



## Full wwPDB EM Validation Report ⓘ

Apr 6, 2026 – 03:56 AM UTC

PDB ID : 9Q7Q / pdb\_00009q7q  
EMDB ID : EMD-72314  
Title : ABCE1-eRF1-RNC-AMD1C  
Authors : Maldosevic, E.; Jomaa, A.  
Deposited on : 2025-08-25  
Resolution : 2.86 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](mailto: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>.

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

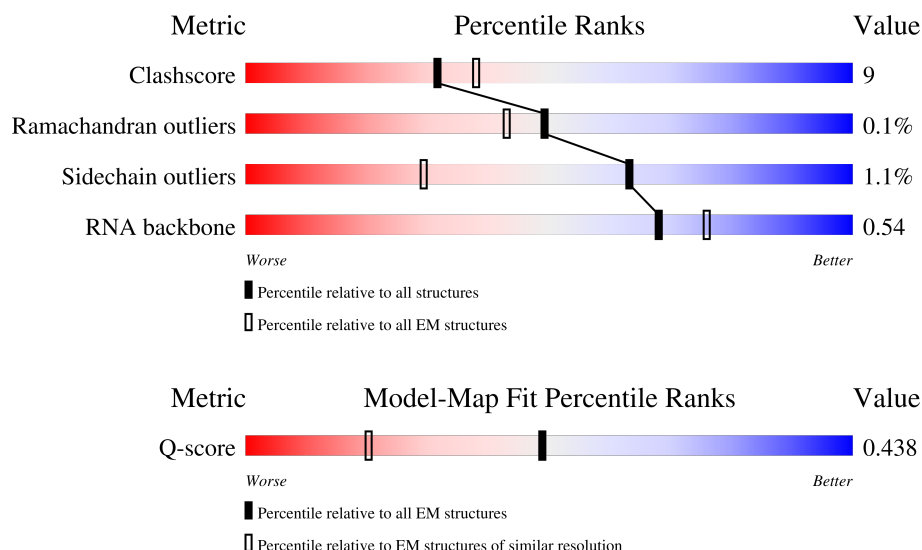
EMDB validation analysis : 0.0.1.dev132  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins)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

# 1 Overall quality at a glance i

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

The reported resolution of this entry is 2.86 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.






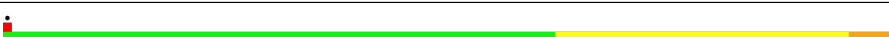
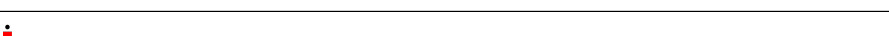
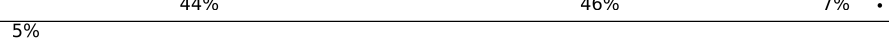
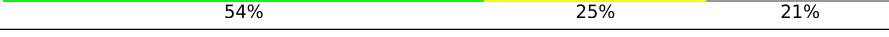




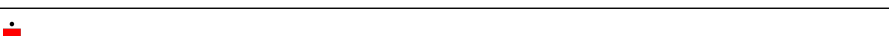

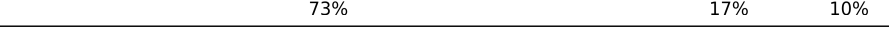





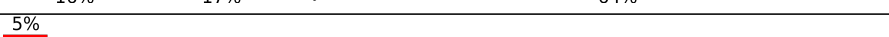





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	12017 ( 2.36 - 3.36 )

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  $\geq 3$ , 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	0	156	<div> <div>42%</div> <div>35% 8% 56%</div> </div>
2	1	32	<div> <div>16%</div> <div>84% 16%</div> </div>
3	2	76	<div> <div>46% 50%</div> </div>

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Mol	Chain	Length	Quality of chain
4	4	11	
5	5	7224	
6	6	317	
7	7	120	
8	8	156	
9	9	56	
10	A	257	
11	B	403	
12	C	413	
13	D	297	
14	E	291	
15	F	249	
16	G	319	
17	H	192	
18	I	214	
19	J	178	
20	K	4592	
21	L	211	
22	M	139	
23	N	203	
24	O	203	
25	P	183	
26	Q	187	
27	R	181	
28	S	176	

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Mol	Chain	Length	Quality of chain
29	T	160	
30	U	99	
31	V	140	
32	W	157	
33	X	156	
34	Y	145	
35	Z	136	
36	a	148	
37	b	245	
38	c	115	
39	d	125	
40	e	130	
41	f	110	
42	g	117	
43	h	123	
44	i	105	
45	j	97	
46	k	69	
47	l	51	
48	m	128	
49	n	25	
50	o	106	
51	p	92	
52	q	222	
53	r	137	

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Mol	Chain	Length	Quality of chain
54	s	318	
55	t	165	
56	u	264	
57	v	278	
58	w	243	
59	x	263	
60	y	204	
61	z	249	
62	AA	133	
63	BB	194	
64	CC	208	
65	DD	194	
66	EE	158	
67	FF	69	
68	GG	119	
69	HH	83	
70	II	152	
71	JJ	84	
72	KK	134	
73	LL	115	
74	MM	151	
75	NN	133	
76	OO	124	
77	PP	145	
78	QQ	151	

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Mol	Chain	Length	Quality of chain
79	RF	437	
80	RR	132	
81	SS	165	
82	TT	130	
83	UU	146	
84	VV	143	
85	WW	145	
86	AB	599	

## 2 Entry composition

There are 88 unique types of molecules in this entry. The entry contains 218503 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	68	Total	C	N	O	S	0	0
			555	351	103	94	7		

- Molecule 2 is a protein called AMD1 C-tail.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	1	32	Total	C	N	O	0	0
			225	143	45	37		

- Molecule 3 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	76	Total	C	N	O	P	0	0
			1622	723	286	537	76		

- Molecule 4 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	4	11	Total	C	N	O	P	0	0
			230	103	37	79	11		

- Molecule 5 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	5	3444	Total	C	N	O	P	0	0
			73867	32899	13535	23989	3444		

- Molecule 6 is a protein called RACK1.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	6	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 7 is a RNA chain called 5S rRNA.

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

- Molecule 8 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	8	151	Total	C	N	O	P	0	0
			3208	1432	564	1062	150		

- Molecule 9 is a protein called eS29.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	9	44	Total	C	N	O	S	0	0
			359	222	73	59	5		

- Molecule 10 is a protein called Ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	A	248	Total	C	N	O	S	0	0
			1898	1189	389	314	6		

- Molecule 11 is a protein called Ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	B	394	Total	C	N	O	S	0	0
			3172	2020	597	542	13		

- Molecule 12 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	C	362	Total	C	N	O	S	0	0
			2883	1812	577	480	14		

- Molecule 13 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	D	290	Total	C	N	O	S	0	0
			2364	1492	434	424	14		

- Molecule 14 is a protein called 60S ribosomal protein L6.



Mol	Chain	Residues	Atoms					AltConf	Trace
14	E	216	Total	C	N	O	S	0	0
			1729	1115	329	282	3		

- Molecule 15 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	F	225	Total	C	N	O	S	0	0
			1875	1205	358	303	9		

- Molecule 16 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	G	228	Total	C	N	O	S	0	0
			1845	1178	355	308	4		

- Molecule 17 is a protein called 60S ribosomal protein L9.

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

- Molecule 18 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	I	213	Total	C	N	O	S	0	0
			1717	1086	332	285	14		

- Molecule 19 is a protein called Ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	J	170	Total	C	N	O	S	0	0
			1362	861	254	241	6		

- Molecule 20 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	K	1662	Total	C	N	O	P	0	0
			35481	15839	6373	11608	1661		

- Molecule 21 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	L	210	Total	C	N	O	S	0	0
			1702	1065	354	279	4		

- Molecule 22 is a protein called Large ribosomal subunit protein eL14.

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

- Molecule 23 is a protein called 60S ribosomal protein L15.

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

- Molecule 24 is a protein called Large ribosomal subunit protein uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	O	199	Total	C	N	O	S	0	0
			1630	1051	319	255	5		

- Molecule 25 is a protein called Large ribosomal subunit protein uL22.

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

- Molecule 26 is a protein called Large ribosomal subunit protein eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	Q	187	Total	C	N	O	S	0	0
			1515	946	315	250	4		

- Molecule 27 is a protein called Large ribosomal subunit protein eL19.

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

- Molecule 28 is a protein called Large ribosomal subunit protein eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	S	176	Total	C	N	O	S	0	0
			1457	924	288	234	11		

- Molecule 29 is a protein called eL21.

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

- Molecule 30 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	U	98	Total	C	N	O	S	0	0
			795	507	140	146	2		

- Molecule 31 is a protein called Ribosomal protein L23.

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

- Molecule 32 is a protein called eL24.

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

- Molecule 33 is a protein called eL23.

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

- Molecule 34 is a protein called uL24.

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

- Molecule 35 is a protein called 60S ribosomal protein L27.

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

- Molecule 36 is a protein called 60S ribosomal protein L27a.

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

- Molecule 37 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	b	102	Total	C	N	O	S	0	0
			833	516	187	127	3		

- Molecule 38 is a protein called eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	c	98	Total	C	N	O	S	0	0
			761	481	134	140	6		

- Molecule 39 is a protein called eL31.

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

- Molecule 40 is a protein called 60S ribosomal protein L32.

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

- Molecule 41 is a protein called eL33.

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

- Molecule 42 is a protein called 60S ribosomal protein L34.

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

- Molecule 43 is a protein called eL35.

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

- Molecule 44 is a protein called Large ribosomal subunit protein eL36.

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

- Molecule 45 is a protein called Ribosomal protein L37.

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

- Molecule 46 is a protein called Large ribosomal subunit protein eL38.

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

- Molecule 47 is a protein called eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	l	50	Total	C	N	O	S	0	0
			447	286	96	64	1		

- Molecule 48 is a protein called Ubiquitin-ribosomal protein eL40 fusion protein.

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

- Molecule 49 is a protein called eL41.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	n	25	Total	C	N	O	S	0	0
			239	145	64	27	3		

- Molecule 50 is a protein called Large ribosomal subunit protein eL42.

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

- Molecule 51 is a protein called eL43.

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

- Molecule 52 is a protein called Small ribosomal subunit protein uS2.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	q	217	Total	C	N	O	S	0	0
			1710	1086	300	316	8		

- Molecule 53 is a protein called eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	r	124	Total	C	N	O	S	0	0
			994	616	205	167	6		

- Molecule 54 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	s	196	Total	C	N	O	S	0	0
			1507	959	263	276	9		

- Molecule 55 is a protein called 60S ribosomal protein L12.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	t	137	Total	C	N	O	S	0	0
			1022	640	187	191	4		

- Molecule 56 is a protein called 40S ribosomal protein S3a.

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

- Molecule 57 is a protein called Small ribosomal subunit protein uS5.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	v	221	Total	C	N	O	S	0	0
			1715	1111	295	300	9		

- Molecule 58 is a protein called Ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	w	211	Total	C	N	O	S	0	0
			1642	1047	299	289	7		

- Molecule 59 is a protein called Small ribosomal subunit protein eS4.

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

- Molecule 60 is a protein called Ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	y	185	Total	C	N	O	S	0	0
			1471	921	277	266	7		

- Molecule 61 is a protein called 40S ribosomal protein S6.

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

- Molecule 62 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	AA	55	Total	C	N	O	S	0	0
			443	274	97	71	1		

- Molecule 63 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	BB	185	Total	C	N	O	S	0	0
			1488	952	271	264	1		

- Molecule 64 is a protein called eS8.

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

- Molecule 65 is a protein called Ribosomal protein S9 (Predicted).

Mol	Chain	Residues	Atoms					AltConf	Trace
65	DD	181	Total	C	N	O	S	0	0
			1495	950	299	244	2		

- Molecule 66 is a protein called Ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	EE	139	Total	C	N	O	S	0	0
			1140	728	214	192	6		

- Molecule 67 is a protein called Ribosomal protein S28.

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

- Molecule 68 is a protein called uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	GG	99	Total	C	N	O	S	0	0
			785	492	149	140	4		

- Molecule 69 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	HH	83	Total	C	N	O	S	0	0
			637	392	117	123	5		

- Molecule 70 is a protein called uS13.



Mol	Chain	Residues	Atoms					AltConf	Trace
70	II	144	Total	C	N	O	S	0	0
			1190	746	241	202	1		

- Molecule 71 is a protein called 40S ribosomal protein S27.

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

- Molecule 72 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	KK	132	Total	C	N	O	S	0	0
			1068	670	199	195	4		

- Molecule 73 is a protein called eS26.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	LL	101	Total	C	N	O	S	0	0
			814	507	170	132	5		

- Molecule 74 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	MM	135	Total	C	N	O	S	0	0
			1004	614	196	188	6		

- Molecule 75 is a protein called Small ribosomal subunit protein eS24.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	NN	124	Total	C	N	O	S	0	0
			1011	640	198	168	5		

- Molecule 76 is a protein called eS25.

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

- Molecule 77 is a protein called eS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	PP	141	Total	C	N	O	S	0	0
			1097	688	211	195	3		

- Molecule 78 is a protein called Ribosomal protein S13.

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

- Molecule 79 is a protein called Eukaryotic peptide chain release factor subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	RF	414	Total	C	N	O	S	0	0
			3268	2080	557	620	11		

- Molecule 80 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	RR	117	Total	C	N	O	S	0	0
			908	570	161	169	8		

- Molecule 81 is a protein called S10\_ plectin domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	SS	96	Total	C	N	O	S	0	0
			810	530	143	131	6		

- Molecule 82 is a protein called Ribosomal protein S15a.

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

- Molecule 83 is a protein called uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	UU	139	Total	C	N	O	S	0	0
			1109	704	210	192	3		

- Molecule 84 is a protein called uS12.

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

- Molecule 85 is a protein called uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	WW	120	Total	C	N	O	S	0	0
			997	635	187	168	7		

- Molecule 86 is a protein called ATP binding cassette subfamily E member 1.

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

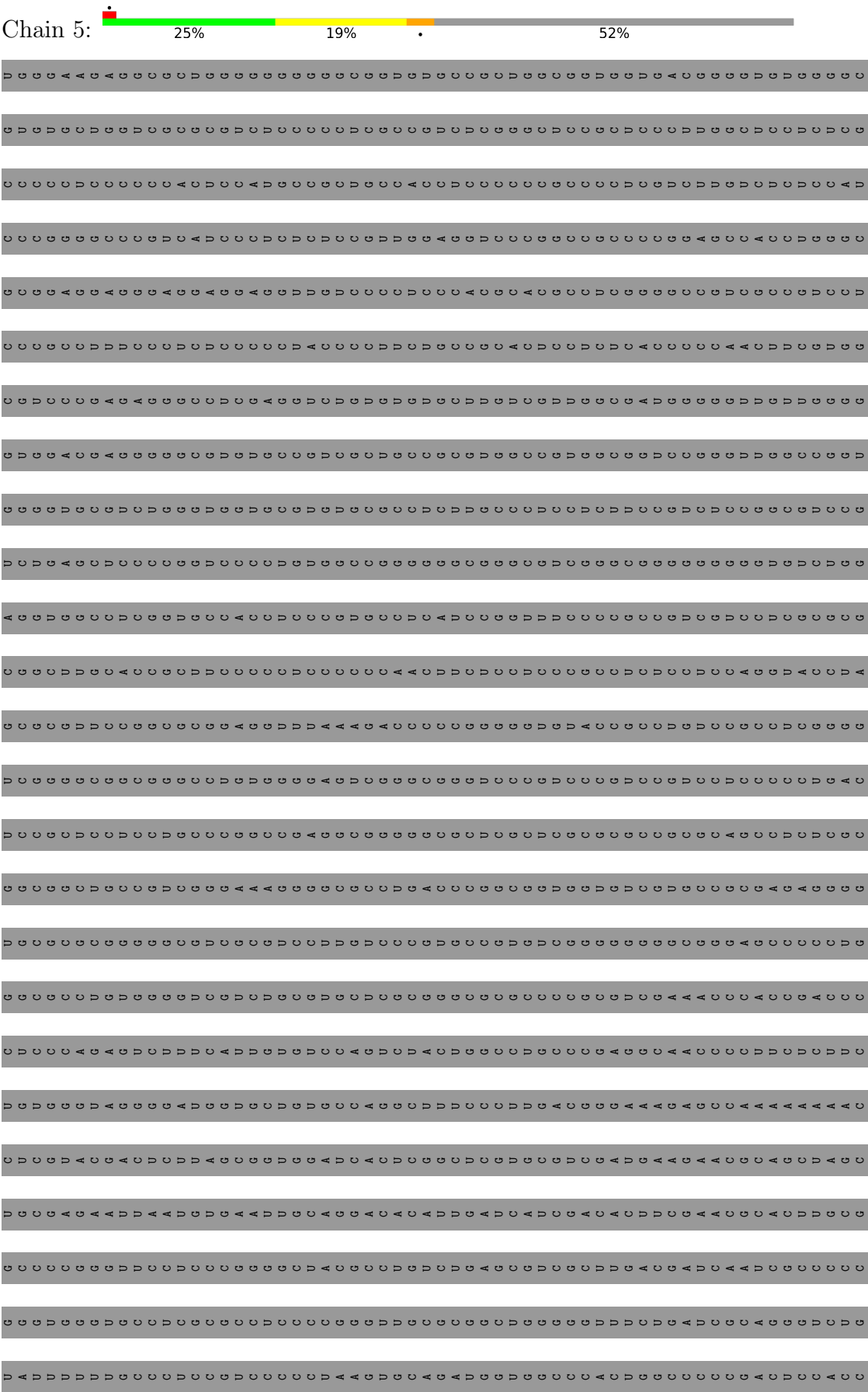
- Molecule 87 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
87	4	1	Total	Mg	0
			1	1	
87	5	195	Total	Mg	0
			195	195	
87	7	7	Total	Mg	0
			7	7	
87	8	5	Total	Mg	0
			5	5	
87	A	1	Total	Mg	0
			1	1	
87	K	75	Total	Mg	0
			75	75	
87	P	1	Total	Mg	0
			1	1	
87	V	1	Total	Mg	0
			1	1	
87	a	1	Total	Mg	0
			1	1	
87	g	1	Total	Mg	0
			1	1	
87	j	2	Total	Mg	0
			2	2	
87	PP	1	Total	Mg	0
			1	1	

- Molecule 88 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
88	g	1	Total 1	Zn 1	0
88	j	1	Total 1	Zn 1	0
88	m	1	Total 1	Zn 1	0
88	o	1	Total 1	Zn 1	0
88	p	1	Total 1	Zn 1	0
88	LL	1	Total 1	Zn 1	0





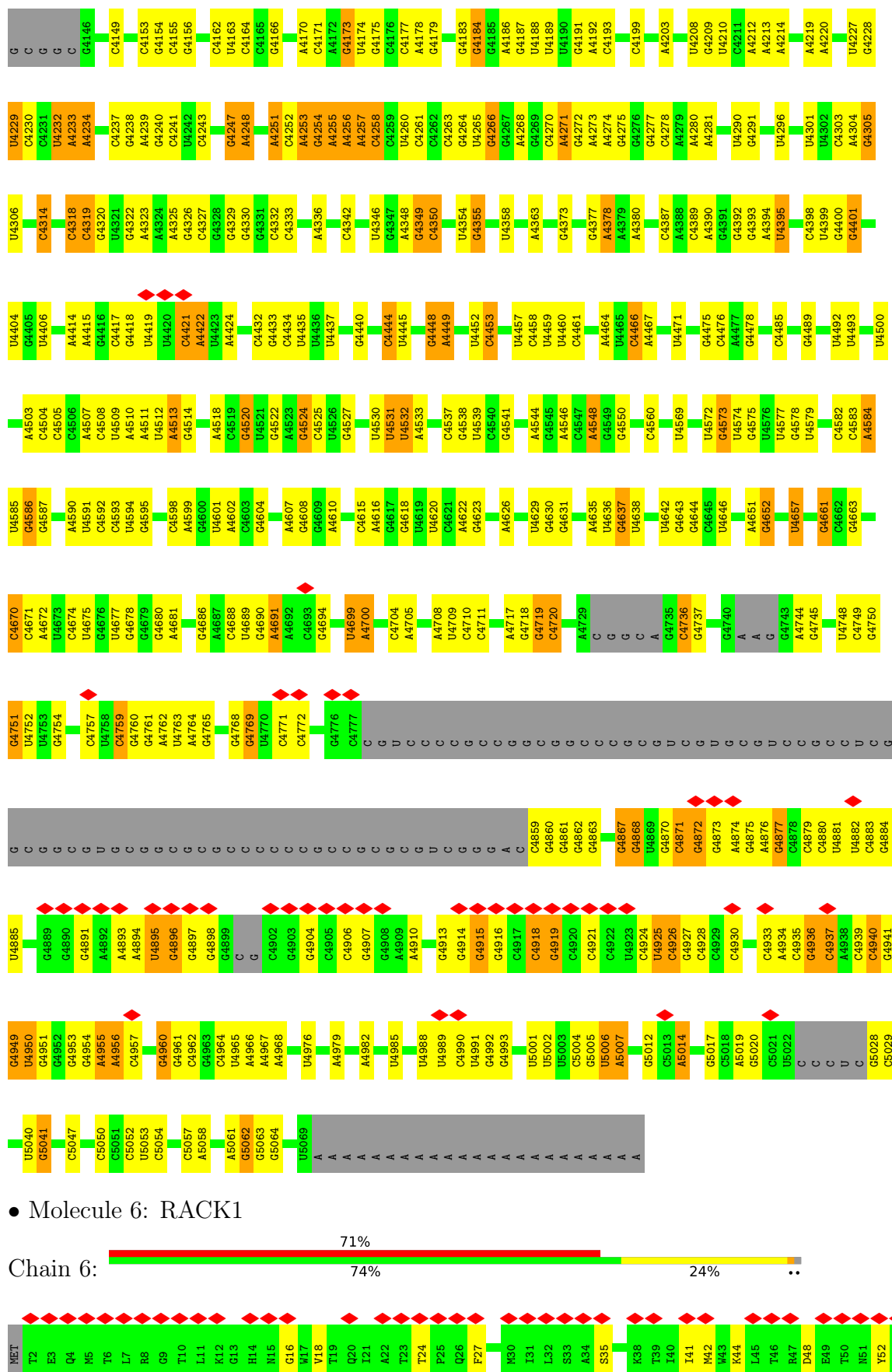


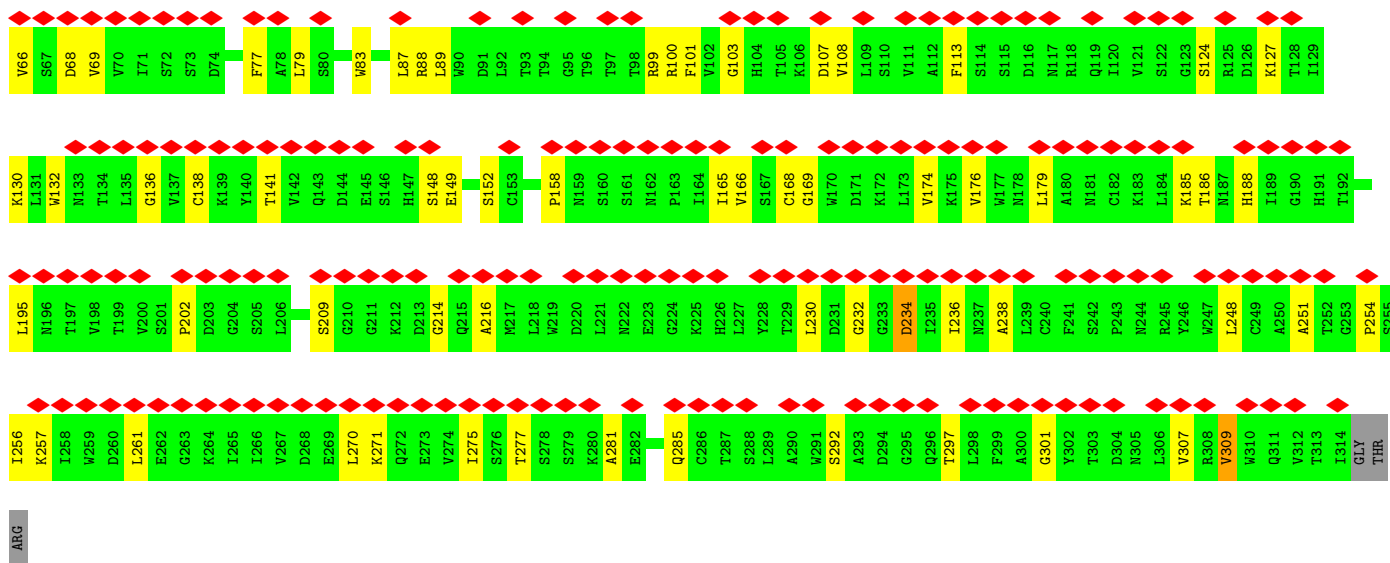




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A1508	A1612	U1728	G1799	U1883	U1959	C2022	A2025	G2361	G2455	G2547	G2640	A2725
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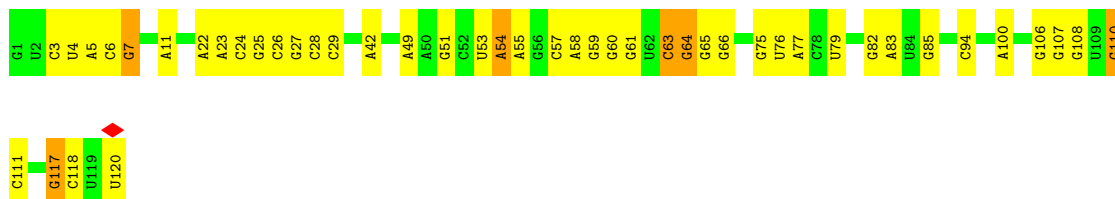






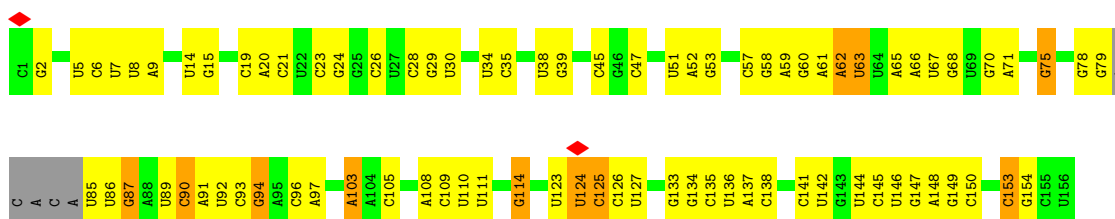
- Molecule 7: 5S rRNA

Chain 7: 62% 33% 5%



- Molecule 8: 5.8S rRNA

Chain 8: 44% 46% 7%



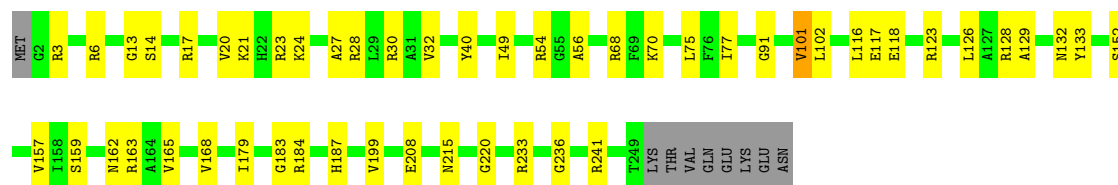
- Molecule 9: eS29

Chain 9: 5% 54% 25% 21%



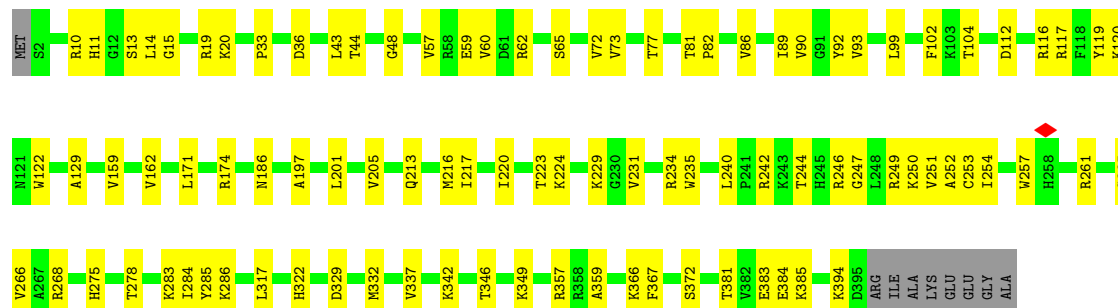
- Molecule 10: Ribosomal protein L8

Chain A: 77% 19%



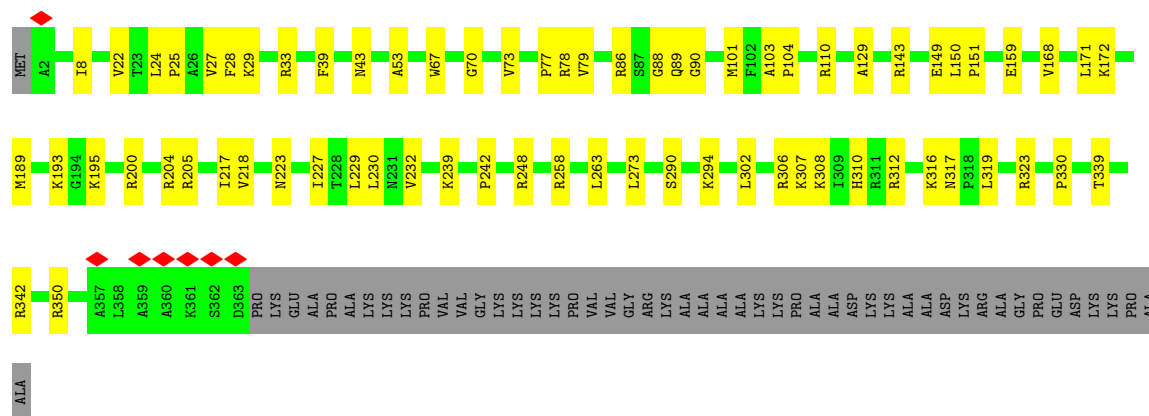
• Molecule 11: Ribosomal protein L3

Chain B: 74% 24% .



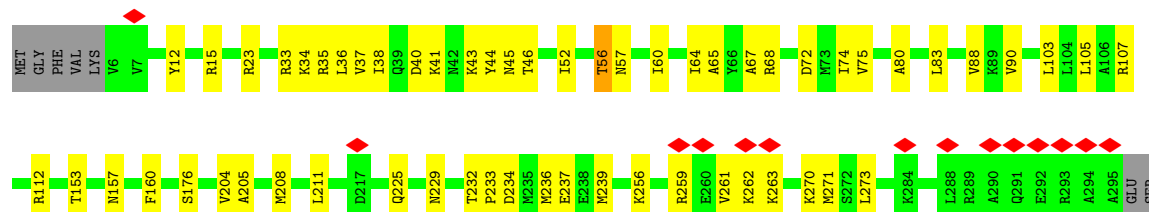
• Molecule 12: 60S ribosomal protein L4

Chain C: 71% 17% 12% .



• Molecule 13: Large ribosomal subunit protein uL18

Chain D: 5% 78% 19% .



• Molecule 14: 60S ribosomal protein L6

Frequency	Percentage
Often	55%
Sometimes	19%
Never	26%





G C C C D G G G G G A G C G D D C C C D C G G G G D C C C G G D G C D D C C G G G C A D G G A G A D C C G G A D G

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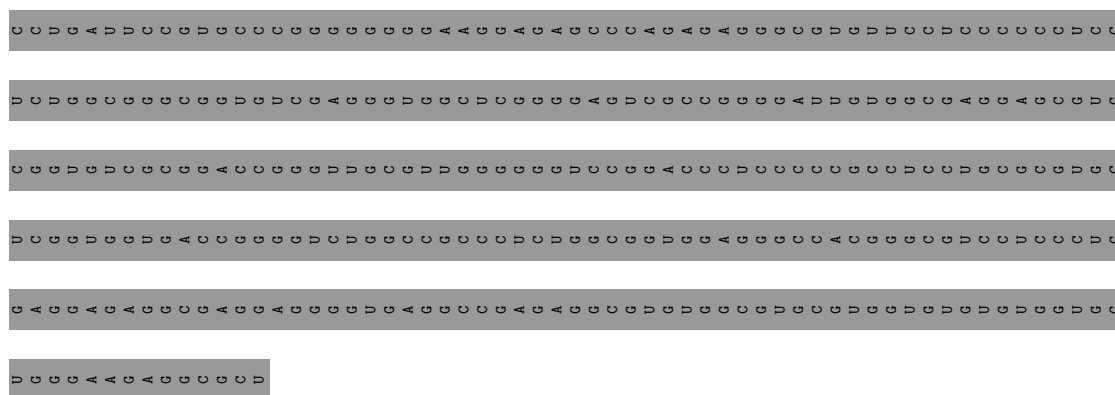
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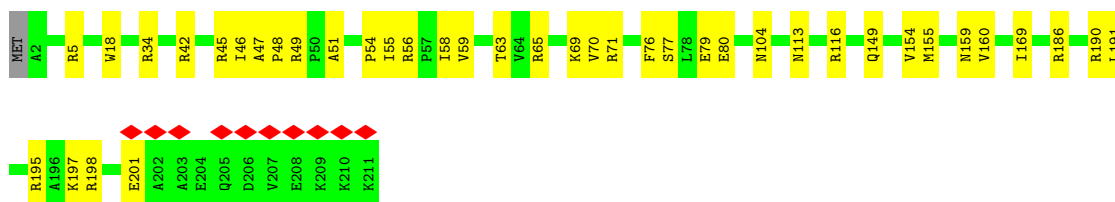
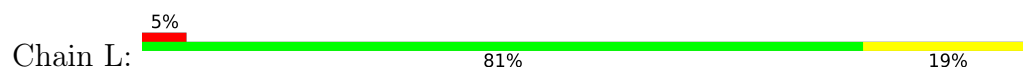




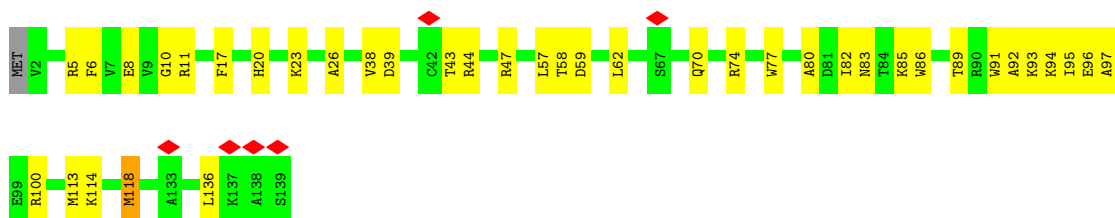




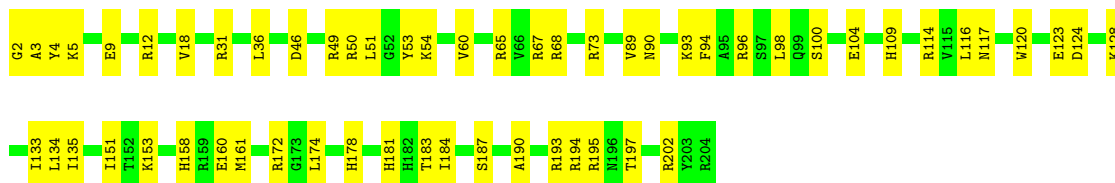
- Molecule 21: Large ribosomal subunit protein eL13



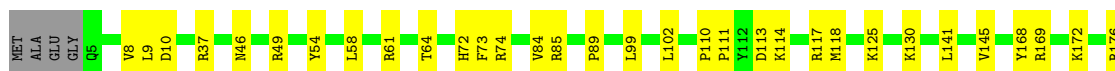
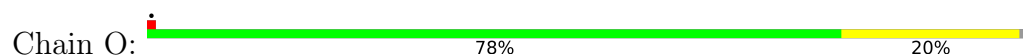
- Molecule 22: Large ribosomal subunit protein eL14



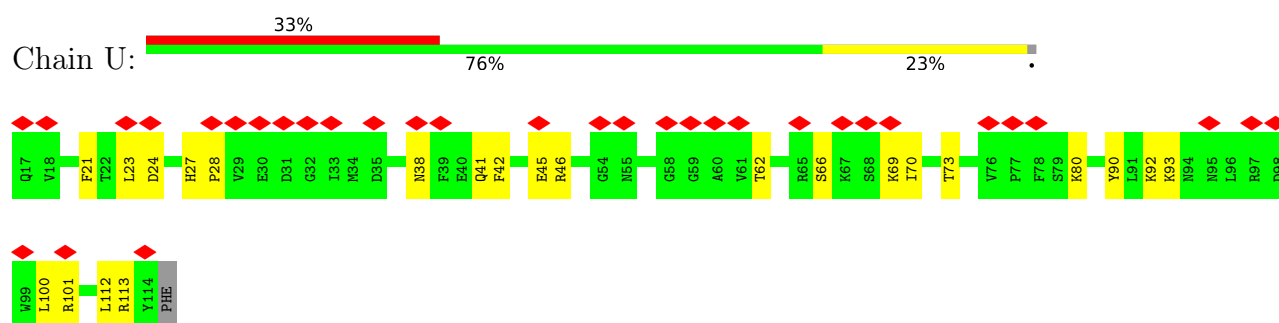
- Molecule 23: 60S ribosomal protein L15



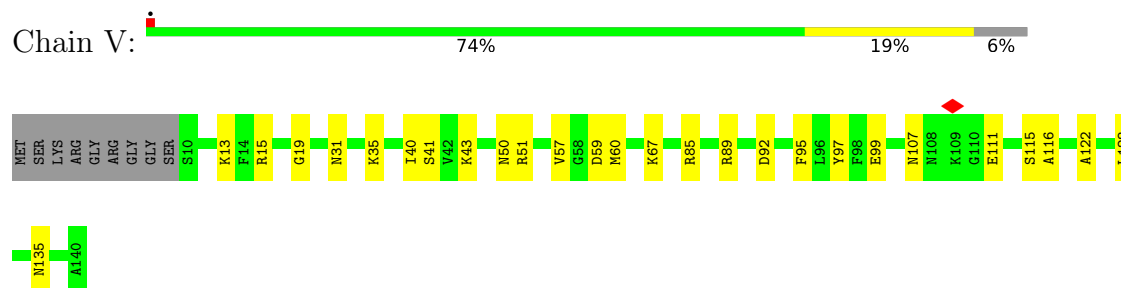
- Molecule 24: Large ribosomal subunit protein uL13



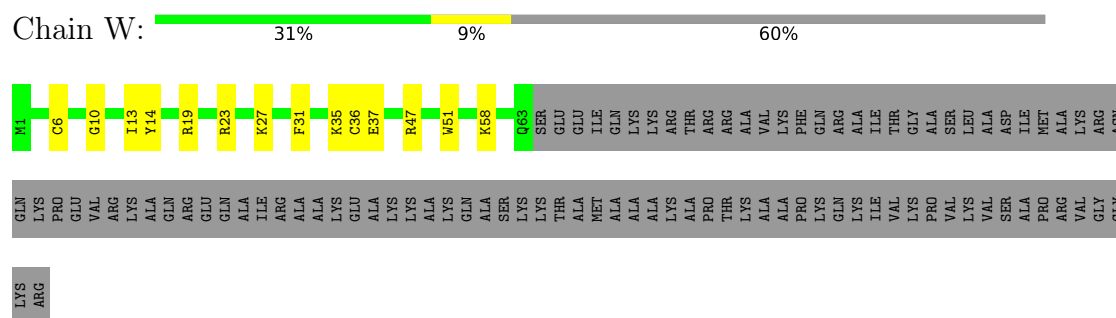




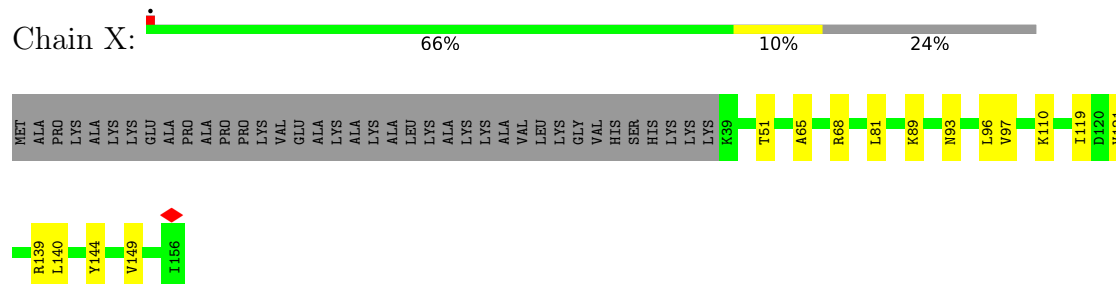
• Molecule 31: Ribosomal protein L23



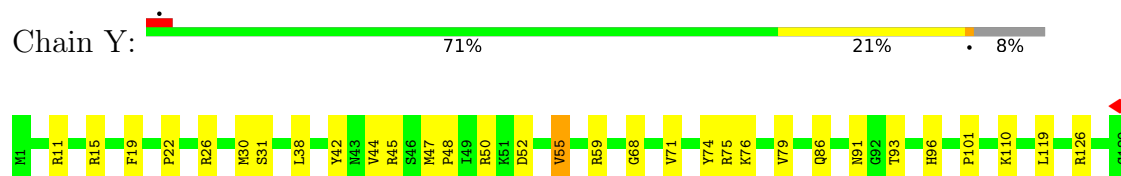
• Molecule 32: eL24

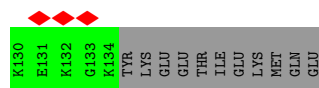


• Molecule 33: eL23

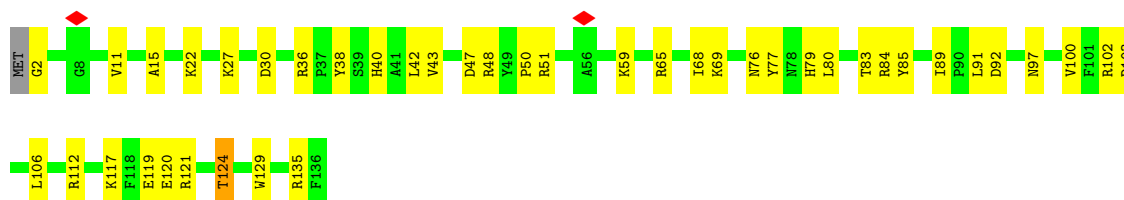


• Molecule 34: uL24

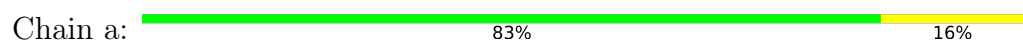




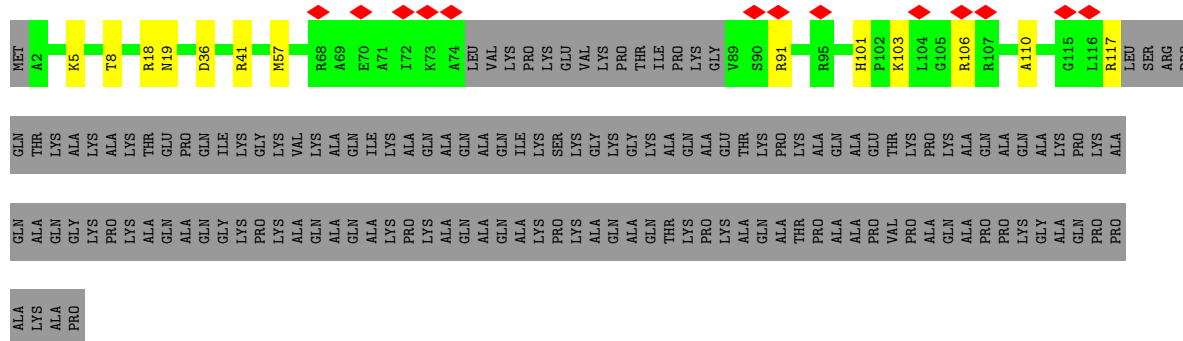
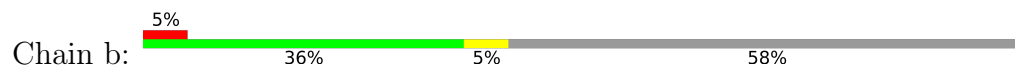
• Molecule 35: 60S ribosomal protein L27



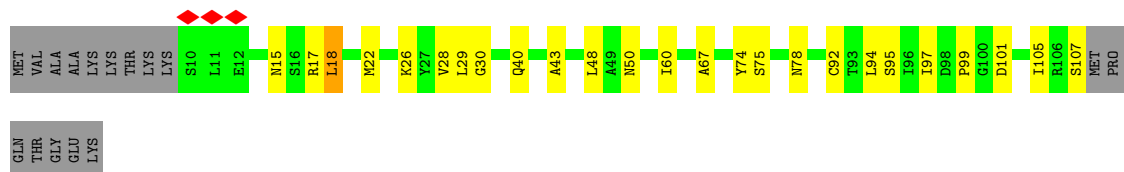
• Molecule 36: 60S ribosomal protein L27a



• Molecule 37: Large ribosomal subunit protein eL29

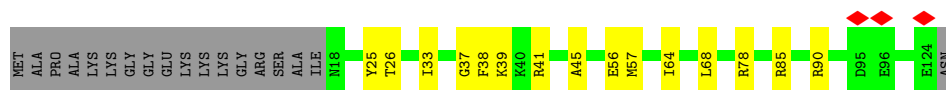


• Molecule 38: eL30

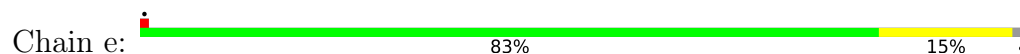


• Molecule 39: eL31

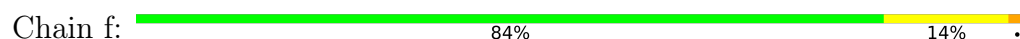




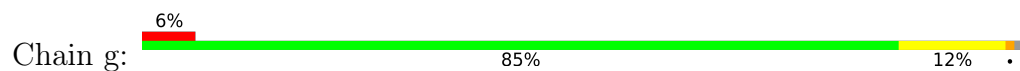
- Molecule 40: 60S ribosomal protein L32



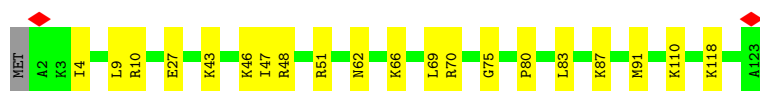
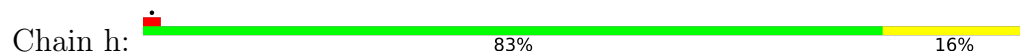
- Molecule 41: eL33



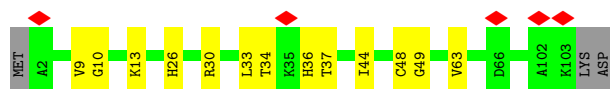
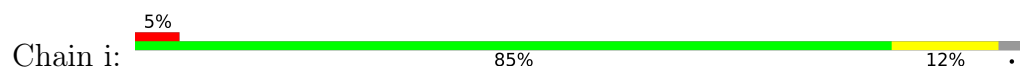
- Molecule 42: 60S ribosomal protein L34



- Molecule 43: eL35



- Molecule 44: Large ribosomal subunit protein eL36



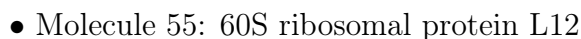
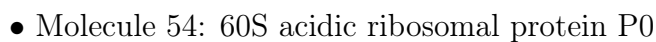
- Molecule 45: Ribosomal protein L37

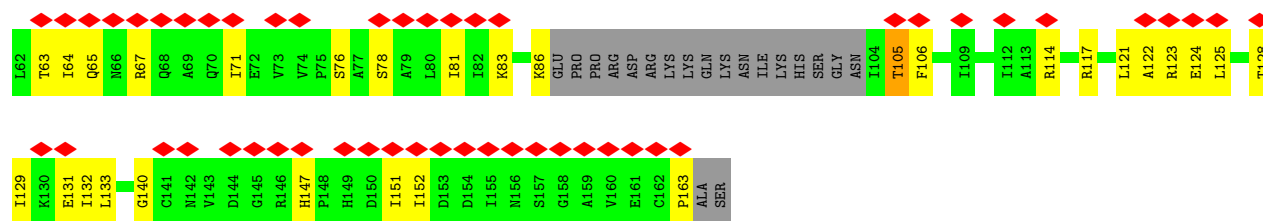


- Molecule 46: Large ribosomal subunit protein eL38

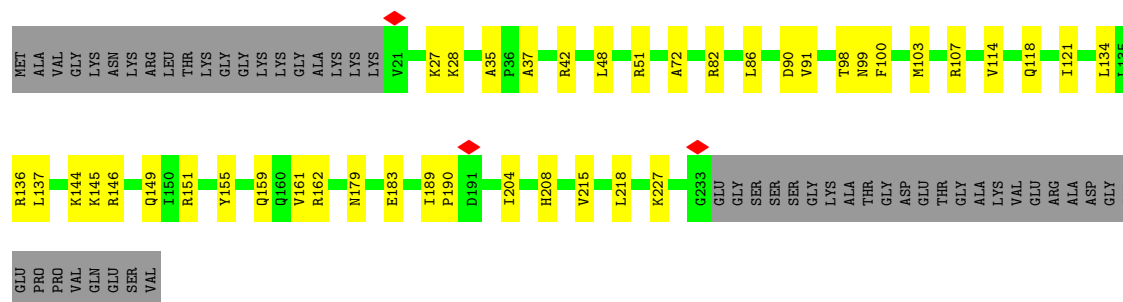




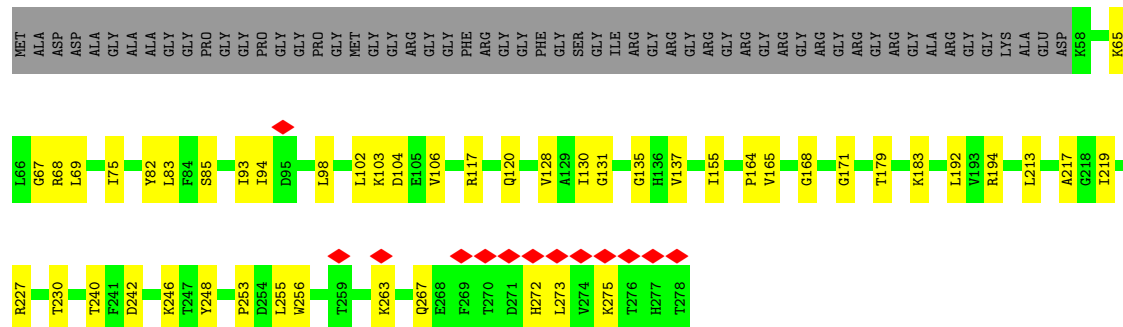




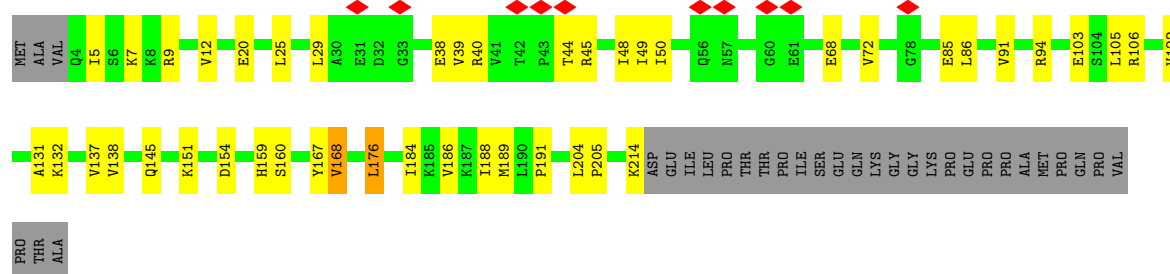
• Molecule 56: 40S ribosomal protein S3a




• Molecule 57: Small ribosomal subunit protein uS5

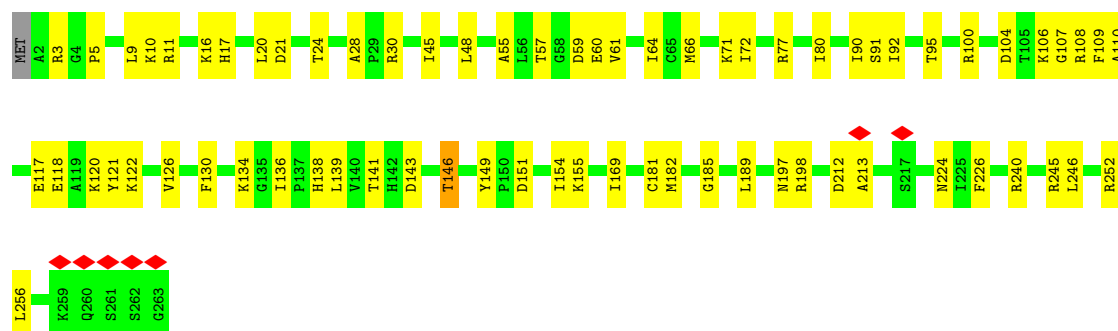


• Molecule 58: Ribosomal protein S3



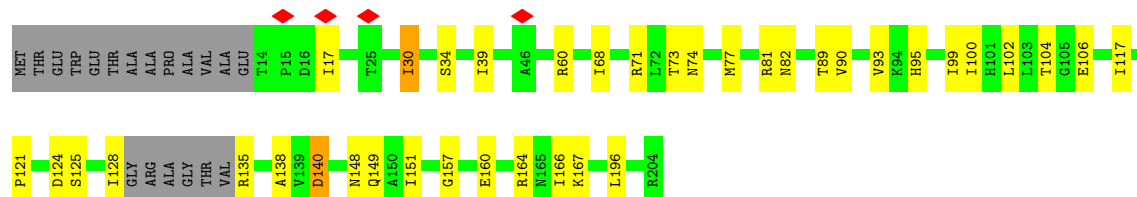
• Molecule 59: Small ribosomal subunit protein eS4

