Full wwPDB EM Validation Report

Mar 9, 2026 – 11:04 PM UTC

PDB ID	:	3JAH / pdb_00003jah
EMDB ID	:	EMD-3039
Title	:	Structure of a mammalian ribosomal termination complex with ABCE1, eRF1(AAQ), and the UAG stop codon
Authors	:	Brown, A.; Shao, S.; Murray, J.; Hegde, R.S.; Ramakrishnan, V.
Deposited on	:	2015-06-10
Resolution	:	3.45 Å(reported)
Based on initial models	:	3J7P, 3J92, 4V51, 3BK7, 1DT9

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 (i) 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 (1)) were used in the production of this report:

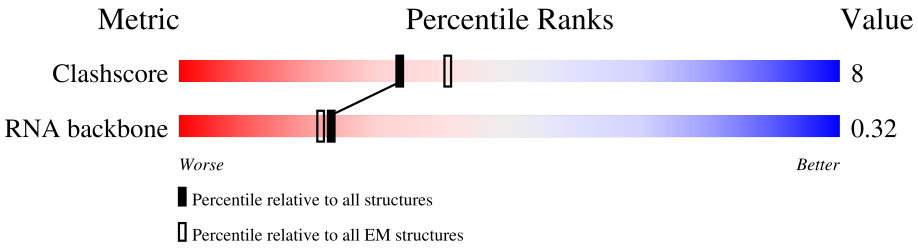
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

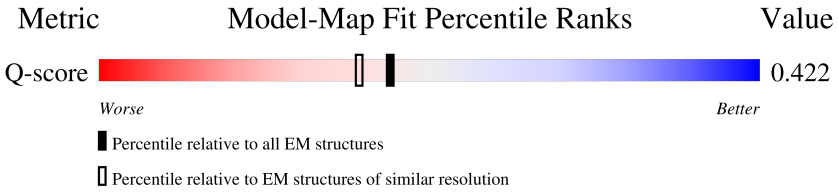
1 Overall quality at a glance

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

The reported resolution of this entry is 3.45 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	-
RNA backbone	8273	3508	-
Q-score	-	25397	13836 (2.95 - 3.95)

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

Mol	Chain	Length	Quality of chain
1	A	244	83% 16%
2	B	394	82% 16%
3	C	362	82% 18%
4	D	292	88% 12%
5	E	248	10% 75% 18% 5%

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Mol	Chain	Length	Quality of chain
6	F	225	85% 15%
7	G	241	13% 89% 11%
8	H	190	88% 12%
9	I	213	79% 15%
10	J	169	92% 8%
11	L	210	5% 85% 15%
12	M	138	89% 11%
13	N	203	87% 13%
14	O	199	83% 16%
15	P	153	89% 11%
16	Q	187	89% 11%
17	R	180	82% 18%
18	S	175	89% 10%
19	T	159	89% 10%
20	U	99	89% 11%
21	V	131	93% 7%
22	W	63	92% 8%
23	X	119	90% 10%
24	Y	134	90% 10%
25	Z	135	81% 17%
26	a	147	84% 16%
27	b	75	17% 88% 11%
28	c	94	85% 15%
29	d	107	93% 7%
30	e	128	85% 15%

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Mol	Chain	Length	Quality of chain
31	f	109	72% 27%
32	g	114	6% 82% 18%
33	h	122	90% 10%
34	i	102	94% 6%
35	j	86	80% 19%
36	k	69	7% 86% 14%
37	l	50	88% 12%
38	m	52	79% 21%
39	n	23	78% 22%
40	o	104	84% 16%
41	p	91	90% 10%
42	r	125	74% 24%
43	s	198	72% 92% 8%
44	t	163	69% 88% 12%
45	1	15	20% 80% 20%
46	2	76	58% 32% 9%
47	3	75	20% 33% 39% 20% 8%
48	5	3662	7% 45% 40% 13%
49	7	120	62% 32% 5%
50	8	156	38% 49% 12%
51	9	1719	6% 44% 40% 14%
52	AA	208	85% 15%
53	BB	213	88% 12%
54	CC	218	87% 12%
55	DD	227	7% 94% 6%

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Mol	Chain	Length	Quality of chain
56	EE	262	79% 19%
57	FF	191	6% 83% 16%
58	GG	237	11% 83% 17%
59	HH	189	13% 82% 17%
60	II	206	10% 83% 17%
61	JJ	185	85% 13%
62	KK	98	11% 90% 10%
63	LL	152	11% 82% 18%
64	MM	124	55% 95% 5%
65	NN	150	89% 11%
66	OO	136	81% 18%
67	PP	127	12% 84% 16%
68	QQ	141	88% 11%
69	RR	129	11% 87% 13%
70	SS	137	83% 16%
71	TT	141	87% 13%
72	UU	104	11% 91% 7%
73	VV	83	83% 16%
74	WW	129	71% 29%
75	XX	141	85% 14%
76	YY	126	6% 89% 11%
77	ZZ	75	89% 11%
78	aa	98	80% 20%
79	bb	83	5% 89% 11%
80	cc	61	8% 90% 10%

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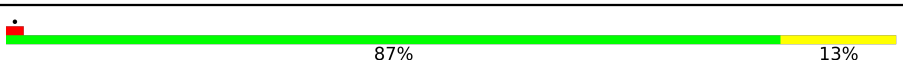
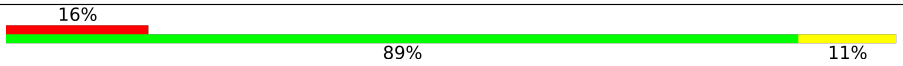
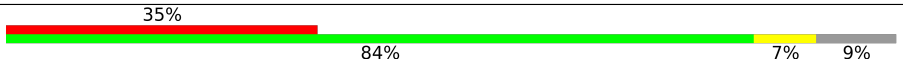
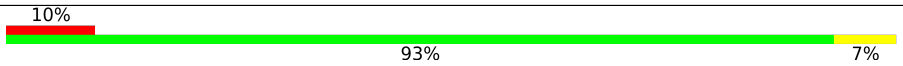
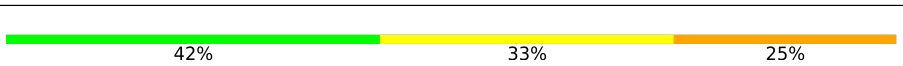
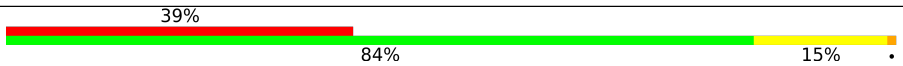
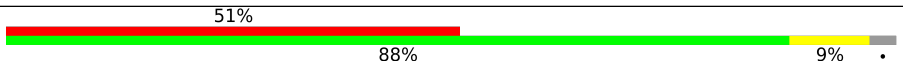
Mol	Chain	Length	Quality of chain
81	dd	53	
82	ee	57	
83	ff	68	
84	gg	313	
85	hh	12	
86	ii	416	
87	jj	594	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
89	ZN	o	201	-	-	X	-

2 Entry composition (i)

There are 91 unique types of molecules in this entry. The entry contains 226454 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	244	1868	1171	382	309	6	0	0

- Molecule 2 is a protein called uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	394	3148	2007	591	537	13	0	0

- Molecule 3 is a protein called uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	362	2884	1814	578	478	14	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	361	LYS	-	expression tag	UNP G1SVW5
C	362	LYS	-	expression tag	UNP G1SVW5
C	363	SER	-	expression tag	UNP G1SVW5

- Molecule 4 is a protein called uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	292	2386	1509	437	426	14	0	0

- Molecule 5 is a protein called eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	236	1898	1215	362	318	3	0	0

- Molecule 6 is a protein called uL30.

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

- Molecule 7 is a protein called eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	241	Total	C	N	O	S	0	0
			1934	1233	371	326	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	191	GLY	CYS	conflict	UNP G1STW0

- Molecule 8 is a protein called uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	190	Total	C	N	O	S	0	0
			1516	954	284	272	6		

- Molecule 9 is a protein called uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	204	Total	C	N	O	S	0	0
			1655	1051	319	272	13		

- Molecule 10 is a protein called uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	169	Total	C	N	O	S	0	0
			1353	855	252	240	6		

- Molecule 11 is a protein called eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	210	Total	C	N	O	S	0	0
			1703	1065	354	280	4		

- Molecule 12 is a protein called eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	138	Total	C	N	O	S	0	0
			1137	727	221	182	7		

- Molecule 13 is a protein called eL15.

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

- Molecule 14 is a protein called uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	199	Total	C	N	O	S	0	0
			1638	1056	321	256	5		

- Molecule 15 is a protein called uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 16 is a protein called uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	187	Total	C	N	O	S	0	0
			1506	941	311	249	5		

- Molecule 17 is a protein called eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	180	Total	C	N	O	S	0	0
			1508	933	328	238	9		

- Molecule 18 is a protein called eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	175	Total	C	N	O	S	0	0
			1454	925	284	235	10		

- Molecule 19 is a protein called eL21.

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

- Molecule 20 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	U	99	Total	C	N	O	S	0	0
			808	518	141	147	2		

- Molecule 21 is a protein called uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 22 is a protein called eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	63	Total	C	N	O	S	0	0
			528	337	103	85	3		

- Molecule 23 is a protein called uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	119	Total	C	N	O	S	0	0
			976	624	183	168	1		

- Molecule 24 is a protein called uL24.

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

- Molecule 25 is a protein called eL27.

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

- Molecule 26 is a protein called uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	a	147	Total	C	N	O	S	0	0
			1162	734	239	185	4		

- Molecule 27 is a protein called eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	b	75	Total	C	N	O	S	0	0
			609	378	130	98	3		

- Molecule 28 is a protein called eL30.

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

- Molecule 29 is a protein called eL31.

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

- Molecule 30 is a protein called eL32.

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

- Molecule 31 is a protein called eL33.

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

- Molecule 32 is a protein called eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 33 is a protein called uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h	122	Total	C	N	O	S	0	0
			1013	640	204	168	1		

- Molecule 34 is a protein called eL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i	102	Total	C	N	O	S	0	0
			830	520	176	129	5		

- Molecule 35 is a protein called eL37.

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

- Molecule 36 is a protein called eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	k	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 37 is a protein called eL39.

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

- Molecule 38 is a protein called eL40.

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

- Molecule 39 is a protein called eL41.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	n	23	Total	C	N	O	S	0	0
			222	134	61	25	2		

- Molecule 40 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	o	104	Total	C	N	O	S	0	0
			851	533	174	138	6		

- Molecule 41 is a protein called eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	p	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 42 is a protein called eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	r	125	Total	C	N	O	S	0	0
			1001	621	206	168	6		

- Molecule 43 is a protein called uL10.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	s	198	Total	C	N	O	S	0	0
			1523	969	265	280	9		

- Molecule 44 is a protein called uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	t	163	Total	C	N	O	S	0	0
			1238	773	230	230	5		

- Molecule 45 is a protein called peptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	1	15	Total	C	N	O	S	0	0
			125	82	20	22	1		

- Molecule 46 is a RNA chain called tRNA(Val).

Mol	Chain	Residues	Atoms					AltConf	Trace
46	2	76	Total	C	N	O	P	0	0
			1616	723	291	527	75		

- Molecule 47 is a RNA chain called tRNA(Lys).

Mol	Chain	Residues	Atoms					AltConf	Trace
47	3	75	Total	C	N	O	P	0	0
			1593	712	281	526	74		

- Molecule 48 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	5	3662	Total	C	N	O	P	0	0
			78486	34947	14363	25515	3661		

- Molecule 49 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	7	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

- Molecule 50 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	8	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		

- Molecule 51 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	9	1719	Total	C	N	O	P	0	0
			36680	16371	6586	12005	1718		

- Molecule 52 is a protein called uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	AA	208	Total	C	N	O	S	0	0
			1642	1045	289	300	8		

- Molecule 53 is a protein called eS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	BB	213	Total	C	N	O	S	0	0
			1729	1098	309	308	14		

- Molecule 54 is a protein called uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	CC	218	Total	C	N	O	S	0	0
			1692	1102	287	296	7		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CC	194	ARG	HIS	conflict	UNP G1TUT9
CC	228	GLY	SER	conflict	UNP G1TUT9

- Molecule 55 is a protein called uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	DD	227	Total	C	N	O	S	0	0
			1764	1124	317	315	8		

- Molecule 56 is a protein called eS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	EE	262	Total	C	N	O	S	0	0
			2073	1323	384	357	9		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
EE	25	GLY	SER	conflict	UNP G1TK17

- Molecule 57 is a protein called uS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	FF	191	Total	C	N	O	S	0	0
			1509	943	286	273	7		

- Molecule 58 is a protein called eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	GG	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

- Molecule 59 is a protein called eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	HH	189	Total	C	N	O	S	0	0
			1521	969	280	271	1		

- Molecule 60 is a protein called eS8.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	II	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
II	47	ARG	GLY	conflict	UNP G1TJW1

- Molecule 61 is a protein called uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	JJ	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 62 is a protein called eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	KK	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

- Molecule 63 is a protein called uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	LL	152	Total	C	N	O	S	0	0
			1238	788	232	212	6		

- Molecule 64 is a protein called eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	MM	124	Total	C	N	O	S	0	0
			958	600	170	179	9		

- Molecule 65 is a protein called uS15.

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

- Molecule 66 is a protein called uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	OO	136	Total	C	N	O	S	0	0
			1016	621	199	190	6		

- Molecule 67 is a protein called uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	PP	127	Total	C	N	O	S	0	0
			1060	673	201	179	7		

- Molecule 68 is a protein called uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	QQ	141	Total	C	N	O	S	0	0
			1124	715	212	194	3		

- Molecule 69 is a protein called eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	RR	129	Total	C	N	O	S	0	0
			1047	658	193	191	5		

- Molecule 70 is a protein called uS13.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SS	137	Total	C	N	O	S	0	0
			1139	714	231	193	1		

- Molecule 71 is a protein called eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	TT	141	Total	C	N	O	S	0	0
			1102	692	212	195	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
TT	119	GLY	TRP	conflict	UNP G1TN62

- Molecule 72 is a protein called uS10.

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

- Molecule 73 is a protein called eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	VV	83	Total	C	N	O	S	0	0
			636	394	118	119	5		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
VV	3	ASN	SER	conflict	UNP G1TM82
VV	4	ASP	ASN	conflict	UNP G1TM82
VV	50	PHE	SER	conflict	UNP G1TM82
VV	75	ALA	SER	conflict	UNP G1TM82

- Molecule 74 is a protein called uS8.

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

- Molecule 75 is a protein called uS12.

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

- Molecule 76 is a protein called eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	YY	126	Total	C	N	O	S	0	0
			1023	646	200	172	5		

- Molecule 77 is a protein called eS25.

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

- Molecule 78 is a protein called eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	aa	98	Total	C	N	O	S	0	0
			781	486	161	129	5		

- Molecule 79 is a protein called eS27.

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

- Molecule 80 is a protein called eS28.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	cc	61	Total	C	N	O	S	0	0
			475	290	92	91	2		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
cc	18	ILE	LEU	conflict	UNP G1TIB4
cc	20	LYS	ARG	conflict	UNP G1TIB4
cc	40	HIS	ARG	conflict	UNP G1TIB4
cc	42	THR	ILE	conflict	UNP G1TIB4

- Molecule 81 is a protein called uS14.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	dd	53	Total	C	N	O	S	0	0
			445	278	90	72	5		

- Molecule 82 is a protein called eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	ee	57	Total	C	N	O	S	0	0
			457	282	101	73	1		

- Molecule 83 is a protein called eS31.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	ff	62	Total	C	N	O	S	0	0
			520	331	98	85	6		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
ff	?	-	VAL	deletion	UNP G1SK22

- Molecule 84 is a protein called RACK1.

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

- Molecule 85 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	hh	12	Total	C	N	O	P	0	0
			257	115	46	84	12		

- Molecule 86 is a protein called eRF1.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	ii	416	Total	C	N	O	S	0	0
			3280	2087	559	623	11		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
ii	183	ALA	GLY	engineered mutation	UNP P62495
ii	184	ALA	GLY	engineered mutation	UNP P62495

- Molecule 87 is a protein called ABCE1.

Mol	Chain	Residues	Atoms					AltConf	Trace
87	jj	576	Total	C	N	O	S	0	0
			4543	2904	779	829	31		

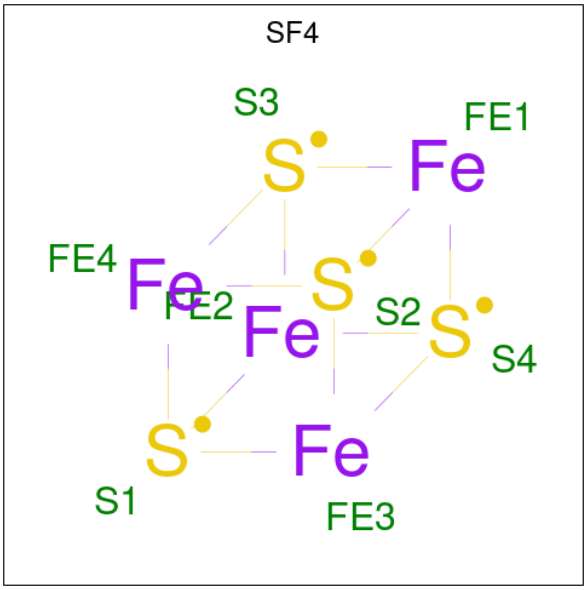
- Molecule 88 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
88	B	1	Total Mg 1 1	0
88	C	1	Total Mg 1 1	0
88	I	1	Total Mg 1 1	0
88	P	1	Total Mg 1 1	0
88	V	1	Total Mg 1 1	0
88	g	1	Total Mg 1 1	0
88	5	146	Total Mg 146 146	0
88	7	5	Total Mg 5 5	0
88	8	2	Total Mg 2 2	0
88	9	34	Total Mg 34 34	0
88	LL	1	Total Mg 1 1	0
88	hh	1	Total Mg 1 1	0

- Molecule 89 is ZINC ION (CCD ID: ZN) (formula: Zn).

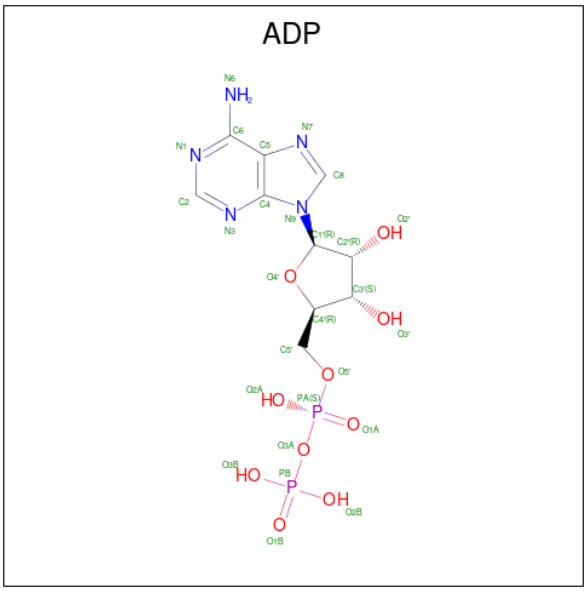
Mol	Chain	Residues	Atoms	AltConf
89	g	1	Total Zn 1 1	0
89	j	1	Total Zn 1 1	0
89	m	1	Total Zn 1 1	0
89	o	1	Total Zn 1 1	0
89	p	1	Total Zn 1 1	0
89	aa	1	Total Zn 1 1	0
89	dd	1	Total Zn 1 1	0
89	ff	1	Total Zn 1 1	0

- Molecule 90 is IRON/SULFUR CLUSTER (CCD ID: SF4) (formula: Fe_4S_4).



Mol	Chain	Residues	Atoms			AltConf
90	jj	1	Total	Fe	S	0
			8	4	4	
90	jj	1	Total	Fe	S	0
			8	4	4	

- Molecule 91 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms					AltConf
91	jj	1	Total	C	N	O	P	0
			27	10	5	10	2	

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Continued from previous page...

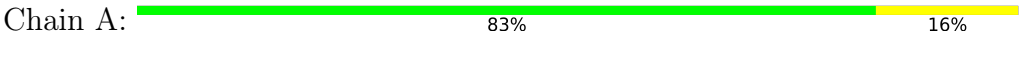
Mol	Chain	Residues	Atoms					AltConf
91	jj	1	Total	C	N	O	P	0
			27	10	5	10	2	

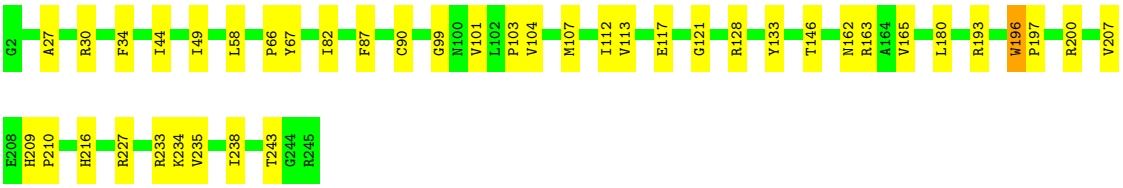
3 Residue-property plots (i)

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

- Molecule 1: uL2

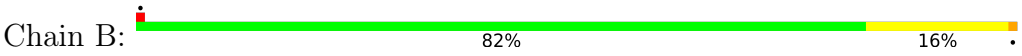
Chain A:

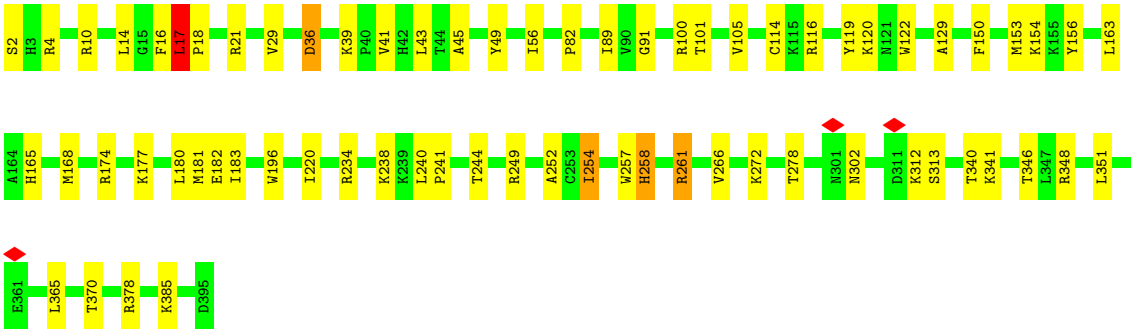




- Molecule 2: uL3

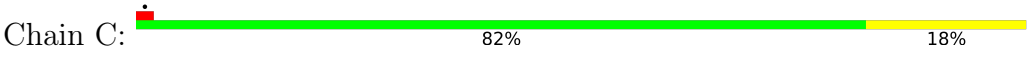
Chain B:

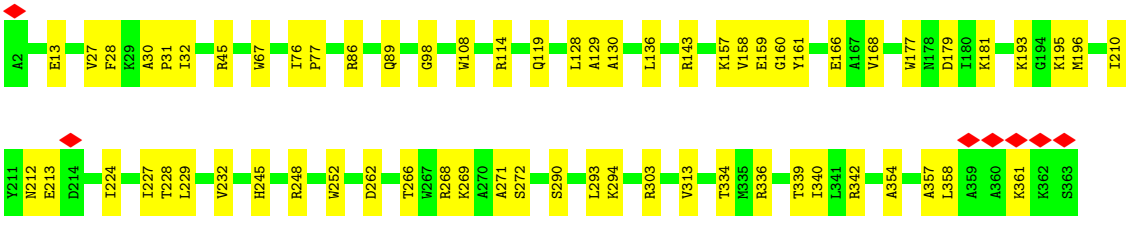




- Molecule 3: uL4

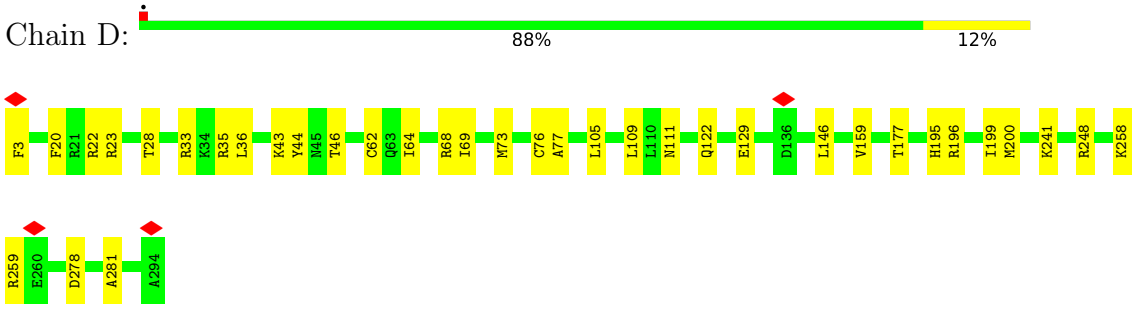
Chain C:





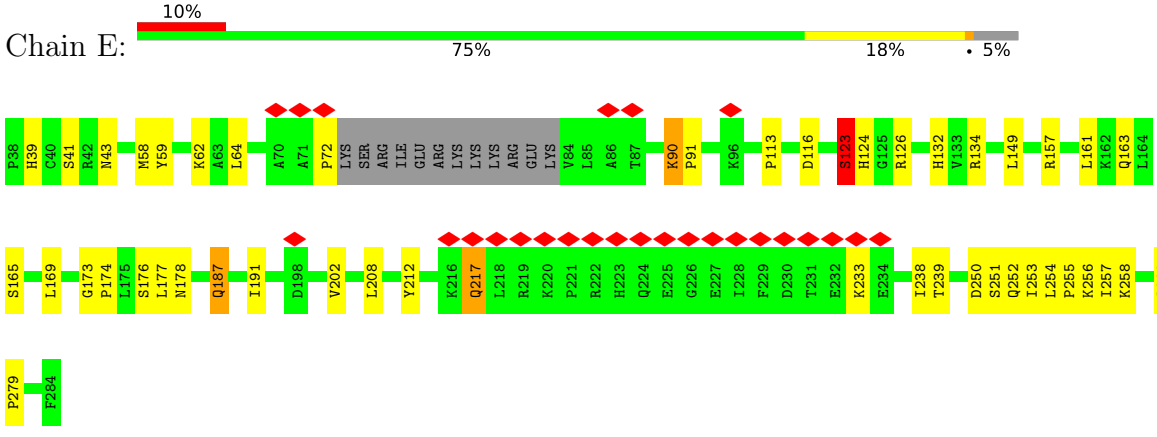
- Molecule 4: uL18

Chain D:



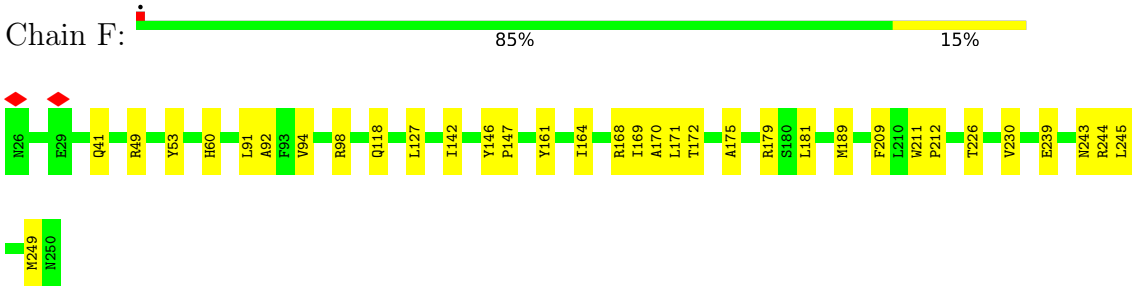
• Molecule 5: eL6

Chain E:



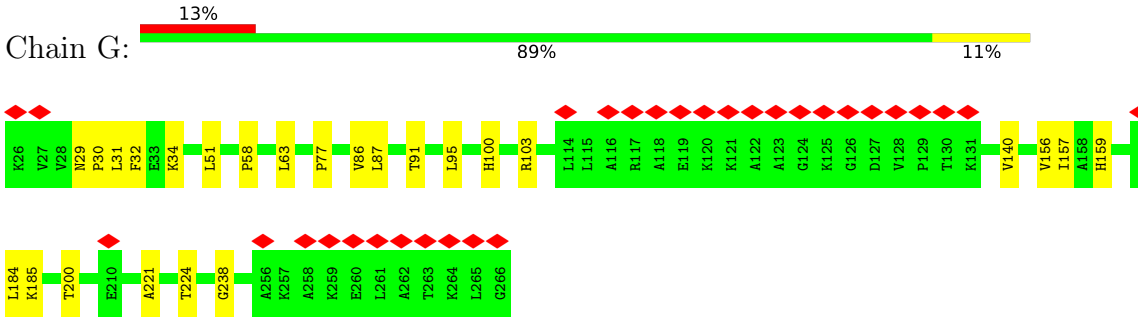
• Molecule 6: uL30

Chain F:



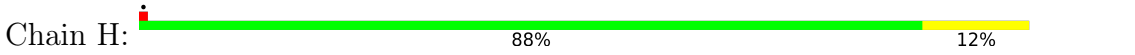
• Molecule 7: eL8

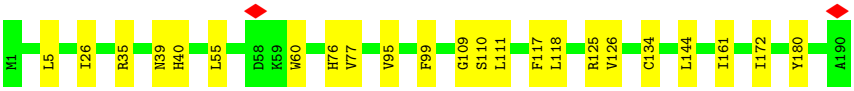
Chain G:



• Molecule 8: uL6

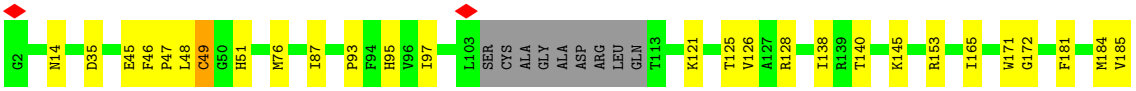
Chain H:

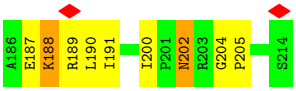




• Molecule 9: uL16

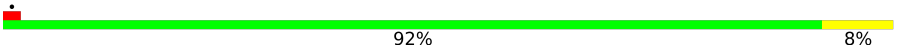
Chain I:

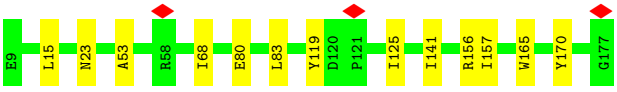




• Molecule 10: uL5

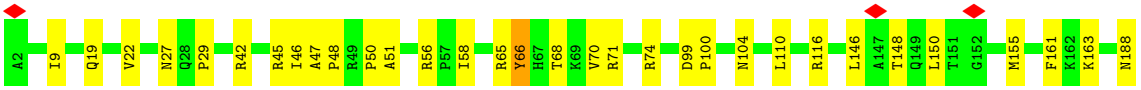
Chain J:

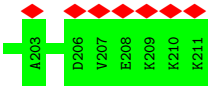




• Molecule 11: eL13

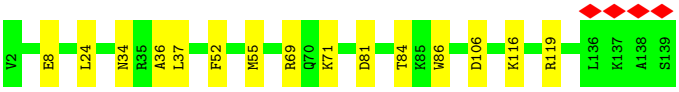
Chain L:





• Molecule 12: eL14

Chain M:

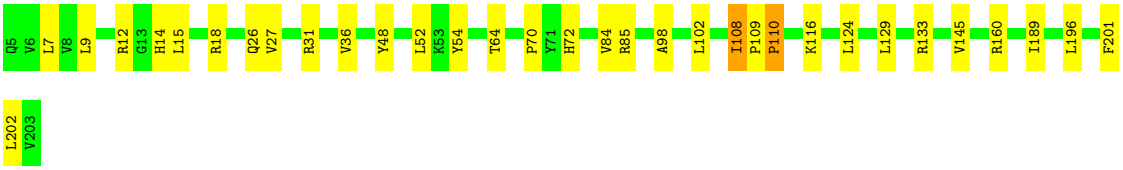


• Molecule 13: eL15

Chain N:

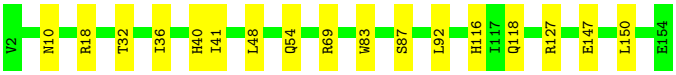
• Molecule 14: uL13

Chain O:



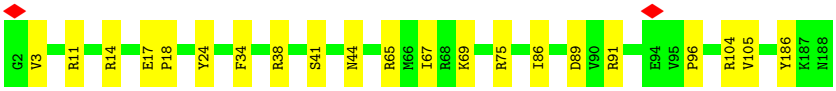
• Molecule 15: uL22

Chain P:



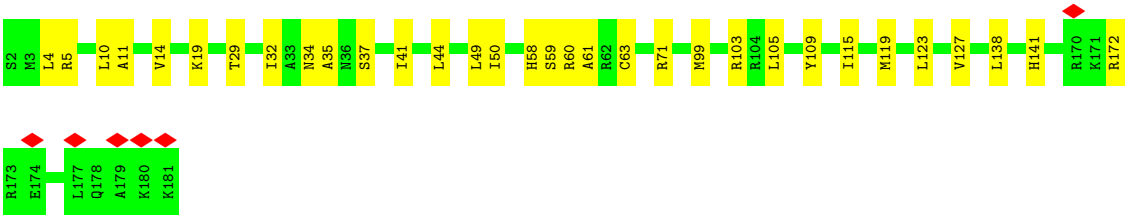
• Molecule 16: uL14

Chain Q:



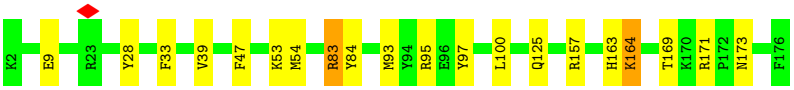
• Molecule 17: eL19

Chain R:



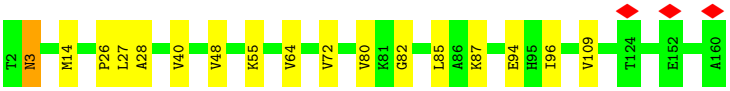
• Molecule 18: eL20

Chain S:



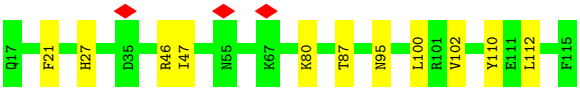
• Molecule 19: eL21

Chain T:



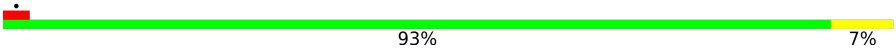
• Molecule 20: eL22

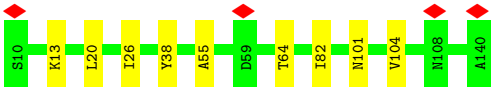
Chain U:



• Molecule 21: uL14

Chain V:



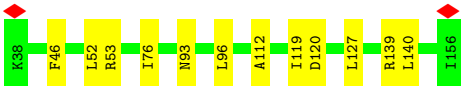


• Molecule 22: eL24

Chain W:

• Molecule 23: uL23

Chain X:



• Molecule 24: uL24

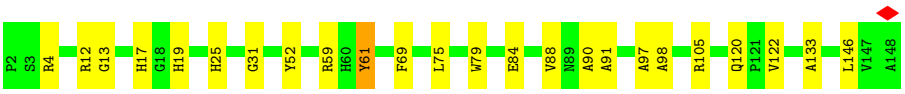
Chain Y:

• Molecule 25: eL27

Chain Z:

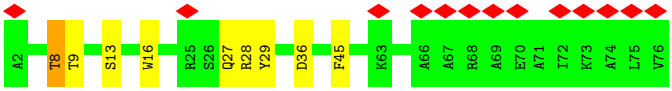
• Molecule 26: uL15

Chain a:



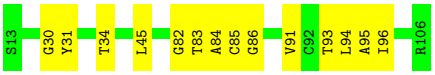
• Molecule 27: eL29

Chain b:



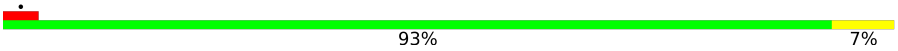
• Molecule 28: eL30

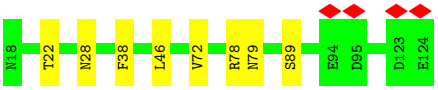
Chain c:



• Molecule 29: eL31

Chain d:





• Molecule 30: eL32

Chain e:

• Molecule 31: eL33

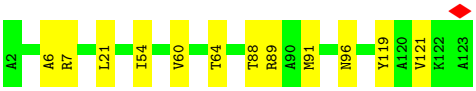
Chain f:

• Molecule 32: eL34

Chain g:

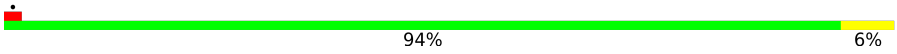
• Molecule 33: uL29

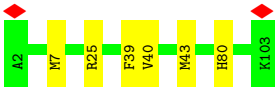
Chain h:



• Molecule 34: eL36

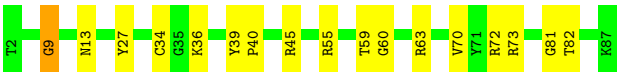
Chain i:





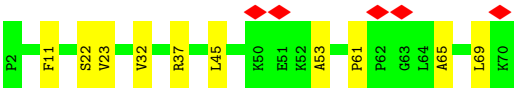
• Molecule 35: eL37

Chain j:



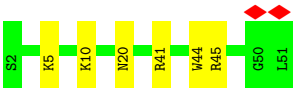
• Molecule 36: eL38

Chain k:



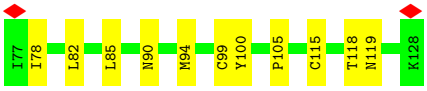
• Molecule 37: eL39

Chain l:



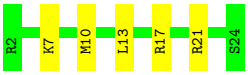
• Molecule 38: eL40

Chain m:



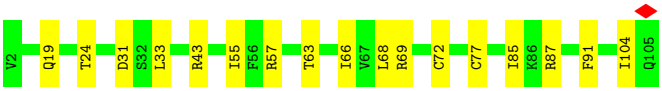
• Molecule 39: eL41

Chain n:



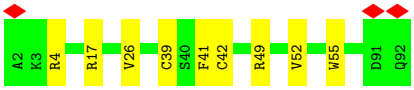
• Molecule 40: eL42

Chain o:



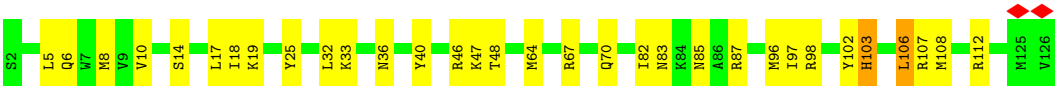
• Molecule 41: eL43

Chain p:



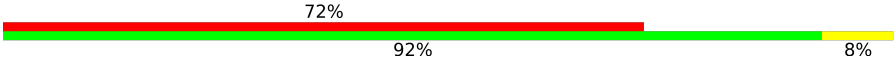
• Molecule 42: eL28

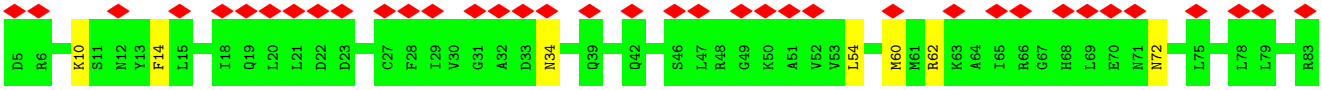
Chain r:

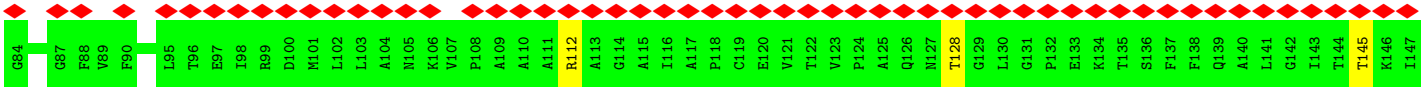


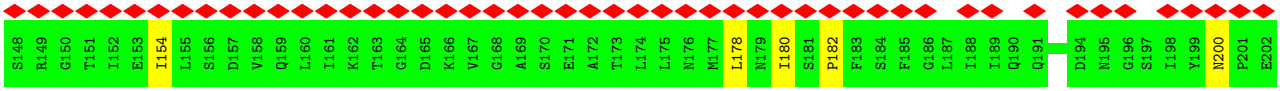
• Molecule 43: uL10

Chain s:



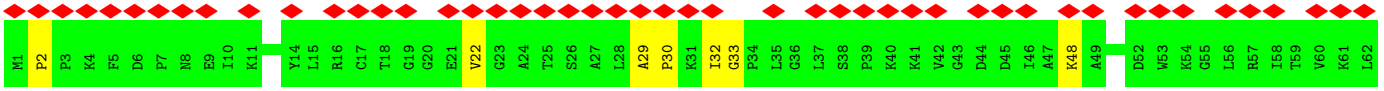


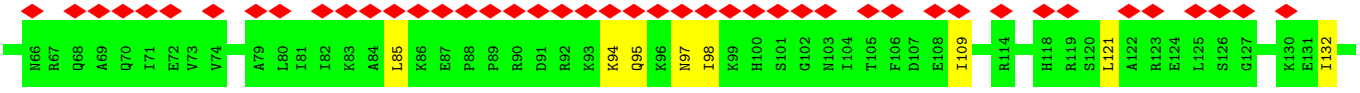


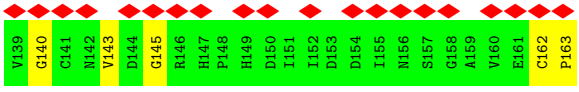


• Molecule 44: uL11

Chain t:

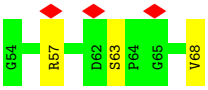






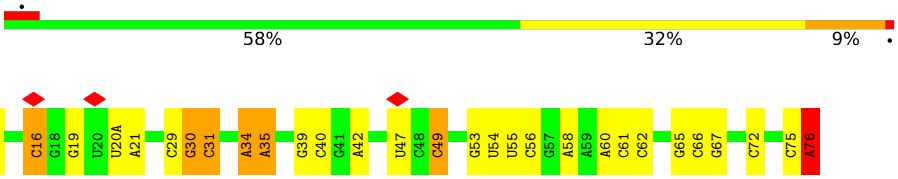
• Molecule 45: peptide

Chain 1:



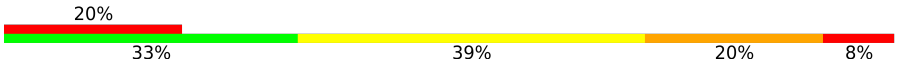
• Molecule 46: tRNA(Val)

Chain 2:



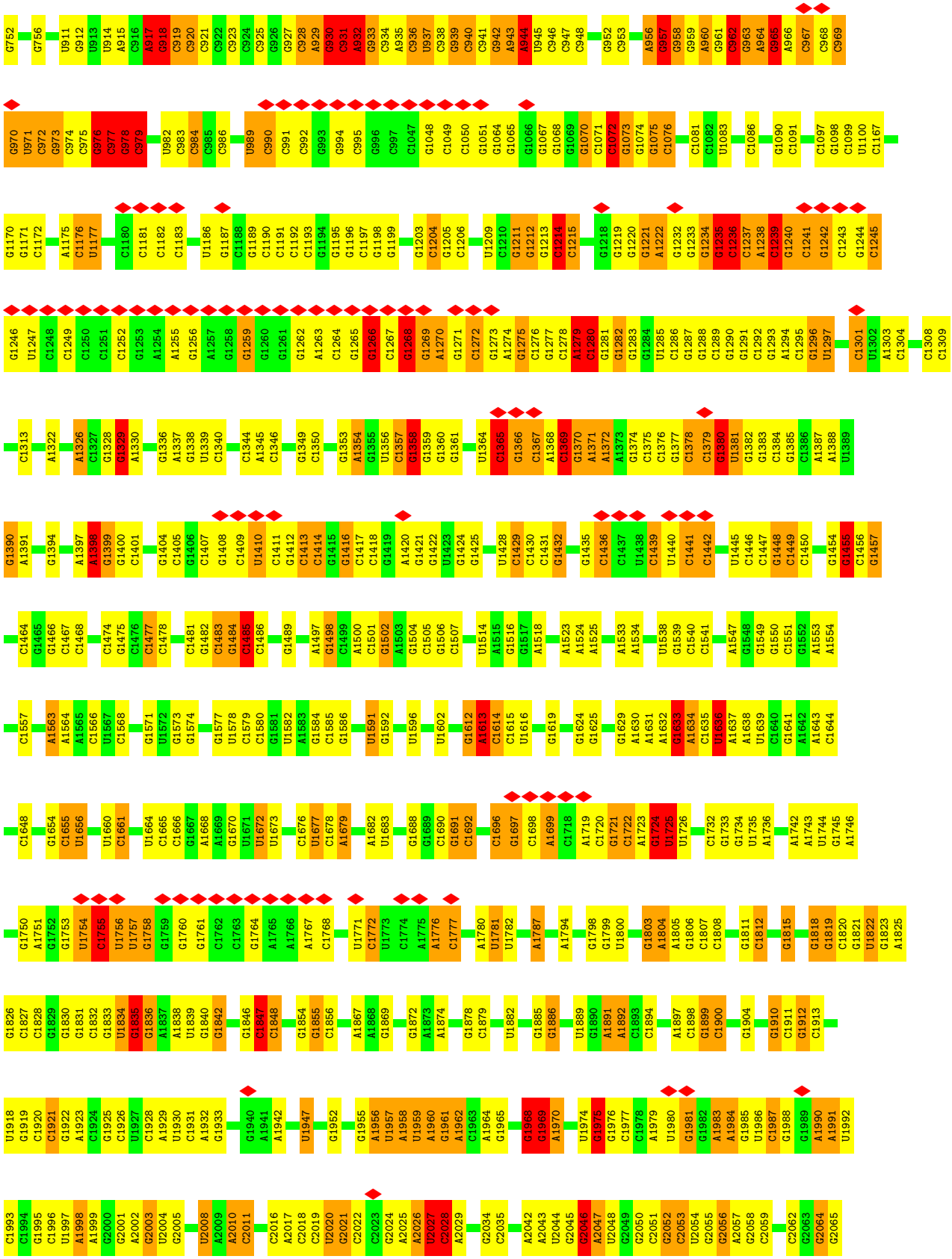
• Molecule 47: tRNA(Lys)

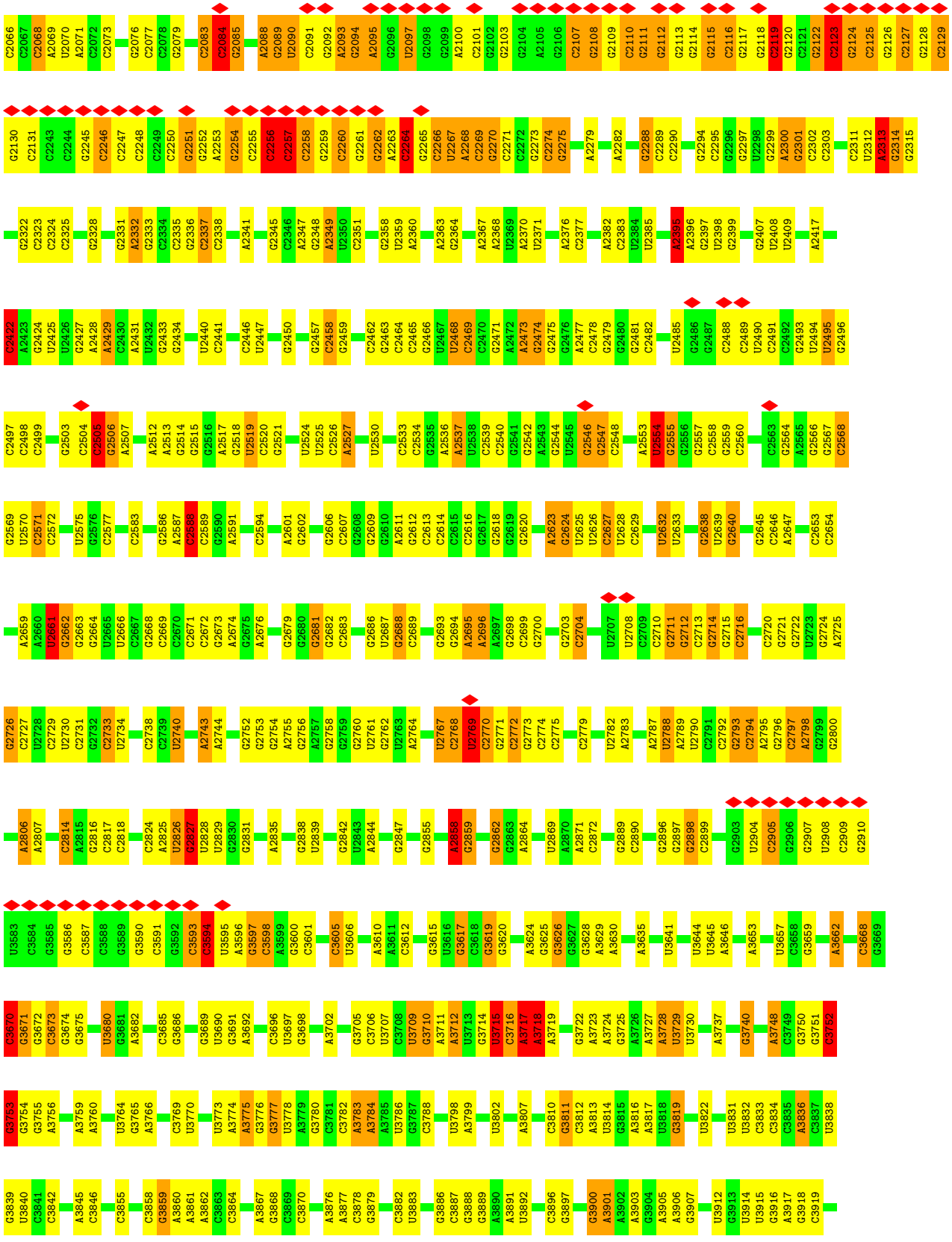
Chain 3:

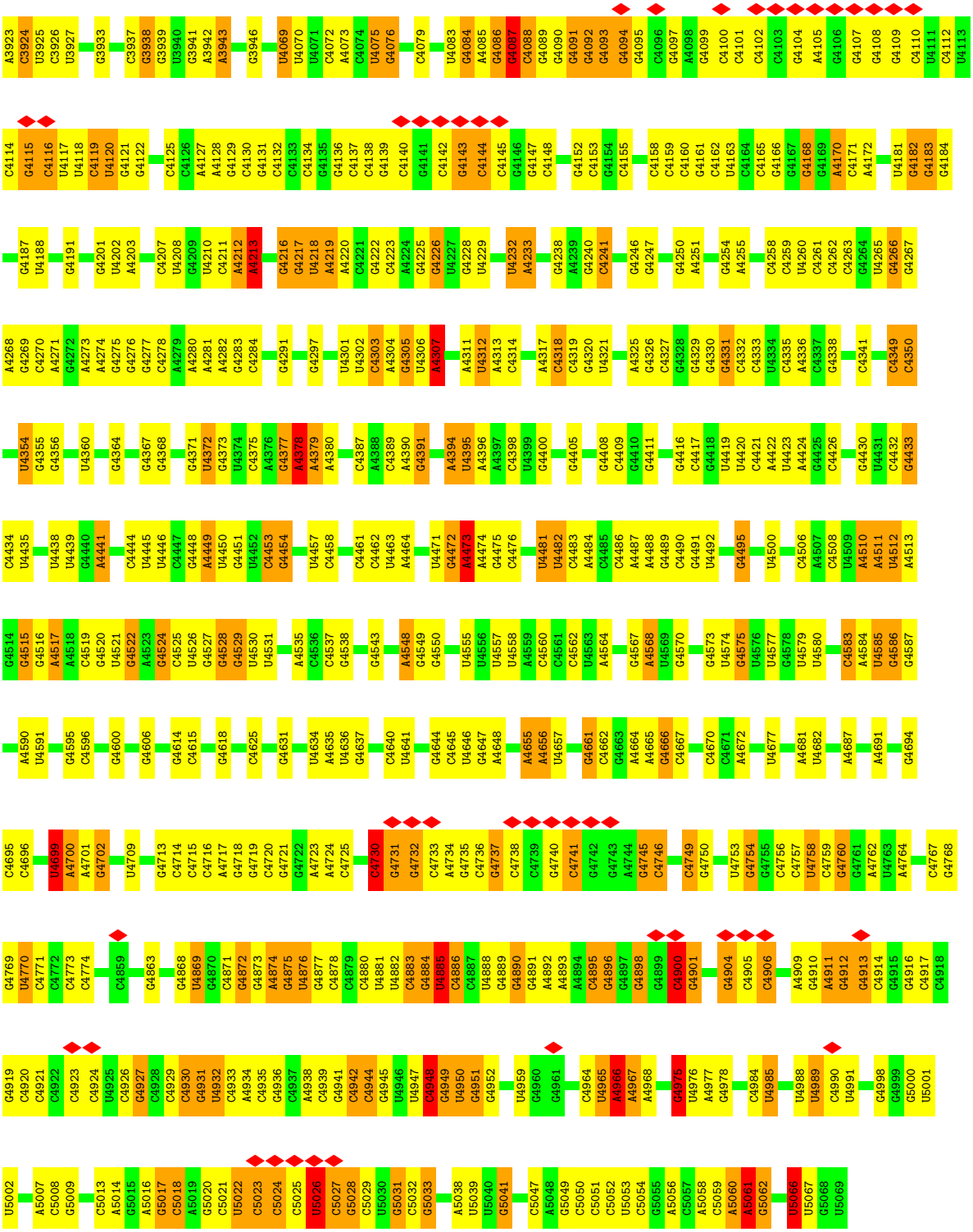


• Molecule 48: 28S ribosomal RNA

Chain 5:

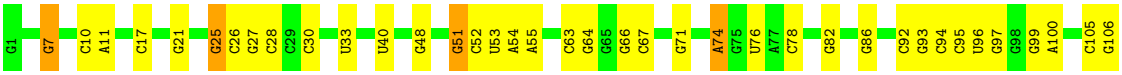


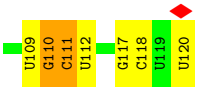




• Molecule 49: 5S ribosomal RNA

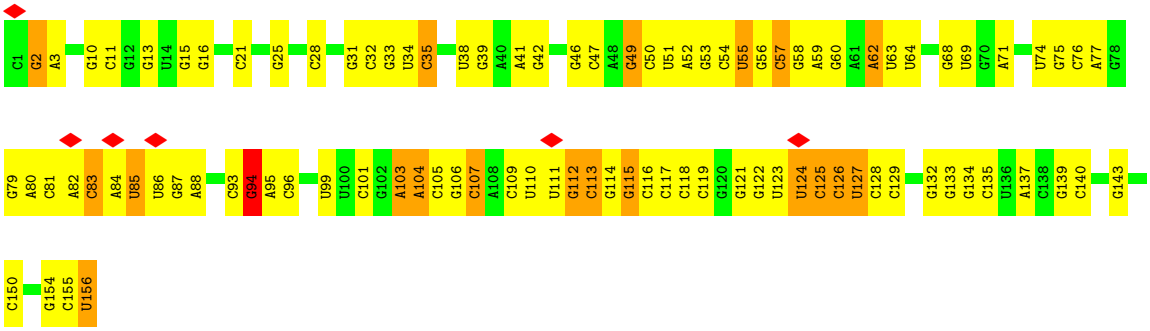
Chain 7:





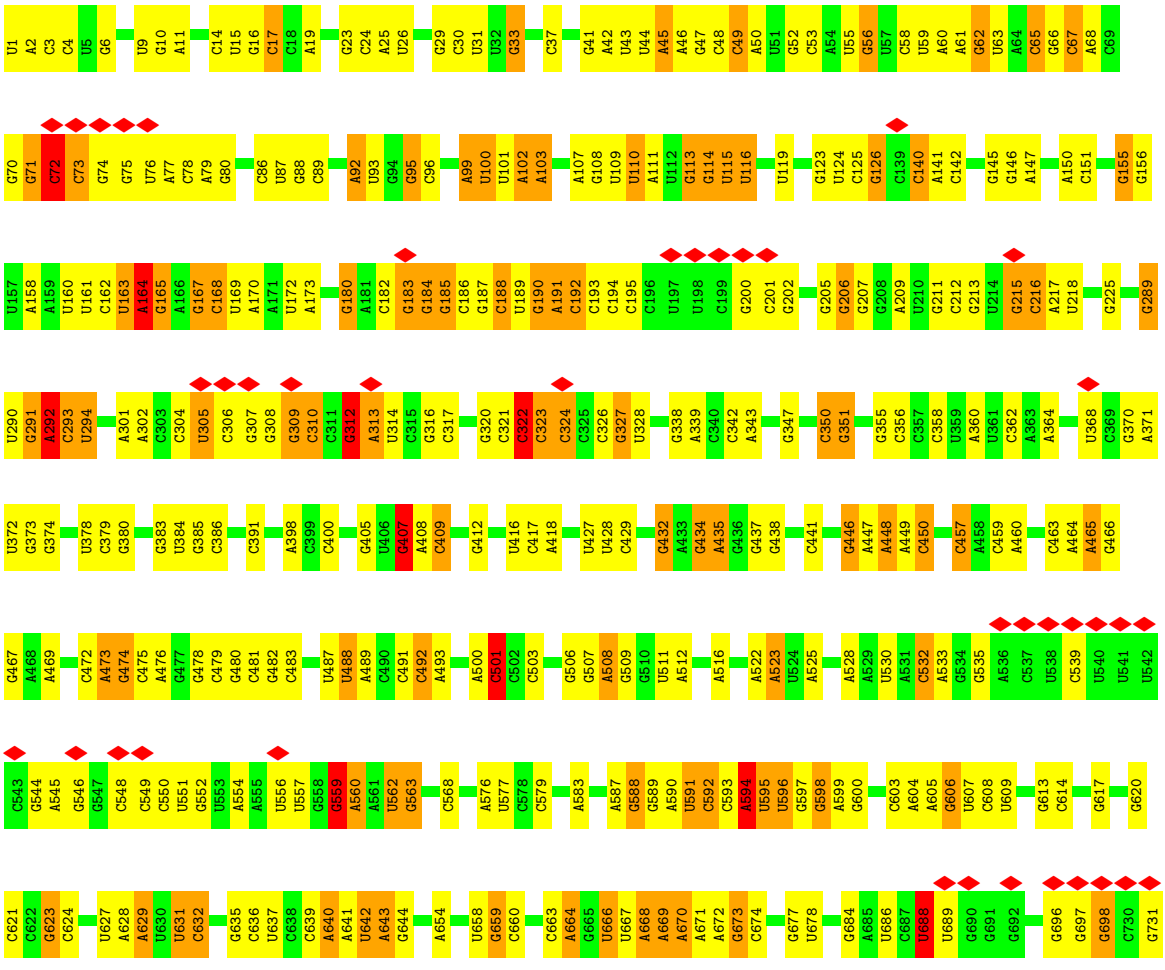
• Molecule 50: 5.8S ribosomal RNA

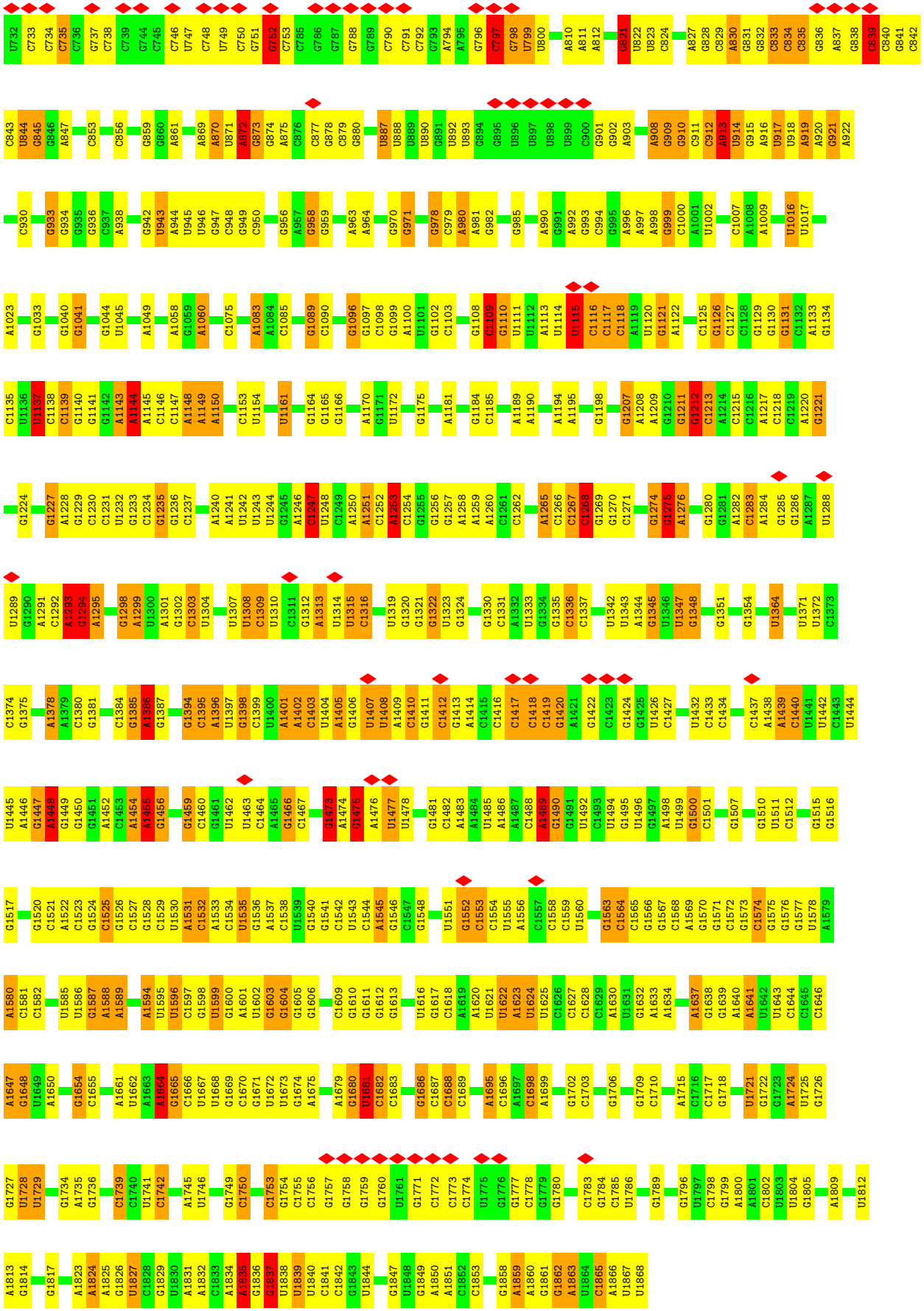
Chain 8:



• Molecule 51: 18S ribosomal RNA

Chain 9:



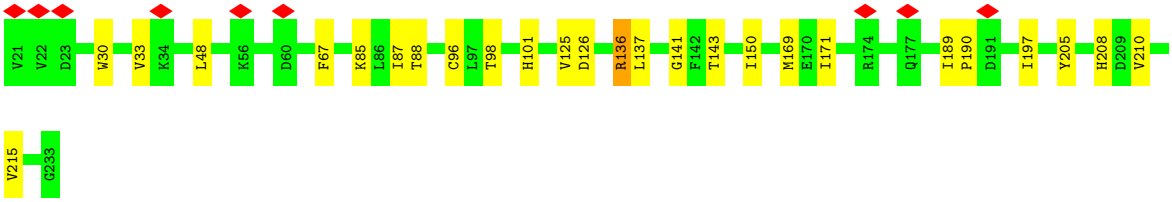


• Molecule 52: uS2

Chain AA:

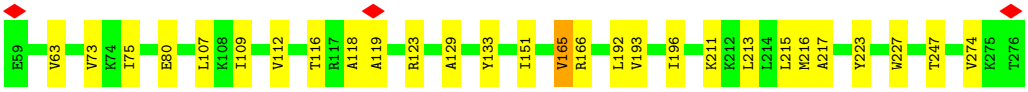
• Molecule 53: eS1

Chain BB:



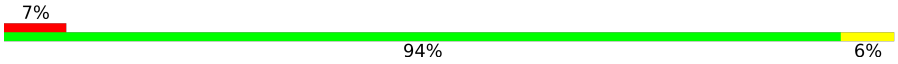
• Molecule 54: uS5

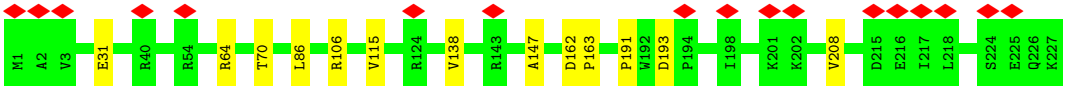
Chain CC:



• Molecule 55: uS3

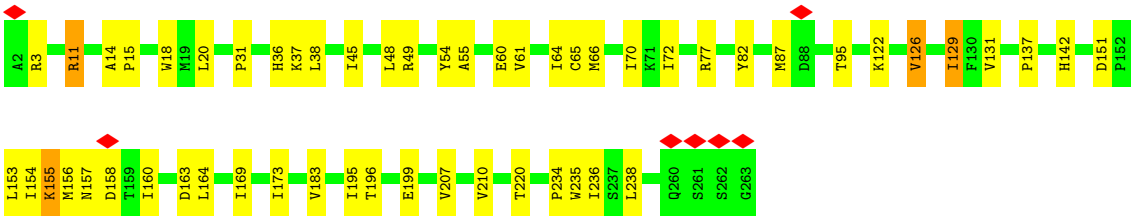
Chain DD:





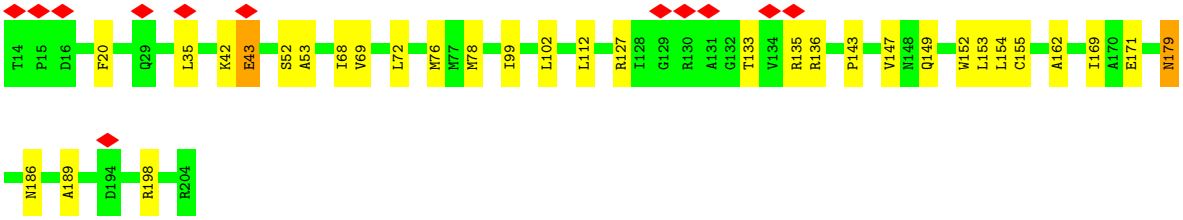
• Molecule 56: eS4

Chain EE:

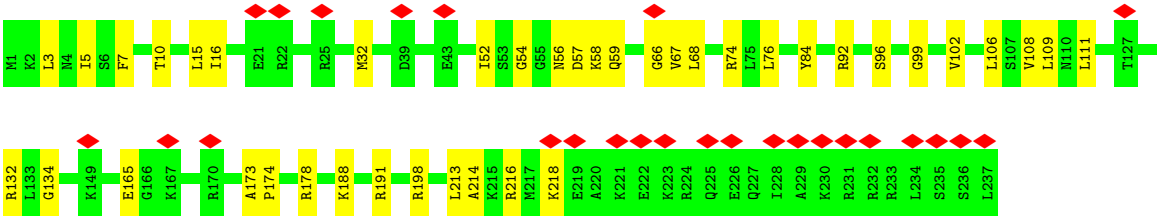


• Molecule 57: uS7

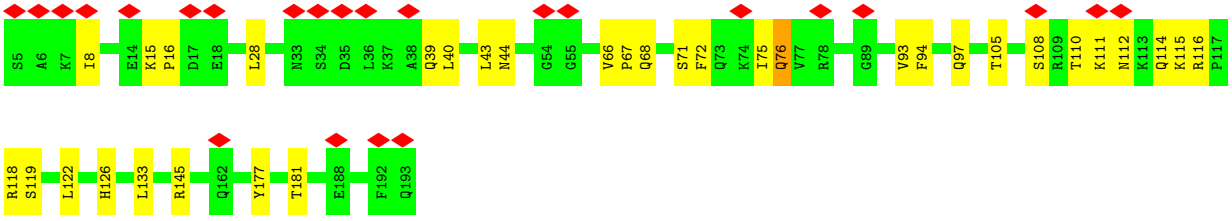
Chain FF:



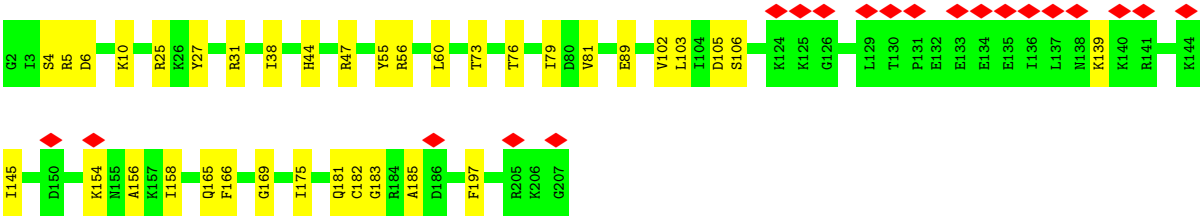
• Molecule 58: eS6



• Molecule 59: eS7



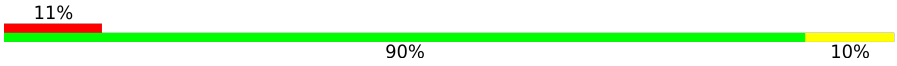
• Molecule 60: eS8

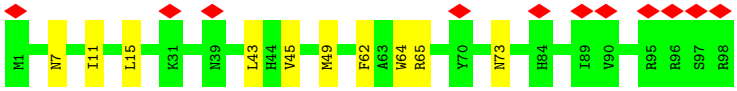


• Molecule 61: uS4

• Molecule 62: eS10

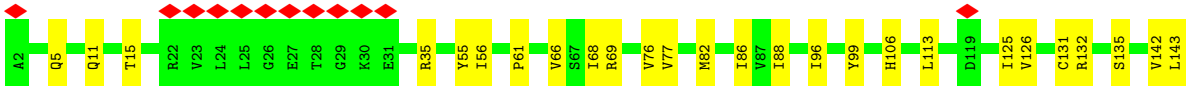
Chain KK:





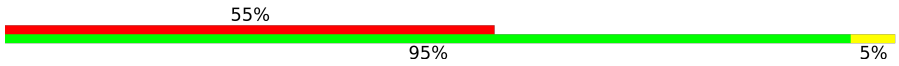
• Molecule 63: uS17

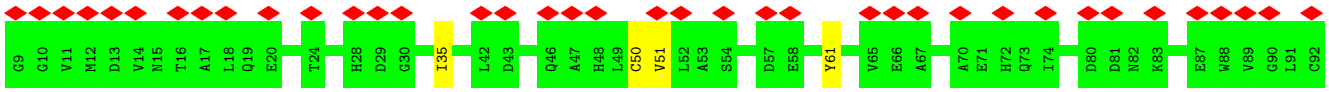
Chain LL:

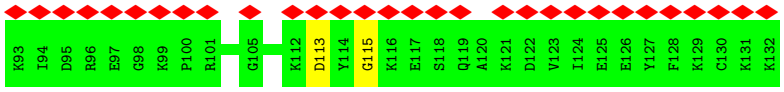


• Molecule 64: eS12

Chain MM:

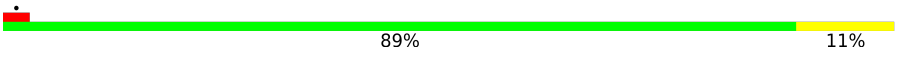


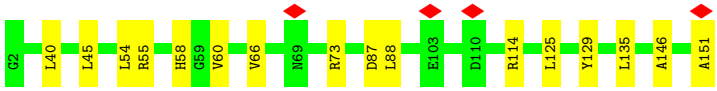




• Molecule 65: uS15

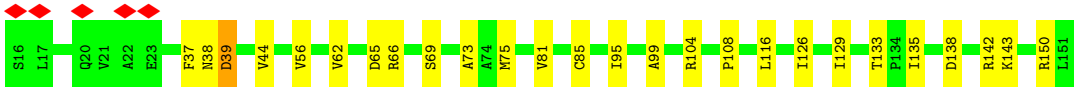
Chain NN:





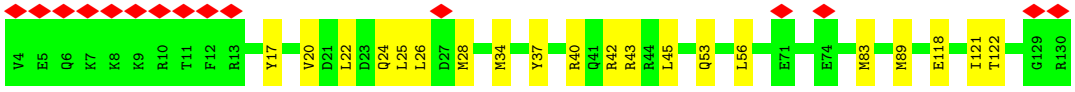
• Molecule 66: uS11

Chain OO:



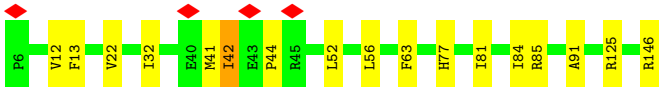
• Molecule 67: uS19

Chain PP:



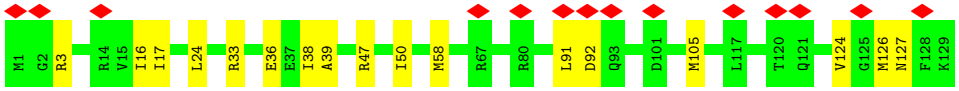
• Molecule 68: uS9

Chain QQ:



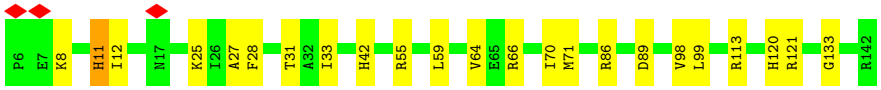
• Molecule 69: eS17

Chain RR:



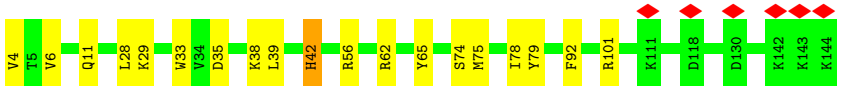
• Molecule 70: uS13

Chain SS:



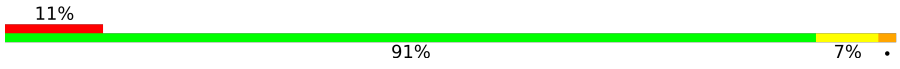
• Molecule 71: eS19

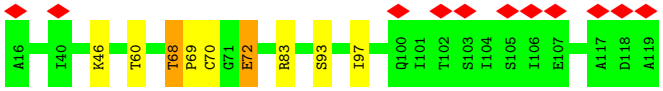
Chain TT:



• Molecule 72: uS10

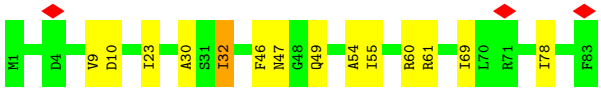
Chain UU:





• Molecule 73: eS21

Chain VV:

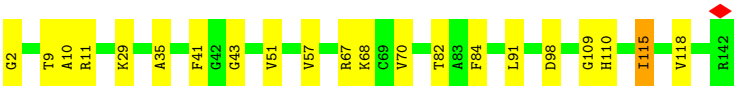


• Molecule 74: uS8

Chain WW:

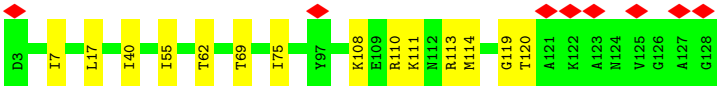
• Molecule 75: uS12

Chain XX:



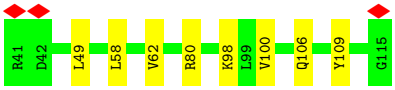
• Molecule 76: eS24

Chain YY:



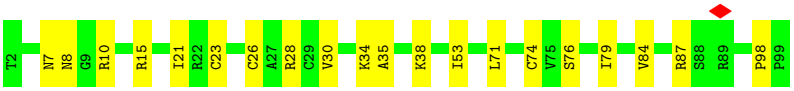
• Molecule 77: eS25

Chain ZZ:



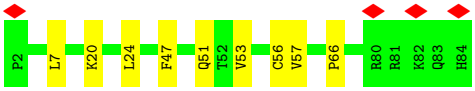
• Molecule 78: eS26

Chain aa:



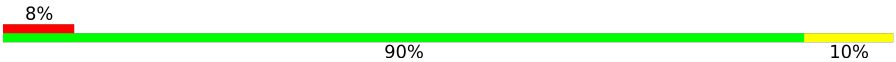
• Molecule 79: eS27

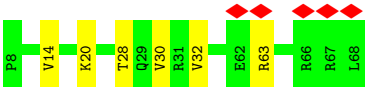
Chain bb:



• Molecule 80: eS28

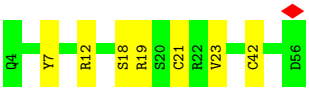
Chain cc:





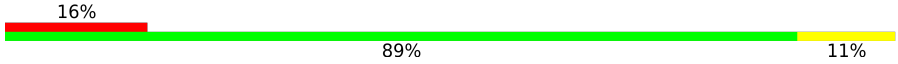
• Molecule 81: uS14

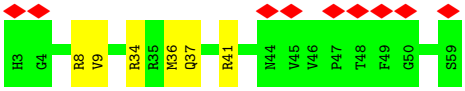
Chain dd:



• Molecule 82: eS30

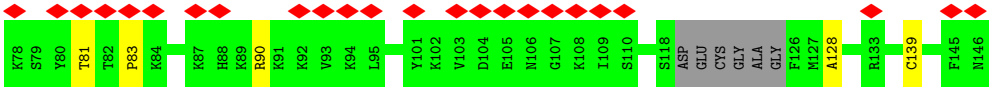
Chain ee:





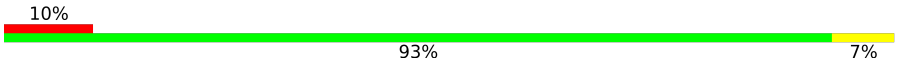
• Molecule 83: eS31

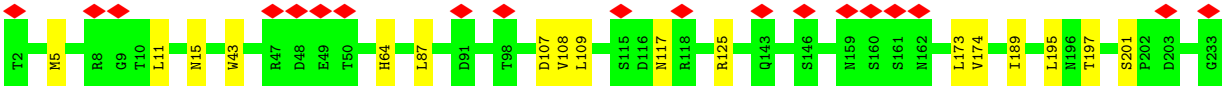
Chain ff:

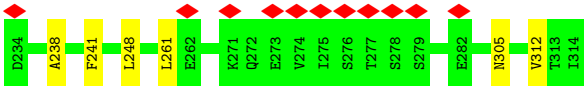


• Molecule 84: RACK1

Chain gg:

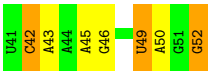






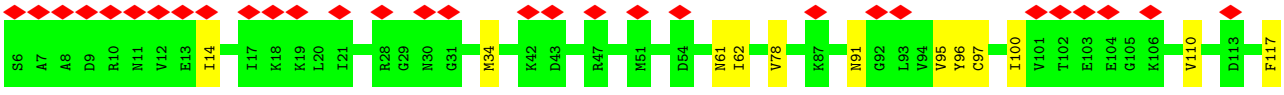
• Molecule 85: mRNA

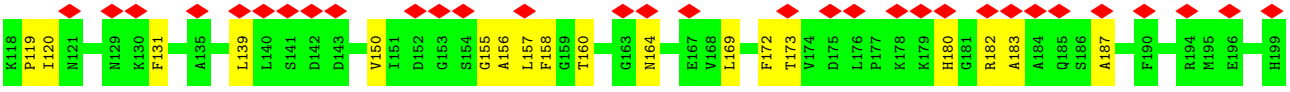
Chain hh:

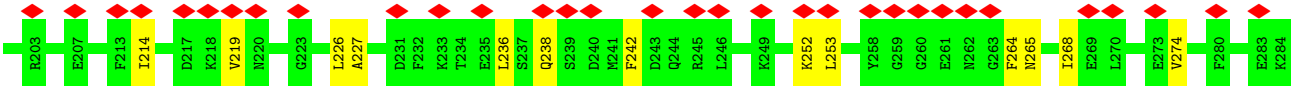


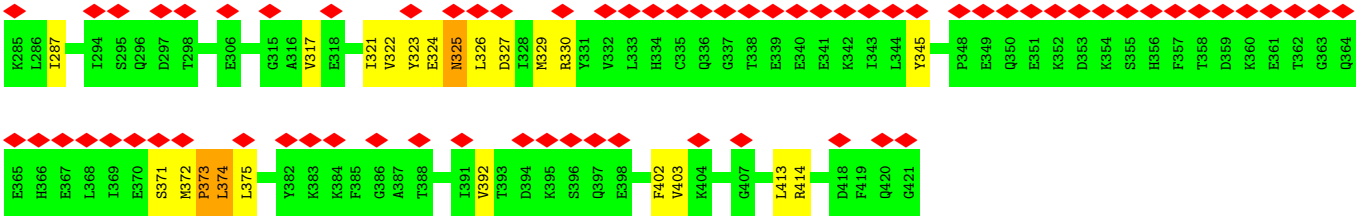
• Molecule 86: eRF1

Chain ii:

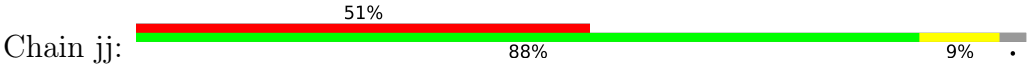


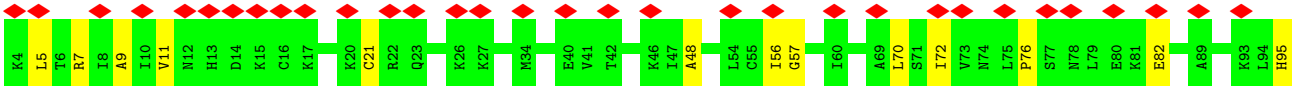


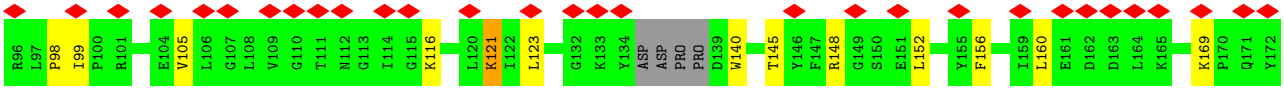


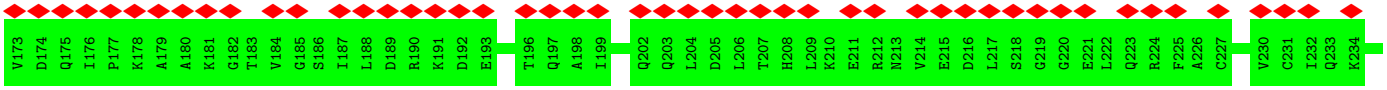


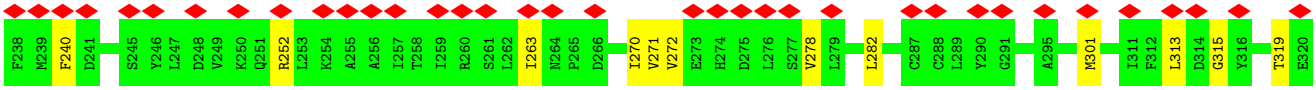
• Molecule 87: ABCE1

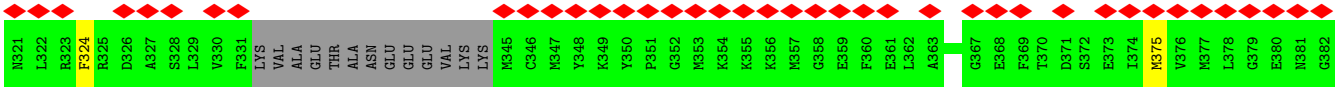


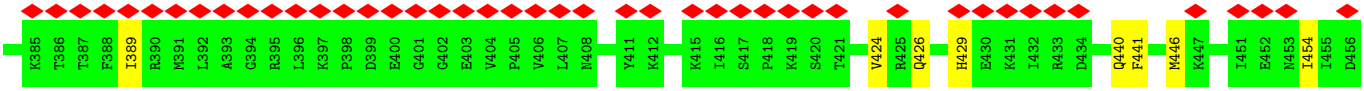


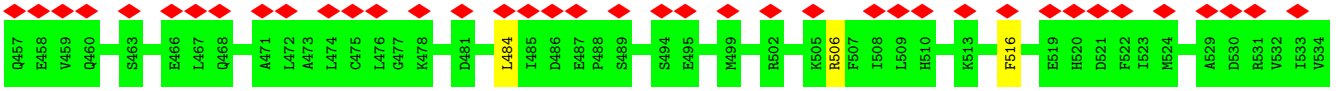


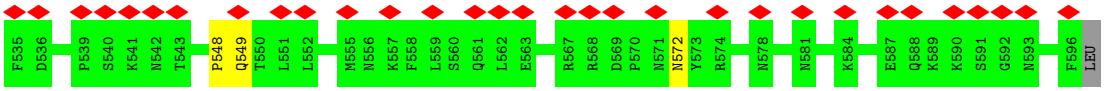












4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	20515	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	Not provided	
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	30	Depositor
Minimum defocus (nm)	1700	Depositor
Maximum defocus (nm)	3600	Depositor
Magnification	104478	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.528	Depositor
Minimum map value	-0.315	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.07	Depositor
Map size (Å)	562.8, 562.8, 562.8	wwPDB
Map dimensions	420, 420, 420	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.3399999, 1.3399999, 1.3399999	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SF4, MG, ZN, ADP

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	A	0.63	3/1906 (0.2%)	0.92	2/2556 (0.1%)
2	B	0.53	0/3216	0.93	14/4311 (0.3%)
3	C	0.56	2/2938 (0.1%)	0.96	3/3946 (0.1%)
4	D	0.48	0/2432	0.86	0/3257
5	E	0.65	3/1936 (0.2%)	1.00	7/2600 (0.3%)
6	F	0.51	0/1905	0.87	0/2539
7	G	0.54	0/1967	0.94	2/2647 (0.1%)
8	H	0.52	1/1535 (0.1%)	0.82	2/2063 (0.1%)
9	I	0.56	1/1693 (0.1%)	0.87	3/2260 (0.1%)
10	J	0.48	0/1376	0.85	1/1841 (0.1%)
11	L	0.55	1/1734 (0.1%)	0.92	1/2317 (0.0%)
12	M	0.49	0/1158	0.94	1/1547 (0.1%)
13	N	0.58	1/1746 (0.1%)	0.96	3/2338 (0.1%)
14	O	0.54	0/1671	0.95	3/2234 (0.1%)
15	P	0.59	3/1268 (0.2%)	0.91	4/1701 (0.2%)
16	Q	0.54	0/1530	0.89	0/2041
17	R	0.58	2/1524 (0.1%)	0.95	2/2013 (0.1%)
18	S	0.52	0/1493	0.94	2/2002 (0.1%)
19	T	0.55	1/1326 (0.1%)	0.84	1/1770 (0.1%)
20	U	0.52	1/822 (0.1%)	0.77	0/1103
21	V	0.55	0/993	0.88	1/1332 (0.1%)
22	W	0.58	0/541	0.94	2/720 (0.3%)
23	X	0.55	1/993 (0.1%)	0.89	0/1334
24	Y	0.48	0/1132	0.91	1/1504 (0.1%)
25	Z	0.51	0/1130	0.90	3/1507 (0.2%)
26	a	0.52	0/1191	0.97	4/1590 (0.3%)
27	b	0.56	1/619 (0.2%)	0.96	1/818 (0.1%)
28	c	0.49	0/742	0.93	0/996
29	d	0.51	0/903	0.87	0/1216
30	e	0.61	1/1071 (0.1%)	0.98	1/1429 (0.1%)
31	f	0.70	3/895 (0.3%)	1.02	7/1198 (0.6%)
32	g	0.55	1/916 (0.1%)	0.89	1/1220 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	h	0.48	0/1021	0.93	1/1348 (0.1%)
34	i	0.57	1/841 (0.1%)	0.94	2/1112 (0.2%)
35	j	0.61	0/720	1.03	1/952 (0.1%)
36	k	0.55	0/575	0.90	1/761 (0.1%)
37	l	0.66	0/454	0.92	0/599
38	m	0.51	0/435	0.89	0/575
39	n	0.55	0/223	0.87	0/284
40	o	0.52	0/864	0.86	0/1140
41	p	0.57	0/718	0.94	1/953 (0.1%)
42	r	0.65	2/1017 (0.2%)	0.98	2/1364 (0.1%)
43	s	0.58	0/1547	0.81	3/2088 (0.1%)
44	t	0.64	0/1257	0.97	4/1697 (0.2%)
45	1	0.58	0/129	1.02	2/173 (1.2%)
46	2	0.37	0/1805	0.79	3/2809 (0.1%)
47	3	0.45	0/1777	1.01	15/2763 (0.5%)
48	5	0.41	1/87790 (0.0%)	0.89	278/136937 (0.2%)
49	7	0.38	0/2858	0.77	1/4455 (0.0%)
50	8	0.40	0/3701	0.82	3/5766 (0.1%)
51	9	0.40	1/41013 (0.0%)	0.86	107/63919 (0.2%)
52	AA	0.50	0/1679	0.91	0/2283
53	BB	0.53	0/1756	0.93	3/2350 (0.1%)
54	CC	0.55	0/1730	0.95	2/2344 (0.1%)
55	DD	0.52	0/1792	0.88	0/2412
56	EE	0.57	2/2115 (0.1%)	0.98	8/2843 (0.3%)
57	FF	0.63	3/1531 (0.2%)	0.99	2/2059 (0.1%)
58	GG	0.53	0/1946	0.88	0/2590
59	HH	0.62	2/1544 (0.1%)	0.94	1/2068 (0.0%)
60	II	0.55	0/1715	0.93	1/2287 (0.0%)
61	JJ	0.55	1/1550 (0.1%)	0.97	3/2069 (0.1%)
62	KK	0.66	1/851 (0.1%)	0.94	0/1147
63	LL	0.53	0/1259	0.88	3/1684 (0.2%)
64	MM	0.64	0/968	0.91	0/1296
65	NN	0.55	1/1232 (0.1%)	1.02	3/1656 (0.2%)
66	OO	0.60	0/1029	1.01	2/1380 (0.1%)
67	PP	0.55	0/1079	0.94	1/1437 (0.1%)
68	QQ	0.50	0/1142	0.87	0/1528
69	RR	0.56	0/1060	0.94	0/1421
70	SS	0.53	0/1157	0.97	1/1548 (0.1%)
71	TT	0.60	2/1120 (0.2%)	1.01	2/1499 (0.1%)
72	UU	0.52	0/831	0.92	2/1115 (0.2%)
73	VV	0.55	0/645	0.95	1/865 (0.1%)
74	WW	0.51	0/1051	0.91	1/1406 (0.1%)
75	XX	0.50	0/1116	1.00	1/1490 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
76	YY	0.52	0/1040	0.89	0/1382
77	ZZ	0.55	0/604	0.94	0/810
78	aa	0.56	0/794	0.98	0/1065
79	bb	0.51	0/665	0.78	0/891
80	cc	0.47	0/478	0.85	0/640
81	dd	0.52	0/455	0.90	0/603
82	ee	0.62	0/462	0.87	0/607
83	ff	0.55	0/531	0.71	0/703
84	gg	0.52	2/2493 (0.1%)	0.79	2/3394 (0.1%)
85	hh	0.41	0/287	0.87	1/445 (0.2%)
86	ii	0.55	3/3333 (0.1%)	0.89	3/4483 (0.1%)
87	jj	0.58	2/4625 (0.0%)	0.83	0/6238
All	All	0.48	50/242712 (0.0%)	0.89	539/355683 (0.2%)

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
1	A	0	1
2	B	0	4
3	C	0	2
4	D	0	1
5	E	0	1
7	G	0	1
9	I	0	2
11	L	0	3
17	R	0	1
18	S	0	2
19	T	0	1
20	U	0	1
24	Y	0	1
31	f	0	1
42	r	0	2
48	5	0	1
51	9	0	1
52	AA	0	1
56	EE	0	2
57	FF	0	2
59	HH	0	1
60	II	0	1

Continued on next page...

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
61	JJ	0	2
66	OO	0	1
68	QQ	0	1
70	SS	0	1
71	TT	0	1
72	UU	0	2
73	VV	0	1
74	WW	0	2
75	XX	0	1
78	aa	0	1
86	ii	0	3
All	All	0	49

All (50) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	5	1965	G	O3'-P	-18.41	1.33	1.61
87	jj	121	LYS	CE-NZ	16.52	1.99	1.49
51	9	908	A	O3'-P	7.18	1.72	1.61
19	T	3	ASN	CG-OD1	5.80	1.34	1.23
84	gg	64	HIS	ND1-CE1	5.51	1.38	1.32
42	r	6	GLN	CD-OE1	5.48	1.33	1.23
5	E	187	GLN	CD-OE1	5.46	1.33	1.23
61	JJ	132	GLN	CD-OE1	5.45	1.33	1.23
59	HH	97	GLN	CD-OE1	5.42	1.33	1.23
32	g	28	ASN	CG-OD1	5.40	1.33	1.23
86	ii	180	HIS	CD2-NE2	-5.40	1.31	1.37
59	HH	76	GLN	CD-OE1	5.37	1.33	1.23
86	ii	238	GLN	CD-OE1	5.37	1.33	1.23
87	jj	549	GLN	CD-OE1	5.37	1.33	1.23
3	C	212	ASN	CG-OD1	5.31	1.33	1.23
23	X	93	ASN	CG-OD1	5.31	1.33	1.23
15	P	116	HIS	ND1-CE1	5.31	1.37	1.32
86	ii	180	HIS	ND1-CE1	5.29	1.37	1.32
3	C	119	GLN	CD-OE1	5.27	1.33	1.23
17	R	34	ASN	CG-OD1	5.26	1.33	1.23
31	f	24	HIS	ND1-CE1	5.26	1.37	1.32
17	R	141	HIS	ND1-CE1	5.25	1.37	1.32
27	b	27	GLN	CD-OE1	5.25	1.33	1.23
65	NN	58	HIS	ND1-CE1	5.23	1.37	1.32
15	P	40	HIS	ND1-CE1	5.20	1.37	1.32
42	r	83	ASN	CG-OD1	5.19	1.33	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	EE	142	HIS	ND1-CE1	5.19	1.37	1.32
31	f	21	GLN	CD-OE1	5.17	1.33	1.23
71	TT	11	GLN	CD-OE1	5.16	1.33	1.23
34	i	80	HIS	ND1-CE1	5.16	1.37	1.32
71	TT	42	HIS	CD2-NE2	-5.14	1.32	1.37
13	N	109	HIS	ND1-CE1	5.14	1.37	1.32
20	U	95	ASN	CG-OD1	5.14	1.33	1.23
30	e	102	ASN	CG-OD1	5.13	1.33	1.23
8	H	76	HIS	ND1-CE1	5.13	1.37	1.32
1	A	216	HIS	ND1-CE1	5.12	1.37	1.32
15	P	40	HIS	CD2-NE2	-5.09	1.32	1.37
1	A	216	HIS	CD2-NE2	-5.09	1.32	1.37
62	KK	7	ASN	CG-OD1	5.08	1.33	1.23
56	EE	36	HIS	ND1-CE1	5.08	1.37	1.32
57	FF	186	ASN	CG-OD1	5.07	1.33	1.23
5	E	39	HIS	ND1-CE1	5.07	1.37	1.32
5	E	163	GLN	CD-OE1	5.07	1.33	1.23
84	gg	117	ASN	CG-OD1	5.06	1.33	1.23
31	f	21	GLN	CD-NE2	-5.06	1.22	1.33
9	I	95	HIS	ND1-CE1	5.04	1.37	1.32
11	L	188	ASN	CG-OD1	5.03	1.33	1.23
57	FF	179	ASN	CG-OD1	5.02	1.33	1.23
57	FF	149	GLN	CD-OE1	5.01	1.33	1.23
1	A	162	ASN	CG-OD1	5.01	1.33	1.23

All (539) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	98	GLY	N-CA-C	-13.80	98.97	111.67
48	5	1358	G	C4'-C3'-O3'	13.61	133.41	113.00
48	5	4975	G	C2'-C3'-O3'	13.14	129.21	109.50
48	5	1357	C	C4'-C3'-O3'	12.91	132.37	113.00
48	5	47	A	C4'-C3'-O3'	11.97	127.36	109.40
51	9	322	C	C2'-C3'-O3'	-11.82	95.97	113.70
47	3	70	G	C4'-C3'-O3'	11.07	129.60	113.00
14	O	110	PRO	N-CA-C	10.93	124.03	110.70
48	5	5061	A	C2'-C3'-O3'	10.55	125.33	109.50
48	5	2695	A	C2'-C3'-O3'	10.47	125.21	109.50
51	9	102	A	C2'-C3'-O3'	10.33	124.99	109.50
51	9	1235	G	C4'-C3'-O3'	10.31	128.47	113.00
48	5	1485	C	C2'-C3'-O3'	10.20	124.80	109.50
48	5	2858	A	C4'-C3'-O3'	10.15	128.23	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
47	3	70	G	N9-C1'-C2'	-10.09	96.87	112.00
48	5	1279	A	C2'-C3'-O3'	10.05	124.58	109.50
48	5	2046	G	C2'-C3'-O3'	10.02	124.52	109.50
48	5	3718	A	C4'-C3'-O3'	10.00	128.00	113.00
51	9	312	G	C2'-C3'-O3'	9.77	124.15	109.50
48	5	1365	C	C4'-C3'-O3'	9.56	123.75	109.40
48	5	90	G	C2'-C3'-O3'	9.50	127.95	113.70
48	5	1398	A	C2'-C3'-O3'	9.49	123.74	109.50
48	5	4528	G	C2'-C3'-O3'	9.47	127.90	113.70
48	5	2123	C	C2'-C3'-O3'	9.45	123.67	109.50
48	5	1239	C	C2'-C3'-O3'	9.42	123.64	109.50
48	5	3888	G	C2'-C3'-O3'	9.39	127.79	113.70
51	9	1394	G	C2'-C3'-O3'	9.34	127.71	113.70
48	5	1847	C	C4'-C3'-O3'	-9.28	99.08	113.00
48	5	118	C	C4'-C3'-O3'	-9.18	99.23	113.00
51	9	642	U	C4'-C3'-O3'	9.17	126.76	113.00
48	5	1696	C	C2'-C3'-O3'	9.09	123.13	109.50
48	5	4948	C	C2'-C3'-O3'	8.99	127.19	113.70
48	5	3753	G	N9-C1'-C2'	-8.99	98.52	112.00
48	5	4872	G	C2'-C3'-O3'	8.97	122.95	109.50
48	5	4951	G	C2'-C3'-O3'	8.95	122.93	109.50
48	5	385	A	C4'-C3'-O3'	8.95	122.82	109.40
48	5	276	C	C4'-C3'-O3'	-8.89	99.66	113.00
48	5	93	G	C4'-C3'-O3'	8.86	126.29	113.00
48	5	1211	G	C2'-C3'-O3'	8.85	126.98	113.70
51	9	72	C	C4'-C3'-O3'	8.85	122.67	109.40
48	5	3697	U	C2'-C3'-O3'	8.78	126.87	113.70
51	9	1212	G	C2'-C3'-O3'	-8.68	100.67	113.70
51	9	1664	A	C4'-C3'-O3'	8.68	122.43	109.40
48	5	1455	G	C2'-C3'-O3'	8.60	126.60	113.70
51	9	1235	G	N9-C1'-C2'	-8.59	99.11	112.00
51	9	870	A	C4'-C3'-O3'	8.59	122.28	109.40
48	5	2083	C	C4'-C3'-O3'	8.58	125.87	113.00
51	9	1386	A	C4'-C3'-O3'	8.58	125.88	113.00
51	9	594	A	C4'-C3'-O3'	8.38	121.97	109.40
48	5	930	G	C4'-C3'-O3'	8.37	121.95	109.40
51	9	1647	A	C2'-C3'-O3'	8.33	122.00	109.50
51	9	1448	A	C2'-C3'-O3'	-8.31	101.23	113.70
3	C	67	TRP	N-CA-C	-8.30	97.39	109.59
48	5	1969	G	C4'-C3'-O3'	8.30	125.45	113.00
48	5	2661	U	C2'-C3'-O3'	8.25	121.88	109.50
48	5	1292	C	C2'-C3'-O3'	8.23	126.05	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	1292	C	C4'-C3'-O3'	-8.21	100.69	113.00
48	5	1755	C	C2'-C3'-O3'	8.18	121.77	109.50
48	5	2068	C	C4'-C3'-O3'	8.06	121.49	109.40
47	3	70	G	C2'-C3'-O3'	-8.05	101.63	113.70
48	5	1410	U	C2'-C3'-O3'	8.05	121.57	109.50
48	5	4975	G	C4'-C3'-O3'	-8.01	97.39	109.40
48	5	275	C	C2'-C3'-O3'	7.99	125.68	113.70
51	9	797	C	C4'-C3'-O3'	7.99	121.38	109.40
48	5	5060	A	C2'-C3'-O3'	7.95	125.62	113.70
48	5	125	C	C2'-C3'-O3'	7.94	125.61	113.70
51	9	327	G	C2'-C3'-O3'	7.94	121.41	109.50
48	5	5027	C	C2'-C3'-O3'	7.92	121.37	109.50
48	5	1477	C	C2'-C3'-O3'	7.86	125.50	113.70
48	5	4170	A	C2'-C3'-O3'	7.82	121.24	109.50
51	9	1109	C	C2'-C3'-O3'	7.66	120.99	109.50
48	5	406	C	C2'-C3'-O3'	7.66	125.19	113.70
48	5	5059	C	C2'-C3'-O3'	7.65	125.18	113.70
48	5	2028	C	C2'-C3'-O3'	-7.65	102.22	113.70
48	5	48	G	C2'-C3'-O3'	7.62	120.93	109.50
51	9	688	U	C2'-C3'-O3'	7.61	120.92	109.50
48	5	3718	A	N9-C1'-C2'	-7.59	100.61	112.00
51	9	1235	G	C2'-C3'-O3'	-7.58	102.33	113.70
48	5	2116	C	C2'-C3'-O3'	7.56	120.84	109.50
51	9	1144	A	N9-C1'-C2'	7.56	123.34	112.00
47	3	69	G	C2'-C3'-O3'	-7.55	102.37	113.70
26	a	31	GLY	N-CA-C	-7.51	104.81	111.95
48	5	4699	U	C4'-C3'-O3'	7.50	120.65	109.40
48	5	1724	G	C4'-C3'-O3'	7.50	120.65	109.40
51	9	1386	A	N9-C1'-C2'	-7.50	100.76	112.00
72	UU	93	SER	N-CA-C	7.47	114.72	108.07
2	B	17	LEU	N-CA-C	7.47	122.83	108.12
48	5	3718	A	C2'-C3'-O3'	-7.42	102.58	113.70
3	C	232	VAL	CB-CA-C	-7.40	102.01	112.22
48	5	4075	U	C4'-C3'-O3'	7.40	120.50	109.40
51	9	909	G	C4'-C3'-O3'	-7.39	101.92	113.00
48	5	3619	G	C4'-C3'-O3'	-7.37	101.95	113.00
51	9	1212	G	N9-C1'-C2'	-7.35	100.98	112.00
48	5	1500	A	C4'-C3'-O3'	-7.34	101.99	113.00
48	5	1357	C	C2'-C3'-O3'	-7.29	102.76	113.70
2	B	258	HIS	CA-C-N	-7.29	110.73	119.84
2	B	258	HIS	C-N-CA	-7.29	110.73	119.84
50	8	94	G	C2'-C3'-O3'	7.29	120.43	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	956	A	C4'-C3'-O3'	7.29	120.33	109.40
48	5	4730	C	C4'-C3'-O3'	7.29	120.33	109.40
48	5	4965	U	C4'-C3'-O3'	-7.28	102.08	113.00
86	ii	180	HIS	CB-CG-CD2	-7.28	121.74	131.20
51	9	666	U	N1-C1'-C2'	7.26	122.89	112.00
51	9	183	G	C4'-C3'-O3'	7.26	120.28	109.40
48	5	4666	G	C4'-C3'-O3'	-7.23	102.16	113.00
48	5	2349	A	C4'-C3'-O3'	-7.22	102.17	113.00
47	3	30	G	C4'-C3'-O3'	7.21	123.82	113.00
48	5	917	A	C4'-C3'-O3'	7.19	120.19	109.40
51	9	1385	G	C4'-C3'-O3'	7.18	123.77	113.00
48	5	1236	C	C2'-C3'-O3'	7.16	124.43	113.70
48	5	1268	G	C4'-C3'-O3'	7.14	120.11	109.40
36	k	61	PRO	N-CA-C	7.13	119.40	110.70
51	9	291	G	C4'-C3'-O3'	7.13	120.10	109.40
48	5	3858	C	C4'-C3'-O3'	-7.13	102.31	113.00
48	5	977	C	C2'-C3'-O3'	7.12	124.39	113.70
15	P	40	HIS	CB-CG-CD2	-7.12	121.94	131.20
48	5	4885	U	C2'-C3'-O3'	7.10	124.35	113.70
48	5	2256	C	C2'-C3'-O3'	7.09	120.13	109.50
48	5	928	C	C2'-C3'-O3'	-7.08	103.08	113.70
75	XX	115	ILE	N-CA-CB	7.08	117.28	109.99
51	9	1212	G	C4'-C3'-O3'	7.06	123.59	113.00
86	ii	374	LEU	N-CA-C	7.01	118.92	111.28
84	gg	64	HIS	CB-CG-CD2	-7.00	122.10	131.20
21	V	13	LYS	N-CA-C	6.99	118.98	111.36
48	5	3876	A	C2'-C3'-O3'	6.99	119.99	109.50
48	5	2769	U	C4'-C3'-O3'	6.98	119.87	109.40
48	5	1818	G	C2'-C3'-O3'	6.95	124.12	113.70
48	5	2107	C	C2'-C3'-O3'	6.92	119.88	109.50
51	9	1115	U	C4'-C3'-O3'	6.91	119.77	109.40
48	5	1974	U	C4'-C3'-O3'	6.89	119.74	109.40
48	5	1380	G	C1'-C2'-O2'	-6.89	101.47	111.80
51	9	980	A	C4'-C3'-O3'	-6.88	102.68	113.00
48	5	965	G	C2'-C3'-O3'	6.88	119.81	109.50
5	E	39	HIS	CB-CG-CD2	-6.87	122.27	131.20
47	3	29	A	C2'-C3'-O3'	-6.85	103.43	113.70
51	9	1637	A	C4'-C3'-O3'	6.85	119.67	109.40
30	e	42	ASP	N-CA-C	-6.84	98.08	109.24
48	5	4378	A	C2'-C3'-O3'	6.82	119.73	109.50
1	A	216	HIS	CB-CG-CD2	-6.80	122.36	131.20
48	5	3657	U	C2'-C3'-O3'	6.78	123.87	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
50	8	124	U	C4'-C3'-O3'	6.77	119.55	109.40
51	9	1386	A	C2'-C3'-O3'	-6.75	103.58	113.70
48	5	1474	C	C2'-C3'-O3'	6.75	123.82	113.70
48	5	1969	G	C2'-C3'-O3'	-6.73	103.61	113.70
48	5	4115	G	C4'-C3'-O3'	6.72	119.48	109.40
61	JJ	144	ILE	N-CA-C	6.72	115.29	107.77
71	TT	42	HIS	CB-CG-CD2	-6.72	122.47	131.20
48	5	1500	A	C2'-C3'-O3'	6.71	123.76	113.70
48	5	2093	A	C2'-C3'-O3'	6.69	119.54	109.50
47	3	39	U	C2'-C3'-O3'	-6.69	103.66	113.70
51	9	110	U	C2'-C3'-O3'	6.69	123.74	113.70
48	5	4449	A	C4'-C3'-O3'	6.68	119.42	109.40
48	5	2632	U	N1-C1'-C2'	6.68	122.02	112.00
48	5	2588	C	C2'-C3'-O3'	-6.67	103.69	113.70
15	P	116	HIS	CB-CG-CD2	-6.67	122.53	131.20
48	5	957	G	C2'-C3'-O3'	6.66	119.49	109.50
56	EE	142	HIS	CB-CG-CD2	-6.66	122.54	131.20
48	5	1835	G	C2'-C3'-O3'	6.66	119.48	109.50
48	5	2797	C	N1-C1'-C2'	-6.66	104.02	114.00
48	5	3670	C	C4'-C3'-O3'	6.63	122.95	113.00
48	5	1	C	C4'-C3'-O3'	6.62	119.33	109.40
17	R	141	HIS	CB-CG-CD2	-6.62	122.60	131.20
48	5	4548	A	C4'-C3'-O3'	6.62	119.32	109.40
51	9	1473	G	C4'-C3'-O3'	6.61	122.92	113.00
48	5	1380	G	C4'-C3'-O3'	6.60	119.31	109.40
48	5	1388	A	C4'-C3'-O3'	-6.60	103.10	113.00
7	G	77	PRO	CA-C-N	6.60	126.23	119.56
7	G	77	PRO	C-N-CA	6.60	126.23	119.56
48	5	90	G	C4'-C3'-O3'	-6.60	103.10	113.00
5	E	72	PRO	N-CA-CB	6.58	110.24	103.00
65	NN	58	HIS	CB-CG-CD2	-6.57	122.66	131.20
31	f	24	HIS	CB-CG-CD2	-6.57	122.67	131.20
51	9	1294	G	N9-C1'-C2'	-6.56	102.15	112.00
48	5	1282	G	C1'-C2'-O2'	6.56	118.24	108.40
48	5	1672	U	N1-C1'-C2'	6.55	121.83	112.00
34	i	80	HIS	CB-CG-CD2	-6.54	122.70	131.20
2	B	261	ARG	N-CA-C	-6.54	98.78	108.79
51	9	1275	G	C2'-C3'-O3'	6.53	119.29	109.50
51	9	1	U	C5'-C4'-C3'	6.53	124.99	115.20
47	3	38	A	N9-C1'-C2'	-6.52	102.22	112.00
51	9	62	G	C2'-C3'-O3'	6.50	123.45	113.70
48	5	2714	G	C4'-C3'-O3'	-6.49	103.26	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	1369	C	C2'-C3'-O3'	-6.49	103.96	113.70
44	t	140	GLY	N-CA-C	6.49	120.74	112.83
48	5	3715	U	C4'-C3'-O3'	6.48	122.72	113.00
47	3	30	G	N9-C1'-C2'	-6.48	102.28	112.00
48	5	4400	G	C4'-C3'-O3'	-6.48	103.28	113.00
2	B	258	HIS	N-CA-C	6.47	124.12	109.81
51	9	160	U	C2'-C3'-O3'	6.47	119.20	109.50
48	5	4888	U	C2'-C3'-O3'	6.47	119.20	109.50
72	UU	72	GLU	N-CA-C	6.46	119.93	108.24
56	EE	36	HIS	CB-CG-CD2	-6.46	122.81	131.20
48	5	4213	A	C4'-C3'-O3'	-6.45	103.32	113.00
48	5	4543	G	C4'-C3'-O3'	-6.45	103.32	113.00
51	9	434	G	C2'-C3'-O3'	6.45	123.38	113.70
48	5	1975	G	C4'-C3'-O3'	6.45	119.07	109.40
48	5	2395	A	C2'-C3'-O3'	6.42	119.13	109.50
13	N	78	GLY	N-CA-C	-6.41	104.37	110.21
48	5	1848	C	C2'-C3'-O3'	6.41	123.31	113.70
13	N	109	HIS	CB-CG-CD2	-6.41	122.87	131.20
48	5	407	A	C4'-C3'-O3'	-6.39	103.42	113.00
48	5	932	A	C2'-C3'-O3'	6.38	119.07	109.50
48	5	4517	A	C4'-C3'-O3'	-6.36	103.46	113.00
48	5	1329	G	C4'-C3'-O3'	6.35	122.52	113.00
48	5	936	C	C2'-C3'-O3'	6.34	119.02	109.50
48	5	1697	G	C4'-C3'-O3'	6.33	118.90	109.40
51	9	933	G	C2'-C3'-O3'	-6.33	104.20	113.70
48	5	1390	G	C2'-C3'-O3'	6.33	123.19	113.70
8	H	76	HIS	CB-CG-CD2	-6.33	122.97	131.20
48	5	215	C	C4'-C3'-O3'	-6.33	103.51	113.00
47	3	38	A	C4'-C3'-O3'	6.32	122.48	113.00
24	Y	87	ARG	NE-CZ-NH2	6.32	124.89	119.20
48	5	944	A	C4'-C3'-O3'	-6.32	103.52	113.00
48	5	4211	C	C4'-C3'-O3'	-6.31	103.53	113.00
66	OO	37	PHE	N-CA-C	-6.29	100.52	109.96
48	5	2858	A	C1'-C2'-O2'	-6.29	98.96	108.40
48	5	2429	A	C4'-C3'-O3'	-6.28	103.58	113.00
51	9	1419	C	C2'-C3'-O3'	6.28	123.12	113.70
48	5	2266	C	C2'-C3'-O3'	6.28	118.92	109.50
48	5	2506	G	C4'-C3'-O3'	6.28	118.82	109.40
48	5	1280	C	C4'-C3'-O3'	-6.28	103.59	113.00
44	t	29	ALA	CA-C-N	6.27	127.68	119.84
44	t	29	ALA	C-N-CA	6.27	127.68	119.84
18	S	164	LYS	N-CA-C	-6.27	101.08	110.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	1613	A	C2'-C3'-O3'	6.26	118.90	109.50
48	5	964	A	O4'-C1'-C2'	-6.25	101.35	107.60
48	5	4473	A	C4'-C3'-O3'	-6.25	103.63	113.00
48	5	5024	C	C2'-C3'-O3'	6.23	118.84	109.50
86	ii	180	HIS	CB-CG-ND1	6.22	132.03	122.70
48	5	978	G	C2'-C3'-O3'	6.20	123.00	113.70
48	5	1232	G	C2'-C3'-O3'	6.18	118.77	109.50
48	5	3593	C	C4'-C3'-O3'	6.17	118.66	109.40
48	5	1891	A	C2'-C3'-O3'	6.17	118.76	109.50
48	5	4084	G	C2'-C3'-O3'	6.17	118.75	109.50
51	9	292	A	C2'-C3'-O3'	6.17	118.75	109.50
51	9	1835	A	C2'-C3'-O3'	6.17	118.75	109.50
48	5	3657	U	C4'-C3'-O3'	-6.15	103.77	113.00
48	5	1329	G	C2'-C3'-O3'	6.14	122.91	113.70
51	9	1298	G	C1'-C2'-O2'	-6.14	102.59	111.80
46	2	76	A	C3'-C2'-O2'	6.14	119.91	110.70
63	LL	99	TYR	N-CA-C	-6.13	99.29	109.46
53	BB	136	ARG	NE-CZ-NH2	6.12	124.71	119.20
51	9	1336	C	C4'-C3'-O3'	-6.12	103.82	113.00
51	9	169	U	C4'-C3'-O3'	-6.12	103.82	113.00
31	f	92	LEU	CA-C-N	6.12	126.01	119.28
31	f	92	LEU	C-N-CA	6.12	126.01	119.28
31	f	93	PRO	N-CA-C	6.11	121.90	113.65
48	5	4144	C	C4'-C3'-O3'	6.10	118.55	109.40
84	gg	64	HIS	CB-CG-ND1	6.09	131.84	122.70
45	1	63	SER	CA-C-N	6.09	127.45	119.84
45	1	63	SER	C-N-CA	6.09	127.45	119.84
48	5	215	C	C2'-C3'-O3'	6.07	122.80	113.70
48	5	4473	A	N9-C1'-C2'	6.06	121.09	112.00
48	5	1969	G	N9-C1'-C2'	-6.06	102.91	112.00
5	E	90	LYS	CA-C-N	6.05	127.41	119.84
5	E	90	LYS	C-N-CA	6.05	127.41	119.84
51	9	1824	A	C2'-C3'-O3'	6.05	122.77	113.70
48	5	1965	G	O3'-P-O5'	-6.04	94.94	104.00
56	EE	11	ARG	N-CA-C	-6.04	102.52	110.43
48	5	2088	A	C2'-C3'-O3'	6.04	118.55	109.50
48	5	2474	G	C3'-C2'-O2'	6.03	119.74	110.70
5	E	39	HIS	CB-CG-ND1	6.03	131.74	122.70
51	9	1253	A	C4'-C3'-O3'	6.03	118.44	109.40
22	W	14	TYR	CA-C-N	6.03	127.37	119.84
22	W	14	TYR	C-N-CA	6.03	127.37	119.84
51	9	1724	A	C3'-C2'-O2'	6.02	119.74	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	I	121	LYS	N-CA-C	-6.01	102.31	110.36
47	3	1	G	C5'-C4'-C3'	6.00	125.00	116.00
48	5	4900	C	C2'-C3'-O3'	6.00	118.51	109.50
48	5	497	G	C2'-C3'-O3'	-5.99	104.72	113.70
48	5	3672	G	C2'-C3'-O3'	-5.98	104.73	113.70
48	5	4318	C	C4'-C3'-O3'	-5.98	104.03	113.00
67	PP	121	ILE	N-CA-CB	5.98	117.66	110.31
49	7	96	U	C2'-C3'-O3'	-5.97	104.75	113.70
15	P	40	HIS	CB-CG-ND1	5.96	131.64	122.70
48	5	5049	G	C4'-C3'-O3'	5.92	118.27	109.40
51	9	1109	C	C1'-C2'-O2'	5.91	120.67	111.80
48	5	3859	G	C4'-C3'-O3'	-5.91	104.13	113.00
51	9	1294	G	C2'-C3'-O3'	-5.91	104.84	113.70
48	5	1214	C	C4'-C3'-O3'	5.90	118.25	109.40
2	B	254	ILE	N-CA-C	-5.90	104.58	110.30
48	5	1357	C	C3'-C2'-O2'	5.88	119.51	110.70
48	5	3753	G	C4'-C3'-O3'	5.87	121.81	113.00
51	9	1385	G	N9-C1'-C2'	-5.87	103.19	112.00
9	I	95	HIS	CB-CG-CD2	-5.86	123.58	131.20
48	5	4083	U	C4'-C3'-O3'	-5.86	104.22	113.00
48	5	1553	A	C4'-C3'-O3'	-5.86	104.22	113.00
51	9	1137	U	C2'-C3'-O3'	5.85	122.48	113.70
48	5	1457	G	C4'-C3'-O3'	-5.85	104.23	113.00
25	Z	36	ARG	CA-C-N	5.84	125.52	119.56
25	Z	36	ARG	C-N-CA	5.84	125.52	119.56
51	9	407	G	C2'-C3'-O3'	-5.83	104.95	113.70
56	EE	14	ALA	CA-C-N	5.83	125.85	119.90
56	EE	14	ALA	C-N-CA	5.83	125.85	119.90
48	5	979	C	C2'-C3'-O3'	5.83	122.44	113.70
51	9	1448	A	C4'-C3'-O3'	5.83	121.74	113.00
51	9	1535	U	C4'-C3'-O3'	-5.83	100.66	109.40
48	5	294	G	C4'-C3'-O3'	-5.83	104.26	113.00
51	9	215	G	C2'-C3'-O3'	5.83	118.24	109.50
61	JJ	163	SER	CA-C-N	5.82	125.30	119.24
61	JJ	163	SER	C-N-CA	5.82	125.30	119.24
48	5	451	C	C2'-C3'-O3'	5.82	118.22	109.50
51	9	1294	G	C4'-C3'-O3'	5.81	121.71	113.00
48	5	4116	C	C2'-C3'-O3'	5.80	118.19	109.50
48	5	1636	U	C4'-C3'-O3'	-5.79	104.32	113.00
48	5	918	G	C2'-C3'-O3'	-5.78	105.03	113.70
48	5	4435	U	C4'-C3'-O3'	-5.78	104.34	113.00
46	2	34	A	C4'-C3'-O3'	5.77	121.66	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	2468	U	C4'-C3'-O3'	5.76	118.05	109.40
1	A	216	HIS	CB-CG-ND1	5.76	131.34	122.70
51	9	1418	C	C4'-C3'-O3'	5.76	118.04	109.40
48	5	2427	G	C4'-C3'-O3'	-5.76	104.36	113.00
48	5	497	G	C4'-C3'-O3'	5.76	121.64	113.00
48	5	1429	C	C4'-C3'-O3'	-5.75	104.37	113.00
51	9	588	G	C2'-C3'-O3'	5.74	118.11	109.50
48	5	1633	G	C4'-C3'-O3'	5.73	121.60	113.00
48	5	3864	C	C2'-C3'-O3'	-5.73	105.11	113.70
48	5	4568	A	C4'-C3'-O3'	-5.72	104.41	113.00
48	5	2827	G	C2'-C3'-O3'	-5.72	100.92	109.50
48	5	265	C	C4'-C3'-O3'	5.72	117.97	109.40
66	OO	39	ASP	N-CA-C	5.71	122.95	110.80
43	s	200	ASN	CA-C-N	5.70	126.97	119.84
43	s	200	ASN	C-N-CA	5.70	126.97	119.84
48	5	201	C	C4'-C3'-O3'	-5.69	104.47	113.00
31	f	24	HIS	CB-CG-ND1	5.68	131.23	122.70
48	5	4228	G	C4'-C3'-O3'	-5.68	100.88	109.40
43	s	72	ASN	N-CA-C	5.67	116.80	109.65
51	9	1475	G	C4'-C3'-O3'	5.67	117.91	109.40
15	P	116	HIS	CB-CG-ND1	5.67	131.21	122.70
48	5	286	U	N1-C1'-C2'	5.67	120.50	112.00
48	5	2554	U	C4'-C3'-O3'	5.66	121.50	113.00
18	S	83	ARG	NE-CZ-NH2	5.66	124.29	119.20
48	5	486	C	C2'-C3'-O3'	5.64	122.16	113.70
56	EE	142	HIS	CB-CG-ND1	5.64	131.15	122.70
48	5	1266	G	C2'-C3'-O3'	5.63	122.15	113.70
48	5	1912	G	C4'-C3'-O3'	-5.63	104.55	113.00
51	9	909	G	O5'-P-OP2	-5.63	91.11	108.00
51	9	1293	A	C2'-C3'-O3'	-5.63	105.26	113.70
17	R	141	HIS	CB-CG-ND1	5.62	131.13	122.70
51	9	501	C	N1-C1'-C2'	5.62	120.44	112.00
51	9	1859	A	C4'-C3'-O3'	-5.62	104.56	113.00
48	5	3717	A	C2'-C3'-O3'	-5.62	105.27	113.70
65	NN	146	ALA	N-CA-C	5.62	118.94	111.75
48	5	664	G	C4'-C3'-O3'	5.61	117.82	109.40
48	5	2858	A	N9-C1'-C2'	-5.61	103.59	112.00
51	9	1247	C	C4'-C3'-O3'	5.61	117.81	109.40
48	5	2053	C	C4'-C3'-O3'	-5.61	104.59	113.00
48	5	4656	A	C2'-C3'-O3'	5.60	117.91	109.50
51	9	752	G	C4'-C3'-O3'	5.60	117.80	109.40
48	5	2251	G	C4'-C3'-O3'	5.60	117.80	109.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
65	NN	58	HIS	CB-CG-ND1	5.59	131.09	122.70
53	BB	208	HIS	N-CA-C	5.59	122.71	110.80
48	5	4521	U	C4'-C3'-O3'	-5.58	104.62	113.00
51	9	1313	A	C4'-C3'-O3'	5.57	117.75	109.40
51	9	1647	A	C4'-C3'-O3'	5.56	117.74	109.40
51	9	1060	A	N9-C1'-C2'	5.56	122.34	114.00
47	3	39	U	N1-C1'-C2'	-5.56	103.66	112.00
51	9	1681	U	N1-C1'-C2'	-5.54	103.68	112.00
35	j	9	GLY	N-CA-C	5.54	119.59	112.83
48	5	4882	U	C2'-C3'-O3'	5.54	117.81	109.50
56	EE	36	HIS	CB-CG-ND1	5.54	131.01	122.70
47	3	30	G	C2'-C3'-O3'	-5.53	105.40	113.70
48	5	5041	G	C2'-C3'-O3'	-5.53	105.41	113.70
48	5	4655	A	C4'-C3'-O3'	-5.53	104.71	113.00
34	i	80	HIS	CB-CG-ND1	5.52	130.99	122.70
48	5	1477	C	C4'-C3'-O3'	-5.52	104.72	113.00
2	B	16	PHE	CA-C-N	-5.52	116.19	122.26
2	B	16	PHE	C-N-CA	-5.52	116.19	122.26
48	5	1633	G	C2'-C3'-O3'	-5.51	105.43	113.70
48	5	3673	C	C2'-C3'-O3'	5.50	117.75	109.50
48	5	1968	G	C2'-C3'-O3'	-5.50	105.45	113.70
51	9	559	G	C1'-C2'-O2'	-5.50	103.55	111.80
25	Z	54	THR	N-CA-C	5.49	119.28	112.47
71	TT	42	HIS	CB-CG-ND1	5.49	130.93	122.70
59	HH	112	ASN	N-CA-C	-5.48	105.64	112.93
48	5	1280	C	N1-C1'-C2'	5.47	120.21	112.00
48	5	977	C	C4'-C3'-O3'	-5.47	104.80	113.00
51	9	322	C	N1-C1'-C2'	-5.47	103.80	112.00
13	N	109	HIS	CB-CG-ND1	5.46	130.90	122.70
47	3	38	A	C2'-C3'-O3'	-5.46	105.51	113.70
48	5	277	G	C4'-C3'-O3'	5.46	117.58	109.40
27	b	8	THR	N-CA-C	5.46	115.75	108.38
48	5	2119	C	C2'-C3'-O3'	5.45	117.68	109.50
33	h	96	ASN	N-CA-C	5.45	119.41	112.87
74	WW	55	ASP	N-CA-C	-5.45	103.20	110.55
48	5	3807	A	C4'-C3'-O3'	-5.44	104.83	113.00
48	5	2700	G	C4'-C3'-O3'	-5.44	104.84	113.00
51	9	1448	A	N9-C1'-C2'	-5.44	103.84	112.00
46	2	30	G	C4'-C3'-O3'	-5.43	104.85	113.00
51	9	1419	C	C4'-C3'-O3'	-5.43	104.85	113.00
51	9	450	C	C4'-C3'-O3'	-5.43	104.86	113.00
48	5	2027	U	C4'-C3'-O3'	5.42	121.13	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	4331	G	C2'-C3'-O3'	5.42	117.63	109.50
48	5	4375	C	C2'-C3'-O3'	-5.42	105.57	113.70
8	H	76	HIS	CB-CG-ND1	5.41	130.81	122.70
48	5	4965	U	C2'-C3'-O3'	5.40	121.81	113.70
51	9	659	G	C4'-C3'-O3'	-5.40	104.90	113.00
48	5	4998	G	C4'-C3'-O3'	-5.40	104.90	113.00
48	5	1380	G	N9-C1'-C2'	5.39	122.09	114.00
51	9	532	C	C2'-C3'-O3'	5.39	121.79	113.70
51	9	1489	A	C4'-C3'-O3'	5.39	121.09	113.00
2	B	18	PRO	N-CA-C	-5.39	101.37	112.47
51	9	1837	G	C2'-C3'-O3'	-5.39	105.62	113.70
51	9	1385	G	C2'-C3'-O3'	-5.39	105.62	113.70
41	p	52	VAL	CB-CA-C	-5.38	103.21	111.71
2	B	36	ASP	CA-C-N	-5.37	113.12	119.84
2	B	36	ASP	C-N-CA	-5.37	113.12	119.84
2	B	36	ASP	N-CA-C	-5.37	102.83	109.64
51	9	1354	G	C2'-C3'-O3'	5.37	121.75	113.70
5	E	217	GLN	N-CA-C	5.36	117.74	110.35
31	f	106	TYR	N-CA-C	5.36	121.64	109.81
48	5	1235	G	C2'-C3'-O3'	-5.35	105.67	113.70
48	5	2246	C	C2'-C3'-O3'	5.35	121.72	113.70
48	5	2083	C	C2'-C3'-O3'	-5.34	105.69	113.70
48	5	1214	C	C2'-C3'-O3'	5.34	117.51	109.50
63	LL	96	ILE	N-CA-C	-5.34	100.69	108.97
48	5	4938	A	C2'-C3'-O3'	-5.34	105.69	113.70
48	5	1236	C	C3'-C2'-O2'	5.34	118.70	110.70
48	5	2546	G	C3'-C2'-O2'	5.33	118.69	110.70
57	FF	43	GLU	N-CA-C	-5.32	99.46	110.80
48	5	1847	C	C2'-C3'-O3'	5.32	121.68	113.70
48	5	2864	A	C4'-C3'-O3'	-5.32	105.02	113.00
48	5	2068	C	C2'-C3'-O3'	5.32	117.47	109.50
48	5	2474	G	C2'-C3'-O3'	5.32	121.67	113.70
51	9	1532	C	C4'-C3'-O3'	-5.31	105.03	113.00
51	9	1252	C	C3'-C2'-O2'	5.31	118.66	110.70
48	5	134	G	C4'-C3'-O3'	5.30	117.34	109.40
48	5	430	G	C4'-C3'-O3'	-5.30	105.05	113.00
48	5	4558	U	C4'-C3'-O3'	-5.29	105.06	113.00
48	5	1990	A	C2'-C3'-O3'	5.29	121.64	113.70
48	5	4966	A	C4'-C3'-O3'	-5.28	105.07	113.00
48	5	5066	U	N1-C1'-C2'	5.28	119.92	112.00
51	9	1734	G	C4'-C3'-O3'	-5.27	105.10	113.00
48	5	1725	U	C1'-C2'-O2'	5.26	116.30	108.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	1921	C	C4'-C3'-O3'	5.26	117.30	109.40
48	5	3594	C	N1-C1'-C2'	5.26	119.90	112.00
48	5	4364	G	C4'-C3'-O3'	-5.25	105.12	113.00
60	II	4	SER	N-CA-C	5.25	117.32	108.96
11	L	99	ASP	N-CA-C	-5.25	102.53	110.50
48	5	1648	C	C4'-C3'-O3'	-5.25	105.13	113.00
48	5	4966	A	N9-C1'-C2'	5.24	119.87	112.00
48	5	218	A	C2'-C3'-O3'	5.24	117.36	109.50
54	CC	119	ALA	CB-CA-C	-5.24	110.11	117.23
32	g	67	LEU	N-CA-C	5.24	117.05	110.24
70	SS	89	ASP	N-CA-C	5.24	118.79	112.93
48	5	4625	C	C4'-C3'-O3'	-5.23	105.15	113.00
48	5	2027	U	N1-C1'-C2'	-5.23	104.16	112.00
48	5	2257	C	C4'-C3'-O3'	5.23	117.25	109.40
51	9	1268	C	N1-C1'-C2'	-5.23	104.15	112.00
48	5	1072	C	N1-C1'-C2'	5.22	121.84	114.00
48	5	4087	G	C2'-C3'-O3'	-5.22	105.86	113.70
14	O	108	ILE	CA-C-N	5.22	125.76	120.38
14	O	108	ILE	C-N-CA	5.22	125.76	120.38
48	5	989	U	C3'-C2'-O2'	5.21	118.51	110.70
48	5	1358	G	O4'-C1'-C2'	-5.20	102.40	107.60
51	9	1137	U	C3'-C2'-O2'	5.20	118.51	110.70
26	a	120	GLN	CA-C-N	5.20	125.19	119.89
26	a	120	GLN	C-N-CA	5.20	125.19	119.89
48	5	976	G	C3'-C2'-O2'	5.20	118.50	110.70
48	5	4696	C	C4'-C3'-O3'	-5.20	105.21	113.00
47	3	1	G	C5'-C4'-O4'	5.19	117.59	109.80
48	5	3903	A	C4'-C3'-O3'	-5.19	105.21	113.00
48	5	300	A	N9-C1'-C2'	5.19	119.79	112.00
51	9	446	G	C1'-C2'-O2'	5.19	116.19	108.40
48	5	2313	A	C3'-C2'-O2'	5.19	118.48	110.70
51	9	1455	A	N9-C1'-C2'	-5.19	104.22	112.00
51	9	640	A	C4'-C3'-O3'	-5.18	105.23	113.00
48	5	2064	G	C2'-C3'-O3'	5.18	121.47	113.70
48	5	1677	U	C4'-C3'-O3'	-5.18	105.24	113.00
48	5	2260	C	C3'-C2'-O2'	5.18	118.47	110.70
48	5	5022	U	C3'-C2'-O2'	5.18	118.46	110.70
48	5	1428	U	C4'-C3'-O3'	-5.17	105.24	113.00
51	9	746	C	C3'-C2'-O2'	5.17	118.45	110.70
57	FF	78	MET	N-CA-C	5.16	117.04	109.24
48	5	931	C	C3'-C2'-O2'	5.16	118.44	110.70
51	9	140	C	C3'-C2'-O2'	5.16	118.44	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	4266	G	C2'-C3'-O3'	-5.16	105.96	113.70
48	5	220	C	C4'-C3'-O3'	-5.15	105.27	113.00
19	T	27	LEU	N-CA-C	5.14	119.27	112.89
48	5	4307	A	C4'-C3'-O3'	-5.14	105.28	113.00
48	5	93	G	C1'-C2'-O2'	-5.14	100.69	108.40
73	VV	23	ILE	N-CA-CB	5.14	116.52	110.82
50	8	93	C	C4'-C3'-O3'	-5.13	105.30	113.00
51	9	659	G	N9-C1'-C2'	5.13	119.70	112.00
51	9	677	G	C4'-C3'-O3'	-5.13	105.30	113.00
51	9	913	A	C4'-C3'-O3'	-5.13	101.70	109.40
26	a	61	TYR	N-CA-C	5.13	116.72	111.03
42	r	103	HIS	CA-C-N	-5.13	114.33	119.56
42	r	103	HIS	C-N-CA	-5.13	114.33	119.56
51	9	164	A	C3'-C2'-O2'	5.13	118.39	110.70
51	9	821	G	C2'-C3'-O3'	5.13	117.19	109.50
51	9	1859	A	N9-C1'-C2'	5.13	119.69	112.00
48	5	166	C	C4'-C3'-O3'	5.12	120.68	113.00
48	5	4312	U	C4'-C3'-O3'	-5.12	105.32	113.00
51	9	872	A	C2'-C3'-O3'	5.12	117.18	109.50
48	5	4228	G	C2'-C3'-O3'	5.11	117.17	109.50
5	E	123	SER	N-CA-C	5.11	118.78	112.24
53	BB	136	ARG	CG-CD-NE	5.11	123.23	112.00
48	5	2422	C	C3'-C2'-O2'	5.10	118.34	110.70
48	5	1848	C	C4'-C3'-O3'	-5.09	105.36	113.00
9	I	49	CYS	N-CA-C	5.09	118.64	111.52
51	9	170	A	C4'-C3'-O3'	-5.09	105.37	113.00
48	5	962	C	C2'-C3'-O3'	5.08	117.12	109.50
48	5	2084	C	C4'-C3'-O3'	5.08	117.02	109.40
48	5	3697	U	C3'-C2'-O2'	5.08	118.32	110.70
48	5	1804	A	C2'-C3'-O3'	5.08	117.12	109.50
48	5	4640	C	C4'-C3'-O3'	-5.08	105.38	113.00
48	5	1358	G	C2'-C3'-O3'	-5.07	106.09	113.70
2	B	101	THR	N-CA-CB	5.07	117.42	109.97
12	M	8	GLU	N-CA-C	-5.07	102.29	110.14
48	5	48	G	C4'-C3'-O3'	5.06	117.00	109.40
56	EE	126	VAL	N-CA-CB	5.06	116.04	110.53
48	5	1336	G	C2'-C3'-O3'	-5.06	106.12	113.70
48	5	5026	U	N1-C1'-C2'	5.06	119.58	112.00
48	5	233	U	C2'-C3'-O3'	5.05	117.08	109.50
48	5	2262	G	C3'-C2'-O2'	5.05	118.28	110.70
51	9	919	A	C2'-C3'-O3'	-5.05	101.92	109.50
48	5	693	C	C2'-C3'-O3'	5.05	121.28	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	5	4585	U	C4'-C3'-O3'	-5.04	105.44	113.00
51	9	1477	U	C2'-C3'-O3'	5.04	121.26	113.70
48	5	266	C	C2'-C3'-O3'	-5.04	106.14	113.70
48	5	216	C	C3'-C2'-O2'	5.04	118.25	110.70
85	hh	42	C	C4'-C3'-O3'	5.04	116.95	109.40
48	5	3752	C	C2'-C3'-O3'	-5.03	106.15	113.70
48	5	4888	U	C4'-C3'-O3'	5.03	116.95	109.40
51	9	1	U	C5'-C4'-O4'	5.03	116.64	109.10
48	5	486	C	C3'-C2'-O2'	5.03	118.24	110.70
48	5	2505	C	C4'-C3'-O3'	5.03	116.94	109.40
54	CC	165	VAL	N-CA-CB	5.02	116.01	110.53
48	5	4069	U	C3'-C2'-O2'	5.02	118.23	110.70
48	5	1898	C	C2'-C3'-O3'	5.02	117.03	109.50
2	B	82	PRO	O-C-N	5.02	123.51	121.15
31	f	83	MET	N-CA-C	-5.01	103.78	110.55
51	9	617	G	C1'-C2'-O2'	5.01	115.92	108.40
63	LL	147	LYS	N-CA-C	5.01	121.47	110.80
48	5	2264	C	C4'-C3'-O3'	-5.01	105.48	113.00
51	9	839	C	N1-C1'-C2'	5.00	119.51	112.00
10	J	23	ASN	N-CA-C	5.00	117.54	108.69
44	t	2	PRO	N-CA-C	5.00	116.80	110.70

