



Full wwPDB EM Validation Report ⓘ

Mar 24, 2026 – 11:32 PM UTC

PDB ID : 6IP6 / pdb_00006ip6
EMDB ID : EMD-9702
Title : Cryo-EM structure of the CMV-stalled human 80S ribosome with HCV IRES (Structure iii)
Authors : Yokoyama, T.; Shigematsu, H.; Shirouzu, M.; Imataka, H.; Ito, T.
Deposited on : 2018-11-02
Resolution : 4.50 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

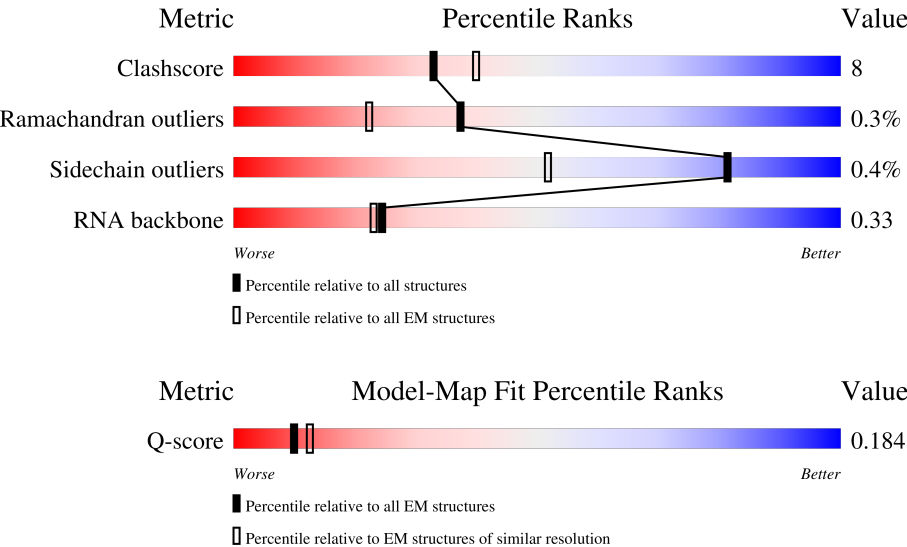
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh &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

1 Overall quality at a glance

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

The reported resolution of this entry is 4.50 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	2937 (4.00 - 5.00)

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	1A	5070	6% 31% 34% 8% 28%
2	1B	121	50% 38% 12%
3	1C	157	14% 45% 48% 7%

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Mol	Chain	Length	Quality of chain
4	1D	257	
5	1E	403	
6	1F	427	
7	1G	297	
8	1H	288	
9	2A	248	
10	2B	266	
11	2C	192	
12	2D	214	
13	2E	178	
14	2F	211	
15	2G	215	
16	2H	204	
17	2I	203	
18	2J	184	
19	2K	188	
20	2L	196	
21	2M	176	
22	2N	160	
23	2O	128	
24	2P	140	
25	2Q	157	
26	2R	156	
27	2S	145	
28	2T	136	

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Mol	Chain	Length	Quality of chain
29	2U	148	
30	2V	159	
31	2W	115	
32	2X	125	
33	2Y	135	
34	2Z	110	
35	2a	117	
36	2b	123	
37	2c	105	
38	2d	97	
39	2e	70	
40	2f	51	
41	2g	128	
42	2h	25	
43	2i	106	
44	2j	92	
45	2k	137	
46	2m	1869	
47	2n	295	
48	2o	264	
49	2p	243	
50	2q	263	
51	2r	204	
52	2s	194	
53	2t	208	

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Mol	Chain	Length	Quality of chain
54	2u	165	
55	2v	158	
56	2w	145	
57	2x	146	
58	2y	135	
59	2z	152	
60	20	145	
61	21	119	
62	3A	83	
63	3B	143	
64	3C	115	
65	3D	69	
66	3E	56	
67	3F	317	
68	3G	293	
69	3H	249	
70	3I	194	
71	3J	132	
72	3K	151	
73	3L	151	
74	3M	130	
75	3N	133	
76	3O	125	
77	3P	84	
78	3Q	59	

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Mol	Chain	Length	Quality of chain
79	3R	156	37%29%13%57%
80	zV	6	50%17%67%17%
81	zX	17	35%88%65%
82	zY	75	40%53%43%
83	zZ	290	53%20%28%8%44%

2 Entry composition

There are 83 unique types of molecules in this entry. The entry contains 219084 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1A	3667	Total	C	N	O	P	0	0
			78599	35000	14383	25550	3666		

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	1B	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

- Molecule 3 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	1C	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		

- Molecule 4 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	1D	248	Total	C	N	O	S	0	0
			1898	1189	389	314	6		

- Molecule 5 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	1E	402	Total	C	N	O	S	0	0
			3238	2060	608	556	14		

- Molecule 6 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	1F	368	Total	C	N	O	S	0	0
			2927	1840	583	489	15		

- Molecule 7 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	1G	293	Total	C	N	O	S	0	0
			2382	1507	434	427	14		

- Molecule 8 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	1H	237	Total	C	N	O	S	0	0
			1913	1228	363	318	4		

- Molecule 9 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	2A	225	Total	C	N	O	S	0	0
			1870	1202	358	301	9		

- Molecule 10 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	2B	241	Total	C	N	O	S	0	0
			1927	1228	371	324	4		

- Molecule 11 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	2C	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 12 is a protein called 60S ribosomal protein L10-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	2D	213	Total	C	N	O	S	0	0
			1711	1082	329	285	15		

- Molecule 13 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	2E	176	Total	C	N	O	S	0	0
			1410	888	263	253	6		

- Molecule 14 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	2F	210	Total	C	N	O	S	0	0
			1701	1064	352	281	4		

- Molecule 15 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	2G	139	Total	C	N	O	S	0	0
			1138	730	218	183	7		

- Molecule 16 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	2H	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 17 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	2I	201	Total	C	N	O	S	0	0
			1650	1063	321	261	5		

- Molecule 18 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	2J	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 19 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	2K	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 20 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	2L	187	Total	C	N	O	S	0	0
			1566	971	336	250	9		

- Molecule 21 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	2M	175	Total	C	N	O	S	0	0
			1453	925	283	235	10		

- Molecule 22 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	2N	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 23 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	2O	101	Total	C	N	O	S	0	0
			825	529	144	150	2		

- Molecule 24 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	2P	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 25 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	2Q	124	Total	C	N	O	S	0	0
			1015	634	207	170	4		

- Molecule 26 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	2R	119	Total	C	N	O	S	0	0
			976	625	184	166	1		

- Molecule 27 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	2S	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 28 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	2T	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 29 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	2U	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	2V	109	Total	C	N	O	S	0	0
			876	546	189	137	4		

- Molecule 31 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	2W	98	Total	C	N	O	S	0	0
			764	485	135	138	6		

- Molecule 32 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	2X	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 33 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	2Y	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 34 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	2Z	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 35 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	2a	113	Total	C	N	O	S	0	0
			895	560	183	146	6		

- Molecule 36 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	2b	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 37 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	2c	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 38 is a protein called 60S ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	2d	86	Total	C	N	O	S	0	0
			705	434	155	111	5		

- Molecule 39 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	2e	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 40 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	2f	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 41 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	2g	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 42 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	2h	24	Total	C	N	O	S	0	0
			230	139	62	26	3		

- Molecule 43 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	2i	105	Total	C	N	O	S	0	0
			862	542	175	139	6		

- Molecule 44 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	2j	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 45 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	2k	125	Total	C	N	O	S	0	0
			1002	622	207	168	5		

- Molecule 46 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	2m	1742	Total	C	N	O	P	0	0
			36900	16458	6595	12106	1741		

- Molecule 47 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	2n	221	Total	C	N	O	S	0	0
			1741	1106	305	322	8		

- Molecule 48 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	2o	214	Total	C	N	O	S	0	0
			1738	1103	310	311	14		

- Molecule 49 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	2p	227	Total	C	N	O	S	0	0
			1765	1125	317	315	8		

- Molecule 50 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	2q	262	Total	C	N	O	S	0	0
			2076	1324	386	358	8		

- Molecule 51 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	2r	187	Total	C	N	O	S	0	0
			1479	924	282	266	7		

- Molecule 52 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	2s	189	Total	C	N	O	S	0	0
			1521	969	280	271	1		

- Molecule 53 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	2t	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

- Molecule 54 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	2u	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

- Molecule 55 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	2v	153	Total	C	N	O	S	0	0
			1247	793	234	214	6		

- Molecule 56 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	2w	97	Total	C	N	O	S	0	0
			804	505	155	138	6		

- Molecule 57 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	2x	146	Total	C	N	O	S	0	0
			1158	736	218	200	4		

- Molecule 58 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	2y	132	Total	C	N	O	S	0	0
			1072	673	199	195	5		

- Molecule 59 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	2z	150	Total	C	N	O	S	0	0
			1235	776	250	208	1		

- Molecule 60 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	20	143	Total	C	N	O	S	0	0
			1112	697	214	198	3		

- Molecule 61 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	21	104	Total	C	N	O	S	0	0
			821	514	155	148	4		

- Molecule 62 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	3A	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

- Molecule 63 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	3B	141	Total	C	N	O	S	0	0
			1098	693	219	183	3		

- Molecule 64 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	3C	107	Total	C	N	O	S	0	0
			847	528	176	138	5		

- Molecule 65 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	3D	64	Total	C	N	O	S	0	0
			506	308	102	94	2		

- Molecule 66 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	3E	53	Total	C	N	O	S	0	0
			445	278	90	72	5		

- Molecule 67 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	3F	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 68 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	3G	222	Total	C	N	O	S	0	0
			1725	1115	298	302	10		

- Molecule 69 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	3H	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

- Molecule 70 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	3I	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 71 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	3J	122	Total	C	N	O	S	0	0
			952	596	169	179	8		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
3J	52	GLN	LEU	conflict	UNP P25398
3J	69	LEU	CYS	conflict	UNP P25398
3J	99	ASN	LYS	conflict	UNP P25398

- Molecule 72 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	3K	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 73 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	3L	140	Total	C	N	O	S	0	0
			1049	642	204	197	6		

- Molecule 74 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	3M	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 75 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	3N	131	Total	C	N	O	S	0	0
			1065	673	209	178	5		

- Molecule 76 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	3O	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 77 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	3P	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 78 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	3Q	58	Total	C	N	O	S	0	0
			459	284	100	74	1		

- Molecule 79 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	3R	67	Total	C	N	O	S	0	0
			548	346	102	93	7		

- Molecule 80 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	zv	6	Total	C	N	O	P	0	0
			123	55	19	43	6		

- Molecule 81 is a protein called nascent peptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	zx	17	Total	C	N	O	S	0	0
			129	86	20	22	1		

- Molecule 82 is a RNA chain called P-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	zy	75	Total	C	N	O	P	0	0
			1599	713	284	528	74		

- Molecule 83 is a RNA chain called HCV-IRES RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	zz	163	Total	C	N	O	P	0	0
			3492	1553	627	1149	163		



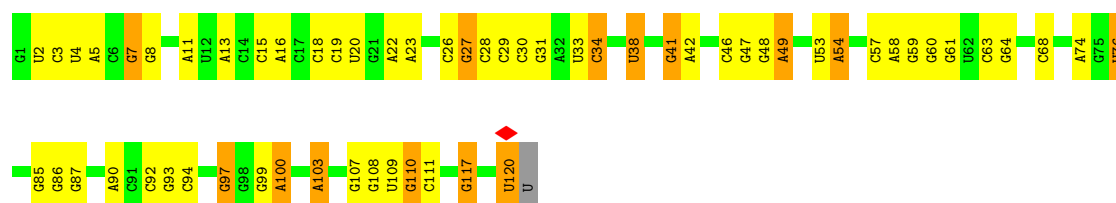
G2684	G2579	G2809	G2364	G2441	G2583	G2104	A2029	G1988	U1889	U1800	G1724
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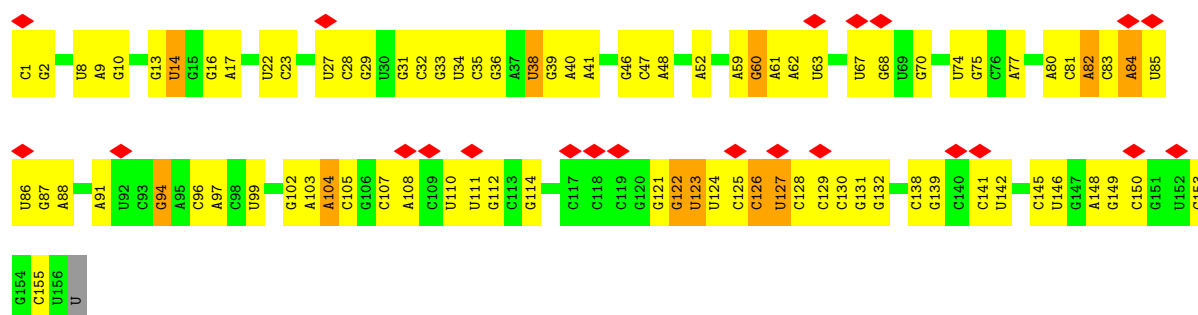




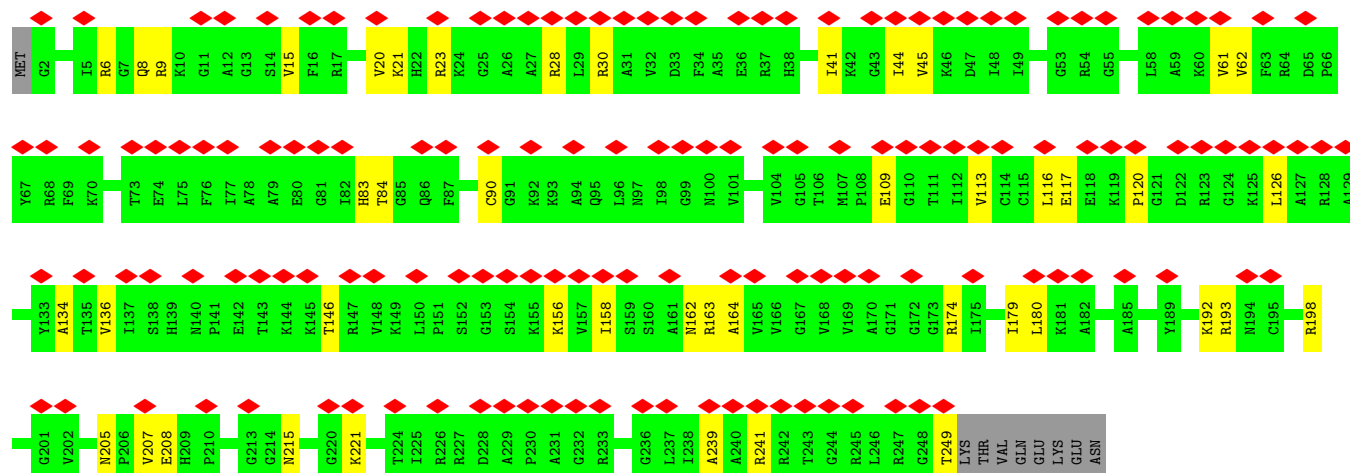
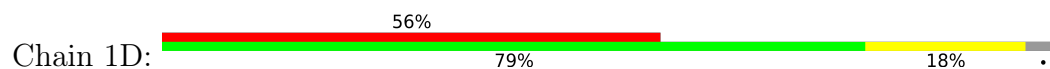
• Molecule 2: 5S ribosomal RNA



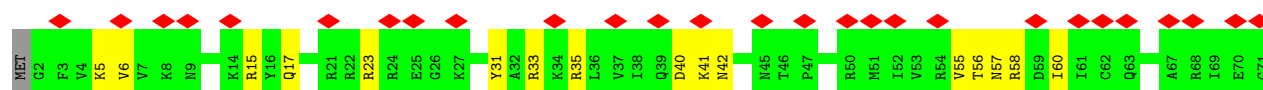
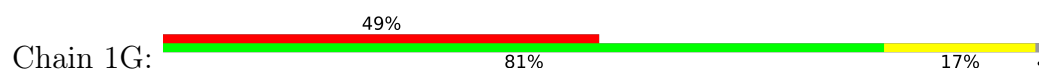
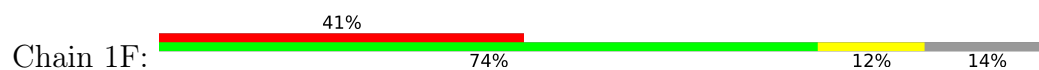
• Molecule 3: 5.8S ribosomal RNA



• Molecule 4: 60S ribosomal protein L8

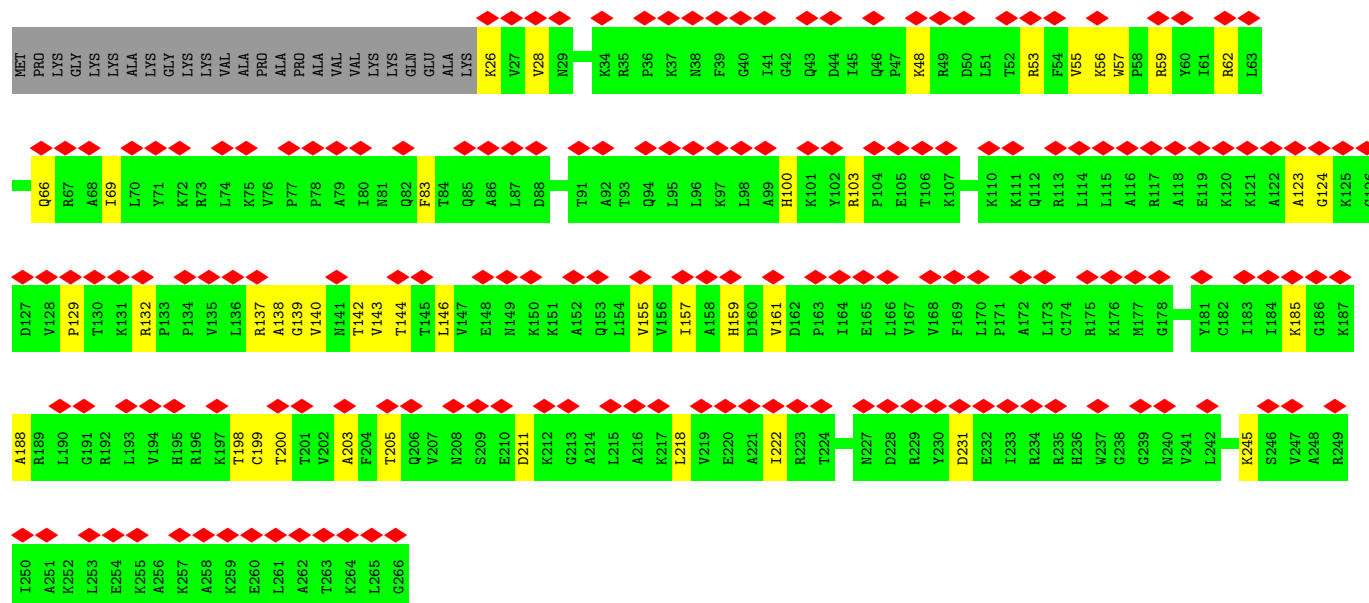
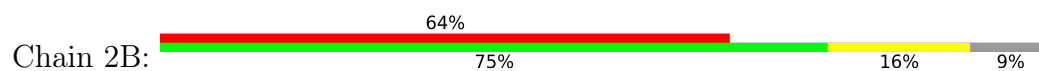


Chain 1E:

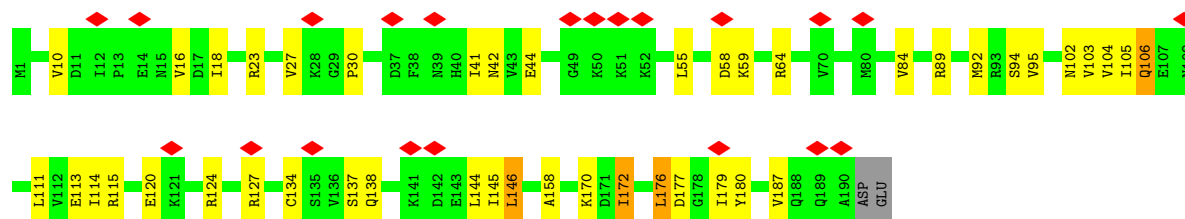
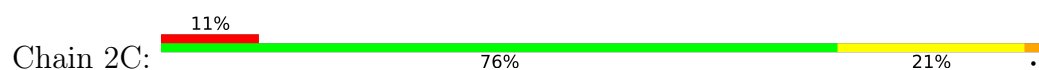




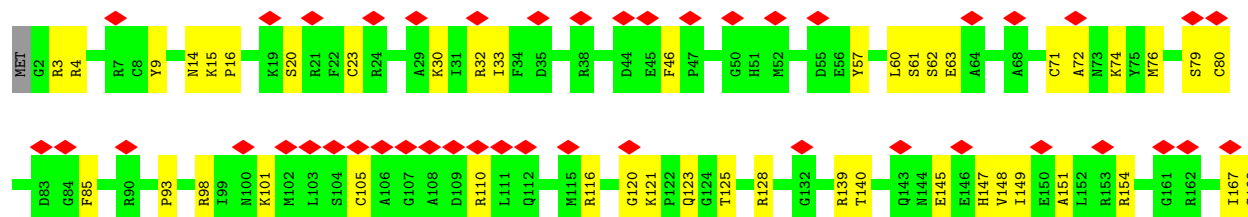
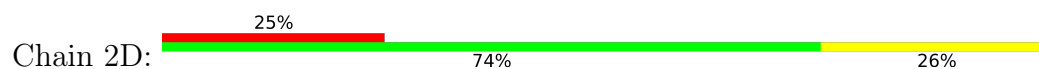
• Molecule 10: 60S ribosomal protein L7a



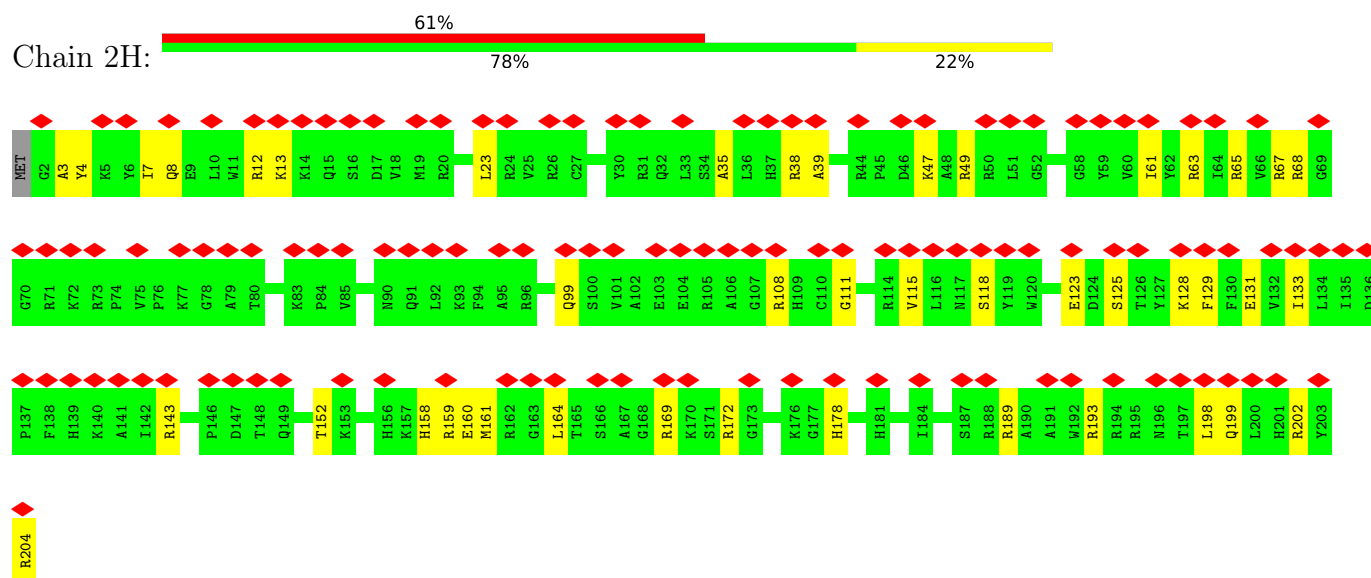
• Molecule 11: 60S ribosomal protein L9



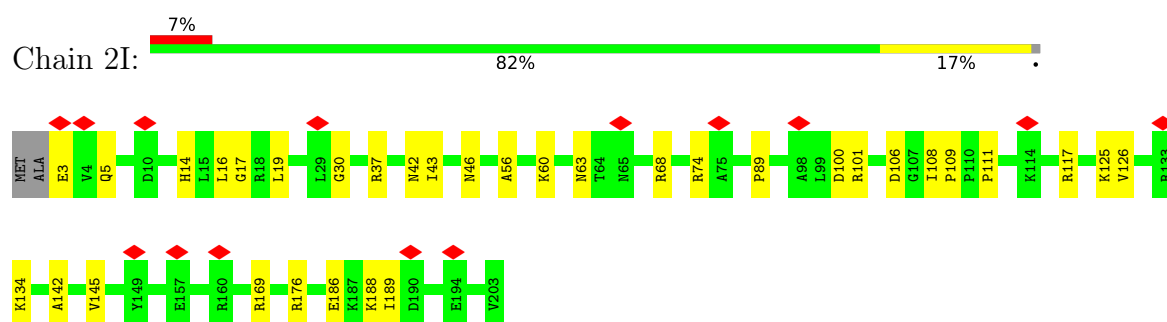
• Molecule 12: 60S ribosomal protein L10-like



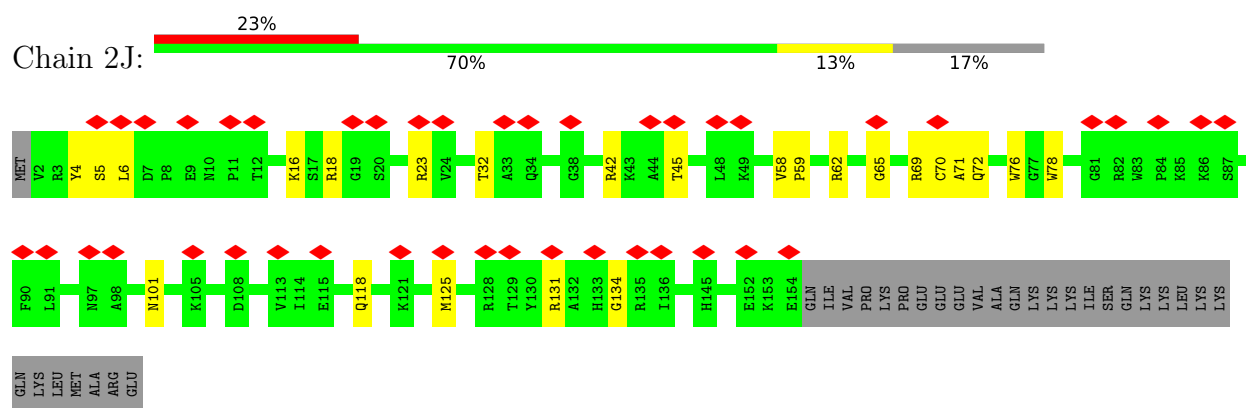
- Molecule 16: 60S ribosomal protein L15



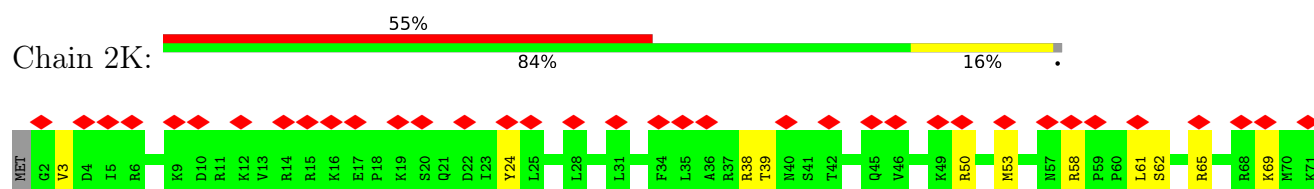
- Molecule 17: 60S ribosomal protein L13a

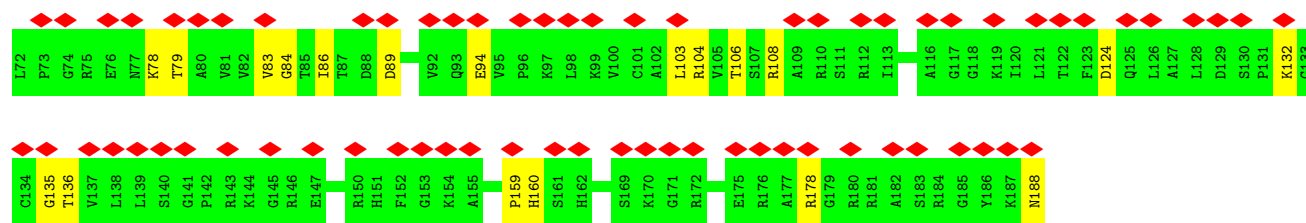


- Molecule 18: 60S ribosomal protein L17

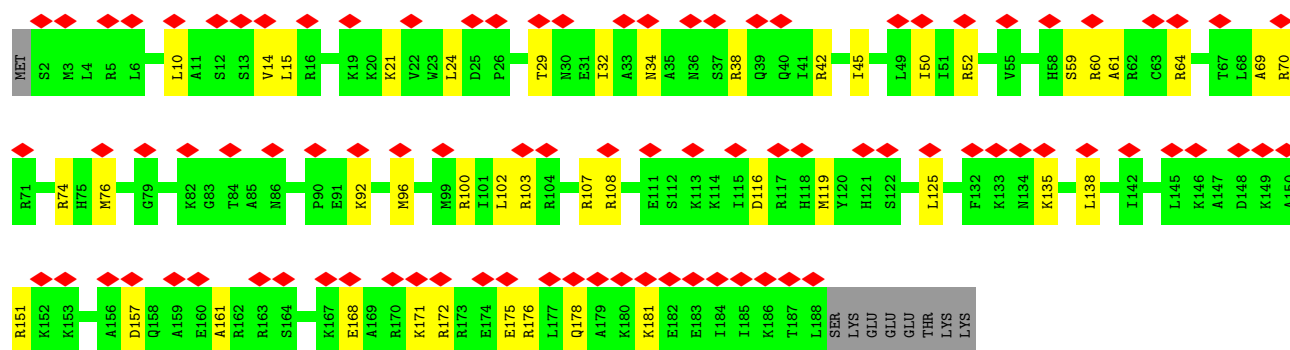
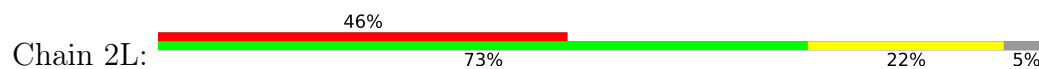


- Molecule 19: 60S ribosomal protein L18

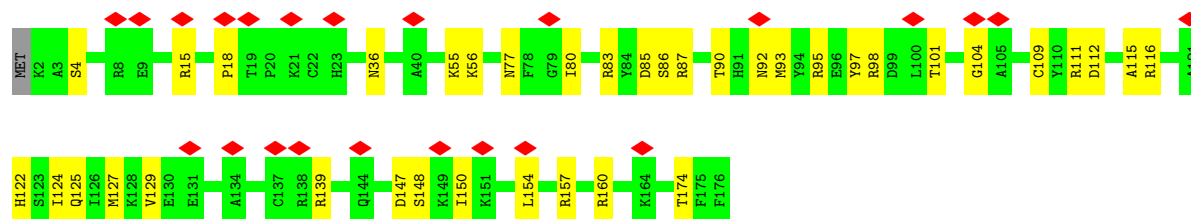
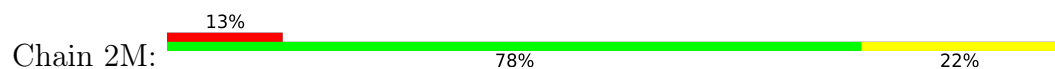




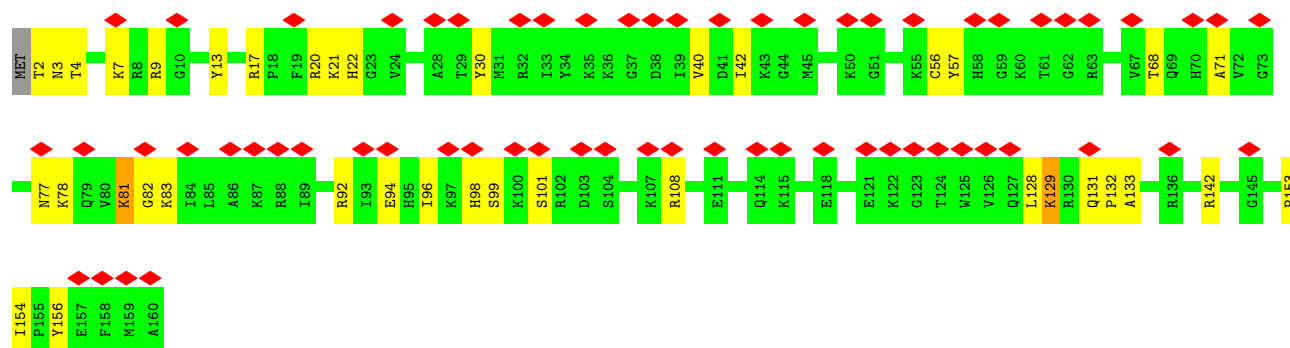
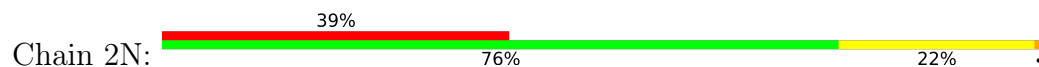
• Molecule 20: 60S ribosomal protein L19



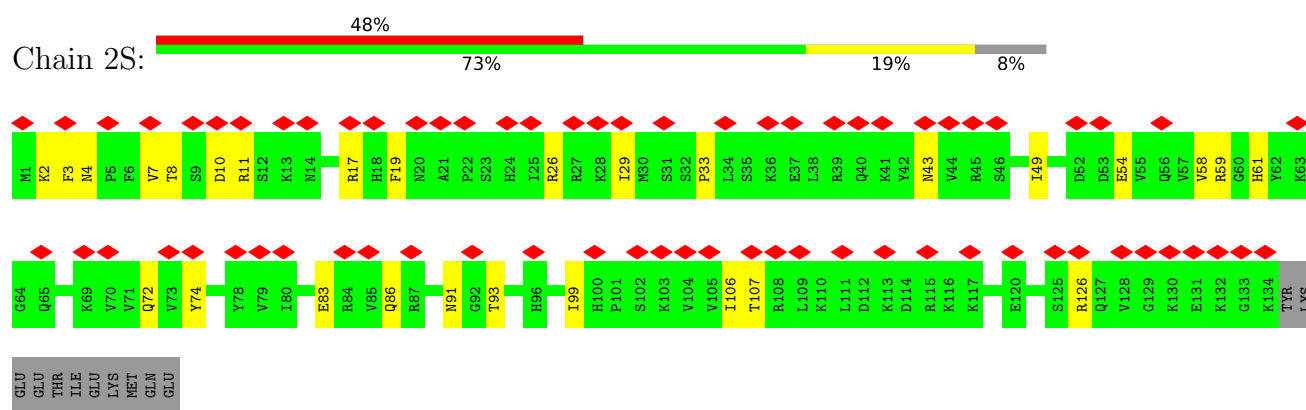
• Molecule 21: 60S ribosomal protein L18a



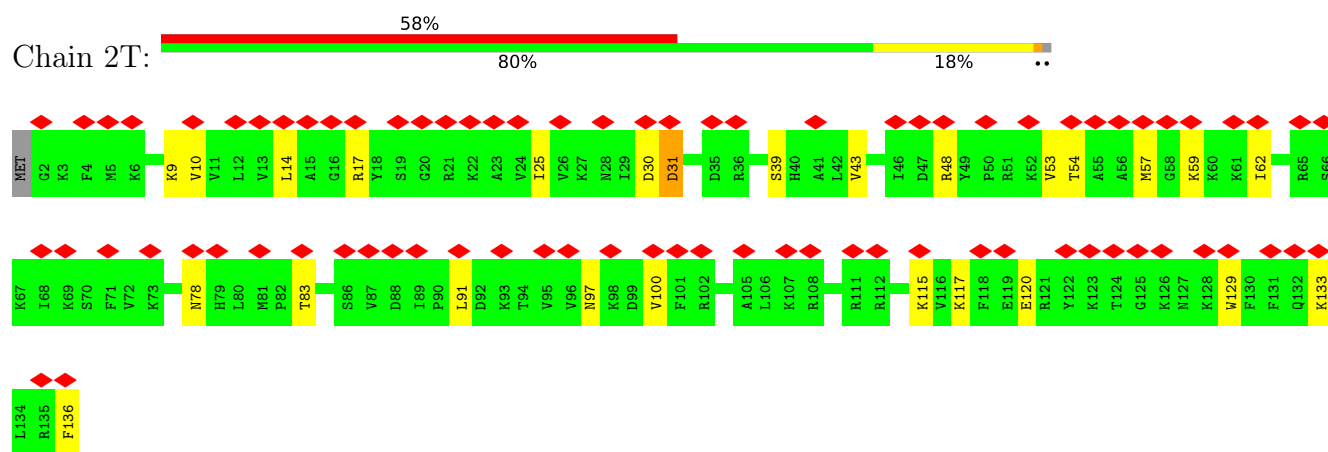
• Molecule 22: 60S ribosomal protein L21



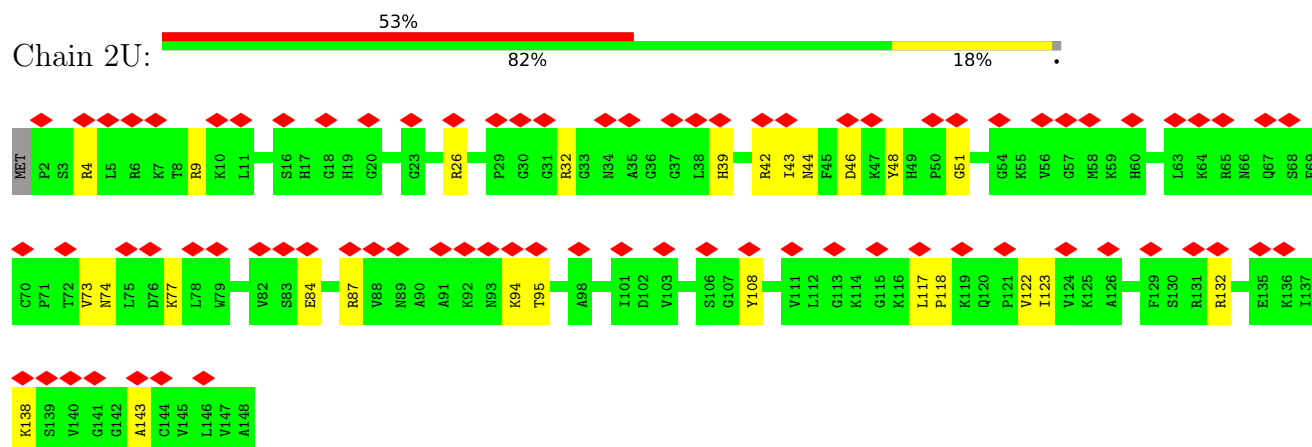
• Molecule 23: 60S ribosomal protein L22



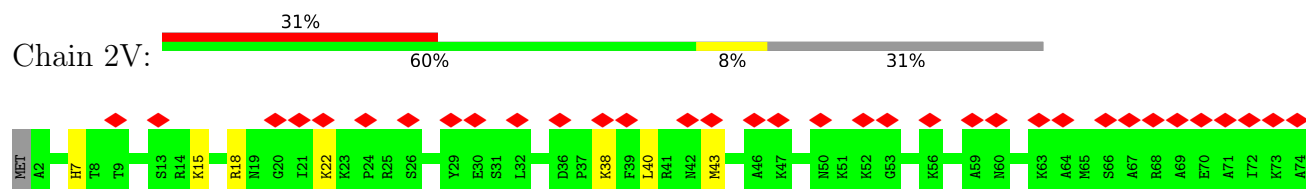
• Molecule 28: 60S ribosomal protein L27



• Molecule 29: 60S ribosomal protein L27a

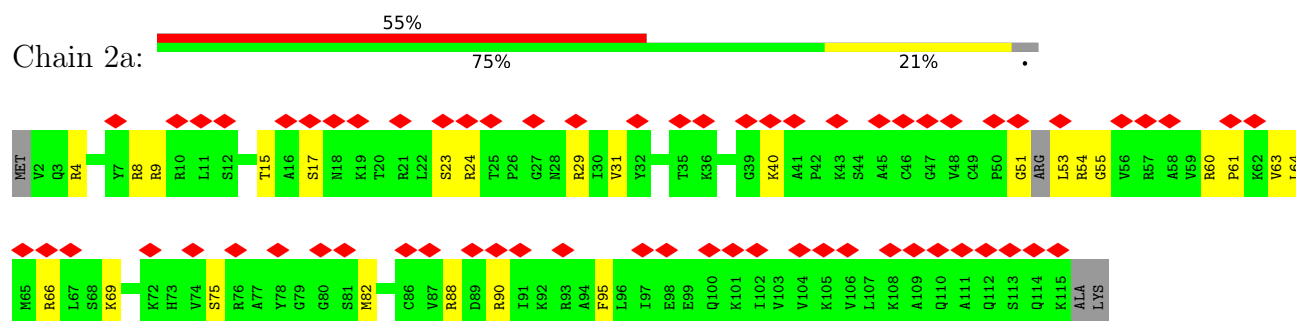


• Molecule 30: 60S ribosomal protein L29

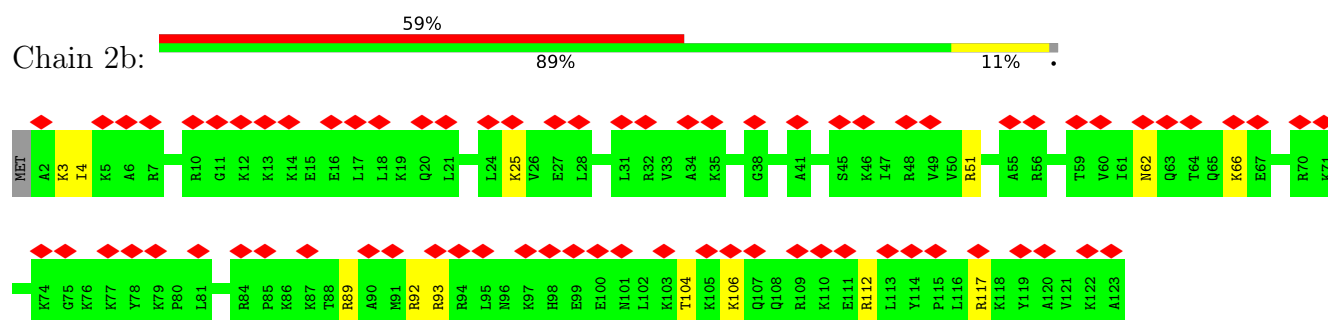




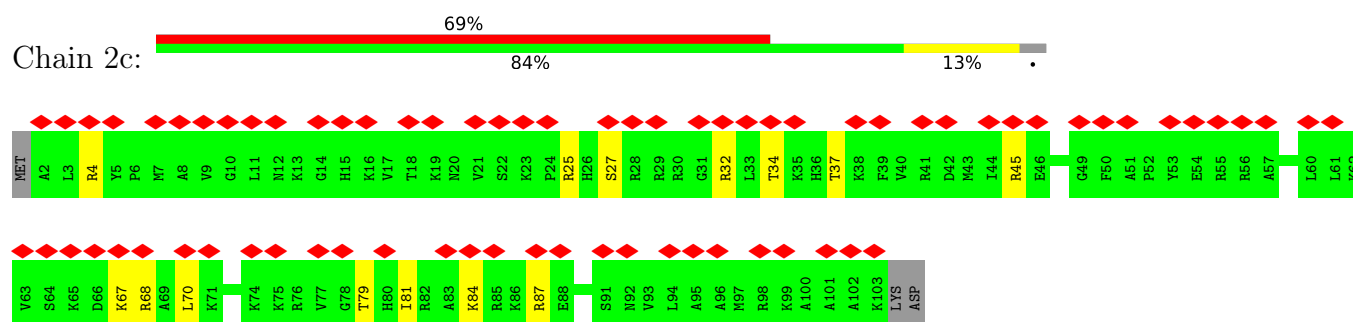
- Molecule 35: 60S ribosomal protein L34



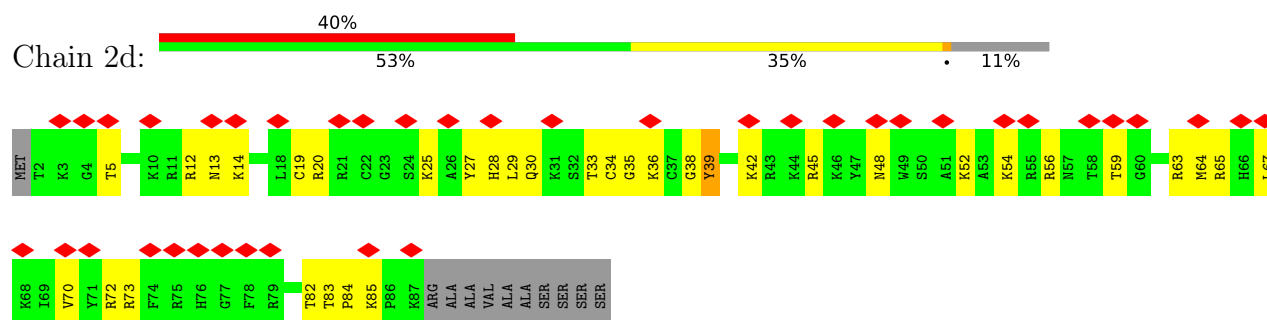
- Molecule 36: 60S ribosomal protein L35



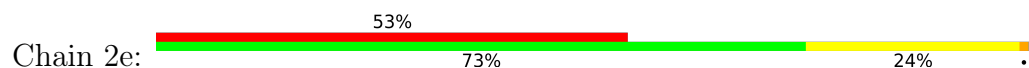
- Molecule 37: 60S ribosomal protein L36

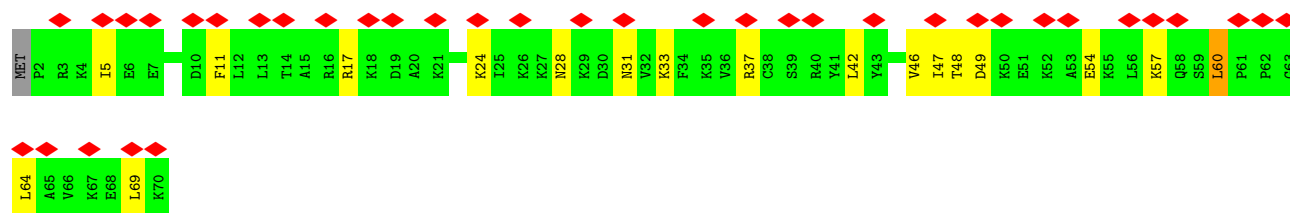


- Molecule 38: 60S ribosomal protein L37

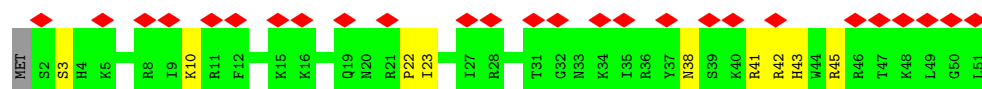
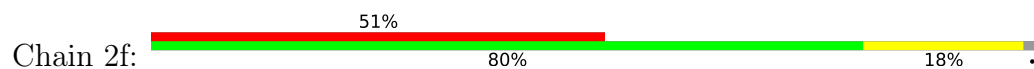


- Molecule 39: 60S ribosomal protein L38

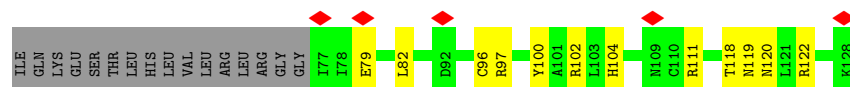
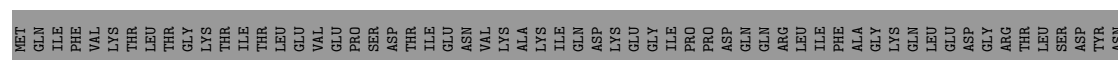




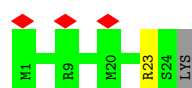
- Molecule 40: 60S ribosomal protein L39



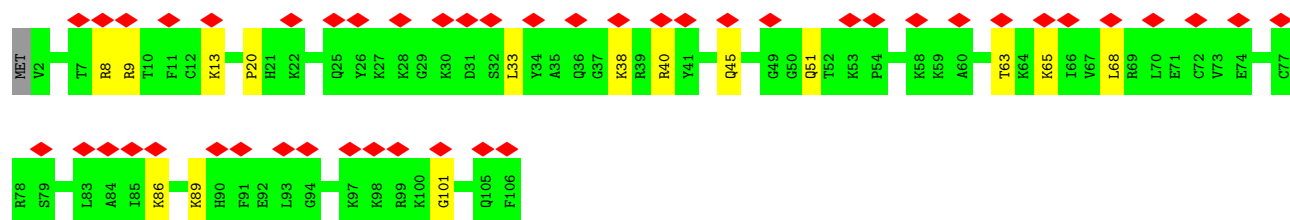
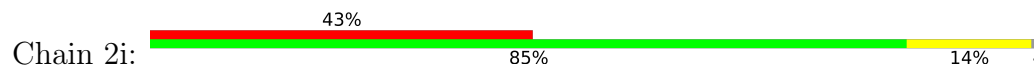
- Molecule 41: Ubiquitin-60S ribosomal protein L40



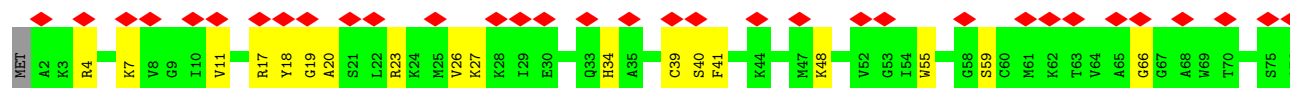
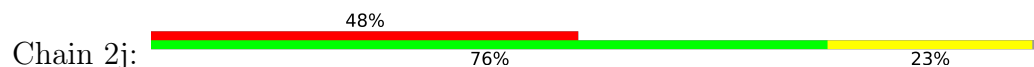
- Molecule 42: 60S ribosomal protein L41



- Molecule 43: 60S ribosomal protein L36a

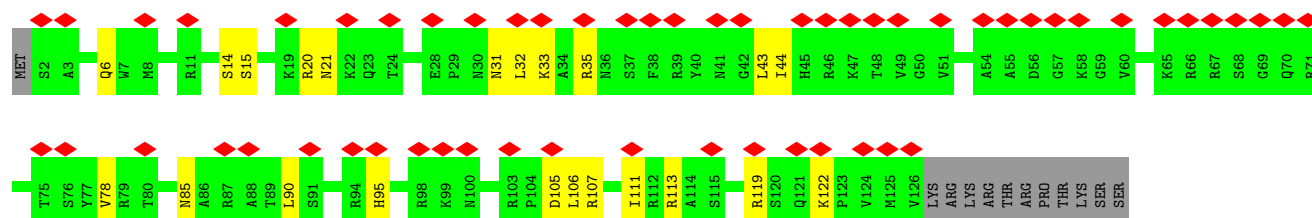
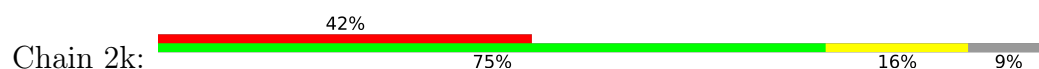


- Molecule 44: 60S ribosomal protein L37a

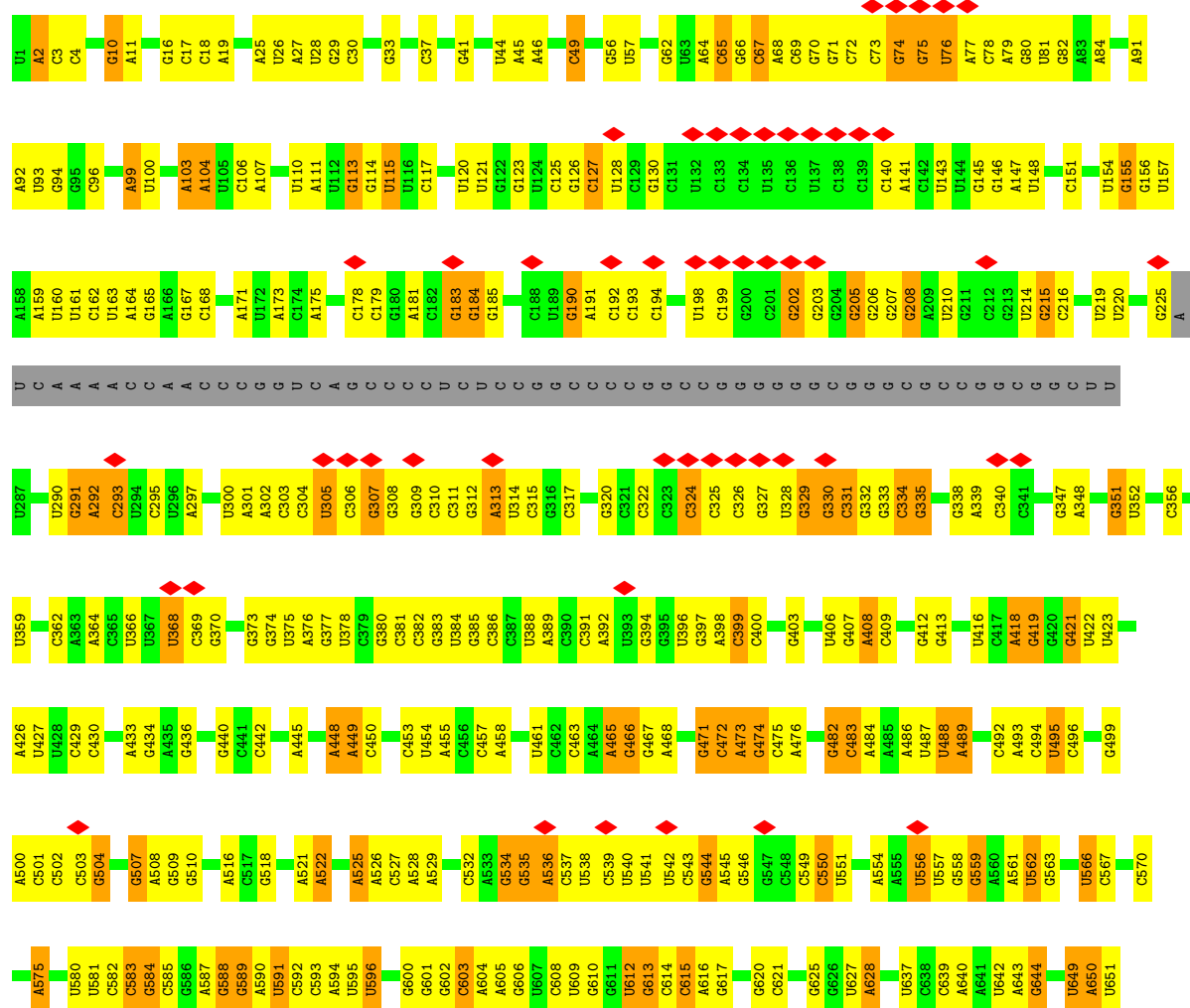


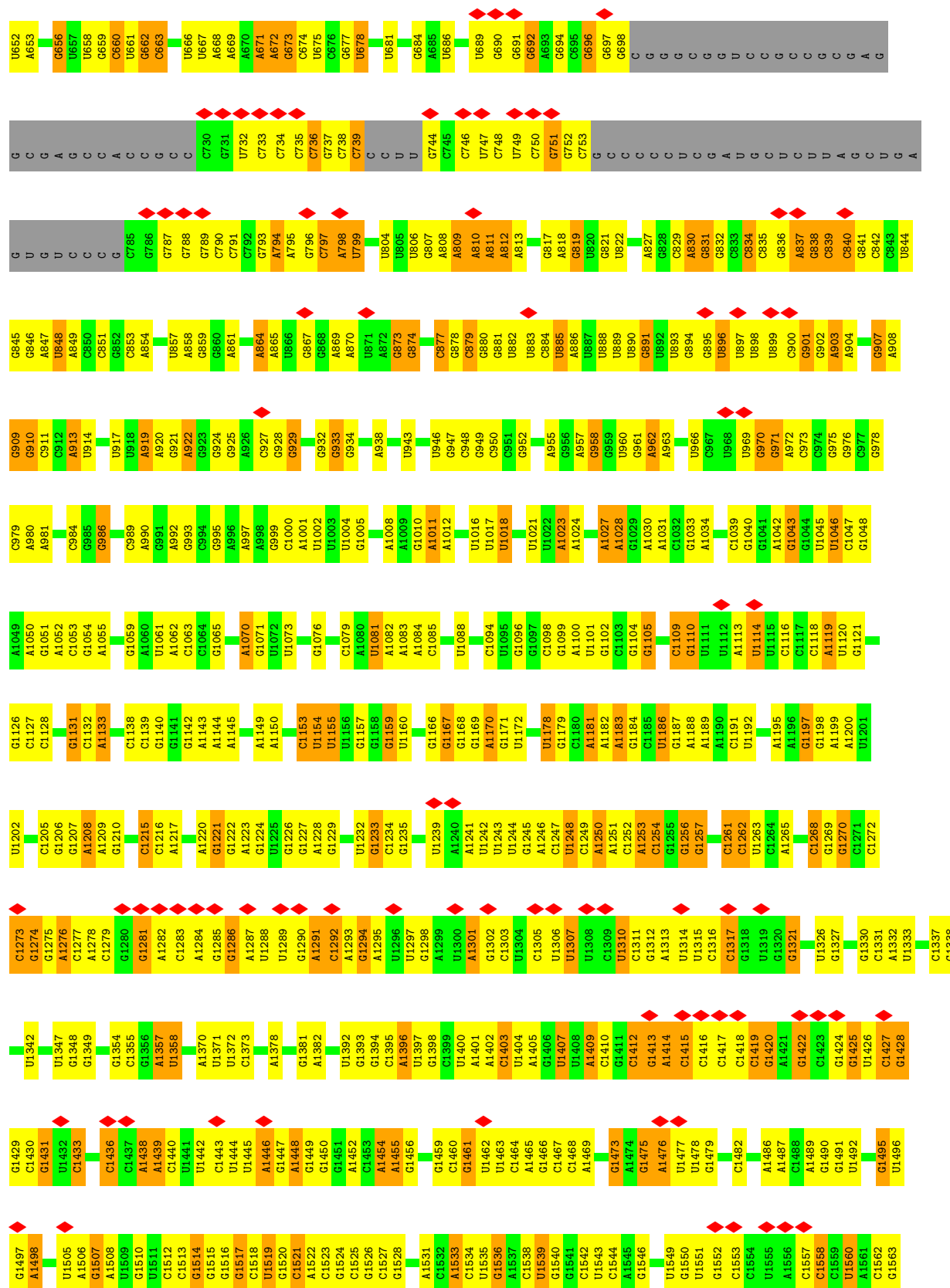


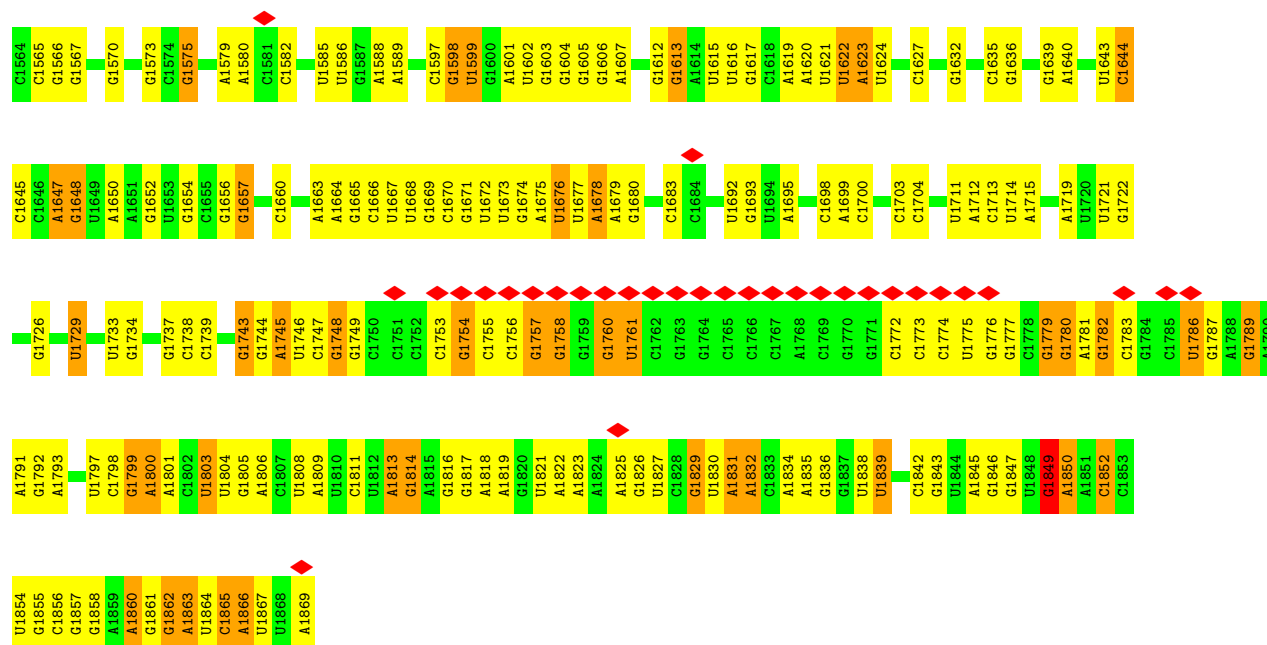
• Molecule 45: 60S ribosomal protein L28



