Full wwPDB X-ray Structure Validation Report (i)

Oct 9, 2023 – 07:49 PM EDT

PDB ID	:	6BOH
Title	:	Antibiotic blasticidin S and E. coli release factor 1 (containing deletion 302-304) bound to the 70S ribosome
Authors	:	Svidritskiy, E.; Korostelev, A.A.
Deposited on	:	2017-11-20
Resolution	:	3.40 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp
with specific help available everywhere you see the (i) symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

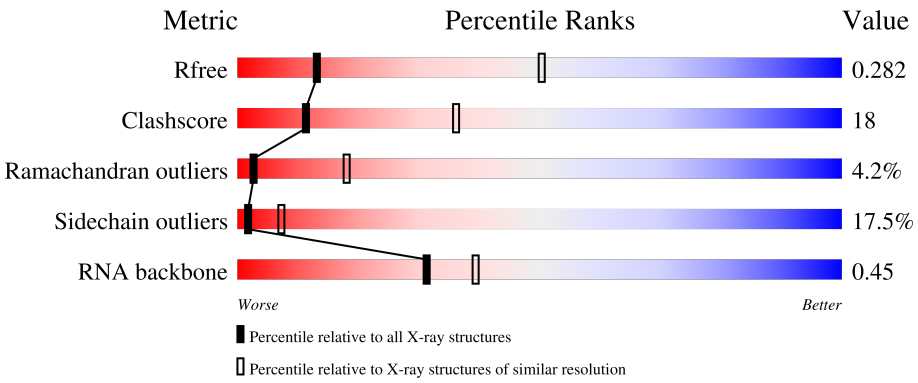
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RNA backbone	3102	1006 (3.84-2.96)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Mol	Chain	Length	Quality of chain
1	A	1507	34% 50% 15%
1	FB	1507	35% 50% 15% •
2	B	2880	34% 45% 19% •
2	GB	2880	37% 43% 18% •
3	C	120	40% 50% 10%
3	HB	120	40% 51% 8% •

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Mol	Chain	Length	Quality of chain
4	D	77	22% 56% 21%
4	IA	77	31% 42% 26%
4	IB	77	21% 57% 21%
4	NC	77	32% 47% 21%
5	E	275	49% 43% 7%
5	JB	275	51% 41% 7%
6	F	206	47% 42% 10%
6	KB	206	49% 41% 9%
7	G	205	45% 46% 7%
7	LB	205	46% 45% 7%
8	H	182	34% 51% 14%
8	MB	182	34% 52% 13%
9	I	180	52% 37% 7%
9	NB	180	51% 38% 8%
10	J	148	41% 44% 14%
10	OB	148	42% 45% 11%
11	K	140	49% 41% 9%
11	PB	140	54% 37% 9%
12	L	122	34% 58% 8%
12	QB	122	34% 57% 9%
13	M	150	53% 36% 9%
13	RB	150	54% 33% 11%
14	N	141	51% 40% 9%
14	SB	141	56% 35% 8%
15	O	118	49% 42% 9%

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Mol	Chain	Length	Quality of chain
15	TB	118	47% 43% 9%
16	P	112	47% 39% 12%
16	UB	112	47% 39% 12%
17	Q	146	39% 40% 14% 6%
17	VB	146	43% 38% 13% 6%
18	R	118	47% 46% 6%
18	WB	118	48% 46% 5%
19	S	101	55% 37% 8%
19	XB	101	56% 37% 7%
20	T	113	51% 39% 9%
20	YB	113	53% 38% 8%
21	U	96	50% 43% 6%
21	ZB	96	58% 32% 8%
22	AC	110	46% 36% 15%
22	V	110	50% 33% 15%
23	BC	206	44% 38% 10% 8%
23	W	206	41% 40% 10% 8%
24	CC	85	51% 41% 7%
24	X	85	51% 39% 9%
25	DC	98	44% 41% 14%
25	Y	98	52% 35% 12%
26	EC	72	53% 33% 11%
26	Z	72	51% 35% 11%
27	AA	60	43% 42% 13%
27	FC	60	47% 40% 12%

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Mol	Chain	Length	Quality of chain
28	BA	71	41% 42% 14% •
28	GC	71	42% 44% 11% •
29	CA	60	40% 48% 10% •
29	HC	60	43% 47% 8% •
30	DA	54	57% 31% 9% •
30	IC	54	61% 30% 7% •
31	EA	49	53% 35% 10% •
31	JC	49	53% 35% 10% •
32	FA	65	57% 37% 5% •
32	KC	65	58% 35% 5% •
33	GA	37	65% 27% 8%
33	LC	37	68% 24% 8%
34	HA	27	11% 19% 11% 59%
34	MC	27	11% 19% 11% 59%
35	JA	365	16% 12% • 70%
35	KA	365	6% 6% • 85%
35	OC	365	15% 12% • 70%
35	PC	365	6% 6% • 85%
36	LA	256	38% 40% 12% • 9%
36	QC	256	39% 39% 12% • 9%
37	MA	239	39% 38% 9% 14%
37	RC	239	41% 37% 8% • 14%
38	NA	209	48% 42% 10%
38	SC	209	50% 39% 11%
39	OA	162	41% 43% 9% 7%

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Mol	Chain	Length	Quality of chain
39	TC	162	39% 45% 9% 7%
40	PA	101	51% 44% 5%
40	UC	101	47% 49% 5%
41	QA	156	47% 44% 6% • •
41	VC	156	47% 44% 6% • •
42	RA	138	44% 47% 8% •
42	WC	138	45% 46% 9%
43	SA	128	43% 46% 9% • •
43	XC	128	42% 46% 10% • •
44	TA	105	42% 41% 10% 7%
44	YC	105	43% 40% 10% 7%
45	UA	129	49% 35% 6% 10%
45	ZC	129	47% 39% 5% 10%
46	AD	132	43% 36% 13% 8%
46	VA	132	42% 37% 13% 8%
47	BD	126	39% 44% 10% 7%
47	WA	126	37% 46% 10% 7%
48	CD	61	39% 54% 5% •
48	XA	61	39% 54% 5% •
49	DD	89	36% 51% 12% •
49	YA	89	38% 48% 12% •
50	ED	88	49% 38% 8% 6%
50	ZA	88	51% 38% 6% 6%
51	AB	105	43% 41% 10% 6%
51	FD	105	45% 39% 10% • 6%

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Mol	Chain	Length	Quality of chain
52	BB	88	38% 33% 9% 20%
52	GD	88	39% 32% 9% 20%
53	CB	93	32% 42% 14% • 11%
53	HD	93	37% 39% 14% 11%
54	DB	106	46% 38% 9% 7%
54	ID	106	50% 33% 10% 7%
55	EB	27	30% 48% 11% 11%
55	JD	27	33% 44% 11% 11%

2 Entry composition (i)

There are 58 unique types of molecules in this entry. The entry contains 298186 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	A	1507	32394	14424	5998	10465	1507	0	0	0
1	FB	1507	32394	14424	5998	10465	1507	0	0	0

- Molecule 2 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	B	2880	62031	27612	11589	19950	2880	0	0	0
2	GB	2880	62031	27612	11589	19950	2880	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	154A	C	UNK	conflict	GB 46197919
GB	154A	C	UNK	conflict	GB 46197919

- Molecule 3 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	C	120	2576	1146	476	834	120	0	0	0
3	HB	120	2576	1146	476	834	120	0	0	0

- Molecule 4 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	P	S			
4	D	77	1642	734	297	534	76	1	0	0	0

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Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
			Total	C	N	O	P	S			
4	IA	77	1642	734	297	534	76	1	0	0	0
4	IB	77	1642	734	297	534	76	1	0	0	0
4	NC	77	1642	734	297	534	76	1	0	0	0

- Molecule 5 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
5	E	275	2145	1353	428	361	3	0	0	0
5	JB	275	2145	1353	428	361	3	0	0	0

- Molecule 6 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
6	F	204	1563	988	299	270	6	0	0	0
6	KB	204	1563	988	299	270	6	0	0	0

- Molecule 7 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
7	G	202	1586	1011	297	275	3	0	0	0
7	LB	202	1586	1011	297	275	3	0	0	0

- Molecule 8 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
8	H	181	1471	940	267	260	4	0	0	0
8	MB	181	1471	940	267	260	4	0	0	0

- Molecule 9 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
9	I	174	1330	845	248	236	1	0	0	0
9	NB	174	1330	845	248	236	1	0	0	0

- Molecule 10 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	J	146	1137	727	201	208	1	0	0	0
10	OB	146	1137	727	201	208	1	0	0	0

- Molecule 11 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	K	140	1121	722	208	187	4	0	0	0
11	PB	140	1121	722	208	187	4	0	0	0

- Molecule 12 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	L	122	932	587	171	170	4	0	0	0
12	QB	122	932	587	171	170	4	0	0	0

- Molecule 13 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	M	150	1145	712	232	198	3	0	0	0
13	RB	150	1145	712	232	198	3	0	0	0

- Molecule 14 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	N	141	1121	715	212	187	7	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
14	SB	141	1121	715	212	187	7	0	0	0

- Molecule 15 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	O	118	968	604	203	160	1	0	0	0
15	TB	118	968	604	203	160	1	0	0	0

- Molecule 16 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
16	P	110	877	553	175	149	0	0	0
16	UB	110	877	553	175	149	0	0	0

- Molecule 17 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
17	Q	137	1143	713	234	195	1	0	0	0
17	VB	137	1143	713	234	195	1	0	0	0

- Molecule 18 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
18	R	117	964	610	202	151	1	0	0	0
18	WB	117	964	610	202	151	1	0	0	0

- Molecule 19 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
19	S	101	779	501	142	135	1	0	0	0
19	XB	101	779	501	142	135	1	0	0	0

- Molecule 20 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
20	T	112	890	560	175	153	2	0	0	0
20	YB	112	890	560	175	153	2	0	0	0

- Molecule 21 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
21	U	95	750	488	135	126	1	0	0	0
21	ZB	95	750	488	135	126	1	0	0	0

- Molecule 22 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
22	V	107	814	523	154	131	6	0	0	0
22	AC	107	814	523	154	131	6	0	0	0

- Molecule 23 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
23	W	189	1495	953	266	273	3	0	0	0
23	BC	189	1495	953	266	273	3	0	0	0

- Molecule 24 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
24	X	84	662	410	140	111	1	0	0	0
24	CC	84	662	410	140	111	1	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	11	ARG	LYS	conflict	UNP Q72HR3

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Chain	Residue	Modelled	Actual	Comment	Reference
CC	11	ARG	LYS	conflict	UNP Q72HR3

- Molecule 25 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
25	Y	97	761	478	151	131	1	0	0	0
25	DC	97	761	478	151	131	1	0	0	0

- Molecule 26 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
26	Z	70	592	368	119	103	2	0	0	0
26	EC	70	592	368	119	103	2	0	0	0

- Molecule 27 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
27	AA	60	477	303	91	82	1	0	0	0
27	FC	60	477	303	91	82	1	0	0	0

- Molecule 28 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
28	BA	69	552	349	99	99	5	0	0	0
28	GC	69	552	349	99	99	5	0	0	0

- Molecule 29 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
29	CA	59	460	290	90	75	5	0	0	0
29	HC	59	460	290	90	75	5	0	0	0

- Molecule 30 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
30	DA	53	453	281	91	77	4	0	0	0
30	IC	53	453	281	91	77	4	0	0	0

- Molecule 31 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
31	EA	48	418	257	104	55	2	0	0	0
31	JC	48	418	257	104	55	2	0	0	0

- Molecule 32 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
32	FA	64	517	331	102	82	2	0	0	0
32	KC	64	517	331	102	82	2	0	0	0

- Molecule 33 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
33	GA	37	307	188	68	47	4	0	0	0
33	LC	37	307	188	68	47	4	0	0	0

- Molecule 34 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
34	HA	11	220	98	44	67	11	0	0	0
34	MC	11	220	98	44	67	11	0	0	0

- Molecule 35 is a protein called Peptide chain release factor 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
35	JA	110	850	525	157	164	4	0	0	0
			Total	C	N	O	S			
35	KA	55	455	281	83	89	2	0	0	0
			Total	C	N	O	S			
35	OC	110	850	525	157	164	4	0	0	0
			Total	C	N	O	S			
35	PC	55	455	281	83	89	2	0	0	0

There are 44 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
JA	?	-	ASP	deletion	UNP B7MKB3
JA	?	-	ARG	deletion	UNP B7MKB3
JA	?	-	SER	deletion	UNP B7MKB3
JA	358	LEU	-	expression tag	UNP B7MKB3
JA	359	GLU	-	expression tag	UNP B7MKB3
JA	360	HIS	-	expression tag	UNP B7MKB3
JA	361	HIS	-	expression tag	UNP B7MKB3
JA	362	HIS	-	expression tag	UNP B7MKB3
JA	363	HIS	-	expression tag	UNP B7MKB3
JA	364	HIS	-	expression tag	UNP B7MKB3
JA	365	HIS	-	expression tag	UNP B7MKB3
KA	?	-	ASP	deletion	UNP B7MKB3
KA	?	-	ARG	deletion	UNP B7MKB3
KA	?	-	SER	deletion	UNP B7MKB3
KA	361	LEU	-	expression tag	UNP B7MKB3
KA	362	GLU	-	expression tag	UNP B7MKB3
KA	363	HIS	-	expression tag	UNP B7MKB3
KA	364	HIS	-	expression tag	UNP B7MKB3
KA	365	HIS	-	expression tag	UNP B7MKB3
KA	366	HIS	-	expression tag	UNP B7MKB3
KA	367	HIS	-	expression tag	UNP B7MKB3
KA	368	HIS	-	expression tag	UNP B7MKB3
OC	?	-	ASP	deletion	UNP B7MKB3
OC	?	-	ARG	deletion	UNP B7MKB3
OC	?	-	SER	deletion	UNP B7MKB3
OC	358	LEU	-	expression tag	UNP B7MKB3
OC	359	GLU	-	expression tag	UNP B7MKB3
OC	360	HIS	-	expression tag	UNP B7MKB3
OC	361	HIS	-	expression tag	UNP B7MKB3
OC	362	HIS	-	expression tag	UNP B7MKB3
OC	363	HIS	-	expression tag	UNP B7MKB3

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Chain	Residue	Modelled	Actual	Comment	Reference
OC	364	HIS	-	expression tag	UNP B7MKB3
OC	365	HIS	-	expression tag	UNP B7MKB3
PC	?	-	ASP	deletion	UNP B7MKB3
PC	?	-	ARG	deletion	UNP B7MKB3
PC	?	-	SER	deletion	UNP B7MKB3
PC	361	LEU	-	expression tag	UNP B7MKB3
PC	362	GLU	-	expression tag	UNP B7MKB3
PC	363	HIS	-	expression tag	UNP B7MKB3
PC	364	HIS	-	expression tag	UNP B7MKB3
PC	365	HIS	-	expression tag	UNP B7MKB3
PC	366	HIS	-	expression tag	UNP B7MKB3
PC	367	HIS	-	expression tag	UNP B7MKB3
PC	368	HIS	-	expression tag	UNP B7MKB3

- Molecule 36 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
36	LA	234	1900	1213	341	341	5	0	0	0
36	QC	234	1900	1213	341	341	5	0	0	0

- Molecule 37 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
37	MA	206	1612	1016	314	281	1	0	0	0
37	RC	206	1612	1016	314	281	1	0	0	0

- Molecule 38 is a protein called 50S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
38	NA	208	1703	1066	339	291	7	0	0	0
38	SC	208	1703	1066	339	291	7	0	0	0

- Molecule 39 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
39	OA	151	1155	729	218	204	4	0	0	0
39	TC	151	1155	729	218	204	4	0	0	0

- Molecule 40 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
40	PA	101	843	531	155	154	3	0	0	0
40	UC	101	843	531	155	154	3	0	0	0

- Molecule 41 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
41	QA	155	1257	781	252	218	6	0	0	0
41	VC	155	1257	781	252	218	6	0	0	0

- Molecule 42 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
42	RA	138	1116	705	215	193	3	0	0	0
42	WC	138	1116	705	215	193	3	0	0	0

- Molecule 43 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
43	SA	127	1011	639	198	174	0	0	0
43	XC	127	1011	639	198	174	0	0	0

- Molecule 44 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
44	TA	98	794	499	156	138	1	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
44	YC	98	794	499	156	138	1	0	0	0

- Molecule 45 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
45	UA	116	864	537	164	160	3	0	0	0
45	ZC	116	864	537	164	160	3	0	0	0

- Molecule 46 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
46	VA	122	958	604	193	159	2	0	0	0
46	AD	122	958	604	193	159	2	0	0	0

- Molecule 47 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
47	WA	117	933	577	192	162	2	0	0	0
47	BD	117	933	577	192	162	2	0	0	0

- Molecule 48 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
48	XA	60	492	312	104	72	4	0	0	0
48	CD	60	492	312	104	72	4	0	0	0

- Molecule 49 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
49	YA	88	734	459	147	126	2	0	0	0
49	DD	88	734	459	147	126	2	0	0	0

- Molecule 50 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
50	ZA	83	700	443	139	117	1	0	0	0
50	ED	83	700	443	139	117	1	0	0	0

- Molecule 51 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
51	AB	99	823	528	152	141	2	0	0	0
51	FD	99	823	528	152	141	2	0	0	0

- Molecule 52 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
52	BB	70	574	367	112	95	0	0	0
52	GD	70	574	367	112	95	0	0	0

- Molecule 53 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
53	CB	83	665	424	124	115	2	0	0	0
53	HD	83	665	424	124	115	2	0	0	0

- Molecule 54 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
54	DB	99	762	469	162	129	2	0	0	0
54	ID	99	762	469	162	129	2	0	0	0

- Molecule 55 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
55	EB	24	208	128	50	30	0	0	0
55	JD	24	208	128	50	30	0	0	0

- Molecule 56 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
56	A	183	183	183	0	0
56	B	433	433	433	0	0
56	C	22	22	22	0	0
56	D	5	5	5	0	0
56	E	6	6	6	0	0
56	F	4	4	4	0	0
56	G	2	2	2	0	0
56	H	2	2	2	0	0
56	J	1	1	1	0	0
56	K	4	4	4	0	0
56	L	3	3	3	0	0
56	M	3	3	3	0	0
56	O	2	2	2	0	0
56	Q	1	1	1	0	0
56	R	1	1	1	0	0
56	S	1	1	1	0	0
56	T	2	2	2	0	0
56	U	1	1	1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
56	V	2	2	2	0	0
56	Y	3	3	3	0	0
56	Z	1	1	1	0	0
56	AA	1	1	1	0	0
56	CA	1	1	1	0	0
56	EA	1	1	1	0	0
56	FA	1	1	1	0	0
56	HA	3	3	3	0	0
56	IA	9	9	9	0	0
56	JA	1	1	1	0	0
56	LA	1	1	1	0	0
56	MA	6	6	6	0	0
56	NA	2	2	2	0	0
56	OA	4	4	4	0	0
56	PA	3	3	3	0	0
56	QA	1	1	1	0	0
56	SA	1	1	1	0	0
56	UA	1	1	1	0	0
56	VA	2	2	2	0	0
56	YA	3	3	3	0	0
56	AB	2	2	2	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
56	BB	1	1	1	0	0
56	CB	1	1	1	0	0
56	FB	194	194	194	0	0
56	GB	402	402	402	0	0
56	HB	20	20	20	0	0
56	IB	2	2	2	0	0
56	JB	5	5	5	0	0
56	KB	2	2	2	0	0
56	LB	4	4	4	0	0
56	NB	1	1	1	0	0
56	OB	1	1	1	0	0
56	PB	2	2	2	0	0
56	QB	2	2	2	0	0
56	RB	3	3	3	0	0
56	SB	2	2	2	0	0
56	TB	1	1	1	0	0
56	UB	4	4	4	0	0
56	VB	3	3	3	0	0
56	XB	2	2	2	0	0
56	ZB	2	2	2	0	0
56	AC	1	1	1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Mg		
56	BC	1	1	1	0	0
56	CC	1	1	1	0	0
56	DC	1	1	1	0	0
56	GC	1	1	1	0	0
56	IC	1	1	1	0	0
56	JC	1	1	1	0	0
56	KC	1	1	1	0	0
56	MC	3	3	3	0	0
56	NC	10	10	10	0	0
56	OC	1	1	1	0	0
56	PC	1	1	1	0	0
56	QC	3	3	3	0	0
56	RC	2	2	2	0	0
56	SC	4	4	4	0	0
56	TC	3	3	3	0	0
56	UC	3	3	3	0	0
56	VC	1	1	1	0	0
56	WC	1	1	1	0	0
56	ZC	1	1	1	0	0
56	AD	4	4	4	0	0
56	BD	1	1	1	0	0

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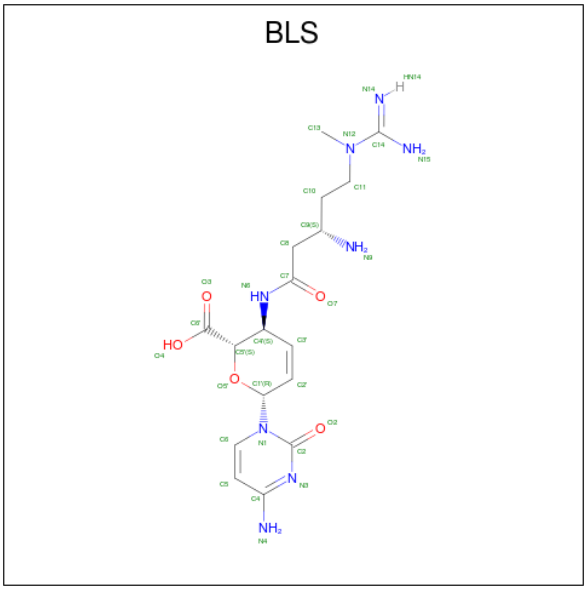
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	DD	1	Total Mg 1 1	0	0
56	ED	1	Total Mg 1 1	0	0
56	HD	1	Total Mg 1 1	0	0

- Molecule 57 is BLASTICIDIN S (three-letter code: BLS) (formula: $C_{17}H_{26}N_8O_5$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
57	B	1	Total C N O 30 17 8 5	0	0
57	GB	1	Total C N O 30 17 8 5	0	0

- Molecule 58 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
58	V	1	Total Zn 1 1	0	0
58	BA	1	Total Zn 1 1	0	0
58	CA	1	Total Zn 1 1	0	0
58	DA	1	Total Zn 1 1	0	0

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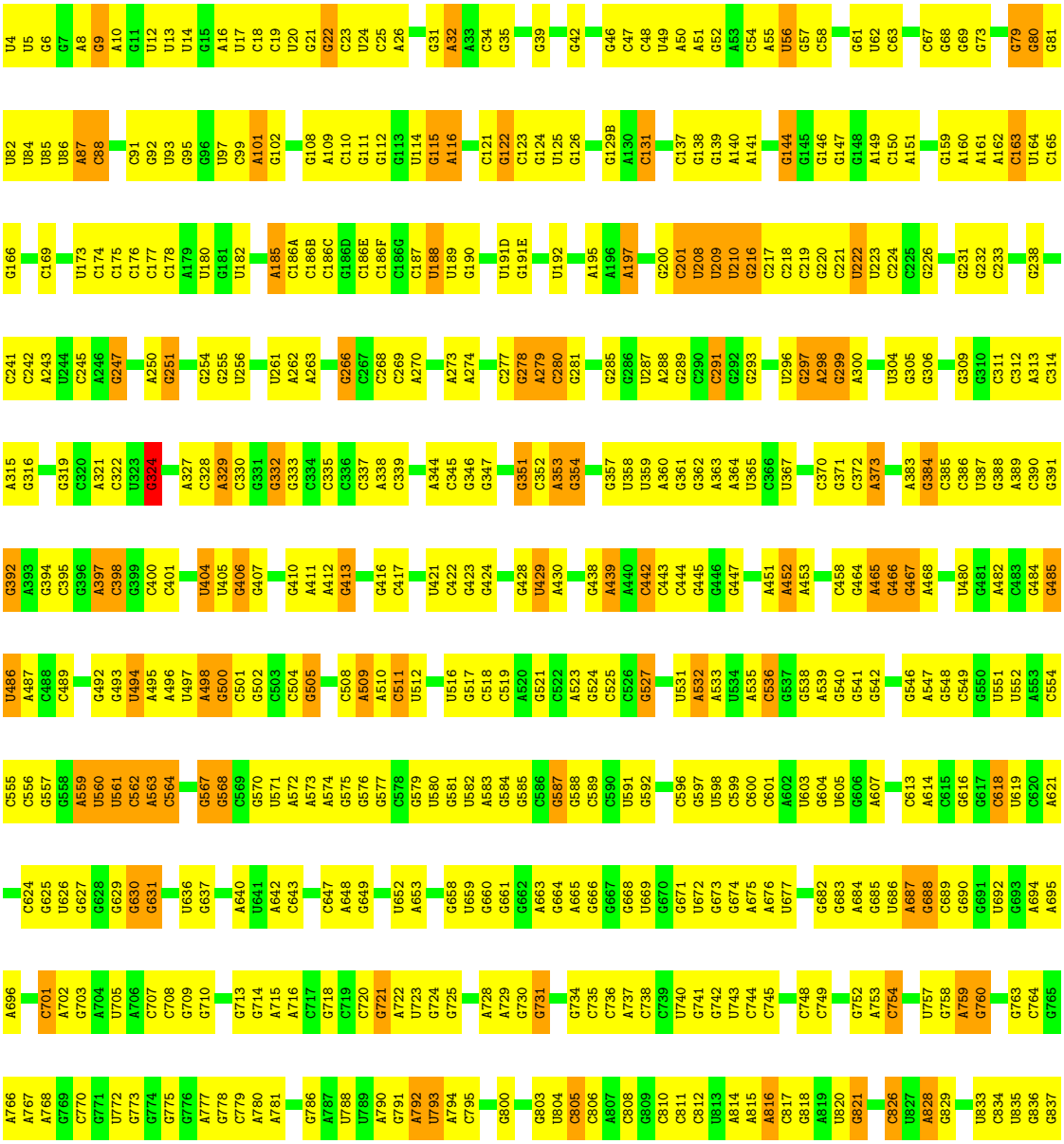
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Zn		
58	GA	1	1	1	0	0
58	AC	1	1	1	0	0
58	GC	1	1	1	0	0
58	HC	1	1	1	0	0
58	IC	1	1	1	0	0
58	LC	1	1	1	0	0

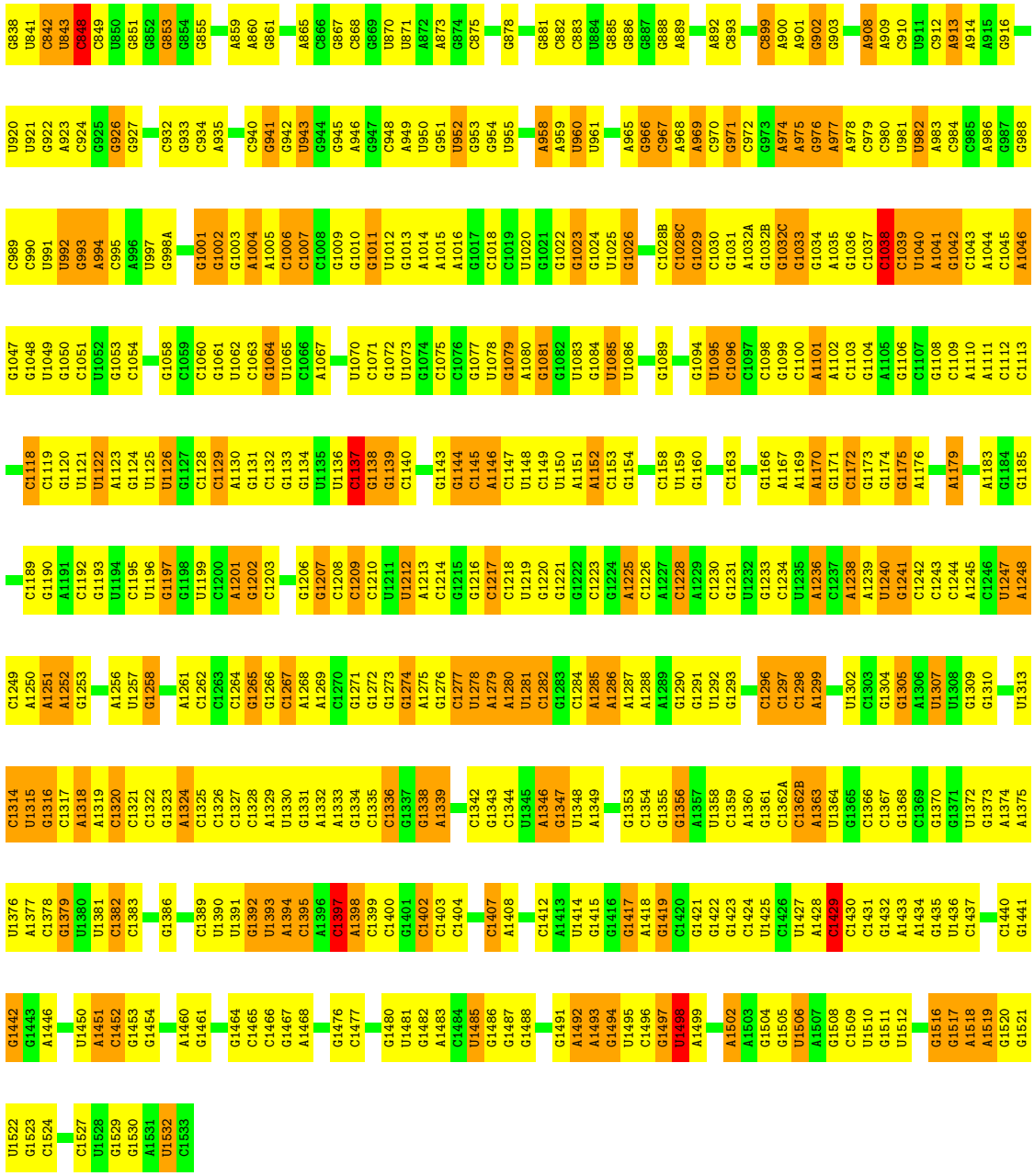
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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. 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: 16S ribosomal RNA

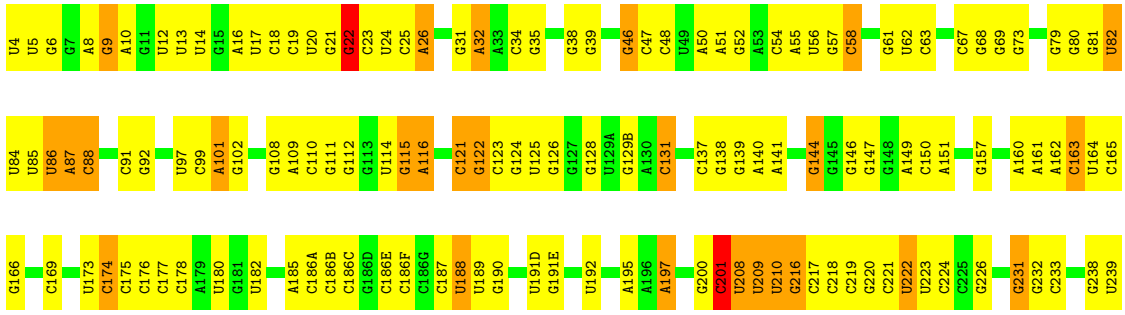
Chain A: 34% 50% 15%





• Molecule 1: 16S ribosomal RNA

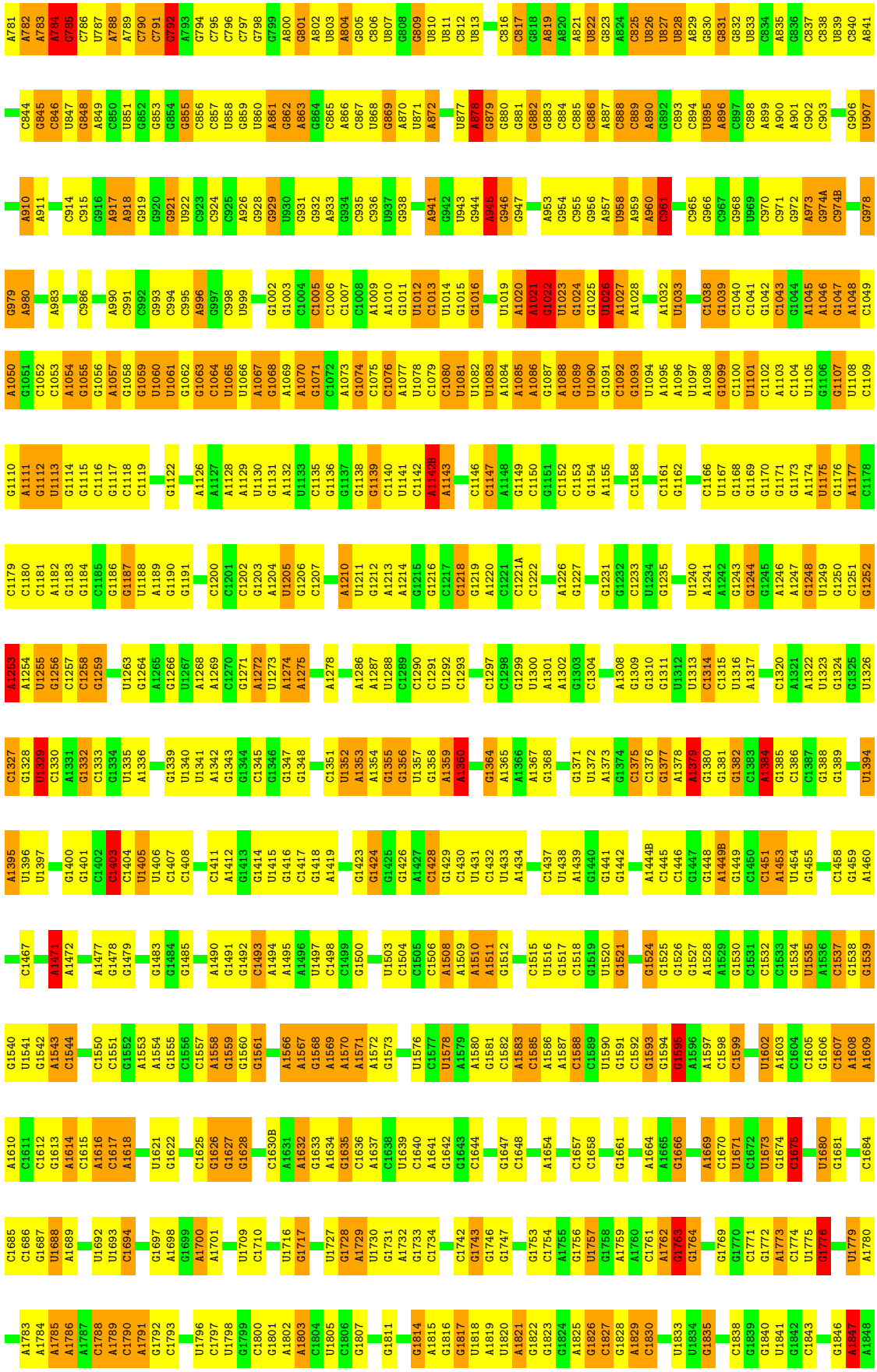
Chain FB:



C240 C241 C242 A243 G247 A250 G251 U252 U253 G254 G255 U256 G257 G258 A262 A263 U264 G265 G266 C267 C268 C269 A270 G275 G276 C277 G278 A279 C280 G281 G285 G286 U287 A288 G289 C290 C291 G292 G293 U296 G297 A298 G299 A300 G301 U304 G305 G306 G309 G310 C311 C312
A313 C314 A315 G316 G319 C320 A321 C322 U323 G324 A325 G326 A327 C328 A329 C330 G331 G332 G333 C334 C335 C336 C337 A338 A344 C345 G346 G347 G348 A349 G350 G351 C352 A353 G354 G357 A360 G361 G362 A363 A364 U365 C366 U367 C370 G371 C372 A373 G384 C385 C386 U387 G388 A389
C390 G391 G392 A393 G394 C395 G396 A397 C398 G399 C400 C401 U404 U405 G406 G407 G410 A411 A412 G413 G416 C417 U421 C422 G423 G424 G428 U429 A430 A431 A439 A440 C442 C443 C444 C445 G446 G447 A451 A452 A453 C458 G464 A465 G466 G467 A468 U480 G481 A482 C483
G484 G485 U486 A487 G492 G493 U494 A495 A496 U497 A498 G500 C501 G502 C503 C504 G505 C508 A509 A510 C511 U512 U516 G517 C518 C519 A523 G524 G525 C526 G527 G528 U531 A532 A533 U534 A535 C536 G537 G538 A539 G540 G541 G542 G546 A547 G548 C549 G550 U551 U552 A553 C554 C555
C556 G557 G558 A559 U560 U561 C562 A563 C564 G567 G568 C569 G570 U571 A572 A573 A574 G575 G576 G577 C578 G579 U580 G581 U582 A583 G584 G585 C586 G587 G588 G589 G593 C596 G597 U598 C599 C600 C601 A602 U603 G604 U605 G606 A607 C613 A614 C615 G616 G617 C618 U619 C620 A621 C624
G625 U626 G627 G628 G629 G630 G631 U636 G637 A642 C643 U646 C647 A648 G649 U652 A653 C656 G657 G658 U659 G660 G661 G662 A663 G664 A665 G666 G667 G668 U669 G670 G671 U672 G673 G674 A675 A676 U677 G683 A684 A687 G688 C689 G690 G691 U692 G693 A694 A695 A696 C701
A702 G703 A704 U705 A706 C707 C708 G709 G710 G713 G714 A715 A716 G717 G718 G721 A722 U723 G724 A728 A729 G730 G731 G734 C735 C736 A737 C738 G739 U740 G741 G742 U743 C744 C745 C748 C749 G750 U751 G752 A753 C754 G755 C756 U757 G758 A759 G760 G763 C764 G765 A766 A767 A768
G769 C770 G773 G774 G775 G776 A777 G778 C779 A780 A781 G786 A790 G791 A792 U793 A794 G803 U804 C805 C806 A807 C808 G809 C810 C811 A814 A815 A816 C817 G818 A819 U820 G821 C826 U827 A828 U833 C834 U835 G836 G837 G838 U841 C842 U843 C848 C849 U850 G851 G852 G853 G854
G855 G858 A859 A860 G861 G867 U870 U871 A872 A873 G874 C875 G876 C877 G878 G881 C882 C883 U884 C885 G886 G887 G888 A889 A892 C893 C899 A900 A901 G902 G903 A908 A909 C910 U911 C912 A913 A914 A915 G916 U920 U921 G922 A923 C924 G925 G926 G927 C932 G933 C934
A935 C940 G941 G942 U943 G944 G945 A946 G947 C948 A949 U950 G951 U952 G953 G954 U955 A958 A959 U960 U961 A965 G966 C967 A968 A969 C970 G971 C972 G973 A974 A975 G976 A977 A978 C979 C980 U981 U982 A983 C984 C985 A986 G987 G988 C989 C990 U991 U992 G993 A994 C995 A996 U997 G998A G1001
G1002 G1003 A1004 A1005 C1006 C1007 C1008 G1009 G1010 G1011 U1012 G1013 A1014 A1015 A1016 U1020 G1021 G1022 G1023 G1024 U1025 G1026 C1028B C1028C G1029 C1030 G1031 A1032A G1032B G1032C G1033 G1034 A1035 G1036 C1037 C1038 C1039 U1040 A1041 G1042 C1043 A1044 C1045 A1046 G1047 G1048 U1049 G1050 C1051 U1052 G1053 C1054 A1055 G1058 C1059 C1060 G1061
U1062 C1063 G1064 U1065 C1066 A1067 G1068 C1069 U1070 C1071 G1072 U1073 G1077 U1078 G1079 A1080 G1081 G1084 U1085 U1086 G1089 G1094 U1095 C1096 C1097 C1098 G1099 C1100 A1101 A1102 C1103 G1104 A1105 G1106 C1107 G1108 C1109 A1110 A1111 C1112 C1113 C1118 C1119 G1120 U1121 U1122 A1123 G1124 U1125 U1126 G1127 C1128 C1129 A1130 G1131
C1132 G1133 G1134 U1135 U1136 C1137 G1138 G1139 C1140 G1143 G1144 C1145 A1146 C1147 U1148 C1149 U1150 A1151 A1152 C1153 G1154 C1158 U1159 G1160 C1163 G1166 A1167 A1169 A1170 G1171 C1172 G1173 G1174 G1175 A1176 G1177 G1178 A1179 A1183 G1184 G1185 C1189 G1190 A1191 C1192 G1193 U1194 C1195 U1196 G1197 G1198 U1199 C1200 A1201
G1202 C1203 G1206 G1207 C1208 C1209 C1210 U1211 U1212 A1213 C1214 G1215 G1216 C1217 C1218 U1219 G1220 G1221 G1222 C1223 G1224 A1225 C1226 A1227 C1228 A1229 C1230 G1231 U1232 G1233 C1234 U1235 A1236 C1237 A1238 A1239 U1240 G1241 C1242 A1245 C1246 U1247 A1248 C1249 A1250 A1251 A1252 G1253 A1256 U1257 G1258 C1259 C1260 A1261 C1262 C1263 C1264
G1265 G1266 C1267 A1268 A1269 C1270 G1271 G1272 G1273 G1274 A1275 G1276 C1277 U1278 A1279 A1280 U1281 C1282 G1283 C1284 A1285 A1286 A1287 A1288 A1289 G1290 G1291 U1292 G1293 C1296 C1297 C1298 A1299 U1302 C1303 G1304 G1305 A1306 U1307 U1308 G1309 G1310 U1313 C1314 U1315 G1316 C1317 A1318 A1319 C1320 C1321 C1322 G1323 A1324 C1325 C1326 C1327

• Molecule 2: 23S ribosomal RNA

Chain B: 34% 45% 19% •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C1685 C1686 G1687 U1688 A1689 U1692 U1693 C1694 G1697 A1698 G1699 A1700 A1701 U1709 C1710 U1716 A1802 G1717 U1727 G1728 A1729 U1730 G1731 A1732 G1733 C1734 C1742 G1743 G1746 G1747 G1753 C1754 A1755 G1756 U1757 G1758 A1759 A1760 C1761 A1762 G1763 G1764 G1769 G1770 C1771 G1772 A1773 C1774 U1775 G1776 U1779 A1780
A1610 C1611 C1612 G1613 A1614 C1615 A1616 C1617 A1618 U1621 G1622 C1625 G1626 G1627 G1628 C1630B A1631 A1632 G1633 A1634 A1635 C1636 A1637 C1638 U1639 C1640 A1641 G1642 G1643 C1644 G1647 C1648 A1654 C1657 C1658 G1661 A1664 A1665 G1666 A1669 C1670 U1671 C1672 U1673 G1674 C1675 U1680 G1681 C1684
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A1395 U1396 U1397 G1400 G1401 C1402 C1403 C1404 U1405 U1406 C1407 C1408 C1411 A1412 G1413 G1414 U1415 A1416 C1417 G1418 A1419 G1423 G1424 G1425 G1426 A1427 C1428 G1429 C1430 U1431 C1432 U1433 A1434 C1437 U1438 A1439 G1440 G1441 G1442 A1444B C1445 C1446 G1447 G1448 A1449B G1449 C1450 C1451 A1453 U1454 G1455 C1458 G1459 A1460
C1327 G1328 U1329 C1330 A1331 G1332 C1333 G1334 U1335 A1336 G1339 U1340 U1341 A1342 G1343 G1344 C1345 G1346 U1347 G1348 C1351 U1352 A1353 A1354 G1355 G1356 U1357 G1358 A1359 A1360 G1364 A1365 A1366 A1367 G1368 G1371 U1372 A1373 G1374 C1375 C1376 G1377 A1378 A1379 G1380 G1381 G1382 C1383 A1384 G1385 C1386 C1387 G1388 G1389 U1394
A1253 A1254 U1255 G1256 C1257 C1258 G1259 U1263 G1264 A1265 G1266 U1267 A1268 A1269 C1270 G1271 A1272 U1273 A1274 A1275 A1278 A1286 A1287 U1288 C1289 G1290 C1291 U1292 C1293 C1297 C1298 G1299 U1300 A1301 A1302 G1303 C1304 A1308 G1309 G1310 G1311 U1312 U1313 C1314 C1315 U1316 A1317 C1320 A1321 A1322 U1323 G1324 G1325 U1326
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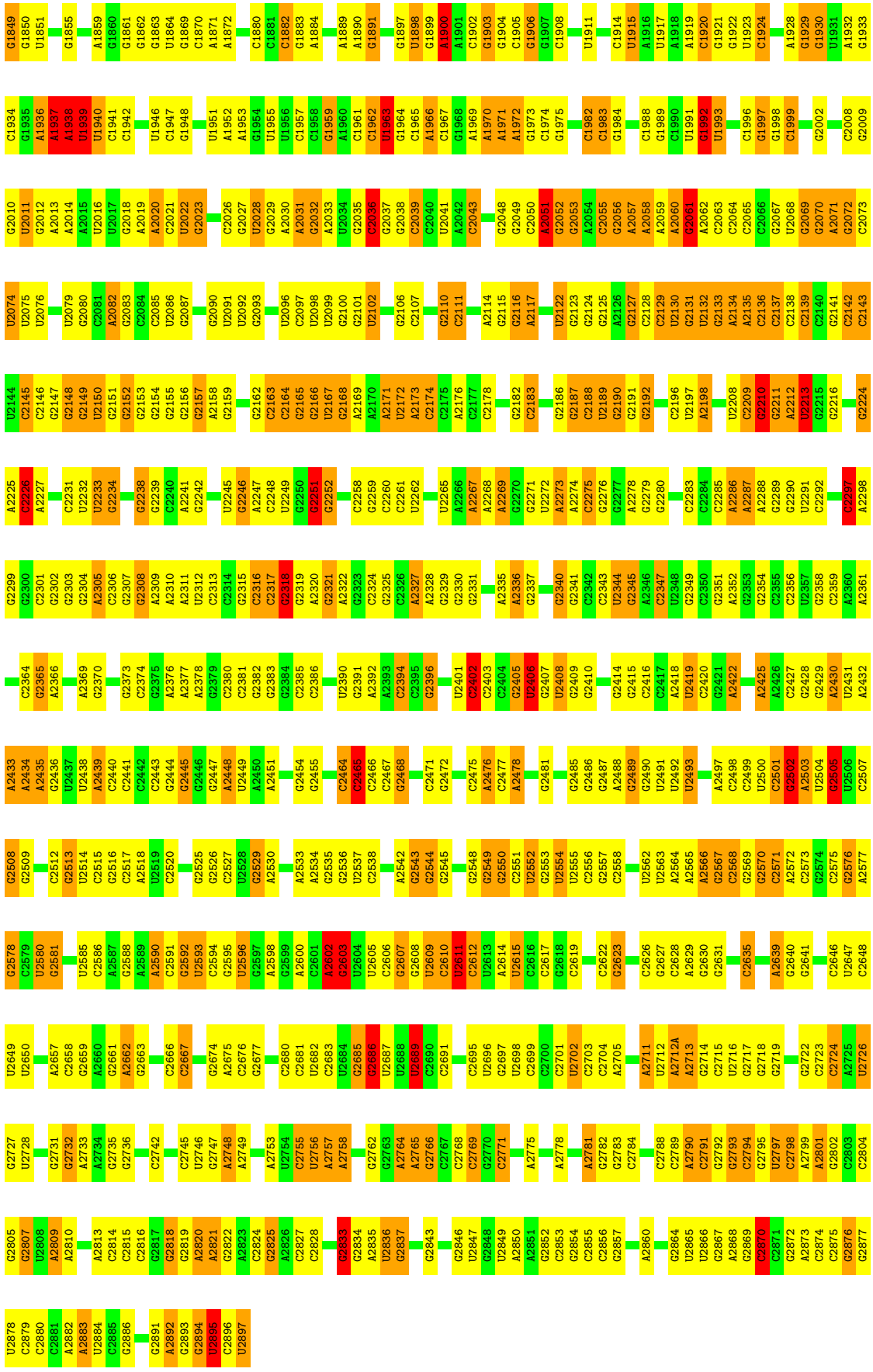
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• Molecule 2: 23S ribosomal RNA

Chain GB: 37% 43% 18% •

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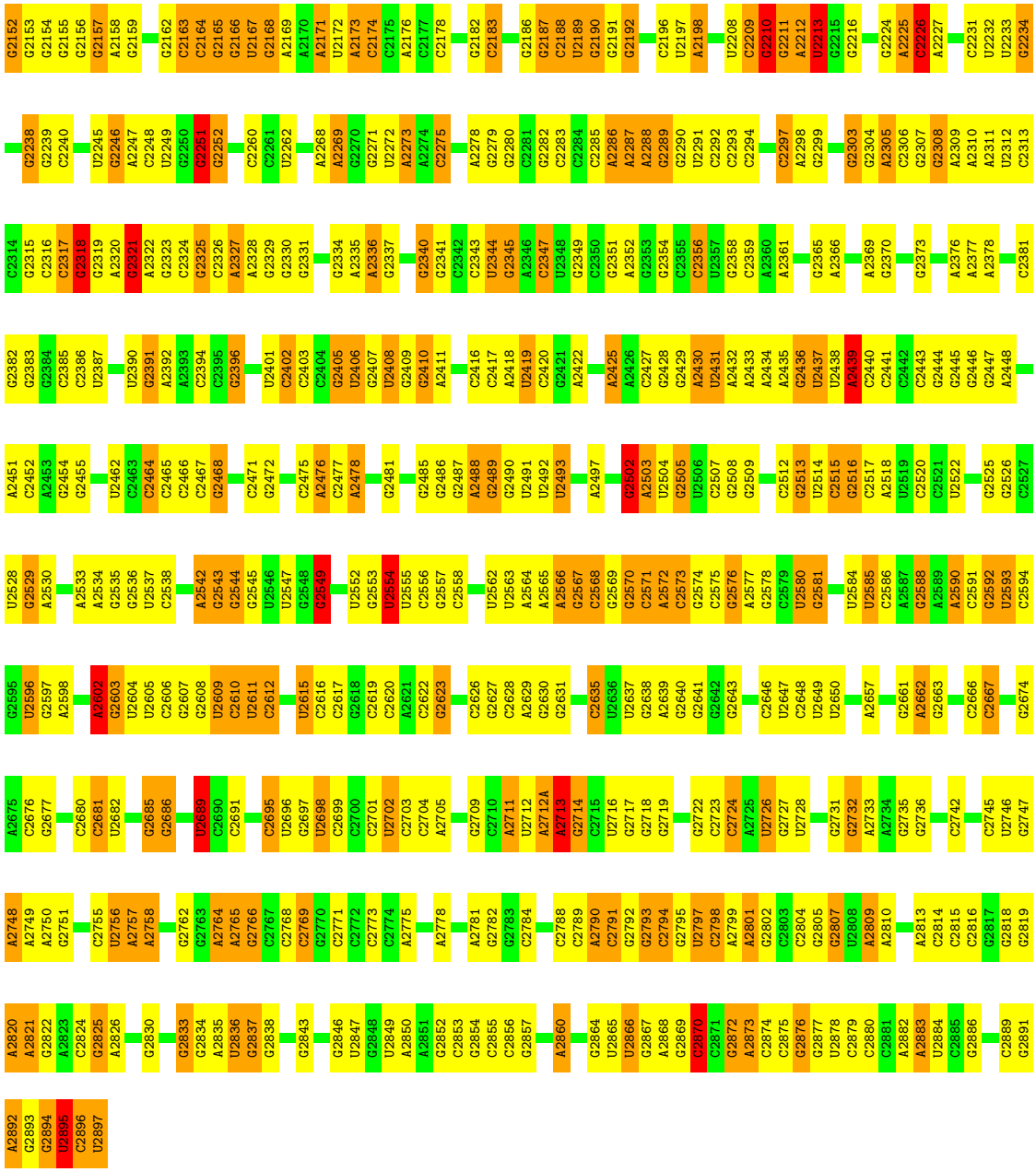

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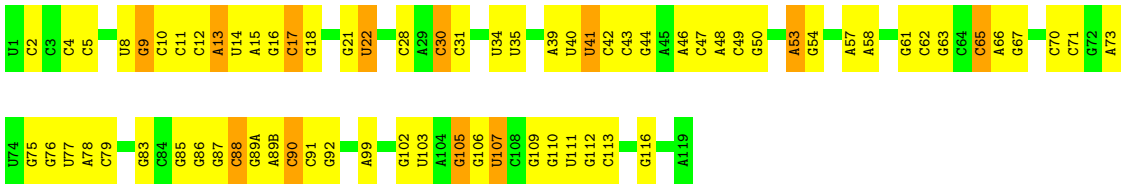

• Molecule 3: 5S ribosomal RNA

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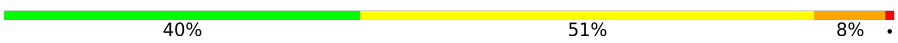
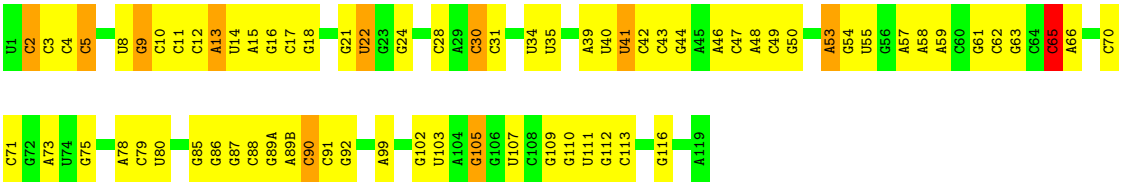
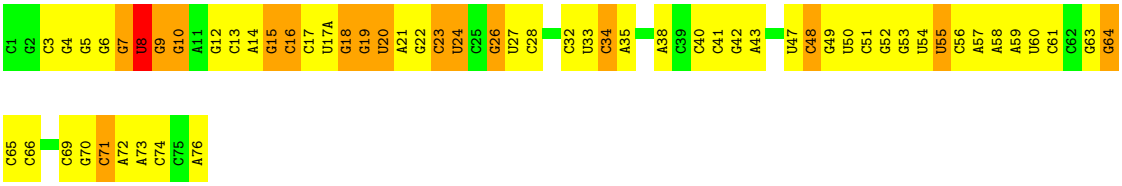




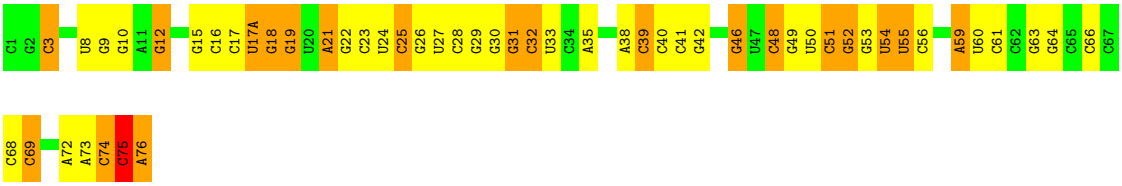
- Molecule 4: tRNA

Chain D: 22% 56% 21%



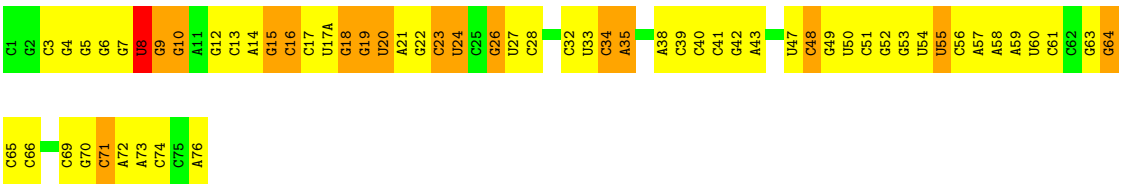
- Molecule 4: tRNA

Chain IA: 31% 42% 26%



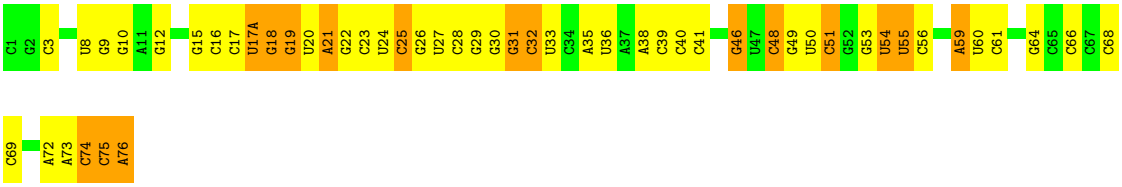
- Molecule 4: tRNA

Chain IB: 21% 57% 21%



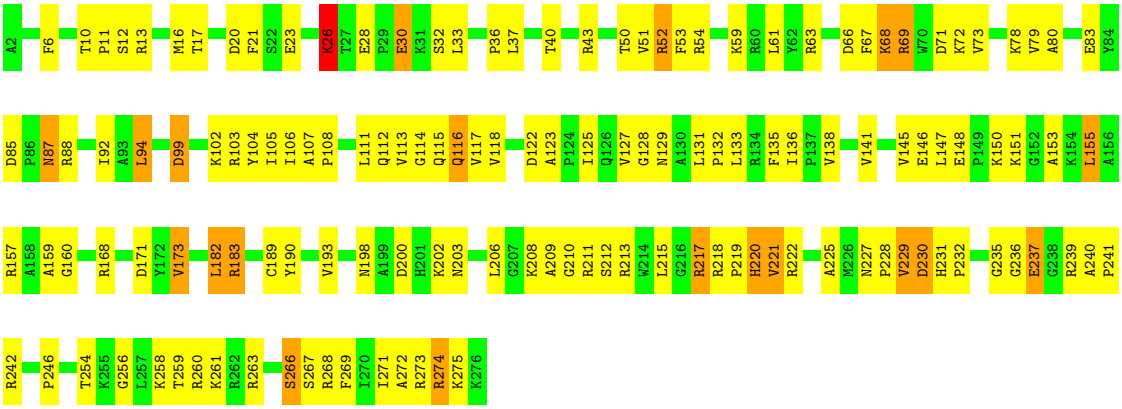
- Molecule 4: tRNA

Chain NC: 32% 47% 21%



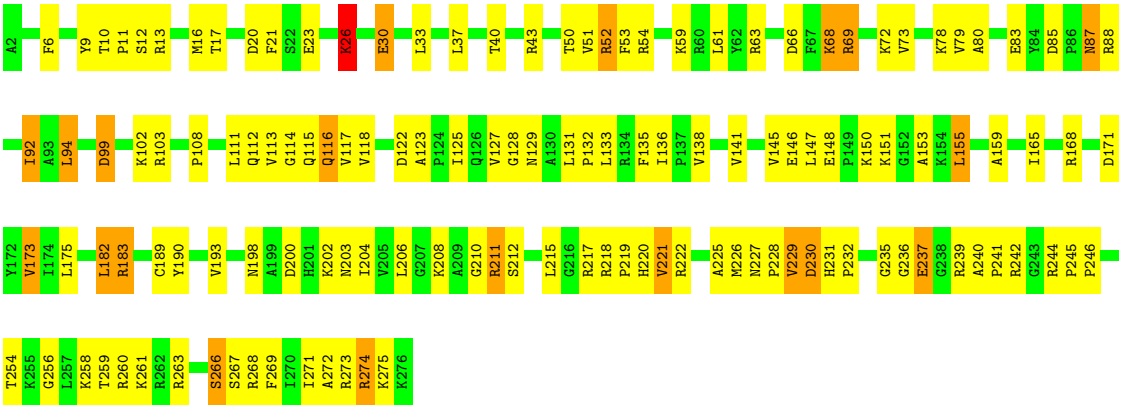
- Molecule 5: 50S ribosomal protein L2

Chain E: 49% 43% 7%



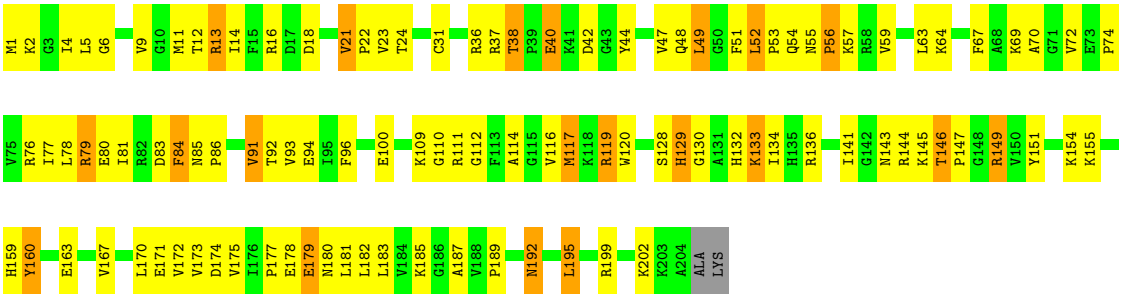
- Molecule 5: 50S ribosomal protein L2

Chain JB: 51% 41% 7%



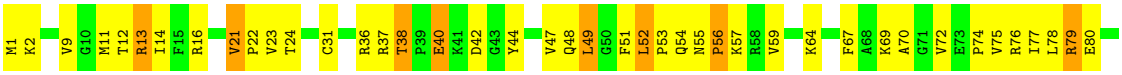
- Molecule 6: 50S ribosomal protein L3

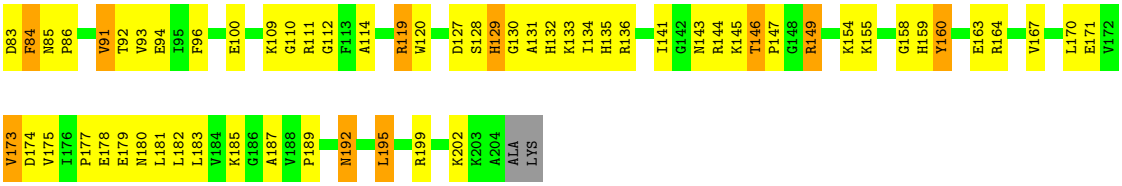
Chain F: 47% 42% 10%



- Molecule 6: 50S ribosomal protein L3

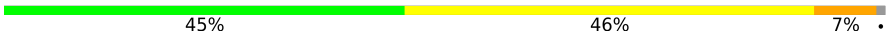
Chain KB: 49% 41% 9%

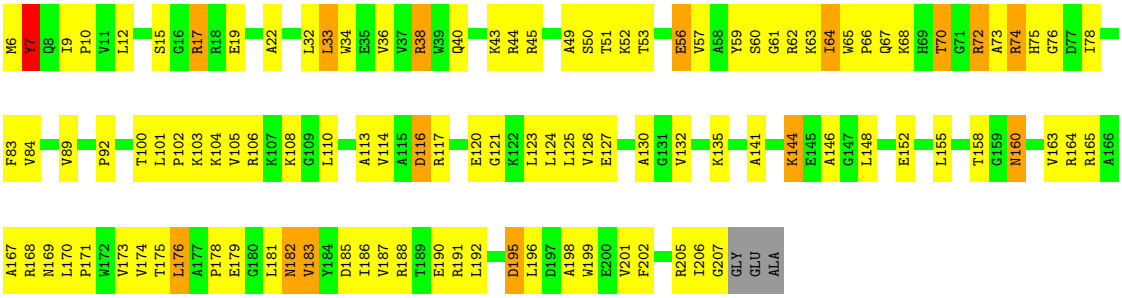




• Molecule 7: 50S ribosomal protein L4

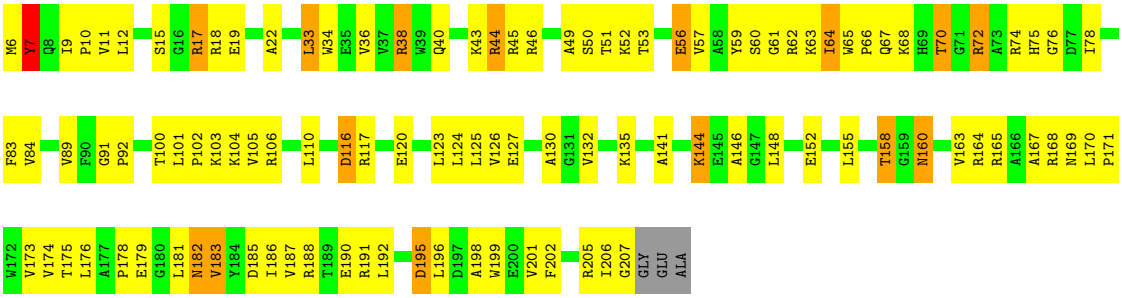
Chain G:





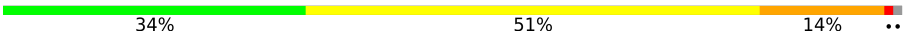
• Molecule 7: 50S ribosomal protein L4

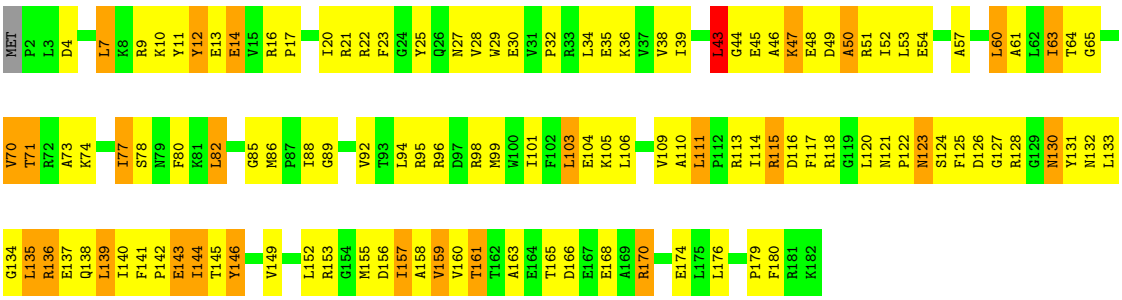
Chain LB:



• Molecule 8: 50S ribosomal protein L5

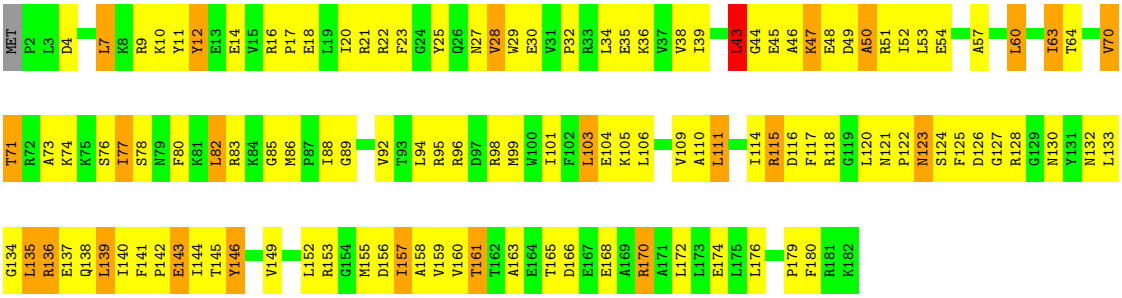
Chain H:





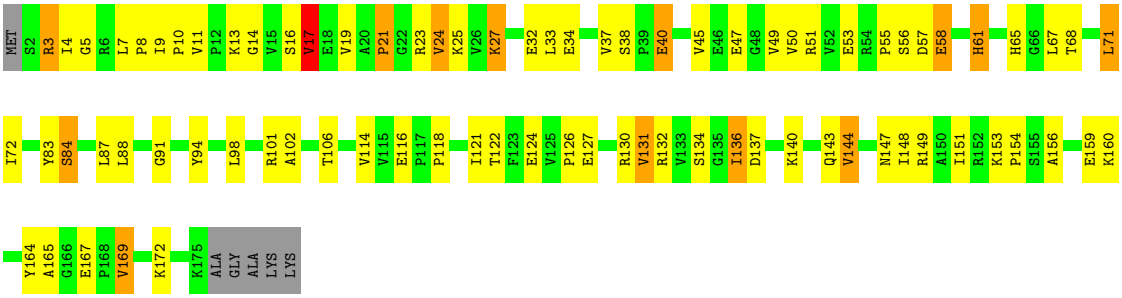
• Molecule 8: 50S ribosomal protein L5

Chain MB:



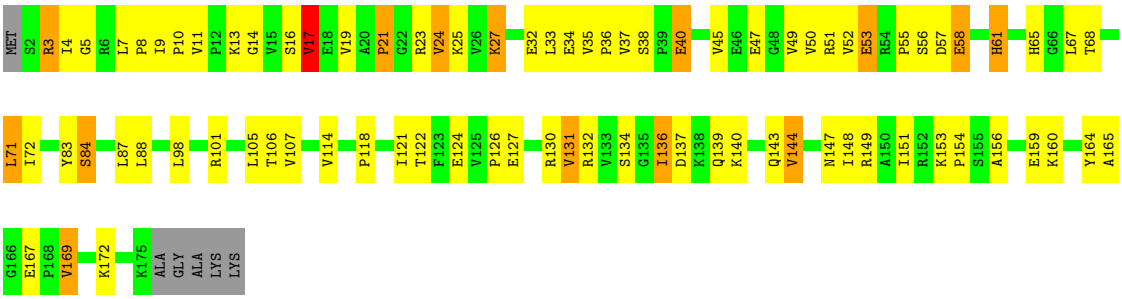
- Molecule 9: 50S ribosomal protein L6

Chain I:



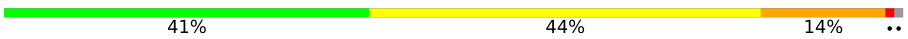
- Molecule 9: 50S ribosomal protein L6

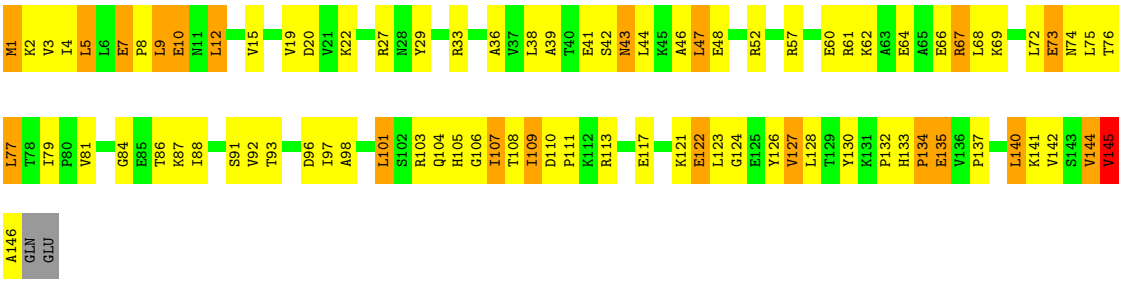
Chain NB:



- Molecule 10: 50S ribosomal protein L9

Chain J:





- Molecule 10: 50S ribosomal protein L9

Chain OB: 42% 45% 11%

M1 K2 V3 I4 L5 L6 E7 P8 L9 E10 N11 L12 V15 V19 D20 V21 K22 Y25 A26 R27 N28 Y29 L30 R33 A36 V37 L38 A39 T40 E41 S42 N43 L44 K45 A46 L47 E48 A53 K56 R57 E60 R61 K62 A63 E64 A65 E66 R67 L68 K69 L72

E73 N74 L75 T76 L77 T78 I79 P80 V81 G84 E85 T86 K87 I88 K95 D96 I97 A98 L101 Q104 H105 G106 I107 T108 I109 D110 P111 E117 K121 E122 L123 G124 E125 Y126 V127 L128 T129 Y130 H133 P134 E135 V136 P137 L140 K141 V142 S143 V144 V145 A146 GLN GLU

- Molecule 11: 50S ribosomal protein L13

Chain K: 49% 41% 9%

M1 Y4 K7 Q8 V9 E10 P11 R12 L15 I16 D17 A18 E19 G20 L23 L26 A27 T28 K29 I30 A31 T32 L33 L34 R35 R39 P40 D41 W42 T43 M48 G49 D50 F51 V52 V55 N56 A57 D58 K59 I60 R61 V62 T63 L67 K70 I71 Y72 T73 R74

Y75 S76 G77 K83 K84 I85 P86 L87 E88 K89 M90 L91 A92 T93 H94 P95 E96 R97 V98 L99 E100 V103 K104 P108 K109 G110 P111 L112 G113 R114 R115 L116 F117 G125 P126 D127 H130 Q131 P135 L138 E139 V140

- Molecule 11: 50S ribosomal protein L13

Chain PB: 54% 37% 9%

M1 Y4 K7 Q8 V9 E10 P11 R12 L15 I16 D17 A18 E19 G20 L23 L26 A27 T28 K29 I30 A31 T32 L33 L34 R35 R39 P40 D41 W42 T43 M48 G49 D50 F51 V52 V55 N56 A57 D58 K59 I60 R61 V62 T63 L67 K70 I71 Y72 T73 R74

Y75 S76 G77 K83 K84 I85 P86 L87 E88 K89 M90 L91 A92 T93 H94 P95 E96 R97 E100 K104 P108 P111 L112 G113 R114 R115 L116 F117 G125 P126 D127 H130 Q131 P135 L138 E139 V140

- Molecule 12: 50S ribosomal protein L14

Chain L: 34% 58% 8%

M1 I2 Q3 P4 Q5 T6 A11 D12 N13 T14 G15 A16 R17 K18 I19 M20 C21 I22 R23 V24 L25 K26 G27 S28 N29 A30 K31 Y32 A33 T34 V35 V38 I39 V40 A41 S42 V43 K44 E45 A46 I47 P48 R49 V52 K53 E54 A60 V63 R64 T65 K66 K67 E68 V69 K70

R71 P72 D73 G74 S75 A76 I77 R78 F79 D80 D81 N82 A83 A84 V85 I86 I87 N88 N89 Q90 L91 E92 P93 R97 V98 F99 G100 P101 V102 A103 R104 E105 L106 R107 F111 M112 K113 I114 V115 S116 L117 A118 P119 E120 V121 L122

- Molecule 12: 50S ribosomal protein L14

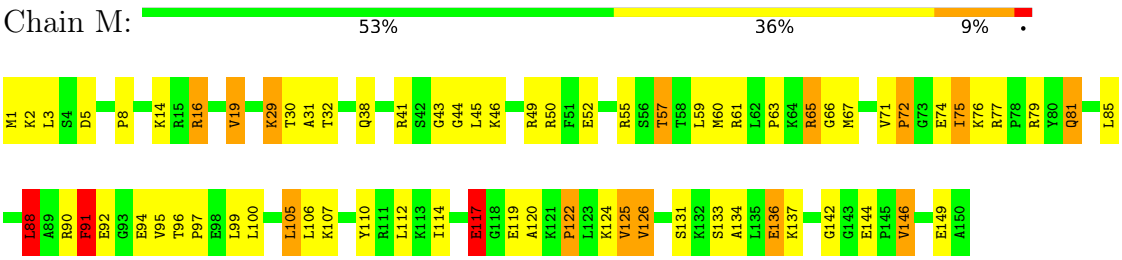
Chain QB: 34% 57% 9%

M1 I2 Q3 P4 L8 A11 D12 N13 A16 R17 K18 I19 M20 C21 I22 R23 V24 L25 K26 G27 S28 A33 T34 V35 V38 I39 V40 A41 S42 V43 K44 E45 P48 V52 K53 E54 A60 V61 V62 V63 R64 T65 K66 K67 E68 V69 K70 R71 P72 D73 G74 S75

A76 I77 R78 F79 N82 A83 A84 V85 I86 I87 N88 N89 Q90 L91 E92 P93 R97 V98 F99 G100 P101 V102 A103 R104 E105 L106 F111 M112 K113 I114 V115 S116 L117 A118 P119 E120 V121 L122

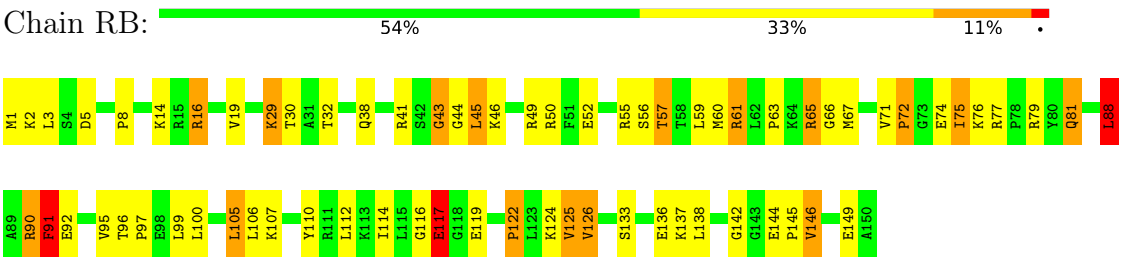
- Molecule 13: 50S ribosomal protein L15

Chain M:



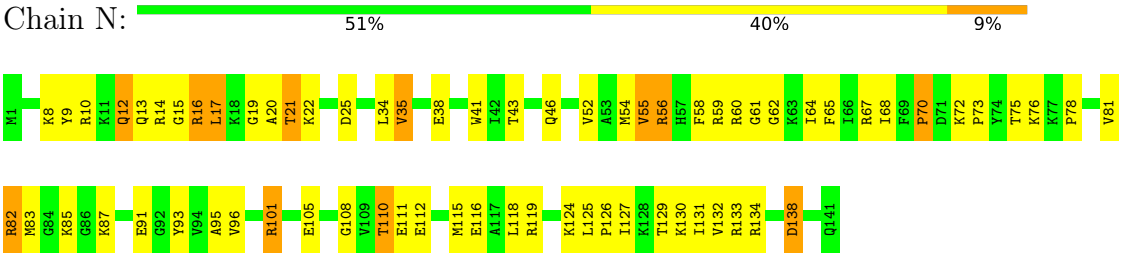
- Molecule 13: 50S ribosomal protein L15

Chain RB:



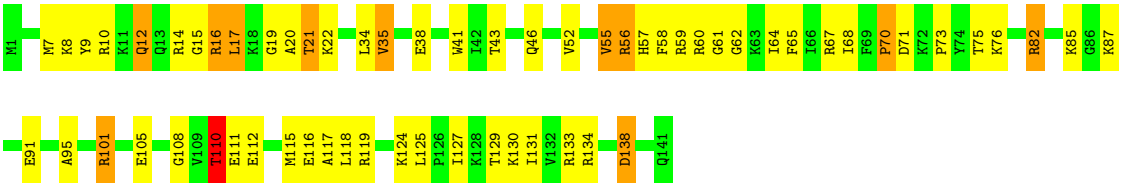
- Molecule 14: 50S ribosomal protein L16

Chain N:



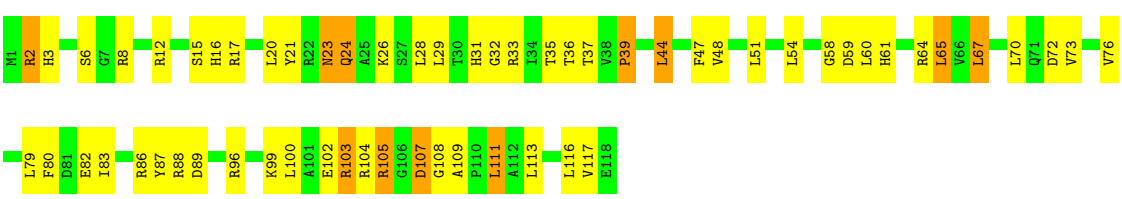
- Molecule 14: 50S ribosomal protein L16

Chain SB:



- Molecule 15: 50S ribosomal protein L17

Chain O:



- Molecule 15: 50S ribosomal protein L17

Chain TB: 47% 43% 9%

M1 R2 S6 G7 R8 K9 R12 H13 S14 S15 H16 R17 L20 Y21 R22 N23 Q24 A25 K26 S27 L28 L29 T30 H31 G32 R33 T34 T35 T36 T37 V38 P39 L44 F47 V48 L51 L54 A55 K56 R57 G58 D59 L60 H61 R64 L65 V66 L67 L70 Q71 D72

V73 V76 F80 D81 E82 I83 R86 Y87 R88 D89 R96 V97 L98 K99 L100 A101 E102 R103 R104 R105 G106 D107 G108 A109 P110 L111 A112 L113 V114 V117 E118

- Molecule 16: 50S ribosomal protein L18

Chain P: 47% 39% 12%

MET ALA R3 L4 T5 A6 Y7 E8 R9 R10 K11 F12 R13 V14 R15 N16 R17 I18 K19 R20 T21 G22 R23 L24 R25 L26 S27 V28 F29 R30 S31 L32 K33 H34 I35 Y36 A37 Q38 I39 I40 D41 D42 E43 K44 L48 V49 S50 A51 K59 G60 N61 K62 T63 R67 R71 A72

L73 A74 E75 K76 A77 L78 I82 K83 Q84 V85 R89 G90 P91 Y92 K93 Y94 H95 G96 R97 V98 E107 G108 E111 F112

- Molecule 16: 50S ribosomal protein L18

Chain UB: 47% 39% 12%

MET ALA R3 L4 T5 A6 Y7 E8 R9 R10 K11 F12 R13 V14 R15 N16 R17 R20 T21 G22 R23 L24 R25 L26 S27 V28 F29 R30 S31 L32 K33 H34 I35 Y36 A37 Q38 I39 I40 D41 D42 E43 K44 L48 V49 K59 G60 N61 K62 R67 R71 A74 E75 K76 A77

L78 I82 K83 Q84 V85 R89 G90 P91 Y92 K93 Y94 H95 G96 R97 V98 A105 R106 E107 G108 G109 L110 E111 F112

- Molecule 17: 50S ribosomal protein L19

Chain Q: 39% 40% 14% 6%

M1 N2 R3 L6 I7 V10 E11 S12 R13 Y14 V15 R16 T17 D18 L19 P20 E21 F22 R23 D26 V30 K33 V34 K35 E36 G37 N38 R39 T40 R41 D44 F45 I50 R51 I52 R53 R54 N55 G56 F57 N58 T59 T60 R64 S67 Y68 G71 V72 E73 R74

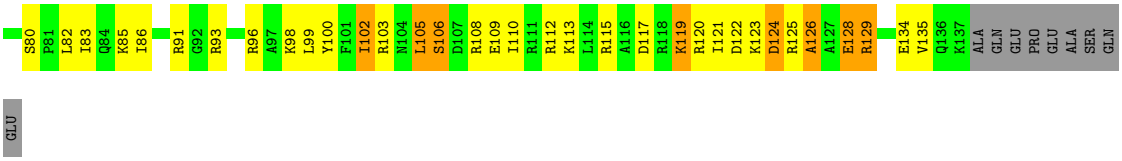
I75 F76 P77 S80 F81 L82 I83 Q84 K85 I86 R91 G92 R93 A94 R95 R96 A97 K98 L99 Y100 F101 I102 R103 N104 L105 S106 D107 R108 E109 I110 R111 R112 K113 L114 R115 A116 D117 R118 K119 R120 I121 D122 K123 D124 R125 A126 A127 E128 R129 E134 V135 Q136 K137 ALA GLN GLU PRO

GLU ALA SER GLN GLU

- Molecule 17: 50S ribosomal protein L19

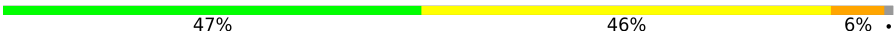
Chain VB: 43% 38% 13% 6%

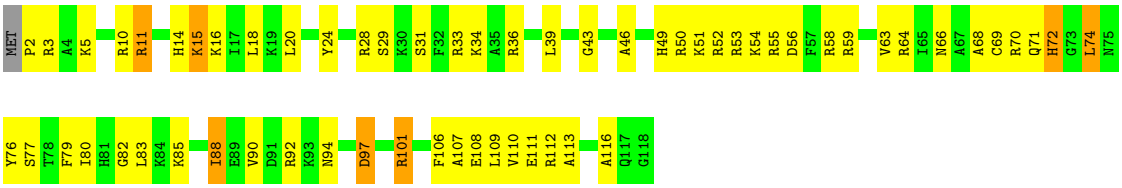
M1 N2 R3 L6 I7 V10 E11 S12 R13 Y14 V15 R16 T17 D18 L19 F22 R23 D26 V30 K33 V34 K35 E36 G37 N38 R39 T40 R41 D44 I50 R51 I52 R53 R54 N55 G56 F57 N58 T59 T60 R64 S67 Y68 V72 E73 R74 I75 F76 P77



• Molecule 18: 50S ribosomal protein L20

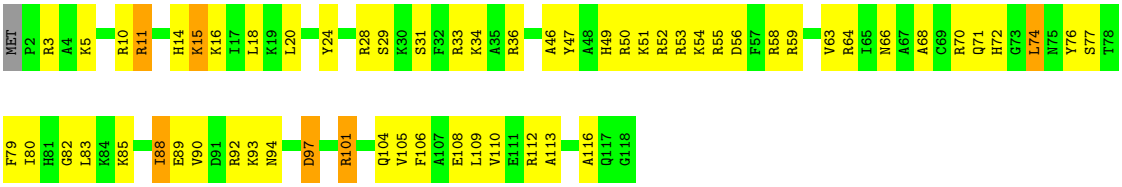
Chain R:





• Molecule 18: 50S ribosomal protein L20

Chain WB:



• Molecule 19: 50S ribosomal protein L21

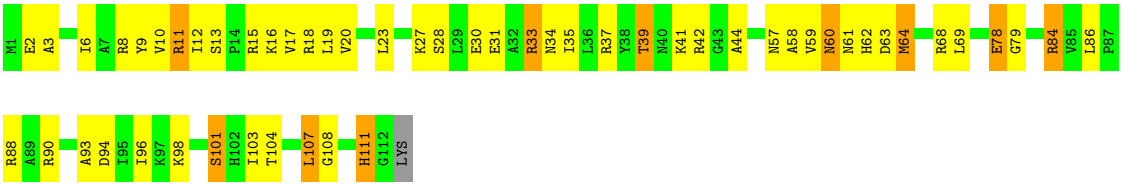
Chain S:

• Molecule 19: 50S ribosomal protein L21

Chain XB:

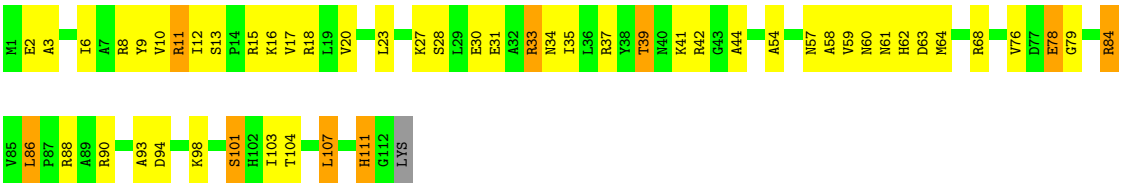
• Molecule 20: 50S ribosomal protein L22

Chain T:



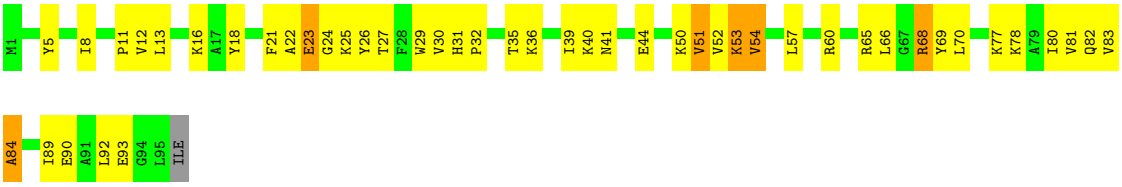
• Molecule 20: 50S ribosomal protein L22

Chain YB: 53% 38% 8% •



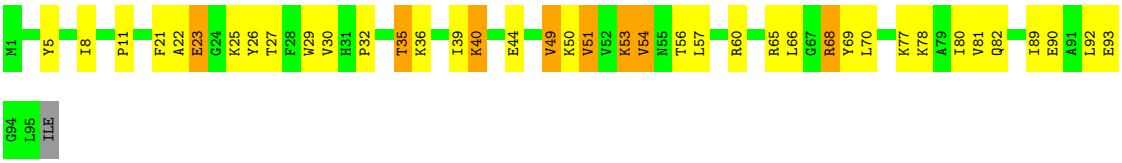
• Molecule 21: 50S ribosomal protein L23

Chain U: 50% 43% 6% •



• Molecule 21: 50S ribosomal protein L23

Chain ZB: 58% 32% 8% •

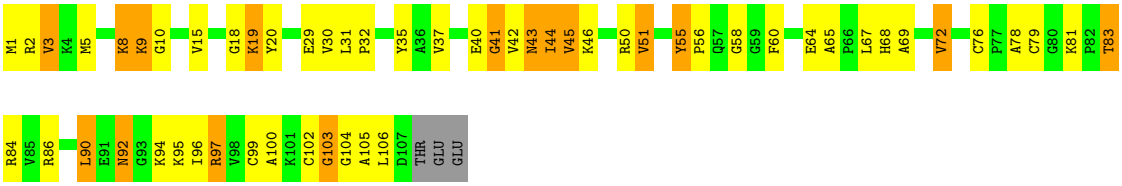


• Molecule 22: 50S ribosomal protein L24

Chain V: 50% 33% 15% •

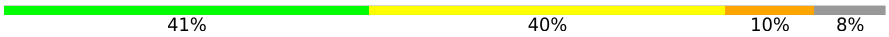
• Molecule 22: 50S ribosomal protein L24

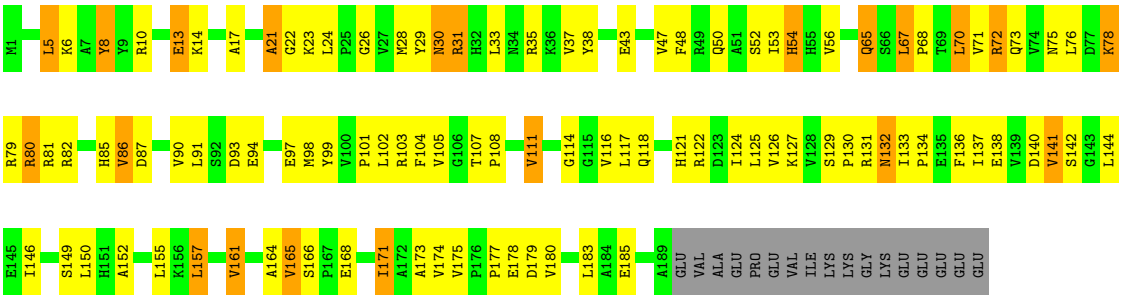
Chain AC: 46% 36% 15% •



• Molecule 23: 50S ribosomal protein L25

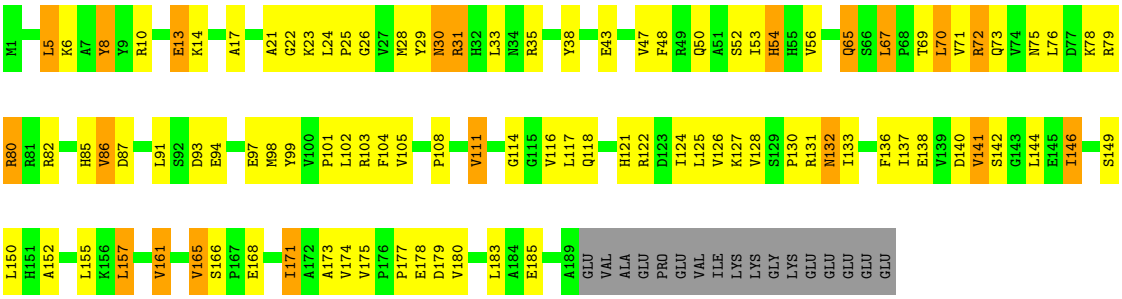
Chain W:





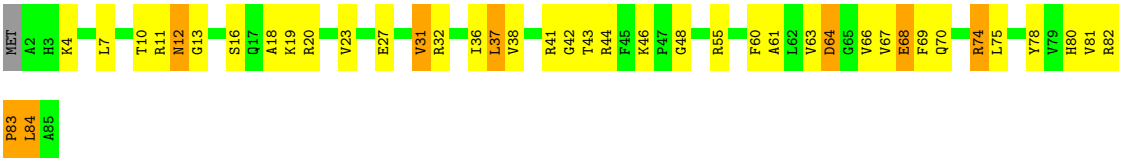
• Molecule 23: 50S ribosomal protein L25

Chain BC:



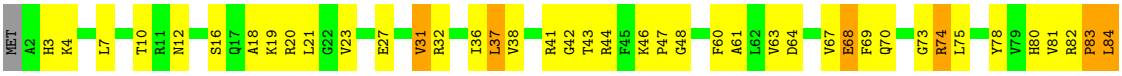
• Molecule 24: 50S ribosomal protein L27

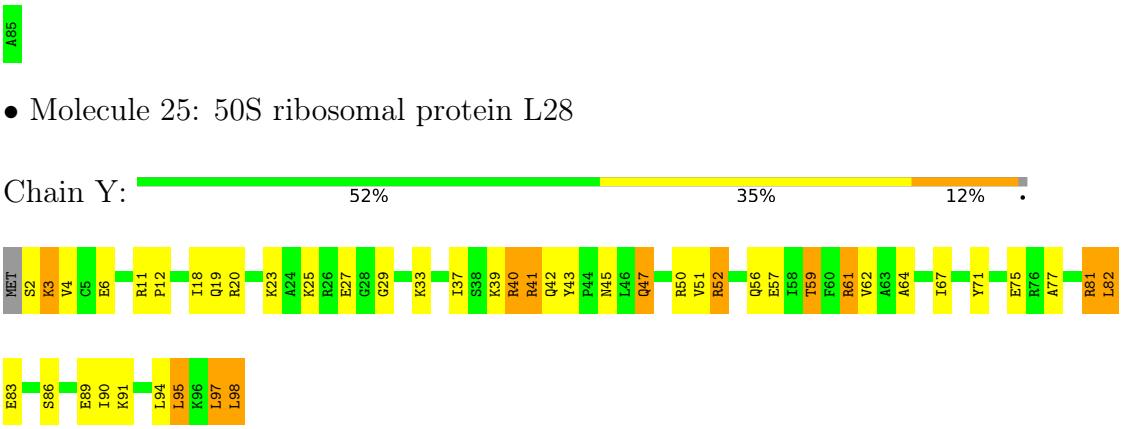
Chain X:



• Molecule 24: 50S ribosomal protein L27

Chain CC:




A85
• Molecule 25: 50S ribosomal protein L28
Chain Y:
52%
35%
12%
MET S2 K3 V4 C5 E6 R11 P12 I18 Q19 R20 K23 A24 K25 R26 E27 G28 G29 K33 I37 S38 K39 R40 R41 Q42 Y43 P44 N45 L46 Q47 R50 V51 R52 Q56 E57 I58 T59 F60 R61 V62 A63 A64 I67 Y71 E75 R76 A77 R81 L82
E83 S86 E89 I90 K91 L94 L95 K96 L97 L98
• Molecule 25: 50S ribosomal protein L28
Chain DC:
44%
41%
14%
MET S2 K3 V4 C5 E6 G9 K10 R11 N16 S17 I18 Q19 R20 K23 A24 K25 R26 E27 G28 G29 V30 K33 I37 S38 K39 R40 R41 Q42 Y43 P44 N45 L46 Q47 R50 V51 R52 Q56 E57 I58 T59 F60 R61 V62 A63 A64 I67 L73 V74 E75 R76
A77 K78 G79 L80 R81 L82 E83 S86 E89 I90 K91 L94 L95 K96 L97 L98
• Molecule 26: 50S ribosomal protein L29
Chain Z:
51%
35%
11%
M1 K2 L3 S4 E5 V6 R7 K8 Q9 L10 E11 L16 S17 E20 L24 R30 L35 R36 A39 S40 I41 G42 Q43 L44 S45 Q46 N47 H48 K49 I50 R51 D52 L53 Q56 R59 V63 E66 K67 R68 R69 Q70 ASN ALA
• Molecule 26: 50S ribosomal protein L29
Chain EC:
53%
33%
11%
M1 K2 L3 S4 E5 V6 R7 K8 Q9 L10 R14 K15 L16 S17 E20 R30 L35 R36 A39 S40 I41 G42 Q43 L44 S45 Q46 N47 H48 K49 I50 R51 D52 L53 Q56 R59 V63 E66 K67 R68 R69 Q70 ASN ALA
• Molecule 27: 50S ribosomal protein L30
Chain AA:
43%
42%
13%
M1 P2 R3 L4 K5 V6 K7 L8 V9 K10 S11 P12 D18 Q19 K20 A21 A22 L23 L26 R29 R30 L31 Q32 Q33 E34 R35 V36 L37 E38 D39 T40 P41 A42 I43 R44 G45 N46 K49 V50 A51 H52 L53 V54 R55 V56 V59 E60
• Molecule 27: 50S ribosomal protein L30
Chain FC:
47%
40%
12%
M1 P2 R3 L4 K5 V6 K7 L8 V9 K10 S11 P12 D18 Q19 K20 A21 A22 L23 K24 A25 L26 R29 R30 L31 Q32 Q33 E34 R35 V36 L37 E38 D39 T40 P41 R44 A51 V54 R55 V56 V59 E60

• Molecule 28: 50S ribosomal protein L31

Chain BA: 41% 42% 14% •

M1 K2 H6 L9 V10 P11 I14 I15 C16 G19 N20 V21 I22 E23 T24 Y25 K28 I31 Y32 V33 E34 V35 C36 S37 K38 C39 H40 P41 F42 Y43 T44 Q47 R48 F49 V50 D51 T52 E53 G54 R55 V56 E57 R58 F59 Q60 R61 D65 S66 Y67 R68 K69 GLY

ARG

• Molecule 28: 50S ribosomal protein L31

Chain GC: 42% 44% 11% •

M1 K2 H6 L9 V10 P11 I14 I15 C16 G19 N20 V21 I22 E23 T24 Y25 K28 I31 Y32 V33 E34 V35 C36 S37 K38 C39 H40 P41 F42 Y43 T44 Q47 R48 F49 V50 D51 T52 E53 G54 R55 V56 E57 R58 F59 Q60 R61 D65 S66 Y67 R68 K69 GLY

ARG

• Molecule 29: 50S ribosomal protein L32

Chain CA: 40% 48% 10% •

MET A2 K3 V6 P7 K8 A14 R15 R16 D17 A18 R19 R20 S21 H22 H23 A24 L25 T26 I29 L30 C33 P34 E35 C36 K37 A38 M39 K40 P41 P42 H43 T44 V45 C46 P47 E48 C49 G50 Y51 Y52 R55 K56 V57 L58 E59 V60

• Molecule 29: 50S ribosomal protein L32

Chain HC: 43% 47% 8% •

MET A2 K3 V6 P7 K8 R16 D17 A18 R19 H22 L25 T26 P27 P28 I29 L30 C33 P34 E35 C36 K37 A38 M39 K40 P41 P42 H43 T44 V45 C46 P47 E48 C49 G50 Y51 Y52 R55 K56 V57 L58 E59 V60

• Molecule 30: 50S ribosomal protein L33

Chain DA: 57% 31% 9% •

MET A2 R6 I7 K8 L9 L10 T14 A22 T23 E24 K25 N26 K27 R28 N29 N32 K33 L34 K38 Y39 C40 P41 W42 C43 R44 E51 V52 K53 I54

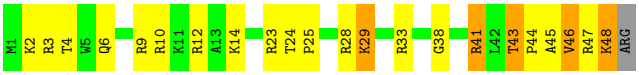
• Molecule 30: 50S ribosomal protein L33

Chain IC: 61% 30% 7% •

MET A2 R6 I7 K8 L9 L10 T14 A22 T23 E24 K25 N26 K27 R28 N29 N32 K33 L34 K38 Y39 C43 R44 E51 V52 K53 I54

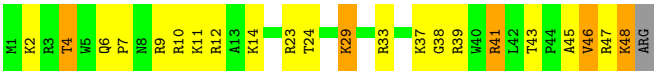
• Molecule 31: 50S ribosomal protein L34

Chain EA: 53% 35% 10% •



• Molecule 31: 50S ribosomal protein L34

Chain JC:

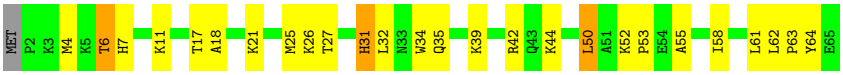


• Molecule 32: 50S ribosomal protein L35

Chain FA:

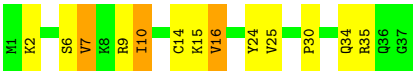
• Molecule 32: 50S ribosomal protein L35

Chain KC:



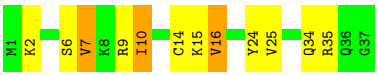
• Molecule 33: 50S ribosomal protein L36

Chain GA:



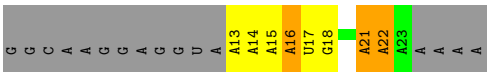
• Molecule 33: 50S ribosomal protein L36

Chain LC:



• Molecule 34: mRNA

Chain HA:

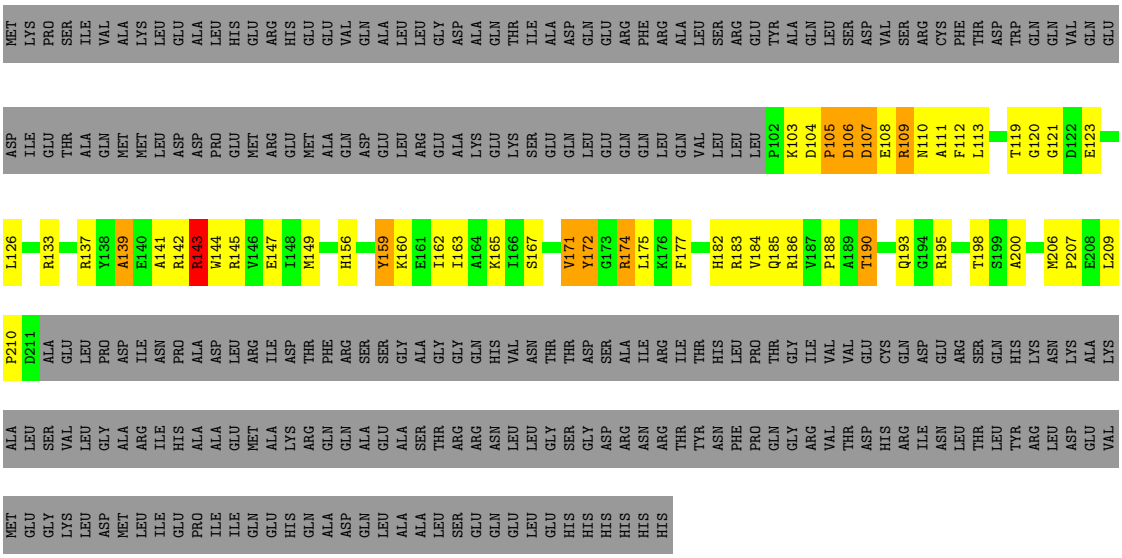


• Molecule 34: mRNA

Chain MC:

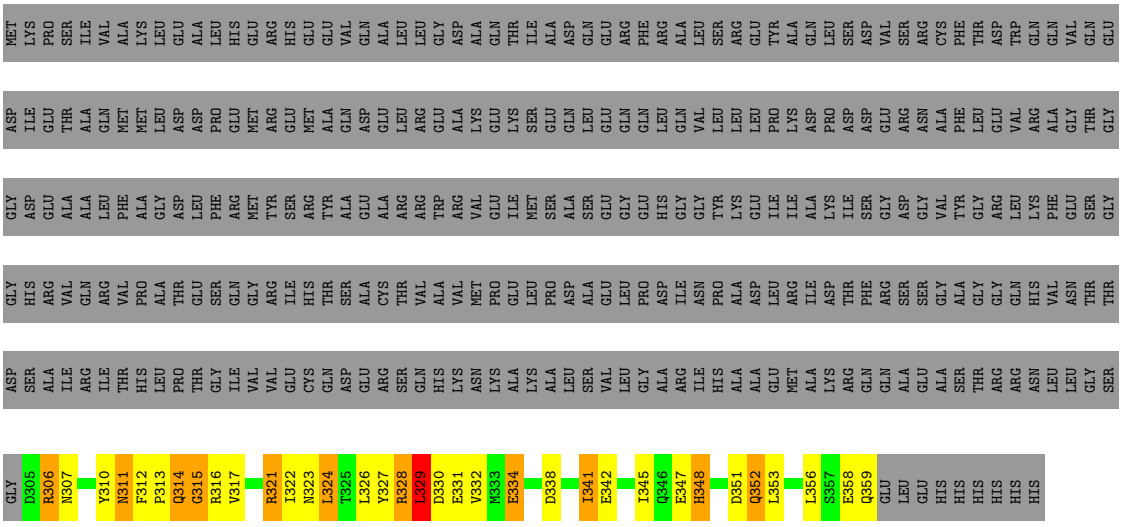
• Molecule 35: Peptide chain release factor 1

Chain JA: 16% 12% • 70%



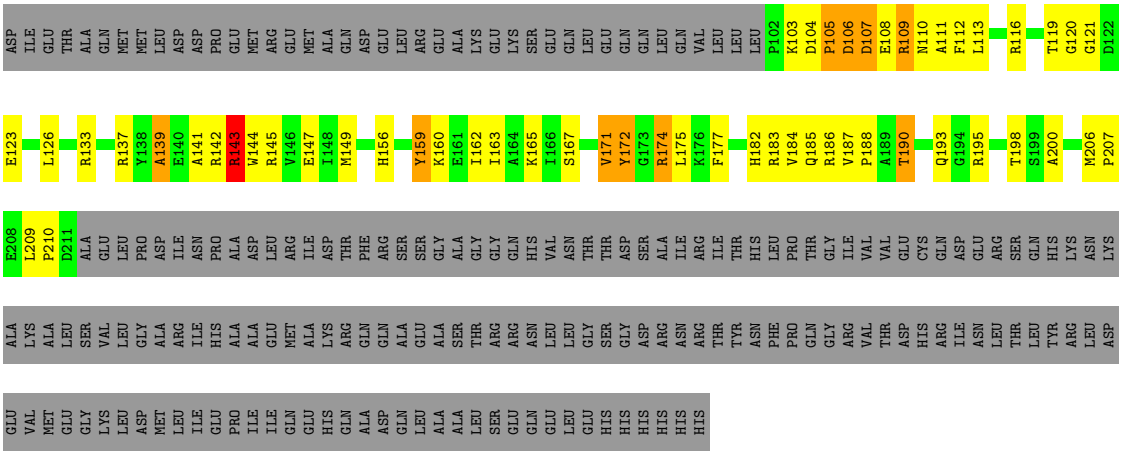
• Molecule 35: Peptide chain release factor 1

Chain KA: 6% 6% • 85%



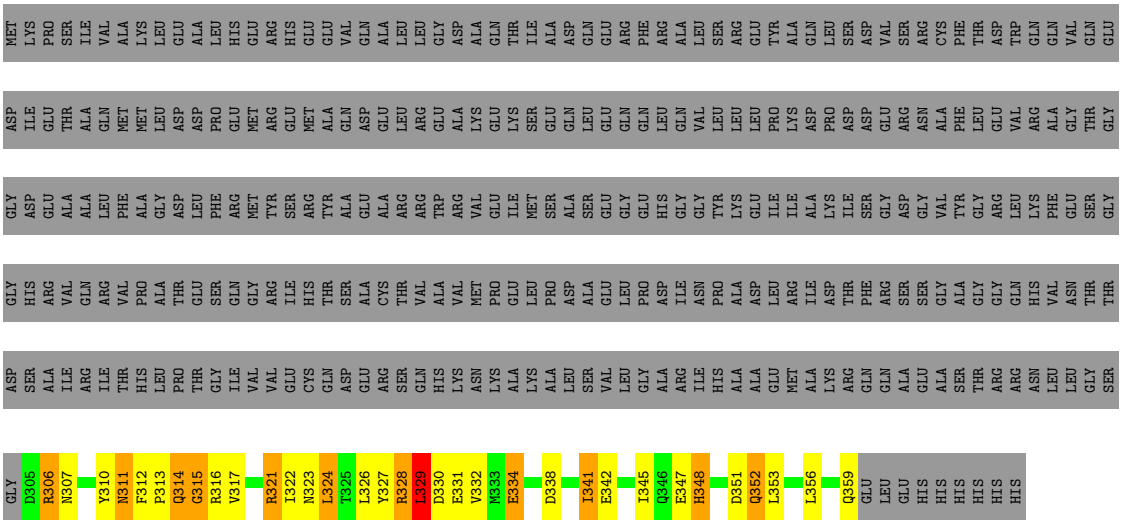
• Molecule 35: Peptide chain release factor 1

Chain OC: 15% 12% • 70%



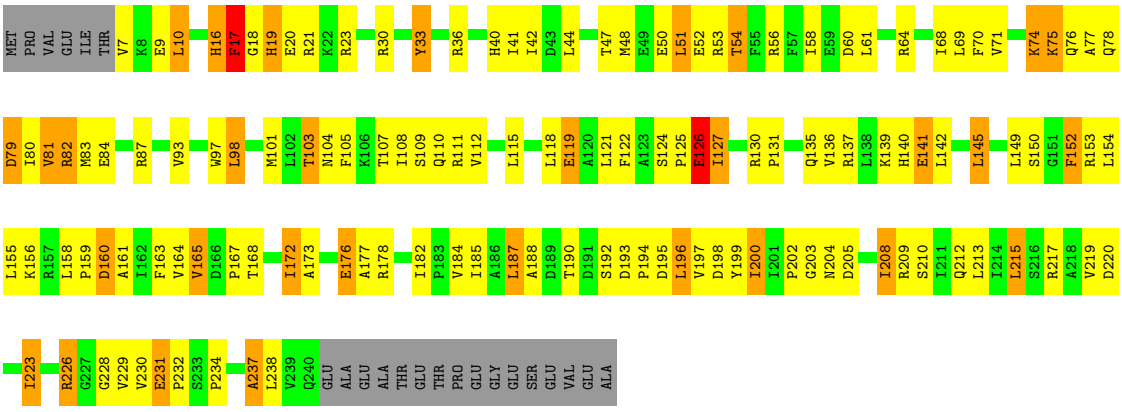
- Molecule 35: Peptide chain release factor 1

Chain PC: 6% 6% • 85%



- Molecule 36: 30S ribosomal protein S2

Chain LA: 38% 40% 12% • 9%



- Molecule 36: 30S ribosomal protein S2

Chain QC: 39% 39% 12% • 9%

MET PRO VAL GLU ILE THR V7 L10 H16 F17 G18 H19 E20 R21 K22 R23 F28 A29 R30 Y31 I32 Y33 R36 H40 I41 I42 D43 L44 T47 M48 E49 E50 L51 E52 R53 T54 F55 R56 D60 L61 R64 I68 L69 F70 V71 K74 K75 Q76 A77 Q78

D79 I80 V81 R82 M83 E84 R87 W97 L98 M101 L102 T103 N104 F105 K106 T107 I108 S109 Q110 R111 V112 H113 R114 L115 E116 E117 L118 E119 A120 L121 F122 A123 S124 P125 E126 I127 R130 P131 K132 Q135 V136 R137 L138 K139 H140 E141 L142 L145 L149 S150 G151 F152 R153

L154 L155 K156 R157 L158 P159 D160 A161 I162 F163 V164 V165 D166 P167 T168 I172 A173 E176 A177 R178 I182 P183 V184 I185 A186 L187 A188 D189 T190 D191 S192 D193 P194 D195 L196 V197 D198 Y199 I200 I201 P202 G203 N204 D205 I208 R209 Q212 L215 V219 D220 I223

R226 G227 G228 V229 V230 E231 P234 A237 L238 V239 Q240 GLU ALA GLU ALA THR GLU THR PRO GLU GLY GLU SER GLU VAL GLU ALA

• Molecule 37: 30S ribosomal protein S3

Chain MA: 39% 38% 9% 14%

MET G2 N3 K4 I5 H6 P7 R11 L12 G13 T14 T15 R16 E19 S20 R21 W22 Y23 K26 K27 R30 H31 L32 E35 D36 Q37 R38 I39 R40 L43 E44 L47 R54 V55 D56 I57 E58 R59 A60 A61 D62 N63 V64 A65 V66 T67 V68 H69 V70 A71 K72 P73

V76 I77 G78 R83 I84 R85 V86 L87 R88 E89 E90 L91 A92 K93 L94 T95 G96 K97 N98 V99 A100 L101 N102 V103 Q104 E105 P109 N110 L111 S112 A113 P114 L115 V116 A117 Q118 R119 V120 A121 E122 Q123 I124 E125 R126 R127 F128 A129 V130 R131 I134 K135 Q139 R140 V141 M142

E143 S144 G145 K150 V151 I152 V153 I157 W167 R172 L175 H176 R179 Y184 G185 L188 A189 R190 T191 G194 V195 V198 K199 A200 Y201 I202 F203 L204 G205 E206 V207 ILE GLY GLY GLN LYS PRO LYS ALA ARG PRO GLU LEU PRO LYS ALA GLU GLU ARG PRO

ARG ARG ARG ARG PRO ALA VAL ARG VAL LYS LYS GLU GLU

• Molecule 37: 30S ribosomal protein S3

Chain RC: 41% 37% 8% • 14%

MET G2 N3 K4 I5 H6 P7 I8 R11 L12 G13 T14 T15 R16 E19 S20 R21 W22 Y23 K26 K27 R30 H31 E35 D36 Q37 R38 I39 R40 L43 L47 R54 V55 D56 I57 E58 R59 A60 V64 A65 V66 T67 V68 H69 V70 A71 K72 P73 V76 I77

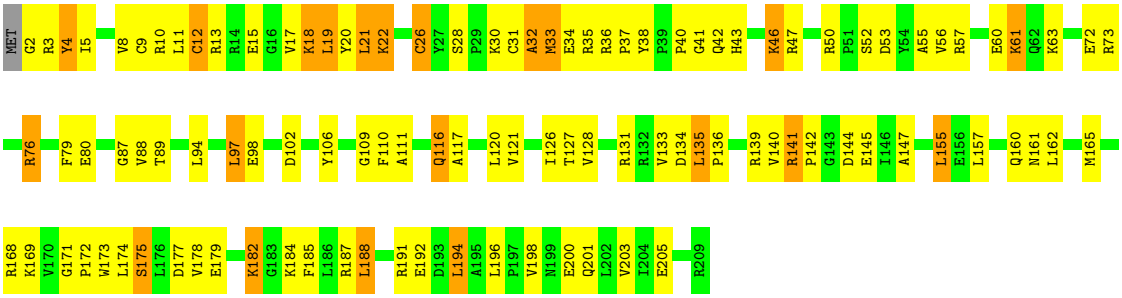
G78 E82 R83 I84 R85 V86 L87 R88 E89 E90 L91 A92 K93 L94 T95 G96 K97 N98 V99 A100 L101 N102 V103 Q104 E105 P109 N110 L111 S112 A113 P114 L115 V116 A117 Q118 R119 V120 A121 E122 Q123 I124 E125 R126 R127 F128 R131 I134 K135 Q139 R140 V141 M142 E143 S144 G145

K150 V151 I152 V153 W167 R172 L175 H176 R179 Y184 G185 L188 A189 R190 T191 V195 V198 K199 A200 Y201 I202 F203 L204 G205 E206 V207 ILE GLY GLY GLN LYS PRO LYS ALA ARG PRO GLU LEU PRO LYS ALA GLU GLU ARG PRO ARG ARG ARG ARG PRO ALA

VAL ARG VAL LYS LYS GLU GLU

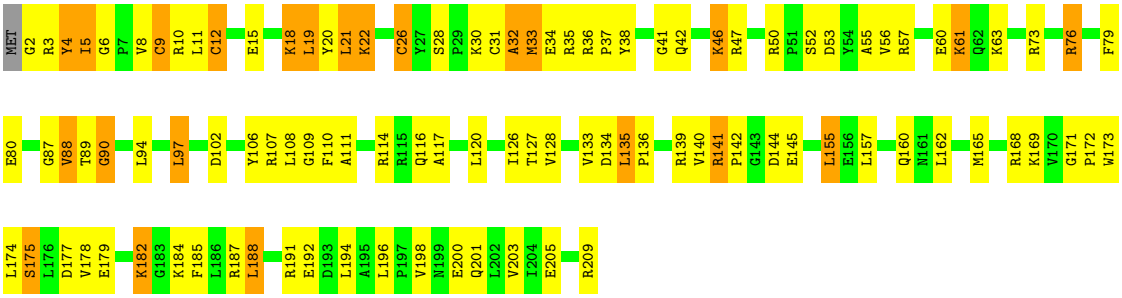
• Molecule 38: 50S ribosomal protein S4

Chain NA: 48% 42% 10%



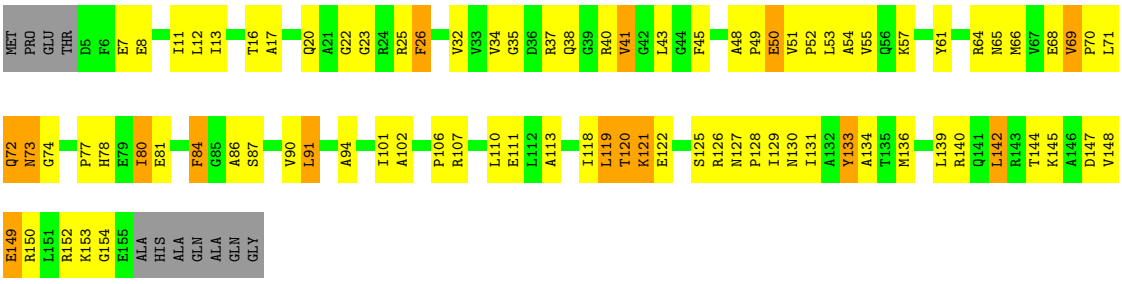
- Molecule 38: 50S ribosomal protein S4

Chain SC:



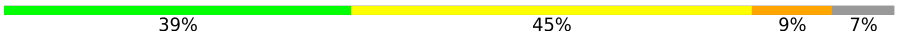
- Molecule 39: 30S ribosomal protein S5

Chain OA:



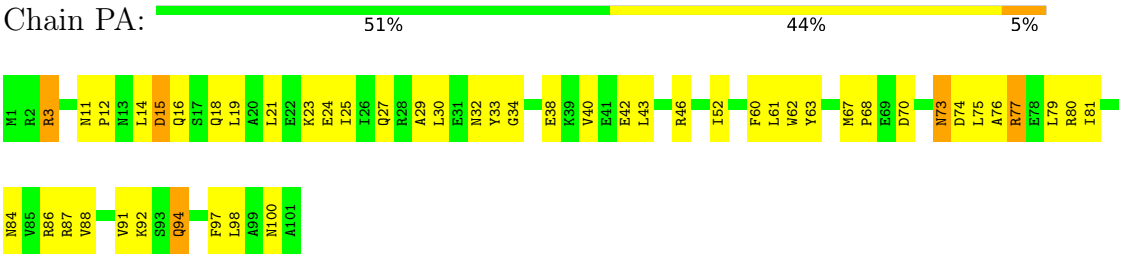
- Molecule 39: 30S ribosomal protein S5

Chain TC:



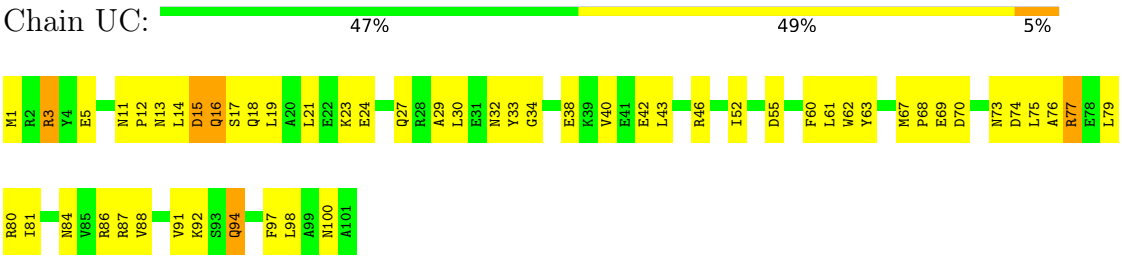
- Molecule 40: 30S ribosomal protein S6

Chain PA:



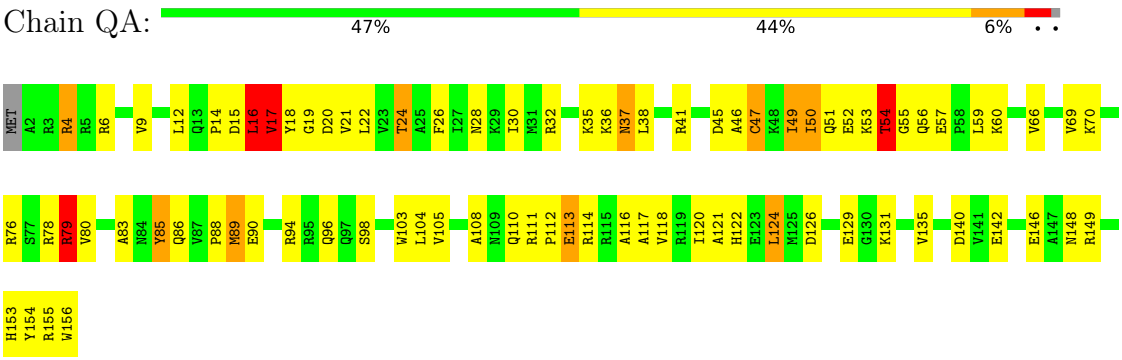
- Molecule 40: 30S ribosomal protein S6

Chain UC:



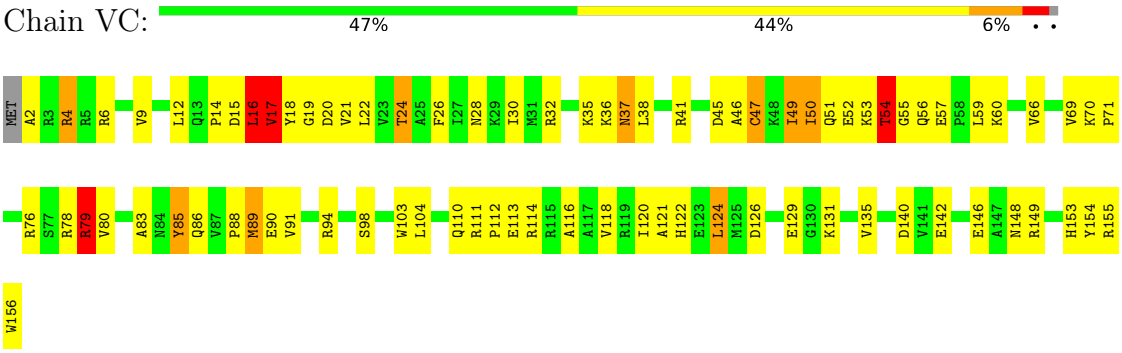
- Molecule 41: 30S ribosomal protein S7

Chain QA:



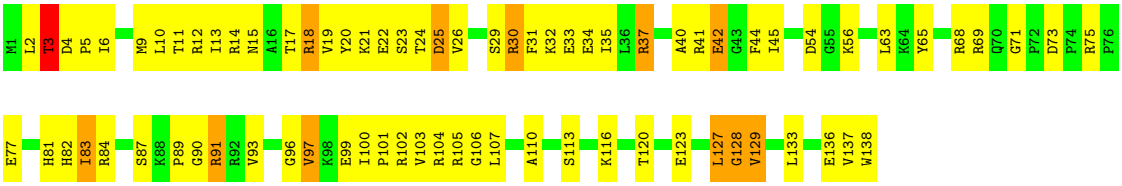
- Molecule 41: 30S ribosomal protein S7

Chain VC:



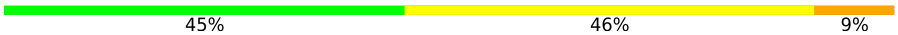
- Molecule 42: 30S ribosomal protein S8

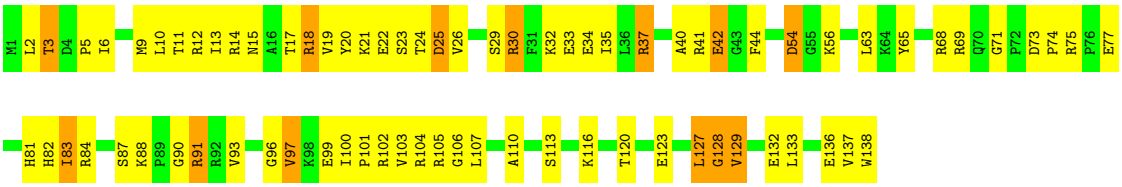
Chain RA:



• Molecule 42: 30S ribosomal protein S8

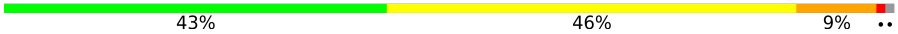
Chain WC:

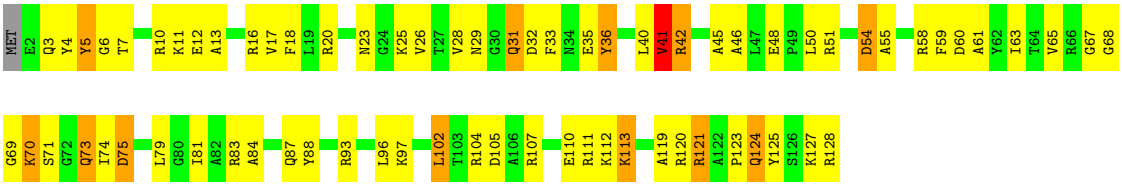




• Molecule 43: 30S ribosomal protein S9

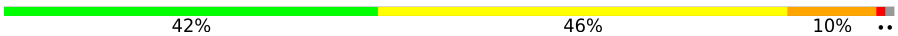
Chain SA:

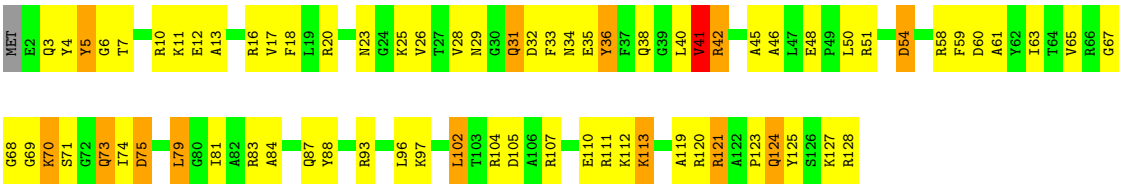




• Molecule 43: 30S ribosomal protein S9

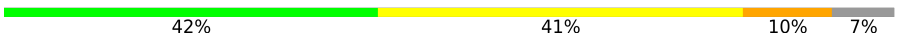
Chain XC:

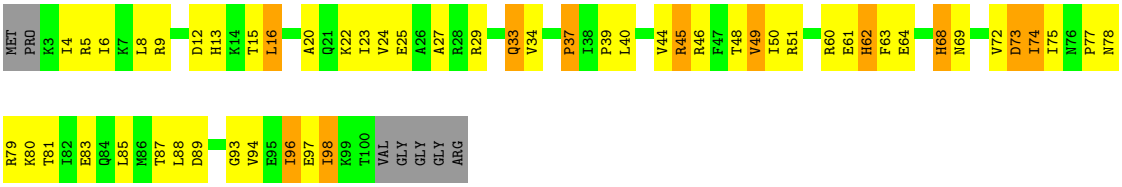




• Molecule 44: 30S ribosomal protein S10

Chain TA:





• Molecule 44: 30S ribosomal protein S10

Chain YC:

MET PRO K3 I4 R5 I6 K7 L8 R9 D12 H13 K14 T15 L16 A20 Q21 K22 I23 V24 E25 A26 A27 R28 R29 Q33 V34 P37 I38 P39 L40 V44 R45 R46 F47 T48 V49 I50 R51 R60 E61 H62 F63 E64 L65 R66 T67 H68 N69 V72 D73 I74 I75 N76

P77 N78 R79 K80 T81 I82 E83 Q84 L85 L88 G93 V94 E95 I96 E97 I98 K99 T100 VAL GLY GLY GLY ARG

• Molecule 45: 30S ribosomal protein S11

Chain UA: 49% 35% 6% 10%

MET ALA LYS LYS PRO SER LYS LYS LYS VAL K11 R12 A15 S16 G17 Y20 I21 H22 Y25 N26 I29 T33 D34 P35 N38 P39 I40 S44 I48 G52 S53 R54 K55 G56 T57 Q62 L63 D67 A68 A69 K70 K71 A72 M73 Q78 S79 V80 D81

V84 R85 G86 T87 G88 A89 G90 R91 E92 Q93 A94 I95 S101 K106 S107 I108 V109 T112 P113 N117 R120 P121 K122 K123 K124 F125 R126 LYS ALA SER

• Molecule 45: 30S ribosomal protein S11

Chain ZC: 47% 39% 5% 10%

MET ALA LYS LYS PRO SER LYS LYS LYS VAL K11 R12 A15 S16 G17 Y20 I21 H22 Y25 N26 I29 T33 D34 P35 D36 G37 N38 P39 I40 I48 G52 S53 R54 K55 G56 T57 P58 L63 D67 K71 A72 M73 Q78 S79 V80 D81 V82 I83 V84

R85 G86 T87 G88 A89 G90 R91 I95 S101 K106 S107 I108 V109 T112 P113 V114 P115 H116 N117 R120 P121 K122 K123 K124 F125 R126 LYS ALA SER

• Molecule 46: 30S ribosomal protein S12

Chain VA: 42% 37% 13% 8%

MET P5 T6 I7 N8 Q9 L10 V11 R12 K13 G14 R15 V18 R19 K20 K21 V24 P25 A26 L27 K28 F32 R33 R34 V39 V40 K47 P48 N49 S50 A51 L52 R53 K54 V55 A56 K57 V58 R59 L60 T61 S62 G63 Y64 E65 V66 T67 A68 Y69 I70 L77 Q78 E79 H80

R86 R89 OTD92 G95 V96 R97 Y98 H99 I100 V101 V104 A107 V110 K111 D112 R113 K114 K115 S116 R117 S118 K119 Y120 K123 K124 P125 K126 GLU ALA ALA LYS THR ALA ALA LYS LYS

• Molecule 46: 30S ribosomal protein S12

Chain AD: 43% 36% 13% 8%

MET P5 T6 I7 N8 V11 R12 K13 G14 R15 V18 R19 K20 K21 V24 P25 A26 L27 K28 F32 R33 R34 T38 V39 V40 R41 K47 P48 N49 S50 A51 L52 R53 K54 V55 A56 K57 L60 T61 S62 G63 V66 T67 A68 Y69 I70 L77 Q78 E79 H80

R86 R89 OTD92 G95 V96 R97 Y98 H99 I100 V101 V104 A107 V110 K111 D112 R113 K114 K115 S116 R117 S118 K119 Y120 K123 K124 P125 K126 GLU ALA ALA LYS THR ALA ALA LYS LYS

• Molecule 47: 30S ribosomal protein S13

Chain WA: 37% 46% 10% 7%

MET A2 R3 I4 A5 G6 V7 E8 I9 P10 R11 N12 K13 R14 V15 D16 V17 A18 L19 I22 Y23 G24 I25 R29 A30 K31 E32 A33 L34 E35 K36 I39 N40 P41 A42 T43 R44 V45 K46 D47 L48 T49 E52 V53 V54 R55 L56 R57 E58 Y59 V60 W64 K65 L66 E67

L70 V74 N77 I78 K79 R80 L81 M82 Y87 R88 R91 H92 L96 P97 V98 R99 G100 Q101 R102 N106 A107 R108 T109 R110 K111 G112 P113 R114 K115 T116 V117 A118 GLY LYS LYS LYS ALA PRO ARG LYS

- Molecule 47: 30S ribosomal protein S13

Chain BD: 39% 44% 10% 7%

MET A2 R3 I4 A5 G6 V7 E8 I9 P10 R11 N12 K13 R14 V15 D16 V17 A18 L19 I22 Y23 G24 I25 R29 A30 K31 E32 A33 L34 E35 I39 N40 P41 A42 T43 R44 V45 K46 D47 L48 V54 R55 L56 R57 E58 Y59 V60 L66 E67 G68 E69 L70 E73 V74

N77 I78 K79 R80 L81 M82 Y87 R88 G89 L90 R91 H92 L96 P97 V98 R99 G100 Q101 R102 N106 A107 R108 T109 R110 K111 G112 K115 T116 V117 A118 GLY LYS LYS LYS ALA PRO ARG LYS

- Molecule 48: 30S ribosomal protein S14 type Z

Chain XA: 39% 54% 5%

MET A2 R3 K4 A5 L6 I7 E8 K11 R12 T13 P14 V18 R19 A20 Y21 T22 R23 C24 V25 R26 C27 G28 R29 A30 R31 S32 V33 Y34 R35 F36 F37 G38 L39 C40 R41 I42 C43 G51 Q52 L53 K58 W61

- Molecule 48: 30S ribosomal protein S14 type Z

Chain CD: 39% 54% 5%

MET A2 R3 K4 A5 L6 I7 E8 K11 R12 T13 P14 V18 R19 A20 Y21 T22 R23 C24 V25 R26 C27 G28 R29 A30 R31 S32 V33 Y34 R35 F36 F37 G38 L39 C40 R41 I42 C43 G51 Q52 L53 K58 W61

- Molecule 49: 30S ribosomal protein S15

Chain YA: 38% 48% 12%

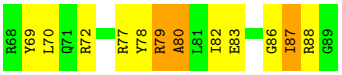
MET P2 I3 T4 K5 E6 E7 K8 I12 Q13 E14 F15 A16 R17 F18 D21 T22 G23 S24 T25 E26 V27 L31 L32 T33 L34 R35 I36 N37 R38 L39 S40 E41 H42 L43 K44 K47 K48 D49 H50 H53 R54 G55 L56 L57 M58 M59 Q62 R63 L67 R68 Y69 L70