There are no chirality outliers.

All (49) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
48	5	2793	G	Sidechain
51	9	1448	A	Sidechain
1	A	196	TRP	Peptide
52	AA	73	ASP	Peptide
2	B	17	LEU	Peptide
2	B	257	TRP	Peptide
2	B	258	HIS	Peptide
2	B	351	LEU	Peptide
3	C	245	HIS	Peptide
3	C	339	THR	Peptide
4	D	36	LEU	Peptide
5	E	123	SER	Peptide
56	EE	129	ILE	Peptide
56	EE	155	LYS	Peptide
57	FF	42	LYS	Peptide
57	FF	43	GLU	Peptide

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Mol	Chain	Res	Type	Group
7	G	238	GLY	Peptide
59	HH	111	LYS	Peptide
9	I	188	LYS	Peptide
9	I	202	ASN	Peptide
60	II	154	LYS	Peptide
61	JJ	38	ARG	Peptide
61	JJ	93	LYS	Peptide
11	L	27	ASN	Peptide
11	L	46	ILE	Peptide
11	L	66	TYR	Peptide
66	OO	104	ARG	Peptide
68	QQ	42	ILE	Peptide
17	R	19	LYS	Peptide
18	S	163	HIS	Peptide
18	S	164	LYS	Peptide
70	SS	11	HIS	Peptide
19	T	26	PRO	Peptide
71	TT	42	HIS	Peptide
20	U	27	HIS	Peptide
72	UU	68	THR	Peptide
72	UU	72	GLU	Peptide
73	VV	32	ILE	Peptide
74	WW	27	ILE	Peptide
74	WW	54	ASP	Peptide
75	XX	98	ASP	Peptide
24	Y	7	VAL	Peptide
78	aa	7	ASN	Peptide
31	f	105	LEU	Peptide
86	ii	325	ASN	Peptide
86	ii	371	SER	Peptide
86	ii	373	PRO	Peptide
42	r	106	LEU	Peptide
42	r	70	GLN	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	A	1868	0	1959	29	0
2	B	3148	0	3267	63	0
3	C	2884	0	3062	47	0
4	D	2386	0	2419	32	0
5	E	1898	0	2035	73	0
6	F	1870	0	1994	28	0
7	G	1934	0	2087	32	0
8	H	1516	0	1597	17	0
9	I	1655	0	1704	43	0
10	J	1353	0	1386	15	0
11	L	1703	0	1820	28	0
12	M	1137	0	1211	16	0
13	N	1701	0	1749	19	0
14	O	1638	0	1777	31	0
15	P	1242	0	1269	12	0
16	Q	1506	0	1623	15	0
17	R	1508	0	1664	26	0
18	S	1454	0	1496	15	0
19	T	1298	0	1366	12	0
20	U	808	0	831	5	0
21	V	979	0	1039	5	0
22	W	528	0	541	5	0
23	X	976	0	1053	8	0
24	Y	1115	0	1205	7	0
25	Z	1107	0	1182	17	0
26	a	1162	0	1209	19	0
27	b	609	0	650	6	0
28	c	732	0	769	11	0
29	d	888	0	930	6	0
30	e	1053	0	1147	12	0
31	f	876	0	912	19	0
32	g	906	0	999	13	0
33	h	1013	0	1147	8	0
34	i	830	0	916	4	0
35	j	705	0	738	16	0
36	k	569	0	637	6	0
37	l	444	0	483	5	0
38	m	429	0	466	11	0
39	n	222	0	264	4	0
40	o	851	0	921	11	0
41	p	708	0	756	7	0
42	r	1001	0	1060	50	0
43	s	1523	0	1577	30	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	t	1238	0	1295	10	0
45	1	125	0	117	3	0
46	2	1616	0	824	19	0
47	3	1593	0	811	79	0
48	5	78486	0	39663	1372	0
49	7	2558	0	1296	27	0
50	8	3314	0	1683	56	0
51	9	36680	0	18529	640	0
52	AA	1642	0	1646	21	0
53	BB	1729	0	1803	14	0
54	CC	1692	0	1780	22	0
55	DD	1764	0	1863	9	0
56	EE	2073	0	2175	48	0
57	FF	1509	0	1562	30	0
58	GG	1923	0	2089	31	0
59	HH	1521	0	1616	22	0
60	II	1686	0	1772	31	0
61	JJ	1525	0	1640	22	0
62	KK	827	0	854	8	0
63	LL	1238	0	1315	18	0
64	MM	958	0	993	3	0
65	NN	1208	0	1294	13	0
66	OO	1016	0	1039	17	0
67	PP	1060	0	1120	17	0
68	QQ	1124	0	1193	11	0
69	RR	1047	0	1103	14	0
70	SS	1139	0	1191	19	0
71	TT	1102	0	1142	12	0
72	UU	821	0	883	6	0
73	VV	636	0	634	9	0
74	WW	1034	0	1080	27	0
75	XX	1098	0	1167	12	0
76	YY	1023	0	1090	12	0
77	ZZ	598	0	656	6	0
78	aa	781	0	828	17	0
79	bb	651	0	672	7	0
80	cc	475	0	497	4	0
81	dd	445	0	439	5	0
82	ee	457	0	502	4	0
83	ff	520	0	536	13	0
84	gg	2436	0	2393	12	0
85	hh	257	0	129	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
86	ii	3280	0	3326	65	0
87	jj	4543	0	4674	44	0
88	5	146	0	0	0	0
88	7	5	0	0	0	0
88	8	2	0	0	0	0
88	9	34	0	0	0	0
88	B	1	0	0	0	0
88	C	1	0	0	0	0
88	I	1	0	0	0	0
88	LL	1	0	0	0	0
88	P	1	0	0	0	0
88	V	1	0	0	0	0
88	g	1	0	0	0	0
88	hh	1	0	0	0	0
89	aa	1	0	0	1	0
89	dd	1	0	0	1	0
89	ff	1	0	0	1	0
89	g	1	0	0	0	0
89	j	1	0	0	0	0
89	m	1	0	0	1	0
89	o	1	0	0	2	0
89	p	1	0	0	0	0
90	jj	16	0	0	1	0
91	jj	54	0	24	0	0
All	All	226454	0	169855	3251	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 (3251) 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)
5:E:279:PRO:HG2	31:f:7:CYS:SG	1.65	1.36
51:9:1137:U:O4	51:9:1148:A:N1	1.61	1.34
48:5:976:G:H2'	48:5:977:C:O4'	1.26	1.32
17:R:172:ARG:NH1	51:9:908:A:H5"	1.47	1.29
48:5:2367:A:N1	48:5:2788:U:O4	1.66	1.29
5:E:126:ARG:NH1	48:5:712:C:H1'	1.49	1.27
87:jj:121:LYS:NZ	87:jj:121:LYS:CE	1.98	1.26
86:ii:323:TYR:HB3	86:ii:326:LEU:CD2	1.64	1.25
42:r:47:LYS:CG	42:r:102:TYR:HE2	1.49	1.25

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
87:jj:7:ARG:CZ	87:jj:56:ILE:O	1.86	1.24
51:9:872:A:N1	51:9:914:U:O4	1.72	1.22
48:5:4213:A:N1	48:5:4218:U:O4	1.72	1.21
48:5:1958:A:H5"	48:5:1962:A:O2'	1.03	1.20
12:M:116:LYS:CG	14:O:196:LEU:HD21	1.72	1.20
17:R:172:ARG:NH1	51:9:908:A:C5'	2.03	1.20
48:5:1929:A:N1	48:5:2054:U:O4	1.75	1.19
48:5:2468:U:O4	48:5:2473:A:N1	1.73	1.19
5:E:202:VAL:HG13	5:E:256:LYS:NZ	1.55	1.18
51:9:322:C:O2'	51:9:323:C:P	2.01	1.17
43:s:14:PHE:CE2	43:s:62:ARG:CD	2.28	1.17
9:I:191:ILE:CD1	9:I:200:ILE:HD12	1.74	1.16
42:r:47:LYS:HG2	42:r:102:TYR:HE2	1.07	1.16
43:s:14:PHE:CD2	43:s:62:ARG:CD	2.29	1.16
42:r:97:ILE:HG21	42:r:107:ARG:HB2	1.19	1.15
7:G:156:VAL:HG11	7:G:184:LEU:HD12	1.28	1.14
5:E:59:TYR:CD2	5:E:64:LEU:HD12	1.83	1.13
5:E:254:LEU:HD23	5:E:257:ILE:HD11	1.24	1.13
17:R:172:ARG:HH11	51:9:908:A:H5"	0.98	1.13
9:I:191:ILE:HD11	9:I:200:ILE:HD12	1.29	1.12
51:9:1137:U:C4	51:9:1148:A:N1	2.18	1.12
48:5:1958:A:C5'	48:5:1962:A:O2'	1.95	1.11
42:r:47:LYS:CG	42:r:102:TYR:CE2	2.33	1.11
11:L:163:LYS:HE2	48:5:509:A:H4'	1.16	1.11
43:s:14:PHE:CD2	43:s:62:ARG:HD3	1.85	1.10
5:E:279:PRO:CG	31:f:7:CYS:SG	2.40	1.10
86:ii:323:TYR:HB3	86:ii:326:LEU:HD21	1.30	1.10
12:M:116:LYS:HG3	14:O:196:LEU:HD21	1.33	1.09
5:E:126:ARG:HH11	48:5:712:C:C1'	1.65	1.09
5:E:126:ARG:NH1	48:5:712:C:C1'	2.14	1.08
9:I:191:ILE:HD12	9:I:200:ILE:CD1	1.84	1.07
5:E:202:VAL:CG1	5:E:256:LYS:NZ	2.17	1.07
9:I:191:ILE:CD1	9:I:200:ILE:CD1	2.33	1.07
78:aa:26:CYS:SG	89:aa:201:ZN:ZN	1.42	1.07
11:L:42:ARG:NH1	11:L:51:ALA:O	1.88	1.06
5:E:62:LYS:NZ	48:5:978:G:OP2	1.88	1.06
5:E:202:VAL:CG1	5:E:256:LYS:HZ2	1.68	1.05
43:s:14:PHE:CE1	48:5:1960:A:C2	2.44	1.05
43:s:14:PHE:CD2	43:s:62:ARG:HD2	1.91	1.05
51:9:1308:U:O3'	83:ff:128:ALA:HB2	1.52	1.05
48:5:2409:U:C4	48:5:2783:A:N1	2.25	1.05

