



Full wwPDB EM Validation Report ⓘ

Apr 15, 2026 – 03:31 AM UTC

PDB ID : 9QQL / pdb_00009qql
EMDB ID : EMD-53307
Title : Mouse RPS15 P131 Mutant Ribosome POST translocation state
Authors : Santo, P.E.; Astier, A.; Plisson-Chastang, C.
Deposited on : 2025-04-01
Resolution : 3.09 Å(reported)
Based on initial model : 7LS1

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

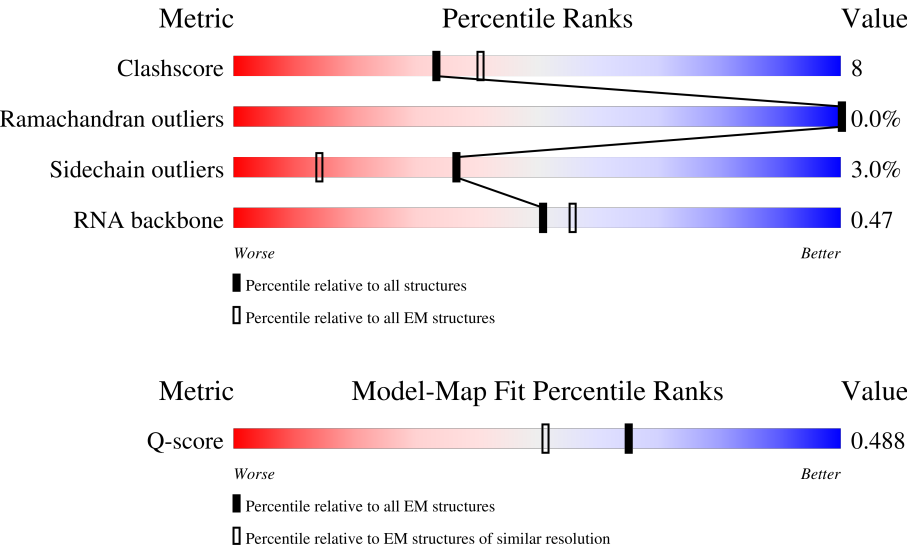
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDb archive up until May 2025)
MapQ : 1.9.13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

1 Overall quality at a glance i

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

The reported resolution of this entry is 3.09 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	14003 (2.59 - 3.59)

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

Mol	Chain	Length	Quality of chain
1	A1	270	<div> <div>6%</div> <div>59%</div> <div>23%</div> <div>18%</div> </div>
2	A2	3615	<div> <div>18%</div> <div>57%</div> <div>36%</div> <div>7%</div> </div>
3	A3	152	<div> <div>74%</div> <div>58%</div> <div>33%</div> <div>8%</div> </div>

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Mol	Chain	Length	Quality of chain
4	B1	266	
5	B2	121	
6	B3	145	
7	Bv	76	
7	n2	76	
8	Bx	10	
9	C1	192	
10	C2	156	
11	C3	119	
12	D1	214	
13	D2	257	
14	D3	83	
15	E1	178	
16	E2	403	
17	E3	143	
18	F1	211	
19	F2	419	
20	F3	114	
21	G1	217	
22	G2	297	
23	G3	69	
24	H1	204	
25	H2	296	
26	H3	56	
27	I2	203	

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

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Mol	Chain	Length	Quality of chain
53	U3	156	
54	V2	160	
55	W2	115	
56	X2	125	
57	Y2	135	
58	Z2	110	
59	a2	117	
60	b2	123	
61	c2	105	
62	d2	97	
63	e2	70	
64	f2	51	
65	g2	128	
66	h2	25	
67	i2	104	
68	j2	92	
69	k2	137	
70	m2	1635	
71	o2	295	
72	p2	264	
73	q2	243	
74	r2	263	
75	s2	204	
76	t2	194	
77	u2	208	

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Mol	Chain	Length	Quality of chain
78	v2	165	<div><div><div></div><div></div><div></div><div></div></div><div>53%</div><div>35%</div><div>22%</div><div>•</div><div>42%</div></div>
79	w2	158	<div><div><div></div><div></div><div></div><div></div></div><div>20%</div><div>68%</div><div>26%</div><div>•</div><div>5%</div></div>
80	x2	145	<div><div><div></div><div></div><div></div><div></div></div><div>70%</div><div>54%</div><div>23%</div><div>•</div><div>20%</div></div>
81	y2	146	<div><div><div></div><div></div><div></div><div></div></div><div>73%</div><div>63%</div><div>33%</div><div>•</div><div>•</div></div>
82	z2	135	<div><div><div></div><div></div><div></div><div></div></div><div>77%</div><div>75%</div><div>22%</div><div>•</div><div>•</div></div>

2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 213778 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A1	222	Total	C	N	O	S	0	0
			1843	1185	353	297	8		

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

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

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

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

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

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

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

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

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

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

- Molecule 7 is a RNA chain called transfer RNA.

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

- Molecule 8 is a RNA chain called messenger RNA.

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	C3	100	Total	C	N	O	S	0	0
			795	498	152	141	4		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F3	?	-	ARG	deletion	UNP P62855

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

There is a discrepancy between the modelled and reference sequences:

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
70	m2	1632	Total	C	N	O	P	0	0
			34879	15587	6261	11399	1632		

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
80	x2	116	Total	C	N	O	S	0	0
			959	610	178	164	7		

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

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

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

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

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

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

- Molecule 84 is UNKNOWN (CCD ID: UNK) (formula: C₄H₉NO₂) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms				AltConf
84	A2	13	Total	C	N	O	0
			65	39	13	13	
84	Bv	1	Total	C	N	O	0
			5	3	1	1	
84	F2	3	Total	C	N	O	0
			15	9	3	3	
84	J2	1	Total	C	N	O	0
			5	3	1	1	
84	f2	4	Total	C	N	O	0
			20	12	4	4	

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

Mol	Chain	Residues	Atoms		AltConf
85	F3	1	Total	Zn	0
			1	1	

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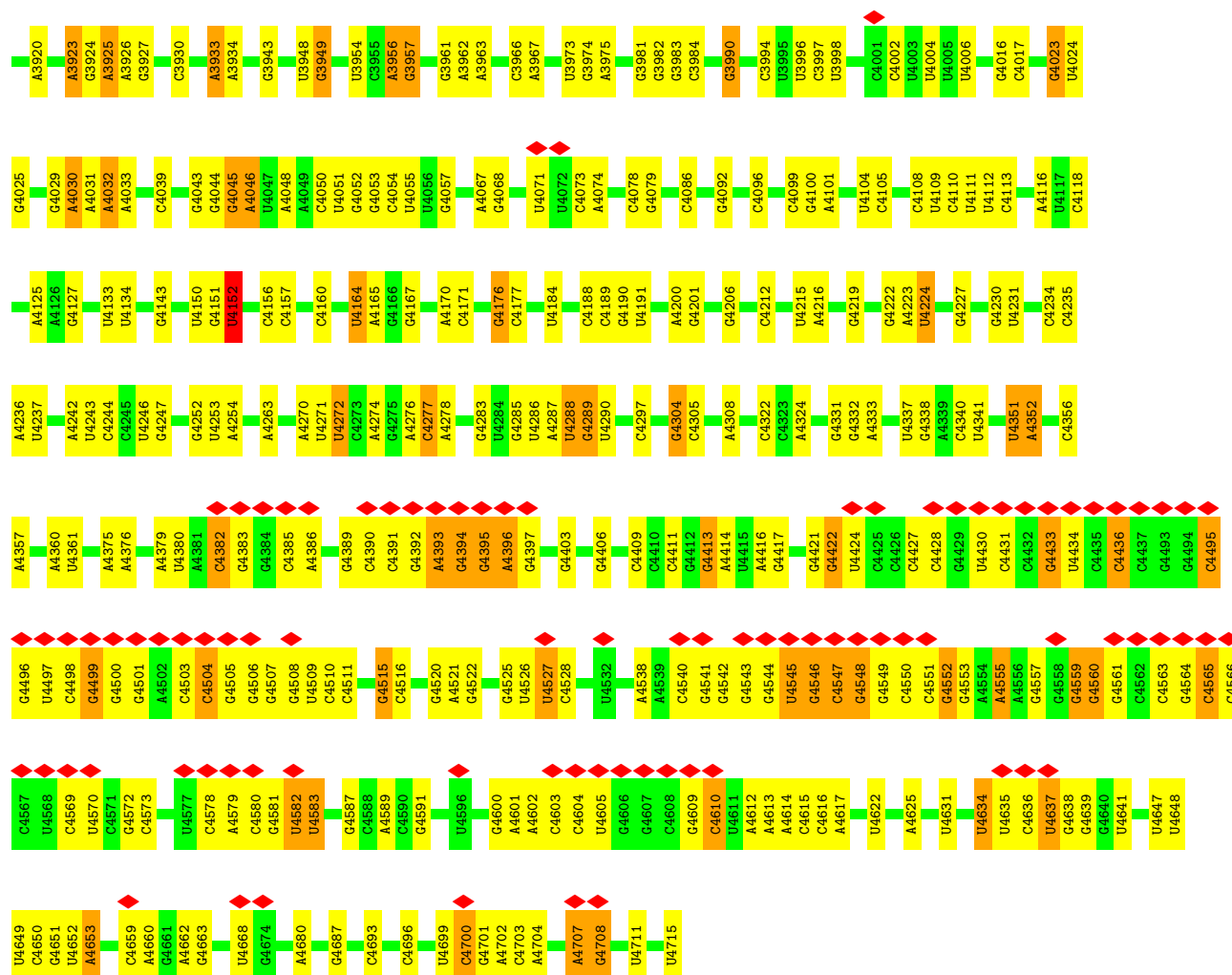
Mol	Chain	Residues	Atoms		AltConf
85	H3	1	Total 1	Zn 1	0
85	d2	1	Total 1	Zn 1	0
85	g2	1	Total 1	Zn 1	0
85	i2	1	Total 1	Zn 1	0
85	j2	1	Total 1	Zn 1	0

- Molecule 86 is water.

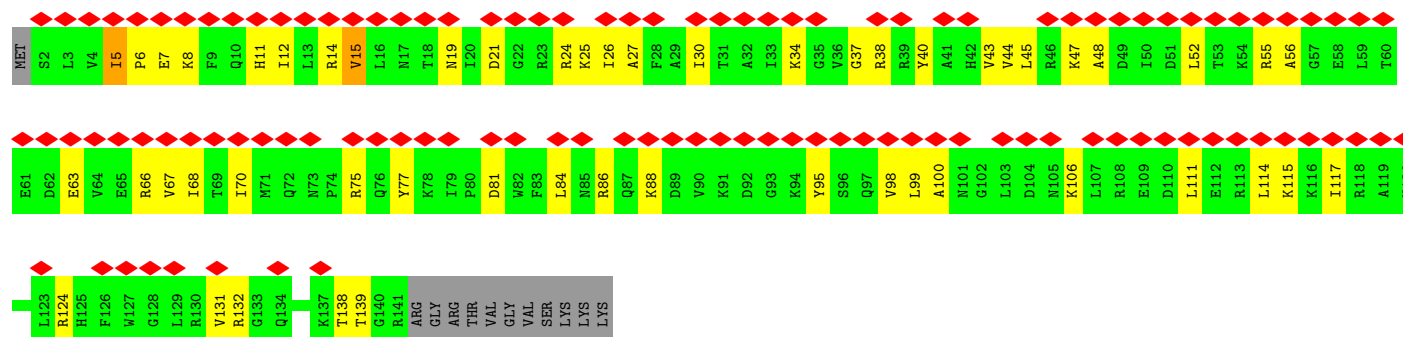
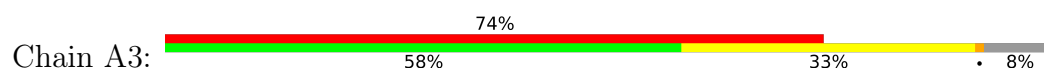
Mol	Chain	Residues	Atoms		AltConf
86	B1	1	Total 1	O 1	0



G3800	G3801	G3802	G3803	C3814	U3815	C3816	A3822	U3826	G3827	G3835	G3836	U3840	U3841	U3842	G3843	A3855	U3860	G3861	A3866	G3874	G3877	G3880	U3881	U3884	A3885	A3886	G3887	G3888	G3889	G3890	A3891	G3892	A3903	G3906	A3907	A3908	A3909	C3910	C3911	U3912	C3913	C3914	C3915	C3916	U3917																																																																																																																																																																																																																																																																																																																																																																
U3716	U3717	U3718	U3719	U3720	U3721	G3726	G3734	A3735	G3736	G3737	G3738	G3739	G3743	G3744	G3745	G3746	G3747	A3748	G3749	C3750	C3751	C3752	G3758	G3759	C3760	U3761	C3762	U3763	C3764	G3765	G3766	U3767	U3768	C3769	U3770	G3771	G3772	C3776	A3777	A3778	G3781	U3782	C3783	C3784	G3785	U3786	C3787	C3788	C3789	G3790	G3796	G3797	G3798	G3799																																																																																																																																																																																																																																																																																																																																																							
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G2241	G2242	C2243	C2244	U2245	C2246	C2247	G2248	U2249	U2250	G2251	C2252	C2253	U2254	U2255	G2256	G2257	C2258	C2259	C2260	G2261	A2262	A2268	A2272	G2273	U2274	C2275	G2276	U2279	G2283	A2284	U2285	C2288	C2289	G2290	A2291	A2292	U2293	C2294	C2295	A2298	G2299	U2300	C2301	C2302	U2309	G2312	C2313	G2314	C2315	C2316	G2317																																																																																																																																																																																																																																																																																																																																																										
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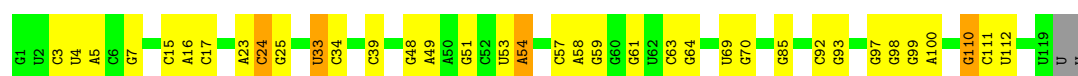
• Molecule 3: Small ribosomal subunit protein uS13



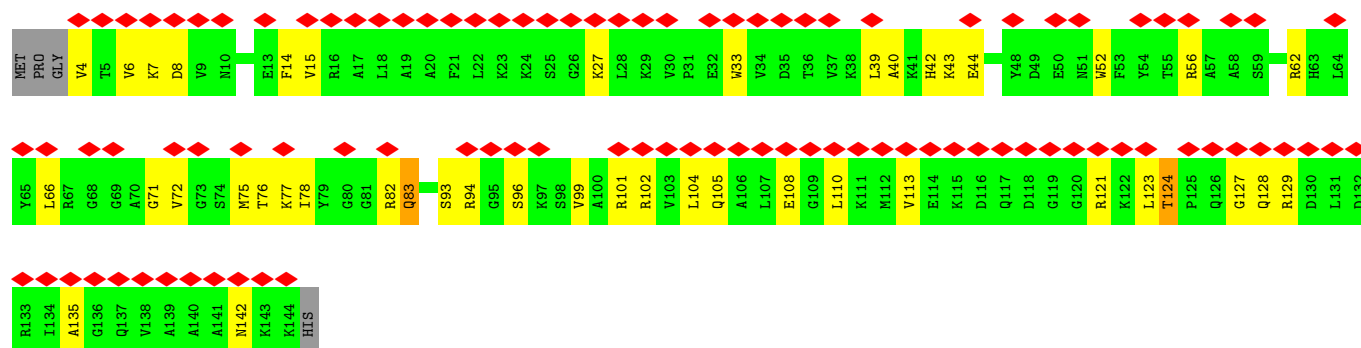
• Molecule 4: Large ribosomal subunit protein eL8



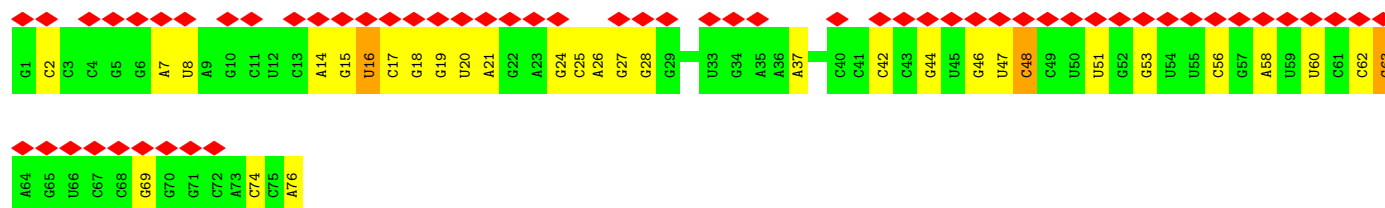
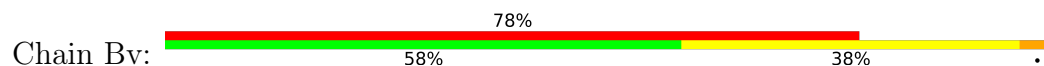
- Molecule 5: 5S ribosomal RNA



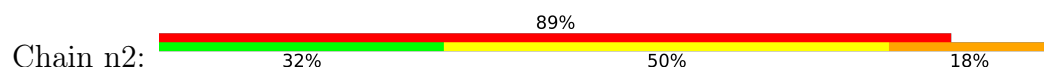
- Molecule 6: Small ribosomal subunit protein eS19



- Molecule 7: transfer RNA

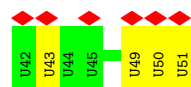


- Molecule 7: transfer RNA

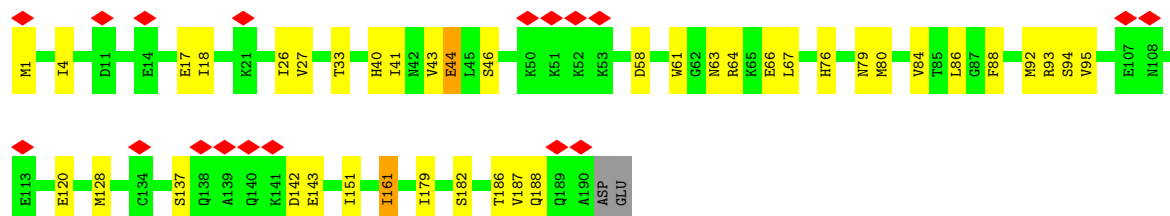
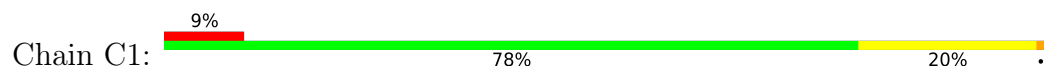




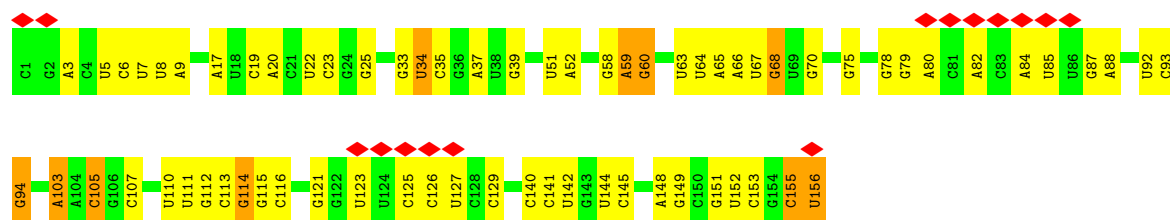
• Molecule 8: messenger RNA



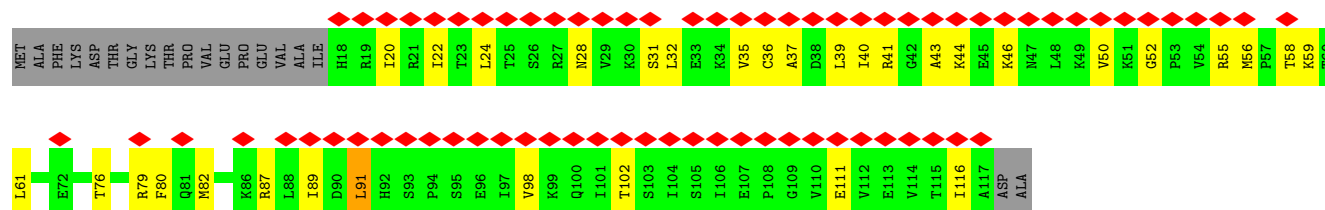
• Molecule 9: Large ribosomal subunit protein uL6



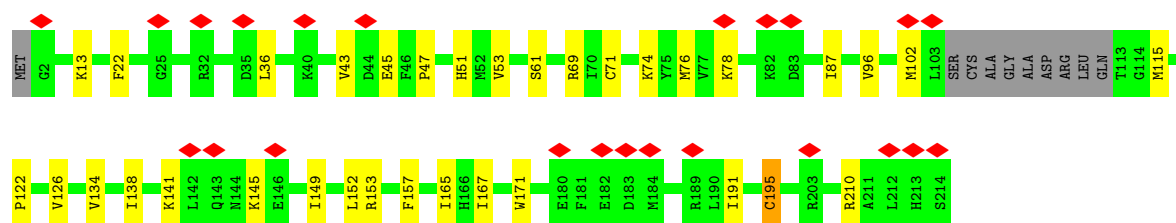
• Molecule 10: 5.8S ribosomal RNA



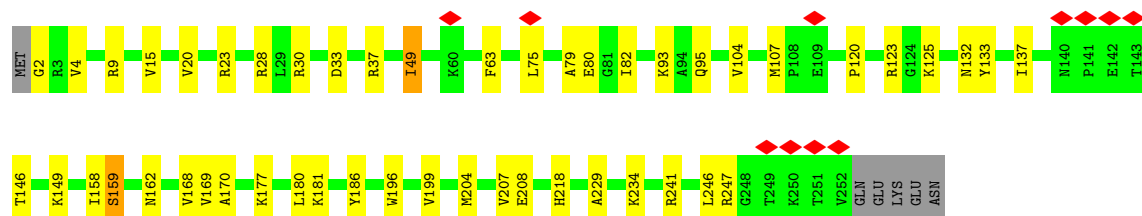
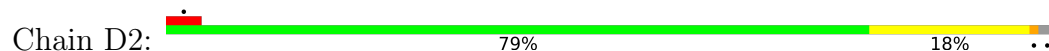
• Molecule 11: Small ribosomal subunit protein uS10



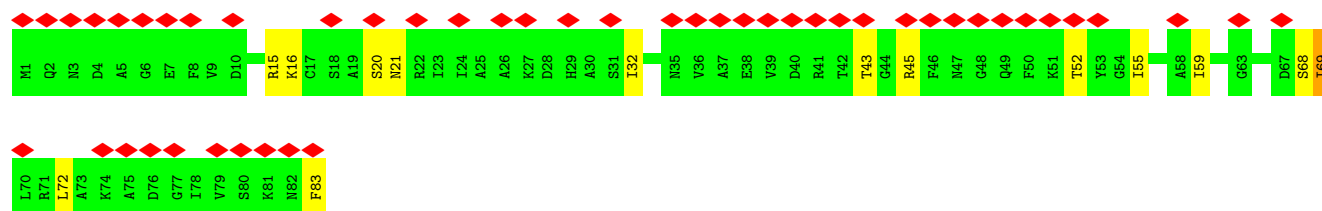
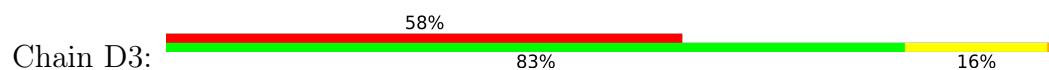
• Molecule 12: Large ribosomal subunit protein uL16



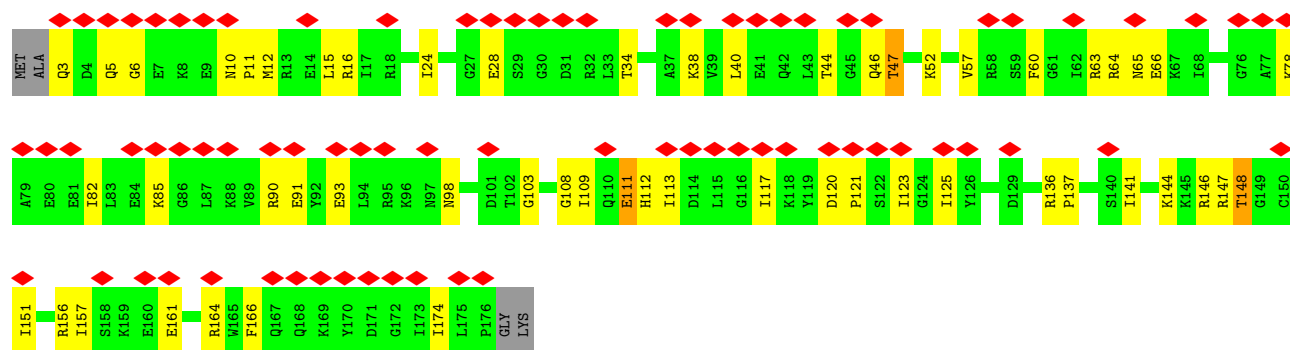
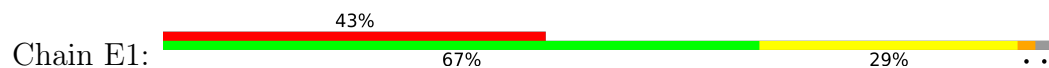
- Molecule 13: Large ribosomal subunit protein uL2



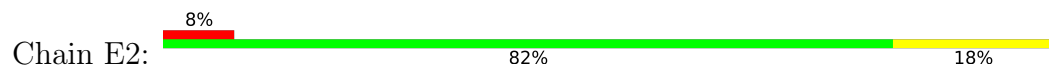
- Molecule 14: Small ribosomal subunit protein eS21

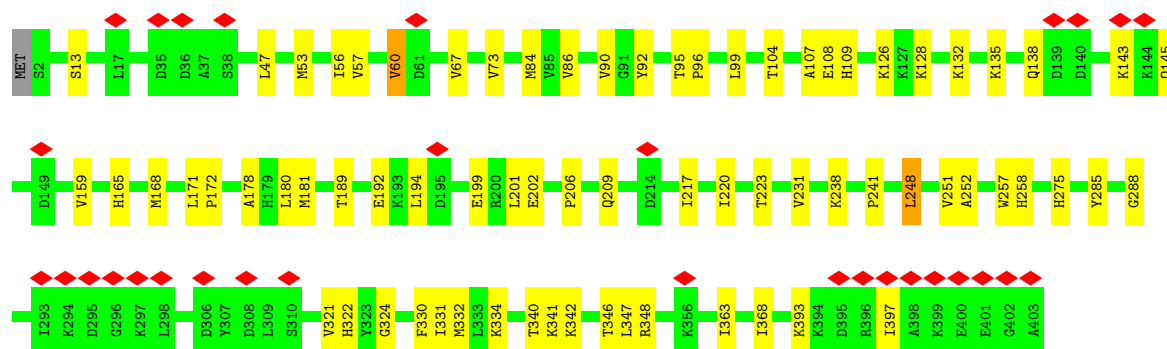


- Molecule 15: Large ribosomal subunit protein uL5

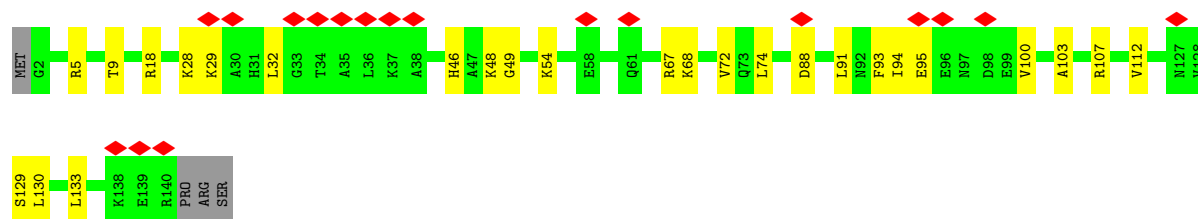
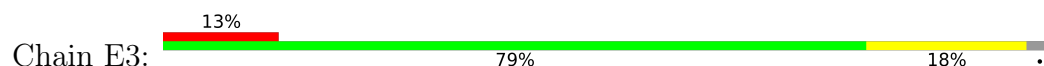


- Molecule 16: Large ribosomal subunit protein uL3

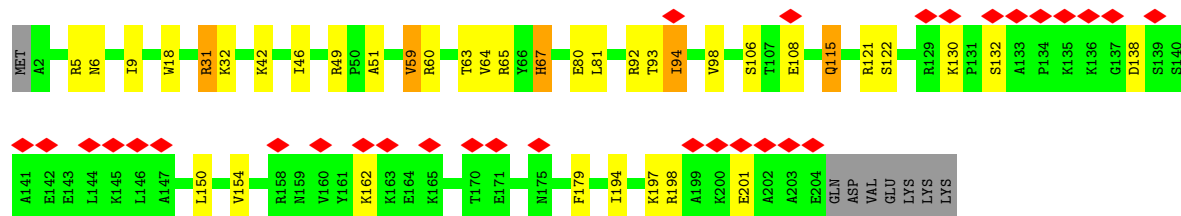
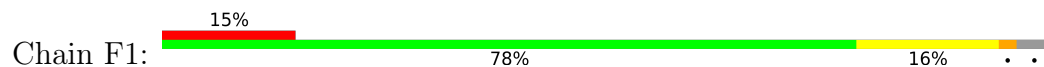




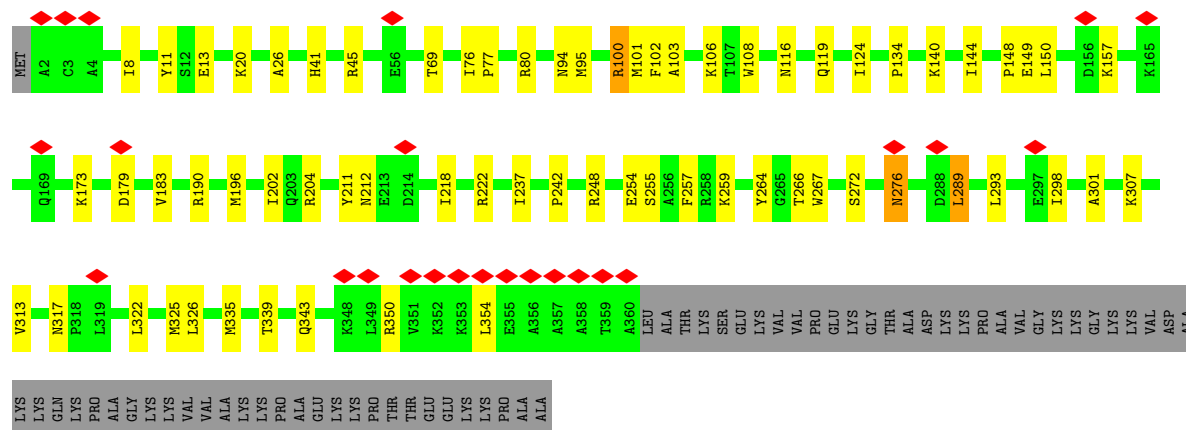
- Molecule 17: Small ribosomal subunit protein uS12



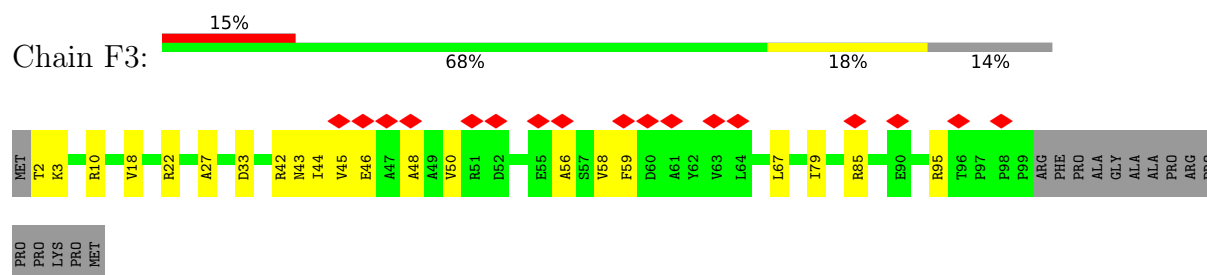
- Molecule 18: Large ribosomal subunit protein eL13



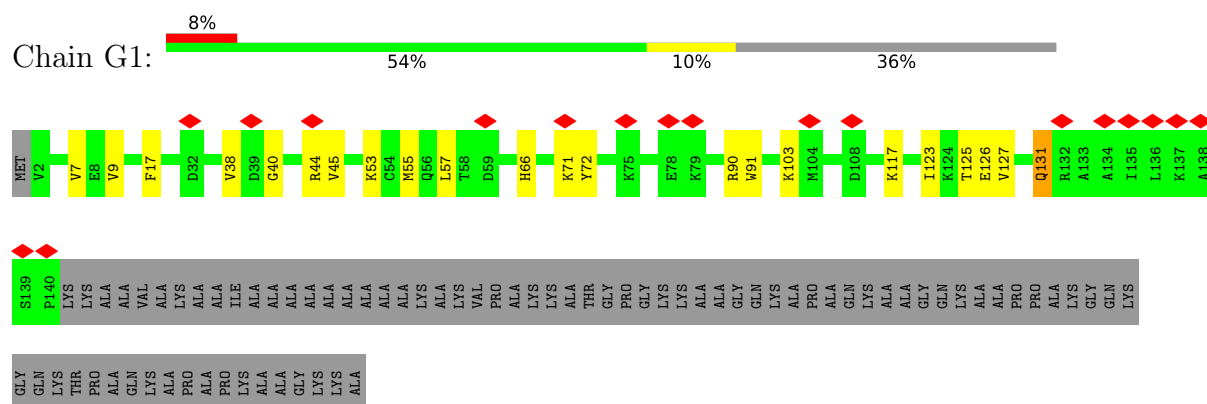
- Molecule 19: Large ribosomal subunit protein uL4



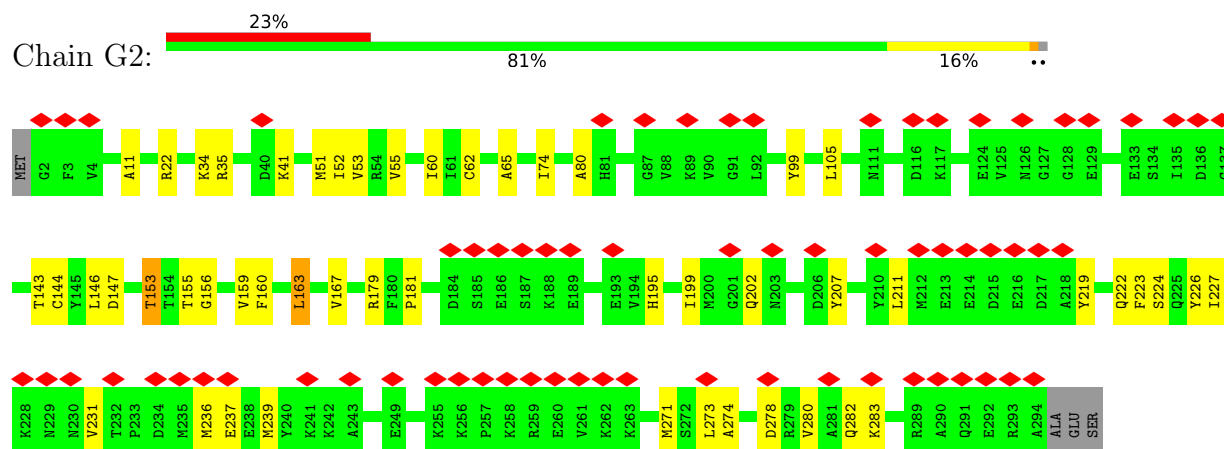
- Molecule 20: Small ribosomal subunit protein eS26



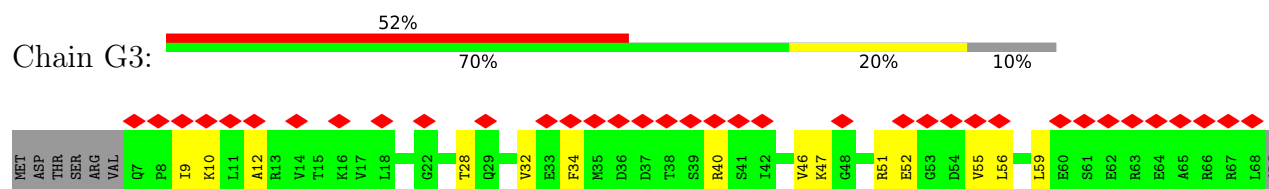
- Molecule 21: Large ribosomal subunit protein eL14



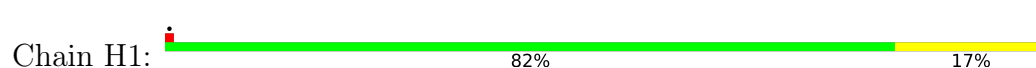
- Molecule 22: Large ribosomal subunit protein uL18



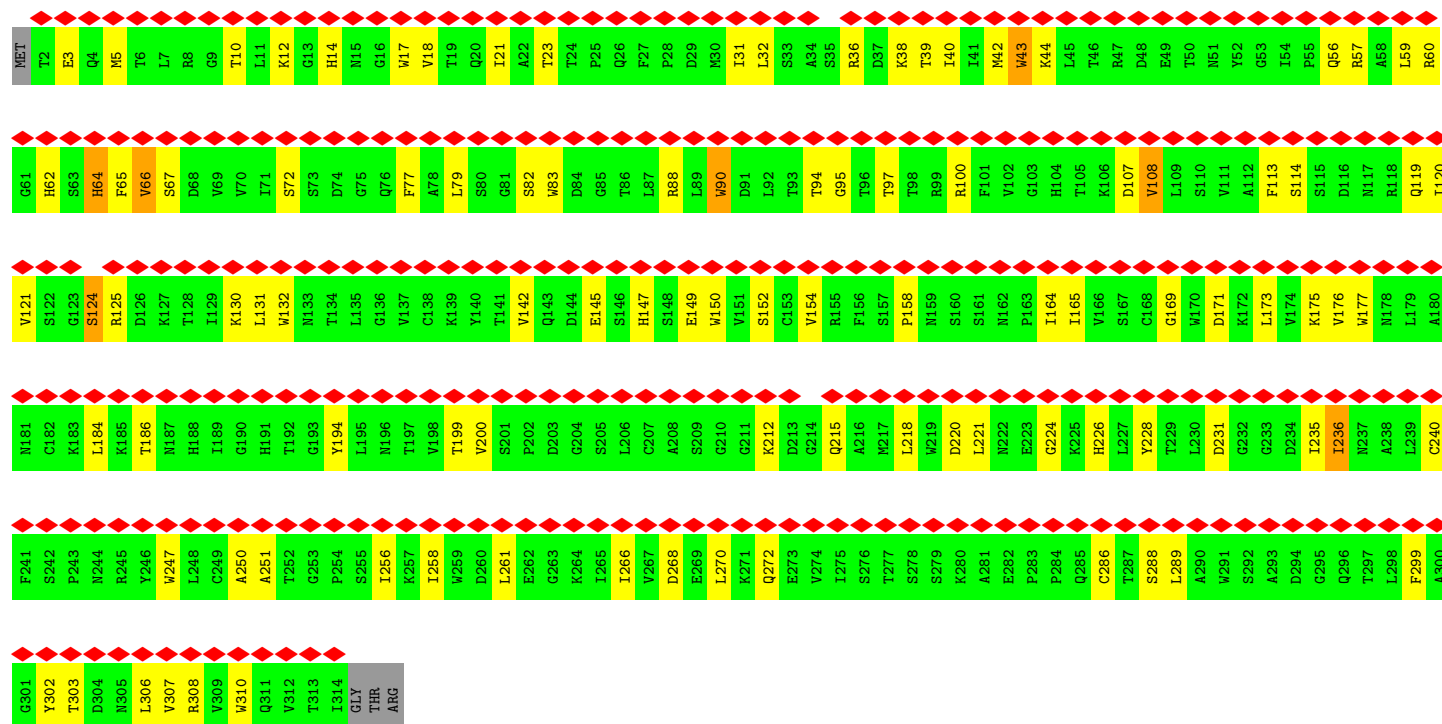
- Molecule 23: Small ribosomal subunit protein eS28



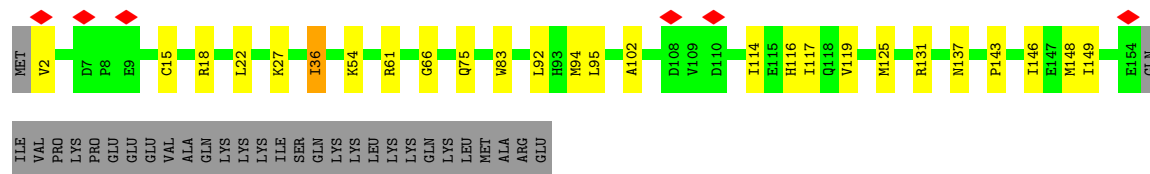
- Molecule 24: Large ribosomal subunit protein eL15



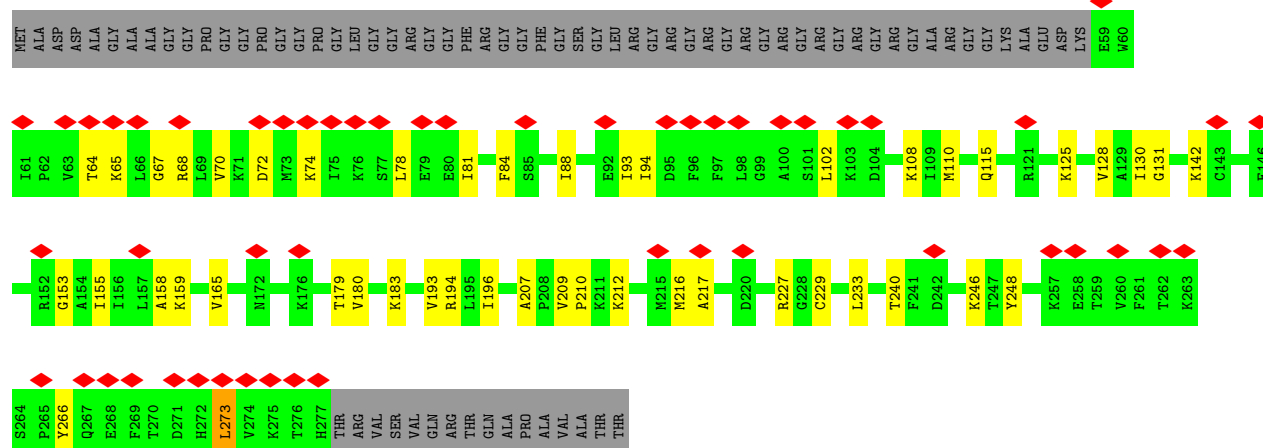




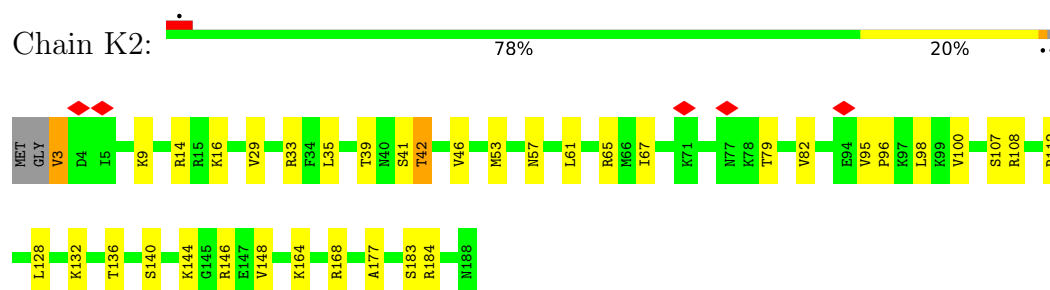
- Molecule 29: Large ribosomal subunit protein uL22



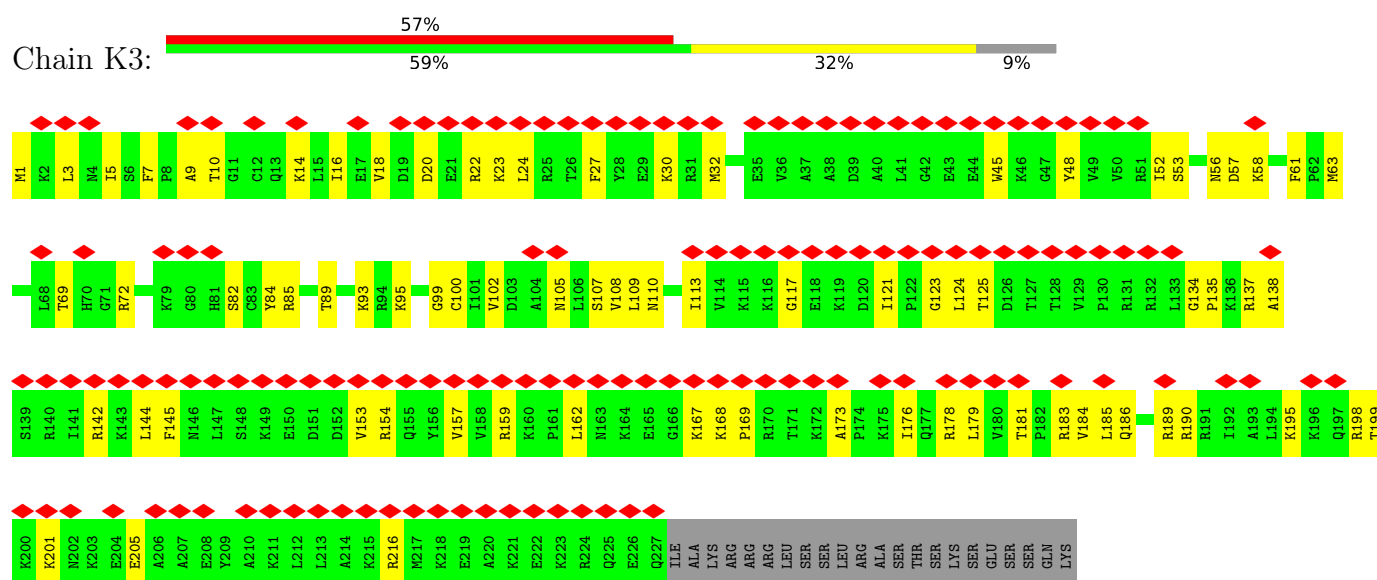
- Molecule 30: Small ribosomal subunit protein uS5



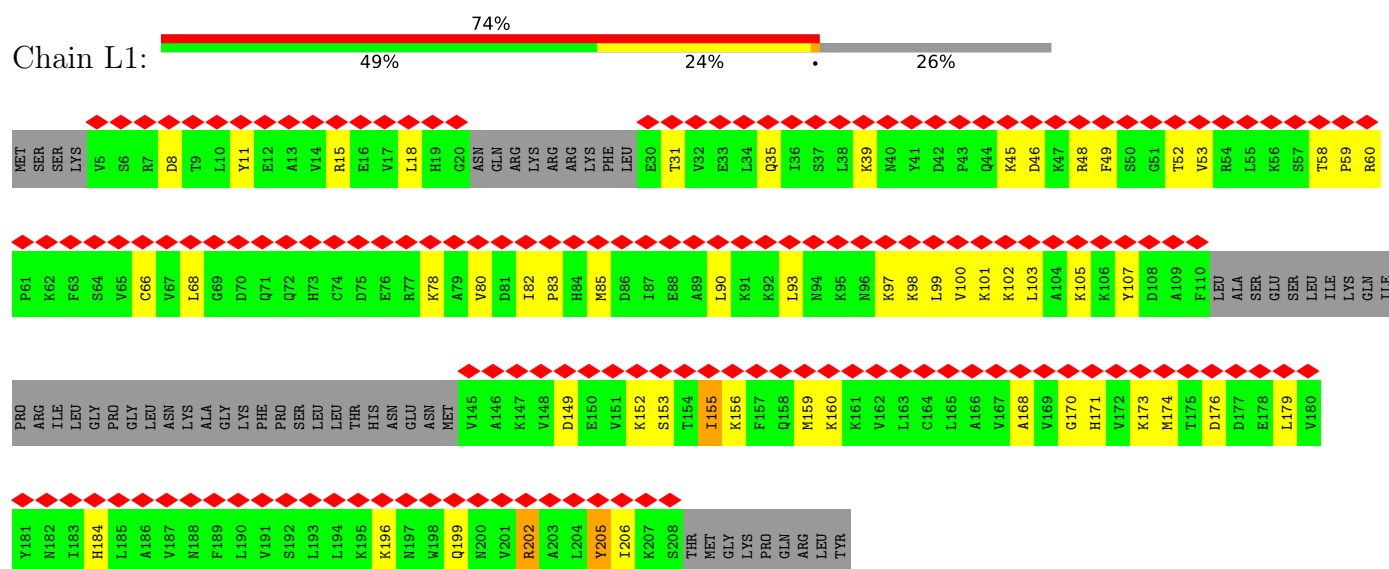
- Molecule 31: Large ribosomal subunit protein eL18



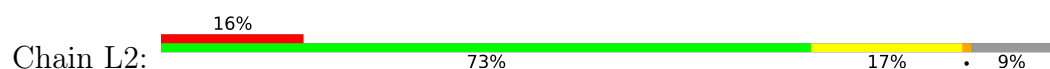
- Molecule 32: Small ribosomal subunit protein eS6

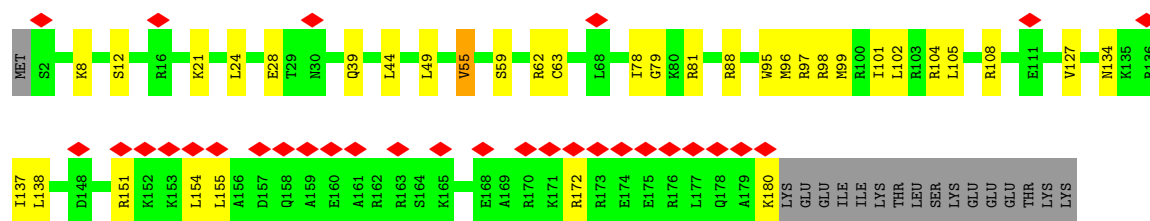


- Molecule 33: Large ribosomal subunit protein uL1

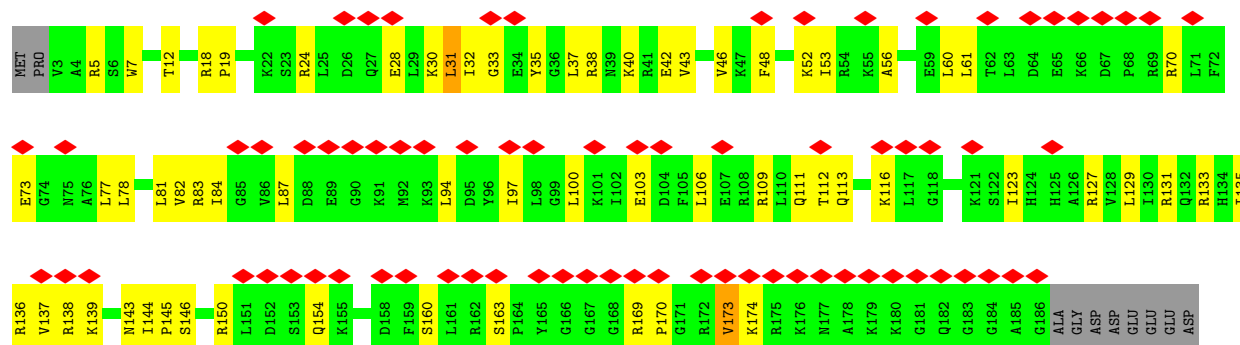
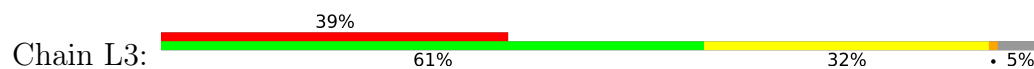


- Molecule 34: Large ribosomal subunit protein eL19

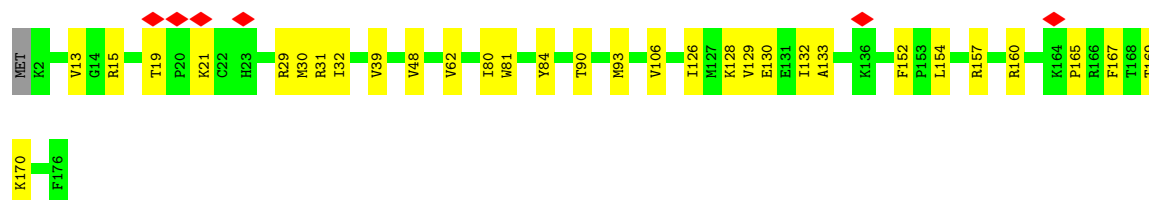
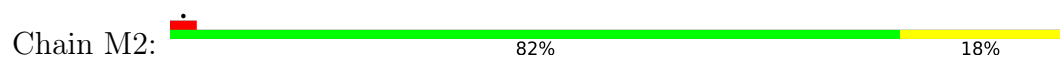




- Molecule 35: Small ribosomal subunit protein uS4



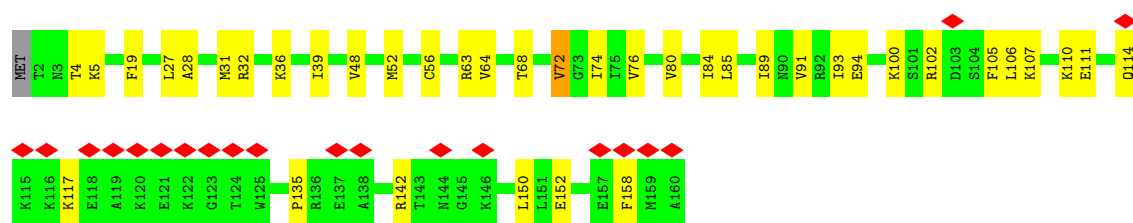
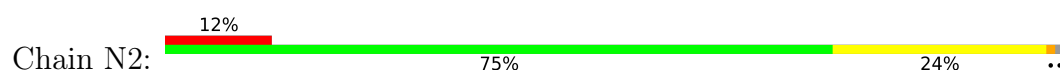
- Molecule 36: Large ribosomal subunit protein eL20



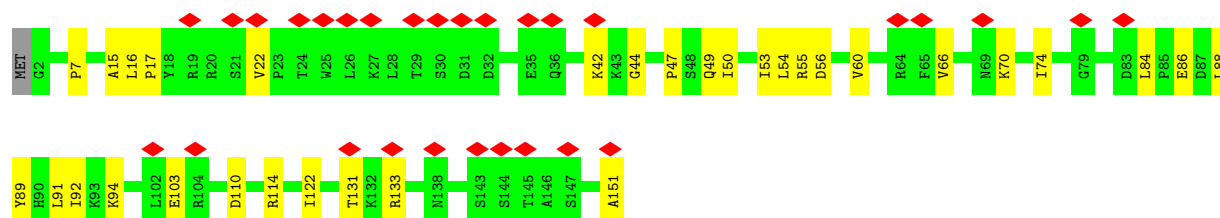
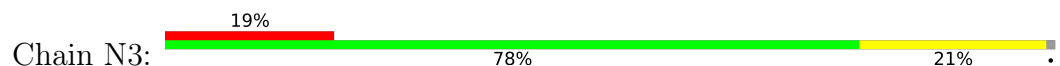
- Molecule 37: Small ribosomal subunit protein eS12



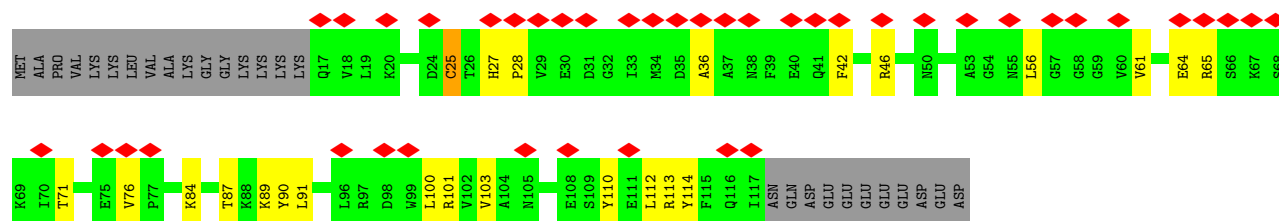
- Molecule 38: Large ribosomal subunit protein eL21



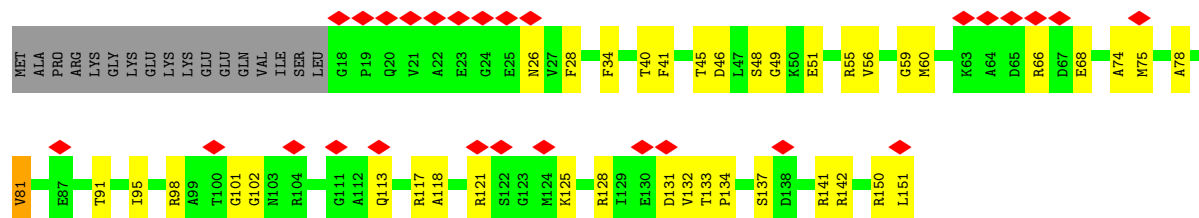
• Molecule 39: Small ribosomal subunit protein uS15



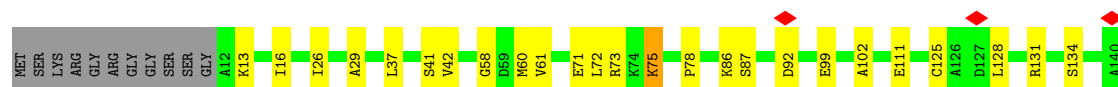
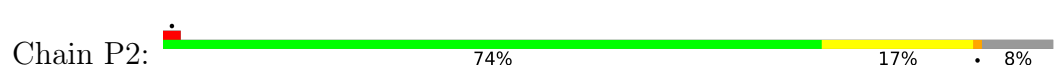
• Molecule 40: Large ribosomal subunit protein eL22



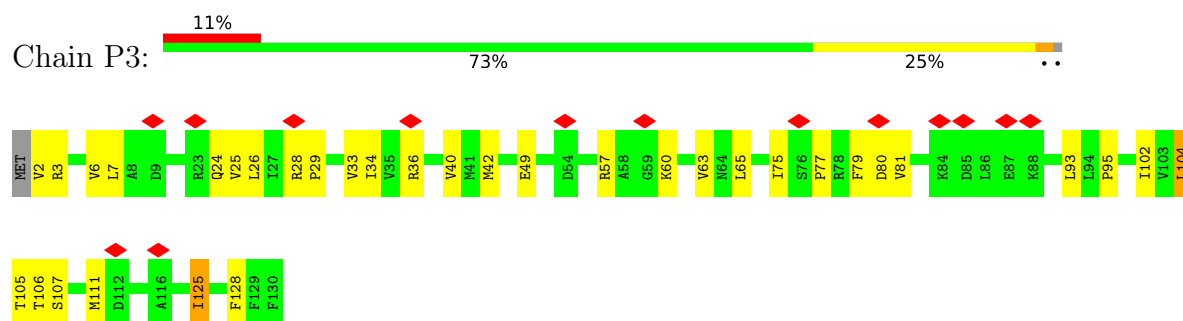
• Molecule 41: Small ribosomal subunit protein uS11



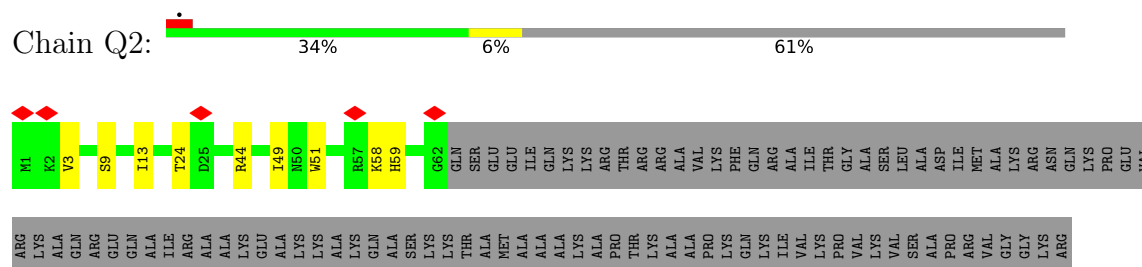
• Molecule 42: Large ribosomal subunit protein uL14



