



Full wwPDB EM Validation Report ⓘ

Mar 20, 2026 – 10:38 AM UTC

PDB ID : 5IT7 / pdb_00005it7
EMDB ID : EMD-8123
Title : Structure of the Kluyveromyces lactis 80S ribosome in complex with the cricket paralysis virus IRES and eEF2
Authors : Murray, J.; Savva, C.G.; Shin, B.S.; Dever, T.E.; Ramakrishnan, V.; Fernandez, I.S.
Deposited on : 2016-03-16
Resolution : 3.60 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

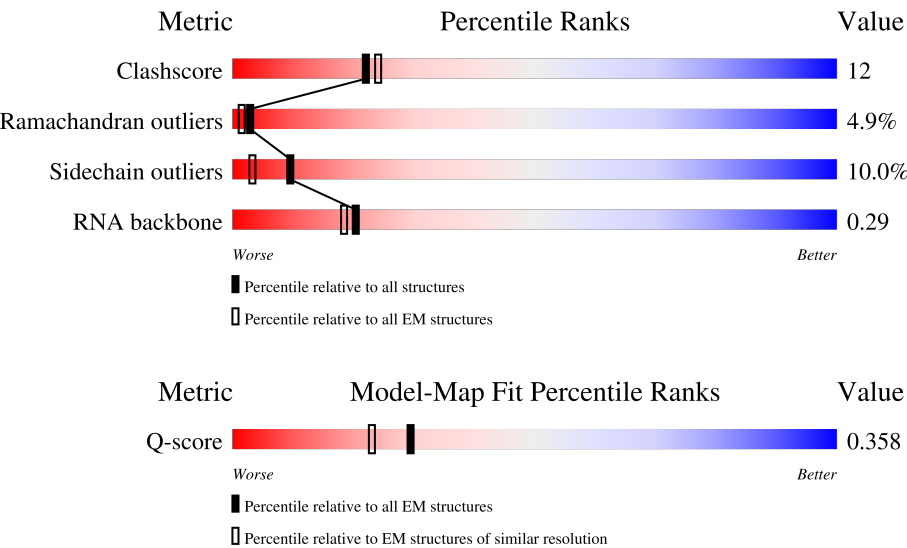
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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 i

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

The reported resolution of this entry is 3.60 Å.

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



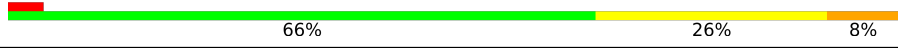
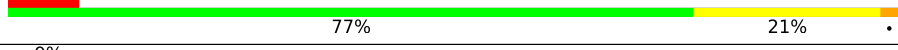
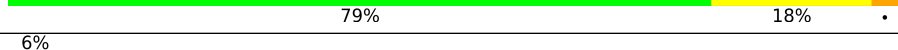
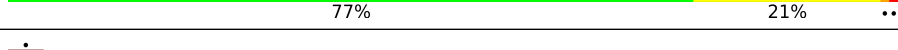
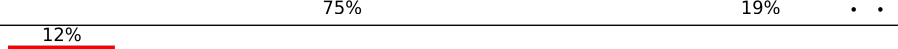
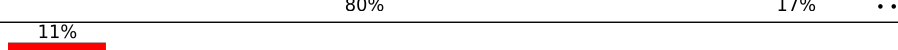
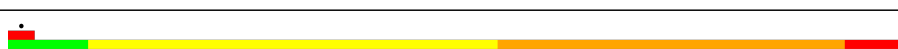
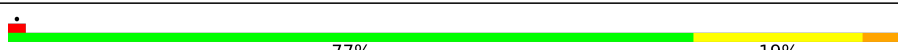
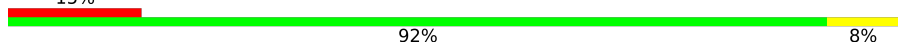
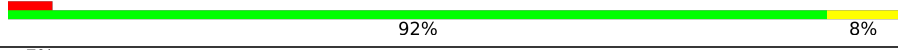
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	12797 (3.10 - 4.10)

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

Mol	Chain	Length	Quality of chain
1	5	3270	
2	7	121	
3	8	157	

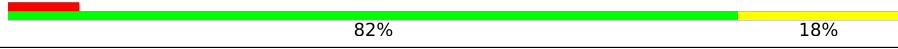
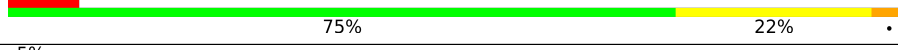
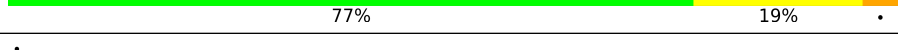
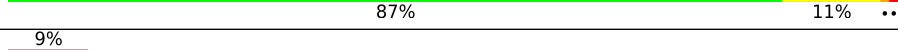
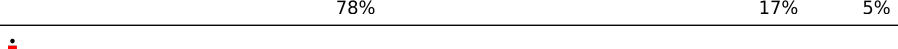
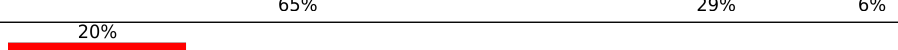
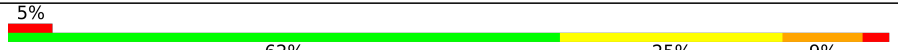
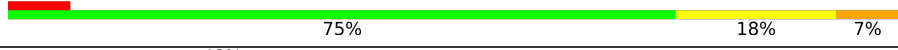
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Mol	Chain	Length	Quality of chain
4	AA	249	
5	BB	384	
6	CC	360	
7	DD	295	
8	EE	170	
9	FF	222	
10	GG	233	
11	HH	191	
12	II	216	
13	JJ	168	
14	LL	197	
15	MM	136	
16	NN	202	
17	OO	198	
18	PP	180	
19	QQ	184	
20	RR	188	
21	SS	169	
22	TT	158	
23	UU	100	
24	VV	132	
25	WW	62	
26	XX	121	
27	YY	125	
28	ZZ	134	

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Mol	Chain	Length	Quality of chain
29	aa	147	
30	bb	57	
31	cc	97	
32	dd	106	
33	ee	122	
34	ff	105	
35	gg	121	
36	hh	116	
37	ii	98	
38	jj	85	
39	kk	76	
40	ll	49	
41	mm	51	
42	nn	25	
43	oo	101	
44	pp	87	
45	qq	217	
46	rr	195	
47	KK	147	
48	A	206	
49	B	214	
50	C	217	
51	D	223	
52	E	260	
53	F	206	

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Mol	Chain	Length	Quality of chain
54	G	226	
55	H	184	
56	I	200	
57	J	182	
58	K	96	
59	L	155	
60	M	122	
61	N	150	
62	O	127	
63	P	123	
64	Q	141	
65	R	129	
66	S	145	
67	T	143	
68	U	106	
69	V	87	
70	W	129	
71	X	145	
72	Y	134	
73	Z	70	
74	a	100	
75	b	82	
76	c	63	
77	d	53	
78	e	55	

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Mol	Chain	Length	Quality of chain
79	f	69	
80	g	324	
81	2	1798	
82	4	190	
83	1	827	

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
85	ZN	jj	100	-	-	X	-

2 Entry composition

There are 87 unique types of molecules in this entry. The entry contains 215768 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 DNA/RNA hybrid called 25S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	5	3270	Total	C	N	O	P	0	0
			69896	31222	12579	22825	3270		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	7	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	8	157	Total	C	N	O	P	0	0
			3326	1488	573	1108	157		

- Molecule 4 is a protein called KLLA0D16027p.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	AA	249	Total	C	N	O	S	0	0
			1892	1176	385	330	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	BB	384	Total	C	N	O	S	0	0
			3064	1946	580	533	5		

- Molecule 6 is a protein called KLLA0B07139p.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	CC	359	Total	C	N	O	S	0	0
			2731	1715	522	491	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
CC	3	ARG	ILE	conflict	UNP Q6CW41

- Molecule 7 is a protein called KLLA0D06941p.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	DD	295	Total	C	N	O	S	0	0
			2384	1510	417	456	1		

- Molecule 8 is a protein called KLLA0B04686p.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	EE	161	Total	C	N	O		0	0
			1300	834	243	223			

- Molecule 9 is a protein called KLLA0D03410p.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	FF	222	Total	C	N	O	S	0	0
			1774	1138	319	316	1		

- Molecule 10 is a protein called KLLA0E00573p.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	GG	233	Total	C	N	O	S	0	0
			1817	1160	324	330	3		

- Molecule 11 is a protein called KLLA0F04499p.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	HH	191	Total	C	N	O	S	0	0
			1528	965	277	284	2		

- Molecule 12 is a protein called KLLA0D05643p.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	II	207	Total	C	N	O	S	0	0
			1690	1074	319	292	5		

- Molecule 13 is a protein called KLLA0F08261p.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	JJ	168	Total	C	N	O	S	0	0
			1349	845	255	245	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LL	197	Total	C	N	O		0	0
			1581	988	317	276			

- Molecule 15 is a protein called KLLA0B13409p.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	MM	136	Total	C	N	O		0	0
			1045	666	196	183			

- Molecule 16 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	NN	202	Total	C	N	O	S	0	0
			1709	1069	359	280	1		

- Molecule 17 is a protein called KLLA0F04675p.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	OO	198	Total	C	N	O	S	196	0
			1571	1013	290	267	1		

- Molecule 18 is a protein called KLLA0A06336p.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	PP	180	Total	C	N	O		0	0
			1432	885	287	260			

- Molecule 19 is a protein called KLLA0A07227p.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	QQ	184	Total	C	N	O		0	0
			1444	911	290	243			

- Molecule 20 is a protein called KLLA0E12453p.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	RR	188	Total	C	N	O	S	0	0
			1522	933	328	259	2		

- Molecule 21 is a protein called 60S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	SS	169	Total	C	N	O	S	0	0
			1416	916	259	238	3		

- Molecule 22 is a protein called KLLA0E23651p.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	TT	158	Total	C	N	O	S	0	0
			1262	797	240	220	5		

- Molecule 23 is a protein called KLLA0D05181p.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	UU	100	Total	C	N	O	0	0
			807	524	131	152		

- Molecule 24 is a protein called KLLA0E06997p.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	VV	132	Total	C	N	O	S	0	0
			976	612	182	174	8		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
25	WW	62	Total	C	N	O	0	0
			515	330	103	82		

- Molecule 26 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	XX	121	Total	C	N	O	S	0	0
			964	620	169	174	1		

- Molecule 27 is a protein called KLLA0B05742p.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	YY	125	Total	C	N	O	0	0
			992	622	189	181		

- Molecule 28 is a protein called KLLA0E03455p.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	ZZ	134	Total	C	N	O	0	0
			1089	708	199	182		

- Molecule 29 is a protein called RPL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	aa	147	Total	C	N	O	S	0	0
			1156	740	225	189	2		

- Molecule 30 is a protein called KLLA0D16071p.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	bb	57	Total	C	N	O	0	0
			458	287	99	72		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
31	cc	97	Total	C	N	O	S	0	0
			740	477	125	137	1		

- Molecule 32 is a protein called KLLA0B02937p.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	dd	106	Total	C	N	O	S	0	0
			869	553	167	147	2		

- Molecule 33 is a protein called KLLA0E06843p.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	ee	122	Total	C	N	O	S	0	0
			980	618	198	162	2		

- Molecule 34 is a protein called KLLA0D07405p.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	ff	105	Total	C	N	O	S	0	0
			837	531	161	144	1		

- Molecule 35 is a protein called KLLA0C08371p.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	gg	121	Total	C	N	O	S	0	0
			951	591	192	167	1		

- Molecule 36 is a protein called KLLA0F05247p.

Mol	Chain	Residues	Atoms				AltConf	Trace
36	hh	116	Total	C	N	O	0	0
			961	608	187	166		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
37	ii	98	Total	C	N	O	S	0	0
			766	479	155	131	1		

- Molecule 38 is a protein called Ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	jj	85	Total	C	N	O	S	0	0
			675	410	148	111	6		

- Molecule 39 is a protein called KLLA0C18216p.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	kk	76	Total	C	N	O	0	0
			619	398	114	107		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
40	ll	49	Total	C	N	O	S	0	0
			428	266	96	64	2		

- Molecule 41 is a protein called Ubiquitin fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	mm	51	Total	C	N	O	S	0	0
			410	254	85	66	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
42	nn	25	Total	C	N	O	S	0	0
			233	142	63	27	1		

- Molecule 43 is a protein called 60S ribosomal protein L44.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	oo	101	Total	C	N	O	S	0	0
			814	509	163	136	6		

- Molecule 44 is a protein called KLLA0E05941p.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	pp	87	Total	C	N	O	S	0	0
			660	404	133	117	6		

- Molecule 45 is a protein called Ribosomal protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	qq	217	Total	C	N	O	S	0	0
			1721	1100	300	312	9		

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
qq	11	GLU	ASP	conflict	UNP Q6CWR9
qq	12	HIS	ASN	conflict	UNP Q6CWR9
qq	152	ARG	LYS	conflict	UNP Q6CWR9

- Molecule 46 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	rr	195	Total	C	N	O	S	0	0
			1508	968	258	278	4		

- Molecule 47 is a protein called uL11.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	KK	147	Total	C	N	O		
			735	441	147	147	0	0

- Molecule 48 is a protein called 40S ribosomal protein S0.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	A	206	Total	C	N	O	S		
			1616	1035	285	294	2	0	0

- Molecule 49 is a protein called 40S ribosomal protein S1.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	B	214	Total	C	N	O	S		
			1722	1089	313	317	3	0	0

- Molecule 50 is a protein called KLLA0F09812p.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	C	217	Total	C	N	O	S		
			1629	1041	287	297	4	0	0

- Molecule 51 is a protein called KLLA0D08305p.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	D	223	Total	C	N	O	S		
			1744	1108	313	318	5	0	0

- Molecule 52 is a protein called 40S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	E	260	Total	C	N	O	S		
			2078	1322	393	359	4	0	0

- Molecule 53 is a protein called KLLA0D10659p.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	F	206	Total	C	N	O	S		
			1609	1008	298	300	3	0	0

- Molecule 54 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	G	226	Total	C	N	O	S	0	0
			1812	1134	348	326	4		

- Molecule 55 is a protein called KLLA0C13519p.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	H	184	Total	C	N	O		0	0
			1483	950	270	263			

- Molecule 56 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	I	188	Total	C	N	O	S	0	0
			1493	926	301	265	1		

- Molecule 57 is a protein called KLLA0E23673p.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	J	182	Total	C	N	O	S	0	0
			1471	929	287	254	1		

- Molecule 58 is a protein called KLLA0B08173p.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	K	96	Total	C	N	O	S	0	0
			809	533	129	146	1		

- Molecule 59 is a protein called KLLA0A10483p.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	L	155	Total	C	N	O	S	0	0
			1248	798	237	210	3		

- Molecule 60 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	M	122	Total	C	N	O		0	0
			922	575	167	180			

- Molecule 61 is a protein called KLLA0F18040p.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	N	150	Total	C	N	O	S	0	0
			1187	756	223	206	2		

- Molecule 62 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	O	127	Total	C	N	O	S	0	0
			942	578	188	173	3		

- Molecule 63 is a protein called KLLA0F07843p.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	P	123	Total	C	N	O	S	0	0
			980	628	179	168	5		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	130	ALA	-	expression tag	UNP Q6CKV4

- Molecule 64 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms				AltConf	Trace
64	Q	141	Total	C	N	O	0	0
			1105	709	204	192		

- Molecule 65 is a protein called KLLA0B01474p.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	R	129	Total	C	N	O	S	0	0
			1031	641	193	194	3		

- Molecule 66 is a protein called KLLA0B01562p.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	S	145	Total	C	N	O	S	0	0
			1193	741	240	210	2		

- Molecule 67 is a protein called KLLA0A07194p.

Mol	Chain	Residues	Atoms				AltConf	Trace
67	T	143	Total	C	N	O	0	0
			1110	693	210	207		

- Molecule 68 is a protein called KLLA0F25542p.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	U	106	Total	C	N	O	S	0	0
			845	540	152	152	1		

- Molecule 69 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	V	87	Total	C	N	O	S	0	0
			687	424	126	135	2		

- Molecule 70 is a protein called 40S ribosomal protein S22.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	W	129	Total	C	N	O	S	0	0
			1021	651	187	180	3		

- Molecule 71 is a protein called RPS23.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	X	145	Total	C	N	O	S	0	0
			1127	713	219	192	3		

- Molecule 72 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms				AltConf	Trace
72	Y	134	Total	C	N	O	0	0
			1061	665	207	189		

- Molecule 73 is a protein called KLLA0B06182p.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	Z	70	Total	C	N	O	S	0	0
			558	355	104	98	1		

- Molecule 74 is a protein called KLLA0D05115p.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	a	100	Total	C	N	O	S	0	0
			798	491	170	131	6		

- Molecule 75 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	b	82	Total	C	N	O	S	0	0
			617	384	113	114	6		

- Molecule 76 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	c	63	Total	C	N	O	S	0	0
			494	305	98	90	1		

- Molecule 77 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	d	53	Total	C	N	O	S	0	0
			446	280	89	76	1		

- Molecule 78 is a protein called KLLA0C04809p.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	e	55	Total	C	N	O	S	0	0
			443	276	90	76	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
79	f	69	Total	C	N	O	S	0	0
			549	352	102	91	4		

- Molecule 80 is a protein called KLLA0E12277p.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	g	318	Total	C	N	O	S	0	0
			2466	1561	430	470	5		

- Molecule 81 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	2	1780	Total	C	N	O	P	0	0
			37797	16892	6658	12467	1780		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
2	676	G	U	conflict	GB 49642208
2	678	U	G	conflict	GB 49642208

- Molecule 82 is DNA/RNA hybrid called cricket paralysis virus IRES.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	4	190	Total	C	N	O	P	0	0
			3950	1768	667	1325	190		

- Molecule 83 is a protein called Eft2p.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	1	827	Total	C	N	O	S	0	0
			6421	4070	1106	1216	29		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	310	GLU	ASP	conflict	UNP W7R097

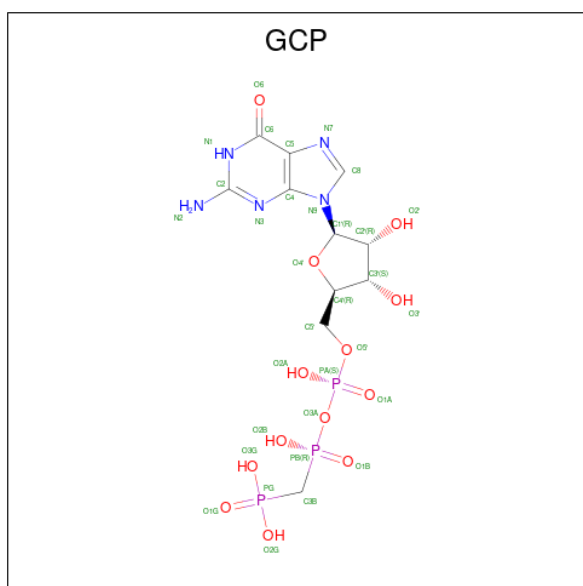
- Molecule 84 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

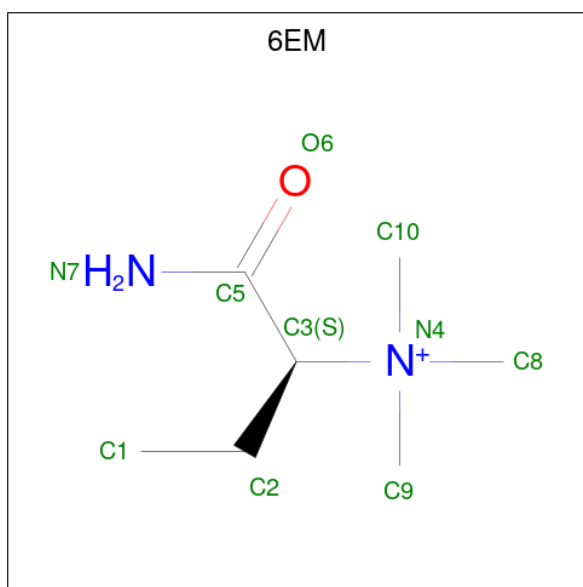
Mol	Chain	Residues	Atoms		AltConf
84	5	2	Total	Mg	0
			2	2	
84	N	1	Total	Mg	0
			1	1	
84	a	1	Total	Mg	0
			1	1	
84	f	1	Total	Mg	0
			1	1	
84	2	74	Total	Mg	0
			74	74	
84	1	1	Total	Mg	0
			1	1	

- Molecule 85 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
85	jj	1	Total	Zn	0
			1	1	
85	mm	1	Total	Zn	0
			1	1	
85	oo	1	Total	Zn	0
			1	1	
85	a	1	Total	Zn	0
			1	1	
85	b	1	Total	Zn	0
			1	1	
85	f	1	Total	Zn	0
			1	1	

- Molecule 86 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (CCD ID: GCP) (formula: C₁₁H₁₈N₅O₁₃P₃).



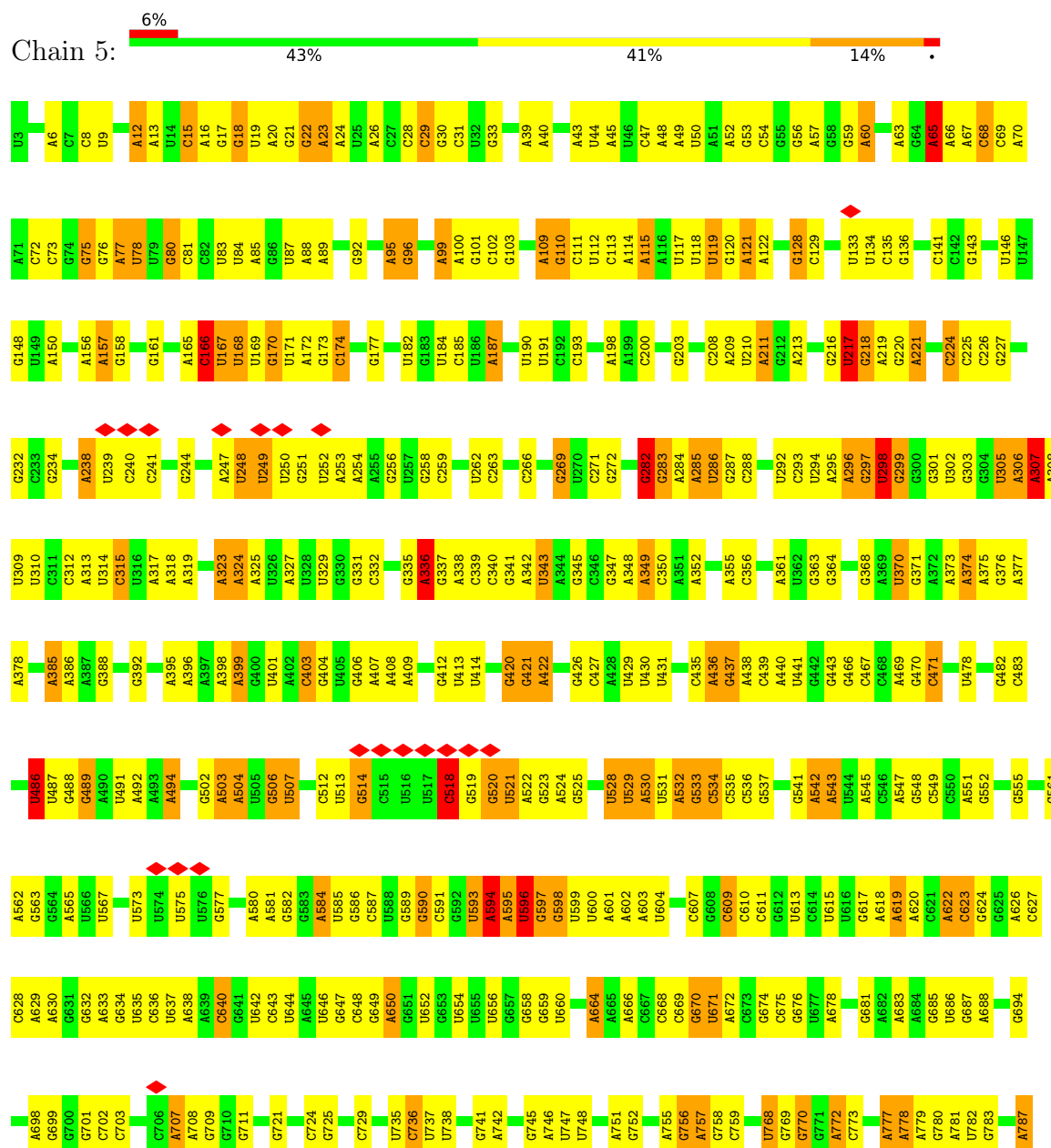


Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
87	1	1	10	7	2	1	0

3 Residue-property plots

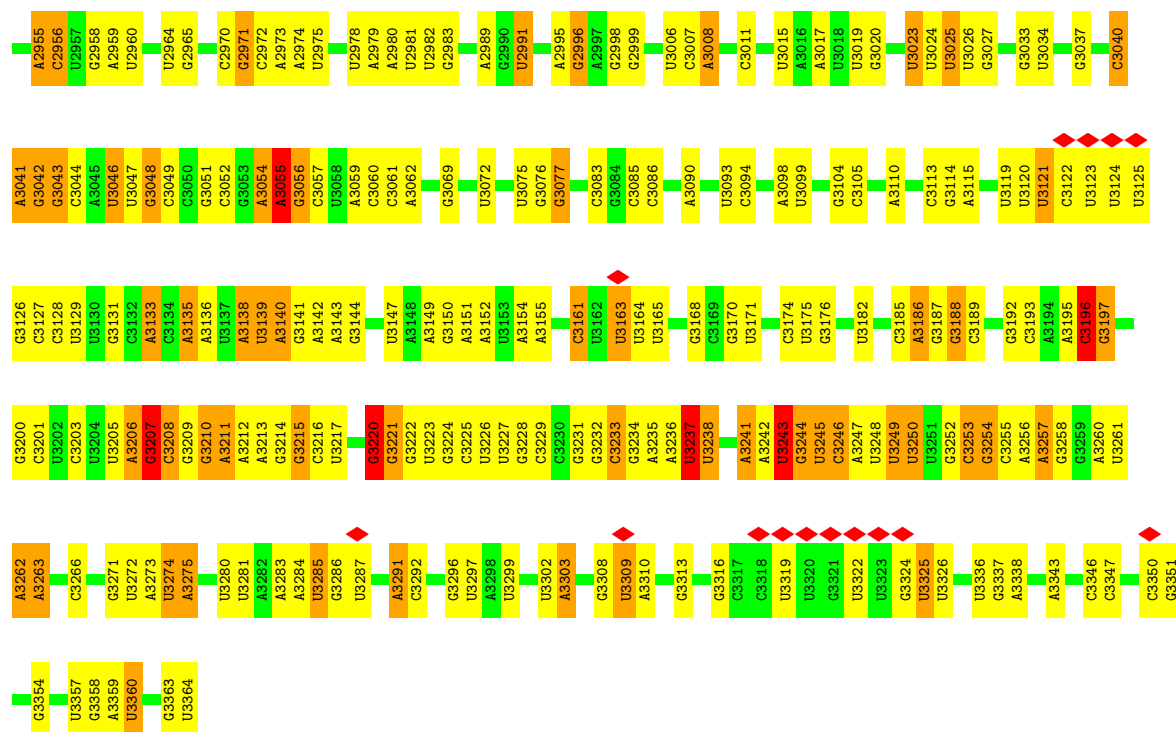
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: 25S ribosomal RNA

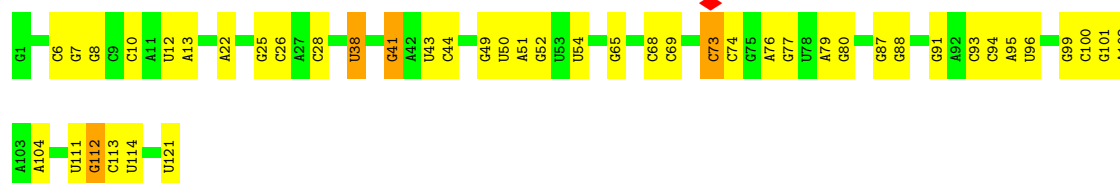




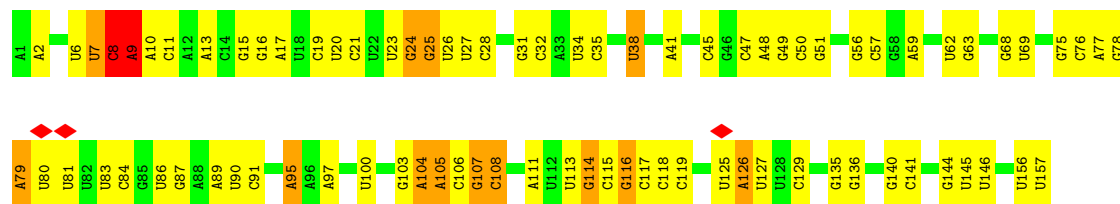
G2807	G2808	G2811	G2812	G2813	G2814	G2815	G2816	G2817	G2818	A2821	U2822	U2823	G2824	G2825	G2826	U2827	G2828	U2829	U2900	U2903	A2904	G2905	G2906	G2907	G2908	A2909	G2910	A2840	G2911	U2912	G2913	A2914	G2915	G2916	U2917	G2918	U2922	U2923	A2924	G2925	G2928	G2929	G2936	A2939	G2940	A2944	G2945	U2946	U2947	A2948	U2949	A2950	C2951		
G2722	G2723	G2724	U2725	A2726	U2727	U2728	G2729	A2730	U2731	C2732	U2735	U2736	G2739	U2740	C2741	G2745	U2746	A2747	A2748	U2749	U2750	U2751	G2752	U2753	U2763	G2764	A2767	U2768	A2769	U2770	A2771	U2775	C2778	G2781	G2782	G2783	G2784	U2785	U2786	G2792	U2793	U2794	G2799	G2800	U2801	U2802	U2803	C2804							
A2631	C2632	U2633	G2634	A2635	A2642	G2645	G2646	A2647	U2648	C2650	A2654	A2655	U2656	A2657	U2658	A2659	A2662	U2663	A2664	U2665	G2666	G2667	G2668	A2671	A2672	A2673	G2682	U2687	G2688	G2694	A2695	G2696	U2697	G2698	U2699	A2700	A2704	A2708	U2709	U2711	U2712	A2715	U2716	G2717	U2720	G2721									
G2544	C2545	U2546	G2547	A2548	U2549	G2553	G2554	G2557	A2558	A2559	G2560	A2561	G2562	A2563	U2564	U2565	C2568	G2574	G2575	U2576	A2577	G2582	G2586	G2587	C2592	G2593	A2596	U2601	U2602	A2603	A2604	A2605	C2606	U2609	A2610	A2611	A2617	U2618	G2619	U2620	C2621	A2624	A2625	G2626	G2629	G2630									
A2469	U2470	A2471	G2472	U2473	U2474	U2475	C2476	U2479	A2480	C2481	U2482	U2483	A2484	U2491	A2492	A2493	A2494	C2495	G2499	C2500	U2501	G2502	G2503	A2504	A2505	U2506	U2507	C2508	A2509	U2510	U2511	U2512	U2513	A2516	C2517	G2518	U2519	U2520	C2521	G2524	C2525	A2526	C2529	A2530	A2531	U2537	A2538	U2539	A2540	G2543					
G2289	U2290	C2291	U2292	A2293	G2294	G2404	U2405	G2406	A2407	A2408	A2412	G2413	A2414	U2415	A2416	G2417	A2418	G2419	G2420	G2421	U2422	G2423	C2427	U2428	A2429	A2430	A2431	G2432	U2433	G2434	G2435	G2436	A2437	G2438	C2439	U2440	U2441	G2442	G2443	G2444	G2445	G2446	C2447	G2448	U2451	A2455	U2456	A2457	C2458	G2459	A2460	C2461	U2469		
C2315	U2316	G2322	C2323	G2324	A2325	A2326	A2327	C2328	C2329	A2330	C2331	A2332	C2333	C2334	C2335	A2336	A2337	G2338	G2339	G2340	A2341	A2342	C2343	G2344	G2345	G2346	C2347	C2352	A2353	G2354	U2357	C2358	A2359	G2360	C2361	G2362	G2365	A2366	A2367	A2368	G2369	A2370	A2371	G2372	A2373	C2374	U2377	G2378	U2379	U2380	G2381	G2387	A2388		
A2239	A2240	G2241	G2242	U2243	A2244	G2245	G2246	C2247	A2248	A2249	A2250	U2251	G2252	C2253	G2257	A2260	U2261	G2262	U2263	A2264	U2267	A2268	G2269	A2272	G2273	G2274	G2275	G2276	G2277	A2278	U2279	G2280	A2281	A2282	U2283	G2284	G2285	A2286	U2287	U2288	A2295	C2299	C2300	A2301	C2302	U2229	U2230	A2231	C2232	U2233	U2235	C2236	U2237	U2238	
C2083	G2084	G2085	G2086	G2087	A2088	A2089	G2090	G2091	G2092	G2093	A2094	A2095	G2099	A2100	G2103	U2104	C2105	U2106	A2107	A2108	A2111	A2112	A2113	A2114	C2115	A2116	G2124	C2125	G2126	A2127	C2132	A2135	A2136	A2137	U2138	U2139	G2140	G2149	C2150	A2151	A2152	U2153	G2154	U2155	U2159	U2160	A2161	C2161	U2162	G2163	C2164	C2165			
G2019	U2020	U2021	G2022	G2023	U2024	A2025	G2026	A2027	G2028	G2029	C2030	C2031	U2032	U2033	G2034	G2035	U2036	A2037	G2038	G2039	U2040	C2041	U2042	G2043	U2044	U2045	G2046	U2047	A2048	G2049	A2050	U2051	G2052	C2053	U2054	G2055	C2056	A2057	A2058	U2059	U2060	A2061	A2062	C2063	G2064	A2065	A2069	C2070	U2071	U2072	G2078	G2079	G2080	U2081	A2082
G1866	G1867	A1870	G1871	U1872	G1873	G1874	G1875	G1876	A1877	A1878	A1882	C1886	C1887	U1893	G1896	G1897	G1898	G1909	C1910	U1911	C1912	G1916	G1917	A1918	G1922	G1923	C1924	G1925	U1926	G1927	A1928	G1929	G1930	G1931	C1932	G1933	U1934	U1935	G1936	G1937	U1938	C1939	A1940	G1941	A1942	C1943	G1944	C1945	G1946	G1947	C1948				



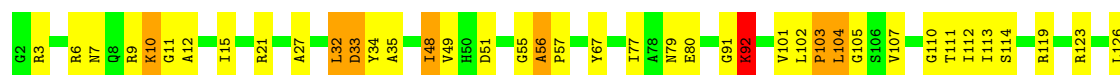
• Molecule 2: 5S ribosomal RNA

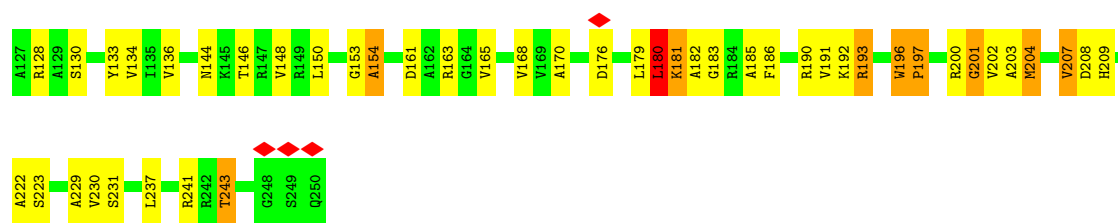


• Molecule 3: 5.8S ribosomal RNA



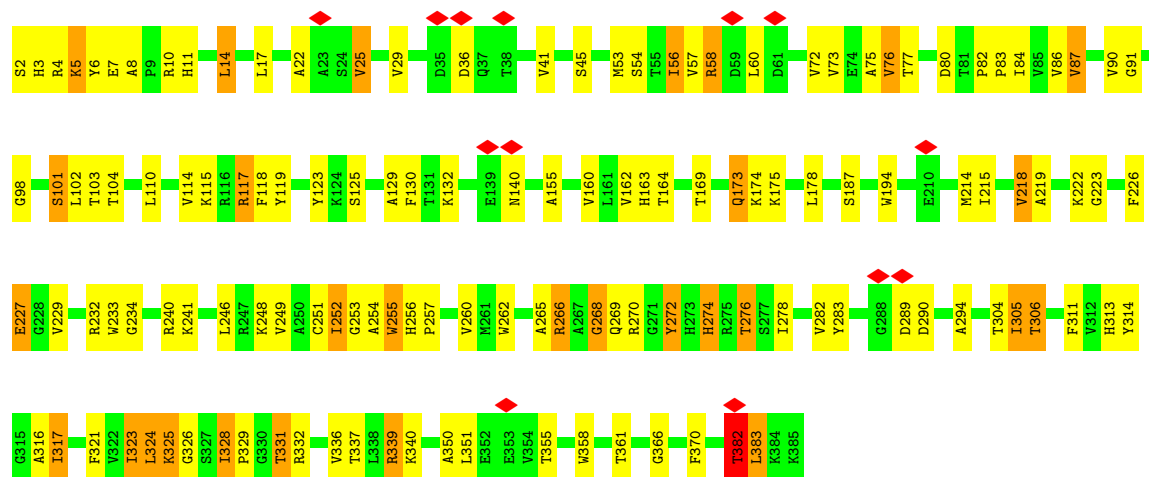
• Molecule 4: KLLA0D16027p





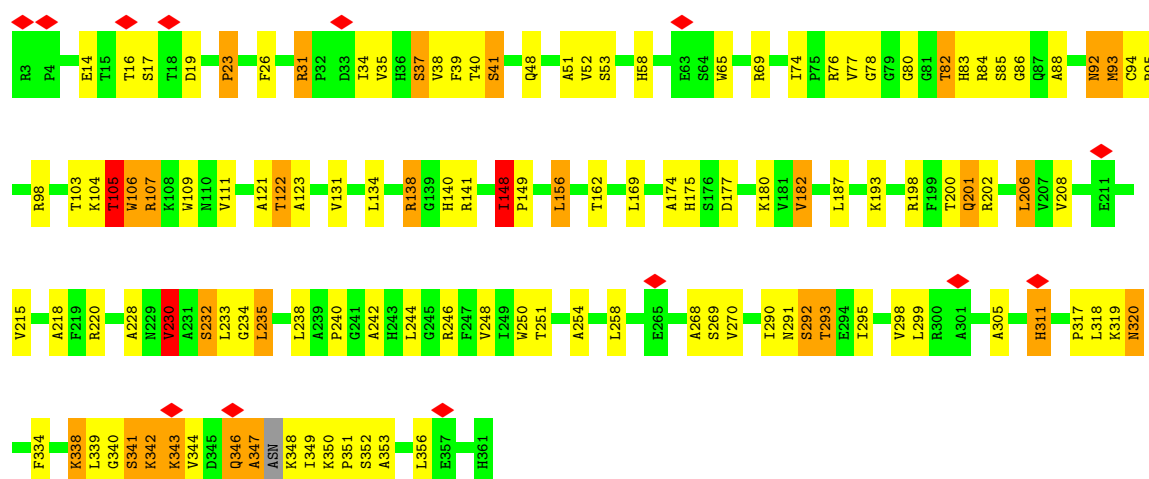
• Molecule 5: 60S ribosomal protein L3

Chain BB: 65% 27% 8%



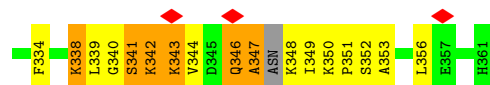
• Molecule 6: KLLA0B07139p

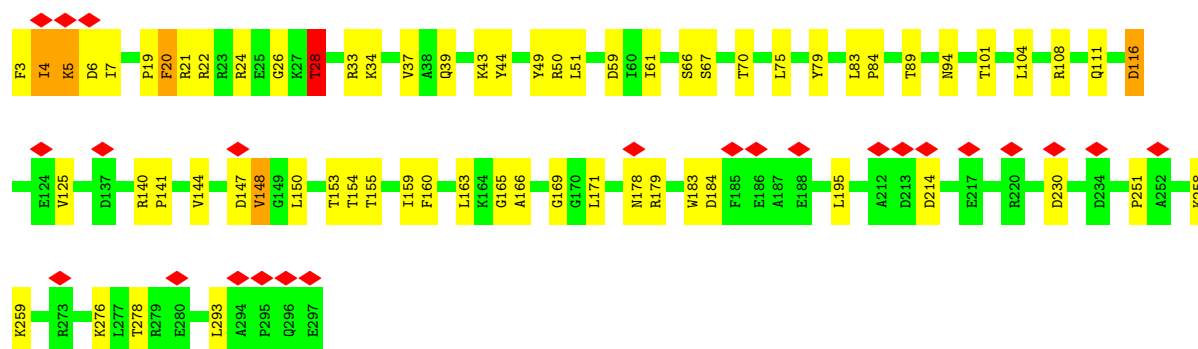
Chain CC: 66% 26% 8%



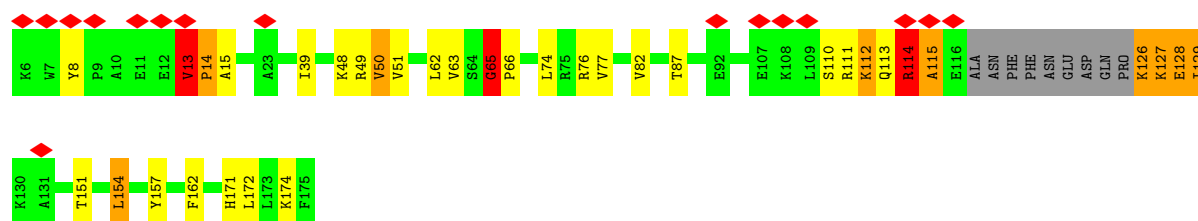
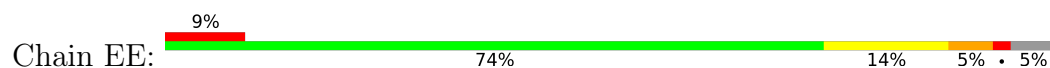
• Molecule 7: KLLA0D06941p

Chain DD: 8% 77% 21%

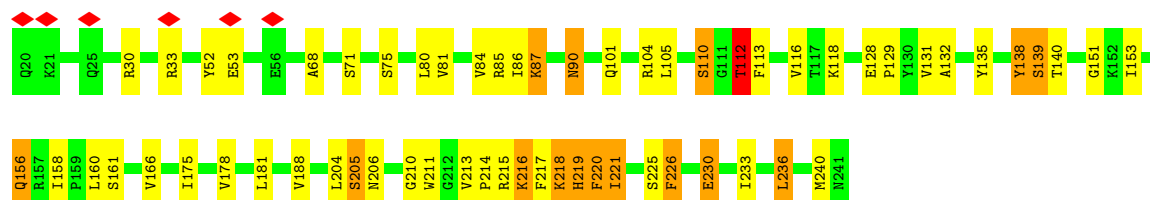
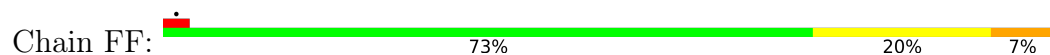




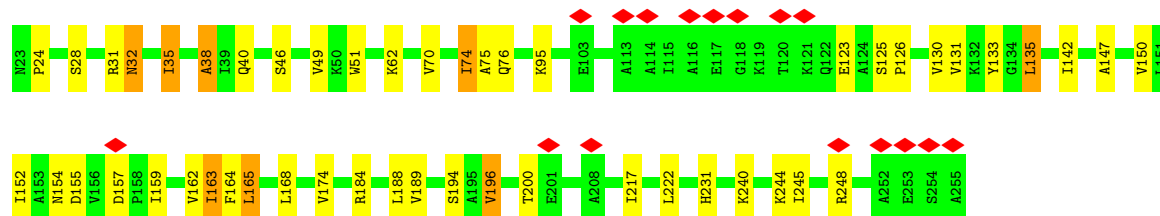
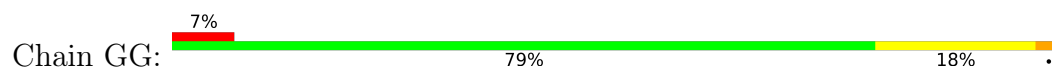
• Molecule 8: KLLA0B04686p



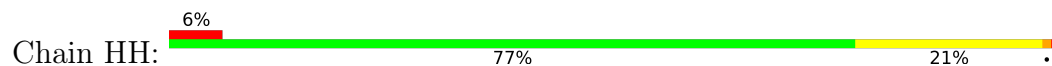
• Molecule 9: KLLA0D03410p

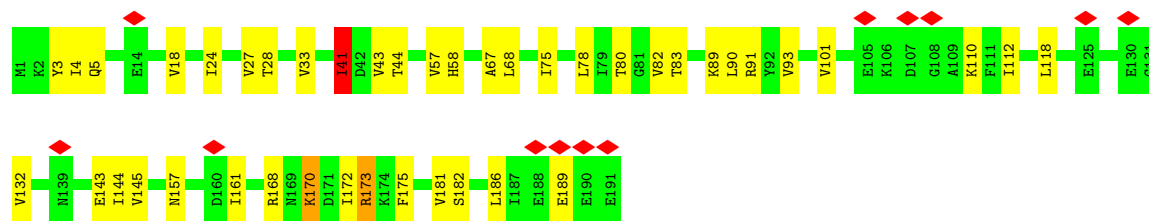


• Molecule 10: KLLA0E00573p

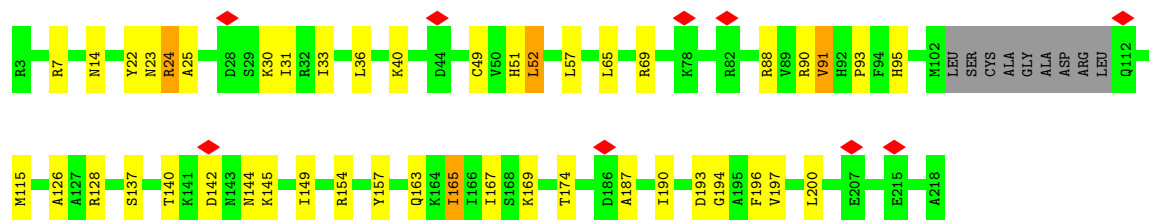
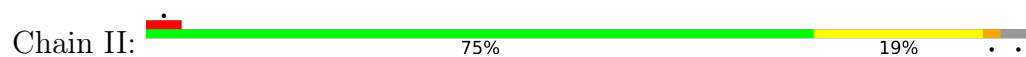


• Molecule 11: KLLA0F04499p

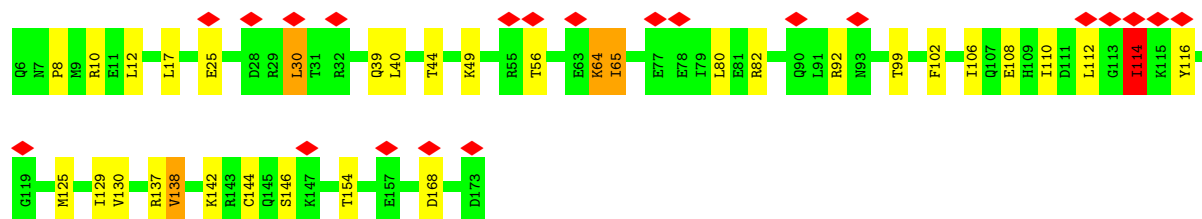
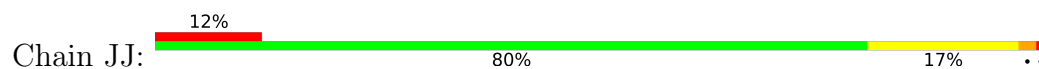




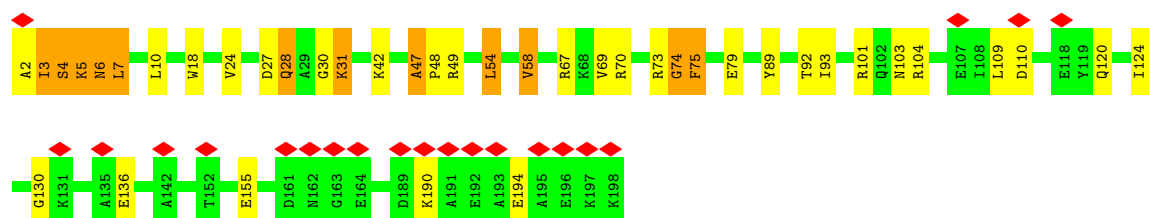
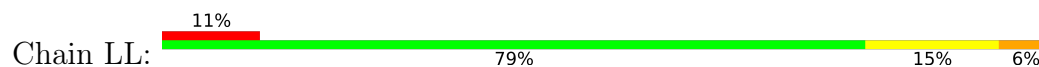
• Molecule 12: KLLA0D05643p



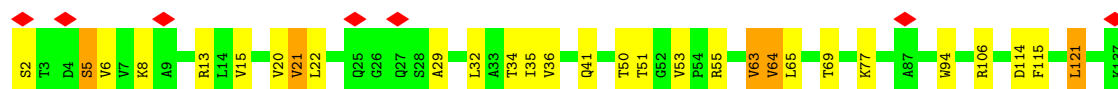
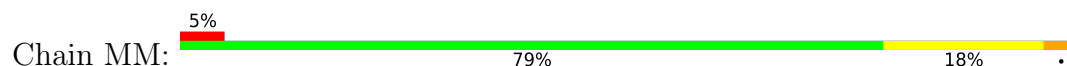
• Molecule 13: KLLA0F08261p



• Molecule 14: 60S ribosomal protein L13



• Molecule 15: KLLA0B13409p



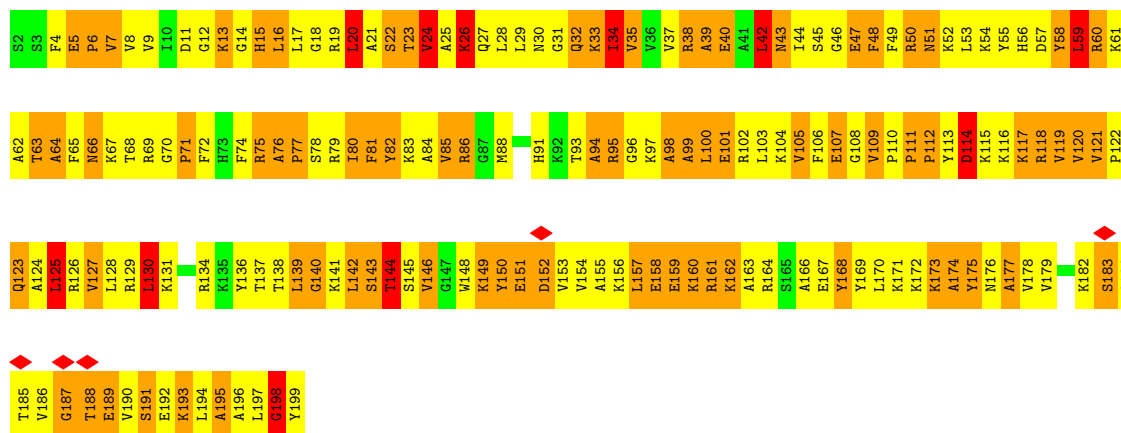
• Molecule 16: Ribosomal protein L15

Chain NN:  73% 23% .



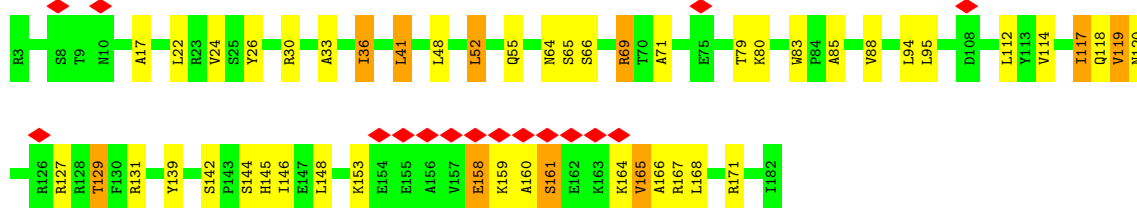
• Molecule 17: KLLA0F04675p

Chain OO:  9% 46% 39% 6%



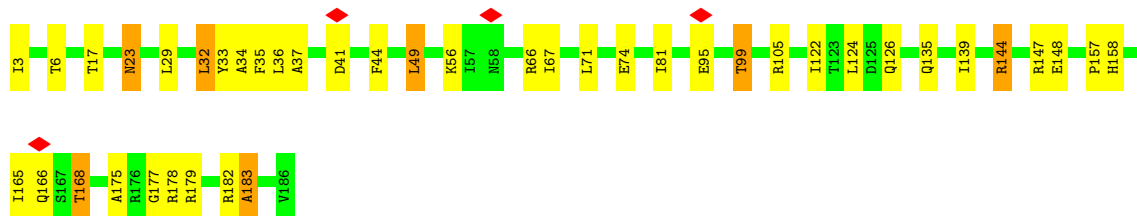
• Molecule 18: KLLA0A06336p

Chain PP:  9% 73% 22% 6%



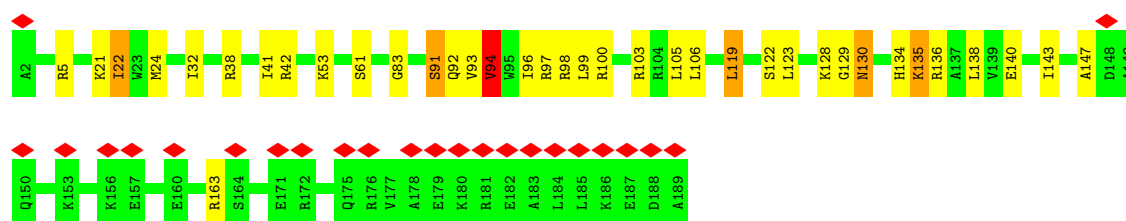
• Molecule 19: KLLA0A07227p

Chain QQ:  77% 19% .



• Molecule 20: KLLA0E12453p

Chain RR:  13% 80% 16% ..



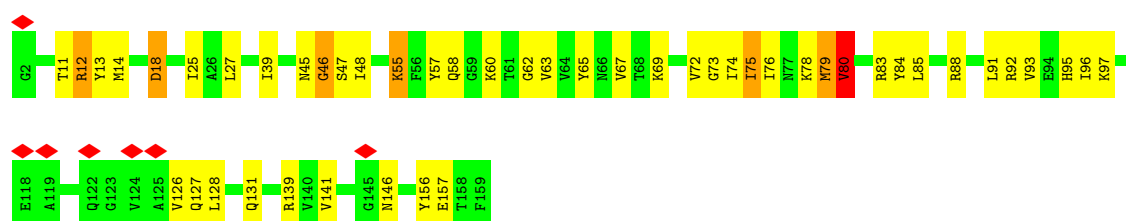
- Molecule 21: 60S ribosomal protein L20

Chain SS:  78% 21% .

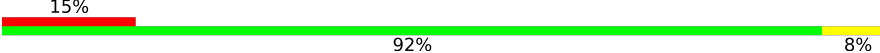


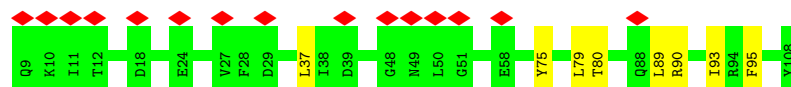
- Molecule 22: KLLA0E23651p

Chain TT:  70% 26% ..



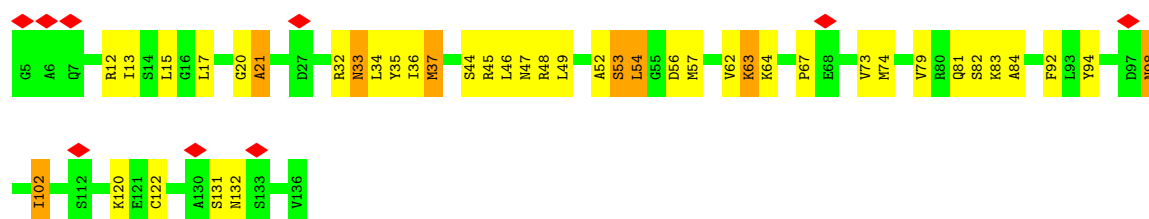
- Molecule 23: KLLA0D05181p

Chain UU:  15% 92% 8%

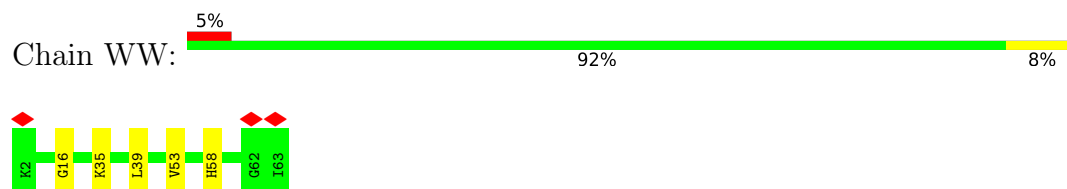


- Molecule 24: KLLA0E06997p

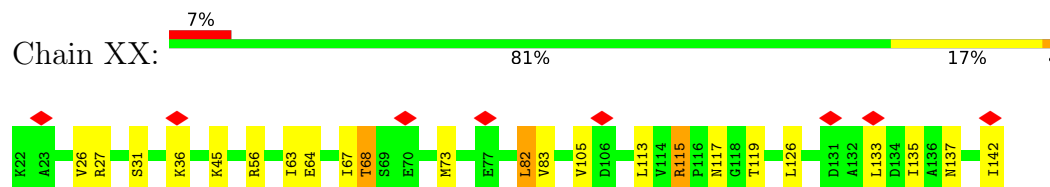
Chain VV:  7% 68% 26% 6%



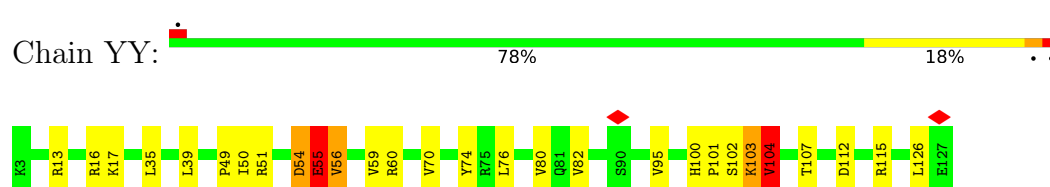
- Molecule 25: 60S ribosomal protein L24



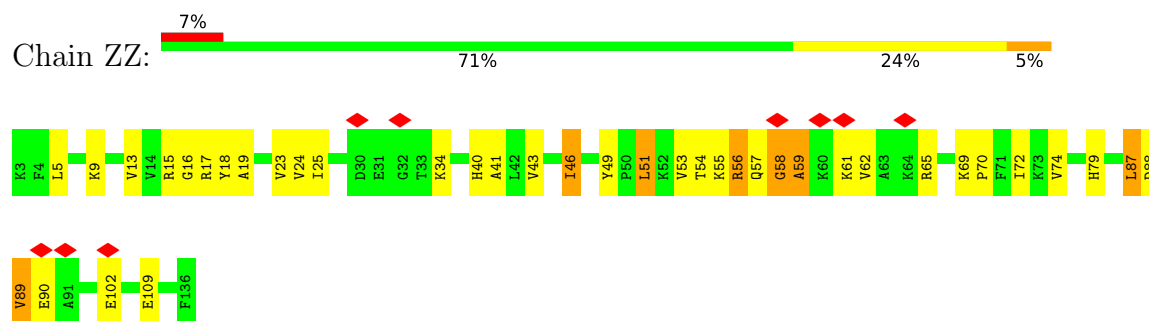
- Molecule 26: 60S ribosomal protein L25



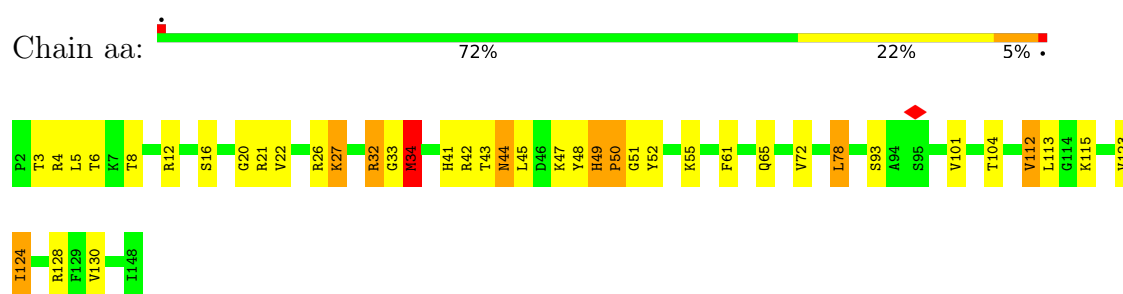
- Molecule 27: KLLA0B05742p



- Molecule 28: KLLA0E03455p



- Molecule 29: RPL28

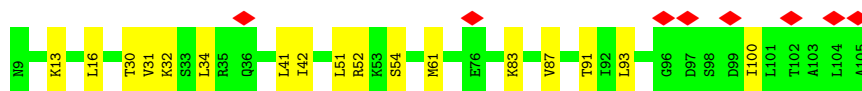
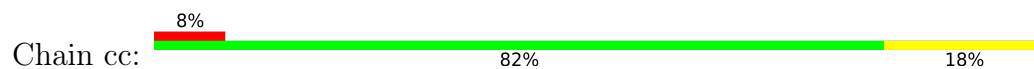


- Molecule 30: KLLA0D16071p

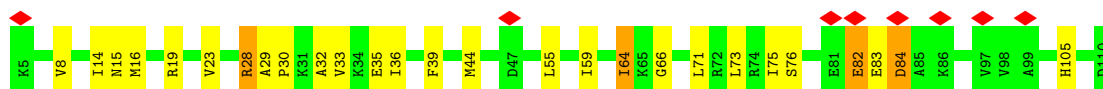
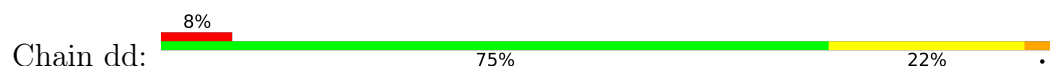




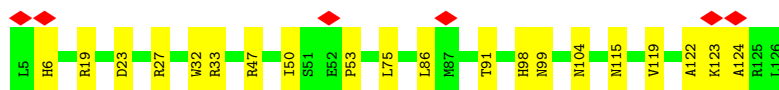
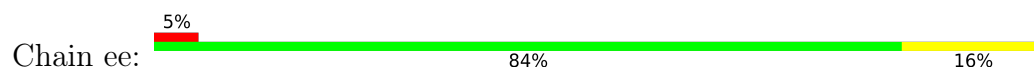
- Molecule 31: 60S ribosomal protein L30



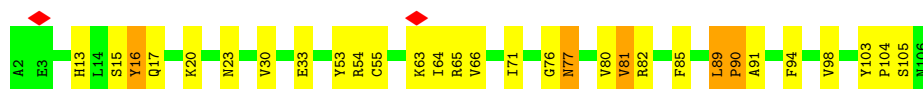
- Molecule 32: KLLA0B02937p



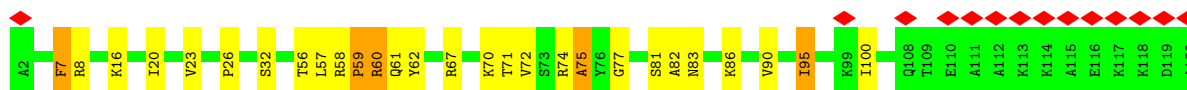
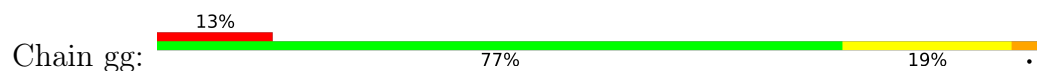
- Molecule 33: KLLA0E06843p



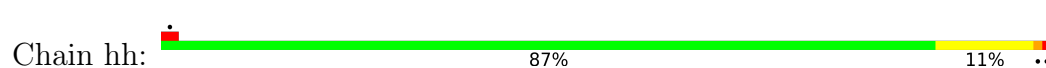
- Molecule 34: KLLA0D07405p

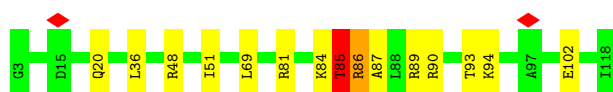


- Molecule 35: KLLA0C08371p

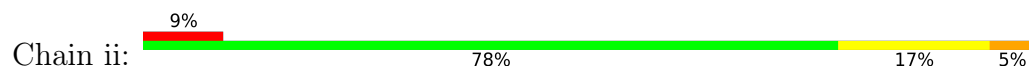


- Molecule 36: KLLA0F05247p

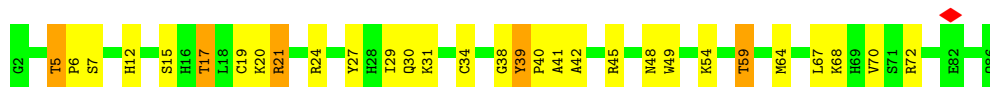




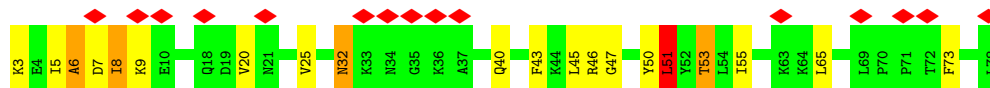
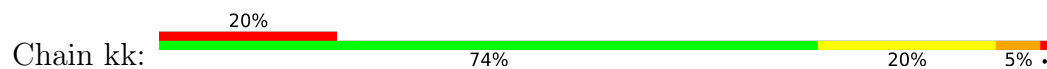
- Molecule 37: 60S ribosomal protein L36



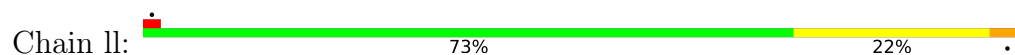
- Molecule 38: Ribosomal protein L37



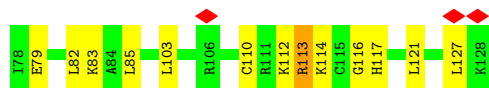
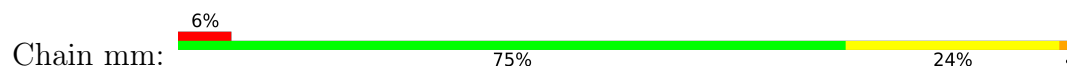
- Molecule 39: KLLA0C18216p



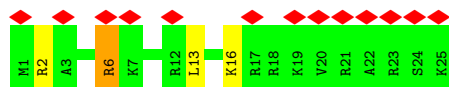
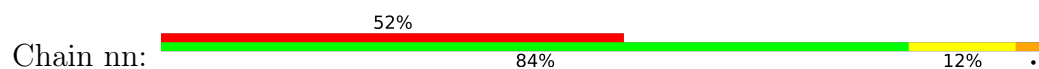
- Molecule 40: 60S ribosomal protein L39



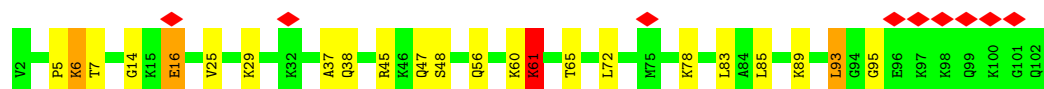
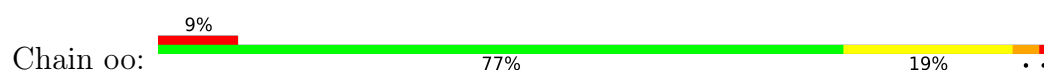
- Molecule 41: Ubiquitin fusion protein



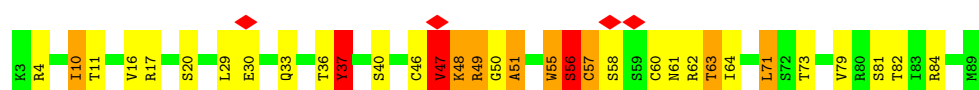
- Molecule 42: 60S ribosomal protein L41-A



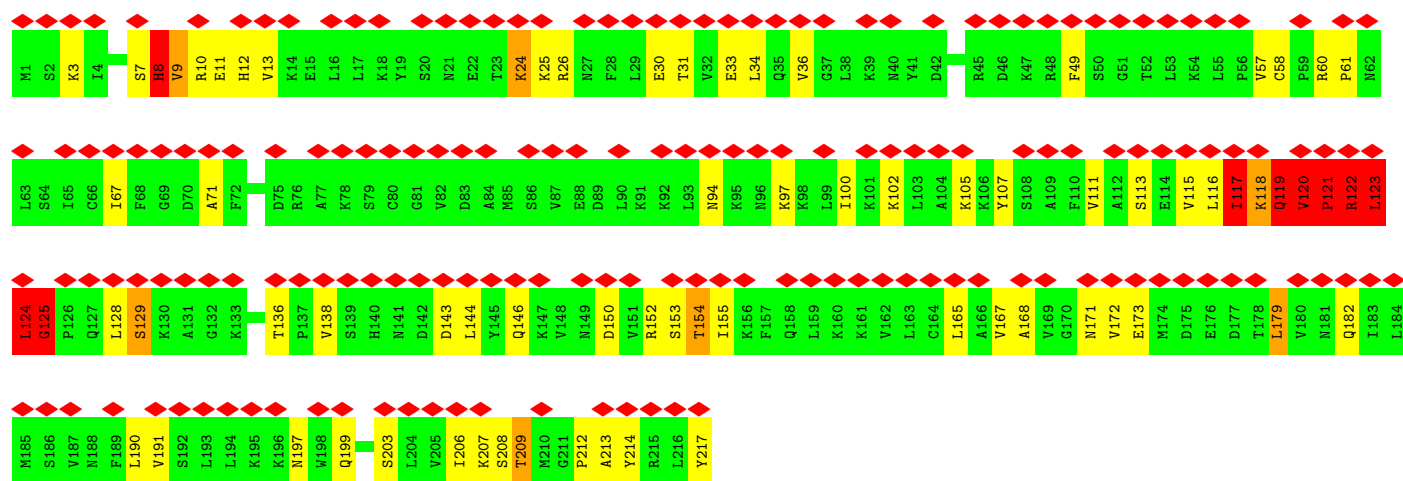
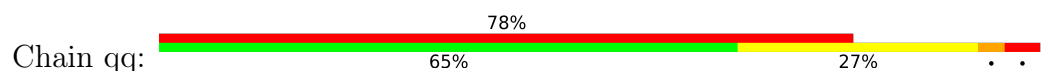
- Molecule 43: 60S ribosomal protein L44



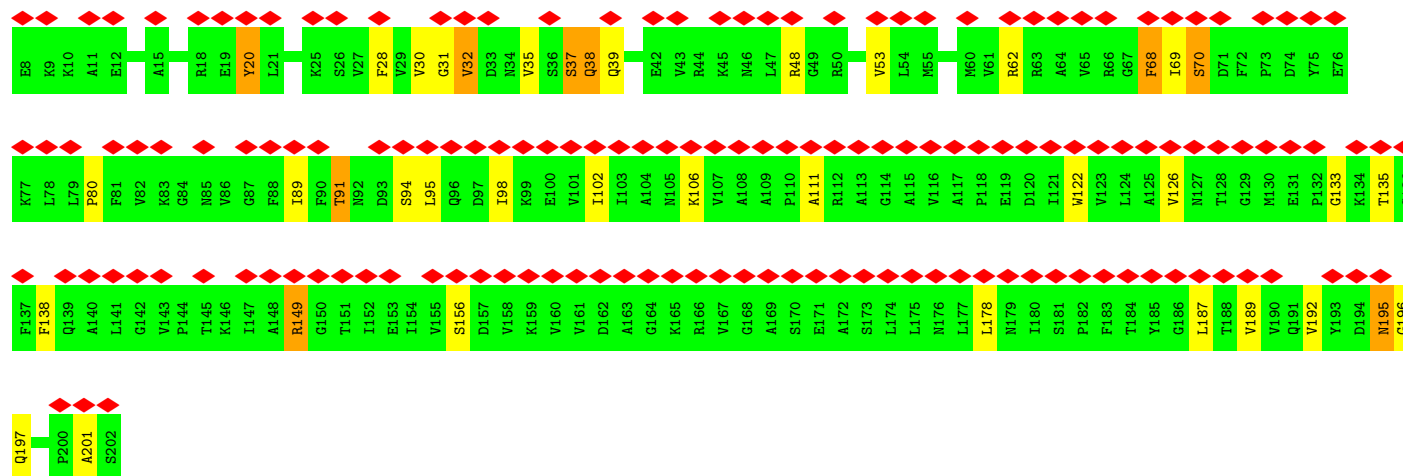
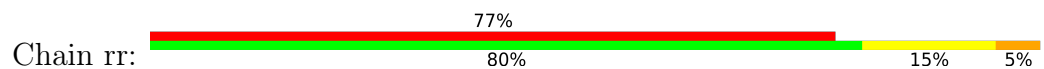
• Molecule 44: KLLA0E05941p



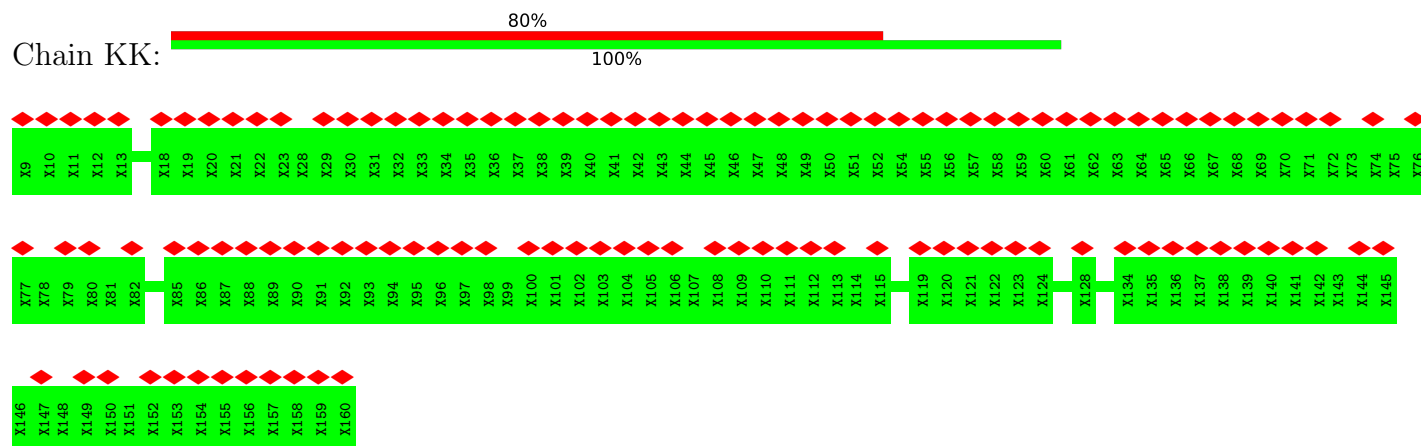
• Molecule 45: Ribosomal protein



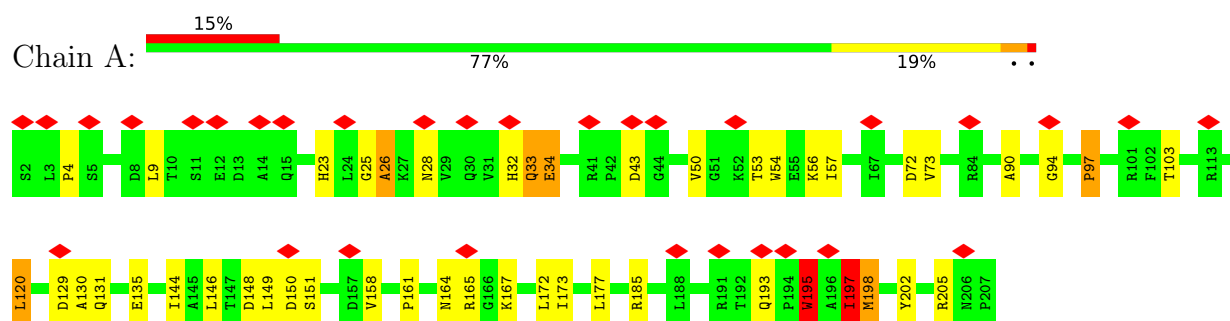
• Molecule 46: 60S acidic ribosomal protein P0



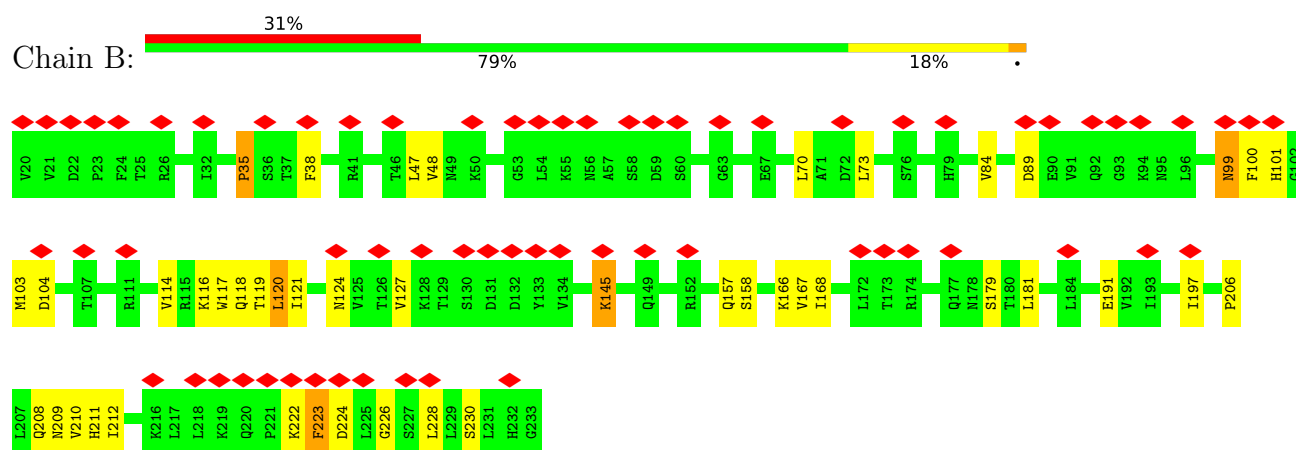
- Molecule 47: uL11



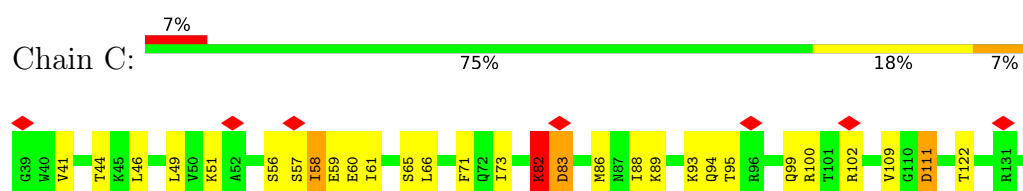
- Molecule 48: 40S ribosomal protein S0

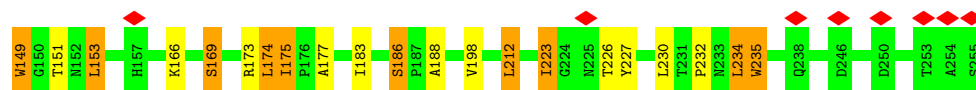


- Molecule 49: 40S ribosomal protein S1

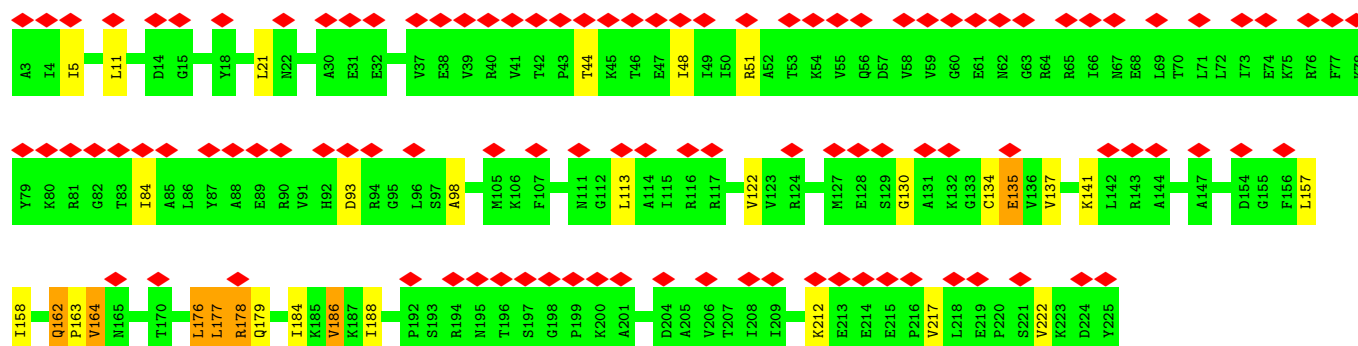
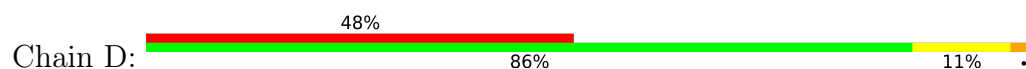


- Molecule 50: KLLA0F09812p

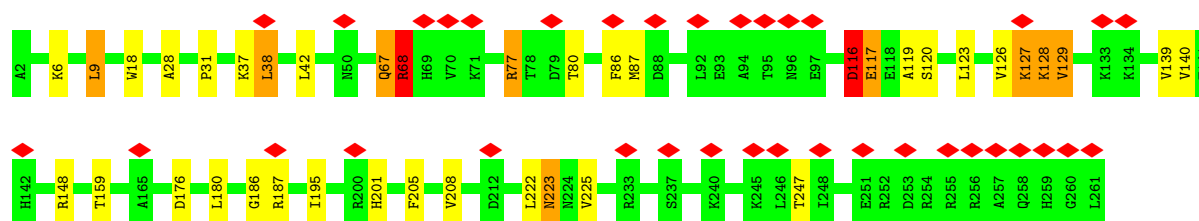
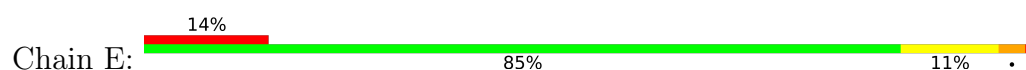




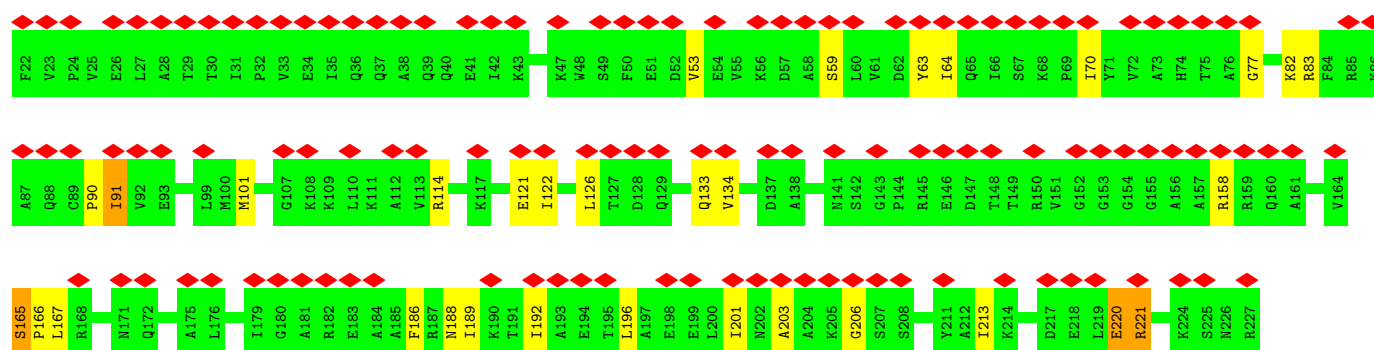
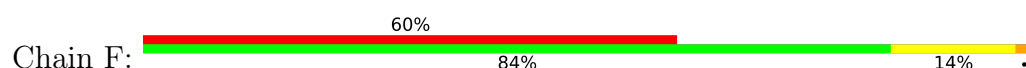
• Molecule 51: KLLA0D08305p



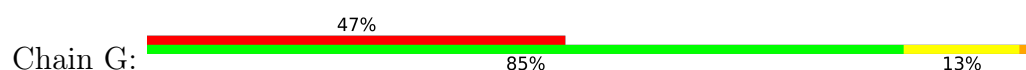
• Molecule 52: 40S ribosomal protein S4

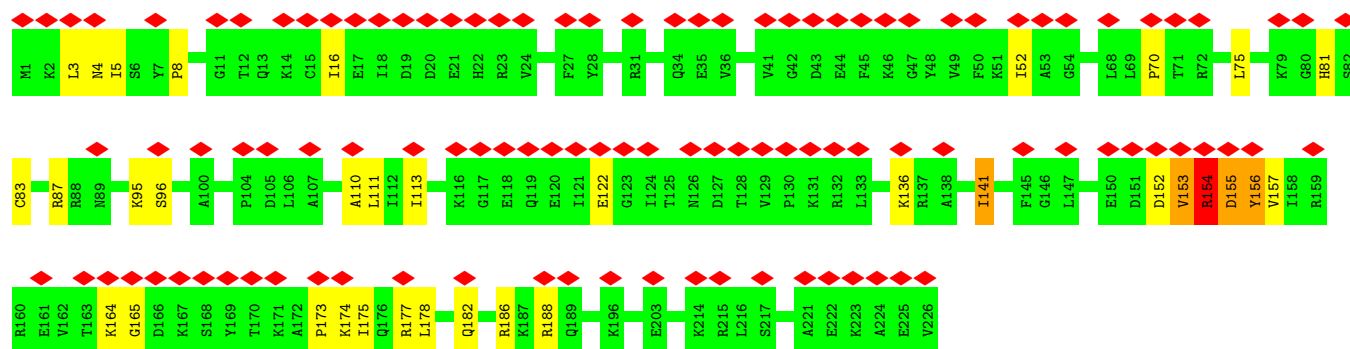


• Molecule 53: KLLA0D10659p

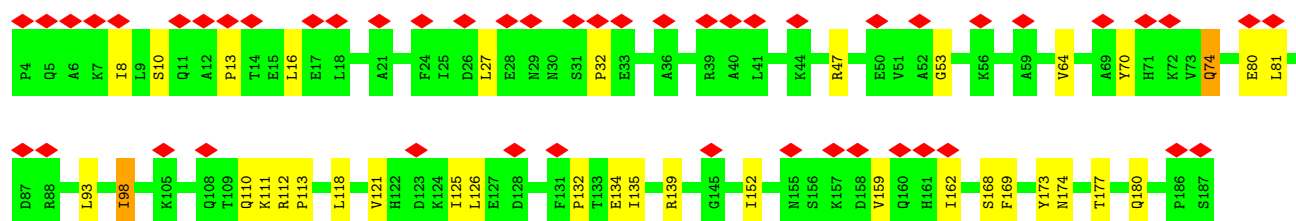
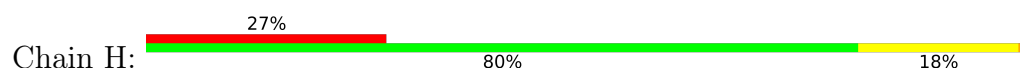