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:3:67:U:C2'	47:3:68:C:H5'	1.86	1.04
5:E:62:LYS:HE3	48:5:978:G:OP1	1.54	1.04
5:E:202:VAL:HG13	5:E:256:LYS:HZ2	1.05	1.04
47:3:41:U:O3'	57:FF:198:ARG:HD3	1.55	1.04
42:r:97:ILE:CG2	42:r:107:ARG:HB2	1.88	1.04
43:s:14:PHE:HE2	43:s:62:ARG:CG	1.71	1.03
51:9:322:C:O2'	51:9:323:C:O5'	1.73	1.03
5:E:62:LYS:CE	48:5:978:G:P	2.46	1.03
51:9:1307:U:C2'	51:9:1308:U:H5"	1.87	1.03
51:9:872:A:N1	51:9:914:U:C4	2.27	1.03
48:5:3751:G:C2'	48:5:3752:C:H5'	1.90	1.02
51:9:1307:U:H2'	51:9:1308:U:H5"	1.04	1.02
5:E:126:ARG:HH11	48:5:712:C:H1'	0.92	1.02
9:I:184:MET:HE2	9:I:190:LEU:HG	1.40	1.02
42:r:47:LYS:HD2	42:r:102:TYR:CD2	1.94	1.01
43:s:14:PHE:HE2	43:s:62:ARG:HG3	1.22	1.01
51:9:1137:U:O4	51:9:1148:A:C2	2.12	1.01
9:I:184:MET:HE2	9:I:190:LEU:CD1	1.91	1.01
47:3:67:U:H2'	47:3:68:C:H5'	1.42	1.00
48:5:1929:A:H61	48:5:2054:U:H3	1.10	1.00
9:I:202:ASN:O	49:7:63:C:C5	2.15	0.99
5:E:126:ARG:NH1	48:5:712:C:C2'	2.26	0.99
5:E:62:LYS:CE	48:5:978:G:OP2	2.10	0.98
51:9:911:C:C2'	51:9:912:C:H5'	1.91	0.98
47:3:41:U:O2'	57:FF:198:ARG:NH2	1.94	0.98
10:J:80:GLU:OE2	10:J:170:TYR:OH	1.82	0.98
48:5:77:U:O4	48:5:335:A:N1	1.98	0.97
42:r:47:LYS:CD	42:r:102:TYR:CE2	2.47	0.97
48:5:1968:G:H1	48:5:2018:C:H42	1.12	0.97
51:9:1308:U:O3'	83:ff:128:ALA:CB	2.12	0.97
43:s:14:PHE:CE1	48:5:1960:A:N3	2.33	0.96
48:5:3751:G:O2'	48:5:3752:C:H5'	1.65	0.96
51:9:911:C:H2'	51:9:912:C:H5'	1.44	0.96
2:B:163:LEU:HD21	2:B:182:GLU:CG	1.95	0.96
38:m:99:CYS:HG	89:m:201:ZN:ZN	0.67	0.96
48:5:1278:C:H3'	48:5:1279:A:H4'	1.48	0.95
48:5:1983:A:N1	48:5:2008:U:C4	2.35	0.95
87:jj:7:ARG:HD3	87:jj:57:GLY:HA3	1.45	0.95
48:5:4278:C:HO2'	48:5:4281:A:H8	1.06	0.95
9:I:184:MET:HE2	9:I:190:LEU:CG	1.95	0.95
48:5:1983:A:N1	48:5:2008:U:O4	2.00	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:ii:323:TYR:CB	86:ii:326:LEU:HD21	1.96	0.94
48:5:957:G:H1'	48:5:958:G:OP2	1.67	0.94
2:B:163:LEU:CD2	2:B:182:GLU:HG2	1.96	0.94
42:r:32:LEU:HD11	42:r:106:LEU:HD12	1.48	0.94
5:E:126:ARG:HH12	48:5:712:C:C2'	1.81	0.94
40:o:77:CYS:HG	89:o:201:ZN:ZN	0.62	0.94
51:9:830:A:N6	51:9:844:U:N3	2.16	0.94
17:R:172:ARG:HH12	51:9:908:A:H5'	1.29	0.94
42:r:98:ARG:NH2	42:r:107:ARG:HH12	1.66	0.94
51:9:830:A:N1	51:9:844:U:O4	2.01	0.94
86:ii:323:TYR:O	86:ii:326:LEU:HG	1.68	0.93
48:5:2409:U:O4	48:5:2783:A:N1	1.99	0.93
51:9:1235:G:H5'	51:9:1247:C:H42	1.30	0.93
51:9:1407:U:H2'	51:9:1408:U:C5	2.04	0.92
9:I:48:LEU:HD21	9:I:145:LYS:HG2	1.49	0.92
42:r:98:ARG:HH22	42:r:107:ARG:HH12	1.12	0.92
5:E:126:ARG:NH1	48:5:712:C:O2'	2.03	0.92
54:CC:63:VAL:O	54:CC:63:VAL:HG12	1.67	0.92
4:D:200:MET:HE2	4:D:241:LYS:HE3	1.50	0.92
86:ii:329:MET:HG2	86:ii:373:PRO:HB3	1.50	0.92
42:r:98:ARG:NH2	42:r:107:ARG:NH1	2.17	0.92
48:5:976:G:C2'	48:5:977:C:O4'	2.17	0.92
2:B:163:LEU:CD2	2:B:182:GLU:CG	2.48	0.92
62:KK:15:LEU:HD22	62:KK:49:MET:HE1	1.49	0.92
12:M:116:LYS:HG2	14:O:196:LEU:HD21	1.49	0.91
42:r:47:LYS:HG2	42:r:102:TYR:CE2	1.98	0.91
70:SS:11:HIS:O	70:SS:12:ILE:HD12	1.69	0.91
48:5:2468:U:N3	48:5:2473:A:N6	2.17	0.91
42:r:47:LYS:CD	42:r:102:TYR:CD2	2.54	0.91
43:s:14:PHE:HD2	43:s:62:ARG:CD	1.83	0.91
2:B:174:ARG:NH1	48:5:4985:U:O2	2.05	0.90
48:5:1958:A:O2'	48:5:1959:U:H5"	1.72	0.90
43:s:14:PHE:CE2	43:s:62:ARG:HG3	2.06	0.90
9:I:191:ILE:HD12	9:I:200:ILE:HD11	1.52	0.90
5:E:251:SER:O	5:E:255:PRO:CD	2.20	0.89
42:r:107:ARG:HD2	42:r:108:MET:N	1.87	0.89
42:r:47:LYS:HB3	42:r:102:TYR:CE2	2.07	0.88
86:ii:323:TYR:HB3	86:ii:326:LEU:HD23	1.54	0.88
5:E:62:LYS:CE	48:5:978:G:OP1	2.20	0.88
51:9:1309:C:P	83:ff:128:ALA:HB2	2.13	0.88
48:5:102:G:O2'	48:5:1381:U:O2'	1.90	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:L:163:LYS:CE	48:5:509:A:H4'	2.04	0.88
42:r:103:HIS:ND1	42:r:106:LEU:HD23	1.89	0.88
43:s:14:PHE:HE1	48:5:1960:A:N3	1.68	0.88
48:5:1958:A:H5"	48:5:1962:A:HO2'	1.04	0.87
54:CC:73:VAL:O	54:CC:73:VAL:HG12	1.73	0.87
43:s:14:PHE:CE2	43:s:62:ARG:HD3	2.01	0.87
48:5:1279:A:H3'	48:5:1280:C:H5"	1.57	0.87
51:9:1455:A:O2'	51:9:1456:G:O5'	1.91	0.87
86:ii:345:TYR:CD1	86:ii:374:LEU:HD21	2.09	0.87
2:B:156:TYR:CD1	48:5:4909:A:H2'	2.10	0.86
51:9:872:A:C2	51:9:914:U:O4	2.26	0.86
87:jj:7:ARG:NH1	87:jj:56:ILE:O	2.07	0.86
4:D:200:MET:HE1	4:D:241:LYS:HG3	1.57	0.86
42:r:47:LYS:O	42:r:103:HIS:CD2	2.28	0.86
48:5:2027:U:O2'	48:5:2028:C:H5'	1.75	0.86
9:I:49:CYS:SG	9:I:51:HIS:NE2	2.48	0.86
42:r:47:LYS:CB	42:r:102:TYR:CE2	2.58	0.86
5:E:238:ILE:O	5:E:239:THR:OG1	1.93	0.85
43:s:14:PHE:CE2	43:s:62:ARG:HD2	2.06	0.85
5:E:62:LYS:HE2	48:5:978:G:OP2	1.76	0.85
5:E:62:LYS:HE2	48:5:978:G:P	2.15	0.85
51:9:1267:C:O2'	51:9:1268:C:H5'	1.76	0.85
5:E:254:LEU:CD2	5:E:257:ILE:HD11	2.05	0.85
48:5:1279:A:C3'	48:5:1280:C:H5"	2.07	0.85
48:5:1956:A:O2'	48:5:1957:U:H5'	1.77	0.84
81:dd:42:CYS:SG	89:dd:100:ZN:ZN	1.65	0.84
5:E:279:PRO:HG2	31:f:7:CYS:HG	1.38	0.84
7:G:156:VAL:HG11	7:G:184:LEU:CD1	2.05	0.84
86:ii:329:MET:HG2	86:ii:373:PRO:CB	2.07	0.84
17:R:172:ARG:NH1	51:9:908:A:H5'	1.89	0.84
47:3:68:C:O2'	47:3:69:G:O4'	1.95	0.84
48:5:1957:U:O2'	48:5:1958:A:C8	2.29	0.84
54:CC:192:LEU:HD23	54:CC:227:TRP:NE1	1.93	0.83
51:9:1385:G:O2'	51:9:1386:A:H5'	1.79	0.83
47:3:29:A:O2'	47:3:30:G:O5'	1.97	0.83
51:9:872:A:C6	51:9:914:U:O4	2.30	0.83
4:D:33:ARG:NH2	49:7:7:G:O3'	2.10	0.82
48:5:3629:A:H4'	51:9:1721:U:O2	1.80	0.82
86:ii:322:VAL:HG13	86:ii:326:LEU:HD11	1.62	0.82
7:G:86:VAL:HG21	7:G:185:LYS:HE3	1.62	0.82
51:9:1406:G:H3'	51:9:1407:U:H4'	1.62	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:157:ARG:O	5:E:178:ASN:ND2	2.13	0.81
9:I:202:ASN:O	49:7:63:C:C4	2.32	0.81
7:G:87:LEU:HD23	7:G:184:LEU:CD2	2.10	0.81
54:CC:211:LYS:O	54:CC:215:LEU:HG	1.80	0.81
51:9:1681:U:O2'	51:9:1682:C:O4'	1.98	0.81
43:s:14:PHE:HD2	43:s:62:ARG:HD3	1.37	0.81
4:D:200:MET:HE1	4:D:241:LYS:CG	2.10	0.81
12:M:81:ASP:OD1	12:M:84:THR:HG23	1.80	0.81
47:3:67:U:C3'	47:3:68:C:H5'	2.10	0.81
48:5:1367:C:C2	48:5:1370:G:H2'	2.15	0.81
15:P:127:ARG:NH2	48:5:2422:C:OP1	2.14	0.81
48:5:1379:C:H4'	48:5:1380:G:O4'	1.81	0.81
2:B:163:LEU:HD21	2:B:182:GLU:HG3	1.61	0.80
54:CC:192:LEU:HD23	54:CC:227:TRP:CD1	2.16	0.80
51:9:523:A:OP2	61:JJ:38:ARG:HD3	1.81	0.80
5:E:251:SER:O	5:E:255:PRO:HD2	1.81	0.80
2:B:156:TYR:CE1	48:5:4909:A:H2'	2.17	0.80
7:G:86:VAL:HG12	7:G:87:LEU:N	1.96	0.80
2:B:163:LEU:HD23	2:B:182:GLU:HG2	1.64	0.79
86:ii:323:TYR:CA	86:ii:326:LEU:HD21	2.11	0.79
48:5:745:G:H2'	48:5:746:A:O4'	1.82	0.79
48:5:919:C:N4	48:5:920:C:C4	2.51	0.79
48:5:957:G:N2	48:5:959:G:O6	2.15	0.79
48:5:4723:A:H2'	48:5:4724:A:C8	2.17	0.79
51:9:292:A:O2'	51:9:293:C:OP2	2.01	0.79
48:5:2395:A:O2'	48:5:2806:A:H1'	1.82	0.79
7:G:87:LEU:HD23	7:G:184:LEU:HD21	1.64	0.79
48:5:3629:A:C4'	51:9:1721:U:O2	2.30	0.79
51:9:1144:A:H2'	51:9:1145:A:C8	2.17	0.79
5:E:279:PRO:CD	31:f:7:CYS:SG	2.71	0.79
17:R:172:ARG:HH11	51:9:908:A:C5'	1.77	0.79
48:5:1929:A:N6	48:5:2054:U:H3	1.80	0.78
48:5:2026:A:C2'	48:5:2027:U:H5'	2.14	0.78
48:5:3751:G:H2'	48:5:3752:C:H5'	1.65	0.78
50:8:55:U:O4	50:8:62:A:N1	2.16	0.78
86:ii:329:MET:CG	86:ii:373:PRO:HB3	2.13	0.78
2:B:163:LEU:HD21	2:B:182:GLU:HG2	1.59	0.78
48:5:504:G:N1	48:5:654:C:C2	2.52	0.78
51:9:1309:C:OP1	83:ff:128:ALA:CB	2.32	0.78
43:s:10:LYS:NZ	48:5:1960:A:O2'	2.17	0.78
48:5:1213:G:C6	48:5:1215:C:C2	2.71	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1454:A:OP1	69:RR:3:ARG:NE	2.16	0.77
48:5:77:U:N3	48:5:335:A:N6	2.32	0.77
43:s:14:PHE:CE1	48:5:1960:A:H2	2.01	0.77
48:5:1563:A:C8	51:9:678:U:H4'	2.19	0.77
48:5:2769:U:C2	48:5:2770:C:C5	2.72	0.77
48:5:3723:A:H2'	48:5:3724:A:C8	2.20	0.77
51:9:1309:C:P	83:ff:128:ALA:CB	2.72	0.77
51:9:1137:U:O4	51:9:1148:A:C6	2.37	0.77
5:E:202:VAL:CG1	5:E:256:LYS:HZ1	1.97	0.76
48:5:2793:G:C6	48:5:2797:C:C4	2.74	0.76
2:B:36:ASP:OD2	2:B:39:LYS:HE2	1.83	0.76
51:9:1235:G:H5'	51:9:1247:C:N4	2.00	0.76
48:5:2468:U:C4	48:5:2473:A:N1	2.54	0.76
51:9:1268:C:O2'	51:9:1269:G:O5'	2.04	0.76
51:9:945:U:H2'	51:9:946:U:C6	2.21	0.75
47:3:35:U:C1'	51:9:1641:A:OP1	2.34	0.75
4:D:35:ARG:HB2	48:5:4325:A:C2	2.21	0.75
51:9:643:A:OP2	61:JJ:38:ARG:NH2	2.19	0.75
63:LL:131:CYS:SG	63:LL:132:ARG:N	2.60	0.75
48:5:2779:C:O2'	50:8:112:G:OP1	2.05	0.75
87:jj:7:ARG:HD3	87:jj:57:GLY:CA	2.17	0.75
51:9:1102:G:N2	51:9:1103:C:C2	2.54	0.75
45:1:57:ARG:NH2	48:5:3862:A:O2'	2.20	0.74
74:WW:6:VAL:HG12	74:WW:34:ILE:HD11	1.69	0.74
86:ii:323:TYR:CB	86:ii:326:LEU:CD2	2.53	0.74
51:9:1307:U:H2'	51:9:1308:U:C5'	2.01	0.74
3:C:158:VAL:HA	3:C:161:TYR:CE2	2.22	0.74
3:C:159:GLU:OE1	3:C:159:GLU:N	2.20	0.74
9:I:184:MET:CE	9:I:190:LEU:HG	2.16	0.74
51:9:290:U:OP1	56:EE:156:MET:HE2	1.86	0.74
51:9:1407:U:H2'	51:9:1408:U:C6	2.22	0.74
86:ii:323:TYR:O	86:ii:326:LEU:CG	2.35	0.74
43:s:14:PHE:HE2	43:s:62:ARG:CD	1.82	0.74
48:5:504:G:C2	48:5:654:C:O2	2.39	0.74
9:I:191:ILE:HD11	9:I:200:ILE:CD1	2.08	0.74
51:9:1405:A:H2'	51:9:1406:G:O4'	1.88	0.74
51:9:1680:G:O2'	51:9:1681:U:H5'	1.88	0.74
7:G:86:VAL:HG11	7:G:185:LYS:HG2	1.68	0.74
48:5:4371:G:O2'	48:5:4372:U:OP2	2.05	0.74
51:9:872:A:C6	51:9:914:U:C4	2.75	0.74
48:5:1279:A:H3'	48:5:1280:C:C5'	2.18	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:184:MET:CE	9:I:190:LEU:CD1	2.64	0.73
42:r:97:ILE:HG21	42:r:107:ARG:CB	2.11	0.73
48:5:22:G:N2	50:8:35:C:C2	2.56	0.73
48:5:1278:C:C3'	48:5:1279:A:H4'	2.18	0.73
11:L:116:ARG:NH1	11:L:155:MET:O	2.21	0.73
48:5:3914:U:H3	48:5:4378:A:N6	1.86	0.73
48:5:956:A:H4'	48:5:957:G:OP2	1.89	0.73
51:9:1386:A:O2'	51:9:1387:G:H5'	1.89	0.72
11:L:161:PHE:CE1	26:a:105:ARG:HG3	2.24	0.72
56:EE:87:MET:HE1	56:EE:236:ILE:HD13	1.71	0.72
47:3:76:A:N7	48:5:4371:G:C6	2.58	0.72
48:5:1280:C:C4	48:5:1282:G:C6	2.77	0.72
3:C:157:LYS:O	3:C:160:GLY:N	2.20	0.72
5:E:62:LYS:HE3	48:5:978:G:P	2.20	0.72
5:E:254:LEU:HD22	5:E:258:LYS:HE3	1.72	0.72
87:jj:21:CYS:SG	90:jj:601:SF4:FE2	1.82	0.72
7:G:86:VAL:HG12	7:G:87:LEU:H	1.55	0.71
56:EE:154:ILE:O	56:EE:155:LYS:HG3	1.89	0.71
48:5:2367:A:N1	48:5:2788:U:C4	2.57	0.71
51:9:65:C:N4	58:GG:134:GLY:O	2.24	0.71
48:5:977:C:C2'	48:5:978:G:H5'	2.20	0.71
30:e:30:LYS:NZ	48:5:2347:A:N3	2.39	0.71
48:5:2367:A:N6	48:5:2788:U:H3	1.88	0.71
48:5:1958:A:H4'	48:5:1962:A:H1'	1.72	0.71
48:5:2632:U:H2'	48:5:2633:U:C6	2.25	0.71
5:E:251:SER:O	5:E:255:PRO:HD3	1.91	0.71
48:5:516:C:C2	48:5:646:G:N2	2.59	0.71
48:5:2026:A:O2'	48:5:2027:U:H5'	1.90	0.71
48:5:3752:C:O2'	48:5:3753:G:OP2	2.09	0.71
51:9:1444:U:H2'	51:9:1445:U:C6	2.26	0.71
7:G:86:VAL:CG1	7:G:87:LEU:H	2.04	0.71
48:5:723:A:C2	48:5:943:A:N1	2.59	0.71
54:CC:192:LEU:HB3	54:CC:227:TRP:CD1	2.26	0.71
5:E:217:GLN:NE2	5:E:233:LYS:HD2	2.05	0.71
48:5:977:C:C2	48:5:978:G:C8	2.79	0.71
48:5:1724:G:H4'	48:5:1725:U:OP2	1.89	0.71
51:9:1235:G:H2'	51:9:1236:G:C8	2.26	0.71
42:r:47:LYS:HD2	42:r:102:TYR:CE2	2.22	0.70
48:5:181:C:N3	48:5:256:G:C2	2.59	0.70
7:G:87:LEU:CD2	7:G:184:LEU:HD21	2.20	0.70
30:e:91:CYS:O	30:e:93:LYS:N	2.25	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:3:39:U:O4'	57:FF:135:ARG:NH2	2.23	0.70
9:I:87:ILE:HG12	9:I:138:ILE:HG12	1.74	0.70
42:r:47:LYS:HD2	42:r:102:TYR:HD2	1.50	0.70
48:5:499:G:N2	48:5:656:C:C2	2.60	0.70
51:9:751:G:C2	51:9:792:C:N3	2.59	0.70
83:ff:139:CYS:SG	89:ff:200:ZN:ZN	1.79	0.70
51:9:1455:A:HO2'	51:9:1456:G:P	2.15	0.70
43:s:14:PHE:CE2	43:s:62:ARG:CG	2.57	0.70
42:r:47:LYS:CD	42:r:102:TYR:HE2	1.94	0.70
51:9:1212:G:O2'	51:9:1213:C:O5'	2.10	0.70
43:s:34:ASN:OD1	48:5:1969:G:P	2.50	0.69
48:5:482:G:H2'	48:5:483:G:C8	2.27	0.69
48:5:4901:G:N2	48:5:4921:C:C2	2.60	0.69
57:FF:35:LEU:HD23	57:FF:147:VAL:HG22	1.73	0.69
48:5:2773:G:N2	48:5:2774:C:C2	2.61	0.69
48:5:4510:A:O2'	48:5:4511:A:O4'	2.11	0.69
54:CC:63:VAL:O	54:CC:63:VAL:CG1	2.41	0.69
9:I:187:GLU:OE1	9:I:189:ARG:NE	2.24	0.69
48:5:1279:A:C2'	48:5:1280:C:H5"	2.21	0.69
48:5:1968:G:H1	48:5:2018:C:N4	1.89	0.69
2:B:163:LEU:CD2	2:B:182:GLU:HG3	2.17	0.69
35:j:59:THR:O	50:8:42:G:OP1	2.10	0.69
48:5:166:C:O2	48:5:166:C:H2'	1.90	0.69
48:5:4075:U:O2'	48:5:4076:G:H2'	1.91	0.69
48:5:2367:A:N6	48:5:2788:U:N3	2.40	0.69
48:5:4481:U:H2'	48:5:4482:U:C6	2.27	0.69
4:D:69:ILE:HD11	19:T:28:ALA:HB1	1.75	0.69
7:G:156:VAL:CG1	7:G:184:LEU:HD12	2.14	0.69
48:5:499:G:C2	48:5:656:C:C2	2.81	0.69
86:ii:329:MET:HG2	86:ii:373:PRO:CA	2.22	0.69
48:5:1635:C:H2'	48:5:1636:U:H5'	1.75	0.69
51:9:309:G:N2	51:9:310:C:C2	2.61	0.69
84:gg:87:LEU:HD21	84:gg:108:VAL:HG11	1.74	0.69
2:B:261:ARG:HE	48:5:3870:C:H4'	1.57	0.68
35:j:34:CYS:SG	35:j:36:LYS:HB3	2.33	0.68
48:5:1929:A:N1	48:5:2054:U:C4	2.59	0.68
48:5:1367:C:N3	48:5:1369:C:OP2	2.26	0.68
39:n:13:LEU:HD11	39:n:17:ARG:CZ	2.23	0.68
47:3:1:G:N2	47:3:2:C:C2	2.61	0.68
48:5:166:C:O2	48:5:167:C:H5	1.76	0.68
48:5:504:G:C6	48:5:654:C:N3	2.61	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:978:G:H2'	48:5:979:C:O4'	1.92	0.68
51:9:289:G:OP1	56:EE:155:LYS:HE3	1.94	0.68
47:3:13:C:N3	47:3:22:G:O6	2.26	0.68
48:5:1991:A:N6	48:5:2003:G:OP1	2.25	0.68
48:5:1380:G:O2'	48:5:1381:U:O2	2.10	0.68
48:5:1958:A:O2'	48:5:1959:U:C5'	2.41	0.68
87:jj:7:ARG:NH2	87:jj:56:ILE:O	2.26	0.68
47:3:39:U:O2'	47:3:40:C:H6	1.77	0.68
66:OO:95:ILE:HD11	66:OO:126:ILE:HD12	1.75	0.68
47:3:76:A:N6	48:5:4371:G:N7	2.41	0.68
47:3:76:A:C6	48:5:4371:G:C5	2.81	0.68
51:9:1235:G:H2'	51:9:1236:G:H8	1.59	0.68
51:9:1253:A:OP2	51:9:1526:G:N2	2.26	0.68
42:r:107:ARG:HD2	42:r:107:ARG:C	2.19	0.67
3:C:313:VAL:HG11	6:F:172:THR:HG21	1.76	0.67
48:5:497:G:N2	48:5:657:C:C2	2.62	0.67
51:9:1406:G:C3'	51:9:1407:U:H4'	2.24	0.67
48:5:2409:U:C4	48:5:2783:A:C2	2.82	0.67
48:5:642:G:N2	48:5:643:C:C2	2.62	0.67
48:5:2288:G:N2	48:5:2290:C:C2	2.63	0.67
48:5:4453:C:C2	48:5:4529:G:C2	2.82	0.67
51:9:1109:C:O2	51:9:1109:C:H2'	1.93	0.67
51:9:1137:U:N3	51:9:1148:A:N6	2.42	0.67
58:GG:67:VAL:HG23	58:GG:99:GLY:HA2	1.74	0.67
6:F:245:LEU:HD23	6:F:249:MET:HG3	1.77	0.67
48:5:166:C:O2	48:5:167:C:C5	2.48	0.67
48:5:1358:G:H8	48:5:1358:G:H3'	1.58	0.67
48:5:3914:U:H3	48:5:4378:A:H61	1.37	0.67
51:9:1137:U:C4	51:9:1148:A:C6	2.82	0.67
3:C:210:ILE:HG21	3:C:252:TRP:CZ3	2.30	0.67
48:5:973:G:N2	48:5:1282:G:O2'	2.28	0.67
47:3:39:U:H4'	66:OO:66:ARG:HH22	1.60	0.67
48:5:5026:U:OP2	60:II:79:ILE:HD13	1.95	0.67
48:5:1268:G:H4'	48:5:1269:G:OP1	1.95	0.67
51:9:1447:G:H2'	51:9:1448:A:C8	2.30	0.67
48:5:1264:C:H2'	48:5:1265:G:O4'	1.95	0.67
51:9:446:G:OP2	60:II:47:ARG:NH1	2.27	0.67
86:ii:372:MET:HG2	86:ii:373:PRO:CD	2.24	0.67
11:L:56:ARG:O	11:L:116:ARG:NH2	2.28	0.66
5:E:161:LEU:HD21	5:E:253:ILE:HD11	1.76	0.66
42:r:32:LEU:CD1	42:r:106:LEU:HD12	2.25	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1420:G:HO2'	71:TT:4:VAL:N	1.93	0.66
48:5:1359:G:H2'	48:5:1360:G:C8	2.30	0.66
48:5:1957:U:O2'	48:5:1958:A:H8	1.78	0.66
10:J:83:LEU:HD12	10:J:170:TYR:OH	1.96	0.66
48:5:22:G:C2	50:8:35:C:N3	2.64	0.66
51:9:1466:G:N2	51:9:1467:C:C2	2.63	0.66
51:9:103:A:OP2	51:9:356:C:N4	2.29	0.66
25:Z:52:LYS:O	25:Z:65:ARG:NH2	2.29	0.66
47:3:33:U:P	57:FF:127:ARG:HH12	2.19	0.66
48:5:1957:U:C2'	48:5:1958:A:C8	2.79	0.66
10:J:83:LEU:HD12	10:J:170:TYR:CZ	2.31	0.66
48:5:2826:U:H4'	48:5:2827:G:H5'	1.77	0.66
51:9:1308:U:H2'	51:9:1309:C:O4'	1.96	0.66
48:5:199:G:C6	48:5:201:C:N4	2.64	0.66
48:5:1358:G:C6	48:5:1379:C:N3	2.64	0.66
51:9:316:G:N2	51:9:317:C:C2	2.64	0.66
5:E:202:VAL:HG13	5:E:256:LYS:HZ1	1.50	0.65
76:YY:110:ARG:O	76:YY:113:ARG:O	2.14	0.65
51:9:15:U:H2'	51:9:16:G:O4'	1.95	0.65
51:9:1526:G:N2	51:9:1527:C:C2	2.65	0.65
71:TT:38:LYS:O	71:TT:39:LEU:HB2	1.95	0.65
4:D:23:ARG:NH2	48:5:4280:A:OP2	2.29	0.65
9:I:184:MET:HG2	9:I:189:ARG:HD2	1.79	0.65
48:5:1958:A:H3'	48:5:1958:A:OP2	1.96	0.65
48:5:723:A:H2	48:5:943:A:N1	1.93	0.65
51:9:1727:G:H2'	51:9:1728:U:O4'	1.97	0.65
48:5:1635:C:C2'	48:5:1636:U:H5'	2.27	0.65
86:ii:287:ILE:HD11	86:ii:392:VAL:HG21	1.76	0.65
3:C:271:ALA:O	3:C:272:SER:OG	2.11	0.65
51:9:1679:A:O2'	51:9:1680:G:OP2	2.09	0.65
2:B:14:LEU:HD23	2:B:17:LEU:HD21	1.77	0.65
47:3:39:U:O2'	47:3:40:C:O5'	2.14	0.65
2:B:45:ALA:HB3	2:B:183:ILE:HG23	1.79	0.65
48:5:1378:C:H3'	48:5:1379:C:C5'	2.26	0.65
2:B:254:ILE:HG23	2:B:266:VAL:HG11	1.78	0.65
4:D:200:MET:CE	4:D:241:LYS:HE3	2.26	0.65
8:H:95:VAL:HG22	38:m:82:LEU:HD22	1.76	0.65
48:5:1969:G:O2'	48:5:1970:A:H5'	1.97	0.65
51:9:164:A:O2'	51:9:165:G:O4'	2.15	0.65
51:9:1102:G:N1	51:9:1103:C:C4	2.65	0.64
28:c:34:THR:OG1	28:c:95:ALA:HB2	1.97	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1681:U:O2'	51:9:1682:C:O5'	2.14	0.64
48:5:1958:A:C5'	48:5:1962:A:HO2'	1.95	0.64
51:9:200:G:N2	51:9:201:C:C2	2.65	0.64
51:9:980:A:H2'	51:9:981:A:C8	2.32	0.64
51:9:1416:C:H2'	51:9:1417:C:C2	2.33	0.64
9:I:184:MET:CE	9:I:190:LEU:HD11	2.27	0.64
9:I:191:ILE:CD1	9:I:200:ILE:HD11	2.14	0.64
48:5:1358:G:H3'	48:5:1358:G:C8	2.32	0.64
48:5:2258:C:O2	48:5:2258:C:H2'	1.96	0.64
48:5:2468:U:H3	48:5:2473:A:N6	1.91	0.64
51:9:1401:A:C2	51:9:1402:A:C6	2.85	0.64
67:PP:34:MET:HE2	67:PP:34:MET:HA	1.78	0.64
9:I:204:GLY:O	9:I:205:PRO:C	2.41	0.64
48:5:2090:U:P	48:5:2090:U:O4'	2.56	0.64
42:r:47:LYS:O	42:r:103:HIS:HD2	1.78	0.64
48:5:1404:G:C2	48:5:1414:C:C2	2.85	0.64
51:9:50:A:N1	51:9:488:U:O4	2.30	0.64
51:9:522:A:O3'	61:JJ:131:ARG:NH2	2.31	0.64
68:QQ:12:VAL:HG21	68:QQ:91:ALA:HA	1.80	0.64
14:O:201:PHE:HB2	14:O:202:LEU:HD13	1.80	0.64
48:5:986:C:C2	48:5:1068:G:N2	2.65	0.64
51:9:1617:G:N7	67:PP:43:ARG:NH1	2.46	0.64
48:5:2084:C:H3'	48:5:2085:G:C5'	2.27	0.64
48:5:5066:U:H2'	48:5:5067:U:C6	2.32	0.64
49:7:30:C:C2	49:7:48:G:N2	2.65	0.64
51:9:1835:A:C4	51:9:1863:A:N7	2.66	0.64
56:EE:31:PRO:CD	56:EE:38:LEU:HD13	2.28	0.64
48:5:1682:A:C2	48:5:1683:U:C2	2.85	0.64
48:5:2268:A:H4'	48:5:2269:C:H5'	1.80	0.64
51:9:1211:G:O2'	51:9:1212:G:H5'	1.97	0.64
51:9:1384:C:C2'	51:9:1385:G:H5'	2.28	0.64
56:EE:163:ASP:O	56:EE:164:LEU:HB2	1.97	0.64
7:G:86:VAL:HG13	7:G:183:ILE:O	1.98	0.63
51:9:200:G:N1	51:9:201:C:C4	2.66	0.63
51:9:1859:A:C2	51:9:1860:A:C6	2.85	0.63
71:TT:33:TRP:O	71:TT:35:ASP:N	2.31	0.63
48:5:1213:G:N1	48:5:1215:C:C2	2.67	0.63
48:5:4213:A:N1	48:5:4218:U:C4	2.61	0.63
48:5:4579:U:H2'	48:5:4580:U:C6	2.33	0.63
48:5:4723:A:C2	48:5:4724:A:C6	2.86	0.63
86:ii:329:MET:CG	86:ii:373:PRO:CB	2.75	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:167:C:C2	48:5:269:G:N2	2.66	0.63
48:5:1378:C:H3'	48:5:1379:C:H5'	1.81	0.63
48:5:1823:G:O3'	48:5:1825:A:P	2.56	0.63
51:9:107:A:H2'	51:9:108:G:C8	2.33	0.63
26:a:4:ARG:NH2	48:5:2341:A:OP2	2.32	0.63
48:5:976:G:H4'	48:5:976:G:OP1	1.98	0.63
51:9:1109:C:O2'	51:9:1110:G:O5'	2.17	0.63
47:3:37:A:C2'	47:3:38:A:H5'	2.28	0.63
47:3:41:U:O3'	57:FF:198:ARG:CD	2.40	0.63
54:CC:73:VAL:O	54:CC:73:VAL:CG1	2.47	0.63
5:E:254:LEU:HD23	5:E:257:ILE:CD1	2.14	0.63
48:5:1550:G:C2	48:5:1579:C:C2	2.86	0.63
6:F:161:TYR:CE2	6:F:170:ALA:HB2	2.34	0.63
48:5:504:G:C6	48:5:654:C:C2	2.87	0.63
51:9:830:A:N6	51:9:844:U:H3	1.97	0.63
86:ii:326:LEU:O	86:ii:327:ASP:HB2	1.99	0.63
11:L:65:ARG:HG2	11:L:66:TYR:CE2	2.34	0.62
48:5:22:G:C2	50:8:35:C:C2	2.87	0.62
3:C:158:VAL:HA	3:C:161:TYR:CD2	2.33	0.62
9:I:204:GLY:O	9:I:205:PRO:O	2.16	0.62
47:3:35:U:H1'	51:9:1641:A:OP1	1.98	0.62
48:5:1983:A:C6	48:5:2008:U:O4	2.52	0.62
48:5:2547:G:N2	48:5:2548:C:C2	2.68	0.62
51:9:1842:C:C2	51:9:1858:G:C2	2.87	0.62
86:ii:91:ASN:HA	86:ii:119:PRO:HA	1.80	0.62
3:C:32:ILE:HD12	3:C:130:ALA:HB2	1.82	0.62
48:5:1879:C:O2'	48:5:1891:A:N3	2.29	0.62
48:5:2108:G:C6	48:5:2125:C:N4	2.67	0.62
48:5:3668:C:C2	48:5:3675:G:C2	2.87	0.62
51:9:1211:G:C2'	51:9:1212:G:H5'	2.29	0.62
48:5:1339:U:H2'	48:5:1340:C:C6	2.34	0.62
7:G:87:LEU:CD2	7:G:184:LEU:CD2	2.77	0.62
48:5:3900:G:N2	48:5:4562:C:C2	2.67	0.62
51:9:448:A:H5"	60:II:25:ARG:HA	1.80	0.62
7:G:86:VAL:CG1	7:G:87:LEU:N	2.57	0.62
12:M:81:ASP:OD1	12:M:84:THR:CG2	2.47	0.62
48:5:3783:A:H4'	48:5:3784:A:H5"	1.81	0.62
48:5:4769:G:H2'	48:5:4770:U:O4'	2.00	0.62
53:BB:30:TRP:CZ2	53:BB:48:LEU:HD23	2.35	0.62
87:jj:375:MET:HE1	87:jj:548:PRO:HB3	1.82	0.62
30:e:108:ARG:HH22	30:e:127:ALA:HB3	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1408:U:O4	51:9:1409:A:N6	2.33	0.62
48:5:2409:U:O4	48:5:2783:A:C6	2.52	0.62
4:D:200:MET:CE	4:D:241:LYS:HG3	2.28	0.62
48:5:3765:G:O2'	48:5:3766:A:C8	2.49	0.62
51:9:217:A:C2	51:9:309:G:N1	2.67	0.62
48:5:1081:C:C2	48:5:1220:G:C2	2.87	0.61
48:5:2905:C:C2	48:5:3590:G:N2	2.68	0.61
48:5:3723:A:C2	48:5:3724:A:C6	2.88	0.61
51:9:33:G:O6	51:9:522:A:H2	1.83	0.61
51:9:751:G:N2	51:9:792:C:C2	2.68	0.61
84:gg:197:THR:HG21	84:gg:238:ALA:HA	1.82	0.61
24:Y:49:ILE:HD13	24:Y:80:ILE:HD13	1.82	0.61
51:9:488:U:O2	51:9:488:U:H2'	2.00	0.61
51:9:1771:G:N2	51:9:1772:C:C2	2.67	0.61
16:Q:65:ARG:NH1	48:5:1502:G:OP1	2.32	0.61
37:l:5:LYS:NZ	48:5:2407:G:N7	2.47	0.61
48:5:1241:C:N4	48:5:1270:A:O2'	2.34	0.61
48:5:1296:G:H1'	48:5:1297:U:P	2.41	0.61
51:9:372:U:O2'	63:LL:82:MET:HE3	2.00	0.61
5:E:279:PRO:HD2	31:f:7:CYS:SG	2.39	0.61
48:5:77:U:H3	48:5:335:A:N6	1.97	0.61
48:5:1723:A:N1	48:5:1838:A:C2	2.67	0.61
48:5:2045:G:O6	48:5:3870:C:O2'	2.17	0.61
5:E:59:TYR:CD2	5:E:64:LEU:CD1	2.73	0.61
48:5:1186:U:H2'	48:5:1187:G:O4'	2.00	0.61
48:5:1358:G:C8	48:5:1358:G:C3'	2.84	0.61
48:5:4885:U:H2'	48:5:4886:C:O4'	1.99	0.61
51:9:834:C:N3	51:9:841:G:C2	2.68	0.61
51:9:1233:G:O2'	51:9:1234:C:H5'	1.99	0.61
52:AA:50:ASN:HA	69:RR:105:MET:HE1	1.82	0.61
48:5:1983:A:C2	48:5:2008:U:C4	2.87	0.61
48:5:2127:C:H2'	48:5:2128:G:C8	2.36	0.61
51:9:1616:U:OP2	67:PP:43:ARG:NH2	2.33	0.61
74:WW:6:VAL:HG13	74:WW:29:PRO:HG2	1.83	0.61
47:3:38:A:O2'	47:3:39:U:H5'	2.00	0.61
48:5:1999:A:H1'	48:5:2017:A:N1	2.16	0.61
48:5:2758:G:O2'	48:5:2764:A:N3	2.26	0.61
18:S:9:GLU:HG2	18:S:33:PHE:CE2	2.36	0.61
42:r:47:LYS:CD	42:r:102:TYR:HD2	2.07	0.61
48:5:977:C:C4	48:5:978:G:N7	2.69	0.61
58:GG:3:LEU:HD13	58:GG:111:LEU:HD11	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
87:jj:7:ARG:CD	87:jj:57:GLY:HA3	2.27	0.61
28:c:45:LEU:HD23	28:c:96:ILE:HD12	1.83	0.61
41:p:39:CYS:SG	41:p:41:PHE:HB2	2.41	0.61
48:5:1957:U:C2'	48:5:1958:A:H8	2.14	0.61
51:9:409:C:C2	51:9:432:G:N2	2.68	0.61
48:5:197:A:N1	48:5:225:G:O2'	2.25	0.61
48:5:1987:C:O2	48:5:1987:C:H2'	2.00	0.61
48:5:2554:U:H4'	48:5:2555:G:OP1	2.01	0.61
48:5:2623:A:C2	48:5:2624:G:C5	2.89	0.61
48:5:3594:C:O2	48:5:3594:C:H2'	2.01	0.61
48:5:4411:G:C2	48:5:4432:C:C2	2.89	0.61
51:9:1351:G:O2'	51:9:1378:A:N1	2.20	0.61
1:A:234:LYS:HG2	1:A:238:ILE:HD12	1.83	0.60
2:B:163:LEU:HD23	2:B:182:GLU:CG	2.24	0.60
51:9:1531:A:H2'	51:9:1532:C:C6	2.36	0.60
63:LL:77:VAL:HG22	63:LL:86:ILE:HD12	1.83	0.60
2:B:120:LYS:N	48:5:4968:A:OP1	2.33	0.60
48:5:111:C:C2	48:5:331:G:C2	2.89	0.60
48:5:181:C:C2	48:5:256:G:N2	2.69	0.60
51:9:301:A:N3	60:II:73:THR:HG21	2.15	0.60
51:9:474:G:N2	51:9:475:C:C2	2.70	0.60
84:gg:109:LEU:HD11	84:gg:125:ARG:HE	1.65	0.60
86:ii:345:TYR:HD1	86:ii:374:LEU:HD11	1.66	0.60
3:C:45:ARG:NH2	48:5:2295:C:O2'	2.34	0.60
3:C:114:ARG:HB2	3:C:114:ARG:CZ	2.31	0.60
28:c:85:CYS:SG	28:c:94:LEU:HD22	2.42	0.60
48:5:3629:A:O4'	51:9:1721:U:O2	2.19	0.60
3:C:76:ILE:HG22	3:C:77:PRO:HD2	1.84	0.60
48:5:515:C:C2	48:5:647:G:C2	2.90	0.60
65:NN:125:LEU:HD22	65:NN:129:TYR:CE2	2.36	0.60
42:r:17:LEU:HD23	42:r:18:ILE:N	2.17	0.60
48:5:286:U:H2'	48:5:287:U:C6	2.37	0.60
48:5:1213:G:C2	48:5:1215:C:O2	2.54	0.60
86:ii:323:TYR:N	86:ii:326:LEU:HD21	2.16	0.60
13:N:202:ARG:NH2	48:5:1372:A:OP1	2.34	0.60
48:5:106:A:H1'	48:5:336:A:C8	2.36	0.60
48:5:1268:G:C2	48:5:1270:A:C8	2.90	0.60
48:5:1672:U:H2'	48:5:1673:U:C6	2.36	0.60
48:5:2288:G:N1	48:5:2290:C:C4	2.70	0.60
48:5:4207:C:C2	48:5:4226:G:C2	2.90	0.60
56:EE:173:ILE:HD11	56:EE:235:TRP:CE3	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:o:77:CYS:SG	89:o:201:ZN:ZN	1.79	0.60
48:5:2616:C:C2	48:5:2722:G:C2	2.89	0.60
51:9:71:G:O2'	51:9:72:C:OP1	2.20	0.60
51:9:1130:G:C2	51:9:1131:G:C8	2.89	0.60
75:XX:41:PHE:O	75:XX:43:GLY:N	2.34	0.60
86:ii:78:VAL:HG23	86:ii:95:VAL:HG11	1.82	0.60
48:5:1839:U:H2'	48:5:1840:G:O4'	2.00	0.60
48:5:2793:G:C5	48:5:2797:C:N4	2.69	0.60
48:5:4283:G:N2	48:5:4284:C:C2	2.70	0.60
51:9:56:G:OP1	76:YY:111:LYS:NZ	2.31	0.60
63:LL:66:VAL:HG23	63:LL:131:CYS:SG	2.42	0.60
48:5:4901:G:C2	48:5:4921:C:N3	2.70	0.60
51:9:293:C:O2	51:9:293:C:H2'	2.02	0.60
51:9:1551:U:H2'	51:9:1552:G:C8	2.37	0.60
56:EE:48:LEU:HD21	56:EE:70:ILE:HD11	1.84	0.60
56:EE:183:VAL:HG11	56:EE:220:THR:HG21	1.82	0.60
70:SS:33:ILE:HD13	70:SS:71:MET:HE1	1.84	0.60
48:5:4092:G:N2	48:5:4158:C:C2	2.70	0.59
48:5:4892:A:N1	48:5:4927:G:O6	2.35	0.59
48:5:5000:G:C2	48:5:5051:C:C2	2.89	0.59
51:9:598:G:C2	51:9:639:C:C2	2.90	0.59
51:9:824:C:C2	61:JJ:144:ILE:HD13	2.36	0.59
28:c:84:ALA:HA	65:NN:151:ALA:C	2.26	0.59
45:1:68:VAL:C	46:2:76:A:O2'	2.45	0.59
46:2:53:G:C2	46:2:62:C:C2	2.90	0.59
48:5:1074:G:N2	48:5:1075:G:C2	2.71	0.59
48:5:3617:G:O2'	48:5:3620:G:N7	2.35	0.59
51:9:1528:G:N2	51:9:1529:C:C2	2.70	0.59
18:S:84:TYR:CE2	18:S:93:MET:HE3	2.37	0.59
48:5:2827:G:N3	48:5:2827:G:H2'	2.18	0.59
55:DD:64:ARG:NH2	62:KK:73:ASN:OD1	2.35	0.59
73:VV:55:ILE:HD11	73:VV:69:ILE:HD11	1.83	0.59
2:B:154:LYS:HB2	2:B:154:LYS:NZ	2.18	0.59
48:5:166:C:O2	48:5:166:C:C2'	2.49	0.59
48:5:222:C:H2'	48:5:223:G:O4'	2.03	0.59
51:9:834:C:H3'	51:9:835:C:C4'	2.33	0.59
69:RR:17:ILE:HG23	69:RR:58:MET:HE1	1.83	0.59
3:C:108:TRP:HZ2	11:L:19:GLN:HE21	1.51	0.59
12:M:116:LYS:HG3	14:O:196:LEU:CD2	2.20	0.59
18:S:53:LYS:NZ	49:7:74:A:O2'	2.35	0.59
47:3:5:G:N2	47:3:6:G:C4	2.71	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:104:ARG:NH2	48:5:1353:G:N7	2.50	0.59
47:3:41:U:C3'	57:FF:198:ARG:HD3	2.32	0.59
48:5:917:A:C2	48:5:919:C:C5	2.90	0.59
48:5:1266:G:H5"	48:5:2112:G:C2	2.37	0.59
48:5:1541:C:C2	48:5:1619:G:C2	2.90	0.59
48:5:3662:A:H61	48:5:3680:U:H3	1.48	0.59
49:7:30:C:N3	49:7:48:G:C2	2.71	0.59
58:GG:188:LYS:HA	58:GG:191:ARG:HD3	1.85	0.59
48:5:2446:C:C2	48:5:2515:G:C2	2.90	0.59
51:9:190:G:O2'	51:9:209:A:N6	2.36	0.59
48:5:113:A:H2'	48:5:114:G:O4'	2.03	0.59
48:5:1957:U:H2'	48:5:1958:A:C8	2.38	0.59
3:C:357:ALA:O	3:C:361:LYS:HG3	2.03	0.59
14:O:18:ARG:NH2	48:5:2057:A:OP1	2.36	0.59
51:9:50:A:N1	51:9:488:U:C4	2.71	0.59
48:5:2084:C:H3'	48:5:2085:G:H5'	1.84	0.58
48:5:2654:C:C2	48:5:2681:G:N2	2.71	0.58
61:JJ:53:ILE:HD13	61:JJ:81:LEU:HD21	1.85	0.58
51:9:1398:G:N2	51:9:1399:C:C2	2.71	0.58
48:5:4219:A:H2'	48:5:4220:A:C8	2.37	0.58
51:9:217:A:C2	51:9:218:U:C6	2.90	0.58
86:ii:324:GLU:HG3	86:ii:325:ASN:N	2.18	0.58
1:A:196:TRP:O	1:A:197:PRO:C	2.46	0.58
10:J:119:TYR:HE2	10:J:125:ILE:HD11	1.67	0.58
47:3:10:G:N2	47:3:11:C:C2	2.71	0.58
48:5:976:G:C2	48:5:977:C:C2	2.92	0.58
48:5:4441:A:H5"	48:5:4441:A:H8	1.68	0.58
51:9:309:G:N1	51:9:310:C:C4	2.71	0.58
86:ii:329:MET:HG2	86:ii:373:PRO:HA	1.84	0.58
47:3:53:G:C2	47:3:62:C:C2	2.92	0.58
48:5:919:C:C4	48:5:920:C:C5	2.92	0.58
48:5:1074:G:C2	48:5:1238:A:C2	2.91	0.58
48:5:1957:U:H2'	48:5:1958:A:H8	1.67	0.58
51:9:752:G:C6	51:9:790:C:N4	2.71	0.58
51:9:872:A:N6	51:9:914:U:C5	2.72	0.58
51:9:1488:C:O2'	51:9:1490:G:OP2	2.22	0.58
58:GG:5:ILE:HD12	58:GG:16:ILE:HD13	1.86	0.58
9:I:184:MET:HE2	9:I:190:LEU:HD12	1.83	0.58
20:U:87:THR:HG23	20:U:102:VAL:HG21	1.85	0.58
31:f:28:LEU:HG	31:f:101:ILE:HD11	1.85	0.58
48:5:642:G:N1	48:5:643:C:C4	2.71	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1213:G:O6	48:5:1215:C:C4	2.57	0.58
75:XX:67:ARG:HG2	75:XX:115:ILE:HD12	1.85	0.58
43:s:34:ASN:OD1	48:5:1968:G:O3'	2.21	0.58
47:3:13:C:O2	47:3:22:G:N1	2.32	0.58
48:5:300:A:C2	48:5:301:G:C5	2.92	0.58
48:5:707:C:C2	48:5:1291:G:C2	2.92	0.58
48:5:969:C:O2'	48:5:970:G:N3	2.31	0.58
51:9:412:G:N2	51:9:429:C:C2	2.72	0.58
57:FF:72:LEU:HD22	57:FF:112:LEU:HD11	1.86	0.58
48:5:685:C:H2'	48:5:685:C:O2	2.04	0.58
48:5:4754:G:C2	48:5:4880:C:C2	2.92	0.58
56:EE:55:ALA:HB2	56:EE:64:ILE:HD12	1.85	0.58
66:OO:116:LEU:HD22	78:aa:53:ILE:HD11	1.85	0.58
17:R:10:LEU:O	17:R:14:VAL:HG23	2.03	0.58
48:5:1279:A:C3'	48:5:1280:C:C5'	2.78	0.58
52:AA:38:ILE:HD11	52:AA:150:THR:HG22	1.86	0.58
56:EE:156:MET:O	56:EE:157:ASN:ND2	2.37	0.58
1:A:104:VAL:CG1	1:A:146:THR:HG21	2.34	0.58
38:m:119:ASN:C	38:m:119:ASN:HD22	2.12	0.58
47:3:76:A:C6	48:5:4371:G:N7	2.72	0.58
48:5:4757:C:O2	48:5:4757:C:O4'	2.21	0.58
51:9:31:U:O2'	51:9:643:A:N1	2.33	0.58
58:GG:52:ILE:HD11	58:GG:109:LEU:HD22	1.86	0.58
48:5:245:C:O4'	48:5:245:C:O2	2.22	0.57
48:5:1280:C:C2	48:5:1282:G:C5	2.93	0.57
48:5:1358:G:H2'	48:5:1359:G:O4'	2.04	0.57
51:9:1543:U:HO2'	68:QQ:77:HIS:HE2	1.52	0.57
1:A:207:VAL:HG11	48:5:1633:G:C6	2.38	0.57
5:E:202:VAL:HG12	5:E:256:LYS:NZ	2.17	0.57
19:T:80:VAL:HG21	19:T:85:LEU:HD12	1.86	0.57
48:5:1757:U:H2'	48:5:1758:G:O4'	2.03	0.57
48:5:1840:G:H3'	48:5:1842:G:P	2.44	0.57
48:5:1959:U:H1'	48:5:1961:G:C1'	2.35	0.57
48:5:5026:U:H3'	60:II:79:ILE:CD1	2.34	0.57
51:9:643:A:OP1	51:9:643:A:H4'	2.04	0.57
59:HH:93:VAL:HG21	59:HH:133:LEU:HD23	1.84	0.57
11:L:42:ARG:HG3	11:L:45:ARG:HH12	1.69	0.57
11:L:71:ARG:NH2	48:5:74:G:O3'	2.36	0.57
50:8:83:C:H4'	50:8:85:U:O2	2.03	0.57
51:9:1233:G:C2'	51:9:1234:C:H5'	2.34	0.57
74:WW:30:CYS:SG	74:WW:31:SER:N	2.77	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:91:LEU:HD22	6:F:92:ALA:N	2.20	0.57
48:5:3751:G:O2'	48:5:3775:A:N6	2.37	0.57
48:5:3766:A:N1	51:9:1827:U:O2'	2.33	0.57
48:5:4461:C:O2	48:5:4516:G:C2	2.58	0.57
51:9:1406:G:H2'	51:9:1407:U:O3'	2.04	0.57
1:A:101:VAL:HB	1:A:165:VAL:HG12	1.86	0.57
28:c:86:GLY:N	65:NN:151:ALA:OXT	2.38	0.57
48:5:2256:C:O2	48:5:2256:C:H2'	2.04	0.57
48:5:4975:G:N2	48:5:4984:C:C2	2.72	0.57
66:OO:75:MET:SD	80:cc:63:ARG:NH2	2.77	0.57
48:5:2367:A:N6	48:5:2798:A:O4'	2.37	0.57
51:9:1212:G:O2'	51:9:1213:C:O4'	2.22	0.57
51:9:1233:G:C6	51:9:1234:C:C4	2.93	0.57
4:D:62:CYS:HB3	4:D:105:LEU:HD22	1.87	0.57
14:O:7:LEU:HD22	14:O:9:LEU:HD21	1.86	0.57
40:o:66:ILE:HD13	40:o:91:PHE:CE1	2.40	0.57
48:5:1639:U:N3	48:5:1643:A:O2'	2.37	0.57
44:t:30:PRO:O	44:t:32:ILE:N	2.38	0.57
51:9:316:G:N1	51:9:317:C:C4	2.72	0.57
11:L:161:PHE:CD1	26:a:105:ARG:HD2	2.40	0.57
48:5:1279:A:OP1	48:5:1279:A:O3'	2.22	0.57
48:5:3870:C:C2	48:5:3886:G:C2	2.92	0.57
51:9:1347:U:H2'	51:9:1348:G:C8	2.39	0.57
3:C:313:VAL:CG1	6:F:172:THR:HG21	2.35	0.57
43:s:14:PHE:HD2	43:s:62:ARG:HH11	1.53	0.57
48:5:2408:U:C1'	48:5:2409:U:C5	2.88	0.57
50:8:55:U:C4	50:8:62:A:N1	2.72	0.57
51:9:195:C:C2	51:9:205:G:N2	2.73	0.57
51:9:322:C:O2'	51:9:323:C:OP2	2.21	0.57
86:ii:322:VAL:CG1	86:ii:326:LEU:HD11	2.34	0.57
3:C:336:ARG:O	3:C:340:ILE:HG12	2.05	0.56
47:3:35:U:O4'	51:9:1641:A:OP1	2.22	0.56
48:5:685:C:O2	48:5:685:C:C2'	2.53	0.56
48:5:1365:C:H4'	48:5:1366:G:OP1	2.05	0.56
48:5:2773:G:N1	48:5:2774:C:C4	2.73	0.56
53:BB:141:GLY:HA2	53:BB:210:VAL:HG22	1.87	0.56
61:JJ:125:HIS:NE2	61:JJ:129:LEU:HD21	2.20	0.56
76:YY:113:ARG:O	76:YY:114:MET:HB2	2.05	0.56
7:G:156:VAL:CG1	7:G:184:LEU:CD1	2.78	0.56
48:5:2409:U:C5	48:5:2783:A:C2	2.93	0.56
51:9:1137:U:H3	51:9:1148:A:N6	2.03	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1760:G:C2	51:9:1773:C:C2	2.93	0.56
7:G:86:VAL:HG22	7:G:183:ILE:HG22	1.87	0.56
10:J:83:LEU:CD1	10:J:170:TYR:CZ	2.87	0.56
23:X:139:ARG:NH2	48:5:2533:C:OP1	2.38	0.56
48:5:516:C:N3	48:5:646:G:C2	2.74	0.56
48:5:665:C:O2	48:5:665:C:H2'	2.05	0.56
48:5:3709:U:O2'	48:5:3710:G:O4'	2.21	0.56
49:7:66:G:C2	49:7:67:C:C2	2.93	0.56
51:9:911:C:O2'	51:9:912:C:H5'	2.05	0.56
58:GG:214:ALA:O	58:GG:218:LYS:N	2.36	0.56
84:gg:87:LEU:CD2	84:gg:108:VAL:HG11	2.36	0.56
19:T:64:VAL:HG13	19:T:72:VAL:HG13	1.88	0.56
47:3:39:U:O2'	47:3:40:C:C6	2.57	0.56
48:5:1278:C:C6	48:5:1279:A:H1'	2.40	0.56
48:5:1398:A:O2'	48:5:1399:G:OP2	2.20	0.56
51:9:167:G:C6	51:9:168:C:C5	2.94	0.56
51:9:830:A:N1	51:9:844:U:C4	2.74	0.56
51:9:1009:A:O2'	65:NN:114:ARG:HG3	2.05	0.56
48:5:2258:C:O2	48:5:2258:C:C2'	2.54	0.56
48:5:2524:U:H5"	48:5:2711:G:C2	2.40	0.56
48:5:2640:G:N7	48:5:2694:G:O6	2.37	0.56
48:5:4101:C:C2	48:5:4109:G:C2	2.94	0.56
2:B:181:MET:HE2	2:B:183:ILE:HG12	1.88	0.56
17:R:60:ARG:NH1	17:R:63:CYS:SG	2.79	0.56
48:5:746:A:O2'	48:5:747:A:O5'	2.20	0.56
48:5:1268:G:C4	48:5:2111:G:C2	2.93	0.56
48:5:1666:C:O2'	48:5:1688:G:OP1	2.21	0.56
48:5:4260:U:H2'	48:5:4261:C:C6	2.40	0.56
51:9:1545:A:H2'	51:9:1546:G:C8	2.41	0.56
6:F:146:TYR:CE2	6:F:239:GLU:HB3	2.41	0.56
49:7:30:C:C2	49:7:48:G:C2	2.94	0.56
53:BB:85:LYS:HB3	53:BB:101:HIS:HB3	1.88	0.56
48:5:976:G:C6	48:5:977:C:C4	2.93	0.56
48:5:1279:A:H2'	48:5:1280:C:H5"	1.88	0.56
48:5:1360:G:C6	48:5:1361:G:C5	2.94	0.56
48:5:4416:G:N2	48:5:4417:C:C2	2.74	0.56
51:9:434:G:H2'	51:9:435:A:C8	2.41	0.56
51:9:1231:C:H2'	51:9:1232:U:O4'	2.05	0.56
51:9:1643:U:H2'	51:9:1644:C:C6	2.40	0.56
3:C:114:ARG:CZ	48:5:1358:G:H5"	2.36	0.56
48:5:370:U:C6	48:5:1637:A:C2	2.93	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1404:G:N2	48:5:1414:C:C2	2.74	0.56
48:5:2555:G:O6	48:5:2572:C:N4	2.37	0.56
49:7:82:G:C2	49:7:95:C:C2	2.94	0.56
50:8:155:C:H2'	50:8:156:U:O4'	2.05	0.56
51:9:1613:G:C2	51:9:1627:C:C2	2.93	0.56
59:HH:39:GLN:HG3	59:HH:75:ILE:HD12	1.87	0.56
48:5:466:A:C2	48:5:467:U:C4	2.94	0.56
48:5:1959:U:H1'	48:5:1961:G:N9	2.21	0.56
48:5:2028:C:O2'	48:5:2029:A:O5'	2.24	0.56
48:5:3593:C:H4'	48:5:3594:C:OP2	2.05	0.56
15:P:36:ILE:HD12	15:P:48:LEU:HD11	1.88	0.55
18:S:28:TYR:CD2	18:S:54:MET:HE1	2.41	0.55
47:3:41:U:H4'	57:FF:198:ARG:HD3	1.88	0.55
48:5:1269:G:C6	48:5:2111:G:N2	2.74	0.55
48:5:2481:G:C2	48:5:2498:C:C2	2.94	0.55
51:9:312:G:O2'	51:9:313:A:OP1	2.19	0.55
51:9:1117:C:O2	51:9:1117:C:O4'	2.25	0.55
51:9:1309:C:OP1	83:ff:128:ALA:HA	2.05	0.55
51:9:1500:G:C6	51:9:1501:C:C4	2.94	0.55
51:9:1520:G:N3	51:9:1520:G:H2'	2.20	0.55
86:ii:323:TYR:CE2	86:ii:325:ASN:HB3	2.41	0.55
14:O:18:ARG:NH1	48:5:2053:C:O3'	2.38	0.55
17:R:10:LEU:HB3	17:R:41:ILE:HD13	1.88	0.55
48:5:2256:C:O2	48:5:2256:C:C2'	2.54	0.55
26:a:25:HIS:CG	48:5:1338:G:H22	2.24	0.55
47:3:39:U:O2'	47:3:40:C:C5'	2.54	0.55
48:5:1277:G:N2	48:5:1278:C:C2	2.75	0.55
48:5:2547:G:N1	48:5:2548:C:C4	2.75	0.55
48:5:4586:G:H5"	48:5:4586:G:H8	1.70	0.55
51:9:384:U:O2'	63:LL:135:SER:C	2.50	0.55
54:CC:75:ILE:HG23	54:CC:80:GLU:OE1	2.06	0.55
67:PP:56:LEU:HG	67:PP:83:MET:HE1	1.88	0.55
38:m:119:ASN:C	38:m:119:ASN:ND2	2.63	0.55
47:3:37:A:H2'	47:3:38:A:H5'	1.88	0.55
48:5:106:A:H2'	48:5:107:G:O4'	2.06	0.55
48:5:2557:G:C2	48:5:2571:C:C2	2.94	0.55
48:5:3612:C:H1'	48:5:5016:A:C8	2.41	0.55
51:9:1309:C:OP1	83:ff:128:ALA:HB1	2.06	0.55
15:P:48:LEU:HD12	15:P:92:LEU:HD13	1.87	0.55
15:P:69:ARG:NH2	48:5:4568:A:N3	2.55	0.55
48:5:181:C:N4	48:5:256:G:C6	2.74	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:497:G:C2	48:5:657:C:C2	2.94	0.55
51:9:642:U:H4’	51:9:643:A:OP1	2.05	0.55
3:C:158:VAL:HG22	3:C:161:TYR:HE2	1.71	0.55
41:p:42:CYS:HA	48:5:2674:A:N6	2.22	0.55
48:5:937:U:H2’	48:5:937:U:O2	2.07	0.55
48:5:2408:U:O4’	48:5:2409:U:C5	2.60	0.55
48:5:4524:G:N2	48:5:4525:C:C2	2.75	0.55
51:9:145:G:N7	58:GG:178:ARG:NH1	2.54	0.55
51:9:664:A:O2’	51:9:670:A:N1	2.39	0.55
51:9:1282:A:H3’	51:9:1283:C:C5’	2.36	0.55
39:n:21:ARG:HH22	51:9:1175:G:P	2.30	0.55
48:5:1279:A:C2	48:5:1280:C:C2	2.95	0.55
48:5:1371:A:N6	50:8:28:C:O2’	2.40	0.55
48:5:1743:A:C5	48:5:1744:U:C5	2.95	0.55
48:5:1751:A:C2	48:5:1780:A:C2	2.95	0.55
51:9:1741:U:H2’	51:9:1742:C:O4’	2.06	0.55
65:NN:54:LEU:HB3	65:NN:60:VAL:HG13	1.88	0.55
48:5:422:C:C2	50:8:13:G:C2	2.94	0.55
48:5:919:C:N4	48:5:920:C:C5	2.75	0.55
48:5:933:G:C2	48:5:940:C:C6	2.95	0.55
48:5:3641:U:H5	48:5:3646:A:N7	2.04	0.55
51:9:115:U:H2’	51:9:116:U:C6	2.41	0.55
51:9:1408:U:C4	51:9:1409:A:N6	2.74	0.55
51:9:1698:C:O2	51:9:1698:C:O4’	2.23	0.55
56:EE:55:ALA:HB1	56:EE:60:GLU:HB2	1.88	0.55
3:C:168:VAL:HG13	3:C:177:TRP:CZ3	2.41	0.55
47:3:70:G:O2’	47:3:71:G:O4’	2.22	0.55
48:5:962:C:OP2	48:5:2264:C:N3	2.40	0.55
48:5:1975:G:O4’	48:5:1984:A:H1’	2.07	0.55
51:9:1102:G:N2	51:9:1130:G:N2	2.55	0.55
51:9:1137:U:HO2’	52:AA:155:ARG:HH22	1.55	0.55
51:9:1616:U:O4	67:PP:40:ARG:NH1	2.40	0.55
17:R:71:ARG:NH1	48:5:3605:C:OP2	2.36	0.55
31:f:102:ARG:NH2	48:5:4947:U:O4	2.40	0.55
47:3:76:A:C5	48:5:4371:G:C5	2.94	0.55
48:5:127:G:N2	48:5:128:C:C2	2.75	0.55
48:5:1249:C:C2	48:5:1262:G:C2	2.95	0.55
48:5:1483:C:O4’	48:5:1483:C:O2	2.23	0.55
48:5:1485:C:O2	48:5:1485:C:O4’	2.23	0.55
48:5:2089:G:O2’	48:5:2090:U:OP2	2.25	0.55
48:5:3816:A:O2’	48:5:3819:G:N3	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:698:G:N1	51:9:733:C:C2	2.75	0.55
51:9:1526:G:N1	51:9:1527:C:C4	2.75	0.55
56:EE:64:ILE:HG23	76:YY:17:LEU:HD13	1.89	0.55
62:KK:11:ILE:HD12	62:KK:45:VAL:HG22	1.89	0.55
2:B:91:GLY:HA3	2:B:153:MET:HE3	1.88	0.54
35:j:59:THR:O	35:j:60:GLY:C	2.50	0.54
48:5:2688:G:N2	48:5:2689:C:C2	2.75	0.54
51:9:832:G:C2	51:9:843:C:C2	2.95	0.54
51:9:1265:A:N3	51:9:1265:A:H2'	2.21	0.54
51:9:1760:G:N2	51:9:1773:C:C2	2.76	0.54
52:AA:42:LYS:CG	52:AA:48:ILE:HD11	2.36	0.54
86:ii:323:TYR:O	86:ii:326:LEU:CD2	2.55	0.54
1:A:82:ILE:HD11	1:A:99:GLY:HA3	1.89	0.54
48:5:1205:G:N2	48:5:1206:C:C2	2.76	0.54
51:9:164:A:C2	51:9:165:G:C8	2.95	0.54
51:9:1568:C:O2'	51:9:1569:A:O4'	2.24	0.54
6:F:230:VAL:HA	18:S:39:VAL:HG12	1.89	0.54
46:2:34:A:O2'	46:2:35:A:O4'	2.25	0.54
48:5:4389:C:H2'	48:5:4390:A:C8	2.43	0.54
72:UU:60:THR:HG22	72:UU:83:ARG:HG2	1.89	0.54
86:ii:372:MET:CG	86:ii:373:PRO:CD	2.85	0.54
14:O:36:VAL:HG11	14:O:108:ILE:HD12	1.89	0.54
19:T:87:LYS:NZ	48:5:4301:U:OP2	2.39	0.54
48:5:1968:G:O2'	48:5:1969:G:O5'	2.20	0.54
48:5:1563:A:C8	48:5:1563:A:O5'	2.60	0.54
48:5:1664:U:H2'	48:5:1665:C:C6	2.42	0.54
48:5:2905:C:C2	48:5:3590:G:C2	2.96	0.54
48:5:3751:G:O2'	48:5:3752:C:C5'	2.47	0.54
51:9:1220:A:N6	51:9:1221:G:C6	2.75	0.54
51:9:1384:C:H2'	51:9:1385:G:H5'	1.89	0.54
51:9:1839:U:H2'	51:9:1840:U:O4'	2.08	0.54
2:B:163:LEU:HD23	2:B:182:GLU:HA	1.89	0.54
11:L:47:ALA:HB3	11:L:48:PRO:HD3	1.87	0.54
30:e:46:ARG:HA	30:e:55:MET:SD	2.48	0.54
47:3:16:C:O2	47:3:16:C:O4'	2.25	0.54
48:5:5023:C:O2	48:5:5023:C:O4'	2.23	0.54
51:9:1598:G:H3'	77:ZZ:80:ARG:HD2	1.89	0.54
53:BB:88:THR:HG22	53:BB:96:CYS:HB3	1.88	0.54
56:EE:195:ILE:O	56:EE:196:THR:CB	2.55	0.54
75:XX:68:LYS:HB3	75:XX:91:LEU:HD22	1.88	0.54
47:3:38:A:C2	57:FF:135:ARG:NH1	2.75	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:516:C:C2	48:5:646:G:C2	2.95	0.54
48:5:2089:G:H2'	48:5:2089:G:N3	2.23	0.54
48:5:4213:A:H61	48:5:4218:U:H3	1.55	0.54
48:5:4730:C:O2	48:5:4730:C:O4'	2.24	0.54
51:9:1129:G:H3'	51:9:1130:G:H8	1.72	0.54
51:9:1144:A:C2	51:9:1145:A:C2	2.95	0.54
51:9:1403:C:O2	51:9:1403:C:C2'	2.54	0.54
65:NN:40:LEU:HD22	65:NN:45:LEU:HD12	1.90	0.54
86:ii:323:TYR:H	86:ii:326:LEU:HD21	1.71	0.54
3:C:114:ARG:NE	48:5:1358:G:O3'	2.37	0.54
16:Q:69:LYS:O	16:Q:75:ARG:NH1	2.39	0.54
33:h:119:TYR:C	33:h:119:TYR:CD2	2.86	0.54
48:5:1067:G:H2'	48:5:1068:G:O4'	2.07	0.54
48:5:3662:A:N6	48:5:3680:U:H3	2.06	0.54
51:9:1241:A:C2	51:9:1517:G:O4'	2.61	0.54
13:N:135:ILE:HD12	13:N:151:ILE:HD13	1.90	0.54
47:3:76:A:N7	48:5:4371:G:N1	2.56	0.54
48:5:1380:G:H4'	48:5:1381:U:OP1	2.07	0.54
48:5:2367:A:C2	48:5:2788:U:O4	2.53	0.54
48:5:4895:C:H1'	48:5:4896:G:C8	2.43	0.54
48:5:5061:A:O2'	48:5:5062:G:OP2	2.11	0.54
2:B:116:ARG:HD2	2:B:122:TRP:CD2	2.43	0.54
47:3:76:A:C8	48:5:4341:C:N4	2.74	0.54
48:5:1959:U:H4'	48:5:1961:G:C4'	2.37	0.54
49:7:66:G:C6	49:7:67:C:C4	2.95	0.54
51:9:669:A:N3	51:9:1164:G:O2'	2.38	0.54
51:9:1374:C:H2'	51:9:1375:G:O4'	2.08	0.54
67:PP:17:TYR:OH	67:PP:37:TYR:HB3	2.08	0.54
48:5:301:G:C6	48:5:302:C:C4	2.96	0.53
48:5:1468:C:C2	48:5:1498:G:C2	2.96	0.53
74:WW:52:ILE:HG22	74:WW:61:ILE:HG12	1.89	0.53
19:T:48:VAL:HG21	19:T:94:GLU:HG2	1.90	0.53
47:3:76:A:N6	48:5:4371:G:C5	2.77	0.53
48:5:1357:C:H5"	48:5:1358:G:OP1	2.08	0.53
48:5:3718:A:H2'	48:5:3719:A:C8	2.43	0.53
48:5:4717:A:H2'	48:5:4718:G:O4'	2.07	0.53
51:9:522:A:OP2	61:JJ:45:ARG:NH2	2.42	0.53
51:9:522:A:O2'	61:JJ:131:ARG:NH2	2.42	0.53
51:9:750:C:O2	51:9:750:C:H2'	2.08	0.53
37:l:44:TRP:CZ3	37:l:45:ARG:HD3	2.44	0.53
48:5:1358:G:O2'	48:5:1359:G:O4'	2.20	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1430:C:C2	48:5:1455:G:C2	2.96	0.53
48:5:1668:A:C4	48:5:2282:A:C2	2.96	0.53
48:5:2301:G:N2	48:5:2302:C:C2	2.76	0.53
56:EE:126:VAL:HG22	56:EE:158:ASP:O	2.08	0.53
86:ii:160:THR:HG23	86:ii:169:LEU:HD11	1.89	0.53
47:3:34:U:O2	51:9:1641:A:OP1	2.26	0.53
48:5:3914:U:N3	48:5:4378:A:N6	2.48	0.53
48:5:4635:A:C2	48:5:4664:A:C5	2.96	0.53
51:9:216:C:O2	51:9:216:C:O4'	2.24	0.53
51:9:823:U:O2	51:9:823:U:O4'	2.25	0.53
51:9:1304:U:OP2	83:ff:90:ARG:NH2	2.42	0.53
51:9:1348:G:H1	51:9:1381:G:H22	1.57	0.53
51:9:1543:U:OP2	71:TT:62:ARG:NH1	2.41	0.53
10:J:119:TYR:HB3	70:SS:12:ILE:HD13	1.89	0.53
48:5:1086:C:C2	48:5:1212:G:C2	2.97	0.53
48:5:4583:C:C4	48:5:4718:G:C6	2.96	0.53
48:5:4723:A:C2	48:5:4724:A:C5	2.97	0.53
51:9:501:C:O2	51:9:501:C:H2'	2.08	0.53
51:9:686:U:O2	59:HH:118:ARG:NH2	2.32	0.53
70:SS:71:MET:HE3	70:SS:99:LEU:HD22	1.91	0.53
5:E:126:ARG:HH12	48:5:712:C:H2'	1.69	0.53
5:E:202:VAL:HB	5:E:252:GLN:OE1	2.09	0.53
6:F:244:ARG:NH1	48:5:942:G:OP2	2.42	0.53
48:5:1297:U:OP2	48:5:1297:U:O4'	2.27	0.53
48:5:2108:G:N1	48:5:2125:C:C4	2.77	0.53
48:5:4977:A:H2'	48:5:4978:G:O4'	2.08	0.53
50:8:15:G:C6	50:8:16:G:N1	2.76	0.53
51:9:1386:A:H2'	51:9:1387:G:C8	2.43	0.53
53:BB:143:THR:HG22	53:BB:205:TYR:CD1	2.43	0.53
86:ii:345:TYR:HD1	86:ii:374:LEU:HD21	1.69	0.53
3:C:130:ALA:HB1	3:C:136:LEU:HD12	1.91	0.53
8:H:180:TYR:HB2	38:m:85:LEU:HD11	1.90	0.53
48:5:199:G:C2	48:5:220:C:O2	2.62	0.53
48:5:1398:A:H1'	48:5:1399:G:C8	2.43	0.53
48:5:5026:U:H5'	60:II:79:ILE:HD11	1.90	0.53
51:9:1447:G:O2'	51:9:1448:A:O4'	2.21	0.53
56:EE:31:PRO:HD3	56:EE:38:LEU:HD13	1.90	0.53
7:G:156:VAL:HG13	7:G:184:LEU:HG	1.89	0.53
48:5:2693:G:C6	48:5:2694:G:N1	2.77	0.53
51:9:71:G:H3'	51:9:72:C:H5"	1.91	0.53
51:9:167:G:N1	51:9:168:C:C4	2.77	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1309:C:OP1	83:ff:128:ALA:CA	2.57	0.53
48:5:986:C:C2	48:5:1068:G:C2	2.97	0.53
48:5:1213:G:C6	48:5:1215:C:N3	2.77	0.53
48:5:1447:C:H2'	48:5:1448:G:O4'	2.08	0.53
51:9:1599:U:O2	51:9:1599:U:O4'	2.24	0.53
7:G:29:ASN:HB2	7:G:32:PHE:CE2	2.43	0.53
10:J:53:ALA:HB2	10:J:68:ILE:HD12	1.91	0.53
14:O:72:HIS:N	48:5:4586:G:OP1	2.39	0.53
46:2:39:G:N2	46:2:40:C:C2	2.76	0.53
48:5:677:G:N2	48:5:678:C:C2	2.77	0.53
48:5:2654:C:C2	48:5:2681:G:C2	2.97	0.53
48:5:2659:A:N1	48:5:2672:C:O2'	2.40	0.53
48:5:5028:G:C6	48:5:5029:C:N4	2.77	0.53
51:9:55:U:O2	51:9:55:U:C2'	2.56	0.53
69:RR:16:ILE:HG22	69:RR:24:LEU:HD11	1.91	0.53
2:B:89:ILE:HD13	2:B:153:MET:HE1	1.91	0.52
8:H:26:ILE:HB	8:H:35:ARG:HG2	1.91	0.52
11:L:9:ILE:O	11:L:9:ILE:HG23	2.09	0.52
25:Z:29:ILE:HG21	25:Z:40:HIS:CE1	2.44	0.52
48:5:256:G:N2	48:5:257:C:C2	2.77	0.52
48:5:1822:U:O2	48:5:1822:U:O4'	2.27	0.52
48:5:3594:C:O2	48:5:3594:C:C2'	2.56	0.52
51:9:944:A:C5	51:9:945:U:C5	2.97	0.52
17:R:35:ALA:O	17:R:37:SER:N	2.41	0.52
48:5:707:C:O2	48:5:1291:G:C2	2.63	0.52
48:5:977:C:N3	48:5:978:G:N7	2.57	0.52
48:5:2043:A:O2'	48:5:4461:C:O2	2.25	0.52
48:5:4579:U:H2'	48:5:4580:U:O4'	2.08	0.52
48:5:4759:C:H2'	48:5:4760:G:O4'	2.09	0.52
51:9:834:C:C2	51:9:841:G:N2	2.78	0.52
66:OO:56:VAL:HG12	66:OO:81:VAL:HG23	1.92	0.52
11:L:58:ILE:HG23	11:L:70:VAL:CG1	2.39	0.52
40:o:63:THR:O	40:o:87:ARG:NH1	2.43	0.52
42:r:47:LYS:HD3	42:r:102:TYR:CD2	2.44	0.52
48:5:1899:G:N2	48:5:1900:C:C2	2.77	0.52
48:5:2108:G:C2	48:5:2125:C:N3	2.77	0.52
48:5:2110:C:C6	48:5:2110:C:OP1	2.62	0.52
48:5:4138:C:C2	48:5:4147:G:C2	2.96	0.52
48:5:4281:A:C2	48:5:4283:G:C5	2.98	0.52
51:9:50:A:C2	51:9:488:U:O4	2.63	0.52
51:9:409:C:C2	51:9:432:G:C2	2.97	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1553:C:O2	51:9:1553:C:O4'	2.25	0.52
87:jj:11:VAL:HG22	87:jj:70:LEU:HD23	1.92	0.52
87:jj:271:VAL:HG21	87:jj:282:LEU:HD13	1.91	0.52
48:5:43:U:H2'	48:5:44:A:O5'	2.09	0.52
48:5:4441:A:H5"	48:5:4441:A:C8	2.44	0.52
51:9:873:G:N1	51:9:914:U:C5	2.77	0.52
63:LL:113:LEU:HD23	63:LL:142:VAL:HG21	1.90	0.52
17:R:59:SER:N	48:5:4646:U:OP1	2.42	0.52
48:5:112:C:C2	48:5:330:G:C2	2.97	0.52
47:3:6:G:N2	47:3:67:U:O2	2.42	0.52
48:5:12:A:H5"	48:5:12:A:H8	1.75	0.52
48:5:181:C:C2	48:5:256:G:C2	2.98	0.52
48:5:1378:C:OP1	48:5:1379:C:H3'	2.09	0.52
48:5:2733:C:H2'	48:5:2734:U:O4'	2.10	0.52
51:9:853:C:O4'	51:9:853:C:O2	2.28	0.52
51:9:1265:A:N3	51:9:1265:A:C2'	2.73	0.52
52:AA:123:VAL:HG13	52:AA:145:ILE:HB	1.92	0.52
54:CC:165:VAL:HG21	54:CC:217:ALA:HB1	1.91	0.52
70:SS:27:ALA:HB1	70:SS:42:HIS:CE1	2.43	0.52
87:jj:424:VAL:HG21	87:jj:454:ILE:HG22	1.91	0.52
4:D:129:GLU:HG3	4:D:177:THR:HG21	1.90	0.52
48:5:300:A:H2'	48:5:301:G:C8	2.45	0.52
48:5:2638:G:C2	48:5:2639:U:C4	2.98	0.52
51:9:350:C:HO2'	51:9:383:G:N2	2.06	0.52
56:EE:129:ILE:HD13	56:EE:155:LYS:HA	1.90	0.52
4:D:200:MET:HE2	4:D:241:LYS:CE	2.33	0.52
31:f:48:ALA:HB2	31:f:71:TRP:CZ3	2.44	0.52
45:1:57:ARG:NH2	48:5:3862:A:HO2'	2.08	0.52
48:5:52:G:N2	48:5:53:C:C2	2.78	0.52
48:5:1854:G:N2	48:5:4394:A:O4'	2.42	0.52
48:5:1874:A:H5'	48:5:4218:U:O2	2.10	0.52
48:5:1912:G:N2	48:5:1913:C:C2	2.78	0.52
48:5:4338:G:C4	48:5:4372:U:C5	2.98	0.52
59:HH:43:LEU:HD21	59:HH:71:SER:HB3	1.92	0.52
87:jj:301:MET:HE1	87:jj:319:THR:HG21	1.91	0.52
2:B:29:VAL:HG13	2:B:348:ARG:HD3	1.91	0.52
5:E:62:LYS:HE2	48:5:979:C:OP2	2.10	0.52
26:a:146:LEU:HD13	34:i:7:MET:HG2	1.92	0.52
48:5:1266:G:H5"	48:5:2112:G:N3	2.25	0.52
51:9:49:C:O2	51:9:478:G:C2	2.63	0.52
51:9:751:G:C6	51:9:792:C:N4	2.78	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:834:C:H3'	51:9:835:C:H4'	1.91	0.52
56:EE:49:ARG:HB3	56:EE:55:ALA:HB3	1.92	0.52
57:FF:102:LEU:HD11	77:ZZ:100:VAL:HG21	1.92	0.52
2:B:154:LYS:HB2	2:B:154:LYS:HZ2	1.75	0.52
36:k:22:SER:HA	36:k:65:ALA:HB3	1.91	0.52
48:5:211:G:H4'	48:5:234:G:C8	2.45	0.52
48:5:1549:G:C2	48:5:1580:C:C2	2.98	0.52
48:5:4735:G:C2	48:5:4736:C:C2	2.98	0.52
51:9:437:G:C2	51:9:457:C:C2	2.98	0.52
51:9:980:A:C2	51:9:981:A:C6	2.98	0.52
51:9:1386:A:OP1	51:9:1483:A:N3	2.43	0.52
51:9:1407:U:C2'	51:9:1408:U:C6	2.91	0.52
56:EE:11:ARG:HD2	56:EE:20:LEU:HB3	1.90	0.52
47:3:76:A:C5	48:5:4371:G:C6	2.98	0.51
48:5:2525:U:P	48:5:2711:G:H1	2.33	0.51
51:9:963:A:H2'	51:9:964:A:O4'	2.09	0.51
51:9:1235:G:C5'	51:9:1247:C:H42	2.13	0.51
4:D:196:ARG:O	4:D:200:MET:HG2	2.10	0.51
42:r:18:ILE:HG23	42:r:25:TYR:HB2	1.92	0.51
48:5:1771:U:H2'	48:5:1772:C:O4'	2.10	0.51
48:5:1904:G:C2	48:5:2073:C:C2	2.98	0.51
50:8:119:C:C2	50:8:132:G:C2	2.98	0.51
51:9:398:A:C8	51:9:398:A:H5'	2.46	0.51
51:9:1118:C:O2	51:9:1118:C:O4'	2.25	0.51
63:LL:61:PRO:HA	63:LL:66:VAL:HG13	1.92	0.51
2:B:21:ARG:NH2	48:5:4568:A:O3'	2.44	0.51
5:E:250:ASP:O	5:E:254:LEU:HB2	2.10	0.51
8:H:99:PHE:HA	87:jj:440:GLN:NE2	2.25	0.51
25:Z:51:ARG:HB2	25:Z:65:ARG:HD2	1.92	0.51
32:g:61:PRO:HA	32:g:64:LEU:HD22	1.90	0.51
41:p:41:PHE:O	48:5:2674:A:N6	2.43	0.51
42:r:48:THR:N	42:r:102:TYR:OH	2.39	0.51
48:5:1268:G:C2	48:5:2111:G:N2	2.78	0.51
48:5:1358:G:H2'	48:5:1359:G:H8	1.75	0.51
48:5:1736:A:N3	49:7:78:C:O2'	2.42	0.51
48:5:4966:A:H2'	48:5:4967:A:C8	2.45	0.51
48:5:5000:G:N2	48:5:5051:C:C2	2.78	0.51