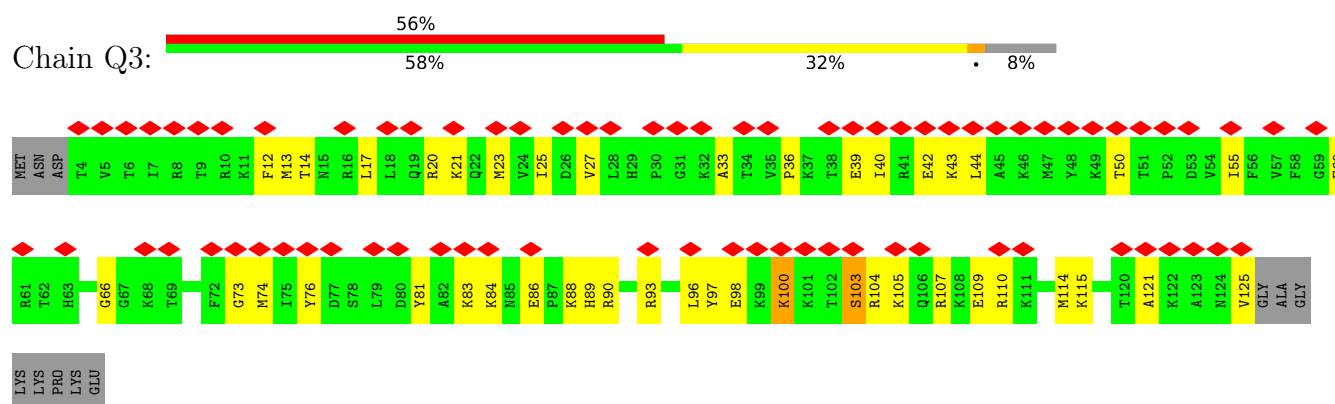
• Molecule 43: Small ribosomal subunit protein uS8



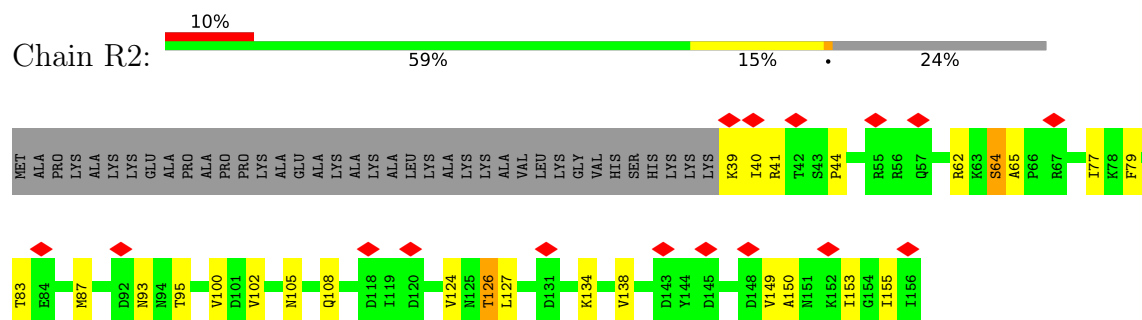
• Molecule 44: Large ribosomal subunit protein eL24



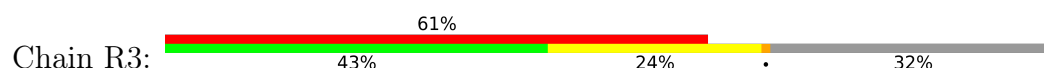
• Molecule 45: Small ribosomal subunit protein eS24

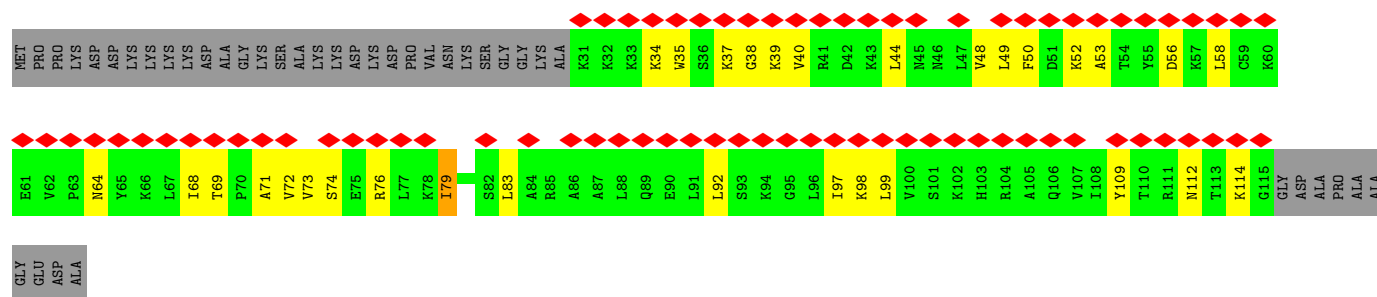


• Molecule 46: Large ribosomal subunit protein uL23

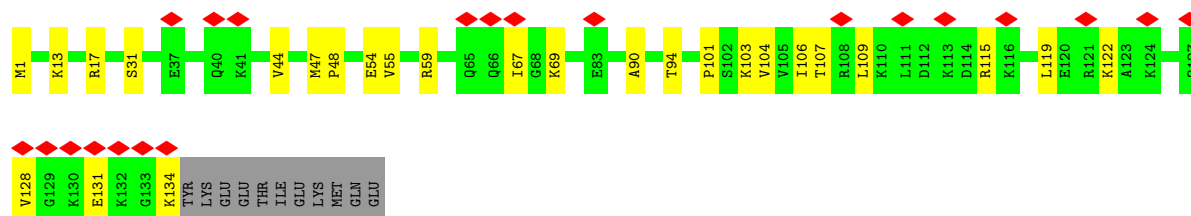
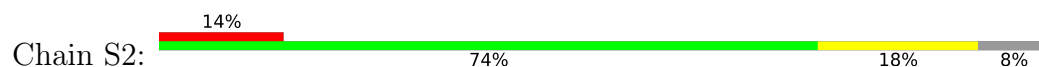


• Molecule 47: Small ribosomal subunit protein eS25

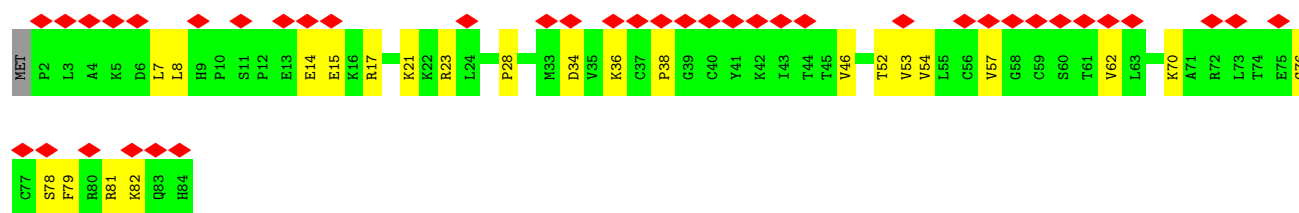




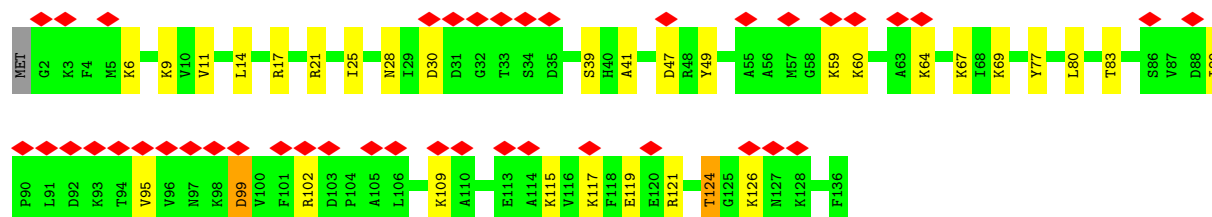
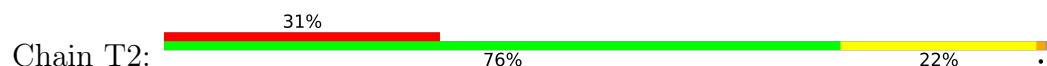
- Molecule 48: Large ribosomal subunit protein uL24



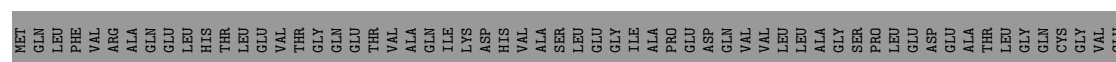
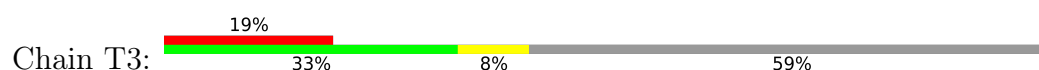
- Molecule 49: Small ribosomal subunit protein eS27

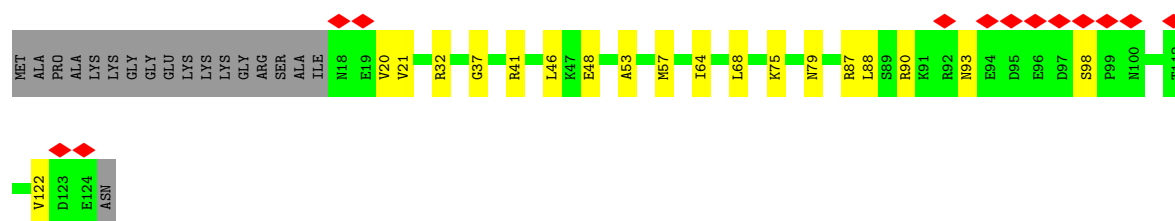
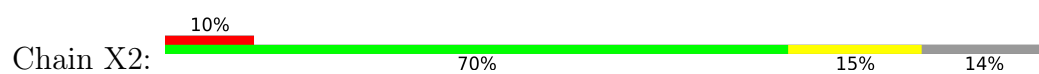


- Molecule 50: Large ribosomal subunit protein eL27

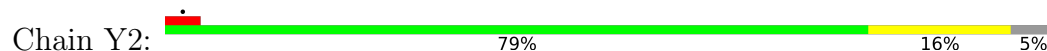


- Molecule 51: Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein

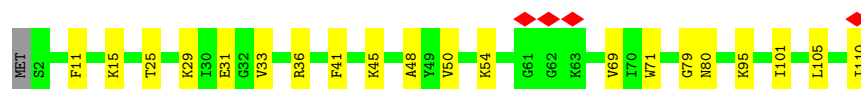
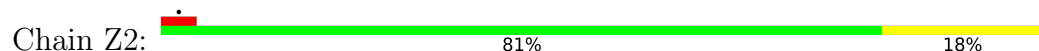




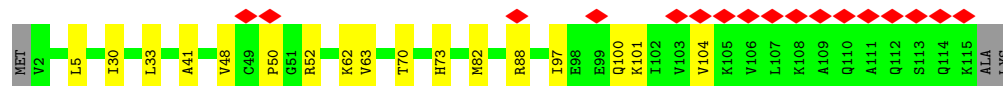
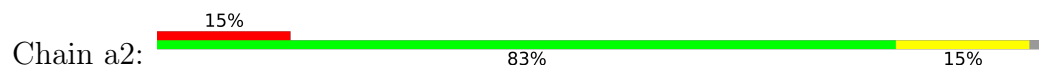
- Molecule 57: Large ribosomal subunit protein eL32



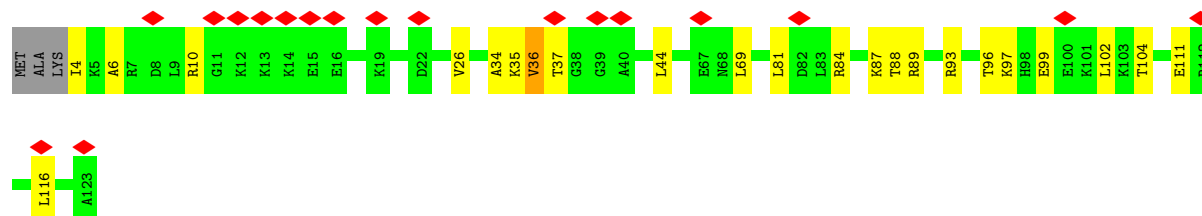
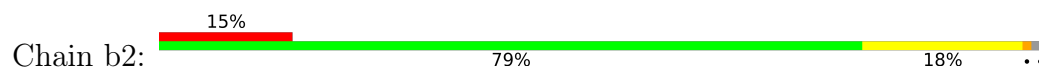
- Molecule 58: Large ribosomal subunit protein eL33



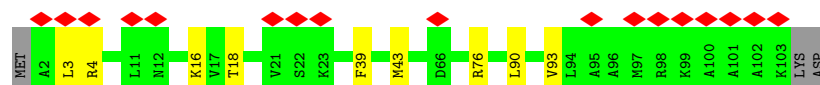
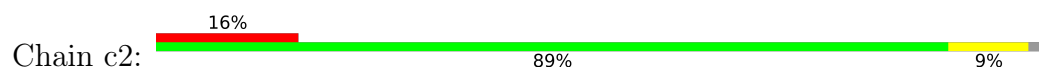
- Molecule 59: Large ribosomal subunit protein eL34



- Molecule 60: Large ribosomal subunit protein uL29

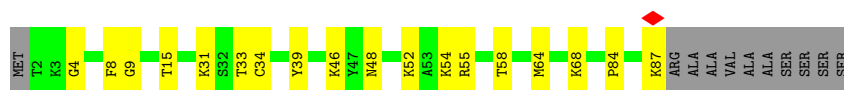


- Molecule 61: Large ribosomal subunit protein eL36




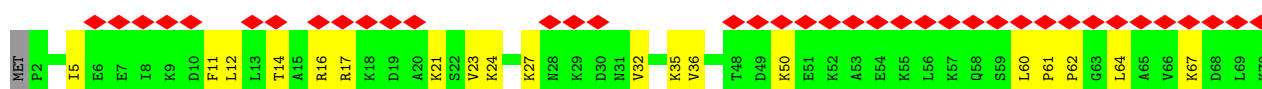
- Molecule 62: Large ribosomal subunit protein eL37

Chain d2: 




- Molecule 63: Large ribosomal subunit protein eL38

Chain e2: 




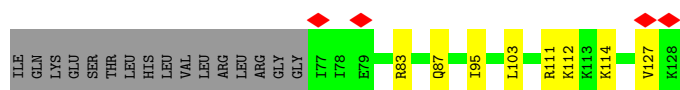
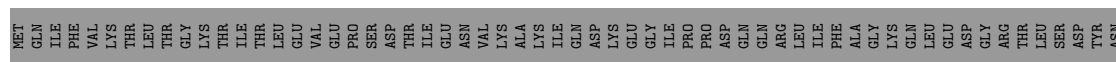
- Molecule 64: Large ribosomal subunit protein eL39

Chain f2: 




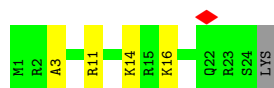
- Molecule 65: Ubiquitin-ribosomal protein eL40 fusion protein

Chain g2: 




- Molecule 66: 60S ribosomal protein L41

Chain h2: 

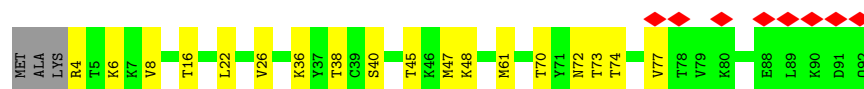
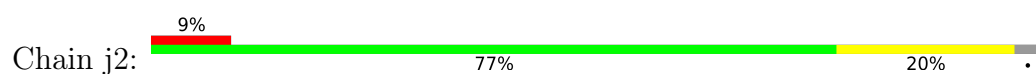


- Molecule 67: Large ribosomal subunit protein eL42

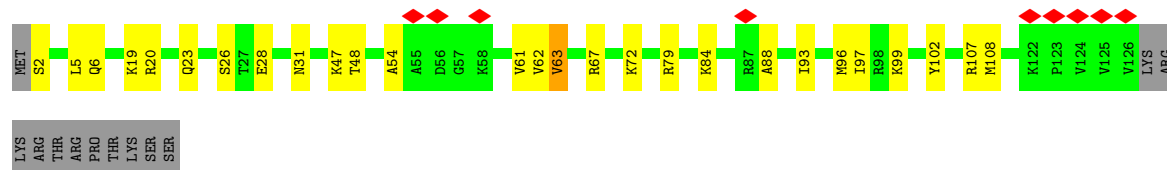
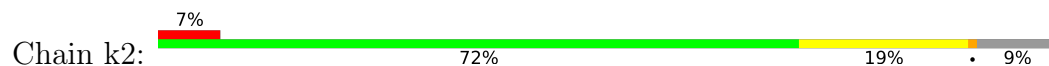
Chain i2: 



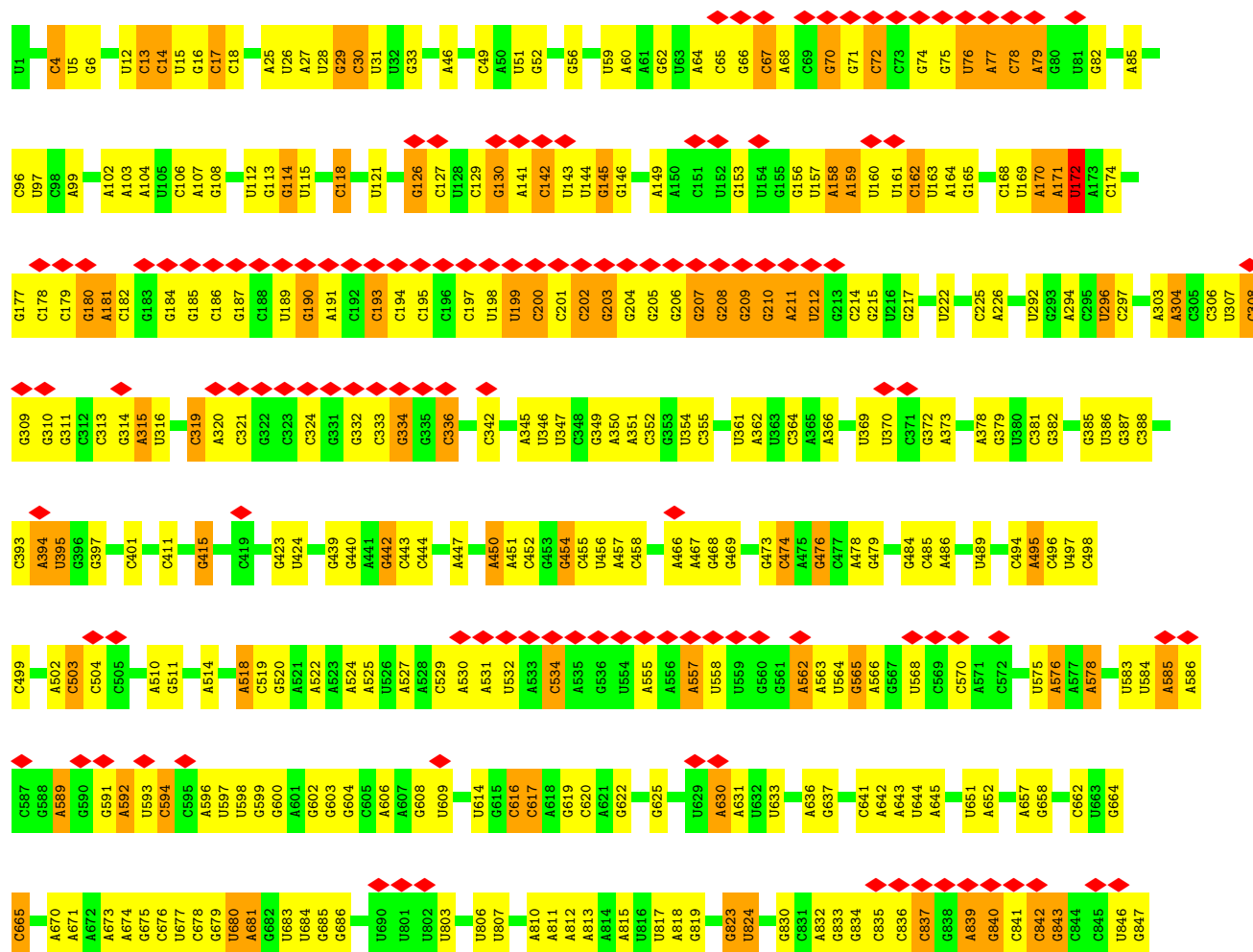
- Molecule 68: Large ribosomal subunit protein eL43



- Molecule 69: Large ribosomal subunit protein eL28

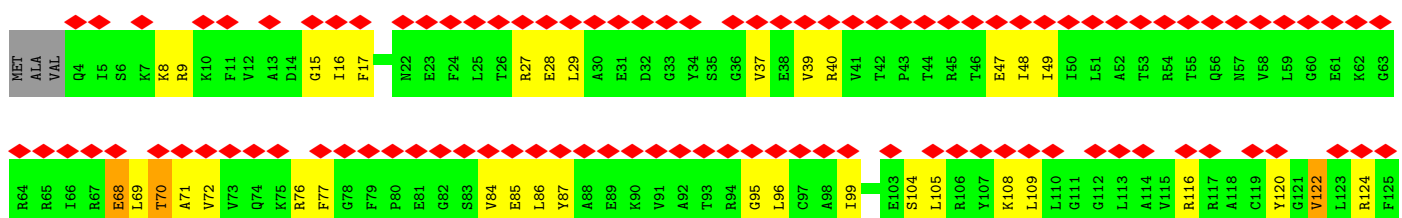


- Molecule 70: 18S ribosomal RNA



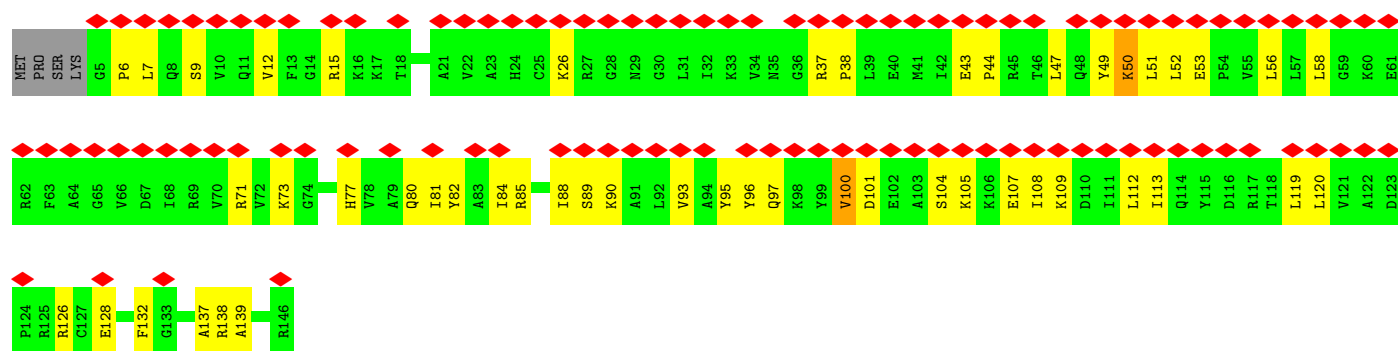
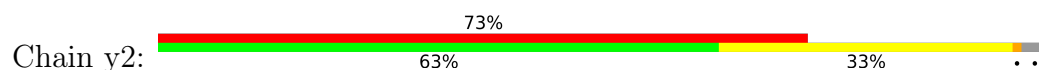


Chain o2: 41% 51% 20% 27%

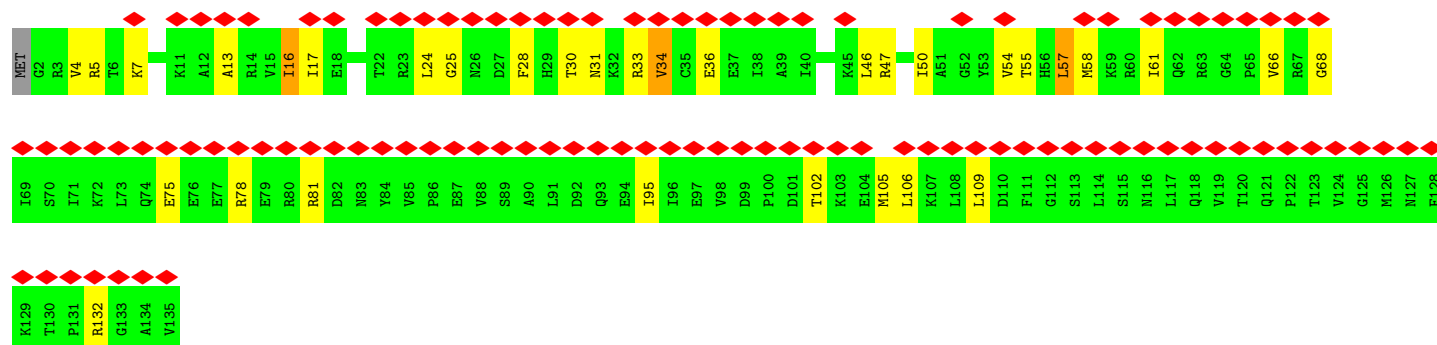
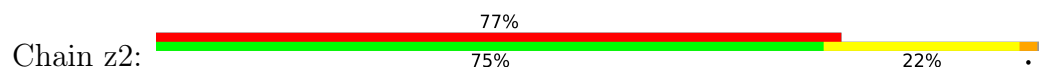




- Molecule 81: Small ribosomal subunit protein uS9



- Molecule 82: Small ribosomal subunit protein eS17



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	157881	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	45	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2900	Depositor
Magnification	100000	Depositor
Image detector	GATAN K2 QUANTUM (4k x 4k)	Depositor
Maximum map value	0.178	Depositor
Minimum map value	-0.077	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.0285	Depositor
Map size (Å)	315.12, 315.12, 315.12	wwPDB
Map dimensions	312, 312, 312	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.01, 1.01, 1.01	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.26	0/1877	0.35	0/2502
2	A2	0.25	0/84889	0.31	1/132400 (0.0%)
3	A3	0.19	0/1175	0.49	0/1575
4	B1	0.22	0/1847	0.40	0/2486
5	B2	0.22	0/2836	0.26	0/4421
6	B3	0.18	0/1122	0.39	0/1503
7	Bv	0.14	0/1813	0.31	0/2823
7	n2	0.14	0/1813	0.31	0/2823
8	Bx	0.14	0/219	0.31	0/336
9	C1	0.22	0/1537	0.36	0/2065
10	C2	0.24	0/3675	0.30	0/5725
11	C3	0.18	0/805	0.42	0/1081
12	D1	0.22	0/1694	0.35	0/2261
13	D2	0.27	0/1959	0.39	0/2627
14	D3	0.18	0/645	0.43	0/863
15	E1	0.21	0/1420	0.47	0/1899
16	E2	0.24	0/3305	0.40	0/4422
17	E3	0.23	0/1097	0.42	0/1464
18	F1	0.26	0/1674	0.48	1/2241 (0.0%)
19	F2	0.24	0/2921	0.37	0/3921
20	F3	0.23	0/805	0.46	0/1079
21	G1	0.22	0/1165	0.39	0/1558
22	G2	0.21	0/2435	0.36	0/3260
23	G3	0.18	0/490	0.46	0/656
24	H1	0.27	0/1746	0.36	0/2338
25	H2	0.19	0/1822	0.37	0/2443
26	H3	0.20	0/466	0.52	0/618
27	I2	0.25	0/1670	0.38	0/2232
28	I3	0.17	0/2493	0.44	0/3394
29	J2	0.26	0/1268	0.42	0/1700
30	J3	0.21	0/1737	0.46	0/2348
31	K2	0.25	0/1535	0.37	0/2048

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	K3	0.19	0/1863	0.44	0/2481
33	L1	0.16	0/1318	0.44	0/1767
34	L2	0.21	0/1515	0.34	0/2002
35	L3	0.20	0/1542	0.41	0/2058
36	M2	0.25	0/1490	0.39	0/2000
37	M3	0.15	0/962	0.34	0/1289
38	N2	0.25	0/1327	0.37	0/1771
39	N3	0.19	0/1232	0.37	0/1656
40	O2	0.18	0/839	0.39	0/1126
41	O3	0.24	0/1015	0.45	0/1361
42	P2	0.26	0/983	0.47	1/1319 (0.1%)
43	P3	0.22	0/1051	0.42	0/1406
44	Q2	0.23	0/532	0.34	0/708
45	Q3	0.22	0/1019	0.53	0/1354
46	R2	0.22	0/984	0.39	0/1323
47	R3	0.18	0/691	0.46	0/922
48	S2	0.21	0/1132	0.33	0/1504
49	S3	0.22	0/665	0.54	0/891
50	T2	0.23	0/1130	0.39	0/1507
51	T3	0.21	0/443	0.35	0/582
52	U2	0.26	0/1193	0.36	0/1593
53	U3	0.24	0/424	0.67	0/566
54	V2	0.21	0/963	0.34	0/1275
55	W2	0.23	0/742	0.43	0/996
56	X2	0.24	0/903	0.36	0/1216
57	Y2	0.26	0/1071	0.37	0/1429
58	Z2	0.26	0/895	0.36	0/1198
59	a2	0.25	0/916	0.36	0/1221
60	b2	0.19	0/1009	0.34	0/1332
61	c2	0.18	0/843	0.31	0/1115
62	d2	0.27	0/720	0.46	0/952
63	e2	0.20	0/574	0.36	0/760
64	f2	0.24	0/454	0.33	0/599
65	g2	0.22	0/435	0.44	0/575
66	h2	0.24	0/231	0.33	0/294
67	i2	0.24	0/855	0.38	0/1128
68	j2	0.27	0/704	0.48	0/935
69	k2	0.23	0/1016	0.39	0/1363
70	m2	0.22	0/38207	0.30	0/59540
71	o2	0.19	0/1731	0.43	0/2352
72	p2	0.25	0/1749	0.54	0/2340
73	q2	0.22	0/1739	0.52	1/2342 (0.0%)
74	r2	0.22	0/2118	0.53	0/2849

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	s2	0.18	0/1477	0.40	0/1983
76	t2	0.19	0/1299	0.45	0/1767
77	u2	0.21	0/1662	0.45	0/2228
78	v2	0.20	0/824	0.46	0/1112
79	w2	0.28	0/1241	0.58	3/1662 (0.2%)
80	x2	0.18	0/977	0.47	0/1305
81	y2	0.23	0/1146	0.51	0/1534
82	z2	0.18	0/1094	0.46	0/1469
All	All	0.23	0/226900	0.35	7/333169 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
42	P2	92	ASP	N-CA-C	-6.42	103.46	113.02
18	F1	115	GLN	CB-CG-CD	6.41	123.49	112.60
73	q2	68	GLU	CA-CB-CG	6.39	126.87	114.10
79	w2	32	LYS	CA-C-N	6.38	129.22	120.67
79	w2	32	LYS	C-N-CA	6.38	129.22	120.67
79	w2	84	ARG	CB-CA-C	-5.64	102.16	111.36
2	A2	1376	A	OP1-P-OP2	-5.00	104.60	119.60

There are no chirality outliers.

There are no planarity outliers.

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	46	0
2	A2	77547	0	39263	852	0
3	A3	1157	0	1213	42	0
4	B1	1812	0	1947	44	0
5	B2	2538	0	1286	30	0
6	B3	1104	0	1139	38	0
7	Bv	1623	0	821	11	0

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Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	n2	1623	0	821	29	0
8	Bx	200	0	101	1	0
9	C1	1519	0	1603	24	0
10	C2	3315	0	1685	39	0
11	C3	795	0	862	25	0
12	D1	1656	0	1706	24	0
13	D2	1921	0	2022	35	0
14	D3	638	0	635	10	0
15	E1	1397	0	1425	39	0
16	E2	3238	0	3380	50	0
17	E3	1080	0	1147	21	0
18	F1	1643	0	1750	23	0
19	F2	2867	0	3040	51	0
20	F3	789	0	841	23	0
21	G1	1143	0	1219	17	0
22	G2	2389	0	2420	37	0
23	G3	488	0	514	13	0
24	H1	1701	0	1749	28	0
25	H2	1789	0	1932	40	0
26	H3	455	0	445	16	0
27	I2	1640	0	1792	33	0
28	I3	2436	0	2393	81	0
29	J2	1242	0	1274	20	0
30	J3	1700	0	1786	32	0
31	K2	1511	0	1636	21	0
32	K3	1840	0	1989	63	0
33	L1	1300	0	1375	41	0
34	L2	1499	0	1651	25	0
35	L3	1518	0	1632	47	0
36	M2	1450	0	1488	19	0
37	M3	952	0	993	30	0
38	N2	1299	0	1368	29	0
39	N3	1208	0	1294	24	0
40	O2	825	0	850	20	0
41	O3	1002	0	1023	45	0
42	P2	969	0	1031	12	0
43	P3	1034	0	1080	24	0
44	Q2	519	0	533	5	0
45	Q3	1002	0	1075	34	0
46	R2	967	0	1040	18	0
47	R3	683	0	761	25	0
48	S2	1115	0	1205	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
49	S3	651	0	672	17	0
50	T2	1107	0	1182	21	0
51	T3	438	0	484	9	0
52	U2	1164	0	1213	14	0
53	U3	415	0	393	15	0
54	V2	945	0	1037	17	0
55	W2	732	0	769	13	0
56	X2	888	0	930	10	0
57	Y2	1053	0	1147	16	0
58	Z2	876	0	912	14	0
59	a2	906	0	997	13	0
60	b2	1001	0	1138	15	0
61	c2	832	0	917	7	0
62	d2	705	0	737	12	0
63	e2	568	0	635	13	0
64	f2	444	0	483	4	0
65	g2	429	0	465	4	0
66	h2	230	0	276	7	0
67	i2	842	0	912	11	0
68	j2	694	0	738	13	0
69	k2	1001	0	1066	16	0
70	m2	34879	0	17619	492	0
71	o2	1694	0	1696	44	0
72	p2	1722	0	1794	57	0
73	q2	1711	0	1805	59	0
74	r2	2076	0	2177	61	0
75	s2	1457	0	1508	38	0
76	t2	1278	0	1207	21	0
77	u2	1633	0	1666	40	0
78	v2	800	0	818	37	0
79	w2	1220	0	1289	36	0
80	x2	959	0	1004	30	0
81	y2	1128	0	1195	44	0
82	z2	1080	0	1135	20	0
83	A2	82	0	0	0	0
83	Bv	2	0	0	0	0
83	H1	1	0	0	0	0
83	J2	1	0	0	0	0
83	P2	1	0	0	0	0
83	d2	1	0	0	0	0
83	m2	34	0	0	0	0
84	A2	65	0	16	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
84	Bv	5	0	1	0	0
84	F2	15	0	3	0	0
84	J2	5	0	2	0	0
84	f2	20	0	8	0	0
85	F3	1	0	0	0	0
85	H3	1	0	0	0	0
85	d2	1	0	0	0	0
85	g2	1	0	0	0	0
85	i2	1	0	0	0	0
85	j2	1	0	0	0	0
86	B1	1	0	0	0	0
All	All	213778	0	158256	3073	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