• Molecule 54: 40S ribosomal protein S6

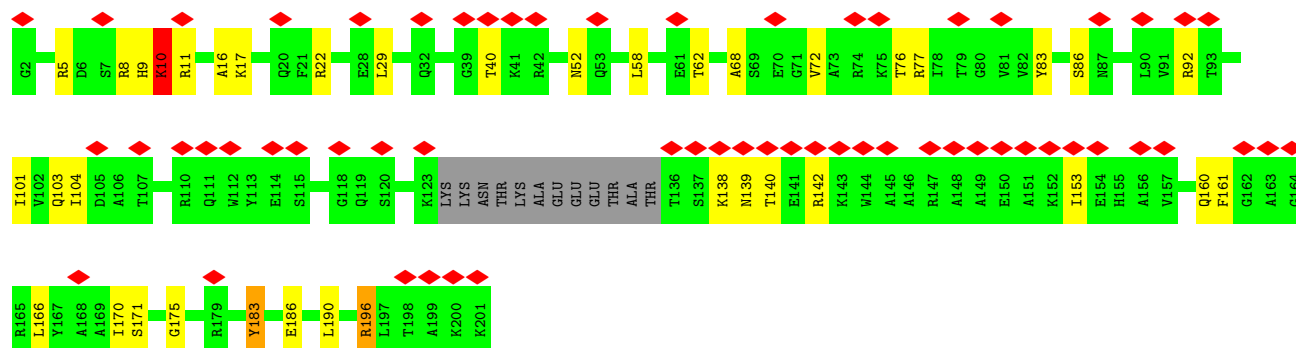
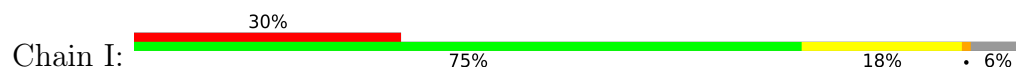




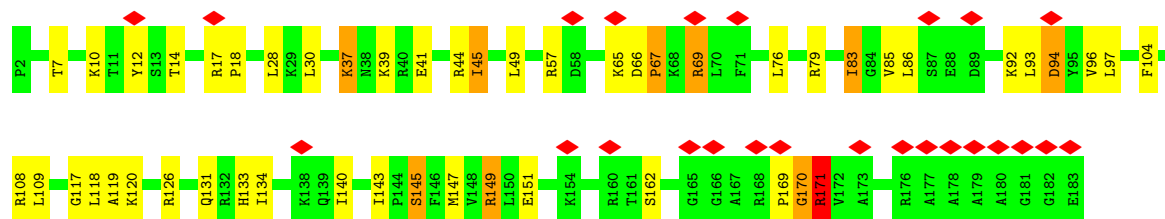
• Molecule 55: KLLA0C13519p



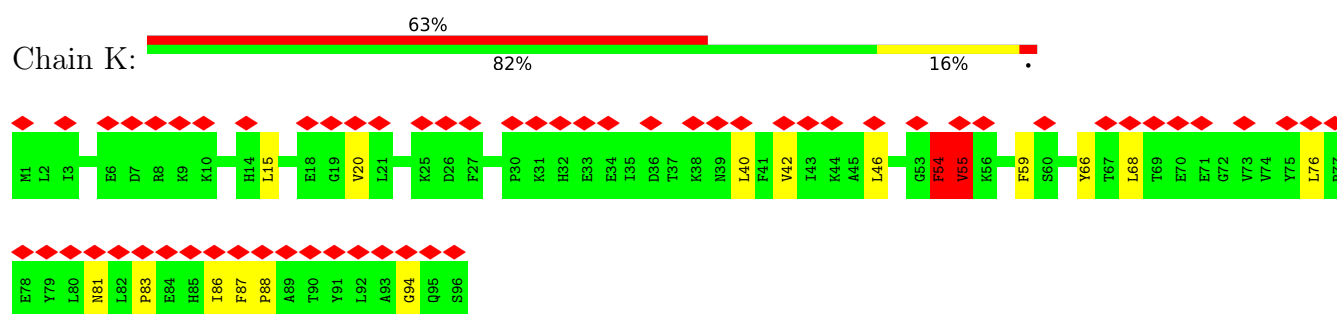
• Molecule 56: 40S ribosomal protein S8



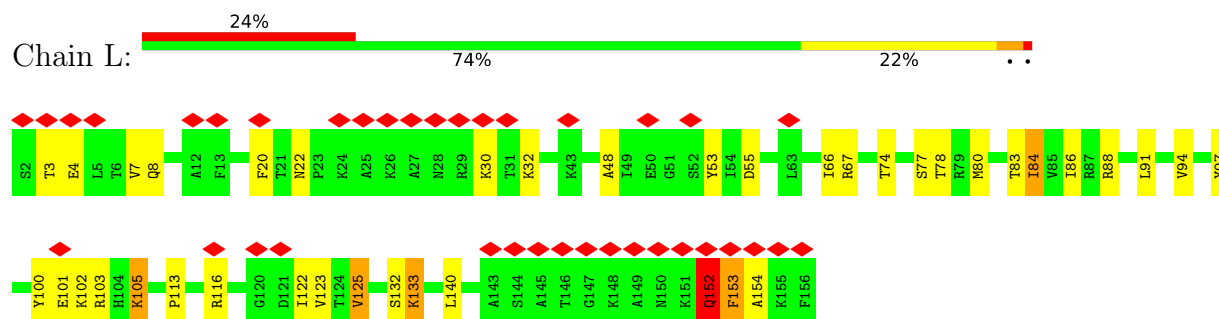
• Molecule 57: KLLA0E23673p



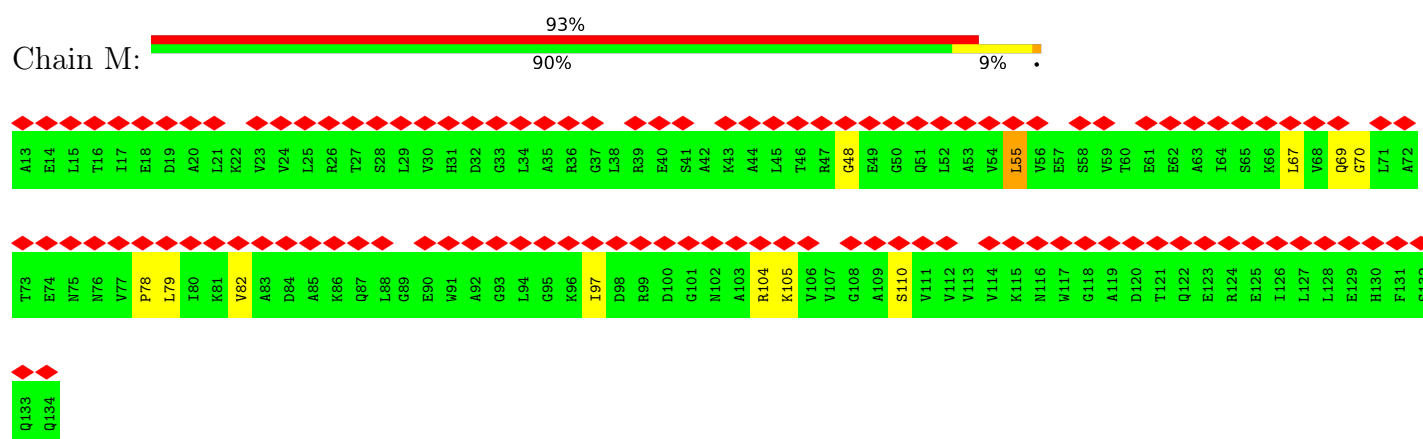
• Molecule 58: KLLA0B08173p



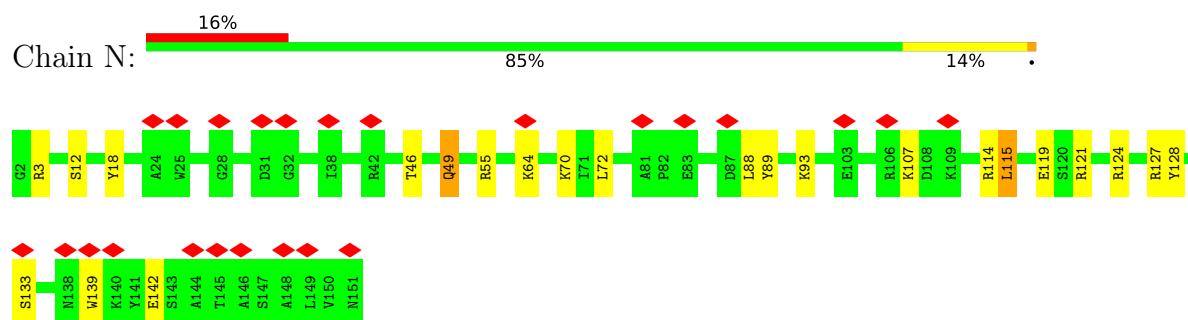
• Molecule 59: KLLA0A10483p



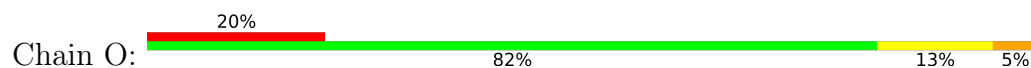
• Molecule 60: 40S ribosomal protein S12

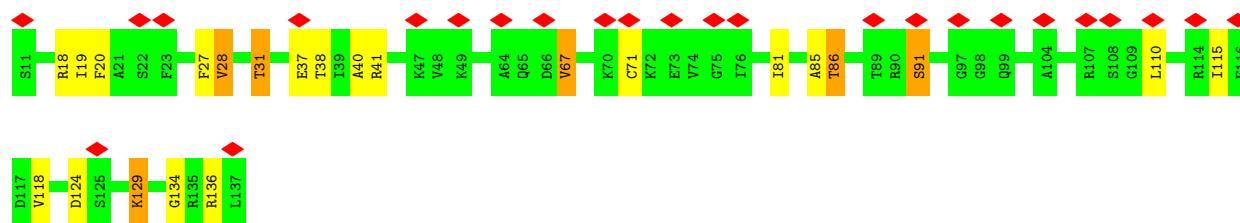


• Molecule 61: KLLA0F18040p

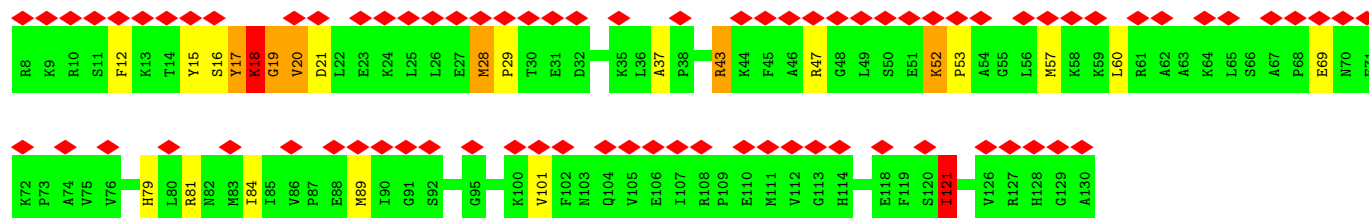
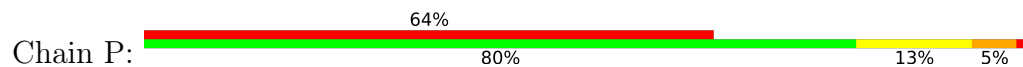


• Molecule 62: 40S ribosomal protein S14

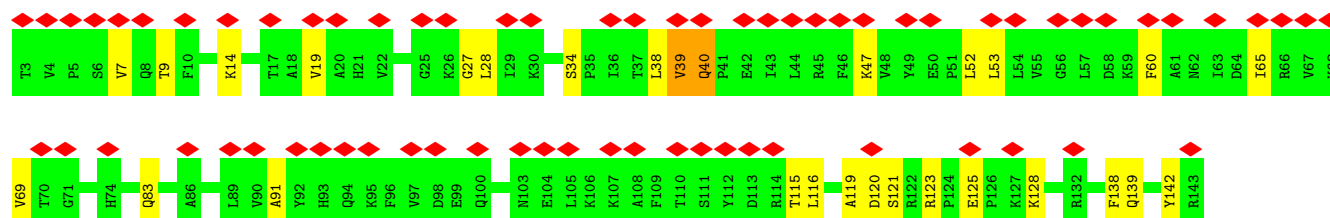
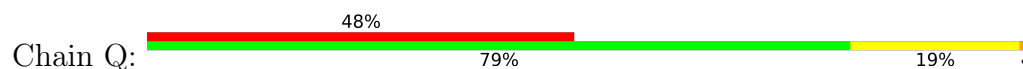




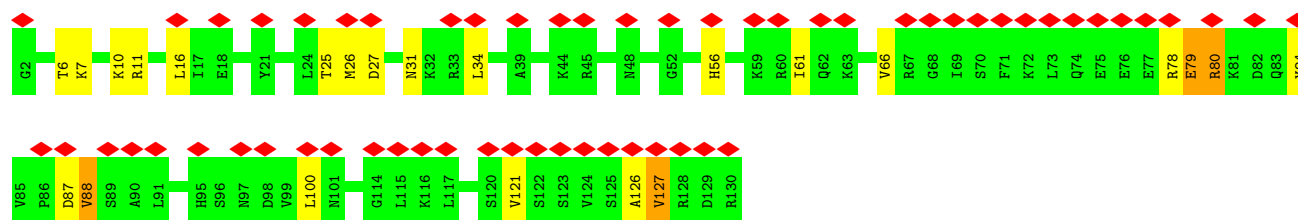
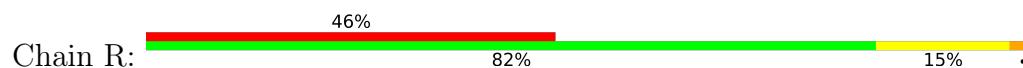
• Molecule 63: KLLA0F07843p



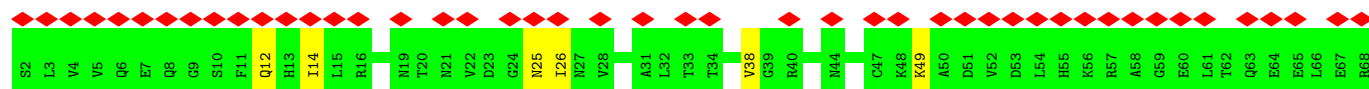
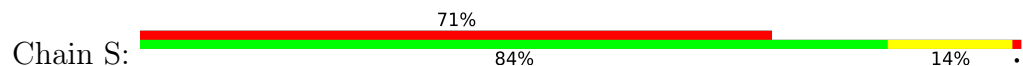
• Molecule 64: 40S ribosomal protein S16

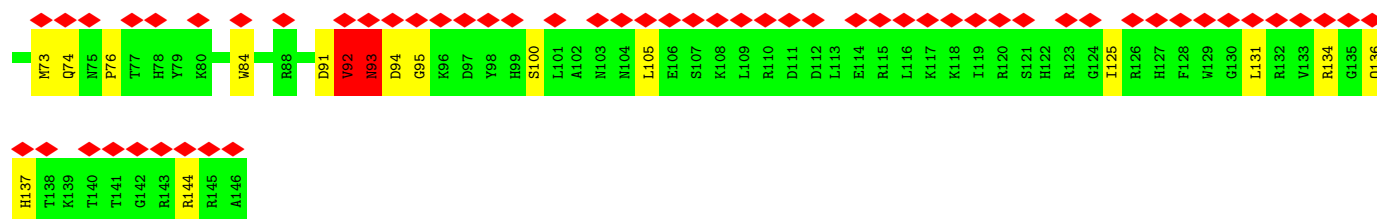


• Molecule 65: KLLA0B01474p

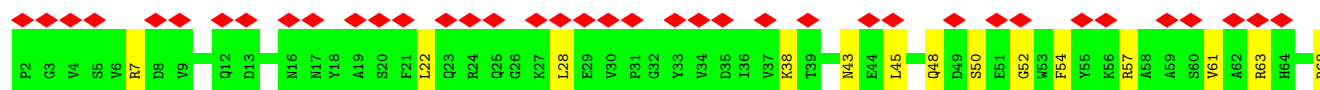
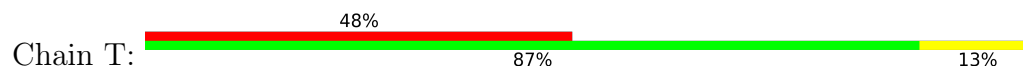


• Molecule 66: KLLA0B01562p

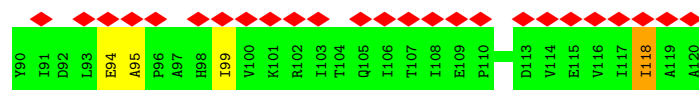
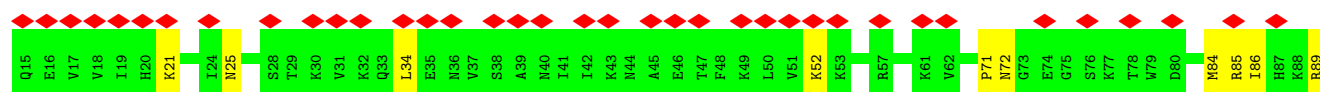
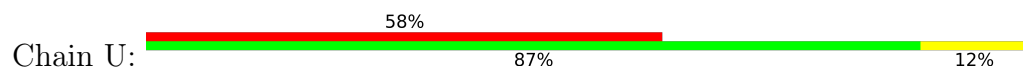




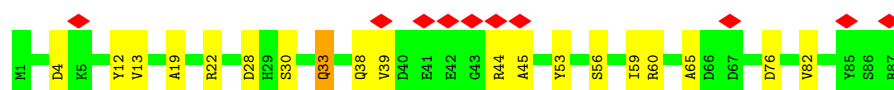
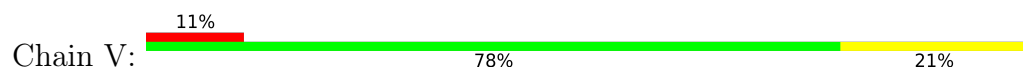
• Molecule 67: KLLA0A07194p



• Molecule 68: KLLA0F25542p



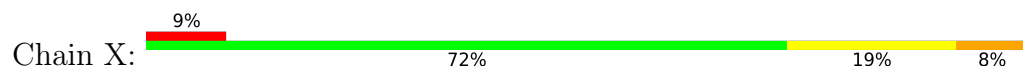
• Molecule 69: 40S ribosomal protein S21

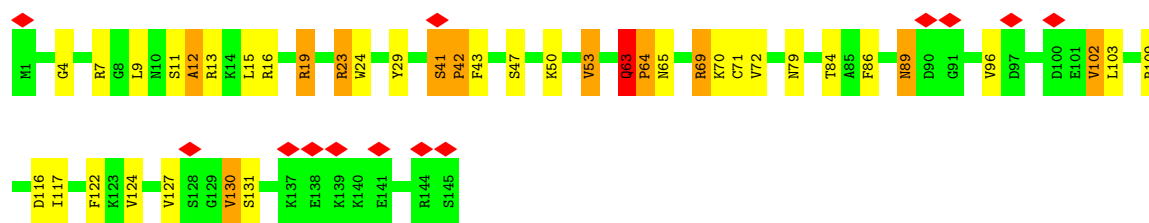


• Molecule 70: 40S ribosomal protein S22

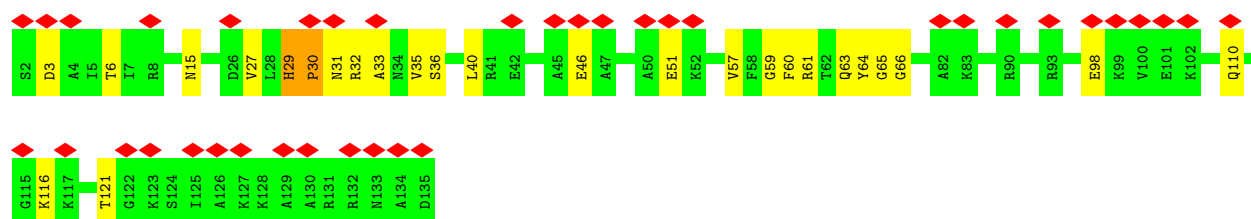
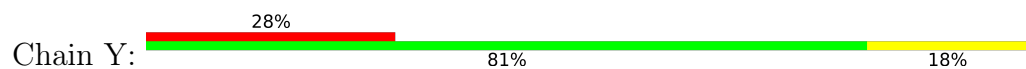


• Molecule 71: RPS23

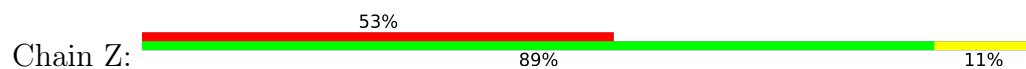




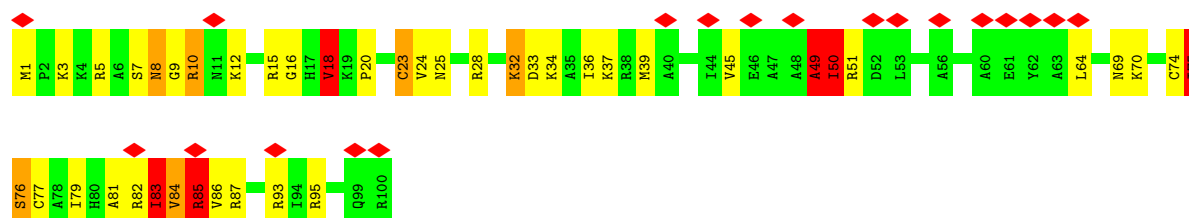
• Molecule 72: 40S ribosomal protein S24



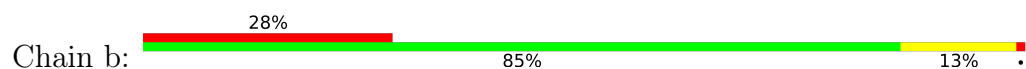
• Molecule 73: KLLA0B06182p



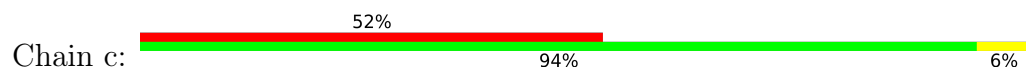
• Molecule 74: KLLA0D05115p

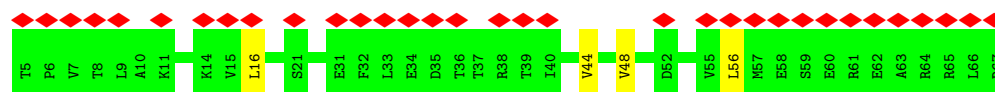


• Molecule 75: 40S ribosomal protein S27

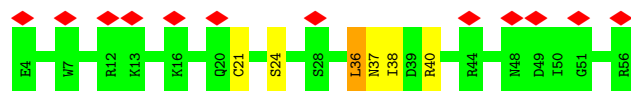
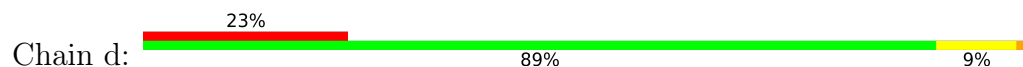


• Molecule 76: 40S ribosomal protein S28

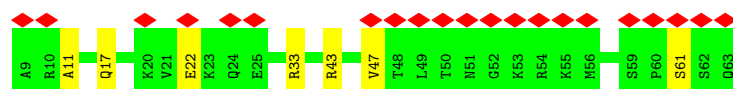
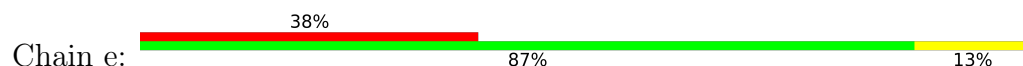




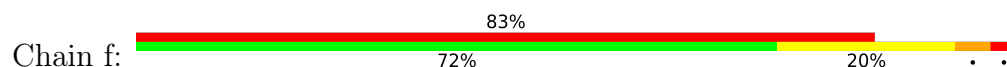
- Molecule 77: 40S ribosomal protein S29



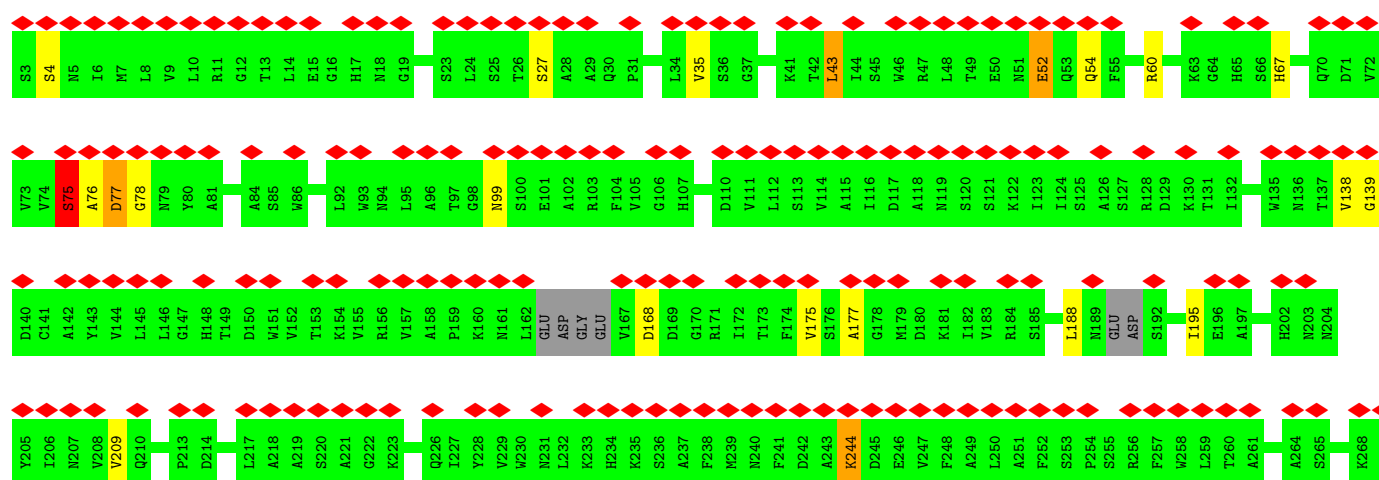
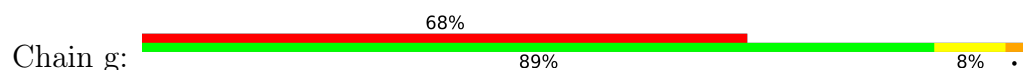
- Molecule 78: KLLA0C04809p

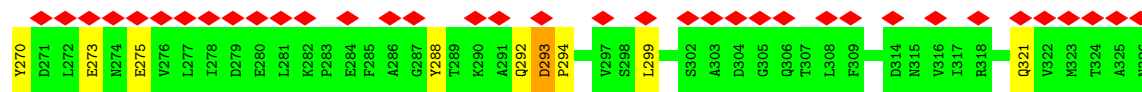


- Molecule 79: Ubiquitin-40S ribosomal protein S27a

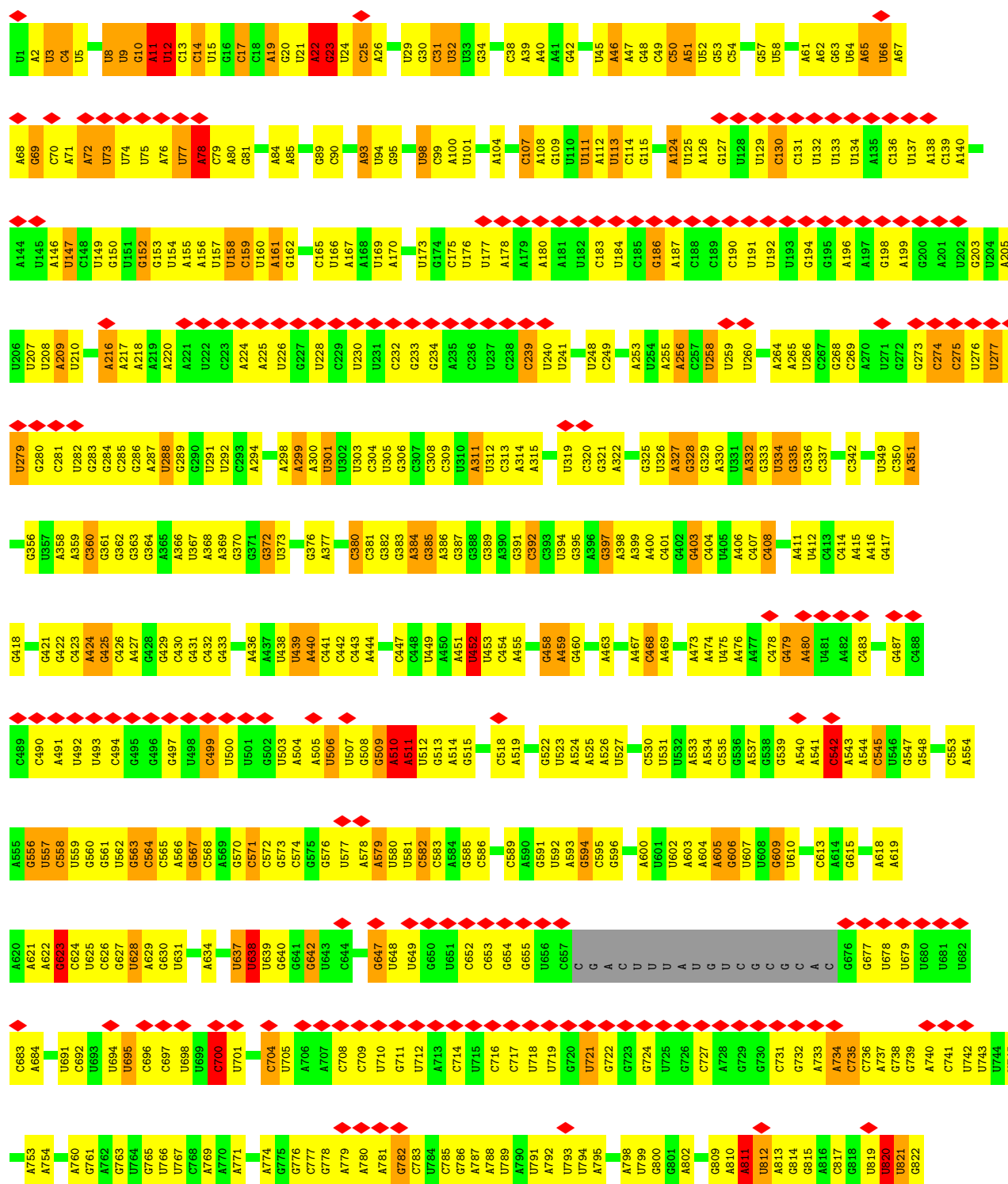


- Molecule 80: KLLA0E12277p

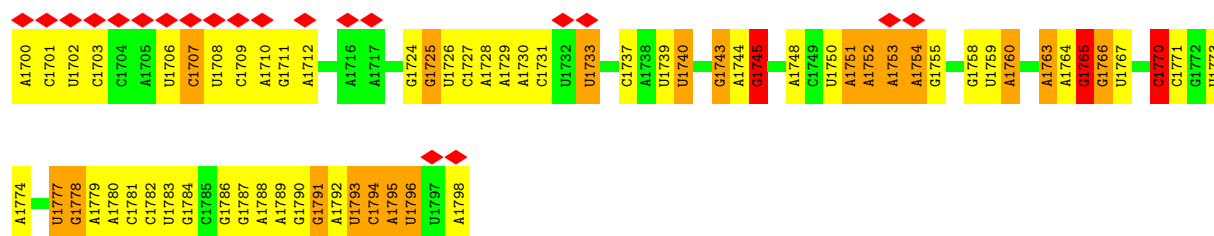




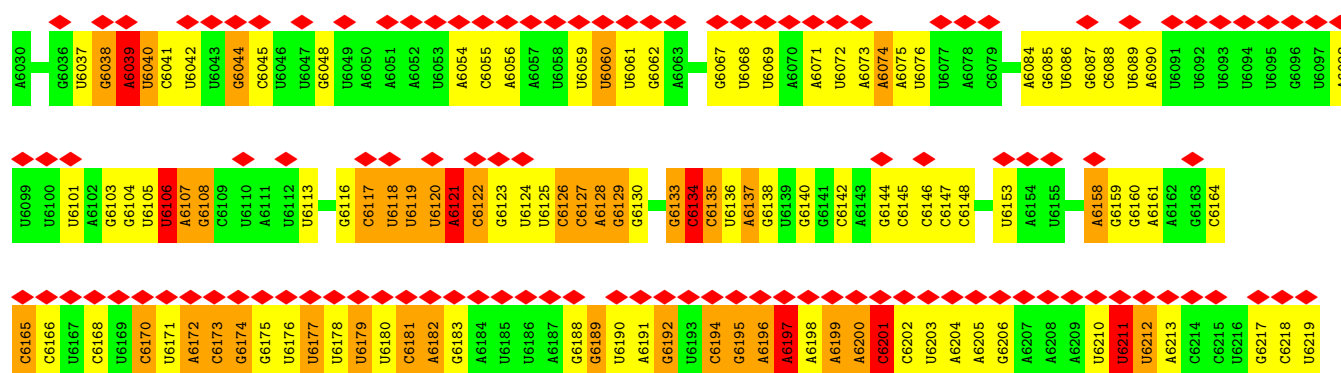
• Molecule 81: 18S ribosomal RNA



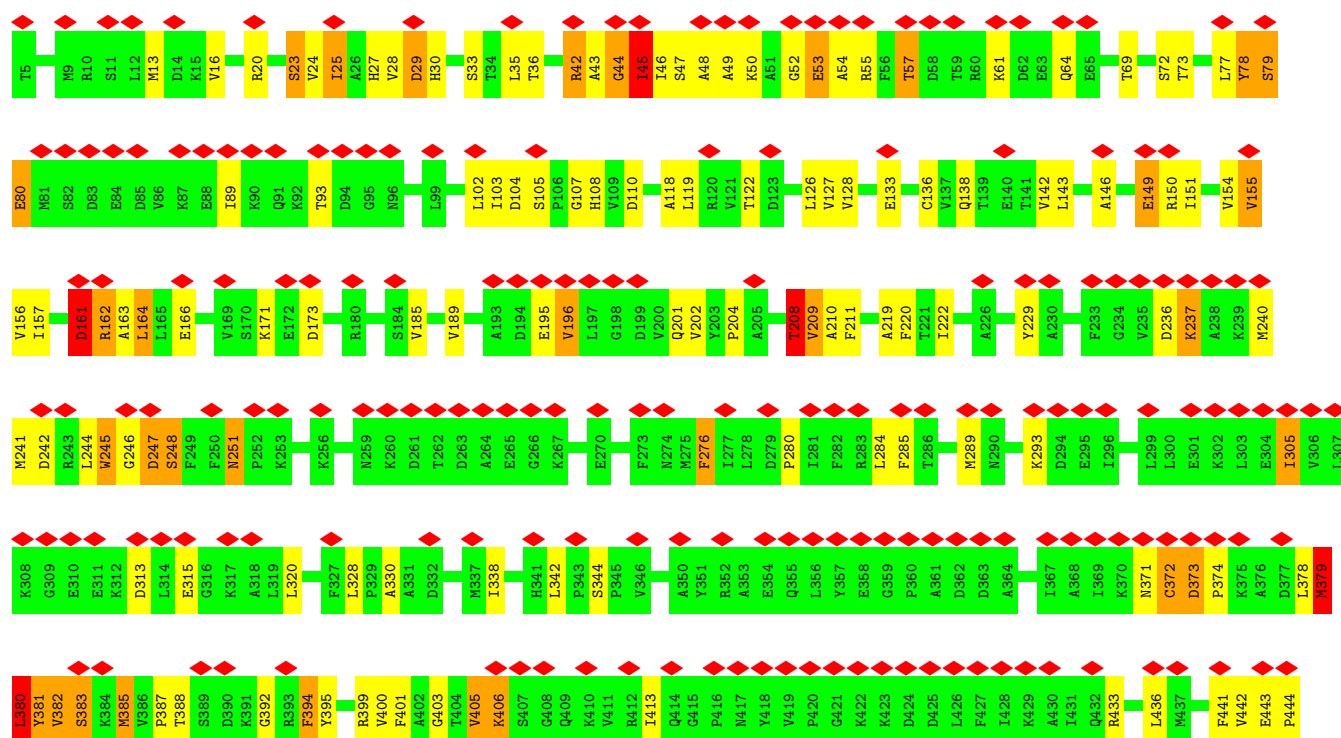
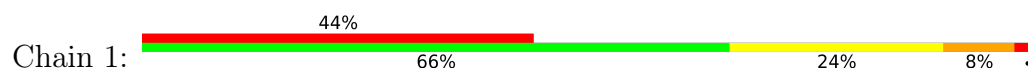


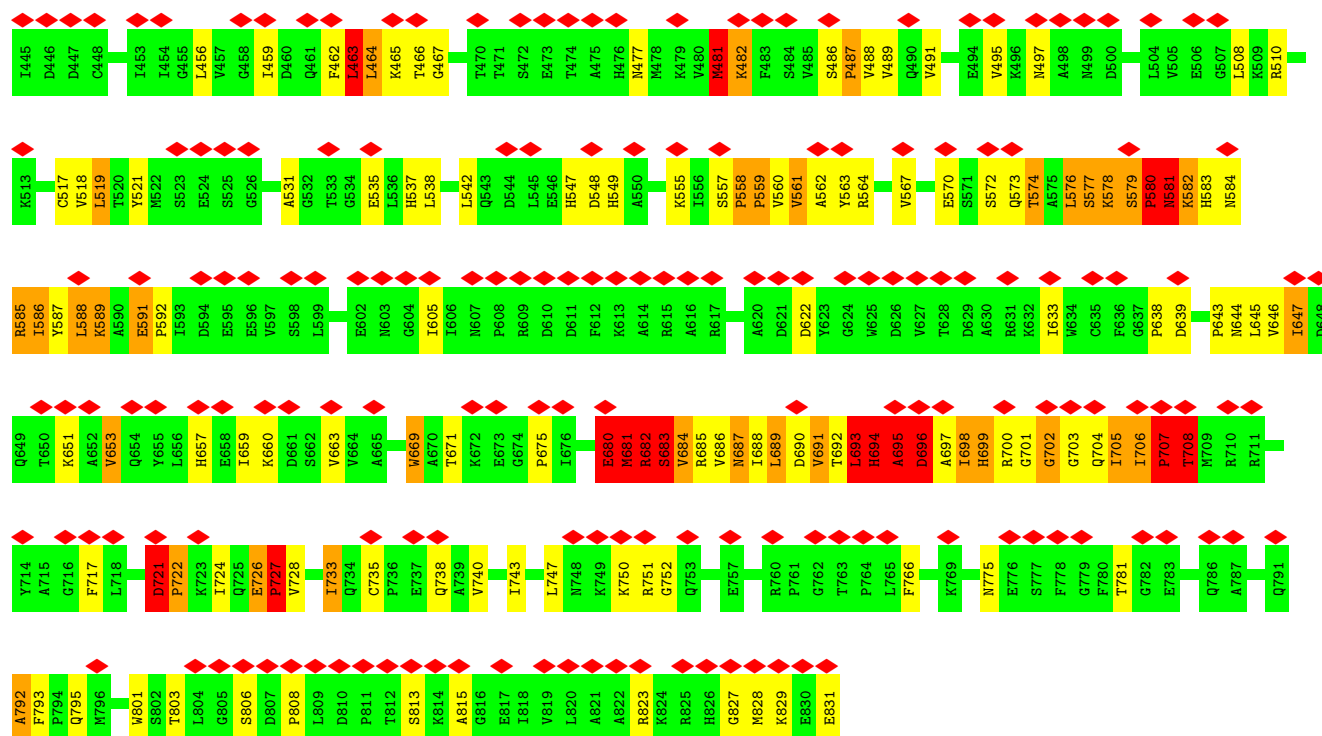


• Molecule 82: cricket paralysis virus IRES



• Molecule 83: Eft2p





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	37844	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.793	Depositor
Minimum map value	-0.578	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.044	Depositor
Recommended contour level	0.1	Depositor
Map size ($\text{\AA}$)	428.80002, 428.80002, 428.80002	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.34, 1.34, 1.34	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: GCP, 6EM, ZN, MG

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	5	0.49	4/78233 (0.0%)	0.94	323/121966 (0.3%)
2	7	0.44	0/2883	0.80	0/4491
3	8	0.47	0/3714	0.90	8/5781 (0.1%)
4	AA	0.85	0/1926	1.01	2/2588 (0.1%)
5	BB	0.81	1/3136 (0.0%)	1.01	4/4225 (0.1%)
6	CC	0.73	0/2780	1.06	7/3760 (0.2%)
7	DD	0.58	0/2436	0.85	2/3292 (0.1%)
8	EE	0.59	0/1322	1.00	5/1776 (0.3%)
9	FF	0.74	1/1810 (0.1%)	1.00	3/2440 (0.1%)
10	GG	0.60	0/1846	0.97	3/2486 (0.1%)
11	HH	0.58	0/1547	0.89	1/2083 (0.0%)
12	II	0.64	0/1725	0.86	0/2310
13	JJ	0.55	0/1370	0.84	0/1835
14	LL	0.65	0/1607	0.97	2/2156 (0.1%)
15	MM	0.61	0/1060	0.95	0/1430
16	NN	0.87	0/1746	0.99	3/2339 (0.1%)
17	OO	0.98	0/1602	1.14	13/2151 (0.6%)
18	PP	0.80	0/1455	0.94	0/1952
19	QQ	0.64	0/1469	0.94	0/1970
20	RR	0.66	0/1539	0.92	0/2047
21	SS	0.65	0/1452	0.88	1/1956 (0.1%)
22	TT	0.69	0/1286	0.92	1/1722 (0.1%)
23	UU	0.50	0/824	0.79	0/1113
24	VV	0.78	0/991	1.01	0/1331
25	WW	0.65	0/528	0.82	1/703 (0.1%)
26	XX	0.65	0/979	0.90	0/1320
27	YY	0.60	0/1003	0.95	1/1339 (0.1%)
28	ZZ	0.63	0/1114	0.99	1/1493 (0.1%)
29	aa	0.78	0/1186	1.02	3/1590 (0.2%)
30	bb	0.58	0/468	0.86	0/621
31	cc	0.61	0/748	0.84	0/1005
32	dd	0.63	0/885	0.82	0/1186

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	ee	0.75	0/998	0.90	0/1332
34	ff	0.89	1/855 (0.1%)	1.06	4/1150 (0.3%)
35	gg	0.71	0/961	0.98	1/1281 (0.1%)
36	hh	0.55	0/970	0.88	0/1291
37	ii	0.59	0/773	0.94	0/1029
38	jj	0.99	0/690	1.05	3/913 (0.3%)
39	kk	0.66	1/626 (0.2%)	1.06	0/835
40	ll	0.74	0/435	0.89	0/577
41	mm	0.65	0/416	0.84	0/552
42	nn	0.57	0/234	0.81	0/300
43	oo	0.60	0/825	0.97	3/1086 (0.3%)
44	pp	0.80	0/667	1.10	2/891 (0.2%)
45	qq	0.98	15/1748 (0.9%)	1.11	16/2350 (0.7%)
46	rr	0.61	0/1535	0.90	0/2077
48	A	0.56	0/1656	0.92	1/2264 (0.0%)
49	B	0.57	0/1747	0.87	1/2353 (0.0%)
50	C	0.61	0/1659	1.03	8/2252 (0.4%)
51	D	0.53	0/1769	0.81	0/2378
52	E	0.57	0/2122	0.93	6/2861 (0.2%)
53	F	0.55	0/1628	0.92	4/2198 (0.2%)
54	G	0.71	3/1835 (0.2%)	0.91	8/2451 (0.3%)
55	H	0.52	0/1507	0.85	0/2028
56	I	0.58	0/1519	0.89	2/2033 (0.1%)
57	J	0.73	3/1495 (0.2%)	0.99	7/2001 (0.3%)
58	K	0.55	0/831	0.89	3/1123 (0.3%)
59	L	0.58	0/1276	0.93	3/1718 (0.2%)
60	M	0.61	0/929	0.82	0/1255
61	N	0.56	0/1210	0.92	0/1628
62	O	0.61	0/953	0.94	1/1279 (0.1%)
63	P	0.75	4/1000 (0.4%)	0.97	6/1343 (0.4%)
64	Q	0.56	0/1125	0.84	0/1510
65	R	0.55	0/1042	0.96	1/1399 (0.1%)
66	S	0.66	2/1212 (0.2%)	0.89	2/1629 (0.1%)
67	T	0.53	0/1129	0.85	0/1520
68	U	0.56	0/857	0.81	0/1158
69	V	0.54	0/696	0.81	0/938
70	W	0.67	0/1039	0.99	2/1399 (0.1%)
71	X	0.64	0/1145	0.95	2/1526 (0.1%)
72	Y	0.53	0/1075	0.87	2/1433 (0.1%)
73	Z	0.60	0/567	0.81	0/762
74	a	0.70	0/810	1.08	5/1084 (0.5%)
75	b	0.51	0/627	0.78	0/847
76	c	0.55	0/496	0.73	0/666

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
77	d	0.47	0/457	0.74	0/607
78	e	0.49	0/450	0.74	0/599
79	f	0.66	0/562	0.84	1/751 (0.1%)
80	g	0.53	0/2521	0.72	0/3431
81	2	0.44	3/42269 (0.0%)	0.87	101/65862 (0.2%)
82	4	0.43	1/4407 (0.0%)	0.89	13/6849 (0.2%)
83	1	0.61	1/6540 (0.0%)	1.12	43/8853 (0.5%)
All	All	0.56	40/230565 (0.0%)	0.93	635/338109 (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	5	0	6
4	AA	0	2
5	BB	0	1
6	CC	0	3
7	DD	0	1
8	EE	0	3
9	FF	0	2
14	LL	0	1
21	SS	0	1
27	YY	0	1
28	ZZ	0	1
29	aa	0	1
34	ff	0	1
35	gg	0	2
44	pp	0	3
45	qq	0	3
46	rr	0	1
48	A	0	2
49	B	0	1
50	C	0	3
51	D	0	1
52	E	0	3
53	F	0	1
58	K	0	1
59	L	0	1
62	O	0	1
63	P	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
64	Q	0	1
65	R	0	2
69	V	0	1
70	W	0	2
71	X	0	1
74	a	0	4
79	f	0	2
80	g	0	1
83	l	0	16
All	All	0	78

All (40) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	2219	G	O3'-P	-13.33	1.41	1.61
54	G	154	ARG	CA-C	12.64	1.69	1.52
57	J	170	GLY	CA-C	12.54	1.69	1.51
45	qq	123	LEU	N-CA	12.52	1.62	1.46
45	qq	119	GLN	CA-C	12.18	1.69	1.52
45	qq	123	LEU	CA-C	9.38	1.65	1.52
81	2	511	A	O5'-C5'	9.18	1.56	1.42
45	qq	120	VAL	CA-CB	8.69	1.65	1.54
45	qq	120	VAL	N-CA	8.47	1.56	1.46
57	J	170	GLY	N-CA	8.44	1.57	1.45
83	l	585	ARG	N-CA	-8.22	1.35	1.46
54	G	154	ARG	N-CA	8.19	1.56	1.46
81	2	510	A	O3'-P	7.80	1.72	1.61
54	G	155	ASP	N-CA	7.74	1.54	1.46
45	qq	118	LYS	CA-C	7.64	1.63	1.52
66	S	93	ASN	N-CA	7.51	1.55	1.46
1	5	2219	G	C3'-O3'	-7.34	1.32	1.43
57	J	171	ARG	N-CA	7.06	1.55	1.46
45	qq	122	ARG	CA-C	7.05	1.61	1.52
63	P	18	LYS	CA-C	7.00	1.61	1.53
45	qq	119	GLN	N-CA	6.92	1.55	1.46
45	qq	124	LEU	N-CA	6.88	1.55	1.46
63	P	20	VAL	N-CA	6.84	1.54	1.46
45	qq	119	GLN	C-N	6.74	1.41	1.33
45	qq	118	LYS	N-CA	6.66	1.54	1.46
9	FF	131	VAL	CA-C	-6.54	1.45	1.52
1	5	2239	A	O3'-P	-6.29	1.51	1.61
45	qq	121	PRO	CA-C	6.04	1.60	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	qq	117	ILE	CA-C	6.04	1.60	1.52
63	P	19	GLY	N-CA	6.01	1.54	1.45
82	4	6040	U	O5'-C5'	5.86	1.51	1.42
45	qq	124	LEU	CA-C	5.76	1.60	1.52
66	S	93	ASN	CA-C	5.72	1.60	1.52
5	BB	218	VAL	CA-C	-5.65	1.45	1.52
63	P	20	VAL	CA-C	5.59	1.59	1.52
45	qq	122	ARG	C-O	-5.45	1.16	1.24
81	2	78	A	O5'-C5'	5.39	1.50	1.42
39	kk	50	TYR	CA-C	-5.26	1.50	1.53
34	ff	16	TYR	N-CA	-5.16	1.40	1.45
1	5	627	C	O3'-P	-5.09	1.53	1.61

All (635) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
83	1	581	ASN	N-CA-CB	20.18	144.59	110.49
1	5	2218	G	C1'-C2'-O2'	14.74	133.92	111.80
83	1	580	PRO	N-CA-C	12.78	138.81	112.47
82	4	6121	A	C4'-C3'-O3'	12.42	131.63	113.00
81	2	931	U	C2'-C3'-O3'	-12.10	91.35	109.50
1	5	1452	A	C2'-C3'-O3'	-11.87	95.90	113.70
8	EE	114	ARG	N-CA-C	11.61	128.52	109.02
81	2	511	A	P-O5'-C5'	11.45	138.07	120.90
1	5	297	G	C2'-C3'-O3'	11.36	126.53	109.50
1	5	65	A	C2'-C3'-O3'	10.78	125.67	109.50
53	F	220	GLU	N-CA-C	10.62	127.21	114.04
83	1	581	ASN	N-CA-C	-10.49	88.46	110.80
81	2	1628	U	C4'-C3'-O3'	10.49	128.73	113.00
65	R	79	GLU	N-CA-C	-10.37	99.13	112.93
82	4	6121	A	C2'-C3'-O3'	-10.28	98.28	113.70
81	2	78	A	C4'-C3'-O3'	10.27	128.41	113.00
1	5	2285	G	C2'-C3'-O3'	-10.22	98.37	113.70
6	CC	348	LYS	N-CA-C	10.19	125.50	108.90
83	1	373	ASP	CA-C-N	9.98	132.31	119.84
83	1	373	ASP	C-N-CA	9.98	132.31	119.84
83	1	373	ASP	N-CA-C	9.86	122.16	109.64
10	GG	125	SER	CA-C-N	9.75	132.03	119.84
10	GG	125	SER	C-N-CA	9.75	132.03	119.84
45	qq	122	ARG	N-CA-C	9.61	128.02	113.61
74	a	50	ILE	N-CA-C	-9.47	101.54	111.58
1	5	2049	G	N9-C1'-C2'	-9.45	97.83	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2922	U	C2'-C3'-O3'	9.29	123.43	109.50
45	qq	120	VAL	CA-C-N	-9.27	108.25	119.84
45	qq	120	VAL	C-N-CA	-9.27	108.25	119.84
17	OO	109[A]	VAL	N-CA-C	9.27	118.29	107.73
1	5	298	U	C2'-C3'-O3'	9.23	123.35	109.50
1	5	2050	A	C4'-C3'-O3'	-9.21	95.59	109.40
81	2	1534	G	C2'-C3'-O3'	9.19	123.29	109.50
17	OO	109[A]	VAL	CA-C-N	9.16	129.82	120.38
17	OO	109[A]	VAL	C-N-CA	9.16	129.82	120.38
1	5	924	G	C2'-C3'-O3'	-9.15	99.97	113.70
1	5	2235	U	C1'-C2'-O2'	-9.06	98.21	111.80
1	5	2049	G	C4'-C3'-O3'	9.04	126.56	113.00
1	5	3207	G	C2'-C3'-O3'	8.96	127.15	113.70
1	5	844	C	C2'-C3'-O3'	-8.86	100.41	113.70
1	5	1113	G	C4'-C3'-O3'	-8.81	99.79	113.00
1	5	2561	A	C4'-C3'-O3'	8.79	122.59	109.40
81	2	963	U	C2'-C3'-O3'	8.79	122.68	109.50
1	5	2630	G	C2'-C3'-O3'	8.77	126.85	113.70
1	5	1864	A	C4'-C3'-O3'	-8.76	99.86	113.00
81	2	704	C	C4'-C3'-O3'	8.74	122.51	109.40
63	P	16	SER	N-CA-C	8.74	120.20	107.88
4	AA	207	VAL	CB-CA-C	-8.71	100.81	111.97
58	K	55	VAL	N-CA-C	-8.71	95.03	107.75
1	5	596	U	C2'-C3'-O3'	8.69	126.73	113.70
83	1	161	ASP	N-CA-C	8.68	124.54	112.04
81	2	828	A	C2'-C3'-O3'	8.65	122.47	109.50
1	5	2107	A	C4'-C3'-O3'	8.57	122.26	109.40
1	5	1420	A	C2'-C3'-O3'	-8.52	100.92	113.70
3	8	8	C	C2'-C3'-O3'	-8.49	100.96	113.70
1	5	28	C	C4'-C3'-O3'	-8.46	100.31	113.00
83	1	381	TYR	N-CA-C	8.46	128.82	110.80
1	5	1600	C	C2'-C3'-O3'	8.43	122.15	109.50
83	1	380	LEU	N-CA-C	8.39	128.68	110.80
1	5	1693	U	C4'-C3'-O3'	8.38	121.97	109.40
1	5	3243	U	C1'-C2'-O2'	-8.35	99.28	111.80
1	5	1278	G	C2'-C3'-O3'	8.30	121.95	109.50
16	NN	121	ILE	CB-CA-C	-8.27	103.58	111.44
1	5	2908	A	C4'-C3'-O3'	-8.26	100.60	113.00
82	4	6039	A	C4'-C3'-O3'	8.22	125.33	113.00
1	5	987	C	C2'-C3'-O3'	8.21	121.81	109.50
81	2	279	U	C2'-C3'-O3'	8.20	121.80	109.50
1	5	3056	G	C2'-C3'-O3'	-8.16	101.46	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1196	A	C2'-C3'-O3'	8.11	125.86	113.70
1	5	2329	C	C2'-C3'-O3'	-8.05	101.62	113.70
1	5	2359	A	C4'-C3'-O3'	-8.01	100.98	113.00
81	2	623	G	C2'-C3'-O3'	-7.96	101.76	113.70
7	DD	28	THR	N-CA-C	7.90	121.08	109.07
1	5	2455	A	C2'-C3'-O3'	7.89	121.33	109.50
81	2	239	C	C4'-C3'-O3'	7.88	121.21	109.40
1	5	403	C	C2'-C3'-O3'	-7.86	101.91	113.70
8	EE	65	GLY	CA-C-N	7.84	129.64	119.84
8	EE	65	GLY	C-N-CA	7.84	129.64	119.84
28	ZZ	58	GLY	N-CA-C	7.83	121.50	111.09
1	5	1808	A	C4'-C3'-O3'	-7.82	101.27	113.00
1	5	2417	G	C2'-C3'-O3'	7.77	121.15	109.50
1	5	1122	U	C2'-C3'-O3'	-7.71	102.13	113.70
7	DD	148	VAL	N-CA-C	-7.71	103.72	110.74
1	5	2322	G	C1'-C2'-O2'	7.71	119.96	108.40
1	5	2377	U	C4'-C3'-O3'	-7.66	101.51	113.00
71	X	41	SER	CA-C-N	7.66	129.41	119.84
71	X	41	SER	C-N-CA	7.66	129.41	119.84
1	5	3163	U	C4'-C3'-O3'	7.64	120.86	109.40
82	4	6165	C	C2'-C3'-O3'	7.61	120.91	109.50
81	2	299	A	C4'-C3'-O3'	-7.57	101.64	113.00
1	5	1827	A	C4'-C3'-O3'	7.56	120.75	109.40
83	1	149	GLU	N-CA-C	7.55	119.41	111.03
81	2	23	G	N9-C1'-C2'	-7.53	100.70	112.00
1	5	2604	A	C4'-C3'-O3'	-7.53	101.70	113.00
1	5	998	A	C4'-C3'-O3'	7.52	120.68	109.40
1	5	2099	G	C1'-C2'-O2'	7.52	119.68	108.40
1	5	1065	U	C4'-C3'-O3'	7.51	120.67	109.40
81	2	78	A	C2'-C3'-O3'	-7.51	102.44	113.70
50	C	174	LEU	CA-C-N	7.49	135.18	121.70
50	C	174	LEU	C-N-CA	7.49	135.18	121.70
1	5	2277	C	C2'-C3'-O3'	-7.49	102.47	113.70
1	5	1086	G	C4'-C3'-O3'	-7.49	101.77	113.00
81	2	113	U	C4'-C3'-O3'	-7.49	101.77	113.00
81	2	22	A	C1'-C2'-O2'	-7.48	97.18	108.40
17	OO	58[A]	TYR	N-CA-C	-7.47	103.16	112.72
1	5	2784	G	C2'-C3'-O3'	-7.47	98.30	109.50
1	5	1145	G	C4'-C3'-O3'	-7.47	101.80	113.00
1	5	2105	C	C1'-C2'-O2'	7.46	119.60	108.40
63	P	20	VAL	N-CA-C	7.43	124.80	109.34
34	ff	90	PRO	N-CA-C	7.42	123.30	113.57

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
45	qq	8	HIS	N-CA-C	7.40	119.43	111.36
57	J	169	PRO	N-CA-C	7.38	123.23	113.57
1	5	626	A	C4'-C3'-O3'	-7.37	101.95	113.00
1	5	2238	U	C4'-C3'-O3'	7.36	124.04	113.00
1	5	1448	A	C4'-C3'-O3'	-7.34	101.99	113.00
1	5	604	U	C1'-C2'-O2'	7.33	119.39	108.40
1	5	2667	G	C3'-C2'-O2'	7.32	121.69	110.70
1	5	1209	C	C2'-C3'-O3'	7.32	124.68	113.70
83	1	585	ARG	CA-C-N	7.31	135.13	121.97
83	1	585	ARG	C-N-CA	7.31	135.13	121.97
1	5	957	U	N1-C1'-C2'	7.29	122.94	112.00
83	1	208	THR	CA-C-N	7.28	134.81	121.70
83	1	208	THR	C-N-CA	7.28	134.81	121.70
81	2	72	A	C4'-C3'-O3'	7.25	120.28	109.40
1	5	2775	U	C4'-C3'-O3'	-7.25	102.13	113.00
81	2	1024	A	C3'-C2'-O2'	7.24	121.56	110.70
1	5	887	G	C4'-C3'-O3'	7.24	123.86	113.00
1	5	3186	A	C4'-C3'-O3'	7.23	120.25	109.40
1	5	2749	U	C4'-C3'-O3'	-7.23	102.16	113.00
81	2	1243	A	C2'-C3'-O3'	7.23	120.34	109.50
1	5	2367	A	C1'-C2'-O2'	7.22	119.23	108.40
54	G	154	ARG	CA-C-N	7.21	130.99	121.90
54	G	154	ARG	C-N-CA	7.21	130.99	121.90
63	P	18	LYS	N-CA-C	7.19	122.64	108.18
1	5	1326	A	C2'-C3'-O3'	7.13	120.20	109.50
1	5	1498	C	C4'-C3'-O3'	-7.08	102.38	113.00
1	5	1926	U	C4'-C3'-O3'	7.07	123.60	113.00
1	5	2054	U	C2'-C3'-O3'	-7.07	103.10	113.70
1	5	1574	A	C4'-C3'-O3'	-7.05	102.43	113.00
1	5	2054	U	C4'-C3'-O3'	7.03	123.54	113.00
50	C	82	LYS	CA-C-N	7.03	134.35	121.70
50	C	82	LYS	C-N-CA	7.03	134.35	121.70
1	5	2218	G	C3'-C2'-O2'	-7.02	104.08	114.60
81	2	78	A	C5'-C4'-C3'	6.99	126.48	116.00
81	2	73	U	C2'-C3'-O3'	6.98	119.98	109.50
81	2	1643	G	C3'-C2'-O2'	6.98	121.17	110.70
83	1	752	GLY	N-CA-C	6.97	121.02	111.54
1	5	1598	U	C2'-C3'-O3'	6.97	119.95	109.50
81	2	1655	U	C4'-C3'-O3'	6.96	119.84	109.40
45	qq	125	GLY	N-CA-C	6.96	126.53	112.34
54	G	155	ASP	CB-CA-C	-6.95	101.67	112.31
81	2	990	G	C4'-C3'-O3'	6.95	123.42	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2114	A	C4'-C3'-O3'	-6.94	102.59	113.00
1	5	2217	C	O3'-P-O5'	-6.93	93.60	104.00
81	2	991	A	C4'-C3'-O3'	-6.93	102.61	113.00
1	5	2785	A	C4'-C3'-O3'	6.92	119.78	109.40
1	5	2530	A	C4'-C3'-O3'	6.89	119.74	109.40
1	5	1539	U	C4'-C3'-O3'	6.89	119.73	109.40
17	OO	75[A]	ARG	N-CA-C	-6.89	105.41	113.88
1	5	1212	U	C2'-C3'-O3'	6.87	119.81	109.50
52	E	129	VAL	N-CA-C	6.85	123.59	109.34
1	5	3046	U	C2'-C3'-O3'	6.84	119.77	109.50
1	5	1136	A	C1'-C2'-O2'	6.80	118.61	108.40
66	S	93	ASN	N-CA-C	6.80	125.29	110.80
81	2	1025	A	C3'-C2'-O2'	-6.80	104.40	114.60
1	5	1657	U	C4'-C3'-O3'	6.80	119.60	109.40
50	C	149	TRP	CA-CB-CG	6.79	126.50	113.60
49	B	224	ASP	N-CA-C	-6.79	102.12	111.28
6	CC	347	ALA	N-CA-C	-6.77	100.42	110.23
1	5	1893	U	C4'-C3'-O3'	-6.75	102.87	113.00
83	1	443	GLU	CA-C-N	6.74	128.27	119.84
83	1	443	GLU	C-N-CA	6.74	128.27	119.84
54	G	155	ASP	N-CA-C	6.74	121.38	111.34
1	5	2284	G	C3'-C2'-O2'	6.74	120.81	110.70
29	aa	123	VAL	N-CA-C	6.72	117.77	112.12
1	5	1085	U	C4'-C3'-O3'	-6.71	102.94	113.00
1	5	972	G	C2'-C3'-O3'	-6.70	103.64	113.70
59	L	154	ALA	N-CA-C	6.70	118.38	111.14
1	5	844	C	C4'-C3'-O3'	6.69	123.04	113.00
81	2	1613	C	C4'-C3'-O3'	6.69	119.44	109.40
1	5	2084	G	C4'-C3'-O3'	-6.67	102.99	113.00
1	5	1791	C	C4'-C3'-O3'	6.67	119.41	109.40
1	5	2539	U	C2'-C3'-O3'	6.65	119.47	109.50
83	1	161	ASP	CA-C-N	6.64	133.66	121.70
83	1	161	ASP	C-N-CA	6.64	133.66	121.70
82	4	6122	C	C4'-C3'-O3'	-6.63	99.46	109.40
81	2	542	C	C2'-C3'-O3'	6.62	119.43	109.50
1	5	827	G	C4'-C3'-O3'	-6.62	103.08	113.00
1	5	1032	A	C4'-C3'-O3'	-6.60	103.10	113.00
1	5	2239	A	C4'-C3'-O3'	-6.58	103.12	113.00
81	2	12	U	C4'-C3'-O3'	-6.58	103.13	113.00
1	5	2740	U	C2'-C3'-O3'	6.58	119.37	109.50
83	1	405	VAL	CA-C-N	6.57	133.53	121.70
83	1	405	VAL	C-N-CA	6.57	133.53	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	2	277	U	C2'-C3'-O3'	6.57	119.35	109.50
1	5	1255	C	C2'-C3'-O3'	6.57	123.55	113.70
1	5	938	A	C1'-C2'-O2'	6.55	118.22	108.40
1	5	3257	A	C2'-C3'-O3'	6.55	123.52	113.70
1	5	2437	A	C2'-C3'-O3'	6.54	119.31	109.50
81	2	1080	A	C4'-C3'-O3'	6.54	119.20	109.40
1	5	2238	U	C1'-C2'-O2'	-6.52	98.61	108.40
82	4	6201	C	N1-C1'-C2'	-6.51	102.24	112.00
81	2	1657	A	C3'-C2'-O2'	6.50	120.45	110.70
82	4	6177	U	C1'-C2'-O2'	6.49	121.54	111.80
1	5	941	A	C1'-C2'-O2'	6.49	118.13	108.40
1	5	3076	G	C4'-C3'-O3'	-6.49	103.27	113.00
1	5	518	C	C4'-C3'-O3'	6.48	119.12	109.40
5	BB	268	GLY	N-CA-C	-6.46	105.00	111.85
29	aa	123	VAL	CB-CA-C	-6.46	104.58	110.91
1	5	2596	A	C1'-C2'-O2'	6.43	118.05	108.40
1	5	1404	A	C3'-C2'-O2'	-6.42	104.96	114.60
81	2	1598	A	C4'-C3'-O3'	6.42	119.03	109.40
1	5	736	C	C4'-C3'-O3'	6.42	119.02	109.40
1	5	2939	A	C2'-C3'-O3'	-6.42	104.07	113.70
52	E	126	VAL	CA-C-N	6.41	133.24	121.70
52	E	126	VAL	C-N-CA	6.41	133.24	121.70
45	qq	154	THR	N-CA-C	-6.39	100.82	110.28
81	2	1086	A	C4'-C3'-O3'	-6.39	103.42	113.00
1	5	1196	A	C4'-C3'-O3'	-6.38	103.44	113.00
57	J	170	GLY	N-CA-C	6.37	128.28	113.18
57	J	170	GLY	CA-C-N	6.37	133.71	121.54
57	J	170	GLY	C-N-CA	6.37	133.71	121.54
1	5	619	A	C3'-C2'-O2'	6.37	120.25	110.70
81	2	863	U	C2'-C3'-O3'	-6.36	104.16	113.70
1	5	1068	G	C4'-C3'-O3'	6.36	118.94	109.40
1	5	2782	G	C4'-C3'-O3'	-6.36	103.46	113.00
70	W	55	ASP	N-CA-C	-6.36	100.63	110.10
1	5	3325	U	C2'-C3'-O3'	6.34	123.21	113.70
81	2	458	G	C2'-C3'-O3'	6.34	119.01	109.50
81	2	98	U	C3'-C2'-O2'	6.34	120.20	110.70
1	5	282	G	C4'-C3'-O3'	6.33	122.50	113.00
1	5	1525	U	C4'-C3'-O3'	6.33	118.89	109.40
1	5	2214	C	C1'-C2'-O2'	6.32	117.88	108.40
1	5	2885	G	C4'-C3'-O3'	-6.32	103.53	113.00
1	5	1926	U	C2'-C3'-O3'	-6.32	104.23	113.70
1	5	777	A	C4'-C3'-O3'	-6.31	103.53	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	CC	52	VAL	CB-CA-C	6.31	117.44	110.62
1	5	2507	U	C4'-C3'-O3'	6.31	118.86	109.40
1	5	2577	A	C4'-C3'-O3'	-6.31	103.54	113.00
82	4	6122	C	C2'-C3'-O3'	6.30	118.96	109.50
1	5	1452	A	N9-C1'-C2'	6.30	121.44	112.00
1	5	1342	G	C1'-C2'-O2'	6.29	117.83	108.40
50	C	149	TRP	N-CA-CB	6.29	121.12	110.49
1	5	2062	A	C2'-C3'-O3'	6.28	118.92	109.50
54	G	153	VAL	N-CA-C	6.28	118.17	108.44
16	NN	131	GLU	N-CA-C	-6.26	99.04	109.24
3	8	107	G	C4'-C3'-O3'	-6.25	103.62	113.00
5	BB	276	THR	N-CA-C	-6.25	100.59	109.96
1	5	3196	C	C2'-C3'-O3'	6.25	118.87	109.50
1	5	1862	A	C4'-C3'-O3'	-6.23	103.66	113.00
1	5	1800	U	C4'-C3'-O3'	-6.18	103.73	113.00
1	5	2913	G	C3'-C2'-O2'	6.17	119.96	110.70
1	5	336	A	N9-C1'-C2'	6.17	121.25	112.00
50	C	175	ILE	N-CA-CB	6.17	121.98	111.50
1	5	307	A	N9-C1'-C2'	6.15	121.22	112.00
1	5	1312	U	C4'-C3'-O3'	-6.14	103.78	113.00
45	qq	154	THR	CA-C-N	-6.12	113.75	121.96
45	qq	154	THR	C-N-CA	-6.12	113.75	121.96
54	G	154	ARG	N-CA-C	6.12	123.83	110.80
1	5	2781	A	C3'-C2'-O2'	6.12	119.88	110.70
1	5	707	A	C2'-C3'-O3'	6.12	122.87	113.70
1	5	1035	A	C2'-C3'-O3'	6.11	118.67	109.50
81	2	1601	U	C4'-C3'-O3'	-6.11	103.83	113.00
1	5	2219	G	P-O3'-C3'	-6.11	111.04	120.20
52	E	116	ASP	CA-C-N	6.10	132.69	121.70
52	E	116	ASP	C-N-CA	6.10	132.69	121.70
1	5	39	A	C4'-C3'-O3'	-6.10	103.85	113.00
1	5	1531	G	C2'-C3'-O3'	6.10	122.85	113.70
1	5	2153	U	C4'-C3'-O3'	-6.09	103.86	113.00
1	5	2834	U	C4'-C3'-O3'	6.09	118.53	109.40
1	5	2219	G	C2'-C3'-O3'	-6.08	100.37	109.50
58	K	87	PHE	CA-C-N	6.08	127.44	119.84
58	K	87	PHE	C-N-CA	6.08	127.44	119.84
81	2	873	C	C4'-C3'-O3'	-6.08	103.88	113.00
81	2	987	A	C4'-C3'-O3'	-6.07	103.89	113.00
1	5	504	A	C2'-C3'-O3'	6.07	118.60	109.50
1	5	1476	C	C4'-C3'-O3'	-6.07	103.90	113.00
81	2	1628	U	C3'-C2'-O2'	6.07	119.80	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	2	1501	A	C2'-C3'-O3'	6.06	122.79	113.70
1	5	1305	U	C4'-C3'-O3'	-6.06	103.91	113.00
81	2	695	U	C2'-C3'-O3'	6.05	118.58	109.50
1	5	2529	C	N1-C1'-C2'	6.05	121.08	112.00
1	5	1150	A	C4'-C3'-O3'	-6.04	103.94	113.00
1	5	2219	G	C4'-C3'-O3'	-6.04	100.34	109.40
1	5	1035	A	C4'-C3'-O3'	6.03	118.45	109.40
1	5	1345	G	C4'-C3'-O3'	-6.02	103.96	113.00
83	1	585	ARG	CA-C-O	6.02	127.67	121.23
1	5	2032	U	C2'-C3'-O3'	6.02	122.72	113.70
1	5	2218	G	P-O5'-C5'	-6.00	111.89	120.90
6	CC	230	VAL	CB-CA-C	-6.00	104.20	112.24
1	5	594	A	C2'-C3'-O3'	6.00	118.49	109.50
1	5	1898	G	C4'-C3'-O3'	-5.99	104.02	113.00
57	J	171	ARG	N-CA-C	5.99	123.55	110.80
1	5	47	C	C4'-C3'-O3'	-5.99	104.02	113.00
81	2	21	U	C4'-C3'-O3'	-5.99	104.02	113.00
81	2	638	U	C4'-C3'-O3'	5.97	118.35	109.40
1	5	2331	C	C4'-C3'-O3'	-5.96	104.07	113.00
1	5	2361	C	C2'-C3'-O3'	-5.96	104.77	113.70
1	5	352	A	C2'-C3'-O3'	-5.95	100.57	109.50
74	a	83	ILE	CB-CA-C	-5.95	101.53	111.29
1	5	746	A	C4'-C3'-O3'	-5.95	104.08	113.00
1	5	632	G	C2'-C3'-O3'	-5.95	104.78	113.70
45	qq	124	LEU	CA-CB-CG	5.94	137.08	116.30
1	5	1463	G	C3'-C2'-O2'	5.94	119.60	110.70
53	F	220	GLU	CA-C-N	5.93	132.38	121.70
53	F	220	GLU	C-N-CA	5.93	132.38	121.70
1	5	2228	A	C4'-C3'-O3'	5.93	118.30	109.40
81	2	721	U	C2'-C3'-O3'	5.93	118.40	109.50
17	OO	170[A]	LEU	N-CA-C	-5.93	106.08	113.55
43	oo	16	GLU	N-CA-C	5.92	120.06	112.12
1	5	2586	G	C2'-C3'-O3'	5.92	118.38	109.50
1	5	282	G	C2'-C3'-O3'	5.92	122.57	113.70
1	5	1044	U	C4'-C3'-O3'	-5.92	104.12	113.00
83	1	793	PHE	CA-C-N	5.89	127.20	119.84
83	1	793	PHE	C-N-CA	5.89	127.20	119.84
29	aa	32	ARG	N-CA-C	5.89	118.00	108.34
6	CC	52	VAL	N-CA-CB	-5.88	105.33	112.33
1	5	2295	A	C1'-C2'-O2'	5.88	117.22	108.40
1	5	2335	C	C4'-C3'-O3'	-5.88	104.18	113.00
1	5	2341	A	C3'-C2'-O2'	5.87	119.51	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	3015	U	C4'-C3'-O3'	-5.87	104.19	113.00
1	5	324	A	C4'-C3'-O3'	-5.86	104.21	113.00
1	5	2113	A	C2'-C3'-O3'	5.86	118.29	109.50
81	2	557	U	C4'-C3'-O3'	5.86	121.79	113.00
1	5	348	A	C4'-C3'-O3'	-5.86	104.21	113.00
1	5	2843	U	C4'-C3'-O3'	5.85	121.77	113.00
81	2	1784	G	C4'-C3'-O3'	-5.84	104.24	113.00
1	5	2135	A	C4'-C3'-O3'	-5.84	104.24	113.00
83	1	726	GLU	CA-C-N	5.83	127.13	119.84
83	1	726	GLU	C-N-CA	5.83	127.13	119.84
81	2	449	U	C4'-C3'-O3'	-5.83	104.26	113.00
1	5	2285	G	C4'-C3'-O3'	5.82	121.73	113.00
81	2	901	G	C4'-C3'-O3'	-5.82	104.26	113.00
1	5	2276	G	C1'-C2'-O2'	-5.82	103.08	111.80
3	8	89	A	C2'-C3'-O3'	-5.82	104.98	113.70
57	J	39	LYS	N-CA-C	-5.82	104.86	111.14
83	1	721	ASP	CA-C-N	5.82	127.11	119.84
83	1	721	ASP	C-N-CA	5.82	127.11	119.84
1	5	1576	U	C2'-C3'-O3'	5.81	118.22	109.50
45	qq	197	ASN	N-CA-C	5.81	117.41	111.14
1	5	2081	U	C2'-C3'-O3'	5.80	118.20	109.50
48	A	165	ARG	N-CA-C	-5.79	105.05	111.36
1	5	1404	A	C4'-C3'-O3'	-5.79	100.72	109.40
54	G	153	VAL	CA-C-N	5.79	132.59	121.54
54	G	153	VAL	C-N-CA	5.79	132.59	121.54
1	5	768	U	C1'-C2'-O2'	5.78	117.08	108.40
1	5	985	U	C2'-C3'-O3'	5.78	118.18	109.50
1	5	2104	U	C4'-C3'-O3'	-5.78	104.33	113.00
81	2	11	A	C2'-C3'-O3'	-5.78	105.03	113.70
9	FF	132	ALA	N-CA-C	-5.78	101.18	110.14
83	1	558	PRO	N-CA-C	5.78	117.75	110.70
1	5	1396	U	C3'-C2'-O2'	5.77	119.35	110.70
81	2	912	G	C3'-C2'-O2'	5.77	119.35	110.70
14	LL	75	PHE	N-CA-C	5.76	120.46	113.38
1	5	888	A	C1'-C2'-O2'	5.75	117.03	108.40
1	5	77	A	C1'-C2'-O2'	5.74	117.02	108.40
16	NN	185	ALA	N-CA-C	-5.73	104.95	111.14
1	5	1052	U	C2'-C3'-O3'	5.73	122.29	113.70
1	5	238	A	C3'-C2'-O2'	5.71	119.27	110.70
1	5	1155	A	C2'-C3'-O3'	5.71	122.27	113.70
81	2	216	A	C4'-C3'-O3'	5.71	117.97	109.40
1	5	2235	U	C3'-C2'-O2'	-5.70	106.05	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	2	959	U	C4'-C3'-O3'	-5.70	104.45	113.00
81	2	700	C	C3'-C2'-O2'	5.70	119.25	110.70
1	5	2482	U	C2'-C3'-O3'	5.69	118.04	109.50
57	J	10	LYS	N-CA-C	-5.69	98.67	110.80
1	5	1253	G	C4'-C3'-O3'	-5.69	104.47	113.00
1	5	2946	U	N1-C1'-C2'	5.68	122.52	114.00
1	5	1807	G	C2'-C3'-O3'	-5.68	105.18	113.70
1	5	1273	A	C4'-C3'-O3'	-5.68	104.48	113.00
83	1	588	LEU	N-CA-C	5.67	117.69	109.07
1	5	2956	C	C4'-C3'-O3'	-5.66	104.51	113.00
1	5	3297	U	C4'-C3'-O3'	-5.66	104.51	113.00
81	2	1015	C	C1'-C2'-O2'	5.65	116.87	108.40
1	5	1863	U	C2'-C3'-O3'	5.64	122.16	113.70
1	5	217	U	C4'-C3'-O3'	-5.64	104.55	113.00
1	5	364	G	C2'-C3'-O3'	5.62	122.14	113.70
1	5	1922	G	C3'-C2'-O2'	5.62	119.13	110.70
1	5	836	U	C1'-C2'-O2'	5.62	116.83	108.40
81	2	1791	G	C4'-C3'-O3'	5.61	117.82	109.40
1	5	2366	A	C4'-C3'-O3'	-5.61	104.59	113.00
1	5	3285	U	C2'-C3'-O3'	5.61	117.91	109.50
81	2	452	U	N1-C1'-C2'	5.61	120.41	112.00
81	2	1491	A	C3'-C2'-O2'	5.60	119.11	110.70
1	5	1863	U	C4'-C3'-O3'	-5.60	104.60	113.00
1	5	2650	C	C4'-C3'-O3'	-5.60	104.61	113.00
1	5	1494	U	C1'-C2'-O2'	-5.59	103.41	111.80
1	5	2480	A	C4'-C3'-O3'	5.59	121.39	113.00
81	2	1765	G	C2'-C3'-O3'	5.59	117.89	109.50
1	5	2261	U	C3'-C2'-O2'	5.59	119.08	110.70
1	5	238	A	C2'-C3'-O3'	5.59	122.08	113.70
1	5	2337	A	C1'-C2'-O2'	5.59	116.78	108.40
1	5	2946	U	C2'-C3'-O3'	-5.59	101.12	109.50
81	2	931	U	C4'-C3'-O3'	-5.59	101.02	109.40
1	5	1084	G	C4'-C3'-O3'	-5.58	104.62	113.00
1	5	1555	G	C4'-C3'-O3'	-5.58	104.63	113.00
1	5	3135	A	C2'-C3'-O3'	5.58	122.06	113.70
1	5	1323	A	C2'-C3'-O3'	5.58	117.86	109.50
1	5	2783	G	C4'-C3'-O3'	-5.57	104.64	113.00
44	pp	47	VAL	CB-CA-C	5.57	121.99	111.40
81	2	1103	U	C1'-C2'-O2'	5.57	116.75	108.40
1	5	1107	A	C4'-C3'-O3'	-5.57	104.65	113.00
1	5	2971	G	C3'-C2'-O2'	5.57	119.05	110.70
1	5	2826	U	C4'-C3'-O3'	-5.56	104.66	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
38	jj	39	TYR	N-CA-C	-5.56	102.77	109.83
1	5	1176	A	C1'-C2'-O2'	5.56	116.74	108.40
45	qq	119	GLN	N-CA-C	5.56	122.64	110.80
53	F	165	SER	C-N-CD	-5.56	108.38	120.60
82	4	6211	U	C4'-C3'-O3'	5.55	117.73	109.40
1	5	374	A	C2'-C3'-O3'	-5.55	101.18	109.50
1	5	347	G	C4'-C3'-O3'	-5.54	104.69	113.00
3	8	9	A	C4'-C3'-O3'	-5.54	104.69	113.00
1	5	630	A	C3'-C2'-O2'	5.54	119.01	110.70
1	5	2062	A	N9-C1'-C2'	5.54	122.31	114.00
81	2	23	G	C2'-C3'-O3'	-5.53	105.40	113.70
81	2	1765	G	C4'-C3'-O3'	5.53	117.70	109.40
1	5	2341	A	C2'-C3'-O3'	5.53	122.00	113.70
45	qq	122	ARG	CA-C-N	5.52	132.08	121.54
45	qq	122	ARG	C-N-CA	5.52	132.08	121.54
45	qq	123	LEU	CA-CB-CG	5.52	135.62	116.30
1	5	966	U	C4'-C3'-O3'	-5.52	104.72	113.00
1	5	1068	G	C2'-C3'-O3'	5.52	117.78	109.50
1	5	2338	G	C1'-C2'-O2'	5.51	116.67	108.40
22	TT	74	ILE	CB-CA-C	-5.51	104.12	110.41
1	5	1507	G	C3'-C2'-O2'	5.51	118.96	110.70
81	2	78	A	P-O5'-C5'	5.51	129.16	120.90
1	5	1088	G	C4'-C3'-O3'	-5.50	104.75	113.00
34	ff	80	VAL	N-CA-C	-5.50	101.81	109.45
83	1	706	ILE	CA-C-N	5.50	126.71	119.84
83	1	706	ILE	C-N-CA	5.50	126.71	119.84
1	5	787	A	C2'-C3'-O3'	5.50	117.75	109.50
1	5	3075	U	C4'-C3'-O3'	-5.49	104.76	113.00
81	2	564	C	C2'-C3'-O3'	5.49	117.74	109.50
5	BB	382	THR	CA-C-N	5.49	131.58	121.70
5	BB	382	THR	C-N-CA	5.49	131.58	121.70
38	jj	42	ALA	N-CA-C	5.49	117.34	111.36
81	2	940	A	C2'-C3'-O3'	-5.48	105.48	113.70
35	gg	16	LYS	N-CA-C	-5.46	102.20	110.28
1	5	2332	A	C4'-C3'-O3'	-5.46	104.81	113.00
1	5	3220	G	C3'-C2'-O2'	5.46	118.88	110.70
1	5	2124	G	C4'-C3'-O3'	-5.45	104.82	113.00
50	C	148	TYR	N-CA-C	-5.45	100.29	109.07
81	2	991	A	C1'-C2'-O2'	5.45	116.57	108.40
1	5	296	A	C4'-C3'-O3'	-5.44	104.83	113.00
1	5	2923	U	C3'-C2'-O2'	5.44	118.86	110.70
3	8	8	C	N1-C1'-C2'	-5.44	103.84	112.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2053	C	N1-C1'-C2'	-5.44	103.84	112.00
59	L	152	GLN	CA-C-N	5.43	129.97	121.76
59	L	152	GLN	C-N-CA	5.43	129.97	121.76
81	2	811	A	C4'-C3'-O3'	5.43	117.55	109.40
1	5	3274	U	C4'-C3'-O3'	-5.43	104.85	113.00
83	1	605	ILE	N-CA-C	-5.43	106.40	111.45
1	5	471	C	C3'-C2'-O2'	5.43	118.85	110.70
81	2	469	A	C4'-C3'-O3'	-5.42	104.87	113.00
1	5	958	U	C4'-C3'-O3'	-5.41	104.88	113.00
1	5	29	C	C4'-C3'-O3'	-5.41	104.89	113.00
1	5	1613	C	C2'-C3'-O3'	-5.40	105.60	113.70
52	E	126	VAL	CA-C-O	-5.40	115.12	120.90
1	5	3237	U	C2'-C3'-O3'	5.40	117.60	109.50
81	2	1110	G	C3'-C2'-O2'	5.40	118.80	110.70
1	5	656	U	C1'-C2'-O2'	5.40	116.49	108.40
1	5	3271	G	C4'-C3'-O3'	5.39	117.49	109.40
21	SS	150	PHE	N-CA-C	5.39	114.51	108.25
82	4	6106	U	C2'-C3'-O3'	5.39	117.59	109.50
81	2	1320	A	C4'-C3'-O3'	5.39	117.48	109.40
1	5	778	A	C4'-C3'-O3'	-5.39	104.92	113.00
1	5	1763	U	C1'-C2'-O2'	-5.38	103.73	111.80
1	5	1004	U	C3'-C2'-O2'	5.38	118.77	110.70
81	2	327	A	C1'-C2'-O2'	5.38	116.47	108.40
81	2	469	A	C2'-C3'-O3'	5.37	121.76	113.70
81	2	258	U	C2'-C3'-O3'	5.37	117.55	109.50
9	FF	138	TYR	N-CA-C	-5.37	102.35	110.24
1	5	1804	A	C4'-C3'-O3'	-5.36	104.96	113.00
81	2	1075	A	C2'-C3'-O3'	-5.36	105.66	113.70
1	5	12	A	C4'-C3'-O3'	-5.36	104.96	113.00
70	W	70	ASN	N-CA-C	-5.36	102.88	111.02
43	oo	16	GLU	CA-C-N	5.35	131.34	121.70
43	oo	16	GLU	C-N-CA	5.35	131.34	121.70
1	5	534	C	C4'-C3'-O3'	-5.35	104.97	113.00
81	2	1023	U	C1'-C2'-O2'	5.35	116.42	108.40
81	2	911	U	N1-C1'-C2'	5.34	122.01	114.00
1	5	1052	U	C3'-C2'-O2'	5.34	118.70	110.70
17	OO	101[A]	GLU	N-CA-C	-5.33	106.82	113.38
11	HH	41	ILE	N-CA-C	5.33	116.14	111.56
3	8	24	G	C1'-C2'-O2'	5.33	116.39	108.40
1	5	2285	G	N9-C1'-C2'	-5.33	104.01	112.00
81	2	1024	A	C4'-C3'-O3'	-5.33	105.01	113.00
1	5	1480	A	C4'-C3'-O3'	-5.32	105.02	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2081	U	C4'-C3'-O3'	5.32	117.38	109.40
1	5	2239	A	C5'-C4'-O4'	5.32	117.79	109.80
81	2	1777	U	C2'-C3'-O3'	-5.32	105.71	113.70
17	OO	155[A]	ALA	N-CA-C	-5.32	106.84	113.38
17	OO	81[A]	PHE	CB-CA-C	-5.32	102.17	110.94
1	5	2662	A	N9-C1'-C2'	5.31	119.97	112.00
81	2	1151	A	C1'-C2'-O2'	5.31	116.37	108.40
83	1	585	ARG	O-C-N	5.31	129.10	123.42
4	AA	119	ARG	N-CA-C	-5.31	103.25	110.36
6	CC	83	HIS	CB-CA-C	5.30	118.36	110.62
6	CC	82	THR	N-CA-C	-5.30	99.50	110.80
1	5	95	A	C2'-C3'-O3'	-5.30	105.75	113.70
56	I	183	TYR	N-CA-C	5.30	116.68	107.93
81	2	130	C	C4'-C3'-O3'	5.30	117.35	109.40
1	5	3055	A	C4'-C3'-O3'	-5.30	105.06	113.00
9	FF	210	GLY	N-CA-C	-5.30	106.73	112.08
74	a	18	VAL	CB-CA-C	-5.29	102.61	111.29
1	5	3309	U	C4'-C3'-O3'	5.29	117.34	109.40
1	5	2041	C	C2'-C3'-O3'	5.29	121.64	113.70
1	5	1131	C	C1'-C2'-O2'	-5.28	103.87	111.80
1	5	2172	U	C4'-C3'-O3'	-5.28	105.09	113.00
1	5	2041	C	C3'-C2'-O2'	5.27	118.61	110.70
81	2	820	U	C4'-C3'-O3'	-5.27	105.09	113.00
1	5	3043	G	C3'-C2'-O2'	5.27	118.60	110.70
1	5	1760	C	C2'-C3'-O3'	-5.26	105.80	113.70
1	5	2495	C	C4'-C3'-O3'	-5.26	105.11	113.00
1	5	1577	C	C2'-C3'-O3'	-5.26	105.81	113.70
81	2	1501	A	C3'-C2'-O2'	5.26	118.59	110.70
81	2	11	A	N9-C1'-C2'	-5.26	104.11	112.00
81	2	19	A	C1'-C2'-O2'	5.26	116.29	108.40
1	5	100	A	C4'-C3'-O3'	-5.26	105.12	113.00
81	2	1745	G	C1'-C2'-O2'	5.25	116.28	108.40
1	5	23	A	C4'-C3'-O3'	-5.25	105.13	113.00
3	8	17	A	C1'-C2'-O2'	5.25	116.27	108.40
25	WW	53	VAL	N-CA-C	-5.25	105.73	110.82
1	5	788	A	C2'-C3'-O3'	5.24	117.35	109.50
1	5	2361	C	C4'-C3'-O3'	-5.24	105.15	113.00
1	5	80	G	C1'-C2'-O2'	5.23	116.25	108.40
45	qq	119	GLN	CA-CB-CG	5.23	124.57	114.10
27	YY	56	VAL	N-CA-C	5.23	115.81	108.17
1	5	486	U	O4'-C1'-C2'	-5.23	102.37	107.60
1	5	1124	A	C4'-C3'-O3'	-5.23	105.15	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2877	U	C1'-C2'-O2'	5.23	116.25	108.40
83	1	699	HIS	CB-CA-C	5.23	120.03	110.10
1	5	2914	A	C3'-C2'-O2'	5.22	118.53	110.70
10	GG	95	LYS	N-CA-C	-5.22	102.75	110.48
1	5	2456	U	C4'-C3'-O3'	5.22	117.23	109.40
34	ff	89	LEU	CA-C-N	5.22	124.72	119.19
34	ff	89	LEU	C-N-CA	5.22	124.72	119.19
1	5	99	A	C2'-C3'-O3'	5.22	121.53	113.70
1	5	2273	C	C4'-C3'-O3'	-5.21	105.18	113.00
74	a	83	ILE	N-CA-CB	5.21	119.83	111.23
81	2	1102	U	C4'-C3'-O3'	-5.21	105.18	113.00
1	5	345	G	C4'-C3'-O3'	-5.21	105.19	113.00
1	5	2153	U	C2'-C3'-O3'	5.21	121.51	113.70
81	2	968	C	C1'-C2'-O2'	5.20	116.20	108.40
83	1	680	GLU	N-CA-C	5.20	117.24	110.53
1	5	2272	A	C3'-C2'-O2'	5.20	118.49	110.70
79	f	103	LEU	N-CA-C	5.20	118.12	107.37
1	5	1407	U	C4'-C3'-O3'	-5.19	105.21	113.00
81	2	79	C	C3'-C2'-O2'	5.19	118.49	110.70
1	5	883	G	C2'-C3'-O3'	-5.19	105.92	113.70
63	P	28	MET	CA-C-N	5.19	126.33	119.84
63	P	28	MET	C-N-CA	5.19	126.33	119.84
81	2	1044	C	C4'-C3'-O3'	5.19	117.19	109.40
81	2	1533	U	O4'-C1'-C2'	-5.19	102.41	107.60
1	5	1784	U	C2'-C3'-O3'	5.19	117.28	109.50
1	5	652	U	C4'-C3'-O3'	-5.17	105.24	113.00
1	5	2469	A	C2'-C3'-O3'	5.17	117.26	109.50
1	5	166	C	C3'-C2'-O2'	5.17	118.45	110.70
81	2	1433	G	C2'-C3'-O3'	-5.17	105.95	113.70
81	2	865	G	C1'-C2'-O2'	5.16	116.14	108.40
81	2	967	U	C4'-C3'-O3'	-5.16	105.25	113.00
1	5	388	G	C4'-C3'-O3'	-5.16	105.26	113.00
1	5	1045	U	C4'-C3'-O3'	-5.16	105.27	113.00
74	a	18	VAL	N-CA-C	5.15	120.06	109.34
1	5	1481	G	C4'-C3'-O3'	-5.15	105.27	113.00
1	5	3246	C	C2'-C3'-O3'	-5.15	105.97	113.70
1	5	2611	A	C1'-C2'-O2'	5.15	116.12	108.40
1	5	2949	U	C4'-C3'-O3'	-5.15	105.28	113.00
1	5	78	U	O4'-C4'-C3'	-5.14	98.86	104.00
1	5	2481	C	C4'-C3'-O3'	-5.14	101.68	109.40
44	pp	62	ARG	O-C-N	5.14	124.64	120.83
1	5	1378	A	C4'-C3'-O3'	-5.14	105.28	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2818	G	C4'-C3'-O3'	-5.14	105.29	113.00
1	5	885	A	C4'-C3'-O3'	5.14	117.11	109.40
1	5	1209	C	C3'-C2'-O2'	5.14	118.41	110.70
1	5	1493	U	C2'-C3'-O3'	-5.14	101.79	109.50
83	1	687	ASN	CA-C-N	5.14	130.95	121.70
83	1	687	ASN	C-N-CA	5.14	130.95	121.70
1	5	2032	U	C3'-C2'-O2'	5.14	118.41	110.70
83	1	708	THR	N-CA-C	-5.13	106.11	112.93
1	5	1476	C	C1'-C2'-O2'	5.12	116.08	108.40
62	O	91	SER	N-CA-C	5.12	121.70	110.80
1	5	70	A	C4'-C3'-O3'	-5.11	105.33	113.00
1	5	864	C	C4'-C3'-O3'	-5.11	105.33	113.00
82	4	6174	G	C3'-C2'-O2'	5.11	118.37	110.70
1	5	1088	G	C1'-C2'-O2'	5.11	116.06	108.40
1	5	363	G	C1'-C2'-O2'	5.11	116.06	108.40
1	5	1290	G	C4'-C3'-O3'	-5.11	105.34	113.00
72	Y	15	ASN	CA-C-N	5.10	124.89	119.28
72	Y	15	ASN	C-N-CA	5.10	124.89	119.28
1	5	2103	G	C4'-C3'-O3'	-5.10	105.35	113.00
17	OO	26[A]	LYS	N-CA-C	-5.09	106.57	112.89
63	P	37	ALA	N-CA-C	5.09	112.60	108.07
81	2	1149	G	C2'-C3'-O3'	-5.09	106.06	113.70
1	5	623	C	C4'-C3'-O3'	-5.09	105.37	113.00
1	5	72	C	C4'-C3'-O3'	-5.08	105.38	113.00
1	5	907	A	C4'-C3'-O3'	-5.08	105.37	113.00
83	1	705	ILE	N-CA-C	-5.08	107.44	111.81
45	qq	118	LYS	N-CA-C	5.08	121.62	110.80
1	5	2978	U	C2'-C3'-O3'	5.08	121.32	113.70
1	5	1685	U	C4'-C3'-O3'	5.07	117.00	109.40
81	2	902	U	C4'-C3'-O3'	-5.07	105.39	113.00
83	1	53	GLU	CA-C-N	5.07	130.82	121.70
83	1	53	GLU	C-N-CA	5.07	130.82	121.70
1	5	860	U	C2'-C3'-O3'	5.07	121.30	113.70
1	5	2422	U	C4'-C3'-O3'	5.07	120.60	113.00
1	5	1017	A	C4'-C3'-O3'	-5.06	105.40	113.00
17	OO	22[A]	SER	N-CA-C	-5.06	106.94	113.02
8	EE	15	ALA	N-CA-C	-5.06	101.74	109.64
17	OO	151[A]	GLU	N-CA-C	-5.06	105.34	112.12
17	OO	198[A]	GLY	N-CA-C	-5.06	101.18	113.18
81	2	1770	C	C4'-C3'-O3'	-5.06	105.41	113.00
82	4	6197	A	C3'-C2'-O2'	5.06	118.29	110.70
82	4	6134	C	C2'-C3'-O3'	-5.06	106.11	113.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1155	A	C3'-C2'-O2'	5.05	118.28	110.70
81	2	1491	A	C2'-C3'-O3'	5.05	121.28	113.70
3	8	114	G	C3'-C2'-O2'	5.05	118.27	110.70
1	5	842	U	N1-C1'-C2'	5.04	119.57	112.00
56	I	138	LYS	N-CA-C	5.04	117.89	111.69
66	S	92	VAL	CB-CA-C	5.04	119.55	111.29
1	5	800	U	C1'-C2'-O2'	5.04	115.95	108.40
1	5	1912	C	C4'-C3'-O3'	-5.04	105.45	113.00
1	5	2303	U	C3'-C2'-O2'	5.03	118.25	110.70
14	LL	31	LYS	N-CA-C	-5.03	105.70	111.14
1	5	2546	U	C2'-C3'-O3'	-5.03	106.15	113.70
83	1	210	ALA	N-CA-C	5.03	116.78	110.24
1	5	1563	A	C4'-C3'-O3'	-5.03	105.46	113.00
81	2	1446	G	C4'-C3'-O3'	-5.03	105.46	113.00
1	5	1606	A	C4'-C3'-O3'	-5.01	105.48	113.00
38	jj	54	LYS	N-CA-C	-5.01	104.78	111.24
1	5	1826	C	C4'-C3'-O3'	-5.01	105.49	113.00
81	2	1788	A	C4'-C3'-O3'	-5.01	105.49	113.00
1	5	2837	U	C2'-C3'-O3'	-5.00	106.20	113.70
1	5	2912	U	C2'-C3'-O3'	-5.00	106.20	113.70
8	EE	13	VAL	CB-CA-C	5.00	120.46	111.36

There are no chirality outliers.

