



Full wwPDB EM Validation Report ⓘ

Jun 9, 2026 – 03:37 PM EDT

PDB ID : 9Q1S / pdb_00009q1s
EMDB ID : EMD-72137
Title : NediV IRES (P site) in complex with Rabbit 80S ribosome
Authors : De, S.; Altomare, C.G.; Abaeva, I.S.; Dadhwal, P.; Garg, P.; Acosta-Reyes, F.; Brown, Z.P.; Pestova, T.V.; Hellen, C.U.T.; Frank, J.
Deposited on : 2025-08-14
Resolution : 3.00 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

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

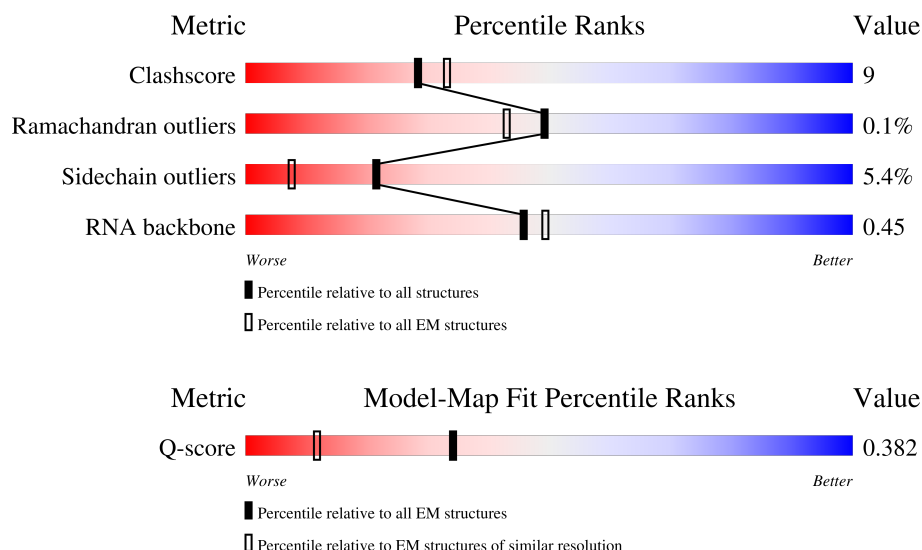
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY




The reported resolution of this entry is 3.00 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	14081 (2.50 - 3.50)

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

Mol	Chain	Length	Quality of chain
1	9	1670	
2	A	248	
3	B	394	







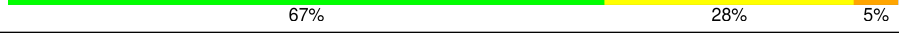
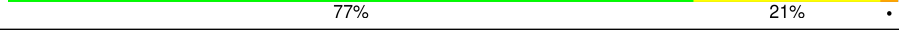
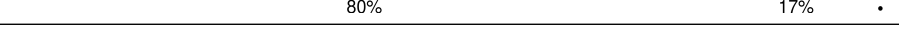
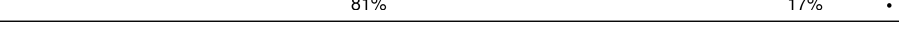
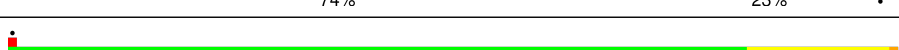

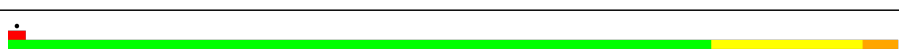

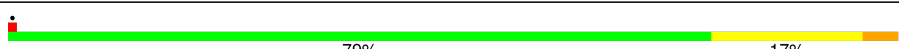





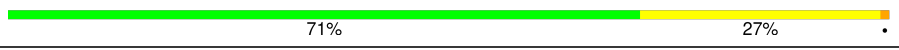
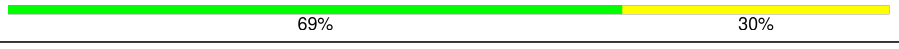



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Mol	Chain	Length	Quality of chain
4	C	362	
5	E	251	
6	G	240	
7	H	190	
8	I	213	
9	J	170	
10	L	210	
11	N	203	
12	O	199	
13	R	180	
14	V	139	
15	W	94	
16	X	118	
17	Y	134	
18	a	147	
19	b	116	
20	e	128	
21	5	3543	
22	7	119	
23	8	156	
24	D	293	
25	F	225	
26	M	138	
27	P	153	
28	Q	187	

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Mol	Chain	Length	Quality of chain
29	S	176	
30	T	159	
31	U	99	
32	Z	135	
33	c	98	
34	d	107	
35	f	109	
36	g	114	
37	h	122	
38	i	102	
39	j	86	
40	k	69	
41	l	50	
42	m	52	
43	n	25	
44	o	104	
45	p	91	
46	r	124	
47	l	167	
48	K	130	
49	AA	217	
50	BB	213	
51	CC	221	
52	EE	262	
53	GG	224	

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Mol	Chain	Length	Quality of chain
54	HH	189	
55	II	206	
56	JJ	176	
57	LL	151	
58	NN	149	
59	OO	136	
60	VV	83	
61	WW	129	
62	XX	141	
63	YY	124	
64	aa	101	
65	bb	83	
66	ee	57	
67	DD	211	
68	FF	191	
69	KK	78	
70	PP	129	
71	QQ	136	
72	RR	132	
73	SS	144	
74	TT	141	
75	UU	48	
76	ZZ	75	
77	cc	62	
78	dd	55	

2 Entry composition

There are 80 unique types of molecules in this entry. The entry contains 208701 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	9	1670	Total	C	N	O	P	0	0
			35659	15917	6408	11665	1669		

- Molecule 2 is a protein called 60S ribosomal protein L8.

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

- Molecule 3 is a protein called 60S ribosomal protein L3.

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

- Molecule 4 is a protein called 60S ribosomal protein L4.

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

- Molecule 5 is a protein called Large ribosomal subunit protein eL6.

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

- Molecule 6 is a protein called Large ribosomal subunit protein eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	G	233	Total	C	N	O	S	0	0
			1879	1199	361	315	4		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	244	GLY	CYS	conflict	UNP G1STW0

- Molecule 7 is a protein called 60S ribosomal protein L9.

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

- Molecule 8 is a protein called Ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	I	205	Total	C	N	O	S	0	0
			1664	1056	321	274	13		

- Molecule 9 is a protein called 60S ribosomal protein L11.

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

- Molecule 10 is a protein called Large ribosomal subunit protein eL13.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L	74	ARG	HIS	conflict	UNP G1TKB3
L	190	ARG	HIS	conflict	UNP G1TKB3

- Molecule 11 is a protein called 60S ribosomal protein L15.

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

- Molecule 12 is a protein called Large ribosomal subunit protein uL13.

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

- Molecule 13 is a protein called 60S ribosomal protein L19.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	38	ARG	HIS	conflict	UNP G1TYL6
R	151	ARG	HIS	conflict	UNP G1TYL6

- Molecule 14 is a protein called Large ribosomal subunit protein uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	V	139	Total	C	N	O	S	0	0
			1034	648	199	182	5		

- Molecule 15 is a protein called Large ribosomal subunit protein eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	W	79	Total	C	N	O	S	0	0
			645	408	127	106	4		

- Molecule 16 is a protein called Large ribosomal subunit protein uL23.

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

- Molecule 17 is a protein called 60S ribosomal protein L26.

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

- Molecule 18 is a protein called 60S ribosomal protein L27a.

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

- Molecule 19 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	b	104	Total	C	N	O	S	0	0
			848	527	189	129	3		

- Molecule 20 is a protein called Large ribosomal subunit protein eL32.

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

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
e	3	ALA	SER	conflict	UNP G1TUN8
e	13	VAL	ILE	conflict	UNP G1TUN8
e	16	ARG	TRP	conflict	UNP G1TUN8
e	81	ASN	SER	conflict	UNP G1TUN8
e	98	GLU	LYS	conflict	UNP G1TUN8
e	108	ARG	CYS	conflict	UNP G1TUN8
e	115	ALA	VAL	conflict	UNP G1TUN8

- Molecule 21 is a RNA chain called 28S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	5	3543	Total	C	N	O	P	0	0
			75972	33833	13910	24686	3543		

- Molecule 22 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	7	119	Total	C	N	O	P	0	0
			2538	1132	454	834	118		

- Molecule 23 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	8	151	Total	C	N	O	P	0	0
			3208	1432	564	1062	150		

- Molecule 24 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	D	293	Total	C	N	O	S	0	0
			2391	1512	438	427	14		

- Molecule 25 is a protein called 60S ribosomal protein L7.

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

- Molecule 26 is a protein called 60S ribosomal protein L14.

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

- Molecule 27 is a protein called 60S ribosomal protein L17.

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

- Molecule 28 is a protein called Large ribosomal subunit protein eL18.

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

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Q	4	ASP	ASN	conflict	UNP G1TFE0
Q	14	ARG	TRP	conflict	UNP G1TFE0
Q	53	MET	LEU	conflict	UNP G1TFE0
Q	58	ARG	TRP	conflict	UNP G1TFE0
Q	75	ARG	GLN	conflict	UNP G1TFE0
Q	80	ALA	PRO	conflict	UNP G1TFE0
Q	86	VAL	ILE	conflict	UNP G1TFE0
Q	104	ARG	HIS	conflict	UNP G1TFE0
Q	110	ARG	CYS	conflict	UNP G1TFE0
Q	137	VAL	GLY	conflict	UNP G1TFE0
Q	157	GLY	ARG	conflict	UNP G1TFE0

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Chain	Residue	Modelled	Actual	Comment	Reference
Q	181	ARG	TRP	conflict	UNP G1TFE0

- Molecule 29 is a protein called eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	S	176	Total	C	N	O	S	0	0
			1462	930	285	236	11		

- Molecule 30 is a protein called 60S ribosomal protein L21.

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

- Molecule 31 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	U	99	Total	C	N	O	S	0	0
			809	519	141	147	2		

- Molecule 32 is a protein called 60S ribosomal protein L27.

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

- Molecule 33 is a protein called 60S ribosomal protein L30.

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

- Molecule 34 is a protein called 60S ribosomal protein L31.

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

- Molecule 35 is a protein called Large ribosomal subunit protein eL33.

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

- Molecule 36 is a protein called 60S ribosomal protein L34.

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

- Molecule 37 is a protein called 60S ribosomal protein L35.

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

- Molecule 38 is a protein called 60S ribosomal protein L36.

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

- Molecule 39 is a protein called 60S ribosomal protein L37.

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

- Molecule 40 is a protein called Large ribosomal subunit protein eL38.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
k	24	LYS	ASN	conflict	UNP G1U001

- Molecule 41 is a protein called 60S ribosomal protein L39.

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

- Molecule 42 is a protein called Large ribosomal subunit protein eL40.

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

- Molecule 43 is a protein called eL41.

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

- Molecule 44 is a protein called eL42.

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

- Molecule 45 is a protein called 60S ribosomal protein L37a.

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

- Molecule 46 is a protein called 60S ribosomal protein L28.

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

- Molecule 47 is a RNA chain called NediV IRES.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	1	167	Total	C	N	O	P	0	0
			3538	1583	612	1176	167		

- Molecule 48 is a protein called eL1.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	K	130	Total	C	N	O	S	0	0
			1064	680	193	186	5		

- Molecule 49 is a protein called 40S_SA_C domain-containing protein.

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

- Molecule 50 is a protein called 40S ribosomal protein S3a.

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

- Molecule 51 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	CC	221	Total	C	N	O	S	0	0
			1716	1111	295	301	9		

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

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

- Molecule 53 is a protein called Small ribosomal subunit protein eS6.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	GG	224	Total	C	N	O	S	0	0
			1813	1134	362	310	7		

- Molecule 54 is a protein called Small ribosomal subunit protein eS7.

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

- Molecule 55 is a protein called 40S ribosomal protein S8.

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

There is a discrepancy between the modelled and reference sequences:

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

- Molecule 56 is a protein called Small ribosomal subunit protein uS4.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	JJ	176	Total	C	N	O	S	0	0
			1472	938	294	238	2		

- Molecule 57 is a protein called Small ribosomal subunit protein uS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	LL	143	Total	C	N	O	S	0	0
			1175	749	222	198	6		

- Molecule 58 is a protein called 40S ribosomal protein S13.

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

- Molecule 59 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 60 is a protein called eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	VV	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

There are 7 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
VV	3	ASN	SER	conflict	UNP G1TM82

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Chain	Residue	Modelled	Actual	Comment	Reference
VV	4	ASP	ASN	conflict	UNP G1TM82
VV	33	GLN	PRO	conflict	UNP G1TM82
VV	50	PHE	SER	conflict	UNP G1TM82
VV	75	ALA	SER	conflict	UNP G1TM82
VV	76	ASP	HIS	conflict	UNP G1TM82
VV	81	LYS	GLN	conflict	UNP G1TM82

- Molecule 61 is a protein called 40S ribosomal protein S15a.

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

- Molecule 62 is a protein called 40S ribosomal protein S23.

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

- Molecule 63 is a protein called 40S ribosomal protein S24.

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

- Molecule 64 is a protein called eS26.

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

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
aa	28	ARG	CYS	conflict	UNP G1TFE8
aa	56	ALA	VAL	conflict	UNP G1TFE8

- Molecule 65 is a protein called 40S ribosomal protein S27.

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

- Molecule 66 is a protein called Small ribosomal subunit protein eS30.

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

- Molecule 67 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	DD	211	Total	C	N	O	S	0	0
			1637	1044	298	287	8		

- Molecule 68 is a protein called Small ribosomal subunit protein uS7.

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

- Molecule 69 is a protein called Small ribosomal subunit protein eS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	KK	78	Total	C	N	O	S	0	0
			658	431	114	107	6		

- Molecule 70 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	PP	129	Total	C	N	O	S	0	0
			1058	670	201	180	7		

- Molecule 71 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	QQ	136	Total	C	N	O	S	0	0
			1087	691	206	187	3		

- Molecule 72 is a protein called 40S ribosomal protein S17.

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

- Molecule 73 is a protein called 40S ribosomal protein S18.

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

- Molecule 74 is a protein called Small ribosomal subunit protein eS19.

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

There is a discrepancy between the modelled and reference sequences:

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

- Molecule 75 is a protein called uS10.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	UU	48	Total	C	N	O	S	0	0
			394	244	80	66	4		

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

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

- Molecule 77 is a protein called 40S ribosomal protein S28.

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

- Molecule 78 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	dd	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 79 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
79	A	1	Total	Mg	0
			1	1	
79	V	1	Total	Mg	0
			1	1	
79	a	1	Total	Mg	0
			1	1	
79	5	192	Total	Mg	0
			192	192	
79	7	6	Total	Mg	0
			6	6	
79	8	3	Total	Mg	0
			3	3	
79	l	1	Total	Mg	0
			1	1	
79	aa	1	Total	Mg	0
			1	1	

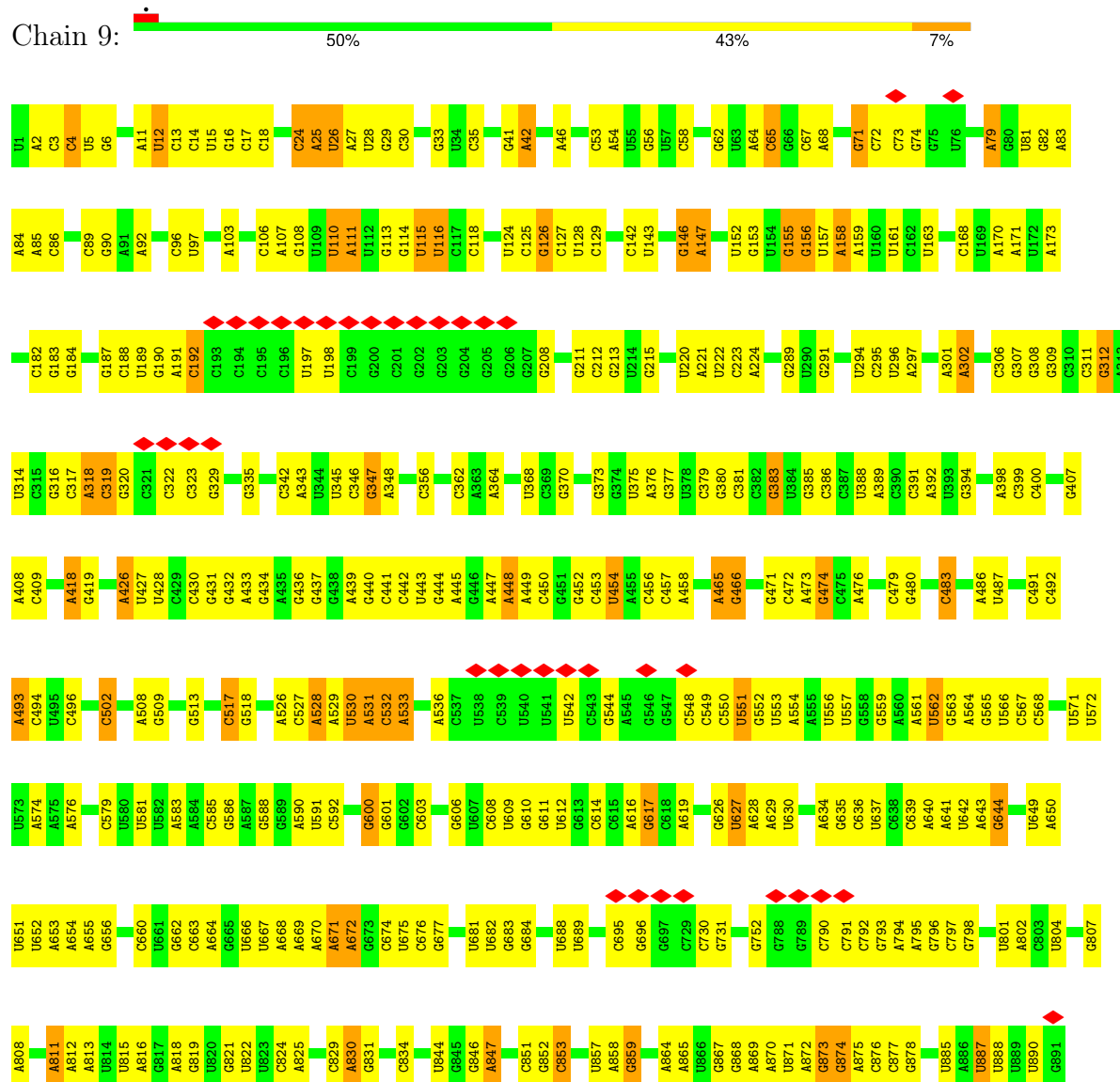
- Molecule 80 is ZINC ION (CCD ID: ZN) (formula: Zn).

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


3 Residue-property plots

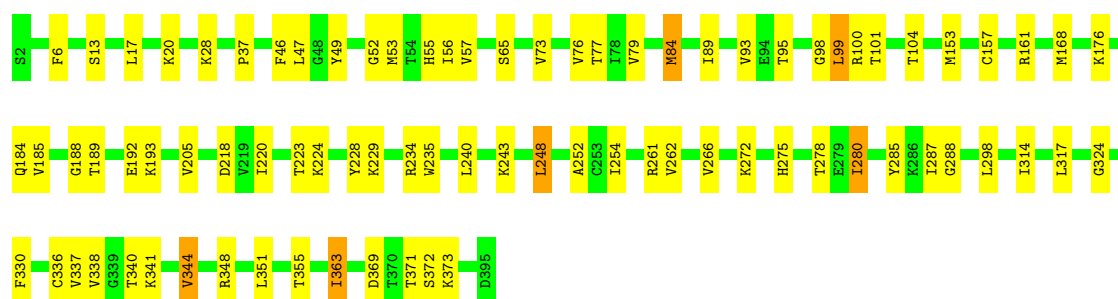
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

• Molecule 1: 18S rRNA




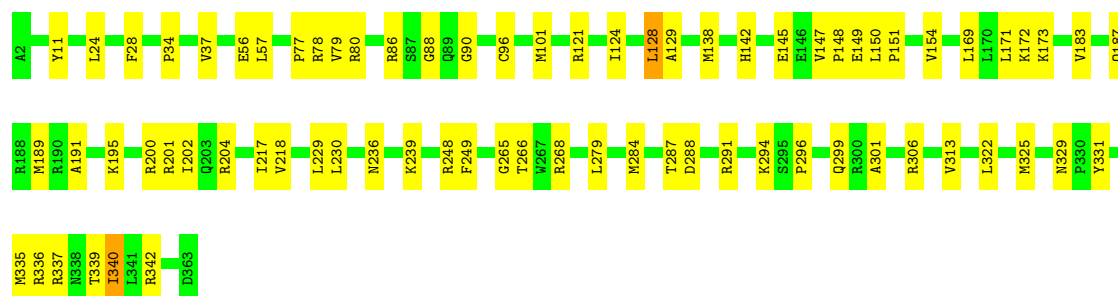


Chain B:  79% 19%



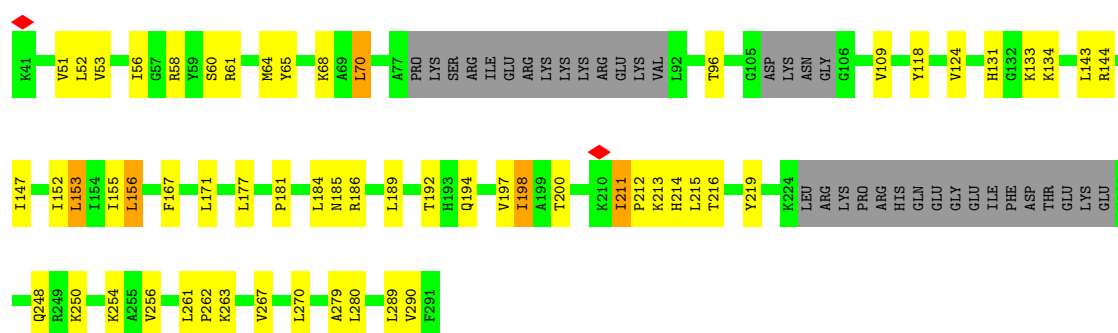
• Molecule 4: 60S ribosomal protein L4

Chain C:  80% 20%



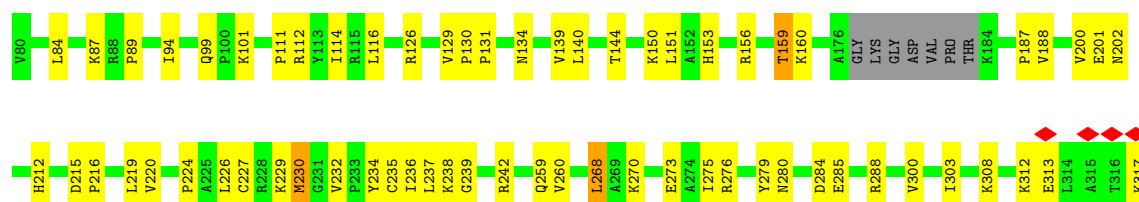
• Molecule 5: Large ribosomal subunit protein eL6

Chain E:  63% 21% 14%



• Molecule 6: Large ribosomal subunit protein eL8

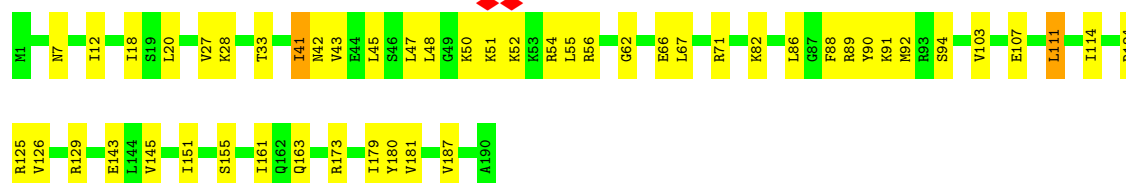
Chain G:  70% 26%





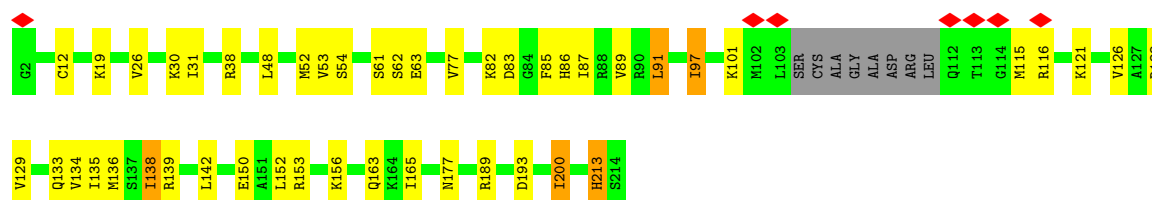
- Molecule 7: 60S ribosomal protein L9

Chain H: 74% 25%



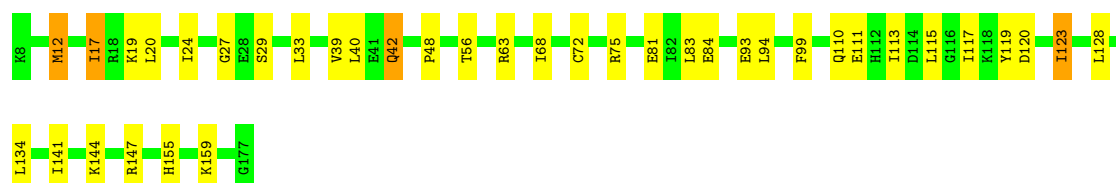
- Molecule 8: Ribosomal protein L10

Chain I: 74% 20%



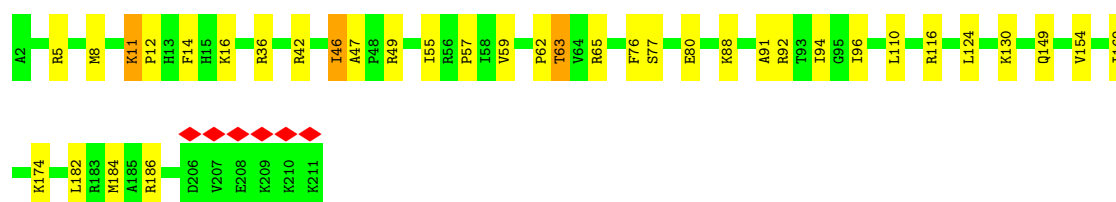
- Molecule 9: 60S ribosomal protein L11

Chain J: 78% 20%



- Molecule 10: Large ribosomal subunit protein eL13

Chain L: 83% 16%

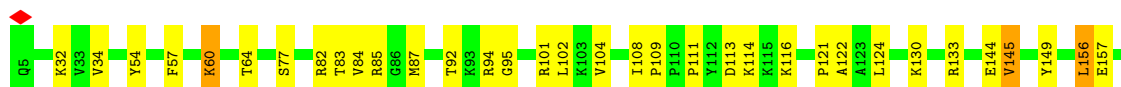
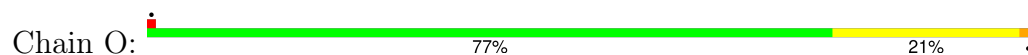


- Molecule 11: 60S ribosomal protein L15

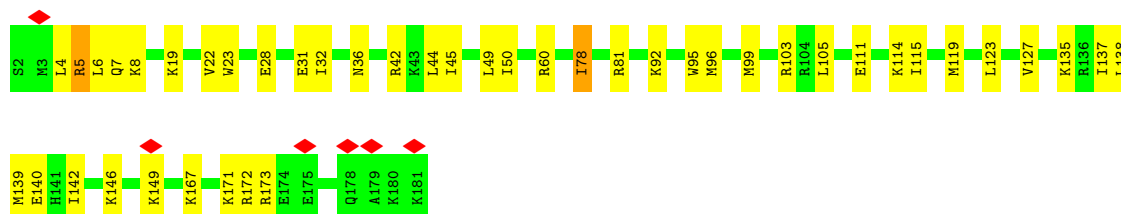
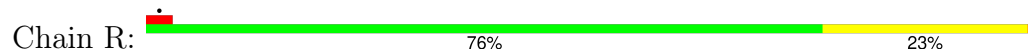
Chain N: 87% 11%



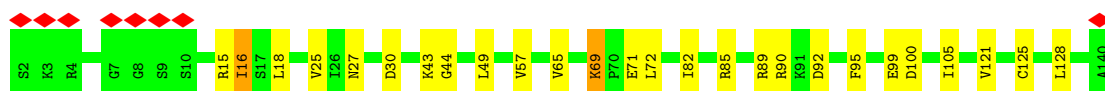
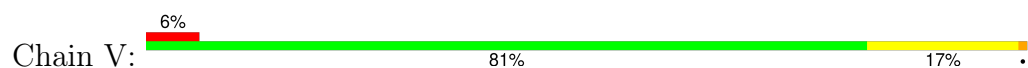
- Molecule 12: Large ribosomal subunit protein uL13



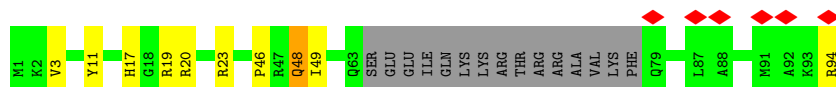
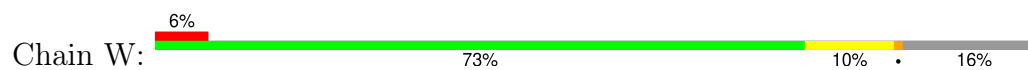
- Molecule 13: 60S ribosomal protein L19



- Molecule 14: Large ribosomal subunit protein uL14



- Molecule 15: Large ribosomal subunit protein eL24



- Molecule 16: Large ribosomal subunit protein uL23



- Molecule 17: 60S ribosomal protein L26



- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|----|----|----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|
| P2 | S3 | R4 | L5 | | R12 | T22 | G23 | K24 | H25 | R26 | R32 | G36 | H40 | I43 | H49 | P50 | G51 | K55 | V56 | G57 | M58 | R59 | H60 | K64 | P71 | L75 | K94 | A98 | D102 | R105 | Y108 | G113 | L117 | V122 | E134 | I137 | V140 | G143 |
|----|----|----|----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|

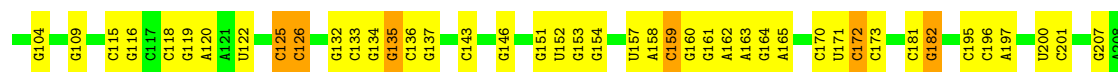


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- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| A2 | V8 | K9 | P10 | K11 | I12 | I21 | Q24 | K30 | I31 | I41 | D42 | K43 | R44 | V45 | R46 | Q52 | I58 | T66 | K67 | H68 | M69 | L70 | R75 | K76 | F77 | L78 | V79 | H80 | N81 | L85 | L89 | M90 | C91 | Y95 | I99 | S104 | R108 | I111 | L118 | A119 | I120 |
|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|

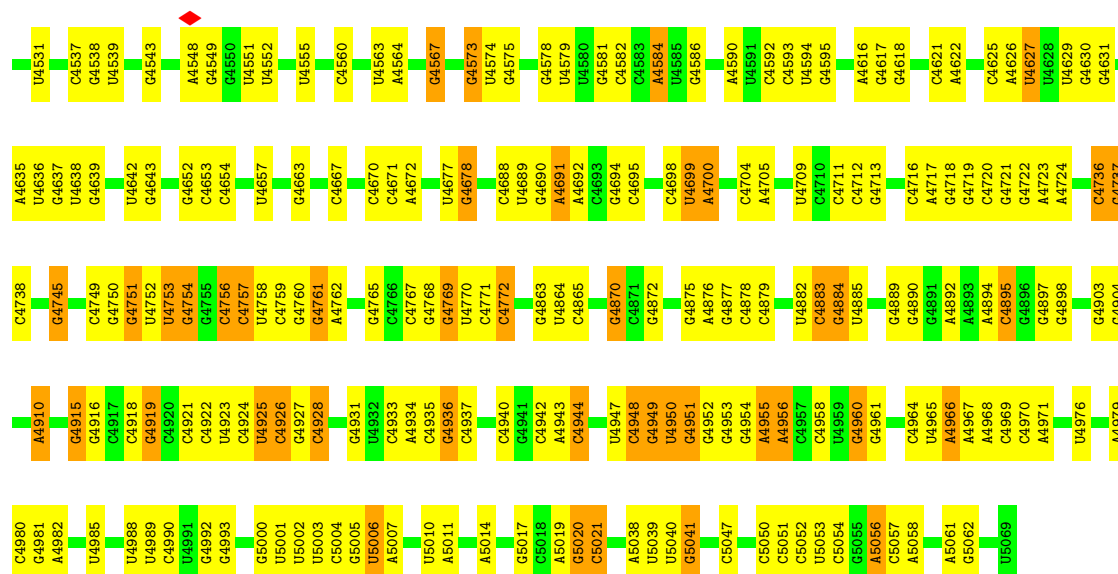


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|----|--|----|----|----|----|----|--|-----|-----|--|-----|-----|--|-----|--|-----|--|-----|-----|--|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|--|-----|-----|--|-----|-----|-----|-----|--|-----|------|
| C1 | | G4 | A5 | C6 | C7 | U8 | | A12 | U13 | | C18 | G19 | | A26 | | G29 | | G32 | A33 | | U37 | | A38 | A39 | G40 | C41 | A42 | U43 | A44 | U45 | U46 | A47 | G48 | U49 | C50 | | G55 | A56 | G57 | G58 | A59 | A60 | A61 | A62 | G63 | A64 | A65 | | A69 | | A73 | G74 | | G91 | C92 | G93 | A94 | | A99 | G100 |
|----|--|----|----|----|----|----|--|-----|-----|--|-----|-----|--|-----|--|-----|--|-----|-----|--|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|--|-----|-----|--|-----|-----|-----|-----|--|-----|------|



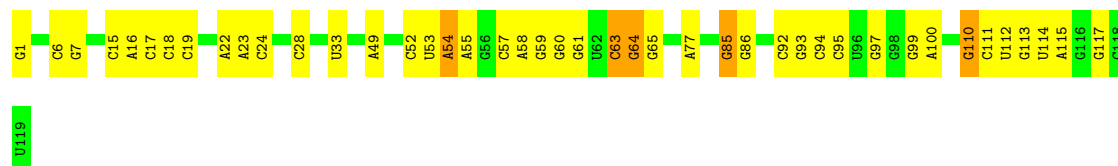
U2027	A1967	G1880	A1780	C1676	G1579	C1483	G1394	C1309	G1187	A964	C668	G478	C406
C2028	G1968	C1881	U1781	G1685	C1580	G1484	A1397	C1310	G1188	G965	C669	G479	A407
A2029	G1969	U1882		G1686	G1581	C1485	A1398	C1314	G1189	A966	G670	A480	A408
G2034	C1884	C1883	A1786	U1687	G1586	G1486	G1399			G671	C672	G481A	G409
A2046	G1885	C1884	A1787	G1688	G1587	G1487	G1400	U1317	G1193	G968	G673	G482	A410
A2047	A1888	U1889	C1789	G1689	U1591	G1490	C1401	C1318	G1194	G674	G675	G483	G411
U2048	U1889	G1890	A1794	C1690	G1592	A1491	G1402	C1325	G1195	C972	C676	G484	G412
G2049	G1890	G1891		G1691	A1593	A1497	G1404	A1326	G1196	G975	C677	G485	G413
G2050	C1977	G1799	G1799	G1694	C1594	G1498	G1405			G976	C678	G486	C414
G2055	A1978	A1802	A1802	G1724	G1595	C1499	G1406	C1330	G1199	G977	C679	C490	U416
G2056	G1803	G1803	G1803		C1597	C1501	G1406C	A1331	G1200	G978	G680	C491	U417
C2062	A1804	A1804	U1730	U1730	C1598	G1502	C1411	C1332	U1201	G979	G681	U492	A418
G2063	A1805	A1805	G1731	G1731	C1599	A1503	G1411A	A1333	C1210	U980	C682	C493	A419
G2064	G1806	G1806	C1732	C1732	A1600	A1504	C1411B	G1335	G1211	C981	C683	C494	C422
C2068	C1807	C1807	G1733	G1733	A1601	C1505	C1411C	G1336	G1212	C982	C684	C495	G423
G2068	G1811	G1811	A1738	A1738	G1604	G1506	G1412	A1337	C1215	U989	A686	C497	U424
A2069	C1812	C1812	G1739	G1739	G1605	C1507	A1420	G1338	C1216	C922	C691	C498	U425
C2073	U1817	U1817	C1740	C1740	C1605	A1508	G1421	U1339	C1216	C922A	A692	C499	A426
C2074	G1818	G1818	A1742	A1742	G1612	C1509	U1341	C1340	G1234	G1065	C922B	G500	A427
G2075	G1819	G1819	A1743	A1743	A1613	U1511	A1427	U1341	G1235	C1070	C923	G504	G428
G2076	U1820	U1820	U1744	U1744	G1617	G1512	C1428	A1342	C1236	C1071	C924	G505	A429
C1993	G1821	G1821	G1745	A1745	U1514	U1513	C1429	C1344	C1237	C1072	C925	G505	G430
C1994	U1822	U1822	A1746	A1746	A1515	G1514	A1433	A1345	A1238	G1073	C926	G506	G431
C1995	G1823	G1823	G1746	G1746	C1516	G1515	A1433	G1347	C1239	U1074	C927	G507	U432
C1996	G1824	G1824	A1749	A1749	G1623	G1517	U1438	G1351	G1246	G1075	C928	U440	U440
U1997	A1825	A1825	G1750	G1750	G1624	A1518	U1440	C1352	G1247	C1076	A929	C515	C441
A1998	G1826	G1826	A1751	A1751	G1625	A1518	C1441	G1352	U1247	C1077	G930	C517	G442
G2000	C1827	C1827	G1752	G1752	C1628	A1523	C1441	C1352	A1078	C1078	C931	G518	G443
G2001	G1828	G1828	G1753	G1753	C1628	A1534	C1446	C1354	G1273	G705	C932	C519	C446
A2002	G1829	G1829	U1754	U1754	A1534	A1534	C1446	A1354	A1274	C706	C933	U520	
G2003	G1830	G1830	G1755	G1755	A1631	C1541	C1449	G1358	C1275	C1082	C934	G638	C449
U2004	G1835	G1835	U1757	U1757	G1632	G1547	C1450	G1359	C1276	U1083	A935	U639	G450
G2005	G1836	G1836	G1758	G1758	A1633	A1547	C1450	G1360	G1277	C1084	G935A	C640	C451
A2006	A1837	A1837	G1759	G1759	C1635	G1550	G1455	G1361	A1279		U937	G641	A452
G2007	G1840	G1840	G1760	G1760	U1636	G1551	G1456	G1362	C1280	G1089	C938	G642	A453
U2008	G1841	G1841	G1761	G1761	A1637	C1551	G1457	C1363	G1281	C1090	C712	G643	U454
A2009	G1842	G1842	C1762	C1762	A1638	G1552	G1458	U1364	G1282	C1091	G714	G644	C455
G2010	A1944	A1944	G1763	G1763	U1639	A1553	A1459	G1370	G1283	G1092	G715		
C2011	G1945	G1945	G1764	G1764	C1640	A1554	C1460	A1371	G1284	C1093	C716	G648	C460
A2101			A1765	A1765	G1641		C1461	A1372	G1291	G1094	U717	A649	G461
G2102	G1948	G1948	A1766	A1766	A1642	C1557	C1462	A1373	C1292	C718	G718	G650	G462
A2103			A1767	A1767	A1643	A1558	A1462	G1374	G1293	C719	C719	G651	A463
A2104	G1951	G1951	C1768	C1768	C1644	A1563	G1465		A1294	C946		G652	G464
A2105	U1957	U1957	G1769	G1769	C1645	A1563	G1465	G1377	U1295	G951	C727	G653	A465
G2106	A1958	A1958	A1770	A1770	A1646	C1566	U1473	G1380	G1296	G952	U728	C654	U466
C2017	U1959	U1959	U1771	U1771	G1654	C1566	C1474	U1381	C1301	G952	G729	U467	U468
C2019	U1960	U1960	C1772	C1772	U1572	U1572	G1475	G1382	U1302	A956	G730	C655	U469
A2109	A1874	A1874	U1773	U1773	G1573	G1573	G1476	G1383	G1303	G957	G731	C656	C469
G2021	G1875	G1875	C1774	C1774	C1661	C1661	C1477	G1384	A1303	G958	A470	G662	A471
C2022	U1876	U1876	A1775	A1775	C1662	C1662	C1478	G1385	G1304	G959	G732	G663	
G2023	C1877	C1877	A1776	A1776	C1663	C1663	G1479	G1386	C1305	A960	G733	G664	C474
G2024	G1878	G1878	C1778	C1778	A1669	A1669	C1481	C1387	C1306	C738	C738A	G665	G475
G2025	C1879	C1879	U1779	U1779			G1482	A1387	A1307	C961	C739	G666	G476
A2263									C1308	G963		A667	C477





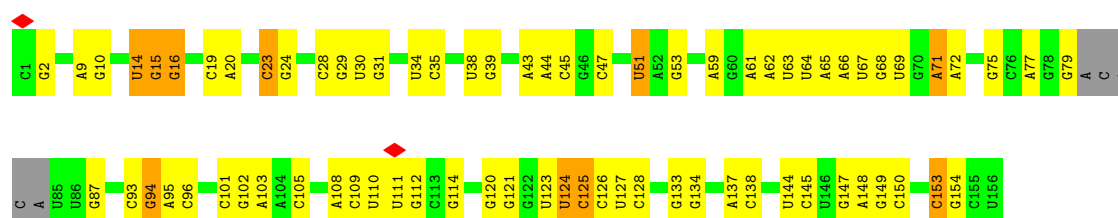
• Molecule 22: 5S rRNA

Chain 7: 64% 32% .



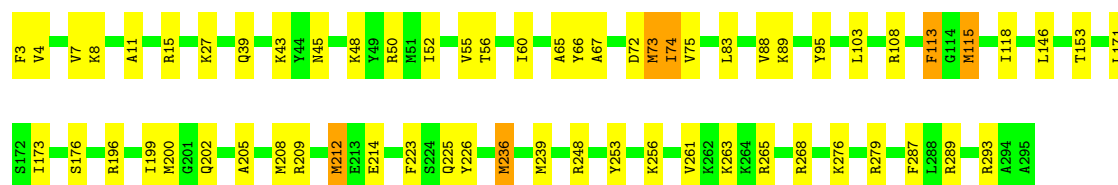
• Molecule 23: 5.8S rRNA

Chain 8: 49% 41% 6% .



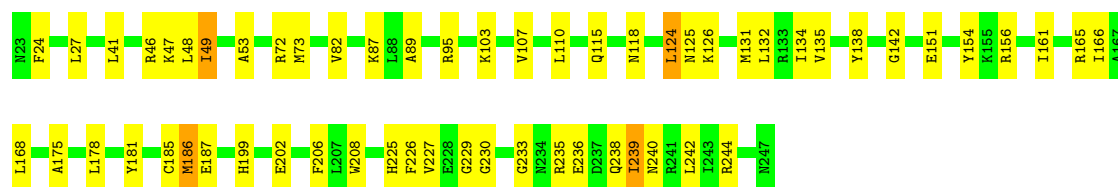
• Molecule 24: 60S ribosomal protein L5

Chain D: 78% 19% .



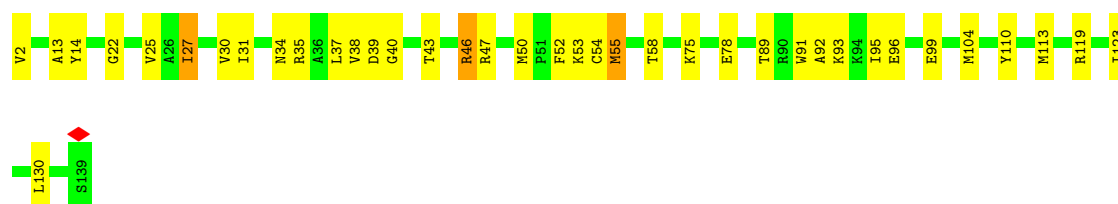
• Molecule 25: 60S ribosomal protein L7

Chain F:  74% 24% .



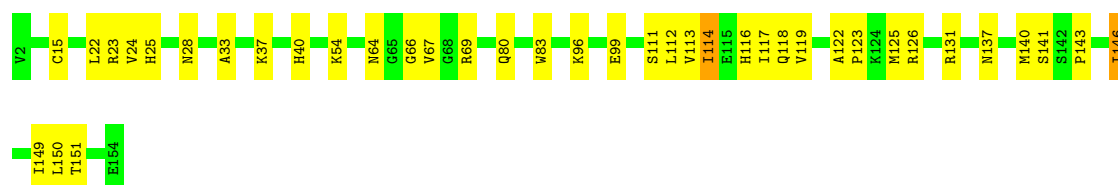
- Molecule 26: 60S ribosomal protein L14

Chain M:  72% 25% .




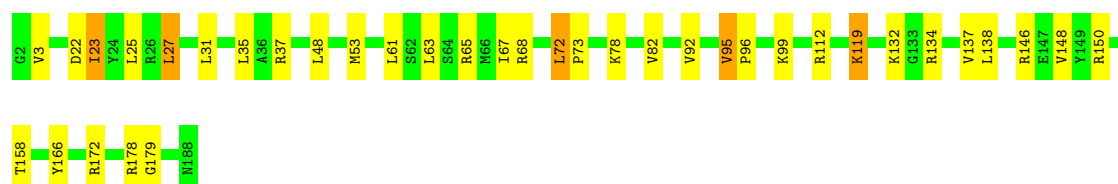
- Molecule 27: 60S ribosomal protein L17

Chain P:  75% 24% .



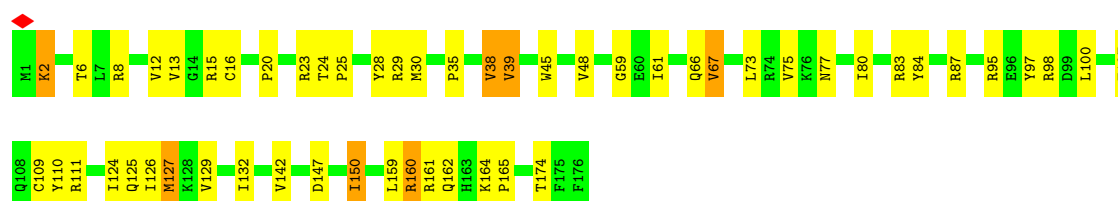
- Molecule 28: Large ribosomal subunit protein eL18

Chain Q:  80% 17% .

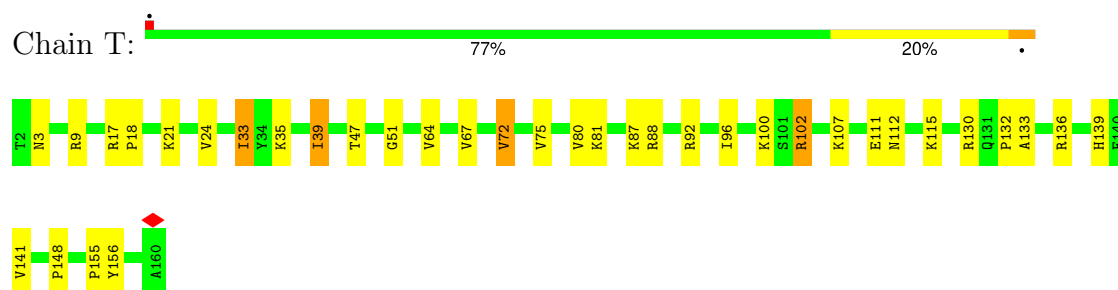


- Molecule 29: eL20

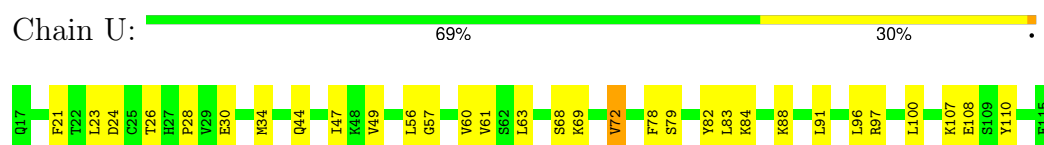
Chain S:  69% 27% .



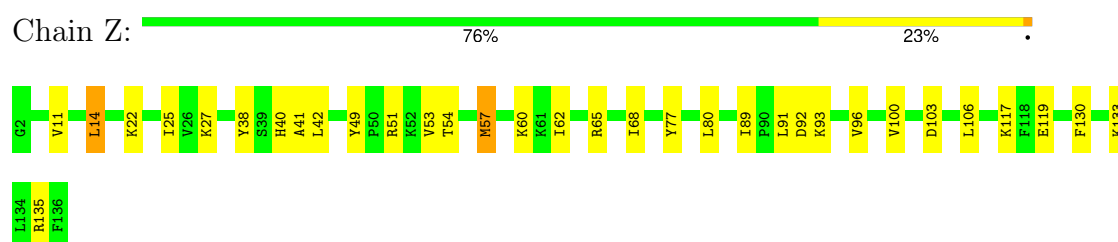
- Molecule 30: 60S ribosomal protein L21



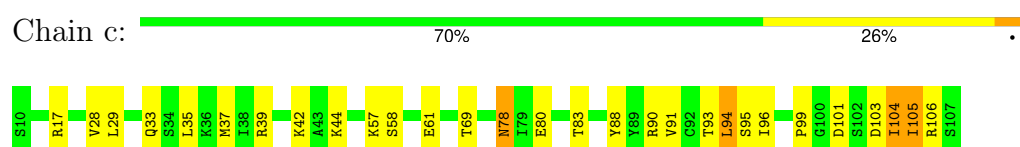
- Molecule 31: eL22



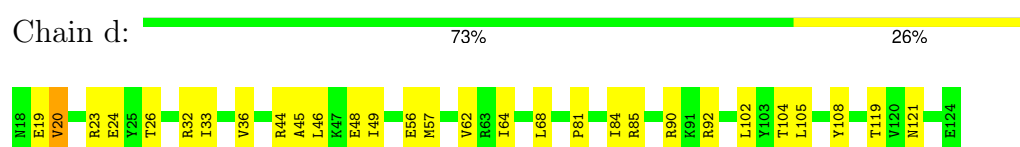
- Molecule 32: 60S ribosomal protein L27



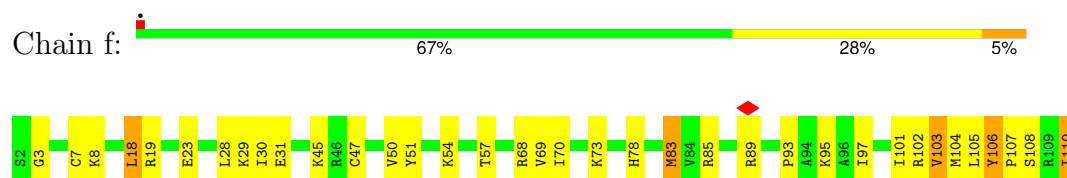
- Molecule 33: 60S ribosomal protein L30




- Molecule 34: 60S ribosomal protein L31



- Molecule 35: Large ribosomal subunit protein eL33




- Molecule 36: 60S ribosomal protein L34

Chain g:  77% 21%




- Molecule 37: 60S ribosomal protein L35

Chain h:  80% 17%



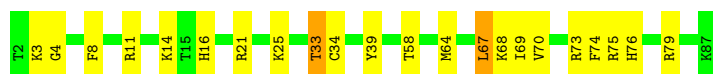
- Molecule 38: 60S ribosomal protein L36

Chain i:  81% 17%




- Molecule 39: 60S ribosomal protein L37

Chain j:  74% 23%




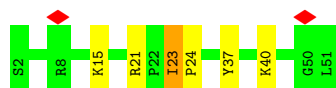
- Molecule 40: Large ribosomal subunit protein eL38

Chain k:  83% 16%




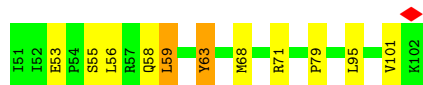
- Molecule 41: 60S ribosomal protein L39

Chain l:  88% 10%




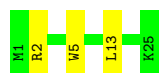
- Molecule 42: Large ribosomal subunit protein eL40

Chain m:  79% 17%




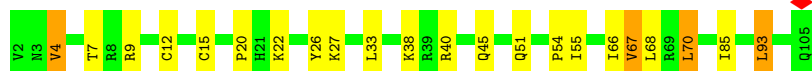
- Molecule 43: eL41

Chain n:  88% 12%




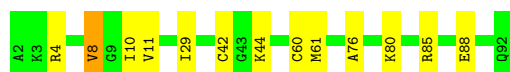
- Molecule 44: eL42

Chain o:  79% 17%



- Molecule 45: 60S ribosomal protein L37a

Chain p:  86% 13%



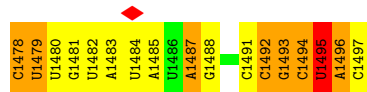
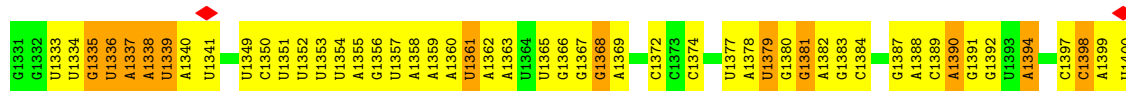
- Molecule 46: 60S ribosomal protein L28

Chain r:  75% 24%



- Molecule 47: NediV IRES

Chain 1:  31% 51% 17%



- Molecule 48: eL1

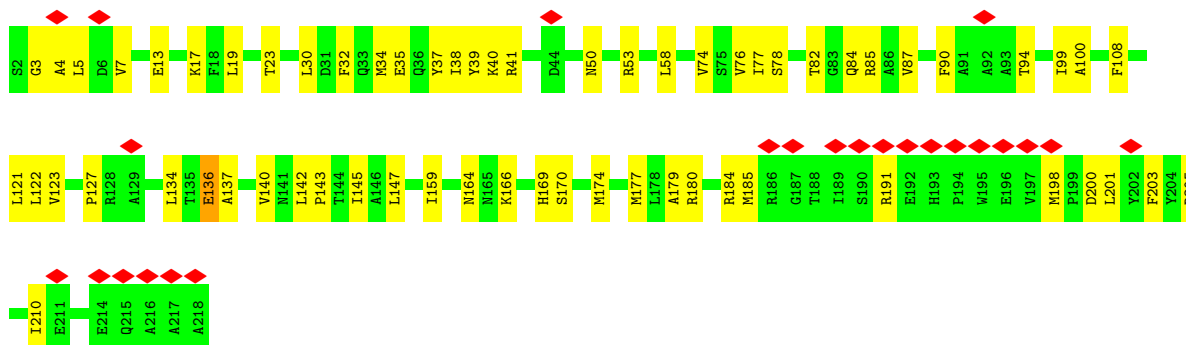
Chain K:  73% 25%





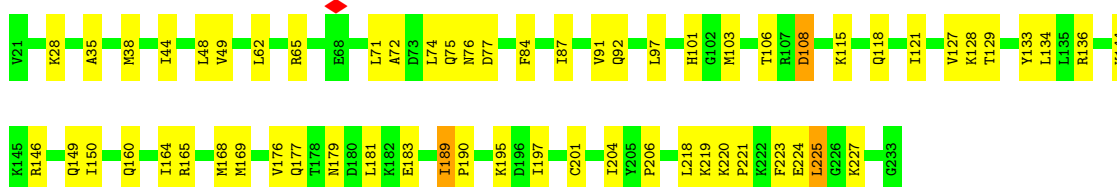
- Molecule 49: 40S_SA_C domain-containing protein

Chain AA: 11% 71% 29%



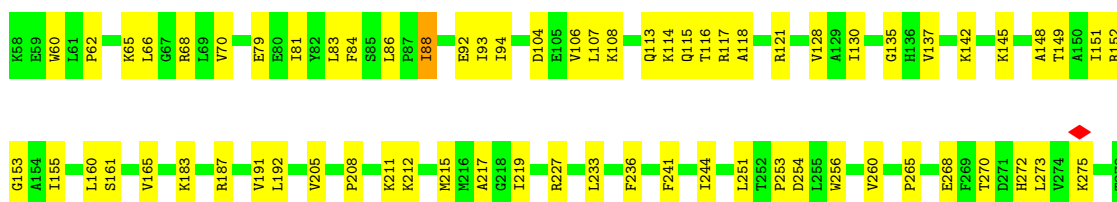
- Molecule 50: 40S ribosomal protein S3a