Q71 R72 E73 D74 R77 Y78 R79 A80 L81 I82 E83 G86 I87 R88 G89

- Molecule 49: 30S ribosomal protein S15

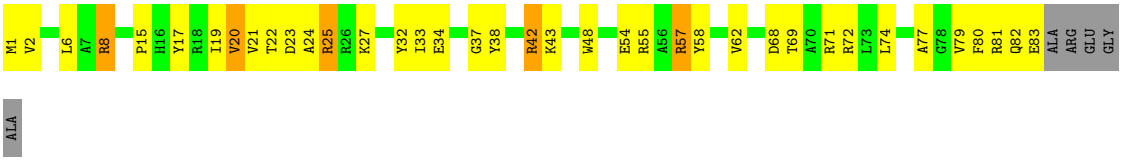
Chain DD: 36% 51% 12%

MET P2 I3 T4 K5 E6 E7 K8 I12 Q13 E14 F15 A16 R17 F18 D21 T22 G23 S24 T25 E26 V27 Q28 L31 L32 T33 L34 R35 I36 N37 R38 L39 S40 E41 H42 L43 K44 K47 K48 D49 H50 H53 R54 G55 L56 L57 M58 M59 Q62 R63 R64 R65 L66 L67



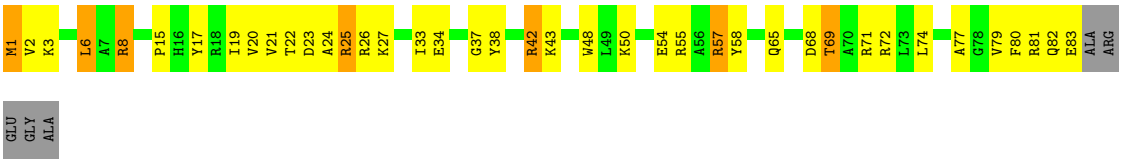
• Molecule 50: 30S ribosomal protein S16

Chain ZA:



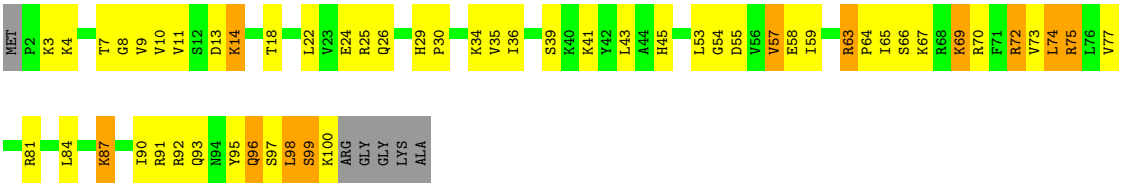
• Molecule 50: 30S ribosomal protein S16

Chain ED:



• Molecule 51: 30S ribosomal protein S17

Chain AB:

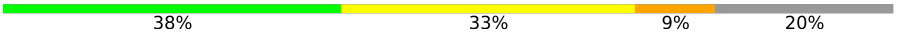


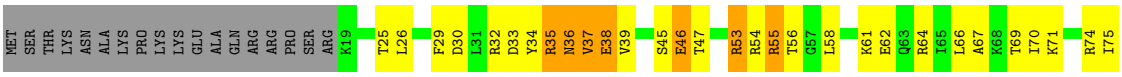
• Molecule 51: 30S ribosomal protein S17

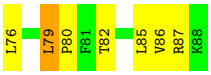
Chain FD:

• Molecule 52: 30S ribosomal protein S18

Chain BB:

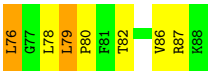






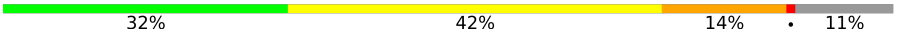
• Molecule 52: 30S ribosomal protein S18

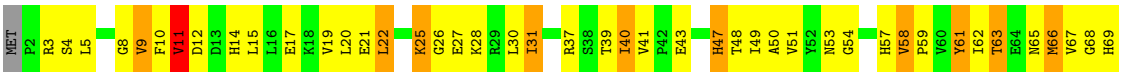
Chain GD:

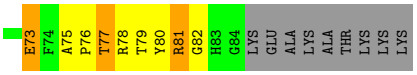


• Molecule 53: 30S ribosomal protein S19

Chain CB:

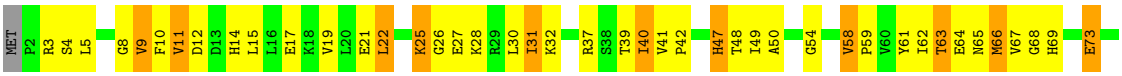


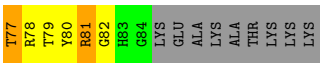




• Molecule 53: 30S ribosomal protein S19

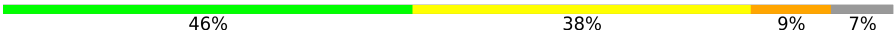
Chain HD:

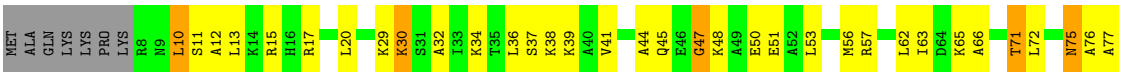


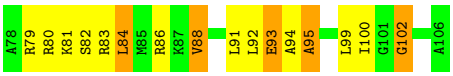


• Molecule 54: 30S ribosomal protein S20

Chain DB:

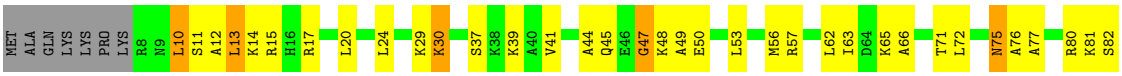






• Molecule 54: 30S ribosomal protein S20

Chain ID:

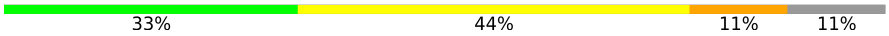


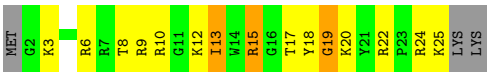
• Molecule 55: 30S ribosomal protein Thx

Chain EB:

• Molecule 55: 30S ribosomal protein Thx

Chain JD:





4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	209.86Å 450.69Å 615.88Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 3.40 69.13 – 3.40	Depositor EDS
% Data completeness (in resolution range)	99.9 (50.00-3.40) 100.0 (69.13-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.22 (at 3.41Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	(Not available) , (Not available) 0.243 , 0.282	Depositor DCC
R_{free} test set	7928 reflections (1.00%)	wwPDB-VP
Wilson B-factor (Å^2)	120.8	Xtriage
Anisotropy	0.263	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.26 , 82.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.37$, $< L^2 > = 0.20$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	298186	wwPDB-VP
Average B, all atoms (Å^2)	137.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.58% of the height of the origin peak. No significant pseudotranslation is detected.*

[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: 4SU, ZN, 4OC, 2MU, 7MG, 2MA, BLS, M2G, OMG, UR3, 5MU, MG, 0TD, PSU, 2MG, MA6, 5MC

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
1	A	0.60	1/35961 (0.0%)	1.09	67/56125 (0.1%)
1	FB	0.59	1/35961 (0.0%)	1.09	73/56125 (0.1%)
2	B	0.94	58/69214 (0.1%)	1.41	808/108048 (0.7%)
2	GB	0.83	32/69214 (0.0%)	1.33	620/108048 (0.6%)
3	C	0.56	0/2881	1.05	3/4494 (0.1%)
3	HB	0.51	0/2881	1.02	2/4494 (0.0%)
4	D	0.40	0/1744	0.90	0/2719
4	IA	0.60	0/1744	1.06	4/2719 (0.1%)
4	IB	0.37	0/1744	0.90	0/2719
4	NC	0.50	0/1744	1.00	0/2719
5	E	0.80	4/2195 (0.2%)	0.80	1/2955 (0.0%)
5	JB	0.63	2/2195 (0.1%)	0.73	1/2955 (0.0%)
6	F	0.52	0/1596	0.69	1/2153 (0.0%)
6	KB	0.57	0/1596	0.70	1/2153 (0.0%)
7	G	0.61	0/1621	0.69	0/2194
7	LB	0.51	0/1621	0.65	0/2194
8	H	0.36	0/1496	0.57	0/2013
8	MB	0.33	0/1496	0.57	0/2013
9	I	0.43	0/1356	0.59	0/1834
9	NB	0.34	0/1356	0.55	0/1834
10	J	0.46	0/1152	0.62	0/1559
10	OB	0.42	0/1152	0.61	0/1559
11	K	0.49	0/1148	0.62	0/1547
11	PB	0.44	0/1148	0.59	0/1547
12	L	0.59	0/942	0.66	0/1268
12	QB	0.65	0/942	0.68	0/1268
13	M	0.54	0/1162	0.69	0/1544
13	RB	0.47	0/1162	0.65	0/1544
14	N	0.51	0/1142	0.62	0/1525
14	SB	0.49	0/1142	0.60	0/1525
15	O	0.51	0/982	0.63	0/1312

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
15	TB	0.53	0/982	0.64	0/1312
16	P	0.42	0/887	0.56	0/1180
16	UB	0.40	0/887	0.56	0/1180
17	Q	0.48	0/1157	0.57	0/1544
17	VB	0.54	0/1157	0.59	0/1544
18	R	0.55	0/982	0.60	0/1306
18	WB	0.49	0/982	0.60	0/1306
19	S	0.49	0/790	0.65	0/1057
19	XB	0.44	0/790	0.61	0/1057
20	T	0.65	0/901	0.69	0/1209
20	YB	0.60	0/901	0.68	0/1209
21	U	0.71	0/764	0.68	0/1025
21	ZB	0.60	0/764	0.61	0/1025
22	AC	0.50	0/827	0.61	0/1103
22	V	0.58	0/827	0.64	0/1103
23	BC	0.40	0/1527	0.58	0/2073
23	W	0.44	0/1527	0.60	0/2073
24	CC	0.50	0/671	0.62	0/892
24	X	0.52	0/671	0.63	0/892
25	DC	0.57	0/768	0.69	0/1021
25	Y	0.63	0/768	0.68	0/1021
26	EC	0.50	0/594	0.64	0/785
26	Z	0.61	0/594	0.71	0/785
27	AA	0.50	0/482	0.63	0/646
27	FC	0.44	0/482	0.59	0/646
28	BA	0.39	0/565	0.53	0/761
28	GC	0.35	0/565	0.52	0/761
29	CA	0.54	0/474	0.66	0/640
29	HC	0.54	0/474	0.64	0/640
30	DA	0.34	0/460	0.51	0/613
30	IC	0.33	0/460	0.51	0/613
31	EA	0.77	0/426	0.76	0/561
31	JC	0.65	0/426	0.72	0/561
32	FA	0.60	0/525	0.64	0/691
32	KC	0.53	0/525	0.62	0/691
33	GA	0.41	0/310	0.58	0/407
33	LC	0.45	0/310	0.60	0/407
34	HA	0.72	0/247	0.92	0/382
34	MC	0.72	0/247	0.91	0/382
35	JA	0.37	0/867	0.51	0/1165
35	KA	0.39	0/461	0.56	0/622
35	OC	0.34	0/867	0.51	0/1165
35	PC	0.36	0/461	0.56	0/622

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
36	LA	0.39	0/1935	0.57	0/2609
36	QC	0.35	0/1935	0.55	0/2609
37	MA	0.37	0/1636	0.54	0/2205
37	RC	0.36	0/1636	0.54	0/2205
38	NA	0.47	1/1733 (0.1%)	0.59	1/2318 (0.0%)
38	SC	0.53	1/1733 (0.1%)	0.62	1/2318 (0.0%)
39	OA	0.45	0/1171	0.62	0/1576
39	TC	0.44	0/1171	0.61	0/1576
40	PA	0.51	0/856	0.62	0/1154
40	UC	0.43	0/856	0.60	0/1154
41	QA	0.36	0/1276	0.51	0/1709
41	VC	0.34	0/1276	0.50	0/1709
42	RA	0.37	0/1136	0.57	0/1527
42	WC	0.38	0/1136	0.56	0/1527
43	SA	0.34	0/1029	0.54	0/1378
43	XC	0.32	0/1029	0.53	1/1378 (0.1%)
44	TA	0.36	0/807	0.56	0/1085
44	YC	0.34	0/807	0.57	0/1085
45	UA	0.48	0/879	0.64	0/1187
45	ZC	0.41	0/879	0.59	0/1187
46	AD	0.52	0/963	0.62	0/1287
46	VA	0.50	0/963	0.61	0/1287
47	BD	0.33	0/943	0.51	0/1265
47	WA	0.36	0/943	0.52	0/1265
48	CD	0.35	0/501	0.48	0/664
48	XA	0.37	0/501	0.52	0/664
49	DD	0.42	0/745	0.55	0/992
49	YA	0.49	0/745	0.58	0/992
50	ED	0.40	0/716	0.59	0/963
50	ZA	0.34	0/716	0.56	0/963
51	AB	0.47	0/836	0.57	0/1117
51	FD	0.48	0/836	0.58	0/1117
52	BB	0.46	0/579	0.54	0/768
52	GD	0.41	0/579	0.52	0/768
53	CB	0.32	0/680	0.50	0/915
53	HD	0.30	0/680	0.51	0/915
54	DB	0.36	0/764	0.53	0/1006
54	ID	0.40	0/764	0.54	0/1006
55	EB	0.31	0/212	0.48	0/277
55	JD	0.31	0/212	0.46	0/277
All	All	0.71	100/320836 (0.0%)	1.12	1584/479388 (0.3%)

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
21	U	0	1

All (100) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	E	237	GLU	CG-CD	10.38	1.67	1.51
5	E	237	GLU	CB-CG	8.22	1.67	1.52
38	SC	12	CYS	CB-SG	8.17	1.96	1.82
38	NA	12	CYS	CB-SG	7.71	1.95	1.82
2	GB	1780	A	N9-C4	-7.60	1.33	1.37
2	B	576	U	C2-N3	7.58	1.43	1.37
2	B	1599	C	N1-C6	-7.08	1.32	1.37
2	B	734	A	N9-C4	-7.04	1.33	1.37
2	B	2593	U	C4-O4	7.03	1.29	1.23
5	JB	237	GLU	CB-CG	6.84	1.65	1.52
2	GB	1972	A	N9-C4	-6.81	1.33	1.37
2	B	727	A	N7-C5	-6.80	1.35	1.39
2	B	751	A	N3-C4	-6.78	1.30	1.34
2	B	795	C	N1-C6	-6.78	1.33	1.37
2	B	71	A	N9-C4	-6.65	1.33	1.37
2	B	2593	U	C2-N3	6.58	1.42	1.37
2	GB	960	A	N9-C4	-6.57	1.33	1.37
2	GB	576	U	N3-C4	6.56	1.44	1.38
5	JB	237	GLU	CG-CD	6.50	1.61	1.51
2	GB	2593	U	C2-N3	6.46	1.42	1.37
2	GB	2028	U	C2-N3	6.43	1.42	1.37
2	GB	1382	G	C6-O6	6.37	1.29	1.24
5	E	237	GLU	CD-OE2	6.30	1.32	1.25
2	B	1963	U	N1-C2	6.25	1.44	1.38
2	B	784	A	C6-N1	-6.21	1.31	1.35
2	GB	2542	A	N9-C4	-6.19	1.34	1.37
2	B	1762	A	N9-C4	6.16	1.41	1.37
2	B	459	U	C2-N3	-6.13	1.33	1.37
2	B	733	G	N7-C5	6.13	1.43	1.39
2	GB	2060	A	N9-C4	-6.12	1.34	1.37
2	GB	2590	A	N9-C4	-6.09	1.34	1.37
2	GB	576	U	C2-N3	6.09	1.42	1.37
2	B	1599	C	N3-C4	-6.08	1.29	1.33
2	B	1802	A	N9-C4	-6.08	1.34	1.37
2	B	802	A	N3-C4	-5.98	1.31	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	GB	1762	A	C5-C6	5.95	1.46	1.41
2	B	1382	G	C6-O6	5.94	1.29	1.24
2	B	1802	A	N3-C4	-5.91	1.31	1.34
2	B	775	G	C6-N1	-5.88	1.35	1.39
2	B	1612	C	N1-C6	-5.86	1.33	1.37
2	B	2032	G	N9-C8	5.86	1.42	1.37
2	B	1783	A	N9-C4	-5.85	1.34	1.37
2	B	1938	A	N9-C4	-5.83	1.34	1.37
2	B	2602	A	N9-C4	5.80	1.41	1.37
2	B	2060	A	N9-C4	-5.79	1.34	1.37
2	B	751	A	N9-C4	-5.77	1.34	1.37
2	B	2602	A	N3-C4	5.75	1.38	1.34
2	B	201	C	N1-C6	-5.74	1.33	1.37
2	B	1783	A	N3-C4	-5.70	1.31	1.34
2	B	1793	C	N3-C4	-5.67	1.29	1.33
2	B	2590	A	N9-C4	-5.65	1.34	1.37
2	GB	576	U	C4-O4	5.65	1.28	1.23
1	A	1468	A	N9-C4	-5.59	1.34	1.37
2	B	751	A	C6-N1	-5.58	1.31	1.35
2	B	1571	A	N9-C4	-5.57	1.34	1.37
2	GB	1275	A	N9-C4	-5.51	1.34	1.37
2	B	1377	G	N7-C5	-5.50	1.35	1.39
2	B	1829	A	N9-C4	-5.46	1.34	1.37
2	B	1814	G	N3-C4	-5.45	1.31	1.35
1	FB	1451	A	N9-C4	5.43	1.41	1.37
2	B	472	A	N7-C5	-5.42	1.36	1.39
2	GB	1142(B)	A	N9-C4	-5.40	1.34	1.37
2	B	1807	G	N7-C5	-5.40	1.36	1.39
2	GB	1671	U	C4-O4	5.38	1.27	1.23
2	B	34	C	N1-C6	5.38	1.40	1.37
2	GB	795	C	N3-C4	-5.38	1.30	1.33
2	B	73	A	N3-C4	-5.37	1.31	1.34
2	GB	1026	U	N1-C2	5.37	1.43	1.38
2	GB	2602	A	N9-C4	5.36	1.41	1.37
2	B	515	A	N3-C4	-5.35	1.31	1.34
2	B	960	A	N9-C4	-5.35	1.34	1.37
2	GB	2249	U	C4-O4	5.35	1.27	1.23
2	B	1790	C	N3-C4	-5.33	1.30	1.33
2	GB	2593	U	C4-O4	5.33	1.27	1.23
2	GB	34	C	N1-C6	5.30	1.40	1.37
2	GB	2451	A	N9-C4	-5.28	1.34	1.37
2	GB	2580	U	C4-O4	5.28	1.27	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	576	U	N3-C4	5.26	1.43	1.38
2	B	448	U	N1-C2	-5.23	1.33	1.38
2	B	2781	A	N9-C4	-5.23	1.34	1.37
2	B	693	C	N3-C4	-5.22	1.30	1.33
2	B	2610	C	C2-O2	5.20	1.29	1.24
2	B	771	G	C2-N3	-5.19	1.28	1.32
2	B	1847	A	N9-C4	5.18	1.41	1.37
2	GB	2602	A	C6-N1	5.17	1.39	1.35
2	B	1602	U	C4-O4	5.17	1.27	1.23
2	B	471	A	N3-C4	-5.15	1.31	1.34
2	B	706	A	N9-C4	-5.14	1.34	1.37
2	B	1375	C	N3-C4	-5.12	1.30	1.33
2	B	1972	A	N9-C4	-5.11	1.34	1.37
2	GB	2602	A	C5-C4	5.08	1.42	1.38
5	E	28	GLU	CG-CD	5.08	1.59	1.51
2	GB	1271	G	N9-C8	-5.08	1.34	1.37
2	GB	2602	A	N3-C4	5.05	1.37	1.34
2	B	1762	A	N3-C4	5.04	1.37	1.34
2	GB	761	A	N9-C4	-5.04	1.34	1.37
2	B	466	A	N3-C4	-5.03	1.31	1.34
2	GB	1620	G	C5-C6	-5.03	1.37	1.42
2	GB	1671	U	C2-N3	5.01	1.41	1.37
2	GB	1762	A	C6-N6	5.00	1.38	1.33