All (78) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
83	1	463	LEU	Peptide
83	1	464	LEU	Peptide
83	1	576	LEU	Peptide
83	1	577	SER	Peptide
83	1	669	TRP	Peptide
83	1	680	GLU	Peptide
83	1	681	MET	Peptide
83	1	682	ARG	Peptide
83	1	683	SER	Peptide
83	1	684	VAL	Peptide
83	1	693	LEU	Peptide
83	1	694	HIS	Peptide
83	1	695	ALA	Peptide
83	1	696	ASP	Peptide
83	1	697	ALA	Peptide
83	1	707	PRO	Peptide

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Mol	Chain	Res	Type	Group
1	5	1178	G	Sidechain
1	5	2049	G	Sidechain
1	5	2218	G	Sidechain
1	5	2219	G	Sidechain
1	5	2285	G	Sidechain
1	5	2629	G	Sidechain
48	A	164	ASN	Peptide
48	A	33	GLN	Peptide
4	AA	196	TRP	Peptide
4	AA	33	ASP	Peptide
49	B	35	PRO	Peptide
5	BB	331	THR	Peptide
50	C	111	ASP	Peptide
50	C	148	TYR	Peptide
50	C	177	ALA	Peptide
6	CC	148	ILE	Peptide
6	CC	80	GLY	Peptide
6	CC	82	THR	Peptide
51	D	176	LEU	Peptide
7	DD	3	PHE	Peptide
52	E	116	ASP	Peptide
52	E	128	LYS	Peptide
52	E	67	GLN	Peptide
8	EE	110	SER	Peptide
8	EE	112	LYS	Mainchain
8	EE	65	GLY	Peptide
53	F	165	SER	Peptide
9	FF	112	THR	Peptide
9	FF	220	PHE	Peptide
58	K	54	PHE	Peptide
59	L	152	GLN	Peptide
14	LL	74	GLY	Peptide
62	O	129	LYS	Peptide
63	P	15	TYR	Peptide
64	Q	40	GLN	Peptide
65	R	78	ARG	Peptide
65	R	79	GLU	Peptide
21	SS	12	ARG	Peptide
69	V	13	VAL	Peptide
70	W	56	HIS	Peptide
70	W	75	ILE	Peptide
71	X	63	GLN	Peptide

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Mol	Chain	Res	Type	Group
27	YY	55	GLU	Peptide
28	ZZ	88	ASP	Peptide
74	a	34	LYS	Peptide
74	a	49	ALA	Peptide
74	a	83	ILE	Peptide
74	a	9	GLY	Peptide
29	aa	112	VAL	Peptide
79	f	102	VAL	Peptide
79	f	103	LEU	Peptide
34	ff	103	TYR	Peptide
80	g	75	SER	Peptide
35	gg	26	PRO	Peptide
35	gg	8	ARG	Peptide
44	pp	37	TYR	Peptide
44	pp	55	TRP	Peptide
44	pp	56	SER	Peptide
45	qq	117	ILE	Peptide
45	qq	120	VAL	Peptide
45	qq	123	LEU	Peptide
46	rr	20	TYR	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	5	69896	0	35118	1432	0
2	7	2579	0	1304	23	0
3	8	3326	0	1680	71	0
4	AA	1892	0	1954	56	0
5	BB	3064	0	3140	83	0
6	CC	2731	0	2842	90	0
7	DD	2384	0	2337	26	0
8	EE	1300	0	1393	26	0
9	FF	1774	0	1832	32	0
10	GG	1817	0	1927	33	0
11	HH	1528	0	1596	22	0
12	II	1690	0	1729	20	0
13	JJ	1349	0	1382	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	LL	1581	0	1661	48	0
15	MM	1045	0	1126	11	0
16	NN	1709	0	1763	23	0
17	OO	1571	0	1663	427	0
18	PP	1432	0	1465	26	0
19	QQ	1444	0	1541	26	0
20	RR	1522	0	1624	24	0
21	SS	1416	0	1461	17	0
22	TT	1262	0	1309	20	0
23	UU	807	0	821	5	0
24	VV	976	0	1021	31	0
25	WW	515	0	532	2	0
26	XX	964	0	1031	10	0
27	YY	992	0	1070	14	0
28	ZZ	1089	0	1150	24	0
29	aa	1156	0	1206	42	0
30	bb	458	0	486	2	0
31	cc	740	0	792	7	0
32	dd	869	0	920	12	0
33	ee	980	0	1048	9	0
34	ff	837	0	861	23	0
35	gg	951	0	1036	14	0
36	hh	961	0	1062	11	0
37	ii	766	0	840	12	0
38	jj	675	0	679	19	0
39	kk	619	0	675	22	0
40	ll	428	0	464	9	0
41	mm	410	0	446	8	0
42	nn	233	0	284	1	0
43	oo	814	0	875	9	0
44	pp	660	0	690	24	0
45	qq	1721	0	1820	188	0
46	rr	1508	0	1542	12	0
47	KK	735	0	177	0	0
48	A	1616	0	1636	21	0
49	B	1722	0	1793	17	0
50	C	1629	0	1710	19	0
51	D	1744	0	1826	9	0
52	E	2078	0	2157	9	0
53	F	1609	0	1679	7	0
54	G	1812	0	1911	35	0
55	H	1483	0	1579	8	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	I	1493	0	1515	13	0
57	J	1471	0	1553	36	0
58	K	809	0	810	6	0
59	L	1248	0	1311	19	0
60	M	922	0	953	2	0
61	N	1187	0	1251	8	0
62	O	942	0	979	9	0
63	P	980	0	1029	14	0
64	Q	1105	0	1170	9	0
65	R	1031	0	1082	7	0
66	S	1193	0	1217	11	0
67	T	1110	0	1124	7	0
68	U	845	0	913	3	0
69	V	687	0	682	7	0
70	W	1021	0	1056	20	0
71	X	1127	0	1210	23	0
72	Y	1061	0	1111	7	0
73	Z	558	0	585	2	0
74	a	798	0	854	34	0
75	b	617	0	643	2	0
76	c	494	0	534	2	0
77	d	446	0	436	2	0
78	e	443	0	481	1	0
79	f	549	0	564	3	0
80	g	2466	0	2406	7	0
81	2	37797	0	19015	705	0
82	4	3950	0	1982	200	0
83	1	6421	0	6490	463	0
84	1	1	0	0	0	0
84	2	74	0	0	0	0
84	5	2	0	0	0	0
84	N	1	0	0	0	0
84	a	1	0	0	0	0
84	f	1	0	0	0	0
85	a	1	0	0	0	0
85	b	1	0	0	0	0
85	f	1	0	0	0	0
85	jj	1	0	0	2	0
85	mm	1	0	0	0	0
85	oo	1	0	0	0	0
86	1	32	0	14	1	0
87	1	10	0	0	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	215768	0	160636	4281	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 12.

All (4281) 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)
81:2:884:G:H2'	81:2:885:U:C1'	1.20	1.64
83:1:698:ILE:HG22	83:1:699:HIS:CD2	1.33	1.58
1:5:2217:C:C3'	1:5:2218:G:H5'	1.16	1.57
83:1:576:LEU:HD21	83:1:587:TYR:CD1	1.36	1.57
14:LL:3:ILE:CD1	29:aa:34:MET:HE3	1.29	1.56
1:5:2217:C:H3'	1:5:2218:G:C5'	1.12	1.54
14:LL:3:ILE:HD13	29:aa:34:MET:CE	1.37	1.54
1:5:2167:A:C5	1:5:2238:U:C4	1.97	1.52
45:qq:12:HIS:CD2	45:qq:206:ILE:HD12	1.41	1.52
83:1:587:TYR:CE2	83:1:690:ASP:N	1.77	1.50
45:qq:12:HIS:CG	45:qq:214:TYR:CE2	2.00	1.48
45:qq:12:HIS:CD2	45:qq:214:TYR:CE2	2.02	1.47
14:LL:3:ILE:HG21	29:aa:41:HIS:CD2	1.51	1.45
8:EE:13:VAL:HG22	8:EE:14:PRO:CD	1.48	1.42
1:5:2167:A:C4	1:5:2238:U:C5	2.05	1.42
1:5:1923:G:N2	1:5:1925:G:C8	1.76	1.41
83:1:698:ILE:CG2	83:1:699:HIS:HD2	1.33	1.41
81:2:884:G:C2'	81:2:885:U:H1'	1.49	1.40
45:qq:12:HIS:CD2	45:qq:206:ILE:CD1	2.06	1.39
83:1:587:TYR:CD2	83:1:690:ASP:N	1.90	1.38
8:EE:13:VAL:CG2	8:EE:14:PRO:HD2	1.52	1.37
45:qq:12:HIS:NE2	45:qq:206:ILE:HD12	1.34	1.37
45:qq:123:LEU:N	82:4:6039:A:N3	1.72	1.36
83:1:587:TYR:HE2	83:1:691:VAL:N	1.25	1.35
83:1:576:LEU:CD2	83:1:587:TYR:CD1	2.11	1.34
45:qq:123:LEU:N	82:4:6039:A:H2'	1.03	1.33
83:1:806:SER:OG	83:1:815:ALA:HB3	1.25	1.33
17:OO:168[A]:TYR:CD1	17:OO:168[A]:TYR:O	1.80	1.33
17:OO:34[A]:ILE:CG2	17:OO:35[A]:VAL:H	1.39	1.32
83:1:584:ASN:HB2	83:1:692:THR:O	1.29	1.32
57:J:14:THR:HG21	81:2:23:G:OP1	1.24	1.31
81:2:884:G:C2'	81:2:885:U:C1'	2.01	1.31
83:1:586:ILE:HD11	83:1:708:THR:OG1	1.13	1.30

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:698:ILE:HB	83:1:699:HIS:C	1.56	1.29
1:5:2234:C:O2'	1:5:2235:U:H5'	1.22	1.28
17:OO:20[A]:LEU:O	17:OO:20[A]:LEU:CD1	1.82	1.27
17:OO:86[A]:ARG:HB2	17:OO:100[A]:LEU:CD1	1.63	1.27
17:OO:86[A]:ARG:O	17:OO:86[A]:ARG:HD3	1.35	1.27
83:1:806:SER:OG	83:1:815:ALA:CB	1.83	1.27
81:2:886:A:C2	81:2:925:A:C2	2.22	1.27
83:1:580:PRO:HD2	83:1:583:HIS:CE1	1.70	1.27
83:1:638:PRO:CD	83:1:681:MET:HE1	1.65	1.27
83:1:702:GLY:CA	83:1:706:ILE:HD12	1.65	1.26
1:5:2481:C:H2'	1:5:2482:U:C6	1.71	1.26
74:a:70:LYS:HD2	81:2:930:C:OP2	1.36	1.26
8:EE:128:GLU:O	8:EE:129:ILE:CG1	1.83	1.25
17:OO:192[A]:GLU:O	17:OO:194[A]:LEU:N	1.66	1.25
81:2:1292:U:O4	81:2:1321:A:N1	1.68	1.25
81:2:480:A:N1	81:2:506:U:C4	2.05	1.25
83:1:581:ASN:H	83:1:583:HIS:CD2	1.55	1.25
17:OO:107[A]:GLU:H	17:OO:107[A]:GLU:CD	1.40	1.25
83:1:580:PRO:HG2	83:1:583:HIS:NE2	1.51	1.25
83:1:576:LEU:CD2	83:1:587:TYR:HD1	1.45	1.24
1:5:2481:C:OP2	10:GG:244:LYS:NZ	1.69	1.24
45:qq:150:ASP:O	45:qq:154:THR:HB	1.10	1.24
83:1:587:TYR:CE2	83:1:691:VAL:N	2.04	1.24
45:qq:123:LEU:N	82:4:6039:A:C2'	1.99	1.23
45:qq:122:ARG:O	82:4:6040:U:O4'	1.55	1.23
82:4:6199:A:O2'	82:4:6200:A:H5'	1.34	1.23
83:1:133:GLU:OE2	83:1:136:CYS:CB	1.87	1.23
45:qq:12:HIS:NE2	45:qq:214:TYR:CD2	2.06	1.23
83:1:702:GLY:HA2	83:1:706:ILE:CD1	1.68	1.23
83:1:695:ALA:O	83:1:700:ARG:NH1	1.72	1.22
1:5:1925:G:H21	1:5:2056:C:C3'	1.51	1.22
45:qq:119:GLN:HB3	82:4:6039:A:OP2	1.39	1.22
1:5:2167:A:C4	1:5:2238:U:C6	2.28	1.21
45:qq:12:HIS:CD2	45:qq:214:TYR:CD2	2.26	1.21
83:1:380:LEU:HD13	83:1:400:VAL:CG2	1.68	1.21
1:5:2481:C:O2'	1:5:2482:U:O4'	1.57	1.21
83:1:586:ILE:CD1	83:1:708:THR:OG1	1.86	1.21
1:5:78:U:O4	1:5:325:A:N1	1.72	1.21
1:5:1925:G:N3	1:5:2056:C:C2	2.09	1.21
83:1:695:ALA:C	83:1:700:ARG:NH1	1.98	1.21
45:qq:119:GLN:CB	82:4:6039:A:OP2	1.88	1.20

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2167:A:C6	1:5:2238:U:C4	2.29	1.20
14:LL:2:ALA:O	14:LL:3:ILE:HG22	1.04	1.20
1:5:2167:A:C6	1:5:2238:U:O4	1.94	1.20
1:5:2234:C:O2'	1:5:2235:U:C5'	1.87	1.20
1:5:2167:A:C2	1:5:2238:U:C5	2.29	1.19
45:qq:120:VAL:HB	82:4:6038:G:O2'	1.39	1.19
83:1:638:PRO:HD2	83:1:681:MET:CE	1.72	1.19
17:OO:20[A]:LEU:O	17:OO:20[A]:LEU:HD12	1.33	1.18
1:5:1923:G:N2	1:5:1925:G:H8	1.16	1.18
81:2:480:A:N1	81:2:506:U:O4	1.77	1.18
81:2:886:A:H2	81:2:925:A:C2	1.58	1.18
45:qq:123:LEU:C	82:4:6039:A:N3	2.02	1.18
83:1:705:ILE:HA	83:1:708:THR:CG2	1.74	1.18
1:5:529:U:N3	1:5:532:A:N6	1.91	1.17
14:LL:2:ALA:O	14:LL:3:ILE:CG2	1.92	1.17
83:1:133:GLU:OE2	83:1:136:CYS:SG	2.01	1.17
1:5:2167:A:C5	1:5:2238:U:C5	2.27	1.17
17:OO:65[A]:PHE:CD1	17:OO:65[A]:PHE:O	1.97	1.17
83:1:380:LEU:HD13	83:1:400:VAL:HG22	1.20	1.17
1:5:2481:C:O5'	10:GG:244:LYS:HE2	1.43	1.16
83:1:698:ILE:HD11	83:1:700:ARG:NE	1.39	1.16
17:OO:107[A]:GLU:O	17:OO:107[A]:GLU:OE2	1.63	1.16
1:5:1924:C:N4	1:5:2055:G:O6	1.78	1.16
17:OO:168[A]:TYR:O	17:OO:168[A]:TYR:CG	1.97	1.16
83:1:698:ILE:CG2	83:1:699:HIS:CD2	2.13	1.16
1:5:1924:C:O2'	1:5:1926:U:OP2	1.59	1.15
17:OO:111[A]:PRO:HB2	17:OO:112[A]:PRO:CD	1.76	1.15
83:1:580:PRO:HD2	83:1:583:HIS:NE2	1.62	1.15
83:1:705:ILE:HA	83:1:708:THR:HG22	1.28	1.15
17:OO:104[A]:LYS:O	17:OO:105[A]:VAL:HG23	1.43	1.15
83:1:587:TYR:CD2	83:1:689:LEU:C	2.21	1.15
1:5:1925:G:N2	1:5:2056:C:H3'	1.60	1.15
57:J:14:THR:HG21	81:2:23:G:P	1.84	1.15
17:OO:86[A]:ARG:CB	17:OO:100[A]:LEU:HD11	1.76	1.14
83:1:587:TYR:CE2	83:1:690:ASP:CA	2.29	1.14
83:1:580:PRO:CG	83:1:583:HIS:NE2	2.09	1.14
17:OO:104[A]:LYS:O	17:OO:105[A]:VAL:CG2	1.96	1.14
83:1:204:PRO:HG2	83:1:245:TRP:CZ2	1.82	1.14
83:1:581:ASN:N	83:1:583:HIS:HD2	1.45	1.14
1:5:2167:A:N3	1:5:2238:U:C5	2.16	1.14
17:OO:35[A]:VAL:O	17:OO:35[A]:VAL:HG13	1.45	1.14

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:qq:121:PRO:HA	82:4:6039:A:N7	1.63	1.14
45:qq:122:ARG:O	82:4:6040:U:C5'	1.95	1.14
45:qq:123:LEU:CA	82:4:6039:A:N3	2.11	1.14
45:qq:143:ASP:OD2	45:qq:146:GLN:HG3	1.47	1.14
17:OO:44[A]:ILE:HD11	17:OO:139[A]:LEU:HD11	1.25	1.13
81:2:928:A:H2'	81:2:929:A:H5'	1.25	1.13
14:LL:3:ILE:CG2	29:aa:41:HIS:CD2	2.31	1.13
1:5:1159:U:O4	1:5:1288:A:N1	1.81	1.12
17:OO:107[A]:GLU:OE2	17:OO:107[A]:GLU:N	1.81	1.12
83:1:580:PRO:HD2	83:1:583:HIS:CD2	1.83	1.12
17:OO:86[A]:ARG:HB2	17:OO:100[A]:LEU:HD11	1.17	1.12
74:a:70:LYS:CD	81:2:930:C:OP2	1.95	1.12
1:5:2481:C:P	10:GG:244:LYS:HZ1	1.73	1.12
45:qq:123:LEU:CB	82:4:6039:A:O2'	1.97	1.12
81:2:884:G:C2'	81:2:885:U:O4'	1.96	1.12
1:5:2167:A:C2	1:5:2238:U:H5	1.64	1.12
1:5:1924:C:N3	1:5:2055:G:N1	1.97	1.11
1:5:2239:A:H2'	1:5:2240:A:C8	1.85	1.11
17:OO:107[A]:GLU:CD	17:OO:107[A]:GLU:N	2.01	1.11
81:2:1439:C:O2'	81:2:1445:C:N4	1.82	1.11
45:qq:150:ASP:O	45:qq:154:THR:CB	1.97	1.10
82:4:6120:U:H1'	82:4:6127:C:H5''	1.33	1.10
83:1:584:ASN:HD22	83:1:693:LEU:HD13	1.16	1.10
1:5:2218:G:H1'	1:5:2219:G:H5'	1.20	1.10
1:5:2237:U:O4	1:5:2241:G:N1	1.84	1.10
17:OO:31[A]:GLY:O	17:OO:32[A]:GLN:O	1.67	1.10
83:1:702:GLY:HA2	83:1:706:ILE:HD12	1.19	1.10
8:EE:128:GLU:O	8:EE:129:ILE:HG13	0.93	1.10
45:qq:122:ARG:O	82:4:6040:U:C4'	2.00	1.09
45:qq:165:LEU:HD12	45:qq:190:LEU:HD21	1.34	1.09
83:1:580:PRO:CD	83:1:583:HIS:NE2	2.15	1.09
83:1:379:MET:SD	83:1:380:LEU:HD22	1.93	1.09
17:OO:114[A]:ASP:HA	17:OO:118[A]:ARG:HH12	1.17	1.09
57:J:14:THR:CG2	81:2:23:G:OP1	2.00	1.09
14:LL:5:LYS:H	14:LL:5:LYS:HD2	1.18	1.08
1:5:1925:G:N2	1:5:2056:C:C3'	2.15	1.08
81:2:928:A:C2'	81:2:929:A:H5'	1.84	1.08
17:OO:13[A]:LYS:HD2	17:OO:38[A]:ARG:NH2	1.68	1.08
83:1:587:TYR:HE2	83:1:690:ASP:C	1.62	1.08
83:1:380:LEU:HD12	83:1:399:ARG:C	1.78	1.07
83:1:584:ASN:CB	83:1:692:THR:O	2.01	1.07

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:380:LEU:CD1	83:1:400:VAL:HA	1.84	1.07
1:5:2050:A:O2'	1:5:2051:U:OP1	1.73	1.07
45:qq:118:LYS:HA	82:4:6038:G:C8	1.88	1.07
83:1:698:ILE:HG22	83:1:699:HIS:CG	1.88	1.07
17:OO:137[A]:THR:HG22	17:OO:138[A]:THR:H	1.19	1.06
17:OO:34[A]:ILE:HG22	17:OO:35[A]:VAL:N	1.46	1.06
83:1:580:PRO:CD	83:1:583:HIS:CE1	2.38	1.06
83:1:584:ASN:HD22	83:1:693:LEU:CD1	1.69	1.06
1:5:2481:C:P	10:GG:244:LYS:CE	2.43	1.06
17:OO:139[A]:LEU:O	17:OO:141[A]:LYS:N	1.89	1.06
17:OO:192[A]:GLU:C	17:OO:194[A]:LEU:H	1.58	1.06
83:1:693:LEU:HB3	83:1:695:ALA:HA	1.09	1.06
17:OO:197[A]:LEU:O	17:OO:198[A]:GLY:C	1.97	1.05
83:1:583:HIS:HE1	83:1:704:GLN:CD	1.64	1.05
1:5:2050:A:OP1	1:5:2051:U:C4	2.09	1.05
14:LL:3:ILE:CG2	29:aa:41:HIS:HD2	1.66	1.05
81:2:1292:U:C4	81:2:1321:A:N1	2.24	1.05
82:4:6181:C:H2'	83:1:578:LYS:HZ3	1.14	1.05
81:2:1267:G:N1	81:2:1439:C:N3	2.04	1.05
1:5:2055:G:C5	1:5:2056:C:N4	2.25	1.05
82:4:6199:A:C2'	82:4:6200:A:H5'	1.86	1.04
17:OO:20[A]:LEU:O	17:OO:20[A]:LEU:CG	2.05	1.04
81:2:11:A:HO2'	81:2:12:U:C5'	1.69	1.04
83:1:638:PRO:HD2	83:1:681:MET:HE1	1.05	1.04
1:5:1925:G:N1	1:5:2056:C:C5	2.12	1.04
45:qq:123:LEU:HB3	82:4:6039:A:O2'	1.53	1.04
45:qq:123:LEU:H	82:4:6039:A:C2'	1.66	1.04
17:OO:91[A]:HIS:CD2	17:OO:91[A]:HIS:O	2.11	1.03
45:qq:118:LYS:HA	82:4:6038:G:H8	1.16	1.03
83:1:587:TYR:CE2	83:1:690:ASP:C	2.36	1.03
1:5:1928:A:C2	1:5:2053:C:H2'	1.93	1.03
81:2:885:U:C2'	81:2:886:A:H5''	1.89	1.03
81:2:884:G:H2'	81:2:885:U:O4'	1.53	1.03
83:1:16:VAL:HG11	83:1:372:CYS:SG	1.98	1.03
1:5:2234:C:O2'	1:5:2235:U:C4'	2.08	1.02
83:1:684:VAL:HG12	83:1:686:VAL:HB	1.40	1.02
17:OO:5[A]:GLU:OE1	17:OO:5[A]:GLU:N	1.91	1.02
17:OO:153[A]:VAL:O	17:OO:153[A]:VAL:HG12	1.57	1.02
49:B:117:TRP:N	81:2:931:U:OP2	1.93	1.02
83:1:133:GLU:OE2	83:1:136:CYS:HB2	1.54	1.02
83:1:380:LEU:HD12	83:1:400:VAL:N	1.74	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2218:G:C6	1:5:2219:G:C4	2.48	1.02
57:J:170:GLY:HA3	81:2:510:A:H2'	1.42	1.02
81:2:628:U:N3	81:2:969:A:N6	2.06	1.02
83:1:806:SER:HG	83:1:815:ALA:CB	1.64	1.01
1:5:2167:A:N3	1:5:2238:U:C6	2.28	1.01
17:OO:34[A]:ILE:HG22	17:OO:35[A]:VAL:H	0.86	1.01
83:1:157:ILE:HD12	83:1:211:PHE:CE1	1.94	1.01
17:OO:176[A]:ASN:O	17:OO:178[A]:VAL:N	1.94	1.01
54:G:154:ARG:N	81:2:78:A:O5'	1.93	1.01
82:4:6181:C:C2'	83:1:578:LYS:HZ3	1.72	1.01
83:1:638:PRO:CD	83:1:681:MET:CE	2.33	1.01
1:5:2218:G:N1	1:5:2219:G:C4	2.28	1.01
14:LL:3:ILE:HD11	29:aa:34:MET:HE3	1.42	1.01
17:OO:192[A]:GLU:C	17:OO:194[A]:LEU:N	2.13	1.00
17:OO:124[A]:ALA:O	17:OO:125[A]:LEU:O	1.79	1.00
83:1:694:HIS:N	83:1:700:ARG:HH12	1.58	1.00
1:5:2481:C:C2'	1:5:2482:U:C6	2.45	1.00
83:1:589:LYS:HD3	83:1:685:ARG:HD2	1.39	1.00
1:5:2481:C:P	10:GG:244:LYS:NZ	2.33	1.00
45:qq:122:ARG:O	82:4:6040:U:O5'	1.78	1.00
1:5:2051:U:H4'	1:5:2052:G:OP2	1.19	1.00
17:OO:158[A]:GLU:O	17:OO:161[A]:ARG:N	1.93	1.00
1:5:2237:U:N3	1:5:2241:G:O6	1.95	0.99
1:5:2480:A:H3'	1:5:2481:C:C5'	1.92	0.99
81:2:884:G:C3'	81:2:885:U:O4'	2.10	0.99
8:EE:128:GLU:C	8:EE:129:ILE:HG13	1.87	0.99
1:5:1925:G:H21	1:5:2056:C:C2'	1.54	0.99
45:qq:118:LYS:N	82:4:6038:G:O5'	1.95	0.99
45:qq:123:LEU:CA	82:4:6039:A:H2'	1.92	0.99
1:5:2479:U:C2'	1:5:2480:A:H5'	1.92	0.99
83:1:702:GLY:HA2	83:1:706:ILE:CG1	1.93	0.99
1:5:601:A:H2'	1:5:602:A:C8	1.98	0.98
45:qq:12:HIS:CG	45:qq:214:TYR:CZ	2.51	0.98
81:2:11:A:O2'	81:2:12:U:C5'	2.09	0.98
1:5:2234:C:C2'	1:5:2235:U:H5'	1.94	0.98
45:qq:12:HIS:CD2	45:qq:214:TYR:HE2	1.77	0.98
45:qq:12:HIS:NE2	45:qq:206:ILE:CD1	2.20	0.98
57:J:170:GLY:HA3	81:2:510:A:C2'	1.93	0.98
17:OO:176[A]:ASN:O	17:OO:179[A]:VAL:N	1.97	0.98
1:5:1925:G:O2'	1:5:2056:C:O2	1.79	0.98
45:qq:12:HIS:CG	45:qq:206:ILE:HD11	1.99	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:529:U:N3	1:5:532:A:C6	2.28	0.97
81:2:11:A:O2'	81:2:12:U:H5'	1.63	0.97
54:G:155:ASP:H	81:2:78:A:C5'	1.76	0.97
83:1:562:ALA:HB1	83:1:563:TYR:HA	1.46	0.97
1:5:2540:A:O2'	1:5:2541:C:OP2	1.82	0.97
83:1:133:GLU:CD	83:1:136:CYS:HB2	1.90	0.97
83:1:705:ILE:CA	83:1:708:THR:HG22	1.95	0.97
83:1:806:SER:HB2	83:1:813:SER:HB2	1.43	0.97
83:1:380:LEU:CD1	83:1:400:VAL:CA	2.43	0.97
17:OO:65[A]:PHE:O	17:OO:66[A]:ASN:HB2	1.65	0.96
17:OO:9[A]:VAL:HG22	17:OO:35[A]:VAL:HG11	1.45	0.96
17:OO:37[A]:VAL:O	17:OO:38[A]:ARG:HB2	1.60	0.96
17:OO:141[A]:LYS:O	17:OO:142[A]:LEU:C	2.08	0.96
81:2:884:G:O2'	81:2:885:U:H1'	1.65	0.96
83:1:380:LEU:HD13	83:1:400:VAL:HA	1.45	0.96
17:OO:120[A]:VAL:O	17:OO:122[A]:PRO:HD3	1.65	0.96
82:4:6121:A:H2'	82:4:6121:A:N3	1.79	0.96
1:5:2218:G:H5''	1:5:2242:G:N7	1.81	0.96
17:OO:104[A]:LYS:C	17:OO:105[A]:VAL:HG23	1.89	0.96
17:OO:40[A]:GLU:OE1	17:OO:108[A]:GLY:N	1.98	0.96
45:qq:124:LEU:N	82:4:6039:A:N3	2.13	0.96
82:4:6182:A:OP2	83:1:585:ARG:NH1	1.97	0.96
45:qq:122:ARG:C	82:4:6040:U:O4'	2.08	0.95
83:1:698:ILE:HB	83:1:700:ARG:N	1.81	0.95
45:qq:119:GLN:HG3	82:4:6038:G:OP2	1.67	0.95
83:1:564:ARG:HD2	83:1:681:MET:CG	1.96	0.95
1:5:2218:G:C6	1:5:2219:G:N3	2.34	0.95
17:OO:35[A]:VAL:O	17:OO:35[A]:VAL:CG1	2.10	0.95
82:4:6181:C:H2'	83:1:578:LYS:NZ	1.81	0.95
17:OO:33[A]:LYS:O	17:OO:34[A]:ILE:HG12	1.66	0.95
83:1:698:ILE:HA	83:1:699:HIS:HB3	1.44	0.95
1:5:2051:U:C4'	1:5:2052:G:OP2	2.13	0.95
1:5:2167:A:N6	1:5:2238:U:O4	1.99	0.95
83:1:703:GLY:N	83:1:706:ILE:HB	1.81	0.95
1:5:2541:C:OP1	28:ZZ:59:ALA:N	2.00	0.95
54:G:155:ASP:N	81:2:78:A:O5'	2.00	0.94
83:1:380:LEU:CD1	83:1:400:VAL:CG2	2.44	0.94
17:OO:122[A]:PRO:HA	17:OO:125[A]:LEU:CD2	1.98	0.94
81:2:884:G:H2'	81:2:885:U:H1'	0.96	0.94
1:5:2049:G:N2	1:5:2052:G:O6	2.01	0.94
17:OO:193[A]:LYS:HE3	17:OO:193[A]:LYS:HA	1.47	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:194[A]:LEU:O	17:OO:197[A]:LEU:N	2.01	0.94
81:2:1752:A:O2'	81:2:1753:A:OP1	1.85	0.94
6:CC:349:ILE:HG13	6:CC:350:LYS:CB	1.98	0.94
83:1:698:ILE:CD1	83:1:700:ARG:NE	2.22	0.94
83:1:703:GLY:O	83:1:706:ILE:O	1.85	0.94
45:qq:12:HIS:CG	45:qq:206:ILE:CD1	2.51	0.94
1:5:1924:C:O2'	1:5:1925:G:O5'	1.85	0.93
17:OO:19[A]:ARG:O	17:OO:21[A]:ALA:N	2.01	0.93
17:OO:82[A]:TYR:CD1	17:OO:82[A]:TYR:O	2.21	0.93
83:1:580:PRO:HD2	83:1:583:HIS:CG	2.02	0.93
1:5:2480:A:P	1:5:2481:C:H5''	2.07	0.93
17:OO:93[A]:THR:O	17:OO:94[A]:ALA:C	2.11	0.93
83:1:698:ILE:HD11	83:1:700:ARG:HE	1.17	0.93
1:5:2218:G:C2	1:5:2219:G:C8	2.56	0.93
81:2:1439:C:C2'	81:2:1440:U:H5'	1.98	0.93
82:4:6119:U:H5'	82:4:6120:U:C5'	1.98	0.93
45:qq:143:ASP:HB3	45:qq:146:GLN:HB2	1.49	0.93
1:5:1925:G:N2	1:5:2056:C:C2'	2.27	0.93
1:5:2218:G:C4	1:5:2219:G:N9	2.37	0.93
17:OO:126[A]:ARG:HG3	17:OO:130[A]:LEU:HD22	1.51	0.93
83:1:583:HIS:CE1	83:1:704:GLN:NE2	2.37	0.92
83:1:463:LEU:HD11	83:1:467:GLY:HA3	1.48	0.92
1:5:1926:U:N3	1:5:1927:G:N7	2.18	0.92
17:OO:96[A]:GLY:O	17:OO:99[A]:ALA:HB3	1.70	0.92
17:OO:138[A]:THR:O	17:OO:139[A]:LEU:C	2.11	0.92
83:1:380:LEU:HD13	83:1:400:VAL:CA	1.97	0.92
6:CC:349:ILE:HG13	6:CC:350:LYS:HG3	1.49	0.92
83:1:584:ASN:ND2	83:1:693:LEU:HD13	1.85	0.92
1:5:2167:A:C6	1:5:2238:U:C5	2.52	0.92
17:OO:161[A]:ARG:O	17:OO:163[A]:ALA:N	2.01	0.92
81:2:8:U:O4	81:2:15:U:O4	1.88	0.92
83:1:750:LYS:O	83:1:751:ARG:HG3	1.69	0.92
1:5:2036:U:H2'	1:5:2049:G:C6	2.05	0.91
1:5:2218:G:C5	1:5:2219:G:N9	2.38	0.91
82:4:6199:A:O2'	82:4:6200:A:C5'	2.17	0.91
83:1:579:SER:HB2	83:1:708:THR:HB	1.52	0.91
45:qq:120:VAL:CB	82:4:6038:G:O2'	2.17	0.91
14:LL:3:ILE:HD13	29:aa:34:MET:HE2	1.47	0.91
17:OO:68[A]:THR:O	17:OO:72[A]:PHE:HE1	1.52	0.91
17:OO:194[A]:LEU:O	17:OO:196[A]:ALA:N	2.03	0.91
83:1:380:LEU:CD1	83:1:400:VAL:HG22	1.99	0.91