All (3073) 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:A2:1374:G:N2	2:A2:1379:C:O2	1.95	1.00
70:m2:1290:U:H3	70:m2:1313:C:H42	1.10	0.99
2:A2:740:A:H62	2:A2:828:G:H21	0.97	0.94
70:m2:1409:U:H5''	81:y2:71:ARG:HH12	1.31	0.93
2:A2:1754:G:H4'	36:M2:93:MET:HG2	1.51	0.92
23:G3:51:ARG:HH21	75:s2:61:PHE:HB3	1.36	0.91
70:m2:70:G:H21	70:m2:79:A:H62	1.19	0.91
19:F2:76:ILE:HD12	19:F2:77:PRO:HD2	1.51	0.91
2:A2:740:A:H62	2:A2:828:G:N2	1.70	0.88
70:m2:564:U:H3	70:m2:589:A:H2	1.21	0.88
20:F3:45:VAL:HA	41:O3:113:GLN:HE22	1.39	0.87
2:A2:928:G:H1	2:A2:1064:G:H22	1.23	0.86
70:m2:534:C:H42	70:m2:555:A:H61	1.25	0.84
2:A2:4707:A:H4'	2:A2:4708:G:H5''	1.60	0.84
2:A2:1116:U:H4'	57:Y2:18:LYS:HA	1.61	0.83
30:J3:142:LYS:HD3	30:J3:153:GLY:HA3	1.60	0.83
10:C2:121:G:N2	10:C2:129:C:O2	2.11	0.82
32:K3:14:LYS:HB3	32:K3:124:LEU:HD23	1.61	0.82
33:L1:15:ARG:HE	33:L1:18:LEU:HD21	1.45	0.82
43:P3:42:MET:HE1	43:P3:49:GLU:HA	1.61	0.82
73:q2:70:THR:HG23	73:q2:86:LEU:HG	1.61	0.82
2:A2:3593:C:H1'	24:H1:125:SER:HB3	1.62	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B3:7:LYS:HD2	81:y2:37:ARG:HD3	1.62	0.81
70:m2:153:G:H22	70:m2:165:G:H1	1.28	0.81
70:m2:1571:A:H8	70:m2:1615:G:H21	1.24	0.81
74:r2:11:ARG:HH12	74:r2:20:LEU:HD22	1.43	0.81
2:A2:740:A:N6	2:A2:828:G:H21	1.76	0.80
79:w2:27:GLU:HG2	79:w2:29:GLY:H	1.46	0.80
2:A2:3348:A:H62	2:A2:3479:G:H21	1.29	0.80
32:K3:190:ARG:HH12	70:m2:336:C:H41	1.30	0.80
9:C1:44:GLU:HG2	9:C1:58:ASP:HB2	1.63	0.79
73:q2:71:ALA:HB2	78:v2:96:ARG:HH22	1.47	0.79
15:E1:24:ILE:HD11	15:E1:40:LEU:HD21	1.66	0.78
4:B1:138:ALA:HB2	4:B1:194:VAL:HG11	1.66	0.78
11:C3:55:ARG:HG2	11:C3:87:ARG:HE	1.49	0.78
2:A2:492:G:H22	2:A2:670:G:H1	1.32	0.77
2:A2:4263:A:H2	9:C1:120:GLU:HB3	1.47	0.77
55:W2:38:ILE:HG21	55:W2:63:TYR:HB3	1.67	0.77
70:m2:193:C:H5	77:u2:141:ARG:HH12	1.32	0.77
2:A2:1259:C:H42	2:A2:1901:A:H61	1.31	0.77
6:B3:124:THR:HG23	6:B3:127:GLY:H	1.49	0.77
3:A3:12:ILE:HD11	3:A3:19:ASN:HB3	1.65	0.77
33:L1:98:LYS:HA	33:L1:101:LYS:HE3	1.67	0.76
70:m2:876:G:H2'	70:m2:877:A:H8	1.50	0.76
4:B1:205:THR:HG22	4:B1:206:GLN:HG2	1.66	0.76
70:m2:70:G:N2	70:m2:79:A:H62	1.84	0.76
77:u2:48:VAL:HG11	77:u2:54:LYS:HE2	1.68	0.76
2:A2:2312:G:H1	2:A2:2325:U:H3	1.33	0.76
70:m2:1290:U:H3	70:m2:1313:C:N4	1.84	0.76
2:A2:4421:G:H5'	27:I2:176:ARG:HD3	1.68	0.75
42:P2:13:LYS:HD3	42:P2:128:LEU:HD11	1.66	0.75
70:m2:1742:C:H5''	77:u2:58:LEU:HD21	1.68	0.75
73:q2:76:ARG:HB2	78:v2:22:VAL:HG11	1.67	0.75
3:A3:34:LYS:HB2	3:A3:100:ALA:HA	1.66	0.75
33:L1:35:GLN:HE21	33:L1:206:ILE:HG13	1.52	0.74
2:A2:3621:A:H2'	2:A2:3698:A:H2'	1.68	0.74
80:x2:98:ASN:HD22	80:x2:120:SER:HB3	1.50	0.74
2:A2:1354:U:H3	2:A2:1431:G:H1	1.31	0.74
2:A2:4504:C:H4'	27:I2:169:ARG:HH11	1.52	0.74
31:K2:35:LEU:O	31:K2:39:THR:HB	1.86	0.74
28:I3:236:ILE:HD11	28:I3:250:ALA:HB1	1.69	0.74
2:A2:262:G:H2'	2:A2:263:G:C8	2.23	0.73
70:m2:385:G:H21	79:w2:133:PRO:HG2	1.53	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:p2:144:LYS:HD2	72:p2:208:HIS:HB3	1.71	0.73
72:p2:149:GLN:HE22	72:p2:154:SER:HB3	1.53	0.73
28:I3:40:ILE:HD11	28:I3:66:VAL:HG11	1.71	0.73
74:r2:158:ASP:OD2	74:r2:174:LYS:HA	1.88	0.73
73:q2:39:VAL:HG22	73:q2:48:ILE:HG23	1.71	0.73
43:P3:102:ILE:HD11	43:P3:125:ILE:HD11	1.70	0.72
72:p2:229:MET:HA	72:p2:232:HIS:HD2	1.54	0.72
28:I3:272:GLN:H	28:I3:272:GLN:CD	1.97	0.72
71:o2:108:PHE:HB2	71:o2:136:GLU:HG2	1.70	0.72
72:p2:28:LYS:HD2	72:p2:48:LEU:HD12	1.70	0.72
79:w2:22:ARG:HD3	79:w2:23:VAL:H	1.54	0.72
25:H2:268:ILE:HG23	25:H2:274:LEU:HD23	1.71	0.72
75:s2:35:LEU:HD11	75:s2:146:ARG:HD3	1.70	0.72
2:A2:3411:G:H1	2:A2:3424:U:H3	1.35	0.72
32:K3:45:TRP:HD1	32:K3:48:TYR:HD1	1.38	0.72
7:n2:35:A:H2'	7:n2:36:A:H8	1.52	0.72
2:A2:3884:U:H5'	67:i2:3:ASN:HB3	1.72	0.72
79:w2:4:ILE:H	79:w2:4:ILE:HD12	1.54	0.72
2:A2:1007:A:H2	2:A2:1017:G:H1	1.38	0.72
2:A2:4563:C:H2'	2:A2:4564:G:H8	1.55	0.71
33:L1:196:LYS:HB3	33:L1:199:GLN:HB2	1.71	0.71
3:A3:86:ARG:HE	3:A3:106:LYS:HG2	1.55	0.71
7:Bv:20:U:H2'	7:Bv:21:A:H4'	1.73	0.71
51:T3:51:LYS:HB3	51:T3:53:LYS:HE2	1.71	0.71
56:X2:57:MET:HE3	56:X2:90:ARG:HB2	1.71	0.71
6:B3:104:LEU:HD13	6:B3:121:ARG:HD2	1.73	0.71
56:X2:64:ILE:HG23	56:X2:68:LEU:HD23	1.72	0.71
70:m2:930:G:H1	70:m2:1015:U:H3	1.39	0.71
71:o2:66:VAL:HG23	71:o2:186:ARG:HG2	1.73	0.71
72:p2:52:THR:HG22	72:p2:58:ALA:H	1.55	0.70
77:u2:178:ARG:HH21	77:u2:181:GLN:HG3	1.56	0.70
9:C1:187:VAL:HG12	9:C1:188:GLN:HG3	1.73	0.70
70:m2:70:G:H21	70:m2:79:A:N6	1.90	0.70
71:o2:206:ASP:HB2	71:o2:209:GLU:HG2	1.72	0.70
70:m2:853:C:H5''	70:m2:854:G:H5'	1.73	0.70
73:q2:163:PRO:O	73:q2:167:TYR:HB2	1.91	0.70
34:L2:104:ARG:O	34:L2:108:ARG:HG2	1.91	0.70
42:P2:99:GLU:HB3	44:Q2:24:THR:HG23	1.73	0.70
25:H2:125:THR:HG22	25:H2:126:GLU:HG2	1.74	0.70
74:r2:123:LEU:HD22	74:r2:236:ILE:HD11	1.74	0.70
43:P3:107:SER:HB2	70:m2:862:G:H21	1.57	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:y2:109:LYS:HG2	81:y2:120:LEU:HD21	1.73	0.69
2:A2:4506:G:H2'	2:A2:4507:G:H8	1.56	0.69
30:J3:194:ARG:HD3	30:J3:196:ILE:HD11	1.74	0.69
71:o2:94:THR:HG23	71:o2:96:ALA:H	1.56	0.69
2:A2:768:G:H2'	2:A2:769:G:C8	2.28	0.69
43:P3:25:VAL:HG23	43:P3:65:LEU:HD21	1.72	0.69
70:m2:680:U:H2'	70:m2:681:A:H8	1.57	0.69
37:M3:50:CYS:HB2	37:M3:110:VAL:HG13	1.72	0.69
81:y2:80:GLN:O	81:y2:84:ILE:HG12	1.92	0.69
2:A2:1116:U:H5'	57:Y2:17:THR:HG22	1.73	0.69
2:A2:4023:G:H5'	7:n2:76:A:H62	1.55	0.69
70:m2:1622:A:H8	80:x2:40:ARG:NH2	1.91	0.69
70:m2:1219:A:H2'	70:m2:1220:C:H6	1.57	0.69
81:y2:43:GLU:HB3	81:y2:44:PRO:HD3	1.75	0.69
80:x2:98:ASN:HD21	80:x2:121:ILE:C	2.00	0.69
2:A2:2366:A:H5'	2:A2:2443:G:H4'	1.73	0.69
55:W2:30:GLY:O	55:W2:34:THR:HG23	1.93	0.69
81:y2:12:VAL:HG11	81:y2:90:LYS:HB3	1.73	0.69
2:A2:1894:G:H4'	2:A2:1895:G:H4'	1.74	0.68
4:B1:190:LEU:HB3	4:B1:199:CYS:HB3	1.75	0.68
60:b2:99:GLU:HA	60:b2:102:LEU:HG	1.74	0.68
70:m2:1205:G:H2'	70:m2:1206:A:C8	2.29	0.68
32:K3:7:PHE:HD1	32:K3:113:ILE:HB	1.59	0.68
16:E2:90:VAL:HG13	16:E2:104:THR:HG22	1.75	0.68
2:A2:4638:G:H2'	2:A2:4639:G:C8	2.28	0.68
49:S3:70:LYS:HG3	70:m2:1108:C:H5''	1.76	0.68
82:z2:46:LEU:O	82:z2:50:ILE:HG13	1.93	0.68
6:B3:96:SER:HB3	6:B3:99:VAL:HG22	1.75	0.68
79:w2:68:ILE:HG13	79:w2:143:LEU:HD21	1.76	0.68
2:A2:1006:G:H1	2:A2:1018:U:H3	1.40	0.68
20:F3:46:GLU:H	41:O3:113:GLN:NE2	1.92	0.68
70:m2:1409:U:H4'	81:y2:71:ARG:HH22	1.59	0.68
71:o2:85:ARG:HH12	71:o2:205:ARG:HD3	1.59	0.68
79:w2:33:LEU:HD12	79:w2:34:PRO:HD2	1.76	0.68
45:Q3:13:MET:HE1	74:r2:53:LYS:HB2	1.75	0.68
2:A2:3954:U:H4'	38:N2:5:LYS:HD3	1.75	0.67
33:L1:58:THR:HG23	33:L1:153:SER:HB3	1.76	0.67
36:M2:13:VAL:HG22	36:M2:29:ARG:HB2	1.76	0.67
73:q2:146:ARG:HB2	73:q2:148:LYS:HZ2	1.59	0.67
45:Q3:83:LYS:HE2	45:Q3:96:LEU:HD22	1.75	0.67
23:G3:59:LEU:HD21	75:s2:122:ARG:HD2	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1011:U:H3'	2:A2:1012:C:H5''	1.75	0.67
12:D1:102:MET:HE2	12:D1:102:MET:H	1.59	0.67
70:m2:1230:A:H2'	70:m2:1231:G:C8	2.30	0.67
36:M2:80:ILE:HD13	36:M2:129:VAL:HG22	1.77	0.67
70:m2:1279:C:H2'	70:m2:1280:A:H8	1.60	0.67
70:m2:369:U:H4'	70:m2:373:A:C8	2.30	0.67
70:m2:1409:U:H2'	70:m2:1410:U:C6	2.30	0.67
2:A2:928:G:H1	2:A2:1064:G:N2	1.93	0.67
81:y2:97:GLN:HB2	81:y2:105:LYS:HD2	1.77	0.67
70:m2:1230:A:H2'	70:m2:1231:G:H8	1.59	0.66
28:I3:88:ARG:HH11	28:I3:97:THR:HG21	1.59	0.66
40:O2:56:LEU:HD12	40:O2:61:VAL:HG13	1.76	0.66
25:H2:265:LEU:HB3	25:H2:269:LYS:HZ2	1.60	0.66
70:m2:1012:G:H2'	70:m2:1013:A:H8	1.60	0.66
2:A2:2166:C:H2'	2:A2:2167:A:H8	1.59	0.66
13:D2:247:ARG:HG2	70:m2:1071:U:H4'	1.77	0.66
35:L3:12:THR:HG23	70:m2:522:A:H5''	1.76	0.66
70:m2:1375:C:OP1	82:z2:7:LYS:HD3	1.95	0.66
82:z2:28:PHE:HA	82:z2:55:THR:HG21	1.76	0.66
73:q2:49:ILE:HG22	73:q2:87:TYR:HB2	1.76	0.66
39:N3:151:ALA:HB1	55:W2:19:GLN:HB2	1.76	0.66
2:A2:3412:A:H61	2:A2:3423:C:H42	1.43	0.66
19:F2:212:ASN:HD21	19:F2:259:LYS:HD3	1.61	0.66
20:F3:2:THR:HG23	70:m2:1201:A:H5''	1.76	0.66
52:U2:3:SER:HA	52:U2:6:ARG:HD2	1.77	0.66
70:m2:457:A:H2'	70:m2:458:C:H6	1.61	0.66
76:t2:154:ILE:HB	76:t2:185:VAL:HG22	1.78	0.66
26:H3:50:ILE:HG23	73:q2:15:GLY:HA3	1.78	0.66
35:L3:60:LEU:HD12	35:L3:70:ARG:HA	1.78	0.65
2:A2:927:C:H2'	2:A2:928:G:C8	2.32	0.65
6:B3:129:ARG:HE	70:m2:1417:C:H5'	1.62	0.65
11:C3:43:ALA:HB1	11:C3:50:VAL:HG21	1.78	0.65
13:D2:28:ARG:HB2	13:D2:123:ARG:HB3	1.78	0.65
45:Q3:44:LEU:HD13	45:Q3:55:ILE:HD11	1.79	0.65
70:m2:1538:G:H2'	70:m2:1539:A:H8	1.61	0.65
9:C1:94:SER:HB2	9:C1:142:ASP:HB2	1.78	0.65
37:M3:69:LEU:HD22	37:M3:76:LEU:HG	1.79	0.65
72:p2:229:MET:HA	72:p2:232:HIS:CD2	2.31	0.65
28:I3:39:THR:HG22	28:I3:60:ARG:HG2	1.78	0.65
2:A2:4394:G:H2'	2:A2:4395:G:O4'	1.97	0.65
15:E1:136:ARG:HE	15:E1:157:ILE:HG22	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:E3:48:LYS:HG3	70:m2:485:C:H5''	1.79	0.65
74:r2:118:GLU:HG3	74:r2:121:TYR:HE1	1.62	0.65
81:y2:104:SER:O	81:y2:108:ILE:HG12	1.96	0.65
41:O3:102:GLY:H	41:O3:134:PRO:HB2	1.62	0.64
47:R3:68:ILE:HB	47:R3:109:TYR:HB2	1.79	0.64
2:A2:1894:G:H2'	2:A2:2017:G:C6	2.31	0.64
2:A2:3926:A:H2'	2:A2:3927:G:H8	1.63	0.64
81:y2:47:LEU:HD22	81:y2:81:ILE:HG13	1.79	0.64
39:N3:55:ARG:HD3	70:m2:1019:U:H5'	1.77	0.64
78:v2:41:PRO:O	78:v2:45:VAL:HG23	1.97	0.64
22:G2:207:TYR:HE2	22:G2:222:GLN:HE21	1.46	0.64
78:v2:41:PRO:HG2	78:v2:44:HIS:CE1	2.33	0.64
34:L2:99:MET:HA	34:L2:99:MET:HE3	1.79	0.64
45:Q3:89:HIS:CD2	45:Q3:90:ARG:HG2	2.33	0.64
80:x2:50:ARG:H	80:x2:53:GLN:NE2	1.96	0.64
11:C3:80:PHE:HB3	26:H3:52:PHE:HB3	1.78	0.64
38:N2:107:LYS:O	38:N2:111:GLU:HG2	1.97	0.64
40:O2:46:ARG:HH21	40:O2:89:LYS:HE3	1.61	0.64
1:A1:157:ILE:HD11	2:A2:1528:U:H5'	1.80	0.64
2:A2:3379:A:H2'	2:A2:3380:A2M:H8	1.80	0.64
3:A3:111:LEU:O	3:A3:115:LYS:HG3	1.97	0.64
41:O3:60:MET:HE3	70:m2:957:A:H5''	1.80	0.64
55:W2:57:LYS:O	55:W2:61:GLU:HG3	1.98	0.64
19:F2:335:MET:O	19:F2:339:THR:HG23	1.98	0.64
28:I3:83:TRP:HA	28:I3:107:ASP:HB2	1.80	0.64
2:A2:2279:U:H3	2:A2:2284:A:H2	1.45	0.64
50:T2:99:ASP:HB3	50:T2:102:ARG:HH21	1.63	0.63
7:n2:51:U:H3	7:n2:63:G:H1	1.44	0.63
70:m2:1538:G:H2'	70:m2:1539:A:C8	2.33	0.63
71:o2:118:GLU:HG2	71:o2:118:GLU:O	1.97	0.63
71:o2:38:ILE:HD13	71:o2:47:TYR:HB3	1.79	0.63
11:C3:40:ILE:HG22	11:C3:44:LYS:HE2	1.81	0.63
13:D2:28:ARG:HD2	13:D2:123:ARG:HD3	1.80	0.63
39:N3:89:TYR:HE1	39:N3:151:ALA:H	1.47	0.63
70:m2:145:G:H1	70:m2:174:OMC:H5	1.45	0.63
70:m2:382:G:H1'	77:u2:5:ARG:HD3	1.80	0.63
25:H2:54:ASN:HB2	25:H2:69:MET:HE2	1.80	0.63
2:A2:4600:G:H2'	2:A2:4601:A:C8	2.34	0.63
20:F3:85[A]:ARG:H	70:m2:1868:A:H61	1.46	0.63
20:F3:85[B]:ARG:H	70:m2:1868:A:H61	1.46	0.63
43:P3:26:LEU:HB2	49:S3:7:LEU:HD23	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:q2:122:VAL:O	73:q2:126:ILE:HG13	1.99	0.63
23:G3:51:ARG:HG2	23:G3:52:GLU:H	1.64	0.63
37:M3:35:ILE:HD12	53:U3:102:VAL:HG11	1.78	0.63
73:q2:76:ARG:HG3	73:q2:77:PHE:HD1	1.64	0.63
2:A2:3926:A:H2'	2:A2:3927:G:C8	2.32	0.63
30:J3:64:THR:HG23	30:J3:67:GLY:H	1.64	0.63
2:A2:4637:U:H2'	2:A2:4638:G:H8	1.64	0.62
77:u2:57:ALA:HB2	77:u2:183:GLY:HA2	1.81	0.62
82:z2:13:ALA:O	82:z2:17:ILE:HG12	1.99	0.62
32:K3:185:LEU:HB3	32:K3:189:ARG:HH21	1.64	0.62
63:e2:23:VAL:HG13	63:e2:64:LEU:HD22	1.79	0.62
71:o2:7:VAL:HG12	71:o2:191:ARG:HE	1.62	0.62
74:r2:137:PRO:HB2	74:r2:150:PRO:HD2	1.81	0.62
80:x2:98:ASN:ND2	80:x2:120:SER:HB3	2.14	0.62
82:z2:66:VAL:HG23	82:z2:68:GLY:H	1.64	0.62
13:D2:80:GLU:HB3	13:D2:170:ALA:HA	1.81	0.62
15:E1:64:ARG:HG2	15:E1:65:ASN:OD1	1.99	0.62
63:e2:60:LEU:HD23	63:e2:61:PRO:HD2	1.79	0.62
28:I3:121:VAL:HG22	28:I3:131:LEU:HD13	1.80	0.62
70:m2:153:G:N2	70:m2:165:G:H22	1.97	0.62
71:o2:54:THR:HG22	71:o2:162:PRO:HG2	1.81	0.62
72:p2:89:GLU:HB3	72:p2:223:PHE:HE1	1.64	0.62
72:p2:164:ILE:HG23	72:p2:201:CYS:SG	2.38	0.62
2:A2:3716:U:H2'	2:A2:3717:U:C6	2.35	0.62
47:R3:72:VAL:O	47:R3:76:ARG:HG2	1.99	0.62
2:A2:3325:G:H21	2:A2:3328:G:N2	1.97	0.62
16:E2:107:ALA:HB1	16:E2:202:GLU:HG3	1.82	0.62
1:A1:178:LYS:HG3	19:F2:317:ASN:HD21	1.64	0.62
2:A2:2302:G:H1	2:A2:2527:C:H5	1.46	0.62
32:K3:190:ARG:HH12	70:m2:336:C:N4	1.95	0.62
73:q2:124:ARG:O	73:q2:128:GLU:HG2	2.00	0.62
2:A2:1561:G:H1	2:A2:1575:U:H3	1.47	0.62
28:I3:212:LYS:HA	28:I3:235:ILE:HG13	1.82	0.62
69:k2:47:LYS:HB2	69:k2:102:TYR:CZ	2.35	0.62
70:m2:141:A:H62	70:m2:179:C:H1'	1.65	0.62
70:m2:983:A:H2'	70:m2:984:G:C8	2.35	0.62
70:m2:1019:U:H2'	70:m2:1020:U:H6	1.63	0.62
28:I3:113:PHE:HA	28:I3:120:ILE:HD13	1.81	0.62
31:K2:39:THR:HG22	31:K2:41:SER:H	1.65	0.62
41:O3:66:ARG:HH21	70:m2:964:A:H4'	1.65	0.62
70:m2:859:U:H2'	70:m2:860:A:C8	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4526:U:H4'	2:A2:4527:U:H5	1.65	0.61
2:A2:4563:C:H2'	2:A2:4564:G:C8	2.33	0.61
16:E2:56:ILE:HG22	16:E2:368:ILE:HA	1.82	0.61
27:I2:27:VAL:HG13	27:I2:98:ALA:HB1	1.82	0.61
35:L3:137:VAL:HG12	35:L3:138:ARG:HG3	1.81	0.61
74:r2:44:LEU:HD11	74:r2:72:ILE:HD11	1.82	0.61
2:A2:1273:C:H5''	31:K2:144:LYS:HG3	1.82	0.61
2:A2:2500:A:H2'	2:A2:2501:A:H8	1.65	0.61
39:N3:133:ARG:HH12	79:w2:150:GLY:HA2	1.65	0.61
76:t2:69:LEU:HD22	76:t2:96:ALA:HB2	1.81	0.61
33:L1:68:LEU:HB2	33:L1:85:MET:HE3	1.80	0.61
70:m2:457:A:H2'	70:m2:458:C:C6	2.35	0.61
2:A2:174:C:H2'	2:A2:175:C:C6	2.35	0.61
18:F1:63:THR:HG23	18:F1:65:ARG:H	1.66	0.61
32:K3:121:ILE:HD11	32:K3:124:LEU:HG	1.82	0.61
37:M3:62:VAL:O	37:M3:66:GLU:HG3	1.98	0.61
78:v2:41:PRO:HG2	78:v2:44:HIS:ND1	2.16	0.61
2:A2:3524:G:H22	2:A2:3556:G:H1'	1.66	0.61
16:E2:217:ILE:HD12	16:E2:347:LEU:HB3	1.83	0.61
70:m2:529:C:H2'	70:m2:530:A:H8	1.65	0.61
9:C1:161:ILE:HD11	9:C1:179:ILE:HG21	1.81	0.61
35:L3:169:ARG:HD2	35:L3:170:PRO:HD2	1.81	0.61
2:A2:938:U:H3	2:A2:1049:C:H42	1.49	0.61
37:M3:129:LYS:HD3	37:M3:132:LYS:HE2	1.83	0.61
71:o2:167:GLY:O	71:o2:171:VAL:HG23	2.01	0.61
72:p2:109:LYS:O	72:p2:113:MET:HG3	2.00	0.61
2:A2:1316:A:H4'	2:A2:1317:G:H5'	1.83	0.61
2:A2:3565:C:H5	2:A2:4048:A:H61	1.46	0.61
2:A2:3912:U:H2'	2:A2:3913:C:C6	2.36	0.61
17:E3:93:PHE:HD2	17:E3:133:LEU:HB3	1.65	0.61
28:I3:59:LEU:HD23	28:I3:90:TRP:CD2	2.36	0.61
70:m2:1219:A:H2'	70:m2:1220:C:C6	2.36	0.61
80:x2:62:LYS:O	80:x2:66:GLU:HG3	2.01	0.61
2:A2:129:C:H2'	2:A2:130:G:H8	1.65	0.61
2:A2:1377:A:H2'	2:A2:1378:A:O4'	2.01	0.61
3:A3:14:ARG:NH1	15:E1:111:GLU:HG3	2.16	0.61
32:K3:32:MET:HB2	32:K3:100:CYS:HB2	1.83	0.61
41:O3:134:PRO:HB3	70:m2:946:A:H5''	1.81	0.61
71:o2:11:LYS:O	71:o2:15:VAL:HG12	2.00	0.61
75:s2:173:LEU:O	75:s2:177:LEU:HG	2.01	0.61
2:A2:3602:G:H1	2:A2:3717:U:H3	1.47	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3713:U:H2'	2:A2:3715:G:C8	2.36	0.60
28:I3:175:LYS:HD3	28:I3:184:LEU:HD21	1.83	0.60
2:A2:3891:A:H2'	2:A2:3892:G:C8	2.36	0.60
2:A2:4244:C:H42	2:A2:4270:A2M:H62	1.49	0.60
12:D1:87:ILE:HG12	12:D1:138:ILE:HG12	1.83	0.60
38:N2:106:LEU:O	38:N2:110:LYS:HG2	2.00	0.60
70:m2:96:C:H1'	70:m2:476:G:H5'	1.81	0.60
77:u2:79:ILE:HD13	77:u2:170:LYS:HG2	1.84	0.60
20:F3:46:GLU:HG3	41:O3:113:GLN:HE21	1.66	0.60
54:V2:93:ARG:O	54:V2:97:ILE:HG13	2.01	0.60
70:m2:107:A:H2'	70:m2:108:G:C8	2.36	0.60
22:G2:51:MET:HB2	22:G2:144:CYS:SG	2.41	0.60
47:R3:34:LYS:HD2	47:R3:35:TRP:H	1.66	0.60
70:m2:379:G:H5'	77:u2:98:LYS:HB3	1.83	0.60
2:A2:1153:U:H2'	2:A2:1154:OMC:C6	2.37	0.60
2:A2:2407:G:H1	68:j2:61:MET:HE2	1.66	0.60
28:I3:258:ILE:HB	28:I3:268:ASP:HB3	1.83	0.60
32:K3:1:MET:HE3	32:K3:24:LEU:HD13	1.83	0.60
75:s2:41:VAL:O	75:s2:42:LYS:HD2	2.01	0.60
2:A2:1438:OMG:HM23	24:H1:81:TYR:HE2	1.66	0.60
2:A2:1914:C:H1'	2:A2:2004:G:H1	1.67	0.60
2:A2:2166:C:H2'	2:A2:2167:A:C8	2.36	0.60
2:A2:3626:G:H4'	33:L1:168:ALA:HB2	1.83	0.60
18:F1:46:ILE:HB	18:F1:49:ARG:HD2	1.83	0.60
38:N2:27:LEU:HB3	38:N2:31:MET:HE3	1.84	0.60
74:r2:87:MET:HA	74:r2:87:MET:HE3	1.83	0.60
6:B3:39:LEU:HD12	6:B3:56:ARG:HH21	1.67	0.60
15:E1:141:ILE:HA	15:E1:144:LYS:HD2	1.83	0.60
70:m2:1652:A:H5''	81:y2:139:ALA:HB2	1.83	0.60
7:n2:35:A:H2'	7:n2:36:A:C8	2.34	0.60
2:A2:4637:U:H2'	2:A2:4638:G:C8	2.37	0.60
19:F2:339:THR:O	19:F2:343:GLN:HG3	2.02	0.60
33:L1:31:THR:HG21	33:L1:60:ARG:HE	1.67	0.60
70:m2:859:U:H2'	70:m2:860:A:H8	1.67	0.60
80:x2:93:MET:HE1	80:x2:106:GLU:HB2	1.82	0.60
54:V2:89:PRO:HB2	54:V2:92:LYS:HB2	1.83	0.60
70:m2:510:A:H3'	70:m2:511:OMG:H8	1.66	0.60
75:s2:86:LYS:O	75:s2:90:VAL:HG23	2.02	0.60
75:s2:150:ALA:O	75:s2:154:LEU:HG	2.02	0.60
80:x2:17:TYR:HB3	80:x2:25:LEU:HD11	1.83	0.60
16:E2:206:PRO:HG2	16:E2:209:GLN:HG3	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3743:G:H2'	2:A2:3744:G:C8	2.37	0.59
63:e2:14:THR:HA	63:e2:17:ARG:HD3	1.83	0.59
70:m2:842:C:H4'	70:m2:843:G:O5'	2.01	0.59
2:A2:3388:A:H2'	2:A2:3389:A:C8	2.36	0.59
15:E1:103:GLY:HA3	15:E1:157:ILE:HG13	1.83	0.59
45:Q3:103:SER:O	45:Q3:107:ARG:HG3	2.02	0.59
48:S2:31:SER:HA	48:S2:48:PRO:HA	1.84	0.59
1:A1:177:TYR:CE2	19:F2:325:MET:HE1	2.37	0.59
2:A2:2500:A:H2'	2:A2:2501:A:C8	2.37	0.59
38:N2:117:LYS:HA	38:N2:117:LYS:HE3	1.84	0.59
2:A2:665:C:H2'	2:A2:666:G:H8	1.67	0.59
4:B1:209:SER:HA	4:B1:212:LYS:HG3	1.83	0.59
19:F2:76:ILE:HD12	19:F2:77:PRO:CD	2.31	0.59
34:L2:21:LYS:HE3	34:L2:55:VAL:HA	1.83	0.59
72:p2:62:LEU:HD23	72:p2:96:CYS:HB3	1.83	0.59
77:u2:101:ILE:HD12	77:u2:190:LEU:HD11	1.84	0.59
2:A2:1361:G:O2'	2:A2:2567:A:H8	1.86	0.59
36:M2:19:THR:HG22	36:M2:21:LYS:H	1.68	0.59
60:b2:6:ALA:O	60:b2:10:ARG:HG2	2.03	0.59
1:A1:173:ASN:HD21	2:A2:841:A:H62	1.51	0.59
26:H3:16:GLN:HE22	70:m2:1265:U:H1'	1.67	0.59
34:L2:99:MET:HE1	34:L2:127:VAL:HG12	1.84	0.59
66:h2:16:LYS:HZ3	70:m2:1820:A:H4'	1.66	0.59
70:m2:876:G:H2'	70:m2:877:A:C8	2.36	0.59
2:A2:1253:U:H2'	2:A2:1254:C:H6	1.68	0.59
3:A3:38:ARG:HH12	70:m2:1605:G:H4'	1.67	0.59
18:F1:130:LYS:HE3	18:F1:132:SER:HB2	1.83	0.59
53:U3:123:SER:HB3	53:U3:126:CYS:HB3	1.84	0.59
72:p2:62:LEU:HA	72:p2:65:ARG:HH11	1.68	0.59
73:q2:132:LYS:HE2	73:q2:192:TRP:CD1	2.38	0.59
72:p2:180:ASP:O	72:p2:184:VAL:HG23	2.03	0.59
2:A2:518:C:H2'	2:A2:519:G:C8	2.37	0.59
2:A2:2106:OMC:HM22	19:F2:95:MET:HG3	1.83	0.59
28:I3:44:LYS:HD3	28:I3:56:GLN:HG3	1.83	0.59
37:M3:110:VAL:HB	37:M3:112:LYS:HZ1	1.67	0.59
2:A2:325:U:H2'	2:A2:326:C:C6	2.38	0.59
2:A2:952:C:H2'	2:A2:953:G:H8	1.67	0.59
2:A2:1511:C:H2'	2:A2:1512:U:C4	2.38	0.59
2:A2:1532:U:H4'	38:N2:100:LYS:HB2	1.84	0.59
70:m2:163:U:H2'	70:m2:164:A:H8	1.66	0.59
7:n2:20:U:H4'	7:n2:21:A:OP1	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:n2:59:U:H2'	7:n2:60:U:O4'	2.03	0.59
72:p2:60:ASP:HA	72:p2:63:LYS:HG3	1.83	0.59
2:A2:724:U:H2'	2:A2:725:C:C6	2.38	0.58
2:A2:1032:C:H5''	38:N2:142:ARG:HH12	1.68	0.58
2:A2:1604:A:H5''	2:A2:1605:G:H5'	1.85	0.58
13:D2:2:GLY:HA2	13:D2:207:VAL:HG23	1.84	0.58
13:D2:229:ALA:HB3	13:D2:234:LYS:HG3	1.84	0.58
19:F2:8:ILE:HD11	19:F2:257:PHE:CE2	2.38	0.58
63:e2:5:ILE:HD11	63:e2:11:PHE:HD2	1.67	0.58
70:m2:1522:G:H5''	70:m2:1523:C:OP2	2.03	0.58
78:v2:11:ILE:HD11	78:v2:45:VAL:HA	1.85	0.58
2:A2:93:G:H2'	2:A2:94:A:C8	2.38	0.58
2:A2:300:A:H2'	2:A2:301:G:H8	1.68	0.58
4:B1:110:LYS:HD2	4:B1:113:ARG:HH12	1.68	0.58
72:p2:25:PHE:HA	72:p2:28:LYS:HG3	1.85	0.58
2:A2:927:C:H2'	2:A2:928:G:H8	1.66	0.58
2:A2:1670:A:H61	12:D1:115:MET:HE2	1.66	0.58
2:A2:1744:A:H2'	2:A2:1745:A:C8	2.38	0.58
17:E3:94:ILE:HD11	17:E3:100:VAL:HG11	1.85	0.58
22:G2:273:LEU:HD23	22:G2:274:ALA:H	1.67	0.58
70:m2:118:C:H1'	70:m2:447:A:C5	2.38	0.58
11:C3:55:ARG:HG2	11:C3:87:ARG:NE	2.16	0.58
47:R3:92:LEU:HD12	47:R3:109:TYR:HE2	1.67	0.58
70:m2:930:G:H2'	70:m2:931:G:C8	2.38	0.58
70:m2:1409:U:H2'	70:m2:1410:U:H6	1.68	0.58
70:m2:641:C:H2'	70:m2:642:A:C8	2.38	0.58
70:m2:1856:U:H2'	70:m2:1857:G:H8	1.68	0.58
73:q2:164:VAL:HA	73:q2:168:VAL:HG13	1.84	0.58
28:I3:226:HIS:CD2	73:q2:222:PRO:HB3	2.39	0.58
50:T2:89:ILE:HD11	50:T2:117:LYS:HB3	1.83	0.58
28:I3:119:GLN:HB2	28:I3:131:LEU:HD11	1.85	0.58
58:Z2:36:ARG:HB2	58:Z2:80:ASN:HA	1.86	0.58
79:w2:126:VAL:HG22	79:w2:145:VAL:HG22	1.84	0.58
2:A2:1190:C:H3'	2:A2:1191:G:C8	2.38	0.58
6:B3:82:ARG:NH2	70:m2:1592:C:H5'	2.19	0.58
72:p2:121:ILE:HD13	72:p2:164:ILE:HG21	1.85	0.58
81:y2:77:HIS:O	81:y2:81:ILE:HG12	2.04	0.58
2:A2:665:C:H2'	2:A2:666:G:C8	2.39	0.58
2:A2:928:G:H22	2:A2:1064:G:N2	2.00	0.58
2:A2:4603:C:H2'	2:A2:4604:C:C6	2.39	0.58
12:D1:36:LEU:HD11	12:D1:69:ARG:HH11	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:W2:38:ILE:HD11	55:W2:46:VAL:HG21	1.86	0.58
17:E3:93:PHE:CD2	17:E3:133:LEU:HB3	2.39	0.58
19:F2:116:ASN:HB2	19:F2:119:GLN:HG3	1.83	0.58
73:q2:116:ARG:HG2	73:q2:150:MET:HE1	1.86	0.58
76:t2:53:VAL:HG21	76:t2:172:THR:HA	1.86	0.58
79:w2:120:VAL:HG12	79:w2:145:VAL:HG11	1.85	0.58
2:A2:262:G:H2'	2:A2:263:G:H8	1.69	0.57
28:I3:256:ILE:HB	28:I3:270:LEU:HB3	1.85	0.57
28:I3:270:LEU:HD21	28:I3:310:TRP:CD2	2.39	0.57
41:O3:56:VAL:HB	41:O3:81:VAL:HG23	1.85	0.57
53:U3:138:ARG:HH11	53:U3:149:CYS:HB2	1.69	0.57
2:A2:1374:G:C2'	2:A2:1375:G:H5'	2.33	0.57
2:A2:3250:C:H5'	2:A2:3251:U:H5	1.67	0.57
2:A2:4044:OMG:H2'	2:A2:4099:5MC:HM51	1.86	0.57
4:B1:143:VAL:O	4:B1:147:VAL:HG23	2.04	0.57
27:I2:141:LEU:O	27:I2:145:VAL:HG13	2.04	0.57
29:J2:95:LEU:HD21	29:J2:114:ILE:HD11	1.85	0.57
29:J2:125:MET:HE3	29:J2:143:PRO:HG3	1.86	0.57
45:Q3:110:ARG:O	45:Q3:114:MET:HG3	2.02	0.57
2:A2:108:A:H4'	2:A2:109:G:H5'	1.85	0.57
2:A2:1430:G:H1'	2:A2:2268:A:N6	2.20	0.57
2:A2:2240:U:H2'	2:A2:2241:G:C8	2.39	0.57
3:A3:15:VAL:HG21	3:A3:68:ILE:HD11	1.86	0.57
27:I2:46:ASN:HB3	27:I2:134:LYS:HD3	1.87	0.57
70:m2:129:C:H42	70:m2:181:A:H61	1.50	0.57
70:m2:1289:A:H62	70:m2:1314:G:H21	1.53	0.57
25:H2:103:VAL:HG11	25:H2:112:ARG:HE	1.69	0.57
30:J3:131:GLY:HA3	30:J3:216:MET:HB3	1.86	0.57
45:Q3:21:LYS:O	45:Q3:74:MET:HA	2.04	0.57
70:m2:71:G:H3'	70:m2:72:C:H5''	1.86	0.57
70:m2:589:A:H5'	70:m2:594:C:H41	1.69	0.57
19:F2:149:GLU:HG2	69:k2:72:LYS:HG2	1.87	0.57
28:I3:142:VAL:HG11	28:I3:177:TRP:CH2	2.40	0.57
70:m2:658:G:N2	70:m2:665:C:H5''	2.19	0.57
70:m2:1738:G:H2'	70:m2:1739:G:H8	1.69	0.57
71:o2:76:VAL:HG12	71:o2:123:VAL:HB	1.87	0.57
2:A2:3624:U:H2'	2:A2:3625:G:C8	2.40	0.57
5:B2:110:G:H2'	5:B2:111:C:C6	2.40	0.57
22:G2:52:ILE:HA	22:G2:147:ASP:HB3	1.85	0.57
29:J2:22:LEU:HD12	29:J2:146:ILE:HD12	1.85	0.57
72:p2:171:ILE:O	72:p2:175:GLU:HG2	2.05	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:x2:52:LYS:HG3	80:x2:53:GLN:OE1	2.05	0.57
2:A2:1509:C:H2'	2:A2:1510:G:C4	2.40	0.57
6:B3:39:LEU:H	6:B3:43:LYS:HZ3	1.52	0.57
2:A2:138:C:H2'	2:A2:139:G:H8	1.69	0.57
2:A2:181:C:H2'	2:A2:182:G:H8	1.70	0.57
2:A2:854:A:H1'	2:A2:1878:G:H5''	1.85	0.57
6:B3:27:LYS:HE2	6:B3:110:LEU:HD13	1.85	0.57
14:D3:43:THR:HG22	14:D3:45:ARG:HG3	1.86	0.57
24:H1:3:ALA:O	24:H1:7:ILE:HG13	2.04	0.57
29:J2:94:MET:HE2	29:J2:148:MET:HE3	1.87	0.57
77:u2:106:SER:HB3	77:u2:171:LEU:HG	1.87	0.57
79:w2:22:ARG:HG2	79:w2:27:GLU:HA	1.86	0.57
4:B1:175:ARG:NH1	4:B1:230:TYR:HB2	2.20	0.57
18:F1:64:VAL:HA	18:F1:67:HIS:CD2	2.40	0.57
32:K3:216:ARG:HG2	74:r2:152:PRO:HG2	1.85	0.57
70:m2:1738:G:H2'	70:m2:1739:G:C8	2.40	0.57
71:o2:90:PHE:O	71:o2:94:THR:HG22	2.04	0.57
17:E3:9:THR:HG22	70:m2:683:U:H4'	1.87	0.57
23:G3:51:ARG:NH2	75:s2:61:PHE:HB3	2.14	0.57
25:H2:139:PRO:HD2	25:H2:142:GLN:OE1	2.04	0.57
34:L2:105:LEU:HD23	34:L2:138:LEU:HD23	1.86	0.57
46:R2:83:THR:O	46:R2:87:MET:HG2	2.05	0.57
81:y2:44:PRO:HG2	81:y2:81:ILE:HD11	1.86	0.57
2:A2:2555:G:H1'	62:d2:9:GLY:HA3	1.87	0.56
2:A2:4395:G:H2'	2:A2:4396:A:C8	2.39	0.56
11:C3:61:LEU:HD12	11:C3:82:MET:HE3	1.87	0.56
26:H3:33:LYS:HG3	70:m2:1660:G:H5''	1.85	0.56
38:N2:39:ILE:HA	38:N2:63:ARG:HA	1.86	0.56
71:o2:119:PRO:HG2	71:o2:142:LEU:HD21	1.85	0.56
73:q2:70:THR:HG22	73:q2:84:VAL:HG12	1.87	0.56
4:B1:164:ILE:HG13	4:B1:168:VAL:HG13	1.85	0.56
10:C2:8:U:H2'	10:C2:9:A:H8	1.70	0.56
45:Q3:66:GLY:HA2	70:m2:583:U:H4'	1.87	0.56
2:A2:140:G:H2'	2:A2:141:C:C6	2.41	0.56
2:A2:3912:U:H2'	2:A2:3913:C:H6	1.70	0.56
15:E1:166:PHE:HD1	15:E1:174:ILE:HD11	1.69	0.56
16:E2:168:MET:HG3	16:E2:178:ALA:HA	1.86	0.56
22:G2:53:VAL:HG11	22:G2:159:VAL:HA	1.87	0.56
30:J3:110:MET:HE2	30:J3:125:LYS:HD2	1.88	0.56
45:Q3:39:GLU:O	45:Q3:43:LYS:HD3	2.05	0.56
70:m2:102:A:H4'	70:m2:104:A:C8	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:205:G:H2'	70:m2:206:G:C8	2.39	0.56
73:q2:126:ILE:HD12	73:q2:134:CYS:SG	2.45	0.56
78:v2:24:LYS:HD3	78:v2:66:HIS:CE1	2.40	0.56
82:z2:30:THR:O	82:z2:34:VAL:HG22	2.05	0.56
2:A2:280:G:H5''	24:H1:14:LYS:HE2	1.87	0.56
4:B1:176:LYS:HD2	61:c2:43:MET:HE1	1.87	0.56
18:F1:194:ILE:O	18:F1:198:ARG:HG3	2.05	0.56
76:t2:157:HIS:HB3	76:t2:190:PRO:HG3	1.88	0.56
28:I3:286:CYS:HA	28:I3:302:TYR:HD2	1.71	0.56
40:O2:42:PHE:HE1	40:O2:46:ARG:HD3	1.70	0.56
70:m2:85:A:O2'	70:m2:149:A:H8	1.87	0.56
1:A1:128:ARG:O	1:A1:132:GLN:HG2	2.06	0.56
2:A2:4111:U:H2'	2:A2:4112:U:C6	2.40	0.56
16:E2:92:TYR:HB2	16:E2:159:VAL:HB	1.87	0.56
30:J3:102:LEU:HD22	30:J3:130:ILE:HG12	1.88	0.56
39:N3:50:ILE:O	39:N3:54:LEU:HD12	2.06	0.56
74:r2:100:ARG:HB2	74:r2:114:ILE:HD13	1.87	0.56
19:F2:212:ASN:ND2	19:F2:259:LYS:HD3	2.21	0.56
24:H1:75:VAL:HG11	24:H1:80:THR:HG22	1.87	0.56
35:L3:174:LYS:HG2	70:m2:562:A:H5'	1.88	0.56
19:F2:276:ASN:HD22	19:F2:276:ASN:C	2.14	0.56
70:m2:622:G:H2'	70:m2:622:G:N3	2.20	0.56
70:m2:1599:C:H4'	70:m2:1605:G:C6	2.41	0.56
70:m2:1622:A:C8	80:x2:40:ARG:NH2	2.74	0.56
74:r2:11:ARG:NH1	74:r2:20:LEU:HD22	2.17	0.56
1:A1:192:THR:HG21	19:F2:313:VAL:HG11	1.88	0.56
2:A2:4613:A:H2'	2:A2:4614:A:C8	2.41	0.56
11:C3:31:SER:O	11:C3:35:VAL:HG23	2.05	0.56
15:E1:151:ILE:HD11	15:E1:156:ARG:HG2	1.88	0.56
70:m2:206:G:H2'	70:m2:207:G:C8	2.41	0.56
73:q2:105:LEU:O	73:q2:109:LEU:HD12	2.06	0.56
2:A2:4030:A:O2'	2:A2:4031:A:H2'	2.05	0.56
22:G2:278:ASP:O	22:G2:282:GLN:HG2	2.06	0.56
38:N2:84:ILE:HD12	54:V2:21:ILE:HG22	1.88	0.56
65:g2:83:ARG:O	65:g2:87:GLN:HG3	2.05	0.56
74:r2:200:ARG:HA	74:r2:206:ASP:OD1	2.05	0.56
2:A2:261:G:H2'	2:A2:262:G:C8	2.41	0.55
2:A2:433:A:C2	2:A2:3523:A:H4'	2.41	0.55
20:F3:10:ARG:HB2	20:F3:33:ASP:OD2	2.06	0.55
32:K3:190:ARG:NH1	70:m2:336:C:H41	2.01	0.55
70:m2:641:C:H2'	70:m2:642:A:H8	1.68	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:954:G:H2'	70:m2:955:C:C6	2.41	0.55
70:m2:1597:U:H2'	70:m2:1598:U:C6	2.40	0.55
72:p2:168:MET:O	72:p2:172:MET:HG3	2.06	0.55
3:A3:117:ILE:HD11	80:x2:111:MET:HB3	1.88	0.55
7:Bv:51:U:H3	7:Bv:63:G:H22	1.52	0.55
7:n2:41:C:H4'	75:s2:198:ARG:HE	1.70	0.55
2:A2:518:C:H2'	2:A2:519:G:H8	1.71	0.55
2:A2:2090:C:H2'	2:A2:2091:G:H8	1.71	0.55
28:I3:194:TYR:CE1	28:I3:212:LYS:HB2	2.41	0.55
69:k2:54:ALA:HA	69:k2:61:VAL:HG23	1.89	0.55
70:m2:564:U:H2'	70:m2:565:G:C8	2.42	0.55
70:m2:597:U:H2'	70:m2:598:U:C6	2.41	0.55
70:m2:1679:U:H2'	70:m2:1680:A2M:H8	1.88	0.55
2:A2:700:C:H2'	2:A2:701:C:H6	1.71	0.55
33:L1:59:PRO:HB3	33:L1:170:GLY:H	1.72	0.55
73:q2:120:TYR:O	73:q2:124:ARG:HG3	2.06	0.55
78:v2:59:LYS:HB3	78:v2:70:TYR:HB2	1.88	0.55
79:w2:68:ILE:HG21	79:w2:143:LEU:HD11	1.88	0.55
2:A2:3600:G:H4'	72:p2:54:GLY:HA2	1.89	0.55
10:C2:8:U:H2'	10:C2:9:A:C8	2.41	0.55
70:m2:1847:A:H2'	70:m2:1848:G:C8	2.41	0.55
82:z2:75:GLU:HA	82:z2:78:ARG:HE	1.72	0.55
2:A2:444:G:H2'	2:A2:445:U:C6	2.42	0.55
2:A2:1496:PSU:H2'	2:A2:1497:A:C8	2.41	0.55
19:F2:301:ALA:HB1	31:K2:132:LYS:HD3	1.88	0.55
30:J3:165:VAL:HG21	30:J3:217:ALA:HB1	1.89	0.55
63:e2:23:VAL:HG12	63:e2:36:VAL:HG22	1.88	0.55
70:m2:193:C:H5	77:u2:141:ARG:NH1	2.03	0.55
70:m2:1115:A:H2'	70:m2:1116:U:C6	2.41	0.55
70:m2:1203:U:H2'	70:m2:1204:U:C6	2.42	0.55
70:m2:1327:G:H1'	70:m2:1512:G:H5''	1.88	0.55
1:A1:170:LYS:O	1:A1:174:GLU:HG2	2.07	0.55
2:A2:2117:U:H2'	2:A2:2118:A2M:H8	1.87	0.55
2:A2:3601:A:H2'	2:A2:3602:G:C8	2.42	0.55
2:A2:3815:U:H5'	2:A2:3816:C:H5''	1.89	0.55
2:A2:4067:1MA:H4'	12:D1:74:LYS:HD3	1.87	0.55
11:C3:22:ILE:HD13	11:C3:89:ILE:HB	1.89	0.55
33:L1:171:HIS:CE1	33:L1:173:LYS:HD2	2.42	0.55
74:r2:66:MET:HA	74:r2:66:MET:HE3	1.88	0.55
77:u2:141:ARG:HB2	77:u2:145:ILE:HB	1.89	0.55
1:A1:178:LYS:HG3	19:F2:317:ASN:ND2	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1561:G:H2'	2:A2:1562:G:C8	2.42	0.55
2:A2:2631:G:C8	68:j2:16:THR:HG22	2.42	0.55
26:H3:33:LYS:HE2	26:H3:34:TYR:CZ	2.41	0.55
32:K3:45:TRP:CD1	32:K3:48:TYR:HD1	2.23	0.55
34:L2:97:ARG:O	34:L2:101:ILE:HG13	2.07	0.55
70:m2:16:G:H2'	70:m2:17:C:C6	2.42	0.55
70:m2:933:C:H2'	70:m2:934:G:C8	2.42	0.55
70:m2:1397:C:H2'	70:m2:1398:A:C8	2.42	0.55
2:A2:1374:G:H2'	2:A2:1375:G:H5'	1.89	0.55
10:C2:5:U:H2'	10:C2:6:C:C6	2.42	0.55
70:m2:534:C:N4	70:m2:555:A:H61	2.00	0.55
74:r2:179:ASN:HA	74:r2:231:GLY:HA2	1.89	0.55
2:A2:181:C:H2'	2:A2:182:G:C8	2.42	0.55
3:A3:37:GLY:N	70:m2:1632:A:H5''	2.22	0.55
4:B1:96:LEU:HD22	4:B1:193:LEU:HD11	1.89	0.55
21:G1:40:GLY:HA3	21:G1:45:VAL:HB	1.88	0.55
28:I3:62:HIS:CD2	28:I3:88:ARG:HD2	2.42	0.55
29:J2:131:ARG:HG3	29:J2:137:ASN:HB2	1.89	0.55
33:L1:8:ASP:HA	33:L1:11:TYR:HD1	1.72	0.55
66:h2:11:ARG:HG2	66:h2:11:ARG:HH11	1.72	0.55
75:s2:68:ILE:HD11	75:s2:151:ILE:HD11	1.87	0.55
81:y2:89:SER:O	81:y2:93:VAL:HG23	2.07	0.55
2:A2:517:C:H2'	2:A2:518:C:C6	2.42	0.54
3:A3:14:ARG:CZ	15:E1:113:ILE:HD12	2.37	0.54
3:A3:86:ARG:NH1	70:m2:1613:G:H4'	2.22	0.54
10:C2:5:U:H2'	10:C2:6:C:H6	1.71	0.54
19:F2:11:TYR:CZ	19:F2:148:PRO:HB2	2.42	0.54
67:i2:23:VAL:HG22	67:i2:70:LEU:HD22	1.90	0.54
70:m2:99:A2M:H8	70:m2:99:A2M:O5'	2.07	0.54
71:o2:148:CYS:SG	71:o2:160:ALA:HB1	2.47	0.54
6:B3:14:PHE:HE1	6:B3:135:ALA:HB2	1.72	0.54
28:I3:31:ILE:HG21	28:I3:299:PHE:CE2	2.42	0.54
38:N2:102:ARG:O	38:N2:106:LEU:HG	2.07	0.54
45:Q3:89:HIS:CE1	70:m2:576:A:H5'	2.43	0.54
2:A2:1146:C:H2'	2:A2:1147:A:H8	1.72	0.54
2:A2:1523:G:H2'	2:A2:1524:C:H6	1.73	0.54
6:B3:62:ARG:HH12	6:B3:66:LEU:HD11	1.71	0.54
34:L2:44:LEU:HD22	34:L2:49:LEU:HD12	1.90	0.54
47:R3:69:THR:O	47:R3:73:VAL:HG22	2.07	0.54
70:m2:1547:A:H2'	70:m2:1548:G:C8	2.42	0.54
70:m2:1590:A:H2'	70:m2:1591:A:C8	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:p2:110:MET:HA	72:p2:113:MET:HE2	1.89	0.54
73:q2:28:GLU:OE1	78:v2:70:TYR:HE2	1.90	0.54
1:A1:127:VAL:HG13	1:A1:158:VAL:HG12	1.89	0.54
2:A2:138:C:H2'	2:A2:139:G:C8	2.43	0.54
2:A2:444:G:H2'	2:A2:445:U:H6	1.72	0.54
2:A2:1023:C:H2'	2:A2:1024:C:C6	2.42	0.54
2:A2:3715:G:H2'	2:A2:3716:U:C6	2.42	0.54
7:Bv:27:G:H2'	7:Bv:28:G:H8	1.72	0.54
16:E2:165:HIS:HB3	16:E2:180:LEU:HD23	1.89	0.54
26:H3:16:GLN:NE2	70:m2:1265:U:H1'	2.22	0.54
28:I3:266:ILE:H	28:I3:266:ILE:HD12	1.71	0.54
33:L1:97:LYS:HG3	33:L1:97:LYS:O	2.07	0.54
45:Q3:104:ARG:HA	45:Q3:107:ARG:HD3	1.89	0.54
72:p2:90:ASP:HB2	72:p2:223:PHE:HZ	1.73	0.54
2:A2:223:G:H4'	2:A2:225:G:N7	2.22	0.54
2:A2:3367:A:H5'	2:A2:3368:A:N7	2.23	0.54
2:A2:4600:G:H2'	2:A2:4601:A:H8	1.72	0.54
6:B3:71:GLY:HA3	70:m2:1564:C:H5'	1.90	0.54
74:r2:211:LYS:HE2	74:r2:215:GLY:HA2	1.90	0.54
2:A2:4499:G:H2'	2:A2:4500:G:C8	2.42	0.54
40:O2:36:ALA:HB1	40:O2:65:ARG:HD2	1.90	0.54
46:R2:64:SER:HB2	60:b2:69:LEU:HD13	1.89	0.54
63:e2:27:LYS:HG2	63:e2:32:VAL:HG22	1.90	0.54
70:m2:15:U:H2'	70:m2:16:G:O4'	2.07	0.54
70:m2:456:U:H2'	70:m2:457:A:H8	1.71	0.54
1:A1:120:ILE:HD13	31:K2:3:VAL:HG12	1.89	0.54
2:A2:1386:G:N2	68:j2:4:ARG:HH12	2.05	0.54
31:K2:67:ILE:HD11	31:K2:95:VAL:HG13	1.88	0.54
52:U2:84:GLU:O	52:U2:88:VAL:HG13	2.08	0.54
70:m2:180:G:H3'	70:m2:181:A:C8	2.42	0.54
70:m2:1847:A:H2'	70:m2:1848:G:H8	1.71	0.54
2:A2:3625:G:H2'	2:A2:3626:G:C8	2.43	0.54
2:A2:3903:A:H5''	15:E1:108:GLY:HA3	1.90	0.54
2:A2:3910:C:H2'	2:A2:3911:C:H6	1.72	0.54
13:D2:20:VAL:HA	13:D2:23:ARG:HG3	1.89	0.54
2:A2:3566:C:H2'	2:A2:3567:C:C6	2.42	0.54
2:A2:4506:G:H2'	2:A2:4507:G:C8	2.42	0.54
2:A2:4711:U:H1'	29:J2:75:GLN:OE1	2.07	0.54
6:B3:42:HIS:HB2	6:B3:83:GLN:HA	1.90	0.54
10:C2:141:C:H2'	10:C2:142:U:C6	2.43	0.54
70:m2:75:G:H4'	70:m2:76:U:C4	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2224:C:H5	2:A2:2226:G:H1	1.56	0.54
2:A2:3840:U:H2'	2:A2:3841:U:C6	2.43	0.54
4:B1:103:ARG:HG2	4:B1:104:PRO:HD2	1.90	0.54
33:L1:66:CYS:HB2	33:L1:107:TYR:CD2	2.43	0.54
41:O3:101:GLY:HA3	41:O3:134:PRO:HD2	1.90	0.54
70:m2:957:A:N6	70:m2:973:G:H1'	2.23	0.54
2:A2:467:U:H2'	2:A2:468:U:C6	2.43	0.53
2:A2:1010:G:N3	2:A2:1010:G:H2'	2.23	0.53
2:A2:4223:A2M:H2'	2:A2:4224:U:H6	1.72	0.53
2:A2:4427:C:H2'	2:A2:4428:C:C6	2.44	0.53
4:B1:162:ASP:HB2	4:B1:163:PRO:HD3	1.89	0.53
30:J3:209:VAL:HB	30:J3:210:PRO:HD3	1.90	0.53
35:L3:28:GLU:O	35:L3:32:ILE:HG13	2.08	0.53
35:L3:35:TYR:HD1	35:L3:112:THR:HG21	1.73	0.53
70:m2:225:C:H2'	70:m2:226:A:C8	2.42	0.53
71:o2:50:ASN:O	71:o2:54:THR:HG23	2.08	0.53
74:r2:60:GLU:O	74:r2:64:ILE:HG12	2.08	0.53
74:r2:122:LYS:HB3	74:r2:164:LEU:HD11	1.90	0.53
1:A1:177:TYR:CE1	1:A1:209:MET:HG2	2.43	0.53
2:A2:1292:G:H2'	2:A2:1293:C:C6	2.43	0.53
2:A2:4189:C:H2'	2:A2:4190:G:H8	1.74	0.53
2:A2:4582:U:H4'	2:A2:4583:U:OP1	2.09	0.53
11:C3:22:ILE:HD11	11:C3:91:LEU:HB2	1.90	0.53
23:G3:34:PHE:HD1	23:G3:40:ARG:HB3	1.72	0.53
68:j2:38:THR:HA	68:j2:45:THR:HA	1.90	0.53
70:m2:839:A:H1'	70:m2:841:C:C5	2.43	0.53
75:s2:100:ILE:HG23	75:s2:178:ILE:HD11	1.90	0.53
80:x2:57:LEU:HB3	80:x2:61:ARG:NH2	2.23	0.53
2:A2:453:G:H1	2:A2:1107:G:N2	2.07	0.53
3:A3:98:VAL:HG11	3:A3:106:LYS:HD3	1.90	0.53
4:B1:50:ASP:OD1	4:B1:52:THR:HG23	2.09	0.53
6:B3:33:TRP:HH2	6:B3:102:ARG:HG3	1.73	0.53
37:M3:69:LEU:HD13	37:M3:76:LEU:HG	1.89	0.53
72:p2:52:THR:CG2	72:p2:58:ALA:H	2.20	0.53
72:p2:120:MET:HE3	72:p2:122:GLU:HG3	1.90	0.53
78:v2:60:GLU:HB2	78:v2:69:TRP:CD1	2.43	0.53
81:y2:85:ARG:O	81:y2:88:ILE:HG22	2.09	0.53
2:A2:1079:A:H2'	2:A2:1080:C:C6	2.43	0.53
30:J3:72:ASP:OD1	30:J3:74:LYS:HG2	2.08	0.53
34:L2:134:ASN:OD1	34:L2:137:ILE:HG12	2.09	0.53
52:U2:75:LEU:HG	52:U2:113:GLY:HA2	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:o2:128:ARG:HG3	71:o2:128:ARG:HH11	1.72	0.53
78:v2:30:PRO:HB2	78:v2:31:LYS:HD2	1.91	0.53
2:A2:175:C:H2'	2:A2:176:G:H8	1.74	0.53
2:A2:1147:A:H2'	2:A2:1148:A:C8	2.44	0.53
2:A2:2167:A:H2'	2:A2:2168:U:C6	2.44	0.53
2:A2:3567:C:H2'	2:A2:3568:U:C6	2.44	0.53
2:A2:4500:G:H2'	2:A2:4501:G:C8	2.43	0.53
2:A2:4613:A:H2'	2:A2:4614:A:H8	1.73	0.53
18:F1:92:ARG:NH2	18:F1:98:VAL:HB	2.24	0.53
36:M2:29:ARG:HG2	36:M2:29:ARG:HH11	1.74	0.53
42:P2:71:GLU:O	42:P2:75:LYS:HE2	2.08	0.53
53:U3:138:ARG:HD2	53:U3:150:PHE:H	1.74	0.53
70:m2:1460:G:H2'	70:m2:1461:G:C8	2.44	0.53
72:p2:69:VAL:HG23	72:p2:74:LEU:HD11	1.90	0.53
80:x2:57:LEU:HB3	80:x2:61:ARG:HH22	1.73	0.53
82:z2:36:GLU:HB3	82:z2:47:ARG:HD2	1.90	0.53
2:A2:1214:G:H2'	2:A2:1215:G:H8	1.72	0.53
2:A2:1253:U:H2'	2:A2:1254:C:C6	2.44	0.53
2:A2:3297:U:H5	2:A2:3302:A:N7	2.07	0.53
3:A3:6:PRO:HD2	47:R3:49:LEU:HD13	1.89	0.53
16:E2:60:VAL:HG21	16:E2:67:VAL:HG23	1.89	0.53
28:I3:114:SER:HB3	28:I3:119:GLN:HG3	1.90	0.53
70:m2:511:OMG:H4'	74:r2:26:VAL:HG11	1.90	0.53
70:m2:1623:U:H5'	70:m2:1625:A:O2'	2.09	0.53
73:q2:17:PHE:HE1	73:q2:39:VAL:HG11	1.73	0.53
76:t2:129:ILE:O	76:t2:133:LEU:HB2	2.07	0.53
77:u2:64:ASN:HB3	77:u2:186:ASP:HB3	1.91	0.53
2:A2:1496:PSU:H2'	2:A2:1497:A:H8	1.74	0.53
28:I3:158:PRO:HD3	28:I3:200:VAL:HG11	1.91	0.53
46:R2:124:VAL:HG22	46:R2:138:VAL:HG13	1.91	0.53
70:m2:65:C:H5'	70:m2:78:C:N4	2.23	0.53
70:m2:351:A:H2'	70:m2:352:C:C6	2.44	0.53
70:m2:1012:G:H2'	70:m2:1013:A:C8	2.42	0.53
74:r2:11:ARG:HD2	74:r2:25:GLY:O	2.09	0.53
75:s2:18:LYS:HG3	75:s2:21:GLY:HA2	1.91	0.53
75:s2:143:PRO:O	75:s2:146:ARG:HG2	2.09	0.53
78:v2:27:VAL:HG12	78:v2:46:MET:HE1	1.90	0.53
2:A2:2499:A:H2'	2:A2:2500:A:C8	2.44	0.53
6:B3:62:ARG:NH1	6:B3:66:LEU:HD11	2.24	0.53
24:H1:158:HIS:HB3	24:H1:161:MET:HB2	1.89	0.53
53:U3:117:LEU:HB3	53:U3:118:ARG:HH11	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:870:G:H3'	70:m2:871:A:H5''	1.89	0.53
72:p2:164:ILE:HG12	72:p2:201:CYS:SG	2.48	0.53
74:r2:208:VAL:HG21	74:r2:222:LEU:HD13	1.91	0.53
2:A2:1390:G:O2'	2:A2:1425:G:H4'	2.09	0.53
2:A2:3312:A:H2'	2:A2:3313:U:H6	1.74	0.53
2:A2:3409:G:H1	2:A2:3426:U:H3	1.55	0.53
9:C1:92:MET:HE2	9:C1:179:ILE:HG22	1.90	0.53
11:C3:28:ASN:HB3	11:C3:31:SER:OG	2.08	0.53
28:I3:302:TYR:HE1	28:I3:308:ARG:HD3	1.73	0.53
39:N3:16:LEU:HD12	70:m2:921:A:H5''	1.90	0.53
41:O3:150:ARG:HH21	70:m2:1856:U:H5''	1.74	0.53
70:m2:51:U:H2'	70:m2:52:G:H8	1.74	0.53
55:W2:48:LEU:HD21	55:W2:60:ILE:HG21	1.90	0.53
72:p2:52:THR:HG22	72:p2:57:ILE:HA	1.91	0.53
72:p2:198:GLU:O	72:p2:202:GLN:HB3	2.08	0.53
81:y2:100:VAL:HG12	81:y2:101:ASP:H	1.74	0.53
2:A2:418:A:C2	10:C2:17:A:H1'	2.44	0.52
2:A2:3392:A:H2'	2:A2:3393:A:C8	2.43	0.52
2:A2:3576:U:H2'	2:A2:3577:U:C6	2.43	0.52
2:A2:3923:A:H62	2:A2:3983:G:N2	2.08	0.52
22:G2:227:ILE:H	22:G2:227:ILE:HD12	1.73	0.52
39:N3:56:ASP:OD2	49:S3:52:THR:HG23	2.10	0.52
39:N3:91:LEU:HB3	39:N3:122:ILE:HG12	1.91	0.52
70:m2:107:A:H2'	70:m2:108:G:H8	1.72	0.52
70:m2:1858:C:H2'	70:m2:1859:G:C8	2.44	0.52
7:n2:20:U:H1'	7:n2:21:A:H5''	1.91	0.52
2:A2:453:G:N2	2:A2:1107:G:H22	2.07	0.52
2:A2:1659:C:H2'	2:A2:1660:A:H8	1.73	0.52
22:G2:211:LEU:HB3	22:G2:219:TYR:HB2	1.90	0.52
32:K3:135:PRO:HG3	32:K3:144:LEU:HD23	1.91	0.52
32:K3:201:LYS:O	32:K3:205:GLU:HG3	2.10	0.52
36:M2:81:TRP:HZ3	36:M2:130:GLU:HG2	1.73	0.52
55:W2:36:LYS:O	55:W2:40:GLN:HG3	2.09	0.52
70:m2:806:U:H2'	70:m2:807:U:C6	2.44	0.52
70:m2:1460:G:H2'	70:m2:1461:G:H8	1.73	0.52
2:A2:4160:C:N3	2:A2:4164:U:H5	2.08	0.52
3:A3:26:ILE:HD13	3:A3:56:ALA:HA	1.92	0.52
9:C1:41:ILE:HG22	9:C1:43:VAL:HG13	1.91	0.52
22:G2:156:GLY:HA2	22:G2:181:PRO:HG3	1.91	0.52
28:I3:59:LEU:HG	28:I3:95:GLY:HA2	1.91	0.52
32:K3:3:LEU:HD22	32:K3:109:LEU:HD23	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:K3:7:PHE:CE2	32:K3:9:ALA:HB3	2.44	0.52
35:L3:56:ALA:O	35:L3:60:LEU:HD23	2.10	0.52
41:O3:26:ASN:HB2	41:O3:91:THR:OG1	2.10	0.52
42:P2:111:GLU:HG2	42:P2:131:ARG:HD2	1.91	0.52
49:S3:17:ARG:HD3	70:m2:1129:C:H4'	1.91	0.52
50:T2:124:THR:HG23	50:T2:126:LYS:H	1.73	0.52
70:m2:1629:C:H2'	70:m2:1630:C:H6	1.74	0.52
7:n2:15:G:H22	7:n2:48:C:H42	1.56	0.52
2:A2:10:A:H2'	2:A2:11:G:H8	1.74	0.52
2:A2:744:C:H3'	2:A2:746:G:H5''	1.90	0.52
2:A2:1360:A:C2	2:A2:2568:A:H8	2.28	0.52
2:A2:1378:A:H2	70:m2:1031:G:H1'	1.74	0.52
2:A2:1881:G:H2'	2:A2:1882:U:C6	2.45	0.52
2:A2:3567:C:H2'	2:A2:3568:U:H6	1.75	0.52
2:A2:3612:G:H21	2:A2:3620:U:H5'	1.73	0.52
3:A3:37:GLY:H	70:m2:1632:A:H5''	1.74	0.52
18:F1:18:TRP:CD1	18:F1:18:TRP:H	2.26	0.52
25:H2:169:VAL:HG11	25:H2:191:VAL:HG11	1.92	0.52
26:H3:22:ARG:NH1	73:q2:16:ILE:HG21	2.25	0.52
32:K3:52:ILE:HG23	32:K3:109:LEU:HD11	1.91	0.52
32:K3:84:TYR:HE2	32:K3:93:LYS:HB3	1.74	0.52
44:Q2:44:ARG:HD3	44:Q2:49:ILE:HD11	1.91	0.52
70:m2:680:U:H2'	70:m2:681:A:C8	2.42	0.52
70:m2:1410:U:C2	70:m2:1411:A:C8	2.98	0.52
2:A2:184:U:H5''	2:A2:254:G:N2	2.23	0.52
2:A2:718:A:H2'	2:A2:719:C:C6	2.45	0.52
2:A2:1122:C:H2'	2:A2:1123:C:C6	2.44	0.52
2:A2:3512:A:H5''	29:J2:83:TRP:O	2.09	0.52
31:K2:14:ARG:HH12	31:K2:16:LYS:HE3	1.73	0.52
70:m2:850:U:H2'	70:m2:851:A:H8	1.75	0.52
2:A2:3694:U:H5	33:L1:102:LYS:HB2	1.73	0.52
2:A2:3890:G:H2'	2:A2:3891:A:C8	2.45	0.52
3:A3:75:ARG:HD2	3:A3:95:TYR:HB2	1.92	0.52
4:B1:190:LEU:O	4:B1:194:VAL:HG22	2.10	0.52
35:L3:109:ARG:HE	35:L3:146:SER:HA	1.73	0.52
60:b2:35:LYS:HA	60:b2:44:LEU:HD11	1.91	0.52
61:c2:3:LEU:HD23	61:c2:3:LEU:H	1.74	0.52
70:m2:913:C:O2'	70:m2:914:C:H5'	2.10	0.52
71:o2:180:ARG:HD2	71:o2:184:ARG:NH2	2.25	0.52
78:v2:32:HIS:HB3	78:v2:35:LEU:HB2	1.91	0.52
2:A2:10:A:H2'	2:A2:11:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1244:C:H2'	2:A2:1245:G:O4'	2.09	0.52
2:A2:2395:G:H2'	2:A2:2396:A:C8	2.45	0.52
2:A2:3713:U:H2'	2:A2:3715:G:H8	1.74	0.52
3:A3:40:TYR:O	3:A3:43:VAL:HG12	2.10	0.52
13:D2:28:ARG:HD2	13:D2:123:ARG:HH11	1.74	0.52
70:m2:202:C:H5''	70:m2:203:G:H21	1.73	0.52
70:m2:1409:U:H5''	81:y2:71:ARG:NH1	2.12	0.52
2:A2:1417:G:H2'	2:A2:1418:G:C8	2.44	0.52
2:A2:2203:G:H2'	2:A2:2204:A:C8	2.45	0.52
28:I3:17:TRP:HB2	28:I3:36:ARG:HG2	1.91	0.52
48:S2:54:GLU:HG2	48:S2:69:LYS:HG2	1.91	0.52
59:a2:50:PRO:HG3	68:j2:61:MET:HE3	1.91	0.52
7:n2:70:G:H2'	7:n2:71:G:C8	2.44	0.52
2:A2:1574:C:H2'	2:A2:1575:U:C6	2.45	0.52
2:A2:3536:G:H2'	2:A2:3537:G:C8	2.45	0.52
2:A2:4109:U:H1'	16:E2:252:ALA:HB3	1.92	0.52
33:L1:80:VAL:HG13	33:L1:82:ILE:HG12	1.91	0.52
37:M3:21:VAL:HG12	37:M3:119:GLN:HG3	1.92	0.52
81:y2:51:LEU:HD13	81:y2:81:ILE:HG23	1.92	0.52
2:A2:173:C:H2'	2:A2:174:C:C6	2.46	0.52
2:A2:1475:C:H2'	2:A2:1476:C:C6	2.45	0.52
2:A2:2407:G:H1	68:j2:61:MET:CE	2.22	0.52
18:F1:81:LEU:HD11	18:F1:98:VAL:HG22	1.92	0.52
28:I3:215:GLN:HG3	28:I3:231:ASP:HB2	1.92	0.52
30:J3:183:LYS:HG3	43:P3:95:PRO:O	2.10	0.52
70:m2:442:G:OP1	77:u2:24:LYS:HE3	2.09	0.52
70:m2:846:U:H2'	70:m2:847:G:C8	2.45	0.52
70:m2:1279:C:H2'	70:m2:1280:A:C8	2.42	0.52
70:m2:1407:A:H2'	70:m2:1408:G:O4'	2.09	0.52
71:o2:149:ASN:HB2	71:o2:165:ASN:OD1	2.10	0.52
72:p2:184:VAL:O	72:p2:188:LEU:HG	2.10	0.52
74:r2:87:MET:HE1	74:r2:236:ILE:HD13	1.91	0.52
77:u2:161:LEU:H	77:u2:161:LEU:HD23	1.75	0.52
78:v2:90:VAL:HB	78:v2:94:LEU:HG	1.92	0.52
2:A2:928:G:H22	2:A2:1064:G:H22	1.58	0.51
2:A2:3711:C:H2'	2:A2:3712:A:C8	2.45	0.51
10:C2:67:U:H2'	10:C2:68:G:H8	1.75	0.51
28:I3:36:ARG:HD2	28:I3:65:PHE:CE1	2.44	0.51
54:V2:110:MET:O	54:V2:114:GLN:HG3	2.10	0.51
62:d2:54:LYS:O	62:d2:58:THR:HB	2.10	0.51
70:m2:65:C:H5'	70:m2:78:C:H41	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:575:U:O2	70:m2:578:A2M:H8	2.10	0.51
6:B3:15:VAL:HG23	6:B3:62:ARG:HD3	1.92	0.51
6:B3:43:LYS:HB3	70:m2:1541:U:OP1	2.10	0.51
25:H2:53:ARG:HH21	25:H2:73:LYS:HG2	1.75	0.51
35:L3:46:VAL:HG21	35:L3:106:LEU:HD21	1.91	0.51
40:O2:42:PHE:CD2	40:O2:90:TYR:HB2	2.45	0.51
45:Q3:107:ARG:O	45:Q3:110:ARG:HG2	2.10	0.51
70:m2:25:A:O2'	70:m2:26:U:H5''	2.10	0.51
70:m2:1620:C:H2'	70:m2:1621:A:C8	2.45	0.51
81:y2:50:LYS:HE3	81:y2:82:TYR:OH	2.10	0.51
1:A1:109:PRO:HG3	1:A1:166:TYR:CD2	2.45	0.51
2:A2:1444:A:C8	13:D2:199:VAL:HG21	2.45	0.51
2:A2:2167:A:H2'	2:A2:2168:U:H6	1.74	0.51
2:A2:2216:G:H2'	2:A2:2217:U:C6	2.46	0.51
2:A2:3337:G:O6	13:D2:125:LYS:HD2	2.10	0.51
2:A2:4543:G:H2'	2:A2:4544:G:C8	2.45	0.51
6:B3:124:THR:O	6:B3:128:GLN:HG2	2.11	0.51
30:J3:207:ALA:HB2	70:m2:4:C:H4'	1.92	0.51
47:R3:50:PHE:CZ	47:R3:79:ILE:HG12	2.45	0.51
62:d2:64:MET:O	62:d2:68:LYS:HG2	2.09	0.51
68:j2:73:THR:O	68:j2:77:VAL:HG23	2.10	0.51
70:m2:447:A:H5''	77:u2:51:GLY:HA3	1.92	0.51
70:m2:945:U:H2'	70:m2:946:A:H8	1.76	0.51
70:m2:1223:G:H2'	70:m2:1224:G:H8	1.76	0.51
77:u2:165:GLN:HG3	77:u2:171:LEU:HD23	1.91	0.51
78:v2:45:VAL:O	78:v2:49:MET:HG2	2.10	0.51
2:A2:517:C:H2'	2:A2:518:C:H6	1.74	0.51
2:A2:1114:G:H2'	2:A2:1115:C:C6	2.45	0.51
2:A2:3890:G:H2'	2:A2:3891:A:H8	1.74	0.51
22:G2:60:ILE:HB	22:G2:80:ALA:HB2	1.91	0.51
28:I3:18:VAL:HG21	28:I3:307:VAL:HG23	1.92	0.51
41:O3:55:ARG:HH12	70:m2:975:C:H42	1.59	0.51
54:V2:41:ARG:HH21	54:V2:45:PHE:HE2	1.57	0.51
72:p2:71:LEU:HD21	72:p2:189:ILE:HD13	1.92	0.51
76:t2:69:LEU:O	76:t2:73:GLN:HG3	2.11	0.51
37:M3:94:ILE:HB	37:M3:100:PRO:HB3	1.91	0.51
70:m2:474:C:H4'	70:m2:476:G:OP1	2.11	0.51
73:q2:95:GLY:O	73:q2:126:ILE:HG23	2.10	0.51
2:A2:2619:A:H2'	2:A2:2620:U:C6	2.46	0.51
19:F2:190:ARG:HB2	19:F2:202:ILE:HG23	1.93	0.51
39:N3:17:PRO:HG3	49:S3:28:PRO:HG3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:O3:121:ARG:HG2	41:O3:121:ARG:HH11	1.76	0.51
43:P3:81:VAL:HG21	43:P3:125:ILE:HD13	1.93	0.51
55:W2:22:MET:HE3	55:W2:85:CYS:HA	1.92	0.51
70:m2:381:C:O2	77:u2:5:ARG:HD2	2.11	0.51
70:m2:1570:C:H2'	70:m2:1571:A:N3	2.26	0.51
82:z2:58:MET:HA	82:z2:61:ILE:HG12	1.93	0.51
2:A2:432:U:H4'	2:A2:433:A:H5''	1.91	0.51
2:A2:1441:C:OP2	13:D2:9:ARG:HD2	2.11	0.51
2:A2:2189:G:H5''	46:R2:83:THR:HG22	1.93	0.51
2:A2:2294:C:H2'	2:A2:2295:C:C6	2.46	0.51
2:A2:2448:G:H2'	2:A2:2449:G:N2	2.26	0.51
9:C1:93:ARG:HG2	9:C1:182:SER:HB3	1.92	0.51
36:M2:81:TRP:HB2	36:M2:128:LYS:HB2	1.93	0.51
70:m2:77:A:H2'	70:m2:78:C:O4'	2.10	0.51
2:A2:106:A:H2'	2:A2:107:G:O4'	2.10	0.51
2:A2:1596:A:H5''	2:A2:3866:A:H61	1.76	0.51
2:A2:2120:OMC:HM21	2:A2:2583:U:H2'	1.92	0.51
2:A2:3325:G:H21	2:A2:3328:G:H21	1.57	0.51
2:A2:4112:U:H2'	2:A2:4113:C:H6	1.76	0.51
2:A2:4176:G:N3	16:E2:252:ALA:HB1	2.26	0.51
2:A2:4495:C:H2'	2:A2:4496:G:C8	2.46	0.51
4:B1:83:PHE:CE2	4:B1:164:ILE:HD11	2.45	0.51
4:B1:242:LEU:HD13	4:B1:246:SER:HB3	1.93	0.51
33:L1:31:THR:HA	33:L1:171:HIS:HB3	1.93	0.51
42:P2:71:GLU:HG2	42:P2:72:LEU:N	2.26	0.51
70:m2:443:C:H2'	70:m2:444:C:C6	2.46	0.51
70:m2:1858:C:H2'	70:m2:1859:G:H8	1.74	0.51
1:A1:98:ARG:HD2	2:A2:736:G:H5''	1.93	0.51
2:A2:1380:U:H2'	2:A2:1381:C:C6	2.46	0.51
2:A2:1444:A:H2	13:D2:208:GLU:HG3	1.74	0.51
2:A2:2250:U:H2'	2:A2:2251:G:H8	1.76	0.51
15:E1:16:ARG:HH21	15:E1:137:PRO:HG3	1.76	0.51
28:I3:152:SER:H	28:I3:169:GLY:HA2	1.76	0.51
35:L3:61:LEU:HD11	35:L3:94:LEU:HB3	1.93	0.51
35:L3:127:ARG:HD3	51:T3:31:ARG:HD3	1.92	0.51
39:N3:86:GLU:H	39:N3:86:GLU:CD	2.19	0.51
49:S3:34:ASP:OD1	49:S3:82:LYS:HD2	2.11	0.51
70:m2:658:G:H21	70:m2:665:C:H5''	1.75	0.51
70:m2:919:U:H5'	76:t2:118:ARG:HG3	1.92	0.51
70:m2:1803:A:H2'	70:m2:1804:C:C6	2.45	0.51
77:u2:34:ALA:HB2	77:u2:56:ARG:HD3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:318:A:H2'	2:A2:319:A:C8	2.45	0.51
2:A2:2103:G:H5''	2:A2:2106:OMC:H5	1.75	0.51
4:B1:159:HIS:NE2	4:B1:185:LYS:HE3	2.26	0.51
4:B1:165:GLU:HA	4:B1:168:VAL:HG22	1.93	0.51
15:E1:34:THR:O	15:E1:38:LYS:HG2	2.11	0.51
17:E3:68:LYS:HD2	17:E3:91:LEU:HD22	1.93	0.51
22:G2:195:HIS:O	22:G2:199:ILE:HG13	2.10	0.51
34:L2:95:TRP:O	34:L2:99:MET:HG2	2.10	0.51
37:M3:35:ILE:HD13	37:M3:61:TYR:CE1	2.45	0.51
43:P3:24:GLN:HB2	49:S3:7:LEU:HD13	1.92	0.51
55:W2:48:LEU:HD23	55:W2:93:THR:HG23	1.93	0.51
70:m2:354:U:H2'	70:m2:355:OMC:C6	2.46	0.51
70:m2:1009:C:H2'	70:m2:1010:A:C8	2.46	0.51
2:A2:1523:G:H2'	2:A2:1524:C:C6	2.46	0.50
2:A2:1541:G:H2'	2:A2:1542:C:C6	2.46	0.50
2:A2:4581:G:C6	25:H2:190:ARG:HD3	2.46	0.50
13:D2:137:ILE:HD11	13:D2:149:LYS:HB2	1.93	0.50
15:E1:144:LYS:O	15:E1:148:THR:HB	2.10	0.50
16:E2:220:ILE:HB	16:E2:346:THR:HB	1.93	0.50
16:E2:231:VAL:HG21	16:E2:251:VAL:HG23	1.92	0.50
32:K3:32:MET:HE1	32:K3:63:MET:HE3	1.92	0.50
35:L3:19:PRO:HA	35:L3:24:ARG:HH21	1.75	0.50
37:M3:31:LEU:HD13	37:M3:111:VAL:HG12	1.93	0.50
62:d2:4:GLY:O	62:d2:8:PHE:HD2	1.94	0.50
70:m2:957:A:H61	70:m2:973:G:H1'	1.76	0.50
72:p2:152:LYS:HB3	82:z2:132:ARG:HB2	1.93	0.50
2:A2:686:C:H2'	2:A2:687:G:H8	1.76	0.50
2:A2:2241:G:H2'	2:A2:2242:G:C8	2.46	0.50
2:A2:2599:A:O2'	2:A2:4283:G:H4'	2.10	0.50
22:G2:62:CYS:HB3	22:G2:105:LEU:HD22	1.93	0.50
25:H2:197:HIS:HB3	25:H2:200:PHE:HD2	1.75	0.50
70:m2:496:C:N4	70:m2:511:OMG:HN22	2.10	0.50
2:A2:1672:C:H2'	2:A2:1673:A2M:H8	1.93	0.50
2:A2:4274:A:H4'	16:E2:13:SER:HB2	1.93	0.50
2:A2:4526:U:H4'	2:A2:4527:U:C5	2.46	0.50
45:Q3:81:TYR:HD1	45:Q3:84:LYS:HD2	1.76	0.50
66:h2:11:ARG:NH1	70:m2:1185:A:H5'	2.25	0.50
73:q2:132:LYS:HE2	73:q2:192:TRP:HD1	1.75	0.50
81:y2:104:SER:O	81:y2:107:GLU:HG2	2.11	0.50
2:A2:1604:A:H4'	38:N2:105:PHE:CE1	2.46	0.50
2:A2:1766:A:H3'	2:A2:1767:G:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3517:A:H2'	2:A2:3518:A:C8	2.47	0.50
2:A2:4045:G:O4'	2:A2:4099:5MC:HM52	2.11	0.50
31:K2:79:THR:HB	31:K2:136:THR:HG22	1.94	0.50
42:P2:60:MET:HE3	42:P2:78:PRO:HB3	1.93	0.50
70:m2:931:G:H2'	70:m2:932:C:O4'	2.11	0.50
70:m2:1201:A:H2'	70:m2:1202:A:C8	2.46	0.50
2:A2:1670:A:N6	12:D1:115:MET:HE2	2.27	0.50
2:A2:3566:C:H2'	2:A2:3567:C:H6	1.76	0.50
16:E2:57:VAL:HG22	16:E2:73:VAL:HG22	1.93	0.50
39:N3:7:PRO:HG3	70:m2:998:A:H5''	1.92	0.50
43:P3:104:LEU:HD12	43:P3:106:THR:HG22	1.93	0.50
70:m2:915:A:N6	76:t2:98:ARG:HG3	2.27	0.50
74:r2:155:LYS:O	74:r2:158:ASP:HB2	2.11	0.50
79:w2:118:ARG:HH11	79:w2:118:ARG:HG2	1.76	0.50
2:A2:176:G:H2'	2:A2:177:G:H8	1.77	0.50
2:A2:1327:U:H2'	2:A2:1328:A:C8	2.47	0.50
2:A2:2293:U:H2'	2:A2:2294:C:C6	2.46	0.50
2:A2:2323:C:H2'	2:A2:2324:G:H8	1.76	0.50
2:A2:4550:C:H2'	2:A2:4551:C:C6	2.47	0.50
6:B3:39:LEU:HD11	6:B3:52:TRP:CZ3	2.47	0.50
16:E2:181:MET:HE1	16:E2:346:THR:HG23	1.94	0.50
16:E2:288:GLY:HA3	16:E2:330:PHE:CE1	2.46	0.50
22:G2:163:LEU:O	22:G2:167:VAL:HG13	2.12	0.50
44:Q2:58:LYS:HG2	44:Q2:59:HIS:ND1	2.26	0.50
70:m2:164:A:H2'	70:m2:165:G:C8	2.46	0.50
73:q2:137:VAL:HG13	73:q2:151:LYS:HG3	1.94	0.50
2:A2:811:G:H8	2:A2:811:G:OP2	1.95	0.50
2:A2:1735:G:H2'	2:A2:1736:A:C8	2.47	0.50
2:A2:3573:A:H2'	2:A2:3574:G:H8	1.75	0.50
2:A2:3885:A:OP2	67:i2:97:LYS:HB3	2.12	0.50
2:A2:4555:A:H4'	16:E2:95:THR:HG22	1.93	0.50
5:B2:54:A:C5	15:E1:12:MET:HG2	2.46	0.50
15:E1:57:VAL:HG12	15:E1:60:PHE:H	1.77	0.50
16:E2:340:THR:HG22	16:E2:341:LYS:H	1.76	0.50
32:K3:84:TYR:HD2	32:K3:95:LYS:HD2	1.76	0.50
35:L3:83:ARG:HE	35:L3:150:ARG:HD3	1.77	0.50
53:U3:132:MET:HB3	53:U3:139:HIS:HB3	1.94	0.50
56:X2:37:GLY:O	56:X2:41:ARG:HG3	2.11	0.50
70:m2:1647:C:H4'	81:y2:138:ARG:O	2.11	0.50
73:q2:167:TYR:O	73:q2:190:LEU:HD13	2.12	0.50