Chain BB: 71% 27%



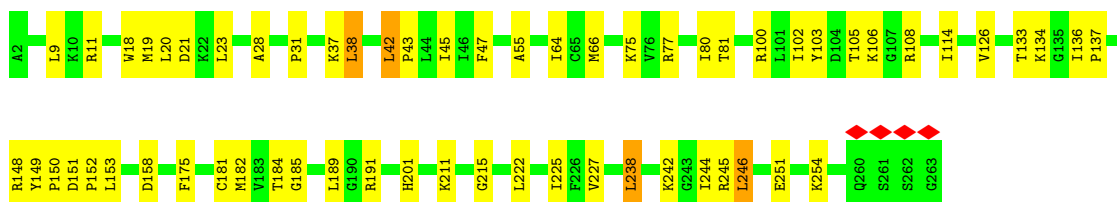
- Molecule 51: 40S ribosomal protein S2

Chain CC: 69% 30%

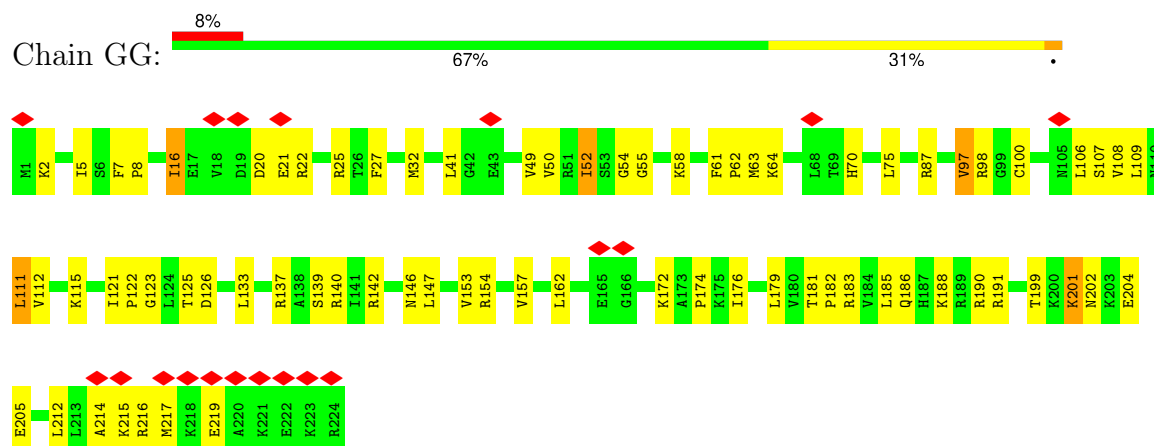


- Molecule 52: 40S ribosomal protein S4

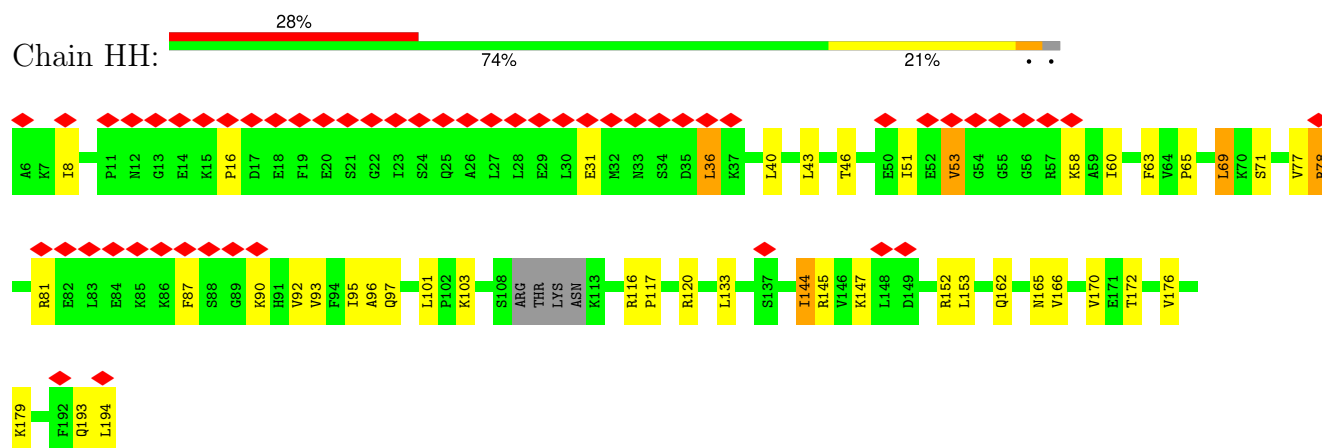
Chain EE: 77% 22%



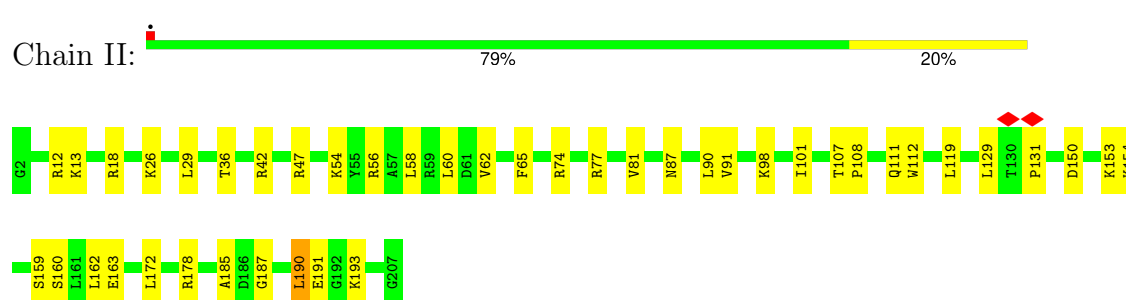
- Molecule 53: Small ribosomal subunit protein eS6



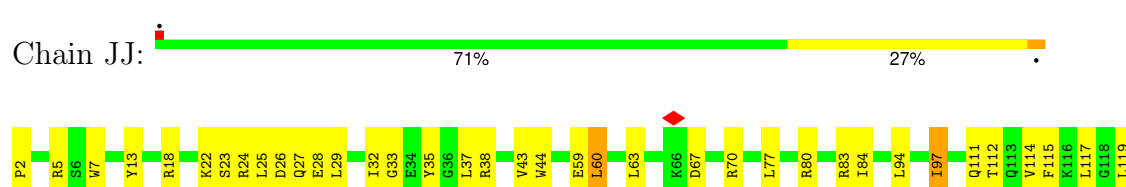
- Molecule 54: Small ribosomal subunit protein eS7

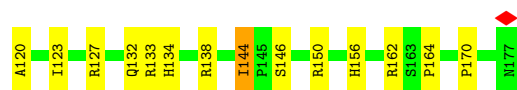


- Molecule 55: 40S ribosomal protein S8



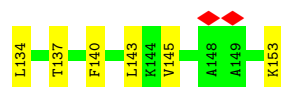
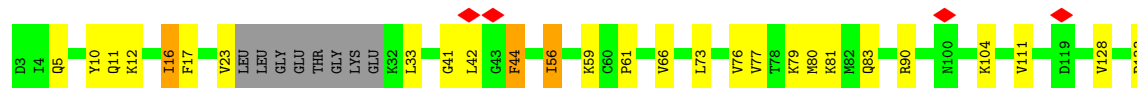
- Molecule 56: Small ribosomal subunit protein uS4





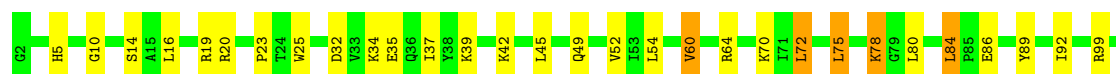
- Molecule 57: Small ribosomal subunit protein uS17

Chain LL: 73% 20% 5%



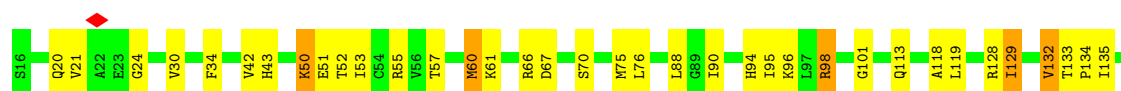
- Molecule 58: 40S ribosomal protein S13

Chain NN: 72% 25%



- Molecule 59: Small ribosomal subunit protein uS11

Chain OO: 73% 24%



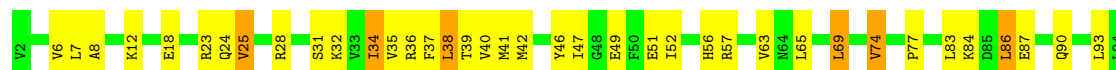
- Molecule 60: eS21

Chain VV: 12% 81% 19%



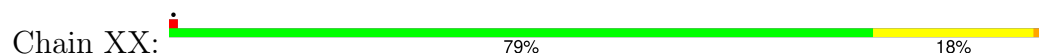
- Molecule 61: 40S ribosomal protein S15a

Chain WW: 64% 31% 5%

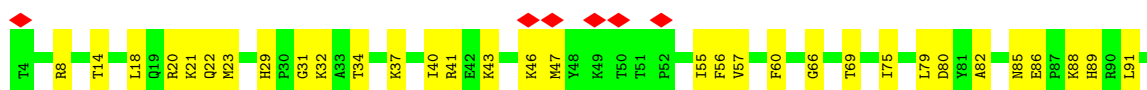




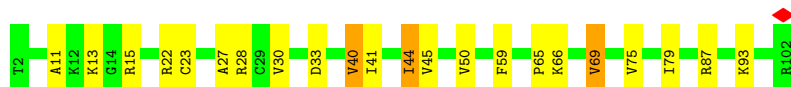
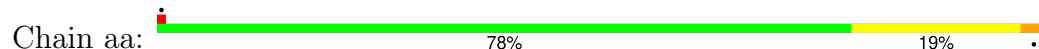
- Molecule 62: 40S ribosomal protein S23



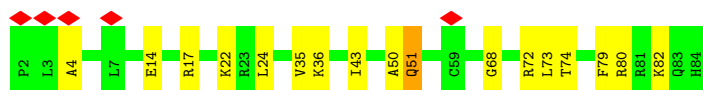
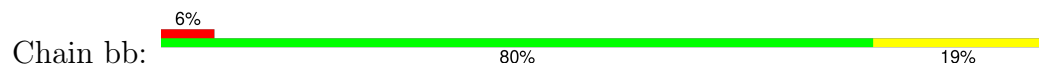
- Molecule 63: 40S ribosomal protein S24



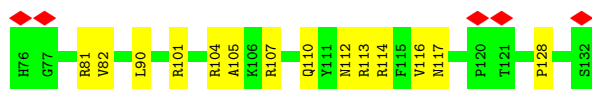
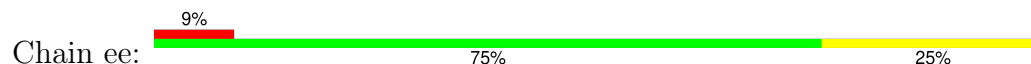
- Molecule 64: eS26



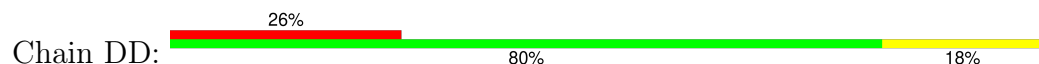
- Molecule 65: 40S ribosomal protein S27

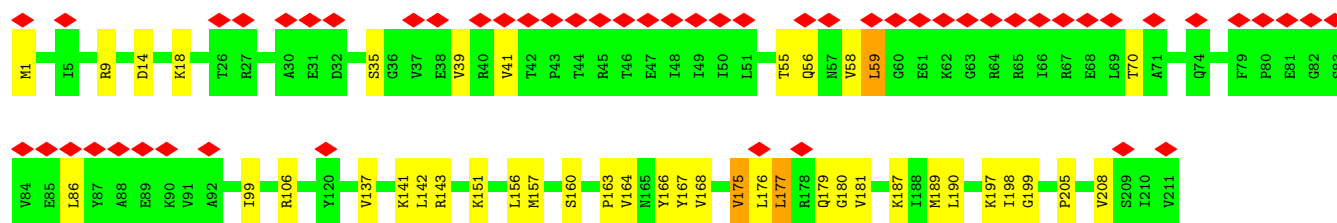


- Molecule 66: Small ribosomal subunit protein eS30



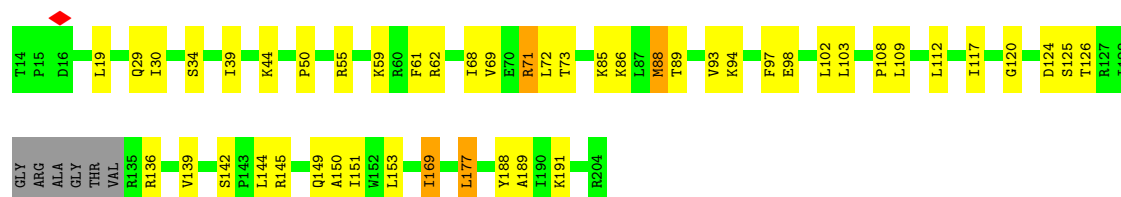
- Molecule 67: Small ribosomal subunit protein uS3





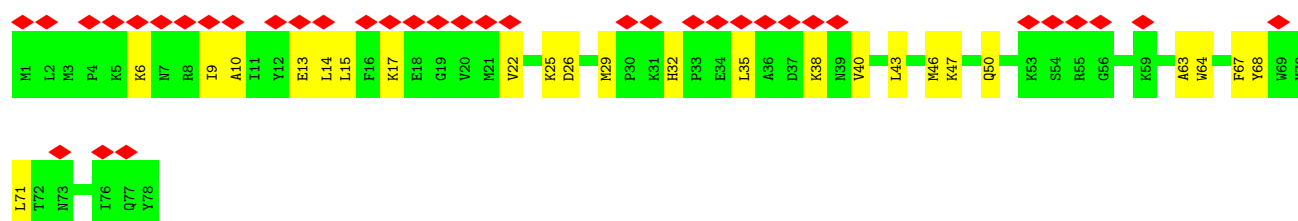
- Molecule 68: Small ribosomal subunit protein uS7

Chain FF: 72% 23%



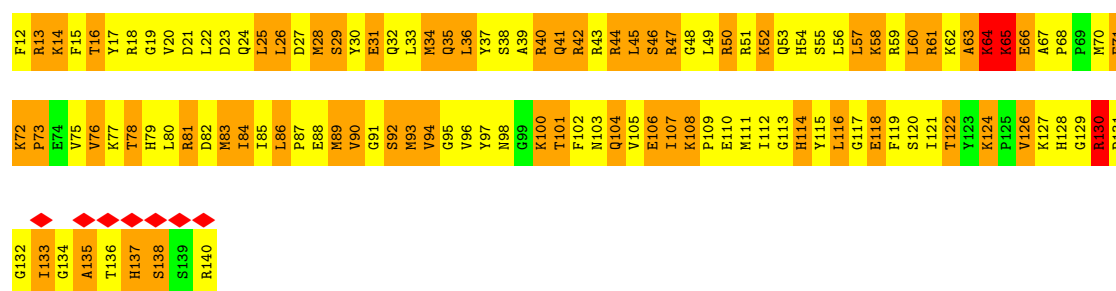
- Molecule 69: Small ribosomal subunit protein eS10

Chain KK: 47% 69% 31%



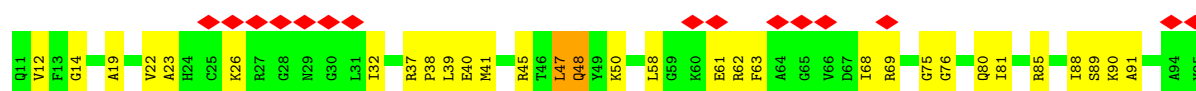
- Molecule 70: Small ribosomal subunit protein uS19

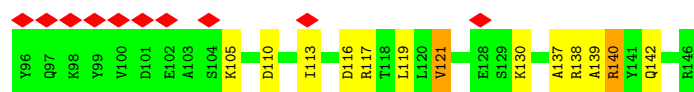
Chain PP: 5% 50% 43%



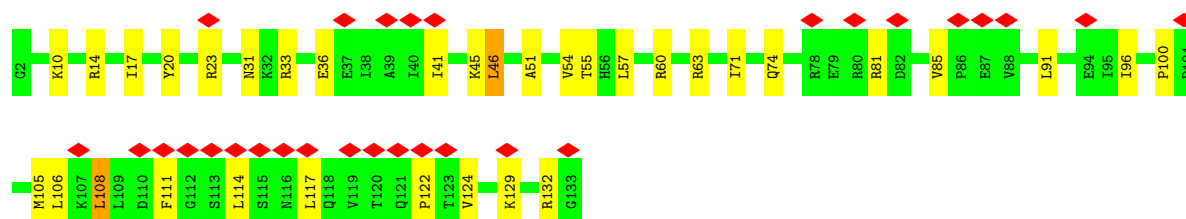
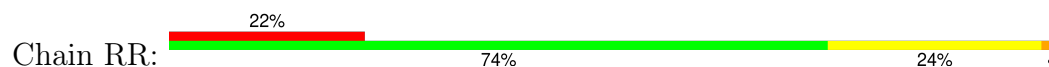
- Molecule 71: Small ribosomal subunit protein uS9

Chain QQ: 18% 68% 29%

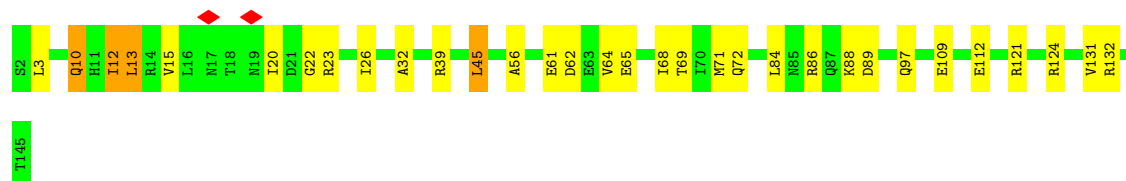
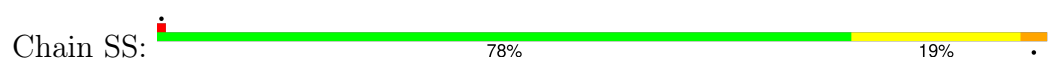




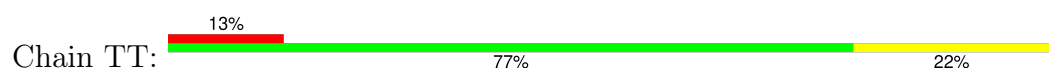
- Molecule 72: 40S ribosomal protein S17



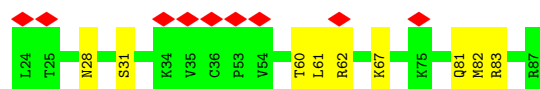
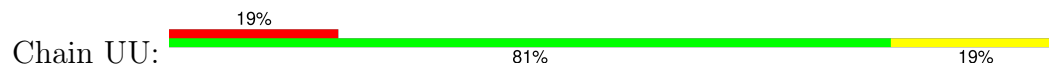
- Molecule 73: 40S ribosomal protein S18



- Molecule 74: Small ribosomal subunit protein eS19



- Molecule 75: uS10



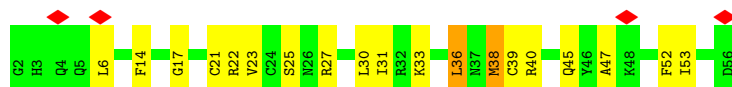
- Molecule 76: 40S ribosomal protein S25



● Molecule 77: 40S ribosomal protein S28

Chain cc:  69% 26% 5%

● Molecule 78: 40S ribosomal protein S29

Chain dd:  7% 65% 31% .

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	264326	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	64	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	1.612	Depositor
Minimum map value	-0.681	Depositor
Average map value	0.063	Depositor
Map value standard deviation	0.161	Depositor
Recommended contour level	0.25	Depositor
Map size (Å)	320.0, 320.0, 320.0	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.25, 1.25, 1.25	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	9	0.11	1/39866 (0.0%)	0.24	2/62107 (0.0%)
2	A	0.10	0/1936	0.26	0/2596
3	B	0.10	0/3240	0.25	0/4339
4	C	0.09	0/2937	0.25	1/3946 (0.0%)
5	E	0.08	0/1762	0.25	0/2362
6	G	0.09	0/1910	0.26	0/2569
7	H	0.10	0/1535	0.27	0/2063
8	I	0.09	0/1702	0.24	0/2272
9	J	0.08	0/1385	0.25	0/1852
10	L	0.09	0/1733	0.24	0/2316
11	N	0.10	0/1746	0.25	0/2338
12	O	0.10	0/1662	0.26	0/2222
13	R	0.09	0/1524	0.24	0/2013
14	V	0.09	0/1048	0.25	0/1402
15	W	0.09	0/657	0.24	0/873
16	X	0.09	0/984	0.27	0/1323
17	Y	0.09	0/1132	0.23	0/1504
18	a	0.09	0/1191	0.26	0/1590
19	b	0.08	0/861	0.20	0/1138
20	e	0.10	0/1071	0.25	0/1429
21	5	0.11	0/84978	0.26	0/132528
22	7	0.08	0/2836	0.18	0/4421
23	8	0.10	0/3581	0.23	0/5577
24	D	0.08	0/2437	0.24	0/3264
25	F	0.10	0/1911	0.26	0/2549
26	M	0.10	0/1158	0.27	0/1547
27	P	0.10	0/1268	0.32	0/1700
28	Q	0.09	0/1539	0.24	0/2054
29	S	0.11	0/1501	0.27	0/2012
30	T	0.08	0/1326	0.22	0/1770
31	U	0.09	0/823	0.26	0/1104
32	Z	0.09	0/1130	0.24	0/1507

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	c	0.10	0/771	0.26	0/1034
34	d	0.10	0/903	0.26	0/1216
35	f	0.10	0/895	0.29	0/1198
36	g	0.09	0/916	0.24	0/1220
37	h	0.10	0/1021	0.28	0/1348
38	i	0.09	0/841	0.24	0/1112
39	j	0.09	0/720	0.27	0/952
40	k	0.08	0/575	0.26	0/761
41	l	0.11	0/459	0.28	0/608
42	m	0.08	0/435	0.24	0/575
43	n	0.09	0/240	0.20	0/305
44	o	0.08	0/864	0.22	0/1140
45	p	0.10	0/718	0.25	0/953
46	r	0.09	0/1010	0.29	0/1354
47	1	0.35	0/3951	0.56	2/6150 (0.0%)
48	K	0.10	0/1080	0.30	0/1447
49	AA	0.08	0/1747	0.24	0/2374
50	BB	0.11	0/1756	0.29	0/2350
51	CC	0.09	0/1753	0.26	0/2369
52	EE	0.08	0/2118	0.25	0/2849
53	GG	0.09	0/1836	0.26	0/2445
54	HH	0.08	0/1510	0.22	0/2022
55	II	0.08	0/1715	0.25	0/2287
56	JJ	0.09	0/1497	0.25	0/2001
57	LL	0.09	0/1195	0.25	0/1597
58	NN	0.09	0/1226	0.25	0/1649
59	OO	0.08	0/1029	0.25	0/1380
60	VV	0.08	0/643	0.27	0/860
61	WW	0.11	0/1051	0.34	0/1406
62	XX	0.09	0/1116	0.28	0/1490
63	YY	0.09	0/1028	0.24	0/1366
64	aa	0.11	0/828	0.31	0/1109
65	bb	0.07	0/665	0.25	0/891
66	ee	0.09	0/462	0.23	0/607
67	DD	0.09	0/1662	0.28	0/2234
68	FF	0.08	0/1492	0.26	0/2005
69	KK	0.10	0/677	0.27	0/909
70	PP	0.50	0/1079	0.83	4/1441 (0.3%)
71	QQ	0.10	0/1104	0.27	0/1476
72	RR	0.09	0/1082	0.26	0/1452
73	SS	0.08	0/1208	0.26	0/1618
74	TT	0.08	0/1115	0.23	0/1493
75	UU	0.07	0/399	0.24	0/530

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	ZZ	0.08	0/604	0.25	0/810
77	cc	0.08	0/490	0.27	0/656
78	dd	0.13	0/470	0.32	0/623
All	All	0.12	1/224326 (0.0%)	0.27	9/329959 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
35	f	0	1
78	dd	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	9	1699	A	O3'-P	-5.33	1.53	1.61

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
47	1	1495	U	C1'-C2'-O2'	-11.54	94.49	111.80
1	9	1699	A	C3'-C2'-O2'	-8.98	97.23	110.70
47	1	1495	U	O4'-C4'-C3'	-6.55	99.55	106.10
70	PP	134	GLY	N-CA-C	-6.16	107.75	115.08
4	C	340	ILE	N-CA-C	-6.10	106.80	111.62
70	PP	138	SER	N-CA-C	-5.92	104.74	111.07
70	PP	46	SER	N-CA-C	-5.88	104.95	111.36
1	9	1699	A	C4'-C3'-O3'	-5.37	104.95	113.00
70	PP	81	ARG	N-CA-C	-5.31	106.75	113.43

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
78	dd	38	MET	Peptide
35	f	106	TYR	Peptide