2:B:56:ILE:HG12	2:B:365:LEU:HD22	1.92	0.51
7:G:34:LYS:O	48:5:4128:A:N3	2.43	0.51
9:I:187:GLU:OE1	9:I:189:ARG:CD	2.58	0.51
46:2:16:C:O4'	46:2:16:C:O2	2.24	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:470:A:C5	48:5:471:A:C8	2.99	0.51
48:5:1723:A:N1	48:5:1838:A:N1	2.58	0.51
48:5:1755:C:O2	48:5:1755:C:O2'	2.22	0.51
48:5:2297:G:N2	48:5:2338:C:C2	2.79	0.51
48:5:3641:U:C2	48:5:3645:U:C5	2.99	0.51
48:5:5026:U:C6	60:II:79:ILE:HG13	2.45	0.51
51:9:195:C:C2	51:9:205:G:C2	2.99	0.51
51:9:1588:A:H2'	51:9:1589:A:C8	2.46	0.51
54:CC:192:LEU:HB3	54:CC:227:TRP:HD1	1.74	0.51
62:KK:15:LEU:HD22	62:KK:49:MET:CE	2.32	0.51
4:D:122:GLN:O	4:D:248:ARG:NH2	2.43	0.51
20:U:46:ARG:O	20:U:47:ILE:C	2.53	0.51
48:5:1959:U:H4'	48:5:1961:G:C5'	2.41	0.51
48:5:2301:G:N1	48:5:2302:C:C4	2.79	0.51
48:5:2505:C:O2	48:5:2505:C:O4'	2.28	0.51
51:9:599:A:H2'	51:9:606:G:N2	2.25	0.51
51:9:1839:U:O4	78:aa:28:ARG:NH2	2.43	0.51
78:aa:26:CYS:SG	78:aa:74:CYS:SG	3.08	0.51
35:j:63:ARG:NH2	50:8:58:G:N7	2.59	0.51
42:r:47:LYS:HB3	42:r:102:TYR:CZ	2.46	0.51
42:r:85:ASN:O	42:r:87:ARG:N	2.44	0.51
43:s:54:LEU:HD23	43:s:60:MET:HE1	1.93	0.51
48:5:671:G:C6	48:5:672:C:C4	2.98	0.51
48:5:2363:A:C2	48:5:3860:A:C4	2.98	0.51
48:5:4305:G:C2'	48:5:4305:G:N3	2.73	0.51
48:5:4600:G:P	87:jj:506:ARG:HH22	2.34	0.51
58:GG:74:ARG:HA	58:GG:96:SER:HA	1.91	0.51
1:A:180:LEU:HD21	41:p:26:VAL:HG21	1.93	0.51
2:B:378:ARG:HE	22:W:32:LEU:HD21	1.75	0.51
8:H:111:LEU:HD11	8:H:125:ARG:HB2	1.92	0.51
14:O:70:PRO:O	14:O:72:HIS:CE1	2.64	0.51
48:5:476:G:N2	48:5:679:C:C2	2.79	0.51
48:5:1835:G:O2'	48:5:1836:G:OP2	2.21	0.51
48:5:1891:A:O2'	48:5:1892:A:O4'	2.25	0.51
48:5:2026:A:H2'	48:5:2027:U:H5'	1.93	0.51
48:5:2297:G:C2	48:5:2338:C:N3	2.79	0.51
48:5:4913:G:O2'	48:5:4914:C:O4'	2.28	0.51
51:9:305:U:H1'	60:II:55:TYR:CG	2.45	0.51
51:9:412:G:C2	51:9:429:C:C2	2.99	0.51
51:9:1139:C:H2'	51:9:1140:G:O4'	2.11	0.51
51:9:1466:G:N1	51:9:1467:C:C4	2.79	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1500:G:C2	51:9:1501:C:C2	2.98	0.51
51:9:1784:G:N2	51:9:1785:C:C2	2.79	0.51
51:9:1863:A:H1'	78:aa:79:ILE:HD13	1.92	0.51
74:WW:53:ILE:HD13	79:bb:24:LEU:HD11	1.92	0.51
2:B:252:ALA:HB3	48:5:4457:U:O2	2.10	0.51
30:e:108:ARG:NH2	30:e:127:ALA:HB3	2.26	0.51
48:5:77:U:C4	48:5:335:A:N1	2.76	0.51
48:5:3723:A:C2	48:5:3724:A:C5	2.99	0.51
50:8:106:G:N2	50:8:107:C:C2	2.79	0.51
51:9:1303:C:O2	51:9:1303:C:O4'	2.24	0.51
3:C:334:THR:HG21	6:F:53:TYR:OH	2.11	0.51
25:Z:5:MET:HG2	25:Z:77:TYR:CE1	2.46	0.51
39:n:7:LYS:NZ	51:9:1844:U:OP2	2.44	0.51
48:5:2768:C:O2	48:5:2768:C:O4'	2.26	0.51
48:5:3628:G:C2	48:5:3834:C:C2	2.98	0.51
48:5:3782:C:C2	48:5:3811:G:N2	2.79	0.51
48:5:4093:G:C3'	48:5:4094:G:H5'	2.41	0.51
48:5:5026:U:H3'	60:II:79:ILE:HD11	1.93	0.51
51:9:88:G:C6	51:9:89:C:C4	2.99	0.51
51:9:211:G:N2	51:9:212:C:C2	2.78	0.51
51:9:379:C:O2	60:II:5:ARG:HD2	2.11	0.51
51:9:1735:A:H2'	51:9:1736:G:O4'	2.11	0.51
67:PP:20:VAL:HG13	67:PP:24:GLN:HG2	1.93	0.51
70:SS:86:ARG:HB2	70:SS:98:VAL:HG23	1.93	0.51
74:WW:81:VAL:HG11	74:WW:86:LEU:HD13	1.92	0.51
2:B:302:ASN:HB2	2:B:313:SER:HA	1.93	0.51
48:5:1358:G:C2'	48:5:1359:G:O4'	2.59	0.51
48:5:1400:G:C6	48:5:1401:C:C4	2.99	0.51
56:EE:122:LYS:HB3	56:EE:164:LEU:HD21	1.93	0.51
9:I:97:ILE:HD13	9:I:126:VAL:HG11	1.92	0.50
21:V:82:ILE:HD12	21:V:104:VAL:HG22	1.93	0.50
23:X:76:ILE:HG21	23:X:112:ALA:HB2	1.91	0.50
30:e:7:LEU:HB2	30:e:93:LYS:HB3	1.92	0.50
36:k:37:ARG:NH2	48:5:2537:A:OP2	2.44	0.50
48:5:4303:C:O2	48:5:4303:C:O4'	2.26	0.50
48:5:4758:U:O2	48:5:4758:U:O4'	2.29	0.50
51:9:151:C:O2'	58:GG:132:ARG:NH1	2.43	0.50
51:9:1537:A:C2	51:9:1596:U:N3	2.79	0.50
25:Z:15:ALA:HB3	25:Z:79:HIS:HB3	1.93	0.50
47:3:1:G:N1	47:3:2:C:C4	2.80	0.50
48:5:929:A:H3'	48:5:930:G:C5'	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:2712:G:N2	48:5:2713:C:C2	2.79	0.50
48:5:4389:C:H2'	48:5:4390:A:H8	1.76	0.50
48:5:4906:C:C2	48:5:4916:G:C2	2.99	0.50
55:DD:191:PRO:O	55:DD:193:ASP:N	2.45	0.50
42:r:82:ILE:HD11	42:r:96:MET:HE3	1.93	0.50
48:5:504:G:C2	48:5:654:C:C2	2.99	0.50
48:5:3717:A:N1	48:5:3933:G:H1'	2.26	0.50
48:5:4583:C:N4	48:5:4718:G:C6	2.80	0.50
51:9:407:G:N3	51:9:407:G:H2'	2.26	0.50
51:9:501:C:O2	51:9:501:C:C2'	2.58	0.50
51:9:1207:G:C6	51:9:1837:G:C6	2.99	0.50
51:9:1666:C:H2'	51:9:1667:U:O4'	2.11	0.50
51:9:1739:C:C2	51:9:1796:G:C2	3.00	0.50
52:AA:134:LEU:HD21	52:AA:144:THR:HG21	1.93	0.50
7:G:95:LEU:HD13	7:G:184:LEU:HD11	1.93	0.50
10:J:156:ARG:NH2	49:7:17:C:OP1	2.44	0.50
14:O:54:TYR:CE1	14:O:145:VAL:HG11	2.47	0.50
46:2:53:G:N2	46:2:62:C:C2	2.79	0.50
48:5:1072:C:O2	48:5:1072:C:C2'	2.60	0.50
48:5:1214:C:H1'	48:5:1215:C:OP2	2.10	0.50
48:5:1265:G:C2'	48:5:1266:G:H5'	2.41	0.50
48:5:2028:C:O2'	48:5:2029:A:O4'	2.29	0.50
48:5:4966:A:C2	48:5:4967:A:C2	2.99	0.50
51:9:1364:U:O2	51:9:1364:U:O4'	2.28	0.50
51:9:1587:G:N2	71:TT:74:SER:OG	2.45	0.50
87:jj:9:ALA:HA	87:jj:72:ILE:HD13	1.93	0.50
2:B:43:LEU:HD13	2:B:196:TRP:CH2	2.46	0.50
12:M:69:ARG:O	12:M:71:LYS:N	2.42	0.50
44:t:121:LEU:HD22	44:t:132:ILE:HD13	1.92	0.50
48:5:105:A:C2	48:5:336:A:C8	3.00	0.50
48:5:2627:C:O4'	48:5:2627:C:O2	2.30	0.50
48:5:4462:C:C2	48:5:4515:G:C2	3.00	0.50
50:8:125:C:O2	50:8:125:C:O4'	2.29	0.50
51:9:155:G:N2	58:GG:56:ASN:OD1	2.45	0.50
51:9:305:U:O2'	51:9:309:G:O4'	2.28	0.50
51:9:598:G:N2	51:9:639:C:C2	2.79	0.50
51:9:1116:C:O2	51:9:1116:C:O4'	2.28	0.50
4:D:111:ASN:ND2	4:D:111:ASN:C	2.70	0.50
4:D:200:MET:HE1	4:D:241:LYS:HG2	1.93	0.50
47:3:31:A:H2'	57:FF:136:ARG:HH22	1.77	0.50
48:5:93:G:O2'	48:5:94:A:O4'	2.25	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1171:G:C2	48:5:1191:C:C2	2.99	0.50
48:5:1263:A:C6	48:5:1264:C:C4	3.00	0.50
48:5:2090:U:O4'	48:5:2090:U:OP2	2.30	0.50
48:5:4281:A:C2	48:5:4283:G:C6	2.99	0.50
51:9:350:C:O2'	51:9:383:G:N1	2.43	0.50
51:9:1622:U:C6	70:SS:120:HIS:CE1	3.00	0.50
53:BB:150:ILE:O	53:BB:150:ILE:HG23	2.11	0.50
58:GG:5:ILE:HG12	58:GG:111:LEU:HD12	1.94	0.50
68:QQ:52:LEU:HD13	68:QQ:56:LEU:HD21	1.94	0.50
2:B:220:ILE:HG12	2:B:278:THR:HG23	1.93	0.50
48:5:1399:G:H2'	48:5:1400:G:O4'	2.12	0.50
48:5:1983:A:C2	48:5:2010:A:H5"	2.47	0.50
48:5:2123:C:O2'	48:5:2124:G:OP2	2.20	0.50
51:9:92:A:O4'	56:EE:3:ARG:NH1	2.45	0.50
51:9:970:G:H3'	51:9:971:G:C5'	2.41	0.50
51:9:1681:U:O2'	51:9:1682:C:C5'	2.60	0.50
56:EE:87:MET:CE	56:EE:236:ILE:HD13	2.42	0.50
63:LL:11:GLN:HB3	63:LL:56:ILE:HD11	1.94	0.50
87:jj:98:PRO:HG2	87:jj:123:LEU:HD11	1.94	0.50
9:I:181:PHE:O	9:I:185:VAL:HG23	2.12	0.50
48:5:1167:C:C2	48:5:1195:G:C2	3.00	0.50
48:5:1235:G:H2'	48:5:1236:C:H5'	1.93	0.50
48:5:1381:U:O2	48:5:1381:U:O4'	2.28	0.50
48:5:1910:G:N2	48:5:1911:C:C2	2.80	0.50
48:5:1998:A:O2'	48:5:1999:A:O4'	2.30	0.50
48:5:4213:A:N6	48:5:4218:U:H3	2.10	0.50
49:7:71:G:C2	49:7:105:C:C2	3.00	0.50
51:9:88:G:C2	51:9:89:C:C2	3.00	0.50
51:9:193:C:C2	51:9:207:G:C2	2.99	0.50
51:9:474:G:N1	51:9:475:C:C4	2.80	0.50
56:EE:131:VAL:HA	56:EE:137:PRO:HA	1.94	0.50
60:II:76:THR:HG21	60:II:105:ASP:O	2.12	0.50
66:OO:44:VAL:HG11	66:OO:85:CYS:SG	2.52	0.50
84:gg:5:MET:HE1	84:gg:312:VAL:HG13	1.93	0.50
5:E:134:ARG:NH1	5:E:165:SER:O	2.45	0.50
17:R:109:TYR:HB3	17:R:115:ILE:HG12	1.94	0.50
48:5:1811:G:N2	48:5:1812:C:C2	2.80	0.50
48:5:2028:C:O2'	48:5:2029:A:C5'	2.60	0.50
48:5:2368:A:N6	48:5:2788:U:O2	2.45	0.50
48:5:2752:G:H2'	48:5:2753:G:O4'	2.12	0.50
48:5:3715:U:O2'	48:5:3716:C:O4'	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:4094:G:H2'	48:5:4095:G:O4'	2.12	0.50
48:5:5031:G:N2	48:5:5032:C:C2	2.80	0.50
61:JJ:38:ARG:O	61:JJ:38:ARG:HG2	2.12	0.50
70:SS:11:HIS:O	70:SS:12:ILE:CD1	2.52	0.50
87:jj:389:ILE:HG12	87:jj:484:LEU:HD22	1.93	0.50
2:B:241:PRO:O	2:B:244:THR:OG1	2.30	0.49
48:5:166:C:C2	48:5:167:C:H5	2.30	0.49
48:5:975:C:C3'	48:5:976:G:O4'	2.60	0.49
48:5:1400:G:C2	48:5:1401:C:C2	3.00	0.49
48:5:1886:G:C2	48:5:1894:C:C2	3.00	0.49
48:5:2311:C:C2	48:5:2328:G:C2	3.00	0.49
48:5:2463:G:N2	48:5:2464:C:C2	2.80	0.49
54:CC:107:LEU:HD11	54:CC:129:ALA:HB2	1.93	0.49
71:TT:75:MET:HA	71:TT:78:ILE:HG22	1.93	0.49
2:B:49:TYR:CE1	2:B:168:MET:HE1	2.47	0.49
5:E:208:LEU:HD12	5:E:208:LEU:O	2.12	0.49
11:L:65:ARG:HG2	11:L:66:TYR:CD2	2.48	0.49
48:5:405:U:O2'	48:5:407:A:N7	2.39	0.49
48:5:1776:A:C6	48:5:1777:C:C4	2.99	0.49
48:5:1872:G:O2'	48:5:4219:A:N3	2.38	0.49
48:5:2588:C:OP1	48:5:2767:U:O2'	2.30	0.49
51:9:92:A:C6	51:9:446:G:C6	3.00	0.49
51:9:182:C:H2'	51:9:184:G:H1'	1.93	0.49
53:BB:137:LEU:HD23	53:BB:215:VAL:HG22	1.94	0.49
71:TT:62:ARG:HD2	71:TT:62:ARG:C	2.37	0.49
74:WW:14:ILE:HD11	74:WW:41:MET:HE1	1.94	0.49
1:A:49:ILE:HG22	1:A:58:LEU:HB2	1.94	0.49
9:I:76:MET:HG3	9:I:87:ILE:HD11	1.93	0.49
17:R:105:LEU:HD12	17:R:138:LEU:HD13	1.94	0.49
26:a:25:HIS:ND1	48:5:1338:G:N2	2.60	0.49
47:3:66:U:H2'	47:3:67:U:O4'	2.11	0.49
48:5:230:G:C2	48:5:239:C:C2	3.01	0.49
48:5:1412:G:N2	48:5:1413:C:C2	2.79	0.49
48:5:2257:C:O2'	48:5:2258:C:O5'	2.25	0.49
51:9:887:U:O2	51:9:887:U:O4'	2.29	0.49
51:9:1395:C:O2'	51:9:1396:A:OP1	2.29	0.49
51:9:1401:A:C2	51:9:1402:A:N1	2.81	0.49
56:EE:15:PRO:HD2	56:EE:18:TRP:CZ3	2.47	0.49
56:EE:153:LEU:HD11	58:GG:216:ARG:NE	2.28	0.49
13:N:67:ARG:NH1	48:5:2458:C:OP1	2.45	0.49
23:X:127:LEU:HD12	23:X:127:LEU:C	2.38	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:93:G:H2'	48:5:94:A:C8	2.48	0.49
48:5:356:G:O2'	50:8:25:G:N3	2.44	0.49
48:5:1245:C:C4	48:5:1269:G:O6	2.66	0.49
48:5:2108:G:N2	48:5:2125:C:C2	2.80	0.49
48:5:2336:G:C2	48:5:2337:C:C2	3.01	0.49
48:5:3752:C:H2'	48:5:3777:G:C8	2.47	0.49
48:5:4579:U:O2	48:5:4580:U:C2	2.65	0.49
51:9:666:U:H2'	51:9:667:U:C6	2.47	0.49
61:JJ:46:VAL:HG11	61:JJ:106:LEU:HD12	1.94	0.49
3:C:213:GLU:OE1	3:C:213:GLU:N	2.46	0.49
15:P:54:GLN:HA	15:P:83:TRP:CD1	2.47	0.49
48:5:325:U:H2'	48:5:326:C:C6	2.47	0.49
48:5:1297:U:P	48:5:1297:U:O4'	2.71	0.49
48:5:1613:A:C2	48:5:1630:A:C2	3.00	0.49
51:9:73:C:O2	51:9:73:C:O4'	2.28	0.49
51:9:1408:U:H2'	51:9:1409:A:C8	2.47	0.49
51:9:1481:G:C6	51:9:1482:C:N3	2.80	0.49
61:JJ:28:GLU:HB3	61:JJ:40:LYS:HD2	1.94	0.49
78:aa:74:CYS:SG	78:aa:76:SER:OG	2.69	0.49
4:D:258:LYS:O	4:D:259:ARG:HG3	2.13	0.49
9:I:14:ASN:O	9:I:128:ARG:NH2	2.45	0.49
9:I:46:PHE:CD1	9:I:140:THR:HA	2.48	0.49
12:M:24:LEU:HD11	12:M:86:TRP:CG	2.47	0.49
32:g:46:CYS:SG	32:g:47:GLY:N	2.85	0.49
42:r:107:ARG:HD2	42:r:108:MET:CA	2.42	0.49
48:5:300:A:C2	48:5:301:G:C6	3.01	0.49
48:5:1269:G:C5	48:5:2111:G:C2	3.01	0.49
48:5:1960:A:H4'	48:5:1961:G:OP2	2.11	0.49
48:5:2494:U:H2'	48:5:2495:U:O4'	2.12	0.49
48:5:2519:U:C2	48:5:2520:C:C5	3.01	0.49
48:5:4411:G:C2	48:5:4432:C:O2	2.65	0.49
51:9:506:G:OP1	76:YY:108:LYS:NZ	2.44	0.49
51:9:1511:U:H2'	51:9:1512:C:C6	2.48	0.49
2:B:340:THR:OG1	2:B:341:LYS:N	2.43	0.49
3:C:193:LYS:HD2	3:C:196:MET:HE3	1.94	0.49
31:f:79:GLY:O	31:f:81:SER:N	2.45	0.49
42:r:47:LYS:O	42:r:103:HIS:NE2	2.45	0.49
48:5:1170:G:C2	48:5:1192:C:C2	3.00	0.49
48:5:2056:G:C8	48:5:2058:G:C8	3.00	0.49
48:5:2557:G:C6	48:5:2558:C:C4	3.01	0.49
48:5:2726:G:C6	48:5:2727:C:N4	2.81	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:3626:G:C6	48:5:3836:A:C2	3.01	0.49
48:5:3782:C:N3	48:5:3811:G:C2	2.81	0.49
65:NN:60:VAL:HG23	65:NN:66:VAL:HG21	1.93	0.49
67:PP:83:MET:HE3	67:PP:89:MET:CE	2.42	0.49
20:U:80:LYS:HD3	20:U:110:TYR:CE2	2.47	0.49
48:5:1301:C:O2	48:5:1301:C:O4'	2.29	0.49
48:5:1726:U:H3	48:5:1836:G:H1	1.61	0.49
48:5:4079:C:C2	48:5:4168:G:C2	3.01	0.49
48:5:4489:G:C6	48:5:4490:C:C4	3.00	0.49
48:5:4574:U:H3'	48:5:4575:G:H5"	1.94	0.49
51:9:1654:G:N2	51:9:1655:C:C2	2.81	0.49
74:WW:90:GLN:HA	74:WW:102:ILE:HD11	1.93	0.49
1:A:44:ILE:HG22	1:A:87:PHE:CD2	2.48	0.49
1:A:107:MET:SD	1:A:113:VAL:HG11	2.53	0.49
5:E:254:LEU:N	5:E:255:PRO:HD2	2.28	0.49
11:L:66:TYR:O	11:L:68:THR:N	2.46	0.49
16:Q:86:ILE:HB	16:Q:105:VAL:HG13	1.95	0.49
29:d:38:PHE:CE1	48:5:4634:U:C2	3.01	0.49
47:3:35:U:H1'	51:9:1641:A:P	2.53	0.49
48:5:224:U:O2	48:5:224:U:O4'	2.27	0.49
48:5:384:A:C6	48:5:386:A:C6	3.01	0.49
48:5:977:C:H2'	48:5:978:G:O4'	2.12	0.49
48:5:986:C:N3	48:5:1068:G:C2	2.81	0.49
48:5:1328:G:O2'	48:5:2349:A:OP1	2.31	0.49
48:5:1400:G:H2'	48:5:1401:C:O4'	2.13	0.49
48:5:1754:U:O2	48:5:1754:U:O4'	2.30	0.49
48:5:4691:A:C2	48:5:4700:A:C4	3.00	0.49
48:5:4735:G:C6	48:5:4736:C:C4	3.01	0.49
48:5:4932:U:H2'	48:5:4933:C:O4'	2.13	0.49
51:9:123:G:C2	51:9:342:C:C2	3.01	0.49
51:9:635:G:C6	51:9:636:C:C4	3.01	0.49
2:B:165:HIS:HB3	2:B:180:LEU:HG	1.95	0.49
4:D:195:HIS:CE1	4:D:199:ILE:HD11	2.48	0.49
9:I:184:MET:HE3	9:I:189:ARG:HB3	1.95	0.49
30:e:31:ILE:HD11	48:5:2347:A:C5	2.48	0.49
47:3:24:G:C6	47:3:25:C:C4	3.01	0.49
48:5:956:A:H3'	48:5:957:G:C8	2.48	0.49
48:5:1252:C:C2	48:5:1259:G:C2	3.01	0.49
48:5:2557:G:C2	48:5:2558:C:C2	3.01	0.49
48:5:2730:U:H2'	48:5:2731:C:C6	2.48	0.49
51:9:1212:G:C2	51:9:1213:C:C2	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1315:U:O2	51:9:1315:U:O4'	2.29	0.49
51:9:1406:G:C5	51:9:1407:U:H1'	2.47	0.49
52:AA:42:LYS:HG2	52:AA:48:ILE:HD11	1.95	0.49
57:FF:76:MET:HA	57:FF:155:CYS:SG	2.53	0.49
16:Q:11:ARG:NH2	48:5:1690:C:OP2	2.46	0.48
32:g:60:ARG:HG3	32:g:61:PRO:HD2	1.94	0.48
40:o:24:THR:HG23	40:o:69:ARG:HB3	1.94	0.48
48:5:3724:A:N6	48:5:3725:G:C6	2.81	0.48
48:5:5020:G:H2'	48:5:5021:C:O4'	2.13	0.48
51:9:958:G:C2	51:9:959:G:C6	3.01	0.48
51:9:1411:G:H3'	51:9:1412:C:H4'	1.94	0.48
57:FF:20:PHE:CZ	57:FF:69:VAL:HG11	2.47	0.48
67:PP:34:MET:HE3	67:PP:45:LEU:HD12	1.93	0.48
82:ee:36:MET:SD	82:ee:36:MET:C	2.96	0.48
16:Q:186:TYR:CD2	48:5:4307:A:H4'	2.48	0.48
17:R:172:ARG:HH12	51:9:908:A:C5'	1.81	0.48
43:s:112:ARG:NH1	48:5:1968:G:OP1	2.46	0.48
47:3:6:G:N1	47:3:7:A:C5	2.81	0.48
47:3:10:G:N1	47:3:11:C:C4	2.81	0.48
47:3:34:U:O2'	47:3:35:U:O4'	2.31	0.48
48:5:990:C:C4	48:5:1064:G:C2	3.01	0.48
48:5:1279:A:O2'	48:5:1280:C:OP1	2.30	0.48
48:5:1449:C:H2'	48:5:1450:C:O4'	2.12	0.48
48:5:2313:A:O2'	48:5:2314:G:OP1	2.22	0.48
48:5:4099:G:C6	48:5:4100:C:C4	3.01	0.48
48:5:4129:G:H2'	48:5:4130:C:O4'	2.14	0.48
51:9:409:C:N3	51:9:432:G:C2	2.81	0.48
51:9:916:A:C5	65:NN:73:ARG:HD3	2.48	0.48
51:9:1865:C:OP1	78:aa:87:ARG:NH2	2.46	0.48
52:AA:66:VAL:HG11	73:VV:46:PHE:HB2	1.95	0.48
75:XX:109:GLY:O	75:XX:110:HIS:C	2.56	0.48
3:C:303:ARG:O	16:Q:38:ARG:NH1	2.42	0.48
4:D:3:PHE:HB2	48:5:1755:C:C6	2.48	0.48
11:L:9:ILE:HG21	26:a:52:TYR:CE2	2.48	0.48
48:5:671:G:C2	48:5:672:C:C2	3.01	0.48
48:5:919:C:N4	48:5:920:C:N4	2.61	0.48
48:5:2468:U:O2	48:5:2469:C:C5	2.66	0.48
48:5:4213:A:C2	48:5:4218:U:O4	2.57	0.48
51:9:114:G:N7	63:LL:69:ARG:NH1	2.60	0.48
51:9:1262:C:O2'	81:dd:12:ARG:NH1	2.46	0.48
69:RR:91:LEU:HD12	69:RR:92:ASP:N	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:YY:113:ARG:O	76:YY:114:MET:CB	2.61	0.48
80:cc:14:VAL:HA	80:cc:32:VAL:HG12	1.95	0.48
86:ii:78:VAL:HB	86:ii:97:CYS:SG	2.53	0.48
48:5:100:C:H2'	48:5:101:A:O4'	2.13	0.48
48:5:125:C:O2'	48:5:126:C:OP1	2.22	0.48
48:5:505:G:C2	48:5:506:C:C2	3.01	0.48
48:5:4724:A:C6	48:5:4725:C:C4	3.01	0.48
51:9:17:C:O2'	51:9:1194:A:N1	2.36	0.48
2:B:234:ARG:HA	2:B:272:LYS:HD2	1.95	0.48
13:N:65:ARG:HG3	13:N:129:PHE:CE1	2.49	0.48
20:U:100:LEU:HD22	20:U:112:LEU:HB3	1.96	0.48
27:b:45:PHE:CE1	48:5:1815:G:N7	2.82	0.48
28:c:83:THR:O	65:NN:151:ALA:OXT	2.32	0.48
44:t:94:LYS:HA	44:t:95:GLN:C	2.38	0.48
48:5:1448:G:N2	48:5:1449:C:C2	2.81	0.48
48:5:2539:C:H2'	48:5:2540:C:C6	2.48	0.48
48:5:4136:G:C6	48:5:4137:C:C4	3.01	0.48
51:9:217:A:C2	51:9:309:G:C6	3.01	0.48
51:9:830:A:C6	51:9:844:U:N3	2.82	0.48
51:9:1380:C:H2'	51:9:1381:G:O4'	2.13	0.48
51:9:1408:U:C4	51:9:1409:A:C6	3.01	0.48
51:9:1617:G:N1	51:9:1620:A:OP2	2.45	0.48
64:MM:113:ASP:O	64:MM:115:GLY:N	2.47	0.48
7:G:32:PHE:CZ	25:Z:55:ALA:HA	2.48	0.48
48:5:28:C:C2	48:5:55:G:C2	3.02	0.48
48:5:965:G:H2'	48:5:965:G:N3	2.29	0.48
48:5:2336:G:C6	48:5:2337:C:C4	3.02	0.48
48:5:2729:C:H2'	48:5:2730:U:O4'	2.13	0.48
48:5:3586:G:C6	48:5:3587:C:C4	3.02	0.48
48:5:3896:C:O2	48:5:4564:A:N1	2.46	0.48
48:5:4767:C:C2	48:5:4868:G:C2	3.01	0.48
48:5:4989:U:O2	48:5:4989:U:O4'	2.30	0.48
51:9:1321:G:H2'	51:9:1322:G:O4'	2.14	0.48
61:JJ:45:ARG:O	61:JJ:49:THR:HG23	2.14	0.48
12:M:36:ALA:HB2	12:M:52:PHE:CE1	2.49	0.48
13:N:124:ASP:OD1	13:N:125:SER:N	2.46	0.48
33:h:88:THR:O	33:h:89:ARG:C	2.57	0.48
35:j:45:ARG:NH1	48:5:372:A:O3'	2.47	0.48
47:3:68:C:H2'	47:3:69:G:C8	2.48	0.48
48:5:1308:C:H2'	48:5:1309:C:C6	2.49	0.48
48:5:1383:G:C5	48:5:1384:C:C4	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1910:G:C6	48:5:1911:C:N4	2.82	0.48
48:5:1942:A:N3	48:5:4432:C:O2'	2.44	0.48
48:5:1983:A:C2	48:5:2008:U:O4	2.65	0.48
48:5:2468:U:C4	48:5:2473:A:N6	2.77	0.48
48:5:2496:G:C2	48:5:2497:C:C2	3.02	0.48
48:5:2844:A:O2'	48:5:4631:G:H4'	2.14	0.48
48:5:2909:C:C2	48:5:3586:G:C2	3.01	0.48
50:8:60:G:O6	50:8:96:C:O2'	2.25	0.48
51:9:629:A:N6	51:9:632:C:C2	2.82	0.48
51:9:841:G:C2	51:9:842:C:C2	3.01	0.48
51:9:1466:G:C2	51:9:1467:C:C4	3.02	0.48
54:CC:129:ALA:HB2	54:CC:213:LEU:HD11	1.95	0.48
57:FF:68:ILE:HD12	57:FF:112:LEU:HD22	1.94	0.48
79:bb:56:CYS:SG	79:bb:57:VAL:N	2.87	0.48
87:jj:11:VAL:HG22	87:jj:70:LEU:CD2	2.43	0.48
4:D:68:ARG:HG3	4:D:73:MET:HE3	1.95	0.48
5:E:254:LEU:O	5:E:257:ILE:HG12	2.14	0.48
16:Q:67:ILE:HD12	16:Q:96:PRO:HD2	1.96	0.48
48:5:2477:A:H2'	48:5:2478:C:C6	2.48	0.48
48:5:3860:A:H61	48:5:4560:C:H5	1.61	0.48
51:9:191:A:H3'	51:9:192:C:H5"	1.95	0.48
51:9:322:C:O2	51:9:323:C:C6	2.66	0.48
51:9:516:A:N1	51:9:643:A:O2'	2.44	0.48
51:9:830:A:N6	51:9:844:U:C2	2.81	0.48
51:9:1235:G:C5'	51:9:1247:C:N4	2.75	0.48
51:9:1333:U:H4'	55:DD:147:ALA:HB2	1.95	0.48
51:9:1771:G:N1	51:9:1772:C:C4	2.82	0.48
87:jj:313:LEU:HD12	87:jj:572:ASN:HD22	1.78	0.48
4:D:146:LEU:HD11	4:D:159:VAL:HG11	1.94	0.48
27:b:8:THR:OG1	27:b:9:THR:N	2.46	0.48
32:g:63:VAL:O	32:g:66:ARG:N	2.45	0.48
48:5:80:C:C2	48:5:104:G:C2	3.01	0.48
48:5:484:U:C4	48:5:486:C:C5	3.02	0.48
48:5:1699:A:N6	48:5:2094:G:O2'	2.46	0.48
48:5:1878:G:N2	48:5:1879:C:C2	2.81	0.48
48:5:1956:A:C2'	48:5:1957:U:H5'	2.43	0.48
48:5:1981:G:O3'	86:ii:414:ARG:NH2	2.47	0.48
48:5:3714:G:C6	48:5:3715:U:C4	3.02	0.48
48:5:5020:G:C2	48:5:5021:C:C2	3.02	0.48
51:9:1149:A:O2'	51:9:1150:A:H3'	2.14	0.48
67:PP:22:LEU:HA	67:PP:25:LEU:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:QQ:44:PRO:HG2	68:QQ:81:ILE:HD11	1.95	0.48
2:B:105:VAL:HG11	2:B:150:PHE:CZ	2.49	0.48
9:I:45:GLU:O	9:I:46:PHE:CD1	2.67	0.48
48:5:351:C:C2	50:8:25:G:N2	2.82	0.48
48:5:984:C:C2	48:5:1070:G:C2	3.01	0.48
48:5:2814:C:O2	48:5:2814:C:C2'	2.62	0.48
48:5:3712:A:C2	51:9:970:G:C6	3.02	0.48
48:5:3715:U:H2'	48:5:3716:C:C6	2.48	0.48
51:9:99:A:H2'	51:9:100:U:O4'	2.13	0.48
51:9:1308:U:O3'	83:ff:128:ALA:HB1	2.08	0.48
69:RR:33:ARG:NH1	84:gg:107:ASP:OD2	2.47	0.48
5:E:254:LEU:O	5:E:258:LYS:HG3	2.13	0.47
8:H:39:ASN:O	8:H:40:HIS:HB3	2.14	0.47
41:p:49:ARG:HB2	41:p:55:TRP:CZ3	2.49	0.47
43:s:14:PHE:CZ	48:5:1960:A:N3	2.80	0.47
48:5:505:G:C6	48:5:506:C:C4	3.02	0.47
48:5:508:G:C2	48:5:510:U:C5	3.02	0.47
48:5:1075:G:C2	48:5:1076:C:C2	3.02	0.47
48:5:1987:C:O2	48:5:1987:C:C2'	2.61	0.47
48:5:2496:G:C6	48:5:2497:C:C4	3.02	0.47
51:9:62:G:O4'	51:9:172:U:N3	2.46	0.47
51:9:185:G:N2	51:9:186:C:C2	2.82	0.47
51:9:491:C:H2'	51:9:492:C:O4'	2.14	0.47
51:9:830:A:H2'	51:9:831:G:O4'	2.13	0.47
87:jj:105:VAL:HG23	87:jj:263:ILE:HD11	1.95	0.47
11:L:74:ARG:NH2	48:5:76:A:N7	2.63	0.47
13:N:5:LYS:HG2	34:i:40:VAL:HG11	1.96	0.47
17:R:61:ALA:HB2	48:5:2633:U:H5"	1.96	0.47
43:s:128:THR:HG22	43:s:178:LEU:HD21	1.96	0.47
48:5:1279:A:H2'	48:5:1280:C:C6	2.49	0.47
48:5:1345:A:H2'	48:5:1346:C:C6	2.48	0.47
48:5:1995:G:C2	48:5:1996:C:C2	3.02	0.47
50:8:139:G:C6	50:8:140:C:C4	3.02	0.47
51:9:1126:G:N2	51:9:1127:C:C2	2.83	0.47
51:9:1537:A:H2'	51:9:1538:C:O4'	2.14	0.47
52:AA:109:THR:O	52:AA:110:ASN:HB2	2.13	0.47
84:gg:248:LEU:HB2	84:gg:261:LEU:HD21	1.95	0.47
86:ii:183:ALA:O	86:ii:187:ALA:HB2	2.14	0.47
2:B:36:ASP:OD1	2:B:36:ASP:N	2.44	0.47
14:O:84:VAL:HG11	14:O:102:LEU:HD22	1.96	0.47
28:c:82:GLY:HA2	28:c:91:VAL:CG1	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:120:A:H2'	48:5:149:A:N6	2.30	0.47
48:5:279:A:OP1	48:5:279:A:H3'	2.14	0.47
48:5:497:G:C2	48:5:657:C:N3	2.82	0.47
48:5:499:G:H2'	48:5:499:G:N3	2.28	0.47
48:5:977:C:H2'	48:5:978:G:H5'	1.96	0.47
48:5:1958:A:H3'	48:5:1958:A:P	2.54	0.47
48:5:2618:G:N2	48:5:2720:C:C2	2.82	0.47
48:5:4152:G:N2	48:5:4153:C:C2	2.82	0.47
51:9:1108:G:C2	51:9:1125:C:C2	3.01	0.47
51:9:1530:U:H2'	51:9:1531:A:O4'	2.14	0.47
51:9:1868:U:N3	78:aa:98:PRO:O	2.43	0.47
74:WW:89:TRP:CE3	74:WW:93:LEU:HD22	2.49	0.47
1:A:193:ARG:NH2	48:5:3685:C:OP1	2.47	0.47
4:D:64:ILE:HG13	4:D:105:LEU:HD21	1.95	0.47
5:E:202:VAL:HG12	5:E:256:LYS:HZ1	1.74	0.47
11:L:100:PRO:O	34:i:25:ARG:NH2	2.47	0.47
14:O:109:PRO:HB2	14:O:110:PRO:CD	2.43	0.47
47:3:70:G:H4'	48:5:3740:G:O2'	2.15	0.47
48:5:1367:C:O2	48:5:1367:C:H2'	2.14	0.47
48:5:1661:C:C2	48:5:2345:G:N1	2.82	0.47
51:9:1834:A:C2'	51:9:1834:A:N3	2.77	0.47
2:B:312:LYS:HD2	2:B:370:THR:HG21	1.97	0.47
14:O:196:LEU:HB3	14:O:202:LEU:HD22	1.97	0.47
48:5:298:G:N2	48:5:299:C:C2	2.83	0.47
48:5:1189:G:C6	48:5:1190:C:C4	3.02	0.47
48:5:1448:G:C6	48:5:1449:C:N4	2.82	0.47
48:5:1468:C:C2	48:5:1498:G:N2	2.82	0.47
48:5:2661:U:HO2'	48:5:2662:G:P	2.37	0.47
48:5:3662:A:N6	48:5:3680:U:N3	2.57	0.47
48:5:4093:G:H3'	48:5:4094:G:H5'	1.95	0.47
48:5:4099:G:C2	48:5:4100:C:C2	3.02	0.47
48:5:4246:G:N2	48:5:4263:C:C2	2.83	0.47
48:5:4378:A:O2'	48:5:4379:A:H2'	2.14	0.47
48:5:4916:G:C2	48:5:4917:C:C2	3.02	0.47
50:8:56:G:C6	50:8:57:C:C4	3.02	0.47
51:9:1537:A:N1	51:9:1596:U:C4	2.83	0.47
51:9:1667:U:H2'	51:9:1668:U:C6	2.49	0.47
55:DD:162:ASP:N	55:DD:163:PRO:HD2	2.29	0.47
67:PP:26:LEU:N	67:PP:28:MET:SD	2.87	0.47
3:C:181:LYS:HD2	48:5:2300:A:N1	2.29	0.47
6:F:49:ARG:NH1	48:5:974:C:O3'	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:211:TRP:CD1	6:F:212:PRO:HD2	2.50	0.47
9:I:153:ARG:HA	9:I:165:ILE:HD11	1.96	0.47
17:R:11:ALA:HB1	17:R:50:ILE:HD13	1.96	0.47
27:b:13:SER:HA	27:b:16:TRP:CE3	2.49	0.47
32:g:5:LEU:HD13	32:g:32:TYR:CE2	2.49	0.47
32:g:69:LYS:N	48:5:2769:U:OP1	2.48	0.47
40:o:68:LEU:HD11	40:o:85:ILE:CD1	2.44	0.47
48:5:971:U:H2'	48:5:972:C:H5'	1.95	0.47
48:5:2097:U:O2	48:5:2097:U:O4'	2.33	0.47
48:5:2297:G:C2	48:5:2338:C:C2	3.03	0.47
48:5:4119:C:O2	48:5:4119:C:O4'	2.30	0.47
51:9:172:U:O2	51:9:172:U:C2'	2.61	0.47
51:9:635:G:C2	51:9:636:C:C2	3.03	0.47
51:9:1445:U:O4	51:9:1446:A:N6	2.47	0.47
51:9:1754:G:C6	51:9:1755:C:C4	3.03	0.47
62:KK:64:TRP:O	62:KK:65:ARG:C	2.57	0.47
66:OO:142:ARG:HG3	66:OO:143:LYS:N	2.30	0.47
86:ii:226:LEU:HD12	86:ii:253:LEU:HD22	1.96	0.47
3:C:161:TYR:CD1	3:C:166:GLU:HB3	2.49	0.47
3:C:290:SER:O	3:C:294:LYS:HG2	2.14	0.47
5:E:62:LYS:NZ	48:5:978:G:P	2.81	0.47
5:E:123:SER:O	5:E:126:ARG:HG2	2.15	0.47
17:R:44:LEU:HD22	17:R:49:LEU:HD12	1.96	0.47
17:R:99:MET:HE3	17:R:127:VAL:HG12	1.96	0.47
24:Y:52:ASP:OD1	24:Y:52:ASP:N	2.47	0.47
48:5:35:U:O2'	48:5:1525:A:N1	2.46	0.47
48:5:384:A:N6	48:5:386:A:C6	2.83	0.47
48:5:499:G:C2	48:5:656:C:N3	2.82	0.47
48:5:1246:G:H2'	48:5:1247:U:O4'	2.14	0.47
48:5:1270:A:H2'	48:5:1271:G:O5'	2.15	0.47
48:5:1357:C:O2'	48:5:1358:G:O4'	2.29	0.47
48:5:1358:G:H2'	48:5:1359:G:C8	2.50	0.47
48:5:1787:A:N3	48:5:4210:U:O2'	2.44	0.47
48:5:2020:U:O2	48:5:2020:U:H2'	2.14	0.47
48:5:2089:G:HO2'	48:5:2090:U:P	2.37	0.47
48:5:2128:G:C6	48:5:2129:C:C4	3.03	0.47
48:5:2459:G:N2	48:5:2462:C:OP2	2.47	0.47
48:5:2586:G:C8	48:5:2770:C:H1'	2.49	0.47
48:5:3938:G:O6	48:5:4172:A:N1	2.48	0.47
48:5:4092:G:C2	48:5:4158:C:C2	3.02	0.47
48:5:4303:C:O2	48:5:4303:C:O5'	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:4525:C:H2'	48:5:4526:U:O4'	2.15	0.47
51:9:1115:U:O2	51:9:1115:U:O4'	2.31	0.47
51:9:1444:U:O2'	51:9:1580:A:N1	2.45	0.47
51:9:1541:G:C6	51:9:1542:C:C4	3.03	0.47
52:AA:104:THR:O	52:AA:107:THR:HG23	2.14	0.47
56:EE:195:ILE:O	56:EE:196:THR:HB	2.15	0.47
58:GG:57:ASP:HA	58:GG:106:LEU:HD23	1.96	0.47
61:JJ:118:GLY:O	61:JJ:120:ALA:N	2.44	0.47
80:cc:20:LYS:HG3	80:cc:28:THR:HG22	1.96	0.47
2:B:91:GLY:CA	2:B:153:MET:HE3	2.45	0.47
3:C:268:ARG:NH2	48:5:655:C:OP2	2.47	0.47
28:c:34:THR:HG21	28:c:93:THR:CG2	2.44	0.47
35:j:9:GLY:HA3	48:5:2800:G:H1'	1.95	0.47
48:5:2743:A:C2	48:5:2744:A:C4	3.03	0.47
48:5:2907:G:H2'	48:5:2908:U:O4'	2.15	0.47
48:5:4489:G:C2	48:5:4490:C:C2	3.02	0.47
48:5:4730:C:O5'	48:5:4731:G:N2	2.47	0.47
48:5:4919:G:C2	48:5:4920:C:C2	3.02	0.47
49:7:117:G:C2	49:7:118:C:C2	3.03	0.47
50:8:71:A:C2	50:8:88:A:H1'	2.50	0.47
51:9:322:C:C2'	51:9:323:C:OP2	2.62	0.47
51:9:942:G:N2	66:OO:138:ASP:OD1	2.47	0.47
51:9:1228:A:H2'	51:9:1229:G:C8	2.50	0.47
56:EE:126:VAL:HG13	56:EE:160:ILE:HD11	1.96	0.47
65:NN:55:ARG:HD2	79:bb:47:PHE:CD2	2.50	0.47
78:aa:34:LYS:O	78:aa:35:ALA:HB3	2.15	0.47
87:jj:7:ARG:CD	87:jj:57:GLY:CA	2.91	0.47
4:D:76:CYS:SG	4:D:77:ALA:N	2.87	0.47
7:G:100:HIS:HA	7:G:103:ARG:HD2	1.95	0.47
8:H:126:VAL:HG11	8:H:161:ILE:HG22	1.97	0.47
14:O:160:ARG:NH2	48:5:4759:C:OP1	2.47	0.47
48:5:100:C:O4'	48:5:100:C:O2	2.33	0.47
48:5:698:G:N2	48:5:699:C:C2	2.83	0.47
48:5:1189:G:C2	48:5:1190:C:C2	3.03	0.47
48:5:1240:G:C2	48:5:1241:C:C2	3.03	0.47
48:5:1584:G:C6	48:5:1585:C:C4	3.02	0.47
48:5:1886:G:N2	48:5:1894:C:C2	2.83	0.47
48:5:2089:G:C6	48:5:2262:G:H2'	2.50	0.47
48:5:2468:U:N3	48:5:2473:A:C6	2.83	0.47
48:5:4942:C:O3'	48:5:4944:C:P	2.73	0.47
51:9:380:G:OP2	60:II:181:GLN:NE2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1129:G:H3'	51:9:1130:G:C8	2.50	0.47
51:9:1141:G:N2	51:9:1147:C:C2	2.83	0.47
51:9:1267:C:C2	51:9:1516:G:C2	3.03	0.47
56:EE:160:ILE:HG21	56:EE:169:ILE:HG22	1.96	0.47
63:LL:126:VAL:HG22	63:LL:142:VAL:HG13	1.97	0.47
86:ii:372:MET:HG3	86:ii:373:PRO:HD3	1.96	0.47
4:D:43:LYS:HB3	4:D:46:THR:CG2	2.45	0.47
5:E:59:TYR:CZ	5:E:64:LEU:HB2	2.49	0.47
11:L:65:ARG:HD3	26:a:69:PHE:CD1	2.49	0.47
14:O:26:GLN:OE1	14:O:31:ARG:NH1	2.48	0.47
29:d:46:LEU:HD12	29:d:72:VAL:HG11	1.97	0.47
30:e:35:TRP:CZ2	30:e:56:PRO:HD2	2.50	0.47
48:5:967:C:N3	48:5:2254:G:C6	2.82	0.47
48:5:1383:G:C6	48:5:1384:C:C4	3.02	0.47
48:5:2065:G:C6	48:5:2066:C:C4	3.03	0.47
48:5:2743:A:H2'	48:5:2744:A:C8	2.50	0.47
51:9:830:A:N6	51:9:844:U:C4	2.72	0.47
51:9:1335:G:C6	51:9:1336:C:C4	3.03	0.47
51:9:1500:G:H2'	51:9:1501:C:O4'	2.14	0.47
51:9:1528:G:N1	51:9:1529:C:C4	2.83	0.47
52:AA:155:ARG:NE	73:VV:61:ARG:O	2.37	0.47
66:OO:126:ILE:HG21	66:OO:129:ILE:HD11	1.97	0.47
86:ii:156:ALA:HB3	86:ii:172:PHE:CE1	2.50	0.47
2:B:240:LEU:HB3	2:B:241:PRO:HD2	1.96	0.46
2:B:385:LYS:NZ	48:5:5002:U:OP2	2.47	0.46
15:P:32:THR:HG21	15:P:87:SER:HB3	1.96	0.46
21:V:38:TYR:N	21:V:64:THR:O	2.47	0.46
23:X:52:LEU:HD22	23:X:53:ARG:N	2.30	0.46
40:o:104:ILE:HG21	46:2:56:C:N4	2.30	0.46
48:5:1221:G:O2'	48:5:1222:A:O5'	2.22	0.46
48:5:1541:C:C2	48:5:1619:G:N2	2.82	0.46
48:5:1732:C:C2	48:5:1798:G:C2	3.03	0.46
48:5:1995:G:C6	48:5:1996:C:C4	3.03	0.46
48:5:2771:G:C6	48:5:2772:C:C4	3.03	0.46
48:5:2858:A:O2'	48:5:2859:G:C8	2.65	0.46
49:7:86:G:C2	49:7:92:C:C2	3.03	0.46
51:9:1139:C:O2	51:9:1139:C:O4'	2.33	0.46
51:9:1406:G:O3'	51:9:1408:U:OP1	2.33	0.46
51:9:1859:A:H2'	51:9:1860:A:C8	2.50	0.46
56:EE:31:PRO:HD2	56:EE:38:LEU:HD13	1.97	0.46
56:EE:156:MET:O	56:EE:157:ASN:CB	2.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:98:ARG:HH21	6:F:226:THR:HG22	1.81	0.46
15:P:41:ILE:HD12	15:P:150:LEU:CD1	2.46	0.46
31:f:45:LYS:HD3	31:f:107:PRO:HD2	1.97	0.46
48:5:199:G:N1	48:5:220:C:C2	2.83	0.46
48:5:302:C:N4	48:5:303:C:N4	2.64	0.46
48:5:1099:C:H2'	48:5:1100:U:O4'	2.16	0.46
48:5:1957:U:O2'	48:5:1958:A:O4'	2.33	0.46
48:5:2245:G:C2	48:5:2246:C:C2	3.04	0.46
48:5:4461:C:C2	48:5:4516:G:C2	3.03	0.46
48:5:4661:G:C6	48:5:4662:C:C4	3.03	0.46
50:8:56:G:C2	50:8:57:C:C2	3.03	0.46
51:9:125:C:OP2	58:GG:198:ARG:NH1	2.39	0.46
51:9:290:U:OP1	56:EE:156:MET:CE	2.60	0.46
51:9:479:C:H2'	51:9:480:G:O4'	2.16	0.46
51:9:562:U:H2'	51:9:563:G:C8	2.49	0.46
75:XX:9:THR:O	75:XX:11:ARG:N	2.48	0.46
2:B:252:ALA:HB1	48:5:4524:G:N3	2.30	0.46
6:F:41:GLN:CG	48:5:2095:A:N1	2.79	0.46
13:N:68:ARG:CG	48:5:302:C:OP1	2.63	0.46
17:R:119:MET:HG3	17:R:123:LEU:HD22	1.97	0.46
19:T:64:VAL:HG22	19:T:72:VAL:HG11	1.97	0.46
26:a:61:TYR:N	48:5:4354:U:O4	2.47	0.46
48:5:22:G:N1	50:8:35:C:C4	2.83	0.46
48:5:106:A:O2'	48:5:335:A:N3	2.43	0.46
48:5:978:G:C6	48:5:979:C:C4	3.04	0.46
48:5:1198:G:H2'	48:5:1199:G:C8	2.49	0.46
48:5:4537:C:H2'	48:5:4538:G:C8	2.50	0.46
48:5:4740:G:C2	48:5:4741:C:C2	3.04	0.46
50:8:127:U:C4	50:8:128:C:C5	3.03	0.46
51:9:358:C:C2	51:9:405:G:C2	3.03	0.46
51:9:1641:A:H8	51:9:1641:A:OP2	1.99	0.46
74:WW:52:ILE:HG22	74:WW:61:ILE:HG23	1.96	0.46
87:jj:389:ILE:HG23	87:jj:484:LEU:HD13	1.97	0.46
1:A:209:HIS:CG	1:A:210:PRO:HD2	2.51	0.46
9:I:87:ILE:HG12	9:I:138:ILE:CG1	2.45	0.46
48:5:205:C:C4	48:5:211:G:C6	3.04	0.46
48:5:384:A:C6	48:5:386:A:C5	3.04	0.46
48:5:479:G:N2	48:5:480:C:C2	2.83	0.46
48:5:747:A:C2	48:5:749:G:H1'	2.50	0.46
48:5:1591:U:N3	48:5:4555:U:OP1	2.47	0.46
48:5:1928:C:C4	48:5:2054:U:O2	2.69	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1984:A:N6	48:5:2011:C:O2'	2.48	0.46
48:5:4587:G:C2	48:5:4716:C:C2	3.04	0.46
50:8:55:U:N3	50:8:62:A:C2	2.83	0.46
51:9:23:G:C6	51:9:24:C:C4	3.03	0.46
51:9:1835:A:N9	51:9:1863:A:N7	2.63	0.46
56:EE:54:TYR:CD1	76:YY:17:LEU:HD11	2.51	0.46
59:HH:145:ARG:HD3	74:WW:51:GLU:HB3	1.97	0.46
63:LL:106:HIS:O	63:LL:106:HIS:CG	2.69	0.46
87:jj:252:ARG:HD3	87:jj:278:VAL:HG21	1.98	0.46
2:B:119:TYR:OH	2:B:129:ALA:N	2.48	0.46
47:3:35:U:C1'	51:9:1641:A:P	3.03	0.46
48:5:120:A:C2	48:5:148:C:O2	2.68	0.46
48:5:499:G:C2	48:5:500:G:C8	3.03	0.46
48:5:721:G:C2	48:5:948:C:C2	3.03	0.46
48:5:1171:G:C6	48:5:1172:C:C4	3.04	0.46
48:5:1270:A:H2'	48:5:1271:G:O4'	2.16	0.46
48:5:1855:G:C6	48:5:1856:C:C4	3.04	0.46
48:5:2046:G:C2	48:5:2047:A:C2	3.03	0.46
48:5:2698:G:C6	48:5:2699:C:C4	3.03	0.46
48:5:3900:G:H5"	48:5:3901:A:H4'	1.97	0.46
48:5:4102:C:C2	48:5:4108:G:C2	3.03	0.46
48:5:4372:U:O2	48:5:4377:G:H1'	2.15	0.46
48:5:4916:G:C6	48:5:4917:C:C4	3.04	0.46
51:9:187:G:C6	51:9:188:C:C4	3.04	0.46
51:9:1726:G:C6	51:9:1727:G:C5	3.03	0.46
56:EE:199:GLU:HB2	56:EE:207:VAL:HG12	1.97	0.46
69:RR:124:VAL:HB	69:RR:126:MET:HE1	1.96	0.46
86:ii:323:TYR:C	86:ii:326:LEU:HD21	2.41	0.46
2:B:4:ARG:HG3	48:5:4458:C:N4	2.30	0.46
5:E:262:GLN:N	48:5:4930:C:OP1	2.47	0.46
11:L:150:LEU:HD22	33:h:121:VAL:CG2	2.46	0.46
18:S:84:TYR:CD1	18:S:84:TYR:C	2.94	0.46
37:l:20:ASN:O	37:l:41:ARG:NE	2.48	0.46
39:n:10:MET:HE2	51:9:1172:U:H4'	1.96	0.46
48:5:177:G:C6	48:5:178:C:C4	3.03	0.46
48:5:497:G:H3'	48:5:498:C:H5"	1.97	0.46
48:5:654:C:O2	48:5:654:C:H2'	2.15	0.46
48:5:1269:G:C8	48:5:2111:G:C6	3.04	0.46
48:5:1643:A:H2'	48:5:1644:C:C6	2.50	0.46
48:5:1826:G:C6	48:5:1827:C:C4	3.03	0.46
48:5:2128:G:C2	48:5:2129:C:C2	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:2618:G:C2	48:5:2720:C:C2	3.03	0.46
48:5:2698:G:C2	48:5:2699:C:C2	3.04	0.46
48:5:3597:G:C2	48:5:3598:C:C2	3.03	0.46
51:9:1096:G:OP1	74:WW:22:LYS:NZ	2.46	0.46
51:9:1650:A:C5	51:9:1675:A:C2	3.03	0.46
51:9:1703:C:O2	51:9:1832:A:N1	2.48	0.46
70:SS:66:ARG:HD2	70:SS:70:ILE:HD11	1.97	0.46
71:TT:56:ARG:HD2	71:TT:79:TYR:CD2	2.50	0.46
74:WW:105:THR:HB	74:WW:126:LEU:HD11	1.97	0.46
74:WW:108:ALA:HB3	74:WW:111:MET:HE1	1.97	0.46
86:ii:34:MET:HE1	86:ii:100:ILE:HG22	1.98	0.46
86:ii:374:LEU:O	86:ii:375:LEU:C	2.56	0.46
18:S:83:ARG:HH21	18:S:83:ARG:CG	2.29	0.46
26:a:84:GLU:O	26:a:88:VAL:HG23	2.16	0.46
46:2:30:G:C6	46:2:31:C:C4	3.04	0.46
48:5:177:G:C2	48:5:178:C:C2	3.03	0.46
48:5:207:G:O4’	48:5:406:C:H5’	2.15	0.46
48:5:1279:A:C4	48:5:1280:C:C4	3.04	0.46
48:5:1280:C:N3	48:5:1282:G:C6	2.83	0.46
48:5:1365:C:O2	48:5:1366:G:C8	2.69	0.46
48:5:1379:C:H4’	48:5:1380:G:C8	2.50	0.46
48:5:2818:C:OP1	48:5:4655:A:H4’	2.15	0.46
48:5:4919:G:C6	48:5:4920:C:C4	3.04	0.46
51:9:752:G:N1	51:9:790:C:C4	2.83	0.46
51:9:993:G:C2	51:9:994:C:C2	3.04	0.46
51:9:1401:A:H2’	51:9:1402:A:C8	2.51	0.46
52:AA:159:ILE:HG23	52:AA:159:ILE:O	2.16	0.46
69:RR:36:GLU:HG2	69:RR:47:ARG:HD2	1.98	0.46
74:WW:26:LEU:HD11	74:WW:60:LYS:HD3	1.96	0.46
74:WW:53:ILE:HD11	74:WW:62:VAL:HG23	1.98	0.46
78:aa:8:ASN:O	78:aa:10:ARG:N	2.49	0.46
86:ii:264:PHE:CE1	86:ii:268:ILE:HD11	2.51	0.46
1:A:112:ILE:HG23	1:A:133:TYR:CD2	2.51	0.46
2:B:156:TYR:CD1	48:5:4909:A:C2’	2.91	0.46
29:d:28:ASN:C	29:d:28:ASN:OD1	2.57	0.46
33:h:60:VAL:O	33:h:64:THR:HG23	2.16	0.46
42:r:10:VAL:HG13	42:r:14:SER:HB3	1.96	0.46
42:r:82:ILE:HD11	42:r:96:MET:CE	2.46	0.46
48:5:199:G:C2	48:5:201:C:N3	2.84	0.46
48:5:746:A:H4’	48:5:747:A:OP1	2.16	0.46
48:5:917:A:C6	48:5:919:C:N4	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:967:C:OP1	48:5:2254:G:N1	2.48	0.46
48:5:1240:G:C6	48:5:1241:C:C4	3.04	0.46
48:5:2847:G:N2	48:5:3842:C:C2	2.84	0.46
48:5:3586:G:C2	48:5:3587:C:C2	3.03	0.46
48:5:4283:G:N1	48:5:4284:C:C4	2.84	0.46
51:9:834:C:N4	51:9:841:G:C6	2.84	0.46
51:9:872:A:N6	51:9:914:U:C4	2.83	0.46
51:9:1454:A:P	69:RR:3:ARG:HE	2.39	0.46
56:EE:126:VAL:CG1	56:EE:160:ILE:HD11	2.46	0.46
2:B:29:VAL:CG2	2:B:346:THR:HG21	2.46	0.46
5:E:41:SER:HA	48:5:978:G:H4'	1.96	0.46
14:O:12:ARG:O	18:S:171:ARG:NH2	2.49	0.46
31:f:11:PHE:CE2	31:f:97:ILE:HD13	2.51	0.46
35:j:59:THR:HG22	50:8:41:A:O2'	2.16	0.46
47:3:24:G:H2'	47:3:25:C:O4'	2.16	0.46
47:3:24:G:C2	47:3:25:C:C2	3.03	0.46
47:3:38:A:C2	57:FF:135:ARG:CZ	2.98	0.46
47:3:38:A:N3	57:FF:135:ARG:NH2	2.63	0.46
48:5:1416:G:N2	48:5:1417:C:C2	2.84	0.46
48:5:3600:G:C6	48:5:3601:C:C4	3.04	0.46
48:5:3900:G:C2	48:5:4562:C:N3	2.84	0.46
48:5:4472:G:C6	48:5:4473:A:N7	2.84	0.46
51:9:1466:G:C6	51:9:1467:C:N4	2.84	0.46
51:9:1696:C:HO2'	51:9:1702:G:HO2'	1.62	0.46
57:FF:99:ILE:HD11	77:ZZ:106:GLN:HE22	1.81	0.46
58:GG:66:GLY:O	58:GG:68:LEU:HD22	2.16	0.46
67:PP:53:GLN:HE22	67:PP:83:MET:HG3	1.80	0.46
69:RR:126:MET:HA	69:RR:126:MET:HE3	1.97	0.46
74:WW:27:ILE:HG12	74:WW:61:ILE:HB	1.97	0.46
81:dd:21:CYS:SG	81:dd:23:VAL:N	2.87	0.46
5:E:250:ASP:O	5:E:254:LEU:N	2.46	0.46
6:F:41:GLN:HG3	48:5:2095:A:N1	2.31	0.46
12:M:37:LEU:HD23	18:S:100:LEU:HD11	1.98	0.46
13:N:169:ARG:NH1	48:5:63:G:OP2	2.43	0.46
26:a:19:HIS:NE2	48:5:1338:G:N2	2.64	0.46
26:a:75:LEU:HD11	26:a:133:ALA:HA	1.98	0.46
46:2:54:U:H2'	46:2:55:U:O4'	2.16	0.46
48:5:705:G:N2	48:5:706:C:C2	2.84	0.46
48:5:726:G:C6	48:5:727:C:N4	2.84	0.46
48:5:918:G:H2'	48:5:918:G:N3	2.31	0.46
48:5:1613:A:H3'	48:5:1614:C:C5'	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:2065:G:C2	48:5:2066:C:C2	3.04	0.46
48:5:2065:G:H2'	48:5:2066:C:O4'	2.16	0.46
48:5:3717:A:O2'	48:5:3718:A:O4'	2.33	0.46
48:5:3729:U:H2'	48:5:3730:U:C6	2.52	0.46
48:5:4136:G:C2	48:5:4137:C:C2	3.04	0.46
48:5:4737:G:C2	48:5:4738:C:C2	3.04	0.46
51:9:1102:G:C2	51:9:1103:C:C4	3.04	0.46
51:9:1319:U:H2'	51:9:1320:G:O4'	2.16	0.46
51:9:1563:G:C2	51:9:1564:C:C2	3.04	0.46
51:9:1695:A:N1	51:9:1832:A:O2'	2.47	0.46
80:cc:14:VAL:HG13	80:cc:30:VAL:CG1	2.46	0.46
86:ii:372:MET:CG	86:ii:373:PRO:HD3	2.46	0.46
1:A:207:VAL:HG12	48:5:3919:C:H4'	1.97	0.45
7:G:58:PRO:HD3	23:X:46:PHE:HD2	1.80	0.45
7:G:221:ALA:O	7:G:224:THR:OG1	2.34	0.45
25:Z:28:ASN:C	25:Z:29:ILE:HD12	2.41	0.45
26:a:79:TRP:CZ2	26:a:122:VAL:HG13	2.51	0.45
34:i:39:PHE:O	34:i:43:MET:HB2	2.16	0.45
48:5:181:C:C4	48:5:256:G:N1	2.84	0.45
48:5:984:C:C2	48:5:1070:G:N2	2.84	0.45
48:5:1639:U:O2	48:5:1639:U:H2'	2.16	0.45
48:5:2270:G:C6	48:5:2271:C:C4	3.04	0.45
48:5:2569:G:H2'	48:5:2570:U:O4'	2.15	0.45
48:5:2711:G:H3'	48:5:2712:G:H5"	1.98	0.45
48:5:3690:U:H2'	48:5:3691:G:O4'	2.17	0.45
48:5:3941:G:H2'	48:5:3942:A:O4'	2.15	0.45
48:5:5017:G:C2	48:5:5018:C:C2	3.05	0.45
48:5:5017:G:C6	48:5:5018:C:C4	3.04	0.45
75:XX:57:VAL:HG11	75:XX:115:ILE:HG22	1.97	0.45
87:jj:7:ARG:CZ	87:jj:56:ILE:C	2.80	0.45
18:S:84:TYR:C	18:S:84:TYR:HD1	2.25	0.45
37:l:41:ARG:NH1	48:5:2431:A:OP1	2.49	0.45
42:r:17:LEU:HD21	42:r:19:LYS:HG3	1.97	0.45
46:2:7:G:C6	46:2:49:C:N4	2.84	0.45
47:3:29:A:HO2'	47:3:30:G:P	2.33	0.45
48:5:3942:A:H2'	48:5:3943:A:O4'	2.17	0.45
48:5:4423:U:O2	48:5:4423:U:O4'	2.34	0.45
48:5:4773:C:C2	48:5:4863:G:C2	3.04	0.45
48:5:4881:U:O2	48:5:4881:U:O4'	2.34	0.45
48:5:4904:G:N2	48:5:4905:C:C2	2.85	0.45
51:9:997:A:H2'	51:9:998:A:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1862:G:N2	51:9:1863:A:H2	2.13	0.45
54:CC:192:LEU:HD23	54:CC:227:TRP:HE1	1.77	0.45
60:II:55:TYR:HB2	60:II:182:CYS:O	2.16	0.45
73:VV:30:ALA:O	73:VV:60:ARG:HD3	2.17	0.45
85:hh:49:U:O2	86:ii:61:ASN:ND2	2.49	0.45
12:M:119:ARG:NH2	14:O:189:ILE:HD12	2.31	0.45
24:Y:59:ARG:NH2	48:5:200:U:O2'	2.49	0.45
38:m:100:TYR:O	48:5:4472:G:O2'	2.29	0.45
43:s:180:ILE:HG22	43:s:182:PRO:HD3	1.98	0.45
47:3:67:U:C2'	47:3:68:C:C5'	2.77	0.45
48:5:77:U:H3	48:5:336:A:N6	2.13	0.45
48:5:688:U:H2'	48:5:689:U:C6	2.52	0.45
48:5:1826:G:C2	48:5:1827:C:C2	3.04	0.45
48:5:1904:G:N2	48:5:2073:C:C2	2.84	0.45
48:5:2465:C:H2'	48:5:2466:G:C8	2.51	0.45
48:5:4699:U:C4	48:5:4702:G:C6	3.05	0.45
48:5:4883:C:O2'	48:5:4884:G:P	2.74	0.45
48:5:5001:U:H2'	48:5:5002:U:O4'	2.16	0.45
51:9:23:G:C2	51:9:24:C:C2	3.04	0.45
51:9:434:G:N3	51:9:473:A:H2	2.13	0.45
51:9:591:U:O2	51:9:591:U:O4'	2.31	0.45
51:9:673:G:C6	51:9:674:C:C4	3.04	0.45
51:9:1673:U:H2'	51:9:1674:G:O4'	2.16	0.45
63:LL:35:ARG:NH2	63:LL:55:TYR:O	2.43	0.45
86:ii:264:PHE:HE1	86:ii:268:ILE:HD11	1.81	0.45
6:F:171:LEU:HB2	6:F:189:MET:HE1	1.98	0.45
16:Q:14:ARG:NH2	48:5:2083:C:OP2	2.49	0.45
31:f:35:ALA:O	31:f:37:ASP:N	2.49	0.45
48:5:190:G:C2	48:5:252:C:C2	3.04	0.45
48:5:504:G:O6	48:5:654:C:C4	2.70	0.45
48:5:1098:G:C2	48:5:1099:C:C2	3.05	0.45
48:5:4109:G:C6	48:5:4110:C:C4	3.05	0.45
48:5:4644:G:C6	48:5:4645:C:C4	3.05	0.45
48:5:4913:G:HO2'	48:5:4914:C:C1'	2.27	0.45
51:9:1294:G:C6	51:9:1295:A:C5	3.04	0.45
51:9:1298:G:O2'	51:9:1299:A:C8	2.69	0.45
51:9:1409:A:C6	51:9:1410:C:C5	3.04	0.45
53:BB:33:VAL:HG21	53:BB:67:PHE:CZ	2.52	0.45
63:LL:76:VAL:HB	63:LL:125:ILE:HD13	1.98	0.45
73:VV:32:ILE:HD12	73:VV:60:ARG:HD2	1.97	0.45
73:VV:47:ASN:O	73:VV:49:GLN:N	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:ZZ:58:LEU:HD23	77:ZZ:62:VAL:HG21	1.97	0.45
5:E:124:HIS:NE2	48:5:1282:G:N7	2.65	0.45
9:I:93:PRO:HB2	9:I:125:THR:HB	1.99	0.45
14:O:116:LYS:HD3	18:S:169:THR:HG21	1.98	0.45
47:3:35:U:O4'	51:9:1641:A:P	2.74	0.45
48:5:977:C:O2'	48:5:978:G:H5'	2.17	0.45
48:5:1549:G:N2	48:5:1580:C:C2	2.84	0.45
48:5:1925:G:C6	48:5:1926:C:C4	3.05	0.45
48:5:1995:G:C6	48:5:1996:C:N3	2.84	0.45
48:5:2395:A:HO2'	48:5:2806:A:H1'	1.77	0.45
48:5:2567:G:C2	48:5:2568:C:C2	3.04	0.45
48:5:3918:G:C6	48:5:3919:C:C4	3.04	0.45
48:5:5008:C:H2'	48:5:5009:G:O4'	2.16	0.45
51:9:194:C:C2	51:9:206:G:C2	3.05	0.45
51:9:293:C:O2'	51:9:294:U:H3'	2.16	0.45
51:9:1489:A:H4'	51:9:1490:G:OP2	2.15	0.45
60:II:139:LYS:HD2	60:II:145:ILE:HD12	1.99	0.45
87:jj:98:PRO:CG	87:jj:123:LEU:HD11	2.47	0.45
8:H:95:VAL:HG12	38:m:78:ILE:HD11	1.98	0.45
13:N:179:LYS:O	48:5:298:G:H5'	2.16	0.45
15:P:41:ILE:HD12	15:P:150:LEU:HD13	1.99	0.45
26:a:59:ARG:NH2	48:5:294:G:O2'	2.49	0.45
41:p:4:ARG:NH1	48:5:1554:A:OP2	2.49	0.45
42:r:47:LYS:C	42:r:103:HIS:HD2	2.25	0.45
48:5:1072:C:O2	48:5:1072:C:H2'	2.17	0.45
48:5:1448:G:C2	48:5:1449:C:C2	3.04	0.45
48:5:3727:A:H2'	48:5:3728:A:C8	2.51	0.45
48:5:4473:A:H2'	48:5:4474:A:C8	2.51	0.45
51:9:1274:G:N7	62:KK:43:LEU:HD13	2.32	0.45
51:9:1309:C:P	83:ff:128:ALA:HB1	2.53	0.45
51:9:1537:A:N1	51:9:1596:U:O4	2.50	0.45
72:UU:46:LYS:HD3	72:UU:97:ILE:HG23	1.98	0.45
74:WW:8:ALA:HA	74:WW:74:VAL:HG11	1.97	0.45
16:Q:17:GLU:HB2	16:Q:18:PRO:HD2	1.98	0.45
48:5:179:G:C2	48:5:180:C:C2	3.05	0.45
48:5:199:G:C6	48:5:220:C:N3	2.85	0.45
48:5:351:C:C2	50:8:25:G:C2	3.04	0.45
48:5:488:G:N2	48:5:489:C:C2	2.85	0.45
48:5:1322:A:N6	48:5:4446:U:OP1	2.48	0.45
48:5:2664:G:N2	48:5:2671:C:C2	2.85	0.45
48:5:5020:G:C6	48:5:5021:C:C4	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:7:27:G:C2	49:7:28:C:C2	3.05	0.45
51:9:1041:G:C2	51:9:1075:C:C2	3.04	0.45
51:9:1541:G:C2	51:9:1542:C:C2	3.05	0.45
51:9:1597:C:H4'	51:9:1603:G:C6	2.52	0.45
57:FF:143:PRO:O	57:FF:147:VAL:HG23	2.16	0.45
59:HH:177:TYR:CZ	59:HH:181:THR:HG21	2.51	0.45
61:JJ:94:LEU:HD12	61:JJ:97:ILE:HD12	1.98	0.45
70:SS:113:ARG:HG2	70:SS:113:ARG:HH11	1.81	0.45
72:UU:68:THR:HG22	72:UU:69:PRO:O	2.17	0.45
74:WW:82:GLN:O	74:WW:84:LYS:N	2.49	0.45
42:r:8:MET:HA	42:r:8:MET:HE2	1.97	0.45
48:5:994:G:C2	48:5:1050:C:C2	3.04	0.45
48:5:1241:C:C2'	48:5:1242:G:OP1	2.65	0.45
48:5:1855:G:C2	48:5:1856:C:C2	3.04	0.45
48:5:2594:C:C2	48:5:2752:G:C2	3.04	0.45
48:5:2738:C:O2'	48:5:2740:U:O2	2.35	0.45
50:8:94:G:C8	50:8:94:G:H5'	2.52	0.45
51:9:1717:C:C2	51:9:1817:G:C2	3.04	0.45
51:9:1749:G:C2	51:9:1750:C:C2	3.05	0.45
59:HH:115:LYS:O	59:HH:116:ARG:CB	2.65	0.45
64:MM:50:CYS:SG	64:MM:51:VAL:N	2.90	0.45
66:OO:62:VAL:HG21	66:OO:73:ALA:HB2	1.98	0.45
5:E:157:ARG:HD3	5:E:266:TYR:CZ	2.52	0.45
9:I:184:MET:CE	9:I:190:LEU:CG	2.78	0.45
9:I:202:ASN:N	9:I:202:ASN:OD1	2.49	0.45
25:Z:55:ALA:O	25:Z:57:MET:N	2.49	0.45
48:5:158:A:H5"	48:5:159:C:H2'	1.99	0.45
48:5:994:G:C2	48:5:995:C:C2	3.05	0.45
48:5:1744:U:H2'	48:5:1745:G:O4'	2.17	0.45
48:5:1959:U:H1'	48:5:1961:G:O4'	2.17	0.45
48:5:2898:G:C6	48:5:2899:C:C4	3.05	0.45
48:5:4473:A:C2	48:5:4474:A:C5	3.04	0.45
48:5:4874:A:H3'	48:5:4875:G:C5'	2.47	0.45
51:9:751:G:O2'	51:9:752:G:O4'	2.25	0.45
51:9:797:C:O2	51:9:798:G:O2'	2.35	0.45
51:9:1759:G:C2	51:9:1774:C:C2	3.05	0.45
58:GG:76:LEU:HD22	58:GG:92:ARG:CG	2.47	0.45
58:GG:173:ALA:HB1	58:GG:174:PRO:CD	2.47	0.45
59:HH:15:LYS:N	59:HH:16:PRO:HD2	2.32	0.45
66:OO:65:ASP:OD1	66:OO:65:ASP:N	2.50	0.45
87:jj:7:ARG:NH2	87:jj:57:GLY:HA3	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:233:ARG:O	1:A:235:VAL:HB	2.17	0.45
2:B:249:ARG:NH2	48:5:3845:A:OP2	2.49	0.45
14:O:85:ARG:NH2	48:5:3887:C:OP2	2.43	0.45
18:S:47:PHE:HE1	18:S:125:GLN:HG2	1.81	0.45
30:e:53:ILE:HG22	48:5:437:G:H5'	1.99	0.45
48:5:202:C:C2	48:5:214:G:C2	3.04	0.45
48:5:751:G:N2	48:5:912:G:C4	2.84	0.45
48:5:994:G:C6	48:5:995:C:C4	3.05	0.45
48:5:1070:G:C6	48:5:1071:C:N4	2.85	0.45
48:5:1245:C:O2	48:5:2111:G:O2'	2.30	0.45
48:5:1326:A:OP2	48:5:4445:U:O2'	2.35	0.45
48:5:1947:U:O2	48:5:1947:U:H2'	2.17	0.45
48:5:2245:G:C6	48:5:2246:C:C4	3.05	0.45
48:5:2322:G:C6	48:5:2323:C:C4	3.05	0.45
48:5:4183:G:H2'	48:5:4183:G:N3	2.32	0.45
48:5:4207:C:C2	48:5:4226:G:N2	2.85	0.45
48:5:4600:G:OP1	87:jj:506:ARG:NH1	2.47	0.45
51:9:673:G:C2	51:9:674:C:C2	3.05	0.45
51:9:1016:U:OP2	79:bb:20:LYS:NZ	2.33	0.45
51:9:1218:C:H6	51:9:1218:C:O5'	2.00	0.45
51:9:1563:G:C6	51:9:1564:C:C4	3.05	0.45
54:CC:112:VAL:HG22	54:CC:123:ARG:O	2.16	0.45
60:II:25:ARG:O	60:II:27:TYR:N	2.50	0.45
1:A:90:CYS:CB	1:A:101:VAL:HG13	2.47	0.44
5:E:173:GLY:O	5:E:174:PRO:C	2.60	0.44
7:G:159:HIS:CE1	7:G:185:LYS:HE2	2.51	0.44
14:O:27:VAL:CG1	14:O:98:ALA:HB1	2.47	0.44
17:R:4:LEU:HD22	17:R:32:ILE:HG22	2.00	0.44
48:5:278:G:H4'	48:5:279:A:OP2	2.17	0.44
48:5:307:A:N3	48:5:310:G:O2'	2.41	0.44
48:5:973:G:N2	48:5:974:C:C2	2.85	0.44
48:5:1196:G:C6	48:5:1197:C:C4	3.05	0.44
48:5:1404:G:C6	48:5:1405:C:C4	3.04	0.44
48:5:2122:G:O2'	48:5:2123:C:P	2.74	0.44
48:5:2517:A:N3	48:5:2539:C:O2'	2.43	0.44
48:5:2559:G:C6	48:5:2560:C:C4	3.04	0.44
48:5:2715:G:C2	48:5:2716:C:C2	3.05	0.44
48:5:4731:G:H4'	48:5:4732:G:H5'	1.99	0.44
49:7:111:C:H2'	49:7:112:U:O4'	2.18	0.44
50:8:134:G:C6	50:8:135:C:C4	3.05	0.44
51:9:323:C:H3'	51:9:324:C:C5'	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:828:G:C6	51:9:829:C:C4	3.05	0.44
51:9:832:G:N2	51:9:843:C:C2	2.85	0.44
52:AA:110:ASN:O	52:AA:116:PHE:CD1	2.71	0.44
59:HH:76:GLN:HE22	59:HH:94:PHE:HB2	1.82	0.44
86:ii:14:ILE:HG12	86:ii:117:PHE:CE2	2.53	0.44
4:D:146:LEU:HD11	4:D:159:VAL:CG1	2.47	0.44
19:T:80:VAL:O	19:T:82:GLY:N	2.51	0.44
22:W:44:ARG:HG2	22:W:44:ARG:HH11	1.81	0.44
48:5:978:G:C2	48:5:979:C:C2	3.05	0.44
48:5:1196:G:C2	48:5:1197:C:C2	3.05	0.44
48:5:1268:G:C4	48:5:2111:G:N2	2.86	0.44
48:5:1277:G:N1	48:5:1278:C:C4	2.85	0.44
48:5:1823:G:C3’	48:5:1825:A:P	3.05	0.44
48:5:1840:G:C3’	48:5:1842:G:P	3.05	0.44
48:5:2315:G:C2	48:5:2325:C:C2	3.05	0.44
48:5:2376:A:H2’	48:5:2377:C:O4’	2.17	0.44
48:5:2594:C:O2	48:5:2752:G:C2	2.71	0.44
48:5:2682:G:N2	48:5:2683:C:C2	2.85	0.44
48:5:2715:G:C6	48:5:2716:C:C4	3.05	0.44
48:5:3782:C:C2	48:5:3811:G:C2	3.05	0.44
48:5:4109:G:C2	48:5:4110:C:C2	3.06	0.44
48:5:4740:G:C6	48:5:4741:C:C4	3.04	0.44
51:9:508:A:H3’	51:9:509:G:H8	1.82	0.44
51:9:697:G:C2	51:9:734:C:C2	3.04	0.44
51:9:1612:G:C2	51:9:1628:C:C2	3.05	0.44
70:SS:8:LYS:HD3	77:ZZ:49:LEU:HD11	2.00	0.44
87:jj:315:GLY:HA2	87:jj:324:PHE:CZ	2.52	0.44
2:B:100:ARG:NH1	48:5:4911:A:OP2	2.50	0.44
48:5:751:G:C2	48:5:752:G:N7	2.84	0.44
48:5:1632:A:O2’	48:5:3641:U:O2	2.29	0.44
48:5:1995:G:C5	48:5:1996:C:C4	3.05	0.44
48:5:2609:G:C2	48:5:2731:C:O2	2.70	0.44
48:5:2909:C:O2	48:5:3586:G:C2	2.71	0.44
48:5:4090:G:N2	48:5:4160:C:C2	2.86	0.44
48:5:4451:G:C6	48:5:4522:G:C8	3.05	0.44
48:5:4749:C:O2	48:5:4749:C:O4’	2.32	0.44
49:7:25:G:C6	49:7:26:C:C4	3.06	0.44
49:7:117:G:C6	49:7:118:C:C4	3.05	0.44
51:9:200:G:C2	51:9:201:C:C4	3.05	0.44
51:9:834:C:N3	51:9:841:G:N2	2.66	0.44
51:9:917:U:H2’	51:9:918:U:O4’	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1386:A:H2'	51:9:1387:G:H8	1.82	0.44
51:9:1559:C:C2	51:9:1577:G:C2	3.06	0.44
57:FF:154:LEU:HA	57:FF:189:ALA:HB2	2.00	0.44
76:YY:7:ILE:HD11	76:YY:40:ILE:HG13	1.99	0.44
87:jj:99:ILE:HD12	87:jj:99:ILE:N	2.32	0.44
5:E:169:LEU:HD21	5:E:187:GLN:HG3	1.98	0.44
6:F:146:TYR:CE2	6:F:239:GLU:CB	3.01	0.44
8:H:55:LEU:HD22	8:H:77:VAL:HG11	2.00	0.44
19:T:14:MET:HE1	19:T:55:LYS:HB2	2.00	0.44
42:r:17:LEU:HD23	42:r:17:LEU:C	2.42	0.44
48:5:43:U:C2'	48:5:44:A:O5'	2.66	0.44
48:5:52:G:N1	48:5:53:C:C4	2.86	0.44
48:5:192:G:C2	48:5:250:C:C2	3.05	0.44
48:5:723:A:C2	48:5:724:C:C6	3.06	0.44
48:5:1296:G:C1'	48:5:1297:U:P	3.06	0.44
48:5:4088:C:H2'	48:5:4089:G:C8	2.53	0.44
48:5:4416:G:N1	48:5:4417:C:C4	2.86	0.44
51:9:594:A:C6	51:9:643:A:C8	3.06	0.44
51:9:841:G:C6	51:9:842:C:C4	3.05	0.44
51:9:1227:G:C2	51:9:1228:A:C8	3.06	0.44
51:9:1552:G:C8	51:9:1578:U:C4	3.05	0.44
51:9:1573:G:C6	51:9:1574:C:N3	2.86	0.44
51:9:1835:A:C8	51:9:1863:A:C8	3.06	0.44
54:CC:196:ILE:HB	54:CC:223:TYR:HB2	1.99	0.44
56:EE:15:PRO:HG2	56:EE:18:TRP:CZ2	2.52	0.44
75:XX:51:VAL:HG13	75:XX:70:VAL:HG13	1.99	0.44
86:ii:323:TYR:CB	86:ii:326:LEU:HD23	2.36	0.44
7:G:51:LEU:HD11	48:5:4086:G:C4	2.53	0.44
24:Y:10:ASP:O	24:Y:11:ARG:C	2.60	0.44
25:Z:29:ILE:HD12	25:Z:29:ILE:N	2.32	0.44
28:c:83:THR:O	65:NN:151:ALA:O	2.35	0.44
32:g:8:ARG:HB2	32:g:34:TYR:HE2	1.83	0.44
33:h:88:THR:O	33:h:91:MET:N	2.50	0.44
35:j:27:TYR:HA	35:j:34:CYS:HA	1.98	0.44
42:r:17:LEU:HD12	42:r:36:ASN:HD21	1.82	0.44
44:t:97:ASN:N	44:t:98:ILE:HA	2.32	0.44
47:3:5:G:N2	47:3:68:C:C2	2.85	0.44
47:3:35:U:O2'	47:3:36:U:H5'	2.17	0.44
48:5:3600:G:C2	48:5:3601:C:C2	3.06	0.44
48:5:4091:G:N2	48:5:4159:C:C2	2.85	0.44