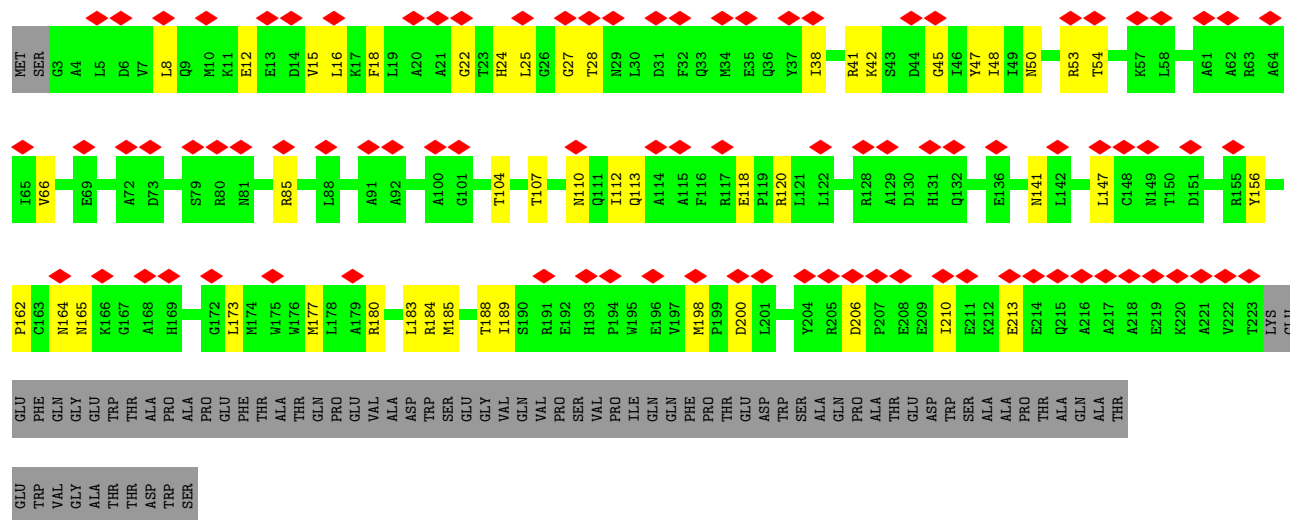
• Molecule 46: 18S ribosomal RNA



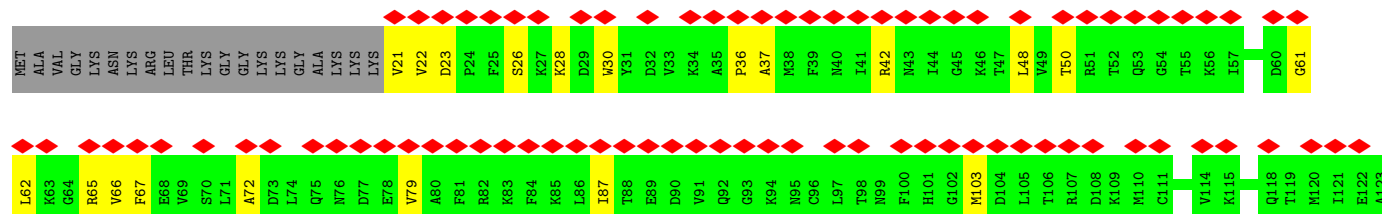


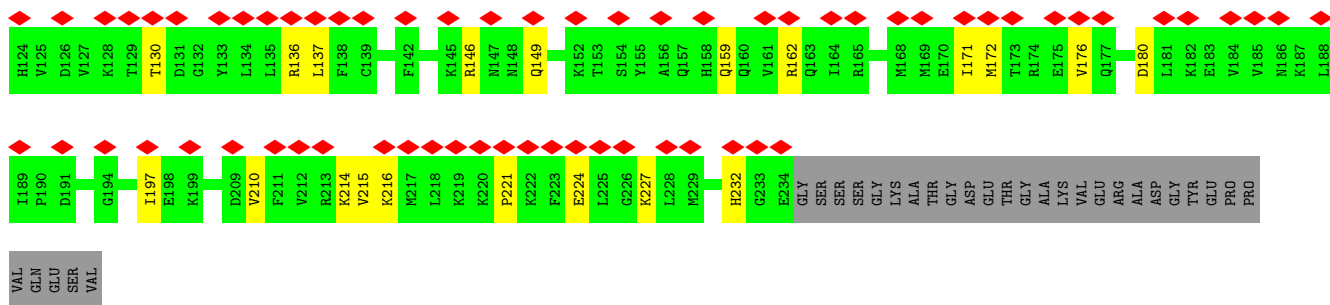


• Molecule 47: 40S ribosomal protein SA

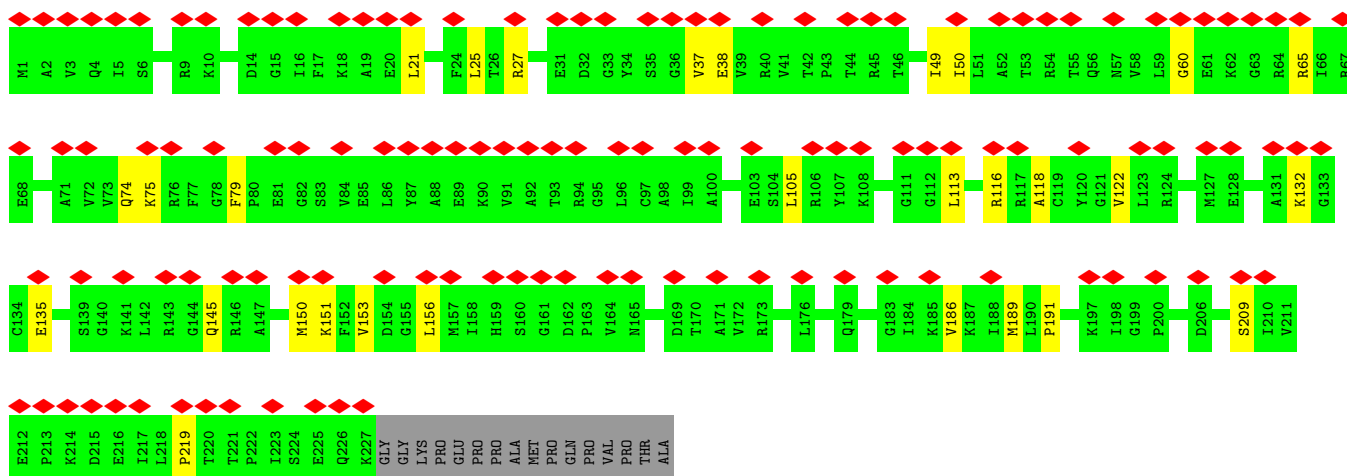
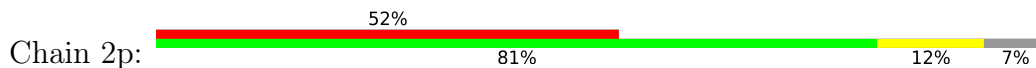


• Molecule 48: 40S ribosomal protein S3a

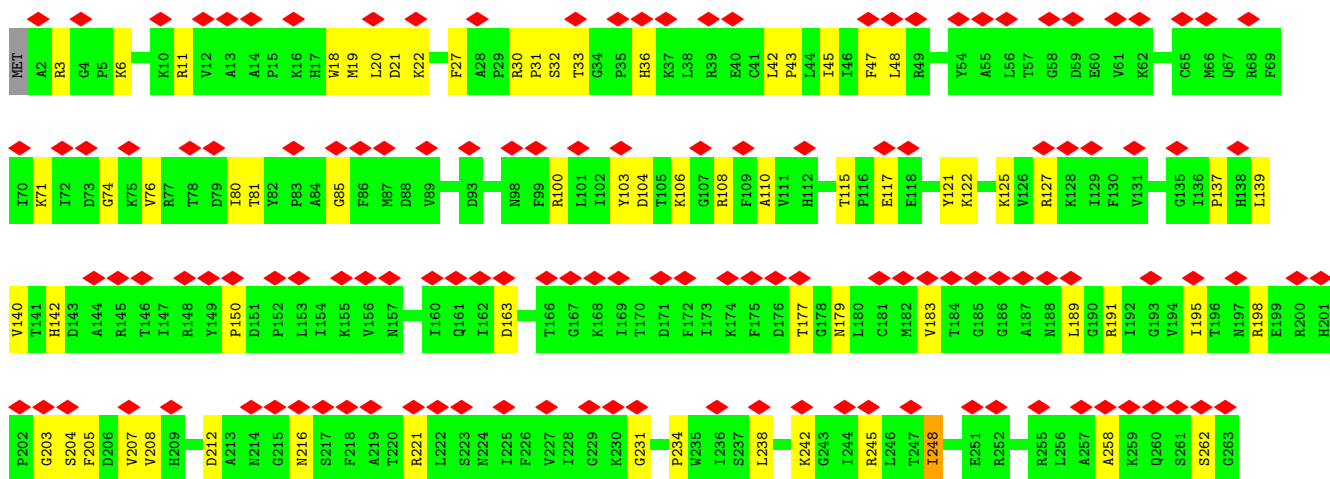
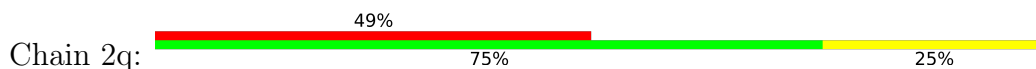




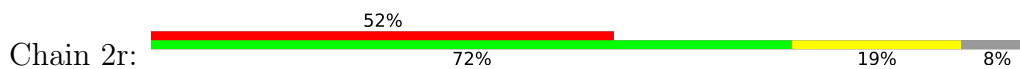
• Molecule 49: 40S ribosomal protein S3

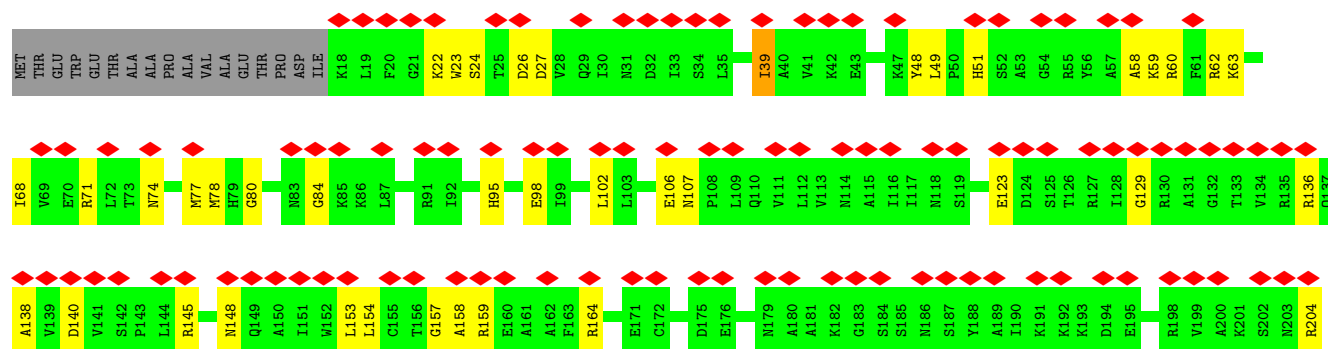


• Molecule 50: 40S ribosomal protein S4, X isoform

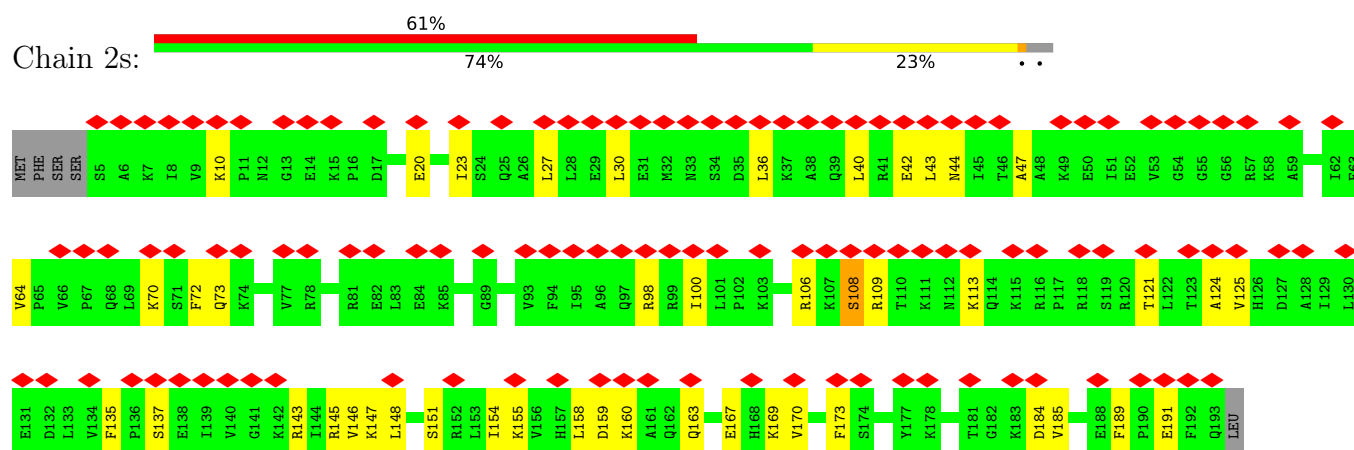


• Molecule 51: 40S ribosomal protein S5

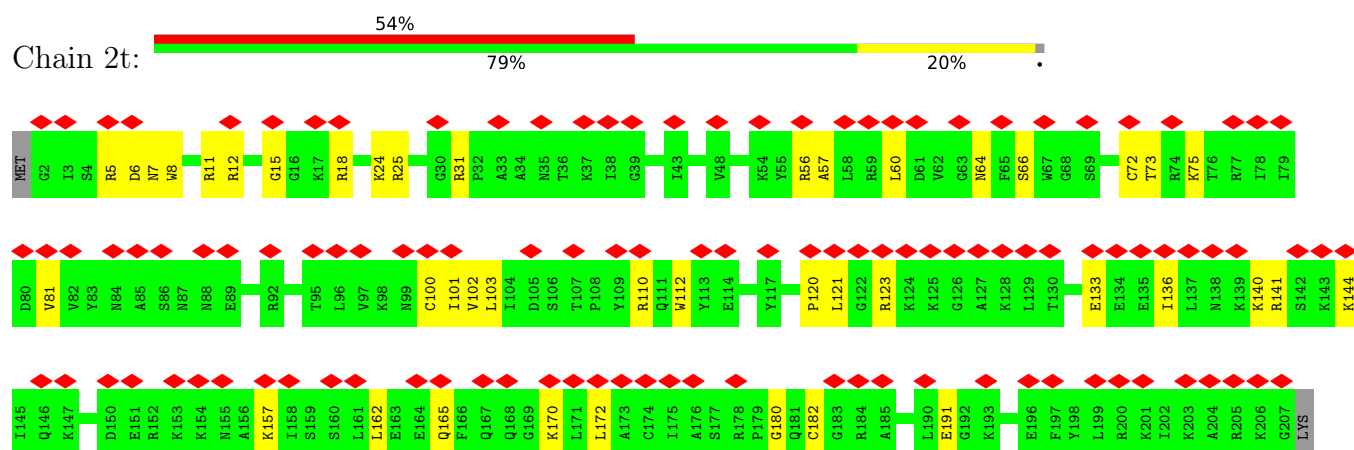




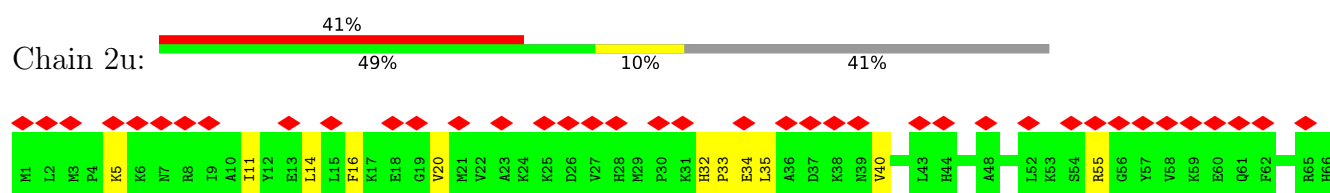
• Molecule 52: 40S ribosomal protein S7

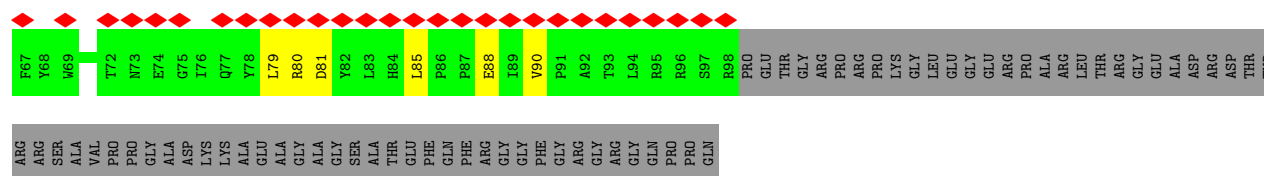


• Molecule 53: 40S ribosomal protein S8



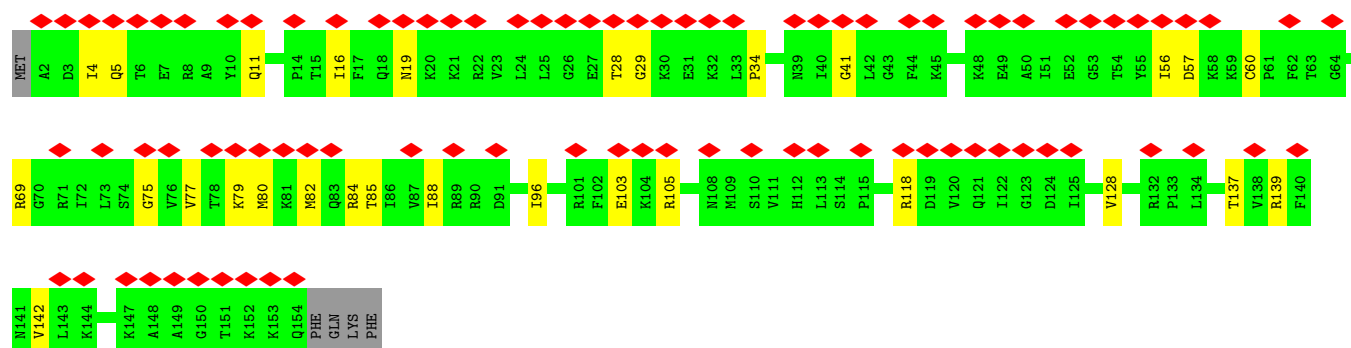
• Molecule 54: 40S ribosomal protein S10





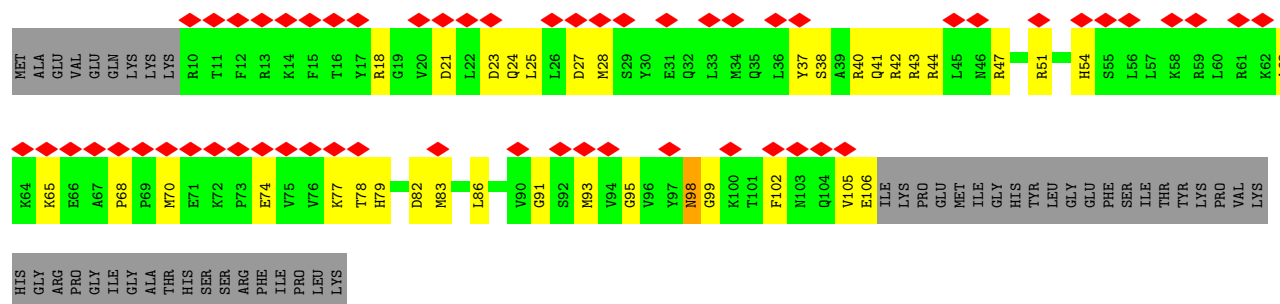
• Molecule 55: 40S ribosomal protein S11

Chain 2v:



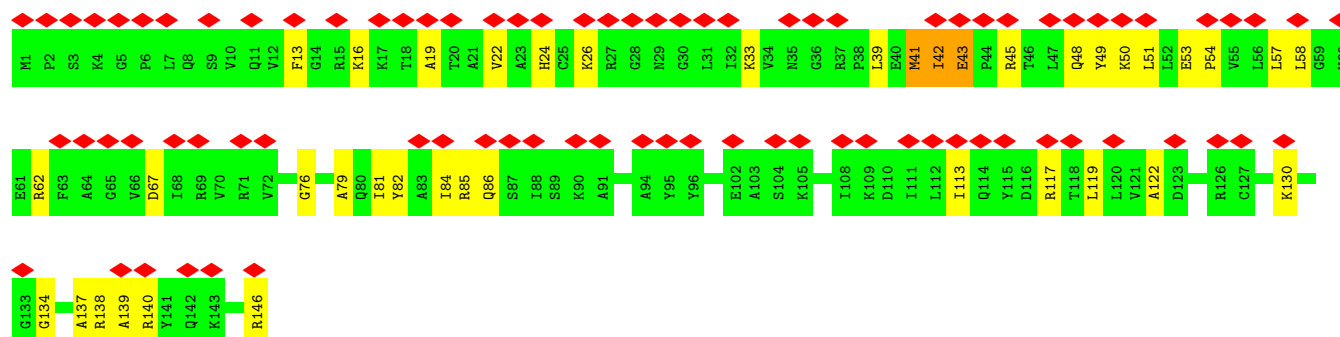
• Molecule 56: 40S ribosomal protein S15

Chain 2w:

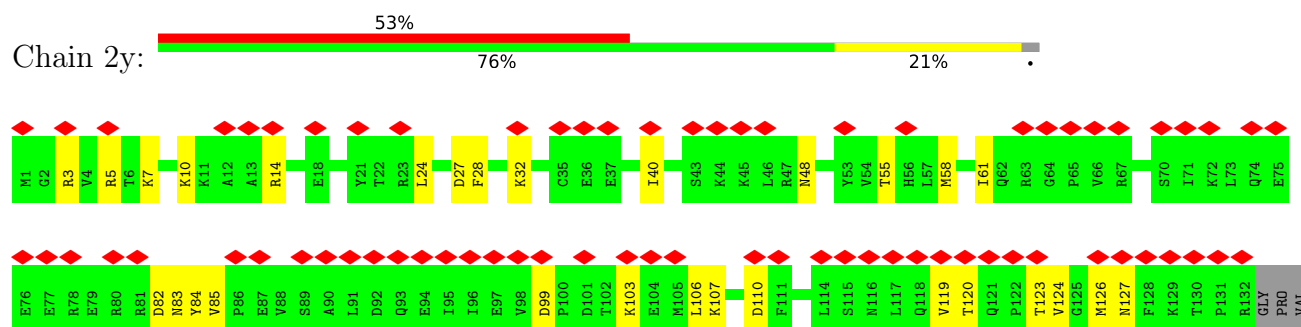


• Molecule 57: 40S ribosomal protein S16

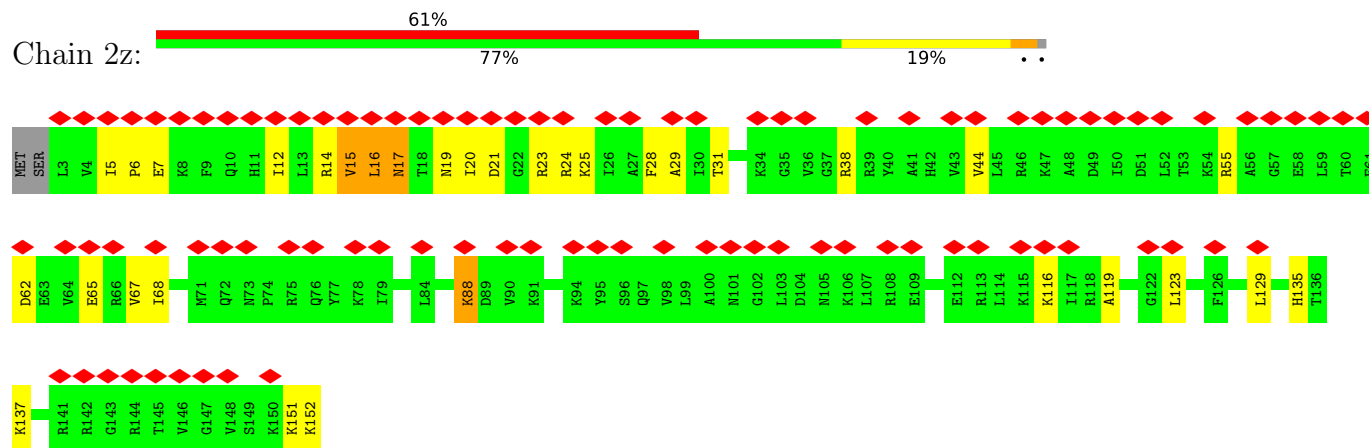
Chain 2x:



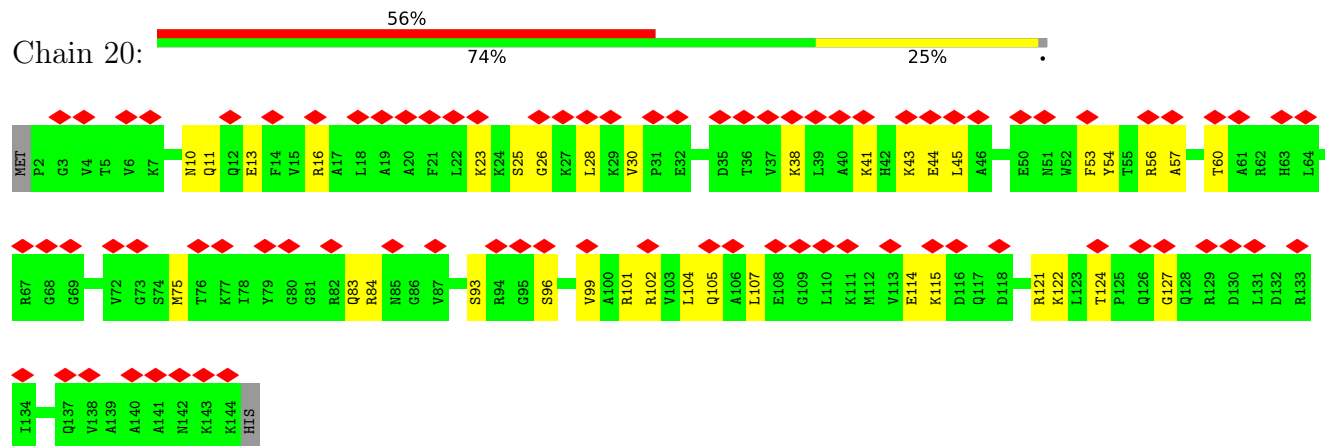
• Molecule 58: 40S ribosomal protein S17



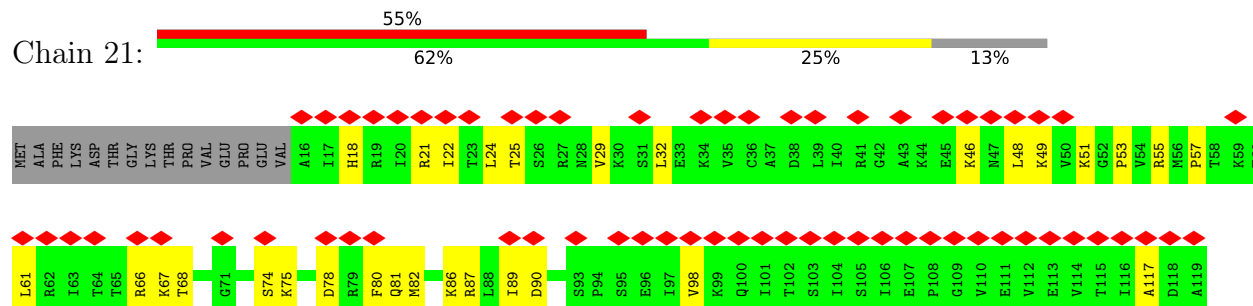
• Molecule 59: 40S ribosomal protein S18



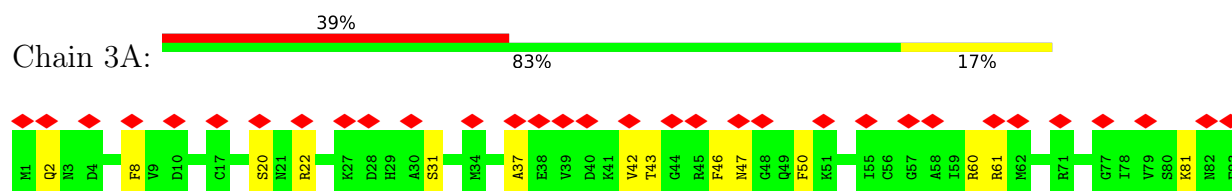
• Molecule 60: 40S ribosomal protein S19



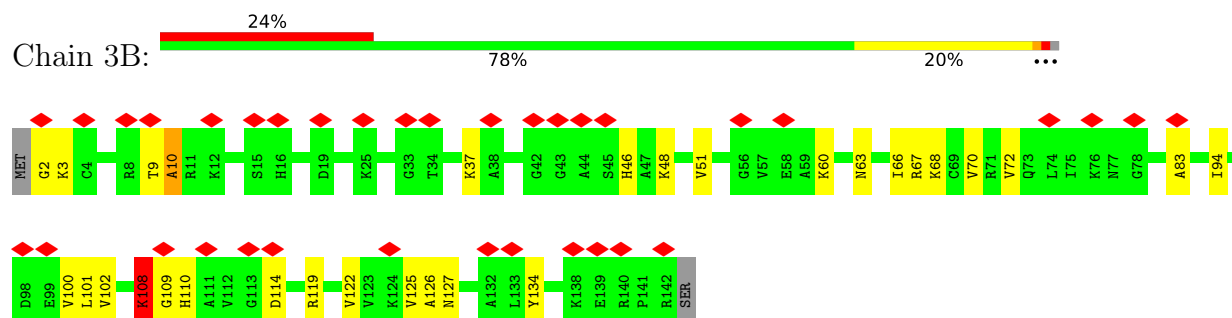
• Molecule 61: 40S ribosomal protein S20



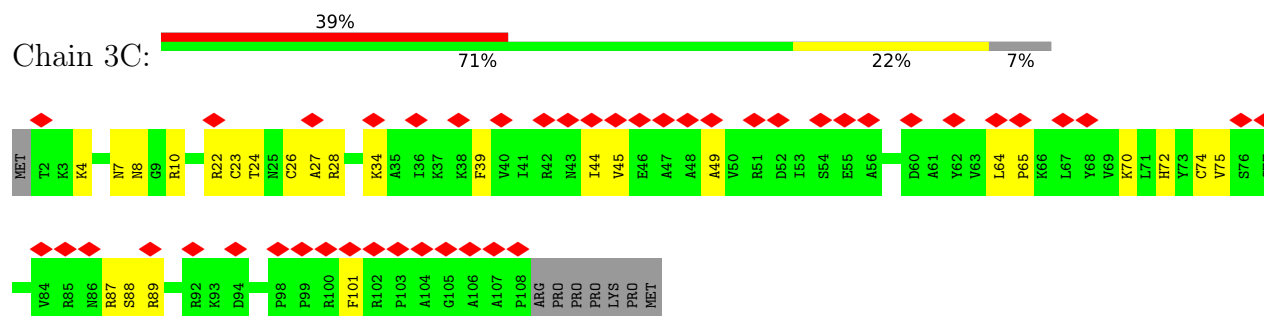
- Molecule 62: 40S ribosomal protein S21



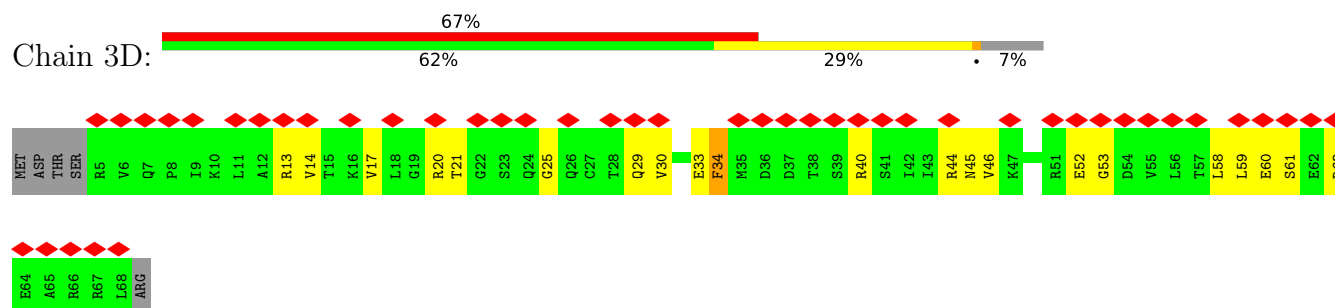
- Molecule 63: 40S ribosomal protein S23



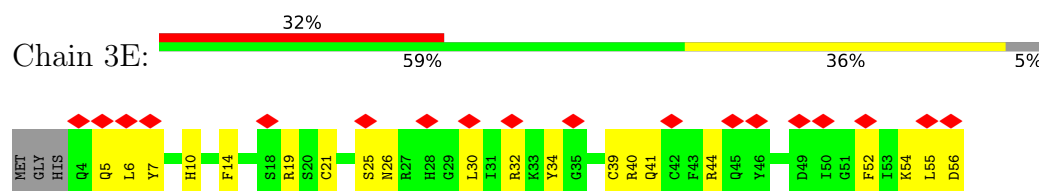
- Molecule 64: 40S ribosomal protein S26



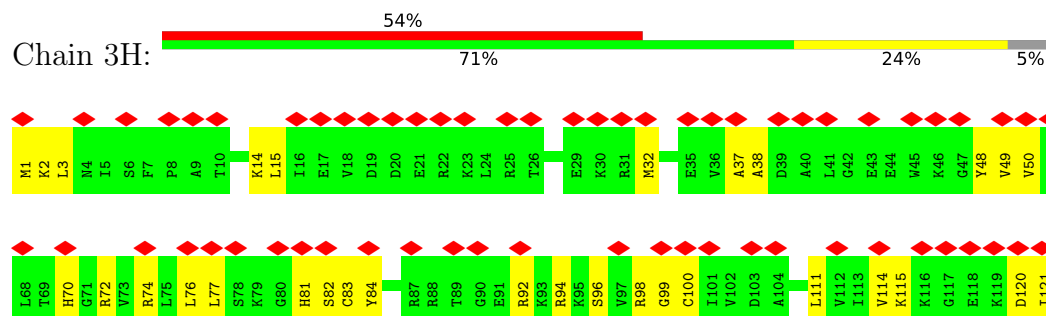
- Molecule 65: 40S ribosomal protein S28

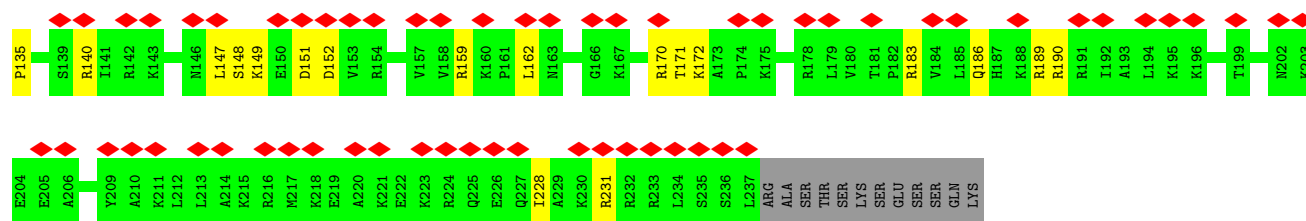


- Molecule 66: 40S ribosomal protein S29

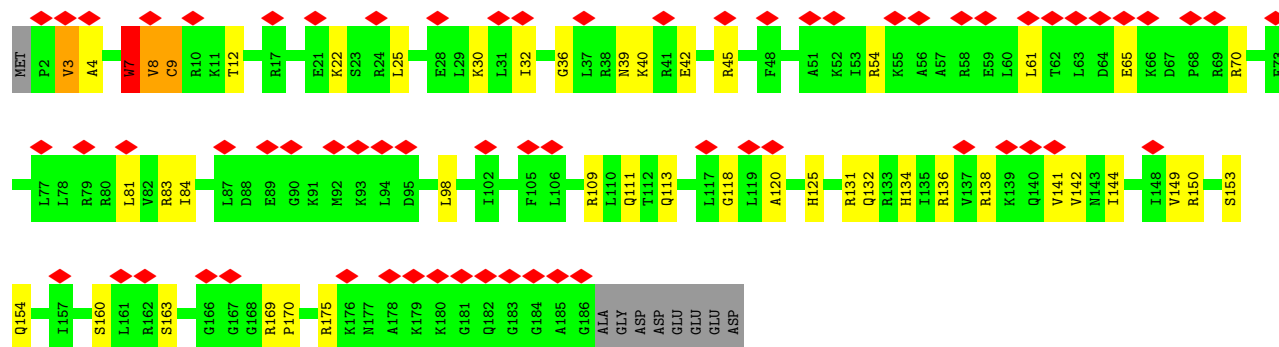


- Molecule 67: Receptor of activated protein C kinase 1

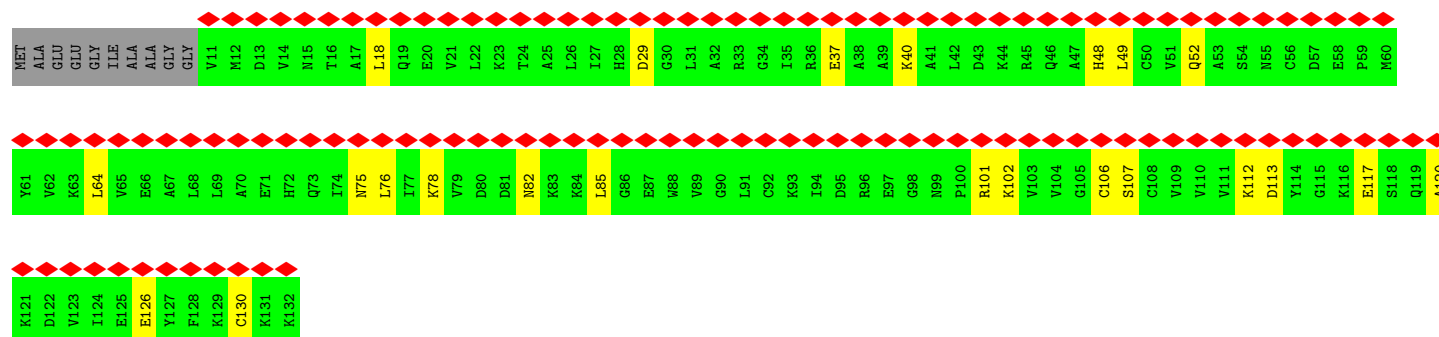
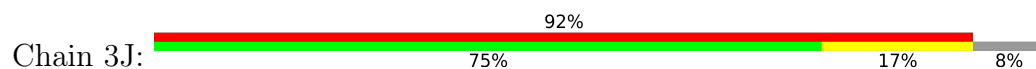




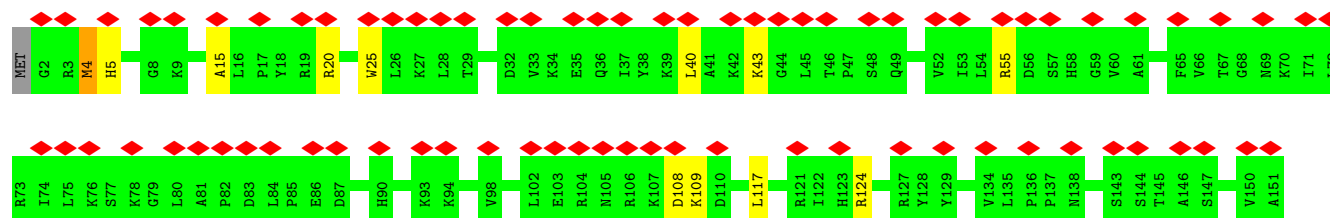
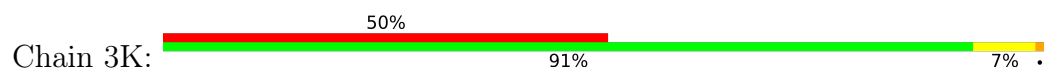
• Molecule 70: 40S ribosomal protein S9



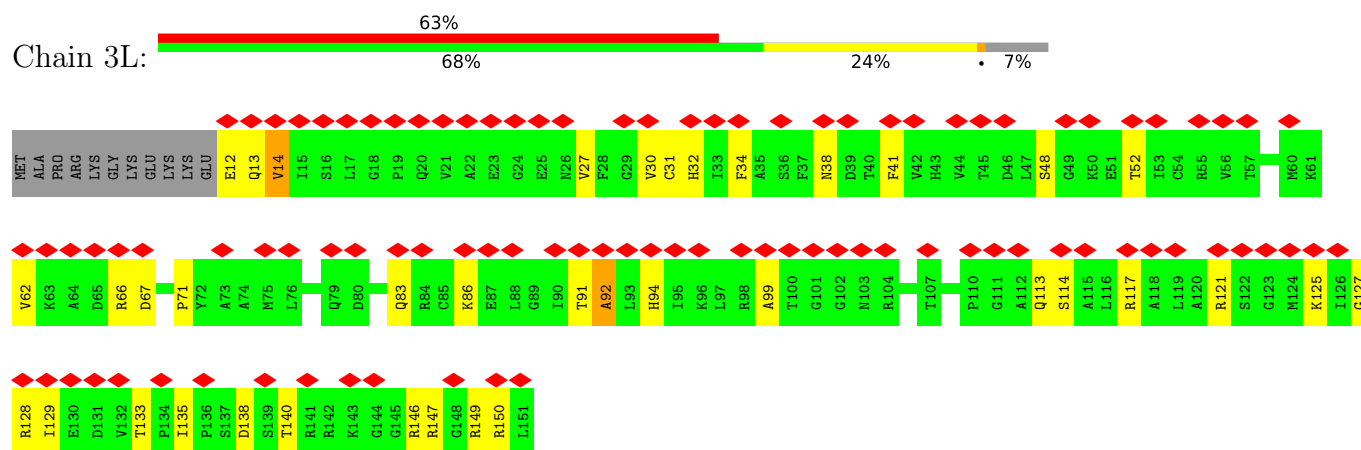
• Molecule 71: 40S ribosomal protein S12



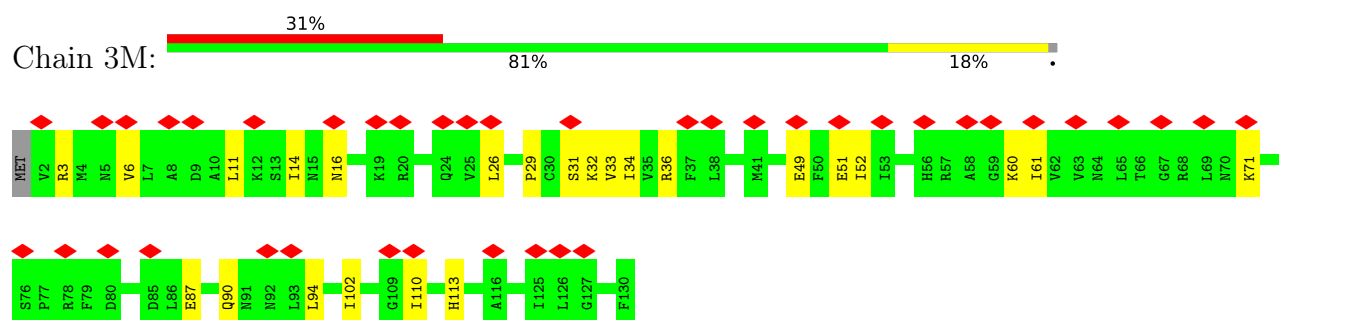
• Molecule 72: 40S ribosomal protein S13



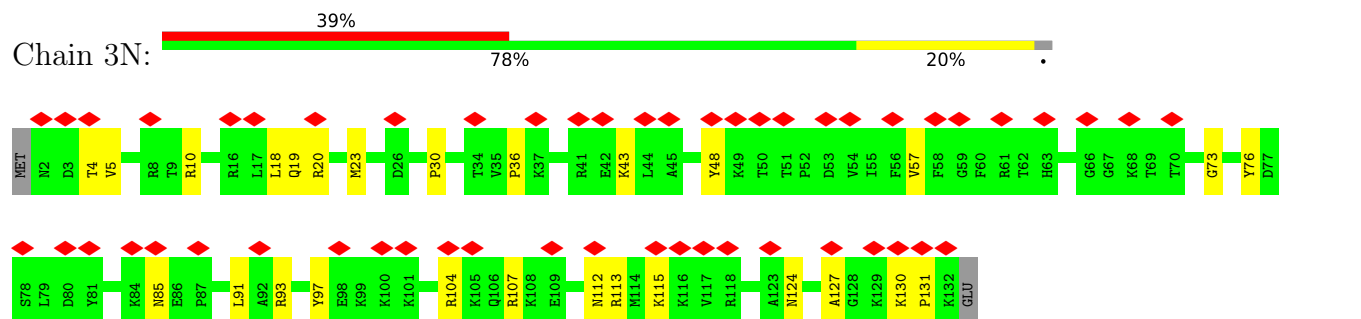
• Molecule 73: 40S ribosomal protein S14



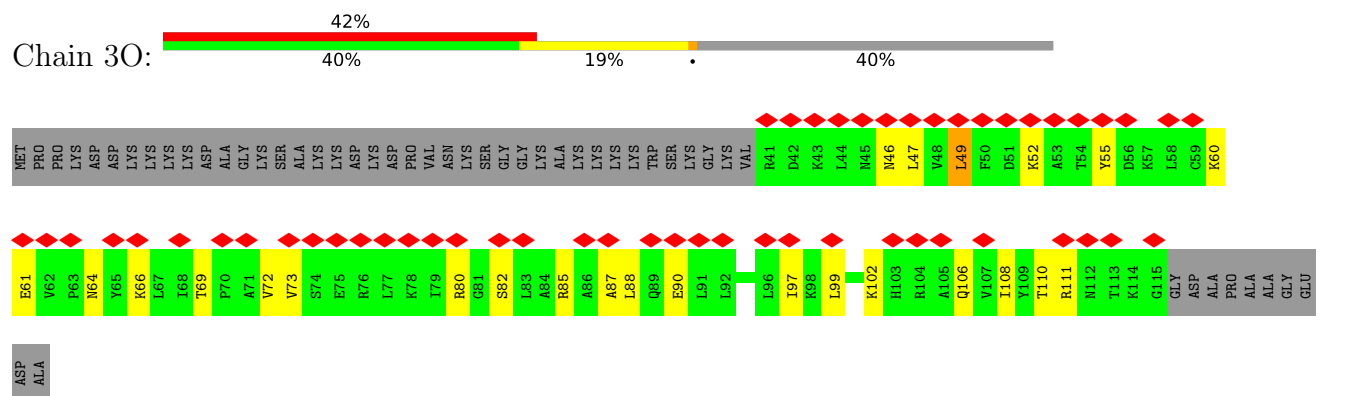
- Molecule 74: 40S ribosomal protein S15a



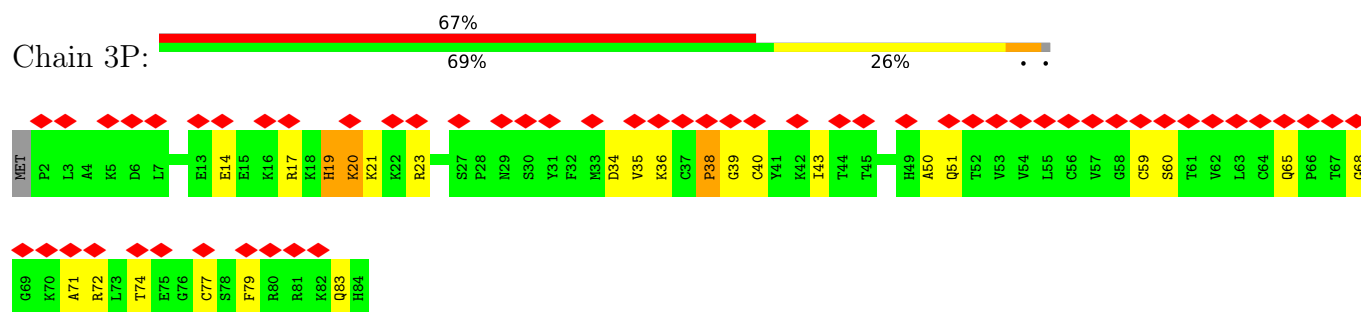
- Molecule 75: 40S ribosomal protein S24



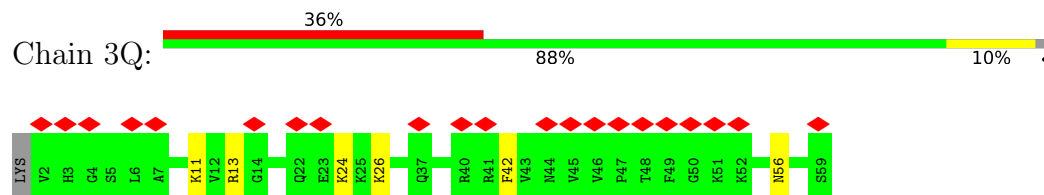
- Molecule 76: 40S ribosomal protein S25



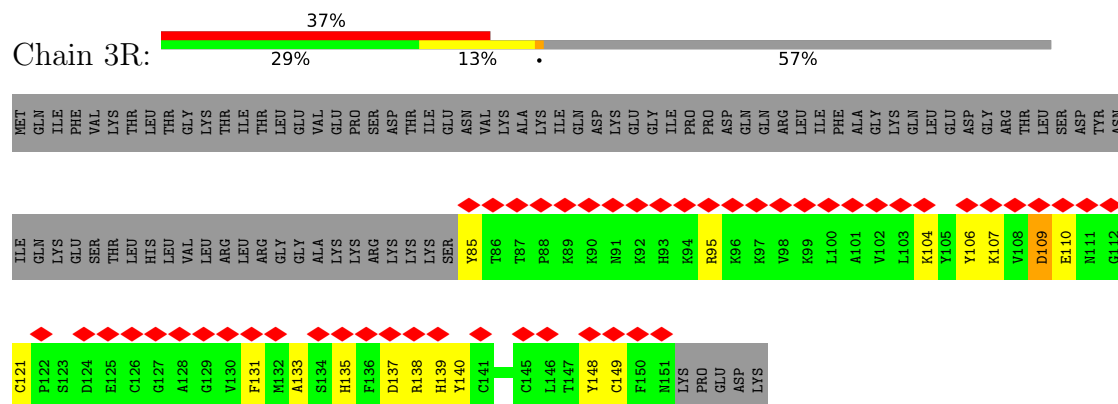
- Molecule 77: 40S ribosomal protein S27



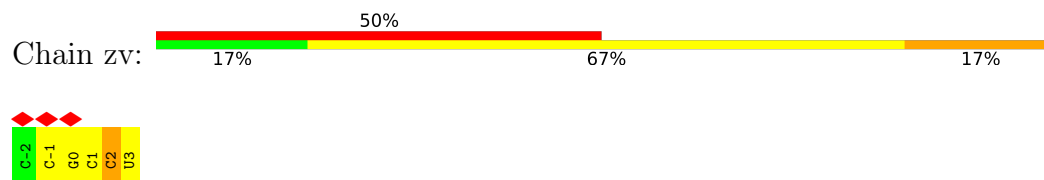
- Molecule 78: 40S ribosomal protein S30



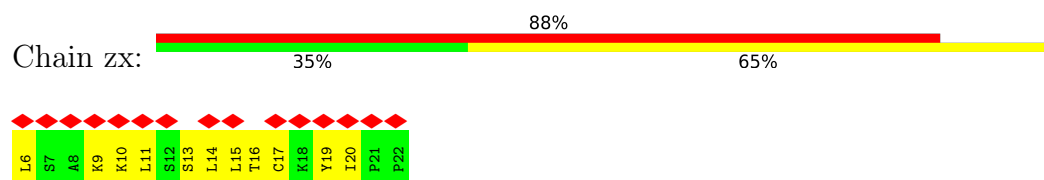
- Molecule 79: Ubiquitin-40S ribosomal protein S27a



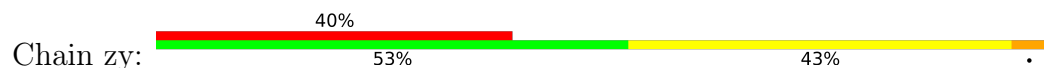
- Molecule 80: mRNA



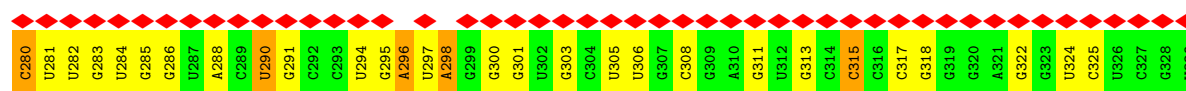
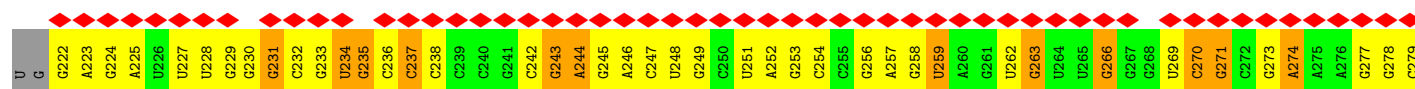
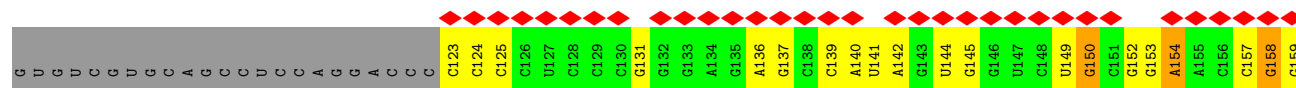
- Molecule 81: nascent peptide



- Molecule 82: P-site tRNA



- Molecule 83: HCV-IRES RNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	21303	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TECNAI ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	33557	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.219	Depositor
Minimum map value	-0.109	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.011	Depositor
Recommended contour level	0.04	Depositor
Map size ($\text{\AA}$)	625.8, 625.8, 625.8	wwPDB
Map dimensions	420, 420, 420	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.49, 1.49, 1.49	Depositor

5 Model quality

5.1 Standard geometry

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	1A	0.48	0/87922	0.54	6/137154 (0.0%)
2	1B	0.49	0/2858	0.51	0/4455
3	1C	0.46	0/3701	0.50	0/5766
4	1D	0.45	0/1936	0.72	0/2596
5	1E	0.44	0/3306	0.69	2/4424 (0.0%)
6	1F	0.43	0/2981	0.70	2/4002 (0.0%)
7	1G	0.37	0/2428	0.66	0/3252
8	1H	0.40	0/1951	0.81	0/2618
9	2A	0.49	0/1905	0.75	3/2539 (0.1%)
10	2B	0.36	0/1960	0.67	2/2637 (0.1%)
11	2C	0.39	0/1537	0.69	0/2066
12	2D	0.44	0/1751	0.73	1/2340 (0.0%)
13	2E	0.36	0/1433	0.65	0/1915
14	2F	0.40	0/1732	0.72	0/2315
15	2G	0.40	0/1161	0.63	0/1554
16	2H	0.47	0/1746	0.72	0/2338
17	2I	0.45	0/1682	0.66	0/2250
18	2J	0.51	0/1268	0.75	0/1701
19	2K	0.48	0/1537	0.69	0/2052
20	2L	0.39	0/1582	0.67	0/2091
21	2M	0.50	0/1493	0.67	0/2003
22	2N	0.40	0/1326	0.70	0/1770
23	2O	0.33	0/839	0.63	0/1126
24	2P	0.43	0/993	0.68	1/1332 (0.1%)
25	2Q	0.37	0/1030	0.68	0/1364
26	2R	0.40	0/992	0.62	0/1330
27	2S	0.36	0/1132	0.63	0/1504
28	2T	0.36	0/1130	0.64	0/1507
29	2U	0.47	0/1191	0.67	0/1591
30	2V	0.39	0/889	0.67	0/1175
31	2W	0.39	0/774	0.55	0/1038
32	2X	0.39	0/903	0.63	0/1216
33	2Y	0.46	0/1071	0.67	0/1429
34	2Z	0.47	0/895	0.72	0/1198

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	2a	0.40	0/904	0.67	0/1203
36	2b	0.36	0/1023	0.64	0/1351
37	2c	0.34	0/843	0.67	0/1115
38	2d	0.48	0/720	0.76	0/952
39	2e	0.37	0/575	0.68	0/761
40	2f	0.47	0/454	0.71	0/599
41	2g	0.42	0/435	0.70	0/575
42	2h	0.41	0/231	0.72	0/294
43	2i	0.42	0/876	0.66	2/1156 (0.2%)
44	2j	0.48	0/718	0.70	0/953
45	2k	0.44	0/1017	0.71	0/1364
46	2m	0.39	0/41243	0.52	2/64257 (0.0%)
47	2n	0.34	0/1778	0.65	0/2416
48	2o	0.29	0/1765	0.60	3/2362 (0.1%)
49	2p	0.32	0/1793	0.65	0/2414
50	2q	0.32	0/2118	0.66	0/2849
51	2r	0.29	0/1500	0.68	0/2015
52	2s	0.32	0/1544	0.66	0/2068
53	2t	0.35	0/1715	0.64	0/2287
54	2u	0.31	0/851	0.69	0/1147
55	2v	0.37	0/1268	0.64	0/1696
56	2w	0.33	0/815	0.78	2/1087 (0.2%)
57	2x	0.33	0/1177	0.68	0/1575
58	2y	0.30	0/1086	0.67	0/1457
59	2z	0.37	0/1253	0.80	0/1676
60	20	0.28	0/1131	0.59	0/1515
61	21	0.34	0/831	0.71	0/1115
62	3A	0.32	0/643	0.66	0/860
63	3B	0.37	0/1116	0.73	0/1490
64	3C	0.37	0/863	0.76	2/1159 (0.2%)
65	3D	0.31	0/508	0.83	0/680
66	3E	0.37	0/455	0.67	0/603
67	3F	0.31	0/2493	0.70	0/3394
68	3G	0.35	0/1762	0.66	0/2381
69	3H	0.31	0/1946	0.71	0/2590
70	3I	0.35	0/1550	0.77	5/2069 (0.2%)
71	3J	0.27	0/962	0.69	0/1290
72	3K	0.38	0/1232	0.70	0/1656
73	3L	0.33	0/1062	0.70	2/1425 (0.1%)
74	3M	0.40	0/1051	0.71	0/1406
75	3N	0.33	0/1083	0.58	0/1438
76	3O	0.30	0/604	0.75	2/810 (0.2%)
77	3P	0.34	0/665	0.71	0/891

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
78	3Q	0.31	0/465	0.64	0/612
79	3R	0.26	0/560	0.68	0/745
80	zv	0.28	0/135	0.49	0/207
81	zx	0.31	0/131	0.71	0/176
82	zy	0.28	0/1786	0.44	0/2784
83	zz	0.25	0/3902	0.51	0/6084
All	All	0.42	0/235673	0.59	37/346657 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
4	1D	0	1
5	1E	0	2
7	1G	0	1
8	1H	0	4
11	2C	0	1
12	2D	0	1
14	2F	0	3
15	2G	0	2
16	2H	0	1
18	2J	0	2
19	2K	0	1
22	2N	0	2
24	2P	0	2
25	2Q	0	1
28	2T	0	1
38	2d	0	1
48	2o	0	1
51	2r	0	1
52	2s	0	2
57	2x	0	4
59	2z	0	3
62	3A	0	1
63	3B	0	3
67	3F	0	1
68	3G	0	1
69	3H	0	1
70	3I	0	5
71	3J	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
76	3O	0	1
77	3P	0	2
79	3R	0	1
81	zx	0	1
All	All	0	55

There are no bond length outliers.