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	9	35659	0	18015	548	0
2	A	1898	0	1993	35	0
3	B	3172	0	3310	49	0
4	C	2883	0	3053	45	0
5	E	1729	0	1887	32	0
6	G	1879	0	2027	41	0
7	H	1516	0	1597	32	0
8	I	1664	0	1712	28	0
9	J	1362	0	1399	22	0
10	L	1702	0	1820	28	0
11	N	1701	0	1749	20	0
12	O	1630	0	1778	34	0
13	R	1508	0	1664	30	0
14	V	1034	0	1097	16	0
15	W	645	0	668	6	0
16	X	967	0	1040	18	0
17	Y	1115	0	1205	21	0
18	a	1162	0	1209	25	0
19	b	848	0	920	8	0
20	e	1053	0	1147	20	0
21	5	75972	0	38385	1227	0
22	7	2538	0	1286	28	0
23	8	3208	0	1629	38	0
24	D	2391	0	2424	42	0
25	F	1875	0	1995	38	0
26	M	1137	0	1211	23	0
27	P	1242	0	1274	27	0
28	Q	1515	0	1634	24	0
29	S	1462	0	1508	35	0
30	T	1298	0	1366	26	0
31	U	809	0	833	16	0
32	Z	1107	0	1182	21	0
33	c	761	0	794	20	0
34	d	888	0	930	17	0
35	f	876	0	912	23	0
36	g	906	0	998	18	0
37	h	1013	0	1147	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	i	830	0	916	12	0
39	j	705	0	737	14	0
40	k	569	0	637	6	0
41	l	447	0	480	4	0
42	m	429	0	465	7	0
43	n	239	0	289	2	0
44	o	851	0	920	12	0
45	p	708	0	756	10	0
46	r	994	0	1051	19	0
47	1	3538	0	1789	65	0
48	K	1064	0	1126	19	0
49	AA	1710	0	1708	46	0
50	BB	1729	0	1803	42	0
51	CC	1716	0	1806	42	0
52	EE	2076	0	2177	41	0
53	GG	1813	0	1967	49	0
54	HH	1488	0	1582	29	0
55	II	1686	0	1772	27	0
56	JJ	1472	0	1584	40	0
57	LL	1175	0	1249	20	0
58	NN	1202	0	1289	26	0
59	OO	1016	0	1039	29	0
60	VV	636	0	637	11	0
61	WW	1034	0	1080	31	0
62	XX	1098	0	1167	21	0
63	YY	1011	0	1083	32	0
64	aa	814	0	863	19	0
65	bb	651	0	672	11	0
66	ee	457	0	502	15	0
67	DD	1637	0	1734	24	0
68	FF	1471	0	1522	32	0
69	KK	658	0	674	15	0
70	PP	1058	0	1104	203	0
71	QQ	1087	0	1152	31	0
72	RR	1068	0	1121	25	0
73	SS	1190	0	1249	24	0
74	TT	1097	0	1132	21	0
75	UU	394	0	425	5	0
76	ZZ	598	0	656	18	0
77	cc	488	0	514	16	0
78	dd	459	0	448	16	0
79	5	192	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
79	7	6	0	0	0	0
79	8	3	0	0	0	0
79	A	1	0	0	0	0
79	V	1	0	0	0	0
79	a	1	0	0	0	0
79	aa	1	0	0	0	0
79	l	1	0	0	0	0
80	aa	1	0	0	0	0
80	dd	1	0	0	0	0
80	g	1	0	0	0	0
80	j	1	0	0	0	0
80	m	1	0	0	0	0
80	o	1	0	0	0	0
80	p	1	0	0	0	0
All	All	208701	0	153675	3419	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 (3419) 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)
70:PP:72:LYS:HE3	70:PP:92:SER:CA	1.21	1.61
70:PP:72:LYS:CE	70:PP:92:SER:CA	1.77	1.55
70:PP:72:LYS:CE	70:PP:92:SER:HA	1.37	1.51
70:PP:72:LYS:CE	70:PP:92:SER:C	1.97	1.36
70:PP:72:LYS:NZ	70:PP:92:SER:O	1.69	1.25
70:PP:104:GLN:OE1	70:PP:106:GLU:OE2	1.55	1.23
70:PP:72:LYS:HZ1	70:PP:92:SER:C	1.48	1.21
70:PP:72:LYS:HE2	70:PP:92:SER:C	1.61	1.18
70:PP:72:LYS:NZ	70:PP:92:SER:C	2.00	1.16
70:PP:72:LYS:HE3	70:PP:92:SER:N	1.61	1.15
70:PP:97:TYR:HA	70:PP:102:PHE:HA	1.14	1.12
1:9:1522:A:H62	70:PP:131:PRO:HA	1.16	1.06
21:5:2845:A:H61	21:5:3843:C:N4	1.55	1.04
45:p:42:CYS:HB3	45:p:60:CYS:SG	1.99	1.03
1:9:442:C:H42	1:9:449:A:H62	1.05	1.02
21:5:2845:A:N6	21:5:3843:C:H42	1.58	1.00
70:PP:72:LYS:HE2	70:PP:92:SER:CA	1.83	0.99
70:PP:97:TYR:CA	70:PP:102:PHE:HA	1.96	0.96
21:5:2557:G:H1	21:5:2570:U:H3	0.98	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1754:U:H1'	24:D:3:PHE:HE1	1.31	0.95
70:PP:72:LYS:CE	70:PP:92:SER:N	2.26	0.95
1:9:116:U:H3	1:9:347:G:H1	1.07	0.94
21:5:4897:G:H1	21:5:4923:U:H3	1.11	0.94
1:9:1351:G:H1	1:9:1360:U:H3	0.97	0.94
1:9:1652:G:H1	1:9:1672:U:H3	0.95	0.93
21:5:3944:G:H1	21:5:4069:U:H3	1.01	0.93
70:PP:15:PHE:HB3	70:PP:22:LEU:HB2	1.50	0.92
70:PP:72:LYS:HE2	70:PP:93:MET:N	1.85	0.91
21:5:1993:C:H3'	21:5:1994:C:H6	1.35	0.91
21:5:1989:G:H3'	21:5:1990:A:H8	1.36	0.91
21:5:3946:G:H1	21:5:4067:U:H3	0.91	0.90
21:5:25:A:H61	21:5:58:G:H1	1.11	0.89
21:5:2011:C:H3'	21:5:2012:A:H8	1.36	0.89
21:5:4898:G:N2	21:5:4922:C:O2	2.06	0.89
70:PP:61:ARG:HG3	70:PP:89:MET:HE1	1.53	0.88
70:PP:72:LYS:HE2	70:PP:92:SER:HA	1.47	0.88
70:PP:97:TYR:HA	70:PP:102:PHE:CA	2.02	0.88
21:5:2020:U:H2'	21:5:2021:G:H8	1.37	0.88
1:9:1656:G:H1	1:9:1668:U:H3	0.89	0.86
1:9:1737:G:H1	1:9:1797:U:H3	1.23	0.86
21:5:312:G:H1	21:5:325:U:H3	1.24	0.85
21:5:3697:U:H5''	21:5:3698:G:H5'	1.59	0.85
21:5:4454:G:H1	21:5:4526:U:H3	1.22	0.84
21:5:1969:G:H3'	21:5:1970:A:H8	1.40	0.84
21:5:1992:U:H4'	21:5:1993:C:H6	1.43	0.84
21:5:2008:U:C5	21:5:2010:A:H3'	2.12	0.84
21:5:2012:A:H3'	21:5:2013:A:H8	1.42	0.84
54:HH:87:PHE:HB2	54:HH:90:LYS:HE2	1.58	0.84
57:LL:5:GLN:HE22	57:LL:10:TYR:HA	1.43	0.83
21:5:1990:A:C2	21:5:1991:A:H1'	2.13	0.83
1:9:1743:G:H21	1:9:1791:A:H62	1.23	0.83
47:1:1495:U:H2'	47:1:1496:A:N3	1.94	0.83
9:J:144:LYS:HE3	9:J:147:ARG:HB2	1.59	0.83
21:5:1989:G:H3'	21:5:1990:A:C8	2.13	0.82
70:PP:72:LYS:NZ	70:PP:92:SER:N	2.27	0.82
70:PP:106:GLU:N	70:PP:106:GLU:CD	2.38	0.82
21:5:3724:A:H61	21:5:3729:U:H3	1.22	0.82
70:PP:41:GLN:HA	70:PP:41:GLN:OE1	1.80	0.82
70:PP:72:LYS:NZ	70:PP:92:SER:CA	2.37	0.82
21:5:2845:A:H61	21:5:3843:C:H42	0.84	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1452:A:H61	1:9:1473:G:H21	1.25	0.81
6:G:139:VAL:HG21	6:G:238:LYS:HG3	1.62	0.81
63:YY:82:ALA:O	63:YY:86:GLU:HB3	1.79	0.80
70:PP:41:GLN:OE1	70:PP:41:GLN:CA	2.30	0.80
21:5:1985:G:H1'	21:5:2003:G:C5	2.17	0.80
70:PP:79:HIS:HA	70:PP:97:TYR:HB3	1.62	0.80
1:9:1658:G:H4'	78:dd:33:LYS:HE3	1.63	0.80
21:5:2492:C:H2'	21:5:2493:G:H8	1.47	0.80
21:5:1964:A:H3'	21:5:1965:G:H8	1.48	0.79
56:JJ:29:LEU:HD21	66:ee:110:GLN:HE22	1.47	0.79
1:9:394:G:H5'	57:LL:81:LYS:HE2	1.65	0.79
1:9:442:C:N4	1:9:449:A:H62	1.81	0.79
21:5:1999:A:H1'	21:5:2019:C:H1'	1.65	0.78
31:U:28:PRO:HB2	31:U:34:MET:HB3	1.65	0.78
4:C:78:ARG:HB3	4:C:88:GLY:HA2	1.66	0.77
21:5:1757:U:H2'	21:5:1758:G:C8	2.19	0.77
1:9:957:A:H3'	1:9:958:G:H21	1.49	0.77
21:5:1993:C:H3'	21:5:1994:C:C6	2.19	0.77
70:PP:14:LYS:HZ1	70:PP:22:LEU:HB3	1.49	0.77
21:5:418:A:H4'	21:5:2311:C:H5'	1.67	0.77
21:5:1976:G:H2'	21:5:1977:C:C6	2.20	0.77
21:5:989:U:H3	21:5:1065:G:H1	1.32	0.76
21:5:1762:C:H2'	21:5:1763:C:C6	2.21	0.76
21:5:1802:A:H5''	21:5:1803:G:H5'	1.66	0.76
1:9:1701:C:H5'	47:1:1492:C:N4	1.99	0.76
54:HH:58:LYS:O	54:HH:90:LYS:HA	1.85	0.76
70:PP:64:LYS:HG3	70:PP:73:PRO:HG3	1.68	0.76
1:9:1743:G:N2	1:9:1791:A:H62	1.83	0.76
21:5:2049:G:H2'	21:5:2050:G:C8	2.20	0.76
70:PP:34:MET:HA	70:PP:37:TYR:CE1	2.21	0.75
26:M:27:ILE:HA	26:M:38:VAL:HG23	1.68	0.75
21:5:1971:U:H3	21:5:1995:G:H1	1.32	0.75
48:K:59:PRO:HD2	48:K:153:SER:HA	1.68	0.75
5:E:61:ARG:HD3	21:5:1237:C:H1'	1.69	0.75
1:9:170:A:H5'	53:GG:137:ARG:HB2	1.67	0.75
21:5:717:U:H3	21:5:951:G:H1	1.34	0.74
21:5:2020:U:H2'	21:5:2021:G:C8	2.21	0.74
32:Z:27:LYS:HB2	32:Z:42:LEU:HB3	1.69	0.74
49:AA:84:GLN:HG3	49:AA:100:ALA:HB1	1.69	0.74
55:II:129:LEU:HG	55:II:131:PRO:HD2	1.69	0.74
5:E:153:LEU:HD21	5:E:167:PHE:HB2	1.67	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1759:G:H1	21:5:1773:U:H3	1.33	0.74
70:PP:72:LYS:HE3	70:PP:92:SER:HA	0.74	0.74
8:I:30:LYS:HD3	8:I:63:GLU:HG2	1.67	0.74
21:5:1332:C:H2'	21:5:1333:A:H8	1.52	0.74
21:5:4099:G:H1	21:5:4109:G:H22	1.33	0.74
70:PP:58:LYS:HA	70:PP:61:ARG:HD2	1.70	0.74
1:9:377:G:H5'	55:II:98:LYS:HB3	1.70	0.74
21:5:2001:G:H2'	21:5:2003:G:C8	2.23	0.74
21:5:2012:A:H3'	21:5:2013:A:C8	2.23	0.73
52:EE:137:PRO:HB2	52:EE:150:PRO:HD2	1.70	0.73
70:PP:124:LYS:HE2	70:PP:126:VAL:HA	1.68	0.73
21:5:25:A:N6	21:5:58:G:H1	1.85	0.73
1:9:346:C:H5''	52:EE:38:LEU:HD21	1.70	0.73
17:Y:8:THR:HG22	17:Y:10:ASP:H	1.52	0.73
21:5:1743:A:H1'	24:D:15:ARG:HH11	1.54	0.73
10:L:8:MET:HE2	21:5:1344:C:H4'	1.71	0.73
21:5:2000:G:H4'	21:5:2017:A:N1	2.04	0.73
59:OO:57:THR:H	59:OO:60:MET:HG3	1.54	0.73
19:b:68:ARG:HH12	21:5:1830:G:H4'	1.53	0.73
21:5:33:A:H3'	21:5:47:A:H61	1.54	0.72
54:HH:144:ILE:HD11	54:HH:152:ARG:HB3	1.71	0.72
70:PP:33:LEU:HG	70:PP:37:TYR:CE2	2.24	0.72
1:9:1133:A:H4'	64:aa:13:LYS:HZ1	1.55	0.72
21:5:2009:A:H3'	21:5:2010:A:H8	1.53	0.72
21:5:1990:A:N1	21:5:1991:A:H1'	2.05	0.72
21:5:1992:U:H4'	21:5:1993:C:C6	2.25	0.72
21:5:2483:G:H1	21:5:2495:U:H3	0.81	0.72
3:B:317:LEU:HB2	3:B:372:SER:HB2	1.72	0.72
21:5:1754:U:H1'	24:D:3:PHE:CE1	2.22	0.72
21:5:1768:C:H5''	21:5:1770:A:N7	2.05	0.72
70:PP:57:LEU:HB3	70:PP:61:ARG:HE	1.54	0.72
21:5:1991:A:N7	21:5:2002:A:H5''	2.05	0.71
3:B:168:MET:HE3	3:B:176:LYS:HA	1.72	0.71
58:NN:99:ARG:HE	58:NN:115:LEU:HD21	1.56	0.71
74:TT:116:ASP:HB3	74:TT:122:LYS:HD2	1.71	0.71
21:5:2373:C:H4'	34:d:64:ILE:HD11	1.72	0.71
21:5:4095:G:H1	21:5:4113:U:H3	1.38	0.71
1:9:1698:C:H6	1:9:1698:C:H5'	1.56	0.71
5:E:189:LEU:HD21	5:E:256:VAL:HG21	1.72	0.71
1:9:1452:A:H61	1:9:1473:G:N2	1.88	0.71
21:5:1757:U:H2'	21:5:1758:G:H8	1.55	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2011:C:H3'	21:5:2012:A:C8	2.24	0.71
68:FF:59:LYS:HG2	68:FF:62:ARG:HB2	1.72	0.71
70:PP:72:LYS:HE3	70:PP:91:GLY:C	2.15	0.71
74:TT:64:LEU:HD13	74:TT:113:VAL:HG21	1.73	0.71
1:9:442:C:H42	1:9:449:A:N6	1.86	0.70
1:9:1351:G:O6	1:9:1360:U:O4	2.09	0.70
21:5:2019:C:H2'	21:5:2020:U:C6	2.26	0.70
21:5:3759:A:H5'	21:5:3765:G:H22	1.57	0.70
55:II:101:ILE:HD13	55:II:190:LEU:HD21	1.71	0.70
64:aa:40:VAL:HG13	64:aa:69:VAL:HG23	1.71	0.70
21:5:1967:A:H61	21:5:2020:U:H3	1.39	0.70
61:WW:83:LEU:HA	61:WW:86:LEU:HD23	1.72	0.70
77:cc:31:ARG:HE	77:cc:43:ILE:HG23	1.56	0.70
3:B:153:MET:O	3:B:157:CYS:HB2	1.92	0.70
21:5:1995:G:H2'	21:5:1996:C:C6	2.27	0.70
50:BB:65:ARG:HG3	59:OO:50:LYS:HD3	1.72	0.70
70:PP:86:LEU:HD22	70:PP:87:PRO:HD2	1.74	0.70
1:9:655:A:H4'	1:9:656:G:H3'	1.74	0.69
48:K:49:PHE:HB2	48:K:159:MET:HB3	1.74	0.69
18:a:51:GLY:HA2	28:Q:178:ARG:H	1.57	0.69
20:e:70:LEU:HD21	20:e:76:LYS:HG3	1.74	0.69
21:5:2009:A:H3'	21:5:2010:A:C8	2.28	0.69
58:NN:64:ARG:HE	58:NN:70:LYS:HD3	1.57	0.69
1:9:681:U:H4'	62:XX:9:THR:HG22	1.75	0.69
21:5:1824:G:H5''	30:T:35:LYS:HE3	1.74	0.69
1:9:486:A:H1'	1:9:513:G:H22	1.56	0.69
6:G:111:PRO:HD2	6:G:114:ILE:HD12	1.73	0.69
21:5:3873:G:H2'	21:5:3874:G:C8	2.28	0.69
10:L:63:THR:HG23	10:L:65:ARG:H	1.55	0.69
20:e:89:LEU:HD13	20:e:118:LEU:HD12	1.74	0.69
47:1:1403:U:H3	47:1:1433:U:H5'	1.58	0.69
3:B:99:LEU:HB3	21:5:4582:C:H4'	1.75	0.69
12:O:166:ILE:HD13	12:O:169:ARG:HH12	1.58	0.68
70:PP:33:LEU:HG	70:PP:37:TYR:HE2	1.58	0.68
24:D:45:ASN:HB3	30:T:33:ILE:HG21	1.74	0.68
53:GG:106:LEU:HD13	53:GG:109:LEU:HD11	1.75	0.68
1:9:1452:A:N6	1:9:1473:G:H21	1.92	0.68
12:O:116:LYS:HG2	21:5:4758:U:H5''	1.75	0.68
21:5:2483:G:O6	21:5:2495:U:O4	2.11	0.68
11:N:146:PRO:HA	11:N:149:GLN:HE22	1.59	0.68
21:5:2008:U:H2'	21:5:2010:A:N7	2.07	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2478:C:H2'	21:5:2479:G:H8	1.56	0.68
21:5:1963:C:H41	21:5:2024:G:N2	1.90	0.68
4:C:138:MET:HE1	4:C:145:GLU:HG3	1.73	0.68
20:e:104:SER:HB2	21:5:2303:C:H5''	1.75	0.68
21:5:132:G:H2'	21:5:133:C:O4'	1.93	0.68
3:B:57:VAL:HG22	3:B:73:VAL:HG22	1.76	0.68
22:7:49:A:H5''	24:D:225:GLN:HG2	1.76	0.68
21:5:2647:A:H62	21:5:2686:G:H8	1.42	0.67
60:VV:34:MET:HE2	60:VV:34:MET:HA	1.76	0.67
1:9:42:A:H1'	1:9:426:A:H1'	1.76	0.67
21:5:300:A:H2'	21:5:301:G:H8	1.58	0.67
1:9:1259:A:H1'	1:9:1264:C:H42	1.59	0.67
21:5:2753:G:H2'	21:5:2754:G:C4	2.30	0.67
51:CC:187:ARG:HB3	51:CC:192:LEU:HD23	1.76	0.67
70:PP:106:GLU:CD	70:PP:106:GLU:H	2.00	0.67
72:RR:41:ILE:HD11	72:RR:46:LEU:HB3	1.76	0.67
21:5:4323:A:H4'	24:D:176:SER:HB3	1.77	0.67
61:WW:77:PRO:HD3	62:XX:5:ARG:HB3	1.77	0.67
21:5:153:G:H2'	21:5:154:G:H8	1.59	0.67
21:5:1980:U:C2	21:5:1983:A:H3'	2.29	0.67
21:5:1983:A:H1'	21:5:2010:A:O3'	1.95	0.67
21:5:308:G:H3'	38:i:33:LEU:HG	1.75	0.67
21:5:1976:G:H3'	21:5:1979:A:H62	1.58	0.67
54:HH:117:PRO:HG2	54:HH:120:ARG:HD3	1.76	0.67
21:5:308:G:H8	21:5:310:G:H1'	1.60	0.67
21:5:4642:U:H2'	21:5:4643:G:H8	1.60	0.67
21:5:4949:G:H4'	21:5:4950:U:H5'	1.75	0.67
13:R:5:ARG:CZ	21:5:2385:U:H4'	2.25	0.66
1:9:142:C:H41	1:9:329:G:H5'	1.58	0.66
21:5:2745:A:H2'	21:5:2746:A:H8	1.60	0.66
1:9:457:C:H2'	1:9:458:A:H8	1.59	0.66
8:I:38:ARG:HD3	8:I:83:ASP:HB2	1.76	0.66
18:a:117:LEU:HD23	18:a:140:VAL:HG11	1.77	0.66
21:5:1985:G:H4'	21:5:2002:A:H1'	1.78	0.66
24:D:223:PHE:HB3	24:D:226:TYR:HB2	1.77	0.66
50:BB:224:GLU:HG2	50:BB:227:LYS:HG2	1.78	0.66
3:B:13:SER:HB2	21:5:4622:A:H4'	1.76	0.66
21:5:2400:G:H21	36:g:6:THR:HG22	1.61	0.66
78:dd:17:GLY:HA2	78:dd:27:ARG:HG2	1.76	0.66
1:9:981:A:H2'	1:9:982:G:C8	2.29	0.66
3:B:224:LYS:HG2	3:B:340:THR:HB	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1971:U:H2'	21:5:1972:G:H8	1.60	0.66
26:M:50:MET:HE1	26:M:55:MET:HB3	1.78	0.66
1:9:1277:C:H2'	1:9:1278:A:H8	1.59	0.66
13:R:60:ARG:HH12	21:5:2615:C:H5''	1.60	0.66
24:D:67:ALA:HA	24:D:72:ASP:HA	1.76	0.66
70:PP:52:LYS:HG3	70:PP:80:LEU:HD21	1.78	0.66
3:B:95:THR:HG22	21:5:4910:A:H4'	1.78	0.66
5:E:181:PRO:HD2	5:E:185:ASN:HD21	1.59	0.66
29:S:29:ARG:HB2	30:T:148:PRO:HB2	1.78	0.66
1:9:383:G:H21	57:LL:133:PRO:HG3	1.61	0.66
47:1:1428:C:H42	47:1:1443:A:H2'	1.60	0.65
1:9:1514:G:H21	70:PP:79:HIS:HE1	1.43	0.65
1:9:1696:C:H2'	1:9:1697:A:C5'	2.26	0.65
12:O:130:LYS:HB2	12:O:133:ARG:HG2	1.78	0.65
50:BB:136:ARG:HB2	50:BB:218:LEU:HD11	1.78	0.65
2:A:226:ARG:HG2	2:A:228:ASP:H	1.61	0.65
56:JJ:70:ARG:HH21	56:JJ:94:LEU:HD11	1.62	0.65
21:5:4492:U:H5''	21:5:4493:U:H5'	1.78	0.65
23:8:15:G:H2'	23:8:16:G:C4	2.30	0.65
70:PP:96:VAL:C	70:PP:103:ASN:H	2.03	0.65
21:5:2073:C:H4'	25:F:156:ARG:HH22	1.61	0.65
27:P:125:MET:HB2	27:P:141:SER:HB3	1.78	0.65
55:II:119:LEU:HD11	55:II:153:LYS:HG3	1.79	0.65
71:QQ:50:LYS:HE3	71:QQ:85:ARG:HH12	1.61	0.65
1:9:528:A:H2'	1:9:529:A:H8	1.62	0.65
1:9:1358:U:H5'	51:CC:114:LYS:HD2	1.78	0.65
34:d:36:VAL:HG11	34:d:44:ARG:HG2	1.79	0.65
63:YY:82:ALA:O	63:YY:86:GLU:CB	2.45	0.65
12:O:82:ARG:HD2	12:O:85:ARG:HH12	1.61	0.65
21:5:1593:A:H5''	21:5:2839:U:H5''	1.79	0.65
52:EE:103:TYR:HB2	52:EE:182:MET:HE1	1.79	0.65
1:9:1240:A:C8	70:PP:100:LYS:HG3	2.32	0.64
63:YY:102:THR:HB	63:YY:106:GLN:HE21	1.62	0.64
21:5:4238:G:H2'	21:5:4239:A:H8	1.62	0.64
51:CC:121:ARG:HH22	51:CC:145:LYS:HG2	1.62	0.64
67:DD:141:LYS:HE2	67:DD:179:GLN:HG3	1.78	0.64
1:9:1521:C:H1'	70:PP:128:HIS:CE1	2.32	0.64
9:J:141:ILE:HA	9:J:144:LYS:HE2	1.78	0.64
21:5:1750:G:H22	21:5:1780:A:H2	1.46	0.64
21:5:2486:G:H2'	21:5:2487:G:C8	2.32	0.64
58:NN:75:LEU:HD12	58:NN:80:LEU:HB2	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:146:G:H1	1:9:173:A:H61	1.45	0.64
1:9:980:A:H2'	1:9:981:A:H8	1.62	0.64
13:R:4:LEU:H	13:R:5:ARG:CZ	2.10	0.64
21:5:172:C:H1'	37:h:112:ARG:HH12	1.62	0.64
70:PP:24:GLN:HE21	70:PP:32:GLN:HE22	1.43	0.64
70:PP:76:VAL:H	70:PP:94:VAL:HA	1.62	0.64
2:A:5:ILE:HG22	2:A:8:GLN:HE21	1.62	0.64
13:R:45:ILE:HG12	13:R:50:ILE:HD11	1.79	0.64
18:a:71:PRO:HG2	18:a:108:TYR:HA	1.80	0.64
24:D:205:ALA:HB2	24:D:236:MET:HE1	1.79	0.64
49:AA:23:THR:HB	49:AA:174:MET:HE1	1.80	0.64
1:9:934:G:H1	1:9:1008:A:H2	1.42	0.64
66:ee:110:GLN:HE21	66:ee:114:ARG:HG3	1.62	0.64
1:9:456:C:H2'	1:9:457:C:C6	2.33	0.64
52:EE:31:PRO:HG3	52:EE:43:PRO:HG3	1.79	0.64
1:9:955:A:H4'	59:OO:60:MET:HE1	1.78	0.64
1:9:1238:U:H4'	70:PP:127:LYS:HD3	1.80	0.64
4:C:195:LYS:HE3	21:5:2333:G:H5''	1.78	0.64
6:G:139:VAL:HG23	6:G:236:ILE:HG22	1.80	0.64
21:5:1976:G:H3'	21:5:1979:A:N6	2.12	0.64
49:AA:180:ARG:HE	49:AA:184:ARG:HH21	1.45	0.64
1:9:1644:C:H5''	71:QQ:140:ARG:HE	1.63	0.64
7:H:20:LEU:HD13	7:H:45:LEU:HD12	1.78	0.64
21:5:697:G:H2'	21:5:698:G:H8	1.63	0.64
21:5:4967:A:H2'	21:5:4968:A:H8	1.62	0.64
47:1:1496:A:C4	47:1:1497:C:H5	2.16	0.64
71:QQ:23:ALA:HB1	71:QQ:68:ILE:HD11	1.79	0.64
1:9:1049:A:N7	1:9:1069:U:O2	2.32	0.63
2:A:177:LYS:HB2	45:p:29:ILE:HG21	1.79	0.63
21:5:1073:G:H1	21:5:1238:A:H2	1.47	0.63
21:5:4704:C:H2'	21:5:4705:A:H8	1.62	0.63
71:QQ:32:ILE:HB	71:QQ:39:LEU:HD22	1.79	0.63
30:T:3:ASN:HB3	30:T:9:ARG:HH12	1.63	0.63
33:c:29:LEU:HD12	33:c:91:VAL:HG21	1.80	0.63
1:9:928:G:H2'	1:9:929:G:C8	2.33	0.63
21:5:1997:U:H2'	21:5:1999:A:C8	2.33	0.63
21:5:4594:U:H2'	21:5:4595:G:H8	1.63	0.63
57:LL:11:GLN:HB3	57:LL:56:ILE:HD13	1.79	0.63
1:9:1235:G:H21	70:PP:135:ALA:C	2.06	0.63
3:B:6:PHE:HB3	14:V:49:LEU:HD21	1.78	0.63
21:5:2004:U:H2'	21:5:2005:G:C1'	2.29	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:260:VAL:HG13	6:G:268:LEU:HD13	1.81	0.63
47:1:1497:C:O2	47:1:1497:C:H2'	1.97	0.63
58:NN:136:PRO:HG2	58:NN:139:TRP:HB2	1.78	0.63
1:9:191:A:H3'	1:9:192:C:H5''	1.81	0.63
1:9:551:U:H2'	1:9:552:G:C8	2.34	0.63
1:9:616:A:H4'	66:ee:81:ARG:HH12	1.64	0.63
9:J:119:TYR:HD2	73:SS:12:ILE:HG12	1.63	0.63
13:R:105:LEU:HD22	13:R:135:LYS:HG3	1.81	0.63
50:BB:189:ILE:HG13	50:BB:190:PRO:HD3	1.80	0.63
9:J:12:MET:HE1	22:7:52:C:H1'	1.79	0.62
17:Y:85:VAL:HG12	17:Y:97:VAL:HG23	1.79	0.62
25:F:236:GLU:HG2	29:S:38:VAL:HG13	1.81	0.62
46:r:10:VAL:HG22	46:r:14:SER:HB2	1.79	0.62
51:CC:116:THR:HG23	51:CC:118:ALA:H	1.64	0.62
71:QQ:19:ALA:HB2	71:QQ:75:GLY:HA3	1.81	0.62
3:B:77:THR:HG21	3:B:337:VAL:HG22	1.81	0.62
68:FF:112:LEU:HA	68:FF:177:LEU:HD11	1.82	0.62
71:QQ:47:LEU:HD23	71:QQ:81:ILE:HG12	1.80	0.62
1:9:980:A:H2'	1:9:981:A:C8	2.34	0.62
3:B:324:GLY:HA2	21:5:5051:C:H4'	1.81	0.62
4:C:301:ALA:HB1	28:Q:132:LYS:HE3	1.80	0.62
11:N:146:PRO:HB2	37:h:104:THR:HG22	1.80	0.62
53:GG:32:MET:HB2	53:GG:100:CYS:HB2	1.81	0.62
59:OO:67:ASP:HB2	59:OO:70:SER:HB2	1.82	0.62
34:d:62:VAL:HG22	34:d:104:THR:HB	1.81	0.62
70:PP:98:ASN:HD21	70:PP:122:THR:HA	1.63	0.62
21:5:1976:G:H2'	21:5:1977:C:H6	1.64	0.62
52:EE:100:ARG:HB2	52:EE:114:ILE:HD13	1.80	0.62
68:FF:50:PRO:HB3	68:FF:69:VAL:HG22	1.80	0.62
1:9:952:G:H21	59:OO:52:THR:HG21	1.64	0.62
2:A:3:ARG:HD2	2:A:208:GLU:HG2	1.81	0.62
2:A:45:VAL:HG12	2:A:61:VAL:HG22	1.80	0.62
4:C:28:PHE:HA	4:C:129:ALA:HA	1.80	0.62
21:5:2638:G:H22	21:5:2697:A:H61	1.47	0.62
59:OO:30:VAL:HG12	59:OO:94:HIS:HB2	1.82	0.62
61:WW:104:LEU:HB3	61:WW:125:ILE:HA	1.81	0.62
73:SS:22:GLY:HA2	73:SS:56:ALA:HB3	1.81	0.62
47:1:1407:C:H1'	47:1:1434:G:C2	2.34	0.62
11:N:115:VAL:HG11	11:N:160:GLU:HB3	1.80	0.62
1:9:1617:G:H1	70:PP:40:ARG:HH12	1.48	0.62
21:5:1405:C:H2'	21:5:1406:G:C8	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1982:G:H8	21:5:1982:G:OP2	1.83	0.62
2:A:116:LEU:HD11	2:A:158:ILE:HD12	1.82	0.61
5:E:216:THR:H	5:E:219:TYR:HB3	1.65	0.61
24:D:261:VAL:HG12	24:D:263:LYS:H	1.64	0.61
25:F:107:VAL:HG11	25:F:134:ILE:HD11	1.81	0.61
30:T:51:GLY:HA3	30:T:92:ARG:HB2	1.82	0.61
21:5:4088:C:H2'	21:5:4089:G:H8	1.64	0.61
78:dd:47:ALA:HB1	78:dd:52:PHE:HB3	1.82	0.61
1:9:161:U:H1'	53:GG:87:ARG:HH12	1.65	0.61
1:9:1203:G:C6	1:9:1697:A:N1	2.69	0.61
16:X:86:ALA:HB1	16:X:97:VAL:HG21	1.80	0.61
21:5:1991:A:H4'	21:5:1991:A:OP1	1.99	0.61
24:D:83:LEU:HB3	24:D:88:VAL:HB	1.80	0.61
70:PP:72:LYS:HZ2	70:PP:92:SER:N	1.97	0.61
21:5:2777:G:H5''	21:5:2778:G:H5'	1.83	0.61
1:9:116:U:O4	1:9:347:G:O6	2.19	0.61
13:R:78:ILE:HA	13:R:81:ARG:HD3	1.82	0.61
21:5:2836:A:H2	21:5:3895:G:H4'	1.65	0.61
31:U:44:GLN:HG3	31:U:56:LEU:HD21	1.81	0.61
49:AA:180:ARG:HG2	49:AA:184:ARG:HE	1.66	0.61
1:9:962:A:H5''	59:OO:66:ARG:HB3	1.81	0.61
1:9:1221:G:H2'	1:9:1222:G:H8	1.66	0.61
21:5:3692:A:H62	21:5:3823:G:H21	1.48	0.61
40:k:14:THR:HA	40:k:17:ARG:HD3	1.81	0.61
8:I:91:LEU:HD23	8:I:135:ILE:HA	1.83	0.61
21:5:727:C:H5''	25:F:72:ARG:HH22	1.65	0.61
21:5:1980:U:C4	21:5:1983:A:H5'	2.35	0.61
21:5:4716:C:H2'	21:5:4717:A:C8	2.36	0.61
26:M:31:ILE:HD11	26:M:37:LEU:HB2	1.83	0.61
20:e:30:LYS:HG3	20:e:31:ILE:HD12	1.81	0.61
21:5:1997:U:H2'	21:5:1999:A:N7	2.16	0.61
59:OO:98:ARG:HA	59:OO:133:THR:HG22	1.83	0.61
31:U:23:LEU:HD11	31:U:83:LEU:HD21	1.83	0.60
21:5:2411:C:H2'	21:5:2412:A:H8	1.66	0.60
25:F:225:HIS:CE1	25:F:233:GLY:HA3	2.36	0.60
29:S:83:ARG:HD2	30:T:155:PRO:HA	1.82	0.60
21:5:2573:A:H62	21:5:2761:U:H3	1.48	0.60
21:5:4423:U:H3'	42:m:71:ARG:HH21	1.66	0.60
21:5:4750:G:H2'	21:5:4751:G:C8	2.36	0.60
50:BB:115:LYS:H	50:BB:118:GLN:HE22	1.48	0.60
21:5:3880:G:H2'	21:5:3881:G:C8	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:AA:123:VAL:HG12	49:AA:145:ILE:HB	1.83	0.60
70:PP:49:LEU:C	70:PP:50:ARG:HE	2.10	0.60
10:L:46:ILE:HB	10:L:49:ARG:HB2	1.83	0.60
21:5:1769:G:H2'	21:5:1770:A:O4'	2.01	0.60
6:G:317:LYS:HD2	50:BB:225:LEU:HG	1.84	0.60
21:5:1739:G:H1'	21:5:1742:A:H62	1.66	0.60
21:5:1978:C:H3'	21:5:1979:A:H5''	1.82	0.60
21:5:4992:G:H2'	21:5:4993:G:H8	1.65	0.60
53:GG:22:ARG:HG2	53:GG:25:ARG:HH21	1.65	0.60
56:JJ:144:ILE:HD11	56:JJ:146:SER:HB3	1.83	0.60
1:9:656:G:H21	1:9:663:C:H5''	1.66	0.60
7:H:28:LYS:HD3	7:H:33:THR:HG22	1.83	0.60
21:5:1645:C:H2'	21:5:1646:A:C8	2.37	0.60
21:5:4115:G:H5''	21:5:4116:C:H5'	1.82	0.60
1:9:1521:C:H1'	70:PP:128:HIS:HE1	1.67	0.60
21:5:1817:U:H4'	24:D:43:LYS:HE2	1.84	0.60
21:5:1968:G:H2'	21:5:1969:G:H8	1.67	0.60
21:5:3848:U:H2'	21:5:3849:A:H8	1.65	0.60
53:GG:54:GLY:HA3	53:GG:63:MET:HG3	1.83	0.60
72:RR:31:ASN:HD21	72:RR:55:THR:HG22	1.65	0.60
4:C:339:THR:HG22	4:C:342:ARG:HH22	1.67	0.60
7:H:41:ILE:HB	7:H:43:VAL:HG12	1.83	0.60
21:5:1974:U:O4'	21:5:1975:G:H3'	2.02	0.60
21:5:2018:C:H2'	21:5:2019:C:C6	2.37	0.60
21:5:4093:G:H2'	21:5:4094:G:H8	1.66	0.60
25:F:53:ALA:HA	25:F:187:GLU:HG2	1.83	0.60
1:9:921:G:H3'	61:WW:28:ARG:HH22	1.67	0.60
12:O:87:MET:HE1	21:5:1912:G:H21	1.66	0.60
21:5:2520:C:H2'	21:5:2521:G:H8	1.66	0.60
59:OO:75:MET:HG2	59:OO:118:ALA:HB2	1.83	0.60
68:FF:103:LEU:HB2	76:ZZ:67:LEU:HD21	1.83	0.60
1:9:1098:C:H2'	1:9:1099:G:C8	2.37	0.59
21:5:4573:G:H22	21:5:4722:G:H21	1.48	0.59
25:F:142:GLY:HA3	25:F:239:ILE:HG12	1.82	0.59
39:j:21:ARG:HE	39:j:39:TYR:HA	1.67	0.59
47:1:1361:U:H5'	47:1:1442:G:N3	2.17	0.59
64:aa:22:ARG:HH21	64:aa:27:ALA:HB1	1.67	0.59
1:9:1781:A:H2'	1:9:1782:G:H8	1.67	0.59
21:5:1402:C:H2'	21:5:1403:G:H8	1.65	0.59
21:5:1977:C:H5	21:5:1979:A:C6	2.19	0.59
21:5:4699:U:H1'	21:5:4700:A:H5''	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:HH:90:LYS:HZ2	54:HH:92:VAL:HB	1.67	0.59
75:UU:62:ARG:HD3	75:UU:81:GLN:HG3	1.84	0.59
23:8:96:C:H5''	37:h:66:LYS:HD3	1.82	0.59
2:A:201:GLY:HA2	2:A:204:MET:HG3	1.84	0.59
21:5:651:C:H2'	21:5:652:G:H8	1.66	0.59
54:HH:51:ILE:HD11	54:HH:176:VAL:HG22	1.84	0.59
56:JJ:32:ILE:HG23	56:JJ:37:LEU:HB2	1.85	0.59
1:9:677:G:H21	1:9:1028:A:H62	1.50	0.59
8:I:87:ILE:HD13	8:I:138:ILE:HB	1.84	0.59
47:1:1398:C:H2'	47:1:1399:A:C8	2.38	0.59
55:II:162:LEU:HD11	55:II:191:GLU:HB3	1.84	0.59
70:PP:96:VAL:HG11	70:PP:116:LEU:HB2	1.84	0.59
1:9:4:C:H1'	56:JJ:18:ARG:HH21	1.67	0.59
1:9:106:C:H2'	1:9:107:A:H8	1.68	0.59
12:O:109:PRO:HB2	12:O:111:PRO:HD2	1.83	0.59
12:O:157:GLU:O	12:O:161:LYS:HG2	2.03	0.59
21:5:1591:U:H3	21:5:4555:U:H5''	1.67	0.59
21:5:2830:G:H2'	21:5:2831:G:H8	1.67	0.59
76:ZZ:73:VAL:HG12	76:ZZ:79:ILE:HD11	1.84	0.59
1:9:1112:U:O2	1:9:1121:G:O6	2.21	0.59
6:G:200:VAL:HG13	6:G:232:VAL:HG21	1.85	0.59
21:5:1884:C:H2'	21:5:1885:G:H8	1.67	0.59
21:5:1968:G:H2'	21:5:1969:G:C8	2.38	0.59
21:5:2093:G:H4'	21:5:2094:C:H5'	1.85	0.59
67:DD:55:THR:HA	67:DD:58:VAL:HG22	1.83	0.59
69:KK:15:LEU:HG	69:KK:71:LEU:HD22	1.84	0.59
78:dd:31:ILE:HD11	78:dd:40:ARG:HB3	1.85	0.59
1:9:1092:G:H2'	1:9:1093:A:H8	1.66	0.59
6:G:151:LEU:HD21	6:G:268:LEU:HG	1.83	0.59
21:5:708:G:H21	21:5:4942:C:H5	1.48	0.59
21:5:979:C:H42	21:5:1276:C:H42	1.51	0.59
21:5:1996:C:C2	21:5:1997:U:H1'	2.38	0.59
21:5:2375:A:H2'	21:5:2376:A:H8	1.68	0.59
21:5:4716:C:H2'	21:5:4717:A:H8	1.68	0.59
28:Q:72:LEU:HD22	28:Q:73:PRO:HD2	1.83	0.59
1:9:84:A:H5''	63:YY:122:LYS:HG3	1.84	0.59
1:9:479:C:H2'	1:9:480:G:H8	1.68	0.59
11:N:36:LEU:HD23	11:N:64:ILE:HG22	1.85	0.59
21:5:3846:C:H2'	21:5:3847:C:H6	1.67	0.59
61:WW:46:TYR:HB3	61:WW:69:LEU:HD23	1.84	0.59
67:DD:177:LEU:HD12	67:DD:180:GLY:H	1.67	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:64:A:H2	1:9:83:A:H62	1.51	0.59
5:E:96:THR:HG22	5:E:109:VAL:HG22	1.84	0.59
6:G:284:ASP:HB2	6:G:288:ARG:HH21	1.68	0.59
21:5:1985:G:H4'	21:5:2002:A:C1'	2.33	0.59
21:5:2520:C:H1'	21:5:2640:G:H21	1.67	0.59
44:o:12:CYS:HB3	44:o:15:CYS:HB2	1.85	0.59
47:1:1440:G:H22	47:1:1443:A:H62	1.48	0.59
47:1:1458:C:H2'	47:1:1459:U:C6	2.38	0.59
70:PP:115:TYR:H	70:PP:118:GLU:HG2	1.67	0.59
3:B:37:PRO:HA	3:B:188:GLY:HA2	1.83	0.58
6:G:87:LYS:HG2	6:G:89:PRO:HD3	1.83	0.58
27:P:131:ARG:HH11	27:P:137:ASN:HD21	1.50	0.58
49:AA:58:LEU:HD13	49:AA:177:MET:HE3	1.85	0.58
70:PP:94:VAL:HG13	70:PP:105:VAL:HB	1.85	0.58
1:9:1468:C:H2'	1:9:1469:A:C8	2.38	0.58
1:9:1560:U:O2	1:9:1575:G:O6	2.20	0.58
1:9:1650:A:H5''	71:QQ:139:ALA:HB2	1.84	0.58
21:5:2002:A:H4'	21:5:2003:G:C8	2.39	0.58
35:f:7:CYS:HB2	35:f:103:VAL:HG13	1.85	0.58
70:PP:61:ARG:O	70:PP:62:LYS:C	2.46	0.58
70:PP:130:ARG:O	70:PP:131:PRO:C	2.47	0.58
1:9:1172:U:H2'	1:9:1173:A:H8	1.68	0.58
1:9:1228:A:H2'	1:9:1229:G:C8	2.38	0.58
21:5:1645:C:H2'	21:5:1646:A:H8	1.68	0.58
48:K:36:ILE:H	48:K:165:LEU:HD12	1.67	0.58
1:9:1757:G:O6	1:9:1775:U:O2	2.22	0.58
21:5:4232:U:H4'	21:5:4233:A:O5'	2.03	0.58
46:r:6:GLN:HG3	46:r:44:ILE:HG22	1.84	0.58
54:HH:31:GLU:HB2	54:HH:40:LEU:HD23	1.85	0.58
75:UU:61:LEU:HB2	75:UU:82:MET:HB2	1.85	0.58
1:9:1781:A:H2'	1:9:1782:G:C8	2.39	0.58
14:V:43:LYS:HA	21:5:4508:C:H4'	1.85	0.58
21:5:268:G:H2'	21:5:269:G:H8	1.67	0.58
21:5:1979:A:H4'	21:5:1980:U:OP2	2.03	0.58
21:5:4584:A:H62	21:5:4718:G:H21	1.49	0.58
35:f:45:LYS:HA	35:f:107:PRO:HG3	1.86	0.58
2:A:101:VAL:HB	2:A:165:VAL:HG22	1.85	0.58
3:B:65:SER:HB3	21:5:4616:A:H4'	1.85	0.58
21:5:1083:U:H3	21:5:1216:C:H42	1.51	0.58
21:5:1514:U:H2'	21:5:1515:A:C8	2.39	0.58
21:5:3604:A:H2'	21:5:3605:C:C6	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:4980:C:H3'	21:5:4981:G:H21	1.68	0.58
53:GG:122:PRO:HA	53:GG:126:ASP:HB2	1.85	0.58
56:JJ:63:LEU:HD23	56:JJ:70:ARG:HB2	1.86	0.58
62:XX:28:LYS:O	62:XX:32:LEU:HB2	2.03	0.58
1:9:1010:G:H2'	1:9:1011:A:H8	1.69	0.58
21:5:2015:U:H2'	21:5:2016:C:C6	2.39	0.58
70:PP:72:LYS:O	70:PP:73:PRO:C	2.46	0.58
21:5:710:G:H2'	21:5:711:A:H8	1.68	0.58
21:5:1405:C:H2'	21:5:1406:G:H8	1.67	0.58
21:5:4537:C:H2'	21:5:4538:G:H8	1.66	0.58
21:5:4892:A:N6	21:5:4928:C:H41	2.02	0.58
22:7:57:C:H2'	22:7:58:A:H8	1.69	0.58
54:HH:63:PHE:HB3	54:HH:97:GLN:HB2	1.85	0.58
21:5:2006:U:H3	21:5:2014:C:H1'	1.69	0.58
47:1:1493:G:H3'	47:1:1493:G:N3	2.19	0.58
66:ee:113:ARG:HH12	66:ee:128:PRO:HB3	1.68	0.58
2:A:103:PRO:HA	2:A:163:ARG:HA	1.84	0.58
21:5:1824:G:H2'	21:5:1825:A:H8	1.69	0.58
21:5:4274:A:H2'	21:5:4275:G:H8	1.69	0.58
1:9:1488:C:H3'	1:9:1489:A:H4'	1.86	0.57
21:5:922:C:H2'	21:5:922(A):G:H8	1.68	0.57
21:5:2832:A:H2'	21:5:2833:A:H8	1.68	0.57
21:5:3720:G:H22	21:5:3733:A:H2	1.52	0.57
1:9:1202:U:H2'	1:9:1203:G:H8	1.68	0.57
8:I:12:CYS:HB3	8:I:128:ARG:HH21	1.69	0.57
21:5:1982:G:N3	21:5:2010:A:H5'	2.19	0.57
21:5:3721:U:H2'	21:5:3722:G:H8	1.69	0.57
2:A:117:GLU:HB2	2:A:162:ASN:HB2	1.86	0.57
21:5:3916:G:H2'	21:5:3917:A:H8	1.69	0.57
33:c:29:LEU:HD13	33:c:94:LEU:HD23	1.85	0.57
39:j:68:LYS:HG3	39:j:69:ILE:HD12	1.87	0.57
47:1:1424:A:H4'	47:1:1427:U:H3'	1.84	0.57
52:EE:149:TYR:HD2	53:GG:205:GLU:HG2	1.69	0.57
1:9:465:A:H4'	1:9:466:G:O5'	2.05	0.57
1:9:792:C:H2'	1:9:793:G:H8	1.69	0.57
1:9:1228:A:H2'	1:9:1229:G:H8	1.68	0.57
21:5:418:A:H2'	21:5:419:A:H8	1.69	0.57
21:5:1604:G:H2'	21:5:1605:G:C8	2.39	0.57
21:5:1767:A:H3'	21:5:1769:G:N7	2.20	0.57
1:9:1588:A:H2'	1:9:1589:A:H8	1.70	0.57
1:9:1652:G:O6	1:9:1672:U:O4	2.23	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:N:164:LEU:HD21	21:5:61:A:H5''	1.86	0.57
13:R:7:GLN:HE21	13:R:36:ASN:H	1.52	0.57
14:V:69:LYS:HE3	14:V:71:GLU:HB2	1.86	0.57
21:5:1991:A:H3'	21:5:1992:U:H5''	1.85	0.57
21:5:2548:C:H2'	21:5:2549:G:H8	1.69	0.57
23:8:47:C:H1'	23:8:61:A:H2'	1.86	0.57
70:PP:61:ARG:O	70:PP:65:LYS:HG2	2.03	0.57
70:PP:63:ALA:O	70:PP:64:LYS:C	2.46	0.57
1:9:551:U:H2'	1:9:552:G:H8	1.68	0.57
1:9:1643:U:H1'	71:QQ:142:GLN:HG3	1.87	0.57
21:5:55:G:H2'	21:5:56:A:C8	2.40	0.57
31:U:49:VAL:HB	31:U:57:GLY:HA3	1.85	0.57
21:5:1991:A:H62	21:5:2002:A:H5'	1.70	0.57
21:5:2007:G:H1'	21:5:2012:A:H61	1.70	0.57
21:5:4239:A:H2'	21:5:4240:G:H8	1.69	0.57
21:5:4454:G:O6	21:5:4526:U:O4	2.23	0.57
21:5:4466:C:H2'	21:5:4467:A:H8	1.68	0.57
32:Z:41:ALA:HB2	32:Z:77:TYR:HE1	1.69	0.57
1:9:1514:G:H21	70:PP:79:HIS:CE1	2.21	0.57
6:G:187:PRO:HB3	6:G:259:GLN:HB3	1.87	0.57
21:5:520:U:H3	21:5:641:G:H1	1.50	0.57
21:5:1964:A:C8	21:5:4694:G:C2	2.93	0.57
53:GG:52:ILE:HG23	53:GG:111:LEU:HD23	1.87	0.57
73:SS:20:ILE:HG22	73:SS:32:ALA:HB3	1.86	0.57
1:9:1468:C:H2'	1:9:1469:A:H8	1.70	0.57
16:X:109:ILE:HD11	16:X:124:VAL:HG21	1.87	0.57
21:5:425:U:H2'	21:5:426:A:H8	1.69	0.57
21:5:1980:U:O2	21:5:1983:A:H3'	2.05	0.57
21:5:2005:G:N2	21:5:2015:U:H1'	2.20	0.57
23:8:67:U:H2'	23:8:68:G:H8	1.69	0.57
32:Z:103:ASP:HB3	32:Z:106:LEU:HB2	1.86	0.57
34:d:23:ARG:HG2	34:d:121:ASN:HA	1.87	0.57
39:j:74:PHE:HD2	39:j:75:ARG:HH21	1.51	0.57
68:FF:73:THR:HG22	68:FF:93:VAL:HG21	1.86	0.57
1:9:1698:C:H5'	1:9:1698:C:C6	2.39	0.57
3:B:20:LYS:HB3	21:5:4567:G:H5'	1.87	0.57
21:5:2004:U:H2'	21:5:2005:G:H1'	1.86	0.57
21:5:3599:A:H2'	21:5:3600:G:H8	1.68	0.57
27:P:116:HIS:HB3	27:P:149:ILE:HB	1.86	0.57
55:II:101:ILE:HD11	55:II:172:LEU:HB3	1.87	0.57
56:JJ:77:LEU:HA	56:JJ:80:ARG:HE	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:JJ:111:GLN:NE2	56:JJ:127:ARG:HB2	2.20	0.57
70:PP:20:VAL:HG13	70:PP:24:GLN:HG3	1.86	0.57
1:9:920:A:N7	1:9:1021:U:O4	2.38	0.56
21:5:673:C:H2'	21:5:674:G:H8	1.70	0.56
29:S:83:ARG:HH21	30:T:156:TYR:HB2	1.70	0.56
51:CC:84:PHE:HA	60:VV:15:ARG:HE	1.69	0.56
59:OO:96:LYS:HE2	59:OO:132:VAL:HG21	1.87	0.56
74:TT:84:ARG:HB2	74:TT:90:SER:HB3	1.85	0.56
1:9:804:U:O2	1:9:859:G:O6	2.24	0.56
18:a:51:GLY:HA2	28:Q:178:ARG:N	2.20	0.56
21:5:1743:A:H5'	24:D:11:ALA:HB1	1.86	0.56
21:5:1972:G:H3'	21:5:1973:G:H8	1.70	0.56
23:8:28:C:H2'	23:8:29:G:H8	1.68	0.56
34:d:19:GLU:HB2	34:d:102:LEU:HD21	1.87	0.56
50:BB:164:ILE:HD12	50:BB:201:CYS:HB3	1.86	0.56
58:NN:20:ARG:HH21	61:WW:56:HIS:HB3	1.70	0.56
70:PP:97:TYR:HB2	70:PP:102:PHE:CD2	2.40	0.56
1:9:444:G:H3'	55:II:47:ARG:HH22	1.69	0.56
1:9:894:G:H2'	1:9:895:G:H8	1.68	0.56
1:9:1139:C:H41	1:9:1149:A:H62	1.53	0.56
4:C:195:LYS:HA	4:C:200:ARG:HA	1.86	0.56
5:E:192:THR:HB	5:E:197:VAL:HG21	1.87	0.56
21:5:418:A:H2'	21:5:419:A:C8	2.40	0.56
21:5:1969:G:C2	21:5:1970:A:H1'	2.41	0.56
21:5:3685:C:H2'	21:5:3686:G:H8	1.70	0.56
21:5:3893:C:H1'	27:P:69:ARG:HH11	1.69	0.56
42:m:68:MET:HG2	42:m:79:PRO:HA	1.86	0.56
53:GG:121:ILE:HG22	53:GG:123:GLY:H	1.70	0.56
69:KK:32:HIS:HD2	69:KK:35:LEU:H	1.51	0.56
1:9:1541:G:H5''	74:TT:59:SER:HB2	1.87	0.56
1:9:1563:G:H5''	74:TT:121:ARG:HH22	1.71	0.56
10:L:91:ALA:HB1	10:L:96:ILE:HB	1.87	0.56
21:5:667:A:H5'	21:5:668:C:H5	1.71	0.56
2:A:90:CYS:HB3	2:A:101:VAL:HG13	1.88	0.56
21:5:2016:C:H2'	21:5:2017:A:H8	1.69	0.56
17:Y:16:LYS:HE3	23:8:23:C:H1'	1.88	0.56
70:PP:25:LEU:O	70:PP:28:MET:HB3	2.06	0.56
21:5:978:G:H22	21:5:1277:G:H1	1.54	0.56
21:5:1962:A:C8	21:5:2025:A:C2	2.93	0.56
22:7:28:C:H1'	22:7:54:A:H61	1.71	0.56
47:1:1493:G:C5	47:1:1494:C:C4	2.93	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:1:1494:C:O5'	47:1:1494:C:H6	1.87	0.56
52:EE:185:GLY:H	52:EE:189:LEU:HD13	1.70	0.56
70:PP:75:VAL:HG22	70:PP:93:MET:HB3	1.87	0.56
77:cc:9:ILE:HG22	77:cc:59:LEU:HA	1.88	0.56
2:A:227:ARG:HB3	2:A:239:ALA:HB2	1.87	0.56
27:P:122:ALA:HB3	27:P:143:PRO:HG2	1.88	0.56
62:XX:50:ILE:HG12	62:XX:75:ILE:HD11	1.88	0.56
70:PP:79:HIS:HA	70:PP:97:TYR:CB	2.32	0.56
27:P:119:VAL:HG22	27:P:146:ILE:HG22	1.87	0.56
32:Z:11:VAL:HG11	32:Z:80:LEU:HB3	1.88	0.56
50:BB:72:ALA:HB3	59:OO:128:ARG:HH12	1.71	0.56
52:EE:181:CYS:HA	52:EE:227:VAL:HA	1.88	0.56
1:9:952:G:H2'	1:9:953:C:C6	2.41	0.56
13:R:42:ARG:HA	13:R:45:ILE:HD12	1.87	0.56
20:e:126:ASN:HB3	20:e:129:LEU:HD11	1.88	0.56
21:5:1970:A:O2'	21:5:2017:A:N6	2.39	0.56
70:PP:79:HIS:HD2	70:PP:102:PHE:CE2	2.24	0.56
1:9:1786:U:H2'	1:9:1787:G:H8	1.71	0.55
21:5:1876:U:H2'	21:5:1877:G:H8	1.71	0.55
23:8:30:U:H2'	23:8:31:G:C8	2.41	0.55
49:AA:127:PRO:HB3	49:AA:134:LEU:HD11	1.88	0.55
50:BB:134:LEU:HD23	50:BB:219:LYS:HE3	1.88	0.55
52:EE:211:LYS:HD2	52:EE:215:GLY:HA2	1.88	0.55
21:5:734:G:H22	21:5:929:A:H62	1.53	0.55
21:5:1461:C:H2'	21:5:1462:A:C8	2.41	0.55
21:5:1976:G:C5	21:5:1977:C:C4	2.94	0.55
21:5:4749:C:H2'	21:5:4750:G:C8	2.42	0.55
36:g:48:VAL:HB	45:p:61:MET:HE3	1.88	0.55
1:9:345:U:H5''	52:EE:37:LYS:HD2	1.88	0.55
1:9:1202:U:H2'	1:9:1203:G:C8	2.42	0.55
7:H:47:LEU:HD11	7:H:52:LYS:HA	1.88	0.55
21:5:2001:G:C6	21:5:2017:A:C5	2.94	0.55
70:PP:41:GLN:OE1	70:PP:41:GLN:N	2.39	0.55
76:ZZ:76:ARG:HG3	76:ZZ:77:LEU:HG	1.89	0.55
4:C:142:HIS:CE1	4:C:249:PHE:H	2.24	0.55
8:I:152:LEU:HD12	8:I:165:ILE:HG23	1.88	0.55
21:5:922(B):C:H3'	21:5:923:C:H5''	1.87	0.55
21:5:1732:C:H2'	21:5:1733:G:C8	2.41	0.55
21:5:2003:G:H4'	21:5:2004:U:OP2	2.03	0.55
44:o:66:ILE:HG23	44:o:85:ILE:HB	1.87	0.55
54:HH:78:ARG:H	54:HH:78:ARG:HD2	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:JJ:32:ILE:HD11	56:JJ:43:VAL:HB	1.88	0.55
62:XX:72:VAL:HG13	62:XX:81:ILE:HG23	1.87	0.55
78:dd:21:CYS:SG	78:dd:39:CYS:HB3	2.46	0.55
1:9:1019:C:H5'	58:NN:72:LEU:HD21	1.88	0.55
1:9:1535:U:C5	68:FF:169:ILE:HG12	2.41	0.55
10:L:184:MET:HE1	21:5:1479:G:H21	1.70	0.55
17:Y:8:THR:HG21	17:Y:13:LYS:HD2	1.87	0.55
21:5:2307:A:H2'	21:5:2308:A:H8	1.72	0.55
21:5:3723:A:H2'	21:5:3724:A:C8	2.40	0.55
21:5:5006:U:H4'	21:5:5007:A:H5'	1.89	0.55
29:S:164:LYS:HB3	29:S:165:PRO:HD3	1.89	0.55
70:PP:79:HIS:O	70:PP:81:ARG:HG3	2.07	0.55
1:9:918:U:H2'	1:9:919:A:C4	2.42	0.55
1:9:1522:A:N6	70:PP:131:PRO:HA	2.01	0.55
20:e:45:VAL:HG12	20:e:52:GLN:HB3	1.88	0.55
21:5:4239:A:H2'	21:5:4240:G:C8	2.41	0.55
63:YY:91:LEU:HD22	63:YY:96:LEU:HD11	1.89	0.55
65:bb:14:GLU:HA	65:bb:17:ARG:HG2	1.88	0.55
1:9:158:A:H2'	1:9:159:A:H8	1.72	0.55
1:9:929:G:N2	1:9:1104:G:H4'	2.22	0.55
6:G:139:VAL:HG11	6:G:238:LYS:HE3	1.89	0.55
21:5:1373:A:H2'	21:5:1374:G:H8	1.71	0.55
21:5:4992:G:H2'	21:5:4993:G:C8	2.41	0.55
27:P:112:LEU:HB3	27:P:150:LEU:HD11	1.88	0.55
21:5:1876:U:H2'	21:5:1877:G:C8	2.42	0.55
21:5:4507:A:H2'	21:5:4508:C:C6	2.42	0.55
32:Z:27:LYS:HE2	32:Z:93:LYS:HE2	1.89	0.55
47:1:1493:G:C6	47:1:1494:C:C2	2.94	0.55
1:9:1271:C:H42	1:9:1511:U:H3	1.54	0.55
2:A:29:LEU:HD23	2:A:30:ARG:H	1.71	0.55
7:H:180:TYR:HB2	42:m:59:LEU:HD21	1.88	0.55
8:I:129:VAL:HG21	8:I:135:ILE:HD11	1.89	0.55
9:J:110:GLN:HG2	9:J:111:GLU:HG3	1.89	0.55
21:5:1169:G:H2'	21:5:1170:G:H8	1.71	0.55
21:5:1403:G:H2'	21:5:1404:G:H8	1.72	0.55
21:5:4238:G:H2'	21:5:4239:A:C8	2.42	0.55
25:F:227:VAL:HG13	29:S:39:VAL:HG12	1.89	0.55
49:AA:198:MET:HG3	49:AA:200:ASP:H	1.71	0.55
1:9:5:U:H2'	1:9:6:G:H8	1.71	0.55
21:5:639:U:H2'	21:5:640:C:C6	2.42	0.55
21:5:1988:G:H3'	21:5:1989:G:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:3927:U:H2'	21:5:3928:A:H8	1.72	0.55
21:5:4094:G:H2'	21:5:4095:G:C8	2.42	0.55
46:r:90:LEU:HD12	46:r:111:ILE:HG23	1.89	0.55
52:EE:152:PRO:HD2	53:GG:216:ARG:HD2	1.87	0.55
1:9:1514:G:N2	70:PP:79:HIS:HE1	2.05	0.54
13:R:8:LYS:HE3	13:R:19:LYS:HB2	1.89	0.54
21:5:125:C:H2'	21:5:126:C:H6	1.71	0.54
21:5:3729:U:H2'	21:5:3730:U:C6	2.42	0.54
24:D:196:ARG:O	24:D:200:MET:HG3	2.07	0.54
1:9:223:C:H2'	1:9:224:A:C8	2.42	0.54
1:9:223:C:H2'	1:9:224:A:H8	1.72	0.54
1:9:432:G:H2'	1:9:433:A:C8	2.43	0.54
17:Y:54:GLU:HB2	17:Y:108:ARG:HB2	1.89	0.54
21:5:956:A:H1'	21:5:2076:G:H5''	1.89	0.54
21:5:1824:G:H2'	21:5:1825:A:C8	2.42	0.54
21:5:1991:A:H8	21:5:2002:A:C2	2.25	0.54
21:5:3730:U:H2'	21:5:3731:C:C6	2.42	0.54
23:8:148:A:H2'	23:8:149:G:C8	2.41	0.54
33:c:90:ARG:NH2	45:p:44:LYS:HE3	2.22	0.54
46:r:17:LEU:HD21	46:r:19:LYS:HE3	1.89	0.54
55:II:87:ASN:HB3	55:II:90:LEU:HD23	1.89	0.54
67:DD:176:LEU:HG	67:DD:181:VAL:HG22	1.89	0.54
71:QQ:45:ARG:HH11	71:QQ:48:GLN:HB2	1.71	0.54
21:5:1980:U:N3	21:5:1983:A:H5'	2.22	0.54
21:5:2405:G:H5''	39:j:14:LYS:HE3	1.90	0.54
21:5:4153:C:H2'	21:5:4154:G:H8	1.71	0.54
55:II:12:ARG:HH21	55:II:18:ARG:HG3	1.73	0.54
70:PP:13:ARG:HH12	70:PP:15:PHE:HA	1.72	0.54
70:PP:60:LEU:HD22	70:PP:89:MET:HG3	1.89	0.54
70:PP:114:HIS:CD2	70:PP:119:PHE:HZ	2.25	0.54
1:9:1656:G:O6	1:9:1668:U:O4	2.24	0.54
5:E:181:PRO:HB2	5:E:184:LEU:HB2	1.90	0.54
17:Y:130:LYS:HG2	17:Y:134:LYS:HZ2	1.72	0.54
21:5:257:C:H2'	21:5:258:G:C8	2.42	0.54
21:5:1840:G:H1'	25:F:110:LEU:HD22	1.89	0.54
21:5:1969:G:H3'	21:5:1970:A:C8	2.31	0.54
21:5:4969:C:H2'	21:5:4970:C:H6	1.73	0.54
32:Z:77:TYR:HB3	33:c:39:ARG:NE	2.23	0.54
47:1:1495:U:O2'	47:1:1496:A:O5'	2.25	0.54
49:AA:34:MET:HB2	49:AA:37:TYR:HD2	1.73	0.54
52:EE:18:TRP:HB3	52:EE:20:LEU:HD13	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:YY:55:ILE:HG12	63:YY:75:ILE:HG12	1.90	0.54
64:aa:41:ILE:HD11	64:aa:66:LYS:HB3	1.89	0.54
3:B:252:ALA:HB1	21:5:4524:G:C2	2.42	0.54
13:R:105:LEU:HD23	13:R:138:LEU:HD23	1.90	0.54
21:5:1211:G:H2'	21:5:1212:G:C8	2.42	0.54
21:5:1461:C:H2'	21:5:1462:A:H8	1.72	0.54
21:5:1636:U:H5''	21:5:1637:A:H5'	1.90	0.54
21:5:1771:U:H2'	21:5:1772:C:C6	2.42	0.54
21:5:1970:A:H4'	21:5:2000:G:C8	2.42	0.54
21:5:2019:C:H2'	21:5:2020:U:C5	2.43	0.54
21:5:2568:C:H2'	21:5:2569:G:H8	1.72	0.54
21:5:3870:C:H2'	21:5:3871:A:H8	1.73	0.54
24:D:196:ARG:O	24:D:199:ILE:HG13	2.07	0.54
54:HH:133:LEU:HD21	54:HH:176:VAL:HG11	1.90	0.54
1:9:1797:U:H2'	1:9:1798:C:C6	2.42	0.54
21:5:1758:G:H2'	21:5:1759:G:H8	1.73	0.54
21:5:4688:C:H2'	21:5:4689:U:C6	2.42	0.54
30:T:75:VAL:HG12	30:T:88:ARG:HG2	1.89	0.54
49:AA:169:HIS:CE1	49:AA:205:ARG:HH22	2.25	0.54
61:WW:37:PHE:HE1	61:WW:41:MET:HE2	1.72	0.54
1:9:526:A:H5'	66:ee:104:ARG:HH21	1.71	0.54
4:C:172:LYS:HE2	21:5:219:G:H22	1.71	0.54
21:5:648:G:H2'	21:5:649:A:H8	1.73	0.54
21:5:1913:C:H2'	21:5:1914:C:C6	2.43	0.54
55:II:159:SER:HB3	55:II:162:LEU:HD13	1.89	0.54
72:RR:96:ILE:HB	72:RR:117:LEU:HD13	1.90	0.54
1:9:885:U:O2	1:9:901:G:O6	2.26	0.54
21:5:1332:C:H2'	21:5:1333:A:C8	2.36	0.54
21:5:4455:G:H2'	21:5:4456:C:H6	1.73	0.54
21:5:4745:G:H22	21:5:4956:A:H2	1.56	0.54
45:p:8:VAL:HG23	45:p:11:VAL:HG23	1.90	0.54
48:K:37:SER:HB2	48:K:205:TYR:HE2	1.73	0.54
54:HH:101:LEU:HD13	54:HH:120:ARG:HG2	1.90	0.54
70:PP:28:MET:SD	70:PP:33:LEU:HB2	2.48	0.54
70:PP:81:ARG:HB3	70:PP:117:GLY:CA	2.38	0.54
1:9:572:U:H5''	63:YY:60:PHE:H	1.73	0.54
1:9:929:G:H21	1:9:1104:G:H4'	1.73	0.54
1:9:948:C:H2'	1:9:949:G:H8	1.72	0.54
1:9:1221:G:H2'	1:9:1222:G:C8	2.42	0.54
3:B:161:ARG:HD3	3:B:184:GLN:HA	1.90	0.54
21:5:424:U:H2'	21:5:425:U:C6	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1975:G:C2	21:5:1984:A:C5	2.96	0.54
21:5:2734:U:H2'	21:5:2735:G:H8	1.73	0.54
21:5:4098:A:H2'	21:5:4099:G:C8	2.43	0.54
26:M:46:ARG:HH11	26:M:46:ARG:HB2	1.72	0.54
29:S:8:ARG:HE	29:S:66:GLN:HE21	1.56	0.54
47:1:1495:U:H2'	47:1:1496:A:C4	2.43	0.54
54:HH:51:ILE:HG21	54:HH:179:LYS:HG2	1.89	0.54
54:HH:69:LEU:HG	54:HH:96:ALA:HB2	1.89	0.54
64:aa:13:LYS:H	64:aa:15:ARG:HH21	1.56	0.54
1:9:532:C:H2'	1:9:533:A:C8	2.42	0.54
1:9:695:C:H2'	1:9:696:G:C8	2.43	0.54
1:9:1016:U:H5''	58:NN:14:SER:HB2	1.89	0.54
1:9:1539:U:H5''	74:TT:43:LYS:HZ2	1.72	0.54
2:A:80:GLU:HG2	45:p:76:ALA:HB1	1.90	0.54
9:J:56:THR:HG23	9:J:63:ARG:HA	1.90	0.54
21:5:1333:A:H2'	21:5:1334:A:H8	1.73	0.54
21:5:1514:U:H2'	21:5:1515:A:H8	1.73	0.54
21:5:2573:A:N7	21:5:2761:U:O4	2.41	0.54
21:5:4537:C:H2'	21:5:4538:G:C8	2.41	0.54
21:5:4935:C:H2'	21:5:4936:G:H8	1.72	0.54
61:WW:23:ARG:HG3	61:WW:24:GLN:HG2	1.89	0.54
70:PP:67:ALA:HB1	70:PP:71:GLU:OE2	2.08	0.54
8:I:101:LYS:HG3	8:I:121:LYS:HZ3	1.72	0.53
14:V:69:LYS:HE2	14:V:72:LEU:HG	1.90	0.53
16:X:55:ARG:HB2	16:X:57:GLN:HE22	1.72	0.53
21:5:257:C:H2'	21:5:258:G:H8	1.72	0.53
21:5:1973:G:H3'	21:5:1974:U:H2'	1.90	0.53
21:5:2018:C:H2'	21:5:2019:C:H6	1.71	0.53
22:7:63:C:H5'	22:7:64:G:H5''	1.90	0.53
34:d:19:GLU:HG3	34:d:92:ARG:HH11	1.71	0.53
47:1:1335:G:H3'	47:1:1336:U:H5''	1.90	0.53
50:BB:49:VAL:HG11	50:BB:62:LEU:HD22	1.91	0.53
52:EE:11:ARG:HA	52:EE:28:ALA:HB2	1.90	0.53
53:GG:27:PHE:HE2	53:GG:41:LEU:HD11	1.73	0.53
70:PP:75:VAL:HG13	70:PP:104:GLN:HE21	1.73	0.53
1:9:1199:A:H2'	1:9:1200:A:C8	2.44	0.53
1:9:1237:C:H4'	70:PP:130:ARG:O	2.08	0.53
1:9:1277:C:H2'	1:9:1278:A:C8	2.42	0.53
21:5:651:C:H2'	21:5:652:G:C8	2.43	0.53
21:5:1964:A:H1'	21:5:4694:G:N2	2.22	0.53
58:NN:113:PHE:O	58:NN:116:ILE:HG13	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1101:U:H2'	1:9:1102:G:C8	2.43	0.53
9:J:99:PHE:HB2	9:J:159:LYS:HE3	1.89	0.53
21:5:654:C:H2'	21:5:655:C:H6	1.72	0.53
21:5:3916:G:H2'	21:5:3917:A:C8	2.42	0.53
21:5:3921:U:H1'	21:5:4543:G:H21	1.72	0.53
36:g:15:THR:HG23	36:g:17:SER:H	1.73	0.53
72:RR:31:ASN:ND2	72:RR:55:THR:HG22	2.23	0.53
1:9:1113:A:H2'	1:9:1114:U:C6	2.43	0.53
5:E:131:HIS:HB2	21:5:1281:G:C6	2.43	0.53
5:E:198:ILE:HG22	35:f:108:SER:HB3	1.91	0.53
18:a:60:HIS:CE1	21:5:4354:U:H3	2.27	0.53
21:5:694:C:H2'	21:5:695:G:C8	2.43	0.53
21:5:1982:G:H21	21:5:2010:A:P	2.32	0.53
21:5:2411:C:H2'	21:5:2412:A:C8	2.44	0.53
21:5:4080:C:H2'	21:5:4081:G:H8	1.72	0.53
21:5:4966:A:H2'	21:5:4967:A:C8	2.44	0.53
33:c:78:ASN:HD22	33:c:78:ASN:H	1.54	0.53
53:GG:188:LYS:HA	53:GG:191:ARG:HG2	1.90	0.53
70:PP:115:TYR:HB2	70:PP:118:GLU:HG2	1.90	0.53
5:E:212:PRO:HB2	5:E:215:LEU:HD22	1.90	0.53
10:L:42:ARG:O	10:L:46:ILE:HG13	2.09	0.53
21:5:2758:G:H2'	21:5:2759:G:C4	2.44	0.53
37:h:31:LEU:HB3	37:h:47:ILE:HG22	1.91	0.53
53:GG:186:GLN:HG2	53:GG:190:ARG:HD3	1.91	0.53
70:PP:37:TYR:HE1	70:PP:42:ARG:HA	1.73	0.53
21:5:1964:A:N7	21:5:1965:G:H1'	2.24	0.53
21:5:4903:G:H2'	21:5:4904:G:H8	1.73	0.53
1:9:1655:C:H2'	1:9:1656:G:H8	1.74	0.53
1:9:1817:G:H2'	1:9:1818:A:C8	2.44	0.53
20:e:43:ASN:HB3	20:e:46:ARG:HB3	1.89	0.53
21:5:135:G:C5	37:h:97:LYS:HE3	2.44	0.53
21:5:1761:G:C2	21:5:1772:C:C2	2.97	0.53
21:5:1988:G:H3'	21:5:1989:G:H8	1.72	0.53
21:5:2422:C:H2'	21:5:2423:A:C8	2.43	0.53
34:d:68:LEU:HD13	34:d:108:TYR:HB2	1.91	0.53
55:II:42:ARG:HD2	55:II:58:LEU:HB2	1.91	0.53
1:9:610:G:H2'	1:9:611:G:H8	1.73	0.53
1:9:1056:U:H2'	1:9:1057:C:C6	2.43	0.53
1:9:1203:G:C6	1:9:1697:A:C6	2.96	0.53
18:a:75:LEU:HD23	18:a:117:LEU:HD22	1.90	0.53
19:b:106:ARG:HG2	19:b:109:ARG:HH22	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:GG:142:ARG:HA	53:GG:147:LEU:HB2	1.90	0.53
55:II:193:LYS:HD3	55:II:193:LYS:H	1.74	0.53
57:LL:79:LYS:HD3	57:LL:81:LYS:HG2	1.91	0.53
61:WW:86:LEU:HD21	61:WW:117:ARG:HE	1.73	0.53
70:PP:14:LYS:NZ	70:PP:22:LEU:HB3	2.22	0.53
76:ZZ:91:LEU:HA	76:ZZ:94:LYS:HZ3	1.74	0.53
1:9:1244:U:H3	1:9:1255:G:H1	1.56	0.53
21:5:708:G:H5'	35:f:89:ARG:HH12	1.74	0.53
21:5:1188:C:H2'	21:5:1189:G:H8	1.73	0.53
21:5:1980:U:H2'	21:5:1982:G:N7	2.23	0.53
21:5:4153:C:H2'	21:5:4154:G:C8	2.43	0.53
21:5:4954:G:H2'	21:5:4955:A:C8	2.43	0.53
49:AA:13:GLU:O	49:AA:17:LYS:HG2	2.08	0.53
71:QQ:26:LYS:HZ1	71:QQ:69:ARG:HD3	1.72	0.53
1:9:600:G:H2'	1:9:601:G:H8	1.74	0.53
7:H:173:ARG:HE	42:m:101:VAL:HG13	1.74	0.53
35:f:50:VAL:HG22	35:f:69:VAL:HG12	1.91	0.53
56:JJ:115:PHE:HA	56:JJ:120:ALA:HB3	1.91	0.53
70:PP:49:LEU:HD12	70:PP:53:GLN:HG2	1.89	0.53
72:RR:105:MET:HA	72:RR:108:LEU:HD23	1.91	0.53
1:9:1617:G:O6	70:PP:43:ARG:HD3	2.08	0.52
10:L:169:ILE:HD13	18:a:142:GLY:HA2	1.91	0.52
12:O:108:ILE:HD11	12:O:113:ASP:HA	1.90	0.52
14:V:82:ILE:HD11	14:V:121:VAL:HB	1.91	0.52
21:5:381:U:H4'	21:5:415:G:H5'	1.91	0.52
21:5:1853:G:H5''	21:5:1854:G:H5''	1.91	0.52
21:5:1983:A:O2'	21:5:1984:A:H5''	2.09	0.52
21:5:2483:G:N2	21:5:2495:U:O2	2.37	0.52
21:5:4935:C:H2'	21:5:4936:G:C8	2.44	0.52
49:AA:3:GLY:HA3	60:VV:80:SER:H	1.74	0.52
58:NN:49:GLN:HA	58:NN:52:VAL:HG12	1.90	0.52
1:9:211:G:H2'	1:9:212:C:C6	2.44	0.52
1:9:612:U:H3	1:9:629:A:H62	1.55	0.52
2:A:207:VAL:HG13	2:A:208:GLU:HG3	1.90	0.52
7:H:129:ARG:HH22	21:5:4704:C:H4'	1.73	0.52
12:O:60:LYS:HD2	21:5:2046:G:C5	2.44	0.52
21:5:922(A):G:H2'	21:5:922(B):C:C6	2.44	0.52
21:5:2376:A:H2'	21:5:2377:C:C6	2.44	0.52
50:BB:28:LYS:HB3	50:BB:48:LEU:HD12	1.91	0.52
52:EE:151:ASP:HB3	53:GG:216:ARG:NH1	2.24	0.52
56:JJ:162:ARG:HH21	63:YY:31:GLY:H	1.55	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:WW:23:ARG:HG2	65:bb:4:ALA:HB3	1.91	0.52
68:FF:39:ILE:HG23	68:FF:68:ILE:HD13	1.90	0.52
70:PP:130:ARG:HE	70:PP:132:GLY:H	1.57	0.52
78:dd:30:LEU:HD23	78:dd:39:CYS:H	1.73	0.52
1:9:1283:C:H4'	1:9:1286:G:H4'	1.92	0.52
18:a:36:GLY:HA3	18:a:40:HIS:CE1	2.44	0.52
21:5:1406(C):G:H1'	21:5:1411(A):G:C6	2.44	0.52
21:5:1985:G:H2'	21:5:1986:U:C6	2.44	0.52
29:S:16:CYS:HA	29:S:59:GLY:HA2	1.91	0.52
48:K:23:ARG:HG2	48:K:206:ILE:HB	1.90	0.52
61:WW:8:ALA:HA	61:WW:74:VAL:HG11	1.91	0.52
1:9:1039:C:H2'	1:9:1040:G:H8	1.74	0.52
1:9:1116:C:H1'	1:9:1117:C:C4	2.44	0.52
1:9:1375:G:H2'	1:9:1376:A:C8	2.44	0.52
1:9:1828:C:H2'	1:9:1829:G:C8	2.45	0.52
26:M:39:ASP:HB2	26:M:47:ARG:HD3	1.92	0.52
56:JJ:29:LEU:HD21	66:ee:110:GLN:NE2	2.21	0.52
1:9:562:U:H2'	1:9:563:G:C8	2.45	0.52
1:9:1453:C:H2'	1:9:1454:A:H4'	1.91	0.52
3:B:223:THR:HG22	3:B:275:HIS:H	1.74	0.52
12:O:92:THR:HG23	12:O:95:GLY:H	1.73	0.52
21:5:4459:U:H2'	21:5:4460:U:C6	2.45	0.52
23:8:53:G:H4'	41:l:40:LYS:HD3	1.92	0.52
27:P:37:LYS:HA	27:P:117:ILE:HD13	1.90	0.52
51:CC:81:ILE:HG23	51:CC:86:LEU:HB2	1.91	0.52
70:PP:68:PRO:O	70:PP:71:GLU:HG3	2.08	0.52
70:PP:93:MET:HE1	70:PP:106:GLU:HB3	1.92	0.52
1:9:1235:G:H21	70:PP:135:ALA:CA	2.23	0.52
6:G:226:LEU:HD21	6:G:230:MET:HE2	1.90	0.52
7:H:48:LEU:HG	7:H:54:ARG:HH21	1.74	0.52
12:O:54:TYR:HD2	12:O:145:VAL:HG21	1.74	0.52
21:5:423:G:H2'	21:5:424:U:C6	2.45	0.52
21:5:699:C:H2'	21:5:700:G:H8	1.75	0.52
21:5:1404:G:H2'	21:5:1405:C:C6	2.45	0.52
35:f:18:LEU:HB3	35:f:19:ARG:HH11	1.75	0.52
73:SS:124:ARG:HD3	73:SS:131:VAL:HG23	1.92	0.52
1:9:1697:A:C2	51:CC:115:GLN:NE2	2.77	0.52
2:A:18:ALA:HB2	21:5:3677:U:H5''	1.91	0.52
21:5:325:U:H2'	21:5:326:C:C6	2.44	0.52
21:5:640:C:H2'	21:5:641:G:H8	1.75	0.52
25:F:161:ILE:HD12	25:F:166:ILE:HD11	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:92:A:H61	1:9:444:G:H1'	1.74	0.52
1:9:432:G:H2'	1:9:433:A:H8	1.75	0.52
1:9:1828:C:H2'	1:9:1829:G:H8	1.74	0.52
7:H:114:ILE:HD11	7:H:124:ARG:HE	1.75	0.52
21:5:469:C:H2'	21:5:470:A:H8	1.75	0.52
21:5:640:C:H2'	21:5:641:G:C8	2.44	0.52
21:5:2001:G:H2'	21:5:2003:G:H8	1.72	0.52
21:5:4903:G:H2'	21:5:4904:G:C8	2.45	0.52
47:1:1456:G:H2'	47:1:1457:G:H8	1.74	0.52
49:AA:37:TYR:HD1	49:AA:53:ARG:HD2	1.73	0.52
66:ee:101:ARG:HE	66:ee:105:ALA:HB1	1.75	0.52
69:KK:64:TRP:CD2	78:dd:23:VAL:HG22	2.44	0.52
1:9:1743:G:H21	1:9:1791:A:N6	2.00	0.52
8:I:52:MET:HE3	8:I:156:LYS:HG2	1.92	0.52
21:5:2049:G:H2'	21:5:2050:G:H8	1.73	0.52
21:5:4088:C:H2'	21:5:4089:G:C8	2.45	0.52
35:f:57:THR:HG21	35:f:68:ARG:HG2	1.91	0.52
40:k:47:ILE:HG22	40:k:49:ASP:H	1.75	0.52
47:1:1493:G:C4	47:1:1494:C:C4	2.98	0.52
51:CC:62:PRO:HG2	51:CC:68:ARG:HD2	1.92	0.52
54:HH:93:VAL:HG21	54:HH:133:LEU:HD23	1.91	0.52
55:II:98:LYS:HD2	55:II:178:ARG:HD3	1.91	0.52
63:YY:41:ARG:HH21	63:YY:94:HIS:CE1	2.27	0.52
1:9:1798:C:H2'	1:9:1799:G:O4'	2.10	0.52
6:G:313:GLU:O	6:G:317:LYS:HG2	2.10	0.52
8:I:61:SER:HA	8:I:126:VAL:HG23	1.91	0.52
21:5:163:A:H2'	21:5:164:G:H8	1.75	0.52
21:5:304:C:O2'	38:i:76:ARG:HD3	2.10	0.52
21:5:673:C:H2'	21:5:674:G:C8	2.45	0.52
21:5:1177:U:H2'	21:5:1178:G:C8	2.45	0.52
21:5:1211:G:H2'	21:5:1212:G:H8	1.73	0.52
21:5:2558:C:H2'	21:5:2559:G:H8	1.75	0.52
21:5:2706:G:H21	21:5:2709:C:H5	1.58	0.52
21:5:3727:A:H2'	21:5:3728:A:C8	2.45	0.52
21:5:4312:U:H2'	21:5:4313:A:C8	2.44	0.52
57:LL:111:VAL:HG12	57:LL:140:PHE:HB2	1.92	0.52
70:PP:45:LEU:C	70:PP:48:GLY:H	2.18	0.52
1:9:1205:C:H2'	1:9:1206:G:C8	2.45	0.51
21:5:1072:C:H42	21:5:1239:C:H42	1.57	0.51
21:5:2015:U:H2'	21:5:2016:C:H6	1.75	0.51
21:5:2362:U:H2'	21:5:2363:A:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:8:30:U:H2'	23:8:31:G:H8	1.75	0.51
26:M:89:THR:HG22	26:M:91:TRP:H	1.75	0.51
1:9:1593:C:H2'	1:9:1594:A:C8	2.44	0.51
21:5:48:G:H4'	21:5:49:U:O5'	2.10	0.51
21:5:1967:A:N6	21:5:2020:U:H3	2.07	0.51
21:5:1991:A:H61	21:5:2003:G:H5'	1.74	0.51
21:5:2074:C:H2'	21:5:2075:G:H8	1.75	0.51
21:5:2373:C:H2'	21:5:2374:A:C8	2.44	0.51
21:5:4188:U:H2'	21:5:4189:U:C6	2.45	0.51
22:7:114:U:H2'	22:7:115:A:C8	2.45	0.51
32:Z:100:VAL:HG13	32:Z:106:LEU:HB3	1.91	0.51
63:YY:110:ARG:HA	63:YY:113:ARG:HG2	1.92	0.51
68:FF:97:PHE:CZ	68:FF:108:PRO:HB2	2.45	0.51
1:9:24:C:H2'	1:9:25:A:C8	2.45	0.51
1:9:493:A:H1'	1:9:574:A:H5'	1.92	0.51
4:C:187:GLN:HB3	4:C:201:ARG:HH22	1.75	0.51
20:e:79:VAL:HG11	20:e:85:LEU:HD23	1.93	0.51
21:5:1091:C:H2'	21:5:1092:G:C8	2.45	0.51
21:5:1978:C:H3'	21:5:1979:A:C5'	2.40	0.51
21:5:2089:G:H4'	21:5:2090:U:O5'	2.10	0.51
21:5:2743:A:H2'	21:5:2744:A:C8	2.45	0.51
28:Q:67:ILE:HD12	28:Q:96:PRO:HD2	1.93	0.51
29:S:35:PRO:HD2	29:S:39:VAL:HG21	1.91	0.51
47:1:1368:G:H2'	47:1:1369:A:C8	2.46	0.51
49:AA:76:VAL:HA	49:AA:123:VAL:HG23	1.91	0.51
50:BB:220:LYS:HD3	50:BB:221:PRO:HD2	1.92	0.51
51:CC:107:LEU:HB3	51:CC:233:LEU:HD21	1.93	0.51
1:9:156:G:H2'	1:9:157:U:C6	2.46	0.51
5:E:52:LEU:HD21	5:E:58:ARG:HD3	1.93	0.51
21:5:318:A:H2'	21:5:319:A:H8	1.74	0.51
21:5:1687:U:H2'	21:5:1688:G:C8	2.45	0.51
21:5:1769:G:H2'	21:5:1770:A:C8	2.45	0.51
21:5:1933:G:H2'	21:5:1934:A:C8	2.45	0.51
21:5:4635:A:H2	21:5:4663:G:H21	1.58	0.51
47:1:1493:G:N3	47:1:1493:G:C2'	2.74	0.51
1:9:5:U:H2'	1:9:6:G:C8	2.44	0.51
1:9:1010:G:H2'	1:9:1011:A:C8	2.45	0.51
1:9:1268:C:O2'	70:PP:100:LYS:HG2	2.11	0.51
3:B:348:ARG:HH11	3:B:351:LEU:HD23	1.76	0.51
19:b:91:ARG:HA	19:b:94:HIS:HD2	1.76	0.51
21:5:729:G:H1	29:S:67:VAL:HA	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:5020:G:H2'	21:5:5021:C:C6	2.46	0.51
23:8:133:G:H2'	23:8:134:G:H8	1.76	0.51
70:PP:13:ARG:NH1	70:PP:15:PHE:HA	2.26	0.51
1:9:619:A:H61	62:XX:115:ILE:HD11	1.76	0.51
1:9:815:U:H2'	1:9:816:A:H8	1.76	0.51
11:N:49:ARG:HH12	21:5:152:U:P	2.33	0.51
21:5:1767:A:H2'	21:5:1769:G:C8	2.46	0.51
21:5:2587:A:H5''	21:5:2588:C:C5	2.46	0.51
21:5:3871:A:H2'	21:5:3872:A:H8	1.74	0.51
21:5:4967:A:H2'	21:5:4968:A:C8	2.44	0.51
47:1:1495:U:N3	47:1:1496:A:N7	2.59	0.51
61:WW:86:LEU:HD11	61:WW:117:ARG:HH21	1.75	0.51
4:C:56:GLU:HG2	4:C:57:LEU:HD22	1.93	0.51
7:H:92:MET:HB3	7:H:181:VAL:HA	1.92	0.51
10:L:55:ILE:HB	10:L:116:ARG:HH12	1.76	0.51
21:5:2008:U:H5	21:5:2011:C:O5'	1.92	0.51
21:5:2520:C:H2'	21:5:2521:G:C8	2.45	0.51
21:5:4274:A:H2'	21:5:4275:G:C8	2.46	0.51
31:U:26:THR:HA	31:U:68:SER:HB3	1.93	0.51
51:CC:253:PRO:HA	51:CC:256:TRP:CD1	2.46	0.51
54:HH:60:ILE:HD11	54:HH:90:LYS:HZ2	1.76	0.51
1:9:642:U:H4'	1:9:644:G:H4'	1.93	0.51
1:9:1093:A:H2'	1:9:1094:C:C6	2.46	0.51
13:R:95:TRP:CD1	21:5:2667:C:HO2'	2.28	0.51
21:5:1507:C:H2'	21:5:1508:A:H8	1.75	0.51
21:5:2007:G:H2'	21:5:2008:U:O2	2.11	0.51
21:5:3848:U:H2'	21:5:3849:A:C8	2.45	0.51
21:5:4524:G:H2'	21:5:4525:C:C6	2.46	0.51
49:AA:184:ARG:HD2	49:AA:191:ARG:HG2	1.93	0.51
53:GG:5:ILE:HD13	53:GG:16:ILE:HD13	1.91	0.51
59:OO:95:ILE:HB	59:OO:129:ILE:HG23	1.92	0.51
69:KK:32:HIS:CD2	69:KK:35:LEU:H	2.29	0.51
1:9:456:C:H2'	1:9:457:C:H6	1.76	0.51
1:9:1567:G:H2'	1:9:1568:C:O4'	2.11	0.51
6:G:159:THR:HG22	6:G:160:LYS:HD3	1.93	0.51
21:5:517:C:H2'	21:5:518:G:C8	2.46	0.51
21:5:2264:C:H2'	21:5:2265:G:C8	2.45	0.51
21:5:2749:C:H2'	21:5:2750:G:C8	2.46	0.51
30:T:17:ARG:HD2	30:T:47:THR:HG23	1.93	0.51
51:CC:183:LYS:HD2	61:WW:95:PRO:HA	1.93	0.51
51:CC:192:LEU:HB3	51:CC:227:ARG:HB3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:HH:193:GLN:HG3	54:HH:194:LEU:HG	1.93	0.51
67:DD:137:VAL:HG22	67:DD:151:LYS:HG3	1.93	0.51
69:KK:35:LEU:HD21	69:KK:38:LYS:HB2	1.92	0.51
1:9:1697:A:H5'	1:9:1697:A:C8	2.46	0.51
2:A:89:TYR:HB2	2:A:100:ASN:HD21	1.77	0.51
15:W:48:GLN:HE22	21:5:3615:G:H4'	1.75	0.51
21:5:922:C:H2'	21:5:922(A):G:C8	2.45	0.51
21:5:1773:U:H3'	21:5:1774:C:C6	2.46	0.51
21:5:5010:U:H2'	21:5:5011:A:C8	2.45	0.51
23:8:124:U:H4'	23:8:125:C:O5'	2.10	0.51
47:1:1494:C:H6	47:1:1494:C:C5'	2.24	0.51
50:BB:179:ASN:HB3	50:BB:183:GLU:HB2	1.92	0.51
61:WW:101:PHE:HA	61:WW:113:HIS:HE1	1.76	0.51
70:PP:43:ARG:O	70:PP:47:ARG:HG2	2.11	0.51
1:9:28:U:H2'	1:9:29:G:H8	1.76	0.50
1:9:876:C:H2'	1:9:877:C:C6	2.46	0.50
1:9:1224:G:H1	1:9:1642:U:H3	1.57	0.50
1:9:1863:A:C8	64:aa:79:ILE:HG21	2.46	0.50
13:R:115:ILE:HD11	13:R:142:ILE:HG23	1.93	0.50
21:5:32:G:H21	21:5:50:C:H5	1.59	0.50
21:5:1977:C:N3	21:5:1990:A:C2	2.79	0.50
21:5:1985:G:H1'	21:5:2003:G:N7	2.26	0.50
21:5:4621:C:H2'	21:5:4622:A:H8	1.76	0.50
69:KK:47:LYS:O	69:KK:50:GLN:HG3	2.11	0.50
1:9:391:C:H2'	1:9:392:A:H8	1.76	0.50
1:9:634:A:H2'	1:9:635:G:H8	1.77	0.50
1:9:1298:G:N3	1:9:1298:G:H2'	2.26	0.50
1:9:1553:C:H41	78:dd:22:ARG:NH2	2.10	0.50
20:e:99:ILE:HG21	20:e:108:ARG:HG2	1.94	0.50
21:5:1976:G:C2	21:5:1977:C:C2	2.99	0.50
21:5:2277:C:H2'	21:5:2278:G:C8	2.46	0.50
21:5:3607:U:H2'	21:5:3608:A:C8	2.47	0.50
21:5:4925:U:H4'	21:5:4926:C:H5'	1.94	0.50
27:P:113:VAL:C	27:P:150:LEU:HD12	2.36	0.50
47:1:1495:U:H4'	47:1:1496:A:OP1	2.10	0.50
67:DD:18:LYS:HD2	67:DD:39:VAL:HG21	1.93	0.50
70:PP:50:ARG:O	70:PP:51:ARG:C	2.55	0.50
70:PP:98:ASN:ND2	70:PP:122:THR:HA	2.25	0.50
1:9:1093:A:H2'	1:9:1094:C:H6	1.77	0.50
1:9:1801:A:H2'	1:9:1802:C:C6	2.47	0.50
1:9:1854:U:H2'	1:9:1855:G:H8	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:J:113:ILE:HD12	9:J:119:TYR:HB2	1.93	0.50
21:5:429:A:H2'	21:5:430:G:C8	2.46	0.50
21:5:517:C:H2'	21:5:518:G:H8	1.76	0.50
21:5:4466:C:H2'	21:5:4467:A:C8	2.46	0.50
60:VV:59:ILE:HA	60:VV:62:MET:HG2	1.93	0.50
62:XX:130:LEU:HD13	62:XX:133:LEU:HD21	1.93	0.50
67:DD:35:SER:HA	67:DD:99:ILE:HD11	1.94	0.50
72:RR:17:ILE:HD11	72:RR:54:VAL:HA	1.94	0.50
72:RR:51:ALA:O	72:RR:55:THR:HG23	2.11	0.50
1:9:1628:C:H5''	74:TT:38:LYS:HE2	1.93	0.50
3:B:373:LYS:HD2	21:5:4627:U:H4'	1.92	0.50
10:L:57:PRO:HB3	10:L:76:PHE:CE2	2.46	0.50
21:5:1382:G:H2'	21:5:1383:G:H8	1.76	0.50
21:5:1976:G:C4	21:5:2002:A:C5	2.99	0.50
21:5:4525:C:H2'	21:5:4526:U:H6	1.77	0.50
26:M:53:LYS:HZ3	29:S:160:ARG:HH21	1.60	0.50
26:M:110:TYR:O	26:M:113:MET:HG3	2.12	0.50
67:DD:14:ASP:O	67:DD:18:LYS:HG2	2.11	0.50
72:RR:71:ILE:H	72:RR:74:GLN:NE2	2.09	0.50
1:9:65:C:C4	53:GG:133:LEU:HD12	2.45	0.50
1:9:912:C:H3'	1:9:913:A:H5''	1.92	0.50
1:9:928:G:H2'	1:9:929:G:H8	1.75	0.50
8:I:19:LYS:HD3	8:I:26:VAL:HB	1.92	0.50
18:a:55:LYS:HD3	21:5:92:C:C2	2.47	0.50
21:5:164:G:H2'	21:5:165:A:H8	1.76	0.50
21:5:922(A):G:H2'	21:5:922(B):C:H6	1.76	0.50
21:5:1340:C:H2'	21:5:1341:U:H6	1.76	0.50
21:5:1617:G:H1'	21:5:2513:A:H62	1.76	0.50
21:5:1972:G:C2	21:5:1973:G:C4	2.99	0.50
21:5:2735:G:H2'	21:5:2736:G:H8	1.77	0.50
21:5:2830:G:H2'	21:5:2831:G:C8	2.46	0.50
21:5:3911:C:H2'	21:5:3912:U:H6	1.76	0.50
47:1:1361:U:C6	47:1:1443:A:H5''	2.47	0.50
1:9:1004:U:H2'	1:9:1005:G:H8	1.76	0.50
1:9:1236:G:H4'	70:PP:133:ILE:O	2.12	0.50
1:9:1649:U:H2'	1:9:1650:A:H8	1.77	0.50
1:9:1698:C:N3	47:1:1495:U:O2'	2.45	0.50
9:J:17:ILE:HA	9:J:134:LEU:HD13	1.94	0.50
11:N:5:LYS:O	11:N:9:GLU:HG3	2.12	0.50
14:V:65:VAL:HG21	14:V:72:LEU:HB3	1.93	0.50
16:X:74:TYR:HB2	37:h:25:LYS:HE3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:e:91:CYS:HB3	20:e:95:TYR:HD2	1.76	0.50
21:5:1976:G:OP1	21:5:1979:A:N6	2.45	0.50
21:5:2492:C:H2'	21:5:2493:G:C8	2.37	0.50
21:5:3871:A:H2'	21:5:3872:A:C8	2.46	0.50
29:S:83:ARG:HE	30:T:156:TYR:HB2	1.77	0.50
35:f:29:LYS:HE3	35:f:83:MET:HE3	1.93	0.50
60:VV:71:ARG:HA	60:VV:74:LYS:HG2	1.93	0.50
62:XX:68:LYS:HE2	66:ee:82:VAL:HG22	1.92	0.50
66:ee:112:ASN:HA	66:ee:116:VAL:HG22	1.94	0.50
77:cc:44:ARG:HH12	77:cc:63:ARG:HB2	1.77	0.50
1:9:801:U:H2'	1:9:802:A:H8	1.77	0.50
1:9:1203:G:C5	1:9:1697:A:N1	2.80	0.50
3:B:55:HIS:HB2	3:B:369:ASP:HB2	1.93	0.50
5:E:263:LYS:O	5:E:267:VAL:HG12	2.12	0.50
16:X:140:LEU:HD22	16:X:141:ALA:N	2.26	0.50
21:5:429:A:H2'	21:5:430:G:H8	1.77	0.50
21:5:1918:U:O2	21:5:2064:G:O6	2.30	0.50
21:5:1962:A:H3'	21:5:1963:C:C5	2.47	0.50
21:5:1981:G:N7	21:5:1982:G:C6	2.79	0.50
21:5:3707:U:H2'	21:5:3708:C:H6	1.77	0.50
23:8:14:U:H4'	27:P:123:PRO:HG3	1.92	0.50
24:D:39:GLN:HG2	24:D:48:LYS:HB2	1.92	0.50
26:M:31:ILE:HG13	26:M:35:ARG:HD2	1.93	0.50
33:c:105:ILE:HD12	33:c:106:ARG:HG3	1.94	0.50
44:o:45:GLN:HE22	44:o:51:GLN:HA	1.77	0.50
70:PP:85:ILE:HG12	70:PP:111:MET:HB3	1.93	0.50
1:9:640:A:H2'	1:9:641:A:C8	2.47	0.50
1:9:1516:G:O3'	70:PP:122:THR:HG21	2.12	0.50
15:W:19:ARG:HD3	21:5:4629:U:H4'	1.93	0.50
21:5:4889:G:H2'	21:5:4890:G:H8	1.76	0.50
21:5:4953:G:H2'	21:5:4954:G:C8	2.46	0.50
70:PP:97:TYR:N	70:PP:102:PHE:HA	2.27	0.50
1:9:1696:C:H2'	1:9:1697:A:H5'	1.94	0.50
21:5:7:C:H2'	21:5:8:U:C6	2.47	0.50
21:5:1091:C:H2'	21:5:1092:G:H8	1.77	0.50
21:5:2362:U:H2'	21:5:2363:A:C8	2.47	0.50
21:5:2539:C:H2'	21:5:2540:C:C6	2.47	0.50
21:5:2844:A:O2'	21:5:4631:G:H4'	2.12	0.50
21:5:4898:G:N1	21:5:4922:C:N3	2.44	0.50
25:F:226:PHE:HE2	29:S:38:VAL:HG21	1.77	0.50
36:g:25:THR:HG23	36:g:27:GLY:H	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:CC:272:HIS:HA	51:CC:275:LYS:HE2	1.93	0.50
56:JJ:35:TYR:HD1	56:JJ:112:THR:HG21	1.77	0.50
70:PP:80:LEU:O	70:PP:116:LEU:HD12	2.11	0.50
1:9:920:A:H62	1:9:1021:U:H3	1.58	0.49
1:9:1563:G:H5''	74:TT:121:ARG:HH12	1.76	0.49
17:Y:26:ARG:HA	17:Y:29:ILE:HG22	1.94	0.49
21:5:426:A:H2'	21:5:427:A:H8	1.77	0.49
21:5:1180:C:H41	24:D:289:ARG:HH12	1.59	0.49
21:5:1971:U:H2'	21:5:1972:G:C8	2.44	0.49
21:5:1995:G:C5	21:5:1996:C:C4	3.00	0.49
21:5:3933:G:H2'	21:5:3934:G:H8	1.77	0.49
29:S:107:THR:O	29:S:111:ARG:HG2	2.12	0.49
38:i:59:GLU:O	38:i:63:VAL:HG23	2.12	0.49
49:AA:30:LEU:HD21	49:AA:35:GLU:HG2	1.94	0.49
49:AA:77:ILE:HD12	49:AA:122:LEU:HD11	1.94	0.49
54:HH:43:LEU:HD21	54:HH:71:SER:HB3	1.93	0.49
54:HH:147:LYS:HZ2	54:HH:153:LEU:HB2	1.77	0.49
59:OO:101:GLY:HA3	59:OO:134:PRO:HG2	1.94	0.49
70:PP:96:VAL:HG21	70:PP:116:LEU:HB3	1.94	0.49
72:RR:111:PHE:HB3	72:RR:114:LEU:HD11	1.94	0.49
1:9:126:G:H8	53:GG:199:THR:HG21	1.77	0.49
1:9:1588:A:H2'	1:9:1589:A:C8	2.47	0.49
4:C:296:PRO:HA	4:C:299:GLN:HE21	1.77	0.49
17:Y:55:VAL:HG13	17:Y:104:VAL:HG13	1.94	0.49
21:5:423:G:H2'	21:5:424:U:H6	1.77	0.49
21:5:3650:C:H2'	21:5:3651:A:C8	2.47	0.49
21:5:4260:U:H2'	21:5:4261:C:C6	2.48	0.49
27:P:126:ARG:HD3	27:P:140:MET:HE1	1.94	0.49
33:c:78:ASN:HD22	33:c:78:ASN:N	2.10	0.49
36:g:95:PHE:O	36:g:98:GLU:HG3	2.12	0.49
37:h:67:GLU:HA	37:h:70:ARG:HG2	1.93	0.49
71:QQ:12:VAL:HG21	71:QQ:91:ALA:HA	1.94	0.49
1:9:356:C:O2	1:9:356:C:H2'	2.11	0.49
1:9:1672:U:H2'	1:9:1673:U:C6	2.47	0.49
17:Y:41:LYS:HE3	17:Y:42:TYR:CZ	2.47	0.49
21:5:951:G:H2'	21:5:952:G:H8	1.77	0.49
21:5:1972:G:C2	21:5:1995:G:C4	3.01	0.49
21:5:2692:U:H2'	21:5:2693:G:O4'	2.12	0.49
21:5:2727:C:H2'	21:5:2728:U:H6	1.77	0.49
21:5:4099:G:H1	21:5:4109:G:N2	2.06	0.49
24:D:103:LEU:HD11	24:D:248:ARG:HD3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:U:21:PHE:HB2	31:U:72:VAL:HG13	1.95	0.49
56:JJ:132:GLN:HB2	56:JJ:134:HIS:CD2	2.48	0.49
69:KK:43:LEU:HA	69:KK:46:MET:HE2	1.95	0.49
70:PP:73:PRO:HG2	70:PP:92:SER:HA	1.95	0.49
70:PP:80:LEU:HD13	70:PP:83:MET:SD	2.52	0.49
1:9:96:C:H1'	1:9:474:G:H5'	1.94	0.49
1:9:318:A:H3'	1:9:319:C:H5''	1.94	0.49
1:9:1004:U:H2'	1:9:1005:G:C8	2.47	0.49
1:9:1712:A:H2'	1:9:1713:C:C6	2.47	0.49
18:a:134:GLU:HA	18:a:137:ILE:HG22	1.94	0.49
21:5:2277:C:H5''	28:Q:3:VAL:HG21	1.95	0.49
21:5:2373:C:H2'	21:5:2374:A:H8	1.77	0.49
24:D:39:GLN:HG2	24:D:48:LYS:HD2	1.94	0.49
24:D:66:TYR:CZ	24:D:73:MET:HG2	2.48	0.49
25:F:126:LYS:HB2	30:T:133:ALA:HB3	1.94	0.49
29:S:15:ARG:HH21	30:T:141:VAL:HG22	1.76	0.49
30:T:39:ILE:HG12	30:T:102:ARG:HG3	1.94	0.49
39:j:16:HIS:HB2	39:j:25:LYS:HZ3	1.77	0.49
53:GG:58:LYS:HA	53:GG:107:SER:HB2	1.92	0.49
64:aa:44:ILE:HD12	64:aa:45:VAL:HG22	1.93	0.49
1:9:319:C:OP1	1:9:319:C:H4'	2.11	0.49
1:9:430:C:H2'	1:9:431:G:C8	2.48	0.49
1:9:1820:G:H2'	1:9:1821:U:C6	2.48	0.49
6:G:219:LEU:HA	11:N:7:ILE:HD11	1.94	0.49
8:I:85:PHE:HB2	8:I:138:ILE:HD11	1.94	0.49
21:5:710:G:H2'	21:5:711:A:C8	2.46	0.49
21:5:1987:C:H3'	21:5:1988:G:H5''	1.94	0.49
21:5:2395:A:O2'	21:5:2806:A:H1'	2.12	0.49
21:5:2528:G:H4'	21:5:2783:A:H4'	1.94	0.49
21:5:3845:A:H2'	21:5:3846:C:C6	2.48	0.49
21:5:4563:U:H2'	21:5:4564:A:H8	1.78	0.49
21:5:4894:A:H5''	21:5:4895:C:C6	2.48	0.49
31:U:91:LEU:HD11	31:U:100:LEU:HD12	1.94	0.49
58:NN:25:TRP:CD2	65:bb:82:LYS:HD3	2.47	0.49
68:FF:72:LEU:HD13	68:FF:151:ILE:HG23	1.94	0.49
70:PP:16:THR:HA	70:PP:20:VAL:O	2.13	0.49
1:9:996:A:H2'	1:9:997:A:C8	2.48	0.49
10:L:80:GLU:HG3	10:L:110:LEU:HD12	1.94	0.49
16:X:83:THR:HG23	16:X:86:ALA:H	1.76	0.49
21:5:1753:G:C2	21:5:1754:U:N3	2.81	0.49
21:5:1988:G:C3'	21:5:1989:G:H8	2.25	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2557:G:O6	21:5:2570:U:O4	2.31	0.49
21:5:3944:G:O6	21:5:4069:U:O4	2.30	0.49
21:5:4089:G:H2'	21:5:4090:G:H8	1.78	0.49
22:7:117:G:H5'	24:D:256:LYS:HD2	1.94	0.49
23:8:45:C:P	41:I:15:LYS:HD3	2.53	0.49
32:Z:57:MET:HE2	32:Z:62:ILE:HG12	1.94	0.49
47:1:1424:A:O2'	47:1:1427:U:H5'	2.13	0.49
47:1:1476:A:H2'	47:1:1477:G:H8	1.76	0.49
51:CC:265:PRO:HA	51:CC:268:GLU:HG2	1.95	0.49
70:PP:85:ILE:HG21	70:PP:111:MET:HB3	1.95	0.49
1:9:909:G:H2'	1:9:910:G:C8	2.48	0.49
1:9:1625:U:H2'	1:9:1626:C:H6	1.77	0.49
1:9:1701:C:H5'	47:1:1492:C:C4	2.47	0.49
7:H:50:LYS:HG2	7:H:51:LYS:HG3	1.93	0.49
8:I:77:VAL:HG23	8:I:82:LYS:HA	1.94	0.49
9:J:27:GLY:HA2	9:J:68:ILE:HG23	1.95	0.49
17:Y:121:ARG:HH22	21:5:247:G:N2	2.11	0.49
21:5:56:A:H2'	21:5:57:G:C8	2.47	0.49
21:5:125:C:H2'	21:5:126:C:C6	2.47	0.49
21:5:368:C:H2'	21:5:369:G:C8	2.47	0.49
21:5:1777:C:H2'	21:5:1778:C:C6	2.47	0.49
21:5:1942:A:H2'	21:5:1943:A:C8	2.47	0.49
21:5:1968:G:C4	21:5:1969:G:C8	3.01	0.49
21:5:2498:C:H2'	21:5:2499:C:H6	1.78	0.49
21:5:3944:G:N2	21:5:4069:U:O2	2.35	0.49
26:M:47:ARG:HG2	29:S:73:LEU:HD12	1.95	0.49
28:Q:146:ARG:HB2	28:Q:148:VAL:HG22	1.94	0.49
37:h:34:ALA:HA	37:h:37:THR:HG22	1.94	0.49
53:GG:7:PHE:HD1	53:GG:8:PRO:HD2	1.78	0.49
68:FF:153:LEU:HG	68:FF:189:ALA:HA	1.95	0.49
73:SS:39:ARG:HG3	74:TT:45:LEU:HA	1.94	0.49
1:9:975:G:H21	59:OO:50:LYS:HA	1.77	0.49
21:5:195:C:H2'	21:5:196:C:H6	1.77	0.49
21:5:713:C:H2'	21:5:714:G:C8	2.48	0.49
21:5:1210:C:O2	21:5:1210:C:H2'	2.13	0.49
21:5:1806:G:H2'	21:5:1807:C:H6	1.77	0.49
21:5:1980:U:H4'	21:5:1987:C:H41	1.78	0.49
21:5:4305:G:H22	30:T:87:LYS:HE3	1.78	0.49
21:5:4347:G:H2'	21:5:4348:A:C8	2.47	0.49
21:5:4642:U:H2'	21:5:4643:G:C8	2.45	0.49
26:M:37:LEU:HD11	26:M:47:ARG:HD2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:f:28:LEU:HD11	35:f:101:ILE:HD11	1.95	0.49
39:j:76:HIS:CD2	39:j:79:ARG:HH21	2.29	0.49
53:GG:70:HIS:HA	53:GG:98:ARG:HH12	1.78	0.49
70:PP:130:ARG:NE	70:PP:132:GLY:H	2.10	0.49
71:QQ:89:SER:HB2	71:QQ:119:LEU:HD12	1.95	0.49
1:9:110:U:H2'	1:9:111:A:C8	2.47	0.49
1:9:222:U:H5''	57:LL:17:PHE:CG	2.47	0.49
1:9:296:U:H2'	1:9:297:A:O4'	2.13	0.49
1:9:585:C:H3'	1:9:586:G:H8	1.78	0.49
1:9:928:G:H21	65:bb:68:GLY:HA2	1.78	0.49
14:V:69:LYS:HD2	14:V:71:GLU:H	1.77	0.49
17:Y:108:ARG:NH1	17:Y:109:LEU:H	2.10	0.49
21:5:495:C:H2'	21:5:496:G:C8	2.47	0.49
21:5:1403:G:H2'	21:5:1404:G:C8	2.48	0.49
21:5:1979:A:N3	21:5:1980:U:N3	2.60	0.49
21:5:4170:A:H4'	21:5:4171:C:O5'	2.13	0.49
21:5:4993:G:O6	21:5:5058:A:N1	2.45	0.49
22:7:60:G:H2'	22:7:61:G:H8	1.78	0.49
23:8:67:U:H2'	23:8:68:G:C8	2.48	0.49
50:BB:164:ILE:HD11	50:BB:204:ILE:HB	1.95	0.49
51:CC:65:LYS:HE2	51:CC:273:LEU:HD13	1.95	0.49
51:CC:128:VAL:HG11	51:CC:155:ILE:HG12	1.95	0.49
70:PP:56:LEU:HG	70:PP:60:LEU:HD12	1.94	0.49
1:9:212:C:H2'	1:9:213:G:C8	2.47	0.49
13:R:92:LYS:O	13:R:96:MET:HG2	2.13	0.49
21:5:699:C:H2'	21:5:700:G:C8	2.48	0.49
21:5:711:A:H2'	21:5:712:C:C6	2.48	0.49
21:5:1978:C:N4	21:5:1979:A:C4	2.81	0.49
21:5:2008:U:H5	21:5:2010:A:H3'	1.74	0.49
21:5:2283:G:H2'	21:5:2284:G:H8	1.78	0.49
21:5:2375:A:H2'	21:5:2376:A:C8	2.47	0.49
21:5:3599:A:H2'	21:5:3600:G:C8	2.47	0.49
24:D:113:PHE:HB3	24:D:115:MET:SD	2.53	0.49
35:f:47:CYS:HB3	35:f:101:ILE:HD13	1.95	0.49
47:1:1423:C:O2	47:1:1423:C:H2'	2.13	0.49
70:PP:16:THR:O	70:PP:17:TYR:C	2.55	0.49
1:9:807:G:H2'	1:9:808:A:C8	2.48	0.48
1:9:1203:G:C6	1:9:1697:A:N6	2.81	0.48
2:A:57:PRO:HG2	2:A:78:ALA:HB3	1.95	0.48
6:G:270:LYS:O	6:G:273:GLU:HG3	2.13	0.48
7:H:12:ILE:HG21	7:H:18:ILE:HD13	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1967:A:C6	21:5:2021:G:C6	3.01	0.48
21:5:2457:G:H21	21:5:3672:G:H21	1.61	0.48
21:5:2589:C:H2'	21:5:2590:G:O4'	2.13	0.48
21:5:2893:U:H2'	21:5:2894:A:H8	1.78	0.48
78:dd:22:ARG:HD3	78:dd:38:MET:HG2	1.95	0.48
4:C:96:CYS:HA	21:5:2352:U:H1'	1.95	0.48
4:C:279:LEU:HD12	4:C:279:LEU:H	1.77	0.48
11:N:47:LYS:HZ3	21:5:279:A:H5''	1.78	0.48
18:a:32:ARG:HD2	21:5:37:U:H4'	1.93	0.48
21:5:1333:A:H2'	21:5:1334:A:C8	2.48	0.48
21:5:1404:G:H2'	21:5:1405:C:H6	1.79	0.48
21:5:1688:G:H2'	21:5:1689:G:H8	1.77	0.48
21:5:1763:C:N3	21:5:1770:A:C2	2.80	0.48
21:5:1990:A:H3'	21:5:1991:A:H5''	1.95	0.48
21:5:2008:U:H6	21:5:2011:C:C5	2.30	0.48
21:5:3648:A:H1'	21:5:3785:A:H61	1.79	0.48
28:Q:132:LYS:HD2	28:Q:134:ARG:HH12	1.78	0.48
41:l:23:ILE:HG21	41:l:37:TYR:HA	1.94	0.48
44:o:33:LEU:HA	44:o:38:LYS:HG2	1.95	0.48
54:HH:53:VAL:HG11	54:HH:172:THR:HA	1.95	0.48
58:NN:89:TYR:O	58:NN:92:ILE:HG13	2.12	0.48
61:WW:42:MET:HE2	61:WW:49:GLU:HA	1.95	0.48
62:XX:123:VAL:HG22	62:XX:124:LYS:HG3	1.95	0.48
1:9:612:U:O4	1:9:629:A:N7	2.45	0.48
1:9:807:G:H2'	1:9:808:A:H8	1.78	0.48
1:9:1711:U:H2'	1:9:1712:A:C8	2.48	0.48
3:B:46:PHE:HA	3:B:84:MET:HE1	1.94	0.48
8:I:153:ARG:HA	8:I:156:LYS:HE2	1.95	0.48
18:a:122:VAL:HG23	18:a:137:ILE:HD11	1.96	0.48
21:5:254:G:H2'	21:5:255:C:C6	2.47	0.48
21:5:2758:G:H2'	21:5:2759:G:C5	2.47	0.48
54:HH:145:ARG:HD2	61:WW:51:GLU:OE1	2.13	0.48
61:WW:7:LEU:HD23	61:WW:34:ILE:HG22	1.95	0.48
1:9:1198:G:H2'	1:9:1199:A:H8	1.78	0.48
10:L:11:LYS:O	10:L:11:LYS:HD2	2.13	0.48
17:Y:50:ARG:HB2	17:Y:115:ARG:NH2	2.28	0.48
21:5:495:C:H2'	21:5:496:G:H8	1.78	0.48
21:5:962:C:H2'	21:5:963:G:H8	1.78	0.48
21:5:2400:G:N2	36:g:6:THR:HG22	2.28	0.48
21:5:3610:A:H2'	21:5:3611:A:H8	1.78	0.48
21:5:3917:A:H2'	21:5:3918:G:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:4434:C:H2'	21:5:4435:U:C6	2.49	0.48
36:g:45:ALA:HB3	36:g:82:MET:HB3	1.94	0.48
50:BB:150:ILE:HD13	72:RR:129:LYS:HB2	1.94	0.48
58:NN:39:LYS:HD3	58:NN:42:LYS:HD2	1.95	0.48
62:XX:28:LYS:HA	62:XX:32:LEU:HD23	1.95	0.48
63:YY:14:THR:HG22	63:YY:21:LYS:HD2	1.94	0.48
70:PP:28:MET:HG2	70:PP:32:GLN:HB3	1.95	0.48
70:PP:108:LYS:HD2	70:PP:111:MET:HE1	1.96	0.48
1:9:53:C:H4'	63:YY:108:LYS:HD3	1.95	0.48
1:9:857:U:H4'	52:EE:201:HIS:CE1	2.49	0.48
1:9:1144:A:H2'	1:9:1145:A:C8	2.48	0.48
1:9:1324:G:H1	1:9:1504:U:H3	1.61	0.48
1:9:1337:C:H2'	1:9:1338:G:C8	2.48	0.48
1:9:1716:C:H2'	1:9:1717:C:H6	1.78	0.48
4:C:77:PRO:O	4:C:90:GLY:HA2	2.14	0.48
7:H:41:ILE:HD12	7:H:42:ASN:H	1.79	0.48
7:H:45:LEU:HD11	7:H:55:LEU:HD11	1.95	0.48
21:5:714:G:H2'	21:5:715:G:H8	1.79	0.48
21:5:1074:G:H2'	21:5:1075:G:C8	2.48	0.48
21:5:2002:A:H4'	21:5:2003:G:H8	1.78	0.48
21:5:3941:G:H2'	21:5:3942:A:H8	1.77	0.48
21:5:4629:U:H2'	21:5:4630:G:H8	1.79	0.48
21:5:4955:A:H2'	21:5:4956:A:C4	2.48	0.48
23:8:147:G:H2'	23:8:148:A:H8	1.78	0.48
24:D:50:ARG:HE	24:D:52:ILE:HD11	1.79	0.48
27:P:64:ASN:HD22	27:P:80:GLN:HE22	1.61	0.48
28:Q:92:VAL:HG13	28:Q:112:ARG:HH22	1.79	0.48
56:JJ:83:ARG:HD3	56:JJ:150:ARG:HE	1.78	0.48
67:DD:190:LEU:HD23	67:DD:199:GLY:HA2	1.96	0.48
76:ZZ:79:ILE:HB	76:ZZ:83:LEU:HD22	1.95	0.48
1:9:170:A:H2'	1:9:171:A:C8	2.49	0.48
4:C:236:ASN:HD21	21:5:1372:A:H2	1.62	0.48
14:V:90:ARG:HG2	14:V:92:ASP:H	1.78	0.48
21:5:1346:C:H2'	21:5:1347:G:H8	1.79	0.48
21:5:1633:G:H5'	21:5:1634:A:OP1	2.14	0.48
21:5:1751:A:H3'	21:5:1752:G:H8	1.79	0.48
21:5:2011:C:H5''	21:5:2012:A:N7	2.29	0.48
21:5:3723:A:H2'	21:5:3724:A:N7	2.28	0.48
21:5:4616:A:H2'	21:5:4617:G:O4'	2.14	0.48
21:5:4951:G:C2	21:5:4952:G:N7	2.81	0.48
29:S:84:TYR:HB2	29:S:124:ILE:HG22	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:K:214:GLN:HG2	48:K:216:LEU:HD22	1.96	0.48
51:CC:148:ALA:O	51:CC:151:ILE:HG13	2.14	0.48
1:9:28:U:H2'	1:9:29:G:C8	2.48	0.48
1:9:301:A:N6	1:9:302:A:H62	2.11	0.48
1:9:1337:C:H2'	1:9:1338:G:H8	1.78	0.48
3:B:261:ARG:HB2	12:O:64:THR:HG21	1.95	0.48
13:R:44:LEU:HD12	13:R:49:LEU:HB2	1.95	0.48
18:a:102:ASP:HB3	18:a:105:ARG:HB3	1.95	0.48
21:5:163:A:H2'	21:5:164:G:C8	2.48	0.48
21:5:1094:G:H2'	21:5:1095:A:H8	1.79	0.48
21:5:1982:G:H2'	21:5:1983:A:C8	2.47	0.48
21:5:1993:C:C4	21:5:1994:C:C4	3.01	0.48
40:k:60:LEU:HD12	40:k:61:PRO:HD2	1.95	0.48
41:l:23:ILE:HD12	41:l:24:PRO:HD2	1.95	0.48
49:AA:78:SER:HB3	49:AA:87:VAL:HG21	1.96	0.48
49:AA:180:ARG:HE	49:AA:184:ARG:NH2	2.12	0.48
51:CC:70:VAL:HG21	51:CC:93:ILE:HG23	1.96	0.48
53:GG:181:THR:HG22	53:GG:183:ARG:H	1.78	0.48
62:XX:107:ARG:HB3	62:XX:110:HIS:HB3	1.96	0.48
1:9:797:C:H2'	1:9:798:G:C8	2.49	0.48
1:9:1337:C:H5''	75:UU:67:LYS:HG2	1.95	0.48
1:9:1616:U:H2'	1:9:1617:G:C8	2.49	0.48
1:9:1625:U:H2'	1:9:1626:C:C6	2.48	0.48
2:A:96:LEU:HD23	2:A:96:LEU:H	1.78	0.48
6:G:131:PRO:HA	6:G:134:ASN:HB3	1.96	0.48
16:X:119:ILE:HG13	16:X:144:TYR:HD2	1.78	0.48
21:5:1440:U:H2'	21:5:1441:C:C6	2.48	0.48
21:5:1997:U:H3	21:5:1999:A:H3'	1.78	0.48
21:5:2491:C:H2'	21:5:2492:C:C6	2.49	0.48
21:5:4435:U:H2'	21:5:4436:U:C2	2.49	0.48
21:5:4592:C:H2'	21:5:4593:C:C6	2.48	0.48
21:5:4704:C:H2'	21:5:4705:A:C8	2.46	0.48
21:5:4934:A:H2'	21:5:4935:C:H6	1.79	0.48
24:D:7:VAL:HG23	24:D:8:LYS:HD3	1.95	0.48
25:F:115:GLN:HE22	28:Q:3:VAL:HA	1.77	0.48
33:c:104:ILE:HD12	33:c:105:ILE:H	1.78	0.48
47:1:1491:C:O2'	47:1:1492:C:O5'	2.28	0.48
50:BB:168:MET:HA	50:BB:197:ILE:HD12	1.96	0.48
70:PP:22:LEU:HA	70:PP:25:LEU:HD12	1.96	0.48
1:9:652:U:H2'	1:9:653:A:C8	2.49	0.48
7:H:126:VAL:HG11	7:H:161:ILE:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1339:U:H2'	21:5:1340:C:C6	2.49	0.48
21:5:1688:G:H2'	21:5:1689:G:C8	2.49	0.48
21:5:1976:G:C5	21:5:2002:A:C4	3.01	0.48
21:5:2319:C:H2'	21:5:2320:G:C4	2.49	0.48
21:5:2890:C:H42	21:5:3611:A:H61	1.60	0.48
21:5:4934:A:H2'	21:5:4935:C:C6	2.49	0.48
28:Q:78:LYS:HG2	28:Q:137:VAL:HG13	1.96	0.48
68:FF:34:SER:HA	77:cc:55:VAL:HB	1.95	0.48
78:dd:31:ILE:HA	78:dd:33:LYS:HZ3	1.78	0.48
1:9:671:A:H4'	1:9:672:A:H5''	1.96	0.48
1:9:979:C:H2'	1:9:980:A:H8	1.78	0.48
1:9:1115:U:O3'	1:9:1116:C:H2'	2.13	0.48
1:9:1372:U:H5''	1:9:1386:A:C2	2.49	0.48
2:A:137:ILE:HD11	2:A:149:LYS:HB2	1.96	0.48
4:C:183:VAL:HG12	4:C:204:ARG:HB3	1.96	0.48
8:I:53:VAL:HG22	8:I:134:VAL:HG12	1.95	0.48
13:R:19:LYS:HA	13:R:22:VAL:HB	1.96	0.48
21:5:115:C:H2'	21:5:116:G:O4'	2.14	0.48
21:5:670:G:H2'	21:5:671:G:H8	1.79	0.48
21:5:1988:G:OP1	21:5:2003:G:H5''	2.13	0.48
21:5:1993:C:N3	21:5:2002:A:N6	2.62	0.48
21:5:2003:G:HO2'	21:5:2004:U:H5	1.62	0.48
21:5:2448:G:H2'	21:5:2449:A:C8	2.49	0.48
21:5:3607:U:H2'	21:5:3608:A:H8	1.79	0.48
21:5:3893:C:H2'	21:5:3894:A:C8	2.49	0.48
21:5:4075:U:H2'	21:5:4169:G:H1	1.79	0.48
21:5:4736:C:H2'	21:5:4737:G:H8	1.78	0.48
39:j:67:LEU:HA	39:j:70:VAL:HG22	1.96	0.48
52:EE:80:ILE:HG13	52:EE:81:THR:HG23	1.95	0.48
53:GG:49:VAL:HB	53:GG:115:LYS:HB3	1.96	0.48
55:II:74:ARG:HH22	55:II:112:TRP:CD1	2.31	0.48
67:DD:106:ARG:HG3	67:DD:175:VAL:HB	1.96	0.48
1:9:107:A:H2'	1:9:108:G:C8	2.49	0.47
1:9:929:G:H2'	1:9:930:C:O4'	2.15	0.47
2:A:116:LEU:HD22	2:A:117:GLU:H	1.79	0.47
2:A:120:PRO:HA	2:A:162:ASN:HB3	1.96	0.47
21:5:713:C:H2'	21:5:714:G:H8	1.79	0.47
21:5:978:G:N2	21:5:1277:G:H22	2.12	0.47
21:5:2283:G:H2'	21:5:2284:G:C8	2.49	0.47
21:5:2654:C:H2'	21:5:2655:C:C6	2.49	0.47
21:5:4319:C:H2'	21:5:4320:G:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:g:93:ARG:O	36:g:97:ILE:HG12	2.14	0.47
51:CC:60:TRP:HH2	51:CC:70:VAL:HG13	1.78	0.47
63:YY:18:LEU:HB2	63:YY:20:ARG:HG2	1.96	0.47
69:KK:25:LYS:HB2	69:KK:67:PHE:HE1	1.79	0.47
1:9:531:A:H3'	1:9:532:C:H5''	1.95	0.47
6:G:101:LYS:HB3	16:X:42:THR:HG23	1.95	0.47
21:5:381:U:H2'	21:5:382:G:O4'	2.14	0.47
21:5:978:G:N2	21:5:1277:G:H1	2.11	0.47
21:5:1317:U:H2'	21:5:1318:C:C6	2.49	0.47
21:5:3816:A:H2'	21:5:3819:G:H21	1.78	0.47
21:5:4870:G:H5''	26:M:91:TRP:CE2	2.49	0.47
22:7:1:G:H1'	24:D:265:ARG:CZ	2.45	0.47
23:8:66:A:H2'	23:8:67:U:C6	2.50	0.47
29:S:110:TYR:CZ	29:S:124:ILE:HD11	2.49	0.47
52:EE:38:LEU:HD22	52:EE:38:LEU:H	1.79	0.47
58:NN:34:LYS:O	58:NN:37:ILE:HG13	2.14	0.47
70:PP:64:LYS:HE2	70:PP:89:MET:HA	1.97	0.47
76:ZZ:87:ALA:O	76:ZZ:90:GLU:HG3	2.13	0.47
1:9:161:U:H5'	63:YY:116:LYS:HE2	1.95	0.47
1:9:955:A:N3	1:9:956:G:H1'	2.29	0.47
1:9:1298:G:N7	70:PP:79:HIS:CD2	2.82	0.47
4:C:337:ARG:HH22	5:E:60:SER:HA	1.79	0.47
6:G:140:LEU:HG	6:G:144:THR:OG1	2.13	0.47
21:5:662:C:H2'	21:5:663:G:H8	1.78	0.47
21:5:1663:C:H4'	21:5:2320:G:H21	1.78	0.47
21:5:2500:U:H2'	21:5:2501:C:C6	2.50	0.47
21:5:2633:U:H2'	21:5:2634:C:C6	2.49	0.47
21:5:3732:A:H2'	21:5:3733:A:C8	2.48	0.47
47:1:1497:C:O2	47:1:1497:C:C2'	2.61	0.47
48:K:7:ARG:HD2	48:K:9:THR:H	1.78	0.47
53:GG:214:ALA:O	53:GG:217:MET:HG3	2.15	0.47
59:OO:53:ILE:HG23	59:OO:88:LEU:HG	1.96	0.47
62:XX:124:LYS:HG2	62:XX:129:SER:HA	1.96	0.47
1:9:35:C:H5''	1:9:579:C:H5''	1.97	0.47
1:9:867:G:H2'	1:9:868:G:C8	2.49	0.47
1:9:934:G:O6	1:9:1008:A:N1	2.47	0.47
1:9:974:C:H2'	1:9:975:G:C8	2.49	0.47
6:G:215:ASP:HB3	6:G:216:PRO:HD3	1.97	0.47
17:Y:50:ARG:HG2	17:Y:51:LYS:H	1.78	0.47
18:a:4:ARG:HG3	18:a:5:LEU:HD12	1.97	0.47
23:8:64:U:H1'	37:h:59:THR:HG21	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:M:92:ALA:HA	26:M:95:ILE:HG12	1.97	0.47
46:r:93:ILE:O	46:r:97:ILE:HG13	2.14	0.47
47:1:1456:G:H2'	47:1:1457:G:C8	2.49	0.47
47:1:1478:C:H2'	47:1:1479:U:C5	2.49	0.47
49:AA:201:LEU:HD23	72:RR:85:VAL:HG22	1.97	0.47
58:NN:110:ASP:O	58:NN:114:ARG:HG2	2.15	0.47
68:FF:59:LYS:HD3	68:FF:62:ARG:HH21	1.79	0.47
70:PP:56:LEU:HD22	70:PP:80:LEU:HD12	1.97	0.47
76:ZZ:86:ALA:O	76:ZZ:89:GLN:HG3	2.14	0.47
77:cc:43:ILE:H	77:cc:43:ILE:HG13	1.53	0.47
1:9:1244:U:H2'	1:9:1245:G:H8	1.80	0.47
6:G:276:ARG:HG3	6:G:280:ASN:HB2	1.96	0.47
21:5:956:A:N6	21:5:1283:G:H1'	2.29	0.47
21:5:4305:G:H1	30:T:87:LYS:NZ	2.13	0.47
26:M:93:LYS:O	26:M:96:GLU:HG3	2.14	0.47
29:S:80:ILE:HG13	29:S:109:CYS:SG	2.54	0.47
77:cc:12:ALA:HB1	77:cc:32:VAL:HB	1.97	0.47
1:9:65:C:H4'	53:GG:172:LYS:HE2	1.96	0.47
1:9:1697:A:N3	51:CC:115:GLN:NE2	2.62	0.47
9:J:81:GLU:O	9:J:84:GLU:HG3	2.14	0.47
11:N:44:ARG:HG2	11:N:47:LYS:HB2	1.96	0.47
12:O:94:ARG:HH11	35:f:97:ILE:HG21	1.80	0.47
21:5:260:C:H2'	21:5:261:G:C8	2.50	0.47
21:5:751:G:H3'	21:5:752:G:H8	1.80	0.47
21:5:1083:U:H3	21:5:1216:C:N4	2.13	0.47
21:5:2374:A:H2'	21:5:2375:A:H8	1.80	0.47
21:5:2607:C:H2'	21:5:2608:G:C8	2.50	0.47
21:5:4321:U:H2'	21:5:4322:G:C8	2.49	0.47
21:5:4594:U:H2'	21:5:4595:G:C8	2.48	0.47
22:7:114:U:H2'	22:7:115:A:H8	1.79	0.47
29:S:98:ARG:HB2	29:S:142:VAL:HG23	1.96	0.47
39:j:64:MET:HE2	39:j:64:MET:HA	1.96	0.47
47:1:1494:C:O5'	47:1:1494:C:C6	2.66	0.47
47:1:1495:U:O2'	47:1:1496:A:O4'	2.24	0.47
49:AA:170:SER:O	49:AA:174:MET:HG2	2.15	0.47
63:YY:105:LYS:O	63:YY:109:GLU:HG2	2.15	0.47
66:ee:90:LEU:HD23	66:ee:90:LEU:H	1.78	0.47
1:9:381:C:H5''	55:II:54:LYS:HE3	1.96	0.47
1:9:508:A:H3'	1:9:509:G:H8	1.80	0.47
1:9:1007:C:H2'	1:9:1008:A:C8	2.50	0.47
1:9:1203:G:O6	1:9:1697:A:N6	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1227:G:H1'	1:9:1638:G:H1'	1.96	0.47
1:9:1495:G:H22	78:dd:45:GLN:HG2	1.80	0.47
1:9:1565:C:H2'	1:9:1566:G:C8	2.49	0.47
1:9:1645:C:H4'	71:QQ:138:ARG:CZ	2.45	0.47
2:A:183:GLY:HA2	21:5:1613:A:H5''	1.97	0.47
3:B:98:GLY:HA2	12:O:149:TYR:CZ	2.49	0.47
4:C:142:HIS:HD2	4:C:204:ARG:HH12	1.62	0.47
11:N:172:ARG:HG2	21:5:29:G:H5''	1.95	0.47
12:O:177:LEU:HD12	26:M:130:LEU:HB3	1.97	0.47
18:a:24:LYS:HG3	18:a:26:ARG:HH21	1.80	0.47
21:5:423:G:H21	27:P:118:GLN:NE2	2.12	0.47
21:5:1306:C:H2'	21:5:1307:A:C8	2.50	0.47
21:5:1509:C:H2'	21:5:1510:G:H8	1.80	0.47
21:5:1751:A:H2'	21:5:1752:G:C8	2.50	0.47
21:5:2548:C:H2'	21:5:2549:G:C8	2.48	0.47
21:5:2757:A:H2'	21:5:2758:G:C8	2.49	0.47
21:5:2811:G:H22	21:5:2813:A:H3'	1.78	0.47
21:5:2893:U:H2'	21:5:2894:A:C8	2.49	0.47
21:5:4889:G:H2'	21:5:4890:G:C8	2.50	0.47
22:7:110:G:H2'	22:7:111:C:C6	2.49	0.47
27:P:114:ILE:HG23	27:P:150:LEU:HD13	1.96	0.47
47:1:1493:G:C5'	47:1:1494:C:H5	2.28	0.47
48:K:157:PHE:HE2	48:K:193:LEU:HG	1.80	0.47
49:AA:169:HIS:HE1	49:AA:205:ARG:HH22	1.63	0.47
53:GG:147:LEU:HD13	53:GG:153:VAL:HG13	1.97	0.47
56:JJ:144:ILE:HG12	56:JJ:146:SER:H	1.79	0.47
59:OO:113:GLN:HE22	64:aa:45:VAL:HA	1.80	0.47
61:WW:18:GLU:HG3	61:WW:65:LEU:HD11	1.96	0.47
68:FF:145:ARG:HH12	68:FF:149:GLN:HE21	1.62	0.47
71:QQ:76:GLY:O	71:QQ:80:GLN:HG2	2.15	0.47
77:cc:18:LEU:HD21	77:cc:29:GLN:HG2	1.96	0.47
1:9:479:C:H2'	1:9:480:G:C8	2.47	0.47
1:9:1753:C:H2'	1:9:1754:G:C8	2.50	0.47
21:5:693:C:H2'	21:5:694:C:H6	1.80	0.47
21:5:1774:C:C2	21:5:1775:A:C8	3.03	0.47
21:5:1979:A:H1'	21:5:1980:U:C5	2.49	0.47
21:5:2340:C:H2'	21:5:2341:A:H8	1.79	0.47
21:5:4089:G:H2'	21:5:4090:G:C8	2.50	0.47
43:n:2:ARG:HD3	43:n:5:TRP:NE1	2.29	0.47
50:BB:87:ILE:HG22	50:BB:101:HIS:HB2	1.97	0.47
51:CC:254:ASP:HB3	60:VV:1:MET:HB2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:EE:133:THR:HG23	52:EE:134:LYS:HG3	1.96	0.47
59:OO:43:HIS:CD2	59:OO:55:ARG:HB3	2.49	0.47
67:DD:197:LYS:HG2	67:DD:198:ILE:HG23	1.96	0.47
77:cc:67:ARG:HH12	77:cc:68:LEU:HD23	1.79	0.47
1:9:107:A:H2'	1:9:108:G:H8	1.78	0.47
1:9:1380:C:H2'	1:9:1381:G:C8	2.50	0.47
8:I:82:LYS:HE3	8:I:82:LYS:HB3	1.78	0.47
21:5:229:G:H2'	21:5:230:G:H8	1.80	0.47
21:5:464:G:H2'	21:5:465:G:H8	1.78	0.47
21:5:978:G:H21	21:5:1277:G:H22	1.63	0.47
21:5:1982:G:C4	21:5:1983:A:N7	2.83	0.47
21:5:4186:A:H2'	21:5:4187:G:H8	1.79	0.47
21:5:4637:G:H2'	21:5:4638:U:C6	2.50	0.47
21:5:4933:C:H2'	21:5:4934:A:C8	2.49	0.47
25:F:229:GLY:HA2	29:S:2:LYS:HE2	1.97	0.47
32:Z:89:ILE:HD11	32:Z:117:LYS:HB3	1.96	0.47
34:d:45:ALA:O	34:d:49:ILE:HG12	2.15	0.47
51:CC:142:LYS:HG2	51:CC:153:GLY:HA3	1.97	0.47
58:NN:84:LEU:HD13	58:NN:89:TYR:HB2	1.97	0.47
1:9:14:C:H2'	1:9:15:U:C6	2.50	0.47
1:9:316:G:H3'	53:GG:183:ARG:NH2	2.29	0.47
1:9:430:C:H2'	1:9:431:G:H8	1.80	0.47
12:O:83:THR:O	12:O:87:MET:HG2	2.15	0.47
21:5:758:G:H2'	21:5:759:G:O4'	2.14	0.47
21:5:1759:G:C2	21:5:1774:C:C2	3.02	0.47
21:5:1985:G:C2	21:5:2003:G:C2	3.02	0.47
21:5:3911:C:H2'	21:5:3912:U:C6	2.50	0.47
23:8:28:C:H2'	23:8:29:G:C8	2.48	0.47
27:P:40:HIS:HE2	27:P:111:SER:HA	1.80	0.47
38:i:84:LYS:O	38:i:88:GLU:HG2	2.14	0.47
49:AA:210:ILE:HD13	72:RR:81:ARG:HD3	1.97	0.47
54:HH:60:ILE:HG13	54:HH:92:VAL:HA	1.96	0.47
59:OO:34:PHE:HA	59:OO:98:ARG:HD3	1.96	0.47
66:ee:113:ARG:HA	66:ee:117:ASN:HD22	1.78	0.47
70:PP:111:MET:HA	70:PP:114:HIS:HD2	1.79	0.47
1:9:115:U:H2'	1:9:116:U:C6	2.49	0.46
1:9:796:G:H2'	1:9:797:C:C6	2.50	0.46
1:9:1054:G:H2'	1:9:1055:A:H8	1.80	0.46
1:9:1487:A:H2'	1:9:1488:C:C6	2.50	0.46
13:R:23:TRP:CD1	21:5:2387:G:H5''	2.50	0.46
21:5:443:G:H5''	35:f:54:LYS:HE3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:691:C:H2'	21:5:692:A:C8	2.51	0.46
21:5:1776:A:H2'	21:5:1776:A:N3	2.30	0.46
21:5:1806:G:H2'	21:5:1807:C:C6	2.49	0.46
21:5:1921:C:O4'	29:S:161:ARG:HB3	2.15	0.46
21:5:2374:A:H2'	21:5:2375:A:C8	2.50	0.46
21:5:2480:G:H2'	21:5:2481:G:H8	1.80	0.46
21:5:2857:A:H2'	21:5:2858:A:O4'	2.14	0.46
23:8:147:G:H2'	23:8:148:A:C8	2.51	0.46
23:8:153:C:H2'	23:8:154:G:H8	1.80	0.46
26:M:34:ASN:HA	26:M:52:PHE:HD2	1.79	0.46
31:U:84:LYS:HB2	31:U:110:TYR:CE2	2.50	0.46
47:1:1493:G:C8	47:1:1494:C:N4	2.83	0.46
50:BB:35:ALA:HB2	50:BB:44:ILE:HD11	1.96	0.46
54:HH:103:LYS:HE3	54:HH:116:ARG:CZ	2.45	0.46
57:LL:10:TYR:HE1	57:LL:12:LYS:HB3	1.80	0.46
67:DD:18:LYS:HE3	67:DD:39:VAL:HG11	1.97	0.46
74:TT:60:THR:HG23	74:TT:75:MET:HE2	1.96	0.46
74:TT:85:ASN:HB3	74:TT:88:MET:HB2	1.97	0.46