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1925:G:O6	1:5:2057:A:C5	2.24	0.91
17:OO:111[A]:PRO:HB2	17:OO:112[A]:PRO:HD2	1.49	0.91
81:2:885:U:C3'	81:2:886:A:H5''	2.01	0.91
45:qq:31:THR:O	45:qq:209:THR:HG23	1.70	0.91
1:5:2218:G:N3	1:5:2219:G:C8	2.39	0.91
17:OO:76[A]:ALA:O	17:OO:79[A]:ARG:N	2.04	0.91
1:5:2050:A:O2'	1:5:2051:U:P	2.28	0.90
1:5:2218:G:N3	1:5:2218:G:H2'	1.87	0.90
1:5:2480:A:H5''	10:GG:248:ARG:CZ	2.01	0.90
45:qq:119:GLN:O	82:4:6087:G:O6	1.89	0.90
83:1:694:HIS:H	83:1:700:ARG:NH1	1.68	0.90
82:4:6181:C:C3'	83:1:578:LYS:HZ3	1.83	0.90
82:4:6181:C:H3'	83:1:578:LYS:NZ	1.86	0.90
17:OO:7[A]:VAL:CG1	17:OO:8[A]:VAL:N	2.34	0.90
17:OO:145[A]:SER:O	17:OO:146[A]:VAL:CG1	2.19	0.90
1:5:2480:A:H3'	1:5:2481:C:H5''	1.52	0.89
45:qq:12:HIS:CE1	45:qq:214:TYR:CD2	2.59	0.89
83:1:204:PRO:HG2	83:1:245:TRP:CE2	2.07	0.89
6:CC:349:ILE:HG13	6:CC:350:LYS:CG	2.02	0.89
1:5:2481:C:H2'	1:5:2482:U:H6	1.32	0.89
83:1:694:HIS:CD2	83:1:700:ARG:HH22	1.88	0.89
17:OO:19[A]:ARG:C	17:OO:21[A]:ALA:H	1.74	0.89
17:OO:55[A]:TYR:O	17:OO:57[A]:ASP:N	2.05	0.89
83:1:583:HIS:CE1	83:1:704:GLN:CD	2.51	0.89
17:OO:24[A]:VAL:HG22	17:OO:34[A]:ILE:HD12	1.53	0.89
17:OO:197[A]:LEU:O	17:OO:199[A]:TYR:N	2.01	0.88
17:OO:94[A]:ALA:O	17:OO:96[A]:GLY:N	2.06	0.88
81:2:1292:U:O4	81:2:1321:A:C2	2.25	0.88
82:4:6189:G:H2'	82:4:6190:U:C6	2.08	0.88
1:5:1608:C:OP2	35:gg:74:ARG:NH1	2.06	0.88
17:OO:55[A]:TYR:C	17:OO:57[A]:ASP:H	1.80	0.88
1:5:2481:C:OP1	10:GG:244:LYS:HE3	1.73	0.88
17:OO:20[A]:LEU:HD12	17:OO:20[A]:LEU:C	1.92	0.88
17:OO:176[A]:ASN:O	17:OO:177[A]:ALA:C	2.17	0.88
17:OO:190[A]:VAL:O	17:OO:192[A]:GLU:N	2.06	0.88
83:1:583:HIS:CE1	83:1:704:GLN:HB3	2.08	0.88
17:OO:153[A]:VAL:O	17:OO:153[A]:VAL:CG1	2.21	0.88
1:5:2239:A:H2'	1:5:2240:A:H8	1.32	0.88
1:5:2481:C:H2'	1:5:2482:U:C5	2.08	0.88
1:5:3237:U:O2'	8:EE:127:LYS:HD2	1.74	0.88
17:OO:20[A]:LEU:O	17:OO:20[A]:LEU:HG	1.73	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:126[A]:ARG:HD3	17:OO:136[A]:TYR:CD2	2.09	0.88
45:qq:8:HIS:O	45:qq:11:GLU:N	2.07	0.87
17:OO:86[A]:ARG:O	17:OO:86[A]:ARG:CD	2.20	0.87
17:OO:95[A]:ARG:CG	17:OO:95[A]:ARG:O	2.21	0.87
82:4:6120:U:C1'	82:4:6127:C:H5''	2.04	0.87
83:1:694:HIS:CD2	83:1:700:ARG:NH2	2.42	0.87
1:5:2234:C:O2'	1:5:2235:U:O4'	1.93	0.87
1:5:1925:G:H2'	1:5:2055:G:N2	1.89	0.87
1:5:1925:G:N3	1:5:2056:C:N1	2.09	0.87
17:OO:85[A]:VAL:O	17:OO:88[A]:MET:N	2.02	0.87
17:OO:173[A]:LYS:O	17:OO:174[A]:ALA:C	2.18	0.87
81:2:1439:C:O2'	81:2:1440:U:H5'	1.75	0.87
83:1:381:TYR:O	83:1:382:VAL:HG23	1.74	0.87
81:2:628:U:C4	81:2:969:A:N6	2.43	0.87
83:1:682:ARG:NH2	83:1:801:TRP:HE3	1.73	0.87
38:jj:19:CYS:SG	85:jj:100:ZN:ZN	1.61	0.87
1:5:2167:A:H1'	1:5:2238:U:O4'	1.74	0.86
1:5:1925:G:N7	1:5:2057:A:N3	2.24	0.86
83:1:694:HIS:ND1	83:1:696:ASP:OD1	2.07	0.86
17:OO:120[A]:VAL:O	17:OO:120[A]:VAL:HG23	1.76	0.86
83:1:578:LYS:HE2	83:1:585:ARG:HH12	1.41	0.86
83:1:580:PRO:CD	83:1:583:HIS:CD2	2.57	0.86
45:qq:12:HIS:CG	45:qq:214:TYR:HE2	1.77	0.86
83:1:564:ARG:HD2	83:1:681:MET:HG3	1.56	0.86
3:8:8:C:O2'	3:8:9:A:H5'	1.74	0.86
81:2:1292:U:O4	81:2:1321:A:C6	2.29	0.86
81:2:628:U:N3	81:2:969:A:C6	2.44	0.86
1:5:2218:G:C1'	1:5:2219:G:H5'	2.05	0.86
45:qq:119:GLN:HB2	82:4:6039:A:P	2.16	0.86
14:LL:5:LYS:O	14:LL:6:ASN:C	2.18	0.86
83:1:695:ALA:C	83:1:700:ARG:HH11	1.81	0.86
45:qq:118:LYS:N	82:4:6038:G:O4'	2.08	0.85
82:4:6181:C:C3'	83:1:578:LYS:NZ	2.38	0.85
82:4:6119:U:H5'	82:4:6120:U:H5''	1.58	0.85
1:5:1923:G:H8	1:5:1923:G:O5'	1.59	0.85
1:5:957:U:O2	1:5:958:U:C6	2.28	0.85
14:LL:3:ILE:CD1	29:aa:34:MET:CE	2.14	0.85
74:a:32:LYS:HE2	81:2:931:U:O2'	1.77	0.85
83:1:586:ILE:HD11	83:1:708:THR:HG1	1.38	0.85
1:5:2229:U:OP2	81:2:1643:G:O2'	1.91	0.85
83:1:685:ARG:HG2	83:1:685:ARG:HH11	1.41	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:23[A]:THR:O	17:OO:25[A]:ALA:N	2.09	0.85
17:OO:141[A]:LYS:O	17:OO:143[A]:SER:N	2.09	0.85
1:5:2055:G:C4	1:5:2056:C:N3	2.45	0.85
81:2:480:A:C2	81:2:506:U:O4	2.29	0.85
83:1:567:VAL:HG11	83:1:684:VAL:HG22	1.57	0.85
83:1:806:SER:HG	83:1:815:ALA:HB3	0.73	0.85
17:OO:93[A]:THR:O	17:OO:95[A]:ARG:N	2.09	0.84
83:1:647:ILE:HB	83:1:685:ARG:HH12	1.42	0.84
17:OO:95[A]:ARG:O	17:OO:95[A]:ARG:HG2	1.77	0.84
1:5:1928:A:N1	1:5:2053:C:H2'	1.91	0.84
17:OO:44[A]:ILE:CD1	17:OO:139[A]:LEU:HD11	2.07	0.84
83:1:204:PRO:CG	83:1:245:TRP:CZ2	2.60	0.84
81:2:928:A:C2'	81:2:929:A:C5'	2.56	0.84
83:1:381:TYR:O	83:1:382:VAL:CB	2.21	0.84
45:qq:123:LEU:C	82:4:6039:A:C2	2.55	0.84
83:1:701:GLY:O	83:1:705:ILE:HD12	1.77	0.84
1:5:2050:A:HO2'	1:5:2051:U:P	2.01	0.84
83:1:806:SER:OG	83:1:815:ALA:N	2.10	0.84
1:5:436:A:N1	1:5:596:U:O4	2.10	0.84
1:5:2218:G:C2	1:5:2219:G:C5	2.65	0.84
17:OO:13[A]:LYS:HD2	17:OO:38[A]:ARG:HH22	1.41	0.84
17:OO:34[A]:ILE:O	17:OO:35[A]:VAL:HB	1.76	0.84
83:1:580:PRO:HD2	83:1:583:HIS:ND1	1.93	0.84
45:qq:12:HIS:ND1	45:qq:214:TYR:CE2	2.45	0.84
17:OO:75[A]:ARG:NE	17:OO:146[A]:VAL:O	2.10	0.83
3:8:9:A:H2'	3:8:10:A:C8	2.13	0.83
17:OO:111[A]:PRO:CB	17:OO:112[A]:PRO:CD	2.54	0.83
17:OO:127[A]:VAL:O	17:OO:127[A]:VAL:HG13	1.78	0.83
1:5:2479:U:O2'	1:5:2480:A:H5'	1.77	0.83
17:OO:111[A]:PRO:HB2	17:OO:112[A]:PRO:HD3	1.60	0.83
17:OO:158[A]:GLU:O	17:OO:159[A]:GLU:C	2.19	0.83
1:5:1925:G:C2	1:5:2056:C:C2	2.59	0.83
1:5:1925:G:C4	1:5:2056:C:C2	2.65	0.83
1:5:1927:G:C6	1:5:2054:U:H2'	2.12	0.83
45:qq:165:LEU:CD1	45:qq:190:LEU:HD21	2.08	0.83
81:2:22:A:O2'	81:2:23:G:H5'	1.78	0.83
83:1:587:TYR:CG	83:1:689:LEU:C	2.57	0.83
17:OO:86[A]:ARG:HB2	17:OO:100[A]:LEU:HD13	1.60	0.82
17:OO:141[A]:LYS:O	17:OO:144[A]:THR:N	2.12	0.82
83:1:463:LEU:HD11	83:1:467:GLY:CA	2.09	0.82
83:1:694:HIS:HD2	83:1:700:ARG:HH22	1.23	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:430:U:H2'	1:5:431:U:C6	2.13	0.82
81:2:928:A:H2'	81:2:929:A:C5'	2.07	0.82
1:5:2480:A:O5'	1:5:2481:C:H5''	1.80	0.82
17:OO:9[A]:VAL:HA	17:OO:35[A]:VAL:HG12	1.58	0.82
83:1:244:LEU:O	83:1:245:TRP:HB2	1.80	0.82
83:1:586:ILE:HG23	83:1:688:ILE:HD11	1.62	0.82
83:1:586:ILE:HG22	83:1:587:TYR:H	1.44	0.82
17:OO:187[A]:GLY:O	17:OO:189[A]:GLU:N	2.12	0.82
17:OO:44[A]:ILE:HD11	17:OO:139[A]:LEU:CD1	2.08	0.82
83:1:381:TYR:O	83:1:382:VAL:CG2	2.28	0.82
83:1:638:PRO:HD3	83:1:681:MET:HE1	1.61	0.82
17:OO:107[A]:GLU:OE2	17:OO:107[A]:GLU:C	2.23	0.82
17:OO:194[A]:LEU:C	17:OO:196[A]:ALA:H	1.86	0.82
45:qq:119:GLN:CB	82:4:6039:A:P	2.68	0.82
83:1:587:TYR:CG	83:1:689:LEU:O	2.33	0.82
1:5:1190:C:O2'	1:5:1257:A:N1	2.12	0.82
1:5:1925:G:N3	1:5:2056:C:H2'	1.95	0.82
1:5:1928:A:C2	1:5:2053:C:C2'	2.62	0.82
1:5:2480:A:H2'	1:5:2481:C:C1'	2.09	0.82
45:qq:120:VAL:HA	82:4:6039:A:C5'	2.10	0.82
45:qq:125:GLY:HA3	82:4:6039:A:C6	2.15	0.82
74:a:70:LYS:CE	81:2:930:C:OP2	2.27	0.82
17:OO:82[A]:TYR:CD1	17:OO:82[A]:TYR:C	2.57	0.82
81:2:884:G:H2'	81:2:885:U:N1	1.94	0.82
83:1:693:LEU:CB	83:1:695:ALA:HA	2.04	0.82
17:OO:27[A]:GLN:O	17:OO:28[A]:LEU:HD23	1.79	0.81
17:OO:33[A]:LYS:O	17:OO:34[A]:ILE:CG1	2.27	0.81
17:OO:23[A]:THR:C	17:OO:25[A]:ALA:H	1.88	0.81
17:OO:34[A]:ILE:CG2	17:OO:35[A]:VAL:N	2.09	0.81
17:OO:99[A]:ALA:O	17:OO:101[A]:GLU:N	2.13	0.81
17:OO:192[A]:GLU:O	17:OO:193[A]:LYS:C	2.22	0.81
45:qq:12:HIS:ND1	45:qq:214:TYR:CZ	2.47	0.81
83:1:584:ASN:ND2	83:1:693:LEU:CD1	2.42	0.81
83:1:685:ARG:HB3	83:1:686:VAL:HA	1.61	0.81
1:5:1554:C:H2'	1:5:1555:G:H5'	1.62	0.81
1:5:2167:A:N7	1:5:2238:U:C4	2.49	0.81
15:MM:15:VAL:HG23	15:MM:35:ILE:HD13	1.60	0.81
14:LL:5:LYS:O	14:LL:7:LEU:HB2	1.80	0.81
17:OO:94[A]:ALA:C	17:OO:96[A]:GLY:H	1.88	0.81
1:5:2235:U:H2'	1:5:2236:C:C5	2.15	0.81
17:OO:91[A]:HIS:O	17:OO:91[A]:HIS:CG	2.29	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:LL:5:LYS:O	14:LL:7:LEU:N	2.14	0.81
1:5:2218:G:C2	1:5:2219:G:C4	2.69	0.81
17:OO:58[A]:TYR:O	17:OO:60[A]:ARG:N	2.13	0.81
83:1:698:ILE:CB	83:1:699:HIS:C	2.48	0.81
1:5:529:U:C4	1:5:532:A:N6	2.49	0.81
1:5:2217:C:O2'	1:5:2218:G:OP1	1.99	0.81
17:OO:97[A]:LYS:O	17:OO:98[A]:ALA:C	2.22	0.81
83:1:578:LYS:HE2	83:1:585:ARG:NH1	1.95	0.81
83:1:694:HIS:H	83:1:700:ARG:HH12	0.86	0.81
1:5:2285:G:O2'	1:5:2286:A:H5'	1.80	0.80
17:OO:156[A]:LYS:O	17:OO:158[A]:GLU:N	2.14	0.80
3:8:8:C:O2'	3:8:9:A:C5'	2.28	0.80
82:4:6120:U:H1'	82:4:6127:C:C5'	2.10	0.80
83:1:587:TYR:HE2	83:1:691:VAL:H	0.95	0.80
17:OO:68[A]:THR:O	17:OO:72[A]:PHE:CE1	2.34	0.80
45:qq:123:LEU:HB2	82:4:6039:A:O2'	1.81	0.80
1:5:2285:G:O2'	1:5:2286:A:C5'	2.29	0.80
17:OO:148[A]:TRP:CH2	17:OO:150[A]:TYR:O	2.34	0.80
81:2:480:A:C6	81:2:506:U:O4	2.34	0.80
81:2:886:A:C2	81:2:925:A:H2	1.96	0.80
83:1:383:SER:O	83:1:465:LYS:O	1.99	0.80
83:1:695:ALA:CA	83:1:700:ARG:NH1	2.44	0.80
1:5:2167:A:C5	1:5:2238:U:O4	2.23	0.80
17:OO:76[A]:ALA:O	17:OO:77[A]:PRO:C	2.25	0.80
1:5:1923:G:C2	1:5:1925:G:C8	2.68	0.80
1:5:2480:A:H2'	1:5:2481:C:O4'	1.82	0.80
17:OO:9[A]:VAL:HG22	17:OO:35[A]:VAL:CG1	2.11	0.80
1:5:2479:U:C2	1:5:2480:A:C8	2.70	0.80
17:OO:9[A]:VAL:HG12	17:OO:118[A]:ARG:HB3	1.63	0.80
1:5:2481:C:OP1	10:GG:245:ILE:HG13	1.83	0.79
1:5:2234:C:C2'	1:5:2235:U:O4'	2.31	0.79
82:4:6121:A:C6	82:4:6158:A:C2	2.70	0.79
6:CC:349:ILE:CG1	6:CC:350:LYS:HG3	2.11	0.79
12:II:14:ASN:O	12:II:128:ARG:NH2	2.16	0.79
1:5:2238:U:C5	1:5:2239:A:N7	2.51	0.79
17:OO:23[A]:THR:C	17:OO:25[A]:ALA:N	2.39	0.79
17:OO:173[A]:LYS:O	17:OO:176[A]:ASN:N	2.15	0.79
83:1:381:TYR:O	83:1:382:VAL:HB	1.81	0.79
17:OO:86[A]:ARG:CB	17:OO:100[A]:LEU:CD1	2.45	0.79
17:OO:194[A]:LEU:C	17:OO:196[A]:ALA:N	2.36	0.79
1:5:2237:U:OP1	82:4:6205:DA:OP1	2.00	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:5[A]:GLU:OE1	17:OO:5[A]:GLU:CA	2.31	0.79
17:OO:31[A]:GLY:O	17:OO:32[A]:GLN:C	2.24	0.79
17:OO:97[A]:LYS:O	17:OO:101[A]:GLU:HG3	1.83	0.79
83:1:806:SER:CB	83:1:813:SER:HB2	2.12	0.79
83:1:380:LEU:HB3	83:1:400:VAL:HA	1.65	0.78
1:5:1402:G:OP2	29:aa:12:ARG:NH1	2.17	0.78
17:OO:86[A]:ARG:CA	17:OO:100[A]:LEU:HD11	2.13	0.78
17:OO:120[A]:VAL:O	17:OO:120[A]:VAL:CG2	2.32	0.78
81:2:886:A:C2	81:2:925:A:N1	2.51	0.78
3:8:26:U:H2'	3:8:27:U:C6	2.18	0.78
45:qq:12:HIS:CE1	45:qq:214:TYR:CE2	2.71	0.78
81:2:1292:U:C4	81:2:1321:A:C2	2.71	0.78
83:1:586:ILE:HA	83:1:691:VAL:HG22	1.65	0.78
1:5:2055:G:C4	1:5:2056:C:C4	2.72	0.78
1:5:2217:C:C4'	1:5:2218:G:H5'	2.11	0.78
1:5:2238:U:C4	1:5:2239:A:C4	2.72	0.78
1:5:2482:U:C5	1:5:2560:G:C6	2.71	0.78
14:LL:3:ILE:HD13	29:aa:34:MET:HE3	0.91	0.78
82:4:6039:A:N6	82:4:6087:G:OP1	2.17	0.78
1:5:2239:A:C2'	1:5:2240:A:C8	2.65	0.78
6:CC:349:ILE:HG23	6:CC:350:LYS:HE3	1.66	0.78
17:OO:148[A]:TRP:CZ2	17:OO:150[A]:TYR:O	2.36	0.78
82:4:6119:U:H5'	82:4:6120:U:H5'	1.64	0.78
83:1:567:VAL:CG1	83:1:684:VAL:HG22	2.13	0.78
1:5:504:A:N6	1:5:529:U:C5	2.52	0.78
74:a:70:LYS:HD2	81:2:930:C:P	2.24	0.78
1:5:2167:A:N1	1:5:2238:U:C5	2.52	0.78
17:OO:27[A]:GLN:O	17:OO:32[A]:GLN:HB3	1.84	0.78
17:OO:43[A]:ASN:OD1	17:OO:136[A]:TYR:CE2	2.37	0.78
17:OO:169[A]:TYR:CD1	17:OO:169[A]:TYR:O	2.37	0.78
45:qq:12:HIS:CE1	45:qq:206:ILE:HD12	2.19	0.78
83:1:806:SER:OG	83:1:815:ALA:CA	2.31	0.78
1:5:2234:C:H2'	1:5:2235:U:O4'	1.83	0.78
1:5:2481:C:O5'	10:GG:244:LYS:CE	2.24	0.78
17:OO:65[A]:PHE:O	17:OO:65[A]:PHE:CG	2.35	0.78
17:OO:161[A]:ARG:O	17:OO:162[A]:LYS:C	2.25	0.78
17:OO:161[A]:ARG:HG2	17:OO:162[A]:LYS:H	1.48	0.78
83:1:682:ARG:NH2	83:1:801:TRP:CE3	2.49	0.77
1:5:647:G:O6	19:QQ:56:LYS:NZ	2.17	0.77
8:EE:13:VAL:CG2	8:EE:14:PRO:CD	2.29	0.77
45:qq:120:VAL:HA	82:4:6039:A:H5''	1.65	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:576:LEU:HD22	83:1:587:TYR:CD1	2.16	0.77
17:OO:16[A]:LEU:HA	17:OO:43[A]:ASN:O	1.83	0.77
17:OO:145[A]:SER:C	17:OO:146[A]:VAL:HG13	2.08	0.77
45:qq:12:HIS:CE1	45:qq:206:ILE:CD1	2.68	0.77
45:qq:123:LEU:CA	82:4:6039:A:C2'	2.59	0.77
1:5:1924:C:H4'	1:5:1925:G:OP1	1.85	0.77
1:5:2055:G:C5	1:5:2056:C:C4	2.72	0.77
4:AA:196:TRP:CE3	4:AA:197:PRO:HD3	2.19	0.77
83:1:379:MET:SD	83:1:380:LEU:CD2	2.71	0.77
1:5:1924:C:O2'	1:5:1925:G:H3'	1.84	0.77
17:OO:168[A]:TYR:CD1	17:OO:168[A]:TYR:C	2.61	0.77
83:1:380:LEU:HD13	83:1:400:VAL:CB	2.14	0.77
17:OO:38[A]:ARG:O	17:OO:39[A]:ALA:C	2.28	0.77
17:OO:76[A]:ALA:O	17:OO:78[A]:SER:N	2.18	0.77
17:OO:145[A]:SER:O	17:OO:146[A]:VAL:HG12	1.82	0.77
81:2:1590:A:H2'	81:2:1591:A:C8	2.19	0.77
82:4:6039:A:N3	82:4:6039:A:H2'	1.99	0.77
1:5:78:U:H3	1:5:325:A:N6	1.83	0.77
1:5:2238:U:C4	1:5:2239:A:C5	2.72	0.77
45:qq:119:GLN:NE2	82:4:6038:G:OP2	2.18	0.77
17:OO:27[A]:GLN:C	17:OO:28[A]:LEU:HD23	2.09	0.77
17:OO:65[A]:PHE:O	17:OO:66[A]:ASN:CB	2.33	0.77
17:OO:104[A]:LYS:O	17:OO:105[A]:VAL:HG22	1.85	0.77
45:qq:119:GLN:CA	82:4:6039:A:OP2	2.21	0.77
54:G:154:ARG:HA	81:2:78:A:H3'	1.66	0.77
17:OO:66[A]:ASN:O	17:OO:68[A]:THR:N	2.17	0.76
17:OO:171[A]:LYS:NZ	17:OO:171[A]:LYS:HB3	2.00	0.76
45:qq:30:GLU:CA	45:qq:209:THR:HG21	2.15	0.76
1:5:1924:C:C4	1:5:2055:G:O6	2.37	0.76
4:AA:3:ARG:NH1	4:AA:208:ASP:OD1	2.18	0.76
1:5:1359:U:O2'	33:ee:99:ASN:O	2.03	0.76
17:OO:32[A]:GLN:O	17:OO:102[A]:ARG:HD3	1.86	0.76
81:2:884:G:O2'	81:2:885:U:C1'	2.27	0.76
45:qq:123:LEU:N	82:4:6039:A:C4	2.37	0.76
81:2:749:U:H2'	81:2:750:U:C6	2.19	0.76
82:4:6120:U:O2'	82:4:6127:C:H5''	1.85	0.76
5:BB:229:VAL:HG11	5:BB:249:VAL:HG23	1.68	0.76
6:CC:350:LYS:HD2	6:CC:350:LYS:N	2.00	0.76
9:FF:105:LEU:HD21	9:FF:112:THR:HG23	1.67	0.76
17:OO:31[A]:GLY:C	17:OO:32[A]:GLN:O	2.26	0.76
83:1:579:SER:OG	83:1:580:PRO:HD3	1.86	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:122[A]:PRO:HA	17:OO:125[A]:LEU:HD23	1.67	0.76
45:qq:31:THR:O	45:qq:209:THR:CG2	2.34	0.76
82:4:6181:C:H3'	83:1:578:LYS:CE	2.16	0.76
83:1:586:ILE:HD11	83:1:708:THR:CB	2.16	0.76
57:J:14:THR:CG2	81:2:23:G:P	2.68	0.75
83:1:380:LEU:HD12	83:1:400:VAL:CA	2.11	0.75
83:1:695:ALA:HA	83:1:700:ARG:NH1	2.01	0.75
83:1:705:ILE:HA	83:1:708:THR:HG21	1.64	0.75
1:5:436:A:N1	1:5:596:U:C4	2.53	0.75
83:1:586:ILE:CG2	83:1:688:ILE:HD11	2.16	0.75
1:5:2218:G:C2	1:5:2219:G:N9	2.55	0.75
17:OO:17[A]:LEU:O	17:OO:19[A]:ARG:N	2.19	0.75
17:OO:34[A]:ILE:HG23	17:OO:35[A]:VAL:H	1.46	0.75
1:5:1083:A:OP2	14:LL:5:LYS:NZ	2.18	0.75
81:2:8:U:O4	81:2:1138:A:N6	2.18	0.75
29:aa:33:GLY:O	29:aa:34:MET:HB2	1.87	0.75
1:5:958:U:H2'	1:5:959:U:C6	2.22	0.75
81:2:928:A:O2'	81:2:929:A:H5''	1.85	0.75
17:OO:143[A]:SER:O	17:OO:145[A]:SER:N	2.19	0.75
1:5:529:U:C2	1:5:532:A:N6	2.54	0.74
1:5:2393:A:H2'	1:5:2394:G:O4'	1.86	0.74
1:5:298:U:H4'	1:5:299:G:H5'	1.70	0.74
1:5:1197:G:C5	1:5:1198:C:C4	2.74	0.74
1:5:2260:A:O2'	81:2:1653:A:N1	2.19	0.74
81:2:885:U:H2'	81:2:886:A:H5''	1.67	0.74
82:4:6181:C:H3'	83:1:578:LYS:HZ3	1.45	0.74
17:OO:43[A]:ASN:OD1	17:OO:136[A]:TYR:HE2	1.71	0.74
81:2:945:U:H2'	81:2:946:U:C6	2.23	0.74
83:1:517:CYS:SG	83:1:518:VAL:N	2.61	0.74
1:5:2167:A:C4	1:5:2238:U:C4	2.52	0.74
17:OO:114[A]:ASP:HA	17:OO:118[A]:ARG:NH1	1.99	0.74
1:5:1923:G:C6	1:5:2057:A:H2	2.05	0.74
1:5:2481:C:P	10:GG:244:LYS:HE2	2.21	0.74
81:2:11:A:O2'	81:2:12:U:O5'	2.01	0.74
83:1:695:ALA:O	83:1:700:ARG:CZ	2.36	0.74
81:2:886:A:N7	81:2:887:U:C5	2.56	0.74
1:5:2218:G:H1'	1:5:2219:G:C5'	2.11	0.74
11:HH:41:ILE:HD12	11:HH:43:VAL:HG13	1.69	0.74
17:OO:9[A]:VAL:HA	17:OO:35[A]:VAL:CG1	2.17	0.74
83:1:380:LEU:CD1	83:1:400:VAL:N	2.51	0.74
1:5:520:G:H2'	1:5:521:U:H5'	1.70	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2055:G:C2	1:5:2056:C:N3	2.56	0.73
17:OO:103[A]:LEU:HG	17:OO:103[A]:LEU:O	1.87	0.73
83:1:580:PRO:CG	83:1:583:HIS:CE1	2.70	0.73
1:5:2218:G:C2	1:5:2219:G:N7	2.56	0.73
1:5:2284:G:O2'	1:5:2285:G:H5'	1.88	0.73
6:CC:349:ILE:HG13	6:CC:350:LYS:CA	2.18	0.73
17:OO:107[A]:GLU:OE2	17:OO:107[A]:GLU:CA	2.35	0.73
54:G:155:ASP:HB2	81:2:77:U:O3'	1.87	0.73
49:B:117:TRP:H	81:2:931:U:P	2.11	0.73
74:a:10:ARG:CZ	81:2:1795:A:OP1	2.37	0.73
83:1:30:HIS:CE1	83:1:133:GLU:OE1	2.41	0.73
83:1:647:ILE:HB	83:1:685:ARG:NH1	2.02	0.73
1:5:78:U:H3	1:5:325:A:H61	1.36	0.73
1:5:1194:A:H1'	1:5:1195:C:O4'	1.88	0.73
45:qq:122:ARG:C	82:4:6039:A:H2'	2.07	0.73
45:qq:125:GLY:HA3	82:4:6039:A:N6	2.03	0.73
81:2:1439:C:H2'	81:2:1440:U:H5'	1.69	0.73
82:4:6181:C:C2'	83:1:578:LYS:NZ	2.43	0.73
83:1:702:GLY:HA3	83:1:706:ILE:HD12	1.67	0.73
14:LL:3:ILE:HG13	14:LL:4:SER:H	1.53	0.73
83:1:381:TYR:C	83:1:382:VAL:HG23	2.12	0.73
1:5:2167:A:O4'	1:5:2238:U:H1'	1.88	0.73
17:OO:145[A]:SER:O	17:OO:146[A]:VAL:HG13	1.87	0.73
1:5:529:U:O2	1:5:532:A:N7	2.22	0.73
17:OO:176[A]:ASN:C	17:OO:178[A]:VAL:N	2.44	0.73
1:5:2505:A:O3'	49:B:226:GLY:O	2.07	0.73
45:qq:120:VAL:O	45:qq:122:ARG:N	2.22	0.73
83:1:157:ILE:CD1	83:1:211:PHE:CE1	2.71	0.73
1:5:1033:A:C2	1:5:1069:A:C6	2.77	0.72
1:5:1927:G:O6	1:5:2054:U:H2'	1.88	0.72
83:1:589:LYS:CD	83:1:685:ARG:HD2	2.18	0.72
1:5:529:U:O2	1:5:532:A:C5	2.42	0.72
1:5:2479:U:H2'	1:5:2480:A:O4'	1.89	0.72
17:OO:7[A]:VAL:HG12	17:OO:8[A]:VAL:N	2.03	0.72
17:OO:47[A]:GLU:HG3	17:OO:47[A]:GLU:O	1.89	0.72
17:OO:159[A]:GLU:O	17:OO:160[A]:LYS:C	2.30	0.72
45:qq:58:CYS:HB3	45:qq:153:SER:HB3	1.70	0.72
70:W:40:VAL:HG11	70:W:103:ILE:HD12	1.71	0.72
1:5:943:A:H2'	1:5:944:A:O4'	1.88	0.72
1:5:2238:U:C5	1:5:2239:A:C8	2.78	0.72
17:OO:66[A]:ASN:C	17:OO:68[A]:THR:H	1.96	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:161[A]:ARG:HG2	17:OO:162[A]:LYS:N	2.04	0.72
45:qq:111:VAL:HG13	45:qq:138:VAL:HG21	1.71	0.72
83:1:580:PRO:HG2	83:1:583:HIS:CE1	2.22	0.72
81:2:10:G:H8	81:2:1631:A:HO2'	1.35	0.72
57:J:170:GLY:C	81:2:511:A:O4'	2.32	0.72
1:5:1925:G:N1	1:5:2056:C:C4	2.58	0.72
1:5:2480:A:H3'	1:5:2481:C:C4'	2.20	0.72
1:5:1924:C:N4	1:5:2055:G:C6	2.57	0.72
83:1:519:LEU:C	83:1:519:LEU:HD12	2.15	0.72
83:1:702:GLY:HA2	83:1:706:ILE:HG13	1.71	0.72
83:1:702:GLY:C	83:1:706:ILE:HD12	2.15	0.72
17:OO:193[A]:LYS:HE3	17:OO:193[A]:LYS:CA	2.17	0.72
45:qq:118:LYS:CA	82:4:6038:G:O5'	2.38	0.72
57:J:14:THR:HG21	81:2:22:A:O3'	1.89	0.71
1:5:2167:A:C8	1:5:2238:U:C2	2.77	0.71
1:5:2237:U:N3	1:5:2241:G:C6	2.54	0.71
1:5:2480:A:H2'	1:5:2481:C:C4'	2.21	0.71
17:OO:172[A]:LYS:O	17:OO:173[A]:LYS:C	2.33	0.71
45:qq:118:LYS:CA	82:4:6038:G:H8	2.00	0.71
45:qq:123:LEU:N	82:4:6039:A:C2	2.56	0.71
81:2:884:G:O3'	81:2:885:U:H4'	1.90	0.71
45:qq:150:ASP:HA	45:qq:154:THR:OG1	1.90	0.71
48:A:73:VAL:HG13	48:A:120:LEU:HD12	1.72	0.71
1:5:1693:U:H1'	1:5:1694:C:C6	2.25	0.71
1:5:2238:U:H2'	1:5:2239:A:O4'	1.90	0.71
3:8:145:U:H2'	3:8:146:U:C6	2.25	0.71
74:a:85:ARG:CZ	74:a:85:ARG:HA	2.20	0.71
1:5:1867:G:O2'	24:VV:21:ALA:HB2	1.90	0.71
10:GG:74:ILE:O	10:GG:76:GLN:N	2.24	0.71
81:2:1173:C:N3	81:2:1464:G:C2	2.58	0.71
74:a:70:LYS:NZ	81:2:930:C:OP2	2.24	0.71
1:5:52:A:N3	1:5:782:U:O2'	2.23	0.71
1:5:1083:A:P	14:LL:5:LYS:HZ1	2.14	0.71
83:1:681:MET:HB3	83:1:682:ARG:HG3	1.73	0.71
54:G:154:ARG:CA	81:2:78:A:O5'	2.39	0.71
5:BB:56:ILE:HD12	5:BB:76:VAL:HG21	1.72	0.71
17:OO:97[A]:LYS:O	17:OO:98[A]:ALA:O	2.08	0.71
17:OO:137[A]:THR:HG22	17:OO:138[A]:THR:N	1.97	0.71
5:BB:283:TYR:HB2	5:BB:323:ILE:HG22	1.73	0.70
45:qq:123:LEU:CA	82:4:6039:A:C2	2.75	0.70
83:1:577:SER:HB2	83:1:585:ARG:HA	1.72	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:587:TYR:HE2	83:1:690:ASP:CA	1.83	0.70
1:5:1927:G:O6	1:5:2055:G:C8	2.44	0.70
5:BB:382:THR:N	5:BB:383:LEU:HB3	2.07	0.70
17:OO:7[A]:VAL:HG13	17:OO:8[A]:VAL:N	2.04	0.70
44:pp:36:THR:HG22	44:pp:47:VAL:HG23	1.73	0.70
45:qq:57:VAL:HG12	45:qq:182:GLN:OE1	1.89	0.70
1:5:2480:A:H2'	1:5:2481:C:H1'	1.71	0.70
17:OO:129[A]:ARG:O	17:OO:131[A]:LYS:N	2.25	0.70
48:A:120:LEU:HD11	48:A:144:ILE:HD12	1.73	0.70
1:5:2662:A:H2'	1:5:2663:A:C8	2.25	0.70
45:qq:150:ASP:CA	45:qq:154:THR:OG1	2.40	0.70
6:CC:349:ILE:HG23	6:CC:350:LYS:HG3	1.73	0.70
45:qq:58:CYS:CB	45:qq:153:SER:HB3	2.22	0.70
83:1:371:ASN:O	83:1:372:CYS:HB3	1.91	0.70
1:5:2055:G:N3	1:5:2056:C:N3	2.40	0.70
1:5:2234:C:HO2'	1:5:2235:U:C4'	1.98	0.70
3:8:8:C:HO2'	3:8:9:A:C5'	2.03	0.70
14:LL:5:LYS:H	14:LL:5:LYS:CD	1.96	0.70
17:OO:82[A]:TYR:O	17:OO:82[A]:TYR:CG	2.43	0.70
81:2:1653:A:N6	81:2:1743:G:O2'	2.25	0.70
17:OO:124[A]:ALA:O	17:OO:125[A]:LEU:C	2.33	0.69
45:qq:8:HIS:O	45:qq:10:ARG:N	2.25	0.69
83:1:806:SER:HB2	83:1:813:SER:CB	2.19	0.69
27:YY:56:VAL:HG21	27:YY:104:VAL:HG13	1.72	0.69
1:5:2237:U:C4	1:5:2241:G:N1	2.49	0.69
81:2:884:G:H3'	81:2:885:U:O4'	1.88	0.69
83:1:647:ILE:CB	83:1:685:ARG:HH12	2.05	0.69
1:5:78:U:C4	1:5:325:A:N1	2.60	0.69
1:5:613:U:OP1	29:aa:21:ARG:NH2	2.25	0.69
1:5:2055:G:N7	1:5:2056:C:N4	2.40	0.69
63:P:18:LYS:O	66:S:95:GLY:N	2.24	0.69
83:1:244:LEU:O	83:1:245:TRP:CB	2.41	0.69
83:1:698:ILE:CA	83:1:699:HIS:HB3	2.23	0.69
83:1:727:PRO:HB2	83:1:728:VAL:HA	1.73	0.69
1:5:1464:G:C4	40:ll:13:MET:SD	2.85	0.69
6:CC:93:MET:SD	6:CC:93:MET:N	2.64	0.69
45:qq:122:ARG:HB3	82:4:6040:U:OP2	1.90	0.69
1:5:2218:G:C5	1:5:2219:G:C1'	2.76	0.69
1:5:2238:U:O2'	1:5:2239:A:H5'	1.92	0.69
1:5:3023:U:H3	1:5:3055:A:H61	1.41	0.69
1:5:520:G:H2'	1:5:521:U:C5'	2.22	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1574:A:O2'	1:5:1576:U:OP2	2.08	0.69
1:5:1923:G:O5'	1:5:1923:G:C8	2.44	0.69
1:5:2482:U:O2'	1:5:2483:U:C6	2.46	0.69
1:5:2502:G:O2'	1:5:2516:A:N1	2.22	0.69
49:B:114:VAL:HG21	81:2:929:A:C2	2.27	0.69
81:2:406:A:O2'	81:2:1669:A:N3	2.25	0.69
83:1:647:ILE:HG13	83:1:685:ARG:O	1.93	0.69
81:2:888:U:H2'	81:2:889:C:C6	2.28	0.69
81:2:1085:A:H2'	81:2:1086:A:C8	2.28	0.69
1:5:1579:G:H2'	1:5:1580:G:O4'	1.93	0.69
4:AA:112:ILE:HD12	44:pp:82:THR:HG21	1.74	0.69
81:2:969:A:N6	81:2:970:A:C4	2.61	0.69
83:1:413:ILE:CG2	83:1:463:LEU:HD21	2.23	0.69
83:1:700:ARG:HG2	83:1:705:ILE:HD11	1.74	0.69
1:5:2438:G:O2'	45:qq:24:LYS:NZ	2.26	0.68
1:5:2481:C:O2'	1:5:2482:U:C6	2.46	0.68
1:5:3077:G:C2	1:5:3094:C:C2	2.81	0.68
1:5:3077:G:N2	1:5:3094:C:C2	2.61	0.68
1:5:3243:U:H5'	34:ff:66:VAL:HG21	1.74	0.68
17:OO:169[A]:TYR:O	17:OO:169[A]:TYR:CG	2.45	0.68
17:OO:57[A]:ASP:O	17:OO:61[A]:LYS:NZ	2.20	0.68
81:2:23:G:O2'	81:2:24:U:O5'	2.09	0.68
83:1:380:LEU:HD12	83:1:400:VAL:HA	1.74	0.68
83:1:703:GLY:H	83:1:706:ILE:HB	1.58	0.68
17:OO:154[A]:VAL:O	17:OO:154[A]:VAL:HG12	1.92	0.68
62:O:81:ILE:HB	62:O:115:ILE:HG22	1.75	0.68
81:2:1601:U:H2'	81:2:1602:U:C6	2.28	0.68
83:1:583:HIS:ND1	83:1:704:GLN:HB3	2.08	0.68
1:5:1925:G:C6	1:5:2056:C:C4	2.80	0.68
1:5:2239:A:C6	1:5:2240:A:C6	2.81	0.68
1:5:3023:U:H1'	1:5:3025:U:OP2	1.93	0.68
17:OO:182[A]:LYS:C	17:OO:184[A]:ALA:N	2.50	0.68
17:OO:182[A]:LYS:O	17:OO:184[A]:ALA:N	2.26	0.68
81:2:628:U:C2	81:2:969:A:N6	2.61	0.68
1:5:78:U:O2	1:5:78:U:H2'	1.93	0.68
1:5:1557:A:O2'	40:ll:4:GLN:OE1	2.08	0.68
14:LL:3:ILE:HG21	29:aa:41:HIS:HD2	0.71	0.68
17:OO:35[A]:VAL:HG21	17:OO:113[A]:TYR:CZ	2.29	0.68
17:OO:63[A]:THR:O	17:OO:64[A]:ALA:C	2.37	0.68
17:OO:98[A]:ALA:O	17:OO:99[A]:ALA:C	2.37	0.68
45:qq:120:VAL:O	45:qq:121:PRO:C	2.37	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2438:G:C6	1:5:2439:C:N4	2.62	0.68
17:OO:99[A]:ALA:O	17:OO:102[A]:ARG:N	2.22	0.68
82:4:6195:G:O2'	82:4:6196:A:C8	2.44	0.68
1:5:2237:U:O4	1:5:2241:G:C2	2.46	0.68
45:qq:119:GLN:O	82:4:6087:G:C6	2.47	0.68
83:1:698:ILE:HB	83:1:699:HIS:CA	2.22	0.68
17:OO:126[A]:ARG:CD	17:OO:136[A]:TYR:CD2	2.76	0.68
83:1:583:HIS:HE1	83:1:704:GLN:CG	2.06	0.68
1:5:2167:A:O4'	1:5:2238:U:C1'	2.42	0.68
1:5:2281:A:O2'	1:5:2284:G:N3	2.27	0.68
6:CC:104:LYS:O	6:CC:106:TRP:N	2.27	0.68
1:5:2218:G:N1	1:5:2219:G:C5	2.62	0.68
81:2:299:A:H2'	81:2:300:A:C8	2.28	0.68
1:5:336:A:C2	1:5:337:G:C5	2.81	0.67
17:OO:58[A]:TYR:O	17:OO:59[A]:LEU:C	2.35	0.67
81:2:1363:G:N2	81:2:1364:C:C2	2.62	0.67
83:1:576:LEU:HD23	83:1:587:TYR:HA	1.76	0.67
83:1:577:SER:OG	83:1:586:ILE:HB	1.94	0.67
1:5:2035:G:H2'	1:5:2036:U:O4'	1.94	0.67
17:OO:162[A]:LYS:O	17:OO:163[A]:ALA:C	2.38	0.67
17:OO:63[A]:THR:O	17:OO:63[A]:THR:HG22	1.94	0.67
17:OO:148[A]:TRP:CE2	17:OO:150[A]:TYR:O	2.47	0.67
26:XX:113:LEU:C	26:XX:113:LEU:HD12	2.20	0.67
83:1:381:TYR:O	83:1:467:GLY:O	2.12	0.67
17:OO:70[A]:GLY:O	17:OO:71[A]:PRO:C	2.37	0.67
63:P:17:TYR:C	66:S:92:VAL:O	2.36	0.67
81:2:886:A:C8	81:2:887:U:C5	2.82	0.67
82:4:6127:C:N3	82:4:6160:G:O6	2.27	0.67
17:OO:32[A]:GLN:HG3	17:OO:33[A]:LYS:O	1.95	0.67
17:OO:129[A]:ARG:O	17:OO:130[A]:LEU:C	2.38	0.67
1:5:2480:A:C6	1:5:2481:C:N3	2.63	0.67
17:OO:29[A]:LEU:N	17:OO:29[A]:LEU:HD23	2.08	0.67
81:2:884:G:O3'	81:2:885:U:C4'	2.42	0.67
1:5:1044:U:H2'	1:5:1045:U:C6	2.30	0.67
17:OO:58[A]:TYR:C	17:OO:60[A]:ARG:N	2.52	0.67
17:OO:148[A]:TRP:CZ3	17:OO:150[A]:TYR:O	2.47	0.67
1:5:1923:G:N1	1:5:2057:A:C2	2.62	0.67
57:J:170:GLY:N	81:2:511:A:OP1	2.23	0.67
81:2:1046:G:C2	81:2:1071:C:C2	2.82	0.67
83:1:693:LEU:HB3	83:1:695:ALA:CA	2.05	0.67
1:5:2217:C:C3'	1:5:2218:G:C5'	2.00	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:4:6120:U:C6	82:4:6127:C:H5'	2.29	0.67
83:1:581:ASN:N	83:1:583:HIS:CD2	2.34	0.67
1:5:529:U:C2	1:5:532:A:C6	2.82	0.67
1:5:1147:C:H2'	1:5:1148:G:N2	2.09	0.67
81:2:1793:U:O3'	81:2:1795:A:N1	2.28	0.67
1:5:1925:G:C6	1:5:2057:A:C4	2.83	0.66
17:OO:4[A]:PHE:C	17:OO:5[A]:GLU:OE1	2.38	0.66
33:ee:122:ALA:HA	33:ee:124:ALA:N	2.11	0.66
54:G:154:ARG:CA	81:2:78:A:H3'	2.25	0.66
17:OO:28[A]:LEU:C	17:OO:30[A]:ASN:H	2.02	0.66
81:2:480:A:C2	81:2:506:U:C4	2.83	0.66
83:1:733:ILE:HG22	83:1:792:ALA:HB1	1.77	0.66
1:5:2237:U:P	82:4:6205:DA:OP1	2.52	0.66
45:qq:123:LEU:CA	82:4:6039:A:O2'	2.43	0.66
1:5:2167:A:C1'	1:5:2238:U:O4'	2.43	0.66
45:qq:143:ASP:HB2	45:qq:146:GLN:OE1	1.95	0.66
81:2:51:A:N6	81:2:439:U:H3	1.93	0.66
81:2:363:G:N2	81:2:380:C:C2	2.63	0.66
83:1:698:ILE:HG21	83:1:699:HIS:HD2	1.53	0.66
17:OO:9[A]:VAL:CG2	17:OO:35[A]:VAL:HG11	2.24	0.66
17:OO:42[A]:LEU:HD13	17:OO:42[A]:LEU:N	2.09	0.66
44:pp:56:SER:OG	44:pp:57:CYS:N	2.25	0.66
74:a:85:ARG:HA	74:a:85:ARG:NE	2.09	0.66
83:1:806:SER:CB	83:1:815:ALA:H	2.08	0.66
17:OO:42[A]:LEU:HB2	17:OO:139[A]:LEU:HD22	1.77	0.66
17:OO:65[A]:PHE:O	17:OO:65[A]:PHE:HD1	1.73	0.66
17:OO:113[A]:TYR:C	17:OO:115[A]:LYS:H	2.04	0.66
17:OO:145[A]:SER:C	17:OO:146[A]:VAL:CG1	2.66	0.66
81:2:928:A:O2'	81:2:929:A:C5'	2.44	0.66
1:5:285:A:OP1	1:5:306:A:H5''	1.94	0.66
1:5:2238:U:C6	1:5:2239:A:C8	2.84	0.66
45:qq:100:ILE:HD12	45:qq:124:LEU:HD23	1.78	0.66
81:2:811:A:O4'	81:2:857:G:N2	2.29	0.66
81:2:1671:G:C6	81:2:1672:C:N4	2.64	0.66
83:1:459:ILE:HG22	83:1:463:LEU:HG	1.78	0.66
1:5:2481:C:OP1	10:GG:244:LYS:CE	2.39	0.66
8:EE:126:LYS:HD3	8:EE:126:LYS:N	2.11	0.66
17:OO:52[A]:LYS:HG2	17:OO:52[A]:LYS:O	1.95	0.66
17:OO:197[A]:LEU:C	17:OO:199[A]:TYR:N	2.52	0.66
45:qq:121:PRO:HB2	82:4:6087:G:C8	2.31	0.66
81:2:980:U:O2'	81:2:1122:C:N3	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:586:ILE:HD12	83:1:708:THR:OG1	1.93	0.66
50:C:169:SER:O	50:C:169:SER:OG	2.14	0.66
1:5:1925:G:C2	1:5:2056:C:H2'	2.30	0.66
1:5:2218:G:C5	1:5:2219:G:C4	2.84	0.66
74:a:74:CYS:O	74:a:77:CYS:N	2.28	0.66
17:OO:11[A]:ASP:OD1	17:OO:13[A]:LYS:HB3	1.96	0.65
82:4:6189:G:O2'	87:1:903:6EM:O6	2.13	0.65
83:1:589:LYS:HD3	83:1:685:ARG:CD	2.21	0.65
1:5:1197:G:C5	1:5:1198:C:N4	2.64	0.65
45:qq:150:ASP:CB	45:qq:154:THR:OG1	2.44	0.65
83:1:659:ILE:HD13	83:1:693:LEU:HD11	1.77	0.65
1:5:1186:U:H2'	1:5:1187:C:O4'	1.96	0.65
1:5:1925:G:C2	1:5:2056:C:C4	2.75	0.65
1:5:2167:A:N7	1:5:2238:U:N3	2.45	0.65
45:qq:12:HIS:CE1	45:qq:214:TYR:CG	2.84	0.65
54:G:83:CYS:N	81:2:161:A:OP1	2.29	0.65
81:2:366:A:H2'	81:2:367:U:O4'	1.96	0.65
81:2:954:A:H2'	81:2:955:C:O4'	1.96	0.65
1:5:2457:A:N1	45:qq:26:ARG:NH1	2.45	0.65
1:5:2480:A:C3'	1:5:2481:C:H4'	2.26	0.65
81:2:987:A:C2	81:2:988:U:C2	2.85	0.65
83:1:577:SER:OG	83:1:586:ILE:CB	2.45	0.65
14:LL:103:ASN:HB3	14:LL:109:LEU:HD21	1.79	0.65
17:OO:55[A]:TYR:CE2	17:OO:59[A]:LEU:HD13	2.31	0.65
54:G:155:ASP:N	81:2:78:A:P	2.70	0.65
83:1:564:ARG:HD2	83:1:681:MET:CB	2.27	0.65
1:5:1554:C:C2'	1:5:1555:G:H5'	2.26	0.65
17:OO:23[A]:THR:O	17:OO:24[A]:VAL:C	2.39	0.65
17:OO:130[A]:LEU:O	17:OO:131[A]:LYS:C	2.40	0.65
26:XX:73:MET:SD	26:XX:73:MET:N	2.69	0.65
54:G:136:LYS:O	54:G:175:ILE:HG23	1.97	0.65
83:1:413:ILE:HG23	83:1:463:LEU:HD21	1.78	0.65
1:5:957:U:C2	1:5:958:U:C5	2.85	0.65
1:5:2236:C:H2'	1:5:2237:U:C6	2.31	0.65
17:OO:119[A]:VAL:O	17:OO:119[A]:VAL:CG2	2.42	0.65
17:OO:151[A]:GLU:O	17:OO:154[A]:VAL:N	2.23	0.65
18:PP:36:ILE:HD11	18:PP:95:LEU:HD11	1.78	0.65
45:qq:123:LEU:CB	82:4:6039:A:C2'	2.75	0.65
57:J:14:THR:CG2	81:2:22:A:O3'	2.45	0.65
17:OO:24[A]:VAL:O	17:OO:28[A]:LEU:HG	1.97	0.64
39:kk:51:LEU:C	39:kk:51:LEU:HD12	2.22	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:1338:C:O2'	81:2:1340:A:N7	2.26	0.64
83:1:380:LEU:CB	83:1:400:VAL:HA	2.27	0.64
1:5:1925:G:C2	1:5:2056:C:C2'	2.81	0.64
83:1:682:ARG:HB2	83:1:683:SER:OG	1.96	0.64
39:kk:3:LYS:CD	39:kk:51:LEU:HG	2.25	0.64
81:2:1131:A:C2	81:2:1132:A:C4	2.85	0.64
82:4:6104:G:H2'	82:4:6105:U:O4'	1.97	0.64
1:5:1624:G:H8	1:5:1624:G:H5''	1.61	0.64
17:OO:49[A]:PHE:CD1	17:OO:49[A]:PHE:C	2.75	0.64
17:OO:193[A]:LYS:HA	17:OO:193[A]:LYS:CE	2.15	0.64
18:PP:36:ILE:CD1	18:PP:95:LEU:HD11	2.27	0.64
83:1:576:LEU:HD22	83:1:586:ILE:O	1.96	0.64
17:OO:12[A]:GLY:O	17:OO:13[A]:LYS:C	2.38	0.64
81:2:480:A:C6	81:2:506:U:C4	2.84	0.64
82:4:6127:C:O2	82:4:6160:G:N1	2.30	0.64
83:1:584:ASN:O	83:1:585:ARG:HG3	1.98	0.64
83:1:702:GLY:CA	83:1:706:ILE:CD1	2.44	0.64
1:5:1925:G:C4	1:5:2056:C:N3	2.65	0.64
1:5:1928:A:C2	1:5:2053:C:O2'	2.50	0.64
1:5:2218:G:N3	1:5:2219:G:N9	2.44	0.64
12:II:49:CYS:SG	12:II:51:HIS:CE1	2.91	0.64
81:2:8:U:C3'	81:2:9:U:H5'	2.28	0.64
83:1:587:TYR:CD2	83:1:690:ASP:C	2.76	0.64
17:OO:44[A]:ILE:CD1	17:OO:139[A]:LEU:CD1	2.72	0.64
17:OO:63[A]:THR:OG1	17:OO:70[A]:GLY:HA2	1.98	0.64
38:jj:5:THR:HG22	38:jj:6:PRO:HD3	1.80	0.64
50:C:82:LYS:HA	50:C:83:ASP:HB2	1.78	0.64
52:E:9:LEU:HD13	52:E:28:ALA:HB3	1.80	0.64
70:W:55:ASP:O	70:W:57:ARG:N	2.31	0.64
83:1:694:HIS:N	83:1:695:ALA:O	2.29	0.64
1:5:336:A:C2	1:5:337:G:C6	2.86	0.64
1:5:1288:A:C4	1:5:1290:G:N7	2.66	0.64
1:5:2072:U:H2'	1:5:2073:A:O4'	1.98	0.64
26:XX:105:VAL:HG11	26:XX:126:LEU:HD22	1.80	0.64
83:1:591:GLU:HB3	83:1:592:PRO:C	2.22	0.64
1:5:2167:A:C5	1:5:2238:U:N3	2.63	0.64
6:CC:349:ILE:CG2	6:CC:350:LYS:HG3	2.28	0.64
83:1:562:ALA:CB	83:1:563:TYR:HA	2.26	0.64
6:CC:74:ILE:HD11	6:CC:93:MET:HE2	1.79	0.64
17:OO:139[A]:LEU:C	17:OO:141[A]:LYS:N	2.56	0.64
45:qq:119:GLN:CG	82:4:6038:G:H5'	2.16	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:859:A:C2	1:5:860:U:C2	2.87	0.63
1:5:883:G:N7	4:AA:9:ARG:NH2	2.46	0.63
1:5:1926:U:N3	1:5:2055:G:C4	2.66	0.63
1:5:2481:C:C2'	1:5:2482:U:H6	1.99	0.63
17:OO:122[A]:PRO:C	17:OO:124[A]:ALA:H	2.04	0.63
74:a:32:LYS:CE	81:2:931:U:O2'	2.45	0.63
83:1:750:LYS:O	83:1:751:ARG:CG	2.44	0.63
1:5:2218:G:O2'	1:5:2219:G:O5'	2.16	0.63
1:5:2223:U:H2'	1:5:2224:A:O4'	1.98	0.63
17:OO:99[A]:ALA:C	17:OO:101[A]:GLU:H	2.06	0.63
34:ff:71:ILE:HG23	34:ff:81:VAL:HG13	1.80	0.63
81:2:391:G:OP1	81:2:1727:C:O2'	2.14	0.63
83:1:47:SER:HA	83:1:48:ALA:HB3	1.80	0.63
83:1:701:GLY:H	83:1:704:GLN:HB2	1.64	0.63
1:5:436:A:N6	1:5:597:G:C6	2.66	0.63
1:5:518:C:O2	1:5:518:C:H2'	1.97	0.63
1:5:2167:A:N9	1:5:2238:U:C6	2.66	0.63
1:5:2530:A:H1'	1:5:2531:A:OP1	1.99	0.63
17:OO:190[A]:VAL:C	17:OO:192[A]:GLU:N	2.54	0.63
71:X:7:ARG:HD3	81:2:1101:G:OP2	1.97	0.63
81:2:9:U:O2'	81:2:11:A:N7	2.29	0.63
81:2:886:A:C5	81:2:887:U:C4	2.86	0.63
81:2:1592:G:OP2	81:2:1594:C:N4	2.31	0.63
82:4:6126:C:O2	82:4:6161:A:N1	2.30	0.63
1:5:2107:A:O2'	1:5:2108:A:OP1	2.16	0.63
1:5:2164:C:H2'	1:5:2165:C:O4'	1.98	0.63
17:OO:143[A]:SER:O	17:OO:144[A]:THR:C	2.40	0.63
39:kk:8:ILE:HG12	39:kk:9:LYS:HA	1.80	0.63
81:2:10:G:H2'	81:2:11:A:C8	2.34	0.63
83:1:685:ARG:HD3	83:1:687:ASN:H	1.63	0.63
1:5:674:G:C5	1:5:675:C:C4	2.87	0.63
1:5:2167:A:N1	1:5:2238:U:H5	1.89	0.63
5:BB:218:VAL:HG13	5:BB:274:HIS:HE1	1.63	0.63
14:LL:3:ILE:HD12	29:aa:34:MET:HE3	1.67	0.63
17:OO:184[A]:ALA:O	17:OO:187[A]:GLY:N	2.32	0.63
81:2:1044:C:O2	81:2:1073:G:C2	2.51	0.63
82:4:6134:C:O2'	82:4:6135:C:O5'	2.16	0.63
83:1:133:GLU:OE1	83:1:136:CYS:HB2	1.99	0.63
1:5:907:A:OP2	29:aa:27:LYS:NZ	2.29	0.63
1:5:1925:G:C2'	1:5:2055:G:N2	2.62	0.63
1:5:2239:A:O2'	1:5:2240:A:O4'	2.15	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2479:U:H2'	1:5:2480:A:H5'	1.78	0.63
17:OO:7[A]:VAL:HG13	17:OO:8[A]:VAL:H	1.63	0.63
81:2:51:A:N6	81:2:439:U:N3	2.47	0.63
74:a:74:CYS:O	74:a:76:SER:N	2.32	0.63
1:5:2151:A:OP1	4:AA:193:ARG:NH2	2.32	0.63
1:5:2971:G:N2	1:5:2972:C:C2	2.67	0.63
1:5:3054:A:H3'	1:5:3055:A:N7	2.14	0.63
3:8:7:U:O2'	3:8:8:C:H5'	1.99	0.63
45:qq:122:ARG:HB2	82:4:6039:A:H5''	1.81	0.63
82:4:6127:C:C2	82:4:6160:G:N1	2.67	0.63
1:5:2218:G:N2	1:5:2219:G:N7	2.47	0.62
13:JJ:82:ARG:HB3	13:JJ:112:LEU:HB2	1.81	0.62
28:ZZ:46:ILE:HD11	28:ZZ:49:TYR:CD2	2.34	0.62
48:A:90:ALA:HB2	48:A:97:PRO:HG3	1.81	0.62
1:5:1159:U:C4	1:5:1288:A:N1	2.66	0.62
1:5:2050:A:OP1	1:5:2051:U:C5	2.51	0.62
1:5:2247:C:C2	1:5:2276:G:N2	2.67	0.62
1:5:2877:U:H2'	1:5:2878:A:O4'	1.98	0.62
1:5:3243:U:O2	1:5:3243:U:H2'	1.97	0.62
5:BB:57:VAL:HG22	5:BB:73:VAL:HG22	1.81	0.62
45:qq:30:GLU:C	45:qq:209:THR:HG21	2.25	0.62
81:2:928:A:C3'	81:2:929:A:H5'	2.29	0.62
83:1:380:LEU:CD1	83:1:400:VAL:HG23	2.28	0.62
1:5:2167:A:C5	1:5:2168:G:C8	2.87	0.62
1:5:2218:G:H4'	1:5:2219:G:OP1	1.98	0.62
1:5:2313:U:H2'	1:5:2314:A:C8	2.34	0.62
17:OO:106[A]:PHE:CG	17:OO:110[A]:PRO:HG3	2.33	0.62
45:qq:119:GLN:CG	82:4:6038:G:OP2	2.45	0.62
1:5:1876:C:O2	5:BB:240:ARG:NH2	2.33	0.62
1:5:1925:G:N3	1:5:2056:C:C2'	2.63	0.62
5:BB:14:LEU:HD23	5:BB:17:LEU:HD12	1.81	0.62
6:CC:35:VAL:HG21	6:CC:244:LEU:HD21	1.80	0.62
81:2:823:G:N2	81:2:848:C:C2	2.67	0.62
81:2:987:A:H2'	81:2:988:U:C6	2.35	0.62
82:4:6182:A:OP1	83:1:585:ARG:NH2	2.32	0.62
3:8:9:A:C2	3:8:10:A:C6	2.86	0.62
17:OO:55[A]:TYR:C	17:OO:57[A]:ASP:N	2.50	0.62
83:1:695:ALA:C	83:1:700:ARG:HH12	2.00	0.62
83:1:727:PRO:CB	83:1:728:VAL:HA	2.29	0.62
81:2:628:U:C4	81:2:969:A:C6	2.85	0.62
83:1:579:SER:OG	83:1:704:GLN:O	2.14	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:583:HIS:CE1	83:1:704:GLN:CB	2.80	0.62
17:OO:63[A]:THR:OG1	17:OO:70[A]:GLY:CA	2.48	0.62
81:2:1378:U:O2'	81:2:1514:A:N1	2.32	0.62
82:4:6134:C:O2'	82:4:6135:C:O4'	2.16	0.62
1:5:687:G:C5	29:aa:113:LEU:HD11	2.35	0.62
17:OO:63[A]:THR:O	17:OO:65[A]:PHE:N	2.33	0.62
83:1:694:HIS:H	83:1:695:ALA:C	2.07	0.62
1:5:887:G:C6	4:AA:207:VAL:CG2	2.83	0.62
1:5:1503:C:C2	1:5:1560:G:C2	2.88	0.62
1:5:2167:A:C8	1:5:2238:U:N3	2.67	0.62
17:OO:190[A]:VAL:C	17:OO:192[A]:GLU:H	2.08	0.62
65:R:87:ASP:HB3	65:R:88:VAL:HG13	1.82	0.62
74:a:10:ARG:NE	81:2:1795:A:OP1	2.33	0.62
17:OO:120[A]:VAL:O	17:OO:122[A]:PRO:CD	2.44	0.62
17:OO:139[A]:LEU:O	17:OO:141[A]:LYS:C	2.42	0.62
61:N:46:THR:OG1	61:N:49:GLN:NE2	2.33	0.62
81:2:1440:U:C4	81:2:1441:U:C4	2.87	0.62
1:5:2235:U:H2'	1:5:2236:C:C6	2.34	0.61
45:qq:119:GLN:HG3	82:4:6037:U:H3'	1.82	0.61
54:G:155:ASP:N	81:2:77:U:O3'	2.32	0.61
81:2:887:U:O2'	81:2:987:A:O2'	2.14	0.61
1:5:248:U:O2	1:5:248:U:H2'	2.00	0.61
1:5:502:G:C2	1:5:535:C:C2	2.88	0.61
21:SS:90:MET:HE1	21:SS:114:HIS:NE2	2.14	0.61
1:5:2280:G:H4'	1:5:2285:G:H5''	1.82	0.61
83:1:696:ASP:HB2	83:1:698:ILE:HG23	1.80	0.61
1:5:2218:G:P	1:5:2218:G:H3'	2.40	0.61
1:5:3243:U:O2	1:5:3243:U:C2'	2.48	0.61
83:1:378:LEU:HD23	83:1:405:VAL:HG13	1.81	0.61
1:5:292:U:H2'	1:5:293:C:O4'	2.00	0.61
1:5:2217:C:H3'	1:5:2218:G:H5''	1.60	0.61
29:aa:34:MET:HE2	29:aa:34:MET:HA	1.81	0.61
82:4:6200:A:H4'	82:4:6201:C:H5''	1.82	0.61
17:OO:142[A]:LEU:O	17:OO:143[A]:SER:C	2.44	0.61
45:qq:36:VAL:HG11	45:qq:190:LEU:CD1	2.31	0.61
46:rr:91:THR:HG23	46:rr:98:ILE:HD13	1.80	0.61
51:D:186:VAL:HG12	51:D:188:ILE:HD11	1.82	0.61
70:W:77:PRO:HG2	70:W:79:PHE:CZ	2.36	0.61
6:CC:156:LEU:C	6:CC:156:LEU:HD12	2.25	0.61
17:OO:143[A]:SER:O	17:OO:146[A]:VAL:N	2.34	0.61
83:1:584:ASN:C	83:1:585:ARG:HG3	2.26	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:BB:87:VAL:HG22	5:BB:110:LEU:HD23	1.81	0.61
17:OO:182[A]:LYS:O	17:OO:183[A]:SER:C	2.44	0.61
1:5:1333:G:H2'	1:5:1334:A:C8	2.36	0.61
17:OO:49[A]:PHE:O	17:OO:50[A]:ARG:O	2.19	0.61
45:qq:30:GLU:HA	45:qq:209:THR:HG21	1.83	0.61
51:D:134:CYS:SG	51:D:135:GLU:N	2.73	0.61
81:2:1046:G:N2	81:2:1071:C:C2	2.69	0.61
1:5:426:G:C2	1:5:607:C:O2	2.54	0.61
1:5:1074:A:H3'	1:5:1075:G:H5'	1.83	0.61
1:5:2218:G:H5''	1:5:2242:G:C8	2.36	0.61
17:OO:49[A]:PHE:CD1	17:OO:49[A]:PHE:O	2.54	0.61
17:OO:190[A]:VAL:O	17:OO:191[A]:SER:C	2.43	0.61
1:5:426:G:C6	1:5:427:C:N4	2.69	0.60
1:5:533:G:C6	1:5:534:C:C4	2.89	0.60
1:5:1357:A:O4'	6:CC:141:ARG:NH2	2.33	0.60
1:5:2663:A:N1	1:5:2727:U:O4	2.33	0.60
1:5:3243:U:O4	34:ff:64:ILE:C	2.44	0.60
3:8:115:C:H2'	3:8:116:G:O4'	2.00	0.60
17:OO:86[A]:ARG:HA	17:OO:100[A]:LEU:HD11	1.83	0.60
45:qq:123:LEU:HB2	82:4:6039:A:C2'	2.31	0.60
83:1:750:LYS:C	83:1:751:ARG:HG3	2.25	0.60
1:5:103:G:OP1	14:LL:70:ARG:NH2	2.34	0.60
1:5:2106:U:OP2	1:5:2111:A:N6	2.34	0.60
2:7:113:C:H2'	2:7:114:U:O4'	2.01	0.60
81:2:886:A:N1	81:2:925:A:N1	2.49	0.60
82:4:6178:U:O4	82:4:6198:A:N1	2.34	0.60
82:4:6189:G:H5'	83:1:582:LYS:HE2	1.84	0.60
83:1:519:LEU:HD12	83:1:519:LEU:O	2.01	0.60
1:5:173:G:C2	1:5:174:C:C2	2.89	0.60
1:5:594:A:OP1	18:PP:167:ARG:NH2	2.34	0.60
1:5:2235:U:C2'	1:5:2236:C:C5	2.85	0.60
3:8:38:U:C4	36:hh:89:ARG:HD2	2.35	0.60
31:cc:42:ILE:HG22	31:cc:91:THR:HG22	1.82	0.60
81:2:605:A:H4'	81:2:606:G:H5''	1.83	0.60
83:1:576:LEU:CD2	83:1:587:TYR:CE1	2.81	0.60
83:1:701:GLY:HA3	83:1:705:ILE:H	1.66	0.60
1:5:2062:A:C8	1:5:2063:C:H1'	2.37	0.60
1:5:2235:U:C2'	1:5:2236:C:C6	2.84	0.60
5:BB:214:MET:HE2	5:BB:350:ALA:HB2	1.83	0.60
17:OO:122[A]:PRO:O	17:OO:124[A]:ALA:N	2.34	0.60
83:1:577:SER:O	83:1:578:LYS:HG3	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1792:A:H2'	1:5:1793:U:O4'	2.01	0.60
72:Y:40:LEU:HD13	72:Y:60:PHE:CZ	2.37	0.60
81:2:1462:G:N1	81:2:1463:C:C4	2.70	0.60
83:1:579:SER:CB	83:1:708:THR:HB	2.28	0.60
1:5:2506:U:P	49:B:226:GLY:O	2.59	0.60
1:5:3210:G:OP1	17:OO:164[A]:ARG:NH2	2.35	0.60
2:7:8:G:P	7:DD:33:ARG:HH12	2.23	0.60
17:OO:154[A]:VAL:O	17:OO:154[A]:VAL:CG1	2.49	0.60
38:jj:21:ARG:NH2	38:jj:41:ALA:O	2.34	0.60
53:F:70:ILE:HD13	53:F:90:PRO:HG3	1.84	0.60
67:T:38:LYS:NZ	81:2:1562:U:OP1	2.23	0.60
1:5:1926:U:O2	1:5:2055:G:H1'	2.02	0.60
1:5:2332:A:H2'	1:5:2333:G:O4'	2.01	0.60
5:BB:254:ALA:O	5:BB:256:HIS:N	2.34	0.60
83:1:72:SER:CB	83:1:73:THR:HA	2.32	0.60
83:1:685:ARG:HG2	83:1:685:ARG:NH1	2.16	0.60
1:5:640:C:H1'	14:LL:10:LEU:HD21	1.83	0.60
6:CC:349:ILE:HG13	6:CC:350:LYS:HA	1.83	0.60
11:HH:4:ILE:HD11	21:SS:150:PHE:CD1	2.37	0.60
18:PP:22:LEU:HD12	18:PP:146:ILE:HD12	1.84	0.60
44:pp:55:TRP:O	44:pp:64:ILE:N	2.35	0.60
83:1:584:ASN:O	83:1:585:ARG:CG	2.50	0.60
1:5:2494:G:N7	4:AA:67:TYR:OH	2.29	0.60
8:EE:128:GLU:O	8:EE:129:ILE:CB	2.47	0.60
14:LL:10:LEU:HD23	19:QQ:166:GLN:NE2	2.17	0.60
17:OO:55[A]:TYR:O	17:OO:58[A]:TYR:N	2.25	0.60
45:qq:12:HIS:HB2	45:qq:214:TYR:OH	2.02	0.60
81:2:1671:G:H2'	81:2:1672:C:C6	2.37	0.60
83:1:413:ILE:CG2	83:1:463:LEU:CD2	2.80	0.60
54:G:155:ASP:N	81:2:78:A:C5'	2.59	0.60
74:a:74:CYS:SG	74:a:77:CYS:HB2	2.41	0.60
81:2:363:G:C2	81:2:380:C:C2	2.90	0.60
1:5:2052:G:H5''	1:5:2053:C:OP1	2.01	0.59
1:5:3243:U:C5	34:ff:64:ILE:HG22	2.37	0.59
17:OO:127[A]:VAL:O	17:OO:127[A]:VAL:CG1	2.47	0.59
81:2:1440:U:H2'	81:2:1441:U:O4'	2.02	0.59
83:1:698:ILE:HG22	83:1:699:HIS:CB	2.32	0.59
1:5:3292:C:OP1	32:dd:19:ARG:NH1	2.35	0.59
14:LL:74:GLY:O	14:LL:101:ARG:NH1	2.35	0.59
17:OO:13[A]:LYS:HG2	17:OO:14[A]:GLY:N	2.17	0.59
81:2:10:G:H8	81:2:1631:A:O2'	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:687:ASN:HB3	83:1:688:ILE:HA	1.83	0.59
1:5:2234:C:H2'	1:5:2235:U:C6	2.36	0.59
1:5:2352:C:OP2	17:OO:86[A]:ARG:NH2	2.35	0.59
6:CC:342:LYS:O	6:CC:343:LYS:C	2.46	0.59
14:LL:4:SER:HB3	14:LL:5:LYS:HD2	1.84	0.59
17:OO:9[A]:VAL:CG1	17:OO:118[A]:ARG:HB3	2.32	0.59
17:OO:63[A]:THR:H	17:OO:70[A]:GLY:HA3	1.67	0.59
17:OO:93[A]:THR:O	17:OO:96[A]:GLY:N	2.35	0.59
17:OO:182[A]:LYS:HA	17:OO:185[A]:THR:HG22	1.83	0.59
81:2:12:U:H2'	81:2:13:C:C6	2.37	0.59
82:4:6199:A:H2'	82:4:6200:A:H5'	1.83	0.59
83:1:687:ASN:CB	83:1:688:ILE:HA	2.32	0.59
83:1:701:GLY:HA2	83:1:702:GLY:C	2.28	0.59
1:5:844:C:H3'	1:5:845:U:H4'	1.84	0.59
1:5:922:A:C4	1:5:1340:A:C2	2.90	0.59
1:5:1197:G:C4	1:5:1198:C:C4	2.91	0.59
1:5:2163:G:N2	1:5:2164:C:C2	2.70	0.59
1:5:2249:A:C2'	1:5:2250:A:H5'	2.31	0.59
1:5:3055:A:C5'	1:5:3055:A:H8	2.14	0.59
1:5:3220:G:H2'	1:5:3221:G:O4'	2.03	0.59
17:OO:42[A]:LEU:N	17:OO:42[A]:LEU:CD1	2.62	0.59
63:P:17:TYR:N	66:S:92:VAL:O	2.35	0.59
82:4:6121:A:N6	82:4:6158:A:C2	2.70	0.59
1:5:2218:G:H3'	1:5:2218:G:OP2	2.03	0.59
6:CC:350:LYS:HD3	9:FF:68:ALA:CB	2.33	0.59
17:OO:139[A]:LEU:O	17:OO:140[A]:GLY:C	2.45	0.59
24:VV:34:LEU:HD21	24:VV:102:ILE:HG22	1.84	0.59
45:qq:143:ASP:HB3	45:qq:146:GLN:CB	2.27	0.59
51:D:162:GLN:O	51:D:164:VAL:N	2.36	0.59
82:4:6134:C:O2'	82:4:6135:C:C5'	2.50	0.59
83:1:54:ALA:HB1	83:1:55:ARG:HG2	1.84	0.59
1:5:1107:A:C2	1:5:1108:C:C4	2.91	0.59
1:5:1923:G:C6	1:5:2057:A:C2	2.89	0.59
45:qq:150:ASP:C	45:qq:154:THR:HB	2.15	0.59
54:G:5:ILE:HD12	54:G:16:ILE:HD13	1.83	0.59
81:2:566:A:N1	81:2:582:C:H1'	2.18	0.59
83:1:371:ASN:HB3	83:1:373:ASP:OD1	2.01	0.59
1:5:2981:U:H2'	1:5:2982:U:C6	2.38	0.59
17:OO:188[A]:THR:O	17:OO:189[A]:GLU:O	2.21	0.59
54:G:154:ARG:C	81:2:78:A:O5'	2.45	0.59
83:1:164:LEU:HD22	83:1:285:PHE:CD2	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:405:VAL:HA	83:1:406:LYS:HB3	1.84	0.59
83:1:685:ARG:HH11	83:1:685:ARG:CG	2.15	0.59
1:5:931:U:O2'	1:5:932:C:H5'	2.02	0.59
1:5:2238:U:H2'	1:5:2239:A:C5'	2.33	0.59
11:HH:27:VAL:HG12	11:HH:82:VAL:HG11	1.83	0.59
17:OO:58[A]:TYR:C	17:OO:60[A]:ARG:H	2.11	0.59
22:TT:11:THR:O	22:TT:12:ARG:C	2.45	0.59
34:ff:63:LYS:C	34:ff:64:ILE:HG13	2.27	0.59
81:2:1440:U:H5'	81:2:1445:C:N4	2.16	0.59
1:5:674:G:C6	1:5:675:C:N3	2.70	0.59
1:5:2055:G:N3	1:5:2056:C:C2	2.71	0.59
1:5:2247:C:N3	1:5:2276:G:C2	2.70	0.59
3:8:118:C:C2	3:8:136:G:N2	2.71	0.59
4:AA:57:PRO:HD2	4:AA:170:ALA:HB3	1.84	0.59
21:SS:79:VAL:HG13	21:SS:121:ILE:HG23	1.85	0.59
59:L:78:THR:HG22	59:L:84:ILE:HD11	1.85	0.59
1:5:803:G:C2	1:5:834:C:C2	2.91	0.59
1:5:2218:G:C6	1:5:2219:G:C2	2.90	0.59
1:5:2218:G:C8	1:5:2219:G:O4'	2.56	0.59
9:FF:166:VAL:HG21	9:FF:178:VAL:HG22	1.85	0.59
63:P:19:GLY:N	66:S:93:ASN:N	2.51	0.59
74:a:25:ASN:HB3	74:a:77:CYS:SG	2.42	0.59
77:d:21:CYS:SG	77:d:24:SER:N	2.76	0.59
80:g:77:ASP:HB2	80:g:78:GLY:HA3	1.84	0.59
1:5:78:U:O2	1:5:78:U:C2'	2.50	0.58
1:5:2050:A:C2'	1:5:2051:U:OP1	2.51	0.58
1:5:2167:A:H2'	1:5:2168:G:O5'	2.03	0.58
71:X:7:ARG:NH2	81:2:1099:G:O4'	2.35	0.58
81:2:864:A:N1	81:2:964:U:C5	2.71	0.58
1:5:891:A:OP1	1:5:894:C:N4	2.35	0.58
17:OO:16[A]:LEU:HD21	17:OO:130[A]:LEU:HD22	1.85	0.58
81:2:385:G:O2'	81:2:424:A:N1	2.28	0.58
81:2:478:C:H2'	81:2:479:G:O4'	2.03	0.58
81:2:1349:G:C2	81:2:1374:C:O2	2.56	0.58
1:5:312:C:O2	1:5:2746:G:C2	2.56	0.58
1:5:340:C:C2	3:8:25:G:N2	2.71	0.58
1:5:3296:G:C2	1:5:3347:C:C2	2.91	0.58
4:AA:196:TRP:CE3	4:AA:197:PRO:CD	2.86	0.58
17:OO:11[A]:ASP:OD1	17:OO:13[A]:LYS:CB	2.51	0.58
17:OO:17[A]:LEU:C	17:OO:19[A]:ARG:N	2.59	0.58
17:OO:75[A]:ARG:CD	17:OO:146[A]:VAL:O	2.51	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
74:a:23:CYS:SG	74:a:24:VAL:N	2.76	0.58
81:2:969:A:N6	81:2:970:A:C5	2.72	0.58
81:2:1462:G:N2	81:2:1463:C:C2	2.72	0.58
1:5:1083:A:P	14:LL:5:LYS:NZ	2.75	0.58
1:5:2852:C:O2	1:5:2907:G:C2	2.56	0.58
1:5:3274:U:H2'	1:5:3275:A:H5''	1.83	0.58
23:UU:80:THR:HG21	23:UU:95:PHE:CE1	2.38	0.58
1:5:1033:A:C2	1:5:1069:A:C5	2.92	0.58
1:5:2050:A:OP1	1:5:2051:U:O4	2.21	0.58
1:5:2480:A:N6	1:5:2481:C:C4	2.71	0.58
1:5:2704:A:OP1	22:TT:92:ARG:NH1	2.36	0.58
10:GG:142:ILE:HD11	10:GG:150:VAL:HG21	1.84	0.58
82:4:6121:A:N6	82:4:6158:A:H2	2.01	0.58
1:5:2237:U:C3'	1:5:2238:U:H5'	2.34	0.58
1:5:2237:U:C2	1:5:2241:G:O6	2.56	0.58
1:5:2239:A:C2'	1:5:2240:A:H8	2.08	0.58
11:HH:90:LEU:CD2	11:HH:181:VAL:HG22	2.33	0.58
24:VV:20:GLY:O	24:VV:21:ALA:C	2.46	0.58
81:2:1086:A:H2'	81:2:1087:A:C8	2.39	0.58
83:1:683:SER:H	83:1:684:VAL:HG23	1.67	0.58
1:5:396:A:O2'	1:5:399:A:OP1	2.22	0.58
1:5:422:A:N1	1:5:2331:C:O2'	2.31	0.58
1:5:1800:U:H2'	1:5:1801:C:C6	2.38	0.58
45:qq:12:HIS:CB	45:qq:214:TYR:CE2	2.83	0.58
83:1:591:GLU:HB3	83:1:592:PRO:CA	2.32	0.58
1:5:343:U:O4'	6:CC:95:ARG:NH2	2.37	0.58
1:5:420:G:H4'	1:5:421:G:OP1	2.03	0.58
1:5:1925:G:C5	1:5:2057:A:C4	2.91	0.58
1:5:2218:G:H2'	1:5:2219:G:C8	2.39	0.58
1:5:3054:A:H4'	5:BB:366:GLY:HA2	1.85	0.58
81:2:977:A:H2'	81:2:978:A:O4'	2.04	0.58
83:1:694:HIS:H	83:1:695:ALA:CA	2.16	0.58
1:5:324:A:C6	1:5:325:A:N6	2.72	0.58
1:5:916:C:H2'	1:5:917:U:C6	2.39	0.58
1:5:1159:U:N3	1:5:1288:A:N6	2.50	0.58
9:FF:135:TYR:CE2	9:FF:230:GLU:HA	2.39	0.58
17:OO:194[A]:LEU:O	17:OO:195[A]:ALA:C	2.44	0.58
1:5:2911:G:O2'	5:BB:254:ALA:HB1	2.03	0.58
1:5:2979:A:N1	1:5:3011:C:O2'	2.35	0.58
1:5:3211:A:N1	17:OO:109[A]:VAL:N	2.51	0.58
5:BB:232:ARG:NH1	5:BB:268:GLY:O	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:49[A]:PHE:CE1	17:OO:53[A]:LEU:HG	2.39	0.58
1:5:599:U:H2'	1:5:600:U:O4'	2.03	0.57
1:5:1923:G:N1	1:5:2057:A:H2	2.00	0.57
1:5:2238:U:C2'	1:5:2239:A:C5'	2.82	0.57
1:5:2667:G:N2	1:5:2724:C:C2	2.72	0.57
1:5:2876:G:O2'	41:mm:114:LYS:NZ	2.36	0.57
17:OO:43[A]:ASN:OD1	17:OO:126[A]:ARG:NH1	2.36	0.57
27:YY:70:VAL:HG22	27:YY:82:VAL:HA	1.85	0.57
82:4:6200:A:H4'	82:4:6201:C:C5'	2.33	0.57
83:1:659:ILE:CD1	83:1:693:LEU:HD21	2.34	0.57
1:5:336:A:H1'	6:CC:48:GLN:HE22	1.68	0.57
1:5:1924:C:C4	1:5:2055:G:C6	2.92	0.57
5:BB:86:VAL:HG13	5:BB:160:VAL:HG13	1.86	0.57
6:CC:349:ILE:CG1	6:CC:350:LYS:HA	2.33	0.57
6:CC:350:LYS:HD2	6:CC:350:LYS:H	1.68	0.57
44:pp:47:VAL:HG22	44:pp:48:LYS:HA	1.86	0.57
57:J:170:GLY:HA3	81:2:510:A:C3'	2.34	0.57
81:2:1292:U:O4	81:2:1293:G:C4	2.56	0.57
82:4:6120:U:O2'	82:4:6121:A:OP1	2.21	0.57
83:1:685:ARG:HD3	83:1:687:ASN:N	2.19	0.57
53:F:203:ALA:HA	53:F:213:ILE:HD11	1.86	0.57
71:X:11:SER:O	71:X:13:ARG:N	2.36	0.57
81:2:332:A:H2'	81:2:333:G:C8	2.39	0.57
1:5:1753:G:H2'	1:5:1754:C:O4'	2.05	0.57
1:5:3243:U:O4	34:ff:64:ILE:O	2.22	0.57
1:5:3243:U:O2'	1:5:3244:G:C4'	2.52	0.57
82:4:6188:G:H4'	83:1:696:ASP:OD2	2.05	0.57
82:4:6189:G:OP1	83:1:582:LYS:NZ	2.37	0.57
83:1:381:TYR:OH	83:1:466:THR:HB	2.04	0.57
83:1:583:HIS:HE1	83:1:704:GLN:CB	2.17	0.57
83:1:680:GLU:HG2	83:1:681:MET:HB2	1.87	0.57
17:OO:94[A]:ALA:C	17:OO:96[A]:GLY:N	2.54	0.57
70:W:8:ALA:HA	70:W:74:VAL:HG21	1.87	0.57
83:1:698:ILE:HG21	83:1:699:HIS:CD2	2.29	0.57
1:5:2630:G:H2'	1:5:2631:A:C8	2.39	0.57
1:5:3154:A:OP1	21:SS:154:HIS:ND1	2.37	0.57
5:BB:215:ILE:HD12	5:BB:282:VAL:HG21	1.85	0.57
9:FF:87:LYS:HD2	9:FF:217:PHE:CE1	2.38	0.57
17:OO:156[A]:LYS:O	17:OO:157[A]:LEU:C	2.48	0.57
24:VV:15:LEU:HD23	24:VV:53:SER:HB3	1.86	0.57
24:VV:37:MET:HE1	24:VV:73:VAL:HG13	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:dd:36:ILE:HD12	32:dd:59:ILE:HD11	1.87	0.57
81:2:921:G:H2'	81:2:922:A:C8	2.39	0.57
83:1:577:SER:OG	83:1:586:ILE:CA	2.52	0.57
1:5:148:G:OP2	16:NN:4:TYR:OH	2.20	0.57
1:5:1717:G:C5'	39:kk:3:LYS:HD2	2.35	0.57
1:5:2850:U:H2'	1:5:2851:U:O4'	2.04	0.57
1:5:3127:C:H2'	1:5:3128:C:C6	2.40	0.57
17:OO:28[A]:LEU:HD11	17:OO:103[A]:LEU:HB2	1.87	0.57
19:QQ:32:LEU:HD23	19:QQ:32:LEU:C	2.29	0.57
83:1:577:SER:OG	83:1:586:ILE:N	2.35	0.57
1:5:1328:G:C2	1:5:1329:C:C2	2.92	0.57
1:5:2228:A:H1'	1:5:2229:U:H2'	1.86	0.57
1:5:2529:C:O2	1:5:2529:C:H2'	2.05	0.57
12:II:52:LEU:HG	12:II:165:ILE:HG22	1.86	0.57
17:OO:14[A]:GLY:O	17:OO:15[A]:HIS:C	2.47	0.57
17:OO:126[A]:ARG:HG3	17:OO:130[A]:LEU:CD2	2.29	0.57
17:OO:175[A]:TYR:O	17:OO:179[A]:VAL:HG23	2.05	0.57
71:X:96:VAL:HA	71:X:127:VAL:HG11	1.87	0.57
81:2:1188:A:N3	81:2:1193:A:O2'	2.36	0.57
1:5:1092:U:H2'	1:5:1093:U:C6	2.39	0.57
1:5:1196:A:H3'	1:5:1197:G:H5'	1.87	0.57
1:5:1209:C:H2'	1:5:1210:C:O4'	2.05	0.57
37:ii:44:VAL:O	37:ii:44:VAL:HG12	2.04	0.57
81:2:1752:A:HO2'	81:2:1753:A:P	2.25	0.57
83:1:89:ILE:HG21	83:1:93:THR:HG21	1.86	0.57
1:5:413:U:H2'	1:5:414:U:C6	2.40	0.57
15:MM:55:ARG:NH1	21:SS:70:THR:O	2.37	0.57
17:OO:17[A]:LEU:C	17:OO:19[A]:ARG:H	2.12	0.57
81:2:823:G:C2	81:2:848:C:N3	2.73	0.57
81:2:1044:C:N3	81:2:1073:G:C6	2.72	0.57
1:5:2418:A:H2'	1:5:2419:G:O4'	2.05	0.56
11:HH:90:LEU:HB2	11:HH:144:ILE:HG23	1.85	0.56
44:pp:10:ILE:HD11	44:pp:30:GLU:HB3	1.87	0.56
81:2:1103:U:H2'	81:2:1104:C:O4'	2.04	0.56
81:2:1464:G:N2	81:2:1465:C:C2	2.73	0.56
83:1:735:CYS:SG	83:1:740:VAL:HG11	2.45	0.56
1:5:533:G:C2	1:5:534:C:C2	2.93	0.56
1:5:2480:A:H3'	1:5:2481:C:H4'	1.84	0.56
17:OO:31[A]:GLY:HA2	17:OO:102[A]:ARG:CZ	2.35	0.56
17:OO:48[A]:PHE:C	17:OO:48[A]:PHE:CD1	2.82	0.56
29:aa:52:TYR:CG	29:aa:52:TYR:O	2.58	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:282:G:H4'	1:5:283:G:O5'	2.06	0.56
1:5:1925:G:O6	1:5:2057:A:C4	2.58	0.56
1:5:2167:A:C1'	1:5:2238:U:C1'	2.83	0.56
1:5:2225:A:N6	1:5:2229:U:H1'	2.19	0.56
17:OO:47[A]:GLU:O	17:OO:49[A]:PHE:N	2.38	0.56
17:OO:171[A]:LYS:HB3	17:OO:171[A]:LYS:HZ3	1.68	0.56
27:YY:56:VAL:CG2	27:YY:104:VAL:HG13	2.35	0.56
54:G:154:ARG:H	81:2:78:A:C5'	2.18	0.56
59:L:86:ILE:HD13	59:L:125:VAL:HG11	1.87	0.56
60:M:55:LEU:HD22	60:M:79:LEU:HD22	1.87	0.56
1:5:1926:U:C2	1:5:2055:G:N3	2.73	0.56
1:5:2149:G:C6	1:5:2150:C:N4	2.73	0.56
10:GG:49:VAL:CG2	10:GG:51:TRP:CE2	2.88	0.56
18:PP:148:LEU:C	18:PP:148:LEU:HD12	2.31	0.56
19:QQ:67:ILE:HG23	19:QQ:81:ILE:HD12	1.88	0.56
74:a:49:ALA:HB3	74:a:50:ILE:HA	1.87	0.56
81:2:1014:U:C6	81:2:1015:C:N3	2.74	0.56
82:4:6133:G:H2'	82:4:6134:C:C5	2.41	0.56
1:5:1122:U:H5''	1:5:1123:G:OP2	2.05	0.56
1:5:1923:G:N1	1:5:1925:G:N7	2.53	0.56
1:5:3120:U:C5	1:5:3363:G:C6	2.94	0.56
17:OO:50[A]:ARG:HG2	17:OO:50[A]:ARG:HH11	1.70	0.56
17:OO:142[A]:LEU:O	17:OO:145[A]:SER:N	2.34	0.56
24:VV:13:ILE:HD12	24:VV:54:LEU:HB3	1.88	0.56
62:O:19:ILE:HG13	62:O:28:VAL:HG13	1.87	0.56
83:1:20:ARG:NH2	83:1:342:LEU:HD13	2.21	0.56
83:1:371:ASN:O	83:1:372:CYS:CB	2.54	0.56
1:5:601:A:H2'	1:5:602:A:H8	1.65	0.56
1:5:1678:C:C2	1:5:1705:G:N2	2.74	0.56
1:5:1678:C:C2	1:5:1705:G:C2	2.94	0.56
1:5:2480:A:C6	1:5:2481:C:C4	2.92	0.56
1:5:3055:A:H2'	1:5:3056:G:O4'	2.05	0.56
1:5:3224:G:H2'	1:5:3225:C:O4'	2.06	0.56
69:V:60:ARG:HA	69:V:65:ALA:HB2	1.87	0.56
81:2:899:A:HO2'	81:2:915:U:HO2'	1.53	0.56
83:1:157:ILE:HD12	83:1:211:PHE:CD1	2.39	0.56
83:1:204:PRO:HB2	83:1:245:TRP:CD2	2.41	0.56
1:5:1068:G:H4'	1:5:1069:A:O5'	2.06	0.56
17:OO:14[A]:GLY:O	17:OO:15[A]:HIS:O	2.23	0.56
83:1:695:ALA:CA	83:1:700:ARG:HH11	2.13	0.56
1:5:20:A:P	36:hh:90:ARG:HH12	2.29	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:595:A:C6	1:5:596:U:C5	2.93	0.56
1:5:970:G:C6	1:5:971:C:N4	2.74	0.56
1:5:1207:G:N2	1:5:1215:A:OP1	2.38	0.56
1:5:1288:A:O2'	1:5:1289:A:H3'	2.05	0.56
1:5:2438:G:C2	1:5:2439:C:N3	2.74	0.56
1:5:2864:A:H5''	1:5:2864:A:C8	2.41	0.56
17:OO:42[A]:LEU:HD13	17:OO:42[A]:LEU:H	1.69	0.56
17:OO:77[A]:PRO:HD2	17:OO:148[A]:TRP:CD1	2.41	0.56
43:oo:25:VAL:HG22	43:oo:72:LEU:HD23	1.88	0.56
49:B:116:LYS:HG2	81:2:931:U:OP2	2.06	0.56
81:2:8:U:C2'	81:2:9:U:H5'	2.36	0.56
83:1:584:ASN:HB3	83:1:693:LEU:HA	1.86	0.56
1:5:2413:C:C2'	1:5:2413:C:O2	2.54	0.56
1:5:2480:A:H2'	1:5:2481:C:H4'	1.87	0.56
1:5:3224:G:C6	1:5:3225:C:N3	2.74	0.56
22:TT:11:THR:O	22:TT:13:TYR:N	2.39	0.56
53:F:64:ILE:HG23	53:F:91:ILE:HG21	1.88	0.56
64:Q:83:GLN:HE22	64:Q:119:ALA:HA	1.71	0.56
81:2:207:U:H2'	81:2:208:U:C6	2.41	0.56
81:2:284:G:N2	81:2:285:C:C2	2.74	0.56
83:1:53:GLU:HB3	83:1:54:ALA:C	2.30	0.56
83:1:387:PRO:HA	83:1:394:PHE:HB2	1.88	0.56
83:1:695:ALA:HA	83:1:700:ARG:HH12	1.67	0.56
1:5:2234:C:H2'	1:5:2235:U:H6	1.69	0.56
1:5:2540:A:C2'	1:5:2540:A:N3	2.69	0.56
1:5:2949:U:O2'	1:5:2950:A:H5'	2.06	0.56
3:8:24:G:H2'	3:8:25:G:O4'	2.05	0.56
6:CC:37:SER:O	6:CC:38:VAL:C	2.49	0.56
11:HH:28:THR:HG22	11:HH:33:VAL:HG12	1.88	0.56
62:O:129:LYS:HA	81:2:989:C:H4'	1.88	0.56
81:2:46:A:N1	81:2:431:G:O2'	2.30	0.56
81:2:1349:G:C6	81:2:1374:C:N3	2.74	0.56
83:1:698:ILE:CB	83:1:699:HIS:CA	2.83	0.56
1:5:1196:A:N7	1:5:1197:G:C6	2.74	0.55
1:5:2239:A:C6	1:5:2240:A:N6	2.74	0.55
1:5:3182:U:C5	15:MM:121:LEU:HD22	2.41	0.55
5:BB:313:HIS:O	5:BB:314:TYR:C	2.46	0.55
17:OO:156[A]:LYS:C	17:OO:158[A]:GLU:N	2.64	0.55
17:OO:192[A]:GLU:O	17:OO:194[A]:LEU:CA	2.53	0.55
44:pp:47:VAL:HG13	44:pp:48:LYS:CB	2.35	0.55
45:qq:143:ASP:OD2	45:qq:146:GLN:CG	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:I:103:GLN:HA	56:I:166:LEU:O	2.06	0.55
83:1:405:VAL:HA	83:1:406:LYS:CB	2.35	0.55
1:5:173:G:C6	1:5:174:C:C4	2.94	0.55
1:5:522:A:H2'	1:5:523:G:C8	2.41	0.55
1:5:2218:G:HO2'	1:5:2219:G:P	2.27	0.55
2:7:73:C:O2	2:7:73:C:O4'	2.24	0.55
28:ZZ:46:ILE:HD11	28:ZZ:49:TYR:CE2	2.42	0.55
82:4:6120:U:HO2'	82:4:6121:A:P	2.28	0.55
1:5:831:G:OP1	44:pp:17:ARG:NH1	2.39	0.55
1:5:1106:A:C2	1:5:1107:A:C8	2.94	0.55
1:5:2506:U:O2	1:5:2506:U:H2'	2.06	0.55
1:5:3224:G:C6	1:5:3225:C:C4	2.94	0.55
27:YY:102:SER:OG	27:YY:103:LYS:NZ	2.39	0.55
81:2:886:A:N7	81:2:887:U:C4	2.74	0.55
81:2:886:A:N1	81:2:925:A:C2	2.73	0.55
83:1:684:VAL:HG21	83:1:717:PHE:CZ	2.41	0.55
1:5:792:U:O2'	1:5:883:G:OP1	2.21	0.55
1:5:1197:G:C6	1:5:1198:C:N4	2.74	0.55
1:5:1459:G:C2	1:5:1460:A:C8	2.94	0.55
7:DD:61:ILE:HG23	7:DD:79:TYR:CE2	2.42	0.55
17:OO:76[A]:ALA:C	17:OO:78[A]:SER:N	2.64	0.55
17:OO:172[A]:LYS:O	17:OO:173[A]:LYS:O	2.24	0.55
59:L:103:ARG:NH1	81:2:306:G:OP1	2.39	0.55
81:2:100:A:H2'	81:2:101:U:O4'	2.07	0.55
81:2:991:A:O2'	81:2:1783:U:O2	2.24	0.55
81:2:1540:G:C6	81:2:1566:C:N3	2.74	0.55
1:5:1791:C:HO2'	1:5:1792:A:H8	1.51	0.55
1:5:2277:C:C5'	1:5:2278:A:H5'	2.36	0.55
14:LL:2:ALA:O	14:LL:3:ILE:CB	2.51	0.55
54:G:154:ARG:HB3	81:2:77:U:H4'	1.88	0.55
70:W:82:LYS:O	70:W:84:ALA:N	2.39	0.55
81:2:930:C:H3'	81:2:931:U:C5'	2.37	0.55
83:1:645:LEU:O	83:1:684:VAL:O	2.24	0.55
1:5:469:A:O2'	1:5:3241:A:N1	2.39	0.55
1:5:2749:U:H2'	1:5:2750:U:C6	2.41	0.55
14:LL:27:ASP:O	14:LL:28:GLN:C	2.49	0.55
40:ll:27:ILE:HG13	40:ll:30:ARG:CZ	2.36	0.55
45:qq:124:LEU:N	82:4:6039:A:C4	2.75	0.55
54:G:154:ARG:CB	81:2:77:U:H4'	2.37	0.55
63:P:18:LYS:HA	66:S:91:ASP:C	2.32	0.55
83:1:579:SER:CB	83:1:580:PRO:CD	2.84	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2277:C:H4'	1:5:2278:A:H4'	1.89	0.55
1:5:2543:G:C2	1:5:2544:G:C8	2.94	0.55
17:OO:126[A]:ARG:HD3	17:OO:136[A]:TYR:CE2	2.41	0.55
17:OO:166[A]:ALA:O	17:OO:169[A]:TYR:N	2.36	0.55
68:U:34:LEU:HD11	68:U:89:ARG:HG3	1.87	0.55
83:1:72:SER:HB3	83:1:73:THR:HA	1.89	0.55
83:1:464:LEU:O	83:1:466:THR:N	2.35	0.55
1:5:593:U:O2'	1:5:594:A:OP1	2.22	0.55
1:5:1927:G:C6	1:5:2055:G:O4'	2.59	0.55
1:5:2214:C:H2'	1:5:2215:G:O4'	2.07	0.55
1:5:2480:A:OP2	1:5:2481:C:H5''	2.05	0.55
17:OO:143[A]:SER:C	17:OO:145[A]:SER:N	2.63	0.55
17:OO:182[A]:LYS:O	17:OO:185[A]:THR:HG22	2.06	0.55
34:ff:85:PHE:CZ	34:ff:89:LEU:HD11	2.42	0.55
45:qq:212:PRO:O	45:qq:214:TYR:N	2.40	0.55
83:1:684:VAL:HG21	83:1:717:PHE:CE1	2.42	0.55
1:5:541:G:H2'	1:5:542:A:O4'	2.07	0.55
1:5:1337:A:OP1	1:5:1338:G:OP2	2.25	0.55
17:OO:47[A]:GLU:O	17:OO:48[A]:PHE:C	2.50	0.55
17:OO:117[A]:LYS:HG3	17:OO:118[A]:ARG:O	2.06	0.55
17:OO:119[A]:VAL:O	17:OO:119[A]:VAL:HG22	2.06	0.55
45:qq:150:ASP:HB3	45:qq:154:THR:OG1	2.07	0.55
52:E:67:GLN:HA	52:E:68:ARG:HB2	1.87	0.55
1:5:436:A:N6	1:5:594:A:C8	2.74	0.55
1:5:869:U:H2'	1:5:870:U:O4'	2.07	0.55
1:5:1587:G:N2	1:5:1796:C:C2	2.75	0.55
1:5:2358:C:OP1	18:PP:66:SER:N	2.39	0.55
4:AA:112:ILE:HD13	44:pp:79:VAL:HG22	1.89	0.55
14:LL:27:ASP:O	14:LL:30:GLY:N	2.39	0.55
17:OO:28[A]:LEU:C	17:OO:30[A]:ASN:N	2.64	0.55
17:OO:99[A]:ALA:C	17:OO:101[A]:GLU:N	2.64	0.55
35:gg:59:PRO:O	35:gg:60:ARG:HB2	2.06	0.55
38:jj:17:THR:OG1	38:jj:29:ILE:HD11	2.06	0.55
45:qq:165:LEU:HD12	45:qq:190:LEU:CD2	2.23	0.55
52:E:128:LYS:O	52:E:140:VAL:N	2.36	0.55
81:2:923:A:O2'	81:2:985:G:O3'	2.25	0.55
1:5:216:G:OP1	27:YY:16:ARG:NH1	2.40	0.54
1:5:1464:G:OP2	1:5:1464:G:N2	2.38	0.54
17:OO:141[A]:LYS:O	17:OO:143[A]:SER:C	2.51	0.54
45:qq:208:SER:C	45:qq:209:THR:HG1	2.10	0.54
74:a:10:ARG:NH1	81:2:1794:C:O3'	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:111:U:H2'	81:2:112:A:O4'	2.07	0.54
81:2:309:C:C2	81:2:356:G:C2	2.94	0.54
81:2:1527:C:H2'	81:2:1528:C:C6	2.43	0.54
83:1:750:LYS:C	83:1:751:ARG:CG	2.77	0.54
1:5:3245:U:O2	1:5:3245:U:O4'	2.25	0.54
4:AA:200:ARG:O	4:AA:201:GLY:C	2.51	0.54
17:OO:122[A]:PRO:C	17:OO:124[A]:ALA:N	2.65	0.54
39:kk:3:LYS:CE	39:kk:51:LEU:HG	2.37	0.54
82:4:6117:C:H2'	82:4:6118:U:O4'	2.07	0.54
1:5:83:U:H2'	1:5:84:U:O4'	2.06	0.54
1:5:2996:G:OP1	83:1:27:HIS:CE1	2.60	0.54
10:GG:133:TYR:CG	10:GG:189:VAL:HG21	2.43	0.54
17:OO:150[A]:TYR:N	17:OO:150[A]:TYR:CD1	2.76	0.54
37:ii:57:LEU:HD12	37:ii:61:ILE:HD11	1.89	0.54
39:kk:8:ILE:CG1	39:kk:9:LYS:HA	2.36	0.54
54:G:154:ARG:C	81:2:78:A:H3'	2.31	0.54
80:g:75:SER:HB2	80:g:77:ASP:N	2.22	0.54
81:2:152:G:H2'	81:2:153:G:C8	2.43	0.54
81:2:1012:A:H2'	81:2:1013:G:O4'	2.07	0.54
1:5:1346:G:N2	1:5:1347:C:C2	2.76	0.54
1:5:1356:C:OP1	6:CC:141:ARG:NH1	2.39	0.54
1:5:1370:A:C2	3:8:8:C:H5'	2.42	0.54
1:5:1925:G:C2'	1:5:2056:C:O2	2.55	0.54
1:5:2237:U:N3	1:5:2241:G:N1	2.54	0.54
17:OO:166[A]:ALA:C	17:OO:168[A]:TYR:N	2.64	0.54
45:qq:119:GLN:HG3	82:4:6038:G:H5'	1.89	0.54
55:H:135:ILE:HG23	55:H:152:ILE:HG23	1.88	0.54
63:P:19:GLY:HA3	66:S:94:ASP:C	2.33	0.54
81:2:874:G:H2'	81:2:876:G:OP2	2.07	0.54
1:5:303:G:C2	1:5:313:A:C2	2.96	0.54
1:5:312:C:C2	1:5:2746:G:C2	2.95	0.54
1:5:664:A:N1	3:8:28:C:O2'	2.39	0.54
1:5:1209:C:O2'	1:5:1210:C:OP1	2.17	0.54
1:5:1862:A:C6	1:5:1863:U:C4	2.95	0.54
1:5:2480:A:H4'	10:GG:248:ARG:NH2	2.22	0.54
1:5:2971:G:N1	1:5:2972:C:C4	2.76	0.54
6:CC:31:ARG:HB2	6:CC:34:ILE:HG22	1.89	0.54
6:CC:138:ARG:C	6:CC:138:ARG:HD3	2.32	0.54
45:qq:36:VAL:HG11	45:qq:190:LEU:HD13	1.88	0.54
56:I:139:ASN:HB2	81:2:186:G:H2'	1.90	0.54
72:Y:29:HIS:CD2	72:Y:35:VAL:HG13	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:4:6173:C:C2'	82:4:6173:C:O2	2.56	0.54
83:1:107:GLY:HA2	83:1:138:GLN:HE22	1.72	0.54
1:5:314:U:OP1	14:LL:104:ARG:NH2	2.41	0.54
1:5:3085:C:H2'	1:5:3086:C:O4'	2.08	0.54
1:5:3224:G:N1	1:5:3225:C:C2	2.76	0.54
14:LL:4:SER:O	29:aa:44:ASN:OD1	2.25	0.54
28:ZZ:46:ILE:C	28:ZZ:46:ILE:HD12	2.33	0.54
81:2:991:A:N1	81:2:1011:U:C4	2.75	0.54
81:2:1586:G:C6	81:2:1587:C:C4	2.95	0.54
83:1:462:PHE:O	83:1:463:LEU:HD22	2.07	0.54
83:1:701:GLY:CA	83:1:703:GLY:N	2.71	0.54
1:5:1562:A:H2'	1:5:1563:A:C8	2.42	0.54
1:5:2277:C:H5'	1:5:2278:A:H5'	1.88	0.54
17:OO:138[A]:THR:O	17:OO:140[A]:GLY:N	2.40	0.54
22:TT:11:THR:O	22:TT:14:MET:N	2.38	0.54
45:qq:12:HIS:CB	45:qq:214:TYR:OH	2.55	0.54
81:2:884:G:C3'	81:2:885:U:C4'	2.86	0.54
81:2:1439:C:H2'	81:2:1440:U:C5'	2.38	0.54
81:2:1643:G:N2	81:2:1644:C:C2	2.75	0.54
81:2:1671:G:C2	81:2:1672:C:C2	2.96	0.54
1:5:628:C:OP1	33:ee:27:ARG:N	2.39	0.54
1:5:634:G:N1	1:5:773:C:C2	2.76	0.54
1:5:643:C:OP1	19:QQ:147:ARG:NH2	2.40	0.54
5:BB:80:ASP:CG	5:BB:314:TYR:OH	2.51	0.54
6:CC:93:MET:HG2	6:CC:94:CYS:SG	2.48	0.54
8:EE:157:TYR:CE1	15:MM:115:PHE:HA	2.42	0.54
14:LL:5:LYS:HD2	14:LL:5:LYS:N	2.03	0.54
45:qq:30:GLU:HB3	45:qq:209:THR:OG1	2.07	0.54
81:2:970:A:C8	81:2:971:G:C8	2.95	0.54
82:4:6044:G:N2	82:4:6045:C:C2	2.76	0.54
83:1:693:LEU:HB3	83:1:700:ARG:NH1	2.22	0.54
1:5:1491:G:H2'	1:5:1492:G:O4'	2.07	0.54
1:5:2480:A:C2'	1:5:2481:C:H4'	2.37	0.54
1:5:2500:C:O2	1:5:2500:C:O4'	2.26	0.54
1:5:3255:C:H2'	1:5:3256:A:H5'	1.90	0.54
3:8:7:U:O4	3:8:8:C:N4	2.41	0.54
9:FF:160:LEU:HD22	9:FF:166:VAL:HG22	1.89	0.54
14:LL:5:LYS:O	14:LL:7:LEU:CB	2.53	0.54
17:OO:15[A]:HIS:C	17:OO:16[A]:LEU:O	2.51	0.54
17:OO:166[A]:ALA:C	17:OO:168[A]:TYR:H	2.15	0.54
45:qq:30:GLU:C	45:qq:209:THR:CG2	2.81	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:427:A:C2	81:2:439:U:O2	2.61	0.54
82:4:6127:C:N3	82:4:6160:G:C6	2.76	0.54
83:1:587:TYR:CE2	83:1:690:ASP:CB	2.90	0.54
83:1:587:TYR:O	83:1:588:LEU:HG	2.08	0.54
1:5:3252:G:C2	1:5:3253:C:C2	2.95	0.54
7:DD:104:LEU:HD21	7:DD:108:ARG:CZ	2.37	0.54
36:hh:86:ARG:O	36:hh:87:ALA:C	2.49	0.54
62:O:41:ARG:NH2	81:2:915:U:O2	2.41	0.54
81:2:887:U:O4	81:2:888:U:O4	2.26	0.54
83:1:694:HIS:N	83:1:694:HIS:CD2	2.75	0.54
1:5:3138:A:H2'	1:5:3139:U:H5'	1.90	0.53
29:aa:72:VAL:HG12	29:aa:113:LEU:HD13	1.90	0.53
81:2:9:U:O2	81:2:12:U:H5	1.91	0.53
81:2:480:A:N1	81:2:506:U:C5	2.73	0.53
81:2:975:G:H1	81:2:1022:A:HO2'	1.55	0.53
83:1:682:ARG:NE	83:1:801:TRP:CE3	2.76	0.53
17:OO:55[A]:TYR:OH	17:OO:74[A]:PHE:O	2.26	0.53
17:OO:148[A]:TRP:CE3	17:OO:150[A]:TYR:O	2.61	0.53
17:OO:161[A]:ARG:CG	17:OO:162[A]:LYS:N	2.64	0.53
45:qq:122:ARG:N	82:4:6039:A:C5	2.77	0.53
51:D:176:LEU:HB3	51:D:177:LEU:HA	1.89	0.53
83:1:519:LEU:HG	83:1:531:ALA:HB2	1.90	0.53
83:1:560:VAL:HB	83:1:561:VAL:HA	1.89	0.53
83:1:583:HIS:CE1	83:1:704:GLN:CG	2.89	0.53
1:5:185:C:O2	1:5:232:G:C2	2.61	0.53
1:5:2218:G:O5'	1:5:2242:G:C8	2.61	0.53
4:AA:223:SER:O	4:AA:237:LEU:N	2.40	0.53
5:BB:53:MET:HG2	5:BB:77:THR:HG22	1.89	0.53
9:FF:128:GLU:HG2	9:FF:129:PRO:HD3	1.91	0.53
1:5:1210:C:O2	1:5:1221:G:C2	2.61	0.53
1:5:1361:A:N3	1:5:1361:A:H5'	2.22	0.53
1:5:2167:A:H2'	1:5:2168:G:C5'	2.38	0.53
1:5:2218:G:C5'	1:5:2242:G:C8	2.92	0.53
1:5:3131:G:C6	1:5:3256:A:C6	2.97	0.53
17:OO:19[A]:ARG:O	17:OO:22[A]:SER:N	2.36	0.53
74:a:79:ILE:CG1	74:a:84:VAL:HG11	2.38	0.53
74:a:84:VAL:CG1	81:2:1793:U:H4'	2.38	0.53
81:2:1671:G:C5	81:2:1672:C:N4	2.76	0.53
1:5:77:A:H2'	1:5:78:U:O4'	2.09	0.53
1:5:602:A:C2	1:5:603:A:C4	2.97	0.53
1:5:1565:C:O2'	1:5:1665:A:N3	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1882:A:N3	1:5:2089:A:H2'	2.23	0.53
1:5:2248:A:C2	1:5:2257:G:C6	2.97	0.53
2:7:25:G:H2'	2:7:26:C:O4'	2.08	0.53
4:AA:9:ARG:O	4:AA:12:ALA:N	2.42	0.53
81:2:700:C:C2	81:2:739:G:N1	2.77	0.53
83:1:204:PRO:HA	83:1:209:VAL:HG11	1.89	0.53
83:1:584:ASN:OD1	83:1:585:ARG:N	2.42	0.53
83:1:705:ILE:C	83:1:708:THR:HG22	2.33	0.53
1:5:413:U:O2	1:5:414:U:C2	2.61	0.53
1:5:436:A:C6	1:5:597:G:N1	2.77	0.53
1:5:634:G:O6	1:5:773:C:C4	2.62	0.53
3:8:8:C:O2'	3:8:9:A:O5'	2.21	0.53
17:OO:12[A]:GLY:O	17:OO:13[A]:LYS:O	2.26	0.53
17:OO:148[A]:TRP:CD2	17:OO:150[A]:TYR:O	2.61	0.53
46:rr:195:ASN:HB3	46:rr:196:GLY:HA3	1.89	0.53
81:2:1002:A:O2'	81:2:1004:A:N7	2.32	0.53
81:2:1108:G:C5	81:2:1109:G:N7	2.76	0.53
81:2:1173:C:N4	81:2:1464:G:C6	2.77	0.53
81:2:1770:C:H5''	81:2:1770:C:H6	1.73	0.53
1:5:1119:G:C2	1:5:1127:C:C2	2.97	0.53
1:5:1119:G:N2	1:5:1127:C:C2	2.76	0.53
1:5:1372:G:N2	1:5:1373:C:C2	2.77	0.53
1:5:2216:G:N3	1:5:2240:A:C2	2.77	0.53
22:TT:45:ASN:O	22:TT:46:GLY:C	2.52	0.53
22:TT:95:HIS:C	22:TT:96:ILE:HD12	2.32	0.53
45:qq:117:ILE:HG22	45:qq:117:ILE:O	2.09	0.53
81:2:1440:U:O2'	81:2:1441:U:H5'	2.09	0.53
81:2:1673:C:C2	81:2:1725:G:N2	2.77	0.53
1:5:22:G:H1'	3:8:104:A:N3	2.24	0.53
1:5:703:C:C2	1:5:711:G:C2	2.97	0.53
1:5:1916:G:H5''	20:RR:134:HIS:CE1	2.44	0.53
12:II:23:ASN:O	12:II:25:ALA:N	2.42	0.53
16:NN:156:HIS:HB3	16:NN:159:ARG:HD2	1.90	0.53
17:OO:79[A]:ARG:O	17:OO:80[A]:ILE:C	2.46	0.53
28:ZZ:40:HIS:CD2	28:ZZ:74:VAL:HG13	2.44	0.53
71:X:89:ASN:N	81:2:568:C:OP1	2.39	0.53
82:4:6194:C:O2'	82:4:6195:G:O4'	2.27	0.53
83:1:108:HIS:O	83:1:110:ASP:N	2.41	0.53
83:1:481:MET:HA	83:1:482:LYS:CB	2.39	0.53
1:5:114:A:C2'	1:5:115:A:H5'	2.39	0.53
1:5:1773:A:H2'	1:5:1774:C:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2061:A:H1'	1:5:2062:A:C8	2.44	0.53
1:5:2224:A:C6	1:5:2229:U:O2	2.61	0.53
1:5:2406:G:C2	1:5:2479:U:C2	2.97	0.53
1:5:2864:A:H5''	1:5:2864:A:H8	1.73	0.53
12:II:49:CYS:HG	12:II:51:HIS:CE1	2.27	0.53
17:OO:98[A]:ALA:O	17:OO:99[A]:ALA:O	2.25	0.53
24:VV:17:LEU:HD11	24:VV:98:ASN:CB	2.39	0.53
39:kk:3:LYS:HE2	39:kk:51:LEU:HG	1.89	0.53
45:qq:120:VAL:HG12	45:qq:121:PRO:HD3	1.91	0.53
83:1:52:GLY:N	83:1:53:GLU:HB2	2.24	0.53
83:1:388:THR:HG23	83:1:394:PHE:HA	1.91	0.53
83:1:684:VAL:HG12	83:1:686:VAL:CB	2.26	0.53
1:5:340:C:N4	1:5:341:G:C6	2.77	0.53
1:5:1197:G:C2	1:5:1198:C:C2	2.97	0.53
1:5:1928:A:N6	1:5:2053:C:C4	2.77	0.53
1:5:2218:G:C4	1:5:2219:G:C1'	2.92	0.53
1:5:2480:A:C6	1:5:2481:C:C2	2.97	0.53
1:5:2510:U:O2	1:5:2510:U:H2'	2.08	0.53
1:5:2635:A:N6	1:5:2655:G:O2'	2.42	0.53
1:5:3243:U:HO2'	1:5:3244:G:C4'	2.22	0.53
10:GG:150:VAL:HG23	10:GG:174:VAL:HG11	1.91	0.53
17:OO:24[A]:VAL:O	17:OO:24[A]:VAL:HG13	2.08	0.53
17:OO:159[A]:GLU:O	17:OO:161[A]:ARG:N	2.41	0.53
38:jj:39:TYR:CG	38:jj:40:PRO:HA	2.44	0.53
81:2:542:C:O2	81:2:542:C:O4'	2.25	0.53
83:1:572:SER:HA	83:1:589:LYS:HG3	1.91	0.53
83:1:705:ILE:CA	83:1:708:THR:CG2	2.61	0.53
1:5:412:G:C5	1:5:413:U:C5	2.97	0.52
1:5:503:A:C6	1:5:504:A:N6	2.77	0.52
1:5:650:A:N1	1:5:676:G:O2'	2.38	0.52
1:5:1052:U:O2	1:5:1052:U:O4'	2.27	0.52
13:JJ:102:PHE:CE2	13:JJ:129:ILE:HD13	2.45	0.52
17:OO:186[A]:VAL:O	17:OO:187[A]:GLY:O	2.25	0.52
50:C:234:LEU:O	50:C:235:TRP:C	2.52	0.52
57:J:12:TYR:CG	57:J:44:ARG:HA	2.44	0.52
82:4:6200:A:H4'	82:4:6201:C:O5'	2.09	0.52
1:5:628:C:H2'	1:5:629:A:C8	2.44	0.52
1:5:659:G:C2	1:5:668:C:C2	2.97	0.52
1:5:1284:G:O2'	1:5:1289:A:N1	2.31	0.52
1:5:2029:G:C2	1:5:2030:C:C2	2.97	0.52
1:5:2251:U:O2	1:5:2279:U:H4'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2304:G:N2	1:5:2308:C:O2'	2.42	0.52
3:8:15:G:C6	3:8:16:G:N1	2.77	0.52
11:HH:112:ILE:HD13	11:HH:161:ILE:HD11	1.90	0.52
17:OO:39[A]:ALA:O	17:OO:42[A]:LEU:N	2.38	0.52
54:G:155:ASP:O	54:G:157:VAL:HB	2.09	0.52
81:2:1438:C:O2	81:2:1438:C:H2'	2.08	0.52
81:2:1440:U:H6	81:2:1440:U:O5'	1.93	0.52
1:5:12:A:H2'	1:5:13:A:C8	2.45	0.52
1:5:436:A:C6	1:5:596:U:O4	2.61	0.52
1:5:1019:A:H2'	12:II:22:TYR:CZ	2.45	0.52
1:5:1159:U:H3	1:5:1288:A:N6	2.08	0.52
1:5:1291:C:O2	21:SS:115:ARG:NH2	2.43	0.52
1:5:1690:U:O4	20:RR:128:LYS:NZ	2.42	0.52
1:5:2438:G:C2	1:5:2439:C:C4	2.98	0.52
29:aa:3:THR:O	29:aa:6:THR:HG22	2.09	0.52
37:ii:95:THR:HA	37:ii:99:ARG:HB2	1.90	0.52
45:qq:31:THR:N	45:qq:209:THR:CG2	2.73	0.52
45:qq:125:GLY:O	45:qq:129:SER:N	2.43	0.52
48:A:43:ASP:CG	65:R:126:ALA:HB1	2.35	0.52
81:2:1363:G:N1	81:2:1364:C:C4	2.78	0.52
83:1:823:ARG:NH1	83:1:829:LYS:O	2.42	0.52
1:5:287:G:C2	1:5:288:C:C2	2.97	0.52
1:5:532:A:N6	1:5:533:G:C2	2.78	0.52
1:5:635:U:OP1	29:aa:8:THR:HG21	2.10	0.52
1:5:1791:C:O2'	1:5:1792:A:C8	2.62	0.52
17:OO:163[A]:ALA:O	17:OO:166[A]:ALA:HB3	2.09	0.52
32:dd:19:ARG:HB3	32:dd:35:GLU:HG2	1.92	0.52
81:2:360:C:C2	81:2:383:G:N2	2.77	0.52
81:2:1786:G:H2'	81:2:1787:G:O4'	2.10	0.52
83:1:576:LEU:HB3	83:1:585:ARG:NH2	2.25	0.52
1:5:518:C:O2	1:5:518:C:C2'	2.57	0.52
1:5:1584:C:H2'	1:5:1585:U:C6	2.45	0.52
1:5:2201:A:H2'	1:5:2202:A:O4'	2.10	0.52
1:5:2277:C:H4'	1:5:2278:A:C4'	2.40	0.52
1:5:2482:U:O2'	1:5:2483:U:H2'	2.10	0.52
1:5:2482:U:O4	1:5:2560:G:C4	2.62	0.52
3:8:6:U:O2'	3:8:7:U:H5'	2.10	0.52
6:CC:74:ILE:HG21	6:CC:88:ALA:HB1	1.91	0.52
17:OO:114[A]:ASP:OD1	17:OO:114[A]:ASP:N	2.41	0.52
17:OO:168[A]:TYR:O	17:OO:168[A]:TYR:CE1	2.54	0.52
31:cc:31:VAL:O	31:cc:32:LYS:C	2.53	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:425:G:N2	81:2:426:C:C2	2.77	0.52
81:2:700:C:N3	81:2:739:G:C6	2.78	0.52
81:2:883:A:O2'	81:2:884:G:H5'	2.09	0.52
82:4:6198:A:C2	82:4:6199:A:C6	2.98	0.52
83:1:441:PHE:HB2	83:1:442:VAL:HB	1.92	0.52
83:1:828:MET:HB3	83:1:829:LYS:HA	1.90	0.52
1:5:513:U:H2'	1:5:514:G:H1'	1.92	0.52
1:5:957:U:C2	1:5:958:U:C6	2.98	0.52
1:5:1926:U:C4	1:5:1927:G:N7	2.77	0.52
1:5:2234:C:C2'	1:5:2235:U:C5'	2.70	0.52
4:AA:101:VAL:HG22	4:AA:165:VAL:HG22	1.91	0.52
12:II:31:ILE:HG23	12:II:31:ILE:O	2.09	0.52
17:OO:15[A]:HIS:NE2	17:OO:121[A]:VAL:N	2.58	0.52
24:VV:84:ALA:HA	24:VV:94:TYR:HB3	1.92	0.52
35:gg:20:ILE:HG23	35:gg:32:SER:HB2	1.92	0.52
83:1:77:LEU:HB3	83:1:78:TYR:HB2	1.91	0.52
1:5:128:G:C2	1:5:141:C:O2	2.63	0.52
1:5:504:A:H2	1:5:532:A:N1	2.08	0.52
1:5:646:U:H2'	1:5:647:G:H8	1.74	0.52
1:5:1896:G:C8	44:pp:16:VAL:HG22	2.43	0.52
1:5:2238:U:C5	1:5:2239:A:C5	2.95	0.52
1:5:2435:G:O3'	45:qq:31:THR:OG1	2.27	0.52
1:5:2480:A:C5	1:5:2481:C:C2	2.98	0.52
17:OO:52[A]:LYS:O	17:OO:52[A]:LYS:CG	2.58	0.52
81:2:776:G:N2	81:2:777:C:C2	2.78	0.52
81:2:1752:A:H3'	81:2:1754:A:C2	2.44	0.52
83:1:69:THR:N	86:1:902:GCP:O3G	2.42	0.52
83:1:578:LYS:O	83:1:579:SER:C	2.53	0.52
1:5:13:A:C6	1:5:15:C:C4	2.98	0.52
1:5:294:U:P	16:NN:15:GLN:HE22	2.33	0.52
1:5:1665:A:H2'	1:5:1666:A:C8	2.45	0.52
1:5:1833:A:OP1	20:RR:83:GLY:N	2.39	0.52
1:5:2218:G:N9	1:5:2219:G:O4'	2.42	0.52
17:OO:8[A]:VAL:O	17:OO:35[A]:VAL:HG12	2.08	0.52
17:OO:110[A]:PRO:O	17:OO:111[A]:PRO:C	2.53	0.52
81:2:886:A:H2'	81:2:887:U:O4'	2.10	0.52
81:2:888:U:C1'	81:2:987:A:H4'	2.40	0.52
83:1:582:LYS:NZ	83:1:694:HIS:CG	2.78	0.52
83:1:695:ALA:CA	83:1:700:ARG:HH12	2.19	0.52
1:5:2222:G:C6	1:5:2223:U:C5	2.97	0.52
1:5:2804:C:O2	1:5:2804:C:O4'	2.28	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AA:80:GLU:HG3	4:AA:170:ALA:HA	1.92	0.52
5:BB:305:ILE:HD12	5:BB:321:PHE:CZ	2.44	0.52
17:OO:50[A]:ARG:HG2	17:OO:50[A]:ARG:NH1	2.22	0.52
17:OO:60[A]:ARG:O	17:OO:60[A]:ARG:HG3	2.07	0.52
17:OO:182[A]:LYS:C	17:OO:184[A]:ALA:H	2.16	0.52
81:2:1007:G:H2'	81:2:1008:U:C6	2.45	0.52
81:2:1771:C:C2	81:2:1787:G:C2	2.98	0.52
83:1:579:SER:CB	83:1:580:PRO:HD3	2.39	0.52
83:1:579:SER:HB3	83:1:580:PRO:CD	2.40	0.52
1:5:960:A:H2'	1:5:961:U:O4'	2.09	0.52
1:5:1601:A:N7	1:5:1613:C:H2'	2.25	0.52
1:5:2029:G:C6	1:5:2030:C:C4	2.98	0.52
1:5:2361:C:O2	1:5:2955:A:N1	2.42	0.52
1:5:3056:G:C2	1:5:3057:C:C2	2.98	0.52
3:8:7:U:C4	3:8:8:C:N4	2.78	0.52
6:CC:349:ILE:HD12	6:CC:350:LYS:HA	1.92	0.52
17:OO:171[A]:LYS:HB3	17:OO:171[A]:LYS:HZ2	1.73	0.52
1:5:1923:G:C2	1:5:1925:G:H8	2.08	0.51
1:5:2055:G:C6	1:5:2056:C:N4	2.55	0.51
1:5:2060:U:O2	1:5:2060:U:O4'	2.27	0.51
1:5:2662:A:C2	1:5:2663:A:C2	2.98	0.51
5:BB:119:TYR:OH	5:BB:129:ALA:N	2.43	0.51
17:OO:158[A]:GLU:O	17:OO:160[A]:LYS:N	2.42	0.51
39:kk:6:ALA:HB3	39:kk:7:ASP:HA	1.92	0.51
81:2:25:C:O2	81:2:25:C:O4'	2.25	0.51
81:2:287:A:H2'	81:2:288:U:O4'	2.10	0.51
83:1:582:LYS:HZ1	83:1:694:HIS:CG	2.28	0.51
83:1:694:HIS:N	83:1:695:ALA:CA	2.73	0.51
1:5:529:U:C2	1:5:532:A:C5	2.97	0.51
1:5:2219:G:O5'	1:5:2277:C:C6	2.63	0.51
1:5:3303:A:N7	1:5:3338:A:O2'	2.35	0.51
3:8:118:C:C2	3:8:136:G:C2	2.97	0.51
4:AA:192:LYS:HB3	4:AA:193:ARG:HG2	1.92	0.51
5:BB:11:HIS:ND1	5:BB:234:GLY:O	2.43	0.51
17:OO:15[A]:HIS:HB3	17:OO:20[A]:LEU:HB2	1.93	0.51
17:OO:54[A]:LYS:O	17:OO:57[A]:ASP:HB2	2.10	0.51
19:QQ:36:LEU:O	19:QQ:37:ALA:C	2.53	0.51
57:J:149:ARG:O	57:J:151:GLU:N	2.42	0.51
71:X:63:GLN:HB3	71:X:64:PRO:CD	2.41	0.51
71:X:102:VAL:HG22	71:X:124:VAL:HG13	1.92	0.51
72:Y:29:HIS:O	72:Y:30:PRO:C	2.54	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:992:A:N6	81:2:993:G:C4	2.78	0.51
83:1:28:VAL:C	83:1:30:HIS:H	2.19	0.51
1:5:361:A:O3'	38:jj:45:ARG:NH2	2.44	0.51
1:5:967:A:H2'	1:5:968:A:O4'	2.10	0.51
1:5:1417:A:N1	1:5:2325:A:H5''	2.26	0.51
1:5:1601:A:OP1	28:ZZ:69:LYS:NZ	2.44	0.51
1:5:2313:U:H2'	1:5:2314:A:H8	1.73	0.51
1:5:2480:A:P	1:5:2481:C:C5'	2.91	0.51
7:DD:166:ALA:HB1	7:DD:171:LEU:HD12	1.92	0.51
14:LL:54:LEU:HD13	14:LL:75:PHE:CE2	2.45	0.51
16:NN:189:LYS:O	16:NN:190:THR:C	2.53	0.51
18:PP:52:LEU:HD13	18:PP:88:VAL:HG11	1.92	0.51
37:ii:27:SER:O	37:ii:29:ARG:N	2.43	0.51
57:J:79:ARG:NH2	81:2:763:G:OP2	2.42	0.51
83:1:701:GLY:HA3	83:1:704:GLN:N	2.26	0.51
1:5:502:G:N2	1:5:535:C:C2	2.79	0.51
1:5:1924:C:N3	1:5:2055:G:C6	2.73	0.51
1:5:2200:C:O2	1:5:2200:C:O4'	2.25	0.51
1:5:2224:A:C2	1:5:2225:A:N6	2.78	0.51
45:qq:12:HIS:ND1	45:qq:206:ILE:HD11	2.25	0.51
45:qq:121:PRO:HA	82:4:6039:A:C8	2.41	0.51
81:2:1138:A:H2'	81:2:1139:G:O4'	2.10	0.51
81:2:1440:U:C5'	81:2:1445:C:N4	2.73	0.51
81:2:1464:G:N1	81:2:1465:C:C4	2.78	0.51
83:1:577:SER:CB	83:1:586:ILE:H	2.23	0.51
1:5:482:G:H2'	1:5:483:C:O4'	2.11	0.51
1:5:504:A:N6	1:5:529:U:H5	2.07	0.51
1:5:646:U:H2'	1:5:647:G:C8	2.46	0.51
1:5:1452:A:H2'	1:5:1827:A:N3	2.26	0.51
1:5:1716:G:O3'	39:kk:53:THR:HG21	2.10	0.51
1:5:2055:G:H2'	1:5:2056:C:C6	2.46	0.51
1:5:2592:G:C6	1:5:2593:C:N4	2.79	0.51
5:BB:87:VAL:HG22	5:BB:110:LEU:CD2	2.41	0.51
6:CC:74:ILE:HD13	6:CC:94:CYS:SG	2.50	0.51
17:OO:159[A]:GLU:O	17:OO:161[A]:ARG:C	2.53	0.51
24:VV:17:LEU:HD11	24:VV:98:ASN:HB3	1.92	0.51
24:VV:20:GLY:N	24:VV:36:ILE:O	2.44	0.51
81:2:585:G:C8	81:2:585:G:O5'	2.63	0.51
81:2:882:C:H2'	81:2:883:A:O4'	2.11	0.51
81:2:1072:G:C2	81:2:1073:G:C8	2.99	0.51
81:2:1670:G:H2'	81:2:1671:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:1794:C:O4'	81:2:1794:C:O2	2.28	0.51
1:5:370:U:O4	1:5:371:G:C6	2.64	0.51
1:5:1108:C:N4	1:5:1109:U:C4	2.79	0.51
1:5:2218:G:N2	1:5:2219:G:C5	2.78	0.51
1:5:3243:U:O2'	1:5:3244:G:H4'	2.10	0.51
4:AA:35:ALA:HA	10:GG:35:ILE:HG23	1.92	0.51
10:GG:135:LEU:HA	10:GG:196:VAL:HG21	1.93	0.51
13:JJ:49:LYS:HA	13:JJ:64:LYS:HA	1.91	0.51
17:OO:30[A]:ASN:C	17:OO:32[A]:GLN:H	2.18	0.51
57:J:170:GLY:CA	81:2:510:A:H2'	2.26	0.51
81:2:431:G:C6	81:2:432:C:N3	2.79	0.51
82:4:6120:U:C2'	82:4:6127:C:H5''	2.39	0.51
82:4:6178:U:C5	82:4:6179:U:C5	2.98	0.51
83:1:78:TYR:CG	83:1:79:SER:HA	2.46	0.51
83:1:685:ARG:CB	83:1:686:VAL:HA	2.31	0.51
83:1:700:ARG:HG2	83:1:705:ILE:CD1	2.40	0.51
1:5:610:C:C2	1:5:611:C:C5	2.98	0.51
1:5:819:A:C5	1:5:820:C:H1'	2.46	0.51
1:5:2223:U:O2'	82:4:6179:U:OP1	2.25	0.51
1:5:2807:G:N2	1:5:2808:C:C2	2.79	0.51
6:CC:349:ILE:HG13	6:CC:350:LYS:HB3	1.89	0.51
6:CC:349:ILE:CD1	6:CC:350:LYS:HA	2.41	0.51
17:OO:66[A]:ASN:C	17:OO:68[A]:THR:N	2.60	0.51
17:OO:142[A]:LEU:HG	17:OO:143[A]:SER:N	2.25	0.51
45:qq:8:HIS:ND1	45:qq:214:TYR:OH	2.42	0.51
48:A:185:ARG:HG3	69:V:45:ALA:HB3	1.92	0.51
81:2:1353:G:C2	81:2:1354:C:C2	2.99	0.51
82:4:6103:G:H2'	82:4:6104:G:O4'	2.10	0.51
83:1:583:HIS:HD1	83:1:704:GLN:HB3	1.74	0.51
83:1:726:GLU:HG3	83:1:727:PRO:HD2	1.93	0.51
1:5:65:A:C4	1:5:110:G:N7	2.79	0.51
1:5:1874:G:O6	5:BB:241:LYS:NZ	2.37	0.51
1:5:1911:U:H2'	1:5:1912:C:O4'	2.11	0.51
1:5:3023:U:H3	1:5:3055:A:N6	2.06	0.51
1:5:3056:G:C6	1:5:3057:C:C4	2.99	0.51
1:5:3215:G:C2	1:5:3216:C:C2	2.99	0.51
39:kk:51:LEU:C	39:kk:51:LEU:CD1	2.82	0.51
81:2:585:G:C6	81:2:586:C:N4	2.78	0.51
81:2:888:U:H1'	81:2:987:A:H4'	1.91	0.51
81:2:1108:G:C4	81:2:1109:G:C8	2.99	0.51
81:2:1120:C:O2	81:2:1126:G:C2	2.64	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:155:VAL:HG21	83:1:185:VAL:HG11	1.92	0.51
83:1:157:ILE:CD1	83:1:211:PHE:HE1	2.22	0.51
83:1:383:SER:HA	83:1:465:LYS:O	2.10	0.51
83:1:576:LEU:CD2	83:1:587:TYR:HA	2.41	0.51
8:EE:114:ARG:CG	8:EE:115:ALA:H	2.23	0.51
17:OO:126[A]:ARG:NH1	17:OO:126[A]:ARG:HB3	2.26	0.51
17:OO:188[A]:THR:O	17:OO:189[A]:GLU:C	2.53	0.51
50:C:82:LYS:HA	50:C:83:ASP:CB	2.40	0.51
83:1:383:SER:C	83:1:465:LYS:O	2.54	0.51
83:1:519:LEU:HD13	83:1:521:TYR:HB3	1.93	0.51
1:5:486:U:O3'	6:CC:343:LYS:O	2.29	0.51
1:5:1328:G:C6	1:5:1329:C:C4	2.99	0.51
1:5:1573:U:H3'	1:5:1573:U:O2	2.11	0.51
1:5:3224:G:C2	1:5:3225:C:C2	2.99	0.51
4:AA:176:ASP:HB3	44:pp:29:LEU:HD11	1.92	0.51
7:DD:39:GLN:HE21	7:DD:43:LYS:CD	2.24	0.51
16:NN:143:ARG:NH1	16:NN:152:CYS:SG	2.84	0.51
45:qq:171:ASN:O	45:qq:173:GLU:N	2.44	0.51
46:rr:37:SER:HA	46:rr:38:GLN:HB3	1.93	0.51
68:U:72:ASN:ND2	81:2:1427:G:N3	2.59	0.51
71:X:53:VAL:HG22	71:X:72:VAL:HG11	1.93	0.51
81:2:1588:G:N2	81:2:1589:C:C2	2.79	0.51
81:2:1770:C:H5''	81:2:1770:C:C6	2.46	0.51
82:4:6196:A:H2'	82:4:6197:A:C8	2.46	0.51
1:5:128:G:H2'	1:5:129:C:O4'	2.11	0.50
1:5:1300:U:O2'	1:5:1301:A:OP1	2.23	0.50
1:5:1716:G:H5'	39:kk:55:ILE:HD11	1.91	0.50
1:5:1924:C:C4	1:5:2055:G:N1	2.76	0.50
1:5:2735:U:H2'	1:5:2736:U:C6	2.47	0.50
1:5:2749:U:O2	1:5:2750:U:C2	2.63	0.50
1:5:3262:A:H2'	1:5:3263:A:O4'	2.10	0.50
4:AA:181:LYS:O	4:AA:182:ALA:C	2.54	0.50
5:BB:283:TYR:CZ	5:BB:325:LYS:HG3	2.46	0.50
9:FF:211:TRP:CE2	9:FF:216:LYS:HD2	2.47	0.50
10:GG:152:ILE:HG23	10:GG:162:VAL:HG21	1.93	0.50
14:LL:3:ILE:O	14:LL:4:SER:OG	2.19	0.50
17:OO:30[A]:ASN:O	17:OO:32[A]:GLN:N	2.41	0.50
17:OO:126[A]:ARG:O	17:OO:126[A]:ARG:HG2	2.10	0.50
17:OO:192[A]:GLU:O	17:OO:194[A]:LEU:C	2.54	0.50
19:QQ:122:ILE:HG23	19:QQ:126:GLN:HB2	1.93	0.50
20:RR:134:HIS:O	20:RR:136:ARG:N	2.43	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:E:116:ASP:N	52:E:117:GLU:HB2	2.26	0.50
81:2:30:G:H2'	81:2:31:C:O4'	2.11	0.50
81:2:1471:U:O2	81:2:1471:U:C2'	2.58	0.50
83:1:659:ILE:HD13	83:1:693:LEU:HD21	1.93	0.50
3:8:8:C:HO2'	3:8:9:A:H8	1.59	0.50
5:BB:215:ILE:HD12	5:BB:282:VAL:CG2	2.40	0.50
80:g:75:SER:CB	80:g:76:ALA:HB3	2.41	0.50
81:2:886:A:H2	81:2:925:A:H2	1.35	0.50
81:2:1015:C:O2	81:2:1015:C:O4'	2.28	0.50
81:2:1353:G:C6	81:2:1354:C:C4	2.99	0.50
82:4:6118:U:H2'	82:4:6119:U:H4'	1.93	0.50
1:5:618:A:C8	1:5:622:A:C6	2.99	0.50
1:5:995:G:N2	1:5:997:A:OP2	2.44	0.50
1:5:1018:A:N3	1:5:2601:U:O2'	2.43	0.50
17:OO:126[A]:ARG:HD2	17:OO:136[A]:TYR:CG	2.46	0.50
31:cc:13:LYS:HB3	31:cc:100:ILE:HG23	1.93	0.50
64:Q:34:SER:HB2	64:Q:38:LEU:HD12	1.93	0.50
81:2:864:A:N1	81:2:964:U:H5	2.09	0.50
81:2:1040:G:C6	81:2:1041:G:C6	2.99	0.50
81:2:1363:G:C2	81:2:1364:C:C4	2.98	0.50
1:5:1049:U:O2	1:5:1053:U:C2	2.64	0.50
1:5:1196:A:C3'	1:5:1197:G:H5'	2.41	0.50
1:5:1346:G:N1	1:5:1347:C:C4	2.80	0.50
1:5:1722:G:C6	1:5:1723:C:C4	3.00	0.50
1:5:1927:G:N1	1:5:2054:U:H2'	2.27	0.50
1:5:2170:G:C2	1:5:2171:C:C2	3.00	0.50
1:5:2217:C:C5'	1:5:2218:G:H5'	2.41	0.50
1:5:2236:C:P	82:4:6206:DG:OP2	2.67	0.50
1:5:2435:G:O2'	45:qq:209:THR:HG22	2.10	0.50
1:5:2564:U:C4	1:5:2565:U:C4	2.99	0.50
1:5:3207:G:N2	1:5:3208:C:C2	2.79	0.50
2:7:12:U:OP2	2:7:68:C:O2'	2.29	0.50
7:DD:165:GLY:O	7:DD:169:GLY:N	2.43	0.50
8:EE:126:LYS:N	8:EE:126:LYS:CD	2.74	0.50
53:F:53:VAL:HG13	53:F:133:GLN:HA	1.93	0.50
74:a:95:ARG:CZ	81:2:933:C:C2	2.95	0.50
81:2:8:U:C4	81:2:1138:A:N6	2.79	0.50
81:2:1673:C:N3	81:2:1725:G:C2	2.80	0.50
1:5:2392:U:H2'	1:5:2393:A:C8	2.47	0.50
1:5:3188:G:N2	1:5:3189:C:C2	2.79	0.50
1:5:3254:G:C2	1:5:3255:C:C2	3.00	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AA:134:VAL:HG22	4:AA:150:LEU:HD23	1.94	0.50
5:BB:306:THR:HG22	5:BB:317:ILE:HB	1.93	0.50
34:ff:77:ASN:OD1	34:ff:77:ASN:N	2.44	0.50
45:qq:94:ASN:ND2	45:qq:100:ILE:HG13	2.26	0.50
49:B:103:MET:SD	49:B:104:ASP:N	2.83	0.50
70:W:36:LYS:HB2	70:W:110:ILE:HD12	1.92	0.50
81:2:1146:A:H2'	81:2:1147:C:O4'	2.11	0.50
1:5:167:U:C5	1:5:168:U:C5	2.99	0.50
1:5:335:G:C2	1:5:336:A:C8	2.99	0.50
1:5:520:G:C2'	1:5:521:U:H5'	2.38	0.50
1:5:2824:G:N2	1:5:2825:C:C2	2.79	0.50
1:5:3055:A:C4'	1:5:3055:A:C8	2.95	0.50
4:AA:110:GLY:HA2	81:2:922:A:H5''	1.94	0.50
14:LL:89:TYR:O	14:LL:92:THR:OG1	2.29	0.50
43:oo:60:LYS:O	43:oo:61:LYS:C	2.54	0.50
81:2:17:C:O2'	81:2:1136:A:N1	2.39	0.50
81:2:700:C:O2	81:2:739:G:C2	2.64	0.50
81:2:992:A:H5''	81:2:993:G:OP2	2.12	0.50
81:2:1671:G:C6	81:2:1672:C:C4	3.00	0.50
82:4:6178:U:C4	82:4:6198:A:N1	2.80	0.50
83:1:633:ILE:HG22	83:1:647:ILE:HG12	1.94	0.50
83:1:638:PRO:HD3	83:1:681:MET:CE	2.26	0.50
1:5:1627:G:O4'	1:5:1765:G:H2'	2.12	0.50
1:5:2180:U:O2	1:5:2180:U:O4'	2.29	0.50
1:5:2218:G:C4	1:5:2219:G:O4'	2.64	0.50
2:7:25:G:C6	2:7:26:C:C4	3.00	0.50
4:AA:209:HIS:C	4:AA:209:HIS:CD2	2.90	0.50
5:BB:173:GLN:O	5:BB:175:LYS:N	2.45	0.50
5:BB:256:HIS:HA	5:BB:257:PRO:C	2.35	0.50
7:DD:33:ARG:HE	7:DD:37:VAL:HG21	1.77	0.50
12:II:65:LEU:HD11	12:II:91:VAL:CG1	2.41	0.50
28:ZZ:61:LYS:O	28:ZZ:65:ARG:N	2.44	0.50
41:mm:116:GLY:O	41:mm:117:HIS:C	2.54	0.50
45:qq:8:HIS:CD2	45:qq:11:GLU:OE1	2.65	0.50
45:qq:121:PRO:CA	82:4:6039:A:N7	2.55	0.50
45:qq:143:ASP:CB	45:qq:146:GLN:OE1	2.59	0.50
74:a:85:ARG:CZ	81:2:1151:A:O2'	2.59	0.50
81:2:1412:U:O4'	81:2:1412:U:O2	2.28	0.50
81:2:1610:U:H3'	81:2:1611:U:O2	2.12	0.50
83:1:576:LEU:HB3	83:1:585:ARG:HH21	1.76	0.50
1:5:1108:C:C4	1:5:1109:U:C4	3.00	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2503:G:H2'	1:5:2504:A:O4'	2.11	0.50
4:AA:104:LEU:HB3	4:AA:146:THR:HG21	1.94	0.50
17:OO:176[A]:ASN:C	17:OO:178[A]:VAL:H	2.17	0.50
20:RR:122:SER:OG	20:RR:123:LEU:N	2.44	0.50
20:RR:163:ARG:HG2	81:2:812:U:O2	2.11	0.50
45:qq:121:PRO:C	82:4:6039:A:C5	2.89	0.50
46:rr:138:PHE:CZ	46:rr:178:LEU:HD12	2.47	0.50
60:M:70:GLY:HA3	79:f:114:VAL:HG13	1.94	0.50
81:2:273:G:C6	81:2:274:C:N4	2.80	0.50
81:2:902:U:O3'	81:2:903:G:H3'	2.11	0.50
82:4:6105:U:H2'	82:4:6106:U:H5''	1.94	0.50
82:4:6121:A:C6	82:4:6158:A:N1	2.79	0.50
83:1:380:LEU:HD12	83:1:399:ARG:O	2.10	0.50
1:5:114:A:H2'	1:5:115:A:H5'	1.92	0.50
1:5:209:A:H2'	6:CC:162:THR:HG21	1.93	0.50
1:5:221:A:C4	1:5:224:C:N4	2.80	0.50
1:5:842:U:H2'	1:5:843:U:C6	2.46	0.50
1:5:882:C:H5''	4:AA:15:ILE:HD13	1.94	0.50
1:5:1074:A:H3'	1:5:1075:G:C5'	2.41	0.50
1:5:1617:A:H2'	1:5:1618:U:O4'	2.12	0.50
1:5:1923:G:C8	1:5:1923:G:P	3.04	0.50
1:5:2667:G:C2	1:5:2724:C:C2	3.00	0.50
1:5:2752:G:H2'	1:5:2753:A:O4'	2.12	0.50
11:HH:112:ILE:CD1	11:HH:161:ILE:HD11	2.41	0.50
45:qq:94:ASN:HB3	45:qq:123:LEU:HD23	1.94	0.50
58:K:46:LEU:HD13	58:K:66:TYR:CD2	2.47	0.50
81:2:39:A:O2'	81:2:468:C:N4	2.45	0.50
1:5:1174:A:N3	1:5:2823:U:O2'	2.36	0.49
1:5:1266:G:C2	1:5:1267:C:C2	3.00	0.49
3:8:8:C:O2'	3:8:9:A:H8	1.95	0.49
17:OO:5[A]:GLU:OE1	17:OO:5[A]:GLU:HA	2.10	0.49
17:OO:174[A]:ALA:O	17:OO:176[A]:ASN:N	2.44	0.49
17:OO:187[A]:GLY:C	17:OO:189[A]:GLU:H	2.15	0.49
32:dd:16:MET:HE2	32:dd:32:ALA:HB1	1.93	0.49
44:pp:47:VAL:HG13	44:pp:48:LYS:HB2	1.94	0.49
56:I:68:ALA:HB2	56:I:183:TYR:OH	2.12	0.49
59:L:132:SER:O	59:L:133:LYS:C	2.55	0.49
81:2:84:A:H2'	81:2:85:A:O4'	2.11	0.49
81:2:1310:U:O2'	81:2:1312:A:N7	2.39	0.49
81:2:1661:G:C6	81:2:1662:C:C4	3.00	0.49
83:1:682:ARG:CZ	83:1:801:TRP:CE3	2.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:922:A:N3	1:5:1340:A:C2	2.80	0.49
1:5:1926:U:H2'	1:5:1927:G:O5'	2.12	0.49
1:5:2480:A:H5''	10:GG:248:ARG:NH1	2.26	0.49
8:EE:112:LYS:HD2	8:EE:113:GLN:N	2.26	0.49
16:NN:74:PRO:O	16:NN:75:VAL:O	2.29	0.49
24:VV:37:MET:HE1	24:VV:73:VAL:HG22	1.94	0.49
24:VV:81:GLN:O	24:VV:98:ASN:ND2	2.45	0.49
28:ZZ:53:VAL:HG13	28:ZZ:62:VAL:HG22	1.94	0.49
81:2:851:C:H2'	81:2:852:G:O4'	2.12	0.49
1:5:1418:G:OP1	18:PP:65:SER:OG	2.29	0.49
1:5:2055:G:H2'	1:5:2056:C:N1	2.27	0.49
1:5:2154:G:O2'	1:5:2283:U:OP2	2.29	0.49
1:5:2480:A:C3'	1:5:2481:C:C4'	2.84	0.49
4:AA:150:LEU:O	4:AA:153:GLY:N	2.43	0.49
5:BB:91:GLY:O	5:BB:101:SER:HA	2.12	0.49
5:BB:219:ALA:HB3	5:BB:329:PRO:HG2	1.94	0.49
10:GG:152:ILE:CG2	10:GG:162:VAL:HG21	2.42	0.49
12:II:69:ARG:C	12:II:69:ARG:HD2	2.37	0.49
26:XX:82:LEU:HD11	26:XX:126:LEU:HD21	1.93	0.49
81:2:93:A:C6	81:2:397:G:C6	3.00	0.49
81:2:1084:G:N2	81:2:1086:A:H3'	2.27	0.49
81:2:1349:G:N1	81:2:1374:C:C2	2.80	0.49
82:4:6074:A:H2'	82:4:6075:A:O4'	2.13	0.49
1:5:296:A:N3	1:5:299:G:O2'	2.38	0.49
1:5:2480:A:C2'	1:5:2481:C:C4'	2.88	0.49
5:BB:29:VAL:HG11	5:BB:339:ARG:HD3	1.93	0.49
28:ZZ:46:ILE:HD11	28:ZZ:49:TYR:CG	2.48	0.49
51:D:48:ILE:HD13	51:D:84:ILE:HG23	1.94	0.49
81:2:69:G:C6	81:2:70:C:C4	3.01	0.49
83:1:44:GLY:HA3	83:1:45:ILE:HD13	1.95	0.49
1:5:435:C:O2	1:5:598:G:C2	2.66	0.49
1:5:832:C:OP2	1:5:833:U:OP2	2.31	0.49
1:5:918:G:C6	1:5:919:C:N4	2.81	0.49
1:5:1275:A:O2'	1:5:2852:C:O2	2.29	0.49
1:5:1753:G:C6	1:5:1754:C:C4	3.01	0.49
1:5:1925:G:N3	1:5:2056:C:C1'	2.75	0.49
1:5:2406:G:C2	1:5:2479:U:O2	2.65	0.49
1:5:2540:A:N3	1:5:2540:A:H2'	2.28	0.49
1:5:3170:G:H2'	1:5:3171:U:O4'	2.13	0.49
1:5:3252:G:C6	1:5:3253:C:C4	3.00	0.49
6:CC:290:ILE:HG23	19:QQ:35:PHE:CE2	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:HH:75:ILE:HA	11:HH:78:LEU:HD12	1.94	0.49
16:NN:59:PHE:CD2	16:NN:135:VAL:HG22	2.48	0.49
17:OO:62[A]:ALA:O	17:OO:64[A]:ALA:N	2.43	0.49
17:OO:166[A]:ALA:O	17:OO:168[A]:TYR:N	2.46	0.49
34:ff:90:PRO:O	34:ff:91:ALA:HB3	2.11	0.49
45:qq:33:GLU:HA	45:qq:168:ALA:HA	1.95	0.49
46:rr:53:VAL:HG13	46:rr:89:ILE:HG12	1.95	0.49
50:C:144:ILE:HG12	50:C:223:ILE:HG23	1.95	0.49
58:K:54:PHE:HB3	58:K:55:VAL:HG23	1.94	0.49
61:N:55:ARG:NH1	81:2:959:U:OP2	2.43	0.49
81:2:884:G:C2'	81:2:885:U:C4'	2.91	0.49
81:2:1278:C:H2'	81:2:1279:C:O4'	2.12	0.49
81:2:1671:G:C5	81:2:1672:C:C4	3.00	0.49
83:1:681:MET:SD	83:1:682:ARG:HB3	2.53	0.49
1:5:187:A:C5	1:5:211:A:C2	3.01	0.49
1:5:674:G:C2	1:5:675:C:C2	3.00	0.49
1:5:1395:C:H2'	1:5:1396:U:O4'	2.13	0.49
1:5:1479:C:OP1	18:PP:127:ARG:NH2	2.46	0.49
1:5:2480:A:N7	1:5:2481:C:C5	2.79	0.49
1:5:2853:C:C2	1:5:2906:G:C2	3.00	0.49
1:5:3139:U:C3'	1:5:3140:A:H5''	2.42	0.49
1:5:3234:G:C6	1:5:3235:A:C6	3.00	0.49
17:OO:174[A]:ALA:O	17:OO:175[A]:TYR:C	2.55	0.49
1:5:422:A:C2	1:5:2332:A:H4'	2.48	0.49
1:5:674:G:C6	1:5:675:C:C4	3.00	0.49
1:5:1120:G:N2	1:5:1126:C:C2	2.81	0.49
1:5:1722:G:C2	1:5:1723:C:C2	3.01	0.49
6:CC:106:TRP:O	16:NN:203:ARG:NH2	2.42	0.49
45:qq:118:LYS:CA	82:4:6038:G:C8	2.79	0.49
52:E:67:GLN:CA	52:E:68:ARG:HB2	2.43	0.49
70:W:2:THR:N	81:2:1033:C:HO2'	2.10	0.49
81:2:332:A:C6	81:2:333:G:C6	3.00	0.49
81:2:1289:U:H2'	81:2:1290:G:C8	2.47	0.49
83:1:133:GLU:OE2	83:1:136:CYS:CA	2.56	0.49
1:5:858:G:C4	1:5:859:A:C8	3.01	0.49
1:5:1269:C:O3'	41:mm:113:ARG:NH1	2.45	0.49
1:5:1791:C:O2'	1:5:1792:A:H8	1.96	0.49
1:5:2840:A:OP1	1:5:2840:A:H4'	2.12	0.49
1:5:3200:G:O6	1:5:3223:U:C4	2.65	0.49
8:EE:39:ILE:HG21	8:EE:162:PHE:CD2	2.48	0.49
33:ee:32:TRP:CZ2	33:ee:53:PRO:HD2	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:X:41:SER:O	71:X:43:PHE:N	2.45	0.49
82:4:6120:U:O2	82:4:6120:U:H2'	2.12	0.49
82:4:6199:A:N6	82:4:6200:A:N6	2.61	0.49
1:5:1717:G:H5'	39:kk:3:LYS:HD2	1.94	0.49
1:5:2843:U:O2	1:5:2843:U:H2'	2.13	0.49
1:5:3077:G:C2	1:5:3094:C:N3	2.80	0.49
4:AA:9:ARG:O	4:AA:10:LYS:C	2.56	0.49
17:OO:118[A]:ARG:C	17:OO:119[A]:VAL:CG1	2.85	0.49
17:OO:124[A]:ALA:C	17:OO:125[A]:LEU:O	2.49	0.49
20:RR:93:VAL:O	20:RR:94:VAL:C	2.56	0.49
23:UU:75:TYR:CZ	23:UU:79:LEU:HD11	2.48	0.49
45:qq:122:ARG:HB3	82:4:6039:A:H3'	1.95	0.49
81:2:69:G:C2	81:2:70:C:C2	3.01	0.49
81:2:1560:G:C6	81:2:1561:C:C4	3.01	0.49
81:2:1586:G:N1	81:2:1587:C:C2	2.81	0.49
82:4:6189:G:O4'	87:1:903:6EM:N7	2.46	0.49
83:1:276:PHE:CD1	83:1:276:PHE:C	2.90	0.49
83:1:638:PRO:CD	83:1:681:MET:HE2	2.35	0.49
1:5:590:G:C6	1:5:591:C:C4	3.01	0.49
1:5:770:G:C6	1:5:772:A:C4	3.00	0.49
1:5:987:C:O2	1:5:987:C:O2'	2.30	0.49
1:5:1452:A:C4'	1:5:1452:A:OP1	2.60	0.49
1:5:1464:G:C5	40:ll:13:MET:SD	3.06	0.49
1:5:2036:U:C3'	1:5:2049:G:O6	2.61	0.49
1:5:2173:C:O2	1:5:2208:G:C2	2.66	0.49
1:5:2182:A:H2'	1:5:2183:A:C8	2.47	0.49
1:5:2203:G:C2	1:5:2204:C:C2	3.01	0.49
1:5:2217:C:H5''	1:5:2218:G:H5'	1.95	0.49
1:5:2236:C:H2'	1:5:2237:U:H6	1.78	0.49
1:5:2446:G:C2	1:5:2447:C:C2	3.01	0.49
1:5:2850:U:H2'	1:5:2851:U:C6	2.48	0.49
1:5:3238:U:OP2	8:EE:127:LYS:NZ	2.45	0.49
9:FF:135:TYR:HE2	9:FF:230:GLU:CD	2.21	0.49
35:gg:7:PHE:CD1	35:gg:20:ILE:HD11	2.47	0.49
39:kk:20:VAL:HG22	39:kk:47:GLY:HA3	1.95	0.49
45:qq:119:GLN:O	45:qq:120:VAL:O	2.31	0.49
81:2:22:A:C2	81:2:23:G:C5	3.01	0.49
81:2:23:G:HO2'	81:2:24:U:C5'	2.25	0.49
81:2:594:G:C6	81:2:595:C:N4	2.81	0.49
81:2:628:U:O4	81:2:969:A:C5	2.65	0.49
81:2:1080:A:C6	81:2:1090:A:C6	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:1162:A:N6	81:2:1163:G:C6	2.80	0.49
81:2:1739:U:H2'	81:2:1740:U:O4'	2.13	0.49
82:4:6128:A:H2'	82:4:6129:G:C4'	2.42	0.49
82:4:6159:G:C2	82:4:6160:G:C5	3.00	0.49
1:5:436:A:C6	1:5:597:G:C2	3.01	0.48
1:5:664:A:N6	6:CC:48:GLN:NE2	2.61	0.48
1:5:843:U:N3	1:5:859:A:C2	2.81	0.48
1:5:849:G:H1'	1:5:851:G:H21	1.77	0.48
1:5:2107:A:O3'	1:5:2108:A:H2'	2.13	0.48
1:5:2154:G:C2'	1:5:2155:U:O5'	2.61	0.48
1:5:2475:U:H2'	1:5:2476:C:C6	2.48	0.48
1:5:2769:A:O2'	1:5:2770:A:H2'	2.12	0.48
1:5:3228:G:N2	1:5:3229:C:C2	2.81	0.48
4:AA:77:ILE:CD1	4:AA:128:ARG:HB3	2.43	0.48
8:EE:13:VAL:CG2	8:EE:14:PRO:HD3	2.34	0.48
22:TT:63:VAL:HB	22:TT:75:ILE:CD1	2.43	0.48
44:pp:49:ARG:HB2	44:pp:55:TRP:CZ3	2.48	0.48
49:B:99:ASN:O	49:B:101:HIS:N	2.46	0.48
54:G:136:LYS:HE3	81:2:65:A:H3'	1.95	0.48
54:G:154:ARG:H	81:2:78:A:C4'	2.25	0.48
81:2:885:U:H3'	81:2:886:A:H5''	1.88	0.48
81:2:991:A:O4'	81:2:991:A:N3	2.45	0.48
81:2:1611:U:O2	81:2:1611:U:O4'	2.30	0.48
1:5:226:C:H2'	1:5:227:G:O4'	2.12	0.48
1:5:1075:G:H2'	1:5:1076:A:C8	2.48	0.48
1:5:2524:G:C6	35:gg:95:ILE:HG21	2.49	0.48
1:5:2915:G:N2	1:5:2916:C:C2	2.82	0.48
2:7:28:C:OP1	13:JJ:137:ARG:NH1	2.46	0.48
4:AA:55:GLY:O	4:AA:56:ALA:HB3	2.12	0.48
7:DD:111:GLN:HE22	7:DD:251:PRO:HD2	1.78	0.48
11:HH:41:ILE:HD11	11:HH:67:ALA:CB	2.42	0.48
16:NN:104:GLU:HA	16:NN:160:GLU:HG3	1.95	0.48
37:ii:61:ILE:HA	37:ii:65:GLY:HA2	1.94	0.48
45:qq:118:LYS:CA	82:4:6038:G:O4'	2.61	0.48
50:C:153:LEU:HD22	57:J:94:ASP:HB3	1.94	0.48
81:2:406:A:H2'	81:2:407:C:C6	2.49	0.48
81:2:922:A:C2	81:2:923:A:C6	3.00	0.48
81:2:966:A:H2'	81:2:967:U:O4'	2.13	0.48
81:2:991:A:C2	81:2:1011:U:O4	2.66	0.48
83:1:463:LEU:CD1	83:1:467:GLY:HA3	2.33	0.48
1:5:548:G:N2	1:5:549:C:C2	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:666:A:O2'	6:CC:234:GLY:HA3	2.13	0.48
1:5:1925:G:N7	1:5:2057:A:C4	2.82	0.48
1:5:2203:G:C6	1:5:2204:C:C4	3.01	0.48
1:5:2236:C:OP2	82:4:6206:DG:OP2	2.31	0.48
1:5:2480:A:N6	1:5:2481:C:N4	2.60	0.48
4:AA:80:GLU:CG	4:AA:170:ALA:HA	2.43	0.48
17:OO:161[A]:ARG:CG	17:OO:162[A]:LYS:H	2.16	0.48
18:PP:83:TRP:O	18:PP:85:ALA:N	2.46	0.48
22:TT:57:TYR:O	22:TT:58:GLN:C	2.56	0.48
24:VV:67:PRO:HG3	81:2:1657:A:O2'	2.13	0.48
36:hh:85:THR:O	36:hh:86:ARG:C	2.57	0.48
45:qq:120:VAL:CG1	45:qq:121:PRO:N	2.76	0.48
48:A:33:GLN:N	48:A:34:GLU:HB2	2.28	0.48
63:P:43:ARG:NH1	81:2:1549:U:OP2	2.46	0.48
71:X:53:VAL:HG13	71:X:72:VAL:HG13	1.95	0.48
81:2:1440:U:N3	81:2:1441:U:C4	2.81	0.48
82:4:6044:G:C6	82:4:6045:C:C4	3.02	0.48
1:5:1032:A:C2	1:5:1033:A:C4	3.01	0.48
1:5:1111:G:N2	1:5:1112:C:C2	2.81	0.48
1:5:1925:G:C6	1:5:2057:A:C5	3.01	0.48
1:5:2237:U:H3'	1:5:2238:U:H5'	1.94	0.48
1:5:2530:A:O2'	1:5:2531:A:H5''	2.14	0.48
18:PP:36:ILE:HD12	18:PP:48:LEU:HD11	1.95	0.48
18:PP:36:ILE:HG23	18:PP:114:VAL:HG11	1.95	0.48
34:ff:13:HIS:CD2	34:ff:89:LEU:HD12	2.48	0.48
55:H:70:TYR:O	55:H:74:GLN:N	2.46	0.48
71:X:63:GLN:O	71:X:65:ASN:N	2.47	0.48
74:a:49:ALA:CB	74:a:50:ILE:HA	2.43	0.48
81:2:591:G:H2'	81:2:592:U:O4'	2.13	0.48
81:2:1277:G:C2	81:2:1278:C:C2	3.01	0.48
81:2:1558:U:O4'	81:2:1558:U:O2	2.30	0.48
1:5:885:A:C2	4:AA:204:MET:SD	3.06	0.48
1:5:2444:G:C2	1:5:2445:C:C2	3.02	0.48
1:5:3243:U:C5'	34:ff:66:VAL:HG21	2.43	0.48
2:7:112:G:H2'	2:7:113:C:C6	2.49	0.48
3:8:56:G:C2	3:8:57:C:C2	3.01	0.48
17:OO:16[A]:LEU:HD21	17:OO:126[A]:ARG:HG3	1.94	0.48
18:PP:64:ASN:ND2	18:PP:80:LYS:HE3	2.29	0.48
35:gg:74:ARG:CG	35:gg:75:ALA:N	2.76	0.48
38:jj:5:THR:N	38:jj:6:PRO:HD2	2.29	0.48
49:B:222:LYS:O	49:B:223:PHE:C	2.56	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:626:C:H2'	81:2:627:G:O4'	2.13	0.48
81:2:1170:A:H2'	81:2:1171:G:C8	2.47	0.48
81:2:1560:G:C2	81:2:1561:C:C2	3.01	0.48
82:4:6119:U:C5'	82:4:6120:U:H5''	2.35	0.48
83:1:162:ARG:HA	83:1:163:ALA:C	2.38	0.48
1:5:193:C:C2	1:5:203:G:N2	2.82	0.48
1:5:1277:G:N2	1:5:1278:G:N7	2.56	0.48
1:5:1717:G:C6	1:5:1718:A:C6	3.02	0.48
1:5:1729:C:C2	1:5:1735:G:N1	2.82	0.48
1:5:1773:A:H5'	35:gg:70:LYS:HD3	1.96	0.48
1:5:2911:G:C2'	5:BB:254:ALA:HB1	2.43	0.48
17:OO:125[A]:LEU:HD22	17:OO:125[A]:LEU:H	1.79	0.48
32:dd:23:VAL:O	32:dd:28:ARG:NH1	2.46	0.48
41:mm:103:LEU:CD1	41:mm:121:LEU:HD22	2.43	0.48
45:qq:12:HIS:CD2	45:qq:214:TYR:HD2	2.19	0.48
49:B:117:TRP:HD1	81:2:931:U:OP2	1.96	0.48
81:2:52:U:H2'	81:2:53:G:C8	2.48	0.48
81:2:885:U:C3'	81:2:886:A:C5'	2.85	0.48
81:2:1306:U:O2	81:2:1306:U:O4'	2.29	0.48
83:1:576:LEU:HD21	83:1:587:TYR:HD1	0.52	0.48
1:5:954:A:C2	1:5:1072:G:C2	3.02	0.48
1:5:1420:A:C2	1:5:2325:A:C4	3.01	0.48
1:5:2036:U:H2'	1:5:2049:G:O6	2.14	0.48
1:5:2159:U:H2'	1:5:2160:U:O4'	2.14	0.48
1:5:2479:U:N3	1:5:2480:A:C8	2.81	0.48
4:AA:9:ARG:O	4:AA:11:GLY:N	2.47	0.48
5:BB:3:HIS:O	5:BB:5:LYS:N	2.46	0.48
45:qq:30:GLU:CB	45:qq:209:THR:HG21	2.44	0.48
74:a:84:VAL:O	81:2:1795:A:N6	2.46	0.48
81:2:53:G:C6	81:2:54:C:C4	3.01	0.48
81:2:95:G:O2'	81:2:459:A:O2'	2.16	0.48
81:2:556:G:C6	81:2:558:C:N4	2.82	0.48
81:2:931:U:H1'	81:2:932:A:C2	2.49	0.48
81:2:1292:U:O4	81:2:1293:G:C5	2.67	0.48
81:2:1300:U:H2'	81:2:1301:U:O4'	2.13	0.48
82:4:6107:A:H2'	82:4:6108:G:C8	2.48	0.48
83:1:204:PRO:CG	83:1:245:TRP:CE2	2.87	0.48
83:1:687:ASN:CG	83:1:688:ILE:HA	2.39	0.48
1:5:1055:A:H2'	1:5:1056:A:C8	2.49	0.48
1:5:2862:C:O2	1:5:2876:G:C2	2.67	0.48
4:AA:27:ALA:O	4:AA:128:ARG:NH1	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:kk:3:LYS:HD3	39:kk:51:LEU:HG	1.95	0.48
56:I:142:ARG:NH2	81:2:196:A:N1	2.62	0.48
62:O:31:THR:HG22	62:O:38:THR:HA	1.96	0.48
81:2:585:G:N2	81:2:586:C:C2	2.81	0.48
81:2:1000:A:H3'	81:2:1001:G:C8	2.48	0.48
81:2:1451:G:H2'	81:2:1452:G:O4'	2.14	0.48
83:1:47:SER:CA	83:1:48:ALA:HB3	2.44	0.48
1:5:1261:A:H2'	1:5:1262:A:O4'	2.13	0.48
1:5:1398:U:C6	29:aa:4:ARG:NH2	2.82	0.48
1:5:2167:A:N9	1:5:2238:U:C2	2.82	0.48
1:5:2444:G:C6	1:5:2445:C:C4	3.02	0.48
1:5:2506:U:O2	1:5:2506:U:C2'	2.62	0.48
3:8:75:G:C2	3:8:76:C:C2	3.02	0.48
5:BB:114:VAL:O	5:BB:115:LYS:C	2.55	0.48
6:CC:74:ILE:CG2	6:CC:88:ALA:HB1	2.44	0.48
10:GG:159:ILE:HD12	16:NN:22:LEU:HD21	1.94	0.48
44:pp:37:TYR:HB2	44:pp:71:LEU:HD12	1.95	0.48
45:qq:120:VAL:HG12	45:qq:121:PRO:CD	2.44	0.48
59:L:88:ARG:NH2	81:2:304:C:O3'	2.47	0.48
69:V:53:TYR:OH	69:V:76:ASP:HB2	2.13	0.48
71:X:43:PHE:CZ	71:X:122:PHE:CD1	3.02	0.48
81:2:884:G:C8	81:2:885:U:C6	3.02	0.48
81:2:1363:G:C6	81:2:1364:C:N4	2.82	0.48
81:2:1417:G:C6	81:2:1418:C:N3	2.82	0.48
82:4:6170:C:H2'	82:4:6171:U:O4'	2.14	0.48
83:1:103:ILE:CD1	83:1:118:ALA:HB1	2.44	0.48
1:5:808:A:OP2	44:pp:4:ARG:NH1	2.47	0.48
1:5:1105:G:O2'	1:5:2610:A:N3	2.41	0.48
1:5:1467:C:C2	1:5:1492:G:N2	2.82	0.48
1:5:1469:A:H2'	1:5:1470:C:C6	2.48	0.48
3:8:107:G:N2	3:8:108:C:C2	2.82	0.48
12:II:149:ILE:HD11	12:II:167:ILE:HD11	1.94	0.48
45:qq:12:HIS:CA	45:qq:214:TYR:HE2	2.25	0.48
59:L:91:LEU:HD13	59:L:100:TYR:CG	2.49	0.48
64:Q:139:GLN:HA	81:2:1577:U:O2'	2.13	0.48
67:T:48:GLN:OE1	81:2:1529:G:N2	2.44	0.48
70:W:95:PRO:HD2	70:W:130:TYR:HB3	1.96	0.48
81:2:958:U:H5'	81:2:958:U:O2	2.14	0.48
82:4:6182:A:P	83:1:585:ARG:NH1	2.86	0.48
1:5:610:C:H1'	1:5:611:C:C6	2.49	0.47
1:5:658:G:C2	1:5:669:C:C2	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:947:U:H2'	1:5:948:C:O4'	2.14	0.47
1:5:1755:G:H2'	1:5:1756:A:C8	2.48	0.47
1:5:1923:G:N1	1:5:1925:G:C8	2.81	0.47
1:5:2422:U:H4'	1:5:2423:G:OP1	2.14	0.47
1:5:2481:C:OP1	10:GG:245:ILE:CG1	2.60	0.47
1:5:2694:C:N4	1:5:2696:G:C6	2.82	0.47
1:5:3260:A:O2'	5:BB:132:LYS:NZ	2.40	0.47
9:FF:220:PHE:O	9:FF:221:ILE:HG22	2.12	0.47
17:OO:17[A]:LEU:HG	17:OO:18[A]:GLY:N	2.29	0.47
17:OO:77[A]:PRO:HG2	17:OO:148[A]:TRP:CE2	2.49	0.47
38:jj:19:CYS:HG	85:jj:100:ZN:ZN	0.41	0.47
50:C:95:THR:O	81:2:1145:G:O2'	2.31	0.47
62:O:20:PHE:HB3	62:O:27:PHE:HB2	1.95	0.47
81:2:50:C:O2	81:2:429:G:C2	2.66	0.47
81:2:53:G:C2	81:2:54:C:C2	3.02	0.47
81:2:1499:C:C2	81:2:1505:G:N2	2.82	0.47
81:2:1589:C:C2	81:2:1590:A:C8	3.01	0.47
83:1:567:VAL:HG13	83:1:684:VAL:HG22	1.95	0.47
1:5:1515:G:C2	1:5:1521:C:C2	3.02	0.47
1:5:1860:A:H8	1:5:1860:A:H5''	1.79	0.47
1:5:2238:U:H2'	1:5:2239:A:O5'	2.14	0.47
1:5:2242:G:N2	1:5:2280:G:H2'	2.29	0.47
1:5:2242:G:H1'	1:5:2280:G:N1	2.29	0.47
3:8:45:C:H4'	40:ll:11:GLN:HG3	1.96	0.47
15:MM:32:LEU:HD11	15:MM:94:TRP:CG	2.49	0.47
17:OO:182[A]:LYS:CA	17:OO:185[A]:THR:HG22	2.43	0.47
26:XX:68:THR:HG21	36:hh:36:LEU:HD13	1.95	0.47
48:A:4:PRO:HD3	69:V:39:VAL:HG11	1.95	0.47
57:J:37:LYS:N	57:J:41:GLU:OE1	2.44	0.47
64:Q:52:LEU:HD22	64:Q:60:PHE:CZ	2.49	0.47
82:4:6191:A:H2'	82:4:6192:G:O4'	2.14	0.47
1:5:520:G:H2'	1:5:521:U:H5''	1.96	0.47
1:5:918:G:N2	1:5:919:C:C2	2.82	0.47
1:5:1600:C:OP1	28:ZZ:69:LYS:HB2	2.15	0.47
1:5:1927:G:N1	1:5:2055:G:O4'	2.47	0.47
1:5:2446:G:C6	1:5:2447:C:C4	3.02	0.47
1:5:3266:C:H5''	18:PP:71:ALA:HB1	1.96	0.47
6:CC:187:LEU:HD22	6:CC:193:LYS:HE3	1.96	0.47
29:aa:49:HIS:O	29:aa:50:PRO:O	2.32	0.47
70:W:73:GLY:HA3	70:W:128:PHE:CZ	2.49	0.47
81:2:642:G:C2	81:2:692:C:O2	2.68	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:849:A:C2	81:2:850:U:C2	3.02	0.47
81:2:980:U:H2'	81:2:981:U:C6	2.48	0.47
81:2:1333:U:H2'	81:2:1334:U:O4'	2.13	0.47
83:1:463:LEU:CD1	83:1:467:GLY:CA	2.87	0.47
1:5:33:G:N1	1:5:50:U:OP2	2.38	0.47
1:5:172:A:N3	1:5:247:A:C6	2.82	0.47
1:5:292:U:C4	1:5:293:C:C5	3.02	0.47
1:5:520:G:C2'	1:5:521:U:C5'	2.91	0.47
1:5:523:G:H2'	1:5:524:A:C8	2.49	0.47
1:5:1630:G:H2'	1:5:1631:G:C8	2.49	0.47
1:5:1797:A:H2'	1:5:1798:G:O4'	2.14	0.47
1:5:2995:A:H2'	1:5:2996:G:O4'	2.13	0.47
1:5:3296:G:N2	1:5:3347:C:C2	2.82	0.47
17:OO:111[A]:PRO:HA	17:OO:114[A]:ASP:OD1	2.14	0.47
37:ii:29:ARG:O	37:ii:31:GLY:N	2.45	0.47
45:qq:119:GLN:HB2	82:4:6039:A:OP1	2.14	0.47
45:qq:123:LEU:HB2	82:4:6039:A:O3'	2.13	0.47
57:J:108:ARG:NH2	57:J:145:SER:OG	2.47	0.47
81:2:1126:G:C6	81:2:1127:C:C4	3.03	0.47
81:2:1396:U:H3'	81:2:1397:C:H5'	1.95	0.47
82:4:6105:U:C2'	82:4:6106:U:H5''	2.45	0.47
82:4:6120:U:C6	82:4:6127:C:C5'	2.97	0.47
83:1:189:VAL:HG11	83:1:201:GLN:HA	1.96	0.47
83:1:681:MET:CB	83:1:682:ARG:HG3	2.44	0.47
1:5:101:G:H2'	1:5:102:C:O4'	2.13	0.47
1:5:118:U:O2	1:5:121:A:H5'	2.14	0.47
1:5:185:C:C2	1:5:232:G:C2	3.02	0.47
1:5:185:C:C2	1:5:232:G:N1	2.83	0.47
1:5:435:C:H2'	1:5:436:A:H8	1.79	0.47
1:5:1700:A:H2'	1:5:1701:G:O4'	2.14	0.47
1:5:2170:G:C6	1:5:2171:C:C4	3.02	0.47
1:5:2215:G:N2	1:5:2216:G:C4	2.83	0.47
5:BB:324:LEU:HD13	5:BB:328:ILE:CD1	2.45	0.47
22:TT:79:MET:HB2	22:TT:84:TYR:CE1	2.49	0.47
54:G:175:ILE:HG22	81:2:78:A:N3	2.28	0.47
57:J:41:GLU:OE2	57:J:108:ARG:NH2	2.47	0.47
81:2:30:G:C6	81:2:31:C:C4	3.02	0.47
83:1:519:LEU:HG	83:1:531:ALA:CB	2.44	0.47
1:5:1266:G:C6	1:5:1267:C:C4	3.01	0.47
1:5:1283:C:H5''	1:5:1284:G:OP2	2.15	0.47
1:5:1442:U:OP1	20:RR:5:ARG:NH1	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1753:G:C2	1:5:1754:C:C2	3.02	0.47
1:5:2238:U:H2'	1:5:2239:A:C4'	2.44	0.47
1:5:3019:U:H1'	24:VV:92:PHE:CZ	2.48	0.47
5:BB:252:ILE:CG2	5:BB:260:VAL:HG13	2.44	0.47
6:CC:41:SER:HB3	6:CC:111:VAL:HG11	1.97	0.47
9:FF:101:GLN:HG3	19:QQ:6:THR:HG22	1.96	0.47
17:OO:11[A]:ASP:O	17:OO:12[A]:GLY:C	2.57	0.47
17:OO:42[A]:LEU:CB	17:OO:139[A]:LEU:HD22	2.44	0.47
38:jj:29:ILE:C	38:jj:31:LYS:H	2.22	0.47
81:2:820:U:H2'	81:2:821:U:C6	2.49	0.47
81:2:935:G:C6	81:2:936:C:C4	3.03	0.47
81:2:1437:C:H2'	81:2:1438:C:H6	1.80	0.47
81:2:1672:C:H2'	81:2:1673:C:C6	2.49	0.47
83:1:701:GLY:HA3	83:1:703:GLY:N	2.29	0.47
1:5:1196:A:H2'	1:5:1197:G:H5'	1.96	0.47
1:5:1419:U:C5	1:5:2324:G:C2	3.02	0.47
1:5:1751:C:H2'	1:5:1752:C:C6	2.50	0.47
1:5:1786:G:C4	1:5:1787:U:C5	3.03	0.47
1:5:1923:G:H8	1:5:1923:G:P	2.37	0.47
1:5:2149:G:C2	1:5:2150:C:N3	2.83	0.47
1:5:2482:U:H4'	1:5:2483:U:OP1	2.15	0.47
1:5:2915:G:OP2	1:5:2915:G:H4'	2.15	0.47
1:5:3040:C:H2'	1:5:3041:A:O4'	2.14	0.47
1:5:3056:G:C5	1:5:3057:C:C4	3.03	0.47
1:5:3128:C:H2'	1:5:3129:U:C6	2.48	0.47
5:BB:283:TYR:OH	5:BB:325:LYS:HG3	2.15	0.47
6:CC:208:VAL:CG1	6:CC:230:VAL:HG22	2.44	0.47
6:CC:232:SER:OG	6:CC:233:LEU:N	2.48	0.47
7:DD:148:VAL:HG21	7:DD:153:THR:CG2	2.44	0.47
11:HH:170:LYS:HB3	11:HH:175:PHE:CD2	2.50	0.47
19:QQ:32:LEU:HD23	19:QQ:33:TYR:N	2.30	0.47
21:SS:155:ARG:HD3	21:SS:172:TYR:CD1	2.49	0.47
22:TT:80:VAL:HG11	22:TT:85:LEU:HD12	1.96	0.47
32:dd:29:ALA:HB3	32:dd:30:PRO:HD3	1.97	0.47
38:jj:38:GLY:HA3	38:jj:45:ARG:HB2	1.97	0.47
41:mm:110:CYS:SG	41:mm:112:LYS:HB2	2.54	0.47
45:qq:13:VAL:HG22	45:qq:206:ILE:HD13	1.97	0.47
50:C:173:ARG:HD2	81:2:1096:U:H1'	1.97	0.47
62:O:40:ALA:HB3	62:O:67:VAL:HG22	1.96	0.47
65:R:10:LYS:NZ	81:2:1315:G:O2'	2.46	0.47
71:X:69:ARG:NH1	71:X:116:ASP:OD2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:c:44:VAL:HG11	76:c:48:VAL:HG22	1.97	0.47
79:f:142:CYS:O	79:f:144:SER:N	2.48	0.47
81:2:394:U:H2'	81:2:395:G:O4'	2.15	0.47
81:2:876:G:N1	81:2:951:A:C2	2.83	0.47
81:2:922:A:N1	81:2:923:A:C6	2.83	0.47
81:2:1277:G:C6	81:2:1278:C:C4	3.03	0.47
81:2:1316:C:H2'	81:2:1317:G:O4'	2.14	0.47
81:2:1578:C:H2'	81:2:1579:C:O4'	2.15	0.47
81:2:1586:G:C2	81:2:1587:C:C2	3.02	0.47
81:2:1670:G:C2	81:2:1671:G:C5	3.02	0.47
82:4:6178:U:N3	82:4:6198:A:C2	2.81	0.47
83:1:584:ASN:C	83:1:585:ARG:CG	2.87	0.47
83:1:643:PRO:O	83:1:683:SER:HA	2.14	0.47
83:1:644:ASN:OD1	83:1:681:MET:SD	2.73	0.47
1:5:170:G:H2'	1:5:170:G:N3	2.30	0.47
1:5:597:G:C2	1:5:598:G:C8	3.03	0.47
1:5:687:G:C6	29:aa:113:LEU:HD11	2.49	0.47
1:5:852:C:HI'	1:5:1819:A:C8	2.50	0.47
1:5:1145:G:N2	1:5:1146:C:C2	2.82	0.47
1:5:3042:G:C2	1:5:3043:G:C8	3.03	0.47
6:CC:346:GLN:O	6:CC:347:ALA:C	2.54	0.47
17:OO:13[A]:LYS:CD	17:OO:38[A]:ARG:NH2	2.59	0.47
34:ff:55:CYS:SG	34:ff:65:ARG:CZ	3.03	0.47
35:gg:74:ARG:HG2	35:gg:75:ALA:N	2.30	0.47
54:G:87:ARG:NH2	81:2:159:C:OP1	2.48	0.47
56:I:160:GLN:HB3	56:I:166:LEU:HA	1.96	0.47
57:J:66:ASP:HB3	57:J:67:PRO:CD	2.45	0.47
81:2:623:G:C2	81:2:624:C:C2	3.03	0.47
81:2:1015:C:H2'	81:2:1016:U:O4'	2.15	0.47
81:2:1153:G:C2	81:2:1623:C:N3	2.83	0.47
81:2:1454:C:O2	81:2:1454:C:O4'	2.31	0.47
81:2:1620:G:C2	81:2:1621:C:C2	3.03	0.47
83:1:462:PHE:O	83:1:463:LEU:CD2	2.63	0.47
1:5:1624:G:H5''	1:5:1624:G:C8	2.48	0.47
1:5:1845:U:H6	1:5:1845:U:H5''	1.80	0.47
3:8:41:A:O3'	38:jj:59:THR:HA	2.14	0.47
3:8:68:G:H2'	3:8:69:U:O4'	2.15	0.47
9:FF:84:VAL:HA	9:FF:110:SER:O	2.14	0.47
17:OO:86[A]:ARG:CG	17:OO:100[A]:LEU:CD1	2.93	0.47
37:ii:27:SER:O	37:ii:28:TYR:C	2.58	0.47
45:qq:122:ARG:CZ	82:4:6040:U:OP2	2.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:rr:37:SER:HA	46:rr:38:GLN:CB	2.45	0.47
81:2:30:G:C2	81:2:31:C:C2	3.03	0.47
81:2:291:U:H2'	81:2:292:U:C6	2.50	0.47
81:2:900:G:N1	81:2:901:G:C6	2.83	0.47
81:2:1014:U:H2'	81:2:1015:C:O2	2.15	0.47
81:2:1782:C:H2'	81:2:1783:U:H6	1.79	0.47
83:1:750:LYS:O	83:1:751:ARG:CB	2.63	0.47
1:5:1386:U:C4	1:5:1387:A:C6	3.02	0.47
1:5:1923:G:C2	1:5:1925:G:N7	2.82	0.47
1:5:2437:A:N3	45:qq:26:ARG:NH2	2.62	0.47
10:GG:131:VAL:HG11	10:GG:188:LEU:CD1	2.45	0.47
45:qq:58:CYS:HA	45:qq:153:SER:CB	2.45	0.47
52:E:31:PRO:HG2	52:E:38:LEU:HD22	1.97	0.47
52:E:148:ARG:NE	81:2:124:A:O2'	2.48	0.47
58:K:42:VAL:HG12	58:K:46:LEU:HD12	1.97	0.47
63:P:121:ILE:HD11	66:S:125:ILE:HD13	1.96	0.47
81:2:1499:C:C2	81:2:1505:G:C2	3.03	0.47
81:2:1540:G:O2'	81:2:1541:A:O4'	2.31	0.47
81:2:1602:U:C4	81:2:1603:G:N7	2.83	0.47
83:1:547:HIS:O	83:1:549:HIS:N	2.48	0.47
83:1:721:ASP:H	83:1:722:PRO:HD2	1.79	0.47
1:5:173:G:C4	1:5:174:C:C5	3.03	0.46
1:5:466:G:C6	1:5:467:C:C4	3.03	0.46
1:5:1897:G:O2'	44:pp:16:VAL:HG21	2.15	0.46
1:5:2249:A:C3'	1:5:2250:A:H5'	2.45	0.46
1:5:2915:G:C5	5:BB:251:CYS:SG	3.08	0.46
1:5:3051:G:C6	1:5:3052:C:C4	3.03	0.46
6:CC:31:ARG:NH2	19:QQ:23:ASN:CG	2.73	0.46
6:CC:74:ILE:HD11	6:CC:93:MET:CE	2.45	0.46
6:CC:77:VAL:O	6:CC:86:GLY:N	2.48	0.46
17:OO:28[A]:LEU:CD1	17:OO:103[A]:LEU:HB2	2.45	0.46
18:PP:158:GLU:HA	18:PP:159:LYS:HB2	1.97	0.46
24:VV:33:ASN:HD22	24:VV:33:ASN:C	2.24	0.46
45:qq:136:THR:HG23	45:qq:138:VAL:HG23	1.97	0.46
55:H:173:TYR:CE1	55:H:177:THR:HG21	2.51	0.46
75:b:21:LEU:HD23	75:b:26:GLN:HG2	1.96	0.46
81:2:1091:A:C5	81:2:1093:G:C8	3.03	0.46
81:2:1497:G:C6	81:2:1498:C:C4	3.03	0.46
81:2:1603:G:C6	81:2:1604:C:C4	3.03	0.46
83:1:659:ILE:HD11	83:1:693:LEU:HD21	1.97	0.46
1:5:68:C:H2'	1:5:69:C:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:370:U:C4	1:5:371:G:C5	3.03	0.46
1:5:436:A:H2'	1:5:437:G:C8	2.50	0.46
1:5:863:U:H2'	1:5:864:C:O4'	2.15	0.46
1:5:2438:G:N2	1:5:2439:C:C2	2.84	0.46
2:7:88:G:C2	2:7:94:C:C2	3.03	0.46
6:CC:200:THR:O	6:CC:201:GLN:HG2	2.16	0.46
8:EE:50:VAL:HG13	8:EE:51:VAL:N	2.29	0.46
17:OO:107[A]:GLU:C	17:OO:108[A]:GLY:O	2.57	0.46
45:qq:120:VAL:C	45:qq:122:ARG:N	2.72	0.46
81:2:487:G:C2	81:2:499:C:C2	3.03	0.46
81:2:508:G:H2'	81:2:509:G:C8	2.50	0.46
81:2:828:A:O2'	81:2:829:U:O2	2.29	0.46
81:2:1326:C:C4	81:2:1327:G:N7	2.83	0.46
81:2:1604:C:H2'	81:2:1605:G:C8	2.50	0.46
83:1:388:THR:HG22	83:1:395:TYR:CE1	2.50	0.46
83:1:491:VAL:HG21	83:1:542:LEU:HD11	1.97	0.46
1:5:78:U:O4	1:5:325:A:C2	2.61	0.46
1:5:435:C:C2	1:5:598:G:N1	2.84	0.46
1:5:466:G:C2	1:5:467:C:C2	3.04	0.46
1:5:842:U:H2'	1:5:843:U:O4'	2.15	0.46
1:5:860:U:H2'	1:5:861:C:O4'	2.16	0.46
1:5:1193:G:H5'	1:5:1194:A:C2	2.51	0.46
1:5:2218:G:O2'	1:5:2219:G:H8	1.98	0.46
1:5:2481:C:C4	1:5:2482:U:C4	3.04	0.46
1:5:2631:A:H2'	1:5:2632:C:O4'	2.15	0.46
1:5:3104:G:C5	1:5:3105:C:C5	3.03	0.46
3:8:56:G:C6	3:8:57:C:C4	3.03	0.46
5:BB:58:ARG:NH1	5:BB:283:TYR:OH	2.48	0.46
5:BB:233:TRP:CD1	5:BB:265:ALA:HB1	2.51	0.46
11:HH:41:ILE:O	11:HH:41:ILE:HD13	2.15	0.46
19:QQ:29:LEU:HD21	19:QQ:124:LEU:HB2	1.97	0.46
19:QQ:44:PHE:CE1	19:QQ:139:ILE:HD11	2.51	0.46
34:ff:54:ARG:HG2	34:ff:64:ILE:HG23	1.97	0.46
34:ff:63:LYS:C	34:ff:64:ILE:CG1	2.87	0.46
54:G:155:ASP:H	81:2:78:A:H5''	1.73	0.46
57:J:92:LYS:O	57:J:94:ASP:N	2.43	0.46
74:a:32:LYS:NZ	81:2:931:U:O2'	2.48	0.46
81:2:609:G:H2'	81:2:609:G:N3	2.29	0.46
81:2:1322:C:H6	81:2:1322:C:O5'	1.99	0.46
81:2:1546:G:N2	81:2:1547:C:C2	2.84	0.46
83:1:587:TYR:C	83:1:588:LEU:HG	2.39	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:305:U:O2	1:5:2752:G:N2	2.48	0.46
1:5:314:U:H2'	1:5:315:C:C6	2.51	0.46
1:5:1139:U:H1'	9:FF:206:ASN:HD22	1.81	0.46
1:5:1278:G:C2	1:5:1279:A:C2	3.04	0.46
1:5:1925:G:N2	1:5:2056:C:H2'	2.20	0.46
1:5:1925:G:O6	1:5:2057:A:C6	2.67	0.46
1:5:2238:U:O4	1:5:2239:A:C5	2.67	0.46
1:5:2342:A:N3	1:5:2792:G:O2'	2.37	0.46
1:5:3192:G:N2	1:5:3193:C:C2	2.83	0.46
1:5:3254:G:C6	1:5:3255:C:C4	3.04	0.46
5:BB:252:ILE:HG22	5:BB:253:GLY:N	2.30	0.46
8:EE:114:ARG:O	8:EE:115:ALA:HB3	2.14	0.46
9:FF:151:GLY:N	9:FF:158:ILE:O	2.42	0.46
45:qq:120:VAL:HG23	82:4:6039:A:O5'	2.15	0.46
70:W:26:LEU:HD11	70:W:60:LYS:HD3	1.98	0.46
81:2:311:A:N6	81:2:351:A:O2'	2.49	0.46
81:2:407:C:H2'	81:2:408:C:C6	2.51	0.46
81:2:1154:G:C2	81:2:1622:C:C2	3.03	0.46
81:2:1641:U:O2	81:2:1778:G:N2	2.49	0.46
82:4:6044:G:C2	82:4:6045:C:C2	3.03	0.46
83:1:388:THR:HG22	83:1:395:TYR:CZ	2.50	0.46
1:5:30:G:C6	1:5:31:C:C4	3.04	0.46
1:5:701:G:C6	1:5:702:C:C4	3.04	0.46
1:5:1111:G:C2	1:5:1112:C:C2	3.04	0.46
1:5:2507:U:O2	1:5:2507:U:C2'	2.64	0.46
1:5:2540:A:O2'	1:5:2540:A:N3	2.48	0.46
2:7:25:G:C2	2:7:26:C:C2	3.03	0.46
27:YY:59:VAL:HG13	27:YY:60:ARG:HG2	1.96	0.46
29:aa:34:MET:HE1	29:aa:45:LEU:HD11	1.98	0.46
45:qq:123:LEU:HD13	82:4:6040:U:C5'	2.45	0.46
59:L:101:GLU:OE2	71:X:13:ARG:N	2.48	0.46
81:2:360:C:N3	81:2:383:G:C2	2.82	0.46
81:2:1290:G:N2	81:2:1324:A:N3	2.63	0.46
1:5:88:A:H2'	1:5:89:A:O4'	2.15	0.46
1:5:466:G:N2	1:5:467:C:C2	2.84	0.46
1:5:1769:A:H2'	1:5:1770:U:O4'	2.15	0.46
1:5:2264:A:C6	24:VV:37:MET:HG3	2.51	0.46
1:5:3280:U:H4'	5:BB:25:VAL:HG21	1.98	0.46
3:8:118:C:N3	3:8:136:G:C2	2.84	0.46
14:LL:93:ILE:O	14:LL:93:ILE:HG22	2.15	0.46
17:OO:184[A]:ALA:C	17:OO:186[A]:VAL:N	2.70	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:qq:12:HIS:CB	45:qq:214:TYR:CZ	2.99	0.46
48:A:197:ILE:HG23	48:A:198:MET:N	2.30	0.46
81:2:85:A:N3	81:2:147:U:O2'	2.49	0.46
81:2:782:G:N2	81:2:783:C:C2	2.83	0.46
81:2:883:A:C2'	81:2:884:G:H5'	2.45	0.46
81:2:1588:G:C2	81:2:1589:C:C2	3.03	0.46
81:2:1638:C:O2'	81:2:1760:A:N1	2.46	0.46
81:2:1651:C:H2'	81:2:1652:G:O4'	2.15	0.46
83:1:42:ARG:HA	83:1:43:ALA:C	2.41	0.46
83:1:154:VAL:HG21	83:1:342:LEU:HD11	1.97	0.46
83:1:693:LEU:HB3	83:1:700:ARG:HH12	1.79	0.46
1:5:1210:C:C2	1:5:1221:G:N1	2.84	0.46
1:5:1928:A:C6	1:5:2054:U:C2	3.04	0.46
1:5:2163:G:N1	1:5:2164:C:C4	2.84	0.46
1:5:2482:U:O2'	1:5:2483:U:O5'	2.33	0.46
1:5:3283:A:H2'	5:BB:123:TYR:CD2	2.51	0.46
5:BB:114:VAL:CG2	5:BB:163:HIS:CG	2.99	0.46
11:HH:41:ILE:HD11	11:HH:67:ALA:HB1	1.98	0.46
14:LL:79:GLU:OE2	14:LL:103:ASN:ND2	2.48	0.46
16:NN:6:TYR:O	16:NN:10:LEU:N	2.48	0.46
16:NN:121:ILE:HG22	16:NN:122:ASN:HB2	1.98	0.46
17:OO:186[A]:VAL:C	17:OO:187[A]:GLY:O	2.58	0.46
45:qq:116:LEU:O	45:qq:117:ILE:HG13	2.16	0.46
81:2:580:U:H3'	81:2:580:U:O2	2.15	0.46
81:2:935:G:C2	81:2:936:C:C2	3.04	0.46
81:2:1120:C:C2	81:2:1126:G:C2	3.04	0.46
83:1:222:ILE:HD11	83:1:245:TRP:CE3	2.51	0.46
1:5:12:A:C2	1:5:13:A:C6	3.04	0.46
1:5:128:G:N1	1:5:141:C:C2	2.84	0.46
1:5:638:A:OP1	16:NN:203:ARG:NH1	2.48	0.46
1:5:987:C:O2'	1:5:988:C:O5'	2.31	0.46
1:5:1149:G:N3	1:5:1299:C:O2'	2.49	0.46
1:5:1627:G:H2'	1:5:1628:U:O4'	2.16	0.46
1:5:2234:C:C3'	1:5:2235:U:H5'	2.29	0.46
12:II:51:HIS:ND1	12:II:137:SER:OG	2.44	0.46
17:OO:126[A]:ARG:HG2	17:OO:130[A]:LEU:HB2	1.97	0.46
24:VV:79:VAL:HG12	24:VV:122:CYS:SG	2.56	0.46
34:ff:15:SER:HA	34:ff:94:PHE:CE1	2.50	0.46
49:B:157:GLN:O	49:B:158:SER:C	2.59	0.46
61:N:114:ARG:NH2	81:2:938:A:OP1	2.48	0.46
61:N:128:TYR:OH	81:2:962:A:H4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:623:G:C6	81:2:624:C:C4	3.04	0.46
81:2:630:G:C6	81:2:631:U:N3	2.84	0.46
81:2:1115:A:C6	81:2:1130:A:C8	3.04	0.46
81:2:1173:C:C2	81:2:1464:G:N2	2.84	0.46
83:1:79:SER:OG	83:1:80:GLU:N	2.49	0.46
83:1:127:VAL:HG21	83:1:143:LEU:HD13	1.96	0.46
83:1:211:PHE:HB2	83:1:220:PHE:CZ	2.51	0.46
83:1:698:ILE:CA	83:1:699:HIS:CB	2.89	0.46
1:5:1288:A:N3	1:5:1288:A:H5'	2.31	0.46
1:5:1335:C:O2'	1:5:1336:G:H5'	2.16	0.46
1:5:2630:G:H2'	1:5:2631:A:H8	1.81	0.46
1:5:2886:G:N2	1:5:2897:C:C2	2.84	0.46
1:5:2922:U:O2	1:5:2922:U:O4'	2.32	0.46
5:BB:114:VAL:O	5:BB:117:ARG:N	2.45	0.46
12:II:36:LEU:HD21	12:II:69:ARG:HD3	1.97	0.46
17:OO:122[A]:PRO:HA	17:OO:125[A]:LEU:HD22	1.94	0.46
17:OO:162[A]:LYS:O	17:OO:166[A]:ALA:N	2.45	0.46
57:J:140:ILE:HD12	72:Y:65:GLY:HA3	1.98	0.46
81:2:925:A:H3'	81:2:926:C:C6	2.51	0.46
1:5:340:C:N3	3:8:25:G:C2	2.84	0.46
1:5:1314:A:C2	1:5:1333:G:C2	3.04	0.46
1:5:2218:G:C2'	1:5:2219:G:C5'	2.94	0.46
1:5:3174:C:N3	15:MM:13:ARG:NH2	2.63	0.46
3:8:75:G:C6	3:8:76:C:C4	3.04	0.46
17:OO:11[A]:ASP:HB2	17:OO:118[A]:ARG:HG3	1.98	0.46
17:OO:29[A]:LEU:HB3	17:OO:95[A]:ARG:NH2	2.30	0.46
17:OO:113[A]:TYR:O	17:OO:115[A]:LYS:N	2.49	0.46
44:pp:55:TRP:N	44:pp:55:TRP:CD1	2.82	0.46
45:qq:117:ILE:HA	82:4:6038:G:C1'	2.46	0.46
65:R:7:LYS:O	65:R:11:ARG:N	2.46	0.46
81:2:23:G:O2'	81:2:24:U:C5'	2.64	0.46
81:2:991:A:N3	81:2:991:A:C5'	2.79	0.46
81:2:1328:A:H2'	81:2:1329:G:O4'	2.16	0.46
81:2:1482:G:N2	81:2:1483:C:C2	2.84	0.46
81:2:1661:G:C2	81:2:1662:C:C2	3.03	0.46
83:1:589:LYS:CD	83:1:685:ARG:CD	2.89	0.46
83:1:701:GLY:CA	83:1:702:GLY:C	2.88	0.46
1:5:788:A:OP1	38:jj:30:GLN:NE2	2.45	0.45
1:5:1120:G:C2	1:5:1126:C:C2	3.04	0.45
1:5:1587:G:C2	1:5:1796:C:C2	3.05	0.45
1:5:1637:G:C2	1:5:1638:C:C2	3.03	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2541:C:C4	1:5:2542:G:C8	3.04	0.45
1:5:2711:A:H2'	1:5:2712:U:O4'	2.16	0.45
1:5:2770:A:C8	43:oo:56:GLN:HG2	2.51	0.45
1:5:3161:C:C2	1:5:3168:G:C2	3.04	0.45
21:SS:87:THR:HG23	22:TT:156:TYR:CG	2.51	0.45
40:ll:27:ILE:CG1	40:ll:30:ARG:CZ	2.95	0.45
45:qq:118:LYS:N	82:4:6038:G:C5'	2.79	0.45
81:2:301:U:O2	81:2:301:U:H2'	2.15	0.45
83:1:118:ALA:O	83:1:122:THR:HG23	2.17	0.45
83:1:582:LYS:HZ1	83:1:694:HIS:CE1	2.33	0.45
1:5:16:A:H2'	1:5:17:G:O4'	2.16	0.45
1:5:211:A:OP1	6:CC:220:ARG:HD2	2.16	0.45
1:5:590:G:C2	1:5:591:C:C2	3.04	0.45
1:5:909:C:C5	29:aa:26:ARG:HD2	2.51	0.45
1:5:954:A:H3'	1:5:955:G:C5'	2.46	0.45
1:5:1087:G:N2	1:5:2785:A:O4'	2.49	0.45
1:5:1328:G:C5	1:5:1329:C:C4	3.04	0.45
1:5:1729:C:N3	1:5:1735:G:C6	2.84	0.45
3:8:140:G:C6	3:8:141:C:N3	2.85	0.45
6:CC:65:TRP:CD1	6:CC:69:ARG:HD2	2.52	0.45
6:CC:92:ASN:O	6:CC:93:MET:C	2.59	0.45
17:OO:106[A]:PHE:CD2	17:OO:110[A]:PRO:HG3	2.51	0.45
18:PP:41:LEU:HD21	18:PP:95:LEU:HB3	1.97	0.45
35:gg:81:SER:O	35:gg:83:ASN:N	2.48	0.45
57:J:170:GLY:CA	81:2:510:A:C3'	2.94	0.45
58:K:55:VAL:CG2	58:K:68:LEU:HD23	2.47	0.45
81:2:882:C:C2	81:2:883:A:C8	3.04	0.45
81:2:991:A:N3	81:2:991:A:H5'	2.32	0.45
81:2:1298:G:C2	81:2:1299:A:C2	3.04	0.45
81:2:1647:G:H2'	81:2:1648:U:C6	2.51	0.45
83:1:20:ARG:CZ	83:1:342:LEU:HD13	2.47	0.45
83:1:657:HIS:HA	83:1:660:LYS:HD2	1.96	0.45
1:5:830:G:C2	1:5:832:C:C2	3.05	0.45
1:5:1145:G:C6	1:5:1146:C:C4	3.05	0.45
1:5:1637:G:C6	1:5:1638:C:C4	3.04	0.45
1:5:2235:U:O2'	1:5:2236:C:C6	2.68	0.45
1:5:2983:G:C2	1:5:3008:A:C2	3.05	0.45
1:5:3120:U:H4'	1:5:3121:U:OP2	2.16	0.45
3:8:114:G:N2	3:8:115:C:C2	2.84	0.45
7:DD:49:TYR:CE1	7:DD:66:SER:HB2	2.51	0.45
16:NN:16:SER:OG	16:NN:19:LEU:HB2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:PP:33:ALA:HB1	18:PP:117:ILE:HG12	1.99	0.45
19:QQ:182:ARG:O	19:QQ:183:ALA:HB3	2.16	0.45
32:dd:83:GLU:O	32:dd:84:ASP:C	2.59	0.45
34:ff:15:SER:OG	34:ff:16:TYR:N	2.49	0.45
45:qq:120:VAL:O	45:qq:122:ARG:HB2	2.15	0.45
57:J:76:LEU:HD21	57:J:96:VAL:HG11	1.98	0.45
65:R:25:THR:O	65:R:27:ASP:N	2.49	0.45
81:2:48:G:C6	81:2:49:C:C4	3.05	0.45
81:2:108:A:H2'	81:2:109:G:C8	2.51	0.45
81:2:281:C:H2'	81:2:282:U:O4'	2.16	0.45
81:2:561:G:C2	81:2:583:C:C2	3.05	0.45
81:2:1290:G:C2	81:2:1324:A:C2	3.04	0.45
81:2:1502:G:N7	81:2:1503:A:C2	2.84	0.45
1:5:1456:G:HO2'	1:5:1843:A:HO2'	1.61	0.45
1:5:1589:U:H2'	1:5:1590:A:C8	2.52	0.45
1:5:1698:A:O4'	31:cc:52:ARG:NH1	2.50	0.45
1:5:2244:A:N6	1:5:2280:G:H1'	2.32	0.45
1:5:2414:A:H3'	1:5:2415:U:O4'	2.16	0.45
1:5:2480:A:C8	1:5:2481:C:C6	3.04	0.45
1:5:3243:U:O4	34:ff:64:ILE:HB	2.17	0.45
2:7:43:U:C4	2:7:44:C:C4	3.04	0.45
17:OO:121[A]:VAL:O	17:OO:122[A]:PRO:C	2.60	0.45
19:QQ:71:LEU:CD1	19:QQ:99:THR:HG21	2.46	0.45
24:VV:17:LEU:HB2	24:VV:52:ALA:HB3	1.97	0.45
28:ZZ:15:ARG:HD3	28:ZZ:79:HIS:CD2	2.51	0.45
54:G:154:ARG:N	81:2:78:A:C5'	2.77	0.45
70:W:11:LEU:HD12	70:W:74:VAL:CG2	2.46	0.45
81:2:360:C:C2	81:2:383:G:C2	3.04	0.45
81:2:430:C:H4'	83:1:392:GLY:HA3	1.97	0.45
81:2:878:G:C2	81:2:879:C:C2	3.05	0.45
81:2:1171:G:C2	81:2:1172:C:C2	3.05	0.45
81:2:1307:G:C2	81:2:1308:C:C2	3.05	0.45
83:1:49:ALA:HB1	83:1:50:LYS:HA	1.99	0.45
1:5:77:A:OP2	14:LL:73:ARG:NH2	2.50	0.45
1:5:167:U:H2'	1:5:168:U:O4'	2.16	0.45
1:5:1194:A:C4	1:5:1195:C:C6	3.04	0.45
1:5:2606:C:O2	22:TT:60:LYS:NZ	2.49	0.45
1:5:2620:U:C4	1:5:2621:C:C4	3.04	0.45
4:AA:112:ILE:HG23	4:AA:133:TYR:CD2	2.51	0.45
6:CC:295:ILE:HG22	6:CC:299:LEU:HD11	1.98	0.45
11:HH:4:ILE:N	21:SS:142:GLN:OE1	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:130[A]:LEU:HD12	17:OO:130[A]:LEU:HA	1.60	0.45
34:ff:55:CYS:SG	34:ff:65:ARG:NE	2.89	0.45
50:C:145:ARG:HG3	50:C:227:TYR:CE1	2.52	0.45
80:g:177:ALA:HB2	80:g:209:VAL:CG2	2.46	0.45
82:4:6136:U:H2'	82:4:6137:A:O4'	2.17	0.45
83:1:559:PRO:HB2	83:1:561:VAL:HG13	1.99	0.45
83:1:685:ARG:NH1	83:1:685:ARG:CG	2.73	0.45
1:5:967:A:C2	1:5:1025:A:C4	3.05	0.45
1:5:1670:C:H2'	1:5:1671:U:O4'	2.16	0.45
1:5:1691:U:OP1	20:RR:100:ARG:NH1	2.49	0.45
1:5:2268:A:C5	1:5:2269:G:C8	3.05	0.45
1:5:2482:U:C5	1:5:2560:G:C5	3.04	0.45
1:5:2482:U:C4	1:5:2560:G:C4	3.05	0.45
5:BB:73:VAL:HG21	25:WW:16:GLY:CA	2.47	0.45
5:BB:229:VAL:HG22	5:BB:266:ARG:HA	1.99	0.45
7:DD:83:LEU:N	7:DD:84:PRO:HD2	2.32	0.45
16:NN:60:VAL:HG12	16:NN:61:ILE:N	2.32	0.45
17:OO:16[A]:LEU:HA	17:OO:16[A]:LEU:HD23	1.71	0.45
17:OO:139[A]:LEU:C	17:OO:141[A]:LYS:H	2.21	0.45
45:qq:8:HIS:O	45:qq:9:VAL:C	2.60	0.45
81:2:66:U:O2	81:2:66:U:O4'	2.34	0.45
81:2:878:G:C6	81:2:879:C:C4	3.05	0.45
81:2:887:U:C4	81:2:888:U:C4	3.05	0.45
81:2:1021:C:O2'	81:2:1124:A:N1	2.47	0.45
81:2:1438:C:H2'	81:2:1439:C:O5'	2.16	0.45
81:2:1440:U:O4	81:2:1441:U:O4	2.34	0.45
82:4:6120:U:H1'	82:4:6127:C:C3'	2.46	0.45
83:1:488:VAL:HG13	83:1:489:VAL:N	2.32	0.45
1:5:385:A:H2'	1:5:386:A:C8	2.52	0.45
1:5:595:A:C5	1:5:596:U:C5	3.04	0.45
1:5:1451:G:O2'	1:5:1840:U:O4	2.27	0.45
1:5:1664:U:C2	1:5:1718:A:C2	3.04	0.45
1:5:1722:G:H2'	1:5:1723:C:O4'	2.16	0.45
1:5:2220:G:H2'	1:5:2221:A:O4'	2.17	0.45
1:5:2491:U:O2	1:5:2491:U:O4'	2.32	0.45
3:8:49:G:C2	3:8:50:C:C2	3.05	0.45
4:AA:182:ALA:O	4:AA:185:ALA:N	2.49	0.45
16:NN:46:ASP:O	16:NN:47:LYS:C	2.59	0.45
26:XX:113:LEU:C	26:XX:113:LEU:CD1	2.88	0.45
31:cc:51:LEU:HD11	35:gg:90:VAL:HG12	1.97	0.45
45:qq:13:VAL:HG11	45:qq:179:LEU:HD22	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:qq:125:GLY:O	45:qq:128:LEU:N	2.50	0.45
81:2:1126:G:C2	81:2:1127:C:C2	3.05	0.45
82:4:6119:U:OP1	82:4:6120:U:C2	2.70	0.45
83:1:519:LEU:CD1	83:1:521:TYR:HB3	2.46	0.45
83:1:694:HIS:N	83:1:695:ALA:HA	2.31	0.45
1:5:75:G:H5'	14:LL:58:VAL:HG13	1.98	0.45
1:5:601:A:C2	1:5:602:A:C4	3.05	0.45
1:5:675:C:O2	1:5:759:C:H4'	2.17	0.45
1:5:780:G:N1	1:5:903:U:O4	2.49	0.45
1:5:886:A:H2'	1:5:886:A:N3	2.32	0.45
1:5:1926:U:N3	1:5:1927:G:C8	2.84	0.45
1:5:1926:U:C2	1:5:1927:G:C8	3.05	0.45
1:5:2237:U:C6	1:5:2239:A:OP2	2.70	0.45
1:5:2479:U:O2'	1:5:2480:A:C5'	2.59	0.45
1:5:2479:U:N3	1:5:2480:A:N7	2.65	0.45
1:5:2480:A:N7	1:5:2481:C:C6	2.84	0.45
1:5:3055:A:C5'	1:5:3055:A:C8	2.99	0.45
1:5:3205:U:H2'	1:5:3206:A:O4'	2.17	0.45
1:5:3232:G:C6	1:5:3233:C:C4	3.04	0.45
4:AA:113:ILE:HD12	4:AA:136:VAL:HG23	1.99	0.45
5:BB:73:VAL:HG21	25:WW:16:GLY:HA3	1.99	0.45
6:CC:338:LYS:O	6:CC:340:GLY:N	2.50	0.45
22:TT:62:GLY:HA3	22:TT:76:ILE:HD13	1.99	0.45
26:XX:67:ILE:HD12	26:XX:83:VAL:HG12	1.99	0.45
32:dd:36:ILE:HD11	32:dd:71:LEU:HD13	1.99	0.45
77:d:36:LEU:HD22	77:d:38:ILE:HD12	1.98	0.45
81:2:10:G:H2'	81:2:11:A:H8	1.81	0.45
81:2:562:U:H3'	81:2:563:G:C8	2.52	0.45
81:2:903:G:O2'	81:2:904:A:N7	2.50	0.45
81:2:988:U:C4	81:2:989:C:N4	2.85	0.45
81:2:1598:A:H1'	81:2:1599:G:C5'	2.46	0.45
1:5:308:A:C6	1:5:309:U:C4	3.04	0.45
1:5:964:G:N3	1:5:2605:A:H2'	2.32	0.45
1:5:987:C:O2	1:5:987:C:C2'	2.65	0.45
1:5:1339:U:O2'	1:5:1340:A:H5'	2.16	0.45
1:5:1873:C:H2'	1:5:1874:G:O4'	2.17	0.45
1:5:2287:U:H2'	1:5:2288:U:O4'	2.17	0.45
1:5:2302:C:H2'	1:5:2303:U:O4'	2.16	0.45
1:5:2852:C:N3	1:5:2907:G:C6	2.85	0.45
1:5:3054:A:H3'	1:5:3055:A:C8	2.51	0.45
4:AA:32:LEU:HD22	4:AA:163:ARG:CZ	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:BB:218:VAL:HA	5:BB:276:THR:HA	1.99	0.45
6:CC:169:LEU:HB3	6:CC:174:ALA:HB3	1.99	0.45
7:DD:39:GLN:HE21	7:DD:43:LYS:HD2	1.81	0.45
8:EE:112:LYS:HD2	8:EE:113:GLN:H	1.82	0.45
21:SS:132:THR:O	21:SS:133:ALA:CB	2.64	0.45
55:H:98:ILE:HG12	55:H:121:VAL:HG21	1.99	0.45
55:H:118:LEU:HB3	81:2:638:U:OP2	2.16	0.45
59:L:66:ILE:HG13	59:L:140:LEU:HD21	1.99	0.45
59:L:74:THR:HA	59:L:122:ILE:HA	1.99	0.45
59:L:113:PRO:O	59:L:116:ARG:NH2	2.47	0.45
61:N:18:TYR:O	70:W:56:HIS:CG	2.70	0.45
62:O:134:GLY:O	62:O:136:ARG:HG3	2.17	0.45
81:2:268:G:C2	81:2:269:C:C2	3.05	0.45
81:2:935:G:N2	81:2:936:C:C2	2.85	0.45
82:4:6121:A:OP2	82:4:6121:A:C4	2.70	0.45
83:1:161:ASP:N	83:1:162:ARG:C	2.75	0.45
83:1:694:HIS:H	83:1:695:ALA:HA	1.81	0.45
1:5:504:A:C6	1:5:529:U:C5	3.04	0.45
1:5:845:U:OP1	5:BB:241:LYS:HG3	2.17	0.45
1:5:2238:U:C4	1:5:2239:A:C8	3.05	0.45
1:5:2438:G:O4'	45:qq:26:ARG:NH2	2.50	0.45
1:5:2970:C:H2'	1:5:2971:G:O4'	2.17	0.45
1:5:3007:C:H2'	1:5:3008:A:O4'	2.17	0.45
3:8:119:C:C2	3:8:135:G:N2	2.85	0.45
8:EE:151:THR:CG2	8:EE:154:LEU:HD12	2.47	0.45
17:OO:5[A]:GLU:HB3	17:OO:6[A]:PRO:HD2	1.98	0.45
33:ee:98:HIS:CG	33:ee:99:ASN:N	2.84	0.45
44:pp:30:GLU:HG2	44:pp:33:GLN:OE1	2.17	0.45
45:qq:123:LEU:HD13	82:4:6040:U:H5'	1.97	0.45
61:N:115:LEU:O	61:N:115:LEU:HD22	2.17	0.45
69:V:33:GLN:HA	69:V:33:GLN:HE21	1.82	0.45
73:Z:74:SER:HB2	81:2:1531:C:OP2	2.17	0.45
74:a:79:ILE:HG12	74:a:84:VAL:HG11	1.99	0.45
81:2:311:A:N7	81:2:351:A:C2	2.85	0.45
81:2:362:G:N2	81:2:381:C:C2	2.84	0.45
81:2:452:U:O2	81:2:452:U:C2'	2.65	0.45
81:2:1586:G:N2	81:2:1587:C:H1'	2.31	0.45
1:5:247:A:C4	1:5:248:U:H1'	2.52	0.44
1:5:262:U:H2'	1:5:263:C:O4'	2.17	0.44
1:5:601:A:C2	1:5:602:A:C2	3.06	0.44
1:5:770:G:O2'	14:LL:18:TRP:NE1	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1356:C:C2	1:5:1393:G:N1	2.85	0.44
1:5:2132:C:OP1	4:AA:231:SER:HA	2.17	0.44
1:5:2574:G:H2'	1:5:2574:G:N3	2.31	0.44
1:5:3359:A:H2'	1:5:3360:U:O4'	2.17	0.44
6:CC:341:SER:O	6:CC:342:LYS:C	2.60	0.44
17:OO:6[A]:PRO:HB2	17:OO:7[A]:VAL:H	1.53	0.44
26:XX:115:ARG:NH1	26:XX:119:THR:OG1	2.50	0.44
43:oo:5:PRO:O	43:oo:6:LYS:CB	2.64	0.44
45:qq:123:LEU:HB2	82:4:6040:U:O5'	2.17	0.44
71:X:86:PHE:CD1	71:X:117:ILE:HD13	2.51	0.44
74:a:15:ARG:CZ	74:a:15:ARG:HB2	2.48	0.44
81:2:811:A:H4'	81:2:812:U:O5'	2.16	0.44
81:2:1032:C:N4	81:2:1033:C:N4	2.64	0.44
81:2:1093:G:C2'	81:2:1094:U:O5'	2.65	0.44
81:2:1580:U:O2	81:2:1611:U:H5	2.00	0.44
81:2:1620:G:C6	81:2:1621:C:C4	3.04	0.44
83:1:245:TRP:O	83:1:245:TRP:CD1	2.70	0.44
1:5:30:G:C2	1:5:31:C:C2	3.06	0.44
1:5:1356:C:O2	1:5:1393:G:C2	2.71	0.44
1:5:2671:A:C6	7:DD:150:LEU:HD11	2.53	0.44
1:5:3208:C:H2'	1:5:3209:G:O4'	2.17	0.44
2:7:112:G:C2	2:7:113:C:C2	3.05	0.44
4:AA:107:VAL:HG12	4:AA:111:THR:OG1	2.17	0.44
5:BB:86:VAL:HG13	5:BB:160:VAL:CG1	2.46	0.44
9:FF:218:LYS:O	9:FF:219:HIS:CB	2.65	0.44
11:HH:18:VAL:HG12	11:HH:27:VAL:HG13	1.99	0.44
17:OO:113[A]:TYR:C	17:OO:115[A]:LYS:N	2.68	0.44
31:cc:30:THR:HA	31:cc:91:THR:HG21	1.99	0.44
45:qq:120:VAL:CA	82:4:6038:G:O2'	2.65	0.44
54:G:4:ASN:HB3	54:G:110:ALA:HA	1.99	0.44
57:J:83:ILE:HG23	57:J:85:VAL:HG23	1.99	0.44
57:J:170:GLY:CA	81:2:511:A:O4'	2.65	0.44
59:L:152:GLN:HB3	59:L:153:PHE:HA	1.99	0.44
65:R:80:ARG:O	65:R:84:TYR:N	2.49	0.44
70:W:11:LEU:HD13	70:W:72:CYS:SG	2.57	0.44
81:2:1590:A:C2	81:2:1591:A:C6	3.06	0.44
83:1:25:ILE:HG12	83:1:119:LEU:HD11	1.99	0.44
83:1:562:ALA:HB1	83:1:563:TYR:CA	2.32	0.44
83:1:573:GLN:HA	83:1:574:THR:HG23	1.99	0.44
1:5:470:G:C2	1:5:471:C:C2	3.05	0.44
1:5:1086:G:H5''	1:5:1087:G:H5'	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1097:G:OP2	12:II:14:ASN:ND2	2.50	0.44
1:5:1117:C:H5''	33:ee:47:ARG:HB2	1.99	0.44
1:5:1157:G:C6	1:5:1158:C:C4	3.06	0.44
1:5:1210:C:C2	1:5:1221:G:C2	3.06	0.44
1:5:2218:G:P	1:5:2218:G:C3'	3.06	0.44
1:5:2285:G:O2'	1:5:2286:A:O5'	2.35	0.44
1:5:3291:A:H2'	1:5:3292:C:O4'	2.18	0.44
2:7:10:C:C4	7:DD:20:PHE:CD1	3.06	0.44
7:DD:20:PHE:O	7:DD:24:ARG:NH2	2.50	0.44
8:EE:128:GLU:C	8:EE:129:ILE:CG1	2.63	0.44
13:JJ:30:LEU:HD23	13:JJ:65:ILE:O	2.18	0.44
17:OO:136[A]:TYR:N	17:OO:136[A]:TYR:CD1	2.85	0.44
23:UU:80:THR:HG21	23:UU:95:PHE:CD1	2.52	0.44
45:qq:118:LYS:H	82:4:6038:G:C5'	2.23	0.44
45:qq:203:SER:HA	45:qq:217:TYR:CD1	2.52	0.44
63:P:19:GLY:H	66:S:93:ASN:N	2.15	0.44
74:a:74:CYS:O	74:a:75:ILE:C	2.59	0.44
81:2:585:G:C2	81:2:586:C:C2	3.05	0.44
81:2:604:A:C4	81:2:605:A:C2	3.06	0.44
81:2:782:G:C2	81:2:783:C:C2	3.05	0.44
81:2:782:G:C6	81:2:783:C:C4	3.05	0.44
81:2:1171:G:C6	81:2:1172:C:C4	3.06	0.44
81:2:1389:A:H2'	81:2:1390:U:C6	2.53	0.44
81:2:1648:U:H3'	81:2:1649:A:H8	1.82	0.44
83:1:378:LEU:HG	83:1:403:GLY:HA3	1.97	0.44
1:5:135:C:H1'	36:hh:93:THR:HB	2.00	0.44
1:5:208:C:H2'	1:5:209:A:O4'	2.17	0.44
1:5:529:U:O4'	1:5:530:A:C5	2.71	0.44
1:5:1145:G:C2'	1:5:1146:C:O5'	2.65	0.44
1:5:1621:G:H2'	1:5:1622:G:O4'	2.17	0.44
1:5:2163:G:C6	1:5:2164:C:N4	2.85	0.44
1:5:2244:A:H2'	1:5:2245:G:O4'	2.18	0.44
1:5:2804:C:H4'	12:II:157:TYR:CD2	2.52	0.44
1:5:2899:C:H2'	1:5:2900:U:O4'	2.17	0.44
1:5:3196:C:H4'	1:5:3197:G:O5'	2.17	0.44
3:8:49:G:C6	3:8:50:C:C4	3.05	0.44
3:8:116:G:C6	3:8:117:C:N4	2.86	0.44
5:BB:118:PHE:CE2	5:BB:130:PHE:HE1	2.36	0.44
5:BB:218:VAL:HG22	5:BB:276:THR:HG22	1.99	0.44
14:LL:3:ILE:HG13	14:LL:4:SER:N	2.25	0.44
17:OO:152[A]:ASP:N	17:OO:152[A]:ASP:OD1	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:YY:39:LEU:HD11	27:YY:107:THR:C	2.42	0.44
42:nn:6:ARG:NH2	81:2:1111:G:OP1	2.51	0.44
45:qq:12:HIS:CE1	45:qq:214:TYR:CZ	3.04	0.44
72:Y:59:GLY:N	81:2:522:G:OP1	2.50	0.44
81:2:885:U:O2'	81:2:886:A:H5''	2.13	0.44
81:2:1624:U:H2'	81:2:1625:U:C6	2.51	0.44
82:4:6118:U:H2'	82:4:6119:U:C4'	2.47	0.44
83:1:33:SER:HB3	83:1:57:THR:HG21	2.00	0.44
83:1:108:HIS:N	83:1:138:GLN:OE1	2.49	0.44
83:1:704:GLN:O	83:1:708:THR:HG22	2.18	0.44
1:5:63:A:H2	1:5:78:U:O2	2.01	0.44
1:5:248:U:C3'	1:5:249:U:H5'	2.47	0.44
1:5:269:G:H5'	16:NN:120:TRP:CE3	2.53	0.44
1:5:287:G:C6	1:5:288:C:C4	3.05	0.44
1:5:1193:G:C6	1:5:1257:A:O4'	2.70	0.44
1:5:1266:G:C5	1:5:1267:C:C4	3.05	0.44
1:5:2799:G:C2	1:5:2800:C:C2	3.06	0.44
7:DD:160:PHE:HA	7:DD:163:LEU:HB3	2.00	0.44
7:DD:178:ASN:HA	7:DD:183:TRP:CD2	2.53	0.44
9:FF:226:PHE:C	9:FF:226:PHE:CD1	2.96	0.44
14:LL:47:ALA:HB3	14:LL:48:PRO:CD	2.48	0.44
17:OO:121[A]:VAL:HG12	17:OO:123[A]:GLN:HG2	1.99	0.44
18:PP:30:ARG:HA	18:PP:119:VAL:HG11	2.00	0.44
22:TT:91:LEU:HD12	22:TT:96:ILE:HD11	1.99	0.44
43:oo:65:THR:HG22	43:oo:89:LYS:CG	2.47	0.44
59:L:20:PHE:CE2	59:L:22:ASN:HA	2.52	0.44
71:X:19:ARG:HA	71:X:19:ARG:HD2	1.70	0.44
81:2:776:G:N1	81:2:777:C:C4	2.85	0.44
81:2:922:A:H2'	81:2:923:A:O4'	2.18	0.44
81:2:1147:C:O2'	81:2:1763:A:N1	2.44	0.44
81:2:1671:G:C4	81:2:1672:C:C5	3.05	0.44
82:4:6198:A:C2	82:4:6199:A:C5	3.05	0.44
83:1:647:ILE:HD12	83:1:685:ARG:NH1	2.32	0.44
1:5:172:A:C4	1:5:247:A:N6	2.86	0.44
1:5:184:U:H2'	1:5:185:C:C6	2.53	0.44
1:5:373:A:C6	1:5:375:A:C6	3.06	0.44
1:5:855:A:OP1	38:jj:5:THR:HB	2.16	0.44
1:5:1193:G:H2'	1:5:1194:A:C4	2.52	0.44
1:5:1633:G:C2	1:5:1634:C:C2	3.06	0.44
1:5:1825:C:C4	1:5:1826:C:N4	2.86	0.44
1:5:2137:A:N6	1:5:2139:U:O2	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2216:G:N3	1:5:2240:A:H2	2.15	0.44
1:5:2247:C:C2	1:5:2276:G:C2	3.06	0.44
1:5:2540:A:C2	1:5:2541:C:C4	3.06	0.44
1:5:2748:A:H2'	1:5:2749:U:H5'	2.00	0.44
1:5:3302:U:H4'	1:5:3303:A:H5''	2.00	0.44
3:8:78:G:H2'	3:8:79:A:O4'	2.17	0.44
3:8:145:U:H2'	3:8:146:U:O4'	2.17	0.44
4:AA:6:ARG:CZ	4:AA:7:ASN:HD21	2.30	0.44
4:AA:183:GLY:O	4:AA:186:PHE:HB3	2.18	0.44
17:OO:5[A]:GLU:HB3	17:OO:6[A]:PRO:CD	2.46	0.44
17:OO:42[A]:LEU:HD12	17:OO:42[A]:LEU:HA	1.48	0.44
17:OO:171[A]:LYS:NZ	17:OO:171[A]:LYS:CB	2.72	0.44
19:QQ:175:ALA:C	29:aa:51:GLY:HA2	2.43	0.44
21:SS:87:THR:HG23	22:TT:156:TYR:CD2	2.53	0.44
56:I:175:GLY:HA3	81:2:330:A:OP1	2.18	0.44
57:J:117:GLY:O	57:J:119:ALA:N	2.50	0.44
57:J:170:GLY:HA2	81:2:511:A:O4'	2.10	0.44
67:T:61:VAL:HG21	67:T:104:VAL:HG11	2.00	0.44
70:W:75:ILE:HD11	70:W:125:ILE:HB	1.99	0.44
81:2:268:G:C6	81:2:269:C:C4	3.05	0.44
81:2:372:G:N2	81:2:602:U:O3'	2.51	0.44
81:2:930:C:H5''	81:2:931:U:H3'	1.99	0.44
81:2:963:U:H1'	81:2:964:U:OP2	2.16	0.44
82:4:6182:A:N6	82:4:6195:G:O2'	2.50	0.44
83:1:491:VAL:HG22	83:1:538:LEU:HD21	1.99	0.44
83:1:519:LEU:C	83:1:519:LEU:CD1	2.86	0.44
1:5:916:C:C2	1:5:1346:G:C2	3.06	0.44
1:5:1397:C:C4	1:5:1398:U:C5	3.06	0.44
1:5:2282:A:O4'	1:5:2284:G:C8	2.71	0.44
10:GG:32:ASN:O	10:GG:38:ALA:HB3	2.18	0.44
45:qq:143:ASP:CG	45:qq:146:GLN:HG3	2.35	0.44
64:Q:28:LEU:O	64:Q:65:ILE:N	2.48	0.44
70:W:75:ILE:HD11	70:W:125:ILE:CD1	2.48	0.44
81:2:1314:U:H2'	81:2:1315:G:O4'	2.18	0.44
81:2:1400:G:C2	81:2:1401:C:C2	3.05	0.44
81:2:1400:G:C6	81:2:1401:C:C4	3.05	0.44
81:2:1497:G:C2	81:2:1498:C:C2	3.06	0.44
81:2:1603:G:C2	81:2:1604:C:C2	3.06	0.44
83:1:237:LYS:C	83:1:237:LYS:HE3	2.43	0.44
1:5:617:G:O6	1:5:2836:U:OP1	2.35	0.44
1:5:1493:U:H4'	1:5:1494:U:OP2	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1614:U:OP1	35:gg:67:ARG:NH2	2.51	0.44
1:5:2657:A:H2'	1:5:2657:A:N3	2.32	0.44
1:5:3188:G:N1	1:5:3189:C:C4	2.86	0.44
1:5:3249:U:H2'	1:5:3250:U:O4'	2.18	0.44
1:5:3255:C:H2'	1:5:3256:A:C5'	2.48	0.44
3:8:27:U:H4'	6:CC:51:ALA:HB3	1.99	0.44
4:AA:11:GLY:O	4:AA:12:ALA:C	2.60	0.44
5:BB:283:TYR:HB2	5:BB:323:ILE:CG2	2.45	0.44
6:CC:39:PHE:CD2	6:CC:242:ALA:HB2	2.53	0.44
6:CC:122:THR:O	6:CC:123:ALA:C	2.60	0.44
17:OO:173[A]:LYS:O	17:OO:174[A]:ALA:O	2.36	0.44
45:qq:125:GLY:CA	82:4:6039:A:C6	2.95	0.44
59:L:94:VAL:HG21	71:X:12:ALA:HB1	1.99	0.44
81:2:1315:G:N2	81:2:1316:C:C2	2.86	0.44
82:4:6159:G:N1	82:4:6160:G:C6	2.85	0.44
83:1:104:ASP:HA	83:1:105:SER:HB2	1.99	0.44
1:5:185:C:N3	1:5:232:G:C6	2.86	0.44
1:5:528:U:O2	1:5:529:U:H5	2.01	0.44
1:5:635:U:H2'	1:5:636:C:C6	2.53	0.44
1:5:1304:C:OP1	19:QQ:3:ILE:HD11	2.18	0.44
1:5:1477:A:C4	1:5:1481:G:O6	2.71	0.44
1:5:1496:G:O4'	1:5:1798:G:H2'	2.18	0.44
1:5:2333:G:H22	1:5:2365:G:H1'	1.83	0.44
1:5:2559:A:C6	1:5:2560:G:C6	3.06	0.44
1:5:2956:C:O2	5:BB:266:ARG:NE	2.51	0.44
1:5:3215:G:C6	1:5:3216:C:C4	3.05	0.44
3:8:19:C:H2'	3:8:20:U:C6	2.53	0.44
5:BB:14:LEU:CD2	5:BB:17:LEU:HD12	2.48	0.44
5:BB:41:VAL:HG11	5:BB:194:TRP:CG	2.53	0.44
15:MM:63:VAL:HG13	15:MM:64:VAL:N	2.33	0.44
16:NN:75:VAL:O	16:NN:76:SER:C	2.61	0.44
17:OO:86[A]:ARG:O	17:OO:86[A]:ARG:CG	2.65	0.44
22:TT:25:ILE:HD12	22:TT:48:ILE:HD11	2.00	0.44
28:ZZ:15:ARG:HB2	28:ZZ:79:HIS:HD2	1.83	0.44
38:jj:48:ASN:O	38:jj:49:TRP:C	2.60	0.44
62:O:85:ALA:O	62:O:86:THR:C	2.60	0.44
66:S:134:ARG:NH2	81:2:1544:G:N7	2.66	0.44
81:2:95:G:HO2'	81:2:459:A:HO2'	1.58	0.44
81:2:908:U:H2'	81:2:909:C:C5	2.53	0.44
81:2:987:A:C2	81:2:988:U:N3	2.86	0.44
81:2:993:G:H2'	81:2:994:A:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:693:LEU:HD12	83:1:700:ARG:CZ	2.48	0.44
1:5:166:C:N3	1:5:256:G:O6	2.51	0.43
1:5:216:G:C2	1:5:225:C:C2	3.06	0.43
1:5:1141:A:OP1	9:FF:215:ARG:HA	2.18	0.43
1:5:2167:A:N9	1:5:2238:U:N1	2.66	0.43
1:5:2694:C:C2	1:5:2696:G:C2	3.06	0.43
1:5:3225:C:H2'	1:5:3226:U:O4'	2.17	0.43
2:7:7:G:OP2	7:DD:28:THR:HG21	2.18	0.43
3:8:83:U:O2	27:YY:51:ARG:NH2	2.51	0.43
3:8:103:G:C6	3:8:105:A:C6	3.06	0.43
3:8:119:C:C2	3:8:135:G:C2	3.06	0.43
4:AA:91:GLY:O	4:AA:92:LYS:C	2.61	0.43
6:CC:292:SER:O	6:CC:293:THR:HG23	2.18	0.43
6:CC:311:HIS:ND1	6:CC:311:HIS:O	2.50	0.43
11:HH:68:LEU:HD13	11:HH:68:LEU:C	2.43	0.43
17:OO:22[A]:SER:O	17:OO:22[A]:SER:OG	2.34	0.43
17:OO:159[A]:GLU:C	17:OO:161[A]:ARG:N	2.72	0.43
34:ff:23:ASN:C	34:ff:23:ASN:OD1	2.61	0.43
38:jj:12:HIS:ND1	38:jj:12:HIS:O	2.51	0.43
44:pp:50:GLY:O	44:pp:51:ALA:HB3	2.18	0.43
45:qq:118:LYS:HB3	82:4:6037:U:C2'	2.48	0.43
45:qq:122:ARG:C	82:4:6040:U:O5'	2.56	0.43
46:rr:192:VAL:HG23	46:rr:201:ALA:HB2	2.00	0.43
54:G:154:ARG:C	81:2:77:U:O3'	2.60	0.43
54:G:188:ARG:NH1	81:2:283:G:O6	2.50	0.43
57:J:12:TYR:CD1	57:J:44:ARG:HA	2.53	0.43
81:2:108:A:H8	81:2:108:A:O5'	2.01	0.43
81:2:363:G:C2	81:2:380:C:N3	2.86	0.43
81:2:911:U:O2	81:2:911:U:C2'	2.66	0.43
81:2:1027:C:C2	81:2:1029:A:O4'	2.71	0.43
81:2:1571:A:O4'	81:2:1572:G:C2	2.71	0.43
1:5:53:G:N2	1:5:54:C:C2	2.86	0.43
1:5:1088:G:C2	1:5:1089:C:C2	3.06	0.43
1:5:2231:A:H2'	1:5:2231:A:N3	2.33	0.43
1:5:2602:U:C4	1:5:2603:A:C5	3.05	0.43
1:5:2672:A:O2'	1:5:2673:A:O5'	2.36	0.43
1:5:2785:A:H4'	1:5:2786:U:OP2	2.18	0.43
1:5:3206:A:H2'	1:5:3207:G:O4'	2.18	0.43
7:DD:148:VAL:HG22	7:DD:159:ILE:HG21	2.00	0.43
9:FF:80:LEU:HD11	9:FF:113:PHE:CD1	2.53	0.43
17:OO:187[A]:GLY:C	17:OO:189[A]:GLU:N	2.75	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:QQ:71:LEU:HG	19:QQ:81:ILE:HD11	2.00	0.43
45:qq:118:LYS:HB3	82:4:6037:U:O2'	2.18	0.43
45:qq:150:ASP:C	45:qq:154:THR:CB	2.85	0.43
48:A:25:GLY:O	48:A:26:ALA:HB3	2.19	0.43
50:C:58:ILE:HG23	50:C:61:ILE:HD12	2.00	0.43
57:J:170:GLY:HA2	81:2:511:A:H4'	1.79	0.43
74:a:83:ILE:HD13	81:2:1796:U:C5	2.53	0.43
81:2:568:C:H1'	81:2:582:C:H5''	1.98	0.43
81:2:642:G:N1	81:2:692:C:C2	2.86	0.43
81:2:1175:G:C2	81:2:1176:C:C2	3.06	0.43
83:1:586:ILE:CD1	83:1:708:THR:HG1	2.07	0.43
83:1:694:HIS:CD2	83:1:695:ALA:O	2.70	0.43
1:5:23:A:H2'	1:5:24:A:O4'	2.17	0.43
1:5:488:G:C2	1:5:547:A:C2	3.06	0.43
1:5:597:G:N1	1:5:598:G:C5	2.86	0.43
1:5:1340:A:O3'	29:aa:20:GLY:HA2	2.17	0.43
1:5:1922:G:O2'	1:5:1923:G:OP1	2.34	0.43
1:5:3121:U:O2	1:5:3121:U:O4'	2.36	0.43
1:5:3207:G:C2	1:5:3208:C:C2	3.06	0.43
5:BB:57:VAL:CG2	5:BB:73:VAL:HG22	2.47	0.43
14:LL:75:PHE:O	14:LL:79:GLU:HB2	2.17	0.43
17:OO:77[A]:PRO:HD3	17:OO:143[A]:SER:HB3	2.00	0.43
17:OO:149[A]:LYS:HB2	17:OO:150[A]:TYR:CE1	2.53	0.43
20:RR:21:LYS:O	20:RR:22:ILE:C	2.61	0.43
24:VV:33:ASN:C	24:VV:33:ASN:ND2	2.77	0.43
27:YY:54:ASP:HB2	27:YY:70:VAL:N	2.33	0.43
72:Y:33:ALA:HB1	81:2:531:U:O2'	2.18	0.43
80:g:35:VAL:HG22	80:g:43:LEU:CD2	2.49	0.43
81:2:561:G:N2	81:2:583:C:C2	2.87	0.43
81:2:921:G:C6	81:2:922:A:C6	3.06	0.43
81:2:1307:G:C6	81:2:1308:C:N4	2.86	0.43
81:2:1431:G:H2'	81:2:1432:U:O4'	2.18	0.43
82:4:6211:U:O2'	82:4:6212:U:H4'	2.17	0.43
83:1:285:PHE:CE1	83:1:320:LEU:HD11	2.53	0.43
83:1:587:TYR:CD2	83:1:690:ASP:CA	2.80	0.43
83:1:735:CYS:O	83:1:766:PHE:N	2.51	0.43
1:5:118:U:C5	1:5:119:U:C4	3.06	0.43
1:5:482:G:C2	1:5:483:C:C2	3.07	0.43
1:5:883:G:H2'	1:5:885:A:N7	2.34	0.43
1:5:1111:G:C6	1:5:1112:C:C4	3.07	0.43
1:5:1604:G:C2	1:5:1608:C:C2	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2438:G:O2'	1:5:2439:C:O5'	2.30	0.43
1:5:2540:A:HO2'	1:5:2541:C:P	2.26	0.43
1:5:2793:C:C5	1:5:2794:U:C5	3.07	0.43
1:5:2996:G:H5'	83:1:27:HIS:CE1	2.53	0.43
4:AA:196:TRP:CG	4:AA:197:PRO:N	2.87	0.43
6:CC:31:ARG:NH2	19:QQ:23:ASN:OD1	2.51	0.43
9:FF:153:ILE:HD12	9:FF:158:ILE:HB	1.99	0.43
13:JJ:137:ARG:O	13:JJ:138:VAL:C	2.61	0.43
17:OO:40[A]:GLU:O	17:OO:40[A]:GLU:HG2	2.16	0.43
17:OO:143[A]:SER:C	17:OO:145[A]:SER:H	2.27	0.43
21:SS:106:LEU:HD22	21:SS:123:ILE:HD11	2.01	0.43
48:A:148:ASP:OD1	48:A:151:SER:N	2.50	0.43
48:A:149:LEU:HD12	48:A:149:LEU:N	2.34	0.43
49:B:168:ILE:HG12	49:B:197:ILE:HG23	2.00	0.43
58:K:15:LEU:HD11	58:K:46:LEU:HD21	2.00	0.43
63:P:18:LYS:C	66:S:93:ASN:C	2.86	0.43
81:2:32:U:O2'	81:2:545:C:O2'	2.21	0.43
81:2:157:U:H4'	81:2:158:U:OP1	2.18	0.43
81:2:403:G:C2	81:2:404:C:C2	3.07	0.43
81:2:1075:A:C2	81:2:1076:C:C6	3.05	0.43
81:2:1321:A:H2'	81:2:1322:C:C6	2.53	0.43
81:2:1482:G:C6	81:2:1483:C:N4	2.86	0.43
83:1:481:MET:HA	83:1:482:LYS:HB2	2.01	0.43
1:5:887:G:C6	4:AA:207:VAL:HG21	2.53	0.43
1:5:1106:A:C6	1:5:1107:A:N7	2.87	0.43
1:5:1151:A:C2	1:5:1153:A:C4	3.07	0.43
1:5:1317:G:C5	1:5:1318:U:C4	3.06	0.43
1:5:1641:U:C2'	1:5:1642:G:H5'	2.49	0.43
1:5:2060:U:H4'	1:5:2061:A:O5'	2.18	0.43
1:5:2218:G:O2'	1:5:2219:G:C3'	2.66	0.43
1:5:2237:U:H3'	1:5:2238:U:H3'	2.00	0.43
1:5:2694:C:O2	1:5:2694:C:O5'	2.35	0.43
1:5:3114:G:H2'	1:5:3115:A:C8	2.53	0.43
4:AA:133:TYR:CG	4:AA:168:VAL:HG22	2.54	0.43
5:BB:75:ALA:O	5:BB:76:VAL:HG23	2.18	0.43
6:CC:138:ARG:NH2	6:CC:240:PRO:HG2	2.33	0.43
8:EE:51:VAL:HG23	8:EE:65:GLY:HA2	2.00	0.43
9:FF:205:SER:OG	9:FF:206:ASN:N	2.51	0.43
18:PP:69:ARG:HG2	18:PP:79:THR:HB	1.99	0.43
19:QQ:182:ARG:NH1	29:aa:55:LYS:O	2.51	0.43
63:P:60:LEU:HD13	63:P:89:MET:HG3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:Y:29:HIS:O	72:Y:32:ARG:N	2.52	0.43
80:g:77:ASP:HB2	80:g:78:GLY:CA	2.49	0.43
81:2:11:A:N1	81:2:1142:A:C2	2.87	0.43
81:2:14:C:O2	81:2:1140:G:C2	2.71	0.43
81:2:50:C:N3	81:2:429:G:C6	2.86	0.43
81:2:364:G:C6	81:2:376:G:C2	3.06	0.43
81:2:975:G:N1	81:2:1022:A:O2'	2.47	0.43
81:2:1666:G:C6	81:2:1667:U:C4	3.07	0.43
82:4:6127:C:C4	82:4:6160:G:O6	2.71	0.43
83:1:247:ASP:CB	83:1:248:SER:HA	2.48	0.43
1:5:883:G:C2	1:5:885:A:C2	3.07	0.43
1:5:958:U:C2	1:5:1033:A:C2	3.07	0.43
1:5:1178:G:C2	1:5:1269:C:O2	2.71	0.43
1:5:1249:A:C8	1:5:1250:C:C5	3.07	0.43
1:5:1603:G:N7	28:ZZ:17:ARG:NH2	2.67	0.43
1:5:1713:G:C2	1:5:1714:C:C2	3.06	0.43
1:5:2506:U:O5'	49:B:226:GLY:O	2.36	0.43
1:5:2890:G:H8	1:5:2890:G:H5''	1.84	0.43
1:5:2974:A:H2'	1:5:2975:U:O4'	2.19	0.43
5:BB:57:VAL:HB	5:BB:358:TRP:HB3	2.00	0.43
5:BB:229:VAL:HG11	5:BB:249:VAL:CG2	2.43	0.43
8:EE:127:LYS:O	8:EE:128:GLU:HG3	2.19	0.43
20:RR:24:MET:CE	20:RR:32:ILE:HG21	2.49	0.43
28:ZZ:53:VAL:HG12	28:ZZ:54:THR:N	2.33	0.43
29:aa:72:VAL:CG1	29:aa:113:LEU:HD13	2.48	0.43
63:P:52:LYS:HB2	63:P:53:PRO:HD3	1.99	0.43
70:W:8:ALA:HB2	70:W:74:VAL:HG11	1.99	0.43
81:2:8:U:O2'	81:2:9:U:H5''	2.19	0.43
81:2:887:U:O4	81:2:888:U:C4	2.71	0.43
81:2:1670:G:H2'	81:2:1671:G:H8	1.83	0.43
83:1:383:SER:CA	83:1:465:LYS:O	2.66	0.43
83:1:586:ILE:HG22	83:1:688:ILE:HD11	2.00	0.43
83:1:686:VAL:O	83:1:686:VAL:HG13	2.19	0.43
1:5:634:G:C6	1:5:773:C:C2	3.07	0.43
1:5:783:G:C2	1:5:900:A:C2	3.07	0.43
1:5:899:C:H2'	1:5:900:A:C8	2.53	0.43
1:5:1077:G:H2'	1:5:1078:C:O4'	2.19	0.43
1:5:1194:A:C6	1:5:1195:C:C4	3.06	0.43
1:5:1288:A:N3	1:5:1288:A:H2'	2.33	0.43
1:5:1306:C:H2'	1:5:1307:C:C6	2.54	0.43
1:5:1536:A:C2	1:5:1544:A:N3	2.87	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1554:C:C3'	1:5:1555:G:H5'	2.48	0.43
1:5:1624:G:H8	1:5:1624:G:C5'	2.29	0.43
1:5:1926:U:O4	1:5:2054:U:N3	2.51	0.43
1:5:2220:G:C6	1:5:2221:A:C5	3.07	0.43
1:5:2502:G:H3'	1:5:2503:G:C8	2.54	0.43
1:5:3133:A:C2	1:5:3254:G:C2	3.06	0.43
1:5:3215:G:C4	1:5:3216:C:C5	3.07	0.43
6:CC:162:THR:HG22	6:CC:218:ALA:O	2.19	0.43
10:GG:194:SER:O	10:GG:196:VAL:N	2.48	0.43
11:HH:91:ARG:HG3	11:HH:182:SER:HB3	1.99	0.43
11:HH:173:ARG:HB2	41:mm:127:LEU:HD12	2.00	0.43
12:II:190:ILE:HG23	12:II:197:VAL:CG2	2.49	0.43
17:OO:164[A]:ARG:O	17:OO:168[A]:TYR:N	2.52	0.43
51:D:186:VAL:HG12	51:D:188:ILE:CD1	2.49	0.43
53:F:63:TYR:CE1	53:F:167:LEU:HD11	2.54	0.43
75:b:20:LYS:HG2	75:b:29:ARG:HG3	2.00	0.43
76:c:44:VAL:HG11	76:c:48:VAL:CG2	2.49	0.43
81:2:208:U:H2'	81:2:209:A:O4'	2.19	0.43
81:2:303:U:H2'	81:2:304:C:C6	2.53	0.43
81:2:441:C:N3	81:2:442:C:C5	2.87	0.43
81:2:734:A:H2'	81:2:735:C:C6	2.54	0.43
81:2:798:A:C2	81:2:799:U:C2	3.06	0.43
81:2:1131:A:C2	81:2:1132:A:C5	3.06	0.43
82:4:6172:A:H4'	82:4:6173:C:OP2	2.18	0.43
83:1:30:HIS:HE1	83:1:133:GLU:OE1	1.94	0.43
83:1:696:ASP:CB	83:1:698:ILE:HG23	2.47	0.43
1:5:637:U:H2'	1:5:638:A:C8	2.54	0.43
1:5:967:A:N3	2:7:80:G:O2'	2.51	0.43
1:5:1026:A:H4'	2:7:100:C:O2	2.19	0.43
1:5:1197:G:C5'	1:5:3085:C:H1'	2.49	0.43
1:5:1304:C:H1'	9:FF:206:ASN:OD1	2.19	0.43
1:5:1637:G:H2'	1:5:1638:C:O4'	2.18	0.43
1:5:1717:G:H4'	39:kk:3:LYS:HE3	2.01	0.43
1:5:1929:G:OP1	1:5:2032:U:OP1	2.37	0.43
1:5:2170:G:C5	1:5:2171:C:C4	3.06	0.43
1:5:2218:G:O6	1:5:2219:G:C2	2.71	0.43
1:5:2510:U:O2	1:5:2510:U:C2'	2.67	0.43
1:5:2529:C:O2	1:5:2529:C:C2'	2.67	0.43
1:5:2540:A:O2'	1:5:2541:C:P	2.75	0.43
1:5:2654:A:O2'	7:DD:5:LYS:NZ	2.52	0.43
1:5:3019:U:C2	1:5:3020:G:C8	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3054:A:C5	1:5:3055:A:C5	3.06	0.43
1:5:3150:G:H2'	1:5:3151:A:O4'	2.18	0.43
1:5:3232:G:C2	1:5:3233:C:C2	3.07	0.43
4:AA:32:LEU:N	4:AA:32:LEU:HD23	2.33	0.43
4:AA:153:GLY:O	4:AA:154:ALA:C	2.60	0.43
4:AA:201:GLY:O	4:AA:204:MET:N	2.52	0.43
6:CC:105:THR:O	6:CC:109:TRP:NE1	2.51	0.43
13:JJ:40:LEU:HD23	13:JJ:114:ILE:HD11	2.01	0.43
17:OO:49[A]:PHE:HE1	17:OO:53[A]:LEU:CD1	2.32	0.43
19:QQ:34:ALA:HA	19:QQ:49:LEU:HD13	2.01	0.43
20:RR:106:LEU:CD1	20:RR:138:LEU:HD21	2.49	0.43
24:VV:34:LEU:HD21	24:VV:102:ILE:CG2	2.47	0.43
61:N:127:ARG:NH2	81:2:628:U:OP1	2.51	0.43
81:2:108:A:C6	81:2:109:G:C6	3.06	0.43
81:2:328:G:C4	81:2:329:G:C8	3.06	0.43
81:2:1024:A:O2'	81:2:1771:C:O2'	2.26	0.43
81:2:1075:A:C6	81:2:1076:C:C5	3.07	0.43
83:1:78:TYR:HB3	83:1:79:SER:CB	2.49	0.43
1:5:135:C:O2	36:hh:94:LYS:N	2.52	0.43
1:5:335:G:C6	1:5:336:A:N7	2.87	0.43
1:5:1193:G:C5	1:5:1194:A:N6	2.87	0.43
1:5:1496:G:C8	1:5:1798:G:C5	3.07	0.43
1:5:1679:C:C2	1:5:1704:G:N2	2.87	0.43
1:5:2154:G:H2'	1:5:2155:U:O5'	2.18	0.43
1:5:2237:U:H3'	1:5:2238:U:C5'	2.49	0.43
1:5:2240:A:H2'	1:5:2241:G:O4'	2.19	0.43
1:5:2908:A:OP2	5:BB:2:SER:N	2.52	0.43
1:5:2959:A:N3	18:PP:69:ARG:NH2	2.67	0.43
1:5:3043:G:C6	1:5:3044:C:C4	3.07	0.43
3:8:27:U:OP1	6:CC:53:SER:CB	2.66	0.43
4:AA:102:LEU:N	4:AA:102:LEU:HD23	2.33	0.43
4:AA:103:PRO:O	4:AA:105:GLY:N	2.52	0.43
5:BB:321:PHE:CD1	5:BB:321:PHE:C	2.97	0.43
6:CC:248:VAL:HG11	6:CC:250:TRP:CE2	2.53	0.43
17:OO:35[A]:VAL:HG23	17:OO:104[A]:LYS:HB2	2.01	0.43
24:VV:32:ARG:O	81:2:1733:U:OP1	2.36	0.43
45:qq:120:VAL:HG12	45:qq:121:PRO:N	2.34	0.43
48:A:32:HIS:HB2	81:2:1039:G:O3'	2.19	0.43
48:A:53:THR:HA	48:A:161:PRO:HD2	1.99	0.43
49:B:38:PHE:CD2	49:B:73:LEU:HD13	2.54	0.43
81:2:38:C:H2'	81:2:39:A:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:1730:A:H2'	81:2:1731:C:C6	2.53	0.43
83:1:30:HIS:NE2	83:1:133:GLU:OE1	2.52	0.43
83:1:587:TYR:HB2	83:1:689:LEU:H	1.83	0.43
1:5:29:C:C2	1:5:56:G:N2	2.87	0.43
1:5:128:G:C2	1:5:141:C:C2	3.06	0.43
1:5:301:G:C6	1:5:302:U:C4	3.07	0.43
1:5:303:G:O2'	1:5:2746:G:OP2	2.32	0.43
1:5:406:G:HI1'	3:8:16:G:N2	2.34	0.43
1:5:793:G:C6	1:5:794:C:C4	3.07	0.43
1:5:1528:A:C5	1:5:1530:A:C5	3.07	0.43
1:5:1573:U:O2	1:5:1573:U:C2'	2.67	0.43
1:5:1628:U:H2'	1:5:1629:C:C6	2.54	0.43
1:5:2200:C:O2	1:5:2200:C:O5'	2.37	0.43
1:5:3048:G:C6	1:5:3049:C:C4	3.06	0.43
1:5:3192:G:C6	1:5:3193:C:C4	3.07	0.43
1:5:3228:G:C2	1:5:3229:C:C2	3.07	0.43
3:8:31:G:C6	3:8:32:C:C4	3.07	0.43
4:AA:79:ASN:O	4:AA:80:GLU:C	2.62	0.43
5:BB:218:VAL:HB	5:BB:337:THR:OG1	2.19	0.43
6:CC:121:ALA:HB1	6:CC:235:LEU:HD13	2.00	0.43
6:CC:319:LYS:O	6:CC:320:ASN:HB2	2.18	0.43
15:MM:15:VAL:HG23	15:MM:35:ILE:CD1	2.40	0.43
17:OO:95[A]:ARG:O	17:OO:95[A]:ARG:HG3	2.11	0.43
17:OO:188[A]:THR:C	17:OO:189[A]:GLU:O	2.61	0.43
20:RR:136:ARG:O	20:RR:140:GLU:N	2.45	0.43
29:aa:47:LYS:O	29:aa:49:HIS:N	2.49	0.43
38:jj:64:MET:O	38:jj:68:LYS:HB2	2.19	0.43
48:A:54:TRP:HA	48:A:57:ILE:HD12	2.01	0.43
51:D:135:GLU:CD	51:D:137:VAL:HG23	2.43	0.43
67:T:22:LEU:HD13	67:T:28:LEU:HD13	2.01	0.43
68:U:95:ALA:HB1	68:U:99:ILE:HG21	2.01	0.43
69:V:19:ALA:CB	69:V:59:ILE:HD13	2.49	0.43
74:a:5:ARG:HH12	81:2:1793:U:H3'	1.83	0.43
81:2:48:G:C2	81:2:49:C:C2	3.07	0.43
81:2:98:U:H2'	81:2:99:C:C6	2.53	0.43
81:2:647:G:H2'	81:2:647:G:N3	2.34	0.43
81:2:1038:A:P	81:2:1038:A:H3'	2.59	0.43
81:2:1173:C:C2	81:2:1464:G:C2	3.07	0.43
81:2:1667:U:H2'	81:2:1668:G:O4'	2.19	0.43
81:2:1727:C:H2'	81:2:1728:A:O4'	2.18	0.43
82:4:6133:G:O2'	82:4:6134:C:C6	2.70	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:4:6182:A:OP2	83:1:585:ARG:CZ	2.63	0.43
83:1:487:PRO:CB	83:1:488:VAL:HA	2.49	0.43
83:1:828:MET:CB	83:1:829:LYS:HA	2.48	0.43
1:5:609:C:C4	1:5:619:A:C8	3.07	0.42
1:5:1202:A:C2	1:5:1248:C:C5	3.07	0.42
1:5:1298:C:O2'	34:ff:76:GLY:HA2	2.18	0.42
1:5:1925:G:C5	1:5:2056:C:C4	3.06	0.42
1:5:2166:C:N4	1:5:2211:A:C4	2.87	0.42
1:5:2220:G:C5	1:5:2221:A:C8	3.07	0.42
1:5:2781:A:C6	1:5:2782:G:C5	3.07	0.42
1:5:2973:A:H5''	5:BB:98:GLY:HA3	2.00	0.42
1:5:3048:G:C2	1:5:3049:C:C2	3.07	0.42
3:8:24:G:OP2	27:YY:13:ARG:NH2	2.52	0.42
17:OO:31[A]:GLY:HA2	17:OO:102[A]:ARG:NH2	2.34	0.42
17:OO:49[A]:PHE:C	17:OO:50[A]:ARG:O	2.61	0.42
21:SS:81:TYR:CE1	21:SS:90:MET:HE3	2.54	0.42
24:VV:132:ASN:HD22	24:VV:132:ASN:N	2.17	0.42
27:YY:100:HIS:CG	27:YY:101:PRO:HD2	2.54	0.42
28:ZZ:13:VAL:HG23	28:ZZ:23:VAL:HG11	2.00	0.42
34:ff:53:TYR:CE1	34:ff:65:ARG:HB3	2.54	0.42
46:rr:68:PHE:O	46:rr:70:SER:N	2.52	0.42
50:C:61:ILE:HA	50:C:66:LEU:HD12	2.00	0.42
54:G:186:ARG:NE	81:2:268:G:N7	2.67	0.42
81:2:440:A:C2	81:2:441:C:C6	3.06	0.42
81:2:922:A:N1	81:2:923:A:N6	2.66	0.42
81:2:1540:G:C2	81:2:1566:C:O2	2.72	0.42
1:5:340:C:C2	3:8:25:G:C2	3.07	0.42
1:5:533:G:N1	1:5:534:C:C2	2.86	0.42
1:5:756:G:OP2	19:QQ:66:ARG:NH1	2.53	0.42
1:5:1157:G:C2	1:5:1158:C:C2	3.07	0.42
1:5:1282:G:C2	1:5:1283:C:C2	3.07	0.42
1:5:1290:G:C2	1:5:1291:C:C2	3.07	0.42
1:5:1397:C:C2	1:5:1398:U:C6	3.06	0.42
1:5:1404:A:N3	33:ee:27:ARG:NH1	2.67	0.42
1:5:1927:G:N7	1:5:2054:U:O2	2.52	0.42
1:5:2530:A:N7	10:GG:31:ARG:NH2	2.67	0.42
1:5:2634:C:OP2	1:5:2655:G:N1	2.44	0.42
1:5:2663:A:N1	1:5:2727:U:C4	2.87	0.42
1:5:3104:G:C6	1:5:3105:C:C4	3.07	0.42
1:5:3228:G:C6	1:5:3229:C:C4	3.07	0.42
3:8:6:U:C2'	3:8:7:U:H5'	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:BB:117:ARG:HG2	5:BB:178:LEU:HD12	2.01	0.42
6:CC:342:LYS:O	6:CC:344:VAL:N	2.52	0.42
17:OO:139[A]:LEU:O	17:OO:141[A]:LYS:CA	2.64	0.42
32:dd:14:ILE:HD12	32:dd:39:PHE:CG	2.54	0.42
35:gg:71:THR:HG22	35:gg:72:VAL:O	2.19	0.42
50:C:56:SER:N	50:C:60:GLU:OE2	2.52	0.42
50:C:186:SER:HB3	81:2:4:C:H4'	2.01	0.42
67:T:52:GLY:O	67:T:54:PHE:N	2.51	0.42
81:2:89:G:C6	81:2:90:C:C4	3.07	0.42
81:2:274:C:N4	81:2:275:C:N4	2.68	0.42
81:2:899:A:N1	81:2:909:C:C4	2.87	0.42
81:2:922:A:C6	81:2:923:A:N6	2.87	0.42
81:2:1000:A:OP1	82:4:6211:U:H1'	2.19	0.42
81:2:1324:A:C2	81:2:1325:A:C5	3.08	0.42
1:5:173:G:C5	1:5:174:C:C4	3.07	0.42
1:5:482:G:C6	1:5:483:C:C4	3.08	0.42
1:5:701:G:C2	1:5:702:C:C2	3.07	0.42
1:5:1192:A:HO2'	1:5:1256:G:H1	1.62	0.42
1:5:1495:A:C4	1:5:1498:C:C4	3.08	0.42
1:5:2228:A:H4'	1:5:2229:U:OP1	2.20	0.42
1:5:2345:G:H2'	1:5:2346:G:C8	2.54	0.42
1:5:2378:G:H4'	1:5:2379:U:OP2	2.19	0.42
1:5:2544:G:C2	1:5:2545:C:C2	3.07	0.42
1:5:2664:A:H2'	1:5:2665:A:C8	2.53	0.42
1:5:2807:G:N1	1:5:2808:C:C4	2.87	0.42
1:5:3222:G:C2	1:5:3223:U:C2	3.08	0.42
4:AA:229:ALA:C	4:AA:230:VAL:HG23	2.44	0.42
6:CC:349:ILE:HD12	6:CC:349:ILE:HA	1.94	0.42
13:JJ:40:LEU:HD13	13:JJ:40:LEU:C	2.45	0.42
17:OO:109[A]:VAL:HA	17:OO:110[A]:PRO:HD3	1.53	0.42
17:OO:146[A]:VAL:O	17:OO:146[A]:VAL:HG23	2.18	0.42
17:OO:176[A]:ASN:O	17:OO:178[A]:VAL:C	2.61	0.42
17:OO:182[A]:LYS:O	17:OO:185[A]:THR:N	2.52	0.42
26:XX:68:THR:CG2	36:hh:36:LEU:HD13	2.50	0.42
33:ee:91:THR:O	33:ee:91:THR:HG22	2.20	0.42
37:ii:17:VAL:HG12	37:ii:18:ASN:N	2.33	0.42
39:kk:46:ARG:HB2	39:kk:51:LEU:HD22	2.01	0.42
45:qq:12:HIS:CE1	45:qq:206:ILE:HD11	2.52	0.42
59:L:97:TYR:CE1	71:X:15:LEU:HB3	2.54	0.42
61:N:89:TYR:CZ	61:N:93:LYS:HD2	2.54	0.42
70:W:75:ILE:HA	81:2:1099:G:O2'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:19:A:H2'	81:2:20:G:O4'	2.19	0.42
81:2:594:G:C2	81:2:595:C:N3	2.87	0.42
81:2:628:U:N3	81:2:629:A:C8	2.87	0.42
81:2:1008:U:H2'	81:2:1009:C:C6	2.55	0.42
81:2:1652:G:N2	81:2:1745:G:C6	2.87	0.42
82:4:6039:A:N3	82:4:6039:A:C2'	2.75	0.42
83:1:247:ASP:HB2	83:1:248:SER:HA	2.01	0.42
1:5:80:G:N2	1:5:81:C:C2	2.87	0.42
1:5:355:A:H2'	1:5:356:C:O4'	2.18	0.42
1:5:488:G:C5	1:5:489:G:C6	3.07	0.42
1:5:601:A:C2	1:5:602:A:C5	3.08	0.42
1:5:1092:U:H2'	1:5:1093:U:O4'	2.20	0.42
1:5:1143:G:O2'	1:5:1150:A:N1	2.43	0.42
1:5:1350:G:C6	1:5:1399:A:C2	3.07	0.42
1:5:1425:A:N3	1:5:1425:A:C5'	2.83	0.42
1:5:2326:A:H2'	1:5:2327:A:C8	2.54	0.42
1:5:2459:C:H2'	1:5:2460:A:O4'	2.19	0.42
1:5:2504:A:H2'	1:5:2505:A:O4'	2.19	0.42
1:5:2592:G:N2	1:5:2593:C:C2	2.87	0.42
3:8:114:G:C6	3:8:115:C:C4	3.07	0.42
4:AA:48:ILE:HB	44:pp:63:THR:HG22	2.01	0.42
16:NN:91:GLN:C	16:NN:92:LEU:HD12	2.44	0.42
19:QQ:177:GLY:O	19:QQ:178:ARG:HD3	2.20	0.42
20:RR:97:ARG:O	20:RR:98:ARG:C	2.62	0.42
45:qq:136:THR:OG1	45:qq:154:THR:HG21	2.19	0.42
46:rr:98:ILE:HG22	46:rr:102:ILE:HD12	2.01	0.42
46:rr:195:ASN:HB3	46:rr:196:GLY:CA	2.48	0.42
48:A:195:TRP:CE2	48:A:197:ILE:HG21	2.53	0.42
52:E:116:ASP:HB2	52:E:117:GLU:HB2	2.02	0.42
56:I:10:LYS:O	56:I:11:ARG:C	2.62	0.42
56:I:58:LEU:HD11	81:2:1674:U:OP1	2.19	0.42
81:2:623:G:C8	81:2:1026:A:C6	3.08	0.42
81:2:1013:G:C5	81:2:1014:U:C5	3.07	0.42
81:2:1292:U:C4	81:2:1293:G:C5	3.07	0.42
81:2:1782:C:H2'	81:2:1783:U:C6	2.54	0.42
83:1:586:ILE:O	83:1:587:TYR:CD1	2.73	0.42
1:5:342:A:N1	1:5:349:A:O2'	2.44	0.42
1:5:586:G:C2	1:5:587:C:C2	3.07	0.42
1:5:809:G:O6	44:pp:4:ARG:NH2	2.52	0.42
1:5:1030:G:C6	1:5:1031:U:C4	3.08	0.42
1:5:1160:C:C4	17:OO:134[A]:ARG:CZ	3.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1197:G:C2	1:5:1198:C:N3	2.87	0.42
1:5:1352:A:C2	1:5:1397:C:C2	3.07	0.42
1:5:1452:A:C2'	1:5:1827:A:N3	2.83	0.42
1:5:1733:G:H3'	1:5:1734:U:H5''	2.02	0.42
1:5:1846:U:H5''	1:5:1847:G:O4'	2.20	0.42
1:5:2077:C:C4	1:5:2078:U:C4	3.07	0.42
1:5:2149:G:H2'	1:5:2150:C:C6	2.54	0.42
1:5:2236:C:N4	1:5:2241:G:C2	2.88	0.42
1:5:2238:U:C2'	1:5:2239:A:O5'	2.67	0.42
1:5:2816:G:C6	1:5:2817:C:C4	3.07	0.42
1:5:3245:U:H1'	34:ff:64:ILE:HD12	2.02	0.42
3:8:7:U:C4	3:8:8:C:C4	3.08	0.42
5:BB:324:LEU:HD13	5:BB:328:ILE:HD11	2.01	0.42
6:CC:138:ARG:HD3	6:CC:138:ARG:O	2.19	0.42
9:FF:52:TYR:CE2	9:FF:138:TYR:CE2	3.07	0.42
17:OO:23[A]:THR:O	17:OO:26[A]:LYS:N	2.53	0.42
19:QQ:157:PRO:HA	19:QQ:158:HIS:HA	1.90	0.42
22:TT:12:ARG:HD3	22:TT:13:TYR:CZ	2.55	0.42
28:ZZ:55:LYS:O	28:ZZ:56:ARG:CB	2.67	0.42
55:H:112:ARG:NH1	81:2:637:U:O2'	2.53	0.42
81:2:1540:G:N1	81:2:1566:C:C2	2.87	0.42
81:2:1546:G:C2	81:2:1547:C:C2	3.07	0.42
82:4:6134:C:H2'	82:4:6135:C:C6	2.54	0.42
83:1:694:HIS:CG	83:1:695:ALA:O	2.72	0.42
1:5:8:C:H2'	1:5:9:U:O4'	2.20	0.42
1:5:412:G:H2'	1:5:413:U:H5'	2.00	0.42
1:5:494:A:N6	1:5:543:A:C2	2.87	0.42
1:5:1086:G:OP1	29:aa:22:VAL:HG11	2.20	0.42
1:5:1354:G:C6	1:5:1355:U:C4	3.07	0.42
1:5:1495:A:C2	1:5:1498:C:C6	3.08	0.42
1:5:1572:A:OP1	20:RR:38:ARG:NH1	2.52	0.42
1:5:1713:G:C6	1:5:1714:C:C4	3.08	0.42
1:5:2168:G:C5	1:5:2169:U:C4	3.07	0.42
1:5:2731:U:C5	1:5:2732:C:C5	3.07	0.42
1:5:3220:G:O2'	1:5:3221:G:OP1	2.29	0.42
3:8:31:G:C2	3:8:32:C:C2	3.08	0.42
10:GG:147:ALA:HA	10:GG:200:THR:HG22	2.02	0.42
10:GG:162:VAL:O	10:GG:164:PHE:N	2.52	0.42
16:NN:189:LYS:O	16:NN:192:LYS:N	2.52	0.42
17:OO:16[A]:LEU:HD11	17:OO:130[A]:LEU:HD13	2.01	0.42
17:OO:23[A]:THR:OG1	17:OO:24[A]:VAL:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:PP:129:THR:HG21	18:PP:139:TYR:CD1	2.55	0.42
22:TT:14:MET:HE1	22:TT:55:LYS:HA	2.01	0.42
28:ZZ:25:ILE:HG23	28:ZZ:41:ALA:HB1	2.01	0.42
39:kk:3:LYS:HD3	39:kk:51:LEU:CD1	2.49	0.42
50:C:232:PRO:HA	50:C:235:TRP:CD2	2.55	0.42
65:R:31:ASN:HA	65:R:34:LEU:HD12	2.01	0.42
69:V:19:ALA:HB3	69:V:59:ILE:HD13	2.00	0.42
71:X:42:PRO:O	71:X:79:ASN:ND2	2.53	0.42
81:2:506:U:O2	81:2:506:U:O4'	2.37	0.42
81:2:624:C:H2'	81:2:625:U:C6	2.54	0.42
81:2:1178:G:C2	81:2:1179:C:C2	3.08	0.42
83:1:560:VAL:CB	83:1:561:VAL:HA	2.49	0.42
1:5:412:G:C2'	1:5:413:U:H5'	2.50	0.42
1:5:686:U:O2	1:5:725:G:H4'	2.19	0.42
1:5:827:G:C6	1:5:828:G:N1	2.87	0.42
1:5:930:C:O2	1:5:2582:G:O2'	2.31	0.42
1:5:1651:U:O4	23:UU:90:ARG:NH1	2.52	0.42
1:5:1825:C:H2'	1:5:1826:C:C6	2.54	0.42
1:5:2166:C:N3	1:5:2211:A:C2	2.87	0.42
5:BB:25:VAL:HG22	5:BB:272:TYR:OH	2.19	0.42
6:CC:23:PRO:HD2	6:CC:26:PHE:CD1	2.54	0.42
9:FF:30:ARG:HA	9:FF:33:ARG:HD2	2.02	0.42
9:FF:218:LYS:O	9:FF:219:HIS:HB2	2.19	0.42
14:LL:3:ILE:CG2	29:aa:41:HIS:NE2	2.79	0.42
21:SS:80:ARG:HB3	21:SS:124:LEU:HD21	2.01	0.42
38:jj:67:LEU:HA	38:jj:70:VAL:HG23	2.01	0.42
45:qq:12:HIS:HA	45:qq:214:TYR:CE2	2.55	0.42
54:G:155:ASP:O	54:G:157:VAL:N	2.52	0.42
57:J:57:ARG:HG3	57:J:97:LEU:HD21	2.01	0.42
57:J:171:ARG:CA	81:2:511:A:OP2	2.66	0.42
70:W:125:ILE:HG22	70:W:126:LEU:N	2.33	0.42
81:2:898:G:H2'	81:2:899:A:C8	2.54	0.42
81:2:929:A:OP2	81:2:930:C:H5	2.02	0.42
81:2:969:A:C4'	81:2:969:A:C8	3.03	0.42
81:2:1437:C:H2'	81:2:1438:C:C6	2.54	0.42
82:4:6199:A:C6	82:4:6200:A:C6	3.08	0.42
83:1:583:HIS:NE2	83:1:704:GLN:NE2	2.67	0.42
83:1:685:ARG:N	83:1:686:VAL:HA	2.34	0.42
1:5:298:U:C6	37:ii:31:GLY:O	2.72	0.42
1:5:309:U:C4	1:5:310:U:C5	3.08	0.42
1:5:837:A:H2'	1:5:838:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1193:G:H1'	1:5:1257:A:C2	2.54	0.42
1:5:1564:U:H1'	1:5:1565:C:C6	2.55	0.42
1:5:1674:U:O2	1:5:1755:G:O2'	2.38	0.42
1:5:1691:U:O4'	20:RR:96:ILE:HG12	2.19	0.42
1:5:1793:U:H2'	1:5:1794:G:O4'	2.19	0.42
1:5:2219:G:C2'	1:5:2220:G:OP2	2.61	0.42
1:5:2236:C:N4	1:5:2241:G:N1	2.68	0.42
1:5:2823:U:H2'	1:5:2824:G:O4'	2.20	0.42
1:5:2852:C:C2	1:5:2907:G:N1	2.88	0.42
3:8:95:A:OP2	38:jj:72:ARG:NH1	2.53	0.42
5:BB:294:ALA:HB2	5:BB:305:ILE:HG13	2.02	0.42
6:CC:291:ASN:O	6:CC:292:SER:C	2.63	0.42
17:OO:19[A]:ARG:O	17:OO:20[A]:LEU:C	2.52	0.42
26:XX:117:ASN:C	26:XX:117:ASN:OD1	2.62	0.42
28:ZZ:16:GLY:O	28:ZZ:18:TYR:N	2.51	0.42
43:oo:6:LYS:O	43:oo:7:THR:C	2.62	0.42
56:I:68:ALA:N	56:I:186:GLU:OE2	2.53	0.42
64:Q:9:THR:HA	81:2:1339:U:O4	2.19	0.42
64:Q:38:LEU:HD11	67:T:7:ARG:O	2.20	0.42
79:f:96:LYS:O	79:f:97:LYS:HB3	2.20	0.42
81:2:906:A:C6	81:2:907:U:C5	3.08	0.42
81:2:930:C:H3'	81:2:931:U:H5''	2.02	0.42
81:2:957:U:O2	81:2:957:U:O4'	2.37	0.42
81:2:1137:A:C4	81:2:1138:A:N7	2.88	0.42
81:2:1287:G:N7	81:2:1313:U:H2'	2.34	0.42
81:2:1335:A:H2'	81:2:1336:A:O4'	2.20	0.42
81:2:1590:A:C2'	81:2:1591:A:C8	2.99	0.42
82:4:6040:U:H2'	82:4:6041:C:O5'	2.19	0.42
1:5:221:A:C2	1:5:224:C:C5	3.08	0.42
1:5:271:C:H2'	1:5:272:G:O4'	2.19	0.42
1:5:408:A:H2'	1:5:409:A:O4'	2.19	0.42
1:5:535:C:H2'	1:5:536:C:O4'	2.20	0.42
1:5:1925:G:N7	1:5:2057:A:C2	2.87	0.42
1:5:2055:G:C5	1:5:2056:C:N3	2.82	0.42
1:5:2169:U:C4	1:5:2170:G:N7	2.88	0.42
1:5:2405:U:C2	1:5:2480:A:N1	2.88	0.42
1:5:3033:G:H2'	1:5:3034:U:O4'	2.20	0.42
1:5:3220:G:O2'	1:5:3221:G:O4'	2.38	0.42
6:CC:208:VAL:HA	6:CC:228:ALA:O	2.20	0.42
11:HH:93:VAL:HG22	41:mm:82:LEU:HB3	2.02	0.42
17:OO:40[A]:GLU:HB3	17:OO:107[A]:GLU:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:77[A]:PRO:HD2	17:OO:148[A]:TRP:CG	2.55	0.42
28:ZZ:53:VAL:CG1	28:ZZ:54:THR:N	2.83	0.42
50:C:183:ILE:HD11	50:C:198:VAL:O	2.19	0.42
51:D:184:ILE:HD12	51:D:184:ILE:N	2.35	0.42
56:I:9:HIS:O	56:I:10:LYS:HB2	2.20	0.42
57:J:17:ARG:NH2	81:2:3:U:O2	2.52	0.42
59:L:20:PHE:CG	81:2:210:U:H5''	2.55	0.42
74:a:70:LYS:CD	81:2:930:C:P	2.97	0.42
81:2:391:G:C2	81:2:392:C:C2	3.08	0.42
81:2:909:C:O2	81:2:909:C:C2'	2.67	0.42
81:2:1218:A:N6	81:2:1263:G:O2'	2.53	0.42
81:2:1307:G:C6	81:2:1308:C:C4	3.08	0.42
83:1:119:LEU:HB3	83:1:146:ALA:HB2	2.02	0.42
83:1:195:GLU:HA	83:1:196:VAL:HB	2.00	0.42
83:1:456:LEU:HD13	83:1:459:ILE:HD11	2.02	0.42
83:1:584:ASN:CG	83:1:585:ARG:N	2.74	0.42
83:1:701:GLY:HA2	83:1:703:GLY:N	2.35	0.42
1:5:217:U:C2'	1:5:218:G:OP1	2.68	0.42
1:5:470:G:C6	1:5:471:C:C4	3.07	0.42
1:5:907:A:OP1	29:aa:32:ARG:NH2	2.52	0.42
1:5:917:U:H2'	1:5:918:G:H8	1.85	0.42
1:5:1192:A:O2'	1:5:1193:G:OP2	2.38	0.42
1:5:1192:A:O2'	1:5:1256:G:N1	2.45	0.42
1:5:2055:G:C2	1:5:2056:C:C2	3.08	0.42
1:5:2061:A:C6	1:5:2062:A:N6	2.88	0.42
1:5:2150:C:H2'	1:5:2151:A:O4'	2.20	0.42
1:5:2506:U:OP1	49:B:230:SER:HB3	2.20	0.42
1:5:2541:C:H5''	28:ZZ:58:GLY:HA3	2.02	0.42
7:DD:34:LYS:HA	22:TT:27:LEU:HD11	2.02	0.42
7:DD:116:ASP:OD1	7:DD:116:ASP:N	2.53	0.42
15:MM:21:VAL:HG12	15:MM:65:LEU:HA	2.01	0.42
17:OO:78[A]:SER:OG	17:OO:79[A]:ARG:N	2.52	0.42
24:VV:46:LEU:HD13	24:VV:47:ASN:HB2	2.01	0.42
28:ZZ:40:HIS:HD2	28:ZZ:74:VAL:HG13	1.82	0.42
44:pp:47:VAL:HG13	44:pp:48:LYS:CG	2.50	0.42
46:rr:31:GLY:HA2	46:rr:32:VAL:HB	2.02	0.42
48:A:23:HIS:CG	48:A:50:VAL:HG22	2.54	0.42
50:C:46:LEU:CD2	50:C:73:ILE:HD13	2.49	0.42
57:J:170:GLY:N	81:2:510:A:O3'	2.46	0.42
64:Q:120:ASP:O	64:Q:123:ARG:NH1	2.53	0.42
81:2:884:G:H2'	81:2:885:U:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:899:A:O2'	81:2:915:U:O2'	2.31	0.42
81:2:1014:U:C5	81:2:1015:C:N3	2.87	0.42
81:2:1292:U:C4	81:2:1293:G:C4	3.08	0.42
83:1:580:PRO:CA	83:1:583:HIS:CD2	3.03	0.42
83:1:582:LYS:HE3	83:1:694:HIS:CE1	2.55	0.42
83:1:586:ILE:HD11	83:1:708:THR:CG2	2.50	0.42
1:5:18:G:C6	1:5:19:U:C4	3.08	0.41
1:5:29:C:C2	1:5:56:G:C2	3.08	0.41
1:5:642:U:H2'	1:5:643:C:O4'	2.20	0.41
1:5:1312:U:H2'	1:5:1313:C:C6	2.55	0.41
1:5:1372:G:N1	1:5:1373:C:C4	2.88	0.41
1:5:1522:C:H2'	1:5:1523:G:O4'	2.20	0.41
1:5:1633:G:C6	1:5:1634:C:C4	3.08	0.41
1:5:1688:G:H2'	1:5:1689:U:O4'	2.19	0.41
1:5:1722:G:N1	1:5:1723:C:C2	2.88	0.41
1:5:1910:C:H2'	1:5:1911:U:C6	2.55	0.41
1:5:2236:C:C5	1:5:2237:U:C5	3.08	0.41
2:7:95:A:C6	2:7:96:U:C4	3.08	0.41
3:8:76:C:H2'	3:8:77:A:O4'	2.20	0.41
4:AA:237:LEU:HD12	4:AA:243:THR:CG2	2.49	0.41
6:CC:334:PHE:CD1	6:CC:334:PHE:C	2.97	0.41
7:DD:140:ARG:HB3	7:DD:141:PRO:HD2	2.02	0.41
13:JJ:110:ILE:HG22	13:JJ:116:TYR:HA	2.01	0.41
17:OO:30[A]:ASN:C	17:OO:32[A]:GLN:N	2.78	0.41
17:OO:127[A]:VAL:HG12	17:OO:128[A]:LEU:HG	2.02	0.41
27:YY:49:PRO:O	27:YY:115:ARG:NH2	2.53	0.41
41:mm:103:LEU:HD12	41:mm:121:LEU:HD22	2.01	0.41
48:A:23:HIS:NE2	48:A:50:VAL:HG13	2.35	0.41
55:H:162:ILE:HD13	55:H:169:PHE:CE2	2.55	0.41
59:L:91:LEU:HD13	59:L:100:TYR:CB	2.49	0.41
63:P:19:GLY:C	66:S:93:ASN:H	2.27	0.41
81:2:161:A:C6	81:2:162:G:C6	3.08	0.41
81:2:255:A:H2'	81:2:256:A:O4'	2.20	0.41
81:2:429:G:C2	81:2:430:C:C2	3.08	0.41
81:2:429:G:C6	81:2:430:C:C4	3.08	0.41
81:2:886:A:C2'	81:2:887:U:O4'	2.68	0.41
81:2:958:U:O2	81:2:958:U:H2'	2.20	0.41
81:2:1093:G:H2'	81:2:1094:U:O5'	2.20	0.41
81:2:1417:G:C2	81:2:1418:C:O2	2.73	0.41
82:4:6181:C:O2	82:4:6196:A:C2	2.73	0.41
83:1:33:SER:CA	83:1:57:THR:HG21	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:1:338:ILE:HA	83:1:342:LEU:HD12	2.02	0.41
83:1:405:VAL:HA	83:1:406:LYS:CG	2.50	0.41
1:5:109:A:H4'	1:5:110:G:OP1	2.19	0.41
1:5:533:G:C5	1:5:534:C:C5	3.07	0.41
1:5:623:C:H2'	1:5:624:G:C8	2.55	0.41
1:5:851:G:OP2	18:PP:131:ARG:HA	2.20	0.41
1:5:1197:G:C6	1:5:1198:C:C4	3.08	0.41
1:5:1397:C:H2'	1:5:1397:C:O2	2.19	0.41
1:5:1464:G:O6	40:II:2:ALA:N	2.52	0.41
1:5:2671:A:N6	7:DD:150:LEU:HD11	2.34	0.41
1:5:2781:A:N6	1:5:2782:G:C6	2.88	0.41
1:5:2886:G:C2	1:5:2897:C:C2	3.08	0.41
1:5:2939:A:N3	1:5:2939:A:H2'	2.35	0.41
1:5:3224:G:C6	1:5:3225:C:C2	3.08	0.41
2:7:87:G:OP1	9:FF:215:ARG:NH1	2.52	0.41
3:8:27:U:OP1	6:CC:53:SER:HB2	2.20	0.41
3:8:116:G:N2	3:8:117:C:C2	2.88	0.41
6:CC:349:ILE:HG23	6:CC:350:LYS:CE	2.42	0.41
11:HH:4:ILE:HD12	21:SS:143:PHE:HE1	1.85	0.41
11:HH:89:LYS:HG2	11:HH:145:VAL:HG22	2.02	0.41
12:II:65:LEU:HD11	12:II:91:VAL:HG13	2.01	0.41
17:OO:33[A]:LYS:C	17:OO:34[A]:ILE:CG1	2.93	0.41
17:OO:171[A]:LYS:HZ2	17:OO:171[A]:LYS:CB	2.33	0.41
29:aa:41:HIS:O	29:aa:42:ARG:C	2.63	0.41
29:aa:101:VAL:HG22	29:aa:124:ILE:HG23	2.02	0.41
30:bb:7:HIS:CG	30:bb:8:THR:N	2.89	0.41
45:qq:155:ILE:HG21	45:qq:167:VAL:HG13	2.03	0.41
48:A:90:ALA:HB2	48:A:97:PRO:CG	2.49	0.41
81:2:208:U:C4	81:2:209:A:N7	2.88	0.41
81:2:941:G:C6	81:2:942:C:C4	3.08	0.41
81:2:1460:G:C2	81:2:1461:C:C2	3.08	0.41
81:2:1493:C:C2	81:2:1511:G:N2	2.88	0.41
83:1:380:LEU:HB3	83:1:401:PHE:H	1.84	0.41
83:1:380:LEU:HB2	83:1:399:ARG:O	2.20	0.41
83:1:441:PHE:HB2	83:1:442:VAL:CB	2.50	0.41
83:1:647:ILE:CG1	83:1:685:ARG:NH1	2.84	0.41
1:5:109:A:C6	1:5:323:A:C4	3.08	0.41
1:5:982:A:O4'	12:II:194:GLY:HA3	2.20	0.41
1:5:1742:C:H2'	1:5:1743:C:O4'	2.20	0.41
1:5:1918:A:OP2	20:RR:135:LYS:NZ	2.54	0.41
1:5:2991:U:C5	1:5:2999:G:N2	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3139:U:H3'	1:5:3140:A:H5''	2.00	0.41
9:FF:86:ILE:CD1	9:FF:211:TRP:CZ3	3.03	0.41
17:OO:97[A]:LYS:C	17:OO:101[A]:GLU:HG3	2.42	0.41
18:PP:158:GLU:HA	18:PP:159:LYS:CB	2.50	0.41
23:UU:89:LEU:HB3	23:UU:93:ILE:HD12	2.02	0.41
32:dd:14:ILE:HG21	32:dd:73:LEU:HD11	2.02	0.41
38:jj:27:TYR:HA	38:jj:34:CYS:HA	2.02	0.41
48:A:202:TYR:O	48:A:205:ARG:NH1	2.54	0.41
63:P:47:ARG:NE	81:2:1551:G:N7	2.67	0.41
80:g:293:ASP:HA	80:g:294:PRO:HD3	1.98	0.41
81:2:9:U:H2'	81:2:11:A:OP2	2.20	0.41
81:2:284:G:C2	81:2:285:C:C2	3.08	0.41
81:2:284:G:C6	81:2:285:C:C4	3.08	0.41
81:2:579:A:C6	81:2:582:C:C6	3.08	0.41
81:2:859:U:H2'	81:2:860:U:O4'	2.20	0.41
81:2:886:A:C6	81:2:887:U:C4	3.08	0.41
81:2:924:G:N2	81:2:987:A:C8	2.89	0.41
81:2:969:A:C8	81:2:969:A:C3'	3.03	0.41
81:2:1637:C:H2'	81:2:1638:C:O4'	2.20	0.41
82:4:6172:A:OP2	82:4:6200:A:N6	2.53	0.41
82:4:6181:C:C3'	83:1:578:LYS:HZ1	2.28	0.41
83:1:36:THR:HB	83:1:102:LEU:HD11	2.01	0.41
1:5:248:U:O2	1:5:248:U:C2'	2.64	0.41
1:5:323:A:N6	1:5:324:A:N1	2.68	0.41
1:5:385:A:C2	1:5:386:A:C4	3.07	0.41
1:5:532:A:N7	1:5:533:G:C8	2.88	0.41
1:5:1074:A:H2'	1:5:1074:A:N3	2.35	0.41
1:5:1091:A:C2	1:5:1110:G:C2	3.08	0.41
1:5:1108:C:C4	1:5:1109:U:C5	3.09	0.41
1:5:1928:A:C6	1:5:2053:C:C2	3.09	0.41
1:5:2093:G:C2	1:5:2299:C:C2	3.09	0.41
1:5:2852:C:C2	1:5:2907:G:C2	3.08	0.41
1:5:3037:G:O2'	20:RR:61:SER:CB	2.68	0.41
2:7:87:G:OP1	9:FF:215:ARG:HD3	2.20	0.41
3:8:38:U:C5	36:hh:89:ARG:HD2	2.55	0.41
16:NN:150:TRP:CZ3	16:NN:151:ILE:HG12	2.55	0.41
24:VV:13:ILE:CD1	24:VV:54:LEU:HB3	2.50	0.41
32:dd:44:MET:HG3	32:dd:75:ILE:HG22	2.01	0.41
44:pp:37:TYR:CB	44:pp:71:LEU:HD12	2.50	0.41
54:G:136:LYS:NZ	54:G:174:LYS:O	2.54	0.41
57:J:45:ILE:HG12	57:J:104:PHE:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:e:43:ARG:NH2	81:2:589:C:OP1	2.54	0.41
81:2:566:A:C2	81:2:582:C:H1'	2.55	0.41
81:2:571:C:C4	81:2:572:C:C5	3.08	0.41
81:2:828:A:O2'	81:2:829:U:OP2	2.38	0.41
81:2:945:U:H2'	81:2:946:U:N1	2.36	0.41
81:2:952:G:H2'	81:2:953:G:C8	2.56	0.41
81:2:1482:G:C2	81:2:1483:C:N3	2.88	0.41
83:1:733:ILE:HD12	83:1:743:ILE:CD1	2.51	0.41
83:1:735:CYS:HB3	83:1:740:VAL:HG11	2.01	0.41
1:5:287:G:C6	1:5:288:C:N3	2.88	0.41
1:5:825:G:O2'	20:RR:130:ASN:ND2	2.54	0.41
1:5:835:G:O6	1:5:864:C:H3'	2.21	0.41
1:5:1297:A:H2'	1:5:1298:C:O4'	2.21	0.41
1:5:1300:U:OP2	34:ff:82:ARG:NH2	2.54	0.41
1:5:1503:C:O2	1:5:1560:G:C2	2.73	0.41
1:5:1678:C:N3	1:5:1705:G:C2	2.89	0.41
1:5:1749:G:C6	1:5:1750:C:N4	2.88	0.41
1:5:2218:G:O2'	1:5:2219:G:C4'	2.69	0.41
1:5:2530:A:C1'	1:5:2531:A:OP1	2.67	0.41
1:5:2668:G:O2'	1:5:2673:A:N1	2.40	0.41
1:5:3192:G:C2	1:5:3193:C:C2	3.08	0.41
3:8:116:G:C2	3:8:117:C:C2	3.08	0.41
5:BB:56:ILE:CD1	5:BB:76:VAL:HG21	2.45	0.41
6:CC:230:VAL:HG22	6:CC:254:ALA:HB1	2.02	0.41
17:OO:46[A]:GLY:HA3	17:OO:51[A]:ASN:HD21	1.86	0.41
17:OO:76[A]:ALA:HA	17:OO:77[A]:PRO:HD2	1.90	0.41
17:OO:77[A]:PRO:HG2	17:OO:148[A]:TRP:CZ2	2.56	0.41
17:OO:126[A]:ARG:O	17:OO:126[A]:ARG:CG	2.66	0.41
18:PP:22:LEU:HD12	18:PP:146:ILE:CD1	2.50	0.41
20:RR:134:HIS:C	20:RR:136:ARG:H	2.28	0.41
21:SS:29:ILE:HG22	21:SS:31:ALA:HB2	2.03	0.41
29:aa:104:THR:HG21	29:aa:112:VAL:CG2	2.50	0.41
39:kk:3:LYS:HG2	39:kk:51:LEU:HG	2.01	0.41
45:qq:214:TYR:CD1	45:qq:214:TYR:C	2.97	0.41
52:E:86:PHE:O	52:E:87:MET:HB2	2.20	0.41
56:I:83:TYR:CZ	56:I:196:ARG:HG2	2.55	0.41
57:J:131:GLN:O	57:J:133:HIS:CD2	2.74	0.41
81:2:992:A:N6	81:2:993:G:N3	2.69	0.41
81:2:1130:A:H2'	81:2:1131:A:O4'	2.20	0.41
83:1:517:CYS:SG	83:1:537:HIS:NE2	2.94	0.41
83:1:638:PRO:HA	83:1:639:ASP:HA	1.87	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1017:A:H2'	1:5:1020:C:C5	2.55	0.41
1:5:1119:G:C2	1:5:1127:C:N3	2.89	0.41
1:5:1196:A:H3'	1:5:1197:G:C8	2.56	0.41
1:5:1587:G:O2'	3:8:126:A:N1	2.54	0.41
1:5:1604:G:N2	1:5:1608:C:C2	2.88	0.41
1:5:1909:G:C6	1:5:1910:C:N3	2.88	0.41
1:5:2729:G:C4	1:5:2763:U:C5	3.08	0.41
1:5:3302:U:H4'	1:5:3303:A:C5'	2.51	0.41
3:8:38:U:O4	36:hh:89:ARG:HD2	2.19	0.41
3:8:107:G:C6	3:8:108:C:C4	3.08	0.41
5:BB:77:THR:HG23	5:BB:326:GLY:O	2.19	0.41
17:OO:145[A]:SER:O	17:OO:145[A]:SER:OG	2.37	0.41
39:kk:32:ASN:O	39:kk:32:ASN:CG	2.63	0.41
45:qq:30:GLU:HB3	45:qq:209:THR:HG21	2.03	0.41
45:qq:60:ARG:HA	45:qq:152:ARG:HG3	2.02	0.41
45:qq:117:ILE:HA	82:4:6038:G:O4'	2.21	0.41
45:qq:120:VAL:CG2	82:4:6039:A:O5'	2.68	0.41
81:2:284:G:N1	81:2:285:C:C4	2.88	0.41
81:2:334:U:H2'	81:2:335:G:O4'	2.21	0.41
81:2:585:G:C6	81:2:586:C:C4	3.08	0.41
81:2:1127:C:H2'	81:2:1128:U:O4'	2.20	0.41
81:2:1177:G:H3'	81:2:1178:G:H8	1.86	0.41
81:2:1666:G:H2'	81:2:1667:U:O4'	2.20	0.41
83:1:219:ALA:HB3	83:1:330:ALA:HA	2.02	0.41
83:1:441:PHE:HB2	83:1:442:VAL:CA	2.50	0.41
83:1:464:LEU:HD12	83:1:464:LEU:HA	1.89	0.41
1:5:157:A:H2'	1:5:158:G:O4'	2.20	0.41
1:5:867:A:N1	1:5:2116:A:O2'	2.48	0.41
1:5:940:C:OP1	30:bb:19:ASN:HB2	2.21	0.41
1:5:1101:A:N1	1:5:2832:A:O2'	2.51	0.41
1:5:1195:C:C5	1:5:1196:A:C8	3.09	0.41
1:5:1290:G:C6	1:5:1291:C:C4	3.08	0.41
1:5:2050:A:N3	1:5:2050:A:H2'	2.36	0.41
1:5:2218:G:C1'	1:5:2219:G:C5'	2.84	0.41
1:5:2802:G:C2	1:5:2823:U:C2	3.09	0.41
1:5:3215:G:C6	1:5:3216:C:N4	2.88	0.41
1:5:3274:U:C2'	1:5:3275:A:H5''	2.51	0.41
6:CC:230:VAL:CG2	6:CC:254:ALA:HB1	2.50	0.41
8:EE:49:ARG:NH1	15:MM:114:ASP:OD2	2.53	0.41
9:FF:236:LEU:HD21	9:FF:240:MET:SD	2.61	0.41
17:OO:79[A]:ARG:HA	17:OO:82[A]:TYR:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:179[A]:VAL:O	17:OO:179[A]:VAL:HG12	2.21	0.41
20:RR:91:SER:O	20:RR:92:GLN:C	2.64	0.41
24:VV:45:ARG:O	24:VV:46:LEU:C	2.61	0.41
33:ee:86:LEU:HD22	33:ee:115:ASN:ND2	2.35	0.41
35:gg:58:ARG:O	35:gg:61:GLN:N	2.53	0.41
36:hh:48:ARG:HA	36:hh:51:ILE:HD12	2.03	0.41
39:kk:45:LEU:O	39:kk:46:ARG:C	2.64	0.41
45:qq:124:LEU:HG	82:4:6039:A:H1'	2.02	0.41
56:I:76:THR:CG2	56:I:104:ILE:HG23	2.50	0.41
81:2:362:G:C2	81:2:381:C:C2	3.09	0.41
81:2:509:G:C6	81:2:510:A:N7	2.88	0.41
81:2:826:C:H2'	81:2:827:U:C6	2.55	0.41
81:2:989:C:O2	81:2:989:C:O5'	2.38	0.41
81:2:1707:C:O2	81:2:1707:C:O4'	2.38	0.41
81:2:1750:U:O4	81:2:1751:A:N6	2.54	0.41
83:1:586:ILE:O	83:1:587:TYR:CG	2.73	0.41
1:5:408:A:N6	3:8:15:G:H1'	2.36	0.41
1:5:647:G:C6	1:5:648:C:C4	3.09	0.41
1:5:1145:G:C2	1:5:1146:C:C2	3.08	0.41
1:5:1599:U:O2	1:5:1599:U:H3'	2.21	0.41
1:5:1643:G:C2	1:5:1743:C:O2	2.74	0.41
1:5:2438:G:C2	1:5:2439:C:C2	3.09	0.41
1:5:2807:G:C6	1:5:2808:C:C4	3.09	0.41
1:5:3008:A:H5'	24:VV:12:ARG:HB2	2.02	0.41
1:5:3220:G:C2'	1:5:3221:G:O4'	2.67	0.41
2:7:112:G:C6	2:7:113:C:N4	2.88	0.41
9:FF:138:TYR:O	9:FF:139:SER:CB	2.69	0.41
12:II:95:HIS:HB3	12:II:126:ALA:O	2.21	0.41
17:OO:70[A]:GLY:O	17:OO:71[A]:PRO:O	2.38	0.41
17:OO:185[A]:THR:HG23	17:OO:186[A]:VAL:HG23	2.03	0.41
31:cc:34:LEU:HD11	31:cc:42:ILE:HG21	2.03	0.41
39:kk:6:ALA:CB	39:kk:7:ASP:CA	2.99	0.41
44:pp:37:TYR:CE2	44:pp:48:LYS:N	2.89	0.41
48:A:129:ASP:O	48:A:131:GLN:N	2.54	0.41
71:X:50:LYS:HG3	71:X:103:LEU:HD23	2.03	0.41
81:2:929:A:O2'	81:2:930:C:P	2.78	0.41
81:2:979:G:C6	81:2:980:U:C4	3.08	0.41
81:2:1211:G:O2'	81:2:1240:G:N2	2.54	0.41
81:2:1726:U:H2'	81:2:1727:C:C6	2.56	0.41
81:2:1752:A:H5''	81:2:1752:A:H8	1.85	0.41
82:4:6075:A:H2'	82:4:6076:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:4:6210:U:H1'	82:4:6211:U:C5	2.56	0.41
83:1:53:GLU:HA	83:1:54:ALA:HB3	2.01	0.41
83:1:385:MET:HG3	83:1:394:PHE:CE2	2.55	0.41
1:5:53:G:C2	1:5:54:C:C2	3.09	0.41
1:5:312:C:C2	1:5:2746:G:N1	2.89	0.41
1:5:533:G:N2	1:5:534:C:H1'	2.35	0.41
1:5:584:A:C2	1:5:585:U:C2	3.09	0.41
1:5:586:G:C6	1:5:587:C:C4	3.08	0.41
1:5:947:U:OP1	19:QQ:144:ARG:NH2	2.53	0.41
1:5:1124:A:C6	1:5:1125:A:N1	2.88	0.41
1:5:1370:A:C2	3:8:8:C:C5'	3.03	0.41
1:5:1398:U:C5	29:aa:4:ARG:CZ	3.04	0.41
1:5:1427:A:C4	32:dd:64:ILE:HD11	2.55	0.41
1:5:1451:G:O4'	1:5:1454:G:N2	2.54	0.41
1:5:1811:A:H4'	1:5:1812:C:OP2	2.20	0.41
1:5:1871:G:C8	1:5:1871:G:O5'	2.74	0.41
1:5:2086:A:H2'	1:5:2087:C:O4'	2.20	0.41
1:5:2218:G:OP2	1:5:2218:G:C3'	2.69	0.41
1:5:2238:U:C2'	1:5:2239:A:H5'	2.49	0.41
1:5:2247:C:N4	1:5:2276:G:C6	2.89	0.41
1:5:2260:A:H2'	1:5:2261:U:O4'	2.20	0.41
1:5:2619:G:C2	1:5:2764:G:C4	3.09	0.41
1:5:2699:U:H2'	1:5:2700:G:O4'	2.21	0.41
1:5:2928:C:H2'	1:5:2929:G:C8	2.55	0.41
1:5:3207:G:C6	1:5:3208:C:C4	3.09	0.41
2:7:68:C:H2'	2:7:69:C:O4'	2.21	0.41
3:8:10:A:C6	3:8:11:C:C4	3.09	0.41
3:8:27:U:OP1	6:CC:53:SER:OG	2.36	0.41
3:8:140:G:C6	3:8:141:C:C4	3.08	0.41
4:AA:200:ARG:O	4:AA:203:ALA:N	2.53	0.41
5:BB:218:VAL:HG13	5:BB:274:HIS:CE1	2.48	0.41
5:BB:316:ALA:O	5:BB:317:ILE:HB	2.21	0.41
5:BB:339:ARG:HG3	5:BB:340:LYS:O	2.21	0.41
6:CC:16:THR:HA	6:CC:17:SER:HB3	2.02	0.41
6:CC:31:ARG:HH11	6:CC:31:ARG:HB3	1.85	0.41
6:CC:206:LEU:HD23	6:CC:208:VAL:HG23	2.03	0.41
6:CC:349:ILE:CG2	6:CC:350:LYS:HE3	2.45	0.41
8:EE:171:HIS:CD2	8:EE:172:LEU:HG	2.56	0.41
10:GG:135:LEU:HD21	10:GG:165:LEU:HD11	2.03	0.41
16:NN:17:ASP:OD1	37:ii:55:ARG:NH2	2.54	0.41
17:OO:13[A]:LYS:HD2	17:OO:38[A]:ARG:CZ	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:26[A]:LYS:HD3	17:OO:26[A]:LYS:O	2.21	0.41
17:OO:93[A]:THR:O	17:OO:93[A]:THR:OG1	2.32	0.41
17:OO:111[A]:PRO:CB	17:OO:112[A]:PRO:HD3	2.37	0.41
28:ZZ:51:LEU:HB3	28:ZZ:65:ARG:HD2	2.03	0.41
40:ll:45:ARG:O	40:ll:46:ARG:C	2.63	0.41
50:C:46:LEU:HD12	50:C:66:LEU:HD13	2.03	0.41
53:F:134:VAL:HG11	53:F:201:ILE:HD12	2.03	0.41
59:L:48:ALA:HA	59:L:53:TYR:OH	2.20	0.41
70:W:73:GLY:HA3	70:W:128:PHE:CE2	2.56	0.41
74:a:83:ILE:HG21	81:2:1796:U:C5	2.56	0.41
81:2:523:U:C6	81:2:525:A:OP2	2.74	0.41
81:2:602:U:H2'	81:2:603:A:O4'	2.20	0.41
81:2:823:G:C6	81:2:848:C:N4	2.89	0.41
81:2:989:C:H3'	81:2:990:G:C8	2.56	0.41
81:2:1031:G:C6	81:2:1032:C:C4	3.09	0.41
81:2:1175:G:C6	81:2:1176:C:C4	3.09	0.41
81:2:1467:A:H2'	81:2:1468:C:C6	2.56	0.41
82:4:6128:A:C2	82:4:6159:G:N3	2.89	0.41
82:4:6133:G:C2'	82:4:6134:C:C5	3.04	0.41
83:1:107:GLY:CA	83:1:138:GLN:HE22	2.33	0.41
83:1:149:GLU:N	83:1:150:ARG:HA	2.35	0.41
83:1:240:MET:O	83:1:242:ASP:N	2.54	0.41
83:1:694:HIS:CG	83:1:696:ASP:OD1	2.70	0.41
83:1:698:ILE:HD13	83:1:700:ARG:HD3	1.46	0.41
1:5:283:G:H2'	29:aa:61:PHE:CZ	2.56	0.41
1:5:331:G:H2'	1:5:332:C:C6	2.56	0.41
1:5:336:A:C2	3:8:27:U:N3	2.83	0.41
1:5:506:G:C2	1:5:528:U:O2	2.74	0.41
1:5:1410:U:H2'	1:5:1411:G:O4'	2.20	0.41
1:5:1791:C:O2'	1:5:1792:A:P	2.79	0.41
1:5:2236:C:C4	1:5:2237:U:C4	3.09	0.41
1:5:2339:G:H2'	1:5:2340:G:O4'	2.21	0.41
1:5:2482:U:C4	1:5:2560:G:C5	3.09	0.41
1:5:2799:G:C6	1:5:2800:C:C4	3.08	0.41
1:5:3006:U:H2'	1:5:3007:C:O4'	2.21	0.41
5:BB:227:GLU:HG2	5:BB:270:ARG:HD2	2.03	0.41
6:CC:26:PHE:HE1	6:CC:258:LEU:HD13	1.86	0.41
6:CC:208:VAL:O	6:CC:251:THR:HG23	2.21	0.41
8:EE:87:THR:HG21	15:MM:115:PHE:HB3	2.03	0.41
14:LL:47:ALA:CB	14:LL:48:PRO:CD	2.98	0.41
16:NN:38:ARG:CZ	16:NN:60:VAL:HG13	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:OO:82[A]:TYR:CZ	17:OO:100[A]:LEU:HD13	2.56	0.41
17:OO:136[A]:TYR:H	17:OO:136[A]:TYR:HD1	1.69	0.41
18:PP:165:VAL:O	18:PP:167:ARG:N	2.54	0.41
24:VV:35:TYR:CG	24:VV:63:LYS:HE2	2.55	0.41
29:aa:49:HIS:C	29:aa:50:PRO:O	2.63	0.41
45:qq:122:ARG:HA	82:4:6040:U:C6	2.56	0.41
54:G:3:LEU:HD22	54:G:111:LEU:HD11	2.02	0.41
74:a:87:ARG:HD2	81:2:1795:A:C6	2.56	0.41
81:2:362:G:H2'	81:2:363:G:O4'	2.21	0.41
81:2:630:G:C6	81:2:631:U:C4	3.09	0.41
81:2:1482:G:N1	81:2:1483:C:C4	2.89	0.41
81:2:1773:U:H2'	81:2:1774:A:C8	2.56	0.41
83:1:693:LEU:HD13	83:1:693:LEU:HA	1.76	0.41
1:5:258:G:C2	1:5:259:C:C2	3.08	0.40
1:5:307:A:C2	1:5:308:A:C5	3.09	0.40
1:5:377:A:H1'	1:5:392:G:N2	2.35	0.40
1:5:507:U:O4'	1:5:532:A:N3	2.53	0.40
1:5:521:U:H2'	1:5:522:A:N9	2.36	0.40
1:5:563:G:O6	1:5:584:A:H3'	2.21	0.40
1:5:670:G:H2'	1:5:671:U:C6	2.56	0.40
1:5:922:A:H5''	1:5:1114:A:N1	2.36	0.40
1:5:1546:G:C6	1:5:1547:C:N4	2.89	0.40
1:5:2218:G:O2'	1:5:2219:G:C5'	2.69	0.40
1:5:2276:G:H3'	1:5:2277:C:H5''	2.03	0.40
1:5:2662:A:N1	1:5:2663:A:C2	2.89	0.40
1:5:2807:G:C2	1:5:2808:C:C2	3.09	0.40
1:5:3055:A:O4'	1:5:3343:A:N1	2.54	0.40
2:7:38:U:N3	2:7:41:G:OP2	2.52	0.40
5:BB:82:PRO:O	5:BB:83:PRO:C	2.64	0.40
6:CC:206:LEU:HB2	6:CC:246:ARG:NE	2.35	0.40
7:DD:50:ARG:HB2	7:DD:147:ASP:OD1	2.21	0.40
9:FF:86:ILE:HD13	9:FF:86:ILE:HA	1.94	0.40
17:OO:9[A]:VAL:HG12	17:OO:118[A]:ARG:CB	2.44	0.40
19:QQ:34:ALA:HA	19:QQ:49:LEU:CD1	2.52	0.40
20:RR:143:ILE:O	20:RR:147:ALA:N	2.50	0.40
27:YY:54:ASP:HB2	27:YY:70:VAL:HB	2.03	0.40
43:oo:6:LYS:HD3	43:oo:93:LEU:HD21	2.03	0.40
45:qq:30:GLU:HB3	45:qq:209:THR:CG2	2.51	0.40
50:C:188:ALA:HB2	50:C:212:LEU:HD11	2.03	0.40
53:F:122:ILE:HG23	73:Z:59:TYR:CE2	2.56	0.40
56:I:5:ARG:NE	81:2:335:G:O6	2.43	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:T:108:LEU:HB3	67:T:114:VAL:HG23	2.02	0.40
71:X:23:ARG:HD2	71:X:29:TYR:CD1	2.56	0.40
74:a:83:ILE:O	74:a:84:VAL:HG23	2.21	0.40
81:2:94:U:H2'	81:2:95:G:O4'	2.21	0.40
81:2:524:A:C6	81:2:525:A:C6	3.08	0.40
81:2:929:A:O2'	81:2:930:C:OP1	2.39	0.40
81:2:1154:G:N2	81:2:1622:C:C2	2.89	0.40
81:2:1320:A:H4'	81:2:1321:A:OP1	2.20	0.40
81:2:1464:G:C6	81:2:1465:C:C4	3.10	0.40
81:2:1473:A:H2'	81:2:1474:C:O4'	2.21	0.40
83:1:381:TYR:C	83:1:382:VAL:CG2	2.79	0.40
1:5:12:A:C2	1:5:13:A:N1	2.89	0.40
1:5:830:G:C6	1:5:832:C:C4	3.08	0.40
1:5:930:C:C5	1:5:2769:A:C4	3.09	0.40
1:5:1019:A:H2'	12:II:22:TYR:CE2	2.57	0.40
1:5:1088:G:C6	1:5:1089:C:C4	3.10	0.40
1:5:1165:G:C6	1:5:1166:A:N6	2.88	0.40
1:5:1333:G:H2'	1:5:1334:A:H8	1.81	0.40
1:5:1608:C:OP2	35:gg:74:ARG:CZ	2.66	0.40
1:5:1886:C:H2'	1:5:1887:C:O4'	2.21	0.40
1:5:2163:G:C6	1:5:2164:C:C4	3.10	0.40
1:5:2235:U:H2'	1:5:2236:C:H5	1.79	0.40
1:5:2479:U:C3'	1:5:2480:A:H5'	2.32	0.40
1:5:2544:G:C6	1:5:2545:C:C4	3.08	0.40
1:5:2592:G:C2	1:5:2593:C:N3	2.89	0.40
1:5:3154:A:N6	11:HH:58:HIS:O	2.50	0.40
1:5:3200:G:C2	1:5:3224:G:C4	3.09	0.40
4:AA:179:LEU:C	4:AA:180:LEU:O	2.63	0.40
5:BB:246:LEU:O	5:BB:248:LYS:N	2.54	0.40
5:BB:311:PHE:HE2	5:BB:317:ILE:HD12	1.86	0.40
12:II:174:THR:HA	12:II:196:PHE:CZ	2.56	0.40
17:OO:53[A]:LEU:HA	17:OO:53[A]:LEU:HD23	1.80	0.40
20:RR:119:LEU:O	20:RR:123:LEU:HG	2.20	0.40
21:SS:7:TYR:CE2	21:SS:63:VAL:HG22	2.56	0.40
28:ZZ:58:GLY:C	28:ZZ:62:VAL:H	2.29	0.40
40:II:2:ALA:O	40:II:3:ALA:CB	2.68	0.40
43:oo:25:VAL:HG22	43:oo:72:LEU:CD2	2.50	0.40
49:B:211:HIS:O	49:B:212:ILE:HD12	2.22	0.40
50:C:102:ARG:NH2	81:2:1300:U:OP2	2.54	0.40
59:L:102:LYS:O	71:X:13:ARG:NH2	2.54	0.40
71:X:7:ARG:NH2	81:2:1099:G:CI'	2.83	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:2:364:G:C5	81:2:376:G:N2	2.90	0.40
81:2:384:A:H5''	81:2:384:A:C8	2.56	0.40
81:2:960:U:H2'	81:2:961:C:C6	2.57	0.40
82:4:6060:U:C5	82:4:6062:G:OP1	2.74	0.40
83:1:464:LEU:HG	83:1:465:LYS:HG3	2.03	0.40
83:1:706:ILE:HG23	83:1:707:PRO:HD2	2.03	0.40
1:5:60:A:C4	1:5:327:A:C2	3.09	0.40
1:5:824:G:H2'	1:5:825:G:O4'	2.21	0.40
1:5:847:A:C2	1:5:857:C:C2	3.10	0.40
1:5:1284:G:O3'	17:OO:18[A]:GLY:HA3	2.21	0.40
1:5:1531:G:C6	1:5:1532:G:C6	3.09	0.40
1:5:2163:G:C2	1:5:2164:C:C4	3.09	0.40
1:5:2218:G:C1'	1:5:2219:G:O4'	2.70	0.40
1:5:2553:G:N7	10:GG:46:SER:OG	2.54	0.40
5:BB:6:TYR:O	5:BB:8:ALA:N	2.54	0.40
6:CC:39:PHE:O	6:CC:40:THR:C	2.60	0.40
9:FF:80:LEU:HD21	9:FF:113:PHE:HB3	2.03	0.40
9:FF:128:GLU:N	9:FF:129:PRO:CD	2.84	0.40
17:OO:28[A]:LEU:HD23	17:OO:28[A]:LEU:N	2.23	0.40
17:OO:114[A]:ASP:CA	17:OO:118[A]:ARG:HH12	2.08	0.40
17:OO:128[A]:LEU:HA	17:OO:128[A]:LEU:HD23	1.79	0.40
20:RR:38:ARG:O	20:RR:42:ARG:N	2.48	0.40
28:ZZ:24:VAL:HG11	28:ZZ:87:LEU:HD23	2.04	0.40
29:aa:3:THR:O	29:aa:4:ARG:C	2.63	0.40
39:kk:43:PHE:CE2	39:kk:65:LEU:HD22	2.56	0.40
43:oo:37:ALA:O	43:oo:38:GLN:C	2.61	0.40
45:qq:118:LYS:O	82:4:6087:G:N1	2.48	0.40
45:qq:120:VAL:CA	82:4:6039:A:H5''	2.45	0.40
46:rr:30:VAL:CG1	46:rr:89:ILE:HD12	2.52	0.40
48:A:23:HIS:CE1	48:A:50:VAL:HG13	2.57	0.40
54:G:153:VAL:HB	81:2:78:A:C8	2.57	0.40
81:2:325:G:C2	81:2:342:C:C2	3.09	0.40
81:2:326:U:H2'	81:2:327:A:C8	2.56	0.40
81:2:425:G:C2	81:2:426:C:C2	3.09	0.40
81:2:452:U:O2	81:2:452:U:H2'	2.21	0.40
81:2:567:G:C6	81:2:568:C:N4	2.90	0.40
81:2:854:A:N1	81:2:856:U:O2	2.55	0.40
81:2:1460:G:C6	81:2:1461:C:C4	3.08	0.40
81:2:1513:A:O2'	81:2:1516:C:N4	2.54	0.40
82:4:6084:A:N7	82:4:6085:G:C8	2.89	0.40
83:1:721:ASP:N	83:1:722:PRO:HD2	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:95:A:C5	1:5:96:G:H1'	2.57	0.40
1:5:286:U:H2'	1:5:287:G:O4'	2.22	0.40
1:5:945:G:N2	1:5:946:C:C2	2.90	0.40
1:5:1138:U:H2'	1:5:1139:U:O4'	2.21	0.40
1:5:1202:A:O2'	1:5:1249:A:N6	2.53	0.40
1:5:1400:G:OP2	6:CC:107:ARG:NH1	2.44	0.40
1:5:2249:A:O2'	1:5:2250:A:H5''	2.21	0.40
1:5:2915:G:C6	5:BB:251:CYS:SG	3.14	0.40
1:5:3138:A:C2	1:5:3249:U:C2	3.09	0.40
1:5:3188:G:C6	1:5:3189:C:C4	3.10	0.40
1:5:3200:G:H2'	1:5:3201:C:C6	2.56	0.40
2:7:79:A:H2'	2:7:80:G:O4'	2.22	0.40
5:BB:252:ILE:HG21	5:BB:260:VAL:HG13	2.03	0.40
6:CC:349:ILE:CB	6:CC:350:LYS:HG3	2.51	0.40
17:OO:184[A]:ALA:C	17:OO:187[A]:GLY:H	2.29	0.40
22:TT:65:TYR:CE1	22:TT:73:GLY:HA3	2.56	0.40
37:ii:12:ASN:O	37:ii:13:LYS:O	2.39	0.40
54:G:141:ILE:HD11	54:G:156:TYR:O	2.22	0.40
54:G:155:ASP:H	81:2:78:A:P	2.30	0.40
55:H:173:TYR:CZ	55:H:177:THR:HG21	2.55	0.40
64:Q:7:VAL:HG11	64:Q:91:ALA:HB1	2.03	0.40
70:W:76:SER:OG	81:2:1100:G:H5''	2.21	0.40
81:2:107:C:H5''	81:2:382:G:C2'	2.52	0.40
81:2:1765:G:O2'	81:2:1766:G:OP2	2.34	0.40
82:4:6128:A:C4	82:4:6159:G:N2	2.89	0.40
83:1:47:SER:HB2	83:1:48:ALA:HB3	2.03	0.40
83:1:584:ASN:HB3	83:1:692:THR:O	2.11	0.40
1:5:317:A:H2'	1:5:318:A:C8	2.56	0.40
1:5:649:G:O2'	1:5:757:A:N1	2.54	0.40
1:5:768:U:H2'	1:5:769:G:O4'	2.22	0.40
1:5:781:A:H2'	1:5:782:U:C6	2.57	0.40
1:5:1145:G:N1	1:5:1146:C:C4	2.90	0.40
1:5:1475:A:C5	1:5:1476:C:C5	3.10	0.40
1:5:1484:G:O2'	1:5:1485:G:H5'	2.21	0.40
1:5:1727:G:C2	1:5:1728:C:C2	3.10	0.40
1:5:1870:A:O2'	24:VV:49:LEU:HD21	2.21	0.40
1:5:1927:G:C5	1:5:2054:U:O2	2.75	0.40
1:5:2057:A:O2'	1:5:2058:A:H5'	2.21	0.40
1:5:2063:C:H2'	1:5:2064:G:O4'	2.21	0.40
1:5:2173:C:N3	1:5:2208:G:C6	2.90	0.40
1:5:2592:G:C2	1:5:2593:C:C2	3.10	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2944:A:N6	1:5:2945:G:C6	2.89	0.40
1:5:2960:U:H1'	18:PP:69:ARG:NH2	2.37	0.40
1:5:3008:A:C5'	24:VV:12:ARG:HB2	2.51	0.40
7:DD:19:PRO:O	7:DD:20:PHE:C	2.64	0.40
10:GG:162:VAL:O	10:GG:163:ILE:C	2.64	0.40
24:VV:37:MET:HE1	24:VV:73:VAL:CG1	2.51	0.40
24:VV:62:VAL:HG23	24:VV:74:MET:HE2	2.04	0.40
27:YY:54:ASP:CG	27:YY:70:VAL:CG2	2.95	0.40
37:ii:13:LYS:HA	37:ii:14:GLY:HA2	1.86	0.40
49:B:120:LEU:HD12	49:B:121:ILE:N	2.37	0.40
51:D:98:ALA:HA	51:D:188:ILE:HD13	2.04	0.40
58:K:54:PHE:CD1	58:K:54:PHE:N	2.89	0.40
59:L:122:ILE:C	59:L:123:VAL:HG23	2.47	0.40
81:2:50:C:OP1	81:2:422:G:N2	2.53	0.40
81:2:89:G:C2	81:2:90:C:C2	3.09	0.40
81:2:207:U:N3	81:2:208:U:C4	2.90	0.40
81:2:429:G:N2	81:2:430:C:C2	2.90	0.40
81:2:760:A:C6	81:2:761:G:C4	3.09	0.40
81:2:886:A:O2'	81:2:887:U:O4'	2.38	0.40
81:2:947:G:C2	81:2:948:C:C2	3.10	0.40
81:2:1209:C:C2	81:2:1452:G:N2	2.89	0.40
82:4:6040:U:C5	82:4:6041:C:C5	3.10	0.40
82:4:6120:U:C2'	82:4:6120:U:O2	2.69	0.40
82:4:6173:C:O2	82:4:6173:C:H2'	2.20	0.40
82:4:6199:A:HO2'	82:4:6200:A:H5'	1.69	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
4	AA	247/249 (99%)	198 (80%)	35 (14%)	14 (6%)	1 13