All (1584) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	298	G	N1-C6-O6	16.25	129.65	119.90
2	B	2593	U	N3-C4-C5	-15.20	105.48	114.60
2	B	2593	U	C6-N1-C2	-14.08	112.55	121.00
2	GB	2593	U	N3-C4-C5	-13.88	106.27	114.60
2	B	2032	G	C4-C5-N7	13.65	116.26	110.80
2	B	576	U	N3-C4-O4	13.61	128.93	119.40
2	B	1352	U	O5'-P-OP2	-13.56	93.50	105.70
2	B	1382	G	C5-C6-N1	-13.35	104.82	111.50
2	B	450	G	C5-C6-N1	-13.32	104.84	111.50
2	B	2032	G	C5-N7-C8	-13.30	97.65	104.30
2	B	1647	G	O5'-P-OP1	-12.79	94.19	105.70
2	GB	298	G	N1-C6-O6	12.71	127.53	119.90
2	B	298	G	C6-C5-N7	-12.33	123.00	130.40
2	B	2576	G	O5'-P-OP2	-11.89	95.00	105.70
2	GB	2593	U	C6-N1-C2	-11.60	114.04	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2593	U	N3-C4-O4	11.44	127.41	119.40
2	GB	298	G	C4-C5-N7	11.22	115.29	110.80
2	B	1828	G	C5-C6-N1	-11.20	105.90	111.50
2	B	1602	U	N3-C4-C5	-11.19	107.89	114.60
2	GB	1790	C	C5-C4-N4	11.12	127.98	120.20
2	B	298	G	C4-C5-N7	11.01	115.20	110.80
2	GB	298	G	C6-C5-N7	-10.94	123.83	130.40
2	B	1671	U	N3-C4-O4	10.81	126.97	119.40
2	B	298	G	C5-C6-O6	-10.77	122.14	128.60
2	B	298	G	C5-N7-C8	-10.73	98.94	104.30
2	GB	298	G	C5-N7-C8	-10.71	98.94	104.30
2	B	1790	C	C5-C4-N4	10.68	127.67	120.20
2	B	1382	G	N3-C2-N2	-10.65	112.44	119.90
2	GB	1382	G	C5-C6-N1	-10.61	106.20	111.50
2	GB	2249	U	N3-C4-C5	-10.58	108.25	114.60
2	B	570	G	C5-C6-N1	-10.52	106.24	111.50
2	B	1382	G	C2-N3-C4	-10.41	106.69	111.90
2	GB	1352	U	O5'-P-OP2	-10.38	96.36	105.70
2	GB	1671	U	N3-C4-O4	10.24	126.57	119.40
2	GB	576	U	N3-C4-O4	10.23	126.56	119.40
2	B	751	A	O5'-P-OP2	-10.22	96.50	105.70
2	B	784	A	N1-C6-N6	-10.22	112.47	118.60
2	B	568	U	N3-C4-C5	-10.19	108.49	114.60
2	B	2032	G	N3-C4-C5	10.19	133.69	128.60
2	B	943	U	O5'-P-OP1	-10.13	96.58	105.70
2	GB	2576	G	O5'-P-OP2	-10.08	96.62	105.70
2	B	2028	U	N3-C4-C5	-10.07	108.56	114.60
2	B	2593	U	N1-C2-O2	-10.06	115.76	122.80
2	GB	298	G	N7-C8-N9	10.02	118.11	113.10
2	B	1828	G	C4-C5-N7	-9.99	106.80	110.80
1	A	754	C	N1-C2-O2	9.81	124.78	118.90
2	B	2593	U	N1-C2-N3	9.79	120.78	114.90
2	GB	2592	G	O5'-P-OP2	-9.79	96.89	105.70
2	B	2028	U	N3-C4-O4	9.71	126.20	119.40
2	B	298	G	N7-C8-N9	9.64	117.92	113.10
2	B	2593	U	C4-C5-C6	9.60	125.46	119.70
2	GB	2061	G	N1-C6-O6	9.59	125.65	119.90
2	B	2032	G	N1-C6-O6	9.57	125.64	119.90
2	GB	1671	U	N3-C4-C5	-9.49	108.91	114.60
2	B	576	U	C5-C6-N1	9.47	127.44	122.70
1	A	754	C	C2-N1-C1'	9.42	129.16	118.80
2	B	2592	G	O5'-P-OP2	-9.37	97.27	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2685	G	C5-C6-N1	-9.31	106.85	111.50
2	B	530	G	N1-C6-O6	-9.29	114.33	119.90
2	GB	570	G	C5-C6-N1	-9.14	106.93	111.50
2	GB	801	G	N1-C6-O6	-9.08	114.45	119.90
1	FB	1397	C	C6-N1-C2	-9.06	116.68	120.30
1	A	1397	C	C6-N1-C2	-9.05	116.68	120.30
2	GB	1790	C	N3-C4-N4	-9.04	111.67	118.00
1	FB	754	C	C2-N1-C1'	9.04	128.74	118.80
2	B	2419	U	N3-C4-C5	-9.00	109.20	114.60
2	GB	1789	A	O5'-P-OP1	-9.00	97.60	105.70
2	GB	945	A	N1-C6-N6	8.98	123.99	118.60
2	B	945	A	N1-C6-N6	8.92	123.95	118.60
2	GB	1790	C	N3-C2-O2	-8.90	115.67	121.90
2	GB	298	G	C5-C6-O6	-8.87	123.28	128.60
2	GB	2610	C	C6-N1-C2	8.88	123.85	120.30
2	B	1578	U	N3-C2-O2	-8.86	116.00	122.20
2	B	1790	C	N3-C4-N4	-8.86	111.80	118.00
1	FB	754	C	N1-C2-O2	8.80	124.18	118.90
2	B	2249	U	N3-C4-C5	-8.78	109.33	114.60
2	GB	450	G	C5-C6-N1	-8.77	107.11	111.50
2	B	1773	A	C8-N9-C4	-8.77	102.29	105.80
2	B	787	U	O5'-P-OP2	-8.73	97.84	105.70
2	B	1829	A	O5'-P-OP1	-8.71	97.86	105.70
2	GB	1828	G	C5-C6-N1	-8.70	107.15	111.50
2	GB	775	G	O5'-P-OP2	-8.70	97.87	105.70
2	B	450	G	C4-C5-C6	8.67	124.00	118.80
1	A	775	G	N1-C6-O6	8.65	125.09	119.90
2	GB	2593	U	N3-C4-O4	8.59	125.41	119.40
2	GB	1828	G	C5-C6-O6	8.55	133.73	128.60
2	GB	2028	U	N3-C4-C5	-8.54	109.48	114.60
2	GB	751	A	O5'-P-OP2	-8.53	98.02	105.70
2	B	1671	U	N3-C4-C5	-8.53	109.48	114.60
2	B	1828	G	N9-C4-C5	8.52	108.81	105.40
2	GB	576	U	C5-C6-N1	8.51	126.95	122.70
2	B	576	U	C6-N1-C2	-8.49	115.91	121.00
2	B	1647	G	O5'-P-OP2	8.49	120.88	110.70
2	B	2061	G	OP2-P-O3'	8.48	123.86	105.20
2	B	1304	C	C6-N1-C2	8.47	123.69	120.30
2	B	2032	G	N7-C8-N9	8.47	117.34	113.10
2	GB	2419	U	C6-N1-C2	-8.46	115.92	121.00
2	B	1790	C	N3-C2-O2	-8.42	116.01	121.90
2	GB	197	A	O5'-P-OP2	-8.37	98.17	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1602	U	C4-C5-C6	8.35	124.71	119.70
2	B	576	U	C5-C4-O4	-8.33	120.90	125.90
2	B	678	C	N3-C4-C5	8.32	125.23	121.90
1	FB	242	C	C6-N1-C2	8.32	123.63	120.30
2	B	1142(B)	A	C2-N3-C4	-8.31	106.45	110.60
2	B	1471	A	C8-N9-C4	-8.28	102.49	105.80
2	GB	527	C	C2-N1-C1'	8.27	127.90	118.80
2	GB	784	A	N1-C6-N6	-8.26	113.65	118.60
2	B	848	G	O5'-P-OP2	-8.24	98.28	105.70
2	B	527	C	C2-N1-C1'	8.22	127.85	118.80
2	GB	1602	U	N3-C4-C5	-8.22	109.67	114.60
2	B	791	C	N3-C4-C5	8.21	125.19	121.90
2	B	1382	G	N1-C2-N3	8.20	128.82	123.90
1	A	754	C	C6-N1-C2	-8.18	117.03	120.30
2	GB	2685	G	C5-C6-N1	-8.18	107.41	111.50
2	B	459	U	N3-C2-O2	-8.16	116.49	122.20
2	B	2505	G	C5-C6-O6	8.15	133.49	128.60
2	B	138	G	N1-C6-O6	8.13	124.78	119.90
2	B	795	C	C5-C6-N1	-8.12	116.94	121.00
2	B	2419	U	C6-N1-C2	-8.11	116.13	121.00
2	GB	1828	G	N9-C4-C5	8.09	108.64	105.40
2	B	585	G	OP2-P-O3'	8.08	122.98	105.20
2	B	701	G	C5-C6-O6	-8.04	123.78	128.60
2	B	2061	G	N1-C6-O6	8.04	124.72	119.90
2	B	2032	G	C5-C6-O6	-8.02	123.79	128.60
2	GB	2032	G	C5-N7-C8	-8.02	100.29	104.30
2	B	795	C	C4-C5-C6	8.02	121.41	117.40
2	GB	695	G	N1-C6-O6	8.02	124.71	119.90
2	GB	568	U	N3-C4-C5	-8.02	109.79	114.60
2	GB	1632	A	N1-C6-N6	8.02	123.41	118.60
2	B	1828	G	C5-C6-O6	8.00	133.40	128.60
2	GB	1828	G	C4-C5-N7	-7.97	107.61	110.80
2	GB	943	U	O5'-P-OP1	-7.95	98.54	105.70
2	B	2685	G	N3-C2-N2	-7.95	114.33	119.90
2	B	1790	C	N1-C2-N3	7.95	124.77	119.20
2	B	979	G	N1-C6-O6	7.94	124.67	119.90
2	GB	1471	A	C8-N9-C4	-7.94	102.62	105.80
2	GB	2061	G	OP2-P-O3'	7.94	122.66	105.20
2	GB	1667	G	C5-C6-O6	7.93	133.36	128.60
2	B	1814	G	C4-C5-N7	-7.93	107.63	110.80
1	A	754	C	C5-C6-N1	7.89	124.94	121.00
2	GB	2028	U	N3-C4-O4	7.88	124.92	119.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	788	A	O5'-P-OP1	-7.87	98.62	105.70
2	B	1940	U	N3-C4-C5	-7.84	109.89	114.60
2	B	771	G	N3-C2-N2	-7.83	114.42	119.90
2	B	2435	A	C8-N9-C4	-7.83	102.67	105.80
2	GB	1790	C	C6-N1-C1'	7.83	130.19	120.80
2	B	1780	A	C8-N9-C4	7.80	108.92	105.80
2	GB	2447	G	C8-N9-C4	7.79	109.52	106.40
2	GB	1664	A	C8-N9-C4	-7.78	102.69	105.80
2	B	2610	C	N1-C2-O2	7.78	123.57	118.90
2	GB	2685	G	N3-C2-N2	-7.76	114.47	119.90
2	B	1602	U	C6-N1-C2	-7.75	116.35	121.00
2	GB	2249	U	C6-N1-C2	-7.74	116.36	121.00
2	B	11	G	C8-N9-C4	-7.74	103.31	106.40
1	A	1397	C	C5-C6-N1	7.73	124.86	121.00
2	GB	1814	G	C5-C6-N1	-7.72	107.64	111.50
2	GB	510	C	O5'-P-OP2	-7.71	98.76	105.70
2	B	298	G	C2-N3-C4	-7.70	108.05	111.90
2	GB	2028	U	C6-N1-C2	-7.70	116.38	121.00
2	GB	791	C	C6-N1-C2	7.68	123.37	120.30
1	FB	775	G	N1-C6-O6	7.67	124.50	119.90
1	FB	1397	C	C5-C6-N1	7.66	124.83	121.00
2	B	72	U	O5'-P-OP2	-7.65	98.81	105.70
2	GB	1327	C	N1-C2-O2	-7.65	114.31	118.90
2	GB	2408	U	C5-C6-N1	7.65	126.52	122.70
2	B	804	A	OP1-P-O3'	7.65	122.02	105.20
2	GB	195	A	C5-N7-C8	-7.64	100.08	103.90
2	B	2402	C	C6-N1-C2	-7.64	117.24	120.30
2	GB	695	G	C5-C6-N1	-7.64	107.68	111.50
2	B	528	A	C2-N3-C4	-7.63	106.78	110.60
2	B	2297	C	O5'-P-OP1	-7.61	98.86	105.70
2	B	1790	C	O4'-C1'-N1	7.60	114.28	108.20
2	B	1026	U	N1-C2-O2	7.59	128.11	122.80
2	B	187	G	C5-C6-O6	-7.58	124.05	128.60
2	B	56	A	C2-N3-C4	-7.57	106.81	110.60
2	B	775	G	N1-C6-O6	-7.56	115.37	119.90
1	A	1397	C	O4'-C1'-N1	7.54	114.24	108.20
2	GB	785	G	O5'-P-OP1	-7.54	98.91	105.70
2	B	1352	U	O5'-P-OP1	7.53	119.74	110.70
2	B	459	U	N1-C2-O2	7.52	128.07	122.80
2	GB	527	C	C6-N1-C1'	-7.51	111.79	120.80
2	GB	1790	C	N1-C2-N3	7.49	124.45	119.20
2	GB	1647	G	O5'-P-OP1	-7.49	98.96	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2317	C	N1-C2-O2	7.49	123.39	118.90
2	GB	2505	G	C5-C6-O6	7.45	133.07	128.60
2	B	1632	A	N1-C6-N6	7.43	123.06	118.60
2	GB	2061	G	C6-C5-N7	-7.42	125.95	130.40
2	GB	2032	G	C4-C5-N7	7.41	113.77	110.80
2	B	2249	U	C6-N1-C2	-7.40	116.56	121.00
2	B	1827	C	C6-N1-C2	-7.39	117.34	120.30
2	B	576	U	N3-C4-C5	-7.39	110.17	114.60
2	GB	929	G	N1-C6-O6	7.37	124.32	119.90
2	GB	209	C	N3-C4-C5	7.35	124.84	121.90
2	GB	2593	U	C4-C5-C6	7.35	124.11	119.70
2	B	809	G	N3-C4-C5	-7.35	124.93	128.60
2	B	2509	G	N1-C6-O6	7.35	124.31	119.90
2	B	729	G	C5-C6-O6	-7.34	124.20	128.60
2	GB	1790	C	C4-C5-C6	7.32	121.06	117.40
2	GB	1966	A	N1-C6-N6	-7.32	114.21	118.60
2	GB	1667	G	N9-C4-C5	7.32	108.33	105.40
2	B	801	G	N1-C6-O6	-7.32	115.51	119.90
2	GB	576	U	C6-N1-C2	-7.32	116.61	121.00
2	B	729	G	C4-C5-N7	7.31	113.72	110.80
2	B	1327	C	N1-C2-O2	-7.30	114.52	118.90
2	B	1790	C	C6-N1-C2	-7.29	117.38	120.30
2	B	1332	G	O5'-P-OP2	-7.29	99.14	105.70
2	GB	298	G	C8-N9-C4	-7.28	103.49	106.40
2	GB	945	A	C5-C6-N6	-7.28	117.88	123.70
2	B	2610	C	C6-N1-C2	7.27	123.21	120.30
2	GB	1026	U	C2-N1-C1'	7.27	126.42	117.70
2	B	1382	G	N3-C4-N9	-7.26	121.65	126.00
2	GB	2593	U	N1-C2-O2	-7.26	117.72	122.80
2	B	1841	U	N3-C4-C5	-7.25	110.25	114.60
2	GB	530	G	N1-C6-O6	-7.25	115.55	119.90
2	GB	140	A	N7-C8-N9	7.24	117.42	113.80
2	GB	1026	U	N1-C2-O2	7.24	127.87	122.80
2	B	1821	A	C8-N9-C4	7.23	108.69	105.80
2	B	1333	C	N3-C4-C5	7.20	124.78	121.90
2	B	1632	A	C4-C5-N7	7.20	114.30	110.70
2	B	2058	A	C8-N9-C4	-7.20	102.92	105.80
2	B	731	C	C6-N1-C2	7.19	123.18	120.30
2	B	2685	G	N3-C4-N9	-7.18	121.69	126.00
2	B	1936	A	N1-C6-N6	7.18	122.91	118.60
2	B	510	C	O5'-P-OP2	-7.18	99.24	105.70
2	GB	2317	C	N1-C2-O2	7.17	123.20	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	681	G	C8-N9-C4	7.16	109.27	106.40
2	GB	129	C	C6-N1-C2	7.16	123.16	120.30
2	B	450	G	C4-C5-N7	-7.16	107.94	110.80
2	B	1364	G	C8-N9-C4	-7.16	103.54	106.40
2	GB	228	A	N1-C6-N6	7.15	122.89	118.60
2	B	277	C	N1-C2-O2	7.14	123.18	118.90
2	B	2028	U	C6-N1-C2	-7.14	116.72	121.00
2	GB	1790	C	O4'-C1'-N1	7.12	113.90	108.20
2	B	2505	G	N9-C4-C5	7.12	108.25	105.40
2	GB	741	G	O5'-P-OP2	-7.11	99.30	105.70
2	B	2447	G	N1-C6-O6	7.11	124.16	119.90
2	B	2036	C	C6-N1-C2	-7.10	117.46	120.30
1	FB	351	G	OP2-P-O3'	7.10	120.81	105.20
2	B	2544	G	N1-C6-O6	7.09	124.15	119.90
2	B	1814	G	C5-C6-N1	-7.08	107.96	111.50
1	A	242	C	C6-N1-C2	7.08	123.13	120.30
2	B	2508	G	C5-C6-N1	-7.08	107.96	111.50
2	B	778	G	N1-C6-O6	7.07	124.14	119.90
38	SC	12	CYS	CA-CB-SG	7.07	126.72	114.00
1	A	770	C	C6-N1-C2	7.06	123.12	120.30
2	B	2602	A	OP1-P-O3'	7.05	120.72	105.20
2	GB	527	C	N1-C2-O2	7.05	123.13	118.90
2	B	471	A	N1-C2-N3	7.04	132.82	129.30
1	FB	1397	C	O4'-C1'-N1	7.04	113.83	108.20
2	GB	2447	G	N1-C6-O6	7.03	124.12	119.90
2	GB	2685	G	N9-C4-C5	7.03	108.21	105.40
2	B	1661	G	C5-C6-O6	-7.02	124.39	128.60
2	B	783	A	O5'-P-OP1	-7.01	99.39	105.70
2	B	1333	C	C4-C5-C6	-7.01	113.89	117.40
2	B	1823	G	C5-C6-N1	-7.01	107.99	111.50
2	GB	2581	G	C8-N9-C4	-7.00	103.60	106.40
2	GB	72	U	O5'-P-OP2	-7.00	99.40	105.70
2	B	240	G	C4-C5-N7	-6.99	108.00	110.80
2	B	1635	G	OP2-P-O3'	6.99	120.58	105.20
2	GB	1537	C	C6-N1-C2	-6.99	117.50	120.30
2	B	527	C	C6-N1-C1'	-6.98	112.43	120.80
2	B	1984	G	C6-C5-N7	-6.96	126.23	130.40
2	GB	2059	A	C8-N9-C4	6.95	108.58	105.80
2	GB	2419	U	N3-C4-C5	-6.95	110.43	114.60
2	B	277	C	C2-N1-C1'	6.94	126.44	118.80
2	B	816	C	C6-N1-C2	-6.94	117.52	120.30
2	GB	2610	C	N1-C2-O2	6.94	123.06	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1382	G	N1-C6-O6	6.94	124.06	119.90
2	GB	568	U	C6-N1-C2	-6.93	116.84	121.00
2	B	210	C	C6-N1-C2	6.93	123.07	120.30
2	B	945	A	C4-C5-N7	6.93	114.17	110.70
1	FB	770	C	C6-N1-C2	6.93	123.07	120.30
2	B	2210	G	O4'-C1'-N9	6.92	113.74	108.20
2	B	1026	U	C2-N1-C1'	6.91	125.99	117.70
2	B	701	G	N1-C6-O6	6.91	124.05	119.90
2	GB	277	C	C2-N1-C1'	6.89	126.38	118.80
2	GB	2685	G	N3-C4-N9	-6.89	121.86	126.00
2	GB	330	A	C2-N3-C4	-6.89	107.16	110.60
2	GB	1781	C	C6-N1-C2	6.89	123.06	120.30
2	B	2505	G	C8-N9-C4	-6.88	103.65	106.40
2	B	251	A	N1-C6-N6	-6.87	114.48	118.60
2	B	1984	G	C4-N9-C1'	6.87	135.43	126.50
2	B	450	G	C5-C6-O6	6.87	132.72	128.60
2	B	1814	G	C5-C6-O6	6.87	132.72	128.60
2	GB	527	C	C5-C6-N1	6.86	124.43	121.00
2	B	327	G	O5'-P-OP2	-6.86	99.53	105.70
2	GB	1971	A	C8-N9-C4	6.86	108.54	105.80
2	B	945	A	C6-C5-N7	-6.86	127.50	132.30
1	A	754	C	N3-C2-O2	-6.86	117.10	121.90
2	GB	512	G	O4'-C1'-N9	6.86	113.69	108.20
2	GB	1428	C	C6-N1-C2	6.86	123.04	120.30
2	GB	1756	G	N1-C6-O6	6.85	124.01	119.90
2	B	527	C	N1-C2-O2	6.84	123.01	118.90
2	B	2576	G	OP1-P-O3'	6.84	120.26	105.20
2	GB	2593	U	C5-C6-N1	6.84	126.12	122.70
1	FB	121	C	C6-N1-C2	6.84	123.04	120.30
2	B	1343	G	N3-C4-C5	-6.84	125.18	128.60
2	GB	1650	G	N1-C6-O6	6.83	124.00	119.90
2	B	2071	A	O5'-P-OP2	-6.83	99.56	105.70
2	GB	1043	C	N3-C2-O2	-6.83	117.12	121.90
2	B	2895	U	C5-C6-N1	6.82	126.11	122.70
2	GB	2509	G	N1-C6-O6	6.82	123.99	119.90
2	GB	1333	C	N3-C4-C5	6.81	124.62	121.90
2	B	2548	G	N1-C6-O6	-6.81	115.81	119.90
2	B	189	G	C8-N9-C4	6.80	109.12	106.40
2	B	1830	C	N3-C4-C5	6.80	124.62	121.90
2	B	1790	C	C6-N1-C1'	6.79	128.95	120.80
2	B	1537	C	C5-C6-N1	6.79	124.39	121.00
2	B	733	G	N1-C6-O6	-6.79	115.83	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	GB	385	C	N1-C2-O2	6.78	122.97	118.90
2	B	2593	U	C5-C6-N1	6.78	126.09	122.70
2	B	1823	G	C2-N3-C4	-6.78	108.51	111.90
2	B	2556	C	N1-C2-O2	6.78	122.97	118.90
2	B	944	G	N3-C2-N2	-6.77	115.16	119.90
2	GB	2554	U	O5'-P-OP1	-6.77	99.61	105.70
2	B	1773	A	N7-C8-N9	6.76	117.18	113.80
2	B	568	U	C5-C4-O4	6.75	129.95	125.90
2	GB	1788	C	OP1-P-O3'	6.75	120.05	105.20
2	B	792	G	C5-C6-O6	6.75	132.65	128.60
2	GB	2616	C	C6-N1-C2	6.75	123.00	120.30
2	B	2449	U	N3-C4-O4	6.75	124.12	119.40
1	A	788	U	N3-C2-O2	-6.74	117.48	122.20
2	GB	34	C	C5-C6-N1	6.74	124.37	121.00
2	GB	979	G	N1-C6-O6	6.74	123.94	119.90
2	B	568	U	C4-C5-C6	6.74	123.74	119.70
2	B	784	A	C5-C6-N6	6.74	129.09	123.70
2	B	2554	U	O5'-P-OP1	-6.74	99.64	105.70
2	B	187	G	N1-C6-O6	6.74	123.94	119.90
2	B	277	C	O4'-C1'-N1	-6.73	102.81	108.20
2	B	1202	C	N3-C4-C5	-6.73	119.21	121.90
2	B	1790	C	C4-C5-C6	6.73	120.76	117.40
2	GB	1697	G	N1-C6-O6	6.72	123.93	119.90
2	B	471	A	O5'-P-OP1	6.72	118.77	110.70
2	GB	568	U	N1-C2-O2	-6.72	118.10	122.80
2	GB	1187	G	C5-C6-N1	-6.71	108.14	111.50
2	B	787	U	O5'-P-OP1	6.71	118.75	110.70
2	B	197	A	OP2-P-O3'	6.71	119.96	105.20
2	GB	2685	G	C4-C5-N7	-6.71	108.12	110.80
2	B	1841	U	N3-C4-O4	6.70	124.09	119.40
2	B	138	G	C4-C5-N7	6.69	113.47	110.80
2	B	568	U	C6-N1-C2	-6.69	116.99	121.00
2	B	1187	G	C5-C6-N1	-6.68	108.16	111.50
2	GB	401	A	N1-C6-N6	-6.68	114.59	118.60
2	B	2028	U	C4-C5-C6	6.68	123.71	119.70
2	B	2430	A	C8-N9-C4	-6.68	103.13	105.80
1	A	324	G	C4-N9-C1'	-6.67	117.83	126.50
2	B	1814	G	N9-C4-C5	6.67	108.07	105.40
2	GB	665	C	C6-N1-C2	6.67	122.97	120.30
1	A	557	G	N3-C4-C5	-6.67	125.27	128.60
2	B	1605	C	N1-C2-O2	-6.67	114.90	118.90
2	B	2318	G	N1-C6-O6	6.66	123.90	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	GB	298	G	C2-N3-C4	-6.66	108.57	111.90
1	FB	22	G	N1-C6-O6	6.66	123.90	119.90
2	B	59	U	N3-C2-O2	-6.66	117.54	122.20
2	B	809	G	OP1-P-O3'	6.65	119.83	105.20
2	GB	450	G	C4-C5-C6	6.65	122.79	118.80
2	B	1680	U	N3-C4-C5	-6.62	110.63	114.60
2	B	2435	A	N7-C8-N9	6.62	117.11	113.80
2	GB	1984	G	C4-N9-C1'	6.62	135.10	126.50
2	B	2598	A	O5'-P-OP2	-6.62	99.75	105.70
2	GB	1774	C	C6-N1-C2	6.62	122.95	120.30
2	GB	2570	G	C5-C6-N1	-6.62	108.19	111.50
2	B	1647	G	N3-C4-N9	-6.61	122.03	126.00
2	B	2689	U	C2-N1-C1'	6.61	125.63	117.70
2	GB	2576	G	C4-C5-N7	6.61	113.44	110.80
2	B	2465	C	C6-N1-C2	-6.59	117.66	120.30
2	GB	760	G	C6-C5-N7	-6.59	126.44	130.40
2	B	1451	C	C6-N1-C2	6.59	122.94	120.30
2	GB	1984	G	C8-N9-C1'	-6.59	118.43	127.00
2	B	2209	C	C6-N1-C2	6.59	122.94	120.30
2	GB	974(A)	G	N1-C6-O6	6.59	123.85	119.90
2	B	1602	U	N1-C2-N3	6.59	118.85	114.90
2	GB	2681	C	C5-C6-N1	-6.59	117.71	121.00
2	B	679	C	N3-C4-C5	6.58	124.53	121.90
1	FB	754	C	C5-C6-N1	6.58	124.29	121.00
2	B	298	G	C5-C6-N1	-6.58	108.21	111.50
2	B	1247	A	O5'-P-OP2	-6.57	99.78	105.70
2	B	776	G	C5-C6-N1	-6.57	108.21	111.50
2	GB	1635	G	OP2-P-O3'	6.57	119.65	105.20
2	GB	2580	U	N3-C4-C5	-6.57	110.66	114.60
2	B	11	G	N7-C8-N9	6.57	116.38	113.10
2	GB	1790	C	C6-N1-C2	-6.56	117.67	120.30
2	B	1471	A	N7-C8-N9	6.56	117.08	113.80
1	FB	848	C	C6-N1-C2	-6.56	117.68	120.30
2	GB	1382	G	N1-C6-O6	6.56	123.83	119.90
2	B	262	A	N1-C6-N6	6.55	122.53	118.60
2	B	2570	G	C5-C6-N1	-6.55	108.22	111.50
2	B	1606	G	N3-C4-C5	-6.55	125.33	128.60
2	B	2609	U	C5-C6-N1	-6.55	119.42	122.70
2	GB	2210	G	O4'-C1'-N9	6.55	113.44	108.20
2	B	2430	A	C4-N9-C1'	6.54	138.08	126.30
2	B	945	A	C5-C6-N6	-6.54	118.47	123.70
2	B	2575	C	C6-N1-C2	-6.54	117.68	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	570	G	C4-C5-N7	-6.54	108.19	110.80
2	B	878	A	O4'-C1'-N9	6.54	113.43	108.20
1	FB	1452	C	C6-N1-C2	-6.53	117.69	120.30
2	GB	2447	G	OP1-P-O3'	6.53	119.56	105.20
2	B	16	G	C5-C6-N1	-6.52	108.24	111.50
2	B	573	G	C4-N9-C1'	6.52	134.98	126.50
2	B	1043	C	N3-C2-O2	-6.52	117.34	121.90
2	B	140	A	N7-C8-N9	6.52	117.06	113.80
2	B	240	G	C5-C6-O6	6.51	132.51	128.60
2	GB	2575	C	C6-N1-C2	-6.51	117.69	120.30
2	B	2070	G	N1-C2-N3	6.50	127.80	123.90
1	A	1393	U	C6-N1-C2	-6.49	117.11	121.00
2	B	1821	A	C2-N3-C4	-6.49	107.36	110.60
2	GB	2610	C	N1-C2-N3	-6.49	114.66	119.20
2	GB	2895	U	C2-N1-C1'	6.48	125.48	117.70
2	B	1664	A	C8-N9-C4	-6.48	103.21	105.80
2	B	2061	G	C6-C5-N7	-6.48	126.51	130.40
2	GB	2598	A	O5'-P-OP1	6.47	118.47	110.70
2	B	2497	A	C4-C5-C6	-6.47	113.77	117.00
2	GB	1319	G	C5-C6-O6	-6.47	124.72	128.60
2	B	2050	C	N1-C2-O2	-6.46	115.02	118.90
1	FB	324	G	C8-N9-C1'	6.46	135.40	127.00
2	B	1626	G	N9-C4-C5	6.46	107.98	105.40
2	B	1780	A	N9-C4-C5	-6.46	103.22	105.80
2	GB	1828	G	N3-C4-N9	-6.46	122.13	126.00
2	B	510	C	C6-N1-C2	6.45	122.88	120.30
2	B	918	A	N1-C6-N6	6.45	122.47	118.60
2	B	943	U	N3-C4-C5	-6.45	110.73	114.60
2	B	576	U	N1-C2-O2	-6.45	118.29	122.80
2	B	128	C	C6-N1-C2	6.44	122.88	120.30
2	B	1828	G	N3-C2-N2	-6.44	115.39	119.90
2	GB	1191	G	O5'-P-OP2	-6.44	99.91	105.70
2	B	786	C	O5'-P-OP2	-6.43	99.91	105.70
2	B	2612	C	N1-C2-O2	6.43	122.76	118.90
2	GB	277	C	O4'-C1'-N1	-6.43	103.05	108.20
2	GB	2689	U	C2-N1-C1'	6.43	125.42	117.70
1	A	324	G	C8-N9-C1'	6.43	135.36	127.00
2	GB	1304	C	C6-N1-C2	6.43	122.87	120.30
2	B	187	G	C4-C5-N7	6.42	113.37	110.80
2	GB	2452	C	O5'-P-OP2	-6.42	99.92	105.70
2	B	1675	C	OP2-P-O3'	6.42	119.32	105.20
2	GB	277	C	N1-C2-O2	6.42	122.75	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	821	A	N1-C6-N6	-6.42	114.75	118.60
2	B	1404	C	N1-C2-O2	6.41	122.75	118.90
2	B	2245	U	N3-C4-C5	-6.41	110.75	114.60
2	B	2447	G	C5-C6-O6	-6.41	124.75	128.60
2	GB	2593	U	N1-C2-N3	6.41	118.75	114.90
1	FB	251	G	N1-C6-O6	6.40	123.74	119.90
2	B	1256	G	C8-N9-C1'	-6.40	118.69	127.00
2	B	265	A	C5-C6-N1	-6.39	114.50	117.70
2	B	1537	C	C6-N1-C2	-6.39	117.74	120.30
2	GB	2391	G	C5-C6-N1	6.39	114.70	111.50
1	FB	1028(B)	C	C6-N1-C2	-6.39	117.74	120.30
2	B	34	C	N1-C2-O2	6.39	122.73	118.90
2	GB	2597	G	O5'-P-OP1	6.39	118.36	110.70
2	GB	2028	U	N1-C2-O2	-6.38	118.33	122.80
1	A	1393	U	N3-C4-C5	-6.38	110.77	114.60
2	B	970	C	C6-N1-C2	6.38	122.85	120.30
2	GB	878	A	O4'-C1'-N9	6.38	113.30	108.20
2	GB	11	G	C8-N9-C4	-6.37	103.85	106.40
2	B	570	G	C5-C6-O6	6.37	132.42	128.60
2	GB	2447	G	O5'-P-OP1	-6.37	99.97	105.70
2	GB	2002	G	C4-C5-N7	6.37	113.35	110.80
2	B	2241	A	C2-N3-C4	-6.36	107.42	110.60
1	FB	557	G	N3-C4-C5	-6.36	125.42	128.60
2	GB	451	C	C6-N1-C2	6.34	122.84	120.30
2	GB	707	G	C5-C6-N1	-6.34	108.33	111.50
2	B	741	G	C8-N9-C4	-6.34	103.86	106.40
2	GB	462	C	C6-N1-C2	6.34	122.83	120.30
2	GB	755	C	N1-C2-O2	-6.34	115.10	118.90
2	GB	734	A	C2-N3-C4	-6.33	107.43	110.60
38	NA	12	CYS	CA-CB-SG	6.33	125.40	114.00
2	GB	2895	U	C5-C6-N1	6.33	125.86	122.70
2	GB	2602	A	OP1-P-O3'	6.33	119.12	105.20
2	GB	1667	G	C4-C5-N7	-6.33	108.27	110.80
2	B	2318	G	C6-C5-N7	-6.32	126.61	130.40
2	GB	1129	A	C8-N9-C4	6.32	108.33	105.80
2	B	330	A	C2-N3-C4	-6.32	107.44	110.60
2	B	707	G	C5-C6-N1	-6.32	108.34	111.50
2	GB	761	A	C4-C5-C6	-6.32	113.84	117.00
2	B	862	G	C8-N9-C4	-6.32	103.87	106.40
2	B	1535	U	C2-N1-C1'	6.32	125.28	117.70
2	GB	1936	A	C4-C5-N7	6.32	113.86	110.70
2	GB	1814	G	C4-C5-N7	-6.31	108.28	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1326	U	OP2-P-O3'	6.31	119.08	105.20
2	B	1348	G	N1-C6-O6	6.31	123.69	119.90
2	B	1633	G	N1-C6-O6	6.31	123.69	119.90
2	B	2242	G	N9-C4-C5	6.31	107.92	105.40
2	GB	747	U	C6-N1-C2	6.30	124.78	121.00
2	GB	1966	A	N9-C4-C5	6.30	108.32	105.80
2	GB	2439	A	O4'-C1'-N9	-6.30	103.16	108.20
2	B	1992	G	C2-N3-C4	6.30	115.05	111.90
2	B	59	U	N3-C4-C5	-6.30	110.82	114.60
2	GB	570	G	C8-N9-C4	-6.30	103.88	106.40
2	GB	918	A	N1-C6-N6	6.30	122.38	118.60
2	B	2010	G	C6-C5-N7	-6.29	126.63	130.40
2	GB	2847	U	C6-N1-C2	-6.29	117.23	121.00
2	B	2052	G	N1-C6-O6	6.28	123.67	119.90
2	B	2010	G	N1-C6-O6	6.28	123.67	119.90
2	B	788	A	C8-N9-C4	6.28	108.31	105.80
2	GB	1926	U	C5-C6-N1	-6.28	119.56	122.70
2	B	837	C	C6-N1-C2	-6.28	117.79	120.30
2	B	2070	G	C2-N3-C4	-6.28	108.76	111.90
1	FB	22	G	C5-C6-N1	-6.27	108.36	111.50
2	GB	1626	G	C8-N9-C4	-6.27	103.89	106.40
2	B	195	A	C5-N7-C8	-6.27	100.77	103.90
2	B	1786	A	C8-N9-C4	6.27	108.31	105.80
2	B	179	G	N1-C6-O6	6.26	123.66	119.90
2	B	391	G	N1-C6-O6	6.26	123.66	119.90
1	FB	754	C	C6-N1-C1'	-6.26	113.29	120.80
2	GB	264	C	N1-C2-O2	6.25	122.65	118.90
2	GB	1304	C	N3-C4-C5	6.24	124.40	121.90
2	GB	1535	U	C2-N1-C1'	6.24	125.19	117.70
2	B	2394	C	N1-C2-O2	6.23	122.64	118.90
2	B	58	G	C5-C6-N1	-6.23	108.39	111.50
2	B	2036	C	C5-C6-N1	6.23	124.11	121.00
2	B	761	A	N3-C4-C5	6.23	131.16	126.80
2	GB	2590	A	C8-N9-C4	6.22	108.29	105.80
2	B	1661	G	N1-C6-O6	6.22	123.63	119.90
1	FB	1038	C	C5-C6-N1	6.21	124.11	121.00
2	GB	809	G	OP1-P-O3'	6.21	118.86	105.20
2	GB	1667	G	N1-C6-O6	-6.21	116.18	119.90
2	B	1769	G	C5-C6-N1	-6.20	108.40	111.50
2	B	2598	A	O5'-P-OP1	6.20	118.14	110.70
2	B	1612	C	O5'-P-OP2	-6.20	100.12	105.70
2	GB	1187	G	N1-C6-O6	6.20	123.62	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	450	G	C2-N3-C4	-6.20	108.80	111.90
2	B	2002	G	C4-C5-N7	6.19	113.28	110.80
2	GB	568	U	C6-N1-C1'	6.19	129.87	121.20
2	B	189	G	N9-C4-C5	-6.19	102.92	105.40
2	B	1343	G	C8-N9-C4	-6.19	103.92	106.40
2	GB	732	C	N3-C4-C5	-6.19	119.42	121.90
2	B	707	G	N1-C6-O6	6.18	123.61	119.90
2	GB	570	G	C4-C5-C6	6.18	122.51	118.80
2	B	1535	U	C5-C6-N1	6.17	125.79	122.70
2	B	179	G	C5-C6-N1	-6.17	108.41	111.50
2	B	298	G	C8-N9-C4	-6.17	103.93	106.40
2	GB	1790	C	C2-N1-C1'	-6.17	112.02	118.80
1	FB	775	G	C6-C5-N7	-6.16	126.70	130.40
2	GB	653	C	N1-C2-O2	6.15	122.59	118.90
2	B	450	G	C4-N9-C1'	6.15	134.50	126.50
2	B	1428	C	C6-N1-C2	6.15	122.76	120.30
2	B	2895	U	C2-N1-C1'	6.15	125.08	117.70
1	A	1028(B)	C	C6-N1-C2	-6.15	117.84	120.30
2	GB	252	G	O5'-P-OP2	-6.14	100.17	105.70
2	B	1632	A	C5-N7-C8	-6.14	100.83	103.90
2	GB	750	A	C8-N9-C4	-6.14	103.34	105.80
2	GB	2447	G	N9-C4-C5	-6.14	102.94	105.40
2	B	2210	G	C6-C5-N7	6.14	134.08	130.40
2	B	1521	G	N3-C4-C5	-6.13	125.53	128.60
2	B	1835	G	C8-N9-C4	-6.13	103.95	106.40
1	FB	46	G	C5-C6-N1	-6.13	108.43	111.50
2	GB	1628	G	N1-C6-O6	6.13	123.58	119.90
2	B	1992	G	N3-C4-C5	-6.13	125.53	128.60
2	B	138	G	C5-C6-O6	-6.12	124.93	128.60
2	GB	228	A	C4-C5-N7	6.12	113.76	110.70
2	GB	1348	G	N1-C6-O6	6.12	123.57	119.90
2	B	34	C	C5-C6-N1	6.12	124.06	121.00
2	B	568	U	C6-N1-C1'	6.12	129.77	121.20
2	B	2242	G	C8-N9-C4	-6.12	103.95	106.40
2	GB	743	G	C2-N3-C4	-6.12	108.84	111.90
2	B	277	C	C6-N1-C1'	-6.12	113.46	120.80
2	B	2500	U	N3-C2-O2	-6.12	117.92	122.20
2	GB	1326	U	OP2-P-O3'	6.12	118.66	105.20
2	GB	2609	U	C5-C6-N1	-6.12	119.64	122.70
2	B	749	C	C6-N1-C2	6.12	122.75	120.30
1	FB	324	G	N3-C4-N9	-6.12	122.33	126.00
2	GB	2062	A	C8-N9-C4	6.12	108.25	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1304	C	C2-N1-C1'	-6.11	112.07	118.80
2	B	767	U	C5-C4-O4	6.11	129.57	125.90
2	GB	2088	G	N1-C2-N3	6.11	127.57	123.90
2	GB	2612	C	OP1-P-OP2	-6.11	110.44	119.60
2	B	733	G	C5-N7-C8	-6.11	101.25	104.30
2	GB	1665	A	O5'-P-OP1	-6.11	100.20	105.70
2	B	101	G	C2-N3-C4	6.10	114.95	111.90
2	GB	795	C	C5-C6-N1	-6.09	117.95	121.00
2	B	791	C	C2-N1-C1'	-6.09	112.10	118.80
2	GB	573	G	C4-N9-C1'	6.09	134.41	126.50
2	B	1785	A	O5'-P-OP2	-6.08	100.22	105.70
2	B	1843	C	N3-C4-C5	6.08	124.33	121.90
2	B	749	C	N1-C2-O2	6.08	122.55	118.90
2	B	448	U	N1-C2-O2	-6.08	118.55	122.80
2	GB	2249	U	N3-C4-O4	6.08	123.65	119.40
2	B	2550	G	C8-N9-C4	-6.07	103.97	106.40
2	GB	1951	U	N3-C4-C5	-6.07	110.96	114.60
2	B	1982	C	N3-C4-C5	6.07	124.33	121.90
2	B	1626	G	C8-N9-C4	-6.06	103.97	106.40
2	B	2032	G	N3-C4-N9	-6.06	122.36	126.00
1	A	1417	G	C5-C6-N1	-6.05	108.47	111.50
2	B	576	U	C2-N1-C1'	6.05	124.97	117.70
1	A	792	A	N1-C6-N6	6.05	122.23	118.60
2	B	104	U	N1-C2-O2	-6.05	118.56	122.80
2	B	729	G	N1-C6-O6	6.05	123.53	119.90
2	B	775	G	O5'-P-OP2	-6.05	100.26	105.70
2	GB	2593	U	C2-N3-C4	6.05	130.63	127.00
1	FB	816	A	C2-N3-C4	-6.05	107.58	110.60
2	B	2685	G	N9-C4-C5	6.03	107.81	105.40
2	GB	2544	G	N1-C6-O6	6.03	123.52	119.90
2	GB	2709	G	C8-N9-C4	6.03	108.81	106.40
2	B	1576	U	C6-N1-C2	-6.03	117.38	121.00
2	GB	1310	G	C6-C5-N7	-6.02	126.79	130.40
2	B	240	G	C5-C6-N1	-6.02	108.49	111.50
2	B	1688	U	C5-C4-O4	6.02	129.51	125.90
2	B	1628	G	N1-C6-O6	6.02	123.51	119.90
2	GB	71	A	C5-C6-N1	-6.02	114.69	117.70
2	GB	585	G	OP2-P-O3'	6.02	118.44	105.20
2	B	2430	A	N7-C8-N9	6.01	116.81	113.80
2	GB	1348	G	C5-C6-O6	-6.01	124.99	128.60
1	A	587	G	N1-C6-O6	6.01	123.51	119.90
2	B	761	A	C4-C5-C6	-6.01	114.00	117.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2074	U	C5-C6-N1	6.01	125.70	122.70
2	GB	837	C	C6-N1-C2	-6.01	117.90	120.30
2	B	130	C	C6-N1-C2	6.00	122.70	120.30
1	FB	754	C	N3-C2-O2	-6.00	117.70	121.90
1	FB	324	G	C4-N9-C1'	-6.00	118.70	126.50
1	FB	1354	C	C6-N1-C2	-6.00	117.90	120.30
2	B	1603	A	C8-N9-C4	-5.99	103.40	105.80
2	GB	801	G	N9-C4-C5	5.99	107.80	105.40
2	GB	2612	C	N1-C2-N3	-5.99	115.01	119.20
2	GB	450	G	C8-N9-C4	-5.99	104.00	106.40
2	B	788	A	N7-C8-N9	-5.99	110.81	113.80
2	GB	2317	C	N3-C2-O2	-5.99	117.71	121.90
2	GB	2556	C	N1-C2-O2	5.99	122.49	118.90
2	GB	2686	G	C4-N9-C1'	5.99	134.28	126.50
2	GB	1779	U	OP1-P-OP2	5.99	128.58	119.60
1	FB	754	C	C6-N1-C2	-5.98	117.91	120.30
1	A	687	A	P-O3'-C3'	5.98	126.87	119.70
2	GB	129	C	C5-C6-N1	-5.98	118.01	121.00
2	B	197	A	OP1-P-O3'	-5.98	92.05	105.20
2	GB	739	G	O5'-P-OP2	-5.97	100.33	105.70
2	B	581	C	C5-C4-N4	-5.97	116.02	120.20
2	B	570	G	N9-C4-C5	5.96	107.78	105.40
2	GB	1026	U	C6-N1-C1'	-5.96	112.86	121.20
2	GB	2573	C	C6-N1-C2	5.96	122.68	120.30
2	B	1671	U	C6-N1-C2	-5.95	117.43	121.00
2	GB	695	G	C6-C5-N7	-5.95	126.83	130.40
2	GB	195	A	C4-C5-N7	5.95	113.67	110.70
2	B	2580	U	N3-C4-C5	-5.95	111.03	114.60
2	GB	1999	C	C5-C6-N1	-5.95	118.03	121.00
2	GB	2505	G	C5-C6-N1	-5.95	108.53	111.50
2	B	1975	G	C5-C6-O6	-5.94	125.03	128.60
2	B	2224	G	N1-C6-O6	5.94	123.46	119.90
2	GB	262	A	N1-C6-N6	5.94	122.16	118.60
2	GB	140	A	C5-N7-C8	-5.93	100.93	103.90
2	B	1756	G	C5-C6-N1	-5.93	108.53	111.50
2	GB	966	G	O5'-P-OP2	-5.93	100.36	105.70
2	GB	1379	A	N9-C4-C5	-5.93	103.43	105.80
2	GB	707	G	C2-N3-C4	-5.93	108.94	111.90
2	GB	530	G	C5-C6-O6	5.92	132.15	128.60
2	GB	576	U	C5-C4-O4	-5.92	122.35	125.90
2	GB	155	C	C2-N1-C1'	5.92	125.31	118.80
2	B	1898	U	C5-C4-O4	5.92	129.45	125.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	GB	2430	A	C4-N9-C1'	5.92	136.95	126.30
1	A	362	G	C8-N9-C4	-5.91	104.03	106.40
2	GB	1842	G	C8-N9-C4	5.91	108.77	106.40
2	GB	2580	U	C5-C4-O4	5.91	129.45	125.90
2	GB	330	A	N1-C2-N3	5.91	132.26	129.30
2	GB	801	G	C5-C6-O6	5.91	132.15	128.60
2	GB	2433	A	C8-N9-C4	-5.91	103.44	105.80
2	B	112	U	C6-N1-C2	-5.91	117.46	121.00
2	GB	1773	A	OP1-P-O3'	5.90	118.19	105.20
2	B	242	G	C4-N9-C1'	-5.90	118.83	126.50
2	GB	391	G	C8-N9-C1'	-5.90	119.33	127.00
2	GB	749	C	C6-N1-C2	5.90	122.66	120.30
2	GB	2695	C	C6-N1-C2	5.90	122.66	120.30
2	B	2580	U	C6-N1-C2	-5.90	117.46	121.00
2	B	527	C	C5-C6-N1	5.89	123.95	121.00
2	B	2544	G	C6-C5-N7	-5.89	126.86	130.40
2	GB	2072	G	N1-C6-O6	5.89	123.44	119.90
2	B	1602	U	N1-C2-O2	-5.89	118.67	122.80
2	GB	34	C	N1-C2-O2	5.89	122.44	118.90
2	B	1828	G	N3-C4-N9	-5.89	122.47	126.00
2	GB	1187	G	N7-C8-N9	5.89	116.05	113.10
2	B	653	C	C6-N1-C2	-5.89	117.94	120.30
2	B	2074	U	C6-N1-C2	-5.89	117.47	121.00
2	B	2408	U	C5-C6-N1	5.89	125.64	122.70
2	GB	383	U	C5-C6-N1	-5.89	119.76	122.70
2	GB	970	C	C6-N1-C2	5.89	122.66	120.30
1	A	1219	U	C5-C6-N1	5.89	125.64	122.70
2	B	795	C	C2-N3-C4	-5.89	116.96	119.90
2	GB	576	U	C2-N1-C1'	5.88	124.76	117.70
2	B	453	C	O5'-P-OP2	-5.88	100.41	105.70
2	GB	1606	G	N3-C4-N9	5.88	129.53	126.00
2	GB	1671	U	C6-N1-C2	-5.88	117.47	121.00
2	GB	804	A	OP1-P-O3'	5.87	118.12	105.20
2	GB	2408	U	N3-C4-O4	5.87	123.51	119.40
2	GB	2681	C	C4-C5-C6	5.87	120.34	117.40
2	B	1959	G	C8-N9-C4	-5.87	104.05	106.40
2	GB	770	G	C4-C5-N7	5.87	113.15	110.80
2	B	2258	C	C6-N1-C2	-5.87	117.95	120.30
2	GB	1769	G	C6-C5-N7	-5.87	126.88	130.40
2	B	570	G	C8-N9-C4	-5.87	104.05	106.40
2	B	2592	G	C8-N9-C4	-5.87	104.05	106.40
2	GB	825	C	OP1-P-O3'	5.87	118.10	105.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	209	C	N3-C4-C5	5.86	124.25	121.90
2	GB	576	U	N3-C4-C5	-5.86	111.08	114.60
2	B	1634	A	C8-N9-C4	5.86	108.14	105.80
2	B	2686	G	C8-N9-C1'	-5.86	119.39	127.00
2	B	1026	U	C6-N1-C1'	-5.86	113.00	121.20
2	B	1776	G	C4-C5-N7	5.86	113.14	110.80
2	GB	1765	C	C6-N1-C2	5.86	122.64	120.30
2	B	2502	G	N3-C4-N9	5.85	129.51	126.00
1	A	754	C	C6-N1-C1'	-5.85	113.78	120.80
2	B	795	C	N1-C2-N3	5.85	123.29	119.20
2	GB	1298	C	N3-C4-C5	5.85	124.24	121.90
2	B	1938	A	C5-N7-C8	-5.84	100.98	103.90
2	GB	1602	U	C4-C5-C6	5.84	123.20	119.70
1	A	775	G	C6-C5-N7	-5.84	126.90	130.40
2	B	2639	A	C2-N3-C4	-5.84	107.68	110.60
2	B	1043	C	N1-C2-O2	5.84	122.40	118.90
2	GB	2053	G	C4-C5-N7	5.84	113.13	110.80
2	B	2610	C	N1-C2-N3	-5.83	115.12	119.20
2	GB	2069	G	N1-C6-O6	5.83	123.40	119.90
2	B	692	C	C5-C4-N4	-5.83	116.12	120.20
2	B	1621	U	OP2-P-O3'	5.83	118.03	105.20
2	B	1606	G	N3-C4-N9	5.83	129.50	126.00
2	GB	848	G	O5'-P-OP2	-5.83	100.45	105.70
2	B	734	A	C2-N3-C4	-5.83	107.69	110.60
1	A	723	U	O4'-C1'-N1	5.83	112.86	108.20
2	B	2447	G	OP1-P-O3'	5.83	118.02	105.20
2	GB	761	A	C5-N7-C8	-5.83	100.99	103.90
1	A	848	C	C6-N1-C2	-5.82	117.97	120.30
2	B	1756	G	N1-C6-O6	5.82	123.39	119.90
2	GB	2556	C	N3-C2-O2	-5.82	117.83	121.90
2	B	458	G	OP2-P-O3'	5.82	118.01	105.20
2	B	1573	G	C8-N9-C4	5.82	108.73	106.40
2	B	1647	G	N3-C4-C5	5.82	131.51	128.60
2	GB	1620	G	C6-C5-N7	-5.81	126.91	130.40
2	B	783	A	C6-C5-N7	-5.81	128.23	132.30
2	B	2226	C	N1-C2-O2	5.81	122.39	118.90
2	GB	1298	C	O5'-P-OP1	-5.81	100.47	105.70
2	GB	2837	G	N1-C6-O6	5.81	123.39	119.90
2	B	464	U	N3-C4-C5	-5.81	111.12	114.60
2	B	979	G	C6-C5-N7	-5.80	126.92	130.40
2	B	2035	G	N1-C6-O6	-5.80	116.42	119.90
2	B	25	U	C6-N1-C2	-5.80	117.52	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	679	C	C6-N1-C2	5.80	122.62	120.30
1	FB	174	C	C6-N1-C2	5.80	122.62	120.30
2	B	2686	G	C4-N9-C1'	5.80	134.04	126.50
4	IA	69	C	C6-N1-C2	-5.80	117.98	120.30
2	GB	1632	A	C5-C6-N6	-5.80	119.06	123.70
2	B	155	C	C2-N1-C1'	5.79	125.17	118.80
2	GB	2515	C	N1-C2-O2	-5.79	115.42	118.90
2	GB	1983	C	C2-N3-C4	-5.79	117.01	119.90
2	GB	863	A	N1-C6-N6	-5.79	115.13	118.60
2	GB	1697	G	C4-C5-N7	5.79	113.11	110.80
2	GB	795	C	C2-N3-C4	-5.78	117.01	119.90
2	B	1647	G	C5-C6-N1	-5.78	108.61	111.50
2	B	1343	G	C4-N9-C1'	5.78	134.01	126.50
2	B	1033	U	N1-C2-O2	5.78	126.84	122.80
2	B	1632	A	C5-C6-N6	-5.77	119.08	123.70
2	B	203	C	C6-N1-C2	5.77	122.61	120.30
2	B	1256	G	N9-C4-C5	-5.77	103.09	105.40
1	A	1038	C	C5-C6-N1	5.77	123.88	121.00
2	B	945	A	C5-N7-C8	-5.77	101.02	103.90
2	B	2365	G	N3-C4-N9	5.77	129.46	126.00
2	GB	1578	U	N3-C2-O2	-5.77	118.16	122.20
2	B	1376	C	C5-C6-N1	5.77	123.88	121.00
2	B	2188	C	C6-N1-C2	-5.76	118.00	120.30
2	GB	733	G	C5-N7-C8	-5.76	101.42	104.30
2	GB	479	A	O4'-C1'-N9	5.76	112.81	108.20
2	B	2316	C	C6-N1-C2	-5.76	118.00	120.30
2	B	1632	A	N9-C4-C5	-5.75	103.50	105.80
2	GB	1612	C	N1-C2-O2	-5.75	115.45	118.90
2	GB	1828	G	N3-C2-N2	-5.75	115.87	119.90
2	B	582	G	N1-C6-O6	-5.75	116.45	119.90
2	GB	1849	G	N1-C6-O6	5.75	123.35	119.90
5	E	182	LEU	CA-CB-CG	-5.75	102.08	115.30
2	GB	1404	C	N3-C2-O2	-5.75	117.88	121.90
2	GB	2588	G	N3-C2-N2	-5.75	115.88	119.90
2	GB	1398	C	N1-C2-O2	-5.74	115.45	118.90
2	GB	2188	C	C6-N1-C2	-5.74	118.00	120.30
2	GB	1304	C	C2-N1-C1'	-5.74	112.49	118.80
2	B	528	A	N1-C6-N6	5.74	122.04	118.60
2	GB	1567	A	N9-C4-C5	5.74	108.09	105.80
2	GB	2598	A	O5'-P-OP2	-5.74	100.54	105.70
2	GB	189	G	C8-N9-C4	5.73	108.69	106.40
2	B	1647	G	O4'-C1'-N9	-5.73	103.61	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	729	G	C5-C6-O6	-5.73	125.16	128.60
2	GB	1382	G	C2-N3-C4	-5.73	109.03	111.90
2	B	2210	G	N1-C6-O6	-5.73	116.46	119.90
2	GB	2722	G	C8-N9-C1'	-5.73	119.55	127.00
1	A	945	G	N1-C6-O6	5.73	123.34	119.90
2	GB	573	G	N3-C4-C5	-5.72	125.74	128.60
2	GB	2830	G	N1-C6-O6	5.72	123.33	119.90
2	B	1187	G	N7-C8-N9	5.72	115.96	113.10
2	B	1333	C	C5-C6-N1	5.72	123.86	121.00
2	B	548	A	C8-N9-C4	-5.72	103.51	105.80
2	B	1415	U	C5-C4-O4	5.72	129.33	125.90
2	GB	2245	U	N3-C4-C5	-5.72	111.17	114.60
2	B	568	U	N1-C2-O2	-5.71	118.80	122.80
3	C	17	C	C6-N1-C2	5.71	122.59	120.30
2	GB	2446	G	C4-C5-N7	-5.71	108.52	110.80
1	A	722	A	C2-N3-C4	-5.70	107.75	110.60
2	B	1274	A	C8-N9-C4	5.70	108.08	105.80
2	GB	2062	A	O5'-P-OP1	-5.70	100.57	105.70
2	B	1936	A	C6-C5-N7	-5.70	128.31	132.30
2	B	2794	C	C5-C6-N1	5.70	123.85	121.00
2	GB	2061	G	C4-C5-N7	5.70	113.08	110.80
1	FB	111	G	N3-C4-N9	-5.70	122.58	126.00
2	B	1671	U	C5-C6-N1	5.69	125.55	122.70
2	B	1769	G	C6-C5-N7	-5.69	126.98	130.40
1	FB	22	G	C6-C5-N7	-5.69	126.98	130.40
2	GB	1187	G	C6-C5-N7	-5.69	126.98	130.40
1	FB	723	U	O4'-C1'-N1	5.69	112.75	108.20
2	GB	563	G	C6-C5-N7	-5.69	126.99	130.40
2	B	431	U	N3-C4-O4	5.69	123.38	119.40
2	GB	1664	A	N7-C8-N9	5.69	116.64	113.80
2	GB	698	C	C5-C6-N1	-5.68	118.16	121.00
2	B	16	G	C2-N3-C4	-5.68	109.06	111.90
2	B	343	C	C6-N1-C2	5.68	122.57	120.30
2	GB	761	A	N3-C4-C5	5.68	130.78	126.80
2	GB	1961	C	C6-N1-C2	5.68	122.57	120.30
1	FB	557	G	N3-C4-N9	5.68	129.41	126.00
1	FB	687	A	P-O3'-C3'	5.68	126.52	119.70
2	GB	2573	C	N3-C4-C5	5.68	124.17	121.90
2	B	512	G	O4'-C1'-N9	5.68	112.74	108.20
2	GB	1471	A	N7-C8-N9	5.68	116.64	113.80
2	B	261	G	N3-C4-C5	5.67	131.44	128.60
2	GB	2088	G	C5-C6-N1	-5.67	108.66	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	732	C	C6-N1-C2	-5.67	118.03	120.30
2	GB	2061	G	C5-C6-N1	-5.67	108.67	111.50
2	B	1544	C	N1-C2-O2	5.67	122.30	118.90
2	GB	1756	G	C5-C6-N1	-5.67	108.67	111.50
2	B	838	C	N1-C2-O2	5.67	122.30	118.90
2	GB	1621	U	OP2-P-O3'	5.67	117.67	105.20
1	A	1354	C	C6-N1-C2	-5.66	118.04	120.30
2	B	451	C	C6-N1-C2	5.66	122.56	120.30
2	B	1904	G	N1-C6-O6	-5.66	116.50	119.90
2	B	570	G	C4-C5-C6	5.66	122.19	118.80
2	GB	277	C	C6-N1-C1'	-5.66	114.01	120.80
2	GB	731	C	C6-N1-C2	5.65	122.56	120.30
2	B	391	G	C8-N9-C1'	-5.65	119.65	127.00
2	B	1788	C	OP1-P-O3'	5.65	117.64	105.20
2	GB	527	C	O4'-C1'-N1	5.65	112.72	108.20
2	GB	1983	C	N3-C4-C5	5.65	124.16	121.90
2	GB	2775	A	N1-C6-N6	5.65	121.99	118.60
2	B	1792	G	C8-N9-C4	-5.65	104.14	106.40
2	GB	189	G	N9-C4-C5	-5.65	103.14	105.40
2	GB	806	C	C4-C5-C6	-5.65	114.58	117.40
2	GB	2088	G	C2-N3-C4	-5.65	109.08	111.90
2	B	1382	G	C4-C5-N7	-5.65	108.54	110.80
2	B	770	G	C4-C5-N7	5.64	113.06	110.80
2	B	2052	G	C6-C5-N7	-5.64	127.01	130.40
1	A	913	A	P-O3'-C3'	5.64	126.47	119.70
2	B	482	A	C8-N9-C4	5.64	108.06	105.80
2	B	2451	A	C2-N3-C4	-5.64	107.78	110.60
2	GB	1602	U	C6-N1-C2	-5.64	117.62	121.00
2	B	471	A	C2-N3-C4	-5.64	107.78	110.60
2	GB	11	G	N7-C8-N9	5.64	115.92	113.10
2	GB	563	G	N1-C6-O6	5.64	123.28	119.90
2	GB	1022	G	N3-C4-N9	-5.63	122.62	126.00
2	GB	1348	G	C4-C5-N7	5.63	113.05	110.80
2	GB	1253	A	C5-N7-C8	-5.63	101.08	103.90
2	B	57	C	C6-N1-C2	5.63	122.55	120.30
2	B	751	A	N9-C4-C5	5.63	108.05	105.80
2	B	1187	G	C4-N9-C1'	5.63	133.82	126.50
1	FB	299	G	C4-C5-N7	-5.63	108.55	110.80
2	B	2771	C	C6-N1-C2	5.62	122.55	120.30
2	GB	2002	G	C5-C6-O6	-5.62	125.22	128.60
2	GB	2069	G	OP2-P-O3'	5.62	117.58	105.20
2	B	1256	G	N3-C4-N9	5.62	129.37	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	979	G	C4-C5-N7	5.62	113.05	110.80
2	GB	2553	G	C5-C6-O6	-5.62	125.23	128.60
2	B	961	C	C6-N1-C2	-5.62	118.05	120.30
2	B	1371	G	N1-C6-O6	5.62	123.27	119.90
2	B	1814	G	C4-C5-C6	5.62	122.17	118.80
2	GB	653	C	N3-C2-O2	-5.62	117.97	121.90
2	GB	2576	G	OP1-P-O3'	5.62	117.57	105.20
2	B	2053	G	C5-N7-C8	-5.62	101.49	104.30
2	B	806	C	C4-C5-C6	-5.62	114.59	117.40
2	B	817	C	C6-N1-C2	-5.62	118.05	120.30
2	B	2416	C	C6-N1-C2	-5.62	118.05	120.30
2	B	2022	U	C6-N1-C2	5.62	124.37	121.00
2	GB	1142(B)	A	C2-N3-C4	-5.62	107.79	110.60
2	B	2316	C	C5-C6-N1	5.62	123.81	121.00
2	GB	2505	G	C4-C5-N7	-5.61	108.55	110.80
2	B	1158	C	C6-N1-C2	5.61	122.55	120.30
2	B	1405	U	O5'-P-OP2	-5.61	100.65	105.70
2	GB	57	C	C6-N1-C2	5.61	122.55	120.30
6	F	195	LEU	CA-CB-CG	5.61	128.20	115.30
2	GB	527	C	C4-C5-C6	-5.61	114.60	117.40
2	GB	2576	G	C5-N7-C8	-5.61	101.50	104.30
1	A	324	G	C6-C5-N7	5.61	133.76	130.40
2	GB	863	A	C5-C6-N1	5.61	120.50	117.70
2	GB	973	A	N1-C6-N6	-5.61	115.24	118.60
2	GB	2686	G	C8-N9-C1'	-5.61	119.71	127.00
1	A	1018	C	C6-N1-C2	-5.60	118.06	120.30
2	GB	1828	G	C8-N9-C4	-5.60	104.16	106.40
2	B	1166	C	C6-N1-C2	-5.60	118.06	120.30
2	B	2508	G	N1-C6-O6	5.60	123.26	119.90
2	B	1773	A	N1-C2-N3	5.60	132.10	129.30
2	B	944	G	O4'-C1'-N9	5.59	112.68	108.20
2	GB	242	G	C4-N9-C1'	-5.59	119.23	126.50
2	GB	1537	C	C5-C6-N1	5.59	123.80	121.00
1	FB	587	G	C6-C5-N7	-5.59	127.05	130.40
2	GB	528	A	C2-N3-C4	-5.59	107.80	110.60
2	GB	1651	G	C2-N3-C4	-5.59	109.10	111.90
2	GB	2002	G	N1-C6-O6	5.59	123.25	119.90
2	GB	596	G	C5-C6-N1	-5.59	108.70	111.50
1	FB	1158	C	N1-C2-O2	5.59	122.25	118.90
2	GB	228	A	C5-N7-C8	-5.59	101.11	103.90
2	GB	570	G	C4-C5-N7	-5.59	108.57	110.80
2	GB	2571	C	C6-N1-C2	5.59	122.53	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1774	C	N3-C4-C5	5.58	124.13	121.90
2	GB	527	C	C5-C4-N4	-5.58	116.29	120.20
2	B	945	A	N9-C4-C5	-5.58	103.57	105.80
2	B	2052	G	C4-C5-N7	5.58	113.03	110.80
2	GB	1532	C	C6-N1-C2	-5.58	118.07	120.30
2	B	2433	A	C8-N9-C4	-5.58	103.57	105.80
2	B	1356	G	C5-C6-N1	-5.58	108.71	111.50
2	B	1602	U	N3-C4-O4	5.58	123.30	119.40
2	B	2722	G	N1-C6-O6	5.58	123.25	119.90
2	GB	739	G	OP2-P-O3'	5.58	117.47	105.20
2	GB	1338	G	C8-N9-C4	-5.58	104.17	106.40
1	A	1485	U	C5-C6-N1	-5.57	119.91	122.70
2	B	1593	G	C8-N9-C4	5.57	108.63	106.40
2	GB	568	U	N1-C2-N3	5.57	118.24	114.90
1	A	351	G	OP2-P-O3'	5.57	117.45	105.20
2	GB	1300	U	O5'-P-OP1	-5.57	100.69	105.70
2	GB	2086	U	C5-C4-O4	5.57	129.24	125.90
2	B	783	A	C5-N7-C8	-5.57	101.11	103.90
2	B	1576	U	N3-C2-O2	-5.57	118.30	122.20
2	B	528	A	OP1-P-O3'	5.57	117.45	105.20
2	B	1020	A	C8-N9-C4	5.57	108.03	105.80
2	B	2603	G	C2-N3-C4	-5.57	109.12	111.90
2	GB	450	G	C4-N9-C1'	5.57	133.74	126.50
2	GB	1632	A	C4-C5-N7	5.57	113.48	110.70
2	B	1521	G	N3-C4-N9	5.57	129.34	126.00
2	B	1821	A	N9-C4-C5	-5.57	103.57	105.80
1	FB	587	G	N1-C6-O6	5.57	123.24	119.90
2	GB	1829	A	O5'-P-OP1	-5.56	100.70	105.70
2	GB	2643	G	C4-C5-N7	5.56	113.02	110.80
2	B	2052	G	O5'-P-OP1	-5.56	100.70	105.70
2	B	1803	A	C8-N9-C4	5.56	108.02	105.80
2	B	459	U	C2-N1-C1'	5.55	124.36	117.70
2	B	1216	G	O5'-P-OP1	-5.55	100.70	105.70
2	B	1664	A	N7-C8-N9	5.55	116.58	113.80
2	B	1256	G	C5-C6-O6	-5.55	125.27	128.60
2	GB	2028	U	C5-C6-N1	5.55	125.47	122.70
2	B	2609	U	C2-N3-C4	-5.55	123.67	127.00
2	GB	59	U	C6-N1-C2	-5.55	117.67	121.00
2	B	1769	G	O5'-P-OP2	-5.54	100.71	105.70
1	A	557	G	N3-C4-N9	5.54	129.33	126.00
2	B	1838	C	C6-N1-C2	5.54	122.52	120.30
2	B	2408	U	N3-C4-O4	5.54	123.28	119.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	2612	C	C6-N1-C2	5.54	122.52	120.30
2	B	995	C	C6-N1-C2	5.54	122.52	120.30
1	FB	111	G	C5-C6-N1	-5.54	108.73	111.50
2	B	2261	C	O5'-P-OP2	-5.54	100.71	105.70
2	GB	1626	G	N9-C4-C5	5.54	107.62	105.40
2	B	2502	G	C5-C6-O6	-5.54	125.28	128.60
2	GB	806	C	C5-C6-N1	5.54	123.77	121.00
1	A	1452	C	C6-N1-C2	-5.54	118.08	120.30
2	B	733	G	C4-C5-C6	-5.54	115.48	118.80
2	B	1607	C	C6-N1-C2	5.54	122.52	120.30
2	GB	597	U	C5-C4-O4	5.54	129.22	125.90
2	GB	715	G	C8-N9-C4	-5.54	104.19	106.40
2	GB	1657	C	OP1-P-O3'	5.53	117.37	105.20
2	B	568	U	N1-C2-N3	5.53	118.22	114.90
1	A	725	G	C8-N9-C4	-5.53	104.19	106.40
2	B	1187	G	C4-C5-C6	5.53	122.12	118.80
1	A	548	G	C8-N9-C4	-5.52	104.19	106.40
2	B	1256	G	C4-N9-C1'	5.52	133.68	126.50
3	HB	5	C	C6-N1-C2	-5.52	118.09	120.30
2	GB	2249	U	C2-N3-C4	5.52	130.31	127.00
2	B	1614	A	C8-N9-C4	-5.52	103.59	105.80
2	B	2374	C	C6-N1-C2	5.52	122.51	120.30
2	GB	16	G	C5-C6-N1	-5.51	108.74	111.50
2	GB	2553	G	C4-C5-N7	5.51	113.00	110.80
2	GB	2686	G	N3-C4-N9	5.51	129.31	126.00
2	B	1311	G	C5-C6-O6	5.51	131.91	128.60
2	B	1828	G	C4-C5-C6	5.51	122.11	118.80
2	GB	1309	G	C6-C5-N7	-5.51	127.09	130.40
2	B	783	A	N7-C8-N9	5.51	116.55	113.80
2	GB	1955	U	C5-C4-O4	5.51	129.20	125.90
2	B	2505	G	C4-C5-N7	-5.50	108.60	110.80
2	B	530	G	C5-C6-O6	5.50	131.90	128.60
2	B	1597	A	O5'-P-OP2	-5.50	100.75	105.70
2	GB	1257	C	N3-C4-C5	5.50	124.10	121.90
2	GB	1675	C	OP2-P-O3'	5.50	117.31	105.20
2	B	59	U	C6-N1-C2	-5.50	117.70	121.00
2	B	790	C	N3-C2-O2	-5.50	118.05	121.90
2	B	1673	U	C5-C6-N1	-5.50	119.95	122.70
2	B	1900	A	N1-C6-N6	-5.50	115.30	118.60
2	GB	1779	U	O4'-C1'-N1	5.50	112.60	108.20
2	GB	1820	U	C5-C6-N1	-5.50	119.95	122.70
2	GB	2058	A	N9-C4-C5	5.50	108.00	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2406	U	O5'-P-OP2	-5.50	100.75	105.70
1	FB	311	C	C6-N1-C2	-5.50	118.10	120.30
2	GB	1666	G	C4-N9-C1'	-5.49	119.36	126.50
1	FB	324	G	N3-C4-C5	5.49	131.35	128.60
2	GB	1521	G	N3-C4-N9	5.49	129.29	126.00
2	B	1615	C	N1-C2-O2	-5.49	115.61	118.90
2	B	2010	G	N7-C8-N9	5.49	115.84	113.10
1	FB	250	A	N1-C6-N6	-5.49	115.31	118.60
2	B	862	G	N3-C4-C5	-5.49	125.86	128.60
2	B	731	C	N3-C2-O2	5.49	125.74	121.90
2	GB	2365	G	N3-C4-N9	5.49	129.29	126.00
2	GB	2505	G	N9-C4-C5	5.49	107.59	105.40
2	GB	163	U	C2-N1-C1'	5.48	124.28	117.70
2	GB	2058	A	OP2-P-O3'	5.48	117.26	105.20
2	GB	2686	G	C6-C5-N7	-5.48	127.11	130.40
2	B	1375	C	OP2-P-O3'	5.48	117.26	105.20
2	B	1773	A	C4-C5-C6	5.48	119.74	117.00
2	B	1789	A	O5'-P-OP1	-5.48	100.77	105.70
2	GB	411	G	C6-C5-N7	-5.48	127.11	130.40
2	B	39	C	C5-C6-N1	5.48	123.74	121.00
2	B	391	G	C6-C5-N7	-5.48	127.11	130.40
2	B	798	G	C5-C6-O6	-5.48	125.31	128.60
2	GB	767	U	C5-C4-O4	5.48	129.19	125.90
2	B	1382	G	C4-C5-C6	5.47	122.08	118.80
2	GB	1043	C	N1-C2-O2	5.47	122.19	118.90
2	B	1936	A	C4-C5-N7	5.47	113.44	110.70
2	B	2689	U	N1-C2-O2	5.47	126.63	122.80
2	GB	2035	G	N7-C8-N9	-5.47	110.36	113.10
2	GB	130	C	C6-N1-C2	5.47	122.49	120.30
2	GB	1903	G	N3-C4-N9	-5.47	122.72	126.00
6	KB	195	LEU	CA-CB-CG	5.47	127.87	115.30
2	B	727	A	C4-C5-C6	5.46	119.73	117.00
2	GB	195	A	N7-C8-N9	5.46	116.53	113.80
2	B	2689	U	N3-C2-O2	-5.46	118.38	122.20
2	B	2833	G	C8-N9-C4	-5.46	104.22	106.40
2	B	1253	A	C5-N7-C8	-5.46	101.17	103.90
2	B	1573	G	N7-C8-N9	-5.46	110.37	113.10
1	FB	1397	C	C2-N1-C1'	5.46	124.80	118.80
2	B	2067	G	N1-C2-N3	5.45	127.17	123.90
2	GB	337	C	C6-N1-C2	5.45	122.48	120.30
2	B	1900	A	O5'-P-OP2	-5.45	100.79	105.70
2	B	1617	C	N3-C4-N4	-5.45	114.19	118.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1773	A	C6-C5-N7	-5.45	128.48	132.30
2	B	1984	G	C8-N9-C1'	-5.45	119.92	127.00
2	B	2600	A	N1-C2-N3	5.45	132.03	129.30
2	B	780	G	N7-C8-N9	5.45	115.82	113.10
2	GB	1933	G	N1-C6-O6	5.45	123.17	119.90
2	B	1903	G	N3-C4-C5	5.45	131.32	128.60
2	GB	1936	A	N1-C6-N6	5.45	121.87	118.60
2	B	1200	C	C6-N1-C2	-5.44	118.12	120.30
2	B	1602	U	OP1-P-O3'	5.44	117.17	105.20
2	B	1618	A	C5-C6-N1	5.44	120.42	117.70
2	GB	2209	C	N3-C4-C5	5.44	124.08	121.90
2	B	2837	G	N1-C6-O6	5.44	123.16	119.90
2	B	1256	G	C4-C5-N7	5.44	112.98	110.80
2	B	1823	G	C6-C5-N7	-5.44	127.14	130.40
2	GB	1926	U	C5-C4-O4	5.44	129.16	125.90
2	GB	2009	G	N1-C6-O6	5.44	123.16	119.90
2	B	1612	C	C6-N1-C2	5.44	122.47	120.30
2	GB	1981	A	C5-N7-C8	-5.44	101.18	103.90
2	GB	2722	G	N1-C6-O6	5.44	123.16	119.90
2	B	1329	U	C6-N1-C2	5.43	124.26	121.00
2	GB	34	C	C6-N1-C2	-5.43	118.13	120.30
2	GB	1343	G	C4-N9-C1'	5.43	133.56	126.50
1	FB	1397	C	N3-C4-C5	-5.43	119.73	121.90
1	A	557	G	C4-N9-C1'	5.43	133.56	126.50
2	B	678	C	N3-C4-N4	-5.43	114.20	118.00
2	B	739	G	O5'-P-OP2	-5.43	100.81	105.70
2	B	806	C	C5-C6-N1	5.43	123.72	121.00
2	B	1384	A	N1-C6-N6	-5.43	115.34	118.60
2	GB	1382	G	N3-C4-N9	-5.43	122.74	126.00
2	B	1255	U	C2-N1-C1'	-5.42	111.19	117.70
2	GB	1774	C	N3-C4-C5	5.42	124.07	121.90
2	B	727	A	C6-C5-N7	-5.42	128.50	132.30
2	GB	791	C	C2-N1-C1'	-5.42	112.83	118.80
2	GB	974(A)	G	N7-C8-N9	5.42	115.81	113.10
1	A	848	C	C5-C6-N1	5.42	123.71	121.00
2	B	2500	U	O4'-C1'-N1	5.42	112.54	108.20
1	FB	201	C	C6-N1-C2	-5.42	118.13	120.30
2	B	707	G	C2-N3-C4	-5.42	109.19	111.90
2	B	791	C	C6-N1-C2	5.42	122.47	120.30
2	B	1498	C	C6-N1-C2	-5.42	118.13	120.30
2	B	1595	G	C8-N9-C4	-5.42	104.23	106.40
2	B	2502	G	C4-C5-N7	5.42	112.97	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	1841	U	N3-C4-C5	-5.42	111.35	114.60
2	B	739	G	OP2-P-O3'	5.42	117.11	105.20
2	GB	1382	G	N3-C2-N2	-5.42	116.11	119.90
2	B	1202	C	N1-C2-O2	-5.41	115.65	118.90
2	B	2592	G	N7-C8-N9	5.41	115.81	113.10
2	GB	573	G	OP2-P-O3'	5.41	117.11	105.20
2	GB	1256	G	C4-N9-C1'	5.41	133.54	126.50
2	B	809	G	N3-C4-N9	5.41	129.25	126.00
2	B	944	G	N1-C2-N3	5.41	127.15	123.90
4	IA	75	C	N3-C4-C5	-5.41	119.73	121.90
2	GB	493	G	N3-C4-N9	-5.41	122.75	126.00
2	GB	707	G	N1-C6-O6	5.41	123.15	119.90
2	GB	2059	A	N7-C8-N9	-5.41	111.09	113.80
2	B	1961	C	N3-C4-C5	5.41	124.06	121.90
2	B	1757	U	N3-C4-C5	5.41	117.84	114.60
2	GB	240	G	C4-C5-N7	-5.41	108.64	110.80
2	GB	698	C	C6-N1-C2	5.40	122.46	120.30
2	B	1352	U	C5-C6-N1	-5.40	120.00	122.70
2	B	1793	C	N1-C2-N3	5.40	122.98	119.20
2	B	2592	G	N3-C4-C5	-5.40	125.90	128.60
2	GB	25	U	N1-C2-N3	5.40	118.14	114.90
2	GB	2581	G	N7-C8-N9	5.40	115.80	113.10
2	GB	945	A	C6-C5-N7	-5.40	128.52	132.30
2	GB	1751	C	C6-N1-C2	5.40	122.46	120.30
1	A	1158	C	N3-C2-O2	-5.40	118.12	121.90
2	B	1142	C	C5-C6-N1	5.40	123.70	121.00
2	GB	1785	A	N1-C6-N6	5.40	121.84	118.60
2	GB	1272	A	O4'-C1'-N9	5.39	112.52	108.20
2	GB	2059	A	C5-C6-N6	-5.39	119.39	123.70
1	A	1419	G	C5-C6-N1	-5.39	108.80	111.50
2	B	1578	U	N1-C2-N3	5.39	118.14	114.90
2	B	1187	G	N1-C6-O6	5.39	123.13	119.90
2	B	1671	U	C2-N1-C1'	5.39	124.17	117.70
2	B	1999	C	C5-C6-N1	-5.39	118.31	121.00
1	FB	121	C	N1-C2-O2	5.39	122.13	118.90
2	B	786	C	OP1-P-O3'	5.38	117.05	105.20
2	B	1769	G	N1-C2-N3	5.38	127.13	123.90
2	GB	2713	A	OP2-P-O3'	5.38	117.05	105.20
2	B	1769	G	C4-C5-C6	5.38	122.03	118.80
2	GB	1379	A	N1-C2-N3	-5.38	126.61	129.30
2	GB	459	U	C2-N1-C1'	5.38	124.15	117.70
2	B	1353	A	C6-N1-C2	-5.38	115.38	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	812	C	N1-C2-O2	5.37	122.12	118.90
2	B	2011	U	N3-C2-O2	5.37	125.96	122.20
4	IA	39	C	N1-C2-O2	-5.37	115.68	118.90
2	B	1219	G	C8-N9-C4	5.37	108.55	106.40
2	B	1595	G	N9-C4-C5	5.37	107.55	105.40
1	FB	485	G	N3-C4-N9	-5.37	122.78	126.00
2	B	929	G	N1-C6-O6	5.37	123.12	119.90
2	GB	1762	A	C5-C6-N6	5.37	128.00	123.70
2	B	1258	C	N3-C4-C5	5.37	124.05	121.90
1	FB	231	G	C5-C6-N1	-5.37	108.81	111.50
2	GB	71	A	C2-N3-C4	-5.37	107.92	110.60
2	GB	974(A)	G	C8-N9-C4	-5.37	104.25	106.40
2	B	450	G	N1-C2-N3	5.37	127.12	123.90
2	GB	945	A	N9-C4-C5	-5.37	103.65	105.80
2	B	792	G	N1-C6-O6	-5.36	116.68	119.90
2	B	1259	G	N3-C2-N2	-5.36	116.15	119.90
2	B	1627	G	N1-C6-O6	5.36	123.12	119.90
2	B	1984	G	C4-C5-C6	5.36	122.02	118.80
2	B	2553	G	N3-C4-N9	5.36	129.22	126.00
2	B	2580	U	C5-C4-O4	5.36	129.12	125.90
2	GB	2588	G	C2-N3-C4	-5.36	109.22	111.90
2	B	1595	G	N3-C2-N2	-5.36	116.15	119.90
1	FB	557	G	C4-N9-C1'	5.36	133.47	126.50
2	GB	1961	C	C5-C6-N1	-5.36	118.32	121.00
2	GB	2011	U	N3-C2-O2	5.36	125.95	122.20
2	B	304	G	C5-C6-N1	-5.36	108.82	111.50
2	B	1694	C	N3-C4-C5	5.36	124.04	121.90
2	GB	974(A)	G	C5-C6-O6	-5.36	125.39	128.60
1	FB	806	C	C6-N1-C2	5.35	122.44	120.30
1	FB	1158	C	N3-C2-O2	-5.35	118.15	121.90
2	B	208	C	C6-N1-C2	5.35	122.44	120.30
2	B	2491	U	C6-N1-C2	5.35	124.21	121.00
2	B	2433	A	O5'-P-OP1	-5.35	100.89	105.70
1	FB	1449	C	C6-N1-C2	-5.35	118.16	120.30
2	GB	1647	G	O5'-P-OP2	5.35	117.12	110.70
2	B	1567	A	N1-C6-N6	-5.35	115.39	118.60
1	A	1158	C	C2-N1-C1'	5.34	124.68	118.80
2	GB	68	G	C5-C6-N1	-5.34	108.83	111.50
2	GB	935	C	C6-N1-C2	5.34	122.44	120.30
1	A	754	C	C2-N3-C4	5.34	122.57	119.90
2	B	810	U	C5-C6-N1	-5.34	120.03	122.70
2	B	750	A	C8-N9-C4	-5.33	103.67	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	791	C	N3-C4-N4	-5.33	114.27	118.00
2	GB	1617	C	C2-N1-C1'	-5.33	112.93	118.80
2	B	1849	G	N1-C6-O6	5.33	123.10	119.90
1	FB	285	G	C8-N9-C4	5.33	108.53	106.40
2	GB	589	C	O5'-P-OP2	-5.33	100.90	105.70
2	GB	2032	G	N7-C8-N9	5.33	115.77	113.10
2	B	2072	G	C6-C5-N7	-5.33	127.20	130.40
2	GB	727	A	C4-C5-C6	5.33	119.67	117.00
2	GB	1471	A	C4-C5-C6	5.33	119.67	117.00
2	GB	1779	U	O5'-P-OP1	-5.33	100.90	105.70
2	B	90	U	N3-C2-O2	-5.33	118.47	122.20
2	B	2022	U	N1-C2-O2	5.33	126.53	122.80
2	GB	2896	C	C6-N1-C2	-5.33	118.17	120.30
2	GB	1521	G	N3-C4-C5	-5.33	125.94	128.60
2	B	494	G	C5-C6-O6	-5.33	125.41	128.60
1	A	56	U	C5-C6-N1	5.32	125.36	122.70
2	B	1256	G	C6-C5-N7	-5.32	127.21	130.40
1	FB	301	G	N1-C6-O6	5.32	123.09	119.90
2	GB	25	U	N3-C2-O2	-5.32	118.47	122.20
2	GB	1814	G	C4-C5-C6	5.32	121.99	118.80
2	B	790	C	N1-C2-O2	5.32	122.09	118.90
2	GB	187	G	C5-C6-O6	-5.32	125.41	128.60
2	GB	1264	G	OP2-P-O3'	5.32	116.91	105.20
2	GB	2050	C	N1-C2-O2	-5.32	115.71	118.90
2	GB	2365	G	N3-C4-C5	-5.32	125.94	128.60
2	B	1022	G	N9-C4-C5	5.32	107.53	105.40
3	C	107	U	O4'-C1'-N1	5.32	112.45	108.20
2	GB	773	U	N1-C2-O2	-5.32	119.08	122.80
2	GB	1610	A	C2-N3-C4	5.32	113.26	110.60
2	B	163	U	C2-N1-C1'	5.32	124.08	117.70
2	GB	2838	G	C8-N9-C4	-5.32	104.27	106.40
2	B	16	G	N1-C2-N3	5.31	127.09	123.90
2	GB	568	U	C5-C4-O4	5.31	129.09	125.90
2	B	495	G	C6-C5-N7	-5.31	127.21	130.40
1	FB	111	G	N3-C4-C5	5.31	131.25	128.60
1	A	1397	C	C2-N1-C1'	5.31	124.64	118.80
2	GB	767	U	C2-N1-C1'	-5.31	111.33	117.70
2	GB	1351	C	OP2-P-O3'	5.31	116.88	105.20
2	B	757	U	C5-C4-O4	5.31	129.08	125.90
2	GB	1633	G	N1-C6-O6	5.31	123.08	119.90
2	GB	34	C	C2-N3-C4	5.31	122.55	119.90
2	B	1310	G	N1-C2-N3	5.30	127.08	123.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1849	G	N3-C4-C5	5.30	131.25	128.60
2	B	1924	C	C6-N1-C2	-5.30	118.18	120.30
2	B	586	A	N1-C6-N6	5.30	121.78	118.60
2	B	2092	U	N3-C2-O2	-5.30	118.49	122.20
2	B	264	C	N1-C2-O2	5.30	122.08	118.90
2	B	673	C	N3-C2-O2	-5.30	118.19	121.90
2	B	1250	G	N1-C6-O6	5.30	123.08	119.90
2	GB	471	A	O5'-P-OP1	5.30	117.06	110.70
2	B	1982	C	C5-C4-N4	-5.30	116.49	120.20
2	B	2057	A	C2-N3-C4	-5.30	107.95	110.60
2	B	1992	G	P-O3'-C3'	5.30	126.06	119.70
2	GB	1903	G	N3-C4-C5	5.30	131.25	128.60
2	B	743	G	C2-N3-C4	-5.30	109.25	111.90
4	IA	52	G	N3-C4-N9	5.30	129.18	126.00
2	B	1819	A	N1-C6-N6	5.29	121.78	118.60
2	GB	2419	U	C5-C6-N1	5.29	125.35	122.70
2	B	1688	U	C2-N1-C1'	-5.29	111.35	117.70
3	C	88	C	C6-N1-C2	-5.29	118.18	120.30
2	B	1774	C	C6-N1-C2	5.29	122.42	120.30
1	FB	1432	G	N1-C6-O6	5.29	123.07	119.90
2	GB	1602	U	N1-C2-N3	5.29	118.07	114.90
1	FB	362	G	C8-N9-C4	-5.29	104.29	106.40
2	GB	248	G	N1-C6-O6	5.29	123.07	119.90
2	GB	701	G	N1-C6-O6	5.29	123.07	119.90
2	GB	1997	G	C8-N9-C4	5.29	108.51	106.40
2	B	242	G	N3-C4-C5	5.28	131.24	128.60
2	B	785	G	O5'-P-OP1	-5.28	100.94	105.70
2	B	1187	G	C6-C5-N7	-5.28	127.23	130.40
2	GB	187	G	N9-C4-C5	-5.28	103.29	105.40
2	GB	570	G	N9-C4-C5	5.28	107.51	105.40
2	B	684	G	N9-C4-C5	5.28	107.51	105.40
2	B	155	C	N1-C2-O2	5.28	122.07	118.90
2	B	2052	G	C5-C6-O6	-5.28	125.43	128.60
2	GB	579	G	C2-N3-C4	5.28	114.54	111.90
2	B	1021	A	N7-C8-N9	5.28	116.44	113.80
2	B	2318	G	C5-C6-O6	-5.28	125.43	128.60
2	B	165	U	N3-C2-O2	-5.28	118.51	122.20
2	B	383	U	C5-C6-N1	-5.28	120.06	122.70
2	B	2422	A	C8-N9-C4	5.28	107.91	105.80
2	B	2595	G	N3-C2-N2	-5.28	116.21	119.90
2	GB	2325	G	C8-N9-C4	-5.27	104.29	106.40
2	B	261	G	C2-N3-C4	-5.27	109.27	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	974(A)	G	N1-C6-O6	5.27	123.06	119.90
2	B	695	G	C5-C6-N1	-5.27	108.87	111.50
2	GB	2226	C	N3-C2-O2	-5.26	118.21	121.90
2	B	445	C	OP2-P-O3'	5.26	116.77	105.20
2	B	1272	A	O4'-C1'-N9	5.26	112.41	108.20
2	GB	757	U	N1-C2-N3	5.26	118.06	114.90
2	GB	757	U	N3-C2-O2	-5.26	118.52	122.20
2	GB	2714	G	O5'-P-OP2	5.26	117.01	110.70
2	B	265	A	C2-N3-C4	-5.26	107.97	110.60
2	B	2600	A	N9-C4-C5	5.26	107.90	105.80
2	GB	1022	G	N3-C2-N2	-5.26	116.22	119.90
2	GB	1951	U	C6-N1-C2	-5.25	117.85	121.00
2	B	2051	A	N1-C2-N3	5.25	131.93	129.30
2	GB	653	C	C6-N1-C2	-5.25	118.20	120.30
2	GB	2437	U	N3-C4-C5	-5.25	111.45	114.60
2	B	751	A	N1-C6-N6	-5.25	115.45	118.60
1	FB	858	G	C4-N9-C1'	5.25	133.32	126.50
2	B	1021	A	C5-N7-C8	-5.25	101.28	103.90
2	B	1906	G	N1-C6-O6	5.25	123.05	119.90
2	B	2002	G	C5-C6-O6	-5.25	125.45	128.60
2	B	2242	G	C4-C5-N7	-5.25	108.70	110.80
2	GB	1769	G	O5'-P-OP2	-5.25	100.98	105.70
2	B	391	G	C5-C6-N1	-5.25	108.88	111.50
2	GB	264	C	N3-C2-O2	-5.25	118.23	121.90
2	GB	1940	U	N3-C4-C5	-5.25	111.45	114.60
2	GB	2213	U	N3-C2-O2	-5.25	118.53	122.20
2	GB	2794	C	C5-C6-N1	5.25	123.62	121.00
1	A	1137	C	C6-N1-C2	-5.25	118.20	120.30
5	JB	182	LEU	CA-CB-CG	-5.25	103.24	115.30
2	GB	197	A	OP2-P-O3'	5.24	116.74	105.20
2	GB	242	G	C8-N9-C1'	5.24	133.82	127.00
2	GB	1823	G	N1-C6-O6	5.24	123.05	119.90
2	B	1022	G	N3-C2-N2	-5.24	116.23	119.90
2	GB	2435	A	C8-N9-C4	-5.24	103.70	105.80
2	B	1508	A	C8-N9-C4	-5.24	103.70	105.80
2	GB	1256	G	C8-N9-C1'	-5.24	120.19	127.00
2	GB	2213	U	C2-N1-C1'	5.24	123.99	117.70
2	GB	1535	U	N1-C2-O2	5.24	126.47	122.80
2	GB	929	G	C5-C6-N1	-5.24	108.88	111.50
1	A	972	C	C6-N1-C2	-5.24	118.21	120.30
2	B	187	G	C6-C5-N7	-5.24	127.26	130.40
1	FB	326	G	C5-C6-N1	-5.23	108.88	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	115	C	O5'-P-OP1	-5.23	100.99	105.70
2	GB	784	A	C5-C6-N6	5.23	127.89	123.70
2	GB	839	U	C5-C4-O4	5.23	129.04	125.90
2	B	1817	G	OP2-P-O3'	5.23	116.71	105.20
2	GB	736	C	C6-N1-C2	5.23	122.39	120.30
2	GB	2722	G	C4-N9-C1'	5.23	133.30	126.50
2	B	2715	C	N3-C4-C5	5.23	123.99	121.90
1	FB	1419	G	C5-C6-N1	-5.23	108.89	111.50
2	B	1841	U	C6-N1-C2	-5.23	117.86	121.00
2	GB	1965	C	C2-N1-C1'	-5.23	113.05	118.80
2	B	1382	G	N3-C4-C5	5.23	131.21	128.60
2	B	965	C	N3-C4-C5	-5.22	119.81	121.90
2	B	2274	A	N3-C4-C5	5.22	130.46	126.80
2	B	2433	A	N1-C6-N6	5.22	121.73	118.60
2	B	1568	G	N3-C4-N9	-5.22	122.87	126.00
2	B	2686	G	C6-C5-N7	-5.22	127.27	130.40
2	GB	2502	G	C6-C5-N7	-5.22	127.27	130.40
2	GB	979	G	C5-N7-C8	-5.22	101.69	104.30
2	B	2058	A	N9-C4-C5	5.21	107.89	105.80
1	FB	1478	C	C6-N1-C2	5.21	122.39	120.30
2	GB	1343	G	N3-C4-C5	-5.21	125.99	128.60
2	B	450	G	N3-C2-N2	-5.21	116.25	119.90
2	B	479	A	O4'-C1'-N9	5.21	112.37	108.20
2	B	685	A	O5'-P-OP1	-5.21	101.01	105.70
1	FB	58	C	C6-N1-C2	-5.21	118.22	120.30
2	GB	528	A	P-O3'-C3'	5.21	125.95	119.70
2	GB	1661	G	N3-C4-C5	5.21	131.21	128.60
2	GB	2010	G	N1-C6-O6	5.21	123.03	119.90
2	GB	2213	U	N1-C2-O2	5.21	126.45	122.80
2	GB	2447	G	C5-C6-O6	-5.21	125.47	128.60
2	B	116	C	C6-N1-C2	-5.21	118.22	120.30
2	GB	822	U	O4'-C1'-N1	5.21	112.37	108.20
1	FB	773	G	N1-C6-O6	5.21	123.02	119.90
1	A	1393	U	N3-C4-O4	5.20	123.04	119.40
2	B	1937	A	C8-N9-C4	5.20	107.88	105.80
2	GB	25	U	C6-N1-C2	-5.20	117.88	121.00
2	B	1772	G	C4-N9-C1'	-5.20	119.74	126.50
2	B	2571	C	C6-N1-C2	5.20	122.38	120.30
2	B	1613	G	OP1-P-O3'	5.20	116.64	105.20
1	FB	370	C	C6-N1-C2	5.20	122.38	120.30
1	A	111	G	N3-C4-N9	-5.20	122.88	126.00
2	B	2595	G	N7-C8-N9	-5.20	110.50	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	391	G	C5-C6-N1	-5.20	108.90	111.50
2	B	813	U	C5-C4-O4	5.19	129.02	125.90
1	A	1397	C	N3-C4-C5	-5.19	119.82	121.90
2	B	1371	G	C5-C6-N1	-5.19	108.90	111.50
2	B	1688	U	C6-N1-C1'	5.19	128.47	121.20
2	B	2082	A	C8-N9-C4	5.19	107.88	105.80
2	B	2499	C	C5-C4-N4	-5.19	116.57	120.20
1	FB	1417	G	C5-C6-N1	-5.19	108.90	111.50
2	GB	127	A	C8-N9-C4	5.19	107.88	105.80
2	GB	240	G	C5-C6-N1	-5.19	108.90	111.50
2	GB	1388	G	C8-N9-C4	5.19	108.48	106.40
2	B	2365	G	N3-C4-C5	-5.19	126.00	128.60
2	GB	944	G	N1-C6-O6	5.19	123.01	119.90
2	GB	1780	A	C8-N9-C4	5.19	107.88	105.80
2	B	861	A	OP2-P-O3'	5.19	116.61	105.20
2	B	1535	U	N1-C2-O2	5.19	126.43	122.80
2	B	144	C	C6-N1-C2	5.19	122.38	120.30
2	B	1622	G	N1-C6-O6	5.19	123.01	119.90
2	B	1697	G	C4-C5-N7	5.19	112.88	110.80
2	B	2249	U	C5-C6-N1	5.19	125.29	122.70
2	GB	1309	G	N1-C6-O6	5.19	123.01	119.90
2	GB	1632	A	C5-N7-C8	-5.19	101.31	103.90
2	B	1828	G	C8-N9-C4	-5.18	104.33	106.40
2	GB	228	A	C6-C5-N7	-5.18	128.67	132.30
2	GB	2870	C	C2-N1-C1'	5.18	124.50	118.80
2	B	228	A	N1-C6-N6	5.18	121.71	118.60
2	B	1984	G	N7-C8-N9	5.18	115.69	113.10
2	B	1597	A	N1-C6-N6	-5.18	115.49	118.60
2	GB	1957	C	N1-C2-O2	-5.18	115.79	118.90
2	GB	2029	G	C8-N9-C4	-5.18	104.33	106.40
2	GB	2522	U	C5-C6-N1	-5.18	120.11	122.70
2	GB	2549	G	OP1-P-O3'	5.18	116.60	105.20
2	GB	528	A	C5-C6-N1	-5.18	115.11	117.70
2	GB	2588	G	C5-C6-N1	-5.18	108.91	111.50
1	FB	775	G	N9-C4-C5	-5.18	103.33	105.40
2	B	1573	G	C4-N9-C1'	-5.17	119.77	126.50
2	B	945	A	OP2-P-O3'	5.17	116.58	105.20
2	B	2069	G	OP2-P-O3'	5.17	116.58	105.20
2	GB	2240	C	OP2-P-O3'	5.17	116.58	105.20
2	B	2213	U	N1-C2-O2	5.17	126.42	122.80
2	B	2499	C	C2-N1-C1'	5.17	124.49	118.80
2	GB	1772	G	C4-N9-C1'	-5.17	119.78	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	1154	G	N9-C4-C5	-5.17	103.33	105.40
2	B	455	C	N1-C2-O2	5.17	122.00	118.90
2	B	527	C	O4'-C1'-N1	5.17	112.33	108.20
2	B	1983	C	C5-C6-N1	-5.17	118.42	121.00
2	GB	2860	A	C8-N9-C4	5.17	107.87	105.80
2	B	778	G	C6-C5-N7	-5.17	127.30	130.40
2	GB	738	G	O4'-C1'-N9	-5.17	104.07	108.20
2	B	248	G	C2-N3-C4	-5.16	109.32	111.90
2	B	2595	G	C8-N9-C4	5.16	108.47	106.40
2	GB	776	G	C5-C6-N1	-5.16	108.92	111.50
2	B	1376	C	N3-C2-O2	5.16	125.51	121.90
2	B	2611	U	C6-N1-C2	-5.16	117.90	121.00
2	B	2265	U	N3-C2-O2	-5.16	118.59	122.20
2	GB	2321	G	C8-N9-C4	-5.16	104.34	106.40
1	A	1209	C	N1-C2-O2	5.16	122.00	118.90
1	FB	258	G	N1-C6-O6	5.16	123.00	119.90
2	GB	948	G	O5'-P-OP1	5.16	116.89	110.70
2	B	563	G	N1-C6-O6	5.16	122.99	119.90
2	B	2210	G	C4-C5-N7	-5.16	108.74	110.80
2	GB	1567	A	N1-C2-N3	5.16	131.88	129.30
2	B	693	C	C2-N3-C4	-5.15	117.32	119.90
2	B	1763	G	C8-N9-C4	5.15	108.46	106.40
2	B	2259	G	C4-C5-N7	5.15	112.86	110.80
2	GB	155	C	C6-N1-C2	-5.15	118.24	120.30
2	GB	734	A	C5-C6-N1	-5.15	115.12	117.70
2	B	669	G	O5'-P-OP2	-5.15	101.06	105.70
2	B	1838	C	N1-C2-N3	-5.15	115.59	119.20
2	B	2233	U	N1-C2-N3	5.15	117.99	114.90
2	GB	1602	U	N1-C2-O2	-5.15	119.20	122.80
2	B	653	C	N1-C2-O2	5.15	121.99	118.90
2	B	1403	C	O5'-P-OP2	-5.15	101.07	105.70
2	B	1891	G	C5-C6-N1	-5.15	108.93	111.50
2	GB	1204	A	N1-C6-N6	5.15	121.69	118.60
2	GB	2447	G	OP2-P-O3'	-5.15	93.88	105.20
2	B	2607	G	C6-C5-N7	-5.15	127.31	130.40
2	B	1673	U	C6-N1-C2	5.14	124.09	121.00
2	B	1902	C	N1-C2-O2	5.14	121.99	118.90
2	B	1934	C	O5'-P-OP2	-5.14	101.07	105.70
2	B	2683	C	N3-C4-C5	-5.14	119.84	121.90
2	GB	1849	G	N3-C4-C5	5.14	131.17	128.60
2	B	450	G	C8-N9-C1'	-5.14	120.31	127.00
2	B	573	G	C8-N9-C1'	-5.14	120.31	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	391	G	C4-N9-C1'	5.14	133.18	126.50
2	GB	2065	C	C5-C4-N4	-5.14	116.60	120.20
1	A	362	G	N7-C8-N9	5.14	115.67	113.10
2	B	683	C	C6-N1-C2	5.14	122.36	120.30
2	B	1969	A	N1-C6-N6	-5.14	115.52	118.60
2	GB	444	C	C6-N1-C2	5.14	122.36	120.30
2	GB	1790	C	O5'-P-OP2	5.14	116.87	110.70
2	GB	1404	C	N1-C2-O2	5.14	121.98	118.90
2	GB	372	G	N7-C8-N9	-5.13	110.53	113.10
2	GB	2249	U	C5-C6-N1	5.13	125.27	122.70
2	B	528	A	C5-C6-N1	-5.13	115.13	117.70
2	B	809	G	C4-N9-C1'	5.13	133.17	126.50
2	GB	1279	G	C5-C6-O6	5.13	131.68	128.60
2	B	1379	A	C8-N9-C4	5.13	107.85	105.80
1	FB	484	G	C4-N9-C1'	-5.13	119.84	126.50
1	FB	848	C	C5-C6-N1	5.13	123.56	121.00
2	GB	1187	G	C4-N9-C1'	5.12	133.16	126.50
1	A	1429	C	N3-C2-O2	-5.12	118.32	121.90
2	GB	1661	G	C8-N9-C4	5.12	108.45	106.40
2	B	2061	G	C4-C5-N7	5.12	112.85	110.80
2	B	330	A	N1-C2-N3	5.12	131.86	129.30
2	B	1381	G	C4-N9-C1'	5.12	133.15	126.50
2	GB	165	U	N3-C2-O2	-5.12	118.62	122.20
2	GB	573	G	C8-N9-C1'	-5.12	120.35	127.00
1	A	299	G	C5-C6-N1	-5.11	108.94	111.50
2	B	1673	U	N3-C4-C5	5.11	117.67	114.60
2	B	1793	C	C6-N1-C2	-5.11	118.25	120.30
2	GB	1790	C	O5'-P-OP1	-5.11	101.10	105.70
1	A	725	G	N7-C8-N9	5.11	115.66	113.10
2	B	1666	G	C4-N9-C1'	-5.11	119.85	126.50
2	B	459	U	O5'-P-OP2	-5.11	101.10	105.70
2	GB	1451	C	C6-N1-C2	5.11	122.34	120.30
2	GB	2488	A	N1-C6-N6	5.11	121.67	118.60
2	B	2249	U	N3-C4-O4	5.11	122.98	119.40
2	GB	1984	G	N3-C4-N9	5.11	129.06	126.00
2	B	1026	U	N1-C2-N3	-5.11	111.83	114.90
2	B	2870	C	C2-N1-C1'	5.11	124.42	118.80
2	GB	128	C	C6-N1-C2	5.11	122.34	120.30
2	GB	2431	U	N1-C2-N3	5.11	117.97	114.90
2	GB	193	U	C4-C5-C6	5.11	122.76	119.70
2	B	464	U	O5'-P-OP2	-5.10	101.11	105.70
2	B	2603	G	C6-C5-N7	-5.10	127.34	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	721	G	N1-C6-O6	5.10	122.96	119.90
2	B	1576	U	N1-C2-N3	5.10	117.96	114.90
2	GB	208	C	C6-N1-C2	5.10	122.34	120.30
2	GB	1620	G	C4-C5-N7	5.10	112.84	110.80
2	B	2068	U	C5-C6-N1	-5.10	120.15	122.70
2	GB	942	G	OP2-P-O3'	5.10	116.42	105.20
2	GB	2032	G	C5-C6-O6	-5.10	125.54	128.60
1	A	805	C	C4-C5-C6	-5.10	114.85	117.40
2	B	698	C	C6-N1-C2	5.10	122.34	120.30
2	B	1840	G	N1-C6-O6	5.10	122.96	119.90
2	B	2069	G	C4-C5-C6	5.10	121.86	118.80
2	B	2755	C	C5-C6-N1	5.10	123.55	121.00
2	B	1561	G	N1-C2-N2	5.09	120.78	116.20
2	B	2581	G	C5-C6-O6	5.09	131.66	128.60
2	GB	862	G	C8-N9-C4	-5.09	104.36	106.40
2	GB	1647	G	O4'-C1'-N9	-5.09	104.12	108.20
2	GB	1937	A	C8-N9-C4	5.09	107.84	105.80
2	B	481	G	O5'-P-OP2	-5.09	101.12	105.70
2	GB	1844	C	N3-C4-C5	5.09	123.94	121.90
2	B	1204	A	N1-C6-N6	5.09	121.66	118.60
2	B	1360	A	C8-N9-C4	5.09	107.84	105.80
2	GB	2326	C	C6-N1-C2	-5.09	118.26	120.30
2	B	464	U	N1-C2-N3	5.09	117.95	114.90
2	B	1314	C	OP2-P-O3'	5.09	116.40	105.20
2	B	2072	G	C8-N9-C4	-5.09	104.36	106.40
2	B	2267	A	C8-N9-C4	-5.09	103.76	105.80
2	B	1021	A	C8-N9-C4	-5.09	103.77	105.80
2	B	165	U	C2-N1-C1'	5.09	123.81	117.70
2	B	968	G	C5-C6-N1	-5.09	108.96	111.50
2	GB	579	G	C8-N9-C4	-5.09	104.36	106.40
2	GB	1979	C	C6-N1-C2	-5.09	118.27	120.30
2	GB	2318	G	N1-C6-O6	5.09	122.95	119.90
2	GB	2410	G	N1-C6-O6	5.09	122.95	119.90
2	GB	2866	U	C6-N1-C2	-5.09	117.95	121.00
2	B	785	G	O5'-P-OP2	5.08	116.80	110.70
2	GB	1033	U	N1-C2-O2	5.08	126.36	122.80
1	FB	281	G	N1-C6-O6	5.08	122.95	119.90
2	GB	706	A	C2-N3-C4	-5.08	108.06	110.60
2	GB	1697	G	C6-C5-N7	-5.08	127.35	130.40
2	GB	1891	G	C4-C5-C6	5.08	121.85	118.80
2	B	1982	C	C6-N1-C2	5.08	122.33	120.30
2	B	2685	G	C4-C5-N7	-5.08	108.77	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2686	G	N3-C4-N9	5.08	129.05	126.00
2	B	132	G	N1-C6-O6	5.08	122.95	119.90
2	B	731	C	N1-C2-N3	-5.08	115.64	119.20
2	B	2056	G	C5-N7-C8	-5.08	101.76	104.30
2	GB	1671	U	C5-C6-N1	5.08	125.24	122.70
2	B	242	G	C8-N9-C1'	5.08	133.60	127.00
2	B	784	A	N9-C4-C5	5.08	107.83	105.80
2	GB	2491	U	C6-N1-C2	5.08	124.05	121.00
2	B	738	G	O4'-C1'-N9	-5.07	104.14	108.20
2	B	1263	U	C5-C6-N1	-5.07	120.16	122.70
2	GB	1376	C	C5-C4-N4	-5.07	116.65	120.20
2	GB	1790	C	C5-C6-N1	-5.07	118.46	121.00
2	B	872	A	N1-C6-N6	-5.07	115.56	118.60
2	GB	2866	U	C2-N1-C1'	5.07	123.78	117.70
1	FB	82	U	C5-C6-N1	5.07	125.23	122.70
2	B	2010	G	C8-N9-C4	-5.07	104.37	106.40
2	B	665	C	C6-N1-C2	5.06	122.33	120.30
2	B	213	A	C8-N9-C4	5.06	107.83	105.80
1	A	1516	G	N1-C6-O6	-5.06	116.86	119.90
2	B	138	G	C5-N7-C8	-5.06	101.77	104.30
2	B	1353	A	OP2-P-O3'	5.06	116.33	105.20
2	GB	760	G	N1-C6-O6	5.06	122.94	119.90
2	GB	1154	G	N3-C4-N9	5.06	129.03	126.00
1	A	1075	C	C6-N1-C2	5.06	122.32	120.30
2	B	262	A	C5-C6-N6	-5.06	119.66	123.70
2	B	533	G	C4-N9-C1'	5.06	133.07	126.50
2	B	671	C	C5-C6-N1	-5.05	118.47	121.00
2	B	1763	G	N3-C4-C5	5.05	131.13	128.60
2	B	1779	U	OP1-P-O3'	5.05	116.32	105.20
2	GB	29	U	N3-C2-O2	-5.05	118.66	122.20
2	GB	1685	C	C6-N1-C2	5.05	122.32	120.30
2	GB	2087	G	N1-C6-O6	5.05	122.93	119.90
2	B	2501	C	OP2-P-O3'	5.05	116.31	105.20
2	GB	2516	G	C8-N9-C4	5.05	108.42	106.40
2	B	1578	U	C6-N1-C2	-5.05	117.97	121.00
1	A	800	G	OP2-P-O3'	5.05	116.30	105.20
2	B	1830	C	C5-C4-N4	-5.05	116.67	120.20
2	B	2775	A	N1-C6-N6	5.05	121.63	118.60
2	B	778	G	C5-C6-N1	-5.04	108.98	111.50
2	GB	140	A	N1-C6-N6	5.04	121.63	118.60
1	A	899	C	C6-N1-C2	5.04	122.32	120.30
2	GB	1967	C	C6-N1-C2	5.04	122.32	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	GB	750	A	N7-C8-N9	5.04	116.32	113.80
2	GB	2303	G	C5-C6-N1	-5.04	108.98	111.50
2	B	75	G	C8-N9-C4	-5.04	104.39	106.40
2	B	163	U	C5-C6-N1	5.04	125.22	122.70
2	B	563	G	C4-C5-N7	5.04	112.81	110.80
2	GB	1379	A	C8-N9-C4	5.04	107.82	105.80
2	GB	1678	G	C8-N9-C4	-5.04	104.39	106.40
2	B	1823	G	C4-C5-C6	5.04	121.82	118.80
2	GB	2249	U	C4-C5-C6	5.04	122.72	119.70
43	XC	79	LEU	CA-CB-CG	5.04	126.88	115.30
2	B	487	C	C5-C4-N4	-5.03	116.68	120.20
2	B	845	G	C4-C5-N7	5.03	112.81	110.80
2	GB	1256	G	C4-C5-N7	5.03	112.81	110.80
2	B	491	G	N3-C2-N2	-5.03	116.38	119.90
2	GB	933	A	O4'-C1'-N9	5.03	112.22	108.20
2	GB	2698	U	N3-C4-C5	-5.03	111.58	114.60
2	B	600	G	C8-N9-C4	5.03	108.41	106.40
2	GB	2318	G	C6-C5-N7	-5.03	127.38	130.40
2	B	391	G	O4'-C1'-N9	-5.03	104.18	108.20
2	B	776	G	O4'-C1'-N9	-5.03	104.18	108.20
2	GB	1999	C	C6-N1-C2	5.03	122.31	120.30
2	B	1187	G	C8-N9-C4	-5.03	104.39	106.40
2	GB	1356	G	C5-C6-N1	-5.03	108.99	111.50
2	B	751	A	C5-C6-N6	5.02	127.72	123.70
2	GB	55	G	N3-C2-N2	-5.02	116.38	119.90
2	B	780	G	C8-N9-C4	-5.02	104.39	106.40
2	B	2276	G	N1-C6-O6	5.02	122.91	119.90
2	B	2317	C	N3-C2-O2	-5.02	118.38	121.90
2	B	541	C	C6-N1-C2	-5.02	118.29	120.30
1	A	1392	G	C6-C5-N7	-5.02	127.39	130.40
2	B	200	U	C5-C4-O4	5.02	128.91	125.90
2	B	333	G	C4-N9-C1'	5.02	133.02	126.50
2	B	2430	A	C8-N9-C1'	-5.02	118.67	127.70
2	GB	528	A	N1-C6-N6	5.02	121.61	118.60
3	HB	65	C	N1-C2-O2	5.02	121.91	118.90
2	GB	181	A	N1-C6-N6	-5.01	115.59	118.60
2	GB	784	A	O4'-C1'-N9	5.01	112.21	108.20
2	GB	2509	G	C5-C6-O6	-5.01	125.59	128.60
2	B	1320	C	N3-C4-N4	5.01	121.51	118.00
2	B	1617	C	C2-N1-C1'	-5.01	113.29	118.80
2	B	2614	A	C5-C6-N1	5.01	120.21	117.70
2	B	731	C	C4-C5-C6	-5.01	114.89	117.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	FB	1432	G	C5-C6-N1	-5.01	109.00	111.50
2	GB	728	G	N9-C4-C5	-5.01	103.40	105.40
2	GB	1632	A	N9-C4-C5	-5.01	103.80	105.80
2	GB	2053	G	C5-C6-O6	-5.01	125.59	128.60
2	GB	974(A)	G	C6-C5-N7	-5.01	127.39	130.40
2	B	673	C	N1-C2-O2	5.01	121.90	118.90
2	B	2274	A	C6-N1-C2	5.01	121.60	118.60
2	GB	949	C	C6-N1-C2	-5.01	118.30	120.30
2	B	1957	C	C6-N1-C2	5.00	122.30	120.30
2	GB	1559	G	N3-C4-C5	5.00	131.10	128.60
2	B	534	U	C5-C4-O4	5.00	128.90	125.90
2	B	1351	C	OP2-P-O3'	5.00	116.20	105.20
2	B	1355	G	C8-N9-C4	-5.00	104.40	106.40
2	GB	2497	A	C4-C5-C6	-5.00	114.50	117.00
2	GB	2643	G	N9-C4-C5	-5.00	103.40	105.40

