Full wwPDB EM Validation Report

Apr 15, 2026 – 02:46 AM UTC

PDB ID	:	9QSA / pdb_00009qsa
EMDB ID	:	EMD-53333
Title	:	Mouse Ribosome rotated-1 PRE state
Authors	:	Santo, P.E.; Astier, A.; Plisson-Chastang, C.
Deposited on	:	2025-04-04
Resolution	:	3.40 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

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

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

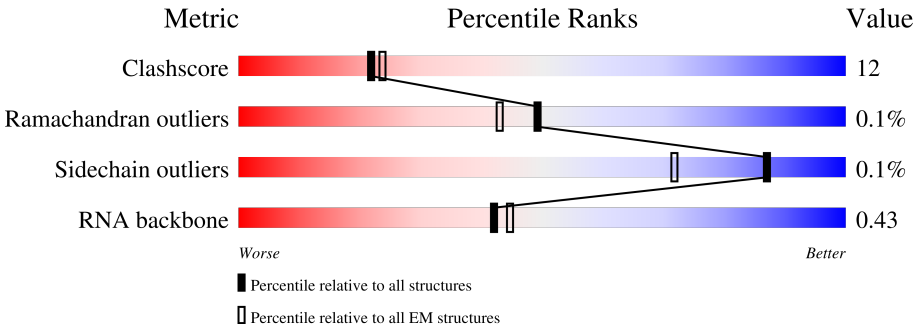
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.40 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	229148	23984
Ramachandran outliers	224038	23583
Sidechain outliers	223484	23102
RNA backbone	8273	3508

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	44% 63% 20% 18%
2	A2	3615	25% 39% 48% 9%
3	A3	152	32% 59% 32% 9%
4	B1	266	42% 66% 15% 18%
5	B2	121	53% 41%
6	B3	145	43% 64% 32%
7	Bz	76	38% 11% 34% 42% 13%

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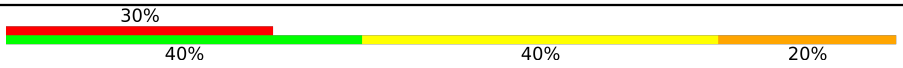
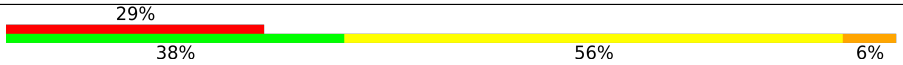
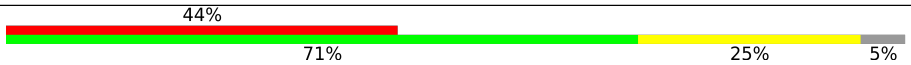
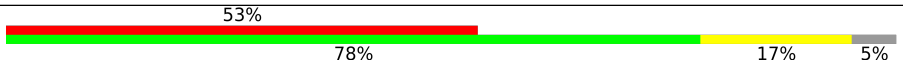
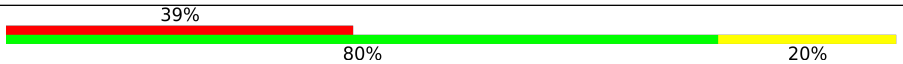
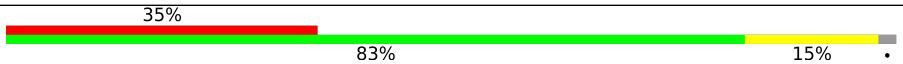
Mol	Chain	Length	Quality of chain
8	Bx	10	
9	By	22	
10	C1	192	
11	C2	156	
12	C3	119	
13	D1	214	
14	D2	257	
15	D3	83	
16	E1	178	
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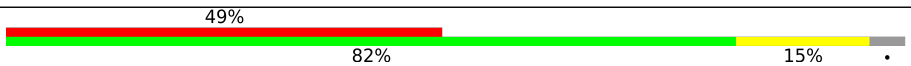
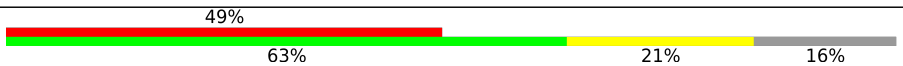
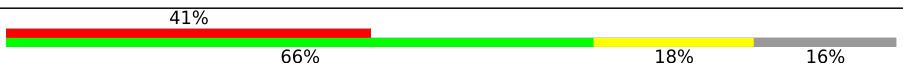
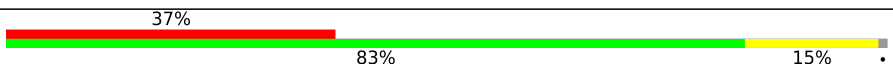
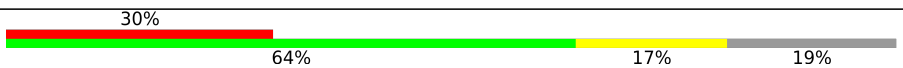
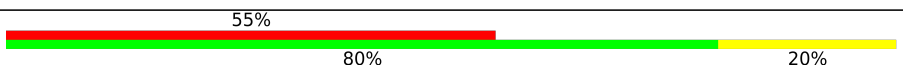
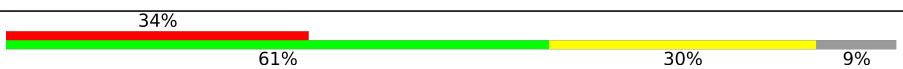
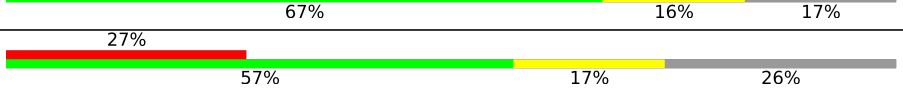
18	E3	143	
19	F1	211	
20	F2	419	
21	F3	115	
22	G1	217	
23	G2	297	
24	G3	69	
25	H1	204	
26	H2	296	
27	H3	56	
28	I2	203	
29	I3	317	
30	J2	184	
31	J3	293	
32	K2	188	

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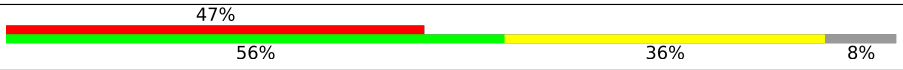
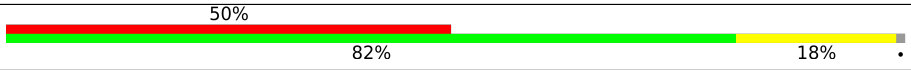
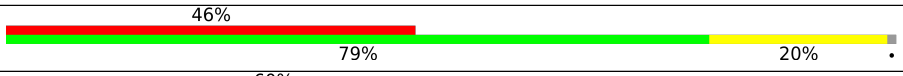
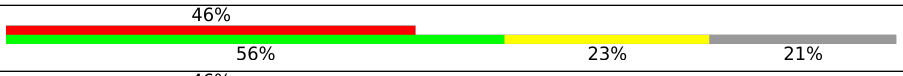
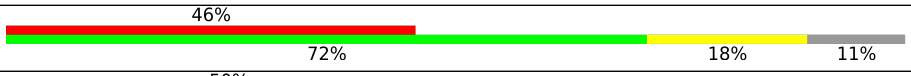
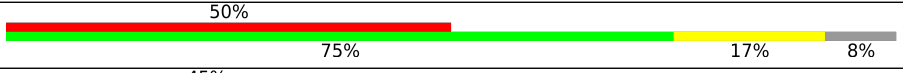
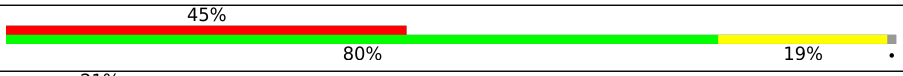
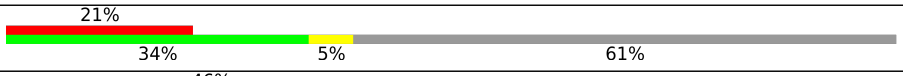
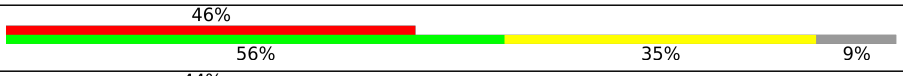
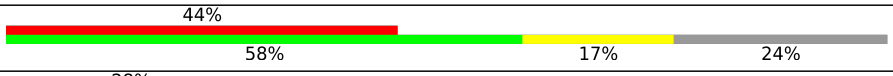
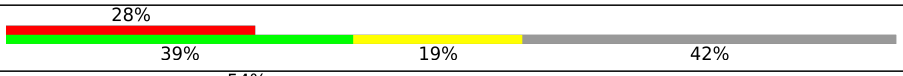
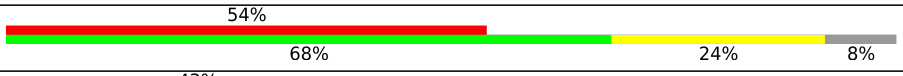
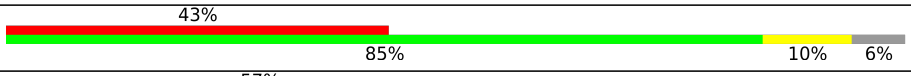
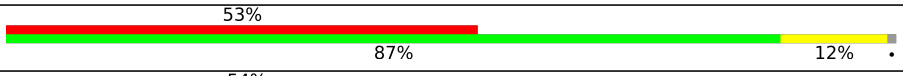
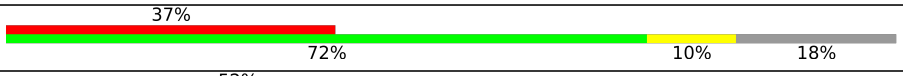
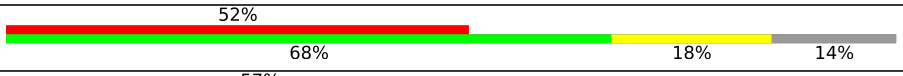
Mol	Chain	Length	Quality of chain
33	K3	249	
34	L2	196	
35	L3	194	
36	M2	176	
37	M3	132	
38	N2	160	
39	N3	151	
40	O2	128	
41	O3	151	
42	P2	140	
43	P3	130	
44	Q2	157	
45	Q3	133	
46	R2	156	
47	R3	125	
48	S2	145	
49	S3	84	
50	T2	136	
51	T3	133	
52	U2	148	
53	V2	160	
54	W2	115	
55	X2	125	
56	Y2	135	
57	Z2	110	

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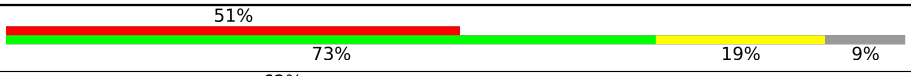
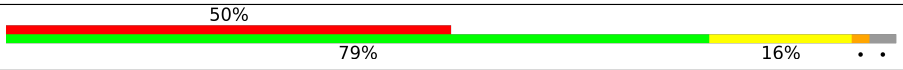
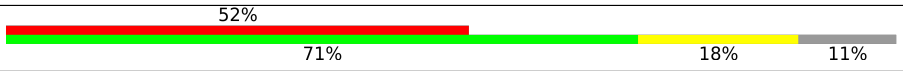
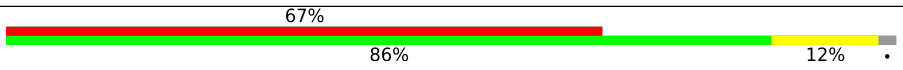
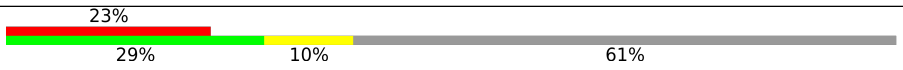
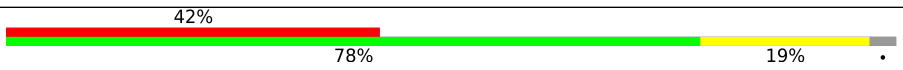
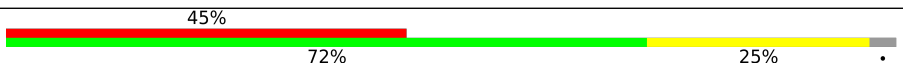
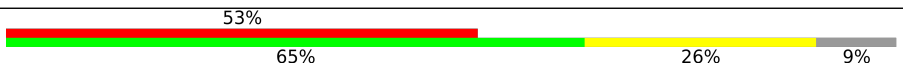
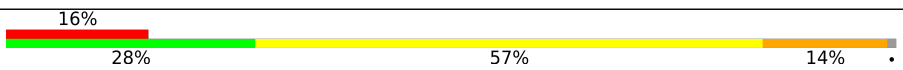
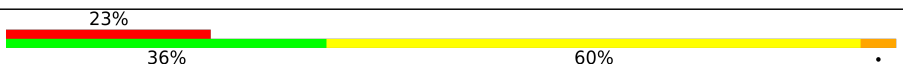
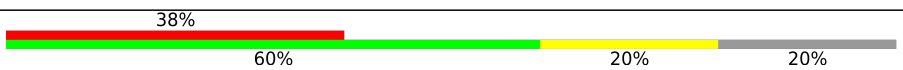
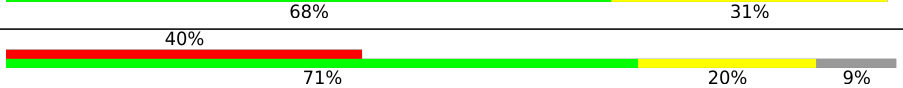
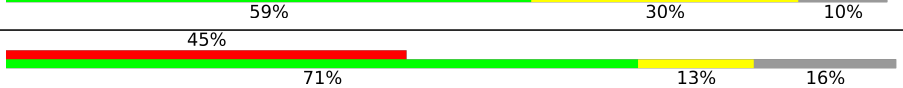
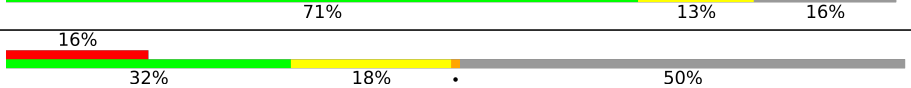
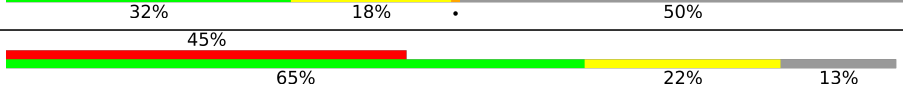
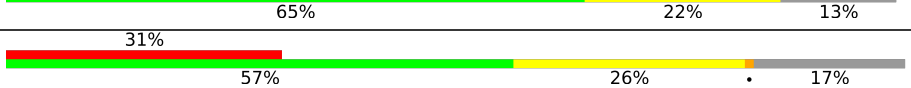
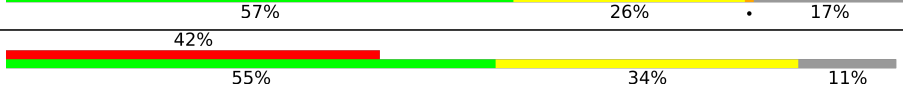
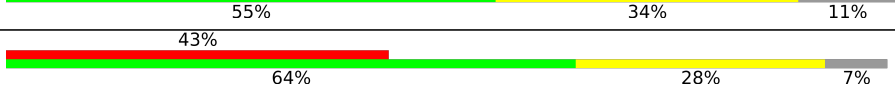
Mol	Chain	Length	Quality of chain
58	a2	117	
59	b2	123	
60	c2	105	
61	d2	97	
62	e2	70	
63	f2	51	
64	g2	128	
65	h2	25	
66	i2	106	
67	j2	92	
68	k2	137	
69	m2	1635	
70	n2	73	
71	o2	295	
72	p2	264	
73	q2	243	
74	r2	257	
75	s2	204	
76	t2	194	
77	u2	208	
78	v2	165	
79	w2	158	
80	x2	145	
81	y2	146	
82	z2	135	

2 Entry composition

There are 85 unique types of molecules in this entry. The entry contains 206246 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	1843	1185	353	297	8	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	A2	3511	75321	33579	13742	24490	3510	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	139	1154	725	233	195	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	217	1764	1127	340	293	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	140	1091	686	210	192	3	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B3	88	MET	ARG	conflict	UNP Q9CZX8

- Molecule 7 is a RNA chain called transfer RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	Bz	66	Total	C	N	O	P	0	0
			1412	629	255	462	66		

- 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	84	Total	C	N	O	S	0	0
			679	428	130	117	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	245	Total	C	N	O	S	0	0
			1876	1177	383	310	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
			589	369	111	104	5		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D3	25	GLY	ALA	conflict	UNP Q9CQR2
D3	41	LYS	ARG	conflict	UNP Q9CQR2
D3	42	VAL	THR	conflict	UNP Q9CQR2
D3	54	ALA	GLY	conflict	UNP Q9CQR2

- 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	395	Total	C	N	O	S	0	0
			3189	2030	601	544	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	352	Total	C	N	O	S	0	0
			2823	1776	566	466	15		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
21	F3	97	Total	C	N	O	S	0	0
			774	481	160	128	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	56	Total	C	N	O	S	0	0
			435	267	85	81	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	218	Total	C	N	O	S	0	0
			1766	1130	337	295	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
27	H3	51	Total	C	N	O	S	0	0
			427	269	87	66	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
28	I2	198	Total	C	N	O	S	0	0
			1618	1043	316	253	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
29	I3	234	Total	C	N	O	S	0	0
			1800	1135	318	337	10		

- 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	217	Total	C	N	O	S	0	0
			1590	1039	276	266	9		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
J3	61	MET	ILE	conflict	UNP P25444

- 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	211	Total	C	N	O	S	0	0
			1708	1073	342	286	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
34	L2	169	Total	C	N	O	S	0	0
			1408	873	304	222	9		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
35	L3	179	Total	C	N	O	S	0	0
			1495	953	299	241	2		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
37	M3	84	Total	C	N	O	S	0	0
			525	332	97	91	5		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
39	N3	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
41	O3	135	Total	C	N	O	S	0	0
			1003	615	198	184	6		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
43	P3	129	Total	C	N	O	S	0	0
			1027	655	192	174	6		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Q3	121	Total	C	N	O	S	0	0
			981	620	192	164	5		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
47	R3	73	Total	C	N	O	S	0	0
			585	374	108	102	1		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
49	S3	79	Total	C	N	O	S	0	0
			618	386	115	110	7		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
51	T3	40	Total	C	N	O	S	0	0
			319	194	73	51	1		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
T3	55	PRO	ASN	conflict	UNP P62862
T3	56	ASN	VAL	conflict	UNP P62862
T3	57	ALA	VAL	conflict	UNP P62862

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

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

- Molecule 53 is a protein called Large ribosomal subunit protein eL29.

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

- Molecule 54 is a protein called Large ribosomal subunit protein eL30.

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

- Molecule 55 is a protein called Large ribosomal subunit protein eL31.

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

- Molecule 56 is a protein called Large ribosomal subunit protein eL32.

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

- Molecule 57 is a protein called Large ribosomal subunit protein eL33.

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

- Molecule 58 is a protein called Large ribosomal subunit protein eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	a2	107	Total	C	N	O	S	0	0
			854	535	176	137	6		

- Molecule 59 is a protein called Large ribosomal subunit protein uL29.

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

- Molecule 60 is a protein called Large ribosomal subunit protein eL36.

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

- Molecule 61 is a protein called Large ribosomal subunit protein eL37.

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

- Molecule 62 is a protein called Large ribosomal subunit protein eL38.

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

- Molecule 63 is a protein called Large ribosomal subunit protein eL39.

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

- Molecule 64 is a protein called Ubiquitin-ribosomal protein eL40 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	g2	50	Total	C	N	O	S	0	0
			412	255	87	64	6		

- Molecule 65 is a protein called 60S ribosomal protein L41.

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

- Molecule 66 is a protein called Large ribosomal subunit protein eL42.

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

- Molecule 67 is a protein called Large ribosomal subunit protein eL43.

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

- Molecule 68 is a protein called Large ribosomal subunit protein eL28.

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

- Molecule 69 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	m2	1616	Total	C	N	O	P	0	0
			34547	15439	6209	11283	1616		

- Molecule 70 is a RNA chain called transfer RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	n2	73	Total	C	N	O	P	0	0
			1562	698	291	501	72		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
71	o2	215	Total	C	N	O	S	0	0
			1704	1083	298	315	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	202	Total	C	N	O	S	0	0
			1572	1006	283	276	7		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
q2	195	THR	SER	conflict	UNP P62908

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

Mol	Chain	Residues	Atoms					AltConf	Trace
74	r2	257	Total	C	N	O	S	0	0
			2031	1298	381	344	8		

There are 19 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
r2	46	VAL	ILE	conflict	UNP P62702
r2	78	VAL	THR	conflict	UNP P62702
r2	80	VAL	ILE	conflict	UNP P62702
r2	93	GLU	ASP	conflict	UNP P62702
r2	98	HIS	ASN	conflict	UNP P62702
r2	102	VAL	ILE	conflict	UNP P62702
r2	116	VAL	PRO	conflict	UNP P62702
r2	130	THR	PHE	conflict	UNP P62702
r2	133	VAL	THR	conflict	UNP P62702
r2	153	VAL	LEU	conflict	UNP P62702
r2	160	VAL	ILE	conflict	UNP P62702
r2	165	GLY	GLU	conflict	UNP P62702
r2	170	ILE	THR	conflict	UNP P62702
r2	171	ASN	ASP	conflict	UNP P62702
r2	184	ILE	THR	conflict	UNP P62702
r2	192	VAL	ILE	conflict	UNP P62702
r2	230	ASN	LYS	conflict	UNP P62702
r2	248	VAL	ILE	conflict	UNP P62702
r2	258	THR	ALA	conflict	UNP P62702

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

Mol	Chain	Residues	Atoms					AltConf	Trace
75	s2	185	Total	C	N	O	S	0	0
			1468	919	277	265	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
76	t2	174	Total	C	N	O	S	0	0
			1322	857	246	218	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
77	u2	175	Total	C	N	O	S	0	0
			1359	853	267	234	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
78	v2	83	Total	C	N	O	S	0	0
			705	462	122	115	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
79	w2	138	Total	C	N	O	S	0	0
			1134	722	214	192	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
80	x2	120	Total	C	N	O	S	0	0
			999	635	188	169	7		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
81	y2	130	Total	C	N	O	S	0	0
			1028	655	194	176	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
82	z2	125	Total	C	N	O	S	0	0
			1011	634	187	186	4		

- Molecule 83 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of

Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
83	A2	83	Total Mg 83 83	0
83	E3	1	Total Mg 1 1	0
83	J2	1	Total Mg 1 1	0
83	m2	31	Total Mg 31 31	0
83	q2	1	Total Mg 1 1	0

- Molecule 84 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

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

- Molecule 85 is water.

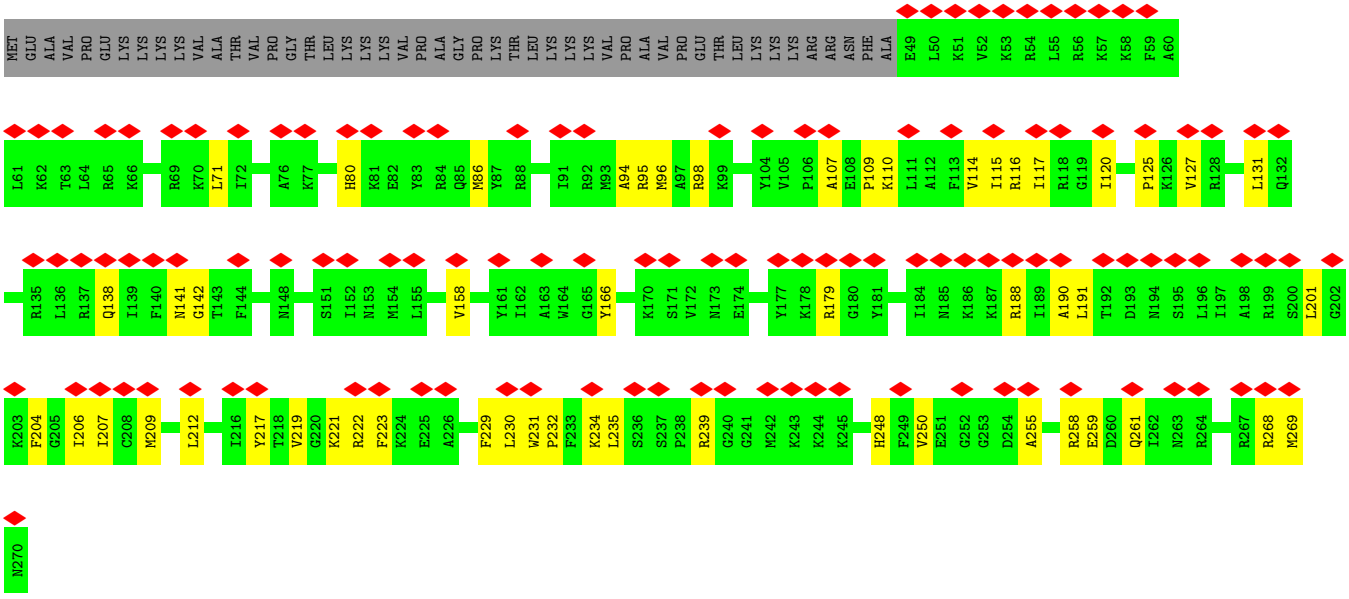
Mol	Chain	Residues	Atoms	AltConf
85	B1	1	Total O 1 1	0

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.

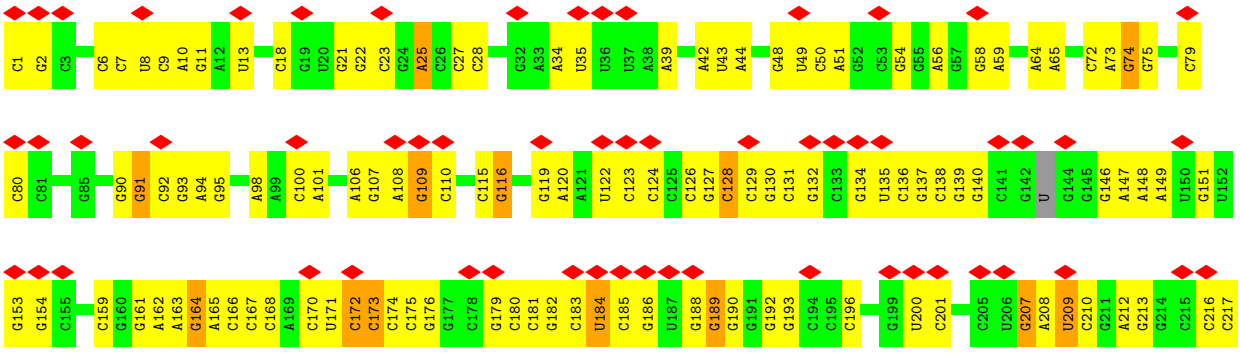
• Molecule 1: Large ribosomal subunit protein uL30

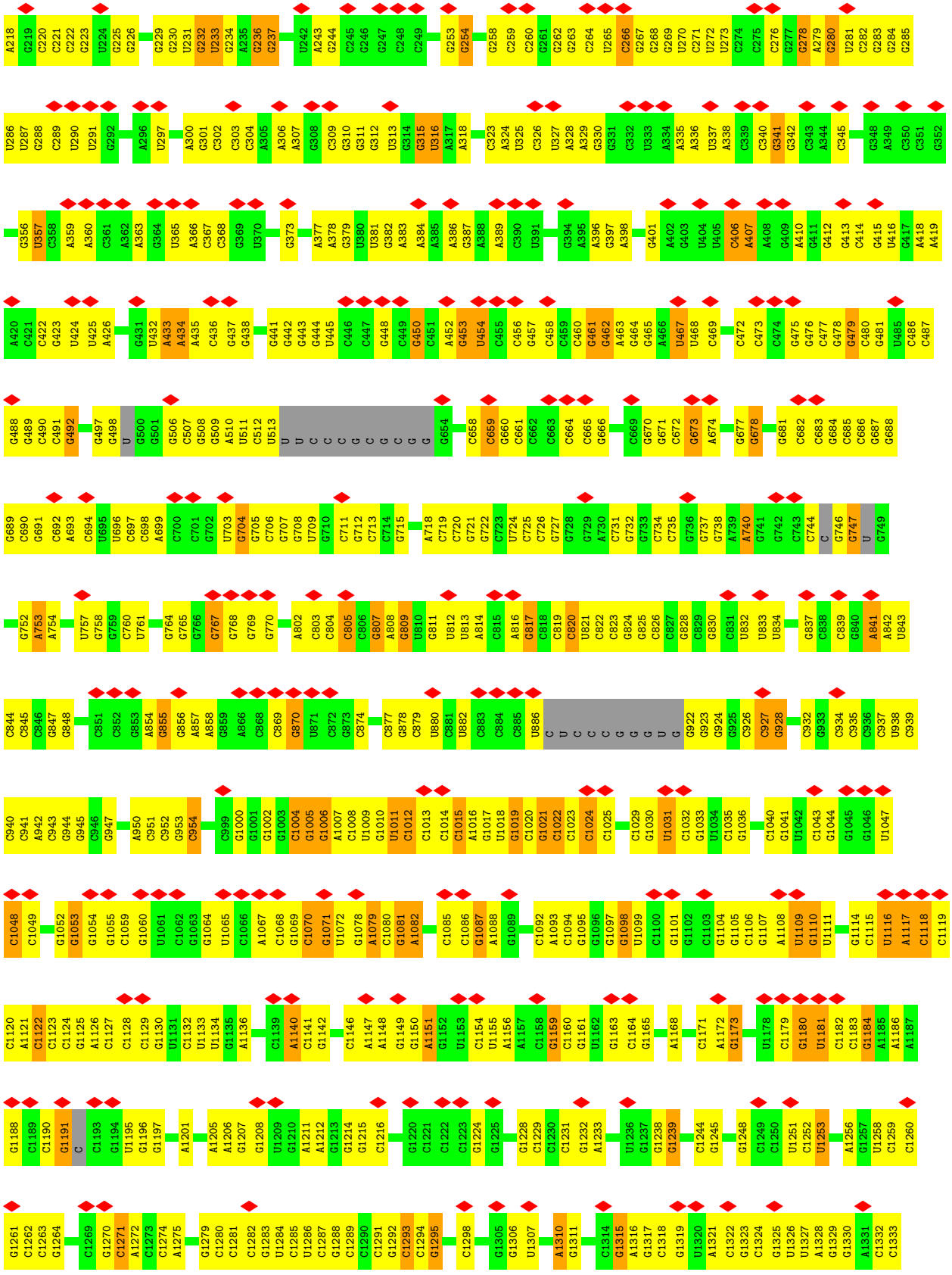
Chain A1:

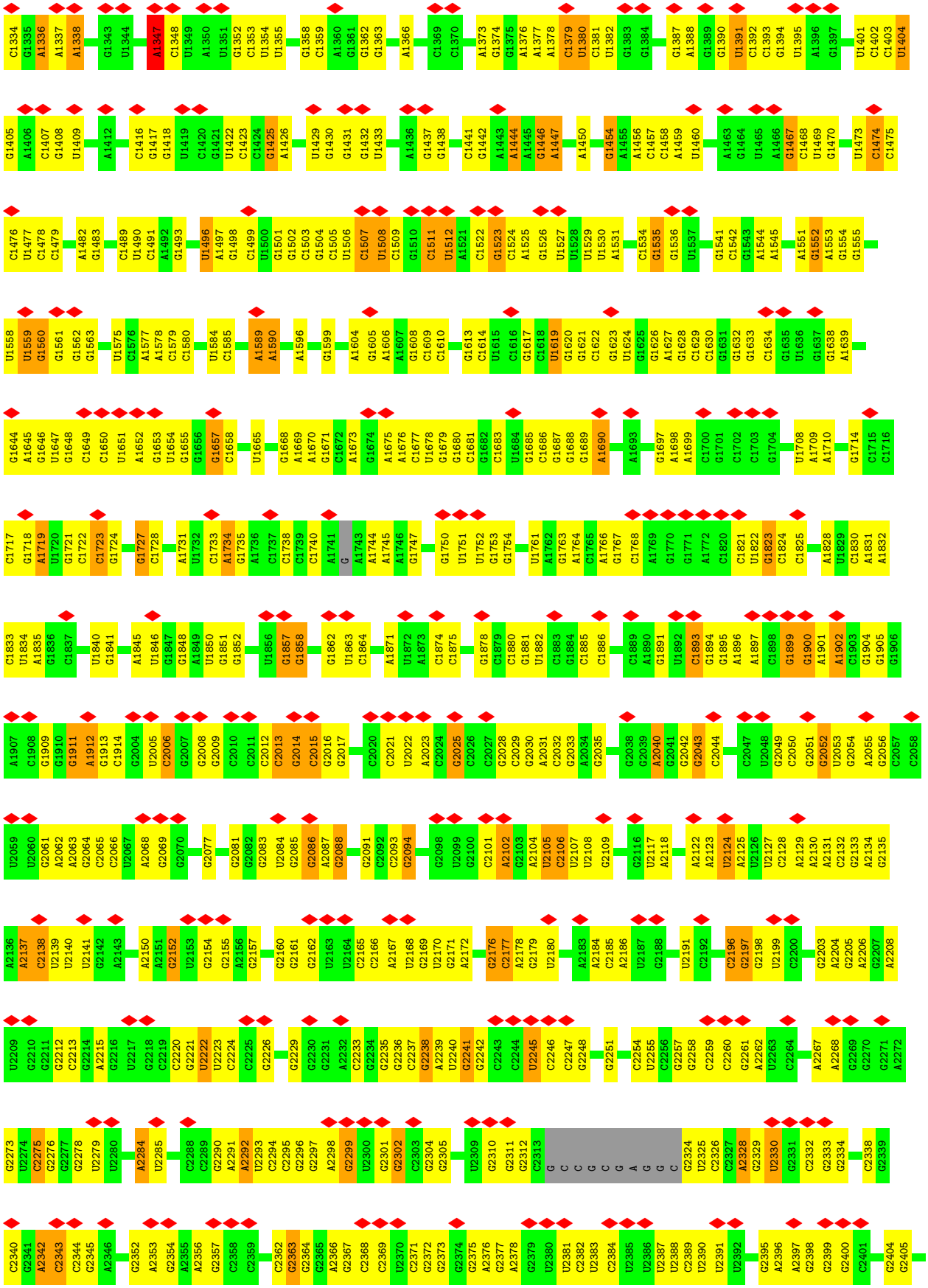


• Molecule 2: 28S ribosomal RNA

Chain A2:



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C1476 U1477 C1478 C1479 A1482 G1483 C1489 U1490 C1491 A1492 G1493 U1496 A1497 G1498 C1499 U1500 G1501 G1502 C1503 G1504 C1505 U1506 C1507 U1508 C1509 G1510 C1511 U1512 A1521 C1522 G1523 C1524 A1525 G1526 U1527 U1528 U1529 U1530 A1531 C1534 G1535 G1536 U1537 G1541 C1542 G1543 A1544 A1545 A1551 G1552 A1553 G1554 G1555
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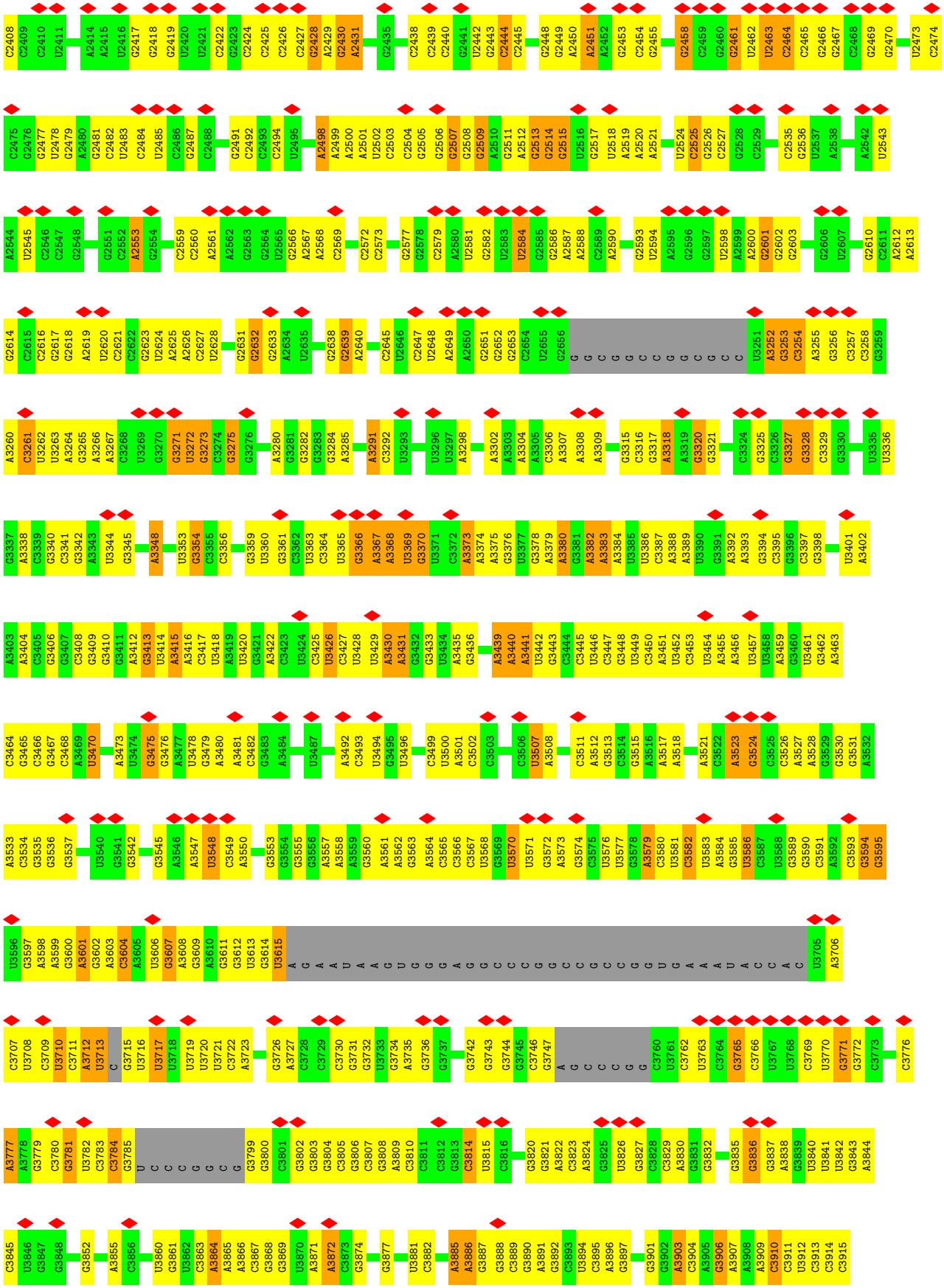
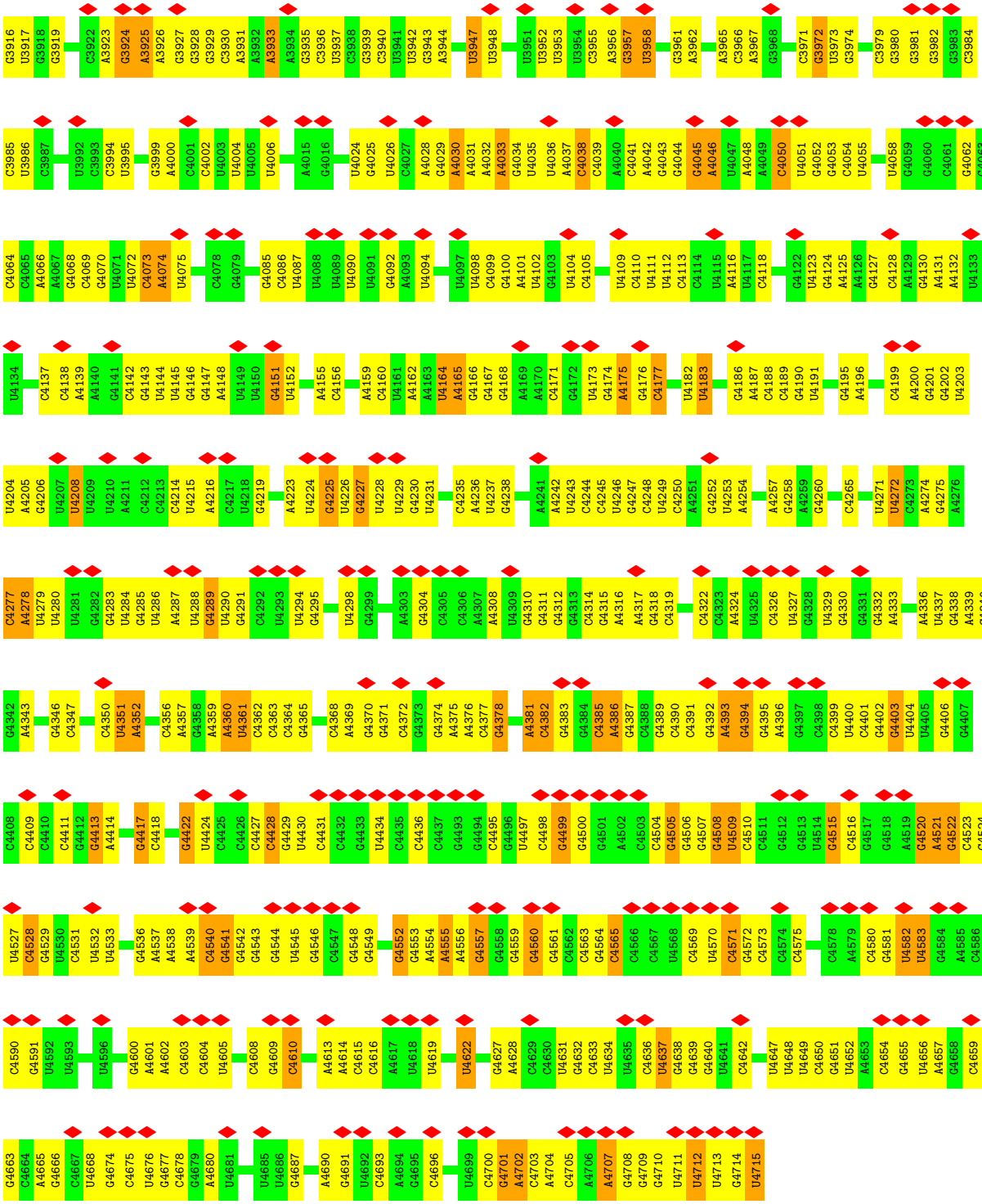
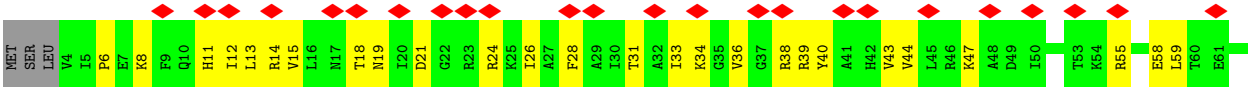
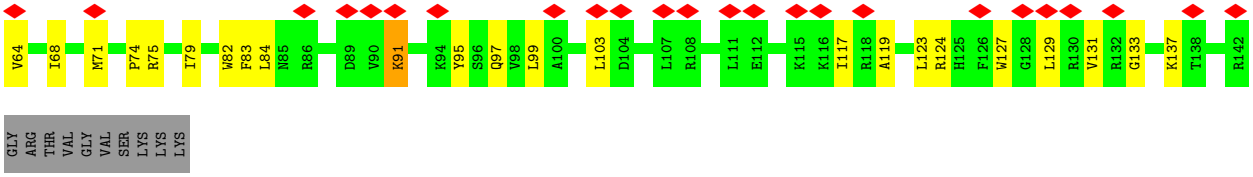




• Molecule 3: Small ribosomal subunit protein uS13

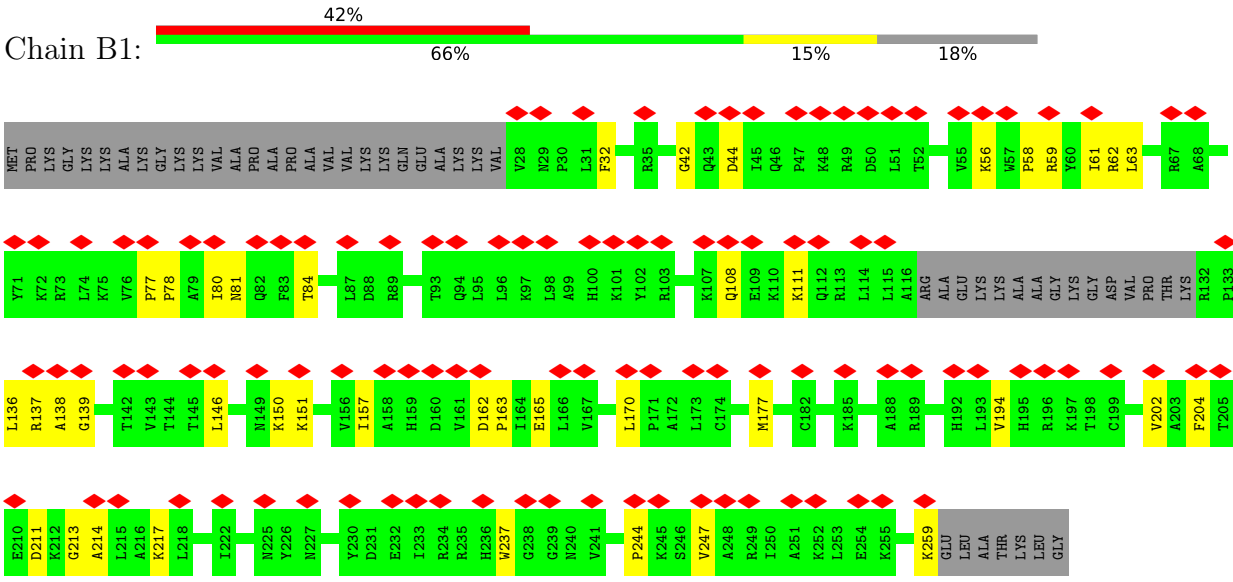
Chain A3:





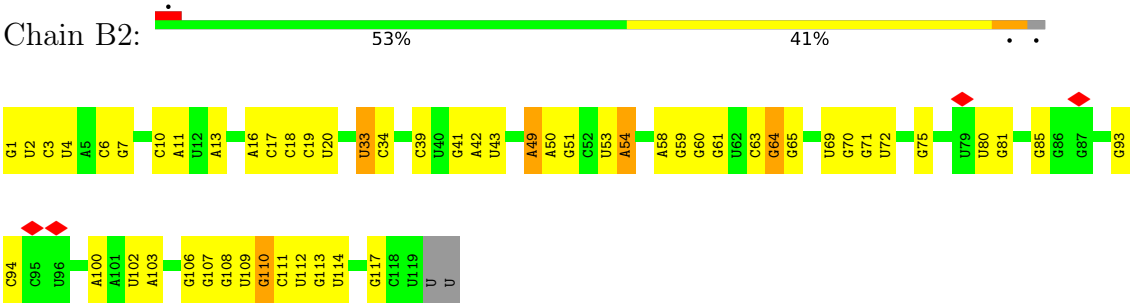
• Molecule 4: Large ribosomal subunit protein eL8

Chain B1:



• Molecule 5: 5S ribosomal RNA

Chain B2:



• Molecule 6: Small ribosomal subunit protein eS19

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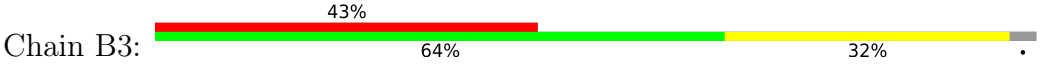
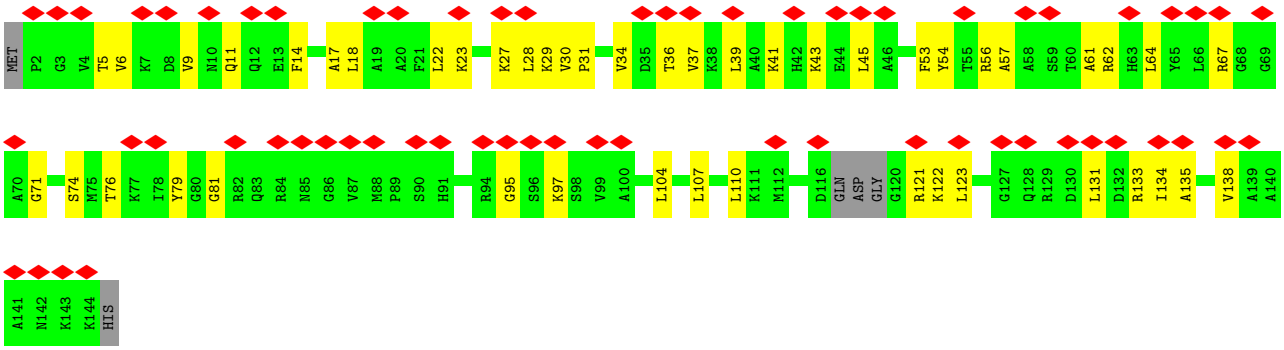
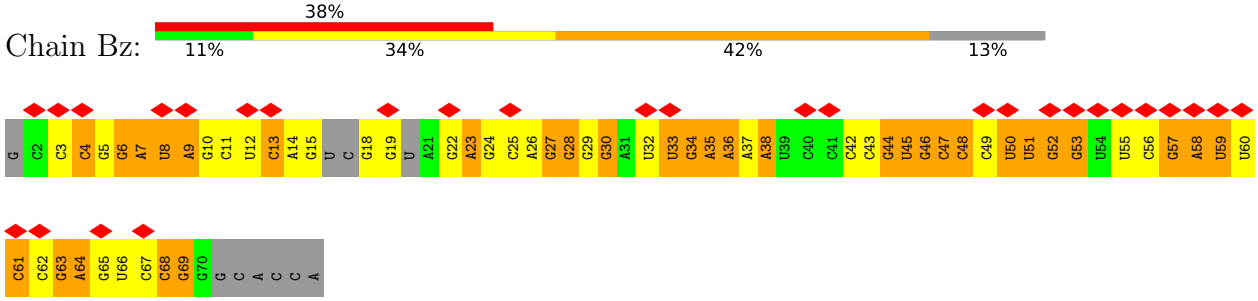




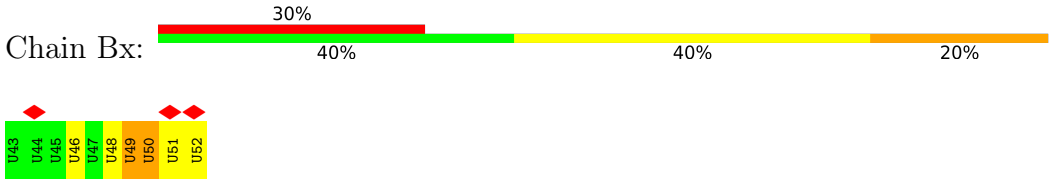
• Molecule 7: transfer RNA

Chain Bz:



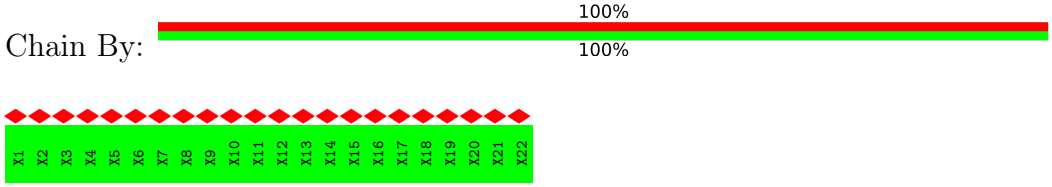
• Molecule 8: messenger RNA

Chain Bx:



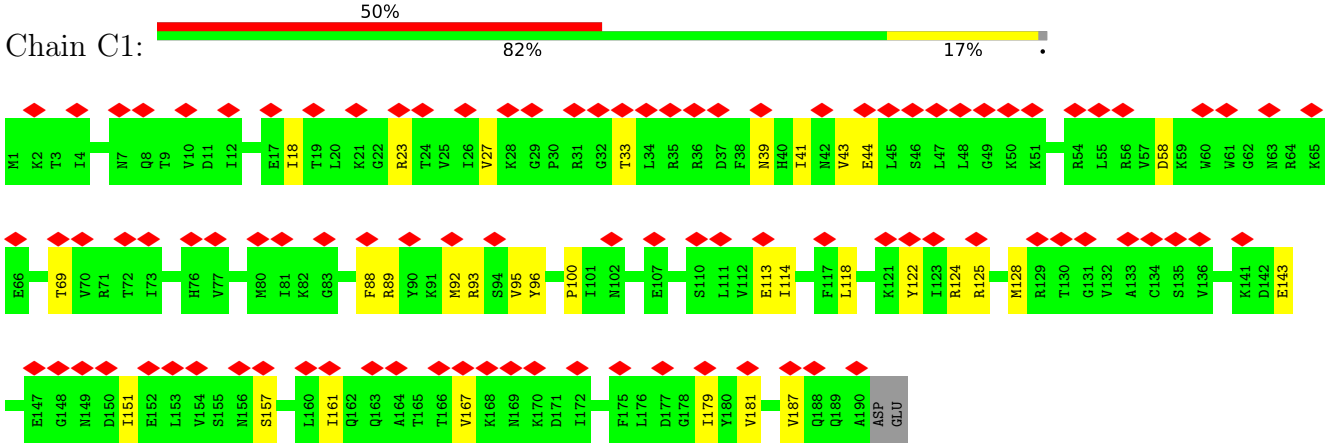
• Molecule 9: Nascent protein chain

Chain By:



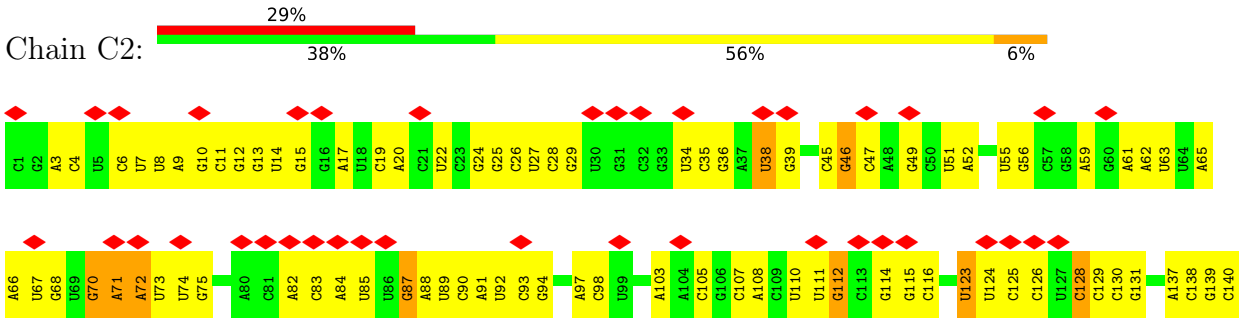
• Molecule 10: Large ribosomal subunit protein uL6

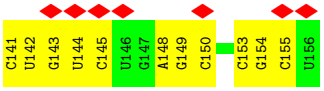
Chain C1:



• Molecule 11: 5.8S ribosomal RNA

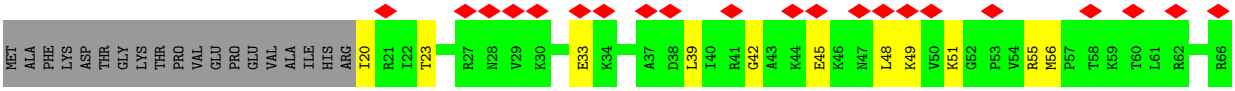
Chain C2:

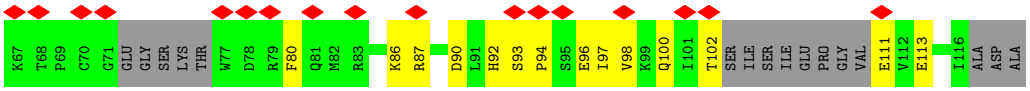




• Molecule 12: Small ribosomal subunit protein uS10

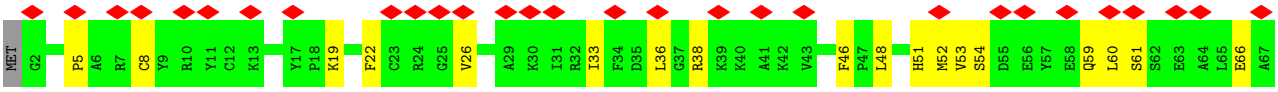
Chain C3:

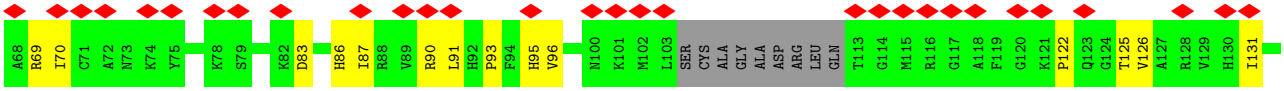


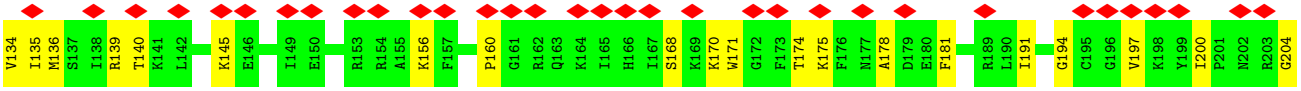


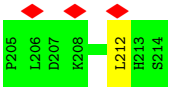
• Molecule 13: Large ribosomal subunit protein uL16

Chain D1:



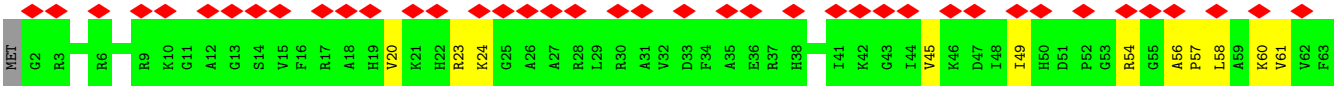


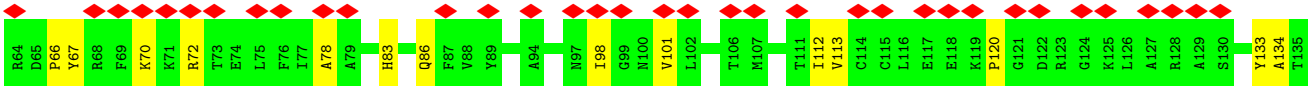


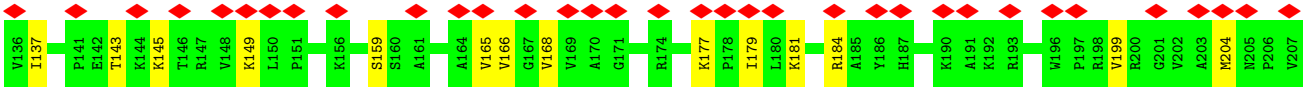


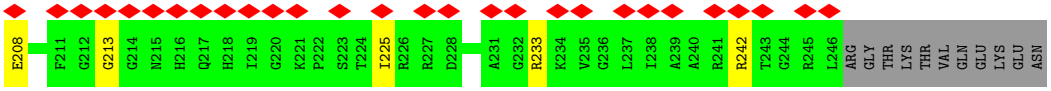
• Molecule 14: Large ribosomal subunit protein uL2

Chain D2:



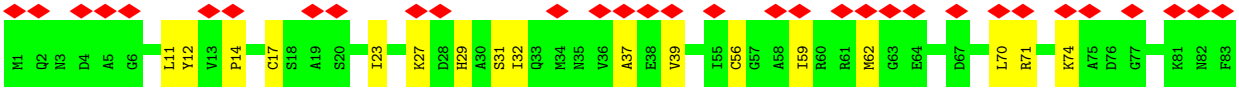






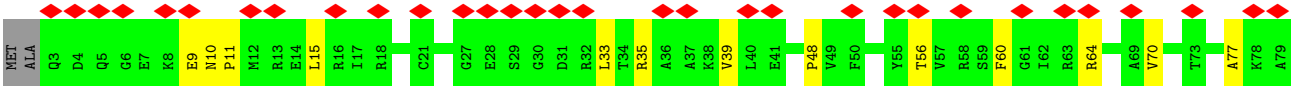
• Molecule 15: Small ribosomal subunit protein eS21

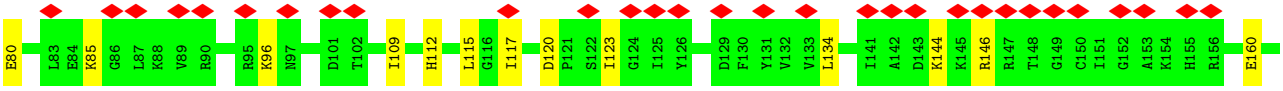
Chain D3:

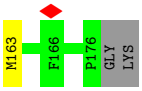


• Molecule 16: Large ribosomal subunit protein uL5

Chain E1:

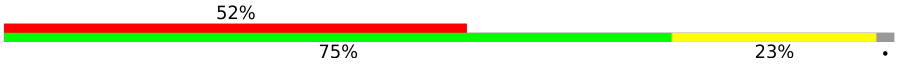


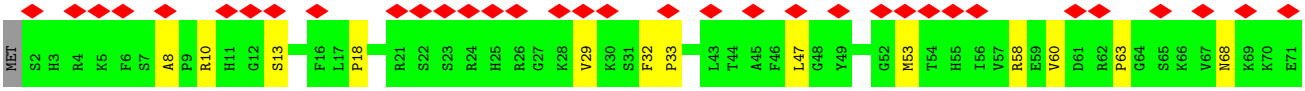


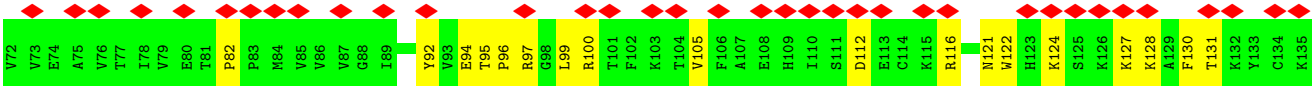


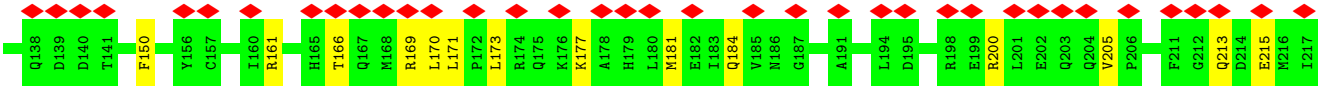
• Molecule 17: Large ribosomal subunit protein uL3

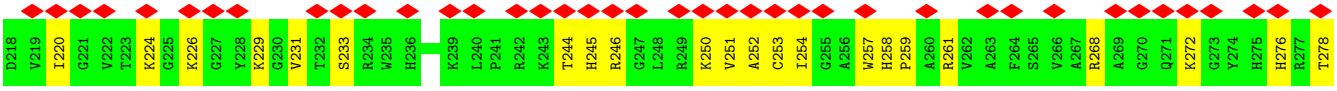
Chain E2:

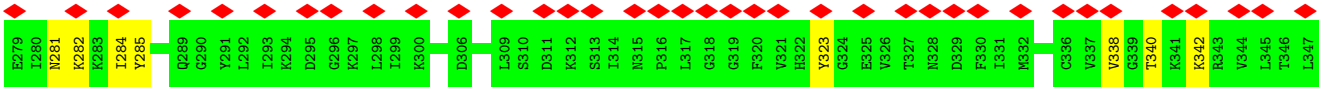


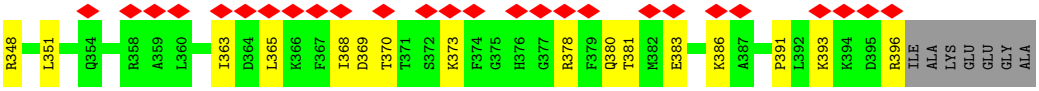






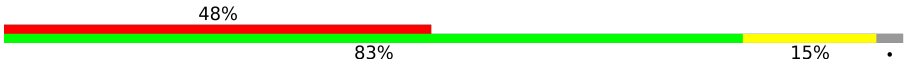


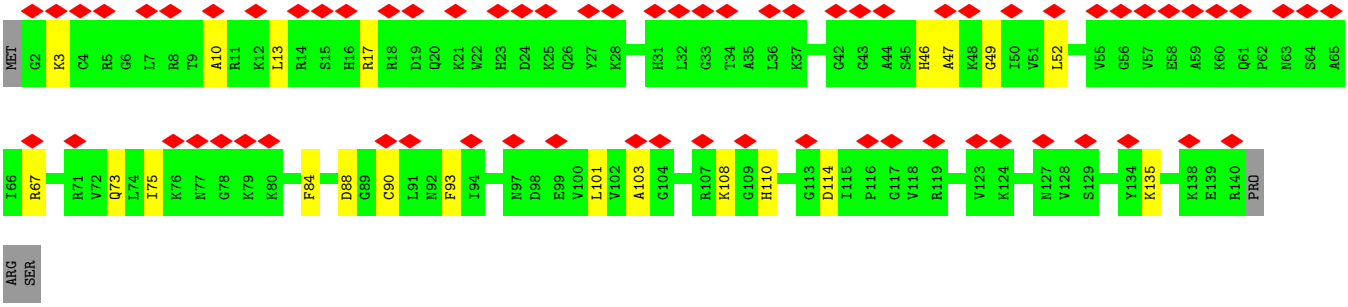




• Molecule 18: Small ribosomal subunit protein uS12

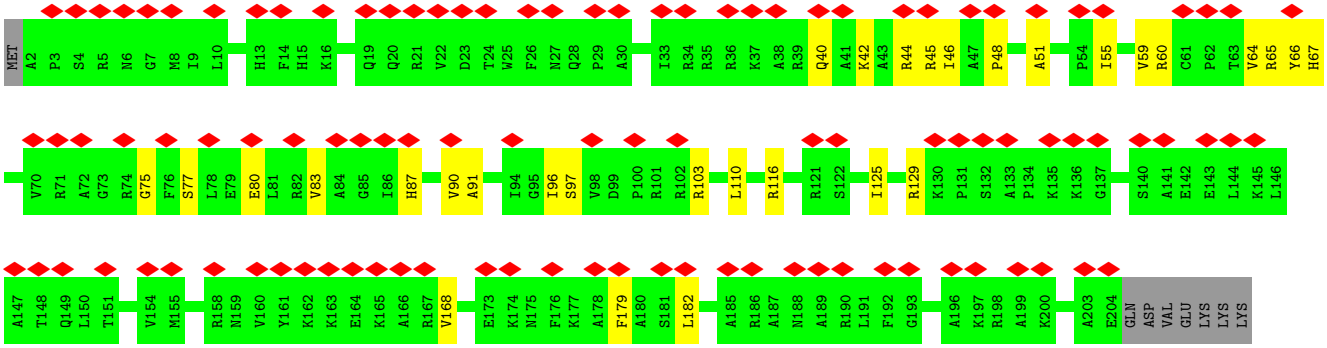
Chain E3:





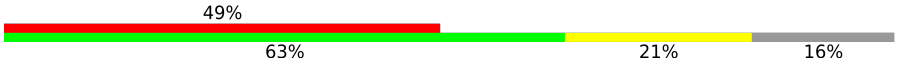
• Molecule 19: Large ribosomal subunit protein eL13

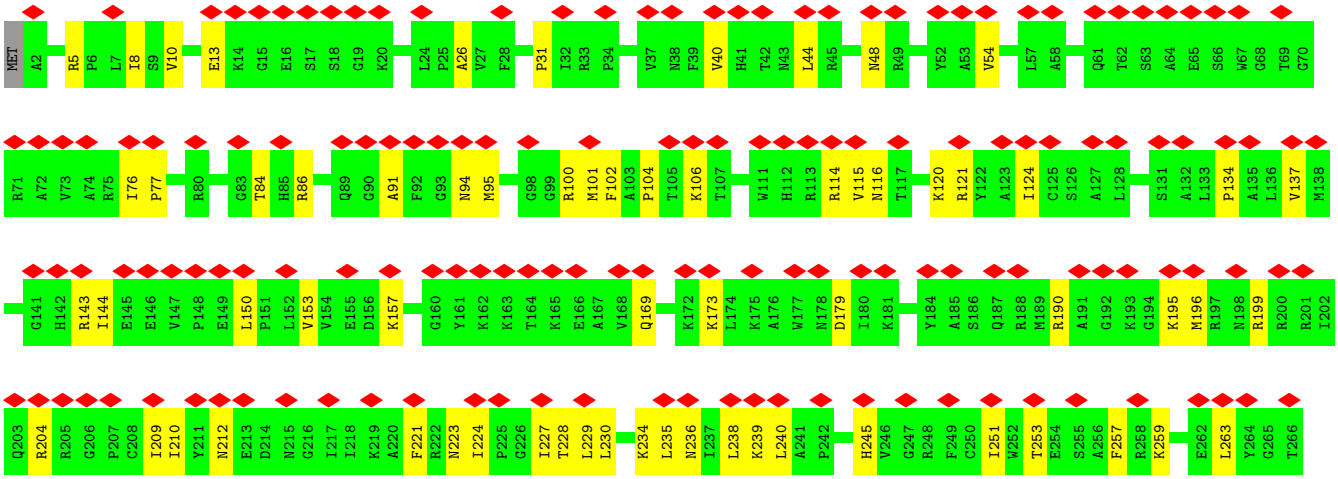
Chain F1:

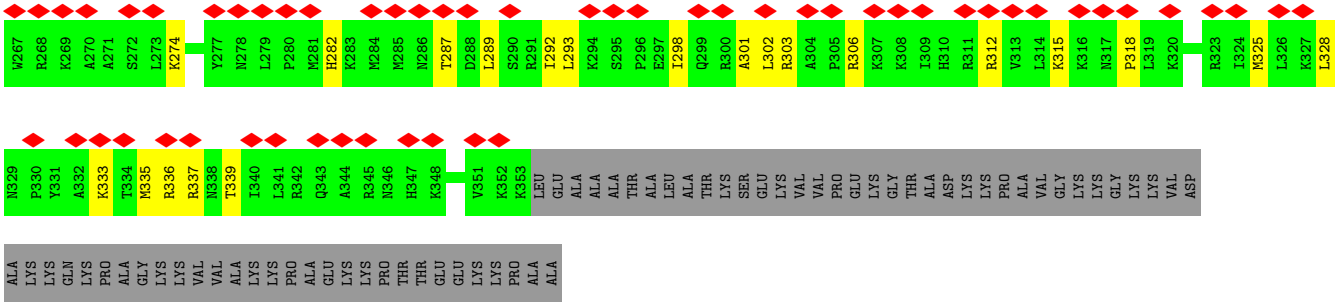


• Molecule 20: Large ribosomal subunit protein uL4

Chain F2:

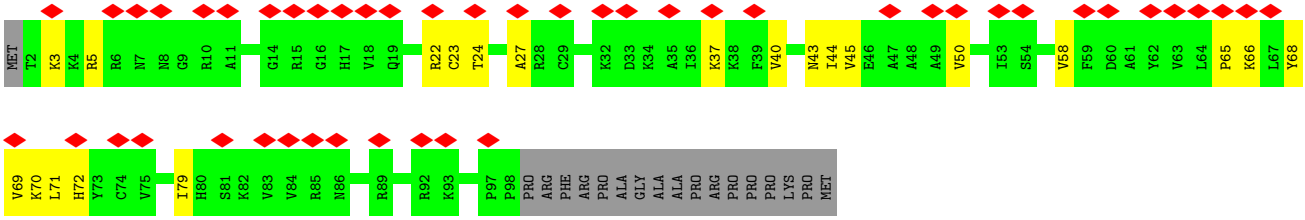






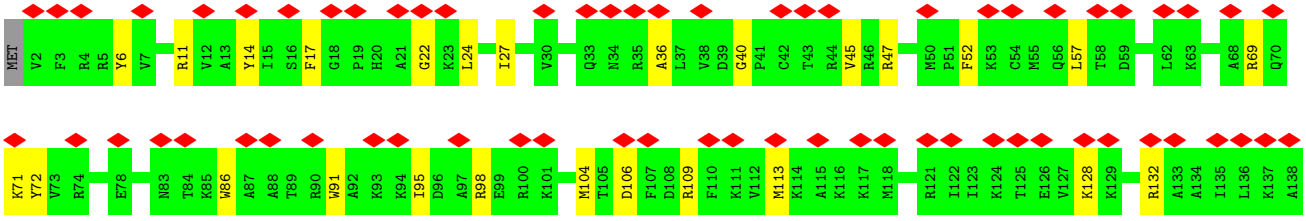
• Molecule 21: Small ribosomal subunit protein eS26

Chain F3:



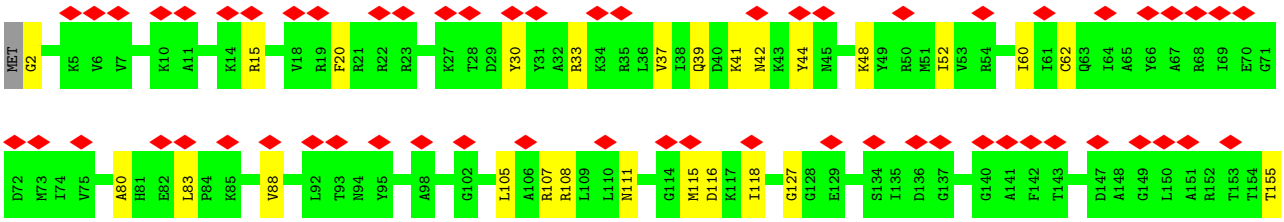
• Molecule 22: Large ribosomal subunit protein eL14

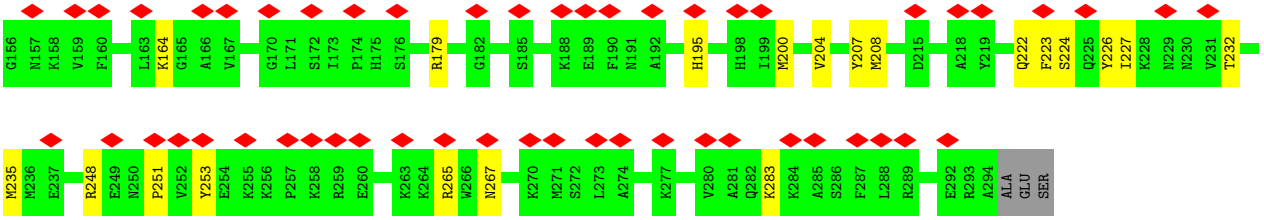
Chain G1:



• Molecule 23: Large ribosomal subunit protein uL18

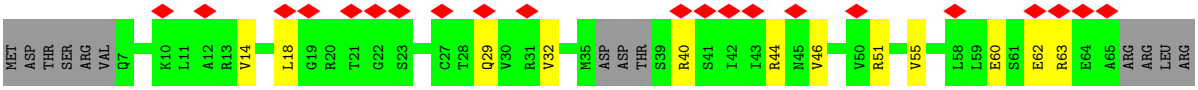
Chain G2:





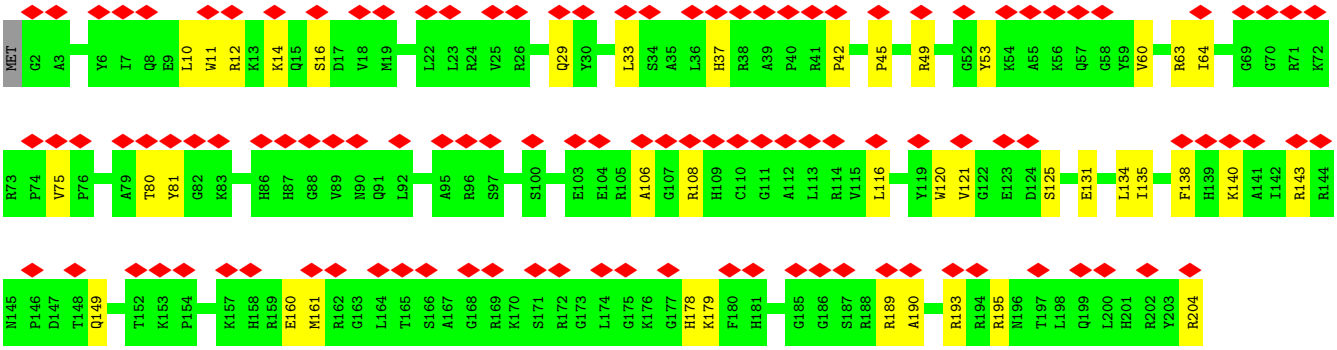
• Molecule 24: Small ribosomal subunit protein eS28

Chain G3:



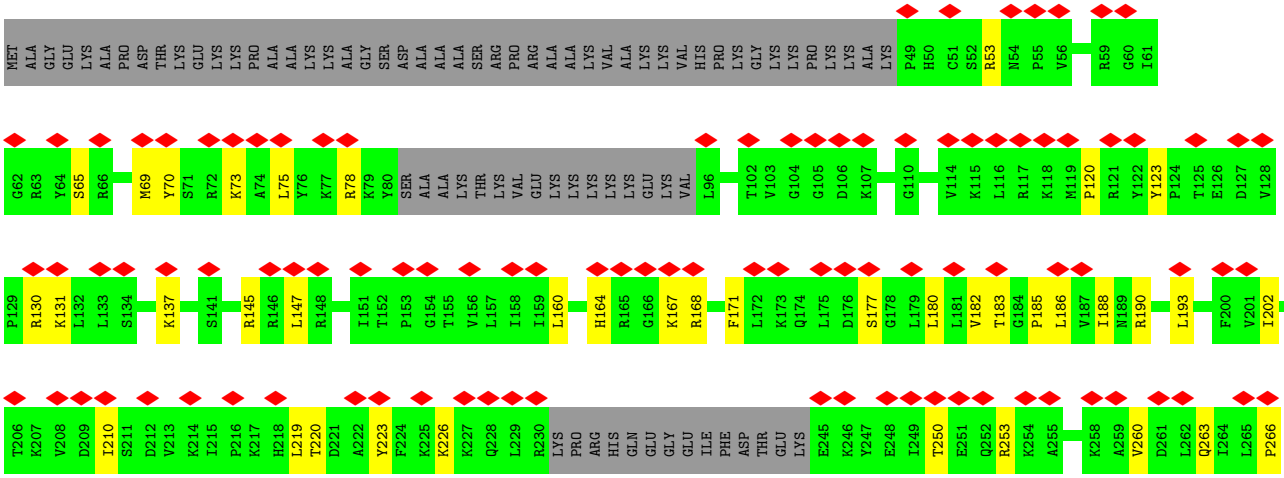
• Molecule 25: Large ribosomal subunit protein eL15

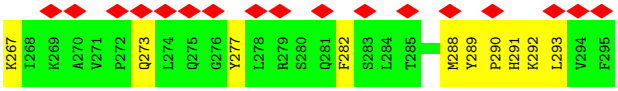
Chain H1:



• Molecule 26: Large ribosomal subunit protein eL6

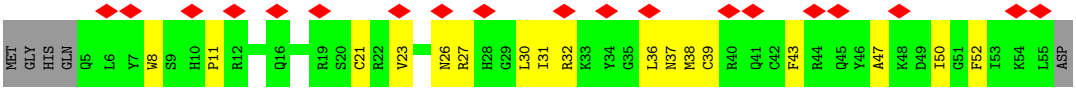
Chain H2:





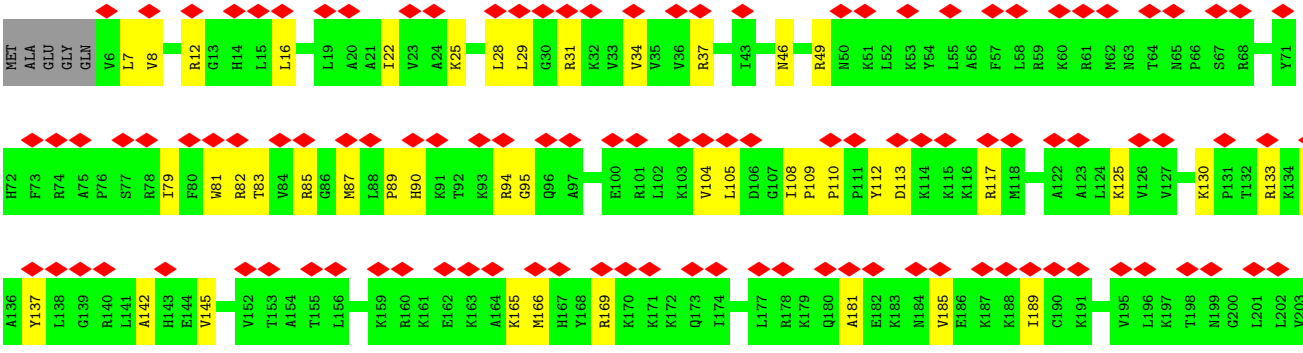
• Molecule 27: Small ribosomal subunit protein uS14

Chain H3:



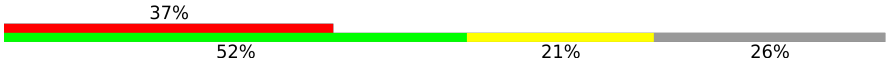
• Molecule 28: Large ribosomal subunit protein uL13

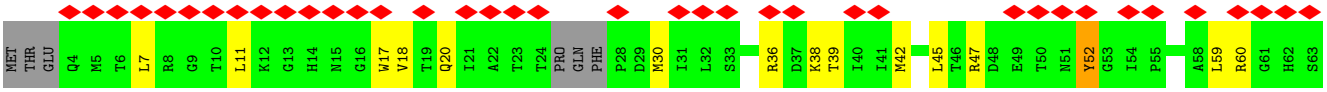
Chain I2:

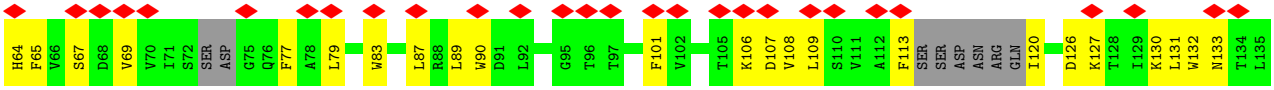


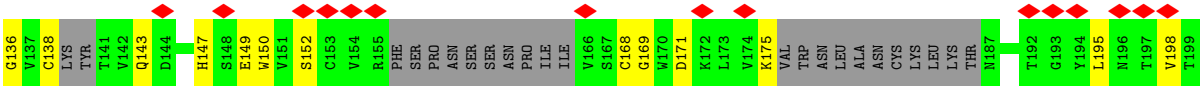
• Molecule 29: Small ribosomal subunit protein RACK1

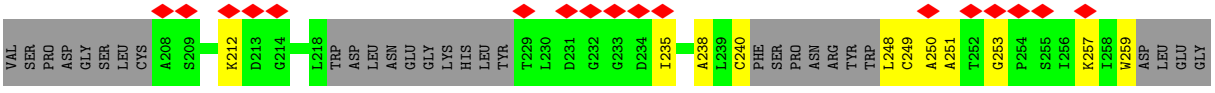
Chain I3:

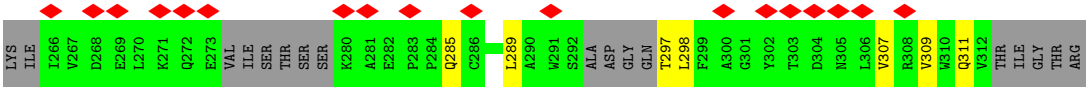






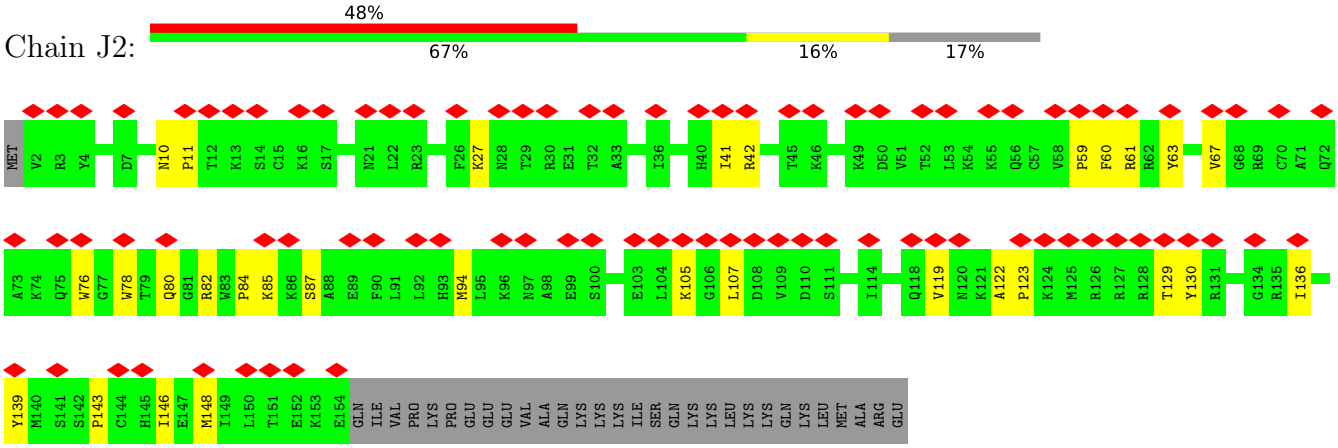






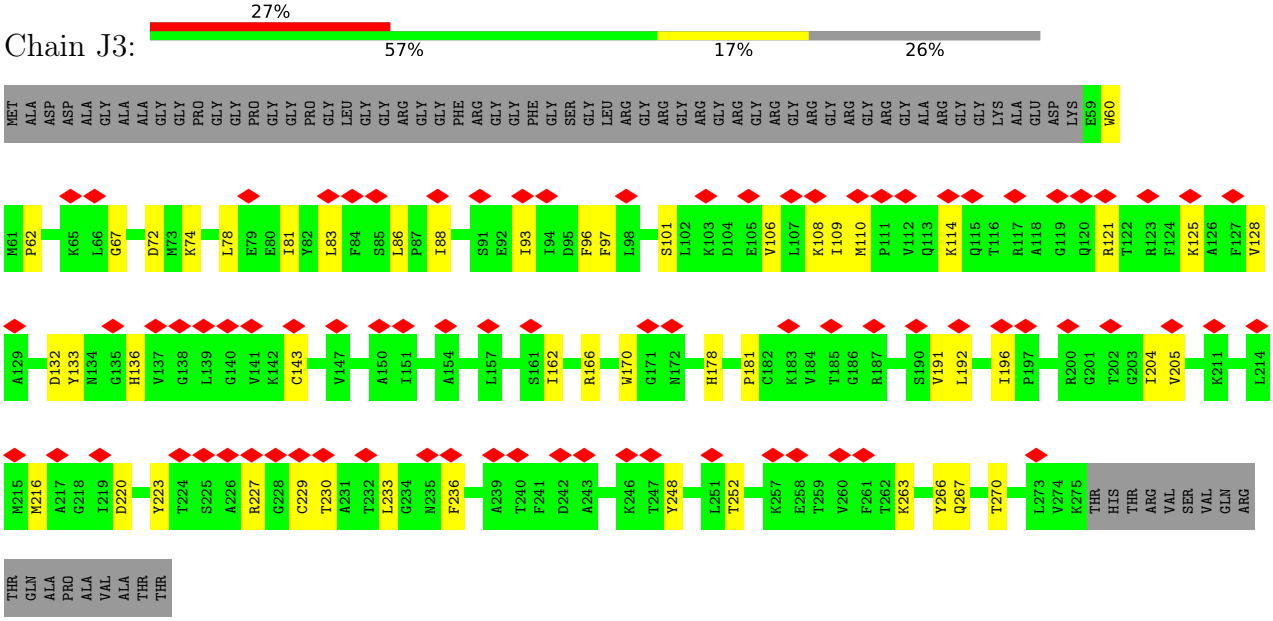
• Molecule 30: Large ribosomal subunit protein uL22

Chain J2:



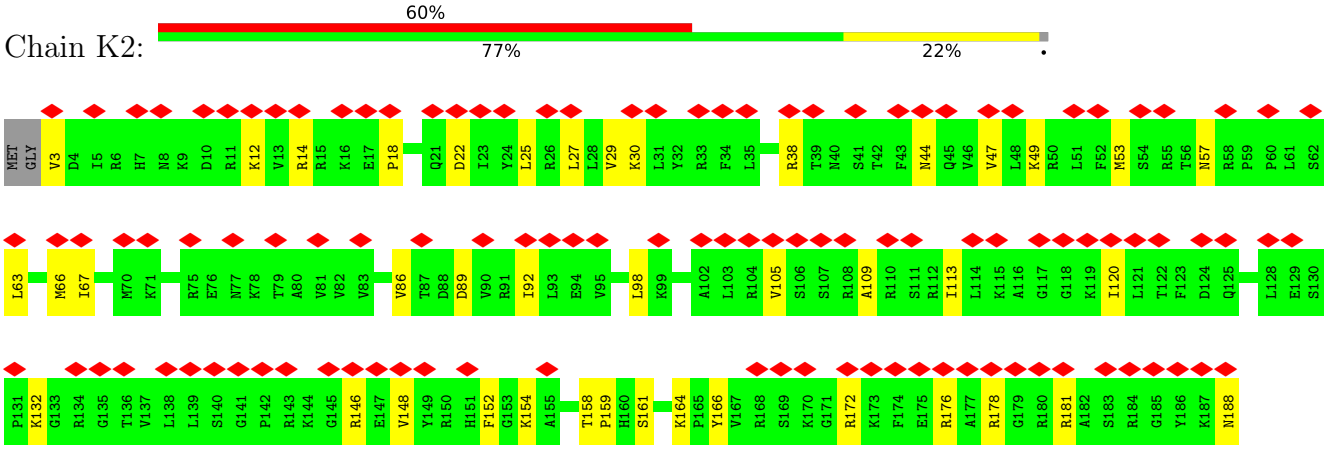
• Molecule 31: Small ribosomal subunit protein uS5

Chain J3:



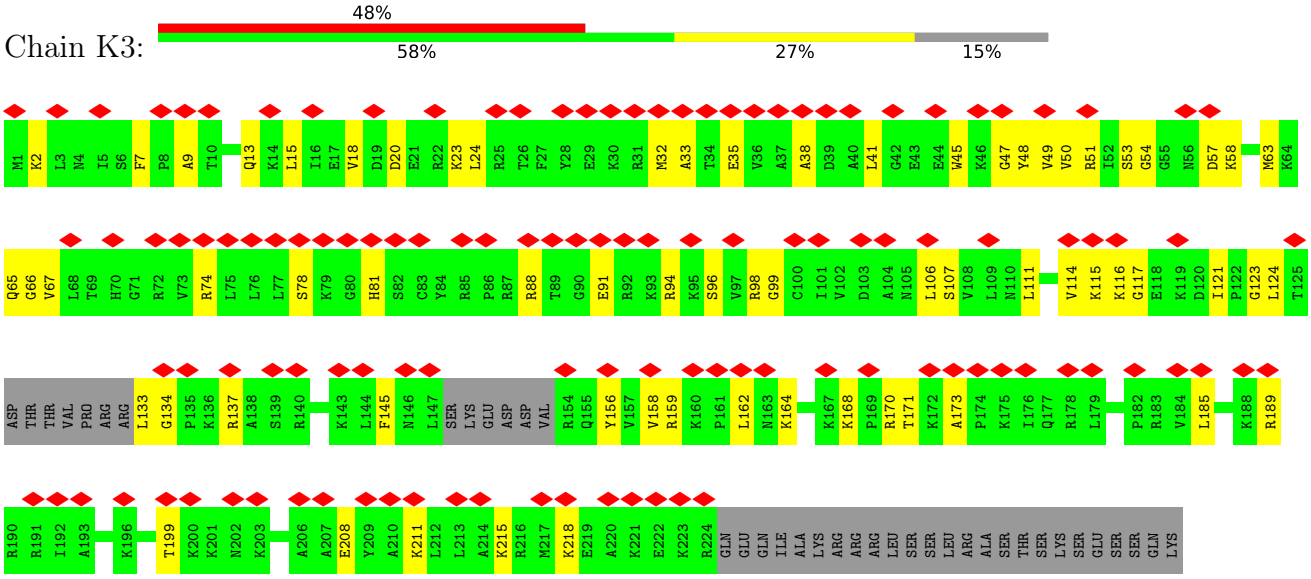
• Molecule 32: Large ribosomal subunit protein eL18

Chain K2:



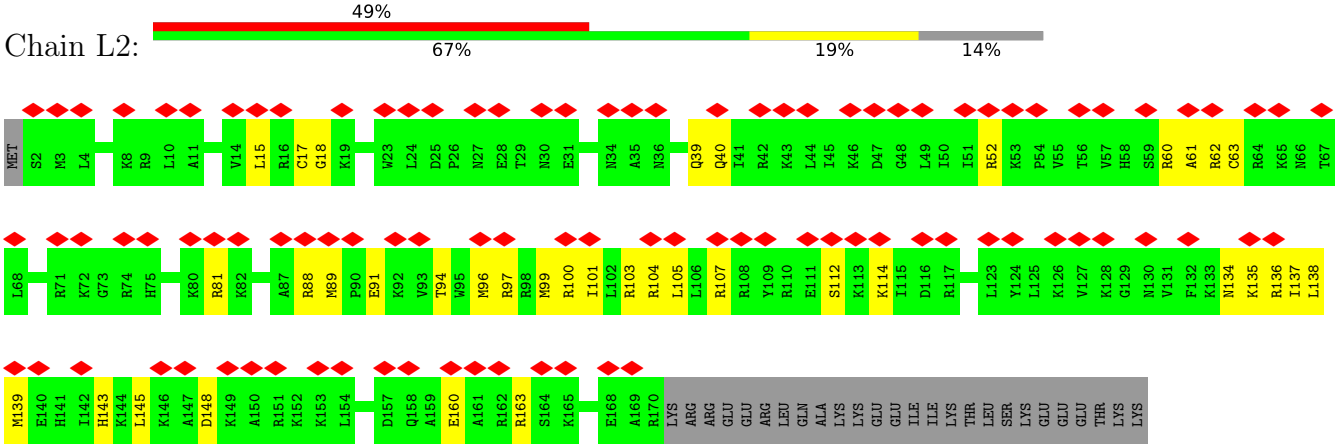
• Molecule 33: Small ribosomal subunit protein eS6

Chain K3:



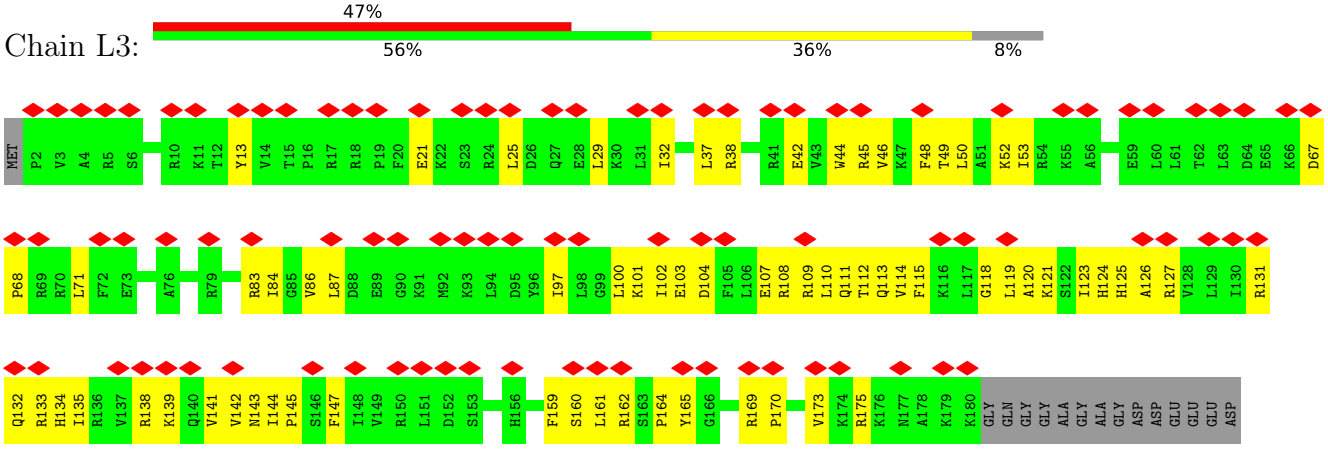
• Molecule 34: Large ribosomal subunit protein eL19

Chain L2:



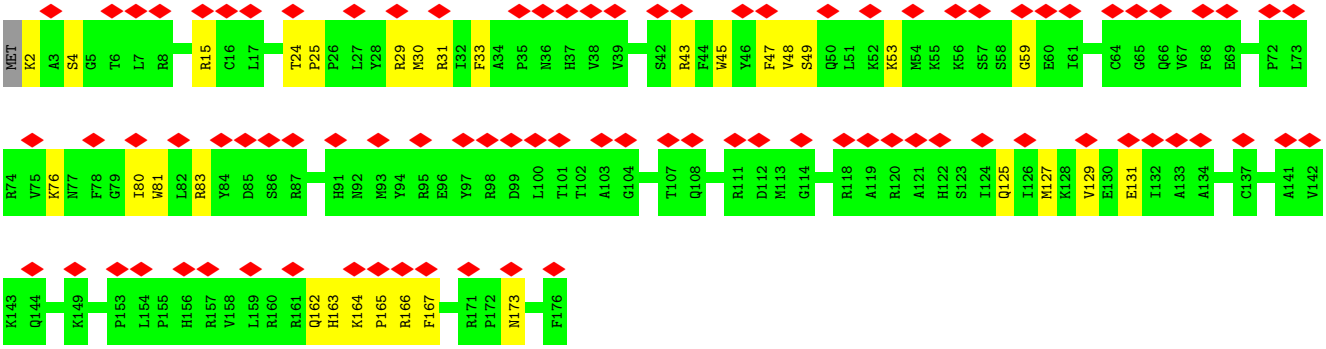
• Molecule 35: Small ribosomal subunit protein uS4

Chain L3:



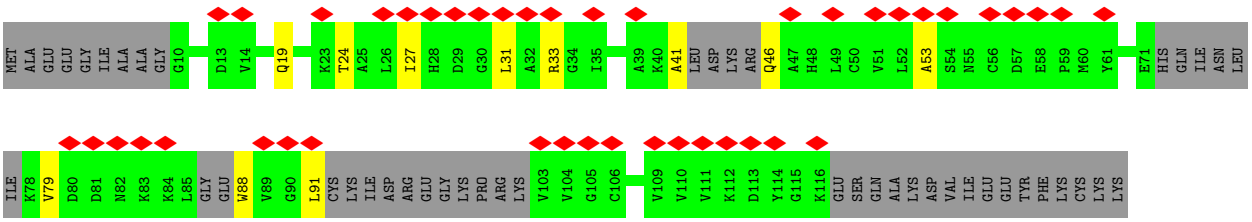
• Molecule 36: Large ribosomal subunit protein eL20

Chain M2:



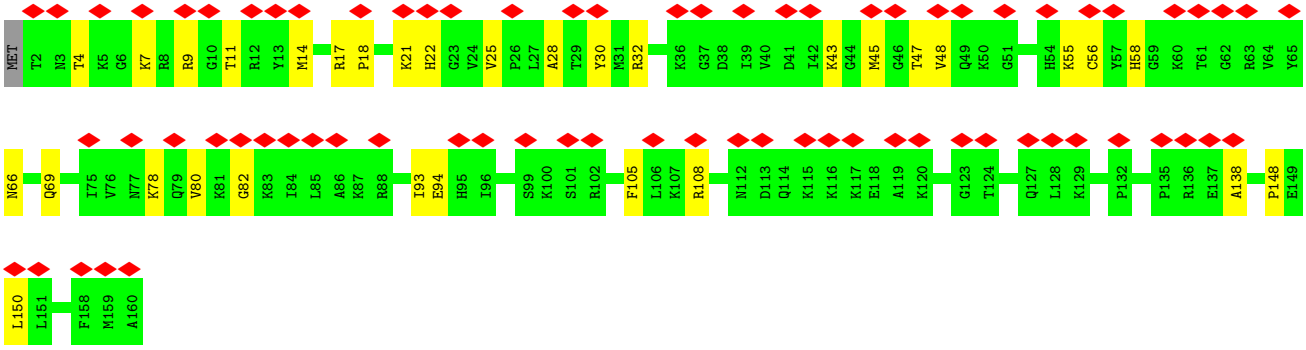
• Molecule 37: Small ribosomal subunit protein eS12

Chain M3:



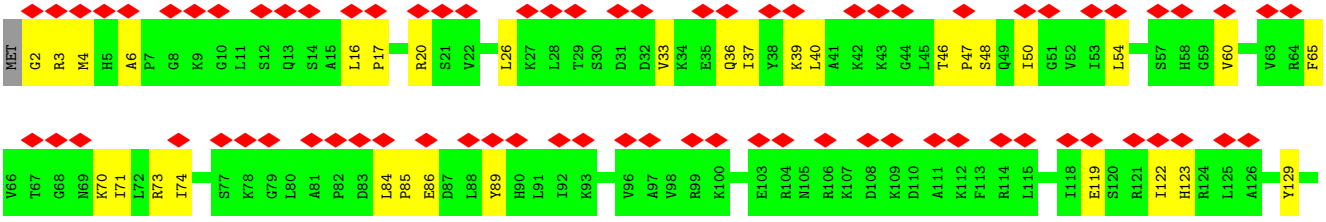
• Molecule 38: Large ribosomal subunit protein eL21

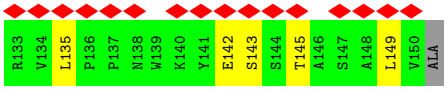
Chain N2:



• Molecule 39: Small ribosomal subunit protein uS15

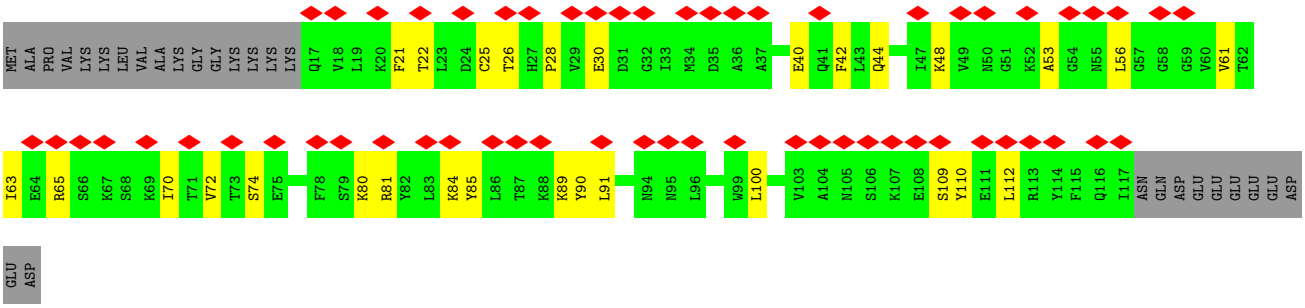
Chain N3:





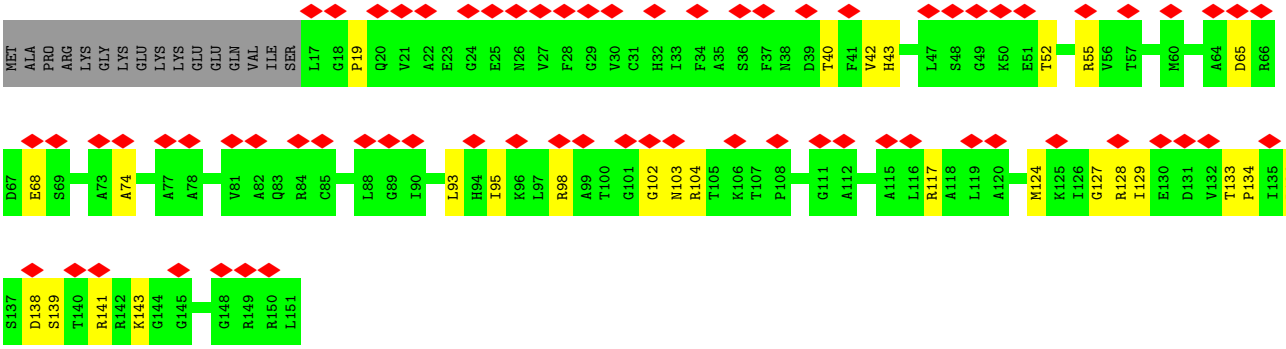
• Molecule 40: Large ribosomal subunit protein eL22

Chain O2:



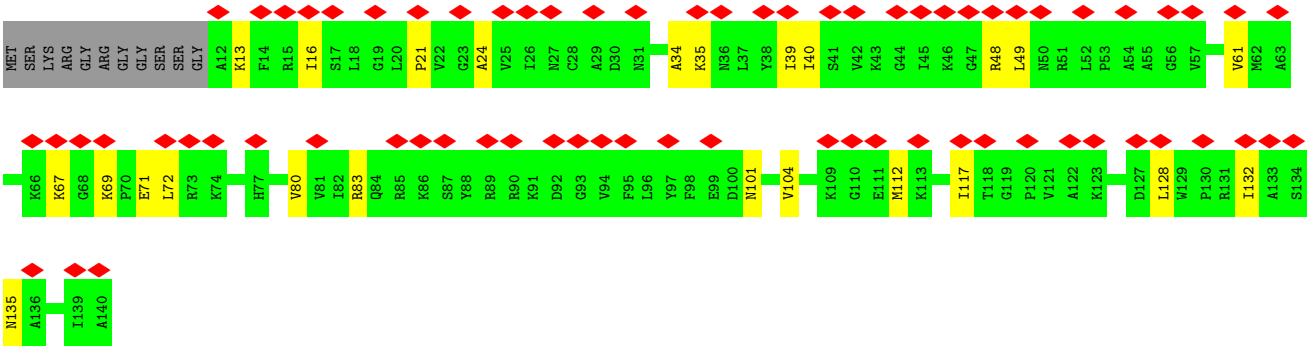
• Molecule 41: Small ribosomal subunit protein uS11

Chain O3:



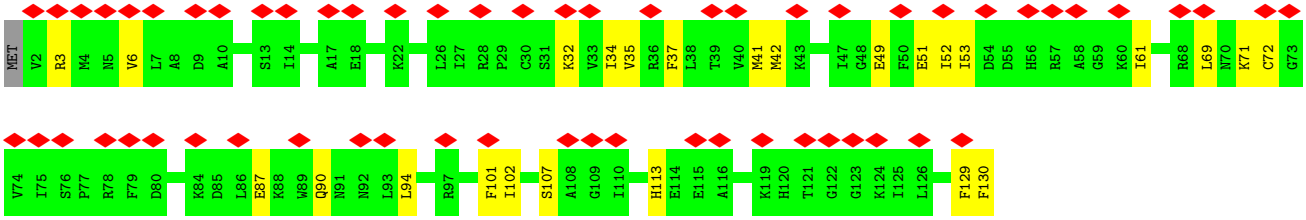
• Molecule 42: Large ribosomal subunit protein uL14

Chain P2:

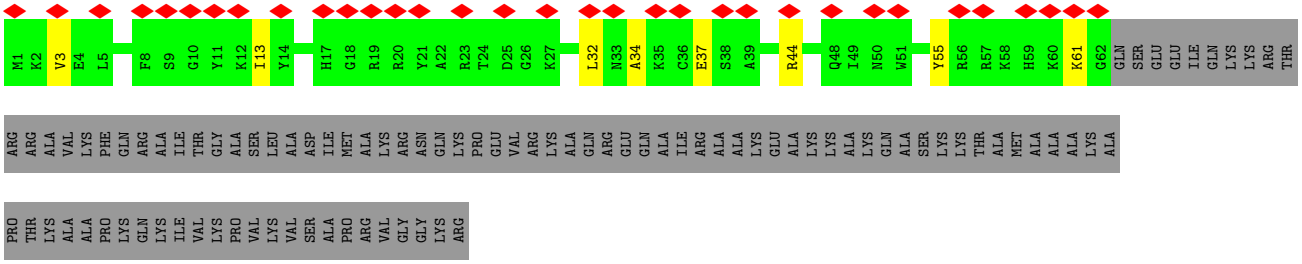


• Molecule 43: Small ribosomal subunit protein uS8

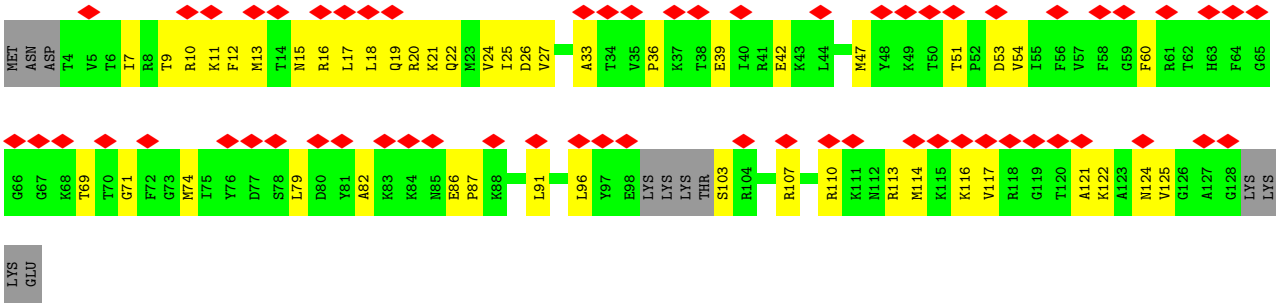
Chain P3:



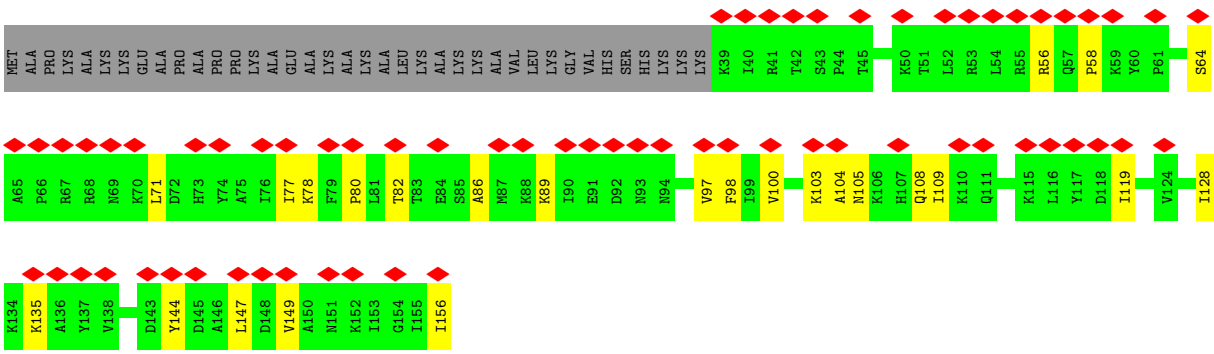
• Molecule 44: Large ribosomal subunit protein eL24



• Molecule 45: Small ribosomal subunit protein eS24

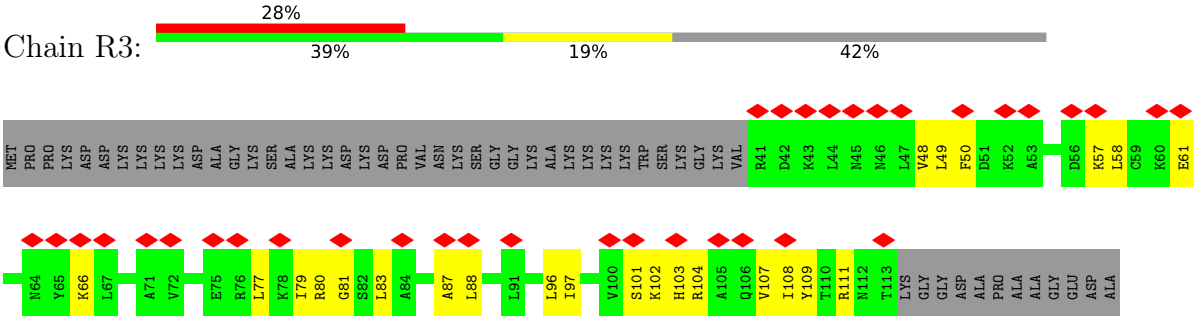


• Molecule 46: Large ribosomal subunit protein uL23



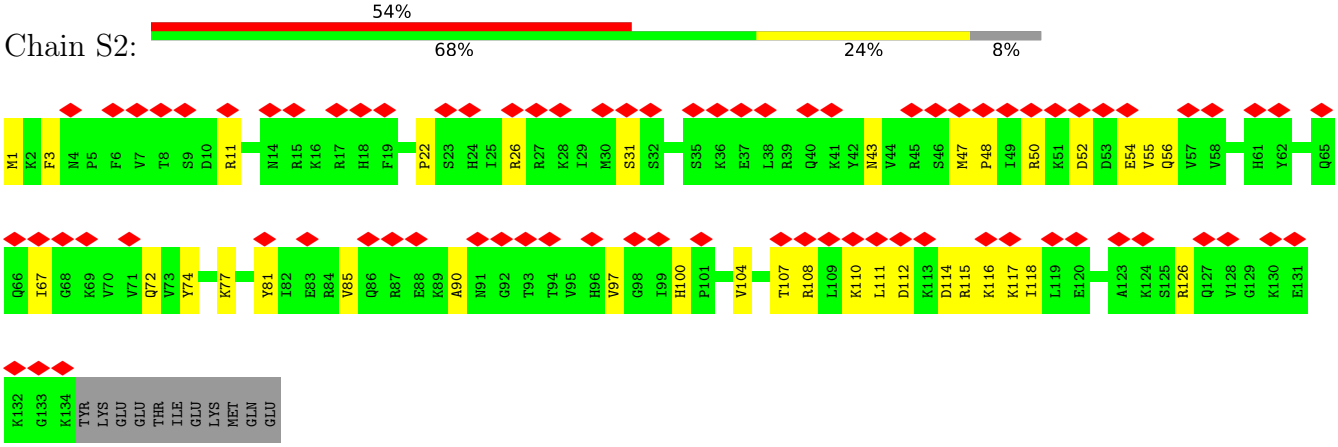
• Molecule 47: Small ribosomal subunit protein eS25

Chain R3:



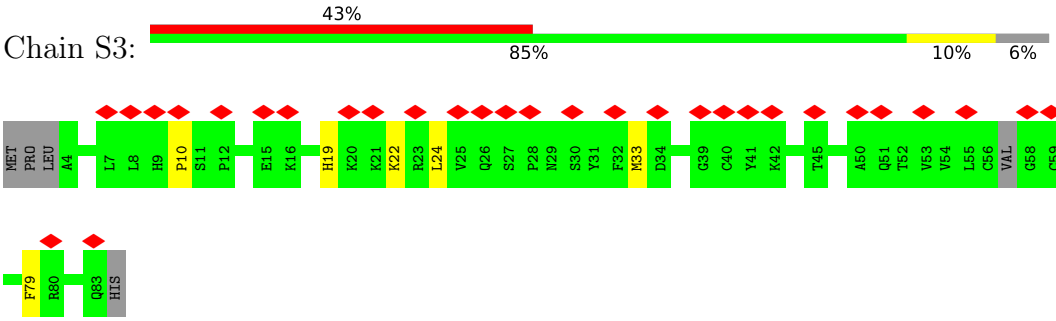
• Molecule 48: Large ribosomal subunit protein uL24

Chain S2:



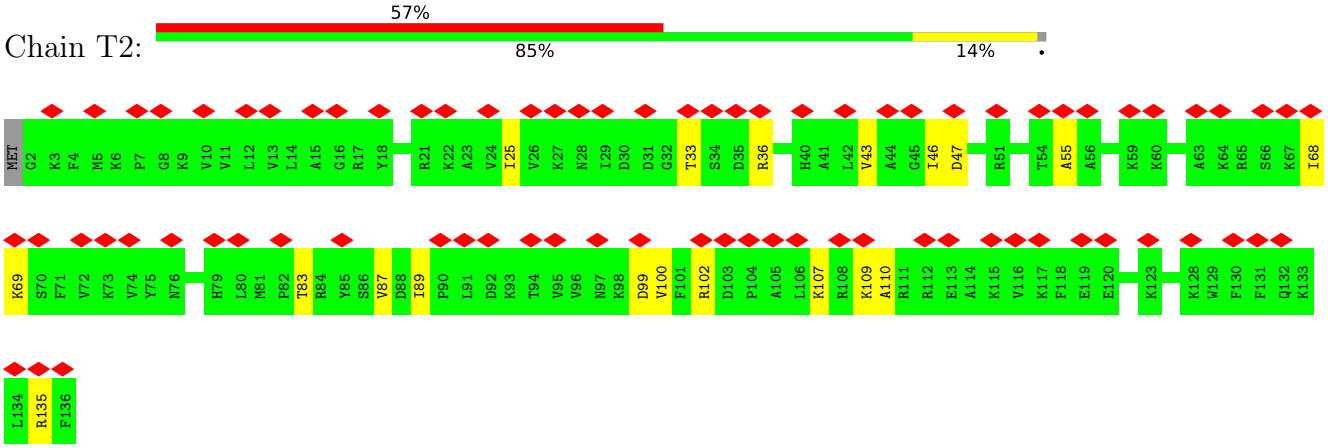
• Molecule 49: Small ribosomal subunit protein eS27

Chain S3:



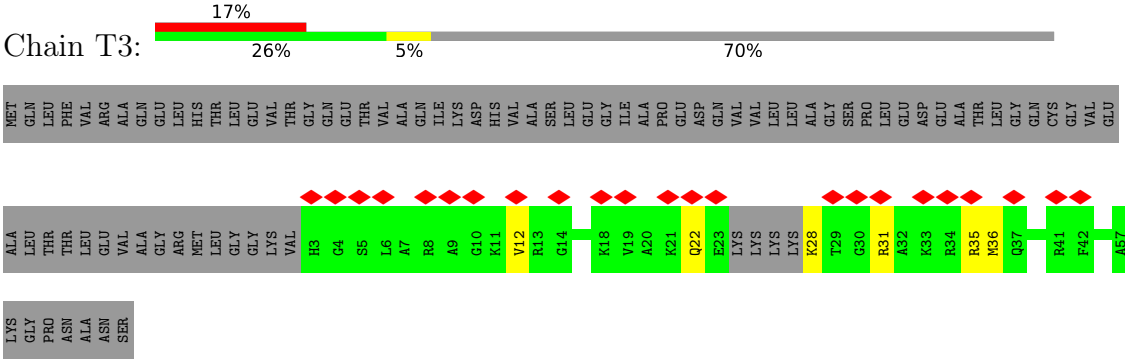
• Molecule 50: Large ribosomal subunit protein eL27

Chain T2:



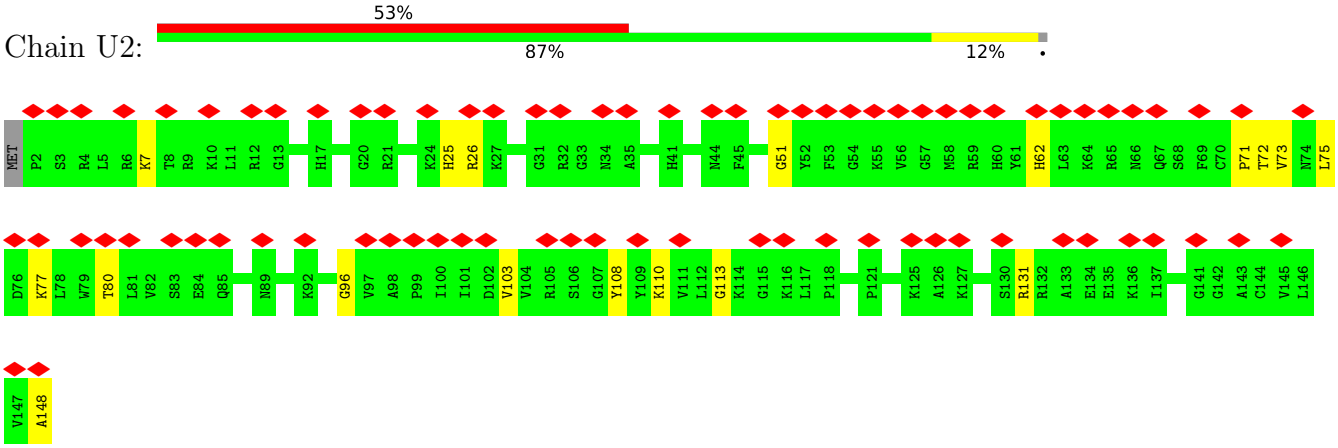
• Molecule 51: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein

Chain T3:



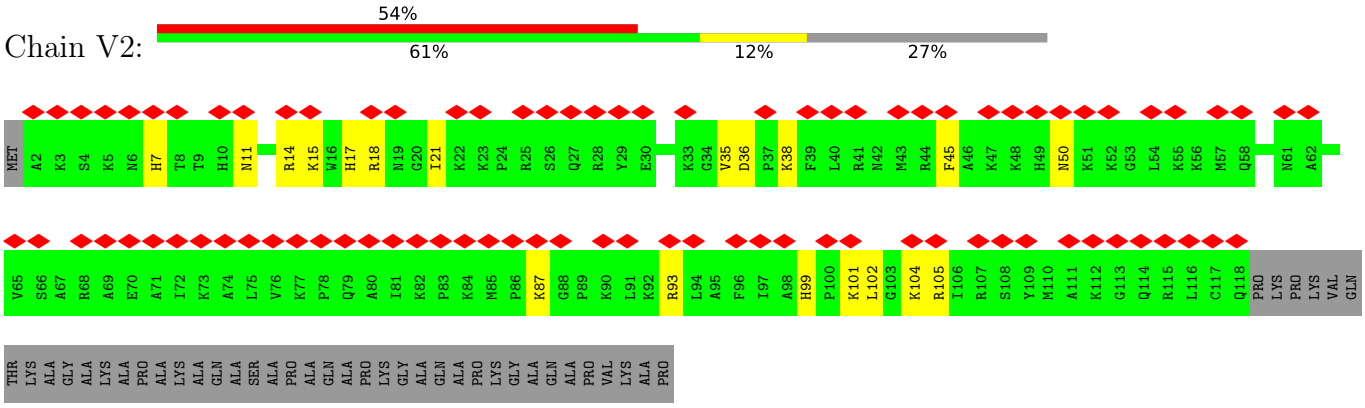
• Molecule 52: Large ribosomal subunit protein uL15

Chain U2:



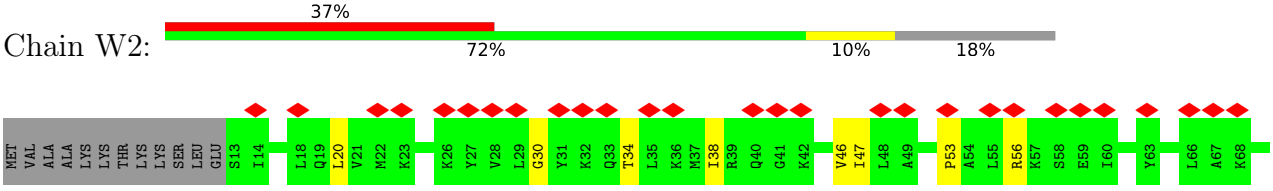
• Molecule 53: Large ribosomal subunit protein eL29

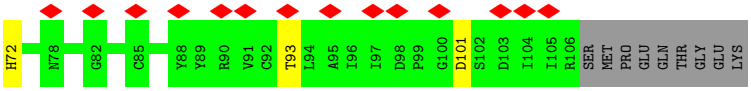
Chain V2:



• Molecule 54: Large ribosomal subunit protein eL30

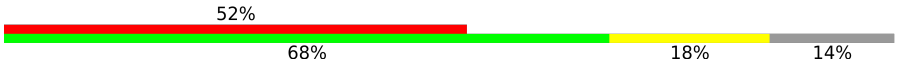
Chain W2:

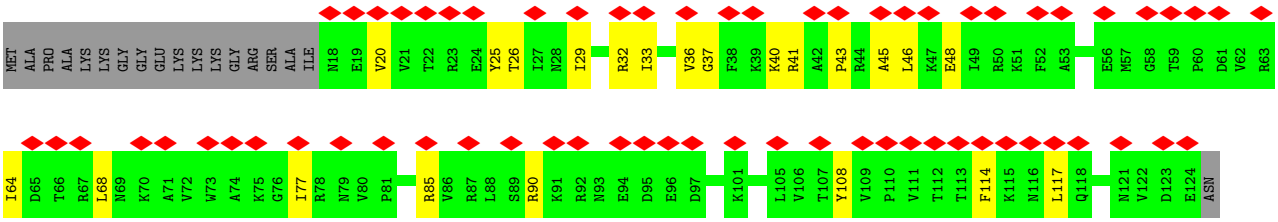




• Molecule 55: Large ribosomal subunit protein eL31

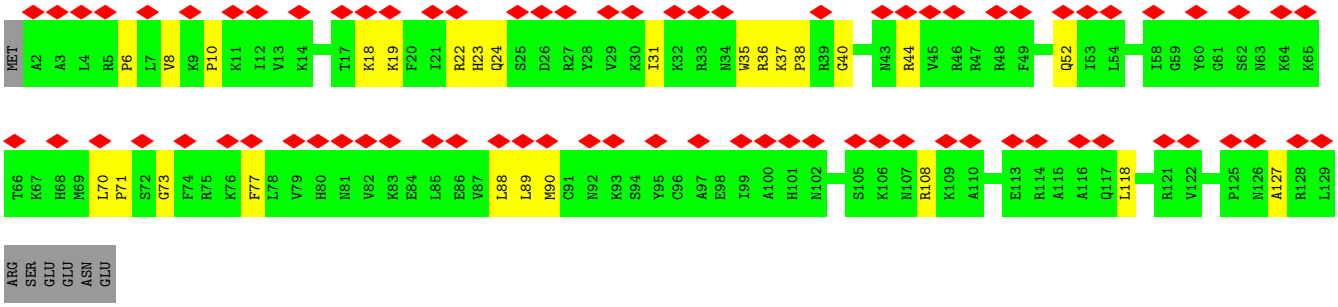
Chain X2:





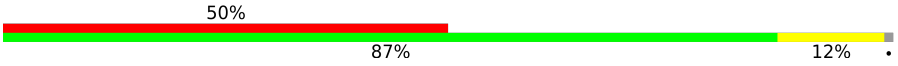
• Molecule 56: Large ribosomal subunit protein eL32

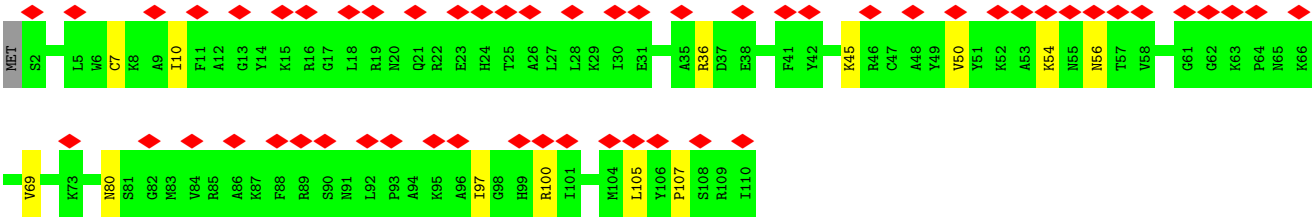
Chain Y2:



• Molecule 57: Large ribosomal subunit protein eL33

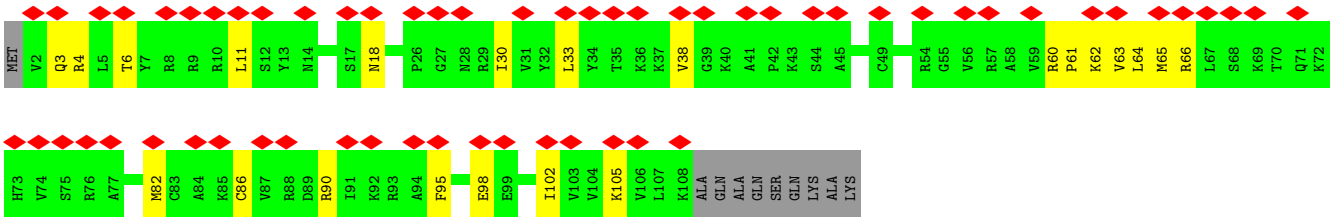
Chain Z2:





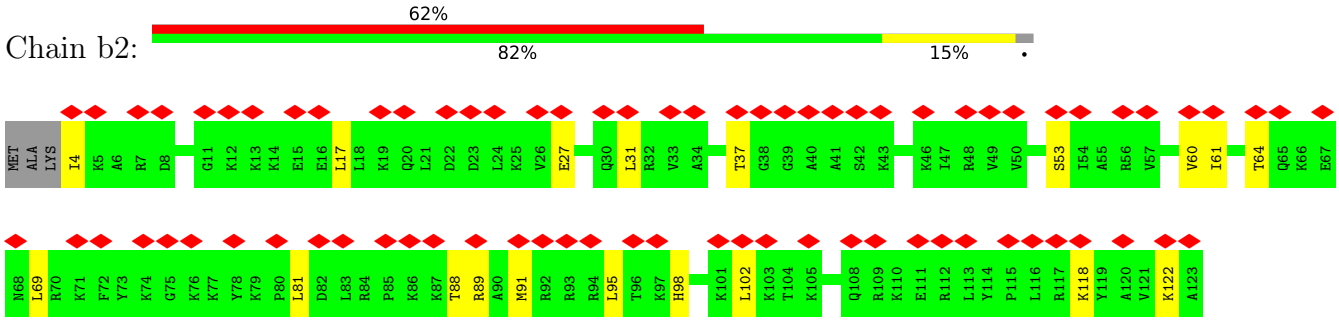
• Molecule 58: Large ribosomal subunit protein eL34

Chain a2:



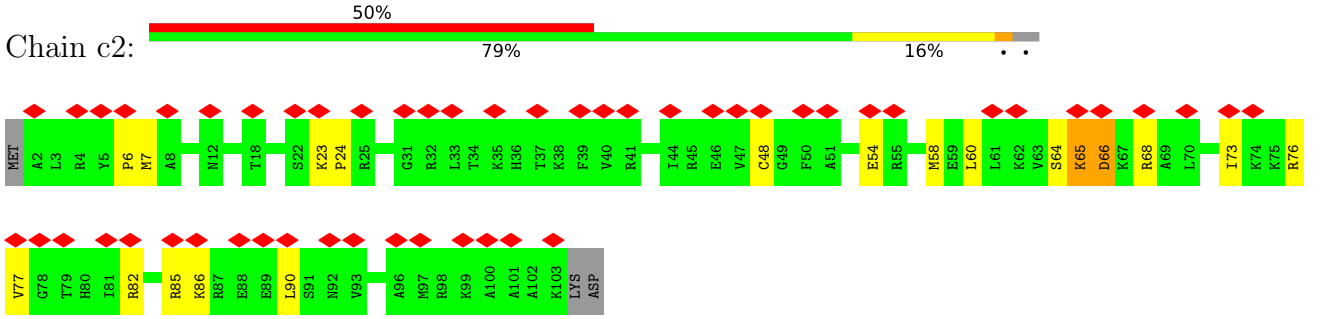
• Molecule 59: Large ribosomal subunit protein uL29

Chain b2:



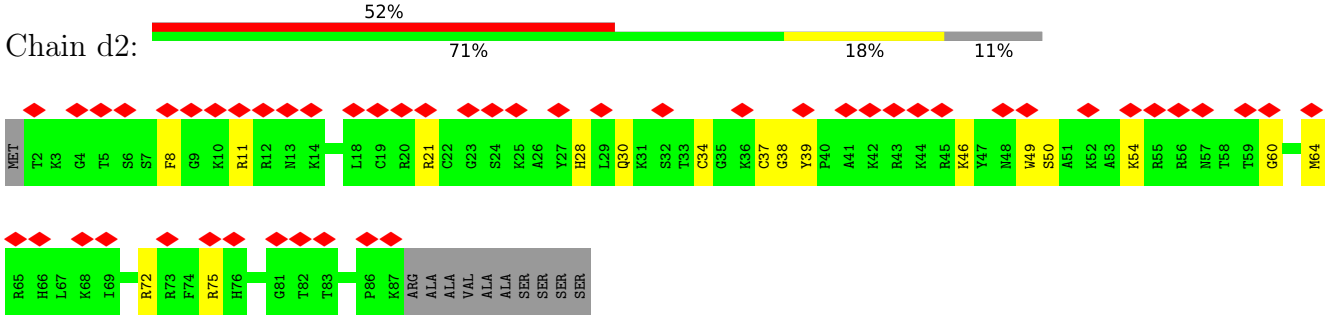
• Molecule 60: Large ribosomal subunit protein eL36

Chain c2:



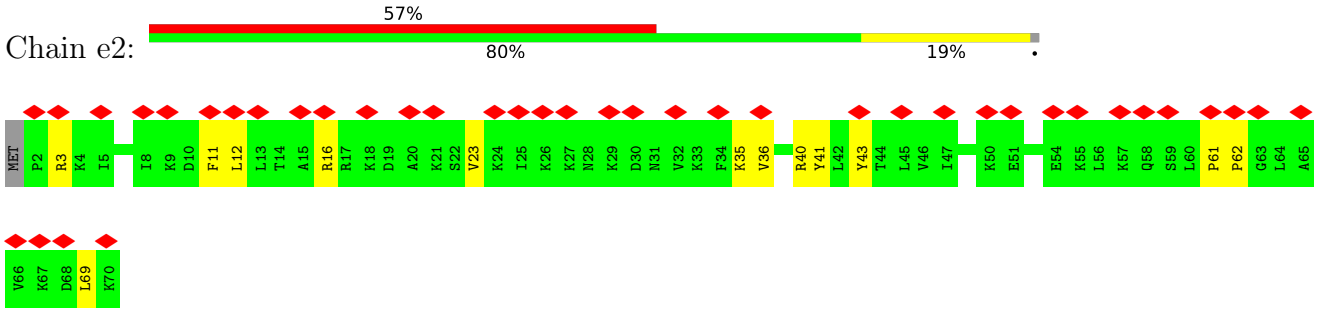
• Molecule 61: Large ribosomal subunit protein eL37

Chain d2:



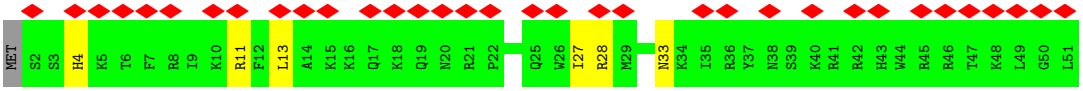
• Molecule 62: Large ribosomal subunit protein eL38

Chain e2:



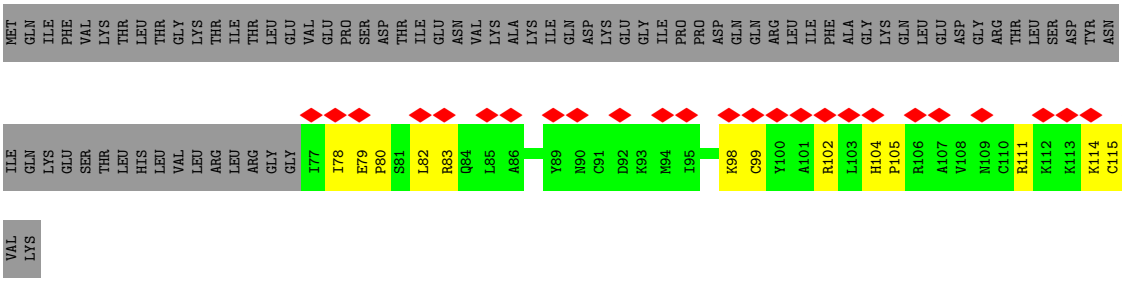
• Molecule 63: Large ribosomal subunit protein eL39

Chain f2:



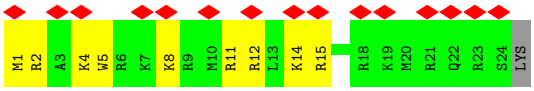
• Molecule 64: Ubiquitin-ribosomal protein eL40 fusion protein

Chain g2:



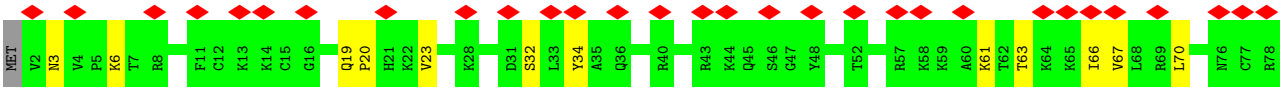
• Molecule 65: 60S ribosomal protein L41

Chain h2:



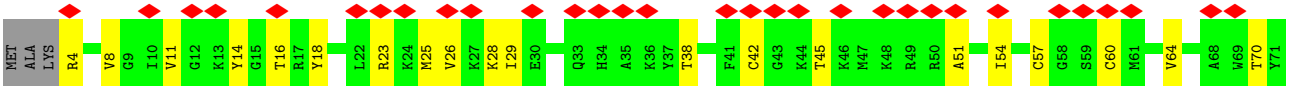
• Molecule 66: Large ribosomal subunit protein eL42

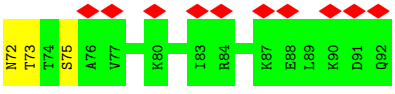
Chain i2:



• Molecule 67: Large ribosomal subunit protein eL43

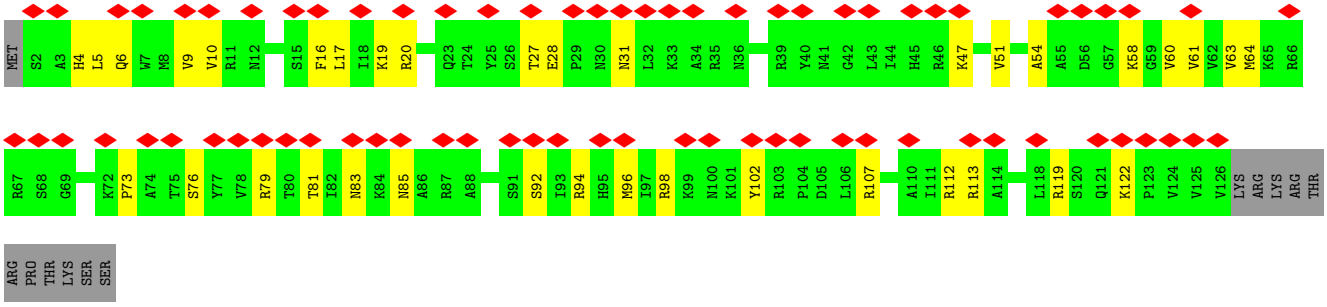
Chain j2:





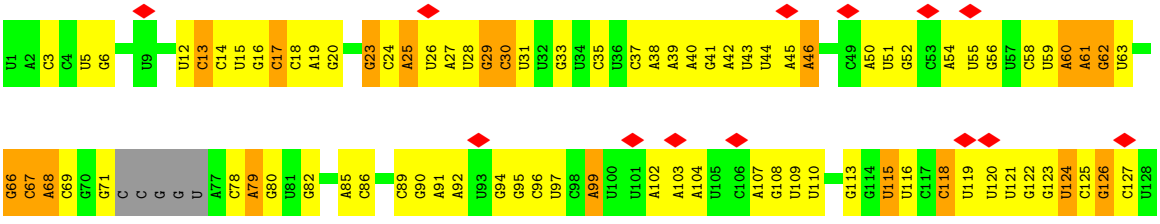
• Molecule 68: Large ribosomal subunit protein eL28

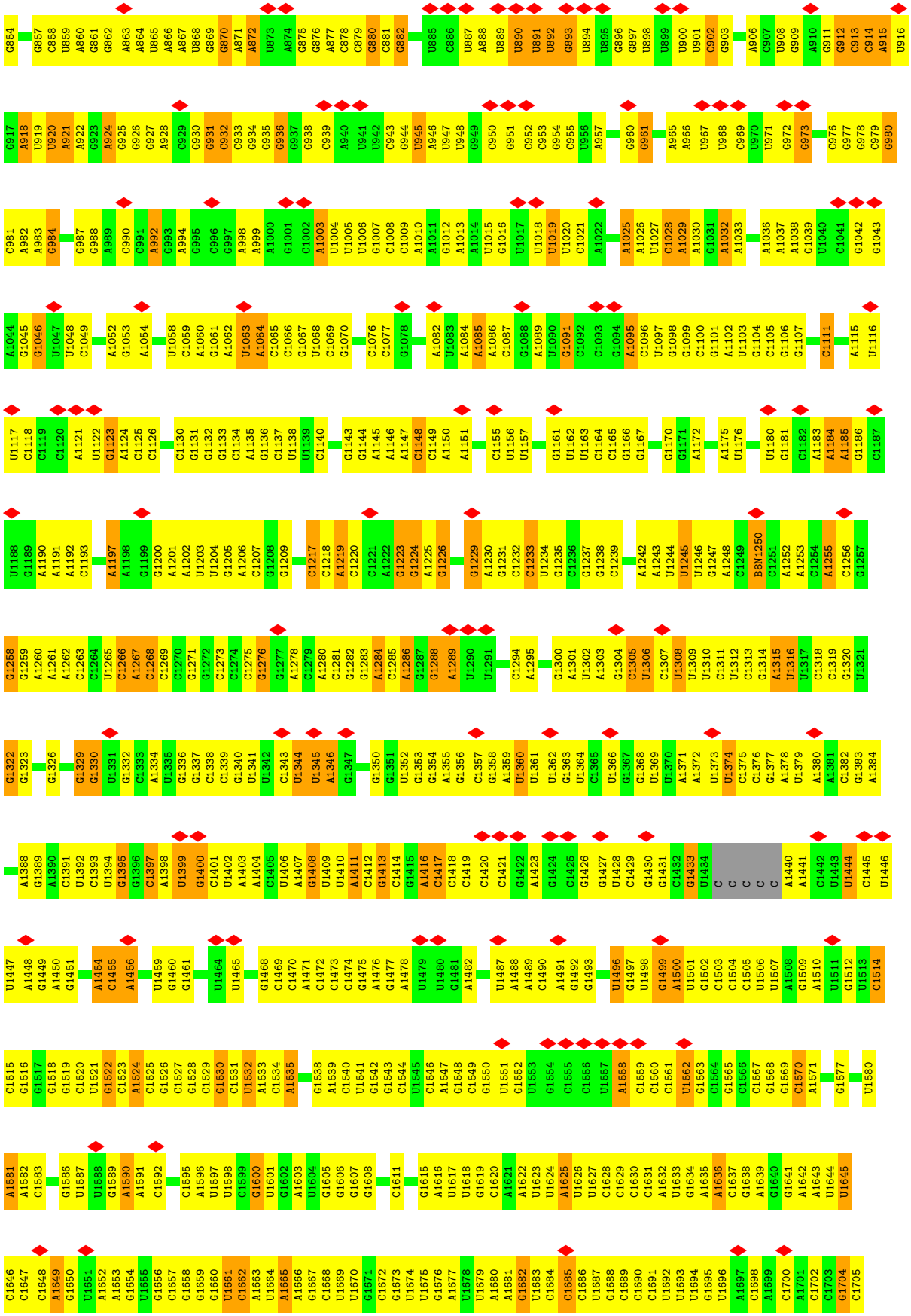
Chain k2:

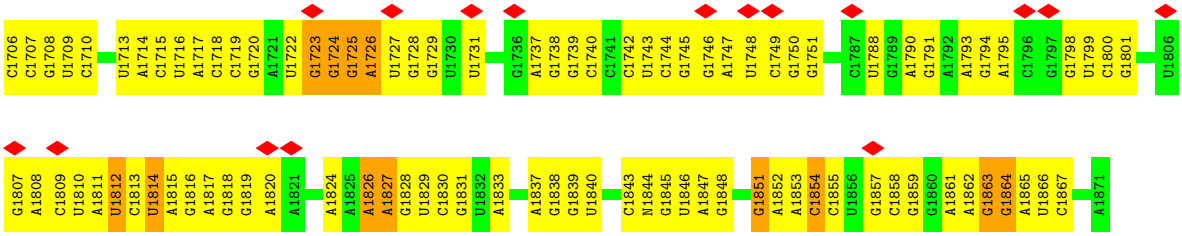


• Molecule 69: 18S ribosomal RNA

Chain m2:

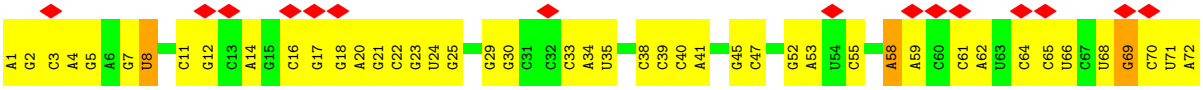






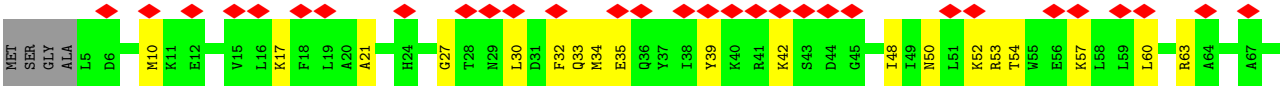
• Molecule 70: transfer RNA

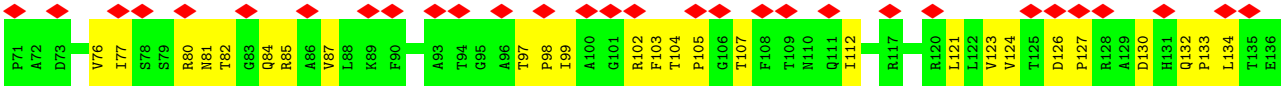
Chain n2:

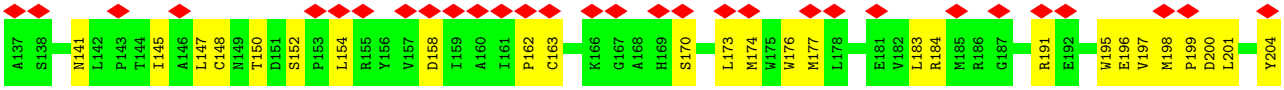


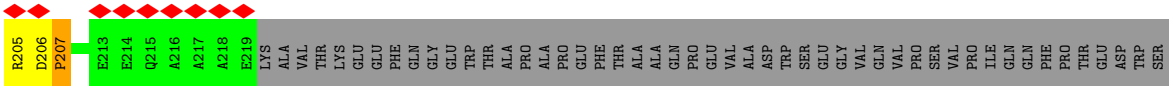
• Molecule 71: Small ribosomal subunit protein uS2

Chain o2:



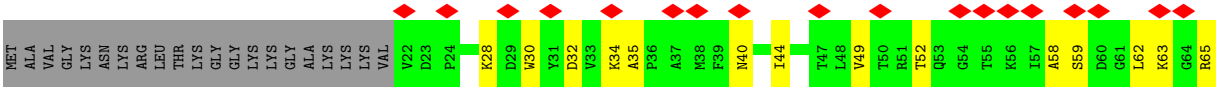


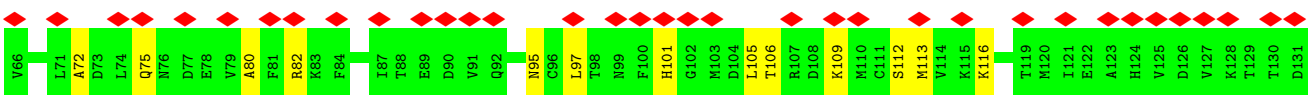


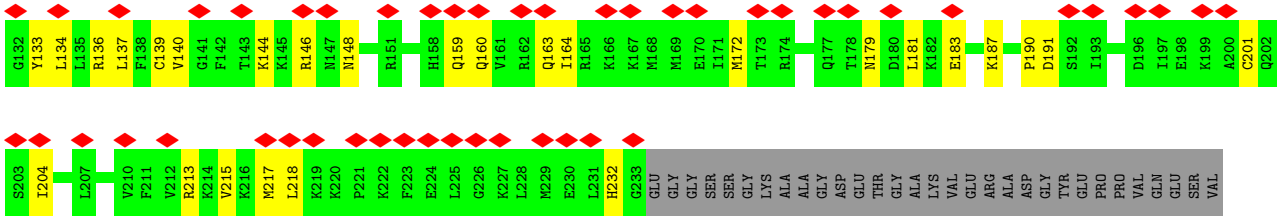


• Molecule 72: 40S ribosomal protein S3a

Chain p2:

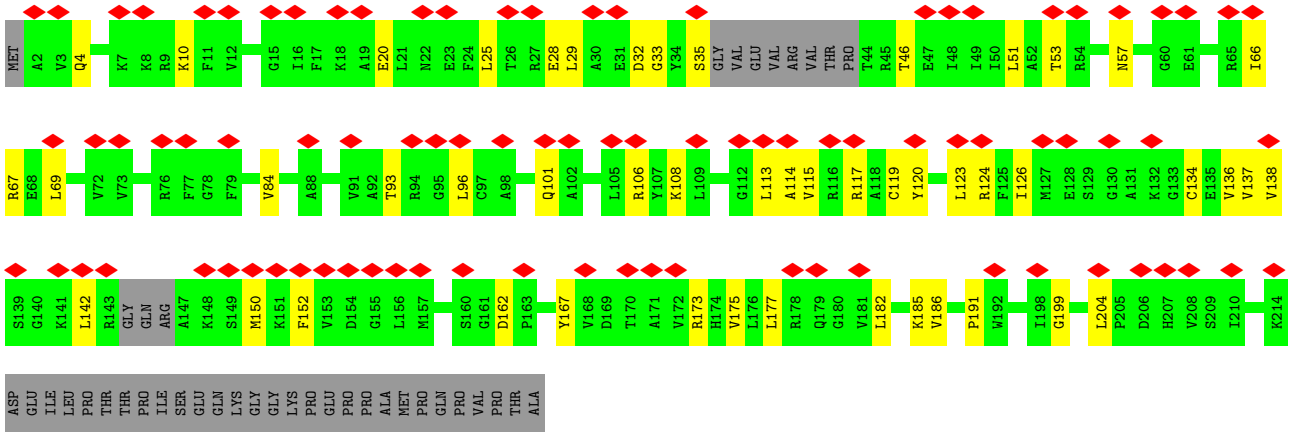






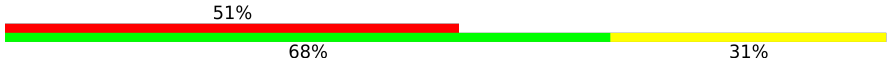
• Molecule 73: Small ribosomal subunit protein uS3

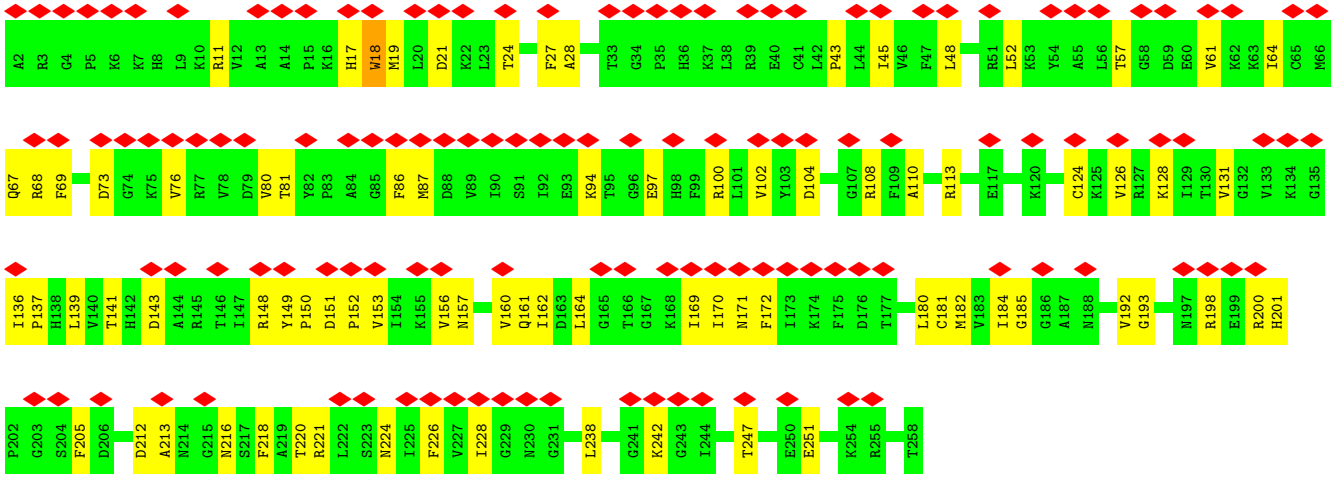
Chain q2:



• Molecule 74: Small ribosomal subunit protein eS4

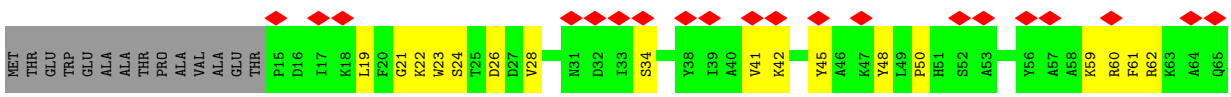
Chain r2:

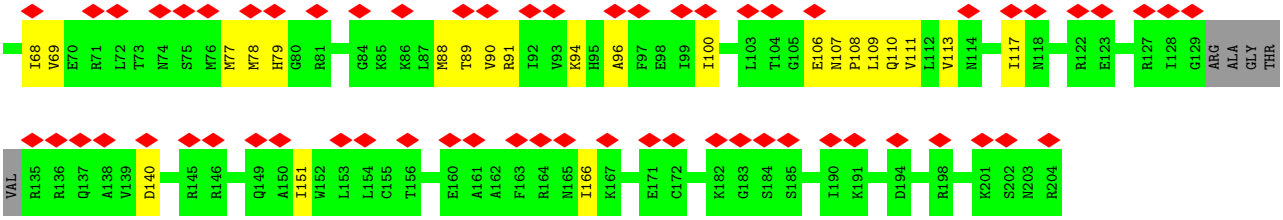




• Molecule 75: Small ribosomal subunit protein uS7

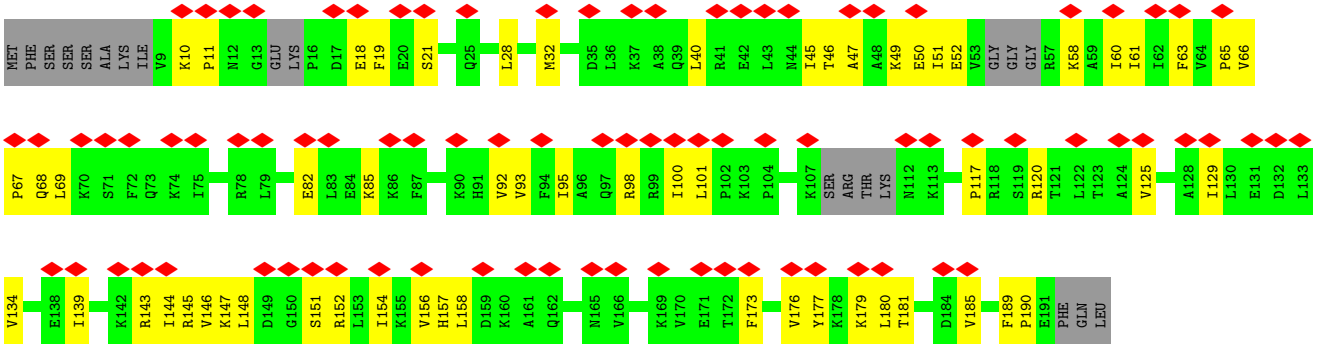
Chain s2:





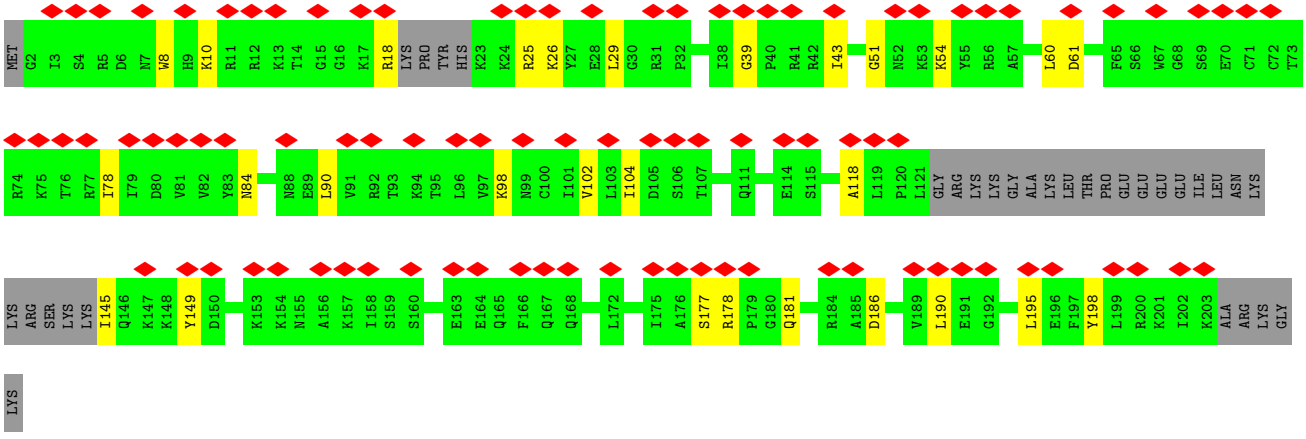
• Molecule 76: Small ribosomal subunit protein eS7

Chain t2:



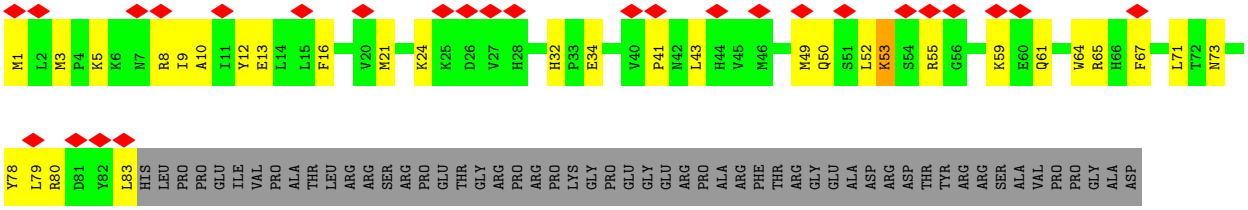
• Molecule 77: Small ribosomal subunit protein eS8

Chain u2:



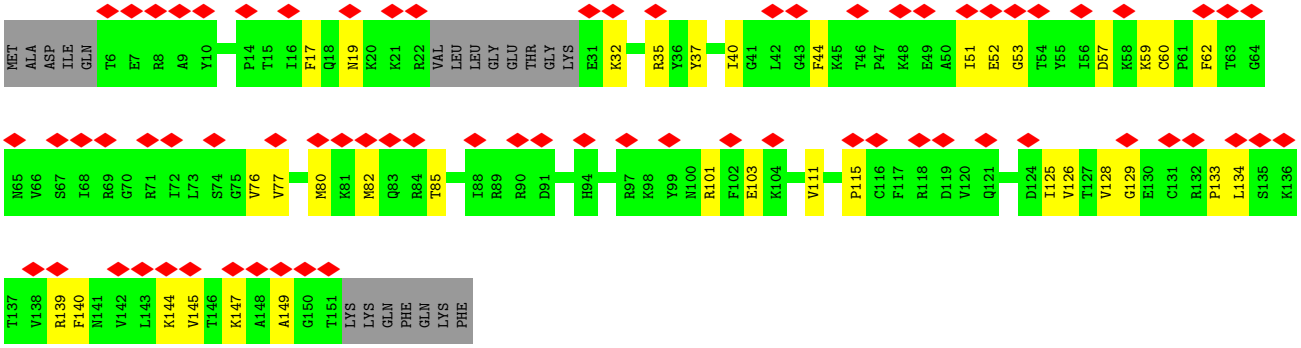
• Molecule 78: Small ribosomal subunit protein eS10