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
5	BB	382/384 (100%)	311 (81%)	52 (14%)	19 (5%)	1	16
6	CC	357/360 (99%)	273 (76%)	57 (16%)	27 (8%)	1	9
7	DD	293/295 (99%)	254 (87%)	27 (9%)	12 (4%)	2	19
8	EE	157/170 (92%)	127 (81%)	22 (14%)	8 (5%)	1	15
9	FF	220/222 (99%)	182 (83%)	25 (11%)	13 (6%)	1	13
10	GG	231/233 (99%)	198 (86%)	25 (11%)	8 (4%)	3	23
11	HH	189/191 (99%)	168 (89%)	19 (10%)	2 (1%)	11	43
12	II	203/216 (94%)	179 (88%)	20 (10%)	4 (2%)	6	32
13	JJ	166/168 (99%)	136 (82%)	20 (12%)	10 (6%)	1	13
14	LL	195/197 (99%)	170 (87%)	17 (9%)	8 (4%)	2	19
15	MM	134/136 (98%)	124 (92%)	5 (4%)	5 (4%)	2	21
16	NN	200/202 (99%)	172 (86%)	25 (12%)	3 (2%)	8	37
17	OO	196/198 (99%)	88 (45%)	40 (20%)	68 (35%)	0	0
18	PP	178/180 (99%)	152 (85%)	19 (11%)	7 (4%)	2	20
19	QQ	182/184 (99%)	155 (85%)	23 (13%)	4 (2%)	5	30
20	RR	186/188 (99%)	155 (83%)	25 (13%)	6 (3%)	3	24
21	SS	167/169 (99%)	144 (86%)	18 (11%)	5 (3%)	3	25
22	TT	156/158 (99%)	126 (81%)	22 (14%)	8 (5%)	1	15
23	UU	98/100 (98%)	86 (88%)	12 (12%)	0	100	100
24	VV	130/132 (98%)	115 (88%)	10 (8%)	5 (4%)	2	21
25	WW	60/62 (97%)	53 (88%)	7 (12%)	0	100	100
26	XX	119/121 (98%)	107 (90%)	11 (9%)	1 (1%)	16	49
27	YY	123/125 (98%)	104 (85%)	16 (13%)	3 (2%)	4	29
28	ZZ	132/134 (98%)	107 (81%)	17 (13%)	8 (6%)	1	13
29	aa	145/147 (99%)	121 (83%)	17 (12%)	7 (5%)	2	16
30	bb	55/57 (96%)	48 (87%)	5 (9%)	2 (4%)	2	22
31	cc	95/97 (98%)	83 (87%)	12 (13%)	0	100	100
32	dd	104/106 (98%)	90 (86%)	9 (9%)	5 (5%)	2	16
33	ee	120/122 (98%)	104 (87%)	15 (12%)	1 (1%)	16	49
34	ff	103/105 (98%)	94 (91%)	8 (8%)	1 (1%)	12	45
35	gg	119/121 (98%)	102 (86%)	9 (8%)	8 (7%)	1	11