All (37) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
64	3C	101	PHE	CA-C-N	7.56	128.22	119.83
64	3C	101	PHE	C-N-CA	7.56	128.22	119.83
48	2o	176	VAL	N-CA-C	-6.28	107.37	113.53
43	2i	101	GLY	CA-C-N	5.73	132.02	121.70
43	2i	101	GLY	C-N-CA	5.73	132.02	121.70
12	2D	16	PRO	N-CA-C	5.66	120.48	111.26
70	3I	7	TRP	CA-C-N	5.64	132.12	121.97
70	3I	7	TRP	C-N-CA	5.64	132.12	121.97
10	2B	129	PRO	CA-C-N	5.58	132.19	121.54
10	2B	129	PRO	C-N-CA	5.58	132.19	121.54
76	3O	99	LEU	CA-C-N	5.37	131.36	121.70
76	3O	99	LEU	C-N-CA	5.37	131.36	121.70
46	2m	1849	G	P-O3'-C3'	5.29	128.14	120.20
46	2m	1860	A	P-O3'-C3'	5.26	128.10	120.20
5	1E	4	ARG	CA-C-N	5.22	131.51	121.54
5	1E	4	ARG	C-N-CA	5.22	131.51	121.54
70	3I	8	VAL	N-CA-C	5.22	120.20	109.34
1	1A	2760	G	P-O3'-C3'	5.20	128.00	120.20
9	2A	220	MET	CA-C-N	5.19	131.46	121.54
9	2A	220	MET	C-N-CA	5.19	131.46	121.54
9	2A	98	ILE	N-CA-C	-5.19	108.22	113.20
56	2w	98	ASN	CA-C-N	5.18	131.03	121.70
56	2w	98	ASN	C-N-CA	5.18	131.03	121.70
6	1F	109	ARG	CA-C-N	5.17	131.41	121.54
6	1F	109	ARG	C-N-CA	5.17	131.41	121.54
48	2o	79	VAL	CA-C-N	5.10	131.28	121.54
48	2o	79	VAL	C-N-CA	5.10	131.28	121.54
24	2P	110	GLY	N-CA-C	5.09	125.24	113.18
1	1A	485	C	C2-N1-C1'	5.09	134.06	118.80
1	1A	914	U	P-O3'-C3'	5.09	127.83	120.20
1	1A	4731	G	P-O3'-C3'	5.08	127.82	120.20
70	3I	4	ALA	CA-C-N	5.08	130.84	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
70	3I	4	ALA	C-N-CA	5.08	130.84	121.70
1	1A	1082	C	P-O3'-C3'	5.05	127.77	120.20
1	1A	4600	G	P-O3'-C3'	5.02	127.73	120.20
73	3L	14	VAL	CA-C-N	5.00	130.71	121.70
73	3L	14	VAL	C-N-CA	5.00	130.71	121.70

There are no chirality outliers.

All (55) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	1D	239	ALA	Peptide
5	1E	258	HIS	Peptide
5	1E	293	ILE	Peptide
7	1G	124	GLU	Peptide
8	1H	109	LEU	Peptide
8	1H	110	ARG	Peptide
8	1H	111	LYS	Peptide
8	1H	130	LYS	Peptide
11	2C	106	GLN	Peptide
12	2D	14	ASN	Peptide
14	2F	15	HIS	Peptide
14	2F	47	ALA	Peptide
14	2F	5	ARG	Peptide
15	2G	34	ASN	Peptide
15	2G	64	PHE	Peptide
16	2H	198	LEU	Peptide
18	2J	131	ARG	Peptide
18	2J	134	GLY	Peptide
19	2K	94	GLU	Peptide
22	2N	81	LYS	Peptide
22	2N	92	ARG	Peptide
24	2P	108	ASN	Peptide
24	2P	109	LYS	Peptide
25	2Q	96	GLN	Peptide
28	2T	30	ASP	Peptide
38	2d	39	TYR	Peptide
48	2o	221	PRO	Peptide
51	2r	106	GLU	Peptide
52	2s	108	SER	Peptide
52	2s	113	LYS	Peptide
57	2x	113	ILE	Peptide
57	2x	41	MET	Peptide

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Mol	Chain	Res	Type	Group
57	2x	42	ILE	Peptide
57	2x	43	GLU	Peptide
59	2z	15	VAL	Peptide
59	2z	16	LEU	Peptide
59	2z	88	LYS	Peptide
62	3A	46	PHE	Peptide
63	3B	108	LYS	Peptide
63	3B	126	ALA	Peptide
63	3B	60	LYS	Peptide
67	3F	283	PRO	Peptide
68	3G	268	GLU	Peptide
69	3H	147	LEU	Peptide
70	3I	118	GLY	Peptide
70	3I	12	THR	Peptide
70	3I	3	VAL	Peptide
70	3I	7	TRP	Peptide
70	3I	9	CYS	Peptide
71	3J	113	ASP	Peptide
76	3O	49	LEU	Peptide
77	3P	19	HIS	Peptide
77	3P	38	PRO	Peptide
79	3R	109	ASP	Peptide
81	zx	20	ILE	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1A	78599	0	39720	1091	0
2	1B	2558	0	1296	48	0
3	1C	3314	0	1683	48	0
4	1D	1898	0	1993	35	0
5	1E	3238	0	3376	52	0
6	1F	2927	0	3104	47	0
7	1G	2382	0	2410	40	0
8	1H	1913	0	2067	49	0
9	2A	1870	0	1996	53	0
10	2B	1927	0	2074	30	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	2C	1518	0	1601	25	0
12	2D	1711	0	1749	36	0
13	2E	1410	0	1441	32	0
14	2F	1701	0	1818	24	0
15	2G	1138	0	1204	15	0
16	2H	1701	0	1749	38	0
17	2I	1650	0	1794	29	0
18	2J	1242	0	1269	16	0
19	2K	1513	0	1628	21	0
20	2L	1566	0	1729	35	0
21	2M	1453	0	1490	28	0
22	2N	1298	0	1366	28	0
23	2O	825	0	850	13	0
24	2P	979	0	1039	17	0
25	2Q	1015	0	1079	12	0
26	2R	976	0	1059	11	0
27	2S	1115	0	1205	20	0
28	2T	1107	0	1182	19	0
29	2U	1162	0	1213	21	0
30	2V	876	0	948	11	0
31	2W	764	0	804	7	0
32	2X	888	0	930	8	0
33	2Y	1053	0	1147	21	0
34	2Z	876	0	912	23	0
35	2a	895	0	988	19	0
36	2b	1015	0	1148	13	0
37	2c	832	0	917	12	0
38	2d	705	0	741	31	0
39	2e	569	0	637	13	0
40	2f	444	0	483	6	0
41	2g	429	0	469	10	0
42	2h	230	0	276	1	0
43	2i	862	0	933	10	0
44	2j	708	0	760	16	0
45	2k	1002	0	1068	14	0
46	2m	36900	0	18599	593	0
47	2n	1741	0	1746	29	0
48	2o	1738	0	1809	22	0
49	2p	1765	0	1865	19	0
50	2q	2076	0	2177	44	0
51	2r	1479	0	1534	28	0
52	2s	1521	0	1616	29	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
53	2t	1686	0	1772	32	0
54	2u	827	0	854	13	0
55	2v	1247	0	1323	22	0
56	2w	804	0	841	24	0
57	2x	1158	0	1232	30	0
58	2y	1072	0	1130	20	0
59	2z	1235	0	1309	28	0
60	20	1112	0	1146	24	0
61	21	821	0	883	22	0
62	3A	636	0	637	8	0
63	3B	1098	0	1167	18	0
64	3C	847	0	899	20	0
65	3D	506	0	536	16	0
66	3E	445	0	442	19	0
67	3F	2436	0	2393	60	0
68	3G	1725	0	1813	33	0
69	3H	1923	0	2089	54	0
70	3I	1525	0	1640	29	0
71	3J	952	0	983	16	0
72	3K	1208	0	1294	11	0
73	3L	1049	0	1073	37	0
74	3M	1034	0	1080	19	0
75	3N	1065	0	1142	17	0
76	3O	598	0	656	18	0
77	3P	651	0	672	17	0
78	3Q	459	0	503	7	0
79	3R	548	0	555	16	0
80	zv	123	0	66	2	0
81	zx	129	0	148	8	0
82	zy	1599	0	809	19	0
83	zz	3492	0	1761	49	0
All	All	219084	0	161539	2979	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 (2979) 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)
46:2m:902:G:O6	46:2m:904:A:C6	1.71	1.44
2:1B:30:C:C2	2:1B:48:G:N2	2.20	1.10