Chain v2:



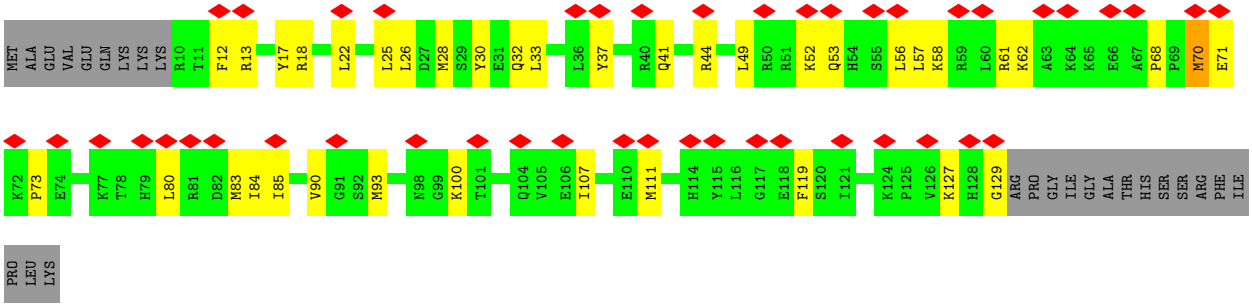
• Molecule 79: Small ribosomal subunit protein uS17

Chain w2:



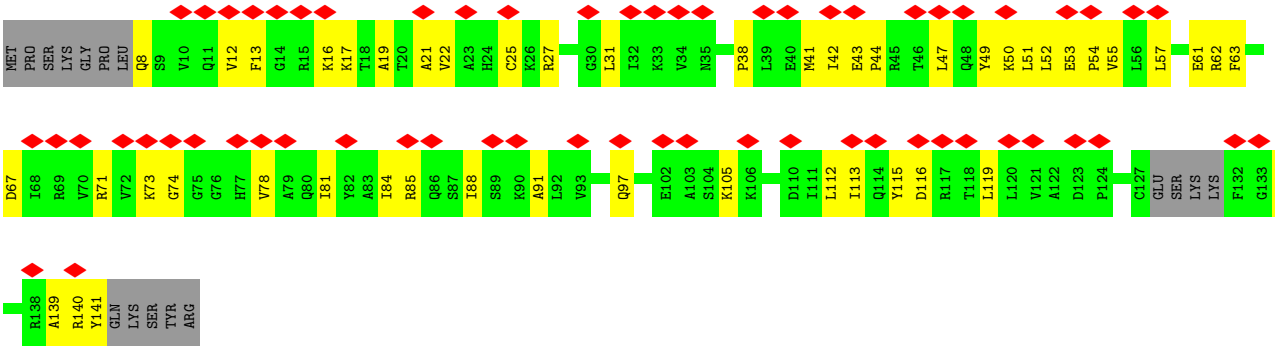
• Molecule 80: Small ribosomal subunit protein uS19

Chain x2:



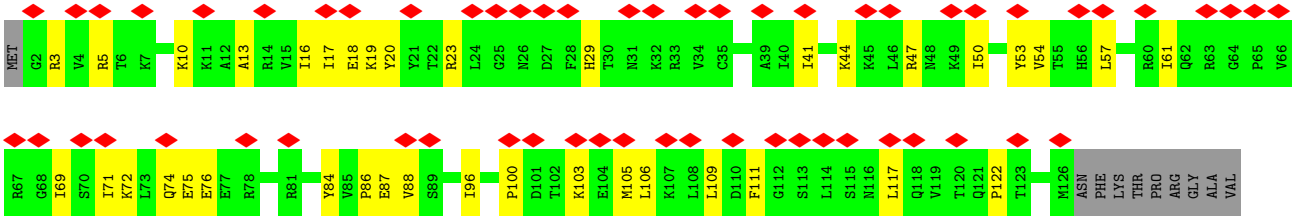
• Molecule 81: Small ribosomal subunit protein uS9

Chain y2:



• Molecule 82: Small ribosomal subunit protein eS17

Chain z2:


MET G2 R3 V4 R5 T6 K7 K10 K11 A12 A13 R14 V15 I16 I17 E18 K19 Y20 Y21 T22 R23 L24 G25 N26 D27 F28 H29 T30 N31 K32 R33 V34 C35 A39 I40 I41 K44 K45 L46 R47 W48 K49 I50 Y53 V54 T55 H56 L57 R60 I61 Q62 R63 G64 P65 V66
R67 G68 I69 S70 I71 K72 L73 Q74 E75 E76 E77 R78 R81 Y84 V85 P86 E87 V88 S89 T96 P100 D101 T102 K103 E104 M105 L106 K107 L108 L109 D110 F111 G112 S113 L114 S115 N116 L117 Q118 V119 T120 Q121 P122 T123 M126 ASN PHE LYS THR PRO ARG GLY ALA VAL

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	44947	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	1.822	Depositor
Minimum map value	-0.047	Depositor
Average map value	0.011	Depositor
Map value standard deviation	0.067	Depositor
Recommended contour level	0.0287	Depositor
Map size (Å)	331.28, 331.28, 331.28	wwPDB
Map dimensions	328, 328, 328	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: MG, ZN, PSU, OMG, A2M, 2MG, UR3, OMC, B8T, 1MA, 4AC, OMU, 5MC, B8N

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A1	0.21	0/1877	0.34	0/2502
2	A2	0.30	0/82417	0.32	0/128525
3	A3	0.19	0/1172	0.40	0/1570
4	B1	0.21	0/1799	0.37	0/2424
5	B2	0.29	0/2836	0.29	0/4421
6	B3	0.17	0/1109	0.39	0/1484
7	Bz	0.15	0/1576	0.35	0/2451
8	Bx	0.22	0/219	0.35	0/336
10	C1	0.21	0/1537	0.34	0/2065
11	C2	0.30	0/3675	0.32	0/5725
12	C3	0.17	0/685	0.31	0/916
13	D1	0.22	0/1694	0.37	0/2261
14	D2	0.24	0/1914	0.34	0/2567
15	D3	0.22	0/596	0.40	0/800
16	E1	0.19	0/1420	0.39	0/1899
17	E2	0.26	0/3256	0.41	0/4357
18	E3	0.16	0/1097	0.36	0/1464
19	F1	0.21	0/1674	0.35	0/2241
20	F2	0.23	0/2877	0.37	0/3860
21	F3	0.21	0/786	0.38	0/1053
22	G1	0.22	0/1165	0.33	0/1558
23	G2	0.19	0/2435	0.33	0/3260
24	G3	0.16	0/436	0.37	0/582
25	H1	0.20	0/1746	0.36	0/2338
26	H2	0.20	0/1799	0.35	0/2413
27	H3	0.17	0/437	0.36	0/580
28	I2	0.23	0/1648	0.39	0/2203
29	I3	0.14	0/1827	0.39	0/2467
30	J2	0.24	0/1268	0.41	0/1700
31	J3	0.24	0/1626	0.51	2/2211 (0.1%)
32	K2	0.21	0/1535	0.34	0/2048
33	K3	0.16	0/1728	0.39	0/2295

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
34	L2	0.20	0/1424	0.35	0/1884
35	L3	0.21	0/1520	0.42	0/2030
36	M2	0.23	0/1490	0.41	0/2000
37	M3	0.12	0/527	0.35	0/718
38	N2	0.20	0/1327	0.31	0/1771
39	N3	0.21	0/1226	0.41	0/1649
40	O2	0.17	0/839	0.33	0/1126
41	O3	0.19	0/1016	0.37	0/1363
42	P2	0.20	0/983	0.37	0/1319
43	P3	0.22	0/1044	0.42	0/1398
44	Q2	0.19	0/532	0.33	0/708
45	Q3	0.17	0/997	0.47	0/1325
46	R2	0.21	0/984	0.37	0/1323
47	R3	0.16	0/591	0.35	0/794
48	S2	0.20	0/1132	0.34	0/1504
49	S3	0.18	0/629	0.33	0/841
50	T2	0.20	0/1130	0.33	0/1507
51	T3	0.18	0/321	0.34	0/420
52	U2	0.21	0/1193	0.35	0/1593
53	V2	0.19	0/963	0.33	0/1275
54	W2	0.22	0/742	0.33	0/996
55	X2	0.22	0/903	0.35	0/1216
56	Y2	0.20	0/1071	0.36	0/1429
57	Z2	0.22	0/895	0.34	0/1198
58	a2	0.19	0/864	0.36	0/1152
59	b2	0.20	0/1009	0.36	0/1332
60	c2	0.34	0/843	0.43	0/1115
61	d2	0.21	0/720	0.38	0/952
62	e2	0.16	0/574	0.32	0/760
63	f2	0.22	0/454	0.29	0/599
64	g2	0.18	0/418	0.35	0/554
65	h2	0.17	0/231	0.36	0/294
66	i2	0.19	0/855	0.35	0/1128
67	j2	0.24	0/704	0.37	0/935
68	k2	0.23	0/1016	0.36	0/1363
69	m2	0.27	0/37837	0.33	0/58960
70	n2	0.19	0/1746	0.26	0/2717
71	o2	0.21	0/1741	0.46	0/2366
72	p2	0.20	0/1749	0.40	0/2340
73	q2	0.20	0/1595	0.38	0/2141
74	r2	0.19	0/2072	0.44	0/2793
75	s2	0.19	0/1489	0.40	1/1999 (0.1%)
76	t2	0.18	0/1341	0.42	0/1803

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
77	u2	0.18	0/1382	0.35	0/1859
78	v2	0.21	0/725	0.50	0/974
79	w2	0.19	0/1154	0.38	0/1543
80	x2	0.27	0/1018	0.45	0/1359
81	y2	0.17	0/1043	0.40	0/1398
82	z2	0.18	0/1023	0.42	0/1373
All	All	0.26	0/218948	0.34	3/321772 (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
71	o2	0	1
74	r2	0	1
All	All	0	2

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	J3	263	LYS	CA-C-N	8.93	133.17	120.49
31	J3	263	LYS	C-N-CA	8.93	133.17	120.49
75	s2	106	GLU	CB-CA-C	-5.53	110.19	116.54

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
71	o2	207	PRO	Peptide
74	r2	18	TRP	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	1843	0	1975	44	0
2	A2	75321	0	38138	1476	0
3	A3	1154	0	1210	41	0
4	B1	1764	0	1892	29	0
5	B2	2538	0	1286	40	0
6	B3	1091	0	1130	39	0
7	Bz	1412	0	716	48	0
8	Bx	200	0	101	4	0
9	By	110	0	30	0	0
10	C1	1519	0	1603	22	0
11	C2	3315	0	1685	68	0
12	C3	679	0	744	17	0
13	D1	1656	0	1706	37	0
14	D2	1876	0	1970	31	0
15	D3	589	0	566	15	0
16	E1	1397	0	1425	17	0
17	E2	3189	0	3331	65	0
18	E3	1080	0	1147	16	0
19	F1	1643	0	1750	24	0
20	F2	2823	0	2996	72	0
21	F3	774	0	821	17	0
22	G1	1143	0	1219	23	0
23	G2	2389	0	2420	36	0
24	G3	435	0	461	10	0
25	H1	1701	0	1749	31	0
26	H2	1766	0	1902	40	0
27	H3	427	0	426	17	0
28	I2	1618	0	1775	30	0
29	I3	1800	0	1770	53	0
30	J2	1242	0	1274	21	0
31	J3	1590	0	1606	38	0
32	K2	1511	0	1636	30	0
33	K3	1708	0	1864	50	0
34	L2	1408	0	1550	32	0
35	L3	1495	0	1615	59	0
36	M2	1450	0	1488	24	0
37	M3	525	0	439	9	0
38	N2	1299	0	1368	24	0
39	N3	1202	0	1289	28	0
40	O2	825	0	850	18	0
41	O3	1003	0	1028	23	0
42	P2	969	0	1031	20	0
43	P3	1027	0	1067	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	Q2	519	0	533	5	0
45	Q3	981	0	1039	37	0
46	R2	967	0	1040	19	0
47	R3	585	0	640	20	0
48	S2	1115	0	1205	25	0
49	S3	618	0	634	6	0
50	T2	1107	0	1182	12	0
51	T3	319	0	338	7	0
52	U2	1164	0	1213	15	0
53	V2	945	0	1037	20	0
54	W2	732	0	769	6	0
55	X2	888	0	930	15	0
56	Y2	1053	0	1147	23	0
57	Z2	876	0	912	10	0
58	a2	854	0	945	16	0
59	b2	1001	0	1138	13	0
60	c2	832	0	917	15	0
61	d2	705	0	737	12	0
62	e2	568	0	635	11	0
63	f2	444	0	483	5	0
64	g2	412	0	443	11	0
65	h2	230	0	276	11	0
66	i2	842	0	912	16	0
67	j2	694	0	738	17	0
68	k2	1001	0	1066	26	0
69	m2	34547	0	17448	962	0
70	n2	1562	0	797	35	0
71	o2	1704	0	1702	59	0
72	p2	1722	0	1794	39	0
73	q2	1572	0	1661	34	0
74	r2	2031	0	2138	60	0
75	s2	1468	0	1519	28	0
76	t2	1322	0	1365	43	0
77	u2	1359	0	1341	20	0
78	v2	705	0	722	28	0
79	w2	1134	0	1197	23	0
80	x2	999	0	1046	26	0
81	y2	1028	0	1088	42	0
82	z2	1011	0	1063	36	0
83	A2	83	0	0	0	0
83	E3	1	0	0	0	0
83	J2	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
83	m2	31	0	0	0	0
83	q2	1	0	0	0	0
84	F3	1	0	0	0	0
84	H3	1	0	0	0	0
84	d2	1	0	0	0	0
84	g2	1	0	0	0	0
84	i2	1	0	0	0	0
84	j2	1	0	0	0	0
85	B1	1	0	0	0	0
All	All	206246	0	151839	4133	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 12.