79:w2:4:ILE:HG21	79:w2:56:ILE:HG12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A3:7:GLU:O	3:A3:8:LYS:HG2	2.11	0.50
6:B3:62:ARG:HH22	70:m2:1545:U:P	2.35	0.50
7:Bv:15:G:H22	7:Bv:48:C:H42	1.60	0.50
15:E1:63:ARG:O	15:E1:66:GLU:HB3	2.12	0.50
19:F2:289:LEU:O	19:F2:293:LEU:HG	2.11	0.50
28:I3:10:THR:HG22	28:I3:308:ARG:HG3	1.93	0.50
37:M3:66:GLU:HA	37:M3:69:LEU:CD2	2.42	0.50
53:U3:137:ASP:C	53:U3:138:ARG:HD3	2.37	0.50
56:X2:87:ARG:NH2	56:X2:122:VAL:HG11	2.26	0.50
70:m2:31:U:H3	70:m2:518:A:H2	1.59	0.50
70:m2:835:C:H2'	70:m2:836:C:C6	2.47	0.50
70:m2:1229:G:C2	70:m2:1230:A:C8	3.00	0.50
72:p2:35:ALA:HB2	72:p2:44:ILE:HD11	1.94	0.50
2:A2:217:C:H3'	2:A2:218:A:H4'	1.93	0.50
2:A2:453:G:H22	2:A2:1107:G:H22	1.60	0.50
2:A2:4649:U:H2'	2:A2:4650:C:C6	2.46	0.50
22:G2:41:LYS:HB2	38:N2:68:THR:O	2.12	0.50
57:Y2:77:PHE:HD2	57:Y2:88:LEU:HD11	1.77	0.50
71:o2:61:ALA:O	71:o2:65:ILE:HG13	2.12	0.50
2:A2:129:C:H2'	2:A2:130:G:C8	2.44	0.49
2:A2:1068:C:N4	2:A2:1082:A:H61	2.10	0.49
2:A2:3720:U:H2'	2:A2:3721:U:C6	2.47	0.49
5:B2:33:U:H2'	5:B2:34:C:C6	2.47	0.49
28:I3:42:MET:HE3	28:I3:57:ARG:HG2	1.93	0.49
45:Q3:17:LEU:HD21	74:r2:92:ILE:HD13	1.93	0.49
53:U3:135:HIS:HB2	53:U3:138:ARG:O	2.11	0.49
70:m2:394:A:H3'	70:m2:394:A:N3	2.27	0.49
72:p2:33:VAL:HG12	72:p2:96:CYS:SG	2.52	0.49
2:A2:4634:U:H4'	2:A2:4635:U:H5	1.77	0.49
9:C1:4:ILE:HG12	9:C1:61:TRP:CH2	2.47	0.49
11:C3:56:MET:HE3	70:m2:1582:A:H5'	1.94	0.49
32:K3:153:VAL:O	32:K3:157:VAL:HG23	2.11	0.49
32:K3:159:ARG:HG2	32:K3:173:ALA:HB2	1.93	0.49
35:L3:18:ARG:HH11	35:L3:18:ARG:HG3	1.77	0.49
45:Q3:25:ILE:HD11	45:Q3:73:GLY:HA3	1.94	0.49
50:T2:95:VAL:HG13	50:T2:109:LYS:HE3	1.93	0.49
70:m2:616:C:H5''	70:m2:617:C:C6	2.47	0.49
70:m2:1100:C:H2'	70:m2:1101:G:C8	2.48	0.49
76:t2:117:PRO:HD2	76:t2:120:ARG:HD3	1.93	0.49
2:A2:2653:G:H2'	2:A2:2654:C:H6	1.77	0.49
2:A2:3312:A:H2'	2:A2:3313:U:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3412:A:H2'	2:A2:3413:G:C8	2.47	0.49
2:A2:3713:U:H4'	2:A2:3714:C:H5	1.77	0.49
28:I3:175:LYS:HB2	28:I3:177:TRP:HE1	1.77	0.49
31:K2:42:THR:O	31:K2:46:VAL:HG23	2.12	0.49
41:O3:121:ARG:HG2	41:O3:121:ARG:NH1	2.28	0.49
56:X2:21:VAL:HG23	56:X2:57:MET:HE1	1.94	0.49
59:a2:70:THR:HA	59:a2:73:HIS:CD2	2.47	0.49
69:k2:63:VAL:HG13	69:k2:79:ARG:HG2	1.93	0.49
70:m2:27:A2M:HM'1	70:m2:485:C:H1'	1.94	0.49
70:m2:1205:G:H2'	70:m2:1206:A:H8	1.77	0.49
75:s2:49:LEU:HD11	81:y2:49:TYR:HB2	1.93	0.49
2:A2:221:C:H2'	2:A2:222:C:C6	2.47	0.49
2:A2:325:U:H2'	2:A2:326:C:H6	1.76	0.49
2:A2:1281:C:H2'	2:A2:1282:C:H6	1.77	0.49
2:A2:1668:G:H1	2:A2:4092:G:N2	2.10	0.49
2:A2:2366:A:H2'	2:A2:2367:G:C8	2.47	0.49
10:C2:66:A:H2'	10:C2:67:U:C6	2.47	0.49
19:F2:106:LYS:HG2	19:F2:108:TRP:CZ2	2.47	0.49
22:G2:202:GLN:NE2	22:G2:237:GLU:HB2	2.27	0.49
43:P3:28:ARG:HB3	43:P3:29:PRO:HD3	1.93	0.49
70:m2:415:G:H5'	70:m2:815:A:H61	1.78	0.49
74:r2:45:ILE:HG13	74:r2:80:ILE:HB	1.95	0.49
2:A2:850:G:H2'	2:A2:851:C:C6	2.48	0.49
2:A2:1376:A:H1'	70:m2:681:A:H5'	1.95	0.49
2:A2:2275:C:H2'	2:A2:2276:G:H8	1.77	0.49
2:A2:4430:U:H2'	2:A2:4431:C:C6	2.48	0.49
2:A2:4604:C:H2'	2:A2:4605:U:C6	2.47	0.49
3:A3:27:ALA:HB2	3:A3:52:LEU:HD23	1.94	0.49
15:E1:82:ILE:HA	15:E1:85:LYS:HD3	1.95	0.49
15:E1:90:ARG:O	15:E1:93:GLU:HG2	2.12	0.49
18:F1:46:ILE:HD11	18:F1:51:ALA:HA	1.94	0.49
23:G3:9:ILE:HG23	23:G3:59:LEU:HD23	1.94	0.49
27:I2:9:LEU:HD23	27:I2:118:MET:HB2	1.94	0.49
30:J3:88:ILE:HD13	30:J3:94:ILE:HD11	1.93	0.49
30:J3:193:VAL:HG11	30:J3:240:THR:HG22	1.93	0.49
70:m2:121:OMU:H5'	74:r2:77:ARG:HH21	1.78	0.49
70:m2:158:A:H1'	70:m2:159:A:H5'	1.95	0.49
70:m2:529:C:H2'	70:m2:530:A:C8	2.45	0.49
70:m2:1166:G:O2'	70:m2:1167:G:H5'	2.12	0.49
70:m2:1310:U:H2'	70:m2:1311:C:C6	2.47	0.49
73:q2:76:ARG:HG3	73:q2:77:PHE:CD1	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:57:LYS:O	1:A1:61:LEU:HD12	2.12	0.49
2:A2:1067:A:C6	2:A2:1082:A:C6	3.01	0.49
2:A2:1128:C:C2	2:A2:1129:C:C5	3.01	0.49
2:A2:1131:U:H2'	2:A2:1132:C:C6	2.47	0.49
14:D3:15:ARG:HH11	30:J3:84:PHE:HA	1.78	0.49
17:E3:5:ARG:O	43:P3:77:PRO:HG3	2.13	0.49
21:G1:90:ARG:HH11	21:G1:90:ARG:HG3	1.78	0.49
58:Z2:41:PHE:HE1	58:Z2:110:ILE:HD13	1.78	0.49
70:m2:51:U:H2'	70:m2:52:G:C8	2.46	0.49
70:m2:1841:U:H2'	70:m2:1842:U:C6	2.48	0.49
75:s2:126:THR:O	75:s2:136:ARG:HA	2.11	0.49
2:A2:132:G:H2'	2:A2:133:C:O4'	2.13	0.49
2:A2:261:G:H2'	2:A2:262:G:H8	1.78	0.49
2:A2:1446:G:H5'	2:A2:1447:A:OP1	2.11	0.49
2:A2:1510:G:H2'	2:A2:1511:C:C4	2.47	0.49
2:A2:3948:U:H2'	2:A2:3949:G:O4'	2.13	0.49
2:A2:4505:G:H2'	2:A2:4506:G:C8	2.48	0.49
4:B1:147:VAL:HG13	4:B1:179:VAL:HG11	1.94	0.49
4:B1:189:ARG:HG2	4:B1:189:ARG:HH11	1.77	0.49
5:B2:92:C:H2'	5:B2:93:G:H8	1.77	0.49
28:I3:108:VAL:HG23	28:I3:124:SER:HB2	1.93	0.49
32:K3:85:ARG:HG2	32:K3:85:ARG:HH11	1.78	0.49
34:L2:28:GLU:HG3	34:L2:49:LEU:HD22	1.94	0.49
43:P3:79:PHE:H	43:P3:125:ILE:HG22	1.78	0.49
47:R3:50:PHE:CZ	47:R3:58:LEU:HD11	2.47	0.49
48:S2:131:GLU:HA	48:S2:134:LYS:HD2	1.93	0.49
70:m2:450:A:N6	77:u2:29:LEU:HD13	2.27	0.49
70:m2:1141:C:H2'	70:m2:1142:G:O4'	2.11	0.49
73:q2:105:LEU:HD23	73:q2:184:ILE:HG21	1.94	0.49
1:A1:242:MET:HB3	1:A1:254:ASP:OD2	2.13	0.49
2:A2:1121:A:H2'	2:A2:1122:C:C6	2.47	0.49
2:A2:4289:OMG:H1'	2:A2:4289:OMG:HM23	1.59	0.49
2:A2:4610:C:H4'	16:E2:132:LYS:NZ	2.28	0.49
16:E2:47:LEU:H	16:E2:84:MET:HE3	1.77	0.49
22:G2:153:THR:HG23	22:G2:160:PHE:CE2	2.48	0.49
33:L1:35:GLN:NE2	33:L1:206:ILE:HG13	2.25	0.49
40:O2:27:HIS:HB3	40:O2:114:TYR:HE2	1.77	0.49
41:O3:34:PHE:HB3	41:O3:41:PHE:HB2	1.95	0.49
53:U3:113:LYS:HD3	53:U3:114:ILE:H	1.77	0.49
54:V2:85:MET:HE1	54:V2:106:ILE:HG21	1.95	0.49
55:W2:19:GLN:O	55:W2:23:LYS:HG3	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:928:A:H61	70:m2:1017:U:H3	1.61	0.49
74:r2:11:ARG:HH12	74:r2:21:ASP:H	1.61	0.49
75:s2:87:LEU:CD2	81:y2:47:LEU:HD11	2.43	0.49
80:x2:38:SER:HB2	80:x2:41:GLN:OE1	2.13	0.49
2:A2:2030:G:H2'	2:A2:2031:A:C8	2.48	0.49
2:A2:2387:U:H2'	2:A2:2388:U:C6	2.47	0.49
2:A2:2653:G:H2'	2:A2:2654:C:C6	2.48	0.49
2:A2:3736:G:C8	46:R2:44:PRO:HG3	2.48	0.49
2:A2:4375:A:H2'	2:A2:4376:A:C8	2.48	0.49
15:E1:146:ARG:HG2	15:E1:147:ARG:HG3	1.95	0.49
23:G3:46:VAL:HG11	23:G3:56:LEU:HD13	1.94	0.49
28:I3:36:ARG:HD2	28:I3:65:PHE:CZ	2.48	0.49
33:L1:52:THR:HA	33:L1:156:LYS:HA	1.95	0.49
41:O3:151:LEU:HD23	41:O3:151:LEU:H	1.78	0.49
50:T2:11:VAL:HG21	50:T2:80:LEU:HB3	1.93	0.49
60:b2:89:ARG:O	60:b2:93:ARG:HG2	2.12	0.49
80:x2:81:ARG:HH12	80:x2:98:ASN:HB2	1.78	0.49
2:A2:952:C:H2'	2:A2:953:G:C8	2.48	0.49
2:A2:1118:C:H2'	2:A2:1119:C:C6	2.48	0.49
2:A2:1648:G:H2'	2:A2:1649:C:C6	2.48	0.49
2:A2:4189:C:H2'	2:A2:4190:G:C8	2.48	0.49
2:A2:4538:A:H5''	21:G1:125:THR:HG21	1.93	0.49
11:C3:98:VAL:O	11:C3:102:THR:HG22	2.12	0.49
35:L3:87:LEU:HD13	35:L3:100:LEU:HD21	1.93	0.49
70:m2:1335:U:H5'	73:q2:147:ALA:HB2	1.93	0.49
72:p2:224:GLU:HG2	72:p2:227:LYS:HE3	1.95	0.49
73:q2:40:ARG:HD3	73:q2:47:GLU:OE1	2.13	0.49
2:A2:659:C:H2'	2:A2:660:G:H8	1.78	0.48
2:A2:1899:G:H5'	2:A2:1900:G:H4'	1.95	0.48
2:A2:2475:C:H2'	2:A2:2476:G:O4'	2.12	0.48
2:A2:3366:G:H1'	2:A2:3368:A:H62	1.77	0.48
2:A2:3562:A:H2'	19:F2:69:THR:HG21	1.94	0.48
6:B3:62:ARG:NH2	70:m2:1544:C:H5''	2.29	0.48
32:K3:144:LEU:HG	32:K3:145:PHE:CD1	2.47	0.48
47:R3:69:THR:OG1	47:R3:72:VAL:HG12	2.12	0.48
54:V2:99:HIS:ND1	54:V2:102:LEU:HD12	2.27	0.48
70:m2:839:A:H4'	70:m2:840:G:OP1	2.13	0.48
71:o2:180:ARG:HD2	71:o2:184:ARG:HH21	1.77	0.48
1:A1:170:LYS:HD3	1:A1:267:ARG:HH21	1.77	0.48
2:A2:318:A:H2'	2:A2:319:A:H8	1.78	0.48
2:A2:1535:G:N3	2:A2:3866:A:H2'	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B1:158:ALA:HB2	4:B1:190:LEU:HD22	1.95	0.48
25:H2:160:LEU:HD11	25:H2:202:ILE:HG13	1.94	0.48
57:Y2:35:TRP:CZ2	57:Y2:56:PRO:HD2	2.47	0.48
70:m2:1115:A:O2'	72:p2:203:SER:HB3	2.13	0.48
70:m2:1718:C:H2'	70:m2:1719:C:H6	1.78	0.48
77:u2:81:VAL:HA	77:u2:102:VAL:HA	1.95	0.48
2:A2:822:C:H2'	2:A2:823:C:C6	2.48	0.48
2:A2:871:U:H5'	25:H2:133:LEU:HD21	1.95	0.48
2:A2:1371:A:H2'	2:A2:1372:G:H8	1.76	0.48
2:A2:2655:U:H2'	2:A2:2656:G:C8	2.48	0.48
2:A2:3316:C:P	13:D2:241:ARG:HH22	2.36	0.48
2:A2:3601:A:H2'	2:A2:3602:G:H8	1.78	0.48
2:A2:3627:G:H1	2:A2:3700:A:H61	1.60	0.48
2:A2:4067:1MA:H2'	2:A2:4068:G:O4'	2.13	0.48
2:A2:4616:C:C2	2:A2:4617:A:C8	3.01	0.48
5:B2:23:A:H2'	5:B2:24:C:C6	2.48	0.48
18:F1:60:ARG:HD2	18:F1:67:HIS:O	2.13	0.48
20:F3:46:GLU:HG3	41:O3:113:GLN:NE2	2.29	0.48
20:F3:79:ILE:HD11	70:m2:1866:U:H5'	1.94	0.48
27:I2:81:TRP:HB2	27:I2:104:VAL:HG21	1.95	0.48
27:I2:151:ALA:O	27:I2:155:THR:HG23	2.13	0.48
28:I3:251:ALA:HB2	28:I3:289:LEU:HD21	1.96	0.48
52:U2:110:LYS:HD3	52:U2:128:PHE:HB2	1.95	0.48
70:m2:1146:A:H2'	70:m2:1147:A:C8	2.48	0.48
70:m2:1300:G:H4'	80:x2:78:THR:HA	1.94	0.48
70:m2:1312:U:H2'	70:m2:1313:C:H6	1.79	0.48
70:m2:1468:G:OP1	82:z2:5:ARG:HD2	2.13	0.48
70:m2:1530:G:H2'	70:m2:1531:C:C6	2.48	0.48
76:t2:76:GLN:HE21	76:t2:94:PHE:HD1	1.60	0.48
77:u2:81:VAL:HG12	77:u2:102:VAL:HG12	1.94	0.48
2:A2:512:C:H2'	2:A2:513:U:O4'	2.13	0.48
2:A2:2031:A:H2'	2:A2:2032:C:O4'	2.14	0.48
2:A2:3614:G:H3'	2:A2:3615:U:C5'	2.43	0.48
2:A2:4351:U:H1'	2:A2:4352:A:H5''	1.95	0.48
2:A2:4652:U:H4'	2:A2:4653:A:H5'	1.95	0.48
10:C2:65:A:C4	10:C2:66:A:C8	3.01	0.48
17:E3:129:SER:HB2	70:m2:29:G:H4'	1.95	0.48
20:F3:3:LYS:HE2	70:m2:1089:A:OP1	2.14	0.48
22:G2:99:TYR:CD2	22:G2:199:ILE:HD13	2.49	0.48
23:G3:12:ALA:HB1	23:G3:32:VAL:HB	1.94	0.48
28:I3:176:VAL:HB	28:I3:186:THR:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:J3:179:THR:HG23	30:J3:180:VAL:O	2.13	0.48
31:K2:61:LEU:HD11	31:K2:65:ARG:HG2	1.95	0.48
50:T2:14:LEU:HD22	59:a2:88:ARG:HG3	1.96	0.48
70:m2:676:C:H2'	70:m2:677:U:C6	2.47	0.48
2:A2:866:A:N6	2:A2:1894:G:H1'	2.28	0.48
2:A2:1669:A:OP1	12:D1:13:LYS:HE2	2.13	0.48
6:B3:40:ALA:H	6:B3:43:LYS:HE2	1.79	0.48
14:D3:16:LYS:HD2	14:D3:21:ASN:OD1	2.14	0.48
14:D3:55:ILE:HD11	14:D3:69:ILE:HG13	1.96	0.48
15:E1:90:ARG:O	15:E1:91:GLU:HG3	2.13	0.48
33:L1:90:LEU:HA	33:L1:93:LEU:HG	1.95	0.48
35:L3:111:GLN:HE21	35:L3:123:ILE:HG13	1.78	0.48
70:m2:303:A:H2'	70:m2:304:A:O4'	2.13	0.48
70:m2:1500:A:P	73:q2:27:ARG:HH22	2.36	0.48
71:o2:165:ASN:HA	71:o2:171:VAL:HG22	1.96	0.48
74:r2:31:PRO:HB3	74:r2:43:PRO:HG3	1.95	0.48
74:r2:111:VAL:HG23	74:r2:111:VAL:O	2.14	0.48
74:r2:118:GLU:HG3	74:r2:121:TYR:CE1	2.47	0.48
78:v2:16:PHE:CD2	78:v2:79:LEU:HB3	2.48	0.48
2:A2:424:U:H2'	2:A2:425:U:H6	1.79	0.48
2:A2:1697:G:H2'	2:A2:1698:A:O4'	2.14	0.48
2:A2:4544:G:H2'	2:A2:4546:G:C8	2.48	0.48
7:Bv:25:C:C2	7:Bv:26:A:C8	3.02	0.48
10:C2:19:C:H2'	10:C2:20:A:C8	2.49	0.48
19:F2:140:LYS:NZ	19:F2:242:PRO:HD2	2.29	0.48
21:G1:7:VAL:HG12	21:G1:57:LEU:HD21	1.95	0.48
28:I3:62:HIS:HD2	28:I3:90:TRP:HZ2	1.61	0.48
30:J3:65:LYS:HG2	30:J3:273:LEU:HG	1.95	0.48
39:N3:49:GLN:O	39:N3:53:ILE:HG13	2.13	0.48
58:Z2:11:PHE:HB2	58:Z2:101:ILE:HD12	1.96	0.48
70:m2:106:C:H2'	70:m2:107:A:H8	1.77	0.48
70:m2:1104:G:H2'	70:m2:1105:C:C6	2.49	0.48
1:A1:250:VAL:HA	36:M2:39:VAL:HG22	1.94	0.48
2:A2:1123:C:H2'	2:A2:1124:C:C6	2.48	0.48
2:A2:1147:A:H2'	2:A2:1148:A:H8	1.78	0.48
28:I3:302:TYR:CE1	28:I3:308:ARG:HD3	2.49	0.48
30:J3:81:ILE:HG21	30:J3:88:ILE:HD11	1.96	0.48
32:K3:138:ALA:O	32:K3:142:ARG:HG3	2.14	0.48
37:M3:38:ALA:O	37:M3:42:LEU:HG	2.14	0.48
42:P2:58:GLY:HA2	42:P2:125:CYS:HB3	1.95	0.48
49:S3:46:VAL:HG13	49:S3:54:VAL:HG21	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:U2:71:PRO:HG2	52:U2:108:TYR:HA	1.96	0.48
53:U3:130:VAL:HB	70:m2:1312:U:H5''	1.95	0.48
54:V2:112:LYS:HA	54:V2:115:ARG:HG3	1.94	0.48
60:b2:111:GLU:OE1	60:b2:111:GLU:HA	2.13	0.48
61:c2:16:LYS:HD3	61:c2:16:LYS:HA	1.65	0.48
62:d2:48:ASN:HA	62:d2:54:LYS:NZ	2.29	0.48
70:m2:456:U:H2'	70:m2:457:A:C8	2.48	0.48
2:A2:424:U:H2'	2:A2:425:U:C6	2.48	0.48
2:A2:1376:A:OP1	2:A2:1376:A:C8	2.67	0.48
2:A2:2117:U:H5''	29:J2:66:GLY:HA3	1.94	0.48
14:D3:83:PHE:CZ	71:o2:53:ARG:HG3	2.49	0.48
21:G1:71:LYS:HE2	21:G1:72:TYR:CZ	2.49	0.48
25:H2:181:LEU:HD11	25:H2:193:LEU:HD22	1.94	0.48
27:I2:181:ALA:O	27:I2:185:VAL:HG22	2.13	0.48
33:L1:49:PHE:HD1	33:L1:49:PHE:H	1.62	0.48
39:N3:47:PRO:HD2	39:N3:86:GLU:HG2	1.94	0.48
41:O3:51:GLU:HG3	72:p2:48:LEU:HG	1.96	0.48
70:m2:12:U:H2'	70:m2:13:C:C6	2.48	0.48
70:m2:589:A:C8	70:m2:592:A:H2'	2.49	0.48
70:m2:1231:G:H2'	70:m2:1232:C:C6	2.49	0.48
70:m2:1629:C:H2'	70:m2:1630:C:C6	2.48	0.48
74:r2:102:ILE:HD11	74:r2:112:HIS:CD2	2.48	0.48
2:A2:1005:G:N2	2:A2:1019:G:H22	2.12	0.48
2:A2:4111:U:H2'	2:A2:4112:U:H6	1.78	0.48
4:B1:176:LYS:HD3	61:c2:39:PHE:HE1	1.79	0.48
5:B2:15:C:H2'	5:B2:16:A:H8	1.79	0.48
27:I2:110:PRO:N	27:I2:111:PRO:HD2	2.29	0.48
45:Q3:36:PRO:HD2	45:Q3:39:GLU:HG3	1.96	0.48
46:R2:149:VAL:O	46:R2:153:ILE:HG22	2.14	0.48
50:T2:64:LYS:O	50:T2:67:LYS:HG2	2.13	0.48
67:i2:33:LEU:HA	67:i2:38:LYS:HG2	1.95	0.48
70:m2:29:G:H2'	70:m2:30:C:C6	2.49	0.48
70:m2:915:A:N3	76:t2:66:VAL:HG11	2.29	0.48
70:m2:1630:C:H2'	70:m2:1631:C:H6	1.78	0.48
79:w2:85:THR:HG23	79:w2:111:VAL:O	2.14	0.48
81:y2:6:PRO:HB2	81:y2:7:LEU:HD12	1.95	0.48
2:A2:1508:U:H2'	2:A2:1509:C:C6	2.48	0.48
2:A2:1763:G:H2'	2:A2:1826:G:H22	1.79	0.48
5:B2:39:C:O2'	15:E1:46:GLN:HG2	2.14	0.48
6:B3:124:THR:HG23	6:B3:127:GLY:N	2.24	0.48
9:C1:76:HIS:O	9:C1:80:MET:HG3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:G2:55:VAL:HG22	22:G2:60:ILE:HG12	1.96	0.48
28:I3:79:LEU:HD22	28:I3:120:ILE:HD12	1.95	0.48
28:I3:147:HIS:NE2	28:I3:175:LYS:HG3	2.29	0.48
33:L1:52:THR:HG22	33:L1:156:LYS:HB3	1.96	0.48
35:L3:145:PRO:HD2	70:m2:524:A:H5'	1.96	0.48
70:m2:947:U:H2'	70:m2:948:U:C6	2.49	0.48
10:C2:3:A:O2'	29:J2:61:ARG:HD3	2.14	0.47
15:E1:3:GLN:NE2	15:E1:5:GLN:HB3	2.29	0.47
23:G3:56:LEU:HB3	75:s2:140:ASP:OD2	2.14	0.47
32:K3:27:PHE:HA	32:K3:30:LYS:HD2	1.95	0.47
70:m2:1225:A:H2'	70:m2:1226:G:O4'	2.14	0.47
70:m2:1735:U:H2'	70:m2:1736:G:O4'	2.14	0.47
70:m2:1739:G:H2'	70:m2:1740:C:C6	2.49	0.47
70:m2:1799:U:H2'	70:m2:1800:C:C6	2.49	0.47
7:n2:22:G:H2'	7:n2:23:A:H8	1.79	0.47
80:x2:28:MET:HG2	80:x2:32:GLN:HB2	1.96	0.47
1:A1:264:ARG:HD2	2:A2:839:C:OP2	2.14	0.47
2:A2:153:G:H2'	2:A2:154:G:H8	1.79	0.47
2:A2:443:G:H5''	58:Z2:54:LYS:HD3	1.95	0.47
2:A2:453:G:H4'	2:A2:454:U:H5'	1.96	0.47
2:A2:486:C:H2'	2:A2:487:C:C6	2.49	0.47
2:A2:850:G:H2'	2:A2:851:C:H6	1.79	0.47
2:A2:1347:A2M:N7	62:d2:15:THR:HG22	2.30	0.47
2:A2:2195:U:H4'	2:A2:2196:C:OP2	2.13	0.47
2:A2:2558:U:H2'	2:A2:2559:OMC:H6	1.79	0.47
2:A2:4436:C:H42	2:A2:4495:C:H42	1.62	0.47
3:A3:25:LYS:HD2	3:A3:55:ARG:HD3	1.96	0.47
5:B2:61:G:H5''	22:G2:271:MET:HE3	1.96	0.47
10:C2:64:U:C2	10:C2:65:A:C8	3.02	0.47
13:D2:132:ASN:O	13:D2:169:VAL:HG23	2.13	0.47
19:F2:144:ILE:O	19:F2:144:ILE:HG13	2.14	0.47
19:F2:266:THR:HG22	19:F2:267:TRP:H	1.79	0.47
22:G2:34:LYS:HD3	22:G2:35:ARG:HH12	1.78	0.47
28:I3:5:MET:CG	28:I3:310:TRP:HB3	2.44	0.47
37:M3:76:LEU:HB3	37:M3:78:LYS:HZ3	1.79	0.47
43:P3:36:ARG:O	43:P3:40:VAL:HG23	2.13	0.47
45:Q3:89:HIS:CD2	45:Q3:93:ARG:HH21	2.31	0.47
70:m2:909:G:H2'	70:m2:910:A:C8	2.49	0.47
70:m2:1448:A:HO2'	70:m2:1449:G:H8	1.62	0.47
70:m2:1630:C:H2'	70:m2:1631:C:C6	2.48	0.47
82:z2:102:THR:O	82:z2:106:LEU:HG	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1214:G:H2'	2:A2:1215:G:C8	2.48	0.47
2:A2:1482:A:H4'	2:A2:1498:G:N2	2.29	0.47
2:A2:2050:C:H2'	2:A2:2051:G:H8	1.79	0.47
2:A2:2194:G:H5'	2:A2:2533:G:OP2	2.13	0.47
2:A2:2235:G:H2'	2:A2:2236:G:C8	2.49	0.47
2:A2:4110:C:H2'	2:A2:4111:U:C6	2.50	0.47
32:K3:124:LEU:HD12	32:K3:125:THR:HG23	1.96	0.47
41:O3:40:THR:HG21	41:O3:74:ALA:HB2	1.95	0.47
43:P3:107:SER:HA	70:m2:864:A:C4	2.49	0.47
70:m2:1032:A:H2'	70:m2:1033:A2M:H8	1.96	0.47
70:m2:1739:G:H2'	70:m2:1740:C:H6	1.79	0.47
77:u2:6:ASP:HB2	77:u2:8:TRP:CD1	2.50	0.47
1:A1:136:LEU:HD21	1:A1:143:THR:HG22	1.97	0.47
2:A2:1123:C:H2'	2:A2:1124:C:H6	1.80	0.47
2:A2:3275:G:H4'	34:L2:79:GLY:O	2.14	0.47
2:A2:4190:G:H2'	2:A2:4191:U:C6	2.50	0.47
14:D3:32:ILE:HD13	71:o2:158:ASP:OD1	2.14	0.47
15:E1:120:ASP:O	15:E1:123:ILE:HG13	2.14	0.47
27:I2:36:VAL:HG12	27:I2:105:LEU:HD12	1.96	0.47
36:M2:30:MET:HE2	36:M2:32:ILE:HD11	1.95	0.47
64:f2:34:LYS:HE3	64:f2:34:LYS:HB2	1.63	0.47
70:m2:658:G:H5'	70:m2:664:G:N2	2.29	0.47
78:v2:48:ALA:O	78:v2:52:LEU:HD23	2.14	0.47
80:x2:108:LYS:HE3	80:x2:108:LYS:HB3	1.74	0.47
2:A2:1068:C:H2'	2:A2:1069:G:C8	2.49	0.47
2:A2:4188:OMC:HM22	2:A2:4189:C:O4'	2.14	0.47
2:A2:4612:A:H5''	16:E2:128:LYS:HG3	1.96	0.47
24:H1:99:GLN:HG3	24:H1:130:PHE:CD1	2.49	0.47
37:M3:24:THR:OG1	37:M3:119:GLN:HG2	2.14	0.47
41:O3:98:ARG:HG2	41:O3:133:THR:HA	1.96	0.47
41:O3:102:GLY:N	41:O3:134:PRO:HB2	2.27	0.47
46:R2:79:PHE:CD2	60:b2:36:VAL:HG21	2.50	0.47
47:R3:40:VAL:O	47:R3:40:VAL:HG12	2.15	0.47
47:R3:53:ALA:HA	47:R3:56:ASP:OD2	2.14	0.47
59:a2:100:GLN:O	59:a2:104:VAL:HG13	2.14	0.47
70:m2:208:G:H2'	70:m2:209:G:C8	2.49	0.47
70:m2:1116:U:H3	70:m2:1121:A:N6	2.13	0.47
71:o2:124:VAL:HG13	71:o2:130:ASP:HB2	1.97	0.47
80:x2:98:ASN:OD1	80:x2:98:ASN:O	2.31	0.47
2:A2:7:C:H2'	2:A2:8:U:C6	2.49	0.47
2:A2:40:G:N2	2:A2:4032:A:H62	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1032:C:H5''	38:N2:142:ARG:NH1	2.29	0.47
2:A2:3241:G:H2'	2:A2:3242:G:C8	2.49	0.47
2:A2:3415:A:N7	2:A2:3419:A:N1	2.63	0.47
2:A2:3973:U:H2'	2:A2:3974:G:C8	2.49	0.47
16:E2:393:LYS:HE2	16:E2:397:ILE:HD11	1.96	0.47
32:K3:7:PHE:CD2	32:K3:10:THR:HG23	2.49	0.47
51:T3:33:LYS:O	51:T3:37:GLN:HG3	2.15	0.47
51:T3:39:ASN:HD21	70:m2:555:A:H5'	1.78	0.47
70:m2:170:A:H2'	70:m2:171:A:C8	2.50	0.47
73:q2:99:ILE:H	73:q2:99:ILE:HD12	1.78	0.47
1:A1:59:PHE:CE2	2:A2:1086:C:H4'	2.50	0.47
1:A1:114:VAL:O	1:A1:142:GLY:HA2	2.15	0.47
2:A2:74:G:H5'	18:F1:59:VAL:HG22	1.96	0.47
2:A2:684:G:H2'	2:A2:685:C:H6	1.80	0.47
2:A2:746:G:HO2'	2:A2:747:G:H8	1.61	0.47
2:A2:2438:C:H2'	2:A2:2439:C:C6	2.49	0.47
2:A2:3413:G:H1	2:A2:3422:A:H62	1.61	0.47
2:A2:3705:U:H5'	33:L1:202:ARG:NH2	2.30	0.47
2:A2:3891:A:H2'	2:A2:3892:G:H8	1.77	0.47
2:A2:3930:C:O2'	2:A2:3933:A:H1'	2.14	0.47
2:A2:3961:G:H5'	2:A2:3990:G:H5''	1.97	0.47
2:A2:4053:G:H2'	2:A2:4054:C:H6	1.78	0.47
2:A2:4234:C:H2'	2:A2:4235:C:O4'	2.15	0.47
3:A3:5:ILE:HG13	47:R3:50:PHE:O	2.14	0.47
3:A3:30:ILE:H	3:A3:30:ILE:HD12	1.80	0.47
5:B2:39:C:H4'	15:E1:47:THR:HG23	1.97	0.47
5:B2:57:C:H2'	5:B2:58:A:H8	1.79	0.47
6:B3:82:ARG:HH21	70:m2:1592:C:H5'	1.79	0.47
7:Bv:25:C:H2'	7:Bv:26:A:H8	1.80	0.47
13:D2:186:TYR:HB2	13:D2:196:TRP:CZ3	2.50	0.47
17:E3:54:LYS:HB3	17:E3:91:LEU:HD11	1.97	0.47
26:H3:33:LYS:HE2	26:H3:34:TYR:CE1	2.49	0.47
27:I2:88:LEU:HD12	27:I2:99:LEU:HD13	1.95	0.47
27:I2:185:VAL:O	27:I2:189:ILE:HG12	2.15	0.47
28:I3:38:LYS:HB3	28:I3:64:HIS:HA	1.95	0.47
32:K3:134:GLY:O	70:m2:169:U:H4'	2.14	0.47
41:O3:51:GLU:HG2	72:p2:65:ARG:HH21	1.79	0.47
45:Q3:76:TYR:OH	45:Q3:86:GLU:HG2	2.15	0.47
46:R2:105:ASN:OD1	46:R2:108:GLN:HG3	2.14	0.47
50:T2:41:ALA:HB2	50:T2:77:TYR:HE1	1.80	0.47
65:g2:103:LEU:HD21	65:g2:111:ARG:H	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:28:U:H2'	70:m2:29:G:H8	1.79	0.47
70:m2:454:G:H2'	70:m2:455:C:C6	2.49	0.47
70:m2:454:G:H2'	70:m2:455:C:H6	1.80	0.47
70:m2:636:A:H2'	70:m2:637:G:C8	2.50	0.47
70:m2:636:A:H2'	70:m2:637:G:H8	1.78	0.47
70:m2:1049:C:H2'	70:m2:1050:G:O4'	2.15	0.47
70:m2:1608:G:N2	70:m2:1634:G:H2'	2.30	0.47
7:n2:9:A:H5'	7:n2:10:G:OP2	2.15	0.47
73:q2:198:ILE:HD12	73:q2:198:ILE:H	1.80	0.47
79:w2:125:ILE:H	79:w2:125:ILE:HD12	1.78	0.47
2:A2:1146:C:H2'	2:A2:1147:A:C8	2.48	0.47
2:A2:3418:U:H3'	2:A2:3419:A:C8	2.50	0.47
2:A2:4044:OMG:HM21	2:A2:4046:A:H2'	1.97	0.47
2:A2:4376:A:O2'	16:E2:104:THR:HG23	2.15	0.47
9:C1:93:ARG:HD2	9:C1:143:GLU:HG3	1.97	0.47
10:C2:105:C:H5''	10:C2:107:C:OP2	2.14	0.47
19:F2:218:ILE:O	19:F2:222:ARG:HB2	2.15	0.47
38:N2:28:ALA:O	38:N2:32:ARG:HG2	2.15	0.47
80:x2:21:ASP:HB2	80:x2:24:GLN:OE1	2.15	0.47
2:A2:233:U:H4'	2:A2:234:G:OP1	2.15	0.47
2:A2:942:A:H2'	2:A2:943:C:H6	1.80	0.47
2:A2:2106:OMC:H1'	2:A2:2106:OMC:HM23	1.62	0.47
2:A2:3390:U:H2'	2:A2:3391:G:O4'	2.15	0.47
19:F2:322:LEU:O	19:F2:326:LEU:HG	2.15	0.47
30:J3:102:LEU:HD22	30:J3:130:ILE:CG1	2.45	0.47
32:K3:199:THR:OG1	70:m2:126:G:H2'	2.15	0.47
49:S3:8:LEU:HD23	49:S3:8:LEU:H	1.80	0.47
70:m2:172:OMU:HM22	70:m2:172:OMU:O2	2.15	0.47
70:m2:1231:G:H2'	70:m2:1232:C:H6	1.79	0.47
70:m2:1803:A:H2'	70:m2:1804:C:H6	1.79	0.47
7:n2:21:A:H61	7:n2:46:G:H2'	1.80	0.47
74:r2:102:ILE:HD12	74:r2:239:PRO:HD3	1.96	0.47
1:A1:53:LYS:HA	1:A1:56:ARG:HD2	1.97	0.47
2:A2:857:A:C8	25:H2:130:ARG:HG2	2.50	0.47
2:A2:4332:G:H2'	2:A2:4333:A:C8	2.50	0.47
2:A2:4340:C:H2'	2:A2:4341:U:C6	2.50	0.47
7:Bv:15:G:N2	7:Bv:48:C:H42	2.12	0.47
20:F3:95:ARG:HE	20:F3:95:ARG:HB3	1.47	0.47
24:H1:80:THR:OG1	24:H1:87:HIS:HA	2.15	0.47
25:H2:75:LEU:HA	25:H2:78:ARG:HG3	1.97	0.47
32:K3:5:ILE:HD13	32:K3:16:ILE:HD12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:K3:137:ARG:HD3	32:K3:178:ARG:HG3	1.96	0.47
56:X2:53:ALA:HA	56:X2:88:LEU:HD21	1.96	0.47
70:m2:292:U:H2'	70:m2:294:A:H2	1.78	0.47
70:m2:944:G:H2'	70:m2:945:U:C6	2.50	0.47
72:p2:93:GLY:O	72:p2:94:LYS:HB2	2.14	0.47
73:q2:194:PRO:HD2	73:q2:200:PRO:O	2.15	0.47
78:v2:42:ASN:O	78:v2:46:MET:HG3	2.15	0.47
1:A1:244:LYS:HE2	5:B2:85:G:OP1	2.15	0.46
2:A2:398:A2M:H8	2:A2:398:A2M:O5'	2.15	0.46
5:B2:63:C:H1'	22:G2:280:VAL:HG11	1.96	0.46
7:Bv:16:U:H2'	7:Bv:60:U:O2	2.15	0.46
7:Bv:26:A:H61	7:Bv:44:G:H1	1.63	0.46
13:D2:93:LYS:HA	13:D2:93:LYS:HD2	1.74	0.46
33:L1:48:ARG:HB2	33:L1:159:MET:HB3	1.96	0.46
33:L1:149:ASP:HA	33:L1:152:LYS:HE2	1.96	0.46
35:L3:53:ILE:HG23	35:L3:77:LEU:HD11	1.97	0.46
50:T2:21:ARG:HA	50:T2:49:TYR:OH	2.15	0.46
62:d2:31:LYS:HB3	62:d2:33:THR:HG22	1.97	0.46
70:m2:5:U:H2'	70:m2:6:G:H8	1.79	0.46
70:m2:28:U:O2'	70:m2:29:G:H5'	2.15	0.46
74:r2:48:LEU:HD12	74:r2:61:VAL:HG13	1.97	0.46
74:r2:107:GLY:HA2	74:r2:189:LEU:HG	1.97	0.46
1:A1:112:ALA:HB2	1:A1:147:LEU:HD11	1.97	0.46
2:A2:1005:G:H22	2:A2:1019:G:H1	1.62	0.46
2:A2:1613:G:H2'	2:A2:1614:C:C6	2.50	0.46
2:A2:1742:G:H22	2:A2:4086:C:H5''	1.79	0.46
2:A2:4016:G:H2'	2:A2:4017:C:H6	1.81	0.46
2:A2:4125:A:H5''	65:g2:95:ILE:HD12	1.97	0.46
2:A2:4603:C:H2'	2:A2:4604:C:H6	1.79	0.46
4:B1:159:HIS:CE1	4:B1:185:LYS:HE3	2.51	0.46
5:B2:16:A:H2'	5:B2:17:C:C6	2.50	0.46
35:L3:70:ARG:HG2	35:L3:70:ARG:HH11	1.80	0.46
35:L3:113:GLN:OE1	35:L3:154:GLN:HG2	2.15	0.46
70:m2:118:C:H1'	70:m2:447:A:C4	2.50	0.46
75:s2:113:VAL:O	75:s2:117:ILE:HG12	2.15	0.46
77:u2:103:LEU:HG	77:u2:170:LYS:HB3	1.97	0.46
2:A2:830:G:N2	2:A2:836:C:H2'	2.30	0.46
2:A2:2520:A:H2'	2:A2:2521:A:C8	2.50	0.46
3:A3:88:LYS:HG2	80:x2:18:ARG:HD3	1.96	0.46
6:B3:42:HIS:HB3	6:B3:93:SER:OG	2.16	0.46
10:C2:94:G:C5	62:d2:84:PRO:HG3	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:C2:155:C:H2'	10:C2:156:U:O4'	2.16	0.46
27:I2:62:MET:HG2	27:I2:65:ASN:H	1.80	0.46
38:N2:36:LYS:HB2	38:N2:36:LYS:HE3	1.56	0.46
45:Q3:12:PHE:HD1	45:Q3:23:MET:HB3	1.79	0.46
69:k2:62:VAL:HG21	69:k2:93:ILE:HG12	1.96	0.46
70:m2:1310:U:H2'	70:m2:1311:C:H6	1.79	0.46
7:n2:22:G:H2'	7:n2:23:A:C8	2.51	0.46
7:n2:25:C:C2	7:n2:26:A:C8	3.03	0.46
72:p2:90:ASP:HB2	72:p2:223:PHE:CZ	2.50	0.46
79:w2:112:HIS:HB3	79:w2:141:ASN:HD22	1.80	0.46
82:z2:57:LEU:O	82:z2:61:ILE:HG23	2.15	0.46
2:A2:18:C:H4'	24:H1:138:PHE:CD1	2.50	0.46
2:A2:2464:C:H2'	2:A2:2465:C:C6	2.50	0.46
2:A2:2619:A:H2'	2:A2:2620:U:H6	1.80	0.46
2:A2:3326:C:H2'	2:A2:3327:G:O4'	2.16	0.46
2:A2:3600:G:H1	2:A2:3719:U:H3	1.63	0.46
2:A2:3758:G:H2'	2:A2:3759:G:H8	1.81	0.46
4:B1:104:PRO:HD3	4:B1:136:LEU:HB3	1.96	0.46
5:B2:49:A:H5''	22:G2:224:SER:HB2	1.97	0.46
9:C1:137:SER:HB3	9:C1:143:GLU:HB3	1.98	0.46
21:G1:38:VAL:HG11	21:G1:55:MET:HE1	1.97	0.46
28:I3:175:LYS:CB	28:I3:177:TRP:HE1	2.28	0.46
29:J2:119:VAL:HG12	29:J2:146:ILE:HG12	1.96	0.46
32:K3:69:THR:O	32:K3:99:GLY:HA3	2.15	0.46
32:K3:198:ARG:HD2	70:m2:126:G:OP1	2.16	0.46
39:N3:54:LEU:HB3	39:N3:60:VAL:HB	1.97	0.46
40:O2:42:PHE:CE1	40:O2:46:ARG:HD3	2.50	0.46
50:T2:115:LYS:O	50:T2:119:GLU:HG2	2.14	0.46
57:Y2:78:LEU:HB3	69:k2:20:ARG:HD3	1.97	0.46
70:m2:1522:G:H2'	70:m2:1522:G:N3	2.31	0.46
74:r2:31:PRO:HG2	74:r2:38:LEU:HG	1.97	0.46
74:r2:149:TYR:N	74:r2:150:PRO:HD3	2.31	0.46
2:A2:1506:U:H2'	2:A2:1507:C:O4'	2.15	0.46
2:A2:2058:C:H5''	57:Y2:104:SER:HB3	1.97	0.46
2:A2:3933:A:O2'	2:A2:3934:A:C8	2.69	0.46
2:A2:4542:G:H1'	2:A2:4572:G:H22	1.79	0.46
2:A2:4542:G:H2'	2:A2:4543:G:C8	2.51	0.46
12:D1:53:VAL:HG11	38:N2:158:PHE:HZ	1.80	0.46
12:D1:153:ARG:HH21	12:D1:157:PHE:HE2	1.64	0.46
28:I3:23:THR:HB	28:I3:31:ILE:HG22	1.97	0.46
28:I3:199:THR:HG21	28:I3:240:CYS:HA	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:L1:105:LYS:HE2	33:L1:105:LYS:HB2	1.57	0.46
34:L2:151:ARG:HD3	79:w2:118:ARG:HH21	1.80	0.46
36:M2:154:LEU:HB3	36:M2:157:ARG:HD3	1.97	0.46
51:T3:24:LYS:HB2	51:T3:24:LYS:HE3	1.79	0.46
54:V2:36:ASP:HB3	54:V2:39:PHE:HB3	1.97	0.46
70:m2:184:G:H2'	70:m2:185:G:H8	1.78	0.46
70:m2:393:C:H2'	70:m2:394:A:C6	2.51	0.46
70:m2:1617:U:H2'	70:m2:1618:U:C6	2.51	0.46
73:q2:96:LEU:HD12	73:q2:190:LEU:HG	1.96	0.46
73:q2:197:LYS:HA	73:q2:197:LYS:HD2	1.76	0.46
74:r2:11:ARG:HG3	74:r2:27:PHE:O	2.15	0.46
1:A1:93:MET:HA	1:A1:96:MET:HG2	1.98	0.46
2:A2:712:G:H2'	2:A2:713:C:C6	2.51	0.46
2:A2:757:U:C2	2:A2:758:G:C8	3.03	0.46
2:A2:1483:G:O2'	2:A2:1655:G:H4'	2.16	0.46
2:A2:3517:A:H2'	2:A2:3518:A:H8	1.81	0.46
2:A2:3768:U:C4	13:D2:95:GLN:HG2	2.50	0.46
18:F1:63:THR:HG23	18:F1:65:ARG:N	2.30	0.46
21:G1:123:ILE:HD13	27:I2:182:GLU:HG3	1.96	0.46
28:I3:17:TRP:CE2	28:I3:303:THR:HG23	2.50	0.46
40:O2:87:THR:O	40:O2:91:LEU:HD23	2.14	0.46
70:m2:17:C:H2'	70:m2:18:C:C6	2.51	0.46
70:m2:1223:G:H2'	70:m2:1224:G:C8	2.50	0.46
74:r2:108:ARG:HE	74:r2:108:ARG:HB2	1.49	0.46
75:s2:35:LEU:HD11	75:s2:146:ARG:HH11	1.80	0.46
2:A2:1121:A:H2'	2:A2:1122:C:H6	1.79	0.46
2:A2:3507:U:H2'	2:A2:3508:A:O4'	2.15	0.46
2:A2:3628:A:N6	2:A2:3699:U:H3	2.13	0.46
10:C2:79:G:H2'	10:C2:80:A:N3	2.31	0.46
10:C2:92:U:H2'	10:C2:93:C:O4'	2.16	0.46
11:C3:76:THR:HA	81:y2:132:PHE:CE2	2.51	0.46
16:E2:132:LYS:HA	16:E2:135:LYS:HE3	1.97	0.46
16:E2:334:LYS:HE2	16:E2:334:LYS:HB3	1.73	0.46
22:G2:65:ALA:HB2	22:G2:74:ILE:HD13	1.97	0.46
27:I2:10:ASP:HB2	27:I2:117:ARG:HB3	1.98	0.46
35:L3:31:LEU:HD11	35:L3:103:GLU:HG3	1.97	0.46
37:M3:25:ALA:HB3	37:M3:31:LEU:HD11	1.98	0.46
48:S2:44:VAL:HG11	48:S2:47:MET:HE1	1.96	0.46
48:S2:115:ARG:O	48:S2:119:LEU:HD13	2.15	0.46
53:U3:138:ARG:NH1	53:U3:149:CYS:HB2	2.29	0.46
2:A2:288:G:H2'	2:A2:289:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1722:C:H3'	2:A2:1723:C:H5''	1.97	0.46
2:A2:1820:C:H2'	2:A2:1821:C:C6	2.50	0.46
2:A2:3366:G:H1'	2:A2:3368:A:N6	2.30	0.46
2:A2:3388:A:H2'	2:A2:3389:A:H8	1.79	0.46
12:D1:145:LYS:HD2	12:D1:167:ILE:HG13	1.97	0.46
31:K2:29:VAL:O	31:K2:33:ARG:HB2	2.16	0.46
45:Q3:88:LYS:HB3	45:Q3:97:TYR:CD1	2.51	0.46
46:R2:93:ASN:HB3	46:R2:95:THR:HG23	1.98	0.46
71:o2:128:ARG:HG3	71:o2:128:ARG:NH1	2.31	0.46
78:v2:32:HIS:CG	78:v2:33:PRO:HD2	2.51	0.46
2:A2:935:C:H2'	2:A2:936:C:C6	2.50	0.46
2:A2:1561:G:H2'	2:A2:1562:G:H8	1.78	0.46
2:A2:1590:A:H2'	12:D1:22:PHE:CZ	2.51	0.46
2:A2:3374:A2M:H2	2:A2:3590:G:O4'	2.15	0.46
2:A2:3557:A:H8	2:A2:4170:A:N1	2.14	0.46
2:A2:4236:A:H2'	2:A2:4237:U:O4'	2.16	0.46
20:F3:58:VAL:HG13	41:O3:125:LYS:HB3	1.98	0.46
25:H2:98:THR:OG1	25:H2:113:VAL:HG22	2.16	0.46
25:H2:193:LEU:HD11	25:H2:260:VAL:HG21	1.97	0.46
27:I2:79:ILE:O	27:I2:83:THR:HG23	2.15	0.46
43:P3:2:VAL:HG12	70:m2:1093:C:O2'	2.16	0.46
70:m2:498:C:H2'	70:m2:499:C:C6	2.51	0.46
70:m2:1535:A:H2	70:m2:1538:G:N3	2.13	0.46
70:m2:1622:A:H2'	80:x2:40:ARG:NH2	2.31	0.46
74:r2:19:MET:SD	74:r2:108:ARG:HD2	2.56	0.46
74:r2:255:ARG:NH1	74:r2:259:LYS:HD2	2.30	0.46
78:v2:24:LYS:HD2	78:v2:65:ARG:O	2.15	0.46
2:A2:162:A:H2'	2:A2:163:A:H8	1.80	0.46
2:A2:165:A:H2'	2:A2:166:C:C6	2.51	0.46
2:A2:1288:G:H2'	2:A2:1289:C:C6	2.51	0.46
2:A2:2459:C:H2'	2:A2:2460:G:O4'	2.16	0.46
2:A2:4601:A:H2'	2:A2:4602:A:H8	1.81	0.46
13:D2:30:ARG:HD2	13:D2:63:PHE:CE2	2.51	0.46
16:E2:108:GLU:HG2	16:E2:109:HIS:CD2	2.51	0.46
19:F2:41:HIS:NE2	19:F2:45:ARG:HD3	2.31	0.46
19:F2:211:TYR:OH	19:F2:218:ILE:HD11	2.16	0.46
29:J2:54:LYS:HB3	29:J2:54:LYS:HE3	1.73	0.46
30:J3:70:VAL:HG11	30:J3:93:ILE:HG23	1.98	0.46
30:J3:78:LEU:HD23	30:J3:81:ILE:HD12	1.98	0.46
39:N3:133:ARG:HH12	79:w2:150:GLY:CA	2.28	0.46
40:O2:28:PRO:HG3	40:O2:100:LEU:HD21	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:R2:150:ALA:HA	46:R2:153:ILE:HG22	1.98	0.46
70:m2:1019:U:H2'	70:m2:1020:U:C6	2.48	0.46
7:n2:27:G:H2'	7:n2:28:G:H8	1.81	0.46
1:A1:49:GLU:O	1:A1:53:LYS:HG2	2.15	0.45
1:A1:84:ARG:HD3	2:A2:842:A:OP2	2.17	0.45
2:A2:1444:A:N7	13:D2:199:VAL:HG21	2.31	0.45
2:A2:1553:A:H2'	2:A2:1554:G:C8	2.50	0.45
2:A2:2019:G:H2'	2:A2:2020:C:O4'	2.16	0.45
2:A2:2081:G:H5''	57:Y2:127:ALA:CB	2.46	0.45
2:A2:3504:U:H2'	2:A2:3505:A:C8	2.51	0.45
2:A2:3886:A:N7	2:A2:3923:A:N1	2.64	0.45
10:C2:152:U:H2'	10:C2:153:C:O4'	2.16	0.45
12:D1:102:MET:H	12:D1:102:MET:CE	2.29	0.45
16:E2:238:LYS:HE2	16:E2:238:LYS:HB2	1.71	0.45
32:K3:56:ASN:HB2	32:K3:108:VAL:HG12	1.99	0.45
36:M2:165:PRO:C	36:M2:167:PHE:H	2.24	0.45
37:M3:41:ALA:HB2	37:M3:112:LYS:HE3	1.98	0.45
45:Q3:17:LEU:HD23	74:r2:64:ILE:HG23	1.98	0.45
57:Y2:113:GLU:O	57:Y2:117:GLN:HG2	2.16	0.45
63:e2:14:THR:O	63:e2:17:ARG:HB2	2.17	0.45
70:m2:584:U:H2'	70:m2:585:A:H5''	1.98	0.45
72:p2:171:ILE:HG21	72:p2:197:ILE:HG13	1.96	0.45
74:r2:19:MET:HE2	74:r2:19:MET:HB2	1.78	0.45
1:A1:146:LYS:HB2	1:A1:223:PHE:CE2	2.52	0.45
2:A2:1069:G:H2'	2:A2:1070:C:H4'	1.98	0.45
2:A2:1115:C:H2'	2:A2:1117:A:C5	2.52	0.45
2:A2:1371:A:H2'	2:A2:1372:G:C8	2.51	0.45
2:A2:4024:U:OP2	67:i2:61:LYS:HG2	2.17	0.45
2:A2:4546:G:H2'	2:A2:4547:C:C6	2.50	0.45
3:A3:40:TYR:O	3:A3:44:VAL:HG13	2.16	0.45
13:D2:177:LYS:HG3	68:j2:26:VAL:HG23	1.97	0.45
17:E3:49:GLY:HA3	17:E3:72:VAL:HG13	1.99	0.45
21:G1:127:VAL:O	21:G1:131:GLN:HG2	2.17	0.45
25:H2:74:ALA:HA	25:H2:76:TYR:CE2	2.51	0.45
27:I2:156:LEU:HD23	27:I2:159:LYS:HD2	1.98	0.45
38:N2:111:GLU:HA	38:N2:114:GLN:HG2	1.98	0.45
39:N3:16:LEU:HD23	70:m2:1018:U:H4'	1.98	0.45
40:O2:25:CYS:C	40:O2:28:PRO:HD2	2.41	0.45
41:O3:117:ARG:O	41:O3:121:ARG:HG3	2.16	0.45
70:m2:296:U:C4	79:w2:65:ASN:HB2	2.52	0.45
70:m2:1446:U:P	81:y2:15:ARG:HH21	2.39	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:1810:U:H2'	70:m2:1811:A:C8	2.51	0.45
81:y2:96:TYR:HA	81:y2:100:VAL:HG23	1.98	0.45
2:A2:123:C:H2'	2:A2:124:C:C6	2.52	0.45
2:A2:190:G:H2'	2:A2:191:G:H8	1.82	0.45
2:A2:689:G:H2'	2:A2:690:C:C6	2.51	0.45
2:A2:2191:U:H3'	46:R2:127:LEU:HD11	1.98	0.45
2:A2:2247:C:H2'	2:A2:2248:G:H8	1.81	0.45
3:A3:132:ARG:HD3	70:m2:1625:A:C5	2.50	0.45
16:E2:322:HIS:O	16:E2:342:LYS:HE3	2.15	0.45
30:J3:229:CYS:HB2	70:m2:14:C:H5'	1.99	0.45
36:M2:128:LYS:HG3	38:N2:152:GLU:OE2	2.16	0.45
37:M3:77:ILE:HD11	37:M3:130:CYS:HB2	1.98	0.45
45:Q3:14:THR:HG22	45:Q3:21:LYS:HG2	1.99	0.45
46:R2:62:ARG:HA	46:R2:62:ARG:HD3	1.78	0.45
67:i2:45:GLN:HE22	67:i2:51:GLN:HA	1.82	0.45
70:m2:1533:A:H2'	70:m2:1534:C:C6	2.51	0.45
2:A2:416:U:H4'	2:A2:2085:G:H4'	1.98	0.45
2:A2:1557:C:N4	2:A2:1578:A:H2	2.14	0.45
2:A2:2338:C:N4	50:T2:17:ARG:HG2	2.32	0.45
2:A2:4703:C:H2'	2:A2:4704:A:C8	2.51	0.45
9:C1:86:LEU:HB3	9:C1:186:THR:HB	1.99	0.45
10:C2:144:U:H2'	10:C2:145:C:C6	2.51	0.45
12:D1:76:MET:HA	12:D1:76:MET:HE3	1.99	0.45
12:D1:152:LEU:HB3	12:D1:165:ILE:HD12	1.98	0.45
30:J3:108:LYS:HB2	30:J3:233:LEU:HD13	1.98	0.45
30:J3:128:VAL:HG11	30:J3:155:ILE:HG12	1.98	0.45
31:K2:177:ALA:O	31:K2:184:ARG:HB2	2.17	0.45
46:R2:39:LYS:HB3	46:R2:40:ILE:H	1.59	0.45
46:R2:77:ILE:HD13	46:R2:100:VAL:HG12	1.99	0.45
48:S2:55:VAL:HG12	48:S2:106:ILE:HA	1.98	0.45
70:m2:211:A:H8	70:m2:211:A:OP2	1.99	0.45
70:m2:1312:U:H2'	70:m2:1313:C:C6	2.51	0.45
7:n2:69:G:H2'	7:n2:70:G:C8	2.51	0.45
75:s2:168:THR:OG1	75:s2:171:GLU:HG3	2.16	0.45
78:v2:11:ILE:CD1	78:v2:45:VAL:HA	2.45	0.45
1:A1:87:TYR:CE1	1:A1:91:ILE:HD11	2.51	0.45
2:A2:176:G:H2'	2:A2:177:G:C8	2.52	0.45
2:A2:1551:A:H2'	2:A2:1552:G:C8	2.51	0.45
2:A2:1893:C:C2	2:A2:1896:A:H4'	2.52	0.45
2:A2:3382:A:H2'	2:A2:3383:A:C8	2.51	0.45
2:A2:3906:G:H2'	2:A2:3906:G:N3	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4391:C:H3'	2:A2:4393:A:H5''	1.97	0.45
3:A3:114:LEU:HA	3:A3:117:ILE:HG22	1.97	0.45
5:B2:24:C:H2'	5:B2:25:G:O4'	2.16	0.45
6:B3:104:LEU:HD23	6:B3:104:LEU:HA	1.79	0.45
32:K3:14:LYS:HE2	32:K3:14:LYS:HB2	1.79	0.45
32:K3:176:ILE:HB	32:K3:179:LEU:HD22	1.98	0.45
39:N3:88:LEU:O	39:N3:92:ILE:HG13	2.17	0.45
47:R3:74:SER:HA	47:R3:79:ILE:HG22	1.99	0.45
59:a2:41:ALA:O	59:a2:52:ARG:HD2	2.17	0.45
70:m2:498:C:H2'	70:m2:499:C:H6	1.81	0.45
72:p2:38:MET:SD	72:p2:182:LYS:HG3	2.56	0.45
2:A2:121:A:H62	2:A2:152:U:H3	1.64	0.45
2:A2:423:G:H2'	2:A2:424:U:C6	2.51	0.45
2:A2:1255:C:H2'	2:A2:1256:A:C8	2.52	0.45
2:A2:1657:G:OP1	54:V2:4:SER:HB2	2.16	0.45
2:A2:1734:A:P	27:I2:49:ARG:HH22	2.39	0.45
6:B3:78:ILE:HD11	70:m2:1589:G:C5	2.51	0.45
12:D1:43:VAL:HG12	12:D1:195:CYS:O	2.16	0.45
36:M2:29:ARG:HH12	38:N2:150:LEU:HB2	1.81	0.45
47:R3:79:ILE:HD12	47:R3:79:ILE:HA	1.86	0.45
49:S3:38:PRO:HD3	49:S3:76:GLY:O	2.17	0.45
61:c2:4:ARG:HA	61:c2:4:ARG:HD3	1.75	0.45
70:m2:178:C:H2'	70:m2:179:C:H6	1.81	0.45
72:p2:127:VAL:HG11	72:p2:173:THR:HA	1.98	0.45
72:p2:225:LEU:HD11	72:p2:229:MET:HE2	1.98	0.45
74:r2:45:ILE:HA	74:r2:61:VAL:HG11	1.98	0.45
76:t2:63:PHE:HA	76:t2:95:ILE:O	2.17	0.45
76:t2:100:ILE:HG13	76:t2:125:VAL:HG21	1.99	0.45
79:w2:22:ARG:HD3	79:w2:23:VAL:N	2.26	0.45
79:w2:51:ILE:HG22	79:w2:52:GLU:HG2	1.98	0.45
2:A2:1310:A:H1'	31:K2:164:LYS:HG3	1.98	0.45
2:A2:1677:C:H2'	2:A2:1678:U:C6	2.51	0.45
2:A2:2457:C:H5''	40:O2:101:ARG:HH22	1.82	0.45
2:A2:2639:G:H2'	2:A2:2640:A:C8	2.52	0.45
2:A2:3996:U:H2'	2:A2:3997:C:H6	1.82	0.45
16:E2:86:VAL:HG12	16:E2:201:LEU:HD12	1.97	0.45
24:H1:191:ALA:O	24:H1:195:ARG:HG2	2.17	0.45
28:I3:57:ARG:NH1	28:I3:94:THR:H	2.15	0.45
29:J2:117:ILE:HD12	29:J2:148:MET:HE2	1.99	0.45
36:M2:84:TYR:CE1	36:M2:93:MET:HE3	2.51	0.45
41:O3:45:THR:OG1	41:O3:49:GLY:HA2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:V2:65:VAL:O	54:V2:68:ARG:HG3	2.16	0.45
70:m2:530:A:H2'	70:m2:531:A:C8	2.52	0.45
70:m2:951:G:H2'	70:m2:952:C:C6	2.52	0.45
70:m2:1232:C:H2'	70:m2:1233:C:H6	1.81	0.45
7:n2:31:A:H2'	7:n2:31:A:N3	2.31	0.45
73:q2:104:SER:O	73:q2:108:LYS:HD2	2.16	0.45
73:q2:132:LYS:HB2	73:q2:189:MET:HG2	1.98	0.45
74:r2:49:ARG:HG2	74:r2:50:ASN:OD1	2.17	0.45
74:r2:255:ARG:HH12	74:r2:259:LYS:HD2	1.81	0.45
2:A2:123:C:H2'	2:A2:124:C:H6	1.82	0.45
2:A2:1053:G:H2'	2:A2:1054:G:C8	2.52	0.45
2:A2:1659:C:H2'	2:A2:1660:A:C8	2.51	0.45
2:A2:1743:A:C2	2:A2:4086:C:H5'	2.51	0.45
2:A2:2081:G:H5''	57:Y2:127:ALA:HB2	1.98	0.45
2:A2:2092:C:H4'	69:k2:19:LYS:HB2	1.98	0.45
2:A2:2498:A:H2'	2:A2:2499:A:C8	2.52	0.45
2:A2:2652:G:H2'	2:A2:2653:G:H8	1.82	0.45
2:A2:3378:G:H2'	2:A2:3379:A:H8	1.81	0.45
20:F3:42:ARG:HG3	20:F3:43:ASN:O	2.17	0.45
21:G1:126:GLU:HB3	27:I2:181:ALA:HB1	1.99	0.45
27:I2:157:GLU:O	27:I2:161:LYS:HG3	2.17	0.45
32:K3:57:ASP:OD1	32:K3:58:LYS:N	2.50	0.45
35:L3:131:ARG:HA	35:L3:131:ARG:HD2	1.70	0.45
48:S2:67:ILE:HD12	48:S2:107:THR:HG21	1.99	0.45
54:V2:84:LYS:HB2	54:V2:84:LYS:HE3	1.84	0.45
63:e2:12:LEU:O	63:e2:16:ARG:HD3	2.16	0.45
2:A2:1068:C:H42	2:A2:1082:A:H61	1.63	0.45
2:A2:1683:OMC:HM21	2:A2:1684:U:H5	1.82	0.45
2:A2:1893:C:N3	2:A2:1896:A:H4'	2.32	0.45
13:D2:104:VAL:HA	13:D2:107:MET:HG3	1.98	0.45
15:E1:44:THR:HA	15:E1:78:LYS:HE3	1.98	0.45
17:E3:18:ARG:HD3	70:m2:361:U:OP2	2.17	0.45
32:K3:162:LEU:HD23	70:m2:67:C:H6	1.82	0.45
56:X2:93:ASN:HD21	56:X2:98:SER:HB2	1.82	0.45
70:m2:190:G:N3	70:m2:190:G:H2'	2.32	0.45
77:u2:201:LYS:HA	77:u2:201:LYS:HD3	1.72	0.45
1:A1:212:LEU:HD21	1:A1:230:LEU:HD21	1.99	0.45
2:A2:79:C:H2'	2:A2:80:C:H6	1.82	0.45
2:A2:114:G:H21	2:A2:276:C:H4'	1.81	0.45
2:A2:453:G:H22	2:A2:1107:G:N2	2.15	0.45
2:A2:928:G:N2	2:A2:1064:G:H22	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1120:C:H2'	2:A2:1121:A:H8	1.81	0.45
2:A2:1390:G:C8	13:D2:181:LYS:HD2	2.52	0.45
2:A2:1596:A:H5''	2:A2:3866:A:N6	2.32	0.45
2:A2:2130:A:H2'	2:A2:2131:A:H8	1.82	0.45
2:A2:2448:G:H2'	2:A2:2449:G:C2	2.52	0.45
2:A2:3738:C:H2'	2:A2:3739:G:H8	1.82	0.45
2:A2:3880:OMG:H5''	2:A2:3881:U:O4'	2.17	0.45
2:A2:4133:U:H2'	2:A2:4134:U:H6	1.81	0.45
4:B1:187:LYS:HG3	4:B1:199:CYS:O	2.16	0.45
9:C1:63:ASN:O	9:C1:67:LEU:HG	2.17	0.45
9:C1:88:PHE:CZ	9:C1:151:ILE:HB	2.52	0.45
14:D3:68:SER:O	14:D3:72:LEU:HD12	2.16	0.45
16:E2:172:PRO:HB2	16:E2:324:GLY:HA3	1.99	0.45
25:H2:291:HIS:CE1	58:Z2:33:VAL:HG22	2.52	0.45
26:H3:38:MET:HE3	26:H3:43:PHE:HA	1.98	0.45
41:O3:51:GLU:HG3	72:p2:48:LEU:O	2.17	0.45
48:S2:47:MET:HG3	48:S2:48:PRO:HD2	1.99	0.45
60:b2:34:ALA:HA	60:b2:37:THR:HG22	1.98	0.45
70:m2:1038:A:H4'	70:m2:1857:G:N2	2.32	0.45
70:m2:1322:G:H2'	70:m2:1323:G:O4'	2.16	0.45
70:m2:1674:U:H2'	70:m2:1675:U:C6	2.52	0.45
70:m2:1675:U:H2'	70:m2:1676:G:O4'	2.17	0.45
7:n2:20:U:H6	7:n2:21:A:H8	1.65	0.45
71:o2:34:MET:HE1	71:o2:162:PRO:HB3	1.98	0.45
1:A1:91:ILE:O	1:A1:95:ARG:HG3	2.17	0.44
2:A2:1724:G:OP1	36:M2:160:ARG:HD3	2.17	0.44
2:A2:1881:G:H2'	2:A2:1882:U:H6	1.82	0.44
3:A3:34:LYS:HG2	70:m2:1634:G:OP1	2.17	0.44
10:C2:66:A:H2'	10:C2:67:U:H6	1.81	0.44
10:C2:78:G:H2'	10:C2:79:G:C8	2.52	0.44
16:E2:223:THR:HB	16:E2:275:HIS:H	1.83	0.44
25:H2:180:LEU:HD11	25:H2:198:GLN:HA	2.00	0.44
28:I3:120:ILE:O	28:I3:131:LEU:HA	2.17	0.44
41:O3:98:ARG:HG3	41:O3:132:VAL:HG23	1.99	0.44
50:T2:47:ASP:HB3	50:T2:69:LYS:HG2	1.98	0.44
69:k2:2:SER:O	69:k2:6:GLN:HG3	2.17	0.44
70:m2:129:C:N4	70:m2:181:A:H61	2.15	0.44
70:m2:565:G:C2	70:m2:566:A:C8	3.05	0.44
70:m2:1218:C:N4	70:m2:1344:U:H5'	2.32	0.44
2:A2:1211:A:C8	52:U2:114:LYS:HD2	2.52	0.44
2:A2:1376:A:C4	70:m2:680:U:O2'	2.67	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1475:C:H2'	2:A2:1476:C:H6	1.80	0.44
2:A2:2189:G:H5''	46:R2:83:THR:CG2	2.47	0.44
2:A2:2393:G:N1	2:A2:2473:U:H2'	2.33	0.44
2:A2:2451:A:H62	63:e2:35:LYS:NZ	2.15	0.44
2:A2:4170:A:OP2	2:A2:4170:A:H8	1.99	0.44
2:A2:4271:U:H2'	2:A2:4272:OMU:H6	1.98	0.44
3:A3:21:ASP:HB3	3:A3:24:ARG:HG2	1.99	0.44
4:B1:186:GLY:HA3	4:B1:189:ARG:HD3	1.99	0.44
13:D2:33:ASP:O	13:D2:37:ARG:HB2	2.17	0.44
13:D2:49:ILE:HD11	13:D2:75:LEU:HD21	1.99	0.44
16:E2:168:MET:HA	16:E2:171:LEU:HD12	2.00	0.44
35:L3:37:LEU:HD12	35:L3:43:VAL:HG22	1.99	0.44
41:O3:150:ARG:H	41:O3:150:ARG:HG2	1.64	0.44
48:S2:59:ARG:HB2	48:S2:103:LYS:HD2	1.99	0.44
57:Y2:11:LYS:HE2	57:Y2:11:LYS:HB2	1.81	0.44
70:m2:495:A:H1'	70:m2:576:A:O5'	2.18	0.44
70:m2:1568:G:H21	70:m2:1571:A:H2	1.65	0.44
70:m2:1618:U:H2'	70:m2:1619:G:O4'	2.17	0.44
2:A2:685:C:H2'	2:A2:686:C:H6	1.82	0.44
2:A2:1159:G:H2'	2:A2:1160:C:C6	2.53	0.44
2:A2:3621:A:H1'	2:A2:3699:U:OP2	2.18	0.44
20:F3:44:ILE:HG23	20:F3:45:VAL:HG23	1.98	0.44
32:K3:7:PHE:CE2	32:K3:10:THR:HG23	2.53	0.44
33:L1:59:PRO:HA	33:L1:174:MET:HE1	1.99	0.44
45:Q3:89:HIS:ND1	70:m2:576:A:H5'	2.32	0.44
45:Q3:98:GLU:OE1	45:Q3:100:LYS:HD3	2.18	0.44
47:R3:40:VAL:HG11	47:R3:44:LEU:HD21	1.98	0.44
49:S3:15:GLU:OE2	49:S3:23:ARG:HB3	2.18	0.44
70:m2:1638:G:H1'	75:s2:164:ARG:HH12	1.83	0.44
73:q2:9:ARG:HH11	73:q2:9:ARG:HG3	1.83	0.44
76:t2:62:ILE:HD11	76:t2:94:PHE:CE2	2.52	0.44
81:y2:128:GLU:HG2	81:y2:137:ALA:HB1	1.99	0.44
2:A2:1004:C:H2'	2:A2:1005:G:C8	2.52	0.44
2:A2:1770:G:H2'	2:A2:1771:G:C8	2.53	0.44
10:C2:67:U:OP1	62:d2:87:LYS:HG3	2.18	0.44
19:F2:94:ASN:HA	19:F2:100:ARG:O	2.18	0.44
32:K3:181:THR:HG22	32:K3:183:ARG:H	1.83	0.44
33:L1:53:VAL:CG2	33:L1:155:ILE:HG13	2.47	0.44
39:N3:44:GLY:HA3	55:W2:20:LEU:HD22	2.00	0.44
49:S3:82:LYS:HB3	49:S3:82:LYS:HE3	1.71	0.44
66:h2:14:LYS:HB3	66:h2:14:LYS:HE3	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:210:G:C2'	70:m2:211:A:H5'	2.46	0.44
70:m2:878:C:H2'	70:m2:879:C:C6	2.53	0.44
70:m2:903:G:H2'	70:m2:904:G:H8	1.82	0.44
70:m2:1146:A:H5'	70:m2:1357:C:H41	1.83	0.44
70:m2:1531:C:H5'	70:m2:1668:C:OP1	2.17	0.44
71:o2:89:LYS:HD3	71:o2:89:LYS:HA	1.79	0.44
2:A2:37:U:H4'	52:U2:32:ARG:HD2	1.99	0.44
2:A2:4230:G:H2'	2:A2:4231:U:C6	2.53	0.44
2:A2:4243:U:H2'	2:A2:4244:C:C6	2.52	0.44
5:B2:48:G:H5'	22:G2:226:TYR:HE2	1.83	0.44
11:C3:59:LYS:HD2	73:q2:8:LYS:NZ	2.32	0.44
13:D2:120:PRO:HD3	13:D2:159:SER:OG	2.18	0.44
21:G1:9:VAL:HG21	21:G1:66:HIS:HB3	2.00	0.44
23:G3:47:LYS:HE3	23:G3:47:LYS:HB2	1.71	0.44
33:L1:45:LYS:HE2	33:L1:45:LYS:HB3	1.90	0.44
35:L3:173:VAL:HG13	70:m2:563:A:OP2	2.18	0.44
62:d2:52:LYS:HG2	62:d2:55:ARG:NH2	2.33	0.44
66:h2:3:ALA:HB3	70:m2:1844:4AC:OP1	2.18	0.44
70:m2:191:A:H62	70:m2:210:G:H21	1.65	0.44
70:m2:319:C:H2'	70:m2:320:A:C8	2.52	0.44
70:m2:643:A:H2'	70:m2:644:U:O4'	2.16	0.44
70:m2:1021:C:H2'	70:m2:1022:A:O4'	2.17	0.44
70:m2:1395:G:H2'	70:m2:1396:G:C8	2.53	0.44
2:A2:162:A:H2'	2:A2:163:A:C8	2.53	0.44
2:A2:879:C:H2'	2:A2:880:U:H6	1.83	0.44
2:A2:1836:G:H2'	2:A2:1837:C:C6	2.53	0.44
2:A2:1857:G:H4'	2:A2:1858:G:OP2	2.17	0.44
2:A2:2504:C:H2'	2:A2:2505:G:C8	2.52	0.44
2:A2:2648:U:H2'	2:A2:2649:A:C8	2.53	0.44
2:A2:3760:C:C2	2:A2:3761:U:C5	3.06	0.44
2:A2:4071:U:O2	2:A2:4071:U:H2'	2.16	0.44
2:A2:4285:G:O3'	2:A2:4286:U:H3'	2.18	0.44
2:A2:4601:A:H2'	2:A2:4602:A:C8	2.52	0.44
2:A2:4650:C:H2'	2:A2:4651:G:O4'	2.17	0.44
15:E1:52:LYS:HE3	15:E1:65:ASN:HB3	1.99	0.44
17:E3:130:LEU:HD12	17:E3:130:LEU:HA	1.83	0.44
28:I3:12:LYS:HG2	28:I3:306:LEU:HD22	1.98	0.44
32:K3:20:ASP:OD2	32:K3:22:ARG:HB2	2.18	0.44
35:L3:94:LEU:HD23	35:L3:94:LEU:HA	1.83	0.44
39:N3:133:ARG:NH1	79:w2:150:GLY:HA2	2.29	0.44
62:d2:34:CYS:HB3	62:d2:39:TYR:H	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:14:C:H2'	70:m2:15:U:C6	2.53	0.44
70:m2:378:A:H2'	70:m2:379:G:O4'	2.16	0.44
70:m2:382:G:H5''	77:u2:31:ARG:NH1	2.32	0.44
70:m2:846:U:H2'	70:m2:847:G:H8	1.82	0.44
70:m2:1191:A:H2'	70:m2:1192:A:C8	2.52	0.44
70:m2:1246:U:H2'	70:m2:1247:G:H8	1.82	0.44
75:s2:94:LYS:HG3	75:s2:95:HIS:N	2.32	0.44
77:u2:38:ILE:HD11	77:u2:81:VAL:HG13	1.99	0.44
80:x2:49:LEU:HD12	80:x2:53:GLN:HG3	1.98	0.44
2:A2:389:A:H1'	48:S2:90:ALA:O	2.18	0.44
2:A2:1071:G:H4'	2:A2:1079:A:C6	2.52	0.44
2:A2:1347:A2M:HM'2	2:A2:1348:C:C6	2.53	0.44
2:A2:2504:C:H2'	2:A2:2505:G:H8	1.83	0.44
2:A2:3275:G:H22	2:A2:3280:A:H1'	1.83	0.44
2:A2:4304:G:H2'	2:A2:4305:C:C6	2.52	0.44
9:C1:80:MET:O	9:C1:84:VAL:HG22	2.18	0.44
12:D1:210:ARG:HH22	22:G2:283:LYS:HD2	1.82	0.44
15:E1:113:ILE:HA	15:E1:117:ILE:HG13	2.00	0.44
25:H2:76:TYR:CE1	25:H2:77:LYS:HG3	2.52	0.44
26:H3:44:ARG:CZ	26:H3:44:ARG:HB3	2.47	0.44
37:M3:51:VAL:HA	37:M3:77:ILE:O	2.18	0.44
48:S2:1:MET:HE2	48:S2:1:MET:HB2	1.93	0.44
70:m2:1294:C:C2	70:m2:1295:A:C8	3.06	0.44
71:o2:144:THR:O	71:o2:158:ASP:HB2	2.17	0.44
72:p2:171:ILE:HG12	72:p2:174:ARG:NH2	2.32	0.44
78:v2:19:GLY:HA3	78:v2:93:THR:OG1	2.18	0.44
81:y2:51:LEU:HD11	81:y2:84:ILE:CD1	2.48	0.44
2:A2:302:C:OP1	24:H1:68:ARG:HB2	2.18	0.44
2:A2:399:G:H4'	29:J2:18:ARG:HG2	1.99	0.44
2:A2:1092:C:H2'	2:A2:1093:A:O4'	2.17	0.44
2:A2:1489:C:H41	2:A2:4030:A:H5''	1.83	0.44
2:A2:3252:A:C5	79:w2:3:ASP:HB2	2.53	0.44
2:A2:3994:C:O3'	67:i2:37:GLY:HA3	2.18	0.44
5:B2:15:C:H2'	5:B2:16:A:C8	2.51	0.44
5:B2:51:G:H21	15:E1:12:MET:HE1	1.82	0.44
6:B3:8:ASP:HA	81:y2:38:PRO:HG3	1.99	0.44
11:C3:24:LEU:HA	11:C3:111:GLU:O	2.18	0.44
22:G2:34:LYS:HD3	22:G2:35:ARG:NH1	2.33	0.44
26:H3:24:CYS:SG	26:H3:26:ASN:HB2	2.58	0.44
33:L1:45:LYS:HE3	33:L1:46:ASP:O	2.18	0.44
47:R3:48:VAL:C	47:R3:83:LEU:HD11	2.43	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:a2:82:MET:HB3	59:a2:82:MET:HE3	1.79	0.44
71:o2:137:ALA:HB1	71:o2:142:LEU:HB3	2.00	0.44
75:s2:100:ILE:HD11	75:s2:177:LEU:HD12	1.99	0.44
78:v2:53:LYS:HD3	78:v2:60:GLU:OE1	2.18	0.44
1:A1:81:LYS:O	1:A1:85:GLN:HG3	2.17	0.44
1:A1:108:GLU:HG3	38:N2:135:PRO:HB3	1.99	0.44
2:A2:270:U:H2'	2:A2:271:C:H6	1.83	0.44
2:A2:1012:C:OP1	2:A2:1012:C:H4'	2.18	0.44
2:A2:1668:G:C2	2:A2:4057:G:C8	3.05	0.44
2:A2:2559:OMC:C2	2:A2:2560:C:C5	3.06	0.44
2:A2:3268:C:H1'	2:A2:4662:A:C8	2.52	0.44
2:A2:3617:G:N3	2:A2:3621:A:N6	2.66	0.44
2:A2:4108:OMC:HM21	16:E2:241:PRO:HD3	2.00	0.44
10:C2:141:C:H5''	24:H1:60:VAL:HG11	2.00	0.44
18:F1:92:ARG:CZ	18:F1:98:VAL:HB	2.48	0.44
19:F2:13:GLU:HG3	19:F2:157:LYS:NZ	2.33	0.44
23:G3:55:VAL:HB	75:s2:34:SER:HA	1.99	0.44
25:H2:265:LEU:O	25:H2:269:LYS:HG3	2.17	0.44
28:I3:60:ARG:HD3	81:y2:97:GLN:HE22	1.81	0.44
29:J2:94:MET:CE	29:J2:148:MET:HE3	2.47	0.44
29:J2:116:HIS:HB3	29:J2:149:ILE:HB	2.00	0.44
30:J3:94:ILE:HG13	30:J3:159:LYS:O	2.18	0.44
70:m2:1525:C:H2'	70:m2:1526:G:H8	1.83	0.44
75:s2:96:ALA:O	75:s2:100:ILE:HD12	2.18	0.44
77:u2:123:ARG:NH1	77:u2:128:LYS:HE2	2.33	0.44
78:v2:60:GLU:HB2	78:v2:69:TRP:NE1	2.33	0.44
1:A1:53:LYS:NZ	2:A2:1252:C:H5'	2.33	0.43
2:A2:651:C:H2'	2:A2:652:G:C8	2.53	0.43
2:A2:1403:C:H4'	2:A2:2612:A:H5'	1.99	0.43
2:A2:2614:G:H2'	2:A2:2615:C:H6	1.83	0.43
2:A2:3527:A:H2'	2:A2:3528:A:C8	2.53	0.43
4:B1:187:LYS:HD2	4:B1:198:THR:HG23	1.99	0.43
8:Bx:43:U:H5'	70:m2:963:G:C8	2.53	0.43
12:D1:96:VAL:HG11	12:D1:122:PRO:HB3	1.99	0.43
17:E3:46:HIS:CD2	17:E3:103:ALA:HB2	2.52	0.43
25:H2:265:LEU:HD23	25:H2:265:LEU:HA	1.77	0.43
25:H2:290:PRO:HB2	58:Z2:41:PHE:CE2	2.53	0.43
32:K3:48:TYR:HE2	32:K3:117:GLY:H	1.65	0.43
35:L3:116:LYS:HD2	35:L3:116:LYS:HA	1.78	0.43
38:N2:89:ILE:HD12	38:N2:91:VAL:CG2	2.48	0.43
40:O2:64:GLU:HB2	40:O2:71:THR:HG23	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:R3:37:LYS:HG2	47:R3:38:GLY:H	1.83	0.43
50:T2:9:LYS:HZ3	50:T2:83:THR:H	1.66	0.43
62:d2:46:LYS:HE2	62:d2:46:LYS:HB3	1.82	0.43
70:m2:642:A:H2'	70:m2:643:A:C8	2.53	0.43
70:m2:855:C:C2	70:m2:856:A:C8	3.05	0.43
70:m2:1478:A:H4'	70:m2:1479:U:H5''	2.00	0.43
72:p2:122:GLU:HG2	72:p2:140:VAL:HG23	2.00	0.43
2:A2:1458:C:H2'	2:A2:1459:A:C8	2.54	0.43
2:A2:3248:G:H2'	2:A2:3248:G:N3	2.33	0.43
2:A2:3717:U:H2'	2:A2:3718:U:C6	2.53	0.43
2:A2:4544:G:H2'	2:A2:4546:G:H8	1.82	0.43
3:A3:11:HIS:HD2	15:E1:121:PRO:HG3	1.84	0.43
3:A3:14:ARG:NH1	15:E1:113:ILE:HB	2.33	0.43
5:B2:92:C:H2'	5:B2:93:G:C8	2.53	0.43
6:B3:72:VAL:O	6:B3:76:THR:HG22	2.18	0.43
10:C2:6:C:H2'	10:C2:7:U:H6	1.83	0.43
21:G1:7:VAL:HG22	36:M2:152:PHE:O	2.17	0.43
27:I2:191:LYS:O	27:I2:195:VAL:HG23	2.18	0.43
28:I3:149:GLU:HG3	28:I3:150:TRP:H	1.82	0.43
32:K3:195:LYS:HG2	70:m2:126:G:OP2	2.19	0.43
36:M2:106:VAL:HG13	36:M2:126:ILE:HD13	2.00	0.43
50:T2:11:VAL:CG2	50:T2:80:LEU:HB3	2.48	0.43
70:m2:1099:G:H4'	71:o2:32:PHE:CG	2.53	0.43
70:m2:1163:U:H2'	70:m2:1164:C:C6	2.53	0.43
72:p2:29:ASP:O	72:p2:48:LEU:HA	2.19	0.43
73:q2:29:LEU:HD21	73:q2:69:LEU:HD11	2.00	0.43
73:q2:68:GLU:OE1	78:v2:70:TYR:CD1	2.71	0.43
2:A2:68:U:H2'	2:A2:69:A:O4'	2.18	0.43
2:A2:214:G:H2'	2:A2:215:C:C6	2.54	0.43
2:A2:462:G:H2'	2:A2:463:A:C8	2.53	0.43
2:A2:1116:U:H1'	57:Y2:19:LYS:HG3	1.99	0.43
2:A2:1285:C:H2'	2:A2:1286:U:C6	2.53	0.43
2:A2:1473:U:OP1	52:U2:15:VAL:HA	2.19	0.43
14:D3:20:SER:OG	14:D3:59:ILE:HD11	2.18	0.43
17:E3:74:LEU:HD23	17:E3:74:LEU:HA	1.82	0.43
20:F3:27:ALA:HB2	41:O3:142:ARG:CZ	2.48	0.43
31:K2:96:PRO:HG2	31:K2:98:LEU:HD21	2.00	0.43
32:K3:58:LYS:HG2	32:K3:105:ASN:O	2.18	0.43
35:L3:150:ARG:HG3	70:m2:823:G:C6	2.53	0.43
38:N2:39:ILE:HD12	38:N2:102:ARG:CG	2.47	0.43
43:P3:25:VAL:CG2	43:P3:65:LEU:HD21	2.46	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:Q3:115:LYS:HB2	45:Q3:115:LYS:HE3	1.81	0.43
60:b2:97:LYS:HD3	60:b2:97:LYS:HA	1.86	0.43
63:e2:23:VAL:HA	63:e2:35:LYS:O	2.18	0.43
70:m2:177:G:H1'	70:m2:315:A:N6	2.32	0.43
70:m2:510:A:H3'	70:m2:511:OMG:C8	2.51	0.43
71:o2:39:TYR:CD1	71:o2:40:LYS:HG2	2.53	0.43
71:o2:164:ASN:O	71:o2:170:SER:HB2	2.18	0.43
2:A2:1373:A:C4	2:A2:1374:G:C8	3.06	0.43
2:A2:1911:G:H2'	2:A2:1912:A:C8	2.53	0.43
2:A2:2018:A:H5''	69:k2:108:MET:HG3	1.99	0.43
2:A2:4143:G:H5''	2:A2:4272:OMU:HM21	1.99	0.43
17:E3:107:ARG:HG3	17:E3:112:VAL:HG22	2.00	0.43
20:F3:46:GLU:O	20:F3:50:VAL:HG23	2.18	0.43
25:H2:214:LYS:HA	25:H2:214:LYS:HD3	1.74	0.43
27:I2:22:ILE:HD13	27:I2:120:VAL:HG11	1.99	0.43
31:K2:9:LYS:HE3	31:K2:9:LYS:HB3	1.85	0.43
33:L1:78:LYS:HA	33:L1:78:LYS:HD3	1.79	0.43
35:L3:129:LEU:HB3	35:L3:135:ILE:HD11	1.99	0.43
38:N2:64:VAL:HG13	38:N2:72:VAL:HG13	2.00	0.43
40:O2:84:LYS:HB2	40:O2:110:TYR:CZ	2.53	0.43
58:Z2:15:LYS:HB3	58:Z2:25:THR:HB	2.00	0.43
70:m2:401:C:N4	79:w2:104:LYS:HE3	2.34	0.43
70:m2:1224:G:H2'	70:m2:1225:A:C8	2.53	0.43
70:m2:1705:OMC:H2'	70:m2:1706:C:O4'	2.19	0.43
70:m2:1743:U:H2'	70:m2:1744:C:O4'	2.19	0.43
71:o2:63:ARG:O	71:o2:66:VAL:HG12	2.17	0.43
74:r2:59:ASP:O	74:r2:63:LYS:HG3	2.18	0.43
81:y2:52:LEU:HB3	81:y2:56:LEU:CD2	2.48	0.43
2:A2:1156:A:OP1	24:H1:204:ARG:HD2	2.18	0.43
2:A2:1545:A:H5'	22:G2:11:ALA:HB1	2.00	0.43
2:A2:2652:G:H5'	34:L2:101:ILE:HG21	2.00	0.43