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:902:G:O6	46:2m:904:A:N6	1.87	1.07
1:1A:120:A:H62	1:1A:151:G:N2	1.56	1.03
46:2m:677:G:N2	46:2m:1028:A:H62	1.57	1.01
46:2m:412:G:H21	46:2m:812:A:H61	1.07	1.00
46:2m:1729:U:H3	46:2m:1805:G:H1	1.08	1.00
46:2m:146:G:H1	46:2m:173:A:H61	0.99	0.97
46:2m:924:G:H1	46:2m:1018:U:H3	1.12	0.96
46:2m:1656:G:H1	46:2m:1668:U:H3	1.01	0.94
46:2m:677:G:H21	46:2m:1028:A:N6	1.64	0.94
46:2m:146:G:H1	46:2m:173:A:N6	1.65	0.94
46:2m:1748:G:H1	46:2m:1786:U:H3	0.99	0.94
1:1A:2845:A:H61	1:1A:3843:C:H42	1.14	0.94
83:zz:175:U:H3	83:zz:224:G:H1	0.98	0.93
46:2m:566:U:H3	46:2m:584:G:H1	0.96	0.93
46:2m:1737:G:H1	46:2m:1797:U:H3	1.02	0.93
83:zz:295:G:H21	83:zz:298:A:H2	1.16	0.93
1:1A:87:A:H62	1:1A:97:G:H21	1.11	0.93
46:2m:616:A:H62	46:2m:625:G:H21	1.15	0.92
1:1A:4748:U:H3	1:1A:4951:G:H1	1.18	0.91
2:1B:30:C:C2	2:1B:48:G:C2	2.58	0.91
83:zz:295:G:N2	83:zz:298:A:C2	2.39	0.91
46:2m:616:A:H62	46:2m:625:G:N2	1.70	0.90
46:2m:925:G:H1	46:2m:1017:U:H3	1.01	0.90
81:zx:15:LEU:O	81:zx:19:TYR:HB2	1.71	0.89
46:2m:1726:G:H1	46:2m:1808:U:H3	1.20	0.89
1:1A:120:A:H62	1:1A:151:G:H21	0.91	0.88
1:1A:505:G:H1	1:1A:653:U:H3	1.23	0.86
1:1A:3779:A:H62	1:1A:3815:G:H21	1.19	0.86
46:2m:412:G:N2	46:2m:812:A:H61	1.72	0.86
1:1A:450:G:H1	1:1A:1297:U:H3	1.19	0.85
46:2m:412:G:H21	46:2m:812:A:N6	1.74	0.85
1:1A:120:A:N6	1:1A:151:G:H21	1.73	0.85
46:2m:902:G:C6	46:2m:904:A:C6	2.66	0.84
1:1A:4769:G:H1	1:1A:4865:C:H42	1.25	0.84
1:1A:3944:G:H1	1:1A:4069:U:H3	1.24	0.81
1:1A:183:C:HO2'	1:1A:184:U:H3	1.23	0.81
46:2m:1657:G:H1	46:2m:1667:U:H3	1.29	0.81
1:1A:87:A:H62	1:1A:97:G:N2	1.79	0.80
1:1A:3869:C:H1'	17:2I:68:ARG:HH22	1.46	0.80
1:1A:1094:G:H1	1:1A:1201:U:H3	1.25	0.80
2:1B:76:U:H3	2:1B:100:A:H62	1.27	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:1519:U:C4	46:2m:1623:A:N7	2.50	0.79
2:1B:30:C:N3	2:1B:48:G:N1	2.31	0.79
1:1A:2845:A:H61	1:1A:3843:C:N4	1.81	0.79
46:2m:902:G:O6	46:2m:904:A:C5	2.37	0.78
1:1A:4077:A:H62	1:1A:4169:G:H21	1.32	0.77
2:1B:2:U:H3	2:1B:117:G:H1	1.30	0.77
1:1A:1951:G:H1	1:1A:2032:U:H3	1.32	0.77
67:3F:119:GLN:HE21	67:3F:131:LEU:HD11	1.50	0.77
46:2m:315:C:H42	46:2m:335:G:H1	1.32	0.76
1:1A:1617:G:N3	1:1A:2513:A:N6	2.35	0.75
2:1B:30:C:O2	2:1B:48:G:C2	2.39	0.75
1:1A:87:A:N6	1:1A:97:G:H21	1.85	0.74
1:1A:4885:U:N3	1:1A:4936:G:N1	2.36	0.74
14:2F:25:TRP:HE1	16:2H:199:GLN:HG2	1.54	0.73
46:2m:616:A:N6	46:2m:625:G:H21	1.86	0.72
46:2m:359:U:H3	46:2m:403:G:H1	1.35	0.72
1:1A:2303:C:H5''	33:2Y:104:SER:HB3	1.70	0.72
1:1A:3779:A:H62	1:1A:3815:G:N2	1.86	0.72
1:1A:3765:G:H21	1:1A:3766:A:H5'	1.56	0.71
38:2d:36:LYS:HA	38:2d:45:ARG:HH11	1.55	0.71
1:1A:3765:G:HO2'	46:2m:1849:G:H1	1.36	0.71
46:2m:1172:U:H3	46:2m:1188:A:H62	1.38	0.71
36:2b:3:LYS:HB3	36:2b:4:ILE:HG13	1.72	0.71
46:2m:1413:G:H22	46:2m:1415:C:H6	1.39	0.71
46:2m:1519:U:O4	46:2m:1623:A:N7	2.24	0.71
68:3G:110:MET:HB3	68:3G:125:LYS:HB3	1.72	0.71
83:zz:295:G:N2	83:zz:298:A:H2	1.83	0.71
1:1A:2486:G:N7	1:1A:2493:G:N1	2.35	0.70
1:1A:4885:U:O2	1:1A:4936:G:N2	2.23	0.70
25:2Q:73:ARG:NH1	46:2m:1782:G:N7	2.39	0.70
1:1A:2339:G:H21	6:1F:45:ARG:HH12	1.39	0.70
46:2m:1412:C:N4	46:2m:1433:C:N3	2.39	0.70
46:2m:927:C:O2	77:3P:51:GLN:NE2	2.25	0.70
21:2M:147:ASP:HB3	21:2M:150:ILE:HG13	1.73	0.70
1:1A:2845:A:N6	1:1A:3843:C:H42	1.90	0.70
52:2s:143:ARG:HB2	52:2s:155:LYS:HB2	1.73	0.69
33:2Y:67:LYS:HG3	33:2Y:68:HIS:HD1	1.57	0.69
61:21:24:LEU:HB3	61:21:87:ARG:HB2	1.75	0.69
1:1A:223:G:N3	6:1F:223:ASN:ND2	2.41	0.69
1:1A:1440:U:H3	1:1A:2105:A:H2	1.41	0.69
46:2m:1566:G:N7	60:20:101:ARG:NH2	2.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:2T:14:LEU:HD23	35:2a:88:ARG:HB2	1.73	0.68
46:2m:1550:G:H3'	46:2m:1579:A:H61	1.58	0.68
1:1A:2486:G:H8	1:1A:2493:G:H22	1.40	0.68
13:2E:141:ILE:HA	13:2E:144:LYS:HE3	1.73	0.68
41:2g:97:ARG:HD2	41:2g:120:ASN:HB3	1.75	0.68
61:21:61:LEU:HB2	61:21:82:MET:HB3	1.74	0.68
1:1A:2557:G:H1	1:1A:2570:U:H3	0.79	0.68
1:1A:4077:A:H62	1:1A:4169:G:N2	1.92	0.68
1:1A:1174:G:H1	1:1A:1186:U:H3	1.42	0.67
1:1A:4617:G:OP2	5:1E:62:ARG:NH2	2.28	0.67
1:1A:3616:U:O2	1:1A:3618:C:N4	2.27	0.67
76:3O:52:LYS:HA	76:3O:55:TYR:HB3	1.75	0.67
49:2p:60:GLY:HA3	49:2p:65:ARG:H	1.59	0.67
49:2p:219:PRO:HB2	67:3F:192:THR:HA	1.77	0.67
67:3F:248:LEU:HB3	67:3F:259:TRP:H	1.59	0.67
3:1C:96:C:H5''	36:2b:66:LYS:HD2	1.77	0.67
51:2r:140:ASP:HB3	65:3D:46:VAL:HG12	1.77	0.67
53:2t:57:ALA:HB1	53:2t:60:LEU:HD11	1.77	0.67
1:1A:1661:C:OP1	33:2Y:36:ARG:NH2	2.28	0.67
1:1A:4885:U:O2	1:1A:4936:G:C2	2.48	0.67
46:2m:1358:U:H5'	68:3G:114:LYS:HD3	1.77	0.67
1:1A:489:C:H42	1:1A:664:G:H1	1.43	0.67
46:2m:602:G:N2	46:2m:620:G:N7	2.43	0.67
1:1A:143:C:H5''	1:1A:144:G:H5'	1.75	0.66
1:1A:3763:A:N7	1:1A:3764:U:N3	2.42	0.66
61:21:67:LYS:HB2	61:21:78:ASP:HB2	1.78	0.66
1:1A:106:A:H1'	1:1A:336:A:H8	1.61	0.66
74:3M:31:SER:HG	74:3M:34:ILE:H	1.41	0.66
46:2m:637:U:O2	78:3Q:56:ASN:ND2	2.28	0.66
1:1A:3779:A:N6	1:1A:3815:G:H21	1.91	0.66
2:1B:30:C:N3	2:1B:48:G:C2	2.63	0.66
46:2m:317:C:H5''	69:3H:183:ARG:HH22	1.60	0.66
46:2m:535:G:N2	46:2m:536:A:N7	2.43	0.66
46:2m:677:G:H21	46:2m:1028:A:H62	0.81	0.66
3:1C:104:A:OP2	38:2d:42:LYS:NZ	2.29	0.66
11:2C:10:VAL:HB	11:2C:55:LEU:HB3	1.77	0.66
68:3G:65:LYS:HB3	68:3G:273:LEU:HD21	1.78	0.66
1:1A:4141:G:O2'	1:1A:4143:G:N7	2.29	0.66
7:1G:196:ARG:NH1	7:1G:200:MET:SD	2.69	0.66
2:1B:99:G:OP2	21:2M:55:LYS:NZ	2.30	0.65
46:2m:178:C:H3'	46:2m:313:A:H61	1.60	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:3R:106:TYR:HD1	79:3R:117:LEU:H	1.44	0.65
61:21:46:LYS:HE2	61:21:98:VAL:HB	1.78	0.65
83:zz:259:U:N3	83:zz:274:A:C8	2.55	0.65
1:1A:375:G:N7	38:2d:56:ARG:NH1	2.45	0.65
20:2L:176:ARG:NH1	46:2m:910:G:OP1	2.30	0.65
46:2m:330:G:N7	69:3H:189:ARG:NH1	2.44	0.65
46:2m:1533:A:H62	46:2m:1602:U:H3	1.45	0.65
48:2o:67:PHE:HB3	73:3L:48:SER:HA	1.79	0.65
3:1C:9:A:H2'	3:1C:10:G:H8	1.62	0.65
46:2m:804:U:H3	46:2m:859:G:H1	1.44	0.65
46:2m:1513:C:H2'	46:2m:1514:G:H8	1.60	0.65
48:2o:159:GLN:OE1	48:2o:162:ARG:NH2	2.30	0.65
61:21:21:ARG:HA	61:21:90:ASP:HA	1.77	0.65
10:2B:57:TRP:O	10:2B:62:ARG:NH1	2.31	0.64
69:3H:52:ILE:HG22	69:3H:111:LEU:HG	1.79	0.64
83:zz:145:G:N1	83:zz:248:U:N3	2.44	0.64
1:1A:2062:C:H4'	21:2M:4:SER:HB2	1.77	0.64
1:1A:4693:C:O2	1:1A:4695:C:N4	2.29	0.64
1:1A:4765:G:H22	1:1A:4869:U:H3	1.45	0.64
25:2Q:6:CYS:SG	25:2Q:7:SER:N	2.70	0.64
46:2m:380:G:OP1	53:2t:56:ARG:NH2	2.31	0.64
1:1A:1699:A:O2'	6:1F:306:ARG:NH1	2.31	0.64
1:1A:4376:A:O2'	29:2U:42:ARG:NH1	2.30	0.64
2:1B:76:U:H3	2:1B:100:A:N6	1.95	0.64
46:2m:750:C:H42	46:2m:794:A:H1'	1.61	0.64
69:3H:48:TYR:HH	69:3H:114:VAL:H	1.43	0.64
1:1A:4894:A:OP2	17:2I:188:LYS:NZ	2.31	0.64
44:2j:39:CYS:SG	44:2j:40:SER:N	2.70	0.64
47:2n:183:LEU:HD22	47:2n:188:THR:HG21	1.79	0.64
57:2x:85:ARG:HE	57:2x:119:LEU:HD21	1.60	0.64
1:1A:1763:C:H41	1:1A:1764:G:H21	1.46	0.64
1:1A:493:G:O6	1:1A:660:A:N1	2.31	0.64
1:1A:3723:A:OP2	37:2c:68:ARG:NH1	2.26	0.64
46:2m:830:A:OP2	46:2m:846:G:N2	2.31	0.64
50:2q:19:MET:SD	50:2q:108:ARG:NH1	2.69	0.64
60:20:83:GLN:HB2	60:20:93:SER:HB2	1.80	0.64
1:1A:4716:C:H2'	1:1A:4717:A:H8	1.63	0.64
19:2K:84:GLY:H	19:2K:103:LEU:HD13	1.61	0.64
69:3H:64:LYS:HE3	69:3H:82:SER:H	1.63	0.64
1:1A:1468:C:OP1	29:2U:132:ARG:NH2	2.30	0.64
46:2m:1636:G:O2'	51:2r:164:ARG:NH1	2.30	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:2n:54:THR:HG22	47:2n:162:PRO:HG2	1.80	0.64
60:20:124:THR:HG23	60:20:127:GLY:H	1.60	0.64
5:1E:10:ARG:NH2	5:1E:12:GLY:O	2.31	0.63
8:1H:177:GLY:HA3	8:1H:182:ASN:HD21	1.63	0.63
47:2n:66:VAL:O	62:3A:47:ASN:ND2	2.31	0.63
1:1A:2449:A:H62	1:1A:2510:G:N2	1.96	0.63
47:2n:110:ASN:HD22	47:2n:113:GLN:HG3	1.62	0.63
56:2w:38:SER:HB2	56:2w:41:GLN:HB3	1.79	0.63
1:1A:1573:G:OP1	20:2L:92:LYS:NZ	2.29	0.63
7:1G:123:VAL:HG23	7:1G:124:GLU:HG2	1.80	0.63
9:2A:113:ARG:NH2	9:2A:208:LEU:O	2.32	0.63
70:3I:83:ARG:HD3	70:3I:150:ARG:HH21	1.62	0.63
1:1A:1951:G:H5'	21:2M:116:ARG:HH11	1.64	0.63
1:1A:4768:G:OP1	17:2I:176:ARG:NH2	2.30	0.63
46:2m:1479:G:N2	66:3E:56:ASP:OD1	2.31	0.63
75:3N:127:ALA:HA	75:3N:130:LYS:HD3	1.80	0.63
1:1A:2871:A:H62	1:1A:2878:G:N2	1.97	0.63
1:1A:3906:A:N7	6:1F:75:ARG:NH1	2.47	0.63
1:1A:4126:C:H5''	1:1A:4127:A:H5''	1.81	0.63
1:1A:4980:C:N3	18:2J:69:ARG:NH2	2.45	0.63
5:1E:137:TRP:O	5:1E:143:LYS:NZ	2.32	0.63
39:2e:33:LYS:HG2	39:2e:46:VAL:HG22	1.80	0.63
46:2m:696:G:N3	46:2m:736:C:N4	2.45	0.63
1:1A:4174:U:H2'	1:1A:4175:G:H8	1.64	0.63
20:2L:176:ARG:HH12	46:2m:909:G:H5'	1.64	0.63
37:2c:70:LEU:HD13	37:2c:87:ARG:HD2	1.80	0.63
1:1A:4633:G:H21	1:1A:4665:A:N6	1.97	0.63
46:2m:333:G:N7	69:3H:190:ARG:NH1	2.47	0.63
1:1A:2309:G:O6	1:1A:2330:G:N2	2.32	0.62
49:2p:209:SER:HB2	58:2y:40:ILE:HB	1.81	0.62
57:2x:51:LEU:HD12	57:2x:81:ILE:HG23	1.81	0.62
1:1A:423:G:OP1	18:2J:62:ARG:NH2	2.31	0.62
1:1A:725:G:OP2	6:1F:350:ARG:NH2	2.32	0.62
1:1A:1459:A:OP1	19:2K:65:ARG:NH2	2.32	0.62
34:2Z:45:LYS:HD2	34:2Z:105:LEU:HA	1.80	0.62
46:2m:130:G:OP2	46:2m:183:G:N2	2.31	0.62
46:2m:806:U:H3	46:2m:857:U:H3	1.47	0.62
57:2x:39:LEU:O	57:2x:48:GLN:NE2	2.32	0.62
65:3D:13:ARG:HB2	65:3D:33:GLU:HB3	1.81	0.62
1:1A:2684:C:H5'	35:2a:55:GLY:HA2	1.82	0.62
61:21:66:ARG:HH22	61:21:75:LYS:HG2	1.65	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:3F:109:LEU:HD23	67:3F:110:SER:H	1.64	0.62
77:3P:20:LYS:O	77:3P:23:ARG:NH1	2.33	0.62
1:1A:492:U:OP1	6:1F:268:ARG:NH2	2.33	0.62
46:2m:1065:G:OP1	73:3L:149:ARG:NH1	2.33	0.62
1:1A:2262:G:OP2	45:2k:107:ARG:NH2	2.29	0.62
46:2m:127:C:N4	46:2m:181:A:O2'	2.31	0.62
46:2m:1606:G:HO2'	46:2m:1607:A:H8	1.46	0.62
1:1A:1310:C:H2'	1:1A:1311:G:H8	1.65	0.62
1:1A:1372:A:OP1	16:2H:202:ARG:NH2	2.31	0.62
1:1A:3753:G:H22	1:1A:3770:U:H3	1.46	0.62
82:zy:14:A:N1	82:zy:20:A:O2'	2.32	0.62
1:1A:517:C:N4	1:1A:646:G:O2'	2.33	0.62
1:1A:2005:G:H22	1:1A:2014:C:H42	1.47	0.62
1:1A:3870:C:H2'	1:1A:3871:A:H8	1.65	0.61
1:1A:4552:U:H2'	1:1A:4553:A:H8	1.65	0.61
46:2m:1276:A:H62	46:2m:1321:G:H8	1.46	0.61
47:2n:141:ASN:ND2	62:3A:31:SER:O	2.32	0.61
55:2v:16:ILE:HD13	55:2v:34:PRO:HG2	1.82	0.61
1:1A:1335:G:N2	6:1F:95:MET:O	2.32	0.61
24:2P:18:LEU:HD23	24:2P:54:ALA:HB3	1.82	0.61
1:1A:460:C:OP1	8:1H:110:ARG:NH1	2.33	0.61
56:2w:74:GLU:H	56:2w:93:MET:HB3	1.65	0.61
1:1A:4294:C:O2'	43:2i:13:LYS:NZ	2.33	0.61
1:1A:4885:U:C2	1:1A:4936:G:N1	2.68	0.61
64:3C:10:ARG:HB3	64:3C:34:LYS:HB2	1.82	0.61
1:1A:2763:U:H2'	1:1A:2764:A:H8	1.66	0.61
1:1A:3653:A:N6	1:1A:3691:G:O2'	2.34	0.61
2:1B:68:C:OP1	22:2N:20:ARG:NH2	2.33	0.61
46:2m:521:A:OP1	70:3I:45:ARG:NH1	2.33	0.61
64:3C:44:ILE:O	73:3L:113:GLN:NE2	2.33	0.61
75:3N:57:VAL:HG12	75:3N:73:GLY:HA2	1.82	0.61
46:2m:924:G:N2	46:2m:1018:U:O2	2.32	0.61
24:2P:72:LEU:HA	24:2P:75:LYS:HZ3	1.66	0.61
51:2r:129:GLY:HA3	51:2r:136:ARG:HH22	1.64	0.61
61:21:68:THR:O	66:3E:40:ARG:NH1	2.32	0.61
1:1A:1794:A:H5''	1:1A:4214:A:H61	1.65	0.61
1:1A:1800:U:H2'	1:1A:1801:A:H8	1.65	0.61
1:1A:2622:G:O6	23:2O:81:ARG:NH2	2.27	0.61
1:1A:3805:U:H2'	1:1A:3806:G:H8	1.65	0.61
46:2m:1305:C:OP2	79:3R:95:ARG:NH1	2.34	0.61
46:2m:1551:U:H5'	46:2m:1558:C:H1'	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:2s:27:LEU:HA	52:2s:30:LEU:HB2	1.83	0.61
1:1A:382:G:N1	1:1A:385:A:OP2	2.34	0.61
1:1A:975:C:O3'	9:2A:47:ARG:NH2	2.34	0.61
1:1A:1906:U:H2'	1:1A:1907:A:H8	1.66	0.61
1:1A:3765:G:N2	1:1A:3767:C:OP1	2.34	0.61
1:1A:1439:C:OP2	9:2A:34:ARG:NH2	2.34	0.61
1:1A:4889:G:H22	1:1A:4932:U:H1'	1.66	0.61
9:2A:222:LYS:HB3	9:2A:231:GLY:HA2	1.81	0.61
13:2E:90:ARG:NH2	13:2E:108:GLY:O	2.33	0.61
14:2F:23:ALA:HB3	16:2H:199:GLN:HG3	1.83	0.61
21:2M:83:ARG:NH2	22:2N:154:ILE:O	2.33	0.61
46:2m:575:A:OP2	75:3N:93:ARG:NH1	2.34	0.61
46:2m:1277:C:OP1	54:2u:55:ARG:NH1	2.33	0.61
46:2m:1616:U:OP2	56:2w:43:ARG:NH2	2.33	0.61
1:1A:2449:A:H62	1:1A:2510:G:H21	1.49	0.60
46:2m:1519:U:N3	46:2m:1623:A:C8	2.69	0.60
46:2m:1565:C:OP2	60:20:105:GLN:NE2	2.34	0.60
75:3N:5:VAL:HG11	75:3N:43:LYS:HE3	1.82	0.60
1:1A:28:C:OP2	16:2H:189:ARG:NH1	2.33	0.60
1:1A:3614:G:H2'	1:1A:3617:G:H22	1.66	0.60
1:1A:3684:G:OP1	4:1D:174:ARG:NH2	2.33	0.60
1:1A:4662:C:H2'	1:1A:4663:G:H8	1.66	0.60
46:2m:1010:G:H2'	46:2m:1011:A:H8	1.66	0.60
64:3C:74:CYS:SG	64:3C:75:VAL:N	2.74	0.60
1:1A:512:U:H3	1:1A:647:G:H1	1.47	0.60
1:1A:2578:G:N7	28:2T:17:ARG:NH1	2.41	0.60
1:1A:3855:C:H2'	1:1A:3856:A:H8	1.66	0.60
18:2J:42:ARG:HA	18:2J:45:THR:HG22	1.84	0.60
1:1A:1620:U:H2'	1:1A:1621:A:H8	1.66	0.60
1:1A:2112:G:O2'	1:1A:2250:C:N4	2.34	0.60
1:1A:4745:G:H22	1:1A:4954:G:H1	1.48	0.60
1:1A:4761:G:N2	1:1A:4765:G:O2'	2.35	0.60
47:2n:85:ARG:NH2	58:2y:82:ASP:O	2.34	0.60
1:1A:1394:G:OP1	14:2F:186:ARG:NH1	2.35	0.60
1:1A:2621:A:OP1	23:2O:80:LYS:NZ	2.35	0.60
9:2A:94:ARG:NH1	9:2A:97:GLY:O	2.34	0.60
46:2m:384:U:O4	53:2t:5:ARG:NH1	2.35	0.60
46:2m:1396:A:O2'	46:2m:1398:G:N7	2.34	0.60
50:2q:125:LYS:HB3	50:2q:142:HIS:HB3	1.83	0.60
65:3D:14:VAL:HG22	65:3D:53:GLY:HA2	1.83	0.60
71:3J:49:LEU:HD23	71:3J:75:ASN:H	1.66	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1280:C:H41	8:1H:52:ARG:HB2	1.67	0.60
1:1A:1977:C:N4	1:1A:2002:A:O2'	2.34	0.60
8:1H:50:LEU:HD12	8:1H:51:VAL:HG23	1.84	0.60
1:1A:1762:C:O2	1:1A:1764:G:N2	2.35	0.60
1:1A:4546:A:N7	4:1D:215:ASN:ND2	2.50	0.60
52:2s:73:GLN:HA	52:2s:135:PHE:HZ	1.66	0.60
75:3N:112:ASN:HA	75:3N:115:LYS:HE2	1.83	0.60
1:1A:1252:C:O2	1:1A:1254:A:N6	2.35	0.60
3:1C:82:A:N6	3:1C:85:U:OP1	2.35	0.60
41:2g:79:GLU:HB2	41:2g:82:LEU:HB3	1.82	0.60
46:2m:191:A:N6	46:2m:208:G:O2'	2.34	0.60
46:2m:466:G:O2'	69:3H:59:GLN:NE2	2.34	0.60
46:2m:955:A:N6	46:2m:971:G:O2'	2.35	0.60
46:2m:1429:G:H5'	57:2x:33:LYS:HZ3	1.67	0.60
46:2m:1495:G:O2'	66:3E:26:ASN:ND2	2.35	0.60
49:2p:74:GLN:NE2	49:2p:79:PHE:O	2.34	0.60
53:2t:6:ASP:OD2	53:2t:8:TRP:NE1	2.35	0.60
56:2w:78:THR:OG1	56:2w:79:HIS:N	2.34	0.60
65:3D:44:ARG:HG2	65:3D:63:ARG:HD2	1.84	0.60
1:1A:2285:A:H2'	1:1A:2286:G:H8	1.67	0.60
1:1A:2458:C:OP1	16:2H:67:ARG:NH1	2.35	0.60
1:1A:2656:U:OP1	28:2T:78:ASN:ND2	2.35	0.60
1:1A:4946:U:HO2'	34:2Z:2:SER:N	1.99	0.60
13:2E:95:ARG:HD2	13:2E:177:GLY:HA2	1.84	0.60
33:2Y:90:MET:HG2	45:2k:33:LYS:HG2	1.83	0.60
46:2m:190:G:N2	46:2m:210:U:O4	2.34	0.60
46:2m:322:C:N4	46:2m:329:G:O6	2.35	0.60
50:2q:31:PRO:HB3	50:2q:43:PRO:HB3	1.84	0.60
1:1A:1478:C:H2'	1:1A:1479:G:H8	1.67	0.60
2:1B:97:G:OP2	21:2M:56:LYS:NZ	2.31	0.60
20:2L:178:GLN:HA	20:2L:181:LYS:HE2	1.83	0.60
46:2m:639:C:H2'	46:2m:640:A:H8	1.66	0.60
67:3F:48:ASP:OD2	67:3F:51:ASN:ND2	2.35	0.60
1:1A:27:C:OP1	16:2H:193:ARG:NH1	2.33	0.59
1:1A:1802:A:H5''	1:1A:1803:G:H5'	1.84	0.59
1:1A:4690:G:H21	1:1A:4700:A:H62	1.50	0.59
10:2B:144:THR:HG21	16:2H:3:ALA:HB2	1.83	0.59
46:2m:1598:G:N7	76:3O:85:ARG:NE	2.49	0.59
48:2o:197:ILE:HD11	48:2o:210:VAL:HG11	1.82	0.59
1:1A:2348:G:OP1	1:1A:2351:C:N4	2.33	0.59
1:1A:3660:C:OP1	4:1D:241:ARG:NH2	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:2j:7:LYS:O	44:2j:27:LYS:NZ	2.36	0.59
46:2m:696:G:N2	46:2m:737:G:O6	2.36	0.59
46:2m:1244:U:H2'	46:2m:1245:G:H8	1.67	0.59
48:2o:21:VAL:HG12	48:2o:22:VAL:HG23	1.84	0.59
53:2t:11:ARG:NH1	53:2t:15:GLY:O	2.36	0.59
83:zz:177:C:H2'	83:zz:222:G:H22	1.67	0.59
1:1A:1387:A:N7	29:2U:74:ASN:ND2	2.44	0.59
1:1A:1844:G:OP1	30:2V:22:LYS:NZ	2.36	0.59
12:2D:149:ILE:HD11	12:2D:167:ILE:HD11	1.83	0.59
1:1A:1685:G:O2'	30:2V:15:LYS:NZ	2.35	0.59
1:1A:3844:U:H2'	1:1A:3845:A:H8	1.67	0.59
2:1B:28:C:H1'	2:1B:54:A:H61	1.66	0.59
46:2m:960:U:OP2	73:3L:38:ASN:ND2	2.36	0.59
1:1A:1552:G:O2'	1:1A:1574:G:N2	2.36	0.59
1:1A:2608:G:H2'	1:1A:2609:G:H8	1.67	0.59
1:1A:4633:G:H21	1:1A:4665:A:H62	1.49	0.59
7:1G:80:ALA:HA	7:1G:83:LEU:HD13	1.84	0.59
7:1G:122:GLN:O	7:1G:248:ARG:NH2	2.36	0.59
46:2m:1169:G:H21	46:2m:1191:C:H41	1.51	0.59
68:3G:211:LYS:NZ	68:3G:215:MET:SD	2.75	0.59
1:1A:942:G:OP1	9:2A:245:ARG:NH1	2.34	0.59
1:1A:1461:C:H2'	1:1A:1462:A:H8	1.67	0.59
1:1A:1637:A:OP1	1:1A:1640:C:N4	2.35	0.59
1:1A:2553:A:N6	1:1A:2764:A:OP2	2.36	0.59
1:1A:4940:C:OP2	8:1H:219:LYS:NZ	2.34	0.59
1:1A:1175:A:H2	1:1A:1185:G:H1	1.49	0.59
1:1A:2706:G:N2	1:1A:2708:U:OP2	2.35	0.59
4:1D:192:LYS:HG3	4:1D:193:ARG:HG2	1.84	0.59
46:2m:1452:A:N6	46:2m:1473:G:O2'	2.35	0.59
46:2m:1864:U:OP2	64:3C:4:LYS:NZ	2.35	0.59
16:2H:39:ALA:HB2	16:2H:63:ARG:HG3	1.85	0.59
50:2q:11:ARG:HH11	50:2q:20:LEU:HB3	1.66	0.59
56:2w:106:GLU:OE1	59:2z:116:LYS:NZ	2.36	0.59
1:1A:67:C:OP2	1:1A:312:G:N2	2.36	0.59
1:1A:95:G:N7	14:2F:11:LYS:NZ	2.40	0.59
1:1A:2485:U:H3	1:1A:2489:C:HO2'	1.48	0.59
1:1A:4129:G:O6	1:1A:4156:G:N2	2.36	0.59
50:2q:104:ASP:HB3	50:2q:110:ALA:HB2	1.84	0.59
83:zz:145:G:N2	83:zz:248:U:O2	2.35	0.59
1:1A:505:G:O6	1:1A:653:U:O4	2.21	0.59
1:1A:1759:G:H1	1:1A:1773:U:H3	1.49	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:642:U:H4'	46:2m:644:G:H4'	1.85	0.59
46:2m:1438:A:N6	46:2m:1439:A:N1	2.50	0.59
1:1A:1577:G:OP1	44:2j:17:ARG:NH1	2.36	0.58
1:1A:1902:G:OP1	34:2Z:24:HIS:NE2	2.36	0.58
1:1A:2325:C:O2'	33:2Y:124:ASN:ND2	2.35	0.58
1:1A:3807:A:OP1	42:2h:23:ARG:NH1	2.36	0.58
1:1A:3903:A:N1	1:1A:3904:G:N2	2.50	0.58
1:1A:4771:C:OP2	1:1A:4772:C:N4	2.36	0.58
1:1A:4906:C:H2'	1:1A:4907:G:H8	1.67	0.58
2:1B:27:G:N7	7:1G:58:ARG:NH1	2.50	0.58
18:2J:70:CYS:SG	18:2J:71:ALA:N	2.76	0.58
29:2U:94:LYS:HG3	29:2U:95:THR:HG23	1.84	0.58
46:2m:356:C:OP1	55:2v:105:ARG:NH1	2.36	0.58
46:2m:943:U:OP1	48:2o:214:LYS:NZ	2.35	0.58
46:2m:1170:A:N6	46:2m:1189:A:OP2	2.36	0.58
46:2m:1273:C:H5'	46:2m:1274:G:H2'	1.85	0.58
46:2m:1445:U:O2'	61:21:55:ARG:O	2.21	0.58
67:3F:88:ARG:HE	67:3F:97:THR:HG21	1.68	0.58
69:3H:228:ILE:HD12	69:3H:231:ARG:HD2	1.85	0.58
1:1A:1617:G:O3'	38:2d:12:ARG:NH2	2.36	0.58
1:1A:4627:U:H4'	5:1E:373:LYS:HD2	1.84	0.58
46:2m:1403:C:H42	46:2m:1436:C:H5''	1.68	0.58
69:3H:2:LYS:HG2	69:3H:15:LEU:HD21	1.84	0.58
1:1A:98:A:H2'	1:1A:99:A:C8	2.39	0.58
1:1A:2003:G:H1	1:1A:2016:C:H42	1.50	0.58
11:2C:42:ASN:O	11:2C:59:LYS:NZ	2.33	0.58
12:2D:98:ARG:HB3	12:2D:120:GLY:HA3	1.84	0.58
46:2m:1160:U:O4	63:3B:2:GLY:N	2.36	0.58
46:2m:1192:U:OP2	63:3B:119:ARG:NH2	2.36	0.58
1:1A:1442:C:H41	1:1A:2104:G:H21	1.50	0.58
1:1A:1800:U:OP1	22:2N:77:ASN:ND2	2.35	0.58
1:1A:3759:A:N6	1:1A:3764:U:O2	2.34	0.58
5:1E:82:PRO:HG3	5:1E:171:LEU:HD11	1.85	0.58
46:2m:1034:A:N6	46:2m:1081:U:C2	2.72	0.58
47:2n:177:MET:SD	47:2n:180:ARG:NH2	2.72	0.58
2:1B:26:C:H5''	7:1G:56:THR:HG21	1.85	0.58
1:1A:2295:C:H2'	1:1A:2296:G:H8	1.69	0.58
1:1A:2701:U:H3	1:1A:2715:G:H1	1.51	0.58
3:1C:74:U:O4	27:2S:72:GLN:NE2	2.37	0.58
22:2N:68:THR:HG1	22:2N:71:ALA:H	1.50	0.58
27:2S:83:GLU:O	27:2S:86:GLN:NE2	2.36	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4633:G:N2	1:1A:4665:A:H62	2.01	0.58
9:2A:226:HIS:HA	9:2A:233:ALA:HB3	1.84	0.58
16:2H:63:ARG:HG2	16:2H:131:GLU:HG2	1.85	0.58
21:2M:80:ILE:HG12	21:2M:129:VAL:HG23	1.86	0.58
51:2r:138:ALA:O	51:2r:204:ARG:NH1	2.37	0.58
1:1A:1336:G:H21	1:1A:2349:A:N6	2.00	0.58
1:1A:2411:C:H2'	1:1A:2412:A:H8	1.68	0.58
1:1A:2599:G:H5'	35:2a:60:ARG:HH22	1.68	0.58
1:1A:4981:G:H3'	1:1A:4982:A:H8	1.69	0.58
5:1E:115:LYS:NZ	5:1E:129:ALA:O	2.36	0.58
46:2m:692:G:N2	46:2m:739:C:O5'	2.36	0.58
67:3F:111:VAL:HA	67:3F:123:GLY:HA3	1.85	0.58
69:3H:74:ARG:HA	69:3H:96:SER:HA	1.86	0.58
1:1A:188:G:N2	1:1A:189:G:O6	2.37	0.58
1:1A:1509:C:H2'	1:1A:1510:G:H8	1.69	0.58
1:1A:2485:U:N3	1:1A:2489:C:O2'	2.35	0.58
44:2j:19:GLY:O	44:2j:23:ARG:NH1	2.36	0.58
46:2m:1729:U:O4	46:2m:1805:G:O6	2.22	0.58
67:3F:31:ILE:HG23	67:3F:43:TRP:HB2	1.84	0.58
69:3H:149:LYS:NZ	69:3H:152:ASP:O	2.30	0.58
1:1A:469:C:N3	8:1H:105:ARG:NH2	2.52	0.58
1:1A:4889:G:N1	1:1A:4932:U:C2	2.71	0.58
35:2a:51:GLY:O	35:2a:53:LEU:N	2.36	0.58
46:2m:659:G:O2'	46:2m:662:G:O2'	2.20	0.58
48:2o:62:LEU:HD12	48:2o:65:ARG:HD2	1.86	0.58
67:3F:69:VAL:HA	67:3F:80:SER:HA	1.86	0.58
1:1A:518:G:H22	1:1A:643:C:H2'	1.69	0.57
1:1A:1569:U:H2'	1:1A:1570:G:H8	1.69	0.57
1:1A:2706:G:N2	1:1A:2709:C:OP1	2.32	0.57
1:1A:3921:U:OP1	4:1D:221:LYS:NZ	2.36	0.57
46:2m:602:G:H3'	46:2m:603:C:H2'	1.85	0.57
46:2m:1407:U:H2'	46:2m:1409:A:H62	1.68	0.57
46:2m:1495:G:N2	66:3E:41:GLN:O	2.37	0.57
61:21:25:THR:HG22	61:21:86:LYS:HG3	1.85	0.57
69:3H:14:LYS:NZ	69:3H:15:LEU:O	2.31	0.57
19:2K:53:MET:O	19:2K:58:ARG:NH1	2.38	0.57
45:2k:105:ASP:OD1	45:2k:105:ASP:N	2.33	0.57
71:3J:52:GLN:HE21	71:3J:78:LYS:HB2	1.68	0.57
83:zz:294:U:H2'	83:zz:295:G:H2'	1.85	0.57
1:1A:1653:A:OP1	29:2U:32:ARG:NH2	2.38	0.57
1:1A:1703:C:O2'	9:2A:39:GLN:NE2	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1780:A:O2'	12:2D:198:LYS:NZ	2.35	0.57
1:1A:4759:C:OP1	17:2I:117:ARG:NH2	2.37	0.57
46:2m:1046:U:H1'	73:3L:140:THR:HG21	1.86	0.57
49:2p:37:VAL:HG12	49:2p:50:ILE:HA	1.86	0.57
1:1A:300:A:H2'	1:1A:301:G:H8	1.69	0.57
1:1A:1898:C:O2	33:2Y:48:ARG:NH1	2.37	0.57
1:1A:2000:G:O2'	1:1A:2017:A:N1	2.34	0.57
1:1A:2405:G:OP1	38:2d:14:LYS:NZ	2.37	0.57
1:1A:3839:G:N2	1:1A:3843:C:O2'	2.37	0.57
1:1A:3908:A:H61	81:zx:16:THR:HA	1.69	0.57
9:2A:116:GLN:HB3	19:2K:3:VAL:HG12	1.86	0.57
12:2D:168:SER:OG	12:2D:169:LYS:N	2.37	0.57
23:2O:44:GLN:HA	23:2O:56:LEU:HD21	1.87	0.57
46:2m:556:U:H3	46:2m:588:G:H21	1.53	0.57
1:1A:3765:G:OP2	1:1A:3767:C:N4	2.37	0.57
7:1G:55:VAL:HG22	7:1G:60:ILE:HG23	1.86	0.57
9:2A:26:ALA:HA	9:2A:29:LYS:HG2	1.86	0.57
46:2m:1053:C:H2'	46:2m:1054:G:H8	1.69	0.57
46:2m:1142:G:N2	46:2m:1145:A:OP2	2.30	0.57
65:3D:21:THR:HA	65:3D:25:GLY:HA2	1.87	0.57
1:1A:2898:G:OP2	20:2L:135:LYS:NZ	2.32	0.57
7:1G:31:TYR:O	7:1G:35:ARG:NH1	2.37	0.57
46:2m:454:U:H2'	46:2m:455:A:H8	1.69	0.57
46:2m:483:C:OP2	63:3B:48:LYS:NZ	2.32	0.57
46:2m:1172:U:H3	46:2m:1188:A:N6	2.02	0.57
67:3F:18:VAL:HA	67:3F:35:SER:HA	1.86	0.57
68:3G:200:ARG:O	70:3I:54:ARG:NH2	2.37	0.57
1:1A:2386:U:H2'	1:1A:2387:G:H8	1.69	0.57
26:2R:128:ILE:HG12	26:2R:134:LYS:HG2	1.87	0.57
46:2m:155:G:N2	69:3H:56:ASN:OD1	2.35	0.57
46:2m:562:U:OP1	70:3I:134:HIS:NE2	2.38	0.57
46:2m:1144:A:OP1	46:2m:1355:C:N4	2.38	0.57
83:zz:262:U:O2	83:zz:271:G:O6	2.23	0.57
1:1A:2702:C:OP1	23:2O:101:ARG:NH2	2.36	0.57
4:1D:117:GLU:O	4:1D:162:ASN:ND2	2.38	0.57
7:1G:5:LYS:NZ	7:1G:6:VAL:O	2.31	0.57
43:2i:33:LEU:HA	43:2i:38:LYS:HG2	1.86	0.57
1:1A:114:G:H22	1:1A:158:A:H61	1.53	0.57
2:1B:107:G:H2'	2:1B:108:G:H8	1.70	0.57
3:1C:8:U:H2'	3:1C:9:A:C8	2.40	0.57
14:2F:174:LYS:O	29:2U:138:LYS:NZ	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:2L:172:ARG:NH1	20:2L:175:GLU:OE1	2.38	0.57
54:2u:5:LYS:HB2	71:3J:29:ASP:HB2	1.87	0.57
1:1A:4558:U:OP2	5:1E:246:ARG:NH2	2.36	0.56
34:2Z:41:PHE:O	34:2Z:45:LYS:NZ	2.33	0.56
46:2m:846:G:OP2	50:2q:108:ARG:NH2	2.38	0.56
57:2x:26:LYS:HG3	57:2x:67:ASP:HB3	1.85	0.56
63:3B:51:VAL:HG21	63:3B:94:ILE:HD11	1.87	0.56
1:1A:4250:G:H5''	13:2E:98:ASN:HD22	1.71	0.56
1:1A:4463:U:O2'	1:1A:4488:A:N6	2.37	0.56
2:1B:30:C:O2	2:1B:48:G:N2	2.32	0.56
10:2B:188:ALA:HA	10:2B:198:THR:HG22	1.86	0.56
21:2M:157:ARG:O	21:2M:174:THR:OG1	2.23	0.56
27:2S:19:PHE:O	27:2S:26:ARG:NH2	2.37	0.56
39:2e:31:ASN:HB3	39:2e:48:THR:HG22	1.87	0.56
45:2k:31:ASN:O	45:2k:113:ARG:NH2	2.38	0.56
50:2q:80:ILE:HG13	50:2q:81:THR:HG23	1.86	0.56
57:2x:81:ILE:HA	57:2x:84:ILE:HD12	1.87	0.56
75:3N:20:ARG:NH1	75:3N:76:TYR:OH	2.37	0.56
1:1A:104:G:H2'	1:1A:105:A:H8	1.69	0.56
1:1A:311:G:H2'	1:1A:312:G:H8	1.70	0.56
1:1A:1253:G:O2'	1:1A:1255:A:OP1	2.22	0.56
1:1A:2652:G:H22	44:2j:59:SER:HA	1.69	0.56
1:1A:3664:G:H2'	1:1A:3665:G:H8	1.71	0.56
1:1A:4322:G:N2	1:1A:4325:A:OP2	2.35	0.56
1:1A:4479:A:OP1	11:2C:170:LYS:NZ	2.38	0.56
26:2R:60:TYR:O	26:2R:62:ARG:NH1	2.38	0.56
46:2m:192:C:OP1	53:2t:140:LYS:NZ	2.38	0.56
46:2m:507:G:OP2	75:3N:104:ARG:NH2	2.34	0.56
46:2m:1099:G:H1	46:2m:1133:A:H61	1.53	0.56
51:2r:63:LYS:HE2	51:2r:71:ARG:HE	1.69	0.56
57:2x:58:LEU:O	57:2x:62:ARG:NH2	2.36	0.56
63:3B:66:ILE:O	63:3B:68:LYS:NZ	2.39	0.56
67:3F:43:TRP:HA	67:3F:55:PRO:HA	1.87	0.56
71:3J:40:LYS:O	71:3J:112:LYS:NZ	2.37	0.56
1:1A:1896:A:OP1	9:2A:97:GLY:N	2.38	0.56
1:1A:2837:U:H5''	5:1E:249:ARG:HB2	1.86	0.56
5:1E:222:VAL:O	5:1E:343:ARG:NH1	2.39	0.56
21:2M:77:ASN:OD1	21:2M:98:ARG:NH1	2.39	0.56
46:2m:1034:A:N6	46:2m:1081:U:N3	2.52	0.56
46:2m:1566:G:OP2	60:20:102:ARG:NH1	2.36	0.56
79:3R:138:ARG:NH1	79:3R:149:CYS:SG	2.78	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:2633:U:OP1	20:2L:64:ARG:NH2	2.38	0.56
1:1A:4420:U:O4	1:1A:4475:G:N2	2.37	0.56
1:1A:4425:G:OP1	41:2g:100:TYR:OH	2.23	0.56
1:1A:4431:U:OP2	12:2D:3:ARG:NH2	2.39	0.56
3:1C:60:G:O6	36:2b:62:ASN:ND2	2.39	0.56
20:2L:96:MET:SD	20:2L:100:ARG:NH2	2.79	0.56
34:2Z:108:SER:OG	34:2Z:110:ILE:O	2.23	0.56
41:2g:118:THR:OG1	41:2g:119:ASN:N	2.39	0.56
1:1A:1521:C:OP1	6:1F:100:ARG:NH2	2.38	0.56
1:1A:4767:C:O2'	1:1A:4874:A:N6	2.38	0.56
12:2D:57:TYR:OH	12:2D:128:ARG:NH2	2.39	0.56
20:2L:24:LEU:HD23	20:2L:32:ILE:HD13	1.87	0.56
22:2N:30:TYR:HE1	22:2N:94:GLU:HB3	1.71	0.56
46:2m:817:G:N2	46:2m:818:A:N7	2.53	0.56
47:2n:184:ARG:HE	47:2n:189:ILE:HD11	1.70	0.56
67:3F:133:ASN:HD21	67:3F:139:LYS:HD3	1.69	0.56
1:1A:2780:C:H2'	1:1A:2781:G:H8	1.71	0.56
1:1A:2835:A:O2'	5:1E:228:TYR:O	2.22	0.56
1:1A:3658:C:H2'	1:1A:3659:G:H8	1.71	0.56
1:1A:4600:G:N2	1:1A:4601:U:O4	2.38	0.56
1:1A:4939:C:H3'	8:1H:156:ARG:HH22	1.71	0.56
35:2a:15:THR:HG22	35:2a:17:SER:H	1.69	0.56
46:2m:103:A:H5''	53:2t:12:ARG:HH12	1.70	0.56
46:2m:1034:A:N7	46:2m:1081:U:O4	2.39	0.56
46:2m:1811:C:OP1	63:3B:37:LYS:NZ	2.36	0.56
46:2m:1813:A:H3'	46:2m:1814:G:H8	1.71	0.56
46:2m:1845:A:H2'	46:2m:1846:G:H8	1.70	0.56
1:1A:1951:G:N2	1:1A:2032:U:O2	2.33	0.56
1:1A:2693:G:OP2	39:2e:33:LYS:NZ	2.39	0.56
1:1A:5000:G:OP1	5:1E:394:LYS:NZ	2.38	0.56
43:2i:45:GLN:NE2	43:2i:51:GLN:OE1	2.39	0.56
46:2m:391:C:H2'	46:2m:392:A:H8	1.70	0.56
46:2m:448:A:H4'	46:2m:449:A:H5''	1.88	0.56
46:2m:1398:G:H1	46:2m:1448:A:H61	1.54	0.56
67:3F:256:ILE:HB	67:3F:270:LEU:HD22	1.86	0.56
1:1A:2045:G:N2	1:1A:2046:G:N7	2.51	0.56
1:1A:4274:A:H2'	1:1A:4275:G:H8	1.70	0.56
46:2m:18:C:H2'	46:2m:19:A:H8	1.70	0.56
46:2m:570:C:H4'	75:3N:36:PRO:HG3	1.88	0.56
46:2m:1059:G:N2	46:2m:1829:G:O3'	2.39	0.56
76:3O:69:THR:H	76:3O:72:VAL:HB	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:512:U:O4	1:1A:647:G:O6	2.23	0.56
1:1A:1700:G:OP2	1:1A:1704:C:N4	2.38	0.56
1:1A:2075:G:H2'	1:1A:2076:G:H8	1.70	0.56
1:1A:2344:U:H3'	29:2U:9:ARG:HH12	1.71	0.56
1:1A:4077:A:N6	1:1A:4169:G:H21	2.02	0.56
46:2m:398:A:H5''	46:2m:399:C:H3'	1.88	0.56
57:2x:16:LYS:H	57:2x:19:ALA:HB3	1.71	0.56
1:1A:1958:A:O2'	1:1A:2025:A:N1	2.38	0.55
1:1A:2361:G:H5'	18:2J:65:GLY:H	1.70	0.55
38:2d:70:VAL:HA	38:2d:73:ARG:HG2	1.88	0.55
46:2m:305:U:N3	53:2t:182:CYS:O	2.34	0.55
46:2m:525:A:H2'	46:2m:526:A:H8	1.71	0.55
46:2m:1603:G:O4'	59:2z:38:ARG:NH1	2.39	0.55
67:3F:216:ALA:HB3	67:3F:230:LEU:H	1.70	0.55
1:1A:725:G:H2'	1:1A:726:G:H8	1.71	0.55
1:1A:2057:A:N6	17:2I:17:GLY:O	2.37	0.55
1:1A:4083:U:OP1	4:1D:28:ARG:NH2	2.40	0.55
18:2J:4:TYR:HE2	18:2J:16:LYS:HB2	1.71	0.55
46:2m:1748:G:O6	46:2m:1786:U:O4	2.24	0.55
55:2v:57:ASP:HB3	55:2v:60:CYS:HB2	1.88	0.55
11:2C:18:ILE:HG22	11:2C:27:VAL:HG22	1.88	0.55
13:2E:58:ARG:NH1	82:zy:19:U:O4	2.38	0.55
46:2m:672:A:N6	46:2m:1027:A:OP1	2.39	0.55
47:2n:22:GLY:O	47:2n:24:HIS:ND1	2.37	0.55
58:2y:107:LYS:HA	58:2y:110:ASP:HB3	1.88	0.55
1:1A:977:C:OP2	8:1H:59:ARG:NH1	2.40	0.55
1:1A:1270:A:O2'	1:1A:1439:C:O2	2.25	0.55
1:1A:1361:G:OP2	14:2F:28:GLN:NE2	2.33	0.55
1:1A:3848:U:H2'	1:1A:3849:A:H8	1.71	0.55
46:2m:351:G:OP1	53:2t:7:ASN:ND2	2.39	0.55
46:2m:1043:G:H21	46:2m:1073:U:H3	1.54	0.55
46:2m:1172:U:O4	46:2m:1188:A:N7	2.40	0.55
50:2q:137:PRO:HG2	50:2q:150:PRO:HD2	1.89	0.55
54:2u:88:GLU:HG2	54:2u:90:VAL:H	1.71	0.55
67:3F:65:PHE:O	67:3F:82:SER:OG	2.24	0.55
1:1A:1070:G:OP2	8:1H:65:ARG:NH2	2.39	0.55
1:1A:2892:C:OP2	20:2L:74:ARG:NH1	2.39	0.55
1:1A:3667:C:H4'	4:1D:8:GLN:HA	1.87	0.55
1:1A:4702:G:OP1	17:2I:134:LYS:NZ	2.39	0.55
11:2C:30:PRO:HD2	11:2C:84:VAL:HG12	1.89	0.55
21:2M:36:ASN:OD1	21:2M:36:ASN:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:2T:25:ILE:HA	28:2T:43:VAL:HG12	1.88	0.55
48:2o:146:ARG:HB3	48:2o:149:GLN:HB2	1.87	0.55
65:3D:29:GLN:HG3	65:3D:45:ASN:HB3	1.87	0.55
67:3F:20:GLN:NE2	67:3F:68:ASP:OD1	2.40	0.55
67:3F:131:LEU:HD22	67:3F:139:LYS:HB3	1.88	0.55
13:2E:114:ASP:OD1	59:2z:14:ARG:NH2	2.40	0.55
14:2F:106:SER:OG	14:2F:107:THR:N	2.37	0.55
52:2s:154:ILE:HB	52:2s:185:VAL:HG12	1.87	0.55
59:2z:119:ALA:O	59:2z:123:LEU:N	2.33	0.55
1:1A:2816:G:HO2'	1:1A:3622:C:HO2'	1.52	0.55
3:1C:131:G:O3'	26:2R:108:GLN:NE2	2.40	0.55
57:2x:146:ARG:NH1	82:zy:34:G:OP1	2.40	0.55
68:3G:229:CYS:SG	68:3G:232:THR:OG1	2.64	0.55
1:1A:90:G:OP2	43:2i:40:ARG:NH2	2.39	0.55
1:1A:2557:G:O6	1:1A:2570:U:O4	2.24	0.55
1:1A:4704:C:H2'	1:1A:4705:A:H8	1.72	0.55
1:1A:5002:U:OP2	5:1E:385:LYS:NZ	2.38	0.55
8:1H:133:PHE:O	8:1H:138:ARG:NH2	2.39	0.55
49:2p:132:LYS:HE2	49:2p:191:PRO:HB3	1.87	0.55
51:2r:39:ILE:HA	51:2r:68:ILE:HG21	1.88	0.55
1:1A:1290:G:H5''	8:1H:219:LYS:HD2	1.89	0.55
1:1A:2743:A:O2'	4:1D:21:LYS:NZ	2.40	0.55
6:1F:65:GLU:OE2	6:1F:80:ARG:NH1	2.40	0.55
9:2A:113:ARG:HH21	9:2A:210:PRO:HD3	1.71	0.55
46:2m:2:A:H5'	68:3G:205:VAL:HG11	1.89	0.55
46:2m:1460:C:N4	46:2m:1461:G:O6	2.39	0.55
47:2n:38:ILE:HD11	47:2n:47:TYR:HB3	1.88	0.55
50:2q:207:VAL:HG22	50:2q:221:ARG:HA	1.87	0.55
53:2t:57:ALA:H	53:2t:180:GLY:HA2	1.71	0.55
53:2t:103:LEU:HD23	53:2t:170:LYS:HG2	1.88	0.55
67:3F:57:ARG:NH2	67:3F:93:THR:O	2.39	0.55
1:1A:679:C:H2'	1:1A:680:G:H8	1.71	0.55
5:1E:54:THR:HG22	5:1E:373:LYS:HE2	1.88	0.55
8:1H:72:LYS:HG3	30:2V:119:CYS:HB2	1.89	0.55
46:2m:885:U:O2	46:2m:901:G:N1	2.40	0.55
51:2r:95:HIS:ND1	51:2r:98:GLU:OE1	2.40	0.55
83:zz:144:U:O2	83:zz:249:G:O6	2.25	0.55
1:1A:183:C:O2'	1:1A:184:U:N3	2.31	0.54
1:1A:2871:A:N6	1:1A:2878:G:H21	2.05	0.54
7:1G:288:LEU:HD23	7:1G:291:GLN:HE21	1.72	0.54
59:2z:24:ARG:HB3	59:2z:29:ALA:HB2	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1914:C:H4'	17:2I:89:PRO:HD3	1.89	0.54
1:1A:2274:C:O2	9:2A:165:LYS:NZ	2.39	0.54
1:1A:3667:C:O2	1:1A:3675:G:N2	2.35	0.54
6:1F:303:ARG:O	19:2K:38:ARG:NH2	2.37	0.54
14:2F:170:THR:HG22	14:2F:172:GLU:H	1.71	0.54
46:2m:1281:G:O6	71:3J:101:ARG:NH2	2.40	0.54
69:3H:149:LYS:HG3	69:3H:151:ASP:H	1.71	0.54
1:1A:68:U:OP1	16:2H:178:HIS:ND1	2.35	0.54
1:1A:106:A:H1'	1:1A:336:A:C8	2.42	0.54
1:1A:4541:G:N2	1:1A:4544:A:OP2	2.36	0.54
1:1A:4693:C:OP1	11:2C:64:ARG:NH2	2.40	0.54
20:2L:70:ARG:NH1	20:2L:76:MET:SD	2.81	0.54
38:2d:28:HIS:N	38:2d:33:THR:O	2.40	0.54
46:2m:1354:G:N2	46:2m:1357:A:OP2	2.34	0.54
51:2r:49:LEU:HD12	57:2x:50:LYS:HB3	1.89	0.54
6:1F:60:HIS:HA	6:1F:92:PHE:HE1	1.72	0.54
25:2Q:123:LYS:HB3	46:2m:324:C:H41	1.72	0.54
46:2m:1647:A:N6	46:2m:1677:U:O4	2.40	0.54
1:1A:3702:A:N6	1:1A:3774:A:N1	2.54	0.54
1:1A:4454:G:HO2'	1:1A:4500:U:HO2'	1.53	0.54
1:1A:4522:G:O2'	1:1A:4525:C:OP2	2.22	0.54
7:1G:125:VAL:HG12	7:1G:127:GLY:H	1.73	0.54
11:2C:23:ARG:NH2	11:2C:41:ILE:O	2.41	0.54
27:2S:8:THR:HG22	27:2S:10:ASP:H	1.73	0.54
31:2W:28:VAL:HB	31:2W:95:ALA:HB3	1.87	0.54
46:2m:1270:G:O2'	46:2m:1301:A:N7	2.40	0.54
49:2p:132:LYS:HD2	49:2p:156:LEU:HD22	1.88	0.54
63:3B:63:ASN:ND2	63:3B:114:ASP:OD2	2.40	0.54
1:1A:1437:C:O2'	1:1A:2099:G:OP2	2.25	0.54
1:1A:4444:C:H2'	1:1A:4445:U:H6	1.73	0.54
16:2H:115:VAL:HG11	16:2H:160:GLU:HB3	1.89	0.54
38:2d:13:ASN:N	38:2d:13:ASN:OD1	2.41	0.54
76:3O:60:LYS:O	76:3O:64:ASN:ND2	2.40	0.54
1:1A:309:C:H5'	37:2c:32:ARG:HA	1.90	0.54
1:1A:490:C:N3	1:1A:664:G:N2	2.56	0.54
1:1A:1321:G:N2	1:1A:3876:A:O4'	2.40	0.54
1:1A:1973:G:H8	1:1A:1974:U:H2'	1.73	0.54
1:1A:2003:G:N2	1:1A:2004:U:O4	2.41	0.54
1:1A:3725:G:O6	37:2c:67:LYS:NZ	2.36	0.54
4:1D:6:ARG:HA	4:1D:9:ARG:HG2	1.89	0.54
5:1E:313:SER:OG	5:1E:314:ILE:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:2Q:96:GLN:OE1	25:2Q:101:ARG:NH1	2.40	0.54
46:2m:495:U:O2'	50:2q:27:PHE:O	2.24	0.54
46:2m:652:U:H2'	46:2m:653:A:C8	2.43	0.54
46:2m:1562:C:H2'	46:2m:1563:G:H8	1.72	0.54
60:20:41:LYS:O	60:20:83:GLN:NE2	2.41	0.54
1:1A:2112:G:H4'	1:1A:2251:G:H1	1.72	0.54
5:1E:117:ARG:HH11	5:1E:177:LYS:HD3	1.72	0.54
23:2O:106:SER:O	23:2O:109:SER:OG	2.25	0.54
46:2m:127:C:O2'	46:2m:184:G:N1	2.41	0.54
46:2m:1249:C:H3'	46:2m:1250:A:H2'	1.90	0.54
46:2m:1858:G:OP2	73:3L:146:ARG:NH2	2.30	0.54
57:2x:43:GLU:OE1	57:2x:45:ARG:NE	2.38	0.54
12:2D:110:ARG:NE	82:zy:1:G:O2'	2.40	0.54
29:2U:122:VAL:O	29:2U:143:ALA:N	2.40	0.54
46:2m:925:G:N2	46:2m:1017:U:O2	2.30	0.54
46:2m:1079:C:H4'	46:2m:1182:A:H61	1.73	0.54
46:2m:1619:A:OP1	56:2w:47:ARG:NH1	2.41	0.54
83:zz:175:U:O4	83:zz:224:G:O6	2.26	0.54
1:1A:453:G:OP2	8:1H:228:GLN:NE2	2.41	0.54
1:1A:1554:A:OP2	44:2j:4:ARG:NH2	2.39	0.54
1:1A:2573:A:O3'	28:2T:115:LYS:NZ	2.41	0.54
1:1A:2781:G:O2'	40:2f:3:SER:O	2.26	0.54
61:21:80:PHE:HB3	66:3E:52:PHE:HB3	1.90	0.54
1:1A:82:U:O2'	1:1A:1382:G:O2'	2.26	0.53
1:1A:1517:G:H1	6:1F:106:LYS:HZ1	1.57	0.53
1:1A:1558:A:H2'	1:1A:1559:G:H8	1.73	0.53
1:1A:2520:C:H2'	1:1A:2521:G:H8	1.73	0.53
1:1A:2745:A:H2'	1:1A:2746:A:H8	1.73	0.53
1:1A:4573:G:OP1	3:1C:1:C:N4	2.37	0.53
3:1C:94:G:OP2	38:2d:72:ARG:NH1	2.39	0.53
18:2J:5:SER:HB3	18:2J:118:GLN:HE22	1.73	0.53
20:2L:157:ASP:O	20:2L:161:ALA:N	2.40	0.53
46:2m:922:A:OP1	74:3M:3:ARG:NH2	2.40	0.53
46:2m:1473:G:N2	46:2m:1475:G:OP2	2.41	0.53
46:2m:1601:A:OP2	46:2m:1636:G:N2	2.39	0.53
47:2n:198:MET:HG3	47:2n:200:ASP:H	1.73	0.53
62:3A:42:VAL:HG23	62:3A:43:THR:HG23	1.90	0.53
1:1A:1458:C:OP1	19:2K:69:LYS:NZ	2.41	0.53
1:1A:4186:A:H2'	1:1A:4187:G:H8	1.72	0.53
14:2F:77:SER:OG	14:2F:102:ARG:NH2	2.41	0.53
20:2L:61:ALA:HA	20:2L:64:ARG:HG2	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:2d:35:GLY:O	38:2d:45:ARG:NE	2.42	0.53
46:2m:1454:A:H61	46:2m:1476:A:H5''	1.73	0.53
57:2x:139:ALA:O	57:2x:140:ARG:NH2	2.40	0.53
67:3F:196:ASN:ND2	67:3F:236:ILE:O	2.37	0.53
1:1A:4194:U:H1'	1:1A:4221:C:H41	1.74	0.53
46:2m:366:U:H3	46:2m:394:G:H1	1.56	0.53
46:2m:522:A:O3'	70:3I:131:ARG:NH2	2.41	0.53
46:2m:1024:A:OP2	72:3K:124:ARG:NH2	2.34	0.53
46:2m:1598:G:H5'	76:3O:80:ARG:HD3	1.90	0.53
46:2m:1786:U:H2'	46:2m:1787:G:H8	1.74	0.53
60:20:96:SER:HB3	60:20:99:VAL:HG22	1.91	0.53
74:3M:102:ILE:H	74:3M:113:HIS:CD2	2.26	0.53
83:zz:141:U:H2'	83:zz:142:A:H8	1.73	0.53
83:zz:150:G:O6	83:zz:244:A:N6	2.41	0.53
1:1A:1393:G:O2'	1:1A:4352:U:OP1	2.25	0.53
1:1A:1645:C:H2'	1:1A:1646:A:C8	2.43	0.53
1:1A:2265:G:OP1	45:2k:35:ARG:NH1	2.41	0.53
39:2e:37:ARG:HD3	39:2e:42:LEU:HD12	1.89	0.53
47:2n:147:LEU:O	47:2n:165:ASN:ND2	2.40	0.53
75:3N:4:THR:HB	75:3N:30:PRO:HD2	1.89	0.53
1:1A:1704:C:OP1	9:2A:40:LYS:NZ	2.42	0.53
1:1A:2838:G:H5'	5:1E:247:GLY:HA2	1.90	0.53
1:1A:4545:G:H2'	1:1A:4546:A:H8	1.74	0.53
12:2D:139:ARG:HH22	12:2D:195:CYS:HB3	1.73	0.53
13:2E:90:ARG:HH22	13:2E:110:GLN:HE22	1.55	0.53
15:2G:119:ARG:HA	17:2I:189:ILE:HD11	1.90	0.53
16:2H:13:LYS:HZ3	37:2c:45:ARG:HG2	1.73	0.53
24:2P:48:ARG:HH21	24:2P:51:ARG:HH11	1.56	0.53
26:2R:86:ALA:HB1	26:2R:97:VAL:HG11	1.89	0.53
46:2m:333:G:OP2	69:3H:190:ARG:NH2	2.41	0.53
46:2m:482:G:H21	46:2m:484:A:H8	1.56	0.53
46:2m:1748:G:N2	46:2m:1786:U:O2	2.31	0.53
67:3F:79:LEU:HD11	67:3F:120:ILE:HD13	1.90	0.53
67:3F:120:ILE:O	67:3F:132:TRP:N	2.42	0.53
74:3M:26:LEU:HD11	74:3M:60:LYS:HD3	1.91	0.53
1:1A:357:U:O2	1:1A:359:A:N6	2.42	0.53
1:1A:1636:U:H5''	1:1A:1637:A:H5'	1.90	0.53
11:2C:94:SER:HB2	11:2C:179:ILE:HG13	1.90	0.53
12:2D:3:ARG:HA	12:2D:123:GLN:HE22	1.73	0.53
13:2E:76:GLY:HA2	13:2E:79:ALA:HB3	1.89	0.53
46:2m:1734:G:H2'	46:2m:1799:G:H22	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:2n:213:GLU:HG2	58:2y:84:TYR:HB3	1.90	0.53
1:1A:19:G:OP2	36:2b:93:ARG:NH2	2.42	0.53
1:1A:753:C:H41	1:1A:910:G:H1	1.56	0.53
1:1A:2736:G:OP1	44:2j:48:LYS:NZ	2.42	0.53
1:1A:3660:C:H2'	1:1A:3682:A:H61	1.73	0.53
16:2H:143:ARG:NH1	16:2H:152:THR:OG1	2.41	0.53
24:2P:83:ARG:NH2	24:2P:120:PRO:O	2.41	0.53
38:2d:34:CYS:SG	38:2d:35:GLY:N	2.81	0.53
46:2m:566:U:O4	46:2m:584:G:O6	2.27	0.53
46:2m:1446:A:H5'	61:21:57:PRO:HA	1.90	0.53
46:2m:1704:C:N4	80:zv:3:U:OP1	2.42	0.53
64:3C:45:VAL:HA	73:3L:113:GLN:HE22	1.74	0.53
75:3N:19:GLN:OE1	75:3N:85:ASN:ND2	2.42	0.53
1:1A:4272:G:OP2	1:1A:4272:G:N2	2.35	0.53
1:1A:4459:U:HO2'	5:1E:265:SER:HG	1.52	0.53
1:1A:4642:U:H2'	1:1A:4643:G:H8	1.73	0.53
3:1C:41:A:O2'	38:2d:59:THR:OG1	2.27	0.53
6:1F:163:LYS:N	6:1F:166:GLU:OE2	2.41	0.53
10:2B:55:VAL:HG12	26:2R:44:PRO:HA	1.90	0.53
20:2L:14:VAL:HG23	20:2L:15:LEU:HD12	1.91	0.53
47:2n:156:TYR:O	62:3A:60:ARG:NH2	2.42	0.53
83:zz:234:U:O2	83:zz:235:G:N2	2.42	0.53
1:1A:990:C:N4	1:1A:1051:G:O2'	2.40	0.53
1:1A:1591:U:OP2	5:1E:243:LYS:NZ	2.41	0.53
1:1A:1669:A:N3	1:1A:1852:U:O2'	2.40	0.53
1:1A:1718:C:N3	9:2A:181:LYS:NZ	2.52	0.53
1:1A:4439:U:HO2'	12:2D:105:CYS:HG	1.47	0.53
1:1A:4748:U:O4	1:1A:4951:G:O6	2.26	0.53
2:1B:76:U:O4	2:1B:100:A:N7	2.41	0.53
12:2D:184:MET:HA	12:2D:187:LYS:HG2	1.91	0.53
17:2I:100:ASP:N	17:2I:100:ASP:OD1	2.37	0.53
46:2m:1854:U:H2'	46:2m:1855:G:H8	1.73	0.53
51:2r:140:ASP:HB2	65:3D:63:ARG:HH22	1.73	0.53
65:3D:40:ARG:HH22	73:3L:121:ARG:HD3	1.74	0.53
77:3P:74:THR:OG1	77:3P:77:CYS:SG	2.64	0.53
1:1A:1194:G:H2'	1:1A:1195:G:H8	1.74	0.53
1:1A:2552:G:H2'	1:1A:2765:A:H61	1.74	0.53
1:1A:5006:U:H4'	1:1A:5007:A:H5'	1.91	0.53
3:1C:130:C:H2'	3:1C:131:G:H8	1.74	0.53
16:2H:68:ARG:NH2	16:2H:123:GLU:OE2	2.42	0.53
46:2m:1178:U:H2'	46:2m:1179:G:H8	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:2t:72:CYS:HG	53:2t:112:TRP:CG	2.26	0.53
1:1A:1655:C:OP1	1:1A:1679:A:O2'	2.26	0.52
1:1A:2263:A:O2'	8:1H:120:ASP:OD2	2.28	0.52
1:1A:4378:A:OP2	29:2U:39:HIS:NE2	2.38	0.52
1:1A:4704:C:H2'	1:1A:4705:A:C8	2.44	0.52
17:2I:142:ALA:HA	17:2I:145:VAL:HG12	1.92	0.52
46:2m:671:A:H4'	46:2m:672:A:H5''	1.91	0.52
54:2u:16:PHE:HB2	54:2u:79:LEU:HD22	1.89	0.52
56:2w:18:ARG:HH22	56:2w:37:TYR:HB3	1.74	0.52
67:3F:108:VAL:HG23	67:3F:124:SER:HA	1.91	0.52
69:3H:98:ARG:HH11	69:3H:99:GLY:H	1.57	0.52
1:1A:4:G:H2'	1:1A:5:A:H8	1.74	0.52
1:1A:1743:A:N1	1:1A:1789:C:O2'	2.42	0.52
1:1A:1885:G:OP1	34:2Z:20:ASN:ND2	2.42	0.52
1:1A:1974:U:O2'	1:1A:1994:C:N4	2.42	0.52
1:1A:2822:G:OP2	20:2L:21:LYS:NZ	2.39	0.52
1:1A:4088:C:O2	10:2B:245:LYS:NZ	2.35	0.52
1:1A:4461:C:H2'	1:1A:4462:C:H6	1.74	0.52
9:2A:113:ARG:HH12	9:2A:206:ASN:HA	1.74	0.52
55:2v:75:GLY:HA3	55:2v:88:ILE:HD12	1.90	0.52
1:1A:2759:G:H5'	1:1A:2764:A:H1'	1.91	0.52
1:1A:3641:U:OP2	1:1A:3646:A:N6	2.40	0.52
1:1A:3799:A:H5'	24:2P:64:THR:HG21	1.91	0.52
2:1B:57:C:H2'	2:1B:58:A:H8	1.74	0.52
46:2m:840:C:H5'	46:2m:841:G:H5''	1.90	0.52
46:2m:902:G:C6	46:2m:904:A:N1	2.77	0.52
46:2m:1153:C:OP2	74:3M:71:LYS:NZ	2.33	0.52
64:3C:23:CYS:SG	64:3C:24:THR:N	2.83	0.52
68:3G:131:GLY:HA3	68:3G:137:VAL:HG12	1.91	0.52
1:1A:19:G:OP1	36:2b:93:ARG:NE	2.43	0.52
1:1A:4546:A:H62	4:1D:215:ASN:HD22	1.55	0.52
1:1A:4670:C:O2'	1:1A:4672:A:OP2	2.25	0.52
2:1B:15:C:H2'	2:1B:16:A:H8	1.74	0.52
9:2A:131:ASN:OD1	9:2A:134:ARG:NH2	2.42	0.52
11:2C:146:LEU:HD11	11:2C:158:ALA:HB2	1.90	0.52
36:2b:104:THR:HG22	36:2b:106:LYS:H	1.73	0.52
46:2m:1413:G:H21	46:2m:1415:C:H5'	1.73	0.52
51:2r:138:ALA:HB3	51:2r:204:ARG:HH11	1.75	0.52
1:1A:83:C:H5''	1:1A:84:A:H5''	1.91	0.52
1:1A:1433:A:H3'	1:1A:1434:G:H8	1.73	0.52
1:1A:2300:A:N6	6:1F:178:ASN:OD1	2.41	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:2362:U:H2'	1:1A:2363:A:H8	1.75	0.52
1:1A:4585:U:OP1	17:2I:74:ARG:N	2.43	0.52
6:1F:76:ILE:HG22	6:1F:78:ARG:HE	1.75	0.52
6:1F:293:LEU:O	6:1F:299:GLN:NE2	2.36	0.52
7:1G:150:LEU:HD22	13:2E:146:ARG:HG3	1.92	0.52
9:2A:236:ARG:HH22	9:2A:243:LEU:HD13	1.75	0.52
46:2m:562:U:H2'	46:2m:563:G:H8	1.74	0.52
46:2m:993:G:OP1	46:2m:1131:G:N2	2.42	0.52
46:2m:1220:A:N3	46:2m:1677:U:O2'	2.37	0.52
69:3H:74:ARG:HD2	69:3H:96:SER:HB2	1.91	0.52
82:zy:22:G:H2'	82:zy:23:A:H8	1.73	0.52
1:1A:1925:G:O3'	21:2M:116:ARG:NH2	2.42	0.52
1:1A:2544:G:N2	3:1C:126:C:OP1	2.42	0.52
1:1A:4369:A:H5''	43:2i:65:LYS:HD2	1.91	0.52
1:1A:4896:G:OP1	15:2G:129:LYS:NZ	2.42	0.52
1:1A:4930:C:H2'	1:1A:4931:G:H8	1.74	0.52
1:1A:4936:G:OP2	8:1H:183:ARG:NH2	2.42	0.52
1:1A:4993:G:H2'	1:1A:4994:G:H8	1.74	0.52
3:1C:28:C:H2'	3:1C:29:G:H8	1.73	0.52
46:2m:331:C:N4	69:3H:186:GLN:OE1	2.42	0.52
1:1A:436:C:H2'	1:1A:437:G:H8	1.74	0.52
1:1A:935:A:O2'	15:2G:44:GLN:O	2.27	0.52
1:1A:2675:G:O6	31:2W:33:GLN:N	2.42	0.52
1:1A:2756:G:H2'	1:1A:2757:A:C8	2.45	0.52
1:1A:4552:U:H2'	1:1A:4553:A:C8	2.44	0.52
11:2C:89:ARG:HH11	11:2C:187:VAL:HG13	1.73	0.52
46:2m:28:U:H2'	46:2m:29:G:H8	1.75	0.52
46:2m:65:C:H1'	69:3H:172:LYS:HE3	1.92	0.52
46:2m:440:G:OP1	53:2t:24:LYS:NZ	2.37	0.52
46:2m:1138:C:O2	62:3A:61:ARG:NH1	2.38	0.52
46:2m:1808:U:H2'	46:2m:1809:A:C8	2.45	0.52
63:3B:46:HIS:HB3	63:3B:101:LEU:HD21	1.91	0.52
70:3I:132:GLN:HG3	70:3I:134:HIS:HE1	1.74	0.52
1:1A:1094:G:O6	1:1A:1201:U:O4	2.27	0.52
1:1A:1864:G:OP1	12:2D:98:ARG:NH1	2.43	0.52
1:1A:2516:G:OP1	35:2a:60:ARG:NH1	2.41	0.52
1:1A:3610:A:H2'	1:1A:3611:A:H8	1.75	0.52
13:2E:99:PHE:HD1	13:2E:105:PHE:HB3	1.74	0.52
13:2E:167:GLN:HG3	13:2E:168:GLN:HG3	1.92	0.52
39:2e:47:ILE:HG13	39:2e:49:ASP:H	1.75	0.52
46:2m:96:C:O2	46:2m:473:A:O2'	2.28	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:380:G:N1	46:2m:383:G:OP2	2.28	0.52
52:2s:184:ASP:OD1	52:2s:184:ASP:N	2.42	0.52
59:2z:55:ARG:HD2	76:3O:49:LEU:HD23	1.92	0.52
79:3R:135:HIS:CD2	79:3R:138:ARG:H	2.28	0.52
1:1A:62:A:N3	1:1A:77:U:O2'	2.40	0.52
1:1A:1281:G:H5'	6:1F:323:ARG:HB3	1.92	0.52
1:1A:1735:U:H2'	1:1A:1736:A:H8	1.75	0.52
4:1D:116:LEU:HB2	4:1D:126:LEU:HB2	1.91	0.52
11:2C:94:SER:OG	11:2C:95:VAL:N	2.41	0.52
45:2k:90:LEU:HD11	45:2k:111:ILE:HG23	1.91	0.52
46:2m:114:G:O2'	46:2m:382:C:O2'	2.27	0.52
46:2m:373:G:H2'	46:2m:374:G:H8	1.75	0.52
48:2o:130:THR:OG1	48:2o:180:ASP:OD1	2.27	0.52
1:1A:161:G:H2'	1:1A:162:A:H8	1.74	0.52
1:1A:3631:U:O2'	1:1A:3805:U:OP1	2.28	0.52
1:1A:4389:C:H2'	1:1A:4390:A:H8	1.75	0.52
1:1A:4622:A:H4'	5:1E:13:SER:HB2	1.92	0.52
1:1A:5062:G:H2'	1:1A:5063:G:H8	1.74	0.52
10:2B:137:ARG:HB2	10:2B:203:ALA:HB3	1.92	0.52
19:2K:39:THR:OG1	19:2K:132:LYS:NZ	2.41	0.52
20:2L:176:ARG:NH2	46:2m:909:G:OP1	2.34	0.52
35:2a:61:PRO:HA	35:2a:64:LEU:HD13	1.91	0.52
46:2m:380:G:H5'	53:2t:31:ARG:HH11	1.75	0.52
68:3G:229:CYS:HG	68:3G:232:THR:HG1	1.58	0.52
69:3H:66:GLY:N	69:3H:100:CYS:SG	2.83	0.52
70:3I:42:GLU:OE2	70:3I:109:ARG:NH1	2.40	0.52
1:1A:3844:U:H2'	1:1A:3845:A:C8	2.45	0.51
1:1A:4129:G:OP2	28:2T:54:THR:OG1	2.29	0.51
1:1A:4601:U:H2'	1:1A:4602:A:H8	1.75	0.51
5:1E:372:SER:HB3	5:1E:377:GLY:HA3	1.91	0.51
12:2D:30:LYS:HG2	12:2D:63:GLU:HG3	1.91	0.51
46:2m:84:A:H4'	75:3N:124:ASN:HD22	1.74	0.51
50:2q:212:ASP:OD1	50:2q:216:ASN:N	2.43	0.51
59:2z:14:ARG:HH11	59:2z:17:ASN:HA	1.75	0.51
70:3I:32:ILE:O	70:3I:36:GLY:N	2.43	0.51
1:1A:89:C:H5'	1:1A:294:G:H8	1.75	0.51
1:1A:286:U:OP2	1:1A:296:A:N6	2.43	0.51
1:1A:706:C:O2'	1:1A:1298:C:O2'	2.28	0.51
1:1A:4967:A:OP1	5:1E:125:SER:OG	2.27	0.51
14:2F:102:ARG:O	37:2c:25:ARG:NH1	2.38	0.51
24:2P:70:PRO:HA	24:2P:73:ARG:HG3	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:1268:C:N4	46:2m:1269:G:O6	2.43	0.51
67:3F:67:SER:OG	67:3F:81:GLY:O	2.26	0.51
70:3I:169:ARG:HD2	70:3I:170:PRO:HD2	1.92	0.51
1:1A:443:G:H5''	34:2Z:54:LYS:HE3	1.93	0.51
1:1A:1598:C:H2'	1:1A:1599:A:H8	1.74	0.51
1:1A:1790:U:OP2	22:2N:13:TYR:OH	2.18	0.51
1:1A:3937:C:H1'	16:2H:125:SER:HB3	1.91	0.51
2:1B:8:G:OP1	7:1G:33:ARG:NH2	2.44	0.51
34:2Z:36:ARG:NH2	34:2Z:77:ALA:O	2.35	0.51
46:2m:1005:G:OP2	48:2o:162:ARG:NH1	2.43	0.51
46:2m:1495:G:H21	66:3E:41:GLN:HB3	1.75	0.51
67:3F:20:GLN:HG2	67:3F:69:VAL:H	1.75	0.51
1:1A:1270:A:H8	1:1A:2106:G:H21	1.59	0.51
1:1A:1738:A:H2'	1:1A:1739:G:H8	1.74	0.51
1:1A:1968:G:OP2	1:1A:1970:A:N6	2.38	0.51
1:1A:2374:A:H2'	1:1A:2375:A:H8	1.75	0.51
1:1A:2601:A:OP1	35:2a:40:LYS:NZ	2.32	0.51
1:1A:2843:U:H2'	1:1A:2844:A:C8	2.45	0.51
27:2S:58:VAL:HG12	27:2S:59:ARG:HG3	1.93	0.51
37:2c:79:THR:HG22	37:2c:81:ILE:H	1.74	0.51
50:2q:106:LYS:HG3	50:2q:108:ARG:HH21	1.76	0.51
52:2s:36:LEU:HB3	52:2s:40:LEU:HD13	1.91	0.51
82:zy:22:G:H2'	82:zy:23:A:C8	2.46	0.51
83:zz:295:G:N3	83:zz:298:A:N1	2.58	0.51
1:1A:185:C:H1'	1:1A:187:U:H1'	1.92	0.51
1:1A:2408:U:OP2	40:2f:42:ARG:NH2	2.39	0.51
1:1A:4577:U:H2'	1:1A:4578:G:H8	1.75	0.51
4:1D:83:HIS:ND1	4:1D:84:THR:O	2.37	0.51
21:2M:86:SER:OG	21:2M:87:ARG:N	2.43	0.51
46:2m:373:G:OP1	55:2v:137:THR:OG1	2.28	0.51
50:2q:11:ARG:NH1	50:2q:21:ASP:OD1	2.37	0.51
63:3B:134:TYR:OH	78:3Q:13:ARG:NH1	2.44	0.51
64:3C:26:CYS:O	73:3L:149:ARG:N	2.37	0.51
83:zz:164:U:O2	83:zz:231:G:O2'	2.28	0.51
1:1A:5018:C:H2'	1:1A:5019:A:H8	1.76	0.51
16:2H:61:ILE:HG22	16:2H:133:ILE:HA	1.93	0.51
32:2X:23:ARG:NE	32:2X:25:TYR:OH	2.39	0.51
70:3I:65:GLU:HA	70:3I:70:ARG:HD3	1.92	0.51
76:3O:61:GLU:HA	76:3O:64:ASN:HD22	1.75	0.51
1:1A:1086:C:H2'	1:1A:1087:A:H8	1.76	0.51
1:1A:1870:C:H2'	1:1A:1871:A:H8	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:2378:G:N2	1:1A:2381:A:OP2	2.40	0.51
1:1A:2521:G:H2'	1:1A:2522:G:H8	1.76	0.51
1:1A:2579:G:H21	1:1A:2581:A:H8	1.58	0.51
1:1A:2780:C:H2'	1:1A:2781:G:C8	2.46	0.51
1:1A:3759:A:O2'	46:2m:1826:G:O2'	2.21	0.51
1:1A:4095:G:N2	1:1A:4114:C:OP1	2.33	0.51
1:1A:4299:U:H2'	1:1A:4300:U:H6	1.75	0.51
8:1H:66:LYS:HD2	8:1H:68:MET:HE2	1.92	0.51
9:2A:225:THR:OG1	9:2A:226:HIS:N	2.44	0.51
22:2N:40:VAL:HG12	22:2N:98:HIS:HA	1.92	0.51
22:2N:129:LYS:O	22:2N:131:GLN:NE2	2.43	0.51
29:2U:46:ASP:OD1	29:2U:46:ASP:N	2.44	0.51
46:2m:799:U:O4	46:2m:867:G:N2	2.44	0.51
46:2m:1235:G:O6	59:2z:137:LYS:NZ	2.40	0.51
1:1A:1522:G:H2'	1:1A:1653:A:H61	1.76	0.51
1:1A:4086:G:O6	10:2B:48:LYS:NZ	2.40	0.51
1:1A:4407:G:H1	1:1A:4435:U:H3	1.58	0.51
1:1A:4430:G:H5'	12:2D:3:ARG:HH22	1.75	0.51
29:2U:123:ILE:HA	29:2U:143:ALA:HB3	1.92	0.51
31:2W:31:TYR:O	31:2W:34:THR:OG1	2.29	0.51
67:3F:12:LYS:HZ3	67:3F:306:LEU:HD13	1.75	0.51
1:1A:280:G:OP1	16:2H:47:LYS:NZ	2.31	0.51
1:1A:323:C:H2'	1:1A:324:A:H8	1.76	0.51
1:1A:498:C:H42	1:1A:656:C:H42	1.56	0.51
1:1A:1306:C:H2'	1:1A:1307:A:H8	1.76	0.51
1:1A:2280:G:OP1	33:2Y:48:ARG:NH2	2.44	0.51
1:1A:3645:U:O2'	1:1A:4553:A:O2'	2.22	0.51
1:1A:3723:A:H2'	1:1A:3724:A:H8	1.75	0.51
4:1D:117:GLU:HB2	4:1D:162:ASN:HB2	1.93	0.51
46:2m:91:A:H5''	46:2m:92:A:H5''	1.92	0.51
46:2m:1232:U:OP2	59:2z:135:HIS:ND1	2.44	0.51
50:2q:139:LEU:HD23	50:2q:150:PRO:HB3	1.93	0.51
74:3M:52:ILE:HG22	74:3M:61:ILE:HG23	1.93	0.51
1:1A:1933:G:H2'	1:1A:1934:A:C8	2.46	0.51
46:2m:1779:G:H2'	46:2m:1780:G:C8	2.46	0.51
1:1A:146:G:H2'	1:1A:147:A:H8	1.76	0.50
1:1A:251:C:OP1	38:2d:85:LYS:NZ	2.44	0.50
1:1A:418:A:OP2	3:1C:16:G:N2	2.44	0.50
1:1A:752:G:O6	1:1A:912:G:N2	2.45	0.50
1:1A:2457:G:OP1	16:2H:65:ARG:NH1	2.44	0.50
1:1A:3653:A:H5''	4:1D:179:ILE:HD11	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4389:C:H2'	1:1A:4390:A:C8	2.46	0.50
6:1F:109:ARG:H	6:1F:111:TRP:CD1	2.29	0.50
9:2A:116:GLN:O	9:2A:119:ASN:ND2	2.44	0.50
33:2Y:97:ALA:HB3	33:2Y:122:VAL:HG22	1.92	0.50
39:2e:37:ARG:HH11	39:2e:42:LEU:HB2	1.76	0.50
46:2m:797:C:H1'	46:2m:798:A:H4'	1.93	0.50
46:2m:1476:A:N6	51:2r:58:ALA:O	2.44	0.50
50:2q:45:ILE:HD12	50:2q:80:ILE:HD12	1.93	0.50
50:2q:115:THR:OG1	50:2q:117:GLU:O	2.28	0.50
53:2t:162:LEU:HA	53:2t:165:GLN:HE21	1.76	0.50
68:3G:265:PRO:HA	68:3G:268:GLU:HB2	1.92	0.50
1:1A:2781:G:OP1	40:2f:10:LYS:NZ	2.30	0.50
1:1A:4537:C:H2'	1:1A:4538:G:H8	1.74	0.50
3:1C:153:C:H5'	10:2B:185:LYS:HD2	1.93	0.50
5:1E:245:HIS:CD2	5:1E:246:ARG:HG3	2.46	0.50
14:2F:197:LYS:O	14:2F:201:GLU:N	2.44	0.50
20:2L:69:ALA:HB1	20:2L:74:ARG:HB2	1.92	0.50
20:2L:102:LEU:HD22	20:2L:138:LEU:HD22	1.93	0.50
26:2R:145:ASP:N	26:2R:145:ASP:OD1	2.42	0.50
46:2m:352:U:OP1	55:2v:139:ARG:NE	2.43	0.50
46:2m:948:C:H2'	46:2m:949:G:H8	1.76	0.50
46:2m:1109:C:O2'	46:2m:1110:G:O5'	2.29	0.50
65:3D:17:VAL:HA	65:3D:30:VAL:HG12	1.93	0.50
67:3F:32:LEU:HA	67:3F:42:MET:HA	1.92	0.50
1:1A:1207:C:H2'	1:1A:1208:G:H8	1.76	0.50
1:1A:1686:C:O3'	30:2V:18:ARG:NH1	2.44	0.50
1:1A:2737:C:OP1	44:2j:34:HIS:NE2	2.44	0.50
14:2F:129:ARG:HB2	36:2b:117:ARG:HH12	1.77	0.50
35:2a:23:SER:OG	35:2a:24:ARG:N	2.45	0.50
52:2s:64:VAL:HG11	52:2s:72:PHE:HE2	1.76	0.50
55:2v:103:GLU:OE2	55:2v:105:ARG:NH2	2.40	0.50
1:1A:279:A:OP2	16:2H:8:GLN:NE2	2.43	0.50
1:1A:2295:C:H2'	1:1A:2296:G:C8	2.45	0.50
1:1A:4094:G:H2'	1:1A:4095:G:C8	2.46	0.50
1:1A:4100:C:H4'	1:1A:4110:C:H2'	1.94	0.50
1:1A:4730:C:O2	1:1A:4732:G:N2	2.45	0.50
3:1C:123:U:O3'	3:1C:128:C:N4	2.44	0.50
10:2B:59:ARG:HG2	10:2B:62:ARG:HH22	1.76	0.50
12:2D:20:SER:N	12:2D:23:CYS:SG	2.85	0.50
46:2m:115:U:O2'	46:2m:381:C:O2	2.27	0.50
46:2m:924:G:O6	46:2m:1018:U:O4	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:1478:U:H2'	46:2m:1479:G:C8	2.47	0.50
46:2m:1692:U:H2'	46:2m:1693:G:C8	2.47	0.50
48:2o:72:ALA:HB3	73:3L:128:ARG:HH21	1.76	0.50
53:2t:191:GLU:O	55:2v:19:ASN:ND2	2.43	0.50
69:3H:120:ASP:O	69:3H:125:THR:OG1	2.26	0.50
70:3I:169:ARG:HH12	70:3I:175:ARG:HH21	1.59	0.50
73:3L:94:HIS:ND1	73:3L:127:GLY:O	2.43	0.50
81:zx:14:LEU:HD12	81:zx:17:CYS:HB3	1.93	0.50
1:1A:1849:U:O2'	1:1A:1850:A:O4'	2.28	0.50
1:1A:4414:A:H5''	12:2D:154:ARG:HH11	1.77	0.50
1:1A:4881:U:O2'	1:1A:4882:U:O4'	2.30	0.50
30:2V:96:LEU:HA	30:2V:99:ILE:HD12	1.93	0.50
46:2m:509:G:H5''	70:3I:3:VAL:HG12	1.92	0.50
46:2m:528:A:H2'	46:2m:529:A:H8	1.76	0.50
46:2m:952:G:H21	73:3L:52:THR:HG21	1.77	0.50
64:3C:22:ARG:HD2	64:3C:27:ALA:HB1	1.94	0.50
67:3F:164:ILE:HG12	67:3F:178:ASN:HD22	1.76	0.50
70:3I:169:ARG:NH2	70:3I:170:PRO:O	2.44	0.50
1:1A:1866:U:H5'	12:2D:9:TYR:HE1	1.77	0.50
1:1A:4752:U:OP1	34:2Z:100:ARG:NH2	2.42	0.50
7:1G:17:GLN:NE2	22:2N:22:HIS:O	2.45	0.50
21:2M:111:ARG:O	21:2M:115:ALA:HB2	2.12	0.50
39:2e:60:LEU:HB2	39:2e:64:LEU:HD13	1.93	0.50
46:2m:1562:C:H2'	46:2m:1563:G:C8	2.46	0.50
58:2y:103:LYS:HD2	58:2y:106:LEU:HD11	1.93	0.50
59:2z:55:ARG:NH1	76:3O:82:SER:OG	2.45	0.50
62:3A:20:SER:OG	62:3A:22:ARG:NE	2.44	0.50
69:3H:1:MET:HG3	69:3H:3:LEU:HB3	1.93	0.50
1:1A:908:G:H2'	1:1A:909:A:H8	1.77	0.50
1:1A:2272:C:H2'	1:1A:2273:G:H8	1.76	0.50
1:1A:2599:G:H3'	1:1A:2600:A:H8	1.76	0.50
1:1A:2899:C:OP1	20:2L:108:ARG:NH2	2.39	0.50
1:1A:4415:A:H62	1:1A:4427:G:N2	2.09	0.50
1:1A:4993:G:H1	1:1A:5058:A:H61	1.59	0.50
10:2B:159:HIS:CD2	10:2B:185:LYS:HA	2.47	0.50
25:2Q:56:ARG:HE	25:2Q:61:LYS:HB2	1.76	0.50
27:2S:54:GLU:OE1	27:2S:107:THR:OG1	2.28	0.50
38:2d:28:HIS:HE1	38:2d:30:GLN:HB2	1.76	0.50
46:2m:368:U:H3'	46:2m:369:C:H2'	1.93	0.50
69:3H:48:TYR:OH	69:3H:114:VAL:N	2.34	0.50
69:3H:64:LYS:HZ1	69:3H:81:HIS:HB3	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:3I:132:GLN:HG3	70:3I:134:HIS:CE1	2.46	0.50
1:1A:1660:U:N3	1:1A:2345:G:OP1	2.45	0.50
1:1A:2492:C:H2'	1:1A:2493:G:H8	1.76	0.50
1:1A:2817:C:O3'	1:1A:4655:A:O2'	2.30	0.50
4:1D:45:VAL:HG23	4:1D:61:VAL:HG22	1.93	0.50
7:1G:183:TYR:HD1	7:1G:190:PHE:HB2	1.77	0.50
25:2Q:5:LEU:HA	25:2Q:12:LYS:HA	1.94	0.50
28:2T:54:THR:HG22	28:2T:57:MET:HE3	1.94	0.50
46:2m:429:C:O2'	46:2m:811:A:N1	2.44	0.50
46:2m:837:A:H2'	46:2m:838:G:H4'	1.93	0.50
46:2m:873:G:H2'	46:2m:874:G:H8	1.77	0.50
46:2m:1468:C:H2'	46:2m:1469:A:C8	2.47	0.50
46:2m:1498:A:OP2	49:2p:27:ARG:NH1	2.45	0.50
79:3R:121:CYS:H	79:3R:131:PHE:HA	1.76	0.50
1:1A:422:C:H2'	1:1A:423:G:H8	1.76	0.50
1:1A:1705:G:O5'	9:2A:46:ARG:NH2	2.45	0.50
5:1E:304:SER:HA	5:1E:308:ASP:HB3	1.93	0.50
8:1H:283:PRO:HA	8:1H:286:LEU:HD12	1.94	0.50
10:2B:83:PHE:HB3	10:2B:159:HIS:HB2	1.93	0.50
36:2b:89:ARG:HH21	36:2b:93:ARG:HH21	1.60	0.50
46:2m:1215:C:O2'	46:2m:1645:C:OP2	2.28	0.50
46:2m:1413:G:N2	46:2m:1414:A:O3'	2.45	0.50
1:1A:1426:G:N1	1:1A:1458:C:OP2	2.40	0.49
1:1A:2363:A:H62	1:1A:3859:G:H21	1.58	0.49
1:1A:2587:A:H4'	1:1A:2770:C:H5'	1.92	0.49
1:1A:4220:A:OP2	22:2N:2:THR:OG1	2.28	0.49
1:1A:4335:C:OP1	22:2N:7:LYS:NZ	2.35	0.49
1:1A:4660:G:H2'	1:1A:4661:G:H8	1.77	0.49
1:1A:4692:A:H62	1:1A:4696:C:H42	1.60	0.49
1:1A:4750:G:H3'	1:1A:4751:G:H21	1.74	0.49
1:1A:4885:U:N3	1:1A:4936:G:C6	2.71	0.49
1:1A:4932:U:OP1	8:1H:262:LYS:NZ	2.35	0.49
7:1G:76:CYS:SG	7:1G:77:ALA:N	2.85	0.49
9:2A:154:ILE:HG22	9:2A:187:MET:HE2	1.93	0.49
46:2m:373:G:H4'	55:2v:85:THR:HG21	1.94	0.49
46:2m:1051:G:H2'	46:2m:1052:A:H8	1.76	0.49
46:2m:1070:A:H3'	46:2m:1071:G:H8	1.77	0.49
46:2m:1256:G:OP2	66:3E:40:ARG:NH2	2.41	0.49
83:zz:259:U:H3	83:zz:274:A:H8	1.50	0.49
1:1A:450:G:O6	1:1A:1297:U:O4	2.30	0.49
1:1A:2523:G:OP2	35:2a:29:ARG:NH2	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4212:A:N1	22:2N:3:ASN:ND2	2.60	0.49
1:1A:4911:A:OP2	5:1E:100:ARG:NE	2.41	0.49
1:1A:4978:G:OP1	5:1E:271:GLN:NE2	2.45	0.49
3:1C:32:C:H3'	3:1C:33:G:H8	1.75	0.49
6:1F:122:TYR:HD1	6:1F:280:PRO:HG2	1.78	0.49
46:2m:508:A:H3'	46:2m:509:G:H8	1.77	0.49
46:2m:1400:U:H3	61:21:55:ARG:HH22	1.60	0.49
46:2m:1445:U:H2'	46:2m:1446:A:C4	2.47	0.49
50:2q:71:LYS:HA	50:2q:76:VAL:HA	1.94	0.49
79:3R:135:HIS:HD2	79:3R:137:ASP:H	1.59	0.49
1:1A:279:A:C5	16:2H:12:ARG:HG3	2.47	0.49
1:1A:956:A:O2'	1:1A:2077:C:OP1	2.30	0.49
1:1A:3661:G:N2	1:1A:3681:G:O2'	2.41	0.49
1:1A:4091:G:N7	1:1A:4114:C:N4	2.60	0.49
1:1A:4212:A:OP2	12:2D:15:LYS:NZ	2.45	0.49
1:1A:4621:C:OP1	24:2P:48:ARG:NH2	2.45	0.49
1:1A:4980:C:H3'	1:1A:4981:G:H21	1.76	0.49
2:1B:34:C:O2'	7:1G:203:ASN:ND2	2.45	0.49
6:1F:296:PRO:HA	6:1F:299:GLN:HB2	1.94	0.49
13:2E:152:GLY:HA2	13:2E:156:ARG:HH21	1.76	0.49
46:2m:628:A:H62	49:2p:145:GLN:HE21	1.60	0.49
46:2m:1226:G:N1	46:2m:1639:G:OP2	2.39	0.49
46:2m:1410:C:OP1	57:2x:26:LYS:NZ	2.44	0.49
51:2r:153:LEU:O	51:2r:157:GLY:N	2.42	0.49
56:2w:93:MET:HG3	56:2w:102:PHE:HB2	1.93	0.49
71:3J:106:CYS:SG	71:3J:107:SER:N	2.85	0.49
1:1A:1645:C:H2'	1:1A:1646:A:H8	1.76	0.49
1:1A:2763:U:H2'	1:1A:2764:A:C8	2.48	0.49
1:1A:4268:A:H61	1:1A:4281:A:H62	1.60	0.49
1:1A:4555:U:O2	81:zx:10:LYS:NZ	2.45	0.49
20:2L:10:LEU:HD11	20:2L:38:ARG:HG3	1.95	0.49
46:2m:49:C:OP1	46:2m:471:G:N2	2.46	0.49
46:2m:93:U:OP2	50:2q:3:ARG:NH2	2.41	0.49
46:2m:1862:G:O2'	46:2m:1864:U:OP2	2.25	0.49
1:1A:375:G:OP2	38:2d:52:LYS:NZ	2.44	0.49
1:1A:1692:C:H5''	19:2K:53:MET:HE2	1.94	0.49
1:1A:2825:A:H4'	1:1A:2826:U:H5'	1.95	0.49
1:1A:4760:G:OP1	17:2I:37:ARG:NH1	2.44	0.49
2:1B:4:U:H2'	2:1B:5:A:H8	1.77	0.49
3:1C:22:U:OP1	27:2S:11:ARG:NH2	2.45	0.49
4:1D:158:ILE:HG23	4:1D:162:ASN:HD21	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:1H:220:LYS:HE2	8:1H:237:LYS:HE2	1.93	0.49
10:2B:199:CYS:SG	10:2B:200:THR:N	2.85	0.49
46:2m:303:C:H5'	53:2t:75:LYS:HE3	1.94	0.49
46:2m:844:U:H2'	46:2m:845:G:H8	1.77	0.49
46:2m:1419:C:O2'	46:2m:1420:G:O4'	2.30	0.49
50:2q:47:PHE:HD2	50:2q:48:LEU:HD12	1.78	0.49
50:2q:121:TYR:HA	50:2q:163:ASP:HA	1.95	0.49
60:20:115:LYS:HA	60:20:121:ARG:HA	1.94	0.49
75:3N:23:MET:HE1	75:3N:48:TYR:HE2	1.77	0.49
83:zz:317:C:H2'	83:zz:318:G:H8	1.77	0.49
1:1A:86:U:H2'	1:1A:87:A:C8	2.48	0.49
1:1A:1354:A:N6	1:1A:1503:A:O4'	2.46	0.49
1:1A:2521:G:H2'	1:1A:2522:G:C8	2.47	0.49
1:1A:3754:G:H2'	1:1A:3755:G:C8	2.47	0.49
3:1C:94:G:N3	38:2d:82:THR:OG1	2.42	0.49
8:1H:107:VAL:HG13	8:1H:108:LYS:HB3	1.94	0.49
9:2A:126:ASN:HD22	22:2N:132:PRO:HG3	1.77	0.49
12:2D:3:ARG:HH12	12:2D:63:GLU:HB2	1.78	0.49
46:2m:812:A:H3'	46:2m:813:A:H8	1.77	0.49
52:2s:167:GLU:HA	52:2s:170:VAL:HB	1.94	0.49
65:3D:44:ARG:NH1	65:3D:60:GLU:O	2.45	0.49
71:3J:117:GLU:HG2	71:3J:120:ALA:H	1.78	0.49
82:zy:28:C:H2'	82:zy:29:G:H8	1.77	0.49
1:1A:1876:U:H2'	1:1A:1877:G:C8	2.47	0.49
1:1A:3946:G:O2'	1:1A:3948:C:OP2	2.30	0.49
1:1A:4188:U:H2'	1:1A:4189:U:H6	1.78	0.49
18:2J:4:TYR:HE1	18:2J:18:ARG:HD2	1.77	0.49
24:2P:31:ASN:HD21	24:2P:115:SER:HB2	1.77	0.49
46:2m:1830:U:O2'	80:zv:2:C:OP1	2.29	0.49
59:2z:62:ASP:N	59:2z:62:ASP:OD1	2.44	0.49
70:3I:138:ARG:HH21	70:3I:153:SER:HA	1.78	0.49
1:1A:2843:U:O2'	1:1A:4632:U:OP1	2.30	0.49
10:2B:26:LYS:HG3	10:2B:28:VAL:H	1.78	0.49
17:2I:42:ASN:HD22	17:2I:125:LYS:HD3	1.77	0.49
22:2N:42:ILE:HA	22:2N:96:ILE:HG22	1.95	0.49
46:2m:873:G:H2'	46:2m:874:G:C8	2.48	0.49
46:2m:1338:G:H4'	61:2i:74:SER:H	1.78	0.49
46:2m:1373:C:H5'	58:2y:7:LYS:HB3	1.95	0.49
51:2r:71:ARG:NH1	51:2r:148:ASN:OD1	2.45	0.49
56:2w:63:ALA:HB3	56:2w:65:LYS:HG2	1.95	0.49
83:zz:295:G:O2'	83:zz:298:A:N6	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1394:G:O3'	14:2F:183:ARG:NH1	2.46	0.49
1:1A:1503:A:H4'	1:1A:1504:G:H5'	1.95	0.49
1:1A:1563:A:H2'	1:1A:1564:A:C8	2.47	0.49
1:1A:1824:G:H2'	1:1A:1825:A:C8	2.48	0.49
1:1A:2293:U:H2'	1:1A:2294:G:H8	1.78	0.49
1:1A:2745:A:H2'	1:1A:2746:A:C8	2.47	0.49
1:1A:4928:C:O2'	15:2G:118:MET:SD	2.69	0.49
10:2B:231:ASP:OD1	10:2B:231:ASP:N	2.45	0.49
12:2D:76:MET:HE1	12:2D:147:HIS:HB3	1.94	0.49
12:2D:145:GLU:HA	12:2D:148:VAL:HG22	1.94	0.49
46:2m:30:C:O2'	46:2m:596:U:OP1	2.27	0.49
46:2m:388:U:H2'	46:2m:389:A:H8	1.78	0.49
46:2m:454:U:H2'	46:2m:455:A:C8	2.47	0.49
46:2m:1119:A:N6	83:zz:266:G:O6	2.46	0.49
46:2m:1154:U:H4'	46:2m:1155:U:H3'	1.94	0.49
46:2m:1518:C:H5''	46:2m:1519:U:H5''	1.93	0.49
48:2o:224:GLU:HG2	48:2o:227:LYS:H	1.77	0.49
49:2p:116:ARG:HG2	49:2p:150:MET:HE1	1.94	0.49
50:2q:36:HIS:CG	50:2q:85:GLY:HA3	2.48	0.49
1:1A:54:G:O2'	16:2H:161:MET:SD	2.69	0.49
1:1A:1442:C:N4	1:1A:2104:G:H21	2.10	0.49
1:1A:2643:G:H1	1:1A:2691:U:H3	1.61	0.49
5:1E:224:LYS:HE2	5:1E:340:THR:HG23	1.93	0.49
16:2H:99:GLN:HE21	16:2H:118:SER:HB2	1.78	0.49
16:2H:159:ARG:HG2	16:2H:164:LEU:HB2	1.95	0.49
46:2m:660:C:OP2	63:3B:3:LYS:NZ	2.45	0.49
46:2m:1183:A:H2'	46:2m:1184:G:H8	1.78	0.49
50:2q:127:ARG:HE	50:2q:142:HIS:HA	1.77	0.49
55:2v:96:ILE:HD12	63:3B:10:ALA:HB1	1.95	0.49
67:3F:242:SER:HG	67:3F:291:TRP:CD1	2.31	0.49
1:1A:2404:A:O2'	38:2d:12:ARG:O	2.29	0.48
6:1F:76:ILE:HG13	6:1F:77:PRO:HD2	1.95	0.48
46:2m:1234:C:H5''	46:2m:1246:A:H61	1.78	0.48
52:2s:145:ARG:HE	74:3M:51:GLU:HG2	1.78	0.48
61:21:48:LEU:HA	61:21:49:LYS:HA	1.66	0.48
76:3O:73:VAL:HG21	76:3O:88:LEU:HD11	1.95	0.48
1:1A:98:A:H1'	1:1A:292:G:H1	1.78	0.48
1:1A:297:U:H2'	1:1A:298:G:H8	1.78	0.48
1:1A:2053:C:H5'	17:2I:17:GLY:HA3	1.95	0.48
1:1A:2373:C:H4'	32:2X:64:ILE:HD11	1.95	0.48
1:1A:4102:C:N4	1:1A:4109:G:O6	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4525:C:OP1	5:1E:246:ARG:NH1	2.46	0.48
2:1B:46:C:H2'	2:1B:47:G:C8	2.47	0.48
5:1E:19:ARG:HG2	5:1E:275:HIS:CE1	2.48	0.48
11:2C:134:CYS:HA	11:2C:146:LEU:HA	1.95	0.48
13:2E:64:ARG:NH2	82:zy:55:C:O4'	2.46	0.48
18:2J:23:ARG:NH2	18:2J:125:MET:SD	2.70	0.48
46:2m:1167:G:O6	46:2m:1192:U:O2	2.31	0.48
48:2o:61:GLY:O	48:2o:65:ARG:NE	2.46	0.48
58:2y:83:ASN:HB3	58:2y:85:VAL:HG22	1.93	0.48
58:2y:99:ASP:OD1	58:2y:99:ASP:N	2.42	0.48
63:3B:67:ARG:NH1	63:3B:114:ASP:OD2	2.45	0.48
67:3F:67:SER:H	67:3F:82:SER:HA	1.77	0.48
74:3M:36:ARG:HB3	74:3M:110:ILE:HG21	1.94	0.48
1:1A:97:G:OP1	14:2F:16:LYS:NZ	2.43	0.48
1:1A:964:A:H2'	1:1A:965:G:H4'	1.96	0.48
1:1A:2449:A:N6	1:1A:2510:G:H21	2.10	0.48
1:1A:3873:G:H2'	1:1A:3874:G:C8	2.49	0.48
1:1A:4697:U:H4'	41:2g:104:HIS:CD2	2.47	0.48
2:1B:120:U:O2'	7:1G:260:GLU:O	2.22	0.48
11:2C:177:ASP:O	11:2C:180:TYR:OH	2.25	0.48
46:2m:65:C:N4	69:3H:134:GLY:O	2.46	0.48
46:2m:106:C:H2'	46:2m:107:A:H8	1.78	0.48
46:2m:207:G:H3'	46:2m:208:G:H8	1.78	0.48
46:2m:509:G:H2'	46:2m:510:G:H8	1.77	0.48
46:2m:1027:A:H3'	46:2m:1028:A:H8	1.77	0.48
46:2m:1202:U:O2'	68:3G:115:GLN:O	2.27	0.48
52:2s:147:LYS:HB3	52:2s:151:SER:HB3	1.96	0.48
67:3F:131:LEU:HB3	67:3F:140:TYR:H	1.78	0.48
68:3G:105:GLU:O	68:3G:129:ALA:N	2.40	0.48
68:3G:142:LYS:HD3	68:3G:153:GLY:HA3	1.95	0.48
68:3G:186:GLY:HA3	68:3G:243:ALA:HB2	1.95	0.48
76:3O:47:LEU:O	76:3O:80:ARG:N	2.44	0.48
79:3R:109:ASP:HB3	79:3R:110:GLU:HG3	1.95	0.48
1:1A:1603:C:H2'	1:1A:1604:G:H8	1.78	0.48
1:1A:2647:A:H62	1:1A:2686:G:H8	1.61	0.48
1:1A:3650:C:H2'	1:1A:3651:A:C8	2.47	0.48
1:1A:3710:G:O2'	1:1A:3711:A:N7	2.45	0.48
34:2Z:11:PHE:HD2	34:2Z:97:ILE:HA	1.79	0.48
38:2d:34:CYS:SG	38:2d:36:LYS:N	2.86	0.48
46:2m:396:U:OP2	55:2v:79:LYS:NZ	2.45	0.48
46:2m:1094:C:O2'	74:3M:16:ASN:ND2	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:1533:A:OP2	51:2r:164:ARG:NH2	2.46	0.48
48:2o:103:MET:HG2	48:2o:215:VAL:HG22	1.95	0.48
58:2y:24:LEU:HB2	58:2y:58:MET:HE1	1.95	0.48
83:zz:165:A:O2'	83:zz:230:G:N3	2.45	0.48
1:1A:170:C:N3	1:1A:266:C:N4	2.61	0.48
1:1A:512:U:C4	1:1A:647:G:O6	2.67	0.48
1:1A:1178:G:H21	7:1G:287:PHE:HA	1.78	0.48
1:1A:1352:C:OP2	19:2K:104:ARG:NE	2.46	0.48
1:1A:1772:C:H2'	1:1A:1773:U:H6	1.78	0.48
1:1A:2028:C:H2'	1:1A:2029:A:H8	1.78	0.48
1:1A:3667:C:H2'	1:1A:3668:C:H6	1.77	0.48
1:1A:3750:G:H2'	1:1A:3751:G:H8	1.78	0.48
1:1A:3757:G:H1	82:zy:11:U:H1'	1.78	0.48
1:1A:4581:G:OP2	5:1E:26:ARG:NH2	2.47	0.48
2:1B:61:G:O3'	7:1G:279:ARG:NH1	2.46	0.48
17:2I:186:GLU:HA	17:2I:189:ILE:HG22	1.96	0.48
45:2k:119:ARG:HA	45:2k:122:LYS:HZ3	1.78	0.48
47:2n:118:GLU:OE1	68:3G:65:LYS:NZ	2.38	0.48
50:2q:234:PRO:HG3	50:2q:238:LEU:HD23	1.95	0.48
1:1A:949:G:H2'	1:1A:950:G:H8	1.78	0.48
1:1A:1176:C:OP1	7:1G:268:ARG:NH2	2.46	0.48
1:1A:1750:G:H22	1:1A:1780:A:H2	1.61	0.48
14:2F:80:GLU:OE1	14:2F:113:ASN:ND2	2.47	0.48
16:2H:4:TYR:HA	16:2H:7:ILE:HG12	1.96	0.48
17:2I:106:ASP:OD1	17:2I:106:ASP:N	2.41	0.48
17:2I:109:PRO:HB2	17:2I:111:PRO:HD2	1.95	0.48
46:2m:681:U:H4'	63:3B:9:THR:HG22	1.93	0.48
50:2q:177:THR:HA	50:2q:195:ILE:HB	1.95	0.48
56:2w:77:LYS:HA	56:2w:95:GLY:HA2	1.96	0.48
67:3F:289:LEU:HD22	67:3F:298:LEU:HD11	1.95	0.48
1:1A:86:U:H2'	1:1A:87:A:H8	1.79	0.48
1:1A:500:G:O6	1:1A:654:C:N4	2.47	0.48
1:1A:949:G:H2'	1:1A:950:G:C8	2.48	0.48
1:1A:975:C:H5'	9:2A:43:ARG:HH11	1.79	0.48
1:1A:1507:C:H2'	1:1A:1508:A:C8	2.49	0.48
1:1A:1935:C:OP1	1:1A:2048:U:O2'	2.30	0.48
1:1A:3786:U:OP1	1:1A:4550:G:O2'	2.20	0.48
6:1F:35:ASP:OD1	6:1F:35:ASP:N	2.46	0.48
13:2E:29:SER:OG	13:2E:30:GLY:N	2.47	0.48
32:2X:26:THR:HB	32:2X:85:ARG:HD2	1.96	0.48
46:2m:151:C:O2'	69:3H:132:ARG:NH1	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:388:U:H2'	46:2m:389:A:C8	2.49	0.48
46:2m:1220:A:O3'	51:2r:145:ARG:NH2	2.43	0.48
46:2m:1538:C:H4'	60:20:45:LEU:HD13	1.94	0.48
46:2m:1855:G:OP2	73:3L:150:ARG:NH1	2.46	0.48
67:3F:199:THR:HG21	67:3F:239:LEU:HB3	1.96	0.48
1:1A:1863:U:H2'	1:1A:1864:G:H8	1.79	0.48
1:1A:2099:G:OP1	9:2A:31:LYS:NZ	2.45	0.48
1:1A:2557:G:N2	1:1A:2570:U:O2	2.30	0.48
1:1A:4750:G:H22	34:2Z:52:LYS:HD2	1.79	0.48
3:1C:75:G:OP2	27:2S:74:TYR:OH	2.31	0.48
18:2J:70:CYS:SG	18:2J:72:GLN:N	2.84	0.48
32:2X:26:THR:HB	32:2X:85:ARG:HH11	1.78	0.48
35:2a:8:ARG:HH21	35:2a:31:VAL:HG21	1.77	0.48
46:2m:656:G:H21	46:2m:663:C:H5''	1.78	0.48
46:2m:744:G:N2	52:2s:106:ARG:O	2.47	0.48
47:2n:45:GLY:HA3	58:2y:126:MET:HB2	1.95	0.48
59:2z:28:PHE:O	59:2z:31:THR:OG1	2.28	0.48
69:3H:121:ILE:HG22	69:3H:124:LEU:HB2	1.96	0.48
72:3K:108:ASP:OD1	72:3K:108:ASP:N	2.47	0.48
83:zz:290:U:O2'	83:zz:315:C:OP2	2.26	0.48
1:1A:53:C:H2'	1:1A:54:G:H8	1.78	0.48
1:1A:346:G:OP1	27:2S:8:THR:OG1	2.31	0.48
1:1A:662:C:H2'	1:1A:663:G:C8	2.49	0.48
1:1A:2754:G:OP2	28:2T:133:LYS:NZ	2.46	0.48
1:1A:4762:A:H8	17:2I:126:VAL:HG21	1.79	0.48
5:1E:369:ASP:OD2	5:1E:373:LYS:NZ	2.37	0.48
12:2D:93:PRO:HB2	12:2D:125:THR:HG22	1.96	0.48
13:2E:57:VAL:HG23	13:2E:59:SER:H	1.79	0.48
24:2P:32:THR:HG23	24:2P:34:ALA:H	1.78	0.48
24:2P:86:LYS:NZ	24:2P:87:SER:O	2.37	0.48
46:2m:74:G:H2'	46:2m:75:G:H4'	1.96	0.48
46:2m:145:G:H2'	46:2m:146:G:C8	2.48	0.48
46:2m:1228:A:H2'	46:2m:1229:G:C8	2.49	0.48
83:zz:295:G:C2	83:zz:298:A:N1	2.82	0.48
1:1A:232:G:O6	27:2S:61:HIS:N	2.44	0.48
1:1A:951:G:H2'	1:1A:952:G:C8	2.48	0.48
1:1A:951:G:H2'	1:1A:952:G:H8	1.78	0.48
1:1A:1907:A:H4'	9:2A:223:LYS:HD3	1.94	0.48
1:1A:2274:C:H2'	1:1A:2275:G:H8	1.79	0.48
1:1A:3861:A:H2'	1:1A:3862:A:H8	1.79	0.48
1:1A:4153:C:H2'	1:1A:4154:G:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1B:15:C:H2'	2:1B:16:A:C8	2.49	0.48
5:1E:89:ILE:HG21	5:1E:197:ALA:HB1	1.96	0.48
9:2A:105:VAL:HG13	9:2A:136:VAL:HG12	1.96	0.48
19:2K:159:PRO:HD3	19:2K:188:ASN:HD21	1.77	0.48
27:2S:43:ASN:HB3	27:2S:126:ARG:HD3	1.96	0.48
38:2d:48:ASN:HA	38:2d:54:LYS:HD2	1.95	0.48
46:2m:374:G:H4'	55:2v:84:ARG:HG3	1.96	0.48
46:2m:864:A:H2'	46:2m:865:A:H8	1.79	0.48
46:2m:1660:C:OP1	66:3E:19:ARG:NH2	2.44	0.48
55:2v:128:VAL:HG22	55:2v:142:VAL:HA	1.95	0.48
61:21:22:ILE:N	61:21:89:ILE:O	2.37	0.48
67:3F:154:VAL:HG12	67:3F:167:SER:HA	1.94	0.48
75:3N:113:ARG:HD2	75:3N:131:PRO:HB3	1.96	0.48
1:1A:10:A:H2'	1:1A:11:G:C8	2.49	0.47
1:1A:2502:G:O2'	1:1A:2504:C:OP2	2.32	0.47
1:1A:2852:U:N3	1:1A:2855:G:OP2	2.32	0.47
1:1A:3829:G:H2'	1:1A:3830:A:H8	1.78	0.47
1:1A:3861:A:H2'	1:1A:3862:A:C8	2.49	0.47
1:1A:4770:U:H3'	1:1A:4772:C:H42	1.78	0.47
1:1A:5037:U:H2'	1:1A:5038:A:C8	2.49	0.47
21:2M:85:ASP:HB3	21:2M:90:THR:HG22	1.96	0.47
40:2f:22:PRO:HD3	40:2f:41:ARG:HH12	1.79	0.47
46:2m:984:C:O2'	73:3L:138:ASP:OD2	2.26	0.47
46:2m:1670:C:H2'	46:2m:1671:G:C8	2.49	0.47
51:2r:59:LYS:HB3	51:2r:62:ARG:HD3	1.96	0.47
61:21:53:PRO:HB3	61:21:89:ILE:HD11	1.96	0.47
83:zz:259:U:C2	83:zz:274:A:N7	2.81	0.47
1:1A:1894:C:H2'	1:1A:1895:G:H8	1.79	0.47
1:1A:2003:G:H1	1:1A:2016:C:N4	2.12	0.47
1:1A:2394:G:O4'	1:1A:2397:G:N2	2.46	0.47
1:1A:2520:C:H2'	1:1A:2521:G:C8	2.49	0.47
1:1A:2611:A:H5'	1:1A:2688:G:H4'	1.96	0.47
1:1A:2645:G:O6	1:1A:2689:C:N4	2.47	0.47
1:1A:3848:U:H2'	1:1A:3849:A:C8	2.48	0.47
1:1A:3927:U:H2'	1:1A:3928:A:H8	1.79	0.47
1:1A:3928:A:H3'	1:1A:3929:G:H8	1.79	0.47
1:1A:3930:U:H2'	1:1A:3931:C:C6	2.49	0.47
1:1A:4906:C:H2'	1:1A:4907:G:C8	2.48	0.47
1:1A:5014:A:H2	1:1A:5035:U:H3	1.63	0.47
2:1B:57:C:H2'	2:1B:58:A:C8	2.49	0.47
5:1E:293:ILE:O	5:1E:295:ASP:N	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:3H:121:ILE:HB	69:3H:125:THR:HG23	1.96	0.47
1:1A:493:G:H22	1:1A:661:C:H1'	1.80	0.47
1:1A:1628:C:H2'	1:1A:1629:G:H8	1.79	0.47
3:1C:28:C:H2'	3:1C:29:G:C8	2.50	0.47
7:1G:198:HIS:ND1	7:1G:203:ASN:OD1	2.46	0.47
34:2Z:35:ALA:N	34:2Z:38:GLU:OE2	2.46	0.47
46:2m:1228:A:H2'	46:2m:1229:G:H8	1.79	0.47
46:2m:1754:G:N1	46:2m:1779:G:O2'	2.44	0.47
52:2s:145:ARG:NH2	74:3M:49:GLU:OE1	2.47	0.47
59:2z:25:LYS:HA	59:2z:55:ARG:HA	1.96	0.47
70:3I:136:ARG:HA	70:3I:141:VAL:HA	1.96	0.47
1:1A:690:C:H4'	45:2k:85:ASN:HD22	1.79	0.47
1:1A:1346:C:H2'	1:1A:1347:G:C8	2.48	0.47
1:1A:3951:G:N2	1:1A:4061:G:O6	2.48	0.47
1:1A:4975:G:O2'	1:1A:4977:A:N6	2.42	0.47
7:1G:41:LYS:NZ	22:2N:30:TYR:O	2.37	0.47
10:2B:140:VAL:HA	10:2B:143:VAL:HG12	1.97	0.47
12:2D:79:SER:OG	12:2D:80:CYS:N	2.47	0.47
13:2E:9:GLU:HB3	13:2E:13:ARG:HD2	1.96	0.47
13:2E:54:ARG:HH21	13:2E:55:TYR:HE1	1.63	0.47
23:2O:84:LYS:NZ	23:2O:102:VAL:O	2.47	0.47
46:2m:111:A:O2'	55:2v:69:ARG:NH1	2.47	0.47
46:2m:465:A:H5'	46:2m:466:G:C8	2.48	0.47
46:2m:489:A:OP2	46:2m:507:G:N2	2.44	0.47
46:2m:612:U:O2'	78:3Q:11:LYS:NZ	2.47	0.47
46:2m:928:G:H21	77:3P:68:GLY:HA2	1.79	0.47
46:2m:1729:U:O2	46:2m:1805:G:N2	2.38	0.47
81:zx:13:SER:O	81:zx:16:THR:OG1	2.26	0.47
1:1A:513:U:H3'	1:1A:514:U:H4'	1.95	0.47
1:1A:2566:G:H2'	1:1A:2567:G:C8	2.48	0.47
1:1A:2832:A:H2'	1:1A:2833:A:H8	1.79	0.47
1:1A:3709:U:H3'	1:1A:3710:G:H8	1.79	0.47
1:1A:4369:A:OP1	43:2i:65:LYS:NZ	2.43	0.47
9:2A:224:THR:OG1	9:2A:225:THR:N	2.47	0.47
13:2E:18:ARG:H	13:2E:134:LEU:HA	1.80	0.47
21:2M:83:ARG:NH1	21:2M:125:GLN:OE1	2.48	0.47
43:2i:63:THR:HG21	43:2i:89:LYS:HG2	1.97	0.47
46:2m:656:G:O5'	46:2m:662:G:N2	2.47	0.47
46:2m:946:U:H2'	46:2m:947:G:H8	1.79	0.47
46:2m:1855:G:OP2	73:3L:147:ARG:NH2	2.42	0.47
70:3I:81:LEU:HD23	70:3I:84:ILE:HD12	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1633:G:C5	4:1D:207:VAL:HG21	2.50	0.47
1:1A:1656:U:OP2	29:2U:26:ARG:NH2	2.47	0.47
1:1A:1663:C:O2'	1:1A:2320:G:N2	2.48	0.47
1:1A:2386:U:H2'	1:1A:2387:G:C8	2.48	0.47
1:1A:4274:A:H2'	1:1A:4275:G:C8	2.49	0.47
8:1H:277:LEU:HB3	34:2Z:4:ARG:HB3	1.96	0.47
15:2G:70:GLN:HA	15:2G:73:VAL:HG12	1.96	0.47
46:2m:433:A:OP1	53:2t:25:ARG:NH1	2.40	0.47
47:2n:50:ASN:HD21	47:2n:53:ARG:NH1	2.13	0.47
52:2s:160:LYS:HG3	52:2s:163:GLN:HE21	1.79	0.47
53:2t:81:VAL:HA	53:2t:102:VAL:HG12	1.96	0.47
65:3D:58:LEU:HD23	65:3D:61:SER:HA	1.97	0.47
69:3H:149:LYS:HD2	69:3H:152:ASP:H	1.79	0.47
70:3I:61:LEU:HA	70:3I:70:ARG:HH12	1.79	0.47
71:3J:82:ASN:HB3	71:3J:85:LEU:HB3	1.96	0.47
83:zz:154:A:N7	83:zz:227:U:O2'	2.47	0.47
83:zz:259:U:O2	83:zz:274:A:N7	2.47	0.47
1:1A:452:A:H4'	1:1A:453:G:H5'	1.97	0.47
1:1A:1284:G:OP2	8:1H:130:LYS:NZ	2.48	0.47
1:1A:1310:C:H2'	1:1A:1311:G:C8	2.46	0.47
1:1A:1332:C:H2'	1:1A:1333:A:C8	2.49	0.47
1:1A:1734:G:N2	1:1A:1735:U:O4	2.47	0.47
1:1A:2442:G:OP1	35:2a:9:ARG:NH1	2.48	0.47
1:1A:2666:U:OP2	20:2L:103:ARG:NH1	2.48	0.47
1:1A:2907:G:O2'	1:1A:3589:G:N2	2.48	0.47
1:1A:4312:U:H2'	1:1A:4313:A:C8	2.50	0.47
1:1A:4589:A:N7	5:1E:13:SER:OG	2.42	0.47
7:1G:206:ASP:HA	7:1G:209:ARG:HE	1.78	0.47
10:2B:211:ASP:OD1	10:2B:211:ASP:N	2.45	0.47
12:2D:71:CYS:SG	12:2D:72:ALA:N	2.88	0.47
19:2K:61:LEU:HB3	19:2K:86:ILE:HG22	1.95	0.47
27:2S:49:ILE:HG22	27:2S:106:ILE:HD11	1.97	0.47
46:2m:49:C:H2'	46:2m:472:C:H41	1.80	0.47
46:2m:848:U:H2'	46:2m:849:A:C8	2.49	0.47
46:2m:1466:G:OP1	58:2y:5:ARG:NH2	2.48	0.47
46:2m:1560:U:O2	46:2m:1575:G:O6	2.32	0.47
46:2m:1612:G:H5''	59:2z:88:LYS:HB3	1.96	0.47
46:2m:1845:A:H2'	46:2m:1846:G:C8	2.50	0.47
54:2u:81:ASP:OD1	54:2u:81:ASP:N	2.46	0.47
58:2y:10:LYS:HB3	58:2y:14:ARG:HH22	1.80	0.47
60:20:114:GLU:N	60:20:122:LYS:O	2.42	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:3B:51:VAL:HA	63:3B:72:VAL:HG12	1.95	0.47
66:3E:6:LEU:HA	66:3E:7:TYR:HA	1.69	0.47
67:3F:131:LEU:HD22	67:3F:139:LYS:HE2	1.97	0.47
73:3L:34:PHE:HB3	73:3L:41:PHE:HB2	1.96	0.47