All (4133) 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)
2:A2:3348:A:H62	2:A2:3479:G:H21	1.08	1.00
2:A2:2600:A:H61	2:A2:3499:C:H42	1.04	0.99
2:A2:3348:A:H62	2:A2:3479:G:N2	1.60	0.97
69:m2:153:G:H1	69:m2:165:G:H22	1.06	0.97
8:Bx:48:U:H3	70:n2:33:C:N4	1.62	0.96
2:A2:3348:A:N6	2:A2:3479:G:H21	1.64	0.94
2:A2:3586:U:H3	2:A2:3832:G:H1	1.07	0.94
13:D1:59:GLN:HE22	13:D1:95:HIS:HD2	1.17	0.92
69:m2:936:G:H1	69:m2:1010:A:H2	1.19	0.90
2:A2:3379:A:H2'	2:A2:3380:A2M:H8	1.55	0.89
69:m2:887:U:H3	69:m2:903:G:H1	0.92	0.89
2:A2:3593:C:H1'	25:H1:125:SER:HB3	1.54	0.88
69:m2:1398:A:H2	69:m2:1451:G:H1	0.92	0.87
2:A2:1354:U:H3	2:A2:1431:G:H1	0.91	0.87
50:T2:99:ASP:HB2	50:T2:102:ARG:HE	1.40	0.87
6:B3:133:ARG:HH12	69:m2:1418:C:H5"	1.40	0.87
69:m2:1398:A:C2	69:m2:1451:G:N1	2.43	0.87
2:A2:1150:G:H21	2:A2:2104:A:N6	1.72	0.86
69:m2:1398:A:H2	69:m2:1451:G:N1	1.74	0.85
69:m2:1326:G:H1	69:m2:1506:U:H3	1.24	0.85
73:q2:138:VAL:HG13	73:q2:182:LEU:HD21	1.61	0.83
13:D1:59:GLN:HG2	13:D1:126:VAL:HG12	1.61	0.82
7:Bz:9:A:H1'	7:Bz:46:G:H21	1.44	0.82
2:A2:3711:C:H2'	2:A2:3712:A:C8	2.15	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1278:A:H5'	78:v2:1:MET:HE1	1.62	0.82
33:K3:41:LEU:HD11	33:K3:45:TRP:HB2	1.59	0.81
69:m2:832:A:C6	69:m2:847:G:C6	2.68	0.81
69:m2:832:A:N6	69:m2:847:G:C6	2.48	0.81
66:i2:61:LYS:HD2	66:i2:87:ARG:HH12	1.44	0.80
69:m2:832:A:C5	69:m2:847:G:N1	2.49	0.80
45:Q3:22:GLN:HA	45:Q3:74:MET:HA	1.62	0.80
69:m2:1538:G:H2'	69:m2:1539:A:H8	1.44	0.80
2:A2:1482:A:H4'	2:A2:1498:G:H22	1.46	0.80
2:A2:2500:A:H2'	2:A2:2501:A:H8	1.46	0.80
69:m2:1658:G:H1	69:m2:1670:U:H3	1.30	0.80
2:A2:2600:A:H61	2:A2:3499:C:N4	1.77	0.80
33:K3:66:GLY:HA2	69:m2:1747:A:H1'	1.63	0.80
13:D1:52:MET:HE1	13:D1:156:LYS:HA	1.62	0.80
74:r2:141:THR:HG22	74:r2:143:ASP:H	1.47	0.80
69:m2:1659:G:H1	69:m2:1669:U:H3	1.27	0.79
69:m2:876:G:H2'	69:m2:877:A:H8	1.46	0.79
48:S2:47:MET:HE3	48:S2:48:PRO:HD2	1.64	0.79
69:m2:936:G:O6	69:m2:1010:A:N1	2.15	0.79
69:m2:1679:U:H2'	69:m2:1680:A2M:H8	1.63	0.79
69:m2:1398:A:N1	69:m2:1451:G:O6	2.16	0.79
81:y2:97:GLN:HB3	81:y2:105:LYS:HG3	1.63	0.78
39:N3:3:ARG:HB3	39:N3:6:ALA:HB3	1.66	0.78
68:k2:61:VAL:HG22	68:k2:81:THR:HG22	1.64	0.78
78:v2:3:MET:HG3	78:v2:41:PRO:HB2	1.64	0.78
1:A1:98:ARG:HH12	2:A2:735:C:H5"	1.49	0.77
2:A2:1626:G:H4'	23:G2:44:TYR:HD2	1.48	0.77
2:A2:1008:C:H42	2:A2:1016:A:H61	1.32	0.77
2:A2:2166:C:H2'	2:A2:2167:A:H8	1.48	0.77
76:t2:82:GLU:HA	76:t2:85:LYS:HZ2	1.50	0.77
2:A2:416:U:H4'	2:A2:2085:G:H4'	1.65	0.77
2:A2:4638:G:H2'	2:A2:4639:G:C8	2.20	0.77
76:t2:154:ILE:HB	76:t2:185:VAL:HG22	1.67	0.77
71:o2:102:ARG:HG3	71:o2:104:THR:H	1.48	0.76
2:A2:686:C:H2'	2:A2:687:G:H8	1.48	0.76
2:A2:3353:U:H5"	2:A2:3354:G:H5'	1.66	0.76
61:d2:60:GLY:HA2	61:d2:64:MET:HE3	1.65	0.76
68:k2:63:VAL:HG12	68:k2:79:ARG:HG2	1.65	0.76
70:n2:61:C:H2'	70:n2:62:A:H8	1.51	0.76
2:A2:1146:C:H2'	2:A2:1147:A:H8	1.50	0.76
69:m2:1654:G:H1	69:m2:1674:U:H3	0.83	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:300:A:H2'	2:A2:301:G:H8	1.50	0.76
16:E1:120:ASP:HB3	16:E1:123:ILE:HG12	1.65	0.76
2:A2:4707:A:H4'	2:A2:4708:G:H5"	1.67	0.76
25:H1:149:GLN:HE21	59:b2:95:LEU:HD13	1.50	0.76
77:u2:43:ILE:HD11	77:u2:60:LEU:HD21	1.69	0.75
26:H2:290:PRO:HA	26:H2:293:LEU:HD13	1.69	0.75
69:m2:651:U:H2'	69:m2:652:A:H8	1.51	0.75
25:H1:63:ARG:HG2	25:H1:131:GLU:HG2	1.67	0.75
69:m2:887:U:O2	69:m2:903:G:N2	2.16	0.75
70:n2:40:C:H2'	70:n2:41:A:H8	1.51	0.75
8:Bx:48:U:H3	70:n2:33:C:H42	0.81	0.75
74:r2:139:LEU:HB2	74:r2:150:PRO:HG3	1.69	0.75
2:A2:2600:A:N6	2:A2:3499:C:H42	1.82	0.75
2:A2:444:G:H1	2:A2:1117:A:N6	1.85	0.74
7:Bz:64:A:H3'	7:Bz:65:G:H8	1.51	0.74
47:R3:88:LEU:HB3	47:R3:109:TYR:HE2	1.52	0.74
53:V2:99:HIS:HD2	53:V2:102:LEU:H	1.32	0.74
69:m2:511:OMG:H2'	69:m2:512:G:H8	1.50	0.74
2:A2:4066:A:H2'	2:A2:4074:A:C2	2.22	0.74
69:m2:1538:G:H2'	69:m2:1539:A:C8	2.21	0.74
11:C2:9:A:H2'	11:C2:10:G:H8	1.50	0.74
2:A2:1006:G:H1	2:A2:1018:U:H3	1.36	0.74
2:A2:2013:C:H5	2:A2:2014:G:H21	1.35	0.74
14:D2:133:TYR:HB3	14:D2:168:VAL:HG12	1.69	0.74
55:X2:64:ILE:HG23	55:X2:68:LEU:HD23	1.68	0.74
24:G3:62:GLU:HA	41:O3:117:ARG:HH12	1.53	0.74
29:I3:83:TRP:HA	29:I3:107:ASP:HB3	1.68	0.74
2:A2:4189:C:H2'	2:A2:4190:G:H8	1.53	0.73
2:A2:1274:C:H2'	2:A2:1275:A:H8	1.51	0.73
69:m2:882:G:O6	69:m2:908:U:O2	2.06	0.73
29:I3:248:LEU:HB3	29:I3:259:TRP:HB2	1.70	0.73
16:E1:112:HIS:HD2	16:E1:117:ILE:HD11	1.54	0.73
65:h2:2:ARG:HD2	65:h2:4:LYS:H	1.53	0.73
11:C2:153:C:H2'	11:C2:154:G:H8	1.52	0.73
69:m2:919:U:C4	69:m2:920:U:O4	2.42	0.73
69:m2:1794:G:H2'	69:m2:1795:A:H8	1.53	0.73
27:H3:8:TRP:HE1	69:m2:1514:C:H5'	1.54	0.73
52:U2:73:VAL:HB	52:U2:108:TYR:HD2	1.54	0.72
22:G1:40:GLY:HA3	22:G1:45:VAL:HB	1.71	0.72
69:m2:1731:U:H3	69:m2:1807:G:H1	1.37	0.72
61:d2:34:CYS:HB3	61:d2:38:GLY:H	1.52	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:Y2:77:PHE:HD2	56:Y2:88:LEU:HD11	1.54	0.72
74:r2:80:VAL:HG13	74:r2:81:THR:HG23	1.71	0.72
78:v2:71:LEU:HD23	78:v2:73:ASN:H	1.53	0.72
2:A2:129:C:H2'	2:A2:130:G:C8	2.24	0.72
2:A2:1120:C:H2'	2:A2:1121:A:H8	1.54	0.72
69:m2:927:G:H1	69:m2:1019:U:H3	1.38	0.72
2:A2:4627:G:H3'	2:A2:4628:A:H8	1.54	0.71
43:P3:42:MET:HE2	76:t2:148:LEU:HA	1.72	0.71
69:m2:118:C:H1'	69:m2:447:A:C5	2.24	0.71
69:m2:822:U:O2	69:m2:830:G:O6	2.07	0.71
2:A2:265:U:H5"	2:A2:266:C:H5'	1.72	0.71
68:k2:98:ARG:HH21	68:k2:107:ARG:HH12	1.38	0.71
26:H2:202:ILE:HD11	57:Z2:105:LEU:HD21	1.71	0.71
69:m2:186:C:H2'	69:m2:187:G:H8	1.55	0.71
75:s2:19:LEU:HB3	75:s2:21:GLY:H	1.56	0.71
7:Bz:57:G:H5"	7:Bz:58:A:H8	1.55	0.71
69:m2:641:C:H2'	69:m2:642:A:H8	1.54	0.71
72:p2:72:ALA:HB2	72:p2:80:ALA:HA	1.73	0.71
74:r2:182:MET:HE1	74:r2:192:VAL:HG22	1.72	0.71
2:A2:4422:G:H1	2:A2:4509:U:H3	1.38	0.70
31:J3:108:LYS:HD3	31:J3:233:LEU:HD21	1.73	0.70
2:A2:3378:G:H2'	2:A2:3379:A:H8	1.56	0.70
69:m2:115:U:H2'	69:m2:116:OMU:H6	1.73	0.70
2:A2:3512:A:H4'	30:J2:85:LYS:HE3	1.72	0.70
69:m2:1230:A:H2'	69:m2:1231:G:C8	2.26	0.70
69:m2:1289:A:H62	69:m2:1314:G:H21	1.37	0.70
72:p2:137:LEU:HG	72:p2:215:VAL:HG22	1.74	0.70
11:C2:83:C:H42	48:S2:50:ARG:HH22	1.38	0.70
3:A3:124:ARG:HH11	3:A3:129:LEU:HB3	1.56	0.70
70:n2:4:A:H2'	70:n2:5:G:H8	1.56	0.69
2:A2:659:C:H2'	2:A2:660:G:C8	2.27	0.69
2:A2:686:C:H2'	2:A2:687:G:C8	2.28	0.69
21:F3:70:LYS:HE3	21:F3:72:HIS:HE1	1.56	0.69
36:M2:83:ARG:HG3	36:M2:125:GLN:HB2	1.74	0.69
12:C3:55:ARG:HG2	12:C3:87:ARG:HD3	1.73	0.69
55:X2:46:LEU:HD12	55:X2:64:ILE:HD13	1.72	0.69
2:A2:1604:A:H5"	2:A2:1605:G:H5'	1.73	0.69
71:o2:184:ARG:HD3	71:o2:191:ARG:HA	1.72	0.69
6:B3:71:GLY:H	6:B3:74:SER:HB3	1.57	0.69
74:r2:104:ASP:HB2	74:r2:110:ALA:HB2	1.74	0.69
79:w2:125:ILE:HD13	79:w2:147:LYS:HD3	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B1:58:PRO:HD2	4:B1:61:ILE:HD12	1.75	0.69
69:m2:1275:C:O2	69:m2:1510:A:N6	2.26	0.69
2:A2:1322:C:H2'	2:A2:1323:G:H8	1.57	0.69
23:G2:41:LYS:HG3	38:N2:93:ILE:HG13	1.74	0.69
72:p2:144:LYS:HG2	72:p2:146:ARG:HH21	1.58	0.69
2:A2:175:C:H2'	2:A2:176:G:H8	1.58	0.68
2:A2:2102:A:H61	56:Y2:24:GLN:HE21	1.41	0.68
69:m2:641:C:H2'	69:m2:642:A:C8	2.29	0.68
75:s2:50:PRO:HB3	75:s2:69:VAL:HG12	1.74	0.68
26:H2:160:LEU:HD11	26:H2:202:ILE:HG13	1.73	0.68
2:A2:129:C:H2'	2:A2:130:G:H8	1.57	0.68
2:A2:886:U:H3	2:A2:922:G:H1	1.41	0.68
2:A2:2454:C:H2'	2:A2:2455:G:H8	1.57	0.68
5:B2:54:A:H5'	16:E1:9:GLU:HG3	1.76	0.68
19:F1:64:VAL:HA	19:F1:67:HIS:HD2	1.58	0.68
2:A2:1505:C:H5"	32:K2:53:MET:HE3	1.76	0.68
69:m2:220:U:H2'	69:m2:221:U:C6	2.28	0.68
71:o2:184:ARG:HB3	71:o2:191:ARG:HD2	1.73	0.68
34:L2:105:LEU:HD23	34:L2:138:LEU:HD23	1.75	0.68
14:D2:54:ARG:HG2	14:D2:56:ALA:H	1.58	0.68
2:A2:2302:G:H1	2:A2:2527:C:H5	1.41	0.68
27:H3:27:ARG:HD2	69:m2:1265:U:H4'	1.75	0.68
29:I3:297:THR:HA	29:I3:311:GLN:HA	1.76	0.68
32:K2:158:THR:HB	32:K2:161:SER:HB3	1.75	0.68
7:Bz:4:C:H2'	7:Bz:5:G:C8	2.29	0.68
43:P3:107:SER:HB3	69:m2:862:G:H21	1.58	0.68
46:R2:80:PRO:HA	46:R2:98:PHE:HA	1.75	0.68
2:A2:139:G:H2'	2:A2:140:G:H8	1.58	0.68
71:o2:17:LYS:HB3	71:o2:173:LEU:HD11	1.76	0.68
2:A2:262:G:H2'	2:A2:263:G:C8	2.29	0.67
2:A2:927:C:H2'	2:A2:928:G:C8	2.30	0.67
2:A2:4603:C:H2'	2:A2:4604:C:C6	2.29	0.67
3:A3:117:ILE:HD11	80:x2:111:MET:HG3	1.76	0.67
55:X2:33:ILE:HD11	55:X2:45:ALA:HA	1.77	0.67
16:E1:56:THR:HG22	16:E1:64:ARG:H	1.59	0.67
29:I3:87:LEU:HD21	29:I3:108:VAL:HG11	1.76	0.67
2:A2:3744:G:H22	2:A2:3765:G:H22	1.42	0.67
70:n2:52:G:H2'	70:n2:53:A:C8	2.29	0.67
2:A2:740:A:H62	2:A2:828:G:H21	1.42	0.67
69:m2:1496:U:H4'	69:m2:1497:G:H5"	1.77	0.67
75:s2:28:VAL:HA	75:s2:110:GLN:NE2	2.08	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:262:G:H2'	2:A2:263:G:H8	1.58	0.67
2:A2:2030:G:H2'	2:A2:2031:A:H8	1.60	0.67
2:A2:4604:C:H2'	2:A2:4605:U:C6	2.30	0.67
17:E2:32:PHE:CD2	17:E2:184:GLN:HB2	2.30	0.67
45:Q3:39:GLU:HA	45:Q3:42:GLU:HG3	1.77	0.67
52:U2:148:ALA:HB2	60:c2:6:PRO:HB2	1.75	0.67
2:A2:2525:C:H2'	2:A2:2526:G:H8	1.60	0.67
33:K3:38:ALA:HB1	33:K3:41:LEU:HD21	1.76	0.67
69:m2:209:G:H2'	69:m2:210:G:C8	2.29	0.67
70:n2:40:C:H2'	70:n2:41:A:C8	2.29	0.67
77:u2:190:LEU:HD21	77:u2:198:TYR:HD2	1.60	0.67
36:M2:80:ILE:HG12	36:M2:129:VAL:HG22	1.77	0.67
69:m2:1223:G:H2'	69:m2:1224:G:H8	1.60	0.67
2:A2:1146:C:H2'	2:A2:1147:A:C8	2.30	0.67
42:P2:24:ALA:HB3	42:P2:39:ILE:HD12	1.75	0.67
48:S2:54:GLU:HB2	48:S2:108:ARG:HB2	1.77	0.67
71:o2:183:LEU:HB2	71:o2:195:TRP:HH2	1.57	0.67
32:K2:53:MET:HE2	32:K2:57:ASN:HB3	1.75	0.67
74:r2:124:CYS:HB3	74:r2:141:THR:HG23	1.76	0.67
2:A2:1627:A:H2'	2:A2:1628:G:H8	1.61	0.66
14:D2:20:VAL:HG12	14:D2:23:ARG:HD2	1.77	0.66
46:R2:64:SER:HB2	59:b2:69:LEU:HD23	1.77	0.66
48:S2:31:SER:HA	48:S2:48:PRO:HA	1.77	0.66
73:q2:136:VAL:HG22	73:q2:186:VAL:HG22	1.76	0.66
25:H1:116:LEU:HD22	25:H1:135:ILE:HD11	1.78	0.66
69:m2:17:C:H2'	69:m2:18:C:C6	2.30	0.66
7:Bz:14:A:H3'	7:Bz:15:G:H8	1.58	0.66
13:D1:19:LYS:HE2	13:D1:26:VAL:HB	1.78	0.66
13:D1:61:SER:HA	13:D1:126:VAL:HG13	1.77	0.66
3:A3:75:ARG:HH21	3:A3:95:TYR:HB2	1.61	0.66
53:V2:99:HIS:CD2	53:V2:102:LEU:H	2.13	0.66
2:A2:106:A:H2'	2:A2:107:G:O4'	1.96	0.66
2:A2:181:C:H2'	2:A2:182:G:H8	1.60	0.66
2:A2:1541:G:H2'	2:A2:1542:C:C6	2.30	0.66
2:A2:1626:G:H4'	23:G2:44:TYR:CD2	2.30	0.66
38:N2:43:LYS:HG3	38:N2:58:HIS:HE1	1.60	0.66
69:m2:369:U:H4'	69:m2:373:A:C8	2.29	0.66
69:m2:657:A:H4'	69:m2:658:G:H3'	1.77	0.66
2:A2:138:C:H2'	2:A2:139:G:H8	1.60	0.66
2:A2:944:G:H2'	2:A2:945:G:H8	1.60	0.66
2:A2:1147:A:H2'	2:A2:1148:A:H8	1.61	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1766:A:H3'	2:A2:1767:G:H8	1.60	0.66
2:A2:1291:C:H2'	2:A2:1292:G:H8	1.61	0.66
2:A2:4600:G:H2'	2:A2:4601:A:C8	2.30	0.66
17:E2:224:LYS:HG2	17:E2:340:THR:HG22	1.78	0.66
24:G3:44:ARG:HH12	24:G3:63:ARG:HB2	1.61	0.66
29:I3:149:GLU:HG2	29:I3:150:TRP:H	1.60	0.66
69:m2:513:U:H3'	69:m2:514:A2M:H8	1.76	0.66
2:A2:2088:G:H5"	20:F2:195:LYS:HE3	1.76	0.66
11:C2:19:C:H2'	11:C2:20:A:H8	1.61	0.66
45:Q3:16:ARG:HB2	74:r2:94:LYS:HE3	1.76	0.66
45:Q3:51:THR:HG22	45:Q3:53:ASP:H	1.61	0.66
69:m2:1552:G:H3'	69:m2:1581:A:H61	1.59	0.66
75:s2:59:LYS:HB3	75:s2:62:ARG:HB2	1.76	0.66
2:A2:665:C:H2'	2:A2:666:G:H8	1.60	0.65
69:m2:25:A:HO2'	69:m2:26:U:H6	1.43	0.65
69:m2:158:A:H1'	69:m2:159:A:H5'	1.78	0.65
69:m2:1242:A:N1	80:x2:100:LYS:HB2	2.12	0.65
2:A2:1310:A:H1'	32:K2:164:LYS:HG3	1.76	0.65
2:A2:3829:C:H2'	2:A2:3830:A:H8	1.61	0.65
29:I3:168:CYS:SG	29:I3:198:VAL:HG23	2.36	0.65
45:Q3:36:PRO:HG3	69:m2:572:C:H4'	1.77	0.65
2:A2:659:C:H2'	2:A2:660:G:H8	1.61	0.65
2:A2:2324:G:H2'	2:A2:2325:U:C6	2.32	0.65
2:A2:3600:G:H1	2:A2:3719:U:H3	1.42	0.65
2:A2:3602:G:O6	2:A2:3717:U:O4	2.13	0.65
5:B2:6:C:H4'	23:G2:52:ILE:HD13	1.77	0.65
69:m2:186:C:H2'	69:m2:187:G:C8	2.31	0.65
69:m2:496:C:H42	69:m2:511:OMG:HN22	1.44	0.65
71:o2:205:ARG:HE	71:o2:206:ASP:H	1.45	0.65
2:A2:928:G:H1	2:A2:1064:G:H1	1.45	0.65
26:H2:164:HIS:HB3	26:H2:167:LYS:HD2	1.77	0.65
45:Q3:27:VAL:HB	45:Q3:69:THR:HB	1.78	0.65
45:Q3:116:LYS:HG2	69:m2:161:U:H5'	1.76	0.65
69:m2:211:A:H1'	69:m2:212:U:H5	1.61	0.65
69:m2:872:A:H62	69:m2:918:A:H5'	1.61	0.65
13:D1:170:LYS:HD3	13:D1:175:LYS:HA	1.78	0.65
29:I3:30:MET:HB2	29:I3:42:MET:HE3	1.78	0.65
35:L3:111:GLN:HE22	35:L3:127:ARG:HA	1.61	0.65
74:r2:45:ILE:HG13	74:r2:61:VAL:HG11	1.77	0.65
69:m2:510:A:H3'	69:m2:511:OMG:H8	1.60	0.65
2:A2:1011:U:H3'	2:A2:1012:C:H5"	1.79	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:Q3:15:ASN:HD21	45:Q3:18:LEU:HD13	1.62	0.65
81:y2:115:TYR:HD2	81:y2:119:LEU:HD11	1.61	0.65
69:m2:824:PSU:H5"	69:m2:825:PSU:H5'	1.79	0.65
69:m2:1547:A:H2'	69:m2:1548:G:C8	2.31	0.65
14:D2:57:PRO:HG2	14:D2:78:ALA:HB3	1.79	0.65
35:L3:68:PRO:HA	35:L3:71:LEU:HD12	1.79	0.65
45:Q3:117:VAL:HG13	45:Q3:122:LYS:HA	1.78	0.65
57:Z2:10:ILE:HD11	57:Z2:100:ARG:HH21	1.62	0.65
74:r2:136:ILE:HD12	74:r2:148:ARG:HD3	1.79	0.65
2:A2:1376:A:H2'	2:A2:1377:A:C8	2.32	0.64
2:A2:4522:G:H2'	2:A2:4523:C:H6	1.63	0.64
41:O3:136:PRO:HB2	41:O3:139:SER:HB3	1.79	0.64
69:m2:1469:C:H2'	69:m2:1470:C:H6	1.61	0.64
2:A2:2030:G:H2'	2:A2:2031:A:C8	2.32	0.64
73:q2:175:VAL:HB	73:q2:182:LEU:HB3	1.79	0.64
1:A1:110:LYS:HD2	1:A1:219:VAL:HG12	1.78	0.64
2:A2:4189:C:H2'	2:A2:4190:G:C8	2.31	0.64
14:D2:24:LYS:HG3	14:D2:49:ILE:HD12	1.79	0.64
29:I3:64:HIS:HD2	29:I3:83:TRP:HB2	1.62	0.64
62:e2:12:LEU:HB3	62:e2:16:ARG:HH12	1.61	0.64
69:m2:1654:G:O6	69:m2:1674:U:O4	2.14	0.64
30:J2:94:MET:HE2	30:J2:148:MET:HG2	1.77	0.64
2:A2:139:G:H2'	2:A2:140:G:C8	2.33	0.64
2:A2:2389:C:H2'	2:A2:2390:U:H6	1.61	0.64
12:C3:33:GLU:OE2	69:m2:1449:G:H4'	1.98	0.64
26:H2:53:ARG:HB2	26:H2:69:MET:HE1	1.79	0.64
38:N2:66:ASN:HB2	53:V2:35:VAL:HG12	1.80	0.64
69:m2:116:OMU:HN3	69:m2:349:G:H1	1.43	0.64
75:s2:68:ILE:HD11	75:s2:151:ILE:HD11	1.80	0.64
2:A2:718:A:H2'	2:A2:719:C:C6	2.32	0.64
2:A2:2375:G:H1	2:A2:2391:U:H3	1.42	0.64
23:G2:232:THR:HB	23:G2:235:MET:HE3	1.78	0.64
33:K3:74:ARG:HA	33:K3:96:SER:HA	1.80	0.64
69:m2:54:A:H3'	69:m2:453:G:H22	1.62	0.64
2:A2:1150:G:N2	2:A2:2104:A:N6	2.43	0.64
2:A2:1354:U:H1'	2:A2:2203:G:H21	1.62	0.64
2:A2:4701:G:H2'	2:A2:4702:A:H8	1.62	0.64
3:A3:84:LEU:HD22	3:A3:97:GLN:HB2	1.78	0.64
17:E2:63:PRO:HA	17:E2:68:ASN:ND2	2.12	0.64
54:W2:53:PRO:HG2	54:W2:56:ARG:HB3	1.78	0.64
31:J3:88:ILE:HG23	31:J3:93:ILE:HD11	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1219:A:H2'	69:m2:1220:C:C6	2.33	0.64
2:A2:192:G:H2'	2:A2:193:G:H8	1.62	0.64
2:A2:226:G:H2'	20:F2:223:ASN:OD1	1.98	0.64
2:A2:923:G:H2'	2:A2:924:G:H8	1.62	0.64
2:A2:4271:U:H2'	2:A2:4272:OMU:H6	1.79	0.64
2:A2:4298:U:H5	34:L2:62:ARG:HH22	1.45	0.64
13:D1:59:GLN:HE22	13:D1:95:HIS:CD2	2.06	0.64
2:A2:1627:A:H2'	2:A2:1628:G:C8	2.32	0.64
55:X2:32:ARG:HB3	55:X2:48:GLU:HG3	1.80	0.64
66:i2:63:THR:HG21	66:i2:89:LYS:HG2	1.78	0.64
69:m2:571:A:H2'	69:m2:572:C:H6	1.63	0.64
69:m2:1276:G:H5"	78:v2:1:MET:HE2	1.80	0.64
4:B1:63:LEU:HD21	25:H1:29:GLN:HE21	1.63	0.63
26:H2:186:LEU:HD12	26:H2:190:ARG:HA	1.81	0.63
69:m2:159:A:H2	69:m2:469:G:H21	1.46	0.63
69:m2:1410:U:H2'	69:m2:1411:A:C8	2.33	0.63
81:y2:25:CYS:HB2	81:y2:91:ALA:HB1	1.80	0.63
69:m2:950:C:H2'	69:m2:951:G:H8	1.63	0.63
69:m2:1281:C:H2'	69:m2:1282:G:C8	2.32	0.63
2:A2:4111:U:H2'	2:A2:4112:U:C6	2.32	0.63
29:I3:168:CYS:HB3	29:I3:195:LEU:HG	1.79	0.63
69:m2:1858:C:H2'	69:m2:1859:G:H8	1.63	0.63
2:A2:280:G:H5"	25:H1:14:LYS:HE2	1.80	0.63
2:A2:1831:A:H2'	2:A2:1832:A:H8	1.64	0.63
2:A2:4230:G:H2'	2:A2:4231:U:C6	2.34	0.63
22:G1:95:ILE:HG12	22:G1:98:ARG:HH21	1.64	0.63
69:m2:27:A2M:HM'1	69:m2:485:C:H1'	1.79	0.63
74:r2:128:LYS:HA	74:r2:156:VAL:HG23	1.79	0.63
2:A2:1188:G:H1'	20:F2:234:LYS:HG2	1.81	0.63
13:D1:54:SER:HB2	13:D1:135:ILE:HD11	1.80	0.63
69:m2:190:G:H21	69:m2:192:C:H42	1.44	0.63
69:m2:1652:A:H5"	81:y2:139:ALA:HB2	1.81	0.63
74:r2:151:ASP:OD2	74:r2:153:VAL:HG12	1.99	0.63
2:A2:2290:G:H2'	2:A2:2291:A:C8	2.34	0.63
33:K3:88:ARG:HB3	33:K3:91:GLU:HB2	1.80	0.63
50:T2:25:ILE:HA	50:T2:43:VAL:HG12	1.80	0.63
5:B2:1:G:H4'	23:G2:265:ARG:HD2	1.80	0.63
37:M3:33:ARG:HB2	69:m2:1286:A:C8	2.34	0.63
69:m2:1560:C:H2'	69:m2:1561:C:C6	2.34	0.63
2:A2:1141:C:H2'	2:A2:1142:G:C8	2.34	0.63
2:A2:3602:G:H1	2:A2:3717:U:H3	1.44	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:N3:129:TYR:HB3	39:N3:135:LEU:HD13	1.81	0.63
69:m2:118:C:H5”	69:m2:119:U:H5	1.64	0.63
69:m2:498:C:H2’	69:m2:499:C:C6	2.34	0.63
2:A2:808:A:H2’	2:A2:809:G:H8	1.64	0.62
2:A2:1333:C:H4’	20:F2:94:ASN:HD21	1.64	0.62
28:I2:7:LEU:HD22	28:I2:31:ARG:HH21	1.64	0.62
69:m2:529:C:H2’	69:m2:530:A:C8	2.34	0.62
69:m2:1099:G:H4’	71:o2:32:PHE:CD1	2.34	0.62
2:A2:3955:C:H3’	2:A2:3957:G:H21	1.63	0.62
2:A2:4552:G:H2’	2:A2:4559:G:H22	1.64	0.62
69:m2:96:C:H2’	69:m2:97:U:C6	2.34	0.62
69:m2:1205:G:H2’	69:m2:1206:A:H8	1.64	0.62
2:A2:2117:U:H2’	2:A2:2118:A2M:H8	1.80	0.62
16:E1:112:HIS:CD2	16:E1:117:ILE:HD11	2.33	0.62
69:m2:107:A:H2’	69:m2:108:G:C8	2.34	0.62
69:m2:930:G:H2’	69:m2:931:G:C8	2.34	0.62
2:A2:268:G:H2’	2:A2:269:G:H8	1.64	0.62
69:m2:109:U:H2’	69:m2:110:U:C6	2.35	0.62
69:m2:297:C:H2’	69:m2:298:U:H6	1.64	0.62
69:m2:1595:C:H2’	69:m2:1596:A:H8	1.63	0.62
18:E3:90:CYS:HA	18:E3:93:PHE:HD2	1.65	0.62
39:N3:20:ARG:HG2	39:N3:65:PHE:HE1	1.64	0.62
2:A2:1079:A:H2’	2:A2:1080:C:C6	2.34	0.62
46:R2:56:ARG:HG2	46:R2:58:PRO:HD3	1.81	0.62
46:R2:129:ARG:HD3	46:R2:135:LYS:HE3	1.81	0.62
81:y2:42:ILE:HG22	81:y2:44:PRO:HD2	1.80	0.62
2:A2:1744:A:H2’	2:A2:1745:A:H8	1.63	0.62
7:Bz:42:C:H2’	7:Bz:43:C:C6	2.34	0.62
20:F2:230:LEU:HD21	20:F2:239:LYS:HD2	1.82	0.62
65:h2:1:MET:HB2	69:m2:1708:G:H5’	1.82	0.62
69:m2:375:G:H4’	79:w2:85:THR:HG21	1.81	0.62
69:m2:953:C:H2’	69:m2:954:G:H8	1.65	0.62
69:m2:1409:U:H2’	69:m2:1410:U:C6	2.35	0.62
69:m2:1826:A:H2’	69:m2:1827:A:C4	2.34	0.62
76:t2:51:ILE:HG12	76:t2:179:LYS:HG2	1.82	0.62
2:A2:10:A:H2’	2:A2:11:G:H8	1.63	0.62
5:B2:69:U:H3	5:B2:106:G:H1	1.47	0.62
33:K3:185:LEU:HG	33:K3:189:ARG:HE	1.65	0.62
69:m2:390:U:H2’	69:m2:391:A:C8	2.35	0.62
2:A2:1649:C:H2’	2:A2:1650:C:C6	2.35	0.62
2:A2:1830:C:H2’	2:A2:1831:A:H8	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:J2:122:ALA:HB3	30:J2:143:PRO:HG2	1.82	0.62
41:O3:42:VAL:HG23	41:O3:43:HIS:H	1.64	0.62
66:i2:19:GLN:OE1	66:i2:20:PRO:HD2	1.99	0.62
69:m2:25:A:O2'	69:m2:26:U:H5"	2.00	0.62
69:m2:1397:C:H2'	69:m2:1398:A:C8	2.34	0.62
74:r2:182:MET:HB2	74:r2:226:PHE:HB2	1.81	0.62
2:A2:1147:A:H2'	2:A2:1148:A:C8	2.35	0.62
2:A2:4539:A:H5"	2:A2:4540:C:H5"	1.82	0.62
69:m2:1201:A:H2'	69:m2:1202:A:C8	2.35	0.62
2:A2:1007:A:H2	2:A2:1017:G:H22	1.47	0.61
2:A2:3814:C:C2	4:B1:244:PRO:HD3	2.35	0.61
2:A2:3973:U:H2'	2:A2:3974:G:C8	2.35	0.61
45:Q3:7:ILE:HD12	45:Q3:9:THR:HB	1.80	0.61
69:m2:1230:A:H2'	69:m2:1231:G:H8	1.64	0.61
2:A2:4294:U:H2'	2:A2:4295:G:H8	1.65	0.61
69:m2:846:U:H2'	69:m2:847:G:C8	2.35	0.61
2:A2:1417:G:H2'	2:A2:1418:G:C8	2.34	0.61
2:A2:3744:G:H22	2:A2:3765:G:N2	1.98	0.61
2:A2:4505:G:H2'	2:A2:4506:G:C8	2.35	0.61
65:h2:2:ARG:HH21	65:h2:5:TRP:NE1	1.97	0.61
69:m2:85:A:H2'	69:m2:86:C:H6	1.65	0.61
71:o2:105:PRO:HG3	71:o2:132:GLN:HG2	1.81	0.61
76:t2:47:ALA:HB3	76:t2:63:PHE:HB2	1.82	0.61
17:E2:121:ASN:HD21	17:E2:124:LYS:HD3	1.64	0.61
68:k2:47:LYS:HB3	68:k2:102:TYR:CE1	2.35	0.61
2:A2:3826:U:H2'	2:A2:3827:G:H8	1.65	0.61
3:A3:13:LEU:HB2	3:A3:21:ASP:HB2	1.82	0.61
23:G2:60:ILE:H	23:G2:80:ALA:HB3	1.64	0.61
31:J3:196:ILE:HB	31:J3:223:TYR:HB2	1.81	0.61
51:T3:28:LYS:HD2	51:T3:36:MET:HB2	1.81	0.61
60:c2:65:LYS:HG3	60:c2:68:ARG:HB3	1.80	0.61
81:y2:43:GLU:HG3	81:y2:44:PRO:HD3	1.82	0.61
2:A2:146:G:H2'	2:A2:147:A:H8	1.65	0.61
2:A2:1274:C:H2'	2:A2:1275:A:C8	2.34	0.61
33:K3:18:VAL:HG11	33:K3:24:LEU:HD21	1.81	0.61
69:m2:406:G:H2'	69:m2:407:G:H8	1.64	0.61
2:A2:3366:G:C2	2:A2:3367:A:H1'	2.35	0.61
57:Z2:36:ARG:HB2	57:Z2:80:ASN:HA	1.83	0.61
69:m2:15:U:H2'	69:m2:16:G:O4'	2.01	0.61
20:F2:84:THR:HG22	20:F2:86:ARG:H	1.66	0.61
20:F2:287:THR:HB	68:k2:5:LEU:HD11	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1459:U:H2'	69:m2:1460:G:H8	1.66	0.61
2:A2:1688:G:H2'	2:A2:1689:G:H8	1.65	0.61
2:A2:3401:U:H4'	14:D2:242:ARG:HG3	1.82	0.61
39:N3:37:ILE:HG12	39:N3:54:LEU:HD11	1.83	0.61
69:m2:107:A:H2'	69:m2:108:G:H8	1.64	0.61
2:A2:706:C:H2'	2:A2:707:G:H8	1.66	0.61
2:A2:3586:U:O4	2:A2:3832:G:O6	2.19	0.61
2:A2:3912:U:H2'	2:A2:3913:C:C6	2.36	0.61
71:o2:30:LEU:HD21	71:o2:35:GLU:HB3	1.82	0.61
3:A3:36:VAL:HG13	3:A3:40:TYR:HD2	1.66	0.60
39:N3:142:GLU:HG2	39:N3:143:SER:H	1.64	0.60
54:W2:20:LEU:HD22	54:W2:101:ASP:HB3	1.82	0.60
56:Y2:22:ARG:HD3	56:Y2:31:ILE:HG23	1.82	0.60
2:A2:932:C:H42	2:A2:1059:C:H42	1.48	0.60
2:A2:1141:C:H2'	2:A2:1142:G:H8	1.66	0.60
2:A2:3325:G:H21	2:A2:3328:G:N2	1.99	0.60
6:B3:41:LYS:HB3	6:B3:95:GLY:HA2	1.81	0.60
69:m2:612:G:H2'	69:m2:613:G:H8	1.66	0.60
69:m2:832:A:N6	69:m2:847:G:C5	2.69	0.60
69:m2:1223:G:H2'	69:m2:1224:G:C8	2.35	0.60
69:m2:1654:G:N2	69:m2:1674:U:O2	2.28	0.60
81:y2:50:LYS:HD3	81:y2:85:ARG:HH12	1.65	0.60
81:y2:116:ASP:HB3	81:y2:119:LEU:HG	1.82	0.60
2:A2:1894:G:H2'	2:A2:2017:G:C5	2.36	0.60
13:D1:59:GLN:HG2	13:D1:126:VAL:CG1	2.30	0.60
38:N2:48:VAL:HG21	38:N2:94:GLU:HG2	1.84	0.60
69:m2:1416:A:H5'	69:m2:1417:C:OP2	2.01	0.60
2:A2:310:G:H5"	60:c2:85:ARG:HH12	1.66	0.60
2:A2:2083:G:H2'	2:A2:2084:U:C6	2.35	0.60
2:A2:3549:C:H2'	2:A2:3550:A:H8	1.65	0.60
69:m2:498:C:H2'	69:m2:499:C:H6	1.67	0.60
69:m2:832:A:C6	69:m2:847:G:N1	2.68	0.60
69:m2:1659:G:H2'	69:m2:1660:G:C8	2.37	0.60
72:p2:163:GLN:NE2	72:p2:204:ILE:HG21	2.16	0.60
2:A2:422:C:H2'	2:A2:423:G:H8	1.66	0.60
21:F3:22:ARG:HH12	41:O3:141:ARG:HG3	1.66	0.60
50:T2:47:ASP:HB3	50:T2:69:LYS:HG2	1.81	0.60
69:m2:1066:C:H2'	69:m2:1067:G:H8	1.65	0.60
2:A2:2639:G:H2'	2:A2:2640:A:H8	1.65	0.60
29:I3:250:ALA:HB3	29:I3:257:LYS:HB2	1.83	0.60
69:m2:26:U:H2'	69:m2:27:A2M:H8	1.81	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4710:G:H2'	2:A2:4711:U:C6	2.37	0.60
35:L3:111:GLN:HE21	35:L3:145:PRO:HB3	1.66	0.60
69:m2:1459:U:H2'	69:m2:1460:G:C8	2.37	0.60
2:A2:175:C:H2'	2:A2:176:G:C8	2.37	0.60
2:A2:2129:A:H2'	2:A2:2130:A:C8	2.36	0.60
16:E1:109:ILE:HG21	16:E1:115:LEU:HD11	1.84	0.60
17:E2:231:VAL:HG11	17:E2:251:VAL:HG23	1.82	0.60
39:N3:71:ILE:HD12	69:m2:1020:U:H5"	1.84	0.60
46:R2:82:THR:HG21	59:b2:37:THR:HG22	1.84	0.60
69:m2:190:G:H5"	77:u2:145:ILE:HD12	1.84	0.60
69:m2:1409:U:H5"	81:y2:71:ARG:HH12	1.67	0.60
2:A2:2050:C:H2'	2:A2:2051:G:H8	1.66	0.60
2:A2:2363:G:H2'	2:A2:2364:G:H8	1.65	0.60
2:A2:2504:C:H2'	2:A2:2505:G:H8	1.67	0.60
7:Bz:64:A:H3'	7:Bz:65:G:C8	2.34	0.60
63:f2:28:ARG:HA	63:f2:33:ASN:HD22	1.66	0.60
69:m2:5:U:H2'	69:m2:6:G:C8	2.37	0.60
69:m2:623:C:H2'	69:m2:624:C:C6	2.36	0.60
79:w2:59:LYS:HD3	79:w2:134:LEU:HB3	1.84	0.60
2:A2:1744:A:H2'	2:A2:1745:A:C8	2.36	0.60
2:A2:2177:OMC:H5'	2:A2:3513:G:H21	1.66	0.60
2:A2:3366:G:N3	2:A2:3367:A:H1'	2.16	0.60
43:P3:51:GLU:HB2	76:t2:145:ARG:HD2	1.83	0.60
69:m2:318:G:H2'	69:m2:319:C:C6	2.37	0.60
69:m2:1382:C:H2'	69:m2:1383:G:C8	2.37	0.60
69:m2:1713:U:H2'	69:m2:1714:A:C8	2.37	0.60
2:A2:1831:A:H2'	2:A2:1832:A:C8	2.37	0.59
2:A2:2236:G:H2'	2:A2:2237:C:C6	2.37	0.59
2:A2:4522:G:H2'	2:A2:4523:C:C6	2.37	0.59
2:A2:4613:A:H2'	2:A2:4614:A:C8	2.37	0.59
69:m2:1361:U:H2'	69:m2:1362:U:H6	1.66	0.59
2:A2:1196:G:H2'	2:A2:1197:G:H8	1.66	0.59
36:M2:29:ARG:HH21	38:N2:150:LEU:HB2	1.66	0.59
42:P2:112:MET:HE2	42:P2:132:ILE:HA	1.83	0.59
69:m2:356:U:H2'	69:m2:357:G:C8	2.38	0.59
69:m2:1201:A:H2'	69:m2:1202:A:H8	1.67	0.59
69:m2:1794:G:H2'	69:m2:1795:A:C8	2.35	0.59
73:q2:137:VAL:HB	73:q2:185:LYS:HB2	1.83	0.59
79:w2:126:VAL:HG12	79:w2:145:VAL:HA	1.84	0.59
2:A2:1105:G:H2'	2:A2:1106:C:C6	2.37	0.59
2:A2:2240:U:H3	2:A2:2248:G:H1	1.49	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:L3:108:ARG:HA	35:L3:113:GLN:HE21	1.67	0.59
69:m2:29:G:H2'	69:m2:30:C:C6	2.37	0.59
69:m2:290:G:H2'	69:m2:291:G:C8	2.38	0.59
69:m2:406:G:H2'	69:m2:407:G:C8	2.37	0.59
2:A2:123:C:H2'	2:A2:124:C:C6	2.37	0.59
27:H3:32:ARG:HH22	27:H3:38:MET:HB2	1.68	0.59
35:L3:32:ILE:HG23	35:L3:37:LEU:HB2	1.84	0.59
69:m2:1224:G:H2'	69:m2:1225:A:C8	2.37	0.59
69:m2:1646:C:H4'	81:y2:140:ARG:HB2	1.84	0.59
69:m2:1742:C:H2'	69:m2:1743:U:C6	2.37	0.59
2:A2:1679:G:OP2	53:V2:14:ARG:HD2	2.02	0.59
17:E2:128:LYS:HE3	17:E2:131:THR:HG21	1.85	0.59
69:m2:642:A:H2'	69:m2:643:A:C8	2.37	0.59
69:m2:1180:U:H2'	69:m2:1181:G:H8	1.67	0.59
69:m2:1238:G:H2'	69:m2:1239:C:C6	2.37	0.59
2:A2:181:C:H2'	2:A2:182:G:C8	2.38	0.59
2:A2:2203:G:H2'	2:A2:2204:A:C8	2.37	0.59
2:A2:4041:C:H2'	2:A2:4042:A:H8	1.68	0.59
3:A3:19:ASN:HD22	3:A3:33:ILE:HG13	1.68	0.59
23:G2:83:LEU:HB3	23:G2:88:VAL:HB	1.85	0.59
53:V2:11:ASN:HA	53:V2:14:ARG:HE	1.67	0.59
69:m2:1224:G:H2'	69:m2:1225:A:H8	1.68	0.59
1:A1:116:ARG:NH2	1:A1:131:LEU:HD13	2.18	0.59
33:K3:58:LYS:HA	33:K3:107:SER:HB3	1.84	0.59
69:m2:153:G:H22	69:m2:165:G:H21	1.51	0.59
69:m2:555:A:H2'	69:m2:556:A:C8	2.38	0.59
69:m2:1133:G:H2'	69:m2:1134:C:C6	2.37	0.59
69:m2:1191:A:H2'	69:m2:1192:A:H8	1.67	0.59
69:m2:1281:C:H2'	69:m2:1282:G:H8	1.66	0.59
69:m2:1858:C:H2'	69:m2:1859:G:C8	2.37	0.59
71:o2:76:VAL:HG12	71:o2:123:VAL:HB	1.84	0.59
71:o2:123:VAL:HA	71:o2:145:ILE:O	2.02	0.59
76:t2:93:VAL:HG11	76:t2:173:PHE:HE1	1.68	0.59
2:A2:300:A:H2'	2:A2:301:G:C8	2.36	0.59
2:A2:720:C:H2'	2:A2:721:G:H8	1.68	0.59
19:F1:83:VAL:HG11	19:F1:110:LEU:HD21	1.84	0.59
32:K2:63:LEU:O	32:K2:67:ILE:HG13	2.02	0.59
29:I3:238:ALA:H	29:I3:251:ALA:HB3	1.67	0.59
69:m2:346:U:H2'	69:m2:347:U:H6	1.67	0.59
2:A2:3478:U:H2'	2:A2:3479:G:C8	2.38	0.59
2:A2:4274:A:H2'	2:A2:4275:OMG:H8	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:C3:48:LEU:HD12	12:C3:93:SER:HB2	1.85	0.59
26:H2:69:MET:HE3	26:H2:73:LYS:HG3	1.83	0.59
69:m2:118:C:H1'	69:m2:447:A:C4	2.37	0.59
69:m2:1027:U:H2'	69:m2:1028:C:O4'	2.02	0.59
79:w2:32:LYS:HD2	79:w2:52:GLU:HA	1.83	0.59
81:y2:43:GLU:CG	81:y2:44:PRO:HD3	2.33	0.59
2:A2:3387:C:H2'	2:A2:3388:A:H8	1.67	0.58
2:A2:3511:C:H2'	2:A2:3512:A:H8	1.67	0.58
2:A2:4045:G:O4'	2:A2:4099:5MC:HM52	2.03	0.58
2:A2:4111:U:H2'	2:A2:4112:U:H6	1.67	0.58
2:A2:4413:G:H2'	2:A2:4414:A:H8	1.67	0.58
2:A2:4563:C:H2'	2:A2:4564:G:H8	1.68	0.58
11:C2:14:U:H5"	30:J2:123:PRO:HG3	1.85	0.58
37:M3:53:ALA:HA	37:M3:79:VAL:HA	1.85	0.58
69:m2:930:G:H1	69:m2:1015:U:H3	1.50	0.58
1:A1:141:ASN:HD21	1:A1:234:LYS:HD3	1.67	0.58
2:A2:3971:C:H2'	2:A2:3972:G:C8	2.38	0.58
39:N3:86:GLU:HA	39:N3:89:TYR:HB3	1.84	0.58
41:O3:98:ARG:HG3	41:O3:133:THR:HA	1.85	0.58
45:Q3:114:MET:HB3	45:Q3:122:LYS:HD2	1.83	0.58
69:m2:96:C:H1'	69:m2:476:G:H5'	1.86	0.58
69:m2:1398:A:N1	69:m2:1451:G:C6	2.71	0.58
69:m2:1504:C:H2'	69:m2:1505:C:H6	1.69	0.58
69:m2:1548:G:H21	69:m2:1672:C:H1'	1.68	0.58
78:v2:53:LYS:HD3	78:v2:64:TRP:HB3	1.83	0.58
2:A2:138:C:H2'	2:A2:139:G:C8	2.37	0.58
2:A2:1004:C:H2'	2:A2:1005:G:C8	2.38	0.58
2:A2:3306:C:H2'	2:A2:3307:A:H8	1.68	0.58
13:D1:174:THR:HG21	13:D1:197:VAL:HG13	1.83	0.58
31:J3:108:LYS:HE3	31:J3:110:MET:HB2	1.86	0.58
69:m2:844:C:H2'	69:m2:845:C:C6	2.38	0.58
69:m2:1352:U:H4'	71:o2:112:ILE:HG13	1.84	0.58
69:m2:1531:C:H2'	69:m2:1532:U:C6	2.38	0.58
72:p2:133:TYR:HB2	72:p2:181:LEU:HD11	1.85	0.58
2:A2:1477:U:H2'	2:A2:1478:C:C6	2.38	0.58
3:A3:15:VAL:HG13	3:A3:68:ILE:HD11	1.85	0.58
6:B3:41:LYS:HE3	6:B3:81:GLY:HA3	1.83	0.58
7:Bz:44:G:O2'	7:Bz:45:U:H5'	2.03	0.58
23:G2:42:ASN:ND2	38:N2:69:GLN:HE21	2.01	0.58
26:H2:145:ARG:HH21	26:H2:177:SER:HA	1.68	0.58
33:K3:13:GLN:HG3	69:m2:153:G:H21	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:511:OMG:H2'	69:m2:512:G:C8	2.36	0.58
2:A2:43:U:H3	2:A2:93:G:H1	1.52	0.58
2:A2:406:C:H2'	2:A2:407:A:C8	2.38	0.58
2:A2:4201:G:H2'	2:A2:4202:G:H8	1.67	0.58
79:w2:76:VAL:HG22	79:w2:125:ILE:HG13	1.84	0.58
81:y2:8:GLN:HG3	81:y2:27:ARG:HH12	1.69	0.58
2:A2:18:C:H4'	25:H1:138:PHE:CD2	2.38	0.58
2:A2:229:G:H5"	48:S2:11:ARG:HG3	1.86	0.58
2:A2:3565:C:H5	2:A2:4048:A:H61	1.52	0.58
20:F2:40:VAL:HG23	20:F2:115:VAL:HG11	1.86	0.58
45:Q3:17:LEU:HD12	45:Q3:18:LEU:HD12	1.86	0.58
47:R3:79:ILE:HB	47:R3:83:LEU:HD23	1.85	0.58
47:R3:88:LEU:HB3	47:R3:109:TYR:CE2	2.37	0.58
69:m2:1115:A:H2'	69:m2:1116:U:C6	2.39	0.58
72:p2:35:ALA:HB2	72:p2:44:ILE:HD11	1.86	0.58
1:A1:98:ARG:NH1	2:A2:735:C:H5"	2.17	0.58
2:A2:2345:G:H22	2:A2:2509:G:H1'	1.67	0.58
2:A2:3320:G:H2'	2:A2:3321:G:H8	1.67	0.58
14:D2:179:ILE:HG23	14:D2:184:ARG:HB2	1.85	0.58
29:I3:106:LYS:HB2	29:I3:126:ASP:HB3	1.86	0.58
68:k2:16:PHE:HB3	68:k2:27:THR:H	1.68	0.58
69:m2:607:A:N3	69:m2:641:C:H1'	2.19	0.58
69:m2:1263:C:H41	69:m2:1663:A:H62	1.52	0.58
2:A2:1132:C:H2'	2:A2:1133:U:O4'	2.03	0.58
2:A2:1830:C:H2'	2:A2:1831:A:C8	2.38	0.58
20:F2:301:ALA:HB1	32:K2:132:LYS:HE2	1.84	0.58
69:m2:166:A:H2'	69:m2:167:G:H8	1.68	0.58
69:m2:1659:G:H2'	69:m2:1660:G:H8	1.69	0.58
1:A1:86:MET:HE1	1:A1:217:TYR:HE2	1.69	0.58
2:A2:1116:U:H4'	56:Y2:18:LYS:HA	1.86	0.58
2:A2:2298:A:H5"	2:A2:2299:G:H8	1.69	0.58
2:A2:2500:A:H2'	2:A2:2501:A:C8	2.35	0.58
20:F2:337:ARG:NH1	26:H2:65:SER:HA	2.19	0.58
69:m2:217:G:H2'	69:m2:218:C:C6	2.38	0.58
69:m2:1205:G:H2'	69:m2:1206:A:C8	2.38	0.58
69:m2:1250:B8N:C4	70:n2:33:C:H5'	2.34	0.58
70:n2:65:C:H2'	70:n2:66:U:C6	2.39	0.58
2:A2:944:G:H2'	2:A2:945:G:C8	2.38	0.58
2:A2:3542:G:H5"	28:I2:82:ARG:HH22	1.69	0.58
7:Bz:28:G:H2'	7:Bz:29:G:C8	2.39	0.58
10:C1:128:MET:HE1	10:C1:161:ILE:HD11	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:H2:250:THR:HG23	26:H2:253:ARG:H	1.69	0.58
31:J3:81:ILE:HG21	31:J3:88:ILE:HD11	1.86	0.58
69:m2:864:A:H2'	69:m2:865:U:O4'	2.04	0.58
74:r2:182:MET:HE3	74:r2:228:ILE:HG21	1.85	0.58
20:F2:333:LYS:HG2	20:F2:337:ARG:HH21	1.69	0.57
69:m2:170:A:H2'	69:m2:171:A:C8	2.39	0.57
69:m2:373:A:OP2	77:u2:10:LYS:HB2	2.04	0.57
69:m2:1713:U:H2'	69:m2:1714:A:H8	1.68	0.57
2:A2:2632:G:H2'	2:A2:2633:G:O4'	2.05	0.57
2:A2:3263:U:H2'	2:A2:3264:A:C8	2.39	0.57
2:A2:3415:A:H62	2:A2:3420:U:H3	1.52	0.57
21:F3:44:ILE:HD12	21:F3:65:PRO:HB2	1.85	0.57
69:m2:1146:A:H2'	69:m2:1147:A:C8	2.39	0.57
70:n2:4:A:H2'	70:n2:5:G:C8	2.38	0.57
76:t2:146:VAL:HG22	76:t2:152:ARG:HG2	1.85	0.57
80:x2:56:LEU:HD12	80:x2:80:LEU:HD12	1.86	0.57
2:A2:952:C:H2'	2:A2:953:G:H8	1.69	0.57
2:A2:1474:C:H2'	2:A2:1475:C:C6	2.39	0.57
2:A2:2438:C:H2'	2:A2:2439:C:C6	2.39	0.57
2:A2:4332:G:H2'	2:A2:4333:A:C8	2.38	0.57
2:A2:4400:U:H2'	2:A2:4401:C:C6	2.39	0.57
2:A2:4571:C:H2'	2:A2:4572:G:C8	2.38	0.57
2:A2:4582:U:H4'	2:A2:4583:U:OP1	2.04	0.57
33:K3:162:LEU:HB3	33:K3:164:LYS:HZ2	1.67	0.57
47:R3:81:GLY:H	69:m2:1600:G:H2'	1.70	0.57
69:m2:158:A:H61	69:m2:465:C:H1'	1.69	0.57
69:m2:180:G:H3'	69:m2:181:A:C8	2.39	0.57
69:m2:555:A:H2'	69:m2:556:A:H8	1.69	0.57
69:m2:677:U:H2'	69:m2:678:C:C6	2.39	0.57
69:m2:1520:C:H5"	69:m2:1521:U:H5"	1.85	0.57
69:m2:1597:U:H2'	69:m2:1598:U:C6	2.39	0.57
69:m2:1694:U:H2'	69:m2:1695:G:C8	2.39	0.57
2:A2:1529:U:H2'	2:A2:1530:U:C6	2.39	0.57
2:A2:1899:G:H5'	2:A2:1900:G:H4'	1.86	0.57
69:m2:809:G:H2'	69:m2:810:A:C8	2.40	0.57
2:A2:123:C:H2'	2:A2:124:C:H6	1.70	0.57
2:A2:2050:C:H2'	2:A2:2051:G:C8	2.40	0.57
2:A2:3521:A:H61	2:A2:3537:G:H1	1.52	0.57
2:A2:3710:U:H2'	2:A2:3711:C:C6	2.39	0.57
11:C2:47:C:H1'	11:C2:61:A:H2'	1.86	0.57
23:G2:155:THR:HA	23:G2:179:ARG:HA	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:Q3:110:ARG:N	45:Q3:113:ARG:HH21	2.01	0.57
77:u2:8:TRP:HA	77:u2:18:ARG:HD2	1.86	0.57
81:y2:42:ILE:HD13	81:y2:51:LEU:HD21	1.86	0.57
2:A2:453:G:H4'	2:A2:454:U:H5'	1.85	0.57
2:A2:2454:C:H2'	2:A2:2455:G:C8	2.40	0.57
2:A2:3443:G:H1'	2:A2:3445:C:N4	2.20	0.57
2:A2:3986:U:H5"	38:N2:7:LYS:HD2	1.86	0.57
2:A2:4382:C:H2'	2:A2:4383:G:O4'	2.05	0.57
14:D2:101:VAL:HG22	14:D2:165:VAL:HG22	1.87	0.57
33:K3:38:ALA:HB3	33:K3:48:TYR:HB2	1.86	0.57
69:m2:523:A:H2'	69:m2:524:A:O4'	2.05	0.57
69:m2:1540:C:H2'	69:m2:1541:U:C6	2.40	0.57
1:A1:120:ILE:HD13	32:K2:3:VAL:HG13	1.87	0.57
2:A2:3430:A:H2'	2:A2:3431:A:C8	2.39	0.57
2:A2:4051:U:H2'	2:A2:4052:G:O4'	2.05	0.57
2:A2:4637:U:H2'	2:A2:4638:G:H8	1.69	0.57
2:A2:4700:C:H5"	2:A2:4701:G:H5'	1.85	0.57
7:Bz:15:G:N2	7:Bz:47:C:C4	2.73	0.57
69:m2:653:U:H2'	69:m2:654:U:C6	2.39	0.57
73:q2:101:GLN:HG3	73:q2:126:ILE:HD11	1.86	0.57
2:A2:221:C:H2'	2:A2:222:C:C6	2.39	0.57
2:A2:1071:G:H21	2:A2:1078:G:H1	1.52	0.57
2:A2:4506:G:H2'	2:A2:4507:G:H8	1.70	0.57
18:E3:108:LYS:HD3	18:E3:110:HIS:HB3	1.85	0.57
69:m2:571:A:H2'	69:m2:572:C:C6	2.39	0.57
69:m2:908:U:H2'	69:m2:909:G:C8	2.39	0.57
69:m2:1005:U:H2'	69:m2:1006:U:C6	2.40	0.57
2:A2:808:A:H2'	2:A2:809:G:C8	2.39	0.57
2:A2:4337:U:H2'	2:A2:4338:G:C8	2.39	0.57
11:C2:123:U:H2'	11:C2:124:U:O4'	2.05	0.57
14:D2:45:VAL:HG22	14:D2:61:VAL:HG22	1.87	0.57
26:H2:183:THR:HB	26:H2:193:LEU:HD13	1.87	0.57
69:m2:1672:C:H2'	69:m2:1673:G:C8	2.40	0.57
2:A2:100:C:H2'	2:A2:101:A:H8	1.70	0.57
20:F2:104:PRO:HG2	20:F2:106:LYS:HE3	1.86	0.57
35:L3:175:ARG:HD3	69:m2:561:G:H3'	1.87	0.57
39:N3:47:PRO:HD2	39:N3:86:GLU:HG2	1.87	0.57
68:k2:119:ARG:HA	68:k2:122:LYS:HE3	1.86	0.57
69:m2:1096:C:H2'	69:m2:1097:U:C6	2.40	0.57
69:m2:1411:A:H2'	69:m2:1412:C:C6	2.40	0.57
69:m2:1619:G:H1'	69:m2:1663:A:C2	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:r2:43:PRO:HB2	74:r2:45:ILE:HG22	1.87	0.57
74:r2:87:MET:HB2	74:r2:100:ARG:HE	1.69	0.57
76:t2:157:HIS:HB3	76:t2:190:PRO:HD3	1.86	0.57
2:A2:2106:OMC:HM22	20:F2:95:MET:HG3	1.87	0.56
6:B3:67:ARG:HD3	69:m2:1589:G:N7	2.19	0.56
66:i2:66:ILE:HG21	66:i2:91:PHE:CD2	2.40	0.56
69:m2:5:U:H2'	69:m2:6:G:H8	1.69	0.56
69:m2:16:G:H21	69:m2:1197:A:H62	1.53	0.56
69:m2:95:G:H2'	69:m2:96:C:H6	1.70	0.56
69:m2:1305:C:H2'	69:m2:1306:U:C6	2.40	0.56
70:n2:22:C:H2'	70:n2:23:G:C8	2.40	0.56
72:p2:163:GLN:HE22	72:p2:204:ILE:HD13	1.68	0.56
2:A2:268:G:H2'	2:A2:269:G:C8	2.39	0.56
6:B3:76:THR:HG21	6:B3:97:LYS:HG2	1.87	0.56
69:m2:153:G:H22	69:m2:165:G:N2	2.02	0.56
69:m2:1649:A:N1	69:m2:1677:A:H5"	2.21	0.56
72:p2:160:GLN:O	72:p2:164:ILE:HD12	2.05	0.56
2:A2:425:U:H2'	2:A2:426:A:H8	1.70	0.56
2:A2:1459:A:H2'	2:A2:1460:U:C6	2.40	0.56
2:A2:2366:A:H2'	2:A2:2367:G:H8	1.69	0.56
2:A2:2464:C:H5"	34:L2:39:GLN:HG3	1.87	0.56
2:A2:3475:G:H2'	2:A2:3476:G:H8	1.70	0.56
2:A2:4230:G:H2'	2:A2:4231:U:H6	1.70	0.56
2:A2:4637:U:H2'	2:A2:4638:G:C8	2.41	0.56
2:A2:4701:G:H2'	2:A2:4702:A:C8	2.40	0.56
5:B2:69:U:H2'	5:B2:70:G:H8	1.71	0.56
27:H3:30:LEU:HG	69:m2:1258:G:C2	2.39	0.56
31:J3:114:LYS:HD3	31:J3:121:ARG:HH21	1.70	0.56
34:L2:135:LYS:HG2	34:L2:139:MET:HE2	1.87	0.56
35:L3:109:ARG:HH21	35:L3:145:PRO:HB2	1.71	0.56
69:m2:439:G:H2'	69:m2:440:G:O4'	2.06	0.56
69:m2:504:C:H2'	69:m2:505:C:C4	2.41	0.56
69:m2:643:A:H2'	69:m2:644:U:C6	2.40	0.56
69:m2:677:U:H2'	69:m2:678:C:H6	1.70	0.56
69:m2:1411:A:H2'	69:m2:1412:C:H6	1.70	0.56
69:m2:1488:A:H2'	69:m2:1489:A:H8	1.70	0.56
69:m2:1689:C:H2'	69:m2:1690:C:H6	1.69	0.56
76:t2:49:LYS:HD3	76:t2:179:LYS:HZ3	1.69	0.56
78:v2:80:ARG:HD2	78:v2:83:LEU:H	1.70	0.56
2:A2:1068:C:H42	2:A2:1082:A:H61	1.53	0.56
2:A2:2451:A:H62	62:e2:35:LYS:NZ	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4648:U:H2'	2:A2:4649:U:C6	2.40	0.56
3:A3:26:ILE:HD11	3:A3:59:LEU:HD22	1.86	0.56
6:B3:107:LEU:HA	6:B3:110:LEU:HG	1.88	0.56
69:m2:915:A:C6	76:t2:120:ARG:HG2	2.40	0.56
69:m2:1408:G:H2'	69:m2:1409:U:C6	2.41	0.56
69:m2:1519:G:H2'	69:m2:1520:C:C6	2.40	0.56
69:m2:1726:A:H2'	69:m2:1727:U:C6	2.41	0.56
2:A2:328:A:H2'	2:A2:329:A:C8	2.40	0.56
2:A2:1469:U:H2'	2:A2:1470:G:H8	1.70	0.56
2:A2:2465:C:H2'	2:A2:2467:G:H4'	1.87	0.56
2:A2:3566:C:H2'	2:A2:3567:C:H6	1.70	0.56
2:A2:4351:U:H1'	2:A2:4352:A:H5"	1.88	0.56
5:B2:112:U:H2'	5:B2:113:G:H8	1.70	0.56
11:C2:4:C:H5'	30:J2:61:ARG:HB3	1.87	0.56
19:F1:40:GLN:HG2	19:F1:44:ARG:HH12	1.71	0.56
45:Q3:15:ASN:HD22	45:Q3:20:ARG:HE	1.52	0.56
69:m2:1344:U:H4'	69:m2:1345:U:H5'	1.87	0.56
69:m2:1847:A:H2'	69:m2:1848:G:C8	2.41	0.56
69:m2:1854:C:H2'	69:m2:1855:C:C6	2.41	0.56
72:p2:136:ARG:HB2	72:p2:218:LEU:HD11	1.88	0.56
73:q2:35:SER:HB2	73:q2:51:LEU:HB3	1.87	0.56
76:t2:60:ILE:O	76:t2:92:VAL:HA	2.05	0.56
2:A2:2389:C:H2'	2:A2:2390:U:C6	2.40	0.56
2:A2:3415:A:N7	2:A2:3420:U:O4	2.39	0.56
2:A2:3929:G:H2'	2:A2:3930:C:C6	2.41	0.56
69:m2:992:A:H61	69:m2:1003:A:H61	1.53	0.56
69:m2:1595:C:H2'	69:m2:1596:A:C8	2.41	0.56
69:m2:1724:G:O6	69:m2:1814:U:O2	2.23	0.56
2:A2:952:C:H2'	2:A2:953:G:C8	2.40	0.56
2:A2:1880:C:H2'	2:A2:1881:G:C8	2.40	0.56
2:A2:2404:G:H2'	2:A2:2405:G:C8	2.41	0.56
2:A2:3807:C:H2'	2:A2:3808:G:O4'	2.05	0.56
2:A2:4356:C:H2'	2:A2:4357:A:C8	2.41	0.56
69:m2:340:G:H2'	69:m2:341:A:C8	2.40	0.56
69:m2:602:G:H2'	69:m2:603:OMG:H8	1.71	0.56
69:m2:1289:A:H62	69:m2:1314:G:N2	2.02	0.56
1:A1:212:LEU:HD21	1:A1:230:LEU:HD21	1.87	0.56
2:A2:1650:C:H2'	2:A2:1651:U:O4'	2.06	0.56
2:A2:3926:A:H2'	2:A2:3927:G:H8	1.70	0.56
10:C1:95:VAL:HG22	64:g2:82:LEU:HD13	1.87	0.56
35:L3:87:LEU:HD23	35:L3:100:LEU:HD21	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:85:A:H2'	69:m2:86:C:C6	2.41	0.56
69:m2:530:A:H2'	69:m2:531:A:H8	1.71	0.56
69:m2:1571:A:H8	69:m2:1615:G:H21	1.53	0.56
27:H3:32:ARG:HH22	27:H3:43:PHE:HB2	1.70	0.56
29:I3:132:TRP:HB3	29:I3:136:GLY:HA2	1.88	0.56
34:L2:104:ARG:HG2	34:L2:107:ARG:HH21	1.71	0.56
60:c2:23:LYS:HD2	60:c2:24:PRO:HD2	1.86	0.56
69:m2:221:U:H2'	69:m2:222:U:O4'	2.05	0.56
69:m2:1456:A:C8	82:z2:3:ARG:HG3	2.41	0.56
69:m2:1705:OMC:H2'	69:m2:1706:C:O4'	2.06	0.56
69:m2:1846:U:H2'	69:m2:1847:A:C8	2.41	0.56
1:A1:141:ASN:ND2	1:A1:234:LYS:HD3	2.21	0.56
2:A2:4236:A:H2'	2:A2:4237:U:O4'	2.06	0.56
2:A2:4515:G:H5"	22:G1:91:TRP:CE2	2.40	0.56
2:A2:196:C:H4'	48:S2:126:ARG:HG2	1.88	0.55
2:A2:2587:A:H2'	2:A2:2588:A:H8	1.72	0.55
12:C3:23:THR:HB	12:C3:113:GLU:HB3	1.87	0.55
13:D1:46:PHE:HD1	13:D1:140:THR:HA	1.71	0.55
27:H3:31:ILE:HG23	27:H3:37:ASN:HA	1.87	0.55
29:I3:87:LEU:HB2	29:I3:101:PHE:HB2	1.88	0.55
49:S3:10:PRO:HG3	49:S3:24:LEU:HD12	1.88	0.55
69:m2:115:U:H2'	69:m2:116:OMU:C6	2.36	0.55
69:m2:1283:G:H3'	69:m2:1284:A:H8	1.70	0.55
69:m2:1371:A:H2'	69:m2:1372:A:C8	2.41	0.55
69:m2:1750:G:H2'	69:m2:1751:G:H8	1.69	0.55
69:m2:1847:A:H2'	69:m2:1848:G:H8	1.70	0.55
2:A2:444:G:H2'	2:A2:445:U:H6	1.72	0.55
2:A2:3567:C:H2'	2:A2:3568:U:H6	1.71	0.55
2:A2:3573:A:H2'	2:A2:3574:G:H8	1.70	0.55
15:D3:11:LEU:HD12	15:D3:12:TYR:HD2	1.71	0.55
29:I3:133:ASN:H	29:I3:136:GLY:HA2	1.71	0.55
40:O2:80:LYS:HE2	40:O2:110:TYR:CE1	2.42	0.55
69:m2:1103:U:H2'	69:m2:1104:G:C8	2.41	0.55
78:v2:16:PHE:HZ	78:v2:78:TYR:HA	1.71	0.55
1:A1:127:VAL:HG13	1:A1:158:VAL:HG23	1.86	0.55
2:A2:146:G:H2'	2:A2:147:A:C8	2.42	0.55
2:A2:457:G:H2'	2:A2:458:C:C6	2.42	0.55
2:A2:487:C:H2'	2:A2:488:G:H8	1.72	0.55
2:A2:870:G:H5'	26:H2:130:ARG:NH1	2.21	0.55
2:A2:950:A:H2'	2:A2:951:C:H6	1.71	0.55
2:A2:2296:G:H2'	2:A2:2297:G:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4399:C:H2'	2:A2:4400:U:C6	2.42	0.55
14:D2:49:ILE:HD13	14:D2:60:LYS:HE3	1.88	0.55
26:H2:70:TYR:CE1	26:H2:75:LEU:HB2	2.41	0.55
26:H2:171:PHE:HA	26:H2:182:VAL:HG12	1.87	0.55
46:R2:119:ILE:HA	46:R2:144:TYR:HE2	1.72	0.55
69:m2:145:G:H2'	69:m2:146:G:C8	2.42	0.55
69:m2:378:A:H2'	69:m2:379:G:O4'	2.05	0.55
69:m2:525:A:H2'	69:m2:526:U:O4'	2.07	0.55
69:m2:575:U:O2	69:m2:578:A2M:H8	2.07	0.55
69:m2:866:A:H2'	69:m2:867:A:H8	1.71	0.55
69:m2:1449:G:H2'	69:m2:1450:A:C8	2.41	0.55
2:A2:744:C:H3'	2:A2:746:G:H5"	1.88	0.55
2:A2:1115:C:H2'	2:A2:1117:A:C5	2.40	0.55
2:A2:1354:U:O2	2:A2:1431:G:N2	2.28	0.55
2:A2:3260:A:H2'	2:A2:3261:C:C6	2.42	0.55
2:A2:4314:C:H1'	2:A2:4650:C:H5"	1.87	0.55
7:Bz:60:U:H2'	7:Bz:61:C:C5	2.42	0.55
69:m2:658:G:H5'	69:m2:664:G:N2	2.21	0.55
69:m2:1404:A:H2'	69:m2:1407:A:N6	2.21	0.55
73:q2:20:GLU:HG2	78:v2:59:LYS:HG3	1.89	0.55
2:A2:10:A:H2'	2:A2:11:G:C8	2.40	0.55
2:A2:2388:U:H5"	34:L2:61:ALA:HB2	1.89	0.55
2:A2:3536:G:H2'	2:A2:3537:G:C8	2.41	0.55
2:A2:3566:C:H2'	2:A2:3567:C:C6	2.41	0.55
4:B1:77:PRO:HG2	4:B1:80:ILE:HD12	1.88	0.55
28:I2:104:VAL:C	28:I2:105:LEU:HD12	2.31	0.55
29:I3:11:LEU:HB2	29:I3:307:VAL:HB	1.89	0.55
35:L3:42:GLU:HA	35:L3:45:ARG:HG2	1.87	0.55
45:Q3:25:ILE:HD11	45:Q3:60:PHE:HE1	1.70	0.55
69:m2:172:OMU:H6	69:m2:172:OMU:H5"	1.87	0.55
69:m2:322:G:H2'	69:m2:323:C:C6	2.42	0.55
69:m2:611:U:H2'	69:m2:612:G:H8	1.71	0.55
72:p2:40:ASN:HB2	72:p2:75:GLN:HE22	1.71	0.55
2:A2:1022:C:C4	2:A2:1023:C:N4	2.74	0.55
2:A2:3262:U:H2'	2:A2:3263:U:C6	2.41	0.55
2:A2:3397:C:H2'	2:A2:3398:G:H8	1.72	0.55
2:A2:4137:C:H4'	64:g2:114:LYS:NZ	2.21	0.55
18:E3:90:CYS:HA	18:E3:93:PHE:CD2	2.41	0.55
35:L3:144:ILE:HG13	35:L3:144:ILE:O	2.07	0.55
47:R3:103:HIS:HE2	69:m2:1595:C:P	2.30	0.55
68:k2:28:GLU:HG3	68:k2:31:ASN:HB2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:530:A:H2'	69:m2:531:A:C8	2.42	0.55
69:m2:1069:C:H2'	69:m2:1070:G:O4'	2.07	0.55
69:m2:1334:A:C2	69:m2:1502:G:C4	2.95	0.55
69:m2:1523:C:H5'	80:x2:127:LYS:HE3	1.89	0.55
2:A2:1263:C:H2'	2:A2:1264:G:O4'	2.07	0.55
2:A2:1727:G:H2'	2:A2:1728:C:C6	2.41	0.55
2:A2:3776:C:H5"	2:A2:3777:A:H5"	1.89	0.55
2:A2:3915:C:H2'	2:A2:3916:G:O4'	2.07	0.55
3:A3:39:ARG:HD2	6:B3:39:LEU:HD23	1.87	0.55
17:E2:215:GLU:HG2	17:E2:284:ILE:HD12	1.87	0.55
34:L2:88:ARG:O	34:L2:89:MET:HE2	2.07	0.55
45:Q3:117:VAL:HG11	45:Q3:125:VAL:HG11	1.88	0.55
58:a2:62:LYS:O	58:a2:65:MET:HG3	2.07	0.55
69:m2:346:U:H2'	69:m2:347:U:C6	2.41	0.55
69:m2:933:C:H2'	69:m2:934:G:C8	2.42	0.55
69:m2:983:A:H2'	69:m2:984:G:C8	2.42	0.55
71:o2:121:LEU:HD11	71:o2:145:ILE:HG12	1.89	0.55
73:q2:106:ARG:HG3	73:q2:175:VAL:HG22	1.88	0.55
78:v2:32:HIS:HE1	78:v2:34:GLU:HB3	1.72	0.55
2:A2:2129:A:H2'	2:A2:2130:A:H8	1.71	0.55
2:A2:3266:A:H2'	2:A2:3267:A:H8	1.72	0.55
2:A2:3378:G:H2'	2:A2:3379:A:C8	2.39	0.55
2:A2:3713:U:H2'	2:A2:3715:G:H8	1.70	0.55
15:D3:14:PRO:HG2	15:D3:23:ILE:HD12	1.89	0.55
69:m2:1283:G:C6	69:m2:1284:A:C6	2.95	0.55
2:A2:286:U:H2'	2:A2:287:U:C6	2.42	0.55
2:A2:2593:G:H2'	2:A2:2594:U:C6	2.42	0.55
2:A2:2652:G:H2'	2:A2:2653:G:H8	1.72	0.55
2:A2:4422:G:H4'	2:A2:4424:U:C4	2.41	0.55
5:B2:69:U:H2'	5:B2:70:G:C8	2.42	0.55
14:D2:120:PRO:HG3	14:D2:159:SER:HB2	1.88	0.55
29:I3:64:HIS:CG	29:I3:65:PHE:H	2.24	0.55
40:O2:65:ARG:HG3	40:O2:70:ILE:HG13	1.88	0.55
42:P2:35:LYS:HD2	42:P2:67:LYS:HE2	1.88	0.55
48:S2:85:VAL:HG12	48:S2:97:VAL:HB	1.89	0.55
69:m2:835:C:H2'	69:m2:836:C:C6	2.42	0.55
69:m2:1689:C:H2'	69:m2:1690:C:C6	2.42	0.55
74:r2:160:VAL:HG12	74:r2:172:PHE:HB2	1.89	0.55
2:A2:1317:G:H2'	2:A2:1318:C:C6	2.42	0.55
33:K3:121:ILE:HD12	33:K3:124:LEU:HD22	1.88	0.55
33:K3:137:ARG:HG2	69:m2:170:A:H5'	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1469:C:H2'	69:m2:1470:C:C6	2.41	0.55
69:m2:1682:G:H2'	69:m2:1683:U:C6	2.41	0.55
69:m2:1716:U:H2'	69:m2:1717:A:C8	2.41	0.55
2:A2:212:A:H2'	2:A2:213:G:H8	1.72	0.54
2:A2:731:C:H2'	2:A2:732:G:C8	2.42	0.54
2:A2:1579:C:H2'	2:A2:1580:C:C6	2.43	0.54
2:A2:2535:C:H2'	2:A2:2536:G:H8	1.72	0.54
2:A2:3388:A:H2'	2:A2:3389:A:C8	2.42	0.54
2:A2:4427:C:H2'	2:A2:4428:C:C6	2.42	0.54
7:Bz:26:A:H2'	7:Bz:27:G:C8	2.42	0.54
20:F2:235:LEU:HD22	20:F2:240:LEU:HD11	1.89	0.54
22:G1:24:LEU:HD11	22:G1:86:TRP:CD2	2.42	0.54
39:N3:84:LEU:HD22	39:N3:149:LEU:HD23	1.89	0.54
69:m2:153:G:H1	69:m2:165:G:N2	1.89	0.54
69:m2:1305:C:H2'	69:m2:1306:U:H6	1.71	0.54
69:m2:1410:U:H2'	69:m2:1411:A:H8	1.71	0.54
69:m2:1472:C:H2'	69:m2:1473:C:H6	1.72	0.54
69:m2:1745:G:H21	69:m2:1793:A:H62	1.52	0.54
80:x2:107:ILE:HA	80:x2:111:MET:SD	2.47	0.54
2:A2:1:C:H1'	2:A2:2:G:C8	2.42	0.54
2:A2:223:G:H4'	2:A2:225:G:N7	2.22	0.54
2:A2:1317:G:H2'	2:A2:1318:C:H6	1.72	0.54
2:A2:2294:C:H2'	2:A2:2295:C:H6	1.72	0.54
2:A2:2377:G:H2'	2:A2:2378:A:H8	1.72	0.54
2:A2:3306:C:H2'	2:A2:3307:A:C8	2.42	0.54
4:B1:165:GLU:HB2	25:H1:10:LEU:HD23	1.88	0.54
5:B2:49:A:H5"	23:G2:224:SER:HB2	1.89	0.54
11:C2:153:C:H2'	11:C2:154:G:C8	2.38	0.54
34:L2:101:ILE:HG13	34:L2:104:ARG:NH2	2.22	0.54
35:L3:124:HIS:CD2	69:m2:528:A:H5"	2.42	0.54
48:S2:72:GLN:HB3	48:S2:81:TYR:HD2	1.72	0.54
69:m2:318:G:H2'	69:m2:319:C:H6	1.72	0.54
69:m2:443:C:H2'	69:m2:444:C:C6	2.42	0.54
2:A2:7:C:H2'	2:A2:8:U:C6	2.42	0.54
2:A2:424:U:H2'	2:A2:425:U:C6	2.43	0.54
2:A2:1381:C:H2'	2:A2:1382:U:H6	1.72	0.54
2:A2:4050:C:H41	2:A2:4098:U:H3	1.55	0.54
33:K3:121:ILE:HB	33:K3:124:LEU:HB2	1.89	0.54
38:N2:18:PRO:HB2	38:N2:21:LYS:HD2	1.90	0.54
45:Q3:39:GLU:CD	45:Q3:39:GLU:H	2.15	0.54
69:m2:485:C:H2'	69:m2:486:A2M:H8	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:r2:21:ASP:HB2	74:r2:24:THR:OG1	2.07	0.54
82:z2:100:PRO:HA	82:z2:103:LYS:HZ2	1.72	0.54
2:A2:3746:C:H2'	2:A2:3747:G:O4'	2.08	0.54
42:P2:80:VAL:HG11	42:P2:132:ILE:HD13	1.88	0.54
53:V2:50:ASN:ND2	53:V2:50:ASN:O	2.39	0.54
55:X2:32:ARG:HD3	55:X2:48:GLU:HB3	1.90	0.54
59:b2:4:ILE:HD11	59:b2:53:SER:HB3	1.87	0.54
61:d2:28:HIS:CE1	61:d2:30:GLN:HB2	2.42	0.54
69:m2:187:G:H2'	69:m2:188:C:C6	2.42	0.54
2:A2:940:C:H2'	2:A2:941:C:C6	2.42	0.54
2:A2:1416:C:H2'	2:A2:1417:G:H8	1.71	0.54
2:A2:3720:U:H2'	2:A2:3721:U:C6	2.42	0.54
2:A2:4190:G:H2'	2:A2:4191:U:H6	1.72	0.54
2:A2:4703:C:H2'	2:A2:4704:A:C8	2.41	0.54
3:A3:131:VAL:HG22	69:m2:1611:C:H5"	1.90	0.54
4:B1:162:ASP:HB2	4:B1:163:PRO:HD3	1.89	0.54
7:Bz:23:A:H61	7:Bz:46:G:H1	1.54	0.54
20:F2:224:ILE:HB	20:F2:227:ILE:HD13	1.89	0.54
33:K3:18:VAL:HG13	33:K3:23:LYS:HE3	1.87	0.54
69:m2:225:C:H2'	69:m2:226:A:C8	2.41	0.54
76:t2:28:LEU:HD23	76:t2:32:MET:HE1	1.90	0.54
2:A2:288:G:H2'	2:A2:289:C:H6	1.73	0.54
2:A2:456:C:H2'	2:A2:457:G:C8	2.42	0.54
2:A2:665:C:H2'	2:A2:666:G:C8	2.40	0.54
2:A2:4155:A:H2'	2:A2:4156:C:C6	2.43	0.54
6:B3:122:LYS:HD2	6:B3:123:LEU:O	2.08	0.54
69:m2:589:A:H1'	69:m2:592:A:H1'	1.90	0.54
69:m2:1319:C:H2'	69:m2:1320:G:C8	2.43	0.54
1:A1:109:PRO:HG3	1:A1:166:TYR:CE2	2.42	0.54
2:A2:697:C:H2'	2:A2:698:C:C6	2.43	0.54
2:A2:1067:A:C6	2:A2:1082:A:C6	2.95	0.54
2:A2:3387:C:H2'	2:A2:3388:A:C8	2.43	0.54
2:A2:3607:G:H2'	2:A2:3608:A:H8	1.72	0.54
13:D1:86:HIS:HB3	13:D1:139:ARG:HG2	1.90	0.54
21:F3:40:VAL:HB	21:F3:69:VAL:HG23	1.88	0.54
22:G1:36:ALA:HB2	22:G1:52:PHE:CZ	2.43	0.54
58:a2:63:VAL:HB	58:a2:66:ARG:HH21	1.72	0.54
69:m2:496:C:N4	69:m2:511:OMG:HN22	2.05	0.54
80:x2:68:PRO:HG2	80:x2:71:GLU:HB2	1.88	0.54
2:A2:1753:G:H1	2:A2:1834:U:H3	1.54	0.54
2:A2:2275:C:H2'	2:A2:2276:G:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4190:G:H2'	2:A2:4191:U:C6	2.43	0.54
20:F2:259:LYS:HE2	20:F2:263:LEU:HD21	1.89	0.54
20:F2:289:LEU:HB3	68:k2:4:HIS:CD2	2.42	0.54
26:H2:120:PRO:HG2	26:H2:123:TYR:CZ	2.43	0.54
67:j2:23:ARG:HA	67:j2:26:VAL:HG12	1.90	0.54
69:m2:39:A:H2'	69:m2:40:A:O4'	2.08	0.54
69:m2:924:A:H2'	69:m2:925:G:O4'	2.07	0.54
69:m2:1020:U:H2'	69:m2:1021:C:H6	1.71	0.54
69:m2:1145:A:H2'	69:m2:1146:A:C8	2.43	0.54
2:A2:489:G:H2'	2:A2:490:C:C6	2.43	0.54
2:A2:4176:G:H2'	2:A2:4177:C:H6	1.73	0.54
2:A2:4294:U:H2'	2:A2:4295:G:C8	2.43	0.54
19:F1:45:ARG:HG3	19:F1:46:ILE:HG23	1.89	0.54
28:I2:8:VAL:HG12	28:I2:117:ARG:HG3	1.90	0.54
52:U2:75:LEU:HG	52:U2:113:GLY:HA2	1.90	0.54
69:m2:1005:U:H2'	69:m2:1006:U:H6	1.72	0.54
69:m2:1203:U:H2'	69:m2:1204:U:C6	2.42	0.54
69:m2:1374:U:H2'	69:m2:1375:C:C6	2.43	0.54
71:o2:127:PRO:HG2	71:o2:152:SER:HB3	1.90	0.54
76:t2:100:ILE:HD13	76:t2:125:VAL:HG21	1.90	0.54
2:A2:279:A:C5	25:H1:12:ARG:HD3	2.42	0.54
2:A2:953:G:H2'	2:A2:954:C:C6	2.43	0.54
2:A2:1632:G:H2'	2:A2:1633:G:H8	1.72	0.54
2:A2:2212:G:H2'	2:A2:2213:C:C6	2.43	0.54
2:A2:2651:G:H5"	34:L2:134:ASN:ND2	2.23	0.54
2:A2:3844:A:H2'	2:A2:3845:C:H6	1.73	0.54
2:A2:4253:U:H2'	2:A2:4254:A:H8	1.73	0.54
5:B2:63:C:H3'	13:D1:204:GLY:O	2.08	0.54
25:H1:11:TRP:HZ3	25:H1:120:TRP:HZ3	1.56	0.54
29:I3:67:SER:HB2	29:I3:109:LEU:HD12	1.90	0.54
34:L2:105:LEU:HD22	34:L2:135:LYS:HG3	1.90	0.54
38:N2:56:CYS:SG	38:N2:78:LYS:HE3	2.48	0.54
56:Y2:89:LEU:HD13	56:Y2:118:LEU:HD23	1.90	0.54
69:m2:853:C:H5"	69:m2:854:G:H5'	1.89	0.54
69:m2:1488:A:H2'	69:m2:1489:A:C8	2.43	0.54
2:A2:2028:G:H2'	2:A2:2029:C:C6	2.43	0.53
2:A2:2166:C:H2'	2:A2:2167:A:C8	2.37	0.53
2:A2:3971:C:H2'	2:A2:3972:G:H8	1.72	0.53
2:A2:4182:U:H2'	2:A2:4183:PSU:H2'	1.90	0.53
2:A2:4243:U:H2'	2:A2:4244:C:C6	2.43	0.53
7:Bz:18:G:C2	7:Bz:52:G:H5'	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:C1:23:ARG:HH11	10:C1:39:ASN:HA	1.73	0.53
20:F2:228:THR:HG21	20:F2:239:LYS:HD3	1.89	0.53
21:F3:43:ASN:HA	21:F3:66:LYS:HG3	1.91	0.53
32:K2:109:ALA:O	32:K2:113:ILE:HG13	2.08	0.53
40:O2:84:LYS:HB2	40:O2:110:TYR:HE2	1.72	0.53
41:O3:43:HIS:HB2	41:O3:55:ARG:HG3	1.91	0.53
69:m2:915:A:N6	76:t2:98:ARG:HB3	2.22	0.53
69:m2:1185:A:H2'	69:m2:1186:G:H8	1.73	0.53
69:m2:1854:C:H2'	69:m2:1855:C:H6	1.73	0.53
74:r2:126:VAL:HG22	74:r2:139:LEU:HD21	1.90	0.53
82:z2:100:PRO:HG3	82:z2:117:LEU:HD12	1.89	0.53
2:A2:677:G:H2'	2:A2:678:G:H8	1.73	0.53
2:A2:3871:A:H2'	2:A2:3872:A:C8	2.43	0.53
2:A2:3894:U:H3	2:A2:3933:A:H2	1.57	0.53
2:A2:4277:C:H2'	2:A2:4278:A:N3	2.23	0.53
13:D1:91:LEU:HD12	13:D1:135:ILE:HG23	1.89	0.53
28:I2:81:TRP:HB2	28:I2:104:VAL:HG21	1.91	0.53
69:m2:145:G:H2'	69:m2:146:G:H8	1.72	0.53
69:m2:1440:A:H2'	69:m2:1441:A:C8	2.43	0.53
71:o2:50:ASN:HD21	71:o2:53:ARG:HG3	1.74	0.53
71:o2:85:ARG:HE	71:o2:204:TYR:H	1.56	0.53
2:A2:271:C:H2'	2:A2:272:U:H6	1.74	0.53
2:A2:802:A:H2'	2:A2:803:C:C5	2.43	0.53
2:A2:1118:C:H2'	2:A2:1119:C:C6	2.44	0.53
2:A2:3452:U:H2'	2:A2:3453:C:C6	2.43	0.53
31:J3:192:LEU:HB3	31:J3:227:ARG:HB2	1.89	0.53
69:m2:339:C:H2'	69:m2:340:G:C8	2.44	0.53
69:m2:859:U:H2'	69:m2:860:A:C8	2.43	0.53
2:A2:179:G:C6	2:A2:258:G:C6	2.97	0.53
2:A2:3735:A:C4	4:B1:56:LYS:HE2	2.42	0.53
2:A2:4690:A:H2'	2:A2:4691:G:H8	1.73	0.53
6:B3:104:LEU:HD21	6:B3:121:ARG:NH1	2.23	0.53
8:Bx:50:U:H2'	8:Bx:51:U:C6	2.43	0.53
32:K2:146:ARG:HG3	32:K2:148:VAL:HG22	1.90	0.53
49:S3:33:MET:HG3	49:S3:79:PHE:HB2	1.89	0.53
69:m2:1707:C:H2'	69:m2:1708:G:C8	2.43	0.53
73:q2:114:ALA:HB3	73:q2:117:ARG:HG2	1.91	0.53
77:u2:39:GLY:O	77:u2:61:ASP:HB2	2.09	0.53
2:A2:712:G:H2'	2:A2:713:C:C6	2.43	0.53
2:A2:1171:C:H5"	20:F2:116:ASN:OD1	2.09	0.53
4:B1:138:ALA:HB2	4:B1:194:VAL:HG11	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E2:8:ALA:HB1	42:P2:48:ARG:HH12	1.74	0.53
70:n2:70:C:H2'	70:n2:71:U:C6	2.44	0.53
82:z2:44:LYS:HA	82:z2:47:ARG:HG2	1.90	0.53
1:A1:115:ILE:HD13	1:A1:269:MET:HE2	1.90	0.53
1:A1:204:PHE:HB3	1:A1:222:ARG:HG2	1.90	0.53
2:A2:164:G:H2'	2:A2:165:A:H8	1.72	0.53
2:A2:2473:U:H5"	2:A2:2474:C:H5'	1.91	0.53
2:A2:4196:A:H5"	14:D2:213:GLY:HA3	1.90	0.53
6:B3:30:VAL:HB	6:B3:34:VAL:HG11	1.91	0.53
10:C1:92:MET:HG2	10:C1:181:VAL:HA	1.89	0.53
11:C2:142:U:H2'	11:C2:143:G:O4'	2.08	0.53
15:D3:71:ARG:HA	15:D3:74:LYS:NZ	2.23	0.53
16:E1:85:LYS:HE3	16:E1:115:LEU:HB3	1.90	0.53
21:F3:70:LYS:HE3	21:F3:72:HIS:CE1	2.41	0.53
32:K2:154:LYS:HD2	32:K2:158:THR:HG21	1.90	0.53
43:P3:101:PHE:HA	43:P3:113:HIS:CE1	2.44	0.53
69:m2:1329:G:H2'	69:m2:1330:OMG:H8	1.73	0.53
2:A2:684:G:H2'	2:A2:685:C:H6	1.73	0.53
2:A2:1069:G:C5	2:A2:1070:C:H1'	2.43	0.53
2:A2:3317:G:H4'	2:A2:3318:A:H5'	1.89	0.53
2:A2:4509:U:H2'	2:A2:4510:C:H6	1.73	0.53
29:I3:195:LEU:H	29:I3:195:LEU:HD23	1.73	0.53
36:M2:29:ARG:HB2	38:N2:148:PRO:HB2	1.91	0.53
50:T2:100:VAL:HG22	50:T2:107:LYS:HA	1.90	0.53
69:m2:603:OMG:C6	69:m2:604:G:C6	2.96	0.53
69:m2:1312:U:H2'	69:m2:1313:C:C6	2.44	0.53
69:m2:1428:U:H2'	69:m2:1429:C:C6	2.44	0.53
69:m2:1675:U:H2'	69:m2:1676:G:O4'	2.08	0.53
69:m2:1807:G:H2'	69:m2:1808:A:H8	1.72	0.53
2:A2:128:C:H2'	2:A2:129:C:C6	2.43	0.53
12:C3:49:LYS:HB2	12:C3:92:HIS:HB3	1.90	0.53
17:E2:254:ILE:HG21	17:E2:268:ARG:HH12	1.74	0.53
17:E2:378:ARG:HG3	44:Q2:32:LEU:HD21	1.91	0.53
19:F1:125:ILE:HD11	59:b2:122:LYS:HE3	1.91	0.53
69:m2:400:A:C8	69:m2:1029:A:H2	2.27	0.53
69:m2:1690:C:H2'	69:m2:1691:C:H6	1.74	0.53
69:m2:1829:U:H2'	69:m2:1830:C:C6	2.43	0.53
71:o2:54:THR:HA	71:o2:162:PRO:HG2	1.90	0.53
2:A2:281:U:H2'	2:A2:282:C:H6	1.74	0.53
2:A2:1182:C:C2	48:S2:1:MET:HG2	2.44	0.53
2:A2:1714:G:N2	28:I2:87:MET:HE2	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2240:U:H2'	2:A2:2241:G:C8	2.44	0.53
2:A2:2342:A:H2'	2:A2:2343:C:C2	2.44	0.53
11:C2:141:C:H2'	11:C2:142:U:C6	2.44	0.53
18:E3:88:ASP:HA	69:m2:619:G:H4'	1.91	0.53
20:F2:31:PRO:HG3	20:F2:282:HIS:ND1	2.24	0.53
22:G1:11:ARG:HG2	22:G1:57:LEU:HD22	1.90	0.53
42:P2:112:MET:HE1	42:P2:135:ASN:HB2	1.91	0.53
69:m2:1474:C:H2'	69:m2:1475:G:O4'	2.08	0.53
71:o2:80:ARG:HH12	71:o2:126:ASP:HB2	1.73	0.53
80:x2:22:LEU:HG	80:x2:26:LEU:HD23	1.90	0.53
2:A2:207:G:H2'	2:A2:208:A:C8	2.44	0.53
2:A2:315:G:C8	52:U2:62:HIS:HB2	2.43	0.53
2:A2:1496:PSU:H2'	2:A2:1497:A:H8	1.73	0.53
2:A2:1645:A:H2'	2:A2:1646:G:C8	2.43	0.53
12:C3:56:MET:HB2	12:C3:86:LYS:HG3	1.91	0.53
20:F2:190:ARG:HH21	20:F2:199:ARG:HB3	1.74	0.53
31:J3:133:TYR:CD1	31:J3:216:MET:HA	2.44	0.53
40:O2:22:THR:O	40:O2:109:SER:HA	2.08	0.53
41:O3:98:ARG:HG3	41:O3:134:PRO:HD3	1.90	0.53
69:m2:17:C:H2'	69:m2:18:C:H6	1.74	0.53
69:m2:1084:A:H5"	69:m2:1086:A:N7	2.24	0.53
74:r2:100:ARG:HG3	74:r2:102:VAL:HG13	1.90	0.53
81:y2:38:PRO:HG2	81:y2:41:MET:HG2	1.90	0.53
2:A2:886:U:O2	2:A2:922:G:N2	2.32	0.52
2:A2:1040:C:H2'	2:A2:1041:G:H8	1.73	0.52
2:A2:1064:G:H2'	2:A2:1065:U:H5"	1.91	0.52
2:A2:1115:C:H2'	2:A2:1117:A:C4	2.44	0.52
2:A2:3583:U:H3	2:A2:3836:G:H1	1.56	0.52
13:D1:60:LEU:HD22	13:D1:160:PRO:HD2	1.91	0.52
17:E2:169:ARG:HE	17:E2:170:LEU:HD22	1.74	0.52
69:m2:1105:C:H2'	69:m2:1106:G:C8	2.44	0.52
69:m2:1245:PSU:H2'	69:m2:1246:U:O4'	2.09	0.52
69:m2:1255:A:H4'	69:m2:1256:C:H5"	1.91	0.52
74:r2:185:GLY:H	74:r2:224:ASN:HB3	1.74	0.52
76:t2:10:LYS:HD3	76:t2:21:SER:HA	1.89	0.52
2:A2:180:C:H2'	2:A2:181:C:C6	2.44	0.52
2:A2:464:G:H2'	2:A2:465:G:C8	2.44	0.52
2:A2:941:C:H2'	2:A2:942:A:H8	1.74	0.52
2:A2:4601:A:H2'	2:A2:4602:A:C8	2.43	0.52
3:A3:119:ALA:O	3:A3:123:LEU:HD12	2.09	0.52
11:C2:148:A:H2'	11:C2:149:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E2:82:PRO:HG3	17:E2:171:LEU:HD11	1.91	0.52
35:L3:134:HIS:CE1	69:m2:564:U:H5'	2.44	0.52
41:O3:95:ILE:HB	41:O3:129:ILE:HG12	1.91	0.52
69:m2:95:G:H21	69:m2:476:G:H5'	1.75	0.52
69:m2:496:C:H5"	74:r2:57:THR:OG1	2.09	0.52
69:m2:821:G:H2'	69:m2:822:U:C6	2.44	0.52
69:m2:1704:G:H2'	69:m2:1705:OMC:O4'	2.08	0.52
1:A1:248:HIS:ND1	1:A1:250:VAL:HG22	2.24	0.52
2:A2:1482:A:H4'	2:A2:1498:G:N2	2.21	0.52
4:B1:214:ALA:HA	4:B1:217:LYS:NZ	2.25	0.52
11:C2:6:C:H2'	11:C2:7:U:H6	1.74	0.52
16:E1:15:LEU:HD21	16:E1:134:LEU:HD13	1.91	0.52
34:L2:81:ARG:HG2	34:L2:88:ARG:CZ	2.40	0.52
35:L3:162:ARG:HB3	35:L3:164:PRO:HD2	1.92	0.52
38:N2:14:MET:HE1	38:N2:55:LYS:HB2	1.91	0.52
39:N3:84:LEU:HD12	39:N3:85:PRO:HD2	1.89	0.52
62:e2:12:LEU:HB3	62:e2:16:ARG:NH1	2.23	0.52
68:k2:73:PRO:HA	68:k2:76:SER:HB2	1.91	0.52
69:m2:1260:A:N1	69:m2:1665:A:H2'	2.25	0.52
69:m2:1525:C:H2'	69:m2:1526:G:H8	1.74	0.52
69:m2:1590:A:H2'	69:m2:1591:A:C8	2.44	0.52
69:m2:1630:C:H2'	69:m2:1631:C:H6	1.74	0.52
73:q2:106:ARG:HH21	73:q2:173:ARG:HB3	1.75	0.52
2:A2:422:C:H2'	2:A2:423:G:C8	2.44	0.52
2:A2:684:G:H2'	2:A2:685:C:C6	2.44	0.52
2:A2:2352:G:H2'	2:A2:2353:A:C8	2.44	0.52
26:H2:145:ARG:HE	26:H2:177:SER:C	2.17	0.52
30:J2:67:VAL:HG22	30:J2:82:ARG:HD2	1.91	0.52
69:m2:181:A:C8	69:m2:182:C:H2'	2.44	0.52
69:m2:289:U:H2'	69:m2:290:G:C8	2.45	0.52
69:m2:517:G:H5"	69:m2:518:A:OP1	2.09	0.52
69:m2:651:U:H2'	69:m2:652:A:C8	2.39	0.52
69:m2:1392:U:H2'	69:m2:1393:C:H6	1.73	0.52
76:t2:125:VAL:O	76:t2:129:ILE:HG13	2.08	0.52
2:A2:1432:G:H2'	2:A2:1433:U:O4'	2.10	0.52
2:A2:1577:A:H2'	2:A2:1578:A:H8	1.75	0.52
2:A2:2236:G:H2'	2:A2:2237:C:H6	1.75	0.52
2:A2:4531:C:H2'	2:A2:4532:U:H6	1.72	0.52
29:I3:11:LEU:HD21	29:I3:52:TYR:HD2	1.75	0.52
33:K3:33:ALA:HA	33:K3:51:ARG:HG3	1.92	0.52
43:P3:102:ILE:HG13	43:P3:113:HIS:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:b2:60:VAL:O	59:b2:64:THR:HG23	2.10	0.52
62:e2:23:VAL:HG12	62:e2:36:VAL:HG22	1.91	0.52
69:m2:456:U:H2'	69:m2:457:A:C8	2.45	0.52
69:m2:1619:G:H1'	69:m2:1663:A:H2	1.75	0.52
71:o2:103:PHE:CG	71:o2:133:PRO:HG3	2.45	0.52
71:o2:147:LEU:HD11	71:o2:174:MET:HG2	1.91	0.52
73:q2:29:LEU:HD11	73:q2:69:LEU:HD11	1.90	0.52
74:r2:136:ILE:HB	74:r2:149:TYR:HE1	1.75	0.52
76:t2:18:GLU:HG2	76:t2:19:PHE:H	1.74	0.52
2:A2:1159:G:H5"	32:K2:166:TYR:CE1	2.44	0.52
2:A2:1190:C:H3'	2:A2:1191:G:C8	2.44	0.52
2:A2:1474:C:H2'	2:A2:1475:C:H6	1.73	0.52
2:A2:1477:U:H2'	2:A2:1478:C:H6	1.73	0.52
2:A2:2130:A:H2'	2:A2:2131:A:H8	1.74	0.52
2:A2:4499:G:H2'	2:A2:4500:G:C8	2.44	0.52
4:B1:211:ASP:HB2	4:B1:214:ALA:HB3	1.91	0.52
11:C2:19:C:H2'	11:C2:20:A:C8	2.41	0.52
26:H2:210:ILE:HD13	26:H2:267:LYS:HD2	1.92	0.52
31:J3:78:LEU:HD12	31:J3:81:ILE:HD13	1.91	0.52
39:N3:119:GLU:HA	39:N3:122:ILE:HD12	1.92	0.52
65:h2:4:LYS:HZ1	69:m2:1844:4AC:H3'	1.75	0.52
69:m2:354:U:H2'	69:m2:355:OMC:C6	2.45	0.52
69:m2:814:A:C4	69:m2:815:A:C8	2.98	0.52
69:m2:832:A:C5	69:m2:847:G:C6	2.96	0.52
69:m2:1535:A:H2	69:m2:1538:G:N3	2.07	0.52
69:m2:1581:A:H4'	69:m2:1583:C:H5	1.74	0.52
71:o2:176:TRP:CG	71:o2:199:PRO:HB3	2.45	0.52
2:A2:287:U:H2'	2:A2:288:G:C8	2.45	0.52
2:A2:357:U:C2	2:A2:359:A:N7	2.78	0.52
2:A2:444:G:H2'	2:A2:445:U:C6	2.45	0.52
2:A2:1129:C:H2'	2:A2:1130:OMG:H8	1.75	0.52
2:A2:2063:A:H61	2:A2:2085:G:H1'	1.75	0.52
2:A2:2333:G:H2'	2:A2:2334:G:C8	2.45	0.52
2:A2:3263:U:H2'	2:A2:3264:A:H8	1.73	0.52
6:B3:9:VAL:HG21	6:B3:138:VAL:HG13	1.92	0.52
69:m2:849:A:H3'	69:m2:850:U:H6	1.75	0.52
69:m2:947:U:H2'	69:m2:948:U:C6	2.45	0.52
76:t2:11:PRO:HD2	76:t2:45:ILE:O	2.10	0.52
76:t2:176:VAL:O	76:t2:179:LYS:HG3	2.10	0.52
1:A1:95:ARG:HD3	2:A2:737:G:C5	2.45	0.52
2:A2:462:G:H2'	2:A2:463:A:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2122:A:C2	2:A2:2123:A:C8	2.98	0.52
2:A2:2612:A:H2'	2:A2:2613:A:O4'	2.10	0.52
2:A2:4340:C:H2'	2:A2:4341:U:C6	2.44	0.52
2:A2:4537:A:H2'	2:A2:4538:A:C8	2.45	0.52
11:C2:9:A:H2'	11:C2:10:G:C8	2.39	0.52
29:I3:20:GLN:HG2	29:I3:69:VAL:H	1.74	0.52
69:m2:297:C:H2'	69:m2:298:U:C6	2.45	0.52
69:m2:1460:G:H2'	69:m2:1461:G:H8	1.75	0.52
75:s2:50:PRO:HG2	75:s2:90:VAL:HG22	1.92	0.52
2:A2:212:A:H2'	2:A2:213:G:C8	2.44	0.52
2:A2:398:A2M:H8	2:A2:398:A2M:O5'	2.10	0.52
2:A2:1665:U:H3	2:A2:1673:A2M:H2	1.74	0.52
2:A2:1862:G:H2'	2:A2:1863:U:C6	2.45	0.52
2:A2:2032:C:H2'	2:A2:2033:G:C8	2.45	0.52
2:A2:3903:A:H2'	2:A2:3904:C:C6	2.44	0.52
18:E3:46:HIS:CD2	18:E3:103:ALA:HB2	2.45	0.52
19:F1:55:ILE:HG12	19:F1:116:ARG:HH12	1.75	0.52
40:O2:56:LEU:HD12	40:O2:61:VAL:HG13	1.90	0.52
69:m2:381:C:H2'	69:m2:382:G:C8	2.44	0.52
69:m2:513:U:C3'	69:m2:514:A2M:H8	2.40	0.52
69:m2:944:G:H2'	69:m2:945:U:C6	2.45	0.52
69:m2:1161:G:H2'	69:m2:1162:U:C6	2.44	0.52
69:m2:1448:A:O2'	69:m2:1449:G:H5"	2.09	0.52
69:m2:1530:G:H2'	69:m2:1531:C:C6	2.45	0.52
2:A2:1315:G:H1	32:K2:89:ASP:HA	1.75	0.52
2:A2:2328:A:H3'	2:A2:2329:G:H8	1.75	0.52
2:A2:2506:G:C2	2:A2:2507:G:N7	2.78	0.52
2:A2:2639:G:H2'	2:A2:2640:A:C8	2.44	0.52
2:A2:3316:C:H2'	2:A2:3338:A:H61	1.75	0.52
2:A2:3526:C:H2'	2:A2:3527:A:C8	2.45	0.52
16:E1:10:ASN:N	16:E1:11:PRO:HD2	2.25	0.52
29:I3:109:LEU:HD23	29:I3:152:SER:HB2	1.92	0.52
39:N3:26:LEU:HD21	39:N3:60:VAL:HG23	1.91	0.52
69:m2:1283:G:H3'	69:m2:1284:A:C8	2.45	0.52
69:m2:1336:G:H2'	69:m2:1337:G:C8	2.44	0.52
69:m2:1376:C:H2'	69:m2:1377:G:O4'	2.09	0.52
69:m2:1680:A2M:O2'	69:m2:1681:A:H5'	2.10	0.52
70:n2:11:C:H2'	70:n2:12:G:C8	2.45	0.52
71:o2:201:LEU:HD23	71:o2:201:LEU:H	1.74	0.52
2:A2:325:U:H2'	2:A2:326:C:C6	2.44	0.51
2:A2:1292:G:H2'	2:A2:1293:C:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1626:G:H2'	2:A2:1627:A:C8	2.46	0.51
2:A2:2525:C:H2'	2:A2:2526:G:C8	2.43	0.51
2:A2:4041:C:H2'	2:A2:4042:A:C8	2.45	0.51
6:B3:28:LEU:HD21	6:B3:53:PHE:HD2	1.75	0.51
6:B3:41:LYS:HZ2	6:B3:43:LYS:HG3	1.75	0.51
10:C1:92:MET:HE2	10:C1:179:ILE:HG22	1.90	0.51
11:C2:7:U:H2'	11:C2:8:U:C6	2.45	0.51
20:F2:134:PRO:HA	20:F2:150:LEU:HD22	1.91	0.51
31:J3:72:ASP:HB3	31:J3:74:LYS:HZ2	1.75	0.51
33:K3:94:ARG:HG2	69:m2:456:U:H5"	1.92	0.51
34:L2:15:LEU:HD13	34:L2:52:ARG:HB2	1.91	0.51
34:L2:145:LEU:HA	34:L2:148:ASP:HB2	1.92	0.51
39:N3:145:THR:HG23	39:N3:149:LEU:HD13	1.91	0.51
57:Z2:45:LYS:HA	57:Z2:107:PRO:HG2	1.91	0.51
69:m2:51:U:H2'	69:m2:52:G:C8	2.45	0.51
69:m2:1708:G:H2'	69:m2:1709:U:C6	2.45	0.51
69:m2:1724:G:H3'	69:m2:1725:G:H8	1.75	0.51
69:m2:1799:U:H2'	69:m2:1800:C:C6	2.45	0.51
81:y2:16:LYS:HG3	81:y2:17:LYS:H	1.75	0.51
81:y2:112:LEU:O	81:y2:119:LEU:HD12	2.10	0.51
2:A2:1358:G:H2'	2:A2:1359:C:C6	2.45	0.51
2:A2:2395:G:H2'	2:A2:2396:A:C8	2.45	0.51
2:A2:3804:G:H2'	2:A2:3805:C:H6	1.73	0.51
2:A2:4386:A:H2'	2:A2:4387:G:C8	2.45	0.51
7:Bz:26:A:H2'	7:Bz:27:G:H8	1.74	0.51
7:Bz:27:G:C2'	7:Bz:28:G:H5'	2.41	0.51
24:G3:14:VAL:HA	24:G3:32:VAL:HG12	1.92	0.51
25:H1:45:PRO:O	25:H1:49:ARG:HG2	2.10	0.51
31:J3:125:LYS:HG2	31:J3:143:CYS:HB2	1.92	0.51
33:K3:47:GLY:H	33:K3:116:LYS:NZ	2.08	0.51
35:L3:111:GLN:NE2	35:L3:127:ARG:HA	2.25	0.51
43:P3:42:MET:HE3	43:P3:49:GLU:HA	1.93	0.51
55:X2:29:ILE:HG22	55:X2:33:ILE:HG12	1.92	0.51
69:m2:510:A:H3'	69:m2:511:OMG:C8	2.45	0.51
69:m2:881:C:H2'	69:m2:882:G:H8	1.75	0.51
69:m2:1006:U:H2'	69:m2:1007:G:H8	1.76	0.51
69:m2:1862:A:O2'	69:m2:1864:G:H8	1.93	0.51
81:y2:49:TYR:O	81:y2:53:GLU:HB2	2.11	0.51
2:A2:1122:C:H2'	2:A2:1123:C:C6	2.44	0.51
2:A2:2131:A:H2'	2:A2:2132:C:C6	2.45	0.51
2:A2:2140:U:H2'	2:A2:2141:U:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2377:G:H2'	2:A2:2378:A:C8	2.45	0.51
2:A2:3580:C:H2'	2:A2:3581:OMU:H6	1.93	0.51
2:A2:3607:G:H2'	2:A2:3608:A:C8	2.45	0.51
2:A2:3608:A:H2'	2:A2:3609:G:H8	1.75	0.51
2:A2:4422:G:O6	2:A2:4509:U:O4	2.28	0.51
2:A2:4648:U:H2'	2:A2:4649:U:H6	1.75	0.51
3:A3:47:LYS:HZ1	6:B3:36:THR:HA	1.74	0.51
6:B3:104:LEU:HD11	6:B3:121:ARG:HD2	1.92	0.51
13:D1:181:PHE:HE1	13:D1:197:VAL:HG11	1.75	0.51
17:E2:200:ARG:HD3	17:E2:205:VAL:HG22	1.91	0.51
28:I2:166:MET:HG2	28:I2:169:ARG:HH12	1.74	0.51
30:J2:119:VAL:HG12	30:J2:146:ILE:HG12	1.92	0.51
35:L3:114:VAL:HG22	35:L3:120:ALA:HB2	1.91	0.51
69:m2:671:A:H2'	69:m2:672:A:C4	2.45	0.51
69:m2:936:G:N1	69:m2:1010:A:C2	2.71	0.51
69:m2:982:A:H2'	69:m2:983:A:C8	2.44	0.51
69:m2:1042:G:H2'	69:m2:1043:G:H8	1.76	0.51
69:m2:1391:C:C2	69:m2:1392:U:C5	2.98	0.51
69:m2:1471:A:H2'	69:m2:1472:C:C6	2.45	0.51
71:o2:76:VAL:HG23	71:o2:87:VAL:HG13	1.91	0.51
73:q2:28:GLU:HG3	78:v2:65:ARG:NH2	2.26	0.51
2:A2:821:U:H2'	2:A2:822:C:C6	2.45	0.51
2:A2:953:G:H2'	2:A2:954:C:H6	1.75	0.51
2:A2:1648:G:H2'	2:A2:1649:C:C6	2.45	0.51
2:A2:2124:U:HO2'	2:A2:2125:A:H8	1.56	0.51
2:A2:3304:A:H1'	2:A2:3441:A2M:N6	2.24	0.51
6:B3:17:ALA:HB1	6:B3:134:ILE:HD11	1.92	0.51
11:C2:65:A:C4	11:C2:66:A:C8	2.99	0.51
16:E1:77:ALA:O	16:E1:80:GLU:HG3	2.10	0.51
19:F1:40:GLN:HG2	19:F1:44:ARG:NH1	2.25	0.51
25:H1:75:VAL:HG11	25:H1:80:THR:HG22	1.92	0.51
28:I2:22:ILE:HG23	36:M2:166:ARG:HH21	1.75	0.51
33:K3:57:ASP:HA	33:K3:106:LEU:HA	1.90	0.51
33:K3:159:ARG:HG3	33:K3:173:ALA:HB2	1.92	0.51
39:N3:26:LEU:HD11	39:N3:60:VAL:HB	1.93	0.51
61:d2:72:ARG:HA	61:d2:75:ARG:HH11	1.74	0.51
69:m2:149:A:H5"	69:m2:150:A:C8	2.46	0.51
69:m2:152:U:H2'	69:m2:153:G:C8	2.45	0.51
69:m2:1229:G:C2	69:m2:1230:A:C8	2.99	0.51
69:m2:1354:G:H2'	69:m2:1355:A:H8	1.75	0.51
69:m2:1515:C:H2'	69:m2:1516:G:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1720:G:H22	69:m2:1816:G:H2'	1.75	0.51
80:x2:73:PRO:HD2	80:x2:93:MET:HE1	1.93	0.51
2:A2:79:C:H2'	2:A2:80:C:H6	1.76	0.51
2:A2:1214:G:H2'	2:A2:1215:G:H8	1.76	0.51
2:A2:1294:C:H5"	2:A2:1295:G:OP2	2.10	0.51
2:A2:3913:C:H2'	2:A2:3914:C:H6	1.76	0.51
4:B1:59:ARG:HG2	4:B1:62:ARG:HH21	1.74	0.51
35:L3:159:PHE:HA	35:L3:162:ARG:HH21	1.76	0.51
41:O3:19:PRO:HB3	72:p2:30:TRP:CD2	2.45	0.51
52:U2:71:PRO:HG2	52:U2:108:TYR:HA	1.92	0.51
69:m2:223:A:H2'	69:m2:224:U:C6	2.46	0.51
69:m2:810:A:H2	69:m2:857:G:H22	1.57	0.51
69:m2:876:G:H2'	69:m2:877:A:C8	2.35	0.51
69:m2:1388:A:H2'	69:m2:1389:G:O4'	2.11	0.51
69:m2:1739:G:H2'	69:m2:1740:C:C6	2.46	0.51
77:u2:54:LYS:HD3	77:u2:181:GLN:HA	1.93	0.51
77:u2:98:LYS:HD2	77:u2:178:ARG:HG2	1.92	0.51
2:A2:302:C:H2'	2:A2:303:C:C6	2.46	0.51
2:A2:1206:A:H2'	2:A2:1207:G:C8	2.44	0.51
2:A2:1680:G:H2'	2:A2:1681:C:C6	2.45	0.51
2:A2:3253:G:H5'	34:L2:143:HIS:NE2	2.25	0.51
2:A2:3266:A:H2'	2:A2:3267:A:C8	2.45	0.51
6:B3:104:LEU:HD11	6:B3:121:ARG:HH11	1.76	0.51
7:Bz:8:U:H5'	7:Bz:48:C:H4'	1.93	0.51
30:J2:78:TRP:HD1	30:J2:80:GLN:H	1.58	0.51
35:L3:107:GLU:HA	35:L3:112:THR:HG21	1.92	0.51
60:c2:60:LEU:HB3	60:c2:65:LYS:HB2	1.92	0.51
69:m2:1052:A:H62	69:m2:1070:G:H21	1.59	0.51
69:m2:1116:U:H3	69:m2:1121:A:H62	1.58	0.51
69:m2:1399:U:H3	81:y2:12:VAL:HA	1.76	0.51
69:m2:1683:U:H2'	69:m2:1684:C:C6	2.45	0.51
70:n2:24:U:H2'	70:n2:25:G:H8	1.75	0.51
71:o2:57:LYS:HD2	71:o2:60:LEU:HD12	1.93	0.51
2:A2:1114:G:H2'	2:A2:1115:C:C6	2.46	0.51
2:A2:2104:A:H5"	2:A2:2105:U:H5"	1.92	0.51
2:A2:2296:G:H2'	2:A2:2297:G:C8	2.46	0.51
2:A2:2577:G:H5"	34:L2:18:GLY:HA3	1.92	0.51
2:A2:4531:C:H2'	2:A2:4532:U:C6	2.46	0.51
3:A3:74:PRO:HB3	3:A3:79:ILE:HD12	1.92	0.51
21:F3:45:VAL:HG23	21:F3:50:VAL:HG12	1.92	0.51
24:G3:18:LEU:HB2	24:G3:29:GLN:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:J3:60:TRP:CE2	31:J3:62:PRO:HG3	2.46	0.51
46:R2:77:ILE:HD13	46:R2:100:VAL:HG12	1.91	0.51
47:R3:50:PHE:HE2	47:R3:87:ALA:HB2	1.75	0.51
48:S2:67:ILE:HD12	48:S2:107:THR:HG21	1.93	0.51
69:m2:1286:A:H5"	69:m2:1288:G:O4'	2.11	0.51
72:p2:62:LEU:HA	72:p2:65:ARG:HD3	1.92	0.51
73:q2:25:LEU:HD22	73:q2:29:LEU:HD13	1.92	0.51
78:v2:32:HIS:CE1	78:v2:34:GLU:HB3	2.46	0.51
2:A2:74:G:H3'	2:A2:75:G:C8	2.46	0.51
2:A2:660:G:H2'	2:A2:661:C:C6	2.45	0.51
2:A2:752:G:H2'	2:A2:753:A:C8	2.45	0.51
2:A2:878:G:H2'	2:A2:879:C:H6	1.74	0.51
2:A2:4113:C:H1'	2:A2:4168:G:N2	2.26	0.51
2:A2:4215:U:H2'	2:A2:4216:A:H8	1.76	0.51
6:B3:61:ALA:HB1	6:B3:131:LEU:HD21	1.93	0.51
7:Bz:13:C:H2'	7:Bz:14:A:O4'	2.11	0.51
13:D1:135:ILE:HG22	13:D1:136:MET:HG3	1.92	0.51
22:G1:11:ARG:HB3	22:G1:27:ILE:HD12	1.91	0.51
26:H2:168:ARG:HH21	26:H2:282:PHE:HA	1.76	0.51
34:L2:104:ARG:HG2	34:L2:107:ARG:NH2	2.26	0.51
69:m2:1065:C:H5"	69:m2:1066:C:OP2	2.11	0.51
69:m2:1790:A:H2'	69:m2:1791:G:O4'	2.11	0.51
75:s2:42:LYS:H	75:s2:45:TYR:HB2	1.76	0.51
1:A1:95:ARG:HH22	2:A2:734:C:H5"	1.75	0.51
2:A2:1354:U:O4	2:A2:1431:G:O6	2.29	0.51
2:A2:3720:U:H2'	2:A2:3721:U:H6	1.75	0.51
2:A2:4337:U:H2'	2:A2:4338:G:H8	1.76	0.51
6:B3:64:LEU:HD21	6:B3:121:ARG:HH21	1.76	0.51
10:C1:41:ILE:HD13	10:C1:69:THR:HB	1.92	0.51
28:I2:105:LEU:HD23	28:I2:109:PRO:CG	2.40	0.51
35:L3:13:TYR:HE1	35:L3:44:TRP:HE3	1.56	0.51
68:k2:17:LEU:HD21	68:k2:19:LYS:HD2	1.92	0.51
69:m2:339:C:H2'	69:m2:340:G:H8	1.75	0.51
69:m2:411:C:H2'	69:m2:412:G:C8	2.46	0.51
69:m2:519:OMC:H2'	69:m2:520:G:O4'	2.11	0.51
69:m2:835:C:C4	69:m2:836:C:N4	2.79	0.51
69:m2:960:G:H2'	69:m2:961:G:C8	2.46	0.51
69:m2:1294:C:H2'	69:m2:1295:A:O4'	2.11	0.51
69:m2:1720:G:N2	69:m2:1816:G:H2'	2.26	0.51
70:n2:8:U:H3	70:n2:14:A:H62	1.57	0.51
75:s2:107:ASN:ND2	75:s2:109:LEU:HB2	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:28:C:OP1	25:H1:190:ALA:HB2	2.10	0.51
2:A2:164:G:H2'	2:A2:165:A:C8	2.45	0.51
2:A2:467:U:H2'	2:A2:468:U:C6	2.46	0.51
2:A2:950:A:H2'	2:A2:951:C:C6	2.46	0.51
2:A2:1506:U:H2'	2:A2:1507:C:O4'	2.11	0.51
2:A2:4632:G:H2'	2:A2:4633:C:C6	2.46	0.51
7:Bz:37:A:H3'	7:Bz:38:A:H8	1.76	0.51
69:m2:611:U:H2'	69:m2:612:G:C8	2.46	0.51
71:o2:104:THR:HG23	71:o2:107:THR:OG1	2.11	0.51
72:p2:34:LYS:HB3	72:p2:97:LEU:HD13	1.93	0.51
2:A2:940:C:H2'	2:A2:941:C:H6	1.76	0.50
2:A2:1258:U:H2'	2:A2:1259:C:O4'	2.11	0.50
2:A2:2325:U:H2'	2:A2:2326:C:C6	2.46	0.50
2:A2:3417:C:H2'	2:A2:3418:U:O4'	2.10	0.50
2:A2:4035:U:H2'	2:A2:4036:U:C6	2.46	0.50
32:K2:113:ILE:HB	32:K2:120:ILE:HD11	1.92	0.50
34:L2:97:ARG:O	34:L2:101:ILE:HD12	2.11	0.50
67:j2:38:THR:HA	67:j2:45:THR:HA	1.93	0.50
69:m2:826:C:H2'	69:m2:827:A:C8	2.45	0.50
69:m2:1692:U:H2'	69:m2:1693:U:H6	1.75	0.50
73:q2:120:TYR:O	73:q2:124:ARG:HG3	2.11	0.50
81:y2:19:ALA:HA	81:y2:74:GLY:HA3	1.93	0.50
1:A1:95:ARG:HD3	2:A2:737:G:C4	2.46	0.50
2:A2:418:A:C2	11:C2:17:A:H1'	2.47	0.50
2:A2:664:C:H2'	2:A2:665:C:H6	1.75	0.50
2:A2:1195:U:H2'	2:A2:1196:G:O4'	2.11	0.50
2:A2:1315:G:N1	32:K2:89:ASP:HA	2.25	0.50
2:A2:2352:G:H2'	2:A2:2353:A:H8	1.75	0.50
2:A2:2395:G:N7	2:A2:2449:G:O6	2.43	0.50
2:A2:2504:C:H2'	2:A2:2505:G:C8	2.44	0.50
2:A2:3573:A:H2'	2:A2:3574:G:C8	2.46	0.50
2:A2:3784:C:H2'	2:A2:3785:G:C8	2.47	0.50
2:A2:3910:C:H2'	2:A2:3911:C:H6	1.75	0.50
2:A2:4030:A:O2'	2:A2:4031:A:H2'	2.12	0.50
3:A3:40:TYR:HD1	3:A3:83:PHE:HE2	1.58	0.50
6:B3:18:LEU:HD13	6:B3:134:ILE:HG21	1.93	0.50
11:C2:27:U:H2'	11:C2:28:C:C6	2.46	0.50
29:I3:251:ALA:HB2	29:I3:289:LEU:HD21	1.93	0.50
38:N2:45:MET:HE3	38:N2:47:THR:HB	1.93	0.50
47:R3:103:HIS:CE1	47:R3:104:ARG:HG2	2.46	0.50
69:m2:613:G:H2'	69:m2:614:PSU:H6	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1089:A:C5	69:m2:1863:G:C6	3.00	0.50
69:m2:1116:U:H3	69:m2:1121:A:N6	2.09	0.50
69:m2:1166:G:H3'	69:m2:1167:G:H21	1.77	0.50
69:m2:1739:G:H2'	69:m2:1740:C:H6	1.76	0.50
74:r2:137:PRO:HG2	74:r2:149:TYR:HA	1.92	0.50
2:A2:165:A:H2'	2:A2:166:C:H6	1.76	0.50
2:A2:878:G:H2'	2:A2:879:C:C6	2.46	0.50
2:A2:1244:C:H2'	2:A2:1245:G:O4'	2.10	0.50
2:A2:1893:C:C4	2:A2:1896:A:H4'	2.47	0.50
2:A2:3336:U:H5"	14:D2:54:ARG:HH21	1.76	0.50
2:A2:3608:A:H2'	2:A2:3609:G:C8	2.46	0.50
2:A2:4228:U:H2'	2:A2:4229:U:C6	2.46	0.50
2:A2:4528:C:H2'	2:A2:4529:G:H8	1.76	0.50
2:A2:4614:A:H2'	2:A2:4615:C:C6	2.46	0.50
14:D2:83:HIS:HB3	67:j2:64:VAL:HG22	1.92	0.50
29:I3:120:ILE:O	29:I3:131:LEU:HD12	2.10	0.50
47:R3:97:ILE:HD12	47:R3:111:ARG:HA	1.93	0.50
54:W2:38:ILE:HD11	54:W2:46:VAL:HG21	1.94	0.50
67:j2:51:ALA:HB3	67:j2:54:ILE:HD12	1.93	0.50
69:m2:355:OMC:HM21	69:m2:857:G:H5'	1.92	0.50
69:m2:1166:G:O2'	69:m2:1167:G:H5'	2.11	0.50
69:m2:1238:G:H2'	69:m2:1239:C:H6	1.76	0.50
69:m2:1681:A:H2'	75:s2:60:ARG:HD3	1.93	0.50
69:m2:1739:G:H1	69:m2:1799:U:H3	1.59	0.50
2:A2:491:C:H2'	2:A2:492:G:C8	2.45	0.50
2:A2:1231:C:H2'	2:A2:1232:G:O4'	2.11	0.50
2:A2:1613:G:H2'	2:A2:1614:C:H6	1.77	0.50
2:A2:2178:A:H2'	2:A2:2179:OMG:O4'	2.11	0.50
2:A2:2275:C:H5"	58:a2:33:LEU:HD22	1.93	0.50
2:A2:2387:U:H2'	2:A2:2388:U:C6	2.46	0.50
2:A2:3373:A:H3'	2:A2:3374:A2M:H8	1.93	0.50
2:A2:3864:A:H4'	2:A2:3865:A:N3	2.26	0.50
2:A2:4033:A:C6	2:A2:4034:G:N7	2.79	0.50
2:A2:4563:C:H2'	2:A2:4564:G:C8	2.46	0.50
7:Bz:48:C:H5'	7:Bz:50:U:OP2	2.10	0.50
11:C2:28:C:H2'	11:C2:29:G:H8	1.76	0.50
18:E3:13:LEU:HD12	79:w2:101:ARG:HD2	1.93	0.50
18:E3:17:ARG:NH2	69:m2:661:G:H21	2.09	0.50
19:F1:46:ILE:HD11	19:F1:51:ALA:HA	1.92	0.50
26:H2:171:PHE:CE1	26:H2:180:LEU:HD22	2.47	0.50
38:N2:43:LYS:HA	38:N2:58:HIS:CE1	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:k2:98:ARG:NH2	68:k2:107:ARG:HH12	2.09	0.50
69:m2:43:U:C4	69:m2:486:A2M:H2	2.46	0.50
69:m2:155:G:H2'	69:m2:156:G:C8	2.46	0.50
69:m2:655:A:H2'	69:m2:656:A:O4'	2.11	0.50
69:m2:1392:U:H2'	69:m2:1393:C:C6	2.45	0.50
69:m2:1547:A:H2'	69:m2:1548:G:H8	1.77	0.50
81:y2:42:ILE:HG21	81:y2:51:LEU:HD21	1.92	0.50
2:A2:2138:C:C4	2:A2:2178:A:H8	2.30	0.50
2:A2:2439:C:H2'	2:A2:2440:C:C6	2.46	0.50
2:A2:2652:G:H2'	2:A2:2653:G:C8	2.45	0.50
2:A2:3455:A:N1	42:P2:40:ILE:HB	2.27	0.50
2:A2:3931:A:H5'	2:A2:3933:A:H1'	1.94	0.50
2:A2:4627:G:H3'	2:A2:4628:A:C8	2.43	0.50
22:G1:109:ARG:NH1	26:H2:288:MET:HE3	2.27	0.50
28:I2:79:ILE:O	28:I2:83:THR:HG23	2.12	0.50
69:m2:377:U:H2'	69:m2:378:A:C8	2.47	0.50
69:m2:931:G:H2'	69:m2:932:C:O4'	2.12	0.50
69:m2:1146:A:H5'	69:m2:1357:C:H41	1.76	0.50
69:m2:1653:A:H2'	69:m2:1654:G:H8	1.77	0.50
76:t2:63:PHE:HA	76:t2:95:ILE:O	2.12	0.50
1:A1:201:LEU:HD23	1:A1:206:ILE:HD12	1.93	0.50
2:A2:1156:A:OP1	25:H1:204:ARG:HD2	2.11	0.50
2:A2:1524:C:H2'	2:A2:1525:A:C8	2.47	0.50
2:A2:4186:G:H2'	2:A2:4187:A:O4'	2.12	0.50
14:D2:98:ILE:HD13	14:D2:166:VAL:HG12	1.93	0.50
22:G1:109:ARG:HH12	26:H2:293:LEU:HG	1.76	0.50
25:H1:160:GLU:HG2	25:H1:161:MET:SD	2.52	0.50
27:H3:21:CYS:HB3	27:H3:26:ASN:H	1.77	0.50
35:L3:115:PHE:HA	35:L3:120:ALA:HB3	1.94	0.50
35:L3:134:HIS:HD2	35:L3:164:PRO:HG3	1.77	0.50
37:M3:91:LEU:HD22	69:m2:1286:A:C5	2.45	0.50
40:O2:63:ILE:HG12	40:O2:72:VAL:HG22	1.93	0.50
69:m2:976:C:H2'	69:m2:977:G:H8	1.77	0.50
69:m2:1844:4AC:O5'	69:m2:1844:4AC:H6	2.12	0.50
74:r2:220:THR:HG22	74:r2:221:ARG:O	2.12	0.50
1:A1:191:LEU:HD21	1:A1:229:PHE:HZ	1.76	0.50
2:A2:1092:C:H2'	2:A2:1093:A:O4'	2.12	0.50
2:A2:1709:A:H2'	2:A2:1710:A:C8	2.46	0.50
2:A2:2324:G:H2'	2:A2:2325:U:H6	1.75	0.50
2:A2:2366:A:H2'	2:A2:2367:G:C8	2.46	0.50
2:A2:4147:G:H2'	2:A2:4148:A:H8	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A3:47:LYS:NZ	6:B3:36:THR:HA	2.26	0.50
5:B2:18:C:H2'	5:B2:19:C:H6	1.76	0.50
17:E2:281:ASN:O	17:E2:282:LYS:HD3	2.11	0.50
20:F2:236:ASN:ND2	20:F2:238:LEU:HB2	2.27	0.50
39:N3:20:ARG:HG2	39:N3:65:PHE:CE1	2.45	0.50
69:m2:120:U:H2'	69:m2:121:OMU:O4'	2.12	0.50
69:m2:1311:C:H2'	69:m2:1312:U:C6	2.47	0.50
72:p2:140:VAL:HG22	72:p2:213:ARG:HB3	1.94	0.50
2:A2:271:C:H2'	2:A2:272:U:C6	2.46	0.50
2:A2:356:G:H21	11:C2:24:G:H21	1.57	0.50
2:A2:448:G:H2'	2:A2:450:G:O4'	2.12	0.50
2:A2:1080:C:H2'	2:A2:1081:G:C8	2.47	0.50
2:A2:1347:A2M:HM'1	61:d2:11:ARG:HG2	1.94	0.50
2:A2:2222:U:H4'	2:A2:2223:U:H5'	1.92	0.50
7:Bz:34:G:H2'	7:Bz:35:A:C8	2.47	0.50
17:E2:258:HIS:HB3	17:E2:259:PRO:HD3	1.94	0.50
17:E2:383:GLU:HA	17:E2:386:LYS:HZ3	1.77	0.50
19:F1:65:ARG:HG2	19:F1:66:TYR:CD1	2.46	0.50
69:m2:1015:U:H2'	69:m2:1016:G:H8	1.77	0.50
69:m2:1726:A:H2'	69:m2:1727:U:H6	1.77	0.50
70:n2:2:G:H2'	70:n2:3:C:C6	2.47	0.50
73:q2:93:THR:HG21	73:q2:96:LEU:HB2	1.92	0.50
73:q2:167:TYR:CE2	73:q2:204:LEU:HD23	2.47	0.50
75:s2:28:VAL:HA	75:s2:110:GLN:HE21	1.76	0.50
81:y2:44:PRO:HD2	81:y2:81:ILE:HD11	1.94	0.50
82:z2:57:LEU:O	82:z2:61:ILE:HD12	2.12	0.50
2:A2:1629:C:H2'	2:A2:1630:C:H6	1.77	0.50
2:A2:2477:G:H2'	2:A2:2478:U:O4'	2.10	0.50
2:A2:3926:A:H2'	2:A2:3927:G:C8	2.47	0.50
7:Bz:18:G:H1	7:Bz:53:G:P	2.34	0.50
31:J3:191:VAL:HG11	31:J3:236:PHE:HD1	1.76	0.50
69:m2:520:G:H2'	69:m2:521:A:H8	1.77	0.50
69:m2:879:C:H2'	69:m2:880:G:C8	2.47	0.50
69:m2:945:U:C2	69:m2:946:A:C8	3.00	0.50
69:m2:1204:U:H2'	69:m2:1205:G:C8	2.47	0.50
69:m2:1353:G:C6	69:m2:1354:G:N7	2.80	0.50
2:A2:1173:G:H5'	20:F2:114:ARG:HD3	1.93	0.49
2:A2:1893:C:H4'	2:A2:1894:G:H5'	1.94	0.49
2:A2:1894:G:H2'	2:A2:2017:G:N7	2.27	0.49
2:A2:2511:G:H2'	2:A2:2512:A:C8	2.47	0.49
10:C1:113:GLU:HG2	10:C1:125:ARG:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F2:143:ARG:HB2	20:F2:179:ASP:OD1	2.12	0.49
21:F3:66:LYS:HD2	21:F3:68:TYR:HE1	1.77	0.49
31:J3:101:SER:O	31:J3:132:ASP:HA	2.12	0.49
34:L2:160:GLU:HG2	34:L2:163:ARG:HH12	1.77	0.49
35:L3:46:VAL:O	35:L3:49:THR:HG22	2.11	0.49
43:P3:69:LEU:HD21	43:P3:72:CYS:HB3	1.94	0.49
69:m2:179:C:H2'	69:m2:180:G:O4'	2.12	0.49
69:m2:356:U:H2'	69:m2:357:G:H8	1.77	0.49
69:m2:563:A:H2'	69:m2:564:U:C6	2.47	0.49
69:m2:813:A:C4	69:m2:814:A:C8	3.00	0.49
69:m2:976:C:H2'	69:m2:977:G:C8	2.47	0.49
69:m2:1329:G:H2'	69:m2:1330:OMG:C8	2.47	0.49
69:m2:1471:A:H2'	69:m2:1472:C:H6	1.77	0.49
72:p2:97:LEU:HD12	72:p2:232:HIS:ND1	2.27	0.49
2:A2:1118:C:H2'	2:A2:1119:C:H6	1.76	0.49
2:A2:1164:C:H2'	2:A2:1165:G:H8	1.76	0.49
2:A2:2108:U:H2'	2:A2:2109:G:C8	2.47	0.49
3:A3:82:TRP:CG	69:m2:1569:G:C6	3.00	0.49
5:B2:18:C:H2'	5:B2:19:C:C6	2.47	0.49
11:C2:55:U:C2	11:C2:56:G:C8	3.00	0.49
23:G2:208:MET:HE1	23:G2:226:TYR:CE1	2.47	0.49
31:J3:204:ILE:HG13	31:J3:204:ILE:O	2.12	0.49
69:m2:1503:C:H2'	69:m2:1504:C:C6	2.47	0.49
70:n2:8:U:O4	70:n2:14:A:N7	2.45	0.49
70:n2:68:U:H2'	70:n2:69:G:C8	2.46	0.49
74:r2:48:LEU:HD23	74:r2:52:LEU:HD12	1.95	0.49
75:s2:108:PRO:HA	75:s2:111:VAL:HB	1.94	0.49
2:A2:1228:G:H2'	2:A2:1229:C:C6	2.47	0.49
2:A2:3292:C:H5	2:A2:3308:A:H2	1.61	0.49
2:A2:4138:C:H2'	2:A2:4139:A:O4'	2.12	0.49
2:A2:4201:G:H2'	2:A2:4202:G:C8	2.45	0.49
5:B2:102:U:H3'	5:B2:103:A:H8	1.78	0.49
11:C2:6:C:H2'	11:C2:7:U:C6	2.46	0.49
17:E2:122:TRP:CH2	17:E2:127:LYS:HG2	2.48	0.49
33:K3:134:GLY:HA3	33:K3:158:VAL:HG11	1.93	0.49
35:L3:21:GLU:O	35:L3:25:LEU:HG	2.13	0.49
36:M2:30:MET:HE1	36:M2:47:PHE:CB	2.42	0.49
39:N3:47:PRO:HA	39:N3:50:ILE:HD12	1.94	0.49
69:m2:151:C:N3	69:m2:168:C:N4	2.61	0.49
69:m2:456:U:H2'	69:m2:457:A:H8	1.77	0.49
69:m2:575:U:H3	69:m2:577:A:H3'	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1206:A:H2'	69:m2:1207:C:H6	1.77	0.49
69:m2:1673:G:H2'	69:m2:1674:U:H6	1.77	0.49
72:p2:28:LYS:HA	72:p2:49:VAL:O	2.12	0.49
72:p2:62:LEU:HD13	72:p2:65:ARG:HH11	1.77	0.49
76:t2:50:GLU:HB2	76:t2:60:ILE:HG12	1.93	0.49
79:w2:35:ARG:NH2	79:w2:53:GLY:HA3	2.28	0.49
79:w2:147:LYS:HG2	79:w2:149:ALA:H	1.77	0.49
2:A2:161:G:H2'	2:A2:162:A:H8	1.77	0.49
2:A2:677:G:H2'	2:A2:678:G:C8	2.47	0.49
2:A2:1381:C:H2'	2:A2:1382:U:C6	2.47	0.49
2:A2:4165:A:H2'	2:A2:4166:G:C8	2.47	0.49
69:m2:1206:A:H2'	69:m2:1207:C:C6	2.46	0.49
69:m2:1340:G:H2'	69:m2:1341:U:C6	2.46	0.49
69:m2:1645:U:H2'	69:m2:1646:C:C6	2.47	0.49
72:p2:101:HIS:O	72:p2:217:MET:HG2	2.12	0.49
74:r2:17:HIS:HA	74:r2:108:ARG:HG2	1.94	0.49
82:z2:41:ILE:HD13	82:z2:50:ILE:HD12	1.94	0.49
2:A2:1214:G:H2'	2:A2:1215:G:C8	2.48	0.49
2:A2:1322:C:H2'	2:A2:1323:G:C8	2.44	0.49
2:A2:2118:A2M:H8	2:A2:2118:A2M:O5'	2.13	0.49
2:A2:2616:OMC:H2'	2:A2:2617:G:O4'	2.12	0.49
2:A2:3356:C:H2'	2:A2:3402:A:H61	1.77	0.49
2:A2:4215:U:H2'	2:A2:4216:A:C8	2.47	0.49
2:A2:4229:U:H2'	2:A2:4230:G:C8	2.48	0.49
2:A2:4385:C:H3'	2:A2:4386:A:H5"	1.93	0.49
2:A2:4509:U:H2'	2:A2:4510:C:C6	2.46	0.49
5:B2:19:C:H2'	5:B2:20:U:C6	2.48	0.49
20:F2:76:ILE:HD12	20:F2:77:PRO:HD2	1.95	0.49
21:F3:37:LYS:HG2	21:F3:72:HIS:ND1	2.28	0.49
23:G2:204:VAL:HG12	23:G2:208:MET:HE3	1.94	0.49
25:H1:60:VAL:HG23	25:H1:134:LEU:HB2	1.94	0.49
39:N3:70:LYS:HD3	39:N3:73:ARG:HE	1.77	0.49
45:Q3:13:MET:HE1	74:r2:52:LEU:O	2.13	0.49
59:b2:17:LEU:HB3	59:b2:61:ILE:HD11	1.94	0.49
69:m2:67:C:H1'	69:m2:69:C:OP2	2.12	0.49
69:m2:500:C:H2'	69:m2:501:G:C8	2.46	0.49
69:m2:650:A:H2'	69:m2:651:U:C6	2.46	0.49
69:m2:675:G:H2'	69:m2:676:C:C6	2.48	0.49
69:m2:1008:C:H2'	69:m2:1009:C:C6	2.48	0.49
69:m2:1378:A:C2	69:m2:1379:U:H1'	2.46	0.49
69:m2:1506:U:H2'	69:m2:1507:U:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1695:G:H2'	69:m2:1696:U:C6	2.47	0.49
69:m2:1743:U:H2'	69:m2:1744:C:O4'	2.13	0.49
69:m2:1800:C:H2'	69:m2:1801:G:O4'	2.11	0.49
71:o2:42:LYS:HE3	71:o2:48:ILE:HD11	1.94	0.49
74:r2:17:HIS:HB2	74:r2:18:TRP:CD1	2.48	0.49
2:A2:1164:C:H2'	2:A2:1165:G:C8	2.47	0.49
2:A2:1665:U:H3	2:A2:1673:A2M:C2	2.24	0.49
2:A2:2022:U:C6	2:A2:2025:G:H4'	2.48	0.49
2:A2:2028:G:H2'	2:A2:2029:C:H6	1.78	0.49
2:A2:2279:U:H3	2:A2:2284:A:H2	1.61	0.49
2:A2:2294:C:H2'	2:A2:2295:C:C6	2.46	0.49
2:A2:2566:G:H2'	2:A2:2568:A:H2	1.76	0.49
2:A2:2601:G:H21	42:P2:21:PRO:HG3	1.77	0.49
32:K2:49:LYS:O	32:K2:53:MET:HG3	2.13	0.49
34:L2:136:ARG:HA	34:L2:139:MET:HE3	1.94	0.49
35:L3:160:SER:H	35:L3:162:ARG:NH2	2.10	0.49
69:m2:435:A:H5"	77:u2:25:ARG:HH21	1.76	0.49
69:m2:457:A:H2'	69:m2:458:C:H6	1.77	0.49
69:m2:913:C:H2'	69:m2:914:C:C6	2.48	0.49
69:m2:946:A:H2'	69:m2:947:U:H6	1.77	0.49
69:m2:1489:A:H2'	69:m2:1490:C:C6	2.48	0.49
69:m2:1499:G:H22	78:v2:55:ARG:HB3	1.78	0.49
75:s2:48:TYR:HE1	81:y2:57:LEU:HD21	1.77	0.49
82:z2:17:ILE:HD11	82:z2:54:VAL:HA	1.93	0.49
2:A2:270:U:H2'	2:A2:271:C:C6	2.48	0.49
2:A2:283:G:H1'	60:c2:82:ARG:HH12	1.77	0.49
2:A2:377:A:H2'	2:A2:378:A:O4'	2.13	0.49
2:A2:1279:G:H2'	2:A2:1280:C:H6	1.77	0.49
2:A2:3860:U:H2'	2:A2:3861:G:C8	2.48	0.49
2:A2:4160:C:N3	2:A2:4164:U:H5	2.11	0.49
8:Bx:49:U:HO2'	8:Bx:50:U:H6	1.59	0.49
22:G1:128:LYS:HD2	22:G1:132:ARG:HH21	1.77	0.49
33:K3:215:LYS:HA	33:K3:218:LYS:HG2	1.93	0.49
48:S2:56:GLN:HB3	48:S2:67:ILE:HD13	1.95	0.49
59:b2:88:THR:HB	59:b2:91:MET:HB2	1.95	0.49
69:m2:1060:A:H2'	69:m2:1061:G:C8	2.48	0.49
69:m2:1261:A:H62	69:m2:1520:C:H3'	1.78	0.49
80:x2:49:LEU:HD11	80:x2:52:LYS:HE3	1.94	0.49
2:A2:243:A:H2'	2:A2:244:G:O4'	2.11	0.49
2:A2:768:G:H2'	2:A2:769:G:C8	2.47	0.49
2:A2:1160:C:H2'	2:A2:1161:G:H8	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2137:A:O2'	2:A2:2138:C:H5'	2.12	0.49
2:A2:2482:C:H2'	2:A2:2483:U:C6	2.47	0.49
2:A2:3264:A:H2'	2:A2:3265:G:H8	1.78	0.49
2:A2:3344:U:H2'	2:A2:3345:G:C8	2.46	0.49
2:A2:3435:A:C2	2:A2:3436:G:H1'	2.48	0.49
2:A2:3475:G:H2'	2:A2:3476:G:C8	2.48	0.49
2:A2:4173:U:H1'	17:E2:253:CYS:SG	2.52	0.49
2:A2:4311:G:H2'	2:A2:4312:G:C8	2.48	0.49
2:A2:4375:A:H2'	2:A2:4376:A:C8	2.48	0.49
2:A2:4674:G:H2'	2:A2:4675:C:H6	1.77	0.49
6:B3:31:PRO:O	6:B3:34:VAL:HG12	2.13	0.49
17:E2:393:LYS:HA	17:E2:396:ARG:HD3	1.94	0.49
20:F2:169:GLN:OE1	20:F2:173:LYS:HE3	2.12	0.49
29:I3:7:LEU:HA	29:I3:309:VAL:O	2.13	0.49
29:I3:45:LEU:HG	29:I3:47:ARG:HD3	1.95	0.49
69:m2:435:A:H5"	77:u2:25:ARG:NH2	2.28	0.49
71:o2:50:ASN:HA	82:z2:105:MET:SD	2.52	0.49
74:r2:184:ILE:HD13	74:r2:226:PHE:HE1	1.77	0.49
2:A2:720:C:H2'	2:A2:721:G:C8	2.47	0.49
2:A2:1881:G:H2'	2:A2:1882:U:C6	2.48	0.49
2:A2:3412:A:N1	2:A2:3425:C:N3	2.61	0.49
2:A2:4142:C:H2'	2:A2:4143:G:H8	1.77	0.49
2:A2:4552:G:C5	2:A2:4559:G:C6	3.01	0.49
2:A2:4656:U:H2'	2:A2:4657:A:C8	2.48	0.49
4:B1:78:PRO:HD3	4:B1:237:TRP:CE2	2.47	0.49
21:F3:65:PRO:HG3	41:O3:129:ILE:HB	1.95	0.49
39:N3:17:PRO:HG3	69:m2:1018:U:C2	2.48	0.49
69:m2:447:A:H5"	77:u2:51:GLY:CA	2.42	0.49
69:m2:1306:U:H2'	69:m2:1307:C:C6	2.47	0.49
69:m2:1601:U:C4	75:s2:166:ILE:HA	2.48	0.49
80:x2:85:ILE:HD13	80:x2:111:MET:HB3	1.95	0.49
2:A2:311:G:H2'	2:A2:312:G:H8	1.77	0.49
2:A2:4294:U:C2	2:A2:4295:G:C8	3.01	0.49
3:A3:133:GLY:HA3	69:m2:1625:A:H5"	1.94	0.49
4:B1:244:PRO:HA	4:B1:247:VAL:HG22	1.94	0.49
21:F3:68:TYR:HE2	72:p2:112:SER:HB2	1.78	0.49
23:G2:207:TYR:HE2	23:G2:222:GLN:HG2	1.77	0.49
28:I2:12:ARG:HB2	28:I2:37:ARG:HD2	1.95	0.49
29:I3:77:PHE:CG	29:I3:89:LEU:HD21	2.47	0.49
30:J2:94:MET:SD	30:J2:148:MET:HE3	2.53	0.49
34:L2:99:MET:HB3	34:L2:103:ARG:HE	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:435:A:H2'	69:m2:436:G:C8	2.48	0.49
69:m2:867:A:H2'	69:m2:868:U:C6	2.48	0.49
69:m2:1319:C:H2'	69:m2:1320:G:H8	1.78	0.49
69:m2:1716:U:H2'	69:m2:1717:A:H8	1.77	0.49
69:m2:1744:C:H2'	69:m2:1745:G:O4'	2.13	0.49
74:r2:94:LYS:HD3	74:r2:94:LYS:C	2.38	0.49
77:u2:84:ASN:HD22	77:u2:90:LEU:HB2	1.78	0.49
78:v2:49:MET:HB3	78:v2:55:ARG:HH22	1.77	0.49
2:A2:1120:C:H2'	2:A2:1121:A:C8	2.41	0.48
2:A2:1823:G:H2'	2:A2:1824:C:C6	2.48	0.48
2:A2:2371:C:C2	2:A2:2477:G:N2	2.81	0.48
2:A2:3383:A:H2'	2:A2:3384:A:C8	2.48	0.48
2:A2:4199:C:H2'	2:A2:4201:G:C8	2.48	0.48
2:A2:4314:C:H2'	2:A2:4315:G:O4'	2.12	0.48
7:Bz:27:G:H2'	7:Bz:28:G:H5'	1.95	0.48
26:H2:183:THR:HG21	26:H2:260:VAL:HG11	1.95	0.48
69:m2:190:G:N2	69:m2:192:C:H42	2.10	0.48
69:m2:313:C:H5'	69:m2:314:G:H4'	1.95	0.48
69:m2:833:G:H2'	69:m2:834:G:C8	2.47	0.48
69:m2:1551:U:H2'	69:m2:1552:G:C8	2.47	0.48
70:n2:29:G:H2'	70:n2:30:G:H8	1.78	0.48
75:s2:41:VAL:O	75:s2:42:LYS:HE2	2.13	0.48
75:s2:78:MET:HE3	75:s2:79:HIS:CE1	2.48	0.48
81:y2:16:LYS:HB3	81:y2:19:ALA:HB3	1.94	0.48
2:A2:821:U:H2'	2:A2:822:C:H6	1.79	0.48
2:A2:2212:G:H2'	2:A2:2213:C:H6	1.78	0.48
2:A2:3891:A:H2'	2:A2:3892:G:C8	2.48	0.48
11:C2:128:C:H2'	11:C2:129:C:H6	1.78	0.48
17:E2:369:ASP:HA	17:E2:380:GLN:HE22	1.78	0.48
19:F1:182:LEU:HD23	60:c2:7:MET:HE3	1.95	0.48
20:F2:94:ASN:HB3	20:F2:100:ARG:NH1	2.28	0.48
25:H1:16:SER:HB2	60:c2:48:CYS:HB3	1.94	0.48
29:I3:64:HIS:CD2	29:I3:65:PHE:H	2.31	0.48
31:J3:86:LEU:HD22	31:J3:266:TYR:HE2	1.78	0.48
35:L3:169:ARG:HG2	35:L3:173:VAL:HB	1.95	0.48
36:M2:162:GLN:HG3	36:M2:163:HIS:ND1	2.27	0.48
47:R3:101:SER:O	47:R3:108:ILE:HG22	2.13	0.48
48:S2:50:ARG:HD2	48:S2:115:ARG:HH11	1.79	0.48
69:m2:13:C:H1'	69:m2:1358:G:N2	2.28	0.48
69:m2:121:OMU:H2'	69:m2:122:G:H8	1.78	0.48
69:m2:1504:C:H2'	69:m2:1505:C:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1522:G:H5”	69:m2:1523:C:OP2	2.12	0.48
69:m2:1562:U:H2’	69:m2:1563:G:H8	1.78	0.48
71:o2:183:LEU:HB2	71:o2:195:TRP:CH2	2.44	0.48
81:y2:51:LEU:HD23	81:y2:51:LEU:H	1.78	0.48
82:z2:5:ARG:HH11	82:z2:53:TYR:HD1	1.60	0.48
2:A2:9:C:H2’	2:A2:10:A:H8	1.77	0.48
2:A2:35:U:H4’	2:A2:1338:A:N1	2.28	0.48
2:A2:1562:G:H2’	2:A2:1563:G:C8	2.48	0.48
2:A2:2312:G:H1	2:A2:2325:U:H3	1.61	0.48
2:A2:3366:G:H5’	2:A2:3367:A:OP2	2.12	0.48
2:A2:3527:A:H2’	2:A2:3528:A:C8	2.49	0.48
2:A2:4162:A:C2	2:A2:4244:C:H4’	2.48	0.48
2:A2:4165:A:H2’	2:A2:4166:G:H8	1.79	0.48
20:F2:8:ILE:HD11	20:F2:257:PHE:CE2	2.48	0.48
26:H2:290:PRO:HG2	57:Z2:7:CYS:SG	2.54	0.48
31:J3:267:GLN:HA	31:J3:270:THR:HB	1.95	0.48
35:L3:48:PHE:CE2	35:L3:52:LYS:HD2	2.48	0.48
40:O2:40:GLU:O	40:O2:44:GLN:HG3	2.13	0.48
45:Q3:79:LEU:HA	45:Q3:82:ALA:HB3	1.94	0.48
66:i2:61:LYS:HD2	66:i2:87:ARG:NH1	2.23	0.48
69:m2:1322:G:H2’	69:m2:1323:G:O4’	2.12	0.48
69:m2:1543:G:H2’	69:m2:1544:C:C6	2.49	0.48
69:m2:1722:U:H5”	69:m2:1723:G:OP2	2.13	0.48
76:t2:66:VAL:HA	76:t2:69:LEU:HB2	1.96	0.48
80:x2:49:LEU:HD23	80:x2:53:GLN:HG3	1.93	0.48
2:A2:432:U:H4’	2:A2:433:A:H5”	1.94	0.48
2:A2:764:G:H2’	2:A2:765:G:C8	2.48	0.48
2:A2:855:G:O6	2:A2:1098:G:H3’	2.13	0.48
2:A2:941:C:H2’	2:A2:942:A:C8	2.47	0.48
2:A2:2514:G:H2’	2:A2:2515:G:C4	2.47	0.48
2:A2:4622:U:C6	17:E2:342:LYS:HE2	2.48	0.48
5:B2:16:A:H2’	5:B2:17:C:C6	2.47	0.48
5:B2:107:G:H2’	5:B2:108:G:H8	1.79	0.48
7:Bz:23:A:H61	7:Bz:46:G:H22	1.59	0.48
17:E2:226:LYS:HB2	17:E2:272:LYS:HB3	1.95	0.48
17:E2:365:LEU:HD13	17:E2:368:ILE:HD11	1.94	0.48
18:E3:49:GLY:HA2	18:E3:75:ILE:HG12	1.95	0.48
20:F2:336:ARG:HA	20:F2:339:THR:HG22	1.94	0.48
29:I3:133:ASN:HB2	29:I3:138:CYS:SG	2.53	0.48
45:Q3:33:ALA:HB2	69:m2:584:U:H1’	1.95	0.48
67:j2:70:THR:HG23	67:j2:72:ASN:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:535:A:H2'	69:m2:536:G:H8	1.77	0.48
69:m2:808:U:H2'	69:m2:809:G:C8	2.48	0.48
76:t2:66:VAL:N	76:t2:67:PRO:HD2	2.26	0.48
2:A2:165:A:H2'	2:A2:166:C:C6	2.49	0.48
2:A2:389:A:H1'	48:S2:90:ALA:O	2.12	0.48
2:A2:3451:A:H2'	2:A2:3452:U:C6	2.48	0.48
2:A2:4109:U:H1'	17:E2:252:ALA:HB3	1.95	0.48
2:A2:4332:G:H2'	2:A2:4333:A:H8	1.78	0.48
7:Bz:28:G:C2	7:Bz:29:G:C6	3.02	0.48
7:Bz:36:A:C4	7:Bz:37:A:C8	3.01	0.48
31:J3:166:ARG:HH22	31:J3:252:THR:HG23	1.76	0.48
35:L3:50:LEU:HD12	35:L3:53:ILE:HD11	1.94	0.48
55:X2:37:GLY:O	55:X2:41:ARG:HG3	2.13	0.48
69:m2:60:A:H2'	69:m2:61:A:C8	2.49	0.48
69:m2:830:G:H2'	69:m2:831:C:O4'	2.14	0.48
69:m2:1690:C:H2'	69:m2:1691:C:C6	2.48	0.48
70:n2:72:A:H2'	70:n2:73:C:C6	2.48	0.48
77:u2:190:LEU:HD23	77:u2:195:LEU:HA	1.96	0.48
79:w2:35:ARG:CZ	79:w2:53:GLY:HA3	2.43	0.48
1:A1:258:ARG:HD3	1:A1:261:GLN:HB2	1.94	0.48
2:A2:171:U:H4'	2:A2:172:C:H5'	1.95	0.48
2:A2:272:U:H2'	2:A2:273:U:C6	2.49	0.48
2:A2:284:G:H2'	2:A2:285:G:H8	1.78	0.48
2:A2:2378:A:H62	40:O2:81:ARG:HH22	1.61	0.48
2:A2:2559:OMC:H2'	2:A2:2560:C:H6	1.77	0.48
2:A2:3742:G:C2	2:A2:3810:C:C2	3.01	0.48
2:A2:4044:OMG:H2'	2:A2:4099:5MC:HM51	1.94	0.48
2:A2:4613:A:H2'	2:A2:4614:A:H8	1.77	0.48
3:A3:8:LYS:HD3	3:A3:58:GLU:HA	1.96	0.48
18:E3:67:ARG:NH2	69:m2:620:C:H41	2.12	0.48
20:F2:137:VAL:HG21	20:F2:150:LEU:HD11	1.95	0.48
27:H3:32:ARG:NH2	27:H3:38:MET:HB2	2.28	0.48
33:K3:145:PHE:CD2	33:K3:156:TYR:HB3	2.49	0.48
34:L2:134:ASN:HB3	34:L2:137:ILE:HG12	1.96	0.48
69:m2:62:G:O5'	69:m2:62:G:H8	1.97	0.48
69:m2:1203:U:C2	69:m2:1204:U:C5	3.02	0.48
69:m2:1524:A:C4	80:x2:129:GLY:HA2	2.48	0.48
69:m2:1630:C:H2'	69:m2:1631:C:C6	2.48	0.48
78:v2:52:LEU:HA	78:v2:67:PHE:HB2	1.95	0.48
2:A2:90:G:H1'	2:A2:94:A:H61	1.79	0.48
2:A2:712:G:H2'	2:A2:713:C:H6	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1318:C:H2'	2:A2:1319:G:H8	1.78	0.48
2:A2:1333:C:H4'	20:F2:94:ASN:ND2	2.27	0.48
2:A2:1619:U:H3'	2:A2:1620:G:H21	1.79	0.48
2:A2:1619:U:H3'	2:A2:1620:G:N2	2.27	0.48
2:A2:1767:G:H2'	2:A2:1768:C:C6	2.48	0.48
2:A2:2205:G:H2'	2:A2:2206:A:C8	2.49	0.48
2:A2:3426:U:H2'	2:A2:3427:C:H6	1.79	0.48
2:A2:3583:U:H2'	2:A2:3584:A:C8	2.49	0.48
2:A2:4086:C:H2'	2:A2:4087:U:C6	2.49	0.48
3:A3:33:ILE:HG21	3:A3:99:LEU:HD23	1.94	0.48
5:B2:2:U:H3	5:B2:117:G:H1	1.62	0.48
5:B2:64:G:H2'	5:B2:65:G:H8	1.79	0.48
7:Bz:23:A:N6	7:Bz:46:G:H22	2.12	0.48
12:C3:51:LYS:HE3	69:m2:1404:A:H4'	1.94	0.48
35:L3:132:GLN:HB3	35:L3:134:HIS:CE1	2.49	0.48
68:k2:6:GLN:O	68:k2:10:VAL:HG22	2.13	0.48
69:m2:499:C:H2'	69:m2:500:C:C6	2.49	0.48
69:m2:579:U:H2'	69:m2:580:C:H6	1.78	0.48
69:m2:872:A:N6	69:m2:918:A:H5'	2.28	0.48
69:m2:1162:U:H2'	69:m2:1163:U:H6	1.78	0.48
2:A2:173:C:H2'	2:A2:174:C:C6	2.48	0.48
2:A2:460:C:H2'	2:A2:461:G:C8	2.49	0.48
2:A2:475:G:H2'	2:A2:476:G:C8	2.49	0.48
2:A2:2083:G:H2'	2:A2:2084:U:H6	1.76	0.48
2:A2:2366:A:H5'	2:A2:2443:G:H4'	1.96	0.48
2:A2:2536:G:OP1	46:R2:128:ILE:HG21	2.14	0.48
2:A2:3721:U:H2'	2:A2:3722:C:C6	2.48	0.48
2:A2:4074:A:H2'	2:A2:4075:U:O4'	2.12	0.48
5:B2:80:U:C2	5:B2:81:G:C8	3.02	0.48
7:Bz:29:G:C6	7:Bz:30:G:C5	3.02	0.48
11:C2:27:U:H2'	11:C2:28:C:H6	1.79	0.48
14:D2:54:ARG:HH11	14:D2:58:LEU:HD21	1.78	0.48
14:D2:177:LYS:HB2	67:j2:29:ILE:HG21	1.96	0.48
69:m2:176:U:H2'	69:m2:177:G:C8	2.49	0.48
69:m2:1407:A:H2'	69:m2:1408:G:O4'	2.14	0.48
71:o2:148:CYS:SG	71:o2:163:CYS:N	2.87	0.48
72:p2:106:THR:HG23	72:p2:109:LYS:H	1.79	0.48
81:y2:16:LYS:HD2	81:y2:16:LYS:HA	1.72	0.48
2:A2:487:C:H2'	2:A2:488:G:C8	2.49	0.48
2:A2:1377:A:H5'	39:N3:123:HIS:CE1	2.49	0.48
2:A2:1390:G:O2'	2:A2:1425:G:H4'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B1:81:ASN:O	4:B1:84:THR:HG22	2.13	0.48
17:E2:33:PRO:HA	17:E2:351:LEU:HD23	1.95	0.48
26:H2:291:HIS:NE2	26:H2:292:LYS:HG3	2.28	0.48
39:N3:36:GLN:O	39:N3:39:LYS:HG2	2.14	0.48
55:X2:114:PHE:HA	55:X2:117:LEU:HD12	1.96	0.48
78:v2:79:LEU:HD23	78:v2:80:ARG:N	2.29	0.48
81:y2:51:LEU:C	81:y2:53:GLU:H	2.22	0.48
2:A2:1123:C:H2'	2:A2:1124:C:C6	2.49	0.48
2:A2:1328:A:H2'	2:A2:1329:G:O4'	2.14	0.48
2:A2:1677:C:H2'	2:A2:1678:U:C6	2.49	0.48
2:A2:3446:U:H4'	2:A2:3447:C:H3'	1.96	0.48
2:A2:3804:G:H2'	2:A2:3805:C:C6	2.49	0.48
2:A2:3909:A:C2	16:E1:60:PHE:HB3	2.49	0.48
2:A2:4125:A:P	64:g2:102:ARG:HH21	2.37	0.48
2:A2:4203:U:H2'	2:A2:4204:U:C6	2.49	0.48
3:A3:39:ARG:HD3	69:m2:1631:C:OP1	2.13	0.48
4:B1:136:LEU:HD21	4:B1:204:PHE:CE1	2.48	0.48
11:C2:45:C:H4'	63:f2:11:ARG:HD2	1.95	0.48
17:E2:58:ARG:HH12	17:E2:60:VAL:HA	1.79	0.48
20:F2:40:VAL:HG22	20:F2:44:LEU:HD12	1.96	0.48
20:F2:303:ARG:HG2	32:K2:38:ARG:O	2.13	0.48
28:I2:165:LYS:O	28:I2:169:ARG:HG3	2.13	0.48
29:I3:240:CYS:H	29:I3:249:CYS:HB2	1.79	0.48
33:K3:7:PHE:CE2	33:K3:9:ALA:HB3	2.49	0.48
42:P2:13:LYS:HE3	42:P2:16:ILE:HD12	1.96	0.48
61:d2:46:LYS:HD2	61:d2:54:LYS:HE3	1.95	0.48
69:m2:226:A:H2'	69:m2:227:G:O4'	2.13	0.48
69:m2:663:U:H3'	69:m2:664:G:H2'	1.96	0.48
69:m2:1527:C:H2'	69:m2:1528:G:H8	1.79	0.48
74:r2:192:VAL:HG21	74:r2:238:LEU:HD23	1.95	0.48
82:z2:96:ILE:HG13	82:z2:96:ILE:O	2.13	0.48
1:A1:219:VAL:HG23	1:A1:223:PHE:CD2	2.49	0.47
2:A2:1832:A:H2'	2:A2:1833:C:C6	2.50	0.47
2:A2:3253:G:H5'	34:L2:143:HIS:CD2	2.49	0.47
2:A2:3272:U:H4'	2:A2:3273:G:H5'	1.96	0.47
2:A2:3315:G:H2'	2:A2:3316:C:C6	2.49	0.47
2:A2:4044:OMG:HM21	2:A2:4046:A:H2'	1.95	0.47
5:B2:3:C:H2'	5:B2:4:U:H6	1.79	0.47
15:D3:37:ALA:H	71:o2:63:ARG:HB3	1.78	0.47
19:F1:80:GLU:HA	19:F1:83:VAL:HG12	1.95	0.47
33:K3:121:ILE:HG22	33:K3:123:GLY:H	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:380:U:H2'	69:m2:381:C:C6	2.49	0.47
69:m2:892:U:H2'	69:m2:893:G:H3'	1.95	0.47
69:m2:1675:U:H5"	81:y2:78:VAL:HG22	1.96	0.47
76:t2:52:GLU:HA	76:t2:58:LYS:HD2	1.96	0.47
1:A1:117:ILE:HD11	1:A1:255:ALA:HB2	1.97	0.47
2:A2:49:U:H2'	2:A2:50:C:C6	2.49	0.47
2:A2:844:C:H2'	2:A2:845:C:C6	2.49	0.47
2:A2:1087:G:H2'	2:A2:1088:A:H8	1.78	0.47
2:A2:1332:C:H41	52:U2:25:HIS:HB3	1.79	0.47
2:A2:1362:G:C2	2:A2:1363:G:C8	3.02	0.47
2:A2:2198:G:H2'	2:A2:2199:U:O4'	2.14	0.47
2:A2:2631:G:N7	67:j2:16:THR:HG22	2.29	0.47
2:A2:3910:C:H2'	2:A2:3911:C:C6	2.49	0.47
2:A2:4587:G:OP1	26:H2:226:LYS:HE3	2.15	0.47
5:B2:113:G:H2'	5:B2:114:U:H6	1.79	0.47
7:Bz:33:U:H2'	7:Bz:34:G:H3'	1.95	0.47
32:K2:67:ILE:HD12	32:K2:92:ILE:HG21	1.97	0.47
35:L3:142:VAL:HG13	35:L3:144:ILE:HG12	1.95	0.47
40:O2:25:CYS:C	40:O2:28:PRO:HD2	2.39	0.47
69:m2:45:A:H4'	69:m2:46:A:H5'	1.97	0.47
69:m2:637:G:H2'	69:m2:638:C:H6	1.79	0.47
69:m2:878:C:H2'	69:m2:879:C:H6	1.79	0.47
69:m2:978:G:H2'	69:m2:979:C:H6	1.79	0.47
69:m2:1569:G:H2'	69:m2:1570:C:C6	2.49	0.47
79:w2:37:TYR:OH	79:w2:51:ILE:HD13	2.14	0.47
1:A1:248:HIS:HE1	1:A1:250:VAL:HG13	1.79	0.47
2:A2:49:U:H2'	2:A2:50:C:H6	1.79	0.47
2:A2:282:C:H1'	2:A2:306:A:N6	2.28	0.47
2:A2:453:G:H1	2:A2:1107:G:N2	2.12	0.47
2:A2:1180:G:H4'	2:A2:1181:U:H5	1.79	0.47
2:A2:1348:C:N3	2:A2:1450:A:H5'	2.29	0.47
2:A2:2155:G:H21	58:a2:6:THR:HG22	1.80	0.47
2:A2:2624:U:H5'	2:A2:2625:A:OP1	2.14	0.47
2:A2:3517:A:H2'	2:A2:3518:A:H8	1.79	0.47
2:A2:4195:G:H2'	2:A2:4196:A:C8	2.49	0.47
2:A2:4360:A:N3	2:A2:4361:U:H5'	2.28	0.47
2:A2:4650:C:H2'	2:A2:4651:G:O4'	2.14	0.47
2:A2:4708:G:C2	2:A2:4709:G:C8	3.02	0.47
7:Bz:6:G:O2'	7:Bz:7:A:H5"	2.15	0.47
7:Bz:25:C:H2'	7:Bz:26:A:H8	1.80	0.47
20:F2:173:LYS:HA	20:F2:173:LYS:HD3	1.72	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:G1:109:ARG:HH22	26:H2:293:LEU:HD23	1.78	0.47
28:I2:46:ASN:OD1	28:I2:49:ARG:HB2	2.13	0.47
35:L3:118:GLY:O	35:L3:119:LEU:HG	2.14	0.47
38:N2:4:THR:OG1	38:N2:9:ARG:HD3	2.14	0.47
39:N3:33:VAL:O	39:N3:37:ILE:HG13	2.14	0.47
40:O2:90:TYR:HD1	40:O2:91:LEU:HD23	1.79	0.47
66:i2:67:VAL:HG11	66:i2:82:MET:HE3	1.97	0.47
68:k2:54:ALA:HA	68:k2:61:VAL:HG23	1.97	0.47
69:m2:831:C:H4'	69:m2:832:A:H5'	1.96	0.47
69:m2:1032:A:H2'	69:m2:1033:A2M:H8	1.95	0.47
69:m2:1460:G:H2'	69:m2:1461:G:C8	2.50	0.47
69:m2:1719:C:H2'	69:m2:1720:G:C8	2.49	0.47
74:r2:64:ILE:HA	74:r2:67:GLN:HG2	1.96	0.47
76:t2:61:ILE:HG21	76:t2:176:VAL:HG21	1.96	0.47
2:A2:25:A:C8	2:A2:341:G:C8	3.01	0.47
2:A2:337:U:H2'	2:A2:338:A:H8	1.79	0.47
2:A2:683:C:H2'	2:A2:684:G:H8	1.80	0.47
2:A2:1891:G:H1'	2:A2:1893:C:H41	1.79	0.47
2:A2:3307:A:H2'	2:A2:3308:A:C8	2.48	0.47
2:A2:4176:G:N3	17:E2:252:ALA:HB1	2.30	0.47
10:C1:118:LEU:HD11	10:C1:167:VAL:HG22	1.95	0.47
27:H3:47:ALA:HA	27:H3:50:ILE:HD12	1.96	0.47
33:K3:199:THR:HG21	69:m2:126:G:H2'	1.95	0.47
69:m2:687:A:H2'	69:m2:688:U:O4'	2.15	0.47
69:m2:950:C:H2'	69:m2:951:G:C8	2.47	0.47
69:m2:1148:C:H2'	69:m2:1149:C:C6	2.50	0.47
69:m2:1369:U:H3	69:m2:1374:U:H3	1.61	0.47
71:o2:77:ILE:HG13	71:o2:99:ILE:HG13	1.95	0.47
75:s2:113:VAL:O	75:s2:117:ILE:HG13	2.14	0.47
1:A1:94:ALA:O	1:A1:98:ARG:HG3	2.15	0.47
2:A2:79:C:H2'	2:A2:80:C:C6	2.50	0.47
2:A2:162:A:H2'	2:A2:163:A:H8	1.80	0.47
2:A2:1734:A:H8	28:I2:49:ARG:HH22	1.61	0.47
2:A2:2469:G:H2'	2:A2:2470:G:H8	1.80	0.47
11:C2:28:C:H2'	11:C2:29:G:C8	2.48	0.47
13:D1:48:LEU:HD22	13:D1:145:LYS:HD2	1.95	0.47
23:G2:223:PHE:HB3	23:G2:226:TYR:HB2	1.96	0.47
24:G3:60:GLU:HG2	24:G3:60:GLU:O	2.14	0.47
30:J2:59:PRO:HD3	30:J2:76:TRP:CD1	2.50	0.47
31:J3:170:TRP:H	31:J3:178:HIS:HE1	1.61	0.47
69:m2:1714:A:H2'	69:m2:1715:C:H6	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:n2:64:C:H2'	70:n2:65:C:C6	2.49	0.47
2:A2:706:C:H2'	2:A2:707:G:C8	2.49	0.47
2:A2:1098:G:O4'	26:H2:137:LYS:HE2	2.14	0.47
2:A2:1154:OMC:H2'	2:A2:1155:U:H6	1.80	0.47
2:A2:1545:A:O4'	23:G2:15:ARG:HD2	2.13	0.47
2:A2:1613:G:H2'	2:A2:1614:C:C6	2.48	0.47
2:A2:2127:U:H2'	2:A2:2128:C:C6	2.49	0.47
2:A2:2278:G:H2'	2:A2:2279:U:C6	2.49	0.47
2:A2:2448:G:H2'	2:A2:2449:G:C2	2.50	0.47
2:A2:3440:A:H61	2:A2:3470:U:H1'	1.79	0.47
2:A2:3572:G:H2'	2:A2:3573:A:C8	2.50	0.47
2:A2:4413:G:H2'	2:A2:4414:A:C8	2.48	0.47
2:A2:4436:C:H42	2:A2:4495:C:N4	2.12	0.47
2:A2:4654:C:H2'	2:A2:4655:G:O4'	2.14	0.47
2:A2:4656:U:H2'	2:A2:4657:A:H8	1.79	0.47
6:B3:27:LYS:C	6:B3:110:LEU:HD22	2.39	0.47
30:J2:60:PHE:CE2	30:J2:82:ARG:HD3	2.50	0.47
41:O3:40:THR:HG21	41:O3:74:ALA:HB2	1.97	0.47
69:m2:28:U:H2'	69:m2:29:G:C8	2.50	0.47
69:m2:589:A:H2'	69:m2:589:A:N3	2.28	0.47
69:m2:915:A:H62	76:t2:98:ARG:HB3	1.79	0.47
69:m2:1100:C:H2'	69:m2:1101:G:C8	2.48	0.47
69:m2:1122:U:H2'	69:m2:1123:G:O4'	2.15	0.47
69:m2:1136:G:H2'	69:m2:1137:C:C6	2.49	0.47
69:m2:1191:A:H2'	69:m2:1192:A:C8	2.48	0.47
78:v2:10:ALA:O	78:v2:13:GLU:HG3	2.14	0.47
1:A1:179:ARG:HD2	1:A1:235:LEU:HD23	1.97	0.47
2:A2:50:C:C2	2:A2:51:A:C8	3.02	0.47
2:A2:174:C:H2'	2:A2:175:C:C6	2.50	0.47