Chain x:  73% 26%



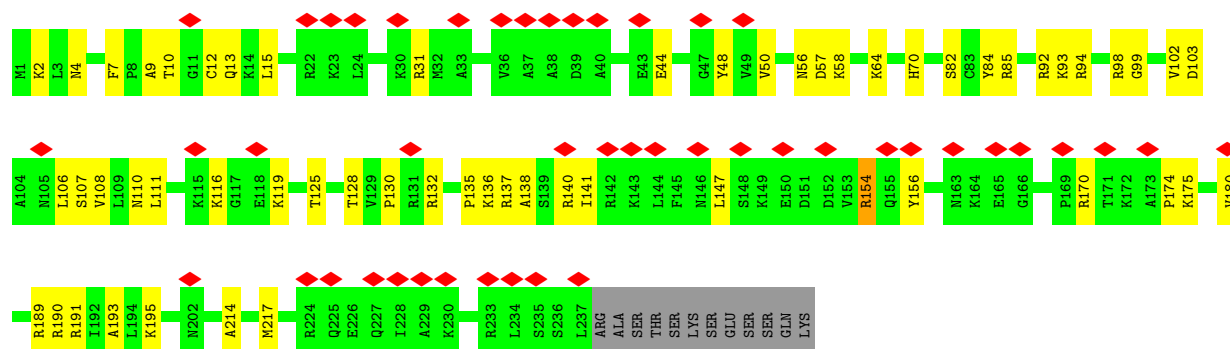
- Molecule 60: Ribosomal protein S5

Chain y:  72% 18% 9%




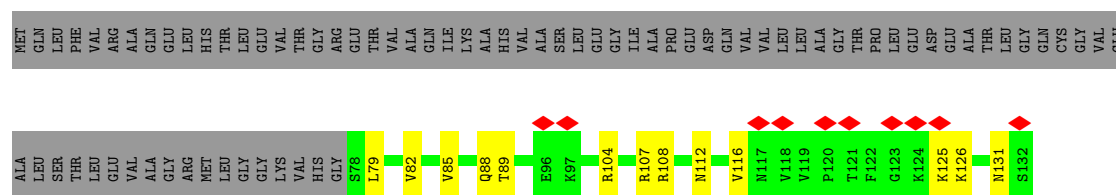
- Molecule 61: 40S ribosomal protein S6

Chain z:  18% 72% 23% 5%



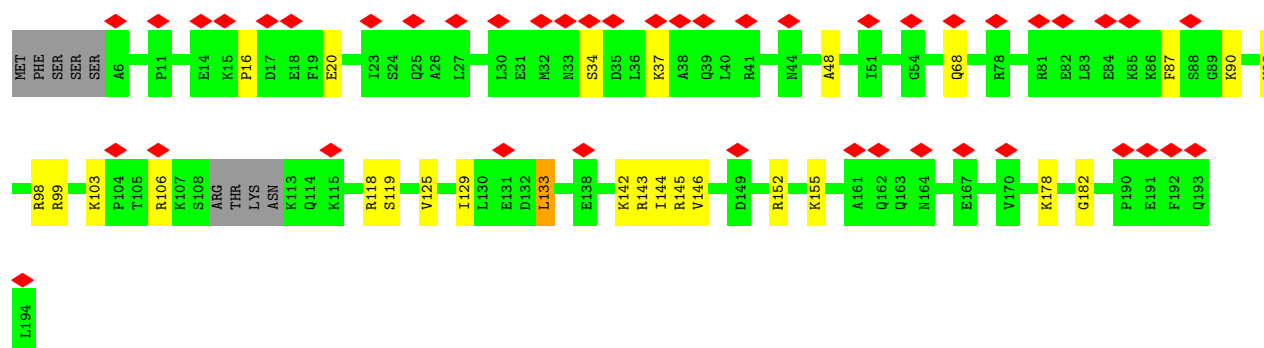
- Molecule 62: 40S ribosomal protein S30

Chain AA:  8% 32% 10% 59%



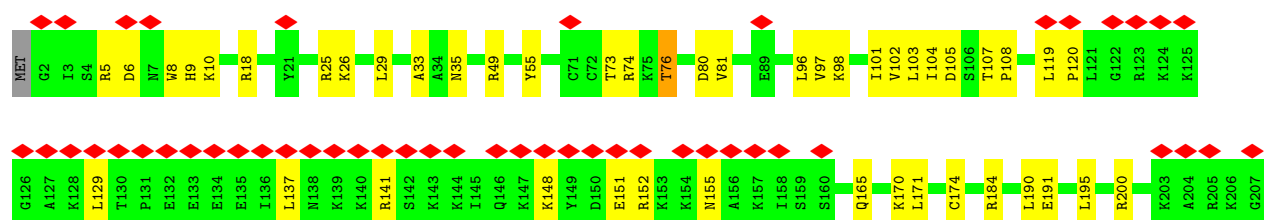
- Molecule 63: 40S ribosomal protein S7

Chain BB: 23% 81% 13% 5%



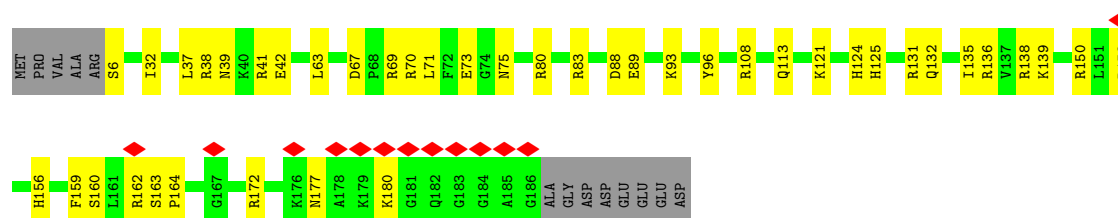
- Molecule 64: eS8

Chain CC: 24% 77% 22%



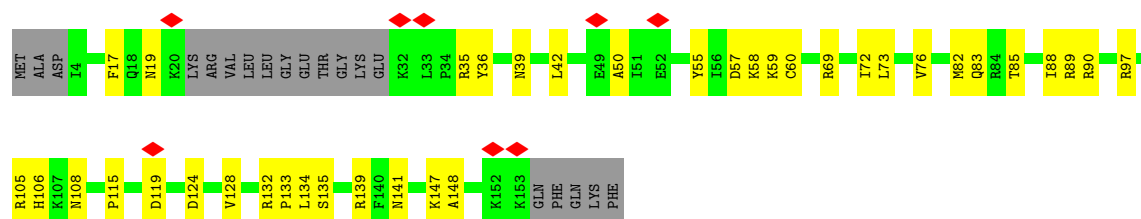
- Molecule 65: Ribosomal protein S9 (Predicted)

Chain DD: 7% 72% 22% 7%



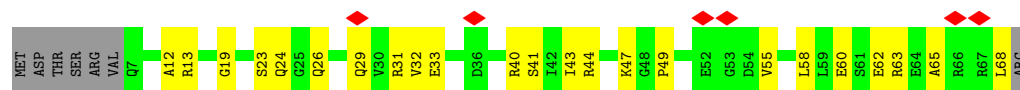
- Molecule 66: Ribosomal protein S11

Chain EE: 5% 64% 24% 12%

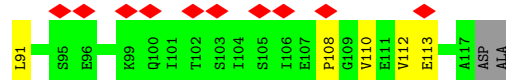
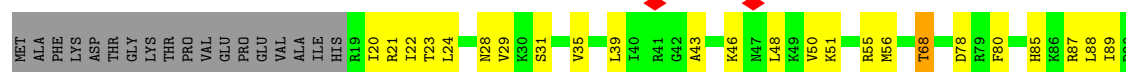


- Molecule 67: Ribosomal protein S28

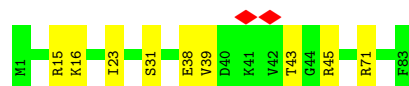
Chain FF: 9% 57% 33% 10%



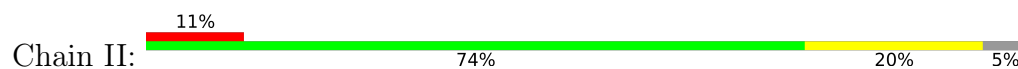
- Molecule 68: uS10



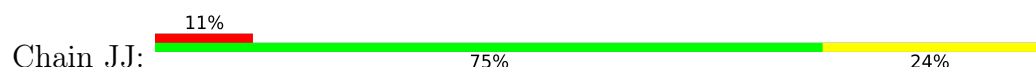
- Molecule 69: Small ribosomal subunit protein eS21



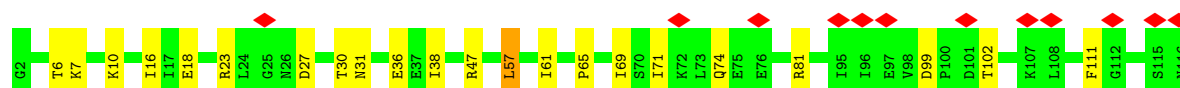
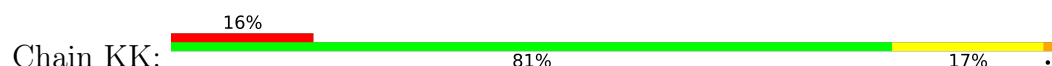
- Molecule 70: uS13

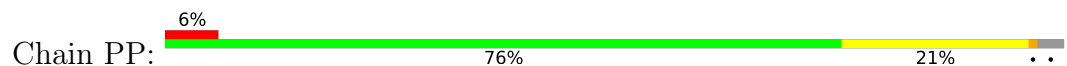


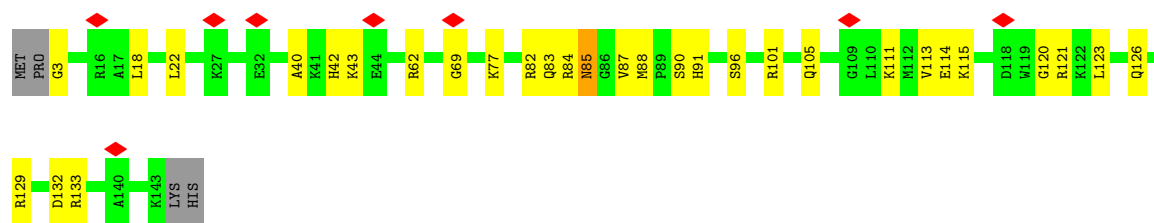
- Molecule 71: 40S ribosomal protein S27



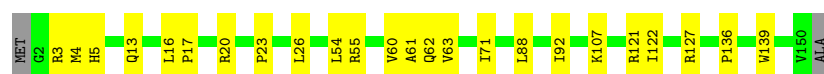
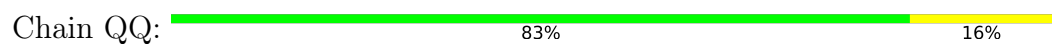
- Molecule 72: Small ribosomal subunit protein eS17



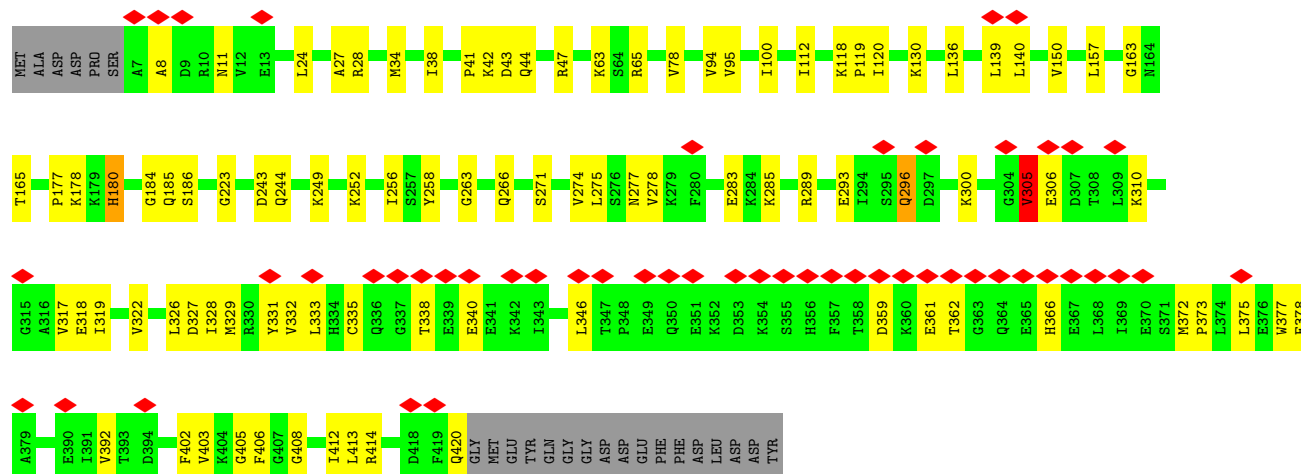
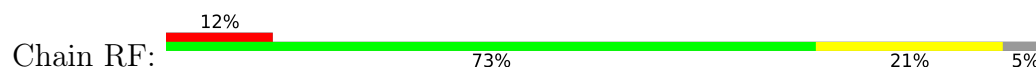




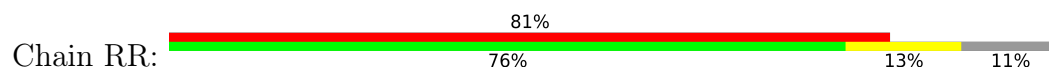
- Molecule 78: Ribosomal protein S13



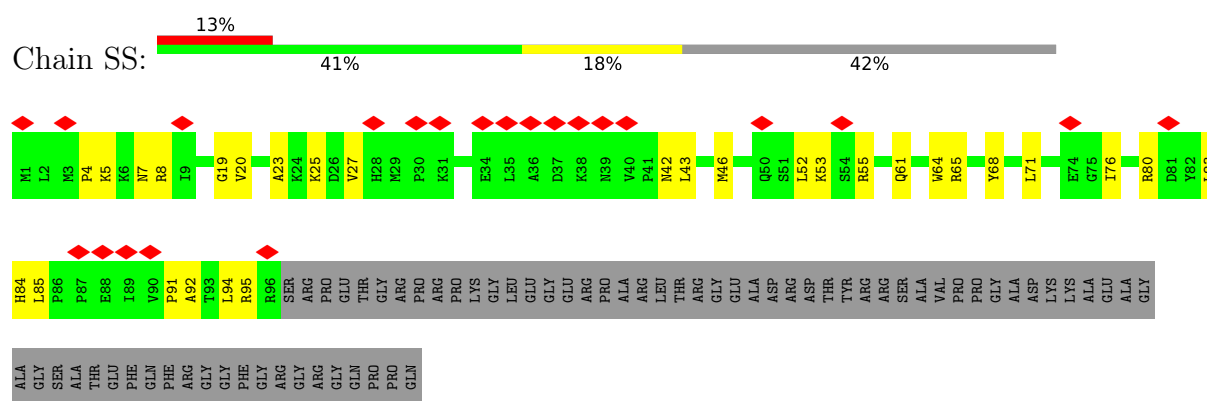
- Molecule 79: Eukaryotic peptide chain release factor subunit 1



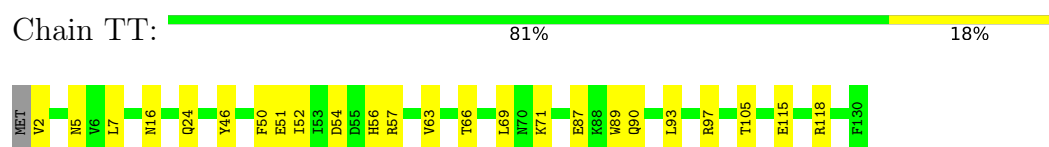
- Molecule 80: 40S ribosomal protein S12



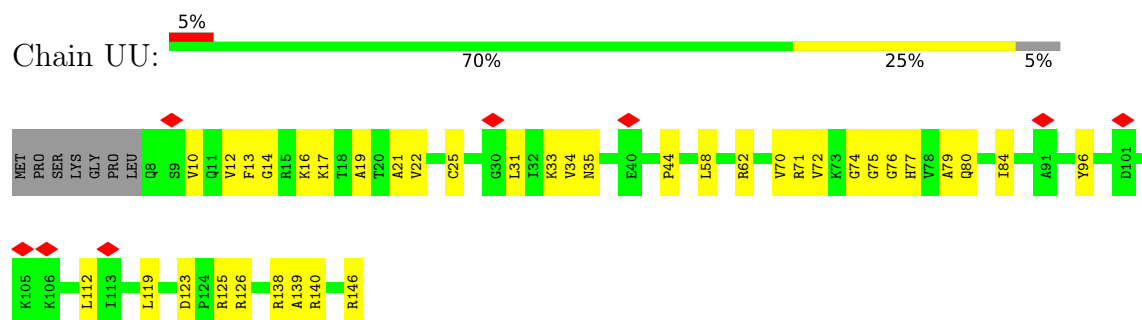
- Molecule 81: S10\_pectin domain-containing protein



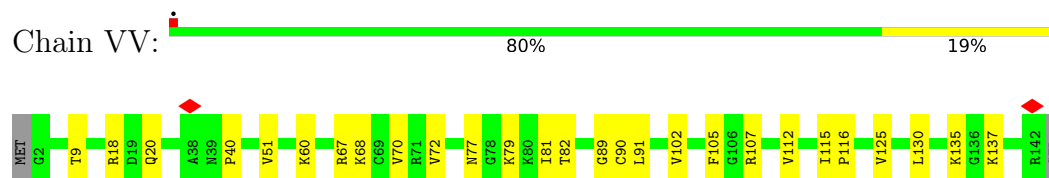
- Molecule 82: Ribosomal protein S15a



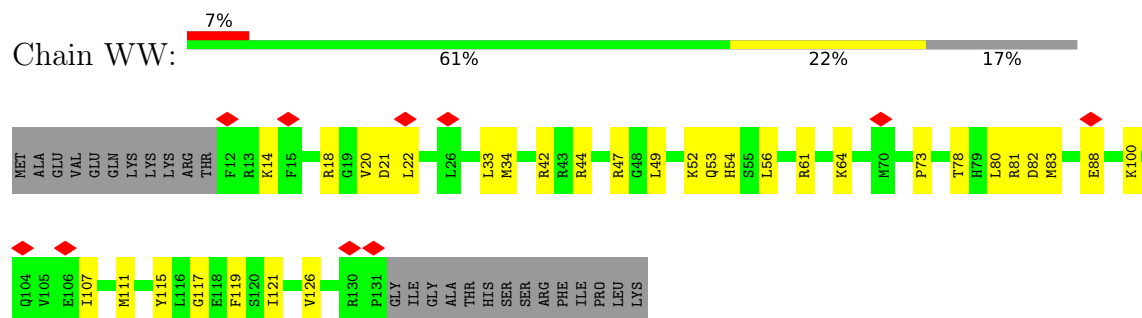
- Molecule 83: uS9



- Molecule 84: uS12




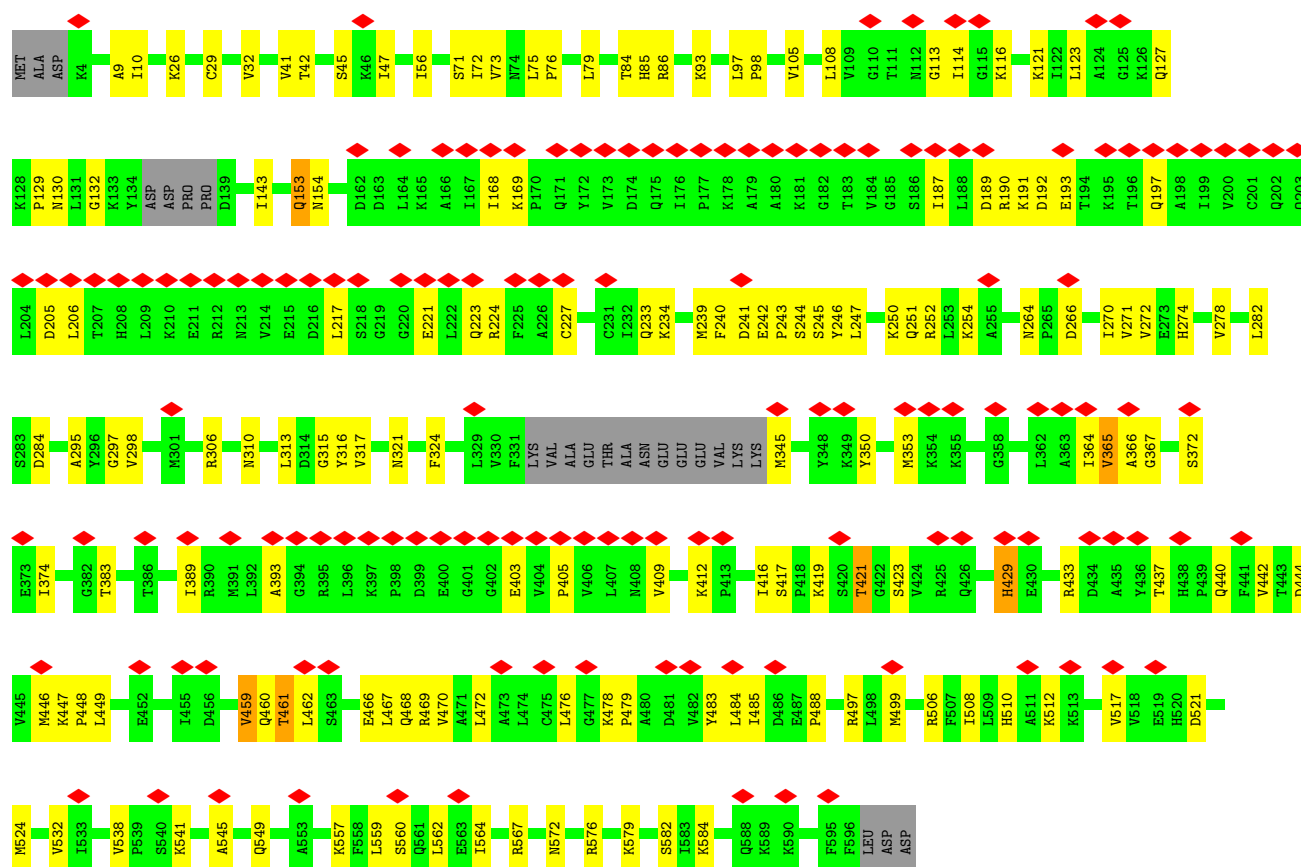
- Molecule 85: uS19



- Molecule 86: ATP binding cassette subfamily E member 1



Chain AB: 



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	15310	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.485	Depositor
Minimum map value	-0.206	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.023	Depositor
Recommended contour level	0.044	Depositor
Map size ( $\text{\AA}$ )	385.12, 385.12, 385.12	wwPDB
Map dimensions	464, 464, 464	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.83, 0.83, 0.83	Depositor

## 5 Model quality

### 5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 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	0	0.06	0/567	0.19	0/753
2	1	0.40	0/170	0.58	0/228
3	2	0.16	0/1812	0.28	0/2823
4	4	0.32	0/255	0.60	1/394 (0.3%)
5	5	0.10	0/82626	0.24	5/128845 (0.0%)
6	6	0.08	0/2493	0.22	0/3394
7	7	0.07	0/2858	0.19	0/4455
8	8	0.08	0/3581	0.21	0/5577
9	9	0.07	0/364	0.21	0/478
10	A	0.07	0/1936	0.23	0/2596
11	B	0.07	0/3240	0.20	0/4339
12	C	0.07	0/2937	0.20	0/3946
13	D	0.07	0/2409	0.19	0/3227
14	E	0.07	0/1762	0.21	0/2362
15	F	0.07	0/1911	0.20	0/2549
16	G	0.08	0/1876	0.21	0/2525
17	H	0.06	0/1535	0.20	0/2063
18	I	0.06	0/1756	0.20	0/2346
19	J	0.07	0/1385	0.21	0/1852
20	K	0.11	0/39671	0.26	12/61813 (0.0%)
21	L	0.08	0/1733	0.20	0/2316
22	M	0.09	0/1158	0.23	0/1547
23	N	0.07	0/1746	0.19	0/2338
24	O	0.08	0/1662	0.21	0/2222
25	P	0.07	0/1268	0.21	0/1700
26	Q	0.07	0/1539	0.21	0/2054
27	R	0.07	0/1524	0.19	0/2013
28	S	0.37	0/1497	0.44	0/2008
29	T	0.07	0/1326	0.20	0/1770
30	U	0.09	0/808	0.25	0/1084
31	V	0.07	0/993	0.20	0/1332
32	W	0.08	0/541	0.23	0/720

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
33	X	0.06	0/984	0.20	0/1323
34	Y	0.07	0/1132	0.20	0/1504
35	Z	0.07	0/1130	0.21	0/1507
36	a	0.06	0/1191	0.19	0/1590
37	b	0.06	0/846	0.17	0/1117
38	c	0.06	0/771	0.17	0/1034
39	d	0.08	0/903	0.22	0/1216
40	e	0.06	0/1071	0.20	0/1429
41	f	0.07	0/895	0.20	0/1198
42	g	0.07	0/916	0.21	0/1220
43	h	0.07	0/1021	0.18	0/1348
44	i	0.08	0/841	0.21	0/1112
45	j	0.07	0/720	0.20	0/952
46	k	0.07	0/575	0.22	0/761
47	l	0.07	0/459	0.20	0/608
48	m	0.06	0/435	0.23	0/575
49	n	0.07	0/240	0.15	0/305
50	o	0.06	0/864	0.19	0/1140
51	p	0.07	0/718	0.20	0/953
52	q	0.07	0/1747	0.20	0/2374
53	r	0.07	0/1010	0.24	0/1354
54	s	0.07	0/1530	0.20	0/2064
55	t	0.12	0/1033	0.37	0/1395
56	u	0.07	0/1756	0.20	0/2350
57	v	0.15	0/1752	0.27	0/2368
58	w	0.08	0/1668	0.25	0/2242
59	x	0.07	0/2118	0.22	0/2849
60	y	0.08	0/1492	0.24	0/2005
61	z	0.08	0/1946	0.26	1/2590 (0.0%)
62	AA	0.06	0/447	0.18	0/587
63	BB	0.07	0/1510	0.20	0/2022
64	CC	0.08	0/1715	0.22	0/2287
65	DD	0.07	0/1519	0.20	0/2027
66	EE	0.07	0/1160	0.20	0/1551
67	FF	0.07	0/490	0.22	0/656
68	GG	0.06	0/794	0.19	0/1066
69	HH	0.06	0/644	0.19	0/862
70	II	0.07	0/1208	0.22	0/1618
71	JJ	0.06	0/665	0.20	0/891
72	KK	0.06	0/1082	0.18	0/1452
73	LL	0.07	0/828	0.21	0/1109
74	MM	0.07	0/1017	0.23	0/1365
75	NN	0.09	0/1028	0.25	0/1366

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
76	OO	0.07	0/604	0.20	0/810
77	PP	0.07	0/1115	0.21	0/1493
78	QQ	0.06	0/1226	0.20	0/1649
79	RF	0.09	0/3321	0.22	0/4466
80	RR	0.07	0/918	0.20	0/1233
81	SS	0.07	0/834	0.23	0/1125
82	TT	0.06	0/1051	0.20	0/1406
83	UU	0.07	0/1126	0.20	0/1506
84	VV	0.07	0/1116	0.20	0/1490
85	WW	0.07	0/1017	0.23	0/1358
86	AB	0.08	0/4626	0.24	0/6241
All	All	0.10	0/233764	0.24	19/341788 (0.0%)

There are no bond length outliers.

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	K	1623	A	P-O3'-C3'	-10.12	105.02	120.20
20	K	1698	C	P-O3'-C3'	-8.48	107.49	120.20
5	5	4133	C	P-O3'-C3'	-8.37	107.65	120.20
20	K	1624	U	P-O3'-C3'	-8.13	108.00	120.20
5	5	3692	A	P-O3'-C3'	-7.97	108.24	120.20
20	K	1697	A	P-O3'-C3'	-7.74	108.59	120.20
20	K	373	G	P-O3'-C3'	-7.58	108.83	120.20
20	K	374	G	P-O3'-C3'	-7.45	109.02	120.20
20	K	372	U	P-O3'-C3'	-7.25	109.33	120.20
5	5	4134	G	P-O3'-C3'	-6.99	109.72	120.20
20	K	1666	C	P-O3'-C3'	-6.89	109.87	120.20
20	K	1621	U	P-O3'-C3'	-6.67	110.20	120.20
5	5	3693	U	P-O3'-C3'	-6.63	110.26	120.20
20	K	1699	A	P-O3'-C3'	-6.58	110.33	120.20
20	K	1665	G	P-O3'-C3'	-5.98	111.23	120.20
20	K	1620	A	P-O3'-C3'	-5.76	111.56	120.20
4	4	10	G	P-O3'-C3'	-5.58	111.84	120.20
5	5	1199	U	P-O3'-C3'	-5.29	112.27	120.20
61	z	132	ARG	CB-CA-C	-5.15	110.23	117.23

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts ⓘ

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	0	555	0	567	10	0
2	1	225	0	184	8	0
3	2	1622	0	816	22	0
4	4	230	0	118	7	0
5	5	73867	0	37311	1114	0
6	6	2436	0	2393	51	0
7	7	2558	0	1296	41	0
8	8	3208	0	1629	54	0
9	9	359	0	364	12	0
10	A	1898	0	1993	39	0
11	B	3172	0	3310	68	0
12	C	2883	0	3053	50	0
13	D	2364	0	2393	49	0
14	E	1729	0	1887	36	0
15	F	1875	0	1995	31	0
16	G	1845	0	1986	30	0
17	H	1516	0	1597	24	0
18	I	1717	0	1764	33	0
19	J	1362	0	1399	22	0
20	K	35481	0	17923	667	0
21	L	1702	0	1820	26	0
22	M	1137	0	1211	28	0
23	N	1701	0	1749	47	0
24	O	1630	0	1778	29	0
25	P	1242	0	1274	12	0
26	Q	1515	0	1634	13	0
27	R	1508	0	1664	37	0
28	S	1457	0	1492	55	0
29	T	1298	0	1366	23	0
30	U	795	0	818	16	0
31	V	979	0	1039	22	0
32	W	528	0	541	10	0
33	X	967	0	1040	12	0
34	Y	1115	0	1205	23	0
35	Z	1107	0	1182	29	0
36	a	1162	0	1209	20	0
37	b	833	0	900	12	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	c	761	0	794	15	0
39	d	888	0	930	9	0
40	e	1053	0	1147	17	0
41	f	876	0	912	13	0
42	g	906	0	998	12	0
43	h	1013	0	1147	18	0
44	i	830	0	914	11	0
45	j	705	0	737	12	0
46	k	569	0	637	9	0
47	l	447	0	480	13	0
48	m	429	0	465	8	0
49	n	239	0	289	4	0
50	o	851	0	920	18	0
51	p	708	0	757	6	0
52	q	1710	0	1711	28	0
53	r	994	0	1051	20	0
54	s	1507	0	1564	35	0
55	t	1022	0	1075	30	0
56	u	1729	0	1803	28	0
57	v	1715	0	1806	31	0
58	w	1642	0	1734	29	0
59	x	2076	0	2177	46	0
60	y	1471	0	1522	27	0
61	z	1923	0	2089	47	0
62	AA	443	0	492	14	0
63	BB	1488	0	1582	19	0
64	CC	1686	0	1772	37	0
65	DD	1495	0	1605	32	0
66	EE	1140	0	1210	26	0
67	FF	488	0	514	15	0
68	GG	785	0	855	19	0
69	HH	637	0	632	10	0
70	II	1190	0	1249	22	0
71	JJ	651	0	672	15	0
72	KK	1068	0	1121	19	0
73	LL	814	0	860	13	0
74	MM	1004	0	1021	25	0
75	NN	1011	0	1083	18	0
76	OO	598	0	656	8	0
77	PP	1097	0	1130	25	0
78	QQ	1202	0	1289	18	0
79	RF	3268	0	3314	59	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
80	RR	908	0	939	11	0
81	SS	810	0	836	20	0
82	TT	1034	0	1080	19	0
83	UU	1109	0	1174	29	0
84	VV	1098	0	1167	19	0
85	WW	997	0	1045	27	0
86	AB	4543	0	4681	107	0
87	4	1	0	0	0	0
87	5	195	0	0	0	0
87	7	7	0	0	0	0
87	8	5	0	0	0	0
87	A	1	0	0	0	0
87	K	75	0	0	0	0
87	P	1	0	0	0	0
87	PP	1	0	0	0	0
87	V	1	0	0	0	0
87	a	1	0	0	0	0
87	g	1	0	0	0	0
87	j	2	0	0	0	0
88	LL	1	0	0	0	0
88	g	1	0	0	0	0
88	j	1	0	0	0	0
88	m	1	0	0	0	0
88	o	1	0	0	0	0
88	p	1	0	0	0	0
All	All	218503	0	165538	3262	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 9.