75:3N:91:LEU:HB3	75:3N:97:TYR:HB3	1.96	0.47
1:1A:10:A:H2'	1:1A:11:G:H8	1.78	0.47
1:1A:27:C:P	16:2H:189:ARG:HH12	2.38	0.47
1:1A:935:A:N7	15:2G:46:ARG:NH2	2.63	0.47
1:1A:2820:C:H2'	1:1A:2821:U:H6	1.79	0.47
1:1A:3765:G:O2'	46:2m:1849:G:N1	2.32	0.47
1:1A:4466:C:H2'	1:1A:4467:A:H8	1.79	0.47
46:2m:1482:C:OP1	66:3E:54:LYS:NZ	2.41	0.47
46:2m:1743:G:H21	46:2m:1791:A:H62	1.62	0.47
53:2t:103:LEU:HA	53:2t:172:LEU:HA	1.96	0.47
57:2x:146:ARG:NH2	82:zy:33:A:O3'	2.45	0.47
61:21:18:HIS:HB3	61:21:117:ALA:HB2	1.96	0.47
74:3M:87:GLU:OE1	74:3M:90:GLN:NE2	2.44	0.47
1:1A:161:G:H2'	1:1A:162:A:C8	2.50	0.47
1:1A:181:C:H2'	1:1A:182:G:C8	2.49	0.47
1:1A:1341:U:H2'	1:1A:1342:A:H8	1.80	0.47
1:1A:2776:G:H2'	1:1A:2777:G:C8	2.50	0.47
1:1A:3758:U:O2	1:1A:3764:U:O2'	2.30	0.47
1:1A:3762:U:H2'	1:1A:3763:A:C4	2.50	0.47
1:1A:4369:A:H2'	1:1A:4370:G:H8	1.79	0.47
1:1A:4684:A:H62	1:1A:4706:G:H21	1.63	0.47
1:1A:4776:G:N3	1:1A:4860:G:N2	2.63	0.47
1:1A:4989:U:H1'	1:1A:4990:C:H5	1.79	0.47
12:2D:85:PHE:HA	12:2D:140:THR:HG22	1.97	0.47
13:2E:39:VAL:HB	13:2E:112:HIS:CE1	2.49	0.47
15:2G:41:PRO:HG3	15:2G:73:VAL:HG13	1.97	0.47
22:2N:17:ARG:NE	22:2N:21:LYS:O	2.47	0.47
46:2m:457:C:H2'	46:2m:458:A:H8	1.80	0.47
46:2m:686:U:OP1	74:3M:32:LYS:N	2.43	0.47
46:2m:1051:G:OP1	46:2m:1847:G:O2'	2.23	0.47
46:2m:1648:G:H22	46:2m:1674:G:H2'	1.80	0.47
67:3F:7:LEU:HD21	67:3F:308:ARG:HD3	1.97	0.47
73:3L:12:GLU:HA	73:3L:13:GLN:HA	1.65	0.47
79:3R:133:ALA:N	79:3R:140:TYR:O	2.48	0.47
1:1A:198:A:OP1	27:2S:126:ARG:NH2	2.48	0.47
1:1A:1176:C:H42	1:1A:1184:A:H61	1.63	0.47
1:1A:1353:G:O2'	1:1A:1503:A:N1	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1633:G:C6	4:1D:207:VAL:HG21	2.51	0.47
1:1A:2871:A:N6	1:1A:2878:G:N2	2.59	0.47
1:1A:3707:U:H2'	1:1A:3708:C:H6	1.80	0.47
1:1A:4122:G:O2'	28:2T:136:PHE:OXT	2.32	0.47
1:1A:4186:A:H2'	1:1A:4187:G:C8	2.48	0.47
1:1A:4986:G:H2'	1:1A:4987:C:C6	2.50	0.47
26:2R:92:ASP:OD1	26:2R:92:ASP:N	2.46	0.47
46:2m:26:U:H2'	46:2m:27:A:H8	1.80	0.47
49:2p:132:LYS:HB2	49:2p:189:MET:HG2	1.97	0.47
50:2q:238:LEU:HD13	50:2q:242:LYS:HA	1.96	0.47
51:2r:24:SER:HB3	51:2r:107:ASN:HB3	1.97	0.47
65:3D:20:ARG:NH1	65:3D:25:GLY:O	2.47	0.47
68:3G:199:PRO:O	68:3G:202:THR:OG1	2.31	0.47
69:3H:82:SER:OG	69:3H:83:CYS:N	2.48	0.47
1:1A:297:U:H2'	1:1A:298:G:C8	2.50	0.46
1:1A:311:G:H2'	1:1A:312:G:C8	2.50	0.46
1:1A:406:C:N4	1:1A:407:A:N1	2.62	0.46
1:1A:1625:G:N2	1:1A:4186:A:OP1	2.46	0.46
1:1A:1837:A:H2'	1:1A:1838:A:H8	1.80	0.46
1:1A:2360:A:H4'	18:2J:65:GLY:HA3	1.96	0.46
1:1A:2395:A:N6	1:1A:2820:C:O2	2.48	0.46
1:1A:4424:A:OP2	41:2g:97:ARG:NH2	2.48	0.46
1:1A:4577:U:H2'	1:1A:4578:G:C8	2.50	0.46
1:1A:4760:G:H2'	1:1A:4761:G:C8	2.50	0.46
2:1B:49:A:N6	7:1G:57:ASN:O	2.47	0.46
3:1C:13:G:H2'	3:1C:14:U:C6	2.50	0.46
3:1C:130:C:H2'	3:1C:131:G:C8	2.50	0.46
46:2m:1528:G:O2'	46:2m:1666:C:OP1	2.28	0.46
46:2m:1745:A:H2	46:2m:1789:G:H21	1.63	0.46
46:2m:1776:G:N2	46:2m:1776:G:OP2	2.48	0.46
46:2m:1805:G:H2'	46:2m:1806:A:H8	1.79	0.46
67:3F:298:LEU:HB3	67:3F:310:TRP:HB2	1.97	0.46
73:3L:27:VAL:O	73:3L:91:THR:OG1	2.33	0.46
75:3N:18:LEU:HD12	75:3N:20:ARG:HH22	1.79	0.46
83:zz:285:G:H2'	83:zz:286:G:H8	1.80	0.46
83:zz:300:G:H2'	83:zz:301:G:H8	1.80	0.46
1:1A:62:A:OP1	16:2H:172:ARG:NH1	2.48	0.46
1:1A:959:G:O2'	1:1A:2263:A:N6	2.46	0.46
1:1A:1502:G:OP2	19:2K:62:SER:OG	2.27	0.46
1:1A:1517:G:H1	6:1F:106:LYS:NZ	2.12	0.46
1:1A:2848:G:H5'	24:2P:24:ALA:HA	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:3885:G:H2'	1:1A:3886:G:H8	1.79	0.46
1:1A:5018:C:H2'	1:1A:5019:A:C8	2.51	0.46
10:2B:159:HIS:HD2	10:2B:185:LYS:HA	1.78	0.46
23:2O:44:GLN:HG3	23:2O:56:LEU:HD11	1.97	0.46
46:2m:110:U:O2	46:2m:351:G:N2	2.46	0.46
46:2m:1430:C:O2'	46:2m:1431:G:N7	2.46	0.46
48:2o:23:ASP:OD2	48:2o:26:SER:N	2.48	0.46
49:2p:75:LYS:HD2	54:2u:20:VAL:HG23	1.97	0.46
62:3A:37:ALA:HA	62:3A:50:PHE:HA	1.97	0.46
64:3C:28:ARG:HG3	73:3L:147:ARG:HA	1.97	0.46
66:3E:30:LEU:HA	66:3E:39:CYS:HA	1.96	0.46
67:3F:62:HIS:CD2	67:3F:88:ARG:HD3	2.50	0.46
68:3G:94:ILE:O	68:3G:99:GLY:N	2.48	0.46
83:zz:123:C:OP1	83:zz:125:C:N4	2.48	0.46
83:zz:243:G:H3'	83:zz:244:A:H8	1.80	0.46
83:zz:277:G:H2'	83:zz:278:G:C8	2.51	0.46
1:1A:121:A:H2	1:1A:152:U:H3	1.62	0.46
1:1A:162:A:H2'	1:1A:163:A:H8	1.80	0.46
1:1A:1857:C:H2'	1:1A:1858:A:C8	2.50	0.46
1:1A:2517:A:H2'	1:1A:2518:G:C8	2.50	0.46
1:1A:2653:C:O4'	35:2a:54:ARG:NH2	2.49	0.46
1:1A:2694:G:H4'	1:1A:2695:A:H5'	1.97	0.46
1:1A:3837:C:O2'	1:1A:3838:U:O4'	2.32	0.46
1:1A:4072:C:H2'	1:1A:4073:A:H8	1.80	0.46
5:1E:175:GLN:HE21	5:1E:177:LYS:HB3	1.80	0.46
45:2k:21:ASN:N	45:2k:21:ASN:OD1	2.46	0.46
46:2m:1205:C:H2'	46:2m:1206:G:C8	2.51	0.46
46:2m:1402:A:H4'	61:21:51:LYS:HD2	1.98	0.46
46:2m:1660:C:H3'	66:3E:32:ARG:HH12	1.80	0.46
46:2m:1786:U:H2'	46:2m:1787:G:C8	2.51	0.46
46:2m:1847:G:O6	46:2m:1852:C:N4	2.46	0.46
47:2n:120:ARG:NH2	68:3G:268:GLU:OE2	2.48	0.46
48:2o:66:VAL:HG22	48:2o:87:ILE:HG22	1.98	0.46
51:2r:22:LYS:HG3	51:2r:23:TRP:CD2	2.50	0.46
52:2s:40:LEU:HG	52:2s:43:LEU:HD11	1.98	0.46
60:20:56:ARG:O	60:20:60:THR:OG1	2.27	0.46
67:3F:174:VAL:HB	67:3F:188:HIS:HB2	1.96	0.46
70:3I:109:ARG:HG3	70:3I:111:GLN:H	1.81	0.46
82:zy:34:G:H2'	82:zy:35:G:H8	1.79	0.46
1:1A:2374:A:H2'	1:1A:2375:A:C8	2.50	0.46
1:1A:3786:U:O2	1:1A:4537:C:O2'	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4526:U:O5'	1:1A:4527:G:N2	2.49	0.46
6:1F:31:PRO:HB3	19:2K:24:TYR:HE2	1.80	0.46
8:1H:254:ASP:HA	8:1H:257:ILE:HG22	1.97	0.46
16:2H:160:GLU:HG2	16:2H:161:MET:HG3	1.97	0.46
17:2I:14:HIS:CD2	17:2I:19:LEU:HD11	2.50	0.46
46:2m:919:A:OP1	72:3K:20:ARG:NH1	2.48	0.46
56:2w:68:PRO:HB2	56:2w:70:MET:HG2	1.97	0.46
69:3H:77:LEU:HD13	69:3H:84:TYR:HB2	1.96	0.46
73:3L:13:GLN:HA	73:3L:14:VAL:HA	1.72	0.46
1:1A:138:G:H2'	1:1A:139:G:H8	1.80	0.46
1:1A:1870:C:H2'	1:1A:1871:A:C8	2.50	0.46
1:1A:3640:U:H3'	1:1A:3646:A:N6	2.31	0.46
6:1F:73:VAL:HB	6:1F:78:ARG:HH12	1.80	0.46
7:1G:42:ASN:N	7:1G:42:ASN:OD1	2.48	0.46
8:1H:164:PHE:HA	8:1H:175:VAL:HG12	1.97	0.46
33:2Y:21:ILE:H	33:2Y:21:ILE:HG13	1.56	0.46
46:2m:69:C:H3'	46:2m:70:G:H8	1.80	0.46
46:2m:292:A:H5'	55:2v:41:GLY:H	1.79	0.46
46:2m:347:G:H2'	46:2m:348:A:C8	2.51	0.46
46:2m:1337:C:OP1	66:3E:44:ARG:NH2	2.40	0.46
46:2m:1648:G:H1	46:2m:1674:G:H3'	1.81	0.46
52:2s:42:GLU:O	52:2s:44:ASN:ND2	2.49	0.46
52:2s:100:ILE:HD11	52:2s:125:VAL:HG11	1.97	0.46
60:20:28:LEU:HD11	60:20:53:PHE:HE2	1.79	0.46
63:3B:70:VAL:HG13	63:3B:83:ALA:HB3	1.97	0.46
65:3D:13:ARG:O	65:3D:33:GLU:N	2.43	0.46
70:3I:120:ALA:HA	70:3I:125:HIS:HD2	1.80	0.46
74:3M:11:LEU:HA	74:3M:14:ILE:HG12	1.98	0.46
1:1A:239:C:H5'	27:2S:33:PRO:HD3	1.98	0.46
1:1A:724:C:H2'	1:1A:725:G:H8	1.81	0.46
1:1A:2770:C:H2'	1:1A:2771:G:C8	2.50	0.46
1:1A:4145:C:H2'	1:1A:4146:G:C8	2.51	0.46
1:1A:4319:C:H2'	1:1A:4320:G:H8	1.80	0.46
7:1G:200:MET:O	7:1G:202:GLN:NE2	2.49	0.46
8:1H:164:PHE:HE1	8:1H:173:LEU:HD22	1.81	0.46
10:2B:123:ALA:HA	10:2B:124:GLY:HA2	1.63	0.46
10:2B:138:ALA:O	10:2B:142:THR:OG1	2.34	0.46
46:2m:145:G:H2'	46:2m:146:G:H8	1.79	0.46
46:2m:986:G:H5'	73:3L:138:ASP:HB2	1.97	0.46
46:2m:1393:G:H2'	46:2m:1394:G:C8	2.51	0.46
46:2m:1428:G:H2'	46:2m:1429:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:2q:191:ARG:HH11	50:2q:245:ARG:HD2	1.80	0.46
52:2s:160:LYS:HE2	52:2s:191:GLU:HA	1.97	0.46
67:3F:43:TRP:HA	67:3F:56:GLN:H	1.81	0.46
83:zz:157:C:H2'	83:zz:158:G:H8	1.81	0.46
1:1A:229:G:H2'	1:1A:230:G:H8	1.80	0.46
1:1A:243:A:H5''	27:2S:3:PHE:HB2	1.97	0.46
1:1A:358:C:H2'	1:1A:359:A:C8	2.50	0.46
1:1A:443:G:H2'	1:1A:444:G:H8	1.80	0.46
1:1A:1194:G:H2'	1:1A:1195:G:C8	2.50	0.46
1:1A:1507:C:H2'	1:1A:1508:A:H8	1.80	0.46
1:1A:1918:U:O4'	1:1A:2065:G:N2	2.49	0.46
1:1A:1973:G:C8	1:1A:1974:U:H2'	2.50	0.46
1:1A:3739:C:N4	1:1A:3740:G:O6	2.48	0.46
1:1A:4545:G:H2'	1:1A:4546:A:C8	2.51	0.46
1:1A:4594:U:H2'	1:1A:4595:G:H8	1.80	0.46
1:1A:4940:C:OP1	8:1H:156:ARG:NH2	2.41	0.46
11:2C:103:VAL:HG11	11:2C:144:LEU:HD21	1.98	0.46
13:2E:95:ARG:HH12	13:2E:97:ASN:HD21	1.63	0.46
46:2m:28:U:H2'	46:2m:29:G:C8	2.50	0.46
46:2m:71:G:H22	69:3H:170:ARG:HB2	1.81	0.46
46:2m:205:G:O6	53:2t:144:LYS:NZ	2.43	0.46
60:20:38:LYS:HE2	60:20:44:GLU:C	2.41	0.46
63:3B:108:LYS:O	63:3B:110:HIS:N	2.47	0.46
71:3J:126:GLU:O	71:3J:130:CYS:N	2.43	0.46
83:zz:262:U:O2	83:zz:271:G:C6	2.68	0.46
1:1A:266:C:H4'	1:1A:267:G:H5'	1.96	0.46
1:1A:1558:A:H2'	1:1A:1559:G:C8	2.49	0.46
1:1A:2541:G:H2'	1:1A:2542:G:C8	2.50	0.46
1:1A:4635:A:H8	1:1A:5048:A:H61	1.64	0.46
1:1A:4760:G:N2	1:1A:4766:C:OP1	2.49	0.46
2:1B:54:A:C6	13:2E:12:MET:HG3	2.51	0.46
6:1F:71:ARG:HE	81:zx:6:LEU:HB3	1.81	0.46
23:2O:28:PRO:O	23:2O:32:GLY:N	2.49	0.46
34:2Z:10:ILE:HG23	34:2Z:29:LYS:HB3	1.97	0.46
44:2j:55:TRP:HD1	44:2j:66:GLY:HA3	1.80	0.46
46:2m:57:U:O2'	46:2m:499:G:O2'	2.28	0.46
46:2m:1281:G:C4	71:3J:102:LYS:HE3	2.50	0.46
46:2m:1650:A:H5''	57:2x:139:ALA:HB2	1.97	0.46
50:2q:198:ARG:HA	50:2q:208:VAL:HG23	1.96	0.46
57:2x:54:PRO:HA	57:2x:57:LEU:HB3	1.97	0.46
67:3F:40:ILE:HB	67:3F:59:LEU:HB2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:3J:48:HIS:HB3	71:3J:112:LYS:HA	1.97	0.46
1:1A:311:G:N2	1:1A:327:U:O2	2.49	0.46
1:1A:399:G:N2	18:2J:101:ASN:OD1	2.48	0.46
1:1A:989:U:O2'	1:1A:990:C:O4'	2.27	0.46
1:1A:1252:C:H2'	1:1A:1254:A:H62	1.81	0.46
1:1A:1954:U:H2'	1:1A:1955:G:C8	2.51	0.46
1:1A:2079:G:H2'	1:1A:2080:U:C6	2.51	0.46
1:1A:3664:G:H2'	1:1A:3665:G:C8	2.49	0.46
1:1A:3890:A:H3'	1:1A:3891:A:H8	1.81	0.46
3:1C:84:A:H8	3:1C:85:U:C2	2.34	0.46
9:2A:186:CYS:SG	9:2A:189:ASP:N	2.80	0.46
35:2a:82:MET:HE1	35:2a:90:ARG:HG3	1.98	0.46
46:2m:10:G:O2'	68:3G:113:GLN:NE2	2.41	0.46
46:2m:1232:U:H2'	46:2m:1233:G:C8	2.51	0.46
46:2m:1253:A:O2'	46:2m:1666:C:O3'	2.34	0.46
47:2n:120:ARG:HE	68:3G:267:GLN:HB3	1.80	0.46
52:2s:158:LEU:HD12	52:2s:189:PHE:HE1	1.81	0.46
58:2y:32:LYS:NZ	58:2y:48:ASN:OD1	2.48	0.46
67:3F:129:ILE:HD11	67:3F:151:VAL:HG11	1.97	0.46
70:3I:169:ARG:HH12	70:3I:175:ARG:NH2	2.14	0.46
74:3M:102:ILE:H	74:3M:113:HIS:HD2	1.64	0.46
1:1A:1188:C:H2'	1:1A:1189:G:C8	2.50	0.46
1:1A:2452:G:H21	1:1A:2507:A:H62	1.62	0.46
1:1A:4473:A:H2'	1:1A:4474:A:C8	2.51	0.46
2:1B:2:U:O4	2:1B:117:G:O6	2.34	0.46
3:1C:126:C:O2'	3:1C:127:U:O4'	2.26	0.46
8:1H:44:CYS:SG	8:1H:46:ARG:NH2	2.88	0.46
28:2T:9:LYS:HB3	28:2T:25:ILE:HD12	1.98	0.46
33:2Y:78:LEU:HB3	45:2k:20:ARG:HD2	1.98	0.46
39:2e:24:LYS:HB3	39:2e:69:LEU:HD11	1.97	0.46
46:2m:99:A:H61	46:2m:433:A:H1'	1.80	0.46
46:2m:128:U:H5'	46:2m:215:G:C4	2.51	0.46
46:2m:799:U:H3	46:2m:867:G:H21	1.63	0.46
46:2m:962:A:H5'	73:3L:66:ARG:HB3	1.97	0.46
46:2m:1846:G:H2'	46:2m:1847:G:C8	2.51	0.46
58:2y:119:VAL:HA	58:2y:120:THR:HA	1.76	0.46
60:20:23:LYS:HD3	60:20:54:TYR:HE2	1.81	0.46
62:3A:2:GLN:H	62:3A:8:PHE:HA	1.80	0.46
1:1A:119:G:O4'	10:2B:132:ARG:NH1	2.49	0.45
1:1A:662:C:H2'	1:1A:663:G:H8	1.81	0.45
1:1A:1509:C:H2'	1:1A:1510:G:C8	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:2674:A:N6	44:2j:41:PHE:O	2.49	0.45
1:1A:4280:A:OP2	7:1G:23:ARG:NH1	2.45	0.45
2:1B:97:G:H4'	9:2A:134:ARG:HD2	1.99	0.45
8:1H:155:GLY:O	8:1H:158:ARG:NH1	2.49	0.45
9:2A:94:ARG:HD2	9:2A:109:LEU:HD21	1.98	0.45
17:2I:46:ASN:OD1	17:2I:46:ASN:N	2.49	0.45
24:2P:90:ARG:HH12	24:2P:96:LEU:HD13	1.81	0.45
46:2m:18:C:H2'	46:2m:19:A:C8	2.51	0.45
46:2m:453:C:O2'	69:3H:92:ARG:O	2.31	0.45
46:2m:589:G:H21	46:2m:591:U:H3	1.64	0.45
46:2m:1063:C:O2'	73:3L:150:ARG:O	2.27	0.45
46:2m:1745:A:N6	46:2m:1789:G:O2'	2.39	0.45
46:2m:1805:G:H2'	46:2m:1806:A:C8	2.52	0.45
50:2q:18:TRP:HE1	50:2q:42:LEU:HA	1.80	0.45
57:2x:13:PHE:HB3	57:2x:22:VAL:HG22	1.98	0.45
64:3C:49:ALA:HB2	73:3L:117:ARG:HG2	1.97	0.45
67:3F:147:HIS:HB2	67:3F:171:ASP:HB2	1.96	0.45
68:3G:278:THR:HA	68:3G:279:ARG:HA	1.60	0.45
1:1A:175:C:H2'	1:1A:176:G:H8	1.82	0.45
1:1A:1866:U:OP1	12:2D:4:ARG:NH2	2.41	0.45
1:1A:1884:C:H2'	1:1A:1885:G:H8	1.81	0.45
1:1A:2361:G:OP1	18:2J:65:GLY:N	2.48	0.45
1:1A:2485:U:H4'	1:1A:2486:G:N2	2.31	0.45
1:1A:2527:A:P	20:2L:38:ARG:HH22	2.39	0.45
1:1A:2664:G:O6	1:1A:2671:C:N4	2.48	0.45
1:1A:2730:U:H2'	1:1A:2731:C:C6	2.51	0.45
1:1A:4633:G:N2	1:1A:4664:A:N7	2.64	0.45
1:1A:4940:C:C2	8:1H:219:LYS:HA	2.51	0.45
4:1D:116:LEU:HD23	4:1D:164:ALA:HB2	1.98	0.45
6:1F:329:ASN:ND2	9:2A:188:GLU:OE2	2.50	0.45
7:1G:202:GLN:HA	7:1G:205:ALA:HB3	1.98	0.45
8:1H:90:ALA:HA	8:1H:109:LEU:HD12	1.98	0.45
20:2L:125:LEU:HD23	20:2L:125:LEU:HA	1.83	0.45
32:2X:22:THR:HA	32:2X:89:SER:HA	1.97	0.45
48:2o:37:ALA:HA	48:2o:42:ARG:HH12	1.81	0.45
77:3P:38:PRO:O	77:3P:40:CYS:N	2.49	0.45
82:zy:67:G:H2'	82:zy:68:A:C8	2.51	0.45
83:zz:237:C:H2'	83:zz:238:C:C6	2.51	0.45
1:1A:451:C:H3'	1:1A:1294:A:H2	1.81	0.45
1:1A:1478:C:H2'	1:1A:1479:G:C8	2.48	0.45
1:1A:2373:C:H2'	1:1A:2374:A:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4339:A:H2'	1:1A:4340:U:H6	1.80	0.45
2:1B:59:G:H2'	2:1B:60:G:H8	1.80	0.45
5:1E:95:THR:HG23	5:1E:97:ARG:H	1.82	0.45
9:2A:80:ASN:HD21	22:2N:142:ARG:HA	1.81	0.45
37:2c:34:THR:O	37:2c:37:THR:OG1	2.32	0.45
44:2j:85:ARG:NH2	46:2m:938:A:O2'	2.50	0.45
46:2m:750:C:H3'	46:2m:751:G:H4'	1.99	0.45
46:2m:946:U:H2'	46:2m:947:G:C8	2.51	0.45
46:2m:1227:G:N2	46:2m:1635:C:O2'	2.50	0.45
46:2m:1507:G:O2'	79:3R:85:TYR:OH	2.22	0.45
46:2m:1599:U:OP1	76:3O:46:ASN:ND2	2.49	0.45
46:2m:1673:U:O2'	51:2r:84:GLY:O	2.32	0.45
73:3L:83:GLN:HA	73:3L:86:LYS:HG2	1.98	0.45
1:1A:85:G:O2'	1:1A:97:G:O6	2.34	0.45
1:1A:229:G:H2'	1:1A:230:G:C8	2.51	0.45
1:1A:688:U:OP1	8:1H:94:LYS:NZ	2.49	0.45
1:1A:2699:C:H2'	1:1A:2700:G:H8	1.81	0.45
1:1A:4537:C:H2'	1:1A:4538:G:C8	2.50	0.45
2:1B:92:C:H2'	2:1B:93:G:H8	1.81	0.45
4:1D:113:VAL:O	4:1D:134:ALA:N	2.48	0.45
11:2C:176:LEU:H	11:2C:176:LEU:HG	1.53	0.45
21:2M:15:ARG:HH12	21:2M:18:PRO:HG3	1.80	0.45
46:2m:406:U:H2'	46:2m:408:A:C8	2.52	0.45
46:2m:1668:U:H2'	46:2m:1669:G:H8	1.82	0.45
46:2m:1800:A:H3'	46:2m:1801:A:H8	1.82	0.45
51:2r:74:ASN:HA	51:2r:77:MET:HE3	1.97	0.45
52:2s:146:VAL:HG12	52:2s:148:LEU:H	1.81	0.45
55:2v:4:ILE:HG23	55:2v:5:GLN:HG2	1.98	0.45
69:3H:48:TYR:HE1	69:3H:115:LYS:HB3	1.81	0.45
82:zy:68:A:H2'	82:zy:69:G:C8	2.51	0.45
1:1A:443:G:H2'	1:1A:444:G:C8	2.52	0.45
1:1A:941:C:OP2	9:2A:242:ARG:NH2	2.50	0.45
1:1A:1211:G:H2'	1:1A:1212:G:H8	1.81	0.45
1:1A:1463:C:H2'	1:1A:1464:C:C6	2.51	0.45
1:1A:1514:U:H2'	1:1A:1515:A:C8	2.51	0.45
1:1A:1824:G:H2'	1:1A:1825:A:H8	1.80	0.45
1:1A:2044:U:O3'	17:2I:63:ASN:ND2	2.49	0.45
1:1A:2647:A:H3'	1:1A:2648:G:H8	1.81	0.45
1:1A:4495:G:H2'	1:1A:4496:A:C8	2.52	0.45
6:1F:73:VAL:HB	6:1F:78:ARG:NH1	2.32	0.45
7:1G:236:MET:HA	7:1G:239:MET:HG2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:2C:92:MET:HE3	11:2C:179:ILE:HG22	1.99	0.45
11:2C:120:GLU:OE2	11:2C:124:ARG:NH2	2.48	0.45
46:2m:1126:G:OP1	47:2n:41:ARG:NH1	2.49	0.45
46:2m:1197:G:H2'	46:2m:1198:G:H8	1.80	0.45
46:2m:1221:G:H2'	46:2m:1222:G:C8	2.51	0.45
46:2m:1301:A:H4'	66:3E:5:GLN:HG2	1.98	0.45
46:2m:1822:A:H2'	46:2m:1823:A:C8	2.51	0.45
46:2m:1862:G:H21	46:2m:1863:A:H2	1.65	0.45
53:2t:100:CYS:SG	53:2t:101:ILE:N	2.90	0.45
1:1A:63:G:OP2	16:2H:169:ARG:NH2	2.49	0.45
1:1A:253:G:N1	1:1A:254:G:N3	2.64	0.45
1:1A:424:U:H2'	1:1A:425:U:C6	2.51	0.45
1:1A:1094:G:O6	1:1A:1201:U:C4	2.69	0.45
1:1A:1315:C:H2'	1:1A:1316:G:C8	2.52	0.45
1:1A:1668:A:OP2	1:1A:2280:G:N2	2.50	0.45
1:1A:2352:U:H2'	1:1A:2353:U:C6	2.51	0.45
1:1A:2749:C:H2'	1:1A:2750:G:H8	1.82	0.45
1:1A:4084:G:H5''	1:1A:4084:G:H8	1.81	0.45
1:1A:4762:A:C8	17:2I:126:VAL:HG21	2.52	0.45
11:2C:137:SER:OG	11:2C:138:GLN:N	2.49	0.45
12:2D:101:LYS:HE3	12:2D:110:ARG:HB2	1.99	0.45
25:2Q:65:GLU:O	25:2Q:69:LYS:HB2	2.17	0.45
34:2Z:35:ALA:HA	34:2Z:81:SER:HA	1.98	0.45
46:2m:110:U:H2'	46:2m:111:A:C8	2.52	0.45
46:2m:853:C:H2'	46:2m:854:A:H8	1.81	0.45
46:2m:1244:U:H3	46:2m:1257:G:H1	1.65	0.45
46:2m:1650:A:OP1	57:2x:138:ARG:N	2.46	0.45
51:2r:123:GLU:HB2	65:3D:59:LEU:HD12	1.99	0.45
52:2s:40:LEU:HA	52:2s:43:LEU:HG	1.97	0.45
53:2t:120:PRO:HB3	53:2t:123:ARG:HB2	1.99	0.45
56:2w:44:ARG:NH2	56:2w:82:ASP:OD2	2.50	0.45
67:3F:298:LEU:HD23	67:3F:310:TRP:HB2	1.98	0.45
72:3K:40:LEU:HA	72:3K:43:LYS:HG2	1.99	0.45
76:3O:66:LYS:HA	76:3O:111:ARG:HE	1.82	0.45
1:1A:1971:C:N4	1:1A:2001:G:O4'	2.50	0.45
1:1A:2363:A:H62	1:1A:3859:G:N2	2.15	0.45
1:1A:4415:A:O3'	12:2D:74:LYS:NZ	2.50	0.45
5:1E:289:GLN:HG3	5:1E:292:LEU:HD11	1.98	0.45
20:2L:168:GLU:HA	20:2L:171:LYS:HG2	1.99	0.45
46:2m:837:A:H2	46:2m:839:C:H5''	1.82	0.45
46:2m:1033:G:OP1	72:3K:109:LYS:NZ	2.40	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:3H:135:PRO:HB3	69:3H:140:ARG:HB3	1.98	0.45
70:3I:160:SER:HB3	70:3I:163:SER:HB3	1.98	0.45
82:zy:34:G:H2'	82:zy:35:G:C8	2.50	0.45
1:1A:300:A:H2'	1:1A:301:G:C8	2.49	0.45
1:1A:1382:G:H2'	1:1A:1383:G:H8	1.82	0.45
1:1A:3709:U:H3'	1:1A:3710:G:C8	2.52	0.45
1:1A:4692:A:H3'	1:1A:4693:C:H2'	1.99	0.45
13:2E:57:VAL:HG22	13:2E:62:ILE:HD11	1.97	0.45
18:2J:32:THR:HG22	18:2J:58:VAL:HG11	1.98	0.45
21:2M:95:ARG:NH2	21:2M:112:ASP:OD2	2.49	0.45
21:2M:127:MET:HB3	22:2N:153:PRO:HG2	1.98	0.45
21:2M:154:LEU:HD23	21:2M:154:LEU:HA	1.87	0.45
46:2m:1792:G:H2'	46:2m:1793:A:H8	1.81	0.45
56:2w:24:GLN:HE21	56:2w:28:MET:HG3	1.82	0.45
57:2x:16:LYS:HE3	57:2x:82:TYR:HD2	1.82	0.45
61:21:81:GLN:HG2	66:3E:55:LEU:HD12	1.99	0.45
63:3B:102:VAL:HG12	63:3B:122:VAL:HG22	1.99	0.45
64:3C:64:LEU:HD12	64:3C:65:PRO:HD2	1.99	0.45
73:3L:30:VAL:HG12	73:3L:94:HIS:HB2	1.97	0.45
1:1A:26:C:N4	1:1A:57:G:O6	2.50	0.45
1:1A:137:G:H2'	1:1A:138:G:H8	1.81	0.45
1:1A:246:G:H2'	1:1A:247:G:H8	1.82	0.45
1:1A:678:C:OP1	45:2k:95:HIS:ND1	2.42	0.45
1:1A:1341:U:H2'	1:1A:1342:A:C8	2.51	0.45
1:1A:2344:U:H2'	29:2U:9:ARG:HH22	1.82	0.45
1:1A:2387:G:H2'	1:1A:2388:A:H8	1.81	0.45
1:1A:2749:C:H2'	1:1A:2750:G:C8	2.52	0.45
1:1A:4582:C:H4'	5:1E:99:LEU:HB2	1.98	0.45
1:1A:4642:U:H2'	1:1A:4643:G:C8	2.52	0.45
2:1B:7:G:OP1	7:1G:33:ARG:NE	2.43	0.45
8:1H:234:ASP:OD1	8:1H:234:ASP:N	2.50	0.45
19:2K:159:PRO:HA	19:2K:160:HIS:HA	1.57	0.45
20:2L:34:ASN:OD1	20:2L:34:ASN:N	2.49	0.45
21:2M:160:ARG:HD3	21:2M:160:ARG:HA	1.82	0.45
46:2m:146:G:H2'	46:2m:147:A:C8	2.51	0.45
46:2m:416:U:O2	46:2m:421:G:O6	2.35	0.45
46:2m:818:A:H3'	46:2m:819:G:H8	1.82	0.45
59:2z:14:ARG:NH1	59:2z:17:ASN:OD1	2.50	0.45
83:zz:285:G:H2'	83:zz:286:G:C8	2.52	0.45
1:1A:162:A:H2'	1:1A:163:A:C8	2.51	0.45
1:1A:952:G:H2'	1:1A:953:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1441:C:N3	1:1A:1442:C:N4	2.65	0.45
1:1A:1628:C:H5''	4:1D:15:VAL:HG11	1.99	0.45
1:1A:1700:G:H4'	6:1F:306:ARG:HH22	1.81	0.45
1:1A:1800:U:H2'	1:1A:1801:A:C8	2.49	0.45
1:1A:2751:G:H2'	1:1A:2752:G:H8	1.82	0.45
1:1A:2772:C:O3'	39:2e:17:ARG:NH2	2.49	0.45
1:1A:4174:U:H2'	1:1A:4175:G:C8	2.49	0.45
1:1A:4561:C:H2'	1:1A:4562:C:H6	1.82	0.45
1:1A:4935:C:H2'	1:1A:4936:G:C8	2.52	0.45
3:1C:67:U:H2'	3:1C:68:G:H8	1.82	0.45
27:2S:91:ASN:HB2	27:2S:93:THR:HG22	1.98	0.45
39:2e:54:GLU:HA	39:2e:57:LYS:HD3	1.99	0.45
45:2k:14:SER:OG	45:2k:15:SER:N	2.48	0.45
46:2m:26:U:H2'	46:2m:27:A:C8	2.52	0.45
46:2m:113:G:C2	46:2m:292:A:H1'	2.52	0.45
46:2m:651:U:H2'	46:2m:652:U:C6	2.51	0.45
46:2m:1101:U:H2'	46:2m:1102:G:C8	2.51	0.45
46:2m:1199:A:H2'	46:2m:1200:A:C8	2.52	0.45
46:2m:1461:G:O2'	46:2m:1464:C:N4	2.48	0.45
46:2m:1650:A:H62	46:2m:1674:G:N2	2.15	0.45
46:2m:1758:G:N2	46:2m:1775:U:H3	2.15	0.45
46:2m:1865:C:H5'	46:2m:1866:A:C8	2.52	0.45
83:zz:237:C:H2'	83:zz:238:C:H6	1.82	0.45
1:1A:175:C:H2'	1:1A:176:G:C8	2.50	0.44
1:1A:441:G:H2'	1:1A:442:G:H8	1.82	0.44
1:1A:469:C:O2	8:1H:105:ARG:NE	2.45	0.44
1:1A:1177:U:H3'	1:1A:1180:C:H41	1.81	0.44
1:1A:1315:C:O5'	33:2Y:24:GLN:NE2	2.50	0.44
1:1A:1327:C:H2'	1:1A:1328:G:C8	2.52	0.44
1:1A:1346:C:H2'	1:1A:1347:G:H8	1.81	0.44
1:1A:2018:C:H2'	1:1A:2019:C:C6	2.52	0.44
1:1A:2738:C:O2'	1:1A:2740:U:O2	2.35	0.44
1:1A:4093:G:H2'	1:1A:4094:G:C8	2.52	0.44
3:1C:62:A:OP1	36:2b:51:ARG:NH2	2.41	0.44
22:2N:99:SER:OG	22:2N:101:SER:OG	2.29	0.44
33:2Y:82:VAL:HG22	33:2Y:111:ILE:HG13	1.98	0.44
46:2m:615:C:H2'	46:2m:616:A:C8	2.52	0.44
46:2m:661:U:H3'	46:2m:662:G:H8	1.82	0.44
46:2m:1181:A:N6	46:2m:1182:A:N1	2.66	0.44
46:2m:1208:A:H2'	46:2m:1209:A:C8	2.52	0.44
46:2m:1221:G:O2'	46:2m:1676:U:O2	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:1521:C:OP1	59:2z:151:LYS:NZ	2.50	0.44
55:2v:11:GLN:HB3	55:2v:56:ILE:HD13	1.98	0.44
70:3I:113:GLN:HG3	70:3I:149:VAL:HG11	1.99	0.44
76:3O:87:ALA:HA	76:3O:90:GLU:HG2	1.99	0.44
77:3P:34:ASP:OD2	77:3P:36:LYS:NZ	2.50	0.44
1:1A:1442:C:O2'	1:1A:1443:A:O4'	2.33	0.44
1:1A:2049:G:H2'	1:1A:2050:G:C8	2.52	0.44
1:1A:2443:G:H5''	1:1A:2445:C:H41	1.83	0.44
2:1B:4:U:H2'	2:1B:5:A:C8	2.53	0.44
2:1B:38:U:N3	2:1B:41:G:OP2	2.42	0.44
5:1E:36:ASP:N	5:1E:36:ASP:OD1	2.51	0.44
13:2E:100:SER:N	13:2E:104:ASN:O	2.46	0.44
22:2N:128:LEU:HD23	22:2N:128:LEU:HA	1.81	0.44
23:2O:24:ASP:OD1	23:2O:24:ASP:N	2.50	0.44
34:2Z:9:ALA:O	34:2Z:100:ARG:NH1	2.49	0.44
44:2j:11:VAL:HG11	44:2j:26:VAL:HG23	1.99	0.44
46:2m:96:C:H1'	46:2m:474:G:H5'	1.99	0.44
46:2m:509:G:H2'	46:2m:510:G:C8	2.52	0.44
46:2m:1422:G:N2	46:2m:1425:G:OP2	2.50	0.44
46:2m:1597:C:O2'	46:2m:1598:G:O4'	2.35	0.44
46:2m:1780:G:H3'	46:2m:1781:A:C8	2.52	0.44
46:2m:1804:U:H2'	46:2m:1805:G:C8	2.52	0.44
48:2o:136:ARG:HB2	48:2o:216:LYS:HB2	1.99	0.44
50:2q:100:ARG:HH22	50:2q:122:LYS:HB2	1.82	0.44
51:2r:26:ASP:HA	51:2r:27:ASP:HA	1.66	0.44
54:2u:14:LEU:HD11	54:2u:35:LEU:HD23	1.99	0.44
1:1A:1628:C:H2'	1:1A:1629:G:C8	2.51	0.44
1:1A:1759:G:O6	1:1A:1760:G:N2	2.50	0.44
1:1A:2492:C:H2'	1:1A:2493:G:C8	2.53	0.44
1:1A:3732:A:H2'	1:1A:3733:A:C8	2.52	0.44
1:1A:4638:U:H2'	1:1A:4639:G:N3	2.32	0.44
1:1A:4675:U:H2'	1:1A:4676:G:C8	2.52	0.44
16:2H:65:ARG:HG3	16:2H:129:PHE:HE1	1.82	0.44
29:2U:73:VAL:HB	29:2U:108:TYR:CD1	2.53	0.44
46:2m:639:C:H2'	46:2m:640:A:C8	2.49	0.44
46:2m:1281:G:N2	46:2m:1317:C:N3	2.65	0.44
46:2m:1486:A:H5''	49:2p:151:LYS:HE3	2.00	0.44
46:2m:1519:U:H3	46:2m:1623:A:H8	1.59	0.44
46:2m:1644:C:H4'	57:2x:140:ARG:HB2	1.98	0.44
48:2o:28:LYS:HA	48:2o:50:THR:HA	1.99	0.44
55:2v:77:VAL:HA	55:2v:88:ILE:HG22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:2x:130:LYS:NZ	57:2x:134:GLY:O	2.45	0.44
64:3C:88:SER:OG	64:3C:89:ARG:N	2.48	0.44
69:3H:70:HIS:HA	69:3H:98:ARG:HH12	1.81	0.44
73:3L:31:CYS:SG	73:3L:32:HIS:N	2.90	0.44
77:3P:14:GLU:HG3	77:3P:17:ARG:HH21	1.83	0.44
77:3P:36:LYS:HE3	77:3P:43:ILE:HG22	1.99	0.44
1:1A:972:C:H2'	1:1A:973:G:H8	1.82	0.44
1:1A:1285:U:OP1	8:1H:127:SER:OG	2.31	0.44
1:1A:1338:G:OP2	1:1A:1338:G:N2	2.39	0.44
1:1A:1687:U:H2'	1:1A:1688:G:C8	2.52	0.44
1:1A:1725:U:H2'	1:1A:1726:U:H6	1.81	0.44
1:1A:2438:A:O2'	1:1A:2440:U:OP2	2.35	0.44
1:1A:2566:G:H2'	1:1A:2567:G:H8	1.82	0.44
1:1A:3658:C:H2'	1:1A:3659:G:C8	2.51	0.44
1:1A:3710:G:O2'	46:2m:970:G:N7	2.50	0.44
1:1A:3927:U:H2'	1:1A:3928:A:C8	2.52	0.44
8:1H:111:LYS:HD2	8:1H:111:LYS:HA	1.78	0.44
9:2A:127:LYS:HB2	22:2N:133:ALA:HB3	2.00	0.44
20:2L:15:LEU:HD23	20:2L:52:ARG:HB2	2.00	0.44
28:2T:59:LYS:HA	28:2T:62:ILE:HG22	1.98	0.44
35:2a:63:VAL:HG13	35:2a:66:ARG:HE	1.81	0.44
46:2m:1244:U:H2'	46:2m:1245:G:C8	2.49	0.44
46:2m:1392:U:H2'	46:2m:1393:G:C8	2.52	0.44
59:2z:21:ASP:N	59:2z:21:ASP:OD1	2.50	0.44
60:20:13:GLU:HA	60:20:16:ARG:HB2	1.99	0.44
68:3G:210:PRO:HD3	68:3G:236:PHE:HE2	1.82	0.44
72:3K:25:TRP:CE2	77:3P:83:GLN:HB3	2.52	0.44
77:3P:74:THR:HG1	77:3P:77:CYS:HG	1.61	0.44
1:1A:120:A:N6	1:1A:151:G:C2	2.82	0.44
1:1A:138:G:H2'	1:1A:139:G:C8	2.53	0.44
1:1A:284:G:H2'	1:1A:285:G:H8	1.83	0.44
1:1A:690:C:H2'	1:1A:691:C:C6	2.52	0.44
1:1A:1211:G:H2'	1:1A:1212:G:C8	2.53	0.44
1:1A:4629:U:H2'	1:1A:4630:G:C8	2.52	0.44
1:1A:4697:U:H4'	41:2g:104:HIS:CG	2.52	0.44
1:1A:5068:G:H1'	1:1A:5069:U:H5	1.83	0.44
2:1B:3:C:H2'	2:1B:4:U:H6	1.82	0.44
3:1C:96:C:H2'	3:1C:97:A:C8	2.52	0.44
4:1D:30:ARG:O	4:1D:163:ARG:NH2	2.47	0.44
4:1D:205:ASN:OD1	4:1D:205:ASN:N	2.47	0.44
7:1G:40:ASP:OD1	7:1G:40:ASP:N	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:2S:4:ASN:HB3	27:2S:7:VAL:HG22	2.00	0.44
46:2m:375:U:H2'	46:2m:376:A:C8	2.52	0.44
46:2m:442:C:H42	46:2m:449:A:H62	1.65	0.44
46:2m:499:G:N2	46:2m:504:G:N7	2.66	0.44
46:2m:848:U:H2'	46:2m:849:A:H8	1.83	0.44
46:2m:948:C:H2'	46:2m:949:G:C8	2.51	0.44
46:2m:1476:A:OP2	58:2y:3:ARG:NH1	2.50	0.44
46:2m:1542:C:H4'	60:20:11:GLN:HG3	1.99	0.44
50:2q:42:LEU:HD21	50:2q:47:PHE:HB2	1.98	0.44
60:20:57:ALA:HB1	60:20:107:LEU:HD11	2.00	0.44
67:3F:197:THR:HG21	67:3F:238:ALA:HA	1.98	0.44
69:3H:130:PRO:HA	69:3H:131:ARG:HA	1.74	0.44
76:3O:106:GLN:HB2	76:3O:108:ILE:HG13	2.00	0.44
82:zy:28:C:H2'	82:zy:29:G:C8	2.53	0.44
83:zz:300:G:H2'	83:zz:301:G:C8	2.53	0.44
1:1A:222:C:H2'	1:1A:223:G:C8	2.53	0.44
1:1A:1269:G:H21	1:1A:1441:C:H1'	1.83	0.44
1:1A:2666:U:OP1	20:2L:107:ARG:NH2	2.50	0.44
1:1A:3723:A:H2'	1:1A:3724:A:C8	2.51	0.44
1:1A:4734:A:H2'	1:1A:4735:G:C8	2.52	0.44
46:2m:525:A:H2'	46:2m:526:A:C8	2.52	0.44
46:2m:1099:G:H1	46:2m:1133:A:N6	2.16	0.44
46:2m:1650:A:OP1	57:2x:137:ALA:N	2.51	0.44
46:2m:1738:C:H2'	46:2m:1739:C:C6	2.53	0.44
49:2p:132:LYS:O	49:2p:156:LEU:N	2.47	0.44
59:2z:38:ARG:HH21	60:20:45:LEU:HD11	1.83	0.44
79:3R:107:LYS:HB3	79:3R:115:SER:HB3	2.00	0.44
1:1A:679:C:H2'	1:1A:680:G:C8	2.52	0.44
1:1A:2297:G:H4'	6:1F:242:PRO:HB2	1.98	0.44
1:1A:2584:G:N7	35:2a:75:SER:OG	2.42	0.44
1:1A:4088:C:H2'	1:1A:4089:G:H8	1.83	0.44
1:1A:4594:U:H2'	1:1A:4595:G:C8	2.53	0.44
10:2B:66:GLN:HA	10:2B:69:ILE:HG22	2.00	0.44
12:2D:76:MET:HE3	12:2D:151:ALA:HB2	2.00	0.44
38:2d:83:THR:HA	38:2d:84:PRO:HD3	1.83	0.44
46:2m:113:G:N2	46:2m:293:C:O4'	2.50	0.44
46:2m:302:A:N3	53:2t:64:ASN:ND2	2.65	0.44
46:2m:1307:U:O2	79:3R:135:HIS:ND1	2.31	0.44
47:2n:18:PHE:HD1	47:2n:173:LEU:HD21	1.82	0.44
59:2z:65:GLU:HA	59:2z:68:ILE:HG12	1.99	0.44
65:3D:52:GLU:HG3	65:3D:53:GLY:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1358:G:OP1	6:1F:117:THR:OG1	2.29	0.44
1:1A:2373:C:H2'	1:1A:2374:A:H8	1.83	0.44
1:1A:3917:A:H2'	1:1A:3918:G:H8	1.81	0.44
1:1A:4096:C:H2'	1:1A:4097:G:C8	2.52	0.44
1:1A:4165:C:H2'	1:1A:4166:G:H8	1.82	0.44
1:1A:4481:U:H2'	1:1A:4482:U:H6	1.83	0.44
3:1C:141:C:H2'	3:1C:142:U:C6	2.52	0.44
11:2C:102:ASN:HB2	11:2C:115:ARG:HB2	1.99	0.44
14:2F:63:THR:HG23	14:2F:65:ARG:H	1.82	0.44
14:2F:187:ALA:HA	14:2F:190:ARG:HG2	2.00	0.44
46:2m:613:G:OP1	78:3Q:11:LYS:NZ	2.41	0.44
46:2m:857:U:H2'	46:2m:858:A:C8	2.52	0.44
46:2m:1355:C:O2	68:3G:235:ASN:ND2	2.50	0.44
47:2n:104:THR:O	47:2n:107:THR:OG1	2.28	0.44
64:3C:64:LEU:HD11	73:3L:129:ILE:HD12	1.98	0.44
68:3G:105:GLU:HB3	68:3G:129:ALA:HB3	2.00	0.44
70:3I:142:VAL:HG12	70:3I:144:ILE:H	1.83	0.44
1:1A:163:A:H2'	1:1A:164:G:H8	1.82	0.44
1:1A:691:C:H2'	1:1A:692:A:C8	2.53	0.44
1:1A:717:U:H3	1:1A:951:G:H1	1.66	0.44
1:1A:1664:U:H5''	33:2Y:58:ILE:HB	1.98	0.44
1:1A:1725:U:H2'	1:1A:1726:U:C6	2.53	0.44
1:1A:1836:G:O2'	22:2N:108:ARG:NH2	2.46	0.44
1:1A:2368:A:H3'	1:1A:2827:G:H22	1.83	0.44
1:1A:2375:A:H2'	1:1A:2376:A:H8	1.82	0.44
1:1A:4237:C:H2'	1:1A:4238:G:C8	2.53	0.44
1:1A:4239:A:H2'	1:1A:4240:G:H8	1.82	0.44
1:1A:4915:G:H2'	1:1A:4916:G:H8	1.82	0.44
1:1A:4990:C:H5''	1:1A:4991:U:H5''	2.00	0.44
33:2Y:36:ARG:HD3	33:2Y:36:ARG:HA	1.77	0.44
38:2d:64:MET:HG2	38:2d:67:LEU:HB2	2.00	0.44
46:2m:642:U:H3'	70:3I:39:ASN:HD22	1.83	0.44
46:2m:1234:C:H2'	46:2m:1235:G:C8	2.53	0.44
46:2m:1347:U:H2'	46:2m:1348:G:C8	2.53	0.44
46:2m:1748:G:N1	46:2m:1786:U:N3	2.36	0.44
50:2q:125:LYS:O	50:2q:142:HIS:N	2.51	0.44
59:2z:5:ILE:HA	59:2z:6:PRO:HA	1.81	0.44
69:3H:14:LYS:HB3	69:3H:124:LEU:HD21	2.00	0.44
1:1A:67:C:H41	1:1A:326:C:H5'	1.82	0.43
1:1A:441:G:H2'	1:1A:442:G:C8	2.53	0.43
1:1A:1743:A:H1'	7:1G:15:ARG:HH21	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:2352:U:H2'	1:1A:2353:U:H6	1.83	0.43
1:1A:2505:C:H1'	1:1A:2506:G:C2	2.53	0.43
1:1A:2508:U:H2'	1:1A:2509:C:H6	1.83	0.43
1:1A:2522:G:H2'	1:1A:2523:G:H8	1.83	0.43
1:1A:3865:A:H61	1:1A:3881:G:H1	1.65	0.43
1:1A:4196:G:H2'	1:1A:4197:G:C8	2.53	0.43
1:1A:4678:G:H2'	1:1A:4679:G:C8	2.53	0.43
1:1A:4736:C:H2'	1:1A:4737:G:H8	1.83	0.43
1:1A:4767:C:H2'	1:1A:4768:G:H8	1.83	0.43
3:1C:96:C:H2'	3:1C:97:A:H8	1.83	0.43
4:1D:120:PRO:HA	4:1D:162:ASN:HB3	1.99	0.43
15:2G:11:ARG:HH22	15:2G:59:ASP:HA	1.82	0.43
20:2L:59:SER:OG	20:2L:60:ARG:N	2.49	0.43
22:2N:81:LYS:O	22:2N:83:LYS:N	2.50	0.43
28:2T:117:LYS:HA	28:2T:120:GLU:HG2	2.00	0.43
46:2m:202:G:H2'	46:2m:203:G:H8	1.83	0.43
46:2m:1639:G:N7	46:2m:1640:A:N6	2.64	0.43
82:zy:68:A:H2'	82:zy:69:G:H8	1.82	0.43
1:1A:53:C:H2'	1:1A:54:G:C8	2.53	0.43
1:1A:974:C:O2'	9:2A:43:ARG:NH1	2.51	0.43
1:1A:1461:C:H2'	1:1A:1462:A:C8	2.51	0.43
1:1A:1657:G:H2'	1:1A:1658:G:C8	2.54	0.43
1:1A:1719:A:H2'	1:1A:1720:C:C6	2.53	0.43
1:1A:2399:G:N2	35:2a:4:ARG:HE	2.16	0.43
1:1A:4473:A:O3'	41:2g:122:ARG:NH2	2.51	0.43
1:1A:4767:C:H2'	1:1A:4768:G:C8	2.53	0.43
4:1D:146:THR:N	4:1D:158:ILE:O	2.50	0.43
5:1E:254:ILE:HG23	5:1E:266:VAL:HG11	2.01	0.43
6:1F:141:GLY:O	6:1F:204:ARG:NH1	2.51	0.43
9:2A:144:TYR:CD2	9:2A:237:GLU:HG3	2.53	0.43
20:2L:151:ARG:HH22	55:2v:118:ARG:HD2	1.83	0.43
25:2Q:20:ARG:HG3	25:2Q:30:GLN:HG3	2.00	0.43
46:2m:1159:G:H2'	46:2m:1160:U:H6	1.82	0.43
46:2m:1248:U:H2'	46:2m:1249:C:C6	2.53	0.43
46:2m:1455:A:H2'	46:2m:1456:G:H8	1.83	0.43
50:2q:183:VAL:HG23	50:2q:189:LEU:HD12	2.00	0.43
52:2s:137:SER:OG	52:2s:159:ASP:OD1	2.36	0.43
54:2u:81:ASP:HA	54:2u:85:LEU:HD23	2.00	0.43
77:3P:59:CYS:SG	77:3P:60:SER:N	2.90	0.43
1:1A:440:U:H2'	1:1A:441:G:H8	1.82	0.43
1:1A:952:G:H4'	34:2Z:75:THR:HG22	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1362:G:OP2	14:2F:32:LYS:NZ	2.51	0.43
1:1A:1738:A:H2'	1:1A:1739:G:C8	2.51	0.43
1:1A:2274:C:H2'	1:1A:2275:G:C8	2.52	0.43
1:1A:2372:U:H2'	1:1A:2373:C:C6	2.54	0.43
1:1A:2384:U:H2'	1:1A:2385:U:C6	2.53	0.43
1:1A:2877:G:H2'	1:1A:2878:G:O4'	2.17	0.43
1:1A:4221:C:C2	12:2D:116:ARG:HD2	2.54	0.43
1:1A:4615:C:H2'	1:1A:4616:A:H8	1.84	0.43
1:1A:4996:C:OP1	32:2X:32:ARG:NH1	2.42	0.43
1:1A:5057:C:H2'	1:1A:5058:A:C8	2.53	0.43
4:1D:109:GLU:HA	4:1D:136:VAL:HG13	2.00	0.43
46:2m:306:C:H5''	46:2m:307:G:C5	2.52	0.43
46:2m:380:G:H5'	53:2t:31:ARG:NH1	2.32	0.43
46:2m:878:G:O6	46:2m:907:G:N1	2.52	0.43
49:2p:135:GLU:HG2	49:2p:153:VAL:HG23	2.01	0.43
50:2q:258:ALA:O	50:2q:262:SER:HB2	2.18	0.43
58:2y:28:PHE:HA	58:2y:55:THR:HG21	2.00	0.43
67:3F:248:LEU:HD22	67:3F:259:TRP:CD2	2.53	0.43
69:3H:76:LEU:HD21	69:3H:92:ARG:HD2	2.00	0.43
70:3I:54:ARG:NH1	70:3I:98:LEU:O	2.42	0.43
77:3P:19:HIS:O	77:3P:21:LYS:N	2.52	0.43
83:zz:157:C:H2'	83:zz:158:G:C8	2.54	0.43
1:1A:1700:G:H4'	6:1F:306:ARG:HH12	1.83	0.43
1:1A:2081:C:H2'	1:1A:2082:G:H8	1.83	0.43
1:1A:2601:A:N6	1:1A:2744:A:OP2	2.51	0.43
1:1A:3874:G:H2'	1:1A:3875:G:C8	2.54	0.43
3:1C:142:U:OP1	16:2H:38:ARG:NH2	2.46	0.43
6:1F:286:ASN:N	19:2K:124:ASP:OD2	2.43	0.43
11:2C:172:ILE:H	11:2C:172:ILE:HG13	1.54	0.43
12:2D:46:PHE:HB3	12:2D:139:ARG:HB2	1.99	0.43
46:2m:179:C:OP2	46:2m:313:A:N6	2.49	0.43
46:2m:902:G:C6	46:2m:903:A:H1'	2.52	0.43
46:2m:928:G:H2'	46:2m:929:G:C8	2.53	0.43
46:2m:1491:G:H2'	46:2m:1492:U:C6	2.54	0.43
48:2o:30:TRP:CE2	48:2o:48:LEU:HD13	2.53	0.43
50:2q:248:ILE:H	50:2q:248:ILE:HG13	1.50	0.43
52:2s:10:LYS:HE3	52:2s:47:ALA:HA	2.01	0.43
57:2x:86:GLN:HE22	57:2x:122:ALA:HA	1.84	0.43
67:3F:27:PHE:HE2	67:3F:75:GLY:HA3	1.84	0.43
71:3J:37:GLU:HB3	71:3J:40:LYS:HB2	2.01	0.43
71:3J:75:ASN:HA	71:3J:76:LEU:HA	1.78	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:724:C:H2'	1:1A:725:G:C8	2.54	0.43
1:1A:992:C:N4	1:1A:994:G:N7	2.67	0.43
1:1A:1481:C:O2'	1:1A:1482:G:O4'	2.37	0.43
1:1A:2017:A:H5''	1:1A:2018:C:H5	1.82	0.43
1:1A:2727:C:H2'	1:1A:2728:U:C6	2.53	0.43
1:1A:2775:C:H2'	1:1A:2776:G:C8	2.53	0.43
1:1A:2875:C:P	44:2j:23:ARG:HH21	2.42	0.43
1:1A:2878:G:H5''	1:1A:2879:A:H2'	1.99	0.43
1:1A:4080:C:H2'	1:1A:4081:G:C8	2.54	0.43
1:1A:4239:A:H2'	1:1A:4240:G:C8	2.53	0.43
5:1E:92:TYR:HE2	5:1E:161:ARG:HD2	1.83	0.43
5:1E:257:TRP:HD1	5:1E:258:HIS:HB2	1.83	0.43
8:1H:276:ALA:HA	34:2Z:3:GLY:HA3	2.00	0.43
10:2B:146:LEU:HD13	10:2B:205:THR:HG21	2.01	0.43
15:2G:24:LEU:HD11	15:2G:86:TRP:CD2	2.54	0.43
15:2G:52:PHE:HA	15:2G:55:MET:HG2	2.00	0.43
15:2G:64:PHE:CZ	15:2G:73:VAL:HG23	2.54	0.43
20:2L:116:ASP:OD1	20:2L:116:ASP:N	2.51	0.43
21:2M:97:TYR:CZ	21:2M:109:CYS:HA	2.54	0.43
21:2M:101:THR:HG23	21:2M:104:GLY:H	1.83	0.43
26:2R:119:ILE:HG13	26:2R:144:TYR:HD2	1.84	0.43
27:2S:2:LYS:HD2	27:2S:7:VAL:HG23	2.01	0.43
46:2m:155:G:H4'	69:3H:15:LEU:HD13	2.00	0.43
46:2m:558:G:N2	46:2m:559:G:H22	2.17	0.43
54:2u:11:ILE:HD12	54:2u:14:LEU:HB2	2.00	0.43
61:21:29:VAL:HA	61:21:32:LEU:HB2	1.99	0.43
73:3L:99:ALA:H	73:3L:133:THR:HB	1.83	0.43
1:1A:181:C:H2'	1:1A:182:G:H8	1.83	0.43
1:1A:499:G:H2'	1:1A:504:G:H22	1.82	0.43
1:1A:1332:C:H2'	1:1A:1333:A:H8	1.83	0.43
1:1A:1657:G:H2'	1:1A:1658:G:H8	1.83	0.43
1:1A:2028:C:H2'	1:1A:2029:A:C8	2.53	0.43
1:1A:2622:G:OP1	23:2O:104:ALA:N	2.40	0.43
1:1A:2743:A:H2'	1:1A:2744:A:C8	2.53	0.43
1:1A:4398:C:N4	1:1A:4450:U:O4	2.47	0.43
1:1A:4638:U:H3'	1:1A:4639:G:H21	1.84	0.43
1:1A:4939:C:H3'	8:1H:156:ARG:NH2	2.34	0.43
4:1D:41:ILE:HG22	4:1D:90:CYS:HB2	2.00	0.43
46:2m:347:G:H2'	46:2m:348:A:H8	1.83	0.43
46:2m:381:C:H2'	46:2m:382:C:C6	2.53	0.43
46:2m:382:C:H2'	46:2m:383:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:1004:U:H2'	46:2m:1005:G:H8	1.84	0.43
46:2m:1054:G:H2'	46:2m:1055:A:H8	1.83	0.43
46:2m:1277:C:H2'	46:2m:1278:A:C8	2.52	0.43
46:2m:1540:G:OP2	60:20:43:LYS:NZ	2.51	0.43
46:2m:1549:U:OP1	66:3E:34:TYR:OH	2.36	0.43
46:2m:1856:C:H2'	46:2m:1857:G:H8	1.82	0.43
56:2w:23:ASP:O	56:2w:27:ASP:HB2	2.18	0.43
59:2z:19:ASN:OD1	59:2z:20:ILE:N	2.52	0.43
67:3F:190:GLY:HA3	67:3F:217:MET:HE1	2.00	0.43
77:3P:65:GLN:HB2	77:3P:72:ARG:HB3	2.00	0.43
1:1A:1248:C:H2'	1:1A:1249:C:H6	1.83	0.43
1:1A:1481:C:N4	37:2c:4:ARG:HE	2.17	0.43
1:1A:1502:G:O6	29:2U:77:LYS:NZ	2.51	0.43
1:1A:2503:G:O4'	1:1A:4084:G:N2	2.52	0.43
1:1A:2874:U:H1'	44:2j:20:ALA:HB2	1.99	0.43
1:1A:3736:A:H2'	1:1A:3737:A:H8	1.84	0.43
1:1A:4161:G:N2	10:2B:53:ARG:HH21	2.16	0.43
1:1A:4232:U:H3	43:2i:8:ARG:HH12	1.66	0.43
4:1D:44:ILE:HG23	4:1D:62:VAL:HB	2.01	0.43
5:1E:268:ARG:HD3	5:1E:268:ARG:HA	1.86	0.43
8:1H:207:LYS:H	8:1H:256:GLN:HE22	1.66	0.43
20:2L:10:LEU:HD12	20:2L:10:LEU:HA	1.88	0.43
20:2L:119:MET:HB3	20:2L:119:MET:HE2	1.83	0.43
22:2N:4:THR:HG23	22:2N:9:ARG:HD3	2.01	0.43
23:2O:47:ILE:HG23	23:2O:82:TYR:HE2	1.84	0.43
28:2T:53:VAL:HG21	28:2T:62:ILE:HG13	2.00	0.43
33:2Y:41:ILE:HA	33:2Y:46:ARG:HH21	1.83	0.43
38:2d:20:ARG:HH11	38:2d:39:TYR:HE2	1.67	0.43
46:2m:64:A:H61	46:2m:82:G:H3'	1.83	0.43
46:2m:94:G:O2'	46:2m:508:A:O2'	2.35	0.43
46:2m:975:G:H2'	46:2m:976:G:C8	2.54	0.43
46:2m:1538:C:H2'	46:2m:1539:U:C6	2.54	0.43
46:2m:1808:U:H2'	46:2m:1809:A:H8	1.81	0.43
49:2p:21:LEU:O	49:2p:25:LEU:HB2	2.19	0.43
50:2q:32:SER:OG	50:2q:33:THR:N	2.52	0.43
70:3I:113:GLN:NE2	70:3I:154:GLN:OE1	2.51	0.43
1:1A:159:C:OP2	37:2c:27:SER:N	2.52	0.43
1:1A:499:G:N3	1:1A:504:G:N2	2.67	0.43
1:1A:714:G:H2'	1:1A:715:G:H8	1.82	0.43
1:1A:753:C:H5	1:1A:910:G:H22	1.66	0.43
1:1A:1994:C:H2'	1:1A:1995:G:H4'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4153:C:H2'	1:1A:4154:G:H8	1.83	0.43
1:1A:4672:A:OP1	24:2P:17:SER:OG	2.29	0.43
3:1C:138:C:H2'	3:1C:139:G:C8	2.54	0.43
6:1F:279:LEU:HA	6:1F:280:PRO:HD3	1.77	0.43
10:2B:100:HIS:CE1	10:2B:103:ARG:HH12	2.37	0.43
12:2D:61:SER:OG	12:2D:62:SER:N	2.51	0.43
12:2D:101:LYS:HA	12:2D:121:LYS:HE3	2.01	0.43
15:2G:34:ASN:HB2	15:2G:35:ARG:HG3	2.00	0.43
25:2Q:105:ARG:HD2	69:3H:149:LYS:HD3	2.01	0.43
45:2k:32:LEU:HD22	45:2k:106:LEU:HD23	2.01	0.43
46:2m:829:C:OP1	50:2q:22:LYS:N	2.50	0.43
46:2m:1098:C:H2'	46:2m:1099:G:C8	2.53	0.43
51:2r:78:MET:HE3	51:2r:159:ARG:HH22	1.84	0.43
54:2u:32:HIS:CD2	54:2u:34:GLU:H	2.37	0.43
55:2v:80:MET:O	55:2v:82:MET:N	2.49	0.43
64:3C:4:LYS:HE3	64:3C:4:LYS:HB2	1.85	0.43
72:3K:55:ARG:NH2	77:3P:51:GLN:OE1	2.52	0.43
77:3P:50:ALA:H	77:3P:71:ALA:HB2	1.84	0.43
79:3R:139:HIS:HB2	79:3R:148:TYR:HB3	2.01	0.43
1:1A:106:A:H2'	1:1A:107:G:C8	2.54	0.43
1:1A:346:G:OP2	27:2S:17:ARG:NH2	2.52	0.43
1:1A:2277:C:H2'	1:1A:2278:G:C8	2.53	0.43
1:1A:2890:C:H2'	1:1A:2891:U:C6	2.54	0.43
1:1A:3707:U:H2'	1:1A:3708:C:C6	2.53	0.43
1:1A:3826:C:N4	1:1A:3827:G:O6	2.52	0.43
1:1A:4282:A:OP1	7:1G:31:TYR:OH	2.28	0.43
2:1B:7:G:O3'	7:1G:33:ARG:NH1	2.51	0.43
9:2A:80:ASN:HD21	22:2N:142:ARG:HG3	1.83	0.43
25:2Q:6:CYS:SG	25:2Q:8:PHE:N	2.91	0.43
30:2V:40:LEU:HA	30:2V:43:MET:HG2	2.00	0.43
33:2Y:26:ASP:OD1	33:2Y:26:ASP:N	2.50	0.43
46:2m:527:C:H2'	46:2m:528:A:C8	2.54	0.43
46:2m:550:C:O2'	46:2m:551:U:O4'	2.32	0.43
46:2m:1142:G:OP1	68:3G:187:ARG:NH1	2.43	0.43
46:2m:1292:C:H2'	46:2m:1294:G:N7	2.33	0.43
48:2o:137:LEU:HD13	48:2o:172:MET:HG3	1.99	0.43
51:2r:51:HIS:O	57:2x:117:ARG:NH2	2.52	0.43
60:20:75:MET:HE1	60:20:104:LEU:HD21	2.00	0.43
73:3L:71:PRO:O	73:3L:114:SER:OG	2.31	0.43
83:zz:154:A:H62	83:zz:227:U:H1'	1.84	0.43
1:1A:207:G:H2'	1:1A:208:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:447:C:H2'	1:1A:448:G:C8	2.53	0.43
1:1A:1306:C:H2'	1:1A:1307:A:C8	2.52	0.43
1:1A:1569:U:H2'	1:1A:1570:G:C8	2.51	0.43
1:1A:1616:U:H2'	1:1A:1617:G:H8	1.84	0.43
1:1A:3610:A:H2'	1:1A:3611:A:C8	2.52	0.43
1:1A:4736:C:H2'	1:1A:4737:G:C8	2.54	0.43
1:1A:5026:U:O2	1:1A:5027:C:N4	2.52	0.43
8:1H:207:LYS:H	8:1H:256:GLN:NE2	2.16	0.43
9:2A:87:PRO:HG2	9:2A:144:TYR:CD2	2.54	0.43
13:2E:164:ARG:HA	13:2E:167:GLN:HG2	2.01	0.43
17:2I:56:ALA:O	17:2I:60:LYS:NZ	2.50	0.43
26:2R:74:TYR:HB2	36:2b:25:LYS:HE3	2.00	0.43
29:2U:117:LEU:HD12	29:2U:118:PRO:HD2	1.99	0.43
46:2m:609:U:H2'	46:2m:610:G:H8	1.83	0.43
46:2m:1127:C:H2'	46:2m:1128:C:C6	2.54	0.43
46:2m:1171:G:O2'	46:2m:1187:G:O6	2.35	0.43
46:2m:1348:G:H22	46:2m:1381:G:H1	1.66	0.43
57:2x:41:MET:SD	60:20:10:ASN:ND2	2.92	0.43
72:3K:4:MET:HG2	72:3K:5:HIS:CD2	2.53	0.43
1:1A:238:C:H2'	1:1A:239:C:H6	1.84	0.42
1:1A:954:C:H2'	1:1A:955:G:C8	2.53	0.42
1:1A:1176:C:H2'	1:1A:1177:U:H6	1.84	0.42
1:1A:1334:A:H2'	1:1A:1335:G:H8	1.83	0.42
1:1A:1528:U:H2'	1:1A:1529:G:C8	2.54	0.42
1:1A:2638:G:O2'	1:1A:2639:U:O4'	2.34	0.42
1:1A:2699:C:H2'	1:1A:2700:G:C8	2.53	0.42
1:1A:4253:A:H5'	1:1A:4254:G:C8	2.53	0.42
1:1A:4260:U:H2'	1:1A:4261:C:C6	2.54	0.42
3:1C:121:G:H2'	3:1C:122:G:C8	2.54	0.42
6:1F:152:LEU:HD21	6:1F:174:LEU:HD22	2.00	0.42
27:2S:26:ARG:HA	27:2S:29:ILE:HD12	2.01	0.42
46:2m:949:G:H2'	46:2m:950:C:C6	2.54	0.42
46:2m:1030:A:H2'	46:2m:1031:A:H8	1.83	0.42
46:2m:1422:G:C4	46:2m:1424:G:H5''	2.54	0.42
46:2m:1668:U:H2'	46:2m:1669:G:C8	2.54	0.42
47:2n:66:VAL:HG21	47:2n:185:MET:HB2	2.01	0.42
64:3C:45:VAL:HA	73:3L:113:GLN:NE2	2.33	0.42
83:zz:171:G:H3'	83:zz:172:A:H8	1.83	0.42
1:1A:132:G:H1'	1:1A:137:G:N2	2.34	0.42
1:1A:251:C:H2'	1:1A:252:C:C6	2.54	0.42
1:1A:323:C:H2'	1:1A:324:A:C8	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1577:G:H5'	1:1A:1578:U:H5''	2.02	0.42
1:1A:2341:A:OP2	29:2U:4:ARG:NH1	2.38	0.42
1:1A:2576:G:OP1	28:2T:48:ARG:NH2	2.53	0.42
1:1A:3880:G:H2'	1:1A:3881:G:C8	2.55	0.42
1:1A:3950:U:H5''	1:1A:3951:G:C8	2.55	0.42
3:1C:132:G:H5''	26:2R:69:ASN:HD22	1.84	0.42
13:2E:158:SER:HB3	13:2E:161:GLU:HG2	2.00	0.42
24:2P:82:ILE:HB	24:2P:121:VAL:HG13	2.00	0.42
32:2X:19:GLU:HA	32:2X:90:ARG:HH11	1.83	0.42
46:2m:202:G:H2'	46:2m:203:G:C8	2.54	0.42
46:2m:534:G:H1	46:2m:550:C:H42	1.65	0.42
46:2m:593:C:O4'	78:3Q:26:LYS:NZ	2.53	0.42
46:2m:649:U:H2'	46:2m:650:A:C8	2.55	0.42
50:2q:204:SER:OG	50:2q:205:PHE:N	2.50	0.42
53:2t:136:ILE:HD13	53:2t:136:ILE:HA	1.88	0.42
59:2z:15:VAL:HG12	59:2z:16:LEU:HB2	2.02	0.42
70:3I:22:LYS:HA	70:3I:25:LEU:HD12	2.01	0.42
83:zz:166:C:H5	83:zz:231:G:H5'	1.84	0.42
1:1A:163:A:H2'	1:1A:164:G:C8	2.54	0.42
1:1A:498:C:N4	1:1A:656:C:H42	2.16	0.42
1:1A:921:C:H2'	1:1A:922:C:C6	2.55	0.42
1:1A:2768:C:O2	35:2a:69:LYS:NZ	2.46	0.42
1:1A:3784:A:O2'	1:1A:3785:A:H3'	2.19	0.42
1:1A:4861:G:OP1	17:2I:169:ARG:NH1	2.49	0.42
8:1H:141:ARG:NH1	34:2Z:109:ARG:O	2.53	0.42
22:2N:57:TYR:HE1	22:2N:78:LYS:HD3	1.83	0.42
23:2O:107:LYS:HG3	23:2O:108:GLU:HG2	2.01	0.42
46:2m:612:U:H3'	46:2m:613:G:H8	1.83	0.42
46:2m:1128:C:O2'	77:3P:19:HIS:ND1	2.53	0.42
46:2m:1513:C:H2'	46:2m:1514:G:C8	2.46	0.42
47:2n:41:ARG:HH21	47:2n:45:GLY:HA2	1.84	0.42
50:2q:179:ASN:HA	50:2q:231:GLY:HA2	2.01	0.42
55:2v:28:THR:HA	55:2v:29:GLY:HA2	1.78	0.42
68:3G:116:THR:OG1	68:3G:119:GLY:O	2.31	0.42
69:3H:32:MET:HB3	69:3H:63:MET:HE2	2.02	0.42
69:3H:76:LEU:HA	69:3H:94:ARG:HA	2.02	0.42
1:1A:2673:G:OP1	31:2W:90:ARG:NH2	2.52	0.42
1:1A:3662:A:P	4:1D:156:LYS:HZ3	2.42	0.42
1:1A:4630:G:H2'	1:1A:4631:G:C8	2.54	0.42
1:1A:4997:G:H2'	1:1A:4998:G:H8	1.84	0.42
2:1B:85:G:H2'	2:1B:86:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:2D:32:ARG:HG3	12:2D:33:ILE:H	1.84	0.42
14:2F:55:ILE:HG22	14:2F:96:ILE:HA	2.01	0.42
16:2H:111:GLY:HA2	16:2H:158:HIS:HE1	1.83	0.42
46:2m:637:U:P	78:3Q:24:LYS:HZ1	2.42	0.42
46:2m:1598:G:H5''	76:3O:82:SER:HB3	2.01	0.42
65:3D:33:GLU:HG2	65:3D:34:PHE:H	1.84	0.42
1:1A:173:C:H1'	36:2b:112:ARG:HG2	2.01	0.42
1:1A:440:U:H2'	1:1A:441:G:C8	2.55	0.42
1:1A:747:A:N6	1:1A:913:U:C2	2.88	0.42
1:1A:1370:G:OP1	6:1F:48:ASN:ND2	2.51	0.42
1:1A:1674:C:H1'	29:2U:43:ILE:HD11	2.00	0.42
1:1A:2293:U:H2'	1:1A:2294:G:C8	2.54	0.42
1:1A:3633:C:H2'	1:1A:3634:G:C8	2.55	0.42
1:1A:3814:U:H2'	1:1A:3815:G:C8	2.54	0.42
1:1A:3868:G:N2	1:1A:3900:G:O2'	2.46	0.42
1:1A:3936:A:N6	1:1A:4175:G:O6	2.52	0.42
1:1A:4071:U:H2'	1:1A:4072:C:C6	2.55	0.42
1:1A:4915:G:H2'	1:1A:4916:G:C8	2.54	0.42
1:1A:4941:G:H4'	8:1H:187:ARG:HH21	1.84	0.42
1:1A:4981:G:H3'	1:1A:4982:A:C8	2.50	0.42
9:2A:94:ARG:HA	9:2A:140:ILE:HG22	2.01	0.42
14:2F:198:ARG:HA	14:2F:201:GLU:HB3	2.01	0.42
25:2Q:83:THR:HB	69:3H:130:PRO:HG3	2.01	0.42
46:2m:418:A:H3'	46:2m:419:G:C8	2.54	0.42
46:2m:809:A:H8	46:2m:810:A:H5''	1.84	0.42
46:2m:1109:C:O2'	46:2m:1110:G:O4'	2.32	0.42
46:2m:1420:G:N2	46:2m:1427:C:O2'	2.53	0.42
50:2q:71:LYS:HD3	50:2q:74:GLY:HA2	2.00	0.42
52:2s:108:SER:OG	52:2s:109:ARG:O	2.35	0.42
56:2w:18:ARG:NH2	59:2z:88:LYS:O	2.52	0.42
57:2x:53:GLU:O	57:2x:57:LEU:HB2	2.19	0.42
1:1A:270:U:H2'	1:1A:271:C:C6	2.54	0.42
1:1A:1211:G:O2'	9:2A:70:ARG:NH2	2.52	0.42
1:1A:1333:A:O2'	3:1C:17:A:O2'	2.36	0.42
1:1A:1340:C:H2'	1:1A:1341:U:H6	1.85	0.42
1:1A:1821:G:N3	1:1A:1822:U:H5'	2.35	0.42
1:1A:1952:G:P	21:2M:139:ARG:HE	2.42	0.42
1:1A:1973:G:OP1	1:1A:1984:A:O2'	2.37	0.42
1:1A:2322:G:OP1	33:2Y:36:ARG:NH1	2.52	0.42
1:1A:4493:U:H2'	1:1A:4494:G:H8	1.85	0.42
1:1A:4578:G:H2'	1:1A:4579:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:5063:G:H2'	1:1A:5064:G:H8	1.84	0.42
3:1C:27:U:H2'	3:1C:28:C:C6	2.54	0.42
13:2E:10:ASN:OD1	13:2E:10:ASN:N	2.52	0.42
13:2E:153:ALA:HA	13:2E:154:LYS:HA	1.78	0.42
19:2K:79:THR:HB	19:2K:136:THR:HG22	2.00	0.42
19:2K:178:ARG:H	29:2U:51:GLY:HA2	1.85	0.42
41:2g:96:CYS:SG	41:2g:97:ARG:N	2.92	0.42
46:2m:1348:G:H2'	46:2m:1349:G:H8	1.85	0.42
46:2m:1467:C:H2'	46:2m:1468:C:C6	2.53	0.42
46:2m:1648:G:N1	46:2m:1675:A:OP2	2.49	0.42
46:2m:1678:A:H3'	46:2m:1679:A:H8	1.84	0.42
46:2m:1711:U:H2'	46:2m:1712:A:C8	2.55	0.42
47:2n:27:GLY:HA3	47:2n:28:THR:HA	1.76	0.42
53:2t:12:ARG:HH21	53:2t:18:ARG:HB3	1.84	0.42
56:2w:41:GLN:NE2	56:2w:83:MET:SD	2.93	0.42
56:2w:51:ARG:HA	56:2w:54:HIS:HB2	2.01	0.42
59:2z:23:ARG:HA	59:2z:23:ARG:HD3	1.86	0.42
67:3F:306:LEU:HD21	67:3F:308:ARG:HE	1.84	0.42
1:1A:153:G:H2'	1:1A:154:G:C8	2.55	0.42
1:1A:425:U:H2'	1:1A:426:A:H8	1.85	0.42
1:1A:428:G:H2'	1:1A:429:A:C8	2.54	0.42
1:1A:1894:C:H2'	1:1A:1895:G:C8	2.55	0.42
1:1A:3893:C:H2'	1:1A:3894:A:C8	2.54	0.42
3:1C:38:U:O4	36:2b:92:ARG:NE	2.52	0.42
8:1H:88:VAL:HA	8:1H:89:LEU:HA	1.63	0.42
9:2A:64:MET:HE3	9:2A:64:MET:HB3	1.93	0.42
38:2d:19:CYS:HB2	38:2d:27:TYR:HB2	2.01	0.42
46:2m:544:G:N2	46:2m:546:G:O4'	2.53	0.42
46:2m:831:G:H2'	46:2m:832:G:C8	2.55	0.42
46:2m:1023:A:P	72:3K:124:ARG:HE	2.42	0.42
46:2m:1227:G:H21	46:2m:1635:C:H4'	1.85	0.42
50:2q:6:LYS:O	50:2q:30:ARG:NH2	2.53	0.42
69:3H:37:ALA:HA	69:3H:49:VAL:HA	2.00	0.42
1:1A:150:U:C4	10:2B:161:VAL:HG13	2.55	0.42
1:1A:287:U:H2'	1:1A:288:G:C8	2.55	0.42
1:1A:326:C:H2'	1:1A:327:U:C6	2.54	0.42
1:1A:366:A:H62	1:1A:375:G:H21	1.67	0.42
1:1A:1976:G:OP2	1:1A:2002:A:O2'	2.29	0.42
1:1A:2776:G:H2'	1:1A:2777:G:H8	1.84	0.42
1:1A:4589:A:H62	5:1E:13:SER:HB2	1.84	0.42
3:1C:46:G:N2	3:1C:47:C:O2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:1C:94:G:N7	38:2d:84:PRO:HG3	2.35	0.42
3:1C:145:C:H2'	3:1C:146:U:C6	2.54	0.42
6:1F:81:GLY:O	6:1F:87:SER:OG	2.37	0.42
8:1H:148:THR:HA	8:1H:200:LYS:HA	2.02	0.42
13:2E:15:LEU:HD13	13:2E:134:LEU:HD13	2.00	0.42
14:2F:64:VAL:HA	14:2F:67:HIS:HD2	1.84	0.42
46:2m:1208:A:H4'	46:2m:1835:A:C8	2.55	0.42
46:2m:1261:C:H42	66:3E:14:PHE:HE2	1.67	0.42
46:2m:1622:U:H3	59:2z:152:LYS:HB2	1.85	0.42
47:2n:42:LYS:HB2	47:2n:48:ILE:HD11	2.01	0.42
54:2u:32:HIS:HB3	54:2u:40:VAL:HG23	2.00	0.42
74:3M:31:SER:OG	74:3M:33:VAL:N	2.53	0.42
77:3P:35:VAL:HG23	77:3P:79:PHE:HB3	2.02	0.42
1:1A:393:U:H2'	1:1A:394:G:C8	2.55	0.42
1:1A:1646:A:OP2	6:1F:80:ARG:NE	2.52	0.42
1:1A:1672:U:OP1	30:2V:7:HIS:ND1	2.52	0.42
1:1A:1974:U:H4'	1:1A:1975:G:H2'	2.02	0.42
1:1A:2662:G:H2'	1:1A:2663:G:H8	1.84	0.42
1:1A:2773:G:H5'	39:2e:17:ARG:HH21	1.85	0.42
1:1A:3688:U:OP2	4:1D:198:ARG:NH1	2.53	0.42
7:1G:82:GLU:OE2	7:1G:108:ARG:NH1	2.37	0.42
8:1H:282:TYR:HA	8:1H:283:PRO:HD3	1.82	0.42
14:2F:31:ARG:HA	14:2F:34:ARG:HG2	2.01	0.42
17:2I:3:GLU:OE1	17:2I:5:GLN:NE2	2.53	0.42
19:2K:50:ARG:HG2	19:2K:83:VAL:HG21	2.02	0.42
22:2N:56:CYS:SG	22:2N:78:LYS:NZ	2.91	0.42
29:2U:84:GLU:OE2	29:2U:87:ARG:NE	2.45	0.42
33:2Y:99:ILE:HG22	33:2Y:108:ARG:HH21	1.85	0.42
34:2Z:10:ILE:HD11	34:2Z:98:GLY:HA2	2.01	0.42
34:2Z:78:HIS:HB2	34:2Z:85:ARG:HG3	2.02	0.42
38:2d:67:LEU:HA	38:2d:70:VAL:HG12	2.01	0.42
46:2m:334:C:H2'	46:2m:335:G:H8	1.85	0.42
46:2m:1114:U:H3	83:zz:296:A:H62	1.67	0.42
46:2m:1842:C:H2'	46:2m:1843:G:H8	1.84	0.42
47:2n:15:VAL:HG23	47:2n:16:LEU:HD12	2.01	0.42
54:2u:80:ARG:HH11	54:2u:85:LEU:HB2	1.85	0.42
56:2w:77:LYS:HA	56:2w:78:THR:HA	1.47	0.42
60:20:25:SER:OG	60:20:26:GLY:N	2.53	0.42
1:1A:946:C:H2'	1:1A:947:C:H6	1.85	0.42
1:1A:1629:G:H1	4:1D:208:GLU:CD	2.26	0.42
1:1A:3848:U:O2'	1:1A:4634:U:O4	2.31	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:4196:G:H2'	1:1A:4197:G:H8	1.85	0.42
1:1A:4507:A:O2'	24:2P:41:SER:OG	2.33	0.42
1:1A:4595:G:H2'	1:1A:4596:C:C6	2.55	0.42
1:1A:4690:G:N2	1:1A:4700:A:H62	2.15	0.42
2:1B:30:C:N3	2:1B:48:G:N2	2.62	0.42
5:1E:308:ASP:OD2	5:1E:310:SER:OG	2.27	0.42
11:2C:104:VAL:HG12	11:2C:113:GLU:HB2	2.02	0.42
19:2K:78:LYS:HE3	19:2K:135:GLY:HA2	2.02	0.42
43:2i:9:ARG:HA	43:2i:20:PRO:HA	2.01	0.42
46:2m:562:U:H2'	46:2m:563:G:C8	2.54	0.42
46:2m:666:U:H2'	46:2m:667:U:C6	2.55	0.42
46:2m:1208:A:H2'	46:2m:1209:A:H8	1.84	0.42
46:2m:1446:A:H1'	61:21:55:ARG:HD2	2.02	0.42
46:2m:1679:A:C8	51:2r:60:ARG:HB2	2.55	0.42
73:3L:71:PRO:HB3	73:3L:114:SER:HB2	2.02	0.42
1:1A:79:C:H2'	1:1A:80:C:C6	2.55	0.41
1:1A:756:G:H2'	1:1A:757:G:H8	1.84	0.41
1:1A:1248:C:H2'	1:1A:1249:C:C6	2.55	0.41
1:1A:1502:G:N2	19:2K:89:ASP:OD1	2.53	0.41
1:1A:1563:A:OP1	46:2m:678:U:O2'	2.37	0.41
1:1A:1954:U:H2'	1:1A:1955:G:H8	1.84	0.41
1:1A:2484:A:N1	1:1A:2495:U:O2'	2.46	0.41
1:1A:2651:C:O2'	1:1A:2653:C:OP1	2.37	0.41
1:1A:4648:A:H2'	1:1A:4649:G:H8	1.85	0.41
3:1C:40:A:OP2	3:1C:102:G:N1	2.46	0.41
3:1C:126:C:N4	3:1C:128:C:O2	2.53	0.41
6:1F:46:LYS:HB2	6:1F:49:ARG:NH2	2.35	0.41
8:1H:141:ARG:H	8:1H:191:GLN:NE2	2.18	0.41
9:2A:133:LEU:HD23	9:2A:133:LEU:HA	1.90	0.41
13:2E:20:LEU:HD12	13:2E:132:VAL:HG22	2.02	0.41
24:2P:87:SER:HA	24:2P:97:TYR:HB3	2.02	0.41
28:2T:31:ASP:HA	28:2T:39:SER:HA	2.02	0.41
28:2T:83:THR:HG23	35:2a:95:PHE:HZ	1.85	0.41
29:2U:44:ASN:O	29:2U:48:TYR:N	2.52	0.41
34:2Z:57:THR:N	34:2Z:65:ASN:O	2.40	0.41
37:2c:84:LYS:HA	37:2c:87:ARG:HG2	2.02	0.41
46:2m:104:A:H62	46:2m:356:C:N4	2.18	0.41
46:2m:807:G:H2'	46:2m:808:A:H8	1.84	0.41
46:2m:933:G:H21	46:2m:1000:C:H3'	1.84	0.41
46:2m:1023:A:H2'	46:2m:1024:A:H8	1.84	0.41
46:2m:1051:G:H2'	46:2m:1052:A:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:1099:G:H2'	46:2m:1100:A:C8	2.55	0.41
46:2m:1831:A:H2'	46:2m:1832:A:H8	1.85	0.41
49:2p:38:GLU:O	49:2p:49:ILE:N	2.52	0.41
51:2r:154:LEU:O	51:2r:158:ALA:N	2.53	0.41
56:2w:21:ASP:O	56:2w:25:LEU:N	2.47	0.41
67:3F:46:THR:OG1	67:3F:52:TYR:O	2.38	0.41
70:3I:30:LYS:HB3	78:3Q:42:PHE:CZ	2.54	0.41
79:3R:106:TYR:HB3	79:3R:116:ARG:HA	2.01	0.41
83:zz:283:G:OP1	83:zz:283:G:N2	2.34	0.41
1:1A:79:C:H2'	1:1A:80:C:H6	1.85	0.41
1:1A:93:G:H2'	1:1A:94:A:C8	2.55	0.41
1:1A:268:G:H2'	1:1A:269:G:H8	1.85	0.41
1:1A:690:C:H2'	1:1A:691:C:H6	1.85	0.41
1:1A:750:U:H1'	1:1A:917:A:C8	2.55	0.41
1:1A:1516:G:H2'	1:1A:1518:A:H62	1.85	0.41
1:1A:1622:U:O2	1:1A:1627:G:O2'	2.37	0.41
1:1A:1900:C:H4'	33:2Y:60:TYR:CE1	2.55	0.41
1:1A:3731:C:H2'	1:1A:3732:A:C8	2.54	0.41
1:1A:5058:A:OP1	32:2X:121:ASN:ND2	2.54	0.41
3:1C:148:A:H2'	3:1C:149:G:C8	2.55	0.41
5:1E:316:PRO:HD2	5:1E:319:GLY:HA2	2.00	0.41
6:1F:44:LEU:HD23	6:1F:44:LEU:HA	1.85	0.41
8:1H:98:GLY:HA3	8:1H:99:ASP:HA	1.74	0.41
9:2A:166:ARG:HE	9:2A:209:TRP:CD1	2.37	0.41
13:2E:115:LEU:HA	13:2E:116:GLY:HA3	1.82	0.41
28:2T:97:ASN:HB2	28:2T:100:VAL:HB	2.03	0.41
46:2m:81:U:H3'	46:2m:82:G:H8	1.83	0.41
46:2m:466:G:O2'	69:3H:72:ARG:NH2	2.53	0.41
46:2m:494:C:N4	46:2m:509:G:H21	2.17	0.41
46:2m:534:G:N2	46:2m:550:C:N3	2.67	0.41
46:2m:879:C:N4	46:2m:881:G:O6	2.54	0.41
46:2m:1249:C:OP2	46:2m:1250:A:O2'	2.31	0.41
46:2m:1516:G:H2'	46:2m:1517:G:C8	2.54	0.41
46:2m:1803:U:H2'	46:2m:1804:U:C6	2.55	0.41
69:3H:38:ALA:N	69:3H:48:TYR:O	2.52	0.41
1:1A:75:G:C6	14:2F:102:ARG:HA	2.54	0.41
1:1A:2462:C:H5''	16:2H:108:ARG:NH2	2.36	0.41
9:2A:108:VAL:HG13	9:2A:132:MET:HE3	2.02	0.41
21:2M:147:ASP:OD1	21:2M:148:SER:N	2.53	0.41
33:2Y:67:LYS:HE2	33:2Y:68:HIS:CE1	2.54	0.41
40:2f:23:ILE:HD11	40:2f:38:ASN:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:2g:102:ARG:O	41:2g:111:ARG:NH2	2.53	0.41
46:2m:156:G:N1	46:2m:163:U:C2	2.88	0.41
46:2m:877:C:H5'	46:2m:878:G:H5''	2.02	0.41
46:2m:1047:C:H2'	46:2m:1048:G:O4'	2.20	0.41
46:2m:1291:A:N1	46:2m:1310:U:C4	2.88	0.41
46:2m:1613:G:H5''	56:2w:42:ARG:HH21	1.86	0.41
46:2m:1797:U:H2'	46:2m:1798:C:C6	2.55	0.41
46:2m:1856:C:H2'	46:2m:1857:G:C8	2.55	0.41
47:2n:25:LEU:O	47:2n:164:ASN:ND2	2.53	0.41
51:2r:102:LEU:HD13	76:3O:110:THR:HG21	2.02	0.41
52:2s:98:ARG:HG3	52:2s:125:VAL:HG13	2.01	0.41
67:3F:120:ILE:HB	67:3F:132:TRP:HB2	2.03	0.41
67:3F:170:TRP:CG	67:3F:194:TYR:HB2	2.56	0.41
69:3H:50:VAL:HG21	69:3H:111:LEU:HD23	2.02	0.41
74:3M:6:VAL:HG13	74:3M:29:PRO:HG2	2.03	0.41
76:3O:102:LYS:HE2	76:3O:102:LYS:HB3	1.82	0.41
79:3R:109:ASP:HB2	79:3R:113:LYS:HB3	2.01	0.41
79:3R:139:HIS:O	79:3R:148:TYR:N	2.53	0.41
1:1A:416:U:H4'	1:1A:2330:G:H4'	2.01	0.41
1:1A:713:C:H2'	1:1A:714:G:C8	2.55	0.41
1:1A:976:G:P	9:2A:47:ARG:HH21	2.42	0.41
1:1A:1601:A:OP1	38:2d:5:THR:OG1	2.31	0.41
1:1A:2621:A:H2'	1:1A:2622:G:C8	2.56	0.41
1:1A:2905:C:O2'	1:1A:2907:G:OP1	2.33	0.41
1:1A:3774:A:O2'	1:1A:3775:A:O4'	2.35	0.41
1:1A:3832:U:H2'	1:1A:3833:C:C6	2.55	0.41
1:1A:4085:A:C4	10:2B:56:LYS:HE2	2.56	0.41
1:1A:4315:A:H5''	30:2V:38:LYS:HE2	2.02	0.41
1:1A:4888:U:H2'	1:1A:4889:G:C8	2.55	0.41
1:1A:5055:G:H2'	1:1A:5056:A:H8	1.86	0.41
2:1B:47:G:N1	2:1B:48:G:N3	2.68	0.41
6:1F:110:ARG:HG2	16:2H:204:ARG:HD2	2.00	0.41
6:1F:195:LYS:HE2	6:1F:195:LYS:HB3	1.92	0.41
6:1F:333:LYS:HE2	6:1F:337:ARG:HH21	1.84	0.41
16:2H:23:LEU:HD23	16:2H:23:LEU:HA	1.88	0.41
38:2d:63:ARG:HH12	38:2d:65:ARG:HD3	1.85	0.41
46:2m:74:G:H1'	46:2m:76:U:C4	2.56	0.41
46:2m:1016:U:OP2	72:3K:15:ALA:N	2.49	0.41
46:2m:1606:G:O2'	46:2m:1607:A:O4'	2.37	0.41
46:2m:1620:A:O2'	56:2w:40:ARG:NH2	2.53	0.41
46:2m:1713:C:H2'	46:2m:1714:U:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:2v:16:ILE:H	55:2v:16:ILE:HG13	1.76	0.41
74:3M:94:LEU:HD23	74:3M:94:LEU:HA	1.86	0.41
83:zz:144:U:C2	83:zz:249:G:O6	2.74	0.41
1:1A:216:C:H5'	1:1A:219:G:N3	2.34	0.41
1:1A:1371:A:H62	6:1F:50:GLN:NE2	2.19	0.41
1:1A:1390:G:O2'	1:1A:1392:A:N7	2.44	0.41
1:1A:1468:C:H2'	1:1A:1469:C:C6	2.55	0.41
1:1A:2385:U:H2'	1:1A:2386:U:C6	2.55	0.41
1:1A:2475:G:O2'	26:2R:53:ARG:NH2	2.53	0.41
1:1A:2634:C:H2'	1:1A:2635:U:C6	2.56	0.41
1:1A:2811:G:N1	1:1A:2814:C:OP2	2.46	0.41
1:1A:2909:C:H4'	1:1A:3586:G:H1	1.85	0.41
2:1B:92:C:H2'	2:1B:93:G:C8	2.54	0.41
4:1D:180:LEU:HD22	44:2j:18:TYR:HB3	2.02	0.41
5:1E:348:ARG:HH12	5:1E:351:LEU:HD23	1.86	0.41
8:1H:58:SER:OG	8:1H:59:ARG:N	2.49	0.41
28:2T:91:LEU:HA	28:2T:117:LYS:HE2	2.02	0.41
46:2m:467:G:H2'	46:2m:468:A:H8	1.86	0.41
46:2m:600:G:H2'	46:2m:601:G:H8	1.85	0.41
46:2m:1104:G:H2'	46:2m:1105:G:C8	2.55	0.41
46:2m:1206:G:H1	46:2m:1692:U:H3	1.66	0.41
46:2m:1252:C:OP1	61:21:75:LYS:NZ	2.41	0.41
46:2m:1549:U:H2'	46:2m:1550:G:H8	1.86	0.41
67:3F:99:ARG:NE	67:3F:135:LEU:O	2.50	0.41
67:3F:191:HIS:CE1	67:3F:217:MET:HB3	2.55	0.41
69:3H:52:ILE:HA	69:3H:111:LEU:HA	2.02	0.41
71:3J:18:LEU:HD23	71:3J:85:LEU:HD13	2.01	0.41
73:3L:62:VAL:HG11	73:3L:67:ASP:HB2	2.01	0.41
83:zz:141:U:H2'	83:zz:142:A:C8	2.54	0.41
1:1A:1504:G:H2'	1:1A:1505:C:C6	2.56	0.41
1:1A:2350:U:N3	1:1A:3906:A:OP1	2.52	0.41
1:1A:4507:A:H2'	1:1A:4508:C:C6	2.55	0.41
1:1A:4679:G:H2'	1:1A:4680:G:C8	2.56	0.41
1:1A:4930:C:H2'	1:1A:4931:G:C8	2.54	0.41
1:1A:4991:U:H2'	1:1A:4992:G:H8	1.85	0.41
9:2A:90:ALA:HB2	9:2A:125:LEU:HD11	2.02	0.41
11:2C:114:ILE:HB	11:2C:124:ARG:HB2	2.02	0.41
12:2D:177:ASN:HB2	12:2D:180:GLU:HG2	2.03	0.41
13:2E:17:ILE:HD12	13:2E:80:GLU:HG2	2.02	0.41
46:2m:157:U:H4'	69:3H:59:GLN:HA	2.02	0.41
46:2m:429:C:H2'	46:2m:430:C:H6	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:2m:943:U:O2'	73:3L:135:ILE:O	2.39	0.41
46:2m:1023:A:H2'	46:2m:1024:A:C8	2.55	0.41
46:2m:1109:C:O2	58:2y:123:THR:N	2.54	0.41
1:1A:151:G:P	16:2H:49:ARG:HH22	2.43	0.41
1:1A:325:U:H2'	1:1A:326:C:C6	2.55	0.41
1:1A:2299:G:O6	6:1F:188:ARG:NH2	2.53	0.41
1:1A:3787:G:H1'	1:1A:3789:C:H41	1.86	0.41
1:1A:3811:G:O2'	1:1A:3814:U:OP2	2.39	0.41
1:1A:4557:U:C2	81:zx:14:LEU:HD23	2.55	0.41
9:2A:42:LEU:HD13	30:2V:109:ARG:CZ	2.50	0.41
9:2A:126:ASN:OD1	9:2A:129:SER:N	2.54	0.41
46:2m:193:C:H41	53:2t:141:ARG:NH2	2.18	0.41
46:2m:957:A:H2'	46:2m:958:G:C2	2.56	0.41
46:2m:1865:C:OP1	64:3C:87:ARG:NE	2.53	0.41
51:2r:48:TYR:HB3	57:2x:49:TYR:CE2	2.55	0.41
53:2t:110:ARG:HA	53:2t:121:LEU:HD23	2.03	0.41
53:2t:133:GLU:HA	53:2t:136:ILE:HB	2.03	0.41
1:1A:742:G:H2'	1:1A:743:G:H8	1.85	0.41
1:1A:1732:C:H2'	1:1A:1733:G:C8	2.56	0.41
1:1A:2457:G:OP1	16:2H:35:ALA:N	2.53	0.41
1:1A:2485:U:OP1	1:1A:2486:G:N2	2.54	0.41
1:1A:2559:G:H2'	1:1A:2560:C:C6	2.56	0.41
1:1A:3598:C:H2'	1:1A:3599:A:H8	1.84	0.41
3:1C:36:G:H2'	36:2b:89:ARG:HH11	1.84	0.41
6:1F:133:LEU:HD23	45:2k:6:GLN:HE21	1.84	0.41
8:1H:284:HIS:CE1	8:1H:285:LYS:HE2	2.55	0.41
9:2A:41:MET:HE2	30:2V:109:ARG:HB2	2.03	0.41
10:2B:139:GLY:O	10:2B:142:THR:OG1	2.31	0.41
10:2B:218:LEU:HD23	10:2B:218:LEU:HA	1.91	0.41
17:2I:30:GLY:HA2	17:2I:101:ARG:NH1	2.36	0.41
33:2Y:37:LYS:HA	33:2Y:38:PRO:HD3	1.91	0.41
46:2m:913:A:N6	52:2s:98:ARG:O	2.54	0.41
46:2m:1222:G:H2'	46:2m:1223:A:C8	2.56	0.41
46:2m:1253:A:H4'	46:2m:1254:C:H5''	2.02	0.41
46:2m:1278:A:H2'	46:2m:1279:C:C6	2.56	0.41
49:2p:113:LEU:HD23	49:2p:118:ALA:HB2	2.03	0.41
52:2s:20:GLU:HA	52:2s:23:ILE:HB	2.02	0.41
52:2s:169:LYS:HE2	52:2s:173:PHE:HZ	1.85	0.41
67:3F:147:HIS:NE2	67:3F:169:GLY:HA3	2.35	0.41
69:3H:162:LEU:HB2	69:3H:170:ARG:HD3	2.02	0.41
71:3J:52:GLN:HG3	71:3J:78:LYS:HG3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
73:3L:92:ALA:HB2	73:3L:125:LYS:HB2	2.03	0.41
1:1A:239:C:H2'	1:1A:240:G:C8	2.55	0.41
1:1A:387:G:O2'	1:1A:412:G:O6	2.26	0.41
1:1A:493:G:N1	1:1A:660:A:C2	2.87	0.41
1:1A:678:C:H2'	1:1A:679:C:C6	2.54	0.41
1:1A:1741:G:O6	2:1B:103:A:O2'	2.31	0.41
1:1A:2411:C:H2'	1:1A:2412:A:C8	2.52	0.41
1:1A:2519:U:O2'	1:1A:2530:U:O2	2.30	0.41
1:1A:2730:U:H2'	1:1A:2731:C:H6	1.86	0.41
1:1A:3750:G:H2'	1:1A:3751:G:C8	2.55	0.41
1:1A:3766:A:N6	46:2m:1850:A:O4'	2.53	0.41
1:1A:3846:C:H2'	1:1A:3847:C:H6	1.86	0.41
1:1A:4081:G:H2'	1:1A:4082:G:C8	2.56	0.41
1:1A:4331:G:O6	43:2i:86:LYS:NZ	2.49	0.41
1:1A:4776:G:H1'	1:1A:4860:G:H22	1.85	0.41
1:1A:4929:C:H2'	1:1A:4930:C:C6	2.55	0.41
2:1B:46:C:OP1	7:1G:158:LYS:N	2.45	0.41
2:1B:87:G:H5'	21:2M:87:ARG:HE	1.86	0.41
2:1B:110:G:H2'	2:1B:111:C:C6	2.56	0.41
5:1E:95:THR:HG23	5:1E:97:ARG:N	2.35	0.41
11:2C:16:VAL:HG12	11:2C:30:PRO:HD3	2.03	0.41
15:2G:59:ASP:N	15:2G:59:ASP:OD1	2.52	0.41
17:2I:14:HIS:HD2	17:2I:19:LEU:HD11	1.85	0.41
20:2L:24:LEU:HG	20:2L:50:ILE:HG22	2.03	0.41
38:2d:34:CYS:HB3	38:2d:38:GLY:H	1.86	0.41
39:2e:28:ASN:ND2	39:2e:31:ASN:OD1	2.42	0.41
46:2m:324:C:N3	46:2m:329:G:N2	2.68	0.41
46:2m:433:A:H2'	46:2m:434:G:C8	2.56	0.41
46:2m:488:U:H6	46:2m:488:U:H2'	1.72	0.41
46:2m:834:C:H42	46:2m:835:C:N4	2.19	0.41
46:2m:864:A:H2'	46:2m:865:A:C8	2.56	0.41
46:2m:1186:U:H3'	46:2m:1187:G:H8	1.84	0.41
46:2m:1513:C:H5'	66:3E:10:HIS:HB3	2.03	0.41
46:2m:1533:A:N3	46:2m:1536:G:O2'	2.52	0.41
46:2m:1597:C:P	76:3O:85:ARG:HH12	2.43	0.41
46:2m:1605:G:OP1	60:20:84:ARG:NH2	2.53	0.41
46:2m:1839:U:O4	64:3C:28:ARG:NH2	2.54	0.41
47:2n:206:ASP:O	47:2n:210:ILE:N	2.53	0.41
48:2o:30:TRP:CZ3	48:2o:48:LEU:HB2	2.55	0.41
49:2p:105:LEU:HD13	49:2p:122:VAL:HG21	2.03	0.41
50:2q:127:ARG:HH21	50:2q:142:HIS:HB2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:2q:127:ARG:HB3	50:2q:140:VAL:HG12	2.02	0.41
53:2t:157:LYS:HA	53:2t:157:LYS:HD3	1.90	0.41
54:2u:32:HIS:HA	54:2u:33:PRO:HD3	1.94	0.41
56:2w:91:GLY:HA3	56:2w:105:VAL:HB	2.03	0.41
57:2x:24:HIS:CE1	57:2x:26:LYS:HE3	2.54	0.41
57:2x:76:GLY:H	57:2x:79:ALA:HB3	1.85	0.41
58:2y:58:MET:HA	58:2y:61:ILE:HG12	2.02	0.41
64:3C:24:THR:OG1	64:3C:72:HIS:O	2.35	0.41
64:3C:39:PHE:HD1	64:3C:70:LYS:HG2	1.86	0.41
68:3G:74:LYS:HG2	68:3G:272:HIS:HE1	1.85	0.41
68:3G:106:VAL:HG12	68:3G:128:VAL:HG22	2.03	0.41
68:3G:107:LEU:HB2	68:3G:127:PHE:HB2	2.02	0.41
73:3L:113:GLN:HB3	73:3L:117:ARG:NH2	2.36	0.41
74:3M:31:SER:OG	74:3M:34:ILE:N	2.34	0.41
75:3N:104:ARG:HA	75:3N:107:ARG:HG2	2.03	0.41
82:zy:49:C:H2'	82:zy:50:G:H8	1.85	0.41
83:zz:145:G:N1	83:zz:248:U:C2	2.86	0.41
83:zz:263:G:N1	83:zz:270:C:O2	2.39	0.41
1:1A:35:U:O2'	1:1A:1525:A:N1	2.53	0.41
1:1A:197:A:H2'	1:1A:198:A:C8	2.56	0.41
1:1A:239:C:H2'	1:1A:240:G:H8	1.86	0.41
1:1A:284:G:H2'	1:1A:285:G:C8	2.56	0.41
1:1A:1086:C:H2'	1:1A:1087:A:C8	2.54	0.41
1:1A:2522:G:H2'	1:1A:2523:G:C8	2.55	0.41
1:1A:2563:C:H5''	1:1A:2564:G:C5	2.56	0.41
1:1A:2832:A:H2'	1:1A:2833:A:C8	2.56	0.41
1:1A:4744:A:H3'	1:1A:4745:G:H8	1.86	0.41
3:1C:131:G:H2'	3:1C:132:G:H8	1.86	0.41
5:1E:171:LEU:HD23	5:1E:171:LEU:HA	1.91	0.41
7:1G:264:LYS:HG3	7:1G:266:TRP:CD1	2.56	0.41
11:2C:111:LEU:HD12	11:2C:127:ARG:HD3	2.03	0.41
13:2E:109:ILE:HD12	13:2E:109:ILE:HA	1.93	0.41
16:2H:13:LYS:NZ	37:2c:45:ARG:HG2	2.36	0.41
23:2O:62:THR:HB	23:2O:73:THR:HB	2.03	0.41
31:2W:28:VAL:O	31:2W:95:ALA:N	2.54	0.41
34:2Z:11:PHE:CD2	34:2Z:97:ILE:HA	2.56	0.41
46:2m:164:A:H3'	46:2m:165:G:H21	1.85	0.41
46:2m:960:U:H2'	46:2m:961:G:H3'	2.03	0.41
46:2m:980:A:H2'	46:2m:981:A:C8	2.56	0.41
46:2m:1678:A:H3'	46:2m:1679:A:C8	2.56	0.41
46:2m:1757:G:H22	46:2m:1758:G:N2	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:2w:98:ASN:H	56:2w:99:GLY:C	2.29	0.41
59:2z:6:PRO:HB2	59:2z:7:GLU:H	1.74	0.41
68:3G:196:ILE:HG23	68:3G:223:TYR:HB2	2.02	0.41
71:3J:64:LEU:HD11	79:3R:104:LYS:HE3	2.03	0.41
74:3M:90:GLN:HB2	74:3M:94:LEU:HD12	2.02	0.41
82:zy:9:G:H21	82:zy:44:G:H3'	1.86	0.41
1:1A:736:C:H5'	15:2G:74:ARG:HH12	1.86	0.40
1:1A:1340:C:H2'	1:1A:1341:U:C6	2.57	0.40
1:1A:1863:U:H2'	1:1A:1864:G:C8	2.56	0.40
1:1A:1962:A:OP2	1:1A:2024:G:N2	2.38	0.40
1:1A:2670:C:H2'	1:1A:2671:C:C6	2.56	0.40
1:1A:2909:C:O2'	1:1A:3585:G:N7	2.53	0.40
1:1A:4238:G:H2'	1:1A:4239:A:C8	2.56	0.40
1:1A:4260:U:H2'	1:1A:4261:C:H6	1.85	0.40
1:1A:4486:C:H2'	1:1A:4487:A:O4'	2.21	0.40
5:1E:292:LEU:HD22	5:1E:298:LEU:HD11	2.02	0.40
15:2G:128:LYS:HA	15:2G:128:LYS:HD2	1.93	0.40
20:2L:29:THR:HA	20:2L:32:ILE:HD12	2.03	0.40
21:2M:93:MET:HE3	21:2M:93:MET:HB2	1.92	0.40
28:2T:10:VAL:HG11	28:2T:129:TRP:HZ3	1.86	0.40
30:2V:120:ARG:HA	30:2V:121:PRO:HD3	1.92	0.40
46:2m:567:C:H1'	46:2m:583:C:H42	1.85	0.40
46:2m:612:U:H3'	46:2m:613:G:C8	2.57	0.40
46:2m:673:G:H4'	46:2m:1084:A:H2'	2.03	0.40
46:2m:1039:C:H2'	46:2m:1040:G:C8	2.56	0.40
46:2m:1729:U:C4	46:2m:1805:G:O6	2.74	0.40
46:2m:1760:G:C5	46:2m:1761:U:H1'	2.56	0.40
67:3F:48:ASP:OD1	67:3F:48:ASP:N	2.54	0.40
69:3H:159:ARG:NH2	69:3H:171:THR:OG1	2.54	0.40
1:1A:123:C:H2'	1:1A:124:C:H6	1.85	0.40
1:1A:909:A:H2'	1:1A:910:G:C8	2.55	0.40
1:1A:1098:G:H2'	1:1A:1099:C:H6	1.86	0.40
1:1A:1463:C:H2'	1:1A:1464:C:H6	1.86	0.40
1:1A:2298:U:O2	1:1A:2336:G:O6	2.39	0.40
1:1A:3594:C:O2'	1:1A:3597:G:N2	2.55	0.40
1:1A:3692:A:H61	1:1A:3824:A:H62	1.69	0.40
1:1A:3820:G:H2'	1:1A:3821:A:H8	1.85	0.40
1:1A:4324:A:H2'	1:1A:4325:A:C4	2.57	0.40
1:1A:4675:U:H2'	1:1A:4676:G:H8	1.85	0.40
1:1A:4685:U:H2'	1:1A:4686:G:C8	2.56	0.40
1:1A:4911:A:N7	5:1E:97:ARG:NH2	2.69	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:1H:159:GLY:O	8:1H:275:PHE:N	2.53	0.40
11:2C:44:GLU:HB3	11:2C:58:ASP:HB2	2.02	0.40
18:2J:6:LEU:HA	18:2J:6:LEU:HD12	1.86	0.40
31:2W:78:ASN:OD1	31:2W:78:ASN:N	2.54	0.40
44:2j:78:THR:O	44:2j:81:SER:OG	2.37	0.40
46:2m:67:C:C5	69:3H:170:ARG:HD2	2.56	0.40
46:2m:291:G:H5''	50:2q:203:GLY:H	1.87	0.40
46:2m:300:U:H2'	46:2m:301:A:H8	1.86	0.40
46:2m:310:C:H2'	46:2m:311:C:C6	2.57	0.40
46:2m:1286:G:O2'	46:2m:1313:A:N6	2.54	0.40
46:2m:1443:C:H1'	57:2x:22:VAL:HG21	2.02	0.40
46:2m:1714:U:H2'	46:2m:1715:A:H8	1.87	0.40
53:2t:66:SER:HA	53:2t:73:THR:HG22	2.02	0.40
58:2y:27:ASP:OD1	58:2y:28:PHE:N	2.51	0.40
60:20:28:LEU:HG	60:20:30:VAL:HG13	2.01	0.40
67:3F:62:HIS:CE1	67:3F:90:TRP:HE1	2.38	0.40
67:3F:161:SER:OG	67:3F:162:ASN:N	2.54	0.40
68:3G:107:LEU:N	68:3G:127:PHE:O	2.41	0.40
69:3H:148:SER:HA	69:3H:149:LYS:HA	1.66	0.40
1:1A:192:G:H2'	1:1A:193:G:H8	1.85	0.40
1:1A:304:C:H2'	1:1A:305:A:O4'	2.22	0.40
1:1A:368:C:H2'	1:1A:369:G:C8	2.56	0.40
1:1A:744:G:H3'	1:1A:745:G:H8	1.86	0.40
1:1A:1298:C:H2'	1:1A:1299:G:C8	2.57	0.40
1:1A:1743:A:H1'	7:1G:15:ARG:NH2	2.37	0.40
1:1A:4210:U:H2'	1:1A:4211:C:C6	2.56	0.40
1:1A:4263:C:H2'	1:1A:4264:G:O4'	2.21	0.40
1:1A:4691:A:H3'	1:1A:4692:A:H8	1.86	0.40
2:1B:18:C:H2'	2:1B:19:C:H6	1.87	0.40
3:1C:31:G:OP2	14:2F:34:ARG:NH2	2.54	0.40
10:2B:155:VAL:HG12	10:2B:157:ILE:HG13	2.03	0.40
25:2Q:90:ILE:HA	25:2Q:93:LYS:HZ3	1.87	0.40
46:2m:422:U:H2'	46:2m:423:U:C6	2.56	0.40
46:2m:986:G:H21	73:3L:135:ILE:HG22	1.87	0.40
46:2m:1277:C:H2'	46:2m:1278:A:H8	1.86	0.40
46:2m:1398:G:H1	46:2m:1448:A:N6	2.18	0.40
46:2m:1816:G:H2'	46:2m:1817:G:H8	1.85	0.40
48:2o:36:PRO:HA	48:2o:232:HIS:HD2	1.86	0.40
67:3F:12:LYS:O	67:3F:14:HIS:N	2.53	0.40
67:3F:178:ASN:HB2	67:3F:183:LYS:HB3	2.03	0.40
68:3G:153:GLY:HA2	68:3G:156:ILE:HG12	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:3G:264:SER:O	68:3G:266:TYR:N	2.51	0.40
82:zy:17:G:OP2	82:zy:59:U:O2'	2.39	0.40
1:1A:272:U:H2'	1:1A:273:U:C6	2.56	0.40
1:1A:1299:G:H2'	1:1A:1300:G:C8	2.57	0.40
1:1A:1437:C:H1'	1:1A:2098:G:C8	2.57	0.40
1:1A:1591:U:N3	1:1A:4555:U:OP1	2.36	0.40
1:1A:1632:A:N7	1:1A:1634:A:H1'	2.36	0.40
1:1A:1752:G:H2'	1:1A:1753:G:C8	2.57	0.40
1:1A:2406:G:OP2	38:2d:14:LYS:NZ	2.43	0.40
1:1A:3754:G:N2	1:1A:3755:G:C2	2.89	0.40
1:1A:3767:C:O2	1:1A:3768:U:N3	2.54	0.40
1:1A:3842:C:OP1	5:1E:238:LYS:NZ	2.42	0.40
1:1A:4258:C:H2'	1:1A:4259:C:C6	2.57	0.40
1:1A:4291:G:N2	1:1A:4293:U:H3	2.20	0.40
1:1A:4306:U:H2'	1:1A:4307:A:H8	1.86	0.40
1:1A:4910:G:N1	17:2I:108:ILE:O	2.54	0.40
2:1B:94:C:H4'	21:2M:122:HIS:HB2	2.02	0.40
4:1D:20:VAL:HA	4:1D:23:ARG:HG2	2.02	0.40
5:1E:41:VAL:HG12	5:1E:187:GLY:HA3	2.02	0.40
7:1G:171:LEU:HD23	7:1G:171:LEU:HA	1.87	0.40
9:2A:156:LYS:HD3	9:2A:248:ASN:ND2	2.37	0.40
9:2A:169:LEU:HD22	9:2A:175:ILE:HD11	2.04	0.40
16:2H:68:ARG:HH21	16:2H:128:LYS:NZ	2.19	0.40
17:2I:16:LEU:HB3	17:2I:43:ILE:HG22	2.02	0.40
18:2J:59:PRO:HD3	18:2J:76:TRP:CD1	2.56	0.40
19:2K:106:THR:HG22	19:2K:108:ARG:H	1.85	0.40
21:2M:92:ASN:ND2	22:2N:156:TYR:O	2.47	0.40
39:2e:5:ILE:HD11	39:2e:11:PHE:HD1	1.87	0.40
40:2f:43:HIS:CD2	40:2f:45:ARG:H	2.39	0.40
46:2m:674:C:H2'	46:2m:675:U:C6	2.57	0.40
46:2m:839:C:H41	75:3N:10:ARG:HA	1.87	0.40
46:2m:891:G:P	46:2m:896:U:H3	2.44	0.40
46:2m:1446:A:O2'	46:2m:1447:G:H5''	2.22	0.40
46:2m:1733:U:H2'	46:2m:1734:G:O4'	2.22	0.40
46:2m:1834:A:H2'	46:2m:1836:G:N7	2.35	0.40
52:2s:121:THR:HB	52:2s:124:ALA:HB3	2.02	0.40
58:2y:124:VAL:HG13	58:2y:127:ASN:HD21	1.86	0.40
59:2z:25:LYS:HB2	59:2z:25:LYS:HE2	1.88	0.40
66:3E:21:CYS:SG	66:3E:25:SER:N	2.94	0.40
1:1A:1192:C:H2'	1:1A:1193:C:C6	2.57	0.40
1:1A:1557:C:H2'	1:1A:1558:A:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1A:1772:C:H2'	1:1A:1773:U:C6	2.56	0.40
1:1A:1884:C:H2'	1:1A:1885:G:C8	2.56	0.40
1:1A:2066:C:H2'	1:1A:2067:C:H6	1.86	0.40
3:1C:131:G:H2'	3:1C:132:G:C8	2.56	0.40
4:1D:249:THR:N	46:2m:1070:A:OP2	2.54	0.40
9:2A:240:ILE:HD12	9:2A:240:ILE:HA	1.95	0.40
10:2B:222:ILE:HD13	10:2B:222:ILE:HA	1.91	0.40
12:2D:212:LEU:HD12	12:2D:213:HIS:HB2	2.04	0.40
20:2L:42:ARG:HA	20:2L:45:ILE:HD12	2.04	0.40
24:2P:13:LYS:HG3	24:2P:128:LEU:HD11	2.03	0.40
31:2W:37:MET:O	31:2W:41:GLY:N	2.53	0.40
38:2d:25:LYS:HE3	38:2d:25:LYS:HB3	1.93	0.40
38:2d:29:LEU:HD23	38:2d:29:LEU:HA	1.87	0.40
46:2m:1004:U:H2'	46:2m:1005:G:C8	2.57	0.40
46:2m:1262:C:H6	46:2m:1262:C:H2'	1.73	0.40
50:2q:103:TYR:CD2	50:2q:189:LEU:HD11	2.56	0.40
52:2s:70:LYS:HD2	52:2s:73:GLN:HG3	2.03	0.40
56:2w:83:MET:HE3	56:2w:86:LEU:HB2	2.03	0.40
59:2z:44:VAL:HG11	59:2z:67:VAL:HG23	2.04	0.40
63:3B:100:VAL:HG12	63:3B:125:VAL:HA	2.04	0.40
64:3C:7:ASN:OD1	64:3C:8:ASN:N	2.55	0.40
67:3F:234:ASP:HB3	67:3F:252:THR:HB	2.03	0.40
72:3K:5:HIS:CG	72:3K:117:LEU:HD11	2.56	0.40
81:zx:9:LYS:HG3	81:zx:11:LEU:H	1.87	0.40
83:zz:279:C:O2'	83:zz:280:C:H5'	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
4	1D	246/257 (96%)	219 (89%)	27 (11%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	1E	400/403 (99%)	355 (89%)	43 (11%)	2 (0%)	24	63
6	1F	366/427 (86%)	324 (88%)	41 (11%)	1 (0%)	36	71
7	1G	291/297 (98%)	269 (92%)	22 (8%)	0	100	100
8	1H	233/288 (81%)	201 (86%)	30 (13%)	2 (1%)	14	49
9	2A	223/248 (90%)	204 (92%)	19 (8%)	0	100	100
10	2B	239/266 (90%)	209 (87%)	30 (13%)	0	100	100
11	2C	188/192 (98%)	166 (88%)	21 (11%)	1 (0%)	24	63
12	2D	211/214 (99%)	184 (87%)	27 (13%)	0	100	100
13	2E	174/178 (98%)	156 (90%)	18 (10%)	0	100	100
14	2F	208/211 (99%)	180 (86%)	27 (13%)	1 (0%)	24	63
15	2G	137/215 (64%)	125 (91%)	12 (9%)	0	100	100
16	2H	201/204 (98%)	186 (92%)	15 (8%)	0	100	100
17	2I	199/203 (98%)	191 (96%)	8 (4%)	0	100	100
18	2J	151/184 (82%)	134 (89%)	17 (11%)	0	100	100
19	2K	185/188 (98%)	172 (93%)	13 (7%)	0	100	100
20	2L	185/196 (94%)	177 (96%)	8 (4%)	0	100	100
21	2M	173/176 (98%)	149 (86%)	24 (14%)	0	100	100
22	2N	157/160 (98%)	138 (88%)	17 (11%)	2 (1%)	9	41
23	2O	99/128 (77%)	90 (91%)	9 (9%)	0	100	100
24	2P	129/140 (92%)	118 (92%)	9 (7%)	2 (2%)	7	37
25	2Q	122/157 (78%)	111 (91%)	11 (9%)	0	100	100
26	2R	115/156 (74%)	103 (90%)	12 (10%)	0	100	100
27	2S	132/145 (91%)	120 (91%)	12 (9%)	0	100	100
28	2T	133/136 (98%)	119 (90%)	13 (10%)	1 (1%)	16	53
29	2U	145/148 (98%)	135 (93%)	10 (7%)	0	100	100
30	2V	105/159 (66%)	92 (88%)	13 (12%)	0	100	100
31	2W	96/115 (84%)	92 (96%)	4 (4%)	0	100	100
32	2X	105/125 (84%)	96 (91%)	9 (9%)	0	100	100
33	2Y	126/135 (93%)	116 (92%)	10 (8%)	0	100	100
34	2Z	107/110 (97%)	97 (91%)	10 (9%)	0	100	100
35	2a	109/117 (93%)	104 (95%)	5 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
36	2b	120/123 (98%)	116 (97%)	4 (3%)	0	100	100
37	2c	100/105 (95%)	96 (96%)	4 (4%)	0	100	100
38	2d	84/97 (87%)	68 (81%)	16 (19%)	0	100	100
39	2e	67/70 (96%)	58 (87%)	9 (13%)	0	100	100
40	2f	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
41	2g	50/128 (39%)	44 (88%)	6 (12%)	0	100	100
42	2h	22/25 (88%)	21 (96%)	1 (4%)	0	100	100
43	2i	103/106 (97%)	92 (89%)	11 (11%)	0	100	100
44	2j	89/92 (97%)	80 (90%)	9 (10%)	0	100	100
45	2k	123/137 (90%)	112 (91%)	11 (9%)	0	100	100
47	2n	219/295 (74%)	198 (90%)	20 (9%)	1 (0%)	24	63
48	2o	212/264 (80%)	193 (91%)	19 (9%)	0	100	100
49	2p	225/243 (93%)	192 (85%)	33 (15%)	0	100	100
50	2q	260/263 (99%)	232 (89%)	28 (11%)	0	100	100
51	2r	185/204 (91%)	162 (88%)	21 (11%)	2 (1%)	11	45
52	2s	187/194 (96%)	167 (89%)	20 (11%)	0	100	100
53	2t	204/208 (98%)	181 (89%)	23 (11%)	0	100	100
54	2u	96/165 (58%)	88 (92%)	8 (8%)	0	100	100
55	2v	151/158 (96%)	129 (85%)	22 (15%)	0	100	100
56	2w	95/145 (66%)	76 (80%)	19 (20%)	0	100	100
57	2x	144/146 (99%)	124 (86%)	19 (13%)	1 (1%)	18	55
58	2y	130/135 (96%)	113 (87%)	17 (13%)	0	100	100
59	2z	148/152 (97%)	123 (83%)	24 (16%)	1 (1%)	18	55
60	20	141/145 (97%)	128 (91%)	13 (9%)	0	100	100
61	21	102/119 (86%)	92 (90%)	10 (10%)	0	100	100
62	3A	81/83 (98%)	71 (88%)	9 (11%)	1 (1%)	10	43
63	3B	139/143 (97%)	121 (87%)	14 (10%)	4 (3%)	3	23
64	3C	105/115 (91%)	96 (91%)	9 (9%)	0	100	100
65	3D	62/69 (90%)	48 (77%)	14 (23%)	0	100	100
66	3E	51/56 (91%)	46 (90%)	5 (10%)	0	100	100
67	3F	311/317 (98%)	265 (85%)	45 (14%)	1 (0%)	36	71