2:A2:281:U:H2'	2:A2:282:C:C6	2.50	0.47
2:A2:288:G:H2'	2:A2:289:C:C6	2.49	0.47
2:A2:434:A:H3'	2:A2:435:A:H8	1.80	0.47
2:A2:697:C:H4'	68:k2:85:ASN:HD22	1.80	0.47
2:A2:1154:OMC:H2'	2:A2:1155:U:C6	2.49	0.47
2:A2:1688:G:H2'	2:A2:1689:G:C8	2.48	0.47
2:A2:2042:G:H2'	2:A2:2043:G:O4'	2.15	0.47
2:A2:2304:G:C6	2:A2:2305:G:C5	3.03	0.47
2:A2:2396:A:H2'	2:A2:2397:A:O4'	2.15	0.47
2:A2:2590:A:C5	2:A2:3508:A:H2	2.33	0.47
2:A2:2620:U:H2'	2:A2:2621:C:C6	2.50	0.47
2:A2:4378:G:HO2'	17:E2:130:PHE:HD1	1.61	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B3:14:PHE:HE1	6:B3:135:ALA:HB2	1.80	0.47
6:B3:28:LEU:HD21	6:B3:53:PHE:CD2	2.50	0.47
20:F2:5:ARG:HD3	20:F2:26:ALA:HA	1.96	0.47
20:F2:10:VAL:HA	20:F2:153:VAL:HG13	1.96	0.47
23:G2:108:ARG:NE	23:G2:253:TYR:HB2	2.29	0.47
23:G2:200:MET:HE2	23:G2:200:MET:HA	1.96	0.47
26:H2:263:GLN:C	26:H2:266:PRO:HD2	2.40	0.47
27:H3:26:ASN:HB3	27:H3:39:CYS:SG	2.55	0.47
29:I3:212:LYS:HA	29:I3:235:ILE:HG22	1.96	0.47
33:K3:49:VAL:HG12	33:K3:114:VAL:HB	1.96	0.47
33:K3:63:MET:HB3	33:K3:98:ARG:HB3	1.95	0.47
35:L3:123:ILE:HA	35:L3:126:ALA:HB3	1.97	0.47
45:Q3:47:MET:HE3	69:m2:839:A:C8	2.50	0.47
50:T2:87:VAL:HG12	50:T2:89:ILE:HG13	1.97	0.47
69:m2:355:OMC:H2'	69:m2:356:U:C6	2.50	0.47
69:m2:612:G:C6	69:m2:636:A:C6	3.03	0.47
69:m2:831:C:H5"	74:r2:21:ASP:CG	2.39	0.47
69:m2:943:C:H2'	69:m2:944:G:H8	1.79	0.47
69:m2:1012:G:H2'	69:m2:1013:A:H8	1.79	0.47
69:m2:1053:G:H2'	69:m2:1054:A:H8	1.79	0.47
69:m2:1204:U:H2'	69:m2:1205:G:H8	1.80	0.47
69:m2:1652:A:H2'	69:m2:1653:A:O4'	2.15	0.47
69:m2:1653:A:H2'	69:m2:1654:G:C8	2.50	0.47
72:p2:163:GLN:HE22	72:p2:204:ILE:HG21	1.79	0.47
74:r2:11:ARG:HD3	74:r2:27:PHE:O	2.14	0.47
74:r2:97:GLU:HG2	74:r2:113:ARG:NH1	2.29	0.47
1:A1:231:TRP:CD1	1:A1:232:PRO:HD2	2.50	0.47
1:A1:239:ARG:NH2	1:A1:268:ARG:HA	2.29	0.47
2:A2:192:G:H2'	2:A2:193:G:C8	2.47	0.47
2:A2:2108:U:H2'	2:A2:2109:G:H8	1.79	0.47
2:A2:2167:A:H2'	2:A2:2168:U:C6	2.50	0.47
2:A2:2520:A:H2'	2:A2:2521:A:C8	2.50	0.47
2:A2:4151:OMG:H5"	2:A2:4151:OMG:H8	1.80	0.47
2:A2:4704:A:H2'	2:A2:4705:C:C6	2.50	0.47
13:D1:5:PRO:HG2	13:D1:8:CYS:SG	2.55	0.47
14:D2:83:HIS:CE1	14:D2:86:GLN:HB2	2.49	0.47
17:E2:245:HIS:ND1	17:E2:246:ARG:HG3	2.29	0.47
24:G3:51:ARG:HG3	75:s2:61:PHE:CE2	2.50	0.47
36:M2:164:LYS:HB3	36:M2:165:PRO:HD3	1.96	0.47
50:T2:100:VAL:HG21	50:T2:110:ALA:HB2	1.97	0.47
69:m2:340:G:H2'	69:m2:341:A:H8	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1232:C:H2'	69:m2:1233:C:C6	2.50	0.47
2:A2:74:G:O5'	19:F1:59:VAL:HG13	2.15	0.47
2:A2:457:G:H2'	2:A2:458:C:H6	1.77	0.47
2:A2:664:C:H2'	2:A2:665:C:C6	2.49	0.47
2:A2:1354:U:H2'	2:A2:1355:U:C6	2.50	0.47
2:A2:1609:C:H2'	2:A2:1610:C:C6	2.50	0.47
2:A2:2168:U:C2	2:A2:2169:G:C8	3.03	0.47
2:A2:3257:C:H2'	2:A2:3258:C:C6	2.50	0.47
2:A2:3710:U:H2'	2:A2:3711:C:H6	1.80	0.47
2:A2:3731:G:H2'	2:A2:3732:G:H8	1.80	0.47
17:E2:370:THR:HG22	17:E2:370:THR:O	2.15	0.47
21:F3:3:LYS:HA	69:m2:1863:G:H5"	1.97	0.47
28:I2:181:ALA:O	28:I2:185:VAL:HG22	2.15	0.47
35:L3:104:ASP:O	35:L3:107:GLU:HG3	2.14	0.47
35:L3:110:LEU:HB2	35:L3:147:PHE:HB3	1.95	0.47
69:m2:990:C:H5"	72:p2:116:LYS:HA	1.97	0.47
69:m2:1064:A:H2'	69:m2:1065:C:O4'	2.15	0.47
69:m2:1346:A:N6	69:m2:1388:A:H5'	2.30	0.47
69:m2:1444:U:H2'	69:m2:1445:C:C6	2.50	0.47
69:m2:1446:U:H2'	69:m2:1447:U:C6	2.50	0.47
69:m2:1520:C:P	69:m2:1521:U:H2'	2.55	0.47
71:o2:130:ASP:C	71:o2:133:PRO:HD2	2.39	0.47
72:p2:187:LYS:O	72:p2:190:PRO:HD2	2.15	0.47
80:x2:70:MET:HE3	80:x2:70:MET:HB3	1.74	0.47
82:z2:84:TYR:CZ	82:z2:86:PRO:HG3	2.50	0.47
2:A2:1373:A:H2'	2:A2:1374:G:H8	1.79	0.47
2:A2:1407:C:H2'	2:A2:1408:G:O4'	2.15	0.47
2:A2:2311:G:H4'	50:T2:109:LYS:HE3	1.97	0.47
2:A2:3603:A:H2'	2:A2:3604:C:C6	2.50	0.47
2:A2:4229:U:H2'	2:A2:4230:G:H8	1.80	0.47
7:Bz:18:G:H4'	7:Bz:51:U:C4	2.50	0.47
11:C2:26:C:H2'	11:C2:27:U:C6	2.50	0.47
18:E3:135:LYS:HA	18:E3:135:LYS:HD3	1.75	0.47
29:I3:127:LYS:HD3	29:I3:150:TRP:HD1	1.80	0.47
43:P3:52:ILE:HG13	43:P3:61:ILE:HG12	1.97	0.47
63:f2:27:ILE:HG22	63:f2:33:ASN:ND2	2.30	0.47
69:m2:225:C:H2'	69:m2:226:A:H8	1.80	0.47
69:m2:293:G:H3'	69:m2:294:A:C2	2.50	0.47
69:m2:457:A:H2'	69:m2:458:C:C6	2.49	0.47
69:m2:604:G:H2'	69:m2:605:C:C6	2.50	0.47
69:m2:953:C:H2'	69:m2:954:G:C8	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1161:G:H2'	69:m2:1162:U:H6	1.78	0.47
69:m2:1714:A:H2'	69:m2:1715:C:C6	2.49	0.47
70:n2:1:A:H2'	70:n2:2:G:O4'	2.15	0.47
78:v2:21:MET:HE3	78:v2:43:LEU:HD12	1.95	0.47
79:w2:77:VAL:HG11	79:w2:80:MET:HE1	1.97	0.47
2:A2:1116:U:H1'	56:Y2:19:LYS:HG3	1.97	0.46
2:A2:1408:G:H22	2:A2:4208:U:H5"	1.80	0.46
2:A2:1469:U:H2'	2:A2:1470:G:C8	2.50	0.46
2:A2:2375:G:O6	2:A2:2391:U:O4	2.33	0.46
2:A2:3252:A:O3'	34:L2:143:HIS:HD2	1.96	0.46
2:A2:3386:U:H2'	2:A2:3387:C:H6	1.79	0.46
2:A2:4249:U:H2'	2:A2:4250:C:O4'	2.15	0.46
2:A2:4665:A:H2'	2:A2:4666:G:H8	1.80	0.46
11:C2:130:C:H2'	11:C2:131:G:H8	1.79	0.46
15:D3:39:VAL:H	71:o2:63:ARG:NH1	2.13	0.46
17:E2:213:GLN:CD	17:E2:363:ILE:HD11	2.41	0.46
20:F2:287:THR:HB	68:k2:5:LEU:CD1	2.44	0.46
22:G1:128:LYS:HD2	22:G1:132:ARG:NH2	2.30	0.46
31:J3:166:ARG:HB2	31:J3:248:TYR:CD1	2.50	0.46
42:P2:69:LYS:HB3	42:P2:71:GLU:OE1	2.15	0.46
52:U2:73:VAL:HB	52:U2:108:TYR:CD2	2.43	0.46
54:W2:47:ILE:HG13	54:W2:72:HIS:HB3	1.97	0.46
69:m2:465:C:H2'	69:m2:467:A:N7	2.29	0.46
69:m2:919:U:N3	69:m2:920:U:C4	2.83	0.46
69:m2:936:G:C6	69:m2:1010:A:N1	2.81	0.46
69:m2:1025:A:H2'	69:m2:1026:A:C8	2.50	0.46
71:o2:99:ILE:HG13	71:o2:99:ILE:O	2.15	0.46
75:s2:88:MET:HG3	75:s2:91:ARG:HH21	1.80	0.46
1:A1:71:LEU:HD22	1:A1:207:ILE:HD11	1.97	0.46
2:A2:34:A:H2'	2:A2:35:U:C6	2.51	0.46
2:A2:923:G:H2'	2:A2:924:G:C8	2.47	0.46
2:A2:1022:C:N4	2:A2:1023:C:N4	2.63	0.46
2:A2:2053:U:P	20:F2:204:ARG:HG3	2.56	0.46
2:A2:2330:U:H3	2:A2:2513:G:H22	1.63	0.46
2:A2:3721:U:H2'	2:A2:3722:C:H6	1.81	0.46
2:A2:4570:U:H4'	2:A2:4571:C:C6	2.51	0.46
11:C2:97:A:H2'	11:C2:98:C:O4'	2.15	0.46
12:C3:111:GLU:HG2	73:q2:10:LYS:NZ	2.30	0.46
13:D1:36:LEU:HD12	13:D1:69:ARG:HD3	1.97	0.46
15:D3:11:LEU:HD12	15:D3:12:TYR:CD2	2.49	0.46
21:F3:5:ARG:HH21	69:m2:1866:U:H3'	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:G2:42:ASN:HD22	38:N2:69:GLN:HE21	1.62	0.46
58:a2:98:GLU:O	58:a2:102:ILE:HG13	2.15	0.46
69:m2:90:G:H2'	69:m2:91:A:O4'	2.16	0.46
69:m2:354:U:C2	69:m2:355:OMC:C5	3.03	0.46
69:m2:535:A:H2'	69:m2:536:G:C8	2.49	0.46
69:m2:998:A:H2'	69:m2:999:A:C8	2.50	0.46
69:m2:1750:G:H2'	69:m2:1751:G:C8	2.49	0.46
80:x2:57:LEU:HD12	80:x2:58:LYS:N	2.30	0.46
2:A2:302:C:H2'	2:A2:303:C:H6	1.79	0.46
2:A2:764:G:H2'	2:A2:765:G:H8	1.80	0.46
2:A2:1031:U:OP1	2:A2:1033:G:H5'	2.14	0.46
2:A2:1723:C:C4	22:G1:17:PHE:HB3	2.50	0.46
2:A2:2620:U:H2'	2:A2:2621:C:H6	1.80	0.46
2:A2:3427:C:H2'	2:A2:3428:U:C6	2.51	0.46
3:A3:124:ARG:HB3	3:A3:131:VAL:HG12	1.97	0.46
4:B1:136:LEU:HD13	4:B1:202:VAL:HG11	1.98	0.46
5:B2:13:A:OP1	5:B2:109:U:H1'	2.15	0.46
11:C2:138:C:H2'	11:C2:139:G:H8	1.80	0.46
13:D1:33:ILE:HB	13:D1:69:ARG:HH12	1.80	0.46
32:K2:172:ARG:HA	32:K2:176:ARG:HD2	1.97	0.46
45:Q3:121:ALA:HA	45:Q3:124:ASN:ND2	2.31	0.46
69:m2:424:U:H2'	69:m2:425:U:C6	2.51	0.46
69:m2:869:OMG:HM23	69:m2:869:OMG:H1'	1.64	0.46
69:m2:1098:G:H2'	69:m2:1099:G:O4'	2.14	0.46
69:m2:1449:G:H2'	69:m2:1450:A:H8	1.79	0.46
74:r2:67:GLN:HG3	74:r2:69:PHE:CD2	2.49	0.46
2:A2:1334:C:H5'	20:F2:95:MET:HE1	1.97	0.46
2:A2:1523:G:H2'	2:A2:1524:C:H6	1.81	0.46
2:A2:1553:A:H2'	2:A2:1554:G:C8	2.51	0.46
2:A2:1553:A:H2'	2:A2:1554:G:H8	1.80	0.46
2:A2:1840:U:H2'	2:A2:1841:G:O4'	2.16	0.46
2:A2:3501:A:H2'	2:A2:3502:C:H6	1.80	0.46
2:A2:3730:C:H2'	2:A2:3731:G:H8	1.78	0.46
3:A3:34:LYS:HB3	3:A3:103:LEU:HD23	1.97	0.46
3:A3:55:ARG:HB2	3:A3:58:GLU:HG2	1.97	0.46
7:Bz:34:G:H2'	7:Bz:35:A:H8	1.79	0.46
11:C2:138:C:C2	11:C2:139:G:C8	3.03	0.46
28:I2:94:ARG:HH11	57:Z2:97:ILE:HG21	1.79	0.46
39:N3:46:THR:HG22	39:N3:48:SER:H	1.80	0.46
58:a2:102:ILE:O	58:a2:105:LYS:HG3	2.15	0.46
69:m2:29:G:H2'	69:m2:30:C:H6	1.78	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:62:G:H2'	69:m2:63:U:O4'	2.14	0.46
69:m2:311:G:H2'	69:m2:312:C:C6	2.50	0.46
69:m2:321:C:H2'	69:m2:322:G:C8	2.50	0.46
69:m2:447:A:H5"	77:u2:51:GLY:HA3	1.96	0.46
69:m2:450:A:C8	77:u2:26:LYS:HA	2.50	0.46
69:m2:1020:U:H2'	69:m2:1021:C:C6	2.50	0.46
69:m2:1497:G:H2'	69:m2:1498:U:C6	2.50	0.46
79:w2:44:PHE:HE2	79:w2:144:LYS:HZ1	1.64	0.46
2:A2:167:C:H2'	2:A2:168:C:H6	1.79	0.46
2:A2:726:C:H2'	2:A2:727:G:C8	2.50	0.46
2:A2:847:G:H2'	2:A2:848:G:H8	1.81	0.46
2:A2:1111:U:OP1	57:Z2:56:ASN:HB2	2.15	0.46
2:A2:1456:A:H2'	2:A2:1457:C:C6	2.50	0.46
2:A2:1555:G:H21	23:G2:2:GLY:HA3	1.80	0.46
2:A2:1669:A:H2'	2:A2:1670:A:C8	2.51	0.46
2:A2:2063:A:H2'	2:A2:2064:G:O4'	2.15	0.46
2:A2:3590:G:H2'	2:A2:3591:C:C6	2.50	0.46
2:A2:3936:C:C2	2:A2:3937:U:C5	3.03	0.46
2:A2:4142:C:H2'	2:A2:4143:G:C8	2.50	0.46
7:Bz:18:G:H5'	7:Bz:63:G:C6	2.51	0.46
11:C2:89:U:H2'	11:C2:90:C:C6	2.51	0.46
13:D1:200:ILE:HG21	13:D1:212:LEU:HD22	1.97	0.46
15:D3:39:VAL:H	71:o2:63:ARG:HH12	1.63	0.46
23:G2:108:ARG:HA	23:G2:251:PRO:HB2	1.96	0.46
33:K3:20:ASP:OD1	33:K3:23:LYS:HE2	2.16	0.46
45:Q3:15:ASN:ND2	45:Q3:18:LEU:HD13	2.29	0.46
65:h2:12:ARG:HG3	65:h2:15:ARG:HH21	1.81	0.46
69:m2:808:U:H3	69:m2:859:U:H3	1.64	0.46
69:m2:1037:A:H2'	69:m2:1038:A:O4'	2.16	0.46
74:r2:136:ILE:HB	74:r2:149:TYR:CE1	2.50	0.46
1:A1:188:ARG:HD2	1:A1:231:TRP:CD1	2.50	0.46
2:A2:316:U:OP1	2:A2:316:U:H3'	2.14	0.46
2:A2:2102:A:N6	56:Y2:24:GLN:HE21	2.09	0.46
2:A2:2483:U:H2'	2:A2:2484:C:C6	2.51	0.46
2:A2:2498:A:H2'	2:A2:2499:A:C8	2.49	0.46
2:A2:3254:C:H2'	2:A2:3255:A:H8	1.80	0.46
2:A2:3461:U:H2'	2:A2:3462:G:H8	1.80	0.46
2:A2:3715:G:H2'	2:A2:3716:U:C6	2.50	0.46
2:A2:3731:G:H2'	2:A2:3732:G:C8	2.51	0.46
2:A2:4052:G:C6	2:A2:4053:G:N7	2.83	0.46
4:B1:108:GLN:O	4:B1:111:LYS:HG2	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E2:8:ALA:HB2	42:P2:49:LEU:HD22	1.98	0.46
23:G2:115:MET:HA	23:G2:118:ILE:HD13	1.98	0.46
26:H2:168:ARG:HH11	26:H2:277:TYR:HE1	1.64	0.46
29:I3:297:THR:OG1	29:I3:311:GLN:HG3	2.15	0.46
32:K2:27:LEU:HD23	32:K2:30:LYS:HD2	1.98	0.46
35:L3:159:PHE:CD2	35:L3:165:TYR:HB2	2.51	0.46
37:M3:31:LEU:O	37:M3:31:LEU:HD23	2.15	0.46
37:M3:91:LEU:HD22	69:m2:1286:A:C6	2.50	0.46
41:O3:102:GLY:C	41:O3:136:PRO:HG3	2.40	0.46
50:T2:33:THR:OG1	50:T2:36:ARG:HB2	2.16	0.46
56:Y2:8:VAL:HG23	56:Y2:10:PRO:HD3	1.98	0.46
68:k2:58:LYS:HG3	68:k2:83:ASN:HD21	1.81	0.46
69:m2:60:A:H1'	69:m2:318:G:O2'	2.14	0.46
69:m2:1237:G:C5	69:m2:1238:G:C5	3.04	0.46
69:m2:1382:C:H2'	69:m2:1383:G:H8	1.80	0.46
69:m2:1622:A:H1'	69:m2:1626:U:OP2	2.15	0.46
69:m2:1718:C:H2'	69:m2:1719:C:H6	1.79	0.46
74:r2:201:HIS:HB2	74:r2:205:PHE:O	2.15	0.46
79:w2:133:PRO:HB3	79:w2:139:ARG:NH1	2.30	0.46
81:y2:85:ARG:HD2	81:y2:119:LEU:CD2	2.45	0.46
2:A2:6:C:H2'	2:A2:7:C:C6	2.51	0.46
2:A2:726:C:H2'	2:A2:727:G:H8	1.81	0.46
2:A2:1182:C:H2'	2:A2:1183:C:O4'	2.16	0.46
2:A2:1291:C:H2'	2:A2:1292:G:C8	2.47	0.46
2:A2:1551:A:H2'	2:A2:1552:G:C8	2.50	0.46
2:A2:3413:G:H2'	2:A2:3414:U:O4'	2.16	0.46
2:A2:3889:C:H2'	2:A2:3890:G:C8	2.51	0.46
2:A2:4237:U:H2'	2:A2:4238:G:H8	1.79	0.46
2:A2:4283:G:H2'	2:A2:4284:U:C6	2.50	0.46
2:A2:4290:U:H2'	2:A2:4291:G:N3	2.30	0.46
2:A2:4371:G:O2'	2:A2:4372:C:H5"	2.16	0.46
2:A2:4564:G:H2'	2:A2:4565:C:C6	2.51	0.46
5:B2:3:C:H2'	5:B2:4:U:C6	2.51	0.46
5:B2:33:U:H2'	5:B2:34:C:C6	2.50	0.46
7:Bz:7:A:N3	7:Bz:7:A:H2'	2.30	0.46
13:D1:53:VAL:HG22	13:D1:134:VAL:HG22	1.97	0.46
20:F2:289:LEU:O	20:F2:293:LEU:HG	2.15	0.46
31:J3:166:ARG:HB2	31:J3:248:TYR:CE1	2.51	0.46
35:L3:138:ARG:O	35:L3:139:LYS:HD3	2.16	0.46
44:Q2:3:VAL:HG13	44:Q2:13:ILE:O	2.15	0.46
50:T2:83:THR:HG22	58:a2:95:PHE:CZ	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:Y2:22:ARG:HD3	56:Y2:31:ILE:CG2	2.46	0.46
69:m2:190:G:N2	69:m2:210:G:H1	2.13	0.46
69:m2:420:A:C4	69:m2:421:G:C8	3.03	0.46
69:m2:597:U:H2'	69:m2:598:U:C6	2.51	0.46
69:m2:1280:A:H2'	69:m2:1281:C:H6	1.81	0.46
69:m2:1409:U:H2'	69:m2:1410:U:H6	1.78	0.46
69:m2:1502:G:H2'	69:m2:1503:C:C6	2.51	0.46
70:n2:11:C:H2'	70:n2:12:G:H8	1.78	0.46
73:q2:191:PRO:O	73:q2:199:GLY:HA3	2.16	0.46
81:y2:13:PHE:HA	81:y2:21:ALA:O	2.15	0.46
1:A1:86:MET:HE1	1:A1:217:TYR:CE2	2.48	0.46
2:A2:126:C:H2'	2:A2:127:G:H8	1.81	0.46
2:A2:512:C:H2'	2:A2:513:U:O4'	2.16	0.46
2:A2:696:U:H2'	2:A2:697:C:H6	1.80	0.46
2:A2:724:U:H2'	2:A2:725:C:C6	2.51	0.46
2:A2:854:A:H1'	2:A2:1878:G:H5"	1.98	0.46
2:A2:1006:G:H2'	2:A2:1007:A:C8	2.51	0.46
2:A2:1441:C:H2'	2:A2:1442:G:C8	2.51	0.46
2:A2:1668:G:H1	2:A2:4092:G:N2	2.13	0.46
2:A2:2511:G:H2'	2:A2:2512:A:H8	1.81	0.46
2:A2:4619:U:H1'	2:A2:4632:G:C2	2.51	0.46
2:A2:4642:C:H4'	55:X2:26:THR:HG23	1.98	0.46
17:E2:213:GLN:NE2	17:E2:363:ILE:HD11	2.31	0.46
39:N3:16:LEU:HD23	69:m2:921:A:OP1	2.16	0.46
53:V2:14:ARG:O	53:V2:18:ARG:HG3	2.16	0.46
69:m2:95:G:H2'	69:m2:96:C:C6	2.49	0.46
69:m2:495:A:H1'	69:m2:576:A:O5'	2.16	0.46
69:m2:859:U:H2'	69:m2:860:A:H8	1.80	0.46
69:m2:1500:A:H2'	69:m2:1501:U:O4'	2.16	0.46
69:m2:1845:G:H2'	69:m2:1846:U:C6	2.51	0.46
73:q2:167:TYR:HE2	73:q2:204:LEU:HD23	1.79	0.46
77:u2:29:LEU:HD23	77:u2:29:LEU:H	1.81	0.46
2:A2:91:G:O5'	2:A2:92:C:H5"	2.15	0.46
2:A2:492:G:H22	2:A2:670:G:H1	1.63	0.46
2:A2:1336:A:H2'	2:A2:1337:A2M:C4	2.46	0.46
2:A2:1584:U:H2'	2:A2:1585:C:C5	2.50	0.46
2:A2:1901:A:C2'	2:A2:1902:A:H5'	2.46	0.46
2:A2:3439:A:H4'	2:A2:3440:A:H5"	1.98	0.46
2:A2:4257:A:H2'	2:A2:4258:G:C8	2.51	0.46
11:C2:25:G:H2'	11:C2:26:C:C6	2.51	0.46
11:C2:65:A:H2'	11:C2:66:A:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C2:73:U:H2'	11:C2:74:U:O4'	2.15	0.46
18:E3:3:LYS:HZ1	69:m2:662:C:H5"	1.81	0.46
22:G1:24:LEU:HD11	22:G1:86:TRP:CG	2.51	0.46
33:K3:48:TYR:CZ	33:K3:117:GLY:HA2	2.50	0.46
42:P2:35:LYS:HB3	42:P2:67:LYS:HG3	1.97	0.46
67:j2:8:VAL:HG13	67:j2:11:VAL:HG23	1.96	0.46
69:m2:391:A:H2'	69:m2:392:C:C6	2.50	0.46
69:m2:497:U:H2'	69:m2:498:C:C6	2.51	0.46
69:m2:920:U:OP2	69:m2:920:U:H6	1.99	0.46
69:m2:1143:G:H2'	69:m2:1144:G:C8	2.51	0.46
69:m2:1237:G:H2'	69:m2:1238:G:O4'	2.16	0.46
69:m2:1263:C:N4	69:m2:1663:A:H62	2.13	0.46
69:m2:1289:A:N6	69:m2:1314:G:H21	2.09	0.46
69:m2:1561:C:H2'	69:m2:1562:U:O4'	2.16	0.46
69:m2:1687:U:C2	69:m2:1688:G:C8	3.04	0.46
74:r2:161:GLN:HB3	74:r2:170:ILE:O	2.14	0.46
80:x2:111:MET:HE3	80:x2:119:PHE:CG	2.51	0.46
2:A2:475:G:H2'	2:A2:476:G:H8	1.80	0.46
2:A2:1140:A2M:H2'	2:A2:1141:C:C6	2.50	0.46
2:A2:1553:A:H5'	13:D1:194:GLY:HA2	1.97	0.46
2:A2:2117:U:H2'	2:A2:2118:A2M:C8	2.45	0.46
2:A2:2625:A:H2'	2:A2:2626:A:C8	2.51	0.46
2:A2:3567:C:H2'	2:A2:3568:U:C6	2.50	0.46
2:A2:3972:G:H2'	2:A2:3973:U:C6	2.51	0.46
2:A2:4245:C:H2'	2:A2:4246:U:H6	1.81	0.46
2:A2:4528:C:H2'	2:A2:4529:G:C8	2.51	0.46
2:A2:4647:U:H2'	2:A2:4648:U:O4'	2.16	0.46
5:B2:50:A:H2'	5:B2:51:G:O4'	2.15	0.46
67:j2:25:MET:HG3	69:m2:1042:G:H4'	1.98	0.46
69:m2:622:G:H2'	69:m2:622:G:N3	2.31	0.46
69:m2:915:A:H2'	76:t2:120:ARG:HH21	1.81	0.46
69:m2:1009:C:H2'	69:m2:1010:A:C8	2.50	0.46
69:m2:1268:C:H2'	69:m2:1269:C:C6	2.51	0.46
69:m2:1334:A:C8	69:m2:1334:A:H3'	2.50	0.46
69:m2:1669:U:H2'	69:m2:1670:U:H6	1.81	0.46
82:z2:44:LYS:O	82:z2:47:ARG:HG2	2.16	0.46
2:A2:323:C:H2'	2:A2:324:A:H8	1.80	0.45
2:A2:1130:OMG:HM23	2:A2:1130:OMG:H1'	1.60	0.45
2:A2:1160:C:H2'	2:A2:1161:G:C8	2.51	0.45
2:A2:1316:A:H1'	2:A2:1317:G:C8	2.49	0.45
2:A2:2162:G:H2'	63:f2:13:LEU:HD22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2332:C:N3	2:A2:2340:C:H5	2.14	0.45
2:A2:3602:G:O6	2:A2:3717:U:C4	2.69	0.45
2:A2:3762:C:H2'	2:A2:3763:U:C6	2.51	0.45
2:A2:3906:G:H2'	2:A2:3906:G:N3	2.31	0.45
25:H1:178:HIS:CE1	25:H1:179:LYS:HG3	2.51	0.45
31:J3:81:ILE:HG23	31:J3:86:LEU:HB2	1.98	0.45
31:J3:83:LEU:HD23	31:J3:83:LEU:O	2.16	0.45
35:L3:50:LEU:HD22	35:L3:102:ILE:HD13	1.97	0.45
69:m2:829:A:H2'	69:m2:830:G:O4'	2.16	0.45
69:m2:1337:G:H2'	69:m2:1338:C:O4'	2.16	0.45
69:m2:1857:G:H2'	69:m2:1858:C:C6	2.51	0.45
75:s2:77:MET:HB2	75:s2:89:THR:HG21	1.98	0.45
78:v2:53:LYS:HA	78:v2:65:ARG:O	2.16	0.45
81:y2:61:GLU:HG2	81:y2:62:ARG:N	2.31	0.45
2:A2:90:G:H1'	2:A2:94:A:N6	2.31	0.45
2:A2:167:C:H2'	2:A2:168:C:C6	2.51	0.45
2:A2:184:U:H5"	2:A2:254:G:N2	2.31	0.45
2:A2:284:G:H2'	2:A2:285:G:C8	2.51	0.45
2:A2:444:G:N1	2:A2:1117:A:N6	2.59	0.45
2:A2:687:G:H2'	2:A2:688:G:H8	1.82	0.45
2:A2:1151:A:H5'	20:F2:102:PHE:HB2	1.97	0.45
2:A2:1285:C:H2'	2:A2:1286:U:C6	2.51	0.45
2:A2:1352:G:H2'	2:A2:1353:C:H6	1.81	0.45
2:A2:1676:A:H4'	2:A2:3869:G:H22	1.80	0.45
2:A2:1834:U:O2'	2:A2:1835:A:H5'	2.16	0.45
2:A2:3320:G:H2'	2:A2:3321:G:C8	2.50	0.45
2:A2:3613:U:H2'	2:A2:3615:U:OP2	2.16	0.45
2:A2:3840:U:H2'	2:A2:3841:U:C6	2.52	0.45
2:A2:3841:U:H2'	2:A2:3842:U:C6	2.51	0.45
2:A2:4572:G:P	2:A2:4573:C:H41	2.39	0.45
4:B1:63:LEU:HD22	25:H1:33:LEU:HD21	1.98	0.45
5:B2:112:U:H2'	5:B2:113:G:C8	2.51	0.45
14:D2:204:MET:HB3	14:D2:208:GLU:HG3	1.97	0.45
17:E2:94:GLU:HG3	17:E2:99:LEU:HD12	1.98	0.45
20:F2:221:PHE:HB2	20:F2:229:LEU:HD21	1.97	0.45
31:J3:229:CYS:HB2	69:m2:15:U:OP2	2.16	0.45
37:M3:27:ILE:HD11	78:v2:73:ASN:HB2	1.98	0.45
48:S2:74:TYR:CE2	48:S2:77:LYS:HE2	2.51	0.45
51:T3:31:ARG:HD2	51:T3:35:ARG:HH21	1.81	0.45
52:U2:103:VAL:HG12	52:U2:108:TYR:O	2.16	0.45
65:h2:4:LYS:HZ2	69:m2:1845:G:H8	1.63	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:h2:11:ARG:HA	65:h2:14:LYS:HG2	1.98	0.45
69:m2:479:G:H2'	69:m2:480:G:H8	1.81	0.45
69:m2:868:U:H2'	69:m2:869:OMG:C8	2.51	0.45
69:m2:1440:A:H2'	69:m2:1441:A:H8	1.81	0.45
69:m2:1657:C:H2'	69:m2:1658:G:H8	1.80	0.45
2:A2:54:G:H4'	25:H1:108:ARG:HH12	1.82	0.45
2:A2:313:U:H5"	25:H1:179:LYS:HE3	1.98	0.45
2:A2:683:C:H2'	2:A2:684:G:C8	2.51	0.45
2:A2:807:G:H2'	2:A2:808:A:H8	1.81	0.45
2:A2:841:A:N3	20:F2:335:MET:HE1	2.31	0.45
2:A2:1377:A:H2'	2:A2:1378:A:C8	2.51	0.45
2:A2:2062:A:N6	2:A2:2086:G:H1'	2.31	0.45
2:A2:2107:U:H2'	2:A2:2108:U:C6	2.51	0.45
2:A2:2328:A:H3'	2:A2:2329:G:C8	2.52	0.45
2:A2:2398:G:H2'	2:A2:2399:G:H8	1.81	0.45
2:A2:3254:C:H2'	2:A2:3255:A:C8	2.51	0.45
2:A2:3386:U:H2'	2:A2:3387:C:C6	2.51	0.45
6:B3:28:LEU:C	6:B3:29:LYS:HD2	2.42	0.45
24:G3:44:ARG:NH1	24:G3:63:ARG:HB2	2.29	0.45
28:I2:110:PRO:HA	28:I2:113:ASP:CG	2.42	0.45
30:J2:84:PRO:HB2	30:J2:87:SER:HB2	1.98	0.45
36:M2:31:ARG:HH21	36:M2:33:PHE:HZ	1.65	0.45
55:X2:68:LEU:HD13	55:X2:108:TYR:HB2	1.97	0.45
61:d2:21:ARG:HD3	61:d2:39:TYR:HA	1.98	0.45
69:m2:23:G:H2'	69:m2:24:C:O4'	2.17	0.45
69:m2:927:G:H2'	69:m2:928:A:H8	1.82	0.45
69:m2:1551:U:H2'	69:m2:1552:G:H8	1.79	0.45
69:m2:1807:G:H2'	69:m2:1808:A:C8	2.51	0.45
78:v2:50:GLN:O	78:v2:52:LEU:HG	2.16	0.45
1:A1:80:HIS:CD2	2:A2:841:A:H1'	2.51	0.45
2:A2:153:G:H2'	2:A2:154:G:H8	1.80	0.45
2:A2:236:G:H2'	2:A2:237:G:C8	2.50	0.45
2:A2:1467:G:C6	2:A2:3570:U:H5"	2.51	0.45
2:A2:1508:U:H2'	2:A2:1509:C:C6	2.52	0.45
2:A2:1744:A:H61	2:A2:1841:G:H2'	1.80	0.45
2:A2:2139:U:H2'	2:A2:2140:U:C6	2.52	0.45
2:A2:3255:A:H2'	2:A2:3256:G:C8	2.52	0.45
2:A2:4403:G:C5	2:A2:4404:U:C5	3.04	0.45
2:A2:4552:G:C6	2:A2:4559:G:C5	3.04	0.45
3:A3:6:PRO:O	47:R3:49:LEU:HB3	2.16	0.45
11:C2:28:C:C2	11:C2:29:G:C8	3.03	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:C2:67:U:H2'	11:C2:68:G:H8	1.81	0.45
11:C2:72:A:H2'	11:C2:73:U:C6	2.52	0.45
17:E2:348:ARG:HH12	17:E2:351:LEU:HG	1.82	0.45
25:H1:140:LYS:HA	25:H1:143:ARG:HG2	1.97	0.45
39:N3:37:ILE:HD13	39:N3:74:ILE:HD11	1.98	0.45
56:Y2:70:LEU:HB3	56:Y2:71:PRO:HD2	1.98	0.45
56:Y2:90:MET:HE1	68:k2:112:ARG:HB3	1.98	0.45
59:b2:27:GLU:O	59:b2:31:LEU:HG	2.17	0.45
61:d2:34:CYS:HB3	61:d2:38:GLY:N	2.25	0.45
69:m2:1355:A:H2'	69:m2:1356:G:C8	2.52	0.45
69:m2:1456:A:C2	69:m2:1478:A:H1'	2.52	0.45
72:p2:179:ASN:HB3	72:p2:183:GLU:HB2	1.99	0.45
81:y2:84:ILE:O	81:y2:88:ILE:HG12	2.17	0.45
2:A2:365:U:H2'	2:A2:366:A:H8	1.81	0.45
2:A2:3549:C:H2'	2:A2:3550:A:C8	2.48	0.45
2:A2:3589:G:H2'	2:A2:3590:G:H8	1.82	0.45
2:A2:3597:G:C6	2:A2:3723:A:C6	3.04	0.45
2:A2:3961:G:H2'	2:A2:3962:A:O4'	2.16	0.45
2:A2:4069:C:H2'	2:A2:4070:G:O4'	2.17	0.45
2:A2:4615:C:H2'	2:A2:4616:C:H6	1.81	0.45
12:C3:97:ILE:HA	12:C3:100:GLN:HE22	1.82	0.45
14:D2:204:MET:SD	14:D2:208:GLU:HG3	2.57	0.45
17:E2:95:THR:HG23	17:E2:97:ARG:H	1.81	0.45
19:F1:60:ARG:HD2	19:F1:67:HIS:O	2.16	0.45
20:F2:209:ILE:HD13	20:F2:251:ILE:HB	1.99	0.45
22:G1:104:MET:SD	22:G1:109:ARG:HG3	2.56	0.45
30:J2:27:LYS:HG2	30:J2:63:TYR:CG	2.51	0.45
30:J2:105:LYS:HE2	30:J2:107:LEU:HD11	1.99	0.45
30:J2:130:TYR:CE1	30:J2:136:ILE:HG12	2.51	0.45
35:L3:29:LEU:HA	35:L3:32:ILE:HD12	1.99	0.45
38:N2:28:ALA:HB1	38:N2:32:ARG:HH12	1.82	0.45
38:N2:105:PHE:HA	38:N2:108:ARG:NH1	2.30	0.45
45:Q3:86:GLU:HB2	45:Q3:87:PRO:HD2	1.98	0.45
69:m2:580:C:H2'	69:m2:581:C:H6	1.81	0.45
69:m2:938:G:H2'	69:m2:939:C:C6	2.52	0.45
69:m2:966:A:H2'	69:m2:967:U:C6	2.51	0.45
69:m2:1685:C:H2'	69:m2:1686:C:H6	1.80	0.45
69:m2:1846:U:H2'	69:m2:1847:A:H8	1.79	0.45
71:o2:85:ARG:HE	71:o2:204:TYR:N	2.14	0.45
73:q2:108:LYS:HB3	73:q2:113:LEU:HD12	1.98	0.45
82:z2:72:LYS:O	82:z2:76:GLU:HG2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:98:A:H5'	25:H1:195:ARG:HD2	1.99	0.45
2:A2:3261:C:H2'	2:A2:3262:U:H6	1.81	0.45
2:A2:3882:C:P	66:i2:89:LYS:HG3	2.57	0.45
2:A2:3936:C:H2'	2:A2:3937:U:H6	1.80	0.45
2:A2:4274:A:H4'	17:E2:13:SER:HB2	1.99	0.45
3:A3:40:TYR:HA	3:A3:83:PHE:CE2	2.51	0.45
11:C2:91:A:H2'	11:C2:92:U:O4'	2.16	0.45
11:C2:107:C:H2'	11:C2:108:A:C8	2.51	0.45
14:D2:49:ILE:HG21	14:D2:60:LYS:HE3	1.98	0.45
23:G2:62:CYS:HB3	23:G2:105:LEU:HD22	1.99	0.45
23:G2:111:ASN:HA	23:G2:116:ASP:HB3	1.97	0.45
26:H2:185:PRO:HG2	26:H2:188:ILE:HD12	1.99	0.45
30:J2:78:TRP:CD1	30:J2:80:GLN:H	2.34	0.45
43:P3:87:GLU:O	43:P3:90:GLN:HG3	2.16	0.45
48:S2:115:ARG:HD2	48:S2:118:ILE:HD11	1.97	0.45
51:T3:12:VAL:HG21	69:m2:618:A:N3	2.31	0.45
69:m2:568:U:H2'	69:m2:569:C:O4'	2.17	0.45
69:m2:882:G:C6	69:m2:908:U:O2	2.70	0.45
69:m2:987:G:O2'	69:m2:1004:U:H5'	2.16	0.45
69:m2:1247:G:H2'	69:m2:1248:A:O4'	2.17	0.45
69:m2:1569:G:H2'	69:m2:1570:C:C5	2.52	0.45
71:o2:103:PHE:CD1	71:o2:133:PRO:HG3	2.51	0.45
74:r2:182:MET:CE	74:r2:192:VAL:HG22	2.44	0.45
79:w2:17:PHE:CE2	79:w2:19:ASN:HB2	2.52	0.45
1:A1:190:ALA:HB1	20:F2:315:LYS:HD2	1.99	0.45
2:A2:1009:U:H4'	23:G2:283:LYS:HG2	1.98	0.45
2:A2:1109:U:H1'	2:A2:1110:G:C8	2.52	0.45
2:A2:1416:C:H2'	2:A2:1417:G:C8	2.51	0.45
2:A2:1498:G:H2'	2:A2:1499:C:H6	1.82	0.45
2:A2:1502:G:H2'	2:A2:1503:C:C6	2.52	0.45
2:A2:1678:U:H2'	2:A2:1679:G:C8	2.52	0.45
2:A2:1881:G:H2'	2:A2:1882:U:H6	1.81	0.45
2:A2:2463:U:C2	34:L2:40:GLN:HG2	2.52	0.45
2:A2:3465:G:H2'	2:A2:3465:G:N3	2.32	0.45
2:A2:4123:U:H2'	2:A2:4124:G:H8	1.81	0.45
2:A2:4227:G:C6	2:A2:4715:U:C4	3.05	0.45
11:C2:11:C:C2	11:C2:12:G:C8	3.05	0.45
20:F2:121:ARG:HH11	20:F2:274:LYS:HD3	1.81	0.45
33:K3:49:VAL:HB	33:K3:115:LYS:HG2	1.98	0.45
69:m2:321:C:H2'	69:m2:322:G:H8	1.81	0.45
69:m2:511:OMG:HM23	69:m2:511:OMG:H1'	1.78	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:806:U:H2'	69:m2:807:U:C6	2.52	0.45
71:o2:27:GLY:HA3	71:o2:150:THR:HB	1.99	0.45
72:p2:163:GLN:NE2	72:p2:204:ILE:HD13	2.31	0.45
80:x2:30:TYR:HA	80:x2:33:LEU:CD2	2.46	0.45
2:A2:189:G:H2'	2:A2:190:G:H8	1.82	0.45
2:A2:2134:A:H2'	2:A2:2135:G:O4'	2.17	0.45
2:A2:2325:U:H2'	2:A2:2326:C:H6	1.82	0.45
2:A2:2378:A:N6	40:O2:81:ARG:HH22	2.14	0.45
2:A2:2390:U:H2'	2:A2:2391:U:H6	1.82	0.45
2:A2:3852:G:N2	2:A2:3855:A:H61	2.15	0.45
2:A2:4205:A:H2'	2:A2:4206:G:C8	2.52	0.45
2:A2:4237:U:H2'	2:A2:4238:G:C8	2.51	0.45
2:A2:4279:U:H4'	17:E2:373:LYS:HE2	1.98	0.45
3:A3:40:TYR:HD1	3:A3:83:PHE:CE2	2.34	0.45
6:B3:133:ARG:NH1	69:m2:1418:C:H5"	2.21	0.45
7:Bz:68:C:C2	7:Bz:69:G:C8	3.05	0.45
10:C1:44:GLU:CG	10:C1:58:ASP:HB2	2.46	0.45
13:D1:46:PHE:CD1	13:D1:140:THR:HA	2.51	0.45
18:E3:10:ALA:HB3	79:w2:103:GLU:HB3	1.99	0.45
36:M2:165:PRO:C	36:M2:167:PHE:H	2.24	0.45
43:P3:101:PHE:HB2	43:P3:129:PHE:CZ	2.52	0.45
69:m2:95:G:H21	69:m2:476:G:C5'	2.30	0.45
69:m2:1133:G:C2	69:m2:1134:C:C4	3.05	0.45
69:m2:1234:U:H2'	69:m2:1235:G:C8	2.52	0.45
69:m2:1541:U:H2'	69:m2:1542:G:C8	2.52	0.45
69:m2:1643:A:H2'	69:m2:1644:U:O4'	2.17	0.45
77:u2:78:ILE:HG13	77:u2:104:ILE:HD11	1.98	0.45
79:w2:82:MET:HB2	79:w2:85:THR:O	2.17	0.45
80:x2:17:TYR:CD2	80:x2:18:ARG:HG2	2.52	0.45
2:A2:418:A:H4'	2:A2:2066:C:H5'	1.99	0.45
2:A2:844:C:H2'	2:A2:845:C:H6	1.81	0.45
2:A2:1913:G:H2'	2:A2:1914:C:C2	2.52	0.45
2:A2:2354:G:H4'	58:a2:60:ARG:HH21	1.82	0.45
2:A2:2428:G:H4'	2:A2:2429:A:H5"	1.99	0.45
2:A2:2645:C:H42	2:A2:3267:A:H61	1.65	0.45
2:A2:3256:G:H2'	2:A2:3257:C:C6	2.52	0.45
2:A2:3262:U:H2'	2:A2:3263:U:H6	1.81	0.45
2:A2:3275:G:H22	2:A2:3280:A:H1'	1.82	0.45
2:A2:3823:C:C2	2:A2:3824:A:C8	3.05	0.45
2:A2:3882:C:OP1	66:i2:89:LYS:HG3	2.16	0.45
2:A2:3936:C:H2'	2:A2:3937:U:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A3:64:VAL:O	3:A3:68:ILE:HG12	2.17	0.45
7:Bz:4:C:H2'	7:Bz:5:G:H8	1.81	0.45
26:H2:288:MET:HE2	26:H2:293:LEU:HD21	1.99	0.45
48:S2:111:LEU:HB3	48:S2:116:LYS:NZ	2.32	0.45
49:S3:69:GLY:HA3	69:m2:1107:G:O3'	2.16	0.45
56:Y2:37:LYS:HD2	56:Y2:38:PRO:HD2	1.97	0.45
56:Y2:44:ARG:HE	56:Y2:52:GLN:CD	2.25	0.45
69:m2:129:C:O2	69:m2:130:G:H2'	2.17	0.45
69:m2:447:A:H2'	69:m2:448:G:C8	2.52	0.45
69:m2:981:C:H2'	69:m2:982:A:H8	1.82	0.45
69:m2:1391:C:O2'	73:q2:162:ASP:HB3	2.16	0.45
69:m2:1636:A:H3'	69:m2:1637:C:C6	2.51	0.45
74:r2:212:ASP:OD1	74:r2:216:ASN:HB2	2.16	0.45
75:s2:91:ARG:O	75:s2:94:LYS:HG2	2.17	0.45
80:x2:22:LEU:HA	80:x2:25:LEU:HB3	1.98	0.45
2:A2:685:C:H2'	2:A2:686:C:C6	2.52	0.45
2:A2:760:C:H2'	2:A2:761:U:C6	2.52	0.45
2:A2:1053:G:H8	2:A2:1053:G:OP2	2.00	0.45
2:A2:1306:G:H2'	2:A2:1307:U:O4'	2.17	0.45
2:A2:1429:U:H2'	2:A2:1430:G:H8	1.81	0.45
2:A2:1458:C:H2'	2:A2:1459:A:C8	2.51	0.45
2:A2:2418:G:H2'	2:A2:2419:G:H8	1.82	0.45
2:A2:2601:G:C4	2:A2:2602:G:C8	3.05	0.45
2:A2:2652:G:P	34:L2:134:ASN:HD21	2.40	0.45
2:A2:3449:U:H2'	2:A2:3450:C:C6	2.51	0.45
2:A2:3507:U:C2	2:A2:3508:A:C8	3.05	0.45
2:A2:3545:G:O2'	2:A2:4223:A2M:H2	2.17	0.45
2:A2:3779:G:H2'	2:A2:3780:C:H6	1.82	0.45
2:A2:3925:A:H2'	2:A2:3926:A:C8	2.52	0.45
2:A2:4430:U:H2'	2:A2:4431:C:H6	1.82	0.45
6:B3:5:THR:HG22	6:B3:6:VAL:N	2.32	0.45
7:Bz:59:U:H5"	7:Bz:60:U:H5	1.81	0.45
11:C2:26:C:H2'	11:C2:27:U:H6	1.81	0.45
15:D3:71:ARG:HA	15:D3:74:LYS:HZ3	1.82	0.45
25:H1:121:VAL:HG11	25:H1:131:GLU:CD	2.42	0.45
28:I2:125:LYS:HE3	28:I2:135:PHE:CD1	2.52	0.45
29:I3:89:LEU:HD23	29:I3:90:TRP:N	2.32	0.45
35:L3:135:ILE:HA	35:L3:159:PHE:HB3	1.98	0.45
35:L3:141:VAL:HG22	35:L3:162:ARG:HH12	1.82	0.45
45:Q3:16:ARG:C	45:Q3:19:GLN:H	2.25	0.45
49:S3:68:GLY:C	69:m2:1107:G:H5"	2.42	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:25:A:O2'	69:m2:26:U:H6	2.00	0.45
69:m2:174:OMC:H2'	69:m2:175:A:O4'	2.17	0.45
69:m2:968:U:H2'	69:m2:969:C:C6	2.52	0.45
69:m2:1203:U:H2'	69:m2:1204:U:H6	1.81	0.45
69:m2:1225:A:OP1	75:s2:79:HIS:HA	2.17	0.45
69:m2:1591:A:H2'	69:m2:1592:C:O4'	2.16	0.45
76:t2:158:LEU:HB2	76:t2:189:PHE:CD2	2.51	0.45
78:v2:24:LYS:HG2	78:v2:61:GLN:OE1	2.17	0.45
1:A1:138:GLN:OE1	2:A2:1874:C:H5"	2.17	0.44
1:A1:166:TYR:CE2	1:A1:259:GLU:HB2	2.53	0.44
2:A2:478:G:H2'	2:A2:479:G:C8	2.52	0.44
2:A2:1071:G:N2	2:A2:1078:G:H1	2.16	0.44
2:A2:1646:G:H2'	2:A2:1647:U:O4'	2.17	0.44
2:A2:2177:OMC:HM23	2:A2:2177:OMC:H1'	1.62	0.44
2:A2:2560:C:O2	58:a2:4:ARG:HD2	2.16	0.44
2:A2:3583:U:H2'	2:A2:3584:A:H8	1.82	0.44
2:A2:4318:G:H2'	2:A2:4319:C:C6	2.53	0.44
2:A2:4330:G:N2	2:A2:4365:G:H1'	2.32	0.44
7:Bz:44:G:H2'	7:Bz:45:U:C2	2.52	0.44
11:C2:22:U:OP2	20:F2:196:MET:HG2	2.16	0.44
11:C2:144:U:H2'	11:C2:145:C:H6	1.81	0.44
19:F1:91:ALA:HB1	19:F1:96:ILE:HB	1.98	0.44
27:H3:32:ARG:HA	69:m2:1661:U:OP1	2.17	0.44
33:K3:208:GLU:HA	33:K3:211:LYS:NZ	2.32	0.44
46:R2:105:ASN:O	46:R2:109:ILE:HD12	2.17	0.44
68:k2:51:VAL:HG13	68:k2:60:VAL:HG11	1.99	0.44
2:A2:381:U:H2'	2:A2:382:G:O4'	2.16	0.44
2:A2:804:C:H2'	2:A2:805:C:C6	2.51	0.44
2:A2:1205:A:P	32:K2:181:ARG:HH22	2.40	0.44
2:A2:2051:G:C6	2:A2:2052:G:C5	3.05	0.44
2:A2:2130:A:H2'	2:A2:2131:A:C8	2.50	0.44
2:A2:3512:A:H2'	2:A2:3513:G:H8	1.81	0.44
2:A2:3572:G:H2'	2:A2:3573:A:H8	1.81	0.44
2:A2:3735:A:C5	4:B1:56:LYS:HE2	2.53	0.44
2:A2:4395:G:H2'	2:A2:4396:A:C8	2.52	0.44
2:A2:4677:G:H2'	2:A2:4678:C:H6	1.82	0.44
5:B2:93:G:H2'	5:B2:94:C:O4'	2.17	0.44
10:C1:161:ILE:H	10:C1:161:ILE:HD12	1.82	0.44
11:C2:70:G:C2	11:C2:87:G:N3	2.86	0.44
11:C2:154:G:H2'	11:C2:155:C:C6	2.51	0.44
14:D2:137:ILE:HD11	14:D2:149:LYS:HB2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:F1:42:LYS:HA	19:F1:45:ARG:HE	1.82	0.44
26:H2:75:LEU:HA	26:H2:78:ARG:HG2	2.00	0.44
29:I3:18:VAL:HG21	29:I3:307:VAL:HG23	1.99	0.44
40:O2:100:LEU:HD23	40:O2:112:LEU:HD23	1.98	0.44
42:P2:104:VAL:HG11	42:P2:117:ILE:HG12	1.99	0.44
45:Q3:7:ILE:HG13	45:Q3:7:ILE:O	2.16	0.44
69:m2:12:U:H2'	69:m2:13:C:C6	2.52	0.44
69:m2:832:A:C6	69:m2:847:G:C5	3.05	0.44
69:m2:943:C:H2'	69:m2:944:G:C8	2.53	0.44
69:m2:1569:G:H8	69:m2:1569:G:OP1	2.00	0.44
70:n2:61:C:H2'	70:n2:62:A:C8	2.41	0.44
71:o2:21:ALA:HB1	71:o2:170:SER:HA	1.98	0.44
74:r2:213:ALA:HB2	74:r2:242:LYS:NZ	2.32	0.44
75:s2:19:LEU:CB	75:s2:21:GLY:H	2.28	0.44
77:u2:177:SER:HB3	77:u2:186:ASP:H	1.81	0.44
81:y2:53:GLU:N	81:y2:54:PRO:HD2	2.31	0.44
2:A2:208:A:H1'	2:A2:232:G:N3	2.32	0.44
2:A2:720:C:O2	26:H2:137:LYS:HE3	2.18	0.44
2:A2:1262:C:H2'	2:A2:1263:C:H6	1.83	0.44
2:A2:1390:G:C8	14:D2:181:LYS:HD2	2.51	0.44
2:A2:2054:G:C2	2:A2:2091:G:C5	3.06	0.44
2:A2:4394:G:H2'	2:A2:4395:G:C8	2.52	0.44
16:E1:35:ARG:O	16:E1:39:VAL:HG23	2.18	0.44
17:E2:173:LEU:HD11	17:E2:323:TYR:CZ	2.52	0.44
20:F2:144:ILE:HD13	20:F2:150:LEU:HD13	1.98	0.44
25:H1:33:LEU:HD13	25:H1:37:HIS:ND1	2.33	0.44
33:K3:47:GLY:H	33:K3:116:LYS:HZ2	1.64	0.44
35:L3:133:ARG:HB2	69:m2:564:U:H5"	1.99	0.44
36:M2:76:LYS:HD2	36:M2:131:GLU:CD	2.42	0.44
54:W2:34:THR:HG21	54:W2:93:THR:HG22	1.98	0.44
56:Y2:23:HIS:CD2	56:Y2:24:GLN:HE22	2.35	0.44
69:m2:181:A:OP2	69:m2:182:C:H5"	2.17	0.44
69:m2:1123:G:C6	69:m2:1124:A:C5	3.06	0.44
69:m2:1202:A:H2'	69:m2:1203:U:H6	1.83	0.44
69:m2:1456:A:N7	82:z2:3:ARG:HG3	2.32	0.44
69:m2:1487:U:H2'	69:m2:1488:A:O4'	2.17	0.44
69:m2:1617:U:H2'	69:m2:1618:U:C6	2.52	0.44
72:p2:97:LEU:HB3	72:p2:232:HIS:HE1	1.82	0.44
73:q2:46:THR:O	73:q2:84:VAL:HA	2.17	0.44
73:q2:150:MET:HG2	73:q2:152:PHE:CE1	2.52	0.44
79:w2:57:ASP:HB2	79:w2:60:CYS:HB2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:y2:31:LEU:H	81:y2:67:ASP:HB3	1.82	0.44
2:A2:263:G:H2'	2:A2:264:C:C6	2.53	0.44
2:A2:689:G:H2'	2:A2:690:C:C6	2.52	0.44
2:A2:1059:C:C2	2:A2:1060:G:C8	3.06	0.44
2:A2:1744:A:N6	2:A2:1841:G:H2'	2.33	0.44
2:A2:1880:C:H2'	2:A2:1881:G:H8	1.80	0.44
2:A2:2238:G:C6	2:A2:2251:G:C6	3.05	0.44
2:A2:2439:C:H2'	2:A2:2440:C:H6	1.81	0.44
2:A2:2458:G:C2	2:A2:2469:G:C2	3.06	0.44
2:A2:2502:U:H2'	2:A2:2503:C:C6	2.53	0.44
2:A2:3439:A:C2	2:A2:3443:G:C6	3.06	0.44
2:A2:3547:A:H2'	2:A2:3548:U:O4'	2.17	0.44
2:A2:4515:G:H2'	22:G1:91:TRP:CZ2	2.51	0.44
2:A2:4554:A:C5	2:A2:4557:G:C6	3.05	0.44
2:A2:4690:A:H2'	2:A2:4691:G:C8	2.51	0.44
5:B2:19:C:H2'	5:B2:20:U:H6	1.81	0.44
5:B2:71:G:H2'	5:B2:72:U:C6	2.53	0.44
12:C3:96:GLU:HG2	12:C3:97:ILE:N	2.33	0.44
20:F2:77:PRO:HG2	20:F2:91:ALA:O	2.18	0.44
20:F2:212:ASN:C	20:F2:212:ASN:HD22	2.25	0.44
23:G2:33:ARG:HE	23:G2:37:VAL:HG11	1.82	0.44
27:H3:32:ARG:HH21	27:H3:36:LEU:HD11	1.81	0.44
28:I2:16:LEU:HD21	28:I2:83:THR:HG21	1.98	0.44
28:I2:130:LYS:HB2	28:I2:133:ARG:HG3	1.99	0.44
29:I3:253:GLY:O	29:I3:285:GLN:HA	2.18	0.44
31:J3:178:HIS:HB2	31:J3:220:ASP:OD1	2.17	0.44
35:L3:169:ARG:HG2	35:L3:169:ARG:O	2.18	0.44
36:M2:2:LYS:HB3	36:M2:43:ARG:HH21	1.82	0.44
40:O2:42:PHE:CE2	40:O2:90:TYR:HB2	2.52	0.44
52:U2:72:THR:HG22	52:U2:110:LYS:HB3	1.99	0.44
55:X2:25:TYR:O	55:X2:85:ARG:HD2	2.17	0.44
58:a2:86:CYS:O	58:a2:90:ARG:HG3	2.17	0.44
69:m2:530:A:C2	69:m2:531:A:C5	3.05	0.44
69:m2:565:G:C2	69:m2:566:A:C8	3.05	0.44
69:m2:604:G:H22	69:m2:622:G:H21	1.65	0.44
69:m2:1550:G:H1	69:m2:1586:G:H1	1.65	0.44
69:m2:1708:G:H2'	69:m2:1709:U:H6	1.83	0.44
69:m2:1830:C:H2'	69:m2:1831:G:C8	2.52	0.44
71:o2:173:LEU:HD21	71:o2:177:MET:HE3	1.99	0.44
2:A2:161:G:H2'	2:A2:162:A:C8	2.53	0.44
2:A2:441:G:H2'	2:A2:442:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1444:A:N7	14:D2:199:VAL:HG11	2.33	0.44
2:A2:1596:A:H5”	2:A2:3866:A:N6	2.33	0.44
2:A2:1823:G:H2’	2:A2:1824:C:H6	1.81	0.44
2:A2:2160:G:H2’	2:A2:2161:G:H8	1.82	0.44
2:A2:2461:G:H3’	2:A2:2462:U:C6	2.53	0.44
2:A2:3765:G:H8	2:A2:3765:G:OP2	2.01	0.44
2:A2:3867:C:C2	2:A2:3868:G:C8	3.06	0.44
2:A2:4265:C:O4’	10:C1:122:TYR:HB2	2.17	0.44
4:B1:150:LYS:HD3	4:B1:177:MET:HE3	1.98	0.44
5:B2:64:G:H2’	5:B2:65:G:C8	2.52	0.44
6:B3:11:GLN:OE1	6:B3:62:ARG:HD2	2.17	0.44
29:I3:17:TRP:HB2	29:I3:36:ARG:HG3	1.98	0.44
31:J3:133:TYR:CE1	31:J3:216:MET:HA	2.53	0.44
41:O3:138:ASP:OD2	69:m2:987:G:H1’	2.17	0.44
60:c2:54:GLU:O	60:c2:58:MET:HG2	2.18	0.44
67:j2:25:MET:SD	69:m2:1042:G:H5”	2.58	0.44
69:m2:620:C:H2’	69:m2:621:A:O4’	2.18	0.44
69:m2:1012:G:H2’	69:m2:1013:A:C8	2.52	0.44
69:m2:1233:C:H42	69:m2:1529:C:N4	2.16	0.44
69:m2:1300:G:H2’	69:m2:1301:A:C8	2.53	0.44
69:m2:1812:U:H2’	69:m2:1813:C:C6	2.53	0.44
72:p2:139:CYS:HB2	72:p2:172:MET:CE	2.48	0.44
78:v2:50:GLN:O	78:v2:50:GLN:HG2	2.18	0.44
2:A2:383:A:H2’	2:A2:384:A:C8	2.52	0.44
2:A2:704:G:C2	2:A2:705:G:N7	2.85	0.44
2:A2:874:C:N4	2:A2:1095:G:H21	2.15	0.44
2:A2:1501:G:H2’	2:A2:1502:G:C8	2.53	0.44
2:A2:1511:C:H2’	2:A2:1512:U:C4	2.53	0.44
2:A2:2376:A:H2’	2:A2:2377:G:H8	1.82	0.44
2:A2:2484:C:H2’	2:A2:2485:U:O4’	2.18	0.44
2:A2:3292:C:H2’	2:A2:3292:C:O2	2.18	0.44
2:A2:3340:G:H2’	2:A2:3341:C:C6	2.53	0.44
2:A2:3344:U:H2’	2:A2:3345:G:H8	1.83	0.44
2:A2:3722:C:C2	2:A2:3723:A:C8	3.06	0.44
2:A2:4176:G:H2’	2:A2:4177:C:C6	2.52	0.44
2:A2:4188:OMC:H2’	2:A2:4189:C:H6	1.82	0.44
11:C2:25:G:H2’	11:C2:26:C:H6	1.83	0.44
11:C2:71:A:C2	11:C2:88:A:C8	3.06	0.44
17:E2:112:ASP:O	17:E2:116:ARG:HG3	2.17	0.44
19:F1:75:GLY:HA2	19:F1:97:SER:OG	2.17	0.44
32:K2:22:ASP:HB3	32:K2:25:LEU:HB3	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:O3:42:VAL:HG23	41:O3:43:HIS:N	2.33	0.44
53:V2:101:LYS:HA	53:V2:104:LYS:NZ	2.33	0.44
57:Z2:50:VAL:HG22	57:Z2:69:VAL:HG22	2.00	0.44
69:m2:186:C:C2	69:m2:187:G:C8	3.06	0.44
69:m2:604:G:H2'	69:m2:605:C:C5	2.53	0.44
69:m2:612:G:N3	69:m2:613:G:C8	2.85	0.44
69:m2:926:G:C4	69:m2:927:G:C8	3.06	0.44
69:m2:1091:G:H1	69:m2:1162:U:H3	1.65	0.44
69:m2:1183:A:H2'	69:m2:1184:A:O4'	2.17	0.44
69:m2:1238:G:C4	69:m2:1239:C:C5	3.06	0.44
69:m2:1669:U:H2'	69:m2:1670:U:C6	2.53	0.44
74:r2:11:ARG:HA	74:r2:28:ALA:HB2	1.98	0.44
74:r2:68:ARG:HE	74:r2:76:VAL:HG11	1.82	0.44
74:r2:97:GLU:HG2	74:r2:113:ARG:HH12	1.82	0.44
1:A1:188:ARG:HD2	1:A1:231:TRP:CE2	2.53	0.44
2:A2:34:A:H2'	2:A2:35:U:H6	1.83	0.44
2:A2:229:G:H2'	2:A2:230:G:C8	2.52	0.44
2:A2:856:G:C2	26:H2:131:LYS:HB3	2.53	0.44
2:A2:1589:A:H2'	2:A2:1590:A:C8	2.53	0.44
2:A2:1590:A:H2'	13:D1:22:PHE:CE2	2.53	0.44
2:A2:2376:A:H2'	2:A2:2377:G:C8	2.53	0.44
2:A2:2618:G:C4	2:A2:2619:A:C8	3.05	0.44
2:A2:3565:C:H5	2:A2:4048:A:N6	2.16	0.44
2:A2:3888:G:H2'	2:A2:3889:C:C6	2.53	0.44
2:A2:3955:C:O2'	2:A2:3958:OMU:H5	2.18	0.44
2:A2:4127:G:H5"	2:A2:4128:C:H5"	2.00	0.44
2:A2:4363:C:H2'	2:A2:4364:C:C6	2.52	0.44
4:B1:206:GLN:OE1	4:B1:206:GLN:HA	2.17	0.44
6:B3:22:LEU:HD13	6:B3:57:ALA:HB3	1.99	0.44
24:G3:55:VAL:HB	75:s2:34:SER:HA	1.99	0.44
35:L3:160:SER:O	35:L3:161:LEU:HD23	2.18	0.44
40:O2:21:PHE:CE2	40:O2:80:LYS:HB3	2.52	0.44
40:O2:26:THR:HG22	40:O2:30:GLU:OE2	2.17	0.44
46:R2:104:ALA:HA	46:R2:108:GLN:NE2	2.33	0.44
49:S3:19:HIS:HB3	49:S3:22:LYS:HG2	1.99	0.44
53:V2:99:HIS:NE2	53:V2:101:LYS:HB3	2.33	0.44
64:g2:79:GLU:HG2	64:g2:80:PRO:HD2	1.99	0.44
68:k2:119:ARG:O	68:k2:122:LYS:HG2	2.18	0.44
69:m2:19:A:H2'	69:m2:20:G:O4'	2.18	0.44
69:m2:149:A:H5"	69:m2:150:A:H8	1.83	0.44
69:m2:833:G:H2'	69:m2:834:G:H8	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1408:G:H2'	69:m2:1409:U:H6	1.83	0.44
72:p2:134:LEU:HG	72:p2:218:LEU:HB2	2.00	0.44
2:A2:424:U:H3	11:C2:10:G:H1	1.65	0.44
2:A2:660:G:H2'	2:A2:661:C:H6	1.81	0.44
2:A2:687:G:C4	2:A2:688:G:C8	3.06	0.44
2:A2:2390:U:H2'	2:A2:2391:U:C6	2.53	0.44
2:A2:2508:G:H5"	50:T2:135:ARG:NH1	2.33	0.44
2:A2:2579:OMC:HM23	2:A2:2579:OMC:H1'	1.88	0.44
2:A2:3382:A:H8	2:A2:3382:A:OP1	2.00	0.44
2:A2:4336:A:H2'	2:A2:4337:U:O4'	2.18	0.44
2:A2:4389:G:H2'	2:A2:4390:C:C6	2.52	0.44
11:C2:3:A:H2'	11:C2:4:C:C6	2.52	0.44
11:C2:66:A:H2'	11:C2:67:U:C6	2.53	0.44
12:C3:80:PHE:HB3	27:H3:52:PHE:HB3	2.00	0.44
21:F3:24:THR:HG21	21:F3:71:LEU:HD22	2.00	0.44
29:I3:38:LYS:HG2	29:I3:64:HIS:C	2.43	0.44
31:J3:205:VAL:HG12	69:m2:3:C:H5'	2.00	0.44
36:M2:45:TRP:HA	36:M2:48:VAL:HG12	2.00	0.44
39:N3:46:THR:HG23	39:N3:86:GLU:HG2	2.00	0.44
40:O2:61:VAL:HG23	40:O2:74:SER:HB3	2.00	0.44
69:m2:206:G:H2'	69:m2:207:G:H8	1.83	0.44
69:m2:815:A:C5	69:m2:816:U:C5	3.06	0.44
69:m2:1811:A:H2'	69:m2:1812:U:C6	2.53	0.44
69:m2:1819:G:H2'	69:m2:1820:A:C8	2.53	0.44
70:n2:38:C:H2'	70:n2:39:C:C6	2.52	0.44
82:z2:5:ARG:NH1	82:z2:53:TYR:HD1	2.15	0.44
82:z2:13:ALA:HA	82:z2:16:ILE:HG22	1.99	0.44
82:z2:18:GLU:HG3	82:z2:69:ILE:HD11	2.00	0.44
2:A2:318:A:O2'	2:A2:3383:A:H1'	2.18	0.44
2:A2:453:G:H22	2:A2:1107:G:N2	2.15	0.44
2:A2:1476:C:H2'	2:A2:1477:U:C6	2.53	0.44
2:A2:1501:G:H2'	2:A2:1502:G:H8	1.82	0.44
2:A2:3366:G:N3	2:A2:3368:A:C6	2.85	0.44
2:A2:3369:U:H2'	2:A2:3370:G:C8	2.53	0.44
2:A2:3439:A:N7	2:A2:3448:OMG:C8	2.86	0.44
2:A2:3730:C:H2'	2:A2:3731:G:C8	2.52	0.44
11:C2:67:U:C2	11:C2:68:G:C8	3.06	0.44
14:D2:66:PRO:HG2	14:D2:67:TYR:CE2	2.53	0.44
26:H2:219:LEU:HA	26:H2:223:TYR:HD2	1.83	0.44
35:L3:160:SER:C	35:L3:161:LEU:HD23	2.43	0.44
36:M2:29:ARG:HD2	36:M2:29:ARG:C	2.42	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:M2:45:TRP:HH2	36:M2:59:GLY:HA3	1.82	0.44
39:N3:2:GLY:HA3	69:m2:925:G:H5"	1.99	0.44
41:O3:143:LYS:HB3	69:m2:1049:C:H5'	1.99	0.44
48:S2:110:LYS:O	48:S2:115:ARG:HG3	2.18	0.44
69:m2:35:C:H42	69:m2:522:A:H61	1.66	0.44
69:m2:167:G:H5'	69:m2:168:C:OP2	2.18	0.44
69:m2:460:A:H2'	69:m2:461:C:H6	1.83	0.44
69:m2:614:PSU:H2'	69:m2:615:G:C8	2.53	0.44
69:m2:637:G:H2'	69:m2:638:C:C6	2.53	0.44
69:m2:638:C:C4	69:m2:639:U:C4	3.05	0.44
69:m2:946:A:H2'	69:m2:947:U:C6	2.53	0.44
69:m2:1192:A:H3'	69:m2:1193:C:H6	1.83	0.44
69:m2:1661:U:O5'	69:m2:1662:C:H5	2.01	0.44
71:o2:52:LYS:HE2	82:z2:109:LEU:HD13	1.99	0.44
81:y2:73:LYS:HE2	81:y2:73:LYS:HB3	1.85	0.44
2:A2:1184:G:OP2	20:F2:48:ASN:HB2	2.18	0.43
2:A2:1697:G:H2'	2:A2:1698:A:O4'	2.17	0.43
2:A2:2362:C:H2'	2:A2:2363:G:C8	2.52	0.43
2:A2:3462:G:C4	2:A2:3463:A:C8	3.06	0.43
2:A2:3576:U:H2'	2:A2:3577:U:C6	2.53	0.43
2:A2:3837:G:C2	2:A2:3838:A:C8	3.06	0.43
2:A2:3927:G:C4	2:A2:3928:G:C8	3.06	0.43
2:A2:4351:U:H4'	2:A2:4352:A:OP1	2.18	0.43
2:A2:4369:A:O4'	17:E2:18:PRO:HG2	2.18	0.43
2:A2:4507:G:C6	2:A2:4508:G:N7	2.86	0.43
15:D3:70:LEU:HD12	71:o2:57:LYS:HD3	2.00	0.43
22:G1:71:LYS:NZ	22:G1:72:TYR:HE1	2.15	0.43
23:G2:223:PHE:O	23:G2:227:ILE:HD12	2.18	0.43
29:I3:36:ARG:NH2	82:z2:29:HIS:HB2	2.32	0.43
46:R2:119:ILE:HA	46:R2:144:TYR:CE2	2.50	0.43
64:g2:78:ILE:HD12	64:g2:83:ARG:HH21	1.83	0.43
69:m2:14:C:H2'	69:m2:15:U:C6	2.53	0.43
69:m2:832:A:H2'	69:m2:833:G:C4'	2.48	0.43
69:m2:1076:C:H2'	69:m2:1077:C:C6	2.53	0.43
69:m2:1280:A:H2'	69:m2:1281:C:C6	2.53	0.43
69:m2:1851:G:H2'	69:m2:1852:A:C8	2.52	0.43
71:o2:196:GLU:HG2	71:o2:197:VAL:HG23	1.99	0.43
72:p2:105:LEU:HG	72:p2:213:ARG:HA	2.00	0.43
80:x2:61:ARG:HD2	80:x2:62:LYS:N	2.33	0.43
2:A2:491:C:O5'	2:A2:491:C:H6	2.01	0.43
2:A2:825:G:H2'	2:A2:826:C:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:874:C:H41	2:A2:1095:G:H21	1.65	0.43
2:A2:1071:G:H4'	2:A2:1079:A:C6	2.52	0.43
2:A2:1082:A:O2'	53:V2:105:ARG:HD2	2.17	0.43
2:A2:1352:G:H2'	2:A2:1353:C:C6	2.54	0.43
2:A2:1422:U:H2'	2:A2:1423:C:O4'	2.17	0.43
2:A2:2040:A:OP2	52:U2:7:LYS:HE3	2.18	0.43
2:A2:3341:C:H2'	2:A2:3342:G:H8	1.82	0.43
2:A2:3555:OMG:H5"	17:E2:257:TRP:CD1	2.54	0.43
2:A2:3882:C:OP2	66:i2:88:CYS:HA	2.18	0.43
2:A2:3999:G:H2'	2:A2:4000:A:C8	2.53	0.43
5:B2:113:G:H2'	5:B2:114:U:C6	2.53	0.43
13:D1:171:TRP:HB2	13:D1:178:ALA:HA	1.99	0.43
15:D3:17:CYS:HB2	15:D3:56:CYS:SG	2.58	0.43
17:E2:391:PRO:HB2	17:E2:396:ARG:NH1	2.33	0.43
28:I2:89:PRO:O	28:I2:95:GLY:HA3	2.18	0.43
29:I3:64:HIS:HD2	29:I3:83:TRP:CB	2.29	0.43
30:J2:10:ASN:HA	30:J2:11:PRO:HD3	1.90	0.43
41:O3:43:HIS:ND1	41:O3:55:ARG:HD3	2.33	0.43
42:P2:39:ILE:HG23	42:P2:61:VAL:HB	1.99	0.43
47:R3:48:VAL:HG22	47:R3:80:ARG:HE	1.82	0.43
61:d2:28:HIS:HE1	61:d2:30:GLN:HB2	1.82	0.43
69:m2:166:A:H2'	69:m2:167:G:C8	2.50	0.43
69:m2:561:G:O2'	69:m2:562:A:H8	2.01	0.43
69:m2:1400:G:C6	69:m2:1401:C:C4	3.06	0.43
76:t2:19:PHE:CE2	76:t2:49:LYS:HA	2.54	0.43
76:t2:148:LEU:HD23	76:t2:148:LEU:O	2.18	0.43
79:w2:111:VAL:HG11	79:w2:128:VAL:HG11	1.99	0.43
81:y2:55:VAL:HG23	81:y2:63:PHE:HB2	2.00	0.43
82:z2:5:ARG:HB2	82:z2:10:LYS:HE2	2.00	0.43
2:A2:709:U:H4'	56:Y2:8:VAL:HG12	2.00	0.43
2:A2:3507:U:H3'	2:A2:3508:A:H8	1.83	0.43
2:A2:3838:A:H5"	25:H1:81:TYR:CE1	2.53	0.43
2:A2:3979:C:H2'	2:A2:3980:G:C8	2.53	0.43
10:C1:27:VAL:O	10:C1:33:THR:HA	2.19	0.43
11:C2:139:G:H2'	11:C2:140:C:C6	2.53	0.43
13:D1:131:ILE:H	13:D1:131:ILE:HD12	1.83	0.43
17:E2:29:VAL:HG22	17:E2:220:ILE:HD13	2.00	0.43
17:E2:105:VAL:HG11	17:E2:150:PHE:CZ	2.53	0.43
19:F1:65:ARG:HG2	19:F1:66:TYR:CE1	2.54	0.43
20:F2:54:VAL:HG21	20:F2:101:MET:HE3	2.00	0.43
25:H1:16:SER:CB	60:c2:48:CYS:HB3	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:Q3:110:ARG:HE	45:Q3:114:MET:HG3	1.81	0.43
69:m2:37:C:H2'	69:m2:38:A:O4'	2.18	0.43
69:m2:85:A:O2'	69:m2:149:A:H8	2.02	0.43
69:m2:676:C:H2'	69:m2:677:U:C6	2.53	0.43
69:m2:817:U:H2'	69:m2:818:A:H8	1.82	0.43
69:m2:954:G:H2'	69:m2:955:C:C6	2.53	0.43
69:m2:1580:U:H2'	73:q2:4:GLN:NE2	2.34	0.43
69:m2:1590:A:H2'	69:m2:1591:A:H8	1.82	0.43
71:o2:81:ASN:O	71:o2:84:GLN:HG2	2.18	0.43
1:A1:96:MET:HE1	2:A2:943:C:O2	2.18	0.43
2:A2:162:A:H2'	2:A2:163:A:C8	2.53	0.43
2:A2:221:C:H2'	2:A2:222:C:H6	1.80	0.43
2:A2:310:G:H2'	2:A2:311:G:H8	1.83	0.43
2:A2:688:G:C4	2:A2:689:G:C8	3.06	0.43
2:A2:757:U:H2'	2:A2:758:G:H8	1.83	0.43
2:A2:1069:G:H2'	2:A2:1070:C:H4'	1.99	0.43
2:A2:1417:G:H2'	2:A2:1418:G:H8	1.79	0.43
2:A2:1498:G:O6	2:A2:1654:U:O2	2.35	0.43
2:A2:1652:A:H2'	2:A2:1653:G:C8	2.53	0.43
2:A2:1657:G:H2'	2:A2:1658:C:C6	2.52	0.43
2:A2:2016:G:OP2	68:k2:94:ARG:HG2	2.18	0.43
2:A2:2125:A:C2	55:X2:77:ILE:HD12	2.53	0.43
2:A2:2170:U:H2'	2:A2:2171:G:C8	2.54	0.43
2:A2:2482:C:H2'	2:A2:2483:U:H6	1.83	0.43
2:A2:3451:A:H2'	2:A2:3452:U:H6	1.83	0.43
2:A2:4123:U:H2'	2:A2:4124:G:C8	2.53	0.43
2:A2:4543:G:H2'	2:A2:4544:G:C8	2.53	0.43
15:D3:31:SER:H	71:o2:141:ASN:ND2	2.17	0.43
16:E1:96:LYS:NZ	16:E1:163:MET:HE1	2.33	0.43
20:F2:190:ARG:NH2	20:F2:199:ARG:HB3	2.32	0.43
29:I3:289:LEU:HB2	29:I3:298:LEU:HD21	2.00	0.43
35:L3:160:SER:H	35:L3:162:ARG:HH21	1.64	0.43
45:Q3:103:SER:N	45:Q3:107:ARG:HD3	2.33	0.43
46:R2:86:ALA:HB1	46:R2:97:VAL:HG21	2.00	0.43
49:S3:19:HIS:HD2	69:m2:1130:C:O2'	2.01	0.43
62:e2:3:ARG:HB2	62:e2:43:TYR:CE1	2.53	0.43
66:i2:6:LYS:O	66:i2:23:VAL:HG22	2.18	0.43
69:m2:579:U:H2'	69:m2:580:C:C6	2.53	0.43
69:m2:927:G:C2	69:m2:928:A:C8	3.07	0.43
69:m2:1232:C:H2'	69:m2:1233:C:H6	1.83	0.43
71:o2:21:ALA:HB2	71:o2:173:LEU:HD13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:r2:18:TRP:O	74:r2:19:MET:C	2.61	0.43
2:A2:122:U:H2'	2:A2:123:C:C6	2.53	0.43
2:A2:151:G:O6	4:B1:139:GLY:HA3	2.18	0.43
2:A2:830:G:C5	2:A2:837:G:C5	3.07	0.43
2:A2:1621:G:H2'	2:A2:1622:C:O4'	2.18	0.43
2:A2:2431:A:OP2	2:A2:2431:A:H8	2.02	0.43
2:A2:2601:G:N2	42:P2:21:PRO:HG3	2.33	0.43
2:A2:3359:G:C6	2:A2:3360:U:C4	3.07	0.43
29:I3:147:HIS:CD2	29:I3:175:LYS:HG3	2.54	0.43
31:J3:133:TYR:HE1	31:J3:216:MET:HG2	1.83	0.43
33:K3:170:ARG:HG3	69:m2:67:C:H41	1.83	0.43
38:N2:25:VAL:HG13	38:N2:30:TYR:HE2	1.84	0.43
39:N3:36:GLN:O	39:N3:40:LEU:HG	2.18	0.43
47:R3:66:LYS:HB2	47:R3:66:LYS:HE3	1.86	0.43
69:m2:616:C:H2'	69:m2:628:G:C8	2.53	0.43
69:m2:1470:C:H2'	69:m2:1471:A:C8	2.53	0.43
69:m2:1624:U:H5"	69:m2:1625:A:H4'	1.99	0.43
70:n2:34:A:H2'	70:n2:35:U:H6	1.83	0.43
82:z2:19:LYS:C	82:z2:20:TYR:HD1	2.26	0.43
1:A1:109:PRO:HG3	1:A1:166:TYR:CD2	2.54	0.43
2:A2:259:C:H2'	2:A2:260:C:H6	1.83	0.43
2:A2:472:C:H2'	2:A2:473:C:H6	1.83	0.43
2:A2:689:G:H2'	2:A2:690:C:H6	1.82	0.43
2:A2:1252:C:O2'	2:A2:1253:U:H5'	2.18	0.43
2:A2:1286:U:H2'	2:A2:1287:C:C6	2.53	0.43
2:A2:2062:A:H62	2:A2:2086:G:H1'	1.83	0.43
2:A2:2177:OMC:N4	2:A2:2584:U:H4'	2.34	0.43
2:A2:2451:A:C5	62:e2:69:LEU:HD13	2.54	0.43
2:A2:3727:A:H61	2:A2:3821:G:H1'	1.83	0.43
2:A2:4224:U:H1'	2:A2:4372:C:C4	2.54	0.43
10:C1:96:TYR:CD2	10:C1:100:PRO:HA	2.54	0.43
14:D2:70:LYS:HD2	14:D2:72:ARG:NH1	2.32	0.43
17:E2:229:LYS:HB3	17:E2:233:SER:OG	2.18	0.43
20:F2:13:GLU:OE1	20:F2:157:LYS:HD3	2.18	0.43
27:H3:11:PRO:HG2	69:m2:1620:C:C5	2.54	0.43
33:K3:159:ARG:HE	33:K3:171:THR:HB	1.82	0.43
33:K3:164:LYS:HB2	33:K3:168:LYS:O	2.18	0.43
38:N2:82:GLY:HA2	53:V2:21:ILE:HD12	1.99	0.43
41:O3:93:LEU:HD23	41:O3:124:MET:HE2	2.01	0.43
46:R2:147:LEU:HD11	46:R2:156:ILE:HD13	2.00	0.43
65:h2:2:ARG:HG3	69:m2:1843:C:OP1	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:j2:28:LYS:HE2	69:m2:1042:G:H1'	2.01	0.43
67:j2:73:THR:HG22	67:j2:75:SER:H	1.83	0.43
68:k2:92:SER:O	68:k2:96:MET:HG3	2.18	0.43
69:m2:564:U:H2'	69:m2:565:G:C8	2.54	0.43
69:m2:1126:C:H5'	72:p2:148:ASN:O	2.19	0.43
69:m2:1534:C:O2'	69:m2:1638:G:H5'	2.18	0.43
72:p2:32:ASP:OD1	72:p2:95:ASN:HA	2.18	0.43
72:p2:139:CYS:HB2	72:p2:172:MET:HE1	2.01	0.43
74:r2:86:PHE:CD2	74:r2:87:MET:HG2	2.53	0.43
2:A2:396:A:H2'	2:A2:397:G:C8	2.53	0.43
2:A2:1324:C:H2'	2:A2:1325:G:H8	1.84	0.43
2:A2:1475:C:H2'	2:A2:1476:C:H6	1.84	0.43
2:A2:1505:C:H2'	2:A2:1506:U:C6	2.54	0.43
2:A2:1585:C:H5"	13:D1:90:ARG:HH21	1.82	0.43
2:A2:1864:C:H4'	36:M2:4:SER:O	2.18	0.43
2:A2:3360:U:C2	2:A2:3361:G:C8	3.06	0.43
2:A2:3579:A:H2'	2:A2:3580:C:C6	2.54	0.43
2:A2:3711:C:H2'	2:A2:3712:A:H8	1.77	0.43
2:A2:4024:U:OP2	66:i2:61:LYS:HG2	2.19	0.43
2:A2:4350:C:H3'	64:g2:111:ARG:NH1	2.34	0.43
2:A2:4520:G:H4'	2:A2:4521:A:H5'	2.00	0.43
4:B1:32:PHE:CZ	50:T2:55:ALA:HA	2.54	0.43
5:B2:60:G:C2	5:B2:61:G:C8	3.07	0.43
13:D1:191:ILE:HD11	13:D1:212:LEU:HD11	2.01	0.43
29:I3:149:GLU:HB3	29:I3:171:ASP:HB3	2.01	0.43
32:K2:159:PRO:HA	32:K2:188:ASN:HB2	2.00	0.43
44:Q2:34:ALA:HA	44:Q2:37:GLU:HB2	2.01	0.43
56:Y2:90:MET:SD	68:k2:113:ARG:HA	2.58	0.43
64:g2:98:LYS:HE3	64:g2:98:LYS:HB2	1.86	0.43
69:m2:350:A:H2'	69:m2:351:A:C8	2.53	0.43
69:m2:353:G:C2	69:m2:354:U:C5	3.05	0.43
69:m2:513:U:H2'	69:m2:514:A2M:C8	2.49	0.43
69:m2:514:A2M:H2'	69:m2:515:G:H8	1.83	0.43
69:m2:1217:C:O2'	69:m2:1647:C:H5"	2.19	0.43
69:m2:1629:C:C2	69:m2:1630:C:C5	3.07	0.43
69:m2:1636:A:H3'	69:m2:1637:C:H6	1.83	0.43
73:q2:32:ASP:HB3	73:q2:57:ASN:ND2	2.33	0.43
79:w2:129:GLY:O	79:w2:140:PHE:HA	2.19	0.43
82:z2:72:LYS:O	82:z2:75:GLU:HG2	2.18	0.43
1:A1:209:MET:SD	20:F2:328:LEU:HD13	2.58	0.43
1:A1:221:LYS:HE2	1:A1:222:ARG:NH1	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:75:G:H1	19:F1:103:ARG:NH1	2.17	0.43
2:A2:1633:G:H2'	2:A2:1634:C:C6	2.54	0.43
2:A2:2293:U:H2'	2:A2:2294:C:C6	2.54	0.43
2:A2:2295:C:OP1	58:a2:66:ARG:HG2	2.19	0.43
2:A2:2418:G:H2'	2:A2:2419:G:C8	2.54	0.43
2:A2:2453:G:H2'	2:A2:2454:C:C6	2.53	0.43
2:A2:2505:G:C4	2:A2:2506:G:C8	3.07	0.43
2:A2:2535:C:H2'	2:A2:2536:G:C8	2.52	0.43
2:A2:3367:A:O3'	2:A2:3368:A:H3'	2.19	0.43
2:A2:3375:A:H2'	2:A2:3376:G:O4'	2.18	0.43
2:A2:3394:G:H2'	2:A2:3395:C:C6	2.54	0.43
2:A2:3952:U:H2'	2:A2:3953:U:C6	2.53	0.43
2:A2:4113:C:H1'	2:A2:4168:G:H22	1.81	0.43
6:B3:23:LYS:HA	6:B3:54:TYR:CE2	2.54	0.43
11:C2:36:G:C5	59:b2:89:ARG:HD3	2.54	0.43
23:G2:30:TYR:HA	23:G2:33:ARG:HB3	2.01	0.43
28:I2:28:LEU:HD21	28:I2:94:ARG:NH1	2.33	0.43
38:N2:80:VAL:HG23	38:N2:80:VAL:O	2.18	0.43
43:P3:6:VAL:HG22	43:P3:34:ILE:HD11	2.00	0.43
43:P3:32:LYS:HA	43:P3:35:VAL:HG22	2.00	0.43
44:Q2:55:TYR:HE2	44:Q2:61:LYS:HZ2	1.67	0.43
46:R2:100:VAL:HG11	46:R2:109:ILE:HG12	2.00	0.43
56:Y2:108:ARG:NH1	56:Y2:108:ARG:HB2	2.34	0.43
66:i2:32:SER:C	66:i2:34:TYR:H	2.26	0.43
69:m2:16:G:H2'	69:m2:17:C:C6	2.53	0.43
69:m2:164:A:H3'	69:m2:165:G:H8	1.82	0.43
69:m2:1571:A:C8	69:m2:1616:A:H1'	2.54	0.43
70:n2:16:C:H1'	70:n2:59:A:H1'	2.01	0.43
71:o2:198:MET:HE1	71:o2:200:ASP:OD2	2.18	0.43
74:r2:151:ASP:CG	74:r2:152:PRO:HD2	2.43	0.43
75:s2:24:SER:HB3	75:s2:26:ASP:OD1	2.19	0.43
2:A2:682:C:H2'	2:A2:683:C:C6	2.54	0.43
2:A2:1468:C:C5	52:U2:26:ARG:HD2	2.54	0.43
2:A2:2081:G:H5"	56:Y2:127:ALA:HB2	2.01	0.43
2:A2:2371:C:C2	2:A2:2372:G:C8	3.07	0.43
2:A2:2487:G:OP1	58:a2:38:VAL:HG21	2.19	0.43
3:A3:43:VAL:O	3:A3:47:LYS:HG2	2.19	0.43
6:B3:56:ARG:HD2	6:B3:79:TYR:CZ	2.54	0.43
10:C1:114:ILE:HB	10:C1:124:ARG:HB2	1.99	0.43
17:E2:100:ARG:HH11	17:E2:100:ARG:HG2	1.83	0.43
19:F1:179:PHE:CD2	52:U2:131:ARG:HB2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F2:210:ILE:O	20:F2:253:THR:HG23	2.19	0.43
33:K3:211:LYS:O	33:K3:215:LYS:HG3	2.18	0.43
35:L3:101:LYS:NZ	35:L3:103:GLU:HB2	2.34	0.43
41:O3:65:ASP:HA	41:O3:68:GLU:HG3	2.00	0.43
69:m2:67:C:H4'	69:m2:68:A:C8	2.53	0.43
69:m2:343:C:H2'	69:m2:344:C:H6	1.83	0.43
69:m2:1101:G:H2'	69:m2:1102:A:O4'	2.19	0.43
69:m2:1164:C:H2'	69:m2:1165:C:O4'	2.18	0.43
69:m2:1166:G:H3'	69:m2:1167:G:N2	2.34	0.43
69:m2:1226:G:C6	69:m2:1645:U:C4	3.07	0.43
69:m2:1393:C:C4	69:m2:1394:U:C4	3.07	0.43
69:m2:1502:G:C5	69:m2:1503:C:C4	3.06	0.43
73:q2:33:GLY:HA3	73:q2:53:THR:OG1	2.19	0.43
82:z2:103:LYS:HZ3	82:z2:117:LEU:HB3	1.84	0.43
2:A2:93:G:H2'	2:A2:94:A:C8	2.53	0.43
2:A2:746:G:O2'	2:A2:747:G:H8	2.01	0.43
2:A2:879:C:H2'	2:A2:880:U:H6	1.83	0.43
2:A2:1121:A:H2'	2:A2:1122:C:C6	2.54	0.43
2:A2:2429:A:N6	67:j2:42:CYS:HA	2.34	0.43
12:C3:42:GLY:O	12:C3:45:GLU:HG3	2.19	0.43
25:H1:189:ARG:O	25:H1:193:ARG:HG3	2.19	0.43
28:I2:25:LYS:HE3	28:I2:29:LEU:HD21	1.99	0.43
35:L3:38:ARG:HA	51:T3:31:ARG:HB2	2.01	0.43
37:M3:24:THR:O	37:M3:27:ILE:HG22	2.18	0.43
55:X2:20:VAL:HA	55:X2:90:ARG:O	2.19	0.43
60:c2:86:LYS:O	60:c2:90:LEU:HG	2.19	0.43
69:m2:1413:G:C6	69:m2:1433:G:C6	3.06	0.43
69:m2:1672:C:H2'	69:m2:1673:G:H8	1.82	0.43
70:n2:68:U:H2'	70:n2:69:G:H8	1.83	0.43
75:s2:22:LYS:HE2	75:s2:23:TRP:CZ3	2.53	0.43
76:t2:65:PRO:HG2	76:t2:68:GLN:HB2	2.01	0.43
76:t2:134:VAL:HG12	76:t2:173:PHE:CD2	2.54	0.43
2:A2:229:G:H2'	2:A2:230:G:H8	1.84	0.42
2:A2:231:U:H4'	48:S2:100:HIS:CG	2.54	0.42
2:A2:425:U:H2'	2:A2:426:A:C8	2.50	0.42
2:A2:1104:G:H2'	2:A2:1105:G:H8	1.84	0.42
2:A2:1476:C:H2'	2:A2:1477:U:H6	1.84	0.42
2:A2:2241:G:H2'	2:A2:2242:G:C8	2.54	0.42
2:A2:2302:G:N1	2:A2:2527:C:H5	2.14	0.42
2:A2:2444:C:H2'	2:A2:2445:C:C6	2.53	0.42
2:A2:2506:G:C2	2:A2:2507:G:C5	3.06	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3360:U:H2'	2:A2:3361:G:O4'	2.19	0.42
2:A2:3526:C:H2'	2:A2:3527:A:H8	1.84	0.42
2:A2:3558:A:OP1	2:A2:4102:PSU:H4'	2.19	0.42
2:A2:3860:U:H2'	2:A2:3861:G:H8	1.83	0.42
2:A2:4188:OMC:H2'	2:A2:4189:C:C6	2.54	0.42
3:A3:15:VAL:O	3:A3:19:ASN:HB3	2.18	0.42
6:B3:41:LYS:HD3	6:B3:43:LYS:HE3	2.01	0.42
10:C1:93:ARG:HD2	10:C1:143:GLU:HB2	2.01	0.42
23:G2:232:THR:O	23:G2:235:MET:HG2	2.19	0.42
29:I3:39:THR:HG22	29:I3:60:ARG:HG3	2.00	0.42
31:J3:233:LEU:HA	31:J3:236:PHE:HB3	2.01	0.42
35:L3:97:ILE:O	35:L3:100:LEU:HG	2.18	0.42
36:M2:15:ARG:HD2	36:M2:25:PRO:HG2	2.01	0.42
55:X2:36:VAL:HG23	55:X2:41:ARG:HG2	2.01	0.42
68:k2:64:MET:HG2	68:k2:102:TYR:CE2	2.54	0.42
69:m2:189:U:H2'	69:m2:190:G:O4'	2.19	0.42
69:m2:533:A:N6	69:m2:556:A:H61	2.17	0.42
69:m2:1085:A:C2	69:m2:1863:G:C4	3.07	0.42
69:m2:1838:G:H4'	69:m2:1839:G:O4'	2.19	0.42
73:q2:115:VAL:HG21	73:q2:142:LEU:HD22	2.01	0.42
76:t2:101:LEU:HD23	76:t2:117:PRO:HD2	2.01	0.42
78:v2:5:LYS:O	78:v2:9:ILE:HG12	2.19	0.42
80:x2:44:ARG:HE	80:x2:49:LEU:HD13	1.83	0.42
2:A2:1262:C:H2'	2:A2:1263:C:C6	2.54	0.42
2:A2:1479:C:O2'	2:A2:1501:G:H5"	2.19	0.42
2:A2:1555:G:N2	2:A2:1580:C:C2	2.87	0.42
2:A2:1689:G:N2	2:A2:1740:C:H42	2.17	0.42
2:A2:2292:A:H2'	2:A2:2293:U:C6	2.54	0.42
2:A2:2572:C:H2'	2:A2:2573:C:C6	2.54	0.42
2:A2:2601:G:H2'	2:A2:2602:G:H8	1.84	0.42
2:A2:3492:A:H2'	2:A2:3493:C:O4'	2.19	0.42
2:A2:3576:U:H2'	2:A2:3577:U:H6	1.84	0.42
2:A2:3967:A:H5'	53:V2:36:ASP:OD1	2.19	0.42
2:A2:4526:U:C4	22:G1:113:MET:HG2	2.55	0.42
2:A2:4639:G:C4	2:A2:4640:G:C8	3.07	0.42
2:A2:4674:G:H2'	2:A2:4675:C:C6	2.54	0.42
3:A3:38:ARG:NH1	69:m2:1605:G:H4'	2.34	0.42
7:Bz:12:U:H2'	7:Bz:13:C:C6	2.54	0.42
35:L3:127:ARG:HG3	51:T3:35:ARG:HH21	1.83	0.42
43:P3:53:ILE:HG23	76:t2:143:ARG:CZ	2.49	0.42
69:m2:120:U:H2'	69:m2:121:OMU:H6	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:122:G:C4	69:m2:123:G:C8	3.07	0.42
69:m2:164:A:H3'	69:m2:165:G:C8	2.54	0.42
69:m2:376:G:H2'	69:m2:377:U:H6	1.85	0.42
69:m2:527:A:H2'	69:m2:528:A:C8	2.55	0.42
69:m2:1409:U:H5"	81:y2:71:ARG:NH1	2.33	0.42
69:m2:1632:A:H2'	69:m2:1633:U:C6	2.53	0.42
72:p2:59:SER:O	72:p2:63:LYS:HG2	2.19	0.42
80:x2:83:MET:HE3	80:x2:84:ILE:O	2.18	0.42
2:A2:307:A:H8	2:A2:307:A:O5'	2.02	0.42
2:A2:740:A:H62	2:A2:828:G:N2	2.12	0.42
2:A2:822:C:H2'	2:A2:823:C:C6	2.54	0.42
2:A2:1271:C:C2	2:A2:1272:A:C8	3.07	0.42
2:A2:1617:G:C2	53:V2:45:PHE:HE2	2.38	0.42
2:A2:2102:A:C2	56:Y2:31:ILE:HD11	2.54	0.42
2:A2:3454:U:O2	2:A2:3456:A:H8	2.02	0.42
2:A2:3461:U:H2'	2:A2:3462:G:C8	2.54	0.42
2:A2:3844:A:H2'	2:A2:3845:C:C6	2.51	0.42
2:A2:3885:A:C5	2:A2:3887:G:N7	2.87	0.42
2:A2:3891:A:H2'	2:A2:3892:G:H8	1.85	0.42
2:A2:4235:C:C4	2:A2:4370:G:C2	3.08	0.42
2:A2:4608:C:C2	2:A2:4609:G:C8	3.06	0.42
3:A3:137:LYS:HB2	69:m2:1522:G:P	2.58	0.42
5:B2:10:C:O2	23:G2:20:PHE:HA	2.19	0.42
5:B2:58:A:H2'	5:B2:59:G:H8	1.84	0.42
5:B2:59:G:C4	5:B2:60:G:C8	3.07	0.42
6:B3:62:ARG:CZ	69:m2:1544:C:H5"	2.49	0.42
13:D1:96:VAL:HG11	13:D1:122:PRO:HB3	2.01	0.42
22:G1:106:ASP:HA	22:G1:109:ARG:HE	1.84	0.42
31:J3:106:VAL:HG22	31:J3:128:VAL:HG22	2.02	0.42
32:K2:12:LYS:HB2	32:K2:14:ARG:HH11	1.85	0.42
32:K2:178:ARG:H	52:U2:51:GLY:HA2	1.84	0.42
38:N2:17:ARG:HB2	38:N2:22:HIS:CE1	2.54	0.42
42:P2:34:ALA:HB2	42:P2:72:LEU:HD11	2.01	0.42
43:P3:94:LEU:HD21	43:P3:102:ILE:HG23	2.02	0.42
65:h2:4:LYS:NZ	69:m2:1845:G:H8	2.16	0.42
69:m2:217:G:H2'	69:m2:218:C:H6	1.81	0.42
69:m2:1026:A:C5	69:m2:1027:U:N3	2.87	0.42
69:m2:1426:G:H2'	69:m2:1427:G:H8	1.84	0.42
69:m2:1567:C:H2'	69:m2:1568:G:C8	2.54	0.42
74:r2:73:ASP:OD1	74:r2:164:LEU:HD22	2.19	0.42
2:A2:147:A:H2'	2:A2:148:A:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:189:G:H2'	2:A2:190:G:C8	2.54	0.42
2:A2:506:G:H2'	2:A2:507:C:C6	2.54	0.42
2:A2:672:C:H2'	2:A2:673:G:C5	2.55	0.42
2:A2:1270:G:O2'	2:A2:1271:C:H5'	2.19	0.42
2:A2:2029:C:H5"	20:F2:312:ARG:HB3	2.00	0.42
2:A2:2065:C:H2'	2:A2:2066:C:C6	2.55	0.42
2:A2:2167:A:H2'	2:A2:2168:U:H6	1.85	0.42
2:A2:2267:A:C6	63:f2:4:HIS:HB3	2.55	0.42
2:A2:3392:A:H2'	2:A2:3393:A:C8	2.54	0.42
2:A2:3500:U:H2'	2:A2:3501:A:H8	1.84	0.42
2:A2:3712:A:C4	2:A2:3713:U:C5	3.08	0.42
2:A2:4037:A:H4'	2:A2:4038:C:H5"	2.01	0.42
2:A2:4145:U:C2	2:A2:4164:U:C4	3.07	0.42
2:A2:4285:G:O3'	2:A2:4286:U:H3'	2.20	0.42
2:A2:4381:A:N6	2:A2:4713:U:H2'	2.34	0.42
2:A2:4393:A:O2'	2:A2:4394:G:H5'	2.20	0.42
3:A3:28:PHE:HA	3:A3:31:THR:HG23	2.01	0.42
11:C2:139:G:C5	11:C2:140:C:C4	3.07	0.42
17:E2:32:PHE:HE2	17:E2:161:ARG:HD3	1.84	0.42
20:F2:209:ILE:HB	20:F2:229:LEU:HD13	2.01	0.42
24:G3:46:VAL:HA	75:s2:140:ASP:OD1	2.19	0.42
28:I2:142:ALA:HA	28:I2:145:VAL:HG22	2.01	0.42
32:K2:66:MET:HE3	32:K2:98:LEU:HD13	2.01	0.42
36:M2:30:MET:HE1	36:M2:47:PHE:HB3	1.99	0.42
43:P3:52:ILE:HB	76:t2:144:ILE:CG2	2.49	0.42
47:R3:58:LEU:HB3	47:R3:77:LEU:HD21	2.00	0.42
51:T3:31:ARG:HH11	51:T3:35:ARG:HE	1.67	0.42
53:V2:17:HIS:CD2	53:V2:21:ILE:HG12	2.54	0.42
58:a2:61:PRO:O	58:a2:64:LEU:HB2	2.19	0.42
64:g2:99:CYS:HB3	64:g2:115:CYS:HB3	2.01	0.42
69:m2:30:C:H2'	69:m2:31:U:O4'	2.19	0.42
69:m2:99:A2M:H8	69:m2:99:A2M:O5'	2.19	0.42
69:m2:143:U:O5'	69:m2:144:U:H2'	2.19	0.42
69:m2:344:C:H2'	69:m2:345:A:O4'	2.19	0.42
69:m2:680:U:C2	69:m2:1030:A:C6	3.08	0.42
69:m2:808:U:H2'	69:m2:809:G:H8	1.85	0.42
69:m2:878:C:H2'	69:m2:879:C:C6	2.54	0.42
69:m2:1045:G:H2'	69:m2:1046:G:O4'	2.18	0.42
69:m2:1062:A:H4'	69:m2:1063:U:H5"	2.01	0.42
69:m2:1232:C:O2'	69:m2:1233:C:H5'	2.19	0.42
69:m2:1531:C:H2'	69:m2:1532:U:H6	1.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1673:G:H2'	69:m2:1674:U:C6	2.52	0.42
69:m2:1691:C:H2'	69:m2:1692:U:C6	2.55	0.42
74:r2:216:ASN:HB3	74:r2:218:PHE:HE1	1.84	0.42
76:t2:40:LEU:HD23	76:t2:40:LEU:HA	1.76	0.42
82:z2:44:LYS:HA	82:z2:47:ARG:HE	1.84	0.42
2:A2:50:C:H2'	2:A2:51:A:O4'	2.19	0.42
2:A2:326:C:H2'	2:A2:327:U:C6	2.53	0.42
2:A2:819:C:H2'	2:A2:820:C:H6	1.83	0.42
2:A2:1260:C:C2	2:A2:1261:G:C8	3.08	0.42
2:A2:1330:2MG:HN2	20:F2:104:PRO:HD2	1.84	0.42
2:A2:1529:U:H2'	2:A2:1530:U:H6	1.80	0.42
2:A2:1727:G:H2'	2:A2:1728:C:H6	1.84	0.42
2:A2:2152:G:C8	2:A2:2154:G:C8	3.08	0.42
2:A2:2220:C:H2'	2:A2:2221:G:O4'	2.20	0.42
2:A2:2368:C:H2'	2:A2:2369:C:H6	1.85	0.42
2:A2:2425:C:H2'	2:A2:2426:C:C6	2.55	0.42
2:A2:2613:A:C4	2:A2:2614:G:C8	3.07	0.42
2:A2:3397:C:H2'	2:A2:3398:G:C8	2.53	0.42
2:A2:3515:G:H4'	30:J2:139:TYR:CE1	2.55	0.42
2:A2:3530:G:H2'	2:A2:3531:G:O4'	2.20	0.42
2:A2:4131:A:H2'	2:A2:4132:A:O4'	2.20	0.42
2:A2:4524:C:H2'	2:A2:4525:G:C8	2.54	0.42
4:B1:146:LEU:HD12	4:B1:151:LYS:HB2	2.02	0.42
5:B2:70:G:C6	5:B2:106:G:C6	3.07	0.42
7:Bz:57:G:H2'	7:Bz:57:G:N3	2.34	0.42
17:E2:383:GLU:HA	17:E2:386:LYS:NZ	2.35	0.42
18:E3:114:ASP:HB2	69:m2:621:A:N1	2.34	0.42
19:F1:48:PRO:HG2	59:b2:118:LYS:HD2	2.02	0.42
19:F1:87:HIS:HB3	19:F1:90:VAL:HG12	2.00	0.42
24:G3:40:ARG:HH22	41:O3:117:ARG:HH21	1.67	0.42
27:H3:21:CYS:HB3	27:H3:26:ASN:N	2.34	0.42
31:J3:230:THR:HG23	69:m2:5:U:OP2	2.19	0.42
32:K2:18:PRO:HG3	32:K2:29:VAL:HG21	2.00	0.42
32:K2:44:ASN:HA	32:K2:47:VAL:HG12	2.00	0.42
33:K3:45:TRP:HE1	33:K3:121:ILE:HD11	1.85	0.42
33:K3:67:VAL:HG23	33:K3:99:GLY:HA2	2.00	0.42
36:M2:81:TRP:O	36:M2:127:MET:HG2	2.19	0.42
47:R3:57:LYS:NZ	47:R3:61:GLU:HG2	2.34	0.42
69:m2:55:U:H6	69:m2:55:U:P	2.43	0.42
69:m2:102:A:H4'	69:m2:104:A:C8	2.55	0.42
69:m2:335:G:C6	69:m2:336:C:C4	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:365:A:C2	69:m2:403:A:C5	3.07	0.42
69:m2:585:A:C6	69:m2:586:A:C5	3.07	0.42
69:m2:911:G:H2'	69:m2:912:G:H8	1.85	0.42
69:m2:992:A:H61	69:m2:1003:A:N6	2.15	0.42
69:m2:1192:A:H3'	69:m2:1193:C:C6	2.55	0.42
69:m2:1209:G:H2'	69:m2:1839:G:N3	2.35	0.42
69:m2:1391:C:H2'	69:m2:1392:U:C6	2.54	0.42
69:m2:1454:A:H4'	69:m2:1455:C:O5'	2.18	0.42
69:m2:1728:G:C6	69:m2:1811:A:C6	3.07	0.42
79:w2:111:VAL:HG12	79:w2:140:PHE:HB2	2.01	0.42
81:y2:50:LYS:CD	81:y2:85:ARG:HH12	2.31	0.42
1:A1:107:ALA:HB2	38:N2:138:ALA:HB2	2.02	0.42
2:A2:209:U:C4	2:A2:233:U:C4	3.08	0.42
2:A2:310:G:H2'	2:A2:311:G:C8	2.54	0.42
2:A2:335:A:H2'	2:A2:336:A:C8	2.55	0.42
2:A2:453:G:N2	2:A2:1107:G:H22	2.18	0.42
2:A2:1134:U:H5"	2:A2:1483:G:H1	1.84	0.42
2:A2:2451:A:H62	62:e2:35:LYS:HZ3	1.67	0.42
2:A2:3560:G:H5"	2:A2:3561:A:OP2	2.19	0.42
2:A2:3967:A:H5"	53:V2:38:LYS:HG3	2.02	0.42
2:A2:4360:A:C2	2:A2:4361:U:H5'	2.54	0.42
2:A2:4368:C:H5"	17:E2:276:HIS:O	2.20	0.42
2:A2:4700:C:H4'	2:A2:4701:G:C8	2.54	0.42
11:C2:141:C:H2'	11:C2:142:U:H6	1.84	0.42
31:J3:136:HIS:HB3	31:J3:162:ILE:CG2	2.50	0.42
33:K3:2:LYS:HD2	33:K3:15:LEU:HD21	2.02	0.42
34:L2:112:SER:OG	34:L2:114:LYS:HG3	2.20	0.42
46:R2:71:LEU:HD21	46:R2:103:LYS:O	2.20	0.42
47:R3:103:HIS:CE1	75:s2:91:ARG:HD2	2.54	0.42
48:S2:43:ASN:O	48:S2:126:ARG:HD3	2.19	0.42
56:Y2:35:TRP:O	56:Y2:36:ARG:HD3	2.20	0.42
64:g2:104:HIS:HB2	64:g2:105:PRO:HD2	2.02	0.42
66:i2:3:ASN:HA	66:i2:92:GLU:O	2.19	0.42
67:j2:57:CYS:HB3	67:j2:60:CYS:SG	2.59	0.42
69:m2:50:A:H2'	69:m2:51:U:O4'	2.19	0.42
69:m2:54:A:C4	69:m2:453:G:C2	3.08	0.42
69:m2:92:A:C6	69:m2:448:G:C6	3.07	0.42
69:m2:223:A:H2'	69:m2:224:U:H6	1.82	0.42
69:m2:385:G:H2'	69:m2:386:U:C6	2.55	0.42
69:m2:1164:C:H2'	69:m2:1165:C:C6	2.53	0.42
69:m2:1394:U:O2'	69:m2:1395:G:H5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1535:A:H2'	69:m2:1535:A:N3	2.34	0.42
71:o2:10:MET:HG3	82:z2:111:PHE:HZ	1.84	0.42
73:q2:113:LEU:HA	73:q2:117:ARG:HH21	1.84	0.42
76:t2:46:THR:HG23	76:t2:65:PRO:HD3	2.00	0.42
78:v2:8:ARG:HD2	78:v2:12:TYR:CZ	2.55	0.42
82:z2:87:GLU:HG2	82:z2:88:VAL:N	2.34	0.42
2:A2:225:G:OP2	20:F2:223:ASN:HB2	2.20	0.42
2:A2:1283:G:H2'	2:A2:1284:U:C6	2.55	0.42
2:A2:2063:A:N6	2:A2:2085:G:H1'	2.35	0.42
2:A2:2093:C:C2	2:A2:2094:G:C8	3.08	0.42
2:A2:2598:U:O2'	2:A2:4284:U:H5"	2.20	0.42
2:A2:3284:G:H2'	2:A2:3285:A:H8	1.85	0.42
2:A2:3594:G:H4'	2:A2:3595:G:O5'	2.19	0.42
2:A2:4109:U:H2'	2:A2:4110:C:C6	2.54	0.42
2:A2:4272:OMU:H5"	42:P2:48:ARG:HB2	2.02	0.42
2:A2:4277:C:HO2'	2:A2:4278:A:P	2.42	0.42
2:A2:4376:A:H2'	2:A2:4377:C:O4'	2.20	0.42
2:A2:4391:C:H3'	2:A2:4393:A:H5"	2.02	0.42
2:A2:4532:U:H2'	2:A2:4533:U:O4'	2.20	0.42
3:A3:44:VAL:HG11	3:A3:71:MET:HG3	2.02	0.42
7:Bz:28:G:H2'	7:Bz:29:G:H8	1.84	0.42
10:C1:41:ILE:HG22	10:C1:43:VAL:HG13	2.01	0.42
12:C3:20:ILE:HG21	12:C3:98:VAL:HG21	2.02	0.42
12:C3:51:LYS:HB3	12:C3:90:ASP:H	1.83	0.42
14:D2:20:VAL:O	14:D2:20:VAL:HG23	2.20	0.42
14:D2:113:VAL:HG23	14:D2:134:ALA:HB3	2.02	0.42
17:E2:47:LEU:HD12	17:E2:166:THR:HG23	2.02	0.42
17:E2:285:TYR:HA	17:E2:363:ILE:HD13	2.01	0.42
20:F2:318:PRO:HB2	20:F2:325:MET:HE2	2.02	0.42
23:G2:265:ARG:HG3	23:G2:267:ASN:O	2.18	0.42
34:L2:17:CYS:HB3	34:L2:52:ARG:CZ	2.50	0.42
35:L3:84:ILE:HG22	35:L3:86:VAL:HG13	2.02	0.42
45:Q3:107:ARG:O	45:Q3:110:ARG:HB3	2.19	0.42
47:R3:102:LYS:HG3	47:R3:107:VAL:HG22	2.00	0.42
69:m2:109:U:O5'	69:m2:109:U:H6	2.02	0.42
69:m2:159:A:H2	69:m2:469:G:N2	2.15	0.42
69:m2:222:U:H2'	69:m2:223:A:C8	2.54	0.42
69:m2:293:G:C6	69:m2:294:A:C6	3.07	0.42
69:m2:575:U:H5'	69:m2:576:A:OP2	2.20	0.42
69:m2:1558:A:H2'	69:m2:1558:A:N3	2.34	0.42
74:r2:181:CYS:O	74:r2:182:MET:HE2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:v2:52:LEU:HD23	78:v2:67:PHE:HB2	2.02	0.42
2:A2:222:C:H2'	2:A2:223:G:O4'	2.20	0.42
2:A2:437:G:H2'	2:A2:438:G:H8	1.84	0.42
2:A2:767:G:C6	2:A2:803:C:C4	3.08	0.42
2:A2:1140:A2M:HM'3	2:A2:1140:A2M:H1'	1.74	0.42
2:A2:1379:C:H2'	2:A2:1380:U:C6	2.55	0.42
2:A2:1446:G:H4'	2:A2:1447:A:O5'	2.19	0.42
2:A2:4175:A2M:H1'	2:A2:4175:A2M:HM'3	1.66	0.42
10:C1:23:ARG:NH1	10:C1:39:ASN:HA	2.35	0.42
10:C1:89:ARG:HE	10:C1:187:VAL:HA	1.84	0.42
18:E3:47:ALA:O	18:E3:101:LEU:HD12	2.20	0.42
29:I3:64:HIS:CD2	29:I3:83:TRP:HB2	2.50	0.42
29:I3:79:LEU:HD11	29:I3:120:ILE:HG21	2.01	0.42
35:L3:67:ASP:O	35:L3:71:LEU:HG	2.19	0.42
38:N2:11:THR:HG22	38:N2:14:MET:HE2	2.00	0.42
42:P2:13:LYS:HB2	42:P2:128:LEU:HD11	2.01	0.42
48:S2:52:ASP:HB2	48:S2:110:LYS:HD2	2.02	0.42
60:c2:68:ARG:O	60:c2:68:ARG:HG3	2.20	0.42
69:m2:528:A:H2'	69:m2:529:C:H6	1.85	0.42
70:n2:33:C:H2'	70:n2:34:A:C8	2.55	0.42
71:o2:39:TYR:CD2	82:z2:105:MET:HB2	2.54	0.42
80:x2:12:PHE:O	80:x2:13:ARG:HD3	2.20	0.42
1:A1:188:ARG:HD2	1:A1:231:TRP:NE1	2.34	0.42
2:A2:139:G:C2	2:A2:140:G:C5	3.08	0.42
2:A2:278:G:C6	2:A2:330:G:N7	2.88	0.42
2:A2:287:U:H2'	2:A2:288:G:H8	1.85	0.42
2:A2:832:U:H2'	2:A2:833:U:C5	2.54	0.42
2:A2:1018:U:H2'	2:A2:1019:G:C8	2.54	0.42
2:A2:1163:G:C5	2:A2:1321:A:C2	3.08	0.42
2:A2:1326:U:H2'	2:A2:1327:U:H6	1.84	0.42
2:A2:1649:C:H4'	32:K2:152:PHE:CZ	2.55	0.42
2:A2:1851:G:H2'	2:A2:1852:G:C8	2.55	0.42
2:A2:2422:C:O4'	34:L2:96:MET:HG3	2.20	0.42
2:A2:3309:A:P	2:A2:3309:A:H8	2.42	0.42
2:A2:3799:G:H2'	2:A2:3800:G:H8	1.85	0.42
2:A2:3802:G:C2	2:A2:3803:G:C8	3.08	0.42
2:A2:3885:A:N7	2:A2:3887:G:C8	2.88	0.42
5:B2:75:G:H5"	36:M2:49:SER:O	2.20	0.42
13:D1:38:ARG:HD2	13:D1:83:ASP:HB2	2.01	0.42
13:D1:51:HIS:CD2	13:D1:168:SER:HB2	2.54	0.42
16:E1:33:LEU:HD23	16:E1:33:LEU:HA	1.90	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E2:250:LYS:HE2	17:E2:250:LYS:HB3	1.88	0.42
23:G2:111:ASN:C	23:G2:111:ASN:HD22	2.28	0.42
28:I2:108:ILE:HG22	28:I2:113:ASP:HA	2.01	0.42
31:J3:166:ARG:HD3	31:J3:181:PRO:HG3	2.01	0.42
36:M2:24:THR:O	36:M2:24:THR:HG23	2.19	0.42
37:M3:41:ALA:HA	37:M3:46:GLN:N	2.34	0.42
43:P3:71:LYS:HB2	69:m2:1157:U:O2	2.19	0.42
48:S2:112:ASP:O	48:S2:116:LYS:HG2	2.20	0.42
50:T2:46:ILE:HG23	50:T2:68:ILE:HG23	2.02	0.42
58:a2:82:MET:SD	58:a2:90:ARG:HD3	2.60	0.42
69:m2:514:A2M:H2'	69:m2:515:G:C8	2.55	0.42
69:m2:615:G:C2	69:m2:629:U:H4'	2.54	0.42
69:m2:1058:U:C4	69:m2:1059:C:C4	3.07	0.42
69:m2:1237:G:H2'	69:m2:1238:G:C8	2.54	0.42
80:x2:90:VAL:HA	80:x2:107:ILE:HG22	2.00	0.42
1:A1:248:HIS:CE1	1:A1:250:VAL:HG13	2.54	0.42
2:A2:398:A2M:HM'3	2:A2:398:A2M:H1'	1.82	0.42
2:A2:1079:A:H2'	2:A2:1080:C:H6	1.82	0.42
2:A2:1391:U:H2'	2:A2:1392:C:C6	2.55	0.42
2:A2:1577:A:H2'	2:A2:1578:A:C8	2.53	0.42
2:A2:1734:A:H2'	2:A2:1735:G:C8	2.55	0.42
2:A2:3886:A:C8	2:A2:3923:A:C6	3.08	0.42
2:A2:3888:G:H4'	2:A2:3980:G:O2'	2.20	0.42
2:A2:3994:C:H2'	2:A2:3995:U:H6	1.85	0.42
2:A2:4575:C:H5"	26:H2:273:GLN:HG2	2.02	0.42
3:A3:91:LYS:HD3	3:A3:91:LYS:HA	1.79	0.42
6:B3:104:LEU:HD21	6:B3:121:ARG:CZ	2.50	0.42
6:B3:133:ARG:NE	6:B3:133:ARG:HA	2.35	0.42
17:E2:128:LYS:HE3	17:E2:128:LYS:HA	2.01	0.42
20:F2:303:ARG:HH12	20:F2:306:ARG:NE	2.18	0.42
20:F2:333:LYS:HE2	20:F2:337:ARG:NH2	2.34	0.42
27:H3:23:VAL:HG22	78:v2:59:LYS:HD2	2.01	0.42
32:K2:27:LEU:HD23	32:K2:27:LEU:HA	1.94	0.42
33:K3:54:GLY:HA2	33:K3:63:MET:SD	2.60	0.42
40:O2:85:TYR:CZ	40:O2:89:LYS:HD2	2.55	0.42
61:d2:21:ARG:HG3	61:d2:37:CYS:SG	2.59	0.42
69:m2:99:A2M:HM'3	69:m2:99:A2M:H1'	1.73	0.42
69:m2:637:G:C6	69:m2:638:C:C4	3.08	0.42
69:m2:890:U:H2'	69:m2:891:U:C6	2.55	0.42
69:m2:1318:C:C2	69:m2:1319:C:C5	3.08	0.42
69:m2:1674:U:H2'	69:m2:1675:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:1709:U:H2'	69:m2:1710:C:O4'	2.19	0.42
69:m2:1737:A:H2'	69:m2:1738:G:O4'	2.20	0.42
71:o2:97:THR:HG22	71:o2:99:ILE:HG23	2.01	0.42
71:o2:124:VAL:HG21	71:o2:134:LEU:HD11	2.01	0.42
74:r2:11:ARG:HD2	74:r2:28:ALA:HB2	2.01	0.42
76:t2:177:TYR:CZ	76:t2:181:THR:HG21	2.54	0.42
2:A2:754:A:C2	2:A2:817:G:N2	2.88	0.41
2:A2:832:U:H3'	2:A2:833:U:H2'	2.01	0.41
2:A2:1020:C:H2'	2:A2:1021:G:C8	2.55	0.41
2:A2:1493:G:H8	2:A2:1493:G:O5'	2.03	0.41
2:A2:1632:G:H2'	2:A2:1633:G:C8	2.54	0.41
2:A2:1911:G:H1	2:A2:2006:C:N4	2.18	0.41
2:A2:4316:A:C4	2:A2:4317:A:C8	3.08	0.41
2:A2:4375:A:H2'	2:A2:4376:A:H8	1.85	0.41
2:A2:4555:A:N3	17:E2:96:PRO:HG3	2.35	0.41
3:A3:84:LEU:HA	3:A3:97:GLN:OE1	2.20	0.41
17:E2:53:MET:HE2	17:E2:53:MET:HB3	1.89	0.41
18:E3:52:LEU:HD11	18:E3:73:GLN:HB2	2.01	0.41
22:G1:14:TYR:OH	22:G1:22:GLY:HA2	2.20	0.41
45:Q3:91:LEU:HD22	45:Q3:96:LEU:HB2	2.02	0.41
69:m2:171:A:H2'	69:m2:173:A:C8	2.55	0.41
69:m2:662:C:H2'	69:m2:663:U:C6	2.55	0.41
69:m2:1020:U:C2	69:m2:1021:C:C5	3.08	0.41
69:m2:1262:A:N1	69:m2:1622:A:C4	2.88	0.41
69:m2:1388:A:H8	69:m2:1388:A:O5'	2.03	0.41
69:m2:1808:A:H2'	69:m2:1809:C:H6	1.85	0.41
72:p2:52:THR:HG22	72:p2:58:ALA:H	1.85	0.41
72:p2:109:LYS:O	72:p2:113:MET:HG2	2.20	0.41
72:p2:164:ILE:HG23	72:p2:201:CYS:SG	2.60	0.41
74:r2:156:VAL:HG13	74:r2:157:ASN:N	2.35	0.41
74:r2:247:THR:O	74:r2:251:GLU:HG2	2.20	0.41
75:s2:96:ALA:O	75:s2:100:ILE:HG12	2.19	0.41
81:y2:134:GLY:HA2	81:y2:141:TYR:CD2	2.55	0.41
2:A2:357:U:C4	2:A2:359:A:C8	3.08	0.41
2:A2:1523:G:H2'	2:A2:1524:C:C6	2.54	0.41
2:A2:1560:G:H2'	2:A2:1561:G:C8	2.55	0.41
2:A2:2254:C:H2'	2:A2:2255:U:H6	1.85	0.41
2:A2:2586:G:C4	2:A2:2587:A:C8	3.09	0.41
2:A2:2623:G:C2	2:A2:2638:G:C6	3.08	0.41
2:A2:3327:G:O2'	2:A2:3328:G:H5'	2.20	0.41
2:A2:3939:G:H2'	2:A2:3940:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4053:G:C4	2:A2:4054:C:C5	3.08	0.41
2:A2:4143:G:H2'	2:A2:4144:U:O4'	2.20	0.41
2:A2:4145:U:H2'	2:A2:4146:OMG:H8	1.85	0.41
2:A2:4271:U:H2'	2:A2:4272:OMU:C6	2.49	0.41
2:A2:4277:C:H5"	17:E2:338:VAL:HA	2.00	0.41
5:B2:42:A:C5	5:B2:43:U:C5	3.08	0.41
7:Bz:25:C:H2'	7:Bz:26:A:C8	2.55	0.41
11:C2:38:U:H6	59:b2:81:LEU:HD23	1.85	0.41
11:C2:65:A:C6	11:C2:66:A:C5	3.08	0.41
11:C2:137:A:H2'	11:C2:138:C:H6	1.85	0.41
16:E1:160:GLU:HA	16:E1:163:MET:HE3	2.02	0.41
17:E2:381:THR:HG22	17:E2:383:GLU:H	1.83	0.41
19:F1:129:ARG:HD2	19:F1:129:ARG:HA	1.88	0.41
21:F3:79:ILE:HD11	69:m2:1866:U:H5'	2.01	0.41
23:G2:107:ARG:HD3	23:G2:248:ARG:HD3	2.01	0.41
29:I3:36:ARG:HH22	82:z2:29:HIS:HB2	1.84	0.41
33:K3:159:ARG:HG2	33:K3:171:THR:HG22	2.02	0.41
35:L3:170:PRO:HG2	69:m2:564:U:OP2	2.21	0.41
61:d2:8:PHE:HD1	61:d2:11:ARG:HD3	1.85	0.41
62:e2:11:PHE:CZ	62:e2:36:VAL:HG23	2.55	0.41
69:m2:18:C:H2'	69:m2:19:A:C8	2.54	0.41
69:m2:89:C:O2'	69:m2:501:G:H5"	2.19	0.41
69:m2:366:A:C6	69:m2:399:G:N1	2.87	0.41
69:m2:566:A:C2	69:m2:567:G:H1'	2.55	0.41
69:m2:979:C:H2'	69:m2:980:G:O4'	2.20	0.41
73:q2:66:ILE:HG13	73:q2:67:ARG:N	2.36	0.41
74:r2:198:ARG:NH1	74:r2:200:ARG:HD2	2.35	0.41
2:A2:760:C:H2'	2:A2:761:U:H6	1.85	0.41
2:A2:1006:G:H2'	2:A2:1007:A:H8	1.84	0.41
2:A2:1403:C:H3'	2:A2:1404:U:H4'	2.02	0.41
2:A2:1508:U:H2'	2:A2:1509:C:H6	1.84	0.41
2:A2:1911:G:H2'	2:A2:1912:A:C8	2.56	0.41
2:A2:2196:C:H2'	2:A2:2197:G:H8	1.86	0.41
2:A2:2508:G:H2'	2:A2:2509:G:C4	2.55	0.41
2:A2:2587:A:H2'	2:A2:2588:A:C8	2.52	0.41
2:A2:2602:G:O2'	42:P2:24:ALA:HB2	2.20	0.41
2:A2:3446:U:O4'	2:A2:3448:OMG:H5'	2.20	0.41
2:A2:3527:A:H2'	2:A2:3528:A:H8	1.85	0.41
2:A2:3581:OMU:H2'	2:A2:3582:C:O4'	2.19	0.41
2:A2:4066:A:P	2:A2:4074:A:H61	2.42	0.41
2:A2:4536:G:H2'	2:A2:4536:G:N3	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4556:A:C5	17:E2:97:ARG:NH1	2.88	0.41
6:B3:45:LEU:HD22	69:m2:1540:C:O2'	2.20	0.41
11:C2:83:C:P	11:C2:83:C:H6	2.43	0.41
12:C3:39:LEU:HD11	12:C3:102:THR:HG22	2.01	0.41
16:E1:144:LYS:HE2	16:E1:146:ARG:O	2.20	0.41
21:F3:58:VAL:HG12	41:O3:127:GLY:HA2	2.02	0.41
29:I3:147:HIS:NE2	29:I3:175:LYS:HG3	2.35	0.41
30:J2:67:VAL:HG12	30:J2:80:GLN:HB3	2.01	0.41
38:N2:25:VAL:HG21	38:N2:45:MET:HE1	2.03	0.41
41:O3:52:THR:HG21	69:m2:954:G:H21	1.85	0.41
41:O3:103:ASN:C	41:O3:104:ARG:HD3	2.46	0.41
41:O3:128:ARG:HH12	72:p2:72:ALA:HB3	1.85	0.41
45:Q3:10:ARG:HG2	45:Q3:11:LYS:H	1.84	0.41
45:Q3:51:THR:O	45:Q3:54:VAL:HG22	2.20	0.41
48:S2:22:PRO:O	48:S2:26:ARG:HG2	2.20	0.41
57:Z2:105:LEU:HD23	57:Z2:105:LEU:O	2.21	0.41
65:h2:5:TRP:HA	65:h2:8:LYS:HB3	2.02	0.41
69:m2:66:G:C5	69:m2:68:A:C8	3.08	0.41
69:m2:79:A:C2	69:m2:80:G:H1'	2.55	0.41
69:m2:499:C:H2'	69:m2:500:C:H6	1.83	0.41
69:m2:499:C:C2	69:m2:500:C:C5	3.08	0.41
69:m2:869:OMG:H2'	69:m2:870:G:N3	2.35	0.41
69:m2:998:A:H2'	69:m2:999:A:H8	1.84	0.41
69:m2:1268:C:H2'	69:m2:1269:C:H6	1.85	0.41
69:m2:1748:U:H2'	69:m2:1749:C:C6	2.55	0.41
69:m2:1750:G:N3	69:m2:1751:G:C8	2.89	0.41
73:q2:119:CYS:O	73:q2:123:LEU:HD23	2.20	0.41
76:t2:139:ILE:HG23	76:t2:156:VAL:HG13	2.01	0.41
77:u2:118:ALA:HB3	77:u2:149:TYR:CE1	2.55	0.41
79:w2:57:ASP:OD2	79:w2:115:PRO:HD2	2.19	0.41
82:z2:50:ILE:O	82:z2:54:VAL:HG23	2.20	0.41
2:A2:126:C:H2'	2:A2:127:G:C8	2.55	0.41
2:A2:718:A:H2'	2:A2:719:C:H6	1.79	0.41
2:A2:1130:OMG:OP1	56:Y2:40:GLY:HA3	2.20	0.41
2:A2:1745:A:H2	2:A2:4064:C:O4'	2.03	0.41
2:A2:2473:U:H5"	2:A2:2474:C:C5'	2.50	0.41
2:A2:3366:G:N3	2:A2:3368:A:N6	2.68	0.41
2:A2:3863:C:O2	2:A2:3874:G:C6	2.73	0.41
2:A2:3923:A:C8	2:A2:3924:G:C6	3.08	0.41
2:A2:4062:G:C6	2:A2:4085:G:C6	3.09	0.41
2:A2:4214:C:H2'	2:A2:4215:U:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4361:U:C2	2:A2:4362:C:C6	3.09	0.41
6:B3:133:ARG:HH22	69:m2:1418:C:H4'	1.85	0.41
11:C2:45:C:H2'	11:C2:46:G:C8	2.55	0.41
11:C2:115:G:H2'	11:C2:116:C:H6	1.86	0.41
13:D1:87:ILE:HD11	13:D1:136:MET:HE2	2.02	0.41
22:G1:95:ILE:HG12	22:G1:98:ARG:NH2	2.32	0.41
28:I2:34:VAL:HG11	28:I2:112:TYR:CE1	2.55	0.41
28:I2:85:ARG:HD3	28:I2:90:HIS:CG	2.56	0.41
29:I3:79:LEU:HD12	29:I3:113:PHE:HB2	2.02	0.41
29:I3:238:ALA:N	29:I3:251:ALA:HB3	2.32	0.41
45:Q3:12:PHE:CE1	45:Q3:21:LYS:HB3	2.56	0.41
47:R3:80:ARG:HH11	69:m2:1600:G:H5"	1.86	0.41
58:a2:11:LEU:HD13	58:a2:18:ASN:HB2	2.02	0.41
69:m2:390:U:H2'	69:m2:391:A:H8	1.80	0.41
69:m2:447:A:C6	69:m2:448:G:C6	3.08	0.41
69:m2:493:C:H4'	69:m2:576:A:C2	2.55	0.41
69:m2:901:U:C2	69:m2:902:C:H1'	2.55	0.41
69:m2:1036:A:H2'	69:m2:1037:A:O4'	2.20	0.41
69:m2:1308:U:H2'	69:m2:1309:U:O4'	2.20	0.41
69:m2:1456:A:H3'	82:z2:5:ARG:NH2	2.35	0.41
80:x2:28:MET:HE2	80:x2:32:GLN:CB	2.50	0.41
81:y2:52:LEU:HD23	81:y2:52:LEU:O	2.21	0.41
82:z2:20:TYR:CD2	82:z2:23:ARG:HD3	2.55	0.41
2:A2:43:U:H2'	2:A2:44:A:O4'	2.21	0.41
2:A2:690:C:H2'	2:A2:691:G:O4'	2.21	0.41
2:A2:1182:C:C5	48:S2:3:PHE:HE1	2.38	0.41
2:A2:1366:A:C2	2:A2:1388:A:H1'	2.55	0.41
2:A2:1401:U:H2'	2:A2:1402:C:C6	2.55	0.41
2:A2:2513:G:H2'	2:A2:2514:G:C8	2.55	0.41
2:A2:2559:OMC:N4	2:A2:2560:C:H41	2.19	0.41
2:A2:3271:G:H21	44:Q2:44:ARG:CZ	2.33	0.41
2:A2:3412:A:O2'	2:A2:3413:G:H5'	2.21	0.41
2:A2:3713:U:C2	2:A2:3715:G:C8	3.08	0.41
2:A2:4177:C:O2'	17:E2:244:THR:HA	2.19	0.41
2:A2:4188:OMC:HM22	2:A2:4189:C:O4'	2.21	0.41
2:A2:4616:C:C2	2:A2:4710:G:C2	3.09	0.41
3:A3:24:ARG:H	3:A3:24:ARG:HG2	1.60	0.41
15:D3:59:ILE:HA	15:D3:62:MET:HG2	2.03	0.41
17:E2:116:ARG:HD3	17:E2:177:LYS:HA	2.01	0.41
18:E3:67:ARG:HB3	18:E3:84:PHE:HE1	1.85	0.41
22:G1:47:ARG:HH22	22:G1:69:ARG:C	2.28	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:I3:59:LEU:HD13	29:I3:90:TRP:CD2	2.55	0.41
29:I3:130:LYS:HD2	29:I3:143:GLN:HB3	2.03	0.41
29:I3:169:GLY:C	29:I3:171:ASP:H	2.29	0.41
32:K2:86:VAL:HB	32:K2:105:VAL:HG12	2.03	0.41
46:R2:119:ILE:HD13	46:R2:149:VAL:HG11	2.01	0.41
55:X2:40:LYS:C	55:X2:43:PRO:HD2	2.46	0.41
62:e2:3:ARG:HB2	62:e2:43:TYR:CD1	2.55	0.41
69:m2:866:A:H2'	69:m2:867:A:C8	2.54	0.41
69:m2:1048:U:C4	69:m2:1049:C:C4	3.08	0.41
69:m2:1456:A:H5"	82:z2:3:ARG:HH11	1.86	0.41
69:m2:1549:C:N3	69:m2:1658:G:H1'	2.36	0.41
70:n2:21:G:H2'	70:n2:22:C:H6	1.85	0.41
71:o2:34:MET:HE2	71:o2:154:LEU:HD21	2.01	0.41
81:y2:113:ILE:HD13	81:y2:113:ILE:HA	1.96	0.41
2:A2:115:C:H2'	2:A2:116:G:O4'	2.21	0.41
2:A2:480:C:H2'	2:A2:481:G:C8	2.54	0.41
2:A2:819:C:H2'	2:A2:820:C:C6	2.55	0.41
2:A2:1015:C:H2'	2:A2:1016:A:C8	2.55	0.41
2:A2:1645:A:H2'	2:A2:1646:G:H8	1.85	0.41
2:A2:1690:A:N7	2:A2:1851:G:H5'	2.36	0.41
2:A2:1718:G:O2'	2:A2:1719:A:H5'	2.21	0.41
2:A2:1874:C:C2	2:A2:1875:C:C5	3.08	0.41
2:A2:3481:A2M:H2'	2:A2:3482:C:O4'	2.21	0.41
2:A2:3523:A:H2'	2:A2:3524:G:C8	2.55	0.41
2:A2:3781:G:C6	2:A2:3806:G:C6	3.08	0.41
2:A2:4246:U:C2	2:A2:4247:G:C8	3.09	0.41
2:A2:4609:G:C6	2:A2:4610:C:N4	2.88	0.41
2:A2:4649:U:H2'	2:A2:4650:C:C6	2.55	0.41
7:Bz:59:U:H3'	7:Bz:60:U:C6	2.55	0.41
11:C2:45:C:H2'	11:C2:46:G:H8	1.86	0.41
12:C3:94:PRO:O	12:C3:98:VAL:HG23	2.21	0.41
12:C3:97:ILE:HA	12:C3:100:GLN:NE2	2.35	0.41
15:D3:32:ILE:HD13	71:o2:158:ASP:OD2	2.21	0.41
16:E1:48:PRO:HB2	16:E1:70:VAL:HG22	2.02	0.41
20:F2:298:ILE:O	20:F2:302:LEU:HG	2.20	0.41
21:F3:23:CYS:N	21:F3:27:ALA:HA	2.35	0.41
27:H3:8:TRP:NE1	69:m2:1514:C:H5'	2.30	0.41
34:L2:91:GLU:HA	34:L2:94:THR:HG22	2.01	0.41
37:M3:19:GLN:HE22	37:M3:88:TRP:CG	2.38	0.41
47:R3:96:LEU:O	47:R3:97:ILE:HD13	2.20	0.41
56:Y2:6:PRO:HG3	56:Y2:73:GLY:HA3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:d2:49:TRP:CE3	61:d2:50:SER:HB2	2.55	0.41
69:m2:501:G:N1	69:m2:506:G:C6	2.88	0.41
69:m2:832:A:C5	69:m2:847:G:C2	3.09	0.41
69:m2:1124:A:C6	69:m2:1125:C:C5	3.08	0.41
69:m2:1630:C:C2	69:m2:1631:C:C5	3.08	0.41
73:q2:28:GLU:OE1	73:q2:29:LEU:HD12	2.21	0.41
74:r2:131:VAL:HG12	74:r2:137:PRO:HA	2.02	0.41
74:r2:180:LEU:HD12	74:r2:193:GLY:O	2.20	0.41
1:A1:114:VAL:O	1:A1:142:GLY:HA2	2.21	0.41
2:A2:135:U:H4'	2:A2:136:C:C5	2.55	0.41
2:A2:707:G:C2	2:A2:708:G:C5	3.08	0.41
2:A2:939:C:H2'	2:A2:940:C:H6	1.86	0.41
2:A2:1098:G:N3	26:H2:137:LYS:HD2	2.36	0.41
2:A2:1149:G:N2	20:F2:95:MET:HB2	2.35	0.41
2:A2:1288:G:H2'	2:A2:1289:C:C6	2.55	0.41
2:A2:1376:A:C6	2:A2:1377:A:C6	3.08	0.41
2:A2:1675:A:H5'	53:V2:7:HIS:O	2.21	0.41
2:A2:2093:C:O2'	20:F2:245:HIS:HE1	2.03	0.41
2:A2:2168:U:H2'	2:A2:2169:G:H8	1.85	0.41
2:A2:2297:G:C6	2:A2:2298:A:C6	3.08	0.41
2:A2:3320:G:C2	2:A2:3321:G:N7	2.89	0.41
2:A2:3784:C:H2'	2:A2:3785:G:H8	1.85	0.41
2:A2:4137:C:H4'	64:g2:114:LYS:HZ3	1.86	0.41
2:A2:4187:A:H2'	2:A2:4188:OMC:H6	1.85	0.41
2:A2:4389:G:C6	2:A2:4609:G:C6	3.09	0.41
2:A2:4552:G:H2'	2:A2:4559:G:N2	2.33	0.41
2:A2:4580:C:H2'	2:A2:4581:G:C8	2.55	0.41
4:B1:213:GLY:O	4:B1:217:LYS:HG3	2.20	0.41
5:B2:70:G:H2'	5:B2:71:G:H8	1.85	0.41
10:C1:88:PHE:CZ	10:C1:151:ILE:HB	2.56	0.41
14:D2:112:ILE:HG23	14:D2:133:TYR:HB2	2.02	0.41
19:F1:168:VAL:HG22	52:U2:96:GLY:C	2.46	0.41
20:F2:120:LYS:O	20:F2:124:ILE:HG12	2.20	0.41
23:G2:39:GLN:NE2	23:G2:48:LYS:HB2	2.35	0.41
33:K3:78:SER:O	33:K3:81:HIS:HB2	2.20	0.41
35:L3:121:LYS:O	35:L3:125:HIS:HB3	2.20	0.41
48:S2:55:VAL:HG22	48:S2:104:VAL:HB	2.03	0.41
66:i2:66:ILE:HG21	66:i2:91:PHE:CE2	2.55	0.41
69:m2:158:A:O2'	69:m2:159:A:H8	2.04	0.41
69:m2:486:A2M:HM'3	69:m2:486:A2M:H1'	1.91	0.41
69:m2:514:A2M:H4'	69:m2:578:A2M:H2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:585:A:C4	69:m2:586:A:C8	3.08	0.41
69:m2:824:PSU:HN3	69:m2:828:A:H62	1.69	0.41
69:m2:947:U:H2'	69:m2:948:U:H6	1.86	0.41
69:m2:971:U:C2	69:m2:973:G:N2	2.89	0.41
69:m2:1068:U:H2'	69:m2:1069:C:O4'	2.20	0.41
69:m2:1354:G:H2'	69:m2:1355:A:C8	2.54	0.41
69:m2:1616:A:H2'	69:m2:1617:U:C6	2.55	0.41
74:r2:162:ILE:HG22	74:r2:169:ILE:HD13	2.02	0.41
2:A2:136:C:H1'	2:A2:137:G:C8	2.55	0.41
2:A2:341:G:C4	2:A2:342:G:C8	3.09	0.41
2:A2:1281:C:H2'	2:A2:1282:C:C6	2.55	0.41
2:A2:1324:C:C2	2:A2:1325:G:C8	3.08	0.41
2:A2:2122:A:C8	2:A2:2553:A:C5	3.09	0.41
2:A2:3291:A:H2'	2:A2:3292:C:O4'	2.21	0.41
2:A2:3780:C:C2'	2:A2:3781:G:H5'	2.50	0.41
2:A2:4712:U:H2'	2:A2:4713:U:C6	2.55	0.41
11:C2:108:A:N1	11:C2:112:G:C6	2.88	0.41
14:D2:143:THR:O	14:D2:145:LYS:HG2	2.21	0.41
20:F2:227:ILE:H	20:F2:227:ILE:HD12	1.86	0.41
23:G2:164:LYS:HG2	23:G2:195:HIS:HE2	1.86	0.41
31:J3:114:LYS:NZ	69:m2:1204:U:H4'	2.36	0.41
45:Q3:10:ARG:HB3	45:Q3:24:VAL:HB	2.02	0.41
53:V2:87:LYS:HA	53:V2:93:ARG:HH21	1.85	0.41
69:m2:188:C:C4	69:m2:189:U:C4	3.08	0.41
69:m2:662:C:C4	69:m2:663:U:C4	3.09	0.41
69:m2:965:A:H2'	69:m2:966:A:C8	2.55	0.41
69:m2:1242:A:O2'	69:m2:1243:A:H5'	2.21	0.41
71:o2:82:THR:HA	71:o2:204:TYR:CD2	2.55	0.41
76:t2:180:LEU:HA	76:t2:180:LEU:HD23	1.82	0.41
79:w2:40:ILE:HD11	79:w2:62:PHE:CD1	2.56	0.41
2:A2:22:G:H2'	2:A2:23:C:C6	2.56	0.41
2:A2:27:C:C2	2:A2:28:C:C5	3.08	0.41
2:A2:290:U:H2'	2:A2:291:U:C6	2.56	0.41
2:A2:720:C:C2	2:A2:721:G:C8	3.09	0.41
2:A2:721:G:H2'	2:A2:722:G:H8	1.86	0.41
2:A2:1020:C:H2'	2:A2:1021:G:H8	1.85	0.41
2:A2:1125:G:H2'	2:A2:1126:A:O4'	2.21	0.41
2:A2:1215:G:H2'	2:A2:1216:C:C6	2.56	0.41
2:A2:1318:C:H2'	2:A2:1319:G:C8	2.55	0.41
2:A2:1709:A:C6	2:A2:1710:A:C6	3.09	0.41
2:A2:1857:G:H4'	2:A2:1858:G:OP2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2245:U:H3'	2:A2:2246:C:C6	2.56	0.41
2:A2:2246:C:H2'	2:A2:2247:C:C6	2.56	0.41
2:A2:2430:G:O6	54:W2:30:GLY:HA3	2.21	0.41
2:A2:2483:U:H2'	2:A2:2484:C:H6	1.85	0.41
2:A2:2587:A:C4	2:A2:2588:A:C8	3.08	0.41
2:A2:3431:A:H8	2:A2:3431:A:OP2	2.03	0.41
2:A2:3580:C:H2'	2:A2:3581:OMU:C6	2.51	0.41
2:A2:3779:G:H2'	2:A2:3780:C:C6	2.55	0.41
2:A2:3838:A:H5"	25:H1:81:TYR:HE1	1.86	0.41
2:A2:3933:A:C6	2:A2:3935:G:C4	3.09	0.41
2:A2:4070:G:O6	2:A2:4073:C:H2'	2.21	0.41
2:A2:4130:G:H2'	2:A2:4131:A:C8	2.56	0.41
2:A2:4159:A:H2'	2:A2:4160:C:C6	2.56	0.41
2:A2:4247:G:C6	2:A2:4248:C:N4	2.89	0.41
2:A2:4326:C:H2'	2:A2:4327:U:H6	1.86	0.41
2:A2:4394:G:H2'	2:A2:4395:G:H8	1.84	0.41
2:A2:4552:G:N1	2:A2:4560:G:C5	2.89	0.41
2:A2:4674:G:OP2	2:A2:4674:G:H8	2.03	0.41
11:C2:144:U:H2'	11:C2:145:C:C6	2.55	0.41
14:D2:225:ILE:HD11	14:D2:233:ARG:HG3	2.03	0.41
15:D3:12:TYR:CE2	31:J3:248:TYR:HE2	2.39	0.41
17:E2:47:LEU:HD21	17:E2:181:MET:SD	2.60	0.41
23:G2:127:GLY:HA2	23:G2:195:HIS:HD2	1.85	0.41
25:H1:64:ILE:HD11	25:H1:106:ALA:HB2	2.02	0.41
28:I2:105:LEU:HD23	28:I2:109:PRO:HG2	2.02	0.41
31:J3:96:PHE:HD2	31:J3:97:PHE:CD1	2.39	0.41
33:K3:53:SER:OG	69:m2:165:G:H4'	2.21	0.41
34:L2:100:ARG:HB3	34:L2:104:ARG:NH1	2.36	0.41
35:L3:83:ARG:HH12	69:m2:822:U:P	2.44	0.41
35:L3:133:ARG:NH2	35:L3:143:ASN:HB3	2.36	0.41
40:O2:48:LYS:HG2	40:O2:53:ALA:HB2	2.03	0.41
42:P2:83:ARG:O	42:P2:101:ASN:HA	2.21	0.41
43:P3:37:PHE:HE1	43:P3:41:MET:HE3	1.85	0.41
43:P3:71:LYS:HB3	43:P3:130:PHE:CE1	2.56	0.41
45:Q3:114:MET:HA	45:Q3:122:LYS:HG3	2.02	0.41
53:V2:15:LYS:HA	53:V2:18:ARG:HH11	1.86	0.41
56:Y2:77:PHE:HE1	68:k2:20:ARG:HB3	1.85	0.41
58:a2:3:GLN:NE2	58:a2:30:ILE:HB	2.36	0.41
62:e2:61:PRO:HA	62:e2:62:PRO:HD3	1.92	0.41
66:i2:70:LEU:O	66:i2:80:LYS:HA	2.21	0.41
68:k2:5:LEU:O	68:k2:9:VAL:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:m2:12:U:H1'	69:m2:1359:A:N3	2.36	0.41
69:m2:337:G:C4	69:m2:338:A:C8	3.08	0.41
69:m2:377:U:H2'	69:m2:378:A:H8	1.84	0.41
69:m2:480:G:H2'	69:m2:481:C:C6	2.55	0.41
69:m2:813:A:H2'	69:m2:814:A:O4'	2.21	0.41
69:m2:933:C:OP2	72:p2:159:GLN:HG3	2.21	0.41
69:m2:945:U:H2'	69:m2:946:A:O4'	2.21	0.41
69:m2:951:G:H2'	69:m2:952:C:C6	2.56	0.41
69:m2:951:G:H2'	69:m2:952:C:H6	1.85	0.41
69:m2:978:G:H2'	69:m2:979:C:C6	2.55	0.41
69:m2:1133:G:H2'	69:m2:1134:C:H6	1.84	0.41
69:m2:1162:U:H2'	69:m2:1163:U:C6	2.55	0.41
69:m2:1175:A:H2'	69:m2:1176:U:O4'	2.21	0.41
69:m2:1192:A:H2'	69:m2:1193:C:O4'	2.21	0.41
69:m2:1202:A:H2'	69:m2:1203:U:C6	2.56	0.41
69:m2:1303:A:C4	69:m2:1305:C:C5	3.08	0.41
69:m2:1518:G:C6	69:m2:1519:G:C5	3.09	0.41
69:m2:1692:U:H2'	69:m2:1693:U:C6	2.55	0.41
70:n2:47:C:C4	70:n2:58:A:C8	3.08	0.41
71:o2:76:VAL:HG23	71:o2:98:PRO:HA	2.03	0.41
71:o2:195:TRP:CD1	71:o2:197:VAL:HB	2.56	0.41
73:q2:35:SER:HB2	73:q2:51:LEU:CB	2.49	0.41
73:q2:175:VAL:HG12	73:q2:177:LEU:HG	2.02	0.41
74:r2:170:ILE:HG12	74:r2:171:ASN:OD1	2.21	0.41
76:t2:147:LYS:HE3	76:t2:151:SER:HB2	2.02	0.41
82:z2:71:ILE:HB	82:z2:74:GLN:HG2	2.01	0.41
82:z2:106:LEU:O	82:z2:109:LEU:HB2	2.20	0.41
2:A2:132:G:N1	2:A2:137:G:C6	2.89	0.41
2:A2:304:C:O2'	60:c2:76:ARG:HD3	2.21	0.41
2:A2:367:C:H2'	2:A2:368:C:H6	1.86	0.41
2:A2:1035:C:H2'	2:A2:1036:G:H8	1.85	0.41
2:A2:1149:G:H21	20:F2:95:MET:HB2	1.85	0.41
2:A2:1285:C:H2'	2:A2:1286:U:H6	1.86	0.41
2:A2:1686:C:H2'	2:A2:1687:G:H8	1.86	0.41
2:A2:1731:A:N3	2:A2:1731:A:H2'	2.36	0.41
2:A2:1751:U:H2'	2:A2:1752:U:C6	2.55	0.41
2:A2:2015:C:O4'	2:A2:2016:G:C2	2.74	0.41
2:A2:2184:A:H2'	2:A2:2185:C:H6	1.86	0.41
2:A2:2185:C:C2	2:A2:2186:A:C8	3.09	0.41
2:A2:2390:U:C2	2:A2:2391:U:C5	3.09	0.41
2:A2:2506:G:H2'	2:A2:2507:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2560:C:H2'	2:A2:2561:A:C8	2.56	0.41
2:A2:2651:G:H5"	34:L2:134:ASN:CG	2.46	0.41
2:A2:3885:A:OP2	66:i2:97:LYS:HE3	2.21	0.41
2:A2:3953:U:O2	2:A2:3961:G:O6	2.38	0.41
2:A2:4225:G:H22	2:A2:4374:G:N2	2.19	0.41
2:A2:4506:G:C4	2:A2:4507:G:C8	3.09	0.41
2:A2:4541:G:H2'	2:A2:4542:G:H8	1.86	0.41
2:A2:4549:G:C2	2:A2:4563:C:C2	3.09	0.41
2:A2:4560:G:C2	2:A2:4561:G:C4	3.10	0.41
3:A3:117:ILE:HG13	80:x2:119:PHE:HE2	1.86	0.41
4:B1:42:GLY:C	4:B1:44:ASP:H	2.29	0.41
4:B1:157:ILE:HG12	4:B1:170:LEU:HD23	2.03	0.41
5:B2:75:G:C8	36:M2:53:LYS:HD2	2.56	0.41
7:Bz:15:G:C6	7:Bz:59:U:C2	3.09	0.41
7:Bz:26:A:C6	7:Bz:44:G:C6	3.09	0.41
7:Bz:28:G:C2	7:Bz:29:G:C5	3.08	0.41
13:D1:66:GLU:O	13:D1:70:ILE:HG13	2.21	0.41
26:H2:289:TYR:HA	26:H2:290:PRO:HD3	1.95	0.41
35:L3:111:GLN:HB3	35:L3:123:ILE:HD11	2.02	0.41
35:L3:131:ARG:HD2	35:L3:131:ARG:HA	1.76	0.41
35:L3:131:ARG:NH1	35:L3:143:ASN:HD22	2.19	0.41
62:e2:40:ARG:HG2	62:e2:41:TYR:CD2	2.55	0.41
65:h2:2:ARG:HD3	69:m2:1844:4AC:P	2.60	0.41
69:m2:1123:G:C4	69:m2:1124:A:C8	3.09	0.41
69:m2:1266:C:H4'	69:m2:1267:A:O4'	2.21	0.41
69:m2:1861:A:O2'	69:m2:1862:A:H5'	2.21	0.41
76:t2:134:VAL:HG23	76:t2:134:VAL:O	2.21	0.41
2:A2:265:U:H4'	2:A2:266:C:O4'	2.22	0.40
2:A2:309:C:H5"	2:A2:310:G:O4'	2.22	0.40
2:A2:419:A:H61	11:C2:15:G:H1'	1.85	0.40
2:A2:487:C:C2	2:A2:488:G:C8	3.09	0.40
2:A2:1024:C:H2'	2:A2:1025:C:C6	2.56	0.40
2:A2:1047:U:OP1	2:A2:1048:C:H4'	2.21	0.40
2:A2:1252:C:H2'	2:A2:1253:U:H6	1.85	0.40
2:A2:1262:C:C2	2:A2:1263:C:C5	3.08	0.40
2:A2:1559:U:C5	2:A2:3907:A:H5'	2.56	0.40
2:A2:1629:C:H2'	2:A2:1630:C:C6	2.54	0.40
2:A2:1708:U:H2'	2:A2:1709:A:H8	1.86	0.40
2:A2:2176:G:C8	30:J2:129:THR:HG22	2.56	0.40
2:A2:2235:G:H2'	2:A2:2236:G:C8	2.56	0.40
2:A2:2627:C:H2'	2:A2:2628:U:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2648:U:H2'	2:A2:2649:A:C8	2.56	0.40
2:A2:3782:U:H2'	2:A2:3783:C:C6	2.56	0.40
2:A2:4072:U:O2	2:A2:4072:U:H2'	2.21	0.40
3:A3:14:ARG:NH2	3:A3:18:THR:HA	2.36	0.40
3:A3:123:LEU:HB3	3:A3:127:TRP:CZ2	2.57	0.40
4:B1:259:LYS:HA	4:B1:259:LYS:HD3	1.93	0.40
10:C1:18:ILE:HG12	10:C1:27:VAL:HG22	2.03	0.40
25:H1:42:PRO:HG3	25:H1:53:TYR:CE1	2.56	0.40
31:J3:109:ILE:HD13	31:J3:109:ILE:HA	1.93	0.40
33:K3:116:LYS:HD3	33:K3:117:GLY:N	2.36	0.40
45:Q3:7:ILE:HA	45:Q3:26:ASP:O	2.22	0.40
60:c2:73:ILE:O	60:c2:77:VAL:HG22	2.21	0.40
69:m2:18:C:H2'	69:m2:19:A:H8	1.86	0.40
69:m2:94:G:C6	69:m2:95:G:C5	3.09	0.40
69:m2:123:G:H3'	69:m2:124:U:H6	1.85	0.40
69:m2:675:G:H2'	69:m2:676:C:H6	1.86	0.40
69:m2:808:U:C2	69:m2:860:A:C2	3.09	0.40
69:m2:982:A:H2'	69:m2:983:A:H8	1.86	0.40
69:m2:1052:A:H4'	69:m2:1848:G:O2'	2.21	0.40
69:m2:1104:G:C6	69:m2:1133:G:C6	3.09	0.40
69:m2:1131:G:H2'	69:m2:1132:G:C4	2.56	0.40
69:m2:1237:G:H2'	69:m2:1238:G:H8	1.87	0.40
69:m2:1627:U:C2	69:m2:1628:C:C5	3.09	0.40
70:n2:14:A:H61	70:n2:20:A:H2	1.68	0.40
71:o2:206:ASP:HA	71:o2:207:PRO:HD3	1.90	0.40
73:q2:126:ILE:HD13	73:q2:134:CYS:SG	2.60	0.40
77:u2:78:ILE:HG23	77:u2:102:VAL:HB	2.02	0.40
2:A2:478:G:H2'	2:A2:479:G:H8	1.86	0.40
2:A2:708:G:C6	2:A2:709:U:C4	3.09	0.40
2:A2:1059:C:H2'	2:A2:1060:G:C8	2.55	0.40
2:A2:1238:G:H5'	2:A2:1239:G:OP2	2.21	0.40
2:A2:1259:C:H42	2:A2:1901:A:H61	1.69	0.40
2:A2:1391:U:H2'	2:A2:1392:C:H6	1.86	0.40
2:A2:1561:G:H22	2:A2:1575:U:H3	1.68	0.40
2:A2:1609:C:H2'	2:A2:1610:C:H6	1.86	0.40
2:A2:2491:G:H2'	2:A2:2492:C:C6	2.56	0.40
2:A2:3457:U:H2'	2:A2:3459:A:N7	2.36	0.40
2:A2:3770:U:H3'	2:A2:3771:G:H5"	2.03	0.40
2:A2:3947:U:H2'	2:A2:3948:U:C6	2.56	0.40
2:A2:4189:C:C2	2:A2:4190:G:N7	2.89	0.40
2:A2:4399:C:H2'	2:A2:4400:U:H6	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4417:G:H2'	2:A2:4418:C:O4'	2.21	0.40
5:B2:110:G:H2'	5:B2:111:C:C6	2.56	0.40
7:Bz:14:A:N6	7:Bz:47:C:H42	2.19	0.40
11:C2:92:U:H2'	11:C2:93:C:O4'	2.21	0.40
20:F2:289:LEU:HA	20:F2:292:ILE:HD12	2.02	0.40
31:J3:67:GLY:HA2	31:J3:93:ILE:HG21	2.03	0.40
33:K3:35:GLU:OE1	33:K3:114:VAL:HG21	2.21	0.40
35:L3:104:ASP:O	35:L3:108:ARG:HG2	2.21	0.40
39:N3:4:MET:SD	69:m2:926:G:H5'	2.61	0.40
45:Q3:60:PHE:HD1	45:Q3:71:GLY:HA3	1.86	0.40
46:R2:78:LYS:HE2	46:R2:78:LYS:HB3	1.88	0.40
69:m2:212:U:H2'	69:m2:213:G:O4'	2.22	0.40
69:m2:349:G:H2'	69:m2:350:A:C8	2.56	0.40
69:m2:857:G:H2'	69:m2:858:C:O4'	2.21	0.40
69:m2:1038:A:C4	69:m2:1039:G:C8	3.09	0.40
69:m2:1125:C:H2'	69:m2:1126:C:H6	1.86	0.40
69:m2:1316:U:H4'	78:v2:8:ARG:NH2	2.37	0.40
69:m2:1360:U:H2'	69:m2:1361:U:C6	2.57	0.40
69:m2:1363:G:H2'	69:m2:1364:U:C5	2.56	0.40
69:m2:1476:A:H2'	69:m2:1477:G:C8	2.57	0.40
69:m2:1560:C:H2'	69:m2:1561:C:H6	1.83	0.40
69:m2:1810:U:H2'	69:m2:1811:A:H8	1.85	0.40
70:n2:21:G:H2'	70:n2:22:C:C6	2.57	0.40
82:z2:13:ALA:HB3	82:z2:53:TYR:HD2	1.86	0.40
1:A1:125:PRO:HD3	2:A2:1678:U:O3'	2.21	0.40
2:A2:1366:A:P	67:j2:4:ARG:HD3	2.61	0.40
2:A2:1405:G:C6	2:A2:1417:G:C6	3.10	0.40
2:A2:1454:G:N7	2:A2:4038:C:H1'	2.36	0.40
2:A2:2132:C:H2'	2:A2:2133:G:O4'	2.21	0.40
2:A2:2499:A:H2'	2:A2:2500:A:C8	2.57	0.40
2:A2:3363:U:H2'	2:A2:3364:C:C6	2.56	0.40
2:A2:3454:U:H2'	2:A2:3456:A:OP2	2.22	0.40
2:A2:3600:G:O2'	2:A2:3601:A:H5'	2.21	0.40
2:A2:4289:OMG:H1'	2:A2:4289:OMG:HM23	1.69	0.40
2:A2:4417:G:N2	36:M2:173:ASN:HD21	2.20	0.40
2:A2:4608:C:H2'	2:A2:4609:G:O4'	2.21	0.40
4:B1:77:PRO:HA	4:B1:237:TRP:CE3	2.55	0.40
10:C1:93:ARG:CZ	64:g2:82:LEU:HD21	2.51	0.40
26:H2:147:LEU:HD13	26:H2:180:LEU:HD21	2.03	0.40
33:K3:32:MET:HG2	33:K3:65:GLN:OE1	2.21	0.40
33:K3:50:VAL:CG2	33:K3:111:LEU:HB3	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:K3:133:LEU:HD22	69:m2:150:A:H61	1.86	0.40
34:L2:60:ARG:HG3	34:L2:63:CYS:SG	2.60	0.40
43:P3:3:ARG:HH22	69:m2:1095:A:H4'	1.85	0.40
46:R2:89:LYS:HB3	46:R2:89:LYS:HE3	1.91	0.40
47:R3:80:ARG:NH1	69:m2:1600:G:H5"	2.36	0.40
48:S2:114:ASP:O	48:S2:117:LYS:HG2	2.20	0.40
52:U2:77:LYS:O	52:U2:80:THR:HG22	2.21	0.40
53:V2:87:LYS:HE2	53:V2:87:LYS:HB2	1.95	0.40
59:b2:98:HIS:CE1	59:b2:102:LEU:HD21	2.57	0.40
60:c2:60:LEU:HD22	60:c2:65:LYS:HG2	2.03	0.40
67:j2:14:TYR:HB3	67:j2:18:TYR:CD2	2.55	0.40
69:m2:61:A:H8	69:m2:61:A:OP2	2.04	0.40
69:m2:416:A:H2'	69:m2:417:A:C8	2.57	0.40
69:m2:518:A:C6	69:m2:646:OMG:C8	3.09	0.40
69:m2:1200:G:C2	69:m2:1201:A:C4	3.10	0.40
69:m2:1288:G:N2	69:m2:1315:A:H62	2.20	0.40
69:m2:1401:C:C4	69:m2:1402:U:C4	3.10	0.40
69:m2:1445:C:H1'	81:y2:22:VAL:HG21	2.03	0.40
69:m2:1668:C:H2'	69:m2:1669:U:O4'	2.21	0.40
69:m2:1745:G:N2	69:m2:1793:A:H62	2.19	0.40
69:m2:1811:A:H2'	69:m2:1812:U:H6	1.86	0.40
69:m2:1829:U:H2'	69:m2:1830:C:H6	1.86	0.40
70:n2:29:G:C4	70:n2:30:G:C8	3.09	0.40
71:o2:195:TRP:HD1	71:o2:197:VAL:O	2.04	0.40
72:p2:82:ARG:CZ	72:p2:191:ASP:HB2	2.52	0.40
78:v2:10:ALA:HA	78:v2:13:GLU:HG3	2.03	0.40
2:A2:108:A:H4'	2:A2:109:G:OP1	2.22	0.40
2:A2:443:G:H5"	57:Z2:54:LYS:HD3	2.03	0.40
2:A2:1393:C:H2'	2:A2:1394:G:O4'	2.21	0.40
2:A2:1678:U:H2'	2:A2:1679:G:H8	1.85	0.40
2:A2:2191:U:O4	46:R2:130:PRO:HG2	2.21	0.40
2:A2:2363:G:H2'	2:A2:2364:G:C8	2.51	0.40
2:A2:2399:G:H2'	2:A2:2400:G:H8	1.87	0.40
2:A2:3583:U:C2	2:A2:3837:G:C2	3.10	0.40
2:A2:3896:A:H2'	2:A2:3897:G:O4'	2.22	0.40
2:A2:4111:U:H5"	17:E2:10:ARG:HH21	1.86	0.40
2:A2:4523:C:C2	2:A2:4524:C:C5	3.09	0.40
3:A3:11:HIS:HB2	3:A3:12:ILE:HD12	2.04	0.40
10:C1:157:SER:O	10:C1:161:ILE:HD12	2.22	0.40
15:D3:27:LYS:HA	15:D3:29:HIS:CE1	2.57	0.40
17:E2:92:TYR:HE2	17:E2:161:ARG:HE	1.70	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E2:220:ILE:HG13	17:E2:278:THR:HG23	2.01	0.40
20:F2:94:ASN:HB3	20:F2:100:ARG:HH12	1.86	0.40
28:I2:135:PHE:HE2	28:I2:137:TYR:CE2	2.40	0.40
36:M2:164:LYS:HD2	36:M2:164:LYS:HA	1.82	0.40
47:R3:50:PHE:CZ	47:R3:83:LEU:HG	2.57	0.40
51:T3:31:ARG:HD2	51:T3:35:ARG:HE	1.87	0.40
67:j2:14:TYR:HB3	67:j2:18:TYR:CE2	2.56	0.40
69:m2:495:A:OP1	69:m2:495:A:H8	2.05	0.40
69:m2:896:G:H2'	69:m2:897:G:C8	2.56	0.40
69:m2:1175:A:C2	69:m2:1190:A:C4	3.08	0.40
69:m2:1635:A:H2'	69:m2:1636:A:C8	2.56	0.40
70:n2:22:C:H2'	70:n2:23:G:H8	1.84	0.40
71:o2:33:GLN:OE1	71:o2:154:LEU:HB2	2.22	0.40
74:r2:67:GLN:HG3	74:r2:69:PHE:HD2	1.85	0.40
80:x2:37:TYR:HB3	80:x2:41:GLN:HB2	2.03	0.40
81:y2:47:LEU:HD23	81:y2:47:LEU:HA	1.87	0.40
2:A2:477:C:H2'	2:A2:478:G:H8	1.87	0.40
2:A2:746:G:O2'	2:A2:747:G:H5'	2.21	0.40
2:A2:1029:C:H2'	2:A2:1030:G:C8	2.57	0.40
2:A2:1040:C:H2'	2:A2:1041:G:C8	2.55	0.40
2:A2:1161:G:C6	2:A2:1323:G:C6	3.10	0.40
2:A2:1324:C:H2'	2:A2:1325:G:C8	2.57	0.40
2:A2:1403:C:H5"	2:A2:1404:U:O5'	2.21	0.40
2:A2:1496:PSU:H2'	2:A2:1497:A:C8	2.54	0.40
2:A2:1534:C:H2'	2:A2:1535:G:C8	2.56	0.40
2:A2:1617:G:C5	53:V2:45:PHE:CD2	3.09	0.40
2:A2:1655:G:N3	2:A2:1655:G:H3'	2.36	0.40
2:A2:2254:C:H2'	2:A2:2255:U:C6	2.56	0.40
2:A2:2381:U:H1'	2:A2:2384:C:H41	1.87	0.40
2:A2:3463:A:C6	2:A2:3464:OMC:N4	2.90	0.40
2:A2:4112:U:H2'	2:A2:4113:C:O4'	2.22	0.40
2:A2:4340:C:H2'	2:A2:4341:U:H6	1.85	0.40
2:A2:4676:U:C2	2:A2:4677:G:C8	3.10	0.40
13:D1:93:PRO:HB2	13:D1:125:THR:HG22	2.03	0.40
13:D1:175:LYS:O	13:D1:175:LYS:HG3	2.21	0.40
19:F1:77:SER:O	19:F1:80:GLU:HG2	2.22	0.40
22:G1:6:TYR:H	22:G1:11:ARG:NH2	2.20	0.40
26:H2:220:THR:O	26:H2:223:TYR:HB3	2.21	0.40
28:I2:185:VAL:O	28:I2:189:ILE:HG12	2.21	0.40
30:J2:41:ILE:HG23	30:J2:42:ARG:HD2	2.03	0.40
33:K3:164:LYS:HG2	69:m2:67:C:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:L3:32:ILE:HA	35:L3:37:LEU:HD12	2.03	0.40
35:L3:50:LEU:HA	35:L3:53:ILE:HG12	2.02	0.40
69:m2:320:A:N1	69:m2:335:G:C6	2.90	0.40
69:m2:528:A:H2'	69:m2:529:C:C6	2.56	0.40
69:m2:919:U:C4	69:m2:920:U:C4	3.08	0.40
69:m2:992:A:N6	69:m2:1003:A:H61	2.18	0.40
69:m2:1085:A:C2	69:m2:1863:G:C5	3.09	0.40
69:m2:1111:C:O2	82:z2:122:PRO:HA	2.22	0.40
69:m2:1233:C:H42	69:m2:1529:C:H42	1.69	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	220/270 (82%)	214 (97%)	6 (3%)	0	100	100
3	A3	137/152 (90%)	123 (90%)	13 (10%)	1 (1%)	18	47
4	B1	214/266 (80%)	208 (97%)	6 (3%)	0	100	100
6	B3	136/145 (94%)	129 (95%)	6 (4%)	1 (1%)	18	47
10	C1	188/192 (98%)	182 (97%)	6 (3%)	0	100	100
12	C3	78/119 (66%)	76 (97%)	2 (3%)	0	100	100
13	D1	200/214 (94%)	192 (96%)	8 (4%)	0	100	100
14	D2	243/257 (95%)	224 (92%)	19 (8%)	0	100	100
15	D3	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
16	E1	172/178 (97%)	166 (96%)	6 (4%)	0	100	100
17	E2	393/403 (98%)	375 (95%)	18 (5%)	0	100	100
18	E3	137/143 (96%)	124 (90%)	13 (10%)	0	100	100
19	F1	201/211 (95%)	192 (96%)	9 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	F2	350/419 (84%)	339 (97%)	11 (3%)	0	100	100
21	F3	95/115 (83%)	92 (97%)	3 (3%)	0	100	100
22	G1	137/217 (63%)	133 (97%)	4 (3%)	0	100	100
23	G2	291/297 (98%)	282 (97%)	9 (3%)	0	100	100
24	G3	52/69 (75%)	52 (100%)	0	0	100	100
25	H1	201/204 (98%)	193 (96%)	8 (4%)	0	100	100
26	H2	212/296 (72%)	205 (97%)	7 (3%)	0	100	100
27	H3	49/56 (88%)	43 (88%)	6 (12%)	0	100	100
28	I2	196/203 (97%)	192 (98%)	4 (2%)	0	100	100
29	I3	208/317 (66%)	190 (91%)	17 (8%)	1 (0%)	24	54
30	J2	151/184 (82%)	143 (95%)	8 (5%)	0	100	100
31	J3	215/293 (73%)	201 (94%)	14 (6%)	0	100	100
32	K2	184/188 (98%)	177 (96%)	7 (4%)	0	100	100
33	K3	205/249 (82%)	195 (95%)	10 (5%)	0	100	100
34	L2	167/196 (85%)	165 (99%)	2 (1%)	0	100	100
35	L3	177/194 (91%)	159 (90%)	18 (10%)	0	100	100
36	M2	173/176 (98%)	163 (94%)	10 (6%)	0	100	100
37	M3	74/132 (56%)	67 (90%)	7 (10%)	0	100	100
38	N2	157/160 (98%)	152 (97%)	5 (3%)	0	100	100
39	N3	147/151 (97%)	133 (90%)	14 (10%)	0	100	100
40	O2	99/128 (77%)	95 (96%)	4 (4%)	0	100	100
41	O3	133/151 (88%)	124 (93%)	9 (7%)	0	100	100
42	P2	127/140 (91%)	121 (95%)	6 (5%)	0	100	100
43	P3	127/130 (98%)	116 (91%)	11 (9%)	0	100	100
44	Q2	60/157 (38%)	57 (95%)	3 (5%)	0	100	100
45	Q3	117/133 (88%)	108 (92%)	9 (8%)	0	100	100
46	R2	116/156 (74%)	112 (97%)	4 (3%)	0	100	100
47	R3	71/125 (57%)	67 (94%)	4 (6%)	0	100	100
48	S2	132/145 (91%)	130 (98%)	2 (2%)	0	100	100
49	S3	75/84 (89%)	69 (92%)	6 (8%)	0	100	100
50	T2	133/136 (98%)	130 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
51	T3	34/133 (26%)	32 (94%)	1 (3%)	1 (3%)	3 19
52	U2	145/148 (98%)	139 (96%)	6 (4%)	0	100 100
53	V2	115/160 (72%)	110 (96%)	5 (4%)	0	100 100
54	W2	92/115 (80%)	89 (97%)	3 (3%)	0	100 100
55	X2	105/125 (84%)	103 (98%)	2 (2%)	0	100 100
56	Y2	126/135 (93%)	124 (98%)	2 (2%)	0	100 100
57	Z2	107/110 (97%)	102 (95%)	5 (5%)	0	100 100
58	a2	105/117 (90%)	101 (96%)	4 (4%)	0	100 100
59	b2	118/123 (96%)	117 (99%)	1 (1%)	0	100 100
60	c2	100/105 (95%)	95 (95%)	4 (4%)	1 (1%)	12 40
61	d2	84/97 (87%)	78 (93%)	6 (7%)	0	100 100
62	e2	67/70 (96%)	67 (100%)	0	0	100 100
63	f2	48/51 (94%)	46 (96%)	2 (4%)	0	100 100
64	g2	48/128 (38%)	45 (94%)	3 (6%)	0	100 100
65	h2	22/25 (88%)	21 (96%)	1 (4%)	0	100 100
66	i2	101/106 (95%)	98 (97%)	3 (3%)	0	100 100
67	j2	87/92 (95%)	77 (88%)	10 (12%)	0	100 100
68	k2	123/137 (90%)	116 (94%)	7 (6%)	0	100 100
71	o2	213/295 (72%)	196 (92%)	17 (8%)	0	100 100
72	p2	210/264 (80%)	192 (91%)	18 (9%)	0	100 100
73	q2	196/243 (81%)	191 (97%)	5 (3%)	0	100 100
74	r2	255/257 (99%)	237 (93%)	18 (7%)	0	100 100
75	s2	181/204 (89%)	171 (94%)	10 (6%)	0	100 100
76	t2	166/194 (86%)	156 (94%)	10 (6%)	0	100 100
77	u2	169/208 (81%)	162 (96%)	7 (4%)	0	100 100
78	v2	81/165 (49%)	64 (79%)	16 (20%)	1 (1%)	10 35
79	w2	134/158 (85%)	124 (92%)	10 (8%)	0	100 100
80	x2	118/145 (81%)	111 (94%)	7 (6%)	0	100 100
81	y2	126/146 (86%)	117 (93%)	9 (7%)	0	100 100
82	z2	123/135 (91%)	112 (91%)	11 (9%)	0	100 100
All	All	10630/12625 (84%)	10079 (95%)	545 (5%)	6 (0%)	49 78