78:dd:36:LEU:HD13	78:dd:38:MET:HG3	1.96	0.46
1:9:639:C:H2'	1:9:640:A:H8	1.81	0.46
1:9:1097:G:H4'	49:AA:32:PHE:CD1	2.50	0.46
1:9:1203:G:H2'	1:9:1204:A:C8	2.49	0.46
1:9:1407:U:H2'	1:9:1408:U:C6	2.51	0.46
1:9:1712:A:H2'	1:9:1713:C:H6	1.80	0.46
7:H:111:LEU:HD11	7:H:125:ARG:HB2	1.96	0.46
21:5:478:G:H2'	21:5:479:G:C8	2.51	0.46
21:5:1966:C:H2'	21:5:1967:A:O4'	2.15	0.46
21:5:1998:A:C5	21:5:1999:A:C6	3.03	0.46
21:5:2001:G:C5	21:5:2017:A:C6	3.04	0.46
22:7:6:C:H4'	24:D:52:ILE:HD13	1.96	0.46
27:P:112:LEU:HD12	27:P:150:LEU:HG	1.97	0.46
57:LL:77:VAL:HG21	57:LL:80:MET:HE2	1.96	0.46
70:PP:44:ARG:HH12	70:PP:50:ARG:CZ	2.28	0.46
70:PP:86:LEU:HD22	70:PP:86:LEU:HA	1.74	0.46
70:PP:98:ASN:N	70:PP:101:THR:O	2.48	0.46
1:9:630:U:H2'	1:9:630:U:O2	2.13	0.46
1:9:1665:G:C5	74:TT:88:MET:HE1	2.50	0.46
4:C:147:VAL:HG22	4:C:149:GLU:H	1.80	0.46
4:C:329:ASN:HB2	25:F:186:MET:HE2	1.98	0.46
21:5:158:A:H4'	21:5:159:C:H5''	1.96	0.46
21:5:1172:C:H2'	21:5:1173:G:C8	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1201:U:H2'	21:5:1202:C:C6	2.51	0.46
21:5:1586:G:H2'	21:5:1587:G:C8	2.51	0.46
21:5:1993:C:C4	21:5:2002:A:N1	2.83	0.46
21:5:4107:G:H2'	21:5:4108:G:C8	2.49	0.46
21:5:4453:C:H2'	21:5:4454:G:O4'	2.14	0.46
49:AA:17:LYS:HE2	72:RR:91:LEU:HG	1.98	0.46
53:GG:5:ILE:HA	53:GG:111:LEU:O	2.14	0.46
64:aa:44:ILE:HG12	64:aa:65:PRO:HG2	1.97	0.46
74:TT:11:GLN:HE22	74:TT:12:GLN:HE21	1.63	0.46
1:9:1217:A:H2'	1:9:1218:C:H6	1.80	0.46
1:9:1617:G:H1	70:PP:40:ARG:NH1	2.11	0.46
1:9:1859:A:H2'	1:9:1860:A:C8	2.51	0.46
4:C:191:ALA:HB2	21:5:2334:C:C5	2.51	0.46
6:G:285:GLU:HA	6:G:288:ARG:HG2	1.98	0.46
20:e:90:MET:HG3	46:r:33:LYS:HA	1.97	0.46
21:5:308:G:C8	21:5:310:G:H1'	2.45	0.46
21:5:1177:U:H2'	21:5:1178:G:H8	1.79	0.46
21:5:1639:U:O2	21:5:1639:U:H2'	2.13	0.46
21:5:1979:A:HO2'	21:5:1980:U:H5	1.62	0.46
21:5:2001:G:H3'	21:5:2001:G:OP2	2.16	0.46
21:5:2093:G:H22	21:5:2262:G:H1	1.63	0.46
21:5:2412:A:H2'	21:5:2413:U:C6	2.50	0.46
21:5:2414:G:H2'	21:5:2415:U:C6	2.51	0.46
21:5:3721:U:H2'	21:5:3722:G:C8	2.50	0.46
21:5:3946:G:O6	21:5:4067:U:O4	2.33	0.46
21:5:4272:G:H3'	21:5:4273:A:H5''	1.97	0.46
25:F:240:ASN:O	25:F:244:ARG:HG2	2.15	0.46
38:i:34:THR:HG22	38:i:37:THR:HG22	1.97	0.46
52:EE:106:LYS:NZ	52:EE:108:ARG:HH12	2.13	0.46
58:NN:72:LEU:H	58:NN:72:LEU:HD23	1.79	0.46
70:PP:25:LEU:O	70:PP:28:MET:HE3	2.15	0.46
70:PP:64:LYS:HG3	70:PP:73:PRO:CG	2.44	0.46
70:PP:108:LYS:O	70:PP:109:PRO:C	2.57	0.46
1:9:428:U:H4'	56:JJ:2:PRO:HG3	1.98	0.46
1:9:574:A:H4'	63:YY:89:HIS:CG	2.50	0.46
1:9:792:C:H2'	1:9:793:G:C8	2.50	0.46
6:G:153:HIS:HA	6:G:156:ARG:HG3	1.97	0.46
13:R:119:MET:HB2	13:R:149:LYS:HZ1	1.80	0.46
21:5:268:G:H2'	21:5:269:G:C8	2.48	0.46
21:5:273:U:H2'	21:5:274:C:C6	2.51	0.46
21:5:930:G:H4'	21:5:931:C:OP1	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1177:U:O2'	24:D:279:ARG:HG2	2.16	0.46
21:5:1617:G:H1'	21:5:2513:A:N6	2.31	0.46
21:5:1996:C:H2'	21:5:1997:U:H4'	1.98	0.46
21:5:3700:C:O2'	21:5:3774:A:H1'	2.15	0.46
32:Z:14:LEU:HB2	36:g:88:ARG:HB2	1.96	0.46
33:c:96:ILE:HD11	33:c:99:PRO:HA	1.98	0.46
56:JJ:77:LEU:O	56:JJ:80:ARG:HG2	2.15	0.46
63:YY:96:LEU:HD23	63:YY:96:LEU:H	1.81	0.46
67:DD:142:LEU:O	67:DD:143:ARG:HG3	2.15	0.46
68:FF:59:LYS:HE3	68:FF:62:ARG:HE	1.79	0.46
68:FF:126:THR:HG23	77:cc:47:LYS:HZ3	1.81	0.46
70:PP:14:LYS:HE2	70:PP:22:LEU:H	1.80	0.46
70:PP:25:LEU:O	70:PP:26:LEU:C	2.59	0.46
73:SS:26:ILE:HG12	73:SS:56:ALA:HA	1.98	0.46
1:9:830:A:C5	1:9:831:G:H1'	2.51	0.46
1:9:1139:C:H3'	1:9:1140:G:C8	2.51	0.46
1:9:1737:G:O6	1:9:1797:U:O4	2.34	0.46
1:9:1845:A:H2'	1:9:1846:G:C8	2.51	0.46
4:C:24:LEU:HD21	4:C:28:PHE:HB2	1.97	0.46
4:C:306:ARG:NH1	21:5:2100:G:H21	2.12	0.46
8:I:89:VAL:HG12	8:I:136:MET:HB3	1.98	0.46
21:5:18:C:H2'	21:5:19:G:H8	1.80	0.46
21:5:228:C:H2'	21:5:229:G:H8	1.80	0.46
21:5:229:G:H2'	21:5:230:G:C8	2.50	0.46
21:5:1306:C:H2'	21:5:1307:A:H8	1.79	0.46
21:5:1733:G:N3	21:5:4214:A:H2'	2.31	0.46
21:5:3946:G:N2	21:5:4067:U:O2	2.31	0.46
21:5:4915:G:H2'	21:5:4916:G:H8	1.81	0.46
23:8:93:C:HO2'	23:8:94:G:H8	1.64	0.46
23:8:137:A:H2'	23:8:138:C:C6	2.51	0.46
27:P:131:ARG:HH11	27:P:137:ASN:ND2	2.13	0.46
35:f:110:ILE:H	35:f:110:ILE:HG13	1.55	0.46
48:K:45:LYS:HE2	48:K:45:LYS:HB3	1.82	0.46
55:II:81:VAL:HG22	55:II:91:VAL:HG23	1.97	0.46
56:JJ:28:GLU:O	56:JJ:32:ILE:HG12	2.15	0.46
58:NN:32:ASP:O	58:NN:35:GLU:HG3	2.15	0.46
70:PP:82:ASP:HA	70:PP:115:TYR:CD2	2.51	0.46
1:9:536:A:H2'	1:9:536:A:N3	2.31	0.46
1:9:1614:A:H2'	1:9:1615:U:C6	2.51	0.46
1:9:1831:A:H2'	1:9:1832:A:H8	1.81	0.46
5:E:214:HIS:CE1	5:E:248:GLN:HE21	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:I:121:LYS:H	8:I:121:LYS:HD2	1.79	0.46
12:O:173:GLN:HA	12:O:176:ARG:HE	1.80	0.46
21:5:738:C:H5''	21:5:739:G:H4'	1.98	0.46
21:5:1973:G:H2'	21:5:1974:U:C5	2.51	0.46
21:5:2517:A:H4'	36:g:66:ARG:HH21	1.81	0.46
21:5:2703:G:H2'	21:5:2704:C:H6	1.80	0.46
21:5:3781:C:H5'	21:5:3821:A:H4'	1.97	0.46
21:5:4578:G:H2'	21:5:4579:U:H6	1.80	0.46
26:M:96:GLU:O	26:M:99:GLU:HG3	2.15	0.46
49:AA:185:MET:HG2	49:AA:191:ARG:HH21	1.80	0.46
52:EE:42:LEU:HD12	52:EE:47:PHE:HB2	1.98	0.46
65:bb:43:ILE:HD13	65:bb:80:ARG:HH21	1.80	0.46
68:FF:102:LEU:HD22	76:ZZ:110:THR:HG21	1.98	0.46
70:PP:63:ALA:O	70:PP:66:GLU:HG2	2.16	0.46
1:9:96:C:H2'	1:9:97:U:C6	2.51	0.46
1:9:940:U:H3	1:9:1002:U:H3	1.63	0.46
1:9:943:U:H2'	1:9:944:A:H8	1.80	0.46
1:9:1019:C:H5'	58:NN:72:LEU:HD11	1.98	0.46
1:9:1457:U:H2'	1:9:1458:G:C8	2.51	0.46
1:9:1576:G:H2'	1:9:1577:G:C8	2.50	0.46
3:B:56:ILE:HG12	3:B:76:VAL:HG21	1.98	0.46
21:5:321:U:H2'	21:5:322:C:C6	2.51	0.46
21:5:347:A:H2'	21:5:348:G:C8	2.51	0.46
21:5:1195:G:H2'	21:5:1196:G:H8	1.81	0.46
21:5:1972:G:C6	21:5:1995:G:C6	3.04	0.46
21:5:2745:A:H2'	21:5:2746:A:C8	2.46	0.46
21:5:3933:G:H2'	21:5:3934:G:C8	2.51	0.46
21:5:4112:C:H2'	21:5:4113:U:C6	2.51	0.46
45:p:80:LYS:HE3	45:p:80:LYS:HB3	1.80	0.46
51:CC:94:ILE:H	51:CC:94:ILE:HD12	1.80	0.46
52:EE:55:ALA:HB2	52:EE:64:ILE:HD12	1.97	0.46
70:PP:54:HIS:O	70:PP:55:SER:C	2.59	0.46
70:PP:78:THR:H	70:PP:102:PHE:HD2	1.64	0.46
71:QQ:117:ARG:NH1	71:QQ:121:VAL:HG12	2.31	0.46
1:9:1198:G:H2'	1:9:1199:A:C8	2.51	0.46
1:9:1797:U:H2'	1:9:1798:C:H6	1.81	0.46
5:E:64:MET:O	5:E:68:LYS:HG3	2.16	0.46
18:a:22:ILE:H	18:a:22:ILE:HD12	1.81	0.46
21:5:963:G:H2'	21:5:964:A:C8	2.50	0.46
21:5:1473:U:H2'	21:5:1474:C:C6	2.51	0.46
21:5:1973:G:C2	21:5:1974:U:C4	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2409:U:H4'	21:5:2428:A:H4'	1.97	0.46
21:5:2540:C:H2'	21:5:2541:G:C8	2.50	0.46
21:5:3835:C:H2'	21:5:3836:A:C8	2.50	0.46
21:5:4348:A:O2'	21:5:4350:C:H5'	2.15	0.46
21:5:4897:G:H2'	21:5:4898:G:H8	1.81	0.46
32:Z:38:TYR:CE2	32:Z:40:HIS:HB3	2.50	0.46
52:EE:136:ILE:HG23	52:EE:149:TYR:CE1	2.51	0.46
70:PP:20:VAL:HG11	70:PP:36:LEU:HD21	1.98	0.46
70:PP:29:SER:O	70:PP:30:TYR:C	2.59	0.46
71:QQ:58:LEU:HB3	71:QQ:62:ARG:HH11	1.81	0.46
1:9:857:U:H2'	1:9:858:A:C8	2.51	0.46
1:9:1239:U:H5'	70:PP:124:LYS:NZ	2.32	0.46
1:9:1593:C:H2'	1:9:1594:A:H8	1.81	0.46
1:9:1628:C:H2'	1:9:1629:C:C6	2.51	0.46
4:C:79:VAL:HG21	4:C:86:ARG:HG2	1.98	0.46
7:H:94:SER:HB3	7:H:179:ILE:HG12	1.98	0.46
13:R:103:ARG:HH12	21:5:2667:C:H5''	1.81	0.46
21:5:1340:C:H2'	21:5:1341:U:C6	2.51	0.46
21:5:1769:G:H2'	21:5:1770:A:H8	1.81	0.46
21:5:1973:G:H1	21:5:1993:C:H42	1.64	0.46
21:5:1976:G:C8	21:5:2002:A:C8	3.03	0.46
21:5:2558:C:H2'	21:5:2559:G:C8	2.51	0.46
34:d:57:MET:HG2	34:d:90:ARG:HB2	1.98	0.46
47:1:1496:A:N3	47:1:1496:A:H3'	2.31	0.46
49:AA:164:ASN:HD21	49:AA:166:LYS:HE3	1.80	0.46
70:PP:31:GLU:O	70:PP:34:MET:HB2	2.16	0.46
1:9:433:A:H2'	1:9:434:G:C8	2.51	0.45
1:9:1443:C:H1'	71:QQ:22:VAL:HG21	1.97	0.45
2:A:21:LYS:HG2	21:5:1541:C:H5''	1.98	0.45
10:L:47:ALA:O	10:L:149:GLN:HG3	2.16	0.45
10:L:77:SER:HB3	10:L:80:GLU:OE1	2.15	0.45
13:R:99:MET:HE1	13:R:127:VAL:HG12	1.98	0.45
16:X:113:VAL:HG23	16:X:117:TYR:HD2	1.81	0.45
18:a:57:GLY:HA3	28:Q:172:ARG:HD2	1.98	0.45
20:e:75:ARG:HB2	20:e:95:TYR:CD1	2.51	0.45
21:5:1835:G:H4'	21:5:1836:G:O5'	2.16	0.45
24:D:89:LYS:HG2	24:D:239:MET:HE1	1.98	0.45
46:r:90:LEU:HD12	46:r:111:ILE:HD13	1.98	0.45
47:1:1349:U:H2'	47:1:1350:C:O4'	2.16	0.45
53:GG:2:LYS:HB3	53:GG:108:VAL:HG22	1.98	0.45
53:GG:182:PRO:HA	53:GG:185:LEU:HG	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:JJ:83:ARG:HD3	56:JJ:150:ARG:NE	2.31	0.45
63:YY:34:THR:HG23	63:YY:69:THR:HG21	1.98	0.45
70:PP:21:ASP:HB3	70:PP:24:GLN:H	1.79	0.45
70:PP:36:LEU:HD13	70:PP:36:LEU:HA	1.70	0.45
70:PP:37:TYR:CZ	70:PP:45:LEU:HD23	2.50	0.45
72:RR:100:PRO:HG2	72:RR:122:PRO:HD3	1.97	0.45
1:9:941:C:H5''	50:BB:136:ARG:NH1	2.31	0.45
1:9:1199:A:H2'	1:9:1200:A:H8	1.81	0.45
1:9:1480:A:H2'	1:9:1481:G:H8	1.81	0.45
4:C:34:PRO:HA	4:C:37:VAL:HG22	1.97	0.45
4:C:128:LEU:HD13	4:C:128:LEU:HA	1.78	0.45
15:W:94:ARG:HG3	53:GG:146:ASN:ND2	2.31	0.45
19:b:91:ARG:HA	19:b:94:HIS:CD2	2.51	0.45
20:e:67:LYS:HG2	20:e:68:HIS:CD2	2.51	0.45
21:5:1749:A:H2'	21:5:1750:G:O4'	2.15	0.45
21:5:3684:G:H2'	21:5:3685:C:C6	2.51	0.45
21:5:4174:U:H2'	21:5:4175:G:H8	1.80	0.45
21:5:4186:A:H2'	21:5:4187:G:C8	2.50	0.45
21:5:4458:C:H2'	21:5:4459:U:C6	2.51	0.45
24:D:209:ARG:HA	24:D:212:MET:SD	2.56	0.45
35:f:45:LYS:HD2	35:f:105:LEU:HA	1.97	0.45
38:i:25:ARG:HB3	38:i:28:ARG:HG2	1.99	0.45
50:BB:92:GLN:HG2	50:BB:97:LEU:HD13	1.98	0.45
51:CC:108:LYS:HD2	51:CC:233:LEU:HD13	1.98	0.45
51:CC:137:VAL:HB	51:CC:217:ALA:HA	1.98	0.45
51:CC:208:PRO:O	51:CC:211:LYS:HG3	2.16	0.45
56:JJ:94:LEU:HD23	56:JJ:94:LEU:H	1.82	0.45
70:PP:52:LYS:HA	70:PP:52:LYS:HD2	1.38	0.45
76:ZZ:92:LEU:HD11	76:ZZ:99:LEU:HB2	1.97	0.45
1:9:815:U:H2'	1:9:816:A:C8	2.51	0.45
1:9:1218:C:H1'	1:9:1683:C:H42	1.81	0.45
1:9:1643:U:H2'	1:9:1644:C:C6	2.50	0.45
1:9:1804:U:H2'	1:9:1805:G:H8	1.80	0.45
4:C:218:VAL:HA	4:C:229:LEU:HG	1.98	0.45
7:H:89:ARG:HE	7:H:187:VAL:HA	1.81	0.45
7:H:114:ILE:HD11	7:H:124:ARG:HB2	1.98	0.45
9:J:48:PRO:HB3	9:J:72:CYS:HB2	1.97	0.45
12:O:121:PRO:HA	12:O:124:LEU:HG	1.98	0.45
13:R:123:LEU:HG	13:R:142:ILE:HD11	1.97	0.45
21:5:516:C:H2'	21:5:517:C:C6	2.51	0.45
21:5:1484:G:H2'	21:5:1484:G:N3	2.30	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1662:C:H2'	21:5:1663:C:H6	1.82	0.45
21:5:1991:A:C8	21:5:2002:A:C2	3.05	0.45
21:5:2749:C:H2'	21:5:2750:G:H8	1.80	0.45
24:D:200:MET:SD	24:D:202:GLN:HG2	2.56	0.45
25:F:125:ASN:ND2	30:T:132:PRO:HG2	2.32	0.45
27:P:33:ALA:HB1	27:P:117:ILE:HG21	1.98	0.45
32:Z:49:TYR:CD1	32:Z:133:LYS:HG2	2.51	0.45
50:BB:127:VAL:HG11	50:BB:176:VAL:HG11	1.98	0.45
61:WW:101:PHE:HA	61:WW:113:HIS:CE1	2.52	0.45
65:bb:36:LYS:HB3	65:bb:43:ILE:HG12	1.98	0.45
67:DD:168:VAL:HA	67:DD:189:MET:HA	1.97	0.45
70:PP:49:LEU:HB3	70:PP:53:GLN:HB2	1.99	0.45
71:QQ:58:LEU:HB3	71:QQ:62:ARG:HD3	1.98	0.45
1:9:824:C:H2'	1:9:825:A:O4'	2.15	0.45
13:R:137:ILE:O	13:R:140:GLU:HG3	2.16	0.45
16:X:106:LYS:O	16:X:109:ILE:HG13	2.16	0.45
21:5:478:G:H2'	21:5:479:G:H8	1.81	0.45
21:5:1765:A:H3'	21:5:1766:A:H8	1.80	0.45
21:5:1804:A:H4'	21:5:1805:A:O5'	2.16	0.45
21:5:1964:A:C6	21:5:1965:G:C4	3.04	0.45
21:5:1978:C:H2'	21:5:1978:C:O2	2.15	0.45
21:5:1987:C:H3'	21:5:1988:G:C5'	2.47	0.45
21:5:2672:C:H4'	21:5:2675:G:H4'	1.98	0.45
28:Q:99:LYS:HG3	28:Q:119:LYS:HB3	1.97	0.45
47:1:1476:A:H2'	47:1:1477:G:C8	2.51	0.45
51:CC:161:SER:HA	60:VV:27:LYS:HE3	1.99	0.45
53:GG:212:LEU:O	53:GG:215:LYS:HG3	2.16	0.45
68:FF:71:ARG:HH22	68:FF:144:LEU:HD11	1.81	0.45
1:9:128:U:H3'	1:9:129:C:C6	2.52	0.45
4:C:142:HIS:HE1	4:C:248:ARG:HA	1.81	0.45
10:L:186:ARG:HH22	21:5:1394:G:P	2.39	0.45
12:O:192:PHE:HA	12:O:195:VAL:HG22	1.97	0.45
21:5:425:U:H2'	21:5:426:A:C8	2.49	0.45
21:5:1411(B):C:H2'	21:5:1411(C):C:C6	2.51	0.45
21:5:1755:C:O2	21:5:1757:U:H5	2.00	0.45
21:5:1968:G:C2	21:5:1969:G:C4	3.05	0.45
21:5:1969:G:C8	21:5:1970:A:C8	3.05	0.45
21:5:1997:U:H3	21:5:2000:G:P	2.39	0.45
21:5:1998:A:H8	21:5:1998:A:OP1	2.00	0.45
21:5:4578:G:H2'	21:5:4579:U:C6	2.52	0.45
32:Z:68:ILE:HB	32:Z:119:GLU:HG3	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:c:80:GLU:HA	33:c:83:THR:HG22	1.98	0.45
35:f:8:LYS:HB2	35:f:31:GLU:HG2	1.98	0.45
47:1:1390:A:H2'	47:1:1390:A:N3	2.32	0.45
47:1:1493:G:N3	47:1:1493:G:H2'	2.31	0.45
49:AA:5:LEU:HG	49:AA:7:VAL:HG22	1.98	0.45
51:CC:104:ASP:HA	51:CC:130:ILE:HG22	1.98	0.45
52:EE:153:LEU:H	53:GG:216:ARG:NH1	2.14	0.45
53:GG:21:GLU:O	53:GG:25:ARG:HG3	2.17	0.45
68:FF:30:ILE:HG23	68:FF:117:ILE:HD11	1.99	0.45
70:PP:56:LEU:HD13	70:PP:78:THR:HB	1.99	0.45
71:QQ:105:LYS:HE3	71:QQ:105:LYS:HB3	1.72	0.45
71:QQ:116:ASP:HB3	71:QQ:119:LEU:HD23	1.99	0.45
73:SS:121:ARG:HG3	73:SS:131:VAL:HG21	1.98	0.45
1:9:379:C:H5''	55:II:56:ARG:HH21	1.81	0.45
1:9:611:G:H2'	1:9:612:U:H6	1.81	0.45
1:9:846:G:H3'	52:EE:19:MET:HE2	1.98	0.45
1:9:1208:A:H2'	1:9:1209:A:H8	1.82	0.45
1:9:1623:A:C5	73:SS:132:ARG:HG3	2.52	0.45
1:9:1653:U:H2'	1:9:1654:G:C8	2.52	0.45
1:9:1753:C:H2'	1:9:1754:G:H8	1.80	0.45
1:9:1856:C:H2'	1:9:1857:G:H8	1.82	0.45
4:C:294:LYS:HD3	4:C:294:LYS:HA	1.75	0.45
10:L:62:PRO:O	10:L:63:THR:HG22	2.17	0.45
11:N:6:TYR:CZ	38:i:40:VAL:HG22	2.51	0.45
21:5:18:C:H2'	21:5:19:G:C8	2.52	0.45
21:5:959:G:H4'	21:5:960:A:O5'	2.16	0.45
21:5:1335:G:H2'	21:5:1336:G:H8	1.81	0.45
21:5:1870:C:H2'	21:5:1871:A:H8	1.82	0.45
21:5:1964:A:H3'	21:5:1965:G:C8	2.38	0.45
21:5:1978:C:N4	21:5:1979:A:N3	2.65	0.45
21:5:2456:G:H2'	21:5:2457:G:H8	1.81	0.45
21:5:2615:C:H2'	21:5:2616:C:H6	1.82	0.45
21:5:2656:U:C4	21:5:2657:G:C6	3.05	0.45
24:D:95:TYR:HE1	24:D:199:ILE:HG22	1.80	0.45
50:BB:75:GLN:HG3	50:BB:76:ASN:H	1.81	0.45
52:EE:75:LYS:HB3	52:EE:77:ARG:NH1	2.31	0.45
54:HH:77:VAL:O	54:HH:81:ARG:HG2	2.17	0.45
67:DD:163:PRO:HA	67:DD:166:TYR:CZ	2.51	0.45
72:RR:20:TYR:HB3	72:RR:23:ARG:HD3	1.98	0.45
4:C:284:MET:HE1	28:Q:27:LEU:HD12	1.99	0.45
14:V:85:ARG:HG3	21:5:2846:G:H4'	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:424:U:H2'	21:5:425:U:H6	1.82	0.45
21:5:1756:U:H2'	21:5:1757:U:C6	2.52	0.45
21:5:1975:G:O3'	21:5:1984:A:H4'	2.17	0.45
21:5:1991:A:H3'	21:5:1992:U:C5'	2.46	0.45
21:5:1997:U:H3'	21:5:1999:A:OP2	2.17	0.45
21:5:2727:C:H2'	21:5:2728:U:C6	2.51	0.45
21:5:4699:U:H4'	21:5:4700:A:OP1	2.17	0.45
28:Q:138:LEU:HD23	28:Q:138:LEU:H	1.82	0.45
33:c:28:VAL:HG21	33:c:37:MET:HG3	1.98	0.45
47:1:1495:U:H2'	47:1:1496:A:C2	2.51	0.45
56:JJ:114:VAL:HG13	56:JJ:119:LEU:HD21	1.98	0.45
57:LL:41:GLY:O	57:LL:44:PHE:HB2	2.17	0.45
70:PP:40:ARG:HD3	70:PP:40:ARG:HA	1.41	0.45
70:PP:111:MET:HA	70:PP:114:HIS:CD2	2.52	0.45
71:QQ:110:ASP:O	71:QQ:113:ILE:HG13	2.17	0.45
1:9:1288:U:H2'	1:9:1289:U:H6	1.80	0.45
7:H:90:TYR:HE2	7:H:155:SER:HB3	1.81	0.45
13:R:6:LEU:HD23	13:R:6:LEU:H	1.82	0.45
14:V:27:ASN:HD21	14:V:100:ASP:HB2	1.81	0.45
20:e:58:ILE:HA	21:5:2319:C:O2	2.17	0.45
21:5:260:C:H2'	21:5:261:G:H8	1.81	0.45
21:5:674:G:H2'	21:5:675:C:C6	2.52	0.45
21:5:1341:U:H2'	21:5:1342:A:H8	1.82	0.45
21:5:1345:A:H2'	21:5:1346:C:C6	2.52	0.45
21:5:1973:G:C2	21:5:1994:C:O2	2.70	0.45
21:5:1983:A:N9	21:5:2010:A:H4'	2.32	0.45
21:5:2001:G:C6	21:5:2003:G:C2	3.05	0.45
21:5:2534:C:H2'	21:5:2535:G:C8	2.51	0.45
21:5:4246:G:H2'	21:5:4247:G:H8	1.82	0.45
21:5:4258:C:H2'	21:5:4259:C:C6	2.52	0.45
29:S:83:ARG:HG3	29:S:127:MET:HE1	1.99	0.45
32:Z:54:THR:H	32:Z:57:MET:HE1	1.81	0.45
32:Z:92:ASP:O	32:Z:96:VAL:HG22	2.16	0.45
47:1:1493:G:C6	47:1:1494:C:N3	2.85	0.45
50:BB:62:LEU:HA	50:BB:65:ARG:HD3	1.99	0.45
67:DD:56:GLN:HA	67:DD:59:LEU:HD22	1.99	0.45
70:PP:72:LYS:NZ	70:PP:92:SER:H	2.10	0.45
73:SS:15:VAL:HG22	73:SS:68:ILE:HD11	1.99	0.45
1:9:85:A:H2'	1:9:86:C:H6	1.81	0.45
1:9:581:U:H4'	63:YY:66:GLY:HA2	1.97	0.45
1:9:600:G:H2'	1:9:601:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:G:140:LEU:HD13	6:G:279:TYR:HE2	1.81	0.45
9:J:24:ILE:HG13	9:J:128:LEU:HA	1.98	0.45
10:L:16:LYS:HE2	21:5:46:U:OP1	2.17	0.45
11:N:125:SER:HB2	21:5:3937:C:H1'	1.98	0.45
17:Y:16:LYS:HD2	23:8:24:G:P	2.57	0.45
21:5:1817:U:H2'	21:5:1818:G:C4	2.52	0.45
21:5:2730:U:H2'	21:5:2731:C:C6	2.52	0.45
25:F:103:LYS:O	25:F:107:VAL:HG12	2.16	0.45
37:h:30:GLN:O	37:h:33:VAL:HG12	2.17	0.45
37:h:64:THR:O	37:h:67:GLU:HG3	2.16	0.45
47:1:1428:C:H2'	47:1:1429:A:C8	2.51	0.45
48:K:36:ILE:HD11	48:K:202:ARG:H	1.82	0.45
49:AA:74:VAL:HG13	49:AA:121:LEU:HD12	1.98	0.45
55:II:150:ASP:O	55:II:154:LYS:HG2	2.17	0.45
59:OO:21:VAL:HG22	59:OO:24:GLY:H	1.80	0.45
71:QQ:85:ARG:O	71:QQ:88:ILE:HG13	2.17	0.45
1:9:11:A:H5'	51:CC:113:GLN:NE2	2.32	0.45
1:9:17:C:H2'	1:9:18:C:H6	1.82	0.45
1:9:439:A:H2'	1:9:440:G:C8	2.51	0.45
1:9:682:U:OP1	62:XX:7:LEU:HG	2.17	0.45
1:9:1661:A:H8	78:dd:14:PHE:HB2	1.81	0.45
1:9:1696:C:HO2'	1:9:1697:A:P	2.40	0.45
3:B:28:LYS:HE3	21:5:4581:G:H5'	1.99	0.45
3:B:47:LEU:H	3:B:84:MET:HE3	1.82	0.45
21:5:419:A:N6	23:8:15:G:H1'	2.32	0.45
21:5:676:C:H2'	21:5:677:G:C8	2.52	0.45
21:5:951:G:H2'	21:5:952:G:C8	2.52	0.45
21:5:1764:G:H2'	21:5:1767:A:H62	1.82	0.45
21:5:1963:C:N4	21:5:1964:A:C2	2.85	0.45
21:5:1998:A:C6	21:5:1999:A:C6	3.05	0.45
21:5:2028:C:H2'	21:5:2029:A:H8	1.82	0.45
21:5:2835:A:H2'	21:5:2836:A:C8	2.52	0.45
21:5:3920:U:H2'	21:5:3921:U:C6	2.51	0.45
22:7:77:A:H62	22:7:99:G:H21	1.65	0.45
23:8:19:C:H2'	23:8:20:A:C8	2.52	0.45
36:g:3:GLN:HE21	36:g:3:GLN:HB3	1.62	0.45
37:h:31:LEU:HD13	37:h:43:LYS:HB3	1.98	0.45
47:1:1493:G:C5	47:1:1494:C:N3	2.85	0.45
48:K:37:SER:HB3	48:K:202:ARG:HG3	1.99	0.45
65:bb:24:LEU:HD23	65:bb:24:LEU:H	1.82	0.45
68:FF:86:LYS:H	68:FF:86:LYS:HE2	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:dd:31:ILE:HG22	78:dd:33:LYS:HG2	1.99	0.45
1:9:457:C:H2'	1:9:458:A:C8	2.45	0.44
6:G:201:GLU:HA	6:G:230:MET:HE1	1.99	0.44
21:5:41:C:O2'	21:5:42:A:H5'	2.17	0.44
21:5:310:G:H2'	21:5:311:G:C8	2.51	0.44
21:5:975:C:H41	21:5:1281:G:H21	1.63	0.44
21:5:1794:A:H5''	21:5:4214:A:H61	1.81	0.44
21:5:2543:A:H2	21:5:2773:G:H22	1.64	0.44
21:5:2624:G:H2'	21:5:2625:U:H6	1.81	0.44
21:5:4178:A:H2'	21:5:4179:G:C8	2.52	0.44
21:5:4970:C:C2	21:5:4971:A:C8	3.05	0.44
23:8:71:A:H4'	23:8:72:A:O5'	2.17	0.44
25:F:226:PHE:HA	25:F:230:GLY:C	2.42	0.44
29:S:164:LYS:HB3	29:S:164:LYS:HE3	1.87	0.44
34:d:26:THR:HG22	34:d:85:ARG:HG2	1.99	0.44
35:f:93:PRO:HB2	35:f:95:LYS:HG2	1.99	0.44
39:j:76:HIS:CG	39:j:79:ARG:HH21	2.35	0.44
45:p:85:ARG:O	45:p:88:GLU:HG3	2.17	0.44
61:WW:25:VAL:HG22	61:WW:63:VAL:HB	1.98	0.44
67:DD:70:THR:HG22	67:DD:86:LEU:HD13	1.99	0.44
70:PP:49:LEU:HD12	70:PP:53:GLN:HE21	1.81	0.44
70:PP:114:HIS:HB2	70:PP:119:PHE:CE2	2.52	0.44
73:SS:109:GLU:O	73:SS:112:GLU:HG3	2.17	0.44
1:9:152:U:H2'	1:9:153:G:C8	2.53	0.44
1:9:1605:G:H1'	1:9:1634:A:H61	1.82	0.44
1:9:1716:C:H2'	1:9:1717:C:C6	2.52	0.44
4:C:322:LEU:HA	4:C:325:MET:HB3	1.99	0.44
9:J:117:ILE:H	9:J:117:ILE:HG13	1.64	0.44
17:Y:121:ARG:HH21	21:5:195:C:H1'	1.83	0.44
21:5:1084:C:H2'	21:5:1085:C:C6	2.53	0.44
21:5:1557:C:H2'	21:5:1558:A:C8	2.52	0.44
21:5:2456:G:H2'	21:5:2457:G:C8	2.52	0.44
21:5:3610:A:H2'	21:5:3611:A:C8	2.51	0.44
21:5:3652:A:H2'	21:5:3653:A:C5	2.53	0.44
21:5:4122:G:N2	32:Z:135:ARG:HB2	2.32	0.44
35:f:78:HIS:HB2	35:f:85:ARG:HG3	1.97	0.44
47:1:1336:U:O2'	47:1:1337:A:H5'	2.18	0.44
49:AA:5:LEU:HD21	60:VV:41:LYS:HA	2.00	0.44
49:AA:37:TYR:CD1	49:AA:53:ARG:HD2	2.51	0.44
51:CC:212:LYS:HA	51:CC:215:MET:HG2	1.98	0.44
56:JJ:117:LEU:HD12	56:JJ:119:LEU:HD22	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:JJ:164:PRO:HB3	56:JJ:170:PRO:HA	1.98	0.44
62:XX:49:GLY:O	62:XX:99:GLU:HA	2.16	0.44
66:ee:101:ARG:HH21	66:ee:105:ALA:HB1	1.81	0.44
69:KK:26:ASP:HB3	69:KK:29:MET:SD	2.57	0.44
70:PP:15:PHE:CE2	70:PP:112:ILE:HD12	2.52	0.44
1:9:155:G:H2'	1:9:156:G:C8	2.53	0.44
1:9:491:C:OP2	63:YY:104:ARG:HB3	2.18	0.44
1:9:947:G:H2'	1:9:948:C:C6	2.52	0.44
1:9:1232:U:H2'	1:9:1233:G:H8	1.82	0.44
2:A:186:TYR:HB2	2:A:196:TRP:CZ3	2.52	0.44
12:O:32:LYS:HD2	12:O:101:ARG:HG3	1.99	0.44
17:Y:11:ARG:HG3	21:5:229:G:H5''	1.98	0.44
20:e:24:GLN:HE21	21:5:2347:A:H61	1.64	0.44
21:5:650:C:H2'	21:5:651:C:H6	1.82	0.44
21:5:1398:A:H2'	21:5:1399:G:O4'	2.17	0.44
21:5:1976:G:O6	21:5:2002:A:H2'	2.17	0.44
21:5:3795:A:H2'	21:5:3796:U:C6	2.52	0.44
21:5:3910:C:H2'	21:5:3911:C:C6	2.53	0.44
21:5:4319:C:H2'	21:5:4320:G:H8	1.81	0.44
35:f:104:MET:HG2	35:f:106:TYR:CZ	2.52	0.44
46:r:52:GLU:HB2	46:r:61:VAL:HG23	2.00	0.44
63:YY:37:LYS:HB3	63:YY:41:ARG:NH1	2.33	0.44
70:PP:79:HIS:CD2	70:PP:97:TYR:CG	3.05	0.44
75:UU:60:THR:HG22	75:UU:83:ARG:HD3	2.00	0.44
1:9:15:U:H2'	1:9:16:G:O4'	2.17	0.44
3:B:99:LEU:HD22	3:B:99:LEU:HA	1.90	0.44
3:B:229:LYS:HG3	3:B:272:LYS:HD3	1.99	0.44
4:C:266:THR:HG23	4:C:268:ARG:H	1.82	0.44
10:L:12:PRO:HB2	10:L:14:PHE:HD2	1.83	0.44
13:R:172:ARG:HH22	13:R:173:ARG:HH21	1.66	0.44
21:5:731:G:H2'	21:5:732:A:C8	2.53	0.44
21:5:1330:A:H5''	21:5:3865:A:H5''	2.00	0.44
21:5:1361:G:H2'	21:5:1362:G:H8	1.81	0.44
21:5:1474:C:H2'	21:5:1475:G:C8	2.53	0.44
21:5:1479:G:H2'	21:5:1480:C:C6	2.53	0.44
21:5:1509:C:H2'	21:5:1510:G:C8	2.52	0.44
21:5:1552:G:H1'	21:5:1575:A:H61	1.82	0.44
21:5:1983:A:C4	21:5:2010:A:H4'	2.52	0.44
21:5:2419:C:H2'	21:5:2420:A:H8	1.83	0.44
21:5:4510:A:C2	21:5:4592:C:H4'	2.53	0.44
21:5:4538:G:H2'	21:5:4539:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:F:24:PHE:HA	25:F:27:LEU:HD23	1.99	0.44
31:U:79:SER:HB3	31:U:82:TYR:HB3	1.98	0.44
59:OO:129:ILE:HB	64:aa:65:PRO:HG3	1.98	0.44
70:PP:18:ARG:HA	73:SS:89:ASP:O	2.18	0.44
70:PP:87:PRO:O	70:PP:90:VAL:HB	2.17	0.44
71:QQ:14:GLY:HA2	71:QQ:90:LYS:HZ3	1.82	0.44
71:QQ:14:GLY:HA2	71:QQ:90:LYS:NZ	2.32	0.44
72:RR:33:ARG:O	72:RR:36:GLU:HG2	2.17	0.44
1:9:610:G:H2'	1:9:611:G:C8	2.53	0.44
1:9:895:G:H2'	1:9:896:U:C6	2.53	0.44
1:9:1069:U:H2'	1:9:1070:A:C8	2.52	0.44
1:9:1129:G:H5''	65:bb:22:LYS:HE3	1.99	0.44
1:9:1201:U:H2'	1:9:1202:U:H6	1.83	0.44
1:9:1520:G:N3	1:9:1520:G:H2'	2.33	0.44
1:9:1627:C:H2'	1:9:1628:C:H6	1.83	0.44
1:9:1693:G:N2	1:9:1834:A:H8	2.16	0.44
6:G:229:LYS:HG2	38:i:43:MET:HE1	1.99	0.44
14:V:99:GLU:OE1	15:W:23:ARG:HA	2.17	0.44
21:5:464:G:H2'	21:5:465:G:C8	2.52	0.44
21:5:962:C:H2'	21:5:963:G:C8	2.52	0.44
21:5:1486:C:H2'	21:5:1487:G:H8	1.81	0.44
21:5:1739:G:H2'	21:5:1740:C:C6	2.53	0.44
21:5:1972:G:H2'	21:5:1973:G:C8	2.53	0.44
21:5:1977:C:C4	21:5:1978:C:N4	2.86	0.44
21:5:2413:U:H2'	21:5:2414:G:C8	2.53	0.44
21:5:2753:G:OP2	21:5:2753:G:H8	2.00	0.44
21:5:2771:G:H2'	21:5:2772:C:O4'	2.18	0.44
21:5:2780:C:H2'	21:5:2781:G:H8	1.83	0.44
21:5:3685:C:H2'	21:5:3686:G:C8	2.51	0.44
21:5:3893:C:H2'	21:5:3894:A:H8	1.82	0.44
21:5:4094:G:H2'	21:5:4095:G:H8	1.80	0.44
21:5:4178:A:H2'	21:5:4179:G:H8	1.83	0.44
21:5:4918:C:H2'	21:5:4919:G:N3	2.32	0.44
22:7:58:A:H2'	22:7:59:G:C8	2.52	0.44
34:d:56:GLU:HG3	34:d:57:MET:SD	2.58	0.44
51:CC:135:GLY:HA2	51:CC:165:VAL:HG22	2.00	0.44
59:OO:146:ARG:O	64:aa:28:ARG:HA	2.17	0.44
69:KK:6:LYS:O	69:KK:9:ILE:HG13	2.17	0.44
70:PP:53:GLN:O	70:PP:54:HIS:C	2.59	0.44
70:PP:75:VAL:HA	70:PP:93:MET:C	2.43	0.44
1:9:322:C:H3'	1:9:323:C:H5'	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1298:G:N7	70:PP:79:HIS:CG	2.85	0.44
1:9:1447:G:H2'	1:9:1448:A:C8	2.53	0.44
1:9:1457:U:H2'	1:9:1458:G:H8	1.82	0.44
1:9:1571:G:H2'	1:9:1572:C:C6	2.53	0.44
1:9:1651:A:H2'	1:9:1652:G:H8	1.83	0.44
2:A:135:THR:HG22	2:A:149:LYS:HB3	2.00	0.44
5:E:279:ALA:HB1	35:f:3:GLY:HA3	2.00	0.44
7:H:82:LYS:NZ	7:H:86:LEU:HB2	2.33	0.44
10:L:36:ARG:HH22	21:5:1364:U:H5''	1.82	0.44
17:Y:37:GLU:HG2	17:Y:38:LEU:HD22	2.00	0.44
17:Y:121:ARG:HH21	21:5:195:C:C1'	2.30	0.44
18:a:113:GLY:O	21:5:1397:A:H5''	2.17	0.44
21:5:195:C:H2'	21:5:196:C:C6	2.52	0.44
21:5:306:A:H2'	21:5:307:A:C8	2.52	0.44
21:5:422:C:H2'	21:5:423:G:H8	1.83	0.44
21:5:639:U:H2'	21:5:640:C:H6	1.81	0.44
21:5:1093:C:H2'	21:5:1094:G:C8	2.52	0.44
21:5:1974:U:C6	21:5:1974:U:H5'	2.53	0.44
21:5:2000:G:H5''	21:5:2018:C:H1'	1.98	0.44
21:5:2317:C:H2'	21:5:2318:G:C8	2.53	0.44
21:5:4122:G:H21	32:Z:135:ARG:HB2	1.81	0.44
21:5:4263:C:H2'	21:5:4264:G:O4'	2.17	0.44
21:5:4538:G:H2'	21:5:4539:U:H6	1.82	0.44
21:5:4691:A:H2'	21:5:4692:A:O4'	2.18	0.44
30:T:67:VAL:HA	30:T:72:VAL:HG12	1.99	0.44
44:o:68:LEU:HD22	44:o:85:ILE:HD11	2.00	0.44
48:K:155:ILE:HD12	48:K:155:ILE:HA	1.91	0.44
52:EE:175:PHE:HE2	52:EE:225:ILE:HG21	1.83	0.44
69:KK:10:ALA:O	69:KK:13:GLU:HG3	2.16	0.44
70:PP:97:TYR:HD1	70:PP:102:PHE:CD1	2.36	0.44
1:9:106:C:H2'	1:9:107:A:C8	2.49	0.44
1:9:1049:A:N7	1:9:1069:U:C2	2.86	0.44
3:B:254:ILE:HG23	3:B:266:VAL:HG21	2.00	0.44
6:G:87:LYS:HE3	21:5:4128:A:H2	1.82	0.44
6:G:112:ARG:HD3	6:G:112:ARG:HA	1.83	0.44
21:5:504:G:H2'	21:5:505:G:C8	2.52	0.44
21:5:981:C:H42	21:5:1274:A:H61	1.65	0.44
21:5:1879:C:H2'	21:5:1880:G:O4'	2.18	0.44
21:5:1981:G:N2	21:5:2009:A:H1'	2.33	0.44
21:5:2340:C:H2'	21:5:2341:A:C8	2.53	0.44
21:5:2555:G:H2'	21:5:2556:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2730:U:H2'	21:5:2731:C:H6	1.82	0.44
21:5:3872:A:H2'	21:5:3873:G:H8	1.82	0.44
22:7:92:C:H2'	22:7:93:G:C8	2.52	0.44
49:AA:121:LEU:HA	49:AA:143:PRO:HG2	1.99	0.44
66:ee:113:ARG:HH22	66:ee:128:PRO:HB3	1.83	0.44
1:9:436:G:C6	1:9:437:G:C6	3.06	0.44
1:9:530:U:H3'	1:9:531:A:H8	1.81	0.44
3:B:220:ILE:HG12	3:B:278:THR:HG23	2.00	0.44
6:G:212:HIS:ND1	6:G:238:LYS:HA	2.33	0.44
8:I:116:ARG:HG3	21:5:4195:G:OP1	2.17	0.44
8:I:213:HIS:HE1	24:D:287:PHE:CE2	2.36	0.44
18:a:12:ARG:HD3	18:a:12:ARG:HA	1.86	0.44
21:5:1402:C:H2'	21:5:1403:G:C8	2.51	0.44
21:5:1744:U:H2'	21:5:1745:G:H8	1.82	0.44
21:5:2358:G:H2'	21:5:2359:U:O4'	2.18	0.44
21:5:2446:C:H2'	21:5:2447:U:C6	2.53	0.44
25:F:225:HIS:HE1	25:F:233:GLY:HA3	1.81	0.44
47:1:1379:U:H2'	47:1:1380:G:C8	2.53	0.44
70:PP:82:ASP:O	70:PP:83:MET:C	2.60	0.44
72:RR:60:ARG:HA	72:RR:63:ARG:HG2	1.99	0.44
73:SS:61:GLU:O	73:SS:64:VAL:HG12	2.18	0.44
1:9:974:C:H2'	1:9:975:G:H8	1.82	0.44
1:9:1589:A:H2'	1:9:1590:C:C6	2.53	0.44
2:A:209:HIS:NE2	2:A:235:VAL:HG11	2.32	0.44
6:G:99:GLN:HE21	21:5:4087:G:H1	1.65	0.44
8:I:54:SER:HA	8:I:163:GLN:HA	2.00	0.44
16:X:47:ARG:HD3	21:5:2474:G:C6	2.53	0.44
21:5:516:C:H2'	21:5:517:C:H6	1.83	0.44
21:5:1490:G:H2'	21:5:1491:A:H8	1.82	0.44
21:5:1998:A:H2'	21:5:1999:A:C8	2.53	0.44
21:5:2476:G:H2'	21:5:2477:A:C8	2.53	0.44
21:5:3870:C:H2'	21:5:3871:A:C8	2.53	0.44
21:5:3941:G:H2'	21:5:3942:A:C8	2.52	0.44
21:5:4617:G:H2'	21:5:4618:G:C8	2.53	0.44
21:5:4897:G:H2'	21:5:4898:G:C8	2.53	0.44
22:7:18:C:H2'	22:7:19:C:H6	1.82	0.44
22:7:112:U:H2'	22:7:113:G:H8	1.82	0.44
30:T:39:ILE:HD11	30:T:102:ARG:HB2	2.00	0.44
36:g:37:LYS:HB2	36:g:60:ARG:NH1	2.33	0.44
39:j:33:THR:HG22	39:j:34:CYS:H	1.83	0.44
39:j:70:VAL:HG12	39:j:73:ARG:HH21	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:AA:108:PHE:HD2	49:AA:136:GLU:HB3	1.83	0.44
51:CC:66:LEU:HD23	51:CC:66:LEU:H	1.82	0.44
52:EE:222:LEU:HD12	52:EE:225:ILE:HD12	1.99	0.44
55:II:13:LYS:HE2	57:LL:137:THR:HG21	1.99	0.44
55:II:65:PHE:HA	55:II:187:GLY:O	2.17	0.44
57:LL:59:LYS:HB3	57:LL:134:LEU:HD13	1.99	0.44
63:YY:111:LYS:HA	63:YY:114:MET:SD	2.58	0.44
1:9:146:G:H1	1:9:173:A:N6	2.14	0.43
1:9:617:G:H4'	62:XX:88:ASP:CG	2.43	0.43
1:9:927:C:H2'	1:9:928:G:C8	2.53	0.43
1:9:1217:A:H2'	1:9:1218:C:C6	2.53	0.43
1:9:1288:U:H2'	1:9:1289:U:C6	2.53	0.43
1:9:1372:U:H5''	1:9:1386:A:H2	1.82	0.43
1:9:1373:C:H2'	1:9:1374:C:C6	2.53	0.43
1:9:1611:G:H4'	73:SS:86:ARG:HH22	1.82	0.43
4:C:336:ARG:O	4:C:340:ILE:HD13	2.18	0.43
8:I:86:HIS:HB3	8:I:139:ARG:CG	2.48	0.43
10:L:182:LEU:O	10:L:186:ARG:HG3	2.18	0.43
11:N:178:HIS:HA	11:N:181:HIS:NE2	2.33	0.43
21:5:274:C:H2'	21:5:275:C:C6	2.54	0.43
21:5:1503:A:H4'	21:5:1504:G:H5'	2.00	0.43
21:5:3717:A:H2'	21:5:3718:A:H8	1.82	0.43
21:5:4174:U:H2'	21:5:4175:G:C8	2.53	0.43
22:7:18:C:H2'	22:7:19:C:C6	2.53	0.43
28:Q:146:ARG:NH2	28:Q:148:VAL:HG21	2.33	0.43
49:AA:205:ARG:HB2	72:RR:81:ARG:HH12	1.83	0.43
50:BB:71:LEU:HD12	50:BB:74:LEU:HD11	2.00	0.43
68:FF:44:LYS:H	68:FF:44:LYS:HD3	1.82	0.43
1:9:27:A:H2'	1:9:28:U:C6	2.53	0.43
1:9:418:A:H3'	1:9:419:G:H8	1.83	0.43
1:9:847:A:H4'	52:EE:106:LYS:NZ	2.33	0.43
2:A:225:ILE:HD12	2:A:234:LYS:HA	2.00	0.43
3:B:218:ASP:OD1	3:B:280:ILE:HD12	2.18	0.43
11:N:45:PRO:O	11:N:49:ARG:HG3	2.18	0.43
13:R:115:ILE:HG23	13:R:119:MET:HE3	2.01	0.43
21:5:662:C:H2'	21:5:663:G:C8	2.52	0.43
21:5:963:G:H2'	21:5:964:A:H8	1.83	0.43
21:5:1612:G:H2'	21:5:1612:G:N3	2.33	0.43
21:5:1980:U:H4'	21:5:1987:C:N4	2.32	0.43
21:5:2414:G:H2'	21:5:2415:U:H6	1.83	0.43
21:5:2417:A:H61	21:5:2430:C:H1'	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2480:G:H2'	21:5:2481:G:C8	2.53	0.43
21:5:2657:G:H2'	21:5:2658:G:C4	2.53	0.43
21:5:4305:G:H1	30:T:87:LYS:HZ2	1.64	0.43
21:5:4460:U:H2'	21:5:4461:C:C6	2.53	0.43
21:5:4479:A:H2'	21:5:4480:A:O4'	2.19	0.43
21:5:4573:G:N2	21:5:4722:G:H21	2.16	0.43
21:5:4690:G:O6	21:5:4698:C:H5''	2.18	0.43
24:D:276:LYS:HA	24:D:276:LYS:HD3	1.62	0.43
25:F:132:LEU:HA	25:F:135:VAL:HG22	1.99	0.43
36:g:25:THR:HG23	36:g:27:GLY:N	2.32	0.43
47:1:1477:G:H4'	47:1:1478:C:OP1	2.18	0.43
48:K:176:ASP:O	48:K:180:VAL:HG12	2.18	0.43
63:YY:43:LYS:O	63:YY:46:LYS:HG3	2.17	0.43
65:bb:35:VAL:HG22	65:bb:79:PHE:HB2	2.00	0.43
70:PP:18:ARG:HD2	73:SS:88:LYS:HG2	1.99	0.43
70:PP:79:HIS:HD2	70:PP:102:PHE:CZ	2.36	0.43
71:QQ:130:LYS:HG3	71:QQ:137:ALA:HA	2.00	0.43
77:cc:31:ARG:NE	77:cc:43:ILE:HG23	2.29	0.43
3:B:52:GLY:HA2	3:B:341:LYS:HE3	2.01	0.43
12:O:87:MET:HE3	21:5:1913:C:H1'	2.00	0.43
18:a:98:ALA:HB1	18:a:122:VAL:HA	2.01	0.43
21:5:638:G:H2'	21:5:639:U:C6	2.53	0.43
21:5:1786:A:H2'	21:5:1789:C:C5	2.54	0.43
21:5:1964:A:C8	21:5:4694:G:N3	2.86	0.43
21:5:1970:A:H4'	21:5:2000:G:H1'	1.99	0.43
21:5:1976:G:C4	21:5:2002:A:C6	3.06	0.43
21:5:1981:G:H3'	21:5:1982:G:C8	2.52	0.43
21:5:2000:G:H3'	21:5:2000:G:N3	2.33	0.43
21:5:2477:A:H2'	21:5:2478:C:C6	2.52	0.43
21:5:2519:U:H1'	21:5:2520:C:C6	2.54	0.43
21:5:4524:G:O2'	21:5:4525:C:H5'	2.18	0.43
21:5:4761:G:H2'	21:5:4762:A:C8	2.53	0.43
21:5:4922:C:H2'	21:5:4923:U:C6	2.53	0.43
24:D:171:LEU:HB3	24:D:173:ILE:HG13	1.99	0.43
25:F:178:LEU:HD11	25:F:206:PHE:CD2	2.52	0.43
34:d:24:GLU:HB3	34:d:85:ARG:CZ	2.49	0.43
54:HH:8:ILE:HG12	54:HH:16:PRO:HB3	2.01	0.43
70:PP:57:LEU:HB3	70:PP:61:ARG:HH21	1.82	0.43
70:PP:93:MET:SD	70:PP:106:GLU:HA	2.58	0.43
70:PP:114:HIS:HD2	70:PP:119:PHE:HZ	1.64	0.43
73:SS:69:THR:HA	73:SS:72:GLN:HG2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:85:A:H2'	1:9:86:C:C6	2.53	0.43
1:9:146:G:O2'	1:9:147:A:H8	2.01	0.43
1:9:483:C:H5''	62:XX:48:LYS:HG3	2.00	0.43
1:9:626:G:H3'	1:9:627:U:H5'	1.99	0.43
1:9:649:U:H2'	1:9:650:A:H8	1.83	0.43
1:9:651:U:H2'	1:9:652:U:C6	2.53	0.43
1:9:653:A:H2'	1:9:654:A:O4'	2.18	0.43
1:9:931:C:H2'	1:9:932:G:C8	2.54	0.43
8:I:200:ILE:H	8:I:200:ILE:HG13	1.70	0.43
11:N:181:HIS:CD2	21:5:99:A:H4'	2.53	0.43
16:X:119:ILE:HD11	16:X:140:LEU:HG	1.99	0.43
21:5:4:G:H2'	21:5:5:A:H8	1.81	0.43
21:5:58:G:H4'	21:5:59:A:H4'	2.00	0.43
21:5:275:C:H4'	21:5:276:C:OP1	2.18	0.43
21:5:277:G:N7	38:i:30:ARG:HD2	2.34	0.43
21:5:426:A:H2'	21:5:427:A:C8	2.53	0.43
21:5:469:C:H2'	21:5:470:A:C8	2.53	0.43
21:5:1341:U:H2'	21:5:1342:A:C8	2.53	0.43
21:5:1477:C:H2'	21:5:1478:C:C6	2.54	0.43
21:5:2102:G:C8	25:F:175:ALA:HB1	2.53	0.43
21:5:2419:C:P	27:P:23:ARG:HH22	2.41	0.43
21:5:2447:U:H2'	21:5:2448:G:H8	1.82	0.43
21:5:2624:G:H2'	21:5:2625:U:C6	2.52	0.43
21:5:4341:C:N4	21:5:4371:G:H1	2.16	0.43
44:o:9:ARG:HA	44:o:20:PRO:HA	2.01	0.43
50:BB:48:LEU:HB2	59:OO:51:GLU:HG3	2.00	0.43
70:PP:90:VAL:HG21	70:PP:109:PRO:HA	2.00	0.43
73:SS:68:ILE:O	73:SS:71:MET:HG3	2.18	0.43
1:9:1462:U:H2'	1:9:1464:C:C4	2.54	0.43
10:L:88:LYS:O	10:L:92:ARG:HG2	2.17	0.43
21:5:1076:C:H2'	21:5:1077:C:C6	2.53	0.43
21:5:1775:A:H3'	21:5:1776:A:H8	1.84	0.43
21:5:1825:A:H2'	21:5:1826:G:C8	2.53	0.43
21:5:1970:A:HO2'	21:5:2017:A:N6	2.15	0.43
21:5:1976:G:C6	21:5:1977:C:C4	3.06	0.43
21:5:1986:U:O2'	21:5:2007:G:N1	2.52	0.43
21:5:2108:G:H2'	21:5:2109:A:H8	1.84	0.43
21:5:2500:U:H2'	21:5:2501:C:H6	1.82	0.43
21:5:3861:A:H2'	21:5:3862:A:H8	1.83	0.43
21:5:3927:U:H2'	21:5:3928:A:C8	2.53	0.43
21:5:4253:A:H5'	21:5:4254:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:8:153:C:H2'	23:8:154:G:C8	2.54	0.43
30:T:136:ARG:HH11	30:T:139:HIS:HE1	1.66	0.43
33:c:104:ILE:HD12	33:c:105:ILE:N	2.34	0.43
38:i:70:LEU:HD13	38:i:70:LEU:HA	1.87	0.43
47:1:1496:A:C5	47:1:1497:C:H5	2.36	0.43
51:CC:93:ILE:H	51:CC:93:ILE:HD12	1.84	0.43
51:CC:241:PHE:O	51:CC:244:ILE:HG13	2.19	0.43
57:LL:16:ILE:H	57:LL:16:ILE:HG13	1.64	0.43
63:YY:88:LYS:HE2	63:YY:88:LYS:HB2	1.83	0.43
70:PP:28:MET:HB2	70:PP:32:GLN:NE2	2.33	0.43
70:PP:57:LEU:HB3	70:PP:61:ARG:NE	2.26	0.43
72:RR:91:LEU:HD23	72:RR:91:LEU:H	1.82	0.43
1:9:92:A:N6	1:9:444:G:H1'	2.33	0.43
1:9:128:U:H3'	1:9:129:C:H6	1.84	0.43
1:9:894:G:H2'	1:9:895:G:C8	2.52	0.43
2:A:147:ARG:HE	2:A:155:LYS:HD3	1.82	0.43
3:B:100:ARG:NH1	21:5:4723:A:H4'	2.34	0.43
3:B:285:TYR:CE1	3:B:363:ILE:HG21	2.53	0.43
7:H:91:LYS:HG2	7:H:145:VAL:HG22	2.01	0.43
8:I:150:GLU:O	8:I:153:ARG:HG3	2.18	0.43
9:J:39:VAL:HA	9:J:42:GLN:OE1	2.19	0.43
9:J:147:ARG:NH2	24:D:27:LYS:HG3	2.33	0.43
12:O:60:LYS:HE3	21:5:2046:G:N1	2.33	0.43
13:R:28:GLU:HB3	13:R:31:GLU:CD	2.44	0.43
21:5:325:U:H2'	21:5:326:C:H6	1.84	0.43
21:5:924:C:N4	21:5:927:G:H5''	2.34	0.43
21:5:929:A:H3'	21:5:930:G:H8	1.84	0.43
21:5:1802:A:H1'	30:T:130:ARG:HH12	1.82	0.43
21:5:1888:A:N7	21:5:2049:G:H5'	2.33	0.43
21:5:1969:G:N1	21:5:1970:A:H1'	2.34	0.43
21:5:3661:G:H4'	21:5:3662:A:H5'	2.01	0.43
21:5:4312:U:H2'	21:5:4313:A:H8	1.84	0.43
21:5:4573:G:H2'	21:5:4574:U:C6	2.54	0.43
21:5:4864:U:H2'	21:5:4865:C:C6	2.54	0.43
23:8:9:A:H2'	23:8:10:G:H8	1.84	0.43
28:Q:35:LEU:HD23	28:Q:35:LEU:HA	1.89	0.43
29:S:15:ARG:NH1	29:S:25:PRO:HD2	2.33	0.43
33:c:17:ARG:HB3	33:c:104:ILE:HG23	2.01	0.43
38:i:90:LEU:HD12	38:i:90:LEU:HA	1.89	0.43
47:1:1493:G:N1	47:1:1494:C:C2	2.87	0.43
49:AA:77:ILE:HG12	49:AA:99:ILE:HB	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:EE:105:THR:HG23	52:EE:106:LYS:HG3	2.00	0.43
54:HH:46:THR:HG23	54:HH:65:PRO:HG3	1.99	0.43
56:JJ:60:LEU:HD12	56:JJ:70:ARG:HG2	2.01	0.43
57:LL:79:LYS:HE3	57:LL:79:LYS:HB3	1.78	0.43
62:XX:8:ARG:O	62:XX:8:ARG:HG2	2.18	0.43
62:XX:50:ILE:C	62:XX:72:VAL:HG23	2.44	0.43
70:PP:59:ARG:O	70:PP:60:LEU:C	2.62	0.43
76:ZZ:84:ALA:O	76:ZZ:88:LEU:HG	2.18	0.43
1:9:54:A:H5'	63:YY:108:LYS:NZ	2.33	0.43
1:9:220:U:H2'	1:9:221:A:C8	2.53	0.43
1:9:347:G:H2'	1:9:348:A:H8	1.84	0.43
1:9:563:G:H5'	56:JJ:133:ARG:NH2	2.34	0.43
1:9:1203:G:N1	1:9:1697:A:C6	2.87	0.43
1:9:1390:U:H2'	1:9:1391:C:C6	2.54	0.43
1:9:1865:C:OP1	64:aa:87:ARG:HD3	2.19	0.43
3:B:185:VAL:HB	3:B:193:LYS:HD3	2.00	0.43
9:J:29:SER:HA	9:J:33:LEU:HD12	2.00	0.43
21:5:310:G:H2'	21:5:311:G:H8	1.83	0.43
21:5:1884:C:H2'	21:5:1885:G:C8	2.50	0.43
21:5:1971:U:OP2	21:5:2000:G:O2'	2.36	0.43
25:F:118:ASN:HD22	25:F:118:ASN:HA	1.67	0.43
34:d:32:ARG:HB3	34:d:48:GLU:CD	2.44	0.43
49:AA:4:ALA:N	60:VV:80:SER:HB2	2.34	0.43
52:EE:148:ARG:H	52:EE:148:ARG:HG2	1.69	0.43
63:YY:88:LYS:H	63:YY:88:LYS:HD3	1.83	0.43
70:PP:42:ARG:O	70:PP:46:SER:N	2.52	0.43
1:9:311:C:H5''	1:9:312:G:H5'	1.99	0.43
1:9:566:U:H2'	1:9:567:C:O4'	2.19	0.43
1:9:677:G:N2	1:9:1028:A:H62	2.15	0.43
1:9:1057:C:H5'	47:1:1487:A:H61	1.83	0.43
1:9:1139:C:H3'	1:9:1140:G:H8	1.84	0.43
1:9:1454:A:C2	1:9:1476:A:H1'	2.53	0.43
1:9:1633:A:H2'	1:9:1634:A:C8	2.54	0.43
1:9:1779:G:H2'	1:9:1780:G:C8	2.53	0.43
1:9:1795:G:H2'	1:9:1796:G:H8	1.84	0.43
3:B:189:THR:HG23	3:B:192:GLU:H	1.83	0.43
6:G:150:LYS:HE3	6:G:150:LYS:HB3	1.77	0.43
21:5:643:C:H2'	21:5:644:G:C8	2.54	0.43
21:5:1572:U:C4	21:5:1573:G:C6	3.07	0.43
21:5:1669:A:H4'	21:5:1685:G:N2	2.33	0.43
21:5:1766:A:H2'	21:5:1767:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1982:G:H2'	21:5:1983:A:H8	1.84	0.43
21:5:1983:A:O2'	21:5:1986:U:OP2	2.35	0.43
21:5:3920:U:H2'	21:5:3921:U:H6	1.84	0.43
21:5:4736:C:O2'	21:5:4737:G:H5'	2.19	0.43
21:5:5019:A:H2'	21:5:5020:G:H8	1.84	0.43
27:P:22:LEU:HD12	27:P:146:ILE:HD11	2.01	0.43
31:U:107:LYS:O	31:U:108:GLU:HG3	2.18	0.43
34:d:20:VAL:HA	34:d:90:ARG:O	2.18	0.43
34:d:26:THR:HG23	34:d:85:ARG:NH1	2.33	0.43
43:n:2:ARG:HD3	43:n:5:TRP:HE1	1.84	0.43
52:EE:251:GLU:O	52:EE:254:LYS:HG3	2.19	0.43
53:GG:162:LEU:HD11	53:GG:172:LYS:HB2	2.00	0.43
58:NN:19:ARG:HH22	58:NN:23:PRO:HA	1.83	0.43
61:WW:31:SER:O	61:WW:34:ILE:HG13	2.18	0.43
72:RR:57:LEU:HD23	72:RR:60:ARG:HD3	2.01	0.43
1:9:1483:A:H4'	67:DD:160:SER:HB3	2.00	0.43
1:9:1491:G:H2'	1:9:1492:U:C6	2.53	0.43
1:9:1522:A:C5	70:PP:128:HIS:HB3	2.54	0.43
1:9:1568:C:H4'	74:TT:41:LYS:HE3	1.99	0.43
3:B:336:CYS:SG	21:5:4625:C:H4'	2.59	0.43
10:L:91:ALA:HA	10:L:94:ILE:HG12	2.00	0.43
10:L:186:ARG:HE	38:i:9:VAL:HG11	1.83	0.43
13:R:78:ILE:H	13:R:78:ILE:HG13	1.65	0.43
16:X:121:VAL:HG13	16:X:138:VAL:HG23	2.00	0.43
17:Y:89:LYS:HG2	17:Y:90:ALA:H	1.82	0.43
21:5:648:G:H2'	21:5:649:A:C8	2.52	0.43
21:5:693:C:H2'	21:5:694:C:C6	2.54	0.43
21:5:1601:A:OP2	39:j:4:GLY:HA3	2.19	0.43
21:5:1738:A:H2'	21:5:1739:G:H8	1.84	0.43
21:5:1973:G:N2	21:5:1994:C:O2	2.52	0.43
21:5:1979:A:H1'	21:5:1980:U:C4	2.54	0.43
21:5:2005:G:N1	21:5:2015:U:C2	2.87	0.43
21:5:2009:A:H2'	21:5:2010:A:O4'	2.19	0.43
21:5:2307:A:H2'	21:5:2308:A:C8	2.52	0.43
21:5:2534:C:H2'	21:5:2535:G:H8	1.83	0.43
21:5:2656:U:H3'	21:5:2657:G:C8	2.53	0.43
21:5:3633:C:H2'	21:5:3634:G:C8	2.54	0.43
21:5:4510:A:H2	21:5:4592:C:H4'	1.83	0.43
21:5:4955:A:OP2	21:5:4955:A:H8	2.01	0.43
26:M:14:TYR:CZ	26:M:22:GLY:HA2	2.54	0.43
50:BB:72:ALA:HB3	59:OO:128:ARG:HH22	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:BB:106:THR:HG22	50:BB:108:ASP:H	1.84	0.43
53:GG:154:ARG:HE	53:GG:179:LEU:HD21	1.83	0.43
56:JJ:138:ARG:HH21	56:JJ:156:HIS:CE1	2.37	0.43
61:WW:93:LEU:HD11	61:WW:128:PHE:CG	2.54	0.43
63:YY:29:HIS:HB2	63:YY:32:LYS:HE2	2.01	0.43
68:FF:120:GLY:HA2	68:FF:150:ALA:HB2	2.01	0.43
68:FF:188:TYR:HA	68:FF:191:LYS:HG2	2.01	0.43
70:PP:57:LEU:HA	70:PP:89:MET:HE3	2.01	0.43
1:9:502:C:H5'	52:EE:66:MET:HE1	2.00	0.43
1:9:791:C:H2'	1:9:792:C:H6	1.84	0.43
1:9:935:G:H2'	1:9:936:G:H8	1.84	0.43
1:9:979:C:H2'	1:9:980:A:C8	2.52	0.43
5:E:143:LEU:HA	5:E:194:GLN:HE22	1.83	0.43
21:5:512:U:H2'	21:5:515:C:H5	1.83	0.43
21:5:708:G:H5'	35:f:89:ARG:NH1	2.34	0.43
21:5:1486:C:H2'	21:5:1487:G:C8	2.53	0.43
21:5:1498:G:H5'	28:Q:150:ARG:HH21	1.84	0.43
21:5:2412:A:H2'	21:5:2413:U:H6	1.84	0.43
21:5:2658:G:H21	21:5:2676:A:H62	1.67	0.43
21:5:2703:G:H2'	21:5:2704:C:C6	2.53	0.43
21:5:4154:G:H2'	21:5:4155:C:C6	2.54	0.43
21:5:4208:U:H2'	21:5:4209:G:C8	2.54	0.43
21:5:4968:A:H2'	21:5:4969:C:H6	1.83	0.43
21:5:5010:U:H2'	21:5:5011:A:H8	1.84	0.43
22:7:15:C:H2'	22:7:16:A:C8	2.53	0.43
23:8:68:G:H2'	23:8:69:U:C6	2.54	0.43
47:1:1339:U:OP2	47:1:1339:U:H4'	2.19	0.43
47:1:1493:G:C4	47:1:1494:C:C5	3.07	0.43
52:EE:238:LEU:HD22	52:EE:238:LEU:HA	1.88	0.43
53:GG:64:LYS:HB2	53:GG:97:VAL:HG11	2.00	0.43
57:LL:61:PRO:HA	57:LL:66:VAL:HG23	2.01	0.43
61:WW:36:ARG:O	61:WW:39:THR:HG22	2.19	0.43
62:XX:86:PRO:HD3	62:XX:122:VAL:HG13	1.99	0.43
70:PP:22:LEU:O	70:PP:25:LEU:HB2	2.19	0.43
70:PP:48:GLY:O	70:PP:49:LEU:HD13	2.19	0.43
1:9:517:C:H2'	1:9:518:G:O4'	2.19	0.42
1:9:695:C:H2'	1:9:696:G:H8	1.84	0.42
1:9:1018:U:H2'	1:9:1019:C:C5	2.52	0.42
1:9:1034:A:H3'	1:9:1035:A:H8	1.84	0.42
10:L:8:MET:HB3	28:Q:166:TYR:HB3	2.01	0.42
12:O:57:PHE:HA	12:O:60:LYS:HZ3	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:V:89:ARG:HB2	14:V:95:PHE:CE2	2.54	0.42
18:a:64:LYS:HE2	21:5:69:A:H5'	2.00	0.42
21:5:1089:G:H2'	21:5:1090:G:H8	1.84	0.42
21:5:1758:G:N3	21:5:1759:G:C8	2.86	0.42
21:5:1765:A:H3'	21:5:1766:A:C8	2.52	0.42
21:5:1920:C:H3'	21:5:1921:C:H5''	2.01	0.42
21:5:1966:C:N3	21:5:1967:A:C8	2.87	0.42
21:5:1998:A:H2'	21:5:1999:A:N9	2.34	0.42
21:5:2001:G:OP2	21:5:2001:G:H8	2.02	0.42
21:5:4396:A:N6	21:5:4447:C:O2	2.52	0.42
21:5:4749:C:H2'	21:5:4750:G:N9	2.33	0.42
21:5:4769:G:H2'	21:5:4770:U:C6	2.54	0.42
37:h:19:LYS:HA	37:h:22:ASP:OD2	2.19	0.42
46:r:96:MET:HE2	46:r:100:ASN:HD21	1.83	0.42
46:r:114:ALA:O	46:r:117:ILE:HG13	2.18	0.42
67:DD:156:LEU:HB3	67:DD:189:MET:HE2	2.01	0.42
69:KK:22:VAL:HG12	69:KK:68:TYR:HD1	1.84	0.42
70:PP:34:MET:O	70:PP:35:GLN:C	2.61	0.42
1:9:12:U:H2'	1:9:13:C:H6	1.84	0.42
1:9:447:A:H2'	55:II:26:LYS:HD2	2.01	0.42
1:9:1104:G:H2'	1:9:1105:G:H8	1.84	0.42
5:E:133:LYS:HD2	5:E:133:LYS:HA	1.75	0.42
11:N:114:ARG:HH12	11:N:157:LYS:HG2	1.84	0.42
19:b:68:ARG:NH1	21:5:1830:G:H4'	2.29	0.42
21:5:679:C:H2'	21:5:680:G:C8	2.54	0.42
21:5:1511:U:H2'	21:5:1512:G:H8	1.84	0.42
21:5:1979:A:O2'	21:5:1980:U:C5	2.72	0.42
21:5:1986:U:C2	21:5:2013:A:N6	2.87	0.42
21:5:1987:C:C4	21:5:1988:G:H1'	2.54	0.42
21:5:2000:G:C5'	21:5:2018:C:H1'	2.49	0.42
21:5:2727:C:C2	21:5:2728:U:C5	3.07	0.42
21:5:2728:U:H2'	21:5:2729:C:H6	1.84	0.42
21:5:2734:U:H2'	21:5:2735:G:C8	2.53	0.42
21:5:4096:C:H2'	21:5:4097:G:H8	1.84	0.42
21:5:4097:G:H2'	21:5:4098:A:C8	2.54	0.42
25:F:89:ALA:HB2	25:F:124:LEU:HD21	2.01	0.42
28:Q:67:ILE:HD11	28:Q:95:VAL:HG23	2.00	0.42
45:p:10:ILE:H	45:p:10:ILE:HG12	1.61	0.42
50:BB:181:LEU:H	50:BB:181:LEU:HD22	1.85	0.42
61:WW:37:PHE:O	61:WW:40:VAL:HG12	2.19	0.42
63:YY:37:LYS:HA	63:YY:40:ILE:HD12	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:FF:109:LEU:H	68:FF:109:LEU:HD12	1.83	0.42
1:9:26:U:H2'	1:9:27:A:C8	2.54	0.42
1:9:1514:G:N3	70:PP:79:HIS:CE1	2.87	0.42
1:9:1552:G:H4'	67:DD:9:ARG:HH21	1.84	0.42
4:C:291:ARG:HH12	21:5:666:G:H1'	1.83	0.42
5:E:64:MET:HG3	5:E:68:LYS:HE3	2.01	0.42
9:J:120:ASP:H	9:J:123:ILE:HD11	1.84	0.42
21:5:462:G:H2'	21:5:463:A:C8	2.54	0.42
21:5:923:C:OP1	21:5:923:C:H4'	2.20	0.42
21:5:1351:G:H2'	21:5:1352:C:C6	2.55	0.42
21:5:1760:G:N3	21:5:1760:G:H2'	2.35	0.42
21:5:1939:A:H5'	21:5:1940:G:H4'	2.01	0.42
21:5:1983:A:C2	21:5:1987:C:H5''	2.54	0.42
21:5:2533:C:H2'	21:5:2534:C:C6	2.54	0.42
21:5:3707:U:H2'	21:5:3708:C:C6	2.54	0.42
22:7:110:G:H2'	22:7:111:C:H6	1.83	0.42
29:S:83:ARG:HH11	29:S:125:GLN:NE2	2.18	0.42
47:1:1338:A:H4'	47:1:1339:U:OP2	2.18	0.42
47:1:1381:G:H2'	47:1:1382:A:C8	2.54	0.42
50:BB:121:ILE:HD11	50:BB:165:ARG:HB2	2.00	0.42
58:NN:78:LYS:HG2	58:NN:80:LEU:HG	2.01	0.42
73:SS:45:LEU:HD22	73:SS:45:LEU:HA	1.91	0.42
1:9:675:U:H2'	1:9:676:C:H6	1.84	0.42
1:9:730:C:H2'	1:9:731:G:C8	2.55	0.42
1:9:811:A:H2'	1:9:812:A:O4'	2.19	0.42
1:9:1125:C:H4'	49:AA:41:ARG:HH22	1.84	0.42
1:9:1237:C:H5'	70:PP:132:GLY:HA3	2.00	0.42
1:9:1656:G:N2	1:9:1668:U:O2	2.36	0.42
1:9:1863:A:H1'	64:aa:79:ILE:HD13	2.01	0.42
3:B:252:ALA:HB3	21:5:4457:U:O2	2.19	0.42
3:B:363:ILE:H	3:B:363:ILE:HG13	1.62	0.42
5:E:144:ARG:HH21	5:E:147:ILE:HD11	1.84	0.42
11:N:176:LYS:HD3	11:N:176:LYS:N	2.35	0.42
12:O:77:SER:HB2	12:O:104:VAL:HG12	2.00	0.42
20:e:21:ILE:HD13	20:e:21:ILE:H	1.84	0.42
21:5:262:G:C2	21:5:263:G:C5	3.08	0.42
21:5:1460:C:H2'	21:5:1461:C:H6	1.84	0.42
21:5:1962:A:H3'	21:5:1963:C:C6	2.55	0.42
21:5:2001:G:C5	21:5:2003:G:C4	3.07	0.42
21:5:2048:U:H5''	21:5:2050:G:P	2.60	0.42
21:5:2722:G:H2'	21:5:2723:U:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:4260:U:H2'	21:5:4261:C:H6	1.83	0.42
21:5:4736:C:H2'	21:5:4737:G:C8	2.54	0.42
21:5:5005:G:H22	21:5:5041:G:H1'	1.84	0.42
23:8:120:G:H2'	23:8:121:G:H8	1.84	0.42
25:F:95:ARG:HG3	25:F:138:TYR:CD2	2.54	0.42
27:P:15:CYS:SG	27:P:150:LEU:HD23	2.59	0.42
39:j:8:PHE:HA	39:j:11:ARG:HH21	1.84	0.42
50:BB:144:LYS:HE2	50:BB:206:PRO:HB2	2.01	0.42
52:EE:191:ARG:HD3	52:EE:245:ARG:HE	1.84	0.42
61:WW:32:LYS:O	61:WW:35:VAL:HG12	2.19	0.42
63:YY:56:PHE:HD1	63:YY:94:HIS:NE2	2.17	0.42
70:PP:17:TYR:O	70:PP:19:GLY:N	2.53	0.42
74:TT:129:ARG:O	74:TT:133:ARG:HG2	2.19	0.42
78:dd:21:CYS:HB3	78:dd:25:SER:H	1.85	0.42
1:9:12:U:H2'	1:9:13:C:C6	2.54	0.42
1:9:118:C:H1'	1:9:445:A:C5	2.55	0.42
1:9:197:U:H2'	1:9:198:U:C6	2.55	0.42
1:9:869:A:H5'	1:9:874:G:H4'	2.02	0.42
1:9:1100:A:H5'	72:RR:132:ARG:NH2	2.35	0.42
1:9:1112:U:H2'	1:9:1113:A:C8	2.54	0.42
1:9:1805:G:H2'	1:9:1806:A:H8	1.85	0.42
1:9:1866:A:N6	64:aa:87:ARG:HD2	2.34	0.42
3:B:104:THR:HG22	21:5:4724:A:O2'	2.20	0.42
3:B:240:LEU:HB2	3:B:248:LEU:HA	2.01	0.42
6:G:227:CYS:HB3	6:G:232:VAL:O	2.20	0.42
7:H:48:LEU:HD23	7:H:54:ARG:HE	1.85	0.42
10:L:5:ARG:HD3	10:L:5:ARG:HA	1.92	0.42
14:V:44:GLY:HA2	21:5:4509:U:H5'	2.00	0.42
19:b:96:LEU:O	25:F:48:LEU:HD21	2.19	0.42
21:5:221:C:H2'	21:5:222:C:C6	2.54	0.42
21:5:287:U:H2'	21:5:288:G:C8	2.54	0.42
21:5:705:G:H2'	21:5:706:C:C6	2.54	0.42
21:5:976:G:H5''	25:F:46:ARG:HE	1.83	0.42
21:5:1550:G:H2'	21:5:1551:C:C6	2.55	0.42
21:5:1933:G:H8	21:5:1933:G:O5'	2.01	0.42
21:5:2003:G:O2'	21:5:2004:U:H5	2.02	0.42
21:5:2376:A:H2'	21:5:2377:C:H6	1.83	0.42
22:7:15:C:H2'	22:7:16:A:H8	1.83	0.42
24:D:108:ARG:CZ	24:D:253:TYR:HB2	2.49	0.42
25:F:181:TYR:HB3	25:F:199:HIS:CG	2.55	0.42
44:o:4:VAL:HG13	44:o:93:LEU:HD22	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:1:1335:G:H5''	47:1:1336:U:OP2	2.20	0.42
47:1:1351:U:H3	47:1:1380:G:H1	1.66	0.42
47:1:1493:G:N3	47:1:1493:G:C3'	2.81	0.42
50:BB:195:LYS:HE3	50:BB:195:LYS:HB3	1.77	0.42
53:GG:157:VAL:HB	53:GG:176:ILE:HD11	2.01	0.42
53:GG:216:ARG:O	53:GG:219:GLU:HG2	2.19	0.42
56:JJ:127:ARG:HD3	66:ee:104:ARG:HD3	2.01	0.42
61:WW:84:LYS:HE2	61:WW:84:LYS:HB2	1.92	0.42
67:DD:168:VAL:HG21	67:DD:187:LYS:HG3	2.01	0.42
69:KK:64:TRP:HA	78:dd:23:VAL:HG13	2.01	0.42
70:PP:51:ARG:O	70:PP:52:LYS:C	2.60	0.42
71:QQ:37:ARG:HG2	74:TT:7:LYS:HB3	2.01	0.42
1:9:375:U:H2'	1:9:376:A:C8	2.53	0.42
1:9:852:G:H3'	1:9:853:C:O2	2.20	0.42
1:9:947:G:H2'	1:9:948:C:H6	1.85	0.42
1:9:959:G:H2'	1:9:960:U:C6	2.55	0.42
1:9:1174:U:H2'	1:9:1175:G:H8	1.84	0.42
1:9:1298:G:N7	70:PP:79:HIS:CE1	2.87	0.42
1:9:1373:C:H2'	1:9:1374:C:H6	1.83	0.42
5:E:211:ILE:H	5:E:211:ILE:HG13	1.59	0.42
12:O:193:THR:HG23	26:M:119:ARG:NH2	2.34	0.42
13:R:103:ARG:NH1	21:5:2667:C:H5''	2.33	0.42
15:W:46:PRO:O	15:W:49:ILE:HG22	2.19	0.42
21:5:746:A:O2'	21:5:747:A:H5'	2.18	0.42
21:5:1305:C:H2'	21:5:1306:C:H6	1.84	0.42
21:5:1986:U:H2'	21:5:2011:C:OP2	2.20	0.42
21:5:2001:G:C6	21:5:2017:A:C6	3.07	0.42
21:5:2615:C:H2'	21:5:2616:C:C6	2.55	0.42
21:5:2810:U:H2'	21:5:2811:G:O4'	2.20	0.42
21:5:3686:G:C2	21:5:3687:A:C8	3.08	0.42
21:5:3709:U:H2'	21:5:3710:G:C8	2.55	0.42
21:5:3867:A:H2'	21:5:3868:G:C8	2.55	0.42
49:AA:137:ALA:HA	49:AA:142:LEU:HB3	2.00	0.42
70:PP:39:ALA:HA	70:PP:42:ARG:HE	1.85	0.42
70:PP:91:GLY:H	70:PP:107:ILE:HB	1.84	0.42
70:PP:111:MET:O	70:PP:112:ILE:C	2.61	0.42
71:QQ:58:LEU:HB2	71:QQ:63:PHE:HE1	1.84	0.42
1:9:443:U:H2'	1:9:444:G:O4'	2.20	0.42
1:9:453:C:O2'	1:9:454:U:H5'	2.20	0.42
1:9:639:C:H2'	1:9:640:A:C8	2.54	0.42
1:9:887:U:O2'	1:9:888:U:H5''	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1043:G:H2'	1:9:1044:G:O4'	2.19	0.42
1:9:1047:C:H2'	1:9:1048:G:O4'	2.19	0.42
1:9:1253:A:H4'	1:9:1254:C:O5'	2.20	0.42
4:C:230:LEU:HD21	4:C:239:LYS:HG3	2.02	0.42
5:E:65:TYR:CD1	5:E:70:LEU:HB2	2.55	0.42
5:E:186:ARG:NH2	21:5:4936:G:H3'	2.35	0.42
6:G:84:LEU:HB3	32:Z:53:VAL:HG11	2.00	0.42
8:I:129:VAL:HG23	8:I:133:GLN:HB3	2.01	0.42
21:5:44:A:N3	21:5:94:A:H2	2.18	0.42
21:5:216:C:P	21:5:219:G:H4'	2.59	0.42
21:5:282:C:C2	21:5:306:A:N6	2.87	0.42
21:5:1291:G:H2'	21:5:1292:C:C6	2.54	0.42
21:5:1823:G:H2'	21:5:1824:G:H8	1.84	0.42
21:5:2000:G:H4'	21:5:2017:A:C6	2.55	0.42
21:5:2034:G:OP1	29:S:87:ARG:HG3	2.20	0.42
21:5:2299:G:H2'	21:5:2301:G:O4'	2.19	0.42
21:5:2397:G:C8	21:5:2399:G:C8	3.08	0.42
21:5:2637:U:H2'	21:5:2719:C:H5	1.84	0.42
21:5:4080:C:H2'	21:5:4081:G:C8	2.53	0.42
21:5:4767:C:H2'	21:5:4768:G:H8	1.84	0.42
49:AA:39:TYR:CE1	72:RR:108:LEU:HD21	2.55	0.42
50:BB:168:MET:HE3	50:BB:197:ILE:HG21	2.00	0.42
50:BB:189:ILE:CG1	50:BB:190:PRO:HD3	2.46	0.42
55:II:107:THR:OG1	55:II:108:PRO:HD3	2.20	0.42
56:JJ:67:ASP:HB3	56:JJ:70:ARG:HB3	2.01	0.42
70:PP:22:LEU:HD22	70:PP:109:PRO:HB3	2.01	0.42
70:PP:73:PRO:O	70:PP:93:MET:HB2	2.19	0.42
70:PP:79:HIS:CD2	70:PP:102:PHE:CZ	3.07	0.42
70:PP:84:ILE:HG23	70:PP:113:GLY:O	2.19	0.42
70:PP:128:HIS:O	70:PP:129:GLY:C	2.63	0.42
70:PP:138:SER:C	70:PP:140:ARG:H	2.27	0.42
1:9:441:C:H4'	1:9:1738:C:H5'	2.02	0.42
1:9:920:A:N6	1:9:1021:U:H3	2.18	0.42
1:9:982:G:H2'	1:9:983:A:H8	1.85	0.42
1:9:1101:U:H3	1:9:1131:G:H1	1.67	0.42
1:9:1454:A:H2	1:9:1476:A:H1'	1.84	0.42
4:C:265:GLY:O	4:C:279:LEU:HD11	2.20	0.42
4:C:331:TYR:HE2	4:C:335:MET:HE2	1.85	0.42
18:a:51:GLY:H	28:Q:179:GLY:H	1.67	0.42
21:5:318:A:H2'	21:5:319:A:C8	2.53	0.42
21:5:919:C:H2'	21:5:920:C:H6	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1075:G:H22	21:5:1235:G:H22	1.68	0.42
21:5:1309:C:H2'	21:5:1310:C:C6	2.55	0.42
21:5:1339:U:H2'	21:5:1340:C:H6	1.84	0.42
21:5:1346:C:H2'	21:5:1347:G:C8	2.55	0.42
21:5:1624:G:C5	21:5:1643:A:C8	3.07	0.42
21:5:1758:G:H2'	21:5:1759:G:C8	2.53	0.42
21:5:1764:G:C2'	21:5:1767:A:H62	2.32	0.42
21:5:1942:A:H2'	21:5:1943:A:H8	1.84	0.42
21:5:1990:A:C6	21:5:1991:A:H1'	2.55	0.42
21:5:3910:C:H2'	21:5:3911:C:H6	1.83	0.42
21:5:4098:A:H2'	21:5:4099:G:H8	1.82	0.42
21:5:4448:G:H5''	21:5:4449:A:H5'	2.01	0.42
21:5:4711:C:H2'	21:5:4712:C:C6	2.54	0.42
21:5:4878:C:H2'	21:5:4879:C:H6	1.83	0.42
35:f:51:TYR:HE1	35:f:70:ILE:HD13	1.85	0.42
48:K:163:LEU:HD22	48:K:163:LEU:HA	1.93	0.42
49:AA:39:TYR:HE2	49:AA:50:ASN:HA	1.85	0.42
50:BB:128:LYS:HD3	50:BB:129:THR:O	2.19	0.42
51:CC:79:GLU:O	51:CC:83:LEU:HG	2.20	0.42
56:JJ:33:GLY:HA2	66:ee:107:ARG:NH1	2.34	0.42
61:WW:87:GLU:HA	61:WW:90:GLN:HG2	2.02	0.42
70:PP:38:SER:C	70:PP:42:ARG:HE	2.28	0.42
70:PP:89:MET:O	70:PP:90:VAL:C	2.61	0.42
74:TT:69:GLY:HA2	74:TT:120:GLY:HA3	2.01	0.42
76:ZZ:50:PHE:HZ	76:ZZ:58:LEU:HD13	1.85	0.42
1:9:17:C:H2'	1:9:18:C:C6	2.55	0.42
1:9:81:U:H2'	1:9:82:G:O4'	2.20	0.42
1:9:564:A:H3'	1:9:565:G:H8	1.85	0.42
1:9:791:C:H2'	1:9:792:C:C6	2.55	0.42
1:9:1803:U:H2'	1:9:1804:U:H6	1.85	0.42
1:9:1866:A:C6	64:aa:87:ARG:HD2	2.54	0.42
5:E:134:LYS:HE2	5:E:134:LYS:HB2	1.88	0.42
21:5:226:G:H4'	21:5:227:A:O5'	2.19	0.42
21:5:245:C:H4'	21:5:246:G:O5'	2.20	0.42
21:5:281:U:H2'	21:5:282:C:H6	1.85	0.42
21:5:1093:C:H2'	21:5:1094:G:H8	1.84	0.42
21:5:1098:G:H2'	21:5:1099:C:C6	2.55	0.42
21:5:1633:G:H4'	21:5:1634:A:O5'	2.19	0.42
21:5:1730:U:H4'	30:T:100:LYS:HB2	2.01	0.42
21:5:1811:G:H2'	21:5:1812:C:H6	1.84	0.42
21:5:2521:G:H2'	21:5:2522:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2780:C:H2'	21:5:2781:G:C8	2.55	0.42
21:5:4948:C:H2'	21:5:4949:G:N2	2.34	0.42
21:5:5002:U:H2'	21:5:5003:U:C6	2.55	0.42
23:8:43:A:H2'	23:8:44:A:H8	1.85	0.42
23:8:66:A:H2'	23:8:67:U:H6	1.82	0.42
26:M:50:MET:HE2	26:M:54:CYS:HB3	2.02	0.42
33:c:17:ARG:NH1	33:c:103:ASP:HB3	2.35	0.42
46:r:4:HIS:O	46:r:8:MET:HG2	2.20	0.42
46:r:94:ARG:HB2	46:r:111:ILE:HD11	2.02	0.42
47:1:1495:U:C2	47:1:1496:A:C8	3.08	0.42
49:AA:35:GLU:O	49:AA:38:ILE:HG22	2.19	0.42
49:AA:203:PHE:HB3	49:AA:205:ARG:HH21	1.84	0.42
53:GG:137:ARG:HB3	53:GG:140:ARG:HB2	2.01	0.42
57:LL:73:LEU:HD23	57:LL:90:ARG:CZ	2.50	0.42
59:OO:20:GLN:H	59:OO:20:GLN:HG3	1.66	0.42
70:PP:57:LEU:O	70:PP:58:LYS:C	2.62	0.42
70:PP:95:GLY:C	70:PP:102:PHE:HB3	2.45	0.42
70:PP:109:PRO:O	70:PP:110:GLU:C	2.62	0.42
71:QQ:38:PRO:HB2	71:QQ:40:GLU:OE1	2.20	0.42
71:QQ:41:MET:HE3	71:QQ:41:MET:HB3	1.91	0.42
1:9:126:G:C8	53:GG:199:THR:HG21	2.54	0.42
1:9:790:C:H2'	1:9:791:C:H6	1.83	0.42
1:9:1016:U:O2	1:9:1016:U:H2'	2.20	0.42
1:9:1703:C:H2'	1:9:1704:C:O4'	2.20	0.42
10:L:186:ARG:NH2	21:5:1394:G:H5'	2.35	0.42
21:5:1644:C:C2	21:5:1645:C:C5	3.07	0.42
21:5:1873:A:H2'	21:5:1874:A:H8	1.85	0.42
21:5:1983:A:H4'	21:5:1984:A:O5'	2.19	0.42
21:5:2731:C:H2'	21:5:2732:G:H8	1.84	0.42
21:5:2759:G:H2'	21:5:2760:G:C4	2.55	0.42
21:5:5038:A:H2'	21:5:5039:U:C6	2.55	0.42
24:D:65:ALA:HB2	24:D:74:ILE:HG22	2.02	0.42
29:S:95:ARG:HB3	29:S:97:TYR:CE2	2.55	0.42
31:U:60:VAL:HG13	31:U:61:VAL:HG23	2.02	0.42
50:BB:146:ARG:HB2	50:BB:149:GLN:HG2	2.02	0.42
60:VV:51:LYS:NZ	60:VV:76:ASP:HB3	2.35	0.42
62:XX:21:LYS:HG2	62:XX:27:TYR:CD2	2.55	0.42
63:YY:8:ARG:HD2	63:YY:8:ARG:HA	1.82	0.42
67:DD:163:PRO:O	67:DD:167:TYR:HB2	2.20	0.42
68:FF:55:ARG:CZ	68:FF:55:ARG:HA	2.50	0.42
70:PP:59:ARG:O	70:PP:62:LYS:HE3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:PP:60:LEU:HB3	70:PP:89:MET:SD	2.60	0.42
70:PP:137:HIS:C	70:PP:140:ARG:H	2.27	0.42
73:SS:10:GLN:HE21	73:SS:10:GLN:HB2	1.68	0.42
1:9:935:G:H2'	1:9:936:G:C8	2.55	0.41
1:9:1204:A:H5'	51:CC:117:ARG:HD2	2.01	0.41
1:9:1362:U:H5''	1:9:1363:C:C5	2.55	0.41
1:9:1611:G:H4'	73:SS:86:ARG:NH2	2.34	0.41
1:9:1672:U:O3'	71:QQ:76:GLY:HA3	2.20	0.41
4:C:288:ASP:HB3	46:r:2:SER:HB2	2.02	0.41
5:E:118:TYR:CZ	46:r:119:ARG:HG3	2.55	0.41
5:E:171:LEU:HG	5:E:177:LEU:HB2	2.01	0.41
21:5:7:C:H2'	21:5:8:U:H6	1.84	0.41
21:5:212:A:H2'	21:5:213:G:H8	1.85	0.41
21:5:273:U:H2'	21:5:274:C:H6	1.84	0.41
21:5:477:C:H2'	21:5:478:G:C8	2.55	0.41
21:5:981:C:H2'	21:5:982:U:C6	2.55	0.41
21:5:1384:C:H2'	21:5:1385:G:H8	1.85	0.41
21:5:1399:G:H2'	21:5:1400:G:H8	1.85	0.41
21:5:1484:G:O2'	21:5:1485:C:H5''	2.19	0.41
21:5:1662:C:H2'	21:5:1663:C:C6	2.55	0.41
21:5:1962:A:C2	21:5:2026:A:O2'	2.72	0.41
21:5:2001:G:N2	21:5:2004:U:C6	2.88	0.41
21:5:2095:A:OP2	21:5:2095:A:H8	2.03	0.41
21:5:2861:C:H2'	21:5:2862:G:O4'	2.20	0.41
21:5:4266:G:N3	21:5:4266:G:H2'	2.35	0.41
21:5:4291:G:H5''	21:5:4293:U:C6	2.55	0.41
21:5:4772:C:N4	21:5:4863:G:H22	2.18	0.41
24:D:205:ALA:O	24:D:208:MET:HG2	2.20	0.41
25:F:154:TYR:OH	25:F:186:MET:HE1	2.20	0.41
32:Z:51:ARG:HB2	32:Z:65:ARG:HD2	2.02	0.41
35:f:102:ARG:HB2	35:f:104:MET:HE1	2.02	0.41
50:BB:160:GLN:O	50:BB:164:ILE:HG12	2.20	0.41
53:GG:201:LYS:HG3	53:GG:202:ASN:N	2.35	0.41
58:NN:54:LEU:HG	58:NN:60:VAL:HG11	2.02	0.41
61:WW:31:SER:HB3	61:WW:34:ILE:HG23	2.01	0.41
73:SS:62:ASP:O	73:SS:65:GLU:HG3	2.19	0.41
1:9:494:C:N4	1:9:509:G:H21	2.18	0.41
1:9:666:U:H2'	1:9:667:U:C6	2.55	0.41
1:9:910:G:H2'	1:9:911:C:C6	2.55	0.41
1:9:1576:G:H2'	1:9:1577:G:H8	1.85	0.41
1:9:1629:C:H2'	1:9:1630:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1713:C:H2'	1:9:1714:U:C6	2.55	0.41
2:A:3:ARG:HH11	21:5:1628:C:H42	1.66	0.41
6:G:224:PRO:HB3	6:G:234:TYR:CE2	2.54	0.41
10:L:174:LYS:HE2	10:L:174:LYS:HB2	1.96	0.41
11:N:146:PRO:HA	11:N:149:GLN:NE2	2.33	0.41
14:V:57:VAL:HG12	14:V:125:CYS:HB2	2.01	0.41
21:5:1580:C:H2'	21:5:1581:G:O4'	2.20	0.41
21:5:1773:U:H3'	21:5:1774:C:H6	1.85	0.41
21:5:1991:A:N6	21:5:2003:G:H5'	2.35	0.41
21:5:2654:C:H2'	21:5:2655:C:H6	1.84	0.41
21:5:4234:A:H2	21:5:4271:A:C6	2.38	0.41
21:5:4247:G:H5'	24:D:4:VAL:HG11	2.02	0.41
21:5:4379:A:C8	44:o:54:PRO:HB3	2.55	0.41
21:5:4629:U:H2'	21:5:4630:G:C8	2.55	0.41
21:5:4968:A:H2'	21:5:4969:C:C6	2.55	0.41
23:8:64:U:C2	23:8:65:A:C8	3.08	0.41
26:M:75:LYS:O	26:M:78:GLU:HG3	2.20	0.41
31:U:26:THR:O	31:U:30:GLU:HG2	2.20	0.41
32:Z:22:LYS:HD2	32:Z:130:PHE:O	2.20	0.41
33:c:94:LEU:HD22	33:c:95:SER:N	2.36	0.41
46:r:47:LYS:HB3	46:r:102:TYR:CZ	2.55	0.41
49:AA:90:PHE:HD1	49:AA:179:ALA:HB2	1.85	0.41
56:JJ:5:ARG:HB2	56:JJ:7:TRP:CE2	2.55	0.41
56:JJ:97:ILE:H	56:JJ:97:ILE:HG13	1.54	0.41
61:WW:56:HIS:O	61:WW:57:ARG:HG3	2.20	0.41
70:PP:133:ILE:C	70:PP:135:ALA:H	2.28	0.41
73:SS:84:LEU:HD22	73:SS:97:GLN:HB2	2.02	0.41
74:TT:43:LYS:HE3	74:TT:45:LEU:O	2.20	0.41
74:TT:127:GLY:HA2	74:TT:130:ASP:OD2	2.21	0.41
1:9:29:G:H2'	1:9:30:C:C6	2.55	0.41
1:9:1012:A:H5''	58:NN:10:GLY:HA3	2.01	0.41
1:9:1388:A:H5''	72:RR:45:LYS:NZ	2.36	0.41
1:9:1696:C:N4	1:9:1697:A:H62	2.18	0.41
1:9:1805:G:H2'	1:9:1806:A:C8	2.56	0.41
8:I:189:ARG:O	8:I:200:ILE:HG13	2.20	0.41
9:J:24:ILE:HD13	9:J:40:LEU:HD11	2.01	0.41
18:a:43:ILE:HD12	18:a:43:ILE:HA	1.96	0.41
18:a:59:ARG:HH22	44:o:40:ARG:HH21	1.68	0.41
21:5:181:C:H2'	21:5:182:G:C8	2.55	0.41
21:5:691:C:H2'	21:5:692:A:H8	1.85	0.41
21:5:2010:A:C2	21:5:2011:C:C2	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2080:U:H2'	21:5:2081:C:C6	2.56	0.41
21:5:4118:U:O2	21:5:4118:U:H2'	2.21	0.41
21:5:4405:G:N1	21:5:4440:G:H1'	2.35	0.41
21:5:4883:C:H2'	21:5:4884:G:C8	2.55	0.41
21:5:4981:G:C5	21:5:4982:A:C8	3.08	0.41
21:5:5052:C:H2'	21:5:5053:U:O4'	2.20	0.41
22:7:64:G:H2'	22:7:65:G:H8	1.85	0.41
27:P:54:LYS:HA	27:P:83:TRP:CD1	2.56	0.41
29:S:8:ARG:HH21	29:S:66:GLN:NE2	2.19	0.41
31:U:88:LYS:HD2	31:U:97:ARG:HH12	1.85	0.41
31:U:91:LEU:HD12	31:U:96:LEU:HB2	2.01	0.41
50:BB:133:TYR:CD1	50:BB:181:LEU:HD21	2.56	0.41
51:CC:251:LEU:HD23	60:VV:23:ILE:HG23	2.02	0.41
56:JJ:22:LYS:HD3	56:JJ:25:LEU:HD21	2.00	0.41
56:JJ:32:ILE:HD12	56:JJ:37:LEU:HB2	2.00	0.41
59:OO:128:ARG:HE	64:aa:59:PHE:HE2	1.66	0.41
70:PP:84:ILE:HG23	70:PP:115:TYR:HE1	1.86	0.41
71:QQ:61:GLU:H	71:QQ:61:GLU:CD	2.29	0.41
76:ZZ:64:ASN:HA	76:ZZ:111:ARG:HD3	2.01	0.41
1:9:220:U:H2'	1:9:221:A:H8	1.86	0.41
1:9:316:G:H2'	1:9:317:C:C6	2.55	0.41
1:9:373:G:H21	57:LL:83:GLN:NE2	2.19	0.41
1:9:1101:U:H2'	1:9:1102:G:H8	1.84	0.41
1:9:1201:U:H2'	1:9:1202:U:C6	2.55	0.41
1:9:1696:C:O2'	1:9:1697:A:OP1	2.33	0.41
4:C:121:ARG:HA	4:C:124:ILE:HG22	2.02	0.41
5:E:156:LEU:HD11	5:E:198:ILE:HG23	2.03	0.41
6:G:235:CYS:HB3	6:G:275:ILE:HD12	2.03	0.41
6:G:308:LYS:O	6:G:312:LYS:HG2	2.21	0.41
10:L:8:MET:HA	18:a:49:HIS:CE1	2.56	0.41
19:b:43:MET:HA	19:b:43:MET:HE3	2.02	0.41
21:5:228:C:H2'	21:5:229:G:C8	2.55	0.41
21:5:504:G:H2'	21:5:505:G:H8	1.85	0.41
21:5:641:G:H2'	21:5:642:G:H8	1.86	0.41
21:5:1399:G:H2'	21:5:1400:G:C8	2.55	0.41
21:5:1500:A:H5''	21:5:1501:C:H5'	2.02	0.41
21:5:1504:G:H2'	21:5:1505:C:C6	2.56	0.41
21:5:1739:G:H1'	21:5:1742:A:N6	2.35	0.41
21:5:1999:A:H1'	21:5:2019:C:C1'	2.42	0.41
21:5:2573:A:N6	21:5:2761:U:H3	2.16	0.41
21:5:2616:C:C2	21:5:2722:G:N2	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2832:A:H2'	21:5:2833:A:C8	2.53	0.41
21:5:3934:G:H2'	21:5:3935:C:C6	2.56	0.41
21:5:4915:G:H2'	21:5:4916:G:C8	2.55	0.41
25:F:165:ARG:HH11	25:F:208:TRP:CD1	2.39	0.41
28:Q:65:ARG:HA	28:Q:68:ARG:HG2	2.01	0.41
32:Z:60:LYS:HE2	32:Z:60:LYS:HB2	1.87	0.41
40:k:7:GLU:HG3	40:k:9:LYS:H	1.86	0.41
46:r:115:SER:O	46:r:118:LEU:HG	2.21	0.41
48:K:53:VAL:HG12	48:K:155:ILE:HG22	2.02	0.41
51:CC:106:VAL:HG22	51:CC:128:VAL:HG22	2.02	0.41
55:II:60:LEU:HD23	55:II:185:ALA:HB2	2.02	0.41
56:JJ:24:ARG:O	56:JJ:27:GLN:HG3	2.20	0.41
70:PP:111:MET:HG3	70:PP:119:PHE:CE2	2.56	0.41
70:PP:117:GLY:HA2	70:PP:120:SER:OG	2.20	0.41
74:TT:6:VAL:HA	74:TT:14:PHE:HE2	1.85	0.41
1:9:896:U:H2'	1:9:897:U:C6	2.56	0.41
1:9:1242:U:H2'	1:9:1242:U:O2	2.20	0.41
1:9:1376:A:H2'	1:9:1377:U:O4'	2.20	0.41
4:C:11:TYR:CE2	4:C:148:PRO:HG2	2.56	0.41
7:H:7:ASN:HD22	7:H:56:ARG:NH2	2.18	0.41
7:H:88:PHE:CZ	7:H:151:ILE:HB	2.55	0.41
8:I:31:ILE:HG22	8:I:62:SER:OG	2.20	0.41
12:O:114:LYS:HG2	21:5:4758:U:C5	2.55	0.41
21:5:930:G:H2'	21:5:931:C:C6	2.55	0.41
21:5:1991:A:H8	21:5:2002:A:H2	1.69	0.41
21:5:2515:G:H5''	36:g:37:LYS:NZ	2.36	0.41
21:5:2768:C:H5'	21:5:2769:U:OP1	2.20	0.41
21:5:4717:A:H2'	21:5:4718:G:O4'	2.21	0.41
21:5:5056:A:H2'	21:5:5057:C:C6	2.56	0.41
25:F:87:LYS:HB2	25:F:87:LYS:HE2	1.87	0.41
50:BB:165:ARG:O	50:BB:169:MET:HG2	2.20	0.41
51:CC:66:LEU:HD11	51:CC:88:ILE:HA	2.01	0.41
57:LL:104:LYS:HB3	57:LL:104:LYS:HE3	1.77	0.41
59:OO:50:LYS:HG2	59:OO:51:GLU:H	1.85	0.41
62:XX:21:LYS:HE3	62:XX:27:TYR:HE2	1.85	0.41
1:9:388:U:H2'	1:9:389:A:C8	2.56	0.41
1:9:676:C:H2'	1:9:677:G:O4'	2.20	0.41
1:9:829:C:H5''	52:EE:21:ASP:HB2	2.02	0.41
1:9:1039:C:H2'	1:9:1040:G:C8	2.55	0.41
1:9:1240:A:N7	70:PP:100:LYS:HG3	2.35	0.41
1:9:1384:C:H5''	67:DD:157:MET:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1408:U:H2'	1:9:1409:A:O4'	2.20	0.41
1:9:1649:U:H2'	1:9:1650:A:C8	2.56	0.41
1:9:1676:U:H2'	1:9:1677:U:O4'	2.19	0.41
6:G:300:VAL:O	6:G:303:ILE:HG13	2.21	0.41
21:5:219:G:H5''	21:5:220:C:OP1	2.20	0.41
21:5:663:G:H2'	21:5:664:G:C8	2.55	0.41
21:5:694:C:H2'	21:5:695:G:H8	1.82	0.41
21:5:1557:C:H2'	21:5:1558:A:H8	1.85	0.41
21:5:2385:U:H2'	21:5:2386:U:C6	2.55	0.41
21:5:2395:A:N6	21:5:2820:C:O2	2.53	0.41
21:5:2470:C:C2	21:5:3673:C:H5	2.39	0.41
21:5:4460:U:H2'	21:5:4461:C:H6	1.83	0.41
21:5:4551:U:H2'	21:5:4552:U:C6	2.56	0.41
21:5:4944:C:H1'	35:f:69:VAL:HG11	2.01	0.41
31:U:47:ILE:HD11	31:U:56:LEU:HA	2.01	0.41
36:g:66:ARG:H	36:g:66:ARG:HG3	1.71	0.41
44:o:45:GLN:HA	44:o:45:GLN:HE21	1.86	0.41
49:AA:174:MET:HA	49:AA:177:MET:HE2	2.01	0.41
51:CC:191:VAL:HG11	51:CC:236:PHE:HA	2.01	0.41
53:GG:137:ARG:HG3	53:GG:139:SER:H	1.86	0.41
54:HH:162:GLN:HB3	54:HH:165:ASN:HB2	2.03	0.41
58:NN:5:HIS:HE1	58:NN:121:ARG:HB2	1.85	0.41
65:bb:50:ALA:O	65:bb:51:GLN:HG2	2.20	0.41
67:DD:163:PRO:HG3	67:DD:205:PRO:HG2	2.02	0.41
69:KK:14:LEU:HA	69:KK:17:LYS:HG2	2.03	0.41
70:PP:80:LEU:HD22	70:PP:83:MET:HE1	2.02	0.41
76:ZZ:68:ILE:HB	76:ZZ:109:TYR:HB2	2.02	0.41
1:9:379:C:H2'	1:9:380:G:C8	2.55	0.41
1:9:526:A:H2'	1:9:527:C:H6	1.85	0.41
1:9:656:G:H5'	1:9:662:G:N2	2.35	0.41
1:9:864:A:H2'	1:9:865:A:H8	1.85	0.41
1:9:1035:A:C4	1:9:1036:A:C8	3.09	0.41
1:9:1129:G:H2'	1:9:1130:G:N3	2.34	0.41
1:9:1172:U:H2'	1:9:1173:A:C8	2.51	0.41
1:9:1235:G:N2	70:PP:135:ALA:HB1	2.36	0.41
1:9:1737:G:H2'	1:9:1738:C:C6	2.55	0.41
3:B:288:GLY:HA3	3:B:330:PHE:CE1	2.56	0.41
3:B:371:THR:HG21	15:W:17:HIS:CE1	2.56	0.41
4:C:150:LEU:HB3	4:C:151:PRO:HD3	2.02	0.41
5:E:213:LYS:HE2	5:E:213:LYS:HB2	1.90	0.41
9:J:155:HIS:HB2	22:7:55:A:H4'	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:440:U:H2'	21:5:441:G:C8	2.55	0.41
21:5:449:C:OP1	21:5:449:C:H4'	2.20	0.41
21:5:474:C:H2'	21:5:475:G:C8	2.56	0.41
21:5:675:C:H2'	21:5:676:C:C6	2.55	0.41
21:5:680:G:H2'	21:5:681:G:C8	2.56	0.41
21:5:976:G:H1	21:5:1279:A:H2	1.67	0.41
21:5:1744:U:H2'	21:5:1745:G:C8	2.56	0.41
21:5:1870:C:H2'	21:5:1871:A:C8	2.56	0.41
21:5:1980:U:OP1	21:5:1988:G:C6	2.74	0.41
21:5:3694:U:H2'	21:5:3695:U:C6	2.55	0.41
21:5:3736:A:H2'	21:5:3737:A:C8	2.56	0.41
21:5:4070:U:H2'	21:5:4071:U:C6	2.55	0.41
21:5:4485:C:H2'	21:5:4486:C:H6	1.86	0.41
21:5:4960:G:H2'	21:5:4961:G:C8	2.56	0.41
21:5:5004:C:H2'	21:5:5005:G:O4'	2.20	0.41
24:D:113:PHE:HD1	24:D:113:PHE:HA	1.77	0.41
24:D:289:ARG:HG3	24:D:293:ARG:HH12	1.84	0.41
29:S:13:VAL:HA	29:S:28:TYR:O	2.20	0.41
29:S:45:TRP:HA	29:S:48:VAL:HG22	2.02	0.41
31:U:24:ASP:HB3	31:U:69:LYS:HE3	2.02	0.41
49:AA:19:LEU:HD13	72:RR:117:LEU:HD11	2.02	0.41
49:AA:85:ARG:HH21	49:AA:201:LEU:HD22	1.86	0.41
50:BB:71:LEU:HD13	50:BB:84:PHE:HE1	1.86	0.41
52:EE:100:ARG:HG2	52:EE:102:ILE:HG13	2.01	0.41
52:EE:153:LEU:HB2	53:GG:216:ARG:NH1	2.35	0.41
53:GG:55:GLY:HA3	53:GG:108:VAL:O	2.20	0.41
61:WW:38:LEU:HD12	61:WW:47:ILE:HD13	2.02	0.41
68:FF:94:LYS:O	68:FF:98:GLU:HG2	2.21	0.41
68:FF:142:SER:HB2	77:cc:50:VAL:HG22	2.02	0.41
73:SS:13:LEU:HD22	73:SS:13:LEU:HA	1.96	0.41
76:ZZ:48:VAL:HG12	76:ZZ:49:LEU:HG	2.03	0.41
1:9:945:U:H2'	1:9:946:U:C6	2.55	0.41
1:9:1525:C:H4'	70:PP:137:HIS:HE1	1.85	0.41
1:9:1628:C:H2'	1:9:1629:C:H6	1.85	0.41
2:A:104:VAL:HA	2:A:107:MET:SD	2.61	0.41
6:G:126:ARG:HH12	21:5:4162:C:H5	1.67	0.41
6:G:129:VAL:HG12	6:G:134:ASN:HB2	2.02	0.41
12:O:161:LYS:HD2	21:5:4760:G:H4'	2.03	0.41
13:R:7:GLN:HG2	13:R:32:ILE:O	2.20	0.41
20:e:8:VAL:HG22	20:e:10:PRO:HD3	2.02	0.41
21:5:1072:C:C2	21:5:1073:G:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1338:G:H4'	21:5:1339:U:C6	2.55	0.41
21:5:1406(C):G:H2'	21:5:1411:C:C4	2.56	0.41
21:5:1427:A:H1'	21:5:1694:C:OP1	2.21	0.41
21:5:1594:C:O2'	21:5:1597:G:H1'	2.20	0.41
21:5:1773:U:O2	21:5:1773:U:H2'	2.20	0.41
21:5:2026:A:H2'	21:5:2027:U:C6	2.55	0.41
21:5:2362:U:H5''	27:P:66:GLY:HA3	2.03	0.41
21:5:2540:C:H2'	21:5:2541:G:H8	1.86	0.41
21:5:4126:C:H5''	21:5:4127:A:H5''	2.01	0.41
22:7:16:A:H2'	22:7:17:C:C6	2.56	0.41
33:c:58:SER:O	33:c:61:GLU:HG3	2.20	0.41
42:m:53:GLU:HB3	42:m:56:LEU:HD23	2.03	0.41
54:HH:36:LEU:H	54:HH:36:LEU:HG	1.68	0.41
56:JJ:60:LEU:HD12	56:JJ:70:ARG:HA	2.03	0.41
63:YY:23:MET:HE3	63:YY:23:MET:HB3	1.97	0.41
1:9:65:C:C6	53:GG:174:PRO:HB3	2.56	0.41
1:9:96:C:H2'	1:9:97:U:H6	1.86	0.41
1:9:448:A:N6	55:II:29:LEU:HD13	2.36	0.41
1:9:794:A:C2	1:9:795:A:N7	2.89	0.41
1:9:818:A:H2'	1:9:819:G:C8	2.56	0.41
1:9:1218:C:H2'	1:9:1219:C:H6	1.86	0.41
1:9:1244:U:H2'	1:9:1245:G:C8	2.56	0.41
1:9:1772:C:H2'	1:9:1773:C:C6	2.56	0.41
1:9:1808:U:H2'	1:9:1809:A:C8	2.55	0.41
1:9:1809:A:H2'	1:9:1810:U:C6	2.56	0.41
2:A:150:LEU:HB3	2:A:151:PRO:HD2	2.02	0.41
3:B:243:LYS:HE2	21:5:4526:U:H4'	2.03	0.41
4:C:80:ARG:HH11	4:C:80:ARG:HA	1.86	0.41
4:C:169:LEU:O	4:C:173:LYS:HG2	2.21	0.41
5:E:250:LYS:O	5:E:254:LYS:HG2	2.20	0.41
7:H:41:ILE:HD12	7:H:42:ASN:N	2.35	0.41
8:I:97:ILE:H	8:I:97:ILE:HG13	1.60	0.41
9:J:17:ILE:H	9:J:17:ILE:HG13	1.69	0.41
12:O:54:TYR:CD2	12:O:145:VAL:HG21	2.54	0.41
12:O:84:VAL:HG11	12:O:102:LEU:HD22	2.03	0.41
12:O:156:LEU:HD22	21:5:4910:A:C5	2.56	0.41
14:V:15:ARG:HB3	21:5:4618:G:H5''	2.03	0.41
21:5:161:G:H2'	21:5:162:A:H8	1.86	0.41
21:5:235:A:H1'	21:5:237:G:OP2	2.21	0.41
21:5:643:C:H2'	21:5:644:G:H8	1.86	0.41
21:5:1073:G:H22	21:5:1238:A:H2	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:1199:G:H2'	21:5:1200:G:H8	1.86	0.41
21:5:1235:G:O2'	21:5:1236:C:H5'	2.20	0.41
21:5:1381:U:H6	21:5:1381:U:H2'	1.70	0.41
21:5:1449:C:H2'	21:5:1450:C:H6	1.86	0.41
21:5:1621:A:H2'	21:5:1622:U:C6	2.55	0.41
21:5:1755:C:O2'	21:5:1757:U:OP2	2.37	0.41
21:5:1794:A:H5''	21:5:4214:A:N6	2.36	0.41
21:5:1902:G:H2'	21:5:1903:G:H8	1.85	0.41
21:5:1964:A:C4	21:5:1965:G:C8	3.09	0.41
21:5:1967:A:C2	21:5:1968:G:C8	3.09	0.41
21:5:1975:G:H4'	21:5:1984:A:H4'	2.03	0.41
21:5:1993:C:N3	21:5:2002:A:C6	2.89	0.41
21:5:1994:C:O2	21:5:1994:C:H2'	2.19	0.41
21:5:2018:C:H2'	21:5:2019:C:O4'	2.21	0.41
21:5:2533:C:H2'	21:5:2534:C:H6	1.86	0.41
21:5:2568:C:H2'	21:5:2569:G:C8	2.52	0.41
21:5:2639:U:O2	36:g:26:PRO:HB3	2.21	0.41
21:5:2640:G:H2'	21:5:2641:A:C8	2.55	0.41
21:5:4410:G:C6	21:5:4433:G:C6	3.08	0.41
21:5:4500:U:H2'	21:5:4501:U:C6	2.56	0.41
21:5:4653:C:H2'	21:5:4654:C:C6	2.56	0.41
21:5:4753:U:H4'	21:5:4754:G:H5'	2.02	0.41
25:F:235:ARG:HD3	25:F:238:GLN:HB2	2.03	0.41
30:T:111:GLU:O	30:T:115:LYS:HG2	2.20	0.41
36:g:99:GLU:O	36:g:102:ILE:HG22	2.20	0.41
37:h:21:LEU:O	37:h:25:LYS:HG3	2.21	0.41
44:o:22:LYS:O	44:o:70:LEU:HA	2.20	0.41
50:BB:223:PHE:CZ	50:BB:225:LEU:HB3	2.56	0.41
50:BB:224:GLU:HG3	50:BB:227:LYS:H	1.85	0.41
55:II:107:THR:O	55:II:111:GLN:HG2	2.21	0.41
56:JJ:84:ILE:HD12	56:JJ:84:ILE:HA	1.92	0.41
57:LL:128:VAL:HB	57:LL:140:PHE:HB3	2.03	0.41
58:NN:103:GLU:HA	58:NN:106:ARG:HH12	1.85	0.41
58:NN:118:ILE:HD13	58:NN:121:ARG:HH21	1.85	0.41
68:FF:85:LYS:HB3	68:FF:88:MET:HG3	2.02	0.41
70:PP:14:LYS:O	70:PP:16:THR:N	2.52	0.41
70:PP:130:ARG:NH2	70:PP:131:PRO:HB2	2.36	0.41
73:SS:86:ARG:NH2	73:SS:89:ASP:HA	2.36	0.41
76:ZZ:73:VAL:HA	76:ZZ:76:ARG:HG2	2.02	0.41
1:9:812:A:C5	1:9:813:A:C8	3.09	0.41
1:9:873:G:H22	57:LL:153:LYS:HD3	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:9:1104:G:H2'	1:9:1105:G:C8	2.56	0.41
2:A:243:THR:O	21:5:3746:A:H5'	2.21	0.41
3:B:49:TYR:CE2	3:B:344:VAL:HG22	2.55	0.41
3:B:234:ARG:HH21	3:B:235:TRP:HE1	1.69	0.41
10:L:184:MET:HE2	10:L:184:MET:HB2	1.92	0.41
12:O:166:ILE:O	12:O:170:LYS:HG2	2.21	0.41
13:R:167:LYS:O	13:R:171:LYS:HG2	2.21	0.41
16:X:91:GLU:HA	16:X:147:LEU:HD11	2.03	0.41
17:Y:42:TYR:CG	17:Y:119:LEU:HD11	2.56	0.41
21:5:307:A:H8	21:5:307:A:O5'	2.04	0.41
21:5:1094:G:H2'	21:5:1095:A:C8	2.56	0.41
21:5:1577:G:H3'	21:5:1577:G:N3	2.35	0.41
21:5:1769:G:C4	21:5:1770:A:C8	3.09	0.41
21:5:1770:A:H2'	21:5:1771:U:C6	2.56	0.41
21:5:2573:A:H2'	21:5:2574:G:C8	2.56	0.41
21:5:4081:G:H2'	21:5:4082:G:C8	2.55	0.41
25:F:131:MET:O	25:F:134:ILE:HG13	2.21	0.41
26:M:25:VAL:HG23	26:M:40:GLY:HA3	2.03	0.41
29:S:20:PRO:HA	29:S:23:ARG:NH1	2.36	0.41
30:T:18:PRO:HB2	30:T:21:LYS:HG3	2.03	0.41
30:T:107:LYS:HE3	30:T:107:LYS:HB3	1.93	0.41
33:c:37:MET:HE1	33:c:42:LYS:HD2	2.03	0.41
48:K:11:TYR:O	48:K:15:ARG:HG2	2.21	0.41
52:EE:246:LEU:H	52:EE:246:LEU:HG	1.72	0.41
56:JJ:23:SER:HA	56:JJ:26:ASP:OD2	2.21	0.41
56:JJ:111:GLN:NE2	56:JJ:123:ILE:HG22	2.36	0.41
68:FF:61:PHE:CE2	77:cc:51:ARG:HB3	2.56	0.41
68:FF:124:ASP:HB3	77:cc:47:LYS:NZ	2.36	0.41
70:PP:79:HIS:CE1	70:PP:97:TYR:CE2	3.09	0.41
72:RR:10:LYS:HB3	72:RR:14:ARG:NH1	2.36	0.41
73:SS:23:ARG:NH1	76:ZZ:48:VAL:H	2.19	0.41
1:9:295:C:H2'	1:9:296:U:C6	2.56	0.40
4:C:287:THR:HB	46:r:5:LEU:HD23	2.02	0.40
5:E:152:ILE:O	5:E:200:THR:HG22	2.20	0.40
12:O:87:MET:HE3	12:O:87:MET:HB3	1.86	0.40
12:O:191:LYS:HA	12:O:194:ASP:OD2	2.20	0.40
21:5:1246:G:H2'	21:5:1247:U:C6	2.56	0.40
21:5:1986:U:O2'	21:5:2006:U:O4	2.39	0.40
21:5:1991:A:C2	21:5:1992:U:C4	3.09	0.40
21:5:1994:C:N4	21:5:1995:G:O6	2.53	0.40
21:5:2508:U:H2'	21:5:2509:C:H6	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:5:2539:C:H2'	21:5:2540:C:H6	1.85	0.40
21:5:2705:G:H2'	21:5:2705:G:N3	2.36	0.40
21:5:3724:A:N6	21:5:3729:U:H3	2.03	0.40
21:5:4134:C:H2'	21:5:4135:G:H8	1.86	0.40
21:5:4254:G:N3	21:5:4254:G:H2'	2.36	0.40
21:5:4486:C:H2'	21:5:4487:A:O4'	2.21	0.40
21:5:5000:G:H2'	21:5:5001:U:O4'	2.21	0.40
27:P:40:HIS:HA	27:P:113:VAL:HG22	2.03	0.40
33:c:44:LYS:O	33:c:69:THR:HG23	2.21	0.40
33:c:88:TYR:HE1	58:NN:145:THR:HG22	1.87	0.40
33:c:90:ARG:HD3	33:c:90:ARG:H	1.86	0.40
34:d:46:LEU:HA	34:d:46:LEU:HD23	1.81	0.40
37:h:20:GLN:HA	37:h:23:ASP:OD2	2.21	0.40
46:r:94:ARG:HG2	46:r:107:ARG:HD2	2.03	0.40
63:YY:40:ILE:HD13	63:YY:60:PHE:CZ	2.56	0.40
64:aa:23:CYS:HB2	64:aa:28:ARG:HB2	2.02	0.40
70:PP:64:LYS:O	70:PP:67:ALA:HB3	2.21	0.40
77:cc:17:VAL:HA	77:cc:30:VAL:HG23	2.03	0.40
1:9:71:G:C6	1:9:79:A:C8	3.10	0.40
1:9:89:C:H2'	1:9:90:G:C8	2.56	0.40
1:9:190:G:H2'	1:9:208:G:N2	2.37	0.40
1:9:636:C:H2'	1:9:637:U:C6	2.55	0.40
1:9:674:C:H2'	1:9:675:U:C6	2.56	0.40
1:9:1386:A:H2'	1:9:1387:G:O4'	2.20	0.40
1:9:1847:G:H2'	1:9:1848:U:C6	2.56	0.40
1:9:1856:C:H2'	1:9:1857:G:C8	2.56	0.40
6:G:130:PRO:HB2	11:N:18:VAL:HG22	2.03	0.40
7:H:180:TYR:HB3	42:m:63:TYR:CD2	2.56	0.40
17:Y:50:ARG:HB2	17:Y:115:ARG:HH21	1.85	0.40
21:5:153:G:H2'	21:5:154:G:C8	2.45	0.40
21:5:417:G:N2	23:8:16:G:C4	2.88	0.40
21:5:471:A:N6	21:5:683:C:H42	2.18	0.40
21:5:926:G:C2	21:5:927:G:C5	3.10	0.40
21:5:1411(C):C:H2'	21:5:1412:G:C8	2.56	0.40
21:5:1598:C:H2'	21:5:1599:G:H8	1.86	0.40
21:5:1964:A:N7	21:5:4694:G:C4	2.89	0.40
21:5:4093:G:H2'	21:5:4094:G:C8	2.53	0.40
21:5:4678:G:N2	21:5:4713:G:H1'	2.36	0.40
21:5:4756:C:H5'	21:5:4757:C:OP1	2.21	0.40
22:7:85:G:H2'	22:7:86:G:H8	1.86	0.40
25:F:49:ILE:HG13	25:F:185:CYS:SG	2.60	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:P:96:LYS:O	27:P:99:GLU:HG2	2.21	0.40
28:Q:22:ASP:HB3	28:Q:25:LEU:HB3	2.02	0.40
28:Q:23:ILE:HD11	46:r:5:LEU:HB2	2.02	0.40
29:S:132:ILE:HD12	29:S:132:ILE:HA	1.97	0.40
40:k:31:ASN:OD1	40:k:33:LYS:HG3	2.20	0.40
40:k:60:LEU:HD13	40:k:60:LEU:HA	1.92	0.40
48:K:34:LEU:HD22	48:K:204:LEU:HD21	2.03	0.40
48:K:146:ALA:HB1	48:K:149:ASP:HB2	2.03	0.40
51:CC:149:THR:O	51:CC:152:ARG:HG2	2.21	0.40
53:GG:20:ASP:OD2	53:GG:22:ARG:HB3	2.21	0.40
55:II:62:VAL:HG12	55:II:77:ARG:HA	2.03	0.40
65:bb:72:ARG:NH1	65:bb:73:LEU:H	2.19	0.40
68:FF:86:LYS:HA	68:FF:89:THR:HG22	2.02	0.40
70:PP:43:ARG:HA	70:PP:46:SER:HB3	2.03	0.40
70:PP:77:LYS:HD3	70:PP:102:PHE:CG	2.56	0.40
75:UU:28:ASN:HB3	75:UU:31:SER:OG	2.22	0.40
76:ZZ:47:LEU:H	76:ZZ:79:ILE:HA	1.86	0.40
1:9:436:G:C6	1:9:437:G:O6	2.74	0.40
1:9:944:A:H5''	59:OO:134:PRO:HB2	2.03	0.40
2:A:180:LEU:HD13	2:A:180:LEU:HA	1.92	0.40
3:B:261:ARG:HD3	21:5:3870:C:H4'	2.04	0.40
16:X:81:LEU:HD11	16:X:135:LYS:HE2	2.02	0.40
16:X:115:LYS:HE2	16:X:115:LYS:HB3	1.96	0.40
21:5:214:G:H2'	21:5:215:C:C6	2.57	0.40
21:5:653:C:H2'	21:5:654:C:C6	2.56	0.40
21:5:1237:C:H5	25:F:47:LYS:HA	1.86	0.40
21:5:1573:G:H22	45:p:4:ARG:CZ	2.34	0.40
21:5:1751:A:C2	21:5:1752:G:C4	3.09	0.40
21:5:2277:C:H2'	21:5:2278:G:H8	1.86	0.40
21:5:2845:A:N3	21:5:2845:A:H2'	2.36	0.40
21:5:4433:G:H2'	21:5:4434:C:C6	2.56	0.40
21:5:4892:A:H61	21:5:4928:C:H41	1.67	0.40
22:7:92:C:H2'	22:7:93:G:H8	1.85	0.40
24:D:118:ILE:H	24:D:118:ILE:HD12	1.85	0.40
25:F:73:MET:HE3	25:F:73:MET:HB3	1.81	0.40
26:M:13:ALA:HA	26:M:58:THR:HG23	2.03	0.40
36:g:32:TYR:HD1	36:g:32:TYR:HA	1.74	0.40
39:j:14:LYS:HE2	39:j:14:LYS:HB3	1.95	0.40
42:m:55:SER:O	42:m:58:GLN:HG3	2.21	0.40
52:EE:126:VAL:HG22	52:EE:158:ASP:O	2.21	0.40
53:GG:61:PHE:HA	53:GG:62:PRO:HD3	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:HH:166:VAL:O	54:HH:170:VAL:HG23	2.22	0.40
59:OO:53:ILE:HD13	59:OO:90:ILE:HG13	2.03	0.40
59:OO:61:LYS:NZ	59:OO:76:LEU:HB3	2.36	0.40
68:FF:125:SER:HB2	68:FF:136:ARG:HB3	2.03	0.40
76:ZZ:104:ARG:HD2	76:ZZ:104:ARG:HA	1.81	0.40
1:9:921:G:C6	61:WW:28:ARG:HD3	2.56	0.40
1:9:1456:G:H2'	1:9:1457:U:H6	1.86	0.40
2:A:45:VAL:HG22	2:A:86:GLN:O	2.20	0.40
3:B:228:TYR:HB2	21:5:4979:A:OP1	2.20	0.40
7:H:62:GLY:HA3	7:H:66:GLU:OE2	2.22	0.40
7:H:71:ARG:HD3	21:5:4691:A:O3'	2.20	0.40
7:H:143:GLU:OE1	7:H:145:VAL:HG23	2.22	0.40
12:O:122:ALA:HA	29:S:162:GLN:HG3	2.02	0.40
14:V:16:ILE:HD11	14:V:57:VAL:H	1.86	0.40
16:X:77:ILE:H	16:X:77:ILE:HG13	1.71	0.40
16:X:117:TYR:HB2	16:X:119:ILE:HG22	2.03	0.40
19:b:16:TRP:CZ2	30:T:81:LYS:HA	2.56	0.40
20:e:81:ASN:HA	20:e:111:ILE:HD11	2.04	0.40
21:5:460:C:H2'	21:5:461:G:C8	2.56	0.40
21:5:490:C:H2'	21:5:491:G:H8	1.86	0.40
21:5:515:C:H2'	21:5:516:C:C6	2.56	0.40
21:5:515:C:H2'	21:5:516:C:H6	1.86	0.40
21:5:979:C:N4	21:5:1276:C:H42	2.18	0.40
21:5:1762:C:H2'	21:5:1763:C:C5	2.53	0.40
21:5:1998:A:H1'	21:5:2020:U:H5'	2.03	0.40
21:5:2521:G:H2'	21:5:2522:G:C8	2.56	0.40
21:5:2765:A:H2'	21:5:2766:A:C8	2.57	0.40
21:5:3802:U:C5	21:5:4498:U:H1'	2.56	0.40
21:5:3856:A:H5''	27:P:83:TRP:O	2.22	0.40
22:7:94:C:H2'	22:7:95:C:H6	1.86	0.40
23:8:51:U:O2	23:8:51:U:H2'	2.20	0.40
23:8:101:C:H2'	23:8:102:G:O4'	2.22	0.40
23:8:144:U:H2'	23:8:145:C:C6	2.56	0.40
27:P:25:HIS:HB2	27:P:28:ASN:HD21	1.86	0.40
29:S:147:ASP:HB3	29:S:150:ILE:HG23	2.03	0.40
34:d:81:PRO:HB2	34:d:84:ILE:HD11	2.02	0.40
37:h:97:LYS:O	37:h:100:GLU:HG3	2.21	0.40
47:1:1479:U:H2'	47:1:1480:U:O4'	2.21	0.40
50:BB:38:MET:HE2	50:BB:38:MET:HB3	1.85	0.40
51:CC:65:LYS:HG2	51:CC:273:LEU:HD13	2.04	0.40
52:EE:191:ARG:HA	52:EE:191:ARG:HD2	1.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:EE:242:LYS:HB2	52:EE:244:ILE:HG13	2.04	0.40
55:II:160:SER:O	55:II:163:GLU:HG3	2.21	0.40
56:JJ:13:TYR:HB2	56:JJ:44:TRP:HB3	2.03	0.40
70:PP:21:ASP:O	70:PP:24:GLN:HB3	2.22	0.40
74:TT:34:VAL:HG13	74:TT:52:TRP:CZ2	2.56	0.40
77:cc:17:VAL:HB	77:cc:30:VAL:HG23	2.03	0.40
1:9:342:C:C2	1:9:343:A:C8	3.09	0.40
1:9:793:G:H2'	1:9:794:A:H8	1.87	0.40
1:9:801:U:N3	1:9:865:A:N6	2.69	0.40
1:9:851:C:H5''	1:9:852:G:H5'	2.03	0.40
1:9:1621:U:O2'	1:9:1622:U:H2'	2.22	0.40
1:9:1802:C:H2'	1:9:1803:U:H6	1.86	0.40
1:9:1865:C:N4	64:aa:93:LYS:HG2	2.36	0.40
3:B:56:ILE:HD13	3:B:56:ILE:HA	1.90	0.40
5:E:261:LEU:N	5:E:262:PRO:HD2	2.37	0.40
6:G:239:GLY:O	6:G:242:ARG:HG3	2.22	0.40
7:H:89:ARG:HB2	7:H:187:VAL:HG22	2.02	0.40
7:H:163:GLN:HE21	7:H:163:GLN:HB3	1.68	0.40
9:J:19:LYS:HB3	9:J:75:ARG:CZ	2.52	0.40
13:R:114:LYS:O	13:R:146:LYS:HE2	2.21	0.40
20:e:41:ILE:HG12	21:5:1317:U:OP2	2.20	0.40
20:e:66:THR:HA	20:e:69:MET:HE2	2.03	0.40
21:5:427:A:H2'	21:5:428:G:H8	1.87	0.40
21:5:1449:C:H2'	21:5:1450:C:C6	2.57	0.40
21:5:1752:G:H2'	21:5:1753:G:C8	2.57	0.40
21:5:1823:G:H2'	21:5:1824:G:C8	2.56	0.40
21:5:1968:G:C6	21:5:2020:U:N3	2.90	0.40
21:5:4107:G:H2'	21:5:4108:G:H8	1.87	0.40
21:5:4194:U:H2'	21:5:4194:U:O2	2.21	0.40
21:5:4519:C:H5''	21:5:4520:G:H5''	2.03	0.40
22:7:23:A:H2'	22:7:24:C:H6	1.86	0.40
44:o:26:TYR:HD2	44:o:67:VAL:HG11	1.86	0.40
47:1:1336:U:O4	47:1:1394:A:H1'	2.22	0.40
48:K:185:LEU:HA	48:K:188:ASN:ND2	2.37	0.40
54:HH:63:PHE:HA	54:HH:95:ILE:O	2.22	0.40
64:aa:11:ALA:HB3	64:aa:33:ASP:HB2	2.03	0.40
68:FF:139:VAL:HG13	77:cc:45:ASN:O	2.22	0.40
69:KK:63:ALA:HB3	69:KK:68:TYR:HE2	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	A	246/248 (99%)	236 (96%)	10 (4%)	0	100	100
3	B	392/394 (100%)	380 (97%)	12 (3%)	0	100	100
4	C	360/362 (99%)	349 (97%)	11 (3%)	0	100	100
5	E	208/251 (83%)	203 (98%)	5 (2%)	0	100	100
6	G	229/240 (95%)	224 (98%)	5 (2%)	0	100	100
7	H	188/190 (99%)	186 (99%)	2 (1%)	0	100	100
8	I	201/213 (94%)	194 (96%)	7 (4%)	0	100	100
9	J	168/170 (99%)	166 (99%)	2 (1%)	0	100	100
10	L	208/210 (99%)	202 (97%)	6 (3%)	0	100	100
11	N	201/203 (99%)	196 (98%)	5 (2%)	0	100	100
12	O	197/199 (99%)	194 (98%)	3 (2%)	0	100	100
13	R	178/180 (99%)	175 (98%)	3 (2%)	0	100	100
14	V	137/139 (99%)	134 (98%)	3 (2%)	0	100	100
15	W	75/94 (80%)	73 (97%)	2 (3%)	0	100	100
16	X	116/118 (98%)	110 (95%)	6 (5%)	0	100	100
17	Y	132/134 (98%)	132 (100%)	0	0	100	100
18	a	145/147 (99%)	143 (99%)	2 (1%)	0	100	100
19	b	100/116 (86%)	97 (97%)	3 (3%)	0	100	100
20	e	126/128 (98%)	124 (98%)	2 (2%)	0	100	100
24	D	291/293 (99%)	283 (97%)	8 (3%)	0	100	100
25	F	223/225 (99%)	213 (96%)	10 (4%)	0	100	100
26	M	136/138 (99%)	129 (95%)	7 (5%)	0	100	100
27	P	151/153 (99%)	146 (97%)	5 (3%)	0	100	100
28	Q	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
29	S	174/176 (99%)	165 (95%)	9 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	T	157/159 (99%)	151 (96%)	6 (4%)	0	100	100
31	U	97/99 (98%)	95 (98%)	2 (2%)	0	100	100
32	Z	133/135 (98%)	128 (96%)	5 (4%)	0	100	100
33	c	96/98 (98%)	94 (98%)	2 (2%)	0	100	100
34	d	105/107 (98%)	102 (97%)	3 (3%)	0	100	100
35	f	107/109 (98%)	104 (97%)	3 (3%)	0	100	100
36	g	112/114 (98%)	110 (98%)	2 (2%)	0	100	100
37	h	120/122 (98%)	118 (98%)	2 (2%)	0	100	100
38	i	100/102 (98%)	98 (98%)	2 (2%)	0	100	100
39	j	84/86 (98%)	82 (98%)	2 (2%)	0	100	100
40	k	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
41	l	48/50 (96%)	45 (94%)	3 (6%)	0	100	100
42	m	50/52 (96%)	49 (98%)	1 (2%)	0	100	100
43	n	23/25 (92%)	23 (100%)	0	0	100	100
44	o	102/104 (98%)	100 (98%)	2 (2%)	0	100	100
45	p	89/91 (98%)	85 (96%)	4 (4%)	0	100	100
46	r	122/124 (98%)	121 (99%)	1 (1%)	0	100	100
48	K	126/130 (97%)	115 (91%)	11 (9%)	0	100	100
49	AA	215/217 (99%)	209 (97%)	6 (3%)	0	100	100
50	BB	211/213 (99%)	199 (94%)	12 (6%)	0	100	100
51	CC	219/221 (99%)	214 (98%)	5 (2%)	0	100	100
52	EE	260/262 (99%)	247 (95%)	13 (5%)	0	100	100
53	GG	222/224 (99%)	215 (97%)	7 (3%)	0	100	100
54	HH	181/189 (96%)	176 (97%)	5 (3%)	0	100	100
55	II	204/206 (99%)	198 (97%)	6 (3%)	0	100	100
56	JJ	174/176 (99%)	170 (98%)	4 (2%)	0	100	100
57	LL	139/151 (92%)	133 (96%)	6 (4%)	0	100	100
58	NN	147/149 (99%)	144 (98%)	3 (2%)	0	100	100
59	OO	134/136 (98%)	130 (97%)	4 (3%)	0	100	100
60	VV	81/83 (98%)	78 (96%)	3 (4%)	0	100	100
61	WW	127/129 (98%)	121 (95%)	6 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
62	XX	139/141 (99%)	137 (99%)	2 (1%)	0	100	100
63	YY	122/124 (98%)	121 (99%)	1 (1%)	0	100	100
64	aa	99/101 (98%)	96 (97%)	3 (3%)	0	100	100
65	bb	81/83 (98%)	78 (96%)	3 (4%)	0	100	100
66	ee	55/57 (96%)	53 (96%)	2 (4%)	0	100	100
67	DD	209/211 (99%)	202 (97%)	7 (3%)	0	100	100
68	FF	181/191 (95%)	172 (95%)	9 (5%)	0	100	100
69	KK	76/78 (97%)	74 (97%)	2 (3%)	0	100	100
70	PP	127/129 (98%)	79 (62%)	40 (32%)	8 (6%)	1	6
71	QQ	134/136 (98%)	130 (97%)	4 (3%)	0	100	100
72	RR	130/132 (98%)	125 (96%)	5 (4%)	0	100	100
73	SS	142/144 (99%)	139 (98%)	3 (2%)	0	100	100
74	TT	139/141 (99%)	136 (98%)	3 (2%)	0	100	100
75	UU	44/48 (92%)	44 (100%)	0	0	100	100
76	ZZ	73/75 (97%)	70 (96%)	3 (4%)	0	100	100
77	cc	60/62 (97%)	60 (100%)	0	0	100	100
78	dd	53/55 (96%)	46 (87%)	7 (13%)	0	100	100
All	All	10683/10948 (98%)	10317 (97%)	358 (3%)	8 (0%)	49	80