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
36	hh	114/116 (98%)	100 (88%)	11 (10%)	3 (3%)	4	27
37	ii	96/98 (98%)	75 (78%)	16 (17%)	5 (5%)	1	15
38	jj	83/85 (98%)	66 (80%)	16 (19%)	1 (1%)	10	41
39	kk	74/76 (97%)	55 (74%)	16 (22%)	3 (4%)	2	19
40	ll	47/49 (96%)	38 (81%)	7 (15%)	2 (4%)	2	18
41	mm	49/51 (96%)	41 (84%)	7 (14%)	1 (2%)	6	32
42	nn	23/25 (92%)	22 (96%)	1 (4%)	0	100	100
43	oo	99/101 (98%)	74 (75%)	21 (21%)	4 (4%)	2	20
44	pp	85/87 (98%)	62 (73%)	14 (16%)	9 (11%)	0	5
45	qq	215/217 (99%)	166 (77%)	33 (15%)	16 (7%)	1	9
46	rr	193/195 (99%)	147 (76%)	30 (16%)	16 (8%)	0	8
48	A	204/206 (99%)	160 (78%)	31 (15%)	13 (6%)	1	12
49	B	212/214 (99%)	162 (76%)	43 (20%)	7 (3%)	3	24
50	C	215/217 (99%)	170 (79%)	34 (16%)	11 (5%)	1	15
51	D	221/223 (99%)	190 (86%)	24 (11%)	7 (3%)	3	24
52	E	258/260 (99%)	220 (85%)	26 (10%)	12 (5%)	2	17
53	F	204/206 (99%)	168 (82%)	29 (14%)	7 (3%)	3	23
54	G	224/226 (99%)	188 (84%)	28 (12%)	8 (4%)	2	22
55	H	182/184 (99%)	149 (82%)	21 (12%)	12 (7%)	1	12
56	I	184/200 (92%)	148 (80%)	29 (16%)	7 (4%)	2	21
57	J	180/182 (99%)	151 (84%)	19 (11%)	10 (6%)	1	14
58	K	94/96 (98%)	78 (83%)	12 (13%)	4 (4%)	2	18
59	L	153/155 (99%)	122 (80%)	24 (16%)	7 (5%)	2	17
60	M	120/122 (98%)	94 (78%)	22 (18%)	4 (3%)	3	24
61	N	148/150 (99%)	129 (87%)	17 (12%)	2 (1%)	9	38
62	O	125/127 (98%)	104 (83%)	18 (14%)	3 (2%)	4	29
63	P	121/123 (98%)	98 (81%)	16 (13%)	7 (6%)	1	13
64	Q	139/141 (99%)	120 (86%)	12 (9%)	7 (5%)	1	16
65	R	127/129 (98%)	99 (78%)	23 (18%)	5 (4%)	2	20
66	S	143/145 (99%)	117 (82%)	21 (15%)	5 (4%)	3	23
67	T	141/143 (99%)	126 (89%)	13 (9%)	2 (1%)	9	38