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	A3	91	LYS
29	I3	52	TYR
60	c2	66	ASP
51	T3	22	GLN
78	v2	53	LYS
6	B3	37	VAL

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	193/234 (82%)	193 (100%)	0	100	100
3	A3	121/132 (92%)	121 (100%)	0	100	100
4	B1	189/223 (85%)	187 (99%)	2 (1%)	65	74
6	B3	111/115 (96%)	111 (100%)	0	100	100
10	C1	169/171 (99%)	169 (100%)	0	100	100
12	C3	79/107 (74%)	79 (100%)	0	100	100
13	D1	174/181 (96%)	174 (100%)	0	100	100
14	D2	188/199 (94%)	188 (100%)	0	100	100
15	D3	53/67 (79%)	53 (100%)	0	100	100
16	E1	147/149 (99%)	147 (100%)	0	100	100
17	E2	343/348 (99%)	342 (100%)	1 (0%)	86	84
18	E3	111/115 (96%)	111 (100%)	0	100	100
19	F1	170/178 (96%)	170 (100%)	0	100	100
20	F2	298/348 (86%)	298 (100%)	0	100	100
21	F3	84/98 (86%)	84 (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	49/62 (79%)	49 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
25	H1	171/172 (99%)	171 (100%)	0	100	100
26	H2	196/256 (77%)	196 (100%)	0	100	100
27	H3	45/49 (92%)	45 (100%)	0	100	100
28	I2	170/173 (98%)	170 (100%)	0	100	100
29	I3	197/275 (72%)	197 (100%)	0	100	100
30	J2	134/163 (82%)	134 (100%)	0	100	100
31	J3	155/224 (69%)	155 (100%)	0	100	100
32	K2	164/165 (99%)	164 (100%)	0	100	100
33	K3	182/218 (84%)	182 (100%)	0	100	100
34	L2	149/175 (85%)	149 (100%)	0	100	100
35	L3	160/168 (95%)	160 (100%)	0	100	100
36	M2	155/156 (99%)	155 (100%)	0	100	100
37	M3	35/108 (32%)	35 (100%)	0	100	100
38	N2	139/140 (99%)	139 (100%)	0	100	100
39	N3	130/131 (99%)	130 (100%)	0	100	100
40	O2	91/114 (80%)	91 (100%)	0	100	100
41	O3	103/119 (87%)	103 (100%)	0	100	100
42	P2	100/107 (94%)	100 (100%)	0	100	100
43	P3	110/113 (97%)	110 (100%)	0	100	100
44	Q2	54/126 (43%)	54 (100%)	0	100	100
45	Q3	103/115 (90%)	103 (100%)	0	100	100
46	R2	106/133 (80%)	106 (100%)	0	100	100
47	R3	65/103 (63%)	65 (100%)	0	100	100
48	S2	124/135 (92%)	124 (100%)	0	100	100
49	S3	71/76 (93%)	71 (100%)	0	100	100
50	T2	117/118 (99%)	117 (100%)	0	100	100
51	T3	31/105 (30%)	31 (100%)	0	100	100
52	U2	120/121 (99%)	120 (100%)	0	100	100
53	V2	98/124 (79%)	98 (100%)	0	100	100
54	W2	79/97 (81%)	79 (100%)	0	100	100
55	X2	98/110 (89%)	98 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
56	Y2	114/121 (94%)	114 (100%)	0	100	100
57	Z2	88/89 (99%)	88 (100%)	0	100	100
58	a2	93/100 (93%)	93 (100%)	0	100	100
59	b2	108/110 (98%)	108 (100%)	0	100	100
60	c2	86/89 (97%)	83 (96%)	3 (4%)	32	56
61	d2	73/80 (91%)	73 (100%)	0	100	100
62	e2	64/65 (98%)	64 (100%)	0	100	100
63	f2	47/48 (98%)	47 (100%)	0	100	100
64	g2	46/116 (40%)	46 (100%)	0	100	100
65	h2	23/24 (96%)	23 (100%)	0	100	100
66	i2	91/94 (97%)	91 (100%)	0	100	100
67	j2	73/75 (97%)	73 (100%)	0	100	100
68	k2	109/121 (90%)	109 (100%)	0	100	100
71	o2	180/242 (74%)	180 (100%)	0	100	100
72	p2	193/229 (84%)	193 (100%)	0	100	100
73	q2	167/202 (83%)	167 (100%)	0	100	100
74	r2	220/220 (100%)	220 (100%)	0	100	100
75	s2	157/170 (92%)	157 (100%)	0	100	100
76	t2	132/174 (76%)	132 (100%)	0	100	100
77	u2	133/180 (74%)	133 (100%)	0	100	100
78	v2	75/136 (55%)	75 (100%)	0	100	100
79	w2	125/142 (88%)	125 (100%)	0	100	100
80	x2	109/130 (84%)	108 (99%)	1 (1%)	70	76
81	y2	106/121 (88%)	106 (100%)	0	100	100
82	z2	113/121 (93%)	113 (100%)	0	100	100
All	All	9220/10721 (86%)	9213 (100%)	7 (0%)	87	89