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
70	PP	135	ALA
70	PP	65	LYS
70	PP	61	ARG
70	PP	63	ALA
70	PP	73	PRO
70	PP	34	MET
70	PP	64	LYS
70	PP	130	ARG

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	
2	A	190/190 (100%)	183 (96%)	7 (4%)	30	64
3	B	342/342 (100%)	323 (94%)	19 (6%)	19	52
4	C	302/302 (100%)	294 (97%)	8 (3%)	40	72
5	E	190/223 (85%)	176 (93%)	14 (7%)	13	42
6	G	200/205 (98%)	191 (96%)	9 (4%)	24	59
7	H	169/169 (100%)	163 (96%)	6 (4%)	31	65
8	I	175/180 (97%)	165 (94%)	10 (6%)	18	52
9	J	143/143 (100%)	134 (94%)	9 (6%)	16	48
10	L	175/175 (100%)	168 (96%)	7 (4%)	28	62
11	N	171/171 (100%)	165 (96%)	6 (4%)	32	65
12	O	171/171 (100%)	165 (96%)	6 (4%)	32	65
13	R	159/159 (100%)	155 (98%)	4 (2%)	42	72
14	V	106/106 (100%)	99 (93%)	7 (7%)	15	46
15	W	66/80 (82%)	62 (94%)	4 (6%)	17	49
16	X	106/106 (100%)	100 (94%)	6 (6%)	18	52
17	Y	124/124 (100%)	122 (98%)	2 (2%)	55	79
18	a	119/119 (100%)	116 (98%)	3 (2%)	42	72
19	b	84/95 (88%)	78 (93%)	6 (7%)	13	43
20	e	114/114 (100%)	107 (94%)	7 (6%)	17	49
24	D	247/247 (100%)	233 (94%)	14 (6%)	18	52
25	F	196/196 (100%)	186 (95%)	10 (5%)	21	55
26	M	117/117 (100%)	109 (93%)	8 (7%)	14	45
27	P	134/134 (100%)	129 (96%)	5 (4%)	30	64
28	Q	164/164 (100%)	151 (92%)	13 (8%)	11	39
29	S	157/157 (100%)	138 (88%)	19 (12%)	5	21
30	T	139/139 (100%)	130 (94%)	9 (6%)	15	47
31	U	89/89 (100%)	86 (97%)	3 (3%)	32	66
32	Z	117/117 (100%)	113 (97%)	4 (3%)	32	66
33	c	84/84 (100%)	75 (89%)	9 (11%)	6	26
34	d	98/98 (100%)	94 (96%)	4 (4%)	27	61