All (3262) 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)
30:U:62:THR:OG1	30:U:73:THR:HB	1.60	1.01
5:5:4421:C:H42	5:5:4475:G:N2	1.73	0.87
5:5:1199:U:H2'	5:5:1200:G:H8	1.40	0.85
3:2:50:U:H3	3:2:64:G:H1	1.25	0.81
5:5:4135:G:H2'	5:5:4136:G:H8	1.47	0.80
5:5:4421:C:N4	5:5:4475:G:H22	1.79	0.79
20:K:1656:G:H1	20:K:1668:U:H3	1.30	0.79
10:A:6:ARG:HH12	10:A:199:VAL:H	1.29	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:730:C:H2'	20:K:731:G:H8	1.46	0.79
3:2:12:C:H42	3:2:24:G:H1	1.31	0.77
5:5:1435:G:H1	5:5:1449:C:H42	1.33	0.77
20:K:1373:C:H5'	72:KK:7:LYS:HG3	1.67	0.77
20:K:957:A:H3'	20:K:958:G:H21	1.47	0.76
20:K:1455:A:H61	20:K:1471:C:H42	1.31	0.76
2:1:124:PHE:HB3	5:5:4449:A:H8	1.49	0.76
20:K:1091:C:HO2'	82:TT:2:VAL:N	1.83	0.76
34:Y:50:ARG:HD3	34:Y:110:LYS:HB3	1.68	0.76
79:RF:120:ILE:HG13	79:RF:139:LEU:HD23	1.68	0.76
5:5:4135:G:H2'	5:5:4136:G:C8	2.20	0.76
5:5:4953:G:H2'	5:5:4954:G:C8	2.20	0.75
16:G:198:THR:HG1	23:N:2:GLY:N	1.83	0.75
20:K:377:G:H5'	64:CC:98:LYS:HB3	1.68	0.75
28:S:15:ARG:HD2	28:S:25:PRO:HG2	1.68	0.75
6:6:63:SER:HB3	20:K:1398:G:H1'	1.66	0.75
5:5:4421:C:H42	5:5:4475:G:H22	1.35	0.75
7:7:28:C:H1'	7:7:54:A:H61	1.52	0.74
20:K:1743:G:H21	20:K:1791:A:H62	1.33	0.74
5:5:734:G:H1	5:5:929:A:H62	1.34	0.74
70:II:22:GLY:HA2	70:II:56:ALA:HB3	1.68	0.74
3:2:75:C:H5''	3:2:76:A:OP2	1.88	0.74
5:5:308:G:OP2	5:5:308:G:N2	2.18	0.74
5:5:2103:A:OP2	15:F:45:ARG:NH2	2.20	0.74
5:5:4949:G:H4'	5:5:4950:U:H5'	1.69	0.74
5:5:2777:G:H5''	5:5:2778:G:H5'	1.70	0.73
28:S:77:ASN:O	28:S:131:GLU:HA	1.88	0.73
20:K:934:G:H1	20:K:1008:A:H2	1.34	0.73
63:BB:98:ARG:HE	63:BB:125:VAL:HG23	1.53	0.73
28:S:19:THR:HG23	28:S:22:SER:H	1.54	0.72
29:T:39:ILE:HG22	29:T:63:ARG:HG2	1.69	0.72
20:K:442:C:H42	20:K:449:A:H62	1.37	0.72
86:AB:113:GLY:H	86:AB:116:LYS:HZ2	1.34	0.72
15:F:46:ARG:HE	15:F:49:ILE:HD11	1.53	0.72
5:5:4254:G:H21	5:5:4256:A:H5''	1.55	0.72
5:5:2520:C:O2	5:5:2640:G:N2	2.22	0.72
20:K:1364:U:H3	20:K:1375:G:H21	1.37	0.72
20:K:1349:G:H21	52:q:112:ILE:HD11	1.55	0.72
79:RF:258:TYR:H	79:RF:266:GLN:HE22	1.38	0.71
5:5:3809:G:N2	5:5:3809:G:OP2	2.21	0.71
5:5:1995:G:H4'	55:t:128:THR:HB	1.72	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1621:U:H5'	20:K:1623:A:O2'	1.90	0.71
2:1:120:HIS:O	5:5:3904:G:N2	2.20	0.71
3:2:73:U:H5''	3:2:74:C:H5'	1.73	0.71
13:D:259:ARG:HH12	13:D:262:LYS:HE2	1.56	0.71
57:v:94:ILE:HG22	57:v:102:LEU:HD11	1.72	0.71
30:U:66:SER:HB2	30:U:69:LYS:HB3	1.72	0.71
60:y:121:PRO:HB3	60:y:196:LEU:HD11	1.73	0.71
77:PP:82:ARG:HH21	77:PP:84:ARG:HH21	1.38	0.71
5:5:1332:C:H2'	5:5:1333:A:H8	1.54	0.71
11:B:317:LEU:HB2	11:B:372:SER:HB2	1.73	0.71
20:K:822:U:H3	20:K:826:A:H62	1.37	0.71
20:K:913:A:N6	63:BB:119:SER:O	2.24	0.70
54:s:147:ILE:HG12	54:s:152:ILE:HG12	1.73	0.70
59:x:45:ILE:HB	59:x:80:ILE:HG22	1.73	0.70
5:5:2845:A:H61	5:5:3843:C:H42	1.39	0.70
16:G:111:PRO:HD2	16:G:114:ILE:HD12	1.74	0.70
5:5:1802:A:H5''	5:5:1803:G:H5'	1.72	0.70
5:5:4761:G:H2'	5:5:4762:A:H8	1.55	0.70
20:K:429:C:H5''	59:x:10:LYS:HG2	1.73	0.70
5:5:2407:G:OP2	5:5:2407:G:N2	2.24	0.69
20:K:943:U:H2'	20:K:944:A:C8	2.27	0.69
20:K:1652:G:H1	20:K:1672:U:H3	1.35	0.69
5:5:3641:U:OP2	5:5:3646:A:N6	2.25	0.69
5:5:4939:C:H3'	14:E:159:ARG:HH12	1.56	0.69
5:5:4993:G:O6	5:5:5058:A:N1	2.26	0.69
5:5:161:G:H2'	5:5:162:A:C8	2.28	0.69
69:HH:43:THR:HG22	69:HH:45:ARG:HG3	1.74	0.69
20:K:677:G:H21	20:K:1028:A:H62	1.41	0.69
20:K:943:U:H2'	20:K:944:A:H8	1.58	0.69
20:K:1373:C:O2'	72:KK:10:LYS:NZ	2.25	0.69
74:MM:34:PHE:HB3	74:MM:41:PHE:HB2	1.75	0.69
5:5:4527:G:N2	5:5:4527:G:OP2	2.26	0.69
20:K:1143:A:O3'	20:K:1355:C:N4	2.26	0.69
5:5:4694:G:N2	5:5:4694:G:OP1	2.26	0.68
8:8:21:C:OP1	12:C:195:LYS:NZ	2.27	0.68
5:5:3928:A:OP1	23:N:90:ASN:ND2	2.26	0.68
28:S:96:GLU:CD	28:S:142:VAL:HG11	2.18	0.68
45:j:28:HIS:HD2	45:j:31:LYS:H	1.38	0.68
71:JJ:5:LYS:O	82:TT:24:GLN:NE2	2.25	0.68
5:5:1981:G:H1	79:RF:414:ARG:HH21	1.39	0.68
5:5:2601:A:N6	5:5:2744:A:OP2	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1228:A:H2'	20:K:1229:G:H8	1.59	0.68
52:q:54:THR:HG22	52:q:162:PRO:HG2	1.74	0.68
75:NN:117:VAL:HG21	75:NN:125:VAL:HG21	1.74	0.68
42:g:83:CYS:SG	42:g:86:CYS:HB2	2.33	0.68
65:DD:108:ARG:HA	65:DD:113:GLN:HE21	1.59	0.68
20:K:925:G:OP1	78:QQ:121:ARG:NH1	2.27	0.68
63:BB:143:ARG:HB2	63:BB:155:LYS:HB2	1.76	0.68
5:5:2583:C:OP2	42:g:76:ARG:NH1	2.27	0.68
20:K:1152:U:H1'	82:TT:16:ASN:HD21	1.59	0.68
34:Y:30:MET:HG3	34:Y:101:PRO:HG2	1.76	0.68
53:r:14:SER:HB3	53:r:17:LEU:HD13	1.75	0.68
28:S:34:ALA:HB1	28:S:39:VAL:HG13	1.76	0.67
65:DD:63:LEU:HD23	65:DD:70:ARG:HB2	1.75	0.67
5:5:1997:U:OP1	54:s:44:ARG:NH1	2.27	0.67
13:D:65:ALA:HB2	13:D:74:ILE:HD13	1.75	0.67
54:s:42:GLN:HE22	54:s:105:ASN:HB2	1.57	0.67
5:5:1199:U:H2'	5:5:1200:G:C8	2.27	0.67
5:5:2575:U:H3	5:5:2758:G:H1	1.42	0.67
5:5:4594:U:H2'	5:5:4595:G:H8	1.59	0.67
5:5:2400:G:H21	42:g:6:THR:HG22	1.60	0.67
5:5:4583:C:O2'	5:5:4718:G:N2	2.26	0.67
20:K:934:G:O6	20:K:1008:A:N1	2.27	0.67
67:FF:44:ARG:NH2	67:FF:60:GLU:O	2.28	0.67
5:5:1172:C:N4	5:5:1173:G:O6	2.28	0.67
1:0:138:ARG:NH2	20:K:1292:C:N3	2.43	0.67
5:5:1755:C:N4	5:5:1770:A:OP2	2.28	0.67
20:K:880:G:H1	20:K:906:U:H3	1.41	0.67
20:K:1228:A:H2'	20:K:1229:G:C8	2.30	0.67
20:K:1518:C:H5''	20:K:1519:U:H5''	1.75	0.67
41:f:8:LYS:HB2	41:f:31:GLU:HG2	1.76	0.67
5:5:2489:C:O2'	5:5:2491:C:N4	2.27	0.67
5:5:2837:U:OP1	11:B:249:ARG:NH1	2.27	0.67
20:K:43:U:OP2	20:K:485:A:N6	2.27	0.67
6:6:108:VAL:HA	6:6:124:SER:HA	1.75	0.67
20:K:801:U:O4	63:BB:106:ARG:NH2	2.27	0.67
20:K:1597:C:OP2	76:OO:85:ARG:NH2	2.27	0.67
20:K:1625:U:H2'	20:K:1626:C:H6	1.60	0.67
31:V:35:LYS:HD2	31:V:67:LYS:HE2	1.76	0.67
70:II:20:ILE:HD11	70:II:33:ILE:HG13	1.75	0.67
5:5:37:U:H4'	36:a:32:ARG:HD2	1.77	0.67
12:C:101:MET:HE3	12:C:104:PRO:HA	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:678:U:OP2	20:K:1026:C:N4	2.28	0.67
20:K:1808:U:H2'	20:K:1809:A:H8	1.60	0.67
5:5:1661:C:OP1	40:e:36:ARG:NH1	2.28	0.66
5:5:2639:U:HO2'	5:5:2694:G:H1	1.40	0.66
5:5:419:A:N3	5:5:1332:C:O2'	2.28	0.66
5:5:4457:U:OP1	31:V:50:ASN:ND2	2.28	0.66
6:6:42:MET:HE2	6:6:57:ARG:HB2	1.76	0.66
20:K:1565:C:OP2	77:PP:101:ARG:NH1	2.29	0.66
20:K:15:U:O2'	20:K:669:A:N6	2.28	0.66
21:L:116:ARG:NH2	21:L:155:MET:O	2.28	0.66
27:R:89:MET:HE1	27:R:97:ARG:HH12	1.61	0.66
20:K:183:G:O2'	20:K:184:G:O5'	2.14	0.66
20:K:1729:U:H3	20:K:1805:G:H1	1.42	0.66
80:RR:58:GLU:HB3	80:RR:61:TYR:HB3	1.78	0.66
18:I:76:MET:HG3	18:I:87:ILE:HD11	1.78	0.65
79:RF:405:GLY:HA3	86:AB:56:ILE:HD12	1.78	0.65
5:5:2520:C:H1'	5:5:2640:G:H21	1.60	0.65
5:5:4622:A:H4'	11:B:13:SER:HB2	1.78	0.65
86:AB:252:ARG:NH1	86:AB:521:ASP:OD1	2.29	0.65
5:5:381:U:H4'	5:5:415:G:H5'	1.78	0.65
46:k:24:LYS:HB2	46:k:35:LYS:HB2	1.78	0.65
58:w:72:VAL:HG22	81:SS:20:VAL:HG21	1.77	0.65
20:K:64:A:OP1	61:z:136:LYS:NZ	2.29	0.65
59:x:107:GLY:HA2	59:x:189:LEU:HD22	1.77	0.65
72:KK:27:ASP:O	72:KK:31:ASN:ND2	2.30	0.65
5:5:2520:C:H2'	5:5:2521:G:H8	1.60	0.65
5:5:4992:G:H2'	5:5:4993:G:H8	1.61	0.65
17:H:124:ARG:NH1	17:H:164:ALA:O	2.30	0.65
50:o:11:PHE:O	50:o:81:ARG:NH2	2.29	0.65
75:NN:27:VAL:HG11	75:NN:35:VAL:HG11	1.78	0.65
86:AB:423:SER:HA	86:AB:459:VAL:H	1.61	0.65
5:5:286:U:OP2	5:5:296:A:N6	2.29	0.65
5:5:2019:C:OP1	54:s:6:ARG:NH2	2.30	0.65
60:y:30:ILE:HG13	60:y:117:ILE:HD11	1.77	0.65
5:5:62:A:N3	5:5:77:U:O2'	2.28	0.65
5:5:152:U:OP2	23:N:49:ARG:NH1	2.29	0.65
5:5:710:G:H2'	5:5:711:A:H8	1.62	0.65
41:f:33:VAL:HG23	41:f:38:GLU:HG3	1.79	0.65
79:RF:139:LEU:HD11	79:RF:163:GLY:HA3	1.79	0.65
80:RR:32:ALA:HB1	80:RR:37:GLU:HB3	1.79	0.65
5:5:4541:G:N2	5:5:4544:A:OP2	2.23	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:D:75:VAL:O	13:D:112:ARG:NH1	2.29	0.65
20:K:894:G:H2'	20:K:895:G:H8	1.59	0.65
5:5:1176:C:O2'	13:D:271:MET:SD	2.55	0.65
18:I:38:ARG:HD3	18:I:83:ASP:HB2	1.79	0.65
20:K:829:C:O2'	20:K:845:G:N2	2.29	0.65
20:K:1298:G:H5'	85:WW:78:THR:HA	1.79	0.65
5:5:4318:C:H4'	50:o:17:LYS:HA	1.79	0.64
20:K:1014:G:N2	71:JJ:51:GLN:OE1	2.30	0.64
20:K:1423:C:H2'	20:K:1424:G:C8	2.32	0.64
20:K:1653:U:H3	20:K:1671:G:H1	1.45	0.64
20:K:1743:G:N2	20:K:1791:A:H62	1.95	0.64
5:5:2495:U:H2'	5:5:2496:G:H8	1.62	0.64
5:5:2575:U:O2	5:5:2758:G:N2	2.28	0.64
9:9:36:LEU:HD12	9:9:38:MET:HE2	1.78	0.64
20:K:1004:U:H2'	20:K:1005:G:H8	1.61	0.64
34:Y:30:MET:HE1	34:Y:75:ARG:HA	1.77	0.64
54:s:135:THR:H	86:AB:437:THR:HG21	1.63	0.64
74:MM:99:ALA:H	74:MM:133:THR:HB	1.62	0.64
5:5:1081:C:O2	5:5:1219:G:N2	2.30	0.64
7:7:7:G:OP1	13:D:33:ARG:NH1	2.30	0.64
10:A:117:GLU:HB2	10:A:162:ASN:HB2	1.78	0.64
56:u:37:ALA:HA	56:u:42:ARG:HH22	1.63	0.64
58:w:25:LEU:HD13	58:w:29:LEU:HD23	1.80	0.64
68:GG:46:LYS:HE2	68:GG:48:LEU:HD22	1.80	0.64
84:VV:107:ARG:HG3	84:VV:112:VAL:HG22	1.80	0.64
9:9:34:TYR:HB3	58:w:12:VAL:HG21	1.78	0.64
70:II:14:ARG:HE	70:II:17:ASN:HA	1.63	0.64
13:D:261:VAL:HG12	13:D:263:LYS:H	1.62	0.64
58:w:138:VAL:HG12	58:w:184:ILE:HG22	1.80	0.64
5:5:1187:G:OP2	5:5:1187:G:N2	2.18	0.64
10:A:159:SER:O	10:A:162:ASN:ND2	2.31	0.64
20:K:1259:A:H2'	20:K:1518:C:H41	1.63	0.64
20:K:1658:G:OP2	20:K:1660:C:N4	2.31	0.64
5:5:4280:A:OP2	13:D:23:ARG:NH1	2.31	0.64
20:K:874:G:H2'	20:K:875:A:H8	1.63	0.64
5:5:1866:U:OP1	18:I:4:ARG:NH1	2.31	0.63
29:T:17:ARG:NH1	29:T:45:MET:SD	2.71	0.63
56:u:146:ARG:HB2	56:u:149:GLN:HB2	1.80	0.63
61:z:2:LYS:HB2	61:z:108:VAL:HG22	1.81	0.63
5:5:2759:G:O2'	5:5:2762:G:N2	2.31	0.63
5:5:4623:G:OP1	11:B:19:ARG:NH2	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:303:C:O2	64:CC:184:ARG:NH1	2.31	0.63
22:M:96:GLU:OE1	22:M:100:ARG:NH1	2.31	0.63
81:SS:61:GLN:HB3	81:SS:68:TYR:HB2	1.80	0.63
5:5:4303:C:H2'	5:5:4305:G:H8	1.63	0.63
6:6:127:LYS:HE3	6:6:148:SER:HA	1.81	0.63
18:I:88:ARG:NH2	18:I:195:CYS:SG	2.71	0.63
20:K:921:G:OP2	71:JJ:21:LYS:NZ	2.32	0.63
16:G:159:THR:N	16:G:162:GLU:OE2	2.32	0.63
86:AB:567:ARG:HG3	86:AB:576:ARG:HB2	1.80	0.63
20:K:851:C:H5''	20:K:852:G:H5'	1.81	0.63
20:K:1012:A:O2'	20:K:1129:G:N2	2.28	0.63
20:K:1650:A:H5''	83:UU:139:ALA:HB2	1.80	0.63
20:K:1737:G:H1	20:K:1797:U:H3	1.47	0.63
21:L:42:ARG:NH2	21:L:51:ALA:O	2.31	0.63
5:5:1329:G:H2'	5:5:3865:A:H5'	1.81	0.63
5:5:1444:G:N2	5:5:1445:U:O4	2.31	0.63
5:5:2318:G:N2	5:5:2321:G:OP2	2.23	0.63
5:5:3693:U:H3	5:5:3823:G:H1	1.46	0.63
58:w:38:GLU:HB2	58:w:49:ILE:HB	1.81	0.63
5:5:158:A:H4'	5:5:159:C:H2'	1.80	0.63
20:K:951:C:O2'	74:MM:50:LYS:NZ	2.31	0.63
5:5:369:G:N2	5:5:372:A:OP2	2.28	0.63
67:FF:60:GLU:OE2	67:FF:63:ARG:NH1	2.32	0.63
83:UU:19:ALA:HB2	83:UU:75:GLY:HA3	1.81	0.63
86:AB:123:LEU:HD13	86:AB:270:ILE:HD13	1.80	0.63
3:2:34:A:H61	4:4:6:U:H3	1.48	0.62
5:5:1837:A:OP1	29:T:108:ARG:NH1	2.32	0.62
20:K:587:A:H5'	20:K:592:C:H41	1.64	0.62
27:R:15:LEU:HD13	27:R:52:ARG:HB2	1.80	0.62
5:5:2075:G:OP1	12:C:312:ARG:NH2	2.31	0.62
5:5:4752:U:O2	5:5:4948:C:N4	2.32	0.62
5:5:33:A:H3'	5:5:47:A:H61	1.65	0.62
5:5:275:C:H3'	5:5:276:C:H5''	1.81	0.62
5:5:669:C:HO2'	5:5:670:G:H8	1.45	0.62
5:5:2322:G:OP1	40:e:36:ARG:NH2	2.32	0.62
5:5:4323:A:H4'	13:D:176:SER:HB3	1.80	0.62
20:K:1670:C:H2'	20:K:1671:G:C8	2.34	0.62
28:S:137:CYS:HG	28:S:146:HIS:CD2	2.17	0.62
63:BB:146:VAL:HG22	63:BB:152:ARG:HG3	1.81	0.62
20:K:1337:C:H2'	20:K:1338:G:H8	1.62	0.62
20:K:1410:C:H2'	20:K:1411:G:C8	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:R:166:THR:OG1	27:R:170:ARG:NH2	2.32	0.62
34:Y:91:ASN:HD21	34:Y:93:THR:HG22	1.63	0.62
64:CC:101:ILE:HD12	64:CC:190:LEU:HD11	1.80	0.62
64:CC:191:GLU:HG2	66:EE:19:ASN:HD22	1.63	0.62
5:5:978:G:OP2	14:E:61:ARG:NH2	2.31	0.62
5:5:4492:U:H5''	5:5:4493:U:H5'	1.80	0.62
18:I:135:ILE:HG22	18:I:136:MET:HG3	1.81	0.62
20:K:557:U:H2'	20:K:558:G:H8	1.64	0.62
27:R:133:LYS:H	27:R:137:ILE:HD11	1.64	0.62
56:u:72:ALA:HB3	74:MM:128:ARG:HH12	1.65	0.62
6:6:152:SER:OG	6:6:168:CYS:SG	2.56	0.62
20:K:1786:U:H2'	20:K:1787:G:H8	1.62	0.62
35:Z:84:ARG:NH1	42:g:99:GLU:OE1	2.33	0.62
86:AB:75:LEU:HD11	86:AB:79:LEU:HD22	1.82	0.62
7:7:63:C:H41	18:I:209:TRP:HB2	1.64	0.62
38:c:17:ARG:NH1	38:c:107:SER:OG	2.32	0.62
64:CC:8:TRP:HA	64:CC:18:ARG:HD3	1.81	0.62
5:5:2093:G:H4'	5:5:2094:C:H5'	1.82	0.62
5:5:2485:U:H3	5:5:2493:G:H1	1.46	0.62
5:5:4274:A:H2'	5:5:4275:G:H8	1.64	0.62
10:A:27:ALA:O	10:A:128:ARG:NH2	2.33	0.62
15:F:104:VAL:HG13	15:F:135:VAL:HG12	1.81	0.62
27:R:103:ARG:NH1	27:R:124:TYR:OH	2.32	0.62
80:RR:92:CYS:SG	80:RR:102:LYS:NZ	2.72	0.62
5:5:2265:G:OP1	53:r:35:ARG:NH2	2.28	0.62
5:5:3848:U:H2'	5:5:3849:A:H8	1.63	0.62
11:B:322:HIS:O	11:B:342:LYS:NZ	2.30	0.62
20:K:1410:C:H2'	20:K:1411:G:H8	1.65	0.62
61:z:136:LYS:NZ	61:z:175:LYS:O	2.29	0.62
20:K:1808:U:H2'	20:K:1809:A:C8	2.35	0.62
59:x:92:ILE:HG22	59:x:95:THR:H	1.65	0.62
14:E:160:HIS:HB3	14:E:163:LYS:HD2	1.80	0.61
20:K:551:U:H2'	20:K:552:G:C8	2.34	0.61
28:S:150:ILE:HG23	28:S:150:ILE:O	1.99	0.61
31:V:57:VAL:HG11	31:V:122:ALA:HB3	1.82	0.61
5:5:481:G:OP1	5:5:2094:C:N4	2.31	0.61
5:5:1555:G:O6	51:p:4:ARG:NH2	2.33	0.61
20:K:1103:C:H2'	20:K:1104:G:C8	2.35	0.61
86:AB:192:ASP:OD2	86:AB:197:GLN:NE2	2.33	0.61
20:K:126:G:O4'	20:K:180:G:N2	2.33	0.61
20:K:1551:U:H1'	20:K:1558:C:C2	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:2753:G:H5'	35:Z:135:ARG:HH12	1.65	0.61
5:5:4088:C:H2'	5:5:4089:G:H8	1.65	0.61
15:F:156:ARG:NH1	15:F:211:LYS:O	2.33	0.61
24:O:72:HIS:O	24:O:74:ARG:NH1	2.32	0.61
5:5:4301:U:OP1	29:T:78:LYS:NZ	2.33	0.61
28:S:137:CYS:SG	28:S:146:HIS:CD2	2.93	0.61
83:UU:10:VAL:HB	83:UU:25:CYS:HB3	1.80	0.61
5:5:3873:G:H2'	5:5:3874:G:C8	2.35	0.61
5:5:4953:G:H2'	5:5:4954:G:H8	1.63	0.61
7:7:23:A:N3	7:7:118:C:O2'	2.31	0.61
59:x:72:ILE:HB	59:x:77:ARG:HD3	1.81	0.61
79:RF:403:VAL:HA	79:RF:408:GLY:HA2	1.82	0.61
5:5:664:G:HO2'	5:5:668:C:H42	1.47	0.61
6:6:152:SER:HG	6:6:168:CYS:HG	1.48	0.61
20:K:146:G:O2'	20:K:147:A:O5'	2.18	0.61
23:N:114:ARG:NH1	23:N:151:ILE:O	2.34	0.61
5:5:947:C:H5''	14:E:53:VAL:HG11	1.83	0.61
5:5:1523:A:N3	5:5:4389:C:O2'	2.31	0.61
5:5:2386:U:H2'	5:5:2387:G:H8	1.65	0.61
5:5:4586:G:OP1	24:O:72:HIS:N	2.32	0.61
17:H:91:LYS:HB2	17:H:183:GLU:HB3	1.83	0.61
20:K:155:G:H21	61:z:56:ASN:HD21	1.48	0.61
64:CC:191:GLU:O	66:EE:19:ASN:ND2	2.34	0.61
5:5:4270:C:H3'	5:5:4271:A:H5''	1.81	0.61
5:5:4421:C:N4	5:5:4475:G:N2	2.41	0.61
22:M:10:GLY:O	22:M:62:LEU:N	2.32	0.61
3:2:63:U:H2'	3:2:64:G:H8	1.64	0.61
5:5:4930:C:H5'	14:E:269:GLN:HG2	1.83	0.61
20:K:508:A:H3'	20:K:509:G:H8	1.65	0.61
28:S:115:ALA:O	28:S:118:ARG:NH1	2.34	0.61
65:DD:138:ARG:NH2	65:DD:152:ASP:OD2	2.34	0.61
86:AB:26:LYS:HA	86:AB:32:VAL:HG21	1.81	0.61
3:2:18:G:H1	3:2:55:U:H6	1.46	0.60
5:5:4077:A:N1	5:5:4171:C:N4	2.48	0.60
20:K:375:U:H2'	20:K:376:A:C8	2.36	0.60
25:P:40:HIS:NE2	25:P:110:ASP:O	2.25	0.60
86:AB:364:ILE:HG22	86:AB:545:ALA:HB3	1.82	0.60
5:5:1091:C:N4	5:5:1092:G:O6	2.33	0.60
5:5:2647:A:H62	5:5:2686:G:H8	1.48	0.60
38:c:50:ASN:ND2	38:c:75:SER:O	2.33	0.60
46:k:6:GLU:HG2	46:k:7:GLU:HG2	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:RF:44:GLN:HB2	79:RF:47:ARG:HD3	1.83	0.60
5:5:1355:G:OP1	26:Q:108:ARG:NH1	2.32	0.60
20:K:902:G:H2'	20:K:903:A:H8	1.66	0.60
20:K:1017:U:OP1	78:QQ:62:GLN:NE2	2.34	0.60
5:5:432:U:OP2	5:5:3888:G:N2	2.35	0.60
5:5:1414:C:N4	5:5:1415:G:O6	2.34	0.60
5:5:1433:A:H62	5:5:1451:G:N2	1.99	0.60
8:8:65:A:O2'	43:h:10:ARG:NH2	2.35	0.60
10:A:129:ALA:HB3	10:A:132:ASN:HD22	1.66	0.60
11:B:261:ARG:HB2	24:O:64:THR:HG21	1.82	0.60
20:K:613:G:N2	20:K:626:G:OP1	2.33	0.60
30:U:27:HIS:NE2	30:U:112:LEU:O	2.32	0.60
52:q:205:ARG:NH2	72:KK:81:ARG:O	2.35	0.60
55:t:18:THR:HA	55:t:58:ILE:HG23	1.83	0.60
85:WW:44:ARG:NH2	85:WW:53:GLN:OE1	2.34	0.60
5:5:1093:C:H42	5:5:1203:A:H61	1.47	0.60
5:5:2576:G:OP1	35:Z:48:ARG:NH2	2.35	0.60
5:5:4895:U:H5'	5:5:4896:G:N7	2.17	0.60
20:K:671:A:H4'	20:K:672:A:H5''	1.83	0.60
78:QQ:20:ARG:HH21	82:TT:56:HIS:HB3	1.66	0.60
5:5:2757:A:H2'	5:5:2758:G:C8	2.36	0.60
20:K:155:G:H2'	20:K:156:G:H8	1.67	0.60
35:Z:51:ARG:HB2	35:Z:65:ARG:HB3	1.83	0.60
57:v:83:LEU:O	69:HH:15:ARG:NH1	2.33	0.60
5:5:4126:C:OP1	16:G:90:LYS:NZ	2.34	0.60
6:6:174:VAL:HB	6:6:188:HIS:HB2	1.82	0.60
18:I:153:ARG:HA	18:I:156:LYS:HE2	1.83	0.60
20:K:1780:G:H2'	20:K:1781:A:C8	2.37	0.60
5:5:229:G:H5''	34:Y:11:ARG:HG3	1.83	0.60
5:5:325:U:H2'	5:5:326:C:C6	2.37	0.60
5:5:2021:G:H4'	54:s:85:ASN:HA	1.83	0.60
5:5:2667:C:OP1	27:R:100:ARG:NE	2.35	0.60
24:O:85:ARG:HG3	24:O:99:LEU:HD11	1.84	0.60
31:V:43:LYS:HD2	31:V:60:MET:HE3	1.83	0.60
36:a:72:THR:HG22	36:a:110:LYS:HB3	1.83	0.60
39:d:26:THR:HG23	39:d:85:ARG:HH11	1.67	0.60
43:h:87:LYS:HD3	43:h:91:MET:HE2	1.82	0.60
5:5:36:U:OP1	5:5:1651:G:N2	2.32	0.60
5:5:153:G:H2'	5:5:154:G:H8	1.66	0.60
5:5:300:A:H2'	5:5:301:G:H8	1.66	0.60
5:5:1564:A:N6	20:K:1029:G:O2'	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1755:C:H4'	5:5:1756:U:H5'	1.84	0.60
59:x:252:ARG:HD2	59:x:256:LEU:HD23	1.84	0.60
2:1:127:HIS:ND1	5:5:3909:C:O2'	2.27	0.60
5:5:1433:A:H62	5:5:1451:G:H21	1.48	0.60
5:5:2588:C:H5''	5:5:2589:C:H5''	1.84	0.60
5:5:5057:C:H2'	5:5:5058:A:C8	2.36	0.60
6:6:149:GLU:OE1	72:KK:23:ARG:NH1	2.35	0.60
20:K:1102:G:OP1	56:u:151:ARG:NH2	2.35	0.60
84:VV:40:PRO:HB3	84:VV:81:ILE:HD11	1.83	0.60
86:AB:460:GLN:HG3	86:AB:461:THR:H	1.66	0.60
5:5:453:G:O2'	5:5:705:G:OP1	2.20	0.59
5:5:1553:A:H4'	51:p:12:GLY:HA3	1.84	0.59
5:5:4525:C:OP1	11:B:246:ARG:NH2	2.30	0.59
5:5:4764:A:N6	17:H:60:TRP:O	2.29	0.59
6:6:216:ALA:HB3	6:6:230:LEU:HB2	1.83	0.59
20:K:1220:A:N3	20:K:1677:U:O2'	2.32	0.59
5:5:1293:G:O2'	5:5:1296:G:N2	2.35	0.59
5:5:4872:G:O6	22:M:98:ARG:NH1	2.35	0.59
20:K:507:G:OP2	75:NN:104:ARG:NH2	2.35	0.59
20:K:1119:A:H5''	71:JJ:72:ARG:HH21	1.68	0.59
86:AB:310:ASN:OD1	86:AB:572:ASN:ND2	2.35	0.59
5:5:956:A:H1'	5:5:2076:G:H5''	1.83	0.59
5:5:2556:G:O2'	35:Z:112:ARG:NH1	2.35	0.59
15:F:178:LEU:HD21	15:F:203:ALA:HA	1.84	0.59
50:o:12:CYS:HB3	50:o:15:CYS:HB2	1.85	0.59
55:t:16:ARG:HE	55:t:17:CYS:H	1.49	0.59
61:z:135:PRO:HB3	61:z:140:ARG:HB2	1.84	0.59
79:RF:94:VAL:HG11	79:RF:136:LEU:HD11	1.83	0.59
5:5:1093:C:H2'	5:5:1094:G:H8	1.65	0.59
5:5:2459:G:N2	5:5:2462:C:OP2	2.35	0.59
6:6:103:GLY:O	6:6:130:LYS:NZ	2.36	0.59
11:B:234:ARG:NH2	11:B:268:ARG:O	2.36	0.59
20:K:952:G:H2'	20:K:953:C:C6	2.38	0.59
20:K:1667:U:H2'	20:K:1668:U:C6	2.38	0.59
5:5:230:G:OP1	34:Y:15:ARG:NH1	2.33	0.59
5:5:303:C:OP2	23:N:68:ARG:NH2	2.35	0.59
5:5:1332:C:H2'	5:5:1333:A:C8	2.36	0.59
6:6:87:LEU:HB3	6:6:101:PHE:HB2	1.84	0.59
20:K:1277:C:H2'	20:K:1278:A:H8	1.68	0.59
20:K:1324:G:H1	20:K:1504:U:H3	1.49	0.59
5:5:4616:A:H4'	11:B:65:SER:HB3	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:59:G:H2'	7:7:60:G:H8	1.68	0.59
20:K:1240:A:C8	85:WW:100:LYS:HG3	2.38	0.59
45:j:85:LYS:HD2	45:j:86:PRO:HD2	1.83	0.59
20:K:329:G:H2'	20:K:330:G:H8	1.68	0.59
20:K:1829:G:H1'	20:K:1850:A:H2	1.67	0.59
74:MM:93:LEU:HD23	74:MM:119:LEU:HD21	1.85	0.59
76:OO:64:ASN:O	76:OO:111:ARG:NH2	2.36	0.59
5:5:3749:C:O2'	10:A:220:GLY:O	2.21	0.59
20:K:913:A:OP2	63:BB:99:ARG:NH1	2.36	0.59
20:K:1617:G:H22	20:K:1620:A:H5'	1.67	0.59
39:d:57:MET:SD	39:d:90:ARG:NH2	2.76	0.59
53:r:16:PHE:HB3	53:r:27:THR:H	1.67	0.59
5:5:1972:G:H2'	5:5:1973:G:C8	2.38	0.59
5:5:2734:U:H2'	5:5:2735:G:H8	1.68	0.59
20:K:146:G:N7	61:z:137:ARG:NH1	2.50	0.59
20:K:482:G:N1	20:K:485:A:OP2	2.33	0.59
43:h:80:PRO:HD2	43:h:83:LEU:HD12	1.85	0.59
5:5:1315:C:N4	5:5:1316:G:O6	2.36	0.59
5:5:1676:C:H41	5:5:4378:A:H5''	1.68	0.59
5:5:2411:C:H2'	5:5:2412:A:H8	1.68	0.59
5:5:4124:G:N2	16:G:96:GLN:O	2.36	0.59
20:K:907:G:H5'	27:R:165:LYS:HE3	1.83	0.59
20:K:1533:A:O2'	60:y:81:ARG:NH1	2.35	0.59
59:x:11:ARG:NH1	59:x:21:ASP:O	2.33	0.59
60:y:71:ARG:NH2	60:y:148:ASN:OD1	2.35	0.59
73:LL:87:ARG:NH1	73:LL:94:ASP:O	2.35	0.59
74:MM:33:ILE:HD13	74:MM:95:ILE:HG23	1.85	0.59
86:AB:403:GLU:HG3	86:AB:405:PRO:HD3	1.83	0.59
5:5:3689:G:O2'	5:5:3818:U:OP2	2.20	0.58
20:K:153:G:N3	61:z:13:GLN:NE2	2.51	0.58
20:K:928:G:H2'	20:K:929:G:C8	2.38	0.58
20:K:1413:G:H2'	20:K:1414:A:H8	1.67	0.58
5:5:160:G:H1	5:5:275:C:H41	1.52	0.58
5:5:451:C:OP2	5:5:1294:A:N6	2.36	0.58
5:5:1669:A:N3	5:5:1852:U:O2'	2.33	0.58
22:M:91:TRP:HA	22:M:94:LYS:HE2	1.84	0.58
58:w:137:VAL:HG22	58:w:151:LYS:HG3	1.84	0.58
78:QQ:136:PRO:HG2	78:QQ:139:TRP:HB2	1.85	0.58
8:8:58:G:O6	45:j:63:ARG:NH2	2.36	0.58
20:K:1536:G:H2'	20:K:1537:A:C8	2.37	0.58
57:v:69:LEU:HB3	57:v:75:ILE:HD13	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:GG:43:ALA:HB1	68:GG:50:VAL:HG21	1.85	0.58
5:5:480:C:O2'	5:5:2094:C:N4	2.36	0.58
5:5:2587:A:OP2	5:5:2588:C:N4	2.35	0.58
20:K:915:G:OP2	20:K:915:G:N2	2.34	0.58
23:N:174:LEU:HA	23:N:183:THR:HG21	1.84	0.58
48:m:71:ARG:HH21	48:m:96:ARG:HB3	1.69	0.58
77:PP:85:ASN:HB2	77:PP:88:MET:HB2	1.86	0.58
79:RF:335:CYS:HG	79:RF:338:THR:HG1	1.46	0.58
12:C:149:GLU:HG2	12:C:151:PRO:HD2	1.85	0.58
22:M:11:ARG:NH1	22:M:58:THR:O	2.36	0.58
27:R:24:LEU:HA	27:R:50:ILE:HG22	1.85	0.58
35:Z:11:VAL:HG11	35:Z:80:LEU:HB3	1.86	0.58
5:5:1077:C:OP1	5:5:1215:U:O2'	2.22	0.58
5:5:2333:G:H5''	12:C:195:LYS:HE2	1.85	0.58
5:5:4859:C:H2'	5:5:4860:G:H8	1.68	0.58
8:8:96:C:H5''	43:h:66:LYS:HD3	1.86	0.58
54:s:47:LEU:HB3	54:s:51:ALA:HB3	1.85	0.58
59:x:9:LEU:HB2	59:x:30:ARG:HD3	1.85	0.58
5:5:1743:A:H4'	13:D:15:ARG:HH11	1.68	0.58
5:5:1850:A:N3	5:5:2283:G:O2'	2.36	0.58
5:5:2845:A:H61	5:5:3843:C:N4	2.01	0.58
5:5:4301:U:OP2	5:5:4303:C:N4	2.37	0.58
28:S:80:ILE:HG13	28:S:129:VAL:HG13	1.84	0.58
86:AB:247:LEU:HD22	86:AB:251:GLN:HB3	1.86	0.58
5:5:1628:C:H42	10:A:3:ARG:HH11	1.51	0.58
5:5:1951:G:H1	5:5:2032:U:H3	1.51	0.58
9:9:22:ARG:HA	81:SS:65:ARG:HH22	1.68	0.58
11:B:59:GLU:HG2	11:B:366:LYS:HD2	1.86	0.58
20:K:1075:C:OP1	78:QQ:107:LYS:NZ	2.37	0.58
20:K:1706:G:H5'	49:n:1:MET:HB2	1.86	0.58
5:5:3681:G:OP2	10:A:128:ARG:NH1	2.36	0.58
5:5:4177:C:OP1	23:N:93:LYS:NZ	2.37	0.58
19:J:136:ARG:HH21	19:J:157:ILE:HG12	1.68	0.58
20:K:432:G:H2'	20:K:433:A:C8	2.39	0.58
20:K:1277:C:H2'	20:K:1278:A:C8	2.39	0.58
71:JJ:23:ARG:HH22	71:JJ:29:ASN:HD21	1.52	0.58
77:PP:113:VAL:HG12	77:PP:123:LEU:HA	1.86	0.58
5:5:1777:C:H2'	5:5:1778:C:H6	1.69	0.58
5:5:3697:U:H5''	5:5:3698:G:H5'	1.86	0.58
20:K:1012:A:OP1	78:QQ:3:ARG:NH1	2.34	0.58
20:K:1121:G:O2'	56:u:204:ILE:O	2.22	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1356:G:H2'	20:K:1357:A:C8	2.39	0.58
20:K:1579:A:O2'	20:K:1581:C:OP2	2.20	0.58
23:N:9:GLU:HB3	44:i:44:ILE:HG13	1.86	0.58
55:t:131:GLU:HB3	55:t:152:ILE:HD12	1.86	0.58
74:MM:75:MET:SD	74:MM:79:GLN:NE2	2.77	0.58
86:AB:532:VAL:O	86:AB:549:GLN:NE2	2.36	0.58
5:5:160:G:C2	5:5:161:G:C8	2.92	0.57
5:5:664:G:HO2'	5:5:668:C:N4	2.01	0.57
5:5:1995:G:H21	55:t:122:ALA:HB3	1.69	0.57
20:K:57:U:O2'	20:K:499:G:N3	2.37	0.57
20:K:1532:C:H5''	20:K:1533:A:H8	1.68	0.57
52:q:80:ARG:NH1	52:q:126:ASP:OD2	2.37	0.57
5:5:184:U:H3	5:5:253:G:H22	1.52	0.57
12:C:230:LEU:HD21	12:C:239:LYS:HD2	1.87	0.57
36:a:76:ASP:HB3	36:a:115:GLY:HA3	1.86	0.57
86:AB:205:ASP:OD2	86:AB:254:LYS:NZ	2.37	0.57
5:5:664:G:O2'	5:5:668:C:N4	2.29	0.57
5:5:736:C:OP1	22:M:74:ARG:NH2	2.37	0.57
5:5:1989:G:H2'	5:5:1990:A:C8	2.39	0.57
5:5:3868:G:H22	5:5:3900:G:H1'	1.68	0.57
9:9:44:ARG:NH1	68:GG:78:ASP:OD2	2.30	0.57
24:O:54:TYR:OH	24:O:73:PHE:O	2.22	0.57
31:V:99:GLU:HG3	32:W:23:ARG:HA	1.85	0.57
83:UU:31:LEU:HD13	83:UU:33:LYS:HZ2	1.69	0.57
5:5:2457:G:OP1	23:N:65:ARG:NH2	2.37	0.57
5:5:4232:U:H4'	5:5:4233:A:O5'	2.03	0.57
11:B:254:ILE:HG23	11:B:266:VAL:HG11	1.87	0.57
13:D:83:LEU:HB3	13:D:88:VAL:HB	1.85	0.57
14:E:169:LYS:HE3	14:E:211:ILE:HD13	1.85	0.57
20:K:1560:U:HO2'	20:K:1583:C:HO2'	1.50	0.57
33:X:119:ILE:HD12	33:X:149:VAL:HG21	1.85	0.57
84:VV:40:PRO:HA	84:VV:79:LYS:HD2	1.86	0.57
5:5:223:G:N3	12:C:223:ASN:ND2	2.52	0.57
5:5:1209:U:O3'	15:F:69:ARG:NH1	2.37	0.57
5:5:3642:A:HO2'	45:j:2:THR:N	2.02	0.57
5:5:4346:U:H5''	50:o:80:LYS:HE2	1.86	0.57
5:5:4414:A:H2'	5:5:4422:A:C2	2.39	0.57
7:7:57:C:H2'	7:7:58:A:H8	1.68	0.57
14:E:115:MET:O	53:r:87:ARG:NH1	2.38	0.57
20:K:852:G:O2'	66:EE:97:ARG:NH2	2.38	0.57
50:o:3:ASN:HD21	50:o:95:GLY:H	1.53	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:4:G:N1	8:8:154:G:O6	2.37	0.57
5:5:1326:A:OP2	5:5:4445:U:O2'	2.23	0.57
5:5:2492:C:H2'	5:5:2493:G:C8	2.40	0.57
8:8:67:U:H2'	8:8:68:G:H8	1.68	0.57
20:K:928:G:N2	71:JJ:68:GLY:O	2.37	0.57
22:M:113:MET:SD	22:M:114:LYS:NZ	2.76	0.57
27:R:105:LEU:HD22	27:R:135:LYS:HG3	1.87	0.57
58:w:45:ARG:NH2	58:w:85:GLU:OE1	2.36	0.57
59:x:11:ARG:HA	59:x:28:ALA:HB2	1.87	0.57
83:UU:13:PHE:HA	83:UU:22:VAL:HA	1.86	0.57
86:AB:274:HIS:O	86:AB:497:ARG:NH2	2.37	0.57
5:5:1492:G:O2'	37:b:41:ARG:NH1	2.38	0.57
5:5:4509:U:H2'	5:5:4510:A:H2'	1.87	0.57
5:5:4764:A:H3'	17:H:23:ARG:HH21	1.69	0.57
79:RF:289:ARG:HH22	79:RF:319:ILE:HD12	1.70	0.57
5:5:66:A:O2'	5:5:326:C:O2	2.20	0.57
5:5:1382:G:H2'	5:5:1383:G:H8	1.70	0.57
5:5:4272:G:OP2	5:5:4272:G:N2	2.29	0.57
20:K:1662:U:O4	20:K:1663:A:N6	2.37	0.57
28:S:78:PHE:CE1	28:S:131:GLU:HG2	2.40	0.57
37:b:106:ARG:NH1	37:b:106:ARG:O	2.38	0.57
9:9:40:ARG:NH2	68:GG:68:THR:O	2.35	0.57
40:e:76:LYS:O	53:r:23:GLN:NE2	2.38	0.57
20:K:124:U:H3	20:K:340:C:H42	1.51	0.57
20:K:1625:U:H2'	20:K:1626:C:C6	2.39	0.57
46:k:52:LYS:HD3	46:k:55:LYS:HD2	1.86	0.57
5:5:2395:A:N6	5:5:2820:C:O2	2.38	0.56
20:K:64:A:H2	20:K:83:A:H62	1.53	0.56
20:K:432:G:H2'	20:K:433:A:H8	1.68	0.56
20:K:501:C:H2'	20:K:502:C:H5''	1.86	0.56
20:K:530:U:H2'	20:K:531:A:C8	2.40	0.56
20:K:879:C:H2'	20:K:880:G:H8	1.69	0.56
20:K:980:A:H2'	20:K:981:A:C8	2.40	0.56
20:K:1416:C:O2	77:PP:3:GLY:N	2.38	0.56
79:RF:243:ASP:OD1	79:RF:244:GLN:N	2.38	0.56
5:5:4256:A:H2'	5:5:4257:A:C8	2.39	0.56
20:K:1593:C:H2'	20:K:1594:A:H8	1.69	0.56
22:M:5:ARG:HE	22:M:58:THR:HA	1.69	0.56
86:AB:191:LYS:HD2	86:AB:233:GLN:HE21	1.68	0.56
5:5:153:G:OP2	23:N:54:LYS:NZ	2.38	0.56
5:5:679:C:H2'	5:5:680:G:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1914:C:H4'	24:O:89:PRO:HD3	1.87	0.56
5:5:4717:A:H4'	11:B:20:LYS:HD3	1.87	0.56
13:D:41:LYS:NZ	29:T:30:TYR:O	2.25	0.56
20:K:974:C:H2'	20:K:975:G:H8	1.70	0.56
20:K:1156:U:O4	57:v:194:ARG:NH1	2.38	0.56
20:K:1737:G:OP1	61:z:94:ARG:NH2	2.38	0.56
24:O:9:LEU:HD23	24:O:118:MET:HB2	1.87	0.56
35:Z:27:LYS:HB3	35:Z:42:LEU:HB3	1.87	0.56
52:q:8:LEU:HD11	69:HH:39:VAL:HG11	1.87	0.56
86:AB:365:VAL:HG12	86:AB:366:ALA:H	1.69	0.56
5:5:2409:U:H4'	5:5:2428:A:H4'	1.88	0.56
20:K:66:G:O6	20:K:82:G:O2'	2.21	0.56
20:K:813:A:OP1	59:x:16:LYS:NZ	2.38	0.56
52:q:25:LEU:O	52:q:164:ASN:ND2	2.38	0.56
5:5:2580:U:O2'	35:Z:79:HIS:ND1	2.32	0.56
5:5:4601:U:O2	5:5:4610:A:N7	2.38	0.56
20:K:526:A:N1	20:K:559:G:O6	2.38	0.56
20:K:551:U:H2'	20:K:552:G:H8	1.70	0.56
26:Q:122:THR:OG1	26:Q:124:ASP:OD1	2.23	0.56
27:R:109:TYR:OH	27:R:139:MET:SD	2.56	0.56
20:K:1560:U:H2'	20:K:1561:A:H8	1.70	0.56
20:K:1590:C:OP1	77:PP:82:ARG:NH1	2.38	0.56
23:N:181:HIS:O	23:N:195:ARG:NH2	2.35	0.56
67:FF:43:ILE:HG22	67:FF:65:ALA:HB3	1.88	0.56
5:5:271:C:H2'	5:5:272:U:C6	2.41	0.56
5:5:2411:C:H2'	5:5:2412:A:C8	2.41	0.56
5:5:4314:C:H4'	29:T:68:THR:HG21	1.86	0.56
5:5:4699:U:H1'	5:5:4700:A:H5''	1.87	0.56
9:9:17:GLY:HA2	9:9:27:ARG:HG2	1.87	0.56
20:K:150:A:H62	20:K:168:C:H42	1.53	0.56
20:K:1415:C:OP1	77:PP:129:ARG:NH2	2.39	0.56
21:L:54:PRO:O	21:L:56:ARG:NH1	2.38	0.56
66:EE:135:SER:O	66:EE:139:ARG:NH1	2.37	0.56
79:RF:150:VAL:HB	79:RF:157:LEU:HB3	1.88	0.56
5:5:4546:A:N7	10:A:215:ASN:ND2	2.53	0.56
20:K:81:U:H3'	20:K:82:G:H8	1.70	0.56
20:K:1563:G:OP1	77:PP:121:ARG:NH1	2.39	0.56
86:AB:108:LEU:HB2	86:AB:272:VAL:HG22	1.88	0.56
1:0:93:HIS:HB2	20:K:1304:U:H5''	1.86	0.56
5:5:160:G:H1	5:5:275:C:N4	2.04	0.56
5:5:2822:G:N7	27:R:20:LYS:NZ	2.50	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:18:VAL:HA	6:6:35:SER:HA	1.88	0.56
14:E:115:MET:N	14:E:115:MET:SD	2.79	0.56
20:K:444:G:H1	64:CC:26:LYS:HE2	1.71	0.56
20:K:1252:C:N4	83:UU:146:ARG:O	2.39	0.56
79:RF:252:LYS:HD2	79:RF:274:VAL:HG21	1.88	0.56
5:5:1802:A:N3	29:T:130:ARG:NH2	2.52	0.56
5:5:2521:G:H2'	5:5:2522:G:H8	1.70	0.56
15:F:238:GLN:OE1	15:F:241:ARG:NH2	2.39	0.56
28:S:154:LEU:HD13	28:S:157:ARG:HD3	1.87	0.56
58:w:168:VAL:HG12	58:w:189:MET:HB3	1.88	0.56
81:SS:4:PRO:HD2	81:SS:7:ASN:HD21	1.71	0.56
81:SS:91:PRO:HD2	81:SS:94:LEU:HD13	1.88	0.56
5:5:2452:G:H21	5:5:2507:A:H62	1.54	0.55
5:5:3796:U:O2'	20:K:1720:U:O2'	2.21	0.55
5:5:4458:C:OP1	11:B:11:HIS:NE2	2.39	0.55
11:B:220:ILE:HB	11:B:346:THR:HB	1.87	0.55
20:K:1291:A:H5''	20:K:1302:G:H2'	1.88	0.55
35:Z:100:VAL:HG13	35:Z:106:LEU:HB3	1.87	0.55
55:t:29:ALA:HB1	55:t:33:GLY:HA3	1.88	0.55
57:v:128:VAL:HG11	57:v:155:ILE:HG12	1.86	0.55
64:CC:76:THR:HG21	64:CC:104:ILE:HG23	1.88	0.55
69:HH:16:LYS:HG2	69:HH:23:ILE:HG22	1.88	0.55
83:UU:123:ASP:HB3	83:UU:125:ARG:HD3	1.86	0.55
5:5:423:G:OP1	25:P:62:ARG:NH1	2.38	0.55
5:5:1333:A:H2'	5:5:1334:A:H8	1.70	0.55
5:5:1372:A:OP1	23:N:202:ARG:NH2	2.38	0.55
5:5:4537:C:H2'	5:5:4538:G:H8	1.70	0.55
20:K:557:U:H2'	20:K:558:G:C8	2.41	0.55
23:N:116:LEU:HD22	23:N:135:ILE:HD11	1.87	0.55
56:u:86:LEU:HB3	56:u:98:THR:HB	1.87	0.55
57:v:171:GLY:HA2	82:TT:97:ARG:HE	1.71	0.55
83:UU:44:PRO:HD3	83:UU:77:HIS:HB3	1.88	0.55
20:K:1468:C:H2'	20:K:1469:A:H8	1.71	0.55
22:M:97:ALA:HB2	24:O:203:VAL:HB	1.87	0.55
24:O:195:VAL:O	24:O:199:HIS:ND1	2.31	0.55
28:S:77:ASN:HD21	28:S:146:HIS:CE1	2.23	0.55
32:W:23:ARG:HD3	32:W:27:LYS:HE3	1.88	0.55
64:CC:137:LEU:O	64:CC:141:ARG:NH2	2.39	0.55
5:5:2020:U:H2'	5:5:2021:G:C8	2.41	0.55
5:5:3732:A:H2'	5:5:3733:A:C8	2.41	0.55
8:8:63:U:OP1	43:h:48:ARG:NH2	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:I:31:ILE:HG22	18:I:62:SER:HB2	1.89	0.55
36:a:36:GLY:HA3	36:a:40:HIS:CE1	2.42	0.55
48:m:68:MET:HB2	48:m:77:LEU:HB2	1.87	0.55
54:s:57:LYS:HB2	54:s:60:MET:HE3	1.89	0.55
5:5:2863:G:O2'	27:R:82:LYS:O	2.21	0.55
5:5:4433:G:N7	18:I:7:ARG:NH2	2.55	0.55
18:I:54:SER:HB2	18:I:135:ILE:HD11	1.88	0.55
54:s:32:ALA:O	54:s:85:ASN:ND2	2.40	0.55
63:BB:144:ILE:HB	82:TT:52:ILE:HB	1.89	0.55
5:5:137:G:H2'	5:5:138:G:H8	1.71	0.55
5:5:1593:A:H5''	5:5:2839:U:H5''	1.89	0.55
5:5:1604:G:H2'	5:5:1605:G:C8	2.41	0.55
5:5:1886:G:HO2'	5:5:1909:G:HO2'	1.54	0.55
5:5:3732:A:H2'	5:5:3733:A:H8	1.72	0.55
5:5:4618:G:H5''	31:V:15:ARG:HB2	1.88	0.55
8:8:60:G:OP1	33:X:68:ARG:NH2	2.39	0.55
20:K:74:G:N2	20:K:77:A:OP2	2.40	0.55
20:K:1828:C:H2'	20:K:1829:G:C8	2.41	0.55
22:M:93:LYS:HB3	24:O:203:VAL:HG12	1.87	0.55
33:X:81:LEU:HD23	33:X:81:LEU:H	1.72	0.55
46:k:17:ARG:NH2	46:k:38:CYS:SG	2.80	0.55
57:v:135:GLY:HA2	57:v:165:VAL:HG12	1.88	0.55
65:DD:83:ARG:HG2	65:DD:150:ARG:HD3	1.87	0.55
5:5:1777:C:H2'	5:5:1778:C:C6	2.42	0.55
5:5:2520:C:H2'	5:5:2521:G:C8	2.40	0.55
5:5:4274:A:H2'	5:5:4275:G:C8	2.42	0.55
8:8:75:G:OP2	34:Y:74:TYR:OH	2.25	0.55
10:A:30:ARG:O	10:A:163:ARG:NH2	2.26	0.55
20:K:986:G:OP2	20:K:988:C:N4	2.39	0.55
20:K:1130:G:N2	20:K:1130:G:OP2	2.40	0.55
20:K:1310:U:OP1	80:RR:36:ARG:NH1	2.40	0.55
28:S:164:LYS:HB3	28:S:165:PRO:HD3	1.88	0.55
29:T:45:MET:H	29:T:95:HIS:HD2	1.53	0.55
38:c:48:LEU:HD21	38:c:60:ILE:HG21	1.88	0.55
86:AB:449:LEU:HD12	86:AB:469:ARG:HD2	1.88	0.55
5:5:3772:U:H3	5:5:3776:G:H22	1.55	0.55
16:G:233:PRO:HG3	16:G:276:ARG:HE	1.72	0.55
20:K:145:G:H2'	20:K:146:G:C8	2.42	0.55
20:K:1332:A:O2'	58:w:145:GLN:O	2.21	0.55
20:K:1396:A:N7	20:K:1450:G:N2	2.55	0.55
20:K:1532:C:H5''	20:K:1533:A:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:N:193:ARG:O	23:N:197:THR:OG1	2.22	0.55
35:Z:97:ASN:HB2	35:Z:100:VAL:HG23	1.87	0.55
62:AA:104:ARG:HE	65:DD:124:HIS:HD2	1.55	0.55
66:EE:57:ASP:HB3	66:EE:60:CYS:HB2	1.87	0.55
76:OO:101:SER:HB3	76:OO:108:ILE:HD13	1.88	0.55
5:5:130:C:H2'	5:5:131:C:C6	2.42	0.55
5:5:137:G:H2'	5:5:138:G:C8	2.42	0.55
5:5:1778:C:H2'	5:5:1779:U:C6	2.42	0.55
5:5:1857:C:H2'	5:5:1858:A:H8	1.72	0.55
5:5:1898:C:OP1	26:Q:2:GLY:N	2.40	0.55
5:5:2521:G:H2'	5:5:2522:G:C8	2.42	0.55
11:B:240:LEU:HB3	11:B:244:THR:HG21	1.89	0.55
14:E:173:SER:OG	14:E:217:ASP:OD2	2.25	0.55
18:I:79:SER:OG	18:I:147:HIS:ND1	2.39	0.55
20:K:1445:U:H2'	20:K:1446:A:C8	2.42	0.55
35:Z:2:GLY:N	38:c:67:ALA:O	2.40	0.55
5:5:48:G:H4'	5:5:49:U:O5'	2.05	0.55
5:5:1073:G:H2'	5:5:1074:G:H8	1.71	0.55
5:5:1755:C:H5''	5:5:1756:U:OP1	2.07	0.55
5:5:3870:C:H2'	5:5:3871:A:H8	1.72	0.55
5:5:4348:A:O2'	5:5:4350:C:OP2	2.23	0.55
20:K:730:C:H2'	20:K:731:G:C8	2.36	0.55
20:K:830:A:OP2	20:K:846:G:N2	2.40	0.55
20:K:1536:G:H2'	20:K:1537:A:H8	1.70	0.55
20:K:1864:U:OP2	73:LL:5:ARG:NH2	2.40	0.55
51:p:8:VAL:HG13	51:p:11:VAL:HG23	1.88	0.55
61:z:48:TYR:OH	61:z:119:LYS:O	2.25	0.55
65:DD:136:ARG:NH1	65:DD:159:PHE:O	2.40	0.55
86:AB:121:LYS:HE2	86:AB:127:GLN:HB2	1.88	0.55
5:5:70:A:OP2	36:a:64:LYS:NZ	2.37	0.54
5:5:2539:C:H2'	5:5:2540:C:C6	2.42	0.54
40:e:90:MET:HG2	53:r:33:LYS:HG2	1.88	0.54
82:TT:5:ASN:O	82:TT:7:LEU:N	2.39	0.54
5:5:1879:C:O2'	5:5:1891:A:N3	2.40	0.54
6:6:165:ILE:HG13	6:6:179:LEU:HD11	1.90	0.54
6:6:185:LYS:HG3	6:6:186:THR:HG22	1.90	0.54
20:K:334:C:OP2	61:z:190:ARG:NH2	2.40	0.54
20:K:1562:C:H2'	20:K:1563:G:H8	1.71	0.54
54:s:44:ARG:NH2	54:s:53:VAL:O	2.40	0.54
5:5:2266:C:O2'	53:r:39:ARG:NH1	2.39	0.54
5:5:2869:U:O2'	5:5:2881:A:N7	2.38	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:3687:A:O2'	10:A:236:GLY:N	2.39	0.54
5:5:4522:G:O2'	5:5:4525:C:OP2	2.24	0.54
18:I:42:LYS:O	18:I:139:ARG:NH2	2.38	0.54
20:K:359:U:OP2	84:VV:18:ARG:NH1	2.38	0.54
20:K:841:G:H2'	20:K:842:C:C6	2.42	0.54
20:K:1377:U:OP2	52:q:102:ARG:NH2	2.40	0.54
20:K:1562:C:H2'	20:K:1563:G:C8	2.42	0.54
62:AA:82:VAL:HG22	84:VV:68:LYS:HE2	1.90	0.54
3:2:21:A:N6	3:2:46:A:O2'	2.40	0.54
5:5:102:G:OP1	21:L:71:ARG:NH2	2.40	0.54
5:5:323:C:H2'	5:5:324:A:H8	1.72	0.54
5:5:1433:A:N6	5:5:1451:G:H21	2.05	0.54
11:B:286:LYS:HB3	11:B:332:MET:HE2	1.89	0.54
19:J:13:ARG:O	19:J:136:ARG:NH1	2.39	0.54
20:K:1061:U:O2	20:K:1848:U:O2'	2.26	0.54
20:K:1155:U:H1'	82:TT:71:LYS:HD2	1.89	0.54
59:x:57:THR:OG1	59:x:59:ASP:OD1	2.24	0.54
86:AB:98:PRO:HG2	86:AB:123:LEU:HD11	1.89	0.54
5:5:2745:A:H2'	5:5:2746:A:H8	1.73	0.54
5:5:4230:C:O2'	5:5:4234:A:N1	2.39	0.54
5:5:4635:A:H2	5:5:4663:G:H21	1.56	0.54
17:H:118:LEU:HD11	17:H:167:VAL:HG22	1.88	0.54
20:K:94:G:O2'	20:K:508:A:O2'	2.26	0.54
55:t:10:ILE:HB	55:t:67:ARG:HG2	1.90	0.54
55:t:16:ARG:HB3	55:t:61:LYS:HB2	1.90	0.54
61:z:135:PRO:HB2	61:z:141:ILE:HG13	1.89	0.54
5:5:4149:C:OP1	35:Z:59:LYS:N	2.41	0.54
5:5:4896:G:H2'	5:5:4897:G:H8	1.73	0.54
20:K:1404:U:OP1	68:GG:21:ARG:NH2	2.37	0.54
33:X:65:ALA:HB2	43:h:69:LEU:HD11	1.90	0.54
57:v:255:LEU:O	69:HH:16:LYS:NZ	2.38	0.54
60:y:30:ILE:HD12	60:y:39:ILE:HD12	1.90	0.54
5:5:64:A:H1'	5:5:76:A:H1'	1.89	0.54
5:5:2639:U:O2'	5:5:2694:G:N1	2.31	0.54
15:F:242:LEU:HD11	15:F:246:MET:HE3	1.90	0.54
20:K:1473:G:N2	20:K:1476:A:OP2	2.40	0.54
25:P:45:THR:HG23	25:P:92:LEU:HD11	1.90	0.54
61:z:7:PHE:HB3	61:z:10:THR:HG22	1.89	0.54
85:WW:56:LEU:HD12	85:WW:80:LEU:HD12	1.89	0.54
86:AB:274:HIS:HB3	86:AB:497:ARG:HH21	1.71	0.54
5:5:1691:G:H5'	26:Q:15:ARG:HG3	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:2300:A:N7	12:C:143:ARG:NH1	2.56	0.54
5:5:4134:G:H5'	5:5:4135:G:OP2	2.08	0.54
11:B:10:ARG:HH12	11:B:265:SER:HB2	1.71	0.54
19:J:35:ARG:HG2	19:J:123:ILE:HA	1.89	0.54
20:K:106:C:H2'	20:K:107:A:H8	1.73	0.54
20:K:1438:A:HO2'	20:K:1439:A:H8	1.56	0.54
20:K:1499:U:H4'	58:w:176:LEU:HD11	1.88	0.54
20:K:1613:G:OP1	70:II:88:LYS:NZ	2.40	0.54
20:K:1619:A:O2'	85:WW:82:ASP:OD2	2.25	0.54
35:Z:36:ARG:NH1	35:Z:38:TYR:OH	2.37	0.54
52:q:106:GLY:O	52:q:113:GLN:NE2	2.40	0.54
57:v:103:LYS:O	57:v:130:ILE:HD12	2.07	0.54
5:5:1320:U:O2'	5:5:1891:A:N1	2.41	0.54
5:5:2890:C:H42	5:5:3611:A:H61	1.55	0.54
5:5:4251:A:N6	19:J:23:ASN:OD1	2.35	0.54
5:5:4582:C:H4'	11:B:99:LEU:HB3	1.89	0.54
5:5:4763:U:O2'	28:S:174:THR:OG1	2.20	0.54
6:6:238:ALA:H	6:6:251:ALA:HB3	1.73	0.54
20:K:908:A:OP1	27:R:172:ARG:NH2	2.41	0.54
20:K:1380:C:H2'	20:K:1381:G:C8	2.43	0.54
28:S:149:ARG:O	28:S:150:ILE:C	2.50	0.54
75:NN:23:MET:N	75:NN:23:MET:SD	2.80	0.54
3:2:33:U:OP2	83:UU:146:ARG:NH2	2.41	0.54
5:5:200:U:O2'	34:Y:59:ARG:NH1	2.36	0.54
5:5:2362:U:H2'	5:5:2363:A:H8	1.73	0.54
5:5:4485:C:O2'	48:m:88:LYS:NZ	2.35	0.54
5:5:4985:U:O2	11:B:174:ARG:NH1	2.34	0.54
28:S:5:GLY:O	28:S:111:ARG:NH2	2.40	0.54
86:AB:169:LYS:NZ	86:AB:227:CYS:SG	2.75	0.54
5:5:710:G:H2'	5:5:711:A:C8	2.41	0.53
5:5:2007:G:H21	5:5:2012:A:H62	1.56	0.53
5:5:2011:C:H3'	5:5:2012:A:H8	1.72	0.53
5:5:4700:A:H2	17:H:69:THR:HG23	1.73	0.53
19:J:46:GLN:NE2	19:J:73:THR:O	2.37	0.53
20:K:433:A:H2'	20:K:434:G:C8	2.43	0.53
86:AB:416:ILE:HB	86:AB:467:LEU:HD13	1.91	0.53
5:5:733:A:H61	5:5:930:G:H22	1.55	0.53
5:5:2324:C:O2'	40:e:98:GLU:OE1	2.25	0.53
5:5:4585:U:OP1	24:O:74:ARG:N	2.38	0.53
20:K:126:G:OP2	61:z:195:LYS:NZ	2.40	0.53
20:K:981:A:H2'	20:K:982:G:C8	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1654:G:OP1	77:PP:90:SER:OG	2.25	0.53
27:R:95:TRP:HZ3	27:R:130:ASN:HD22	1.55	0.53
29:T:75:VAL:HG22	29:T:88:ARG:HG3	1.90	0.53
58:w:5:ILE:HD11	58:w:9:ARG:HB2	1.89	0.53
59:x:212:ASP:OD1	59:x:213:ALA:N	2.40	0.53
61:z:2:LYS:HD3	61:z:15:LEU:HD12	1.89	0.53
73:LL:38:LYS:HB3	73:LL:71:LEU:HB2	1.89	0.53
83:UU:76:GLY:H	83:UU:79:ALA:HB3	1.73	0.53
86:AB:241:ASP:HA	86:AB:272:VAL:HB	1.89	0.53
86:AB:252:ARG:HD3	86:AB:278:VAL:HG21	1.89	0.53
5:5:1730:U:H4'	29:T:100:LYS:HB2	1.90	0.53
5:5:2770:C:H2'	5:5:2771:G:H8	1.73	0.53
8:8:97:A:H5'	43:h:62:ASN:HD22	1.74	0.53
9:9:22:ARG:HG2	9:9:38:MET:HB3	1.90	0.53
12:C:195:LYS:HB3	12:C:200:ARG:HD2	1.89	0.53
12:C:263:LEU:HD23	12:C:273:LEU:HD12	1.90	0.53
31:V:13:LYS:NZ	31:V:59:ASP:OD1	2.42	0.53
33:X:93:ASN:O	33:X:139:ARG:NH1	2.40	0.53
42:g:5:LEU:H	42:g:5:LEU:HD23	1.73	0.53
50:o:66:ILE:HG13	50:o:85:ILE:HB	1.89	0.53
59:x:246:LEU:H	59:x:246:LEU:HD23	1.74	0.53
5:5:1393:G:O2'	21:L:190:ARG:NH1	2.41	0.53
5:5:1895:G:OP1	15:F:95:ARG:NH2	2.41	0.53
5:5:2738:C:O2'	5:5:2740:U:O2	2.26	0.53
6:6:88:ARG:NH2	20:K:1398:G:O3'	2.41	0.53
20:K:1468:C:H2'	20:K:1469:A:C8	2.43	0.53
40:e:90:MET:HG2	53:r:33:LYS:HA	1.91	0.53
68:GG:22:ILE:HD11	68:GG:112:VAL:HG13	1.90	0.53
86:AB:86:ARG:O	86:AB:130:ASN:ND2	2.37	0.53
5:5:1617:G:H1'	5:5:2513:A:N6	2.23	0.53
5:5:1921:C:C4	22:M:17:PHE:HB3	2.43	0.53
5:5:2663:G:N2	5:5:2676:A:O2'	2.32	0.53
5:5:2725:A:N6	27:R:87:ALA:O	2.41	0.53
20:K:312:G:O2'	61:z:191:ARG:NH1	2.41	0.53
20:K:844:U:OP2	59:x:240:ARG:NH1	2.41	0.53
20:K:1670:C:H2'	20:K:1671:G:H8	1.71	0.53
56:u:82:ARG:NH2	56:u:189:ILE:O	2.41	0.53
77:PP:42:HIS:HB2	77:PP:83:GLN:HA	1.89	0.53
4:4:11:U:C2'	20:K:1489:A:H62	2.22	0.53
5:5:364:G:O6	45:j:55:ARG:NH2	2.42	0.53
5:5:983:C:O4'	14:E:73:ARG:NH1	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:4134:G:OP2	5:5:4134:G:N2	2.40	0.53
8:8:70:G:H22	8:8:87:G:H1'	1.73	0.53
12:C:239:LYS:O	12:C:248:ARG:NH1	2.39	0.53
12:C:317:ASN:HD21	12:C:319:LEU:HD12	1.72	0.53
20:K:929:G:H21	20:K:1104:G:H4'	1.74	0.53
50:o:26:TYR:HB3	50:o:67:VAL:HB	1.89	0.53
79:RF:329:MET:HG3	79:RF:373:PRO:HA	1.90	0.53
5:5:150:U:O4	16:G:240:LYS:NZ	2.36	0.53
5:5:4129:G:O6	5:5:4156:G:N2	2.41	0.53
5:5:4874:A:C5	5:5:4877:G:H4'	2.43	0.53
8:8:19:C:H2'	8:8:20:A:C8	2.44	0.53
20:K:656:G:H21	20:K:663:C:H5''	1.74	0.53
22:M:20:HIS:HB3	22:M:23:LYS:HD2	1.89	0.53
23:N:184:ILE:O	23:N:194:ARG:NH2	2.35	0.53
58:w:50:ILE:HD11	58:w:86:LEU:HD23	1.89	0.53
5:5:399:G:N2	25:P:101:ASN:OD1	2.36	0.53
5:5:3897:G:OP1	11:B:250:LYS:NZ	2.38	0.53
5:5:4861:G:H2'	5:5:4862:G:H8	1.74	0.53
6:6:16:GLY:O	6:6:35:SER:OG	2.27	0.53
6:6:79:LEU:HD23	6:6:89:LEU:HD12	1.90	0.53
14:E:180:GLY:HA3	14:E:185:ASN:HD21	1.74	0.53
20:K:1353:A:OP1	52:q:139:TYR:OH	2.21	0.53
20:K:1529:C:O2'	77:PP:87:VAL:O	2.24	0.53
59:x:189:LEU:O	59:x:245:ARG:NH2	2.40	0.53
80:RR:81:ASP:HB2	80:RR:84:LYS:HG2	1.89	0.53
84:VV:60:LYS:HE3	84:VV:116:PRO:HB3	1.90	0.53
5:5:307:A:N3	5:5:310:G:O2'	2.41	0.53
5:5:1517:G:H22	12:C:103:ALA:HA	1.74	0.53
20:K:1344:A:H4'	20:K:1345:G:H5'	1.90	0.53
20:K:1620:A:H2'	20:K:1620:A:N3	2.24	0.53
20:K:1656:G:H2'	20:K:1657:G:H8	1.73	0.53
20:K:1869:A:N6	56:u:114:VAL:O	2.41	0.53
5:5:1239:C:N4	14:E:66:SER:OG	2.42	0.53
5:5:1781:U:H2'	5:5:1782:U:O4'	2.09	0.53
5:5:2049:G:O2'	5:5:3884:U:O2'	2.23	0.53
16:G:149:LEU:HD22	16:G:242:ARG:HH21	1.74	0.53
17:H:47:LEU:HG	17:H:52:LYS:HD2	1.90	0.53
52:q:33:GLN:HB3	52:q:154:LEU:HD12	1.91	0.53
57:v:131:GLY:HA3	57:v:137:VAL:HA	1.90	0.53
75:NN:12:PHE:HZ	75:NN:21:LYS:HD2	1.74	0.53
5:5:651:C:H2'	5:5:652:G:H8	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1655:C:OP2	36:a:26:ARG:NH1	2.42	0.52
5:5:2572:C:H2'	5:5:2573:A:C8	2.43	0.52
5:5:2811:G:H22	5:5:2813:A:H3'	1.74	0.52
5:5:4088:C:H2'	5:5:4089:G:C8	2.43	0.52
5:5:4569:U:OP1	5:5:4982:A:O2'	2.25	0.52
5:5:4954:G:H2'	5:5:4955:A:C8	2.43	0.52
14:E:96:THR:HG22	14:E:109:VAL:HG22	1.92	0.52
20:K:643:A:OP1	65:DD:41:ARG:NH1	2.42	0.52
20:K:1219:C:O2'	67:FF:26:GLN:NE2	2.43	0.52
20:K:1275:G:OP1	20:K:1322:G:N2	2.42	0.52
20:K:1299:A:H4'	85:WW:52:LYS:HG3	1.90	0.52
25:P:40:HIS:HB3	25:P:43:LYS:HG2	1.91	0.52
28:S:76:LYS:HD2	28:S:131:GLU:OE1	2.09	0.52
40:e:100:ALA:HB3	40:e:103:VAL:HG23	1.91	0.52
68:GG:39:LEU:HD23	68:GG:89:ILE:HD12	1.91	0.52
72:KK:18:GLU:HB3	72:KK:69:ILE:HG23	1.92	0.52
5:5:1613:A:H5''	10:A:183:GLY:HA2	1.91	0.52
5:5:2666:U:O2'	5:5:2668:G:N7	2.35	0.52
5:5:4748:U:H5''	41:f:54:LYS:HE3	1.90	0.52
6:6:99:ARG:HH22	6:6:136:GLY:H	1.56	0.52
6:6:254:PRO:HA	6:6:285:GLN:HA	1.90	0.52
20:K:287:U:H2'	20:K:288:G:C8	2.44	0.52
20:K:379:C:O2	64:CC:5:ARG:NH1	2.42	0.52
20:K:880:G:N2	20:K:906:U:O2	2.37	0.52
20:K:1693:G:N2	20:K:1834:A:H8	2.07	0.52
56:u:134:LEU:HG	56:u:218:LEU:HD12	1.91	0.52
71:JJ:65:GLN:HE22	71:JJ:74:THR:HG22	1.74	0.52
86:AB:29:CYS:HB3	86:AB:32:VAL:HG22	1.92	0.52
86:AB:116:LYS:H	86:AB:116:LYS:HD3	1.73	0.52
5:5:448:G:H3'	5:5:449:C:H5''	1.92	0.52
5:5:1207:C:H2'	5:5:1208:G:H8	1.75	0.52
17:H:98:HIS:HE1	86:AB:510:HIS:HD2	1.58	0.52
20:K:114:G:H5'	66:EE:132:ARG:HD3	1.91	0.52
20:K:332:G:O6	61:z:189:ARG:NH2	2.39	0.52
20:K:375:U:H2'	20:K:376:A:H8	1.71	0.52
5:5:189:G:H2'	5:5:190:G:C8	2.45	0.52
5:5:1751:A:H2'	5:5:1752:G:C8	2.45	0.52
5:5:1999:A:H1'	5:5:2019:C:H1'	1.90	0.52
5:5:2491:C:H2'	5:5:2492:C:O4'	2.10	0.52
17:H:103:VAL:HG22	17:H:114:ILE:HG13	1.92	0.52
19:J:27:GLY:HA2	19:J:68:ILE:HG13	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:732:U:H2'	20:K:733:C:C6	2.44	0.52
20:K:1139:C:H41	20:K:1149:A:H62	1.58	0.52
20:K:1204:A:O2'	20:K:1700:C:OP2	2.27	0.52
20:K:1621:U:C6	85:WW:115:TYR:HD2	2.27	0.52
79:RF:43:ASP:OD1	79:RF:44:GLN:N	2.43	0.52
5:5:2407:G:O6	47:l:2:SER:N	2.43	0.52
14:E:120:PRO:O	53:r:112:ARG:NH1	2.40	0.52
20:K:561:A:N3	65:DD:132:GLN:NE2	2.57	0.52
20:K:1144:A:H5'	20:K:1355:C:H41	1.74	0.52
20:K:1218:C:H1'	20:K:1683:C:H42	1.74	0.52
22:M:100:ARG:NH2	24:O:197:LYS:O	2.42	0.52
34:Y:19:PHE:O	34:Y:26:ARG:NH2	2.42	0.52
83:UU:35:ASN:HD21	83:UU:72:VAL:HG22	1.75	0.52
5:5:432:U:H4'	5:5:433:A:H5''	1.92	0.52
5:5:1211:G:H2'	5:5:1212:G:C8	2.45	0.52
5:5:1972:G:H2'	5:5:1973:G:H8	1.73	0.52
5:5:3910:C:H2'	5:5:3911:C:C6	2.44	0.52
5:5:4661:G:N2	5:5:5004:C:O3'	2.42	0.52
6:6:158:PRO:HG2	6:6:202:PRO:HA	1.92	0.52
20:K:1318:G:H2'	20:K:1319:U:C6	2.45	0.52
23:N:53:TYR:HB2	23:N:133:ILE:HD13	1.91	0.52
53:r:28:GLU:HG2	53:r:31:ASN:HB2	1.91	0.52
61:z:64:LYS:NZ	61:z:82:SER:O	2.42	0.52
86:AB:86:ARG:HG2	86:AB:132:GLY:HA2	1.92	0.52
86:AB:316:TYR:OH	86:AB:321:ASN:ND2	2.42	0.52
5:5:667:A:O2'	12:C:29:LYS:NZ	2.41	0.52
5:5:1958:A:O2'	5:5:2025:A:N1	2.38	0.52
5:5:3693:U:H3	5:5:3823:G:H22	1.56	0.52
5:5:4642:U:H2'	5:5:4643:G:H8	1.74	0.52
8:8:30:U:OP1	21:L:34:ARG:NH2	2.41	0.52
8:8:94:G:H21	45:j:82:THR:HB	1.75	0.52
20:K:19:A:H5'	84:VV:107:ARG:HH11	1.74	0.52
20:K:92:A:H61	20:K:444:G:H1'	1.74	0.52
20:K:602:G:OP2	20:K:603:C:O2'	2.24	0.52
20:K:642:U:O2'	20:K:643:A:O5'	2.20	0.52
20:K:822:U:O4	20:K:826:A:N7	2.43	0.52
20:K:1165:G:OP2	20:K:1165:G:N2	2.22	0.52
20:K:1423:C:H2'	20:K:1424:G:H8	1.74	0.52
36:a:4:ARG:H	36:a:4:ARG:HD3	1.73	0.52
36:a:125:LYS:HG2	36:a:145:VAL:HB	1.90	0.52
39:d:64:ILE:HG23	39:d:68:LEU:HD23	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:v:213:LEU:HD23	57:v:240:THR:HG23	1.92	0.52
64:CC:97:VAL:HG23	64:CC:98:LYS:H	1.73	0.52
86:AB:478:LYS:HD2	86:AB:479:PRO:HD2	1.91	0.52
5:5:150:U:OP2	16:G:253:THR:OG1	2.21	0.52
5:5:2672:C:OP1	51:p:44:LYS:NZ	2.41	0.52
58:w:39:VAL:HG12	58:w:48:ILE:HG12	1.90	0.52
5:5:1183:C:H2'	5:5:1184:A:C8	2.45	0.52
5:5:1369:C:OP2	5:5:1370:G:O2'	2.22	0.52
5:5:1933:G:H2'	5:5:1934:A:C8	2.45	0.52
19:J:95:ARG:HB2	19:J:98:ASN:HD22	1.75	0.52
31:V:107:ASN:HD21	31:V:111:GLU:HB2	1.75	0.52
5:5:1563:A:O2'	5:5:1564:A:H8	1.93	0.52
5:5:1787:A:N3	5:5:4210:U:O2'	2.43	0.52
5:5:1942:A:H2'	5:5:1943:A:C8	2.45	0.52
5:5:4587:G:OP1	24:O:61:ARG:NH1	2.42	0.52
5:5:4871:C:N4	28:S:171:ARG:O	2.43	0.52
5:5:5005:G:H22	5:5:5041:G:H1'	1.75	0.52
15:F:121:PHE:O	15:F:204:ASN:ND2	2.43	0.52
20:K:170:A:OP1	61:z:136:LYS:N	2.43	0.52
20:K:689:U:H2'	20:K:690:G:O4'	2.10	0.52
40:e:108:ARG:HD3	40:e:127:ALA:HB3	1.91	0.52
64:CC:148:LYS:NZ	64:CC:151:GLU:OE2	2.43	0.52
86:AB:557:LYS:O	86:AB:560:SER:OG	2.27	0.52
5:5:2386:U:H5''	27:R:24:LEU:HD12	1.92	0.51
5:5:2633:U:O2'	27:R:59:SER:OG	2.28	0.51
5:5:3610:A:H2'	5:5:3611:A:C8	2.45	0.51
6:6:62:HIS:HD2	6:6:66:VAL:HG22	1.75	0.51
16:G:222:PHE:HZ	23:N:3:ALA:HB1	1.75	0.51
19:J:57:VAL:HG12	19:J:60:PHE:H	1.75	0.51
20:K:28:U:H2'	20:K:29:G:H8	1.74	0.51
20:K:388:U:H2'	20:K:389:A:H8	1.76	0.51
20:K:654:A:OP2	20:K:655:A:O2'	2.27	0.51
23:N:104:GLU:HA	23:N:160:GLU:HG3	1.92	0.51
35:Z:68:ILE:N	35:Z:119:GLU:OE2	2.41	0.51
59:x:182:MET:N	59:x:226:PHE:O	2.43	0.51
74:MM:101:GLY:HA3	74:MM:134:PRO:HG2	1.92	0.51
79:RF:28:ARG:HH12	79:RF:130:LYS:HD3	1.75	0.51
5:5:469:C:N3	14:E:108:ARG:NH2	2.48	0.51
5:5:705:G:H2'	5:5:706:C:C6	2.45	0.51
5:5:1174:G:H2'	5:5:1175:A:C8	2.45	0.51
5:5:1503:A:H4'	5:5:1504:G:H5'	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:3786:U:OP1	5:5:4550:G:O2'	2.25	0.51
8:8:153:C:H2'	8:8:154:G:C8	2.45	0.51
20:K:122:G:H21	59:x:146:THR:HG21	1.74	0.51
20:K:125:C:OP1	20:K:127:C:N4	2.43	0.51
31:V:13:LYS:HD2	31:V:128:LEU:HD11	1.92	0.51
64:CC:104:ILE:O	64:CC:171:LEU:N	2.34	0.51
5:5:1794:A:H5''	5:5:4214:A:H61	1.76	0.51
5:5:3599:A:OP1	64:CC:200:ARG:NH2	2.42	0.51
5:5:4358:U:H4'	21:L:197:LYS:HD3	1.92	0.51
5:5:4646:U:OP2	27:R:62:ARG:NH2	2.42	0.51
6:6:152:SER:H	6:6:169:GLY:HA2	1.76	0.51
14:E:206:ILE:HA	14:E:263:LYS:HZ2	1.75	0.51
16:G:198:THR:OG1	23:N:2:GLY:N	2.43	0.51
20:K:223:C:H2'	20:K:224:A:C8	2.45	0.51
20:K:380:G:N1	20:K:383:G:OP2	2.35	0.51
28:S:51:LEU:HD23	29:T:151:LEU:HD12	1.90	0.51
55:t:13:VAL:HG22	55:t:64:ILE:HG12	1.92	0.51
79:RF:305:VAL:HG12	79:RF:306:GLU:H	1.74	0.51
5:5:422:C:H2'	5:5:423:G:H8	1.76	0.51
5:5:956:A:H62	5:5:1283:G:H1'	1.75	0.51
5:5:1996:C:H5''	54:s:48:ARG:HH12	1.76	0.51
5:5:2039:G:OP2	5:5:2040:A:O2'	2.27	0.51
5:5:2052:G:O2'	5:5:2057:A:N1	2.33	0.51
5:5:2411:C:O2'	5:5:2526:C:O2	2.25	0.51
5:5:3653:A:O2'	10:A:179:ILE:O	2.22	0.51
5:5:3805:U:H2'	5:5:3806:G:H8	1.74	0.51
5:5:4325:A:H1'	13:D:36:LEU:HD23	1.91	0.51
5:5:4991:U:H2'	5:5:4992:G:C8	2.46	0.51
8:8:57:C:O2	8:8:61:A:O2'	2.24	0.51
16:G:212:HIS:CD2	16:G:239:GLY:H	2.28	0.51
20:K:382:C:H2'	20:K:383:G:H8	1.75	0.51
20:K:1101:U:H2'	20:K:1102:G:H8	1.75	0.51
20:K:1738:C:OP1	61:z:92:ARG:NH1	2.41	0.51
20:K:1797:U:H2'	20:K:1798:C:C6	2.46	0.51
52:q:183:LEU:O	52:q:188:THR:OG1	2.29	0.51
60:y:74:ASN:HA	60:y:77:MET:HE2	1.93	0.51
61:z:50:VAL:HG21	61:z:111:LEU:HB3	1.92	0.51
61:z:57:ASP:OD1	61:z:58:LYS:N	2.39	0.51
81:SS:52:LEU:HD12	81:SS:55:ARG:HE	1.75	0.51
3:2:35:U:H2'	3:2:36:G:H8	1.76	0.51
5:5:86:U:H2'	5:5:87:A:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:2557:G:H1	5:5:2570:U:H3	1.58	0.51
5:5:3613:U:H2'	5:5:3614:G:C8	2.45	0.51
5:5:4769:G:OP1	24:O:176:ARG:NH2	2.43	0.51
5:5:4862:G:H2'	5:5:4863:G:H8	1.75	0.51
7:7:64:G:H2'	7:7:65:G:H8	1.75	0.51
20:K:1587:G:H5''	77:PP:77:LYS:HD3	1.93	0.51
20:K:1809:A:H2'	20:K:1810:U:C6	2.44	0.51
30:U:100:LEU:HB3	30:U:112:LEU:HD22	1.92	0.51
35:Z:117:LYS:O	35:Z:120:GLU:HG3	2.11	0.51
38:c:15:ASN:ND2	38:c:74:TYR:OH	2.43	0.51
55:t:33:GLY:O	55:t:38:SER:OG	2.27	0.51
5:5:287:U:H2'	5:5:288:G:C8	2.46	0.51
5:5:711:A:H2'	5:5:712:C:C6	2.46	0.51
5:5:752:G:H3'	5:5:753:G:H8	1.75	0.51
5:5:1283:G:N1	5:5:2076:G:OP1	2.41	0.51
5:5:2395:A:O2'	5:5:2806:A:H1'	2.11	0.51
5:5:3848:U:H2'	5:5:3849:A:C8	2.46	0.51
5:5:4076:G:OP2	16:G:126:ARG:NE	2.39	0.51
5:5:4184:G:H5'	10:A:233:ARG:HB2	1.93	0.51
6:6:234:ASP:OD1	6:6:234:ASP:N	2.43	0.51
6:6:277:THR:HB	6:6:281:ALA:HB3	1.93	0.51
20:K:12:U:H2'	20:K:13:C:C6	2.46	0.51
20:K:503:C:H3'	20:K:504:G:H8	1.75	0.51
20:K:531:A:H3'	20:K:532:C:H5''	1.92	0.51
20:K:911:C:H2'	20:K:912:C:C6	2.46	0.51
20:K:931:C:H2'	20:K:932:G:C8	2.46	0.51
20:K:1542:C:OP1	77:PP:62:ARG:NH1	2.41	0.51
5:5:4507:A:HO2'	31:V:41:SER:HG	1.53	0.51
10:A:116:LEU:HB3	10:A:126:LEU:HB2	1.93	0.51
17:H:23:ARG:HH11	17:H:39:ASN:HA	1.76	0.51
20:K:107:A:H2'	20:K:108:G:C8	2.45	0.51
20:K:116:U:H3	20:K:347:G:H22	1.58	0.51
20:K:369:C:N4	20:K:1730:U:OP1	2.44	0.51
27:R:4:LEU:HD11	27:R:29:THR:HG23	1.91	0.51
33:X:81:LEU:HD21	33:X:97:VAL:HG12	1.92	0.51
52:q:81:ASN:HA	52:q:84:GLN:HE22	1.75	0.51
56:u:90:ASP:OD1	56:u:91:VAL:N	2.43	0.51
58:w:204:LEU:HD12	58:w:205:PRO:HD2	1.92	0.51
63:BB:93:VAL:HG21	63:BB:133:LEU:HD13	1.93	0.51
5:5:18:C:H2'	5:5:19:G:H8	1.75	0.51