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	B1	137[A]	ARG
4	B1	137[B]	ARG
17	E2	261	ARG

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Mol	Chain	Res	Type
60	c2	64	SER
60	c2	65	LYS
60	c2	66	ASP
80	x2	70	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (76) such sidechains are listed below:

Mol	Chain	Res	Type
1	A1	214	HIS
1	A1	257	ASN
3	A3	10	GLN
3	A3	11	HIS
6	B3	91	HIS
10	C1	79	ASN
13	D1	59	GLN
13	D1	166	HIS
14	D2	22	HIS
14	D2	83	HIS
14	D2	215	ASN
15	D3	29	HIS
16	E1	46	GLN
19	F1	111	GLN
20	F2	47	ASN
20	F2	50	GLN
22	G1	48	GLN
23	G2	138	GLN
25	H1	29	GLN
25	H1	149	GLN
26	H2	275	GLN
27	H3	26	ASN
29	I3	20	GLN
29	I3	64	HIS
29	I3	76	GLN
29	I3	272	GLN
30	J2	10	ASN
30	J2	133	HIS
31	J3	178	HIS
31	J3	235	ASN
31	J3	267	GLN
32	K2	160	HIS
33	K3	163	ASN
34	L2	134	ASN

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Mol	Chain	Res	Type
35	L3	111	GLN
35	L3	113	GLN
35	L3	124	HIS
35	L3	134	HIS
35	L3	154	GLN
36	M2	173	ASN
37	M3	82	ASN
38	N2	54	HIS
38	N2	58	HIS
38	N2	69	GLN
38	N2	98	HIS
38	N2	144	ASN
45	Q3	15	ASN
48	S2	20	ASN
48	S2	40	GLN
48	S2	43	ASN
50	T2	78	ASN
52	U2	14	HIS
52	U2	40	HIS
52	U2	49	HIS
52	U2	62	HIS
52	U2	89	ASN
56	Y2	24	GLN
56	Y2	34	ASN
56	Y2	80	HIS
56	Y2	107	ASN
56	Y2	126	ASN
60	c2	15	HIS
63	f2	17	GLN
67	j2	72	ASN
68	k2	23	GLN
71	o2	132	GLN
72	p2	163	GLN
75	s2	79	HIS
75	s2	82	ASN
75	s2	110	GLN
75	s2	203	ASN
76	t2	168	HIS
77	u2	35	ASN
80	x2	79	HIS
81	y2	29	ASN
82	z2	74	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	C2	155/156 (99%)	32 (20%)	0
2	A2	3482/3615 (96%)	734 (21%)	13 (0%)
5	B2	118/121 (97%)	12 (10%)	0
69	m2	1606/1635 (98%)	423 (26%)	0
7	Bz	63/76 (82%)	45 (71%)	0
70	n2	70/73 (95%)	9 (12%)	0
8	Bx	9/10 (90%)	4 (44%)	0
All	All	5503/5686 (96%)	1259 (22%)	13 (0%)

All (1259) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	A2	13	U
2	A2	21	G
2	A2	25	A
2	A2	39	A
2	A2	42	A
2	A2	48	G
2	A2	56	A
2	A2	58	G
2	A2	59	A
2	A2	64	A
2	A2	65	A
2	A2	72	C
2	A2	73	A
2	A2	74	G
2	A2	91	G
2	A2	95	G
2	A2	109	G
2	A2	110	C
2	A2	116	G
2	A2	119	G
2	A2	120	A
2	A2	128	C
2	A2	131	C
2	A2	134	G
2	A2	149	A
2	A2	159	C
2	A2	164	G
2	A2	170	C
2	A2	172	C

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Mol	Chain	Res	Type
2	A2	173	C
2	A2	183	C
2	A2	184	U
2	A2	185	C
2	A2	186	G
2	A2	188	G
2	A2	189	G
2	A2	200	U
2	A2	201	C
2	A2	207	G
2	A2	209	U
2	A2	210	C
2	A2	216	C
2	A2	217	C
2	A2	218	A
2	A2	220	C
2	A2	232	G
2	A2	233	U
2	A2	234	G
2	A2	237	G
2	A2	253	G
2	A2	254	G
2	A2	266	C
2	A2	267	G
2	A2	276	C
2	A2	278	G
2	A2	280	G
2	A2	297	U
2	A2	315	G
2	A2	316	U
2	A2	340	C
2	A2	341	G
2	A2	345	C
2	A2	357	U
2	A2	360	A
2	A2	363	A
2	A2	373	G
2	A2	379	G
2	A2	386	A
2	A2	387	G
2	A2	401	G
2	A2	407	A

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Mol	Chain	Res	Type
2	A2	410	A
2	A2	412	G
2	A2	413	G
2	A2	414	C
2	A2	415	G
2	A2	433	A
2	A2	434	A
2	A2	436	C
2	A2	450	G
2	A2	452	A
2	A2	453	G
2	A2	454	U
2	A2	461	G
2	A2	462	G
2	A2	467	U
2	A2	469	C
2	A2	479	G
2	A2	486	C
2	A2	492	G
2	A2	497	G
2	A2	498	G
2	A2	508	G
2	A2	509	G
2	A2	510	A
2	A2	511	U
2	A2	658	C
2	A2	659	C
2	A2	671	G
2	A2	673	G
2	A2	674	A
2	A2	678	G
2	A2	681	G
2	A2	692	C
2	A2	693	A
2	A2	694	C
2	A2	699	A
2	A2	703	U
2	A2	704	G
2	A2	711	C
2	A2	715	G
2	A2	738	G
2	A2	740	A

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Mol	Chain	Res	Type
2	A2	747	G
2	A2	753	A
2	A2	767	G
2	A2	770	G
2	A2	805	C
2	A2	807	G
2	A2	809	G
2	A2	811	G
2	A2	812	U
2	A2	813	U
2	A2	814	A
2	A2	816	A
2	A2	817	G
2	A2	820	C
2	A2	824	G
2	A2	834	U
2	A2	839	C
2	A2	841	A
2	A2	842	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
2	A2	877	C
2	A2	882	U
2	A2	926	C
2	A2	927	C
2	A2	928	G
2	A2	934	C
2	A2	935	C
2	A2	937	C
2	A2	938	U
2	A2	947	G
2	A2	954	C
2	A2	1000	G
2	A2	1002	G
2	A2	1004	C
2	A2	1005	G
2	A2	1006	G
2	A2	1010	G

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Mol	Chain	Res	Type
2	A2	1011	U
2	A2	1012	C
2	A2	1013	C
2	A2	1014	C
2	A2	1015	C
2	A2	1019	G
2	A2	1021	G
2	A2	1022	C
2	A2	1024	C
2	A2	1031	U
2	A2	1032	C
2	A2	1043	C
2	A2	1044	G
2	A2	1048	C
2	A2	1049	C
2	A2	1052	G
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
2	A2	1081	G
2	A2	1082	A
2	A2	1085	C
2	A2	1086	C
2	A2	1087	G
2	A2	1094	C
2	A2	1097	G
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	1117	A
2	A2	1118	C
2	A2	1122	C
2	A2	1127	C
2	A2	1128	C

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Mol	Chain	Res	Type
2	A2	1136	A
2	A2	1140	A2M
2	A2	1151	A
2	A2	1159	G
2	A2	1168	A
2	A2	1172	A
2	A2	1173	G
2	A2	1179	C
2	A2	1180	G
2	A2	1181	U
2	A2	1184	G
2	A2	1186	A
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	1233	A
2	A2	1239	G
2	A2	1248	G
2	A2	1251	U
2	A2	1253	U
2	A2	1256	A
2	A2	1271	C
2	A2	1293	C
2	A2	1295	G
2	A2	1298	C
2	A2	1310	A
2	A2	1311	G
2	A2	1315	G
2	A2	1336	A
2	A2	1338	A
2	A2	1347	A2M
2	A2	1379	C
2	A2	1380	U
2	A2	1387	G
2	A2	1391	U
2	A2	1404	U
2	A2	1409	U
2	A2	1425	G
2	A2	1426	A

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Mol	Chain	Res	Type
2	A2	1437	G
2	A2	1438	OMG
2	A2	1444	A
2	A2	1446	G
2	A2	1447	A
2	A2	1454	G
2	A2	1467	G
2	A2	1473	U
2	A2	1474	C
2	A2	1489	C
2	A2	1490	PSU
2	A2	1491	C
2	A2	1504	G
2	A2	1507	C
2	A2	1508	U
2	A2	1511	C
2	A2	1512	U
2	A2	1522	C
2	A2	1523	G
2	A2	1526	G
2	A2	1527	U
2	A2	1531	A
2	A2	1535	G
2	A2	1536	G
2	A2	1544	A
2	A2	1552	G
2	A2	1558	U
2	A2	1559	U
2	A2	1560	G
2	A2	1589	A
2	A2	1590	A
2	A2	1599	G
2	A2	1606	A
2	A2	1608	G
2	A2	1619	U
2	A2	1623	G
2	A2	1624	U
2	A2	1638	G
2	A2	1639	A
2	A2	1644	G
2	A2	1657	G
2	A2	1671	G

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Mol	Chain	Res	Type
2	A2	1685	G
2	A2	1690	A
2	A2	1699	A
2	A2	1717	C
2	A2	1719	A
2	A2	1721	G
2	A2	1722	C
2	A2	1723	C
2	A2	1724	G
2	A2	1727	G
2	A2	1733	C
2	A2	1734	A
2	A2	1738	C
2	A2	1747	G
2	A2	1750	G
2	A2	1754	G
2	A2	1761	U
2	A2	1763	G
2	A2	1764	A
2	A2	1821	C
2	A2	1822	U
2	A2	1823	G
2	A2	1825	C
2	A2	1828	A
2	A2	1845	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
2	A2	1885	C
2	A2	1886	C
2	A2	1893	C
2	A2	1895	G
2	A2	1897	A
2	A2	1899	G
2	A2	1900	G
2	A2	1902	A
2	A2	1904	G
2	A2	1905	G
2	A2	1909	G

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Mol	Chain	Res	Type
2	A2	1911	G
2	A2	1912	A
2	A2	2005	U
2	A2	2006	C
2	A2	2008	G
2	A2	2009	G
2	A2	2012	C
2	A2	2013	C
2	A2	2014	G
2	A2	2015	C
2	A2	2021	C
2	A2	2023	A
2	A2	2025	G
2	A2	2035	G
2	A2	2040	A
2	A2	2043	G
2	A2	2044	C
2	A2	2049	G
2	A2	2052	G
2	A2	2055	A
2	A2	2056	G
2	A2	2061	G
2	A2	2068	A
2	A2	2069	G
2	A2	2077	G
2	A2	2086	G
2	A2	2087	A
2	A2	2088	G
2	A2	2094	G
2	A2	2101	C
2	A2	2102	A
2	A2	2105	U
2	A2	2106	OMC
2	A2	2124	U
2	A2	2137	A
2	A2	2138	C
2	A2	2150	A
2	A2	2152	G
2	A2	2157	G
2	A2	2165	C
2	A2	2172	A
2	A2	2176	G

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Mol	Chain	Res	Type
2	A2	2177	OMC
2	A2	2180	U
2	A2	2196	C
2	A2	2197	G
2	A2	2208	A
2	A2	2215	A
2	A2	2222	U
2	A2	2224	C
2	A2	2226	G
2	A2	2229	G
2	A2	2233	C
2	A2	2238	G
2	A2	2239	A
2	A2	2241	G
2	A2	2245	U
2	A2	2257	G
2	A2	2258	G
2	A2	2259	C
2	A2	2260	C
2	A2	2261	G
2	A2	2262	A
2	A2	2268	A
2	A2	2273	G
2	A2	2275	C
2	A2	2284	A
2	A2	2285	U
2	A2	2292	A
2	A2	2299	G
2	A2	2301	G
2	A2	2302	G
2	A2	2310	G
2	A2	2328	A
2	A2	2330	U
2	A2	2338	C
2	A2	2342	A
2	A2	2343	C
2	A2	2344	C
2	A2	2356	A
2	A2	2357	G
2	A2	2363	G
2	A2	2373	G
2	A2	2382	C

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Mol	Chain	Res	Type
2	A2	2383	U
2	A2	2408	C
2	A2	2417	G
2	A2	2424	C
2	A2	2427	C
2	A2	2428	G
2	A2	2430	G
2	A2	2431	A
2	A2	2442	U
2	A2	2444	C
2	A2	2450	A
2	A2	2451	A
2	A2	2458	G
2	A2	2461	G
2	A2	2463	U
2	A2	2464	C
2	A2	2466	G
2	A2	2479	G
2	A2	2481	G
2	A2	2494	C
2	A2	2498	A
2	A2	2507	G
2	A2	2509	G
2	A2	2513	G
2	A2	2514	G
2	A2	2515	G
2	A2	2517	G
2	A2	2518	U
2	A2	2519	A
2	A2	2524	U
2	A2	2525	C
2	A2	2543	U
2	A2	2545	U
2	A2	2553	A
2	A2	2567	A
2	A2	2569	C
2	A2	2581	U
2	A2	2582	G
2	A2	2584	U
2	A2	2601	G
2	A2	2603	G
2	A2	2610	G

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Mol	Chain	Res	Type
2	A2	2632	G
2	A2	2639	G
2	A2	2647	C
2	A2	3252	A
2	A2	3253	G
2	A2	3254	C
2	A2	3261	C
2	A2	3271	G
2	A2	3272	U
2	A2	3273	G
2	A2	3275	G
2	A2	3282	G
2	A2	3291	A
2	A2	3298	A
2	A2	3302	A
2	A2	3318	A
2	A2	3320	G
2	A2	3327	G
2	A2	3328	G
2	A2	3329	C
2	A2	3348	A
2	A2	3354	G
2	A2	3365	U
2	A2	3366	G
2	A2	3367	A
2	A2	3368	A
2	A2	3369	U
2	A2	3370	G
2	A2	3373	A
2	A2	3380	A2M
2	A2	3382	A
2	A2	3383	A
2	A2	3404	A
2	A2	3406	G
2	A2	3408	C
2	A2	3409	G
2	A2	3410	G
2	A2	3413	G
2	A2	3415	A
2	A2	3416	A
2	A2	3422	A
2	A2	3426	U

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Mol	Chain	Res	Type
2	A2	3429	U
2	A2	3430	A
2	A2	3431	A
2	A2	3433	G
2	A2	3439	A
2	A2	3440	A
2	A2	3441	A2M
2	A2	3442	U
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	3480	A
2	A2	3494	U
2	A2	3496	U
2	A2	3507	U
2	A2	3523	A
2	A2	3524	G
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	3570	U
2	A2	3571	U
2	A2	3579	A
2	A2	3582	C
2	A2	3585	G
2	A2	3586	U
2	A2	3594	G
2	A2	3595	G
2	A2	3598	A
2	A2	3599	A
2	A2	3601	A
2	A2	3604	C
2	A2	3606	U

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Mol	Chain	Res	Type
2	A2	3607	G
2	A2	3611	G
2	A2	3612	G
2	A2	3614	G
2	A2	3615	U
2	A2	3706	A
2	A2	3707	C
2	A2	3708	U
2	A2	3709	C
2	A2	3710	U
2	A2	3712	A
2	A2	3713	U
2	A2	3717	U
2	A2	3726	G
2	A2	3734	G
2	A2	3736	G
2	A2	3743	G
2	A2	3765	G
2	A2	3766	C
2	A2	3769	C
2	A2	3771	G
2	A2	3772	G
2	A2	3777	A
2	A2	3781	G
2	A2	3784	C
2	A2	3809	A
2	A2	3814	C
2	A2	3815	U
2	A2	3820	G
2	A2	3822	A
2	A2	3835	G
2	A2	3836	G
2	A2	3843	G
2	A2	3864	A
2	A2	3872	A
2	A2	3877	G
2	A2	3881	U
2	A2	3885	A
2	A2	3886	A
2	A2	3895	C
2	A2	3901	G
2	A2	3903	A

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Mol	Chain	Res	Type
2	A2	3906	G
2	A2	3910	C
2	A2	3917	U
2	A2	3919	G
2	A2	3924	G
2	A2	3925	A
2	A2	3933	A
2	A2	3942	U
2	A2	3943	G
2	A2	3944	A
2	A2	3947	U
2	A2	3956	A
2	A2	3957	G
2	A2	3958	OMU
2	A2	3965	A
2	A2	3966	C
2	A2	3972	G
2	A2	3981	G
2	A2	3982	G
2	A2	3984	C
2	A2	3985	C
2	A2	4002	C
2	A2	4004	U
2	A2	4006	U
2	A2	4025	G
2	A2	4026	U
2	A2	4028	A
2	A2	4029	G
2	A2	4030	A
2	A2	4032	A
2	A2	4033	A
2	A2	4038	C
2	A2	4039	C
2	A2	4043	G
2	A2	4045	G
2	A2	4046	A
2	A2	4050	C
2	A2	4058	U
2	A2	4068	G
2	A2	4073	C
2	A2	4074	A
2	A2	4090	U

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Mol	Chain	Res	Type
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	4151	OMG
2	A2	4152	PSU
2	A2	4164	U
2	A2	4165	A
2	A2	4167	G
2	A2	4171	C
2	A2	4174	G
2	A2	4177	C
2	A2	4183	PSU
2	A2	4200	A
2	A2	4208	U
2	A2	4219	G
2	A2	4225	G
2	A2	4226	U
2	A2	4227	G
2	A2	4242	A
2	A2	4252	G
2	A2	4260	G
2	A2	4272	OMU
2	A2	4277	C
2	A2	4278	A
2	A2	4287	A
2	A2	4288	PSU
2	A2	4289	OMG
2	A2	4304	G
2	A2	4308	A
2	A2	4310	G
2	A2	4322	C
2	A2	4324	A
2	A2	4329	U
2	A2	4339	A
2	A2	4343	A
2	A2	4346	G
2	A2	4347	C
2	A2	4352	A
2	A2	4359	A

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Mol	Chain	Res	Type
2	A2	4360	A
2	A2	4361	U
2	A2	4378	G
2	A2	4382	C
2	A2	4385	C
2	A2	4386	A
2	A2	4392	G
2	A2	4393	A
2	A2	4394	G
2	A2	4402	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	4428	C
2	A2	4429	G
2	A2	4434	U
2	A2	4497	U
2	A2	4498	C
2	A2	4499	G
2	A2	4504	C
2	A2	4505	G
2	A2	4508	G
2	A2	4509	U
2	A2	4515	G
2	A2	4516	C
2	A2	4520	G
2	A2	4521	A
2	A2	4522	G
2	A2	4525	G
2	A2	4527	U
2	A2	4528	C
2	A2	4540	C
2	A2	4541	G
2	A2	4545	U
2	A2	4546	G
2	A2	4548	G
2	A2	4552	G
2	A2	4553	G

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Mol	Chain	Res	Type
2	A2	4555	A
2	A2	4557	G
2	A2	4560	G
2	A2	4565	C
2	A2	4569	C
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	4610	C
2	A2	4622	U
2	A2	4631	U
2	A2	4634	U
2	A2	4636	C
2	A2	4637	U
2	A2	4652	U
2	A2	4659	C
2	A2	4662	A
2	A2	4663	G
2	A2	4668	U
2	A2	4680	A
2	A2	4687	G
2	A2	4693	C
2	A2	4696	C
2	A2	4701	G
2	A2	4702	A
2	A2	4707	A
2	A2	4712	U
2	A2	4714	G
2	A2	4715	U
5	B2	7	G
5	B2	11	A
5	B2	33	U
5	B2	39	C
5	B2	41	G
5	B2	49	A
5	B2	53	U
5	B2	54	A
5	B2	64	G

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Mol	Chain	Res	Type
5	B2	85	G
5	B2	100	A
5	B2	110	G
7	Bz	3	C
7	Bz	4	C
7	Bz	6	G
7	Bz	7	A
7	Bz	8	U
7	Bz	9	A
7	Bz	10	G
7	Bz	11	C
7	Bz	13	C
7	Bz	19	G
7	Bz	22	G
7	Bz	23	A
7	Bz	24	G
7	Bz	27	G
7	Bz	28	G
7	Bz	30	G
7	Bz	32	U
7	Bz	33	U
7	Bz	34	G
7	Bz	35	A
7	Bz	36	A
7	Bz	38	A
7	Bz	44	G
7	Bz	45	U
7	Bz	46	G
7	Bz	47	C
7	Bz	48	C
7	Bz	49	C
7	Bz	50	U
7	Bz	51	U
7	Bz	52	G
7	Bz	53	G
7	Bz	55	U
7	Bz	56	C
7	Bz	57	G
7	Bz	58	A
7	Bz	59	U
7	Bz	61	C
7	Bz	62	C

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Mol	Chain	Res	Type
7	Bz	63	G
7	Bz	64	A
7	Bz	66	U
7	Bz	67	C
7	Bz	68	C
7	Bz	69	G
8	Bx	46	U
8	Bx	49	U
8	Bx	50	U
8	Bx	52	U
11	C2	13	G
11	C2	34	U
11	C2	35	C
11	C2	38	U
11	C2	39	G
11	C2	46	G
11	C2	49	G
11	C2	51	U
11	C2	52	A
11	C2	59	A
11	C2	62	A
11	C2	63	U
11	C2	70	G
11	C2	71	A
11	C2	72	A
11	C2	75	OMG
11	C2	82	A
11	C2	84	A
11	C2	85	U
11	C2	87	G
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	128	C
11	C2	150	C

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Mol	Chain	Res	Type
69	m2	13	C
69	m2	17	C
69	m2	23	G
69	m2	25	A
69	m2	29	G
69	m2	30	C
69	m2	33	G
69	m2	41	G
69	m2	42	A
69	m2	44	U
69	m2	46	A
69	m2	56	G
69	m2	58	C
69	m2	59	U
69	m2	60	A
69	m2	61	A
69	m2	62	G
69	m2	66	G
69	m2	67	C
69	m2	68	A
69	m2	71	G
69	m2	78	C
69	m2	79	A
69	m2	82	G
69	m2	99	A2M
69	m2	103	A
69	m2	113	G
69	m2	115	U
69	m2	118	C
69	m2	124	U
69	m2	125	C
69	m2	126	G
69	m2	127	C
69	m2	129	C
69	m2	130	G
69	m2	142	C
69	m2	143	U
69	m2	144	U
69	m2	145	G
69	m2	146	G
69	m2	147	A
69	m2	158	A