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
35	f	88/88 (100%)	81 (92%)	7 (8%)	11	38
36	g	98/98 (100%)	91 (93%)	7 (7%)	13	43
37	h	109/109 (100%)	104 (95%)	5 (5%)	24	58
38	i	86/86 (100%)	81 (94%)	5 (6%)	18	51
39	j	73/73 (100%)	69 (94%)	4 (6%)	19	53
40	k	64/64 (100%)	61 (95%)	3 (5%)	23	58
41	l	47/47 (100%)	45 (96%)	2 (4%)	26	60
42	m	48/48 (100%)	45 (94%)	3 (6%)	16	48
43	n	24/24 (100%)	23 (96%)	1 (4%)	26	61
44	o	92/92 (100%)	85 (92%)	7 (8%)	12	41
45	p	74/74 (100%)	73 (99%)	1 (1%)	59	80
46	r	108/108 (100%)	104 (96%)	4 (4%)	30	64
48	K	119/120 (99%)	112 (94%)	7 (6%)	18	50
49	AA	180/181 (99%)	173 (96%)	7 (4%)	28	62
50	BB	194/194 (100%)	187 (96%)	7 (4%)	31	65
51	CC	187/187 (100%)	180 (96%)	7 (4%)	30	64
52	EE	224/224 (100%)	216 (96%)	8 (4%)	31	65
53	GG	195/195 (100%)	185 (95%)	10 (5%)	21	55
54	HH	165/169 (98%)	160 (97%)	5 (3%)	36	69
55	II	178/178 (100%)	176 (99%)	2 (1%)	65	83
56	JJ	158/158 (100%)	153 (97%)	5 (3%)	34	67
57	LL	130/136 (96%)	121 (93%)	9 (7%)	14	45
58	NN	130/130 (100%)	122 (94%)	8 (6%)	16	49
59	OO	106/106 (100%)	98 (92%)	8 (8%)	12	41
60	VV	67/67 (100%)	64 (96%)	3 (4%)	24	59
61	WW	112/112 (100%)	100 (89%)	12 (11%)	6	26
62	XX	113/113 (100%)	108 (96%)	5 (4%)	25	60
63	YY	107/107 (100%)	100 (94%)	7 (6%)	15	47
64	aa	88/88 (100%)	82 (93%)	6 (7%)	14	45
65	bb	75/75 (100%)	73 (97%)	2 (3%)	39	71
66	ee	47/47 (100%)	47 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
67	DD	174/174 (100%)	167 (96%)	7 (4%)	28	62
68	FF	158/161 (98%)	152 (96%)	6 (4%)	29	63
69	KK	70/70 (100%)	69 (99%)	1 (1%)	59	80
70	PP	115/115 (100%)	57 (50%)	58 (50%)	0	0
71	QQ	112/112 (100%)	108 (96%)	4 (4%)	31	65
72	RR	119/119 (100%)	115 (97%)	4 (3%)	32	66
73	SS	125/125 (100%)	120 (96%)	5 (4%)	28	62
74	TT	111/111 (100%)	107 (96%)	4 (4%)	31	65
75	UU	46/46 (100%)	46 (100%)	0	100	100
76	ZZ	66/66 (100%)	66 (100%)	0	100	100
77	cc	55/55 (100%)	52 (94%)	3 (6%)	19	53
78	dd	48/48 (100%)	45 (94%)	3 (6%)	16	48
All	All	9333/9416 (99%)	8833 (95%)	500 (5%)	21	53