5:5:941:C:OP2	15:F:241:ARG:NH1	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1088:C:H2'	5:5:1089:G:C8	2.46	0.51
5:5:1207:C:H2'	5:5:1208:G:C8	2.46	0.51
5:5:2599:G:OP1	42:g:40:LYS:NZ	2.30	0.51
11:B:231:VAL:HG21	11:B:251:VAL:HG23	1.93	0.51
12:C:290:SER:O	12:C:294:LYS:HG2	2.11	0.51
15:F:189:LEU:HD21	15:F:207:LEU:HD21	1.92	0.51
20:K:218:U:O2	64:CC:184:ARG:NH2	2.44	0.51
20:K:1520:G:H2'	20:K:1520:G:N3	2.25	0.51
20:K:1568:C:H2'	20:K:1569:A:C8	2.46	0.51
66:EE:35:ARG:NE	66:EE:50:ALA:O	2.41	0.51
74:MM:94:HIS:HD2	74:MM:127:GLY:HA3	1.75	0.51
5:5:2735:G:H2'	5:5:2736:G:H8	1.76	0.51
5:5:4239:A:H2'	5:5:4240:G:H8	1.75	0.51
5:5:4940:C:H5''	5:5:4941:G:H5''	1.92	0.51
8:8:8:U:H2'	8:8:9:A:C8	2.46	0.51
18:I:43:VAL:O	18:I:171:TRP:NE1	2.40	0.51
20:K:929:G:N2	20:K:1104:G:H4'	2.26	0.51
47:l:23:ILE:HG23	47:l:38:ASN:HB2	1.92	0.51
55:t:63:THR:OG1	55:t:71:ILE:N	2.40	0.51
55:t:105:THR:OG1	55:t:106:PHE:N	2.42	0.51
56:u:179:ASN:HB3	56:u:183:GLU:HB3	1.92	0.51
86:AB:485:ILE:HB	86:AB:517:VAL:HA	1.93	0.51
5:5:976:G:H5''	15:F:46:ARG:NH1	2.26	0.51
5:5:3717:A:H2'	5:5:3718:A:C8	2.47	0.51
5:5:3717:A:H2'	5:5:3718:A:H8	1.75	0.51
5:5:4239:A:H2'	5:5:4240:G:C8	2.46	0.51
8:8:62:A:H5'	43:h:48:ARG:HH22	1.76	0.51
20:K:902:G:H2'	20:K:903:A:C8	2.45	0.51
20:K:1100:A:O5'	72:KK:132:ARG:NH2	2.44	0.51
20:K:1364:U:H3	20:K:1375:G:N2	2.08	0.51
20:K:1856:C:H2'	20:K:1857:G:H8	1.75	0.51
23:N:96:ARG:NH2	23:N:100:SER:OG	2.44	0.51
28:S:35:PRO:HD2	28:S:39:VAL:HG11	1.91	0.51
56:u:28:LYS:HG3	56:u:48:LEU:HD12	1.92	0.51
56:u:35:ALA:O	56:u:42:ARG:NH1	2.44	0.51
5:5:3619:G:H22	5:5:3624:A:H1'	1.76	0.50
5:5:4915:G:H2'	5:5:4916:G:H8	1.75	0.50
20:K:993:G:OP1	20:K:1131:G:N2	2.32	0.50
57:v:165:VAL:HG21	57:v:219:ILE:HD11	1.93	0.50
58:w:48:ILE:HB	58:w:86:LEU:HG	1.92	0.50
63:BB:178:LYS:HD3	63:BB:182:GLY:HA2	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:SS:42:ASN:O	81:SS:46:MET:HG2	2.11	0.50
1:O:140:TYR:OH	20:K:1291:A:O2'	2.24	0.50
5:5:1333:A:H2'	5:5:1334:A:C8	2.46	0.50
5:5:3897:G:N2	5:5:3898:G:O6	2.41	0.50
5:5:3910:C:H2'	5:5:3911:C:H6	1.75	0.50
5:5:4400:G:H2'	5:5:4401:G:H5''	1.94	0.50
5:5:4448:G:H5''	5:5:4449:A:H5'	1.91	0.50
5:5:4594:U:H2'	5:5:4595:G:C8	2.42	0.50
14:E:164:ARG:O	14:E:185:ASN:ND2	2.44	0.50
20:K:656:G:N2	20:K:663:C:H5''	2.26	0.50
28:S:137:CYS:SG	28:S:137:CYS:O	2.69	0.50
60:y:34:SER:HA	67:FF:55:VAL:HB	1.93	0.50
70:II:27:ALA:HB2	70:II:52:LEU:HD12	1.92	0.50
5:5:18:C:H2'	5:5:19:G:C8	2.47	0.50
5:5:714:G:H2'	5:5:715:G:H8	1.75	0.50
5:5:4537:C:H2'	5:5:4538:G:C8	2.46	0.50
11:B:217:ILE:HD13	11:B:284:ILE:HD11	1.93	0.50
20:K:332:G:OP1	61:z:193:ALA:HB2	2.11	0.50
20:K:388:U:H2'	20:K:389:A:C8	2.46	0.50
20:K:588:G:N2	20:K:588:G:OP2	2.43	0.50
20:K:984:C:H2'	20:K:985:G:C8	2.46	0.50
20:K:1033:G:N1	20:K:1080:A:O2'	2.32	0.50
21:L:46:ILE:HB	21:L:49:ARG:HB2	1.93	0.50
21:L:186:ARG:HE	44:i:9:VAL:HG21	1.74	0.50
40:e:8:VAL:HG13	40:e:10:PRO:HD3	1.93	0.50
44:i:10:GLY:H	44:i:13:LYS:HE2	1.76	0.50
44:i:34:THR:HG22	44:i:37:THR:H	1.77	0.50
47:l:21:ARG:HG3	47:l:22:PRO:HD2	1.94	0.50
55:t:114:ARG:HG3	55:t:133:LEU:HD12	1.92	0.50
76:OO:60:LYS:O	76:OO:64:ASN:ND2	2.45	0.50
85:WW:64:LYS:HA	85:WW:73:PRO:HG3	1.94	0.50
4:4:11:U:H2'	20:K:1489:A:H62	1.76	0.50
5:5:965:G:N2	5:5:2096:G:O2'	2.44	0.50
5:5:1292:C:H2'	5:5:1293:G:C4	2.47	0.50
5:5:2099:C:OP1	12:C:307:LYS:N	2.44	0.50
5:5:3839:G:N2	5:5:3843:C:O2'	2.45	0.50
5:5:4255:A:C5	5:5:4256:A:C2	3.00	0.50
5:5:4538:G:H2'	5:5:4539:U:C6	2.47	0.50
5:5:4745:G:H22	5:5:4956:A:H2	1.57	0.50
5:5:4967:A:H2'	5:5:4968:A:H8	1.75	0.50
12:C:8:ILE:HD13	12:C:24:LEU:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:F:24:PHE:HZ	15:F:28:LYS:HZ3	1.59	0.50
20:K:1406:G:H2'	20:K:1407:U:C6	2.47	0.50
22:M:39:ASP:HB3	22:M:47:ARG:HA	1.93	0.50
27:R:78:ILE:HD13	27:R:81:ARG:HH21	1.75	0.50
52:q:145:ILE:HG12	52:q:159:ILE:HB	1.92	0.50
55:t:17:CYS:SG	55:t:18:THR:N	2.83	0.50
66:EE:88:ILE:HD13	66:EE:128:VAL:HG21	1.94	0.50
79:RF:263:GLY:HA2	79:RF:266:GLN:HE21	1.76	0.50
5:5:3648:A:H1'	5:5:3785:A:N6	2.26	0.50
5:5:4688:C:H2'	5:5:4689:U:C6	2.47	0.50
6:6:99:ARG:HH22	6:6:136:GLY:N	2.10	0.50
17:H:26:ILE:HG22	17:H:35:ARG:HG3	1.93	0.50
20:K:5:U:H2'	20:K:6:G:H8	1.75	0.50
20:K:500:A:H3'	20:K:501:C:H6	1.76	0.50
20:K:988:C:O2'	56:u:118:GLN:O	2.29	0.50
20:K:1004:U:H2'	20:K:1005:G:C8	2.44	0.50
20:K:1415:C:H2'	20:K:1416:C:C6	2.46	0.50
21:L:79:GLU:HB2	21:L:104:ASN:HD22	1.76	0.50
52:q:106:GLY:N	52:q:136:GLU:OE2	2.44	0.50
53:r:61:VAL:HA	53:r:81:THR:HA	1.93	0.50
62:AA:82:VAL:HG11	84:VV:91:LEU:HB3	1.93	0.50
79:RF:41:PRO:HB2	79:RF:42:LYS:HD3	1.94	0.50
86:AB:440:GLN:NE2	86:AB:444:ASP:OD2	2.44	0.50
5:5:1824:G:H5''	29:T:35:LYS:HE3	1.94	0.50
5:5:2420:A:OP2	25:P:127:ARG:NH1	2.44	0.50
20:K:146:G:O2'	20:K:147:A:H8	1.95	0.50
20:K:440:G:OP1	20:K:1798:C:O2'	2.27	0.50
20:K:1593:C:H2'	20:K:1594:A:C8	2.46	0.50
20:K:1611:G:O2'	70:II:87:GLN:O	2.30	0.50
22:M:8:GLU:HB3	28:S:151:ARG:HG3	1.93	0.50
68:GG:28:ASN:HB3	68:GG:31:SER:HB3	1.93	0.50
73:LL:44:ILE:HB	73:LL:64:LEU:HD21	1.93	0.50
73:LL:52:ASP:OD2	74:MM:117:ARG:NH1	2.45	0.50
74:MM:40:THR:HG21	74:MM:74:ALA:HB2	1.94	0.50
79:RF:275:LEU:HA	79:RF:278:VAL:HG22	1.94	0.50
86:AB:372:SER:HA	86:AB:508:ILE:HG12	1.94	0.50
4:4:9:G:H5'	4:4:10:G:O5'	2.11	0.50
5:5:961:G:O2'	5:5:973:G:O2'	2.29	0.50
5:5:1811:G:H21	37:b:57:MET:HE3	1.77	0.50
5:5:2579:G:N2	5:5:2582:A:OP2	2.23	0.50
5:5:3684:G:H2'	5:5:3685:C:C6	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:4232:U:C2	50:o:5:PRO:HD3	2.46	0.50
5:5:4604:G:N2	5:5:4607:A:OP2	2.45	0.50
10:A:77:ILE:HD12	10:A:128:ARG:HB2	1.93	0.50
20:K:1438:A:O2'	20:K:1439:A:H8	1.95	0.50
20:K:1533:A:OP2	60:y:164:ARG:NH1	2.45	0.50
23:N:73:ARG:HB3	23:N:89:VAL:HG12	1.94	0.50
33:X:96:LEU:HG	33:X:140:LEU:HD11	1.94	0.50
53:r:90:LEU:HG	53:r:111:ILE:HG23	1.93	0.50
79:RF:359:ASP:O	79:RF:361:GLU:N	2.43	0.50
5:5:699:C:H2'	5:5:700:G:H8	1.76	0.50
5:5:1983:A:H5''	5:5:1984:A:C5	2.47	0.50
5:5:2572:C:H2'	5:5:2573:A:H8	1.77	0.50
20:K:71:G:H2'	20:K:72:C:H4'	1.94	0.50
20:K:862:A:N3	82:TT:105:THR:OG1	2.40	0.50
55:t:121:LEU:HD22	55:t:132:ILE:HD13	1.93	0.50
59:x:71:LYS:HB2	59:x:91:SER:HB2	1.94	0.50
61:z:147:LEU:HD21	61:z:156:TYR:HD2	1.77	0.50
5:5:318:A:H2'	5:5:319:A:H8	1.77	0.50
5:5:1541:C:H5''	10:A:21:LYS:HG2	1.93	0.50
5:5:2362:U:H2'	5:5:2363:A:C8	2.47	0.50
5:5:4132:C:C4	5:5:4133:C:C5	3.00	0.50
5:5:4615:C:H5''	11:B:357:ARG:HD2	1.93	0.50
6:6:166:VAL:HG12	6:6:176:VAL:HG22	1.94	0.50
8:8:26:C:O2'	12:C:53:ALA:O	2.30	0.50
16:G:206:GLN:NE2	16:G:258:THR:O	2.45	0.50
18:I:47:PRO:HB2	18:I:142:LEU:HD11	1.94	0.50
20:K:292:A:O2'	66:EE:39:ASN:O	2.30	0.50
20:K:1005:G:OP2	56:u:162:ARG:NH2	2.45	0.50
20:K:1244:U:H2'	20:K:1245:G:H8	1.77	0.50
21:L:69:LYS:HG3	21:L:159:ASN:HD22	1.77	0.50
55:t:121:LEU:HB2	55:t:123:ARG:HD2	1.93	0.50
56:u:144:LYS:HD3	56:u:208:HIS:HB3	1.94	0.50
67:FF:40:ARG:HD2	74:MM:121:ARG:HH12	1.76	0.50
70:II:60:THR:OG1	70:II:62:ASP:OD1	2.26	0.50
83:UU:14:GLY:N	83:UU:21:ALA:O	2.45	0.50
5:5:673:C:H2'	5:5:674:G:H8	1.77	0.49
5:5:1824:G:H2'	5:5:1825:A:C8	2.46	0.49
8:8:67:U:H2'	8:8:68:G:C8	2.46	0.49
14:E:69:ALA:HB1	14:E:72:LYS:HE2	1.94	0.49
18:I:61:SER:HA	18:I:126:VAL:HG12	1.93	0.49
20:K:1215:C:OP2	20:K:1217:A:N6	2.44	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1350:U:O2	52:q:110:ASN:ND2	2.44	0.49
20:K:1856:C:OP1	74:MM:141:ARG:NH1	2.45	0.49
28:S:134:ALA:HB1	28:S:146:HIS:CD2	2.47	0.49
54:s:22:ASP:OD1	54:s:23:ASP:N	2.45	0.49
78:QQ:16:LEU:O	82:TT:57:ARG:NH2	2.37	0.49
1:O:107:LYS:HB2	1:O:115:SER:HB3	1.94	0.49
5:5:90:G:OP2	5:5:92:C:N4	2.42	0.49
5:5:1954:U:H2'	5:5:1955:G:H8	1.78	0.49
5:5:3937:C:O2'	23:N:124:ASP:OD1	2.29	0.49
11:B:220:ILE:HG12	11:B:278:THR:HG23	1.93	0.49
20:K:5:U:H2'	20:K:6:G:C8	2.47	0.49
20:K:655:A:H4'	20:K:656:G:H3'	1.93	0.49
20:K:1010:G:H2'	20:K:1011:A:H8	1.76	0.49
27:R:133:LYS:HG3	27:R:134:ASN:HD22	1.77	0.49
55:t:106:PHE:HZ	55:t:140:GLY:HA3	1.77	0.49
59:x:130:PHE:O	59:x:138:HIS:N	2.46	0.49
79:RF:258:TYR:H	79:RF:266:GLN:NE2	2.09	0.49
85:WW:49:LEU:HB2	85:WW:54:HIS:CE1	2.48	0.49
86:AB:579:LYS:HG3	86:AB:582:SER:HB3	1.94	0.49
5:5:11:G:H1'	33:X:51:THR:HG21	1.93	0.49
5:5:189:G:H2'	5:5:190:G:H8	1.77	0.49
5:5:1093:C:H2'	5:5:1094:G:C8	2.45	0.49
5:5:1541:C:H1'	5:5:2448:G:H21	1.78	0.49
5:5:1562:G:H2'	5:5:1563:A:H2'	1.94	0.49
5:5:1840:G:OP2	15:F:201:LYS:NZ	2.38	0.49
5:5:4598:C:O2'	17:H:121:LYS:NZ	2.45	0.49
8:8:90:C:H2'	8:8:91:A:C8	2.47	0.49
12:C:79:VAL:HG21	12:C:86:ARG:HG2	1.94	0.49
12:C:159:GLU:HA	12:C:217:ILE:HB	1.93	0.49
12:C:204:ARG:NH1	12:C:205:ARG:O	2.46	0.49
15:F:221:LYS:NZ	15:F:223:THR:OG1	2.45	0.49
23:N:98:LEU:HD12	23:N:128:LYS:HD2	1.92	0.49
32:W:6:CYS:HB2	32:W:13:ILE:HD11	1.94	0.49
39:d:38:PHE:HB3	39:d:78:ARG:HG2	1.93	0.49
54:s:24:TYR:HD1	54:s:92:LYS:HB2	1.77	0.49
56:u:99:ASN:OD1	56:u:100:PHE:N	2.45	0.49
56:u:189:ILE:HB	56:u:190:PRO:HD3	1.94	0.49
64:CC:119:LEU:HD12	64:CC:120:PRO:HD2	1.94	0.49
86:AB:353:MET:SD	86:AB:353:MET:N	2.85	0.49
86:AB:412:LYS:HE2	86:AB:472:LEU:HA	1.95	0.49
5:5:35:U:O2'	5:5:1525:A:N1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:165:A:H2'	5:5:166:C:C6	2.48	0.49
5:5:408:A:H4'	5:5:409:G:H3'	1.94	0.49
5:5:1073:G:H2'	5:5:1074:G:C8	2.47	0.49
5:5:1954:U:H2'	5:5:1955:G:C8	2.48	0.49
5:5:2809:G:O2'	5:5:4644:G:OP1	2.27	0.49
5:5:3707:U:H2'	5:5:3708:C:H6	1.77	0.49
5:5:4247:G:O2'	5:5:4248:A:OP1	2.28	0.49
5:5:4918:C:H2'	5:5:4919:G:C8	2.47	0.49
12:C:78:ARG:HB3	12:C:88:GLY:HA2	1.93	0.49
20:K:1007:C:H2'	20:K:1008:A:C8	2.47	0.49
85:WW:21:ASP:OD1	85:WW:22:LEU:N	2.44	0.49
5:5:217:C:H5'	5:5:219:G:H5'	1.95	0.49
5:5:1309:C:O2	41:f:21:GLN:NE2	2.44	0.49
5:5:2765:A:H2'	5:5:2766:A:H8	1.78	0.49
5:5:2811:G:OP1	27:R:70:ARG:NH2	2.45	0.49
5:5:4620:U:OP1	31:V:51:ARG:NH1	2.42	0.49
6:6:214:GLY:HA2	6:6:236:ILE:HG12	1.93	0.49
20:K:338:G:H2'	20:K:339:A:H8	1.78	0.49
60:y:167:LYS:HA	76:OO:71:ALA:HB1	1.94	0.49
72:KK:99:ASP:HB2	72:KK:102:THR:HG22	1.93	0.49
81:SS:19:GLY:HA2	81:SS:71:LEU:HD12	1.95	0.49
84:VV:40:PRO:O	84:VV:77:ASN:ND2	2.45	0.49
86:AB:374:ILE:HG12	86:AB:508:ILE:HD13	1.95	0.49
5:5:491:G:O3'	5:5:492:U:H3'	2.13	0.49
5:5:2848:G:O2'	5:5:3838:U:O4	2.27	0.49
5:5:4199:C:H42	18:I:116:ARG:HH12	1.61	0.49
6:6:168:CYS:HB2	6:6:195:LEU:HD23	1.95	0.49
13:D:205:ALA:HB2	13:D:236:MET:HG2	1.94	0.49
14:E:153:LEU:HD13	14:E:197:VAL:HG11	1.95	0.49
20:K:76:U:O2	61:z:154:ARG:NH2	2.46	0.49
20:K:1079:C:O2'	20:K:1182:A:N1	2.45	0.49
20:K:1545:A:H2'	20:K:1546:G:C8	2.47	0.49
29:T:28:ALA:O	29:T:32:ARG:HG3	2.12	0.49
71:JJ:16:LYS:HA	71:JJ:23:ARG:HH21	1.77	0.49
1:0:130:VAL:HG22	80:RR:40:LYS:HZ3	1.76	0.49
5:5:85:G:O2'	5:5:97:G:O6	2.29	0.49
5:5:679:C:H2'	5:5:680:G:C8	2.48	0.49
5:5:730:G:OP2	15:F:75:ARG:NE	2.45	0.49
5:5:956:A:N6	5:5:1283:G:H1'	2.27	0.49
5:5:1669:A:H4'	5:5:1685:G:H21	1.78	0.49
5:5:2492:C:H2'	5:5:2493:G:H8	1.75	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:4186:A:H2'	5:5:4187:G:C8	2.48	0.49
5:5:4867:G:H2'	5:5:4868:G:C8	2.48	0.49
12:C:319:LEU:HD11	15:F:155:LYS:HB2	1.95	0.49
13:D:72:ASP:N	13:D:72:ASP:OD1	2.45	0.49
14:E:189:LEU:HD21	14:E:256:VAL:HG21	1.93	0.49
20:K:130:G:H1	20:K:181:A:N6	2.11	0.49
20:K:414:A:OP1	20:K:814:U:O2'	2.28	0.49
20:K:900:C:N4	20:K:901:G:O6	2.45	0.49
20:K:1119:A:H8	20:K:1119:A:O5'	1.95	0.49
20:K:1144:A:H2'	20:K:1145:A:C8	2.47	0.49
20:K:1644:C:H4'	83:UU:140:ARG:HB2	1.95	0.49
20:K:1786:U:H2'	20:K:1787:G:C8	2.46	0.49
20:K:1866:A:N6	73:LL:85:ARG:O	2.46	0.49
41:f:36:ARG:NH1	41:f:79:GLY:O	2.43	0.49
46:k:49:ASP:HB3	46:k:52:LYS:HB2	1.95	0.49
65:DD:138:ARG:HE	65:DD:156:HIS:HD2	1.61	0.49
5:5:1351:G:OP1	12:C:33:ARG:NH1	2.32	0.49
5:5:1508:A:OP1	12:C:110:ARG:NH1	2.36	0.49
5:5:1514:U:H2'	5:5:1515:A:C8	2.48	0.49
5:5:1613:A:OP2	10:A:187:HIS:NE2	2.39	0.49
10:A:24:LYS:HG3	10:A:49:ILE:HD12	1.94	0.49
20:K:17:C:H4'	20:K:1166:G:C8	2.48	0.49
20:K:804:U:N3	20:K:805:U:O4	2.45	0.49
20:K:886:A:C5	20:K:887:U:H1'	2.48	0.49
20:K:1653:U:H2'	20:K:1654:G:C8	2.47	0.49
20:K:1828:C:H2'	20:K:1829:G:H8	1.76	0.49
21:L:63:THR:HG22	21:L:65:ARG:H	1.77	0.49
26:Q:178:ARG:H	36:a:51:GLY:HA2	1.78	0.49
35:Z:89:ILE:HG12	35:Z:91:LEU:HG	1.95	0.49
54:s:28:PHE:HZ	54:s:95:LEU:HB2	1.78	0.49
64:CC:152:ARG:HA	64:CC:155:ASN:HD21	1.75	0.49
72:KK:65:PRO:HA	72:KK:74:GLN:HE22	1.77	0.49
1:0:132:MET:HG3	1:0:141:CYS:HB2	1.95	0.49
5:5:4749:C:H2'	5:5:4750:G:C8	2.48	0.49
6:6:256:ILE:HG23	6:6:270:LEU:HB2	1.94	0.49
20:K:112:U:H2'	20:K:115:U:H5	1.78	0.49
20:K:887:U:N3	20:K:889:U:O4	2.46	0.49
24:O:168:TYR:CE2	24:O:172:LYS:HD2	2.48	0.49
60:y:125:SER:HA	60:y:138:ALA:HA	1.94	0.49
62:AA:85:VAL:HA	62:AA:88:GLN:HE21	1.78	0.49
65:DD:135:ILE:HA	65:DD:159:PHE:HA	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:VV:77:ASN:OD1	84:VV:77:ASN:N	2.45	0.49
86:AB:250:LYS:HG3	86:AB:562:LEU:HD12	1.95	0.49
4:4:6:U:OP1	20:K:1704:C:N4	2.45	0.49
5:5:655:C:H2'	5:5:656:C:C6	2.48	0.49
5:5:2407:G:H2'	47:l:13:LEU:HD22	1.94	0.49
5:5:2758:G:H2'	5:5:2759:G:C4	2.47	0.49
5:5:2856:C:O2	11:B:242:ARG:NH2	2.34	0.49
5:5:3904:G:O2'	5:5:3905:A:OP1	2.27	0.49
5:5:4530:U:H2'	5:5:4531:U:H2'	1.94	0.49
5:5:4992:G:H2'	5:5:4993:G:C8	2.44	0.49
7:7:6:C:H4'	13:D:52:ILE:HD13	1.95	0.49
20:K:1402:A:O5'	68:GG:51:LYS:HD2	2.13	0.49
20:K:1424:G:H2'	20:K:1425:G:H8	1.78	0.49
30:U:45:GLU:HG3	30:U:46:ARG:HG3	1.95	0.49
45:j:27:TYR:HA	45:j:34:CYS:HA	1.94	0.49
70:II:28:PHE:HE2	70:II:38:ARG:HE	1.61	0.49
75:NN:20:ARG:HD3	75:NN:74:MET:HB2	1.95	0.49
77:PP:114:GLU:OE1	77:PP:114:GLU:N	2.46	0.49
79:RF:338:THR:HG21	79:RF:362:THR:HG21	1.93	0.49
86:AB:462:LEU:HD21	86:AB:466:GLU:HB2	1.95	0.49
5:5:3620:G:OP1	5:5:3622:C:N4	2.46	0.48
5:5:4459:U:H2'	5:5:4460:U:C6	2.47	0.48
5:5:5001:U:H4'	11:B:317:LEU:HB3	1.96	0.48
20:K:63:U:O2'	20:K:170:A:N3	2.39	0.48
20:K:409:C:H2'	20:K:410:G:C8	2.48	0.48
20:K:788:G:H2'	20:K:789:G:H8	1.77	0.48
20:K:1297:U:O2'	20:K:1301:A:N1	2.44	0.48
20:K:1447:G:OP1	68:GG:85:HIS:ND1	2.46	0.48
32:W:19:ARG:NH2	32:W:37:GLU:OE1	2.43	0.48
60:y:128:ILE:O	60:y:135:ARG:NH1	2.47	0.48
61:z:70:HIS:NE2	61:z:103:ASP:OD2	2.35	0.48
62:AA:125:LYS:NZ	62:AA:126:LYS:O	2.42	0.48
64:CC:6:ASP:OD1	64:CC:9:HIS:ND1	2.45	0.48
67:FF:12:ALA:HB1	67:FF:32:VAL:HG13	1.94	0.48
79:RF:318:GLU:HB3	79:RF:412:ILE:HB	1.95	0.48
79:RF:333:LEU:HB3	79:RF:366:HIS:CD2	2.48	0.48
79:RF:375:LEU:H	79:RF:375:LEU:HD23	1.78	0.48
1:0:132:MET:HE1	1:0:148:TYR:HD2	1.78	0.48
20:K:28:U:H2'	20:K:29:G:C8	2.48	0.48
20:K:819:G:OP2	65:DD:80:ARG:NH2	2.46	0.48
20:K:1646:C:OP1	83:UU:138:ARG:NH2	2.45	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1821:U:H2'	20:K:1822:A:C8	2.48	0.48
28:S:160:ARG:O	28:S:161:ARG:HG3	2.12	0.48
73:LL:64:LEU:HD12	73:LL:65:PRO:HD2	1.95	0.48
86:AB:75:LEU:HD12	86:AB:76:PRO:HD2	1.94	0.48
3:2:43:A:H2'	3:2:44:A:C8	2.47	0.48
5:5:734:G:C2	5:5:735:G:C8	3.02	0.48
5:5:976:G:H5''	15:F:46:ARG:HH11	1.78	0.48
5:5:1686:C:O2'	37:b:18:ARG:NH1	2.47	0.48
5:5:4260:U:H2'	5:5:4261:C:H6	1.78	0.48
11:B:381:THR:HG23	11:B:384:GLU:H	1.78	0.48
20:K:558:G:H2'	20:K:559:G:C8	2.49	0.48
20:K:610:G:H2'	20:K:611:G:H8	1.78	0.48
20:K:1036:A:N3	20:K:1844:U:O2'	2.45	0.48
20:K:1069:U:H2'	20:K:1070:A:C8	2.48	0.48
20:K:1794:C:H2'	20:K:1795:G:C8	2.49	0.48
22:M:86:TRP:O	22:M:89:THR:OG1	2.31	0.48
23:N:60:VAL:HG22	23:N:134:LEU:HB2	1.95	0.48
60:y:90:VAL:HA	60:y:93:VAL:HG12	1.94	0.48
65:DD:67:ASP:HB3	65:DD:70:ARG:HB3	1.96	0.48
85:WW:56:LEU:HD13	85:WW:83:MET:HE3	1.95	0.48
86:AB:264:ASN:HD22	86:AB:266:ASP:H	1.61	0.48
4:4:10:G:H5'	79:RF:63:LYS:HB2	1.95	0.48
5:5:181:C:H2'	5:5:182:G:C8	2.48	0.48
5:5:959:G:O2'	5:5:2263:A:N6	2.46	0.48
5:5:1778:C:H2'	5:5:1779:U:H6	1.78	0.48
5:5:2378:G:N2	5:5:2381:A:OP2	2.42	0.48
5:5:2734:U:H2'	5:5:2735:G:C8	2.46	0.48
5:5:3933:G:H2'	5:5:3934:G:H8	1.78	0.48
5:5:4507:A:H2'	5:5:4508:C:C6	2.49	0.48
17:H:41:ILE:HG13	17:H:43:VAL:HG13	1.94	0.48
17:H:89:ARG:HH21	17:H:187:VAL:HG13	1.78	0.48
20:K:464:A:OP1	86:AB:576:ARG:NH2	2.38	0.48
20:K:1628:C:H2'	20:K:1629:C:C6	2.49	0.48
26:Q:18:PRO:HG3	26:Q:29:VAL:HG21	1.95	0.48
66:EE:76:VAL:O	66:EE:89:ARG:N	2.45	0.48
80:RR:27:ILE:HG23	81:SS:84:HIS:HB2	1.96	0.48
5:5:158:A:C4	5:5:160:G:H1'	2.48	0.48
5:5:1818:G:OP2	5:5:1818:G:N2	2.30	0.48
5:5:1884:C:H2'	5:5:1885:G:H8	1.79	0.48
5:5:1916:G:N3	5:5:2067:C:O2'	2.45	0.48
5:5:2502:A:H4'	5:5:2503:G:OP1	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:3610:A:H2'	5:5:3611:A:H8	1.79	0.48
11:B:283:LYS:NZ	11:B:359:ALA:O	2.40	0.48
15:F:148:SER:HB3	15:F:243:ILE:HD13	1.95	0.48
20:K:909:G:H2'	20:K:910:G:C8	2.49	0.48
20:K:1083:A:N7	20:K:1841:C:O2'	2.39	0.48
20:K:1294:G:O6	20:K:1295:A:N6	2.47	0.48
20:K:1860:A:H3'	73:LL:8:ASN:HB3	1.95	0.48
35:Z:22:LYS:NZ	35:Z:129:TRP:O	2.31	0.48
35:Z:121:ARG:O	35:Z:124:THR:HG22	2.14	0.48
64:CC:129:LEU:HD23	64:CC:129:LEU:H	1.78	0.48
79:RF:402:PHE:HA	79:RF:406:PHE:HD2	1.76	0.48
85:WW:61:ARG:NE	85:WW:88:GLU:OE2	2.47	0.48
86:AB:244:SER:HA	86:AB:247:LEU:HD12	1.95	0.48
5:5:2502:A:HO2'	5:5:2503:G:P	2.33	0.48
20:K:1030:A:H2'	20:K:1031:A:H8	1.78	0.48
20:K:1069:U:H2'	20:K:1070:A:H8	1.78	0.48
20:K:1550:G:H3'	20:K:1579:A:H61	1.79	0.48
60:y:124:ASP:HB3	67:FF:47:LYS:HD3	1.95	0.48
65:DD:93:LYS:HB2	65:DD:96:TYR:CD2	2.49	0.48
77:PP:129:ARG:O	77:PP:133:ARG:HG2	2.14	0.48
79:RF:335:CYS:SG	79:RF:338:THR:OG1	2.60	0.48
5:5:440:U:H2'	5:5:441:G:H8	1.79	0.48
5:5:1865:G:H5'	18:I:118:ALA:O	2.14	0.48
5:5:1997:U:O2'	5:5:2000:G:N2	2.45	0.48
5:5:4277:G:H2'	5:5:4278:C:C6	2.48	0.48
6:6:100:ARG:NH2	20:K:1400:U:OP1	2.47	0.48
7:7:63:C:N4	18:I:209:TRP:HB2	2.29	0.48
8:8:133:G:H2'	8:8:134:G:H8	1.79	0.48
13:D:60:ILE:HB	13:D:80:ALA:HB2	1.95	0.48
13:D:236:MET:SD	13:D:237:GLU:N	2.87	0.48
20:K:183:G:O2'	20:K:184:G:O4'	2.30	0.48
25:P:18:ARG:NH2	25:P:147:GLU:OE1	2.46	0.48
41:f:41:PHE:HE1	41:f:110:ILE:HD11	1.79	0.48
54:s:29:ILE:HG23	54:s:86:VAL:HG13	1.95	0.48
64:CC:165:GLN:HE22	64:CC:195:LEU:HD11	1.79	0.48
75:NN:62:THR:HA	75:NN:69:THR:HG22	1.96	0.48
79:RF:118:LYS:HB2	79:RF:140:LEU:HD12	1.93	0.48
84:VV:90:CYS:HB3	84:VV:130:LEU:HD11	1.95	0.48
5:5:4967:A:H2'	5:5:4968:A:C8	2.49	0.48
10:A:116:LEU:N	10:A:126:LEU:O	2.47	0.48
18:I:47:PRO:HG2	18:I:142:LEU:HD21	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:62:G:O2'	20:K:172:U:OP1	2.31	0.48
20:K:442:C:N4	20:K:449:A:H62	2.09	0.48
20:K:854:A:H2'	20:K:855:G:H8	1.78	0.48
28:S:7:LEU:HG	28:S:107:THR:HG22	1.96	0.48
28:S:128:LYS:HB3	28:S:130:GLU:OE2	2.13	0.48
31:V:31:ASN:HD21	31:V:116:ALA:H	1.62	0.48
35:Z:89:ILE:HD11	35:Z:117:LYS:HB3	1.96	0.48
37:b:5:LYS:HE3	37:b:8:THR:HB	1.96	0.48
41:f:35:ALA:HB3	41:f:38:GLU:HG2	1.96	0.48
60:y:104:THR:HG23	60:y:106:GLU:H	1.79	0.48
65:DD:93:LYS:HB2	65:DD:96:TYR:HD2	1.78	0.48
67:FF:13:ARG:N	67:FF:33:GLU:O	2.38	0.48
70:II:75:ARG:HH11	70:II:95:TYR:HB2	1.78	0.48
80:RR:95:ASP:OD2	80:RR:101:ARG:NH1	2.46	0.48
86:AB:85:HIS:HD2	86:AB:130:ASN:H	1.61	0.48
5:5:318:A:H2'	5:5:319:A:C8	2.49	0.48
5:5:425:U:H2'	5:5:426:A:H8	1.78	0.48
5:5:1516:G:O2'	21:L:18:TRP:NE1	2.45	0.48
5:5:2005:G:O2'	5:5:2006:U:H5'	2.13	0.48
5:5:2482:C:H2'	5:5:2483:G:C8	2.48	0.48
5:5:2517:A:N3	5:5:2539:C:O2'	2.44	0.48
5:5:3700:C:H2'	5:5:3746:A:H61	1.77	0.48
5:5:3911:C:H2'	5:5:3912:U:H6	1.78	0.48
5:5:4872:G:N7	22:M:94:LYS:HD2	2.28	0.48
20:K:34:U:H4'	20:K:564:A:H5'	1.94	0.48
20:K:143:U:H4'	20:K:144:U:H5'	1.96	0.48
20:K:1098:C:H2'	20:K:1099:G:C8	2.49	0.48
20:K:1680:G:H2'	20:K:1681:U:C6	2.49	0.48
50:o:21:HIS:HB3	50:o:70:LEU:HB3	1.94	0.48
55:t:29:ALA:N	55:t:30:PRO:HD2	2.29	0.48
59:x:60:GLU:OE2	75:NN:20:ARG:NH1	2.46	0.48
66:EE:119:ASP:O	66:EE:147:LYS:NZ	2.37	0.48
75:NN:19:GLN:HE21	75:NN:85:ASN:HD21	1.62	0.48
5:5:651:C:H2'	5:5:652:G:C8	2.49	0.48
5:5:1237:C:OP2	14:E:62:SER:OG	2.31	0.48
5:5:2029:A:H2'	5:5:2030:A:C8	2.49	0.48
5:5:3758:U:H5''	79:RF:47:ARG:CZ	2.44	0.48
5:5:5062:G:H2'	5:5:5063:G:H8	1.78	0.48
11:B:213:GLN:NE2	11:B:285:TYR:O	2.45	0.48
20:K:148:U:H2'	20:K:149:A:H8	1.79	0.48
20:K:1203:G:N3	20:K:1699:A:H2	2.10	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:R:67:THR:O	27:R:71:ARG:HG2	2.14	0.48
63:BB:20:GLU:HG3	63:BB:48:ALA:HB3	1.96	0.48
81:SS:92:ALA:HA	81:SS:95:ARG:HE	1.78	0.48
5:5:164:G:H2'	5:5:165:A:C8	2.49	0.47
5:5:234:G:N2	5:5:2303:C:N3	2.62	0.47
5:5:435:A:O2'	40:e:26:ASP:OD2	2.28	0.47
5:5:2041:A:N6	5:5:4434:C:O2	2.46	0.47
5:5:3876:A:H4'	5:5:3877:A:OP2	2.14	0.47
5:5:4859:C:H2'	5:5:4860:G:C8	2.48	0.47
6:6:77:PHE:HB3	6:6:89:LEU:HD21	1.94	0.47
19:J:111:GLU:HB2	19:J:125:ILE:HD11	1.95	0.47
20:K:1146:C:O2'	20:K:1150:A:N1	2.43	0.47
23:N:36:LEU:HD21	23:N:109:HIS:CG	2.49	0.47
42:g:60:ARG:HB2	42:g:63:VAL:HG23	1.96	0.47
63:BB:87:PHE:HB3	63:BB:90:LYS:HE2	1.96	0.47
72:KK:16:ILE:HD11	72:KK:38:ILE:HD11	1.95	0.47
79:RF:274:VAL:HA	79:RF:277:ASN:HD21	1.79	0.47
86:AB:497:ARG:HD2	86:AB:524:MET:HE3	1.94	0.47
86:AB:506:ARG:HE	86:AB:510:HIS:CD2	2.32	0.47
5:5:1548:G:O2'	5:5:2812:A:N3	2.35	0.47
5:5:2587:A:O2'	5:5:2588:C:O4'	2.29	0.47
5:5:3662:A:O2'	10:A:118:GLU:OE2	2.33	0.47
5:5:3682:A:H5''	10:A:132:ASN:ND2	2.29	0.47
5:5:4074:C:H2'	5:5:4075:U:C6	2.48	0.47
5:5:5002:U:OP2	11:B:385:LYS:NZ	2.44	0.47
8:8:124:U:H4'	8:8:125:C:O5'	2.13	0.47
17:H:1:MET:SD	17:H:1:MET:N	2.79	0.47
20:K:1130:G:O2'	20:K:1131:G:H8	1.96	0.47
22:M:77:TRP:HE1	22:M:83:ASN:HD21	1.61	0.47
54:s:16:LYS:HB3	54:s:54:LEU:HD21	1.96	0.47
55:t:59:THR:HG22	55:t:76:SER:H	1.79	0.47
59:x:45:ILE:HA	59:x:61:VAL:HG11	1.96	0.47
74:MM:97:LEU:HD11	74:MM:112:ALA:HB1	1.96	0.47
86:AB:485:ILE:HD13	86:AB:517:VAL:HG22	1.96	0.47
2:1:127:HIS:HB2	5:5:3909:C:O4'	2.13	0.47
5:5:1757:U:H2'	5:5:1758:G:C8	2.48	0.47
5:5:1965:G:N2	5:5:2022:C:O2	2.47	0.47
5:5:2033:A:OP1	28:S:88:SER:OG	2.27	0.47
5:5:2620:G:H1	5:5:2636:U:H3	1.61	0.47
5:5:2878:G:OP2	5:5:2879:A:O2'	2.29	0.47
5:5:3664:G:H2'	5:5:3665:G:H8	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:301:GLY:HA2	6:6:307:VAL:HA	1.96	0.47
11:B:89:ILE:HG22	11:B:162:VAL:HG22	1.95	0.47
13:D:45:ASN:HD21	13:D:68:ARG:HH12	1.62	0.47
20:K:688:U:C5	63:BB:103:LYS:HD2	2.49	0.47
20:K:1243:U:OP2	20:K:1518:C:O2'	2.28	0.47
20:K:1406:G:H2'	20:K:1407:U:H6	1.79	0.47
20:K:1798:C:H2'	20:K:1799:G:O4'	2.14	0.47
21:L:58:ILE:HG12	21:L:116:ARG:HD2	1.97	0.47
39:d:37:GLY:O	39:d:41:ARG:HG3	2.14	0.47
54:s:161:ILE:HD13	54:s:167:VAL:HG22	1.96	0.47
62:AA:79:LEU:HD22	84:VV:68:LYS:HG3	1.96	0.47
66:EE:89:ARG:HD2	66:EE:106:HIS:HB2	1.96	0.47
68:GG:56:MET:HE3	68:GG:88:LEU:HD21	1.95	0.47
69:HH:38:GLU:OE1	69:HH:38:GLU:N	2.47	0.47
79:RF:184:GLY:O	79:RF:186:SER:N	2.45	0.47
5:5:2295:C:H2'	5:5:2296:G:H8	1.79	0.47
5:5:2519:U:H1'	5:5:2520:C:C6	2.50	0.47
5:5:2540:C:H2'	5:5:2541:G:H8	1.80	0.47
5:5:4699:U:OP2	48:m:85:ARG:NE	2.41	0.47
5:5:4719:G:O2'	5:5:4720:C:O5'	2.26	0.47
7:7:26:C:H5''	13:D:56:THR:HG21	1.95	0.47
11:B:384:GLU:OE2	32:W:14:TYR:OH	2.33	0.47
13:D:204:VAL:HG12	13:D:208:MET:HE3	1.95	0.47
20:K:463:C:OP2	86:AB:306:ARG:NE	2.47	0.47
20:K:1320:G:H3'	20:K:1321:G:H8	1.79	0.47
20:K:1365:G:H2'	20:K:1366:G:H8	1.80	0.47
24:O:10:ASP:HB2	24:O:117:ARG:HB3	1.95	0.47
28:S:107:THR:O	28:S:111:ARG:HG2	2.14	0.47
62:AA:112:ASN:HA	62:AA:116:VAL:HG12	1.96	0.47
64:CC:81:VAL:HG22	64:CC:102:VAL:HG12	1.95	0.47
79:RF:271:SER:O	79:RF:275:LEU:N	2.37	0.47
86:AB:168:ILE:HA	86:AB:239:MET:HB3	1.95	0.47
5:5:131:C:N4	5:5:132:G:C2	2.83	0.47
5:5:497:G:O2'	5:5:499:G:O4'	2.32	0.47
5:5:1490:G:H2'	5:5:1491:A:H8	1.79	0.47
5:5:2517:A:H5'	42:g:62:LYS:HB2	1.96	0.47
5:5:4192:A:H2'	5:5:4193:C:H6	1.79	0.47
8:8:137:A:H2'	8:8:138:C:C6	2.50	0.47
10:A:68:ARG:HE	10:A:70:LYS:HB2	1.79	0.47
11:B:86:VAL:HG12	11:B:201:LEU:HD12	1.95	0.47
11:B:216:MET:HE2	11:B:283:LYS:HD3	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:71:G:H2'	20:K:72:C:C4'	2.44	0.47
20:K:396:U:OP1	66:EE:108:ASN:ND2	2.47	0.47
20:K:677:G:N2	20:K:1028:A:H62	2.08	0.47
20:K:894:G:H2'	20:K:895:G:C8	2.46	0.47
20:K:1299:A:H2'	20:K:1301:A:H5''	1.97	0.47
20:K:1628:C:H2'	20:K:1629:C:H6	1.79	0.47
20:K:1809:A:H2'	20:K:1810:U:H6	1.79	0.47
23:N:114:ARG:NH1	23:N:153:LYS:O	2.37	0.47
33:X:110:LYS:HG3	33:X:121:VAL:HB	1.97	0.47
43:h:4:ILE:HD11	43:h:9:LEU:HD21	1.96	0.47
57:v:183:LYS:HD3	57:v:194:ARG:HH21	1.78	0.47
61:z:4:ASN:HB3	61:z:110:ASN:HA	1.97	0.47
61:z:7:PHE:CE2	61:z:9:ALA:HB3	2.50	0.47
86:AB:393:ALA:HA	86:AB:409:VAL:HG11	1.96	0.47
5:5:362:A:N6	47:l:37:TYR:O	2.35	0.47
5:5:1517:G:H1	12:C:104:PRO:HD2	1.80	0.47
5:5:2045:G:O6	5:5:3870:C:O2'	2.33	0.47
5:5:2791:C:OP1	47:l:48:LYS:NZ	2.44	0.47
7:7:61:G:H5''	13:D:271:MET:HE2	1.95	0.47
20:K:649:U:H2'	20:K:650:A:C8	2.50	0.47
47:l:42:ARG:HG3	47:l:47:THR:HB	1.96	0.47
53:r:26:SER:OG	53:r:28:GLU:OE1	2.32	0.47
3:2:35:U:H2'	3:2:36:G:C8	2.49	0.47
5:5:747:A:O2'	5:5:748:A:H5'	2.15	0.47
5:5:1329:G:O2'	5:5:1330:A:OP1	2.24	0.47
5:5:1494:U:H2'	5:5:1495:G:C8	2.49	0.47
5:5:1920:C:H3'	5:5:1921:C:H5''	1.95	0.47
5:5:2437:C:H42	33:X:89:LYS:NZ	2.13	0.47
5:5:2716:C:H2'	5:5:2717:G:C8	2.50	0.47
5:5:2824:C:H2'	5:5:2825:A:C8	2.50	0.47
5:5:3751:G:H21	5:5:3775:A:H8	1.62	0.47
5:5:3759:A:HO2'	20:K:1826:G:HO2'	1.56	0.47
5:5:3861:A:H2'	5:5:3862:A:H8	1.79	0.47
5:5:3927:U:H2'	5:5:3928:A:H8	1.79	0.47
5:5:4906:C:H2'	5:5:4907:G:C8	2.50	0.47
6:6:83:TRP:HA	6:6:107:ASP:OD1	2.15	0.47
6:6:89:LEU:HD13	6:6:99:ARG:HD3	1.97	0.47
12:C:25:PRO:HB2	12:C:27:VAL:HG12	1.96	0.47
19:J:51:SER:N	19:J:69:ALA:O	2.42	0.47
20:K:65:C:C6	61:z:174:PRO:HB3	2.50	0.47
20:K:85:A:H2'	20:K:86:C:H6	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:884:C:H2'	20:K:885:U:O4'	2.14	0.47
20:K:1386:A:OP2	58:w:160:SER:OG	2.24	0.47
20:K:1533:A:H2	20:K:1536:G:N3	2.13	0.47
20:K:1856:C:H2'	20:K:1857:G:C8	2.50	0.47
24:O:113:ASP:OD1	24:O:114:LYS:N	2.48	0.47
38:c:101:ASP:N	38:c:101:ASP:OD1	2.45	0.47
54:s:29:ILE:HB	54:s:191:GLN:HB2	1.97	0.47
64:CC:29:LEU:HD12	64:CC:49:ARG:HH12	1.79	0.47
77:PP:40:ALA:HB3	77:PP:43:LYS:HG2	1.96	0.47
5:5:86:U:H2'	5:5:87:A:H8	1.79	0.47
5:5:2571:C:H2'	5:5:2572:C:C6	2.49	0.47
5:5:2692:U:H2'	5:5:2693:G:O4'	2.15	0.47
5:5:2758:G:H2'	5:5:2759:G:C5	2.49	0.47
10:A:101:VAL:HB	10:A:165:VAL:HG22	1.97	0.47
11:B:43:LEU:HD12	11:B:205:VAL:HG11	1.97	0.47
19:J:114:ASP:N	19:J:114:ASP:OD1	2.45	0.47
20:K:562:U:O4	65:DD:172:ARG:NH2	2.40	0.47
20:K:919:A:O2'	20:K:1020:A:N1	2.35	0.47
20:K:943:U:O2'	74:MM:136:PRO:HA	2.14	0.47
20:K:1810:U:H2'	20:K:1811:C:C6	2.50	0.47
28:S:96:GLU:OE2	28:S:132:MET:SD	2.73	0.47
34:Y:86:GLN:HB3	34:Y:96:HIS:HD2	1.80	0.47
35:Z:47:ASP:N	35:Z:69:LYS:O	2.40	0.47
36:a:117:LEU:HD23	36:a:140:VAL:HG11	1.97	0.47
38:c:28:VAL:HB	38:c:95:SER:HB3	1.97	0.47
59:x:11:ARG:NH1	59:x:24:THR:OG1	2.46	0.47
59:x:55:ALA:HB1	59:x:60:GLU:HB3	1.95	0.47
73:LL:51:ARG:NH1	73:LL:54:SER:OG	2.48	0.47
75:NN:78:SER:HB3	75:NN:81:TYR:HD1	1.80	0.47
83:UU:112:LEU:HD22	83:UU:119:LEU:HD13	1.96	0.47
5:5:2640:G:H2'	5:5:2641:A:C8	2.50	0.47
5:5:2836:A:H4'	11:B:229:LYS:HA	1.96	0.47
5:5:4188:U:H2'	5:5:4189:U:C6	2.50	0.47
20:K:472:C:O2	20:K:475:C:N4	2.47	0.47
20:K:1213:C:H2'	20:K:1214:A:H8	1.79	0.47
20:K:1406:G:O2'	20:K:1443:C:O2	2.32	0.47
28:S:78:PHE:HA	28:S:130:GLU:O	2.14	0.47
32:W:47:ARG:HG2	32:W:58:LYS:HD2	1.97	0.47
35:Z:76:ASN:OD1	35:Z:77:TYR:N	2.48	0.47
41:f:106:TYR:HB2	41:f:107:PRO:HD3	1.97	0.47
58:w:105:LEU:HD21	58:w:122:VAL:HG11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:y:121:PRO:HG2	60:y:149:GLN:HG2	1.96	0.47
68:GG:23:THR:HG22	68:GG:88:LEU:HB3	1.97	0.47
74:MM:39:ASP:OD1	74:MM:40:THR:N	2.48	0.47
79:RF:318:GLU:N	79:RF:412:ILE:O	2.40	0.47
85:WW:14:LYS:HZ1	85:WW:22:LEU:HD13	1.80	0.47
5:5:287:U:H2'	5:5:288:G:H8	1.80	0.47
5:5:1316:G:OP1	40:e:43:ASN:ND2	2.39	0.47
5:5:2263:A:OP1	53:r:107:ARG:NH2	2.48	0.47
5:5:2745:A:H2'	5:5:2746:A:C8	2.50	0.47
5:5:4094:G:H2'	5:5:4095:G:H8	1.79	0.47
5:5:4133:C:O2	5:5:4133:C:H2'	2.15	0.47
5:5:4220:A:OP2	29:T:2:THR:N	2.48	0.47
8:8:52:A:N6	47:l:27:ILE:HG12	2.29	0.47
14:E:168:LEU:HD21	14:E:260:ILE:HD11	1.97	0.47
18:I:140:THR:HG22	18:I:141:LYS:H	1.80	0.47
20:K:532:C:H2'	20:K:533:A:C8	2.50	0.47
20:K:681:U:O2'	20:K:1160:U:OP1	2.33	0.47
20:K:1623:A:OP2	70:II:133:GLY:HA3	2.15	0.47
29:T:18:PRO:HB2	29:T:21:LYS:HD2	1.98	0.47
29:T:45:MET:H	29:T:95:HIS:CD2	2.32	0.47
84:VV:51:VAL:HG13	84:VV:70:VAL:HB	1.95	0.47
86:AB:86:ARG:HE	86:AB:93:LYS:HG2	1.79	0.47
5:5:668:C:OP2	53:r:46:ARG:NH1	2.48	0.46
5:5:2447:U:H2'	5:5:2448:G:H8	1.79	0.46
5:5:2562:G:N2	5:5:2565:A:OP2	2.32	0.46
6:6:107:ASP:OD1	6:6:108:VAL:N	2.48	0.46
18:I:38:ARG:HH22	18:I:45:GLU:HG3	1.80	0.46
20:K:989:C:OP2	56:u:155:TYR:OH	2.31	0.46
20:K:1279:C:H2'	20:K:1280:G:H8	1.80	0.46
22:M:58:THR:OG1	22:M:59:ASP:N	2.46	0.46
86:AB:193:GLU:OE1	86:AB:234:LYS:N	2.46	0.46
2:1:127:HIS:HB2	5:5:3909:C:C4'	2.45	0.46
5:5:1744:U:H2'	5:5:1745:G:C8	2.50	0.46
5:5:4120:U:H4'	5:5:4121:G:O5'	2.15	0.46
5:5:4120:U:H1'	5:5:4121:G:OP2	2.15	0.46
19:J:18:ARG:HG2	19:J:135:GLY:HA3	1.95	0.46
20:K:12:U:O2'	20:K:1356:G:H1'	2.15	0.46
20:K:14:C:H2'	20:K:15:U:C6	2.50	0.46
20:K:347:G:H4'	59:x:5:PRO:HA	1.97	0.46
20:K:465:A:H4'	20:K:466:G:O5'	2.13	0.46
20:K:686:U:O2	63:BB:118:ARG:NH2	2.47	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1617:G:H22	20:K:1620:A:C5'	2.28	0.46
21:L:70:VAL:H	21:L:159:ASN:ND2	2.13	0.46
28:S:76:LYS:HD2	28:S:131:GLU:CD	2.40	0.46
32:W:6:CYS:HB3	32:W:10:GLY:H	1.80	0.46
54:s:30:VAL:HG12	54:s:189:ILE:HD13	1.97	0.46
55:t:78:SER:O	55:t:81:ILE:HG13	2.15	0.46
65:DD:162:ARG:HH21	75:NN:31:GLY:HA2	1.80	0.46
86:AB:271:VAL:HG21	86:AB:282:LEU:HD22	1.97	0.46
86:AB:538:VAL:HG23	86:AB:541:LYS:HB2	1.97	0.46
5:5:3853:U:O2'	5:5:4979:A:N3	2.48	0.46
5:5:4466:C:H2'	5:5:4467:A:H8	1.81	0.46
5:5:5006:U:H4'	5:5:5007:A:H5'	1.98	0.46
7:7:64:G:H2'	7:7:65:G:C8	2.51	0.46
9:9:38:MET:HE3	9:9:43:PHE:HA	1.97	0.46
20:K:810:A:H5''	20:K:811:A:H5'	1.96	0.46
20:K:1017:U:H5'	78:QQ:55:ARG:HD3	1.97	0.46
24:O:10:ASP:OD2	24:O:37:ARG:NH2	2.43	0.46
53:r:32:LEU:HD23	53:r:32:LEU:H	1.80	0.46
55:t:114:ARG:HG2	55:t:129:ILE:HG22	1.98	0.46
59:x:139:LEU:HD21	59:x:169:ILE:HD11	1.98	0.46
67:FF:23:SER:OG	67:FF:24:GLN:OE1	2.23	0.46
72:KK:36:GLU:HB2	72:KK:47:ARG:HH11	1.80	0.46
79:RF:38:ILE:HG12	79:RF:94:VAL:HG13	1.96	0.46
81:SS:76:ILE:HG12	81:SS:80:ARG:HE	1.79	0.46
5:5:955:G:H4'	5:5:956:A:C4	2.50	0.46
5:5:976:G:H1	5:5:1279:A:H2	1.62	0.46
5:5:2743:A:O2'	10:A:21:LYS:NZ	2.47	0.46
5:5:4228:G:H5''	5:5:4229:U:O4'	2.16	0.46
5:5:4579:U:H4'	11:B:117:ARG:HG3	1.97	0.46
5:5:4993:G:H1	5:5:5058:A:H2	1.63	0.46
7:7:117:G:H5'	13:D:256:LYS:HD2	1.97	0.46
14:E:151:THR:HG23	14:E:203:LYS:HE3	1.97	0.46
20:K:89:C:O2	20:K:499:G:H4'	2.15	0.46
20:K:170:A:H2'	20:K:171:A:C8	2.50	0.46
20:K:1329:U:OP1	79:RF:65:ARG:NH2	2.48	0.46
20:K:1806:A:H2'	20:K:1807:C:C6	2.51	0.46
22:M:77:TRP:HE1	22:M:83:ASN:ND2	2.13	0.46
55:t:63:THR:HG23	55:t:65:GLN:HE21	1.81	0.46
5:5:62:A:OP1	23:N:172:ARG:NH1	2.48	0.46
5:5:204:U:H2'	5:5:205:C:C6	2.50	0.46
5:5:1849:U:H3'	21:L:5:ARG:HH12	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1895:G:O2'	5:5:1907:A:N3	2.41	0.46
5:5:4880:C:H2'	5:5:4881:U:O4'	2.15	0.46
8:8:114:G:H1	8:8:136:U:H3	1.63	0.46
11:B:33:PRO:HG2	11:B:349:LYS:HB2	1.96	0.46
20:K:1208:A:H2'	20:K:1209:A:H8	1.81	0.46
20:K:1346:U:OP1	57:v:117:ARG:NH1	2.48	0.46
21:L:55:ILE:HG13	21:L:76:PHE:HE1	1.81	0.46
54:s:145:THR:HG22	54:s:154:ILE:HG13	1.97	0.46
78:QQ:92:ILE:HD13	78:QQ:122:ILE:HD13	1.96	0.46
4:4:11:U:H4'	4:4:11:U:OP2	2.15	0.46
5:5:7:C:H2'	5:5:8:U:C6	2.50	0.46
5:5:164:G:H2'	5:5:165:A:H8	1.79	0.46
5:5:1734:G:N2	5:5:1735:U:O4	2.39	0.46
5:5:1750:G:H2'	5:5:1751:A:H5'	1.98	0.46
5:5:1751:A:H2'	5:5:1752:G:H8	1.80	0.46
5:5:1865:G:N2	5:5:1868:A:OP2	2.34	0.46
5:5:2326:G:OP2	40:e:101:HIS:ND1	2.47	0.46
5:5:2654:C:H2'	5:5:2655:C:H6	1.81	0.46
5:5:4947:U:O2'	5:5:4948:C:OP1	2.32	0.46
6:6:271:LYS:HD2	6:6:275:ILE:HD11	1.98	0.46
8:8:144:U:H2'	8:8:145:C:C6	2.51	0.46
20:K:167:G:O2'	61:z:130:PRO:O	2.28	0.46
20:K:329:G:H2'	20:K:330:G:C8	2.47	0.46
20:K:941:C:H2'	20:K:942:G:C8	2.51	0.46
20:K:1716:C:H2'	20:K:1717:C:H6	1.79	0.46
54:s:20:LEU:HD12	54:s:54:LEU:HD22	1.97	0.46
62:AA:108:ARG:HD2	65:DD:124:HIS:CD2	2.51	0.46
72:KK:27:ASP:OD1	72:KK:27:ASP:N	2.46	0.46
5:5:674:G:H2'	5:5:675:C:H6	1.81	0.46
5:5:1378:C:H42	21:L:160:VAL:HB	1.81	0.46
5:5:1804:A:H4'	5:5:1805:A:O5'	2.15	0.46
5:5:1824:G:H2'	5:5:1825:A:H8	1.81	0.46
5:5:2394:G:O4'	5:5:2397:G:N2	2.48	0.46
5:5:2663:G:H21	5:5:2676:A:HO2'	1.59	0.46
5:5:2689:C:H2'	5:5:2690:C:C6	2.51	0.46
6:6:79:LEU:HB2	6:6:87:LEU:HD21	1.96	0.46
10:A:28:ARG:HB3	10:A:123:ARG:HB3	1.97	0.46
15:F:94:ILE:HD13	15:F:140:ALA:HB2	1.96	0.46
19:J:141:ILE:HG23	19:J:144:LYS:HE2	1.98	0.46
20:K:522:A:O3'	65:DD:131:ARG:NH1	2.49	0.46
20:K:1425:G:H2'	20:K:1426:U:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:k:23:VAL:HG22	46:k:36:VAL:HG12	1.96	0.46
74:MM:32:HIS:N	74:MM:43:HIS:O	2.44	0.46
79:RF:223:GLY:HA2	79:RF:249:LYS:HB3	1.97	0.46
80:RR:30:GLY:HA3	80:RR:112:LYS:HE3	1.98	0.46
5:5:151:G:OP2	23:N:4:TYR:OH	2.27	0.46
5:5:163:A:H61	5:5:272:U:H3	1.63	0.46
5:5:180:C:H2'	5:5:181:C:C6	2.51	0.46
5:5:1777:C:C2	5:5:1778:C:C5	3.04	0.46
5:5:2765:A:H2'	5:5:2766:A:C8	2.51	0.46
5:5:2846:G:H5''	31:V:85:ARG:HG2	1.96	0.46
5:5:3773:U:H2'	5:5:3775:A:H2	1.80	0.46
5:5:4670:C:O2	31:V:15:ARG:NH1	2.49	0.46
5:5:4896:G:H2'	5:5:4897:G:C8	2.51	0.46
7:7:75:G:C8	28:S:53:LYS:HG3	2.50	0.46
12:C:22:VAL:HG22	12:C:258:ARG:HE	1.80	0.46
13:D:232:THR:OG1	13:D:234:ASP:OD1	2.29	0.46
20:K:86:C:OP1	61:z:85:ARG:NH2	2.49	0.46
20:K:1103:C:H2'	20:K:1104:G:H8	1.78	0.46
20:K:1255:G:OP1	20:K:1256:G:O2'	2.22	0.46
20:K:1462:U:O2	20:K:1464:C:N4	2.49	0.46
30:U:27:HIS:HE2	30:U:113:ARG:HA	1.80	0.46
44:i:9:VAL:HA	44:i:13:LYS:HE2	1.97	0.46
53:r:72:LYS:O	53:r:76:SER:OG	2.31	0.46
63:BB:142:LYS:HB3	82:TT:54:ASP:HB3	1.97	0.46
79:RF:178:LYS:HD2	79:RF:180:HIS:CE1	2.51	0.46
81:SS:5:LYS:HG3	81:SS:8:ARG:HE	1.80	0.46
3:2:28:C:H2'	3:2:29:A:H8	1.81	0.46
5:5:654:C:H2'	5:5:655:C:H6	1.81	0.46
5:5:739:C:O2'	5:5:741:G:OP2	2.30	0.46
5:5:2008:U:N3	5:5:2011:C:OP2	2.33	0.46
5:5:2844:A:O2'	5:5:4631:G:H4'	2.16	0.46
5:5:3871:A:H2'	5:5:3872:A:C8	2.51	0.46
5:5:4333:C:O2	29:T:8:ARG:NH1	2.48	0.46
5:5:4399:U:H2'	5:5:4400:G:O4'	2.16	0.46
7:7:59:G:H2'	7:7:60:G:C8	2.47	0.46
7:7:110:G:H2'	7:7:111:C:C6	2.51	0.46
18:I:28:ASP:OD1	18:I:32:ARG:NH1	2.49	0.46
20:K:98:C:OP2	20:K:426:A:O2'	2.25	0.46
20:K:107:A:H2'	20:K:108:G:H8	1.81	0.46
20:K:882:U:H2'	20:K:883:U:C6	2.50	0.46
20:K:1773:C:H2'	20:K:1774:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:s:39:GLN:O	54:s:42:GLN:HG3	2.16	0.46
59:x:151:ASP:HB3	59:x:154:ILE:HG12	1.97	0.46
66:EE:124:ASP:HA	66:EE:148:ALA:HB2	1.98	0.46
78:QQ:63:VAL:HG21	78:QQ:71:ILE:HD11	1.98	0.46
5:5:114:G:P	23:N:49:ARG:HH21	2.39	0.46
5:5:1490:G:H2'	5:5:1491:A:C8	2.51	0.46
5:5:4178:A:H2'	5:5:4179:G:C8	2.50	0.46
5:5:4186:A:H2'	5:5:4187:G:H8	1.81	0.46
8:8:6:C:C2	8:8:7:U:C5	3.04	0.46
8:8:45:C:P	47:l:15:LYS:HD3	2.56	0.46
20:K:319:C:H4'	20:K:319:C:OP1	2.16	0.46
20:K:416:U:O2'	20:K:652:U:O2'	2.28	0.46
20:K:629:A:O2'	20:K:631:U:OP1	2.33	0.46
20:K:1131:G:H2'	20:K:1132:C:C6	2.50	0.46
24:O:196:LEU:HD22	24:O:201:LEU:HD12	1.97	0.46
28:S:29:ARG:HB2	29:T:148:PRO:HB2	1.97	0.46
39:d:33:ILE:HD11	39:d:45:ALA:HA	1.98	0.46
58:w:131:ALA:HA	58:w:191:PRO:HG3	1.98	0.46
65:DD:136:ARG:HE	65:DD:139:LYS:HD2	1.81	0.46
79:RF:78:VAL:HG23	79:RF:95:VAL:HG11	1.97	0.46
86:AB:240:PHE:HB2	86:AB:271:VAL:HG12	1.98	0.46
3:2:63:U:H2'	3:2:64:G:C8	2.48	0.45
5:5:223:G:H4'	5:5:225:G:N7	2.30	0.45
5:5:981:C:N4	5:5:1275:G:O6	2.48	0.45
5:5:1346:C:H2'	5:5:1347:G:H8	1.80	0.45
5:5:1946:G:O2'	5:5:1948:G:OP2	2.34	0.45
5:5:4251:A:O2'	5:5:4252:C:H5''	2.16	0.45
5:5:4587:G:O2'	11:B:14:LEU:O	2.26	0.45
5:5:4601:U:C2	5:5:4610:A:N7	2.85	0.45
5:5:4925:U:H4'	5:5:4926:C:O5'	2.16	0.45
8:8:47:C:H1'	8:8:61:A:H2'	1.98	0.45
8:8:146:U:O2	33:X:51:THR:OG1	2.29	0.45
13:D:90:VAL:HB	13:D:229:ASN:HD21	1.81	0.45
16:G:247:VAL:HG23	16:G:249:ARG:HB2	1.98	0.45
20:K:112:U:O2'	20:K:114:G:O2'	2.26	0.45
22:M:92:ALA:O	22:M:95:ILE:HG13	2.16	0.45
59:x:185:GLY:O	59:x:224:ASN:ND2	2.49	0.45
83:UU:62:ARG:O	83:UU:96:TYR:OH	2.33	0.45
5:5:279:A:OP1	23:N:50:ARG:NE	2.50	0.45
5:5:480:C:O2'	5:5:481:G:OP1	2.31	0.45
5:5:1281:G:H5'	12:C:323:ARG:HB2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:3651:A:H2'	5:5:3652:A:C8	2.51	0.45
6:6:68:ASP:OD1	6:6:69:VAL:N	2.50	0.45
6:6:292:SER:HB2	6:6:297:THR:HB	1.98	0.45
8:8:78:G:H2'	8:8:79:G:C8	2.52	0.45
8:8:148:A:H2'	8:8:149:G:C8	2.52	0.45
17:H:162:GLN:HG2	17:H:179:ILE:O	2.17	0.45
20:K:1156:U:OP1	82:TT:71:LYS:NZ	2.42	0.45
20:K:1324:G:HO2'	20:K:1510:G:HO2'	1.61	0.45
20:K:1692:U:H2'	20:K:1693:G:C8	2.51	0.45
27:R:170:ARG:HA	27:R:173:ARG:HG2	1.96	0.45
44:i:48:CYS:SG	44:i:49:GLY:N	2.90	0.45
51:p:72:ASN:HD21	51:p:77:VAL:HG13	1.81	0.45
52:q:42:LYS:HZ2	52:q:48:ILE:HD11	1.80	0.45
52:q:77:ILE:HG21	52:q:133:PRO:HG2	1.97	0.45
56:u:82:ARG:HD2	56:u:103:MET:HE2	1.98	0.45
64:CC:107:THR:OG1	64:CC:108:PRO:HD3	2.16	0.45
79:RF:372:MET:HE1	79:RF:377:TRP:HB2	1.97	0.45
5:5:163:A:N6	5:5:272:U:H3	2.14	0.45
5:5:2032:U:H2'	5:5:2033:A:C8	2.51	0.45
5:5:2699:C:H2'	5:5:2700:G:C8	2.51	0.45
5:5:2743:A:H2'	5:5:2744:A:C8	2.51	0.45
5:5:4254:G:N2	5:5:4256:A:H5''	2.29	0.45
5:5:4270:C:C3'	5:5:4271:A:H5''	2.46	0.45
7:7:4:U:H2'	7:7:5:A:H8	1.81	0.45
18:I:91:LEU:HD12	18:I:135:ILE:HG23	1.97	0.45
20:K:101:U:H3'	20:K:408:A:H61	1.80	0.45
20:K:852:G:H3'	20:K:853:C:O2	2.17	0.45
20:K:912:C:H3'	20:K:913:A:H3'	1.97	0.45
20:K:1092:G:H2'	20:K:1093:A:H8	1.81	0.45
20:K:1331:C:O2	20:K:1489:A:O2'	2.21	0.45
20:K:1709:G:H1	20:K:1824:A:N6	2.15	0.45
20:K:1743:G:H21	20:K:1791:A:N6	2.06	0.45
24:O:58:LEU:HD11	24:O:145:VAL:HG13	1.98	0.45
29:T:51:GLY:HA3	29:T:92:ARG:HB2	1.98	0.45
35:Z:30:ASP:HB3	38:c:40:GLN:HE22	1.81	0.45
46:k:47:ILE:HG22	46:k:49:ASP:H	1.81	0.45
56:u:145:LYS:NZ	56:u:151:ARG:O	2.50	0.45
57:v:65:LYS:HG3	57:v:68:ARG:HH12	1.82	0.45
78:QQ:54:LEU:HB3	78:QQ:60:VAL:HB	1.98	0.45
5:5:1175:A:H2'	5:5:1176:C:C6	2.51	0.45
5:5:1186:U:H2'	5:5:1187:G:N3	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1828:C:H2'	5:5:1829:G:C8	2.52	0.45
5:5:2483:G:H2'	5:5:2484:A:H8	1.82	0.45
5:5:4238:G:H2'	5:5:4239:A:H8	1.81	0.45
6:6:195:LEU:HD11	6:6:209:SER:HB2	1.99	0.45
15:F:106:LYS:HD2	15:F:109:GLN:HE21	1.82	0.45
20:K:1093:A:H2'	20:K:1094:C:C6	2.51	0.45
26:Q:90:VAL:HB	36:a:80:THR:HG21	1.98	0.45
28:S:159:LEU:HD23	28:S:174:THR:HG22	1.99	0.45
30:U:27:HIS:N	30:U:28:PRO:HD2	2.31	0.45
35:Z:102:ARG:HH11	35:Z:103:ASP:HB2	1.80	0.45
52:q:49:ILE:HG21	52:q:162:PRO:HB2	1.99	0.45
54:s:146:LYS:HD3	54:s:155:LEU:HD23	1.99	0.45
70:II:5:ILE:HD13	76:OO:49:LEU:HB2	1.99	0.45
75:NN:18:LEU:HG	75:NN:20:ARG:HG2	1.98	0.45
79:RF:34:MET:HE1	79:RF:100:ILE:HG22	1.98	0.45
5:5:278:G:OP2	44:i:30:ARG:NH2	2.35	0.45
5:5:1514:U:H2'	5:5:1515:A:H8	1.82	0.45
5:5:1859:C:H42	5:5:1875:C:H42	1.64	0.45
5:5:2573:A:H62	5:5:2761:U:H3	1.64	0.45
5:5:2812:A:OP1	27:R:83:GLY:N	2.46	0.45
5:5:3900:G:OP1	5:5:3901:A:O2'	2.30	0.45
5:5:4227:U:O2'	5:5:4228:G:H5'	2.16	0.45
5:5:4254:G:C2	5:5:4256:A:C4	3.04	0.45
5:5:4256:A:H3'	5:5:4257:A:H2'	1.98	0.45
5:5:4948:C:H2'	5:5:4949:G:N2	2.31	0.45
10:A:20:VAL:HG12	10:A:23:ARG:HD2	1.97	0.45
19:J:22:LEU:HD11	19:J:82:ILE:HG21	1.99	0.45
19:J:82:ILE:HG22	19:J:130:PHE:HE2	1.81	0.45
20:K:111:A:O2'	66:EE:69:ARG:NH1	2.50	0.45
20:K:1232:U:H2'	20:K:1233:G:H8	1.81	0.45
20:K:1426:U:H2'	20:K:1427:C:C6	2.52	0.45
28:S:76:LYS:NZ	28:S:100:LEU:O	2.47	0.45
38:c:99:PRO:HG2	38:c:105:ILE:HD13	1.99	0.45
59:x:17:HIS:HB2	59:x:108:ARG:HA	1.98	0.45
63:BB:16:PRO:HB2	63:BB:20:GLU:HB2	1.97	0.45
64:CC:174:CYS:HB2	64:CC:190:LEU:HD21	1.99	0.45
65:DD:39:ASN:N	65:DD:42:GLU:OE2	2.35	0.45
79:RF:293:GLU:HA	79:RF:296:GLN:HE22	1.81	0.45
86:AB:223:GLN:NE2	86:AB:243:PRO:O	2.50	0.45
86:AB:389:ILE:HG23	86:AB:484:LEU:HD22	1.97	0.45
86:AB:462:LEU:HD11	86:AB:466:GLU:HB2	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:2:25:C:HO2'	5:5:3769:C:HO2'	1.61	0.45
3:2:74:C:OP2	5:5:4548:A:H2'	2.16	0.45
5:5:114:G:H22	5:5:158:A:N6	2.14	0.45
5:5:406:C:O2'	5:5:407:A:OP1	2.33	0.45
5:5:495:C:H2'	5:5:496:G:C8	2.51	0.45
5:5:1563:A:OP1	20:K:678:U:O2'	2.32	0.45
5:5:1655:C:O2	5:5:4390:A:O2'	2.35	0.45
5:5:1744:U:H2'	5:5:1745:G:H8	1.81	0.45
5:5:2588:C:H41	42:g:70:THR:HG21	1.81	0.45
5:5:2607:C:H2'	5:5:2608:G:C8	2.51	0.45
5:5:2845:A:N6	5:5:3843:C:H42	2.09	0.45
5:5:3598:C:H2'	5:5:3599:A:C8	2.52	0.45
5:5:3886:G:OP1	24:O:85:ARG:NH2	2.47	0.45
5:5:4319:C:H2'	5:5:4320:G:H8	1.82	0.45
5:5:4434:C:H2'	5:5:4435:U:C6	2.51	0.45
5:5:4933:C:OP2	14:E:265:LYS:NZ	2.48	0.45
9:9:52:PHE:HB3	68:GG:80:PHE:HB3	1.99	0.45
12:C:168:VAL:O	12:C:172:LYS:HG2	2.16	0.45
20:K:841:G:H2'	20:K:842:C:H6	1.82	0.45
20:K:1772:C:H2'	20:K:1773:C:C6	2.51	0.45
38:c:43:ALA:HA	38:c:97:ILE:HG22	1.98	0.45
58:w:40:ARG:HB2	68:GG:108:PRO:HG3	1.98	0.45
72:KK:27:ASP:OD1	72:KK:30:THR:OG1	2.31	0.45
86:AB:187:ILE:HA	86:AB:190:ARG:HG2	1.98	0.45
5:5:1088:C:H2'	5:5:1089:G:H8	1.81	0.45
5:5:4319:C:H2'	5:5:4320:G:C8	2.52	0.45
5:5:4349:G:H4'	5:5:4350:C:OP2	2.16	0.45
5:5:4637:G:H2'	5:5:4638:U:C6	2.51	0.45
10:A:179:ILE:HG23	10:A:184:ARG:HB2	1.98	0.45
11:B:89:ILE:HG21	11:B:197:ALA:HB1	1.99	0.45
12:C:330:PRO:HD3	15:F:46:ARG:HH21	1.82	0.45
20:K:30:C:O2'	20:K:596:U:OP1	2.33	0.45
20:K:128:U:H5'	20:K:215:G:H5'	1.99	0.45
20:K:674:C:H2'	20:K:675:U:C6	2.52	0.45
20:K:1360:U:H3'	20:K:1361:G:C8	2.52	0.45
20:K:1546:G:H21	20:K:1670:C:H1'	1.82	0.45
20:K:1677:U:H2'	20:K:1678:A:C8	2.51	0.45
20:K:1690:U:H2'	20:K:1691:U:C6	2.52	0.45
27:R:76:MET:HE2	27:R:76:MET:HB3	1.85	0.45
28:S:21:LYS:O	28:S:23:PRO:HD3	2.16	0.45
52:q:149:ASN:N	52:q:152:SER:OG	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:KK:36:GLU:OE1	72:KK:47:ARG:NH1	2.50	0.45
74:MM:31:CYS:HA	74:MM:44:VAL:HA	1.99	0.45
5:5:223:G:H4'	5:5:225:G:C8	2.52	0.45
5:5:1563:A:H4'	78:QQ:127:ARG:HH22	1.82	0.45
5:5:2019:C:H2'	5:5:2020:U:C6	2.50	0.45
5:5:4094:G:H2'	5:5:4095:G:C8	2.51	0.45
5:5:4642:U:H2'	5:5:4643:G:C8	2.51	0.45
8:8:8:U:H2'	8:8:9:A:H8	1.82	0.45
21:L:77:SER:OG	21:L:79:GLU:OE1	2.24	0.45
27:R:133:LYS:N	27:R:137:ILE:HD11	2.30	0.45
36:a:117:LEU:HD12	36:a:118:PRO:HD2	1.98	0.45
52:q:77:ILE:HB	52:q:124:VAL:HG12	1.99	0.45
59:x:134:LYS:HG3	59:x:136:ILE:HG12	1.99	0.45
60:y:167:LYS:NZ	76:OO:75:GLU:OE1	2.38	0.45
71:JJ:67:THR:OG1	71:JJ:70:LYS:O	2.34	0.45
86:AB:206:LEU:HD21	86:AB:224:ARG:HB3	1.98	0.45
5:5:270:U:H2'	5:5:271:C:C6	2.52	0.45
5:5:423:G:H21	25:P:118:GLN:HE22	1.65	0.45
5:5:461:G:H2'	5:5:462:G:C8	2.51	0.45
5:5:2414:G:H2'	5:5:2415:U:C6	2.52	0.45
5:5:4153:C:H2'	5:5:4154:G:C8	2.52	0.45
5:5:4155:C:H2'	5:5:4156:G:O4'	2.17	0.45
5:5:4188:U:H2'	5:5:4189:U:H6	1.82	0.45
7:7:11:A:N1	7:7:66:G:O2'	2.43	0.45
11:B:93:VAL:HG23	11:B:102:PHE:HB2	1.98	0.45
12:C:24:LEU:HD23	12:C:29:LYS:HE2	1.99	0.45
12:C:339:THR:HG22	12:C:342:ARG:HH12	1.82	0.45
20:K:12:U:H2'	20:K:13:C:H6	1.82	0.45
20:K:17:C:H2'	20:K:18:C:C6	2.52	0.45
20:K:492:C:N4	20:K:507:G:OP2	2.34	0.45
20:K:929:G:H2'	20:K:930:C:O4'	2.17	0.45
20:K:1443:C:H1'	83:UU:71:ARG:HH21	1.82	0.45
28:S:16:CYS:O	28:S:25:PRO:HG3	2.17	0.45
57:v:192:LEU:HB3	57:v:227:ARG:HG2	1.99	0.45
5:5:114:G:H22	5:5:158:A:H61	1.65	0.45
5:5:326:C:H2'	5:5:327:U:C6	2.52	0.45
5:5:704:C:H42	5:5:707:C:N4	2.15	0.45
5:5:1577:G:H3'	5:5:1577:G:N3	2.32	0.45
5:5:1786:A:O2'	5:5:1788:A:OP2	2.33	0.45
5:5:1940:G:H1	5:5:4434:C:H5''	1.82	0.45
5:5:2297:G:H4'	12:C:242:PRO:HB2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:4237:C:O3'	5:5:4326:G:N2	2.50	0.45
5:5:4363:A:H5''	50:o:36:GLN:HB2	1.97	0.45
5:5:4458:C:H2'	5:5:4459:U:C6	2.51	0.45
8:8:14:U:C4	8:8:15:G:C6	3.05	0.45
20:K:532:C:O2'	20:K:533:A:OP1	2.31	0.45
20:K:544:G:H2'	20:K:545:A:H8	1.82	0.45
20:K:1010:G:H2'	20:K:1011:A:C8	2.52	0.45
20:K:1415:C:O2'	77:PP:132:ASP:OD2	2.28	0.45
20:K:1538:C:H2'	20:K:1539:U:C6	2.52	0.45
20:K:1620:A:C5	20:K:1624:U:C2	3.05	0.45
20:K:1656:G:H2'	20:K:1657:G:C8	2.52	0.45
24:O:110:PRO:N	24:O:111:PRO:HD2	2.31	0.45
28:S:19:THR:HG23	28:S:22:SER:N	2.27	0.45
34:Y:52:ASP:O	34:Y:110:LYS:HB2	2.17	0.45
35:Z:38:TYR:CE2	35:Z:40:HIS:HB3	2.52	0.45
47:l:24:PRO:HG2	47:l:27:ILE:HB	1.98	0.45
53:r:94:ARG:HG3	53:r:107:ARG:HD2	1.99	0.45
59:x:64:ILE:HD11	75:NN:18:LEU:HD13	1.98	0.45
60:y:140:ASP:OD1	60:y:140:ASP:N	2.37	0.45
86:AB:447:LYS:HB2	86:AB:448:PRO:HD3	1.99	0.45
5:5:92:C:C2	36:a:55:LYS:HD3	2.51	0.44
5:5:153:G:H2'	5:5:154:G:C8	2.48	0.44
5:5:1435:G:O2'	5:5:2105:A:N1	2.40	0.44
5:5:1494:U:H2'	5:5:1495:G:H8	1.82	0.44
5:5:1789:C:OP1	18:I:21:ARG:NH2	2.50	0.44
5:5:2386:U:H2'	5:5:2387:G:C8	2.48	0.44
5:5:4510:A:N1	5:5:4592:C:H4'	2.32	0.44
7:7:29:C:H1'	7:7:51:G:H1	1.82	0.44
7:7:83:A:O2'	7:7:85:G:OP1	2.32	0.44
11:B:73:VAL:O	31:V:89:ARG:NH2	2.48	0.44
11:B:77:THR:HG21	11:B:337:VAL:HG22	1.99	0.44
16:G:217:ILE:O	16:G:221:VAL:HG23	2.17	0.44
20:K:1854:U:H2'	20:K:1855:G:H8	1.82	0.44
21:L:42:ARG:HG3	21:L:45:ARG:HH12	1.82	0.44
24:O:46:ASN:HD21	24:O:49:ARG:HG3	1.82	0.44
40:e:126:ASN:HB3	40:e:129:LEU:HD11	1.99	0.44
48:m:83:ASN:HD21	48:m:91:HIS:HB3	1.82	0.44
58:w:214:LYS:H	58:w:214:LYS:HD3	1.82	0.44
86:AB:114:ILE:HG22	86:AB:297:GLY:HA2	1.99	0.44
5:5:40:G:N2	5:5:4380:A:H62	2.16	0.44
5:5:985:C:N4	5:5:1070:G:O6	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1074:G:H2'	5:5:1075:G:C8	2.52	0.44
5:5:3681:G:H2'	10:A:128:ARG:HG2	1.98	0.44
5:5:3787:G:H1'	5:5:3789:C:N4	2.32	0.44
5:5:3855:C:H2'	5:5:3856:A:H8	1.82	0.44
5:5:3870:C:H2'	5:5:3871:A:C8	2.51	0.44
5:5:4078:C:OP1	23:N:31:ARG:NH1	2.51	0.44
5:5:4252:C:N4	19:J:25:CYS:SG	2.86	0.44
5:5:4768:G:N1	5:5:4867:G:O6	2.50	0.44
5:5:4944:C:OP2	41:f:106:TYR:OH	2.34	0.44
6:6:132:TRP:CD1	6:6:138:CYS:HA	2.53	0.44
7:7:42:A:O4'	19:J:75:ARG:NH1	2.50	0.44
14:E:116:PRO:HG2	14:E:119:TYR:CZ	2.53	0.44
20:K:110:U:O2'	20:K:111:A:OP1	2.32	0.44
20:K:444:G:N2	20:K:447:A:OP2	2.50	0.44
20:K:659:G:O2'	20:K:662:G:O2'	2.34	0.44
20:K:1137:U:HO2'	20:K:1138:C:P	2.37	0.44
20:K:1213:C:H2'	20:K:1214:A:C8	2.52	0.44
20:K:1214:A:O2'	20:K:1216:C:OP1	2.32	0.44
22:M:70:GLN:OE1	22:M:70:GLN:N	2.50	0.44
30:U:23:LEU:HD11	30:U:70:ILE:HD12	1.99	0.44
38:c:18:LEU:O	38:c:22:MET:HG2	2.18	0.44
77:PP:69:GLY:HA2	77:PP:120:GLY:HA3	1.99	0.44
86:AB:76:PRO:HG2	86:AB:79:LEU:HD13	1.98	0.44
5:5:1968:G:OP1	54:s:112:ARG:NH1	2.51	0.44
5:5:3835:C:H2'	5:5:3836:A:C8	2.52	0.44
5:5:4327:C:OP1	29:T:70:HIS:NE2	2.50	0.44
5:5:4629:U:C2	5:5:4630:G:C8	3.05	0.44
5:5:4760:G:H2'	5:5:4761:G:O4'	2.18	0.44
5:5:5004:C:H2'	5:5:5005:G:O4'	2.17	0.44
5:5:5019:A:H2'	5:5:5020:G:C8	2.53	0.44
11:B:36:ASP:OD1	11:B:36:ASP:N	2.50	0.44
20:K:72:C:C5	61:z:170:ARG:HG2	2.52	0.44
20:K:1356:G:O2'	20:K:1357:A:O4'	2.29	0.44
20:K:1528:G:H2'	20:K:1529:C:C6	2.52	0.44
20:K:1627:C:C2	20:K:1628:C:C5	3.05	0.44
57:v:272:HIS:HA	57:v:275:LYS:HG2	1.98	0.44
58:w:20:GLU:HG2	81:SS:64:TRP:CE3	2.52	0.44
70:II:18:THR:HG21	70:II:33:ILE:HA	1.99	0.44
70:II:88:LYS:HG2	85:WW:18:ARG:HD3	1.99	0.44
5:5:654:C:H2'	5:5:655:C:C6	2.53	0.44
5:5:943:A:N7	15:F:150:ASN:ND2	2.65	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1346:C:H2'	5:5:1347:G:C8	2.53	0.44
5:5:1942:A:N3	5:5:4432:C:O2'	2.41	0.44
5:5:4323:A:C6	13:D:153:THR:HG21	2.53	0.44
5:5:4392:G:N2	5:5:4395:U:O2	2.49	0.44
15:F:191:HIS:O	15:F:195:THR:OG1	2.30	0.44
16:G:130:PRO:HG3	23:N:18:VAL:HA	2.00	0.44
20:K:1859:A:P	73:LL:10:ARG:HH12	2.40	0.44
34:Y:31:SER:HA	34:Y:48:PRO:HA	1.98	0.44
52:q:21:ALA:HB1	52:q:170:SER:HA	1.99	0.44
52:q:187:GLY:HA2	69:HH:45:ARG:CZ	2.48	0.44
61:z:138:ALA:HA	61:z:141:ILE:HB	2.00	0.44
77:PP:111:LYS:HE2	77:PP:111:LYS:HB3	1.84	0.44
5:5:20:U:O2'	8:8:103:A:O2'	2.29	0.44
5:5:197:A:H2'	5:5:198:A:C8	2.53	0.44
5:5:272:U:H2'	5:5:273:U:C6	2.52	0.44
5:5:423:G:H2'	5:5:424:U:C6	2.52	0.44
5:5:701:G:H2'	5:5:702:U:C6	2.52	0.44
5:5:975:C:H41	5:5:1281:G:H21	1.66	0.44
5:5:1927:U:OP1	5:5:1949:U:O2'	2.23	0.44
5:5:2573:A:N7	5:5:2761:U:O4	2.50	0.44
5:5:4164:C:OP1	16:G:115:ARG:NH1	2.51	0.44
5:5:4578:G:H2'	5:5:4579:U:C6	2.53	0.44
5:5:4689:U:H2'	5:5:4690:G:O4'	2.18	0.44
10:A:40:TYR:HA	10:A:91:GLY:HA3	2.00	0.44
14:E:105:GLY:HA3	14:E:108:ARG:HH12	1.83	0.44
14:E:126:ARG:HH21	14:E:129:LEU:HD21	1.82	0.44
20:K:367:U:H4'	20:K:371:A:C8	2.53	0.44
20:K:1104:G:N1	20:K:1129:G:O6	2.51	0.44
20:K:1352:G:H1	20:K:1359:U:H3	1.64	0.44
35:Z:50:PRO:HD3	35:Z:68:ILE:HG12	1.98	0.44
58:w:7:LYS:HE2	58:w:7:LYS:HB2	1.89	0.44
59:x:141:THR:OG1	59:x:143:ASP:OD1	2.29	0.44
63:BB:145:ARG:NE	82:TT:51:GLU:OE1	2.38	0.44
67:FF:68:LEU:HD23	67:FF:68:LEU:H	1.83	0.44
70:II:114:LEU:HA	70:II:117:ILE:HG22	2.00	0.44
79:RF:322:VAL:HG23	79:RF:326:LEU:HD22	2.00	0.44
82:TT:46:TYR:O	82:TT:66:THR:OG1	2.36	0.44
86:AB:372:SER:HB2	86:AB:512:LYS:HD3	2.00	0.44
5:5:1214:C:H5'	37:b:91:ARG:HH21	1.83	0.44
5:5:1298:C:N4	5:5:1299:G:O6	2.50	0.44
5:5:1823:G:O2'	13:D:44:TYR:O	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:2277:C:H2'	5:5:2278:G:C8	2.52	0.44
5:5:2722:G:H2'	5:5:2723:U:C6	2.53	0.44
5:5:4070:U:H2'	5:5:4071:U:C6	2.53	0.44
5:5:4192:A:H2'	5:5:4193:C:C6	2.53	0.44
5:5:4342:C:O3'	50:o:37:GLY:HA3	2.17	0.44
5:5:4503:A:H2'	5:5:4504:C:C6	2.52	0.44
12:C:302:LEU:HD22	26:Q:38:ARG:HB3	1.99	0.44
13:D:37:VAL:HG12	13:D:38:ILE:HD13	1.98	0.44
20:K:729:C:H2'	20:K:730:C:C6	2.53	0.44
20:K:734:C:H2'	20:K:735:C:C6	2.53	0.44