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
68	3G	220/293 (75%)	205 (93%)	14 (6%)	1 (0%)	24	63
69	3H	235/249 (94%)	206 (88%)	29 (12%)	0	100	100
70	3I	183/194 (94%)	158 (86%)	22 (12%)	3 (2%)	7	37
71	3J	120/132 (91%)	101 (84%)	19 (16%)	0	100	100
72	3K	148/151 (98%)	137 (93%)	10 (7%)	1 (1%)	18	55
73	3L	138/151 (91%)	120 (87%)	17 (12%)	1 (1%)	18	55
74	3M	127/130 (98%)	113 (89%)	14 (11%)	0	100	100
75	3N	129/133 (97%)	121 (94%)	8 (6%)	0	100	100
76	3O	73/125 (58%)	62 (85%)	11 (15%)	0	100	100
77	3P	81/84 (96%)	65 (80%)	14 (17%)	2 (2%)	4	26
78	3Q	56/59 (95%)	51 (91%)	5 (9%)	0	100	100
79	3R	65/156 (42%)	53 (82%)	12 (18%)	0	100	100
81	zx	15/17 (88%)	10 (67%)	5 (33%)	0	100	100
All	All	11334/12705 (89%)	10113 (89%)	1190 (10%)	31 (0%)	37	71