All (500) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	29	LEU
2	A	49	ILE
2	A	101	VAL
2	A	102	LEU
2	A	158	ILE
2	A	202	VAL
2	A	204	MET
3	B	17	LEU
3	B	53	MET
3	B	79	VAL
3	B	84	MET
3	B	89	ILE
3	B	93	VAL
3	B	99	LEU
3	B	101	THR
3	B	205	VAL
3	B	248	LEU
3	B	262	VAL
3	B	280	ILE
3	B	287	ILE
3	B	298	LEU

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Mol	Chain	Res	Type
3	B	314	ILE
3	B	338	VAL
3	B	344	VAL
3	B	355	THR
3	B	363	ILE
4	C	101	MET
4	C	128	LEU
4	C	154	VAL
4	C	171	LEU
4	C	189	MET
4	C	202	ILE
4	C	217	ILE
4	C	313	VAL
5	E	51	VAL
5	E	53	VAL
5	E	56	ILE
5	E	70	LEU
5	E	124	VAL
5	E	153	LEU
5	E	155	ILE
5	E	156	LEU
5	E	198	ILE
5	E	211	ILE
5	E	270	LEU
5	E	280	LEU
5	E	289	LEU
5	E	290	VAL
6	G	94	ILE
6	G	116	LEU
6	G	159	THR
6	G	188	VAL
6	G	202	ASN
6	G	220	VAL
6	G	230	MET
6	G	237	LEU
6	G	268	LEU
7	H	27	VAL
7	H	41	ILE
7	H	67	LEU
7	H	103	VAL
7	H	107	GLU
7	H	111	LEU

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Mol	Chain	Res	Type
8	I	48	LEU
8	I	91	LEU
8	I	97	ILE
8	I	115	MET
8	I	138	ILE
8	I	142	LEU
8	I	177	ASN
8	I	193	ASP
8	I	200	ILE
8	I	213	HIS
9	J	12	MET
9	J	17	ILE
9	J	20	LEU
9	J	42	GLN
9	J	83	LEU
9	J	93	GLU
9	J	94	LEU
9	J	115	LEU
9	J	123	ILE
10	L	11	LYS
10	L	46	ILE
10	L	59	VAL
10	L	63	THR
10	L	124	LEU
10	L	130	LYS
10	L	154	VAL
11	N	22	LEU
11	N	36	LEU
11	N	64	ILE
11	N	89	VAL
11	N	176	LYS
11	N	193	ARG
12	O	34	VAL
12	O	60	LYS
12	O	144	GLU
12	O	145	VAL
12	O	156	LEU
12	O	193	THR
13	R	5	ARG
13	R	78	ILE
13	R	111	GLU
13	R	139	MET

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Mol	Chain	Res	Type
14	V	16	ILE
14	V	18	LEU
14	V	25	VAL
14	V	30	ASP
14	V	69	LYS
14	V	105	ILE
14	V	128	LEU
15	W	3	VAL
15	W	11	TYR
15	W	20	ARG
15	W	48	GLN
16	X	50	LYS
16	X	71	LEU
16	X	93	ASN
16	X	100	VAL
16	X	138	VAL
16	X	140	LEU
17	Y	99	ILE
17	Y	121	ARG
18	a	43	ILE
18	a	94	LYS
18	a	122	VAL
19	b	35	VAL
19	b	40	LEU
19	b	43	MET
19	b	75	LEU
19	b	89	VAL
19	b	104	LEU
20	e	12	ILE
20	e	21	ILE
20	e	58	ILE
20	e	78	LEU
20	e	85	LEU
20	e	111	ILE
20	e	120	ILE
24	D	55	VAL
24	D	56	THR
24	D	60	ILE
24	D	73	MET
24	D	74	ILE
24	D	75	VAL
24	D	113	PHE

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Mol	Chain	Res	Type
24	D	115	MET
24	D	146	LEU
24	D	153	THR
24	D	212	MET
24	D	214	GLU
24	D	236	MET
24	D	268	ARG
25	F	41	LEU
25	F	49	ILE
25	F	82	VAL
25	F	124	LEU
25	F	151	GLU
25	F	168	LEU
25	F	186	MET
25	F	202	GLU
25	F	239	ILE
25	F	242	LEU
26	M	2	VAL
26	M	27	ILE
26	M	30	VAL
26	M	43	THR
26	M	46	ARG
26	M	55	MET
26	M	104	MET
26	M	123	ILE
27	P	24	VAL
27	P	67	VAL
27	P	114	ILE
27	P	146	ILE
27	P	151	THR
28	Q	23	ILE
28	Q	27	LEU
28	Q	31	LEU
28	Q	37	ARG
28	Q	48	LEU
28	Q	53	MET
28	Q	61	LEU
28	Q	63	LEU
28	Q	72	LEU
28	Q	82	VAL
28	Q	95	VAL
28	Q	119	LYS

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Mol	Chain	Res	Type
28	Q	158	THR
29	S	2	LYS
29	S	6	THR
29	S	12	VAL
29	S	24	THR
29	S	30	MET
29	S	38	VAL
29	S	39	VAL
29	S	61	ILE
29	S	67	VAL
29	S	75	VAL
29	S	77	ASN
29	S	100	LEU
29	S	126	ILE
29	S	127	MET
29	S	129	VAL
29	S	150	ILE
29	S	159	LEU
29	S	160	ARG
29	S	174	THR
30	T	24	VAL
30	T	33	ILE
30	T	39	ILE
30	T	64	VAL
30	T	72	VAL
30	T	80	VAL
30	T	96	ILE
30	T	102	ARG
30	T	112	ASN
31	U	63	LEU
31	U	72	VAL
31	U	78	PHE
32	Z	14	LEU
32	Z	25	ILE
32	Z	57	MET
32	Z	91	LEU
33	c	33	GLN
33	c	35	LEU
33	c	57	LYS
33	c	78	ASN
33	c	93	THR
33	c	94	LEU

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Mol	Chain	Res	Type
33	c	101	ASP
33	c	104	ILE
33	c	105	ILE
34	d	20	VAL
34	d	33	ILE
34	d	105	LEU
34	d	119	THR
35	f	18	LEU
35	f	23	GLU
35	f	30	ILE
35	f	73	LYS
35	f	83	MET
35	f	103	VAL
35	f	110	ILE
36	g	3	GLN
36	g	5	LEU
36	g	11	LEU
36	g	22	LEU
36	g	32	TYR
36	g	63	VAL
36	g	65	MET
37	h	30	GLN
37	h	31	LEU
37	h	54	ILE
37	h	82	ASP
37	h	97	LYS
38	i	9	VAL
38	i	21	VAL
38	i	44	ILE
38	i	60	LEU
38	i	70	LEU
39	j	3	LYS
39	j	33	THR
39	j	58	THR
39	j	67	LEU
40	k	46	VAL
40	k	60	LEU
40	k	64	LEU
41	l	21	ARG
41	l	23	ILE
42	m	59	LEU
42	m	63	TYR

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Mol	Chain	Res	Type
42	m	95	LEU
43	n	13	LEU
44	o	4	VAL
44	o	7	THR
44	o	27	LYS
44	o	55	ILE
44	o	67	VAL
44	o	70	LEU
44	o	93	LEU
45	p	8	VAL
46	r	49	VAL
46	r	81	THR
46	r	96	MET
46	r	103	HIS
48	K	10	LEU
48	K	29	LEU
48	K	53	VAL
48	K	163	LEU
48	K	193	LEU
48	K	194	LEU
48	K	197	ASN
49	AA	40	LYS
49	AA	82	THR
49	AA	94	THR
49	AA	136	GLU
49	AA	140	VAL
49	AA	147	LEU
49	AA	159	ILE
50	BB	77	ASP
50	BB	91	VAL
50	BB	103	MET
50	BB	108	ASP
50	BB	177	GLN
50	BB	189	ILE
50	BB	225	LEU
51	CC	88	ILE
51	CC	92	GLU
51	CC	160	LEU
51	CC	205	VAL
51	CC	219	ILE
51	CC	260	VAL
51	CC	270	THR

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Mol	Chain	Res	Type
52	EE	9	LEU
52	EE	23	LEU
52	EE	38	LEU
52	EE	42	LEU
52	EE	45	ILE
52	EE	184	THR
52	EE	238	LEU
52	EE	246	LEU
53	GG	16	ILE
53	GG	50	VAL
53	GG	52	ILE
53	GG	75	LEU
53	GG	97	VAL
53	GG	111	LEU
53	GG	112	VAL
53	GG	125	THR
53	GG	201	LYS
53	GG	204	GLU
54	HH	36	LEU
54	HH	53	VAL
54	HH	69	LEU
54	HH	78	ARG
54	HH	144	ILE
55	II	36	THR
55	II	190	LEU
56	JJ	38	ARG
56	JJ	59	GLU
56	JJ	60	LEU
56	JJ	97	ILE
56	JJ	144	ILE
57	LL	16	ILE
57	LL	23	VAL
57	LL	33	LEU
57	LL	42	LEU
57	LL	44	PHE
57	LL	56	ILE
57	LL	76	VAL
57	LL	143	LEU
57	LL	145	VAL
58	NN	16	LEU
58	NN	45	LEU
58	NN	60	VAL

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Mol	Chain	Res	Type
58	NN	72	LEU
58	NN	75	LEU
58	NN	78	LYS
58	NN	84	LEU
58	NN	86	GLU
59	OO	42	VAL
59	OO	50	LYS
59	OO	60	MET
59	OO	98	ARG
59	OO	119	LEU
59	OO	129	ILE
59	OO	132	VAL
59	OO	135	ILE
60	VV	13	VAL
60	VV	42	VAL
60	VV	79	VAL
61	WW	6	VAL
61	WW	12	LYS
61	WW	25	VAL
61	WW	34	ILE
61	WW	38	LEU
61	WW	52	ILE
61	WW	69	LEU
61	WW	74	VAL
61	WW	86	LEU
61	WW	103	VAL
61	WW	104	LEU
61	WW	115	GLU
62	XX	7	LEU
62	XX	36	LEU
62	XX	55	VAL
62	XX	81	ILE
62	XX	122	VAL
63	YY	22	GLN
63	YY	47	MET
63	YY	57	VAL
63	YY	79	LEU
63	YY	80	ASP
63	YY	85	ASN
63	YY	114	MET
64	aa	30	VAL
64	aa	40	VAL

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Mol	Chain	Res	Type
64	aa	44	ILE
64	aa	50	VAL
64	aa	69	VAL
64	aa	75	VAL
65	bb	51	GLN
65	bb	74	THR
67	DD	1	MET
67	DD	41	VAL
67	DD	59	LEU
67	DD	164	VAL
67	DD	175	VAL
67	DD	177	LEU
67	DD	208	VAL
68	FF	19	LEU
68	FF	29	GLN
68	FF	71	ARG
68	FF	88	MET
68	FF	169	ILE
68	FF	177	LEU
69	KK	40	VAL
70	PP	12	PHE
70	PP	13	ARG
70	PP	14	LYS
70	PP	16	THR
70	PP	23	ASP
70	PP	25	LEU
70	PP	26	LEU
70	PP	27	ASP
70	PP	28	MET
70	PP	29	SER
70	PP	31	GLU
70	PP	35	GLN
70	PP	36	LEU
70	PP	40	ARG
70	PP	41	GLN
70	PP	42	ARG
70	PP	44	ARG
70	PP	45	LEU
70	PP	47	ARG
70	PP	50	ARG
70	PP	52	LYS
70	PP	57	LEU

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Mol	Chain	Res	Type
70	PP	58	LYS
70	PP	60	LEU
70	PP	64	LYS
70	PP	65	LYS
70	PP	66	GLU
70	PP	70	MET
70	PP	71	GLU
70	PP	72	LYS
70	PP	76	VAL
70	PP	78	THR
70	PP	83	MET
70	PP	84	ILE
70	PP	86	LEU
70	PP	88	GLU
70	PP	89	MET
70	PP	90	VAL
70	PP	92	SER
70	PP	93	MET
70	PP	94	VAL
70	PP	100	LYS
70	PP	101	THR
70	PP	104	GLN
70	PP	106	GLU
70	PP	107	ILE
70	PP	108	LYS
70	PP	114	HIS
70	PP	116	LEU
70	PP	118	GLU
70	PP	121	ILE
70	PP	122	THR
70	PP	124	LYS
70	PP	126	VAL
70	PP	130	ARG
70	PP	133	ILE
70	PP	136	THR
70	PP	137	HIS
71	QQ	47	LEU
71	QQ	48	GLN
71	QQ	121	VAL
71	QQ	140	ARG
72	RR	46	LEU
72	RR	106	LEU

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Mol	Chain	Res	Type
72	RR	108	LEU
72	RR	124	VAL
73	SS	3	LEU
73	SS	10	GLN
73	SS	12	ILE
73	SS	13	LEU
73	SS	45	LEU
74	TT	34	VAL
74	TT	77	LYS
74	TT	110	LEU
74	TT	112	MET
77	cc	17	VAL
77	cc	18	LEU
77	cc	43	ILE
78	dd	6	LEU
78	dd	36	LEU
78	dd	53	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (142) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	8	GLN
2	A	50	HIS
2	A	100	ASN
2	A	217	GLN
3	B	158	GLN
3	B	213	GLN
4	C	50	GLN
4	C	119	GLN
4	C	142	HIS
4	C	203	GLN
4	C	282	HIS
5	E	185	ASN
5	E	248	GLN
5	E	287	HIS
6	G	147	GLN
6	G	206	GLN
7	H	188	GLN
8	I	166	HIS
9	J	10	ASN
9	J	112	HIS
10	L	19	GLN

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Mol	Chain	Res	Type
10	L	27	ASN
10	L	104	ASN
11	N	182	HIS
12	O	26	GLN
12	O	50	ASN
12	O	143	HIS
13	R	36	ASN
13	R	58	HIS
13	R	86	ASN
13	R	158	GLN
14	V	27	ASN
14	V	101	ASN
14	V	108	ASN
15	W	48	GLN
15	W	63	GLN
16	X	57	GLN
17	Y	61	HIS
18	a	40	HIS
18	a	49	HIS
19	b	6	ASN
19	b	12	GLN
19	b	60	ASN
19	b	94	HIS
20	e	24	GLN
20	e	126	ASN
24	D	63	GLN
24	D	122	GLN
24	D	202	GLN
24	D	230	ASN
25	F	55	HIS
25	F	79	ASN
25	F	109	GLN
25	F	115	GLN
25	F	118	ASN
25	F	225	HIS
26	M	33	GLN
26	M	70	GLN
27	P	64	ASN
27	P	118	GLN
29	S	66	GLN
29	S	77	ASN
29	S	108	GLN

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Mol	Chain	Res	Type
29	S	125	GLN
29	S	173	ASN
30	T	58	HIS
30	T	70	HIS
30	T	79	GLN
31	U	44	GLN
31	U	105	ASN
33	c	50	ASN
33	c	78	ASN
34	d	69	ASN
34	d	79	ASN
34	d	121	ASN
35	f	21	GLN
36	g	3	GLN
37	h	98	HIS
37	h	108	GLN
39	j	76	HIS
41	l	4	HIS
41	l	17	GLN
42	m	91	HIS
44	o	45	GLN
44	o	102	GLN
45	p	34	HIS
46	r	31	ASN
46	r	100	ASN
48	K	197	ASN
48	K	214	GLN
49	AA	111	GLN
49	AA	113	GLN
49	AA	164	ASN
49	AA	169	HIS
50	BB	186	ASN
52	EE	36	HIS
52	EE	142	HIS
53	GG	13	GLN
54	HH	12	ASN
54	HH	193	GLN
56	JJ	154	GLN
57	LL	5	GLN
57	LL	18	GLN
57	LL	19	ASN
57	LL	83	GLN

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Mol	Chain	Res	Type
57	LL	108	ASN
57	LL	112	HIS
58	NN	5	HIS
58	NN	62	GLN
59	OO	113	GLN
60	VV	29	HIS
61	WW	91	ASN
62	XX	61	GLN
63	YY	22	GLN
63	YY	106	GLN
64	aa	7	ASN
64	aa	72	HIS
64	aa	86	ASN
66	ee	95	GLN
66	ee	110	GLN
66	ee	117	ASN
67	DD	145	GLN
67	DD	179	GLN
68	FF	29	GLN
68	FF	65	GLN
68	FF	82	ASN
68	FF	83	ASN
68	FF	149	GLN
69	KK	32	HIS
69	KK	42	ASN
70	PP	24	GLN
70	PP	53	GLN
70	PP	79	HIS
70	PP	104	GLN
70	PP	114	HIS
70	PP	137	HIS
71	QQ	48	GLN
71	QQ	114	GLN
74	TT	12	GLN
74	TT	117	GLN
74	TT	126	GLN
75	UU	85	HIS

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	9	1653/1670 (98%)	327 (19%)	16 (0%)
21	5	3519/3543 (99%)	756 (21%)	53 (1%)
22	7	118/119 (99%)	11 (9%)	0
23	8	149/156 (95%)	35 (23%)	1 (0%)
47	1	166/167 (99%)	94 (56%)	9 (5%)
All	All	5605/5655 (99%)	1223 (21%)	79 (1%)

All (1223) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	9	2	A
1	9	3	C
1	9	4	C
1	9	12	U
1	9	25	A
1	9	26	U
1	9	33	G
1	9	41	G
1	9	42	A
1	9	46	A
1	9	56	G
1	9	58	C
1	9	62	G
1	9	65	C
1	9	67	C
1	9	68	A
1	9	71	G
1	9	72	C
1	9	73	C
1	9	74	G
1	9	79	A
1	9	103	A
1	9	111	A
1	9	113	G
1	9	114	G
1	9	115	U
1	9	116	U
1	9	124	U
1	9	125	C
1	9	126	G
1	9	127	C

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Mol	Chain	Res	Type
1	9	143	U
1	9	146	G
1	9	147	A
1	9	155	G
1	9	156	G
1	9	158	A
1	9	163	U
1	9	168	C
1	9	182	C
1	9	183	G
1	9	184	G
1	9	187	G
1	9	188	C
1	9	189	U
1	9	192	C
1	9	215	G
1	9	289	G
1	9	291	G
1	9	294	U
1	9	302	A
1	9	306	C
1	9	307	G
1	9	308	G
1	9	309	G
1	9	312	G
1	9	314	U
1	9	318	A
1	9	319	C
1	9	320	G
1	9	335	G
1	9	347	G
1	9	362	C
1	9	364	A
1	9	368	U
1	9	370	G
1	9	383	G
1	9	385	G
1	9	386	C
1	9	398	A
1	9	399	C
1	9	400	C
1	9	407	G

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Mol	Chain	Res	Type
1	9	408	A
1	9	409	C
1	9	418	A
1	9	426	A
1	9	427	U
1	9	448	A
1	9	450	C
1	9	452	G
1	9	454	U
1	9	465	A
1	9	466	G
1	9	471	G
1	9	472	C
1	9	473	A
1	9	474	G
1	9	476	A
1	9	483	C
1	9	487	U
1	9	492	C
1	9	493	A
1	9	496	C
1	9	502	C
1	9	517	C
1	9	528	A
1	9	530	U
1	9	531	A
1	9	532	C
1	9	533	A
1	9	542	U
1	9	544	G
1	9	548	C
1	9	549	C
1	9	550	C
1	9	551	U
1	9	554	A
1	9	556	U
1	9	557	U
1	9	559	G
1	9	561	A
1	9	562	U
1	9	568	C
1	9	571	U

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Mol	Chain	Res	Type
1	9	576	A
1	9	583	A
1	9	588	G
1	9	590	A
1	9	591	U
1	9	592	C
1	9	600	G
1	9	603	C
1	9	606	G
1	9	608	C
1	9	609	U
1	9	614	C
1	9	617	G
1	9	627	U
1	9	628	A
1	9	643	A
1	9	644	G
1	9	660	C
1	9	664	A
1	9	668	A
1	9	669	A
1	9	670	A
1	9	671	A
1	9	672	A
1	9	683	G
1	9	684	G
1	9	689	U
1	9	752	G
1	9	811	A
1	9	821	G
1	9	822	U
1	9	830	A
1	9	834	C
1	9	844	U
1	9	847	A
1	9	853	C
1	9	859	G
1	9	870	A
1	9	871	U
1	9	872	A
1	9	873	G
1	9	874	G

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Mol	Chain	Res	Type
1	9	875	A
1	9	878	G
1	9	887	U
1	9	890	U
1	9	892	U
1	9	913	A
1	9	914	U
1	9	919	A
1	9	920	A
1	9	922	A
1	9	933	G
1	9	934	G
1	9	955	A
1	9	970	G
1	9	971	G
1	9	990	A
1	9	992	A
1	9	999	G
1	9	1017	U
1	9	1023	A
1	9	1045	U
1	9	1057	C
1	9	1061	U
1	9	1062	A
1	9	1083	A
1	9	1085	C
1	9	1115	U
1	9	1116	C
1	9	1117	C
1	9	1118	C
1	9	1121	G
1	9	1123	C
1	9	1126	G
1	9	1133	A
1	9	1138	C
1	9	1139	C
1	9	1148	A
1	9	1149	A
1	9	1153	C
1	9	1154	U
1	9	1155	U
1	9	1161	U

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Mol	Chain	Res	Type
1	9	1170	A
1	9	1172	U
1	9	1195	A
1	9	1208	A
1	9	1212	G
1	9	1215	C
1	9	1221	G
1	9	1224	G
1	9	1240	A
1	9	1242	U
1	9	1251	A
1	9	1253	A
1	9	1254	C
1	9	1256	G
1	9	1257	G
1	9	1264	C
1	9	1265	A
1	9	1274	G
1	9	1275	G
1	9	1281	G
1	9	1282	A
1	9	1285	G
1	9	1286	G
1	9	1293	A
1	9	1294	G
1	9	1295	A
1	9	1298	G
1	9	1299	A
1	9	1301	A
1	9	1302	G
1	9	1307	U
1	9	1308	U
1	9	1309	C
1	9	1310	U
1	9	1314	U
1	9	1342	U
1	9	1354	G
1	9	1357	A
1	9	1363	C
1	9	1371	U
1	9	1372	U
1	9	1378	A

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Mol	Chain	Res	Type
1	9	1382	A
1	9	1395	C
1	9	1396	A
1	9	1397	U
1	9	1398	G
1	9	1401	A
1	9	1402	A
1	9	1447	G
1	9	1449	G
1	9	1452	A
1	9	1454	A
1	9	1462	U
1	9	1463	U
1	9	1466	G
1	9	1473	G
1	9	1475	G
1	9	1476	A
1	9	1477	U
1	9	1480	A
1	9	1489	A
1	9	1490	G
1	9	1494	U
1	9	1495	G
1	9	1498	A
1	9	1507	G
1	9	1520	G
1	9	1535	U
1	9	1536	G
1	9	1544	C
1	9	1546	G
1	9	1548	G
1	9	1552	G
1	9	1553	C
1	9	1556	A
1	9	1557	C
1	9	1560	U
1	9	1570	G
1	9	1574	C
1	9	1575	G
1	9	1580	A
1	9	1587	G
1	9	1588	A

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Mol	Chain	Res	Type
1	9	1601	A
1	9	1604	G
1	9	1606	G
1	9	1621	U
1	9	1623	A
1	9	1637	A
1	9	1638	G
1	9	1645	C
1	9	1646	C
1	9	1648	G
1	9	1665	G
1	9	1671	G
1	9	1674	G
1	9	1680	G
1	9	1683	C
1	9	1686	G
1	9	1697	A
1	9	1698	C
1	9	1699	A
1	9	1705	C
1	9	1706	G
1	9	1715	A
1	9	1721	U
1	9	1722	G
1	9	1726	G
1	9	1730	U
1	9	1744	G
1	9	1748	G
1	9	1756	C
1	9	1783	C
1	9	1784	G
1	9	1785	C
1	9	1823	A
1	9	1824	A
1	9	1831	A
1	9	1836	G
1	9	1838	U
1	9	1839	U
1	9	1849	G
1	9	1851	A
1	9	1861	G
1	9	1862	G

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Mol	Chain	Res	Type
1	9	1865	C
1	9	1869	A
21	5	12	A
21	5	13	U
21	5	25	A
21	5	39	A
21	5	42	A
21	5	48	G
21	5	49	U
21	5	56	A
21	5	58	G
21	5	59	A
21	5	63	G
21	5	64	A
21	5	65	A
21	5	73	A
21	5	74	G
21	5	91	G
21	5	93	G
21	5	100	C
21	5	104	G
21	5	109	G
21	5	118	C
21	5	119	G
21	5	120	A
21	5	122	U
21	5	126	C
21	5	134	G
21	5	135	G
21	5	136	C
21	5	137	G
21	5	143	C
21	5	146	G
21	5	151	G
21	5	157	U
21	5	159	C
21	5	160	G
21	5	171	U
21	5	172	C
21	5	173	C
21	5	182	G
21	5	197	A

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Mol	Chain	Res	Type
21	5	200	U
21	5	201	C
21	5	207	G
21	5	209	U
21	5	216	C
21	5	217	C
21	5	218	A
21	5	224	U
21	5	227	A
21	5	232	G
21	5	233	U
21	5	234	G
21	5	236	G
21	5	246	G
21	5	253	G
21	5	262	G
21	5	265	C
21	5	266	C
21	5	267	G
21	5	268	G
21	5	276	C
21	5	280	G
21	5	281	U
21	5	297	U
21	5	306	A
21	5	309	C
21	5	310	G
21	5	315	G
21	5	316	U
21	5	322	C
21	5	334	A
21	5	336	A
21	5	340	C
21	5	355	A
21	5	357	U
21	5	363	A
21	5	372	A
21	5	386	A
21	5	387	G
21	5	399	G
21	5	407	A
21	5	409	G

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Mol	Chain	Res	Type
21	5	410	A
21	5	412	G
21	5	413	G
21	5	415	G
21	5	431	G
21	5	432	U
21	5	440	U
21	5	446	C
21	5	449	C
21	5	450	G
21	5	452	A
21	5	453	G
21	5	454	U
21	5	455	C
21	5	466	A
21	5	467	U
21	5	468	U
21	5	469	C
21	5	481	G
21	5	481(A)	C
21	5	482	G
21	5	483	G
21	5	484	U
21	5	485	C
21	5	486	C
21	5	492	U
21	5	493	G
21	5	497	G
21	5	498	C
21	5	499	G
21	5	505	G
21	5	510	U
21	5	658	C
21	5	666	G
21	5	667	A
21	5	683	C
21	5	684	G
21	5	685	C
21	5	686	A
21	5	696	C
21	5	697	G
21	5	704	C

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Mol	Chain	Res	Type
21	5	705	G
21	5	719	C
21	5	730	G
21	5	731	G
21	5	738	C
21	5	739	G
21	5	747	A
21	5	749	G
21	5	758	G
21	5	913	U
21	5	914	U
21	5	917	A
21	5	918	G
21	5	923	C
21	5	925	C
21	5	926	G
21	5	927	G
21	5	929	A
21	5	931	C
21	5	932	A
21	5	933	G
21	5	934	C
21	5	935	A
21	5	935(A)	G
21	5	936	C
21	5	938	C
21	5	939	G
21	5	941	C
21	5	943	A
21	5	944	A
21	5	945	U
21	5	946	C
21	5	957	G
21	5	959	G
21	5	960	A
21	5	961	G
21	5	966	A
21	5	967	C
21	5	969	C
21	5	972	C
21	5	979	C
21	5	983	C

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Mol	Chain	Res	Type
21	5	1070	G
21	5	1072	C
21	5	1073	G
21	5	1076	C
21	5	1079	C
21	5	1082	C
21	5	1179	U
21	5	1187	G
21	5	1193	C
21	5	1195	G
21	5	1210	C
21	5	1211	G
21	5	1212	G
21	5	1215	C
21	5	1216	C
21	5	1234	G
21	5	1235	G
21	5	1236	C
21	5	1237	C
21	5	1238	A
21	5	1239	C
21	5	1273	G
21	5	1275	G
21	5	1284	G
21	5	1292	C
21	5	1293	G
21	5	1295	U
21	5	1296	G
21	5	1301	C
21	5	1303	A
21	5	1304	C
21	5	1308	C
21	5	1314	C
21	5	1325	C
21	5	1326	A
21	5	1354	A
21	5	1358	G
21	5	1359	G
21	5	1371	A
21	5	1377	G
21	5	1380	G
21	5	1382	G

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Mol	Chain	Res	Type
21	5	1387	A
21	5	1394	G
21	5	1397	A
21	5	1398	A
21	5	1411(A)	G
21	5	1420	A
21	5	1421	G
21	5	1429	C
21	5	1433	A
21	5	1438	U
21	5	1441	C
21	5	1445	U
21	5	1446	C
21	5	1456	C
21	5	1457	G
21	5	1458	C
21	5	1465	G
21	5	1478	C
21	5	1481	C
21	5	1482	G
21	5	1483	C
21	5	1484	G
21	5	1497	A
21	5	1498	G
21	5	1502	G
21	5	1504	G
21	5	1516	G
21	5	1518	A
21	5	1523	A
21	5	1534	A
21	5	1547	A
21	5	1552	G
21	5	1553	A
21	5	1554	A
21	5	1563	A
21	5	1566	C
21	5	1574	G
21	5	1577	G
21	5	1578	U
21	5	1591	U
21	5	1596	U
21	5	1612	G

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Mol	Chain	Res	Type
21	5	1613	A
21	5	1624	G
21	5	1625	G
21	5	1631	A
21	5	1633	G
21	5	1634	A
21	5	1638	A
21	5	1641	G
21	5	1654	G
21	5	1661	C
21	5	1676	C
21	5	1691	G
21	5	1724	G
21	5	1733	G
21	5	1741	G
21	5	1742	A
21	5	1746	A
21	5	1750	G
21	5	1752	G
21	5	1753	G
21	5	1755	C
21	5	1756	U
21	5	1757	U
21	5	1758	G
21	5	1761	G
21	5	1764	G
21	5	1768	C
21	5	1771	U
21	5	1772	C
21	5	1773	U
21	5	1774	C
21	5	1776	A
21	5	1778	C
21	5	1781	U
21	5	1787	A
21	5	1788	A
21	5	1799	G
21	5	1803	G
21	5	1804	A
21	5	1805	A
21	5	1807	C
21	5	1818	G

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Mol	Chain	Res	Type
21	5	1819	G
21	5	1821	G
21	5	1822	U
21	5	1828	C
21	5	1835	G
21	5	1836	G
21	5	1837	A
21	5	1842	G
21	5	1855	G
21	5	1869	G
21	5	1881	C
21	5	1883	G
21	5	1890	G
21	5	1897	A
21	5	1899	G
21	5	1910	G
21	5	1915	C
21	5	1916	G
21	5	1918	U
21	5	1919	G
21	5	1920	C
21	5	1922	G
21	5	1923	A
21	5	1931	C
21	5	1945	G
21	5	1948	G
21	5	1951	G
21	5	1957	U
21	5	1958	A
21	5	1959	U
21	5	1961	G
21	5	1962	A
21	5	1963	C
21	5	1964	A
21	5	1967	A
21	5	1970	A
21	5	1971	U
21	5	1974	U
21	5	1975	G
21	5	1976	G
21	5	1977	C
21	5	1978	C

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Mol	Chain	Res	Type
21	5	1979	A
21	5	1980	U
21	5	1982	G
21	5	1983	A
21	5	1984	A
21	5	1987	C
21	5	1988	G
21	5	1990	A
21	5	1991	A
21	5	1992	U
21	5	1994	C
21	5	1995	G
21	5	1997	U
21	5	1998	A
21	5	2000	G
21	5	2001	G
21	5	2002	A
21	5	2003	G
21	5	2004	U
21	5	2005	G
21	5	2007	G
21	5	2008	U
21	5	2011	C
21	5	2013	A
21	5	2015	U
21	5	2020	U
21	5	2022	C
21	5	2024	G
21	5	2025	A
21	5	2026	A
21	5	2046	G
21	5	2047	A
21	5	2048	U
21	5	2055	G
21	5	2056	G
21	5	2062	C
21	5	2064	G
21	5	2069	A
21	5	2084	U
21	5	2085	G
21	5	2089	G
21	5	2090	U

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Mol	Chain	Res	Type
21	5	2092	G
21	5	2093	G
21	5	2094	C
21	5	2097	A
21	5	2098	G
21	5	2100	G
21	5	2102	G
21	5	2104	A
21	5	2105	A
21	5	2106	G
21	5	2107	A
21	5	2108	G
21	5	2259	G
21	5	2260	C
21	5	2262	G
21	5	2264	C
21	5	2267	U
21	5	2268	A
21	5	2269	C
21	5	2270	G
21	5	2275	G
21	5	2289	C
21	5	2300	A
21	5	2301	G
21	5	2306	G
21	5	2313	A
21	5	2316	G
21	5	2331	G
21	5	2333	G
21	5	2345	G
21	5	2348	G
21	5	2351	C
21	5	2360	A
21	5	2382	A
21	5	2384	U
21	5	2389	A
21	5	2395	A
21	5	2396	A
21	5	2399	G
21	5	2402	G
21	5	2409	U
21	5	2422	C

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Mol	Chain	Res	Type
21	5	2425	U
21	5	2433	G
21	5	2441	C
21	5	2450	G
21	5	2453	A
21	5	2471	G
21	5	2475	G
21	5	2476	G
21	5	2488	C
21	5	2489	C
21	5	2490	U
21	5	2491	C
21	5	2495	U
21	5	2503	G
21	5	2504	C
21	5	2505	C
21	5	2506	G
21	5	2513	A
21	5	2520	C
21	5	2529	A
21	5	2530	U
21	5	2537	A
21	5	2546	G
21	5	2547	G
21	5	2553	A
21	5	2566	G
21	5	2575	U
21	5	2583	C
21	5	2586	G
21	5	2587	A
21	5	2589	C
21	5	2601	A
21	5	2620	G
21	5	2638	G
21	5	2658	G
21	5	2662	G
21	5	2669	C
21	5	2675	G
21	5	2676	A
21	5	2686	G
21	5	2687	U
21	5	2694	G