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
21	U	84	ALA	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32394	0	16367	824	0
1	FB	32394	0	16367	817	0
2	B	62031	0	31273	1297	0
2	GB	62031	0	31275	1270	1
3	C	2576	0	1305	62	0
3	HB	2576	0	1305	63	0
4	D	1642	0	841	47	0
4	IA	1642	0	841	44	0
4	IB	1642	0	841	46	0
4	NC	1642	0	841	41	0
5	E	2145	0	2234	111	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	JB	2145	0	2234	105	0
6	F	1563	0	1629	90	0
6	KB	1563	0	1629	88	0
7	G	1586	0	1632	110	0
7	LB	1586	0	1632	105	0
8	H	1471	0	1526	90	0
8	MB	1471	0	1526	86	1
9	I	1330	0	1407	63	0
9	NB	1330	0	1407	58	0
10	J	1137	0	1225	56	0
10	OB	1137	0	1225	55	0
11	K	1121	0	1195	57	0
11	PB	1121	0	1195	54	0
12	L	932	0	994	75	0
12	QB	932	0	994	72	0
13	M	1145	0	1228	56	0
13	RB	1145	0	1228	47	0
14	N	1121	0	1179	64	0
14	SB	1121	0	1179	59	0
15	O	968	0	1033	33	0
15	TB	968	0	1033	38	0
16	P	877	0	938	48	0
16	UB	877	0	938	48	0
17	Q	1143	0	1211	81	0
17	VB	1143	0	1211	67	0
18	R	964	0	1022	61	0
18	WB	964	0	1022	55	0
19	S	779	0	852	28	0
19	XB	779	0	852	25	0
20	T	890	0	951	37	0
20	YB	890	0	951	40	0
21	U	750	0	814	40	0
21	ZB	750	0	814	37	0
22	AC	814	0	907	40	0
22	V	814	0	907	40	0
23	BC	1495	0	1521	80	0
23	W	1495	0	1521	90	0
24	CC	662	0	688	40	0
24	X	662	0	688	38	0
25	DC	761	0	837	52	0
25	Y	761	0	837	46	0
26	EC	592	0	654	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
26	Z	592	0	654	33	0
27	AA	477	0	529	27	0
27	FC	477	0	529	25	0
28	BA	552	0	537	31	0
28	GC	552	0	537	30	0
29	CA	460	0	481	32	0
29	HC	460	0	482	30	0
30	DA	453	0	477	15	0
30	IC	453	0	477	13	0
31	EA	418	0	467	24	0
31	JC	418	0	467	30	0
32	FA	517	0	582	31	0
32	KC	517	0	582	28	0
33	GA	307	0	337	11	0
33	LC	307	0	337	9	0
34	HA	220	0	108	10	0
34	MC	220	0	108	10	0
35	JA	850	0	816	38	0
35	KA	455	0	444	24	0
35	OC	850	0	816	38	0
35	PC	455	0	444	26	0
36	LA	1900	0	1951	101	0
36	QC	1900	0	1951	96	0
37	MA	1612	0	1677	91	0
37	RC	1612	0	1677	80	0
38	NA	1703	0	1767	94	0
38	SC	1703	0	1767	91	0
39	OA	1155	0	1213	64	0
39	TC	1155	0	1213	75	0
40	PA	843	0	857	35	0
40	UC	843	0	857	37	0
41	QA	1257	0	1296	62	0
41	VC	1257	0	1296	61	0
42	RA	1116	0	1177	61	0
42	WC	1116	0	1177	61	0
43	SA	1011	0	1043	61	0
43	XC	1011	0	1043	59	0
44	TA	794	0	840	37	0
44	YC	794	0	840	38	0
45	UA	864	0	881	39	0
45	ZC	864	0	881	45	0
46	AD	958	0	1047	54	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
46	VA	958	0	1047	55	0
47	BD	933	0	992	62	0
47	WA	933	0	992	64	0
48	CD	492	0	533	37	0
48	XA	492	0	533	39	0
49	DD	734	0	771	41	0
49	YA	734	0	771	37	0
50	ED	700	0	720	33	0
50	ZA	700	0	720	28	0
51	AB	823	0	893	40	0
51	FD	823	0	893	40	0
52	BB	574	0	644	32	0
52	GD	574	0	644	31	0
53	CB	665	0	686	43	0
53	HD	665	0	686	43	0
54	DB	762	0	859	43	0
54	ID	762	0	859	41	0
55	EB	208	0	221	16	0
55	JD	208	0	221	16	0
56	A	183	0	0	0	0
56	AA	1	0	0	0	0
56	AB	2	0	0	0	0
56	AC	1	0	0	0	0
56	AD	4	0	0	0	0
56	B	433	0	0	0	0
56	BB	1	0	0	0	0
56	BC	1	0	0	0	0
56	BD	1	0	0	0	0
56	C	22	0	0	0	0
56	CA	1	0	0	0	0
56	CB	1	0	0	0	0
56	CC	1	0	0	0	0
56	D	5	0	0	0	0
56	DC	1	0	0	0	0
56	DD	1	0	0	0	0
56	E	6	0	0	0	0
56	EA	1	0	0	0	0
56	ED	1	0	0	0	0
56	F	4	0	0	0	0
56	FA	1	0	0	0	0
56	FB	194	0	0	0	0
56	G	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	GB	402	0	0	0	0
56	GC	1	0	0	0	0
56	H	2	0	0	0	0
56	HA	3	0	0	0	0
56	HB	20	0	0	0	0
56	HD	1	0	0	0	0
56	IA	9	0	0	0	0
56	IB	2	0	0	0	0
56	IC	1	0	0	0	0
56	J	1	0	0	0	0
56	JA	1	0	0	0	0
56	JB	5	0	0	0	0
56	JC	1	0	0	0	0
56	K	4	0	0	0	0
56	KB	2	0	0	0	0
56	KC	1	0	0	0	0
56	L	3	0	0	0	0
56	LA	1	0	0	0	0
56	LB	4	0	0	0	0
56	M	3	0	0	0	0
56	MA	6	0	0	0	0
56	MC	3	0	0	0	0
56	NA	2	0	0	0	0
56	NB	1	0	0	0	0
56	NC	10	0	0	0	0
56	O	2	0	0	0	0
56	OA	4	0	0	0	0
56	OB	1	0	0	0	0
56	OC	1	0	0	0	0
56	PA	3	0	0	0	0
56	PB	2	0	0	0	0
56	PC	1	0	0	0	0
56	Q	1	0	0	0	0
56	QA	1	0	0	0	0
56	QB	2	0	0	0	0
56	QC	3	0	0	0	0
56	R	1	0	0	0	0
56	RB	3	0	0	0	0
56	RC	2	0	0	0	0
56	S	1	0	0	0	0
56	SA	1	0	0	0	0
56	SB	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	SC	4	0	0	0	0
56	T	2	0	0	0	0
56	TB	1	0	0	0	0
56	TC	3	0	0	0	0
56	U	1	0	0	0	0
56	UA	1	0	0	0	0
56	UB	4	0	0	0	0
56	UC	3	0	0	0	0
56	V	2	0	0	0	0
56	VA	2	0	0	0	0
56	VB	3	0	0	0	0
56	VC	1	0	0	0	0
56	WC	1	0	0	0	0
56	XB	2	0	0	0	0
56	Y	3	0	0	0	0
56	YA	3	0	0	0	0
56	Z	1	0	0	0	0
56	ZB	2	0	0	0	0
56	ZC	1	0	0	0	0
57	B	30	0	24	4	0
57	GB	30	0	24	7	0
58	AC	1	0	0	0	0
58	BA	1	0	0	0	0
58	CA	1	0	0	0	0
58	DA	1	0	0	0	0
58	GA	1	0	0	0	0
58	GC	1	0	0	0	0
58	HC	1	0	0	0	0
58	IC	1	0	0	0	0
58	LC	1	0	0	0	0
58	V	1	0	0	0	0
All	All	298186	0	202351	8489	1

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 18.

All (8489) 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)
38:SC:18:LYS:NZ	38:SC:26:CYS:SG	2.02	1.33
38:SC:18:LYS:NZ	38:SC:31:CYS:SG	2.07	1.27