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Mol	Chain	Res	Type
69	m2	159	A
69	m2	160	U
69	m2	161	U
69	m2	162	C
69	m2	163	U
69	m2	168	C
69	m2	170	A
69	m2	171	A
69	m2	172	OMU
69	m2	173	A
69	m2	175	A
69	m2	180	G
69	m2	181	A
69	m2	182	C
69	m2	185	G
69	m2	189	U
69	m2	191	A
69	m2	193	C
69	m2	209	G
69	m2	210	G
69	m2	212	U
69	m2	217	G
69	m2	222	U
69	m2	293	G
69	m2	296	U
69	m2	297	C
69	m2	301	A
69	m2	306	C
69	m2	307	U
69	m2	308	C
69	m2	310	G
69	m2	311	G
69	m2	313	C
69	m2	314	G
69	m2	315	A
69	m2	316	U
69	m2	317	C
69	m2	319	C
69	m2	321	C
69	m2	323	C
69	m2	324	C
69	m2	332	G

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Mol	Chain	Res	Type
69	m2	337	G
69	m2	342	C
69	m2	345	A
69	m2	349	G
69	m2	362	A
69	m2	364	C
69	m2	365	A
69	m2	366	A
69	m2	370	U
69	m2	372	G
69	m2	379	G
69	m2	383	C
69	m2	385	G
69	m2	386	U
69	m2	387	G
69	m2	388	C
69	m2	395	U
69	m2	401	C
69	m2	409	G
69	m2	411	C
69	m2	428	A
69	m2	441	A
69	m2	442	G
69	m2	446	G
69	m2	450	A
69	m2	451	A
69	m2	452	C
69	m2	454	G
69	m2	467	A
69	m2	473	G
69	m2	474	C
69	m2	476	G
69	m2	482	G
69	m2	484	G
69	m2	485	C
69	m2	487	A
69	m2	489	U
69	m2	494	C
69	m2	495	A
69	m2	497	U
69	m2	502	A
69	m2	518	A

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Mol	Chain	Res	Type
69	m2	519	OMC
69	m2	525	A
69	m2	527	A
69	m2	530	A
69	m2	532	U
69	m2	555	A
69	m2	557	A
69	m2	558	U
69	m2	561	G
69	m2	562	A
69	m2	565	G
69	m2	568	U
69	m2	570	C
69	m2	575	U
69	m2	576	A
69	m2	578	A2M
69	m2	585	A
69	m2	589	A
69	m2	590	G
69	m2	591	G
69	m2	592	A
69	m2	593	U
69	m2	594	C
69	m2	596	A
69	m2	600	G
69	m2	608	G
69	m2	609	U
69	m2	616	C
69	m2	617	C
69	m2	625	G
69	m2	630	A
69	m2	631	A
69	m2	633	U
69	m2	636	A
69	m2	645	A
69	m2	659	U
69	m2	661	G
69	m2	662	C
69	m2	670	A2M
69	m2	671	A
69	m2	673	A
69	m2	674	A

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Mol	Chain	Res	Type
69	m2	675	G
69	m2	680	U
69	m2	686	G
69	m2	803	U
69	m2	817	U
69	m2	821	G
69	m2	822	U
69	m2	823	G
69	m2	824	PSU
69	m2	829	A
69	m2	832	A
69	m2	833	G
69	m2	836	C
69	m2	837	C
69	m2	839	A
69	m2	840	G
69	m2	842	C
69	m2	843	G
69	m2	845	C
69	m2	848	G
69	m2	849	A
69	m2	861	G
69	m2	863	A
69	m2	870	G
69	m2	871	A
69	m2	872	A
69	m2	875	G
69	m2	880	G
69	m2	882	G
69	m2	888	A
69	m2	889	U
69	m2	890	U
69	m2	891	U
69	m2	892	U
69	m2	893	G
69	m2	894	U
69	m2	898	U
69	m2	900	U
69	m2	902	C
69	m2	906	A
69	m2	912	G
69	m2	913	C

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Mol	Chain	Res	Type
69	m2	914	C
69	m2	915	A
69	m2	916	U
69	m2	918	A
69	m2	920	U
69	m2	921	A
69	m2	922	A
69	m2	924	A
69	m2	931	G
69	m2	932	C
69	m2	935	G
69	m2	936	G
69	m2	945	U
69	m2	957	A
69	m2	961	G
69	m2	972	G
69	m2	973	G
69	m2	980	G
69	m2	984	G
69	m2	988	G
69	m2	992	A
69	m2	994	A
69	m2	1003	A
69	m2	1019	U
69	m2	1025	A
69	m2	1028	C
69	m2	1029	A
69	m2	1032	A
69	m2	1046	G
69	m2	1063	U
69	m2	1064	A
69	m2	1082	A
69	m2	1085	A
69	m2	1087	C
69	m2	1091	G
69	m2	1095	A
69	m2	1111	C
69	m2	1117	U
69	m2	1118	C
69	m2	1123	G
69	m2	1135	A
69	m2	1138	U

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Mol	Chain	Res	Type
69	m2	1140	C
69	m2	1148	C
69	m2	1150	A
69	m2	1151	A
69	m2	1155	C
69	m2	1156	U
69	m2	1170	G
69	m2	1172	A
69	m2	1184	A
69	m2	1185	A
69	m2	1197	A
69	m2	1217	C
69	m2	1218	C
69	m2	1219	A
69	m2	1223	G
69	m2	1224	G
69	m2	1226	G
69	m2	1229	G
69	m2	1233	C
69	m2	1244	U
69	m2	1245	PSU
69	m2	1250	B8N
69	m2	1252	A
69	m2	1253	A
69	m2	1255	A
69	m2	1258	G
69	m2	1259	G
69	m2	1266	C
69	m2	1267	A
69	m2	1268	C
69	m2	1271	G
69	m2	1273	C
69	m2	1276	G
69	m2	1284	A
69	m2	1285	C
69	m2	1286	A
69	m2	1288	G
69	m2	1289	A
69	m2	1302	U
69	m2	1304	G
69	m2	1305	C
69	m2	1306	U

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Mol	Chain	Res	Type
69	m2	1308	U
69	m2	1310	U
69	m2	1315	A
69	m2	1316	U
69	m2	1322	G
69	m2	1329	G
69	m2	1330	OMG
69	m2	1332	G
69	m2	1339	B8T
69	m2	1343	C
69	m2	1344	U
69	m2	1345	U
69	m2	1346	A
69	m2	1350	G
69	m2	1360	U
69	m2	1366	U
69	m2	1368	G
69	m2	1373	U
69	m2	1374	U
69	m2	1380	A
69	m2	1384	A
69	m2	1395	G
69	m2	1397	C
69	m2	1399	U
69	m2	1400	G
69	m2	1403	A
69	m2	1406	U
69	m2	1408	G
69	m2	1411	A
69	m2	1413	G
69	m2	1414	C
69	m2	1416	A
69	m2	1417	C
69	m2	1419	C
69	m2	1420	C
69	m2	1421	C
69	m2	1423	A
69	m2	1430	G
69	m2	1431	G
69	m2	1433	G
69	m2	1444	U
69	m2	1454	A

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Mol	Chain	Res	Type
69	m2	1455	C
69	m2	1456	A
69	m2	1465	U
69	m2	1468	G
69	m2	1482	A
69	m2	1491	A
69	m2	1492	G
69	m2	1493	G
69	m2	1496	U
69	m2	1499	G
69	m2	1500	A
69	m2	1509	G
69	m2	1512	G
69	m2	1514	C
69	m2	1522	G
69	m2	1524	A
69	m2	1530	G
69	m2	1532	U
69	m2	1533	A
69	m2	1535	A
69	m2	1546	C
69	m2	1558	A
69	m2	1559	C
69	m2	1562	U
69	m2	1565	G
69	m2	1570	C
69	m2	1577	G
69	m2	1581	A
69	m2	1582	A
69	m2	1587	U
69	m2	1590	A
69	m2	1600	G
69	m2	1603	A
69	m2	1606	G
69	m2	1607	G
69	m2	1608	G
69	m2	1623	U
69	m2	1625	A
69	m2	1634	G
69	m2	1636	A
69	m2	1639	A
69	m2	1641	G

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Mol	Chain	Res	Type
69	m2	1642	A
69	m2	1645	U
69	m2	1648	C
69	m2	1649	A
69	m2	1650	G
69	m2	1656	G
69	m2	1661	U
69	m2	1662	C
69	m2	1664	U
69	m2	1665	A
69	m2	1666	A
69	m2	1667	G
69	m2	1682	G
69	m2	1685	C
69	m2	1698	C
69	m2	1700	C
69	m2	1702	C
69	m2	1704	G
69	m2	1723	G
69	m2	1724	G
69	m2	1725	G
69	m2	1726	A
69	m2	1729	G
69	m2	1746	G
69	m2	1788	U
69	m2	1798	G
69	m2	1812	U
69	m2	1814	U
69	m2	1815	A
69	m2	1817	A
69	m2	1818	G
69	m2	1824	A
69	m2	1826	A
69	m2	1827	A
69	m2	1828	G
69	m2	1833	A
69	m2	1837	A
69	m2	1840	U
69	m2	1851	G
69	m2	1853	A
69	m2	1854	C
69	m2	1863	G

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Mol	Chain	Res	Type
69	m2	1864	G
69	m2	1865	A
69	m2	1867	C
70	n2	7	G
70	n2	8	U
70	n2	17	G
70	n2	18	G
70	n2	45	G
70	n2	55	C
70	n2	58	A
70	n2	69	G
70	n2	75	A

All (13) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	A2	233	U
2	A2	236	G
2	A2	406	C
2	A2	1446	G
2	A2	1683	OMC
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	4381	A
2	A2	4582	U

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

107 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	$\#\|Z\|>2$
69	UR3	m2	1832	69	19,22,23	0.27	0	26,32,35	0.33	0
2	A2M	A2	3380	2	22,25,26	0.14	0	30,36,39	0.35	0
69	4AC	m2	1844	69	21,24,25	0.27	0	28,34,37	0.28	0
2	OMC	A2	3543	2	19,22,23	0.30	0	25,31,34	0.38	0
2	OMC	A2	2120	2	19,22,23	0.28	0	25,31,34	0.38	0
2	OMC	A2	2559	2	19,22,23	0.31	0	25,31,34	0.37	0
2	A2M	A2	2570	2	22,25,26	0.09	0	30,36,39	0.25	0
2	PSU	A2	1395	2	18,21,22	0.64	1 (5%)	21,30,33	0.54	0
2	PSU	A2	2263	2	18,21,22	0.55	0	21,30,33	0.58	0
2	PSU	A2	1496	2	18,21,22	0.59	1 (5%)	21,30,33	0.58	0
2	OMU	A2	3958	2	19,22,23	0.27	0	25,31,34	0.51	0
69	OMU	m2	430	69	19,22,23	0.28	0	25,31,34	0.53	0
69	A2M	m2	578	69	22,25,26	0.11	0	30,36,39	0.25	0
69	PSU	m2	1245	69	18,21,22	0.46	0	21,30,33	0.60	0
69	A2M	m2	670	69,83	22,25,26	0.14	0	30,36,39	0.40	0
69	B8T	m2	1339	69	19,22,23	0.32	0	25,31,34	0.40	0
2	OMC	A2	4188	2	19,22,23	0.31	0	25,31,34	0.42	0
2	OMC	A2	1154	2	19,22,23	0.28	0	25,31,34	0.41	0
2	A2M	A2	2156	2	22,25,26	0.29	0	30,36,39	0.52	0
2	OMG	A2	4044	2	23,26,27	0.28	0	32,38,41	0.36	0
2	OMG	A2	2179	2	23,26,27	0.31	0	32,38,41	0.36	0
69	A2M	m2	99	69,83	22,25,26	0.10	0	30,36,39	0.21	0
69	OMG	m2	511	69,83	23,26,27	0.25	0	32,38,41	0.36	0
2	OMG	A2	3400	2	23,26,27	0.32	0	32,38,41	0.35	0
69	PSU	m2	1083	69	18,21,22	0.47	0	21,30,33	0.58	0
69	OMG	m2	438	69	23,26,27	0.30	0	32,38,41	0.35	0
2	A2M	A2	4175	2,83	22,25,26	0.13	0	30,36,39	0.44	1 (3%)
2	PSU	A2	3371	2	18,21,22	0.52	0	21,30,33	0.55	0
2	OMC	A2	3497	2	19,22,23	0.26	0	25,31,34	0.35	0
69	OMG	m2	869	69	23,26,27	0.30	0	32,38,41	0.32	0
2	PSU	A2	4055	2	18,21,22	0.56	0	21,30,33	0.63	1 (4%)
2	OMU	A2	2592	2	19,22,23	0.29	0	25,31,34	0.54	0
2	PSU	A2	4183	2	18,21,22	0.50	0	21,30,33	0.41	0
2	A2M	A2	398	2	22,25,26	0.12	0	30,36,39	0.31	0
69	OMG	m2	646	69	23,26,27	0.29	0	32,38,41	0.33	0
2	A2M	A2	4223	2	22,25,26	0.14	0	30,36,39	0.30	0
69	OMC	m2	519	69	19,22,23	0.23	0	25,31,34	0.36	0
2	OMG	A2	3448	2	23,26,27	0.36	0	32,38,41	0.31	0
2	A2M	A2	3441	2	22,25,26	0.20	0	30,36,39	0.47	0
69	OMG	m2	685	69	23,26,27	0.37	0	32,38,41	0.40	0
2	OMC	A2	2106	2	19,22,23	0.29	0	25,31,34	0.35	0
2	OMC	A2	2616	2	19,22,23	0.27	0	25,31,34	0.37	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	2MG	A2	1330	2	23,26,27	0.28	0	33,38,41	0.37	0
69	OMC	m2	1705	69	19,22,23	0.27	0	25,31,34	0.33	0
69	OMU	m2	121	69	19,22,23	0.25	0	25,31,34	0.37	0
69	OMG	m2	1330	69	23,26,27	0.27	0	32,38,41	0.41	0
2	OMU	A2	3581	2	19,22,23	0.28	0	25,31,34	0.36	0
2	1MA	A2	4067	2	21,25,26	0.29	0	30,37,40	0.42	0
2	A2M	A2	4270	2	22,25,26	0.12	0	30,36,39	0.34	0
2	OMG	A2	2119	2,83	23,26,27	0.34	0	32,38,41	0.37	0
2	OMG	A2	4289	2	23,26,27	0.31	0	32,38,41	0.39	0
69	OMU	m2	172	69	19,22,23	0.20	0	25,31,34	0.52	1 (4%)
69	A2M	m2	1680	69	22,25,26	0.14	0	30,36,39	0.27	0
2	PSU	A2	4102	2,83	18,21,22	0.53	0	21,30,33	0.38	0
2	A2M	A2	1337	2	22,25,26	0.17	0	30,36,39	0.39	0
2	A2M	A2	3486	2	22,25,26	0.13	0	30,36,39	0.49	0
2	A2M	A2	2542	2	22,25,26	0.21	0	30,36,39	0.35	0
2	OMU	A2	4272	2	19,22,23	0.32	0	25,31,34	0.61	0
11	OMG	C2	75	11	23,26,27	0.30	0	32,38,41	0.33	0
2	A2M	A2	1140	2	22,25,26	0.12	0	30,36,39	0.32	0
69	B8N	m2	1250	69	25,29,30	0.57	0	28,42,45	0.58	0
2	A2M	A2	1673	2	22,25,26	0.12	0	30,36,39	0.42	0
2	PSU	A2	4094	2	18,21,22	0.59	1 (5%)	21,30,33	0.67	1 (4%)
2	PSU	A2	4152	2	18,21,22	0.49	0	21,30,33	0.61	0
2	OMG	A2	1130	2	23,26,27	0.38	0	32,38,41	0.39	0
69	OMC	m2	355	69	19,22,23	0.32	0	25,31,34	0.33	0
2	A2M	A2	2118	2,83	22,25,26	0.14	0	30,36,39	0.28	0
69	PSU	m2	824	69	18,21,22	0.45	0	21,30,33	0.60	1 (4%)
69	A2M	m2	27	69	22,25,26	0.13	0	30,36,39	0.28	0
69	OMU	m2	116	69	19,22,23	0.23	0	25,31,34	0.41	0
2	A2M	A2	3481	2	22,25,26	0.14	0	30,36,39	0.27	0
2	OMG	A2	1438	2	23,26,27	0.22	0	32,38,41	0.37	0
2	A2M	A2	3374	2	22,25,26	0.13	0	30,36,39	0.33	0
2	OMG	A2	1335	2	23,26,27	0.34	0	32,38,41	0.41	0
2	OMG	A2	4146	2	23,26,27	0.32	0	32,38,41	0.35	0
2	A2M	A2	1137	2	22,25,26	0.20	0	30,36,39	0.30	0
2	OMG	A2	4022	2	23,26,27	0.36	0	32,38,41	0.34	0
69	A2M	m2	1033	69	22,25,26	0.12	0	30,36,39	0.25	0
2	PSU	A2	3945	2	18,21,22	0.54	0	21,30,33	0.57	0
2	OMG	A2	3848	2	23,26,27	0.29	0	32,38,41	0.33	0
2	5MC	A2	3438	2,83	19,22,23	0.40	0	26,32,35	0.40	0
2	OMC	A2	1683	2,83	19,22,23	0.28	0	25,31,34	0.53	0
69	OMC	m2	174	69	19,22,23	0.28	0	25,31,34	0.52	0
2	OMG	A2	4275	2	23,26,27	0.35	0	32,38,41	0.31	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	OMG	A2	4151	2	23,26,27	0.33	0	32,38,41	0.43	0
69	A2M	m2	486	69	22,25,26	0.09	0	30,36,39	0.26	0
2	OMC	A2	4108	2	19,22,23	0.28	0	25,31,34	0.38	0
69	OMG	m2	603	69	23,26,27	0.34	0	32,38,41	0.34	0
2	OMG	A2	3880	2	23,26,27	0.28	0	32,38,41	0.48	0
2	OMC	A2	3357	2	19,22,23	0.31	0	25,31,34	0.47	0
2	5MC	A2	4099	2	19,22,23	0.39	0	26,32,35	0.52	0
2	OMC	A2	2579	2	19,22,23	0.25	0	25,31,34	0.34	0
2	A2M	A2	1347	2,83	22,25,26	0.19	0	30,36,39	0.61	1 (3%)
2	PSU	A2	3385	2	18,21,22	0.55	0	21,30,33	0.55	0
2	PSU	A2	4280	2	18,21,22	0.56	0	21,30,33	0.61	1 (4%)
69	PSU	m2	825	69	18,21,22	0.57	1 (5%)	21,30,33	0.55	0
2	OMC	A2	3525	2	19,22,23	0.27	0	25,31,34	0.42	0
2	OMC	A2	3464	2	19,22,23	0.31	0	25,31,34	0.36	0
69	PSU	m2	614	69	18,21,22	0.60	1 (5%)	21,30,33	0.54	0
2	PSU	A2	1490	2	18,21,22	0.59	0	21,30,33	0.38	0
2	OMC	A2	2177	2,83	19,22,23	0.27	0	25,31,34	0.39	0
69	A2M	m2	514	69	22,25,26	0.14	0	30,36,39	0.33	0
2	PSU	A2	4288	2	18,21,22	0.46	0	21,30,33	0.62	0
2	OMU	A2	3474	2	19,22,23	0.26	0	25,31,34	0.43	0
2	OMG	A2	3555	2,83	23,26,27	0.32	0	32,38,41	0.39	0
2	OMU	A2	4150	2	19,22,23	0.29	0	25,31,34	0.47	0
2	OMG	A2	3283	2	23,26,27	0.35	0	32,38,41	0.45	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
69	UR3	m2	1832	69	-	0/7/25/26	0/2/2/2
2	A2M	A2	3380	2	-	3/9/27/28	0/3/3/3
69	4AC	m2	1844	69	-	0/11/29/30	0/2/2/2
2	OMC	A2	3543	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	2559	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	2570	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	1395	2	-	0/7/25/26	0/2/2/2
2	PSU	A2	2263	2	-	0/7/25/26	0/2/2/2
2	PSU	A2	1496	2	-	2/7/25/26	0/2/2/2
2	OMU	A2	3958	2	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
69	OMU	m2	430	69	-	4/9/27/28	0/2/2/2
69	A2M	m2	578	69	-	3/9/27/28	0/3/3/3
69	PSU	m2	1245	69	-	2/7/25/26	0/2/2/2
69	A2M	m2	670	69,83	-	2/9/27/28	0/3/3/3
69	B8T	m2	1339	69	-	3/7/27/28	0/2/2/2
2	OMC	A2	4188	2	-	0/9/27/28	0/2/2/2
2	OMC	A2	1154	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	2156	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	4044	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	2179	2	-	0/9/27/28	0/3/3/3
69	A2M	m2	99	69,83	-	2/9/27/28	0/3/3/3
69	OMG	m2	511	69,83	-	1/9/27/28	0/3/3/3
2	OMG	A2	3400	2	-	0/9/27/28	0/3/3/3
69	PSU	m2	1083	69	-	0/7/25/26	0/2/2/2
69	OMG	m2	438	69	-	0/9/27/28	0/3/3/3
2	A2M	A2	4175	2,83	-	1/9/27/28	0/3/3/3
2	PSU	A2	3371	2	-	0/7/25/26	0/2/2/2
2	OMC	A2	3497	2	-	0/9/27/28	0/2/2/2
69	OMG	m2	869	69	-	1/9/27/28	0/3/3/3
2	PSU	A2	4055	2	-	0/7/25/26	0/2/2/2
2	OMU	A2	2592	2	-	0/9/27/28	0/2/2/2
2	PSU	A2	4183	2	-	2/7/25/26	0/2/2/2
2	A2M	A2	398	2	-	1/9/27/28	0/3/3/3
69	OMG	m2	646	69	-	3/9/27/28	0/3/3/3
2	A2M	A2	4223	2	-	0/9/27/28	0/3/3/3
69	OMC	m2	519	69	-	2/9/27/28	0/2/2/2
2	OMG	A2	3448	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	3441	2	-	4/9/27/28	0/3/3/3
69	OMG	m2	685	69	-	2/9/27/28	0/3/3/3
2	OMC	A2	2106	2	-	1/9/27/28	0/2/2/2
2	OMC	A2	2616	2	-	0/9/27/28	0/2/2/2
2	2MG	A2	1330	2	-	0/9/27/28	0/3/3/3
69	OMC	m2	1705	69	-	0/9/27/28	0/2/2/2
69	OMU	m2	121	69	-	1/9/27/28	0/2/2/2
69	OMG	m2	1330	69	-	2/9/27/28	0/3/3/3
2	OMU	A2	3581	2	-	0/9/27/28	0/2/2/2
2	1MA	A2	4067	2	-	2/7/25/26	0/3/3/3
2	A2M	A2	4270	2	-	1/9/27/28	0/3/3/3
2	OMG	A2	2119	2,83	-	1/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMG	A2	4289	2	-	3/9/27/28	0/3/3/3
69	OMU	m2	172	69	-	2/9/27/28	0/2/2/2
69	A2M	m2	1680	69	-	0/9/27/28	0/3/3/3
2	PSU	A2	4102	2,83	-	2/7/25/26	0/2/2/2
2	A2M	A2	1337	2	-	3/9/27/28	0/3/3/3
2	A2M	A2	3486	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	2542	2	-	2/9/27/28	0/3/3/3
2	OMU	A2	4272	2	-	4/9/27/28	0/2/2/2
11	OMG	C2	75	11	-	2/9/27/28	0/3/3/3
2	A2M	A2	1140	2	-	4/9/27/28	0/3/3/3
69	B8N	m2	1250	69	-	4/16/34/35	0/2/2/2
2	A2M	A2	1673	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	4094	2	-	0/7/25/26	0/2/2/2
2	PSU	A2	4152	2	-	1/7/25/26	0/2/2/2
2	OMG	A2	1130	2	-	1/9/27/28	0/3/3/3
69	OMC	m2	355	69	-	0/9/27/28	0/2/2/2
2	A2M	A2	2118	2,83	-	0/9/27/28	0/3/3/3
69	PSU	m2	824	69	-	0/7/25/26	0/2/2/2
69	A2M	m2	27	69	-	0/9/27/28	0/3/3/3
69	OMU	m2	116	69	-	0/9/27/28	0/2/2/2
2	A2M	A2	3481	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	1438	2	-	2/9/27/28	0/3/3/3
2	A2M	A2	3374	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	1335	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	4146	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	1137	2	-	2/9/27/28	0/3/3/3
2	OMG	A2	4022	2	-	0/9/27/28	0/3/3/3
69	A2M	m2	1033	69	-	0/9/27/28	0/3/3/3
2	PSU	A2	3945	2	-	1/7/25/26	0/2/2/2
2	OMG	A2	3848	2	-	0/9/27/28	0/3/3/3
2	5MC	A2	3438	2,83	-	0/7/25/26	0/2/2/2
2	OMC	A2	1683	2,83	-	0/9/27/28	0/2/2/2
69	OMC	m2	174	69	-	2/9/27/28	0/2/2/2
2	OMG	A2	4275	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	4151	2	-	2/9/27/28	0/3/3/3
69	A2M	m2	486	69	-	0/9/27/28	0/3/3/3
2	OMC	A2	4108	2	-	2/9/27/28	0/2/2/2
69	OMG	m2	603	69	-	0/9/27/28	0/3/3/3
2	OMG	A2	3880	2	-	0/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMC	A2	3357	2	-	4/9/27/28	0/2/2/2
2	5MC	A2	4099	2	-	4/7/25/26	0/2/2/2
2	OMC	A2	2579	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	1347	2,83	-	3/9/27/28	0/3/3/3
2	PSU	A2	3385	2	-	1/7/25/26	0/2/2/2
2	PSU	A2	4280	2	-	0/7/25/26	0/2/2/2
69	PSU	m2	825	69	-	0/7/25/26	0/2/2/2
2	OMC	A2	3525	2	-	0/9/27/28	0/2/2/2
2	OMC	A2	3464	2	-	0/9/27/28	0/2/2/2
69	PSU	m2	614	69	-	0/7/25/26	0/2/2/2
2	PSU	A2	1490	2	-	3/7/25/26	0/2/2/2
2	OMC	A2	2177	2,83	-	1/9/27/28	0/2/2/2
69	A2M	m2	514	69	-	1/9/27/28	0/3/3/3
2	PSU	A2	4288	2	-	2/7/25/26	0/2/2/2
2	OMU	A2	3474	2	-	2/9/27/28	0/2/2/2
2	OMG	A2	3555	2,83	-	0/9/27/28	0/3/3/3
2	OMU	A2	4150	2	-	0/9/27/28	0/2/2/2
2	OMG	A2	3283	2	-	0/9/27/28	0/3/3/3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A2	4094	PSU	O4'-C1'	-2.17	1.40	1.43
2	A2	1395	PSU	O4'-C1'	-2.09	1.40	1.43
69	m2	614	PSU	O4'-C1'	-2.09	1.41	1.43
69	m2	825	PSU	O4'-C1'	-2.06	1.41	1.43
2	A2	1496	PSU	O4'-C1'	-2.01	1.41	1.43

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A2	1347	A2M	C3'-C2'-C1'	-2.23	98.53	102.81
2	A2	4055	PSU	O4'-C1'-C2'	2.20	108.20	105.15
2	A2	4094	PSU	O4'-C1'-C2'	2.16	108.14	105.15
69	m2	172	OMU	O2'-C2'-C1'	2.12	113.02	108.99
2	A2	4280	PSU	O4'-C1'-C2'	2.11	108.07	105.15
69	m2	824	PSU	O4'-C1'-C2'	2.03	107.96	105.15
2	A2	4175	A2M	C2'-C3'-C4'	-2.02	97.64	101.99

There are no chirality outliers.

All (107) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	C2	75	OMG	O4'-C4'-C5'-O5'
2	A2	398	A2M	C1'-C2'-O2'-CM'
2	A2	1130	OMG	C1'-C2'-O2'-CM2
2	A2	1140	A2M	O4'-C4'-C5'-O5'
2	A2	1140	A2M	C3'-C4'-C5'-O5'
2	A2	1140	A2M	C1'-C2'-O2'-CM'
2	A2	1347	A2M	C4'-C5'-O5'-P
2	A2	1496	PSU	C2'-C1'-C5-C4
2	A2	2106	OMC	C1'-C2'-O2'-CM2
2	A2	2177	OMC	C1'-C2'-O2'-CM2
2	A2	3380	A2M	O4'-C4'-C5'-O5'
2	A2	3380	A2M	C3'-C4'-C5'-O5'
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	4270	A2M	C1'-C2'-O2'-CM'
2	A2	4272	OMU	C1'-C2'-O2'-CM2
2	A2	4272	OMU	O4'-C4'-C5'-O5'
2	A2	4289	OMG	C1'-C2'-O2'-CM2
69	m2	99	A2M	C1'-C2'-O2'-CM'
69	m2	121	OMU	C1'-C2'-O2'-CM2
69	m2	172	OMU	C1'-C2'-O2'-CM2
69	m2	174	OMC	O4'-C1'-N1-C2
69	m2	174	OMC	O4'-C1'-N1-C6
69	m2	511	OMG	C1'-C2'-O2'-CM2
69	m2	869	OMG	C1'-C2'-O2'-CM2
69	m2	1330	OMG	O4'-C4'-C5'-O5'
11	C2	75	OMG	C3'-C4'-C5'-O5'
2	A2	1137	A2M	O4'-C4'-C5'-O5'
2	A2	1347	A2M	C3'-C4'-C5'-O5'
2	A2	4151	OMG	C3'-C4'-C5'-O5'
2	A2	4288	PSU	C3'-C4'-C5'-O5'
2	A2	4289	OMG	O4'-C4'-C5'-O5'
69	m2	1339	B8T	C3'-C4'-C5'-O5'
2	A2	1347	A2M	O4'-C4'-C5'-O5'
2	A2	4151	OMG	O4'-C4'-C5'-O5'
69	m2	519	OMC	C3'-C4'-C5'-O5'
69	m2	519	OMC	O4'-C4'-C5'-O5'
69	m2	1250	B8N	O4'-C4'-C5'-O5'
69	m2	1250	B8N	C3'-C4'-C5'-O5'
69	m2	1339	B8T	O4'-C4'-C5'-O5'
2	A2	1438	OMG	C4'-C5'-O5'-P

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Mol	Chain	Res	Type	Atoms
69	m2	430	OMU	C2'-C1'-N1-C6
2	A2	4288	PSU	O4'-C4'-C5'-O5'
69	m2	646	OMG	C3'-C4'-C5'-O5'
69	m2	670	A2M	O4'-C4'-C5'-O5'
69	m2	1330	OMG	C3'-C4'-C5'-O5'
2	A2	1490	PSU	C3'-C4'-C5'-O5'
2	A2	3441	A2M	O4'-C4'-C5'-O5'
2	A2	4272	OMU	C3'-C4'-C5'-O5'
69	m2	670	A2M	C3'-C4'-C5'-O5'
69	m2	685	OMG	C3'-C4'-C5'-O5'
2	A2	1137	A2M	C3'-C4'-C5'-O5'
2	A2	1490	PSU	O4'-C4'-C5'-O5'
69	m2	685	OMG	O4'-C4'-C5'-O5'
69	m2	1245	PSU	O4'-C4'-C5'-O5'
2	A2	4289	OMG	C3'-C4'-C5'-O5'
2	A2	3357	OMC	C2'-C1'-N1-C6
2	A2	1438	OMG	C3'-C4'-C5'-O5'
2	A2	4152	PSU	C4'-C5'-O5'-P
69	m2	578	A2M	C4'-C5'-O5'-P
69	m2	646	OMG	O4'-C4'-C5'-O5'
69	m2	1250	B8N	N34-C33-C34-O35
2	A2	3441	A2M	C3'-C4'-C5'-O5'
2	A2	4099	5MC	C2'-C1'-N1-C6
2	A2	4067	1MA	O4'-C4'-C5'-O5'
2	A2	4067	1MA	C3'-C4'-C5'-O5'
2	A2	3441	A2M	C2'-C1'-N9-C8
69	m2	430	OMU	O4'-C1'-N1-C6
69	m2	430	OMU	C2'-C1'-N1-C2
2	A2	4099	5MC	O4'-C1'-N1-C6
2	A2	2119	OMG	O4'-C4'-C5'-O5'
69	m2	578	A2M	C3'-C4'-C5'-O5'
69	m2	430	OMU	O4'-C1'-N1-C2
2	A2	3385	PSU	O4'-C4'-C5'-O5'
2	A2	1337	A2M	O4'-C1'-N9-C4
2	A2	3357	OMC	O4'-C1'-N1-C6
69	m2	646	OMG	C4'-C5'-O5'-P
2	A2	1496	PSU	O4'-C1'-C5-C4
2	A2	3945	PSU	O4'-C1'-C5-C4
2	A2	4102	PSU	O4'-C1'-C5-C4
2	A2	2542	A2M	C2'-C1'-N9-C8
2	A2	3474	OMU	C4'-C5'-O5'-P
2	A2	1337	A2M	O4'-C1'-N9-C8

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Mol	Chain	Res	Type	Atoms
2	A2	4099	5MC	O4'-C1'-N1-C2
2	A2	3357	OMC	C2'-C1'-N1-C2
2	A2	1140	A2M	C4'-C5'-O5'-P
2	A2	4272	OMU	C4'-C5'-O5'-P
69	m2	578	A2M	O4'-C4'-C5'-O5'
2	A2	3441	A2M	O4'-C1'-N9-C8
2	A2	3380	A2M	C4'-C5'-O5'-P
69	m2	1250	B8N	N34-C33-C34-O36
69	m2	172	OMU	C4'-C5'-O5'-P
2	A2	1490	PSU	O4'-C1'-C5-C6
2	A2	4102	PSU	O4'-C1'-C5-C6
2	A2	1337	A2M	C3'-C2'-O2'-CM'
2	A2	3474	OMU	C3'-C2'-O2'-CM2
2	A2	3357	OMC	O4'-C1'-N1-C2
69	m2	1245	PSU	C3'-C4'-C5'-O5'
2	A2	4108	OMC	C2'-C1'-N1-C6
69	m2	514	A2M	C4'-C5'-O5'-P
2	A2	3543	OMC	C4'-C5'-O5'-P
69	m2	99	A2M	C4'-C5'-O5'-P
2	A2	2542	A2M	O4'-C1'-N9-C8
69	m2	1339	B8T	C4'-C5'-O5'-P
2	A2	4099	5MC	C2'-C1'-N1-C2
2	A2	4108	OMC	C2'-C1'-N1-C2

There are no ring outliers.

62 monomers are involved in 114 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A2	3380	A2M	1	0
69	m2	1844	4AC	3	0
2	A2	2559	OMC	2	0
2	A2	1496	PSU	2	0
2	A2	3958	OMU	1	0
69	m2	578	A2M	2	0
69	m2	1245	PSU	1	0
2	A2	4188	OMC	4	0
2	A2	1154	OMC	2	0
2	A2	4044	OMG	2	0
2	A2	2179	OMG	1	0
69	m2	99	A2M	2	0
69	m2	511	OMG	7	0
2	A2	4175	A2M	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
69	m2	869	OMG	3	0
2	A2	4183	PSU	1	0
2	A2	398	A2M	2	0
69	m2	646	OMG	1	0
2	A2	4223	A2M	1	0
69	m2	519	OMC	1	0
2	A2	3448	OMG	2	0
2	A2	3441	A2M	1	0
2	A2	2106	OMC	1	0
2	A2	2616	OMC	1	0
2	A2	1330	2MG	1	0
69	m2	1705	OMC	2	0
69	m2	121	OMU	3	0
69	m2	1330	OMG	2	0
2	A2	3581	OMU	3	0
2	A2	4289	OMG	1	0
69	m2	172	OMU	1	0
69	m2	1680	A2M	2	0
2	A2	4102	PSU	1	0
2	A2	1337	A2M	1	0
2	A2	4272	OMU	3	0
2	A2	1140	A2M	2	0
69	m2	1250	B8N	1	0
2	A2	1673	A2M	2	0
2	A2	1130	OMG	3	0
69	m2	355	OMC	4	0
2	A2	2118	A2M	3	0
69	m2	824	PSU	2	0
69	m2	27	A2M	2	0
69	m2	116	OMU	3	0
2	A2	3481	A2M	1	0
2	A2	3374	A2M	1	0
2	A2	4146	OMG	1	0
69	m2	1033	A2M	1	0
69	m2	174	OMC	1	0
2	A2	4275	OMG	1	0
2	A2	4151	OMG	1	0
69	m2	486	A2M	3	0
69	m2	603	OMG	2	0
2	A2	4099	5MC	2	0
2	A2	2579	OMC	1	0
2	A2	1347	A2M	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
69	m2	825	PSU	1	0
2	A2	3464	OMC	1	0
69	m2	614	PSU	2	0
2	A2	2177	OMC	3	0
69	m2	514	A2M	6	0
2	A2	3555	OMG	1	0

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 123 ligands modelled in this entry, 123 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	A2	15
69	m2	6
70	n2	2
51	T3	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A2	1512:U	O3'	1521:A	P	25.77
1	m2	130:G	O3'	141:A	P	25.00
1	m2	690:U	O3'	801:U	P	19.11
1	A2	4437:C	O3'	4493:G	P	17.43
1	A2	770:G	O3'	799:C	P	16.64
1	m2	536:G	O3'	554:U	P	16.13
1	A2	859:G	O3'	866:A	P	15.12
1	A2	1564:C	O3'	1572:A	P	14.81
1	m2	1753:C	O3'	1786:G	P	14.29
1	m2	324:C	O3'	331:G	P	14.21
1	A2	1772:A	O3'	1820:C	P	14.11
1	A2	1914:C	O3'	2004:G	P	14.00
1	T3	43:VAL	C	55:PRO	N	13.29
1	A2	4668:U	O3'	4674:G	P	11.55
1	A2	481:G	O3'	485:U	P	11.23
1	A2	1055:G	O3'	1059:C	P	10.72
1	A2	866:A	O3'	868:C	P	9.06
1	A2	1072:U	O3'	1078:G	P	7.97
1	A2	956:C	O3'	999:C	P	7.81
1	m2	227:G	O3'	289:U	P	7.49
1	n2	45:G	O3'	47:C	P	6.21
1	n2	18:G	O3'	20:A	P	6.16
1	A2	501:G	O3'	506:G	P	4.77
1	A2	4422:G	O3'	4424:U	P	4.52

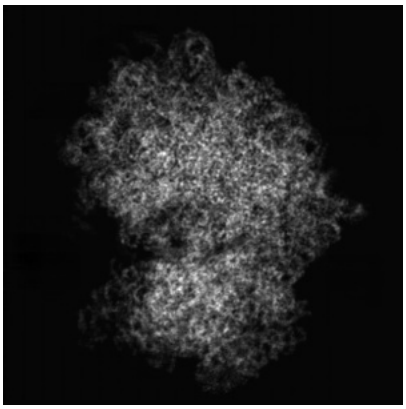
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-53333. These allow visual inspection of the internal detail of the map and identification of artifacts.

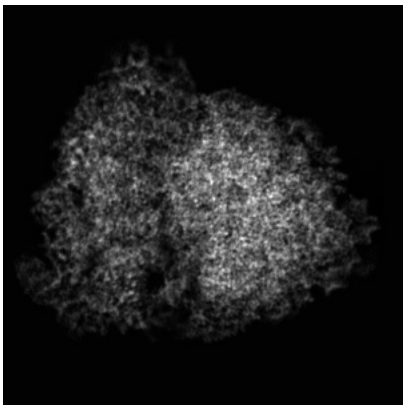
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

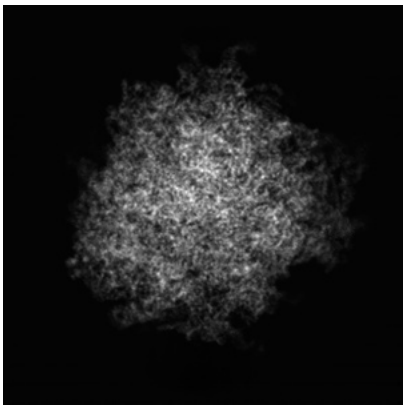
6.1.1 Primary map



X

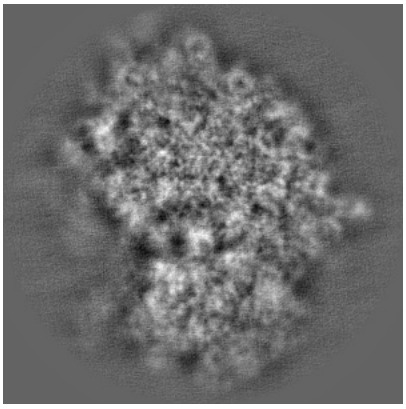


Y

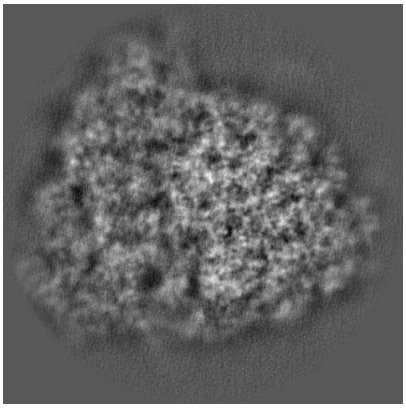


Z

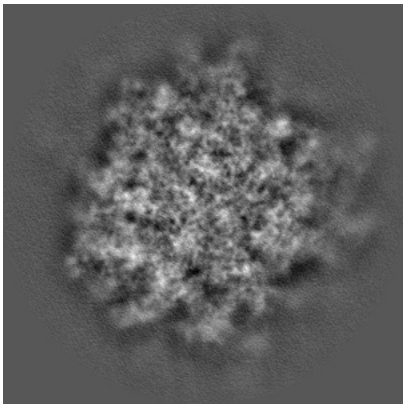
6.1.2 Raw map



X



Y

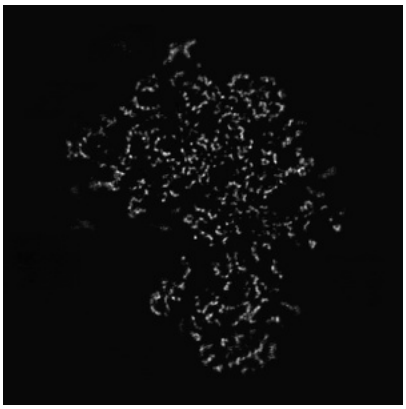


Z

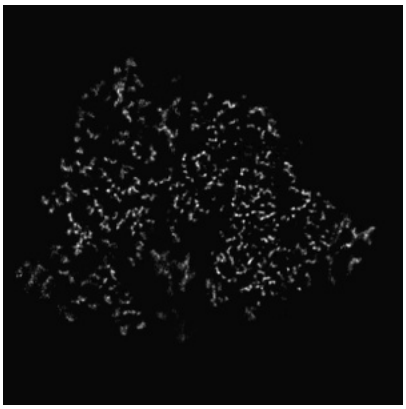
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

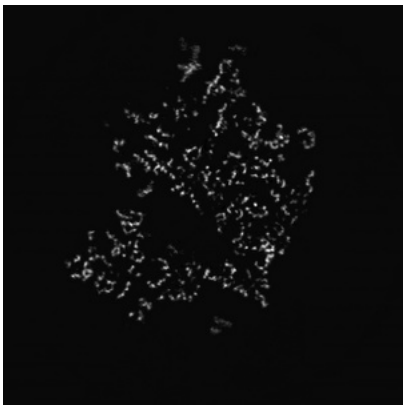
6.2.1 Primary map



X Index: 164

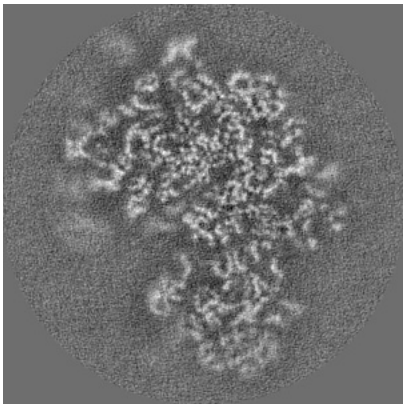


Y Index: 164

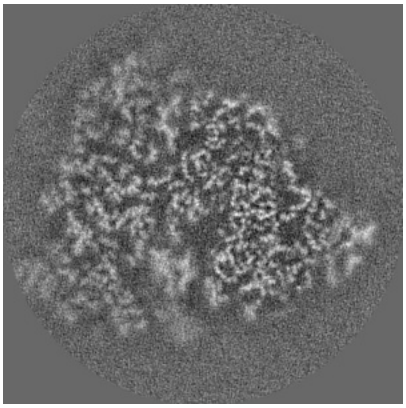


Z Index: 164

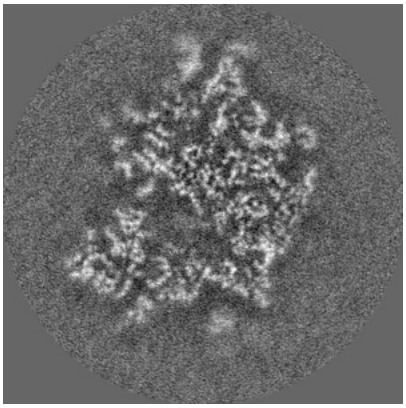
6.2.2 Raw map



X Index: 164



Y Index: 164

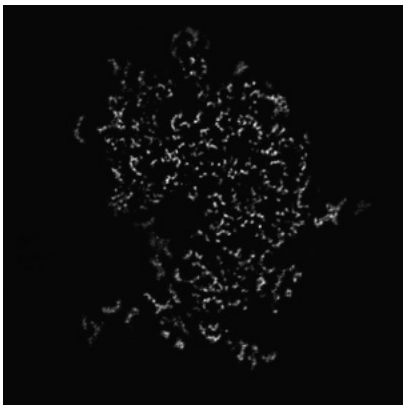


Z Index: 164

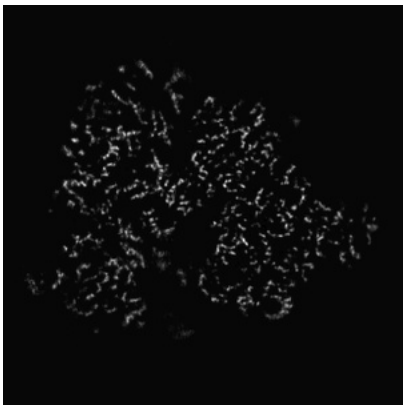
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

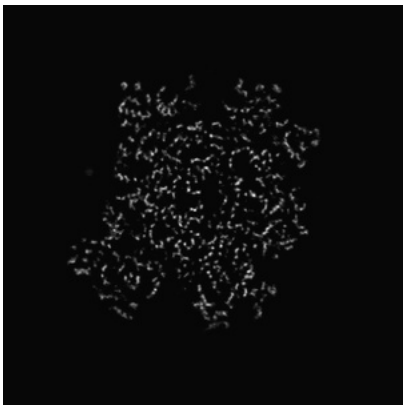
6.3.1 Primary map



X Index: 147

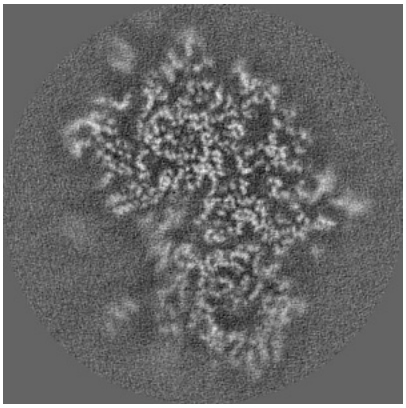


Y Index: 158

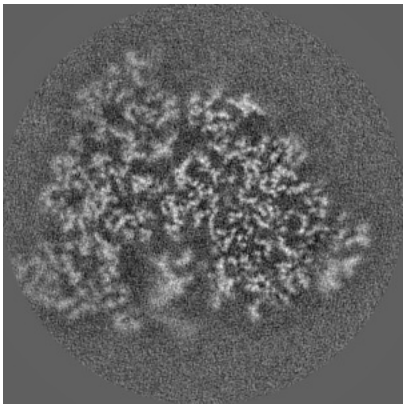


Z Index: 180

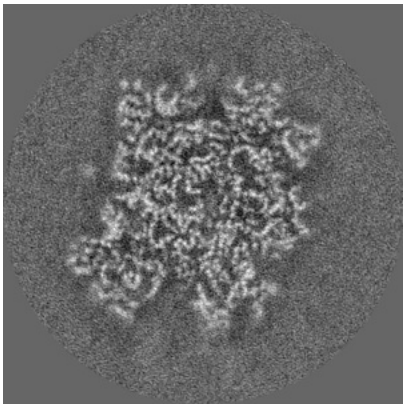
6.3.2 Raw map



X Index: 155



Y Index: 169

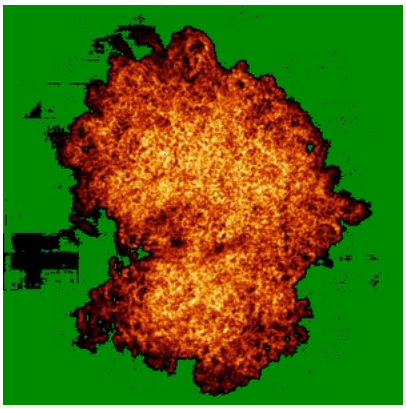


Z Index: 180

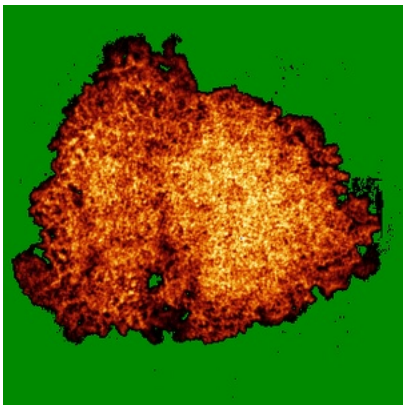
The images above show the largest variance slices of the map in three orthogonal directions.

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

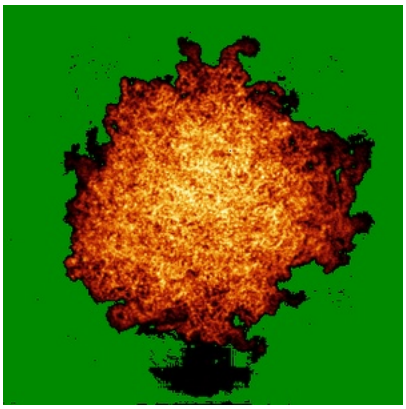
6.4.1 Primary map



X

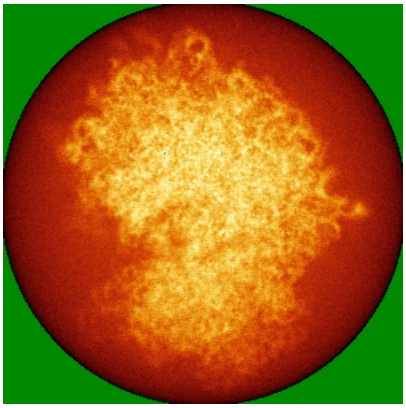


Y

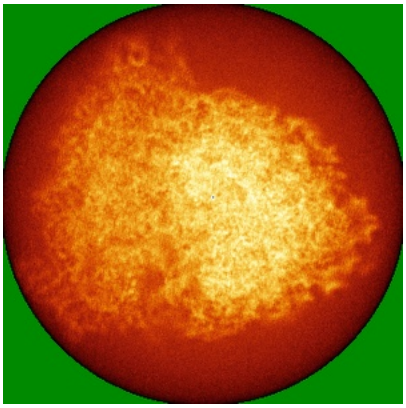


Z

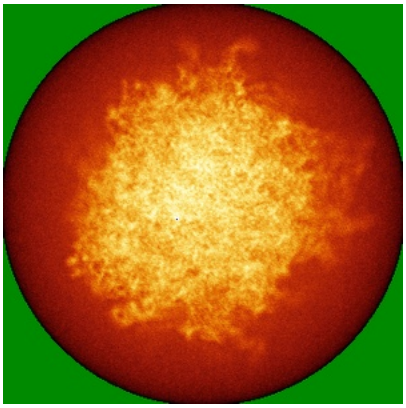
6.4.2 Raw map



X



Y

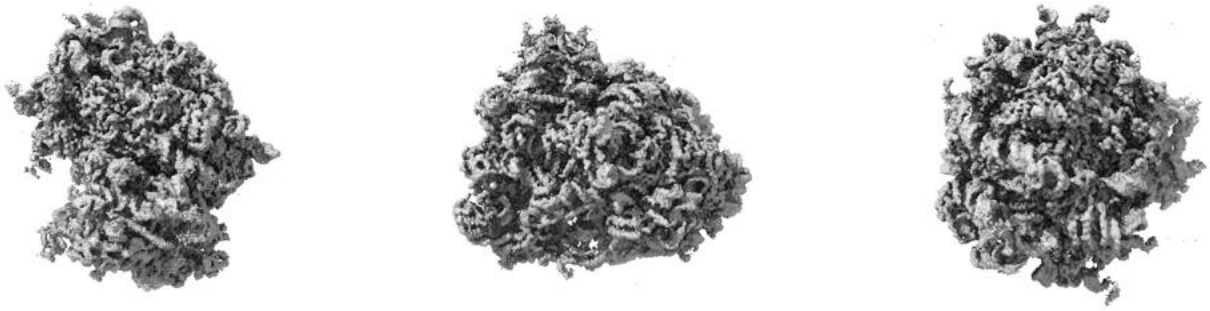


Z

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)

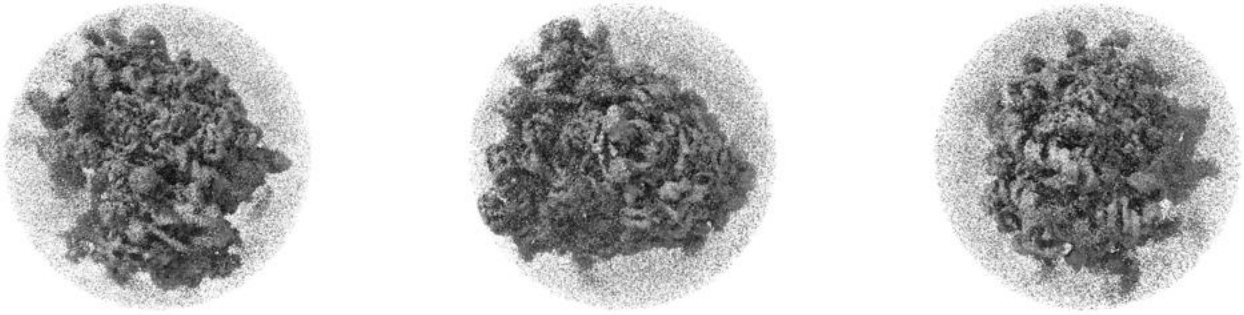
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0287. 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.

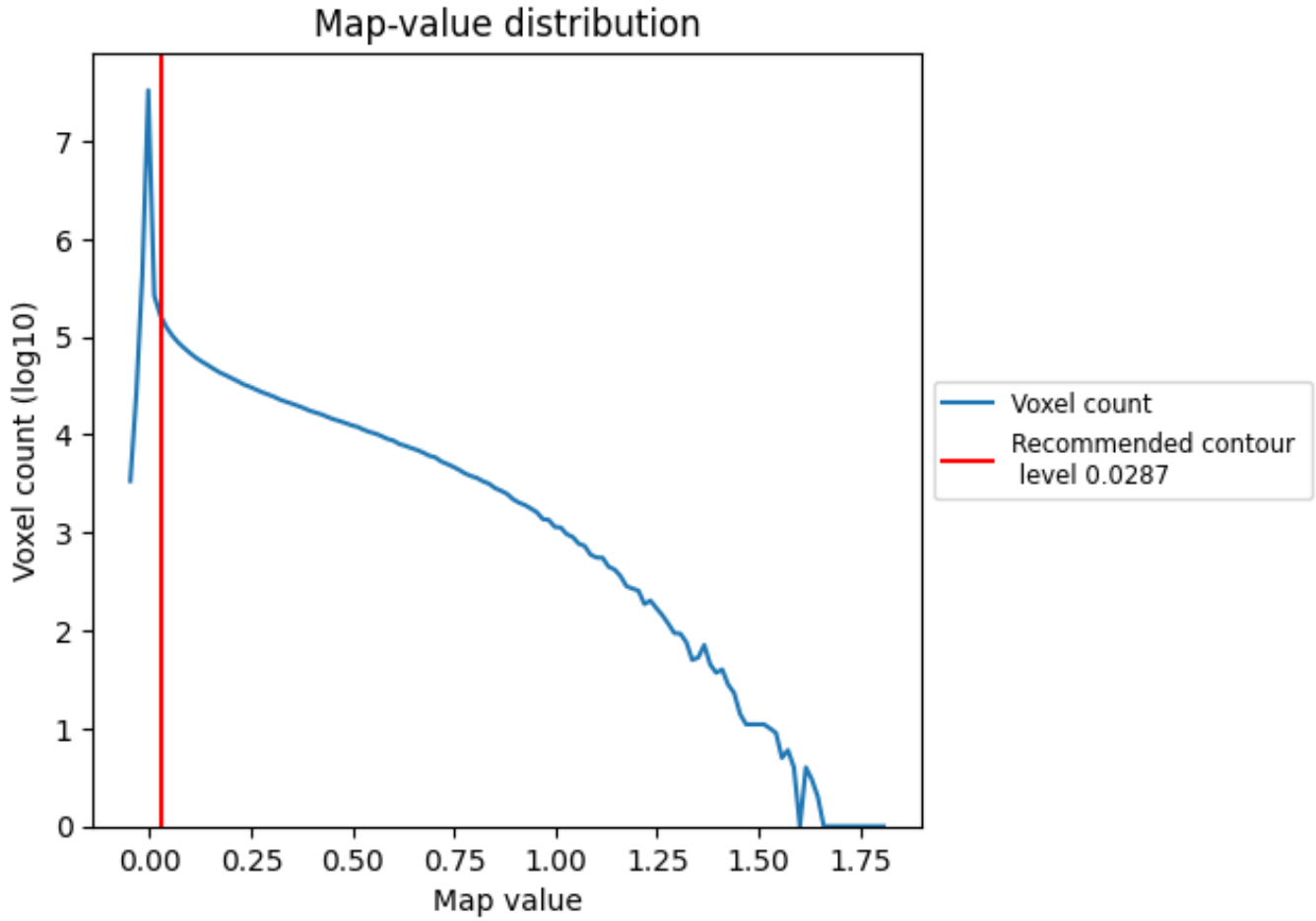
6.6 Mask visualisation (i)

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

7 Map analysis

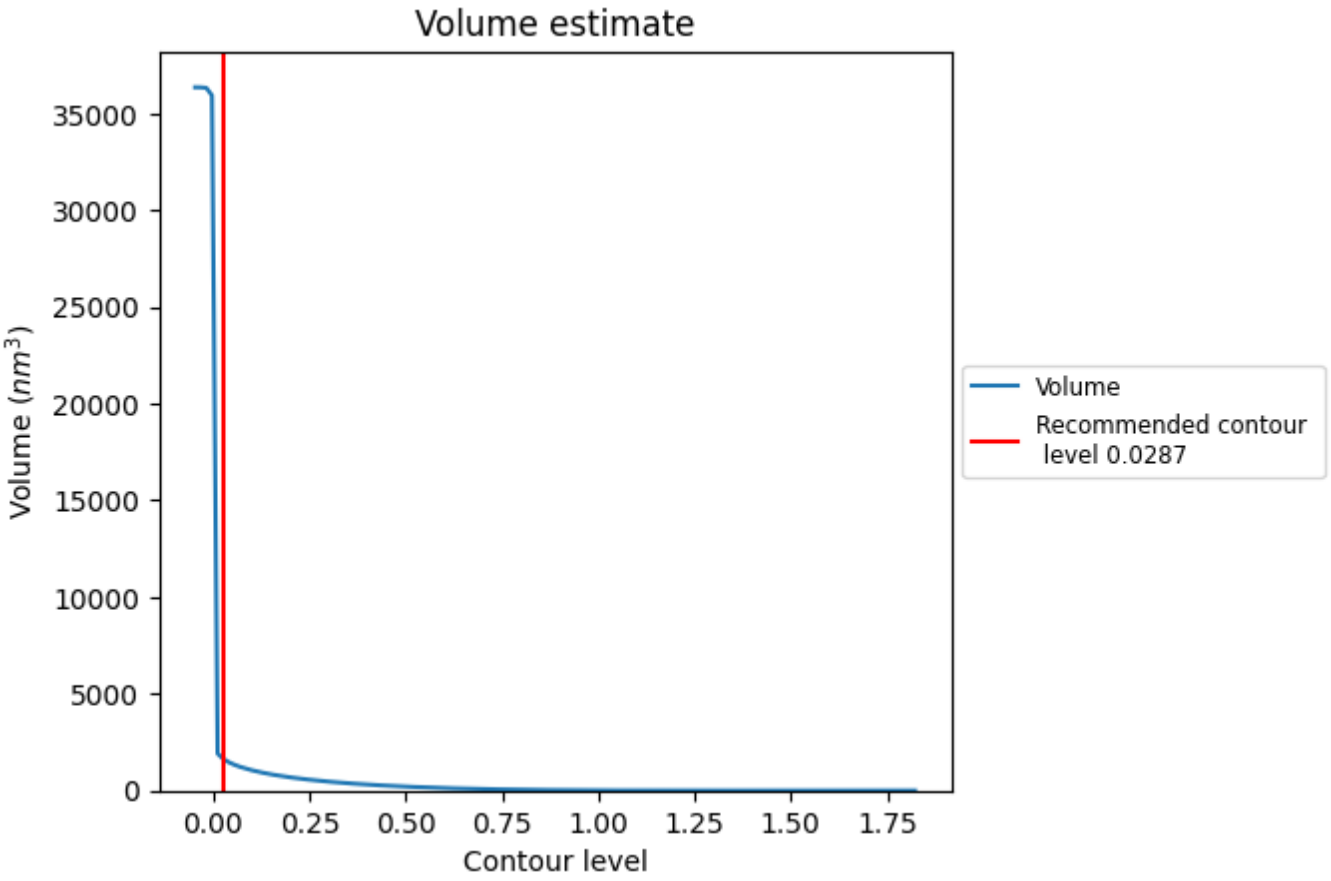
This section contains the results of statistical analysis of the map.

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.

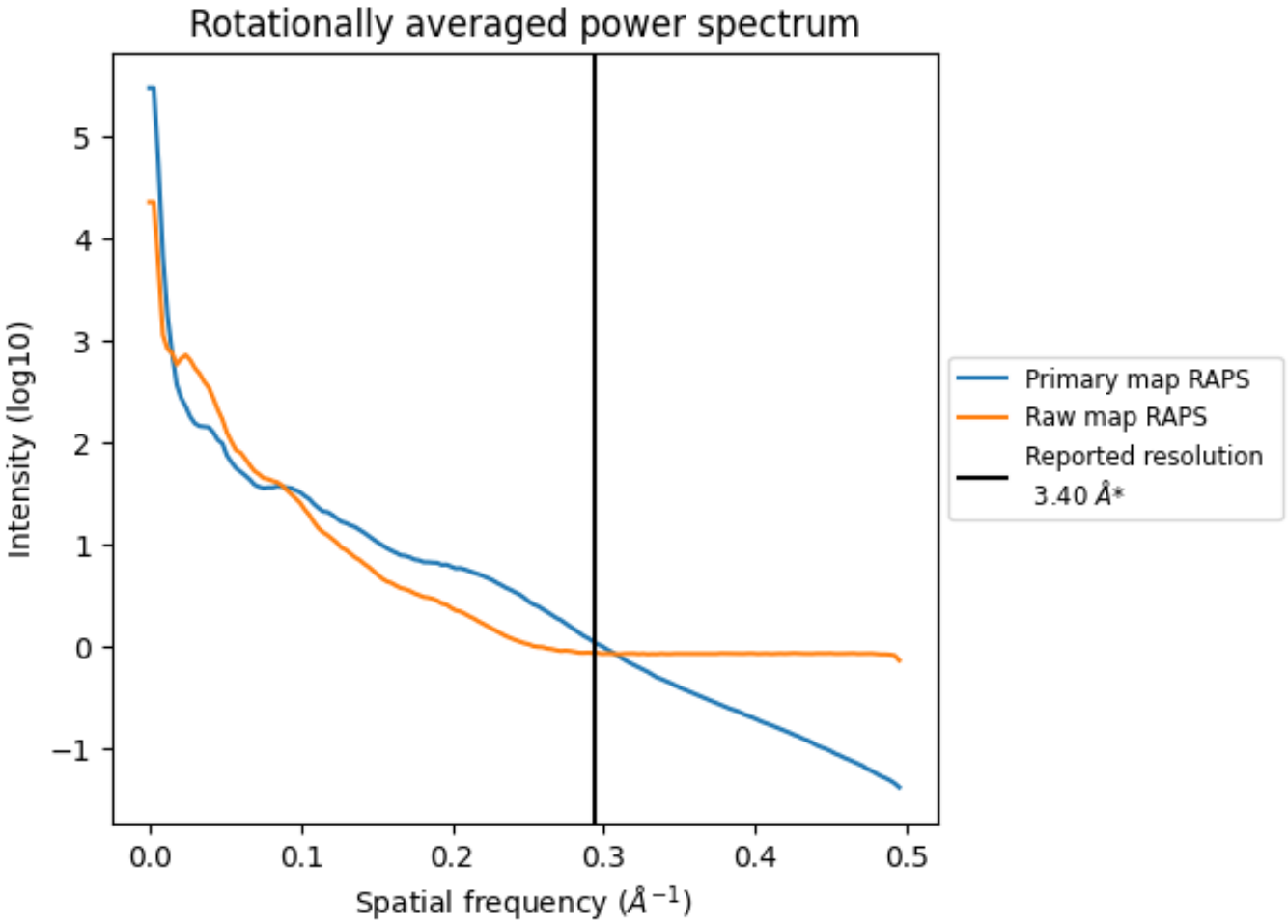
7.2 Volume estimate



The volume at the recommended contour level is 1603 nm^3; this corresponds to an approximate mass of 1448 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)

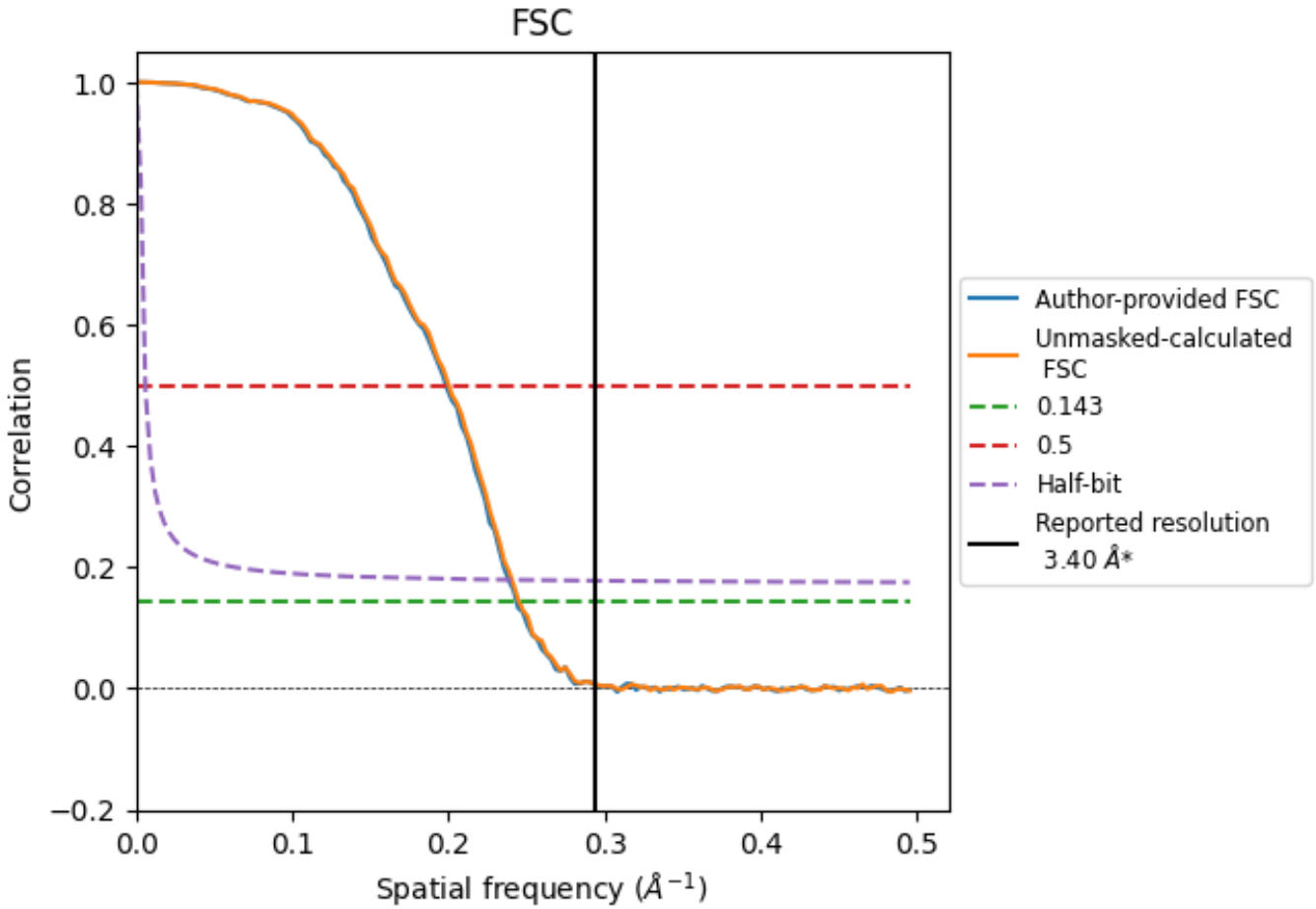


*Reported resolution corresponds to spatial frequency of 0.294 Å^{-1}

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 0.294 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.40	-	-
Author-provided FSC curve	4.11	5.04	4.19
Unmasked-calculated*	4.08	5.00	4.16

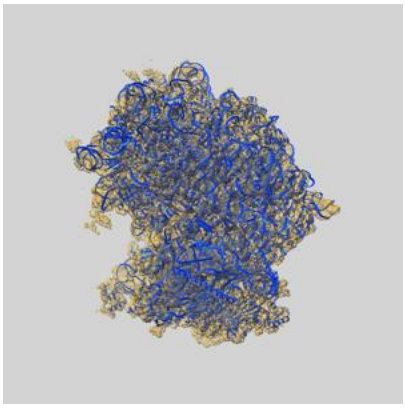
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 4.11 differs from the reported value 3.4 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.08 differs from the reported value 3.4 by more than 10 %

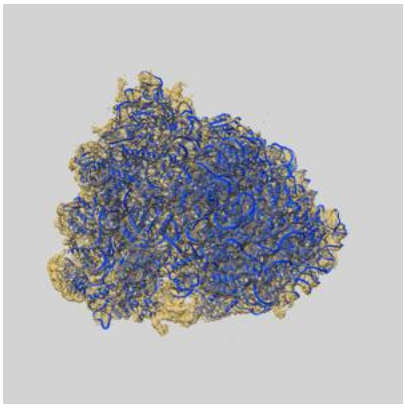
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-53333 and PDB model 9QSA. Per-residue inclusion information can be found in section 3 on page 20.

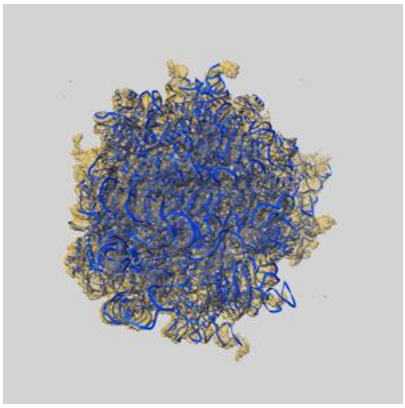
9.1 Map-model overlay



X



Y



Z

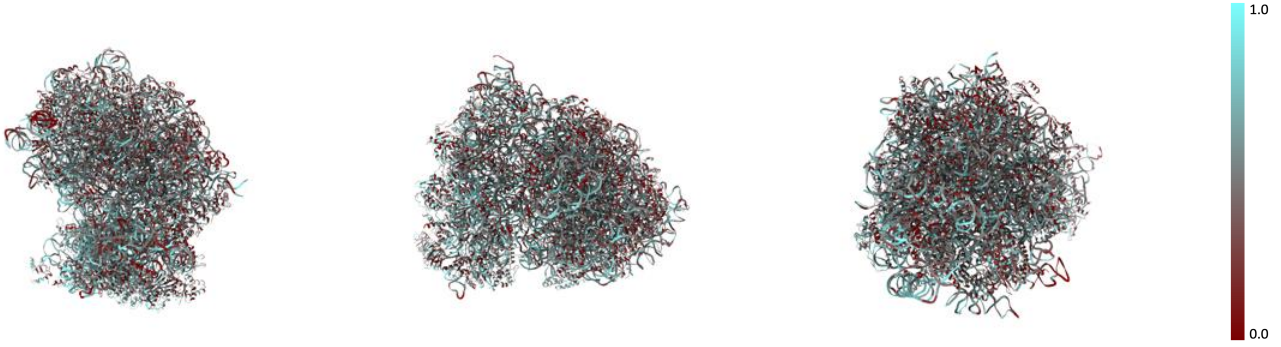
The images above show the 3D surface view of the map at the recommended contour level 0.0287 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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.

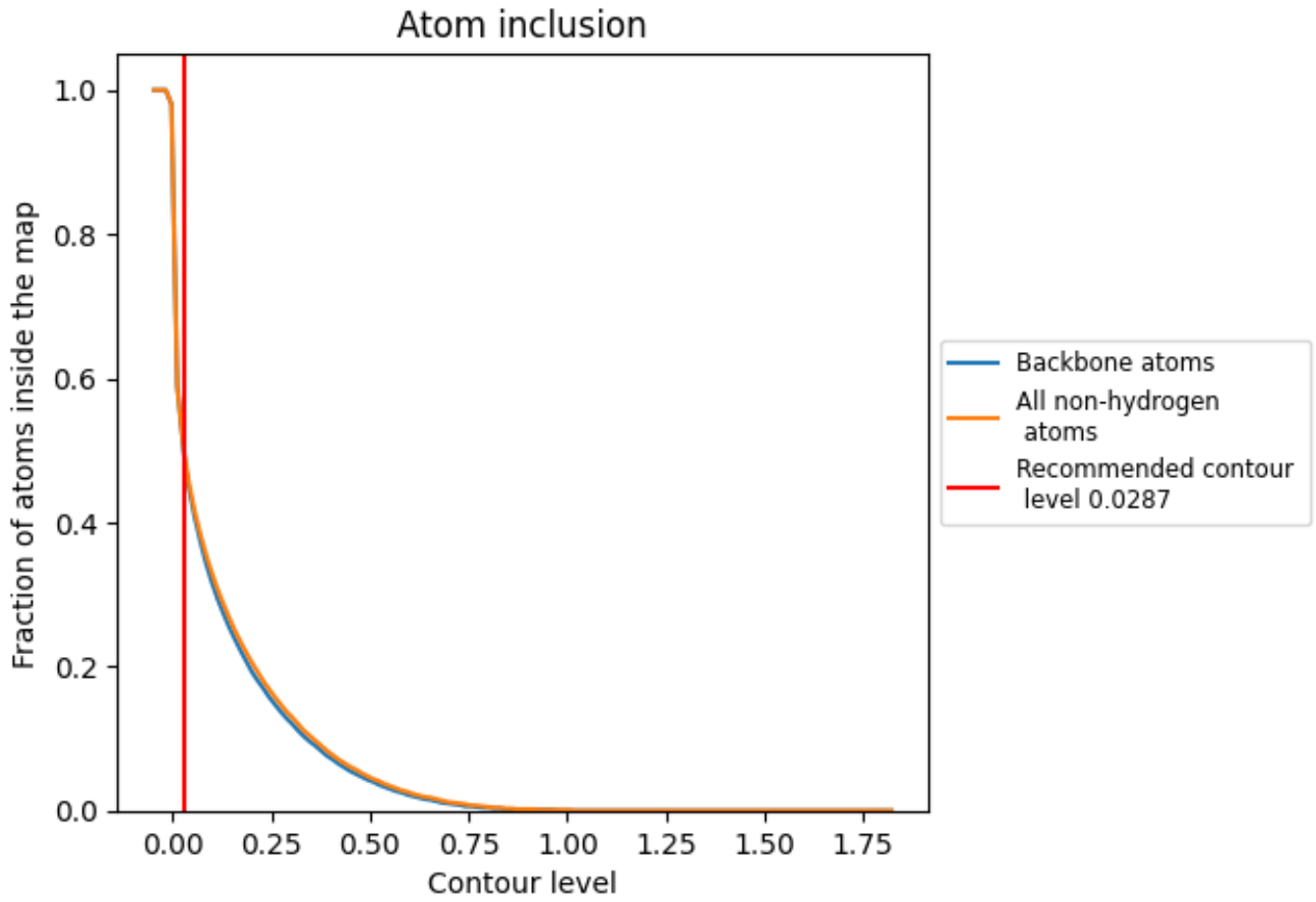
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.0287).

9.4 Atom inclusion (i)



At the recommended contour level, 49% of all backbone atoms, 50% 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 (0.0287) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4970	-0.0680
A1	0.3980	-0.1190
A2	0.5350	-0.0760
A3	0.5460	-0.0150
B1	0.4300	-0.0830
B2	0.6580	-0.0210
B3	0.4530	-0.0410
Bx	0.5300	-0.0110
By	0.0000	-0.0280
Bz	0.4140	-0.0260
C1	0.4310	-0.0960
C2	0.5070	-0.0850
C3	0.4700	-0.0140
D1	0.4530	-0.0840
D2	0.3860	-0.1210
D3	0.5370	-0.0460
E1	0.5230	-0.0440
E2	0.4050	-0.1050
E3	0.4570	-0.0600
F1	0.4130	-0.0840
F2	0.3670	-0.1040
F3	0.4360	-0.0710
G1	0.4360	-0.0850
G2	0.5010	-0.0510
G3	0.4940	-0.0310
H1	0.3970	-0.1050
H2	0.4020	-0.0970
H3	0.4710	-0.0430
I2	0.4020	-0.1000
I3	0.4320	-0.0540
J2	0.3780	-0.1200
J3	0.5240	-0.0570
K2	0.3710	-0.1030
K3	0.3870	-0.0770
L2	0.3990	-0.0910

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Chain	Atom inclusion	Q-score
L3	0.4470	-0.0370
M2	0.4450	-0.1140
M3	0.4290	0.0010
N2	0.4430	-0.0860
N3	0.3720	-0.0870
O2	0.3690	-0.0730
O3	0.4340	-0.0720
P2	0.4090	-0.1160
P3	0.4540	-0.0990
Q2	0.4020	-0.1040
Q3	0.4210	-0.0550
R2	0.3360	-0.1030
R3	0.4540	-0.0340
S2	0.3510	-0.0940
S3	0.4650	-0.0610
T2	0.3980	-0.0880
T3	0.4010	-0.0550
U2	0.3960	-0.1160
V2	0.2830	-0.0910
W2	0.4630	-0.0950
X2	0.3560	-0.1050
Y2	0.3500	-0.1120
Z2	0.3970	-0.1190
a2	0.3720	-0.1020
b2	0.3460	-0.0990
c2	0.4180	-0.0850
d2	0.3610	-0.1260
e2	0.3380	-0.1000
f2	0.3310	-0.1190
g2	0.3940	-0.1060
h2	0.3680	-0.0690
i2	0.4090	-0.1020
j2	0.4670	-0.0780
k2	0.3770	-0.1240
m2	0.6010	-0.0290
n2	0.5810	-0.0160
o2	0.4740	-0.0680
p2	0.4450	-0.0760
q2	0.4600	-0.0340
r2	0.4210	-0.0640
s2	0.4810	-0.0400
t2	0.4450	-0.0520

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Chain	Atom inclusion	Q-score
u2	0.4160	-0.0880
v2	0.5040	-0.0100
w2	0.3830	-0.0830
x2	0.5290	-0.0180
y2	0.4300	-0.0370
z2	0.4650	-0.0440