48:5:4754:G:N2	48:5:4880:C:C2	2.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:5038:A:H2'	48:5:5039:U:O4'	2.18	0.44
51:9:374:G:C2	51:9:391:C:C2	3.06	0.44
51:9:480:G:C6	51:9:481:C:N3	2.86	0.44
51:9:666:U:C2	51:9:667:U:C5	3.05	0.44
51:9:1446:A:O2'	51:9:1447:G:H5"	2.18	0.44
51:9:1754:G:C2	51:9:1755:C:C2	3.05	0.44
51:9:1839:U:H2'	51:9:1840:U:C6	2.52	0.44
56:EE:65:CYS:SG	56:EE:66:MET:N	2.88	0.44
64:MM:35:ILE:HD13	64:MM:61:TYR:CE1	2.53	0.44
66:OO:133:THR:O	66:OO:135:ILE:N	2.49	0.44
9:I:47:PRO:HB3	9:I:171:TRP:CE2	2.53	0.44
12:M:116:LYS:HE3	14:O:201:PHE:CE2	2.53	0.44
48:5:1171:G:C2	48:5:1172:C:C2	3.05	0.44
48:5:1430:C:O2	48:5:1455:G:C2	2.70	0.44
48:5:1691:G:C6	48:5:1692:C:C4	3.06	0.44
48:5:1928:C:N4	48:5:2054:U:O2	2.51	0.44
48:5:2288:G:C2	48:5:2290:C:C4	3.05	0.44
48:5:2315:G:C2	48:5:2325:C:O2	2.71	0.44
48:5:2481:G:C6	48:5:2482:C:C4	3.05	0.44
48:5:3882:C:H2'	48:5:3883:U:C6	2.53	0.44
48:5:3900:G:C2	48:5:4562:C:C2	3.06	0.44
48:5:4129:G:C6	48:5:4130:C:C4	3.05	0.44
50:8:10:G:C2	50:8:11:C:C2	3.06	0.44
51:9:31:U:O2'	51:9:595:U:H4'	2.17	0.44
51:9:126:G:N2	51:9:180:G:O2'	2.49	0.44
51:9:640:A:H2'	51:9:641:A:C8	2.52	0.44
51:9:1669:G:C6	51:9:1670:C:C4	3.06	0.44
54:CC:133:TYR:CD1	54:CC:216:MET:HA	2.53	0.44
76:YY:119:GLY:O	76:YY:120:THR:C	2.61	0.44
82:ee:8:ARG:O	82:ee:9:VAL:C	2.60	0.44
87:jj:484:LEU:HD23	87:jj:516:PHE:HB2	1.99	0.44
14:O:133:ARG:CZ	48:5:1928:C:C4	3.00	0.44
15:P:18:ARG:HA	15:P:147:GLU:HA	1.99	0.44
25:Z:54:THR:O	25:Z:56:ALA:N	2.51	0.44
48:5:125:C:C2	48:5:145:G:C2	3.06	0.44
48:5:744:G:H2'	48:5:745:G:C8	2.53	0.44
48:5:1064:G:C2	48:5:1065:G:C4	3.06	0.44
48:5:1958:A:C4'	48:5:1962:A:O2'	2.63	0.44
48:5:2021:G:C2	48:5:2022:C:C2	3.06	0.44
48:5:2275:G:H5"	48:5:2275:G:H8	1.82	0.44
48:5:3670:C:O2'	48:5:3671:G:O4'	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:4232:U:H1'	48:5:4233:A:OP2	2.18	0.44
48:5:4240:G:C6	48:5:4241:C:C4	3.05	0.44
48:5:4408:G:C6	48:5:4409:C:C4	3.06	0.44
48:5:5016:A:N6	48:5:5033:G:O2'	2.50	0.44
50:8:68:G:H2'	50:8:69:U:O4'	2.17	0.44
51:9:103:A:C6	51:9:356:C:C2	3.06	0.44
51:9:993:G:C6	51:9:994:C:C4	3.06	0.44
51:9:1161:U:O4	75:XX:2:GLY:N	2.50	0.44
51:9:1298:G:O2'	51:9:1299:A:O4'	2.36	0.44
58:GG:7:PHE:CD2	58:GG:10:THR:HG23	2.53	0.44
59:HH:8:ILE:HG21	59:HH:28:LEU:HD13	2.00	0.44
59:HH:66:VAL:HB	59:HH:67:PRO:HD3	2.00	0.44
63:LL:68:ILE:HG21	63:LL:143:LEU:HD21	1.99	0.44
84:gg:15:ASN:O	84:gg:305:ASN:ND2	2.51	0.44
5:E:238:ILE:C	5:E:239:THR:HG1	2.11	0.44
30:e:23:HIS:HB2	30:e:53:ILE:HD11	1.99	0.44
48:5:207:G:C6	48:5:208:A:C6	3.05	0.44
48:5:2898:G:C2	48:5:2899:C:C2	3.05	0.44
50:8:126:C:O2'	50:8:127:U:C5	2.64	0.44
50:8:134:G:C2	50:8:135:C:C2	3.06	0.44
51:9:668:A:N1	51:9:1143:A:C5	2.86	0.44
51:9:752:G:C2	51:9:790:C:N3	2.85	0.44
51:9:832:G:C6	51:9:833:C:C4	3.06	0.44
51:9:1307:U:C3'	51:9:1308:U:H5"	2.46	0.44
51:9:1551:U:O2	51:9:1551:U:O4'	2.35	0.44
51:9:1559:C:C2	51:9:1577:G:N2	2.85	0.44
51:9:1623:A:H5"	70:SS:133:GLY:HA3	2.00	0.44
51:9:1749:G:C6	51:9:1750:C:C4	3.06	0.44
82:ee:37:GLN:O	82:ee:41:ARG:HG2	2.18	0.44
87:jj:140:TRP:CE2	87:jj:160:LEU:HD21	2.53	0.44
3:C:28:PHE:HA	3:C:129:ALA:HA	2.00	0.44
5:E:132:HIS:CE1	48:5:711:A:H1'	2.53	0.44
17:R:99:MET:O	17:R:103:ARG:HB2	2.17	0.44
44:t:85:LEU:HD13	44:t:109:ILE:CG2	2.48	0.44
48:5:2:G:C2	48:5:3:C:C2	3.06	0.44
48:5:977:C:C3'	48:5:978:G:H5'	2.46	0.44
48:5:1270:A:C5	48:5:1271:G:H1'	2.53	0.44
48:5:1374:G:C6	48:5:1375:C:C4	3.06	0.44
48:5:1404:G:C2	48:5:1405:C:C2	3.06	0.44
48:5:2021:G:C6	48:5:2022:C:C4	3.06	0.44
48:5:2088:A:O2'	48:5:2089:G:P	2.76	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:2270:G:C2	48:5:2271:C:C2	3.06	0.44
48:5:4147:G:C6	48:5:4148:C:C4	3.05	0.44
48:5:4216:G:C2'	48:5:4217:G:H5'	2.48	0.44
48:5:4508:C:N3	48:5:4512:U:H5	2.16	0.44
51:9:187:G:C2	51:9:188:C:C2	3.05	0.44
51:9:696:G:C2	51:9:735:C:C2	3.06	0.44
51:9:993:G:OP1	51:9:1131:G:N2	2.40	0.44
51:9:1345:G:OP1	51:9:1688:C:O2'	2.36	0.44
51:9:1500:G:C6	51:9:1501:C:N3	2.86	0.44
52:AA:124:VAL:HG13	52:AA:130:ASP:HB2	1.99	0.44
87:jj:82:GLU:O	87:jj:95:HIS:O	2.36	0.44
2:B:154:LYS:NZ	2:B:154:LYS:CB	2.81	0.43
19:T:85:LEU:HD13	48:5:4305:G:C2	2.53	0.43
26:a:97:ALA:O	26:a:98:ALA:HB3	2.18	0.43
48:5:2612:G:C6	48:5:2613:C:C4	3.05	0.43
48:5:2793:G:H5"	48:5:2794:C:H5"	1.99	0.43
48:5:3861:A:H2'	48:5:3862:A:C8	2.53	0.43
48:5:4713:G:C6	48:5:4714:C:C4	3.05	0.43
48:5:4890:G:C2	48:5:4930:C:C2	3.06	0.43
51:9:92:A:H2'	51:9:446:G:N2	2.32	0.43
51:9:379:C:N3	60:II:5:ARG:NH1	2.66	0.43
51:9:1664:A:HO2'	51:9:1665:G:C5'	2.30	0.43
51:9:1777:G:C6	51:9:1778:C:C4	3.06	0.43
51:9:1847:G:C2	51:9:1853:C:C2	3.06	0.43
53:BB:189:ILE:HB	53:BB:190:PRO:HD3	1.99	0.43
59:HH:43:LEU:HD22	59:HH:72:PHE:CD2	2.53	0.43
68:QQ:84:ILE:HG13	68:QQ:85:ARG:N	2.32	0.43
69:RR:38:ILE:HD12	69:RR:39:ALA:N	2.33	0.43
87:jj:426:GLN:HA	87:jj:429:HIS:CD2	2.52	0.43
1:A:34:PHE:CD2	48:5:4087:G:C6	3.06	0.43
2:B:56:ILE:CG1	2:B:365:LEU:HD22	2.47	0.43
2:B:261:ARG:HB2	14:O:64:THR:HG21	2.00	0.43
3:C:262:ASP:O	3:C:271:ALA:O	2.36	0.43
17:R:99:MET:N	17:R:99:MET:SD	2.91	0.43
25:Z:136:PHE:OXT	32:g:90:ARG:NH1	2.51	0.43
33:h:21:LEU:HD11	33:h:54:ILE:HG23	2.00	0.43
48:5:5:A:C6	48:5:6:C:C4	3.07	0.43
48:5:1265:G:OP1	48:5:2115:G:N1	2.51	0.43
48:5:1280:C:C2	48:5:1282:G:C4	3.06	0.43
48:5:1436:C:O5'	48:5:2119:C:N4	2.51	0.43
48:5:1874:A:C5'	48:5:4218:U:O2	2.66	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:2567:G:C6	48:5:2568:C:C4	3.07	0.43
48:5:2654:C:N3	48:5:2681:G:C2	2.86	0.43
48:5:3610:A:O2'	60:II:89:GLU:OE1	2.19	0.43
48:5:4139:G:C6	48:5:4140:C:C4	3.06	0.43
48:5:4142:C:C4	48:5:4143:G:N1	2.86	0.43
48:5:4320:G:H2'	48:5:4321:U:O4'	2.18	0.43
48:5:4666:G:C2	48:5:4667:C:C2	3.06	0.43
48:5:4681:A:H2'	48:5:4682:U:O4'	2.18	0.43
51:9:29:G:C2	51:9:30:C:C2	3.06	0.43
51:9:623:G:N2	51:9:624:C:C2	2.86	0.43
51:9:1315:U:C4	51:9:1316:C:C4	3.06	0.43
51:9:1337:C:O2'	72:UU:68:THR:HG23	2.18	0.43
78:aa:23:CYS:SG	78:aa:26:CYS:SG	3.15	0.43
84:gg:173:LEU:HD22	84:gg:189:ILE:HG12	2.00	0.43
8:H:117:PHE:CE1	8:H:118:LEU:HD23	2.53	0.43
14:O:48:TYR:CE2	48:5:1930:U:C2	3.07	0.43
23:X:119:ILE:HG23	23:X:120:ASP:N	2.33	0.43
36:k:32:VAL:HG11	36:k:53:ALA:HB1	2.00	0.43
41:p:17:ARG:NH2	48:5:1577:G:OP1	2.51	0.43
44:t:143:VAL:O	44:t:145:GLY:N	2.51	0.43
47:3:69:G:O2'	47:3:70:G:C8	2.70	0.43
48:5:254:G:C2	48:5:255:C:C2	3.06	0.43
48:5:952:G:C6	48:5:953:C:C4	3.06	0.43
48:5:1090:G:C2	48:5:1091:C:C2	3.06	0.43
48:5:1237:C:O2	48:5:1237:C:O4'	2.33	0.43
48:5:1925:G:C2	48:5:1926:C:C2	3.06	0.43
48:5:2703:G:C2	48:5:2704:C:C2	3.06	0.43
48:5:4482:U:N3	48:5:4483:C:C5	2.86	0.43
51:9:14:C:O2	51:9:1198:G:C2	2.72	0.43
51:9:114:G:O6	51:9:351:G:H1'	2.18	0.43
51:9:1524:G:N2	51:9:1525:C:C2	2.87	0.43
51:9:1777:G:C2	51:9:1778:C:C2	3.05	0.43
53:BB:125:VAL:HG22	53:BB:169:MET:HG3	2.00	0.43
60:II:182:CYS:SG	60:II:183:GLY:N	2.92	0.43
65:NN:88:LEU:CD2	65:NN:135:LEU:HD11	2.48	0.43
86:ii:100:ILE:HG23	86:ii:110:VAL:HG11	2.00	0.43
86:ii:317:VAL:HG12	86:ii:413:LEU:HD22	1.99	0.43
7:G:30:PRO:HG2	7:G:31:LEU:HD22	2.00	0.43
29:d:78:ARG:HG2	29:d:78:ARG:HH11	1.83	0.43
48:5:1655:C:H2'	48:5:1656:U:H5"	2.00	0.43
48:5:2457:G:C6	48:5:2458:C:C4	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:2871:A:H2'	48:5:2872:C:O4'	2.18	0.43
48:5:3590:G:N1	48:5:3591:C:C2	2.86	0.43
51:9:1643:U:H2'	51:9:1644:C:H6	1.83	0.43
56:EE:72:ILE:HD13	56:EE:82:TYR:CD1	2.53	0.43
60:II:38:ILE:HD11	60:II:81:VAL:HG23	2.00	0.43
3:C:86:ARG:HA	3:C:89:GLN:HG3	2.00	0.43
3:C:195:LYS:NZ	50:8:21:C:OP1	2.52	0.43
4:D:44:TYR:CD1	48:5:1823:G:H4'	2.54	0.43
8:H:117:PHE:CZ	8:H:118:LEU:HD23	2.54	0.43
11:L:163:LYS:NZ	48:5:509:A:H5'	2.33	0.43
35:j:55:ARG:NH2	48:5:364:G:O6	2.50	0.43
35:j:70:VAL:HG22	35:j:73:ARG:NH2	2.33	0.43
48:5:76:A:C5	48:5:77:U:C5	3.07	0.43
48:5:476:G:C2	48:5:679:C:C2	3.06	0.43
48:5:1048:G:C6	48:5:1049:C:C4	3.06	0.43
48:5:1270:A:C2'	48:5:1271:G:O5'	2.66	0.43
48:5:1724:G:C4'	48:5:1725:U:OP2	2.63	0.43
48:5:2463:G:C2	48:5:2464:C:C2	3.07	0.43
48:5:2559:G:C2	48:5:2560:C:C2	3.06	0.43
48:5:2612:G:C2	48:5:2613:C:C2	3.06	0.43
48:5:4240:G:C2	48:5:4241:C:C2	3.06	0.43
48:5:4666:G:C6	48:5:4667:C:C4	3.05	0.43
51:9:1246:A:N3	51:9:1251:A:O2'	2.46	0.43
51:9:1335:G:C2	51:9:1336:C:C2	3.05	0.43
51:9:1866:A:C5	78:aa:87:ARG:NH2	2.87	0.43
52:AA:33:GLN:HB3	52:AA:154:LEU:HD12	2.01	0.43
53:BB:136:ARG:HH21	53:BB:136:ARG:HG3	1.82	0.43
60:II:44:HIS:O	60:II:56:ARG:N	2.51	0.43
61:JJ:128:VAL:O	61:JJ:132:GLN:HG3	2.19	0.43
71:TT:92:PHE:CD1	71:TT:92:PHE:C	2.97	0.43
78:aa:21:ILE:N	78:aa:30:VAL:O	2.51	0.43
2:B:10:ARG:C	2:B:10:ARG:CD	2.91	0.43
3:C:342:ARG:HG3	3:C:342:ARG:HH11	1.84	0.43
23:X:96:LEU:HG	23:X:140:LEU:HD11	1.99	0.43
35:j:13:ASN:OD1	35:j:13:ASN:N	2.50	0.43
40:o:43:ARG:NH2	48:5:294:G:OP2	2.51	0.43
46:2:35:A:OP2	68:QQ:146:ARG:NH1	2.51	0.43
46:2:65:G:N2	46:2:66:C:C2	2.87	0.43
47:3:41:U:C4'	57:FF:198:ARG:HD3	2.48	0.43
48:5:744:G:C2	48:5:921:C:C2	3.06	0.43
48:5:1048:G:C2	48:5:1049:C:C2	3.05	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1271:G:H3'	48:5:1272:C:H5'	2.00	0.43
48:5:4250:G:C2	48:5:4259:C:C2	3.06	0.43
51:9:1109:C:O2	51:9:1109:C:C2'	2.63	0.43
51:9:1121:G:C6	51:9:1122:A:C5	3.06	0.43
52:AA:119:PRO:HG2	52:AA:142:LEU:HD11	2.00	0.43
57:FF:99:ILE:HD13	57:FF:171:GLU:HA	2.00	0.43
63:LL:5:GLN:OE1	63:LL:11:GLN:HB2	2.18	0.43
63:LL:77:VAL:HA	63:LL:88:ILE:HG22	2.01	0.43
70:SS:28:PHE:O	70:SS:31:THR:OG1	2.36	0.43
86:ii:252:LYS:HG3	86:ii:274:VAL:HG11	2.00	0.43
86:ii:329:MET:SD	86:ii:373:PRO:HB3	2.58	0.43
2:B:43:LEU:HD13	2:B:196:TRP:HH2	1.82	0.43
3:C:224:ILE:HG22	3:C:227:ILE:HD13	1.99	0.43
7:G:87:LEU:HD11	7:G:91:THR:HG21	2.01	0.43
13:N:180:PHE:O	13:N:182:HIS:N	2.52	0.43
37:l:10:LYS:NZ	48:5:2782:U:OP2	2.41	0.43
44:t:30:PRO:O	44:t:33:GLY:N	2.49	0.43
47:3:33:U:C5'	57:FF:127:ARG:NH1	2.82	0.43
48:5:298:G:C2	48:5:299:C:C2	3.07	0.43
48:5:469:C:C2	48:5:470:A:C8	3.07	0.43
48:5:642:G:C2	48:5:643:C:C4	3.06	0.43
48:5:1213:G:C6	48:5:1215:C:C4	3.06	0.43
48:5:1358:G:N3	48:5:1359:G:N7	2.66	0.43
48:5:1811:G:C2	48:5:1812:C:C2	3.07	0.43
48:5:2481:G:C2	48:5:2482:C:C2	3.07	0.43
48:5:2816:G:C6	48:5:2817:C:C4	3.06	0.43
48:5:2862:G:N3	48:5:3624:A:H2'	2.34	0.43
48:5:3705:G:C6	48:5:3706:C:C4	3.06	0.43
48:5:4187:G:H2'	48:5:4188:U:O4'	2.19	0.43
48:5:4222:G:C6	48:5:4223:C:C4	3.07	0.43
48:5:4349:C:H3'	48:5:4350:C:C5'	2.48	0.43
48:5:4904:G:C2	48:5:4905:C:C2	3.06	0.43
51:9:29:G:C6	51:9:30:C:C4	3.06	0.43
51:9:65:C:C2	58:GG:174:PRO:HB3	2.54	0.43
51:9:522:A:H4'	61:JJ:131:ARG:HH22	1.84	0.43
51:9:839:C:O2	51:9:839:C:C2'	2.65	0.43
51:9:1455:A:H2'	51:9:1456:G:H8	1.84	0.43
51:9:1492:U:H1'	72:UU:70:CYS:SG	2.58	0.43
54:CC:192:LEU:HD12	54:CC:193:VAL:N	2.33	0.43
58:GG:76:LEU:HD22	58:GG:92:ARG:HG2	2.00	0.43
60:II:25:ARG:HB3	60:II:27:TYR:CE2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:ii:182:ARG:HH11	86:ii:182:ARG:HG3	1.83	0.43
2:B:2:SER:N	48:5:4517:A:OP2	2.52	0.43
2:B:114:CYS:SG	2:B:180:LEU:HD11	2.59	0.43
3:C:13:GLU:OE1	3:C:161:TYR:OH	2.31	0.43
9:I:191:ILE:HD12	9:I:200:ILE:HD12	1.56	0.43
16:Q:89:ASP:OD1	16:Q:91:ARG:NH2	2.51	0.43
26:a:17:HIS:CE1	48:5:1338:G:H2'	2.54	0.43
27:b:36:ASP:N	27:b:36:ASP:OD1	2.52	0.43
38:m:94:MET:HG2	38:m:105:PRO:HA	2.01	0.43
48:5:199:G:C2	48:5:201:C:C4	3.06	0.43
48:5:322:C:O2	48:5:4356:G:C2	2.71	0.43
48:5:744:G:H2'	48:5:745:G:H8	1.83	0.43
48:5:1912:G:C2	48:5:1913:C:C2	3.07	0.43
48:5:2256:C:H1'	48:5:2257:C:OP2	2.19	0.43
48:5:4129:G:C2	48:5:4130:C:C2	3.06	0.43
48:5:4919:G:N2	48:5:4920:C:C2	2.87	0.43
51:9:911:C:C3'	51:9:912:C:H5'	2.47	0.43
51:9:1229:G:C6	51:9:1230:C:C4	3.07	0.43
51:9:1398:G:N1	51:9:1399:C:C4	2.87	0.43
51:9:1728:U:H3'	51:9:1729:U:H5"	2.01	0.43
68:QQ:41:MET:N	68:QQ:41:MET:SD	2.91	0.43
75:XX:84:PHE:HB2	75:XX:118:VAL:HG11	1.99	0.43
84:gg:174:VAL:HG22	84:gg:195:LEU:HD13	2.01	0.43
1:A:103:PRO:HA	1:A:163:ARG:HA	1.99	0.43
13:N:50:ARG:NH2	48:5:279:A:OP2	2.51	0.43
15:P:36:ILE:CD1	15:P:48:LEU:HD11	2.49	0.43
21:V:20:LEU:HB2	21:V:55:ALA:O	2.19	0.43
29:d:22:THR:HG22	29:d:89:SER:HB2	2.01	0.43
32:g:5:LEU:HD21	32:g:22:LEU:HD12	2.00	0.43
42:r:46:ARG:HH22	42:r:67:ARG:HH11	1.67	0.43
47:3:39:U:HO2'	47:3:40:C:H6	1.43	0.43
48:5:258:G:C2	48:5:259:C:C2	3.07	0.43
48:5:301:G:C2	48:5:302:C:C2	3.07	0.43
48:5:742:G:C2	48:5:923:C:C2	3.07	0.43
48:5:1280:C:C4	48:5:1282:G:O6	2.72	0.43
48:5:1374:G:C2	48:5:1375:C:C2	3.07	0.43
48:5:1691:G:C2	48:5:1692:C:C2	3.06	0.43
48:5:1929:A:C2	48:5:2054:U:O4	2.60	0.43
48:5:1959:U:OP1	48:5:1960:A:O3'	2.37	0.43
48:5:2793:G:C6	48:5:2797:C:N4	2.86	0.43
48:5:4274:A:H2'	48:5:4275:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:7:93:G:C2	49:7:94:C:C2	3.07	0.43
51:9:1097:G:C6	51:9:1098:C:C4	3.07	0.43
51:9:1260:A:C4	51:9:1620:A:N7	2.87	0.43
51:9:1406:G:C4	51:9:1407:U:H1'	2.54	0.43
56:EE:153:LEU:O	56:EE:155:LYS:HD3	2.19	0.43
57:FF:20:PHE:HZ	57:FF:69:VAL:HG11	1.83	0.43
60:II:79:ILE:HG23	60:II:103:LEU:HB2	1.99	0.43
11:L:19:GLN:HA	11:L:22:VAL:HG23	1.99	0.43
13:N:94:PHE:CE2	13:N:96:ARG:HB2	2.54	0.43
22:W:44:ARG:HH11	22:W:44:ARG:CG	2.32	0.43
46:2:30:G:N1	46:2:31:C:C2	2.86	0.43
47:3:37:A:N1	57:FF:133:THR:HG23	2.34	0.43
48:5:3891:A:H2'	48:5:3892:U:O4'	2.18	0.43
48:5:4891:G:C2	48:5:4929:C:C2	3.07	0.43
48:5:4911:A:H3'	48:5:4912:G:H5"	2.01	0.43
48:5:4948:C:H3'	48:5:4949:G:N2	2.33	0.43
50:8:118:C:C2	50:8:133:G:C2	3.06	0.43
51:9:841:G:N2	51:9:842:C:C2	2.87	0.43
51:9:910:G:C6	51:9:911:C:C4	3.06	0.43
51:9:981:A:H2'	51:9:982:G:C8	2.54	0.43
51:9:1143:A:H2'	51:9:1144:A:C8	2.54	0.43
51:9:1516:G:O3'	67:PP:122:THR:HG21	2.19	0.43
56:EE:72:ILE:HD12	56:EE:77:ARG:HB2	2.00	0.43
57:FF:152:TRP:O	57:FF:153:LEU:C	2.62	0.43
59:HH:145:ARG:HA	74:WW:51:GLU:HB3	2.01	0.43
63:LL:106:HIS:O	63:LL:106:HIS:ND1	2.52	0.43
67:PP:20:VAL:HG12	67:PP:25:LEU:HG	2.01	0.43
74:WW:75:ILE:HD11	74:WW:93:LEU:HD11	2.00	0.43
6:F:92:ALA:CB	6:F:127:LEU:HD21	2.49	0.42
26:a:13:GLY:HA2	48:5:1660:U:H3'	2.00	0.42
48:5:93:G:O2'	48:5:94:A:O5'	2.37	0.42
48:5:702:U:H2'	48:5:703:G:H4'	2.01	0.42
48:5:1075:G:C6	48:5:1076:C:C4	3.08	0.42
48:5:1846:G:C2	48:5:1847:C:C2	3.07	0.42
48:5:1959:U:H4'	48:5:1961:G:O4'	2.19	0.42
48:5:2034:G:C6	48:5:2035:C:C4	3.06	0.42
48:5:2076:G:C6	48:5:2077:C:C4	3.07	0.42
48:5:3597:G:C6	48:5:3598:C:C4	3.07	0.42
50:8:10:G:C6	50:8:11:C:C4	3.07	0.42
50:8:53:G:C6	50:8:54:C:C4	3.07	0.42
51:9:1308:U:H2'	51:9:1309:C:C1'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1568:C:H2'	51:9:1569:A:C8	2.54	0.42
60:II:6:ASP:OD1	60:II:6:ASP:N	2.51	0.42
66:OO:38:ASN:HA	66:OO:69:SER:OG	2.19	0.42
74:WW:111:MET:HE3	74:WW:119:LYS:HD2	2.01	0.42
1:A:30:ARG:O	1:A:163:ARG:NH2	2.52	0.42
8:H:5:LEU:HD22	8:H:60:TRP:CH2	2.54	0.42
10:J:119:TYR:CB	70:SS:12:ILE:HG21	2.50	0.42
21:V:20:LEU:HD13	21:V:26:ILE:HG21	2.01	0.42
42:r:33:LYS:HD2	42:r:40:TYR:CE2	2.54	0.42
42:r:103:HIS:ND1	42:r:106:LEU:CD2	2.73	0.42
47:3:35:U:H1'	51:9:1640:A:O3'	2.18	0.42
48:5:199:G:C4	48:5:201:C:C5	3.07	0.42
48:5:975:C:H5"	48:5:976:G:OP2	2.20	0.42
48:5:976:G:C6	48:5:977:C:N3	2.87	0.42
48:5:1367:C:H1'	48:5:1370:G:C8	2.54	0.42
48:5:1539:G:C6	48:5:1540:C:C4	3.06	0.42
48:5:2358:G:H2'	48:5:2359:U:O4'	2.19	0.42
48:5:4583:C:N3	48:5:4718:G:C2	2.88	0.42
48:5:4898:G:N2	48:5:4923:C:C2	2.87	0.42
51:9:798:G:O6	51:9:861:A:N7	2.51	0.42
51:9:1335:G:N1	51:9:1336:C:C2	2.87	0.42
51:9:1439:A:H2'	51:9:1440:C:O4'	2.19	0.42
51:9:1664:A:O2'	51:9:1665:G:H5'	2.20	0.42
51:9:1664:A:O2'	51:9:1665:G:C5'	2.68	0.42
54:CC:166:ARG:HB3	54:CC:247:THR:HB	2.01	0.42
56:EE:195:ILE:O	56:EE:210:VAL:HA	2.18	0.42
57:FF:179:ASN:N	57:FF:179:ASN:HD22	2.16	0.42
59:HH:118:ARG:O	59:HH:119:SER:C	2.62	0.42
61:JJ:24:ARG:HG2	61:JJ:24:ARG:HH11	1.83	0.42
66:OO:150:ARG:CZ	66:OO:150:ARG:HB3	2.49	0.42
71:TT:28:LEU:O	71:TT:29:LYS:HB2	2.19	0.42
2:B:378:ARG:NE	22:W:32:LEU:HD21	2.34	0.42
4:D:22:ARG:NH1	4:D:28:THR:OG1	2.53	0.42
5:E:59:TYR:CE2	5:E:64:LEU:HD12	2.48	0.42
8:H:134:CYS:SG	8:H:144:LEU:HD23	2.59	0.42
10:J:141:ILE:HD11	49:7:55:A:N3	2.34	0.42
19:T:40:VAL:HG13	19:T:96:ILE:HG23	2.01	0.42
42:r:64:MET:HE1	42:r:102:TYR:CD1	2.54	0.42
48:5:208:A:C6	48:5:233:U:C4	3.06	0.42
48:5:504:G:H22	48:5:654:C:H1'	1.84	0.42
48:5:952:G:C2	48:5:953:C:C2	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1584:G:C2	48:5:1585:C:C2	3.08	0.42
48:5:1811:G:C6	48:5:1812:C:C4	3.07	0.42
48:5:4395:U:C6	48:5:4395:U:H5'	2.55	0.42
49:7:110:G:C2	49:7:111:C:C2	3.06	0.42
51:9:156:G:H4'	58:GG:108:VAL:HG23	2.00	0.42
51:9:522:A:C3'	61:JJ:131:ARG:HH22	2.32	0.42
51:9:833:C:H4'	51:9:834:C:OP1	2.19	0.42
51:9:912:C:H3'	51:9:913:A:C5'	2.49	0.42
51:9:1229:G:C2	51:9:1230:C:C2	3.07	0.42
51:9:1268:C:C2	51:9:1515:G:N2	2.88	0.42
51:9:1454:A:OP1	69:RR:3:ARG:HG2	2.19	0.42
51:9:1609:C:H2'	51:9:1610:G:C8	2.53	0.42
51:9:1613:G:N2	51:9:1627:C:C2	2.88	0.42
56:EE:45:ILE:HA	56:EE:61:VAL:HG11	2.01	0.42
59:HH:44:ASN:N	59:HH:68:GLN:OE1	2.52	0.42
60:II:156:ALA:O	60:II:158:ILE:N	2.53	0.42
85:hh:52:G:OP1	86:ii:62:ILE:HG23	2.19	0.42
86:ii:96:TYR:HB3	86:ii:131:PHE:CE2	2.54	0.42
87:jj:169:LYS:HB3	87:jj:240:PHE:HA	2.02	0.42
5:E:43:ASN:HB3	5:E:58:MET:SD	2.59	0.42
6:F:175:ALA:O	6:F:179:ARG:HB2	2.19	0.42
24:Y:55:VAL:HG13	24:Y:104:VAL:HG13	2.02	0.42
35:j:81:GLY:O	35:j:82:THR:CG2	2.67	0.42
44:t:162:CYS:N	44:t:163:PRO:CD	2.83	0.42
48:5:1431:C:C2	48:5:1454:G:C2	3.06	0.42
48:5:1431:C:C2	48:5:1454:G:N2	2.87	0.42
48:5:1781:U:C4	48:5:1782:U:C5	3.08	0.42
48:5:2076:G:C2	48:5:2077:C:C2	3.08	0.42
48:5:2606:G:C2	48:5:2607:C:C2	3.07	0.42
48:5:2712:G:N1	48:5:2713:C:C4	2.87	0.42
48:5:3724:A:C6	48:5:3725:G:C5	3.08	0.42
48:5:4152:G:C2	48:5:4153:C:C2	3.08	0.42
48:5:4462:C:C2	48:5:4515:G:N2	2.87	0.42
48:5:4737:G:C6	48:5:4738:C:C4	3.07	0.42
48:5:4920:C:H2'	48:5:4921:C:C6	2.55	0.42
51:9:1236:G:C2	51:9:1237:C:C2	3.07	0.42
51:9:1566:G:N7	71:TT:101:ARG:NH2	2.65	0.42
52:AA:3:GLY:N	73:VV:78:ILE:O	2.52	0.42
84:gg:201:SER:HA	84:gg:241:PHE:CD2	2.54	0.42
3:C:86:ARG:HD3	48:5:376:A:OP1	2.19	0.42
3:C:114:ARG:HB3	13:N:203:TYR:CD1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:113:PRO:O	42:r:112:ARG:NE	2.52	0.42
6:F:92:ALA:HB3	6:F:127:LEU:HD21	2.00	0.42
10:J:15:LEU:HD11	10:J:157:ILE:HG23	2.01	0.42
11:L:104:ASN:OD1	11:L:110:LEU:HB2	2.18	0.42
14:O:48:TYR:CE2	14:O:52:LEU:HD11	2.54	0.42
31:f:93:PRO:O	31:f:94:ALA:HB3	2.19	0.42
43:s:145:THR:HG22	43:s:154:ILE:HG13	2.01	0.42
44:t:22:VAL:HG13	44:t:48:LYS:HE2	2.00	0.42
47:3:4:C:O2	47:3:4:C:H2'	2.20	0.42
48:5:174:C:C2	48:5:263:G:C2	3.07	0.42
48:5:199:G:C2	48:5:201:C:C2	3.07	0.42
48:5:963:G:H2'	48:5:963:G:N3	2.35	0.42
48:5:1205:G:C2	48:5:1206:C:C2	3.08	0.42
48:5:1466:G:N2	48:5:1467:C:C2	2.88	0.42
48:5:1755:C:C3'	48:5:1756:U:H5"	2.50	0.42
48:5:2468:U:C2	48:5:2473:A:N6	2.85	0.42
48:5:2526:C:N4	48:5:2527:A:N6	2.67	0.42
48:5:2609:G:N1	48:5:2731:C:C2	2.88	0.42
48:5:2712:G:C2	48:5:2713:C:C2	3.08	0.42
48:5:3753:G:O2'	48:5:3754:G:H5'	2.20	0.42
48:5:4371:G:C5	48:5:4372:U:C4	3.07	0.42
48:5:4931:G:H2'	48:5:4931:G:N3	2.35	0.42
48:5:5031:G:C6	48:5:5032:C:C4	3.08	0.42
50:8:31:G:C2	50:8:32:C:C2	3.08	0.42
50:8:139:G:C2	50:8:140:C:C2	3.08	0.42
51:9:211:G:C6	51:9:212:C:N4	2.88	0.42
51:9:507:G:OP1	76:YY:108:LYS:NZ	2.40	0.42
51:9:839:C:O2	51:9:839:C:H2'	2.17	0.42
51:9:1189:A:H2'	51:9:1190:A:C8	2.54	0.42
51:9:1753:C:C2	51:9:1780:G:C2	3.07	0.42
55:DD:31:GLU:OE1	55:DD:106:ARG:NH2	2.52	0.42
56:EE:126:VAL:HG23	56:EE:157:ASN:H	1.84	0.42
56:EE:151:ASP:O	56:EE:153:LEU:N	2.52	0.42
59:HH:114:GLN:O	59:HH:115:LYS:C	2.62	0.42
86:ii:120:ILE:HG22	86:ii:139:LEU:HD13	2.00	0.42
86:ii:157:LEU:HD23	86:ii:158:PHE:N	2.34	0.42
6:F:92:ALA:HA	6:F:147:PRO:HD3	2.01	0.42
15:P:118:GLN:NE2	48:5:423:G:N3	2.67	0.42
16:Q:24:TYR:CE1	42:r:5:LEU:HD13	2.54	0.42
48:5:28:C:C2	48:5:55:G:N2	2.88	0.42
48:5:127:G:C2	48:5:128:C:C2	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:165:A:H3'	48:5:166:C:H6	1.85	0.42
48:5:1075:G:N2	48:5:1076:C:C2	2.88	0.42
48:5:1550:G:C2	48:5:1579:C:O2	2.72	0.42
48:5:1557:C:C2	48:5:1571:G:C2	3.07	0.42
48:5:1721:G:C6	48:5:1722:C:C4	3.08	0.42
48:5:2294:G:N2	48:5:2295:C:C2	2.87	0.42
48:5:2889:G:C6	48:5:2890:C:C4	3.08	0.42
48:5:3712:A:C6	51:9:970:G:C2	3.08	0.42
48:5:4147:G:C2	48:5:4148:C:C2	3.07	0.42
48:5:4326:G:C6	48:5:4327:C:C4	3.08	0.42
51:9:1500:G:C5	51:9:1501:C:C4	3.06	0.42
51:9:1669:G:C2	51:9:1670:C:C2	3.07	0.42
86:ii:323:TYR:O	86:ii:326:LEU:HD21	2.19	0.42
5:E:116:ASP:OD1	5:E:116:ASP:N	2.52	0.42
11:L:146:LEU:HB2	11:L:148:THR:HG22	2.01	0.42
13:N:4:TYR:OH	48:5:151:G:OP2	2.23	0.42
19:T:3:ASN:ND2	48:5:4212:A:N1	2.66	0.42
24:Y:19:PHE:O	24:Y:26:ARG:NH2	2.52	0.42
31:f:18:LEU:HD23	31:f:19:ARG:NH1	2.34	0.42
48:5:76:A:C6	48:5:77:U:C5	3.08	0.42
48:5:479:G:C6	48:5:480:C:C4	3.08	0.42
48:5:674:G:C2	48:5:675:C:C2	3.08	0.42
48:5:976:G:OP1	48:5:976:G:C4'	2.68	0.42
48:5:1757:U:C2	48:5:1758:G:C8	3.07	0.42
48:5:2050:G:C6	48:5:2051:C:C4	3.07	0.42
48:5:2468:U:C4	48:5:2473:A:C6	3.07	0.42
48:5:2542:G:C2	48:5:2775:C:C2	3.07	0.42
48:5:3923:A:H2'	48:5:3924:C:C6	2.55	0.42
48:5:4072:C:H2'	48:5:4073:A:O4'	2.20	0.42
48:5:5028:G:C2	48:5:5029:C:C2	3.07	0.42
51:9:47:G:C2	51:9:48:C:C2	3.08	0.42
51:9:113:G:N2	51:9:293:C:C2	2.88	0.42
51:9:167:G:N2	51:9:168:C:C2	2.88	0.42
51:9:559:G:O2'	51:9:560:A:O4'	2.37	0.42
51:9:799:U:H5"	59:HH:110:THR:HB	2.02	0.42
51:9:993:G:N7	78:aa:15:ARG:NH1	2.67	0.42
51:9:1416:C:O3'	51:9:1417:C:O4'	2.38	0.42
51:9:1604:G:C6	51:9:1605:G:C4	3.07	0.42
51:9:1648:G:C8	68:QQ:125:ARG:HB3	2.54	0.42
51:9:1771:G:C6	51:9:1772:C:N4	2.88	0.42
51:9:1804:U:H2'	51:9:1805:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:9:1847:G:N2	51:9:1853:C:C2	2.88	0.42
61:JJ:120:ALA:O	61:JJ:121:LYS:CB	2.67	0.42
86:ii:321:ILE:HG22	86:ii:402:PHE:CE2	2.55	0.42
87:jj:5:LEU:HD23	87:jj:76:PRO:HA	2.02	0.42
87:jj:152:LEU:HD12	87:jj:156:PHE:CE2	2.54	0.42
1:A:196:TRP:CG	1:A:197:PRO:N	2.86	0.42
4:D:111:ASN:C	4:D:111:ASN:HD22	2.28	0.42
7:G:63:LEU:HD12	13:N:32:GLN:HB3	2.02	0.42
18:S:95:ARG:HD3	18:S:97:TYR:OH	2.19	0.42
19:T:109:VAL:HG13	48:5:1803:G:C6	2.54	0.42
40:o:55:ILE:HD12	40:o:57:ARG:NH2	2.35	0.42
42:r:17:LEU:HD12	42:r:36:ASN:ND2	2.35	0.42
48:5:29:G:C2	48:5:30:C:C2	3.08	0.42
48:5:77:U:N3	48:5:335:A:C6	2.86	0.42
48:5:179:G:C6	48:5:180:C:C4	3.07	0.42
48:5:691:C:H2'	48:5:692:A:C8	2.55	0.42
48:5:742:G:N2	48:5:923:C:C2	2.88	0.42
48:5:978:G:OP2	48:5:979:C:OP2	2.37	0.42
48:5:1072:C:H1'	48:5:1073:G:C8	2.54	0.42
48:5:1349:G:C6	48:5:1350:C:C4	3.08	0.42
48:5:1679:A:N1	48:5:4391:G:O2'	2.46	0.42
48:5:3590:G:C6	48:5:3591:C:C4	3.07	0.42
48:5:3868:G:N2	48:5:3900:G:O2'	2.53	0.42
48:5:3870:C:C2	48:5:3886:G:N2	2.87	0.42
48:5:4212:A:C2	48:5:4218:U:C5	3.07	0.42
48:5:4269:G:C2	48:5:4270:C:C2	3.08	0.42
49:7:93:G:C6	49:7:94:C:C4	3.07	0.42
51:9:102:A:O2'	51:9:103:A:OP2	2.27	0.42
51:9:163:U:OP1	58:GG:84:TYR:HA	2.20	0.42
51:9:595:U:H2'	51:9:596:U:C6	2.54	0.42
51:9:949:G:C2	51:9:950:C:C2	3.08	0.42
51:9:978:G:C6	51:9:979:C:C4	3.08	0.42
51:9:999:G:C2	51:9:1000:C:C2	3.08	0.42
51:9:1212:G:O2'	51:9:1213:C:C5'	2.68	0.42
58:GG:213:LEU:C	58:GG:213:LEU:HD13	2.44	0.42
60:II:106:SER:HB2	60:II:166:PHE:CD1	2.54	0.42
84:gg:11:LEU:HB3	84:gg:43:TRP:CH2	2.55	0.42
86:ii:164:ASN:HD22	86:ii:164:ASN:N	2.18	0.42
87:jj:116:LYS:CE	87:jj:272:VAL:HG11	2.50	0.42
87:jj:145:THR:HA	87:jj:148:ARG:HG3	2.01	0.42
5:E:149:LEU:HD11	5:E:191:ILE:HG13	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:55:MET:O	18:S:157:ARG:NH2	2.53	0.42
13:N:68:ARG:HG2	48:5:302:C:OP1	2.20	0.42
25:Z:38:TYR:CE1	25:Z:76:ASN:OD1	2.73	0.42
28:c:31:TYR:HA	28:c:34:THR:HG22	2.02	0.42
47:3:69:G:O2'	47:3:70:G:O5'	2.37	0.42
48:5:196:C:C2	48:5:246:G:C2	3.08	0.42
48:5:301:G:C5	48:5:302:C:C4	3.08	0.42
48:5:707:C:H42	48:5:1290:G:H1	1.68	0.42
48:5:1359:G:C5	48:5:1360:G:C5	3.07	0.42
48:5:1806:G:C2	48:5:1807:C:C2	3.08	0.42
48:5:1819:G:H5"	48:5:1819:G:C8	2.55	0.42
48:5:2042:A:N3	48:5:4462:C:O2'	2.49	0.42
48:5:2645:G:C6	48:5:2646:C:C4	3.07	0.42
48:5:2793:G:O6	48:5:2797:C:C5	2.73	0.42
48:5:2831:G:C2	48:5:3855:C:C2	3.08	0.42
48:5:4094:G:H2'	48:5:4095:G:C1'	2.50	0.42
48:5:4595:G:C6	48:5:4596:C:C4	3.08	0.42
50:8:2:G:H2'	50:8:2:G:N3	2.34	0.42
51:9:52:G:C6	51:9:53:C:C4	3.07	0.42
51:9:145:G:N1	51:9:146:G:C6	2.88	0.42
51:9:910:G:C2	51:9:911:C:C2	3.08	0.42
51:9:947:G:C2	51:9:948:C:C2	3.08	0.42
51:9:1089:G:C6	51:9:1090:C:C4	3.08	0.42
51:9:1664:A:O2'	51:9:1665:G:O5'	2.33	0.42
51:9:1686:G:C2	51:9:1687:C:C2	3.07	0.42
55:DD:208:VAL:HG21	69:RR:50:ILE:HD11	2.01	0.42
57:FF:162:ALA:HB1	57:FF:169:ILE:HD13	2.01	0.42
58:GG:3:LEU:O	58:GG:15:LEU:HA	2.20	0.42
73:VV:32:ILE:O	73:VV:54:ALA:HA	2.19	0.42
74:WW:26:LEU:HB2	79:bb:7:LEU:HD13	2.02	0.42
75:XX:29:LYS:HD3	75:XX:35:ALA:HB2	2.01	0.42
83:ff:81:THR:HG22	83:ff:83:PRO:HD2	2.01	0.42
86:ii:155:GLY:HA3	86:ii:173:THR:HA	2.02	0.42
1:A:207:VAL:HG12	48:5:3919:C:C5'	2.50	0.42
3:C:161:TYR:HD1	3:C:166:GLU:OE2	2.02	0.42
4:D:64:ILE:CD1	4:D:109:LEU:HD22	2.50	0.42
5:E:208:LEU:HA	5:E:212:TYR:HD2	1.84	0.42
6:F:164:ILE:HB	6:F:169:ILE:HD12	2.02	0.42
7:G:157:ILE:HG23	7:G:167:VAL:HG11	2.01	0.42
8:H:172:ILE:HD12	38:m:90:ASN:HB3	2.02	0.42
11:L:29:PRO:CB	48:5:1371:A:H2'	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:L:50:PRO:HD2	33:h:119:TYR:HE2	1.85	0.42
14:O:27:VAL:HG13	14:O:98:ALA:HB1	2.01	0.42
48:5:235:A:C2	48:5:238:C:C5	3.08	0.42
48:5:479:G:C2	48:5:480:C:C2	3.07	0.42
48:5:1416:G:C2	48:5:1417:C:C2	3.07	0.42
48:5:1448:G:C6	48:5:1449:C:C4	3.08	0.42
48:5:2606:G:C6	48:5:2607:C:C4	3.08	0.42
48:5:3717:A:O2'	48:5:3718:A:O5'	2.38	0.42
48:5:4093:G:C6	48:5:4094:G:N7	2.88	0.42
48:5:4583:C:C2	48:5:4718:G:C2	3.08	0.42
50:8:32:C:H2'	50:8:33:G:O4'	2.20	0.42
50:8:56:G:C4	50:8:62:A:C2	3.08	0.42
51:9:67:C:OP2	58:GG:132:ARG:NH1	2.53	0.42
51:9:293:C:O2	51:9:293:C:C2'	2.68	0.42
51:9:830:A:C6	51:9:845:G:C4	3.08	0.42
51:9:872:A:N6	51:9:915:G:C4	2.88	0.42
54:CC:274:VAL:HG13	54:CC:274:VAL:O	2.20	0.42
55:DD:115:VAL:HG13	55:DD:138:VAL:HG11	2.01	0.42
56:EE:37:LYS:O	56:EE:38:LEU:C	2.63	0.42
58:GG:58:LYS:O	58:GG:59:GLN:HB2	2.20	0.42
75:XX:9:THR:O	75:XX:10:ALA:C	2.63	0.42
87:jj:441:PHE:HE2	87:jj:446:MET:HE2	1.85	0.42
5:E:157:ARG:NH2	12:M:106:ASP:OD2	2.53	0.41
11:L:42:ARG:CG	11:L:45:ARG:HH12	2.34	0.41
17:R:4:LEU:HD11	17:R:29:THR:HG23	2.02	0.41
31:f:13:GLY:HA2	31:f:97:ILE:CD1	2.50	0.41
43:s:10:LYS:HZ3	48:5:1960:A:HO2'	1.55	0.41
47:3:66:U:C4	47:3:67:U:C5	3.08	0.41
47:3:69:G:O2'	47:3:70:G:P	2.78	0.41
48:5:167:C:C2	48:5:269:G:C2	3.08	0.41
48:5:208:A:N6	48:5:233:U:C4	2.88	0.41
48:5:1264:C:C4	48:5:1265:G:N7	2.88	0.41
48:5:1277:G:C2	48:5:1278:C:C2	3.08	0.41
48:5:1358:G:O6	48:5:1379:C:N3	2.52	0.41
48:5:1416:G:C6	48:5:1417:C:C4	3.08	0.41
48:5:1431:C:H2'	48:5:1432:G:O4'	2.20	0.41
48:5:1736:A:C2	48:5:1794:A:C4	3.07	0.41
48:5:1969:G:O2'	48:5:1970:A:C5'	2.66	0.41
48:5:2465:C:H2'	48:5:2466:G:O4'	2.20	0.41
48:5:2623:A:C2	48:5:2624:G:C6	3.08	0.41
48:5:4247:G:C2	48:5:4262:C:C2	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:4276:G:N2	48:5:4333:C:C2	2.88	0.41
48:5:4600:G:OP1	87:jj:506:ARG:NH2	2.51	0.41
48:5:4713:G:C2	48:5:4714:C:C2	3.07	0.41
51:9:52:G:C2	51:9:53:C:C2	3.08	0.41
51:9:194:C:C2	51:9:206:G:N2	2.88	0.41
51:9:912:C:H3'	51:9:913:A:H5"	2.01	0.41
51:9:1212:G:O2'	51:9:1213:C:P	2.78	0.41
51:9:1344:A:N6	51:9:1386:A:H5"	2.35	0.41
51:9:1398:G:C6	51:9:1399:C:C4	3.08	0.41
51:9:1485:U:H2'	51:9:1486:A:O4'	2.20	0.41
56:EE:126:VAL:HG23	56:EE:156:MET:HA	2.02	0.41
66:OO:142:ARG:NH2	78:aa:23:CYS:O	2.53	0.41
68:QQ:42:ILE:HD12	68:QQ:42:ILE:N	2.35	0.41
81:dd:18:SER:OG	81:dd:19:ARG:N	2.53	0.41
87:jj:123:LEU:HD13	87:jj:270:ILE:HD13	2.01	0.41
1:A:107:MET:SD	1:A:113:VAL:CG1	3.09	0.41
3:C:354:ALA:O	3:C:358:LEU:HG	2.20	0.41
6:F:60:HIS:HA	48:5:944:A:C8	2.55	0.41
9:I:49:CYS:SG	9:I:49:CYS:O	2.78	0.41
25:Z:36:ARG:CD	25:Z:74:VAL:HG11	2.50	0.41
30:e:81:ASN:HA	30:e:111:ILE:HD11	2.01	0.41
31:f:30:ILE:HD11	31:f:84:VAL:HG11	2.01	0.41
32:g:63:VAL:O	32:g:64:LEU:C	2.63	0.41
35:j:81:GLY:HA3	48:5:134:G:C5	2.55	0.41
36:k:69:LEU:HD21	48:5:2696:A:C2	2.55	0.41
40:o:19:GLN:NE2	40:o:72:CYS:SG	2.92	0.41
43:s:14:PHE:CD1	48:5:1960:A:H2	2.36	0.41
48:5:747:A:C2	48:5:918:G:N1	2.88	0.41
48:5:973:G:N2	48:5:1282:G:HO2'	2.09	0.41
48:5:1379:C:O2	48:5:1379:C:O4'	2.37	0.41
48:5:1484:G:C2'	48:5:1484:G:N3	2.82	0.41
48:5:1484:G:N3	48:5:1484:G:H2'	2.34	0.41
48:5:1573:G:C6	48:5:1574:G:N1	2.89	0.41
48:5:1612:G:N3	48:5:1612:G:C2'	2.83	0.41
48:5:1615:C:H2'	48:5:1616:U:O4'	2.19	0.41
48:5:2052:G:C2	48:5:2053:C:C2	3.09	0.41
48:5:2463:G:C6	48:5:2464:C:N4	2.89	0.41
48:5:2533:C:C2	48:5:2534:C:C5	3.08	0.41
48:5:2771:G:C2	48:5:2772:C:C2	3.08	0.41
48:5:4586:G:H5"	48:5:4586:G:C8	2.52	0.41
48:5:4904:G:C6	48:5:4905:C:C4	3.07	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:8:46:G:N2	50:8:47:C:C2	2.88	0.41
50:8:128:C:C5	50:8:129:C:C5	3.08	0.41
51:9:47:G:N2	51:9:48:C:C2	2.88	0.41
51:9:1661:A:H2'	51:9:1662:U:O4'	2.20	0.41
55:DD:70:THR:HG22	55:DD:86:LEU:HD13	2.02	0.41
60:II:165:GLN:O	60:II:169:GLY:N	2.44	0.41
71:TT:6:VAL:HG22	71:TT:65:TYR:CE2	2.54	0.41
86:ii:214:ILE:HA	86:ii:219:VAL:HA	2.02	0.41
1:A:227:ARG:NH2	48:5:3659:G:O2'	2.50	0.41
1:A:243:THR:HG21	48:5:3748:A:O4'	2.20	0.41
2:B:41:VAL:HG21	2:B:196:TRP:CG	2.55	0.41
5:E:174:PRO:O	5:E:177:LEU:N	2.50	0.41
47:3:6:G:C6	47:3:7:A:C5	3.08	0.41
48:5:284:G:C2	48:5:304:C:O2	2.73	0.41
48:5:385:A:C2	48:5:386:A:C5	3.08	0.41
48:5:517:C:C2	48:5:645:G:N2	2.88	0.41
48:5:931:C:C2'	48:5:932:A:O5'	2.68	0.41
48:5:952:G:H2'	48:5:953:C:O4'	2.20	0.41
48:5:1098:G:C6	48:5:1099:C:C4	3.08	0.41
48:5:1412:G:C6	48:5:1413:C:C4	3.08	0.41
48:5:1557:C:C2	48:5:1571:G:N2	2.88	0.41
48:5:2050:G:C2	48:5:2051:C:C2	3.08	0.41
48:5:2083:C:H4'	48:5:2084:C:OP2	2.21	0.41
48:5:2468:U:C2	48:5:2469:C:C5	3.08	0.41
48:5:3769:C:H2'	48:5:3770:U:O4'	2.20	0.41
48:5:4131:G:C6	48:5:4132:C:C4	3.09	0.41
48:5:4326:G:C2	48:5:4327:C:C2	3.09	0.41
50:8:60:G:N2	50:8:64:U:C2	2.87	0.41
51:9:427:U:O2	51:9:427:U:O4'	2.37	0.41
51:9:1184:G:C6	51:9:1185:C:C4	3.08	0.41
63:LL:15:THR:O	63:LL:15:THR:HG22	2.20	0.41
67:PP:34:MET:CE	67:PP:42:ARG:HA	2.49	0.41
2:B:89:ILE:CD1	2:B:153:MET:HE1	2.50	0.41
3:C:30:ALA:HB1	3:C:31:PRO:HD2	2.02	0.41
3:C:229:LEU:HD22	3:C:229:LEU:N	2.35	0.41
5:E:90:LYS:N	5:E:91:PRO:HD3	2.35	0.41
10:J:15:LEU:HD21	10:J:157:ILE:HD13	2.02	0.41
13:N:11:TRP:CE3	13:N:44:ARG:NH2	2.89	0.41
14:O:15:LEU:HD11	14:O:129:LEU:HD13	2.01	0.41
18:S:173:ASN:HA	48:5:4762:A:H2	1.85	0.41
20:U:21:PHE:CD1	20:U:80:LYS:HG2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:90:ALA:O	26:a:91:ALA:HB3	2.21	0.41
35:j:39:TYR:O	35:j:40:PRO:C	2.60	0.41
46:2:65:G:C2	46:2:66:C:C2	3.08	0.41
48:5:80:C:C2	48:5:104:G:N2	2.89	0.41
48:5:665:C:O2	48:5:665:C:C2'	2.69	0.41
48:5:1234:G:H2'	48:5:1235:G:C8	2.55	0.41
48:5:1268:G:O4'	48:5:2111:G:C5	2.73	0.41
48:5:1329:G:H3'	48:5:1329:G:C8	2.55	0.41
48:5:1466:G:C2	48:5:1467:C:C2	3.09	0.41
48:5:1959:U:O2'	48:5:1960:A:P	2.78	0.41
48:5:2322:G:C2	48:5:2323:C:C2	3.09	0.41
48:5:2703:G:C6	48:5:2704:C:C4	3.08	0.41
48:5:4139:G:C2	48:5:4140:C:C2	3.08	0.41
48:5:4305:G:N3	48:5:4305:G:H2'	2.35	0.41
48:5:4901:G:C2	48:5:4921:C:C2	3.08	0.41
48:5:4901:G:N1	48:5:4921:C:C4	2.88	0.41
48:5:4950:U:O2	48:5:4950:U:O4'	2.38	0.41
49:7:27:G:C6	49:7:28:C:C4	3.08	0.41
51:9:828:G:C2	51:9:829:C:C2	3.07	0.41
51:9:943:U:H2'	51:9:944:A:O4'	2.20	0.41
51:9:1323:U:H2'	51:9:1324:G:O4'	2.20	0.41
51:9:1459:G:C6	51:9:1460:C:C4	3.09	0.41
51:9:1654:G:C2	51:9:1655:C:C2	3.08	0.41
51:9:1718:G:C6	51:9:1814:G:C6	3.09	0.41
51:9:1771:G:C2	51:9:1772:C:C4	3.09	0.41
58:GG:32:MET:HE2	58:GG:54:GLY:HA3	2.01	0.41
59:HH:105:THR:OG1	59:HH:108:SER:N	2.52	0.41
60:II:197:PHE:CD1	60:II:197:PHE:C	2.98	0.41
66:OO:39:ASP:N	66:OO:69:SER:OG	2.53	0.41
10:J:119:TYR:HB3	70:SS:12:ILE:HG21	2.02	0.41
12:M:34:ASN:ND2	48:5:1925:G:OP1	2.53	0.41
13:N:198:LEU:HD23	13:N:198:LEU:HA	1.94	0.41
40:o:31:ASP:O	40:o:33:LEU:N	2.53	0.41
48:5:972:C:H2'	48:5:973:G:H8	1.84	0.41
48:5:1203:G:C2	48:5:1204:C:C2	3.08	0.41
48:5:1275:G:C2	48:5:1276:C:C2	3.08	0.41
48:5:2273:G:C2	48:5:2274:C:C2	3.08	0.41
48:5:2478:C:N4	48:5:2479:G:O6	2.54	0.41
48:5:2889:G:C2	48:5:2890:C:C2	3.09	0.41
48:5:4131:G:C2	48:5:4132:C:C2	3.09	0.41
48:5:4182:G:H5"	48:5:4183:G:OP2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:4283:G:C6	48:5:4284:C:N4	2.88	0.41
48:5:4492:U:O2'	48:5:4512:U:O2	2.22	0.41
48:5:4966:A:N1	48:5:4967:A:C6	2.88	0.41
51:9:978:G:C2	51:9:979:C:C2	3.09	0.41
51:9:1134:G:C2	51:9:1135:C:C2	3.08	0.41
51:9:1217:A:H2'	51:9:1218:C:C6	2.56	0.41
52:AA:147:LEU:HD12	52:AA:163:CYS:SG	2.60	0.41
61:JJ:32:ILE:HG21	82:ee:34:ARG:CG	2.50	0.41
86:ii:236:LEU:HD11	86:ii:242:PHE:CD1	2.56	0.41
4:D:43:LYS:O	4:D:46:THR:HG22	2.20	0.41
8:H:109:GLY:O	8:H:110:SER:C	2.63	0.41
9:I:49:CYS:HB2	9:I:172:GLY:O	2.21	0.41
48:5:127:G:C6	48:5:128:C:C4	3.08	0.41
48:5:169:G:C2	48:5:170:C:C2	3.09	0.41
48:5:751:G:N2	48:5:752:G:C5	2.89	0.41
48:5:1075:G:C6	48:5:1076:C:N4	2.88	0.41
48:5:1381:U:H5'	48:5:1382:G:OP2	2.21	0.41
48:5:1422:G:C2	48:5:1464:C:C2	3.09	0.41
48:5:1424:G:H2'	48:5:1425:G:O4'	2.21	0.41
48:5:2052:G:C6	48:5:2053:C:C4	3.08	0.41
48:5:2303:C:O2'	48:5:2332:A:N1	2.51	0.41
48:5:2547:G:C2	48:5:2548:C:C2	3.09	0.41
48:5:4395:U:H5'	48:5:4395:U:H6	1.85	0.41
48:5:4664:A:H2'	48:5:4665:A:O4'	2.21	0.41
51:9:49:C:N3	51:9:478:G:C6	2.88	0.41
51:9:832:G:C2	51:9:843:C:N3	2.89	0.41
51:9:921:G:C5	74:WW:28:ARG:HD2	2.56	0.41
51:9:958:G:H2'	51:9:959:G:O4'	2.20	0.41
51:9:1551:U:C5	51:9:1577:G:C6	3.09	0.41
51:9:1624:U:O2	51:9:1624:U:O4'	2.38	0.41
51:9:1859:A:C2	51:9:1860:A:N1	2.88	0.41
60:II:60:LEU:HD23	60:II:185:ALA:HB2	2.03	0.41
60:II:102:VAL:HG11	60:II:175:ILE:HD11	2.01	0.41
67:PP:83:MET:HE3	67:PP:89:MET:SD	2.61	0.41
68:QQ:13:PHE:HA	68:QQ:22:VAL:HA	2.02	0.41
68:QQ:32:ILE:HD11	68:QQ:63:PHE:CD2	2.55	0.41
87:jj:11:VAL:HG21	87:jj:48:ALA:O	2.20	0.41
2:B:36:ASP:OD2	2:B:39:LYS:CE	2.62	0.41
2:B:238:LYS:CE	48:5:3842:C:OP1	2.68	0.41
8:H:5:LEU:HD13	8:H:60:TRP:CD2	2.56	0.41
15:P:10:ASN:N	15:P:10:ASN:OD1	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:a:12:ARG:NH1	48:5:1660:U:C4	2.89	0.41
35:j:9:GLY:HA2	48:5:2792:C:O2	2.19	0.41
36:k:11:PHE:HB3	36:k:45:LEU:HD22	2.02	0.41
48:5:116:G:C2	48:5:117:C:C2	3.08	0.41
48:5:119:G:C8	48:5:119:G:H5"	2.56	0.41
48:5:209:U:C4	48:5:233:U:O4	2.74	0.41
48:5:258:G:C6	48:5:259:C:C4	3.08	0.41
48:5:368:C:C2	48:5:374:G:C2	3.09	0.41
48:5:1205:G:N1	48:5:1206:C:C4	2.89	0.41
48:5:2267:U:O2	48:5:2267:U:O4'	2.39	0.41
48:5:2311:C:C2	48:5:2328:G:N2	2.89	0.41
48:5:2613:C:N4	48:5:2614:C:N4	2.68	0.41
48:5:3937:C:H2'	48:5:3938:G:N2	2.35	0.41
48:5:4181:U:O4	48:5:4182:G:C6	2.73	0.41
50:8:49:G:C6	50:8:50:C:C4	3.09	0.41
51:9:95:G:C6	51:9:96:C:C4	3.09	0.41
51:9:827:A:C5	51:9:828:G:C8	3.09	0.41
51:9:1130:G:N2	51:9:1131:G:C8	2.88	0.41
51:9:1212:G:HO2'	51:9:1213:C:C5'	2.34	0.41
51:9:1220:A:C6	51:9:1221:G:C5	3.08	0.41
51:9:1233:G:C2	51:9:1234:C:C2	3.08	0.41
51:9:1233:G:H2'	51:9:1234:C:H5'	2.02	0.41
51:9:1384:C:O2'	51:9:1385:G:H5'	2.20	0.41
51:9:1473:G:N2	51:9:1475:G:OP2	2.51	0.41
51:9:1512:C:O2'	81:dd:7:TYR:O	2.34	0.41
51:9:1537:A:C2	51:9:1538:C:C2	3.09	0.41
52:AA:161:ILE:HG22	52:AA:163:CYS:SG	2.60	0.41
53:BB:171:ILE:HG21	53:BB:197:ILE:HG13	2.03	0.41
54:CC:116:THR:OG1	54:CC:118:ALA:O	2.38	0.41
55:DD:162:ASP:O	55:DD:163:PRO:C	2.64	0.41
56:EE:54:TYR:OH	56:EE:95:THR:HG21	2.21	0.41
56:EE:234:PRO:CG	56:EE:238:LEU:HD11	2.51	0.41
74:WW:3:ARG:HE	74:WW:29:PRO:HG3	1.85	0.41
79:bb:51:GLN:HA	79:bb:66:PRO:HB2	2.03	0.41
30:e:100:ALA:HB3	30:e:103:VAL:HG23	2.02	0.41
32:g:97:ILE:HD13	48:5:4120:U:N3	2.36	0.41
46:2:7:G:C2	46:2:49:C:C2	3.09	0.41
46:2:40:C:H4'	47:3:36:U:H1'	2.03	0.41
48:5:258:G:N2	48:5:259:C:C2	2.89	0.41
48:5:730:G:N2	48:5:939:G:N2	2.69	0.41
48:5:941:C:H2'	48:5:942:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:1090:G:C6	48:5:1091:C:C4	3.08	0.41
48:5:1279:A:C4	48:5:1280:C:N3	2.89	0.41
48:5:1439:C:O2	48:5:1439:C:O4'	2.39	0.41
48:5:1912:G:C6	48:5:1913:C:N4	2.89	0.41
48:5:2058:G:C6	48:5:2059:C:C4	3.09	0.41
48:5:2625:U:C4	48:5:2626:U:C4	3.09	0.41
48:5:2645:G:C2	48:5:2646:C:C2	3.08	0.41
48:5:4269:G:C6	48:5:4270:C:C4	3.09	0.41
48:5:4473:A:C2	48:5:4474:A:C4	3.09	0.41
51:9:65:C:O5'	58:GG:174:PRO:HA	2.21	0.41
51:9:211:G:C2	51:9:212:C:C2	3.09	0.41
51:9:688:U:OP2	59:HH:122:LEU:N	2.54	0.41
51:9:1540:G:C2	51:9:1594:A:C2	3.09	0.41
51:9:1611:G:OP2	70:SS:121:ARG:NH1	2.48	0.41
51:9:1798:C:H2'	51:9:1799:G:O4'	2.21	0.41
52:AA:132:GLN:N	52:AA:133:PRO:HD2	2.36	0.41
65:NN:87:ASP:OD2	65:NN:125:LEU:HD11	2.21	0.41
75:XX:82:THR:O	75:XX:118:VAL:HG13	2.21	0.41
2:B:116:ARG:HB3	2:B:177:LYS:HA	2.03	0.41
3:C:76:ILE:HG22	3:C:77:PRO:CD	2.51	0.41
3:C:266:THR:HG22	3:C:269:LYS:HB3	2.02	0.41
6:F:168:ARG:HD2	6:F:211:TRP:CD1	2.55	0.41
16:Q:41:SER:OG	16:Q:44:ASN:ND2	2.54	0.41
17:R:58:HIS:HA	48:5:4646:U:OP1	2.21	0.41
21:V:26:ILE:HG22	21:V:101:ASN:HB3	2.03	0.41
28:c:30:GLY:O	28:c:34:THR:HG22	2.20	0.41
31:f:72:GLY:HA3	31:f:88:PHE:CD2	2.56	0.41
46:2:29:C:H2'	46:2:30:G:O4'	2.21	0.41
48:5:44:A:O2'	48:5:94:A:N1	2.42	0.41
48:5:93:G:C2'	48:5:94:A:C8	3.04	0.41
48:5:254:G:C6	48:5:255:C:C4	3.09	0.41
48:5:369:G:N2	48:5:372:A:OP2	2.50	0.41
48:5:937:U:O2	48:5:937:U:C2'	2.69	0.41
48:5:971:U:C2'	48:5:972:C:H5'	2.51	0.41
48:5:1412:G:C2	48:5:1413:C:C2	3.09	0.41
48:5:1721:G:C2	48:5:1722:C:C2	3.09	0.41
48:5:2268:A:C4'	48:5:2269:C:H5'	2.49	0.41
48:5:2517:A:N1	48:5:2518:G:C2	2.89	0.41
48:5:2862:G:H2'	48:5:3619:G:O6	2.21	0.41
48:5:4486:C:H2'	48:5:4487:A:O4'	2.21	0.41
48:5:4595:G:C2	48:5:4596:C:C2	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:5031:G:C2	48:5:5032:C:C2	3.09	0.41
51:9:49:C:C2	51:9:478:G:N1	2.89	0.41
51:9:67:C:O2'	58:GG:165:GLU:OE1	2.39	0.41
51:9:100:U:H2'	51:9:101:U:O4'	2.21	0.41
51:9:378:U:H2'	51:9:379:C:O4'	2.21	0.41
51:9:832:G:C2	51:9:833:C:C2	3.09	0.41
51:9:856:C:O2	51:9:856:C:H2'	2.19	0.41
51:9:1083:A:N7	51:9:1841:C:O2'	2.48	0.41
51:9:1184:G:C2	51:9:1185:C:C2	3.09	0.41
51:9:1293:A:H2'	51:9:1294:G:O4'	2.21	0.41
51:9:1298:G:O2'	51:9:1299:A:O5'	2.38	0.41
51:9:1576:G:H2'	51:9:1577:G:O4'	2.20	0.41
51:9:1835:A:C8	51:9:1863:A:N7	2.89	0.41
51:9:1839:U:C6	51:9:1862:G:N2	2.88	0.41
59:HH:40:LEU:HD23	59:HH:40:LEU:O	2.21	0.41
62:KK:49:MET:HA	62:KK:49:MET:HE2	2.02	0.41
62:KK:62:PHE:CZ	62:KK:65:ARG:HA	2.56	0.41
66:OO:99:ALA:HB2	66:OO:108:PRO:HA	2.02	0.41
67:PP:118:GLU:O	70:SS:120:HIS:N	2.53	0.41
69:RR:126:MET:O	69:RR:127:ASN:ND2	2.54	0.41
70:SS:25:LYS:HA	70:SS:55:ARG:HA	2.03	0.41
74:WW:104:LEU:HB3	74:WW:125:ILE:HA	2.02	0.41
76:YY:62:THR:HA	76:YY:69:THR:HA	2.03	0.41
86:ii:323:TYR:CG	86:ii:403:VAL:HG22	2.56	0.41
3:C:228:THR:OG1	3:C:248:ARG:NH2	2.54	0.41
4:D:278:ASP:O	4:D:281:ALA:HB3	2.20	0.41
9:I:187:GLU:O	9:I:188:LYS:HB2	2.21	0.41
17:R:5:ARG:NH2	48:5:2385:U:OP1	2.53	0.41
25:Z:123:LYS:O	25:Z:124:THR:HG23	2.20	0.41
29:d:79:ASN:OD1	29:d:79:ASN:N	2.53	0.41
32:g:59:VAL:HG21	32:g:63:VAL:HG11	2.02	0.41
36:k:23:VAL:O	36:k:23:VAL:HG22	2.20	0.41
48:5:709:C:H2'	48:5:710:G:O4'	2.20	0.41
48:5:715:G:H1	48:5:953:C:H42	1.68	0.41
48:5:960:A:N6	48:5:1283:G:O6	2.54	0.41
48:5:1238:A:O2'	48:5:1239:C:O5'	2.25	0.41
48:5:1506:G:C2	48:5:1507:C:C2	3.09	0.41
48:5:1538:U:O2'	48:5:1629:G:OP1	2.33	0.41
48:5:1970:A:C2	48:5:2016:C:C5	3.09	0.41
48:5:3723:A:C2	48:5:3730:U:N3	2.89	0.41
48:5:3752:C:O2'	48:5:3753:G:P	2.78	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:4201:G:C6	48:5:4202:U:C4	3.09	0.41
48:5:4433:G:C2	48:5:4434:C:C2	3.09	0.41
50:8:154:G:C6	50:8:155:C:C4	3.09	0.41
51:9:821:G:C6	61:JJ:147:PHE:CZ	3.08	0.41
51:9:1212:G:N2	51:9:1213:C:C2	2.89	0.41
51:9:1275:G:O2'	51:9:1276:A:P	2.80	0.41
57:FF:127:ARG:HG3	57:FF:127:ARG:HH11	1.86	0.41
59:HH:122:LEU:HD21	59:HH:126:HIS:CE1	2.56	0.41
73:VV:9:VAL:HG13	73:VV:10:ASP:N	2.36	0.41
86:ii:150:VAL:HG22	86:ii:227:ALA:HB3	2.03	0.41
1:A:117:GLU:OE1	1:A:121:GLY:N	2.52	0.40
3:C:293:LEU:HD22	16:Q:34:PHE:CD2	2.56	0.40
4:D:20:PHE:CD1	49:7:10:C:C4	3.10	0.40
6:F:94:VAL:HG13	6:F:142:ILE:HD12	2.04	0.40
35:j:72:ARG:NH2	50:8:94:G:OP2	2.54	0.40
46:2:30:G:C2	46:2:31:C:C2	3.09	0.40
47:3:5:G:C2	47:3:6:G:C5	3.09	0.40
47:3:68:C:N3	47:3:69:G:C5	2.89	0.40
48:5:205:C:C2	48:5:211:G:C2	3.09	0.40
48:5:247:G:C2	48:5:248:C:C2	3.09	0.40
48:5:1176:C:HO2'	48:5:1177:U:C4'	2.29	0.40
48:5:1441:C:N4	48:5:1442:C:N4	2.68	0.40
48:5:1466:G:C6	48:5:1467:C:C4	3.09	0.40
48:5:1550:G:N1	48:5:1551:C:C2	2.89	0.40
48:5:1563:A:C8	51:9:678:U:C4'	2.98	0.40
48:5:1633:G:H5'	48:5:1634:A:OP1	2.20	0.40
48:5:2457:G:C2	48:5:2458:C:C2	3.10	0.40
48:5:2463:G:C6	48:5:2464:C:C4	3.10	0.40
48:5:4277:G:C2	48:5:4278:C:C2	3.09	0.40
48:5:4530:U:H2'	48:5:4531:U:C6	2.55	0.40
50:8:112:G:C6	50:8:113:C:C4	3.09	0.40
51:9:86:C:C4	51:9:87:U:C5	3.08	0.40
51:9:95:G:C2	51:9:96:C:C2	3.09	0.40
51:9:999:G:C6	51:9:1000:C:C4	3.09	0.40
51:9:1137:U:N3	51:9:1148:A:C6	2.89	0.40
51:9:1236:G:C6	51:9:1237:C:C4	3.09	0.40
57:FF:52:SER:O	57:FF:53:ALA:C	2.63	0.40
78:aa:38:LYS:HB2	78:aa:71:LEU:HD12	2.03	0.40
1:A:200:ARG:NH1	48:5:3690:U:OP2	2.54	0.40
3:C:27:VAL:HG11	3:C:128:LEU:HD13	2.03	0.40
8:H:95:VAL:CG1	38:m:78:ILE:HD11	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Z:38:TYR:CD1	25:Z:76:ASN:OD1	2.74	0.40
25:Z:95:VAL:HG12	25:Z:110:ALA:HA	2.03	0.40
27:b:45:PHE:CD1	48:5:1815:G:N7	2.89	0.40
43:s:14:PHE:HE1	48:5:1960:A:C2	2.08	0.40
44:t:85:LEU:HD13	44:t:109:ILE:HG21	2.03	0.40
47:3:29:A:HO2'	47:3:30:G:C5'	2.23	0.40
48:5:22:G:C2	50:8:35:C:C4	3.09	0.40
48:5:35:U:H5'	48:5:36:U:OP2	2.21	0.40
48:5:518:G:C6	48:5:519:C:C4	3.09	0.40
48:5:695:G:H3'	48:5:696:C:H5'	2.02	0.40
48:5:1834:U:O2	48:5:1834:U:H2'	2.20	0.40
48:5:1932:A:H2'	48:5:1933:G:C8	2.57	0.40
48:5:2481:G:N2	48:5:2498:C:C2	2.90	0.40
48:5:2726:G:C2	48:5:2727:C:C2	3.10	0.40
48:5:3832:U:H2'	48:5:3833:C:C6	2.57	0.40
48:5:4714:C:C5	48:5:4715:C:C5	3.09	0.40
48:5:4876:U:O2	48:5:4876:U:O4'	2.39	0.40
49:7:51:G:C2	49:7:52:C:C2	3.09	0.40
51:9:45:A:N1	51:9:480:G:O2'	2.42	0.40
51:9:164:A:H2'	51:9:165:G:C2	2.56	0.40
51:9:371:A:OP2	60:II:10:LYS:HB2	2.21	0.40
51:9:600:G:C8	51:9:631:U:C6	3.09	0.40
51:9:834:C:N4	51:9:841:G:N1	2.69	0.40
51:9:1481:G:H2'	51:9:1482:C:O4'	2.21	0.40
51:9:1686:G:N2	51:9:1687:C:C2	2.90	0.40
52:AA:157:VAL:HG23	52:AA:157:VAL:O	2.22	0.40
53:BB:87:ILE:O	53:BB:98:THR:HA	2.21	0.40
54:CC:109:ILE:HD11	54:CC:151:ILE:HD11	2.03	0.40
76:YY:55:ILE:HG12	76:YY:75:ILE:HG23	2.02	0.40
79:bb:53:VAL:HG12	79:bb:66:PRO:CD	2.51	0.40
87:jj:140:TRP:CE3	87:jj:160:LEU:HD11	2.56	0.40
1:A:27:ALA:O	1:A:128:ARG:NH2	2.54	0.40
1:A:66:PRO:HG2	1:A:67:TYR:CE2	2.57	0.40
6:F:118:GLN:HG3	16:Q:3:VAL:HG22	2.03	0.40
7:G:140:VAL:HG13	7:G:200:THR:OG1	2.21	0.40
14:O:14:HIS:CD2	14:O:124:LEU:HD12	2.57	0.40
31:f:92:LEU:HA	31:f:93:PRO:HD3	1.90	0.40
38:m:115:CYS:SG	38:m:118:THR:OG1	2.80	0.40
42:r:85:ASN:HD22	48:5:689:U:H4'	1.87	0.40
48:5:102:G:C2'	48:5:1381:U:O2'	2.68	0.40
48:5:116:G:C6	48:5:117:C:C4	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:5:933:G:N1	48:5:939:G:N2	2.69	0.40
48:5:1356:U:H1'	48:5:1505:C:H1'	2.03	0.40
48:5:1359:G:C2'	48:5:1360:G:C8	3.04	0.40
48:5:1808:C:C2	48:5:1831:G:C2	3.09	0.40
48:5:2301:G:C2	48:5:2302:C:C2	3.09	0.40
48:5:2628:U:C4	48:5:2629:C:C5	3.09	0.40
48:5:3706:C:H2'	48:5:3707:U:O4'	2.22	0.40
48:5:4453:C:H2'	48:5:4454:G:O4'	2.21	0.40
48:5:4495:G:C2	48:5:4506:C:C2	3.09	0.40
48:5:4614:G:C2	48:5:4615:C:C2	3.10	0.40
48:5:4868:G:H3'	48:5:4869:U:H5"	2.03	0.40
49:7:66:G:C6	49:7:67:C:N3	2.89	0.40
50:8:76:C:H2'	50:8:77:A:O4'	2.22	0.40
50:8:154:G:C2	50:8:155:C:C2	3.09	0.40
51:9:380:G:OP1	60:II:31:ARG:NE	2.43	0.40
51:9:827:A:C4	51:9:828:G:C8	3.09	0.40
51:9:1709:G:C6	51:9:1710:C:C4	3.08	0.40
51:9:1866:A:N6	78:aa:84:VAL:HB	2.35	0.40
72:UU:69:PRO:O	72:UU:70:CYS:SG	2.80	0.40
74:WW:89:TRP:HE3	74:WW:93:LEU:HD22	1.85	0.40
86:ii:330:ARG:HB2	86:ii:374:LEU:HD11	2.03	0.40
3:C:143:ARG:N	3:C:179:ASP:OD1	2.54	0.40
6:F:181:LEU:HD11	6:F:209:PHE:HB2	2.02	0.40
9:I:35:ASP:OD1	9:I:35:ASP:N	2.54	0.40
9:I:204:GLY:C	9:I:205:PRO:O	2.64	0.40
10:J:53:ALA:HB2	10:J:68:ILE:CD1	2.51	0.40
12:M:116:LYS:HG2	14:O:196:LEU:CD2	2.35	0.40
25:Z:73:LYS:HG2	25:Z:75:TYR:CZ	2.56	0.40
31:f:15:LYS:HB3	31:f:25:THR:HB	2.03	0.40
33:h:6:ALA:O	33:h:7:ARG:C	2.64	0.40
48:5:303:C:H2'	48:5:304:C:O4'	2.21	0.40
48:5:940:C:C4	48:5:941:C:C4	3.10	0.40
48:5:1780:A:N6	48:5:1781:U:C4	2.90	0.40
48:5:2666:U:O2'	48:5:2668:G:N7	2.52	0.40
48:5:3680:U:O2	48:5:3680:U:C2'	2.69	0.40
48:5:3918:G:C2	48:5:3919:C:C2	3.10	0.40
48:5:4408:G:C2	48:5:4409:C:C2	3.08	0.40
48:5:4745:G:N2	48:5:4746:C:N4	2.69	0.40
48:5:4900:C:O2'	48:5:4901:G:P	2.80	0.40
48:5:4966:A:C2	48:5:4967:A:C6	3.10	0.40
50:8:31:G:C6	50:8:32:C:C4	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:8:115:G:C6	50:8:116:C:C4	3.10	0.40
51:9:480:G:C6	51:9:481:C:C4	3.10	0.40
51:9:636:C:C4	51:9:637:U:C4	3.10	0.40
51:9:751:G:N1	51:9:792:C:C4	2.90	0.40
51:9:752:G:N2	51:9:790:C:C2	2.90	0.40
51:9:999:G:N2	51:9:1000:C:C2	2.89	0.40
51:9:1571:G:C2	51:9:1572:C:C2	3.09	0.40
53:BB:126:ASP:OD1	53:BB:126:ASP:N	2.54	0.40
61:JJ:102:ILE:HG22	61:JJ:103:GLU:N	2.36	0.40
70:SS:59:LEU:HD23	70:SS:64:VAL:HG12	2.03	0.40
86:ii:265:ASN:N	86:ii:265:ASN:OD1	2.53	0.40
1:A:193:ARG:HH12	48:5:3686:G:P	2.44	0.40
5:E:174:PRO:O	5:E:176:SER:N	2.55	0.40
5:E:217:GLN:HE22	5:E:233:LYS:HD2	1.85	0.40
6:F:147:PRO:HA	6:F:243:ASN:OD1	2.22	0.40
6:F:164:ILE:HD12	6:F:169:ILE:HB	2.03	0.40
7:G:58:PRO:CD	23:X:46:PHE:HD2	2.34	0.40
10:J:165:TRP:CH2	10:J:170:TYR:HE2	2.39	0.40
13:N:64:ILE:HD11	13:N:102:ALA:HA	2.03	0.40
22:W:9:SER:HA	22:W:52:THR:HG22	2.04	0.40
24:Y:24:HIS:CE1	24:Y:25:ILE:HG13	2.57	0.40
27:b:28:ARG:HG3	27:b:29:TYR:CD1	2.57	0.40
32:g:84:ALA:O	32:g:85:LYS:C	2.65	0.40
46:2:39:G:C2	46:2:40:C:C2	3.09	0.40
47:3:69:G:C2	47:3:70:G:C5	3.09	0.40
48:5:990:C:C4	48:5:991:C:C5	3.10	0.40
48:5:1354:A:N1	48:5:1385:G:O2'	2.45	0.40
48:5:3705:G:C2	48:5:3706:C:C2	3.09	0.40
48:5:3846:C:H4'	48:5:4667:C:O2	2.22	0.40
50:8:103:A:C8	50:8:104:A:C8	3.09	0.40
51:9:55:U:O2	51:9:55:U:H2'	2.21	0.40
51:9:290:U:H5'	56:EE:156:MET:HE1	2.04	0.40
51:9:309:G:C2	51:9:310:C:C2	3.09	0.40
51:9:463:C:H2'	51:9:465:A:C8	2.56	0.40
51:9:475:C:H2'	51:9:476:A:O4'	2.21	0.40
51:9:592:C:O2	51:9:592:C:O4'	2.36	0.40
51:9:936:G:C2	51:9:1007:C:C2	3.09	0.40
51:9:1097:G:C2	51:9:1098:C:C2	3.10	0.40
51:9:1129:G:H2'	51:9:1130:G:C1'	2.52	0.40
51:9:1228:A:O2'	51:9:1634:A:N3	2.52	0.40
51:9:1398:G:C2	51:9:1399:C:C2	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:GG:102:VAL:CG1	58:GG:109:LEU:HD11	2.52	0.40
59:HH:43:LEU:HD21	59:HH:71:SER:CB	2.51	0.40
77:ZZ:98:LYS:O	77:ZZ:109:TYR:HA	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