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:NA:18:LYS:NZ	38:NA:26:CYS:SG	2.09	1.26
3:C:90:C:OP2	14:N:16:ARG:NH1	1.77	1.18
1:FB:9:G:OP2	39:TC:121:LYS:NZ	1.76	1.16
1:A:9:G:OP2	39:OA:121:LYS:NZ	1.79	1.15
2:GB:321:G:OP2	7:LB:135:LYS:NZ	1.81	1.14
38:NA:18:LYS:NZ	38:NA:31:CYS:SG	2.21	1.14
25:Y:47:GLN:HA	25:Y:47:GLN:HE21	1.15	1.12
38:NA:12:CYS:SG	38:NA:18:LYS:NZ	2.22	1.12
5:E:43:ARG:HG3	5:E:43:ARG:HH11	1.16	1.11
3:HB:90:C:OP2	14:SB:16:ARG:NH1	1.82	1.11
2:GB:606:U:OP2	7:LB:104:LYS:NZ	1.84	1.10
2:B:2313:C:OP2	8:H:74:LYS:NZ	1.85	1.09
45:UA:120:ARG:HH12	45:UA:126:ARG:NH1	1.52	1.07
26:EC:56:GLN:HA	26:EC:59:ARG:HH12	1.19	1.07
25:DC:47:GLN:HA	25:DC:47:GLN:HE21	1.17	1.06
34:HA:22:A:OP2	35:JA:195:ARG:NH1	1.89	1.06
7:G:72:ARG:HG3	7:G:72:ARG:HH11	1.19	1.05
2:GB:2313:C:OP2	8:MB:74:LYS:NZ	1.89	1.05
5:JB:43:ARG:HG3	5:JB:43:ARG:HH11	1.21	1.04
7:LB:72:ARG:HH11	7:LB:72:ARG:HG3	1.18	1.03
26:Z:56:GLN:HA	26:Z:59:ARG:HH12	1.23	1.01
38:SC:12:CYS:SG	38:SC:18:LYS:NZ	2.33	1.01
2:B:321:G:OP2	7:G:135:LYS:NZ	1.93	1.00
7:LB:64:ILE:HD11	7:LB:75:HIS:HB2	1.43	0.99
7:G:64:ILE:HD11	7:G:75:HIS:HB2	1.44	0.98
45:ZC:120:ARG:HH12	45:ZC:126:ARG:NH1	1.61	0.97
9:I:3:ARG:HB2	9:I:3:ARG:HH11	1.26	0.97
2:GB:819:A:OP2	2:GB:1187:G:N2	1.97	0.96
29:CA:16:ARG:NH1	29:CA:17:ASP:OD1	1.97	0.96
23:BC:8:TYR:HE2	23:BC:23:LYS:HZ3	1.10	0.96
43:XC:36:TYR:HE1	43:XC:70:LYS:HZ1	1.15	0.95
25:Y:3:LYS:HD3	25:Y:61:ARG:HH12	1.32	0.95
2:B:606:U:OP2	7:G:104:LYS:NZ	1.99	0.95
2:GB:2347:C:OP1	30:IC:38:LYS:NZ	1.98	0.95
43:SA:110:GLU:OE1	43:SA:113:LYS:NZ	2.01	0.94
2:B:1359:A:N1	2:B:1372:U:N3	2.15	0.94
1:FB:1309:G:OP2	47:BD:99:ARG:NE	2.01	0.94
2:GB:1359:A:N1	2:GB:1372:U:N3	2.16	0.94
43:XC:110:GLU:OE1	43:XC:113:LYS:NZ	2.00	0.94
1:A:974:A:OP2	48:XA:29:ARG:NH2	1.99	0.93
37:MA:35:GLU:OE1	37:MA:97:LYS:NZ	2.02	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2378:A:H4'	16:P:23:ARG:HH11	1.33	0.93
1:FB:974:A:OP2	48:CD:29:ARG:NH2	2.00	0.92
23:W:8:TYR:HE2	23:W:23:LYS:HZ3	1.02	0.92
29:HC:16:ARG:NH1	29:HC:17:ASP:OD1	2.02	0.92
2:B:2285:C:OP2	30:DA:6:ARG:NH1	2.03	0.92
16:P:13:ARG:HG2	16:P:13:ARG:HH11	1.34	0.92
36:QC:121:LEU:HB3	36:QC:127:ILE:HG12	1.50	0.92
36:LA:121:LEU:HB3	36:LA:127:ILE:HG12	1.50	0.92
9:NB:3:ARG:HB2	9:NB:3:ARG:HH11	1.34	0.91
1:A:411:A:OP1	38:NA:30:LYS:NZ	2.02	0.91
2:GB:1566:A:OP1	5:JB:211:ARG:NH1	2.03	0.91
6:KB:36:ARG:NH1	6:KB:85:ASN:OD1	2.04	0.91
2:B:2347:C:OP1	30:DA:38:LYS:NZ	2.03	0.91
18:WB:11:ARG:HH11	18:WB:11:ARG:HG3	1.35	0.91
1:A:509:A:H5'	38:NA:55:ALA:HB2	1.51	0.91
2:GB:1952:A:OP1	12:QB:44:LYS:NZ	2.03	0.91
2:B:154:G:H3'	2:B:154(A):C:H4'	1.53	0.91
12:QB:66:LYS:HB2	12:QB:82:ASN:HD21	1.36	0.91
16:UB:13:ARG:HH11	16:UB:13:ARG:HG2	1.36	0.91
7:LB:165:ARG:HH11	7:LB:165:ARG:HG3	1.33	0.90
2:B:1952:A:OP1	12:L:44:LYS:NZ	2.02	0.90
28:GC:58:ARG:HH21	47:BD:80:ARG:HH12	1.15	0.90
1:FB:504:C:H41	46:AD:115:LYS:HZ1	1.19	0.90
1:FB:1240:U:H4'	1:FB:1241:G:OP2	1.69	0.90
18:R:11:ARG:HH11	18:R:11:ARG:HG3	1.37	0.90
2:GB:154:G:H3'	2:GB:154(A):C:H4'	1.53	0.90
2:B:819:A:OP2	2:B:1187:G:N2	2.05	0.90
43:SA:36:TYR:HE1	43:SA:70:LYS:HZ2	1.12	0.90
1:A:1309:G:OP2	47:WA:99:ARG:NE	2.03	0.90
10:J:104:GLN:O	10:J:105:HIS:ND1	2.05	0.89
2:B:993:G:OP1	18:R:50:ARG:NH2	2.06	0.89
9:I:3:ARG:HB2	9:I:3:ARG:NH1	1.88	0.89
1:A:1240:U:H4'	1:A:1241:G:OP2	1.68	0.89
4:IA:33:U:OP2	43:SA:128:ARG:NH2	2.03	0.89
2:GB:2378:A:H4'	16:UB:23:ARG:HH11	1.36	0.89
2:GB:847:U:O4	2:GB:933:A:N6	2.06	0.89
2:B:1566:A:OP1	5:E:211:ARG:NH1	2.05	0.89
12:QB:71:ARG:HH12	12:QB:104:ARG:HB3	1.35	0.89
2:B:847:U:O4	2:B:933:A:N6	2.06	0.88
24:X:18:ALA:HB3	24:X:20:ARG:NH1	1.89	0.88
2:B:2164:C:OP2	2:B:2165:G:N2	2.07	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:1304:G:N2	1:FB:1332:A:OP2	2.06	0.87
25:DC:3:LYS:HD3	25:DC:61:ARG:HH12	1.37	0.87
40:UC:94:GLN:HG3	52:GD:32:ARG:HH11	1.38	0.87
40:PA:94:GLN:HG3	52:BB:32:ARG:HH11	1.39	0.87
2:GB:2285:C:OP2	30:IC:6:ARG:NH1	2.06	0.87
12:L:66:LYS:HB2	12:L:82:ASN:HD21	1.38	0.86
1:FB:1240:U:O2'	41:VC:32:ARG:NH1	2.08	0.86
1:A:1304:G:N2	1:A:1332:A:OP2	2.05	0.86
24:CC:18:ALA:HB3	24:CC:20:ARG:NH1	1.89	0.86
15:TB:103:ARG:NH1	15:TB:108:GLY:O	2.08	0.86
4:NC:33:U:OP2	43:XC:128:ARG:NH2	2.07	0.86
37:RC:35:GLU:OE1	37:RC:97:LYS:NZ	2.07	0.86
3:C:10:C:O2	3:C:110:G:N2	2.08	0.86
1:A:1240:U:O2'	41:QA:32:ARG:NH1	2.08	0.86
1:A:177:C:OP1	54:DB:65:LYS:NZ	2.09	0.85
2:B:1264:G:OP1	29:CA:19:ARG:NH2	2.08	0.85
1:FB:177:C:OP1	54:ID:65:LYS:NZ	2.08	0.85
2:GB:430:G:H5"	2:GB:431:U:OP2	1.75	0.85
23:BC:98:MET:HE1	23:BC:133:ILE:HG23	1.59	0.85
2:B:7:G:N2	2:B:2897:U:O4	2.09	0.85
7:G:165:ARG:HH11	7:G:165:ARG:HG3	1.40	0.85
9:I:149:ARG:NH1	9:I:167:GLU:OE2	2.10	0.85
6:F:36:ARG:NH1	6:F:85:ASN:OD1	2.10	0.85
1:FB:1077:G:N2	1:FB:1080:A:OP2	2.09	0.84
2:GB:1264:G:OP1	29:HC:19:ARG:NH2	2.10	0.84
2:B:1920:4OC:HM23	2:B:1921:G:H5'	1.56	0.84
2:GB:1093:G:N2	2:GB:1097:U:OP2	2.09	0.84
5:JB:43:ARG:HG3	5:JB:43:ARG:NH1	1.86	0.84
9:NB:11:VAL:HG21	9:NB:50:VAL:HG23	1.59	0.84
1:FB:993:G:H2'	1:FB:995:C:H41	1.41	0.84
1:FB:1256:A:OP1	37:RC:26:LYS:NZ	2.09	0.84
2:GB:1434:A:H61	2:GB:1558:A:H62	1.26	0.84
11:PB:70:LYS:HZ3	11:PB:72:TYR:HE1	1.23	0.84
9:NB:149:ARG:NH1	9:NB:167:GLU:OE2	2.11	0.84
1:A:1077:G:N2	1:A:1080:A:OP2	2.11	0.84
3:C:105:G:H5'	23:W:31:ARG:HB3	1.59	0.84
47:WA:14:ARG:HG2	47:WA:44:ARG:NH1	1.92	0.84
45:ZC:108:ILE:HD12	52:GD:87:ARG:HH11	1.42	0.84
2:GB:1169:G:H1	2:GB:1180:C:H42	1.25	0.84
25:DC:47:GLN:HA	25:DC:47:GLN:NE2	1.93	0.84
1:FB:1086:U:H3	1:FB:1099:G:H22	1.25	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:NB:3:ARG:HB2	9:NB:3:ARG:NH1	1.92	0.83
44:YC:50:ILE:HA	44:YC:60:ARG:HB3	1.61	0.83
1:A:971:G:N2	1:A:1363:A:OP2	2.10	0.83
2:GB:2164:C:OP2	2:GB:2165:G:N2	2.11	0.83
43:XC:112:LYS:NZ	43:XC:113:LYS:O	2.10	0.83
52:BB:56:THR:HB	52:BB:58:LEU:HD23	1.60	0.83
12:L:71:ARG:HH12	12:L:104:ARG:HB3	1.41	0.83
52:GD:56:THR:HB	52:GD:58:LEU:HD23	1.59	0.83
1:A:316:G:OP2	1:A:351:G:O2'	1.97	0.83
1:A:993:G:H2'	1:A:995:C:H41	1.41	0.83
2:B:1169:G:H1	2:B:1180:C:H42	1.26	0.83
1:FB:186(C):C:H42	1:FB:191(E):G:H1	1.27	0.83
54:DB:57:ARG:NH1	54:DB:102:GLY:HA3	1.94	0.83
3:HB:105:G:H5'	23:BC:31:ARG:HB3	1.60	0.83
54:ID:57:ARG:NH1	54:ID:102:GLY:HA3	1.92	0.83
2:GB:2728:U:H5'	12:QB:70:LYS:HZ1	1.43	0.83
11:PB:43:THR:HG23	18:WB:64:ARG:HH11	1.44	0.83
26:EC:56:GLN:HA	26:EC:59:ARG:NH1	1.92	0.83
1:A:345:C:H3'	17:Q:41:ARG:HH12	1.41	0.82
1:FB:504:C:H41	46:AD:115:LYS:NZ	1.77	0.82
10:OB:104:GLN:HG2	10:OB:105:HIS:CE1	2.14	0.82
1:A:504:C:H41	46:VA:115:LYS:HZ1	1.24	0.82
2:GB:7:G:N2	2:GB:2897:U:O4	2.12	0.82
1:A:1086:U:H3	1:A:1099:G:H22	1.24	0.82
5:E:20:ASP:OD2	5:E:21:PHE:N	2.13	0.82
2:B:1434:A:H61	2:B:1558:A:H62	1.26	0.82
44:TA:50:ILE:HA	44:TA:60:ARG:HB3	1.61	0.82
6:KB:47:VAL:HG11	6:KB:86:PRO:HD2	1.62	0.82
2:B:1022:G:H22	2:B:1142(B):A:H2	1.27	0.82
3:C:12:C:N3	24:X:74:ARG:NH2	2.28	0.82
5:JB:217:ARG:HG2	5:JB:217:ARG:HH11	1.44	0.82
3:C:31:C:O2	3:C:53:A:N6	2.12	0.82
2:GB:662:G:OP1	13:RB:16:ARG:NH1	2.12	0.82
17:VB:64:ARG:HH12	17:VB:103:ARG:HG2	1.42	0.82
43:SA:112:LYS:NZ	43:SA:113:LYS:O	2.12	0.82
1:FB:689:C:HO2'	1:FB:705:U:HO2'	1.24	0.82
1:FB:971:G:N2	1:FB:1363:A:OP2	2.12	0.82
1:A:652:U:O4	1:A:752:G:O2'	1.99	0.81
1:FB:652:U:O4	1:FB:752:G:O2'	1.99	0.81
2:B:2260:C:O2	2:B:2280:G:N2	2.10	0.81
5:E:217:ARG:HG2	5:E:217:ARG:HH11	1.43	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:43:THR:HG23	18:R:64:ARG:HH11	1.43	0.81
14:N:85:LYS:HG2	24:X:7:LEU:HB3	1.61	0.81
17:VB:64:ARG:HH11	17:VB:64:ARG:HG3	1.43	0.81
11:K:70:LYS:HZ3	11:K:72:TYR:HE1	1.27	0.81
34:HA:21:A:H62	35:JA:198:THR:HG1	1.26	0.81
4:D:74:C:H4'	25:Y:23:LYS:HB2	1.62	0.81
41:QA:79:ARG:HD2	41:QA:80:VAL:H	1.45	0.81
3:HB:31:C:O2	3:HB:53:A:N6	2.14	0.81
5:E:85:ASP:OD2	5:E:88:ARG:NH1	2.14	0.81
2:GB:993:G:OP1	18:WB:50:ARG:NH2	2.12	0.81
37:RC:91:LEU:HD23	37:RC:99:VAL:HB	1.63	0.81
47:BD:14:ARG:HG2	47:BD:44:ARG:NH1	1.95	0.80
1:A:1309:G:H22	1:A:1329:A:H1'	1.45	0.80
23:W:98:MET:HE1	23:W:133:ILE:HG23	1.64	0.80
36:LA:178:ARG:NH1	36:LA:196:LEU:O	2.14	0.80
24:X:37:LEU:HD21	24:X:61:ALA:HB2	1.63	0.80
2:GB:1920:4OC:HM23	2:GB:1921:G:H5'	1.63	0.80
28:GC:58:ARG:HD2	53:HD:67:VAL:HB	1.63	0.80
38:NA:175:SER:HB3	38:NA:184:LYS:HB3	1.62	0.80
2:GB:308:G:O2'	22:AC:19:LYS:NZ	2.15	0.80
10:J:104:GLN:C	10:J:105:HIS:HD1	1.84	0.80
1:A:563:A:O2'	1:A:564:C:OP2	1.99	0.80
2:B:1093:G:N2	2:B:1097:U:OP2	2.14	0.80
6:F:47:VAL:HG11	6:F:86:PRO:HD2	1.65	0.80
36:LA:84:GLU:HB3	36:LA:219:VAL:HG11	1.63	0.80
1:FB:1309:G:H22	1:FB:1329:A:H1'	1.47	0.80
1:FB:1338:G:H21	4:NC:41:C:H1'	1.47	0.80
41:VC:79:ARG:HD2	41:VC:80:VAL:H	1.46	0.80
2:B:2210:G:H3'	2:B:2211:G:C8	2.16	0.79
9:I:11:VAL:HG21	9:I:50:VAL:HG23	1.62	0.79
28:BA:33:VAL:O	47:WA:57:ARG:NH1	2.15	0.79
45:UA:108:ILE:HD12	52:BB:87:ARG:HH11	1.45	0.79
1:FB:902:G:H2'	1:FB:903:G:H8	1.47	0.79
3:HB:10:C:O2	3:HB:110:G:N2	2.14	0.79
5:JB:85:ASP:OD2	5:JB:88:ARG:NH1	2.15	0.79
6:KB:44:TYR:OH	6:KB:80:GLU:OE2	1.98	0.79
1:FB:563:A:O2'	1:FB:564:C:OP2	1.98	0.79
1:A:533:A:O2'	1:A:535:A:OP2	1.99	0.79
1:FB:147:G:H1	1:FB:175:C:H42	1.30	0.79
48:XA:27:CYS:SG	48:XA:28:GLY:N	2.54	0.79
44:YC:48:THR:HA	44:YC:62:HIS:HB3	1.64	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:147:G:H1	1:A:175:C:H42	1.29	0.79
2:B:2810:A:N6	2:B:2891:G:O2'	2.14	0.79
1:A:1256:A:OP1	37:MA:26:LYS:NZ	2.16	0.79
17:Q:64:ARG:HH11	17:Q:64:ARG:HG3	1.45	0.79
2:GB:1798:U:H5'	5:JB:259:THR:HG22	1.64	0.79
11:K:70:LYS:NZ	11:K:72:TYR:HE1	1.81	0.79
1:A:1110:A:H5"	1:A:1111:A:OP2	1.83	0.78
2:B:430:G:H5"	2:B:431:U:OP2	1.83	0.78
37:MA:91:LEU:HD23	37:MA:99:VAL:HB	1.64	0.78
43:XC:97:LYS:NZ	43:XC:102:LEU:O	2.16	0.78
2:GB:2210:G:H3'	2:GB:2211:G:C8	2.18	0.78
4:IB:8:4SU:S4	4:IB:14:A:N7	2.56	0.78
1:A:1264:C:H2'	1:A:1265:G:H8	1.47	0.78
2:GB:184:C:H2'	2:GB:185:U:H6	1.47	0.78
2:GB:2305:A:H5"	8:MB:134:GLY:HA3	1.65	0.78
36:QC:74:LYS:HB3	36:QC:74:LYS:HZ2	1.49	0.78
3:C:15:A:H3'	3:C:16:G:H8	1.47	0.78
16:P:85:VAL:HB	16:P:112:PHE:HB3	1.66	0.78
26:Z:56:GLN:HA	26:Z:59:ARG:NH1	1.97	0.78
4:IA:9:G:O2'	4:IA:10:G:N7	2.16	0.78
16:P:42:ASP:OD2	16:P:42:ASP:N	2.16	0.78
2:GB:1022:G:H22	2:GB:1142(B):A:H2	1.26	0.78
38:SC:57:ARG:HH12	39:TC:107:ARG:NH1	1.81	0.78
5:E:133:LEU:HA	5:E:136:ILE:HD12	1.66	0.78
25:Y:47:GLN:HA	25:Y:47:GLN:NE2	1.96	0.78
1:FB:512:U:OP1	38:SC:46:LYS:NZ	2.16	0.78
9:NB:126:PRO:HG2	9:NB:130:ARG:HH12	1.49	0.78
39:TC:50:GLU:OE2	39:TC:51:VAL:N	2.15	0.78
1:A:949:A:H1'	1:A:1364:U:H3	1.49	0.78
2:GB:184:C:H2'	2:GB:185:U:C6	2.19	0.78
36:QC:84:GLU:HB3	36:QC:219:VAL:HG11	1.64	0.78
2:B:978:G:H5"	2:B:979:G:OP2	1.84	0.78
2:GB:2260:C:O2	2:GB:2280:G:N2	2.14	0.78
1:A:186(C):C:H42	1:A:191(E):G:H1	1.29	0.78
2:B:190:A:OP2	25:Y:39:LYS:NZ	2.17	0.78
2:B:270(P):U:O2	10:J:52:ARG:NH1	2.17	0.78
16:UB:42:ASP:OD2	16:UB:42:ASP:N	2.16	0.78
4:NC:9:G:O2'	4:NC:10:G:N7	2.16	0.78
17:Q:64:ARG:HH12	17:Q:103:ARG:HG2	1.47	0.78
17:Q:108:ARG:HG2	17:Q:112:ARG:HH12	1.49	0.78
23:W:72:ARG:HA	23:W:72:ARG:HH11	1.47	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:509:A:H5'	38:SC:55:ALA:HB2	1.66	0.78
1:FB:1124:G:N7	1:FB:1145:C:O2'	2.15	0.78
2:GB:2168:G:N2	2:GB:2171:A:OP2	2.17	0.78
14:SB:82:ARG:HE	24:CC:4:LYS:HG3	1.50	0.77
7:G:182:ASN:ND2	7:G:185:ASP:OD2	2.16	0.77
2:GB:296:C:O3'	22:AC:95:LYS:NZ	2.17	0.77
10:J:104:GLN:HG2	10:J:105:HIS:CE1	2.18	0.77
1:FB:1264:C:H2'	1:FB:1265:G:H8	1.49	0.77
14:SB:85:LYS:HG2	24:CC:7:LEU:HB3	1.67	0.77
1:A:1022:G:H2'	1:A:1023:G:H4'	1.66	0.77
38:NA:141:ARG:NH1	38:NA:141:ARG:HB2	2.00	0.77
1:A:1047:G:H1	1:A:1210:C:H42	1.33	0.77
2:B:308:G:O2'	22:V:19:LYS:NZ	2.16	0.77
9:NB:164:TYR:HB2	9:NB:167:GLU:HB2	1.65	0.77
15:O:103:ARG:NH1	15:O:108:GLY:O	2.17	0.77
44:TA:48:THR:HA	44:TA:62:HIS:HB3	1.64	0.77
2:B:662:G:OP1	13:M:16:ARG:NH1	2.18	0.77
1:A:1124:G:N7	1:A:1145:C:O2'	2.18	0.77
3:C:28:C:OP1	16:P:36:TYR:OH	2.02	0.77
47:WA:14:ARG:HG2	47:WA:44:ARG:HH11	1.49	0.77
51:AB:66:SER:O	51:AB:70:ARG:NH1	2.17	0.77
36:QC:68:ILE:HG12	36:QC:161:ALA:HB3	1.66	0.77
1:A:1279:A:O2'	1:A:1281:U:OP2	2.01	0.76
2:GB:1728:G:H5'	2:GB:1729:A:OP2	1.85	0.76
17:VB:108:ARG:HG2	17:VB:112:ARG:HH12	1.48	0.76
34:MC:13:A:H2'	34:MC:14:A:H4'	1.66	0.76
1:A:345:C:H3'	17:Q:41:ARG:NH1	1.99	0.76
2:B:1045:A:H5"	2:B:1046:A:H5'	1.66	0.76
2:B:2168:G:N2	2:B:2171:A:OP2	2.17	0.76
34:HA:13:A:H2'	34:HA:14:A:H4'	1.65	0.76
1:FB:316:G:OP2	1:FB:351:G:O2'	2.02	0.76
36:QC:178:ARG:NH1	36:QC:196:LEU:O	2.17	0.76
38:SC:141:ARG:NH1	38:SC:141:ARG:HB2	2.00	0.76
2:GB:519:U:H2'	2:GB:520:G:H8	1.49	0.76
7:LB:72:ARG:HG3	7:LB:72:ARG:NH1	1.97	0.76
8:MB:143:GLU:HG3	28:GC:28:LYS:HB2	1.68	0.76
36:QC:165:VAL:HA	36:QC:187:LEU:HD23	1.67	0.76
2:B:55:G:H2'	2:B:56:A:H8	1.50	0.76
3:HB:12:C:N3	24:CC:74:ARG:NH2	2.29	0.76
12:QB:45:GLU:HA	12:QB:54:GLU:OE2	1.85	0.76
1:A:902:G:H2'	1:A:903:G:H8	1.50	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:519:U:H2'	2:B:520:G:H8	1.48	0.76
5:E:230:ASP:OD1	5:E:230:ASP:N	2.12	0.76
6:F:44:TYR:OH	6:F:80:GLU:OE2	2.04	0.76
1:FB:1047:G:H1	1:FB:1210:C:H42	1.32	0.76
16:UB:85:VAL:HB	16:UB:112:PHE:HB3	1.68	0.76
38:SC:175:SER:HB3	38:SC:184:LYS:HB3	1.66	0.76
2:B:885:C:H3'	2:B:886:C:H4'	1.67	0.76
20:T:13:SER:HB3	20:T:16:LYS:HD2	1.68	0.76
2:B:507:A:O2'	2:B:508:G:OP2	2.03	0.76
2:B:2846:G:OP2	17:Q:54:ARG:HG3	1.86	0.76
14:N:82:ARG:HE	24:X:4:LYS:HG3	1.49	0.76
1:FB:984:C:H42	1:FB:1221:G:H1	1.31	0.76
1:A:1373:G:H5"	41:QA:36:LYS:NZ	2.01	0.75
2:B:506:G:H4'	2:B:507:A:H5'	1.68	0.75
1:A:677:U:H3	1:A:713:G:H22	1.34	0.75
2:B:1471:A:OP2	2:B:1521:G:N2	2.19	0.75
1:FB:658:G:OP1	49:DD:8:LYS:NZ	2.19	0.75
2:GB:2810:A:N6	2:GB:2891:G:O2'	2.18	0.75
39:TC:121:LYS:NZ	39:TC:122:GLU:H	1.83	0.75
27:AA:35:ARG:NH1	27:AA:35:ARG:HB3	2.01	0.75
1:A:421:U:O4	37:MA:127:ARG:NH1	2.20	0.75
1:FB:467:G:H2'	1:FB:468:A:H8	1.50	0.75
1:FB:1022:G:H2'	1:FB:1023:G:H4'	1.67	0.75
3:HB:15:A:H3'	3:HB:16:G:H8	1.49	0.75
5:JB:148:GLU:HB2	5:JB:151:LYS:HD2	1.68	0.75
36:QC:127:ILE:HD12	36:QC:135:GLN:HG3	1.68	0.75
5:JB:133:LEU:HA	5:JB:136:ILE:HD12	1.67	0.75
36:LA:127:ILE:HD12	36:LA:135:GLN:HG3	1.69	0.75
36:LA:155:LEU:HD21	36:LA:159:PRO:HD3	1.69	0.75
3:C:91:C:H2'	3:C:92:G:H8	1.52	0.75
3:HB:21:G:H1	3:HB:62:C:H42	1.34	0.75
3:HB:86:G:N2	3:HB:90:C:O2	2.16	0.75
11:PB:70:LYS:NZ	11:PB:72:TYR:HE1	1.84	0.75
1:FB:1279:A:O2'	1:FB:1281:U:OP2	2.03	0.75
18:WB:58:ARG:HH11	18:WB:58:ARG:HG3	1.49	0.75
9:I:164:TYR:HB2	9:I:167:GLU:HB2	1.67	0.75
2:B:1992:G:O2'	2:B:1993:U:OP2	2.04	0.74
27:AA:35:ARG:HB3	27:AA:35:ARG:HH11	1.52	0.74
10:OB:74:ASN:O	10:OB:141:LYS:NZ	2.19	0.74
24:CC:37:LEU:HD21	24:CC:61:ALA:HB2	1.68	0.74
8:H:143:GLU:HG3	28:BA:28:LYS:HB2	1.70	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:KB:183:LEU:HD21	17:VB:10:VAL:HG11	1.70	0.74
27:FC:35:ARG:HB3	27:FC:35:ARG:NH1	2.03	0.74
1:A:658:G:OP1	49:YA:8:LYS:NZ	2.20	0.74
12:L:75:SER:OG	17:Q:74:ARG:NH1	2.19	0.74
18:R:58:ARG:HH11	18:R:58:ARG:HG3	1.52	0.74
1:FB:1381:U:H1'	41:VC:79:ARG:HE	1.52	0.74
2:GB:55:G:H2'	2:GB:56:A:H8	1.52	0.74
2:GB:1936:A:OP2	2:GB:1962:5MC:N4	2.19	0.74
43:XC:6:GLY:H	43:XC:84:ALA:HB2	1.53	0.74
1:A:1166:G:H2'	1:A:1169:A:OP2	1.87	0.74
2:B:2304:G:H4'	8:H:133:LEU:HA	1.69	0.74
49:YA:63:ARG:NH1	49:YA:87:ILE:HD13	2.02	0.74
1:FB:979:C:H42	48:CD:18:VAL:HB	1.52	0.74
1:FB:1058:G:H1	1:FB:1199:U:H3	1.35	0.74
3:HB:11:C:H3'	3:HB:12:C:H6	1.52	0.74
47:BD:91:ARG:HB3	47:BD:91:ARG:HH11	1.53	0.74
1:A:984:C:H42	1:A:1221:G:H1	1.35	0.74
41:QA:54:THR:HG22	41:QA:56:GLN:HE22	1.52	0.74
12:QB:75:SER:OG	17:VB:74:ARG:NH1	2.21	0.74
2:B:296:C:O3'	22:V:95:LYS:NZ	2.19	0.74
1:FB:1110:A:H5"	1:FB:1111:A:OP2	1.88	0.74
2:GB:796:C:H2'	2:GB:797:C:C6	2.22	0.74
6:KB:171:GLU:HB3	6:KB:185:LYS:HB3	1.68	0.74
28:GC:58:ARG:HH21	47:BD:80:ARG:NH1	1.84	0.74
28:GC:59:PHE:HE2	53:HD:64:GLU:HG3	1.51	0.74
1:A:467:G:H2'	1:A:468:A:H8	1.53	0.74
6:F:171:GLU:HB3	6:F:185:LYS:HB3	1.68	0.74
2:GB:507:A:O2'	2:GB:508:G:OP2	2.05	0.74
4:D:8:4SU:S4	4:D:14:A:N7	2.60	0.74
9:I:87:LEU:HB2	9:I:131:VAL:HG23	1.68	0.74
1:FB:790:A:OP1	4:NC:38:A:O2'	2.05	0.74
2:GB:270(M):U:O2'	2:GB:270(O):G:N2	2.21	0.74
39:OA:78:HIS:HD1	42:RA:104:ARG:HD2	1.53	0.74
52:BB:53:ARG:NH1	52:BB:58:LEU:O	2.18	0.74
2:GB:2728:U:H5'	12:QB:70:LYS:NZ	2.03	0.74
22:AC:102:CYS:SG	22:AC:103:GLY:N	2.60	0.74
41:VC:9:VAL:HG23	41:VC:94:ARG:HH21	1.53	0.74
1:A:1137:C:OP2	1:A:1138:G:N2	2.20	0.74
28:BA:69:LYS:NZ	53:CB:43:GLU:OE2	2.20	0.74
36:LA:68:ILE:HG12	36:LA:161:ALA:HB3	1.68	0.74
1:FB:949:A:H1'	1:FB:1364:U:H3	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:21:G:H1	3:C:62:C:H42	1.36	0.73
11:K:91:LEU:HA	11:K:95:PRO:HA	1.70	0.73
35:JA:139:ALA:HA	35:JA:144:TRP:HB2	1.70	0.73
42:RA:81:HIS:HB2	42:RA:138:TRP:HD1	1.53	0.73
2:GB:190:A:OP2	25:DC:39:LYS:NZ	2.21	0.73
23:BC:72:ARG:HH11	23:BC:72:ARG:HA	1.52	0.73
3:C:86:G:N2	3:C:90:C:O2	2.17	0.73
5:E:147:LEU:HD13	5:E:155:LEU:HD21	1.68	0.73
23:W:117:LEU:HA	23:W:174:VAL:HA	1.69	0.73
2:GB:1059:G:N2	2:GB:1080:C:O2	2.22	0.73
9:NB:87:LEU:HB2	9:NB:131:VAL:HG23	1.68	0.73
39:TC:37:ARG:HH12	39:TC:111:GLU:HG2	1.53	0.73
1:A:1323:G:N2	1:A:1361:G:O2'	2.21	0.73
1:A:1375:A:OP1	41:QA:28:ASN:ND2	2.21	0.73
36:LA:74:LYS:NZ	36:LA:74:LYS:HB3	2.03	0.73
43:SA:97:LYS:NZ	43:SA:102:LEU:O	2.20	0.73
47:WA:91:ARG:HB3	47:WA:91:ARG:HH11	1.53	0.73
9:NB:126:PRO:HB2	9:NB:130:ARG:HH22	1.53	0.73
27:FC:51:ALA:HA	27:FC:54:VAL:HG12	1.70	0.73
2:B:2305:A:H5"	8:H:134:GLY:HA3	1.71	0.73
6:F:183:LEU:HD21	17:Q:10:VAL:HG11	1.69	0.73
10:J:133:HIS:CE1	10:J:135:GLU:HB3	2.23	0.73
43:SA:17:VAL:HG11	43:SA:81:ILE:HG12	1.69	0.73
52:BB:66:LEU:O	52:BB:69:THR:OG1	2.06	0.73
36:QC:74:LYS:HB3	36:QC:74:LYS:NZ	2.03	0.73
36:QC:209:ARG:NH1	36:QC:237:ALA:O	2.20	0.73
52:GD:79:LEU:HD13	52:GD:80:PRO:HD2	1.68	0.73
1:FB:1323:G:N2	1:FB:1361:G:O2'	2.21	0.73
5:JB:274:ARG:HH11	5:JB:274:ARG:CG	2.01	0.73
14:SB:60:ARG:HH12	23:BC:177:PRO:HG2	1.53	0.73
51:FD:66:SER:O	51:FD:70:ARG:NH1	2.21	0.73
5:JB:20:ASP:OD2	5:JB:21:PHE:N	2.21	0.73
8:MB:63:ILE:HD13	8:MB:143:GLU:HB2	1.70	0.73
2:B:466:A:O3'	31:EA:33:ARG:NH2	2.21	0.73
2:B:2405:G:O2'	2:B:2406:U:OP2	2.05	0.73
39:OA:50:GLU:OE2	39:OA:51:VAL:N	2.20	0.73
1:FB:677:U:H3	1:FB:713:G:H22	1.37	0.73
1:FB:1129:C:O2'	1:FB:1139:G:N7	2.19	0.73
2:GB:1226:A:OP1	18:WB:16:LYS:NZ	2.22	0.73
2:B:1059:G:N2	2:B:1080:C:O2	2.22	0.73
24:X:27:GLU:HG3	24:X:68:GLU:HA	1.70	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:QA:9:VAL:HG23	41:QA:94:ARG:HH21	1.54	0.73
2:B:270(M):U:O2'	2:B:270(O):G:N2	2.20	0.73
52:BB:79:LEU:HD13	52:BB:80:PRO:HD2	1.69	0.73
1:FB:718:G:H5'	45:ZC:117:ASN:HB2	1.71	0.73
1:FB:1166:G:H2'	1:FB:1169:A:OP2	1.89	0.73
2:GB:1869:G:N2	2:GB:1872:A:OP2	2.19	0.73
47:BD:14:ARG:HG2	47:BD:44:ARG:HH11	1.53	0.73
14:N:60:ARG:HH12	23:W:177:PRO:HG2	1.54	0.72
36:LA:209:ARG:NH1	36:LA:237:ALA:O	2.21	0.72
2:GB:2055:C:OP1	29:HC:8:LYS:NZ	2.22	0.72
2:GB:2502:G:H5'	2:GB:2503:2MA:H5"	1.70	0.72
3:HB:91:C:H2'	3:HB:92:G:H8	1.53	0.72
43:XC:17:VAL:HG11	43:XC:81:ILE:HG12	1.71	0.72
18:R:11:ARG:HH11	18:R:11:ARG:CG	2.01	0.72
25:Y:4:VAL:HG12	25:Y:11:ARG:HB3	1.69	0.72
2:GB:2736:G:N2	2:GB:2768:C:O2	2.19	0.72
42:WC:81:HIS:HB2	42:WC:138:TRP:HD1	1.54	0.72
1:A:1058:G:H1	1:A:1199:U:H3	1.36	0.72
10:J:4:ILE:HD12	10:J:47:LEU:HD13	1.72	0.72
22:V:83:THR:OG1	22:V:84:ARG:N	2.21	0.72
19:XB:69:LYS:HB2	19:XB:88:ARG:HD2	1.70	0.72
22:AC:15:VAL:HG21	22:AC:42:VAL:HG11	1.71	0.72
2:B:1869:G:N2	2:B:1872:A:OP2	2.18	0.72
3:C:11:C:H3'	3:C:12:C:H6	1.52	0.72
36:LA:223:ILE:HA	36:LA:226:ARG:HB2	1.71	0.72
2:B:1067:A:H5'	2:B:1068:G:H21	1.55	0.72
2:B:1728:G:H5'	2:B:1729:A:OP2	1.89	0.72
12:L:19:ILE:HG22	12:L:43:VAL:HA	1.71	0.72
42:RA:96:GLY:N	42:RA:99:GLU:OE2	2.22	0.72
2:GB:885:C:H3'	2:GB:886:C:H4'	1.69	0.72
2:GB:2093:G:H1	2:GB:2196:C:H42	1.37	0.72
35:PC:328:ARG:NH1	35:PC:331:GLU:HB2	2.04	0.72
2:B:2502:G:H5'	2:B:2503:2MA:H5"	1.70	0.72
9:I:126:PRO:HG2	9:I:130:ARG:HH12	1.53	0.72
37:MA:77:ILE:HA	37:MA:84:ILE:HB	1.71	0.72
1:FB:1373:G:H5"	41:VC:36:LYS:NZ	2.04	0.72
1:A:1327:C:OP1	55:EB:20:LYS:HB3	1.89	0.72
2:B:184:C:H2'	2:B:185:U:C6	2.25	0.72
31:EA:47:ARG:HB3	31:EA:47:ARG:HH11	1.55	0.72
28:GC:59:PHE:HA	28:GC:61:ARG:HH11	1.55	0.72
37:RC:111:LEU:HD11	37:RC:145:GLY:HA3	1.70	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:XC:93:ARG:HH12	43:XC:97:LYS:HD3	1.54	0.72
2:B:2327:A:H2'	2:B:2328:A:C8	2.24	0.72
28:BA:58:ARG:NH1	53:CB:68:GLY:HA3	2.04	0.72
29:CA:56:LYS:NZ	29:CA:59:GLU:HA	2.04	0.72
35:JA:105:PRO:O	35:JA:109:ARG:NH1	2.22	0.72
1:FB:35:G:H1	1:FB:549:C:H42	1.37	0.72
2:GB:466:A:O3'	31:JC:33:ARG:NH2	2.22	0.72
36:QC:223:ILE:HA	36:QC:226:ARG:HB2	1.72	0.72
22:V:102:CYS:SG	22:V:103:GLY:N	2.62	0.72
29:CA:56:LYS:HZ1	29:CA:59:GLU:HA	1.54	0.72
36:LA:165:VAL:HA	36:LA:187:LEU:HD23	1.70	0.72
39:OA:37:ARG:HH12	39:OA:111:GLU:HG2	1.54	0.72
2:GB:2130:U:H5'	2:GB:2131:G:OP2	1.90	0.72
10:OB:133:HIS:CE1	10:OB:135:GLU:HB3	2.24	0.72
48:CD:27:CYS:SG	48:CD:28:GLY:N	2.63	0.72
2:B:1754:C:N3	2:B:2716:U:O2'	2.23	0.72
2:B:1798:U:H5'	5:E:259:THR:HG22	1.70	0.72
9:I:45:VAL:HG13	9:I:50:VAL:HG22	1.72	0.72
12:L:45:GLU:HA	12:L:54:GLU:OE2	1.90	0.72
16:P:20:ARG:NH1	24:X:48:GLY:O	2.23	0.72
43:SA:6:GLY:H	43:SA:84:ALA:HB2	1.54	0.72
2:GB:1045:A:H5"	2:GB:1046:A:H5'	1.71	0.72
36:QC:155:LEU:HD21	36:QC:159:PRO:HD3	1.70	0.72
12:L:71:ARG:HH21	12:L:77:ILE:HG21	1.55	0.71
2:GB:978:G:H5"	2:GB:979:G:OP2	1.90	0.71
2:GB:1914:C:H5"	35:OC:116:ARG:NH1	2.05	0.71
18:WB:11:ARG:HH11	18:WB:11:ARG:CG	2.01	0.71
39:TC:78:HIS:HD1	42:WC:104:ARG:HD2	1.55	0.71
1:A:1381:U:H1'	41:QA:79:ARG:HE	1.53	0.71
2:B:955:C:OP2	14:N:14:ARG:HG3	1.90	0.71
19:S:69:LYS:HB2	19:S:88:ARG:HD2	1.70	0.71
28:BA:59:PHE:HA	28:BA:61:ARG:HH11	1.55	0.71
39:OA:121:LYS:NZ	39:OA:122:GLU:H	1.87	0.71
20:YB:13:SER:HB3	20:YB:16:LYS:HD2	1.72	0.71
20:YB:23:LEU:HD11	29:HC:25:LEU:HD22	1.72	0.71
43:XC:67:GLY:O	43:XC:73:GLN:NE2	2.23	0.71
49:DD:63:ARG:NH1	49:DD:87:ILE:HD13	2.05	0.71
2:B:503:A:H4'	2:B:504:U:H5"	1.73	0.71
2:B:572:A:H5"	2:B:573:G:OP2	1.91	0.71
35:KA:328:ARG:NH1	35:KA:331:GLU:HB2	2.05	0.71
2:GB:1316:U:H2'	2:GB:1317:A:C8	2.25	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2299:G:H1	2:GB:2317:C:H42	1.37	0.71
9:NB:58:GLU:OE2	9:NB:61:HIS:HB2	1.91	0.71
50:ED:8:ARG:HH12	50:ED:15:PRO:HG3	1.55	0.71
52:GD:53:ARG:NH1	52:GD:58:LEU:O	2.21	0.71
1:A:504:C:H41	46:VA:115:LYS:NZ	1.87	0.71
2:B:2728:U:H5'	12:L:70:LYS:NZ	2.06	0.71
43:SA:79:LEU:HD11	43:SA:104:ARG:HA	1.72	0.71
45:UA:120:ARG:HG2	45:UA:120:ARG:HH11	1.56	0.71
2:GB:506:G:H4'	2:GB:507:A:H5'	1.71	0.71
2:GB:1052:C:N4	2:GB:1107:G:O6	2.23	0.71
53:HD:40:ILE:HD11	53:HD:69:HIS:HB2	1.73	0.71
8:H:63:ILE:HD13	8:H:143:GLU:HB2	1.69	0.71
2:GB:2304:G:H4'	8:MB:133:LEU:HA	1.70	0.71
2:GB:2846:G:OP2	17:VB:54:ARG:HG3	1.90	0.71
27:FC:35:ARG:HB3	27:FC:35:ARG:HH11	1.56	0.71
1:A:976:G:N2	1:A:1362(B):C:OP2	2.19	0.71
43:SA:93:ARG:HH12	43:SA:97:LYS:HD3	1.56	0.71
1:FB:1137:C:OP2	1:FB:1138:G:N2	2.23	0.71
23:BC:117:LEU:HA	23:BC:174:VAL:HA	1.71	0.71
24:CC:68:GLU:HG3	24:CC:82:ARG:HH22	1.54	0.71
37:RC:77:ILE:HA	37:RC:84:ILE:HB	1.71	0.71
43:XC:79:LEU:HD11	43:XC:104:ARG:HA	1.71	0.71
2:B:184:C:H2'	2:B:185:U:H6	1.56	0.71
2:B:1226:A:OP1	18:R:16:LYS:NZ	2.24	0.71
2:GB:2849:U:O4	17:VB:23:ARG:NH2	2.22	0.71
7:LB:188:ARG:HA	13:RB:3:LEU:HD11	1.72	0.71
10:OB:104:GLN:HG2	10:OB:105:HIS:HE1	1.56	0.71
6:F:37:ARG:HA	6:F:42:ASP:OD2	1.90	0.71
36:QC:18:GLY:HA2	36:QC:42:ILE:H	1.54	0.71
38:SC:26:CYS:HA	38:SC:31:CYS:HB2	1.72	0.71
2:GB:1815:A:OP2	5:JB:54:ARG:NH2	2.23	0.71
9:NB:45:VAL:HG13	9:NB:50:VAL:HG22	1.73	0.71
51:FD:8:GLY:HA3	51:FD:22:LEU:O	1.91	0.71
2:B:451:C:H4'	7:G:52:LYS:NZ	2.06	0.70
1:FB:661:G:H1	1:FB:744:C:H42	1.39	0.70
1:FB:1003:G:H2'	1:FB:1004:A:H4'	1.71	0.70
7:LB:182:ASN:ND2	7:LB:185:ASP:OD2	2.18	0.70
2:B:38:A:H2'	2:B:39:C:C6	2.26	0.70
1:FB:533:A:O2'	1:FB:535:A:OP2	2.08	0.70
31:JC:47:ARG:HB3	31:JC:47:ARG:HH11	1.56	0.70
5:E:148:GLU:HB2	5:E:151:LYS:HD2	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:56:PRO:HG2	6:F:57:LYS:NZ	2.05	0.70
49:YA:87:ILE:HG22	49:YA:88:ARG:H	1.55	0.70
1:FB:1326:C:OP1	55:JD:12:LYS:NZ	2.25	0.70
2:GB:1067:A:H5'	2:GB:1068:G:H21	1.54	0.70
16:UB:20:ARG:NH1	24:CC:48:GLY:O	2.25	0.70
26:EC:41:ILE:O	26:EC:43:GLN:N	2.23	0.70
2:B:1815:A:OP2	5:E:54:ARG:NH2	2.24	0.70
8:H:111:LEU:HD22	8:H:117:PHE:HE1	1.56	0.70
8:MB:7:LEU:HD23	8:MB:104:GLU:HG3	1.72	0.70
49:DD:87:ILE:HG22	49:DD:88:ARG:H	1.56	0.70
1:A:661:G:H1	1:A:744:C:H42	1.39	0.70
1:A:1003:G:H2'	1:A:1004:A:H4'	1.72	0.70
1:A:1106:G:H5"	37:MA:172:ARG:HG2	1.74	0.70
2:B:455:C:N3	2:B:472:A:H2'	2.07	0.70
2:B:1062:G:OP1	2:B:1070:A:O2'	2.10	0.70
22:V:15:VAL:HG21	22:V:42:VAL:HG11	1.73	0.70
1:FB:1253:G:H1	1:FB:1284:C:H42	1.39	0.70
1:FB:1422:G:H5"	12:QB:48:PRO:HB3	1.74	0.70
1:A:144:G:H1	1:A:178:C:H42	1.39	0.70
27:AA:51:ALA:HA	27:AA:54:VAL:HG12	1.72	0.70
32:FA:4:MET:HE2	32:FA:63:PRO:HG3	1.72	0.70
1:FB:1106:G:H5"	37:RC:172:ARG:HG2	1.74	0.70
55:JD:18:TYR:HB2	55:JD:22:ARG:HB3	1.73	0.70
2:GB:2405:G:O2'	2:GB:2406:U:OP2	2.08	0.70
1:A:442:C:H42	1:A:492:G:H1	1.38	0.70
2:B:1052:C:N4	2:B:1107:G:O6	2.24	0.70
6:F:31:CYS:HB2	6:F:91:VAL:HG23	1.72	0.70
22:V:86:ARG:NH1	22:V:100:ALA:O	2.18	0.70
2:GB:817:C:O2'	2:GB:839:U:OP1	2.08	0.70
41:VC:54:THR:HG22	41:VC:56:GLN:HE22	1.56	0.70
42:WC:29:SER:O	42:WC:33:GLU:N	2.25	0.70
45:ZC:120:ARG:HG2	45:ZC:120:ARG:HH11	1.56	0.70
2:GB:2361:A:P	32:KC:26:LYS:HZ2	2.14	0.70
35:OC:105:PRO:O	35:OC:109:ARG:NH1	2.24	0.70
1:A:35:G:H1	1:A:549:C:H42	1.40	0.70
1:A:1132:C:H2'	1:A:1133:G:H8	1.56	0.70
2:B:1485:G:N2	2:B:1504:C:O2	2.19	0.70
37:MA:20:SER:OG	37:MA:40:ARG:NH2	2.24	0.70
1:FB:200:G:N2	1:FB:201:C:O2'	2.25	0.70
10:OB:4:ILE:HD12	10:OB:47:LEU:HD13	1.74	0.70
29:HC:56:LYS:HZ1	29:HC:59:GLU:HA	1.57	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:OC:139:ALA:HA	35:OC:144:TRP:HB2	1.73	0.70
1:A:1422:G:H5"	12:L:48:PRO:HB3	1.73	0.69
2:B:330:A:HO2'	2:B:331:A:H8	1.37	0.69
2:B:1814:G:OP1	5:E:40:THR:HG21	1.91	0.69
2:B:2028:U:H2'	2:B:2029:G:C8	2.27	0.69
7:G:188:ARG:HA	13:M:3:LEU:HD11	1.72	0.69
11:K:83:LYS:NZ	11:K:83:LYS:HB2	2.07	0.69
28:BA:2:LYS:HB2	28:BA:6:HIS:HE2	1.56	0.69
3:HB:11:C:H3'	3:HB:12:C:C6	2.27	0.69
53:HD:31:ILE:H	53:HD:49:ILE:HG13	1.57	0.69
1:FB:946:A:O2'	1:FB:1333:A:N3	2.23	0.69
2:GB:455:C:N3	2:GB:472:A:H2'	2.07	0.69
27:FC:39:ASP:O	27:FC:44:ARG:NH2	2.23	0.69
2:B:205:G:H1	25:Y:39:LYS:HZ1	1.39	0.69
2:B:547:A:H2'	2:B:548:A:C8	2.28	0.69
11:K:43:THR:HG23	18:R:64:ARG:NH1	2.06	0.69
12:L:34:THR:OG1	12:L:35:VAL:N	2.26	0.69
21:U:26:TYR:HE2	21:U:89:ILE:H	1.38	0.69
38:NA:177:ASP:HB3	38:NA:182:LYS:HG3	1.72	0.69
43:SA:67:GLY:O	43:SA:73:GLN:NE2	2.26	0.69
2:GB:1485:G:N2	2:GB:1504:C:O2	2.20	0.69
37:RC:20:SER:OG	37:RC:40:ARG:NH2	2.24	0.69
1:A:1145:C:H4'	1:A:1146:A:H8	1.57	0.69
1:A:1149:C:O2'	1:A:1280:A:N1	2.25	0.69
2:B:46:C:O2	2:B:179:G:N2	2.20	0.69
2:B:71:A:H5"	2:B:73:A:C8	2.27	0.69
4:D:33:U:H3'	4:D:34:C:H5"	1.74	0.69
42:RA:69:ARG:NH1	42:RA:73:ASP:O	2.26	0.69
2:GB:16:G:H2'	2:GB:17:G:H8	1.57	0.69
2:B:2299:G:H1	2:B:2317:C:H42	1.39	0.69
4:D:28:C:H42	4:D:42:G:H1	1.38	0.69
5:E:274:ARG:HH11	5:E:274:ARG:CG	2.05	0.69
9:I:126:PRO:HB2	9:I:130:ARG:HH22	1.56	0.69
35:KA:315:GLY:HA2	35:KA:329:LEU:HD22	1.73	0.69
45:UA:120:ARG:NH1	45:UA:126:ARG:NH1	2.35	0.69
2:GB:955:C:OP2	14:SB:14:ARG:HG3	1.92	0.69
4:IB:74:C:H4'	25:DC:23:LYS:HB2	1.75	0.69
35:OC:106:ASP:HA	35:OC:109:ARG:NH1	2.08	0.69
36:QC:115:LEU:HB2	36:QC:145:LEU:HD22	1.74	0.69
2:B:2728:U:H5'	12:L:70:LYS:HZ1	1.56	0.69
9:I:58:GLU:OE2	9:I:61:HIS:HB2	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:NA:3:ARG:HH21	38:NA:4:TYR:HB3	1.57	0.69
3:HB:28:C:OP1	16:UB:36:TYR:OH	2.10	0.69
16:UB:25:ARG:NH1	16:UB:42:ASP:OD1	2.26	0.69
2:B:2130:U:H5'	2:B:2131:G:OP2	1.91	0.69
2:B:2148:G:N2	2:B:2149:G:O6	2.26	0.69
8:H:7:LEU:HD23	8:H:104:GLU:HG3	1.75	0.69
53:CB:31:ILE:H	53:CB:49:ILE:HG13	1.58	0.69
2:GB:503:A:H4'	2:GB:504:U:H5"	1.75	0.69
2:GB:1153:C:OP1	18:WB:92:ARG:NH2	2.25	0.69
22:AC:83:THR:OG1	22:AC:84:ARG:N	2.23	0.69
2:B:55:G:H2'	2:B:56:A:C8	2.27	0.69
2:B:1054:A:H3'	2:B:1055:G:H8	1.58	0.69
3:C:57:A:OP2	3:C:58:A:OP2	2.11	0.69
16:P:30:ARG:NH1	16:P:97:ARG:NH1	2.41	0.69
1:FB:976:G:N2	1:FB:1362(B):C:OP2	2.20	0.69
2:GB:907:U:H4'	14:SB:101:ARG:HH22	1.57	0.69
2:GB:1054:A:H3'	2:GB:1055:G:H8	1.58	0.69
2:GB:2028:U:H2'	2:GB:2029:G:C8	2.28	0.69
4:IB:28:C:H42	4:IB:42:G:H1	1.41	0.69
6:KB:37:ARG:HA	6:KB:42:ASP:OD2	1.92	0.69
36:LA:74:LYS:HB3	36:LA:74:LYS:HZ2	1.56	0.69
1:FB:144:G:H1	1:FB:178:C:H42	1.40	0.69
2:GB:547:A:H2'	2:GB:548:A:C8	2.27	0.69
12:QB:13:ASN:ND2	12:QB:97:ARG:HG3	2.07	0.69
24:CC:27:GLU:HG3	24:CC:68:GLU:HA	1.74	0.69
47:BD:4:ILE:HD13	47:BD:57:ARG:HG2	1.75	0.69
2:B:2577:A:H5"	2:B:2578:G:H5'	1.74	0.69
5:E:43:ARG:HG3	5:E:43:ARG:NH1	1.85	0.69
2:GB:2821:A:OP2	2:GB:2822:G:OP2	2.11	0.69
10:OB:104:GLN:C	10:OB:105:HIS:ND1	2.46	0.69
36:QC:178:ARG:NH1	36:QC:184:VAL:HG21	2.07	0.69
1:A:54:C:H42	1:A:357:G:H1	1.39	0.68
1:A:892:A:H2'	1:A:893:C:C6	2.28	0.68
2:B:1500:G:O3'	5:E:102:LYS:NZ	2.26	0.68
27:AA:39:ASP:O	27:AA:44:ARG:NH2	2.27	0.68
17:VB:102:ILE:HA	17:VB:105:LEU:HD23	1.75	0.68
23:BC:52:SER:OG	23:BC:53:ILE:N	2.27	0.68
38:SC:177:ASP:HB3	38:SC:182:LYS:HG3	1.74	0.68
1:A:430:A:OP2	38:NA:8:VAL:HG12	1.93	0.68
2:B:2055:C:OP1	29:CA:8:LYS:NZ	2.25	0.68
27:AA:44:ARG:HB2	27:AA:44:ARG:HH11	1.58	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1754:C:N3	2:GB:2716:U:O2'	2.25	0.68
2:GB:2557:G:H2'	2:GB:2558:C:H6	1.59	0.68
10:OB:104:GLN:O	10:OB:105:HIS:ND1	2.25	0.68
28:GC:2:LYS:HB2	28:GC:6:HIS:HE2	1.57	0.68
29:HC:30:LEU:HD13	29:HC:39:MET:HB3	1.74	0.68
35:PC:315:GLY:HA2	35:PC:329:LEU:HD22	1.75	0.68
39:TC:121:LYS:HZ2	39:TC:122:GLU:H	1.42	0.68
6:F:37:ARG:HH11	6:F:42:ASP:HB3	1.57	0.68
24:X:68:GLU:HG3	24:X:82:ARG:HH22	1.57	0.68
37:MA:12:LEU:HD11	48:XA:51:GLY:HA2	1.76	0.68
1:FB:442:C:H42	1:FB:492:G:H1	1.42	0.68
1:FB:1492:A:H5'	46:AD:47:LYS:HD2	1.75	0.68
2:GB:1322:A:O3'	20:YB:84:ARG:NH1	2.25	0.68
2:GB:2148:G:N2	2:GB:2149:G:O6	2.26	0.68
5:JB:147:LEU:HD13	5:JB:155:LEU:HD21	1.74	0.68
11:PB:91:LEU:HA	11:PB:95:PRO:HA	1.74	0.68
37:RC:12:LEU:HD11	48:CD:51:GLY:HA2	1.75	0.68
39:TC:20:GLN:HG3	39:TC:22:GLY:H	1.58	0.68
2:B:1728:G:H8	2:B:1732:A:H62	1.41	0.68
2:B:2316:C:H1'	8:H:128:ARG:HD2	1.74	0.68
2:B:2471:C:N4	2:B:2476:A:O2'	2.25	0.68
2:B:2849:U:O4	17:Q:23:ARG:NH2	2.26	0.68
36:LA:115:LEU:HB2	36:LA:145:LEU:HD22	1.75	0.68
55:EB:18:TYR:HB2	55:EB:22:ARG:HB3	1.75	0.68
8:MB:11:TYR:OH	8:MB:32:PRO:O	2.11	0.68
26:EC:42:GLY:O	26:EC:44:LEU:N	2.26	0.68
1:A:1035:A:H2'	1:A:1036:G:C8	2.29	0.68
2:B:458:G:O2'	2:B:469:G:O6	2.08	0.68
3:C:28:C:OP2	16:P:33:LYS:HG3	1.94	0.68
21:U:68:ARG:NH1	21:U:69:TYR:OH	2.26	0.68
36:LA:178:ARG:NH1	36:LA:184:VAL:HG21	2.09	0.68
2:GB:1471:A:OP2	2:GB:1521:G:N2	2.27	0.68
14:SB:108:GLY:HA3	23:BC:116:VAL:HG11	1.75	0.68
47:BD:15:VAL:HG11	47:BD:48:LEU:HD13	1.76	0.68
1:A:966:M2G:HM13	1:A:967:5MC:H1'	1.74	0.68
2:B:1153:C:OP1	18:R:92:ARG:NH2	2.24	0.68
2:GB:2792:G:H2'	2:GB:2793:G:H8	1.58	0.68
1:A:1129:C:O2'	1:A:1139:G:N7	2.21	0.68
1:A:1143:G:H2'	1:A:1144:G:C8	2.29	0.68
1:A:1253:G:H1	1:A:1284:C:H42	1.39	0.68
3:C:11:C:H3'	3:C:12:C:C6	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:JA:200:ALA:HB1	35:KA:306:ARG:HH11	1.59	0.68
1:FB:54:C:H42	1:FB:357:G:H1	1.42	0.68
1:FB:837:G:H1	1:FB:849:C:H42	1.42	0.68
2:GB:1062:G:OP1	2:GB:1070:A:O2'	2.12	0.68
12:QB:19:ILE:HG22	12:QB:43:VAL:HA	1.74	0.68
35:OC:123:GLU:HA	35:OC:126:LEU:HB2	1.76	0.68
25:Y:3:LYS:HD3	25:Y:61:ARG:NH1	2.05	0.68
36:LA:18:GLY:HA2	36:LA:42:ILE:H	1.58	0.68
1:FB:523:A:N6	46:AD:53:ARG:HH11	1.91	0.68
1:FB:1145:C:H4'	1:FB:1146:A:H8	1.58	0.68
2:GB:2316:C:H1'	8:MB:128:ARG:HD2	1.76	0.68
35:OC:183:ARG:NH1	35:PC:306:ARG:HG3	2.09	0.68
1:A:1239:A:H62	1:A:1299:A:N6	1.92	0.68
2:B:881:G:H22	2:B:895:U:H3	1.40	0.68
5:E:217:ARG:HH11	5:E:217:ARG:CG	2.06	0.68
25:Y:23:LYS:HB3	25:Y:29:GLY:HA3	1.74	0.68
26:Z:41:ILE:O	26:Z:43:GLN:N	2.26	0.68
36:LA:23:ARG:HB2	36:LA:23:ARG:NH1	2.08	0.68
1:FB:1035:A:H2'	1:FB:1036:G:C8	2.28	0.68
2:GB:185:U:H4'	2:GB:218:A:H4'	1.76	0.68
2:GB:881:G:H22	2:GB:895:U:H3	1.40	0.68
8:MB:111:LEU:HD22	8:MB:117:PHE:HE1	1.59	0.68
36:QC:97:TRP:HH2	36:QC:176:GLU:HG3	1.58	0.68
38:SC:3:ARG:HH21	38:SC:4:TYR:HB3	1.59	0.68
2:B:1019:U:H3	2:B:1142(B):A:H62	1.42	0.68
44:TA:33:GLN:HG2	44:TA:75:ILE:HG22	1.76	0.68
1:FB:1375:A:OP1	41:VC:28:ASN:ND2	2.27	0.68
2:GB:1019:U:H3	2:GB:1142(B):A:H62	1.40	0.68
14:SB:85:LYS:NZ	24:CC:4:LYS:HE2	2.08	0.68
2:B:2563:U:H4'	12:L:28:SER:HA	1.76	0.67
14:N:76:LYS:HB3	14:N:91:GLU:HG3	1.75	0.67
37:MA:92:ALA:HA	37:MA:95:THR:HB	1.76	0.67
2:GB:140:A:H8	2:GB:1408:C:HO2'	1.42	0.67
2:GB:644:A:H4'	2:GB:645:C:H5	1.59	0.67
4:IB:33:U:H3'	4:IB:34:C:H5"	1.77	0.67
25:DC:23:LYS:HB3	25:DC:29:GLY:HA3	1.75	0.67
36:QC:97:TRP:CH2	36:QC:176:GLU:HG3	2.30	0.67
2:B:16:G:H2'	2:B:17:G:H8	1.58	0.67
2:B:136:G:N1	2:B:143:C:N3	2.38	0.67
2:B:136:G:N2	2:B:143:C:O2	2.17	0.67
2:B:1316:U:H2'	2:B:1317:A:C8	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:3:VAL:HG12	10:J:38:LEU:HA	1.76	0.67
13:M:63:PRO:HG2	32:FA:25:MET:HB2	1.77	0.67
53:CB:40:ILE:HD11	53:CB:69:HIS:HB2	1.76	0.67
2:GB:572:A:H5"	2:GB:573:G:OP2	1.94	0.67
2:GB:2676:C:O2	2:GB:2732:G:N2	2.27	0.67
37:RC:92:ALA:HA	37:RC:95:THR:HB	1.76	0.67
2:B:557:U:H2'	2:B:558:G:H8	1.60	0.67
2:B:2093:G:H1	2:B:2196:C:H42	1.41	0.67
37:MA:40:ARG:HE	37:MA:55:VAL:HB	1.58	0.67
38:NA:109:GLY:HA3	38:NA:165:MET:HG3	1.76	0.67
1:FB:1132:C:H2'	1:FB:1133:G:H8	1.58	0.67
3:HB:49:C:H2'	3:HB:50:G:C8	2.29	0.67
12:QB:71:ARG:HH21	12:QB:77:ILE:HG21	1.59	0.67
2:B:530:G:N1	2:B:2022:U:OP1	2.27	0.67
2:B:1028:A:N3	2:B:2486:G:O2'	2.24	0.67
1:FB:1239:A:H62	1:FB:1299:A:N6	1.91	0.67
33:LC:9:ARG:HD3	33:LC:14:CYS:HB2	1.75	0.67
45:ZC:17:GLY:HA2	45:ZC:35:PRO:HG3	1.77	0.67
2:B:244:A:H4'	13:M:74:GLU:HG2	1.74	0.67
2:B:796:C:H2'	2:B:797:C:C6	2.29	0.67
42:RA:9:MET:HB2	42:RA:26:VAL:HG21	1.76	0.67
44:TA:22:LYS:HZ1	44:TA:85:LEU:HD23	1.59	0.67
1:FB:126:G:OP1	1:FB:605:U:O2'	2.13	0.67
1:FB:297:G:H5"	1:FB:298:A:OP2	1.94	0.67
1:FB:299:G:H2'	1:FB:300:A:C8	2.29	0.67
1:FB:767:A:O2'	1:FB:1524:C:O2	2.11	0.67
1:FB:1376:U:H2'	1:FB:1377:A:C8	2.30	0.67
6:KB:37:ARG:HH11	6:KB:42:ASP:HB3	1.58	0.67
11:PB:83:LYS:NZ	11:PB:83:LYS:HB2	2.10	0.67
2:B:185:U:H4'	2:B:218:A:H4'	1.76	0.67
2:B:2711:A:OP2	2:B:2712(A):A:OP2	2.12	0.67
10:J:62:LYS:HE2	10:J:135:GLU:OE2	1.94	0.67
37:MA:188:LEU:H	37:MA:188:LEU:HD13	1.60	0.67
1:FB:709:G:H2'	1:FB:710:G:H8	1.58	0.67
2:GB:244:A:H4'	13:RB:74:GLU:HG2	1.75	0.67
35:PC:328:ARG:O	35:PC:330:ASP:N	2.27	0.67
37:RC:66:VAL:HG23	37:RC:101:LEU:HB2	1.75	0.67
54:ID:63:ILE:HG21	54:ID:81:LYS:HG3	1.76	0.67
8:MB:27:ASN:HB3	8:MB:30:GLU:HG3	1.77	0.67
8:MB:44:GLY:HA2	8:MB:88:ILE:HG22	1.75	0.67
1:A:1143:G:H2'	1:A:1144:G:H8	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2792:G:H2'	2:B:2793:G:H8	1.59	0.67
12:L:13:ASN:ND2	12:L:97:ARG:HG3	2.10	0.67
1:FB:447:G:H1'	1:FB:487:A:H61	1.59	0.67
2:GB:2471:C:N4	2:GB:2476:A:O2'	2.27	0.67
10:OB:43:ASN:HA	10:OB:46:ALA:HB3	1.76	0.67
1:A:1338:G:H21	4:IA:41:C:H1'	1.60	0.67
2:B:1047:G:H2'	2:B:1110:G:H1	1.59	0.67
13:M:57:THR:HG23	13:M:60:MET:HB2	1.76	0.67
2:GB:2514:U:H3	2:GB:2570:G:H1	1.42	0.67
23:BC:97:GLU:HG2	23:BC:127:LYS:HG3	1.76	0.67
1:A:523:A:N6	46:VA:53:ARG:HH11	1.93	0.67
1:A:1496:C:O3'	2:B:1920:4OC:HM21	1.94	0.67
2:B:271(C):G:H4'	2:B:271(D):U:H5'	1.76	0.67
2:B:644:A:H4'	2:B:645:C:H5	1.60	0.67
27:AA:44:ARG:HB2	27:AA:44:ARG:NH1	2.09	0.67
1:FB:1279:A:OP2	44:YC:9:ARG:NH2	2.27	0.67
2:GB:2091:U:H1'	25:DC:47:GLN:OE1	1.95	0.67
2:GB:2291:U:H2'	2:GB:2292:C:C6	2.30	0.67
6:KB:31:CYS:HB2	6:KB:91:VAL:HG23	1.77	0.67
45:ZC:26:ASN:O	45:ZC:26:ASN:ND2	2.28	0.67
1:A:1440:C:H42	1:A:1461:G:H1	1.43	0.66
2:B:958:U:OP2	14:N:14:ARG:NH2	2.28	0.66
33:GA:9:ARG:HD3	33:GA:14:CYS:HB2	1.77	0.66
35:JA:123:GLU:HA	35:JA:126:LEU:HB2	1.77	0.66
37:MA:111:LEU:HD11	37:MA:145:GLY:HA3	1.77	0.66
46:VA:89:ARG:HH12	46:VA:95:GLY:H	1.43	0.66
1:FB:1391:U:H2'	1:FB:1392:G:C8	2.29	0.66
2:GB:453:C:O2	2:GB:457:A:O2'	2.12	0.66
12:QB:35:VAL:HG11	12:QB:103:ALA:HB3	1.77	0.66
38:SC:109:GLY:HA3	38:SC:165:MET:HG3	1.75	0.66
2:B:205:G:H1	25:Y:39:LYS:NZ	1.93	0.66
2:B:453:C:O2	2:B:457:A:O2'	2.13	0.66
2:B:907:U:H4'	14:N:101:ARG:HH22	1.59	0.66
2:B:2210:G:H3'	2:B:2211:G:N7	2.10	0.66
8:H:44:GLY:HA2	8:H:88:ILE:HG22	1.76	0.66
35:JA:106:ASP:HA	35:JA:109:ARG:NH1	2.10	0.66
54:DB:63:ILE:HG21	54:DB:81:LYS:HG3	1.76	0.66
2:GB:1689:A:H62	2:GB:1698:A:H2	1.43	0.66
36:QC:23:ARG:NH1	36:QC:23:ARG:HB2	2.10	0.66
36:QC:101:MET:HA	36:QC:108:ILE:HG13	1.76	0.66
44:YC:22:LYS:HZ1	44:YC:85:LEU:HD23	1.59	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1716:U:H3	2:GB:1743:G:H1	1.43	0.66
2:GB:2210:G:H3'	2:GB:2211:G:N7	2.10	0.66
7:LB:144:LYS:HZ3	7:LB:144:LYS:HB2	1.60	0.66
1:A:54:C:N3	1:A:357:G:N2	2.44	0.66
1:A:902:G:H2'	1:A:903:G:C8	2.30	0.66
2:B:2736:G:N2	2:B:2768:C:O2	2.19	0.66
40:PA:80:ARG:HE	40:PA:88:VAL:HB	1.60	0.66
35:OC:200:ALA:HB1	35:PC:306:ARG:HH11	1.59	0.66
37:RC:40:ARG:HE	37:RC:55:VAL:HB	1.61	0.66
37:RC:188:LEU:HD13	37:RC:188:LEU:H	1.60	0.66
42:WC:96:GLY:N	42:WC:99:GLU:OE2	2.27	0.66
2:B:2676:C:O2	2:B:2732:G:N2	2.28	0.66
5:E:85:ASP:OD1	5:E:87:ASN:ND2	2.29	0.66
23:W:140:ASP:OD2	23:W:141:VAL:N	2.29	0.66
39:OA:20:GLN:HG3	39:OA:22:GLY:H	1.60	0.66
1:FB:1147:C:O2'	43:XC:5:TYR:OH	2.12	0.66
6:KB:56:PRO:HG2	6:KB:57:LYS:NZ	2.10	0.66
8:MB:7:LEU:HA	8:MB:10:LYS:HB3	1.77	0.66
16:UB:13:ARG:HH11	16:UB:13:ARG:CG	2.06	0.66
2:B:467:G:P	31:EA:33:ARG:HH21	2.19	0.66
29:CA:16:ARG:HG2	29:CA:16:ARG:HH11	1.59	0.66
1:FB:542:G:H5'	38:SC:41:GLY:HA3	1.77	0.66
1:FB:642:A:N3	42:WC:113:SER:OG	2.29	0.66
25:DC:3:LYS:HD3	25:DC:61:ARG:NH1	2.08	0.66
49:DD:8:LYS:HE2	49:DD:31:LEU:HD11	1.78	0.66
1:A:1279:A:OP2	44:TA:9:ARG:NH2	2.28	0.66
17:Q:64:ARG:HG3	17:Q:64:ARG:NH1	2.10	0.66
26:Z:42:GLY:O	26:Z:44:LEU:N	2.28	0.66
38:NA:26:CYS:HA	38:NA:31:CYS:HB2	1.77	0.66
53:CB:48:THR:HB	53:CB:61:TYR:HA	1.78	0.66
1:FB:55:A:N7	1:FB:56:U:N3	2.44	0.66
2:GB:1992:G:O2'	2:GB:1993:U:OP2	2.09	0.66
11:PB:7:LYS:HA	11:PB:7:LYS:NZ	2.11	0.66
40:UC:80:ARG:HE	40:UC:88:VAL:HB	1.60	0.66
51:AB:41:LYS:HE3	51:AB:92:ARG:HH21	1.60	0.66
55:EB:10:ARG:HA	55:EB:13:ILE:HB	1.78	0.66
2:GB:228:A:O2'	2:GB:229:A:OP2	2.12	0.66
1:A:546:G:N1	38:NA:2:GLY:O	2.28	0.66
2:B:298:G:O5'	2:B:298:G:H8	1.78	0.66
3:C:49:C:H2'	3:C:50:G:C8	2.31	0.66
20:T:23:LEU:HD11	29:CA:25:LEU:HD22	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:52:SER:OG	23:W:53:ILE:N	2.26	0.66
36:LA:97:TRP:HH2	36:LA:176:GLU:HG3	1.61	0.66
2:GB:322:A:OP2	7:LB:169:ASN:HB2	1.95	0.66
2:GB:2143:C:O2	2:GB:2148:G:N2	2.28	0.66
10:OB:3:VAL:HG12	10:OB:38:LEU:HA	1.77	0.66
52:GD:58:LEU:HD12	52:GD:62:GLU:HB3	1.77	0.66
10:J:74:ASN:O	10:J:141:LYS:NZ	2.28	0.66
16:P:25:ARG:NH1	16:P:42:ASP:OD1	2.29	0.66
50:ZA:8:ARG:HH12	50:ZA:15:PRO:HG3	1.60	0.66
2:GB:1728:G:H8	2:GB:1732:A:H62	1.42	0.66
36:QC:103:THR:O	36:QC:105:PHE:N	2.29	0.66
42:WC:13:ILE:O	42:WC:17:THR:OG1	2.14	0.66
2:B:1689:A:H62	2:B:1698:A:H2	1.45	0.65
3:C:31:C:H4'	8:H:29:TRP:CH2	2.31	0.65
8:H:7:LEU:HA	8:H:10:LYS:HB3	1.78	0.65
12:L:35:VAL:HG11	12:L:103:ALA:HB3	1.77	0.65
35:JA:113:LEU:HD13	35:JA:175:LEU:HD11	1.77	0.65
1:FB:629:G:H2'	1:FB:630:G:O4'	1.96	0.65
2:GB:1047:G:H2'	2:GB:1110:G:H1	1.61	0.65
3:HB:57:A:OP2	3:HB:58:A:OP2	2.14	0.65
29:HC:16:ARG:HG2	29:HC:16:ARG:HH11	1.61	0.65
29:HC:41:PRO:O	29:HC:44:THR:OG1	2.11	0.65
29:HC:56:LYS:NZ	29:HC:59:GLU:HA	2.10	0.65
38:SC:57:ARG:NH2	38:SC:205:GLU:OE1	2.29	0.65
2:B:1322:A:O3'	20:T:84:ARG:NH1	2.29	0.65
2:B:1936:A:OP2	2:B:1962:5MC:N4	2.28	0.65
4:IA:17:C:H5"	4:IA:17(A):U:OP2	1.96	0.65
1:FB:539:A:H2'	1:FB:540:G:C8	2.31	0.65
17:VB:91:ARG:HD2	17:VB:124:ASP:OD2	1.97	0.65
35:PC:328:ARG:HH12	35:PC:331:GLU:HB2	1.61	0.65
55:JD:10:ARG:HA	55:JD:13:ILE:HB	1.78	0.65
1:A:767:A:O2'	1:A:1524:C:O2	2.12	0.65
1:A:982:U:H5"	48:XA:6:LEU:HD13	1.78	0.65
2:B:2143:C:O2	2:B:2148:G:N2	2.29	0.65
2:B:2771:C:H5"	6:F:202:LYS:NZ	2.12	0.65
11:K:7:LYS:HA	11:K:7:LYS:NZ	2.11	0.65
45:UA:17:GLY:HA2	45:UA:35:PRO:HG3	1.78	0.65
47:WA:4:ILE:HD13	47:WA:57:ARG:HG2	1.77	0.65
1:FB:1223:C:OP2	53:HD:78:ARG:NH2	2.28	0.65
11:PB:23:LEU:HA	11:PB:60:ILE:HD11	1.77	0.65
44:YC:33:GLN:HG2	44:YC:75:ILE:HG22	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:949:A:H1'	1:A:1364:U:N3	2.11	0.65
2:B:595:C:H42	2:B:662:G:H1	1.43	0.65
2:B:1998:G:HO2'	2:B:2724:C:HO2'	1.42	0.65
2:B:2821:A:OP2	2:B:2822:G:OP2	2.15	0.65
14:N:85:LYS:NZ	24:X:4:LYS:HE2	2.11	0.65
16:P:13:ARG:HH11	16:P:13:ARG:CG	2.06	0.65
1:FB:624:C:H2'	1:FB:625:G:H8	1.62	0.65
2:GB:34:C:O2'	2:GB:35:G:OP1	2.13	0.65
2:GB:376:C:H42	2:GB:398:G:H1	1.43	0.65
1:A:112:G:OP2	50:ZA:27:LYS:HE3	1.95	0.65
1:A:539:A:H2'	1:A:540:G:C8	2.31	0.65
1:A:718:G:H5'	45:UA:117:ASN:HB2	1.79	0.65
2:B:307:G:H21	2:B:330:A:N6	1.94	0.65
15:O:12:ARG:O	15:O:17:ARG:NH1	2.30	0.65
23:W:108:PRO:HG3	23:W:141:VAL:HG22	1.79	0.65
11:PB:43:THR:HG23	18:WB:64:ARG:NH1	2.10	0.65
25:DC:82:LEU:N	25:DC:83:GLU:OE1	2.29	0.65
39:TC:8:GLU:HG2	39:TC:34:VAL:HG12	1.77	0.65
41:VC:20:ASP:OD2	41:VC:21:VAL:N	2.29	0.65
1:A:674:G:H2'	1:A:675:A:H8	1.60	0.65
2:B:34:C:O2'	2:B:35:G:OP1	2.13	0.65
1:FB:1440:C:H42	1:FB:1461:G:H1	1.45	0.65
2:GB:2164:C:H41	2:GB:2166:G:H21	1.45	0.65
2:GB:2680:C:H1'	6:KB:187:ALA:HB1	1.79	0.65
23:W:8:TYR:HE2	23:W:23:LYS:NZ	1.88	0.65
51:AB:95:TYR:HA	51:AB:98:LEU:HD12	1.78	0.65
2:GB:574:C:N3	6:KB:145:LYS:NZ	2.44	0.65
8:MB:132:ASN:HB3	8:MB:158:ALA:HA	1.78	0.65
13:RB:57:THR:HG23	13:RB:60:MET:HB2	1.78	0.65
4:NC:74:C:H3'	4:NC:75:C:H5'	1.78	0.65
42:WC:69:ARG:NH1	42:WC:73:ASP:O	2.29	0.65
39:OA:121:LYS:HZ3	39:OA:122:GLU:H	1.42	0.65
52:BB:58:LEU:HD12	52:BB:62:GLU:HB3	1.78	0.65
1:FB:630:G:H3'	1:FB:631:G:H8	1.61	0.65
17:VB:64:ARG:HG3	17:VB:64:ARG:NH1	2.07	0.65
34:MC:22:A:OP2	35:OC:195:ARG:NH1	2.29	0.65
35:OC:113:LEU:HD13	35:OC:175:LEU:HD11	1.79	0.65
40:UC:100:ASN:ND2	52:GD:26:LEU:O	2.30	0.65
1:A:345:C:OP2	17:Q:39:ARG:NH1	2.30	0.65
2:B:646:A:H2'	2:B:647:G:O4'	1.97	0.65
2:B:1506:C:H2'	2:B:1508:A:H8	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2213:U:H5'	25:Y:57:GLU:OE2	1.97	0.65
3:C:103:U:HO2'	23:W:29:TYR:HH	1.43	0.65
5:E:127:VAL:HA	5:E:193:VAL:HG13	1.79	0.65
1:FB:966:M2G:HM13	1:FB:967:5MC:H1'	1.77	0.65
2:GB:55:G:H2'	2:GB:56:A:C8	2.30	0.65
2:GB:530:G:N1	2:GB:2022:U:OP1	2.29	0.65
21:ZB:57:LEU:HD11	21:ZB:78:LYS:HE2	1.79	0.65
1:A:200:G:N2	1:A:201:C:O2'	2.29	0.65
1:A:299:G:H2'	1:A:300:A:C8	2.32	0.65
2:B:2805:G:N1	2:B:2891:G:OP2	2.30	0.65
11:K:23:LEU:HA	11:K:60:ILE:HD11	1.78	0.65
35:JA:183:ARG:NH1	35:KA:306:ARG:HG3	2.12	0.65
36:LA:97:TRP:CH2	36:LA:176:GLU:HG3	2.31	0.65
1:FB:902:G:H2'	1:FB:903:G:C8	2.30	0.65
5:JB:217:ARG:HH11	5:JB:217:ARG:CG	2.09	0.65
23:BC:99:TYR:CZ	23:BC:125:LEU:HB2	2.32	0.65
2:B:1441:G:H2'	2:B:1442:G:C8	2.32	0.64
2:B:2378:A:H4'	16:P:23:ARG:NH1	2.09	0.64
4:IA:74:C:H3'	4:IA:75:C:H5'	1.78	0.64
39:OA:72:GLN:O	39:OA:73:ASN:ND2	2.30	0.64
2:GB:2711:A:OP2	2:GB:2712(A):A:OP2	2.14	0.64
36:QC:33:TYR:HB3	36:QC:41:ILE:HB	1.79	0.64
37:RC:70:VAL:HG21	37:RC:76:VAL:HG21	1.79	0.64
37:RC:95:THR:HG22	37:RC:97:LYS:H	1.62	0.64
37:RC:139:GLN:NE2	37:RC:143:GLU:OE2	2.23	0.64
1:A:532:A:N6	1:A:1206:G:O2'	2.30	0.64
14:N:108:GLY:HA3	23:W:116:VAL:HG11	1.78	0.64
17:Q:102:ILE:HA	17:Q:105:LEU:HD23	1.79	0.64
39:OA:8:GLU:HG2	39:OA:34:VAL:HG12	1.77	0.64
45:UA:120:ARG:HH12	45:UA:126:ARG:HH11	1.44	0.64
51:AB:8:GLY:HA3	51:AB:22:LEU:O	1.95	0.64
51:AB:59:ILE:HG22	51:AB:73:VAL:HA	1.79	0.64
1:FB:1298:C:H5	41:VC:114:ARG:HH11	1.46	0.64
2:GB:2797:U:H3'	2:GB:2798:C:H4'	1.79	0.64
3:HB:28:C:OP2	16:UB:33:LYS:HG3	1.97	0.64
23:BC:79:ARG:HD2	23:BC:80:ARG:NH1	2.13	0.64
25:DC:18:ILE:HG12	25:DC:37:ILE:HG12	1.79	0.64
50:ED:21:VAL:HB	50:ED:33:ILE:HB	1.80	0.64
1:A:1376:U:H2'	1:A:1377:A:C8	2.32	0.64
1:A:1492:A:H5'	46:VA:47:LYS:HD2	1.79	0.64
2:B:1432:C:H2'	2:B:1433:U:O4'	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2514:U:H3	2:B:2570:G:H1	1.45	0.64
4:D:49:G:O6	4:D:65:C:N4	2.30	0.64
23:W:99:TYR:CZ	23:W:125:LEU:HB2	2.32	0.64
45:UA:26:ASN:O	45:UA:26:ASN:ND2	2.30	0.64
12:QB:71:ARG:NH1	12:QB:104:ARG:HB3	2.11	0.64
53:HD:48:THR:HB	53:HD:61:TYR:HA	1.78	0.64
55:JD:12:LYS:HZ2	55:JD:19:GLY:H	1.44	0.64
1:A:1129:C:H5"	43:SA:16:ARG:HH22	1.62	0.64
22:V:41:GLY:N	22:V:64:GLU:OE2	2.30	0.64
2:GB:384:U:H2'	2:GB:385:C:H6	1.62	0.64
2:GB:958:U:OP2	14:SB:14:ARG:NH2	2.31	0.64
2:GB:2557:G:H2'	2:GB:2558:C:C6	2.31	0.64
2:GB:2771:C:H5"	6:KB:202:LYS:NZ	2.12	0.64
48:CD:4:LYS:NZ	48:CD:7:ILE:HG13	2.13	0.64
1:A:837:G:H1	1:A:849:C:H42	1.44	0.64
2:B:2557:G:H2'	2:B:2558:C:H6	1.62	0.64
9:I:7:LEU:HD12	9:I:8:PRO:HD2	1.79	0.64
36:LA:101:MET:HA	36:LA:108:ILE:HG13	1.79	0.64
39:OA:77:PRO:HG2	39:OA:78:HIS:HD2	1.63	0.64
40:PA:100:ASN:ND2	52:BB:26:LEU:O	2.31	0.64
43:SA:83:ARG:HG2	43:SA:102:LEU:HD11	1.80	0.64
1:FB:630:G:H3'	1:FB:631:G:C8	2.33	0.64
21:ZB:53:LYS:H	21:ZB:82:GLN:HB3	1.62	0.64
2:B:1849:G:H2'	2:B:1850:G:H8	1.62	0.64