2:A2:3714:C:OP2	2:A2:3715:G:H5'	2.19	0.43
2:A2:4133:U:H2'	2:A2:4134:U:C6	2.53	0.43
4:B1:58:PRO:HG2	4:B1:61:ILE:HD12	1.99	0.43
9:C1:27:VAL:HG12	9:C1:84:VAL:HG21	2.00	0.43
10:C2:58:G:H4'	10:C2:59:A:OP1	2.18	0.43
10:C2:140:C:H2'	10:C2:141:C:C6	2.54	0.43
11:C3:59:LYS:HD2	73:q2:8:LYS:HZ2	1.82	0.43
15:E1:161:GLU:HA	15:E1:164:ARG:HB2	2.01	0.43
25:H2:76:TYR:CD1	25:H2:77:LYS:HG3	2.53	0.43
31:K2:61:LEU:HD23	31:K2:82:VAL:HG21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:L1:99:LEU:O	33:L1:103:LEU:HG	2.19	0.43
34:L2:102:LEU:HD12	34:L2:138:LEU:HD22	1.99	0.43
40:O2:27:HIS:HB2	40:O2:28:PRO:HD3	2.00	0.43
51:T3:39:ASN:ND2	70:m2:555:A:H5'	2.33	0.43
69:k2:84:LYS:HD3	69:k2:88:ALA:HB1	2.00	0.43
70:m2:519:OMC:H2'	70:m2:520:G:O4'	2.18	0.43
70:m2:806:U:H2'	70:m2:807:U:H6	1.81	0.43
70:m2:1217:C:H6	70:m2:1217:C:H2'	1.69	0.43
70:m2:1461:G:H2'	70:m2:1462:C:H6	1.83	0.43
72:p2:225:LEU:O	72:p2:229:MET:HG2	2.18	0.43
74:r2:45:ILE:HG22	74:r2:46:ILE:HD13	2.00	0.43
2:A2:471:A:H2'	2:A2:472:C:H6	1.84	0.43
2:A2:1882:U:H2'	2:A2:1883:C:C6	2.53	0.43
2:A2:3957:G:C6	38:N2:80:VAL:HG21	2.53	0.43
2:A2:4648:U:H2'	2:A2:4649:U:H6	1.83	0.43
3:A3:66:ARG:O	3:A3:70:ILE:HG13	2.18	0.43
3:A3:124:ARG:HB2	3:A3:131:VAL:HG12	2.00	0.43
4:B1:110:LYS:HD2	4:B1:113:ARG:HH22	1.82	0.43
10:C2:141:C:H2'	10:C2:142:U:H6	1.82	0.43
11:C3:52:GLY:HA3	70:m2:1403:A:H4'	2.00	0.43
15:E1:112:HIS:HD2	15:E1:117:ILE:HD11	1.84	0.43
22:G2:153:THR:HG23	22:G2:160:PHE:HE2	1.83	0.43
22:G2:236:MET:HA	22:G2:239:MET:HE2	2.01	0.43
25:H2:157:LEU:HD11	25:H2:171:PHE:HB2	1.99	0.43
32:K3:53:SER:O	32:K3:110:ASN:HB2	2.18	0.43
32:K3:186:GLN:HA	32:K3:189:ARG:NE	2.34	0.43
34:L2:172:ARG:HH22	70:m2:910:A:H5''	1.83	0.43
56:X2:32:ARG:HB3	56:X2:48:GLU:HG3	2.01	0.43
56:X2:75:LYS:HB2	56:X2:79:ASN:O	2.18	0.43
57:Y2:93:LYS:HD3	57:Y2:93:LYS:HA	1.88	0.43
60:b2:81:LEU:HA	60:b2:84:ARG:HG2	2.01	0.43
75:s2:122:ARG:HG2	75:s2:146:ARG:NH2	2.33	0.43
1:A1:172:VAL:O	1:A1:176:ILE:HG12	2.19	0.43
2:A2:731:C:OP1	19:F2:350:ARG:HD2	2.19	0.43
2:A2:1438:OMG:HM23	24:H1:81:TYR:CE2	2.51	0.43
2:A2:1603:A:H4'	38:N2:102:ARG:HD3	2.00	0.43
2:A2:1847:G:O2'	2:A2:1848:G:H5''	2.18	0.43
2:A2:2063:A:H61	2:A2:2085:G:H1'	1.82	0.43
2:A2:2457:C:H5''	40:O2:101:ARG:NH2	2.34	0.43
2:A2:3392:A:H2'	2:A2:3393:A:H8	1.83	0.43
2:A2:3572:G:H2'	2:A2:3573:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4222:G:H2'	2:A2:4223:A2M:H8	2.00	0.43
6:B3:4:VAL:N	70:m2:1418:C:HO2'	2.17	0.43
9:C1:17:GLU:HA	9:C1:17:GLU:OE1	2.19	0.43
10:C2:33:G:H4'	10:C2:34:U:C5	2.54	0.43
10:C2:115:G:H2'	10:C2:116:C:H6	1.83	0.43
19:F2:276:ASN:C	19:F2:276:ASN:ND2	2.77	0.43
25:H2:151:ILE:HG23	25:H2:157:LEU:HD21	1.99	0.43
25:H2:155:THR:HG21	25:H2:203:ALA:HB1	2.00	0.43
27:I2:155:THR:O	27:I2:159:LYS:HG3	2.17	0.43
35:L3:32:ILE:HD11	35:L3:40:LYS:HG2	1.99	0.43
35:L3:38:ARG:HG2	35:L3:42:GLU:CD	2.44	0.43
58:Z2:11:PHE:HB2	58:Z2:101:ILE:CD1	2.48	0.43
63:e2:61:PRO:HA	63:e2:62:PRO:HD3	1.91	0.43
69:k2:26:SER:HB3	69:k2:31:ASN:HD22	1.83	0.43
70:m2:355:OMC:H1'	70:m2:355:OMC:HM23	1.66	0.43
70:m2:931:G:N2	70:m2:1106:G:H4'	2.34	0.43
70:m2:1246:U:H2'	70:m2:1247:G:C8	2.54	0.43
70:m2:1608:G:H22	70:m2:1634:G:H2'	1.82	0.43
73:q2:190:LEU:HD23	73:q2:199:GLY:HA2	1.99	0.43
2:A2:362:A:C5	64:f2:35:ILE:HG12	2.53	0.43
2:A2:1376:A:OP1	2:A2:1376:A:N9	2.51	0.43
2:A2:1527:U:H2'	2:A2:1528:U:H6	1.83	0.43
2:A2:1680:G:H2'	2:A2:1681:C:C6	2.54	0.43
2:A2:1825:C:H2'	2:A2:1826:G:C8	2.54	0.43
2:A2:2477:G:H2'	2:A2:2478:U:O4'	2.19	0.43
2:A2:3589:G:H2'	2:A2:3590:G:H8	1.83	0.43
2:A2:3826:U:H2'	2:A2:3827:G:C8	2.54	0.43
2:A2:3840:U:H2'	2:A2:3841:U:H6	1.83	0.43
2:A2:4552:G:C6	2:A2:4560:G:C5	3.06	0.43
2:A2:4565:C:H2'	2:A2:4566:C:C6	2.53	0.43
10:C2:113:C:H2'	10:C2:114:G:O4'	2.19	0.43
11:C3:35:VAL:O	11:C3:39:LEU:HG	2.19	0.43
11:C3:46:LYS:HD3	11:C3:46:LYS:HA	1.70	0.43
28:I3:121:VAL:HG12	28:I3:154:VAL:HG11	2.01	0.43
54:V2:33:LYS:HE2	54:V2:33:LYS:HB3	1.80	0.43
56:X2:20:VAL:HA	56:X2:90:ARG:O	2.18	0.43
58:Z2:95:LYS:HB2	58:Z2:95:LYS:HE3	1.68	0.43
59:a2:5:LEU:HD11	59:a2:30:ILE:HG22	2.00	0.43
70:m2:186:C:H2'	70:m2:187:G:H8	1.83	0.43
70:m2:563:A:H2'	70:m2:564:U:C6	2.54	0.43
70:m2:1493:G:H2'	70:m2:1494:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:1503:C:H2'	70:m2:1504:C:H6	1.84	0.43
70:m2:1520:C:H5''	70:m2:1521:U:H5''	2.00	0.43
7:n2:26:A:H2	7:n2:44:G:H22	1.66	0.43
73:q2:170:THR:HA	73:q2:186:VAL:O	2.18	0.43
81:y2:49:TYR:O	81:y2:53:GLU:HG3	2.18	0.43
2:A2:2288:C:H2'	2:A2:2289:C:C6	2.54	0.43
2:A2:3956:A:C2	52:U2:43:ILE:HG23	2.54	0.43
2:A2:4051:U:H2'	2:A2:4052:G:O4'	2.19	0.43
2:A2:4223:A2M:H2'	2:A2:4224:U:C6	2.52	0.43
3:A3:11:HIS:CD2	15:E1:121:PRO:HG3	2.54	0.43
6:B3:101:ARG:O	6:B3:105:GLN:HG3	2.19	0.43
13:D2:158:ILE:HB	13:D2:162:ASN:ND2	2.34	0.43
16:E2:92:TYR:HB3	16:E2:99:LEU:HG	2.00	0.43
19:F2:237:ILE:HD12	19:F2:237:ILE:HA	1.78	0.43
24:H1:22:LEU:HA	24:H1:22:LEU:HD23	1.79	0.43
27:I2:77:SER:HB2	27:I2:104:VAL:HG23	2.00	0.43
28:I3:142:VAL:HG11	28:I3:177:TRP:CZ3	2.54	0.43
30:J3:273:LEU:HD12	30:J3:273:LEU:HA	1.80	0.43
34:L2:8:LYS:HG2	34:L2:24:LEU:HD11	2.01	0.43
37:M3:117:GLU:HA	37:M3:120:ALA:HB3	1.99	0.43
39:N3:22:VAL:HG21	39:N3:66:VAL:HA	2.01	0.43
48:S2:13:LYS:O	48:S2:17:ARG:HD3	2.19	0.43
57:Y2:23:HIS:CD2	57:Y2:43:ASN:HD21	2.37	0.43
70:m2:510:A:H5'	70:m2:511:OMG:OP2	2.19	0.43
70:m2:603:OMG:HM23	70:m2:603:OMG:H1'	1.62	0.43
70:m2:1678:U:H2'	70:m2:1679:U:O4'	2.19	0.43
73:q2:72:VAL:HG11	78:v2:70:TYR:HE1	1.84	0.43
81:y2:113:ILE:HD11	81:y2:120:LEU:HD22	2.00	0.43
1:A1:54:ARG:HH21	2:A2:1897:A:H3'	1.84	0.43
2:A2:488:G:H2'	2:A2:489:G:H8	1.83	0.43
2:A2:1019:G:OP2	2:A2:1019:G:H8	2.02	0.43
2:A2:1911:G:C8	2:A2:1912:A:N7	2.87	0.43
2:A2:2422:C:O4'	34:L2:96:MET:HG2	2.19	0.43
2:A2:2440:C:H2'	2:A2:2441:G:O4'	2.18	0.43
2:A2:3689:G:H4'	2:A2:3700:A:C8	2.53	0.43
2:A2:4337:U:H2'	2:A2:4338:G:C8	2.53	0.43
4:B1:77:PRO:HG3	24:H1:18:VAL:HA	2.00	0.43
4:B1:103:ARG:HH22	4:B1:192:HIS:CE1	2.37	0.43
10:C2:59:A:H4'	10:C2:60:G:O5'	2.19	0.43
12:D1:191:ILE:O	12:D1:191:ILE:HG13	2.19	0.43
16:E2:143:LYS:HB2	16:E2:143:LYS:HE3	1.87	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:E2:257:TRP:C	16:E2:257:TRP:CD1	2.97	0.43
17:E3:28:LYS:HE3	17:E3:32:LEU:HD11	2.01	0.43
20:F3:46:GLU:OE2	20:F3:48:ALA:HB3	2.19	0.43
35:L3:160:SER:HB2	35:L3:163:SER:HB3	2.00	0.43
68:j2:6:LYS:HB3	68:j2:6:LYS:HE3	1.78	0.43
70:m2:890:U:H2'	70:m2:891:U:C6	2.54	0.43
70:m2:908:U:H2'	70:m2:909:G:C8	2.53	0.43
70:m2:948:U:H2'	70:m2:949:G:H8	1.84	0.43
70:m2:1566:C:C2	70:m2:1567:C:C5	3.07	0.43
73:q2:27:ARG:HG2	78:v2:61:GLN:HE22	1.84	0.43
78:v2:80:ARG:HH22	78:v2:90:VAL:HG12	1.82	0.43
79:w2:80:MET:SD	79:w2:120:VAL:HG23	2.59	0.43
81:y2:9:SER:HB3	81:y2:26:LYS:HB3	2.01	0.43
1:A1:125:PRO:HD3	2:A2:1678:U:O3'	2.19	0.42
2:A2:700:C:H2'	2:A2:701:C:C6	2.51	0.42
2:A2:942:A:H2'	2:A2:943:C:C6	2.54	0.42
2:A2:1361:G:O2'	2:A2:2567:A:C8	2.71	0.42
2:A2:1500:U:H2'	2:A2:1501:G:C8	2.54	0.42
2:A2:1901:A:C2'	2:A2:1902:A:H5'	2.49	0.42
2:A2:2324:G:H2'	2:A2:2325:U:C6	2.54	0.42
2:A2:3579:A:H2'	2:A2:3580:C:C6	2.54	0.42
3:A3:48:ALA:HB2	3:A3:70:ILE:HD12	2.01	0.42
4:B1:73:ARG:HD3	4:B1:73:ARG:HA	1.84	0.42
10:C2:22:U:OP2	19:F2:196:MET:HG2	2.18	0.42
10:C2:148:A:H2'	10:C2:149:G:C8	2.54	0.42
11:C3:20:ILE:HG22	11:C3:116:ILE:HG13	2.02	0.42
13:D2:79:ALA:O	13:D2:82:ILE:HG12	2.19	0.42
19:F2:183:VAL:HG22	19:F2:204:ARG:HG3	2.01	0.42
42:P2:42:VAL:HG22	42:P2:61:VAL:HG12	2.00	0.42
45:Q3:17:LEU:HD11	74:r2:92:ILE:HG21	2.01	0.42
47:R3:50:PHE:CE2	47:R3:79:ILE:HG12	2.54	0.42
58:Z2:36:ARG:HD2	58:Z2:79:GLY:O	2.19	0.42
70:m2:174:OMC:H1'	70:m2:174:OMC:HM23	1.76	0.42
70:m2:186:C:H2'	70:m2:187:G:C8	2.54	0.42
70:m2:497:U:H2'	70:m2:498:C:O4'	2.19	0.42
70:m2:836:C:H2'	70:m2:837:C:C2	2.53	0.42
70:m2:1232:C:H2'	70:m2:1233:C:C6	2.54	0.42
70:m2:1313:C:H2'	70:m2:1314:G:O4'	2.19	0.42
7:n2:36:A:H2'	7:n2:37:A:C8	2.54	0.42
1:A1:262:ILE:HD12	1:A1:262:ILE:HA	1.93	0.42
2:A2:457:G:H2'	2:A2:458:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:464:G:H2'	2:A2:465:G:C8	2.54	0.42
2:A2:698:C:H2'	2:A2:699:A:C8	2.53	0.42
2:A2:2048:U:H2'	2:A2:2049:G:C8	2.54	0.42
2:A2:2116:G:N7	29:J2:27:LYS:HB2	2.34	0.42
2:A2:2119:OMG:HM23	2:A2:2119:OMG:H1'	1.85	0.42
2:A2:3777:A:O2'	2:A2:3778:A:H8	2.02	0.42
2:A2:3826:U:H2'	2:A2:3827:G:H8	1.84	0.42
12:D1:47:PRO:HB3	12:D1:171:TRP:CZ2	2.54	0.42
16:E2:135:LYS:O	16:E2:138:GLN:HG2	2.19	0.42
17:E3:32:LEU:HD23	17:E3:32:LEU:HA	1.75	0.42
17:E3:88:ASP:OD2	51:T3:13:ARG:HB2	2.18	0.42
27:I2:29:LEU:HD13	58:Z2:29:LYS:HD2	2.01	0.42
28:I3:67:SER:H	28:I3:82:SER:HA	1.84	0.42
30:J3:94:ILE:HG22	30:J3:102:LEU:HD11	2.00	0.42
32:K3:85:ARG:HG2	32:K3:85:ARG:NH1	2.34	0.42
34:L2:78:ILE:HD13	34:L2:78:ILE:HA	1.85	0.42
35:L3:33:GLY:HA3	51:T3:38:TYR:CD2	2.54	0.42
45:Q3:121:ALA:O	45:Q3:125:VAL:HG13	2.19	0.42
53:U3:120:GLU:O	53:U3:132:MET:HE1	2.19	0.42
69:k2:97:ILE:HD12	69:k2:107:ARG:HA	2.00	0.42
70:m2:1669:U:H2'	70:m2:1670:U:C6	2.54	0.42
70:m2:1714:A:H2'	70:m2:1715:C:C6	2.54	0.42
74:r2:178:GLY:O	74:r2:231:GLY:HA2	2.19	0.42
75:s2:111:VAL:HG11	75:s2:178:ILE:HD13	2.02	0.42
2:A2:279:A:C4	24:H1:12:ARG:HG2	2.55	0.42
2:A2:2275:C:H5''	59:a2:33:LEU:HD22	2.02	0.42
2:A2:2439:C:H2'	2:A2:2440:C:C6	2.54	0.42
2:A2:3594:G:H4'	2:A2:3595:G:O5'	2.20	0.42
4:B1:175:ARG:HH11	4:B1:230:TYR:HB2	1.83	0.42
9:C1:86:LEU:HD22	9:C1:188:GLN:O	2.19	0.42
17:E3:107:ARG:HE	17:E3:107:ARG:HB3	1.62	0.42
20:F3:67:LEU:HD13	41:O3:131:ASP:OD2	2.19	0.42
22:G2:223:PHE:HB3	22:G2:226:TYR:HB2	2.02	0.42
24:H1:195:ARG:HE	24:H1:195:ARG:HB3	1.64	0.42
28:I3:220:ASP:HB3	28:I3:224:GLY:H	1.84	0.42
36:M2:132:ILE:HG22	36:M2:133:ALA:O	2.20	0.42
37:M3:57:ASP:HB3	70:m2:1287:G:H1	1.83	0.42
48:S2:101:PRO:O	48:S2:104:VAL:HG22	2.20	0.42
50:T2:6:LYS:HA	50:T2:6:LYS:HD3	1.91	0.42
50:T2:25:ILE:HG23	50:T2:41:ALA:HB1	1.99	0.42
58:Z2:50:VAL:HG22	58:Z2:69:VAL:HG22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:k2:26:SER:HB3	69:k2:31:ASN:ND2	2.34	0.42
70:m2:604:G:H1	70:m2:622:G:N2	2.18	0.42
70:m2:1622:A:H1'	70:m2:1626:U:OP2	2.20	0.42
7:n2:51:U:H5'	7:n2:52:G:OP2	2.19	0.42
80:x2:30:TYR:HA	80:x2:33:LEU:HB2	2.00	0.42
2:A2:1538:A:H2'	2:A2:1539:A:O4'	2.20	0.42
2:A2:2393:G:H22	2:A2:2474:C:P	2.42	0.42
2:A2:2600:A:H61	2:A2:3499:C:H42	1.67	0.42
2:A2:2612:A:H2'	2:A2:2613:A:O4'	2.19	0.42
2:A2:3279:C:H2'	2:A2:3280:A:O4'	2.20	0.42
2:A2:4156:C:H2'	2:A2:4157:C:C6	2.55	0.42
2:A2:4215:U:C2	2:A2:4216:A:C8	3.08	0.42
3:A3:7:GLU:C	3:A3:8:LYS:HG2	2.44	0.42
10:C2:141:C:H1'	24:H1:136:ASP:OD2	2.19	0.42
16:E2:189:THR:OG1	16:E2:192:GLU:HG3	2.19	0.42
33:L1:97:LYS:O	33:L1:100:VAL:HG22	2.18	0.42
35:L3:32:ILE:HG23	35:L3:37:LEU:HB2	2.01	0.42
41:O3:34:PHE:CD1	41:O3:34:PHE:C	2.95	0.42
46:R2:126:THR:CG2	46:R2:134:LYS:HE2	2.49	0.42
57:Y2:25:SER:HA	57:Y2:31:ILE:HB	2.00	0.42
70:m2:450:A:H61	77:u2:29:LEU:HD13	1.84	0.42
70:m2:502:A:O2'	70:m2:503:C:H5'	2.19	0.42
70:m2:557:A:H8	70:m2:557:A:OP2	2.01	0.42
70:m2:1562:U:H2'	70:m2:1563:G:H8	1.84	0.42
70:m2:1708:G:H2'	70:m2:1709:U:H6	1.84	0.42
7:n2:15:G:H2'	7:n2:59:U:H3	1.84	0.42
71:o2:8:LEU:HD13	71:o2:59:LEU:HD12	2.02	0.42
76:t2:61:ILE:HD11	76:t2:180:LEU:HD11	2.01	0.42
76:t2:77:VAL:HA	76:t2:80:VAL:HG12	2.01	0.42
79:w2:93:LEU:HD23	79:w2:104:LYS:HA	2.02	0.42
79:w2:118:ARG:HG2	79:w2:118:ARG:NH1	2.33	0.42
82:z2:81:ARG:HD3	82:z2:81:ARG:HA	1.86	0.42
2:A2:288:G:H2'	2:A2:289:C:H6	1.85	0.42
2:A2:1135:G:H2'	2:A2:3532:A:N7	2.34	0.42
2:A2:1151:A:H5'	19:F2:102:PHE:HB2	2.00	0.42
2:A2:1155:U:H2'	2:A2:1156:A:C8	2.55	0.42
2:A2:1380:U:H2'	2:A2:1381:C:H6	1.84	0.42
2:A2:2389:C:H2'	2:A2:2390:U:H6	1.85	0.42
2:A2:3694:U:C5	33:L1:102:LYS:HB2	2.53	0.42
2:A2:3738:C:H2'	2:A2:3739:G:C8	2.54	0.42
2:A2:3763:U:H2'	2:A2:3764:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4413:G:H2'	2:A2:4414:A:C8	2.54	0.42
2:A2:4509:U:H2'	2:A2:4510:C:C6	2.54	0.42
3:A3:40:TYR:CE2	3:A3:44:VAL:HG11	2.55	0.42
5:B2:3:C:H2'	5:B2:4:U:C6	2.54	0.42
22:G2:207:TYR:HE2	22:G2:222:GLN:NE2	2.15	0.42
26:H3:25:SER:HB2	78:v2:65:ARG:HD3	2.02	0.42
28:I3:113:PHE:CD1	28:I3:120:ILE:HD11	2.54	0.42
41:O3:59:GLY:HA2	41:O3:68:GLU:HG2	2.01	0.42
49:S3:53:VAL:HG13	49:S3:62:VAL:HG13	2.00	0.42
61:c2:90:LEU:HA	61:c2:93:VAL:HG22	2.02	0.42
70:m2:903:G:H2'	70:m2:904:G:C8	2.54	0.42
70:m2:1648:C:H5''	81:y2:138:ARG:HH11	1.84	0.42
71:o2:184:ARG:NH1	71:o2:191:ARG:HG3	2.34	0.42
72:p2:195:LYS:O	72:p2:199:LYS:HG2	2.19	0.42
77:u2:172:LEU:HD12	77:u2:190:LEU:HB2	2.00	0.42
78:v2:27:VAL:HG12	78:v2:46:MET:CE	2.49	0.42
1:A1:177:TYR:HE1	1:A1:209:MET:HG2	1.83	0.42
2:A2:460:C:C2	2:A2:461:G:C8	3.07	0.42
2:A2:852:C:O2'	2:A2:853:G:H5'	2.20	0.42
2:A2:2178:A:H2'	2:A2:2179:OMG:O4'	2.20	0.42
2:A2:2357:G:H2'	2:A2:2358:C:C6	2.54	0.42
2:A2:2655:U:H2'	2:A2:2656:G:H8	1.83	0.42
2:A2:3691:C:H5''	2:A2:3695:G:OP2	2.20	0.42
2:A2:3772:G:O6	59:a2:97:ILE:HG21	2.19	0.42
2:A2:4526:U:OP2	21:G1:117:LYS:HD3	2.20	0.42
16:E2:321:VAL:O	16:E2:341:LYS:HD3	2.20	0.42
17:E3:29:LYS:HB3	17:E3:29:LYS:HE2	1.73	0.42
24:H1:138:PHE:HA	24:H1:143:ARG:HH11	1.85	0.42
25:H2:289:TYR:O	25:H2:293:LEU:HG	2.20	0.42
28:I3:32:LEU:HB3	28:I3:42:MET:HB3	2.01	0.42
31:K2:100:VAL:HG11	31:K2:113:ILE:HD13	2.00	0.42
32:K3:14:LYS:HE3	32:K3:123:GLY:HA3	2.02	0.42
34:L2:155:LEU:HD13	34:L2:155:LEU:HA	1.92	0.42
37:M3:18:LEU:HA	37:M3:21:VAL:HG22	2.02	0.42
39:N3:15:ALA:HB2	49:S3:21:LYS:HD3	2.01	0.42
39:N3:110:ASP:O	39:N3:114:ARG:HG2	2.19	0.42
40:O2:90:TYR:CD1	40:O2:90:TYR:C	2.97	0.42
43:P3:75:ILE:HD11	43:P3:93:LEU:HD21	2.00	0.42
47:R3:97:ILE:HD13	47:R3:97:ILE:HA	1.91	0.42
53:U3:138:ARG:HD3	53:U3:138:ARG:N	2.35	0.42
63:e2:27:LYS:NZ	63:e2:50:LYS:HD2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:k2:99:LYS:HA	69:k2:99:LYS:HD3	1.89	0.42
70:m2:179:C:H5'	70:m2:180:G:OP2	2.19	0.42
70:m2:346:U:H2'	70:m2:347:U:C6	2.55	0.42
70:m2:947:U:H2'	70:m2:948:U:H6	1.84	0.42
70:m2:948:U:H2'	70:m2:949:G:C8	2.54	0.42
70:m2:1457:A:C2	70:m2:1458:G:C8	3.06	0.42
70:m2:1718:C:H2'	70:m2:1719:C:C6	2.54	0.42
72:p2:33:VAL:HG11	72:p2:67:PHE:CZ	2.55	0.42
74:r2:39:ARG:HA	74:r2:39:ARG:HD3	1.74	0.42
74:r2:130:PHE:O	74:r2:138:HIS:HB2	2.19	0.42
2:A2:1140:A2M:H2'	2:A2:1141:C:C6	2.55	0.42
2:A2:3925:A:H2'	2:A2:3926:A:C8	2.55	0.42
14:D3:16:LYS:HB2	14:D3:16:LYS:HE3	1.74	0.42
15:E1:28:GLU:CD	15:E1:28:GLU:N	2.77	0.42
19:F2:307:LYS:HZ3	19:F2:307:LYS:HG3	1.78	0.42
22:G2:211:LEU:HD13	22:G2:219:TYR:HA	2.02	0.42
28:I3:125:ARG:NH1	82:z2:33:ARG:HG3	2.35	0.42
37:M3:120:ALA:HA	37:M3:123:VAL:HG12	2.01	0.42
42:P2:29:ALA:HB2	42:P2:102:ALA:HB1	2.01	0.42
55:W2:20:LEU:O	55:W2:20:LEU:HD12	2.20	0.42
67:i2:104:ILE:HD12	67:i2:104:ILE:HA	1.93	0.42
70:m2:651:U:H2'	70:m2:652:A:C8	2.55	0.42
70:m2:1597:U:H2'	70:m2:1598:U:H6	1.84	0.42
70:m2:1680:A2M:HM'3	70:m2:1680:A2M:H1'	1.76	0.42
70:m2:1830:C:H2'	70:m2:1831:G:O4'	2.19	0.42
74:r2:55:ALA:HB1	74:r2:60:GLU:HB2	2.01	0.42
74:r2:188:ASN:HB3	74:r2:191:ARG:HD3	2.00	0.42
76:t2:66:VAL:N	76:t2:67:PRO:HD2	2.35	0.42
2:A2:684:G:H2'	2:A2:685:C:C6	2.55	0.42
2:A2:878:G:H2'	2:A2:879:C:C6	2.55	0.42
2:A2:1330:2MG:H2'	2:A2:1331:A:N7	2.35	0.42
2:A2:1490:PSU:H4'	2:A2:1493:G:C2	2.55	0.42
2:A2:1593:U:H4'	38:N2:19:PHE:CD2	2.55	0.42
2:A2:2456:U:H2'	2:A2:2457:C:C6	2.54	0.42
2:A2:3395:C:O2'	7:n2:71:G:H5'	2.20	0.42
3:A3:47:LYS:HE2	3:A3:77:TYR:O	2.20	0.42
4:B1:142:THR:O	4:B1:146:LEU:HG	2.19	0.42
4:B1:157:ILE:HB	4:B1:183:ILE:HD13	2.02	0.42
10:C2:7:U:H2'	10:C2:8:U:C6	2.55	0.42
16:E2:248:LEU:H	16:E2:248:LEU:HD12	1.84	0.42
19:F2:124:ILE:HG21	19:F2:264:TYR:OH	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:H1:60:VAL:HG22	24:H1:134:LEU:HB2	2.00	0.42
28:I3:215:GLN:HA	28:I3:231:ASP:HA	2.00	0.42
28:I3:226:HIS:HD2	73:q2:222:PRO:HB3	1.84	0.42
35:L3:60:LEU:CD1	35:L3:70:ARG:HA	2.49	0.42
43:P3:7:LEU:HD13	43:P3:33:VAL:HG12	2.02	0.42
43:P3:93:LEU:HD23	43:P3:128:PHE:CD1	2.55	0.42
68:j2:36:LYS:HG2	68:j2:48:LYS:HG3	2.02	0.42
70:m2:191:A:N6	70:m2:210:G:H21	2.18	0.42
70:m2:397:G:H5'	79:w2:82:MET:SD	2.60	0.42
70:m2:903:G:P	70:m2:903:G:H8	2.42	0.42
75:s2:91:ARG:HA	75:s2:94:LYS:HG2	2.01	0.42
76:t2:48:ALA:CB	76:t2:62:ILE:HG22	2.49	0.42
1:A1:98:ARG:CD	2:A2:736:G:H5''	2.50	0.42
2:A2:5:A:H2'	2:A2:6:C:C6	2.54	0.42
2:A2:951:C:H2'	2:A2:952:C:H6	1.85	0.42
2:A2:1005:G:H2'	2:A2:1005:G:N3	2.34	0.42
2:A2:1008:C:H42	2:A2:1016:A:H61	1.68	0.42
2:A2:1685:G:O6	2:A2:1698:A:H2	2.02	0.42
2:A2:2570:A2M:H2'	2:A2:2571:G:C8	2.54	0.42
2:A2:3240:C:H2'	2:A2:3241:G:C8	2.55	0.42
2:A2:3549:C:H2'	2:A2:3550:A:C8	2.55	0.42
2:A2:3565:C:H5	2:A2:4048:A:N6	2.14	0.42
2:A2:4176:G:C2	16:E2:252:ALA:HB1	2.54	0.42
2:A2:4699:U:H3'	2:A2:4700:C:C6	2.55	0.42
10:C2:37:A:OP2	60:b2:89:ARG:HG3	2.20	0.42
11:C3:24:LEU:HD11	11:C3:89:ILE:HD11	2.02	0.42
16:E2:194:LEU:HD23	16:E2:194:LEU:HA	1.78	0.42
16:E2:363:ILE:HD12	16:E2:363:ILE:O	2.19	0.42
19:F2:26:ALA:HB2	19:F2:266:THR:HG23	2.01	0.42
28:I3:21:ILE:HG13	28:I3:288:SER:OG	2.19	0.42
30:J3:130:ILE:HG22	30:J3:158:ALA:HB1	2.00	0.42
33:L1:176:ASP:HA	33:L1:179:LEU:HG	2.01	0.42
35:L3:111:GLN:CD	35:L3:127:ARG:HB2	2.44	0.42
36:M2:15:ARG:HD3	36:M2:62:VAL:CG2	2.50	0.42
41:O3:137:SER:O	70:m2:988:G:C8	2.73	0.42
43:P3:6:VAL:HG12	43:P3:34:ILE:HD11	2.02	0.42
47:R3:98:LYS:HE2	47:R3:98:LYS:HB3	1.81	0.42
52:U2:103:VAL:CG1	52:U2:108:TYR:HB2	2.50	0.42
59:a2:5:LEU:HD23	59:a2:5:LEU:HA	1.83	0.42
70:m2:106:C:H2'	70:m2:107:A:C8	2.54	0.42
70:m2:1380:A:H4'	70:m2:1381:A:O5'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:1489:A:O2'	70:m2:1490:C:H5'	2.20	0.42
70:m2:1651:U:H2'	70:m2:1652:A:H8	1.85	0.42
7:n2:37:A:H2'	7:n2:38:A:O4'	2.19	0.42
71:o2:147:LEU:HD13	71:o2:161:ILE:HB	2.01	0.42
73:q2:27:ARG:HG2	78:v2:61:GLN:NE2	2.34	0.42
79:w2:33:LEU:HD12	79:w2:34:PRO:CD	2.49	0.42
79:w2:37:TYR:CD1	79:w2:51:ILE:HG12	2.54	0.42
2:A2:1004:C:H2'	2:A2:1005:G:H8	1.84	0.42
2:A2:1130:OMG:HM23	2:A2:1130:OMG:H1'	1.78	0.42
2:A2:1911:G:H2'	2:A2:1912:A:H8	1.85	0.42
2:A2:3588:U:H2'	2:A2:3589:G:C8	2.55	0.42
2:A2:3698:A:H4'	2:A2:3699:U:H5	1.85	0.42
2:A2:3913:C:H2'	2:A2:3914:C:H6	1.85	0.42
2:A2:3933:A:O2'	2:A2:3934:A:H2'	2.20	0.42
2:A2:4396:A:H2'	2:A2:4397:G:O4'	2.19	0.42
2:A2:4546:G:H2'	2:A2:4547:C:H6	1.84	0.42
5:B2:7:G:H5''	22:G2:22:ARG:HD3	2.02	0.42
9:C1:79:ASN:ND2	9:C1:151:ILE:HD13	2.35	0.42
16:E2:126:LYS:HA	16:E2:126:LYS:HD2	1.83	0.42
16:E2:285:TYR:OH	16:E2:334:LYS:HD3	2.20	0.42
22:G2:226:TYR:HD1	22:G2:231:VAL:HB	1.85	0.42
23:G3:51:ARG:HG2	23:G3:52:GLU:N	2.33	0.42
26:H3:38:MET:HE1	26:H3:50:ILE:HD11	2.01	0.42
27:I2:14:HIS:HE1	27:I2:119:VAL:HG22	1.84	0.42
32:K3:30:LYS:O	32:K3:102:VAL:HG23	2.20	0.42
33:L1:39:LYS:HA	33:L1:202:ARG:HG3	2.01	0.42
39:N3:94:LYS:HB2	39:N3:94:LYS:HE2	1.75	0.42
49:S3:81:ARG:HE	49:S3:81:ARG:HB3	1.61	0.42
52:U2:31:GLY:HA3	52:U2:35:ALA:HB3	2.01	0.42
53:U3:100:LEU:HD23	53:U3:101:ALA:O	2.20	0.42
64:f2:26:TRP:CD1	64:f2:26:TRP:H	2.38	0.42
66:h2:16:LYS:NZ	70:m2:1820:A:H4'	2.35	0.42
70:m2:630:A:N1	73:q2:179:GLN:HG3	2.34	0.42
70:m2:651:U:H2'	70:m2:652:A:H8	1.85	0.42
70:m2:993:G:C6	70:m2:1136:G:H4'	2.55	0.42
75:s2:152:TRP:HE3	75:s2:153:LEU:HD23	1.84	0.42
81:y2:95:TYR:C	81:y2:95:TYR:CD2	2.98	0.42
2:A2:878:G:H2'	2:A2:879:C:H6	1.84	0.41
2:A2:3589:G:H2'	2:A2:3590:G:C8	2.55	0.41
2:A2:4289:OMG:H2'	2:A2:4290:U:C6	2.55	0.41
2:A2:4356:C:H2'	2:A2:4357:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4560:G:H2'	2:A2:4561:G:H8	1.84	0.41
3:A3:14:ARG:HH11	15:E1:111:GLU:HG3	1.84	0.41
5:B2:3:C:H2'	5:B2:4:U:H6	1.85	0.41
6:B3:77:LYS:HD2	6:B3:94:ARG:HH21	1.85	0.41
7:Bv:62:C:H2'	7:Bv:63:G:H8	1.85	0.41
12:D1:45:GLU:H	12:D1:45:GLU:HG2	1.67	0.41
12:D1:47:PRO:HD2	12:D1:141:LYS:HA	2.02	0.41
12:D1:51:HIS:HB3	12:D1:134:VAL:HG22	2.02	0.41
24:H1:146:PRO:HB2	60:b2:104:THR:HG23	2.02	0.41
25:H2:100:THR:HG22	25:H2:111:THR:OG1	2.19	0.41
25:H2:125:THR:HG22	25:H2:126:GLU:CG	2.46	0.41
26:H3:30:LEU:HD11	26:H3:37:ASN:C	2.45	0.41
26:H3:46:TYR:O	26:H3:50:ILE:HG13	2.19	0.41
28:I3:108:VAL:HA	28:I3:124:SER:HB2	2.01	0.41
28:I3:130:LYS:HB2	28:I3:132:TRP:CH2	2.54	0.41
33:L1:205:TYR:O	33:L1:206:ILE:HD13	2.19	0.41
34:L2:180:LYS:HA	34:L2:180:LYS:HD3	1.90	0.41
35:L3:35:TYR:OH	35:L3:103:GLU:HB3	2.20	0.41
41:O3:66:ARG:NH2	70:m2:964:A:H4'	2.32	0.41
42:P2:26:ILE:HG12	42:P2:37:LEU:HB2	2.02	0.41
43:P3:60:LYS:HB2	43:P3:60:LYS:HE3	1.83	0.41
52:U2:78:LEU:HD12	52:U2:78:LEU:HA	1.84	0.41
70:m2:486:A2M:HM'3	70:m2:486:A2M:H1'	1.75	0.41
71:o2:165:ASN:OD1	71:o2:165:ASN:N	2.53	0.41
72:p2:161:VAL:HA	72:p2:164:ILE:HD12	2.02	0.41
73:q2:76:ARG:NE	78:v2:66:HIS:CD2	2.88	0.41
77:u2:42:ARG:HG2	77:u2:58:LEU:HB2	2.01	0.41
2:A2:43:U:H1'	67:i2:52:THR:HB	2.02	0.41
2:A2:817:G:H5'	21:G1:72:TYR:CE2	2.54	0.41
2:A2:1230:C:H2'	2:A2:1231:C:O4'	2.20	0.41
2:A2:1254:C:H2'	2:A2:1255:C:C6	2.55	0.41
2:A2:2220:C:H2'	2:A2:2221:G:O4'	2.20	0.41
2:A2:2241:G:H2'	2:A2:2242:G:H8	1.84	0.41
2:A2:3619:A:H2'	2:A2:3621:A:O5'	2.19	0.41
2:A2:4112:U:H2'	2:A2:4113:C:C6	2.55	0.41
2:A2:4389:G:H2'	2:A2:4390:C:C6	2.56	0.41
2:A2:4504:C:H4'	27:I2:169:ARG:NH1	2.29	0.41
5:B2:69:U:H2'	5:B2:70:G:H8	1.85	0.41
10:C2:140:C:H2'	10:C2:141:C:H6	1.84	0.41
11:C3:79:ARG:NH2	81:y2:132:PHE:HD1	2.17	0.41
18:F1:94:ILE:HA	18:F1:94:ILE:HD13	1.80	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F3:56:ALA:O	41:O3:125:LYS:HD3	2.20	0.41
28:I3:164:ILE:HD11	28:I3:221:LEU:HG	2.02	0.41
29:J2:15:CYS:SG	29:J2:102:ALA:HB2	2.60	0.41
30:J3:212:LYS:HA	30:J3:212:LYS:HD2	1.87	0.41
32:K3:154:ARG:HB3	70:m2:77:A:O5'	2.20	0.41
32:K3:189:ARG:HD2	70:m2:334:G:N7	2.35	0.41
33:L1:45:LYS:HG2	33:L1:46:ASP:H	1.84	0.41
35:L3:133:ARG:HG3	35:L3:143:ASN:HB3	2.01	0.41
50:T2:14:LEU:HD23	50:T2:14:LEU:HA	1.84	0.41
51:T3:11:LYS:HE3	70:m2:617:C:O2	2.20	0.41
70:m2:677:U:H2'	70:m2:678:C:H6	1.84	0.41
70:m2:818:A:H2'	70:m2:819:G:O4'	2.20	0.41
70:m2:1027:U:H2'	70:m2:1028:C:O4'	2.20	0.41
70:m2:1569:G:OP1	70:m2:1569:G:H8	2.03	0.41
70:m2:1800:C:H2'	70:m2:1801:G:O4'	2.20	0.41
77:u2:64:ASN:H	77:u2:186:ASP:HB3	1.85	0.41
77:u2:117:TYR:HB3	77:u2:119:LEU:HD12	2.01	0.41
78:v2:12:TYR:CD2	78:v2:79:LEU:HD21	2.54	0.41
79:w2:68:ILE:HD13	79:w2:131:CYS:HB3	2.02	0.41
81:y2:112:LEU:HD22	81:y2:119:LEU:HD13	2.02	0.41
81:y2:126:ARG:HA	81:y2:126:ARG:HD3	1.93	0.41
2:A2:100:C:C2	2:A2:101:A:C8	3.08	0.41
2:A2:109:G:H2'	2:A2:110:C:O4'	2.20	0.41
2:A2:363:A:N1	2:A2:376:A:H5''	2.36	0.41
2:A2:458:C:H2'	2:A2:459:C:H6	1.84	0.41
2:A2:1258:U:H2'	2:A2:1259:C:O4'	2.20	0.41
2:A2:1281:C:H2'	2:A2:1282:C:C6	2.54	0.41
2:A2:1317:G:H2'	2:A2:1318:C:C6	2.54	0.41
2:A2:1532:U:H2'	2:A2:1533:C:C6	2.55	0.41
2:A2:1867:G:H2'	2:A2:1868:C:O4'	2.20	0.41
2:A2:2256:C:C2'	2:A2:2257:G:H5'	2.50	0.41
2:A2:2566:G:H2'	2:A2:2568:A:H2	1.86	0.41
2:A2:3760:C:H2'	2:A2:3761:U:H6	1.84	0.41
2:A2:4023:G:H5'	7:n2:76:A:N6	2.31	0.41
2:A2:4552:G:H2'	2:A2:4559:G:H22	1.85	0.41
4:B1:207:VAL:HG21	4:B1:215:LEU:HD22	2.01	0.41
5:B2:58:A:H2'	5:B2:59:G:H8	1.85	0.41
18:F1:42:LYS:O	18:F1:46:ILE:HG12	2.20	0.41
19:F2:173:LYS:HA	19:F2:173:LYS:HD2	1.80	0.41
25:H2:173:LYS:HG2	25:H2:181:LEU:HD23	2.01	0.41
25:H2:184:GLY:O	25:H2:185:PRO:C	2.63	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:I3:5:MET:HG3	28:I3:310:TRP:HB3	2.03	0.41
35:L3:97:ILE:O	35:L3:100:LEU:HG	2.20	0.41
37:M3:69:LEU:HD22	37:M3:76:LEU:CG	2.49	0.41
57:Y2:109:LYS:HB3	57:Y2:109:LYS:HE2	1.83	0.41
63:e2:24:LYS:HA	63:e2:67:LYS:O	2.20	0.41
70:m2:1540:C:H2'	70:m2:1541:U:C6	2.55	0.41
75:s2:59:LYS:HG3	75:s2:60:ARG:N	2.35	0.41
1:A1:67:ALA:HB2	54:V2:107:ARG:HD3	2.02	0.41
2:A2:398:A2M:HM'3	2:A2:398:A2M:H1'	1.80	0.41
2:A2:686:C:H2'	2:A2:687:G:C8	2.55	0.41
2:A2:1257:G:H2'	2:A2:1258:U:C6	2.55	0.41
2:A2:1553:A:H2'	2:A2:1554:G:H8	1.83	0.41
2:A2:1711:G:H2'	2:A2:1712:G:O4'	2.20	0.41
2:A2:1770:G:H2'	2:A2:1771:G:H8	1.84	0.41
2:A2:2639:G:H2'	2:A2:2640:A:H8	1.83	0.41
2:A2:3363:U:H2'	2:A2:3364:C:C6	2.55	0.41
2:A2:3376:G:H22	2:A2:3389:A:H2	1.67	0.41
2:A2:3430:A:H8	2:A2:3430:A:OP1	2.02	0.41
2:A2:3549:C:H2'	2:A2:3550:A:H8	1.85	0.41
2:A2:3613:U:H5''	2:A2:3620:U:H1'	2.01	0.41
2:A2:3910:C:H2'	2:A2:3911:C:C6	2.55	0.41
7:Bv:56:C:C4	67:i2:104:ILE:HG12	2.56	0.41
13:D2:133:TYR:HB3	13:D2:168:VAL:HG12	2.02	0.41
13:D2:204:MET:HB3	13:D2:208:GLU:HG3	2.02	0.41
18:F1:31:ARG:HG3	18:F1:32:LYS:N	2.34	0.41
22:G2:155:THR:HA	22:G2:179:ARG:HA	2.02	0.41
28:I3:17:TRP:HB2	28:I3:36:ARG:CG	2.50	0.41
28:I3:88:ARG:CZ	28:I3:100:ARG:HE	2.34	0.41
29:J2:94:MET:HE1	29:J2:146:ILE:HG22	2.01	0.41
31:K2:168:ARG:HE	31:K2:168:ARG:HB3	1.74	0.41
32:K3:45:TRP:HD1	32:K3:48:TYR:CD1	2.27	0.41
33:L1:8:ASP:HA	33:L1:11:TYR:CD1	2.53	0.41
37:M3:59:PRO:HA	37:M3:62:VAL:HG22	2.03	0.41
37:M3:81:ASP:HB2	37:M3:84:LYS:HB2	2.02	0.41
41:O3:95:ILE:HD13	41:O3:95:ILE:HA	1.88	0.41
45:Q3:20:ARG:HD3	45:Q3:74:MET:HB3	2.01	0.41
49:S3:36:LYS:HB3	49:S3:78:SER:OG	2.19	0.41
50:T2:30:ASP:O	50:T2:39:SER:HB3	2.20	0.41
70:m2:17:C:H2'	70:m2:18:C:H6	1.85	0.41
70:m2:294:A:H4'	79:w2:39:ASN:O	2.21	0.41
70:m2:811:A:OP1	74:r2:186:GLY:HA3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:m2:811:A:H2'	70:m2:812:A:O4'	2.20	0.41
70:m2:1232:C:O2'	70:m2:1233:C:H5'	2.20	0.41
70:m2:1714:A:H2'	70:m2:1715:C:H6	1.85	0.41
72:p2:219:LYS:HB2	72:p2:219:LYS:HE2	1.82	0.41
73:q2:210:ILE:HG12	82:z2:16:ILE:HG12	2.03	0.41
77:u2:117:TYR:CD1	77:u2:152:ARG:HB3	2.55	0.41
2:A2:474:C:H2'	2:A2:475:G:H8	1.85	0.41
2:A2:2485:U:H2'	2:A2:2486:C:C6	2.56	0.41
2:A2:3584:A:H2'	2:A2:3585:G:O4'	2.21	0.41
2:A2:4297:C:H3'	34:L2:62:ARG:HH22	1.85	0.41
5:B2:4:U:H2'	5:B2:5:A:C8	2.55	0.41
5:B2:4:U:H2'	5:B2:5:A:H8	1.85	0.41
6:B3:76:THR:OG1	6:B3:94:ARG:HB3	2.20	0.41
16:E2:53:MET:HE2	16:E2:53:MET:HB3	1.91	0.41
18:F1:9:ILE:HD13	18:F1:9:ILE:HA	1.79	0.41
19:F2:179:ASP:O	19:F2:183:VAL:HG23	2.21	0.41
20:F3:59:PHE:CE2	41:O3:128:ARG:HD3	2.55	0.41
28:I3:57:ARG:HH12	28:I3:94:THR:H	1.68	0.41
28:I3:145:GLU:HB3	28:I3:184:LEU:HD12	2.01	0.41
45:Q3:105:LYS:O	45:Q3:109:GLU:HG3	2.21	0.41
47:R3:39:LYS:CE	75:s2:164:ARG:HE	2.34	0.41
57:Y2:28:TYR:HB2	57:Y2:31:ILE:HG12	2.01	0.41
59:a2:33:LEU:HD23	59:a2:33:LEU:HA	1.87	0.41
68:j2:70:THR:HG23	68:j2:72:ASN:O	2.21	0.41
70:m2:211:A:H4'	70:m2:212:U:OP2	2.19	0.41
70:m2:395:U:H6	70:m2:395:U:H2'	1.66	0.41
7:n2:69:G:H2'	7:n2:70:G:H8	1.85	0.41
73:q2:47:GLU:HA	73:q2:85:GLU:HG3	2.02	0.41
74:r2:77:ARG:HD2	74:r2:77:ARG:HA	1.86	0.41
74:r2:124:CYS:HA	74:r2:142:HIS:CE1	2.55	0.41
75:s2:118:ASN:O	75:s2:193:LYS:HE2	2.20	0.41
80:x2:15:PHE:CE1	80:x2:110:GLU:HA	2.56	0.41
2:A2:21:G:H1'	10:C2:103:A:N3	2.35	0.41
2:A2:810:U:H3'	2:A2:811:G:C8	2.56	0.41
2:A2:2130:A:H2'	2:A2:2131:A:C8	2.55	0.41
2:A2:2252:C:H2'	2:A2:2253:C:C6	2.55	0.41
2:A2:3736:G:C4	4:B1:51:LEU:HD21	2.56	0.41
2:A2:3888:G:H2'	2:A2:3889:C:C6	2.56	0.41
5:B2:111:C:H2'	5:B2:112:U:O4'	2.20	0.41
12:D1:61:SER:HA	12:D1:126:VAL:HG12	2.01	0.41
16:E2:96:PRO:HD3	27:I2:156:LEU:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:F1:179:PHE:N	52:U2:134:GLU:OE1	2.53	0.41
20:F3:22:ARG:NH1	41:O3:141:ARG:HG2	2.35	0.41
24:H1:200:LEU:HD23	24:H1:200:LEU:HA	1.88	0.41
25:H2:292:LYS:HB2	25:H2:292:LYS:HE3	1.89	0.41
27:I2:52:LEU:HD23	27:I2:52:LEU:HA	1.90	0.41
28:I3:218:LEU:HD23	28:I3:228:TYR:HB3	2.02	0.41
29:J2:92:LEU:HD23	29:J2:92:LEU:HA	1.79	0.41
32:K3:184:VAL:HG11	70:m2:142:C:H5	1.85	0.41
32:K3:216:ARG:HG3	74:r2:153:LEU:HD11	2.01	0.41
35:L3:48:PHE:O	35:L3:52:LYS:HG3	2.21	0.41
35:L3:146:SER:HB3	70:m2:524:A:OP1	2.20	0.41
38:N2:48:VAL:HG21	38:N2:94:GLU:HG2	2.03	0.41
41:O3:78:ALA:HB3	41:O3:118:ALA:HB3	2.01	0.41
45:Q3:81:TYR:HA	45:Q3:84:LYS:HG2	2.01	0.41
45:Q3:107:ARG:HG3	45:Q3:107:ARG:H	1.65	0.41
70:m2:350:A:H2'	70:m2:351:A:C8	2.56	0.41
70:m2:478:A:H2'	70:m2:479:G:O4'	2.20	0.41
70:m2:911:G:H2'	70:m2:912:G:C8	2.55	0.41
70:m2:937:G:H2'	70:m2:938:G:C8	2.56	0.41
70:m2:998:A:H2'	70:m2:999:A:C8	2.56	0.41
70:m2:1450:A:H2'	70:m2:1451:G:O4'	2.21	0.41
73:q2:40:ARG:HB2	73:q2:47:GLU:HG2	2.02	0.41
73:q2:214:LYS:HE2	73:q2:214:LYS:HB2	1.84	0.41
74:r2:45:ILE:O	74:r2:49:ARG:HB3	2.20	0.41
78:v2:27:VAL:HB	78:v2:43:LEU:HD13	2.02	0.41
80:x2:83:MET:HE2	80:x2:83:MET:HA	2.02	0.41
2:A2:50:C:C2	2:A2:51:A:C8	3.08	0.41
2:A2:221:C:H2'	2:A2:222:C:H6	1.84	0.41
2:A2:259:C:H2'	2:A2:260:C:C6	2.56	0.41
2:A2:480:C:OP1	69:k2:67:ARG:HD2	2.21	0.41
2:A2:2052:G:H4'	19:F2:242:PRO:HB2	2.01	0.41
2:A2:2105:U:O4	19:F2:69:THR:HG22	2.20	0.41
2:A2:2654:C:H2'	2:A2:2655:U:C6	2.55	0.41
2:A2:3452:U:H2'	2:A2:3453:C:C6	2.56	0.41
2:A2:3761:U:H2'	2:A2:3762:C:H6	1.85	0.41
2:A2:3776:C:H5''	2:A2:3777:A:H5''	2.03	0.41
2:A2:3975:A:C2	22:G2:146:LEU:HD23	2.56	0.41
4:B1:213:GLY:O	4:B1:217:LYS:HG2	2.20	0.41
4:B1:244:PRO:HA	4:B1:247:VAL:HG22	2.03	0.41
6:B3:62:ARG:CZ	70:m2:1544:C:H5''	2.50	0.41
14:D3:15:ARG:NH1	30:J3:84:PHE:HA	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:F2:140:LYS:HD2	19:F2:140:LYS:HA	1.91	0.41
21:G1:103:LYS:HE2	21:G1:103:LYS:HB3	1.68	0.41
22:G2:273:LEU:HD23	22:G2:274:ALA:N	2.35	0.41
28:I3:142:VAL:HG11	28:I3:177:TRP:HH2	1.83	0.41
28:I3:177:TRP:N	28:I3:177:TRP:CD1	2.88	0.41
31:K2:108:ARG:O	31:K2:112:ARG:HG3	2.21	0.41
32:K3:121:ILE:HD11	32:K3:124:LEU:CG	2.51	0.41
35:L3:78:LEU:HG	35:L3:97:ILE:HD11	2.03	0.41
54:V2:77:LYS:HA	54:V2:78:PRO:HD3	1.94	0.41
61:c2:76:ARG:HD3	61:c2:76:ARG:HA	1.79	0.41
70:m2:25:A:HO2'	70:m2:26:U:H6	1.68	0.41
70:m2:96:C:H2'	70:m2:97:U:C6	2.56	0.41
70:m2:679:G:H2'	70:m2:680:U:C6	2.55	0.41
70:m2:833:G:H2'	70:m2:834:G:C8	2.56	0.41
70:m2:1502:G:H2'	70:m2:1503:C:C6	2.56	0.41
70:m2:1660:G:H2'	70:m2:1661:U:O4'	2.20	0.41
7:n2:68:C:H2'	7:n2:69:G:H8	1.84	0.41
79:w2:27:GLU:HG2	79:w2:29:GLY:N	2.25	0.41
80:x2:100:LYS:HE2	80:x2:100:LYS:HB3	1.76	0.41
1:A1:242:MET:HE1	1:A1:245:LYS:HB3	2.03	0.41
2:A2:73:A:OP1	18:F1:106:SER:HB3	2.20	0.41
2:A2:669:C:H2'	2:A2:670:G:C8	2.56	0.41
2:A2:1281:C:C2	2:A2:1282:C:C5	3.09	0.41
2:A2:1574:C:H2'	2:A2:1575:U:H6	1.85	0.41
2:A2:1683:OMC:HM21	2:A2:1684:U:C5	2.55	0.41
2:A2:3293:U:O4	2:A2:3307:A:H2	2.04	0.41
2:A2:3719:U:H2'	2:A2:3720:U:C6	2.56	0.41
2:A2:4253:U:H2'	2:A2:4254:A:H8	1.86	0.41
2:A2:4379:A:H2'	2:A2:4380:U:O4'	2.21	0.41
2:A2:4382:C:H6	2:A2:4382:C:O5'	2.04	0.41
19:F2:101:MET:HE2	19:F2:103:ALA:O	2.21	0.41
24:H1:154:PRO:O	24:H1:157:LYS:HG3	2.20	0.41
25:H2:103:VAL:HG23	25:H2:105:GLY:H	1.86	0.41
25:H2:210:ILE:HD13	25:H2:210:ILE:HA	1.91	0.41
27:I2:56:ALA:O	27:I2:60:LYS:HG2	2.21	0.41
28:I3:43:TRP:CD1	28:I3:43:TRP:N	2.89	0.41
32:K3:32:MET:HB2	32:K3:32:MET:HE2	1.89	0.41
34:L2:98:ARG:O	34:L2:102:LEU:HD23	2.20	0.41
37:M3:27:ILE:HG23	78:v2:84:HIS:CG	2.55	0.41
38:N2:93:ILE:HD13	38:N2:93:ILE:HA	1.79	0.41
46:R2:65:ALA:HB2	60:b2:69:LEU:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:T2:59:LYS:HG3	50:T2:60:LYS:N	2.36	0.41
60:b2:81:LEU:HD23	60:b2:84:ARG:HD2	2.02	0.41
70:m2:75:G:H5'	70:m2:76:U:OP1	2.21	0.41
70:m2:162:C:H2'	70:m2:163:U:O4'	2.20	0.41
70:m2:1278:A:O2'	78:v2:51:SER:HA	2.21	0.41
70:m2:1629:C:C2	70:m2:1630:C:C5	3.09	0.41
71:o2:183:LEU:HB3	71:o2:189:ILE:HG12	2.01	0.41
72:p2:171:ILE:HD12	72:p2:197:ILE:HA	2.02	0.41
73:q2:141:LYS:HB3	73:q2:141:LYS:HE2	1.84	0.41
74:r2:11:ARG:NH1	74:r2:21:ASP:H	2.19	0.41
74:r2:86:PHE:CD2	74:r2:87:MET:HG2	2.56	0.41
75:s2:87:LEU:HD22	81:y2:47:LEU:HD11	2.03	0.41
75:s2:107:ASN:HB3	75:s2:110:GLN:HB2	2.01	0.41
75:s2:165:ASN:OD1	75:s2:167:LYS:HB3	2.21	0.41
82:z2:105:MET:O	82:z2:109:LEU:HG	2.21	0.41
1:A1:95:ARG:NH2	2:A2:734:C:H5''	2.35	0.41
1:A1:193:ASP:HB3	1:A1:196:LEU:HD13	2.02	0.41
2:A2:84:A:H61	2:A2:98:A:H3'	1.85	0.41
2:A2:98:A:OP1	24:H1:195:ARG:HD3	2.20	0.41
2:A2:458:C:OP1	25:H2:121:ARG:HG3	2.21	0.41
2:A2:879:C:H2'	2:A2:880:U:C6	2.55	0.41
2:A2:947:G:C6	2:A2:1038:G:C6	3.09	0.41
2:A2:1377:A:C2	70:m2:679:G:H4'	2.55	0.41
2:A2:1563:G:H2'	2:A2:1564:C:O4'	2.21	0.41
2:A2:1669:A:H2'	2:A2:1670:A:C8	2.56	0.41
2:A2:1709:A:H2'	2:A2:1710:A:C8	2.55	0.41
2:A2:1723:C:C4	21:G1:17:PHE:HB3	2.56	0.41
2:A2:1847:G:OP2	2:A2:4113:C:H4'	2.21	0.41
2:A2:2172:A:C4	2:A2:2173:A:C8	3.09	0.41
2:A2:2179:OMG:HM23	2:A2:2179:OMG:H1'	1.74	0.41
2:A2:2272:A:O4'	59:a2:62:LYS:HE2	2.21	0.41
2:A2:2283:G:H2'	2:A2:2284:A:O4'	2.21	0.41
2:A2:2460:G:C6	2:A2:2467:G:C6	3.09	0.41
2:A2:2464:C:H5''	34:L2:39:GLN:HG3	2.03	0.41
2:A2:3266:A:H2'	2:A2:3267:A:C8	2.56	0.41
2:A2:3308:A:H2'	2:A2:3309:A:C5	2.56	0.41
2:A2:3583:U:H2'	2:A2:3584:A:C8	2.56	0.41
2:A2:3583:U:H2'	2:A2:3584:A:H8	1.85	0.41
2:A2:3715:G:H2'	2:A2:3716:U:H6	1.86	0.41
2:A2:3967:A:O4'	54:V2:37:PRO:HG2	2.20	0.41
2:A2:3997:C:H2'	2:A2:3998:U:H6	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4297:C:H3'	34:L2:62:ARG:NH2	2.35	0.41
2:A2:4433:G:H22	2:A2:4499:G:H1	1.68	0.41
2:A2:4515:G:H2'	21:G1:91:TRP:CZ2	2.56	0.41
2:A2:4548:G:C2	2:A2:4549:G:C8	3.09	0.41
2:A2:4560:G:H2'	2:A2:4561:G:C8	2.55	0.41
2:A2:4647:U:H2'	2:A2:4648:U:O4'	2.21	0.41
3:A3:14:ARG:NH2	15:E1:125:ILE:HD12	2.35	0.41
4:B1:42:GLY:O	4:B1:43:GLN:HG2	2.21	0.41
4:B1:55:VAL:HG21	46:R2:41:ARG:HD3	2.02	0.41
6:B3:39:LEU:HD13	6:B3:99:VAL:HG21	2.03	0.41
9:C1:40:HIS:CD2	9:C1:40:HIS:H	2.39	0.41
13:D2:95:GLN:HG2	13:D2:95:GLN:H	1.66	0.41
16:E2:56:ILE:HG21	16:E2:332:MET:CE	2.51	0.41
19:F2:20:LYS:HE3	19:F2:20:LYS:HB3	1.81	0.41
19:F2:242:PRO:HG3	19:F2:248:ARG:HD2	2.03	0.41
24:H1:53:TYR:HB2	24:H1:133:ILE:HD13	2.03	0.41
25:H2:265:LEU:HB3	25:H2:269:LYS:NZ	2.33	0.41
26:H3:40:ARG:O	26:H3:44:ARG:HG3	2.21	0.41
27:I2:89:PRO:O	27:I2:95:GLY:HA3	2.20	0.41
28:I3:32:LEU:HA	28:I3:42:MET:HA	2.03	0.41
28:I3:171:ASP:O	28:I3:173:LEU:HD12	2.21	0.41
32:K3:1:MET:HG3	32:K3:107:SER:O	2.21	0.41
32:K3:18:VAL:HG21	32:K3:24:LEU:HD21	2.03	0.41
37:M3:32:ALA:HB3	37:M3:110:VAL:H	1.85	0.41
40:O2:42:PHE:CE1	40:O2:46:ARG:HB2	2.56	0.41
40:O2:100:LEU:HD23	40:O2:112:LEU:HD23	2.02	0.41
44:Q2:3:VAL:HG13	44:Q2:13:ILE:O	2.21	0.41
47:R3:52:LYS:HB3	47:R3:52:LYS:HE3	1.88	0.41
70:m2:112:U:O2'	70:m2:114:G:H2'	2.21	0.41
70:m2:158:A:N6	70:m2:468:G:C6	2.89	0.41
70:m2:199:U:H3'	70:m2:200:C:H5'	2.02	0.41
70:m2:308:C:H4'	70:m2:309:G:H3'	2.01	0.41
70:m2:486:A2M:H8	70:m2:486:A2M:O5'	2.21	0.41
70:m2:602:G:H2'	70:m2:603:OMG:H8	1.86	0.41
70:m2:1308:U:H2'	70:m2:1309:U:O4'	2.21	0.41
70:m2:1364:U:H5''	70:m2:1365:C:C5	2.56	0.41
70:m2:1517:G:O3'	80:x2:81:ARG:HD3	2.20	0.41
7:n2:36:A:H2'	7:n2:37:A:H8	1.85	0.41
71:o2:66:VAL:HG23	71:o2:186:ARG:CG	2.48	0.41
76:t2:75:ILE:HD12	76:t2:79:LEU:CD2	2.51	0.41
77:u2:19:LYS:HA	77:u2:20:PRO:HD3	1.97	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:u2:89:GLU:O	77:u2:93:THR:HG23	2.21	0.41
79:w2:147:LYS:HD2	79:w2:151:THR:HG21	2.03	0.41
80:x2:107:ILE:HA	80:x2:111:MET:SD	2.61	0.41
2:A2:2290:G:H2'	2:A2:2291:A:C8	2.56	0.41
2:A2:2511:G:H2'	2:A2:2512:A:C8	2.55	0.41
2:A2:3395:C:C2	2:A2:3396:G:C8	3.09	0.41
2:A2:3758:G:C4	2:A2:3759:G:C8	3.09	0.41
2:A2:3957:G:N7	38:N2:85:LEU:HD11	2.36	0.41
2:A2:4150:OMU:HM23	2:A2:4152:PSU:H6	1.86	0.41
2:A2:4277:C:P	16:E2:223:THR:HG23	2.61	0.41
2:A2:4544:G:H5''	2:A2:4545:U:OP2	2.21	0.41
3:A3:81:ASP:HA	3:A3:84:LEU:HD13	2.03	0.41
3:A3:114:LEU:O	3:A3:117:ILE:HG22	2.21	0.41
4:B1:242:LEU:HD23	4:B1:242:LEU:HA	1.93	0.41
15:E1:3:GLN:HG3	15:E1:6:GLY:H	1.86	0.41
18:F1:197:LYS:HE3	18:F1:201:GLU:OE1	2.21	0.41
19:F2:354:LEU:HD12	19:F2:354:LEU:HA	1.94	0.41
20:F3:22:ARG:HH11	41:O3:142:ARG:H	1.69	0.41
24:H1:94:PHE:CE2	24:H1:96:ARG:HB2	2.56	0.41
27:I2:11:GLY:O	27:I2:41:ILE:HG12	2.21	0.41
28:I3:165:ILE:HG12	28:I3:177:TRP:HB2	2.02	0.41
40:O2:103:VAL:HB	40:O2:113:ARG:HD2	2.03	0.41
41:O3:46:ASP:OD2	72:p2:47:THR:HG23	2.21	0.41
45:Q3:40:ILE:HD13	45:Q3:60:PHE:CZ	2.57	0.41
47:R3:64:ASN:HA	47:R3:114:LYS:NZ	2.36	0.41
67:i2:63:THR:OG1	67:i2:87:ARG:HB3	2.21	0.41
70:m2:184:G:H2'	70:m2:185:G:C8	2.56	0.41
70:m2:841:C:H4'	70:m2:842:C:OP2	2.20	0.41
70:m2:869:OMG:H5''	79:w2:149:ALA:HB2	2.03	0.41
70:m2:1595:C:H2'	70:m2:1596:A:H8	1.86	0.41
70:m2:1808:A:H2'	70:m2:1809:C:C6	2.56	0.41
71:o2:155:ARG:HG2	71:o2:156:TYR:CD2	2.56	0.41
77:u2:73:THR:O	77:u2:74:ARG:HD2	2.21	0.41
80:x2:53:GLN:HB2	80:x2:83:MET:HE3	2.02	0.41
82:z2:25:GLY:C	82:z2:31:ASN:HD21	2.29	0.41
2:A2:2:G:H2'	2:A2:3:C:C6	2.55	0.40
2:A2:161:G:H2'	2:A2:162:A:H8	1.85	0.40
2:A2:685:C:H4'	69:k2:96:MET:HG3	2.04	0.40
2:A2:948:C:C2	2:A2:949:G:C8	3.09	0.40
2:A2:1254:C:H2'	2:A2:1255:C:H6	1.87	0.40
2:A2:1580:C:H2'	2:A2:1581:U:C6	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:1751:U:H5''	9:C1:64:ARG:HD3	2.03	0.40
2:A2:2390:U:C4	2:A2:2391:U:C4	3.09	0.40
2:A2:3346:U:H2'	2:A2:3347:G:O4'	2.21	0.40
2:A2:3371:PSU:H2'	2:A2:3372:C:O4'	2.21	0.40
2:A2:3709:C:H2'	2:A2:3710:U:C6	2.56	0.40
2:A2:3751:C:H2'	2:A2:3752:C:C1'	2.51	0.40
2:A2:3888:G:H2'	2:A2:3889:C:H6	1.86	0.40
2:A2:3915:C:H2'	2:A2:3916:G:O4'	2.20	0.40
2:A2:4505:G:C6	2:A2:4506:G:C6	3.09	0.40
5:B2:54:A:C6	15:E1:12:MET:HG2	2.56	0.40
6:B3:44:GLU:OE2	70:m2:1540:C:H5''	2.20	0.40
9:C1:66:GLU:H	9:C1:66:GLU:HG2	1.70	0.40
11:C3:24:LEU:HD13	11:C3:36:CYS:SG	2.60	0.40
11:C3:32:LEU:HD12	11:C3:32:LEU:HA	1.84	0.40
17:E3:67:ARG:NH2	70:m2:620:C:H41	2.19	0.40
18:F1:150:LEU:HD12	18:F1:150:LEU:HA	1.95	0.40
30:J3:68:ARG:O	30:J3:68:ARG:HD3	2.20	0.40
30:J3:227:ARG:HH21	70:m2:658:G:H1'	1.85	0.40
32:K3:61:PHE:CD2	32:K3:72:ARG:HD3	2.57	0.40
32:K3:168:LYS:HA	32:K3:169:PRO:HD3	1.98	0.40
33:L1:83:PRO:HG2	33:L1:107:TYR:CE2	2.56	0.40
40:O2:42:PHE:CE2	40:O2:90:TYR:HB2	2.56	0.40
41:O3:48:SER:HB2	72:p2:67:PHE:CZ	2.56	0.40
43:P3:57:ARG:NE	70:m2:921:A:H5'	2.36	0.40
47:R3:98:LYS:HB2	47:R3:112:ASN:HB3	2.03	0.40
49:S3:14:GLU:H	49:S3:14:GLU:CD	2.28	0.40
50:T2:121:ARG:O	50:T2:124:THR:HG22	2.22	0.40
53:U3:101:ALA:HA	70:m2:1288:G:P	2.61	0.40
59:a2:101:LYS:O	59:a2:104:VAL:HG22	2.21	0.40
70:m2:5:U:H2'	70:m2:6:G:C8	2.56	0.40
70:m2:817:U:C2	70:m2:818:A:C8	3.08	0.40
70:m2:1468:G:O5'	82:z2:4:VAL:HG22	2.21	0.40
76:t2:73:GLN:HB3	76:t2:135:PHE:CE1	2.56	0.40
76:t2:100:ILE:H	76:t2:100:ILE:HD12	1.86	0.40
78:v2:24:LYS:HD2	78:v2:24:LYS:HA	1.94	0.40
81:y2:73:LYS:HD3	81:y2:73:LYS:HA	1.93	0.40
2:A2:64:A:H1'	2:A2:76:A:H1'	2.02	0.40
2:A2:223:G:H4'	2:A2:225:G:C8	2.56	0.40
2:A2:247:G:H4'	48:S2:128:VAL:HG11	2.03	0.40
2:A2:833:U:C6	21:G1:44:ARG:NH1	2.89	0.40
2:A2:1154:OMC:HM23	2:A2:1154:OMC:H1'	1.88	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:2168:U:H2'	2:A2:2169:G:H8	1.86	0.40
2:A2:2321:G:H2'	2:A2:2322:G:H8	1.85	0.40
2:A2:3340:G:H2'	2:A2:3341:C:C6	2.56	0.40
2:A2:3718:U:H2'	2:A2:3719:U:O4'	2.21	0.40
2:A2:4382:C:H2'	2:A2:4383:G:O4'	2.20	0.40
2:A2:4422:G:H4'	2:A2:4424:U:C4	2.57	0.40
2:A2:4422:G:H4'	2:A2:4424:U:C5	2.56	0.40
3:A3:63:GLU:O	3:A3:67:VAL:HG23	2.21	0.40
5:B2:98:G:H2'	5:B2:99:G:O4'	2.20	0.40
6:B3:113:VAL:HB	6:B3:121:ARG:HG2	2.01	0.40
9:C1:128:MET:HE2	9:C1:128:MET:HA	2.03	0.40
11:C3:37:ALA:O	11:C3:41:ARG:HG2	2.21	0.40
13:D2:246:LEU:HD12	13:D2:247:ARG:H	1.87	0.40
15:E1:10:ASN:N	15:E1:11:PRO:HD2	2.36	0.40
19:F2:134:PRO:HA	19:F2:150:LEU:HD22	2.03	0.40
23:G3:10:LYS:HD3	23:G3:10:LYS:HA	1.95	0.40
25:H2:209:ASP:O	25:H2:267:LYS:HD3	2.21	0.40
31:K2:53:MET:HE3	31:K2:57:ASN:HB3	2.03	0.40
33:L1:160:LYS:HA	33:L1:160:LYS:HD3	1.81	0.40
34:L2:81:ARG:HG2	34:L2:88:ARG:CZ	2.51	0.40
35:L3:5:ARG:HG3	35:L3:7:TRP:CE2	2.57	0.40
35:L3:81:LEU:O	35:L3:84:ILE:HG22	2.21	0.40
35:L3:136:ARG:HD3	35:L3:139:LYS:HA	2.03	0.40
41:O3:75:MET:HE2	41:O3:75:MET:HB3	1.95	0.40
43:P3:105:THR:HG23	43:P3:105:THR:O	2.22	0.40
44:Q2:9:SER:HB3	44:Q2:51:TRP:HZ3	1.87	0.40
70:m2:129:C:O2	70:m2:130:G:H2'	2.22	0.40
70:m2:830:G:H5''	74:r2:23:LEU:HD11	2.02	0.40
70:m2:919:U:H2'	70:m2:920:U:H6	1.86	0.40
71:o2:51:LEU:HD23	71:o2:51:LEU:HA	1.85	0.40
71:o2:97:THR:HB	71:o2:117:ARG:HH22	1.86	0.40
72:p2:103:MET:HE3	72:p2:188:LEU:HD13	2.04	0.40
79:w2:4:ILE:H	79:w2:4:ILE:CD1	2.28	0.40
2:A2:128:C:H2'	2:A2:129:C:C6	2.56	0.40
2:A2:195:C:O3'	48:S2:122:LYS:HG2	2.21	0.40
2:A2:1120:C:H2'	2:A2:1121:A:C8	2.55	0.40
2:A2:1734:A:H2'	2:A2:1735:G:C8	2.57	0.40
2:A2:1832:A:H2'	2:A2:1833:C:O4'	2.22	0.40
2:A2:2042:G:H2'	2:A2:2043:G:O4'	2.22	0.40
2:A2:2482:C:H2'	2:A2:2483:U:C6	2.56	0.40
2:A2:3250:C:H5'	2:A2:3251:U:C5	2.53	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:3472:A:OP1	2:A2:3474:OMU:H5	2.21	0.40
2:A2:3474:OMU:HM21	13:D2:218:HIS:HB3	2.04	0.40
2:A2:3590:G:H2'	2:A2:3591:C:C6	2.57	0.40
2:A2:3962:A:H2'	2:A2:3963:A:O4'	2.21	0.40
2:A2:4578:C:H2'	2:A2:4579:A:C8	2.57	0.40
5:B2:58:A:H2'	5:B2:59:G:C8	2.56	0.40
12:D1:78:LYS:HE3	12:D1:78:LYS:HB3	1.72	0.40
18:F1:5:ARG:HB3	18:F1:6:ASN:H	1.64	0.40
20:F3:58:VAL:HG21	41:O3:28:PHE:HZ	1.86	0.40
28:I3:175:LYS:HB3	28:I3:184:LEU:HD21	2.03	0.40
29:J2:36:ILE:HD13	29:J2:36:ILE:HA	1.79	0.40
30:J3:266:TYR:HB3	71:o2:120:ARG:HD2	2.03	0.40
31:K2:146:ARG:HG3	31:K2:148:VAL:HG22	2.04	0.40
32:K3:20:ASP:HB3	32:K3:23:LYS:HG2	2.03	0.40
32:K3:144:LEU:HG	32:K3:145:PHE:HD1	1.86	0.40
35:L3:113:GLN:HE21	35:L3:113:GLN:HB2	1.64	0.40
42:P2:71:GLU:HG2	42:P2:72:LEU:H	1.86	0.40
43:P3:2:VAL:HG23	43:P3:3:ARG:H	1.87	0.40
45:Q3:74:MET:HE1	45:Q3:90:ARG:NH2	2.37	0.40
47:R3:71:ALA:HB1	75:s2:167:LYS:HA	2.03	0.40
55:W2:50:ASN:OD1	55:W2:50:ASN:C	2.64	0.40
66:h2:16:LYS:HE3	66:h2:16:LYS:HB3	1.63	0.40
70:m2:153:G:H21	70:m2:165:G:H22	1.65	0.40
70:m2:850:U:H2'	70:m2:851:A:C8	2.54	0.40
70:m2:914:C:C2	70:m2:916:U:H1'	2.56	0.40
70:m2:1811:A:H2'	70:m2:1812:U:C6	2.57	0.40
72:p2:30:TRP:HA	72:p2:47:THR:O	2.21	0.40
72:p2:90:ASP:OD1	72:p2:91:VAL:N	2.54	0.40
72:p2:125:VAL:O	72:p2:136:ARG:HA	2.21	0.40
73:q2:137:VAL:HG22	73:q2:151:LYS:HG2	2.02	0.40
75:s2:195:GLU:HA	75:s2:198:ARG:HG2	2.04	0.40
81:y2:58:LEU:HD22	81:y2:108:ILE:HG22	2.02	0.40
81:y2:84:ILE:HG21	81:y2:84:ILE:HD13	1.79	0.40
1:A1:259:GLU:H	1:A1:259:GLU:HG2	1.57	0.40
2:A2:119:G:H3'	2:A2:120:A:H5''	2.03	0.40
2:A2:163:A:H2'	2:A2:164:G:H8	1.85	0.40
2:A2:2437:G:H2'	2:A2:2438:C:H6	1.86	0.40
2:A2:3383:A:H2'	2:A2:3384:A:C8	2.56	0.40
2:A2:3529:G:H2'	2:A2:3530:G:C8	2.57	0.40
2:A2:3709:C:H2'	2:A2:3710:U:H6	1.87	0.40
2:A2:3860:U:H2'	2:A2:3861:G:C8	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:4190:G:H2'	2:A2:4191:U:H6	1.85	0.40
2:A2:4304:G:H2'	2:A2:4305:C:H6	1.87	0.40
2:A2:4580:C:H2'	2:A2:4581:G:C8	2.56	0.40
4:B1:215:LEU:HD12	4:B1:215:LEU:HA	1.92	0.40
19:F2:8:ILE:HD11	19:F2:257:PHE:CZ	2.57	0.40
28:I3:3:GLU:HB2	28:I3:247:TRP:HH2	1.85	0.40
37:M3:50:CYS:O	37:M3:76:LEU:HD13	2.21	0.40
39:N3:70:LYS:O	39:N3:74:ILE:HG13	2.21	0.40
42:P2:86:LYS:HD2	42:P2:87:SER:H	1.87	0.40
45:Q3:33:ALA:HB2	70:m2:584:U:H1'	2.03	0.40
48:S2:47:MET:HE2	48:S2:47:MET:HB2	1.65	0.40
50:T2:28:ASN:HB2	50:T2:77:TYR:OH	2.22	0.40
52:U2:11:LEU:HA	52:U2:11:LEU:HD23	1.84	0.40
54:V2:41:ARG:HE	54:V2:41:ARG:HB3	1.67	0.40
58:Z2:45:LYS:HD2	58:Z2:105:LEU:HA	2.03	0.40
58:Z2:48:ALA:HB2	58:Z2:71:TRP:CZ3	2.56	0.40
68:j2:47:MET:HE2	68:j2:47:MET:HB2	1.91	0.40
70:m2:177:G:H1'	70:m2:315:A:H62	1.87	0.40
70:m2:214:C:C2	70:m2:215:G:C8	3.10	0.40
70:m2:564:U:H2'	70:m2:565:G:H8	1.86	0.40
70:m2:677:U:H2'	70:m2:678:C:C6	2.56	0.40
70:m2:684:U:H2'	70:m2:685:OMG:O4'	2.21	0.40
70:m2:1013:A:C4	70:m2:1014:A:C8	3.10	0.40
70:m2:1307:C:C2	70:m2:1308:U:C5	3.10	0.40
70:m2:1558:A:H2'	70:m2:1558:A:N3	2.36	0.40
73:q2:37:VAL:CG2	73:q2:48:ILE:HG22	2.51	0.40
74:r2:26:VAL:HG13	74:r2:27:PHE:CD2	2.56	0.40
75:s2:19:LEU:HG	75:s2:20:PHE:CD2	2.57	0.40
77:u2:130:THR:HG23	77:u2:132:GLU:H	1.87	0.40
1:A1:165:GLY:HA3	1:A1:262:ILE:HB	2.03	0.40
2:A2:5:A:H2'	2:A2:6:C:H6	1.87	0.40
2:A2:268:G:H2'	2:A2:269:G:H8	1.87	0.40
2:A2:294:G:O6	2:A2:315:G:H1'	2.22	0.40
2:A2:1173:G:H4'	24:H1:203:TYR:HB2	2.03	0.40
2:A2:1351:U:H2'	2:A2:1352:G:H8	1.87	0.40
2:A2:1660:A:H2'	2:A2:1661:C:H6	1.86	0.40
2:A2:3419:A:H2'	2:A2:3420:PSU:H5'	2.03	0.40
2:A2:4246:U:H2'	2:A2:4247:G:C8	2.56	0.40
2:A2:4614:A:H2'	2:A2:4615:C:H6	1.87	0.40
4:B1:175:ARG:HE	4:B1:175:ARG:HB2	1.60	0.40
6:B3:71:GLY:O	6:B3:75:MET:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:D2:75:LEU:HA	13:D2:75:LEU:HD23	1.84	0.40
13:D2:180:LEU:HD11	68:j2:22:LEU:HB3	2.03	0.40
18:F1:93:THR:HG22	60:b2:116:LEU:HD22	2.02	0.40
19:F2:254:GLU:HG3	19:F2:255:SER:N	2.37	0.40
33:L1:48:ARG:HB2	33:L1:159:MET:CB	2.51	0.40
35:L3:144:ILE:HD13	35:L3:144:ILE:HA	1.79	0.40
37:M3:52:LEU:O	37:M3:79:VAL:HG22	2.21	0.40
41:O3:45:THR:HG1	41:O3:49:GLY:HA2	1.87	0.40
64:f2:18:LYS:HB3	64:f2:18:LYS:HE3	1.83	0.40
65:g2:112:LYS:HB3	65:g2:114:LYS:HG2	2.03	0.40
70:m2:865:U:C2	70:m2:866:A:C8	3.09	0.40
70:m2:895:U:H2'	70:m2:896:G:O4'	2.21	0.40
70:m2:1222:A:H2'	70:m2:1223:G:O4'	2.21	0.40
70:m2:1390:A:H61	73:q2:161:GLY:HA3	1.86	0.40
77:u2:79:ILE:HD12	77:u2:104:ILE:C	2.46	0.40
77:u2:94:LYS:HA	77:u2:94:LYS:HD3	1.71	0.40
82:z2:16:ILE:HG22	82:z2:24:LEU:HD11	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A1	220/270 (82%)	213 (97%)	7 (3%)	0	100	100
3	A3	138/152 (91%)	133 (96%)	5 (4%)	0	100	100
4	B1	220/266 (83%)	213 (97%)	7 (3%)	0	100	100
6	B3	139/145 (96%)	134 (96%)	5 (4%)	0	100	100
9	C1	188/192 (98%)	182 (97%)	6 (3%)	0	100	100
11	C3	98/119 (82%)	95 (97%)	3 (3%)	0	100	100
12	D1	200/214 (94%)	191 (96%)	9 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	D2	249/257 (97%)	241 (97%)	8 (3%)	0	100	100
14	D3	81/83 (98%)	79 (98%)	2 (2%)	0	100	100
15	E1	172/178 (97%)	168 (98%)	4 (2%)	0	100	100
16	E2	400/403 (99%)	388 (97%)	12 (3%)	0	100	100
17	E3	137/143 (96%)	132 (96%)	5 (4%)	0	100	100
18	F1	201/211 (95%)	192 (96%)	9 (4%)	0	100	100
19	F2	357/419 (85%)	346 (97%)	11 (3%)	0	100	100
20	F3	97/114 (85%)	95 (98%)	2 (2%)	0	100	100
21	G1	137/217 (63%)	135 (98%)	2 (2%)	0	100	100
22	G2	291/297 (98%)	284 (98%)	7 (2%)	0	100	100
23	G3	60/69 (87%)	58 (97%)	2 (3%)	0	100	100
24	H1	201/204 (98%)	196 (98%)	5 (2%)	0	100	100
25	H2	215/296 (73%)	207 (96%)	8 (4%)	0	100	100
26	H3	52/56 (93%)	47 (90%)	5 (10%)	0	100	100
27	I2	199/203 (98%)	193 (97%)	6 (3%)	0	100	100
28	I3	311/317 (98%)	296 (95%)	15 (5%)	0	100	100
29	J2	151/184 (82%)	146 (97%)	5 (3%)	0	100	100
30	J3	217/293 (74%)	213 (98%)	4 (2%)	0	100	100
31	K2	184/188 (98%)	180 (98%)	4 (2%)	0	100	100
32	K3	225/249 (90%)	216 (96%)	9 (4%)	0	100	100
33	L1	155/217 (71%)	148 (96%)	7 (4%)	0	100	100
34	L2	177/196 (90%)	176 (99%)	1 (1%)	0	100	100
35	L3	182/194 (94%)	176 (97%)	6 (3%)	0	100	100
36	M2	173/176 (98%)	165 (95%)	8 (5%)	0	100	100
37	M3	120/132 (91%)	118 (98%)	2 (2%)	0	100	100
38	N2	157/160 (98%)	153 (98%)	4 (2%)	0	100	100
39	N3	148/151 (98%)	143 (97%)	5 (3%)	0	100	100
40	O2	99/128 (77%)	97 (98%)	2 (2%)	0	100	100
41	O3	132/151 (87%)	125 (95%)	7 (5%)	0	100	100
42	P2	127/140 (91%)	122 (96%)	5 (4%)	0	100	100
43	P3	127/130 (98%)	124 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
44	Q2	60/157 (38%)	59 (98%)	1 (2%)	0	100	100
45	Q3	120/133 (90%)	117 (98%)	3 (2%)	0	100	100
46	R2	116/156 (74%)	111 (96%)	5 (4%)	0	100	100
47	R3	83/125 (66%)	79 (95%)	4 (5%)	0	100	100
48	S2	132/145 (91%)	130 (98%)	2 (2%)	0	100	100
49	S3	81/84 (96%)	76 (94%)	5 (6%)	0	100	100
50	T2	133/136 (98%)	127 (96%)	6 (4%)	0	100	100
51	T3	53/133 (40%)	50 (94%)	3 (6%)	0	100	100
52	U2	145/148 (98%)	138 (95%)	7 (5%)	0	100	100
53	U3	50/156 (32%)	43 (86%)	7 (14%)	0	100	100
54	V2	115/160 (72%)	110 (96%)	5 (4%)	0	100	100
55	W2	92/115 (80%)	89 (97%)	3 (3%)	0	100	100
56	X2	105/125 (84%)	105 (100%)	0	0	100	100
57	Y2	126/135 (93%)	124 (98%)	2 (2%)	0	100	100
58	Z2	107/110 (97%)	105 (98%)	2 (2%)	0	100	100
59	a2	112/117 (96%)	110 (98%)	2 (2%)	0	100	100
60	b2	118/123 (96%)	117 (99%)	1 (1%)	0	100	100
61	c2	100/105 (95%)	97 (97%)	3 (3%)	0	100	100
62	d2	84/97 (87%)	83 (99%)	1 (1%)	0	100	100
63	e2	67/70 (96%)	67 (100%)	0	0	100	100
64	f2	48/51 (94%)	46 (96%)	2 (4%)	0	100	100
65	g2	50/128 (39%)	50 (100%)	0	0	100	100
66	h2	22/25 (88%)	22 (100%)	0	0	100	100
67	i2	101/104 (97%)	95 (94%)	6 (6%)	0	100	100
68	j2	87/92 (95%)	83 (95%)	4 (5%)	0	100	100
69	k2	123/137 (90%)	120 (98%)	3 (2%)	0	100	100
71	o2	212/295 (72%)	208 (98%)	4 (2%)	0	100	100
72	p2	210/264 (80%)	187 (89%)	23 (11%)	0	100	100
73	q2	218/243 (90%)	211 (97%)	7 (3%)	0	100	100
74	r2	260/263 (99%)	249 (96%)	11 (4%)	0	100	100
75	s2	179/204 (88%)	172 (96%)	7 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
76	t2	179/194 (92%)	164 (92%)	15 (8%)	0	100	100
77	u2	204/208 (98%)	189 (93%)	15 (7%)	0	100	100
78	v2	93/165 (56%)	92 (99%)	1 (1%)	0	100	100
79	w2	148/158 (94%)	136 (92%)	11 (7%)	1 (1%)	18	49
80	x2	114/145 (79%)	110 (96%)	4 (4%)	0	100	100
81	y2	140/146 (96%)	135 (96%)	5 (4%)	0	100	100
82	z2	132/135 (98%)	120 (91%)	12 (9%)	0	100	100
All	All	11256/13001 (87%)	10846 (96%)	409 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
79	w2	25	LEU