There are no protein backbone outliers to report in this entry.

5.3.2 Protein sidechains

There are no protein residues with a non-rotameric sidechain to report in this entry.

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
46	2	74/76 (97%)	20 (27%)	0
47	3	72/75 (96%)	36 (50%)	0
48	5	3647/3662 (99%)	1202 (32%)	0
49	7	119/120 (99%)	20 (16%)	0
50	8	155/156 (99%)	52 (33%)	0
51	9	1711/1719 (99%)	619 (36%)	0
85	hh	11/12 (91%)	7 (63%)	0
All	All	5789/5820 (99%)	1956 (33%)	0

All (1956) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
46	2	7	G
46	2	8	U
46	2	9	A
46	2	13	U
46	2	16	C
46	2	19	G
46	2	20(A)	U
46	2	21	A

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Mol	Chain	Res	Type
46	2	31	C
46	2	35	A
46	2	42	A
46	2	47	U
46	2	49	C
46	2	58	A
46	2	60	A
46	2	61	C
46	2	67	G
46	2	72	C
46	2	75	C
46	2	76	A
47	3	2	C
47	3	5	G
47	3	7	A
47	3	8	U
47	3	9	A
47	3	10	G
47	3	13	C
47	3	21	A
47	3	22	G
47	3	29	A
47	3	30	G
47	3	31	A
47	3	34	U
47	3	35	U
47	3	38	A
47	3	39	U
47	3	41	U
47	3	42	G
47	3	47	U
47	3	48	C
47	3	49	C
47	3	58	A
47	3	60	U
47	3	61	C
47	3	63	C
47	3	65	G
47	3	67	U
47	3	68	C
47	3	69	G
47	3	70	G

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Mol	Chain	Res	Type
47	3	71	G
47	3	72	C
47	3	73	G
47	3	74	C
47	3	75	C
47	3	76	A
48	5	2	G
48	5	8	U
48	5	9	C
48	5	10	A
48	5	12	A
48	5	13	U
48	5	21	G
48	5	25	A
48	5	30	C
48	5	39	A
48	5	42	A
48	5	43	U
48	5	44	A
48	5	48	G
48	5	49	U
48	5	56	A
48	5	58	G
48	5	59	A
48	5	64	A
48	5	65	A
48	5	69	A
48	5	71	C
48	5	72	C
48	5	73	A
48	5	74	G
48	5	91	G
48	5	93	G
48	5	94	A
48	5	95	G
48	5	108	A
48	5	109	G
48	5	110	C
48	5	116	G
48	5	118	C
48	5	119	G
48	5	120	A

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Mol	Chain	Res	Type
48	5	121	A
48	5	125	C
48	5	126	C
48	5	128	C
48	5	129	C
48	5	134	G
48	5	135	G
48	5	136	C
48	5	143	C
48	5	144	G
48	5	146	G
48	5	157	U
48	5	158	A
48	5	159	C
48	5	160	G
48	5	161	G
48	5	164	G
48	5	166	C
48	5	167	C
48	5	170	C
48	5	171	U
48	5	172	C
48	5	173	C
48	5	174	C
48	5	175	C
48	5	177	G
48	5	183	C
48	5	184	U
48	5	185	C
48	5	186	G
48	5	187	U
48	5	188	G
48	5	189	G
48	5	197	A
48	5	200	U
48	5	201	C
48	5	203	U
48	5	205	C
48	5	209	U
48	5	210	C
48	5	216	C
48	5	217	C

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Mol	Chain	Res	Type
48	5	218	A
48	5	219	G
48	5	220	C
48	5	221	C
48	5	224	U
48	5	225	G
48	5	226	G
48	5	227	A
48	5	233	U
48	5	234	G
48	5	246	G
48	5	253	G
48	5	255	C
48	5	257	C
48	5	265	C
48	5	266	C
48	5	267	G
48	5	272	U
48	5	275	C
48	5	276	C
48	5	277	G
48	5	278	G
48	5	280	G
48	5	286	U
48	5	296	A
48	5	297	U
48	5	300	A
48	5	306	A
48	5	309	C
48	5	315	G
48	5	316	U
48	5	319	A
48	5	321	U
48	5	322	C
48	5	326	C
48	5	328	A
48	5	334	A
48	5	337	U
48	5	340	C
48	5	347	A
48	5	349	A
48	5	350	C

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Mol	Chain	Res	Type
48	5	353	A
48	5	357	U
48	5	361	C
48	5	362	A
48	5	363	A
48	5	385	A
48	5	386	A
48	5	387	G
48	5	399	G
48	5	405	U
48	5	406	C
48	5	407	A
48	5	409	G
48	5	410	A
48	5	412	G
48	5	413	G
48	5	424	U
48	5	429	A
48	5	431	G
48	5	432	U
48	5	434	A
48	5	446	C
48	5	448	G
48	5	449	C
48	5	451	C
48	5	452	A
48	5	453	G
48	5	454	U
48	5	455	C
48	5	458	C
48	5	465	G
48	5	467	U
48	5	468	U
48	5	469	C
48	5	470	A
48	5	473	C
48	5	485	C
48	5	486	C
48	5	487	G
48	5	498	C
48	5	499	G
48	5	500	G

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Mol	Chain	Res	Type
48	5	501	C
48	5	502	C
48	5	503	C
48	5	504	G
48	5	506	C
48	5	509	A
48	5	510	U
48	5	513	U
48	5	514	U
48	5	515	C
48	5	519	C
48	5	649	A
48	5	654	C
48	5	655	C
48	5	663	G
48	5	664	G
48	5	665	C
48	5	666	G
48	5	667	A
48	5	668	C
48	5	682	G
48	5	684	G
48	5	685	C
48	5	686	A
48	5	690	C
48	5	694	C
48	5	695	G
48	5	696	C
48	5	697	G
48	5	701	G
48	5	703	G
48	5	707	C
48	5	718	C
48	5	721	G
48	5	722	G
48	5	724	C
48	5	728	U
48	5	729	G
48	5	730	G
48	5	737	C
48	5	742	G
48	5	745	G

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Mol	Chain	Res	Type
48	5	746	A
48	5	747	A
48	5	748	G
48	5	749	G
48	5	756	G
48	5	911	U
48	5	914	U
48	5	915	A
48	5	917	A
48	5	918	G
48	5	919	C
48	5	920	C
48	5	925	C
48	5	927	G
48	5	928	C
48	5	929	A
48	5	930	G
48	5	931	C
48	5	932	A
48	5	933	G
48	5	934	C
48	5	935	A
48	5	936	C
48	5	937	U
48	5	938	C
48	5	939	G
48	5	940	C
48	5	942	G
48	5	943	A
48	5	944	A
48	5	945	U
48	5	946	C
48	5	947	C
48	5	957	G
48	5	958	G
48	5	960	A
48	5	961	G
48	5	962	C
48	5	963	G
48	5	964	A
48	5	965	G
48	5	966	A

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Mol	Chain	Res	Type
48	5	967	C
48	5	968	C
48	5	969	C
48	5	970	G
48	5	971	U
48	5	972	C
48	5	973	G
48	5	976	G
48	5	977	C
48	5	978	G
48	5	979	C
48	5	982	U
48	5	983	C
48	5	984	C
48	5	989	U
48	5	990	C
48	5	992	C
48	5	1051	G
48	5	1070	G
48	5	1072	C
48	5	1073	G
48	5	1075	G
48	5	1076	C
48	5	1083	U
48	5	1097	C
48	5	1175	A
48	5	1176	C
48	5	1177	U
48	5	1181	C
48	5	1182	C
48	5	1183	C
48	5	1193	C
48	5	1204	C
48	5	1209	U
48	5	1211	G
48	5	1212	G
48	5	1214	C
48	5	1215	C
48	5	1219	G
48	5	1221	G
48	5	1222	A
48	5	1233	G

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Mol	Chain	Res	Type
48	5	1234	G
48	5	1235	G
48	5	1236	C
48	5	1237	C
48	5	1238	A
48	5	1239	C
48	5	1240	G
48	5	1241	C
48	5	1242	G
48	5	1243	C
48	5	1244	G
48	5	1245	C
48	5	1255	A
48	5	1256	G
48	5	1259	G
48	5	1266	G
48	5	1267	C
48	5	1268	G
48	5	1269	G
48	5	1270	A
48	5	1272	C
48	5	1273	G
48	5	1274	A
48	5	1275	G
48	5	1279	A
48	5	1280	C
48	5	1281	G
48	5	1285	U
48	5	1286	C
48	5	1287	G
48	5	1288	G
48	5	1289	C
48	5	1293	G
48	5	1294	A
48	5	1295	C
48	5	1296	G
48	5	1297	U
48	5	1301	C
48	5	1303	A
48	5	1304	C
48	5	1313	C
48	5	1326	A

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Mol	Chain	Res	Type
48	5	1329	G
48	5	1330	A
48	5	1337	A
48	5	1344	C
48	5	1354	A
48	5	1358	G
48	5	1364	U
48	5	1365	C
48	5	1366	G
48	5	1367	C
48	5	1368	A
48	5	1369	C
48	5	1370	G
48	5	1371	A
48	5	1372	A
48	5	1376	C
48	5	1377	G
48	5	1378	C
48	5	1379	C
48	5	1380	G
48	5	1381	U
48	5	1387	A
48	5	1390	G
48	5	1391	A
48	5	1394	G
48	5	1397	A
48	5	1398	A
48	5	1399	G
48	5	1407	C
48	5	1408	G
48	5	1409	C
48	5	1410	U
48	5	1411	C
48	5	1413	C
48	5	1414	C
48	5	1416	G
48	5	1418	C
48	5	1420	A
48	5	1421	G
48	5	1429	C
48	5	1432	G
48	5	1435	G

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Mol	Chain	Res	Type
48	5	1436	C
48	5	1439	C
48	5	1440	U
48	5	1441	C
48	5	1442	C
48	5	1445	U
48	5	1446	C
48	5	1448	G
48	5	1449	C
48	5	1455	G
48	5	1456	C
48	5	1457	G
48	5	1475	G
48	5	1477	C
48	5	1478	C
48	5	1481	C
48	5	1482	G
48	5	1483	C
48	5	1484	G
48	5	1485	C
48	5	1486	C
48	5	1489	G
48	5	1497	A
48	5	1498	G
48	5	1501	C
48	5	1502	G
48	5	1504	G
48	5	1514	U
48	5	1516	G
48	5	1518	A
48	5	1523	A
48	5	1524	A
48	5	1533	A
48	5	1534	A
48	5	1547	A
48	5	1563	A
48	5	1564	A
48	5	1566	C
48	5	1568	C
48	5	1578	U
48	5	1582	U
48	5	1586	G

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Mol	Chain	Res	Type
48	5	1591	U
48	5	1592	G
48	5	1596	U
48	5	1602	U
48	5	1612	G
48	5	1613	A
48	5	1614	C
48	5	1624	G
48	5	1625	G
48	5	1631	A
48	5	1633	G
48	5	1634	A
48	5	1636	U
48	5	1638	A
48	5	1641	G
48	5	1654	G
48	5	1655	C
48	5	1656	U
48	5	1661	C
48	5	1670	G
48	5	1676	C
48	5	1677	U
48	5	1678	C
48	5	1679	A
48	5	1691	G
48	5	1692	C
48	5	1696	C
48	5	1697	G
48	5	1698	C
48	5	1699	A
48	5	1719	A
48	5	1720	C
48	5	1721	G
48	5	1722	C
48	5	1724	G
48	5	1725	U
48	5	1733	G
48	5	1734	G
48	5	1735	U
48	5	1742	A
48	5	1746	A
48	5	1750	G

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Mol	Chain	Res	Type
48	5	1753	G
48	5	1754	U
48	5	1755	C
48	5	1756	U
48	5	1757	U
48	5	1758	G
48	5	1760	G
48	5	1761	G
48	5	1764	G
48	5	1767	A
48	5	1768	C
48	5	1772	C
48	5	1776	A
48	5	1777	C
48	5	1781	U
48	5	1787	A
48	5	1799	G
48	5	1800	U
48	5	1803	G
48	5	1804	A
48	5	1805	A
48	5	1812	C
48	5	1815	G
48	5	1818	G
48	5	1819	G
48	5	1820	C
48	5	1821	G
48	5	1822	U
48	5	1828	C
48	5	1830	G
48	5	1832	C
48	5	1833	G
48	5	1834	U
48	5	1835	G
48	5	1836	G
48	5	1842	G
48	5	1847	C
48	5	1848	C
48	5	1855	G
48	5	1867	A
48	5	1869	G
48	5	1882	U

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Mol	Chain	Res	Type
48	5	1885	G
48	5	1886	G
48	5	1889	U
48	5	1892	A
48	5	1897	A
48	5	1899	G
48	5	1900	C
48	5	1910	G
48	5	1918	U
48	5	1919	G
48	5	1920	C
48	5	1921	C
48	5	1922	G
48	5	1923	A
48	5	1931	C
48	5	1947	U
48	5	1952	G
48	5	1955	G
48	5	1956	A
48	5	1957	U
48	5	1958	A
48	5	1959	U
48	5	1960	A
48	5	1961	G
48	5	1962	A
48	5	1964	A
48	5	1968	G
48	5	1969	G
48	5	1970	A
48	5	1975	G
48	5	1976	G
48	5	1977	C
48	5	1979	A
48	5	1980	U
48	5	1981	G
48	5	1983	A
48	5	1984	A
48	5	1985	G
48	5	1986	U
48	5	1987	C
48	5	1988	G
48	5	1990	A

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Mol	Chain	Res	Type
48	5	1991	A
48	5	1992	U
48	5	1993	C
48	5	1997	U
48	5	1998	A
48	5	2001	G
48	5	2002	A
48	5	2003	G
48	5	2004	U
48	5	2005	G
48	5	2008	U
48	5	2010	A
48	5	2011	C
48	5	2019	C
48	5	2020	U
48	5	2021	G
48	5	2024	G
48	5	2025	A
48	5	2026	A
48	5	2027	U
48	5	2028	C
48	5	2044	U
48	5	2046	G
48	5	2047	A
48	5	2048	U
48	5	2052	G
48	5	2055	G
48	5	2056	G
48	5	2062	C
48	5	2064	G
48	5	2068	C
48	5	2069	A
48	5	2070	U
48	5	2071	A
48	5	2079	G
48	5	2084	C
48	5	2085	G
48	5	2089	G
48	5	2090	U
48	5	2091	C
48	5	2092	G
48	5	2093	A

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Mol	Chain	Res	Type
48	5	2094	G
48	5	2095	A
48	5	2097	U
48	5	2100	A
48	5	2101	C
48	5	2103	G
48	5	2107	C
48	5	2108	G
48	5	2109	G
48	5	2110	C
48	5	2111	G
48	5	2112	G
48	5	2113	G
48	5	2114	G
48	5	2115	G
48	5	2116	C
48	5	2117	G
48	5	2118	G
48	5	2119	C
48	5	2120	G
48	5	2122	G
48	5	2123	C
48	5	2124	G
48	5	2125	C
48	5	2126	G
48	5	2127	C
48	5	2129	C
48	5	2130	G
48	5	2131	C
48	5	2247	C
48	5	2248	C
48	5	2250	C
48	5	2251	G
48	5	2252	G
48	5	2253	A
48	5	2254	G
48	5	2255	C
48	5	2256	C
48	5	2257	C
48	5	2258	C
48	5	2259	G
48	5	2260	C

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Mol	Chain	Res	Type
48	5	2261	G
48	5	2263	A
48	5	2264	C
48	5	2265	G
48	5	2266	C
48	5	2267	U
48	5	2268	A
48	5	2269	C
48	5	2270	G
48	5	2274	C
48	5	2275	G
48	5	2279	A
48	5	2288	G
48	5	2289	C
48	5	2299	G
48	5	2300	A
48	5	2301	G
48	5	2312	U
48	5	2313	A
48	5	2314	G
48	5	2324	C
48	5	2331	G
48	5	2332	A
48	5	2333	G
48	5	2335	C
48	5	2337	C
48	5	2348	G
48	5	2351	C
48	5	2360	A
48	5	2364	G
48	5	2370	A
48	5	2371	U
48	5	2382	A
48	5	2383	C
48	5	2395	A
48	5	2396	A
48	5	2397	G
48	5	2398	U
48	5	2399	G
48	5	2417	A
48	5	2422	C
48	5	2424	G

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Mol	Chain	Res	Type
48	5	2425	U
48	5	2428	A
48	5	2429	A
48	5	2433	G
48	5	2434	G
48	5	2440	U
48	5	2441	C
48	5	2447	U
48	5	2450	G
48	5	2458	C
48	5	2469	C
48	5	2471	G
48	5	2473	A
48	5	2474	G
48	5	2475	G
48	5	2485	U
48	5	2488	C
48	5	2489	C
48	5	2490	U
48	5	2491	C
48	5	2493	G
48	5	2495	U
48	5	2499	C
48	5	2503	G
48	5	2504	C
48	5	2505	C
48	5	2506	G
48	5	2507	A
48	5	2512	A
48	5	2513	A
48	5	2514	G
48	5	2519	U
48	5	2521	G
48	5	2527	A
48	5	2530	U
48	5	2536	A
48	5	2537	A
48	5	2544	G
48	5	2546	G
48	5	2547	G
48	5	2553	A
48	5	2554	U

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Mol	Chain	Res	Type
48	5	2555	G
48	5	2564	G
48	5	2566	G
48	5	2568	C
48	5	2571	C
48	5	2575	U
48	5	2577	C
48	5	2583	C
48	5	2587	A
48	5	2588	C
48	5	2589	C
48	5	2591	A
48	5	2601	A
48	5	2602	G
48	5	2611	A
48	5	2620	G
48	5	2623	A
48	5	2624	G
48	5	2627	C
48	5	2638	G
48	5	2640	G
48	5	2647	A
48	5	2653	C
48	5	2661	U
48	5	2662	G
48	5	2663	G
48	5	2669	C
48	5	2673	G
48	5	2676	A
48	5	2679	G
48	5	2681	G
48	5	2686	G
48	5	2687	U
48	5	2688	G
48	5	2695	A
48	5	2696	A
48	5	2704	C
48	5	2708	U
48	5	2710	C
48	5	2711	G
48	5	2712	G
48	5	2714	G

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Mol	Chain	Res	Type
48	5	2716	C
48	5	2721	G
48	5	2724	G
48	5	2725	A
48	5	2726	G
48	5	2733	C
48	5	2740	U
48	5	2743	A
48	5	2754	G
48	5	2755	A
48	5	2756	G
48	5	2760	G
48	5	2761	U
48	5	2762	G
48	5	2767	U
48	5	2768	C
48	5	2769	U
48	5	2770	C
48	5	2772	C
48	5	2787	A
48	5	2788	U
48	5	2789	A
48	5	2790	U
48	5	2794	C
48	5	2795	A
48	5	2796	G
48	5	2798	A
48	5	2806	A
48	5	2807	A
48	5	2814	C
48	5	2824	C
48	5	2825	A
48	5	2826	U
48	5	2827	G
48	5	2828	U
48	5	2829	U
48	5	2835	A
48	5	2838	G
48	5	2839	U
48	5	2842	G
48	5	2855	G
48	5	2858	A

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Mol	Chain	Res	Type
48	5	2859	G
48	5	2862	G
48	5	2869	U
48	5	2896	G
48	5	2897	G
48	5	2898	G
48	5	2904	U
48	5	2905	C
48	5	2910	G
48	5	3594	C
48	5	3595	U
48	5	3596	A
48	5	3597	G
48	5	3598	C
48	5	3605	C
48	5	3606	U
48	5	3615	G
48	5	3617	G
48	5	3625	G
48	5	3626	G
48	5	3630	A
48	5	3635	A
48	5	3644	U
48	5	3653	A
48	5	3662	A
48	5	3668	C
48	5	3670	C
48	5	3671	G
48	5	3673	C
48	5	3674	G
48	5	3680	U
48	5	3682	A
48	5	3689	G
48	5	3692	A
48	5	3696	C
48	5	3698	G
48	5	3702	A
48	5	3709	U
48	5	3710	G
48	5	3711	A
48	5	3712	A
48	5	3715	U

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Mol	Chain	Res	Type
48	5	3716	C
48	5	3717	A
48	5	3718	A
48	5	3722	G
48	5	3728	A
48	5	3729	U
48	5	3737	A
48	5	3740	G
48	5	3748	A
48	5	3750	G
48	5	3752	C
48	5	3753	G
48	5	3755	G
48	5	3756	A
48	5	3759	A
48	5	3760	A
48	5	3764	U
48	5	3773	U
48	5	3774	A
48	5	3775	A
48	5	3776	G
48	5	3777	G
48	5	3778	U
48	5	3780	G
48	5	3783	A
48	5	3784	A
48	5	3786	U
48	5	3788	C
48	5	3798	U
48	5	3799	A
48	5	3802	U
48	5	3810	C
48	5	3811	G
48	5	3812	C
48	5	3813	A
48	5	3814	U
48	5	3817	A
48	5	3819	G
48	5	3822	U
48	5	3831	U
48	5	3836	A
48	5	3838	U

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Mol	Chain	Res	Type
48	5	3839	G
48	5	3840	U
48	5	3859	G
48	5	3867	A
48	5	3877	A
48	5	3878	C
48	5	3879	G
48	5	3889	G
48	5	3897	G
48	5	3900	G
48	5	3901	A
48	5	3905	A
48	5	3906	A
48	5	3907	G
48	5	3912	U
48	5	3915	U
48	5	3916	G
48	5	3917	A
48	5	3924	C
48	5	3925	U
48	5	3926	C
48	5	3927	U
48	5	3938	G
48	5	3939	G
48	5	3943	A
48	5	3946	G
48	5	4069	U
48	5	4070	U
48	5	4076	G
48	5	4084	G
48	5	4085	A
48	5	4086	G
48	5	4087	G
48	5	4088	C
48	5	4091	G
48	5	4092	G
48	5	4093	G
48	5	4094	G
48	5	4097	G
48	5	4104	G
48	5	4105	A
48	5	4107	G

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Mol	Chain	Res	Type
48	5	4112	C
48	5	4114	C
48	5	4115	G
48	5	4116	C
48	5	4117	U
48	5	4118	U
48	5	4119	C
48	5	4120	U
48	5	4121	G
48	5	4122	G
48	5	4125	C
48	5	4127	A
48	5	4134	C
48	5	4143	G
48	5	4144	C
48	5	4145	C
48	5	4155	C
48	5	4161	G
48	5	4162	C
48	5	4163	U
48	5	4165	C
48	5	4166	G
48	5	4168	G
48	5	4170	A
48	5	4171	C
48	5	4182	G
48	5	4183	G
48	5	4184	G
48	5	4191	G
48	5	4203	A
48	5	4208	U
48	5	4212	A
48	5	4213	A
48	5	4216	G
48	5	4217	G
48	5	4218	U
48	5	4219	A
48	5	4225	G
48	5	4226	G
48	5	4229	U
48	5	4232	U
48	5	4233	A

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Mol	Chain	Res	Type
48	5	4238	G
48	5	4241	C
48	5	4251	A
48	5	4254	G
48	5	4255	A
48	5	4258	C
48	5	4265	U
48	5	4266	G
48	5	4267	G
48	5	4268	A
48	5	4271	A
48	5	4273	A
48	5	4282	A
48	5	4291	G
48	5	4297	G
48	5	4302	U
48	5	4303	C
48	5	4304	A
48	5	4305	G
48	5	4306	U
48	5	4307	A
48	5	4311	A
48	5	4312	U
48	5	4313	A
48	5	4314	C
48	5	4317	A
48	5	4318	C
48	5	4319	C
48	5	4329	G
48	5	4330	G
48	5	4331	G
48	5	4332	C
48	5	4335	C
48	5	4336	A
48	5	4349	C
48	5	4350	C
48	5	4354	U
48	5	4355	G
48	5	4360	U
48	5	4367	G
48	5	4368	G
48	5	4372	U

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Mol	Chain	Res	Type
48	5	4373	G
48	5	4377	G
48	5	4378	A
48	5	4379	A
48	5	4380	A
48	5	4387	C
48	5	4391	G
48	5	4394	A
48	5	4395	U
48	5	4396	A
48	5	4398	C
48	5	4405	G
48	5	4419	U
48	5	4420	U
48	5	4421	C
48	5	4422	A
48	5	4424	A
48	5	4426	C
48	5	4430	G
48	5	4433	G
48	5	4438	U
48	5	4439	U
48	5	4441	A
48	5	4444	C
48	5	4448	G
48	5	4449	A
48	5	4450	U
48	5	4453	C
48	5	4454	G
48	5	4463	U
48	5	4464	A
48	5	4471	U
48	5	4472	G
48	5	4473	A
48	5	4475	G
48	5	4476	C
48	5	4481	U
48	5	4482	U
48	5	4484	A
48	5	4488	A
48	5	4491	G
48	5	4495	G

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Mol	Chain	Res	Type
48	5	4500	U
48	5	4510	A
48	5	4511	A
48	5	4512	U
48	5	4513	A
48	5	4515	G
48	5	4519	C
48	5	4520	G
48	5	4522	G
48	5	4524	G
48	5	4527	G
48	5	4528	G
48	5	4529	G
48	5	4535	A
48	5	4548	A
48	5	4549	G
48	5	4550	G
48	5	4557	U
48	5	4567	G
48	5	4570	G
48	5	4573	G
48	5	4575	G
48	5	4577	U
48	5	4583	C
48	5	4584	A
48	5	4585	U
48	5	4586	G
48	5	4590	A
48	5	4591	U
48	5	4606	G
48	5	4618	G
48	5	4636	U
48	5	4637	G
48	5	4641	U
48	5	4647	G
48	5	4648	A
48	5	4656	A
48	5	4657	U
48	5	4661	G
48	5	4670	C
48	5	4672	A
48	5	4677	U

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Mol	Chain	Res	Type
48	5	4687	A
48	5	4694	G
48	5	4695	C
48	5	4699	U
48	5	4700	A
48	5	4701	A
48	5	4702	G
48	5	4709	U
48	5	4719	G
48	5	4720	C
48	5	4721	G
48	5	4730	C
48	5	4731	G
48	5	4732	G
48	5	4733	C
48	5	4734	A
48	5	4737	G
48	5	4741	C
48	5	4745	G
48	5	4746	C
48	5	4749	C
48	5	4750	G
48	5	4753	U
48	5	4754	G
48	5	4756	C
48	5	4758	U
48	5	4760	G
48	5	4764	A
48	5	4768	G
48	5	4770	U
48	5	4771	C
48	5	4774	C
48	5	4869	U
48	5	4871	C
48	5	4872	G
48	5	4873	G
48	5	4874	A
48	5	4875	G
48	5	4876	U
48	5	4877	G
48	5	4878	C
48	5	4883	C