10:J:79:ILE:O	10:J:144:VAL:HA	1.98	0.64
23:W:97:GLU:HG2	23:W:127:LYS:HG3	1.79	0.64
2:GB:1388:G:H2'	2:GB:1389:G:H8	1.63	0.64
52:GD:66:LEU:O	52:GD:69:THR:OG1	2.14	0.64
1:A:888:G:H2'	1:A:889:A:C8	2.33	0.64
2:B:1089:G:O2'	2:B:1090:U:OP2	2.13	0.64
16:P:74:ALA:HB1	16:P:108:GLY:HA3	1.79	0.64
38:NA:57:ARG:HH12	39:OA:107:ARG:NH1	1.94	0.64
1:FB:1149:C:O2'	1:FB:1280:A:N1	2.27	0.64
2:GB:71:A:H5"	2:GB:73:A:C8	2.31	0.64
13:RB:63:PRO:HG2	32:KC:25:MET:HB2	1.80	0.64
44:YC:16:LEU:HD23	44:YC:68:HIS:HD2	1.61	0.64
45:ZC:21:ILE:HD11	45:ZC:84:VAL:HG22	1.79	0.64
1:A:624:C:H2'	1:A:625:G:H8	1.62	0.64
1:A:1251:A:H4'	43:SA:12:GLU:OE2	1.98	0.64
2:B:59:U:H3	2:B:68:G:H1	1.45	0.64
2:B:2797:U:H3'	2:B:2798:C:H4'	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2857:G:N2	2:B:2860:A:OP2	2.29	0.64
35:JA:200:ALA:HB1	35:KA:306:ARG:NH1	2.13	0.64
36:LA:103:THR:O	36:LA:105:PHE:N	2.29	0.64
41:QA:14:PRO:HB3	41:QA:19:GLY:HA2	1.80	0.64
52:BB:36:ASN:HB3	52:BB:39:VAL:HB	1.80	0.64
1:FB:17:U:H2'	1:FB:18:C:C6	2.33	0.64
1:FB:940:C:O2	1:FB:1343:G:N2	2.17	0.64
4:IB:9:G:H3'	4:IB:10:G:H5"	1.80	0.64
9:NB:9:ILE:HD11	9:NB:72:ILE:HG13	1.79	0.64
10:OB:62:LYS:HE2	10:OB:135:GLU:OE2	1.98	0.64
26:EC:68:ARG:HG2	26:EC:68:ARG:HH11	1.63	0.64
1:A:297:G:H5"	1:A:298:A:OP2	1.98	0.64
1:A:1033:G:H2'	1:A:1034:G:H8	1.63	0.64
1:A:1223:C:OP2	53:CB:78:ARG:NH2	2.31	0.64
2:B:2291:U:H2'	2:B:2292:C:C6	2.33	0.64
25:Y:18:ILE:HG12	25:Y:37:ILE:HG12	1.79	0.64
1:FB:467:G:H2'	1:FB:468:A:C8	2.32	0.64
1:FB:1271:G:H2'	1:FB:1272:G:C8	2.33	0.64
1:FB:1338:G:H5'	1:FB:1339:A:OP2	1.98	0.64
2:GB:271(C):G:H4'	2:GB:271(D):U:H5'	1.78	0.64
2:GB:1432:C:H2'	2:GB:1433:U:O4'	1.96	0.64
21:ZB:26:TYR:HE2	21:ZB:89:ILE:H	1.44	0.64
39:TC:77:PRO:HG2	39:TC:78:HIS:HD2	1.63	0.64
41:VC:14:PRO:HB3	41:VC:19:GLY:HA2	1.80	0.64
1:A:17:U:H2'	1:A:18:C:C6	2.33	0.64
1:A:630:G:H3'	1:A:631:G:H8	1.63	0.64
1:A:946:A:O2'	1:A:1333:A:N3	2.26	0.64
2:B:1066:U:OP1	2:B:1069:A:N6	2.31	0.64
20:T:8:ARG:HB3	20:T:9:TYR:HD2	1.62	0.64
4:IA:39:C:H2'	4:IA:40:C:H6	1.63	0.64
2:GB:59:U:H3	2:GB:68:G:H1	1.45	0.64
8:MB:64:THR:HB	8:MB:94:LEU:HD21	1.78	0.64
25:DC:81:ARG:HH11	25:DC:81:ARG:HB2	1.63	0.64
35:OC:200:ALA:HB1	35:PC:306:ARG:NH1	2.12	0.64
43:XC:5:TYR:HB2	43:XC:18:PHE:HA	1.80	0.64
52:GD:36:ASN:HB3	52:GD:39:VAL:HB	1.80	0.64
1:A:1258:G:H1	1:A:1277:C:H42	1.46	0.63
1:FB:949:A:H1'	1:FB:1364:U:N3	2.13	0.63
50:ED:42:ARG:HB2	50:ED:42:ARG:HH11	1.64	0.63
1:A:304:U:H2'	1:A:305:G:C8	2.34	0.63
1:A:753:A:OP1	49:YA:69:TYR:OH	2.15	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1271:G:H2'	1:A:1272:G:C8	2.34	0.63
8:H:36:LYS:HE2	8:H:160:VAL:HG11	1.78	0.63
8:H:132:ASN:HB3	8:H:158:ALA:HA	1.79	0.63
16:P:48:LEU:HD12	16:P:82:ILE:HD11	1.79	0.63
35:KA:352:GLN:HG3	35:KA:353:LEU:HD12	1.80	0.63
41:QA:20:ASP:OD2	41:QA:21:VAL:N	2.32	0.63
42:RA:32:LYS:HA	42:RA:35:ILE:HD12	1.80	0.63
51:AB:65:ILE:HB	51:AB:69:LYS:HB3	1.79	0.63
1:FB:1123:A:O2'	44:YC:37:PRO:O	2.13	0.63
1:FB:1143:G:H2'	1:FB:1144:G:C8	2.32	0.63
2:GB:595:C:H42	2:GB:662:G:H1	1.45	0.63
4:IB:49:G:O6	4:IB:65:C:N4	2.31	0.63
46:AD:69:TYR:HB3	46:AD:99:HIS:HD2	1.63	0.63
1:A:55:A:N7	1:A:56:U:N3	2.46	0.63
2:B:1043:C:N4	2:B:1112:G:H1	1.95	0.63
7:G:72:ARG:HH11	7:G:72:ARG:CG	2.05	0.63
36:LA:105:PHE:O	36:LA:109:SER:N	2.30	0.63
1:FB:584:G:H5'	51:FD:91:ARG:HH21	1.62	0.63
2:GB:2378:A:H4'	16:UB:23:ARG:NH1	2.12	0.63
6:KB:114:ALA:N	6:KB:158:GLY:O	2.19	0.63
7:LB:12:LEU:HB2	7:LB:126:VAL:HG12	1.79	0.63
41:VC:49:ILE:HA	41:VC:52:GLU:HB2	1.80	0.63
46:AD:89:ARG:HH12	46:AD:95:GLY:H	1.47	0.63
14:N:52:VAL:HG13	23:W:183:LEU:HD11	1.80	0.63
24:X:18:ALA:HB3	24:X:20:ARG:HH12	1.63	0.63
26:Z:47:ASN:O	26:Z:49:LYS:N	2.31	0.63
7:LB:185:ASP:OD1	7:LB:188:ARG:NH2	2.30	0.63
1:A:186(E):C:H2'	1:A:186(F):C:C6	2.33	0.63
1:A:629:G:H2'	1:A:630:G:O4'	1.97	0.63
26:Z:68:ARG:HG2	26:Z:68:ARG:HH11	1.62	0.63
29:CA:41:PRO:O	29:CA:44:THR:OG1	2.12	0.63
30:DA:25:LYS:NZ	30:DA:51:GLU:OE1	2.26	0.63
36:LA:112:VAL:HG13	36:LA:153:ARG:HA	1.78	0.63
39:OA:101:ILE:HD11	39:OA:119:LEU:HD23	1.79	0.63
43:SA:10:ARG:HG2	43:SA:11:LYS:HG3	1.80	0.63
52:BB:45:SER:HG	52:BB:47:THR:HG1	1.42	0.63
2:GB:577:G:O2'	2:GB:1254:A:OP1	2.15	0.63
2:GB:2563:U:H4'	12:QB:28:SER:HA	1.80	0.63
28:GC:61:ARG:HH22	53:HD:42:PRO:HG2	1.63	0.63
30:IC:25:LYS:NZ	30:IC:51:GLU:OE1	2.28	0.63
51:FD:41:LYS:HE3	51:FD:92:ARG:HH21	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:696:A:N3	1:A:786:G:O2'	2.25	0.63
1:A:974:A:H4'	1:A:975:A:H5'	1.81	0.63
1:A:1137:C:OP2	1:A:1137:C:H4'	1.97	0.63
2:B:519:U:H2'	2:B:520:G:C8	2.33	0.63
2:B:607:U:OP1	7:G:103:LYS:N	2.24	0.63
17:Q:16:ARG:HG3	17:Q:19:LEU:HD11	1.80	0.63
18:R:50:ARG:O	18:R:54:LYS:NZ	2.28	0.63
47:WA:87:TYR:CE2	47:WA:91:ARG:HD2	2.34	0.63
2:GB:1043:C:N4	2:GB:1112:G:H1	1.95	0.63
2:GB:2327:A:H2'	2:GB:2328:A:C8	2.34	0.63
2:GB:2789:C:N3	2:GB:2894:G:N2	2.46	0.63
7:LB:181:LEU:HD11	7:LB:186:ILE:HD11	1.80	0.63
10:OB:8:PRO:HB3	10:OB:15:VAL:H	1.63	0.63
22:AC:41:GLY:N	22:AC:64:GLU:OE2	2.32	0.63
24:CC:23:VAL:HA	24:CC:38:VAL:HG22	1.79	0.63
2:B:1889:A:H2'	2:B:1890:A:C8	2.34	0.63
8:H:27:ASN:HB3	8:H:30:GLU:HG3	1.79	0.63
17:Q:120:ARG:HA	17:Q:123:LYS:HB2	1.80	0.63
40:PA:3:ARG:HH11	40:PA:3:ARG:HB2	1.64	0.63
41:QA:49:ILE:HA	41:QA:52:GLU:HB2	1.80	0.63
49:YA:8:LYS:HE2	49:YA:31:LEU:HD11	1.79	0.63
51:AB:29:HIS:HB2	51:AB:36:ILE:HD11	1.81	0.63
1:FB:1251:A:H4'	43:XC:12:GLU:OE2	1.99	0.63
2:GB:252:G:P	13:RB:50:ARG:HH12	2.22	0.63
2:GB:646:A:H2'	2:GB:647:G:O4'	1.98	0.63
16:UB:31:SER:O	16:UB:97:ARG:NH2	2.29	0.63
35:PC:352:GLN:HG3	35:PC:353:LEU:HD12	1.81	0.63
51:FD:95:TYR:HA	51:FD:98:LEU:HD12	1.78	0.63
1:A:467:G:H2'	1:A:468:A:C8	2.33	0.63
1:A:1041:A:H3'	1:A:1042:G:C8	2.33	0.63
1:A:1147:C:O2'	43:SA:5:TYR:OH	2.15	0.63
2:B:2308:G:O2'	2:B:2310:A:N7	2.31	0.63
9:I:9:ILE:HD11	9:I:72:ILE:HG13	1.79	0.63
2:GB:2641:G:OP1	11:PB:74:ARG:NE	2.32	0.63
18:WB:112:ARG:HH12	19:XB:47:VAL:HB	1.63	0.63
46:AD:86:ARG:HG3	46:AD:101:VAL:HG22	1.80	0.63
46:AD:97:ARG:HH11	46:AD:97:ARG:HB2	1.64	0.63
47:BD:31:LYS:NZ	47:BD:35:GLU:OE1	2.32	0.63
51:FD:59:ILE:HG22	51:FD:73:VAL:HA	1.79	0.63
1:A:1029:G:H1'	1:A:1032(C):G:H22	1.63	0.63
2:B:289:A:H2'	2:B:290:G:O4'	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1478:G:O2'	2:B:1558:A:N1	2.32	0.63
37:MA:70:VAL:HG21	37:MA:76:VAL:HG21	1.81	0.63
51:AB:66:SER:HB3	51:AB:69:LYS:HB2	1.81	0.63
1:FB:186(E):C:H2'	1:FB:186(F):C:C6	2.34	0.63
1:FB:674:G:OP1	40:UC:87:ARG:NH2	2.28	0.63
1:FB:1033:G:H2'	1:FB:1034:G:H8	1.62	0.63
1:FB:1041:A:H3'	1:FB:1042:G:C8	2.34	0.63
9:NB:126:PRO:CG	9:NB:130:ARG:HH12	2.11	0.63
1:A:737:A:H2'	1:A:738:C:C6	2.34	0.62
1:A:1415:G:H1	1:A:1485:U:H3	1.46	0.62
2:B:307:G:H21	2:B:330:A:H62	1.46	0.62
2:B:2343:C:O2'	2:B:2373:G:O2'	2.16	0.62
10:J:43:ASN:HA	10:J:46:ALA:HB3	1.79	0.62
35:JA:174:ARG:HG3	35:KA:341:ILE:HG21	1.79	0.62
39:OA:48:ALA:HB3	39:OA:54:ALA:HB2	1.81	0.62
1:FB:532:A:N6	1:FB:1206:G:O2'	2.32	0.62
1:FB:674:G:H2'	1:FB:675:A:H8	1.62	0.62
1:FB:892:A:H2'	1:FB:893:C:C6	2.34	0.62
2:GB:1066:U:OP1	2:GB:1069:A:N6	2.31	0.62
5:JB:230:ASP:OD1	5:JB:230:ASP:N	2.28	0.62
9:NB:10:PRO:HA	9:NB:49:VAL:HG12	1.81	0.62
50:ED:42:ARG:HB2	50:ED:42:ARG:NH1	2.13	0.62
2:B:2251:OMG:H8	2:B:2251:OMG:O5'	1.82	0.62
13:M:95:VAL:HB	13:M:125:VAL:HG12	1.80	0.62
38:NA:57:ARG:NH2	38:NA:205:GLU:OE1	2.33	0.62
1:FB:983:A:H5'	1:FB:984:C:OP2	1.98	0.62
2:GB:1089:G:O2'	2:GB:1090:U:OP2	2.15	0.62
2:GB:1616:A:H4'	2:GB:1617:C:OP2	1.98	0.62
2:GB:1814:G:OP1	5:JB:40:THR:HG21	2.00	0.62
34:MC:21:A:H62	35:OC:198:THR:HG1	1.45	0.62
1:A:54:C:N4	1:A:357:G:H1	1.97	0.62
1:A:989:C:H42	1:A:1217:C:H42	1.46	0.62
1:A:1264:C:H2'	1:A:1265:G:C8	2.34	0.62
2:B:1441:G:H2'	2:B:1442:G:H8	1.64	0.62
2:B:2789:C:N3	2:B:2894:G:N2	2.47	0.62
35:KA:328:ARG:O	35:KA:330:ASP:N	2.31	0.62
47:WA:15:VAL:HG11	47:WA:48:LEU:HD13	1.79	0.62
1:FB:974:A:H4'	1:FB:975:A:H5'	1.81	0.62
1:FB:1258:G:H1	1:FB:1277:C:H42	1.47	0.62
6:KB:23:VAL:HG11	6:KB:183:LEU:HB3	1.80	0.62
38:SC:191:ARG:NH2	38:SC:200:GLU:OE1	2.28	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:UC:3:ARG:HB2	40:UC:3:ARG:HH11	1.64	0.62
43:XC:50:LEU:O	43:XC:54:ASP:N	2.32	0.62
45:ZC:15:ALA:O	45:ZC:78:GLN:N	2.31	0.62
49:DD:39:LEU:HD12	49:DD:56:LEU:HB2	1.81	0.62
1:A:126:G:OP1	1:A:605:U:O2'	2.16	0.62
1:A:709:G:H2'	1:A:710:G:H8	1.64	0.62
2:B:898:C:H2'	2:B:899:A:O4'	1.99	0.62
2:B:2090:G:N2	25:Y:45:ASN:OD1	2.27	0.62
2:B:2358:G:H22	13:M:55:ARG:HH12	1.48	0.62
16:P:31:SER:O	16:P:97:ARG:NH2	2.31	0.62
25:Y:59:THR:O	25:Y:91:LYS:NZ	2.26	0.62
45:UA:123:LYS:O	45:UA:125:PHE:N	2.31	0.62
1:FB:254:G:O3'	51:FD:69:LYS:NZ	2.32	0.62
1:FB:1029:G:H1'	1:FB:1032(C):G:H22	1.65	0.62
1:FB:1475:G:H4'	2:GB:1689:A:H4'	1.81	0.62
2:GB:289:A:H2'	2:GB:290:G:O4'	2.00	0.62
2:GB:307:G:H21	2:GB:330:A:N6	1.97	0.62
42:WC:9:MET:HB2	42:WC:26:VAL:HG21	1.81	0.62
45:ZC:123:LYS:O	45:ZC:125:PHE:N	2.31	0.62
51:FD:65:ILE:HB	51:FD:69:LYS:HB3	1.82	0.62
2:B:274:G:H1'	2:B:363(A):G:N2	2.15	0.62
2:B:1716:U:H3	2:B:1743:G:H1	1.46	0.62
4:D:9:G:H3'	4:D:10:G:H5"	1.82	0.62
17:Q:60:THR:HG22	17:Q:77:PRO:HA	1.80	0.62
25:Y:82:LEU:N	25:Y:83:GLU:OE1	2.31	0.62
37:MA:101:LEU:HD21	37:MA:103:VAL:HG13	1.81	0.62
1:FB:1129:C:H5"	43:XC:16:ARG:HH22	1.62	0.62
1:FB:1130:A:H2'	1:FB:1131:G:H8	1.63	0.62
2:GB:2308:G:O2'	2:GB:2310:A:N7	2.31	0.62
19:XB:66:ARG:HD2	19:XB:88:ARG:HG3	1.80	0.62
22:AC:86:ARG:NH1	22:AC:100:ALA:O	2.23	0.62
36:QC:112:VAL:HG13	36:QC:153:ARG:HA	1.80	0.62
1:A:1347:G:N7	43:SA:10:ARG:NH2	2.48	0.62
2:B:919:G:N2	2:B:2269:A:OP2	2.33	0.62
2:B:1048:A:N1	2:B:1112:G:O2'	2.27	0.62
25:Y:81:ARG:HB2	25:Y:81:ARG:HH11	1.65	0.62
37:MA:112:SER:HB3	37:MA:115:LEU:HD12	1.81	0.62
16:UB:74:ALA:HB1	16:UB:108:GLY:HA3	1.80	0.62
36:QC:77:ALA:HA	36:QC:80:ILE:HD13	1.82	0.62
40:UC:5:GLU:OE1	52:GD:34:TYR:OH	2.12	0.62
43:XC:26:VAL:HB	43:XC:33:PHE:HD2	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:983:A:H5'	1:A:984:C:OP2	1.99	0.62
1:A:1225:A:H2'	1:A:1225:A:N3	2.15	0.62
2:B:322:A:OP2	7:G:169:ASN:HB2	1.99	0.62
13:M:124:LYS:HE2	13:M:144:GLU:HG2	1.81	0.62
41:QA:15:ASP:OD2	41:QA:17:VAL:HG23	2.00	0.62
1:FB:808:C:OP2	49:DD:48:LYS:HD3	2.00	0.62
2:GB:38:A:H2'	2:GB:39:C:C6	2.34	0.62
2:GB:95:G:H4'	26:EC:46:GLN:HA	1.81	0.62
2:GB:363(B):A:H2'	2:GB:363(C):G:C8	2.34	0.62
2:GB:1448:G:H2'	2:GB:1449(B):A:C8	2.35	0.62
27:FC:44:ARG:NH1	27:FC:44:ARG:HB2	2.15	0.62
32:KC:4:MET:HE2	32:KC:63:PRO:HG3	1.81	0.62
32:KC:55:ALA:HA	32:KC:58:ILE:HG12	1.82	0.62
36:QC:20:GLU:OE1	36:QC:23:ARG:NH2	2.26	0.62
49:DD:3:ILE:HG21	49:DD:34:LEU:HD21	1.81	0.62
2:B:1292:U:H2'	2:B:1293:C:C6	2.35	0.62
2:B:1790:C:H5"	2:B:1791:A:OP1	1.99	0.62
10:J:8:PRO:HB3	10:J:15:VAL:H	1.65	0.62
17:Q:128:GLU:OE2	17:Q:129:ARG:N	2.33	0.62
19:S:75:PHE:HE1	19:S:82:ARG:NH1	1.97	0.62
25:Y:86:SER:HB3	25:Y:89:GLU:HG3	1.82	0.62
27:AA:6:VAL:HG13	27:AA:56:VAL:HG13	1.81	0.62
37:MA:139:GLN:NE2	37:MA:143:GLU:OE2	2.26	0.62
2:GB:607:U:OP1	7:LB:103:LYS:N	2.25	0.62
8:MB:36:LYS:HE2	8:MB:160:VAL:HG11	1.81	0.62
35:PC:348:HIS:HA	35:PC:351:ASP:HB2	1.81	0.62
42:WC:23:SER:OG	42:WC:24:THR:N	2.33	0.62
52:GD:55:ARG:HB3	52:GD:55:ARG:NH1	2.14	0.62
2:B:485:C:H42	2:B:495:G:H1	1.47	0.62
2:B:848:G:H2'	2:B:849:A:C8	2.35	0.62
2:B:2361:A:P	32:FA:26:LYS:HZ2	2.23	0.62
16:P:83:LYS:HB2	16:P:111:GLU:OE2	1.99	0.62
38:NA:188:LEU:HD13	38:NA:188:LEU:H	1.63	0.62
39:OA:148:VAL:HG21	42:RA:107:LEU:HD22	1.82	0.62
46:VA:40:VAL:HG13	46:VA:56:ALA:HB2	1.82	0.62
36:QC:105:PHE:O	36:QC:109:SER:N	2.29	0.62
36:QC:153:ARG:HG3	36:QC:154:LEU:HD12	1.82	0.62
43:XC:10:ARG:HG2	43:XC:11:LYS:HG3	1.80	0.62
43:XC:83:ARG:HG2	43:XC:102:LEU:HD11	1.82	0.62
52:GD:55:ARG:HB3	52:GD:55:ARG:HH11	1.65	0.62
1:A:447:G:H1'	1:A:487:A:H61	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:979:C:H42	48:XA:18:VAL:HB	1.63	0.62
2:B:2557:G:H2'	2:B:2558:C:C6	2.34	0.62
5:E:80:ALA:HB3	5:E:94:LEU:HB3	1.82	0.62
45:UA:87:THR:HG22	45:UA:91:ARG:NH1	2.15	0.62
1:FB:1435:G:H1	1:FB:1466:C:H42	1.47	0.62
2:GB:898:C:H2'	2:GB:899:A:O4'	2.00	0.62
2:GB:2577:A:H5"	2:GB:2578:G:H5'	1.81	0.62
5:JB:80:ALA:HB3	5:JB:94:LEU:HB3	1.82	0.62
6:KB:120:TRP:CD1	6:KB:155:LYS:HB3	2.35	0.62
9:NB:127:GLU:HB2	9:NB:130:ARG:HB2	1.81	0.62
1:A:1298:C:H5	41:QA:114:ARG:HH11	1.48	0.61
2:B:207:A:H2'	2:B:208:C:O4'	2.00	0.61
2:B:1007:C:H5"	11:K:35:ARG:NH1	2.13	0.61
2:B:1092:C:N4	2:B:1099:G:H1	1.97	0.61
42:RA:96:GLY:H	42:RA:99:GLU:HB2	1.65	0.61
43:SA:50:LEU:O	43:SA:54:ASP:N	2.33	0.61
2:GB:2358:G:H22	13:RB:55:ARG:HH12	1.48	0.61
17:VB:60:THR:HG22	17:VB:77:PRO:HA	1.82	0.61
17:VB:120:ARG:HA	17:VB:123:LYS:HB2	1.82	0.61
23:BC:140:ASP:OD2	23:BC:141:VAL:N	2.33	0.61
39:TC:101:ILE:HD11	39:TC:119:LEU:HD23	1.81	0.61
1:A:630:G:H3'	1:A:631:G:C8	2.35	0.61
1:A:1046:A:H5'	1:A:1047:G:OP2	2.01	0.61
2:B:376:C:H42	2:B:398:G:H1	1.48	0.61
5:E:108:PRO:HD2	5:E:111:LEU:HD22	1.82	0.61
11:K:20:GLY:HA2	11:K:61:ARG:HG3	1.82	0.61
31:EA:2:LYS:HG3	31:EA:6:GLN:HE21	1.64	0.61
37:MA:83:ARG:HA	37:MA:86:VAL:HG22	1.81	0.61
42:RA:29:SER:O	42:RA:33:GLU:N	2.32	0.61
1:FB:888:G:H2'	1:FB:889:A:C8	2.35	0.61
2:GB:39:C:O2	7:LB:46:ARG:NH2	2.28	0.61
2:GB:549:G:H5"	2:GB:550:G:OP2	2.00	0.61
25:DC:59:THR:O	25:DC:91:LYS:NZ	2.31	0.61
37:RC:83:ARG:HA	37:RC:86:VAL:HG22	1.82	0.61
1:A:1130:A:H2'	1:A:1131:G:H8	1.63	0.61
2:B:363(B):A:H2'	2:B:363(C):G:C8	2.35	0.61
35:KA:328:ARG:HH12	35:KA:331:GLU:HB2	1.65	0.61
44:TA:16:LEU:HD23	44:TA:68:HIS:HD2	1.66	0.61
2:GB:1205:U:C5	7:LB:171:PRO:HA	2.35	0.61
2:GB:1506:C:H2'	2:GB:1508:A:H8	1.64	0.61
2:GB:2857:G:N2	2:GB:2860:A:OP2	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LB:165:ARG:HG3	7:LB:165:ARG:NH1	2.07	0.61
7:LB:170:LEU:HD12	7:LB:171:PRO:HD2	1.82	0.61
19:XB:8:GLY:HA3	19:XB:23:GLU:HB2	1.83	0.61
1:A:959:A:N1	1:A:1221:G:O2'	2.30	0.61
2:B:1257:C:H4'	7:G:83:PHE:CE1	2.36	0.61
12:L:60:ALA:HA	12:L:87:ILE:HG13	1.80	0.61
22:V:37:VAL:HG21	22:V:72:VAL:HG21	1.81	0.61
22:V:46:LYS:HB3	22:V:60:PHE:HD1	1.64	0.61
45:UA:81:ASP:OD2	45:UA:106:LYS:HB2	2.00	0.61
46:VA:69:TYR:HB3	46:VA:99:HIS:HD2	1.65	0.61
1:A:291:C:H42	1:A:309:G:H1	1.48	0.61
1:A:1226:C:H4'	53:CB:80:TYR:CZ	2.35	0.61
2:B:252:G:P	13:M:50:ARG:HH12	2.23	0.61
2:B:1205:U:C5	7:G:171:PRO:HA	2.36	0.61
37:MA:66:VAL:HG23	37:MA:101:LEU:HB2	1.81	0.61
1:FB:735:C:H2'	1:FB:736:C:C6	2.35	0.61
1:FB:1143:G:H2'	1:FB:1144:G:H8	1.62	0.61
2:GB:444:C:H4'	7:LB:49:ALA:HB2	1.82	0.61
2:GB:2622:C:O2'	2:GB:2824:C:N4	2.32	0.61
2:GB:2711:A:H5"	2:GB:2712:U:H5"	1.81	0.61
7:LB:152:GLU:OE2	7:LB:191:ARG:NH1	2.32	0.61
1:A:542:G:H5'	38:NA:41:GLY:HA3	1.83	0.61
2:B:2756:U:H1'	2:B:2757:A:H5"	1.82	0.61
43:SA:5:TYR:HB2	43:SA:18:PHE:HA	1.82	0.61
1:FB:624:C:H2'	1:FB:625:G:C8	2.35	0.61
2:GB:1426:G:O2'	2:GB:1572:A:N6	2.32	0.61
2:GB:1803:A:O2'	5:JB:259:THR:HG21	2.01	0.61
3:HB:31:C:H4'	8:MB:29:TRP:CH2	2.36	0.61
11:PB:17:ASP:OD1	11:PB:56:ASN:HB2	2.01	0.61
45:ZC:81:ASP:OD2	45:ZC:106:LYS:HB2	2.00	0.61
1:A:339:C:OP2	12:L:97:ARG:NH1	2.33	0.61
2:B:95:G:H4'	26:Z:46:GLN:HA	1.82	0.61
2:B:548:A:H2'	2:B:549:G:O4'	2.00	0.61
2:B:1011:G:OP2	18:R:66:ASN:ND2	2.32	0.61
49:YA:3:ILE:HG21	49:YA:34:LEU:HD21	1.81	0.61
1:FB:975:A:O2'	48:CD:32:SER:HA	1.99	0.61
1:FB:1175:G:H2'	1:FB:1176:A:H8	1.66	0.61
1:FB:1175:G:H2'	1:FB:1176:A:C8	2.35	0.61
1:FB:1377:A:OP2	41:VC:94:ARG:NH1	2.34	0.61
2:GB:2142:C:N4	2:GB:2148:G:H22	1.98	0.61
2:GB:2213:U:H5'	25:DC:57:GLU:OE2	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:FD:29:HIS:HB2	51:FD:36:ILE:HD11	1.82	0.61
1:A:624:C:H2'	1:A:625:G:C8	2.36	0.61
6:F:120:TRP:CD1	6:F:155:LYS:HB3	2.35	0.61
14:N:116:GLU:OE2	14:N:119:ARG:NE	2.33	0.61
22:V:86:ARG:HH12	22:V:100:ALA:C	2.03	0.61
31:EA:41:ARG:NH1	31:EA:41:ARG:HB2	2.16	0.61
37:MA:73:PRO:HA	37:MA:76:VAL:HG23	1.83	0.61
24:CC:18:ALA:HB3	24:CC:20:ARG:HH12	1.63	0.61
42:WC:32:LYS:HA	42:WC:35:ILE:HD12	1.83	0.61
45:ZC:87:THR:HG22	45:ZC:91:ARG:NH1	2.16	0.61
1:A:642:A:N3	42:RA:113:SER:OG	2.32	0.61
1:A:745:C:H1'	1:A:836:G:O2'	2.01	0.61
17:Q:30:VAL:HG22	17:Q:86:ILE:HD12	1.81	0.61
24:X:41:ARG:HH11	24:X:41:ARG:HG3	1.63	0.61
34:HA:21:A:N6	35:JA:198:THR:OG1	2.17	0.61
36:LA:87:ARG:NH2	36:LA:220:ASP:OD2	2.33	0.61
38:NA:141:ARG:HB2	38:NA:141:ARG:HH11	1.65	0.61
54:DB:50:GLU:HA	54:DB:53:LEU:HD12	1.81	0.61
2:GB:775:G:C5	2:GB:794:G:C8	2.89	0.61
4:IB:41:C:O2'	41:VC:140:ASP:OD1	2.19	0.61
13:RB:124:LYS:HE2	13:RB:144:GLU:HG2	1.81	0.61
25:DC:86:SER:HB3	25:DC:89:GLU:HG3	1.81	0.61
51:FD:96:GLN:O	51:FD:98:LEU:N	2.32	0.61
2:B:775:G:C5	2:B:794:G:C8	2.89	0.61
2:B:2135:A:H2'	2:B:2136:C:H2'	1.82	0.61
7:G:181:LEU:HD11	7:G:186:ILE:HD11	1.82	0.61
11:K:17:ASP:OD1	11:K:56:ASN:HB2	2.01	0.61
14:N:61:GLY:HA2	23:W:177:PRO:HB2	1.81	0.61
17:Q:54:ARG:HB3	17:Q:54:ARG:NH1	2.16	0.61
21:U:65:ARG:HB2	21:U:70:LEU:HG	1.83	0.61
41:QA:46:ALA:HB1	41:QA:121:ALA:HB2	1.81	0.61
2:GB:519:U:H2'	2:GB:520:G:C8	2.35	0.61
2:GB:557:U:H2'	2:GB:558:G:H8	1.64	0.61
2:GB:1441:G:H2'	2:GB:1442:G:C8	2.36	0.61
23:BC:48:PHE:HE1	23:BC:71:VAL:HG21	1.64	0.61
1:A:512:U:OP1	38:NA:46:LYS:NZ	2.31	0.60
2:B:2622:C:O2'	2:B:2824:C:N4	2.32	0.60
8:H:139:LEU:HD22	8:H:149:VAL:HG11	1.83	0.60
17:Q:64:ARG:HD2	17:Q:102:ILE:HD11	1.82	0.60
45:UA:48:ILE:HG21	45:UA:63:LEU:HB3	1.83	0.60
1:FB:982:U:H5"	48:CD:6:LEU:HD13	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1011:G:OP2	18:WB:66:ASN:ND2	2.33	0.60
2:GB:1826:G:H5"	2:GB:1827:C:OP2	2.01	0.60
3:HB:103:U:HO2'	23:BC:29:TYR:HH	1.45	0.60
7:LB:63:LYS:NZ	7:LB:75:HIS:O	2.27	0.60
18:WB:83:LEU:HD12	18:WB:113:ALA:HB2	1.83	0.60
4:NC:39:C:H2'	4:NC:40:C:H6	1.65	0.60
37:RC:73:PRO:HA	37:RC:76:VAL:HG23	1.83	0.60
44:YC:45:ARG:HD3	48:CD:36:PHE:HE1	1.65	0.60
1:A:1372:U:H5"	43:SA:71:SER:HB2	1.83	0.60
1:A:1399:C:O2	1:A:1502:A:N6	2.34	0.60
2:B:228:A:O2'	2:B:229:A:OP2	2.12	0.60
8:H:11:TYR:OH	8:H:32:PRO:O	2.18	0.60
41:QA:146:GLU:HA	41:QA:149:ARG:HB2	1.83	0.60
1:FB:146:G:H2'	1:FB:147:G:H8	1.65	0.60
1:FB:216:G:H2'	1:FB:217:C:C6	2.35	0.60
1:FB:291:C:H42	1:FB:309:G:H1	1.48	0.60
1:FB:1329:A:H5'	47:BD:29:ARG:HH11	1.66	0.60
2:GB:2321:G:H5'	2:GB:2322:A:OP2	2.01	0.60
13:RB:95:VAL:HB	13:RB:125:VAL:HG12	1.82	0.60
16:UB:44:LYS:HB2	16:UB:44:LYS:NZ	2.16	0.60
1:A:1175:G:H2'	1:A:1176:A:C8	2.36	0.60
2:B:1448:G:H2'	2:B:1449(B):A:C8	2.35	0.60
2:B:2593:U:H2'	2:B:2594:C:C6	2.36	0.60
12:L:82:ASN:HD22	12:L:82:ASN:N	1.97	0.60
18:R:83:LEU:HD12	18:R:113:ALA:HB2	1.83	0.60
29:CA:30:LEU:HD13	29:CA:39:MET:HB3	1.81	0.60
38:NA:18:LYS:HE3	38:NA:20:TYR:H	1.66	0.60
1:FB:1137:C:OP2	1:FB:1137:C:H4'	2.00	0.60
2:GB:274:G:H1'	2:GB:363(A):G:N2	2.15	0.60
2:GB:635:C:O2'	2:GB:639:U:OP1	2.20	0.60
5:JB:69:ARG:NH2	5:JB:128:GLY:O	2.34	0.60
46:AD:40:VAL:HG13	46:AD:56:ALA:HB2	1.84	0.60
51:FD:66:SER:OG	51:FD:67:LYS:N	2.34	0.60
2:B:549:G:H5"	2:B:550:G:OP2	2.01	0.60
2:B:1104:C:H2'	2:B:1105:U:H6	1.65	0.60
38:NA:12:CYS:HG	38:NA:18:LYS:NZ	1.98	0.60
1:FB:1225:A:H2'	1:FB:1225:A:N3	2.14	0.60
1:FB:1359:C:O2'	1:FB:1362(A):C:N4	2.33	0.60
12:QB:21:CYS:HB2	12:QB:39:ILE:HD12	1.83	0.60
12:QB:73:ASP:HB2	17:VB:82:LEU:HD13	1.84	0.60
2:B:1257:C:H4'	7:G:83:PHE:CD1	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2091:U:H1'	25:Y:47:GLN:OE1	2.02	0.60
2:B:2635:C:H5"	6:F:78:LEU:HB3	1.83	0.60
2:B:2792:G:H2'	2:B:2793:G:C8	2.35	0.60
7:G:78:ILE:HA	7:G:83:PHE:CE2	2.37	0.60
48:XA:4:LYS:NZ	48:XA:7:ILE:HG13	2.17	0.60
1:FB:745:C:H1'	1:FB:836:G:O2'	2.01	0.60
1:FB:1226:C:H4'	53:HD:80:TYR:CZ	2.36	0.60
1:FB:1359:C:OP1	48:CD:22:THR:OG1	2.13	0.60
1:FB:1399:C:O2	1:FB:1502:A:N6	2.34	0.60
2:GB:2792:G:H2'	2:GB:2793:G:C8	2.36	0.60
17:VB:16:ARG:HG3	17:VB:19:LEU:HD11	1.82	0.60
23:BC:6:LYS:H	23:BC:6:LYS:HD2	1.66	0.60
41:VC:46:ALA:HB1	41:VC:121:ALA:HB2	1.82	0.60
49:DD:33:THR:O	49:DD:37:ASN:ND2	2.25	0.60
54:ID:93:GLU:O	54:ID:95:ALA:N	2.33	0.60
2:B:1388:G:H2'	2:B:1389:G:H8	1.66	0.60
2:B:1433:U:O2	2:B:1561:G:N1	2.34	0.60
2:B:2142:C:N4	2:B:2148:G:H22	2.00	0.60
2:B:2711:A:H5"	2:B:2712:U:H5"	1.83	0.60
8:H:135:LEU:HD23	8:H:155:MET:HG3	1.84	0.60
14:N:43:THR:N	14:N:46:GLN:OE1	2.28	0.60
31:EA:47:ARG:HB3	31:EA:47:ARG:NH1	2.16	0.60
38:SC:141:ARG:HB2	38:SC:141:ARG:HH11	1.65	0.60
2:B:529:A:H62	2:B:2041:U:H3	1.49	0.60
2:B:881:G:N2	2:B:895:U:H3	2.00	0.60
2:B:2394:C:N3	4:D:76:A:O2'	2.28	0.60
6:F:21:VAL:HG22	6:F:23:VAL:HG23	1.83	0.60
7:G:165:ARG:HG3	7:G:165:ARG:NH1	2.13	0.60
12:L:64:ARG:HD3	12:L:79:PHE:CD1	2.36	0.60
37:MA:86:VAL:HA	37:MA:89:GLU:HB3	1.84	0.60
45:UA:22:HIS:HB3	45:UA:29:ILE:HB	1.83	0.60
52:BB:55:ARG:NH1	52:BB:55:ARG:HB3	2.17	0.60
1:FB:112:G:OP2	50:ED:27:LYS:HE3	2.00	0.60
1:FB:826:C:O2	42:WC:15:ASN:ND2	2.35	0.60
1:FB:1013:G:N2	1:FB:1016:A:OP2	2.35	0.60
2:GB:755:C:H2'	2:GB:756:C:C6	2.37	0.60
17:VB:54:ARG:HB3	17:VB:54:ARG:NH1	2.17	0.60
23:BC:26:GLY:HA2	23:BC:85:HIS:CD2	2.37	0.60
38:SC:31:CYS:O	38:SC:33:MET:N	2.34	0.60
41:VC:146:GLU:HA	41:VC:149:ARG:HB2	1.82	0.60
45:ZC:108:ILE:HD12	52:GD:87:ARG:NH1	2.15	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:114:U:H2'	1:A:115:G:C8	2.36	0.60
2:B:1451:C:H42	2:B:1459:G:H1	1.47	0.60
2:B:2023:G:H5'	2:B:2617:C:H4'	1.84	0.60
11:K:59:LYS:NZ	11:K:125:GLY:HA2	2.17	0.60
35:JA:112:PHE:HB2	35:JA:206:MET:HB2	1.83	0.60
45:UA:15:ALA:O	45:UA:78:GLN:N	2.31	0.60
50:ZA:21:VAL:HB	50:ZA:33:ILE:HB	1.84	0.60
2:GB:797:C:OP2	7:LB:62:ARG:HG3	2.02	0.60
2:GB:1292:U:H2'	2:GB:1293:C:C6	2.36	0.60
2:GB:1379:A:H4'	2:GB:1380:G:OP2	2.01	0.60
2:GB:2543:G:H2'	2:GB:2544:G:C8	2.36	0.60
14:SB:61:GLY:HA2	23:BC:177:PRO:HB2	1.83	0.60
37:RC:112:SER:HB3	37:RC:115:LEU:HD12	1.84	0.60
1:A:1175:G:H2'	1:A:1176:A:H8	1.66	0.60
2:B:900:A:H2'	2:B:901:A:C8	2.36	0.60
2:B:1093:G:H2'	2:B:1093:G:N3	2.16	0.60
2:B:2565:A:H5"	2:B:2566:A:OP2	2.01	0.60
5:E:61:LEU:O	5:E:63:ARG:NH1	2.35	0.60
6:F:119:ARG:HG2	6:F:120:TRP:CE2	2.37	0.60
8:H:101:ILE:O	8:H:105:LYS:NZ	2.24	0.60
9:I:136:ILE:HD12	9:I:137:ASP:H	1.67	0.60
36:LA:33:TYR:HB3	36:LA:41:ILE:HB	1.83	0.60
49:YA:39:LEU:HD12	49:YA:56:LEU:HB2	1.83	0.60
1:FB:114:U:H2'	1:FB:115:G:C8	2.36	0.60
2:GB:270(A):A:OP2	2:GB:270(Z):G:N2	2.32	0.60
2:GB:1067:A:H5'	2:GB:1068:G:N2	2.17	0.60
2:GB:1092:C:N4	2:GB:1099:G:H1	1.99	0.60
2:GB:1104:C:H2'	2:GB:1105:U:H6	1.66	0.60
2:GB:2023:G:H5'	2:GB:2617:C:H4'	1.83	0.60
6:KB:21:VAL:HG22	6:KB:23:VAL:HG23	1.84	0.60
16:UB:11:LYS:HD3	16:UB:15:ARG:NH1	2.16	0.60
45:ZC:48:ILE:HG21	45:ZC:63:LEU:HB3	1.84	0.60
47:BD:87:TYR:CE2	47:BD:91:ARG:HD2	2.37	0.60
1:A:269:C:H2'	1:A:270:A:C8	2.37	0.60
2:B:2131:G:OP2	2:B:2132:U:O2'	2.14	0.60
2:B:2133:G:O2'	2:B:2157:G:N2	2.34	0.60
18:R:10:ARG:HG2	18:R:14:HIS:CD2	2.36	0.60
38:NA:18:LYS:HB3	38:NA:20:TYR:CE2	2.37	0.60
46:VA:97:ARG:HB2	46:VA:97:ARG:HH11	1.66	0.60
1:FB:696:A:N3	1:FB:786:G:O2'	2.28	0.60
12:QB:82:ASN:HD22	12:QB:82:ASN:N	1.97	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:JC:10:ARG:HH11	31:JC:14:LYS:HE3	1.67	0.60
39:TC:72:GLN:O	39:TC:73:ASN:ND2	2.35	0.60
1:A:1359:C:O2'	1:A:1362(A):C:N4	2.34	0.59
2:B:2771:C:H5"	6:F:202:LYS:HZ3	1.67	0.59
17:Q:91:ARG:HD2	17:Q:124:ASP:OD2	2.01	0.59
23:W:48:PHE:HE1	23:W:71:VAL:HG21	1.66	0.59
41:QA:85:TYR:HD2	41:QA:154:TYR:HE2	1.50	0.59
1:FB:1125:U:O2'	1:FB:1126:U:H5"	2.01	0.59
2:GB:735:A:H5"	2:GB:736:C:OP2	2.03	0.59
2:GB:1187:G:H8	2:GB:1187:G:O5'	1.84	0.59
2:GB:1889:A:H2'	2:GB:1890:A:C8	2.37	0.59
3:HB:22:U:H3	3:HB:61:G:H1	1.50	0.59
6:KB:119:ARG:HG2	6:KB:120:TRP:CE2	2.36	0.59
27:FC:44:ARG:HB2	27:FC:44:ARG:HH11	1.66	0.59
31:JC:41:ARG:NH1	31:JC:41:ARG:HB2	2.16	0.59
35:OC:174:ARG:HG3	35:PC:341:ILE:HG21	1.82	0.59
38:SC:18:LYS:HE3	38:SC:20:TYR:H	1.65	0.59
51:FD:66:SER:HB3	51:FD:69:LYS:HB2	1.84	0.59
1:A:803:G:H2'	1:A:804:U:O4'	2.03	0.59
1:A:960:U:H2'	1:A:1225:A:H62	1.66	0.59
2:B:579:G:H2'	2:B:580:C:C6	2.37	0.59
2:B:708:C:H5"	2:B:709:U:OP2	2.03	0.59
2:B:1364:G:OP1	25:Y:2:SER:HA	2.02	0.59
2:B:2321:G:H5'	2:B:2322:A:OP2	2.02	0.59
21:U:57:LEU:HD11	21:U:78:LYS:HE2	1.84	0.59
45:UA:21:ILE:HD11	45:UA:84:VAL:HG22	1.84	0.59
1:FB:960:U:H2'	1:FB:1225:A:H62	1.66	0.59
1:FB:1296:C:H5"	1:FB:1297:C:OP2	2.01	0.59
1:FB:1347:G:N2	1:FB:1374:A:O5'	2.35	0.59
2:GB:1340:U:H4'	2:GB:1341:U:OP2	2.02	0.59
1:A:9:G:H5'	39:OA:122:GLU:OE2	2.02	0.59
1:A:674:G:OP1	40:PA:87:ARG:NH2	2.33	0.59
1:A:1329:A:H5'	47:WA:29:ARG:HH11	1.65	0.59
1:A:1435:G:H1	1:A:1466:C:H42	1.50	0.59
2:B:570:G:H2'	2:B:2030:A:C5	2.37	0.59
5:E:6:PHE:CE1	5:E:13:ARG:NH1	2.71	0.59
7:G:72:ARG:HG3	7:G:72:ARG:NH1	2.01	0.59
9:I:10:PRO:HA	9:I:49:VAL:HG12	1.84	0.59
35:JA:184:VAL:HG23	35:KA:310:TYR:HB2	1.83	0.59
37:MA:185:GLY:O	37:MA:200:ALA:N	2.35	0.59
46:VA:86:ARG:HG3	46:VA:101:VAL:HG22	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:DB:56:MET:HG3	54:DB:88:VAL:HG21	1.83	0.59
1:FB:555:C:H2'	1:FB:556:C:H6	1.67	0.59
2:GB:140:A:H8	2:GB:1408:C:O2'	1.84	0.59
2:GB:573:G:O2'	2:GB:574:C:H3'	2.03	0.59
2:GB:2133:G:O2'	2:GB:2157:G:N2	2.35	0.59
2:GB:2657:A:O3'	9:NB:160:LYS:NZ	2.34	0.59
10:OB:7:GLU:OE2	10:OB:8:PRO:HD2	2.02	0.59
12:QB:34:THR:OG1	12:QB:35:VAL:N	2.35	0.59
12:QB:60:ALA:HA	12:QB:87:ILE:HG13	1.84	0.59
21:ZB:68:ARG:NH1	21:ZB:69:TYR:OH	2.35	0.59
32:KC:50:LEU:HB3	32:KC:55:ALA:HB2	1.84	0.59
48:CD:4:LYS:HZ2	48:CD:7:ILE:HG13	1.67	0.59
1:A:112:G:H1	1:A:315:A:H61	1.49	0.59
1:A:1296:C:H5"	1:A:1297:C:OP2	2.01	0.59
1:A:1319:A:OP2	53:CB:3:ARG:HD3	2.03	0.59
2:B:2164:C:H41	2:B:2166:G:H21	1.49	0.59
7:G:50:SER:HA	7:G:92:PRO:O	2.03	0.59
7:G:170:LEU:HD12	7:G:171:PRO:HD2	1.84	0.59
8:H:64:THR:HB	8:H:94:LEU:HD21	1.84	0.59
8:H:125:PHE:HB3	8:H:166:ASP:OD1	2.02	0.59
10:J:27:ARG:HG2	25:Y:71:TYR:CZ	2.37	0.59
42:RA:84:ARG:HD3	42:RA:136:GLU:OE2	2.01	0.59
1:FB:112:G:H1	1:FB:315:A:H61	1.51	0.59
2:GB:630:G:N2	2:GB:633:A:OP2	2.34	0.59
2:GB:2685:G:H5'	12:QB:68:GLU:OE2	2.01	0.59
2:GB:2698:U:H2'	2:GB:2699:C:C6	2.36	0.59
2:GB:2756:U:H1'	2:GB:2757:A:H5"	1.83	0.59
2:GB:2771:C:H5"	6:KB:202:LYS:HZ3	1.66	0.59
5:JB:218:ARG:HB3	5:JB:219:PRO:HD2	1.84	0.59
54:ID:56:MET:HG3	54:ID:88:VAL:HG21	1.84	0.59
12:L:63:VAL:HG11	12:L:85:VAL:HG23	1.84	0.59
23:W:80:ARG:HB3	23:W:82:ARG:NH1	2.16	0.59
37:MA:135:LYS:NZ	37:MA:135:LYS:HB3	2.18	0.59
46:VA:40:VAL:HG11	46:VA:77:LEU:O	2.03	0.59
47:WA:54:VAL:HA	47:WA:57:ARG:HG3	1.84	0.59
49:YA:33:THR:O	49:YA:37:ASN:ND2	2.26	0.59
1:FB:598:U:H2'	1:FB:599:C:C6	2.37	0.59
1:FB:989:C:H42	1:FB:1217:C:H42	1.49	0.59
1:FB:1079:G:O3'	39:TC:14:ARG:NH2	2.35	0.59
2:GB:298:G:H8	2:GB:298:G:O5'	1.85	0.59
2:GB:467:G:P	31:JC:33:ARG:HH21	2.25	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2349:G:OP2	32:KC:42:ARG:HD3	2.02	0.59
2:GB:2439:A:H2'	57:GB:9001:BLS:N15	2.18	0.59
2:GB:2635:C:H5"	6:KB:78:LEU:HB3	1.83	0.59
2:GB:2805:G:N1	2:GB:2891:G:OP2	2.36	0.59
2:GB:2820:A:OP2	15:TB:2:ARG:NH2	2.34	0.59
2:GB:2849:U:H4'	2:GB:2868:A:C2	2.37	0.59
9:NB:136:ILE:HD12	9:NB:137:ASP:H	1.66	0.59
14:SB:52:VAL:HG13	23:BC:183:LEU:HD11	1.82	0.59
14:SB:112:GLU:HA	14:SB:115:MET:HB2	1.83	0.59
15:TB:48:VAL:O	15:TB:51:LEU:N	2.35	0.59
21:ZB:35:THR:OG1	21:ZB:36:LYS:N	2.32	0.59
4:NC:17:C:H5"	4:NC:17(A):U:OP2	2.01	0.59
1:A:1012:U:H2'	1:A:1013:G:C8	2.38	0.59
1:A:1338:G:H5'	1:A:1339:A:OP2	2.03	0.59
1:A:1342:C:H2'	1:A:1343:G:C8	2.37	0.59
2:B:781:A:C8	5:E:219:PRO:HG3	2.36	0.59
2:B:1472:A:N6	2:B:1521:G:H1'	2.18	0.59
9:I:127:GLU:HB2	9:I:130:ARG:HB2	1.83	0.59
11:K:26:LEU:HG	11:K:30:ILE:HD11	1.83	0.59
23:W:79:ARG:HD2	23:W:80:ARG:NH1	2.18	0.59
35:KA:348:HIS:HA	35:KA:351:ASP:HB2	1.83	0.59
38:NA:201:GLN:NE2	38:NA:205:GLU:OE2	2.36	0.59
1:FB:1372:U:H5"	43:XC:71:SER:HB2	1.84	0.59
2:GB:270(G):U:H2'	2:GB:270(H):C:C6	2.37	0.59
2:GB:1093:G:H2'	2:GB:1093:G:N3	2.16	0.59
3:HB:75:G:O2'	23:BC:10:ARG:NH2	2.30	0.59
10:OB:77:LEU:HB3	10:OB:142:VAL:HG12	1.84	0.59
12:QB:98:VAL:HG12	12:QB:117:LEU:HB3	1.85	0.59
17:VB:128:GLU:OE2	17:VB:129:ARG:N	2.36	0.59
31:JC:41:ARG:HB2	31:JC:41:ARG:HH11	1.68	0.59
41:VC:47:CYS:HA	41:VC:50:ILE:HB	1.84	0.59
1:A:32:A:OP2	1:A:398:C:O2'	2.21	0.59
1:A:619:U:C2	38:NA:135:LEU:HD21	2.38	0.59
1:A:940:C:O2	1:A:1343:G:N2	2.18	0.59
2:B:444:C:H4'	7:G:49:ALA:HB2	1.83	0.59
2:B:517:C:OP1	29:CA:16:ARG:NH2	2.36	0.59
2:B:797:C:OP2	7:G:62:ARG:HG3	2.02	0.59
2:B:2233:U:H2'	2:B:2234:G:C8	2.37	0.59
7:G:12:LEU:HB2	7:G:126:VAL:HG12	1.85	0.59
19:S:69:LYS:H	19:S:88:ARG:NH1	2.00	0.59
22:V:52:SER:OG	22:V:55:TYR:N	2.24	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:923:A:H61	1:FB:1393:U:H3	1.51	0.59
1:FB:1498:UR3:OP2	34:MC:16:A:O2'	2.21	0.59
2:GB:485:C:H42	2:GB:495:G:H1	1.49	0.59
2:GB:828:U:H4'	2:GB:831:G:N1	2.18	0.59
2:GB:2287:A:H62	2:GB:2344:U:H3	1.50	0.59
22:AC:46:LYS:HB3	22:AC:60:PHE:HD1	1.66	0.59
23:BC:108:PRO:HG3	23:BC:141:VAL:HG22	1.84	0.59
35:OC:106:ASP:HA	35:OC:109:ARG:HH11	1.66	0.59
1:A:555:C:H2'	1:A:556:C:H6	1.67	0.59
2:B:1067:A:H5'	2:B:1068:G:N2	2.17	0.59
2:B:1359:A:H2'	2:B:1360:A:H5'	1.84	0.59
29:CA:29:ILE:O	29:CA:30:LEU:HD23	2.02	0.59
2:GB:207:A:H2'	2:GB:208:C:O4'	2.02	0.59
2:GB:686:G:O6	31:JC:12:ARG:NH1	2.36	0.59
2:GB:853:G:H1	2:GB:924:C:H42	1.51	0.59
2:GB:2854:G:H2'	2:GB:2855:C:C6	2.37	0.59
16:UB:48:LEU:HD12	16:UB:82:ILE:HD11	1.84	0.59
23:BC:80:ARG:HG2	23:BC:82:ARG:HH22	1.68	0.59
35:OC:107:ASP:OD2	35:OC:107:ASP:N	2.35	0.59
37:RC:86:VAL:HA	37:RC:89:GLU:HB3	1.84	0.59
40:UC:43:LEU:HB2	40:UC:60:PHE:HB2	1.84	0.59
1:A:405:U:O4	38:NA:3:ARG:HB2	2.02	0.59
1:A:1048:G:OP1	48:XA:4:LYS:HB2	2.02	0.59
1:A:1125:U:O2'	1:A:1126:U:H5"	2.03	0.59
1:A:1377:A:OP2	41:QA:94:ARG:NH1	2.35	0.59
2:B:1340:U:H4'	2:B:1341:U:OP2	2.03	0.59
2:B:2298:A:H62	2:B:2318:G:H8	1.51	0.59
2:B:2535:G:H2'	2:B:2536:G:H8	1.68	0.59
54:DB:75:ASN:N	54:DB:75:ASN:OD1	2.35	0.59
2:GB:570:G:H2'	2:GB:2030:A:C5	2.38	0.59
2:GB:1849:G:H2'	2:GB:1850:G:H8	1.68	0.59
9:NB:88:LEU:HD12	9:NB:165:ALA:HA	1.84	0.59
31:JC:47:ARG:HB3	31:JC:47:ARG:NH1	2.17	0.59
37:RC:185:GLY:O	37:RC:200:ALA:N	2.35	0.59
38:SC:18:LYS:HB3	38:SC:20:TYR:CE2	2.38	0.59
1:A:790:A:OP1	4:IA:38:A:O2'	2.21	0.59
2:B:557:U:H2'	2:B:558:G:C8	2.37	0.59
2:B:581:C:H2'	2:B:582:G:C8	2.38	0.59
2:B:2641:G:OP1	11:K:74:ARG:NE	2.35	0.59
3:C:14:U:O3'	3:C:107:U:O2'	2.20	0.59
6:F:23:VAL:HG11	6:F:183:LEU:HD23	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:114:ALA:HB2	6:F:160:TYR:HB2	1.85	0.59
4:IA:33:U:P	43:SA:128:ARG:HH22	2.25	0.59
42:RA:23:SER:OG	42:RA:24:THR:N	2.36	0.59
1:FB:501:C:H2'	1:FB:502:G:H8	1.68	0.59
2:GB:307:G:H21	2:GB:330:A:H62	1.50	0.59
2:GB:517:C:O2'	20:YB:18:ARG:NH2	2.36	0.59
2:GB:848:G:H2'	2:GB:849:A:C8	2.38	0.59
2:GB:881:G:N2	2:GB:895:U:H3	2.00	0.59
8:MB:125:PHE:HB3	8:MB:166:ASP:OD1	2.02	0.59
4:NC:33:U:P	43:XC:128:ARG:HH22	2.26	0.59
51:FD:29:HIS:CD2	51:FD:30:PRO:HD2	2.38	0.59
1:A:511:C:N3	1:A:541:G:N2	2.51	0.58
1:A:888:G:H2'	1:A:889:A:H8	1.68	0.58
2:B:2336:A:H3'	2:B:2337:G:H8	1.68	0.58
2:B:2784:C:O2	6:F:37:ARG:NH2	2.36	0.58
11:K:70:LYS:NZ	11:K:72:TYR:CE1	2.63	0.58
35:KA:311:ASN:ND2	35:KA:314:GLN:OE1	2.36	0.58
37:MA:131:ARG:NH1	37:MA:135:LYS:HD2	2.18	0.58
2:GB:1257:C:H4'	7:LB:83:PHE:CD1	2.38	0.58
2:GB:1451:C:H42	2:GB:1459:G:H1	1.51	0.58
6:KB:114:ALA:HB2	6:KB:160:TYR:HB2	1.84	0.58
17:VB:64:ARG:HD2	17:VB:102:ILE:HD11	1.84	0.58
31:JC:29:LYS:O	31:JC:33:ARG:HG3	2.03	0.58
36:QC:87:ARG:NH2	36:QC:220:ASP:OD2	2.36	0.58
40:UC:76:ALA:HB1	40:UC:80:ARG:NH1	2.17	0.58
2:B:577:G:O2'	2:B:1254:A:OP1	2.20	0.58
2:B:1357:U:H2'	2:B:1358:G:O4'	2.04	0.58
2:B:1789:A:OP1	5:E:221:VAL:HA	2.03	0.58
2:B:2674:G:H5"	12:L:26:LYS:HE2	1.85	0.58
27:AA:7:LYS:HB2	27:AA:34:GLU:HG2	1.85	0.58
1:FB:1402:4OC:H2'	1:FB:1403:C:O4'	2.02	0.58
1:FB:1415:G:H1	1:FB:1485:U:H3	1.49	0.58
10:OB:122:GLU:HB2	10:OB:126:TYR:OH	2.02	0.58
12:QB:3:GLN:HB2	12:QB:4:PRO:HD2	1.85	0.58
16:UB:83:LYS:HB2	16:UB:111:GLU:OE2	2.03	0.58
39:TC:136:MET:HA	39:TC:139:LEU:HD12	1.84	0.58
54:ID:30:LYS:HB2	54:ID:30:LYS:NZ	2.18	0.58
1:A:1245:A:H61	1:A:1292:U:H3	1.51	0.58
2:B:384:U:H2'	2:B:385:C:H6	1.68	0.58
2:B:2854:G:H2'	2:B:2855:C:C6	2.38	0.58
5:E:26:LYS:HD3	5:E:83:GLU:OE2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:98:VAL:HG12	12:L:117:LEU:HB3	1.86	0.58
24:X:23:VAL:HA	24:X:38:VAL:HG22	1.83	0.58
33:GA:24:TYR:HA	33:GA:35:ARG:HA	1.85	0.58
36:LA:80:ILE:HG22	36:LA:215:LEU:HD12	1.84	0.58
38:NA:191:ARG:NH2	38:NA:200:GLU:OE1	2.31	0.58
40:PA:19:LEU:O	40:PA:23:LYS:N	2.30	0.58
1:FB:296:U:H2'	1:FB:297:G:C8	2.38	0.58
1:FB:304:U:H2'	1:FB:305:G:C8	2.38	0.58
2:GB:1153:C:H5'	18:WB:76:TYR:HE2	1.67	0.58
8:MB:139:LEU:HD22	8:MB:149:VAL:HG11	1.84	0.58
13:RB:100:LEU:HD22	13:RB:105:LEU:HD13	1.84	0.58
1:A:1239:A:O2'	41:QA:114:ARG:O	2.22	0.58
1:A:1402:4OC:H2'	1:A:1403:C:O4'	2.03	0.58
2:B:2815:C:H5'	29:CA:29:ILE:HG13	1.85	0.58
3:C:91:C:H2'	3:C:92:G:C8	2.38	0.58
9:I:65:HIS:O	9:I:68:THR:OG1	2.21	0.58
12:L:73:ASP:HB2	17:Q:82:LEU:HD13	1.86	0.58
25:Y:50:ARG:HG2	25:Y:59:THR:HB	1.85	0.58
47:WA:31:LYS:HZ1	47:WA:34:LEU:HD12	1.68	0.58
1:FB:1228:C:OP2	47:BD:111:LYS:HD3	2.02	0.58
2:GB:1268:A:H2'	2:GB:1269:A:O4'	2.03	0.58
5:JB:66:ASP:HA	5:JB:68:LYS:NZ	2.18	0.58
7:LB:9:ILE:HD12	7:LB:125:LEU:HD13	1.84	0.58
10:OB:79:ILE:O	10:OB:144:VAL:HA	2.03	0.58
11:PB:20:GLY:HA2	11:PB:61:ARG:HG3	1.85	0.58
19:XB:69:LYS:H	19:XB:88:ARG:HH11	1.50	0.58
35:OC:184:VAL:HG23	35:PC:310:TYR:HB2	1.85	0.58
1:A:254:G:O3'	51:AB:69:LYS:NZ	2.35	0.58
1:A:932:C:H2'	1:A:933:G:C8	2.38	0.58
2:B:735:A:H5"	2:B:736:C:OP2	2.04	0.58
2:B:2115:G:C5	2:B:2117:A:H2'	2.38	0.58
10:J:104:GLN:C	10:J:105:HIS:ND1	2.50	0.58
38:NA:31:CYS:O	38:NA:33:MET:N	2.35	0.58
1:FB:1394:A:H8	1:FB:1394:A:OP1	1.86	0.58
2:GB:1007:C:H5"	11:PB:35:ARG:NH1	2.18	0.58
2:GB:1074:G:H1	2:GB:1095:A:H4'	1.69	0.58
2:GB:2262:U:C5	24:CC:16:SER:HB3	2.39	0.58
2:GB:2864:G:H2'	2:GB:2865:U:O4'	2.03	0.58
3:HB:18:G:H1	3:HB:65:C:H42	1.51	0.58
27:FC:7:LYS:HB2	27:FC:34:GLU:HG2	1.84	0.58
35:OC:112:PHE:HB2	35:OC:206:MET:HB2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:RC:47:LEU:HD22	37:RC:68:VAL:HG11	1.84	0.58
39:TC:48:ALA:HB3	39:TC:54:ALA:HB2	1.85	0.58
49:DD:69:TYR:HA	49:DD:72:ARG:HB3	1.84	0.58
1:A:584:G:H5'	51:AB:91:ARG:HH21	1.67	0.58
1:A:1013:G:N2	1:A:1016:A:OP2	2.36	0.58
2:B:581:C:H2'	2:B:582:G:H8	1.67	0.58
2:B:582:G:H2'	2:B:583:G:C8	2.38	0.58
8:H:25:TYR:OH	8:H:168:GLU:OE1	2.09	0.58
10:J:77:LEU:HB3	10:J:142:VAL:HG12	1.86	0.58
20:T:6:ILE:HG12	20:T:104:THR:HG23	1.86	0.58
1:FB:1239:A:O2'	41:VC:114:ARG:O	2.21	0.58
1:FB:1347:G:N7	43:XC:10:ARG:NH2	2.50	0.58
2:GB:1028:A:N3	2:GB:2486:G:O2'	2.29	0.58
2:GB:1478:G:O2'	2:GB:1558:A:N1	2.37	0.58
2:GB:2135:A:H2'	2:GB:2136:C:H2'	1.84	0.58
2:GB:2809:A:OP2	2:GB:2891:G:N2	2.35	0.58
3:HB:14:U:O3'	3:HB:107:U:O2'	2.20	0.58
3:HB:91:C:H2'	3:HB:92:G:C8	2.38	0.58
5:JB:61:LEU:O	5:JB:63:ARG:NH1	2.36	0.58
5:JB:85:ASP:OD1	5:JB:87:ASN:ND2	2.36	0.58
12:QB:102:VAL:HG22	12:QB:121:VAL:HG22	1.86	0.58
16:UB:30:ARG:NH1	16:UB:97:ARG:NH1	2.51	0.58
22:AC:86:ARG:HH12	22:AC:100:ALA:C	2.06	0.58
1:A:20:U:H2'	1:A:21:G:O4'	2.03	0.58
1:A:216:G:H2'	1:A:217:C:C6	2.39	0.58
2:B:2695:C:H2'	2:B:2696:U:C6	2.39	0.58
57:B:9001:BLS:H101	57:B:9001:BLS:H151	1.69	0.58
22:V:35:TYR:CD2	22:V:69:ALA:HB3	2.38	0.58
27:AA:5:LYS:HD2	27:AA:34:GLU:OE2	2.03	0.58
45:UA:108:ILE:HD12	52:BB:87:ARG:NH1	2.17	0.58
51:AB:90:ILE:HA	51:AB:93:GLN:HG2	1.84	0.58
1:FB:447:G:H2'	1:FB:485:G:N2	2.18	0.58
2:GB:154:G:H1	2:GB:172:C:H42	1.52	0.58
2:GB:628:G:H5"	32:KC:18:ALA:HB2	1.84	0.58
2:GB:1266:G:O5'	20:YB:15:ARG:NH2	2.36	0.58
2:GB:1686:C:H2'	2:GB:1687:G:O4'	2.03	0.58
2:GB:2122:U:H2'	2:GB:2123:G:H8	1.68	0.58
2:GB:2695:C:H2'	2:GB:2696:U:C6	2.39	0.58
2:GB:2784:C:O2	6:KB:37:ARG:NH2	2.37	0.58
8:MB:44:GLY:O	8:MB:47:LYS:HG3	2.03	0.58
42:WC:84:ARG:HD3	42:WC:136:GLU:OE2	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:384:G:H2'	1:A:385:C:C6	2.38	0.58
2:B:140:A:H8	2:B:1408:C:HO2'	1.49	0.58
2:B:1246:A:OP1	7:G:38:ARG:NH2	2.37	0.58
2:B:1973:G:H2'	2:B:1974:C:C6	2.39	0.58
2:B:2096:U:H2'	2:B:2097:C:C6	2.38	0.58
2:B:2680:C:H1'	6:F:187:ALA:HB1	1.84	0.58
2:B:2833:G:H4'	2:B:2834:G:OP2	2.04	0.58
17:Q:35:LYS:NZ	17:Q:37:GLY:O	2.24	0.58
21:U:53:LYS:H	21:U:82:GLN:HB3	1.69	0.58
54:DB:30:LYS:HB2	54:DB:30:LYS:NZ	2.19	0.58
1:FB:20:U:H2'	1:FB:21:G:O4'	2.03	0.58
1:FB:54:C:N4	1:FB:357:G:H1	2.00	0.58
1:FB:555:C:H2'	1:FB:556:C:C6	2.39	0.58
1:FB:1150:U:O2'	44:YC:39:PRO:O	2.20	0.58
1:FB:1201:A:H1'	1:FB:1202:G:OP2	2.03	0.58
2:GB:451:C:H4'	7:LB:52:LYS:NZ	2.19	0.58
18:WB:112:ARG:NH1	19:XB:47:VAL:HB	2.19	0.58
20:YB:8:ARG:HB3	20:YB:9:TYR:HD2	1.68	0.58
21:ZB:27:THR:HG23	21:ZB:80:ILE:HG12	1.85	0.58
27:FC:41:PRO:HA	27:FC:44:ARG:HH12	1.69	0.58
41:VC:85:TYR:HD2	41:VC:154:TYR:HE2	1.51	0.58
50:ED:22:THR:HA	50:ED:33:ILE:HG12	1.85	0.58
51:FD:90:ILE:HA	51:FD:93:GLN:HG2	1.85	0.58
1:A:287:U:H2'	1:A:288:A:H8	1.69	0.58
1:A:1305:G:H8	55:EB:5:ASP:HA	1.69	0.58
2:B:1290:C:H2'	2:B:1291:C:C6	2.38	0.58
2:B:2188:C:H2'	2:B:2189:U:H4'	1.86	0.58
3:C:18:G:H1	3:C:65:C:H42	1.52	0.58
18:R:112:ARG:HH12	19:S:47:VAL:HB	1.69	0.58
32:FA:50:LEU:HB3	32:FA:55:ALA:HB2	1.85	0.58
36:LA:163:PHE:HA	36:LA:185:ILE:O	2.04	0.58
50:ZA:42:ARG:NH1	50:ZA:42:ARG:HB2	2.19	0.58
54:DB:66:ALA:HB1	54:DB:71:THR:HB	1.84	0.58
2:GB:994:C:H3'	18:WB:54:LYS:HE3	1.85	0.58
6:KB:93:VAL:HG21	6:KB:180:ASN:HA	1.86	0.58
7:LB:127:GLU:HB3	7:LB:196:LEU:HD12	1.85	0.58
23:BC:80:ARG:HB3	23:BC:82:ARG:NH1	2.19	0.58
25:DC:4:VAL:HG12	25:DC:11:ARG:HB3	1.86	0.58
37:RC:40:ARG:HA	37:RC:43:LEU:HB2	1.86	0.58
49:DD:41:GLU:OE2	49:DD:44:LYS:HD2	2.04	0.58
54:ID:50:GLU:HA	54:ID:53:LEU:HD12	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:975:A:O2'	48:XA:32:SER:HA	2.04	0.58
2:B:279:C:H6	2:B:279:C:OP2	1.86	0.58
2:B:2287:A:H62	2:B:2344:U:H3	1.51	0.58
2:B:2315:G:H2'	2:B:2316:C:C6	2.38	0.58
3:C:22:U:H3	3:C:61:G:H1	1.50	0.58
5:E:69:ARG:NH2	5:E:128:GLY:O	2.36	0.58
10:J:9:LEU:HD13	10:J:10:GLU:O	2.04	0.58
23:W:72:ARG:HA	23:W:72:ARG:NH1	2.18	0.58
38:NA:31:CYS:O	38:NA:34:GLU:N	2.30	0.58
49:YA:78:TYR:O	49:YA:80:ALA:N	2.36	0.58
50:ZA:22:THR:HA	50:ZA:33:ILE:HG12	1.85	0.58
1:FB:9:G:H5'	39:TC:122:GLU:OE2	2.04	0.58
1:FB:370:C:N3	1:FB:392:G:C2	2.71	0.58
1:FB:1046:A:H5'	1:FB:1047:G:OP2	2.03	0.58
2:GB:1820:U:H4'	2:GB:1821:A:OP2	2.04	0.58
5:JB:127:VAL:HA	5:JB:193:VAL:HG13	1.85	0.58
8:MB:25:TYR:OH	8:MB:168:GLU:OE1	2.12	0.58
17:VB:93:ARG:NH1	17:VB:93:ARG:HB3	2.18	0.58
19:XB:69:LYS:H	19:XB:88:ARG:NH1	2.02	0.58
1:A:1512:U:H3	1:A:1523:G:H1	1.49	0.57
2:B:639:U:H2'	2:B:640:C:C6	2.39	0.57
43:SA:28:VAL:HA	43:SA:63:ILE:HB	1.86	0.57
2:GB:372:G:H22	2:GB:400:G:H2'	1.68	0.57
2:GB:974(B):C:OP2	2:GB:974(B):C:H4'	2.04	0.57
2:GB:1472:A:N6	2:GB:1521:G:H1'	2.19	0.57
2:GB:2096:U:H2'	2:GB:2097:C:C6	2.39	0.57
2:GB:2303:G:H22	2:GB:2313:C:N4	2.02	0.57
2:GB:2815:C:H5'	29:HC:29:ILE:HG13	1.84	0.57
8:MB:121:ASN:O	8:MB:124:SER:OG	2.21	0.57
8:MB:135:LEU:HD23	8:MB:155:MET:HG3	1.86	0.57
37:RC:27:LYS:O	37:RC:31:HIS:NE2	2.37	0.57
38:SC:26:CYS:SG	38:SC:31:CYS:SG	3.02	0.57
51:FD:99:SER:OG	51:FD:100:LYS:N	2.37	0.57
1:A:555:C:H2'	1:A:556:C:C6	2.39	0.57
2:B:1922:G:H2'	2:B:1923:U:O4'	2.05	0.57
11:K:26:LEU:O	11:K:30:ILE:HG13	2.03	0.57
19:S:8:GLY:HA3	19:S:23:GLU:HB2	1.85	0.57
41:QA:47:CYS:HA	41:QA:50:ILE:HB	1.86	0.57
54:DB:93:GLU:O	54:DB:95:ALA:N	2.34	0.57
1:FB:296:U:H2'	1:FB:297:G:H8	1.69	0.57
1:FB:546:G:N1	38:SC:2:GLY:O	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:1269:A:H5'	55:JD:19:GLY:HA2	1.84	0.57
2:GB:723:G:H2'	2:GB:724:U:O4'	2.04	0.57
2:GB:1043:C:H41	2:GB:1112:G:H1	1.52	0.57
2:GB:1364:G:OP1	25:DC:2:SER:HA	2.04	0.57
5:JB:108:PRO:HD2	5:JB:111:LEU:HD22	1.85	0.57
20:YB:11:ARG:NH1	20:YB:98:LYS:HB3	2.19	0.57
52:GD:35:ARG:O	52:GD:37:VAL:N	2.37	0.57
1:A:735:C:H2'	1:A:736:C:C6	2.39	0.57
1:A:1252:A:H61	1:A:1285:A:H61	1.51	0.57
2:B:853:G:H1	2:B:924:C:H42	1.53	0.57
2:B:1434:A:H61	2:B:1558:A:N6	2.00	0.57
13:M:49:ARG:HB2	32:FA:61:LEU:HD21	1.87	0.57
17:Q:122:ASP:O	17:Q:126:ALA:N	2.37	0.57
19:S:69:LYS:H	19:S:88:ARG:HH11	1.49	0.57
21:U:35:THR:OG1	21:U:36:LYS:N	2.36	0.57
27:AA:9:VAL:HG11	27:AA:55:ARG:NH2	2.19	0.57
31:EA:10:ARG:HH11	31:EA:14:LYS:HE3	1.69	0.57
36:LA:36:ARG:HB3	36:LA:41:ILE:HD11	1.87	0.57
36:LA:153:ARG:HG3	36:LA:154:LEU:HD12	1.86	0.57
37:MA:7:PRO:HG2	37:MA:184:TYR:HB2	1.85	0.57
1:FB:410:G:C6	1:FB:429:U:H1'	2.38	0.57
1:FB:411:A:OP1	38:SC:30:LYS:NZ	2.35	0.57
2:GB:548:A:H2'	2:GB:549:G:O4'	2.04	0.57
2:GB:911:A:H2'	14:SB:9:TYR:OH	2.05	0.57
4:IB:15:G:H5'	4:IB:16:C:H5"	1.86	0.57
7:LB:78:ILE:HA	7:LB:83:PHE:CE2	2.39	0.57
8:MB:114:ILE:HG12	8:MB:117:PHE:HD1	1.69	0.57
11:PB:70:LYS:NZ	11:PB:72:TYR:CE1	2.66	0.57
31:JC:2:LYS:HG3	31:JC:6:GLN:HE21	1.69	0.57
37:RC:131:ARG:NH1	37:RC:135:LYS:HD2	2.18	0.57
38:SC:33:MET:SD	38:SC:37:PRO:HA	2.44	0.57
46:AD:40:VAL:HG11	46:AD:77:LEU:O	2.05	0.57
54:ID:82:SER:O	54:ID:86:ARG:HG3	2.04	0.57
1:A:296:U:H2'	1:A:297:G:C8	2.38	0.57
1:A:371:G:O2'	1:A:373:A:N7	2.35	0.57
12:L:102:VAL:HG22	12:L:121:VAL:HG22	1.85	0.57
23:W:26:GLY:HA2	23:W:85:HIS:CD2	2.38	0.57
35:JA:107:ASP:N	35:JA:107:ASP:OD2	2.37	0.57
36:LA:53:ARG:HH12	36:LA:199:TYR:HA	1.70	0.57
1:FB:1338:G:H3'	1:FB:1339:A:C8	2.39	0.57
2:GB:205:G:H1	25:DC:39:LYS:NZ	2.02	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:662:G:H2'	2:GB:663:G:H8	1.70	0.57
2:GB:2712:U:O2'	2:GB:2712(A):A:H5"	2.04	0.57
13:RB:49:ARG:HH12	32:KC:4:MET:HE3	1.68	0.57
24:CC:63:VAL:HG21	24:CC:83:PRO:HG3	1.85	0.57
43:XC:29:ASN:N	43:XC:63:ILE:O	2.32	0.57
47:BD:91:ARG:HB3	47:BD:91:ARG:NH1	2.20	0.57
1:A:737:A:H2'	1:A:738:C:H6	1.69	0.57
1:A:1347:G:N2	1:A:1374:A:O5'	2.37	0.57
2:B:372:G:H22	2:B:400:G:H2'	1.68	0.57
2:B:1869:G:N2	2:B:1871:A:H3'	2.19	0.57
2:B:1914:C:H3'	2:B:1915:5MU:H71	1.86	0.57
3:C:53:A:H2'	3:C:54:G:H8	1.69	0.57
6:F:54:GLN:OE1	6:F:55:ASN:N	2.36	0.57
9:I:88:LEU:HD12	9:I:165:ALA:HA	1.85	0.57
12:L:68:GLU:HB3	12:L:78:ARG:HB3	1.85	0.57
14:N:55:VAL:HG23	14:N:64:ILE:HD12	1.86	0.57
23:W:125:LEU:HB3	23:W:165:VAL:HG22	1.86	0.57
27:AA:41:PRO:HA	27:AA:44:ARG:HH12	1.69	0.57
36:LA:61:LEU:HD21	36:LA:160:ASP:HB2	1.85	0.57
1:FB:371:G:O2'	1:FB:373:A:N7	2.36	0.57
1:FB:1245:A:H61	1:FB:1292:U:H3	1.50	0.57
2:GB:1290:C:H2'	2:GB:1291:C:C6	2.39	0.57
3:HB:88:C:H2'	3:HB:89(A):G:O4'	2.04	0.57
25:DC:83:GLU:OE1	25:DC:83:GLU:N	2.37	0.57
37:RC:7:PRO:HG2	37:RC:184:TYR:HB2	1.86	0.57
39:TC:148:VAL:HG21	42:WC:107:LEU:HD22	1.85	0.57
1:A:222:U:H2'	1:A:223:U:C6	2.40	0.57
1:A:708:C:H2'	1:A:709:G:H8	1.69	0.57
1:A:811:C:H4'	1:A:900:A:H62	1.70	0.57
1:A:1391:U:H2'	1:A:1392:G:C8	2.39	0.57
2:B:635:C:O2'	2:B:639:U:OP1	2.21	0.57
2:B:858:U:O2	2:B:2268:A:H2'	2.04	0.57
2:B:1093:G:H22	2:B:1096:A:H5"	1.69	0.57
2:B:2864:G:H2'	2:B:2865:U:O4'	2.05	0.57
9:I:126:PRO:CG	9:I:130:ARG:HH12	2.16	0.57
14:N:38:GLU:HG3	14:N:127:ILE:HB	1.85	0.57
25:Y:47:GLN:HE21	25:Y:47:GLN:CA	2.02	0.57
37:MA:95:THR:HG22	37:MA:97:LYS:H	1.70	0.57
40:PA:76:ALA:HB1	40:PA:80:ARG:NH1	2.20	0.57
42:RA:25:ASP:N	42:RA:25:ASP:OD1	2.38	0.57
1:FB:384:G:H2'	1:FB:385:C:C6	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:556:G:H2'	2:GB:557:U:C6	2.40	0.57
2:GB:1323:U:OP1	20:YB:84:ARG:HD2	2.04	0.57
2:GB:2315:G:H2'	2:GB:2316:C:C6	2.39	0.57
2:GB:2336:A:H3'	2:GB:2337:G:H8	1.69	0.57
7:LB:183:VAL:O	7:LB:187:VAL:HG23	2.04	0.57
9:NB:16:SER:HB3	9:NB:27:LYS:H	1.70	0.57
16:UB:26:LEU:HG	16:UB:39:ILE:HG12	1.87	0.57
4:NC:18:G:O2'	4:NC:19:G:O5'	2.20	0.57
41:VC:15:ASP:OD2	41:VC:17:VAL:HG23	2.03	0.57
1:A:948:C:OP2	47:WA:106:ASN:HB3	2.04	0.57
7:G:183:VAL:O	7:G:187:VAL:HG23	2.05	0.57
7:G:185:ASP:OD1	7:G:188:ARG:NH2	2.37	0.57
9:I:16:SER:OG	9:I:17:VAL:N	2.38	0.57
17:Q:93:ARG:NH1	17:Q:93:ARG:HB3	2.20	0.57
28:BA:59:PHE:HA	28:BA:61:ARG:NH1	2.20	0.57
36:LA:47:THR:HG23	36:LA:202:PRO:HD2	1.87	0.57
36:LA:56:ARG:HB3	36:LA:56:ARG:NH1	2.20	0.57
37:MA:40:ARG:HA	37:MA:43:LEU:HB2	1.86	0.57
40:PA:15:ASP:OD2	40:PA:18:GLN:HB2	2.04	0.57
47:WA:31:LYS:NZ	47:WA:35:GLU:OE1	2.34	0.57
52:BB:66:LEU:HG	52:BB:70:ILE:HD11	1.85	0.57
2:GB:321:G:P	7:LB:135:LYS:NZ	2.76	0.57
7:LB:144:LYS:HB2	7:LB:144:LYS:NZ	2.18	0.57
8:MB:126:ASP:OD2	8:MB:127:GLY:N	2.35	0.57
11:PB:35:ARG:HG2	11:PB:35:ARG:HH11	1.68	0.57
11:PB:58:ASP:N	11:PB:58:ASP:OD1	2.37	0.57
14:SB:16:ARG:HH11	14:SB:16:ARG:HB2	1.68	0.57
14:SB:38:GLU:HG3	14:SB:127:ILE:HB	1.87	0.57
29:HC:40:LYS:NZ	29:HC:44:THR:O	2.23	0.57
33:LC:9:ARG:HE	33:LC:16:VAL:HG13	1.69	0.57
37:RC:101:LEU:HD21	37:RC:103:VAL:HG13	1.86	0.57
1:A:587:G:N2	1:A:754:C:OP2	2.35	0.57
1:A:881:G:P	46:VA:12:ARG:HH22	2.27	0.57
3:C:41:U:N3	8:H:70:VAL:O	2.38	0.57
13:M:100:LEU:HD22	13:M:105:LEU:HD13	1.85	0.57
23:W:6:LYS:H	23:W:6:LYS:HD2	1.70	0.57
26:Z:48:HIS:O	26:Z:52:ASP:HB2	2.04	0.57
50:ZA:42:ARG:HB2	50:ZA:42:ARG:HH11	1.70	0.57
52:BB:35:ARG:O	52:BB:37:VAL:N	2.38	0.57
1:FB:708:C:H2'	1:FB:709:G:H8	1.70	0.57
2:GB:1500:G:O3'	5:JB:102:LYS:NZ	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1511:A:C8	2:GB:1512:G:C8	2.93	0.57
14:SB:116:GLU:OE2	14:SB:119:ARG:NE	2.35	0.57
18:WB:10:ARG:HG2	18:WB:14:HIS:CD2	2.40	0.57
21:ZB:44:GLU:HG3	21:ZB:51:VAL:HG22	1.87	0.57
36:QC:193:ASP:OD2	36:QC:196:LEU:HB2	2.04	0.57
1:A:146:G:H2'	1:A:147:G:H8	1.69	0.57
1:A:251:G:N1	1:A:266:G:O6	2.38	0.57
2:B:26:G:O2'	2:B:514:A:N6	2.36	0.57
2:B:556:G:H2'	2:B:557:U:C6	2.40	0.57
2:B:1074:G:H1	2:B:1095:A:H4'	1.70	0.57