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
68	U	104/106 (98%)	92 (88%)	9 (9%)	3 (3%)	3	26
69	V	85/87 (98%)	66 (78%)	14 (16%)	5 (6%)	1	13
70	W	127/129 (98%)	104 (82%)	18 (14%)	5 (4%)	2	20
71	X	143/145 (99%)	112 (78%)	20 (14%)	11 (8%)	1	9
72	Y	132/134 (98%)	111 (84%)	13 (10%)	8 (6%)	1	13
73	Z	68/70 (97%)	57 (84%)	8 (12%)	3 (4%)	2	18
74	a	98/100 (98%)	68 (69%)	13 (13%)	17 (17%)	0	1
75	b	80/82 (98%)	61 (76%)	15 (19%)	4 (5%)	1	16
76	c	61/63 (97%)	56 (92%)	5 (8%)	0	100	100
77	d	51/53 (96%)	40 (78%)	11 (22%)	0	100	100
78	e	53/55 (96%)	46 (87%)	4 (8%)	3 (6%)	1	13
79	f	67/69 (97%)	49 (73%)	12 (18%)	6 (9%)	0	6
80	g	312/324 (96%)	251 (80%)	50 (16%)	11 (4%)	3	23
83	1	825/827 (100%)	654 (79%)	120 (14%)	51 (6%)	1	12
All	All	12121/12322 (98%)	9932 (82%)	1590 (13%)	599 (5%)	3	16

All (599) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	AA	10	LYS
4	AA	34	TYR
4	AA	92	LYS
4	AA	181	LYS
4	AA	197	PRO
4	AA	222	ALA
5	BB	4	ARG
5	BB	222	LYS
5	BB	226	PHE
5	BB	255	TRP
6	CC	23	PRO
6	CC	84	ARG
6	CC	105	THR
6	CC	148	ILE
6	CC	149	PRO
6	CC	182	VAL
6	CC	292	SER
6	CC	352	SER

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Mol	Chain	Res	Type
6	CC	353	ALA
7	DD	20	PHE
8	EE	13	VAL
8	EE	14	PRO
8	EE	66	PRO
8	EE	127	LYS
8	EE	129	ILE
9	FF	90	ASN
9	FF	139	SER
9	FF	156	GLN
9	FF	161	SER
9	FF	214	PRO
9	FF	216	LYS
9	FF	219	HIS
9	FF	230	GLU
10	GG	75	ALA
10	GG	126	PRO
10	GG	163	ILE
11	HH	3	TYR
12	II	24	ARG
12	II	145	LYS
13	JJ	8	PRO
13	JJ	64	LYS
14	LL	3	ILE
14	LL	47	ALA
16	NN	75	VAL
17	OO	20[A]	LEU
17	OO	24[A]	VAL
17	OO	32[A]	GLN
17	OO	34[A]	ILE
17	OO	35[A]	VAL
17	OO	40[A]	GLU
17	OO	42[A]	LEU
17	OO	45[A]	SER
17	OO	50[A]	ARG
17	OO	51[A]	ASN
17	OO	56[A]	HIS
17	OO	64[A]	ALA
17	OO	66[A]	ASN
17	OO	67[A]	LYS
17	OO	84[A]	ALA
17	OO	86[A]	ARG

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Mol	Chain	Res	Type
17	OO	94[A]	ALA
17	OO	95[A]	ARG
17	OO	98[A]	ALA
17	OO	99[A]	ALA
17	OO	100[A]	LEU
17	OO	111[A]	PRO
17	OO	112[A]	PRO
17	OO	121[A]	VAL
17	OO	125[A]	LEU
17	OO	130[A]	LEU
17	OO	139[A]	LEU
17	OO	140[A]	GLY
17	OO	142[A]	LEU
17	OO	144[A]	THR
17	OO	157[A]	LEU
17	OO	158[A]	GLU
17	OO	161[A]	ARG
17	OO	162[A]	LYS
17	OO	177[A]	ALA
17	OO	183[A]	SER
17	OO	189[A]	GLU
17	OO	191[A]	SER
17	OO	193[A]	LYS
19	QQ	23	ASN
20	RR	22	ILE
20	RR	135	LYS
21	SS	18	SER
21	SS	133	ALA
24	VV	44	SER
27	YY	104	VAL
28	ZZ	9	LYS
28	ZZ	87	LEU
28	ZZ	89	VAL
28	ZZ	102	GLU
29	aa	34	MET
29	aa	50	PRO
29	aa	78	LEU
29	aa	93	SER
32	dd	84	ASP
34	ff	104	PRO
35	gg	7	PHE
35	gg	56	THR

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Mol	Chain	Res	Type
35	gg	60	ARG
35	gg	75	ALA
35	gg	77	GLY
35	gg	82	ALA
37	ii	13	LYS
37	ii	29	ARG
39	kk	51	LEU
40	ll	3	ALA
43	oo	6	LYS
43	oo	61	LYS
44	pp	37	TYR
44	pp	56	SER
44	pp	63	THR
45	qq	24	LYS
45	qq	119	GLN
45	qq	120	VAL
45	qq	121	PRO
45	qq	124	LEU
45	qq	172	VAL
45	qq	213	ALA
46	rr	70	SER
46	rr	106	LYS
46	rr	156	SER
48	A	130	ALA
48	A	197	ILE
49	B	35	PRO
49	B	100	PHE
50	C	57	SER
50	C	59	GLU
50	C	83	ASP
50	C	175	ILE
51	D	164	VAL
52	E	117	GLU
52	E	129	VAL
53	F	59	SER
54	G	154	ARG
55	H	32	PRO
55	H	64	VAL
55	H	74	GLN
56	I	22	ARG
56	I	52	ASN
57	J	171	ARG

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Mol	Chain	Res	Type
58	K	81	ASN
58	K	88	PRO
59	L	3	THR
59	L	105	LYS
59	L	133	LYS
62	O	91	SER
63	P	20	VAL
63	P	29	PRO
64	Q	40	GLN
65	R	26	MET
65	R	121	VAL
66	S	92	VAL
68	U	118	ILE
69	V	30	SER
70	W	57	ARG
71	X	4	GLY
71	X	12	ALA
71	X	42	PRO
71	X	63	GLN
71	X	64	PRO
71	X	131	SER
72	Y	30	PRO
74	a	10	ARG
74	a	18	VAL
74	a	75	ILE
74	a	81	ALA
74	a	86	VAL
75	b	21	LEU
78	e	11	ALA
79	f	111	GLU
79	f	143	HIS
80	g	293	ASP
83	1	23	SER
83	1	46	ILE
83	1	162	ARG
83	1	209	VAL
83	1	247	ASP
83	1	251	ASN
83	1	305	ILE
83	1	382	VAL
83	1	406	LYS
83	1	444	PRO

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Mol	Chain	Res	Type
83	1	548	ASP
83	1	559	PRO
83	1	578	LYS
83	1	579	SER
83	1	581	ASN
83	1	591	GLU
83	1	683	SER
83	1	691	VAL
83	1	695	ALA
83	1	702	GLY
83	1	707	PRO
83	1	721	ASP
83	1	722	PRO
83	1	727	PRO
4	AA	33	ASP
4	AA	104	LEU
4	AA	144	ASN
4	AA	154	ALA
5	BB	140	ASN
5	BB	252	ILE
5	BB	269	GLN
5	BB	317	ILE
5	BB	351	LEU
5	BB	382	THR
6	CC	14	GLU
6	CC	293	THR
6	CC	311	HIS
6	CC	341	SER
6	CC	342	LYS
6	CC	343	LYS
7	DD	5	LYS
7	DD	26	GLY
8	EE	115	ALA
8	EE	128	GLU
9	FF	104	ARG
10	GG	74	ILE
12	II	187	ALA
13	JJ	25	GLU
13	JJ	114	ILE
14	LL	6	ASN
14	LL	28	GLN
14	LL	190	LYS

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Mol	Chain	Res	Type
15	MM	36	VAL
17	OO	6[A]	PRO
17	OO	15[A]	HIS
17	OO	16[A]	LEU
17	OO	59[A]	LEU
17	OO	105[A]	VAL
17	OO	123[A]	GLN
17	OO	146[A]	VAL
17	OO	159[A]	GLU
17	OO	173[A]	LYS
17	OO	174[A]	ALA
17	OO	187[A]	GLY
17	OO	188[A]	THR
17	OO	195[A]	ALA
17	OO	198[A]	GLY
18	PP	166	ALA
22	TT	12	ARG
22	TT	18	ASP
22	TT	46	GLY
22	TT	80	VAL
24	VV	21	ALA
24	VV	54	LEU
27	YY	55	GLU
28	ZZ	5	LEU
28	ZZ	59	ALA
30	bb	25	LYS
30	bb	26	THR
37	ii	30	LYS
43	oo	14	GLY
44	pp	47	VAL
44	pp	48	LYS
44	pp	60	CYS
45	qq	9	VAL
45	qq	125	GLY
46	rr	38	GLN
46	rr	94	SER
46	rr	95	LEU
46	rr	126	VAL
48	A	72	ASP
48	A	97	PRO
48	A	120	LEU
50	C	65	SER

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Mol	Chain	Res	Type
50	C	149	TRP
50	C	153	LEU
51	D	217	VAL
52	E	68	ARG
52	E	119	ALA
52	E	120	SER
52	E	186	GLY
52	E	201	HIS
52	E	205	PHE
53	F	166	PRO
53	F	206	GLY
54	G	122	GLU
54	G	156	TYR
55	H	10	SER
55	H	13	PRO
55	H	53	GLY
55	H	113	PRO
56	I	10	LYS
56	I	16	ALA
56	I	17	LYS
56	I	153	ILE
57	J	65	LYS
57	J	118	LEU
60	M	82	VAL
61	N	70	LYS
61	N	133	SER
64	Q	27	GLY
64	Q	116	LEU
64	Q	138	PHE
65	R	80	ARG
65	R	127	VAL
66	S	26	ILE
67	T	43	ASN
70	W	83	ILE
72	Y	61	ARG
73	Z	97	LYS
74	a	16	GLY
74	a	85	ARG
75	b	3	LEU
79	f	88	PRO
79	f	89	LYS
80	g	77	ASP

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Mol	Chain	Res	Type
80	g	244	LYS
83	1	45	ILE
83	1	155	VAL
83	1	241	MET
83	1	245	TRP
83	1	280	PRO
83	1	497	ASN
83	1	724	ILE
4	AA	180	LEU
4	AA	201	GLY
5	BB	5	LYS
5	BB	22	ALA
5	BB	36	ASP
5	BB	173	GLN
5	BB	174	LYS
6	CC	106	TRP
6	CC	140	HIS
6	CC	201	GLN
6	CC	268	ALA
6	CC	269	SER
6	CC	305	ALA
6	CC	320	ASN
7	DD	259	LYS
10	GG	38	ALA
13	JJ	138	VAL
13	JJ	144	CYS
13	JJ	168	ASP
15	MM	5	SER
15	MM	29	ALA
16	NN	97	SER
17	OO	13[A]	LYS
17	OO	48[A]	PHE
17	OO	63[A]	THR
17	OO	114[A]	ASP
17	OO	143[A]	SER
17	OO	167[A]	GLU
18	PP	17	ALA
18	PP	161	SER
19	QQ	183	ALA
20	RR	129	GLY
21	SS	13	ARG
21	SS	24	LEU

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Mol	Chain	Res	Type
22	TT	47	SER
27	YY	103	LYS
28	ZZ	70	PRO
29	aa	48	TYR
35	gg	57	LEU
37	ii	28	TYR
39	kk	6	ALA
39	kk	40	GLN
45	qq	71	ALA
45	qq	113	SER
45	qq	129	SER
45	qq	209	THR
46	rr	28	PHE
46	rr	68	PHE
46	rr	69	ILE
46	rr	111	ALA
46	rr	197	GLN
48	A	94	GLY
48	A	195	TRP
49	B	209	ASN
49	B	223	PHE
50	C	151	THR
51	D	44	THR
51	D	163	PRO
51	D	178	ARG
52	E	77	ARG
52	E	127	LYS
52	E	195	ILE
53	F	77	GLY
53	F	83	ARG
55	H	132	PRO
60	M	78	PRO
63	P	12	PHE
64	Q	14	LYS
65	R	100	LEU
69	V	4	ASP
69	V	44	ARG
70	W	78	ARG
71	X	47	SER
72	Y	64	TYR
74	a	12	LYS
74	a	20	PRO

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Mol	Chain	Res	Type
74	a	33	ASP
74	a	49	ALA
74	a	51	ARG
74	a	84	VAL
78	e	61	SER
79	f	97	LYS
80	g	4	SER
80	g	52	GLU
80	g	54	GLN
83	1	29	ASP
83	1	379	MET
83	1	653	VAL
4	AA	103	PRO
5	BB	227	GLU
6	CC	131	VAL
6	CC	338	LYS
6	CC	351	PRO
7	DD	21	ARG
7	DD	44	TYR
10	GG	24	PRO
10	GG	32	ASN
13	JJ	10	ARG
14	LL	4	SER
14	LL	155	GLU
15	MM	6	VAL
16	NN	81	TYR
17	OO	39[A]	ALA
17	OO	77[A]	PRO
17	OO	83[A]	LYS
17	OO	175[A]	TYR
21	SS	167	ARG
22	TT	146	ASN
24	VV	82	SER
26	XX	64	GLU
29	aa	124	ILE
32	dd	15	ASN
32	dd	28	ARG
32	dd	82	GLU
33	ee	123	LYS
36	hh	84	LYS
36	hh	85	THR
37	ii	63	ASN

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Mol	Chain	Res	Type
38	jj	20	LYS
40	ll	20	ASN
41	mm	79	GLU
44	pp	57	CYS
44	pp	61	ASN
45	qq	61	PRO
46	rr	189	VAL
48	A	26	ALA
48	A	103	THR
48	A	167	LYS
48	A	193	GLN
49	B	210	VAL
50	C	41	VAL
51	D	93	ASP
52	E	223	ASN
54	G	165	GLY
55	H	111	LYS
57	J	67	PRO
57	J	69	ARG
57	J	147	MET
59	L	30	LYS
59	L	55	ASP
62	O	18	ARG
63	P	101	VAL
64	Q	115	THR
66	S	12	GLN
67	T	50	SER
68	U	71	PRO
69	V	22	ARG
71	X	24	TRP
71	X	89	ASN
73	Z	58	ARG
74	a	8	ASN
80	g	288	TYR
83	1	208	THR
83	1	246	GLY
83	1	589	LYS
83	1	675	PRO
83	1	681	MET
83	1	795	GLN
4	AA	56	ALA
5	BB	155	ALA

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Mol	Chain	Res	Type
5	BB	383	LEU
6	CC	317	PRO
7	DD	6	ASP
7	DD	258	LYS
7	DD	276	LYS
8	EE	8	TYR
9	FF	205	SER
11	HH	110	LYS
14	LL	130	GLY
15	MM	41	GLN
17	OO	38[A]	ARG
18	PP	158	GLU
18	PP	165	VAL
19	QQ	168	THR
19	QQ	179	ARG
20	RR	53	LYS
22	TT	127	GLN
24	VV	53	SER
28	ZZ	19	ALA
29	aa	49	HIS
36	hh	86	ARG
44	pp	51	ALA
45	qq	7	SER
45	qq	25	LYS
46	rr	80	PRO
46	rr	149	ARG
48	A	28	ASN
49	B	145	LYS
50	C	226	THR
53	F	82	LYS
54	G	173	PRO
54	G	177	ARG
55	H	134	GLU
56	I	40	THR
57	J	18	PRO
57	J	134	ILE
58	K	83	PRO
63	P	69	GLU
63	P	121	ILE
66	S	14	ILE
68	U	21	LYS
72	Y	36	SER

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Mol	Chain	Res	Type
72	Y	63	GLN
73	Z	73	GLY
74	a	83	ILE
75	b	62	VAL
80	g	139	GLY
80	g	168	ASP
83	1	44	GLY
83	1	792	ALA
6	CC	78	GLY
7	DD	7	ILE
7	DD	125	VAL
13	JJ	108	GLU
17	OO	160[A]	LYS
18	PP	160	ALA
20	RR	130	ASN
22	TT	69	LYS
43	oo	95	GLY
50	C	44	THR
53	F	221	ARG
54	G	8	PRO
57	J	120	LYS
58	K	94	GLY
59	L	4	GLU
63	P	28	MET
71	X	130	VAL
72	Y	29	HIS
72	Y	51	GLU
72	Y	66	GLY
74	a	82	ARG
78	e	47	VAL
80	g	75	SER
83	1	372	CYS
83	1	374	PRO
83	1	481	MET
83	1	486	SER
83	1	487	PRO
5	BB	223	GLY
7	DD	4	ILE
9	FF	175	ILE
9	FF	213	VAL
17	OO	85[A]	VAL
35	gg	59	PRO

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Mol	Chain	Res	Type
46	rr	133	GLY
69	V	82	VAL
83	1	580	PRO
13	JJ	65	ILE
17	OO	71[A]	PRO
32	dd	66	GLY
55	H	8	ILE
59	L	7	VAL
60	M	97	ILE
66	S	76	PRO
70	W	29	PRO
71	X	53	VAL
75	b	39	GLY
83	1	558	PRO
83	1	827	GLY
12	II	93	PRO
18	PP	117	ILE
20	RR	94	VAL
48	A	158	VAL
49	B	206	PRO
51	D	130	GLY
54	G	70	PRO
60	M	48	GLY
64	Q	39	VAL
74	a	36	ILE
79	f	102	VAL
80	g	138	VAL
9	FF	188	VAL
10	GG	35	ILE
17	OO	76[A]	ALA
55	H	98	ILE
62	O	118	VAL
83	1	808	PRO
57	J	162	SER
70	W	76	SER

5.3.2 Protein sidechains ⓘ

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

The Analysed column shows the number of residues for which the sidechain conformation was

analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	AA	190/190 (100%)	170 (90%)	20 (10%)	6	29
5	BB	323/323 (100%)	276 (85%)	47 (15%)	3	18
6	CC	288/291 (99%)	252 (88%)	36 (12%)	4	22
7	DD	243/243 (100%)	221 (91%)	22 (9%)	9	33
8	EE	139/147 (95%)	126 (91%)	13 (9%)	8	32
9	FF	188/188 (100%)	167 (89%)	21 (11%)	6	27
10	GG	192/194 (99%)	174 (91%)	18 (9%)	8	32
11	HH	173/173 (100%)	155 (90%)	18 (10%)	7	29
12	II	177/185 (96%)	157 (89%)	20 (11%)	5	26
13	JJ	144/144 (100%)	128 (89%)	16 (11%)	6	27
14	LL	162/162 (100%)	147 (91%)	15 (9%)	8	32
15	MM	109/109 (100%)	93 (85%)	16 (15%)	3	17
16	NN	175/175 (100%)	152 (87%)	23 (13%)	4	21
17	OO	163/163 (100%)	131 (80%)	32 (20%)	1	8
18	PP	148/148 (100%)	127 (86%)	21 (14%)	3	19
19	QQ	150/150 (100%)	137 (91%)	13 (9%)	9	34
20	RR	152/152 (100%)	145 (95%)	7 (5%)	24	51
21	SS	154/154 (100%)	144 (94%)	10 (6%)	15	43
22	TT	135/135 (100%)	116 (86%)	19 (14%)	3	19
23	UU	90/90 (100%)	89 (99%)	1 (1%)	65	74
24	VV	101/101 (100%)	89 (88%)	12 (12%)	5	24
25	WW	54/54 (100%)	51 (94%)	3 (6%)	19	47
26	XX	106/106 (100%)	92 (87%)	14 (13%)	4	21
27	YY	111/111 (100%)	99 (89%)	12 (11%)	6	28
28	ZZ	115/115 (100%)	105 (91%)	10 (9%)	9	34
29	aa	117/117 (100%)	106 (91%)	11 (9%)	8	32
30	bb	45/45 (100%)	44 (98%)	1 (2%)	45	65
31	cc	79/79 (100%)	72 (91%)	7 (9%)	9	33
32	dd	95/95 (100%)	88 (93%)	7 (7%)	13	39
33	ee	106/106 (100%)	98 (92%)	8 (8%)	12	39
34	ff	90/90 (100%)	82 (91%)	8 (9%)	9	33

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
35	gg	102/102 (100%)	97 (95%)	5 (5%)	22	49
36	hh	104/104 (100%)	99 (95%)	5 (5%)	23	50
37	ii	79/79 (100%)	73 (92%)	6 (8%)	12	39
38	jj	69/69 (100%)	62 (90%)	7 (10%)	7	30
39	kk	68/68 (100%)	61 (90%)	7 (10%)	7	30
40	ll	44/44 (100%)	40 (91%)	4 (9%)	9	33
41	mm	46/46 (100%)	43 (94%)	3 (6%)	15	43
42	nn	23/23 (100%)	19 (83%)	4 (17%)	2	12
43	oo	86/86 (100%)	76 (88%)	10 (12%)	5	25
44	pp	69/69 (100%)	57 (83%)	12 (17%)	2	12
45	qq	198/198 (100%)	181 (91%)	17 (9%)	10	34
46	rr	162/162 (100%)	149 (92%)	13 (8%)	11	37
48	A	174/174 (100%)	162 (93%)	12 (7%)	14	41
49	B	196/196 (100%)	177 (90%)	19 (10%)	8	31
50	C	176/176 (100%)	149 (85%)	27 (15%)	3	16
51	D	185/185 (100%)	168 (91%)	17 (9%)	8	33
52	E	223/223 (100%)	202 (91%)	21 (9%)	8	32
53	F	174/174 (100%)	161 (92%)	13 (8%)	12	39
54	G	192/192 (100%)	181 (94%)	11 (6%)	18	46
55	H	164/164 (100%)	150 (92%)	14 (8%)	10	35
56	I	148/158 (94%)	133 (90%)	15 (10%)	7	30
57	J	153/153 (100%)	137 (90%)	16 (10%)	6	29
58	K	88/88 (100%)	81 (92%)	7 (8%)	11	37
59	L	136/136 (100%)	126 (93%)	10 (7%)	13	39
60	M	97/97 (100%)	91 (94%)	6 (6%)	16	44
61	N	127/127 (100%)	114 (90%)	13 (10%)	7	30
62	O	96/96 (100%)	88 (92%)	8 (8%)	10	35
63	P	105/105 (100%)	95 (90%)	10 (10%)	8	32
64	Q	117/117 (100%)	108 (92%)	9 (8%)	12	38
65	R	117/117 (100%)	110 (94%)	7 (6%)	17	45
66	S	128/128 (100%)	115 (90%)	13 (10%)	7	30

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
67	T	117/117 (100%)	112 (96%)	5 (4%)	26	52
68	U	96/96 (100%)	89 (93%)	7 (7%)	13	40
69	V	73/73 (100%)	68 (93%)	5 (7%)	14	42
70	W	110/110 (100%)	92 (84%)	18 (16%)	2	14
71	X	120/120 (100%)	108 (90%)	12 (10%)	7	30
72	Y	108/108 (100%)	98 (91%)	10 (9%)	8	32
73	Z	60/60 (100%)	57 (95%)	3 (5%)	22	49
74	a	85/85 (100%)	66 (78%)	19 (22%)	1	6
75	b	72/72 (100%)	66 (92%)	6 (8%)	10	35
76	c	55/55 (100%)	53 (96%)	2 (4%)	31	56
77	d	46/46 (100%)	43 (94%)	3 (6%)	15	43
78	e	49/49 (100%)	46 (94%)	3 (6%)	17	45
79	f	58/60 (97%)	46 (79%)	12 (21%)	1	7
80	g	265/270 (98%)	248 (94%)	17 (6%)	16	43
83	1	700/702 (100%)	610 (87%)	90 (13%)	4	22
All	All	10374/10414 (100%)	9340 (90%)	1034 (10%)	9	30

All (1034) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	AA	21	ARG
4	AA	32	LEU
4	AA	48	ILE
4	AA	49	VAL
4	AA	51	ASP
4	AA	92	LYS
4	AA	114	SER
4	AA	123	ARG
4	AA	126	LEU
4	AA	130	SER
4	AA	148	VAL
4	AA	161	ASP
4	AA	180	LEU
4	AA	190	ARG
4	AA	191	VAL
4	AA	193	ARG
4	AA	202	VAL

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Mol	Chain	Res	Type
4	AA	204	MET
4	AA	241	ARG
4	AA	243	THR
5	BB	7	GLU
5	BB	10	ARG
5	BB	14	LEU
5	BB	25	VAL
5	BB	45	SER
5	BB	54	SER
5	BB	56	ILE
5	BB	58	ARG
5	BB	60	LEU
5	BB	72	VAL
5	BB	76	VAL
5	BB	84	ILE
5	BB	87	VAL
5	BB	90	VAL
5	BB	101	SER
5	BB	102	LEU
5	BB	103	THR
5	BB	104	THR
5	BB	117	ARG
5	BB	125	SER
5	BB	162	VAL
5	BB	164	THR
5	BB	169	THR
5	BB	187	SER
5	BB	255	TRP
5	BB	262	TRP
5	BB	266	ARG
5	BB	272	TYR
5	BB	274	HIS
5	BB	278	ILE
5	BB	289	ASP
5	BB	290	ASP
5	BB	304	THR
5	BB	305	ILE
5	BB	306	THR
5	BB	323	ILE
5	BB	324	LEU
5	BB	325	LYS
5	BB	328	ILE

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Mol	Chain	Res	Type
5	BB	331	THR
5	BB	332	ARG
5	BB	336	VAL
5	BB	339	ARG
5	BB	355	THR
5	BB	361	THR
5	BB	370	PHE
5	BB	382	THR
6	CC	19	ASP
6	CC	31	ARG
6	CC	37	SER
6	CC	41	SER
6	CC	58	HIS
6	CC	76	ARG
6	CC	85	SER
6	CC	92	ASN
6	CC	93	MET
6	CC	98	ARG
6	CC	103	THR
6	CC	105	THR
6	CC	107	ARG
6	CC	122	THR
6	CC	134	LEU
6	CC	138	ARG
6	CC	148	ILE
6	CC	156	LEU
6	CC	175	HIS
6	CC	177	ASP
6	CC	180	LYS
6	CC	182	VAL
6	CC	198	ARG
6	CC	202	ARG
6	CC	206	LEU
6	CC	215	VAL
6	CC	230	VAL
6	CC	232	SER
6	CC	235	LEU
6	CC	238	LEU
6	CC	270	VAL
6	CC	298	VAL
6	CC	318	LEU
6	CC	339	LEU

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Mol	Chain	Res	Type
6	CC	346	GLN
6	CC	356	LEU
7	DD	4	ILE
7	DD	22	ARG
7	DD	28	THR
7	DD	51	LEU
7	DD	59	ASP
7	DD	67	SER
7	DD	70	THR
7	DD	75	LEU
7	DD	89	THR
7	DD	94	ASN
7	DD	101	THR
7	DD	116	ASP
7	DD	144	VAL
7	DD	154	THR
7	DD	155	THR
7	DD	179	ARG
7	DD	184	ASP
7	DD	195	LEU
7	DD	214	ASP
7	DD	230	ASP
7	DD	278	THR
7	DD	293	LEU
8	EE	48	LYS
8	EE	50	VAL
8	EE	62	LEU
8	EE	63	VAL
8	EE	74	LEU
8	EE	76	ARG
8	EE	77	VAL
8	EE	82	VAL
8	EE	111	ARG
8	EE	114	ARG
8	EE	126	LYS
8	EE	154	LEU
8	EE	174	LYS
9	FF	53	GLU
9	FF	71	SER
9	FF	75	SER
9	FF	81	VAL
9	FF	85	ARG

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Mol	Chain	Res	Type
9	FF	87	LYS
9	FF	90	ASN
9	FF	110	SER
9	FF	112	THR
9	FF	116	VAL
9	FF	118	LYS
9	FF	140	THR
9	FF	156	GLN
9	FF	181	LEU
9	FF	204	LEU
9	FF	218	LYS
9	FF	221	ILE
9	FF	225	SER
9	FF	226	PHE
9	FF	233	ILE
9	FF	236	LEU
10	GG	28	SER
10	GG	40	GLN
10	GG	62	LYS
10	GG	70	VAL
10	GG	123	GLU
10	GG	130	VAL
10	GG	135	LEU
10	GG	154	ASN
10	GG	155	ASP
10	GG	157	ASP
10	GG	165	LEU
10	GG	168	LEU
10	GG	184	ARG
10	GG	196	VAL
10	GG	217	ILE
10	GG	222	LEU
10	GG	231	HIS
10	GG	240	LYS
11	HH	5	GLN
11	HH	24	ILE
11	HH	41	ILE
11	HH	44	THR
11	HH	57	VAL
11	HH	80	THR
11	HH	83	THR
11	HH	101	VAL

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Mol	Chain	Res	Type
11	HH	118	LEU
11	HH	132	VAL
11	HH	143	GLU
11	HH	157	ASN
11	HH	168	ARG
11	HH	170	LYS
11	HH	172	ILE
11	HH	173	ARG
11	HH	186	LEU
11	HH	189	GLU
12	II	7	ARG
12	II	24	ARG
12	II	30	LYS
12	II	33	ILE
12	II	40	LYS
12	II	52	LEU
12	II	57	LEU
12	II	88	ARG
12	II	90	ARG
12	II	91	VAL
12	II	115	MET
12	II	140	THR
12	II	142	ASP
12	II	144	ASN
12	II	154	ARG
12	II	163	GLN
12	II	165	ILE
12	II	169	LYS
12	II	193	ASP
12	II	200	LEU
13	JJ	12	LEU
13	JJ	17	LEU
13	JJ	30	LEU
13	JJ	39	GLN
13	JJ	44	THR
13	JJ	56	THR
13	JJ	80	LEU
13	JJ	92	ARG
13	JJ	99	THR
13	JJ	106	ILE
13	JJ	114	ILE
13	JJ	125	MET

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Mol	Chain	Res	Type
13	JJ	130	VAL
13	JJ	142	LYS
13	JJ	146	SER
13	JJ	154	THR
14	LL	5	LYS
14	LL	7	LEU
14	LL	24	VAL
14	LL	31	LYS
14	LL	42	LYS
14	LL	49	ARG
14	LL	54	LEU
14	LL	58	VAL
14	LL	67	ARG
14	LL	69	VAL
14	LL	110	ASP
14	LL	120	GLN
14	LL	124	ILE
14	LL	136	GLU
14	LL	194	GLU
15	MM	2	SER
15	MM	5	SER
15	MM	8	LYS
15	MM	20	VAL
15	MM	21	VAL
15	MM	22	LEU
15	MM	34	THR
15	MM	50	THR
15	MM	51	THR
15	MM	53	VAL
15	MM	63	VAL
15	MM	64	VAL
15	MM	69	THR
15	MM	77	LYS
15	MM	106	ARG
15	MM	121	LEU
16	NN	10	LEU
16	NN	14	LYS
16	NN	19	LEU
16	NN	22	LEU
16	NN	38	ARG
16	NN	41	ARG
16	NN	50	ARG

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Mol	Chain	Res	Type
16	NN	62	TYR
16	NN	64	VAL
16	NN	80	THR
16	NN	83	LYS
16	NN	89	VAL
16	NN	97	SER
16	NN	98	LEU
16	NN	105	ARG
16	NN	126	THR
16	NN	131	GLU
16	NN	133	ILE
16	NN	134	LEU
16	NN	136	ASP
16	NN	151	ILE
16	NN	183	THR
16	NN	196	THR
17	OO	5[A]	GLU
17	OO	7[A]	VAL
17	OO	20[A]	LEU
17	OO	23[A]	THR
17	OO	24[A]	VAL
17	OO	26[A]	LYS
17	OO	33[A]	LYS
17	OO	34[A]	ILE
17	OO	42[A]	LEU
17	OO	43[A]	ASN
17	OO	47[A]	GLU
17	OO	59[A]	LEU
17	OO	60[A]	ARG
17	OO	69[A]	ARG
17	OO	80[A]	ILE
17	OO	81[A]	PHE
17	OO	82[A]	TYR
17	OO	107[A]	GLU
17	OO	114[A]	ASP
17	OO	116[A]	LYS
17	OO	117[A]	LYS
17	OO	118[A]	ARG
17	OO	119[A]	VAL
17	OO	120[A]	VAL
17	OO	125[A]	LEU
17	OO	127[A]	VAL

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Mol	Chain	Res	Type
17	OO	130[A]	LEU
17	OO	144[A]	THR
17	OO	149[A]	LYS
17	OO	150[A]	TYR
17	OO	152[A]	ASP
17	OO	168[A]	TYR
18	PP	24	VAL
18	PP	26	TYR
18	PP	36	ILE
18	PP	41	LEU
18	PP	52	LEU
18	PP	55	GLN
18	PP	69	ARG
18	PP	94	LEU
18	PP	112	LEU
18	PP	118	GLN
18	PP	119	VAL
18	PP	120	ASN
18	PP	129	THR
18	PP	142	SER
18	PP	144	SER
18	PP	145	HIS
18	PP	153	LYS
18	PP	161	SER
18	PP	164	LYS
18	PP	168	LEU
18	PP	171	ARG
19	QQ	17	THR
19	QQ	32	LEU
19	QQ	41	ASP
19	QQ	49	LEU
19	QQ	74	GLU
19	QQ	95	GLU
19	QQ	99	THR
19	QQ	105	ARG
19	QQ	135	GLN
19	QQ	144	ARG
19	QQ	148	GLU
19	QQ	165	ILE
19	QQ	168	THR
20	RR	41	ILE
20	RR	91	SER

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Mol	Chain	Res	Type
20	RR	94	VAL
20	RR	99	LEU
20	RR	103	ARG
20	RR	105	LEU
20	RR	119	LEU
21	SS	10	ILE
21	SS	17	GLU
21	SS	45	LEU
21	SS	50	LYS
21	SS	85	SER
21	SS	97	VAL
21	SS	137	ARG
21	SS	169	THR
21	SS	171	PHE
21	SS	172	TYR
22	TT	18	ASP
22	TT	39	ILE
22	TT	55	LYS
22	TT	67	VAL
22	TT	72	VAL
22	TT	75	ILE
22	TT	78	LYS
22	TT	79	MET
22	TT	80	VAL
22	TT	83	ARG
22	TT	88	ARG
22	TT	93	VAL
22	TT	97	LYS
22	TT	126	VAL
22	TT	128	LEU
22	TT	131	GLN
22	TT	139	ARG
22	TT	141	VAL
22	TT	157	GLU
23	UU	37	LEU
24	VV	33	ASN
24	VV	37	MET
24	VV	48	ARG
24	VV	56	ASP
24	VV	57	MET
24	VV	63	LYS
24	VV	64	LYS

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Mol	Chain	Res	Type
24	VV	83	LYS
24	VV	98	ASN
24	VV	102	ILE
24	VV	120	LYS
24	VV	131	SER
25	WW	35	LYS
25	WW	39	LEU
25	WW	58	HIS
26	XX	26	VAL
26	XX	27	ARG
26	XX	31	SER
26	XX	36	LYS
26	XX	45	LYS
26	XX	56	ARG
26	XX	63	ILE
26	XX	68	THR
26	XX	82	LEU
26	XX	115	ARG
26	XX	133	LEU
26	XX	135	ILE
26	XX	137	ASN
26	XX	142	ILE
27	YY	17	LYS
27	YY	35	LEU
27	YY	50	ILE
27	YY	54	ASP
27	YY	55	GLU
27	YY	74	TYR
27	YY	76	LEU
27	YY	80	VAL
27	YY	95	VAL
27	YY	104	VAL
27	YY	112	ASP
27	YY	126	LEU
28	ZZ	34	LYS
28	ZZ	43	VAL
28	ZZ	46	ILE
28	ZZ	51	LEU
28	ZZ	56	ARG
28	ZZ	57	GLN
28	ZZ	72	ILE
28	ZZ	89	VAL

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Mol	Chain	Res	Type
28	ZZ	90	GLU
28	ZZ	109	GLU
29	aa	5	LEU
29	aa	16	SER
29	aa	27	LYS
29	aa	34	MET
29	aa	43	THR
29	aa	44	ASN
29	aa	65	GLN
29	aa	78	LEU
29	aa	115	LYS
29	aa	128	ARG
29	aa	130	VAL
30	bb	32	LEU
31	cc	16	LEU
31	cc	41	LEU
31	cc	54	SER
31	cc	61	MET
31	cc	83	LYS
31	cc	87	VAL
31	cc	93	LEU
32	dd	8	VAL
32	dd	33	VAL
32	dd	55	LEU
32	dd	64	ILE
32	dd	76	SER
32	dd	82	GLU
32	dd	105	HIS
33	ee	6	HIS
33	ee	19	ARG
33	ee	23	ASP
33	ee	33	ARG
33	ee	50	ILE
33	ee	75	LEU
33	ee	104	ASN
33	ee	119	VAL
34	ff	17	GLN
34	ff	20	LYS
34	ff	30	VAL
34	ff	33	GLU
34	ff	77	ASN
34	ff	81	VAL

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Mol	Chain	Res	Type
34	ff	98	VAL
34	ff	105	SER
35	gg	23	VAL
35	gg	62	TYR
35	gg	86	LYS
35	gg	95	ILE
35	gg	100	ILE
36	hh	20	GLN
36	hh	69	LEU
36	hh	81	ARG
36	hh	85	THR
36	hh	102	GLU
37	ii	18	ASN
37	ii	57	LEU
37	ii	58	ILE
37	ii	62	ARG
37	ii	76	ARG
37	ii	84	LYS
38	jj	5	THR
38	jj	7	SER
38	jj	15	SER
38	jj	17	THR
38	jj	21	ARG
38	jj	24	ARG
38	jj	59	THR
39	kk	5	ILE
39	kk	8	ILE
39	kk	25	VAL
39	kk	32	ASN
39	kk	51	LEU
39	kk	53	THR
39	kk	73	PHE
40	ll	6	SER
40	ll	27	ILE
40	ll	29	LEU
40	ll	49	MET
41	mm	83	LYS
41	mm	85	LEU
41	mm	113	ARG
42	nn	2	ARG
42	nn	6	ARG
42	nn	13	LEU

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Mol	Chain	Res	Type
42	nn	16	LYS
43	oo	16	GLU
43	oo	29	LYS
43	oo	45	ARG
43	oo	47	GLN
43	oo	48	SER
43	oo	61	LYS
43	oo	78	LYS
43	oo	83	LEU
43	oo	85	LEU
43	oo	93	LEU
44	pp	10	ILE
44	pp	11	THR
44	pp	20	SER
44	pp	40	SER
44	pp	46	CYS
44	pp	47	VAL
44	pp	49	ARG
44	pp	58	SER
44	pp	71	LEU
44	pp	73	THR
44	pp	81	SER
44	pp	84	ARG
45	qq	3	LYS
45	qq	8	HIS
45	qq	34	LEU
45	qq	49	PHE
45	qq	67	ILE
45	qq	97	LYS
45	qq	102	LYS
45	qq	105	LYS
45	qq	107	TYR
45	qq	115	VAL
45	qq	120	VAL
45	qq	122	ARG
45	qq	144	LEU
45	qq	179	LEU
45	qq	191	VAL
45	qq	199	GLN
45	qq	207	LYS
46	rr	20	TYR
46	rr	32	VAL

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Mol	Chain	Res	Type
46	rr	35	VAL
46	rr	37	SER
46	rr	39	GLN
46	rr	48	ARG
46	rr	62	ARG
46	rr	91	THR
46	rr	122	TRP
46	rr	135	THR
46	rr	149	ARG
46	rr	187	LEU
46	rr	195	ASN
48	A	9	LEU
48	A	34	GLU
48	A	56	LYS
48	A	135	GLU
48	A	146	LEU
48	A	150	ASP
48	A	172	LEU
48	A	173	ILE
48	A	177	LEU
48	A	195	TRP
48	A	197	ILE
48	A	198	MET
49	B	47	LEU
49	B	48	VAL
49	B	70	LEU
49	B	84	VAL
49	B	89	ASP
49	B	99	ASN
49	B	118	GLN
49	B	119	THR
49	B	120	LEU
49	B	124	ASN
49	B	127	VAL
49	B	145	LYS
49	B	166	LYS
49	B	167	VAL
49	B	179	SER
49	B	181	LEU
49	B	191	GLU
49	B	208	GLN
49	B	228	LEU

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Mol	Chain	Res	Type
50	C	49	LEU
50	C	51	LYS
50	C	58	ILE
50	C	71	PHE
50	C	82	LYS
50	C	86	MET
50	C	88	ILE
50	C	89	LYS
50	C	93	LYS
50	C	94	GLN
50	C	99	GLN
50	C	100	ARG
50	C	109	VAL
50	C	111	ASP
50	C	122	THR
50	C	142	ILE
50	C	145	ARG
50	C	146	ARG
50	C	166	LYS
50	C	169	SER
50	C	174	LEU
50	C	186	SER
50	C	212	LEU
50	C	223	ILE
50	C	230	LEU
50	C	234	LEU
50	C	235	TRP
51	D	5	ILE
51	D	11	LEU
51	D	21	LEU
51	D	51	ARG
51	D	113	LEU
51	D	122	VAL
51	D	135	GLU
51	D	141	LYS
51	D	157	LEU
51	D	158	ILE
51	D	162	GLN
51	D	177	LEU
51	D	178	ARG
51	D	179	GLN
51	D	186	VAL

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Mol	Chain	Res	Type
51	D	212	LYS
51	D	222	VAL
52	E	6	LYS
52	E	9	LEU
52	E	18	TRP
52	E	37	LYS
52	E	38	LEU
52	E	42	LEU
52	E	68	ARG
52	E	77	ARG
52	E	80	THR
52	E	123	LEU
52	E	127	LYS
52	E	139	VAL
52	E	159	THR
52	E	176	ASP
52	E	180	LEU
52	E	187	ARG
52	E	208	VAL
52	E	222	LEU
52	E	223	ASN
52	E	225	VAL
52	E	247	THR
53	F	91	ILE
53	F	101	MET
53	F	114	ARG
53	F	121	GLU
53	F	126	LEU
53	F	158	ARG
53	F	186	PHE
53	F	188	ASN
53	F	189	ILE
53	F	192	ILE
53	F	196	LEU
53	F	220	GLU
53	F	221	ARG
54	G	52	ILE
54	G	75	LEU
54	G	81	HIS
54	G	95	LYS
54	G	96	SER
54	G	113	ILE

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Mol	Chain	Res	Type
54	G	141	ILE
54	G	152	ASP
54	G	164	LYS
54	G	178	LEU
54	G	182	GLN
55	H	16	LEU
55	H	27	LEU
55	H	47	ARG
55	H	80	GLU
55	H	81	LEU
55	H	93	LEU
55	H	110	GLN
55	H	125	ILE
55	H	126	LEU
55	H	139	ARG
55	H	159	VAL
55	H	168	SER
55	H	174	ASN
55	H	180	GLN
56	I	8	ARG
56	I	10	LYS
56	I	29	LEU
56	I	62	THR
56	I	72	VAL
56	I	77	ARG
56	I	86	SER
56	I	92	ARG
56	I	101	ILE
56	I	140	THR
56	I	161	PHE
56	I	170	ILE
56	I	171	SER
56	I	190	LEU
56	I	196	ARG
57	J	7	THR
57	J	28	LEU
57	J	30	LEU
57	J	37	LYS
57	J	45	ILE
57	J	49	LEU
57	J	69	ARG
57	J	83	ILE

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Mol	Chain	Res	Type
57	J	86	LEU
57	J	93	LEU
57	J	94	ASP
57	J	109	LEU
57	J	126	ARG
57	J	143	ILE
57	J	145	SER
57	J	149	ARG
58	K	20	VAL
58	K	40	LEU
58	K	54	PHE
58	K	55	VAL
58	K	59	PHE
58	K	76	LEU
58	K	86	ILE
59	L	8	GLN
59	L	32	LYS
59	L	67	ARG
59	L	77	SER
59	L	80	MET
59	L	83	THR
59	L	84	ILE
59	L	105	LYS
59	L	125	VAL
59	L	153	PHE
60	M	55	LEU
60	M	67	LEU
60	M	69	GLN
60	M	104	ARG
60	M	105	LYS
60	M	110	SER
61	N	3	ARG
61	N	12	SER
61	N	49	GLN
61	N	64	LYS
61	N	72	LEU
61	N	88	LEU
61	N	107	LYS
61	N	115	LEU
61	N	119	GLU
61	N	121	ARG
61	N	124	ARG

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Mol	Chain	Res	Type
61	N	139	TRP
61	N	142	GLU
62	O	28	VAL
62	O	31	THR
62	O	37	GLU
62	O	67	VAL
62	O	71	CYS
62	O	86	THR
62	O	110	LEU
62	O	124	ASP
63	P	17	TYR
63	P	18	LYS
63	P	21	ASP
63	P	43	ARG
63	P	52	LYS
63	P	57	MET
63	P	79	HIS
63	P	81	ARG
63	P	84	ILE
63	P	121	ILE
64	Q	19	VAL
64	Q	39	VAL
64	Q	47	LYS
64	Q	53	LEU
64	Q	69	VAL
64	Q	121	SER
64	Q	125	GLU
64	Q	128	LYS
64	Q	142	TYR
65	R	6	THR
65	R	16	LEU
65	R	56	HIS
65	R	61	ILE
65	R	66	VAL
65	R	88	VAL
65	R	127	VAL
66	S	25	ASN
66	S	38	VAL
66	S	49	LYS
66	S	73	MET
66	S	74	GLN
66	S	84	TRP

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Mol	Chain	Res	Type
66	S	93	ASN
66	S	100	SER
66	S	105	LEU
66	S	131	LEU
66	S	136	GLN
66	S	137	HIS
66	S	144	ARG
67	T	45	LEU
67	T	57	ARG
67	T	63	ARG
67	T	68	ARG
67	T	86	ARG
68	U	25	ASN
68	U	52	LYS
68	U	84	MET
68	U	85	ARG
68	U	86	ILE
68	U	94	GLU
68	U	118	ILE
69	V	12	TYR
69	V	28	ASP
69	V	33	GLN
69	V	38	GLN
69	V	56	SER
70	W	2	THR
70	W	15	ASN
70	W	23	ARG
70	W	24	GLN
70	W	25	VAL
70	W	26	LEU
70	W	28	ARG
70	W	40	VAL
70	W	47	ILE
70	W	51	GLU
70	W	61	ILE
70	W	66	ASN
70	W	70	ASN
70	W	83	ILE
70	W	94	LEU
70	W	107	SER
70	W	111	MET
70	W	124	LYS

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Mol	Chain	Res	Type
71	X	9	LEU
71	X	16	ARG
71	X	19	ARG
71	X	23	ARG
71	X	63	GLN
71	X	69	ARG
71	X	70	LYS
71	X	71	CYS
71	X	84	THR
71	X	102	VAL
71	X	109	ARG
71	X	130	VAL
72	Y	3	ASP
72	Y	6	THR
72	Y	27	VAL
72	Y	31	ASN
72	Y	46	GLU
72	Y	57	VAL
72	Y	98	GLU
72	Y	110	GLN
72	Y	116	LYS
72	Y	121	THR
73	Z	64	VAL
73	Z	68	ARG
73	Z	77	ARG
74	a	1	MET
74	a	3	LYS
74	a	7	SER
74	a	8	ASN
74	a	18	VAL
74	a	23	CYS
74	a	28	ARG
74	a	32	LYS
74	a	37	LYS
74	a	39	MET
74	a	45	VAL
74	a	50	ILE
74	a	64	LEU
74	a	69	ASN
74	a	75	ILE
74	a	76	SER
74	a	83	ILE

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Mol	Chain	Res	Type
74	a	85	ARG
74	a	93	ARG
75	b	4	VAL
75	b	7	LEU
75	b	9	HIS
75	b	21	LEU
75	b	43	ILE
75	b	67	THR
76	c	16	LEU
76	c	56	LEU
77	d	36	LEU
77	d	37	ASN
77	d	40	ARG
78	e	17	GLN
78	e	22	GLU
78	e	33	ARG
79	f	82	LYS
79	f	89	LYS
79	f	97	LYS
79	f	100	LEU
79	f	103	LEU
79	f	106	TYR
79	f	113	LYS
79	f	114	VAL
79	f	117	LEU
79	f	120	GLU
79	f	136	ARG
79	f	139	CYS
80	g	27	SER
80	g	43	LEU
80	g	52	GLU
80	g	60	ARG
80	g	67	HIS
80	g	75	SER
80	g	99	ASN
80	g	175	VAL
80	g	188	LEU
80	g	195	ILE
80	g	244	LYS
80	g	270	TYR
80	g	273	GLU
80	g	275	GLU

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Mol	Chain	Res	Type
80	g	292	GLN
80	g	299	LEU
80	g	321	GLN
83	1	13	MET
83	1	23	SER
83	1	24	VAL
83	1	25	ILE
83	1	29	ASP
83	1	35	LEU
83	1	42	ARG
83	1	45	ILE
83	1	57	THR
83	1	61	LYS
83	1	64	GLN
83	1	78	TYR
83	1	79	SER
83	1	80	GLU
83	1	126	LEU
83	1	128	VAL
83	1	142	VAL
83	1	151	ILE
83	1	156	VAL
83	1	161	ASP
83	1	164	LEU
83	1	166	GLU
83	1	171	LYS
83	1	173	ASP
83	1	196	VAL
83	1	202	VAL
83	1	208	THR
83	1	229	TYR
83	1	236	ASP
83	1	237	LYS
83	1	248	SER
83	1	251	ASN
83	1	276	PHE
83	1	284	LEU
83	1	289	MET
83	1	293	LYS
83	1	305	ILE
83	1	313	ASP
83	1	315	GLU

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Mol	Chain	Res	Type
83	1	328	LEU
83	1	344	SER
83	1	379	MET
83	1	380	LEU
83	1	383	SER
83	1	385	MET
83	1	394	PHE
83	1	433	ARG
83	1	436	LEU
83	1	463	LEU
83	1	477	ASN
83	1	481	MET
83	1	482	LYS
83	1	495	VAL
83	1	508	LEU
83	1	510	ARG
83	1	519	LEU
83	1	535	GLU
83	1	555	LYS
83	1	557	SER
83	1	561	VAL
83	1	570	GLU
83	1	574	THR
83	1	582	LYS
83	1	586	ILE
83	1	622	ASP
83	1	646	VAL
83	1	647	ILE
83	1	651	LYS
83	1	653	VAL
83	1	663	VAL
83	1	669	TRP
83	1	671	THR
83	1	680	GLU
83	1	681	MET
83	1	682	ARG
83	1	689	LEU
83	1	693	LEU
83	1	694	HIS
83	1	696	ASP
83	1	698	ILE
83	1	708	THR

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Mol	Chain	Res	Type
83	1	721	ASP
83	1	727	PRO
83	1	733	ILE
83	1	738	GLN
83	1	747	LEU
83	1	775	ASN
83	1	781	THR
83	1	803	THR
83	1	831	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (176) such sidechains are listed below:

Mol	Chain	Res	Type
4	AA	24	GLN
4	AA	97	ASN
4	AA	144	ASN
4	AA	187	HIS
4	AA	209	HIS
4	AA	233	GLN
5	BB	143	GLN
5	BB	173	GLN
5	BB	177	HIS
5	BB	313	HIS
5	BB	371	GLN
6	CC	5	GLN
6	CC	36	HIS
6	CC	48	GLN
6	CC	160	GLN
6	CC	243	HIS
6	CC	322	GLN
7	DD	39	GLN
7	DD	111	GLN
7	DD	264	GLN
8	EE	166	ASN
8	EE	171	HIS
9	FF	90	ASN
9	FF	101	GLN
9	FF	109	ASN
9	FF	143	GLN
9	FF	154	ASN
10	GG	32	ASN
10	GG	137	HIS

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Mol	Chain	Res	Type
10	GG	144	ASN
10	GG	191	GLN
10	GG	220	ASN
11	HH	5	GLN
11	HH	50	ASN
11	HH	59	ASN
11	HH	162	GLN
12	II	14	ASN
12	II	144	ASN
12	II	163	GLN
13	JJ	7	ASN
13	JJ	145	GLN
15	MM	56	GLN
15	MM	126	GLN
16	NN	15	GLN
16	NN	182	ASN
17	OO	27[A]	GLN
17	OO	91[A]	HIS
18	PP	55	GLN
18	PP	120	ASN
19	QQ	45	ASN
19	QQ	73	GLN
19	QQ	158	HIS
20	RR	39	ASN
20	RR	130	ASN
21	SS	88	HIS
21	SS	108	GLN
21	SS	138	GLN
22	TT	5	HIS
22	TT	49	HIS
22	TT	54	HIS
22	TT	127	GLN
22	TT	146	ASN
23	UU	9	GLN
23	UU	49	ASN
24	VV	98	ASN
24	VV	132	ASN
26	XX	137	ASN
27	YY	66	GLN
28	ZZ	79	HIS
29	aa	41	HIS
30	bb	11	ASN

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Mol	Chain	Res	Type
30	bb	12	GLN
32	dd	57	GLN
32	dd	87	ASN
32	dd	105	HIS
33	ee	20	HIS
33	ee	104	ASN
33	ee	115	ASN
35	gg	33	GLN
35	gg	52	GLN
36	hh	16	GLN
36	hh	99	GLN
37	ii	19	GLN
38	jj	47	HIS
38	jj	69	HIS
39	kk	34	ASN
40	ll	25	GLN
41	mm	120	GLN
43	oo	53	GLN
43	oo	56	GLN
43	oo	99	GLN
45	qq	27	ASN
45	qq	94	ASN
45	qq	188	ASN
45	qq	199	GLN
46	rr	39	GLN
46	rr	105	ASN
48	A	33	GLN
48	A	69	ASN
48	A	83	GLN
48	A	109	ASN
48	A	131	GLN
48	A	168	HIS
49	B	149	GLN
49	B	178	ASN
49	B	183	GLN
49	B	199	ASN
50	C	115	HIS
51	D	159	HIS
51	D	162	GLN
51	D	179	GLN
51	D	195	ASN
52	E	67	GLN

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Mol	Chain	Res	Type
52	E	157	ASN
53	F	36	GLN
53	F	172	GLN
53	F	188	ASN
53	F	202	ASN
54	G	34	GLN
54	G	65	GLN
54	G	176	GLN
55	H	19	GLN
55	H	74	GLN
55	H	122	HIS
55	H	147	ASN
56	I	32	GLN
59	L	14	GLN
59	L	37	ASN
59	L	81	HIS
59	L	138	ASN
61	N	49	GLN
61	N	105	ASN
61	N	151	ASN
62	O	12	GLN
62	O	29	HIS
63	P	79	HIS
63	P	82	ASN
64	Q	83	GLN
66	S	12	GLN
66	S	27	ASN
66	S	89	GLN
66	S	136	GLN
66	S	137	HIS
67	T	91	HIS
68	U	33	GLN
68	U	98	HIS
69	V	33	GLN
70	W	24	GLN
70	W	64	GLN
71	X	18	HIS
71	X	22	ASN
71	X	75	GLN
71	X	79	ASN
71	X	94	ASN
72	Y	29	HIS

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Mol	Chain	Res	Type
72	Y	31	ASN
72	Y	110	GLN
74	a	25	ASN
78	e	17	GLN
80	g	5	ASN
80	g	51	ASN
80	g	70	GLN
80	g	210	GLN
83	1	30	HIS
83	1	64	GLN
83	1	168	GLN
83	1	432	GLN
83	1	452	ASN
83	1	583	HIS
83	1	584	ASN
83	1	607	ASN
83	1	644	ASN
83	1	649	GLN
83	1	699	HIS
83	1	704	GLN
83	1	759	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	5	3263/3270 (99%)	1000 (30%)	198 (6%)
2	7	120/121 (99%)	22 (18%)	4 (3%)
3	8	156/157 (99%)	42 (26%)	6 (3%)
81	2	1778/1798 (98%)	798 (44%)	127 (7%)
82	4	183/190 (96%)	90 (49%)	24 (13%)
All	All	5500/5536 (99%)	1952 (35%)	359 (6%)

All (1952) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	5	6	A
1	5	15	C
1	5	18	G
1	5	21	G
1	5	22	G
1	5	26	A

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Mol	Chain	Res	Type
1	5	40	A
1	5	43	A
1	5	44	U
1	5	45	A
1	5	48	A
1	5	49	A
1	5	57	A
1	5	59	G
1	5	60	A
1	5	65	A
1	5	66	A
1	5	67	A
1	5	68	C
1	5	73	C
1	5	75	G
1	5	76	G
1	5	85	A
1	5	87	U
1	5	92	G
1	5	96	G
1	5	99	A
1	5	109	A
1	5	110	G
1	5	111	C
1	5	112	U
1	5	113	C
1	5	115	A
1	5	117	U
1	5	120	G
1	5	121	A
1	5	122	A
1	5	128	G
1	5	133	U
1	5	134	U
1	5	136	G
1	5	143	G
1	5	146	U
1	5	150	A
1	5	156	A
1	5	157	A
1	5	161	G
1	5	165	A

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Mol	Chain	Res	Type
1	5	166	C
1	5	167	U
1	5	168	U
1	5	169	U
1	5	170	G
1	5	171	U
1	5	174	C
1	5	177	G
1	5	182	U
1	5	187	A
1	5	190	U
1	5	191	U
1	5	198	A
1	5	200	C
1	5	210	U
1	5	211	A
1	5	213	A
1	5	218	G
1	5	219	A
1	5	220	G
1	5	221	A
1	5	224	C
1	5	234	G
1	5	239	U
1	5	240	C
1	5	241	C
1	5	244	G
1	5	248	U
1	5	249	U
1	5	250	U
1	5	251	G
1	5	252	U
1	5	253	A
1	5	254	A
1	5	266	C
1	5	269	G
1	5	282	G
1	5	283	G
1	5	284	A
1	5	285	A
1	5	286	U
1	5	295	A

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Mol	Chain	Res	Type
1	5	298	U
1	5	299	G
1	5	305	U
1	5	306	A
1	5	307	A
1	5	315	C
1	5	319	A
1	5	323	A
1	5	329	U
1	5	336	A
1	5	338	A
1	5	339	C
1	5	343	U
1	5	349	A
1	5	350	C
1	5	368	G
1	5	370	U
1	5	374	A
1	5	376	G
1	5	378	A
1	5	385	A
1	5	395	A
1	5	398	A
1	5	399	A
1	5	401	U
1	5	403	C
1	5	404	G
1	5	407	A
1	5	420	G
1	5	421	G
1	5	422	A
1	5	429	U
1	5	436	A
1	5	437	G
1	5	438	A
1	5	439	C
1	5	440	A
1	5	441	U
1	5	443	G
1	5	478	U
1	5	486	U
1	5	487	U

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Mol	Chain	Res	Type
1	5	491	U
1	5	492	A
1	5	494	A
1	5	503	A
1	5	506	G
1	5	507	U
1	5	512	C
1	5	514	G
1	5	518	C
1	5	519	G
1	5	520	G
1	5	521	U
1	5	525	G
1	5	528	U
1	5	529	U
1	5	530	A
1	5	531	U
1	5	532	A
1	5	533	G
1	5	537	G
1	5	542	A
1	5	543	A
1	5	545	A
1	5	551	A
1	5	552	G
1	5	565	A
1	5	567	U
1	5	573	U
1	5	575	U
1	5	577	G
1	5	580	A
1	5	581	A
1	5	582	G
1	5	584	A
1	5	589	G
1	5	590	G
1	5	594	A
1	5	595	A
1	5	596	U
1	5	597	G
1	5	598	G
1	5	609	C

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Mol	Chain	Res	Type
1	5	615	U
1	5	620	A
1	5	622	A
1	5	633	A
1	5	640	C
1	5	644	U
1	5	650	A
1	5	654	U
1	5	660	U
1	5	664	A
1	5	670	G
1	5	671	U
1	5	672	A
1	5	678	A
1	5	681	G
1	5	683	A
1	5	685	G
1	5	688	A
1	5	694	G
1	5	698	A
1	5	699	G
1	5	708	A
1	5	709	G
1	5	721	G
1	5	724	C
1	5	729	C
1	5	736	C
1	5	737	U
1	5	738	U
1	5	741	G
1	5	742	A
1	5	745	G
1	5	747	U
1	5	748	U
1	5	751	A
1	5	752	G
1	5	755	A
1	5	756	G
1	5	757	A
1	5	758	G
1	5	770	G
1	5	772	A

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Mol	Chain	Res	Type
1	5	777	A
1	5	778	A
1	5	779	A
1	5	788	A
1	5	794	C
1	5	797	G
1	5	801	A
1	5	805	U
1	5	808	A
1	5	817	A
1	5	832	C
1	5	842	U
1	5	845	U
1	5	850	U
1	5	861	C
1	5	867	A
1	5	868	U
1	5	878	G
1	5	879	G
1	5	885	A
1	5	886	A
1	5	887	G
1	5	888	A
1	5	890	U
1	5	891	A
1	5	892	A
1	5	894	C
1	5	908	G
1	5	909	C
1	5	915	C
1	5	924	G
1	5	930	C
1	5	931	U
1	5	932	C
1	5	933	A
1	5	941	A
1	5	945	G
1	5	949	G
1	5	950	U
1	5	951	A
1	5	952	U
1	5	953	C

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Mol	Chain	Res	Type
1	5	955	G
1	5	962	G
1	5	964	G
1	5	965	G
1	5	972	G
1	5	973	A
1	5	974	A
1	5	981	G
1	5	986	A
1	5	987	C
1	5	988	C
1	5	989	G
1	5	990	G
1	5	992	G
1	5	994	U
1	5	995	G
1	5	996	A
1	5	997	A
1	5	999	U
1	5	1000	G
1	5	1003	C
1	5	1005	U
1	5	1006	G
1	5	1018	A
1	5	1020	C
1	5	1025	A
1	5	1034	G
1	5	1035	A
1	5	1036	A
1	5	1043	G
1	5	1052	U
1	5	1053	U
1	5	1056	A
1	5	1058	G
1	5	1064	A
1	5	1065	U
1	5	1066	U
1	5	1067	U
1	5	1069	A
1	5	1074	A
1	5	1075	G
1	5	1078	C

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Mol	Chain	Res	Type
1	5	1087	G
1	5	1088	G
1	5	1102	G
1	5	1115	U
1	5	1116	G
1	5	1122	U
1	5	1123	G
1	5	1124	A
1	5	1129	A
1	5	1130	A
1	5	1145	G
1	5	1146	C
1	5	1149	G
1	5	1151	A
1	5	1152	U
1	5	1153	A
1	5	1155	A
1	5	1156	C
1	5	1162	U
1	5	1163	C
1	5	1164	A
1	5	1167	C
1	5	1168	A
1	5	1172	C
1	5	1177	G
1	5	1179	U
1	5	1180	G
1	5	1191	U
1	5	1192	A
1	5	1193	G
1	5	1194	A
1	5	1195	C
1	5	1196	A
1	5	1197	G
1	5	1198	C
1	5	1203	C
1	5	1206	U
1	5	1207	G
1	5	1208	G
1	5	1210	C
1	5	1212	U
1	5	1213	G

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Mol	Chain	Res	Type
1	5	1216	A
1	5	1217	G
1	5	1218	U
1	5	1223	A
1	5	1225	C
1	5	1229	U
1	5	1230	A
1	5	1233	G
1	5	1234	A
1	5	1235	G
1	5	1236	U
1	5	1237	G
1	5	1248	C
1	5	1254	C
1	5	1256	G
1	5	1257	A
1	5	1258	A
1	5	1263	C
1	5	1266	G
1	5	1272	A
1	5	1274	A
1	5	1276	U
1	5	1278	G
1	5	1279	A
1	5	1280	U
1	5	1281	G
1	5	1284	G
1	5	1289	A
1	5	1296	U
1	5	1301	A
1	5	1302	U
1	5	1319	U
1	5	1320	A
1	5	1321	A
1	5	1322	U
1	5	1323	A
1	5	1324	U
1	5	1326	A
1	5	1327	U
1	5	1328	G
1	5	1351	G
1	5	1356	C

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Mol	Chain	Res	Type
1	5	1357	A
1	5	1370	A
1	5	1371	G
1	5	1390	A
1	5	1398	U
1	5	1401	U
1	5	1402	G
1	5	1405	G
1	5	1408	C
1	5	1409	U
1	5	1414	G
1	5	1417	A
1	5	1421	G
1	5	1422	C
1	5	1424	A
1	5	1425	A
1	5	1426	U
1	5	1427	A
1	5	1431	A
1	5	1436	A
1	5	1446	A
1	5	1448	A
1	5	1452	A
1	5	1453	A
1	5	1455	U
1	5	1458	G
1	5	1466	U
1	5	1468	C
1	5	1471	G
1	5	1479	C
1	5	1496	G
1	5	1497	U
1	5	1498	C
1	5	1499	G
1	5	1504	U
1	5	1507	G
1	5	1510	A
1	5	1513	G
1	5	1525	U
1	5	1526	U
1	5	1527	C
1	5	1528	A

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Mol	Chain	Res	Type
1	5	1530	A
1	5	1531	G
1	5	1532	G
1	5	1533	C
1	5	1534	C
1	5	1536	A
1	5	1537	A
1	5	1539	U
1	5	1540	U
1	5	1542	C
1	5	1544	A
1	5	1545	G
1	5	1546	G
1	5	1547	C
1	5	1549	A
1	5	1550	C
1	5	1551	C
1	5	1552	A
1	5	1555	G
1	5	1558	A
1	5	1559	G
1	5	1565	C
1	5	1575	U
1	5	1576	U
1	5	1577	C
1	5	1584	C
1	5	1589	U
1	5	1597	C
1	5	1598	U
1	5	1599	U
1	5	1600	C
1	5	1601	A
1	5	1602	C
1	5	1608	C
1	5	1611	A
1	5	1612	A
1	5	1613	C
1	5	1614	U
1	5	1615	G
1	5	1624	G
1	5	1625	A
1	5	1627	G