All (31) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
8	1H	111	LYS
24	2P	110	GLY
59	2z	17	ASN
70	3I	8	VAL
77	3P	20	LYS
22	2N	82	GLY
51	2r	80	GLY
62	3A	81	LYS
63	3B	109	GLY
63	3B	127	ASN
77	3P	39	GLY
6	1F	111	TRP
8	1H	127	SER
24	2P	109	LYS
68	3G	78	LEU
5	1E	294	LYS
5	1E	393	LYS
14	2F	48	PRO
22	2N	129	LYS

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Mol	Chain	Res	Type
47	2n	12	GLU
63	3B	10	ALA
63	3B	108	LYS
73	3L	92	ALA
28	2T	31	ASP
70	3I	7	TRP
70	3I	9	CYS
72	3K	4	MET
11	2C	106	GLN
67	3F	283	PRO
51	2r	39	ILE
57	2x	42	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	1D	190/199 (96%)	190 (100%)	0	100	100
5	1E	348/349 (100%)	347 (100%)	1 (0%)	86	84
6	1F	306/348 (88%)	306 (100%)	0	100	100
7	1G	246/250 (98%)	246 (100%)	0	100	100
8	1H	210/252 (83%)	208 (99%)	2 (1%)	68	76
9	2A	194/215 (90%)	191 (98%)	3 (2%)	57	70
10	2B	203/223 (91%)	203 (100%)	0	100	100
11	2C	169/171 (99%)	164 (97%)	5 (3%)	36	57
12	2D	180/181 (99%)	178 (99%)	2 (1%)	65	74
13	2E	148/149 (99%)	147 (99%)	1 (1%)	76	79
14	2F	176/177 (99%)	176 (100%)	0	100	100
15	2G	118/161 (73%)	116 (98%)	2 (2%)	53	67
16	2H	171/172 (99%)	171 (100%)	0	100	100
17	2I	173/174 (99%)	173 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
18	2J	134/163 (82%)	133 (99%)	1 (1%)	76	79
19	2K	164/165 (99%)	164 (100%)	0	100	100
20	2L	166/175 (95%)	166 (100%)	0	100	100
21	2M	156/157 (99%)	155 (99%)	1 (1%)	78	80
22	2N	139/140 (99%)	139 (100%)	0	100	100
23	2O	91/115 (79%)	91 (100%)	0	100	100
24	2P	101/107 (94%)	101 (100%)	0	100	100
25	2Q	103/126 (82%)	103 (100%)	0	100	100
26	2R	107/133 (80%)	107 (100%)	0	100	100
27	2S	124/135 (92%)	123 (99%)	1 (1%)	73	77
28	2T	117/118 (99%)	117 (100%)	0	100	100
29	2U	120/121 (99%)	120 (100%)	0	100	100
30	2V	88/126 (70%)	88 (100%)	0	100	100
31	2W	83/97 (86%)	83 (100%)	0	100	100
32	2X	98/110 (89%)	97 (99%)	1 (1%)	68	76
33	2Y	114/121 (94%)	112 (98%)	2 (2%)	51	67
34	2Z	88/89 (99%)	88 (100%)	0	100	100
35	2a	97/100 (97%)	97 (100%)	0	100	100
36	2b	109/110 (99%)	109 (100%)	0	100	100
37	2c	86/89 (97%)	86 (100%)	0	100	100
38	2d	73/80 (91%)	73 (100%)	0	100	100
39	2e	64/65 (98%)	63 (98%)	1 (2%)	55	69
40	2f	47/48 (98%)	47 (100%)	0	100	100
41	2g	48/116 (41%)	48 (100%)	0	100	100
42	2h	23/24 (96%)	23 (100%)	0	100	100
43	2i	93/94 (99%)	92 (99%)	1 (1%)	65	74
44	2j	74/75 (99%)	74 (100%)	0	100	100
45	2k	109/121 (90%)	106 (97%)	3 (3%)	38	59
47	2n	183/243 (75%)	181 (99%)	2 (1%)	65	74
48	2o	195/231 (84%)	194 (100%)	1 (0%)	81	81
49	2p	190/202 (94%)	189 (100%)	1 (0%)	81	81

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
50	2q	224/225 (100%)	223 (100%)	1 (0%)	84	82
51	2r	157/170 (92%)	157 (100%)	0	100	100
52	2s	169/174 (97%)	169 (100%)	0	100	100
53	2t	178/180 (99%)	178 (100%)	0	100	100
54	2u	89/136 (65%)	89 (100%)	0	100	100
55	2v	137/142 (96%)	137 (100%)	0	100	100
56	2w	87/130 (67%)	87 (100%)	0	100	100
57	2x	121/121 (100%)	121 (100%)	0	100	100
58	2y	120/122 (98%)	120 (100%)	0	100	100
59	2z	130/132 (98%)	128 (98%)	2 (2%)	57	70
60	20	113/115 (98%)	113 (100%)	0	100	100
61	21	94/107 (88%)	94 (100%)	0	100	100
62	3A	67/67 (100%)	67 (100%)	0	100	100
63	3B	113/115 (98%)	113 (100%)	0	100	100
64	3C	90/98 (92%)	90 (100%)	0	100	100
65	3D	57/62 (92%)	56 (98%)	1 (2%)	51	67
66	3E	47/49 (96%)	47 (100%)	0	100	100
67	3F	272/275 (99%)	269 (99%)	3 (1%)	65	74
68	3G	188/225 (84%)	188 (100%)	0	100	100
69	3H	207/218 (95%)	207 (100%)	0	100	100
70	3I	161/168 (96%)	160 (99%)	1 (1%)	78	80
71	3J	104/108 (96%)	104 (100%)	0	100	100
72	3K	130/131 (99%)	130 (100%)	0	100	100
73	3L	110/119 (92%)	110 (100%)	0	100	100
74	3M	112/113 (99%)	112 (100%)	0	100	100
75	3N	113/115 (98%)	113 (100%)	0	100	100
76	3O	66/103 (64%)	65 (98%)	1 (2%)	57	70
77	3P	75/76 (99%)	75 (100%)	0	100	100
78	3Q	47/48 (98%)	47 (100%)	0	100	100
79	3R	60/140 (43%)	60 (100%)	0	100	100
81	zx	16/16 (100%)	16 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
All	All	9870/10817 (91%)	9830 (100%)	40 (0%)	81 82

All (40) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	1E	73	VAL
8	1H	152	ILE
8	1H	281	ILE
9	2A	95	ILE
9	2A	140	ILE
9	2A	184	ILE
11	2C	105	ILE
11	2C	145	ILE
11	2C	146	LEU
11	2C	172	ILE
11	2C	176	LEU
12	2D	60	LEU
12	2D	190	LEU
13	2E	125	ILE
15	2G	61	ILE
15	2G	122	ILE
18	2J	78	TRP
21	2M	124	ILE
27	2S	99	ILE
32	2X	106	VAL
33	2Y	21	ILE
33	2Y	99	ILE
39	2e	60	LEU
43	2i	68	LEU
45	2k	43	LEU
45	2k	44	ILE
45	2k	78	VAL
47	2n	8	LEU
47	2n	112	ILE
48	2o	171	ILE
49	2p	186	VAL
50	2q	248	ILE
59	2z	12	ILE
59	2z	129	LEU
65	3D	34	PHE
67	3F	11	LEU
67	3F	108	VAL

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Mol	Chain	Res	Type
67	3F	109	LEU
70	3I	40	LYS
76	3O	97	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (133) such sidechains are listed below:

Mol	Chain	Res	Type
4	1D	162	ASN
4	1D	215	ASN
5	1E	175	GLN
5	1E	245	HIS
6	1F	50	GLN
6	1F	215	ASN
6	1F	310	HIS
7	1G	39	GLN
7	1G	122	GLN
7	1G	195	HIS
7	1G	203	ASN
8	1H	182	ASN
8	1H	191	GLN
8	1H	227	HIS
8	1H	256	GLN
9	2A	39	GLN
9	2A	99	ASN
9	2A	119	ASN
9	2A	192	HIS
9	2A	239	GLN
10	2B	94	GLN
10	2B	159	HIS
10	2B	195	HIS
10	2B	206	GLN
10	2B	227	ASN
11	2C	7	ASN
12	2D	92	HIS
12	2D	123	GLN
12	2D	130	HIS
13	2E	112	HIS
14	2F	87	HIS
14	2F	104	ASN
14	2F	111	GLN
15	2G	20	HIS
15	2G	34	ASN

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Mol	Chain	Res	Type
15	2G	48	GLN
16	2H	99	GLN
16	2H	156	HIS
16	2H	158	HIS
16	2H	182	HIS
17	2I	42	ASN
17	2I	50	ASN
18	2J	75	GLN
19	2K	21	GLN
19	2K	77	ASN
19	2K	160	HIS
19	2K	162	HIS
21	2M	156	HIS
21	2M	163	HIS
22	2N	49	GLN
22	2N	98	HIS
25	2Q	95	ASN
26	2R	69	ASN
26	2R	107	HIS
27	2S	14	ASN
27	2S	24	HIS
27	2S	127	GLN
28	2T	97	ASN
29	2U	25	HIS
29	2U	67	GLN
29	2U	89	ASN
29	2U	93	ASN
30	2V	12	GLN
31	2W	33	GLN
32	2X	28	ASN
32	2X	100	ASN
35	2a	100	GLN
36	2b	20	GLN
40	2f	43	HIS
43	2i	105	GLN
44	2j	33	GLN
47	2n	9	GLN
48	2o	101	HIS
48	2o	186	ASN
49	2p	56	GLN
49	2p	74	GLN
49	2p	145	GLN

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Mol	Chain	Res	Type
49	2p	159	HIS
49	2p	174	HIS
50	2q	138	HIS
51	2r	110	GLN
52	2s	44	ASN
52	2s	91	HIS
52	2s	162	GLN
52	2s	163	GLN
52	2s	165	ASN
53	2t	146	GLN
53	2t	165	GLN
53	2t	181	GLN
54	2u	7	ASN
55	2v	83	GLN
55	2v	106	HIS
56	2w	24	GLN
56	2w	98	ASN
57	2x	11	GLN
57	2x	86	GLN
58	2y	56	HIS
59	2z	120	HIS
60	20	10	ASN
61	21	85	HIS
63	3B	16	HIS
63	3B	20	GLN
66	3E	26	ASN
67	3F	20	GLN
67	3F	56	GLN
67	3F	76	GLN
67	3F	119	GLN
67	3F	133	ASN
67	3F	188	HIS
68	3G	272	HIS
69	3H	59	GLN
69	3H	81	HIS
69	3H	177	GLN
69	3H	225	GLN
70	3I	113	GLN
70	3I	143	ASN
71	3J	28	HIS
71	3J	52	GLN
71	3J	72	HIS

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Mol	Chain	Res	Type
71	3J	99	ASN
72	3K	101	HIS
73	3L	13	GLN
73	3L	103	ASN
74	3M	5	ASN
74	3M	16	ASN
74	3M	24	GLN
75	3N	89	HIS
75	3N	124	ASN
76	3O	46	ASN
76	3O	64	ASN
76	3O	89	GLN
78	3Q	37	GLN
78	3Q	58	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1A	3655/5070 (72%)	1231 (33%)	30 (0%)
2	1B	119/121 (98%)	29 (24%)	1 (0%)
3	1C	155/157 (98%)	44 (28%)	2 (1%)
46	2m	1714/1869 (91%)	658 (38%)	0
80	zv	5/6 (83%)	4 (80%)	0
82	zy	74/75 (98%)	16 (21%)	0
83	zz	161/290 (55%)	76 (47%)	0
All	All	5883/7588 (77%)	2058 (34%)	33 (0%)

All (2058) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1A	4	G
1	1A	13	U
1	1A	18	C
1	1A	22	G
1	1A	23	C
1	1A	24	G
1	1A	25	A
1	1A	30	C
1	1A	34	A
1	1A	36	U
1	1A	39	A

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Mol	Chain	Res	Type
1	1A	42	A
1	1A	43	U
1	1A	44	A
1	1A	47	A
1	1A	48	G
1	1A	56	A
1	1A	59	A
1	1A	64	A
1	1A	65	A
1	1A	66	A
1	1A	72	C
1	1A	73	A
1	1A	74	G
1	1A	75	G
1	1A	82	U
1	1A	83	C
1	1A	84	A
1	1A	93	G
1	1A	98	A
1	1A	108	A
1	1A	109	G
1	1A	110	C
1	1A	112	C
1	1A	116	G
1	1A	117	C
1	1A	119	G
1	1A	120	A
1	1A	121	A
1	1A	122	U
1	1A	127	G
1	1A	128	C
1	1A	131	C
1	1A	133	C
1	1A	134	G
1	1A	135	G
1	1A	144	G
1	1A	149	A
1	1A	159	C
1	1A	169	G
1	1A	170	C
1	1A	171	U
1	1A	172	C

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Mol	Chain	Res	Type
1	1A	179	G
1	1A	180	C
1	1A	181	C
1	1A	183	C
1	1A	184	U
1	1A	185	C
1	1A	186	G
1	1A	187	U
1	1A	188	G
1	1A	189	G
1	1A	195	C
1	1A	197	A
1	1A	199	G
1	1A	200	U
1	1A	201	C
1	1A	205	C
1	1A	208	A
1	1A	209	U
1	1A	216	C
1	1A	217	C
1	1A	218	A
1	1A	219	G
1	1A	224	U
1	1A	227	A
1	1A	228	C
1	1A	232	G
1	1A	233	U
1	1A	234	G
1	1A	246	G
1	1A	253	G
1	1A	256	G
1	1A	264	C
1	1A	265	C
1	1A	266	C
1	1A	269	G
1	1A	274	C
1	1A	275	C
1	1A	276	C
1	1A	278	G
1	1A	280	G
1	1A	281	U
1	1A	294	G

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Mol	Chain	Res	Type
1	1A	295	A
1	1A	296	A
1	1A	297	U
1	1A	306	A
1	1A	315	G
1	1A	316	U
1	1A	322	C
1	1A	340	C
1	1A	345	C
1	1A	346	G
1	1A	348	G
1	1A	355	A
1	1A	357	U
1	1A	360	A
1	1A	362	A
1	1A	363	A
1	1A	370	U
1	1A	379	G
1	1A	381	U
1	1A	383	A
1	1A	384	A
1	1A	386	A
1	1A	387	G
1	1A	389	A
1	1A	399	G
1	1A	401	G
1	1A	407	A
1	1A	409	G
1	1A	410	A
1	1A	412	G
1	1A	413	G
1	1A	415	G
1	1A	417	G
1	1A	418	A
1	1A	430	G
1	1A	433	A
1	1A	438	G
1	1A	446	C
1	1A	449	C
1	1A	450	G
1	1A	452	A
1	1A	453	G

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Mol	Chain	Res	Type
1	1A	454	U
1	1A	456	C
1	1A	457	G
1	1A	464	G
1	1A	465	G
1	1A	467	U
1	1A	483	G
1	1A	484	U
1	1A	485	C
1	1A	486	C
1	1A	489	C
1	1A	493	G
1	1A	494	U
1	1A	497	G
1	1A	498	C
1	1A	500	G
1	1A	502	C
1	1A	503	C
1	1A	504	G
1	1A	505	G
1	1A	507	G
1	1A	509	A
1	1A	510	U
1	1A	512	U
1	1A	513	U
1	1A	514	U
1	1A	516	C
1	1A	517	C
1	1A	518	G
1	1A	643	C
1	1A	644	G
1	1A	645	G
1	1A	646	G
1	1A	653	U
1	1A	654	C
1	1A	655	C
1	1A	656	C
1	1A	657	C
1	1A	659	G
1	1A	665	C
1	1A	666	G
1	1A	667	A

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Mol	Chain	Res	Type
1	1A	668	C
1	1A	669	C
1	1A	672	C
1	1A	673	C
1	1A	675	C
1	1A	685	C
1	1A	686	A
1	1A	687	U
1	1A	696	C
1	1A	697	G
1	1A	703	G
1	1A	704	C
1	1A	705	G
1	1A	708	G
1	1A	730	G
1	1A	731	G
1	1A	738	C
1	1A	739	G
1	1A	744	G
1	1A	745	G
1	1A	747	A
1	1A	748	G
1	1A	750	U
1	1A	753	C
1	1A	755	C
1	1A	758	G
1	1A	760	G
1	1A	904	C
1	1A	905	C
1	1A	906	C
1	1A	910	G
1	1A	912	G
1	1A	913	U
1	1A	914	U
1	1A	915	A
1	1A	916	C
1	1A	917	A
1	1A	918	G
1	1A	923	C
1	1A	924	C
1	1A	926	G
1	1A	929	A

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Mol	Chain	Res	Type
1	1A	932	A
1	1A	933	G
1	1A	934	C
1	1A	935	A
1	1A	936	C
1	1A	941	C
1	1A	943	A
1	1A	944	A
1	1A	945	U
1	1A	946	C
1	1A	959	G
1	1A	960	A
1	1A	961	G
1	1A	962	C
1	1A	965	G
1	1A	966	A
1	1A	969	C
1	1A	970	G
1	1A	971	U
1	1A	982	U
1	1A	983	C
1	1A	984	C
1	1A	989	U
1	1A	990	C
1	1A	991	C
1	1A	992	C
1	1A	993	G
1	1A	995	C
1	1A	1048	G
1	1A	1051	G
1	1A	1066	G
1	1A	1070	G
1	1A	1071	C
1	1A	1072	C
1	1A	1074	G
1	1A	1075	G
1	1A	1080	C
1	1A	1083	U
1	1A	1089	G
1	1A	1092	G
1	1A	1095	A
1	1A	1099	C

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Mol	Chain	Res	Type
1	1A	1168	G
1	1A	1171	G
1	1A	1173	G
1	1A	1178	G
1	1A	1179	U
1	1A	1180	C
1	1A	1181	C
1	1A	1182	C
1	1A	1183	C
1	1A	1184	A
1	1A	1187	G
1	1A	1191	C
1	1A	1192	C
1	1A	1193	C
1	1A	1196	G
1	1A	1197	C
1	1A	1198	G
1	1A	1200	G
1	1A	1202	C
1	1A	1203	G
1	1A	1210	C
1	1A	1211	G
1	1A	1214	C
1	1A	1215	C
1	1A	1216	C
1	1A	1217	G
1	1A	1218	G
1	1A	1219	G
1	1A	1222	A
1	1A	1235	G
1	1A	1239	C
1	1A	1241	C
1	1A	1243	C
1	1A	1246	G
1	1A	1247	U
1	1A	1252	C
1	1A	1253	G
1	1A	1254	A
1	1A	1255	A
1	1A	1257	A
1	1A	1260	G
1	1A	1261	G

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Mol	Chain	Res	Type
1	1A	1262	G
1	1A	1263	A
1	1A	1265	G
1	1A	1266	G
1	1A	1269	G
1	1A	1270	A
1	1A	1271	G
1	1A	1272	C
1	1A	1273	G
1	1A	1274	A
1	1A	1275	G
1	1A	1277	G
1	1A	1280	C
1	1A	1284	G
1	1A	1285	U
1	1A	1287	G
1	1A	1293	G
1	1A	1294	A
1	1A	1295	C
1	1A	1296	G
1	1A	1301	C
1	1A	1302	U
1	1A	1303	A
1	1A	1314	C
1	1A	1326	A
1	1A	1330	A
1	1A	1338	G
1	1A	1344	C
1	1A	1350	C
1	1A	1354	A
1	1A	1358	G
1	1A	1359	G
1	1A	1364	U
1	1A	1365	C
1	1A	1370	G
1	1A	1371	A
1	1A	1372	A
1	1A	1377	G
1	1A	1378	C
1	1A	1379	C
1	1A	1381	U
1	1A	1385	G

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Mol	Chain	Res	Type
1	1A	1387	A
1	1A	1388	A
1	1A	1391	A
1	1A	1394	G
1	1A	1397	A
1	1A	1398	A
1	1A	1399	G
1	1A	1405	C
1	1A	1406	G
1	1A	1407	C
1	1A	1409	C
1	1A	1410	U
1	1A	1415	G
1	1A	1416	G
1	1A	1420	A
1	1A	1425	G
1	1A	1435	G
1	1A	1436	C
1	1A	1438	U
1	1A	1439	C
1	1A	1441	C
1	1A	1442	C
1	1A	1443	A
1	1A	1444	G
1	1A	1446	C
1	1A	1447	C
1	1A	1457	G
1	1A	1465	G
1	1A	1472	C
1	1A	1482	G
1	1A	1483	C
1	1A	1497	A
1	1A	1498	G
1	1A	1502	G
1	1A	1517	G
1	1A	1518	A
1	1A	1523	A
1	1A	1525	A
1	1A	1534	A
1	1A	1547	A
1	1A	1564	A
1	1A	1566	C

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Mol	Chain	Res	Type
1	1A	1574	G
1	1A	1578	U
1	1A	1581	G
1	1A	1582	U
1	1A	1591	U
1	1A	1596	U
1	1A	1597	G
1	1A	1601	A
1	1A	1608	G
1	1A	1611	C
1	1A	1614	C
1	1A	1620	U
1	1A	1624	G
1	1A	1625	G
1	1A	1631	A
1	1A	1633	G
1	1A	1634	A
1	1A	1638	A
1	1A	1641	G
1	1A	1649	U
1	1A	1650	A
1	1A	1654	G
1	1A	1658	G
1	1A	1660	U
1	1A	1661	C
1	1A	1676	C
1	1A	1677	U
1	1A	1678	C
1	1A	1681	G
1	1A	1688	G
1	1A	1694	C
1	1A	1697	G
1	1A	1699	A
1	1A	1700	G
1	1A	1701	A
1	1A	1703	C
1	1A	1704	C
1	1A	1705	G
1	1A	1724	G
1	1A	1729	A
1	1A	1734	G
1	1A	1735	U

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Mol	Chain	Res	Type
1	1A	1741	G
1	1A	1742	A
1	1A	1745	G
1	1A	1749	A
1	1A	1750	G
1	1A	1753	G
1	1A	1755	C
1	1A	1757	U
1	1A	1758	G
1	1A	1760	G
1	1A	1761	G
1	1A	1762	C
1	1A	1763	C
1	1A	1764	G
1	1A	1765	A
1	1A	1766	A
1	1A	1767	A
1	1A	1768	C
1	1A	1769	G
1	1A	1770	A
1	1A	1772	C
1	1A	1775	A
1	1A	1781	U
1	1A	1787	A
1	1A	1797	G
1	1A	1803	G
1	1A	1804	A
1	1A	1806	G
1	1A	1810	G
1	1A	1811	G
1	1A	1815	G
1	1A	1819	G
1	1A	1821	G
1	1A	1822	U
1	1A	1823	G
1	1A	1833	G
1	1A	1836	G
1	1A	1837	A
1	1A	1842	G
1	1A	1843	A
1	1A	1855	G
1	1A	1869	G

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Mol	Chain	Res	Type
1	1A	1878	G
1	1A	1880	G
1	1A	1881	C
1	1A	1889	U
1	1A	1890	G
1	1A	1891	A
1	1A	1893	C
1	1A	1897	A
1	1A	1898	C
1	1A	1899	G
1	1A	1918	U
1	1A	1919	G
1	1A	1920	C
1	1A	1921	C
1	1A	1922	G
1	1A	1925	G
1	1A	1931	C
1	1A	1932	A
1	1A	1935	C
1	1A	1936	C
1	1A	1937	C
1	1A	1938	C
1	1A	1941	A
1	1A	1945	G
1	1A	1948	G
1	1A	1949	U
1	1A	1959	U
1	1A	1960	A
1	1A	1961	G
1	1A	1962	A
1	1A	1965	G
1	1A	1966	C
1	1A	1967	A
1	1A	1968	G
1	1A	1969	G
1	1A	1970	A
1	1A	1971	C
1	1A	1973	G
1	1A	1974	U
1	1A	1975	G
1	1A	1976	G
1	1A	1977	C

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Mol	Chain	Res	Type
1	1A	1980	U
1	1A	1981	G
1	1A	1982	G
1	1A	1983	A
1	1A	1984	A
1	1A	1985	G
1	1A	1987	C
1	1A	1988	G
1	1A	1989	G
1	1A	1991	A
1	1A	1993	C
1	1A	1994	C
1	1A	1995	G
1	1A	1996	C
1	1A	1998	A
1	1A	1999	A
1	1A	2001	G
1	1A	2002	A
1	1A	2003	G
1	1A	2004	U
1	1A	2005	G
1	1A	2006	U
1	1A	2007	G
1	1A	2009	A
1	1A	2010	A
1	1A	2011	C
1	1A	2012	A
1	1A	2013	A
1	1A	2015	U
1	1A	2016	C
1	1A	2018	C
1	1A	2019	C
1	1A	2020	U
1	1A	2021	G
1	1A	2025	A
1	1A	2026	A
1	1A	2033	A
1	1A	2034	G
1	1A	2038	U
1	1A	2042	A
1	1A	2043	A
1	1A	2044	U

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Mol	Chain	Res	Type
1	1A	2046	G
1	1A	2048	U
1	1A	2052	G
1	1A	2054	U
1	1A	2055	G
1	1A	2056	G
1	1A	2057	A
1	1A	2062	C
1	1A	2069	A
1	1A	2084	C
1	1A	2085	G
1	1A	2089	G
1	1A	2090	U
1	1A	2091	C
1	1A	2092	G
1	1A	2093	A
1	1A	2094	G
1	1A	2095	A
1	1A	2096	G
1	1A	2097	U
1	1A	2098	G
1	1A	2101	C
1	1A	2102	G
1	1A	2103	G
1	1A	2106	G
1	1A	2107	C
1	1A	2108	G
1	1A	2111	G
1	1A	2112	G
1	1A	2252	G
1	1A	2253	A
1	1A	2256	C
1	1A	2257	C
1	1A	2258	C
1	1A	2259	G
1	1A	2260	C
1	1A	2262	G
1	1A	2268	A
1	1A	2279	A
1	1A	2284	G
1	1A	2288	G
1	1A	2289	C

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Mol	Chain	Res	Type
1	1A	2299	G
1	1A	2300	A
1	1A	2301	G
1	1A	2306	G
1	1A	2307	A
1	1A	2313	A
1	1A	2316	G
1	1A	2321	G
1	1A	2322	G
1	1A	2327	G
1	1A	2328	G
1	1A	2331	G
1	1A	2333	G
1	1A	2337	C
1	1A	2342	G
1	1A	2343	G
1	1A	2346	C
1	1A	2347	A
1	1A	2348	G
1	1A	2350	U
1	1A	2351	C
1	1A	2352	U
1	1A	2354	G
1	1A	2360	A
1	1A	2364	G
1	1A	2369	U
1	1A	2370	A
1	1A	2379	A
1	1A	2383	C
1	1A	2384	U
1	1A	2390	G
1	1A	2391	G
1	1A	2392	C
1	1A	2395	A
1	1A	2396	A
1	1A	2397	G
1	1A	2402	G
1	1A	2404	A
1	1A	2406	G
1	1A	2409	U
1	1A	2410	C
1	1A	2412	A

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Mol	Chain	Res	Type
1	1A	2416	G
1	1A	2417	A
1	1A	2418	A
1	1A	2421	G
1	1A	2429	A
1	1A	2436	U
1	1A	2437	C
1	1A	2439	G
1	1A	2440	U
1	1A	2441	C
1	1A	2444	U
1	1A	2450	G
1	1A	2454	U
1	1A	2460	A
1	1A	2461	G
1	1A	2463	G
1	1A	2465	C
1	1A	2467	U
1	1A	2469	C
1	1A	2470	C
1	1A	2471	G
1	1A	2472	A
1	1A	2474	G
1	1A	2475	G
1	1A	2483	G
1	1A	2484	A
1	1A	2485	U
1	1A	2487	G
1	1A	2488	C
1	1A	2489	C
1	1A	2491	C
1	1A	2494	U
1	1A	2495	U
1	1A	2496	G
1	1A	2498	C
1	1A	2499	C
1	1A	2503	G
1	1A	2504	C
1	1A	2505	C
1	1A	2506	G
1	1A	2511	A
1	1A	2512	A

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Mol	Chain	Res	Type
1	1A	2513	A
1	1A	2514	G
1	1A	2529	A
1	1A	2530	U
1	1A	2531	C
1	1A	2532	C
1	1A	2537	A
1	1A	2543	A
1	1A	2544	G
1	1A	2545	U
1	1A	2546	G
1	1A	2547	G
1	1A	2549	G
1	1A	2553	A
1	1A	2554	U
1	1A	2555	G
1	1A	2556	G
1	1A	2560	C
1	1A	2563	C
1	1A	2564	G
1	1A	2565	A
1	1A	2566	G
1	1A	2567	G
1	1A	2569	G
1	1A	2573	A
1	1A	2583	C
1	1A	2586	G
1	1A	2587	A
1	1A	2588	C
1	1A	2589	C
1	1A	2599	G
1	1A	2600	A
1	1A	2601	A
1	1A	2602	G
1	1A	2606	G
1	1A	2607	C
1	1A	2618	G
1	1A	2627	C
1	1A	2631	U
1	1A	2637	U
1	1A	2639	U
1	1A	2647	A

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Mol	Chain	Res	Type
1	1A	2651	C
1	1A	2653	C
1	1A	2659	A
1	1A	2662	G
1	1A	2669	C
1	1A	2670	C
1	1A	2673	G
1	1A	2675	G
1	1A	2681	G
1	1A	2686	G
1	1A	2687	U
1	1A	2688	G
1	1A	2694	G
1	1A	2695	A
1	1A	2696	A
1	1A	2705	G
1	1A	2707	U
1	1A	2708	U
1	1A	2710	C
1	1A	2711	G
1	1A	2712	G
1	1A	2714	G
1	1A	2721	G
1	1A	2724	G
1	1A	2725	A
1	1A	2726	G
1	1A	2739	C
1	1A	2740	U
1	1A	2743	A
1	1A	2744	A
1	1A	2753	G
1	1A	2761	U
1	1A	2762	G
1	1A	2767	U
1	1A	2768	C
1	1A	2769	U
1	1A	2770	C
1	1A	2776	G
1	1A	2787	A
1	1A	2788	U
1	1A	2789	A
1	1A	2791	C

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Mol	Chain	Res	Type
1	1A	2794	C
1	1A	2795	A
1	1A	2796	G
1	1A	2797	C
1	1A	2798	A
1	1A	2807	A
1	1A	2814	C
1	1A	2822	G
1	1A	2826	U
1	1A	2827	G
1	1A	2834	C
1	1A	2842	G
1	1A	2855	G
1	1A	2860	C
1	1A	2867	C
1	1A	2870	A
1	1A	2872	C
1	1A	2874	U
1	1A	2875	C
1	1A	2876	G
1	1A	2877	G
1	1A	2879	A
1	1A	2880	U
1	1A	2884	G
1	1A	2887	U
1	1A	2892	C
1	1A	2899	C
1	1A	2902	G
1	1A	2903	G
1	1A	2904	U
1	1A	2906	G
1	1A	2908	U
1	1A	2910	G
1	1A	3585	G
1	1A	3586	G
1	1A	3591	C
1	1A	3592	G
1	1A	3593	C
1	1A	3595	U
1	1A	3596	A
1	1A	3597	G
1	1A	3606	U

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Mol	Chain	Res	Type
1	1A	3614	G
1	1A	3615	G
1	1A	3616	U
1	1A	3618	C
1	1A	3619	G
1	1A	3620	G
1	1A	3626	G
1	1A	3630	A
1	1A	3634	G
1	1A	3635	A
1	1A	3637	U
1	1A	3640	U
1	1A	3641	U
1	1A	3642	A
1	1A	3646	A
1	1A	3651	A
1	1A	3652	A
1	1A	3662	A
1	1A	3664	G
1	1A	3670	C
1	1A	3671	G
1	1A	3672	G
1	1A	3673	C
1	1A	3678	G
1	1A	3679	U
1	1A	3680	U
1	1A	3682	A
1	1A	3683	C
1	1A	3690	U
1	1A	3691	G
1	1A	3692	A
1	1A	3698	G
1	1A	3701	C
1	1A	3702	A
1	1A	3705	G
1	1A	3709	U
1	1A	3711	A
1	1A	3712	A
1	1A	3713	U
1	1A	3726	A
1	1A	3728	A
1	1A	3735	G

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Mol	Chain	Res	Type
1	1A	3743	G
1	1A	3750	G
1	1A	3753	G
1	1A	3757	G
1	1A	3758	U
1	1A	3760	A
1	1A	3761	C
1	1A	3762	U
1	1A	3763	A
1	1A	3765	G
1	1A	3766	A
1	1A	3767	C
1	1A	3768	U
1	1A	3769	C
1	1A	3770	U
1	1A	3773	U
1	1A	3774	A
1	1A	3776	G
1	1A	3777	G
1	1A	3778	U
1	1A	3783	A
1	1A	3784	A
1	1A	3785	A
1	1A	3786	U
1	1A	3787	G
1	1A	3789	C
1	1A	3790	U
1	1A	3791	C
1	1A	3809	G
1	1A	3810	C
1	1A	3811	G
1	1A	3812	C
1	1A	3817	A
1	1A	3818	U
1	1A	3819	G
1	1A	3824	A
1	1A	3828	A
1	1A	3829	G
1	1A	3839	G
1	1A	3840	U
1	1A	3841	C
1	1A	3860	A

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Mol	Chain	Res	Type
1	1A	3865	A
1	1A	3867	A
1	1A	3869	C
1	1A	3874	G
1	1A	3876	A
1	1A	3877	A
1	1A	3878	C
1	1A	3879	G
1	1A	3883	U
1	1A	3889	G
1	1A	3890	A
1	1A	3892	U
1	1A	3895	G
1	1A	3897	G
1	1A	3901	A
1	1A	3902	A
1	1A	3904	G
1	1A	3905	A
1	1A	3906	A
1	1A	3907	G
1	1A	3908	A
1	1A	3909	C
1	1A	3910	C
1	1A	3913	G
1	1A	3915	U
1	1A	3921	U
1	1A	3923	A
1	1A	3928	A
1	1A	3938	G
1	1A	3939	G
1	1A	3943	A
1	1A	3946	G
1	1A	3947	A
1	1A	3948	C
1	1A	3951	G
1	1A	3952	A
1	1A	3953	G
1	1A	4061	G
1	1A	4062	A
1	1A	4063	U
1	1A	4064	C
1	1A	4065	G

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Mol	Chain	Res	Type
1	1A	4066	U
1	1A	4076	G
1	1A	4077	A
1	1A	4084	G
1	1A	4085	A
1	1A	4086	G
1	1A	4087	G
1	1A	4088	C
1	1A	4099	G
1	1A	4100	C
1	1A	4101	C
1	1A	4102	C
1	1A	4104	G
1	1A	4105	A
1	1A	4106	G
1	1A	4107	G
1	1A	4109	G
1	1A	4111	U
1	1A	4112	C
1	1A	4113	U
1	1A	4114	C
1	1A	4115	G
1	1A	4116	C
1	1A	4117	U
1	1A	4119	C
1	1A	4120	U
1	1A	4121	G
1	1A	4122	G
1	1A	4127	A
1	1A	4128	A
1	1A	4135	G
1	1A	4136	G
1	1A	4141	G
1	1A	4142	C
1	1A	4143	G
1	1A	4144	C
1	1A	4145	C
1	1A	4146	G
1	1A	4151	G
1	1A	4152	G
1	1A	4154	G
1	1A	4162	C

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Mol	Chain	Res	Type
1	1A	4163	U
1	1A	4168	G
1	1A	4170	A
1	1A	4171	C
1	1A	4177	C
1	1A	4180	G
1	1A	4183	G
1	1A	4184	G
1	1A	4191	G
1	1A	4194	U
1	1A	4196	G
1	1A	4201	G
1	1A	4204	C
1	1A	4205	A
1	1A	4206	C
1	1A	4211	C
1	1A	4212	A
1	1A	4214	A
1	1A	4222	G
1	1A	4226	G
1	1A	4228	G
1	1A	4229	U
1	1A	4233	A
1	1A	4234	A
1	1A	4242	U
1	1A	4246	G
1	1A	4249	G
1	1A	4251	A
1	1A	4254	G
1	1A	4255	A
1	1A	4256	A
1	1A	4258	C
1	1A	4263	C
1	1A	4268	A
1	1A	4273	A
1	1A	4280	A
1	1A	4281	A
1	1A	4287	G
1	1A	4288	C
1	1A	4290	U
1	1A	4291	G
1	1A	4293	U

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Mol	Chain	Res	Type
1	1A	4294	C
1	1A	4296	U
1	1A	4305	G
1	1A	4306	U
1	1A	4316	G
1	1A	4319	C
1	1A	4323	A
1	1A	4324	A
1	1A	4325	A
1	1A	4326	G
1	1A	4330	G
1	1A	4338	G
1	1A	4349	C
1	1A	4350	C
1	1A	4354	U
1	1A	4355	G
1	1A	4373	G
1	1A	4376	A
1	1A	4377	G
1	1A	4378	A
1	1A	4380	A
1	1A	4381	A
1	1A	4387	C
1	1A	4391	G
1	1A	4393	G
1	1A	4394	A
1	1A	4395	U
1	1A	4398	C
1	1A	4399	U
1	1A	4405	G
1	1A	4415	A
1	1A	4420	U
1	1A	4422	A
1	1A	4424	A
1	1A	4426	C
1	1A	4427	G
1	1A	4430	G
1	1A	4438	U
1	1A	4440	G
1	1A	4442	U
1	1A	4448	G
1	1A	4449	A