20:K:1633:A:H2'	20:K:1634:A:C8	2.53	0.44
22:M:26:ALA:HB2	22:M:77:TRP:HZ3	1.83	0.44
24:O:8:VAL:HG12	24:O:117:ARG:HG3	1.98	0.44
28:S:140:PRO:O	28:S:144:GLN:N	2.50	0.44
34:Y:71:VAL:HG21	34:Y:96:HIS:CE1	2.53	0.44
36:a:71:PRO:HG2	36:a:108:TYR:HA	2.00	0.44
43:h:70:ARG:HB3	43:h:83:LEU:HD22	1.98	0.44
71:JJ:15:GLU:O	71:JJ:23:ARG:NE	2.46	0.44
82:TT:50:PHE:HB3	82:TT:63:VAL:HG13	1.99	0.44
86:AB:169:LYS:HB3	86:AB:240:PHE:HA	2.00	0.44
86:AB:365:VAL:HG23	86:AB:545:ALA:O	2.18	0.44
86:AB:559:LEU:HD22	86:AB:564:ILE:HB	1.98	0.44
2:1:121:ARG:HD2	5:5:3908:A:C6	2.53	0.44
5:5:1290:G:O3'	14:E:222:LYS:NZ	2.47	0.44
5:5:1563:A:HO2'	5:5:1564:A:H8	1.66	0.44
5:5:1818:G:O2'	5:5:1819:G:OP1	2.31	0.44
5:5:3625:G:O2'	5:5:3626:G:OP1	2.33	0.44
5:5:4258:C:H1'	19:J:25:CYS:SG	2.57	0.44
5:5:4290:U:OP1	50:o:9:ARG:HB3	2.16	0.44
5:5:4524:G:N3	11:B:252:ALA:HB1	2.33	0.44
5:5:4578:G:H5''	11:B:120:LYS:HD2	1.98	0.44
5:5:4759:C:H2'	5:5:4760:G:O4'	2.18	0.44
5:5:4761:G:H2'	5:5:4762:A:C8	2.43	0.44
16:G:297:PRO:HA	16:G:300:VAL:HG12	1.98	0.44
18:I:169:LYS:HG3	18:I:177:ASN:HB2	2.00	0.44
20:K:430:C:H2'	20:K:431:G:C8	2.53	0.44
20:K:652:U:H2'	20:K:653:A:C8	2.52	0.44
20:K:806:U:H2'	20:K:807:G:C8	2.52	0.44
20:K:1347:U:H2'	20:K:1348:G:N3	2.33	0.44
20:K:1520:G:H21	85:WW:126:VAL:HG11	1.82	0.44
20:K:1521:C:OP2	70:II:136:THR:OG1	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:v:263:LYS:NZ	57:v:267:GLN:OE1	2.40	0.44
71:JJ:34:ASP:HB3	71:JJ:43:ILE:HD11	1.99	0.44
79:RF:283:GLU:HB3	79:RF:392:VAL:HG23	2.00	0.44
79:RF:375:LEU:HA	79:RF:378:PHE:CE2	2.53	0.44
82:TT:71:LYS:HB2	82:TT:71:LYS:HE3	1.82	0.44
85:WW:82:ASP:OD1	85:WW:82:ASP:N	2.49	0.44
86:AB:129:PRO:HD2	86:AB:143:ILE:HD13	2.00	0.44
2:1:125:ARG:CZ	5:5:4398:C:C6	3.01	0.44
5:5:347:A:H2'	5:5:348:G:C8	2.53	0.44
5:5:705:G:H2'	5:5:706:C:H6	1.81	0.44
5:5:1907:A:H4'	15:F:222:LYS:HE3	2.00	0.44
5:5:2717:G:H2'	5:5:2718:U:O4'	2.18	0.44
5:5:3727:A:H2'	5:5:3728:A:C8	2.52	0.44
5:5:3905:A:O3'	12:C:70:GLY:HA2	2.18	0.44
5:5:3927:U:H2'	5:5:3928:A:C8	2.52	0.44
5:5:4322:G:N2	5:5:4325:A:OP2	2.43	0.44
5:5:4955:A:OP2	5:5:4955:A:H8	2.00	0.44
8:8:53:G:H4'	47:l:40:LYS:HD2	2.00	0.44
8:8:66:A:H2'	8:8:67:U:C6	2.52	0.44
8:8:141:C:H5''	23:N:60:VAL:HG11	2.00	0.44
15:F:225:HIS:HB3	15:F:228:GLU:HG2	1.99	0.44
20:K:85:A:H2'	20:K:86:C:C6	2.53	0.44
20:K:600:G:H2'	20:K:601:G:C8	2.53	0.44
20:K:806:U:H2'	20:K:807:G:H8	1.83	0.44
20:K:1280:G:H2'	20:K:1281:G:H8	1.82	0.44
20:K:1520:G:O2'	20:K:1521:C:OP1	2.30	0.44
28:S:14:GLY:HA2	28:S:62:VAL:H	1.83	0.44
28:S:140:PRO:HA	28:S:143:LYS:HB3	1.99	0.44
65:DD:69:ARG:HH11	65:DD:73:GLU:HG3	1.82	0.44
70:II:88:LYS:HG2	85:WW:18:ARG:HH11	1.83	0.44
75:NN:51:THR:HG22	75:NN:53:ASP:H	1.83	0.44
75:NN:110:ARG:O	75:NN:114:MET:HG2	2.18	0.44
5:5:693:C:H2'	5:5:694:C:H6	1.83	0.44
5:5:1211:G:O2'	5:5:1212:G:OP1	2.29	0.44
5:5:1307:A:H2'	5:5:1308:C:C6	2.53	0.44
5:5:1345:A:H2'	5:5:1346:C:C6	2.53	0.44
5:5:1960:A:H4'	54:s:60:MET:HB3	1.99	0.44
5:5:2273:G:O2'	12:C:310:HIS:O	2.32	0.44
5:5:2811:G:N2	5:5:2813:A:H3'	2.33	0.44
5:5:2867:C:N4	5:5:2884:G:O6	2.51	0.44
5:5:4651:A:H2'	5:5:4652:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:5019:A:H2'	5:5:5020:G:H8	1.83	0.44
6:6:52:TYR:CZ	6:6:309:VAL:HG21	2.53	0.44
11:B:92:TYR:HB2	11:B:159:VAL:HB	1.99	0.44
11:B:394:LYS:HE3	11:B:394:LYS:HB2	1.87	0.44
12:C:39:PHE:O	12:C:43:ASN:ND2	2.37	0.44
20:K:72:C:H5	61:z:170:ARG:HG2	1.83	0.44
20:K:160:U:O2'	20:K:162:C:O5'	2.36	0.44
20:K:877:C:H2'	20:K:878:G:C8	2.52	0.44
20:K:1066:U:OP2	74:MM:143:LYS:NZ	2.49	0.44
20:K:1093:A:H2'	20:K:1094:C:H6	1.81	0.44
20:K:1484:A:H4'	58:w:159:HIS:HD2	1.82	0.44
30:U:101:ARG:N	30:U:113:ARG:O	2.46	0.44
55:t:56:LEU:HD12	55:t:57:ARG:HG3	1.99	0.44
64:CC:10:LYS:O	64:CC:18:ARG:HG3	2.18	0.44
66:EE:17:PHE:CZ	66:EE:19:ASN:HB2	2.53	0.44
66:EE:133:PRO:HA	66:EE:139:ARG:HG3	2.00	0.44
67:FF:19:GLY:O	67:FF:29:GLN:N	2.45	0.44
70:II:117:ILE:HG12	85:WW:119:PHE:HE2	1.82	0.44
81:SS:43:LEU:HD23	81:SS:43:LEU:H	1.82	0.44
83:UU:16:LYS:HG3	83:UU:17:LYS:H	1.82	0.44
5:5:27:C:O2'	5:5:60:A:N3	2.50	0.43
5:5:269:G:H2'	5:5:270:U:H6	1.81	0.43
5:5:397:G:H22	25:P:90:PHE:HE2	1.65	0.43
5:5:922:C:H3'	5:5:923:C:H5''	1.99	0.43
5:5:989:U:H3	5:5:1065:G:H1	1.65	0.43
5:5:1686:C:OP1	37:b:19:ASN:ND2	2.48	0.43
5:5:2374:A:H2'	5:5:2375:A:H8	1.83	0.43
5:5:2414:G:H2'	5:5:2415:U:H6	1.83	0.43
5:5:2471:G:N7	5:5:2473:A:N6	2.66	0.43
5:5:4080:C:H2'	5:5:4081:G:H8	1.83	0.43
5:5:4626:A:OP2	11:B:224:LYS:NZ	2.35	0.43
5:5:4744:A:N6	5:5:4957:C:H42	2.16	0.43
6:6:41:ILE:HD11	6:6:55:PRO:HB3	1.99	0.43
6:6:48:ASP:OD1	6:6:48:ASP:N	2.51	0.43
7:7:27:G:H5''	13:D:57:ASN:ND2	2.31	0.43
18:I:42:LYS:N	18:I:45:GLU:OE2	2.49	0.43
20:K:1267:C:H2'	20:K:1268:C:C6	2.53	0.43
28:S:163:HIS:HD2	28:S:166:ARG:HH21	1.66	0.43
40:e:11:LYS:NZ	40:e:12:ILE:O	2.49	0.43
58:w:168:VAL:HA	58:w:189:MET:HA	2.00	0.43
5:5:731:G:H2'	5:5:732:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1361:G:H2'	5:5:1362:G:H8	1.84	0.43
5:5:1989:G:H2'	5:5:1990:A:H8	1.82	0.43
5:5:3607:U:H2'	5:5:3608:A:C8	2.53	0.43
5:5:3722:G:H2'	5:5:3723:A:H8	1.83	0.43
12:C:67:TRP:CE3	12:C:73:VAL:HG11	2.53	0.43
20:K:150:A:H62	20:K:168:C:N4	2.17	0.43
20:K:520:A:O2'	20:K:825:A:N3	2.42	0.43
20:K:948:C:H2'	20:K:949:G:H8	1.83	0.43
20:K:1244:U:H2'	20:K:1245:G:C8	2.53	0.43
20:K:1558:C:H2'	20:K:1559:C:C6	2.53	0.43
20:K:1699:A:H5''	20:K:1699:A:H8	1.81	0.43
20:K:1839:U:H2'	20:K:1840:U:C6	2.53	0.43
20:K:1845:A:H2'	20:K:1846:G:C8	2.53	0.43
21:L:80:GLU:OE2	21:L:113:ASN:ND2	2.50	0.43
48:m:96:ARG:NH2	48:m:99:LYS:HG2	2.33	0.43
57:v:82:TYR:CE2	57:v:164:PRO:HD3	2.53	0.43
66:EE:73:LEU:HB3	66:EE:90:ARG:NH1	2.33	0.43
74:MM:85:CYS:O	74:MM:90:ILE:HG22	2.18	0.43
5:5:382:G:N1	5:5:385:A:OP2	2.50	0.43
5:5:1727:U:H2'	5:5:1728:U:C6	2.53	0.43
5:5:1795:A:N3	7:7:79:U:O2'	2.50	0.43
5:5:1982:G:O2'	5:5:1983:A:H5'	2.17	0.43
5:5:2089:G:H4'	5:5:2090:U:O5'	2.17	0.43
5:5:2415:U:H2'	5:5:2416:G:C8	2.53	0.43
5:5:4750:G:H2'	5:5:4751:G:C8	2.52	0.43
11:B:48:GLY:HA3	11:B:81:THR:HG22	2.00	0.43
11:B:57:VAL:HB	11:B:367:PHE:HB3	1.99	0.43
11:B:60:VAL:HG12	11:B:62:ARG:HG2	1.99	0.43
20:K:38:A:H4'	65:DD:6:SER:HA	2.00	0.43
20:K:792:C:H2'	20:K:793:G:H8	1.83	0.43
20:K:910:G:H2'	20:K:911:C:O4'	2.17	0.43
20:K:1716:C:H2'	20:K:1717:C:C6	2.53	0.43
23:N:120:TRP:HE1	23:N:123:GLU:HB3	1.83	0.43
31:V:85:ARG:NH1	31:V:99:GLU:O	2.50	0.43
31:V:115:SER:O	31:V:135:ASN:ND2	2.47	0.43
34:Y:55:VAL:N	34:Y:68:GLY:O	2.51	0.43
55:t:86:LYS:HE3	55:t:86:LYS:HB3	1.88	0.43
59:x:104:ASP:HB3	59:x:110:ALA:HB2	2.00	0.43
78:QQ:23:PRO:HG2	78:QQ:26:LEU:HB2	1.99	0.43
81:SS:27:VAL:HG13	81:SS:43:LEU:HB3	2.00	0.43
83:UU:34:VAL:HA	83:UU:70:VAL:HG22	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:65:A:N6	5:5:75:G:H1'	2.33	0.43
5:5:440:U:H2'	5:5:441:G:C8	2.53	0.43
5:5:1519:C:H2'	5:5:1520:C:H6	1.82	0.43
5:5:1774:C:H2'	5:5:1775:A:C8	2.53	0.43
5:5:2335:C:H2'	5:5:2336:G:H8	1.83	0.43
5:5:2521:G:H5'	5:5:2640:G:H1'	2.00	0.43
20:K:309:G:OP1	64:CC:55:TYR:OH	2.30	0.43
20:K:600:G:H2'	20:K:601:G:H8	1.82	0.43
20:K:1616:U:H2'	20:K:1617:G:C8	2.53	0.43
20:K:1643:U:H2'	20:K:1644:C:C6	2.53	0.43
31:V:97:TYR:HE1	32:W:19:ARG:HG2	1.83	0.43
37:b:36:ASP:OD1	37:b:36:ASP:N	2.50	0.43
38:c:26:LYS:NZ	38:c:97:ILE:HD11	2.33	0.43
45:j:20:ARG:HD2	45:j:39:TYR:CZ	2.53	0.43
48:m:68:MET:HG2	48:m:79:PRO:HA	2.00	0.43
54:s:10:LYS:HE3	54:s:10:LYS:HB3	1.83	0.43
56:u:107:ARG:NH1	74:MM:135:ILE:HD13	2.33	0.43
58:w:68:GLU:O	58:w:72:VAL:HG23	2.18	0.43
65:DD:121:LYS:H	65:DD:125:HIS:CD2	2.36	0.43
70:II:120:HIS:HD2	85:WW:121:ILE:HD13	1.83	0.43
85:WW:81:ARG:NH2	85:WW:117:GLY:O	2.52	0.43
5:5:32:G:H21	5:5:50:C:H5	1.66	0.43
5:5:323:C:H2'	5:5:324:A:C8	2.52	0.43
5:5:710:G:H4'	14:E:193:HIS:CE1	2.54	0.43
5:5:1327:C:N4	5:5:1328:G:O6	2.52	0.43
5:5:1958:A:H5''	5:5:1962:A:H4'	1.99	0.43
5:5:4862:G:H2'	5:5:4863:G:C8	2.53	0.43
5:5:5012:G:O2'	5:5:5014:A:OP1	2.32	0.43
20:K:434:G:H2'	20:K:435:A:C8	2.53	0.43
20:K:962:A:N1	20:K:1055:A:O2'	2.50	0.43
21:L:198:ARG:O	21:L:201:GLU:HG3	2.18	0.43
23:N:178:HIS:HA	23:N:181:HIS:NE2	2.33	0.43
30:U:42:PHE:CE1	30:U:46:ARG:HD2	2.54	0.43
52:q:38:ILE:HD12	52:q:47:TYR:HB3	2.00	0.43
57:v:253:PRO:HA	57:v:256:TRP:CE2	2.54	0.43
64:CC:80:ASP:OD1	64:CC:81:VAL:N	2.51	0.43
65:DD:160:SER:O	65:DD:163:SER:OG	2.29	0.43
79:RF:331:TYR:CD1	79:RF:346:LEU:HD12	2.52	0.43
82:TT:87:GLU:HA	82:TT:90:GLN:HG2	2.00	0.43
83:UU:58:LEU:HB3	83:UU:62:ARG:HG2	2.01	0.43
5:5:669:C:O2'	5:5:670:G:H8	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1669:A:H4'	5:5:1685:G:N2	2.34	0.43
5:5:1806:G:H2'	5:5:1807:C:C6	2.54	0.43
5:5:2607:C:H2'	5:5:2608:G:H8	1.83	0.43
5:5:4460:U:H2'	5:5:4461:C:C6	2.54	0.43
5:5:4680:G:H2'	5:5:4681:A:C8	2.53	0.43
5:5:4944:C:H1'	41:f:69:VAL:HG11	2.01	0.43
6:6:24:THR:HG22	6:6:27:PHE:H	1.84	0.43
8:8:149:G:O2'	16:G:117:GLN:NE2	2.52	0.43
18:I:66:GLU:OE2	18:I:69:ARG:NH2	2.48	0.43
20:K:345:U:H2'	20:K:346:C:C6	2.53	0.43
20:K:464:A:H61	86:AB:579:LYS:HE3	1.84	0.43
20:K:903:A:H2'	20:K:904:A:C8	2.54	0.43
20:K:928:G:H2'	20:K:929:G:H8	1.83	0.43
20:K:1232:U:H2'	20:K:1233:G:C8	2.54	0.43
20:K:1386:A:H2'	20:K:1387:G:O4'	2.19	0.43
20:K:1564:C:OP1	77:PP:105:GLN:NE2	2.49	0.43
21:L:169:ILE:HG12	36:a:123:ILE:HD11	1.99	0.43
28:S:157:ARG:HH22	28:S:160:ARG:HH12	1.66	0.43
43:h:43:LYS:O	43:h:47:ILE:HG13	2.19	0.43
49:n:12:ARG:HD3	49:n:15:ARG:HH21	1.82	0.43
50:o:68:LEU:HD11	50:o:91:PHE:HZ	1.84	0.43
55:t:117:ARG:HH11	55:t:133:LEU:HD11	1.84	0.43
64:CC:105:ASP:OD1	64:CC:105:ASP:N	2.48	0.43
68:GG:28:ASN:OD1	68:GG:29:VAL:N	2.51	0.43
5:5:99:A:H4'	23:N:181:HIS:CD2	2.53	0.43
5:5:160:G:H8	44:i:26:HIS:CD2	2.37	0.43
5:5:1633:G:H5'	5:5:1634:A:OP1	2.19	0.43
5:5:2454:U:C2	5:5:2455:G:C8	3.06	0.43
5:5:2637:U:H2'	5:5:2719:C:H5	1.83	0.43
5:5:3800:A:O2'	5:5:4505:C:O2	2.35	0.43
5:5:3916:G:H2'	5:5:3917:A:H8	1.83	0.43
5:5:3932:U:H2'	5:5:3933:G:H8	1.84	0.43
5:5:4518:A:OP2	11:B:257:TRP:HB3	2.19	0.43
5:5:4532:U:O2'	5:5:4533:A:H5'	2.19	0.43
5:5:4592:C:H2'	5:5:4593:C:C6	2.53	0.43
7:7:3:C:H2'	7:7:4:U:C6	2.54	0.43
7:7:58:A:H2'	7:7:59:G:H8	1.84	0.43
20:K:110:U:H2'	20:K:111:A:C8	2.53	0.43
20:K:360:A:H4'	20:K:361:U:H3'	2.01	0.43
20:K:1801:A:H2'	20:K:1802:C:C6	2.54	0.43
26:Q:178:ARG:N	36:a:51:GLY:HA2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:w:103:GLU:HA	58:w:106:ARG:HG2	2.00	0.43
60:y:95:HIS:O	60:y:99:ILE:HG12	2.18	0.43
69:HH:16:LYS:HA	69:HH:23:ILE:HA	1.99	0.43
70:II:132:ARG:HB2	70:II:134:GLN:HE22	1.83	0.43
72:KK:57:LEU:O	72:KK:61:ILE:HG12	2.18	0.43
83:UU:16:LYS:O	83:UU:126:ARG:NH2	2.51	0.43
5:5:1450:C:H2'	5:5:1451:G:C8	2.54	0.43
5:5:3720:G:H22	5:5:3733:A:H2	1.67	0.43
5:5:4173:G:H2'	5:5:4174:U:C6	2.54	0.43
5:5:4256:A:O2'	5:5:4257:A:H5'	2.19	0.43
5:5:4602:A:P	86:AB:506:ARG:HH22	2.40	0.43
5:5:5063:G:H2'	5:5:5064:G:H8	1.83	0.43
7:7:57:C:H2'	7:7:58:A:C8	2.52	0.43
10:A:49:ILE:HD11	10:A:75:LEU:HD21	2.01	0.43
11:B:90:VAL:HG12	11:B:104:THR:HB	2.01	0.43
13:D:157:ASN:HB3	13:D:160:PHE:HD2	1.84	0.43
16:G:136:PHE:HB3	16:G:212:HIS:HB2	1.99	0.43
16:G:139:VAL:HG11	16:G:238:LYS:HG2	2.00	0.43
20:K:453:C:O2'	61:z:92:ARG:O	2.29	0.43
20:K:1208:A:O2'	20:K:1835:A:N7	2.49	0.43
20:K:1620:A:OP1	85:WW:44:ARG:HG2	2.18	0.43
24:O:84:VAL:HG11	24:O:102:LEU:HD22	2.01	0.43
27:R:167:LYS:HD3	27:R:167:LYS:HA	1.88	0.43
34:Y:47:MET:HE2	34:Y:47:MET:HB3	1.97	0.43
54:s:61:MET:HE3	54:s:82:ILE:HD13	2.00	0.43
56:u:159:GLN:O	56:u:162:ARG:HG2	2.19	0.43
57:v:85:SER:OG	69:HH:31:SER:OG	2.36	0.43
59:x:136:ILE:HD12	59:x:149:TYR:CE1	2.53	0.43
62:AA:85:VAL:O	62:AA:89:THR:OG1	2.26	0.43
86:AB:353:MET:H	86:AB:364:ILE:HD11	1.83	0.43
5:5:29:G:H5''	23:N:172:ARG:HG2	2.00	0.43
5:5:208:A:H1'	5:5:232:G:N3	2.34	0.43
5:5:309:C:OP2	44:i:33:LEU:HB2	2.19	0.43
5:5:921:G:H2'	5:5:922:C:C6	2.53	0.43
5:5:1291:G:H2'	5:5:1292:C:C6	2.54	0.43
5:5:1391:A:OP1	26:Q:181:ARG:NH2	2.46	0.43
5:5:1613:A:H5''	10:A:183:GLY:CA	2.47	0.43
5:5:2020:U:H2'	5:5:2021:G:H8	1.83	0.43
5:5:2404:A:H1'	45:j:12:ARG:HH11	1.84	0.43
5:5:2447:U:H1'	5:5:2744:A:H2	1.83	0.43
5:5:2599:G:N2	5:5:2747:U:O4	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:2811:G:N2	5:5:2814:C:OP2	2.49	0.43
5:5:3861:A:H2'	5:5:3862:A:C8	2.54	0.43
7:7:4:U:H2'	7:7:5:A:C8	2.54	0.43
13:D:41:LYS:HE3	29:T:93:ILE:HG13	2.01	0.43
13:D:64:ILE:HG13	13:D:105:LEU:HD21	2.00	0.43
20:K:582:U:H2'	20:K:583:A:H5''	2.00	0.43
20:K:1599:U:C2	60:y:166:ILE:HG12	2.53	0.43
20:K:1657:G:H1	20:K:1667:U:H3	1.64	0.43
20:K:1675:A:O3'	60:y:74:ASN:HB3	2.18	0.43
23:N:158:HIS:HB3	23:N:161:MET:HG2	2.00	0.43
35:Z:83:THR:HG22	35:Z:85:TYR:H	1.83	0.43
43:h:27:GLU:OE2	43:h:46:LYS:NZ	2.38	0.43
54:s:194:ASP:O	54:s:197:SER:OG	2.25	0.43
65:DD:71:LEU:O	65:DD:75:ASN:ND2	2.30	0.43
73:LL:12:LYS:HD3	73:LL:16:GLY:H	1.84	0.43
74:MM:30:VAL:HA	74:MM:94:HIS:HB2	2.00	0.43
74:MM:150:ARG:HD3	74:MM:150:ARG:H	1.83	0.43
81:SS:23:ALA:HB1	81:SS:46:MET:HE1	2.00	0.43
86:AB:41:VAL:O	86:AB:42:THR:OG1	2.37	0.43
5:5:90:G:N2	5:5:94:A:OP2	2.52	0.43
5:5:308:G:O6	23:N:12:ARG:NH1	2.51	0.43
5:5:480:C:HO2'	5:5:481:G:P	2.41	0.43
5:5:1577:G:OP1	51:p:17:ARG:NH2	2.40	0.43
5:5:1966:C:H2'	5:5:1967:A:C8	2.54	0.43
5:5:1971:C:H2'	5:5:1972:G:C8	2.54	0.43
5:5:2671:C:H2'	5:5:2672:C:C6	2.54	0.43
5:5:4266:G:N3	5:5:4266:G:H2'	2.34	0.43
6:6:138:CYS:SG	6:6:141:THR:OG1	2.76	0.43
8:8:71:A:H2'	34:Y:50:ARG:NH2	2.34	0.43
10:A:133:TYR:HB3	10:A:168:VAL:HG12	2.00	0.43
11:B:72:VAL:HA	31:V:92:ASP:HA	2.01	0.43
14:E:152:ILE:HD12	14:E:274:LEU:HD21	2.01	0.43
18:I:52:MET:HG3	18:I:152:LEU:HD22	2.00	0.43
19:J:29:SER:OG	19:J:67:LYS:O	2.27	0.43
20:K:155:G:N2	61:z:56:ASN:HD21	2.15	0.43
20:K:450:C:OP1	59:x:3:ARG:NH1	2.52	0.43
20:K:457:C:H2'	20:K:458:A:H8	1.84	0.43
20:K:466:G:N2	20:K:466:G:OP2	2.51	0.43
20:K:504:G:H2'	20:K:505:G:C8	2.54	0.43
20:K:561:A:H5''	65:DD:164:PRO:HG2	1.99	0.43
20:K:1124:C:O2'	72:KK:126:MET:O	2.37	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:1275:G:N2	20:K:1322:G:O6	2.52	0.43
26:Q:110:ARG:HG3	26:Q:120:ILE:HD12	2.01	0.43
30:U:24:ASP:OD1	30:U:24:ASP:N	2.52	0.43
53:r:12:ASN:OD1	53:r:19:LYS:NZ	2.51	0.43
65:DD:177:ASN:HA	65:DD:180:LYS:HG2	2.01	0.43
71:JJ:6:ASP:N	71:JJ:6:ASP:OD1	2.51	0.43
86:AB:251:GLN:OE1	86:AB:251:GLN:N	2.52	0.43
3:2:7:G:H1	3:2:67:U:H3	1.67	0.42
5:5:92:C:H4'	5:5:93:G:H5''	2.01	0.42
5:5:423:G:H21	25:P:118:GLN:NE2	2.16	0.42
5:5:691:C:H2'	5:5:692:A:C8	2.53	0.42
5:5:1308:C:H2'	5:5:1309:C:C6	2.54	0.42
5:5:1370:G:H4'	5:5:1371:A:O5'	2.18	0.42
5:5:2078:C:H2'	5:5:2079:G:C8	2.54	0.42
5:5:2079:G:H2'	5:5:2080:U:C6	2.54	0.42
5:5:2591:A:H2'	5:5:2592:U:H6	1.82	0.42
5:5:3637:U:O4	5:5:3651:A:H2	2.02	0.42
5:5:3731:C:H2'	5:5:3732:A:H8	1.83	0.42
5:5:3911:C:H2'	5:5:3912:U:C6	2.54	0.42
7:7:23:A:H2	7:7:118:C:H1'	1.84	0.42
9:9:32:ARG:NH2	20:K:1661:A:OP2	2.52	0.42
12:C:77:PRO:O	12:C:90:GLY:HA2	2.19	0.42
13:D:205:ALA:HB1	13:D:233:PRO:HB3	2.00	0.42
16:G:312:LYS:HE2	16:G:312:LYS:HB3	1.86	0.42
20:K:176:U:H2'	20:K:177:G:O4'	2.18	0.42
20:K:563:G:O2'	20:K:564:A:H8	2.01	0.42
20:K:807:G:C6	20:K:808:A:N1	2.87	0.42
20:K:1281:G:H3'	20:K:1282:A:C8	2.54	0.42
20:K:1745:A:O3'	61:z:31:ARG:NH1	2.52	0.42
20:K:1753:C:H2'	20:K:1754:G:H8	1.84	0.42
25:P:122:ALA:HB3	25:P:143:PRO:HG2	2.00	0.42
27:R:45:ILE:HD13	27:R:50:ILE:HG13	2.01	0.42
30:U:38:ASN:O	30:U:41:GLN:HG3	2.19	0.42
59:x:118:GLU:OE2	59:x:121:TYR:OH	2.26	0.42
84:VV:135:LYS:HG2	84:VV:137:LYS:HE3	2.00	0.42
86:AB:244:SER:O	86:AB:246:TYR:N	2.52	0.42
1:0:126:CYS:HB2	1:0:130:VAL:HB	2.01	0.42
5:5:422:C:H2'	5:5:423:G:C8	2.53	0.42
5:5:441:G:H2'	5:5:442:G:H8	1.85	0.42
5:5:1939:A:H5'	5:5:1940:G:H4'	2.01	0.42
5:5:2055:G:C5	24:O:130:LYS:HG2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:2844:A:N6	5:5:3839:G:O2'	2.52	0.42
5:5:3723:A:H2'	5:5:3724:A:C8	2.54	0.42
7:7:55:A:H4'	19:J:155:HIS:HB2	1.99	0.42
7:7:76:U:H2'	7:7:77:A:C8	2.54	0.42
8:8:6:C:H2'	8:8:7:U:H6	1.84	0.42
20:K:996:A:H2'	20:K:997:A:C8	2.53	0.42
20:K:1733:U:H2'	20:K:1734:G:O4'	2.19	0.42
20:K:1794:C:H2'	20:K:1795:G:H8	1.83	0.42
24:O:186:GLU:HA	24:O:189:ILE:HG12	2.01	0.42
31:V:89:ARG:HB2	31:V:95:PHE:CE2	2.55	0.42
34:Y:45:ARG:HB2	34:Y:126:ARG:HH22	1.84	0.42
40:e:90:MET:HE1	53:r:112:ARG:HB2	2.00	0.42
57:v:67:GLY:HA2	57:v:93:ILE:HD11	2.00	0.42
57:v:137:VAL:HB	57:v:217:ALA:HA	2.00	0.42
61:z:102:VAL:HG13	61:z:106:LEU:HD22	2.01	0.42
65:DD:37:LEU:HB3	65:DD:42:GLU:HG3	2.01	0.42
83:UU:13:PHE:H	83:UU:13:PHE:HD1	1.67	0.42
86:AB:153:GLN:HE21	86:AB:153:GLN:HB2	1.65	0.42
86:AB:419:LYS:HG2	86:AB:421:THR:H	1.85	0.42
86:AB:476:LEU:HA	86:AB:483:TYR:CE1	2.54	0.42
5:5:257:C:H2'	5:5:258:G:H8	1.84	0.42
5:5:352:G:OP2	12:C:193:LYS:NZ	2.46	0.42
5:5:2345:G:OP2	36:a:12:ARG:NH1	2.52	0.42
5:5:4265:U:OP1	13:D:12:TYR:OH	2.37	0.42
5:5:4325:A:C2	13:D:35:ARG:HB2	2.55	0.42
7:7:24:C:H2'	7:7:25:G:O4'	2.18	0.42
7:7:49:A:H61	13:D:57:ASN:HB3	1.85	0.42
10:A:32:VAL:HG22	10:A:163:ARG:HH21	1.83	0.42
11:B:381:THR:OG1	11:B:383:GLU:OE1	2.32	0.42
20:K:128:U:H3'	20:K:129:C:C5	2.54	0.42
20:K:941:C:H5''	56:u:136:ARG:NH1	2.35	0.42
20:K:1101:U:H3	20:K:1131:G:H1	1.67	0.42
20:K:1393:G:H2'	20:K:1394:G:C8	2.54	0.42
27:R:20:LYS:HD2	27:R:21:LYS:HZ2	1.83	0.42
28:S:99:ASP:OD1	28:S:100:LEU:N	2.49	0.42
57:v:98:LEU:O	57:v:102:LEU:HG	2.19	0.42
63:BB:34:SER:O	63:BB:37:LYS:NZ	2.40	0.42
64:CC:6:ASP:OD1	64:CC:6:ASP:N	2.50	0.42
75:NN:29:HIS:ND1	75:NN:29:HIS:O	2.49	0.42
78:QQ:16:LEU:HD12	78:QQ:17:PRO:HD2	2.01	0.42
82:TT:115:GLU:HG2	82:TT:118:ARG:NH2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:AB:242:GLU:HB3	86:AB:274:HIS:HD2	1.83	0.42
86:AB:350:TYR:HB2	86:AB:367:GLY:HA3	2.00	0.42
5:5:1551:C:H2'	5:5:1552:G:O4'	2.19	0.42
5:5:2822:G:H5''	27:R:18:GLY:HA3	2.01	0.42
5:5:4460:U:H2'	5:5:4461:C:H6	1.83	0.42
5:5:4891:G:N2	22:M:118:MET:SD	2.92	0.42
20:K:503:C:H3'	20:K:504:G:C8	2.55	0.42
20:K:606:G:H8	62:AA:131:ASN:HD21	1.67	0.42
21:L:47:ALA:O	21:L:149:GLN:HG3	2.18	0.42
23:N:5:LYS:HE3	44:i:36:HIS:HE1	1.85	0.42
57:v:106:VAL:HG22	57:v:128:VAL:HG22	2.01	0.42
58:w:94:ARG:HD3	58:w:94:ARG:H	1.84	0.42
59:x:126:VAL:HG12	59:x:139:LEU:HD13	2.01	0.42
61:z:116:LYS:NZ	61:z:125:THR:OG1	2.45	0.42
77:PP:111:LYS:HE3	77:PP:126:GLN:HG2	2.01	0.42
81:SS:53:LYS:HE2	81:SS:53:LYS:HB3	1.90	0.42
5:5:28:C:OP2	23:N:193:ARG:NH1	2.49	0.42
5:5:130:C:N4	5:5:139:G:O6	2.53	0.42
5:5:304:C:H2'	5:5:305:A:O4'	2.19	0.42
5:5:1511:U:H2'	5:5:1512:G:H8	1.83	0.42
5:5:2632:U:H2'	5:5:2633:U:C6	2.54	0.42
5:5:2846:G:O2'	31:V:19:GLY:O	2.35	0.42
5:5:2884:G:H2'	5:5:2885:A:H8	1.84	0.42
5:5:4260:U:H2'	5:5:4261:C:C6	2.55	0.42
5:5:4538:G:H2'	5:5:4539:U:H6	1.82	0.42
5:5:4710:C:H2'	5:5:4711:C:C6	2.55	0.42
5:5:4985:U:OP1	11:B:117:ARG:NH1	2.52	0.42
12:C:218:VAL:HG12	12:C:229:LEU:HG	2.00	0.42
13:D:236:MET:O	13:D:239:MET:HG3	2.19	0.42
20:K:434:G:OP1	64:CC:25:ARG:NH2	2.52	0.42
20:K:639:C:H2'	20:K:640:A:C8	2.54	0.42
20:K:1397:U:O4	83:UU:12:VAL:HA	2.19	0.42
20:K:1568:C:OP1	77:PP:96:SER:OG	2.32	0.42
22:M:6:PHE:O	22:M:11:ARG:NE	2.51	0.42
27:R:43:LYS:NZ	27:R:47:ASP:OD2	2.36	0.42
28:S:94:TYR:OH	28:S:132:MET:HE1	2.20	0.42
45:j:63:ARG:HD2	45:j:65:ARG:HD2	2.00	0.42
57:v:68:ARG:HH11	57:v:273:LEU:HD22	1.84	0.42
59:x:117:GLU:HA	59:x:120:LYS:HE3	2.02	0.42
79:RF:256:ILE:HB	79:RF:266:GLN:NE2	2.34	0.42
79:RF:335:CYS:HB3	79:RF:340:GLU:H	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:AB:10:ILE:HB	86:AB:71:SER:HB3	2.01	0.42
5:5:1183:C:H2'	5:5:1184:A:H8	1.82	0.42
5:5:1218:G:H2'	5:5:1219:G:C8	2.54	0.42
5:5:1545:G:H2'	5:5:1546:C:C6	2.54	0.42
5:5:1872:G:O2'	5:5:4219:A:N3	2.48	0.42
5:5:2049:G:H2'	5:5:2050:G:C8	2.54	0.42
5:5:2589:C:H2'	5:5:2590:G:O4'	2.19	0.42
5:5:4305:G:O6	29:T:80:VAL:HG11	2.19	0.42
5:5:4417:C:H2'	5:5:4418:G:O4'	2.19	0.42
5:5:4478:G:N2	5:5:4608:G:O2'	2.53	0.42
7:7:107:G:H5''	13:D:273:LEU:HD22	2.02	0.42
10:A:13:GLY:O	10:A:14:SER:OG	2.34	0.42
13:D:67:ALA:HA	13:D:72:ASP:HB3	2.01	0.42
20:K:77:A:C8	61:z:154:ARG:HB3	2.54	0.42
20:K:681:U:H4'	84:VV:9:THR:HG22	2.01	0.42
20:K:808:A:O2'	20:K:809:A:O4'	2.30	0.42
20:K:861:A:H2	20:K:862:A:H62	1.67	0.42
20:K:1199:A:H2'	20:K:1200:A:C8	2.55	0.42
20:K:1593:C:C2	20:K:1594:A:C8	3.07	0.42
20:K:1836:G:OP1	20:K:1839:U:H4'	2.19	0.42
22:M:118:MET:HA	22:M:118:MET:HE3	2.01	0.42
30:U:38:ASN:OD1	30:U:41:GLN:NE2	2.49	0.42
56:u:121:ILE:HG12	56:u:161:VAL:HG13	2.01	0.42
57:v:168:GLY:N	57:v:179:THR:O	2.51	0.42
60:y:77:MET:HA	60:y:82:ASN:ND2	2.35	0.42
61:z:10:THR:HG23	61:z:12:CYS:H	1.84	0.42
70:II:51:ASP:HB2	70:II:54:LYS:HE3	2.02	0.42
86:AB:412:LYS:HD2	86:AB:485:ILE:HA	2.01	0.42
3:2:5:A:H2'	3:2:6:U:C6	2.54	0.42
5:5:69:A:N1	5:5:324:A:O2'	2.49	0.42
5:5:288:G:H2'	5:5:289:C:C6	2.55	0.42
5:5:478:G:H2'	5:5:479:G:H8	1.85	0.42
5:5:1168:G:H2'	5:5:1169:G:H8	1.85	0.42
5:5:1662:C:H2'	5:5:1663:C:C6	2.55	0.42
5:5:2017:A:H2'	5:5:2017:A:N3	2.35	0.42
5:5:2553:A:OP2	5:5:2574:G:O2'	2.30	0.42
5:5:2626:U:C5	30:U:92:LYS:HG2	2.55	0.42
5:5:4513:A:H2'	5:5:4514:G:C8	2.55	0.42
5:5:4524:G:C2	11:B:252:ALA:HB1	2.55	0.42
5:5:4674:C:H2'	5:5:4675:U:C6	2.55	0.42
5:5:4704:C:H2'	5:5:4705:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:6:248:LEU:HD23	6:6:261:LEU:HD21	2.01	0.42
8:8:92:U:H2'	8:8:93:C:O4'	2.19	0.42
10:A:14:SER:H	10:A:17:ARG:HG3	1.84	0.42
18:I:107:GLY:HA3	79:RF:177:PRO:HB3	2.01	0.42
20:K:106:C:H2'	20:K:107:A:C8	2.54	0.42
20:K:1016:U:H6	78:QQ:61:ALA:HB1	1.85	0.42
32:W:31:PHE:HB3	32:W:36:CYS:HB2	2.00	0.42
43:h:48:ARG:HD2	43:h:51:ARG:HH12	1.84	0.42
60:y:100:ILE:O	60:y:104:THR:HG22	2.19	0.42
68:GG:23:THR:OG1	68:GG:113:GLU:OE2	2.34	0.42
72:KK:61:ILE:HD12	72:KK:71:ILE:HD11	2.00	0.42
85:WW:53:GLN:HB3	85:WW:83:MET:HE1	2.01	0.42
86:AB:42:THR:OG1	86:AB:45:SER:OG	2.32	0.42
5:5:167:C:H2'	5:5:168:C:C6	2.55	0.42
5:5:181:C:H2'	5:5:182:G:H8	1.85	0.42
5:5:200:U:HO2'	34:Y:59:ARG:HH12	1.61	0.42
5:5:1317:U:OP1	36:a:21:ARG:NH1	2.48	0.42
5:5:1870:C:H2'	5:5:1871:A:H8	1.85	0.42
5:5:1942:A:H2'	5:5:1943:A:H8	1.82	0.42
5:5:2539:C:H2'	5:5:2540:C:H6	1.83	0.42
5:5:3734:U:H2'	5:5:3735:G:O4'	2.19	0.42
5:5:3799:A:C6	31:V:40:ILE:HB	2.55	0.42
5:5:4520:G:N2	11:B:253:CYS:SG	2.93	0.42
5:5:4601:U:H2'	5:5:4602:A:H8	1.84	0.42
7:7:107:G:H2'	7:7:108:G:H8	1.85	0.42
8:8:75:G:OP1	34:Y:76:LYS:NZ	2.49	0.42
11:B:82:PRO:HG3	11:B:171:LEU:HD21	2.01	0.42
17:H:105:ILE:HD13	17:H:135:SER:HA	2.01	0.42
18:I:66:GLU:CD	18:I:69:ARG:HH21	2.28	0.42
20:K:71:G:C2	20:K:79:A:C8	3.07	0.42
20:K:129:C:H4'	20:K:130:G:C8	2.55	0.42
30:U:90:TYR:O	30:U:93:LYS:HG2	2.20	0.42
52:q:90:PHE:HD1	52:q:179:ALA:HB2	1.84	0.42
58:w:132:LYS:HD2	58:w:189:MET:HE2	2.02	0.42
61:z:84:TYR:HE1	61:z:93:LYS:HB3	1.83	0.42
63:BB:68:GLN:OE1	63:BB:68:GLN:N	2.53	0.42
66:EE:55:TYR:CD2	66:EE:115:PRO:HG2	2.54	0.42
71:JJ:21:LYS:HE3	78:QQ:13:GLN:HE21	1.84	0.42
79:RF:326:LEU:HG	79:RF:327:ASP:H	1.84	0.42
86:AB:217:LEU:HB3	86:AB:221:GLU:HB2	2.01	0.42
86:AB:449:LEU:HD13	86:AB:499:MET:HE1	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:1961:G:H21	5:5:2025:A:H62	1.68	0.42
5:5:3820:G:C6	5:5:3821:A:C6	3.08	0.42
5:5:4421:C:O2'	5:5:4422:A:H5'	2.20	0.42
5:5:4489:G:N3	5:5:4708:A:H2'	2.35	0.42
5:5:4503:A:H2'	5:5:4504:C:H6	1.85	0.42
5:5:4572:U:H2'	5:5:4573:G:C8	2.55	0.42
5:5:4717:A:H2'	5:5:4718:G:O4'	2.19	0.42
13:D:41:LYS:HB2	29:T:68:THR:O	2.19	0.42
16:G:152:ALA:HB1	16:G:189:LEU:HD11	2.01	0.42
16:G:164:LYS:HA	16:G:167:LEU:HD12	2.01	0.42
17:H:176:LEU:HD22	48:m:60:ALA:HB1	2.02	0.42
20:K:124:U:H3	20:K:340:C:N4	2.18	0.42
20:K:803:C:H2'	20:K:804:U:O4'	2.20	0.42
20:K:1375:G:H2'	20:K:1376:A:C8	2.55	0.42
20:K:1505:U:O3'	20:K:1506:A:H8	2.02	0.42
21:L:48:PRO:HG3	43:h:118:LYS:HE3	2.02	0.42
28:S:150:ILE:O	28:S:150:ILE:CG2	2.67	0.42
35:Z:27:LYS:O	35:Z:42:LEU:N	2.53	0.42
56:u:136:ARG:HE	56:u:218:LEU:HD21	1.84	0.42
5:5:250:C:H2'	5:5:251:C:C6	2.55	0.42
5:5:674:G:H2'	5:5:675:C:C6	2.55	0.42
5:5:1281:G:C6	14:E:131:HIS:HB2	2.55	0.42
5:5:1646:A:H1'	45:j:49:TRP:CE3	2.55	0.42
5:5:2292:C:H2'	5:5:2293:U:C6	2.55	0.42
5:5:2374:A:H2'	5:5:2375:A:C8	2.54	0.42
5:5:2715:G:H3'	5:5:2716:C:H5''	2.02	0.42
5:5:3877:A:C5	5:5:4444:C:H1'	2.54	0.42
5:5:4954:G:O2'	5:5:4955:A:O5'	2.34	0.42
8:8:90:C:O2'	34:Y:22:PRO:HB2	2.20	0.42
11:B:223:THR:HB	11:B:275:HIS:H	1.85	0.42
11:B:234:ARG:HH21	11:B:235:TRP:HE1	1.67	0.42
13:D:33:ARG:O	13:D:37:VAL:HB	2.20	0.42
17:H:43:VAL:HG12	17:H:59:LYS:HD3	2.02	0.42
20:K:15:U:H2'	20:K:16:G:O4'	2.19	0.42
20:K:218:U:H2'	20:K:219:U:C6	2.55	0.42
20:K:890:U:O5'	20:K:891:G:H5''	2.19	0.42
20:K:1301:A:H2'	20:K:1303:C:C2	2.55	0.42
20:K:1310:U:O4	20:K:1311:C:N4	2.52	0.42
20:K:1412:C:H2'	20:K:1413:G:C8	2.55	0.42
20:K:1461:G:H3'	20:K:1463:U:H3	1.85	0.42
23:N:187:SER:H	23:N:190:ALA:HB3	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:Z:15:ALA:HB2	42:g:88:ARG:HH21	1.84	0.42
52:q:130:ASP:C	52:q:133:PRO:HD2	2.44	0.42
64:CC:103:LEU:HG	64:CC:170:LYS:HD2	2.01	0.42
68:GG:35:VAL:HG11	68:GG:110:VAL:HG11	2.02	0.42
73:LL:45:VAL:HG11	73:LL:49:ALA:HB3	2.00	0.42
78:QQ:88:LEU:O	78:QQ:92:ILE:HG12	2.20	0.42
79:RF:119:PRO:O	79:RF:165:THR:OG1	2.29	0.42
1:0:137:ASP:OD1	1:0:137:ASP:N	2.51	0.41
5:5:133:C:N3	43:h:75:GLY:HA2	2.34	0.41
5:5:469:C:H2'	5:5:470:A:H8	1.85	0.41
5:5:2049:G:H2'	5:5:2050:G:H8	1.85	0.41
5:5:2448:G:H2'	5:5:2449:A:C8	2.55	0.41
5:5:2635:U:OP1	27:R:58:HIS:NE2	2.51	0.41
5:5:4879:C:H2'	5:5:4880:C:O2	2.20	0.41
13:D:40:ASP:HB2	13:D:43:LYS:HG2	2.01	0.41
15:F:147:LYS:O	15:F:151:GLU:HG2	2.20	0.41
17:H:46:SER:HB3	17:H:48:LEU:HD13	2.01	0.41
20:K:118:C:H2'	20:K:119:U:O4'	2.20	0.41
20:K:382:C:H2'	20:K:383:G:C8	2.54	0.41
20:K:436:G:OP2	20:K:471:G:O2'	2.37	0.41
20:K:829:C:HO2'	20:K:845:G:N2	2.18	0.41
20:K:1203:G:N3	20:K:1699:A:C2	2.88	0.41
20:K:1788:A:H2'	20:K:1789:G:O4'	2.19	0.41
20:K:1844:U:OP1	49:n:11:ARG:NH2	2.32	0.41
22:M:80:ALA:O	22:M:85:LYS:NZ	2.53	0.41
47:l:43:HIS:CE1	47:l:45:ARG:HG3	2.54	0.41
50:o:68:LEU:HD11	50:o:91:PHE:CZ	2.55	0.41
79:RF:24:LEU:HD21	79:RF:112:ILE:HG13	2.02	0.41
82:TT:89:TRP:O	82:TT:93:LEU:HB2	2.20	0.41
84:VV:72:VAL:HG11	84:VV:102:VAL:HG21	2.01	0.41
5:5:228:C:H2'	5:5:229:G:H8	1.85	0.41
5:5:728:U:OP1	15:F:75:ARG:NH2	2.52	0.41
5:5:1874:A:O4'	5:5:4213:A:N6	2.53	0.41
5:5:2086:G:O2'	12:C:306:ARG:O	2.37	0.41
5:5:2740:U:O2'	5:5:2742:G:N2	2.52	0.41
5:5:3871:A:H2'	5:5:3872:A:H8	1.86	0.41
5:5:4087:G:H4'	5:5:4088:C:H5	1.85	0.41
5:5:4475:G:OP2	5:5:4476:C:H5''	2.21	0.41
5:5:4691:A:N1	5:5:4700:A:C8	2.89	0.41
6:6:232:GLY:O	6:6:257:LYS:NZ	2.53	0.41
7:7:3:C:H2'	7:7:4:U:H6	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:94:C:H4'	28:S:122:HIS:HB2	2.01	0.41
13:D:34:LYS:HE3	13:D:35:ARG:HE	1.85	0.41
18:I:156:LYS:HD3	18:I:165:ILE:HD11	2.03	0.41
19:J:35:ARG:NE	19:J:123:ILE:O	2.53	0.41
20:K:294:U:OP1	66:EE:36:TYR:OH	2.23	0.41
20:K:302:A:H1'	64:CC:73:THR:HG23	2.02	0.41
20:K:1172:U:H2'	20:K:1173:A:C8	2.55	0.41
20:K:1260:A:C2	20:K:1620:A:C8	3.09	0.41
20:K:1626:C:H2'	20:K:1627:C:H6	1.85	0.41
28:S:137:CYS:SG	28:S:143:LYS:HD3	2.60	0.41
38:c:29:LEU:HD23	38:c:94:LEU:HD13	2.02	0.41
55:t:40:LYS:HE2	79:RF:420:GLN:HE22	1.85	0.41
57:v:242:ASP:O	57:v:246:LYS:HG2	2.19	0.41
84:VV:67:ARG:HG3	84:VV:115:ILE:HG12	2.01	0.41
5:5:2810:U:H2'	5:5:2811:G:O4'	2.19	0.41
5:5:2862:G:N3	5:5:3624:A:H2'	2.35	0.41
5:5:4133:C:H3'	5:5:4134:G:H21	1.86	0.41
5:5:4587:G:N2	11:B:15:GLY:O	2.41	0.41
5:5:4592:C:H2'	5:5:4593:C:H6	1.85	0.41
7:7:82:G:H2'	7:7:83:A:C8	2.55	0.41
10:A:54:ARG:HG2	10:A:56:ALA:H	1.85	0.41
12:C:308:LYS:HE2	12:C:308:LYS:HB2	1.93	0.41
13:D:80:ALA:HA	13:D:83:LEU:HD23	2.01	0.41
14:E:176:LEU:HD11	14:E:194:GLN:HB3	2.01	0.41
16:G:270:LYS:O	16:G:273:GLU:HG3	2.20	0.41
20:K:88:G:N2	20:K:499:G:O3'	2.53	0.41
20:K:158:A:N6	20:K:466:G:O6	2.53	0.41
20:K:690:G:H2'	20:K:691:G:C8	2.55	0.41
20:K:1491:G:H2'	20:K:1492:U:C6	2.55	0.41
21:L:191:LEU:O	21:L:195:ARG:HB2	2.20	0.41
34:Y:44:VAL:HG21	34:Y:119:LEU:HD23	2.01	0.41
56:u:137:LEU:HG	56:u:215:VAL:HG22	2.02	0.41
86:AB:315:GLY:HA2	86:AB:324:PHE:CZ	2.55	0.41
86:AB:562:LEU:HG	86:AB:564:ILE:HG13	2.02	0.41
5:5:182:G:H2'	5:5:183:C:H6	1.85	0.41
5:5:443:G:H5''	41:f:54:LYS:HD3	2.03	0.41
5:5:1974:U:C2	5:5:1976:G:H5'	2.55	0.41
5:5:1990:A:H2'	5:5:1991:A:O4'	2.20	0.41
5:5:2102:G:O2'	15:F:176:ARG:NH1	2.37	0.41
5:5:3723:A:H2'	5:5:3724:A:H8	1.85	0.41
5:5:4736:C:H2'	5:5:4737:G:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:7:49:A:H5''	13:D:225:GLN:OE1	2.20	0.41
20:K:26:U:H2'	20:K:27:A:C8	2.56	0.41
20:K:303:C:H2'	20:K:304:C:O4'	2.19	0.41
20:K:389:A:H2'	20:K:390:C:C6	2.55	0.41
20:K:526:A:H2	20:K:559:G:H1	1.68	0.41
20:K:1285:G:C2	80:RR:58:GLU:HG2	2.55	0.41
20:K:1579:A:H4'	20:K:1581:C:H5	1.84	0.41
20:K:1706:G:O2'	20:K:1850:A:O3'	2.38	0.41
43:h:48:ARG:HD2	43:h:51:ARG:NH1	2.35	0.41
50:o:4:VAL:O	50:o:94:GLY:N	2.50	0.41
55:t:147:HIS:H	55:t:151:ILE:HD12	1.84	0.41
61:z:154:ARG:H	61:z:154:ARG:HG2	1.40	0.41
62:AA:82:VAL:HG12	84:VV:89:GLY:HA2	2.01	0.41
64:CC:148:LYS:O	64:CC:151:GLU:HG3	2.21	0.41
66:EE:82:MET:HE3	66:EE:85:THR:HB	2.02	0.41
71:JJ:56:CYS:SG	71:JJ:57:VAL:N	2.93	0.41
79:RF:27:ALA:HB1	79:RF:100:ILE:HG21	2.01	0.41
86:AB:264:ASN:ND2	86:AB:266:ASP:H	2.18	0.41
5:5:1190:C:H2'	5:5:1191:C:C6	2.55	0.41
5:5:1326:A:H2'	5:5:1327:C:C6	2.55	0.41
5:5:1395:U:H2'	5:5:1396:G:O4'	2.21	0.41
5:5:1756:U:H2'	5:5:1757:U:C6	2.55	0.41
5:5:1783:C:H2'	5:5:1784:U:C6	2.55	0.41
5:5:1970:A:OP1	54:s:37:SER:OG	2.38	0.41
5:5:2555:G:H2'	5:5:2556:G:H8	1.85	0.41
5:5:2735:G:H2'	5:5:2736:G:C8	2.56	0.41
5:5:3788:C:N4	5:5:3812:C:OP2	2.44	0.41
5:5:4071:U:H2'	5:5:4072:C:C6	2.55	0.41
5:5:4252:C:H2'	5:5:4253:A:N7	2.35	0.41
5:5:4404:U:O2'	5:5:4406:U:O4	2.26	0.41
5:5:4748:U:H2'	5:5:4749:C:C6	2.55	0.41
5:5:4961:G:H2'	5:5:4962:C:C6	2.55	0.41
8:8:91:A:H2'	8:8:92:U:C6	2.55	0.41
17:H:3:THR:HA	28:S:144:GLN:HE22	1.85	0.41
17:H:92:MET:HB3	17:H:181:VAL:HA	2.02	0.41
20:K:355:G:OP1	66:EE:105:ARG:NH1	2.51	0.41
20:K:528:A:H2'	20:K:529:A:H8	1.85	0.41
20:K:801:U:H2'	20:K:802:A:H8	1.85	0.41
20:K:1165:G:H1	84:VV:20:GLN:NE2	2.19	0.41
20:K:1446:A:O2'	20:K:1447:G:H8	2.04	0.41
24:O:125:LYS:HE3	24:O:125:LYS:HB3	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:P:15:CYS:SG	25:P:150:LEU:HB2	2.60	0.41
28:S:159:LEU:HD12	28:S:162:GLN:HG2	2.03	0.41
32:W:35:LYS:HE2	32:W:51:TRP:CZ2	2.55	0.41
34:Y:42:TYR:HB3	34:Y:119:LEU:HD22	2.02	0.41
59:x:72:ILE:O	59:x:77:ARG:NH1	2.54	0.41
68:GG:20:ILE:HG22	68:GG:91:LEU:HB2	2.01	0.41
70:II:125:HIS:CE1	70:II:131:VAL:HG11	2.55	0.41
81:SS:80:ARG:HD3	81:SS:85:LEU:HD21	2.02	0.41
83:UU:123:ASP:O	83:UU:126:ARG:NH1	2.53	0.41
86:AB:467:LEU:HA	86:AB:470:VAL:HG22	2.01	0.41
1:0:105:TYR:HB3	1:0:131:PHE:HE2	1.86	0.41
5:5:49:U:H2'	5:5:50:C:H6	1.85	0.41
5:5:138:G:H2'	5:5:139:G:H8	1.86	0.41
5:5:1298:C:H2'	5:5:1299:G:C8	2.56	0.41
5:5:1317:U:H2'	5:5:1318:C:C6	2.56	0.41
5:5:1748:U:H2'	5:5:1749:A:C8	2.55	0.41
5:5:1779:U:H2'	5:5:1780:A:C8	2.56	0.41
5:5:1980:U:H3	5:5:1983:A:P	2.44	0.41
5:5:1988:G:C2	5:5:1989:G:C5	3.09	0.41
5:5:2370:A:N7	39:d:39:LYS:NZ	2.69	0.41
5:5:2514:G:O2'	5:5:2743:A:N6	2.54	0.41
5:5:2838:G:O5'	11:B:247:GLY:HA2	2.21	0.41
5:5:3599:A:H2'	5:5:3600:G:C8	2.55	0.41
5:5:4247:G:HO2'	5:5:4248:A:P	2.42	0.41
5:5:4346:U:O2'	50:o:80:LYS:O	2.30	0.41
11:B:44:THR:HG21	11:B:186:ASN:ND2	2.36	0.41
12:C:171:LEU:HD11	12:C:227:ILE:HD11	2.02	0.41
13:D:41:LYS:HA	13:D:41:LYS:HD3	1.91	0.41
20:K:906:U:H2'	20:K:907:G:C8	2.55	0.41
20:K:1365:G:H2'	20:K:1366:G:C8	2.55	0.41
20:K:1498:A:H2'	20:K:1499:U:O4'	2.21	0.41
20:K:1802:C:H2'	20:K:1803:U:C6	2.56	0.41
23:N:46:ASP:OD1	23:N:46:ASP:N	2.46	0.41
28:S:11:LYS:HD2	28:S:29:ARG:HD2	2.03	0.41
43:h:70:ARG:HA	43:h:83:LEU:HD13	2.02	0.41
54:s:64:ALA:O	54:s:68:HIS:ND1	2.37	0.41
56:u:27:LYS:HA	56:u:51:ARG:HH21	1.84	0.41
59:x:48:LEU:HD12	59:x:61:VAL:HG13	2.03	0.41
74:MM:30:VAL:HG12	74:MM:94:HIS:HB2	2.03	0.41
79:RF:8:ALA:HA	79:RF:11:ASN:HD22	1.86	0.41
79:RF:310:LYS:HB3	79:RF:310:LYS:HE3	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:SS:25:LYS:HB3	81:SS:65:ARG:HG3	2.01	0.41
3:2:22:A:H2'	3:2:23:C:C6	2.56	0.41
5:5:381:U:H2'	5:5:382:G:O4'	2.20	0.41
5:5:902:C:H2'	5:5:903:C:C6	2.56	0.41
5:5:1460:C:H5''	26:Q:144:LYS:HD3	2.01	0.41
5:5:2080:U:H2'	5:5:2081:C:C6	2.55	0.41
5:5:3661:G:N7	10:A:152:SER:OG	2.46	0.41
5:5:3726:A:H2'	5:5:3727:A:C8	2.56	0.41
5:5:4208:U:H2'	5:5:4209:G:C8	2.56	0.41
5:5:4263:C:H2'	5:5:4264:G:O4'	2.20	0.41
5:5:4414:A:H2'	5:5:4422:A:N1	2.36	0.41
7:7:60:G:H5''	13:D:270:LYS:HG2	2.03	0.41
8:8:28:C:H2'	8:8:29:G:C8	2.56	0.41
8:8:85:U:H5''	8:8:86:U:H3'	2.03	0.41
8:8:141:C:H2'	8:8:142:U:C6	2.55	0.41
12:C:150:LEU:HB3	12:C:151:PRO:HD3	2.02	0.41
15:F:145:ASN:HD21	15:F:147:LYS:HB3	1.85	0.41
20:K:603:C:N4	20:K:620:G:O6	2.54	0.41
20:K:925:G:H1	20:K:1017:U:H3	1.68	0.41
20:K:1590:C:H42	83:UU:77:HIS:HE1	1.67	0.41
20:K:1649:U:H4'	83:UU:138:ARG:HG3	2.02	0.41
20:K:1824:A:H5'	20:K:1825:A:OP2	2.20	0.41
64:CC:76:THR:HG23	64:CC:108:PRO:HG2	2.02	0.41
73:LL:51:ARG:HH11	73:LL:51:ARG:HA	1.85	0.41
75:NN:10:ARG:O	75:NN:24:VAL:HG12	2.20	0.41
5:5:221:C:H2'	5:5:222:C:H6	1.86	0.41
5:5:314:G:O2'	5:5:4355:G:OP1	2.33	0.41
5:5:981:C:H2'	5:5:982:U:C6	2.56	0.41
5:5:1753:G:C2'	5:5:1754:U:H5'	2.51	0.41
5:5:1757:U:H2'	5:5:1758:G:H8	1.86	0.41
5:5:2005:G:H2'	5:5:2006:U:C6	2.55	0.41
5:5:2093:G:H22	5:5:2262:G:H1	1.68	0.41
5:5:3598:C:H2'	5:5:3599:A:H8	1.85	0.41
5:5:3933:G:H2'	5:5:3934:G:C8	2.55	0.41
5:5:4174:U:H2'	5:5:4175:G:H8	1.86	0.41
5:5:4584:A:H62	5:5:4718:G:H21	1.69	0.41
5:5:4699:U:H4'	5:5:4700:A:OP1	2.21	0.41
5:5:4945:G:N1	41:f:3:GLY:O	2.46	0.41
5:5:4960:G:H2'	5:5:4961:G:H8	1.85	0.41
8:8:89:U:H2'	8:8:90:C:C6	2.56	0.41
12:C:189:MET:H	12:C:189:MET:HG2	1.71	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:K:641:A:OP2	62:AA:107:ARG:NH2	2.37	0.41
20:K:879:C:H2'	20:K:880:G:C8	2.53	0.41
20:K:1472:C:H2'	20:K:1473:G:O4'	2.21	0.41
20:K:1501:C:H2'	20:K:1502:C:H6	1.86	0.41
20:K:1616:U:O2'	20:K:1661:A:N3	2.52	0.41
20:K:1775:U:H2'	20:K:1776:G:C8	2.55	0.41
20:K:1810:U:H2'	20:K:1811:C:H6	1.86	0.41
39:d:25:TYR:OH	39:d:56:GLU:OE2	2.33	0.41
42:g:25:THR:OG1	42:g:29:ARG:HG2	2.21	0.41
52:q:12:GLU:HG3	72:KK:111:PHE:CE1	2.56	0.41
55:t:57:ARG:NH1	55:t:83:LYS:HG3	2.35	0.41
57:v:120:GLN:OE1	57:v:120:GLN:N	2.54	0.41
59:x:197:ASN:OD1	59:x:198:ARG:N	2.53	0.41
60:y:68:ILE:HD11	60:y:151:ILE:HD11	2.03	0.41
62:AA:104:ARG:HE	65:DD:124:HIS:CD2	2.37	0.41
3:2:22:A:H2'	3:2:23:C:H6	1.85	0.41
5:5:139:G:H2'	5:5:140:G:C8	2.56	0.41
5:5:327:U:O2'	44:i:30:ARG:NH1	2.54	0.41
5:5:480:C:HO2'	5:5:2094:C:N4	2.17	0.41
5:5:676:C:H2'	5:5:677:G:H8	1.85	0.41
5:5:724:C:OP2	12:C:350:ARG:NH1	2.54	0.41
5:5:1214:C:OP2	37:b:91:ARG:NH2	2.54	0.41
5:5:1291:G:O2'	5:5:1292:C:OP1	2.31	0.41
5:5:1725:U:H2'	5:5:1726:U:H6	1.85	0.41
5:5:1742:A:H2'	5:5:1743:A:H8	1.85	0.41
5:5:1918:U:O2	5:5:2064:G:O6	2.37	0.41
5:5:2095:A:H2'	5:5:2096:G:C8	2.55	0.41
5:5:2387:G:H2'	5:5:2388:A:H8	1.84	0.41
5:5:2458:C:H5''	23:N:67:ARG:HE	1.85	0.41
5:5:3916:G:H2'	5:5:3917:A:C8	2.55	0.41
5:5:4119:C:H42	5:5:4123:C:N4	2.18	0.41
5:5:4303:C:H2'	5:5:4305:G:C8	2.49	0.41
5:5:4400:G:C6	5:5:4401:G:C8	3.08	0.41
5:5:4584:A:H2'	5:5:4585:U:O4'	2.20	0.41
5:5:4657:U:H4'	39:d:78:ARG:HH12	1.85	0.41
5:5:4935:C:H2'	5:5:4936:G:C8	2.56	0.41
5:5:5028:G:H2'	5:5:5029:C:C6	2.55	0.41
5:5:5063:G:H2'	5:5:5064:G:C8	2.55	0.41
7:7:106:G:C2	7:7:107:G:C8	3.08	0.41
8:8:108:A:H2'	8:8:109:C:O4'	2.21	0.41
9:9:14:PHE:HB2	20:K:1661:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:9:21:CYS:O	81:SS:65:ARG:NH1	2.53	0.41
13:D:43:LYS:HB3	13:D:46:THR:HB	2.03	0.41
14:E:181:PRO:HG2	14:E:184:LEU:HD12	2.03	0.41
16:G:189:LEU:HD13	16:G:255:VAL:HG11	2.02	0.41
18:I:93:PRO:HB2	18:I:125:THR:HG22	2.03	0.41
20:K:89:C:O2'	20:K:499:G:H5''	2.21	0.41
20:K:92:A:N6	20:K:444:G:H1'	2.36	0.41
20:K:223:C:H2'	20:K:224:A:H8	1.84	0.41
20:K:316:G:H2'	20:K:317:C:C6	2.56	0.41
20:K:409:C:H2'	20:K:410:G:H8	1.85	0.41
20:K:497:C:H2'	20:K:498:C:C6	2.55	0.41
20:K:522:A:N7	65:DD:38:ARG:NH2	2.68	0.41
20:K:848:U:H2'	20:K:849:A:H8	1.84	0.41
20:K:883:U:H2'	20:K:884:C:C6	2.55	0.41
20:K:942:G:H2'	20:K:943:U:C6	2.56	0.41
20:K:979:C:H2'	20:K:980:A:H8	1.85	0.41
20:K:1148:A:H4'	20:K:1149:A:O4'	2.21	0.41
20:K:1214:A:H2'	20:K:1217:A:N7	2.35	0.41
20:K:1259:A:N6	20:K:1519:U:O5'	2.54	0.41
20:K:1398:G:H1	20:K:1448:A:H61	1.68	0.41
20:K:1745:A:O2'	61:z:31:ARG:NH1	2.54	0.41
23:N:94:PHE:CE2	23:N:96:ARG:HB2	2.55	0.41
23:N:120:TRP:HZ2	23:N:123:GLU:HG2	1.86	0.41
28:S:76:LYS:HE2	28:S:78:PHE:HZ	1.86	0.41
35:Z:92:ASP:OD1	35:Z:92:ASP:N	2.54	0.41
36:a:12:ARG:HA	36:a:12:ARG:HD3	1.86	0.41
43:h:110:LYS:HE2	43:h:110:LYS:HB2	1.93	0.41
45:j:28:HIS:CD2	45:j:31:LYS:H	2.26	0.41
46:k:52:LYS:HA	46:k:55:LYS:HG2	2.03	0.41
57:v:104:ASP:OD1	57:v:104:ASP:N	2.53	0.41
59:x:100:ARG:HH12	59:x:122:LYS:HA	1.85	0.41
61:z:214:ALA:HA	61:z:217:MET:HE2	2.02	0.41
65:DD:136:ARG:HH11	65:DD:160:SER:HA	1.85	0.41
66:EE:58:LYS:HG3	66:EE:59:LYS:HG3	2.03	0.41
67:FF:31:ARG:NH1	67:FF:41:SER:HB2	2.36	0.41
70:II:89:ASP:OD1	70:II:90:VAL:N	2.54	0.41
75:NN:7:ILE:HG22	75:NN:27:VAL:HG22	2.02	0.41
77:PP:85:ASN:OD1	77:PP:85:ASN:N	2.53	0.41
78:QQ:4:MET:HG2	78:QQ:5:HIS:CD2	2.56	0.41
86:AB:153:GLN:HG3	86:AB:154:ASN:N	2.36	0.41
86:AB:313:LEU:HD12	86:AB:572:ASN:HD22	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:360:A:C4	8:8:24:G:H1'	2.56	0.41
5:5:714:G:H2'	5:5:715:G:C8	2.55	0.41
5:5:919:C:H2'	5:5:920:C:C6	2.56	0.41
5:5:1361:G:H2'	5:5:1362:G:C8	2.55	0.41
5:5:1519:C:H2'	5:5:1520:C:C6	2.55	0.41
5:5:1722:C:H2'	5:5:1723:A:C8	2.56	0.41
5:5:1847:C:H2'	5:5:1848:C:C6	2.56	0.41
5:5:3703:G:H2'	5:5:3704:U:C6	2.56	0.41
5:5:3703:G:H2'	5:5:3704:U:H6	1.86	0.41
5:5:4081:G:H2'	5:5:4082:G:C8	2.56	0.41
5:5:4686:G:H21	17:H:163:GLN:HE22	1.69	0.41
5:5:4936:G:O2'	5:5:4937:C:OP1	2.31	0.41
6:6:44:LYS:HE3	6:6:54:ILE:HB	2.02	0.41
6:6:44:LYS:HG3	6:6:54:ILE:O	2.21	0.41
14:E:65:TYR:CE2	14:E:70:LEU:HB3	2.56	0.41
20:K:5:U:OP2	57:v:230:THR:OG1	2.35	0.41
20:K:912:C:H2'	20:K:914:U:H4'	2.03	0.41
20:K:1013:U:H5'	20:K:1129:G:N3	2.36	0.41
20:K:1545:A:O3'	83:UU:74:GLY:HA2	2.21	0.41
20:K:1619:A:OP1	85:WW:47:ARG:HD2	2.21	0.41
20:K:1736:G:H2'	20:K:1737:G:H8	1.86	0.41
34:Y:38:LEU:HD22	34:Y:42:TYR:HE2	1.86	0.41
50:o:9:ARG:HA	50:o:20:PRO:HA	2.03	0.41
54:s:109:ALA:HB3	54:s:185:PHE:HD2	1.86	0.41
69:HH:71:ARG:HH22	71:JJ:3:LEU:HD12	1.86	0.41
76:OO:106:GLN:HE22	76:OO:108:ILE:HD11	1.86	0.41
80:RR:85:LEU:HD22	80:RR:106:CYS:HB3	2.03	0.41
85:WW:107:ILE:HA	85:WW:111:MET:SD	2.60	0.41
86:AB:73:VAL:HG11	86:AB:295:ALA:HB1	2.03	0.41
86:AB:105:VAL:HG23	86:AB:284:ASP:H	1.85	0.41
86:AB:584:LYS:HA	86:AB:584:LYS:HD3	1.91	0.41
5:5:221:C:H2'	5:5:222:C:C6	2.56	0.40
5:5:702:U:O2'	40:e:7:LEU:O	2.39	0.40
5:5:957:G:N2	5:5:1283:G:OP2	2.54	0.40
5:5:2021:G:OP1	54:s:57:LYS:HA	2.21	0.40
5:5:2525:U:P	27:R:42:ARG:HH22	2.44	0.40
5:5:2675:G:C6	38:c:30:GLY:HA3	2.56	0.40
5:5:2689:C:H2'	5:5:2690:C:H6	1.86	0.40
5:5:2781:G:H5''	47:l:10:LYS:HD2	2.03	0.40
5:5:3697:U:H1'	5:5:3819:G:N2	2.36	0.40
5:5:4453:C:OP1	79:RF:185:GLN:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:4591:U:H2'	5:5:4592:C:C6	2.55	0.40
8:8:66:A:H2'	8:8:67:U:H6	1.86	0.40
12:C:28:PHE:HA	12:C:129:ALA:HA	2.04	0.40
14:E:149:PRO:O	14:E:203:LYS:HE2	2.21	0.40
16:G:264:ASP:OD1	16:G:264:ASP:N	2.52	0.40
20:K:589:G:N7	20:K:591:U:H2'	2.36	0.40
20:K:618:C:H2'	20:K:619:A:O4'	2.21	0.40
20:K:1265:A:H8	20:K:1326:U:H6	1.70	0.40
20:K:1374:C:H2'	20:K:1375:G:O4'	2.21	0.40
20:K:1742:C:H2'	20:K:1743:G:O4'	2.21	0.40
20:K:1847:G:H2'	20:K:1848:U:C6	2.56	0.40
37:b:106:ARG:HH22	37:b:110:ALA:HB2	1.86	0.40
54:s:59:THR:OG1	54:s:60:MET:N	2.54	0.40
59:x:181:CYS:SG	59:x:182:MET:N	2.94	0.40
60:y:73:THR:O	60:y:89:THR:HG21	2.21	0.40
60:y:157:GLY:O	60:y:160:GLU:HG3	2.21	0.40
64:CC:33:ALA:O	64:CC:35:ASN:ND2	2.54	0.40
64:CC:73:THR:O	64:CC:74:ARG:HD2	2.21	0.40
83:UU:80:GLN:O	83:UU:84:ILE:HG12	2.20	0.40
5:5:902:C:H2'	5:5:903:C:H6	1.86	0.40
5:5:1281:G:OP1	12:C:316:LYS:NZ	2.52	0.40
5:5:2009:A:HO2'	5:5:2010:A:P	2.43	0.40
5:5:2667:C:O4'	27:R:96:MET:HG2	2.20	0.40
5:5:2693:G:OP1	46:k:35:LYS:HE3	2.21	0.40
5:5:3659:G:OP1	10:A:241:ARG:HG2	2.21	0.40
5:5:4704:C:H2'	5:5:4705:A:H8	1.85	0.40
7:7:76:U:H2'	7:7:77:A:H8	1.85	0.40
20:K:79:A:H3'	20:K:80:G:H8	1.85	0.40
20:K:104:A:O5'	64:CC:18:ARG:NH2	2.54	0.40
20:K:220:U:H2'	20:K:221:A:C8	2.56	0.40
20:K:498:C:H2'	20:K:499:G:C8	2.57	0.40
20:K:550:C:HO2'	20:K:551:U:H6	1.66	0.40
20:K:1174:U:H2'	20:K:1175:G:H8	1.87	0.40
20:K:1204:A:H2'	20:K:1205:C:C6	2.56	0.40
20:K:1531:A:H2'	20:K:1532:C:C6	2.57	0.40
26:Q:33:ARG:HG2	26:Q:48:LEU:HD21	2.03	0.40
52:q:210:ILE:HG23	72:KK:81:ARG:HD2	2.03	0.40
54:s:77:LYS:HE2	54:s:77:LYS:HB2	1.92	0.40
58:w:154:ASP:OD1	58:w:154:ASP:N	2.55	0.40
59:x:155:LYS:HA	59:x:155:LYS:HD2	1.87	0.40
60:y:17:ILE:H	60:y:17:ILE:HG13	1.68	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:z:44:GLU:H	61:z:44:GLU:CD	2.29	0.40
68:GG:55:ARG:NE	68:GG:87:ARG:HD3	2.36	0.40
77:PP:90:SER:O	77:PP:91:HIS:ND1	2.54	0.40
77:PP:115:LYS:HE2	77:PP:121:ARG:NH2	2.36	0.40
86:AB:442:VAL:HA	86:AB:446:MET:HB2	2.02	0.40
86:AB:468:GLN:NE2	86:AB:488:PRO:HA	2.36	0.40
3:2:24:G:H2'	3:2:25:C:H6	1.86	0.40
5:5:228:C:H2'	5:5:229:G:C8	2.57	0.40
5:5:423:G:H2'	5:5:424:U:H6	1.86	0.40
5:5:950:G:H2'	5:5:951:G:H8	1.86	0.40
5:5:1218:G:H2'	5:5:1219:G:H8	1.86	0.40
5:5:1786:A:H2'	5:5:1789:C:C5	2.56	0.40
5:5:1952:G:H5'	28:S:139:ARG:NH2	2.36	0.40
5:5:2747:U:H2'	5:5:2748:C:C6	2.56	0.40
5:5:2884:G:H2'	5:5:2885:A:C8	2.56	0.40
5:5:4772:C:N4	5:5:4863:G:H22	2.19	0.40
11:B:119:TYR:OH	11:B:129:ALA:N	2.54	0.40
13:D:236:MET:SD	13:D:237:GLU:HG3	2.62	0.40
14:E:48:ARG:HB3	14:E:67:ARG:HD2	2.03	0.40
18:I:85:PHE:HD2	18:I:87:ILE:HG13	1.86	0.40
20:K:296:U:C4	20:K:297:A:C8	3.09	0.40
20:K:944:A:H2'	20:K:945:U:H6	1.86	0.40
20:K:1172:U:H2'	20:K:1173:A:H8	1.84	0.40
22:M:43:THR:O	22:M:44:ARG:HG2	2.22	0.40
23:N:51:LEU:HD13	23:N:117:ASN:HB3	2.02	0.40
52:q:180:ARG:HD3	52:q:184:ARG:CZ	2.51	0.40
55:t:124:GLU:H	55:t:124:GLU:CD	2.29	0.40
59:x:106:LYS:HB2	59:x:106:LYS:HE3	1.92	0.40
61:z:98:ARG:HG2	61:z:99:GLY:H	1.86	0.40
63:BB:98:ARG:HH21	63:BB:129:ILE:HG13	1.86	0.40
79:RF:300:LYS:HB3	79:RF:413:LEU:O	2.21	0.40
85:WW:49:LEU:HD23	85:WW:53:GLN:HE21	1.86	0.40
86:AB:9:ALA:HA	86:AB:72:ILE:HD13	2.04	0.40
86:AB:429:HIS:O	86:AB:433:ARG:HD3	2.21	0.40
5:5:717:U:H2'	5:5:718:C:C6	2.56	0.40
5:5:725:G:H2'	5:5:726:G:H8	1.86	0.40
5:5:1272:C:H5''	37:b:117:ARG:NH2	2.37	0.40
5:5:1356:U:H1'	5:5:1505:C:H1'	2.03	0.40
5:5:1580:C:H2'	5:5:1581:G:O4'	2.21	0.40
5:5:1662:C:H2'	5:5:1663:C:H6	1.84	0.40
5:5:1969:G:H4'	54:s:36:GLY:HA2	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:5:2884:G:O2'	20:K:1731:A:H4'	2.21	0.40
5:5:4082:G:H2'	5:5:4083:U:C6	2.57	0.40
5:5:4257:A:H4'	19:J:54:ARG:HB3	2.03	0.40
8:8:5:U:H2'	8:8:6:C:H6	1.86	0.40
16:G:165:GLN:O	16:G:168:LEU:HG	2.22	0.40
20:K:155:G:H2'	20:K:156:G:C8	2.50	0.40
20:K:293:C:O2'	20:K:294:U:H3'	2.22	0.40
20:K:692:G:H2'	20:K:693:A:C8	2.56	0.40
20:K:974:C:H2'	20:K:975:G:C8	2.53	0.40
20:K:1394:G:H2'	20:K:1395:C:H5'	2.02	0.40
24:O:141:LEU:O	24:O:145:VAL:HG23	2.22	0.40
33:X:119:ILE:HG13	33:X:144:TYR:CG	2.57	0.40
36:a:76:ASP:OD1	36:a:77:LYS:N	2.54	0.40
37:b:101:HIS:NE2	37:b:103:LYS:HB2	2.35	0.40
40:e:75:ARG:HB2	40:e:95:TYR:CD2	2.57	0.40
41:f:28:LEU:HD13	41:f:101:ILE:HD11	2.01	0.40
55:t:125:LEU:HD22	55:t:163:PRO:HG3	2.02	0.40
59:x:11:ARG:HD2	59:x:20:LEU:HB3	2.03	0.40
59:x:72:ILE:HD13	59:x:90:ILE:HG22	2.02	0.40
60:y:60:ARG:HH21	67:FF:49:PRO:HA	1.86	0.40
65:DD:88:ASP:OD1	65:DD:89:GLU:N	2.54	0.40
66:EE:42:LEU:HD13	66:EE:72:ILE:HD11	2.04	0.40
66:EE:134:LEU:HD11	66:EE:141:ASN:HD21	1.87	0.40
85:WW:34:MET:HB3	85:WW:42:ARG:HG3	2.04	0.40
85:WW:111:MET:HE3	85:WW:119:PHE:CE1	2.57	0.40
86:AB:84:THR:HG21	86:AB:97:LEU:HG	2.04	0.40
86:AB:189:ASP:OD1	86:AB:197:GLN:NE2	2.54	0.40
86:AB:345:MET:N	86:AB:345:MET:SD	2.94	0.40
2:1:125:ARG:O	5:5:3907:G:N2	2.54	0.40
3:2:67:U:H2'	3:2:68:G:C8	2.56	0.40
5:5:50:C:C2	5:5:51:A:C8	3.09	0.40
5:5:222:C:H2'	5:5:223:G:O4'	2.22	0.40
5:5:424:U:H2'	5:5:425:U:C6	2.56	0.40
5:5:1184:A:H2'	5:5:1185:G:C8	2.56	0.40
5:5:2521:G:H4'	42:g:26:PRO:HD2	2.04	0.40
5:5:2822:G:OP2	27:R:21:LYS:NZ	2.50	0.40
5:5:3719:A:H2'	5:5:3720:G:C8	2.57	0.40
5:5:4768:G:H2'	5:5:4769:G:C8	2.55	0.40
11:B:112:ASP:O	11:B:116:ARG:HG2	2.21	0.40
11:B:116:ARG:HD3	11:B:122:TRP:CD2	2.57	0.40
13:D:103:LEU:O	13:D:107:ARG:HG2	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:G:210:ILE:HB	16:G:236:ILE:HD13	2.04	0.40
17:H:3:THR:HA	28:S:144:GLN:NE2	2.36	0.40
20:K:115:U:H2'	20:K:116:U:C6	2.57	0.40
20:K:373:G:H21	66:EE:83:GLN:NE2	2.20	0.40
20:K:616:A:N3	62:AA:85:VAL:HG21	2.36	0.40
20:K:953:C:H2'	20:K:954:U:O4'	2.21	0.40
20:K:1624:U:O2	20:K:1624:U:O4'	2.38	0.40
27:R:99:MET:HB3	27:R:103:ARG:HE	1.87	0.40
30:U:21:PHE:CD1	30:U:80:LYS:HD3	2.55	0.40
38:c:78:ASN:HB3	38:c:92:CYS:SG	2.61	0.40
49:n:15:ARG:HG2	49:n:19:LYS:HE3	2.03	0.40
50:o:10:THR:OG1	50:o:11:PHE:N	2.54	0.40
61:z:58:LYS:HA	61:z:107:SER:HB2	2.03	0.40
67:FF:62:GLU:HG2	74:MM:79:GLN:NE2	2.36	0.40
83:UU:16:LYS:HD2	83:UU:16:LYS:HA	1.84	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	0	66/156 (42%)	63 (96%)	3 (4%)	0	100	100
2	1	19/32 (59%)	15 (79%)	4 (21%)	0	100	100
6	6	311/317 (98%)	304 (98%)	7 (2%)	0	100	100
9	9	42/56 (75%)	42 (100%)	0	0	100	100
10	A	246/257 (96%)	235 (96%)	11 (4%)	0	100	100
11	B	392/403 (97%)	379 (97%)	13 (3%)	0	100	100
12	C	360/413 (87%)	353 (98%)	7 (2%)	0	100	100
13	D	288/297 (97%)	283 (98%)	5 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	E	208/291 (72%)	200 (96%)	8 (4%)	0	100	100
15	F	223/249 (90%)	217 (97%)	6 (3%)	0	100	100
16	G	224/319 (70%)	222 (99%)	2 (1%)	0	100	100
17	H	188/192 (98%)	186 (99%)	2 (1%)	0	100	100
18	I	211/214 (99%)	205 (97%)	6 (3%)	0	100	100
19	J	168/178 (94%)	164 (98%)	4 (2%)	0	100	100
21	L	208/211 (99%)	200 (96%)	8 (4%)	0	100	100
22	M	136/139 (98%)	132 (97%)	4 (3%)	0	100	100
23	N	201/203 (99%)	196 (98%)	5 (2%)	0	100	100
24	O	197/203 (97%)	195 (99%)	2 (1%)	0	100	100
25	P	151/183 (82%)	147 (97%)	4 (3%)	0	100	100
26	Q	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
27	R	178/181 (98%)	174 (98%)	4 (2%)	0	100	100
28	S	174/176 (99%)	166 (95%)	7 (4%)	1 (1%)	21	38
29	T	157/160 (98%)	155 (99%)	2 (1%)	0	100	100
30	U	96/99 (97%)	94 (98%)	2 (2%)	0	100	100
31	V	129/140 (92%)	127 (98%)	2 (2%)	0	100	100
32	W	61/157 (39%)	58 (95%)	3 (5%)	0	100	100
33	X	116/156 (74%)	114 (98%)	2 (2%)	0	100	100
34	Y	132/145 (91%)	130 (98%)	2 (2%)	0	100	100
35	Z	133/136 (98%)	130 (98%)	3 (2%)	0	100	100
36	a	145/148 (98%)	139 (96%)	6 (4%)	0	100	100
37	b	98/245 (40%)	94 (96%)	4 (4%)	0	100	100
38	c	96/115 (84%)	95 (99%)	1 (1%)	0	100	100
39	d	105/125 (84%)	101 (96%)	4 (4%)	0	100	100
40	e	126/130 (97%)	124 (98%)	2 (2%)	0	100	100
41	f	107/110 (97%)	106 (99%)	1 (1%)	0	100	100
42	g	112/117 (96%)	112 (100%)	0	0	100	100
43	h	120/123 (98%)	119 (99%)	1 (1%)	0	100	100
44	i	100/105 (95%)	98 (98%)	2 (2%)	0	100	100
45	j	84/97 (87%)	83 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
46	k	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
47	l	48/51 (94%)	48 (100%)	0	0	100	100
48	m	50/128 (39%)	48 (96%)	2 (4%)	0	100	100
49	n	23/25 (92%)	23 (100%)	0	0	100	100
50	o	102/106 (96%)	99 (97%)	3 (3%)	0	100	100
51	p	89/92 (97%)	87 (98%)	2 (2%)	0	100	100
52	q	215/222 (97%)	209 (97%)	6 (3%)	0	100	100
53	r	122/137 (89%)	121 (99%)	1 (1%)	0	100	100
54	s	194/318 (61%)	192 (99%)	2 (1%)	0	100	100
55	t	133/165 (81%)	113 (85%)	17 (13%)	3 (2%)	5	11
56	u	211/264 (80%)	204 (97%)	7 (3%)	0	100	100
57	v	219/278 (79%)	217 (99%)	2 (1%)	0	100	100
58	w	209/243 (86%)	205 (98%)	4 (2%)	0	100	100
59	x	260/263 (99%)	250 (96%)	10 (4%)	0	100	100
60	y	181/204 (89%)	173 (96%)	8 (4%)	0	100	100
61	z	235/249 (94%)	228 (97%)	7 (3%)	0	100	100
62	AA	53/133 (40%)	53 (100%)	0	0	100	100
63	BB	181/194 (93%)	179 (99%)	2 (1%)	0	100	100
64	CC	204/208 (98%)	197 (97%)	7 (3%)	0	100	100
65	DD	179/194 (92%)	177 (99%)	2 (1%)	0	100	100
66	EE	135/158 (85%)	129 (96%)	6 (4%)	0	100	100
67	FF	60/69 (87%)	58 (97%)	2 (3%)	0	100	100
68	GG	97/119 (82%)	95 (98%)	2 (2%)	0	100	100
69	HH	81/83 (98%)	81 (100%)	0	0	100	100
70	II	142/152 (93%)	138 (97%)	4 (3%)	0	100	100
71	JJ	81/84 (96%)	77 (95%)	4 (5%)	0	100	100
72	KK	130/134 (97%)	130 (100%)	0	0	100	100
73	LL	99/115 (86%)	94 (95%)	5 (5%)	0	100	100
74	MM	133/151 (88%)	124 (93%)	9 (7%)	0	100	100
75	NN	122/133 (92%)	118 (97%)	4 (3%)	0	100	100
76	OO	73/124 (59%)	72 (99%)	1 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
77	PP	139/145 (96%)	132 (95%)	7 (5%)	0	100	100
78	QQ	147/151 (97%)	145 (99%)	2 (1%)	0	100	100
79	RF	412/437 (94%)	396 (96%)	13 (3%)	3 (1%)	18	35
80	RR	115/132 (87%)	110 (96%)	5 (4%)	0	100	100
81	SS	94/165 (57%)	91 (97%)	3 (3%)	0	100	100
82	TT	127/130 (98%)	122 (96%)	5 (4%)	0	100	100
83	UU	137/146 (94%)	135 (98%)	2 (2%)	0	100	100
84	VV	139/143 (97%)	135 (97%)	4 (3%)	0	100	100
85	WW	118/145 (81%)	110 (93%)	8 (7%)	0	100	100
86	AB	570/599 (95%)	537 (94%)	30 (5%)	3 (0%)	24	42
All	All	12419/14223 (87%)	12056 (97%)	353 (3%)	10 (0%)	49	68