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A1	193/234 (82%)	186 (96%)	7 (4%)	31	62
3	A3	122/132 (92%)	116 (95%)	6 (5%)	22	53
4	B1	193/223 (86%)	189 (98%)	4 (2%)	47	71
6	B3	112/115 (97%)	106 (95%)	6 (5%)	20	50
9	C1	169/171 (99%)	161 (95%)	8 (5%)	23	55
11	C3	92/107 (86%)	90 (98%)	2 (2%)	45	71
12	D1	174/181 (96%)	171 (98%)	3 (2%)	53	74
13	D2	193/199 (97%)	188 (97%)	5 (3%)	40	68
14	D3	67/67 (100%)	65 (97%)	2 (3%)	36	65
15	E1	147/149 (99%)	141 (96%)	6 (4%)	27	59
16	E2	347/348 (100%)	340 (98%)	7 (2%)	48	72

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	E3	111/115 (96%)	110 (99%)	1 (1%)	70	80
18	F1	170/178 (96%)	158 (93%)	12 (7%)	13	41
19	F2	301/348 (86%)	295 (98%)	6 (2%)	48	72
20	F3	86/97 (89%)	85 (99%)	1 (1%)	63	78
21	G1	118/157 (75%)	116 (98%)	2 (2%)	53	74
22	G2	246/249 (99%)	243 (99%)	3 (1%)	63	78
23	G3	55/62 (89%)	54 (98%)	1 (2%)	51	73
24	H1	171/172 (99%)	169 (99%)	2 (1%)	63	78
25	H2	198/256 (77%)	195 (98%)	3 (2%)	57	75
26	H3	48/49 (98%)	47 (98%)	1 (2%)	47	71
27	I2	172/173 (99%)	164 (95%)	8 (5%)	23	55
28	I3	272/275 (99%)	261 (96%)	11 (4%)	28	60
29	J2	134/163 (82%)	132 (98%)	2 (2%)	57	75
30	J3	185/224 (83%)	181 (98%)	4 (2%)	45	71
31	K2	164/165 (99%)	157 (96%)	7 (4%)	26	57
32	K3	198/218 (91%)	195 (98%)	3 (2%)	57	75
33	L1	147/197 (75%)	143 (97%)	4 (3%)	39	67
34	L2	158/175 (90%)	153 (97%)	5 (3%)	34	64
35	L3	160/168 (95%)	155 (97%)	5 (3%)	35	64
36	M2	155/156 (99%)	150 (97%)	5 (3%)	34	64
37	M3	104/108 (96%)	101 (97%)	3 (3%)	37	66
38	N2	139/140 (99%)	133 (96%)	6 (4%)	26	57
39	N3	130/131 (99%)	126 (97%)	4 (3%)	35	64
40	O2	91/114 (80%)	89 (98%)	2 (2%)	45	71
41	O3	104/119 (87%)	103 (99%)	1 (1%)	68	79
42	P2	100/107 (94%)	95 (95%)	5 (5%)	22	53
43	P3	112/113 (99%)	107 (96%)	5 (4%)	24	56
44	Q2	54/126 (43%)	54 (100%)	0	100	100
45	Q3	107/115 (93%)	102 (95%)	5 (5%)	23	55
46	R2	106/133 (80%)	102 (96%)	4 (4%)	29	60
47	R3	75/103 (73%)	73 (97%)	2 (3%)	39	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
48	S2	124/135 (92%)	122 (98%)	2 (2%)	55	75
49	S3	75/76 (99%)	73 (97%)	2 (3%)	39	67
50	T2	117/118 (99%)	115 (98%)	2 (2%)	53	74
51	T3	45/106 (42%)	44 (98%)	1 (2%)	45	71
52	U2	120/121 (99%)	118 (98%)	2 (2%)	53	74
53	U3	45/140 (32%)	42 (93%)	3 (7%)	15	43
54	V2	98/124 (79%)	94 (96%)	4 (4%)	27	59
55	W2	79/97 (81%)	78 (99%)	1 (1%)	61	77
56	X2	98/110 (89%)	97 (99%)	1 (1%)	68	79
57	Y2	114/121 (94%)	112 (98%)	2 (2%)	51	73
58	Z2	88/89 (99%)	87 (99%)	1 (1%)	65	78
59	a2	98/100 (98%)	96 (98%)	2 (2%)	48	72
60	b2	108/110 (98%)	102 (94%)	6 (6%)	19	49
61	c2	86/89 (97%)	85 (99%)	1 (1%)	63	78
62	d2	73/80 (91%)	73 (100%)	0	100	100
63	e2	64/65 (98%)	63 (98%)	1 (2%)	55	75
64	f2	47/48 (98%)	45 (96%)	2 (4%)	26	57
65	g2	48/116 (41%)	47 (98%)	1 (2%)	47	71
66	h2	23/24 (96%)	23 (100%)	0	100	100
67	i2	91/92 (99%)	89 (98%)	2 (2%)	45	71
68	j2	73/75 (97%)	70 (96%)	3 (4%)	27	59
69	k2	109/121 (90%)	104 (95%)	5 (5%)	24	55
71	o2	179/242 (74%)	175 (98%)	4 (2%)	45	71
72	p2	193/229 (84%)	183 (95%)	10 (5%)	21	51
73	q2	184/202 (91%)	178 (97%)	6 (3%)	33	63
74	r2	224/225 (100%)	217 (97%)	7 (3%)	35	64
75	s2	156/170 (92%)	151 (97%)	5 (3%)	34	64
76	t2	110/174 (63%)	101 (92%)	9 (8%)	10	36
77	u2	165/180 (92%)	159 (96%)	6 (4%)	31	62
78	v2	86/136 (63%)	84 (98%)	2 (2%)	44	70
79	w2	134/142 (94%)	129 (96%)	5 (4%)	30	61