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Mol	Chain	Res	Type
48	5	4884	G
48	5	4885	U
48	5	4886	C
48	5	4889	G
48	5	4890	G
48	5	4893	A
48	5	4895	C
48	5	4896	G
48	5	4898	G
48	5	4900	C
48	5	4901	G
48	5	4904	G
48	5	4906	C
48	5	4910	G
48	5	4911	A
48	5	4912	G
48	5	4913	G
48	5	4924	C
48	5	4926	C
48	5	4927	G
48	5	4930	C
48	5	4931	G
48	5	4932	U
48	5	4934	A
48	5	4935	C
48	5	4936	G
48	5	4939	C
48	5	4941	G
48	5	4942	C
48	5	4944	C
48	5	4945	G
48	5	4948	C
48	5	4949	G
48	5	4950	U
48	5	4951	G
48	5	4952	G
48	5	4959	U
48	5	4964	C
48	5	4965	U
48	5	4966	A
48	5	4967	A
48	5	4975	G

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Mol	Chain	Res	Type
48	5	4976	U
48	5	4985	U
48	5	4988	U
48	5	4989	U
48	5	4990	C
48	5	4991	U
48	5	5007	A
48	5	5013	C
48	5	5014	A
48	5	5017	G
48	5	5018	C
48	5	5022	U
48	5	5023	C
48	5	5024	C
48	5	5025	C
48	5	5026	U
48	5	5027	C
48	5	5028	G
48	5	5031	G
48	5	5033	G
48	5	5041	G
48	5	5047	C
48	5	5050	C
48	5	5052	C
48	5	5053	U
48	5	5054	C
48	5	5056	A
48	5	5058	A
48	5	5060	A
48	5	5061	A
48	5	5062	G
48	5	5066	U
49	7	7	G
49	7	11	A
49	7	21	G
49	7	25	G
49	7	33	U
49	7	40	U
49	7	51	G
49	7	53	U
49	7	54	A
49	7	64	G

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Mol	Chain	Res	Type
49	7	74	A
49	7	76	U
49	7	97	G
49	7	99	G
49	7	100	A
49	7	106	G
49	7	109	U
49	7	110	G
49	7	111	C
49	7	120	U
50	8	2	G
50	8	3	A
50	8	34	U
50	8	35	C
50	8	38	U
50	8	39	G
50	8	49	G
50	8	51	U
50	8	52	A
50	8	55	U
50	8	57	C
50	8	59	A
50	8	62	A
50	8	63	U
50	8	74	U
50	8	75	G
50	8	79	G
50	8	80	A
50	8	81	C
50	8	82	A
50	8	83	C
50	8	84	A
50	8	85	U
50	8	86	U
50	8	87	G
50	8	94	G
50	8	95	A
50	8	99	U
50	8	101	C
50	8	103	A
50	8	104	A
50	8	105	C

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Mol	Chain	Res	Type
50	8	107	C
50	8	109	C
50	8	110	U
50	8	111	U
50	8	112	G
50	8	113	C
50	8	114	G
50	8	115	G
50	8	117	C
50	8	121	G
50	8	122	G
50	8	123	U
50	8	124	U
50	8	125	C
50	8	126	C
50	8	127	U
50	8	137	A
50	8	143	G
50	8	150	C
50	8	156	U
51	9	2	A
51	9	3	C
51	9	4	C
51	9	6	G
51	9	9	U
51	9	10	G
51	9	11	A
51	9	17	C
51	9	19	A
51	9	25	A
51	9	26	U
51	9	33	G
51	9	37	C
51	9	41	G
51	9	42	A
51	9	43	U
51	9	44	U
51	9	45	A
51	9	46	A
51	9	49	C
51	9	56	G
51	9	58	C

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Mol	Chain	Res	Type
51	9	59	U
51	9	60	A
51	9	61	A
51	9	63	U
51	9	65	C
51	9	66	G
51	9	67	C
51	9	68	A
51	9	70	G
51	9	71	G
51	9	72	C
51	9	73	C
51	9	74	G
51	9	75	G
51	9	76	U
51	9	77	A
51	9	78	C
51	9	79	A
51	9	80	G
51	9	92	A
51	9	93	U
51	9	95	G
51	9	99	A
51	9	100	U
51	9	103	A
51	9	109	U
51	9	110	U
51	9	111	A
51	9	113	G
51	9	114	G
51	9	115	U
51	9	116	U
51	9	119	U
51	9	124	U
51	9	126	G
51	9	140	C
51	9	141	A
51	9	142	C
51	9	147	A
51	9	150	A
51	9	155	G
51	9	158	A

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Mol	Chain	Res	Type
51	9	161	U
51	9	162	C
51	9	163	U
51	9	164	A
51	9	165	G
51	9	167	G
51	9	168	C
51	9	173	A
51	9	180	G
51	9	183	G
51	9	184	G
51	9	185	G
51	9	188	C
51	9	189	U
51	9	190	G
51	9	191	A
51	9	192	C
51	9	202	G
51	9	206	G
51	9	213	G
51	9	215	G
51	9	216	C
51	9	225	G
51	9	289	G
51	9	291	G
51	9	292	A
51	9	293	C
51	9	294	U
51	9	302	A
51	9	304	C
51	9	305	U
51	9	306	C
51	9	307	G
51	9	308	G
51	9	309	G
51	9	310	C
51	9	312	G
51	9	313	A
51	9	314	U
51	9	320	G
51	9	321	C
51	9	322	C

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Mol	Chain	Res	Type
51	9	323	C
51	9	324	C
51	9	326	C
51	9	327	G
51	9	328	U
51	9	338	G
51	9	339	A
51	9	343	A
51	9	347	G
51	9	350	C
51	9	351	G
51	9	355	G
51	9	360	A
51	9	362	C
51	9	364	A
51	9	368	U
51	9	370	G
51	9	373	G
51	9	385	G
51	9	386	C
51	9	400	C
51	9	407	G
51	9	408	A
51	9	409	C
51	9	416	U
51	9	417	C
51	9	418	A
51	9	428	U
51	9	432	G
51	9	435	A
51	9	438	G
51	9	441	C
51	9	447	A
51	9	448	A
51	9	449	A
51	9	450	C
51	9	457	C
51	9	459	C
51	9	460	A
51	9	464	A
51	9	465	A
51	9	466	G

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Mol	Chain	Res	Type
51	9	467	G
51	9	469	A
51	9	472	C
51	9	473	A
51	9	474	G
51	9	482	G
51	9	483	C
51	9	487	U
51	9	488	U
51	9	489	A
51	9	492	C
51	9	493	A
51	9	500	A
51	9	501	C
51	9	503	C
51	9	508	A
51	9	511	U
51	9	512	A
51	9	523	A
51	9	525	A
51	9	528	A
51	9	530	U
51	9	532	C
51	9	533	A
51	9	535	G
51	9	539	C
51	9	544	G
51	9	545	A
51	9	546	G
51	9	548	C
51	9	549	C
51	9	550	C
51	9	551	U
51	9	552	G
51	9	554	A
51	9	556	U
51	9	557	U
51	9	559	G
51	9	560	A
51	9	562	U
51	9	563	G
51	9	568	C

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Mol	Chain	Res	Type
51	9	576	A
51	9	577	U
51	9	579	C
51	9	583	A
51	9	587	A
51	9	588	G
51	9	589	G
51	9	590	A
51	9	591	U
51	9	592	C
51	9	593	C
51	9	594	A
51	9	595	U
51	9	596	U
51	9	597	G
51	9	598	G
51	9	603	C
51	9	604	A
51	9	605	A
51	9	606	G
51	9	607	U
51	9	608	C
51	9	609	U
51	9	613	G
51	9	614	C
51	9	620	G
51	9	621	C
51	9	623	G
51	9	627	U
51	9	628	A
51	9	629	A
51	9	631	U
51	9	632	C
51	9	643	A
51	9	644	G
51	9	654	A
51	9	658	U
51	9	659	G
51	9	660	C
51	9	663	C
51	9	664	A
51	9	668	A

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Mol	Chain	Res	Type
51	9	669	A
51	9	670	A
51	9	671	A
51	9	672	A
51	9	673	G
51	9	684	G
51	9	688	U
51	9	689	U
51	9	698	G
51	9	731	G
51	9	735	C
51	9	737	G
51	9	738	C
51	9	747	U
51	9	748	C
51	9	749	U
51	9	752	G
51	9	753	C
51	9	788	G
51	9	791	C
51	9	794	A
51	9	796	G
51	9	797	C
51	9	798	G
51	9	799	U
51	9	800	U
51	9	810	A
51	9	811	A
51	9	812	A
51	9	821	G
51	9	822	U
51	9	830	A
51	9	833	C
51	9	834	C
51	9	835	C
51	9	836	G
51	9	837	A
51	9	838	G
51	9	839	C
51	9	840	C
51	9	844	U
51	9	845	G

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Mol	Chain	Res	Type
51	9	847	A
51	9	859	G
51	9	869	A
51	9	870	A
51	9	871	U
51	9	872	A
51	9	873	G
51	9	874	G
51	9	875	A
51	9	877	C
51	9	878	G
51	9	879	C
51	9	880	G
51	9	887	U
51	9	888	U
51	9	890	U
51	9	892	U
51	9	893	U
51	9	901	G
51	9	902	G
51	9	903	A
51	9	909	G
51	9	910	G
51	9	912	C
51	9	913	A
51	9	914	U
51	9	917	U
51	9	919	A
51	9	920	A
51	9	921	G
51	9	922	A
51	9	930	C
51	9	933	G
51	9	934	G
51	9	938	A
51	9	943	U
51	9	956	G
51	9	958	G
51	9	971	G
51	9	978	G
51	9	985	G
51	9	990	A

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Mol	Chain	Res	Type
51	9	992	A
51	9	996	A
51	9	999	G
51	9	1002	U
51	9	1016	U
51	9	1017	U
51	9	1023	A
51	9	1033	G
51	9	1040	G
51	9	1041	G
51	9	1044	G
51	9	1045	U
51	9	1049	A
51	9	1058	A
51	9	1060	A
51	9	1083	A
51	9	1085	C
51	9	1089	G
51	9	1096	G
51	9	1099	G
51	9	1100	A
51	9	1109	C
51	9	1110	G
51	9	1111	U
51	9	1113	A
51	9	1114	U
51	9	1115	U
51	9	1116	C
51	9	1117	C
51	9	1118	C
51	9	1120	U
51	9	1121	G
51	9	1126	G
51	9	1131	G
51	9	1133	A
51	9	1137	U
51	9	1138	C
51	9	1139	C
51	9	1143	A
51	9	1144	A
51	9	1146	C
51	9	1148	A

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Mol	Chain	Res	Type
51	9	1149	A
51	9	1150	A
51	9	1153	C
51	9	1154	U
51	9	1161	U
51	9	1165	G
51	9	1166	G
51	9	1170	A
51	9	1181	A
51	9	1195	A
51	9	1207	G
51	9	1208	A
51	9	1209	A
51	9	1211	G
51	9	1212	G
51	9	1213	C
51	9	1215	C
51	9	1221	G
51	9	1224	G
51	9	1227	G
51	9	1240	A
51	9	1242	U
51	9	1243	U
51	9	1244	U
51	9	1247	C
51	9	1248	U
51	9	1250	A
51	9	1251	A
51	9	1253	A
51	9	1254	C
51	9	1256	G
51	9	1257	G
51	9	1258	A
51	9	1259	A
51	9	1265	A
51	9	1266	C
51	9	1267	C
51	9	1268	C
51	9	1270	G
51	9	1271	C
51	9	1274	G
51	9	1275	G

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Mol	Chain	Res	Type
51	9	1276	A
51	9	1280	G
51	9	1283	C
51	9	1284	A
51	9	1285	G
51	9	1286	G
51	9	1288	U
51	9	1289	U
51	9	1291	A
51	9	1292	C
51	9	1293	A
51	9	1294	G
51	9	1295	A
51	9	1299	A
51	9	1301	A
51	9	1302	G
51	9	1303	C
51	9	1308	U
51	9	1309	C
51	9	1310	U
51	9	1312	G
51	9	1313	A
51	9	1314	U
51	9	1315	U
51	9	1316	C
51	9	1322	G
51	9	1330	G
51	9	1331	C
51	9	1342	U
51	9	1343	U
51	9	1345	G
51	9	1347	U
51	9	1348	G
51	9	1364	U
51	9	1371	U
51	9	1372	U
51	9	1378	A
51	9	1386	A
51	9	1394	G
51	9	1395	C
51	9	1396	A
51	9	1397	U

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Mol	Chain	Res	Type
51	9	1398	G
51	9	1401	A
51	9	1402	A
51	9	1403	C
51	9	1404	U
51	9	1405	A
51	9	1407	U
51	9	1408	U
51	9	1410	C
51	9	1412	C
51	9	1413	G
51	9	1414	A
51	9	1417	C
51	9	1418	C
51	9	1419	C
51	9	1420	G
51	9	1422	G
51	9	1424	G
51	9	1426	U
51	9	1427	C
51	9	1432	U
51	9	1433	C
51	9	1434	C
51	9	1437	C
51	9	1438	A
51	9	1439	A
51	9	1440	C
51	9	1442	U
51	9	1447	G
51	9	1448	A
51	9	1449	G
51	9	1450	G
51	9	1452	A
51	9	1454	A
51	9	1455	A
51	9	1456	G
51	9	1459	G
51	9	1462	U
51	9	1463	U
51	9	1464	C
51	9	1466	G
51	9	1473	G

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Mol	Chain	Res	Type
51	9	1474	A
51	9	1475	G
51	9	1476	A
51	9	1477	U
51	9	1478	U
51	9	1489	A
51	9	1490	G
51	9	1494	U
51	9	1495	G
51	9	1496	U
51	9	1498	A
51	9	1499	U
51	9	1500	G
51	9	1507	G
51	9	1510	G
51	9	1521	C
51	9	1522	A
51	9	1523	C
51	9	1525	C
51	9	1531	A
51	9	1533	A
51	9	1534	C
51	9	1535	U
51	9	1536	G
51	9	1544	C
51	9	1545	A
51	9	1548	G
51	9	1552	G
51	9	1553	C
51	9	1554	C
51	9	1555	U
51	9	1556	A
51	9	1558	C
51	9	1560	U
51	9	1563	G
51	9	1564	C
51	9	1565	C
51	9	1567	G
51	9	1570	G
51	9	1574	C
51	9	1575	G
51	9	1580	A

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Mol	Chain	Res	Type
51	9	1581	C
51	9	1582	C
51	9	1585	U
51	9	1586	U
51	9	1587	G
51	9	1588	A
51	9	1589	A
51	9	1594	A
51	9	1595	U
51	9	1596	U
51	9	1599	U
51	9	1600	G
51	9	1601	A
51	9	1602	U
51	9	1603	G
51	9	1604	G
51	9	1606	G
51	9	1618	C
51	9	1621	U
51	9	1622	U
51	9	1623	A
51	9	1624	U
51	9	1625	U
51	9	1630	A
51	9	1632	G
51	9	1633	A
51	9	1637	A
51	9	1638	G
51	9	1639	G
51	9	1641	A
51	9	1646	C
51	9	1647	A
51	9	1648	G
51	9	1654	G
51	9	1664	A
51	9	1665	G
51	9	1671	G
51	9	1672	U
51	9	1680	G
51	9	1681	U
51	9	1682	C
51	9	1683	C

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Mol	Chain	Res	Type
51	9	1686	G
51	9	1688	C
51	9	1689	C
51	9	1695	A
51	9	1698	C
51	9	1699	A
51	9	1706	G
51	9	1715	A
51	9	1721	U
51	9	1722	G
51	9	1724	A
51	9	1725	U
51	9	1728	U
51	9	1729	U
51	9	1739	C
51	9	1742	C
51	9	1745	A
51	9	1746	U
51	9	1750	C
51	9	1753	C
51	9	1756	C
51	9	1757	G
51	9	1758	G
51	9	1783	C
51	9	1786	U
51	9	1789	G
51	9	1800	A
51	9	1802	C
51	9	1809	A
51	9	1812	U
51	9	1813	A
51	9	1823	A
51	9	1824	A
51	9	1825	A
51	9	1826	G
51	9	1827	U
51	9	1829	G
51	9	1831	A
51	9	1835	A
51	9	1836	G
51	9	1837	G
51	9	1838	U

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Mol	Chain	Res	Type
51	9	1839	U
51	9	1849	G
51	9	1850	A
51	9	1851	A
51	9	1861	G
51	9	1862	G
51	9	1863	A
51	9	1865	C
51	9	1867	U
85	hh	42	C
85	hh	43	A
85	hh	45	A
85	hh	46	G
85	hh	49	U
85	hh	50	A
85	hh	52	G

There are no RNA pucker outliers to report.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 207 ligands modelled in this entry, 203 are monoatomic - leaving 4 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
91	ADP	jj	603	-	28,29,29	1.51	5 (17%)	43,45,45	1.90	11 (25%)
90	SF4	jj	600	87	0,12,12	-	-	-		
91	ADP	jj	602	-	28,29,29	1.51	5 (17%)	43,45,45	1.90	11 (25%)
90	SF4	jj	601	87	0,12,12	-	-	-		

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
91	ADP	jj	603	-	-	1/16/32/32	0/3/3/3
90	SF4	jj	600	87	-	-	0/6/5/5
91	ADP	jj	602	-	-	1/16/32/32	0/3/3/3
90	SF4	jj	601	87	-	-	0/6/5/5

All (10) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
91	jj	603	ADP	C5-C4	5.01	1.48	1.39
91	jj	602	ADP	C5-C4	4.94	1.47	1.39
91	jj	602	ADP	C5-C6	2.99	1.49	1.41
91	jj	603	ADP	C5-C6	2.97	1.49	1.41
91	jj	602	ADP	C8-N7	2.45	1.36	1.31
91	jj	603	ADP	C8-N7	2.38	1.36	1.31
91	jj	603	ADP	C5-N7	-2.31	1.34	1.39
91	jj	602	ADP	C5-N7	-2.29	1.34	1.39
91	jj	602	ADP	PA-O3A	2.27	1.61	1.59
91	jj	603	ADP	PA-O3A	2.13	1.61	1.59

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
91	jj	603	ADP	C5-C4-N3	-5.90	118.59	126.72
91	jj	602	ADP	C5-C4-N3	-5.82	118.70	126.72
91	jj	603	ADP	N3-C4-N9	4.71	135.18	127.17
91	jj	602	ADP	N3-C4-N9	4.63	135.04	127.17
91	jj	603	ADP	C2-N3-C4	3.94	121.45	111.83
91	jj	602	ADP	C2-N3-C4	3.93	121.44	111.83
91	jj	602	ADP	N3-C2-N1	-3.82	122.80	128.58
91	jj	603	ADP	N3-C2-N1	-3.82	122.81	128.58
91	jj	603	ADP	C4-C5-N7	-3.62	106.45	110.58

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
91	jj	602	ADP	C4-C5-N7	-3.62	106.45	110.58
91	jj	602	ADP	C5-N7-C8	2.81	107.86	103.45
91	jj	602	ADP	C4-N9-C8	2.78	108.66	105.74
91	jj	603	ADP	C5-N7-C8	2.78	107.81	103.45
91	jj	603	ADP	C4-N9-C8	2.73	108.61	105.74
91	jj	603	ADP	C3'-C2'-C1'	2.36	105.93	101.46
91	jj	602	ADP	C3'-C2'-C1'	2.27	105.76	101.46
91	jj	602	ADP	C6-C5-N7	2.27	136.46	132.09
91	jj	603	ADP	C6-C5-N7	2.23	136.39	132.09
91	jj	602	ADP	N9-C8-N7	-2.23	110.78	113.94
91	jj	603	ADP	N9-C8-N7	-2.14	110.90	113.94
91	jj	603	ADP	C2-N1-C6	2.12	122.21	118.73
91	jj	602	ADP	C2-N1-C6	2.11	122.20	118.73

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
91	jj	603	ADP	O4'-C4'-C5'-O5'
91	jj	602	ADP	PB-O3A-PA-O1A

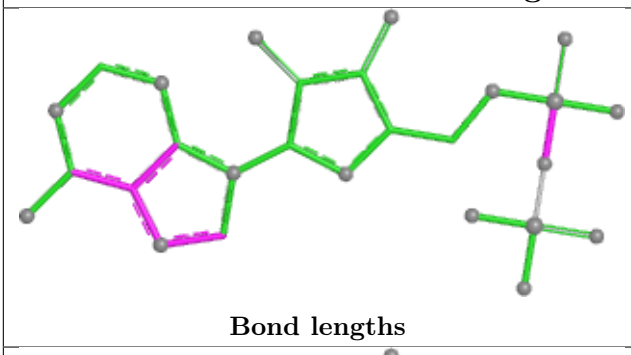
There are no ring outliers.

1 monomer is involved in 1 short contact:

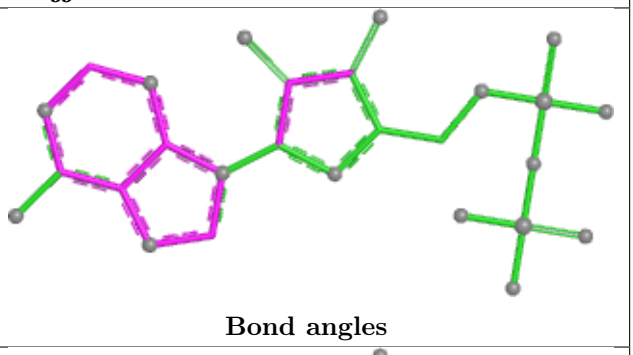
Mol	Chain	Res	Type	Clashes	Symm-Clashes
90	jj	601	SF4	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

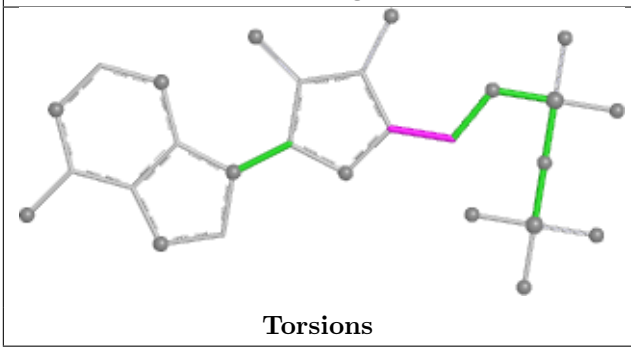
Ligand ADP jj 603



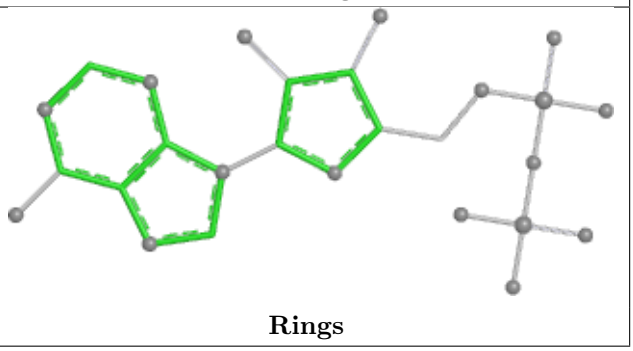
Bond lengths



Bond angles

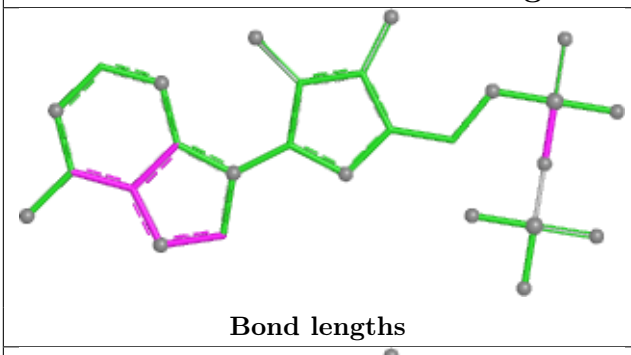


Torsions

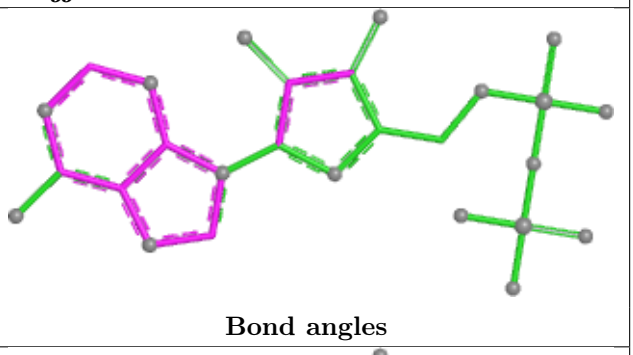


Rings

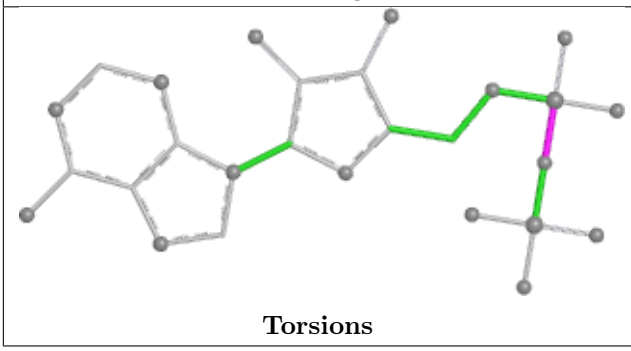
Ligand ADP jj 602



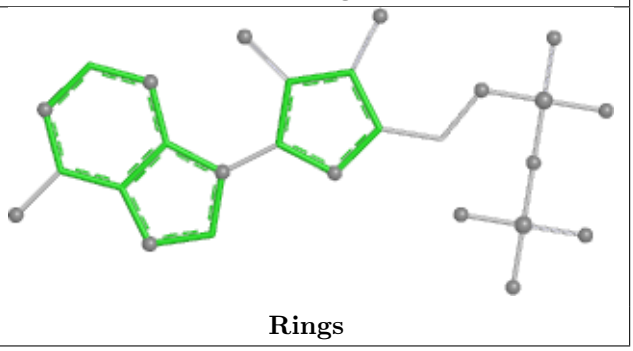
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
48	5	17
51	9	8
47	3	2
46	2	1
87	jj	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	9	753:C	O3'	785:C	P	23.16
1	9	126:G	O3'	139:C	P	22.33
1	9	698:G	O3'	730:C	P	19.62
1	5	4776:G	O3'	4859:C	P	17.95
1	9	1761:U	O3'	1771:G	P	17.55
1	5	757:G	O3'	906:C	P	17.49
1	5	519:C	O3'	642:G	P	16.73
1	5	2910:G	O3'	3583:U	P	16.46
1	5	2131:C	O3'	2243:C	P	14.50
1	5	3950:U	O3'	4065:G	P	14.39
1	5	997:C	O3'	1047:C	P	13.95
1	5	1051:G	O3'	1064:G	P	8.98
1	9	225:G	O3'	287:U	P	7.38
1	9	739:C	O3'	744:G	P	6.44
1	3	19:G	O3'	20:U	P	6.06
1	5	1222:A	O3'	1232:G	P	5.15
1	5	2016:C	O3'	2017:A	P	4.53
1	5	1100:U	O3'	1167:C	P	4.42
1	3	16:C	O3'	18:U	P	4.26
1	5	1699:A	O3'	1718:C	P	4.00
1	2	16:C	O3'	18:G	P	3.75
1	jj	416:ILE	C	417:SER	N	3.69
1	9	873:G	O3'	874:G	P	3.24
1	9	340:C	O3'	342:C	P	3.08
1	5	1840:G	O3'	1842:G	P	2.91
1	5	4939:C	O3'	4941:G	P	2.80
1	5	4942:C	O3'	4944:C	P	2.73
1	5	1823:G	O3'	1825:A	P	2.56
1	5	1965:G	O3'	1966:C	P	1.33

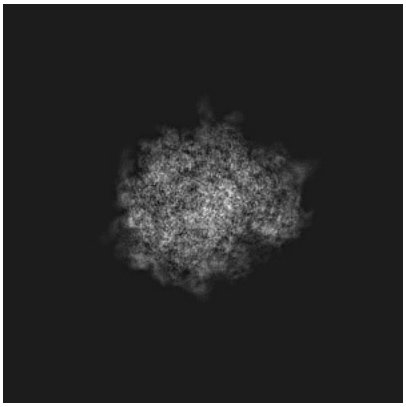
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-3039. These allow visual inspection of the internal detail of the map and identification of artifacts.

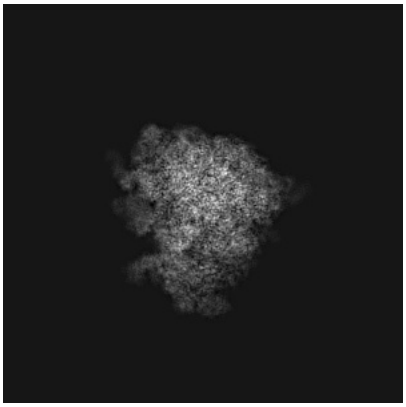
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

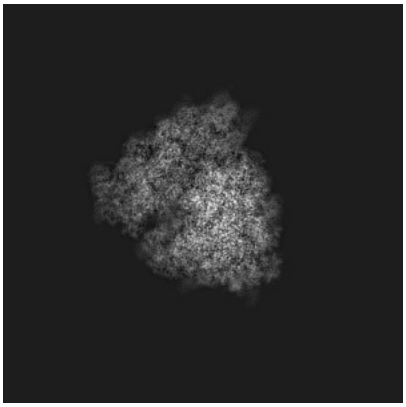
6.1.1 Primary map



X



Y

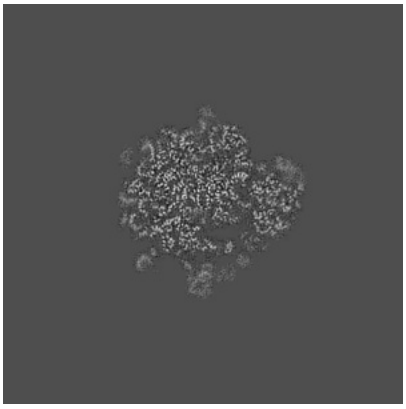


Z

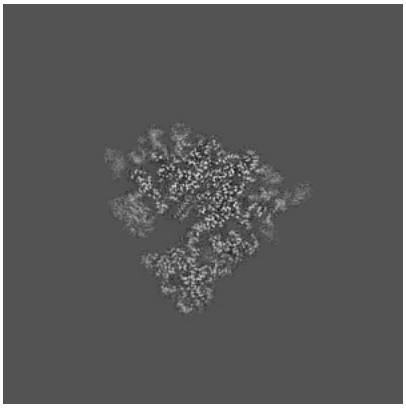
The images above show the map projected in three orthogonal directions.

6.2 Central slices

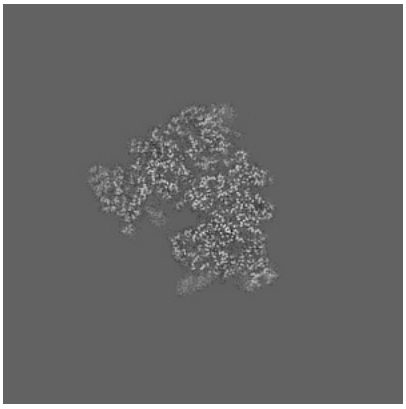
6.2.1 Primary map



X Index: 210



Y Index: 210

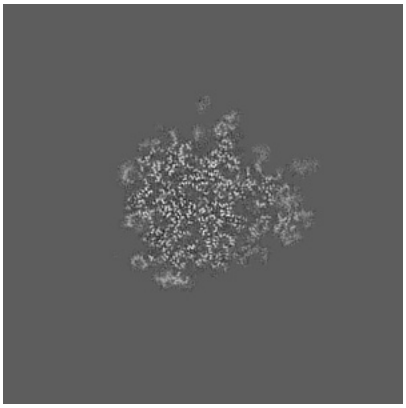


Z Index: 210

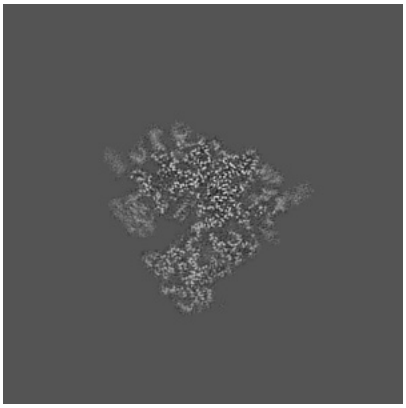
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

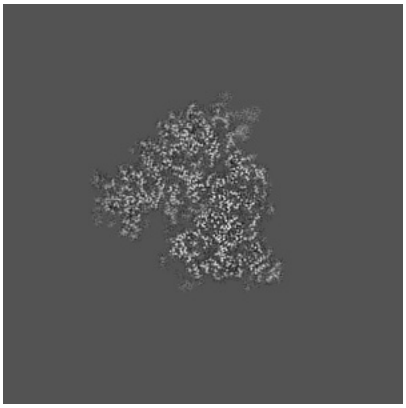
6.3.1 Primary map



X Index: 228



Y Index: 211

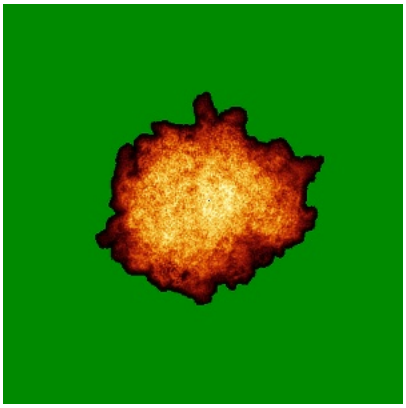


Z Index: 203

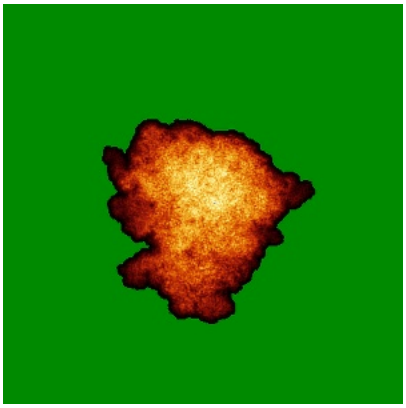
The images above show the largest variance slices of the map in three orthogonal directions.

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

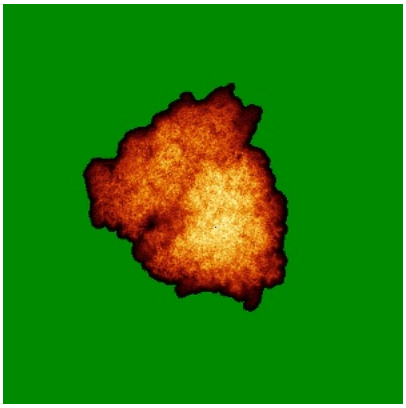
6.4.1 Primary map



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

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.07. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

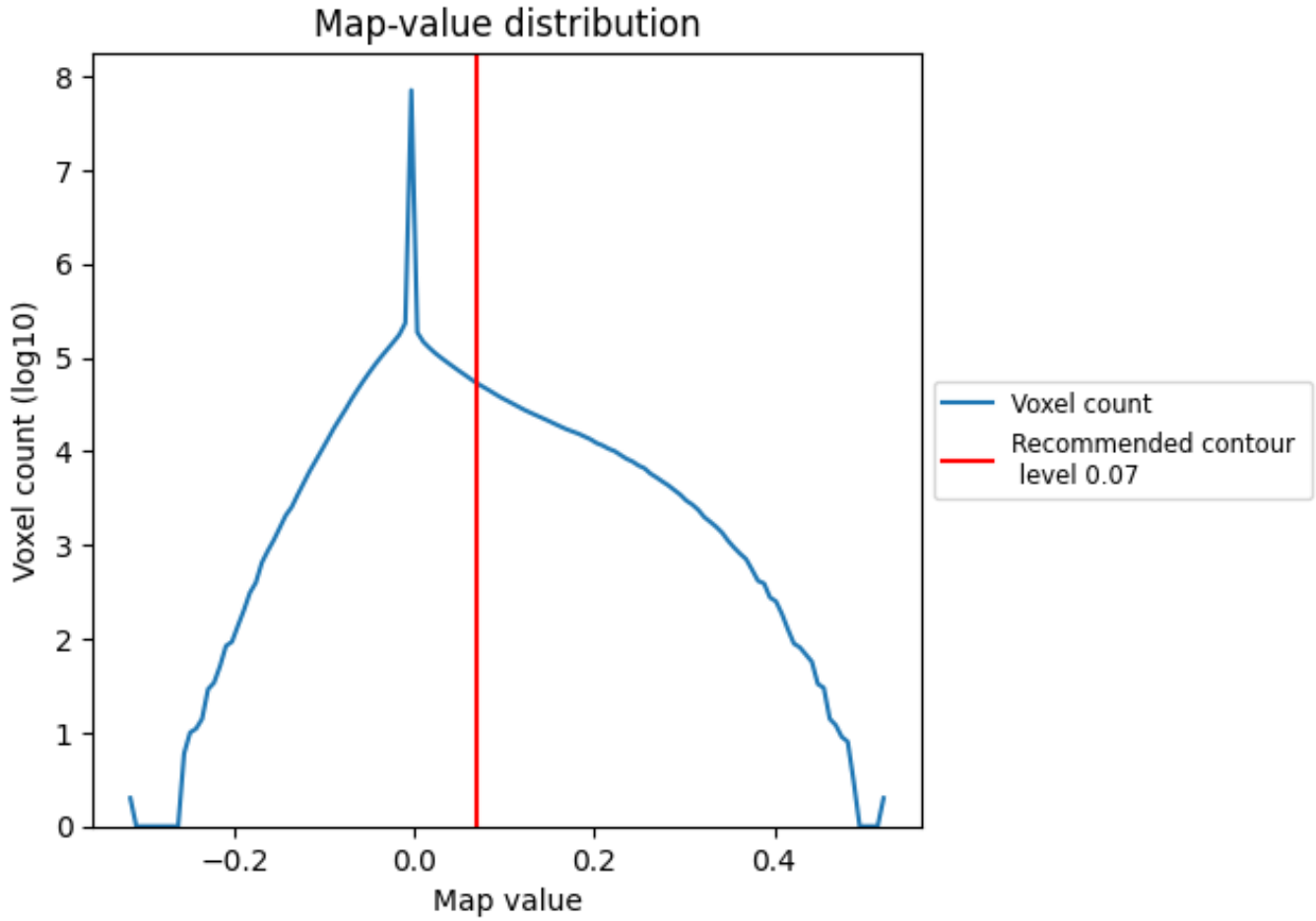
6.6 Mask visualisation (i)

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

7 Map analysis

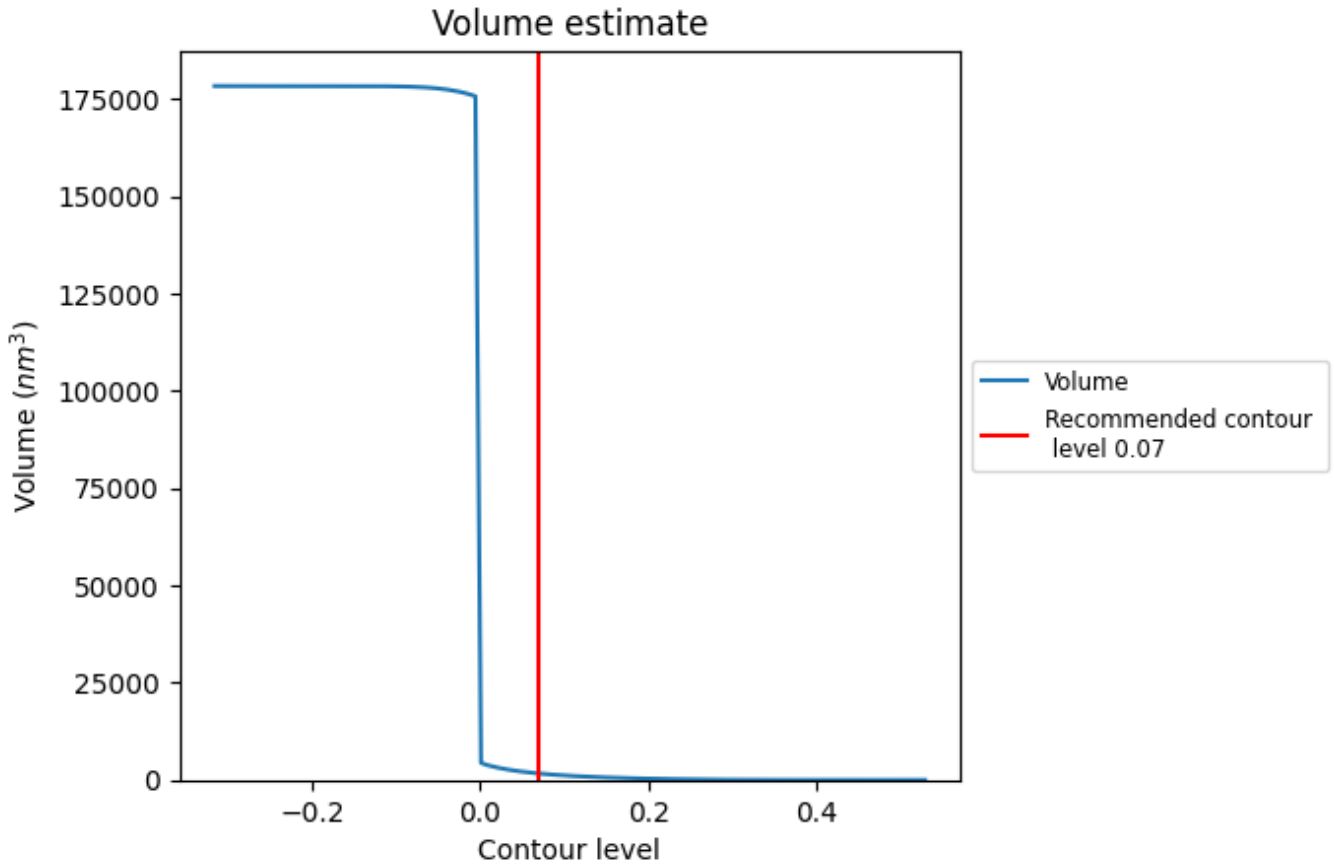
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

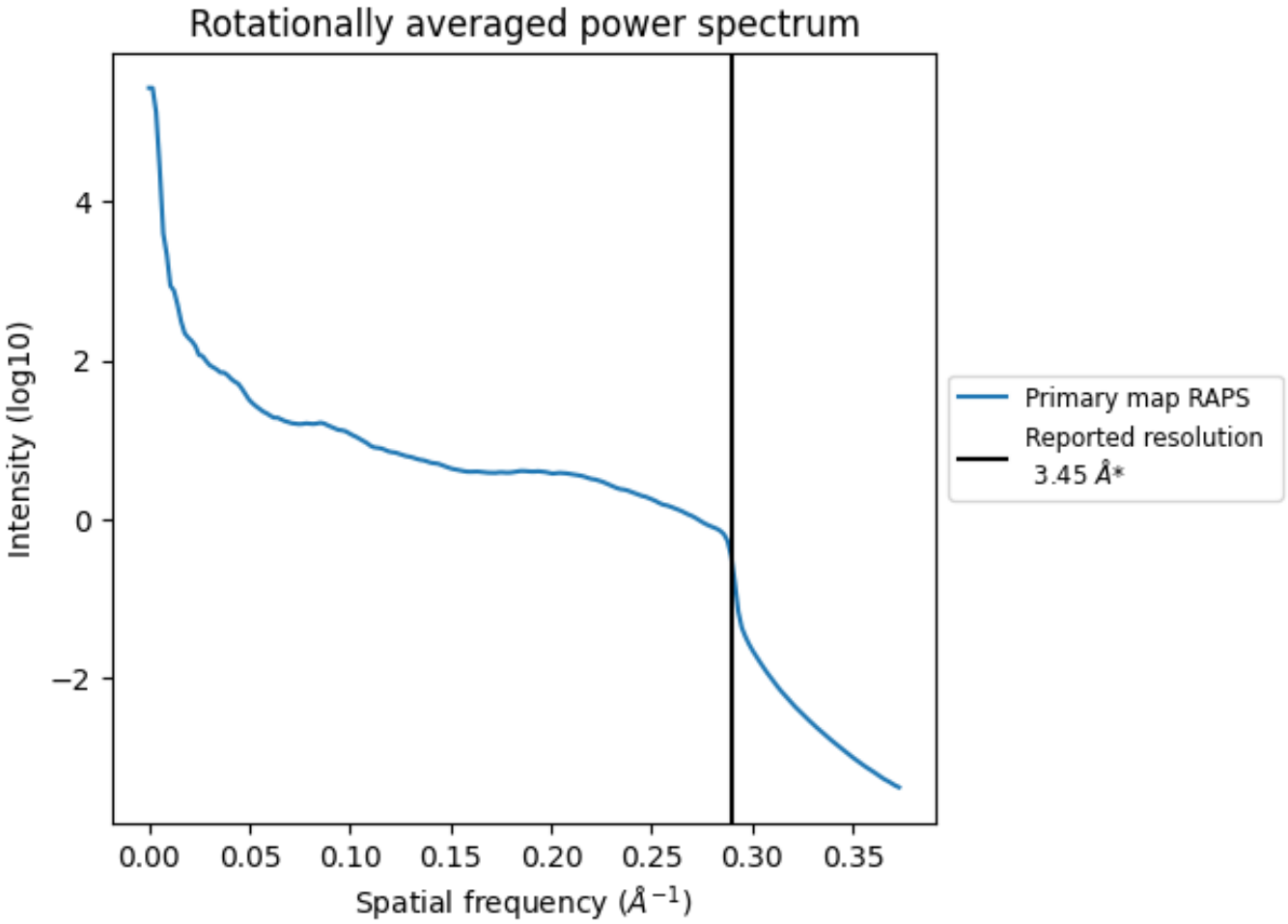
7.2 Volume estimate



The volume at the recommended contour level is 1656 nm^3; this corresponds to an approximate mass of 1496 kDa.

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

7.3 Rotationally averaged power spectrum (i)

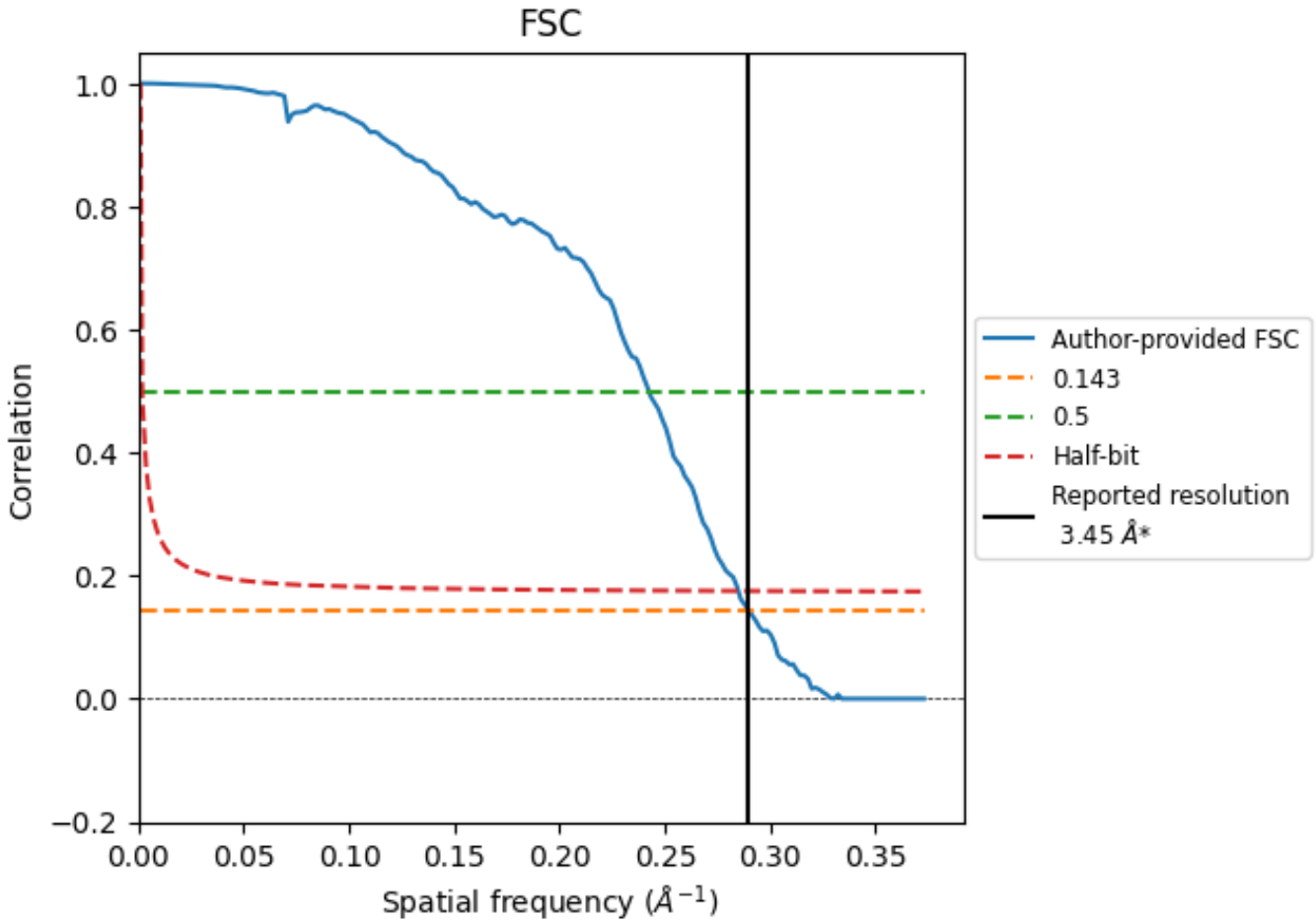


*Reported resolution corresponds to spatial frequency of 0.290 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.290 Å^{-1}

8.2 Resolution estimates (i)

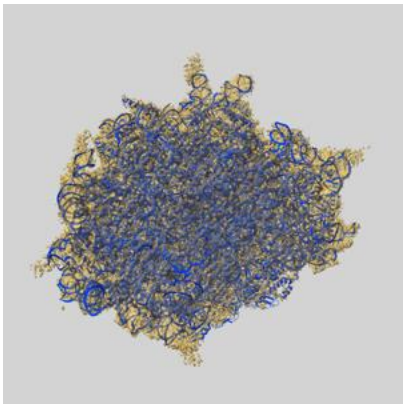
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.45	-	-
Author-provided FSC curve	3.45	4.12	3.51
Unmasked-calculated*	-	-	-

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

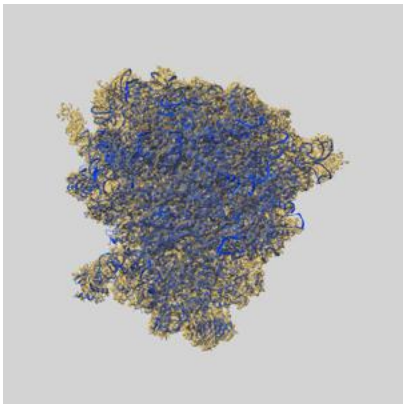
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-3039 and PDB model 3JAH. Per-residue inclusion information can be found in section 3 on page 24.

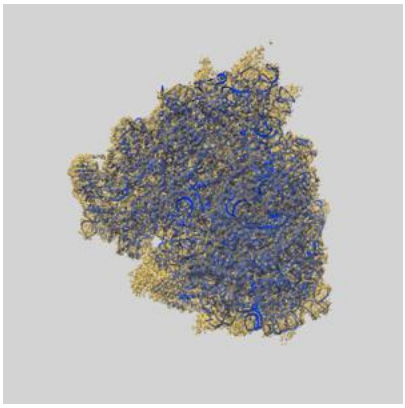
9.1 Map-model overlay



X



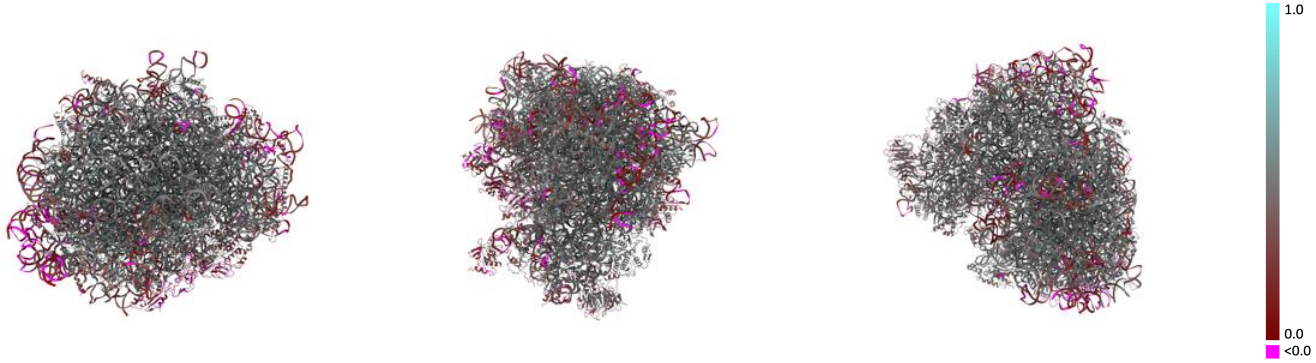
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

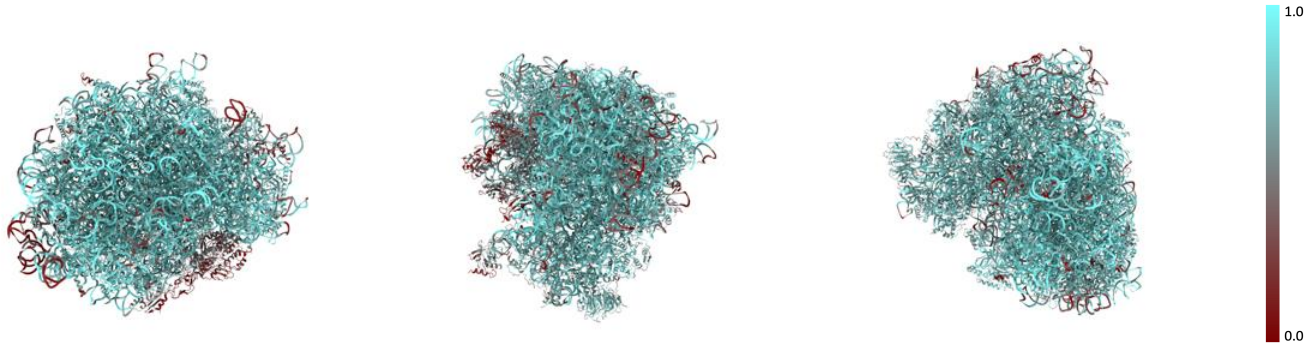
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

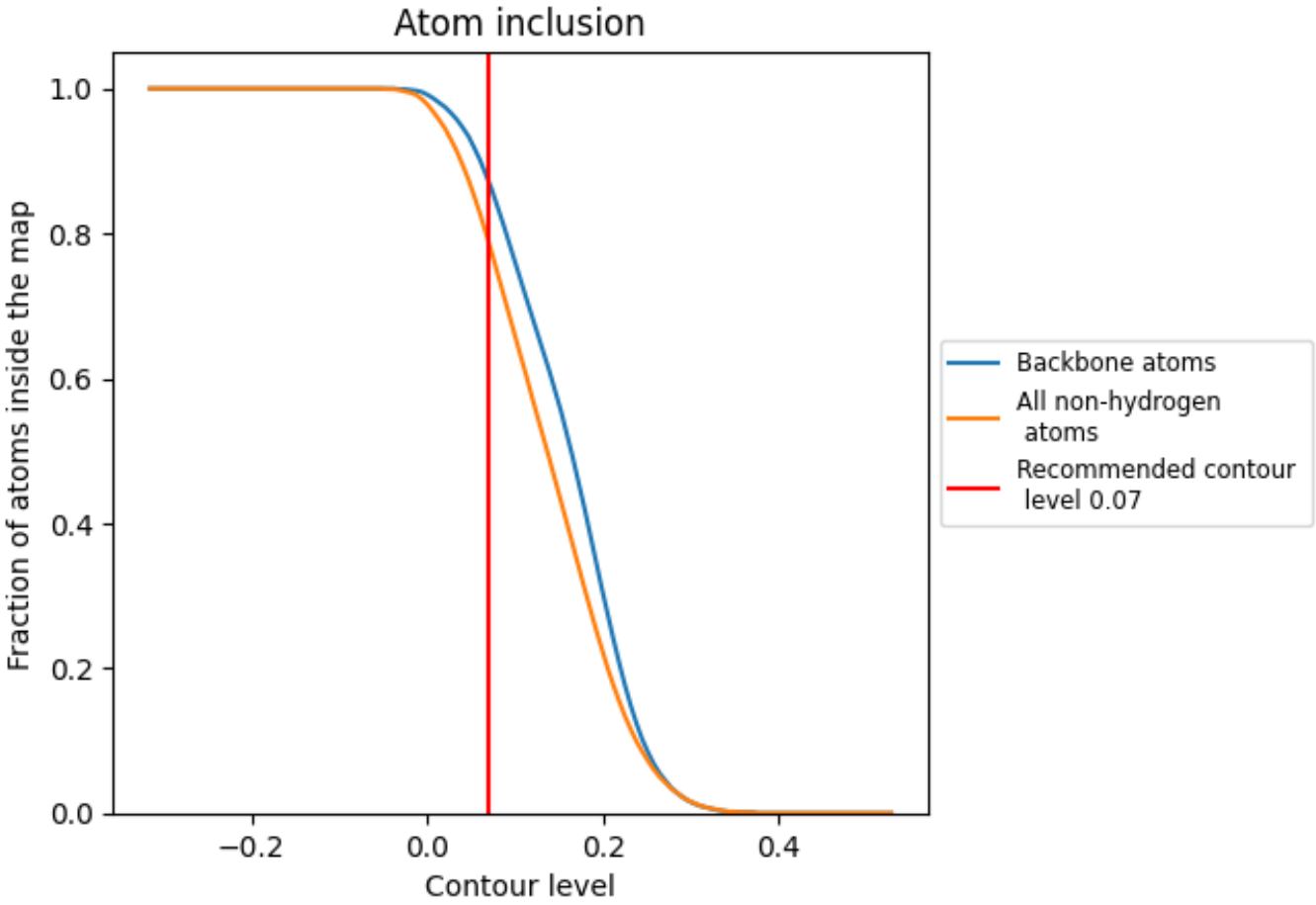
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.07).

9.4 Atom inclusion (i)



At the recommended contour level, 87% of all backbone atoms, 79% 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 (0.07) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7880	0.4220
1	0.5790	0.4150
2	0.8210	0.3920
3	0.5400	0.2310
5	0.8440	0.4100
7	0.9450	0.4810
8	0.8850	0.4360
9	0.8580	0.4170
A	0.8160	0.5110
AA	0.7530	0.4540
B	0.8160	0.4980
BB	0.7450	0.4630
C	0.8040	0.4910
CC	0.7680	0.4710
D	0.7990	0.4550
DD	0.6680	0.4010
E	0.7210	0.4160
EE	0.7630	0.4700
F	0.8050	0.4870
FF	0.6990	0.4280
G	0.6970	0.4080
GG	0.6780	0.3660
H	0.7670	0.4690
HH	0.6430	0.3800
I	0.7880	0.4810
II	0.7330	0.4270
J	0.7620	0.4350
JJ	0.7600	0.4550
KK	0.6450	0.3440
L	0.7780	0.4530
LL	0.7180	0.4460
M	0.8000	0.4560
MM	0.3720	0.1710
N	0.8380	0.5080
NN	0.7830	0.4750

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Chain	Atom inclusion	Q-score
O	0.8120	0.4870
OO	0.7710	0.4790
P	0.8190	0.5040
PP	0.6510	0.3750
Q	0.7960	0.5000
QQ	0.7350	0.4470
R	0.7630	0.4520
RR	0.6690	0.3950
S	0.8120	0.4910
SS	0.7430	0.4190
T	0.7930	0.4790
TT	0.7360	0.4240
U	0.7490	0.4220
UU	0.6610	0.4020
V	0.7630	0.4940
VV	0.7350	0.4630
W	0.8050	0.4840
WW	0.7900	0.4880
X	0.7780	0.4670
XX	0.7700	0.4960
Y	0.7910	0.4670
YY	0.7370	0.4160
Z	0.8100	0.4740
ZZ	0.6930	0.3830
a	0.8430	0.5100
aa	0.7910	0.4860
b	0.6880	0.4000
bb	0.7140	0.4450
c	0.8040	0.4690
cc	0.6750	0.4260
d	0.7950	0.4660
dd	0.7780	0.4520
e	0.8040	0.5000
ee	0.6540	0.4090
f	0.8280	0.5090
ff	0.4820	0.2530
g	0.7780	0.4700
gg	0.6610	0.3850
h	0.7890	0.4630
hh	0.8100	0.4440
i	0.7760	0.4520
ii	0.4330	0.3710

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Chain	Atom inclusion	Q-score
j	0.8440	0.5000
jj	0.3780	0.3410
k	0.7240	0.4200
l	0.8180	0.4960
m	0.7840	0.4770
n	0.7960	0.4730
o	0.7680	0.4860
p	0.7920	0.4850
r	0.8220	0.4860
s	0.2520	0.1220
t	0.2800	0.1180