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
28	S	150	ILE
55	t	30	PRO
79	RF	305	VAL
86	AB	417	SER
79	RF	317	VAL
86	AB	245	SER
55	t	58	ILE
55	t	105	THR
79	RF	328	ILE
86	AB	47	ILE

### 5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	0	61/140 (44%)	61 (100%)	0	100	100
2	1	19/19 (100%)	19 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	6	272/275 (99%)	269 (99%)	3 (1%)	65	81
9	9	38/49 (78%)	37 (97%)	1 (3%)	40	65
10	A	190/199 (96%)	186 (98%)	4 (2%)	47	70
11	B	342/348 (98%)	341 (100%)	1 (0%)	86	93
12	C	302/337 (90%)	300 (99%)	2 (1%)	76	87
13	D	244/250 (98%)	242 (99%)	2 (1%)	73	86
14	E	190/251 (76%)	185 (97%)	5 (3%)	40	65
15	F	196/218 (90%)	196 (100%)	0	100	100
16	G	197/273 (72%)	196 (100%)	1 (0%)	81	90
17	H	169/171 (99%)	168 (99%)	1 (1%)	78	89
18	I	180/181 (99%)	178 (99%)	2 (1%)	65	81
19	J	143/149 (96%)	141 (99%)	2 (1%)	59	78
21	L	175/176 (99%)	173 (99%)	2 (1%)	65	81
22	M	117/118 (99%)	112 (96%)	5 (4%)	26	50
23	N	171/171 (100%)	171 (100%)	0	100	100
24	O	171/173 (99%)	170 (99%)	1 (1%)	78	89
25	P	134/162 (83%)	134 (100%)	0	100	100
26	Q	164/164 (100%)	163 (99%)	1 (1%)	78	89
27	R	159/160 (99%)	157 (99%)	2 (1%)	61	79
28	S	154/154 (100%)	153 (99%)	1 (1%)	78	89
29	T	139/140 (99%)	138 (99%)	1 (1%)	76	87
30	U	87/88 (99%)	87 (100%)	0	100	100
31	V	101/107 (94%)	101 (100%)	0	100	100
32	W	55/126 (44%)	55 (100%)	0	100	100
33	X	106/134 (79%)	106 (100%)	0	100	100
34	Y	124/135 (92%)	122 (98%)	2 (2%)	55	76
35	Z	117/118 (99%)	115 (98%)	2 (2%)	53	75
36	a	119/120 (99%)	119 (100%)	0	100	100
37	b	82/184 (45%)	82 (100%)	0	100	100
38	c	84/98 (86%)	83 (99%)	1 (1%)	63	80
39	d	98/110 (89%)	98 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	e	114/116 (98%)	114 (100%)	0	100	100
41	f	88/89 (99%)	86 (98%)	2 (2%)	44	68
42	g	98/100 (98%)	97 (99%)	1 (1%)	68	83
43	h	109/110 (99%)	109 (100%)	0	100	100
44	i	86/90 (96%)	85 (99%)	1 (1%)	63	80
45	j	73/80 (91%)	72 (99%)	1 (1%)	59	78
46	k	64/64 (100%)	64 (100%)	0	100	100
47	l	47/48 (98%)	47 (100%)	0	100	100
48	m	48/116 (41%)	48 (100%)	0	100	100
49	n	24/24 (100%)	24 (100%)	0	100	100
50	o	92/94 (98%)	91 (99%)	1 (1%)	65	81
51	p	74/75 (99%)	74 (100%)	0	100	100
52	q	180/184 (98%)	178 (99%)	2 (1%)	65	81
53	r	108/121 (89%)	103 (95%)	5 (5%)	24	48
54	s	164/258 (64%)	162 (99%)	2 (1%)	63	80
55	t	111/137 (81%)	109 (98%)	2 (2%)	51	73
56	u	194/231 (84%)	193 (100%)	1 (0%)	81	90
57	v	186/211 (88%)	185 (100%)	1 (0%)	81	90
58	w	175/202 (87%)	168 (96%)	7 (4%)	28	53
59	x	224/225 (100%)	221 (99%)	3 (1%)	61	79
60	y	158/170 (93%)	155 (98%)	3 (2%)	50	72
61	z	207/218 (95%)	204 (99%)	3 (1%)	59	78
62	AA	46/106 (43%)	46 (100%)	0	100	100
63	BB	165/174 (95%)	164 (99%)	1 (1%)	78	89
64	CC	178/180 (99%)	176 (99%)	2 (1%)	65	81
65	DD	158/168 (94%)	157 (99%)	1 (1%)	78	89
66	EE	126/142 (89%)	126 (100%)	0	100	100
67	FF	55/62 (89%)	54 (98%)	1 (2%)	51	73
68	GG	91/107 (85%)	89 (98%)	2 (2%)	45	69
69	HH	68/68 (100%)	68 (100%)	0	100	100
70	II	125/132 (95%)	125 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
71	JJ	75/76 (99%)	74 (99%)	1 (1%)	61	79
72	KK	119/120 (99%)	117 (98%)	2 (2%)	53	75
73	LL	88/99 (89%)	88 (100%)	0	100	100
74	MM	104/119 (87%)	100 (96%)	4 (4%)	29	54
75	NN	107/115 (93%)	105 (98%)	2 (2%)	50	72
76	OO	66/102 (65%)	65 (98%)	1 (2%)	57	77
77	PP	111/116 (96%)	108 (97%)	3 (3%)	39	63
78	QQ	130/131 (99%)	130 (100%)	0	100	100
79	RF	357/376 (95%)	352 (99%)	5 (1%)	59	78
80	RR	99/108 (92%)	99 (100%)	0	100	100
81	SS	87/136 (64%)	86 (99%)	1 (1%)	65	81
82	TT	112/113 (99%)	111 (99%)	1 (1%)	70	84
83	UU	115/121 (95%)	115 (100%)	0	100	100
84	VV	113/115 (98%)	110 (97%)	3 (3%)	39	63
85	WW	109/130 (84%)	107 (98%)	2 (2%)	51	73
86	AB	506/526 (96%)	497 (98%)	9 (2%)	51	73
All	All	10834/12103 (90%)	10716 (99%)	118 (1%)	63	81