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
80	x2	105/130 (81%)	97 (92%)	8 (8%)	12	39
81	y2	117/121 (97%)	115 (98%)	2 (2%)	53	74
82	z2	120/121 (99%)	115 (96%)	5 (4%)	26	58
All	All	9776/11061 (88%)	9484 (97%)	292 (3%)	37	65

All (292) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A1	64	LEU
1	A1	86	MET
1	A1	152	ILE
1	A1	219	VAL
1	A1	235	LEU
1	A1	251	GLU
1	A1	259	GLU
3	A3	5	ILE
3	A3	15	VAL
3	A3	45	LEU
3	A3	99	LEU
3	A3	138	THR
3	A3	139	THR
4	B1	70	LEU
4	B1	85	GLN
4	B1	179	VAL
4	B1	198	THR
6	B3	6	VAL
6	B3	83	GLN
6	B3	108	GLU
6	B3	123	LEU
6	B3	124	THR
6	B3	142	ASN
9	C1	1	MET
9	C1	18	ILE
9	C1	26	ILE
9	C1	33	THR
9	C1	44	GLU
9	C1	46	SER
9	C1	95	VAL
9	C1	161	ILE
11	C3	58	THR
11	C3	91	LEU

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Mol	Chain	Res	Type
12	D1	71	CYS
12	D1	149	ILE
12	D1	195	CYS
13	D2	4	VAL
13	D2	15	VAL
13	D2	49	ILE
13	D2	146	THR
13	D2	159	SER
14	D3	52	THR
14	D3	69	ILE
15	E1	15	LEU
15	E1	47	THR
15	E1	98	ASN
15	E1	109	ILE
15	E1	111	GLU
15	E1	148	THR
16	E2	60	VAL
16	E2	145	GLN
16	E2	199	GLU
16	E2	248	LEU
16	E2	258	HIS
16	E2	331	ILE
16	E2	348	ARG
17	E3	95	GLU
18	F1	31	ARG
18	F1	59	VAL
18	F1	67	HIS
18	F1	80	GLU
18	F1	94	ILE
18	F1	108	GLU
18	F1	115	GLN
18	F1	121	ARG
18	F1	122	SER
18	F1	138	ASP
18	F1	154	VAL
18	F1	162	LYS
19	F2	80	ARG
19	F2	100	ARG
19	F2	272	SER
19	F2	276	ASN
19	F2	289	LEU
19	F2	298	ILE

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Mol	Chain	Res	Type
20	F3	18	VAL
21	G1	53	LYS
21	G1	131	GLN
22	G2	143	THR
22	G2	153	THR
22	G2	163	LEU
23	G3	28	THR
24	H1	10	LEU
24	H1	182	HIS
25	H2	113	VAL
25	H2	260	VAL
25	H2	262	LEU
26	H3	34	TYR
27	I2	27	VAL
27	I2	61	ARG
27	I2	64	THR
27	I2	119	VAL
27	I2	120	VAL
27	I2	132	THR
27	I2	152	VAL
27	I2	198	THR
28	I3	14	HIS
28	I3	43	TRP
28	I3	64	HIS
28	I3	66	VAL
28	I3	72	SER
28	I3	77	PHE
28	I3	90	TRP
28	I3	108	VAL
28	I3	124	SER
28	I3	236	ILE
28	I3	261	LEU
29	J2	2	VAL
29	J2	36	ILE
30	J3	115	GLN
30	J3	246	LYS
30	J3	248	TYR
30	J3	273	LEU
31	K2	3	VAL
31	K2	42	THR
31	K2	107	SER
31	K2	122	THR

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Mol	Chain	Res	Type
31	K2	128	LEU
31	K2	140	SER
31	K2	183	SER
32	K3	82	SER
32	K3	89	THR
32	K3	167	LYS
33	L1	155	ILE
33	L1	184	HIS
33	L1	202	ARG
33	L1	205	TYR
34	L2	12	SER
34	L2	55	VAL
34	L2	59	SER
34	L2	63	CYS
34	L2	154	LEU
35	L3	30	LYS
35	L3	31	LEU
35	L3	73	GLU
35	L3	82	VAL
35	L3	173	VAL
36	M2	31	ARG
36	M2	48	VAL
36	M2	90	THR
36	M2	169	THR
36	M2	170	LYS
37	M3	11	VAL
37	M3	109	VAL
37	M3	110	VAL
38	N2	4	THR
38	N2	52	MET
38	N2	56	CYS
38	N2	72	VAL
38	N2	74	ILE
38	N2	76	VAL
39	N3	42	LYS
39	N3	84	LEU
39	N3	103	GLU
39	N3	131	THR
40	O2	25	CYS
40	O2	76	VAL
41	O3	81	VAL
42	P2	16	ILE

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Mol	Chain	Res	Type
42	P2	41	SER
42	P2	73	ARG
42	P2	75	LYS
42	P2	134	SER
43	P3	63	VAL
43	P3	80	ASP
43	P3	104	LEU
43	P3	111	MET
43	P3	125	ILE
45	Q3	27	VAL
45	Q3	42	GLU
45	Q3	50	THR
45	Q3	100	LYS
45	Q3	103	SER
46	R2	64	SER
46	R2	102	VAL
46	R2	126	THR
46	R2	155	ILE
47	R3	79	ILE
47	R3	99	LEU
48	S2	94	THR
48	S2	109	LEU
49	S3	57	VAL
49	S3	79	PHE
50	T2	99	ASP
50	T2	124	THR
51	T3	48	THR
52	U2	15	VAL
52	U2	56	VAL
53	U3	103	LEU
53	U3	135	HIS
53	U3	144	CYS
54	V2	9	THR
54	V2	50	ASN
54	V2	54	LEU
54	V2	102	LEU
55	W2	21	VAL
56	X2	46	LEU
57	Y2	86	GLU
57	Y2	87	VAL
58	Z2	31	GLU
59	a2	48	VAL

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Mol	Chain	Res	Type
59	a2	63	VAL
60	b2	4	ILE
60	b2	26	VAL
60	b2	36	VAL
60	b2	87	LYS
60	b2	88	THR
60	b2	96	THR
61	c2	18	THR
63	e2	21	LYS
64	f2	23	ILE
64	f2	51	LEU
65	g2	127	VAL
67	i2	10	THR
67	i2	73	VAL
68	j2	8	VAL
68	j2	40	SER
68	j2	74	THR
69	k2	5	LEU
69	k2	23	GLN
69	k2	28	GLU
69	k2	48	THR
69	k2	63	VAL
71	o2	38	ILE
71	o2	104	THR
71	o2	136	GLU
71	o2	189	ILE
72	p2	32	ASP
72	p2	71	LEU
72	p2	83	LYS
72	p2	104	ASP
72	p2	120	MET
72	p2	127	VAL
72	p2	134	LEU
72	p2	177	GLN
72	p2	202	GLN
72	p2	215	VAL
73	q2	70	THR
73	q2	122	VAL
73	q2	153	VAL
73	q2	168	VAL
73	q2	174	HIS
73	q2	209	SER

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Mol	Chain	Res	Type
74	r2	101	LEU
74	r2	120	LYS
74	r2	139	LEU
74	r2	140	VAL
74	r2	170	THR
74	r2	217	SER
74	r2	222	LEU
75	s2	26	ASP
75	s2	69	VAL
75	s2	73	THR
75	s2	98	GLU
75	s2	165	ASN
76	t2	24	SER
76	t2	53	VAL
76	t2	64	VAL
76	t2	77	VAL
76	t2	83	LEU
76	t2	153	LEU
76	t2	156	VAL
76	t2	170	VAL
76	t2	172	THR
77	u2	3	ILE
77	u2	4	SER
77	u2	7	ASN
77	u2	46	VAL
77	u2	159	SER
77	u2	168	GLN
78	v2	79	LEU
78	v2	83	LEU
79	w2	6	THR
79	w2	40	ILE
79	w2	83	GLN
79	w2	85	THR
79	w2	146	THR
80	x2	28	MET
80	x2	37	TYR
80	x2	49	LEU
80	x2	80	LEU
80	x2	94	VAL
80	x2	102	PHE
80	x2	120	SER
80	x2	121	ILE

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Mol	Chain	Res	Type
81	y2	50	LYS
81	y2	100	VAL
82	z2	16	ILE
82	z2	34	VAL
82	z2	54	VAL
82	z2	57	LEU
82	z2	95	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (99) such sidechains are listed below:

Mol	Chain	Res	Type
1	A1	257	ASN
3	A3	10	GLN
4	B1	66	GLN
4	B1	225	ASN
6	B3	51	ASN
6	B3	83	GLN
6	B3	137	GLN
9	C1	39	ASN
9	C1	79	ASN
9	C1	108	ASN
9	C1	156	ASN
12	D1	73	ASN
13	D2	38	HIS
14	D3	82	ASN
17	E3	16	HIS
17	E3	26	GLN
17	E3	92	ASN
18	F1	19	GLN
18	F1	188	ASN
19	F2	38	ASN
19	F2	50	GLN
19	F2	119	GLN
19	F2	142	HIS
19	F2	187	GLN
21	G1	20	HIS
21	G1	34	ASN
21	G1	48	GLN
22	G2	225	GLN
22	G2	230	ASN
22	G2	244	HIS
24	H1	145	ASN

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Mol	Chain	Res	Type
25	H2	108	ASN
26	H3	3	HIS
27	I2	50	ASN
27	I2	63	ASN
27	I2	150	GLN
27	I2	167	HIS
28	I3	117	ASN
28	I3	178	ASN
28	I3	181	ASN
28	I3	188	HIS
29	J2	21	ASN
29	J2	97	ASN
29	J2	116	HIS
29	J2	118	GLN
30	J3	136	HIS
33	L1	35	GLN
33	L1	197	ASN
33	L1	200	ASN
34	L2	141	HIS
37	M3	72	HIS
38	N2	131	GLN
38	N2	144	ASN
39	N3	105	ASN
41	O3	113	GLN
43	P3	70	ASN
44	Q2	50	ASN
45	Q3	89	HIS
46	R2	93	ASN
48	S2	18	HIS
48	S2	56	GLN
50	T2	97	ASN
51	T3	44	ASN
51	T3	58	ASN
52	U2	17	HIS
54	V2	6	ASN
54	V2	42	ASN
54	V2	50	ASN
55	W2	33	GLN
56	X2	28	ASN
56	X2	100	ASN
57	Y2	24	GLN
57	Y2	80	HIS

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Mol	Chain	Res	Type
58	Z2	20	ASN
59	a2	112	GLN
59	a2	114	GLN
60	b2	20	GLN
60	b2	108	GLN
61	c2	15	HIS
64	f2	17	GLN
65	g2	84	GLN
69	k2	21	ASN
71	o2	193	HIS
72	p2	148	ASN
72	p2	149	GLN
75	s2	186	ASN
76	t2	44	ASN
76	t2	76	GLN
76	t2	97	GLN
77	u2	52	ASN
78	v2	66	HIS
79	w2	5	GLN
79	w2	11	GLN
79	w2	13	GLN
79	w2	94	HIS
80	x2	98	ASN
81	y2	97	GLN
82	z2	26	ASN
82	z2	118	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
10	C2	155/156 (99%)	32 (20%)	1 (0%)
2	A2	3593/3615 (99%)	741 (20%)	13 (0%)
5	B2	118/121 (97%)	8 (6%)	0
7	Bv	75/76 (98%)	20 (26%)	0
7	n2	75/76 (98%)	36 (48%)	0
70	m2	1624/1635 (99%)	402 (24%)	0
8	Bx	9/10 (90%)	3 (33%)	0
All	All	5649/5689 (99%)	1242 (21%)	14 (0%)

All (1242) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	A2	2	G
2	A2	5	A
2	A2	17	A
2	A2	21	G
2	A2	25	A
2	A2	39	A
2	A2	42	A
2	A2	48	G
2	A2	59	A
2	A2	64	A
2	A2	65	A
2	A2	66	A
2	A2	73	A
2	A2	91	G
2	A2	104	G
2	A2	108	A
2	A2	109	G
2	A2	110	C
2	A2	119	G
2	A2	120	A
2	A2	131	C
2	A2	134	G
2	A2	136	C
2	A2	143	U
2	A2	144	G
2	A2	151	G
2	A2	159	C
2	A2	170	C
2	A2	172	C
2	A2	183	C
2	A2	184	U
2	A2	185	C
2	A2	186	G
2	A2	187	U
2	A2	188	G
2	A2	189	G
2	A2	197	A
2	A2	200	U
2	A2	201	C
2	A2	209	U
2	A2	210	C
2	A2	216	C
2	A2	217	C

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Mol	Chain	Res	Type
2	A2	218	A
2	A2	220	C
2	A2	233	U
2	A2	234	G
2	A2	237	G
2	A2	253	G
2	A2	254	G
2	A2	258	G
2	A2	266	C
2	A2	267	G
2	A2	268	G
2	A2	280	G
2	A2	297	U
2	A2	315	G
2	A2	316	U
2	A2	340	C
2	A2	341	G
2	A2	373	G
2	A2	387	G
2	A2	407	A
2	A2	408	A
2	A2	409	G
2	A2	410	A
2	A2	412	G
2	A2	413	G
2	A2	415	G
2	A2	432	U
2	A2	433	A
2	A2	450	G
2	A2	452	A
2	A2	453	G
2	A2	454	U
2	A2	467	U
2	A2	468	U
2	A2	469	C
2	A2	470	A
2	A2	479	G
2	A2	486	C
2	A2	490	C
2	A2	497	G
2	A2	498	G
2	A2	499	U

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Mol	Chain	Res	Type
2	A2	500	G
2	A2	510	A
2	A2	511	U
2	A2	513	U
2	A2	514	U
2	A2	516	C
2	A2	651	C
2	A2	652	G
2	A2	653	G
2	A2	654	G
2	A2	671	G
2	A2	673	G
2	A2	674	A
2	A2	675	C
2	A2	678	G
2	A2	682	C
2	A2	692	C
2	A2	693	A
2	A2	694	C
2	A2	699	A
2	A2	703	U
2	A2	704	G
2	A2	711	C
2	A2	715	G
2	A2	737	G
2	A2	738	G
2	A2	745	C
2	A2	746	G
2	A2	747	G
2	A2	748	U
2	A2	749	G
2	A2	753	A
2	A2	767	G
2	A2	770	G
2	A2	801	C
2	A2	802	A
2	A2	805	C
2	A2	811	G
2	A2	812	U
2	A2	813	U
2	A2	814	A
2	A2	816	A

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Mol	Chain	Res	Type
2	A2	824	G
2	A2	830	G
2	A2	835	U
2	A2	839	C
2	A2	840	G
2	A2	841	A
2	A2	843	U
2	A2	844	C
2	A2	856	G
2	A2	857	A
2	A2	858	A
2	A2	869	C
2	A2	870	G
2	A2	871	U
2	A2	878	G
2	A2	884	C
2	A2	888	U
2	A2	891	C
2	A2	919	G
2	A2	921	G
2	A2	926	C
2	A2	927	C
2	A2	934	C
2	A2	935	C
2	A2	936	C
2	A2	937	C
2	A2	938	U
2	A2	954	C
2	A2	1000	G
2	A2	1001	G
2	A2	1002	G
2	A2	1003	G
2	A2	1004	C
2	A2	1005	G
2	A2	1006	G
2	A2	1010	G
2	A2	1012	C
2	A2	1013	C
2	A2	1014	C
2	A2	1015	C
2	A2	1019	G
2	A2	1022	C

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Mol	Chain	Res	Type
2	A2	1024	C
2	A2	1025	C
2	A2	1031	U
2	A2	1032	C
2	A2	1036	G
2	A2	1038	G
2	A2	1039	C
2	A2	1043	C
2	A2	1044	G
2	A2	1047	U
2	A2	1048	C
2	A2	1049	C
2	A2	1053	G
2	A2	1054	G
2	A2	1065	U
2	A2	1066	C
2	A2	1067	A
2	A2	1070	C
2	A2	1071	G
2	A2	1072	U
2	A2	1079	A
2	A2	1081	G
2	A2	1082	A
2	A2	1083	A
2	A2	1085	C
2	A2	1086	C
2	A2	1087	G
2	A2	1094	C
2	A2	1098	G
2	A2	1099	U
2	A2	1101	G
2	A2	1108	A
2	A2	1109	U
2	A2	1110	G
2	A2	1116	U
2	A2	1118	C
2	A2	1136	A
2	A2	1140	A2M
2	A2	1151	A
2	A2	1153	U
2	A2	1159	G
2	A2	1168	A

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Mol	Chain	Res	Type
2	A2	1172	A
2	A2	1173	G
2	A2	1179	C
2	A2	1180	G
2	A2	1181	U
2	A2	1185	A
2	A2	1191	G
2	A2	1201	A
2	A2	1208	G
2	A2	1211	A
2	A2	1212	A
2	A2	1223	C
2	A2	1224	G
2	A2	1233	A
2	A2	1248	G
2	A2	1253	U
2	A2	1270	G
2	A2	1295	G
2	A2	1296	C
2	A2	1297	G
2	A2	1298	C
2	A2	1310	A
2	A2	1311	G
2	A2	1315	G
2	A2	1329	G
2	A2	1338	A
2	A2	1343	G
2	A2	1347	A2M
2	A2	1360	A
2	A2	1361	G
2	A2	1375	G
2	A2	1376	A
2	A2	1377	A
2	A2	1378	A
2	A2	1379	C
2	A2	1387	G
2	A2	1391	U
2	A2	1404	U
2	A2	1409	U
2	A2	1425	G
2	A2	1437	G
2	A2	1438	OMG

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Mol	Chain	Res	Type
2	A2	1444	A
2	A2	1446	G
2	A2	1447	A
2	A2	1451	A
2	A2	1453	C
2	A2	1454	G
2	A2	1467	G
2	A2	1474	C
2	A2	1489	C
2	A2	1490	PSU
2	A2	1493	G
2	A2	1507	C
2	A2	1512	U
2	A2	1523	G
2	A2	1533	C
2	A2	1542	C
2	A2	1544	A
2	A2	1552	G
2	A2	1558	U
2	A2	1559	U
2	A2	1560	G
2	A2	1573	U
2	A2	1589	A
2	A2	1599	G
2	A2	1606	A
2	A2	1608	G
2	A2	1613	G
2	A2	1617	G
2	A2	1622	C
2	A2	1623	G
2	A2	1624	U
2	A2	1638	G
2	A2	1639	A
2	A2	1644	G
2	A2	1645	A
2	A2	1652	A
2	A2	1657	G
2	A2	1671	G
2	A2	1694	A
2	A2	1699	A
2	A2	1719	A
2	A2	1721	G

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Mol	Chain	Res	Type
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	1737	C
2	A2	1738	C
2	A2	1747	G
2	A2	1750	G
2	A2	1760	A
2	A2	1761	U
2	A2	1762	A
2	A2	1764	A
2	A2	1766	A
2	A2	1822	U
2	A2	1825	C
2	A2	1828	A
2	A2	1848	G
2	A2	1850	U
2	A2	1854	G
2	A2	1857	G
2	A2	1858	G
2	A2	1871	A
2	A2	1886	C
2	A2	1887	G
2	A2	1893	C
2	A2	1894	G
2	A2	1895	G
2	A2	1897	A
2	A2	1899	G
2	A2	1900	G
2	A2	1902	A
2	A2	1904	G
2	A2	1905	G
2	A2	1906	G
2	A2	1909	G
2	A2	1911	G
2	A2	1912	A
2	A2	2005	U
2	A2	2006	C
2	A2	2008	G

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Mol	Chain	Res	Type
2	A2	2009	G
2	A2	2012	C
2	A2	2014	G
2	A2	2015	C
2	A2	2024	C
2	A2	2044	C
2	A2	2052	G
2	A2	2055	A
2	A2	2056	G
2	A2	2068	A
2	A2	2069	G
2	A2	2071	G
2	A2	2087	A
2	A2	2088	G
2	A2	2094	G
2	A2	2100	G
2	A2	2103	G
2	A2	2104	A
2	A2	2106	OMC
2	A2	2115	A
2	A2	2137	A
2	A2	2145	G
2	A2	2150	A
2	A2	2152	G
2	A2	2153	U
2	A2	2172	A
2	A2	2176	G
2	A2	2177	OMC
2	A2	2180	U
2	A2	2195	U
2	A2	2196	C
2	A2	2205	G
2	A2	2208	A
2	A2	2225	C
2	A2	2226	G
2	A2	2229	G
2	A2	2233	C
2	A2	2237	C
2	A2	2242	G
2	A2	2245	U
2	A2	2246	C
2	A2	2249	U

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Mol	Chain	Res	Type
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	2295	C
2	A2	2299	G
2	A2	2301	G
2	A2	2302	G
2	A2	2314	G
2	A2	2321	G
2	A2	2328	A
2	A2	2341	G
2	A2	2342	A
2	A2	2343	C
2	A2	2344	C
2	A2	2356	A
2	A2	2357	G
2	A2	2361	G
2	A2	2371	C
2	A2	2373	G
2	A2	2382	C
2	A2	2383	U
2	A2	2397	A
2	A2	2408	C
2	A2	2413	G
2	A2	2417	G
2	A2	2424	C
2	A2	2431	A
2	A2	2442	U
2	A2	2449	G
2	A2	2450	A
2	A2	2451	A
2	A2	2458	G
2	A2	2461	G
2	A2	2462	U

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Mol	Chain	Res	Type
2	A2	2463	U
2	A2	2464	C
2	A2	2466	G
2	A2	2476	G
2	A2	2479	G
2	A2	2481	G
2	A2	2494	C
2	A2	2497	G
2	A2	2498	A
2	A2	2509	G
2	A2	2511	G
2	A2	2518	U
2	A2	2519	A
2	A2	2524	U
2	A2	2525	C
2	A2	2543	U
2	A2	2545	U
2	A2	2549	C
2	A2	2561	A
2	A2	2569	C
2	A2	2580	A
2	A2	2581	U
2	A2	2582	G
2	A2	2601	G
2	A2	2603	G
2	A2	2610	G
2	A2	2632	G
2	A2	2657	G
2	A2	3243	C
2	A2	3244	C
2	A2	3246	G
2	A2	3248	G
2	A2	3250	C
2	A2	3252	A
2	A2	3253	G
2	A2	3254	C
2	A2	3272	U
2	A2	3282	G
2	A2	3286	A
2	A2	3291	A
2	A2	3300	U
2	A2	3302	A

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Mol	Chain	Res	Type
2	A2	3304	A
2	A2	3306	C
2	A2	3318	A
2	A2	3328	G
2	A2	3329	C
2	A2	3366	G
2	A2	3367	A
2	A2	3368	A
2	A2	3373	A
2	A2	3382	A
2	A2	3383	A
2	A2	3406	G
2	A2	3409	G
2	A2	3416	A
2	A2	3417	C
2	A2	3420	PSU
2	A2	3428	U
2	A2	3429	U
2	A2	3430	A
2	A2	3431	A
2	A2	3432	G
2	A2	3433	G
2	A2	3440	A
2	A2	3441	A2M
2	A2	3442	U
2	A2	3447	C
2	A2	3466	C
2	A2	3467	G
2	A2	3470	U
2	A2	3473	A
2	A2	3475	G
2	A2	3478	U
2	A2	3494	U
2	A2	3495	G
2	A2	3496	U
2	A2	3523	A
2	A2	3526	C
2	A2	3533	A
2	A2	3534	C
2	A2	3535	G
2	A2	3549	C
2	A2	3553	G

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Mol	Chain	Res	Type
2	A2	3557	A
2	A2	3562	A
2	A2	3563	G
2	A2	3564	A
2	A2	3571	U
2	A2	3594	G
2	A2	3595	G
2	A2	3599	A
2	A2	3603	A
2	A2	3604	C
2	A2	3605	A
2	A2	3607	G
2	A2	3608	A
2	A2	3610	A
2	A2	3611	G
2	A2	3612	G
2	A2	3613	U
2	A2	3614	G
2	A2	3615	U
2	A2	3617	G
2	A2	3618	A
2	A2	3619	A
2	A2	3620	U
2	A2	3621	A
2	A2	3622	A
2	A2	3623	G
2	A2	3625	G
2	A2	3627	G
2	A2	3633	C
2	A2	3686	G
2	A2	3687	C
2	A2	3689	G
2	A2	3690	C
2	A2	3693	G
2	A2	3694	U
2	A2	3695	G
2	A2	3696	A
2	A2	3697	A
2	A2	3698	A
2	A2	3699	U
2	A2	3701	C
2	A2	3702	C

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Mol	Chain	Res	Type
2	A2	3703	A
2	A2	3704	C
2	A2	3707	C
2	A2	3709	C
2	A2	3712	A
2	A2	3714	C
2	A2	3715	G
2	A2	3719	U
2	A2	3726	G
2	A2	3734	G
2	A2	3736	G
2	A2	3747	G
2	A2	3750	C
2	A2	3752	C
2	A2	3760	C
2	A2	3765	G
2	A2	3766	C
2	A2	3769	C
2	A2	3770	U
2	A2	3771	G
2	A2	3772	G
2	A2	3777	A
2	A2	3781	G
2	A2	3784	C
2	A2	3786	U
2	A2	3787	C
2	A2	3814	C
2	A2	3815	U
2	A2	3822	A
2	A2	3835	G
2	A2	3836	G
2	A2	3843	G
2	A2	3855	A
2	A2	3874	G
2	A2	3877	G
2	A2	3881	U
2	A2	3884	U
2	A2	3885	A
2	A2	3903	A
2	A2	3906	G
2	A2	3909	A
2	A2	3917	U

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Mol	Chain	Res	Type
2	A2	3920	A
2	A2	3923	A
2	A2	3924	G
2	A2	3925	A
2	A2	3933	A
2	A2	3943	G
2	A2	3949	G
2	A2	3956	A
2	A2	3957	G
2	A2	3966	C
2	A2	3981	G
2	A2	3982	G
2	A2	3984	C
2	A2	3990	G
2	A2	4002	C
2	A2	4004	U
2	A2	4006	U
2	A2	4023	G
2	A2	4025	G
2	A2	4029	G
2	A2	4030	A
2	A2	4032	A
2	A2	4033	A
2	A2	4039	C
2	A2	4043	G
2	A2	4045	G
2	A2	4046	A
2	A2	4050	C
2	A2	4073	C
2	A2	4074	A
2	A2	4078	C
2	A2	4079	G
2	A2	4096	C
2	A2	4100	G
2	A2	4101	A
2	A2	4104	U
2	A2	4105	C
2	A2	4116	A
2	A2	4118	C
2	A2	4127	G
2	A2	4151	OMG
2	A2	4152	PSU

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Mol	Chain	Res	Type
2	A2	4164	U
2	A2	4165	A
2	A2	4167	G
2	A2	4171	C
2	A2	4176	G
2	A2	4177	C
2	A2	4184	U
2	A2	4200	A
2	A2	4201	G
2	A2	4206	G
2	A2	4212	C
2	A2	4219	G
2	A2	4224	U
2	A2	4227	G
2	A2	4242	A
2	A2	4252	G
2	A2	4272	OMU
2	A2	4276	A
2	A2	4278	A
2	A2	4287	A
2	A2	4288	PSU
2	A2	4289	OMG
2	A2	4304	G
2	A2	4308	A
2	A2	4322	C
2	A2	4324	A
2	A2	4331	G
2	A2	4352	A
2	A2	4360	A
2	A2	4361	U
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	4395	G
2	A2	4396	A
2	A2	4403	G
2	A2	4406	G
2	A2	4409	C
2	A2	4411	C

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Mol	Chain	Res	Type
2	A2	4413	G
2	A2	4416	A
2	A2	4417	G
2	A2	4422	G
2	A2	4433	G
2	A2	4434	U
2	A2	4436	C
2	A2	4495	C
2	A2	4497	U
2	A2	4498	C
2	A2	4499	G
2	A2	4503	C
2	A2	4504	C
2	A2	4508	G
2	A2	4511	C
2	A2	4515	G
2	A2	4516	C
2	A2	4520	G
2	A2	4521	A
2	A2	4522	G
2	A2	4525	G
2	A2	4527	U
2	A2	4528	C
2	A2	4540	C
2	A2	4541	G
2	A2	4545	U
2	A2	4546	G
2	A2	4547	C
2	A2	4548	G
2	A2	4552	G
2	A2	4553	G
2	A2	4555	A
2	A2	4557	G
2	A2	4559	G
2	A2	4560	G
2	A2	4565	C
2	A2	4569	C
2	A2	4570	U
2	A2	4573	C
2	A2	4582	U
2	A2	4583	U
2	A2	4587	G

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Mol	Chain	Res	Type
2	A2	4589	A
2	A2	4591	G
2	A2	4609	G
2	A2	4610	C
2	A2	4622	U
2	A2	4625	A
2	A2	4631	U
2	A2	4634	U
2	A2	4636	C
2	A2	4637	U
2	A2	4641	U
2	A2	4653	A
2	A2	4659	C
2	A2	4660	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	4700	C
2	A2	4701	G
2	A2	4702	A
2	A2	4707	A
2	A2	4708	G
2	A2	4715	U
5	B2	24	C
5	B2	33	U
5	B2	53	U
5	B2	54	A
5	B2	64	G
5	B2	97	G
5	B2	100	A
5	B2	110	G
7	Bv	2	C
7	Bv	7	A
7	Bv	8	U
7	Bv	14	A
7	Bv	16	U
7	Bv	17	C
7	Bv	18	G
7	Bv	19	G

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Mol	Chain	Res	Type
7	Bv	24	G
7	Bv	37	A
7	Bv	42	C
7	Bv	46	G
7	Bv	47	U
7	Bv	48	C
7	Bv	53	G
7	Bv	58	A
7	Bv	63	G
7	Bv	69	G
7	Bv	74	C
7	Bv	76	A
8	Bx	49	U
8	Bx	50	U
8	Bx	51	U
10	C2	23	C
10	C2	25	G
10	C2	34	U
10	C2	35	C
10	C2	39	G
10	C2	51	U
10	C2	52	A
10	C2	59	A
10	C2	60	G
10	C2	63	U
10	C2	68	G
10	C2	70	G
10	C2	75	OMG
10	C2	82	A
10	C2	84	A
10	C2	85	U
10	C2	87	G
10	C2	88	A
10	C2	94	G
10	C2	103	A
10	C2	105	C
10	C2	110	U
10	C2	111	U
10	C2	112	G
10	C2	114	G
10	C2	123	U
10	C2	125	C

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Mol	Chain	Res	Type
10	C2	126	C
10	C2	127	U
10	C2	151	G
10	C2	155	C
10	C2	156	U
70	m2	4	C
70	m2	13	C
70	m2	14	C
70	m2	17	C
70	m2	29	G
70	m2	30	C
70	m2	33	G
70	m2	46	A
70	m2	49	C
70	m2	56	G
70	m2	59	U
70	m2	60	A
70	m2	62	G
70	m2	64	A
70	m2	66	G
70	m2	67	C
70	m2	68	A
70	m2	70	G
70	m2	72	C
70	m2	74	G
70	m2	76	U
70	m2	77	A
70	m2	78	C
70	m2	79	A
70	m2	82	G
70	m2	103	A
70	m2	113	G
70	m2	114	G
70	m2	115	U
70	m2	118	C
70	m2	126	G
70	m2	127	C
70	m2	130	G
70	m2	142	C
70	m2	143	U
70	m2	144	U
70	m2	145	G

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Mol	Chain	Res	Type
70	m2	146	G
70	m2	156	G
70	m2	157	U
70	m2	158	A
70	m2	159	A
70	m2	160	U
70	m2	161	U
70	m2	162	C
70	m2	168	C
70	m2	170	A
70	m2	171	A
70	m2	172	OMU
70	m2	180	G
70	m2	181	A
70	m2	182	C
70	m2	189	U
70	m2	190	G
70	m2	193	C
70	m2	194	C
70	m2	195	C
70	m2	197	C
70	m2	198	U
70	m2	199	U
70	m2	200	C
70	m2	201	C
70	m2	202	C
70	m2	203	G
70	m2	204	G
70	m2	207	G
70	m2	208	G
70	m2	209	G
70	m2	210	G
70	m2	211	A
70	m2	212	U
70	m2	217	G
70	m2	222	U
70	m2	296	U
70	m2	297	C
70	m2	304	A
70	m2	306	C
70	m2	307	U
70	m2	308	C

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Mol	Chain	Res	Type
70	m2	310	G
70	m2	311	G
70	m2	313	C
70	m2	314	G
70	m2	315	A
70	m2	316	U
70	m2	319	C
70	m2	321	C
70	m2	324	C
70	m2	332	G
70	m2	333	C
70	m2	334	G
70	m2	336	C
70	m2	342	C
70	m2	345	A
70	m2	349	G
70	m2	362	A
70	m2	364	C
70	m2	366	A
70	m2	370	U
70	m2	372	G
70	m2	386	U
70	m2	387	G
70	m2	388	C
70	m2	394	A
70	m2	395	U
70	m2	411	C
70	m2	415	G
70	m2	423	G
70	m2	424	U
70	m2	439	G
70	m2	440	G
70	m2	442	G
70	m2	450	A
70	m2	451	A
70	m2	452	C
70	m2	454	G
70	m2	466	A
70	m2	467	A
70	m2	469	G
70	m2	473	G
70	m2	474	C

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Mol	Chain	Res	Type
70	m2	476	G
70	m2	484	G
70	m2	489	U
70	m2	494	C
70	m2	495	A
70	m2	503	C
70	m2	504	C
70	m2	518	A
70	m2	525	A
70	m2	527	A
70	m2	532	U
70	m2	534	C
70	m2	557	A
70	m2	558	U
70	m2	562	A
70	m2	565	G
70	m2	568	U
70	m2	570	C
70	m2	576	A
70	m2	578	A2M
70	m2	585	A
70	m2	586	A
70	m2	589	A
70	m2	591	G
70	m2	592	A
70	m2	593	U
70	m2	594	C
70	m2	596	A
70	m2	599	G
70	m2	600	G
70	m2	606	A
70	m2	608	G
70	m2	609	U
70	m2	616	C
70	m2	617	C
70	m2	619	G
70	m2	625	G
70	m2	630	A
70	m2	631	A
70	m2	633	U
70	m2	645	A
70	m2	657	A

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Mol	Chain	Res	Type
70	m2	662	C
70	m2	665	C
70	m2	670	A2M
70	m2	671	A
70	m2	673	A
70	m2	674	A
70	m2	675	G
70	m2	680	U
70	m2	681	A
70	m2	686	G
70	m2	803	U
70	m2	810	A
70	m2	813	A
70	m2	823	G
70	m2	824	PSU
70	m2	832	A
70	m2	837	C
70	m2	839	A
70	m2	840	G
70	m2	842	C
70	m2	843	G
70	m2	849	A
70	m2	864	A
70	m2	870	G
70	m2	871	A
70	m2	872	A
70	m2	875	G
70	m2	880	G
70	m2	882	G
70	m2	884	U
70	m2	888	A
70	m2	889	U
70	m2	890	U
70	m2	891	U
70	m2	892	U
70	m2	893	G
70	m2	894	U
70	m2	898	U
70	m2	900	U
70	m2	901	U
70	m2	902	C
70	m2	906	A

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Mol	Chain	Res	Type
70	m2	907	C
70	m2	911	G
70	m2	912	G
70	m2	915	A
70	m2	921	A
70	m2	922	A
70	m2	932	C
70	m2	935	G
70	m2	936	G
70	m2	957	A
70	m2	965	A
70	m2	973	G
70	m2	980	G
70	m2	992	A
70	m2	994	A
70	m2	1001	G
70	m2	1003	A
70	m2	1019	U
70	m2	1024	U
70	m2	1025	A
70	m2	1029	A
70	m2	1030	A
70	m2	1047	U
70	m2	1049	C
70	m2	1063	U
70	m2	1064	A
70	m2	1082	A
70	m2	1085	A
70	m2	1087	C
70	m2	1091	G
70	m2	1092	C
70	m2	1095	A
70	m2	1111	C
70	m2	1115	A
70	m2	1117	U
70	m2	1118	C
70	m2	1123	G
70	m2	1135	A
70	m2	1140	C
70	m2	1150	A
70	m2	1151	A
70	m2	1155	C

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Mol	Chain	Res	Type
70	m2	1156	U
70	m2	1157	U
70	m2	1184	A
70	m2	1197	A
70	m2	1209	G
70	m2	1217	C
70	m2	1219	A
70	m2	1225	A
70	m2	1226	G
70	m2	1229	G
70	m2	1233	C
70	m2	1244	U
70	m2	1245	PSU
70	m2	1250	B8N
70	m2	1252	A
70	m2	1253	A
70	m2	1255	A
70	m2	1258	G
70	m2	1259	G
70	m2	1261	A
70	m2	1268	C
70	m2	1273	C
70	m2	1274	C
70	m2	1275	C
70	m2	1276	G
70	m2	1277	G
70	m2	1282	G
70	m2	1285	C
70	m2	1287	G
70	m2	1288	G
70	m2	1289	A
70	m2	1297	A
70	m2	1302	U
70	m2	1304	G
70	m2	1305	C
70	m2	1307	C
70	m2	1316	U
70	m2	1330	OMG
70	m2	1344	U
70	m2	1345	U
70	m2	1346	A
70	m2	1350	G

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Mol	Chain	Res	Type
70	m2	1358	G
70	m2	1360	U
70	m2	1366	U
70	m2	1368	G
70	m2	1369	U
70	m2	1373	U
70	m2	1374	U
70	m2	1375	C
70	m2	1380	A
70	m2	1384	A
70	m2	1399	U
70	m2	1400	G
70	m2	1403	A
70	m2	1406	U
70	m2	1412	C
70	m2	1416	A
70	m2	1417	C
70	m2	1418	C
70	m2	1419	C
70	m2	1420	C
70	m2	1421	C
70	m2	1422	G
70	m2	1423	A
70	m2	1424	G
70	m2	1425	C
70	m2	1435	C
70	m2	1451	G
70	m2	1452	G
70	m2	1454	A
70	m2	1456	A
70	m2	1465	U
70	m2	1482	A
70	m2	1489	A
70	m2	1491	A
70	m2	1492	G
70	m2	1499	G
70	m2	1500	A
70	m2	1509	G
70	m2	1512	G
70	m2	1514	C
70	m2	1523	C
70	m2	1524	A

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Mol	Chain	Res	Type
70	m2	1528	G
70	m2	1530	G
70	m2	1533	A
70	m2	1535	A
70	m2	1546	C
70	m2	1554	G
70	m2	1559	C
70	m2	1560	C
70	m2	1562	U
70	m2	1565	G
70	m2	1570	C
70	m2	1572	G
70	m2	1577	G
70	m2	1580	U
70	m2	1581	A
70	m2	1582	A
70	m2	1587	U
70	m2	1588	U
70	m2	1590	A
70	m2	1592	C
70	m2	1602	G
70	m2	1603	A
70	m2	1605	G
70	m2	1606	G
70	m2	1608	G
70	m2	1620	C
70	m2	1623	U
70	m2	1625	A
70	m2	1627	U
70	m2	1631	C
70	m2	1634	G
70	m2	1635	A
70	m2	1636	A
70	m2	1639	A
70	m2	1641	G
70	m2	1642	A
70	m2	1648	C
70	m2	1649	A
70	m2	1650	G
70	m2	1656	G
70	m2	1664	U
70	m2	1665	A

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Mol	Chain	Res	Type
70	m2	1667	G
70	m2	1688	G
70	m2	1697	A
70	m2	1698	C
70	m2	1700	C
70	m2	1703	C
70	m2	1723	U
70	m2	1724	G
70	m2	1746	G
70	m2	1750	G
70	m2	1753	C
70	m2	1789	G
70	m2	1809	C
70	m2	1822	G
70	m2	1824	A
70	m2	1827	A
70	m2	1828	G
70	m2	1831	G
70	m2	1833	A
70	m2	1837	A
70	m2	1840	U
70	m2	1851	G
70	m2	1853	A
70	m2	1854	C
70	m2	1863	G
70	m2	1864	G
70	m2	1865	A
70	m2	1866	U
70	m2	1867	C
7	n2	2	C
7	n2	7	A
7	n2	8	U
7	n2	9	A
7	n2	10	G
7	n2	11	C
7	n2	13	C
7	n2	16	U
7	n2	17	C
7	n2	19	G
7	n2	20	U
7	n2	21	A
7	n2	23	A

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Mol	Chain	Res	Type
7	n2	24	G
7	n2	27	G
7	n2	29	G
7	n2	31	A
7	n2	35	A
7	n2	40	C
7	n2	41	C
7	n2	42	C
7	n2	44	G
7	n2	46	G
7	n2	47	U
7	n2	50	U
7	n2	52	G
7	n2	54	U
7	n2	55	U
7	n2	57	G
7	n2	58	A
7	n2	59	U
7	n2	61	C
7	n2	66	U
7	n2	74	C
7	n2	75	C
7	n2	76	A

All (14) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	A2	236	G
2	A2	406	C
2	A2	515	U
2	A2	1446	G
2	A2	2195	U
2	A2	2259	C
2	A2	2382	C
2	A2	2430	G
2	A2	2463	U
2	A2	3253	G
2	A2	4277	C
2	A2	4351	U
2	A2	4582	U
10	C2	59	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
2	OMG	A2	4275	2	23,26,27	0.31	0	32,38,41	0.49	0
2	OMC	A2	2177	2,83	19,22,23	0.25	0	25,31,34	0.36	0
2	PSU	A2	4102	2,83	18,21,22	0.51	0	21,30,33	0.40	0
2	OMC	A2	3464	2	19,22,23	0.27	0	25,31,34	0.36	0
2	A2M	A2	1673	2	22,25,26	0.12	0	30,36,39	0.45	0
70	UR3	m2	1832	70	19,22,23	0.28	0	26,32,35	0.42	0
2	A2M	A2	2156	2	22,25,26	0.11	0	30,36,39	0.20	0
2	OMG	A2	4146	2	23,26,27	0.32	0	32,38,41	0.42	0
2	A2M	A2	1137	2	22,25,26	0.13	0	30,36,39	0.21	0
2	PSU	A2	3385	2	18,21,22	0.52	0	21,30,33	0.58	0
70	OMG	m2	438	70	23,26,27	0.29	0	32,38,41	0.45	0
70	A2M	m2	486	70	22,25,26	0.10	0	30,36,39	0.18	0
70	OMG	m2	603	70	23,26,27	0.26	0	32,38,41	0.33	0
2	PSU	A2	4288	2	18,21,22	0.49	0	21,30,33	0.61	1 (4%)
2	OMG	A2	2119	2,83	23,26,27	0.31	0	32,38,41	0.37	0
2	OMC	A2	3525	2	19,22,23	0.29	0	25,31,34	0.44	0
70	B8N	m2	1250	70	25,29,30	0.57	0	28,42,45	0.62	1 (3%)
2	PSU	A2	4183	2	18,21,22	0.52	0	21,30,33	0.38	0
2	PSU	A2	1496	2	18,21,22	0.57	0	21,30,33	0.56	0
2	OMC	A2	1154	2	19,22,23	0.27	0	25,31,34	0.41	0
2	A2M	A2	4223	2	22,25,26	0.30	0	30,36,39	0.44	0
70	A2M	m2	1033	70	22,25,26	0.11	0	30,36,39	0.38	0
70	A2M	m2	27	70	22,25,26	0.11	0	30,36,39	0.24	0
2	PSU	A2	4280	2	18,21,22	0.52	0	21,30,33	0.56	0
2	OMC	A2	4188	2	19,22,23	0.31	0	25,31,34	0.45	0
2	PSU	A2	4094	2	18,21,22	0.53	0	21,30,33	0.62	0
2	PSU	A2	3945	2	18,21,22	0.51	0	21,30,33	0.55	0
2	PSU	A2	4055	2	18,21,22	0.53	0	21,30,33	0.63	1 (4%)
2	A2M	A2	4270	2	22,25,26	0.11	0	30,36,39	0.40	0
2	OMG	A2	3555	2,83	23,26,27	0.36	0	32,38,41	0.54	0
2	OMG	A2	3880	2	23,26,27	0.28	0	32,38,41	0.54	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
70	OMU	m2	172	70	19,22,23	0.21	0	25,31,34	0.63	1 (4%)
2	A2M	A2	2118	2,83	22,25,26	0.12	0	30,36,39	0.26	0
2	A2M	A2	2570	2	22,25,26	0.10	0	30,36,39	0.18	0
70	4AC	m2	1844	70	21,24,25	0.27	0	28,34,37	0.30	0
2	A2M	A2	1140	2	22,25,26	0.12	0	30,36,39	0.20	0
2	A2M	A2	3374	2	22,25,26	0.12	0	30,36,39	0.29	0
70	OMC	m2	355	70	19,22,23	0.27	0	25,31,34	0.40	0
70	A2M	m2	514	70	22,25,26	0.10	0	30,36,39	0.46	1 (3%)
70	OMG	m2	869	70	23,26,27	0.23	0	32,38,41	0.32	0
2	OMC	A2	3543	2	19,22,23	0.28	0	25,31,34	0.48	0
70	OMU	m2	121	70	19,22,23	0.26	0	25,31,34	0.50	0
2	OMU	A2	2592	2	19,22,23	0.28	0	25,31,34	0.60	0
2	5MC	A2	3438	2,83	19,22,23	0.38	0	26,32,35	0.40	0
2	OMC	A2	4108	2	19,22,23	0.26	0	25,31,34	0.38	0
2	1MA	A2	4067	2	21,25,26	0.26	0	30,37,40	0.44	0
2	PSU	A2	3420	2	18,21,22	0.38	0	21,30,33	0.44	0
2	OMC	A2	1683	2,83	19,22,23	0.28	0	25,31,34	0.57	0
2	OMU	A2	4272	2	19,22,23	0.36	0	25,31,34	0.64	0
2	PSU	A2	3371	2	18,21,22	0.53	0	21,30,33	0.61	1 (4%)
2	OMG	A2	4151	2	23,26,27	0.28	0	32,38,41	0.36	0
70	OMG	m2	511	83,70	23,26,27	0.28	0	32,38,41	0.43	0
2	OMC	A2	2579	2	19,22,23	0.25	0	25,31,34	0.42	0
70	OMG	m2	685	70	23,26,27	0.28	0	32,38,41	0.54	0
2	A2M	A2	3486	2	22,25,26	0.11	0	30,36,39	0.38	0
2	A2M	A2	4175	2,83	22,25,26	0.13	0	30,36,39	0.43	0
70	A2M	m2	1680	70	22,25,26	0.13	0	30,36,39	0.22	0
2	OMU	A2	3581	2	19,22,23	0.27	0	25,31,34	0.48	0
2	PSU	A2	1490	2	18,21,22	0.88	1 (5%)	21,30,33	0.62	0
70	A2M	m2	578	70	22,25,26	0.15	0	30,36,39	0.29	0
2	A2M	A2	2542	2	22,25,26	0.11	0	30,36,39	0.30	0
70	OMC	m2	174	70	19,22,23	0.28	0	25,31,34	0.50	0
2	OMG	A2	2179	2	23,26,27	0.29	0	32,38,41	0.35	0
70	PSU	m2	1083	70	18,21,22	0.66	1 (5%)	21,30,33	0.65	0
70	A2M	m2	670	83,70	22,25,26	0.14	0	30,36,39	0.32	0
70	OMG	m2	1330	70	23,26,27	0.28	0	32,38,41	0.36	0
2	OMG	A2	3848	2,7	23,26,27	0.31	0	32,38,41	0.34	0
2	OMC	A2	2106	2	19,22,23	0.28	0	25,31,34	0.35	0
2	OMG	A2	3448	2	23,26,27	0.29	0	32,38,41	0.32	0
2	PSU	A2	2263	2	18,21,22	0.47	0	21,30,33	0.61	0
2	OMG	A2	4022	2	23,26,27	0.30	0	32,38,41	0.40	0
2	OMG	A2	3400	2	23,26,27	0.26	0	32,38,41	0.37	0
70	PSU	m2	825	70	18,21,22	0.51	0	21,30,33	0.55	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	OMC	A2	2616	2	19,22,23	0.23	0	25,31,34	0.34	0
70	A2M	m2	99	83,70	22,25,26	0.10	0	30,36,39	0.45	0
2	OMG	A2	1335	2	23,26,27	0.33	0	32,38,41	0.41	0
2	OMC	A2	2559	2	19,22,23	0.26	0	25,31,34	0.34	0
70	PSU	m2	614	70	18,21,22	0.56	1 (5%)	21,30,33	0.68	1 (4%)
2	OMU	A2	3958	2	19,22,23	0.27	0	25,31,34	0.45	0
2	OMU	A2	3474	2	19,22,23	0.29	0	25,31,34	0.45	0
2	OMG	A2	4044	2	23,26,27	0.31	0	32,38,41	0.34	0
2	A2M	A2	398	2	22,25,26	0.11	0	30,36,39	0.33	0
2	A2M	A2	1337	2	22,25,26	0.15	0	30,36,39	0.37	0
2	A2M	A2	3481	2	22,25,26	0.11	0	30,36,39	0.30	0
2	OMC	A2	3357	2	19,22,23	0.25	0	25,31,34	0.48	0
2	OMU	A2	4150	2	19,22,23	0.25	0	25,31,34	0.42	0
2	5MC	A2	4099	2	19,22,23	0.50	0	26,32,35	0.64	0
70	OMC	m2	519	70	19,22,23	0.23	0	25,31,34	0.47	0
2	A2M	A2	3380	2	22,25,26	0.09	0	30,36,39	0.35	0
10	OMG	C2	75	10	23,26,27	0.25	0	32,38,41	0.38	0
2	OMG	A2	4289	2	23,26,27	0.32	0	32,38,41	0.43	0
2	A2M	A2	1347	2,83	22,25,26	0.14	0	30,36,39	0.54	0
70	PSU	m2	824	70	18,21,22	0.58	1 (5%)	21,30,33	0.68	1 (4%)
2	2MG	A2	1330	2	23,26,27	0.31	0	33,38,41	0.40	0
70	PSU	m2	1245	70	18,21,22	0.45	0	21,30,33	0.61	0
2	OMG	A2	1130	2	23,26,27	0.38	0	32,38,41	0.49	0
2	OMC	A2	3497	2	19,22,23	0.28	0	25,31,34	0.36	0
2	PSU	A2	4152	2	18,21,22	0.50	0	21,30,33	0.64	1 (4%)
2	A2M	A2	3441	2	22,25,26	0.13	0	30,36,39	0.43	0
2	OMG	A2	3283	2	23,26,27	0.28	0	32,38,41	0.51	0
70	OMU	m2	116	70	19,22,23	0.23	0	25,31,34	0.45	0
70	OMC	m2	1705	70	19,22,23	0.23	0	25,31,34	0.40	0
70	OMG	m2	646	70	23,26,27	0.28	0	32,38,41	0.35	0
2	PSU	A2	1395	2	18,21,22	0.52	0	21,30,33	0.54	0
70	B8T	m2	1339	70	19,22,23	0.33	0	25,31,34	0.36	0
2	OMG	A2	1438	2	23,26,27	0.24	0	32,38,41	0.36	0
70	OMU	m2	430	70	19,22,23	0.24	0	25,31,34	0.48	0
2	OMC	A2	2120	2	19,22,23	0.25	0	25,31,34	0.47	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMG	A2	4275	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	2177	2,83	-	1/9/27/28	0/2/2/2
2	PSU	A2	4102	2,83	-	2/7/25/26	0/2/2/2
2	OMC	A2	3464	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	1673	2	-	0/9/27/28	0/3/3/3
70	UR3	m2	1832	70	-	2/7/25/26	0/2/2/2
2	A2M	A2	2156	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	-	0/9/27/28	0/3/3/3
2	PSU	A2	3385	2	-	1/7/25/26	0/2/2/2
70	OMG	m2	438	70	-	1/9/27/28	0/3/3/3
70	A2M	m2	486	70	-	1/9/27/28	0/3/3/3
70	OMG	m2	603	70	-	1/9/27/28	0/3/3/3
2	PSU	A2	4288	2	-	3/7/25/26	0/2/2/2
2	OMG	A2	2119	2,83	-	2/9/27/28	0/3/3/3
2	OMC	A2	3525	2	-	0/9/27/28	0/2/2/2
70	B8N	m2	1250	70	-	3/16/34/35	0/2/2/2
2	PSU	A2	4183	2	-	2/7/25/26	0/2/2/2
2	PSU	A2	1496	2	-	0/7/25/26	0/2/2/2
2	OMC	A2	1154	2	-	0/9/27/28	0/2/2/2
2	A2M	A2	4223	2	-	0/9/27/28	0/3/3/3
70	A2M	m2	1033	70	-	0/9/27/28	0/3/3/3
70	A2M	m2	27	70	-	0/9/27/28	0/3/3/3
2	PSU	A2	4280	2	-	0/7/25/26	0/2/2/2
2	OMC	A2	4188	2	-	0/9/27/28	0/2/2/2
2	PSU	A2	4094	2	-	0/7/25/26	0/2/2/2
2	PSU	A2	3945	2	-	0/7/25/26	0/2/2/2
2	PSU	A2	4055	2	-	0/7/25/26	0/2/2/2
2	A2M	A2	4270	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	3555	2,83	-	0/9/27/28	0/3/3/3
2	OMG	A2	3880	2	-	0/9/27/28	0/3/3/3
70	OMU	m2	172	70	-	2/9/27/28	0/2/2/2
2	A2M	A2	2118	2,83	-	0/9/27/28	0/3/3/3
2	A2M	A2	2570	2	-	0/9/27/28	0/3/3/3
70	4AC	m2	1844	70	-	0/11/29/30	0/2/2/2
2	A2M	A2	1140	2	-	3/9/27/28	0/3/3/3
2	A2M	A2	3374	2	-	0/9/27/28	0/3/3/3
70	OMC	m2	355	70	-	1/9/27/28	0/2/2/2
70	A2M	m2	514	70	-	0/9/27/28	0/3/3/3
70	OMG	m2	869	70	-	1/9/27/28	0/3/3/3
2	OMC	A2	3543	2	-	1/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
70	OMU	m2	121	70	-	0/9/27/28	0/2/2/2
2	OMU	A2	2592	2	-	0/9/27/28	0/2/2/2
2	5MC	A2	3438	2,83	-	0/7/25/26	0/2/2/2
2	OMC	A2	4108	2	-	0/9/27/28	0/2/2/2
2	1MA	A2	4067	2	-	0/7/25/26	0/3/3/3
2	PSU	A2	3420	2	-	3/7/25/26	0/2/2/2
2	OMC	A2	1683	2,83	-	0/9/27/28	0/2/2/2
2	OMU	A2	4272	2	-	2/9/27/28	0/2/2/2
2	PSU	A2	3371	2	-	0/7/25/26	0/2/2/2
2	OMG	A2	4151	2	-	2/9/27/28	0/3/3/3
70	OMG	m2	511	83,70	-	0/9/27/28	0/3/3/3
2	OMC	A2	2579	2	-	0/9/27/28	0/2/2/2
70	OMG	m2	685	70	-	1/9/27/28	0/3/3/3
2	A2M	A2	3486	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	4175	2,83	-	0/9/27/28	0/3/3/3
70	A2M	m2	1680	70	-	1/9/27/28	0/3/3/3
2	OMU	A2	3581	2	-	1/9/27/28	0/2/2/2
2	PSU	A2	1490	2	-	0/7/25/26	0/2/2/2
70	A2M	m2	578	70	-	1/9/27/28	0/3/3/3
2	A2M	A2	2542	2	-	3/9/27/28	0/3/3/3
70	OMC	m2	174	70	-	3/9/27/28	0/2/2/2
2	OMG	A2	2179	2	-	1/9/27/28	0/3/3/3
70	PSU	m2	1083	70	-	1/7/25/26	0/2/2/2
70	A2M	m2	670	83,70	-	1/9/27/28	0/3/3/3
70	OMG	m2	1330	70	-	2/9/27/28	0/3/3/3
2	OMG	A2	3848	2,7	-	0/9/27/28	0/3/3/3
2	OMC	A2	2106	2	-	4/9/27/28	0/2/2/2
2	OMG	A2	3448	2	-	0/9/27/28	0/3/3/3
2	PSU	A2	2263	2	-	0/7/25/26	0/2/2/2
2	OMG	A2	4022	2	-	0/9/27/28	0/3/3/3
2	OMG	A2	3400	2	-	0/9/27/28	0/3/3/3
70	PSU	m2	825	70	-	0/7/25/26	0/2/2/2
2	OMC	A2	2616	2	-	0/9/27/28	0/2/2/2
70	A2M	m2	99	83,70	-	0/9/27/28	0/3/3/3
2	OMG	A2	1335	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	2559	2	-	0/9/27/28	0/2/2/2
70	PSU	m2	614	70	-	0/7/25/26	0/2/2/2
2	OMU	A2	3958	2	-	0/9/27/28	0/2/2/2
2	OMU	A2	3474	2	-	1/9/27/28	0/2/2/2
2	OMG	A2	4044	2	-	0/9/27/28	0/3/3/3
2	A2M	A2	398	2	-	1/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	A2M	A2	1337	2	-	1/9/27/28	0/3/3/3
2	A2M	A2	3481	2	-	0/9/27/28	0/3/3/3
2	OMC	A2	3357	2	-	4/9/27/28	0/2/2/2
2	OMU	A2	4150	2	-	0/9/27/28	0/2/2/2
2	5MC	A2	4099	2	-	3/7/25/26	0/2/2/2
70	OMC	m2	519	70	-	2/9/27/28	0/2/2/2
2	A2M	A2	3380	2	-	1/9/27/28	0/3/3/3
10	OMG	C2	75	10	-	2/9/27/28	0/3/3/3
2	OMG	A2	4289	2	-	3/9/27/28	0/3/3/3
2	A2M	A2	1347	2,83	-	3/9/27/28	0/3/3/3
70	PSU	m2	824	70	-	2/7/25/26	0/2/2/2
2	2MG	A2	1330	2	-	0/9/27/28	0/3/3/3
70	PSU	m2	1245	70	-	2/7/25/26	0/2/2/2
2	OMG	A2	1130	2	-	1/9/27/28	0/3/3/3
2	OMC	A2	3497	2	-	0/9/27/28	0/2/2/2
2	PSU	A2	4152	2	-	1/7/25/26	0/2/2/2
2	A2M	A2	3441	2	-	4/9/27/28	0/3/3/3
2	OMG	A2	3283	2	-	0/9/27/28	0/3/3/3
70	OMU	m2	116	70	-	0/9/27/28	0/2/2/2
70	OMC	m2	1705	70	-	0/9/27/28	0/2/2/2
70	OMG	m2	646	70	-	3/9/27/28	0/3/3/3
2	PSU	A2	1395	2	-	0/7/25/26	0/2/2/2
70	B8T	m2	1339	70	-	0/7/27/28	0/2/2/2
2	OMG	A2	1438	2	-	3/9/27/28	0/3/3/3
70	OMU	m2	430	70	-	4/9/27/28	0/2/2/2
2	OMC	A2	2120	2	-	0/9/27/28	0/2/2/2

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A2	1490	PSU	O4'-C1'	-3.34	1.39	1.43
70	m2	1083	PSU	O4'-C1'	-2.54	1.40	1.43
70	m2	824	PSU	O4'-C1'	-2.26	1.40	1.43
70	m2	614	PSU	O4'-C1'	-2.11	1.40	1.43

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
70	m2	172	OMU	O2'-C2'-C1'	2.56	113.84	108.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
70	m2	614	PSU	O4'-C1'-C2'	2.36	108.42	105.15
70	m2	824	PSU	O4'-C1'-C2'	2.32	108.36	105.15
2	A2	3371	PSU	O4'-C1'-C2'	2.11	108.08	105.15
70	m2	1250	B8N	O4'-C1'-C2'	2.08	108.03	105.15
2	A2	4055	PSU	O4'-C1'-C2'	2.06	108.00	105.15
2	A2	4288	PSU	O4'-C1'-C2'	2.06	108.00	105.15
2	A2	4152	PSU	O4'-C1'-C2'	2.03	107.96	105.15
70	m2	514	A2M	C2'-C3'-C4'	-2.02	97.65	101.99

There are no chirality outliers.