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Mol	Chain	Res	Type
1	1A	4450	U
1	1A	4453	C
1	1A	4464	A
1	1A	4465	U
1	1A	4471	U
1	1A	4474	A
1	1A	4476	C
1	1A	4477	A
1	1A	4488	A
1	1A	4489	G
1	1A	4497	U
1	1A	4500	U
1	1A	4501	U
1	1A	4502	C
1	1A	4512	U
1	1A	4513	A
1	1A	4518	A
1	1A	4523	A
1	1A	4524	G
1	1A	4528	G
1	1A	4531	U
1	1A	4533	A
1	1A	4535	A
1	1A	4545	G
1	1A	4548	A
1	1A	4549	G
1	1A	4551	U
1	1A	4554	G
1	1A	4555	U
1	1A	4556	U
1	1A	4565	C
1	1A	4567	G
1	1A	4573	G
1	1A	4575	G
1	1A	4581	G
1	1A	4583	C
1	1A	4589	A
1	1A	4590	A
1	1A	4599	A
1	1A	4600	G
1	1A	4601	U
1	1A	4617	G

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Mol	Chain	Res	Type
1	1A	4624	A
1	1A	4626	A
1	1A	4635	A
1	1A	4636	U
1	1A	4637	G
1	1A	4655	A
1	1A	4657	U
1	1A	4658	G
1	1A	4668	U
1	1A	4670	C
1	1A	4678	G
1	1A	4693	C
1	1A	4695	C
1	1A	4696	C
1	1A	4700	A
1	1A	4702	G
1	1A	4703	U
1	1A	4708	A
1	1A	4709	U
1	1A	4719	G
1	1A	4730	C
1	1A	4731	G
1	1A	4732	G
1	1A	4734	A
1	1A	4737	G
1	1A	4740	G
1	1A	4741	C
1	1A	4743	G
1	1A	4744	A
1	1A	4749	C
1	1A	4750	G
1	1A	4753	U
1	1A	4756	C
1	1A	4757	C
1	1A	4758	U
1	1A	4762	A
1	1A	4764	A
1	1A	4768	G
1	1A	4770	U
1	1A	4771	C
1	1A	4772	C
1	1A	4775	C

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Mol	Chain	Res	Type
1	1A	4776	G
1	1A	4861	G
1	1A	4862	G
1	1A	4863	G
1	1A	4865	C
1	1A	4868	G
1	1A	4869	U
1	1A	4871	C
1	1A	4873	G
1	1A	4874	A
1	1A	4875	G
1	1A	4876	U
1	1A	4877	G
1	1A	4882	U
1	1A	4883	C
1	1A	4884	G
1	1A	4886	C
1	1A	4887	C
1	1A	4888	U
1	1A	4889	G
1	1A	4890	G
1	1A	4893	A
1	1A	4894	A
1	1A	4895	C
1	1A	4897	G
1	1A	4900	C
1	1A	4901	G
1	1A	4903	G
1	1A	4910	G
1	1A	4911	A
1	1A	4912	G
1	1A	4913	G
1	1A	4914	C
1	1A	4918	C
1	1A	4921	C
1	1A	4925	U
1	1A	4927	G
1	1A	4928	C
1	1A	4934	A
1	1A	4937	C
1	1A	4940	C
1	1A	4941	G

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Mol	Chain	Res	Type
1	1A	4942	C
1	1A	4943	A
1	1A	4944	C
1	1A	4945	G
1	1A	4947	U
1	1A	4949	G
1	1A	4950	U
1	1A	4951	G
1	1A	4955	A
1	1A	4960	G
1	1A	4965	U
1	1A	4966	A
1	1A	4975	G
1	1A	4976	U
1	1A	4977	A
1	1A	4985	U
1	1A	4988	U
1	1A	4989	U
1	1A	4991	U
1	1A	5004	C
1	1A	5009	G
1	1A	5014	A
1	1A	5016	A
1	1A	5017	G
1	1A	5022	U
1	1A	5023	C
1	1A	5024	C
1	1A	5025	C
1	1A	5026	U
1	1A	5027	C
1	1A	5028	G
1	1A	5030	U
1	1A	5031	G
1	1A	5032	C
1	1A	5034	A
1	1A	5040	U
1	1A	5041	G
1	1A	5047	C
1	1A	5050	C
1	1A	5054	C
1	1A	5055	G
1	1A	5060	A

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Mol	Chain	Res	Type
1	1A	5061	A
1	1A	5069	U
2	1B	7	G
2	1B	11	A
2	1B	13	A
2	1B	20	U
2	1B	22	A
2	1B	23	A
2	1B	27	G
2	1B	29	C
2	1B	31	G
2	1B	33	U
2	1B	34	C
2	1B	38	U
2	1B	41	G
2	1B	42	A
2	1B	49	A
2	1B	53	U
2	1B	54	A
2	1B	63	C
2	1B	64	G
2	1B	74	A
2	1B	76	U
2	1B	90	A
2	1B	97	G
2	1B	100	A
2	1B	103	A
2	1B	109	U
2	1B	110	G
2	1B	117	G
2	1B	120	U
3	1C	2	G
3	1C	14	U
3	1C	23	C
3	1C	34	U
3	1C	35	C
3	1C	38	U
3	1C	39	G
3	1C	48	A
3	1C	52	A
3	1C	59	A
3	1C	60	G

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Mol	Chain	Res	Type
3	1C	61	A
3	1C	63	U
3	1C	70	G
3	1C	77	A
3	1C	80	A
3	1C	81	C
3	1C	82	A
3	1C	83	C
3	1C	84	A
3	1C	86	U
3	1C	87	G
3	1C	88	A
3	1C	91	A
3	1C	94	G
3	1C	99	U
3	1C	103	A
3	1C	104	A
3	1C	105	C
3	1C	107	C
3	1C	108	A
3	1C	110	U
3	1C	111	U
3	1C	112	G
3	1C	114	G
3	1C	122	G
3	1C	123	U
3	1C	124	U
3	1C	125	C
3	1C	126	C
3	1C	127	U
3	1C	129	C
3	1C	150	C
3	1C	155	C
46	2m	2	A
46	2m	3	C
46	2m	4	C
46	2m	10	G
46	2m	11	A
46	2m	16	G
46	2m	17	C
46	2m	25	A
46	2m	33	G

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Mol	Chain	Res	Type
46	2m	37	C
46	2m	41	G
46	2m	44	U
46	2m	45	A
46	2m	46	A
46	2m	49	C
46	2m	56	G
46	2m	62	G
46	2m	65	C
46	2m	66	G
46	2m	67	C
46	2m	68	A
46	2m	72	C
46	2m	73	C
46	2m	74	G
46	2m	75	G
46	2m	76	U
46	2m	77	A
46	2m	78	C
46	2m	79	A
46	2m	80	G
46	2m	99	A
46	2m	100	U
46	2m	103	A
46	2m	104	A
46	2m	113	G
46	2m	115	U
46	2m	117	C
46	2m	120	U
46	2m	121	U
46	2m	123	G
46	2m	125	C
46	2m	126	G
46	2m	127	C
46	2m	140	C
46	2m	141	A
46	2m	143	U
46	2m	148	U
46	2m	154	U
46	2m	155	G
46	2m	159	A
46	2m	160	U

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Mol	Chain	Res	Type
46	2m	161	U
46	2m	162	C
46	2m	167	G
46	2m	168	C
46	2m	171	A
46	2m	175	A
46	2m	183	G
46	2m	184	G
46	2m	185	G
46	2m	190	G
46	2m	194	C
46	2m	198	U
46	2m	199	C
46	2m	202	G
46	2m	205	G
46	2m	206	G
46	2m	208	G
46	2m	214	U
46	2m	215	G
46	2m	216	C
46	2m	219	U
46	2m	220	U
46	2m	225	G
46	2m	290	U
46	2m	291	G
46	2m	292	A
46	2m	293	C
46	2m	295	C
46	2m	297	A
46	2m	304	C
46	2m	305	U
46	2m	307	G
46	2m	308	G
46	2m	309	G
46	2m	312	G
46	2m	313	A
46	2m	314	U
46	2m	320	G
46	2m	324	C
46	2m	325	C
46	2m	326	C
46	2m	327	G

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Mol	Chain	Res	Type
46	2m	328	U
46	2m	329	G
46	2m	330	G
46	2m	331	C
46	2m	332	G
46	2m	334	C
46	2m	335	G
46	2m	338	G
46	2m	339	A
46	2m	340	C
46	2m	351	G
46	2m	362	C
46	2m	364	A
46	2m	368	U
46	2m	370	G
46	2m	377	G
46	2m	378	U
46	2m	385	G
46	2m	386	C
46	2m	397	G
46	2m	399	C
46	2m	400	C
46	2m	407	G
46	2m	408	A
46	2m	409	C
46	2m	413	G
46	2m	418	A
46	2m	419	G
46	2m	421	G
46	2m	426	A
46	2m	427	U
46	2m	436	G
46	2m	445	A
46	2m	448	A
46	2m	449	A
46	2m	450	C
46	2m	461	U
46	2m	463	C
46	2m	465	A
46	2m	466	G
46	2m	471	G
46	2m	472	C

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Mol	Chain	Res	Type
46	2m	473	A
46	2m	474	G
46	2m	475	C
46	2m	476	A
46	2m	482	G
46	2m	483	C
46	2m	486	A
46	2m	487	U
46	2m	488	U
46	2m	489	A
46	2m	492	C
46	2m	493	A
46	2m	495	U
46	2m	496	C
46	2m	500	A
46	2m	501	C
46	2m	502	C
46	2m	503	C
46	2m	504	G
46	2m	507	G
46	2m	516	A
46	2m	518	G
46	2m	522	A
46	2m	525	A
46	2m	532	C
46	2m	534	G
46	2m	535	G
46	2m	536	A
46	2m	537	C
46	2m	538	U
46	2m	539	C
46	2m	540	U
46	2m	541	U
46	2m	542	U
46	2m	543	C
46	2m	544	G
46	2m	545	A
46	2m	549	C
46	2m	550	C
46	2m	554	A
46	2m	556	U
46	2m	557	U

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Mol	Chain	Res	Type
46	2m	559	G
46	2m	561	A
46	2m	562	U
46	2m	566	U
46	2m	575	A
46	2m	580	U
46	2m	581	U
46	2m	582	C
46	2m	583	C
46	2m	584	G
46	2m	585	C
46	2m	587	A
46	2m	588	G
46	2m	589	G
46	2m	590	A
46	2m	591	U
46	2m	592	C
46	2m	594	A
46	2m	595	U
46	2m	596	U
46	2m	603	C
46	2m	604	A
46	2m	605	A
46	2m	606	G
46	2m	608	C
46	2m	612	U
46	2m	613	G
46	2m	614	C
46	2m	615	C
46	2m	617	G
46	2m	621	C
46	2m	627	U
46	2m	628	A
46	2m	643	A
46	2m	644	G
46	2m	649	U
46	2m	650	A
46	2m	656	G
46	2m	658	U
46	2m	660	C
46	2m	662	G
46	2m	663	C

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Mol	Chain	Res	Type
46	2m	668	A
46	2m	669	A
46	2m	671	A
46	2m	672	A
46	2m	673	G
46	2m	678	U
46	2m	684	G
46	2m	689	U
46	2m	690	G
46	2m	691	G
46	2m	692	G
46	2m	694	G
46	2m	696	G
46	2m	697	G
46	2m	698	G
46	2m	732	U
46	2m	733	C
46	2m	734	C
46	2m	735	C
46	2m	736	C
46	2m	738	C
46	2m	739	C
46	2m	746	C
46	2m	747	U
46	2m	748	C
46	2m	749	U
46	2m	751	G
46	2m	752	G
46	2m	753	C
46	2m	787	G
46	2m	788	G
46	2m	789	G
46	2m	790	C
46	2m	791	C
46	2m	793	G
46	2m	794	A
46	2m	795	A
46	2m	796	G
46	2m	797	C
46	2m	798	A
46	2m	799	U
46	2m	809	A

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Mol	Chain	Res	Type
46	2m	810	A
46	2m	811	A
46	2m	812	A
46	2m	819	G
46	2m	821	G
46	2m	822	U
46	2m	827	A
46	2m	830	A
46	2m	831	G
46	2m	834	C
46	2m	836	G
46	2m	837	A
46	2m	838	G
46	2m	839	C
46	2m	840	C
46	2m	842	C
46	2m	847	A
46	2m	848	U
46	2m	851	C
46	2m	861	A
46	2m	864	A
46	2m	869	A
46	2m	870	A
46	2m	873	G
46	2m	874	G
46	2m	877	C
46	2m	879	C
46	2m	880	G
46	2m	882	U
46	2m	883	U
46	2m	884	C
46	2m	885	U
46	2m	886	A
46	2m	888	U
46	2m	889	U
46	2m	890	U
46	2m	891	G
46	2m	893	U
46	2m	894	G
46	2m	895	G
46	2m	896	U
46	2m	897	U

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Mol	Chain	Res	Type
46	2m	898	U
46	2m	899	U
46	2m	900	C
46	2m	901	G
46	2m	903	A
46	2m	907	G
46	2m	908	A
46	2m	909	G
46	2m	910	G
46	2m	911	C
46	2m	913	A
46	2m	914	U
46	2m	917	U
46	2m	919	A
46	2m	920	A
46	2m	921	G
46	2m	922	A
46	2m	929	G
46	2m	932	G
46	2m	933	G
46	2m	934	G
46	2m	958	G
46	2m	962	A
46	2m	963	A
46	2m	966	U
46	2m	969	U
46	2m	970	G
46	2m	971	G
46	2m	972	A
46	2m	973	C
46	2m	978	G
46	2m	979	C
46	2m	986	G
46	2m	989	C
46	2m	990	A
46	2m	992	A
46	2m	995	G
46	2m	997	A
46	2m	999	G
46	2m	1001	A
46	2m	1002	U
46	2m	1008	A

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Mol	Chain	Res	Type
46	2m	1011	A
46	2m	1012	A
46	2m	1018	U
46	2m	1021	U
46	2m	1023	A
46	2m	1027	A
46	2m	1028	A
46	2m	1042	A
46	2m	1043	G
46	2m	1045	U
46	2m	1046	U
46	2m	1050	A
46	2m	1061	U
46	2m	1062	A
46	2m	1070	A
46	2m	1076	G
46	2m	1081	U
46	2m	1082	A
46	2m	1083	A
46	2m	1085	C
46	2m	1088	U
46	2m	1096	G
46	2m	1105	G
46	2m	1109	C
46	2m	1110	G
46	2m	1113	A
46	2m	1114	U
46	2m	1116	C
46	2m	1118	C
46	2m	1119	A
46	2m	1120	U
46	2m	1121	G
46	2m	1131	G
46	2m	1132	C
46	2m	1133	A
46	2m	1139	C
46	2m	1140	G
46	2m	1143	A
46	2m	1149	A
46	2m	1150	A
46	2m	1153	C
46	2m	1154	U

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Mol	Chain	Res	Type
46	2m	1155	U
46	2m	1157	G
46	2m	1159	G
46	2m	1166	G
46	2m	1167	G
46	2m	1168	G
46	2m	1170	A
46	2m	1178	U
46	2m	1181	A
46	2m	1183	A
46	2m	1186	U
46	2m	1195	A
46	2m	1197	G
46	2m	1207	G
46	2m	1208	A
46	2m	1210	G
46	2m	1215	C
46	2m	1216	C
46	2m	1217	A
46	2m	1221	G
46	2m	1224	G
46	2m	1233	G
46	2m	1239	U
46	2m	1241	A
46	2m	1242	U
46	2m	1243	U
46	2m	1247	C
46	2m	1248	U
46	2m	1250	A
46	2m	1251	A
46	2m	1253	A
46	2m	1254	C
46	2m	1256	G
46	2m	1257	G
46	2m	1261	C
46	2m	1262	C
46	2m	1263	U
46	2m	1265	A
46	2m	1268	C
46	2m	1270	G
46	2m	1272	C
46	2m	1273	C

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Mol	Chain	Res	Type
46	2m	1274	G
46	2m	1275	G
46	2m	1276	A
46	2m	1281	G
46	2m	1282	A
46	2m	1283	C
46	2m	1284	A
46	2m	1285	G
46	2m	1286	G
46	2m	1287	A
46	2m	1288	U
46	2m	1289	U
46	2m	1290	G
46	2m	1291	A
46	2m	1292	C
46	2m	1293	A
46	2m	1294	G
46	2m	1295	A
46	2m	1297	U
46	2m	1298	G
46	2m	1301	A
46	2m	1302	G
46	2m	1303	C
46	2m	1306	U
46	2m	1307	U
46	2m	1310	U
46	2m	1311	C
46	2m	1312	G
46	2m	1314	U
46	2m	1315	U
46	2m	1316	C
46	2m	1317	C
46	2m	1321	G
46	2m	1326	U
46	2m	1327	G
46	2m	1330	G
46	2m	1331	C
46	2m	1332	A
46	2m	1333	U
46	2m	1342	U
46	2m	1357	A
46	2m	1358	U

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Mol	Chain	Res	Type
46	2m	1370	A
46	2m	1371	U
46	2m	1372	U
46	2m	1378	A
46	2m	1382	A
46	2m	1395	C
46	2m	1396	A
46	2m	1397	U
46	2m	1401	A
46	2m	1403	C
46	2m	1404	U
46	2m	1405	A
46	2m	1407	U
46	2m	1409	A
46	2m	1412	C
46	2m	1413	G
46	2m	1414	A
46	2m	1415	C
46	2m	1416	C
46	2m	1417	C
46	2m	1418	C
46	2m	1419	C
46	2m	1420	G
46	2m	1422	G
46	2m	1425	G
46	2m	1426	U
46	2m	1427	C
46	2m	1428	G
46	2m	1431	G
46	2m	1433	C
46	2m	1436	C
46	2m	1438	A
46	2m	1439	A
46	2m	1440	C
46	2m	1442	U
46	2m	1444	U
46	2m	1446	A
46	2m	1448	A
46	2m	1449	G
46	2m	1450	G
46	2m	1454	A
46	2m	1455	A

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Mol	Chain	Res	Type
46	2m	1459	G
46	2m	1461	G
46	2m	1462	U
46	2m	1463	U
46	2m	1465	A
46	2m	1473	G
46	2m	1475	G
46	2m	1476	A
46	2m	1477	U
46	2m	1487	A
46	2m	1489	A
46	2m	1490	G
46	2m	1495	G
46	2m	1496	U
46	2m	1497	G
46	2m	1498	A
46	2m	1505	U
46	2m	1506	A
46	2m	1507	G
46	2m	1508	A
46	2m	1510	G
46	2m	1512	C
46	2m	1514	G
46	2m	1515	G
46	2m	1517	G
46	2m	1519	U
46	2m	1520	G
46	2m	1521	C
46	2m	1522	A
46	2m	1523	C
46	2m	1524	G
46	2m	1525	C
46	2m	1526	G
46	2m	1527	C
46	2m	1531	A
46	2m	1533	A
46	2m	1534	C
46	2m	1535	U
46	2m	1536	G
46	2m	1539	U
46	2m	1543	U
46	2m	1544	C

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Mol	Chain	Res	Type
46	2m	1546	G
46	2m	1552	G
46	2m	1553	C
46	2m	1557	C
46	2m	1558	C
46	2m	1560	U
46	2m	1567	G
46	2m	1570	G
46	2m	1573	G
46	2m	1575	G
46	2m	1580	A
46	2m	1582	C
46	2m	1585	U
46	2m	1586	U
46	2m	1588	A
46	2m	1589	A
46	2m	1598	G
46	2m	1599	U
46	2m	1604	G
46	2m	1613	G
46	2m	1615	U
46	2m	1617	G
46	2m	1621	U
46	2m	1622	U
46	2m	1623	A
46	2m	1624	U
46	2m	1627	C
46	2m	1632	G
46	2m	1643	U
46	2m	1644	C
46	2m	1647	A
46	2m	1648	G
46	2m	1652	G
46	2m	1654	G
46	2m	1657	G
46	2m	1663	A
46	2m	1664	A
46	2m	1665	G
46	2m	1672	U
46	2m	1676	U
46	2m	1678	A
46	2m	1680	G

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Mol	Chain	Res	Type
46	2m	1683	C
46	2m	1695	A
46	2m	1698	C
46	2m	1699	A
46	2m	1700	C
46	2m	1703	C
46	2m	1719	A
46	2m	1721	U
46	2m	1722	G
46	2m	1729	U
46	2m	1743	G
46	2m	1744	G
46	2m	1745	A
46	2m	1746	U
46	2m	1747	C
46	2m	1748	G
46	2m	1749	G
46	2m	1753	C
46	2m	1754	G
46	2m	1755	C
46	2m	1756	C
46	2m	1757	G
46	2m	1758	G
46	2m	1760	G
46	2m	1761	U
46	2m	1772	C
46	2m	1773	C
46	2m	1774	C
46	2m	1777	G
46	2m	1779	G
46	2m	1780	G
46	2m	1782	G
46	2m	1783	C
46	2m	1786	U
46	2m	1789	G
46	2m	1799	G
46	2m	1800	A
46	2m	1803	U
46	2m	1813	A
46	2m	1814	G
46	2m	1818	A
46	2m	1819	A

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Mol	Chain	Res	Type
46	2m	1821	U
46	2m	1825	A
46	2m	1827	U
46	2m	1829	G
46	2m	1831	A
46	2m	1832	A
46	2m	1838	U
46	2m	1839	U
46	2m	1849	G
46	2m	1850	A
46	2m	1852	C
46	2m	1860	A
46	2m	1861	G
46	2m	1862	G
46	2m	1863	A
46	2m	1865	C
46	2m	1866	A
46	2m	1867	U
46	2m	1869	A
80	zv	-1	C
80	zv	0	G
80	zv	1	C
80	zv	2	C
82	zy	2	G
82	zy	8	U
82	zy	13	U
82	zy	16	G
82	zy	17	G
82	zy	19	U
82	zy	41	A
82	zy	43	A
82	zy	45	G
82	zy	57	A
82	zy	60	C
82	zy	69	G
82	zy	71	C
82	zy	73	C
82	zy	74	C
82	zy	75	A
83	zz	124	C
83	zz	131	G
83	zz	136	A

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Mol	Chain	Res	Type
83	zz	137	G
83	zz	139	C
83	zz	140	A
83	zz	149	U
83	zz	150	G
83	zz	152	G
83	zz	153	G
83	zz	154	A
83	zz	158	G
83	zz	159	G
83	zz	161	G
83	zz	162	A
83	zz	163	G
83	zz	164	U
83	zz	167	A
83	zz	168	C
83	zz	171	G
83	zz	172	A
83	zz	174	U
83	zz	176	G
83	zz	177	C
83	zz	223	A
83	zz	225	A
83	zz	228	U
83	zz	229	G
83	zz	231	G
83	zz	232	C
83	zz	233	G
83	zz	234	U
83	zz	235	G
83	zz	236	C
83	zz	237	C
83	zz	242	C
83	zz	243	G
83	zz	244	A
83	zz	245	G
83	zz	246	A
83	zz	247	C
83	zz	251	U
83	zz	252	A
83	zz	253	G
83	zz	254	C

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Mol	Chain	Res	Type
83	zz	256	G
83	zz	257	A
83	zz	258	G
83	zz	259	U
83	zz	263	G
83	zz	266	G
83	zz	269	U
83	zz	270	C
83	zz	271	G
83	zz	273	G
83	zz	274	A
83	zz	280	C
83	zz	281	U
83	zz	282	U
83	zz	284	U
83	zz	288	A
83	zz	290	U
83	zz	291	G
83	zz	296	A
83	zz	297	U
83	zz	298	A
83	zz	303	G
83	zz	305	U
83	zz	306	U
83	zz	308	C
83	zz	311	G
83	zz	313	G
83	zz	315	C
83	zz	322	G
83	zz	324	U
83	zz	325	C

All (33) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1A	218	A
1	1A	264	C
1	1A	406	C
1	1A	417	G
1	1A	504	G
1	1A	914	U
1	1A	1082	C

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Mol	Chain	Res	Type
1	1A	1740	C
1	1A	2019	C
1	1A	2033	A
1	1A	2299	G
1	1A	2389	A
1	1A	2408	U
1	1A	2695	A
1	1A	2760	G
1	1A	2775	C
1	1A	2806	A
1	1A	2871	A
1	1A	3773	U
1	1A	3810	C
1	1A	3888	G
1	1A	3894	A
1	1A	4060	U
1	1A	4110	C
1	1A	4452	U
1	1A	4600	G
1	1A	4699	U
1	1A	4731	G
1	1A	4913	G
1	1A	4949	G
2	1B	109	U
3	1C	86	U
3	1C	87	G

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

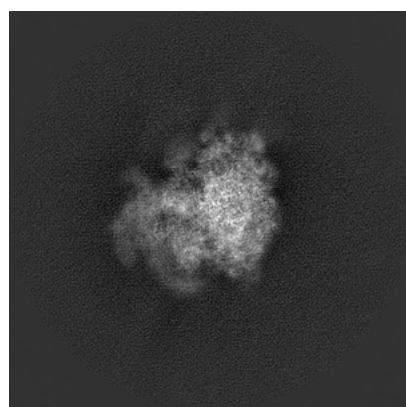
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-9702. These allow visual inspection of the internal detail of the map and identification of artifacts.

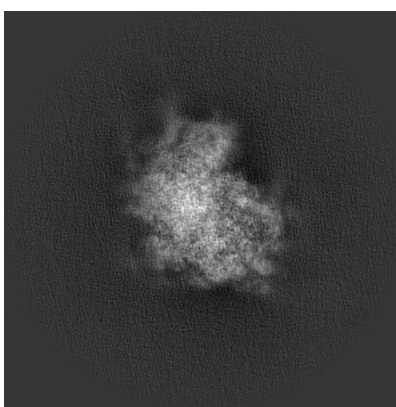
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

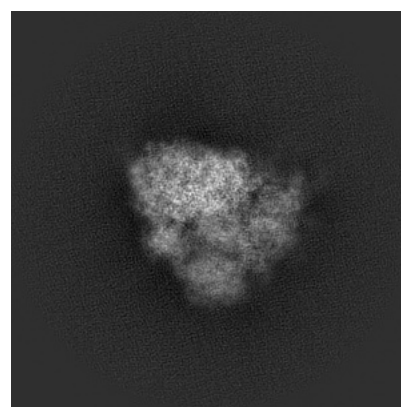
6.1.1 Primary map



X



Y

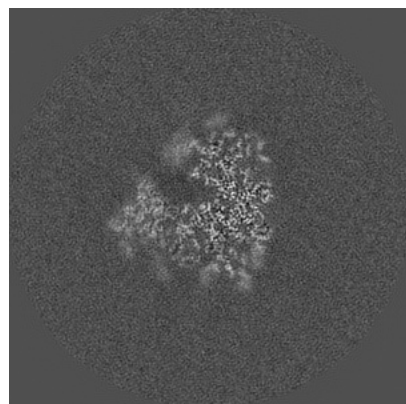


Z

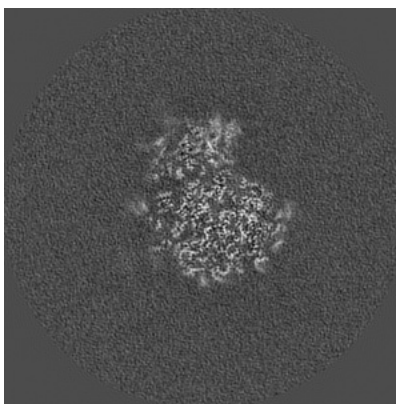
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

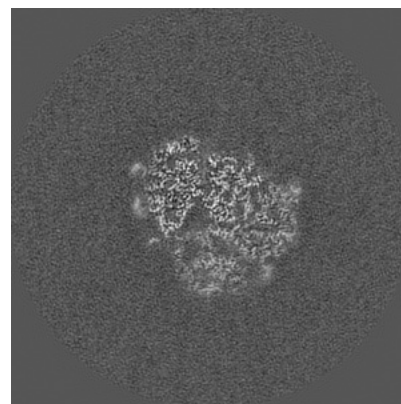
6.2.1 Primary map



X Index: 210



Y Index: 210

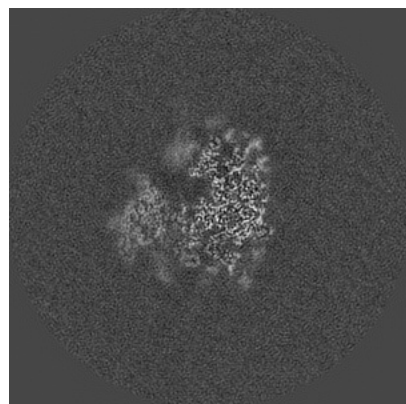


Z Index: 210

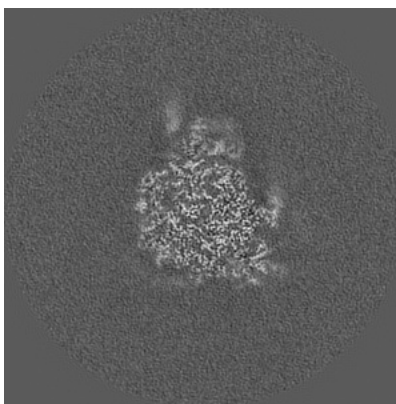
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

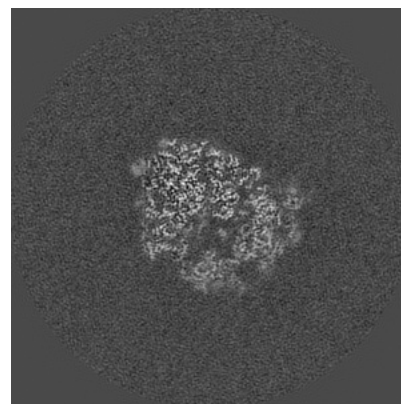
6.3.1 Primary map



X Index: 214



Y Index: 232

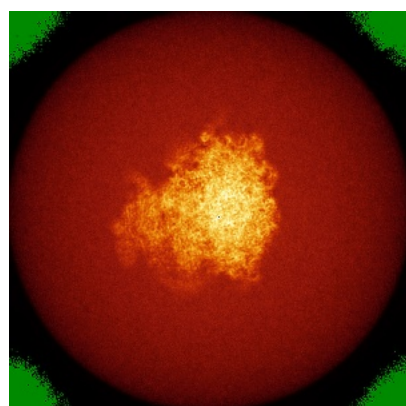


Z Index: 217

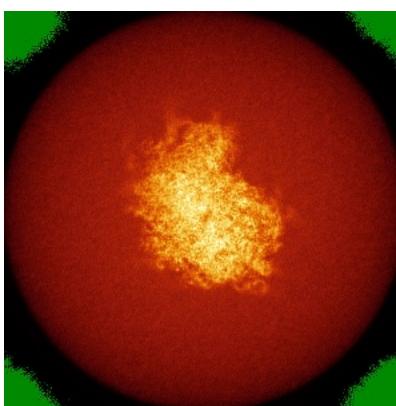
The images above show the largest variance slices of the map in three orthogonal directions.

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

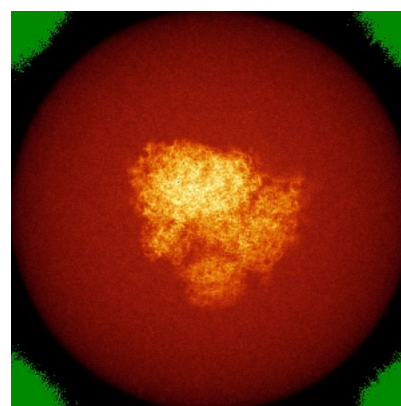
6.4.1 Primary map



X



Y

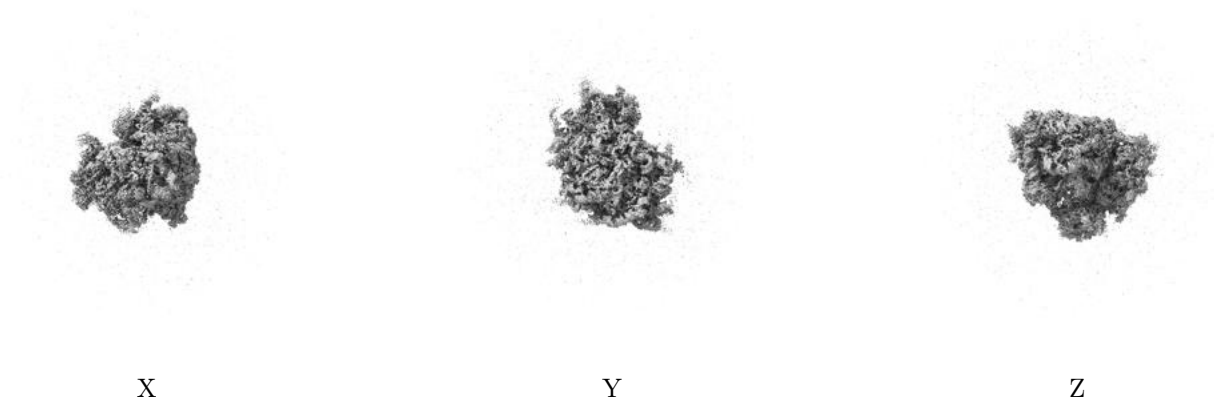


Z

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 0.04. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

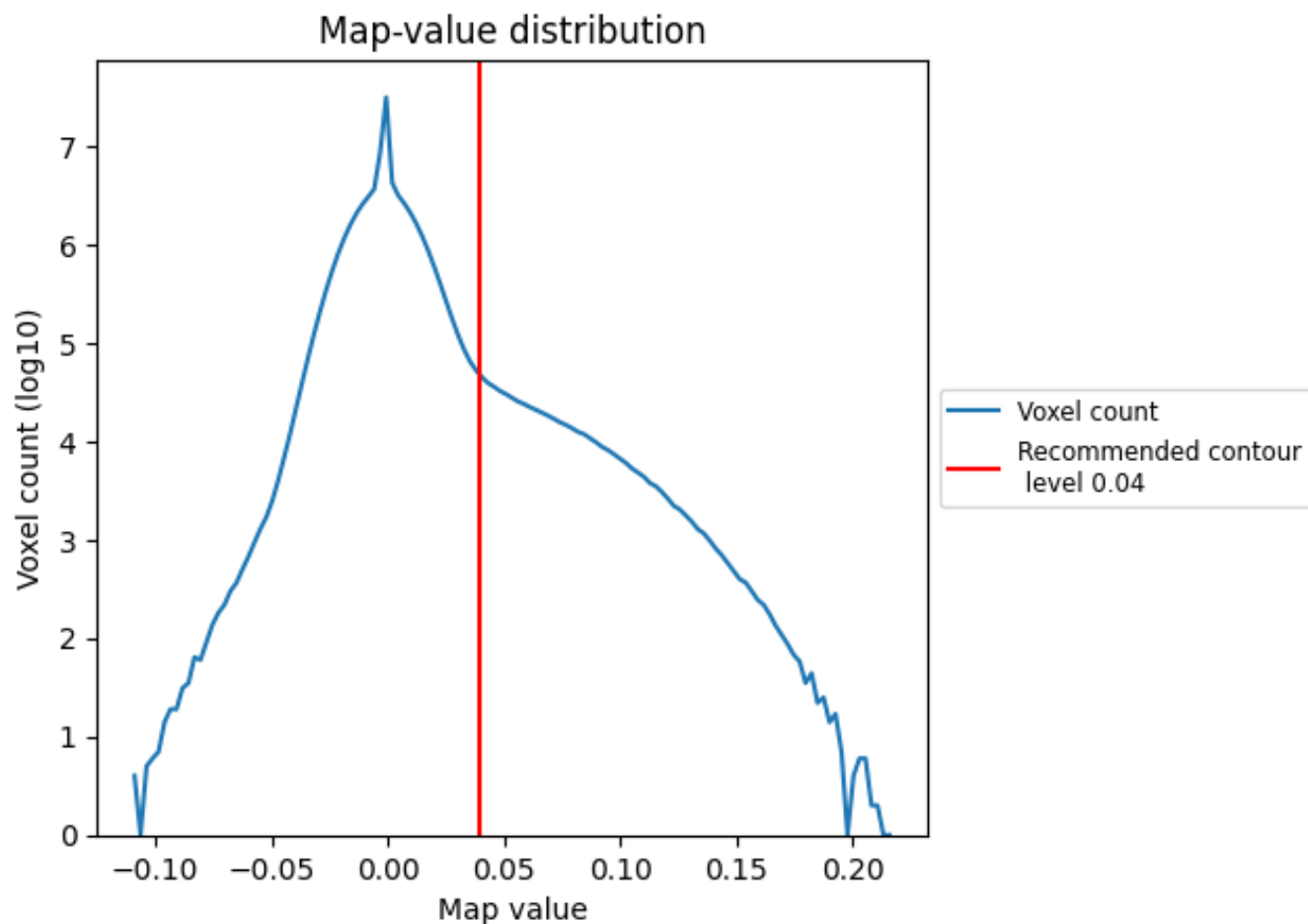
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

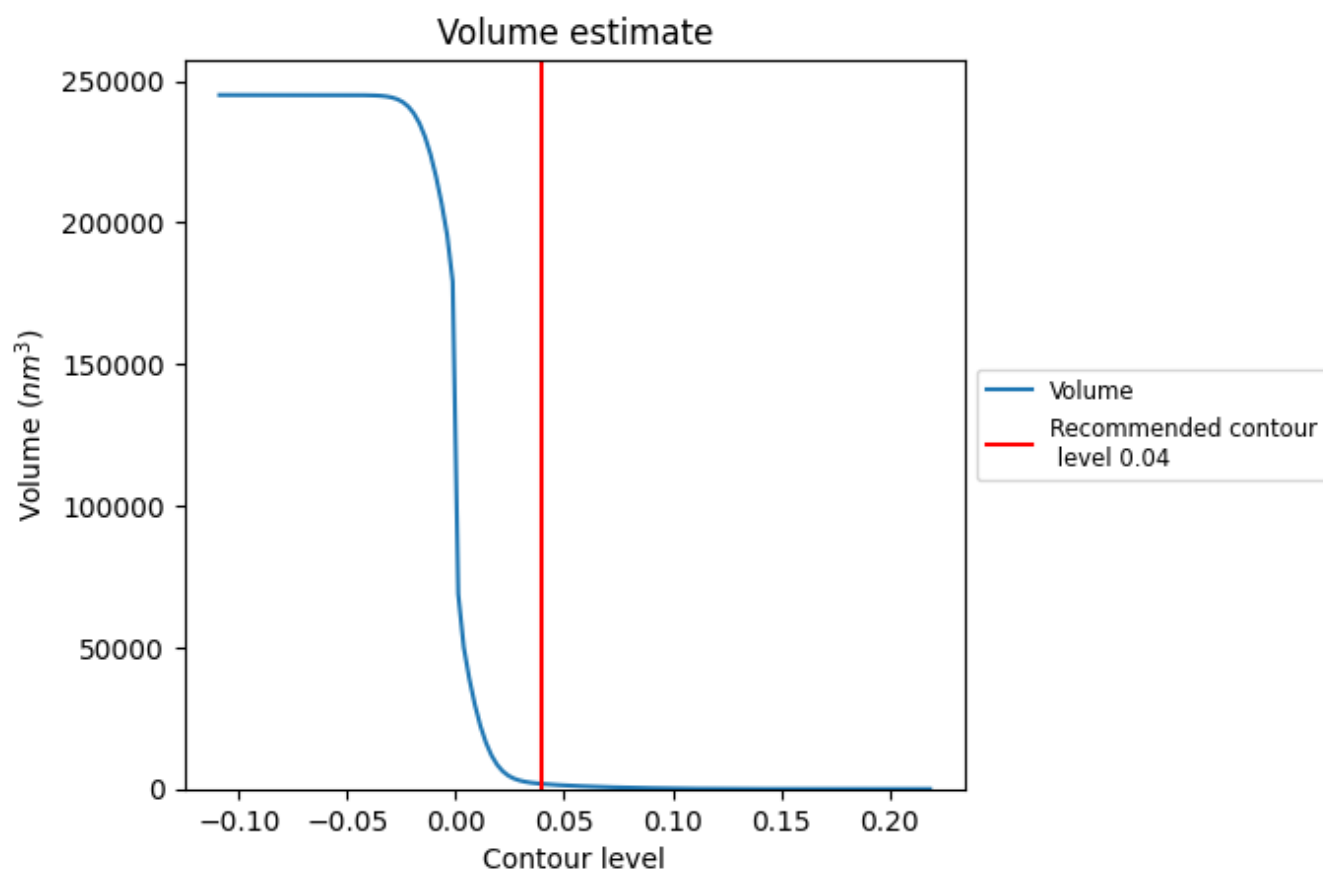
This section contains the results of statistical analysis of the map.

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.

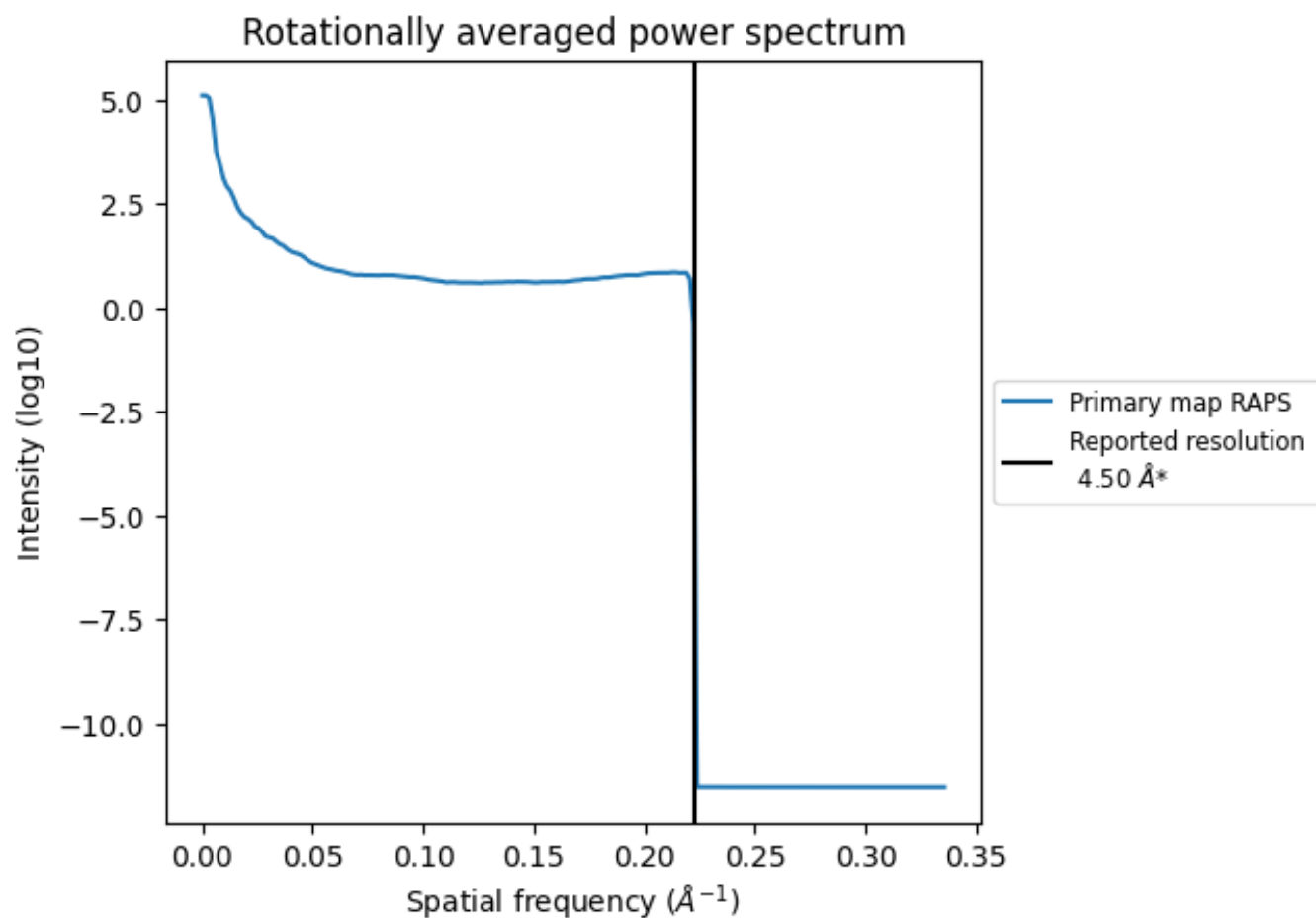
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1785 nm^3 ; this corresponds to an approximate mass of 1612 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 ⓘ

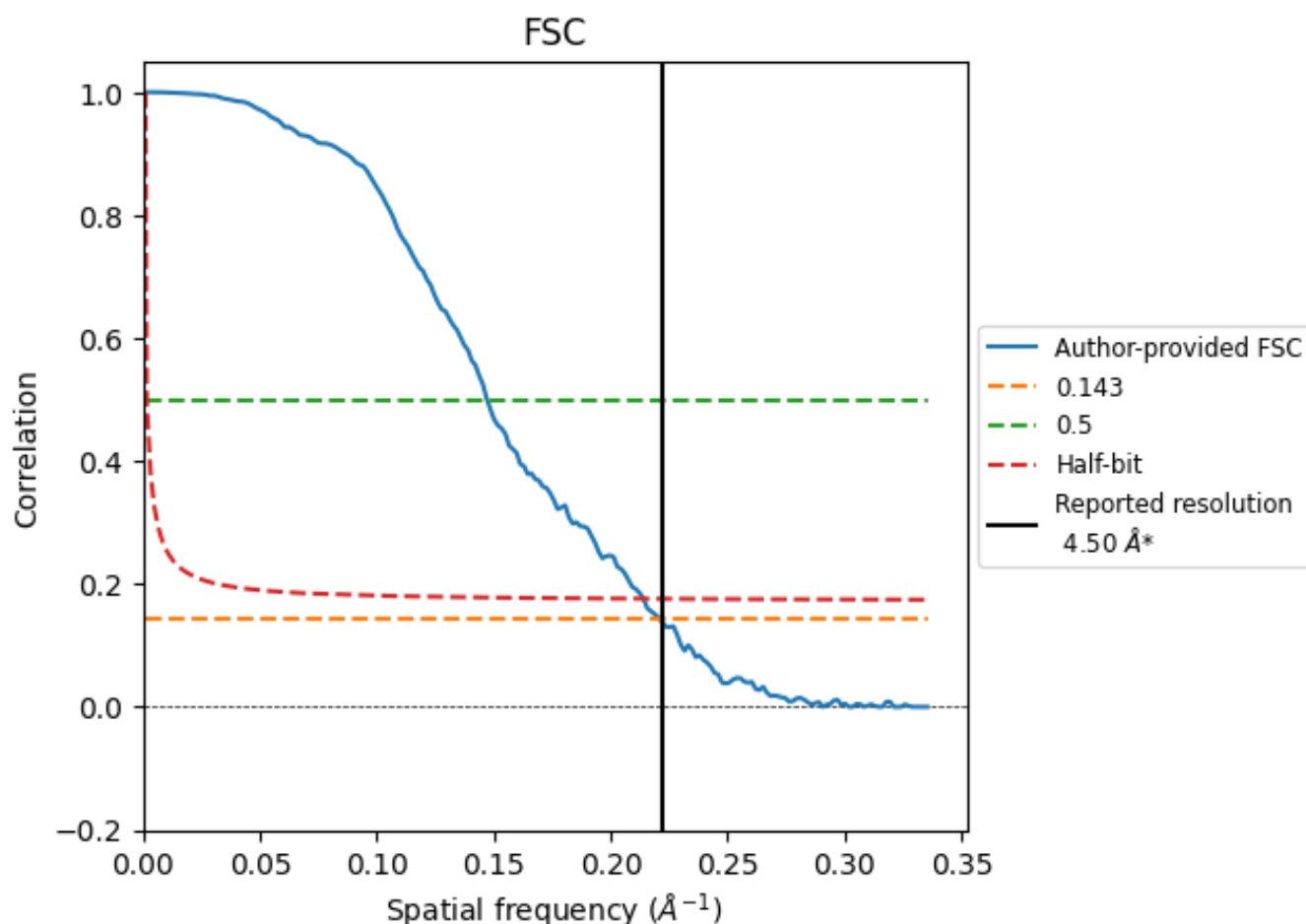


*Reported resolution corresponds to spatial frequency of 0.222 Å⁻¹

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 0.222 Å⁻¹

8.2 Resolution estimates [i](#)

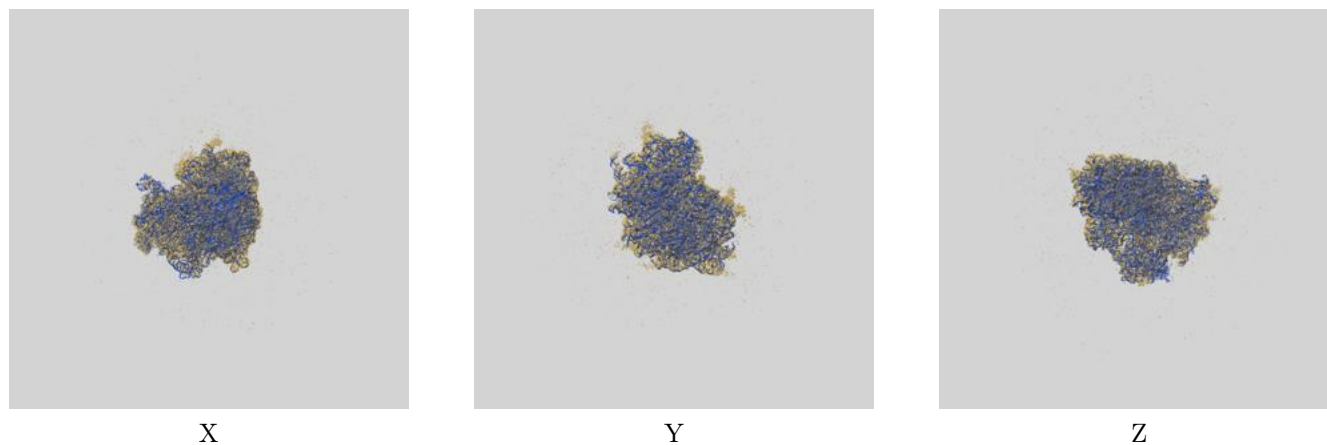
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.50	-	-
Author-provided FSC curve	4.52	6.79	4.67
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

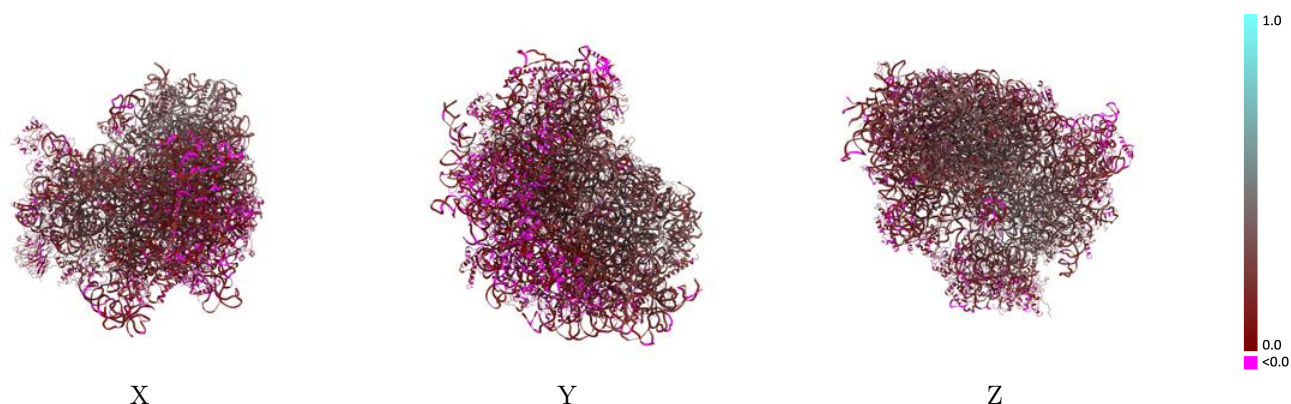
This section contains information regarding the fit between EMDB map EMD-9702 and PDB model 6IP6. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlay [i](#)



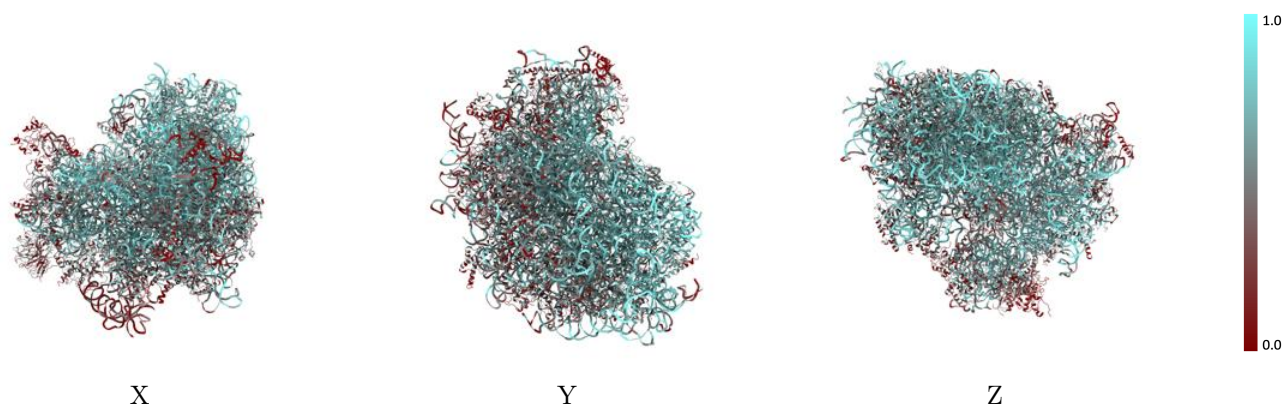
The images above show the 3D surface view of the map at the recommended contour level 0.04 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



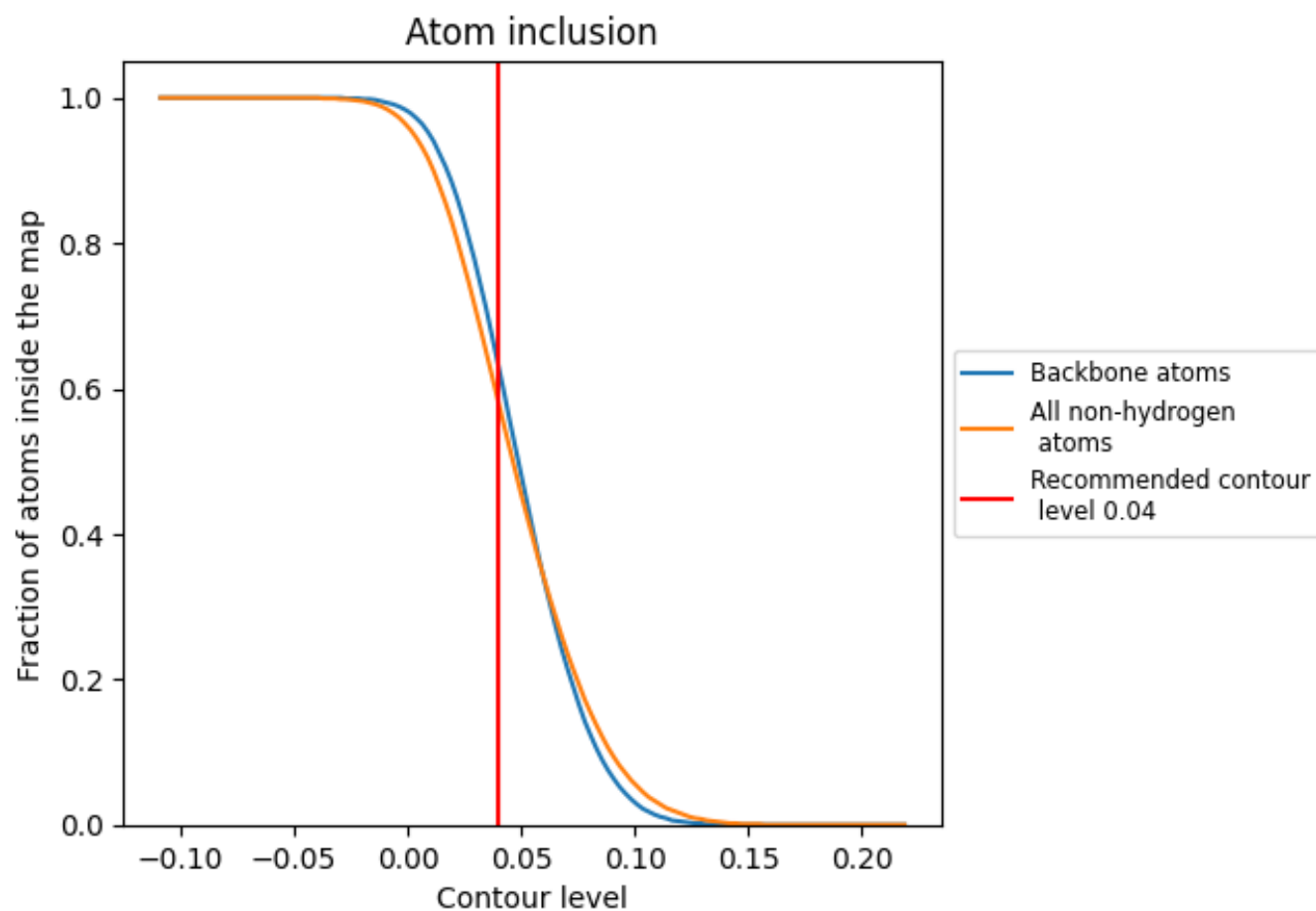
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.04).

9.4 Atom inclusion [i](#)



At the recommended contour level, 63% of all backbone atoms, 58% 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 (0.04) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5800	 0.1840
1A	 0.7000	 0.1930
1B	 0.7750	 0.1950
1C	 0.5970	 0.1010
1D	 0.3890	 0.1250
1E	 0.5890	 0.2710
1F	 0.4210	 0.1150
1G	 0.4360	 0.0990
1H	 0.5540	 0.2490
20	 0.3900	 0.1300
21	 0.3410	 0.1770
2A	 0.5270	 0.2150
2B	 0.2790	 0.0400
2C	 0.6360	 0.3140
2D	 0.5470	 0.2510
2E	 0.4530	 0.1350
2F	 0.3380	 0.0640
2G	 0.6370	 0.2930
2H	 0.3560	 0.0340
2I	 0.6500	 0.3390
2J	 0.5430	 0.2030
2K	 0.4010	 0.0820
2L	 0.4240	 0.1260
2M	 0.6320	 0.2810
2N	 0.4770	 0.1740
2O	 0.3230	 0.0410
2P	 0.6050	 0.3170
2Q	 0.3330	 0.1290
2R	 0.3590	 0.0450
2S	 0.4200	 0.0490
2T	 0.3470	 0.0430
2U	 0.4000	 0.1030
2V	 0.4580	 0.1520
2W	 0.3860	 0.1020
2X	 0.5100	 0.1840



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Chain	Atom inclusion	Q-score
2Y	 0.5210	 0.2160
2Z	 0.6540	 0.3100
2a	 0.3700	 0.0850
2b	 0.3640	 0.0470
2c	 0.3200	 0.0670
2d	 0.4390	 0.0830
2e	 0.3860	 0.0670
2f	 0.4300	 0.1430
2g	 0.6670	 0.3370
2h	 0.6360	 0.3140
2i	 0.4320	 0.1190
2j	 0.4560	 0.1810
2k	 0.4700	 0.1200
2m	 0.7190	 0.2230
2n	 0.4680	 0.2320
2o	 0.2940	 0.1350
2p	 0.3810	 0.2260
2q	 0.3970	 0.1390
2r	 0.3590	 0.1260
2s	 0.3410	 0.1560
2t	 0.3730	 0.1070
2u	 0.3070	 0.1730
2v	 0.3630	 0.1640
2w	 0.3440	 0.1370
2x	 0.3880	 0.1280
2y	 0.3620	 0.1940
2z	 0.3640	 0.1360
3A	 0.4890	 0.2670
3B	 0.5520	 0.3260
3C	 0.4560	 0.2300
3D	 0.2390	 0.1690
3E	 0.5320	 0.2130
3F	 0.3100	 0.1440
3G	 0.5520	 0.2910
3H	 0.3740	 0.1370
3I	 0.5030	 0.2390
3J	 0.0360	 0.0850
3K	 0.4140	 0.1720
3L	 0.3250	 0.1360
3M	 0.5260	 0.2500
3N	 0.4700	 0.1700
3O	 0.2620	 0.0920

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Chain	Atom inclusion	Q-score
3P	 0.3350	 0.1900
3Q	 0.4620	 0.2540
3R	 0.1410	 0.0760
zV	 0.4310	 0.2670
zX	 0.1250	 0.1160
zY	 0.4390	 0.2210
zZ	 0.1650	 0.0770