All (118) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	6	113	PHE
6	6	234	ASP
6	6	309	VAL
9	9	55	LEU
10	A	101	VAL
10	A	102	LEU
10	A	157	VAL
10	A	208	GLU
11	B	329	ASP
12	C	89	GLN
12	C	232	VAL
13	D	56	THR
13	D	211	LEU
14	E	51	VAL
14	E	70	LEU

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Mol	Chain	Res	Type
14	E	178	VAL
14	E	197	VAL
14	E	289	LEU
16	G	237	LEU
17	H	132	VAL
18	I	113	THR
18	I	140	THR
19	J	128	LEU
19	J	132	VAL
21	L	59	VAL
21	L	154	VAL
22	M	38	VAL
22	M	57	LEU
22	M	82	ILE
22	M	118	MET
22	M	136	LEU
24	O	169	ARG
26	Q	82	VAL
27	R	154	LEU
27	R	157	ASP
28	S	13	VAL
29	T	68	THR
34	Y	55	VAL
34	Y	79	VAL
35	Z	43	VAL
35	Z	124	THR
38	c	18	LEU
41	f	31	GLU
41	f	33	VAL
42	g	86	CYS
44	i	63	VAL
45	j	20	ARG
50	o	2	VAL
52	q	56	GLU
52	q	126	ASP
53	r	5	LEU
53	r	27	THR
53	r	61	VAL
53	r	78	VAL
53	r	103	HIS
54	s	60	MET
54	s	89	VAL

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Mol	Chain	Res	Type
55	t	22	VAL
55	t	56	LEU
56	u	227	LYS
57	v	248	TYR
58	w	44	THR
58	w	91	VAL
58	w	167	TYR
58	w	168	VAL
58	w	176	LEU
58	w	186	VAL
58	w	188	ILE
59	x	66	MET
59	x	109	PHE
59	x	146	THR
60	y	30	ILE
60	y	102	LEU
60	y	140	ASP
61	z	128	THR
61	z	154	ARG
61	z	180	VAL
63	BB	133	LEU
64	CC	76	THR
64	CC	96	LEU
65	DD	32	ILE
67	FF	58	LEU
68	GG	24	LEU
68	GG	68	THR
71	JJ	53	VAL
72	KK	6	THR
72	KK	57	LEU
74	MM	44	VAL
74	MM	56	VAL
74	MM	85	CYS
74	MM	133	THR
75	NN	23	MET
75	NN	34	THR
76	OO	69	THR
77	PP	18	LEU
77	PP	22	LEU
77	PP	85	ASN
79	RF	180	HIS
79	RF	285	LYS

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Mol	Chain	Res	Type
79	RF	296	GLN
79	RF	305	VAL
79	RF	332	VAL
81	SS	83	LEU
82	TT	69	LEU
84	VV	82	THR
84	VV	105	PHE
84	VV	125	VAL
85	WW	20	VAL
85	WW	33	LEU
86	AB	153	GLN
86	AB	298	VAL
86	AB	317	VAL
86	AB	365	VAL
86	AB	383	THR
86	AB	421	THR
86	AB	429	HIS
86	AB	459	VAL
86	AB	461	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (203) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	93	HIS
2	1	113	GLN
6	6	20	GLN
6	6	56	GLN
6	6	222	ASN
6	6	237	ASN
6	6	305	ASN
9	9	37	ASN
10	A	83	HIS
10	A	132	ASN
11	B	175	GLN
11	B	184	GLN
11	B	209	GLN
11	B	245	HIS
11	B	289	GLN
12	C	38	ASN
12	C	50	GLN
12	C	61	GLN
12	C	89	GLN

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Mol	Chain	Res	Type
12	C	317	ASN
12	C	329	ASN
12	C	347	HIS
13	D	45	ASN
13	D	63	GLN
13	D	111	ASN
13	D	122	GLN
13	D	195	HIS
13	D	203	ASN
13	D	282	GLN
13	D	291	GLN
14	E	193	HIS
14	E	269	GLN
14	E	282	ASN
15	F	57	HIS
15	F	109	GLN
15	F	199	HIS
16	G	96	GLN
16	G	212	HIS
16	G	248	HIS
16	G	278	ASN
17	H	8	GLN
17	H	15	ASN
17	H	78	GLN
17	H	98	HIS
17	H	163	GLN
17	H	188	GLN
18	I	14	ASN
18	I	59	GLN
18	I	100	ASN
19	J	71	HIS
19	J	98	ASN
19	J	104	ASN
19	J	167	GLN
21	L	67	HIS
21	L	104	ASN
21	L	159	ASN
22	M	83	ASN
22	M	125	ASN
23	N	99	GLN
23	N	182	HIS
24	O	50	ASN

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Mol	Chain	Res	Type
24	O	63	ASN
24	O	96	GLN
24	O	173	GLN
24	O	180	GLN
26	Q	45	GLN
27	R	39	GLN
27	R	40	GLN
27	R	130	ASN
28	S	77	ASN
28	S	92	ASN
28	S	156	HIS
28	S	163	HIS
29	T	3	ASN
29	T	95	HIS
29	T	131	GLN
31	V	27	ASN
31	V	31	ASN
32	W	17	HIS
32	W	59	HIS
32	W	63	GLN
34	Y	86	GLN
34	Y	96	HIS
35	Z	97	ASN
36	a	40	HIS
36	a	66	ASN
37	b	12	GLN
38	c	15	ASN
38	c	33	GLN
38	c	40	GLN
38	c	77	ASN
39	d	30	HIS
39	d	79	ASN
40	e	23	HIS
43	h	62	ASN
43	h	65	GLN
43	h	107	GLN
43	h	108	GLN
44	i	80	HIS
45	j	13	ASN
45	j	28	HIS
45	j	66	HIS
48	m	61	GLN

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Mol	Chain	Res	Type
50	o	3	ASN
50	o	19	GLN
50	o	102	GLN
51	p	72	ASN
52	q	36	GLN
52	q	113	GLN
52	q	132	GLN
53	r	30	ASN
54	s	42	GLN
54	s	126	GLN
55	t	65	GLN
55	t	115	GLN
56	u	147	ASN
56	u	157	GLN
56	u	179	ASN
57	v	113	GLN
57	v	115	GLN
58	w	57	ASN
58	w	165	ASN
59	x	17	HIS
59	x	36	HIS
59	x	50	ASN
59	x	112	HIS
60	y	74	ASN
60	y	137	GLN
61	z	65	GLN
61	z	155	GLN
61	z	197	GLN
61	z	202	ASN
62	AA	88	GLN
62	AA	95	GLN
63	BB	33	ASN
63	BB	193	GLN
64	CC	155	ASN
64	CC	165	GLN
65	DD	113	GLN
65	DD	124	HIS
65	DD	154	GLN
65	DD	156	HIS
66	EE	18	GLN
66	EE	83	GLN
66	EE	112	HIS

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Mol	Chain	Res	Type
66	EE	121	GLN
66	EE	141	ASN
67	FF	26	GLN
70	II	72	GLN
71	JJ	29	ASN
72	KK	74	GLN
74	MM	79	GLN
74	MM	94	HIS
74	MM	113	GLN
75	NN	19	GLN
75	NN	89	HIS
77	PP	105	GLN
77	PP	128	GLN
77	PP	137	GLN
78	QQ	105	ASN
78	QQ	123	HIS
79	RF	11	ASN
79	RF	44	GLN
79	RF	79	GLN
79	RF	129	ASN
79	RF	162	GLN
79	RF	180	HIS
79	RF	238	GLN
79	RF	247	GLN
79	RF	265	ASN
79	RF	266	GLN
79	RF	277	ASN
79	RF	325	ASN
79	RF	350	GLN
79	RF	366	HIS
79	RF	381	ASN
79	RF	420	GLN
80	RR	55	ASN
81	SS	28	HIS
81	SS	44	HIS
82	TT	16	ASN
82	TT	44	HIS
82	TT	98	GLN
82	TT	120	HIS
83	UU	24	HIS
83	UU	77	HIS
84	VV	16	HIS

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Mol	Chain	Res	Type
84	VV	20	GLN
84	VV	39	ASN
84	VV	63	ASN
84	VV	110	HIS
85	WW	35	GLN
85	WW	54	HIS
85	WW	103	ASN
86	AB	44	GLN
86	AB	85	HIS
86	AB	153	GLN
86	AB	197	GLN
86	AB	264	ASN
86	AB	321	ASN
86	AB	468	GLN
86	AB	496	GLN
86	AB	549	GLN

### 5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
20	K	1648/4592 (35%)	350 (21%)	15 (0%)
3	2	75/76 (98%)	15 (20%)	1 (1%)
4	4	10/11 (90%)	4 (40%)	1 (10%)
5	5	3415/7224 (47%)	679 (19%)	48 (1%)
7	7	119/120 (99%)	10 (8%)	0
8	8	149/156 (95%)	27 (18%)	1 (0%)
All	All	5416/12179 (44%)	1085 (20%)	66 (1%)

All (1085) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
3	2	10	G
3	2	11	G
3	2	12	C
3	2	14	U
3	2	15	A
3	2	17	G
3	2	19	G
3	2	20	U
3	2	21	A
3	2	47	U

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Mol	Chain	Res	Type
3	2	48	U
3	2	49	C
3	2	61	C
3	2	70	U
3	2	76	A
4	4	4	C
4	4	7	U
4	4	10	G
4	4	11	U
5	5	4	G
5	5	5	A
5	5	12	A
5	5	13	U
5	5	35	U
5	5	39	A
5	5	42	A
5	5	48	G
5	5	49	U
5	5	59	A
5	5	64	A
5	5	65	A
5	5	71	C
5	5	73	A
5	5	91	G
5	5	93	G
5	5	104	G
5	5	109	G
5	5	110	C
5	5	116	G
5	5	118	C
5	5	119	G
5	5	120	A
5	5	126	C
5	5	134	G
5	5	135	G
5	5	136	U
5	5	146	G
5	5	157	U
5	5	158	A
5	5	159	C
5	5	160	G
5	5	170	C

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Mol	Chain	Res	Type
5	5	181	C
5	5	184	U
5	5	197	A
5	5	200	U
5	5	201	C
5	5	203	U
5	5	208	A
5	5	214	G
5	5	216	C
5	5	217	C
5	5	218	A
5	5	219	G
5	5	224	U
5	5	233	U
5	5	234	G
5	5	246	G
5	5	250	C
5	5	268	G
5	5	269	G
5	5	274	C
5	5	276	C
5	5	279	A
5	5	280	G
5	5	297	U
5	5	306	A
5	5	310	G
5	5	315	G
5	5	316	U
5	5	334	A
5	5	340	C
5	5	350	C
5	5	363	A
5	5	386	A
5	5	387	G
5	5	399	G
5	5	407	A
5	5	412	G
5	5	431	G
5	5	432	U
5	5	446	C
5	5	449	C
5	5	450	G

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Mol	Chain	Res	Type
5	5	452	A
5	5	453	G
5	5	454	U
5	5	464	G
5	5	467	U
5	5	468	U
5	5	469	C
5	5	481	G
5	5	482	G
5	5	486	C
5	5	492	U
5	5	493	G
5	5	495	C
5	5	498	C
5	5	499	G
5	5	505	G
5	5	506	C
5	5	510	U
5	5	657	C
5	5	658	C
5	5	666	G
5	5	667	A
5	5	669	C
5	5	670	G
5	5	672	C
5	5	683	C
5	5	684	G
5	5	685	C
5	5	686	A
5	5	687	U
5	5	691	C
5	5	696	C
5	5	697	G
5	5	704	C
5	5	705	G
5	5	719	C
5	5	729	G
5	5	731	G
5	5	738	C
5	5	739	C
5	5	740	G
5	5	748	A

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Mol	Chain	Res	Type
5	5	750	G
5	5	759	G
5	5	911	U
5	5	912	U
5	5	915	A
5	5	916	G
5	5	923	C
5	5	925	C
5	5	926	G
5	5	929	A
5	5	931	C
5	5	932	A
5	5	939	G
5	5	941	C
5	5	943	A
5	5	944	A
5	5	945	U
5	5	956	A
5	5	959	G
5	5	960	A
5	5	961	G
5	5	962	C
5	5	964	A
5	5	965	G
5	5	966	A
5	5	967	C
5	5	969	U
5	5	979	C
5	5	983	C
5	5	1072	C
5	5	1073	G
5	5	1079	C
5	5	1175	A
5	5	1179	U
5	5	1180	C
5	5	1184	A
5	5	1193	C
5	5	1195	G
5	5	1210	C
5	5	1211	G
5	5	1212	G
5	5	1215	U

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Mol	Chain	Res	Type
5	5	1216	C
5	5	1235	G
5	5	1236	C
5	5	1237	C
5	5	1238	A
5	5	1273	G
5	5	1276	C
5	5	1284	G
5	5	1285	U
5	5	1287	G
5	5	1292	C
5	5	1293	G
5	5	1296	G
5	5	1301	C
5	5	1303	A
5	5	1304	C
5	5	1314	C
5	5	1326	A
5	5	1330	A
5	5	1354	A
5	5	1358	G
5	5	1359	G
5	5	1371	A
5	5	1377	G
5	5	1379	C
5	5	1380	G
5	5	1387	A
5	5	1394	G
5	5	1397	A
5	5	1398	A
5	5	1415	G
5	5	1419	G
5	5	1420	A
5	5	1421	G
5	5	1429	C
5	5	1433	A
5	5	1445	U
5	5	1446	C
5	5	1456	C
5	5	1457	G
5	5	1458	C
5	5	1465	G

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Mol	Chain	Res	Type
5	5	1475	G
5	5	1497	A
5	5	1498	G
5	5	1502	G
5	5	1518	A
5	5	1523	A
5	5	1534	A
5	5	1547	A
5	5	1553	A
5	5	1564	A
5	5	1566	C
5	5	1568	C
5	5	1574	G
5	5	1578	U
5	5	1591	U
5	5	1596	U
5	5	1602	U
5	5	1612	G
5	5	1613	A
5	5	1624	G
5	5	1625	G
5	5	1631	A
5	5	1633	G
5	5	1634	A
5	5	1638	A
5	5	1640	C
5	5	1650	A
5	5	1654	G
5	5	1661	C
5	5	1676	C
5	5	1677	U
5	5	1691	G
5	5	1694	C
5	5	1734	G
5	5	1740	C
5	5	1741	G
5	5	1742	A
5	5	1750	G
5	5	1751	A
5	5	1753	G
5	5	1754	U
5	5	1755	C

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Mol	Chain	Res	Type
5	5	1756	U
5	5	1761	G
5	5	1764	G
5	5	1772	C
5	5	1773	U
5	5	1776	A
5	5	1777	C
5	5	1780	A
5	5	1781	U
5	5	1783	C
5	5	1787	A
5	5	1799	G
5	5	1804	A
5	5	1805	A
5	5	1809	C
5	5	1815	G
5	5	1819	G
5	5	1821	G
5	5	1828	C
5	5	1836	G
5	5	1837	A
5	5	1842	G
5	5	1855	G
5	5	1869	G
5	5	1882	U
5	5	1888	A
5	5	1897	A
5	5	1910	G
5	5	1916	G
5	5	1917	A
5	5	1918	U
5	5	1920	C
5	5	1921	C
5	5	1922	G
5	5	1925	G
5	5	1930	U
5	5	1931	C
5	5	1945	G
5	5	1947	U
5	5	1948	G
5	5	1957	U
5	5	1958	A

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Mol	Chain	Res	Type
5	5	1959	U
5	5	1960	A
5	5	1961	G
5	5	1962	A
5	5	1963	C
5	5	1964	A
5	5	1965	G
5	5	1971	C
5	5	1972	G
5	5	1974	U
5	5	1975	G
5	5	1976	G
5	5	1983	A
5	5	1984	A
5	5	1985	G
5	5	1988	G
5	5	1993	C
5	5	1994	C
5	5	1995	G
5	5	1998	A
5	5	2000	G
5	5	2001	G
5	5	2003	G
5	5	2004	U
5	5	2005	G
5	5	2006	U
5	5	2007	G
5	5	2008	U
5	5	2009	A
5	5	2010	A
5	5	2011	C
5	5	2015	U
5	5	2025	A
5	5	2026	A
5	5	2027	U
5	5	2047	A
5	5	2048	U
5	5	2055	G
5	5	2056	G
5	5	2062	C
5	5	2064	G
5	5	2084	U

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Mol	Chain	Res	Type
5	5	2085	G
5	5	2089	G
5	5	2090	U
5	5	2093	G
5	5	2094	C
5	5	2095	A
5	5	2097	A
5	5	2098	G
5	5	2100	G
5	5	2102	G
5	5	2104	A
5	5	2105	A
5	5	2107	A
5	5	2108	G
5	5	2109	A
5	5	2110	G
5	5	2259	G
5	5	2260	C
5	5	2267	U
5	5	2268	A
5	5	2270	G
5	5	2275	G
5	5	2289	C
5	5	2300	A
5	5	2301	G
5	5	2306	G
5	5	2313	A
5	5	2316	G
5	5	2331	G
5	5	2333	G
5	5	2348	G
5	5	2351	C
5	5	2384	U
5	5	2395	A
5	5	2396	A
5	5	2399	G
5	5	2422	C
5	5	2425	U
5	5	2433	G
5	5	2469	C
5	5	2471	G
5	5	2475	G

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Mol	Chain	Res	Type
5	5	2488	C
5	5	2489	C
5	5	2490	U
5	5	2491	C
5	5	2492	C
5	5	2495	U
5	5	2503	G
5	5	2504	C
5	5	2505	C
5	5	2506	G
5	5	2513	A
5	5	2530	U
5	5	2537	A
5	5	2546	G
5	5	2547	G
5	5	2553	A
5	5	2564	G
5	5	2570	U
5	5	2575	U
5	5	2583	C
5	5	2586	G
5	5	2589	C
5	5	2618	G
5	5	2620	G
5	5	2638	G
5	5	2640	G
5	5	2658	G
5	5	2662	G
5	5	2669	C
5	5	2686	G
5	5	2687	U
5	5	2689	C
5	5	2694	G
5	5	2695	A
5	5	2696	A
5	5	2705	G
5	5	2716	C
5	5	2719	C
5	5	2724	G
5	5	2725	A
5	5	2726	G
5	5	2740	U

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Mol	Chain	Res	Type
5	5	2744	A
5	5	2753	G
5	5	2754	G
5	5	2757	A
5	5	2759	G
5	5	2760	G
5	5	2761	U
5	5	2763	U
5	5	2764	A
5	5	2769	U
5	5	2772	C
5	5	2787	A
5	5	2788	U
5	5	2790	U
5	5	2798	A
5	5	2814	C
5	5	2826	U
5	5	2827	G
5	5	2828	U
5	5	2833	A
5	5	2838	G
5	5	2842	G
5	5	2855	G
5	5	2875	C
5	5	2897	G
5	5	2898	G
5	5	3604	A
5	5	3605	C
5	5	3616	U
5	5	3617	G
5	5	3625	G
5	5	3626	G
5	5	3635	A
5	5	3662	A
5	5	3664	G
5	5	3673	C
5	5	3674	G
5	5	3692	A
5	5	3740	G
5	5	3748	A
5	5	3753	G
5	5	3759	A

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Mol	Chain	Res	Type
5	5	3760	A
5	5	3773	U
5	5	3776	G
5	5	3777	G
5	5	3778	U
5	5	3784	A
5	5	3785	A
5	5	3786	U
5	5	3811	G
5	5	3812	C
5	5	3814	U
5	5	3817	A
5	5	3819	G
5	5	3822	U
5	5	3823	G
5	5	3840	U
5	5	3876	A
5	5	3877	A
5	5	3878	C
5	5	3879	G
5	5	3880	G
5	5	3889	G
5	5	3892	U
5	5	3897	G
5	5	3898	G
5	5	3901	A
5	5	3905	A
5	5	3906	A
5	5	3907	G
5	5	3908	A
5	5	3915	U
5	5	3916	G
5	5	3917	A
5	5	3926	C
5	5	3927	U
5	5	3939	G
5	5	4069	U
5	5	4073	A
5	5	4076	G
5	5	4077	A
5	5	4085	A
5	5	4086	G

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Mol	Chain	Res	Type
5	5	4088	C
5	5	4090	G
5	5	4091	G
5	5	4092	G
5	5	4093	G
5	5	4119	C
5	5	4120	U
5	5	4121	G
5	5	4125	C
5	5	4127	A
5	5	4128	A
5	5	4134	G
5	5	4162	C
5	5	4163	U
5	5	4166	G
5	5	4170	A
5	5	4173	G
5	5	4183	G
5	5	4184	G
5	5	4191	G
5	5	4203	A
5	5	4212	A
5	5	4229	U
5	5	4232	U
5	5	4233	A
5	5	4234	A
5	5	4241	C
5	5	4243	C
5	5	4248	A
5	5	4251	A
5	5	4253	A
5	5	4254	G
5	5	4255	A
5	5	4256	A
5	5	4257	A
5	5	4258	C
5	5	4266	G
5	5	4268	A
5	5	4271	A
5	5	4273	A
5	5	4281	A
5	5	4291	G

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Mol	Chain	Res	Type
5	5	4296	U
5	5	4304	A
5	5	4305	G
5	5	4306	U
5	5	4314	C
5	5	4318	C
5	5	4319	C
5	5	4329	G
5	5	4330	G
5	5	4332	C
5	5	4336	A
5	5	4349	G
5	5	4350	C
5	5	4354	U
5	5	4355	G
5	5	4373	G
5	5	4377	G
5	5	4378	A
5	5	4387	C
5	5	4393	G
5	5	4394	A
5	5	4395	U
5	5	4401	G
5	5	4415	A
5	5	4419	U
5	5	4421	C
5	5	4422	A
5	5	4424	A
5	5	4437	U
5	5	4440	G
5	5	4444	C
5	5	4448	G
5	5	4449	A
5	5	4452	U
5	5	4453	C
5	5	4464	A
5	5	4466	C
5	5	4471	U
5	5	4500	U
5	5	4511	A
5	5	4512	U
5	5	4513	A

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Mol	Chain	Res	Type
5	5	4520	G
5	5	4524	G
5	5	4531	U
5	5	4532	U
5	5	4548	A
5	5	4560	C
5	5	4573	G
5	5	4574	U
5	5	4575	G
5	5	4577	U
5	5	4584	A
5	5	4586	G
5	5	4590	A
5	5	4599	A
5	5	4636	U
5	5	4637	G
5	5	4652	G
5	5	4657	U
5	5	4661	G
5	5	4670	C
5	5	4671	C
5	5	4672	A
5	5	4677	U
5	5	4678	G
5	5	4691	A
5	5	4700	A
5	5	4709	U
5	5	4719	G
5	5	4720	C
5	5	4736	C
5	5	4751	G
5	5	4754	G
5	5	4757	C
5	5	4759	C
5	5	4765	G
5	5	4769	G
5	5	4771	C
5	5	4867	G
5	5	4868	G
5	5	4870	G
5	5	4871	C
5	5	4872	G

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Mol	Chain	Res	Type
5	5	4873	G
5	5	4875	G
5	5	4876	A
5	5	4877	G
5	5	4882	U
5	5	4883	C
5	5	4885	U
5	5	4893	A
5	5	4894	A
5	5	4895	U
5	5	4896	G
5	5	4898	G
5	5	4904	G
5	5	4910	A
5	5	4913	G
5	5	4914	G
5	5	4915	G
5	5	4918	C
5	5	4919	G
5	5	4921	C
5	5	4924	C
5	5	4925	U
5	5	4926	C
5	5	4927	G
5	5	4928	C
5	5	4934	A
5	5	4937	C
5	5	4940	C
5	5	4943	A
5	5	4944	C
5	5	4947	U
5	5	4948	C
5	5	4949	G
5	5	4950	U
5	5	4951	G
5	5	4955	A
5	5	4956	A
5	5	4960	G
5	5	4964	C
5	5	4965	U
5	5	4966	A
5	5	4976	U

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Mol	Chain	Res	Type
5	5	4988	U
5	5	4989	U
5	5	4990	C
5	5	5006	U
5	5	5007	A
5	5	5014	A
5	5	5017	G
5	5	5040	U
5	5	5041	G
5	5	5047	C
5	5	5050	C
5	5	5052	C
5	5	5053	U
5	5	5054	C
5	5	5061	A
5	5	5062	G
7	7	7	G
7	7	22	A
7	7	53	U
7	7	54	A
7	7	63	C
7	7	64	G
7	7	100	A
7	7	110	G
7	7	117	G
7	7	120	U
8	8	2	G
8	8	23	C
8	8	34	U
8	8	35	C
8	8	38	U
8	8	39	G
8	8	51	U
8	8	59	A
8	8	62	A
8	8	63	U
8	8	75	G
8	8	87	G
8	8	90	C
8	8	94	G
8	8	103	A
8	8	105	C