All (94) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
10	C2	75	OMG	O4'-C4'-C5'-O5'
10	C2	75	OMG	C3'-C4'-C5'-O5'
2	A2	398	A2M	C1'-C2'-O2'-CM'
2	A2	1140	A2M	O4'-C4'-C5'-O5'
2	A2	1347	A2M	C4'-C5'-O5'-P
2	A2	1347	A2M	O4'-C4'-C5'-O5'
2	A2	1347	A2M	C3'-C4'-C5'-O5'
2	A2	1438	OMG	O4'-C4'-C5'-O5'
2	A2	2106	OMC	C1'-C2'-O2'-CM2
2	A2	2179	OMG	C1'-C2'-O2'-CM2
2	A2	3357	OMC	C2'-C1'-N1-C6
2	A2	3581	OMU	C1'-C2'-O2'-CM2
2	A2	4102	PSU	C2'-C1'-C5-C4
2	A2	4151	OMG	O4'-C4'-C5'-O5'
2	A2	4183	PSU	O4'-C1'-C5-C4
2	A2	4183	PSU	O4'-C1'-C5-C6
2	A2	4272	OMU	O4'-C4'-C5'-O5'
2	A2	4289	OMG	C1'-C2'-O2'-CM2
70	m2	172	OMU	C1'-C2'-O2'-CM2
70	m2	174	OMC	O4'-C1'-N1-C2
70	m2	174	OMC	O4'-C1'-N1-C6
70	m2	174	OMC	C1'-C2'-O2'-CM2
70	m2	355	OMC	C1'-C2'-O2'-CM2
70	m2	430	OMU	C2'-C1'-N1-C2
70	m2	430	OMU	C2'-C1'-N1-C6
70	m2	486	A2M	C1'-C2'-O2'-CM'
70	m2	603	OMG	C1'-C2'-O2'-CM2
70	m2	869	OMG	C1'-C2'-O2'-CM2
70	m2	1245	PSU	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
70	m2	1250	B8N	O4'-C4'-C5'-O5'
70	m2	1250	B8N	C3'-C4'-C5'-O5'
70	m2	1680	A2M	C1'-C2'-O2'-CM'
70	m2	1832	UR3	O4'-C1'-N1-C6
70	m2	1832	UR3	O4'-C1'-N1-C2
2	A2	1140	A2M	C3'-C4'-C5'-O5'
2	A2	4151	OMG	C3'-C4'-C5'-O5'
2	A2	4272	OMU	C3'-C4'-C5'-O5'
2	A2	4288	PSU	C3'-C4'-C5'-O5'
2	A2	4289	OMG	O4'-C4'-C5'-O5'
70	m2	1330	OMG	O4'-C4'-C5'-O5'
70	m2	1330	OMG	C3'-C4'-C5'-O5'
2	A2	3357	OMC	C2'-C1'-N1-C2
2	A2	1438	OMG	C3'-C4'-C5'-O5'
2	A2	3441	A2M	O4'-C4'-C5'-O5'
2	A2	3441	A2M	C3'-C4'-C5'-O5'
70	m2	1245	PSU	C3'-C4'-C5'-O5'
2	A2	1438	OMG	C3'-C2'-O2'-CM2
2	A2	3420	PSU	C3'-C4'-C5'-O5'
2	A2	3420	PSU	O4'-C4'-C5'-O5'
2	A2	4288	PSU	O4'-C4'-C5'-O5'
70	m2	824	PSU	C3'-C4'-C5'-O5'
2	A2	2119	OMG	O4'-C4'-C5'-O5'
70	m2	519	OMC	O4'-C4'-C5'-O5'
70	m2	646	OMG	C3'-C4'-C5'-O5'
70	m2	824	PSU	O4'-C4'-C5'-O5'
70	m2	519	OMC	C3'-C4'-C5'-O5'
2	A2	2542	A2M	C2'-C1'-N9-C8
2	A2	4289	OMG	C3'-C4'-C5'-O5'
2	A2	4152	PSU	C4'-C5'-O5'-P
2	A2	1130	OMG	C1'-C2'-O2'-CM2
70	m2	438	OMG	C1'-C2'-O2'-CM2
70	m2	578	A2M	C4'-C5'-O5'-P
2	A2	3441	A2M	C2'-C1'-N9-C8
2	A2	2542	A2M	C2'-C1'-N9-C4
2	A2	3474	OMU	C4'-C5'-O5'-P
2	A2	3420	PSU	O4'-C1'-C5-C4
2	A2	4102	PSU	O4'-C1'-C5-C4
2	A2	3357	OMC	O4'-C1'-N1-C2
2	A2	1140	A2M	C4'-C5'-O5'-P
2	A2	3357	OMC	O4'-C1'-N1-C6
2	A2	4099	5MC	O4'-C1'-N1-C6

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Mol	Chain	Res	Type	Atoms
70	m2	430	OMU	O4'-C1'-N1-C6
70	m2	646	OMG	O4'-C4'-C5'-O5'
70	m2	172	OMU	C4'-C5'-O5'-P
70	m2	670	A2M	O4'-C4'-C5'-O5'
70	m2	1083	PSU	C4'-C5'-O5'-P
70	m2	685	OMG	O4'-C4'-C5'-O5'
70	m2	646	OMG	C4'-C5'-O5'-P
2	A2	4288	PSU	O4'-C1'-C5-C6
2	A2	3380	A2M	C3'-C2'-O2'-CM'
2	A2	4099	5MC	O4'-C1'-N1-C2
2	A2	2119	OMG	C3'-C4'-C5'-O5'
2	A2	3385	PSU	O4'-C4'-C5'-O5'
2	A2	3441	A2M	O4'-C1'-N9-C8
2	A2	2542	A2M	O4'-C1'-N9-C8
2	A2	3543	OMC	C4'-C5'-O5'-P
70	m2	430	OMU	O4'-C1'-N1-C2
2	A2	2106	OMC	O4'-C4'-C5'-O5'
2	A2	4099	5MC	C2'-C1'-N1-C6
70	m2	1250	B8N	N3-C31-C32-C33
2	A2	2106	OMC	C2'-C1'-N1-C2
2	A2	1337	A2M	O4'-C1'-N9-C8
2	A2	2177	OMC	O4'-C4'-C5'-O5'
2	A2	2106	OMC	C2'-C1'-N1-C6

There are no ring outliers.

52 monomers are involved in 77 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A2	1673	A2M	1	0
70	m2	486	A2M	2	0
70	m2	603	OMG	2	0
2	A2	2119	OMG	1	0
2	A2	1496	PSU	2	0
2	A2	1154	OMC	2	0
2	A2	4223	A2M	3	0
70	m2	1033	A2M	1	0
70	m2	27	A2M	1	0
2	A2	4188	OMC	1	0
2	A2	4270	A2M	1	0
2	A2	3880	OMG	1	0
70	m2	172	OMU	1	0
2	A2	2118	A2M	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A2	2570	A2M	1	0
70	m2	1844	4AC	1	0
2	A2	1140	A2M	1	0
2	A2	3374	A2M	1	0
70	m2	355	OMC	2	0
70	m2	869	OMG	1	0
70	m2	121	OMU	1	0
2	A2	4108	OMC	1	0
2	A2	4067	1MA	2	0
2	A2	3420	PSU	1	0
2	A2	1683	OMC	2	0
2	A2	4272	OMU	2	0
2	A2	3371	PSU	1	0
70	m2	511	OMG	5	0
70	m2	685	OMG	1	0
70	m2	1680	A2M	2	0
2	A2	1490	PSU	1	0
70	m2	578	A2M	1	0
70	m2	174	OMC	2	0
2	A2	2179	OMG	2	0
2	A2	2106	OMC	3	0
70	m2	99	A2M	1	0
2	A2	2559	OMC	2	0
2	A2	3474	OMU	2	0
2	A2	4044	OMG	2	0
2	A2	398	A2M	2	0
2	A2	4150	OMU	1	0
2	A2	4099	5MC	2	0
70	m2	519	OMC	1	0
2	A2	3380	A2M	1	0
2	A2	4289	OMG	2	0
2	A2	1347	A2M	2	0
2	A2	1330	2MG	1	0
2	A2	1130	OMG	1	0
2	A2	4152	PSU	1	0
70	m2	1705	OMC	1	0
2	A2	1438	OMG	2	0
2	A2	2120	OMC	1	0

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 150 ligands modelled in this entry, 128 are monoatomic and 22 are unknown - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	A2	21
70	m2	6

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	m2	130:G	O3'	141:A	P	25.44
1	A2	1512:U	O3'	1521:A	P	24.55
1	A2	2658:G	O3'	3240:C	P	18.64
1	A2	891:C	O3'	917:G	P	18.18
1	m2	690:U	O3'	801:U	P	18.05
1	A2	3790:G	O3'	3796:G	P	17.93
1	A2	4437:C	O3'	4493:G	P	17.18
1	A2	3752:C	O3'	3758:G	P	16.63
1	A2	520:C	O3'	650:G	P	16.04
1	A2	770:G	O3'	799:C	P	15.93
1	m2	536:G	O3'	554:U	P	15.46
1	A2	1564:C	O3'	1572:A	P	14.88
1	A2	859:G	O3'	866:A	P	14.73
1	m2	324:C	O3'	331:G	P	14.31

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	m2	1753:C	O3'	1786:G	P	14.21
1	A2	1772:A	O3'	1820:C	P	13.90
1	A2	1914:C	O3'	2004:G	P	13.38
1	A2	4668:U	O3'	4674:G	P	12.18
1	A2	481:G	O3'	485:U	P	12.01
1	A2	1055:G	O3'	1059:C	P	11.14
1	A2	3633:C	O3'	3685:G	P	10.57
1	A2	1072:U	O3'	1078:G	P	8.59
1	A2	866:A	O3'	868:C	P	8.58
1	m2	227:G	O3'	289:U	P	7.35
1	A2	956:C	O3'	999:C	P	7.05
1	A2	501:G	O3'	506:G	P	4.60
1	A2	4422:G	O3'	4424:U	P	4.46

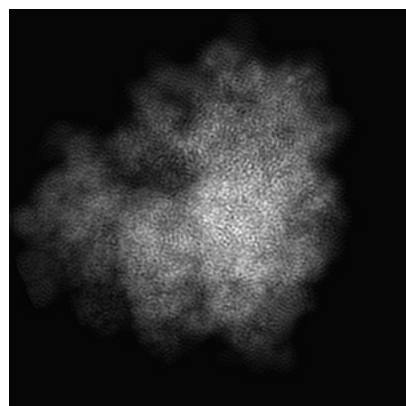
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-53307. These allow visual inspection of the internal detail of the map and identification of artifacts.

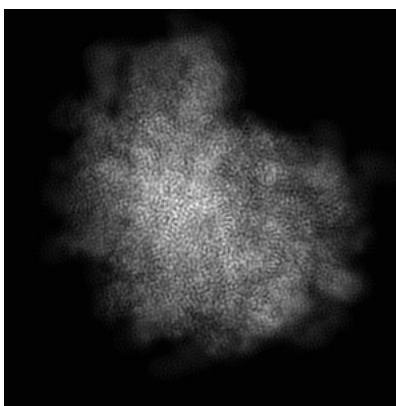
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

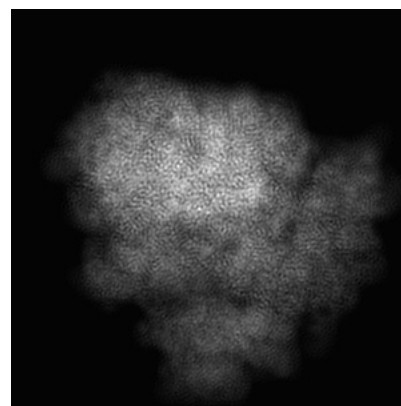
6.1.1 Primary map



X

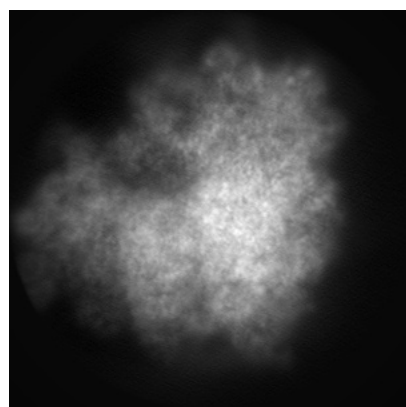


Y

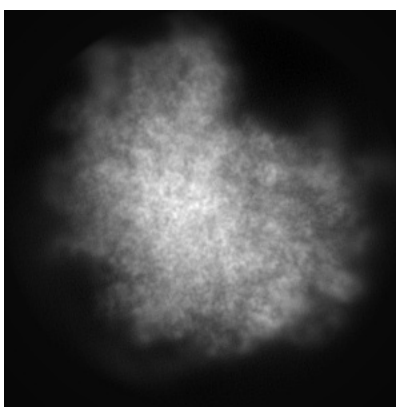


Z

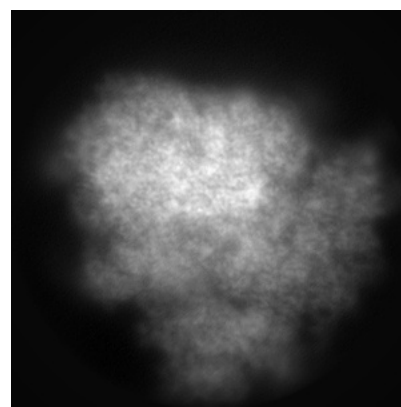
6.1.2 Raw map



X



Y

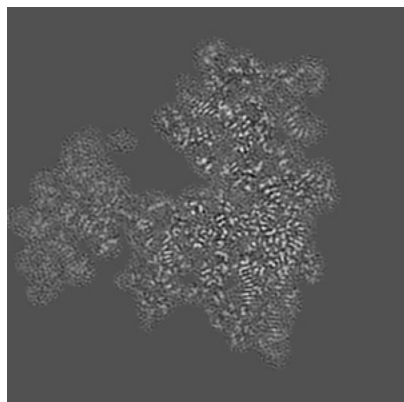


Z

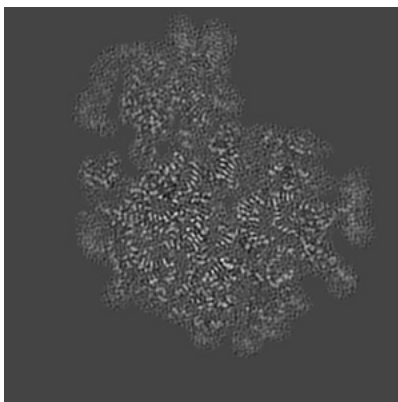
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

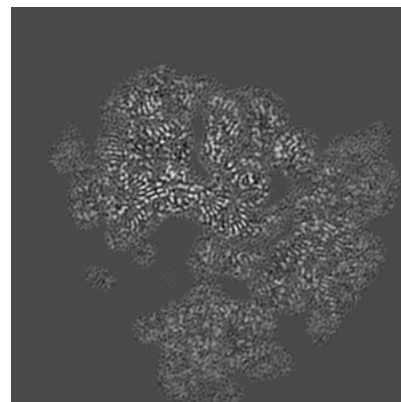
6.2.1 Primary map



X Index: 156

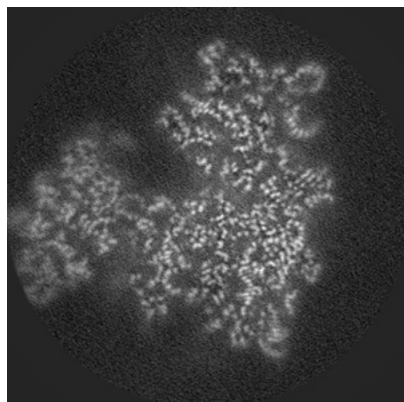


Y Index: 156

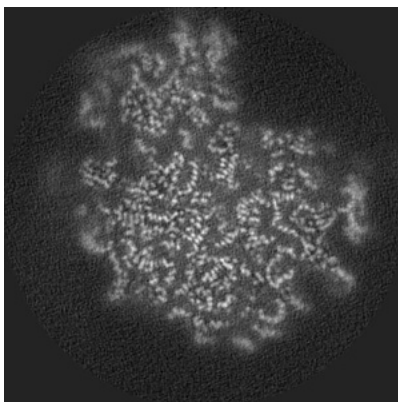


Z Index: 156

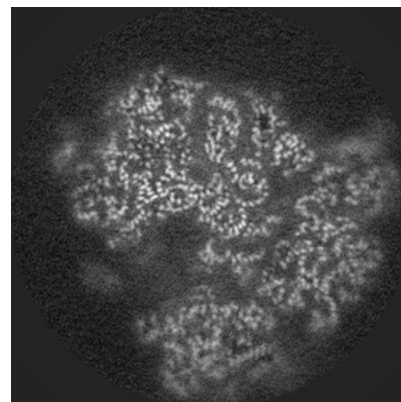
6.2.2 Raw map



X Index: 156



Y Index: 156

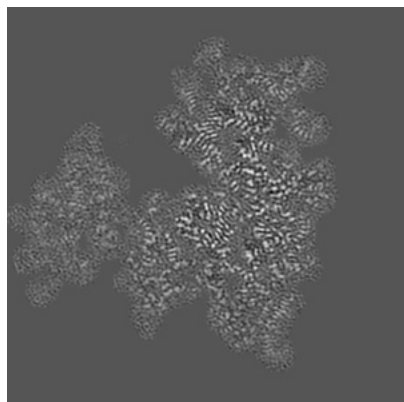


Z Index: 156

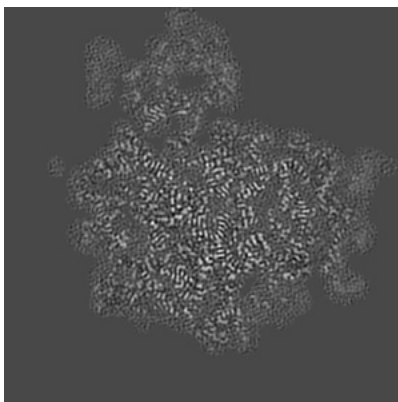
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

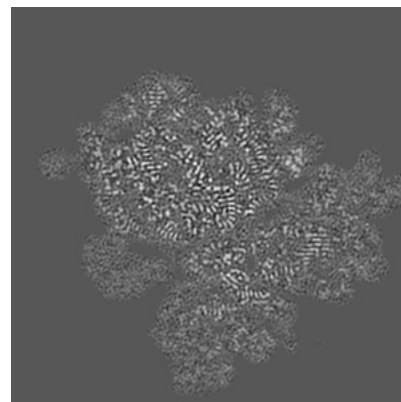
6.3.1 Primary map



X Index: 161

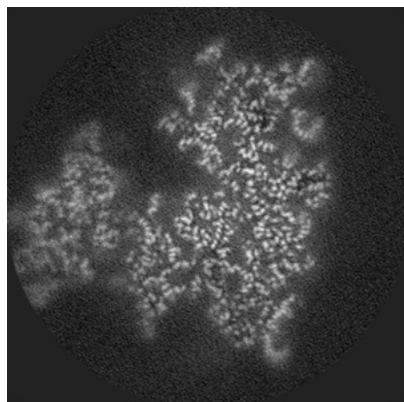


Y Index: 170

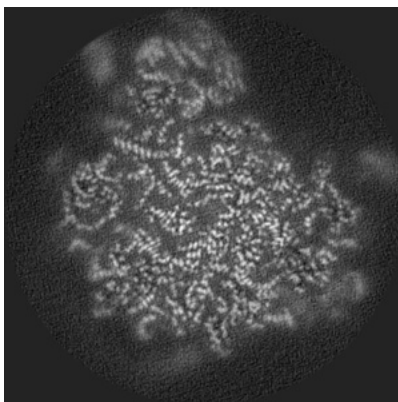


Z Index: 131

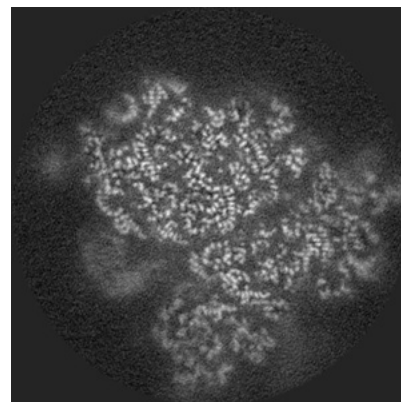
6.3.2 Raw map



X Index: 161



Y Index: 180

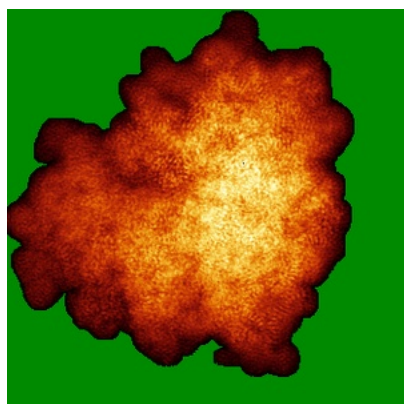


Z Index: 131

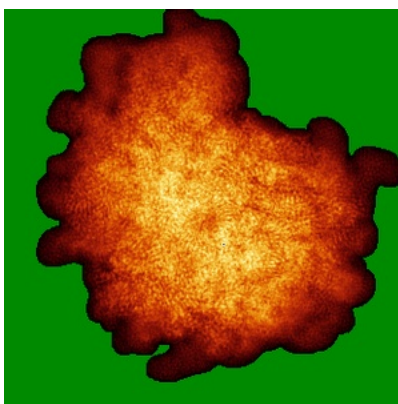
The images above show the largest variance slices of the map in three orthogonal directions.

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

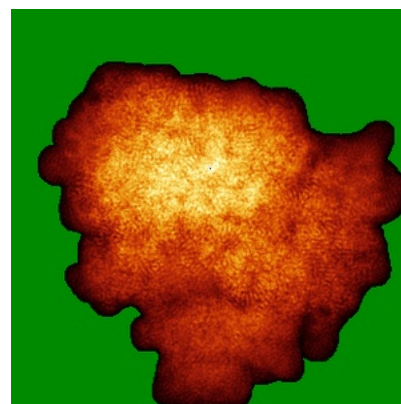
6.4.1 Primary map



X

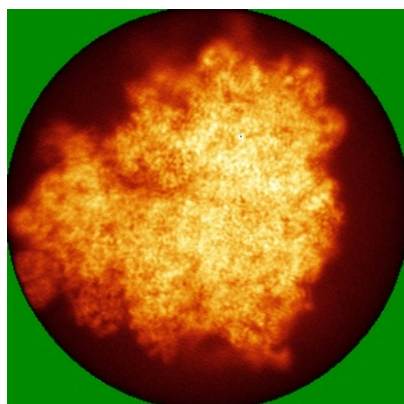


Y

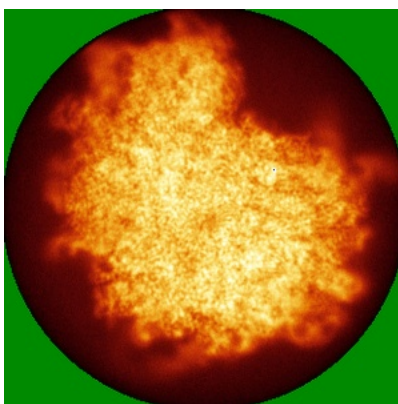


Z

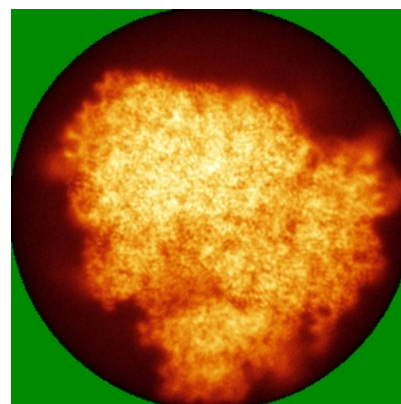
6.4.2 Raw map



X



Y

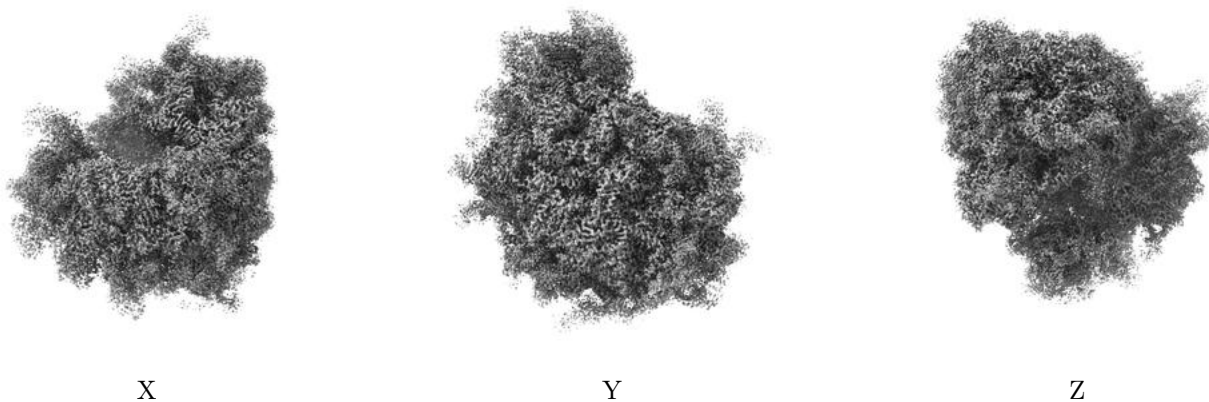


Z

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

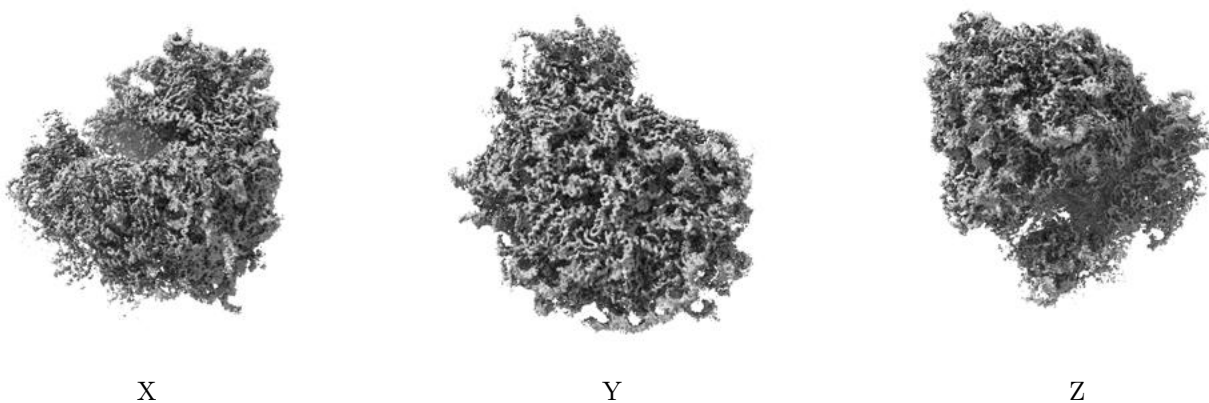
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0285. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

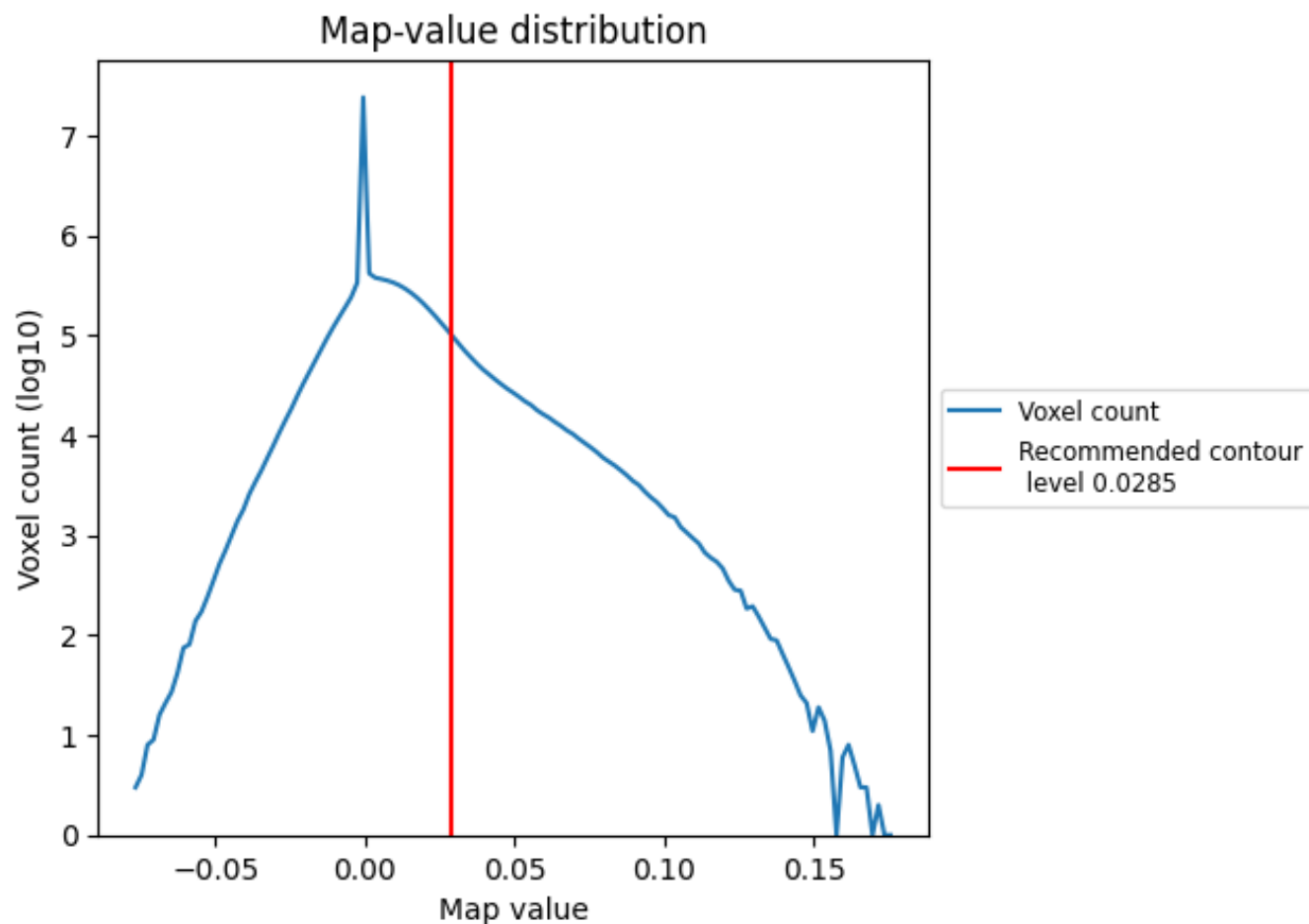
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

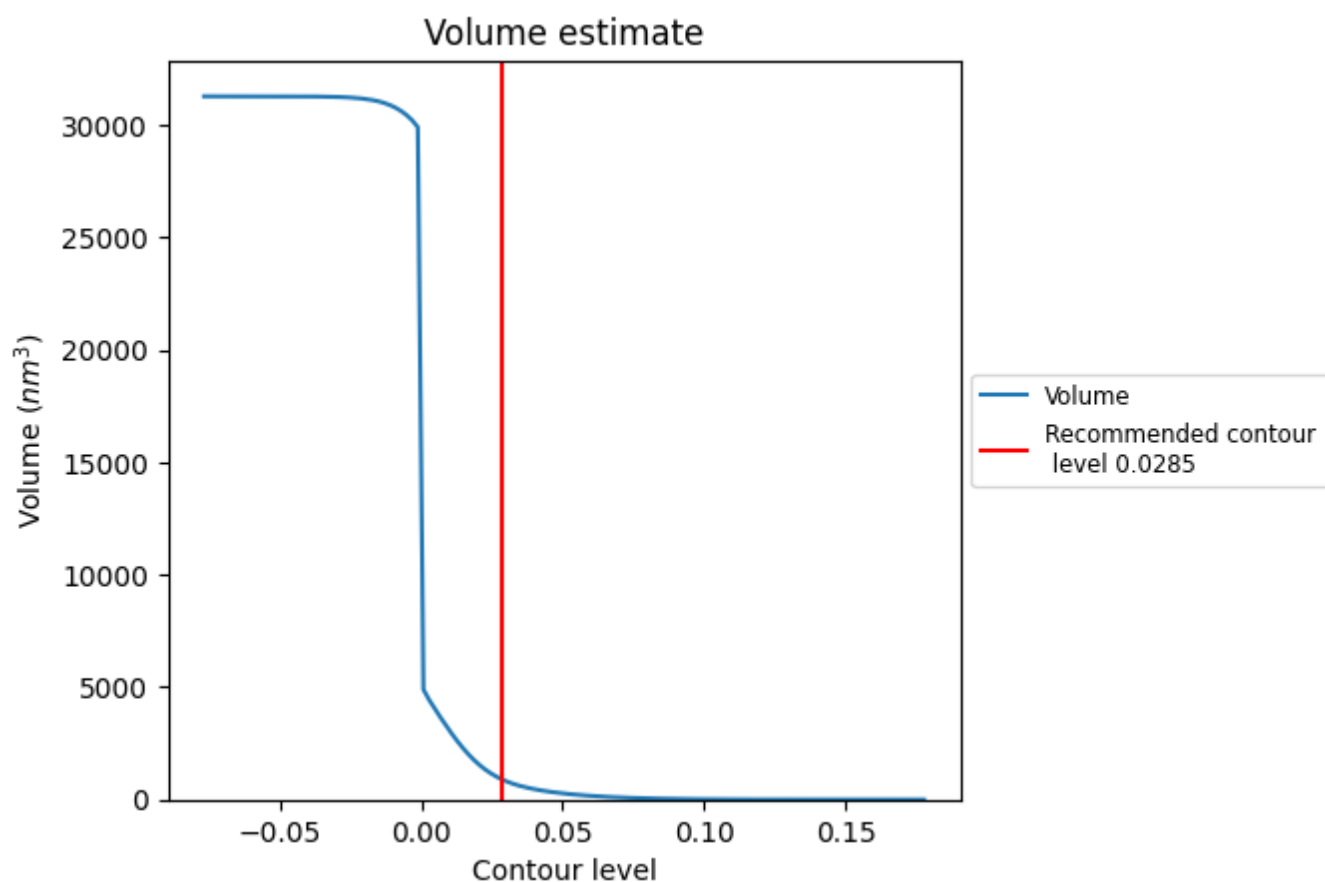
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

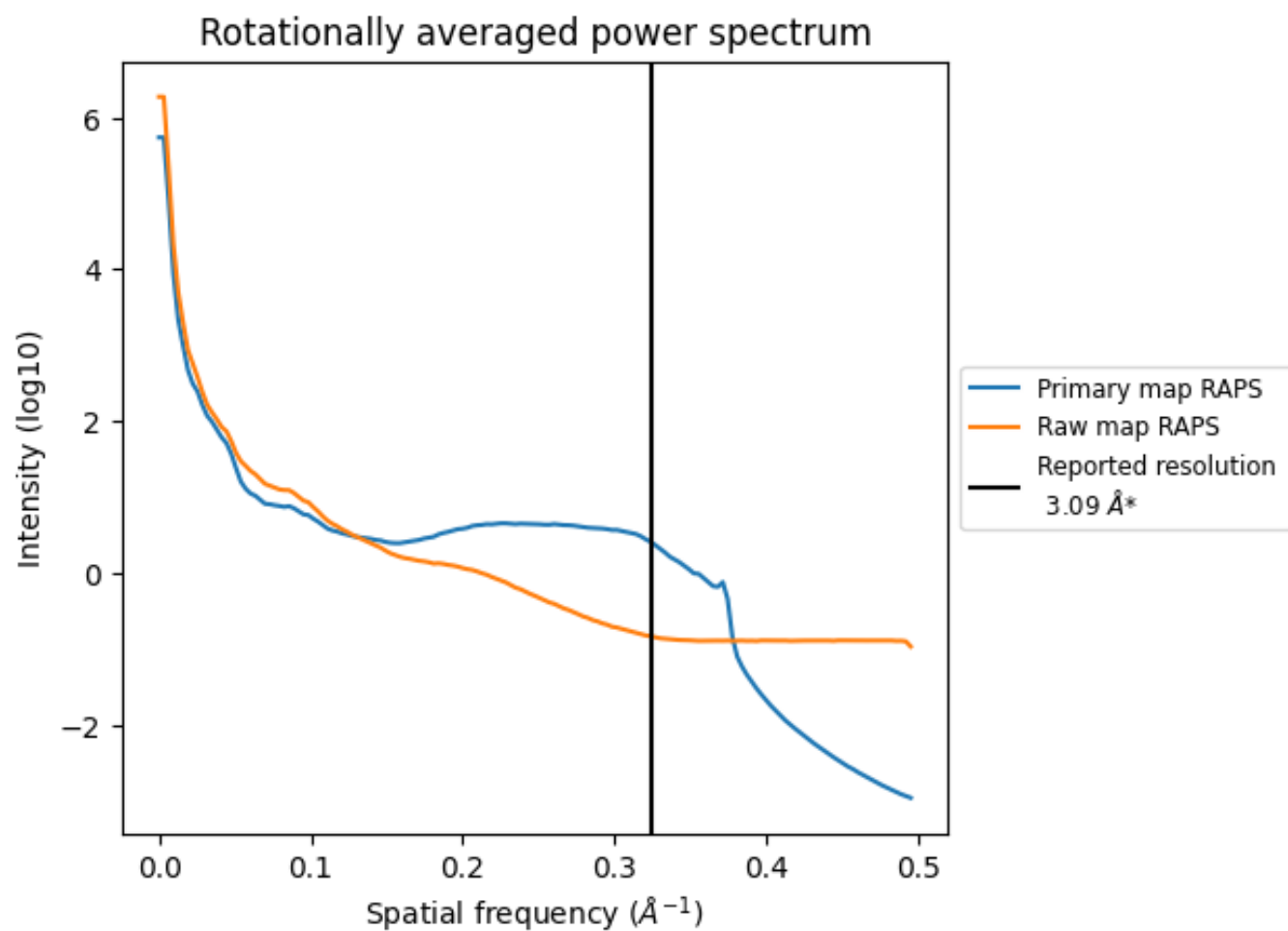
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 902 nm^3 ; this corresponds to an approximate mass of 815 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

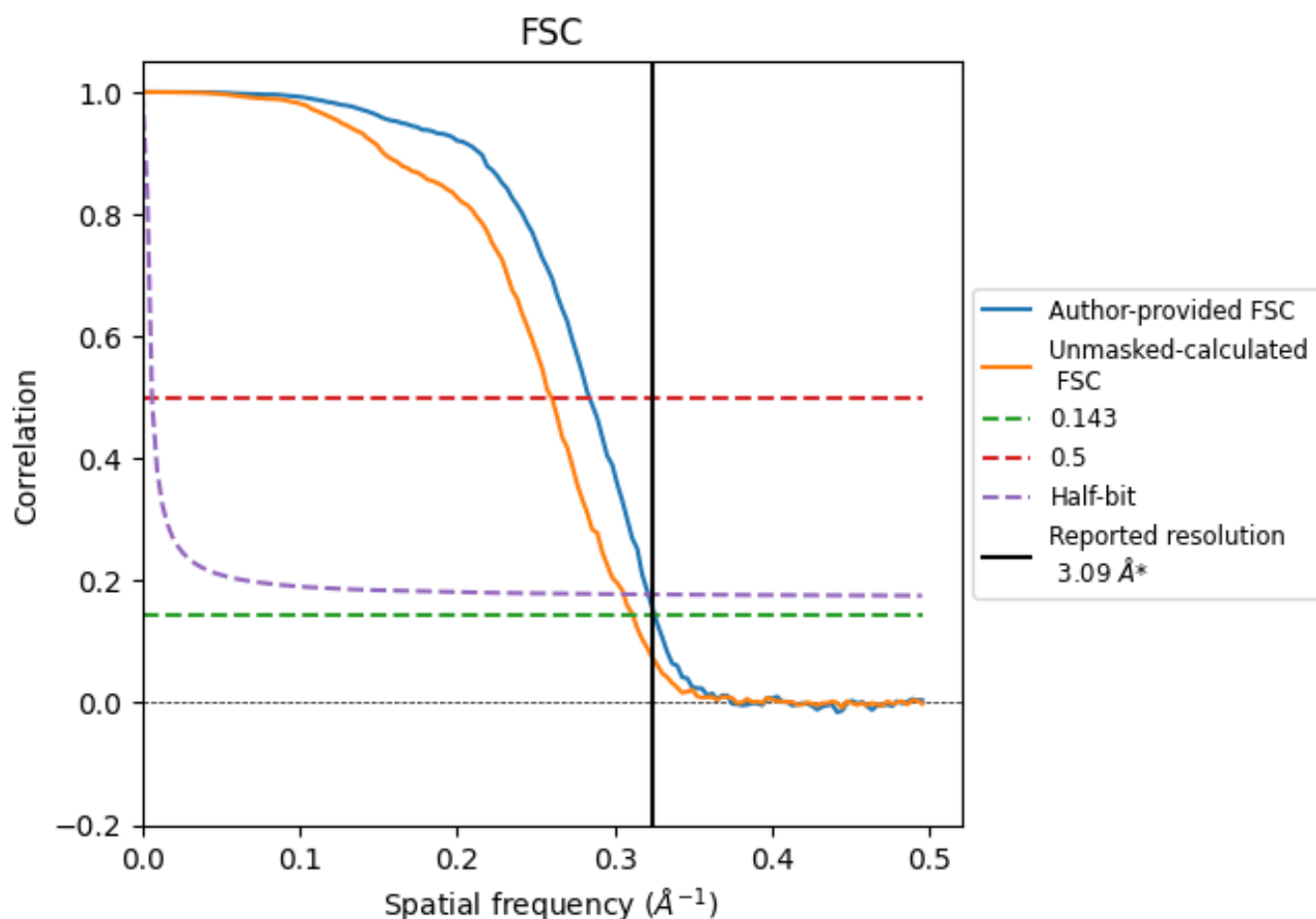


*Reported resolution corresponds to spatial frequency of 0.324 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.324 \AA^{-1}

8.2 Resolution estimates [i](#)

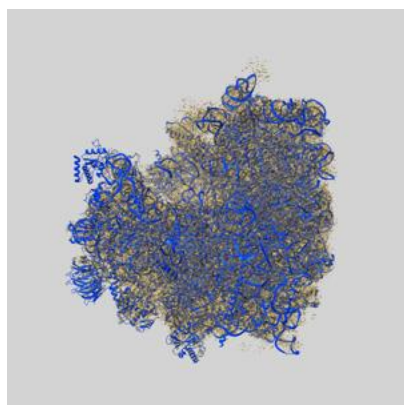
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.09	-	-
Author-provided FSC curve	3.08	3.52	3.11
Unmasked-calculated*	3.21	3.85	3.27

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

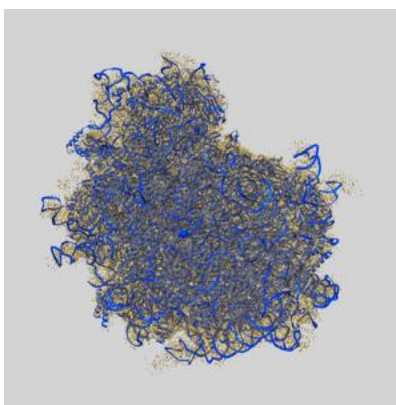
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-53307 and PDB model 9QQL. Per-residue inclusion information can be found in section 3 on page 21.

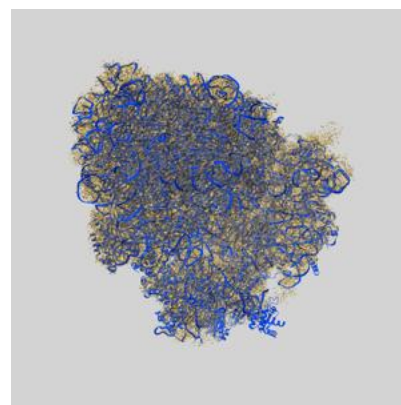
9.1 Map-model overlay [i](#)



X



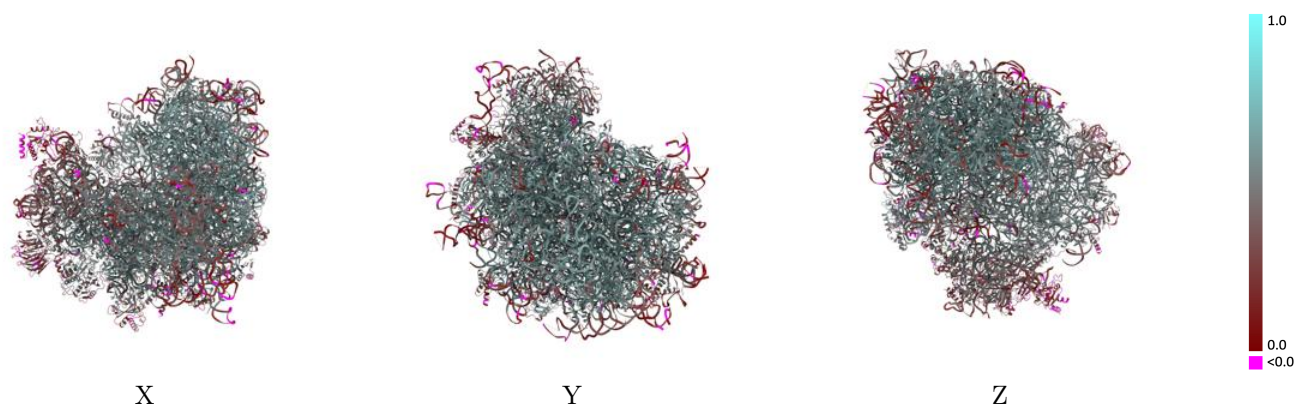
Y



Z

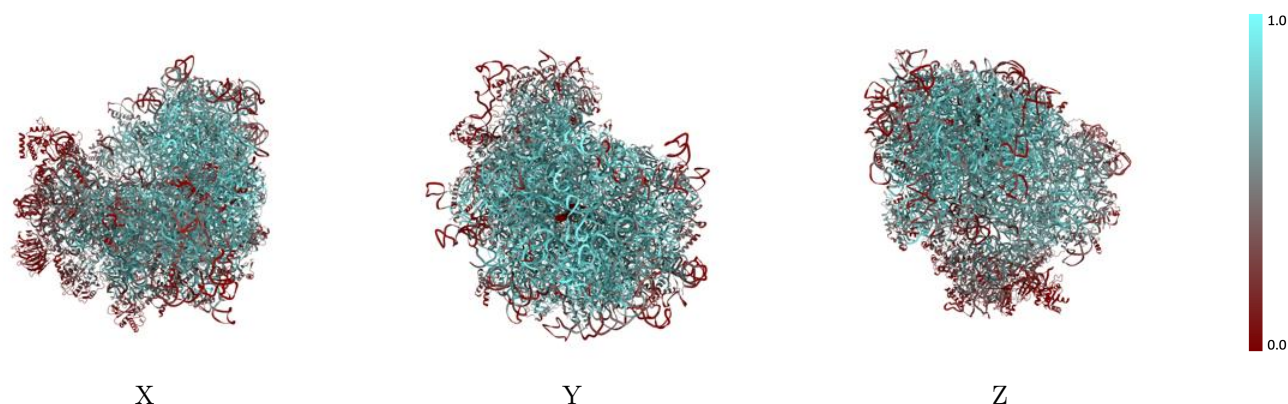
The images above show the 3D surface view of the map at the recommended contour level 0.0285 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



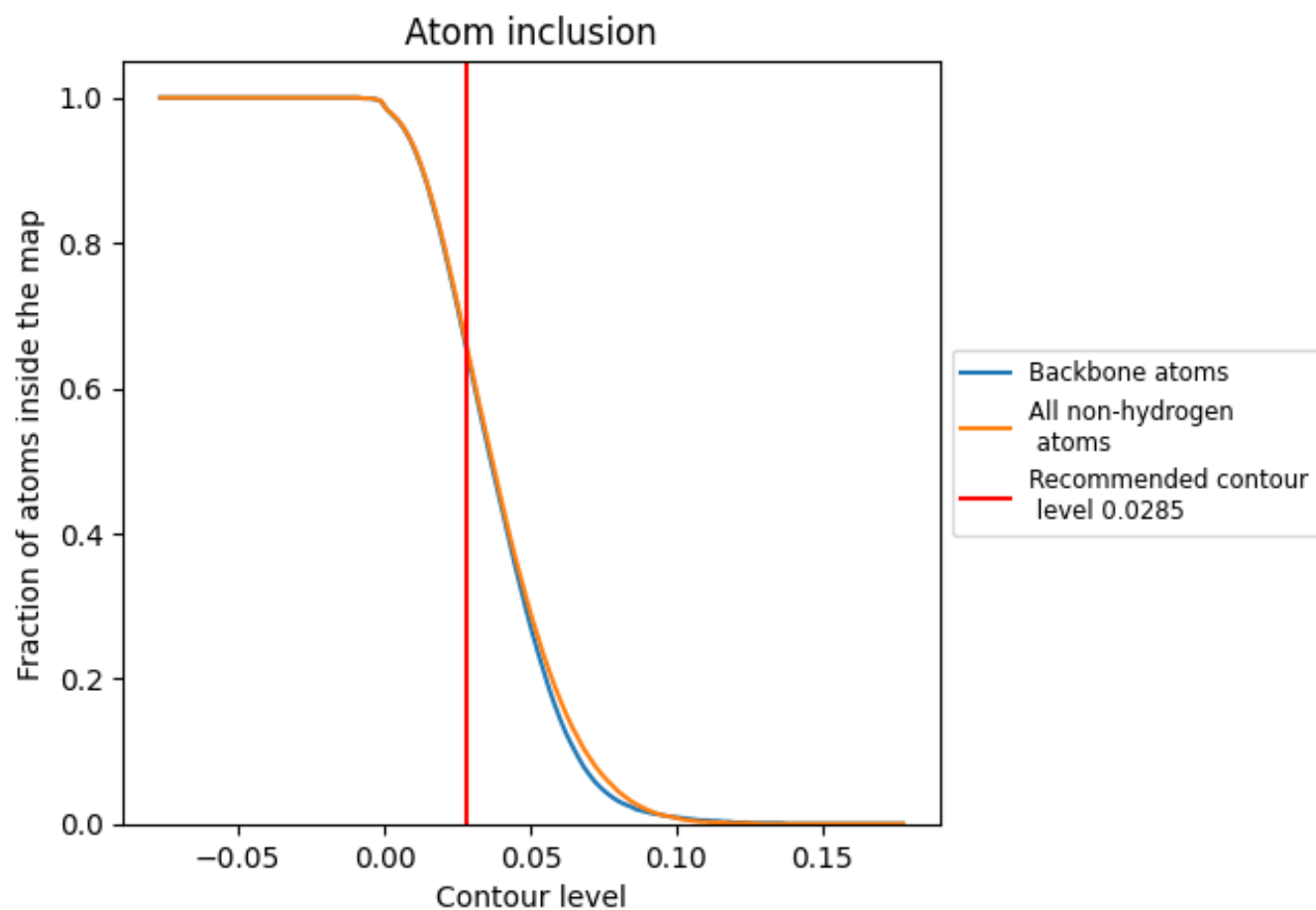
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0285).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 65% of all backbone atoms, 65% 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 (0.0285) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6530	 0.4880
A1	 0.7760	 0.5580
A2	 0.7540	 0.5080
A3	 0.2440	 0.3430
B1	 0.5550	 0.4560
B2	 0.8480	 0.5700
B3	 0.2840	 0.3660
Bv	 0.2800	 0.3410
Bx	 0.3000	 0.2900
C1	 0.6780	 0.5480
C2	 0.8210	 0.5400
C3	 0.2440	 0.3440
D1	 0.7320	 0.5430
D2	 0.8360	 0.5810
D3	 0.3730	 0.4440
E1	 0.4450	 0.4390
E2	 0.7600	 0.5640
E3	 0.6930	 0.5360
F1	 0.6790	 0.5230
F2	 0.7860	 0.5640
F3	 0.6610	 0.5240
G1	 0.6890	 0.5430
G2	 0.6070	 0.5080
G3	 0.3640	 0.3930
H1	 0.8730	 0.6030
H2	 0.5660	 0.4960
H3	 0.4540	 0.4210
I2	 0.7930	 0.5750
I3	 0.0640	 0.2400
J2	 0.8240	 0.5830
J3	 0.5720	 0.5130
K2	 0.8240	 0.5880
K3	 0.3230	 0.3830
L1	 0.0160	 0.1150
L2	 0.6880	 0.5100

















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Chain	Atom inclusion	Q-score
L3	0.4770	0.4500
M2	0.8050	0.5780
M3	0.0060	0.0970
N2	0.7250	0.5370
N3	0.6070	0.5070
O2	0.4810	0.4450
O3	0.6300	0.5040
P2	0.8070	0.5700
P3	0.6570	0.5260
Q2	0.7740	0.5610
Q3	0.3400	0.4180
R2	0.7090	0.5260
R3	0.1720	0.3040
S2	0.7010	0.5380
S3	0.4290	0.4260
T2	0.5660	0.4470
T3	0.4210	0.4090
U2	0.8130	0.5870
U3	0.0170	0.1410
V2	0.5270	0.4290
W2	0.6310	0.4900
X2	0.7130	0.5380
Y2	0.8210	0.5830
Z2	0.8530	0.5970
a2	0.7160	0.5040
b2	0.6760	0.5340
c2	0.6280	0.5100
d2	0.8620	0.5950
e2	0.4440	0.4160
f2	0.8010	0.5630
g2	0.7600	0.5520
h2	0.8180	0.5630
i2	0.7490	0.5630
j2	0.7530	0.5450
k2	0.7650	0.5580
m2	0.6740	0.4830
n2	0.1400	0.1790
o2	0.3830	0.4590
p2	0.5320	0.4770
q2	0.2700	0.3640
r2	0.4930	0.4760
s2	0.3900	0.4250

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Chain	Atom inclusion	Q-score
t2	 0.2620	 0.3650
u2	 0.5890	 0.4830
v2	 0.1620	 0.3260
w2	 0.6400	 0.4950
x2	 0.2150	 0.3400
y2	 0.3100	 0.3900
z2	 0.2300	 0.3550