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Mol	Chain	Res	Type
21	5	2695	A
21	5	2696	A
21	5	2705	G
21	5	2708	U
21	5	2710	C
21	5	2711	G
21	5	2712	G
21	5	2714	G
21	5	2715	G
21	5	2716	C
21	5	2724	G
21	5	2725	A
21	5	2726	G
21	5	2740	U
21	5	2744	A
21	5	2753	G
21	5	2754	G
21	5	2759	G
21	5	2760	G
21	5	2761	U
21	5	2763	U
21	5	2764	A
21	5	2769	U
21	5	2772	C
21	5	2787	A
21	5	2788	U
21	5	2790	U
21	5	2796	G
21	5	2798	A
21	5	2806	A
21	5	2807	A
21	5	2808	G
21	5	2814	C
21	5	2826	U
21	5	2827	G
21	5	2828	U
21	5	2833	A
21	5	2837	U
21	5	2838	G
21	5	2842	G
21	5	2855	G
21	5	3598	C

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Mol	Chain	Res	Type
21	5	3604	A
21	5	3605	C
21	5	3606	U
21	5	3615	G
21	5	3625	G
21	5	3626	G
21	5	3635	A
21	5	3644	U
21	5	3653	A
21	5	3662	A
21	5	3664	G
21	5	3672	G
21	5	3673	C
21	5	3692	A
21	5	3696	C
21	5	3698	G
21	5	3711	A
21	5	3712	A
21	5	3729	U
21	5	3748	A
21	5	3753	G
21	5	3759	A
21	5	3763	A
21	5	3772	U
21	5	3773	U
21	5	3774	A
21	5	3776	G
21	5	3777	G
21	5	3778	U
21	5	3784	A
21	5	3786	U
21	5	3798	U
21	5	3808	C
21	5	3810	C
21	5	3812	C
21	5	3814	U
21	5	3817	A
21	5	3819	G
21	5	3822	U
21	5	3839	G
21	5	3840	U
21	5	3843	C

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Mol	Chain	Res	Type
21	5	3876	A
21	5	3877	A
21	5	3878	C
21	5	3879	G
21	5	3880	G
21	5	3889	G
21	5	3892	U
21	5	3897	G
21	5	3901	A
21	5	3905	A
21	5	3906	A
21	5	3907	G
21	5	3908	A
21	5	3915	U
21	5	3917	A
21	5	3918	G
21	5	3926	C
21	5	3938	G
21	5	3939	G
21	5	3941	G
21	5	3942	A
21	5	3943	A
21	5	4066	U
21	5	4069	U
21	5	4073	A
21	5	4076	G
21	5	4077	A
21	5	4085	A
21	5	4086	G
21	5	4088	C
21	5	4119	C
21	5	4120	U
21	5	4122	G
21	5	4125	C
21	5	4127	A
21	5	4128	A
21	5	4155	C
21	5	4158	C
21	5	4162	C
21	5	4163	U
21	5	4166	G
21	5	4170	A

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Mol	Chain	Res	Type
21	5	4171	C
21	5	4173	G
21	5	4183	G
21	5	4184	G
21	5	4191	G
21	5	4203	A
21	5	4212	A
21	5	4225	G
21	5	4229	U
21	5	4233	A
21	5	4234	A
21	5	4249	G
21	5	4251	A
21	5	4254	G
21	5	4266	G
21	5	4268	A
21	5	4271	A
21	5	4273	A
21	5	4281	A
21	5	4289	U
21	5	4290	U
21	5	4291	G
21	5	4297	G
21	5	4302	U
21	5	4303	C
21	5	4304	A
21	5	4305	G
21	5	4306	U
21	5	4314	C
21	5	4318	C
21	5	4319	C
21	5	4329	G
21	5	4330	G
21	5	4332	C
21	5	4336	A
21	5	4349	C
21	5	4350	C
21	5	4354	U
21	5	4355	G
21	5	4368	G
21	5	4373	G
21	5	4377	G

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Mol	Chain	Res	Type
21	5	4378	A
21	5	4380	A
21	5	4387	C
21	5	4394	A
21	5	4395	U
21	5	4396	A
21	5	4398	C
21	5	4401	G
21	5	4413	C
21	5	4419	U
21	5	4421	C
21	5	4422	A
21	5	4430	G
21	5	4436	U
21	5	4437	U
21	5	4440	G
21	5	4444	C
21	5	4448	G
21	5	4449	A
21	5	4453	C
21	5	4464	A
21	5	4466	C
21	5	4471	U
21	5	4472	G
21	5	4488	A
21	5	4500	U
21	5	4512	U
21	5	4513	A
21	5	4519	C
21	5	4520	G
21	5	4525	C
21	5	4528	G
21	5	4531	U
21	5	4548	A
21	5	4549	G
21	5	4560	C
21	5	4567	G
21	5	4573	G
21	5	4575	G
21	5	4584	A
21	5	4586	G
21	5	4590	A

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Mol	Chain	Res	Type
21	5	4626	A
21	5	4627	U
21	5	4636	U
21	5	4639	G
21	5	4652	G
21	5	4657	U
21	5	4667	C
21	5	4670	C
21	5	4671	C
21	5	4672	A
21	5	4677	U
21	5	4678	G
21	5	4691	A
21	5	4695	C
21	5	4700	A
21	5	4709	U
21	5	4719	G
21	5	4720	C
21	5	4721	G
21	5	4736	C
21	5	4737	G
21	5	4738	C
21	5	4745	G
21	5	4751	G
21	5	4752	U
21	5	4753	U
21	5	4754	G
21	5	4756	C
21	5	4757	C
21	5	4759	C
21	5	4761	G
21	5	4765	G
21	5	4769	G
21	5	4771	C
21	5	4772	C
21	5	4870	G
21	5	4872	G
21	5	4875	G
21	5	4876	A
21	5	4877	G
21	5	4882	U
21	5	4883	C

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Mol	Chain	Res	Type
21	5	4885	U
21	5	4895	C
21	5	4910	A
21	5	4915	G
21	5	4919	G
21	5	4921	C
21	5	4924	C
21	5	4926	C
21	5	4927	G
21	5	4928	C
21	5	4931	G
21	5	4937	C
21	5	4940	C
21	5	4943	A
21	5	4944	C
21	5	4947	U
21	5	4948	C
21	5	4949	G
21	5	4950	U
21	5	4951	G
21	5	4955	A
21	5	4956	A
21	5	4958	C
21	5	4960	G
21	5	4964	C
21	5	4965	U
21	5	4966	A
21	5	4976	U
21	5	4985	U
21	5	4988	U
21	5	4989	U
21	5	4990	C
21	5	5006	U
21	5	5014	A
21	5	5017	G
21	5	5021	C
21	5	5040	U
21	5	5041	G
21	5	5047	C
21	5	5050	C
21	5	5054	C
21	5	5056	A

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Mol	Chain	Res	Type
21	5	5061	A
21	5	5062	G
22	7	7	G
22	7	22	A
22	7	33	U
22	7	53	U
22	7	54	A
22	7	63	C
22	7	64	G
22	7	85	G
22	7	97	G
22	7	100	A
22	7	110	G
23	8	2	G
23	8	14	U
23	8	15	G
23	8	16	G
23	8	23	C
23	8	34	U
23	8	35	C
23	8	38	U
23	8	39	G
23	8	51	U
23	8	59	A
23	8	62	A
23	8	63	U
23	8	71	A
23	8	75	G
23	8	77	A
23	8	79	G
23	8	87	G
23	8	94	G
23	8	95	A
23	8	103	A
23	8	105	C
23	8	108	A
23	8	109	C
23	8	110	U
23	8	111	U
23	8	112	G
23	8	114	G
23	8	123	U

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Mol	Chain	Res	Type
23	8	125	C
23	8	126	C
23	8	127	U
23	8	128	C
23	8	150	C
23	8	153	C
47	1	1333	U
47	1	1335	G
47	1	1336	U
47	1	1337	A
47	1	1338	A
47	1	1339	U
47	1	1340	A
47	1	1341	U
47	1	1352	U
47	1	1353	U
47	1	1354	U
47	1	1355	A
47	1	1356	G
47	1	1357	U
47	1	1358	A
47	1	1359	A
47	1	1360	A
47	1	1361	U
47	1	1362	A
47	1	1363	A
47	1	1365	U
47	1	1366	G
47	1	1367	G
47	1	1368	G
47	1	1372	C
47	1	1374	C
47	1	1377	U
47	1	1378	A
47	1	1379	U
47	1	1381	G
47	1	1383	G
47	1	1384	C
47	1	1387	G
47	1	1388	A
47	1	1389	C
47	1	1390	A

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Mol	Chain	Res	Type
47	1	1391	G
47	1	1392	G
47	1	1394	A
47	1	1397	C
47	1	1398	C
47	1	1400	U
47	1	1402	U
47	1	1403	U
47	1	1404	A
47	1	1405	A
47	1	1406	C
47	1	1408	C
47	1	1409	C
47	1	1411	A
47	1	1413	U
47	1	1414	U
47	1	1415	U
47	1	1416	C
47	1	1417	A
47	1	1419	G
47	1	1420	G
47	1	1424	A
47	1	1425	U
47	1	1426	C
47	1	1428	C
47	1	1429	A
47	1	1430	G
47	1	1431	G
47	1	1432	U
47	1	1433	U
47	1	1434	G
47	1	1438	C
47	1	1439	U
47	1	1441	A
47	1	1442	G
47	1	1443	A
47	1	1444	A
47	1	1452	C
47	1	1454	A
47	1	1455	A
47	1	1465	U
47	1	1466	G

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Mol	Chain	Res	Type
47	1	1470	C
47	1	1474	G
47	1	1478	C
47	1	1479	U
47	1	1481	G
47	1	1482	U
47	1	1483	A
47	1	1484	U
47	1	1485	A
47	1	1487	A
47	1	1488	G
47	1	1492	C
47	1	1493	G
47	1	1494	C
47	1	1495	U
47	1	1496	A

All (79) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	9	24	C
1	9	110	U
1	9	465	A
1	9	532	C
1	9	553	U
1	9	561	A
1	9	688	U
1	9	870	A
1	9	1137	U
1	9	1253	A
1	9	1395	C
1	9	1489	A
1	9	1664	A
1	9	1679	A
1	9	1696	C
1	9	1698	C
21	5	12	A
21	5	47	A
21	5	48	G
21	5	125	C
21	5	170	C
21	5	226	G

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Mol	Chain	Res	Type
21	5	245	C
21	5	267	G
21	5	275	C
21	5	385	A
21	5	406	C
21	5	449	C
21	5	480	C
21	5	485	C
21	5	504	G
21	5	930	G
21	5	959	G
21	5	1072	C
21	5	1211	G
21	5	1238	A
21	5	1291	G
21	5	1370	G
21	5	1440	U
21	5	1445	U
21	5	1455	G
21	5	1477	C
21	5	1633	G
21	5	1804	A
21	5	1835	G
21	5	1974	U
21	5	1975	G
21	5	1979	A
21	5	1983	A
21	5	2003	G
21	5	2025	A
21	5	2046	G
21	5	2068	C
21	5	2089	G
21	5	2266	C
21	5	2502	A
21	5	2695	A
21	5	3603	G
21	5	3625	G
21	5	3888	G
21	5	4170	A
21	5	4232	U
21	5	4448	G
21	5	4699	U

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Mol	Chain	Res	Type
21	5	4719	G
21	5	4884	G
21	5	4925	U
21	5	4936	G
21	5	5020	G
23	8	124	U
47	1	1334	U
47	1	1338	A
47	1	1427	U
47	1	1477	G
47	1	1478	C
47	1	1481	G
47	1	1482	U
47	1	1492	C
47	1	1495	U

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 213 ligands modelled in this entry, 213 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 ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
21	5	25
1	9	19
48	K	1
75	UU	1
5	E	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	5	2113:G	O3'	2258:C	P	42.14
1	5	1252:C	O3'	1271:G	P	34.29
1	9	752:G	O3'	788:G	P	21.44
1	9	1409:A	O3'	1442:U	P	19.85
1	5	1219:G	O3'	1233:G	P	19.34
1	9	130:G	O3'	141:A	P	18.85
1	9	697:G	O3'	729:C	P	18.43
1	9	1761:U	O3'	1771:G	P	18.29
1	9	323:C	O3'	329:G	P	17.65
1	9	834:C	O3'	841:G	P	17.37
1	K	61:PRO	C	144:MET	N	17.09
1	5	4101:C	O3'	4107:G	P	16.59
1	5	4138:C	O3'	4146:G	P	16.55
1	5	990:C	O3'	1064:G	P	16.22
1	5	3948:C	O3'	4065:G	P	16.20
1	5	523:C	O3'	638:G	P	15.58
1	5	4777:C	O3'	4859:C	P	15.38
1	5	1696:C	O3'	1720:C	P	14.75
1	5	5022:U	O3'	5028:G	P	14.14
1	5	760:G	O3'	904:C	P	13.34
1	5	2901:G	O3'	3597:G	P	12.90
1	5	1364:U	O3'	1368:A	P	12.88
1	5	182:G	O3'	189:G	P	10.65
1	5	4729:A	O3'	4735:G	P	10.28
1	5	1406(C):G	O3'	1411:C	P	9.86
1	UU	36:CYS	C	53:PRO	N	8.22
1	9	225:G	O3'	287:U	P	8.10
1	5	1180:C	O3'	1183:C	P	7.40
1	9	736:C	O3'	743:U	P	7.32
1	9	745:C	O3'	749:U	P	6.96
1	5	500:G	O3'	504:G	P	6.27

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	9	1203:G	O3'	1204:A	P	6.21
1	9	1690:U	O3'	1692:U	P	5.96
1	E	100:GLY	C	105:GLY	N	5.69
1	5	1239:C	O3'	1244:G	P	5.42
1	5	1100:U	O3'	1168:G	P	5.21
1	9	322:C	O3'	323:C	P	5.01
1	5	4740:G	O3'	4743:G	P	5.01
1	9	689:U	O3'	690:G	P	4.73
1	5	4899:G	O3'	4902:C	P	3.99
1	5	512:U	O3'	515:C	P	3.95
1	9	304:C	O3'	305:U	P	3.93
1	5	1438:U	O3'	1440:U	P	3.76
1	9	798:G	O3'	799:U	P	3.62
1	9	886:A	O3'	887:U	P	3.47
1	9	903:A	O3'	904:A	P	3.32
1	9	902:G	O3'	903:A	P	3.16

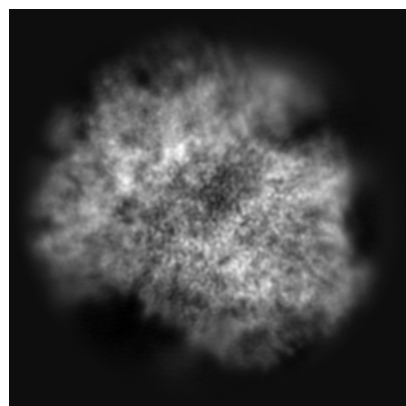
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-72137. These allow visual inspection of the internal detail of the map and identification of artifacts.

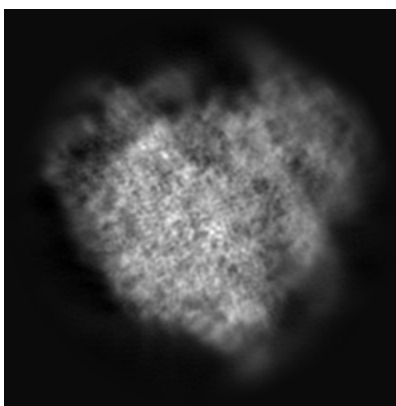
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

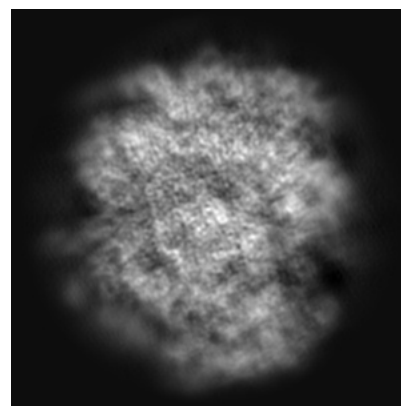
6.1.1 Primary map



X

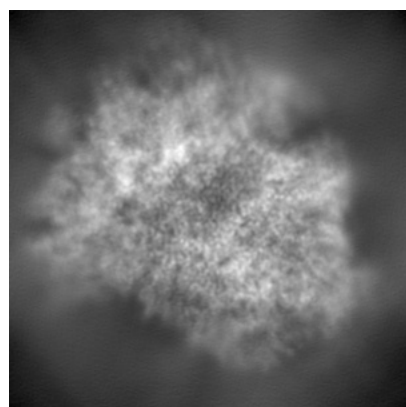


Y

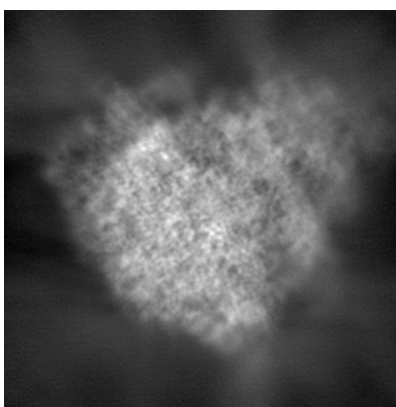


Z

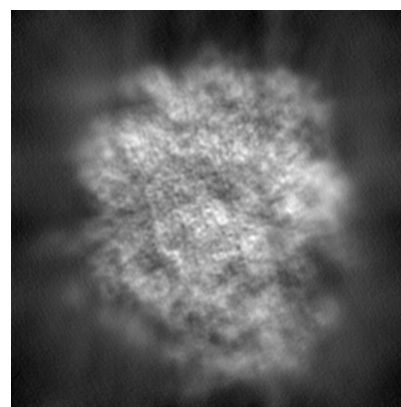
6.1.2 Raw map



X



Y

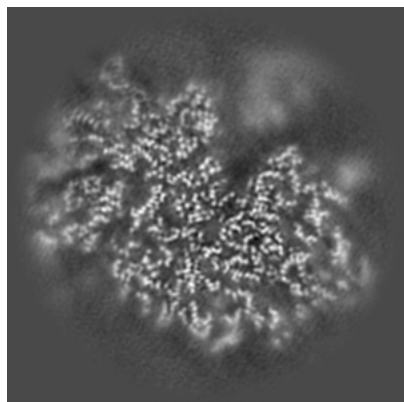


Z

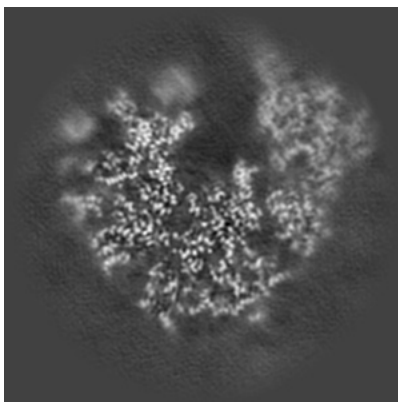
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

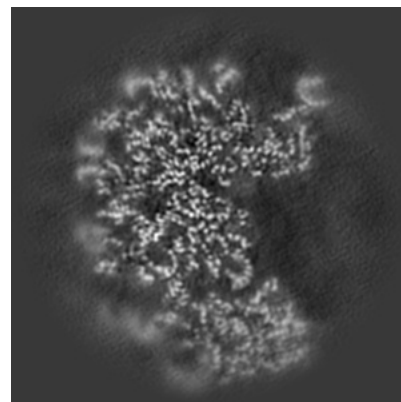
6.2.1 Primary map



X Index: 128

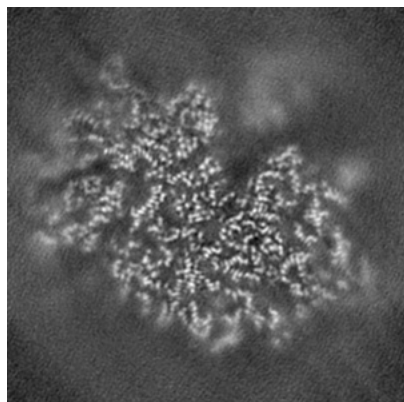


Y Index: 128

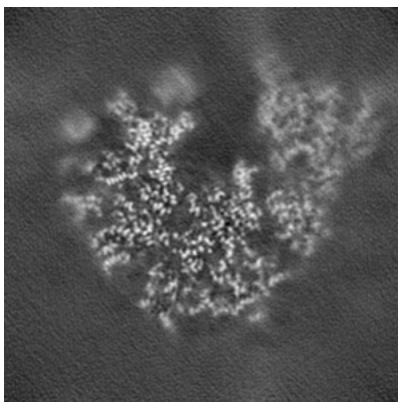


Z Index: 128

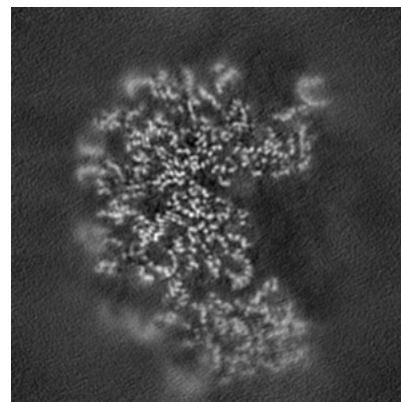
6.2.2 Raw map



X Index: 128



Y Index: 128

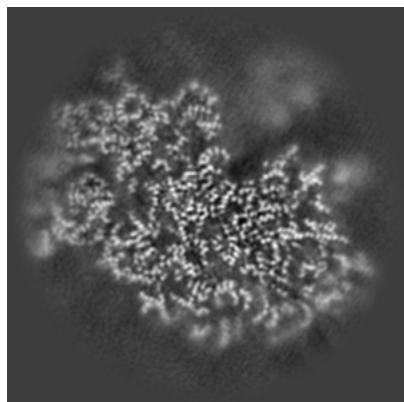


Z Index: 128

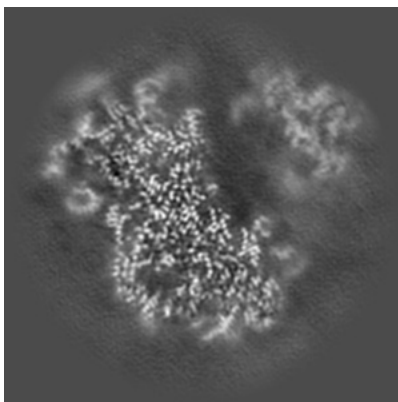
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

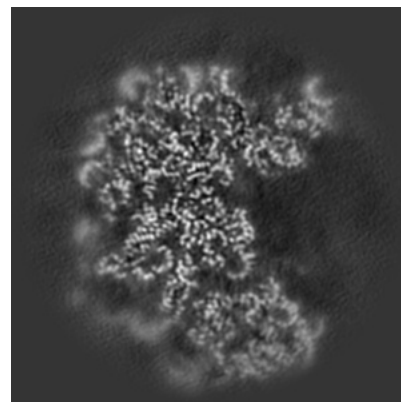
6.3.1 Primary map



X Index: 123

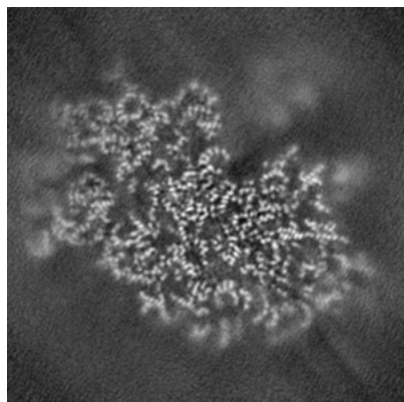


Y Index: 146

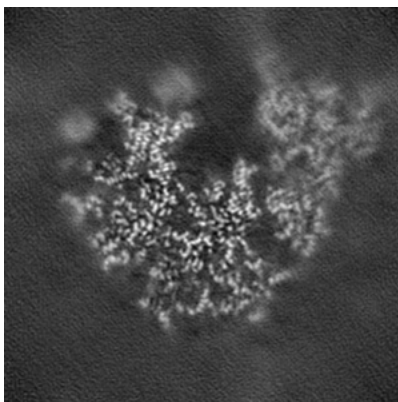


Z Index: 132

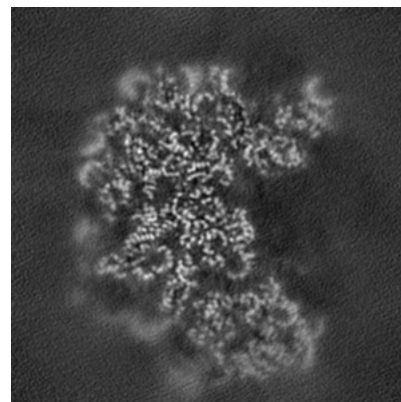
6.3.2 Raw map



X Index: 123



Y Index: 127

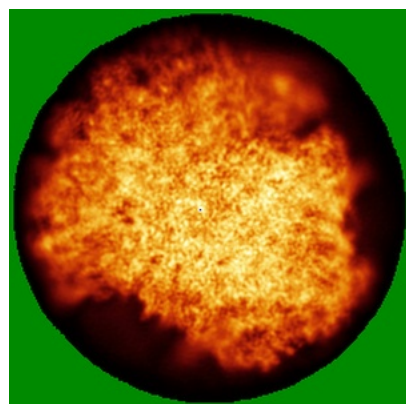


Z Index: 132

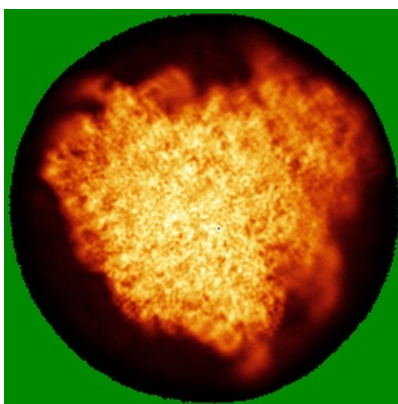
The images above show the largest variance slices of the map in three orthogonal directions.

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

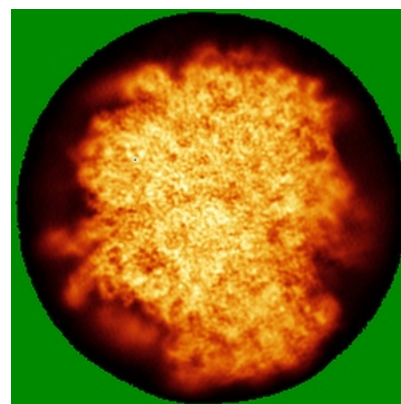
6.4.1 Primary map



X

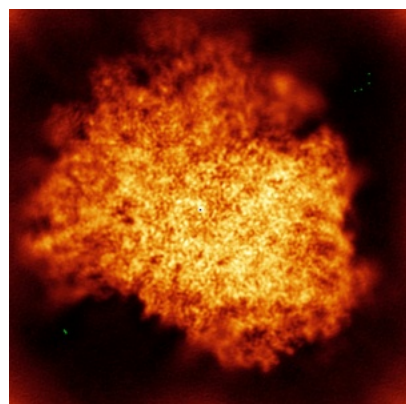


Y

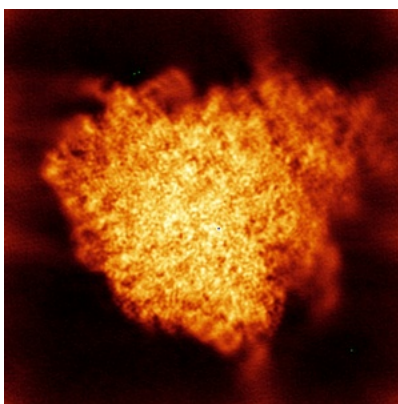


Z

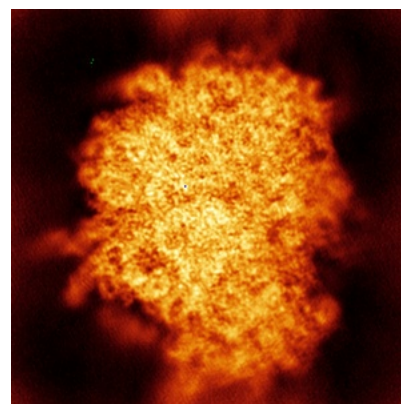
6.4.2 Raw map



X



Y

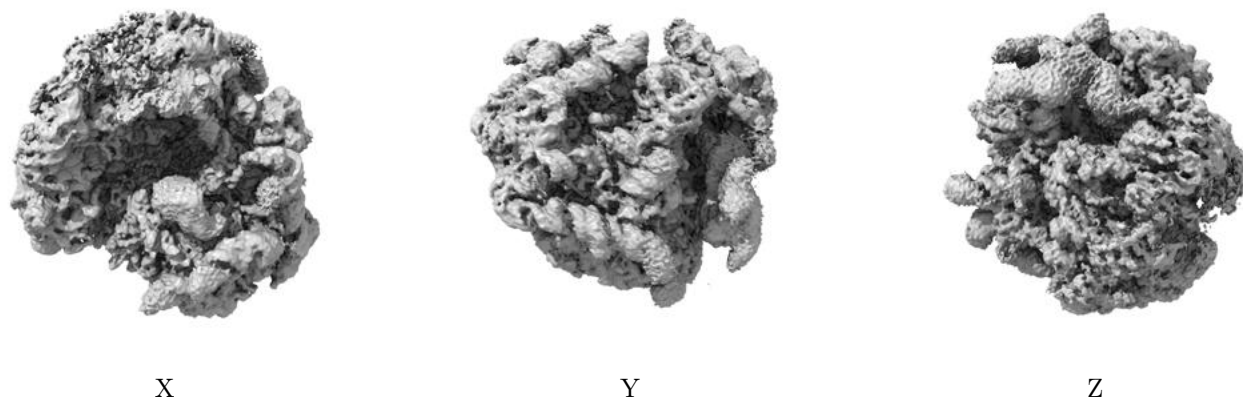


Z

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

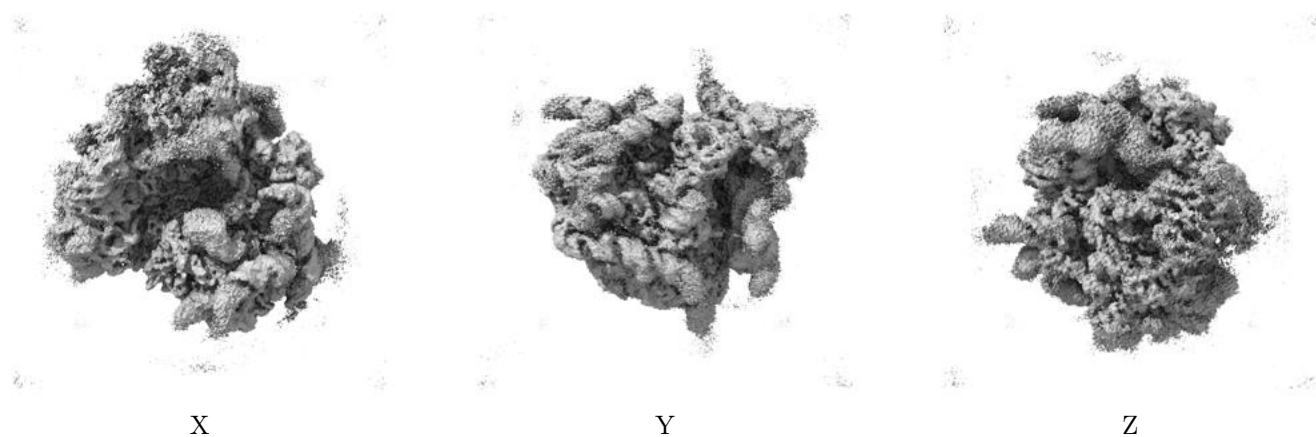
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.25. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

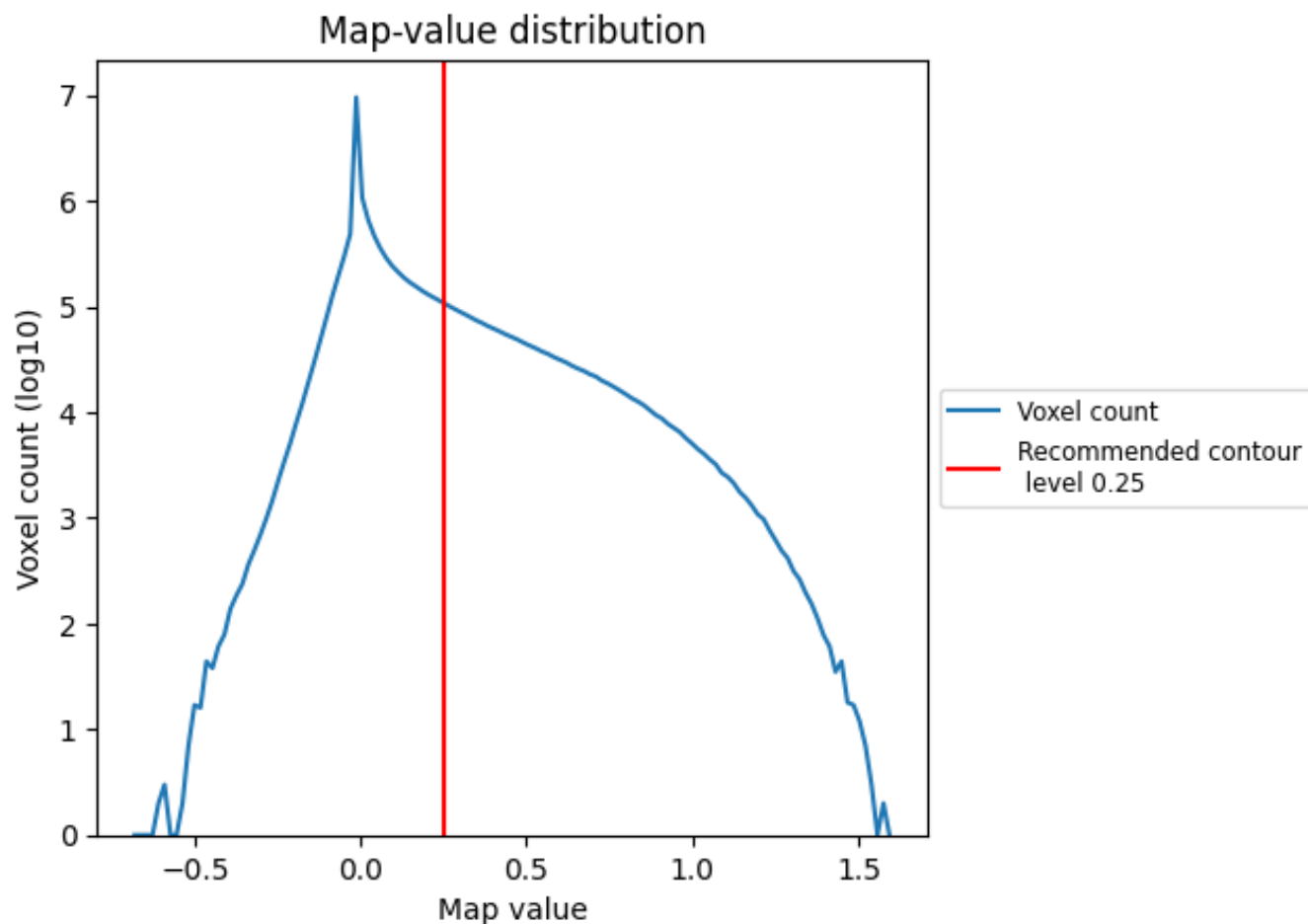
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

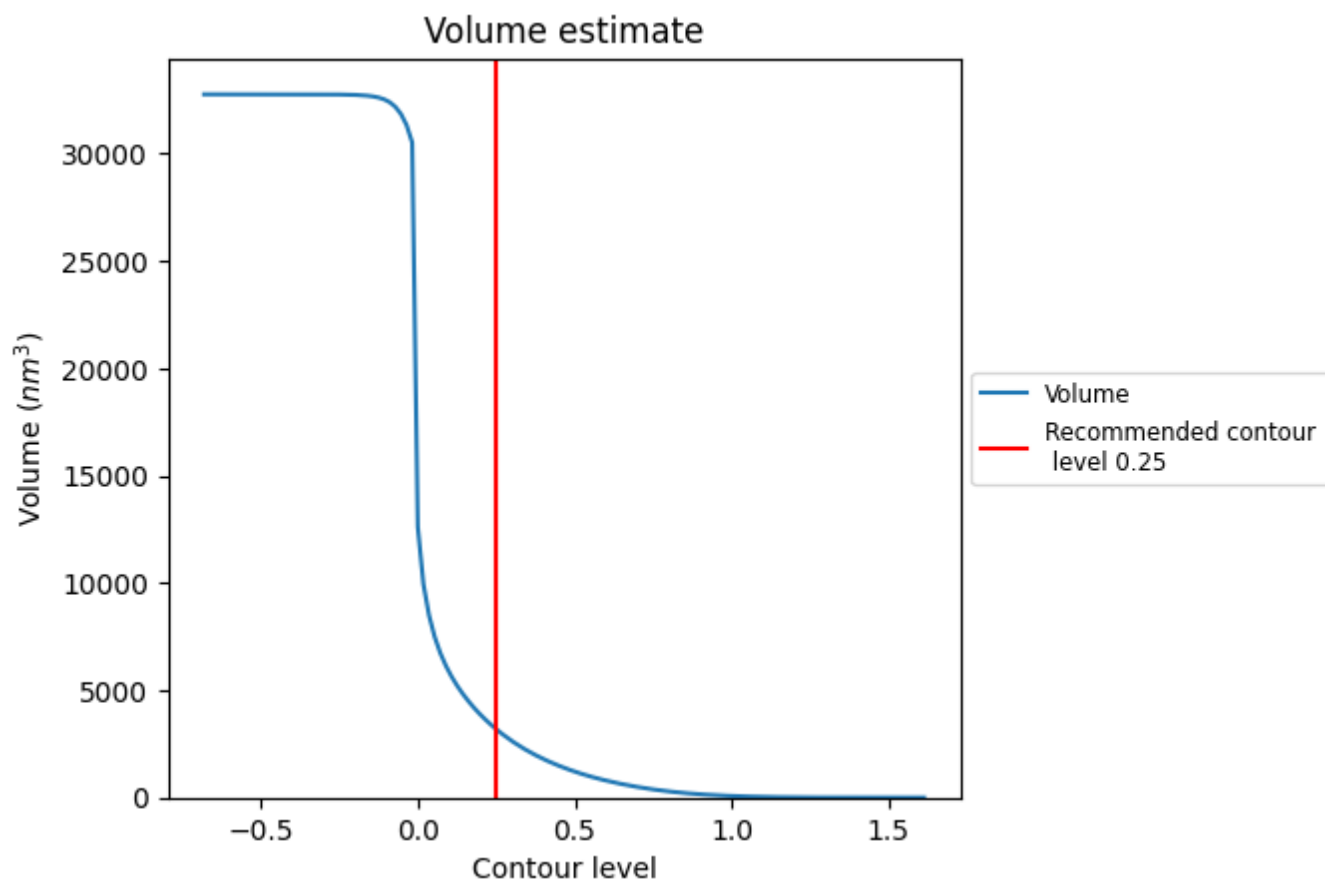
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

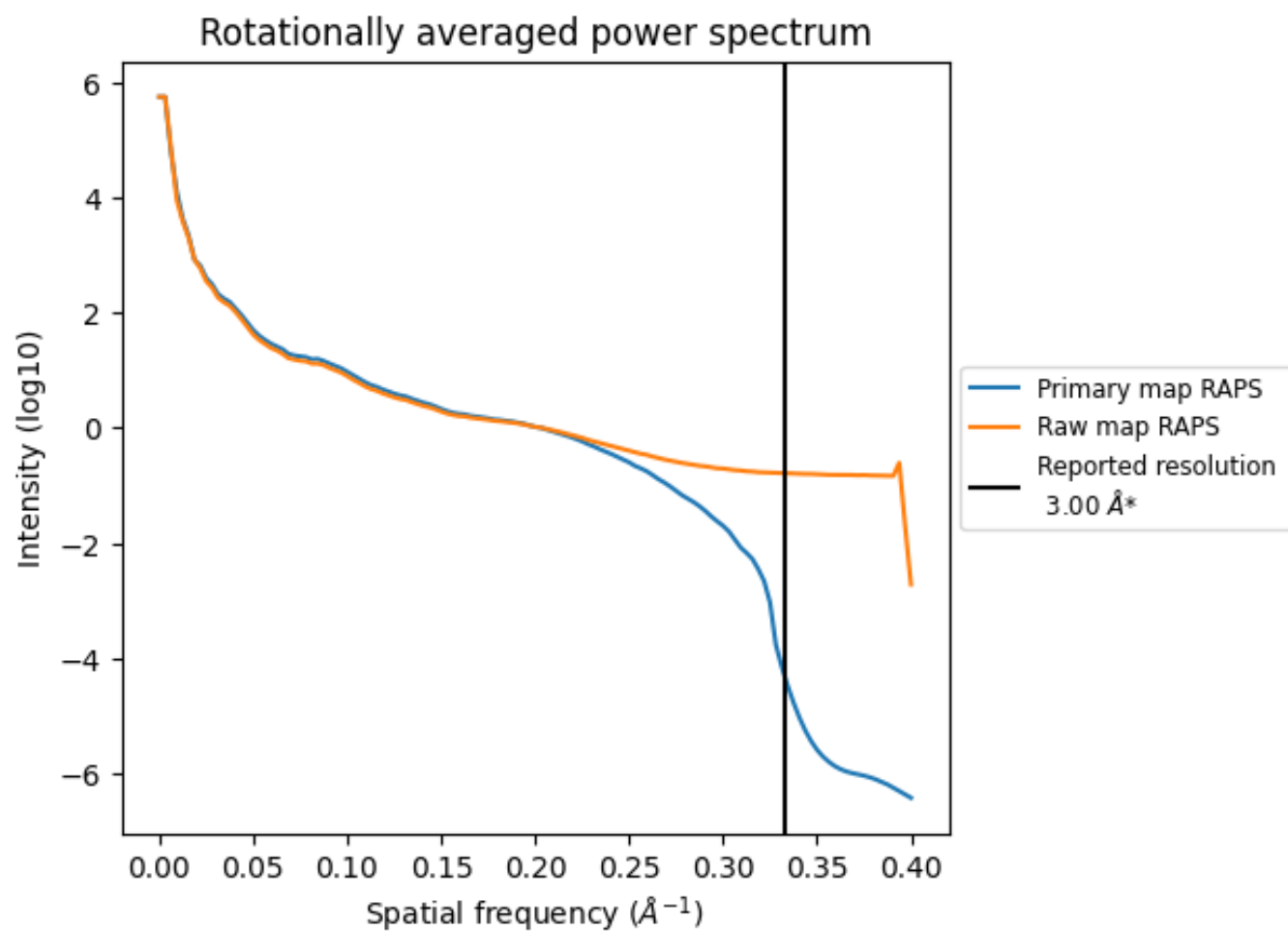
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3185 nm^3 ; this corresponds to an approximate mass of 2877 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 ⓘ

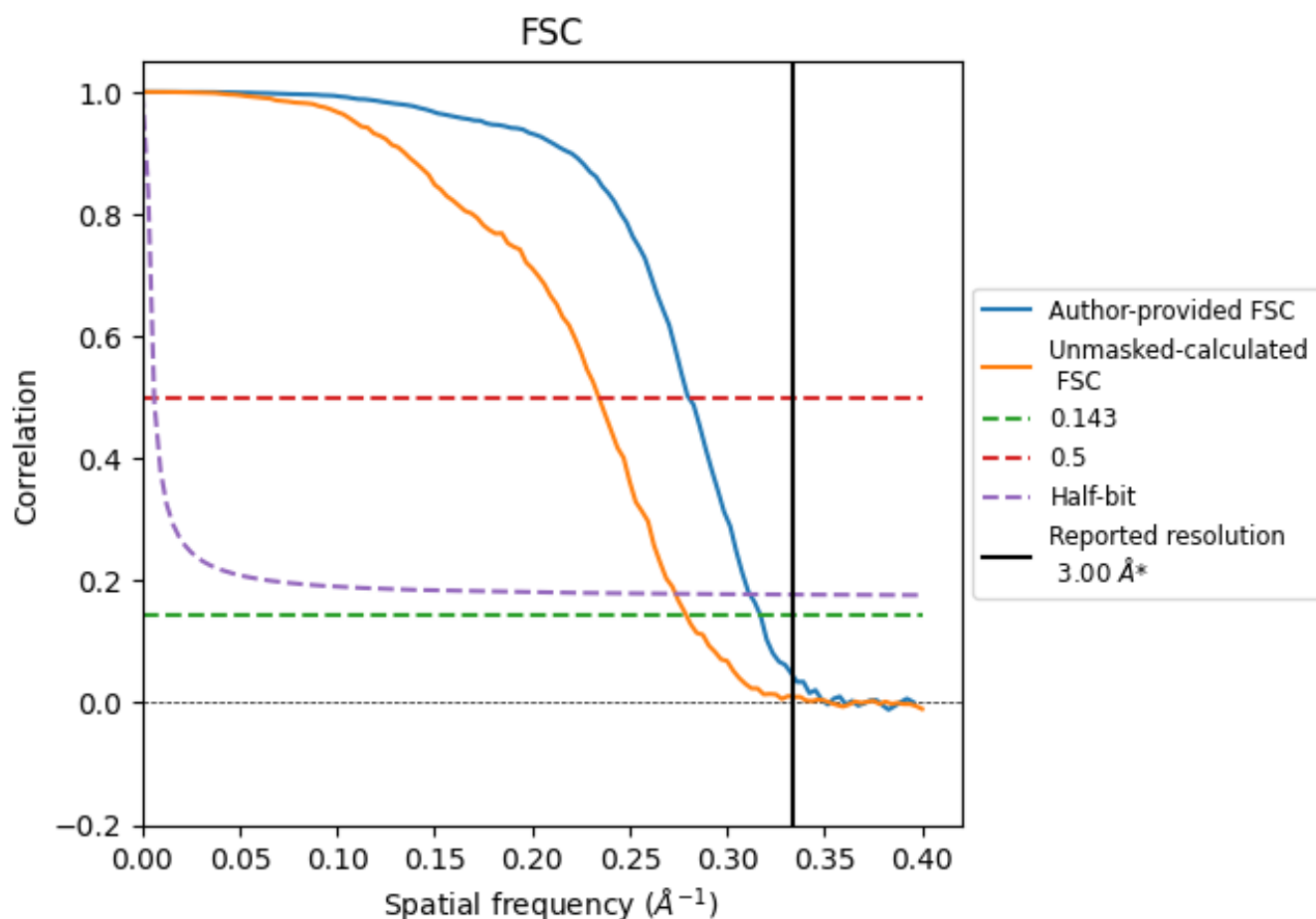


*Reported resolution corresponds to spatial frequency of 0.333 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.333 \AA^{-1}

8.2 Resolution estimates [i](#)

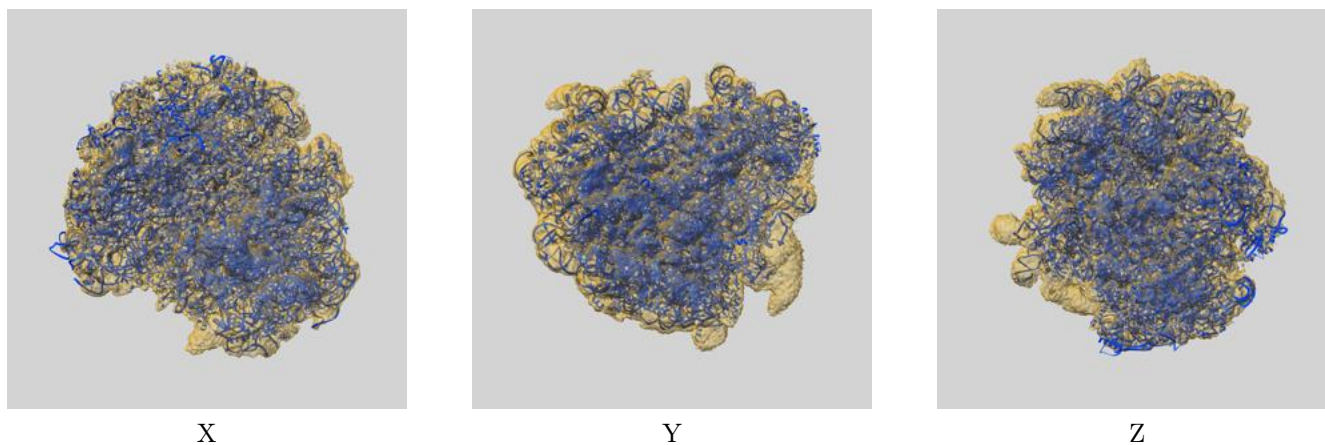
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.00	-	-
Author-provided FSC curve	3.15	3.57	3.21
Unmasked-calculated*	3.58	4.27	3.66

*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 3.58 differs from the reported value 3.0 by more than 10 %

9 Map-model fit [i](#)

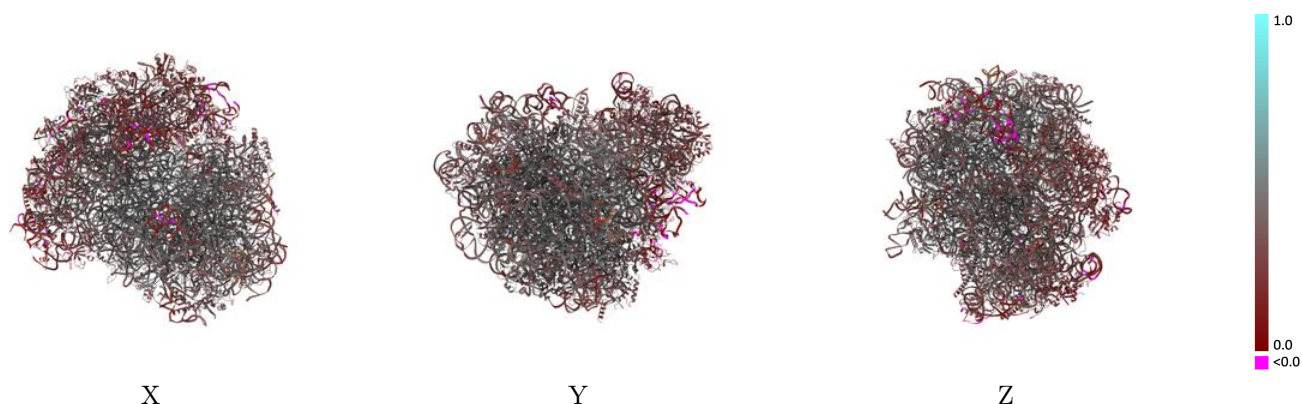
This section contains information regarding the fit between EMDB map EMD-72137 and PDB model 9Q1S. Per-residue inclusion information can be found in section [3](#) on page [20](#).

9.1 Map-model overlay [i](#)



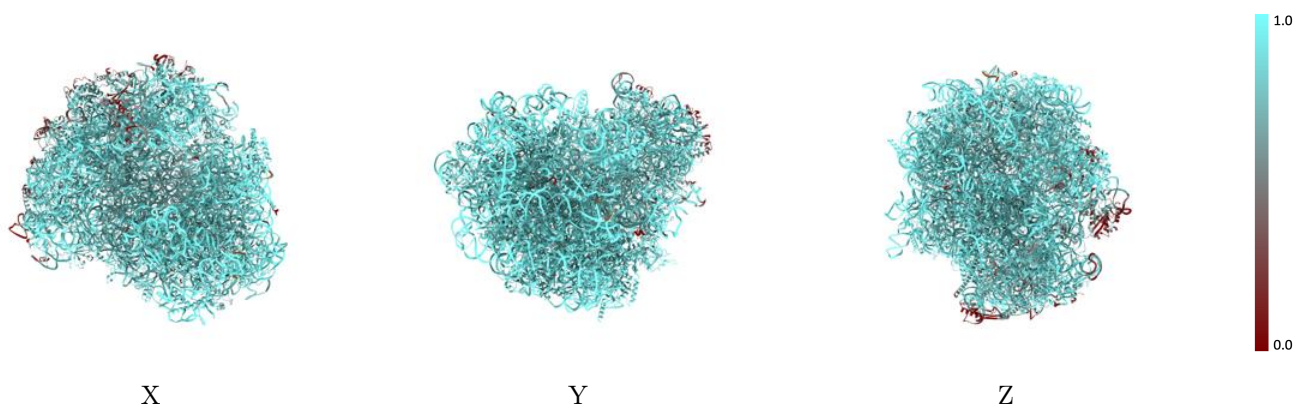
The images above show the 3D surface view of the map at the recommended contour level 0.25 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



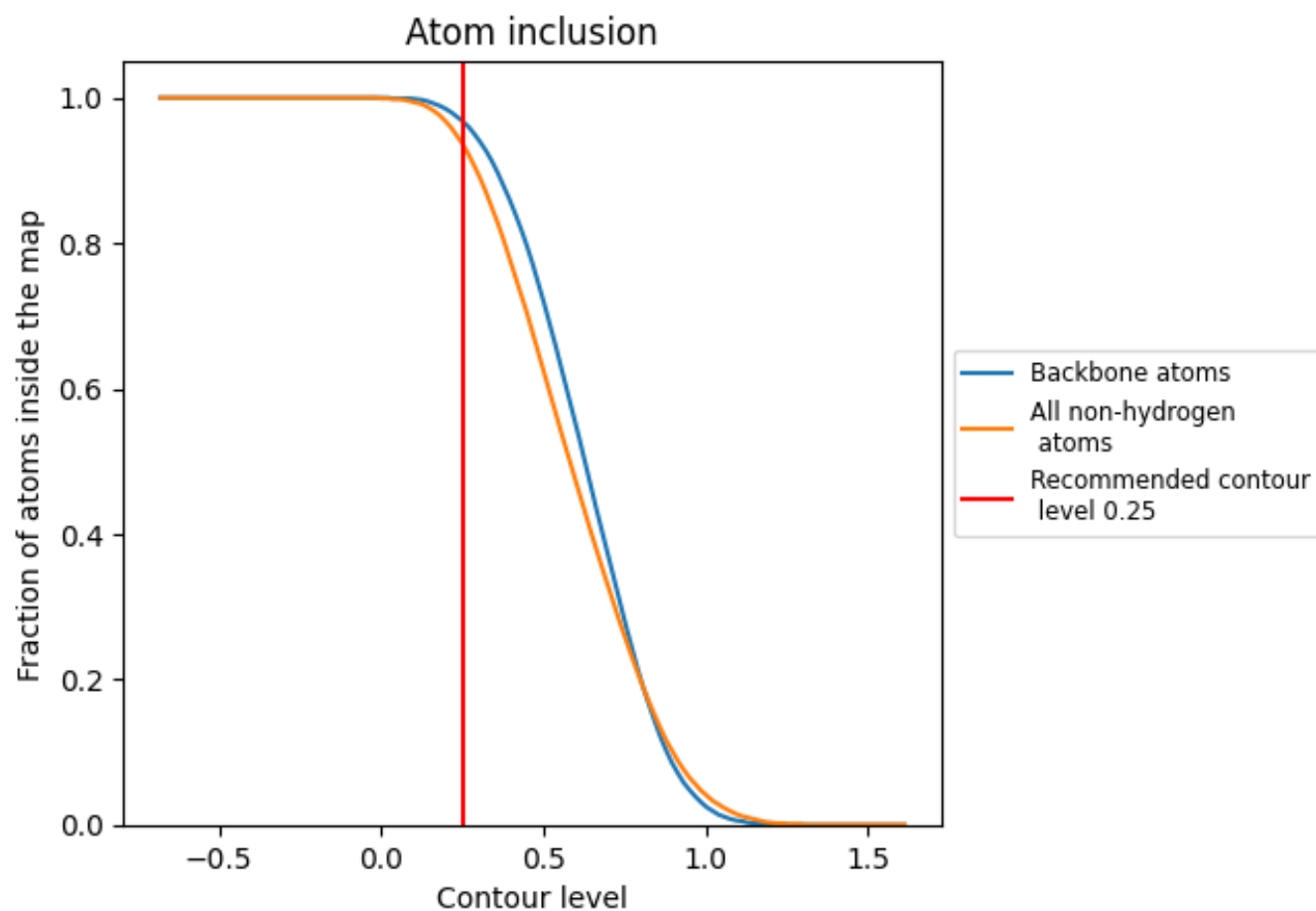
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.25).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 97% of all backbone atoms, 94% 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 (0.25) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9370	 0.3820
1	 0.9190	 0.1470
5	 0.9870	 0.4170
7	 0.9960	 0.4230
8	 0.9840	 0.4180
9	 0.9390	 0.3440
A	 0.9230	 0.4710
AA	 0.7620	 0.3390
B	 0.8940	 0.4450
BB	 0.9230	 0.3600
C	 0.9320	 0.4400
CC	 0.9240	 0.3540
D	 0.9710	 0.3820
DD	 0.6020	 0.2740
E	 0.9080	 0.3970
EE	 0.9260	 0.3580
F	 0.9080	 0.4260
FF	 0.9340	 0.3050
G	 0.9240	 0.3630
GG	 0.8140	 0.2160
H	 0.9250	 0.4070
HH	 0.6400	 0.3220
I	 0.9060	 0.4240
II	 0.9190	 0.3670
J	 0.9000	 0.3390
JJ	 0.9060	 0.2460
K	 0.9040	 0.1580
KK	 0.4810	 0.2070
L	 0.9200	 0.4120
LL	 0.8640	 0.4000
M	 0.9550	 0.3890
N	 0.9440	 0.4520
NN	 0.9200	 0.3920
O	 0.8780	 0.4220
OO	 0.9440	 0.3640







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Chain	Atom inclusion	Q-score
P	 0.9420	 0.4550
PP	 0.9290	 0.2510
Q	 0.9230	 0.4480
QQ	 0.6900	 0.2830
R	 0.9170	 0.3970
RR	 0.6350	 0.3010
S	 0.9330	 0.4230
SS	 0.8980	 0.2700
T	 0.9100	 0.4300
TT	 0.7940	 0.2600
U	 0.9940	 0.3710
UU	 0.7070	 0.2840
V	 0.8150	 0.4320
VV	 0.7380	 0.3370
W	 0.8070	 0.3390
WW	 0.8940	 0.3910
X	 0.9170	 0.4170
XX	 0.8640	 0.3730
Y	 0.9580	 0.4100
YY	 0.8830	 0.1770
Z	 0.9800	 0.3990
ZZ	 0.9020	 0.2570
a	 0.9590	 0.4590
aa	 0.9280	 0.3790
b	 0.8750	 0.3660
bb	 0.9010	 0.3500
c	 0.9570	 0.3960
cc	 0.9550	 0.3530
d	 0.9250	 0.4250
dd	 0.8240	 0.2090
e	 0.9040	 0.4640
ee	 0.8550	 0.2660
f	 0.9060	 0.4610
g	 0.9220	 0.4290
h	 0.9300	 0.3900
i	 0.9460	 0.4130
j	 0.9260	 0.4650
k	 0.9530	 0.3910
l	 0.8650	 0.4170
m	 0.9740	 0.4270
n	 0.8900	 0.4140
o	 0.8990	 0.4480

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Chain	Atom inclusion	Q-score
p	 0.9140	 0.4390
r	 0.9110	 0.4230