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Mol	Chain	Res	Type
8	8	110	U
8	8	111	U
8	8	114	G
8	8	123	U
8	8	125	C
8	8	126	C
8	8	127	U
8	8	135	C
8	8	147	G
8	8	150	C
8	8	153	C
20	K	2	A
20	K	3	C
20	K	4	C
20	K	25	A
20	K	33	G
20	K	41	G
20	K	42	A
20	K	44	U
20	K	46	A
20	K	56	G
20	K	60	A
20	K	65	C
20	K	67	C
20	K	68	A
20	K	71	G
20	K	72	C
20	K	74	G
20	K	75	G
20	K	79	A
20	K	103	A
20	K	110	U
20	K	111	A
20	K	113	G
20	K	114	G
20	K	115	U
20	K	116	U
20	K	124	U
20	K	126	G
20	K	127	C
20	K	129	C
20	K	130	G

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Mol	Chain	Res	Type
20	K	141	A
20	K	142	C
20	K	143	U
20	K	147	A
20	K	149	A
20	K	155	G
20	K	158	A
20	K	160	U
20	K	162	C
20	K	163	U
20	K	164	A
20	K	165	G
20	K	170	A
20	K	173	A
20	K	175	A
20	K	180	G
20	K	182	C
20	K	183	G
20	K	184	G
20	K	215	G
20	K	297	A
20	K	302	A
20	K	312	G
20	K	313	A
20	K	314	U
20	K	317	C
20	K	319	C
20	K	320	G
20	K	332	G
20	K	335	G
20	K	351	G
20	K	360	A
20	K	364	A
20	K	368	U
20	K	369	C
20	K	370	G
20	K	385	G
20	K	386	C
20	K	398	A
20	K	399	C
20	K	400	C
20	K	407	G

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Mol	Chain	Res	Type
20	K	408	A
20	K	409	C
20	K	418	A
20	K	435	A
20	K	436	G
20	K	437	G
20	K	438	G
20	K	448	A
20	K	450	C
20	K	464	A
20	K	465	A
20	K	466	G
20	K	471	G
20	K	472	C
20	K	473	A
20	K	474	G
20	K	475	C
20	K	482	G
20	K	487	U
20	K	492	C
20	K	495	U
20	K	496	C
20	K	500	A
20	K	504	G
20	K	516	A
20	K	523	A
20	K	525	A
20	K	530	U
20	K	532	C
20	K	533	A
20	K	544	G
20	K	547	G
20	K	548	C
20	K	549	C
20	K	550	C
20	K	551	U
20	K	554	A
20	K	555	A
20	K	556	U
20	K	559	G
20	K	560	A
20	K	563	G

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Mol	Chain	Res	Type
20	K	564	A
20	K	568	C
20	K	576	A
20	K	583	A
20	K	587	A
20	K	588	G
20	K	590	A
20	K	591	U
20	K	594	A
20	K	606	G
20	K	608	C
20	K	614	C
20	K	617	G
20	K	629	A
20	K	631	U
20	K	640	A
20	K	643	A
20	K	644	G
20	K	660	C
20	K	668	A
20	K	669	A
20	K	671	A
20	K	672	A
20	K	673	G
20	K	683	G
20	K	688	U
20	K	689	U
20	K	690	G
20	K	696	G
20	K	752	G
20	K	753	C
20	K	754	G
20	K	798	G
20	K	799	U
20	K	810	A
20	K	811	A
20	K	821	G
20	K	822	U
20	K	830	A
20	K	833	C
20	K	834	C
20	K	844	U

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Mol	Chain	Res	Type
20	K	845	G
20	K	846	G
20	K	847	A
20	K	861	A
20	K	862	A
20	K	869	A
20	K	870	A
20	K	871	U
20	K	872	A
20	K	873	G
20	K	878	G
20	K	881	G
20	K	882	U
20	K	887	U
20	K	890	U
20	K	894	G
20	K	898	U
20	K	901	G
20	K	907	G
20	K	909	G
20	K	913	A
20	K	919	A
20	K	920	A
20	K	922	A
20	K	933	G
20	K	934	G
20	K	955	A
20	K	971	G
20	K	990	A
20	K	992	A
20	K	999	G
20	K	1017	U
20	K	1023	A
20	K	1041	G
20	K	1045	U
20	K	1060	A
20	K	1061	U
20	K	1062	A
20	K	1067	C
20	K	1083	A
20	K	1085	C
20	K	1097	G

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Mol	Chain	Res	Type
20	K	1100	A
20	K	1115	U
20	K	1116	C
20	K	1117	C
20	K	1118	C
20	K	1131	G
20	K	1133	A
20	K	1138	C
20	K	1139	C
20	K	1150	A
20	K	1153	C
20	K	1154	U
20	K	1155	U
20	K	1161	U
20	K	1170	A
20	K	1195	A
20	K	1207	G
20	K	1208	A
20	K	1215	C
20	K	1221	G
20	K	1224	G
20	K	1241	A
20	K	1242	U
20	K	1251	A
20	K	1253	A
20	K	1256	G
20	K	1257	G
20	K	1259	A
20	K	1271	C
20	K	1272	C
20	K	1274	G
20	K	1275	G
20	K	1280	G
20	K	1282	A
20	K	1284	A
20	K	1285	G
20	K	1286	G
20	K	1289	U
20	K	1291	A
20	K	1293	A
20	K	1294	G
20	K	1295	A

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Mol	Chain	Res	Type
20	K	1299	A
20	K	1300	U
20	K	1301	A
20	K	1302	G
20	K	1303	C
20	K	1308	U
20	K	1309	C
20	K	1312	G
20	K	1316	C
20	K	1318	G
20	K	1323	U
20	K	1330	G
20	K	1333	U
20	K	1341	C
20	K	1342	U
20	K	1343	U
20	K	1348	G
20	K	1354	G
20	K	1371	U
20	K	1372	U
20	K	1378	A
20	K	1393	G
20	K	1395	C
20	K	1396	A
20	K	1397	U
20	K	1401	A
20	K	1402	A
20	K	1404	U
20	K	1412	C
20	K	1428	G
20	K	1429	G
20	K	1431	G
20	K	1439	A
20	K	1447	G
20	K	1454	A
20	K	1455	A
20	K	1462	U
20	K	1463	U
20	K	1466	G
20	K	1476	A
20	K	1477	U
20	K	1489	A

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Mol	Chain	Res	Type
20	K	1490	G
20	K	1493	C
20	K	1494	U
20	K	1495	G
20	K	1498	A
20	K	1507	G
20	K	1509	U
20	K	1510	G
20	K	1518	C
20	K	1521	C
20	K	1522	A
20	K	1533	A
20	K	1535	U
20	K	1536	G
20	K	1545	A
20	K	1548	G
20	K	1551	U
20	K	1574	C
20	K	1575	G
20	K	1579	A
20	K	1580	A
20	K	1582	C
20	K	1585	U
20	K	1586	U
20	K	1587	G
20	K	1588	A
20	K	1601	A
20	K	1606	G
20	K	1621	U
20	K	1623	A
20	K	1637	A
20	K	1648	G
20	K	1665	G
20	K	1680	G
20	K	1683	C
20	K	1695	A
20	K	1698	C
20	K	1721	U
20	K	1722	G
20	K	1726	G
20	K	1729	U
20	K	1748	G

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Mol	Chain	Res	Type
20	K	1753	C
20	K	1756	C
20	K	1758	G
20	K	1775	U
20	K	1781	A
20	K	1783	C
20	K	1784	G
20	K	1785	C
20	K	1806	A
20	K	1809	A
20	K	1823	A
20	K	1824	A
20	K	1825	A
20	K	1831	A
20	K	1836	G
20	K	1838	U
20	K	1849	G
20	K	1851	A
20	K	1852	C
20	K	1861	G
20	K	1862	G
20	K	1863	A
20	K	1865	C
20	K	1866	A
20	K	1869	A

All (66) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	2	20	U
4	4	10	G
5	5	12	A
5	5	47	A
5	5	48	G
5	5	125	C
5	5	385	A
5	5	406	C
5	5	480	C
5	5	481	G
5	5	485	C
5	5	492	U
5	5	504	G

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Mol	Chain	Res	Type
5	5	509	A
5	5	696	C
5	5	959	G
5	5	1072	C
5	5	1174	G
5	5	1211	G
5	5	1291	G
5	5	1329	G
5	5	1370	G
5	5	1445	U
5	5	1455	G
5	5	1633	G
5	5	1804	A
5	5	1818	G
5	5	2009	A
5	5	2046	G
5	5	2089	G
5	5	2266	C
5	5	2502	A
5	5	2546	G
5	5	2695	A
5	5	3625	G
5	5	3673	C
5	5	3876	A
5	5	3888	G
5	5	3904	G
5	5	4075	U
5	5	4120	U
5	5	4232	U
5	5	4247	G
5	5	4448	G
5	5	4699	U
5	5	4719	G
5	5	4884	G
5	5	4925	U
5	5	4936	G
5	5	4947	U
8	8	124	U
20	K	110	U
20	K	140	U
20	K	434	G
20	K	465	A

*Continued on next page...*

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Mol	Chain	Res	Type
20	K	532	C
20	K	553	U
20	K	642	U
20	K	688	U
20	K	752	G
20	K	870	A
20	K	1137	U
20	K	1520	G
20	K	1664	A
20	K	1665	G
20	K	1679	A

## 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 297 ligands modelled in this entry, 297 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

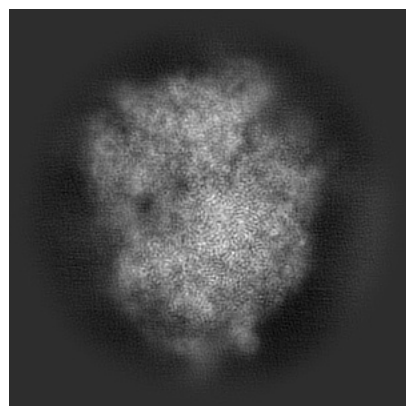
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-72314. These allow visual inspection of the internal detail of the map and identification of artifacts.

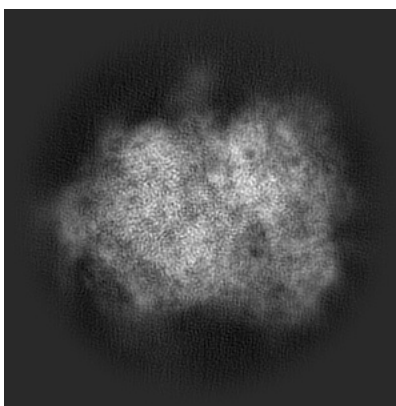
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

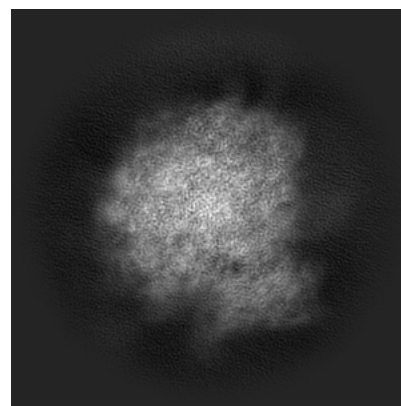
#### 6.1.1 Primary map



X

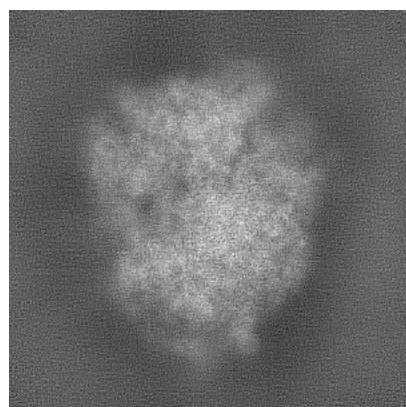


Y

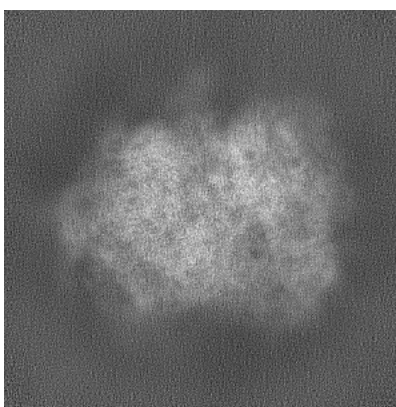


Z

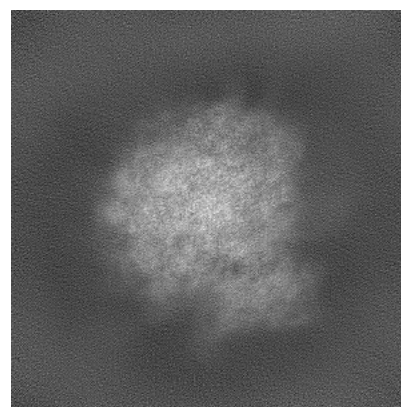
#### 6.1.2 Raw map



X



Y

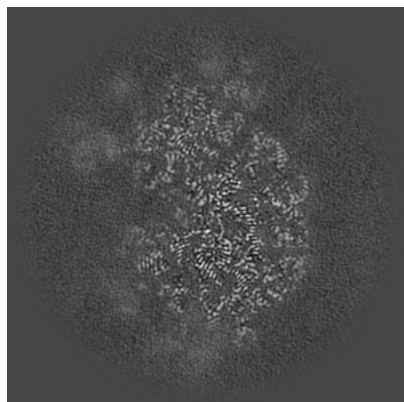


Z

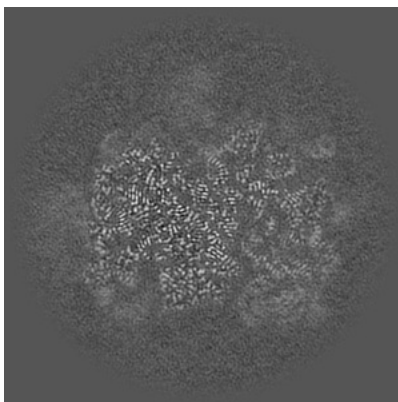
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

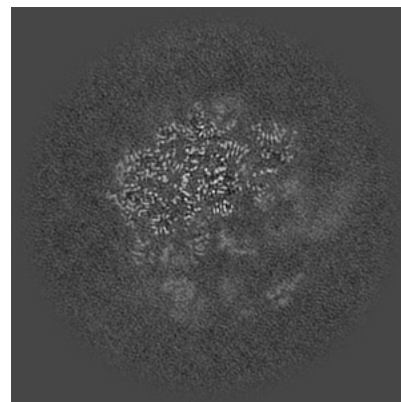
### 6.2.1 Primary map



X Index: 232

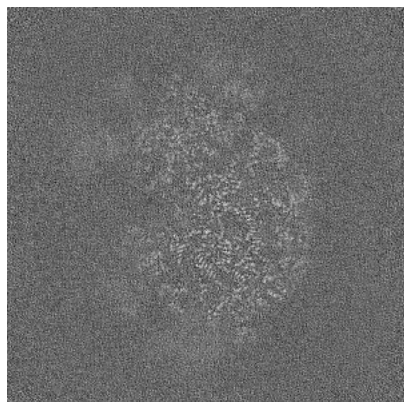


Y Index: 232

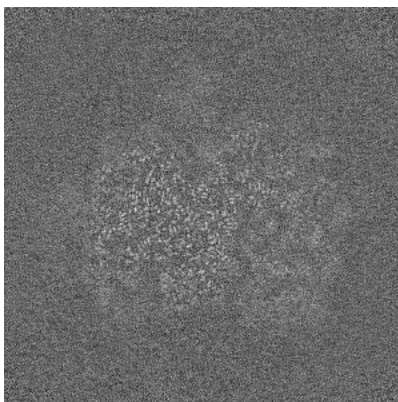


Z Index: 232

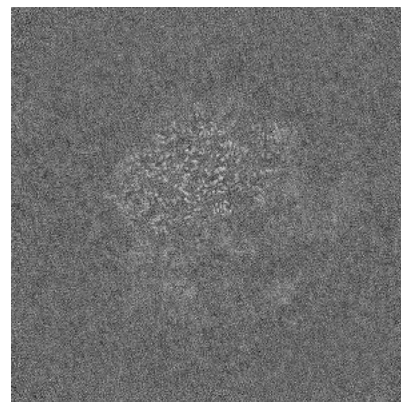
### 6.2.2 Raw map



X Index: 232



Y Index: 232



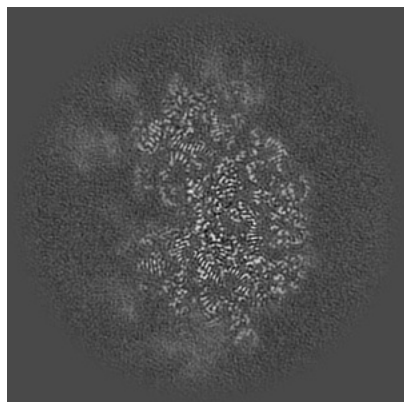
Z Index: 232

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

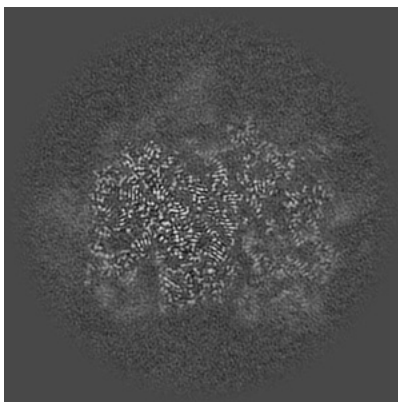


## 6.3 Largest variance slices [i](#)

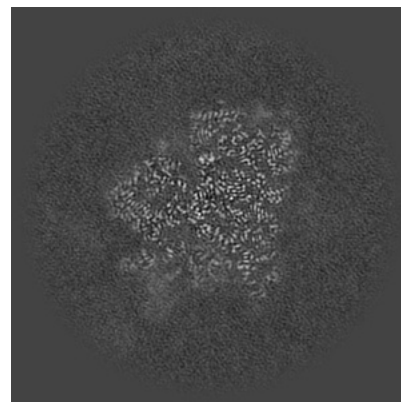
### 6.3.1 Primary map



X Index: 230

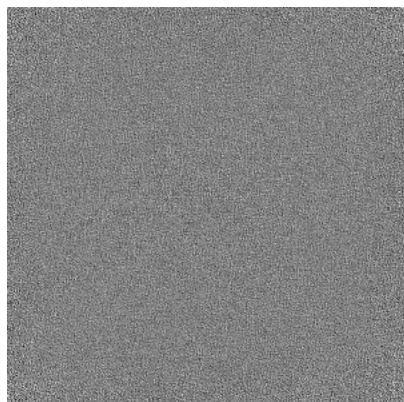


Y Index: 234

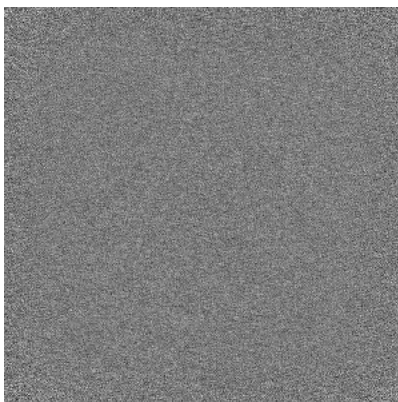


Z Index: 191

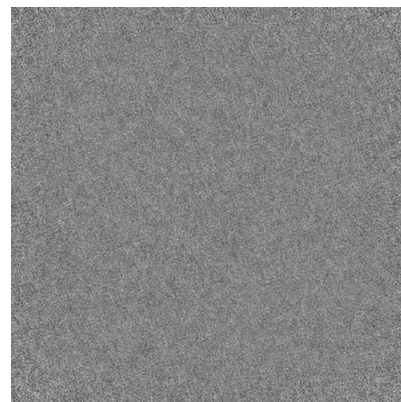
### 6.3.2 Raw map



X Index: 0



Y Index: 0

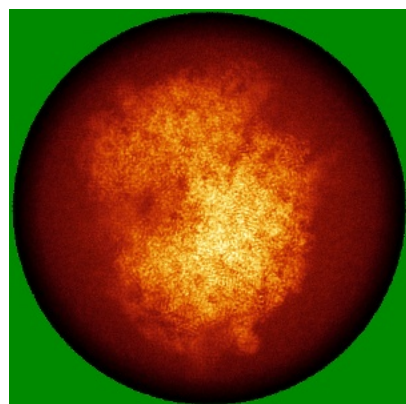


Z Index: 0

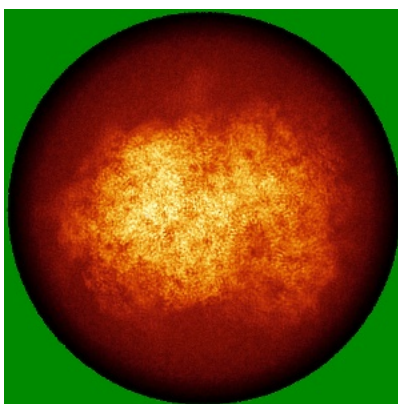
The images above show the largest variance slices of the map in three orthogonal directions.

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

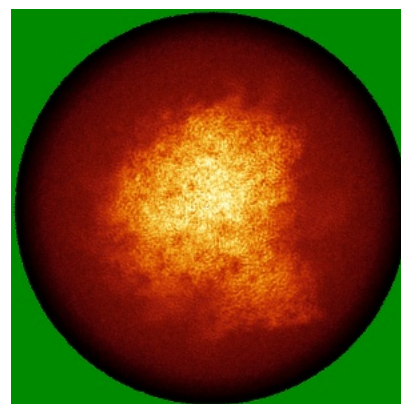
### 6.4.1 Primary map



X

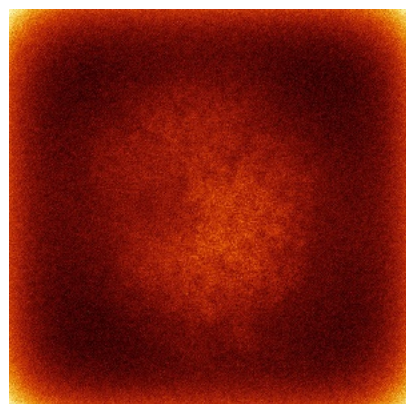


Y

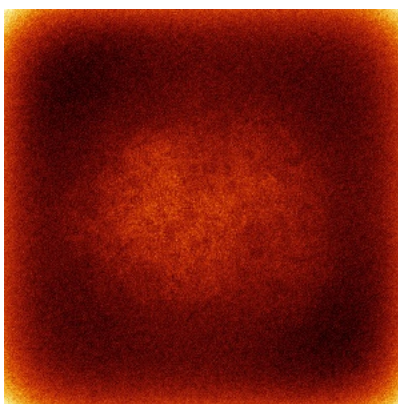


Z

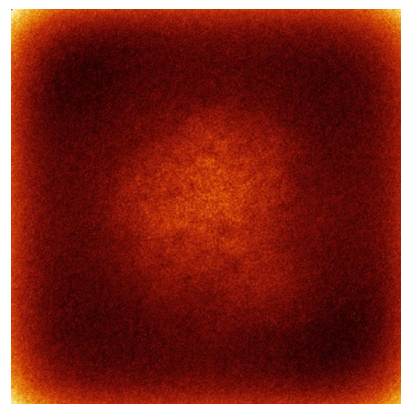
### 6.4.2 Raw map



X



Y

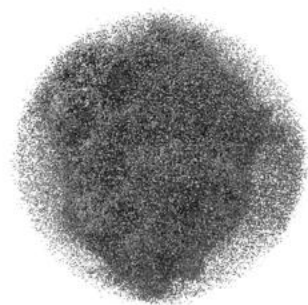


Z

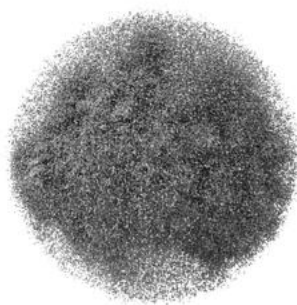
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

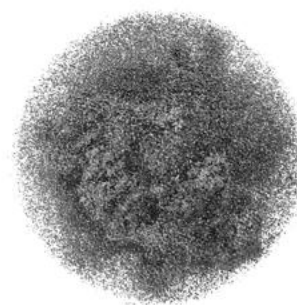
### 6.5.1 Primary map



X



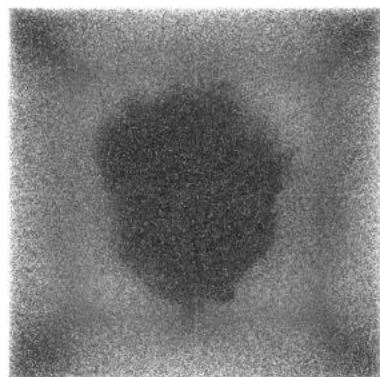
Y



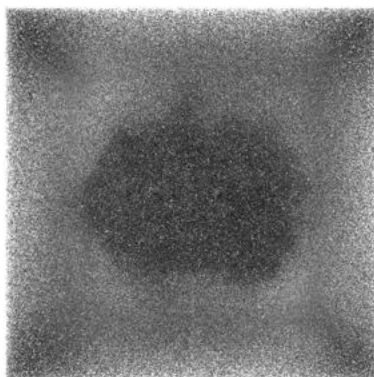
Z

The images above show the 3D surface view of the map at the recommended contour level 0.044. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

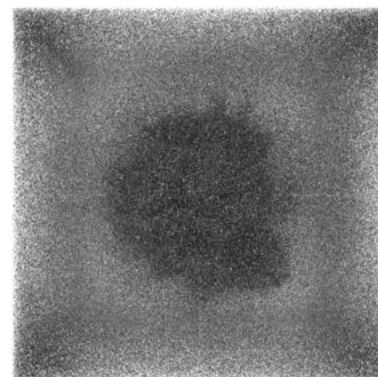
### 6.5.2 Raw map



X



Y



Z

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



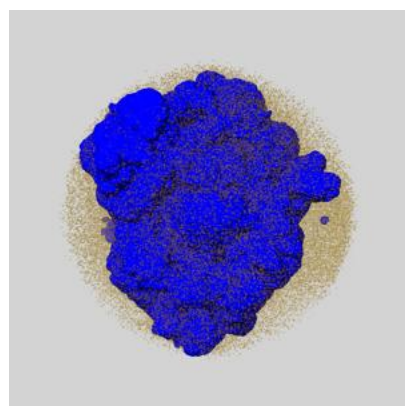
## 6.6 Mask visualisation [i](#)

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

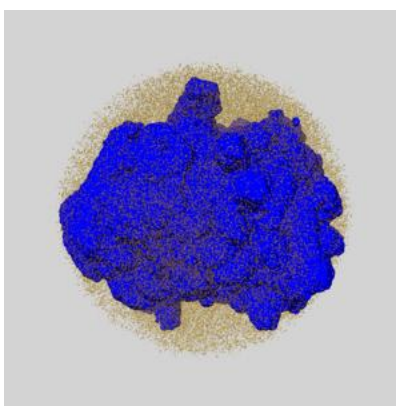
A mask typically either:

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

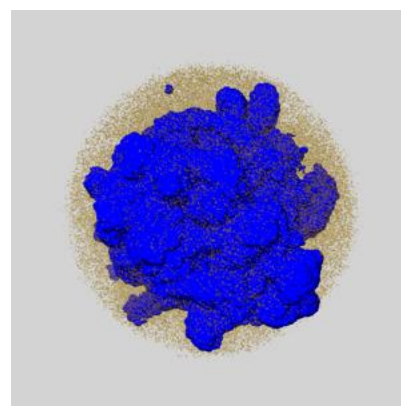
### 6.6.1 emd\_72314\_msk\_1.map [i](#)



X



Y



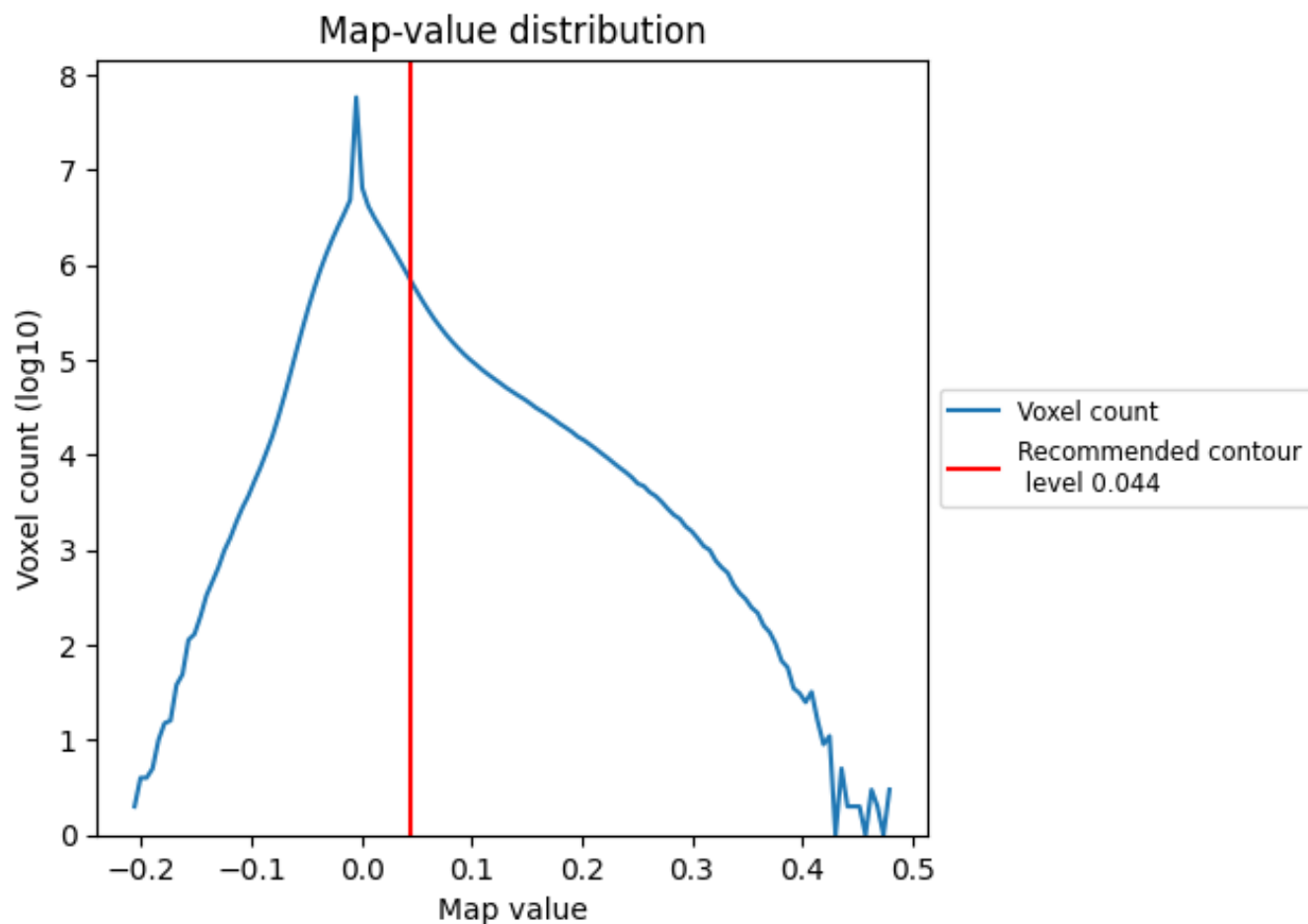
Z



## 7 Map analysis [i](#)

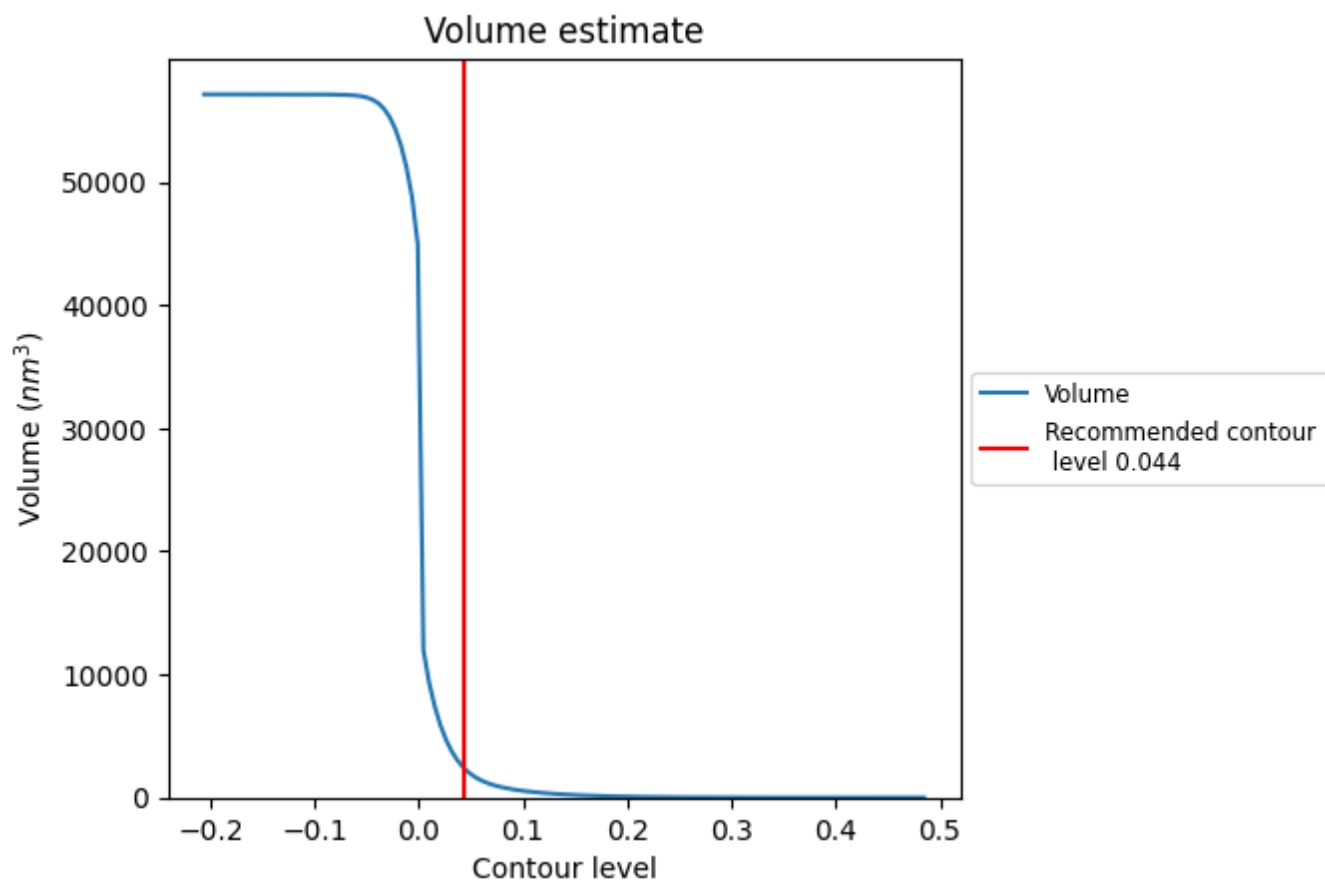
This section contains the results of statistical analysis of the map.

### 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.

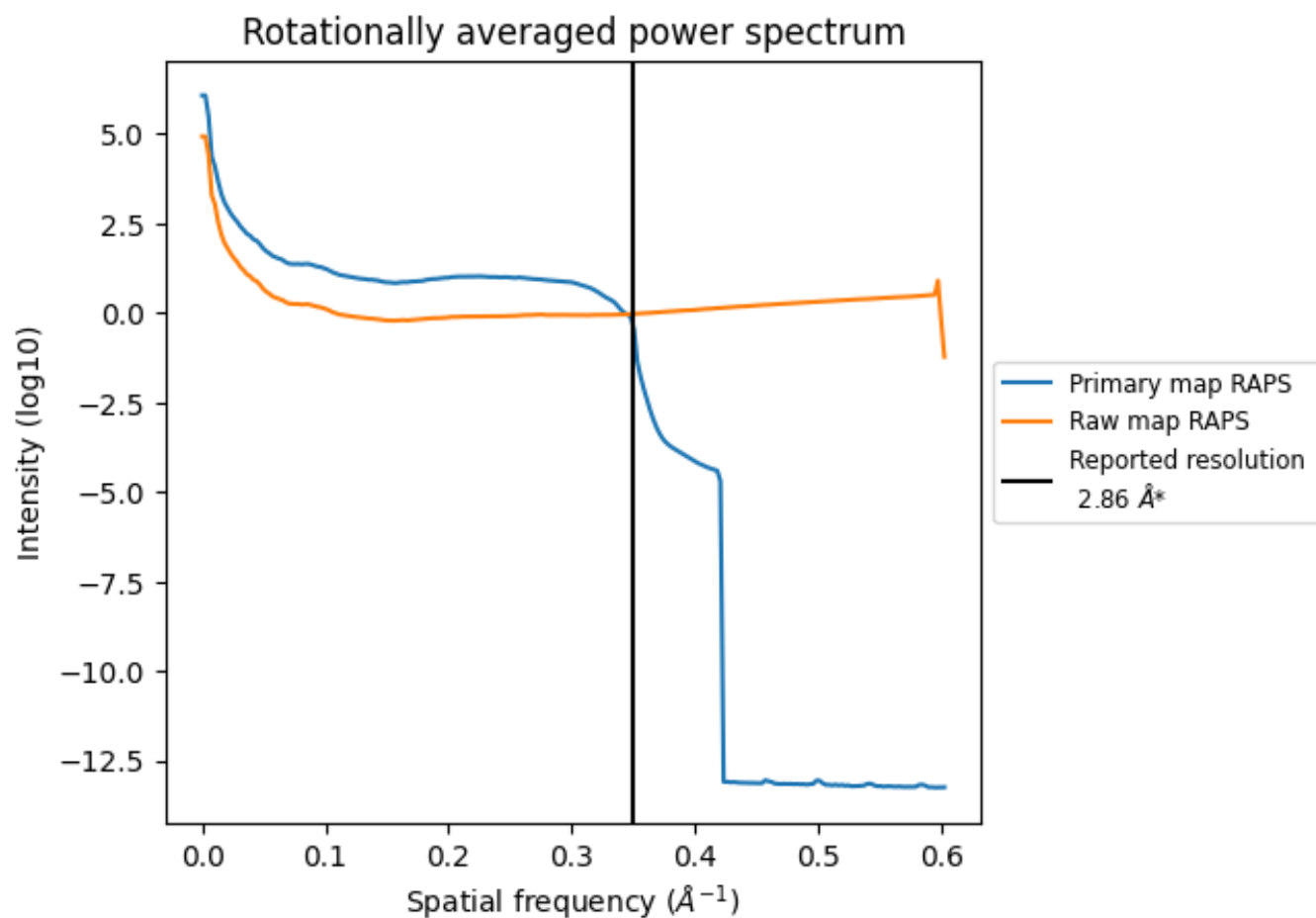
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2354 nm<sup>3</sup>; this corresponds to an approximate mass of 2126 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 ⓘ

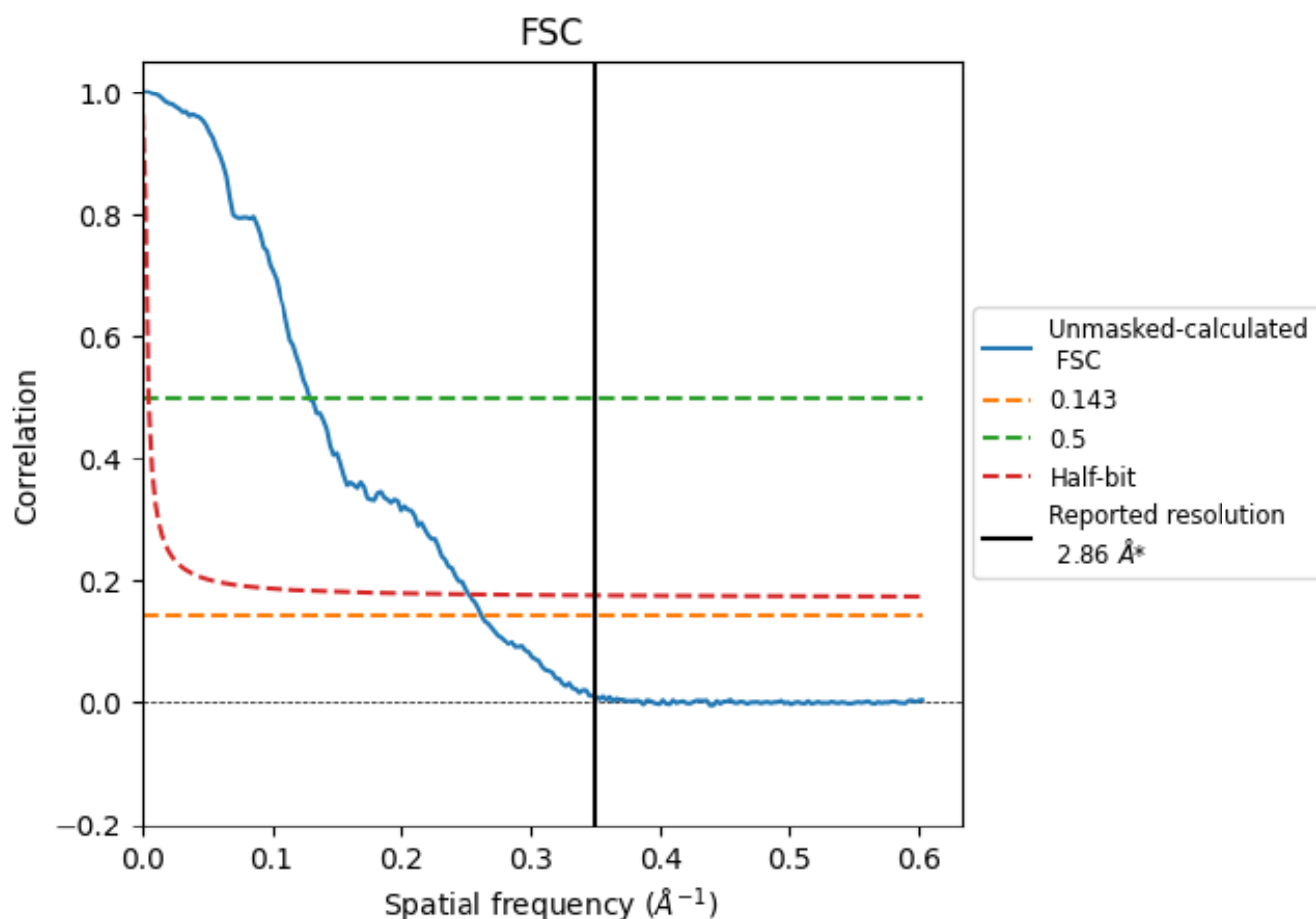


\*Reported resolution corresponds to spatial frequency of 0.350  $\text{\AA}^{-1}$

## 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 0.350 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

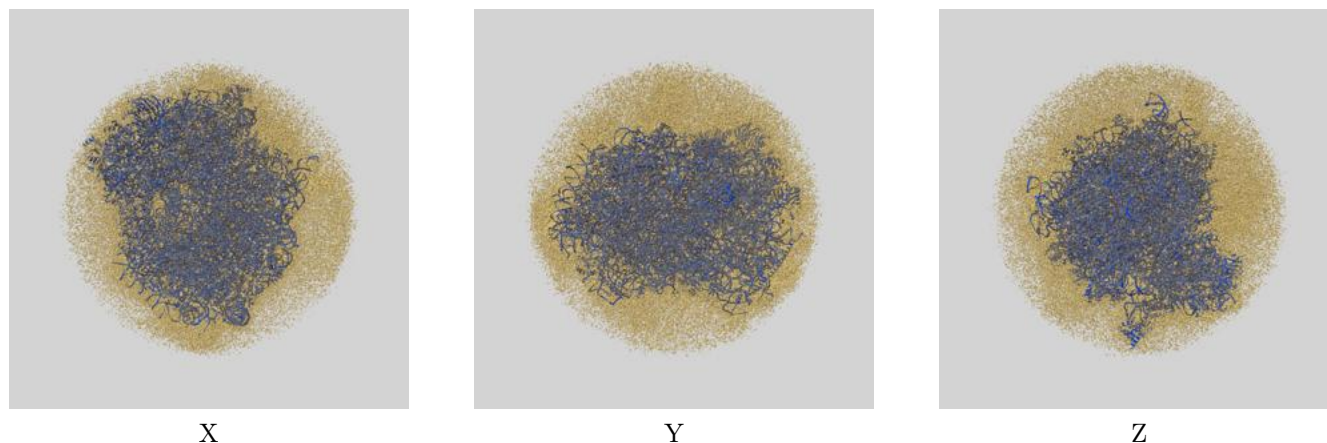
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.86	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.81	7.73	3.97

\*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 3.81 differs from the reported value 2.86 by more than 10 %

## 9 Map-model fit [i](#)

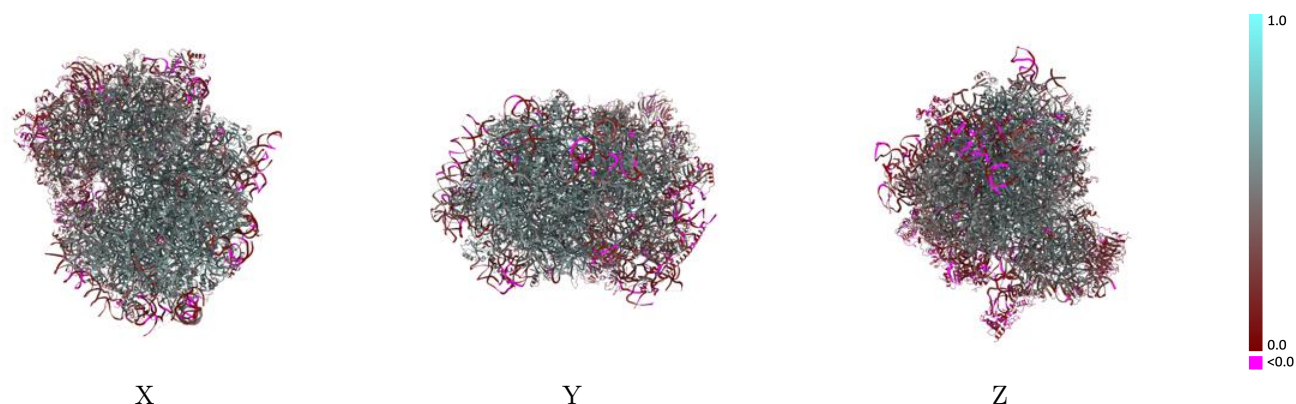
This section contains information regarding the fit between EMDB map EMD-72314 and PDB model 9Q7Q. Per-residue inclusion information can be found in section 3 on page 21.

### 9.1 Map-model overlay [i](#)



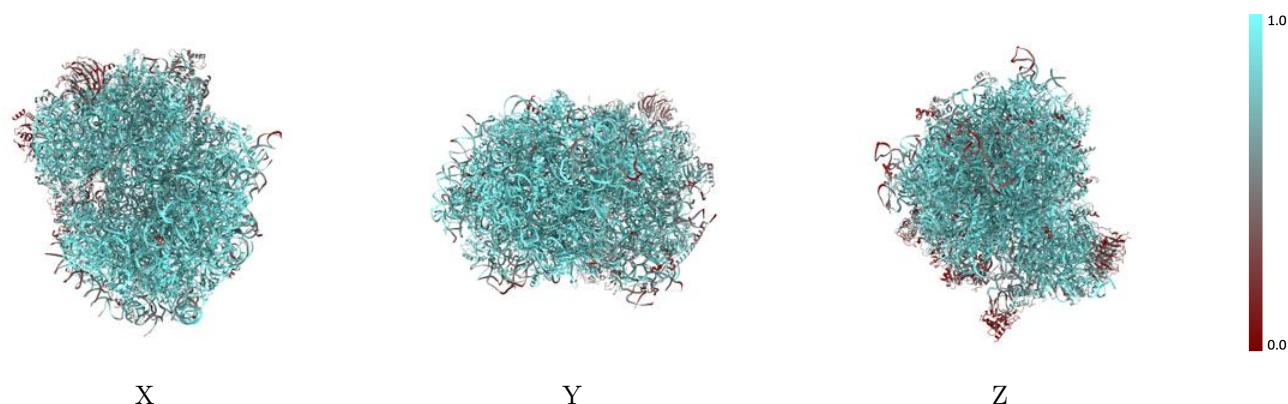
The images above show the 3D surface view of the map at the recommended contour level 0.044 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



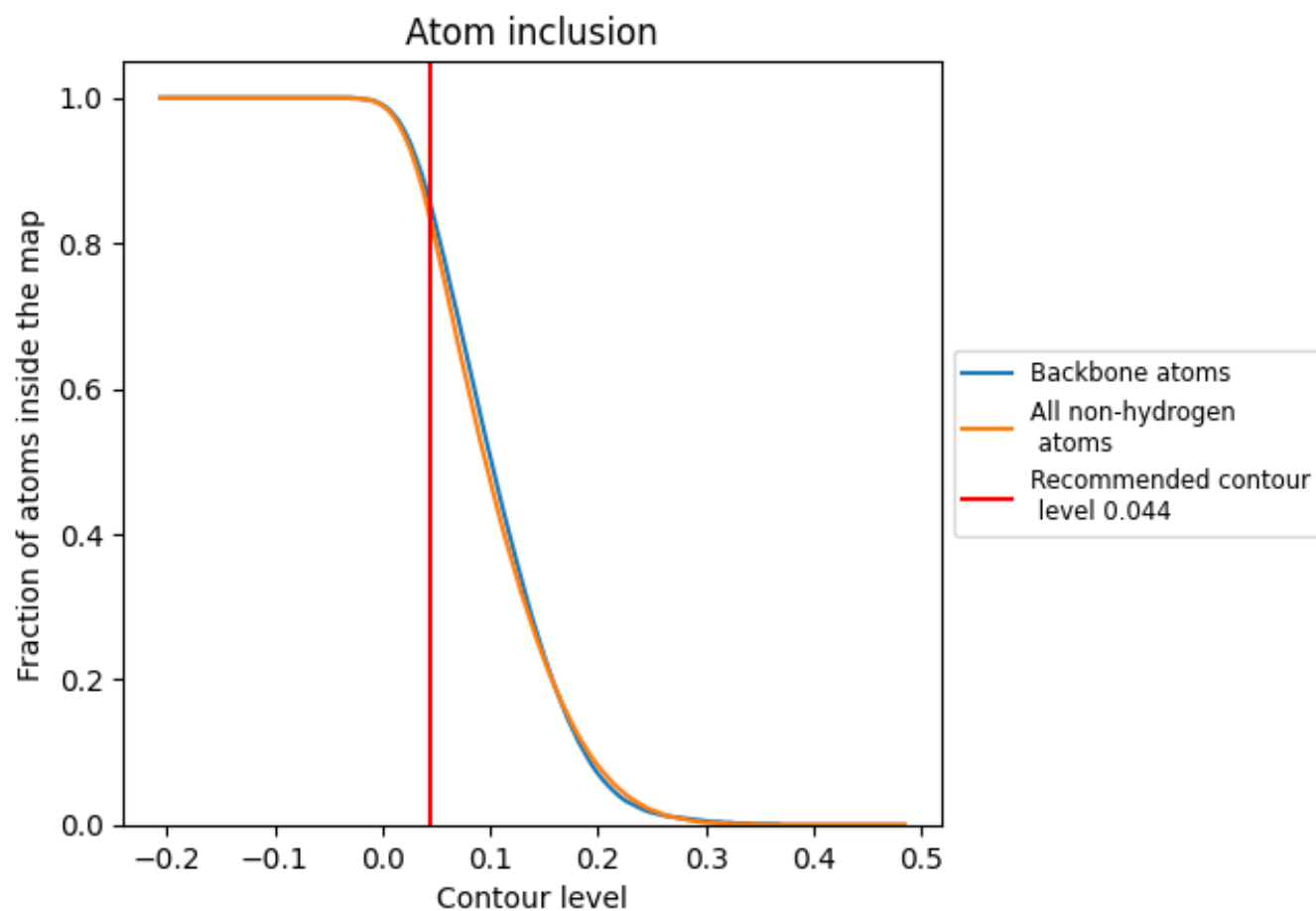
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.044).

## 9.4 Atom inclusion [i](#)









































































At the recommended contour level, 86% of all backbone atoms, 84% 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 (0.044) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8360	 0.4380
0	 0.1000	 0.0630
1	 0.8330	 0.4650
2	 0.9020	 0.4520
4	 0.9350	 0.5260
5	 0.8850	 0.4550
6	 0.3070	 0.2020
7	 0.9520	 0.5160
8	 0.9330	 0.5060
9	 0.8090	 0.4340
A	 0.9520	 0.5810
AA	 0.7250	 0.3680
AB	 0.5930	 0.2650
B	 0.9220	 0.5400
BB	 0.6170	 0.2820
C	 0.9260	 0.5500
CC	 0.6300	 0.3150
D	 0.8470	 0.4570
DD	 0.7890	 0.4100
E	 0.8220	 0.4500
EE	 0.8290	 0.4620
F	 0.9130	 0.5390
FF	 0.7190	 0.3620
G	 0.8400	 0.4620
GG	 0.7330	 0.3650
H	 0.7990	 0.4180
HH	 0.7880	 0.4400
I	 0.8040	 0.4640
II	 0.7200	 0.3470
J	 0.8130	 0.4200
JJ	 0.7370	 0.3560
K	 0.8690	 0.4190
KK	 0.6940	 0.3670
L	 0.8650	 0.5020
LL	 0.8430	 0.4470























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Chain	Atom inclusion	Q-score
M	 0.8600	 0.4560
MM	 0.8440	 0.4640
N	 0.9650	 0.5850
NN	 0.7550	 0.3580
O	 0.9020	 0.5360
OO	 0.6830	 0.3360
P	 0.9380	 0.5590
PP	 0.7950	 0.3790
Q	 0.9410	 0.5740
QQ	 0.8470	 0.4950
R	 0.8320	 0.4590
RF	 0.7120	 0.3900
RR	 0.1390	 0.0790
S	 0.8910	 0.5140
SS	 0.6060	 0.2250
T	 0.8780	 0.5180
TT	 0.9080	 0.5200
U	 0.5400	 0.1490
UU	 0.7610	 0.3860
V	 0.9220	 0.5650
VV	 0.8560	 0.5010
W	 0.8760	 0.5160
WW	 0.7230	 0.3340
X	 0.9120	 0.5320
Y	 0.8980	 0.5290
Z	 0.8950	 0.4960
a	 0.9420	 0.5630
b	 0.7720	 0.3970
c	 0.8640	 0.4980
d	 0.8940	 0.5140
e	 0.9370	 0.5700
f	 0.9310	 0.5610
g	 0.8770	 0.4990
h	 0.8920	 0.5070
i	 0.8510	 0.4660
j	 0.9380	 0.5580
k	 0.6890	 0.3990
l	 0.8780	 0.5050
m	 0.2430	 0.1390
n	 0.9400	 0.5480
o	 0.8830	 0.5040
p	 0.9060	 0.5540

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Chain	Atom inclusion	Q-score
q	 0.7920	 0.4280
r	 0.9340	 0.5470
s	 0.2710	 0.0880
t	 0.3270	 0.1030
u	 0.8490	 0.4640
v	 0.8150	 0.4730
w	 0.7520	 0.3780
x	 0.8370	 0.4230
y	 0.7720	 0.4140
z	 0.6330	 0.2610