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Mol	Chain	Res	Type
1	5	1642	G
1	5	1644	G
1	5	1646	G
1	5	1652	A
1	5	1656	U
1	5	1657	U
1	5	1658	U
1	5	1671	U
1	5	1673	A
1	5	1684	A
1	5	1685	U
1	5	1686	U
1	5	1693	U
1	5	1694	C
1	5	1700	A
1	5	1710	A
1	5	1719	A
1	5	1720	G
1	5	1725	C
1	5	1729	C
1	5	1731	U
1	5	1733	G
1	5	1734	U
1	5	1735	G
1	5	1739	G
1	5	1744	G
1	5	1747	G
1	5	1748	C
1	5	1749	G
1	5	1755	G
1	5	1763	U
1	5	1766	A
1	5	1777	G
1	5	1780	G
1	5	1781	G
1	5	1782	A
1	5	1783	A
1	5	1785	A
1	5	1786	G
1	5	1787	U
1	5	1789	U
1	5	1790	U

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Mol	Chain	Res	Type
1	5	1792	A
1	5	1807	G
1	5	1808	A
1	5	1809	U
1	5	1810	A
1	5	1811	A
1	5	1815	C
1	5	1816	A
1	5	1818	C
1	5	1819	A
1	5	1823	C
1	5	1824	U
1	5	1827	A
1	5	1828	A
1	5	1835	C
1	5	1836	A
1	5	1837	G
1	5	1840	U
1	5	1845	U
1	5	1849	U
1	5	1850	A
1	5	1855	A
1	5	1859	U
1	5	1860	A
1	5	1862	A
1	5	1864	A
1	5	1865	A
1	5	1866	G
1	5	1870	A
1	5	1875	G
1	5	1878	A
1	5	1896	G
1	5	1917	G
1	5	1922	G
1	5	1923	G
1	5	1924	C
1	5	1925	G
1	5	1926	U
1	5	1928	A
1	5	1929	G
1	5	1941	G
1	5	1943	C

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Mol	Chain	Res	Type
1	5	2025	G
1	5	2027	C
1	5	2032	U
1	5	2033	U
1	5	2036	U
1	5	2041	C
1	5	2042	U
1	5	2046	G
1	5	2049	G
1	5	2050	A
1	5	2051	U
1	5	2052	G
1	5	2053	C
1	5	2054	U
1	5	2055	G
1	5	2057	A
1	5	2059	U
1	5	2061	A
1	5	2062	A
1	5	2063	C
1	5	2064	G
1	5	2065	A
1	5	2069	A
1	5	2070	C
1	5	2071	U
1	5	2073	A
1	5	2079	G
1	5	2080	G
1	5	2081	U
1	5	2082	A
1	5	2083	C
1	5	2087	C
1	5	2090	G
1	5	2091	G
1	5	2095	A
1	5	2100	A
1	5	2107	A
1	5	2108	A
1	5	2113	A
1	5	2114	A
1	5	2126	G
1	5	2127	A

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Mol	Chain	Res	Type
1	5	2138	G
1	5	2139	U
1	5	2140	G
1	5	2155	U
1	5	2161	C
1	5	2165	C
1	5	2166	C
1	5	2169	U
1	5	2170	G
1	5	2173	C
1	5	2174	U
1	5	2175	G
1	5	2182	A
1	5	2191	A
1	5	2194	U
1	5	2198	A
1	5	2201	A
1	5	2213	A
1	5	2217	C
1	5	2218	G
1	5	2219	G
1	5	2220	G
1	5	2221	A
1	5	2222	G
1	5	2223	U
1	5	2225	A
1	5	2226	C
1	5	2227	U
1	5	2228	A
1	5	2229	U
1	5	2230	G
1	5	2233	U
1	5	2235	U
1	5	2236	C
1	5	2237	U
1	5	2238	U
1	5	2239	A
1	5	2241	G
1	5	2242	G
1	5	2243	U
1	5	2245	G
1	5	2249	A

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Mol	Chain	Res	Type
1	5	2250	A
1	5	2251	U
1	5	2252	G
1	5	2253	C
1	5	2257	G
1	5	2262	C
1	5	2263	U
1	5	2267	U
1	5	2275	C
1	5	2276	G
1	5	2277	C
1	5	2278	A
1	5	2279	U
1	5	2282	A
1	5	2284	G
1	5	2285	G
1	5	2286	A
1	5	2288	U
1	5	2300	C
1	5	2301	A
1	5	2303	U
1	5	2304	G
1	5	2305	U
1	5	2316	U
1	5	2336	A
1	5	2341	A
1	5	2342	A
1	5	2343	C
1	5	2344	G
1	5	2346	G
1	5	2347	C
1	5	2352	C
1	5	2354	G
1	5	2357	U
1	5	2358	C
1	5	2362	G
1	5	2366	A
1	5	2367	A
1	5	2369	G
1	5	2370	A
1	5	2371	A
1	5	2372	G

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Mol	Chain	Res	Type
1	5	2373	A
1	5	2374	C
1	5	2380	U
1	5	2381	G
1	5	2387	G
1	5	2388	A
1	5	2390	U
1	5	2404	G
1	5	2407	A
1	5	2408	A
1	5	2412	A
1	5	2413	C
1	5	2414	A
1	5	2415	U
1	5	2416	A
1	5	2417	G
1	5	2418	A
1	5	2421	G
1	5	2422	U
1	5	2423	G
1	5	2427	C
1	5	2428	A
1	5	2429	U
1	5	2430	A
1	5	2431	A
1	5	2432	G
1	5	2434	G
1	5	2438	G
1	5	2446	G
1	5	2451	U
1	5	2455	A
1	5	2456	U
1	5	2457	A
1	5	2460	A
1	5	2461	C
1	5	2468	U
1	5	2469	A
1	5	2470	U
1	5	2471	A
1	5	2472	G
1	5	2473	U
1	5	2474	U

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Mol	Chain	Res	Type
1	5	2475	U
1	5	2476	C
1	5	2479	U
1	5	2480	A
1	5	2481	C
1	5	2482	U
1	5	2483	U
1	5	2484	A
1	5	2491	U
1	5	2492	A
1	5	2493	A
1	5	2494	G
1	5	2495	C
1	5	2499	G
1	5	2500	C
1	5	2501	U
1	5	2502	G
1	5	2503	G
1	5	2506	U
1	5	2507	U
1	5	2508	C
1	5	2509	A
1	5	2510	U
1	5	2511	U
1	5	2512	U
1	5	2517	C
1	5	2520	U
1	5	2521	C
1	5	2524	G
1	5	2526	A
1	5	2529	C
1	5	2530	A
1	5	2531	A
1	5	2537	U
1	5	2538	A
1	5	2540	A
1	5	2541	C
1	5	2542	G
1	5	2543	G
1	5	2547	G
1	5	2549	U
1	5	2553	G

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Mol	Chain	Res	Type
1	5	2554	G
1	5	2557	G
1	5	2561	A
1	5	2562	C
1	5	2568	C
1	5	2574	G
1	5	2575	G
1	5	2582	G
1	5	2587	G
1	5	2596	A
1	5	2604	A
1	5	2606	C
1	5	2609	U
1	5	2617	A
1	5	2620	U
1	5	2624	A
1	5	2625	A
1	5	2626	G
1	5	2630	G
1	5	2631	A
1	5	2635	A
1	5	2642	A
1	5	2646	A
1	5	2647	A
1	5	2648	A
1	5	2649	U
1	5	2657	A
1	5	2658	G
1	5	2659	A
1	5	2662	A
1	5	2664	A
1	5	2672	A
1	5	2682	G
1	5	2687	U
1	5	2688	G
1	5	2696	G
1	5	2697	U
1	5	2708	A
1	5	2715	A
1	5	2717	G
1	5	2720	U
1	5	2721	G

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Mol	Chain	Res	Type
1	5	2722	G
1	5	2723	C
1	5	2726	A
1	5	2730	A
1	5	2739	G
1	5	2740	U
1	5	2741	C
1	5	2745	G
1	5	2746	G
1	5	2747	A
1	5	2764	G
1	5	2767	A
1	5	2768	G
1	5	2769	A
1	5	2770	A
1	5	2771	A
1	5	2778	C
1	5	2782	G
1	5	2784	G
1	5	2785	A
1	5	2786	U
1	5	2807	G
1	5	2811	U
1	5	2813	A
1	5	2815	A
1	5	2818	G
1	5	2821	A
1	5	2824	G
1	5	2828	U
1	5	2829	U
1	5	2839	G
1	5	2840	A
1	5	2841	U
1	5	2843	U
1	5	2845	G
1	5	2848	U
1	5	2855	A
1	5	2857	C
1	5	2860	A
1	5	2864	A
1	5	2866	G
1	5	2867	C

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Mol	Chain	Res	Type
1	5	2869	G
1	5	2872	U
1	5	2878	A
1	5	2880	G
1	5	2882	G
1	5	2886	G
1	5	2890	G
1	5	2891	U
1	5	2895	C
1	5	2903	U
1	5	2904	A
1	5	2906	G
1	5	2910	C
1	5	2915	G
1	5	2922	U
1	5	2923	U
1	5	2925	G
1	5	2936	G
1	5	2939	A
1	5	2940	G
1	5	2947	U
1	5	2948	U
1	5	2951	C
1	5	2955	A
1	5	2958	G
1	5	2964	U
1	5	2965	G
1	5	2980	A
1	5	2989	A
1	5	2991	U
1	5	2996	G
1	5	2998	G
1	5	3008	A
1	5	3017	A
1	5	3023	U
1	5	3024	U
1	5	3025	U
1	5	3026	U
1	5	3027	G
1	5	3040	C
1	5	3041	A
1	5	3042	G

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Mol	Chain	Res	Type
1	5	3046	U
1	5	3047	U
1	5	3048	G
1	5	3054	A
1	5	3055	A
1	5	3059	A
1	5	3060	C
1	5	3062	A
1	5	3069	G
1	5	3072	U
1	5	3077	G
1	5	3083	C
1	5	3090	A
1	5	3093	U
1	5	3098	A
1	5	3099	U
1	5	3110	A
1	5	3113	C
1	5	3119	U
1	5	3121	U
1	5	3122	C
1	5	3123	U
1	5	3124	U
1	5	3125	U
1	5	3126	G
1	5	3133	A
1	5	3136	A
1	5	3138	A
1	5	3139	U
1	5	3140	A
1	5	3141	G
1	5	3142	A
1	5	3143	A
1	5	3144	G
1	5	3147	U
1	5	3149	A
1	5	3152	A
1	5	3155	A
1	5	3161	C
1	5	3163	U
1	5	3164	U
1	5	3165	U

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Mol	Chain	Res	Type
1	5	3175	U
1	5	3176	G
1	5	3185	C
1	5	3186	A
1	5	3187	G
1	5	3188	G
1	5	3195	A
1	5	3197	G
1	5	3203	C
1	5	3206	A
1	5	3207	G
1	5	3208	C
1	5	3210	G
1	5	3211	A
1	5	3212	A
1	5	3213	A
1	5	3214	G
1	5	3215	G
1	5	3217	U
1	5	3220	G
1	5	3221	G
1	5	3227	U
1	5	3231	G
1	5	3233	C
1	5	3236	A
1	5	3238	U
1	5	3241	A
1	5	3243	U
1	5	3244	G
1	5	3245	U
1	5	3246	C
1	5	3247	A
1	5	3249	U
1	5	3250	U
1	5	3253	C
1	5	3254	G
1	5	3257	A
1	5	3258	G
1	5	3261	U
1	5	3262	A
1	5	3263	A
1	5	3272	U

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Mol	Chain	Res	Type
1	5	3273	A
1	5	3275	A
1	5	3281	U
1	5	3284	A
1	5	3285	U
1	5	3286	G
1	5	3287	U
1	5	3291	A
1	5	3299	U
1	5	3303	A
1	5	3309	U
1	5	3310	A
1	5	3313	G
1	5	3316	G
1	5	3319	U
1	5	3322	U
1	5	3324	G
1	5	3326	U
1	5	3336	U
1	5	3337	G
1	5	3346	C
1	5	3350	C
1	5	3351	G
1	5	3354	G
1	5	3357	U
1	5	3358	G
1	5	3360	U
1	5	3364	U
2	7	6	C
2	7	13	A
2	7	22	A
2	7	38	U
2	7	41	G
2	7	50	U
2	7	51	A
2	7	52	G
2	7	54	U
2	7	65	G
2	7	73	C
2	7	74	C
2	7	76	A
2	7	77	G

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Mol	Chain	Res	Type
2	7	91	G
2	7	93	C
2	7	99	G
2	7	101	G
2	7	102	A
2	7	104	A
2	7	112	G
2	7	121	U
3	8	2	A
3	8	7	U
3	8	8	C
3	8	9	A
3	8	13	A
3	8	21	C
3	8	23	U
3	8	25	G
3	8	34	U
3	8	35	C
3	8	38	U
3	8	47	C
3	8	48	A
3	8	51	G
3	8	59	A
3	8	62	U
3	8	63	G
3	8	79	A
3	8	80	U
3	8	81	U
3	8	84	C
3	8	86	U
3	8	87	G
3	8	90	U
3	8	91	C
3	8	95	A
3	8	97	A
3	8	100	U
3	8	104	A
3	8	105	A
3	8	106	C
3	8	108	C
3	8	111	A
3	8	113	U

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Mol	Chain	Res	Type
3	8	116	G
3	8	125	U
3	8	126	A
3	8	127	U
3	8	129	C
3	8	144	G
3	8	156	U
3	8	157	U
81	2	2	A
81	2	3	U
81	2	4	C
81	2	5	U
81	2	8	U
81	2	9	U
81	2	10	G
81	2	11	A
81	2	12	U
81	2	14	C
81	2	17	C
81	2	22	A
81	2	23	G
81	2	25	C
81	2	26	A
81	2	29	U
81	2	31	C
81	2	32	U
81	2	34	G
81	2	40	A
81	2	42	G
81	2	45	U
81	2	46	A
81	2	47	A
81	2	50	C
81	2	51	A
81	2	57	G
81	2	58	U
81	2	61	A
81	2	62	A
81	2	63	G
81	2	64	U
81	2	65	A
81	2	67	A

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Mol	Chain	Res	Type
81	2	68	A
81	2	69	G
81	2	71	A
81	2	72	A
81	2	73	U
81	2	74	U
81	2	75	U
81	2	76	A
81	2	77	U
81	2	78	A
81	2	80	A
81	2	81	G
81	2	93	A
81	2	104	A
81	2	107	C
81	2	111	U
81	2	113	U
81	2	114	C
81	2	115	G
81	2	124	A
81	2	125	U
81	2	126	A
81	2	127	G
81	2	129	U
81	2	130	C
81	2	131	C
81	2	132	U
81	2	133	U
81	2	134	U
81	2	136	C
81	2	137	U
81	2	138	A
81	2	139	C
81	2	140	A
81	2	146	A
81	2	147	U
81	2	149	U
81	2	150	G
81	2	152	G
81	2	154	U
81	2	155	A
81	2	156	A

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Mol	Chain	Res	Type
81	2	158	U
81	2	159	C
81	2	160	U
81	2	161	A
81	2	165	C
81	2	166	U
81	2	167	A
81	2	169	U
81	2	170	A
81	2	173	U
81	2	175	C
81	2	176	U
81	2	177	U
81	2	178	A
81	2	180	A
81	2	183	C
81	2	184	U
81	2	186	G
81	2	187	A
81	2	190	C
81	2	191	U
81	2	192	U
81	2	194	G
81	2	198	G
81	2	199	A
81	2	203	G
81	2	205	A
81	2	209	A
81	2	217	A
81	2	218	A
81	2	220	A
81	2	224	A
81	2	225	A
81	2	226	U
81	2	228	U
81	2	230	U
81	2	232	C
81	2	233	G
81	2	234	G
81	2	239	C
81	2	240	U
81	2	241	U

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Mol	Chain	Res	Type
81	2	249	C
81	2	253	A
81	2	256	A
81	2	258	U
81	2	259	U
81	2	260	U
81	2	264	A
81	2	265	A
81	2	266	U
81	2	274	C
81	2	275	C
81	2	276	U
81	2	277	U
81	2	278	G
81	2	279	U
81	2	280	G
81	2	286	G
81	2	288	U
81	2	289	G
81	2	294	A
81	2	298	A
81	2	301	U
81	2	305	U
81	2	308	C
81	2	311	A
81	2	312	U
81	2	313	C
81	2	314	A
81	2	315	A
81	2	319	U
81	2	320	C
81	2	321	G
81	2	322	A
81	2	328	G
81	2	332	A
81	2	334	U
81	2	335	G
81	2	336	G
81	2	337	C
81	2	349	U
81	2	350	C
81	2	351	A

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Mol	Chain	Res	Type
81	2	358	A
81	2	359	A
81	2	360	C
81	2	361	G
81	2	368	A
81	2	369	A
81	2	370	G
81	2	372	G
81	2	373	U
81	2	377	A
81	2	380	C
81	2	384	A
81	2	385	G
81	2	386	A
81	2	387	G
81	2	389	G
81	2	392	C
81	2	397	G
81	2	398	A
81	2	399	A
81	2	400	A
81	2	401	C
81	2	403	G
81	2	408	C
81	2	411	A
81	2	412	U
81	2	414	C
81	2	415	A
81	2	416	A
81	2	417	G
81	2	418	G
81	2	421	G
81	2	423	C
81	2	424	A
81	2	425	G
81	2	433	G
81	2	436	A
81	2	438	U
81	2	439	U
81	2	440	A
81	2	443	C
81	2	444	A

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Mol	Chain	Res	Type
81	2	447	C
81	2	452	U
81	2	453	U
81	2	454	C
81	2	455	A
81	2	458	G
81	2	459	A
81	2	460	G
81	2	463	A
81	2	467	A
81	2	468	C
81	2	474	A
81	2	475	U
81	2	476	A
81	2	479	G
81	2	480	A
81	2	483	C
81	2	490	C
81	2	491	A
81	2	492	U
81	2	493	U
81	2	494	C
81	2	497	G
81	2	499	C
81	2	500	U
81	2	503	U
81	2	504	A
81	2	505	A
81	2	506	U
81	2	507	U
81	2	509	G
81	2	510	A
81	2	511	A
81	2	512	U
81	2	513	G
81	2	514	A
81	2	515	G
81	2	518	C
81	2	519	A
81	2	526	A
81	2	527	U
81	2	530	C

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Mol	Chain	Res	Type
81	2	533	A
81	2	534	A
81	2	535	C
81	2	537	A
81	2	539	G
81	2	540	A
81	2	541	A
81	2	542	C
81	2	543	A
81	2	544	A
81	2	545	C
81	2	547	G
81	2	548	G
81	2	553	C
81	2	554	A
81	2	556	G
81	2	557	U
81	2	558	C
81	2	559	U
81	2	560	G
81	2	563	G
81	2	565	C
81	2	567	G
81	2	570	G
81	2	571	C
81	2	573	G
81	2	574	C
81	2	576	G
81	2	577	U
81	2	578	A
81	2	579	A
81	2	581	U
81	2	582	C
81	2	593	A
81	2	594	G
81	2	596	G
81	2	600	A
81	2	605	A
81	2	606	G
81	2	607	U
81	2	609	G
81	2	610	U

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Mol	Chain	Res	Type
81	2	613	C
81	2	615	G
81	2	618	A
81	2	619	A
81	2	621	A
81	2	622	A
81	2	623	G
81	2	634	A
81	2	637	U
81	2	638	U
81	2	639	U
81	2	640	G
81	2	642	G
81	2	647	G
81	2	648	U
81	2	649	U
81	2	652	C
81	2	653	C
81	2	654	G
81	2	655	G
81	2	677	G
81	2	678	U
81	2	679	U
81	2	683	C
81	2	684	A
81	2	691	U
81	2	694	U
81	2	695	U
81	2	696	C
81	2	697	C
81	2	698	U
81	2	701	U
81	2	704	C
81	2	705	U
81	2	708	C
81	2	709	C
81	2	710	U
81	2	711	G
81	2	712	U
81	2	714	C
81	2	716	C
81	2	717	C

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Mol	Chain	Res	Type
81	2	718	U
81	2	719	U
81	2	722	G
81	2	724	G
81	2	727	C
81	2	731	C
81	2	732	G
81	2	733	A
81	2	734	A
81	2	735	C
81	2	736	C
81	2	737	A
81	2	738	G
81	2	740	A
81	2	741	C
81	2	742	U
81	2	743	U
81	2	745	U
81	2	753	A
81	2	754	A
81	2	765	G
81	2	766	U
81	2	767	U
81	2	769	A
81	2	771	A
81	2	774	A
81	2	778	G
81	2	779	A
81	2	780	A
81	2	781	A
81	2	782	G
81	2	785	C
81	2	786	G
81	2	787	A
81	2	788	A
81	2	789	U
81	2	791	U
81	2	792	A
81	2	793	U
81	2	794	U
81	2	795	A
81	2	800	G

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Mol	Chain	Res	Type
81	2	802	A
81	2	809	G
81	2	810	A
81	2	811	A
81	2	812	U
81	2	813	A
81	2	814	G
81	2	815	G
81	2	817	C
81	2	819	U
81	2	820	U
81	2	821	U
81	2	822	G
81	2	823	G
81	2	825	U
81	2	826	C
81	2	828	A
81	2	829	U
81	2	830	U
81	2	831	U
81	2	832	U
81	2	834	U
81	2	837	G
81	2	840	U
81	2	842	U
81	2	845	G
81	2	848	C
81	2	849	A
81	2	851	C
81	2	852	G
81	2	854	A
81	2	855	A
81	2	859	U
81	2	860	U
81	2	862	A
81	2	863	U
81	2	872	U
81	2	875	G
81	2	876	G
81	2	884	G
81	2	885	U
81	2	886	A

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Mol	Chain	Res	Type
81	2	887	U
81	2	895	U
81	2	897	A
81	2	903	G
81	2	904	A
81	2	905	A
81	2	906	A
81	2	908	U
81	2	909	C
81	2	910	U
81	2	912	G
81	2	913	G
81	2	914	A
81	2	915	U
81	2	916	U
81	2	920	U
81	2	922	A
81	2	926	C
81	2	927	U
81	2	928	A
81	2	929	A
81	2	930	C
81	2	931	U
81	2	932	A
81	2	934	U
81	2	938	A
81	2	939	A
81	2	943	A
81	2	950	A
81	2	958	U
81	2	959	U
81	2	964	U
81	2	965	A
81	2	969	A
81	2	972	A
81	2	980	U
81	2	981	U
81	2	982	A
81	2	983	G
81	2	985	G
81	2	987	A
81	2	990	G

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Mol	Chain	Res	Type
81	2	991	A
81	2	992	A
81	2	993	G
81	2	999	C
81	2	1001	G
81	2	1002	A
81	2	1003	U
81	2	1004	A
81	2	1005	C
81	2	1009	C
81	2	1010	G
81	2	1011	U
81	2	1012	A
81	2	1013	G
81	2	1015	C
81	2	1018	A
81	2	1020	C
81	2	1024	A
81	2	1025	A
81	2	1026	A
81	2	1027	C
81	2	1028	U
81	2	1030	U
81	2	1031	G
81	2	1033	C
81	2	1035	A
81	2	1037	U
81	2	1038	A
81	2	1039	G
81	2	1041	G
81	2	1042	A
81	2	1044	C
81	2	1045	G
81	2	1048	U
81	2	1050	G
81	2	1051	U
81	2	1052	G
81	2	1056	U
81	2	1057	U
81	2	1058	C
81	2	1059	U
81	2	1060	U

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Mol	Chain	Res	Type
81	2	1063	G
81	2	1070	U
81	2	1071	C
81	2	1080	A
81	2	1081	C
81	2	1082	G
81	2	1083	A
81	2	1087	A
81	2	1090	A
81	2	1091	A
81	2	1092	A
81	2	1093	G
81	2	1094	U
81	2	1096	U
81	2	1097	U
81	2	1098	U
81	2	1099	G
81	2	1100	G
81	2	1102	U
81	2	1103	U
81	2	1104	C
81	2	1107	G
81	2	1108	G
81	2	1110	G
81	2	1113	G
81	2	1118	G
81	2	1121	G
81	2	1130	A
81	2	1137	A
81	2	1139	G
81	2	1142	A
81	2	1145	G
81	2	1149	G
81	2	1150	A
81	2	1157	C
81	2	1158	C
81	2	1159	A
81	2	1162	A
81	2	1166	G
81	2	1184	U
81	2	1185	U
81	2	1193	A

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Mol	Chain	Res	Type
81	2	1195	A
81	2	1196	C
81	2	1198	G
81	2	1199	G
81	2	1201	A
81	2	1202	A
81	2	1203	A
81	2	1204	C
81	2	1212	G
81	2	1213	U
81	2	1216	A
81	2	1217	G
81	2	1218	A
81	2	1219	C
81	2	1222	A
81	2	1226	A
81	2	1227	G
81	2	1228	G
81	2	1229	A
81	2	1230	U
81	2	1234	C
81	2	1236	G
81	2	1238	U
81	2	1240	G
81	2	1241	A
81	2	1242	G
81	2	1243	A
81	2	1244	G
81	2	1245	C
81	2	1247	C
81	2	1250	U
81	2	1253	U
81	2	1254	G
81	2	1258	U
81	2	1259	U
81	2	1265	U
81	2	1268	U
81	2	1269	G
81	2	1272	G
81	2	1274	A
81	2	1282	U
81	2	1284	U

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Mol	Chain	Res	Type
81	2	1292	U
81	2	1294	G
81	2	1296	G
81	2	1300	U
81	2	1306	U
81	2	1310	U
81	2	1311	A
81	2	1313	U
81	2	1314	U
81	2	1315	G
81	2	1316	C
81	2	1319	U
81	2	1320	A
81	2	1321	A
81	2	1322	C
81	2	1324	A
81	2	1336	A
81	2	1337	C
81	2	1339	U
81	2	1340	A
81	2	1343	A
81	2	1344	A
81	2	1345	A
81	2	1347	A
81	2	1349	G
81	2	1353	G
81	2	1356	G
81	2	1358	C
81	2	1359	A
81	2	1360	C
81	2	1361	U
81	2	1362	U
81	2	1363	G
81	2	1364	C
81	2	1366	G
81	2	1369	U
81	2	1370	G
81	2	1371	A
81	2	1380	A
81	2	1386	A
81	2	1387	C
81	2	1388	U

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Mol	Chain	Res	Type
81	2	1393	G
81	2	1396	U
81	2	1397	C
81	2	1398	A
81	2	1400	G
81	2	1410	G
81	2	1411	U
81	2	1412	U
81	2	1413	U
81	2	1416	G
81	2	1417	G
81	2	1423	A
81	2	1425	A
81	2	1426	G
81	2	1429	C
81	2	1430	U
81	2	1432	U
81	2	1433	G
81	2	1434	A
81	2	1438	C
81	2	1439	C
81	2	1442	A
81	2	1443	G
81	2	1444	A
81	2	1445	C
81	2	1446	G
81	2	1447	U
81	2	1449	C
81	2	1450	U
81	2	1452	G
81	2	1454	C
81	2	1455	C
81	2	1456	G
81	2	1457	C
81	2	1458	A
81	2	1459	C
81	2	1461	C
81	2	1464	G
81	2	1467	A
81	2	1468	C
81	2	1469	A
81	2	1470	C

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Mol	Chain	Res	Type
81	2	1471	U
81	2	1475	G
81	2	1476	G
81	2	1481	A
81	2	1484	G
81	2	1485	A
81	2	1487	U
81	2	1488	A
81	2	1489	C
81	2	1490	A
81	2	1491	A
81	2	1492	C
81	2	1494	U
81	2	1495	U
81	2	1498	C
81	2	1502	G
81	2	1506	U
81	2	1507	C
81	2	1508	U
81	2	1509	G
81	2	1512	U
81	2	1513	A
81	2	1514	A
81	2	1515	U
81	2	1516	C
81	2	1519	G
81	2	1521	G
81	2	1522	A
81	2	1525	C
81	2	1532	G
81	2	1533	U
81	2	1534	G
81	2	1535	C
81	2	1537	G
81	2	1540	G
81	2	1543	A
81	2	1552	U
81	2	1553	A
81	2	1554	A
81	2	1555	U
81	2	1556	U
81	2	1557	A

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Mol	Chain	Res	Type
81	2	1566	C
81	2	1569	C
81	2	1570	G
81	2	1571	A
81	2	1580	U
81	2	1583	U
81	2	1594	C
81	2	1595	A
81	2	1597	C
81	2	1598	A
81	2	1599	G
81	2	1602	U
81	2	1611	U
81	2	1614	G
81	2	1616	C
81	2	1617	C
81	2	1623	C
81	2	1626	U
81	2	1629	A
81	2	1630	C
81	2	1632	C
81	2	1633	A
81	2	1635	C
81	2	1640	G
81	2	1648	U
81	2	1654	U
81	2	1655	U
81	2	1656	G
81	2	1667	U
81	2	1678	G
81	2	1679	A
81	2	1680	U
81	2	1682	U
81	2	1685	U
81	2	1686	U
81	2	1687	A
81	2	1688	G
81	2	1692	A
81	2	1693	G
81	2	1694	G
81	2	1696	G
81	2	1697	G

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Mol	Chain	Res	Type
81	2	1698	C
81	2	1699	A
81	2	1700	A
81	2	1701	C
81	2	1702	U
81	2	1703	C
81	2	1706	U
81	2	1707	C
81	2	1708	U
81	2	1709	C
81	2	1710	A
81	2	1711	G
81	2	1712	A
81	2	1724	G
81	2	1725	G
81	2	1729	A
81	2	1733	U
81	2	1737	C
81	2	1740	U
81	2	1743	G
81	2	1744	A
81	2	1745	G
81	2	1748	A
81	2	1751	A
81	2	1752	A
81	2	1753	A
81	2	1754	A
81	2	1755	G
81	2	1758	G
81	2	1759	U
81	2	1760	A
81	2	1763	A
81	2	1764	A
81	2	1766	G
81	2	1767	U
81	2	1770	C
81	2	1777	U
81	2	1778	G
81	2	1779	A
81	2	1780	A
81	2	1781	C
81	2	1789	A

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Mol	Chain	Res	Type
81	2	1790	G
81	2	1791	G
81	2	1792	A
81	2	1793	U
81	2	1794	C
81	2	1795	A
81	2	1796	U
81	2	1798	A
82	4	6038	G
82	4	6039	A
82	4	6042	U
82	4	6044	G
82	4	6048	G
82	4	6054	A
82	4	6055	C
82	4	6056	A
82	4	6059	U
82	4	6060	U
82	4	6061	U
82	4	6067	G
82	4	6068	U
82	4	6069	U
82	4	6071	A
82	4	6072	U
82	4	6073	A
82	4	6074	A
82	4	6086	U
82	4	6088	C
82	4	6089	U
82	4	6090	A
82	4	6098	A
82	4	6101	U
82	4	6106	U
82	4	6107	A
82	4	6108	G
82	4	6113	U
82	4	6116	G
82	4	6117	C
82	4	6118	U
82	4	6119	U
82	4	6120	U
82	4	6121	A

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Mol	Chain	Res	Type
82	4	6122	C
82	4	6123	G
82	4	6124	U
82	4	6125	U
82	4	6126	C
82	4	6127	C
82	4	6128	A
82	4	6129	G
82	4	6130	G
82	4	6133	G
82	4	6134	C
82	4	6135	C
82	4	6137	A
82	4	6138	G
82	4	6140	G
82	4	6142	C
82	4	6144	G
82	4	6145	C
82	4	6146	C
82	4	6147	C
82	4	6148	C
82	4	6153	U
82	4	6158	A
82	4	6164	C
82	4	6165	C
82	4	6166	C
82	4	6168	C
82	4	6170	C
82	4	6172	A
82	4	6173	C
82	4	6175	G
82	4	6176	U
82	4	6177	U
82	4	6179	U
82	4	6180	U
82	4	6181	C
82	4	6182	A
82	4	6183	G
82	4	6189	G
82	4	6192	G
82	4	6194	C
82	4	6195	G

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Mol	Chain	Res	Type
82	4	6196	A
82	4	6197	A
82	4	6199	A
82	4	6200	A
82	4	6201	C
82	4	6202	C
82	4	6203	U
82	4	6204	A
82	4	6211	U
82	4	6212	U
82	4	6213	A
82	4	6217	G
82	4	6218	C
82	4	6219	U

All (359) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	5	43	A
1	5	65	A
1	5	66	A
1	5	99	A
1	5	112	U
1	5	119	U
1	5	121	A
1	5	156	A
1	5	166	C
1	5	210	U
1	5	217	U
1	5	238	A
1	5	282	G
1	5	283	G
1	5	297	G
1	5	298	U
1	5	420	G
1	5	436	A
1	5	489	G
1	5	518	C
1	5	529	U
1	5	555	G
1	5	561	G
1	5	562	A

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Mol	Chain	Res	Type
1	5	580	A
1	5	593	U
1	5	596	U
1	5	598	G
1	5	609	C
1	5	707	A
1	5	735	U
1	5	736	C
1	5	737	U
1	5	741	G
1	5	757	A
1	5	787	A
1	5	844	C
1	5	859	A
1	5	860	U
1	5	867	A
1	5	887	G
1	5	908	G
1	5	950	U
1	5	952	U
1	5	964	G
1	5	985	U
1	5	987	C
1	5	998	A
1	5	1004	U
1	5	1035	A
1	5	1052	U
1	5	1065	U
1	5	1068	G
1	5	1115	U
1	5	1155	A
1	5	1167	C
1	5	1179	U
1	5	1193	G
1	5	1196	A
1	5	1209	C
1	5	1212	U
1	5	1233	G
1	5	1255	C
1	5	1257	A
1	5	1278	G
1	5	1300	U

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Mol	Chain	Res	Type
1	5	1316	G
1	5	1323	A
1	5	1326	A
1	5	1390	A
1	5	1403	C
1	5	1421	G
1	5	1452	A
1	5	1496	G
1	5	1525	U
1	5	1531	G
1	5	1539	U
1	5	1549	A
1	5	1558	A
1	5	1575	U
1	5	1576	U
1	5	1598	U
1	5	1600	C
1	5	1610	U
1	5	1685	U
1	5	1693	U
1	5	1719	A
1	5	1747	G
1	5	1777	G
1	5	1785	A
1	5	1788	U
1	5	1815	C
1	5	1816	A
1	5	1827	A
1	5	1848	A
1	5	1922	G
1	5	1924	C
1	5	1925	G
1	5	2032	U
1	5	2040	U
1	5	2041	C
1	5	2050	A
1	5	2051	U
1	5	2052	G
1	5	2058	A
1	5	2062	A
1	5	2070	C
1	5	2079	G

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Mol	Chain	Res	Type
1	5	2081	U
1	5	2107	A
1	5	2113	A
1	5	2166	C
1	5	2173	C
1	5	2218	G
1	5	2219	G
1	5	2228	A
1	5	2235	U
1	5	2236	C
1	5	2237	U
1	5	2238	U
1	5	2249	A
1	5	2250	A
1	5	2252	G
1	5	2274	G
1	5	2276	G
1	5	2278	A
1	5	2284	G
1	5	2285	G
1	5	2341	A
1	5	2343	C
1	5	2346	G
1	5	2369	G
1	5	2416	A
1	5	2417	G
1	5	2422	U
1	5	2429	U
1	5	2437	A
1	5	2455	A
1	5	2456	U
1	5	2468	U
1	5	2469	A
1	5	2481	C
1	5	2482	U
1	5	2491	U
1	5	2507	U
1	5	2518	G
1	5	2529	C
1	5	2530	A
1	5	2539	U
1	5	2540	A

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Mol	Chain	Res	Type
1	5	2553	G
1	5	2561	A
1	5	2586	G
1	5	2630	G
1	5	2645	G
1	5	2648	A
1	5	2657	A
1	5	2696	G
1	5	2722	G
1	5	2739	G
1	5	2740	U
1	5	2745	G
1	5	2769	A
1	5	2785	A
1	5	2786	U
1	5	2840	A
1	5	2854	U
1	5	2866	G
1	5	2890	G
1	5	2918	G
1	5	2922	U
1	5	2939	A
1	5	3023	U
1	5	3024	U
1	5	3046	U
1	5	3061	C
1	5	3122	C
1	5	3125	U
1	5	3135	A
1	5	3140	A
1	5	3163	U
1	5	3164	U
1	5	3186	A
1	5	3196	C
1	5	3207	G
1	5	3214	G
1	5	3220	G
1	5	3237	U
1	5	3242	A
1	5	3245	U
1	5	3248	U
1	5	3257	A

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Mol	Chain	Res	Type
1	5	3261	U
1	5	3284	A
1	5	3285	U
1	5	3308	G
1	5	3309	U
1	5	3325	U
2	7	13	A
2	7	49	G
2	7	76	A
2	7	111	U
3	8	7	U
3	8	8	C
3	8	34	U
3	8	79	A
3	8	81	U
3	8	126	A
81	2	2	A
81	2	3	U
81	2	8	U
81	2	10	G
81	2	11	A
81	2	45	U
81	2	66	U
81	2	72	A
81	2	73	U
81	2	114	C
81	2	129	U
81	2	130	C
81	2	131	C
81	2	133	U
81	2	177	U
81	2	186	G
81	2	209	A
81	2	216	A
81	2	217	A
81	2	239	C
81	2	248	U
81	2	258	U
81	2	265	A
81	2	277	U
81	2	279	U
81	2	314	A

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Mol	Chain	Res	Type
81	2	321	G
81	2	336	G
81	2	368	A
81	2	398	A
81	2	399	A
81	2	415	A
81	2	439	U
81	2	451	A
81	2	452	U
81	2	454	C
81	2	473	A
81	2	497	G
81	2	509	G
81	2	542	C
81	2	556	G
81	2	557	U
81	2	563	G
81	2	564	C
81	2	570	G
81	2	576	G
81	2	577	U
81	2	605	A
81	2	621	A
81	2	628	U
81	2	638	U
81	2	695	U
81	2	700	C
81	2	704	C
81	2	708	C
81	2	710	U
81	2	719	U
81	2	721	U
81	2	740	A
81	2	766	U
81	2	779	A
81	2	792	A
81	2	794	U
81	2	809	G
81	2	811	A
81	2	826	C
81	2	828	A
81	2	854	A

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Mol	Chain	Res	Type
81	2	884	G
81	2	885	U
81	2	886	A
81	2	909	C
81	2	912	G
81	2	913	G
81	2	927	U
81	2	929	A
81	2	930	C
81	2	931	U
81	2	963	U
81	2	990	G
81	2	1002	A
81	2	1003	U
81	2	1010	G
81	2	1027	C
81	2	1033	C
81	2	1034	G
81	2	1044	C
81	2	1056	U
81	2	1060	U
81	2	1080	A
81	2	1090	A
81	2	1098	U
81	2	1107	G
81	2	1157	C
81	2	1195	A
81	2	1243	A
81	2	1286	A
81	2	1292	U
81	2	1320	A
81	2	1343	A
81	2	1386	A
81	2	1412	U
81	2	1442	A
81	2	1455	C
81	2	1470	C
81	2	1491	A
81	2	1501	A
81	2	1515	U
81	2	1532	G
81	2	1534	G

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Mol	Chain	Res	Type
81	2	1556	U
81	2	1580	U
81	2	1598	A
81	2	1613	C
81	2	1628	U
81	2	1631	A
81	2	1632	C
81	2	1654	U
81	2	1655	U
81	2	1678	G
81	2	1724	G
81	2	1752	A
81	2	1759	U
81	2	1763	A
81	2	1765	G
81	2	1792	A
81	2	1795	A
82	4	6038	G
82	4	6106	U
82	4	6119	U
82	4	6120	U
82	4	6122	C
82	4	6124	U
82	4	6127	C
82	4	6133	G
82	4	6134	C
82	4	6137	A
82	4	6144	G
82	4	6165	C
82	4	6172	A
82	4	6174	G
82	4	6177	U
82	4	6181	C
82	4	6194	C
82	4	6195	G
82	4	6196	A
82	4	6200	A
82	4	6201	C
82	4	6203	U
82	4	6211	U
82	4	6218	C

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 88 ligands modelled in this entry, 86 are monoatomic - leaving 2 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	$\# Z > 2$
87	6EM	1	903	83	8,9,9	0.94	1 (12%)	7,13,13	1.77	1 (14%)
86	GCP	1	902	84	32,34,34	1.78	7 (21%)	49,54,54	1.81	9 (18%)

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
87	6EM	1	903	83	-	5/12/12/12	-
86	GCP	1	902	84	-	2/19/38/38	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	1	902	GCP	PG-O1G	5.97	1.62	1.50
86	1	902	GCP	PG-O3G	-3.33	1.47	1.55
86	1	902	GCP	PG-O2G	3.07	1.61	1.55
86	1	902	GCP	C5-C4	2.99	1.47	1.38
86	1	902	GCP	C6-N1	-2.39	1.34	1.38
86	1	902	GCP	C5-N7	-2.35	1.34	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
87	1	903	6EM	C3-C5	-2.08	1.50	1.53
86	1	902	GCP	C4-N9	-2.06	1.32	1.38

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
86	1	902	GCP	C5-C4-N3	-5.48	119.67	128.39
86	1	902	GCP	C2-N3-C4	4.96	120.84	112.30
87	1	903	6EM	C9-N4-C3	4.01	120.13	110.52
86	1	902	GCP	PB-O3A-PA	-3.84	119.83	132.37
86	1	902	GCP	N9-C4-N3	3.75	133.46	125.95
86	1	902	GCP	C6-C5-N7	3.70	137.02	130.29
86	1	902	GCP	O2G-PG-C3B	2.66	112.85	106.40
86	1	902	GCP	C4-C5-N7	-2.63	106.51	110.67
86	1	902	GCP	O2A-PA-O3A	2.19	113.19	107.27
86	1	902	GCP	O6-C6-C5	-2.13	120.91	126.53

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
86	1	902	GCP	C5'-O5'-PA-O1A
87	1	903	6EM	C1-C2-C3-C5
87	1	903	6EM	C1-C2-C3-N4
87	1	903	6EM	C2-C3-N4-C9
87	1	903	6EM	C2-C3-N4-C10
87	1	903	6EM	N4-C3-C5-N7
86	1	902	GCP	O4'-C4'-C5'-O5'

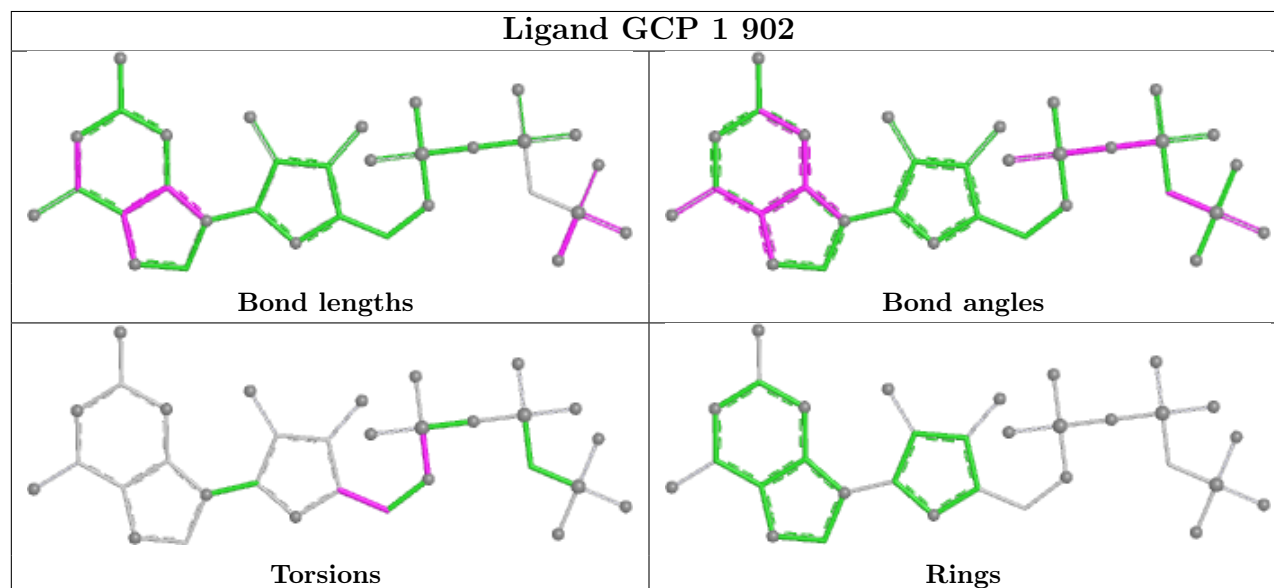
There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	1	903	6EM	2	0
86	1	902	GCP	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 than 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.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	5	2
47	KK	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	5	443:G	O3'	466:G	P	31.65
1	5	1948:C	O3'	2019:G	P	17.88
1	KK	23:UNK	C	28:UNK	N	3.41
1	KK	52:UNK	C	54:UNK	N	3.29

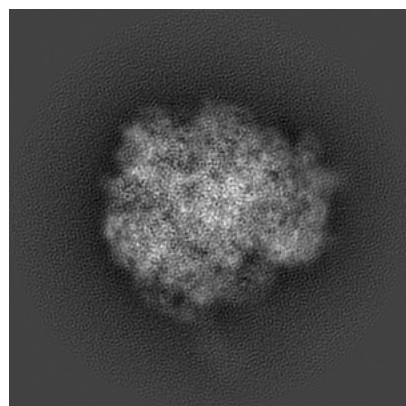
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-8123. These allow visual inspection of the internal detail of the map and identification of artifacts.

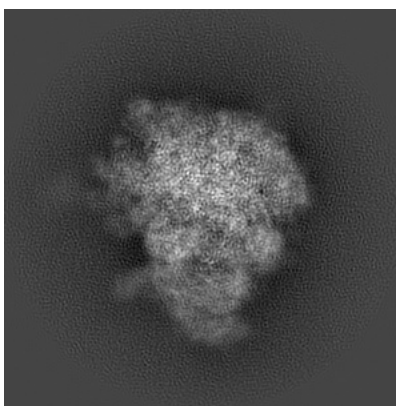
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

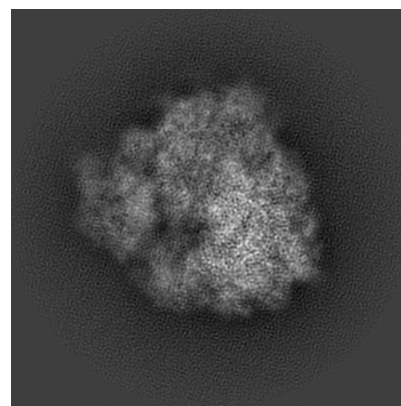
6.1.1 Primary map



X

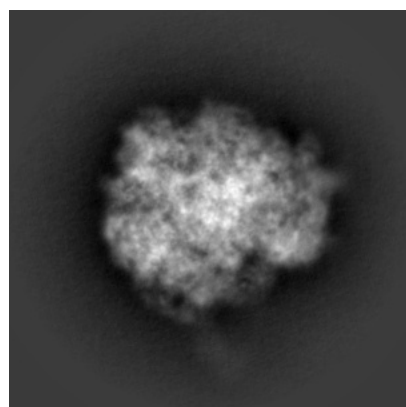


Y

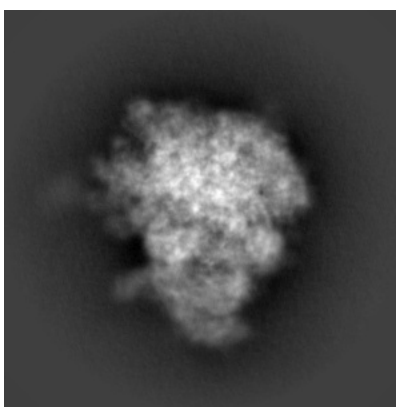


Z

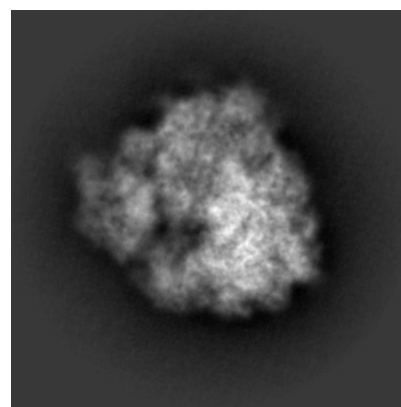
6.1.2 Raw map



X



Y

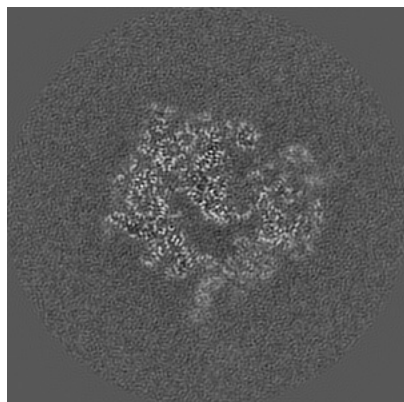


Z

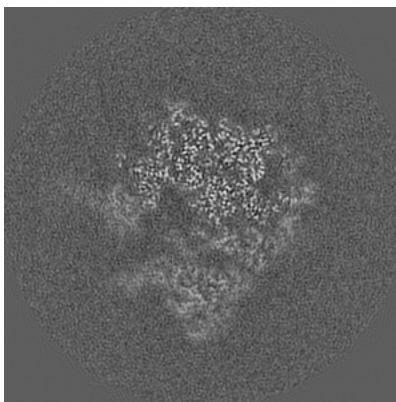
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

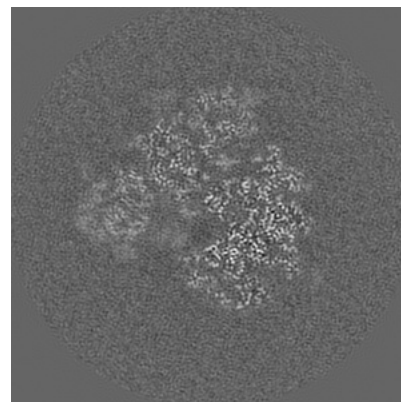
6.2.1 Primary map



X Index: 160

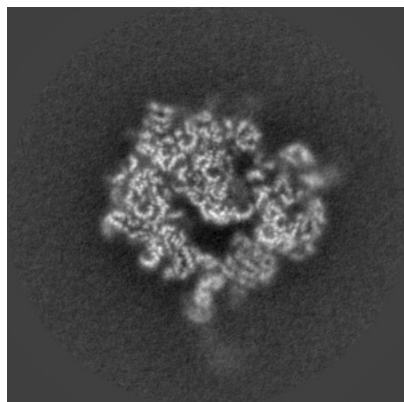


Y Index: 160

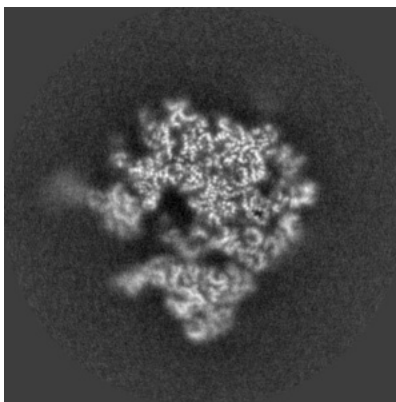


Z Index: 160

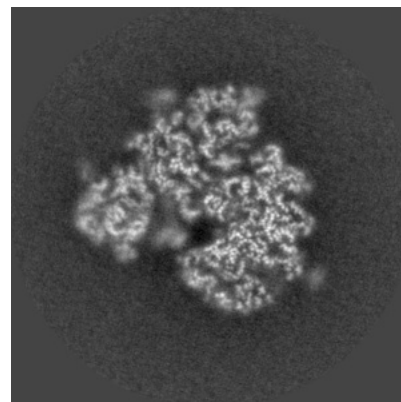
6.2.2 Raw map



X Index: 160



Y Index: 160

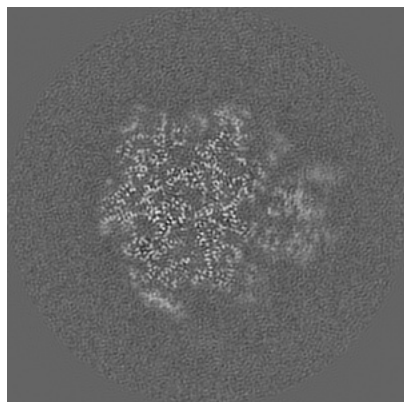


Z Index: 160

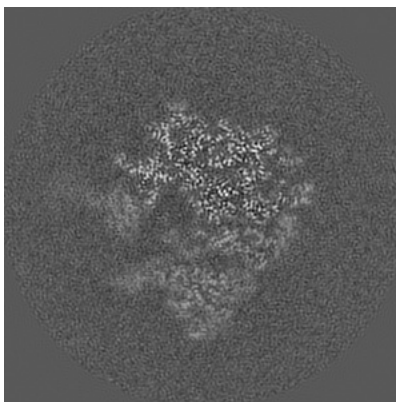
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

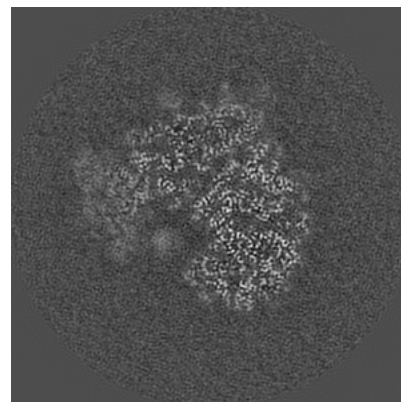
6.3.1 Primary map



X Index: 186

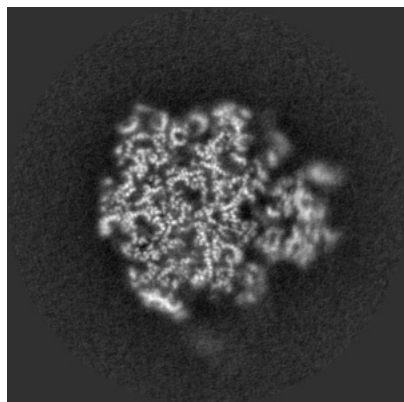


Y Index: 161

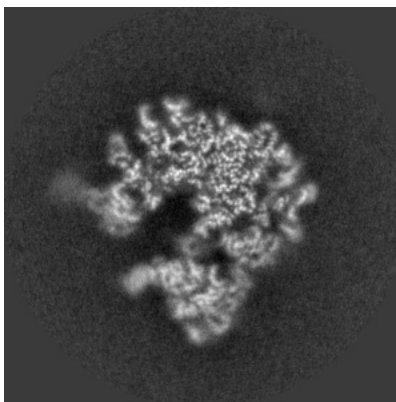


Z Index: 170

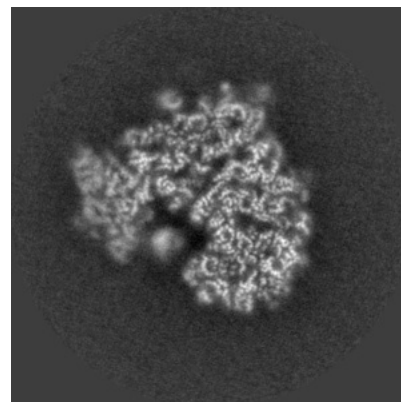
6.3.2 Raw map



X Index: 186



Y Index: 156

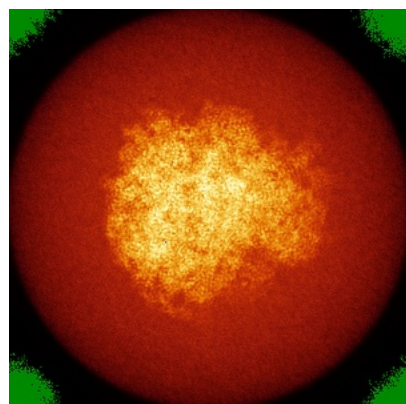


Z Index: 170

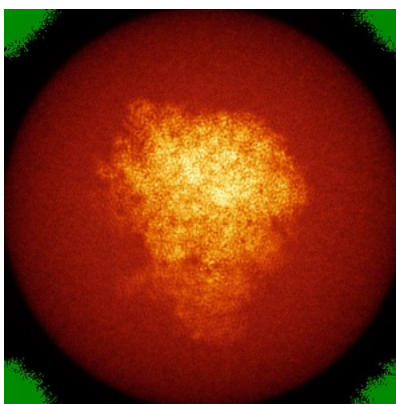
The images above show the largest variance slices of the map in three orthogonal directions.

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

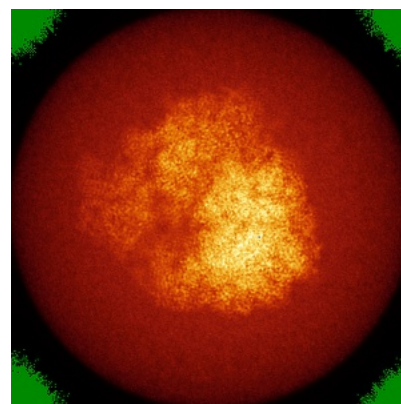
6.4.1 Primary map



X

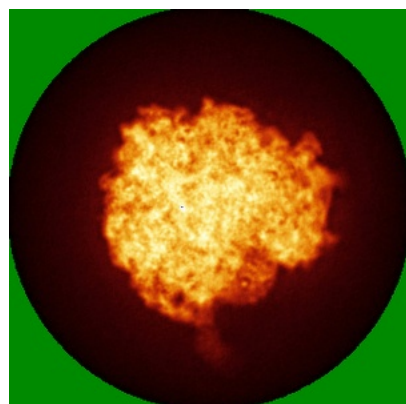


Y

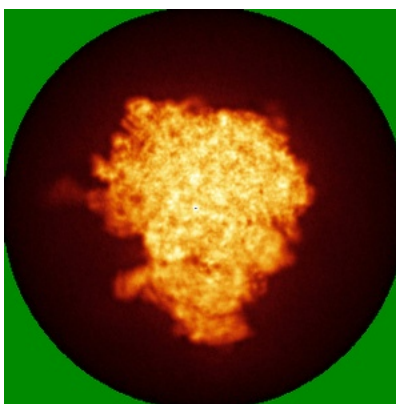


Z

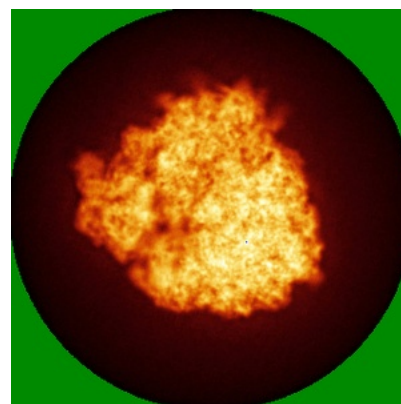
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

This section was not generated.

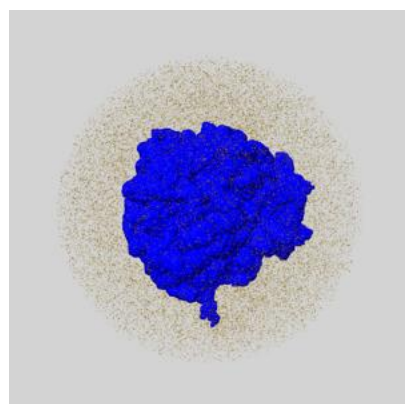
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

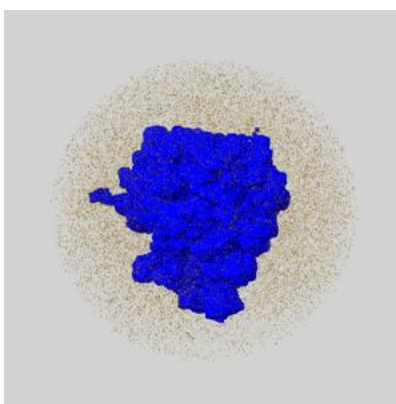
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

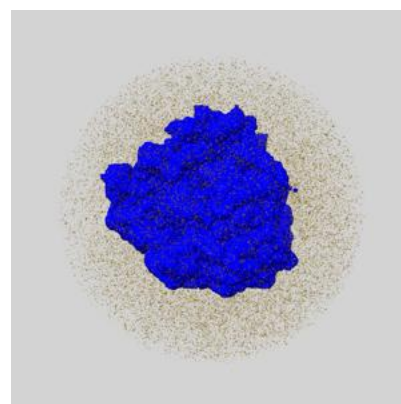
6.6.1 emd_8123_msk_1.map [i](#)



X



Y

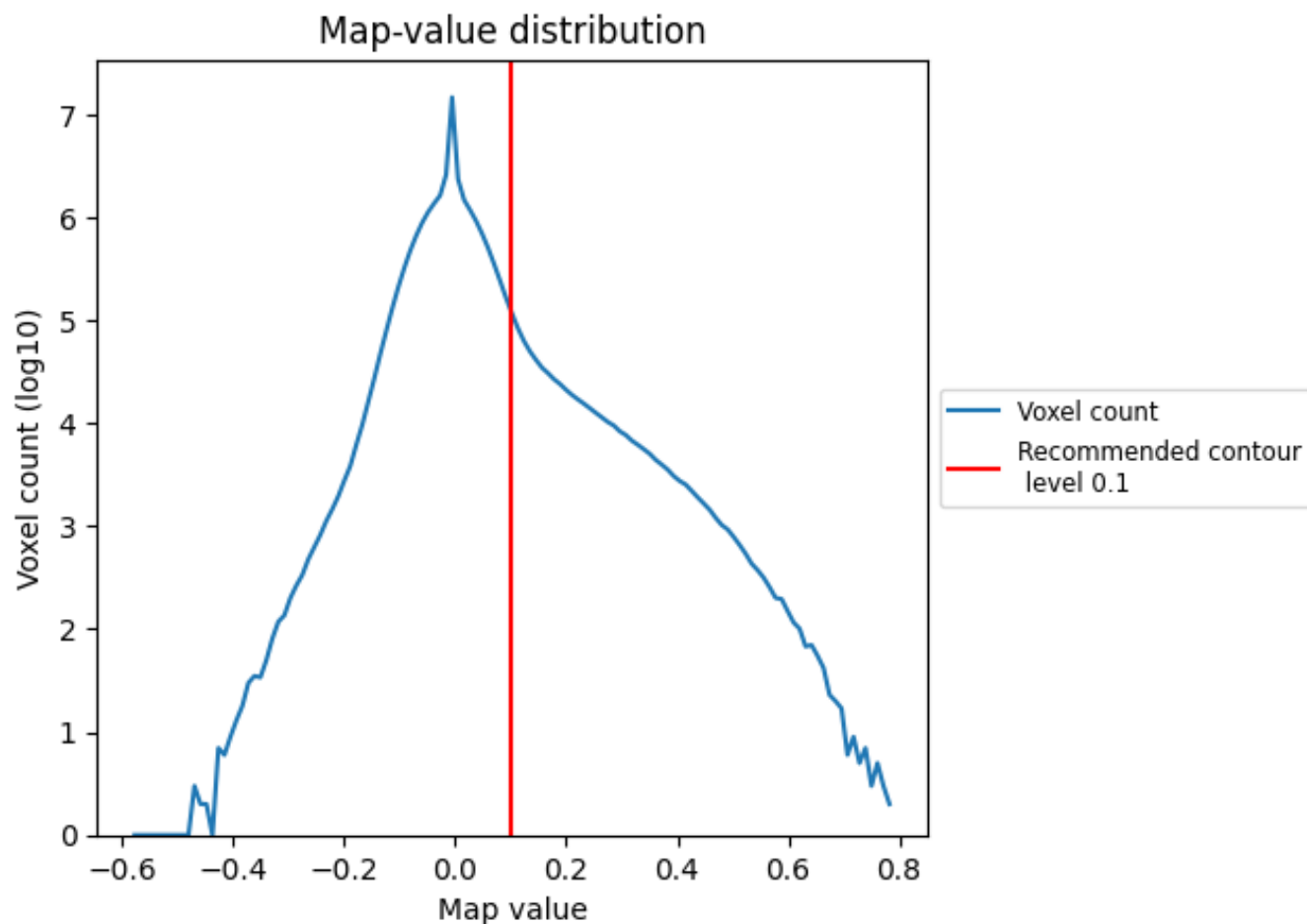


Z

7 Map analysis [i](#)

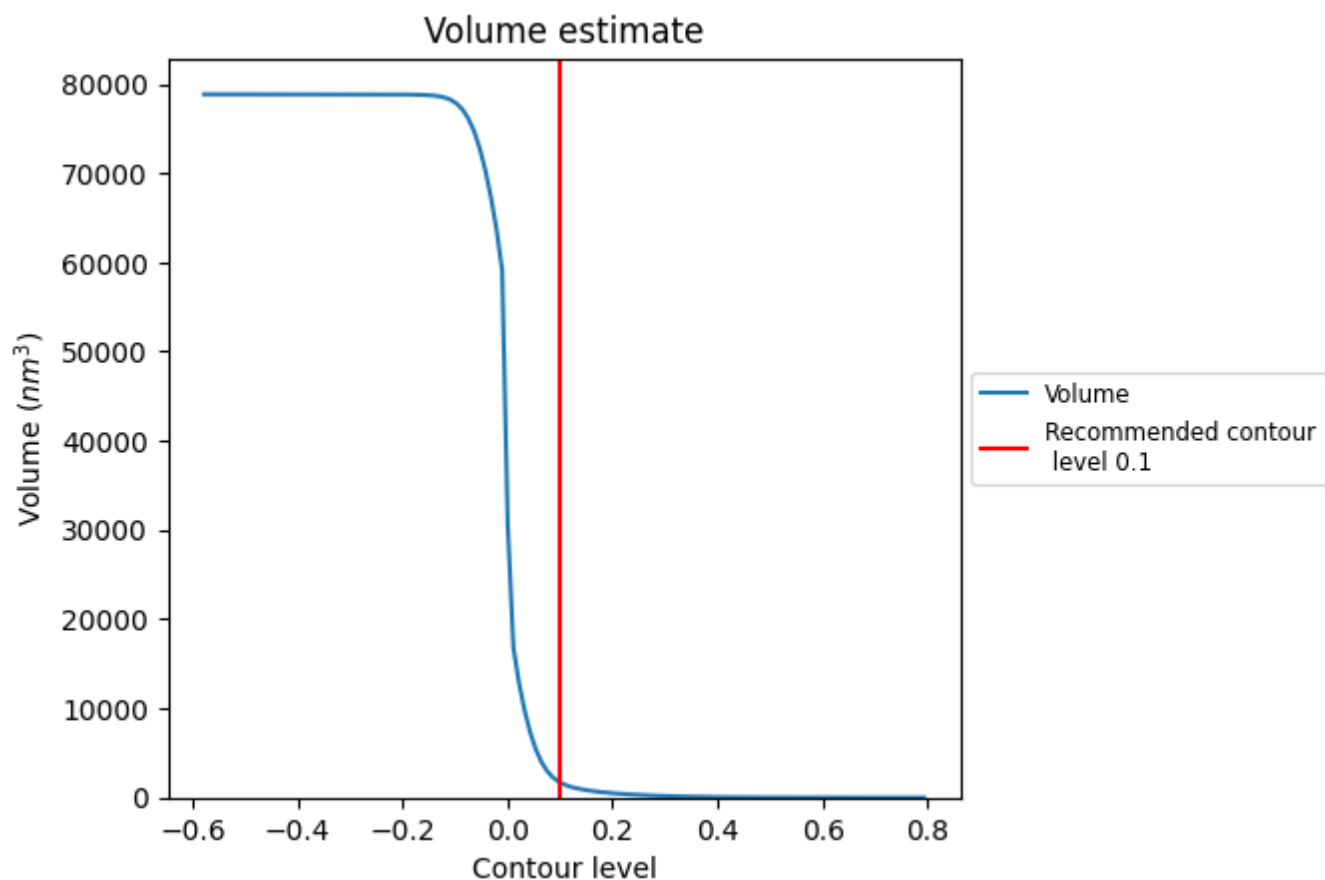
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

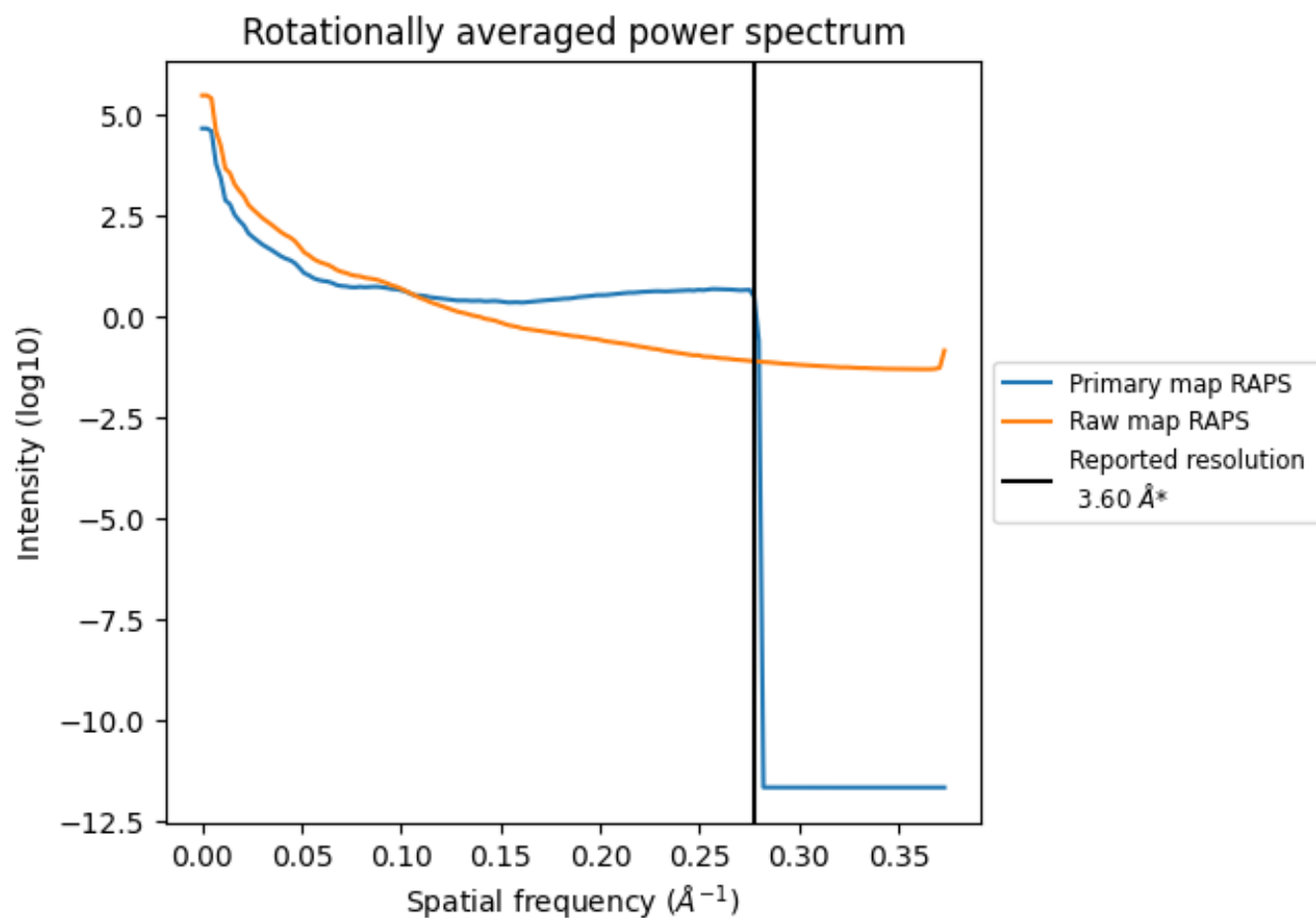
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1706 nm^3 ; this corresponds to an approximate mass of 1541 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

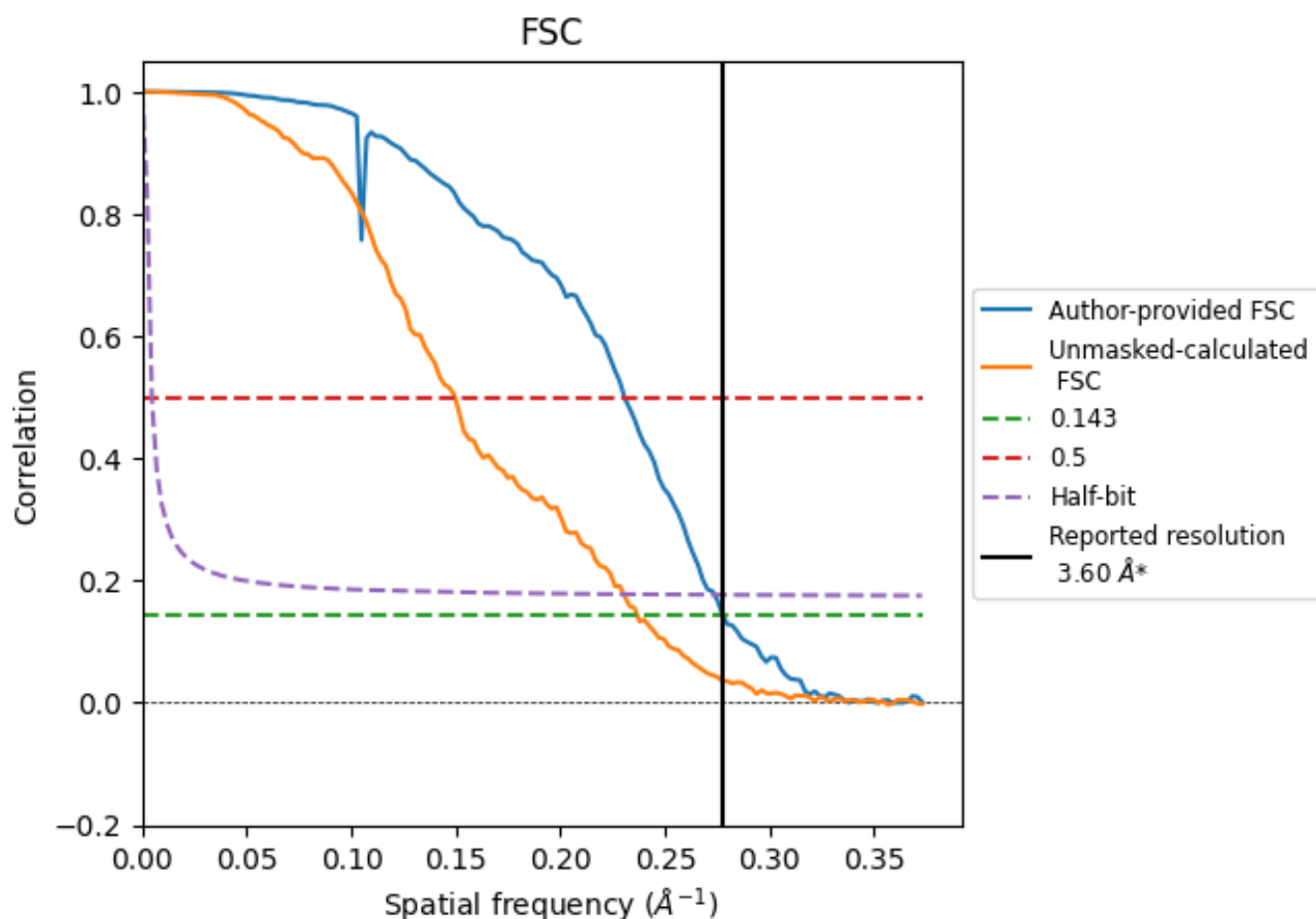


*Reported resolution corresponds to spatial frequency of 0.278 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.278 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

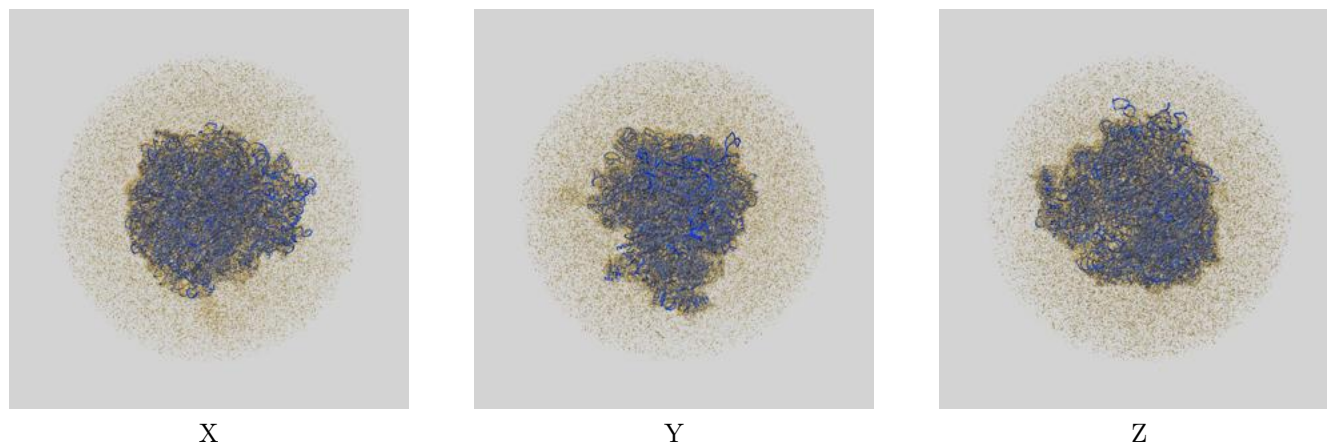
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.60	4.33	3.65
Unmasked-calculated*	4.22	6.69	4.34

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.22 differs from the reported value 3.6 by more than 10 %

9 Map-model fit [i](#)

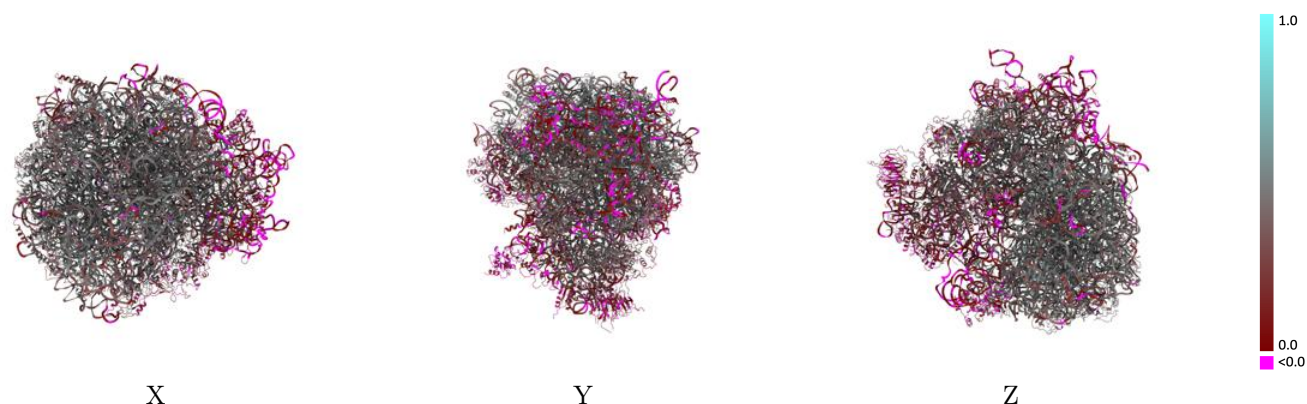
This section contains information regarding the fit between EMDB map EMD-8123 and PDB model 5IT7. Per-residue inclusion information can be found in section 3 on page 22.

9.1 Map-model overlay [i](#)



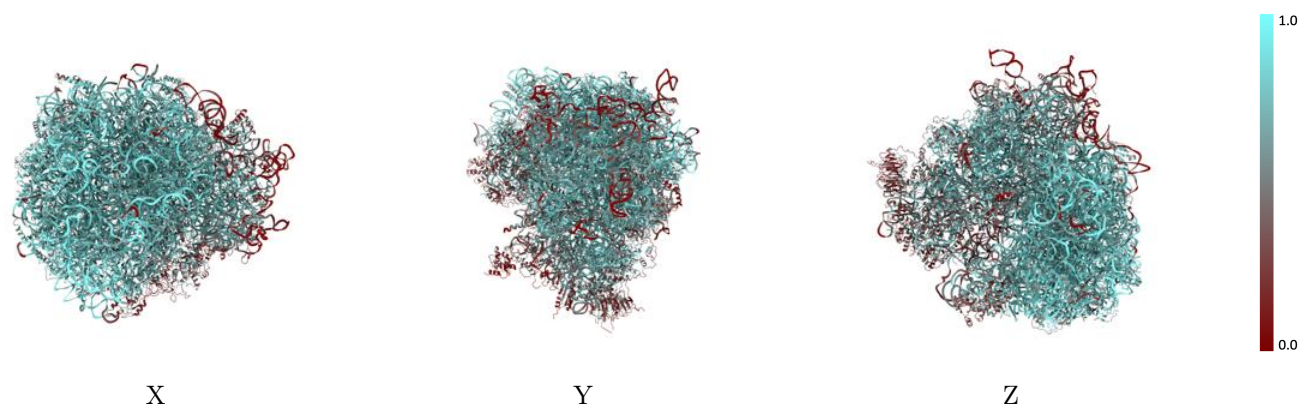
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



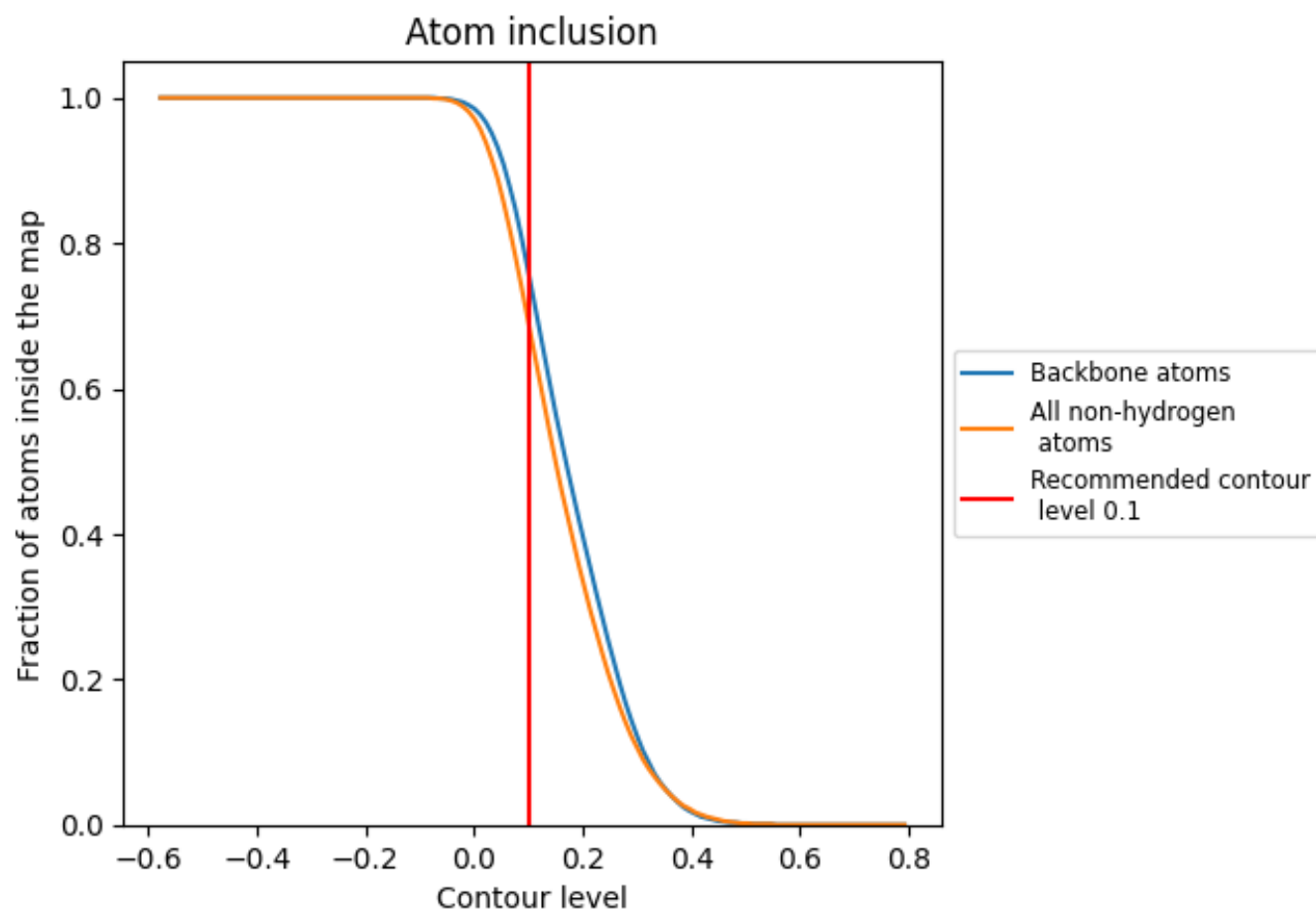
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.1).

9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 69% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.6910	 0.3580
1	 0.4520	 0.2850
2	 0.6800	 0.2900
4	 0.3600	 0.0710
5	 0.8270	 0.4120
7	 0.8960	 0.4420
8	 0.8690	 0.4390
A	 0.6400	 0.3480
AA	 0.7470	 0.4820
B	 0.5230	 0.2830
BB	 0.7560	 0.4680
C	 0.6910	 0.4200
CC	 0.7430	 0.4550
D	 0.4110	 0.2220
DD	 0.7010	 0.3970
E	 0.6260	 0.3710
EE	 0.6990	 0.4020
F	 0.3470	 0.1690
FF	 0.7720	 0.4590
G	 0.4090	 0.1840
GG	 0.7030	 0.4140
H	 0.5610	 0.3020
HH	 0.7040	 0.4410
I	 0.5320	 0.2880
II	 0.7340	 0.4630
J	 0.6510	 0.3720
JJ	 0.6440	 0.3630
K	 0.3530	 0.1400
KK	 0.2490	 0.1270
L	 0.5780	 0.3540
LL	 0.7180	 0.4290
M	 0.1130	 0.0080
MM	 0.7500	 0.4410
N	 0.6220	 0.3860
NN	 0.7890	 0.4960



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Chain	Atom inclusion	Q-score
O	 0.6040	 0.3550
OO	 0.8110	 0.4960
P	 0.3270	 0.1460
PP	 0.7390	 0.4480
Q	 0.4310	 0.2100
QQ	 0.7650	 0.4760
R	 0.4390	 0.2200
RR	 0.6780	 0.4030
S	 0.2840	 0.1310
SS	 0.7620	 0.4760
T	 0.4330	 0.2070
TT	 0.7540	 0.4660
U	 0.3340	 0.1720
UU	 0.6300	 0.3760
V	 0.6430	 0.3730
VV	 0.7080	 0.4670
W	 0.7480	 0.4740
WW	 0.7360	 0.4570
X	 0.6540	 0.4420
XX	 0.7180	 0.4540
Y	 0.5470	 0.2820
YY	 0.7320	 0.4410
Z	 0.3720	 0.1310
ZZ	 0.7240	 0.4020
a	 0.6300	 0.3730
aa	 0.7680	 0.4700
b	 0.5410	 0.3040
bb	 0.7240	 0.4260
c	 0.3630	 0.1930
cc	 0.6840	 0.4300
d	 0.5290	 0.2700
dd	 0.7240	 0.4480
e	 0.4870	 0.3020
ee	 0.7520	 0.4740
f	 0.1720	 0.0460
ff	 0.7790	 0.5020
g	 0.2980	 0.1230
gg	 0.6760	 0.4270
hh	 0.7320	 0.4360
ii	 0.6860	 0.3910
jj	 0.8250	 0.5040
kk	 0.6110	 0.3480

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Chain	Atom inclusion	Q-score
ll	 0.7790	 0.4820
mm	 0.7200	 0.4660
nn	 0.4530	 0.3530
oo	 0.6930	 0.4360
pp	 0.7070	 0.4600
qq	 0.2450	 0.0580
rr	 0.2680	 0.2120