2:B:2210:G:H8	2:B:2211:G:N7	2.03	0.57
8:H:121:ASN:O	8:H:124:SER:OG	2.23	0.57
11:K:94:HIS:HB3	11:K:97:ARG:HG3	1.87	0.57
14:N:16:ARG:HH11	14:N:16:ARG:HB2	1.69	0.57
1:FB:811:C:H4'	1:FB:900:A:H62	1.69	0.57
5:JB:228:PRO:HD3	5:JB:235:GLY:N	2.20	0.57
9:NB:7:LEU:HD12	9:NB:8:PRO:HD2	1.86	0.57
14:SB:82:ARG:NE	24:CC:4:LYS:HG3	2.18	0.57
15:TB:12:ARG:O	15:TB:17:ARG:NH1	2.38	0.57
38:SC:201:GLN:NE2	38:SC:205:GLU:OE2	2.38	0.57
42:WC:96:GLY:H	42:WC:99:GLU:HB2	1.69	0.57
54:ID:66:ALA:HB1	54:ID:71:THR:HB	1.87	0.57
1:A:512:U:O4'	38:NA:43:HIS:HE1	1.88	0.57
1:A:995:C:H4'	48:XA:8:GLU:OE2	2.05	0.57
2:B:2685:G:H5'	12:L:68:GLU:OE2	2.05	0.57
2:B:2698:U:H2'	2:B:2699:C:C6	2.40	0.57
6:F:23:VAL:HG11	6:F:183:LEU:HB3	1.86	0.57
8:H:139:LEU:HB3	8:H:149:VAL:HG21	1.87	0.57
21:U:68:ARG:NH1	21:U:69:TYR:CZ	2.73	0.57
43:SA:26:VAL:HB	43:SA:33:PHE:HD2	1.69	0.57
45:UA:109:VAL:HG12	52:BB:86:VAL:HG22	1.87	0.57
47:WA:91:ARG:HB3	47:WA:91:ARG:NH1	2.20	0.57
2:GB:2164:C:H41	2:GB:2166:G:N2	2.02	0.57
4:IB:39:C:H4'	45:ZC:54:ARG:HE	1.69	0.57
5:JB:274:ARG:HH11	5:JB:274:ARG:HG3	1.69	0.57
13:RB:49:ARG:HB2	32:KC:61:LEU:HD21	1.87	0.57
33:LC:24:TYR:HA	33:LC:35:ARG:HA	1.86	0.57
41:VC:35:LYS:NZ	41:VC:38:LEU:HD22	2.19	0.57
2:B:783:A:H4'	2:B:2588:G:H4'	1.87	0.56
2:B:2139:C:H5	2:B:2153:G:H21	1.53	0.56
2:B:2262:U:OP2	24:X:16:SER:HB2	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2697:G:H2'	2:B:2698:U:O4'	2.04	0.56
4:D:15:G:H5'	4:D:16:C:H5"	1.86	0.56
4:D:19:G:O2'	4:D:20:U:OP1	2.19	0.56
4:D:41:C:O2'	41:QA:140:ASP:OD1	2.22	0.56
5:E:66:ASP:HA	5:E:68:LYS:NZ	2.20	0.56
18:R:46:ALA:O	18:R:49:HIS:N	2.38	0.56
23:W:6:LYS:NZ	23:W:43:GLU:OE2	2.22	0.56
36:LA:118:LEU:HB3	36:LA:142:LEU:HD12	1.87	0.56
1:FB:940:C:H2'	1:FB:941:G:C8	2.40	0.56
1:FB:1252:A:H61	1:FB:1285:A:H61	1.52	0.56
1:FB:1264:C:H2'	1:FB:1265:G:C8	2.36	0.56
26:EC:16:LEU:O	26:EC:67:LYS:NZ	2.26	0.56
27:FC:3:ARG:HG2	27:FC:38:GLU:OE2	2.05	0.56
1:A:296:U:H2'	1:A:297:G:H8	1.71	0.56
1:A:598:U:H2'	1:A:599:C:C6	2.40	0.56
1:A:757:U:H2'	1:A:758:G:O4'	2.05	0.56
2:B:49:A:H4'	2:B:50:U:H5"	1.86	0.56
2:B:270(G):U:H2'	2:B:270(H):C:C6	2.40	0.56
2:B:1187:G:H8	2:B:1187:G:O5'	1.88	0.56
9:I:16:SER:HB3	9:I:27:LYS:H	1.69	0.56
2:GB:609(B):G:H2'	2:GB:610:C:C6	2.39	0.56
2:GB:919:G:N2	2:GB:2269:A:OP2	2.38	0.56
6:KB:96:PHE:HA	6:KB:100:GLU:OE2	2.05	0.56
6:KB:111:ARG:HB2	6:KB:160:TYR:HB3	1.86	0.56
7:LB:50:SER:HA	7:LB:92:PRO:O	2.05	0.56
12:QB:68:GLU:HB3	12:QB:78:ARG:HB3	1.86	0.56
12:QB:119:PRO:HB2	17:VB:68:TYR:CE2	2.40	0.56
36:QC:36:ARG:HB3	36:QC:41:ILE:HD11	1.87	0.56
36:QC:47:THR:HG23	36:QC:202:PRO:HD2	1.87	0.56
38:SC:31:CYS:O	38:SC:34:GLU:N	2.28	0.56
1:A:663:A:H5"	52:BB:61:LYS:HE3	1.87	0.56
1:A:808:C:OP2	49:YA:48:LYS:HD3	2.05	0.56
1:A:1014:A:H5'	53:CB:14:HIS:CE1	2.41	0.56
2:B:34:C:HO2'	2:B:35:G:P	2.28	0.56
2:B:828:U:H4'	2:B:831:G:N1	2.20	0.56
2:B:1511:A:C8	2:B:1512:G:C8	2.93	0.56
2:B:1709:U:H2'	2:B:1710:C:C6	2.41	0.56
2:B:2405:G:HO2'	2:B:2406:U:P	2.27	0.56
3:C:75:G:O2'	23:W:10:ARG:NH2	2.34	0.56
3:C:88:C:H2'	3:C:89(A):G:O4'	2.06	0.56
5:E:218:ARG:HB3	5:E:219:PRO:HD2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:5:LEU:HA	10:J:36:ALA:HA	1.86	0.56
14:N:112:GLU:HA	14:N:115:MET:HB2	1.85	0.56
25:Y:83:GLU:OE1	25:Y:83:GLU:N	2.38	0.56
4:IA:51:C:O2'	4:IA:64:G:N2	2.37	0.56
35:JA:106:ASP:HA	35:JA:109:ARG:HH11	1.69	0.56
36:LA:77:ALA:HA	36:LA:80:ILE:HD13	1.85	0.56
36:LA:193:ASP:OD2	36:LA:196:LEU:HB2	2.05	0.56
37:MA:47:LEU:HD22	37:MA:68:VAL:HG11	1.87	0.56
37:MA:57:ILE:HD12	37:MA:66:VAL:HG12	1.87	0.56
39:OA:52:PRO:HG2	39:OA:53:LEU:HD12	1.87	0.56
45:UA:86:GLY:H	45:UA:112:THR:HG23	1.70	0.56
51:AB:29:HIS:CD2	51:AB:30:PRO:HD2	2.41	0.56
52:BB:67:ALA:HA	52:BB:70:ILE:HD12	1.87	0.56
54:DB:86:ARG:HG2	54:DB:86:ARG:HH11	1.71	0.56
1:FB:146:G:H2'	1:FB:147:G:C8	2.40	0.56
1:FB:161:A:N1	1:FB:347:G:O2'	2.34	0.56
1:FB:222:U:H2'	1:FB:223:U:C6	2.40	0.56
1:FB:888:G:H2'	1:FB:889:A:H8	1.70	0.56
1:FB:977:A:O2'	1:FB:981:U:N3	2.37	0.56
1:FB:1040:U:H5'	1:FB:1041:A:OP2	2.05	0.56
2:GB:363(G):A:H8	2:GB:363(G):A:OP2	1.89	0.56
2:GB:900:A:H2'	2:GB:901:A:C8	2.40	0.56
2:GB:1441:G:H2'	2:GB:1442:G:H8	1.69	0.56
2:GB:2565:A:H5"	2:GB:2566:A:OP2	2.05	0.56
5:JB:6:PHE:CE1	5:JB:13:ARG:NH1	2.73	0.56
6:KB:23:VAL:HG11	6:KB:183:LEU:HD23	1.88	0.56
10:OB:29:TYR:O	10:OB:33:ARG:HD2	2.06	0.56
21:ZB:65:ARG:HB2	21:ZB:70:LEU:HG	1.86	0.56
35:PC:311:ASN:ND2	35:PC:314:GLN:OE1	2.38	0.56
36:QC:163:PHE:HA	36:QC:185:ILE:O	2.05	0.56
40:UC:19:LEU:O	40:UC:23:LYS:N	2.28	0.56
41:VC:15:ASP:OD2	41:VC:18:TYR:N	2.32	0.56
50:ED:43:LYS:HG2	50:ED:48:TRP:CD2	2.41	0.56
52:GD:59:SER:N	52:GD:62:GLU:OE2	2.28	0.56
1:A:940:C:H2'	1:A:941:G:C8	2.40	0.56
1:A:1338:G:H3'	1:A:1339:A:C8	2.39	0.56
2:B:568:U:O4	2:B:973:A:OP2	2.24	0.56
2:B:2122:U:H2'	2:B:2123:G:H8	1.70	0.56
2:B:2211:G:H3'	2:B:2212:A:H5"	1.86	0.56
9:I:137:ASP:HB3	9:I:140:LYS:HB3	1.87	0.56
16:P:44:LYS:HB2	16:P:44:LYS:NZ	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:58:ARG:HH11	18:R:58:ARG:CG	2.19	0.56
39:OA:145:LYS:HA	39:OA:148:VAL:HB	1.87	0.56
1:FB:737:A:H2'	1:FB:738:C:C6	2.40	0.56
1:FB:811:C:H4'	1:FB:900:A:N6	2.20	0.56
2:GB:270(Q):C:H2'	2:GB:270(R):C:C6	2.40	0.56
2:GB:2021:C:H4'	2:GB:2022:U:OP2	2.04	0.56
1:A:1417:G:N2	1:A:1482:G:H2'	2.20	0.56
2:B:1104:C:H2'	2:B:1105:U:C6	2.40	0.56
3:C:5:C:OP1	3:C:61:G:O2'	2.24	0.56
8:H:106:LEU:HA	8:H:110:ALA:HB3	1.87	0.56
22:V:67:LEU:HD23	22:V:72:VAL:HG23	1.86	0.56
36:LA:20:GLU:OE1	36:LA:23:ARG:NH2	2.26	0.56
38:NA:3:ARG:HE	38:NA:4:TYR:HB3	1.71	0.56
42:RA:11:THR:OG1	42:RA:14:ARG:NH1	2.32	0.56
1:FB:1342:C:H2'	1:FB:1343:G:C8	2.40	0.56
2:GB:321:G:C2	2:GB:341:G:H4'	2.40	0.56
2:GB:1002:G:H2'	2:GB:1003:G:O4'	2.05	0.56
2:GB:2188:C:H2'	2:GB:2189:U:H4'	1.88	0.56
2:GB:2275:C:H5'	2:GB:2275:C:H6	1.71	0.56
12:QB:64:ARG:HD3	12:QB:79:PHE:CD1	2.40	0.56
22:AC:102:CYS:SG	22:AC:104:GLY:N	2.77	0.56
28:GC:54:GLY:O	28:GC:56:VAL:N	2.38	0.56
54:ID:75:ASN:OD1	54:ID:75:ASN:N	2.37	0.56
1:A:692:U:O4	45:UA:53:SER:N	2.38	0.56
1:A:1201:A:H1'	1:A:1202:G:OP2	2.06	0.56
2:B:401:A:H2'	2:B:402:A:C8	2.40	0.56
2:B:1153:C:H5'	18:R:76:TYR:HE2	1.69	0.56
2:B:1616:A:H4'	2:B:1617:C:OP2	2.05	0.56
14:N:82:ARG:NE	24:X:4:LYS:HG3	2.20	0.56
1:FB:981:U:H5'	48:CD:21:TYR:CZ	2.41	0.56
2:GB:1329:U:H5"	2:GB:1330:C:H5	1.71	0.56
2:GB:1558:A:H1'	2:GB:1559:G:H5"	1.87	0.56
2:GB:2115:G:C5	2:GB:2117:A:H2'	2.40	0.56
8:MB:46:ALA:HA	8:MB:50:ALA:HB3	1.88	0.56
8:MB:139:LEU:HB3	8:MB:149:VAL:HG21	1.88	0.56
9:NB:65:HIS:O	9:NB:68:THR:OG1	2.23	0.56
19:XB:55:ALA:HA	19:XB:100:ARG:O	2.06	0.56
40:UC:75:LEU:O	40:UC:79:LEU:HG	2.06	0.56
49:DD:78:TYR:O	49:DD:80:ALA:N	2.38	0.56
1:A:721:G:OP2	52:BB:53:ARG:HB2	2.06	0.56
1:A:1207:2MG:HM23	1:A:1208:C:H1'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2115:G:H4'	2:B:2167:U:N3	2.21	0.56
21:U:27:THR:HG23	21:U:80:ILE:HG12	1.86	0.56
23:W:80:ARG:HG2	23:W:82:ARG:HH22	1.71	0.56
2:GB:528:A:O2'	2:GB:529:A:H5'	2.05	0.56
2:GB:716:A:C2	2:GB:717:G:H1'	2.40	0.56
17:VB:30:VAL:HG22	17:VB:86:ILE:HD12	1.87	0.56
30:IC:6:ARG:NH1	30:IC:26:ASN:HB2	2.20	0.56
1:A:1228:C:OP1	47:WA:115:LYS:N	2.38	0.56
2:B:264:C:O2'	2:B:428:A:N1	2.38	0.56
2:B:589:C:H2'	2:B:590:A:C8	2.40	0.56
2:B:668:G:N7	2:B:670:A:C8	2.74	0.56
16:P:11:LYS:HD3	16:P:15:ARG:NH1	2.20	0.56
29:CA:55:ARG:HH21	29:CA:57:VAL:HG22	1.70	0.56
36:LA:56:ARG:HB3	36:LA:56:ARG:HH11	1.70	0.56
40:PA:12:PRO:HD2	40:PA:86:ARG:NH1	2.20	0.56
41:QA:120:ILE:HG22	41:QA:124:LEU:HD12	1.87	0.56
1:FB:721:G:OP2	52:GD:53:ARG:HB2	2.06	0.56
5:JB:72:LYS:HG2	5:JB:103:ARG:NH1	2.20	0.56
5:JB:183:ARG:CG	5:JB:183:ARG:HH11	2.19	0.56
17:VB:105:LEU:HB3	17:VB:110:ILE:HG12	1.88	0.56
23:BC:108:PRO:HA	23:BC:142:SER:HA	1.87	0.56
26:EC:59:ARG:HB2	26:EC:59:ARG:HH11	1.71	0.56
36:QC:61:LEU:HD21	36:QC:160:ASP:HB2	1.86	0.56
44:YC:22:LYS:NZ	44:YC:85:LEU:HD23	2.21	0.56
49:DD:26:GLU:HG3	49:DD:77:ARG:HH21	1.71	0.56
1:A:410:G:C6	1:A:429:U:H1'	2.40	0.56
1:A:501:C:H2'	1:A:502:G:H8	1.70	0.56
1:A:1121:U:H3	1:A:1152:A:H61	1.54	0.56
2:B:392:C:H5"	2:B:409:C:H5"	1.86	0.56
2:B:1591:G:H2'	2:B:1592:C:C6	2.41	0.56
2:B:2262:U:C5	24:X:16:SER:HB3	2.40	0.56
2:B:2791:C:OP1	2:B:2892:A:N6	2.39	0.56
7:G:125:LEU:HD21	7:G:199:TRP:CG	2.41	0.56
7:G:127:GLU:HB3	7:G:196:LEU:HD12	1.88	0.56
16:P:28:VAL:HG21	16:P:98:VAL:HG12	1.88	0.56
19:S:55:ALA:HA	19:S:100:ARG:O	2.05	0.56
25:Y:64:ALA:HA	25:Y:67:ILE:HG13	1.87	0.56
41:QA:35:LYS:NZ	41:QA:38:LEU:HD22	2.21	0.56
1:FB:587:G:N2	1:FB:754:C:OP2	2.37	0.56
1:FB:803:G:H2'	1:FB:804:U:O4'	2.04	0.56
1:FB:1207:2MG:HM23	1:FB:1208:C:H1'	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:589:C:H2'	2:GB:590:A:C8	2.40	0.56
2:GB:2712:U:H1'	2:GB:2712(A):A:C8	2.41	0.56
4:IB:71:C:H2'	4:IB:72:A:H8	1.71	0.56
6:KB:14:ILE:HG13	6:KB:21:VAL:HG13	1.88	0.56
12:QB:71:ARG:HH12	12:QB:104:ARG:CB	2.14	0.56
23:BC:144:LEU:HD21	23:BC:149:SER:HA	1.88	0.56
28:GC:59:PHE:HA	28:GC:61:ARG:NH1	2.19	0.56
47:BD:54:VAL:HA	47:BD:57:ARG:HG3	1.88	0.56
1:A:773:G:H1	1:A:806:C:H42	1.54	0.56
1:A:841:U:H3'	1:A:842:C:H5"	1.86	0.56
2:B:2543:G:H2'	2:B:2544:G:C8	2.41	0.56
14:N:21:THR:OG1	14:N:22:LYS:N	2.40	0.56
28:BA:15:ILE:HG12	28:BA:21:VAL:HG13	1.88	0.56
28:BA:40:HIS:HB3	28:BA:43:TYR:HB2	1.87	0.56
46:VA:6:THR:OG1	46:VA:8:ASN:N	2.38	0.56
1:FB:269:C:H2'	1:FB:270:A:C8	2.40	0.56
1:FB:948:C:OP2	47:BD:106:ASN:HB3	2.05	0.56
2:GB:1248:G:C5	18:WB:3:ARG:HB2	2.41	0.56
2:GB:1922:G:H2'	2:GB:1923:U:O4'	2.05	0.56
2:GB:2197:U:O2'	2:GB:2198:A:OP2	2.19	0.56
6:KB:54:GLN:OE1	6:KB:55:ASN:N	2.39	0.56
36:QC:80:ILE:HG22	36:QC:215:LEU:HD12	1.88	0.56
38:SC:3:ARG:HE	38:SC:4:TYR:HB3	1.71	0.56
1:A:452:A:O2'	1:A:453:A:H8	1.89	0.55
1:A:539:A:H2'	1:A:540:G:H8	1.70	0.55
1:A:1243:C:OP1	55:EB:10:ARG:HG3	2.06	0.55
2:B:528:A:O2'	2:B:529:A:H5'	2.05	0.55
2:B:868:U:N3	2:B:869:G:N7	2.54	0.55
2:B:2607:G:H2'	2:B:2608:G:O4'	2.06	0.55
2:B:2855:C:H2'	2:B:2856:C:H6	1.71	0.55
5:E:52:ARG:HB2	5:E:53:PHE:CD2	2.41	0.55
7:G:9:ILE:HD12	7:G:125:LEU:HD13	1.87	0.55
36:LA:187:LEU:HD12	36:LA:203:GLY:HA3	1.88	0.55
37:MA:27:LYS:O	37:MA:31:HIS:NE2	2.39	0.55
43:SA:29:ASN:N	43:SA:63:ILE:O	2.30	0.55
52:BB:55:ARG:HB3	52:BB:55:ARG:HH11	1.71	0.55
1:FB:102:G:OP1	54:ID:17:ARG:NH2	2.39	0.55
2:GB:1340:U:H3'	21:ZB:57:LEU:HD22	1.88	0.55
2:GB:1973:G:H2'	2:GB:1974:C:C6	2.41	0.55
3:HB:103:U:O3'	23:BC:72:ARG:HD2	2.06	0.55
7:LB:155:LEU:HA	7:LB:174:VAL:HG23	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:QB:87:ILE:HG22	12:QB:93:PRO:HA	1.88	0.55
39:TC:51:VAL:O	39:TC:55:VAL:N	2.31	0.55
40:UC:11:ASN:HB3	40:UC:14:LEU:HD11	1.88	0.55
41:VC:120:ILE:HG22	41:VC:124:LEU:HD12	1.87	0.55
1:A:1394:A:H4'	1:A:1395:C:OP2	2.05	0.55
2:B:2689:U:OP2	2:B:2719:G:N2	2.34	0.55
7:G:152:GLU:OE2	7:G:191:ARG:NH1	2.38	0.55
37:MA:113:ALA:HB2	37:MA:202:ILE:HG13	1.89	0.55
49:YA:8:LYS:NZ	49:YA:31:LEU:HD21	2.21	0.55
1:FB:841:U:H3'	1:FB:842:C:H5"	1.88	0.55
1:FB:932:C:H2'	1:FB:933:G:C8	2.40	0.55
1:FB:1022:G:C6	1:FB:1023:G:H1'	2.41	0.55
2:GB:715:G:C2	49:DD:56:LEU:HD21	2.41	0.55
2:GB:2298:A:H62	2:GB:2318:G:H8	1.51	0.55
8:MB:106:LEU:HA	8:MB:110:ALA:HB3	1.86	0.55
21:ZB:35:THR:O	21:ZB:39:ILE:HG13	2.07	0.55
31:JC:41:ARG:HD3	31:JC:45:ALA:HB2	1.88	0.55
38:SC:188:LEU:H	38:SC:188:LEU:HD13	1.71	0.55
40:UC:21:LEU:O	40:UC:24:GLU:HB3	2.05	0.55
50:ED:21:VAL:O	50:ED:33:ILE:N	2.38	0.55
1:A:407:G:H4'	38:NA:116:GLN:HA	1.89	0.55
1:A:1304:G:OP2	55:EB:5:ASP:OD2	2.23	0.55
2:B:1558:A:H1'	2:B:1559:G:H5"	1.88	0.55
2:B:2577:A:H5'	29:CA:3:LYS:HE3	1.89	0.55
5:E:274:ARG:HH11	5:E:274:ARG:HG3	1.70	0.55
8:H:115:ARG:HH12	47:WA:2:ALA:HA	1.71	0.55
31:EA:41:ARG:HB2	31:EA:41:ARG:HH11	1.69	0.55
39:OA:41:VAL:HG22	39:OA:113:ALA:HA	1.89	0.55
40:PA:29:ALA:HA	40:PA:32:ASN:ND2	2.22	0.55
44:TA:50:ILE:HG13	48:XA:41:ARG:NH1	2.20	0.55
2:GB:34:C:HO2'	2:GB:35:G:P	2.30	0.55
2:GB:223:A:O2'	2:GB:420:C:O2'	2.23	0.55
2:GB:1048:A:N1	2:GB:1112:G:O2'	2.27	0.55
2:GB:1401:G:HO2'	2:GB:1524:G:HO2'	1.54	0.55
8:MB:123:ASN:OD1	8:MB:123:ASN:N	2.37	0.55
14:SB:76:LYS:HB3	14:SB:91:GLU:HG3	1.86	0.55
16:UB:49:VAL:HG21	16:UB:76:LYS:HG2	1.88	0.55
19:XB:75:PHE:HE1	19:XB:82:ARG:NH1	2.03	0.55
32:KC:17:THR:OG1	32:KC:21:LYS:HB2	2.05	0.55
1:A:562:C:H1'	46:VA:15:ARG:HB3	1.88	0.55
1:A:731:G:OP1	1:A:766:A:H1'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1083:U:H2'	2:B:1085:A:H5"	1.87	0.55
2:B:1418:G:H8	2:B:1418:G:O5'	1.90	0.55
2:B:1983:C:H4'	2:B:2606:C:H4'	1.88	0.55
5:E:17:THR:O	5:E:211:ARG:NH2	2.40	0.55
11:K:58:ASP:OD1	11:K:58:ASP:N	2.38	0.55
12:L:71:ARG:NH1	12:L:104:ARG:HB3	2.18	0.55
17:Q:117:ASP:O	17:Q:121:ILE:HG12	2.07	0.55
36:LA:187:LEU:HG	36:LA:205:ASP:HB3	1.89	0.55
51:AB:99:SER:OG	51:AB:100:LYS:N	2.39	0.55
54:DB:37:SER:HB3	54:DB:84:LEU:HD11	1.89	0.55
2:GB:1709:U:H2'	2:GB:1710:C:C6	2.41	0.55
2:GB:2232:U:OP2	25:DC:40:ARG:NH2	2.32	0.55
2:GB:2593:U:H2'	2:GB:2594:C:C6	2.41	0.55
2:GB:2867:G:OP2	17:VB:119:LYS:NZ	2.31	0.55
35:OC:109:ARG:HG3	35:OC:110:ASN:H	1.72	0.55
36:QC:56:ARG:NH1	36:QC:56:ARG:HB3	2.20	0.55
38:SC:18:LYS:HZ3	38:SC:26:CYS:HG	1.52	0.55
39:TC:41:VAL:HG22	39:TC:113:ALA:HA	1.88	0.55
43:XC:28:VAL:HA	43:XC:63:ILE:HB	1.88	0.55
53:HD:8:GLY:O	53:HD:10:PHE:N	2.40	0.55
1:A:1070:U:H2'	1:A:1071:C:H6	1.71	0.55
2:B:1332:G:HO2'	2:B:1609:A:H2	1.53	0.55
2:B:2064:C:H2'	2:B:2065:C:C6	2.42	0.55
6:F:93:VAL:HG21	6:F:180:ASN:HA	1.87	0.55
31:EA:29:LYS:O	31:EA:33:ARG:HG3	2.06	0.55
1:FB:731:G:OP1	1:FB:766:A:H1'	2.07	0.55
1:FB:781:A:H4'	1:FB:1522:U:O2'	2.06	0.55
1:FB:924:C:H42	1:FB:1392:G:H1	1.54	0.55
1:FB:1012:U:H2'	1:FB:1013:G:C8	2.41	0.55
2:GB:557:U:H2'	2:GB:558:G:C8	2.40	0.55
2:GB:627:A:O4'	2:GB:637:A:N6	2.39	0.55
2:GB:1101:U:H2'	2:GB:1102:C:O4'	2.07	0.55
11:PB:127:ASP:N	11:PB:127:ASP:OD1	2.38	0.55
17:VB:108:ARG:HG2	17:VB:112:ARG:NH1	2.21	0.55
25:DC:52:ARG:HH21	25:DC:57:GLU:HG3	1.72	0.55
36:QC:56:ARG:HB3	36:QC:56:ARG:HH11	1.71	0.55
36:QC:187:LEU:HG	36:QC:205:ASP:HB3	1.89	0.55
37:RC:134:ILE:HG23	37:RC:151:VAL:HG13	1.88	0.55
38:SC:57:ARG:HH12	39:TC:107:ARG:HH12	1.54	0.55
1:A:165:C:H2'	1:A:166:G:H8	1.71	0.55
1:A:1244:C:OP2	55:EB:9:ARG:NH1	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:270(Q):C:H2'	2:B:270(R):C:C6	2.41	0.55
2:B:1248:G:C5	18:R:3:ARG:HB2	2.42	0.55
2:B:1406:U:H2'	2:B:1407:C:C6	2.41	0.55
2:B:2275:C:H6	2:B:2275:C:H5'	1.72	0.55
7:G:10:PRO:HA	7:G:17:ARG:HH12	1.71	0.55
10:J:7:GLU:OE2	10:J:8:PRO:HD2	2.06	0.55
17:Q:134:GLU:HG2	17:Q:135:VAL:H	1.72	0.55
18:R:106:PHE:HA	18:R:109:LEU:HD12	1.89	0.55
24:X:36:ILE:HD13	24:X:60:PHE:HB3	1.87	0.55
33:GA:9:ARG:HE	33:GA:16:VAL:HG13	1.69	0.55
37:MA:125:GLU:HA	37:MA:191:THR:HG22	1.89	0.55
42:RA:13:ILE:O	42:RA:17:THR:OG1	2.21	0.55
48:XA:61:TRP:OXT	48:XA:61:TRP:CD1	2.59	0.55
1:FB:741:G:H5'	49:DD:39:LEU:HD21	1.87	0.55
2:GB:2090:G:N2	25:DC:45:ASN:OD1	2.30	0.55
18:WB:50:ARG:O	18:WB:54:LYS:NZ	2.36	0.55
45:ZC:22:HIS:HB3	45:ZC:29:ILE:HB	1.87	0.55
2:B:101:G:H1'	26:Z:7:ARG:HH12	1.71	0.55
2:B:911:A:H2'	14:N:9:TYR:OH	2.07	0.55
2:B:1292:U:H2'	2:B:1293:C:H6	1.72	0.55
2:B:2781:A:H5"	2:B:2782:G:H5'	1.87	0.55
2:B:2820:A:OP2	15:O:2:ARG:NH2	2.40	0.55
3:C:43:C:O2	8:H:95:ARG:NE	2.28	0.55
11:K:96:GLU:N	11:K:96:GLU:OE2	2.39	0.55
12:L:3:GLN:HB2	12:L:4:PRO:HD2	1.89	0.55
4:IA:23:C:H2'	4:IA:24:U:H6	1.71	0.55
49:YA:44:LYS:O	49:YA:47:LYS:NZ	2.40	0.55
53:CB:8:GLY:O	53:CB:10:PHE:N	2.39	0.55
2:GB:994:C:O2'	2:GB:996:A:OP1	2.19	0.55
2:GB:2439:A:OP1	57:GB:9001:BLS:H101	2.07	0.55
24:CC:68:GLU:HG3	24:CC:82:ARG:NH2	2.22	0.55
27:FC:9:VAL:HG11	27:FC:55:ARG:NH2	2.22	0.55
28:GC:15:ILE:HG12	28:GC:21:VAL:HG13	1.87	0.55
29:HC:29:ILE:O	29:HC:30:LEU:HD23	2.06	0.55
42:WC:23:SER:HA	42:WC:63:LEU:HD23	1.89	0.55
1:A:669:U:OP1	49:YA:48:LYS:NZ	2.23	0.55
1:A:1022:G:C6	1:A:1023:G:H1'	2.42	0.55
1:A:1150:U:O2'	44:TA:39:PRO:O	2.21	0.55
1:A:1247:U:H5"	1:A:1248:A:OP2	2.06	0.55
2:B:1248:G:C2	18:R:3:ARG:HD2	2.42	0.55
2:B:1686:C:H2'	2:B:1687:G:O4'	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2849:U:H4'	2:B:2868:A:C2	2.42	0.55
42:RA:19:VAL:HG23	42:RA:21:LYS:HG2	1.88	0.55
1:FB:881:G:P	46:AD:12:ARG:HH22	2.30	0.55
1:FB:1121:U:H3	1:FB:1152:A:H61	1.53	0.55
1:FB:1346:A:N1	1:FB:1374:A:H5"	2.22	0.55
2:GB:363(C):G:H2'	2:GB:363(D):G:H8	1.71	0.55
2:GB:401:A:H2'	2:GB:402:A:C8	2.41	0.55
2:GB:639:U:H2'	2:GB:640:C:C6	2.42	0.55
2:GB:858:U:O2	2:GB:2268:A:H2'	2.07	0.55
2:GB:2251:OMG:H8	2:GB:2251:OMG:O5'	1.90	0.55
2:GB:2262:U:OP2	24:CC:16:SER:HB2	2.06	0.55
2:GB:2343:C:O2'	2:GB:2373:G:O2'	2.23	0.55
2:GB:2515:C:O2	2:GB:2570:G:C2	2.60	0.55
11:PB:59:LYS:NZ	11:PB:125:GLY:HA2	2.22	0.55
11:PB:94:HIS:HB3	11:PB:97:ARG:HG3	1.88	0.55
26:EC:47:ASN:O	26:EC:49:LYS:N	2.40	0.55
32:KC:7:HIS:HD2	32:KC:61:LEU:HD13	1.72	0.55
36:QC:105:PHE:HA	36:QC:108:ILE:HB	1.89	0.55
40:UC:15:ASP:OD2	40:UC:18:GLN:HB2	2.06	0.55
1:A:1038:C:H2'	1:A:1039:C:O4'	2.07	0.55
1:A:1394:A:H8	1:A:1394:A:OP1	1.89	0.55
2:B:483:A:H4'	22:V:50:ARG:HA	1.88	0.55
2:B:1002:G:H2'	2:B:1003:G:O4'	2.07	0.55
2:B:2167:U:O2'	2:B:2168:G:O4'	2.20	0.55
10:J:67:ARG:HD2	10:J:68:LEU:HG	1.87	0.55
40:PA:21:LEU:O	40:PA:24:GLU:HB3	2.07	0.55
42:RA:23:SER:HA	42:RA:63:LEU:HD23	1.89	0.55
1:FB:35:G:H1	1:FB:549:C:N4	2.04	0.55
1:FB:757:U:H2'	1:FB:758:G:O4'	2.06	0.55
1:FB:1346:A:H5"	43:XC:120:ARG:HH12	1.72	0.55
2:GB:380:U:H2'	2:GB:381:G:H8	1.71	0.55
2:GB:548:A:H4'	19:XB:19:LYS:NZ	2.21	0.55
12:QB:13:ASN:HD21	12:QB:97:ARG:H	1.54	0.55
29:HC:51:TYR:HA	29:HC:56:LYS:HA	1.88	0.55
45:ZC:120:ARG:HH12	45:ZC:126:ARG:HH11	1.53	0.55
1:A:8:A:N6	38:NA:205:GLU:O	2.40	0.55
1:A:370:C:N3	1:A:392:G:C2	2.74	0.55
1:A:689:C:O2'	1:A:705:U:O2'	2.20	0.55
1:A:1123:A:O2'	44:TA:37:PRO:O	2.18	0.55
2:B:270(A):A:OP2	2:B:270(Z):G:N2	2.36	0.55
2:B:360:G:H2'	2:B:361:G:O4'	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1161:C:O2'	19:S:8:GLY:HA2	2.07	0.55
2:B:1268:A:H2'	2:B:1269:A:O4'	2.06	0.55
29:CA:16:ARG:NH1	29:CA:16:ARG:HG2	2.22	0.55
36:LA:71:VAL:N	36:LA:163:PHE:O	2.40	0.55
49:YA:5:LYS:HE2	49:YA:5:LYS:HA	1.87	0.55
1:FB:424:G:OP2	1:FB:424:G:H8	1.90	0.55
1:FB:562:C:H1'	46:AD:15:ARG:HB3	1.89	0.55
2:GB:888:C:H5"	2:GB:889:C:OP2	2.06	0.55
2:GB:1093:G:H22	2:GB:1096:A:H5"	1.71	0.55
2:GB:1688:U:O2	2:GB:1700:A:H5'	2.07	0.55
2:GB:2167:U:O2'	2:GB:2168:G:O4'	2.18	0.55
2:GB:2390:U:OP2	32:KC:35:GLN:NE2	2.34	0.55
2:GB:2846:G:P	17:VB:54:ARG:HG3	2.47	0.55
14:SB:56:ARG:O	14:SB:59:ARG:HG3	2.07	0.55
25:DC:47:GLN:HE21	25:DC:47:GLN:CA	2.03	0.55
37:RC:135:LYS:NZ	37:RC:135:LYS:HB3	2.22	0.55
48:CD:37:PHE:HE1	48:CD:53:LEU:HD11	1.72	0.55
1:A:952:U:H2'	1:A:953:G:H8	1.72	0.54
2:B:244:A:C2	2:B:255:A:C4	2.95	0.54
2:B:297:C:P	22:V:95:LYS:HZ2	2.29	0.54
2:B:609(B):G:H2'	2:B:610:C:C6	2.42	0.54
2:B:2661:G:H2'	2:B:2662:A:C8	2.43	0.54
57:B:9001:BLS:H2'	4:IA:76:A:N3	2.22	0.54
6:F:37:ARG:HH11	6:F:42:ASP:CB	2.20	0.54
9:I:68:THR:O	9:I:72:ILE:HG12	2.07	0.54
18:R:28:ARG:HA	18:R:34:LYS:HB3	1.88	0.54
36:LA:30:ARG:NH2	36:LA:195:ASP:OD1	2.41	0.54
36:LA:105:PHE:HA	36:LA:108:ILE:HB	1.88	0.54
1:FB:406:G:H2'	1:FB:407:G:H8	1.71	0.54
2:GB:861:A:H2'	2:GB:862:G:O4'	2.07	0.54
2:GB:1614:A:N1	20:YB:93:ALA:HB2	2.21	0.54
2:GB:2131:G:OP2	2:GB:2132:U:O2'	2.15	0.54
57:GB:9001:BLS:H101	57:GB:9001:BLS:H151	1.71	0.54
3:HB:41:U:N3	8:MB:70:VAL:O	2.40	0.54
11:PB:26:LEU:O	11:PB:30:ILE:HG13	2.06	0.54
17:VB:54:ARG:HA	17:VB:59:THR:HB	1.89	0.54
54:ID:37:SER:HB3	54:ID:84:LEU:HD21	1.88	0.54
1:A:498:A:HO2'	38:NA:2:GLY:N	2.06	0.54
2:B:2712:U:H1'	2:B:2712(A):A:C8	2.42	0.54
11:K:4:TYR:HB2	18:R:101:ARG:NH1	2.23	0.54
14:N:85:LYS:HZ3	24:X:4:LYS:HE2	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:32:PRO:HA	21:U:77:LYS:HB2	1.88	0.54
23:W:118:GLN:N	23:W:173:ALA:O	2.41	0.54
35:JA:109:ARG:HG3	35:JA:110:ASN:H	1.72	0.54
50:ZA:21:VAL:O	50:ZA:33:ILE:N	2.39	0.54
1:FB:820:U:O2'	1:FB:821:G:OP1	2.25	0.54
2:GB:1246:A:OP1	7:LB:38:ARG:NH2	2.40	0.54
2:GB:1580:A:H5'	2:GB:1581:G:OP2	2.08	0.54
2:GB:1790:C:H2'	2:GB:1791:A:C5	2.41	0.54
2:GB:2791:C:OP1	2:GB:2892:A:N6	2.40	0.54
7:LB:34:TRP:CH2	13:RB:8:PRO:HB3	2.42	0.54
31:JC:9:ARG:HE	31:JC:47:ARG:HB2	1.72	0.54
39:TC:129:ILE:O	39:TC:133:TYR:HB2	2.07	0.54
1:A:222:U:OP2	1:A:222:U:H6	1.91	0.54
1:A:580:U:H2'	1:A:581:G:O4'	2.07	0.54
1:A:1366:C:O2'	44:TA:60:ARG:NH2	2.40	0.54
2:B:1043:C:H41	2:B:1112:G:H1	1.54	0.54
2:B:1063:G:N2	2:B:1088:A:N7	2.55	0.54
2:B:1297:C:HO2'	2:B:1302:A:N6	2.06	0.54
2:B:1583:A:H5"	2:B:1585:C:OP1	2.08	0.54
2:B:2164:C:H41	2:B:2166:G:N2	2.06	0.54
24:X:41:ARG:HG3	24:X:41:ARG:NH1	2.20	0.54
50:ZA:6:LEU:HG	50:ZA:17:TYR:HB3	1.88	0.54
54:DB:82:SER:O	54:DB:86:ARG:HG3	2.06	0.54
1:FB:287:U:H2'	1:FB:288:A:H8	1.73	0.54
1:FB:575:G:O2'	1:FB:821:G:H5"	2.08	0.54
1:FB:663:A:H5"	52:GD:61:LYS:HE3	1.89	0.54
1:FB:1121:U:H2'	1:FB:1122:U:C6	2.42	0.54
2:GB:1015:G:H2'	2:GB:1016:G:C8	2.42	0.54
2:GB:2262:U:H5	24:CC:16:SER:HB3	1.72	0.54
6:KB:51:PHE:HD2	6:KB:77:ILE:HD12	1.73	0.54
17:VB:122:ASP:O	17:VB:126:ALA:N	2.41	0.54
25:DC:50:ARG:HG2	25:DC:59:THR:HB	1.88	0.54
4:NC:51:C:O2'	4:NC:64:G:N2	2.41	0.54
39:TC:37:ARG:HH12	39:TC:111:GLU:CG	2.19	0.54
52:GD:67:ALA:HA	52:GD:70:ILE:HD12	1.90	0.54
1:A:159:G:O2'	1:A:161:A:N7	2.32	0.54
1:A:546:G:P	38:NA:72:GLU:HB3	2.47	0.54
2:B:433:C:H2'	2:B:434:U:C6	2.42	0.54
2:B:1329:U:H5"	2:B:1330:C:H5	1.71	0.54
2:B:1580:A:H5'	2:B:1581:G:OP2	2.08	0.54
2:B:2349:G:OP2	32:FA:42:ARG:HD3	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2361:A:O5'	32:FA:27:THR:OG1	2.24	0.54
2:B:2716:U:H2'	2:B:2717:G:H8	1.73	0.54
2:B:2846:G:P	17:Q:54:ARG:HG3	2.47	0.54
7:G:144:LYS:HZ3	7:G:144:LYS:HB2	1.71	0.54
8:H:46:ALA:HA	8:H:50:ALA:HB3	1.89	0.54
19:S:14:VAL:HB	19:S:96:ILE:HG13	1.89	0.54
42:RA:21:LYS:O	42:RA:65:TYR:OH	2.18	0.54
46:VA:8:ASN:HA	46:VA:11:VAL:HG23	1.90	0.54
47:WA:6:GLY:HA3	47:WA:67:GLU:HG2	1.90	0.54
53:CB:19:VAL:HA	53:CB:22:LEU:HB2	1.88	0.54
2:GB:360:G:H2'	2:GB:361:G:O4'	2.08	0.54
2:GB:1515:C:H2'	2:GB:1516:U:C6	2.43	0.54
2:GB:2351:G:HO2'	2:GB:2352:A:H8	1.56	0.54
16:UB:83:LYS:O	16:UB:85:VAL:HG23	2.08	0.54
37:RC:150:LYS:HB3	37:RC:201:TYR:HB2	1.88	0.54
40:UC:74:ASP:O	40:UC:77:ARG:HB3	2.06	0.54
42:WC:81:HIS:HD2	42:WC:104:ARG:HH22	1.55	0.54
54:ID:30:LYS:HB2	54:ID:30:LYS:HZ2	1.72	0.54
2:B:2581:G:C6	2:B:2610:C:N3	2.75	0.54
5:E:183:ARG:CG	5:E:183:ARG:HH11	2.20	0.54
6:F:174:ASP:O	6:F:183:LEU:N	2.40	0.54
14:N:65:PHE:HB2	14:N:105:GLU:HB2	1.90	0.54
16:P:26:LEU:HG	16:P:39:ILE:HG12	1.89	0.54
31:EA:9:ARG:HE	31:EA:47:ARG:HB2	1.71	0.54
32:FA:55:ALA:HA	32:FA:58:ILE:HG12	1.88	0.54
35:JA:159:TYR:HB2	35:JA:162:ILE:HG12	1.89	0.54
37:MA:122:GLU:HA	37:MA:125:GLU:HB2	1.88	0.54
37:MA:134:ILE:HG23	37:MA:151:VAL:HG13	1.90	0.54
54:DB:37:SER:HB3	54:DB:84:LEU:HD21	1.88	0.54
1:FB:498:A:H4'	1:FB:500:G:OP1	2.07	0.54
1:FB:1089:G:H1	1:FB:1096:C:H42	1.56	0.54
2:GB:223:A:HO2'	2:GB:420:C:HO2'	1.56	0.54
5:JB:133:LEU:HB2	5:JB:173:VAL:HG21	1.88	0.54
36:QC:30:ARG:NH2	36:QC:195:ASP:OD1	2.41	0.54
40:UC:12:PRO:HD2	40:UC:86:ARG:NH1	2.23	0.54
1:A:1243:C:H5"	55:EB:8:THR:HG21	1.89	0.54
2:B:451:C:H4'	7:G:52:LYS:HZ1	1.73	0.54
2:B:1820:U:H4'	2:B:1821:A:OP2	2.07	0.54
2:B:2788:C:O2'	2:B:2809:A:N3	2.41	0.54
4:D:73:A:O2'	25:Y:23:LYS:NZ	2.26	0.54
8:H:114:ILE:HG12	8:H:117:PHE:HD1	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:122:GLU:HB2	10:J:126:TYR:OH	2.08	0.54
20:T:11:ARG:NH1	20:T:98:LYS:HB3	2.21	0.54
22:V:43:ASN:O	22:V:65:ALA:N	2.29	0.54
24:X:63:VAL:HG21	24:X:83:PRO:HG3	1.90	0.54
36:LA:19:HIS:CG	36:LA:20:GLU:HG2	2.42	0.54
36:LA:177:ALA:HB1	36:LA:182:ILE:HB	1.89	0.54
38:NA:140:VAL:HG13	38:NA:144:ASP:OD2	2.08	0.54
43:SA:26:VAL:HA	43:SA:61:ALA:HB3	1.89	0.54
1:FB:673:G:H2'	1:FB:674:G:C8	2.42	0.54
2:GB:612:G:N2	2:GB:616:A:O2'	2.40	0.54
2:GB:733:G:N7	2:GB:761:A:N7	2.55	0.54
2:GB:1083:U:H2'	2:GB:1085:A:H5"	1.89	0.54
2:GB:1914:C:H3'	2:GB:1915:5MU:H71	1.90	0.54
5:JB:182:LEU:HB2	5:JB:272:ALA:HB3	1.89	0.54
10:OB:5:LEU:HA	10:OB:36:ALA:HA	1.89	0.54
17:VB:117:ASP:O	17:VB:121:ILE:HG12	2.07	0.54
26:EC:17:SER:H	26:EC:20:GLU:CD	2.11	0.54
29:HC:55:ARG:HH21	29:HC:57:VAL:HG22	1.73	0.54
36:QC:118:LEU:HB3	36:QC:142:LEU:HD12	1.88	0.54
52:GD:66:LEU:HG	52:GD:70:ILE:HD11	1.88	0.54
1:A:191(D):U:H2'	1:A:191(E):G:C8	2.42	0.54
1:A:1296:C:H3'	1:A:1297:C:C6	2.43	0.54
2:B:1014:U:H2'	2:B:1015:G:C8	2.41	0.54
2:B:2701:C:H3'	2:B:2702:U:H5"	1.90	0.54
11:K:30:ILE:HG22	11:K:34:LEU:HD22	1.89	0.54
24:X:11:ARG:NH1	4:IA:63:G:O3'	2.38	0.54
38:NA:117:ALA:HA	38:NA:120:LEU:HD12	1.89	0.54
2:GB:2405:G:HO2'	2:GB:2406:U:P	2.30	0.54
3:HB:4:C:H42	3:HB:116:G:H1	1.56	0.54
10:OB:27:ARG:HD3	25:DC:67:ILE:HG21	1.90	0.54
23:BC:132:ASN:N	23:BC:132:ASN:OD1	2.38	0.54
27:FC:6:VAL:HG13	27:FC:56:VAL:HG13	1.90	0.54
28:GC:40:HIS:HB3	28:GC:43:TYR:HB2	1.89	0.54
29:HC:16:ARG:NH1	29:HC:16:ARG:HG2	2.23	0.54
35:OC:186:ARG:HA	35:PC:313:PRO:CD	2.38	0.54
43:XC:110:GLU:OE2	43:XC:119:ALA:HB1	2.07	0.54
47:BD:91:ARG:HH12	47:BD:96:LEU:C	2.11	0.54
1:A:763:G:H2'	1:A:764:C:C6	2.42	0.54
1:A:1071:C:H5"	39:OA:49:PRO:HG2	1.90	0.54
1:A:1314:C:OP2	53:CB:4:SER:OG	2.24	0.54
2:B:783:A:H2'	2:B:783:A:N3	2.23	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:833:U:O2	13:M:55:ARG:NH2	2.40	0.54
2:B:1167:U:H2'	2:B:1168:G:C8	2.43	0.54
2:B:1411:C:H2'	2:B:1412:A:C8	2.43	0.54
7:G:65:TRP:HD1	7:G:70:THR:HG21	1.71	0.54
11:K:127:ASP:N	11:K:127:ASP:OD1	2.40	0.54
16:P:71:ARG:HD3	16:P:107:GLU:OE2	2.08	0.54
18:R:112:ARG:NH1	19:S:47:VAL:HB	2.22	0.54
24:X:68:GLU:HG3	24:X:82:ARG:NH2	2.22	0.54
4:IA:53:G:H22	4:IA:61:C:N4	2.06	0.54
49:YA:26:GLU:HG3	49:YA:77:ARG:HH21	1.73	0.54
1:FB:692:U:O4	45:ZC:53:SER:N	2.41	0.54
1:FB:743:U:H2'	1:FB:744:C:C6	2.43	0.54
1:FB:1314:C:OP2	53:HD:4:SER:OG	2.23	0.54
2:GB:49:A:H4'	2:GB:50:U:H5"	1.89	0.54
2:GB:96:G:H4'	26:EC:48:HIS:CD2	2.42	0.54
2:GB:205:G:H1	25:DC:39:LYS:HZ3	1.54	0.54
2:GB:1104:C:H2'	2:GB:1105:U:C6	2.42	0.54
2:GB:1403:C:H4'	2:GB:1471:A:H1'	1.90	0.54
2:GB:2115:G:H5"	2:GB:2116:G:OP2	2.08	0.54
2:GB:2577:A:H5'	29:HC:3:LYS:HE3	1.89	0.54
2:GB:2882:A:P	15:TB:96:ARG:HH21	2.31	0.54
16:UB:28:VAL:HG21	16:UB:98:VAL:HG12	1.90	0.54
46:AD:25:PRO:O	46:AD:27:LEU:N	2.40	0.54
46:AD:114:LYS:HA	46:AD:117:ARG:HD2	1.90	0.54
1:A:923:A:H61	1:A:1393:U:H3	1.53	0.54
1:A:1228:C:OP2	47:WA:111:LYS:HD3	2.08	0.54
2:B:1101:U:H2'	2:B:1102:C:O4'	2.07	0.54
2:B:1335:U:H2'	2:B:1336:A:H8	1.73	0.54
2:B:2533:A:H2'	2:B:2534:A:O4'	2.07	0.54
5:E:118:VAL:N	5:E:129:ASN:OD1	2.40	0.54
7:G:155:LEU:HA	7:G:174:VAL:HG23	1.89	0.54
9:I:56:SER:OG	9:I:57:ASP:N	2.40	0.54
13:M:126:VAL:HA	13:M:146:VAL:O	2.06	0.54
16:P:25:ARG:NH2	16:P:40:ILE:HD12	2.23	0.54
34:HA:21:A:N6	35:JA:198:THR:HG1	2.00	0.54
46:VA:47:LYS:HG2	46:VA:48:PRO:HA	1.89	0.54
1:FB:165:C:H2'	1:FB:166:G:H8	1.71	0.54
2:GB:1188:U:O2'	2:GB:1189:A:H5'	2.08	0.54
2:GB:2210:G:H8	2:GB:2211:G:N7	2.06	0.54
12:QB:13:ASN:HD21	12:QB:97:ARG:HG3	1.72	0.54
22:AC:18:GLY:C	22:AC:20:TYR:H	2.11	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:EC:48:HIS:O	26:EC:52:ASP:HB2	2.08	0.54
4:NC:53:G:H22	4:NC:61:C:N4	2.06	0.54
39:TC:81:GLU:HB3	39:TC:90:VAL:HG13	1.90	0.54
44:YC:49:VAL:HG23	48:CD:41:ARG:HB2	1.90	0.54
45:ZC:120:ARG:NH1	45:ZC:126:ARG:NH1	2.45	0.54
47:BD:6:GLY:HA3	47:BD:67:GLU:HG2	1.90	0.54
1:A:941:G:N2	1:A:942:G:H1'	2.23	0.54
1:A:975:A:H8	1:A:975:A:H5"	1.73	0.54
1:A:1111:A:H2'	1:A:1112:C:C6	2.43	0.54
2:B:755:C:H2'	2:B:756:C:C6	2.43	0.54
2:B:1826:G:H5"	2:B:1827:C:OP2	2.07	0.54
2:B:2390:U:OP2	32:FA:35:GLN:NE2	2.31	0.54
2:B:2742:C:H42	2:B:2762:G:H1	1.53	0.54
19:S:66:ARG:HD2	19:S:88:ARG:HG3	1.89	0.54
39:OA:87:SER:HB3	39:OA:131:ILE:HD13	1.89	0.54
2:GB:1418:G:H8	2:GB:1418:G:O5'	1.90	0.54
2:GB:2418:A:H2'	2:GB:2419:U:O4'	2.08	0.54
2:GB:2805:G:H2'	2:GB:2807:G:H5"	1.90	0.54
5:JB:26:LYS:HD3	5:JB:83:GLU:OE2	2.08	0.54
7:LB:10:PRO:HA	7:LB:17:ARG:HH12	1.72	0.54
18:WB:53:ARG:HA	18:WB:56:ASP:OD2	2.07	0.54
22:AC:43:ASN:O	22:AC:65:ALA:N	2.26	0.54
3:C:103:U:O3'	23:W:72:ARG:HD2	2.08	0.53
17:Q:108:ARG:HG2	17:Q:112:ARG:NH1	2.21	0.53
22:V:79:CYS:SG	22:V:81:LYS:HB2	2.49	0.53
44:TA:22:LYS:NZ	44:TA:85:LEU:HD23	2.23	0.53
54:DB:56:MET:SD	54:DB:88:VAL:HG11	2.48	0.53
1:FB:140:A:H2'	1:FB:141:A:C8	2.43	0.53
1:FB:312:C:H2'	1:FB:313:A:C8	2.43	0.53
1:FB:1014:A:H5'	53:HD:14:HIS:CE1	2.42	0.53
1:FB:1041:A:H3'	1:FB:1042:G:H8	1.73	0.53
1:FB:1111:A:H2'	1:FB:1112:C:C6	2.42	0.53
2:GB:191:A:H2'	2:GB:192:C:C6	2.43	0.53
2:GB:392:C:H5"	2:GB:409:C:H5"	1.90	0.53
2:GB:1434:A:H61	2:GB:1558:A:N6	2.01	0.53
2:GB:1869:G:N2	2:GB:1871:A:H3'	2.23	0.53
2:GB:2115:G:H4'	2:GB:2167:U:N3	2.23	0.53
2:GB:2674:G:H5"	12:QB:26:LYS:HE2	1.89	0.53
6:KB:128:SER:OG	6:KB:129:HIS:N	2.40	0.53
6:KB:178:GLU:OE2	6:KB:178:GLU:N	2.36	0.53
7:LB:202:PHE:CE1	7:LB:206:ILE:HD11	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:OB:69:LYS:O	10:OB:73:GLU:HB2	2.08	0.53
11:PB:26:LEU:HG	11:PB:30:ILE:HD11	1.90	0.53
12:QB:66:LYS:HB2	12:QB:82:ASN:ND2	2.15	0.53
21:ZB:60:ARG:CZ	31:JC:47:ARG:HH22	2.21	0.53
22:AC:35:TYR:CD2	22:AC:69:ALA:HB3	2.42	0.53
38:SC:8:VAL:HA	38:SC:11:LEU:HD13	1.90	0.53
45:ZC:109:VAL:HG12	52:GD:86:VAL:HG22	1.89	0.53
48:CD:8:GLU:HA	48:CD:11:LYS:HD2	1.90	0.53
55:JD:12:LYS:HB3	55:JD:18:TYR:HA	1.90	0.53
1:A:335:C:O2'	1:A:1433:A:N3	2.35	0.53
1:A:406:G:H2'	1:A:407:G:H8	1.72	0.53
1:A:741:G:H5'	49:YA:39:LEU:HD21	1.89	0.53
1:A:1072:G:H21	36:LA:107:THR:HG21	1.72	0.53
1:A:1248:A:OP1	1:A:1248:A:H4'	2.07	0.53
2:B:64:A:C5	21:U:66:LEU:HD13	2.43	0.53
2:B:279:C:H2'	2:B:280:C:C6	2.43	0.53
2:B:675:A:OP1	7:G:63:LYS:HD2	2.07	0.53
4:D:71:C:H2'	4:D:72:A:H8	1.73	0.53
7:G:202:PHE:CE1	7:G:206:ILE:HD11	2.43	0.53
28:BA:54:GLY:O	28:BA:56:VAL:N	2.42	0.53
1:FB:773:G:H1	1:FB:806:C:H42	1.55	0.53
1:FB:1038:C:H2'	1:FB:1039:C:O4'	2.08	0.53
1:FB:1098:C:H2'	1:FB:1099:G:O4'	2.09	0.53
1:FB:1319:A:OP2	53:HD:3:ARG:HD3	2.07	0.53
1:FB:1512:U:H3	1:FB:1523:G:H1	1.54	0.53
2:GB:833:U:H1'	13:RB:55:ARG:HH21	1.72	0.53
2:GB:1357:U:H2'	2:GB:1358:G:O4'	2.09	0.53
2:GB:2211:G:H3'	2:GB:2212:A:H5"	1.89	0.53
2:GB:2247:A:H2'	2:GB:2248:C:H6	1.74	0.53
8:MB:101:ILE:O	8:MB:105:LYS:NZ	2.28	0.53
24:CC:41:ARG:HG3	24:CC:41:ARG:HH11	1.73	0.53
25:DC:64:ALA:HA	25:DC:67:ILE:HG13	1.90	0.53
41:VC:49:ILE:HG22	41:VC:53:LYS:HG3	1.90	0.53
44:YC:50:ILE:HG13	48:CD:41:ARG:NH1	2.23	0.53
46:AD:6:THR:OG1	46:AD:8:ASN:N	2.39	0.53
46:AD:8:ASN:HA	46:AD:11:VAL:HG23	1.91	0.53
47:BD:31:LYS:HZ1	47:BD:34:LEU:HD12	1.73	0.53
49:DD:5:LYS:HA	49:DD:5:LYS:HE2	1.89	0.53
2:B:589:C:H2'	2:B:590:A:H8	1.73	0.53
2:B:702:G:H1	2:B:730:C:H42	1.55	0.53
2:B:1175:U:H1'	2:B:1176:G:N2	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1932:A:H2'	2:B:1933:G:O4'	2.08	0.53
12:L:21:CYS:HB2	12:L:39:ILE:HD12	1.90	0.53
43:SA:4:TYR:HB2	43:SA:88:TYR:HD1	1.72	0.53
44:TA:51:ARG:HG3	44:TA:60:ARG:HA	1.90	0.53
45:UA:120:ARG:HG2	45:UA:120:ARG:NH1	2.23	0.53
48:XA:37:PHE:HE1	48:XA:53:LEU:HD11	1.73	0.53
49:YA:69:TYR:HA	49:YA:72:ARG:HB3	1.89	0.53
1:FB:451:A:N6	1:FB:480:U:H2'	2.23	0.53
1:FB:1175:G:H8	1:FB:1175:G:OP2	1.90	0.53
2:GB:483:A:H4'	22:AC:50:ARG:HA	1.89	0.53
11:PB:35:ARG:NH1	11:PB:35:ARG:HG2	2.21	0.53
12:QB:111:PHE:O	12:QB:114:ILE:HG12	2.08	0.53
23:BC:72:ARG:HA	23:BC:72:ARG:NH1	2.22	0.53
24:CC:36:ILE:HD13	24:CC:60:PHE:HB3	1.89	0.53
38:SC:94:LEU:HD11	38:SC:200:GLU:HG3	1.90	0.53
1:A:447:G:H2'	1:A:485:G:N2	2.22	0.53
1:A:1070:U:H2'	1:A:1071:C:C6	2.44	0.53
1:A:1328:C:H2'	1:A:1329:A:O4'	2.09	0.53
1:A:1346:A:N1	1:A:1374:A:H5"	2.22	0.53
6:F:179:GLU:HA	6:F:179:GLU:OE2	2.07	0.53
9:I:67:LEU:O	9:I:71:LEU:HB2	2.08	0.53
21:U:60:ARG:CZ	31:EA:47:ARG:HH22	2.22	0.53
4:IA:16:C:OP1	4:IA:17:C:N4	2.41	0.53
39:OA:81:GLU:HB3	39:OA:90:VAL:HG13	1.90	0.53
1:FB:56:U:H2'	1:FB:57:G:C8	2.43	0.53
1:FB:189:U:O4	51:FD:62:SER:OG	2.22	0.53
1:FB:689:C:H2'	1:FB:690:G:O4'	2.09	0.53
1:FB:1296:C:H3'	1:FB:1297:C:C6	2.43	0.53
1:FB:1309:G:O3'	47:BD:77:ASN:ND2	2.41	0.53
1:FB:1532:U:OP2	1:FB:1532:U:H6	1.91	0.53
2:GB:11:G:H22	2:GB:2628:C:P	2.30	0.53
2:GB:764:A:H5"	5:JB:210:GLY:HA3	1.89	0.53
2:GB:2377:A:H2'	2:GB:2378:A:C8	2.43	0.53
2:GB:2855:C:H2'	2:GB:2856:C:H6	1.73	0.53
9:NB:68:THR:O	9:NB:72:ILE:HG12	2.09	0.53
18:WB:49:HIS:HA	18:WB:52:ARG:HB3	1.90	0.53
36:QC:19:HIS:CG	36:QC:20:GLU:HG2	2.43	0.53
1:A:588:G:H2'	1:A:589:C:C6	2.42	0.53
1:A:958:A:H5"	1:A:959:A:OP2	2.07	0.53
1:A:981:U:H5'	48:XA:21:TYR:CZ	2.44	0.53
1:A:1532:U:OP2	1:A:1532:U:H6	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:363(C):G:H2'	2:B:363(D):G:H8	1.74	0.53
2:B:888:C:H5"	2:B:889:C:OP2	2.09	0.53
2:B:1266:G:O5'	20:T:15:ARG:NH2	2.41	0.53
2:B:1803:A:O2'	5:E:259:THR:HG21	2.08	0.53
2:B:1814:G:H4'	5:E:51:VAL:HG21	1.91	0.53
7:G:65:TRP:CD1	7:G:70:THR:HG21	2.44	0.53
20:T:59:VAL:HG13	20:T:60:ASN:H	1.73	0.53
23:W:108:PRO:HA	23:W:142:SER:HA	1.90	0.53
28:BA:41:PRO:HB3	28:BA:47:GLN:HG2	1.91	0.53
1:FB:1062:U:H2'	1:FB:1063:C:C6	2.44	0.53
1:FB:1240:U:OP2	41:VC:116:ALA:N	2.42	0.53
1:FB:1247:U:H5"	1:FB:1248:A:OP2	2.09	0.53
2:GB:372:G:N2	2:GB:400:G:H2'	2.24	0.53
2:GB:517:C:OP1	29:HC:16:ARG:NH2	2.42	0.53
2:GB:881:G:H1	2:GB:895:U:H3	1.56	0.53
2:GB:1367:A:N7	2:GB:1368:G:H1'	2.24	0.53
10:OB:2:LYS:HG2	10:OB:20:ASP:HB2	1.89	0.53
10:OB:67:ARG:HD2	10:OB:68:LEU:HG	1.88	0.53
12:QB:119:PRO:HB2	17:VB:68:TYR:CD2	2.43	0.53
15:TB:100:LEU:HD11	15:TB:113:LEU:HB3	1.91	0.53
43:XC:4:TYR:HB2	43:XC:88:TYR:HD1	1.73	0.53
1:A:660:G:H1	1:A:745:C:H42	1.57	0.53
1:A:1431:C:H2'	1:A:1432:G:O4'	2.09	0.53
2:B:226:G:H1'	2:B:227:A:C8	2.43	0.53
12:L:89:ASN:HB2	12:L:90:GLN:HE22	1.72	0.53
21:U:35:THR:O	21:U:39:ILE:HG13	2.09	0.53
35:JA:186:ARG:HA	35:KA:313:PRO:CD	2.39	0.53
48:XA:8:GLU:HA	48:XA:11:LYS:HD2	1.89	0.53
2:GB:1074:G:N2	2:GB:1095:A:O2'	2.40	0.53
12:QB:101:PRO:HD3	17:VB:67:SER:O	2.09	0.53
22:AC:18:GLY:O	22:AC:20:TYR:N	2.41	0.53
36:QC:44:LEU:HD12	36:QC:44:LEU:H	1.73	0.53
37:RC:37:GLN:NE2	48:CD:52:GLN:OE1	2.41	0.53
1:A:161:A:N1	1:A:347:G:O2'	2.34	0.53
1:A:870:U:H4'	1:A:871:U:H5"	1.91	0.53
1:A:977:A:H2'	1:A:978:A:H5"	1.91	0.53
1:A:1041:A:H3'	1:A:1042:G:H8	1.73	0.53
2:B:154:G:H1	2:B:172:C:H42	1.56	0.53
2:B:1210:A:C8	2:B:1212:G:C2	2.96	0.53
2:B:2021:C:H4'	2:B:2022:U:OP2	2.09	0.53
2:B:2163:C:H5'	2:B:2164:C:H5"	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2317:C:H2'	2:B:2318:G:H5'	1.90	0.53
2:B:2712:U:O2'	2:B:2712(A):A:H5"	2.09	0.53
5:E:260:ARG:NH2	5:E:266:SER:OG	2.42	0.53
8:H:16:ARG:O	8:H:20:ILE:HG13	2.09	0.53
21:U:44:GLU:HG3	21:U:51:VAL:HG22	1.91	0.53
29:CA:51:TYR:HA	29:CA:56:LYS:HA	1.90	0.53
4:IA:18:G:O2'	4:IA:19:G:O5'	2.21	0.53
40:PA:75:LEU:O	40:PA:79:LEU:HG	2.08	0.53
50:ZA:43:LYS:HG2	50:ZA:48:TRP:CD2	2.43	0.53
1:FB:187:C:H2'	1:FB:188:U:O4'	2.09	0.53
1:FB:958:A:H5"	1:FB:959:A:OP2	2.09	0.53
1:FB:975:A:H8	1:FB:975:A:H5"	1.74	0.53
2:GB:921:G:H5"	2:GB:922:U:OP2	2.08	0.53
2:GB:1388:G:H2'	2:GB:1389:G:C8	2.44	0.53
2:GB:1491:G:H2'	2:GB:1492:G:H8	1.73	0.53
2:GB:1568:G:P	5:JB:63:ARG:HH22	2.31	0.53
2:GB:1591:G:H2'	2:GB:1592:C:C6	2.44	0.53
5:JB:118:VAL:N	5:JB:129:ASN:OD1	2.40	0.53
8:MB:34:LEU:HD23	8:MB:161:THR:HB	1.91	0.53
9:NB:118:PRO:HD2	9:NB:121:ILE:HD12	1.90	0.53
24:CC:46:LYS:HD3	24:CC:78:TYR:CZ	2.43	0.53
37:RC:122:GLU:HA	37:RC:125:GLU:HB2	1.90	0.53
39:TC:145:LYS:HA	39:TC:148:VAL:HB	1.91	0.53
42:WC:5:PRO:HG2	42:WC:6:ILE:HD12	1.90	0.53
52:GD:54:ARG:HB3	52:GD:54:ARG:CZ	2.38	0.53
1:A:280:C:N3	51:AB:39:SER:OG	2.34	0.53
1:A:312:C:H2'	1:A:313:A:C8	2.43	0.53
2:B:1693:U:OP2	2:B:1694:C:H5	1.91	0.53
2:B:2051:A:H4'	6:F:141:ILE:HG12	1.91	0.53
3:C:43:C:O2'	8:H:95:ARG:HB3	2.09	0.53
5:E:159:ALA:HB1	5:E:198:ASN:O	2.09	0.53
8:H:123:ASN:OD1	8:H:123:ASN:N	2.37	0.53
15:O:100:LEU:HD11	15:O:113:LEU:HB3	1.91	0.53
16:P:30:ARG:NH1	16:P:97:ARG:HH11	2.07	0.53
18:R:11:ARG:CG	18:R:11:ARG:NH1	2.69	0.53
20:T:10:VAL:HG12	20:T:12:ILE:HG22	1.91	0.53
20:T:30:GLU:OE2	20:T:33:ARG:HD3	2.08	0.53
35:JA:145:ARG:H	35:JA:167:SER:HB2	1.72	0.53
1:FB:56:U:H2'	1:FB:57:G:H8	1.74	0.53
1:FB:222:U:OP2	1:FB:222:U:H6	1.91	0.53
1:FB:1089:G:H1	1:FB:1096:C:N4	2.06	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:751:A:H5'	20:YB:90:ARG:HA	1.90	0.53
2:GB:1411:C:H2'	2:GB:1412:A:C8	2.44	0.53
2:GB:1983:C:H4'	2:GB:2606:C:H4'	1.91	0.53
2:GB:2378:A:O2'	16:UB:21:THR:HG21	2.08	0.53
2:GB:2535:G:H2'	2:GB:2536:G:H8	1.74	0.53
22:AC:8:LYS:HZ1	22:AC:97:ARG:HD3	1.74	0.53
27:FC:39:ASP:OD1	27:FC:44:ARG:NH2	2.41	0.53
38:SC:36:ARG:HB3	38:SC:38:TYR:CZ	2.44	0.53
39:TC:52:PRO:HG2	39:TC:53:LEU:HD12	1.91	0.53
50:ED:6:LEU:HG	50:ED:17:TYR:HB3	1.91	0.53
1:A:56:U:H2'	1:A:57:G:C8	2.43	0.53
1:A:140:A:H2'	1:A:141:A:C8	2.44	0.53
1:A:567:G:C2	1:A:568:G:H1'	2.44	0.53
1:A:626:U:H2'	1:A:627:G:C8	2.44	0.53
1:A:811:C:H4'	1:A:900:A:N6	2.24	0.53
1:A:1062:U:H2'	1:A:1063:C:C6	2.44	0.53
2:B:71:A:OP1	2:B:112:U:O2'	2.14	0.53
2:B:574:C:N3	6:F:145:LYS:NZ	2.55	0.53
2:B:1340:U:OP2	21:U:78:LYS:NZ	2.42	0.53
2:B:2224:G:H4'	2:B:2226:C:C2	2.43	0.53
2:B:2251:OMG:HN21	57:B:9001:BLS:C2	2.21	0.53
5:E:79:VAL:HG12	5:E:113:VAL:HA	1.91	0.53
14:N:56:ARG:O	14:N:59:ARG:HG3	2.09	0.53
23:W:130:PRO:HD2	23:W:131:ARG:HH11	1.74	0.53
23:W:132:ASN:OD1	23:W:132:ASN:N	2.41	0.53
30:DA:6:ARG:NH1	30:DA:26:ASN:HB2	2.22	0.53
32:FA:26:LYS:HB2	32:FA:44:LYS:O	2.08	0.53
36:LA:71:VAL:HB	36:LA:164:VAL:HG22	1.90	0.53
43:SA:42:ARG:NH1	43:SA:75:ASP:OD2	2.41	0.53
1:FB:116:A:H61	1:FB:313:A:H1'	1.74	0.53
1:FB:337:C:H2'	1:FB:338:A:C8	2.44	0.53
1:FB:567:G:C2	1:FB:568:G:H1'	2.44	0.53
1:FB:619:U:C2	38:SC:135:LEU:HD21	2.44	0.53
1:FB:709:G:H2'	1:FB:710:G:C8	2.40	0.53
1:FB:1077:G:H1	39:TC:47:LYS:HZ3	1.55	0.53
1:FB:1305:G:N2	1:FB:1331:G:H1'	2.24	0.53
2:GB:908:C:O2'	14:SB:71:ASP:OD2	2.21	0.53
2:GB:2697:G:H2'	2:GB:2698:U:O4'	2.08	0.53
2:GB:2836:U:H2'	2:GB:2837:G:C8	2.43	0.53
7:LB:120:GLU:OE1	13:RB:1:MET:N	2.41	0.53
23:BC:80:ARG:CG	23:BC:82:ARG:HH12	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1128:C:N4	1:A:1129:C:H41	2.07	0.53
1:A:1216:G:H5"	48:XA:5:ALA:HB2	1.91	0.53
2:B:861:A:H2'	2:B:862:G:O4'	2.09	0.53
2:B:1403:C:H4'	2:B:1471:A:H1'	1.91	0.53
2:B:2115:G:H5"	2:B:2116:G:OP2	2.09	0.53
2:B:2418:A:H2'	2:B:2419:U:O4'	2.09	0.53
40:PA:33:TYR:HD2	40:PA:75:LEU:HA	1.73	0.53
49:YA:41:GLU:OE2	49:YA:44:LYS:HD2	2.09	0.53
51:AB:96:GLN:O	51:AB:98:LEU:N	2.38	0.53
2:GB:1063:G:N2	2:GB:1088:A:N7	2.57	0.53
2:GB:2788:C:O2'	2:GB:2809:A:N3	2.42	0.53
4:IB:19:G:O2'	4:IB:20:U:OP1	2.22	0.53
9:NB:148:ILE:HA	9:NB:151:ILE:HG13	1.92	0.53
12:QB:87:ILE:HD13	12:QB:91:LEU:HA	1.91	0.53
17:VB:51:ARG:HG3	17:VB:98:LYS:HE3	1.90	0.53
36:QC:209:ARG:HA	36:QC:237:ALA:HB1	1.91	0.53
37:RC:113:ALA:HB2	37:RC:202:ILE:HG13	1.91	0.53
38:SC:12:CYS:SG	38:SC:31:CYS:SG	3.07	0.53
38:SC:61:LYS:HB2	38:SC:203:VAL:HG13	1.91	0.53
38:SC:117:ALA:HA	38:SC:120:LEU:HD12	1.90	0.53
1:A:324:G:N1	1:A:327:A:OP2	2.41	0.52
1:A:781:A:H4'	1:A:1522:U:O2'	2.10	0.52
1:A:1175:G:H8	1:A:1175:G:OP2	1.92	0.52
1:A:1346:A:H5"	43:SA:120:ARG:HH12	1.73	0.52
2:B:733:G:N7	2:B:761:A:N7	2.57	0.52
2:B:1742:C:H5'	2:B:1743:G:OP2	2.09	0.52
2:B:2262:U:H5	24:X:16:SER:HB3	1.75	0.52
4:D:5:G:O2'	4:D:6:G:OP2	2.26	0.52
11:K:83:LYS:HB2	11:K:83:LYS:HZ2	1.73	0.52
15:O:60:LEU:HD21	15:O:64:ARG:NH1	2.24	0.52
31:EA:41:ARG:HD3	31:EA:45:ALA:HB2	1.91	0.52
36:LA:44:LEU:H	36:LA:44:LEU:HD12	1.74	0.52
40:PA:43:LEU:HB2	40:PA:60:PHE:HB2	1.90	0.52
55:EB:12:LYS:HB3	55:EB:18:TYR:HA	1.91	0.52
1:FB:708:C:P	45:ZC:85:ARG:HH22	2.31	0.52
1:FB:1130:A:H2'	1:FB:1131:G:C8	2.43	0.52
1:FB:1268:A:N3	1:FB:1326:C:O2'	2.43	0.52
1:FB:1394:A:H4'	1:FB:1395:C:OP2	2.09	0.52
2:GB:180:G:N2	2:GB:215:G:O6	2.42	0.52
2:GB:1288:U:C2	2:GB:1327:C:O2	2.62	0.52
2:GB:2661:G:H2'	2:GB:2662:A:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:MB:4:ASP:OD2	8:MB:9:ARG:HD2	2.09	0.52
18:WB:31:SER:HB3	18:WB:34:LYS:HB2	1.91	0.52
22:AC:37:VAL:HG21	22:AC:72:VAL:HG21	1.91	0.52
4:NC:53:G:H22	4:NC:61:C:H42	1.55	0.52
38:SC:32:ALA:O	38:SC:36:ARG:N	2.38	0.52
53:HD:19:VAL:HA	53:HD:22:LEU:HB2	1.90	0.52
2:B:881:G:H1	2:B:895:U:H3	1.57	0.52
2:B:1009:A:OP2	2:B:1010:A:OP2	2.27	0.52
2:B:2602:A:H4'	2:B:2603:G:OP1	2.07	0.52
23:W:144:LEU:HD21	23:W:149:SER:HA	1.91	0.52
52:BB:54:ARG:HB3	52:BB:54:ARG:CZ	2.39	0.52
1:FB:501:C:H2'	1:FB:502:G:C8	2.44	0.52
2:GB:868:U:N3	2:GB:869:G:N7	2.57	0.52
2:GB:1014:U:H2'	2:GB:1015:G:C8	2.44	0.52
2:GB:1550:C:OP1	2:GB:1727:U:O2'	2.27	0.52
2:GB:2361:A:P	32:KC:26:LYS:NZ	2.82	0.52
6:KB:114:ALA:CB	6:KB:160:TYR:HB2	2.38	0.52
6:KB:147:PRO:HB2	6:KB:149:ARG:HG3	1.91	0.52
11:PB:4:TYR:HB2	18:WB:101:ARG:NH1	2.24	0.52
14:SB:134:ARG:NH1	23:BC:122:ARG:NE	2.57	0.52
19:XB:14:VAL:HB	19:XB:96:ILE:HG13	1.91	0.52
23:BC:125:LEU:HB3	23:BC:165:VAL:HG22	1.90	0.52
4:NC:23:C:H2'	4:NC:24:U:H6	1.74	0.52
4:NC:27:U:H2'	4:NC:28:C:C6	2.44	0.52
42:WC:25:ASP:OD1	42:WC:25:ASP:N	2.41	0.52
1:A:1309:G:O3'	47:WA:77:ASN:ND2	2.41	0.52
2:B:723:G:H2'	2:B:724:U:O4'	2.09	0.52
2:B:1042:G:C6	2:B:1043:C:N4	2.77	0.52
2:B:1379:A:H4'	2:B:1380:G:OP2	2.10	0.52
2:B:1614:A:N1	20:T:93:ALA:HB2	2.24	0.52
2:B:1688:U:O2	2:B:1700:A:H5'	2.09	0.52
2:B:2630:G:H1'	2:B:2894:G:H1'	1.92	0.52
2:B:2657:A:O3'	9:I:160:LYS:NZ	2.42	0.52
8:H:60:LEU:O	8:H:64:THR:OG1	2.15	0.52
15:O:21:TYR:HB3	15:O:47:PHE:CD2	2.45	0.52
17:Q:54:ARG:HA	17:Q:59:THR:HB	1.92	0.52
38:NA:8:VAL:O	38:NA:10:ARG:N	2.41	0.52
38:NA:33:MET:SD	38:NA:37:PRO:HA	2.48	0.52
38:NA:61:LYS:HB2	38:NA:203:VAL:HG13	1.91	0.52
44:TA:49:VAL:HG23	48:XA:41:ARG:HB2	1.91	0.52
49:YA:18:PHE:CE2	49:YA:21:ASP:HB2	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:517:G:H8	1:FB:517:G:OP2	1.92	0.52
1:FB:574:A:HO2'	1:FB:882:C:HO2'	1.58	0.52
1:FB:660:G:H1	1:FB:745:C:H42	1.57	0.52
1:FB:1292:U:H2'	1:FB:1293:G:C8	2.44	0.52
1:FB:1427:U:H2'	1:FB:1428:A:C8	2.45	0.52
2:GB:264:C:O2'	2:GB:428:A:N1	2.40	0.52
2:GB:708:C:H5"	2:GB:709:U:OP2	2.09	0.52
2:GB:1175:U:H1'	2:GB:1176:G:N2	2.25	0.52
2:GB:2107:C:O2	2:GB:2182:G:N2	2.39	0.52
9:NB:56:SER:OG	9:NB:57:ASP:N	2.42	0.52
35:OC:159:TYR:HB2	35:OC:162:ILE:HG12	1.92	0.52
41:VC:35:LYS:HG2	41:VC:38:LEU:HB2	1.91	0.52
44:YC:46:ARG:HG3	44:YC:64:GLU:HB3	1.90	0.52
48:CD:24:CYS:HB3	48:CD:28:GLY:H	1.73	0.52
1:A:1040:U:H5'	1:A:1041:A:OP2	2.09	0.52
2:B:627:A:O4'	2:B:637:A:N6	2.41	0.52
2:B:1592:C:H2'	2:B:1593:G:H8	1.72	0.52
2:B:2735:G:H1	2:B:2769:C:H42	1.56	0.52
6:F:14:ILE:HB	17:Q:14:TYR:CE1	2.44	0.52
30:DA:9:LEU:HA	30:DA:54:ILE:HB	1.91	0.52
37:MA:150:LYS:HE2	37:MA:152:ILE:HD11	1.90	0.52
39:OA:136:MET:HA	39:OA:139:LEU:HD12	1.90	0.52
43:SA:70:LYS:O	43:SA:74:ILE:N	2.39	0.52
54:DB:86:ARG:HG2	54:DB:86:ARG:NH1	2.23	0.52
1:FB:452:A:O2'	1:FB:453:A:H8	1.92	0.52
1:FB:763:G:H2'	1:FB:764:C:C6	2.44	0.52
2:GB:320:A:H4'	2:GB:322:A:N7	2.24	0.52
2:GB:657:U:H2'	2:GB:658:C:C6	2.45	0.52
2:GB:1161:C:O2'	19:XB:8:GLY:HA2	2.10	0.52
2:GB:1328:G:H2'	2:GB:1330:C:C5	2.44	0.52
2:GB:1359:A:H2'	2:GB:1360:A:H5'	1.91	0.52
2:GB:2533:A:H2'	2:GB:2534:A:O4'	2.10	0.52
2:GB:2764:A:H5'	2:GB:2765:A:OP2	2.10	0.52
2:GB:2869:G:H2'	2:GB:2870:C:O4'	2.10	0.52
7:LB:10:PRO:CB	7:LB:17:ARG:HH12	2.22	0.52
10:OB:75:LEU:HD13	10:OB:105:HIS:HE2	1.73	0.52
14:SB:55:VAL:HG23	14:SB:64:ILE:HD12	1.90	0.52
1:A:1239:A:H5'	1:A:1241:G:H1'	1.91	0.52
1:A:1414:U:H3	1:A:1486:G:H1	1.57	0.52
2:B:1870:C:H2'	2:B:1871:A:O4'	2.10	0.52
2:B:2443:C:OP1	7:G:68:LYS:HD3	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2805:G:H2'	2:B:2807:G:H5"	1.91	0.52
6:F:114:ALA:CB	6:F:160:TYR:HB2	2.39	0.52
10:J:2:LYS:HG2	10:J:20:ASP:HB2	1.92	0.52
16:P:83:LYS:O	16:P:85:VAL:HG23	2.09	0.52
4:IA:53:G:H22	4:IA:61:C:H42	1.56	0.52
37:MA:150:LYS:HB3	37:MA:201:TYR:HB2	1.90	0.52
39:OA:37:ARG:HH12	39:OA:111:GLU:CG	2.21	0.52
40:PA:67:MET:HE1	40:PA:75:LEU:HD13	1.91	0.52
40:PA:74:ASP:O	40:PA:77:ARG:HB3	2.09	0.52
46:VA:114:LYS:HA	46:VA:117:ARG:HD2	1.92	0.52
47:WA:108:ARG:NH1	47:WA:112:GLY:O	2.42	0.52
1:FB:54:C:N3	1:FB:357:G:N2	2.52	0.52
1:FB:867:G:OP2	1:FB:867:G:H8	1.93	0.52
1:FB:1070:U:H2'	1:FB:1071:C:H6	1.74	0.52
1:FB:1298:C:C5	41:VC:114:ARG:NH1	2.77	0.52
2:GB:2110:G:H4'	2:GB:2111:C:OP2	2.08	0.52
2:GB:2742:C:H42	2:GB:2762:G:H1	1.56	0.52
3:HB:111:U:H2'	3:HB:112:G:C8	2.44	0.52
6:KB:37:ARG:HH11	6:KB:42:ASP:CB	2.22	0.52
7:LB:164:ARG:HB3	7:LB:175:THR:HB	1.91	0.52
7:LB:195:ASP:HB3	7:LB:198:ALA:H	1.73	0.52
10:OB:38:LEU:O	10:OB:43:ASN:ND2	2.43	0.52
11:PB:96:GLU:N	11:PB:96:GLU:OE2	2.43	0.52
35:OC:186:ARG:HA	35:PC:313:PRO:HD2	1.91	0.52
1:A:56:U:H2'	1:A:57:G:H8	1.74	0.52
1:A:102:G:OP1	54:DB:17:ARG:NH2	2.42	0.52
1:A:587:G:H8	1:A:587:G:O5'	1.92	0.52
1:A:1268:A:N3	1:A:1326:C:O2'	2.42	0.52
2:B:600:G:H5'	7:G:32:LEU:HD13	1.91	0.52
2:B:2111:C:N4	2:B:2145:C:O2'	2.42	0.52
2:B:2809:A:OP2	2:B:2891:G:N2	2.42	0.52
6:F:56:PRO:HG2	6:F:57:LYS:HZ2	1.73	0.52
8:H:122:PRO:HB3	8:H:170:ARG:HH21	1.74	0.52
12:L:87:ILE:HG22	12:L:93:PRO:HA	1.92	0.52
39:OA:17:ALA:HB2	39:OA:26:PHE:HD1	1.74	0.52
39:OA:37:ARG:HH12	39:OA:111:GLU:HB3	1.75	0.52
41:QA:49:ILE:HG22	41:QA:53:LYS:HG3	1.91	0.52
47:WA:31:LYS:NZ	47:WA:31:LYS:HA	2.25	0.52
1:FB:1510:U:H2'	1:FB:1511:G:C8	2.45	0.52
2:GB:1292:U:H2'	2:GB:1293:C:H6	1.74	0.52
2:GB:2376:A:H2'	2:GB:2377:A:O4'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:RB:107:LYS:HB2	13:RB:110:TYR:CD2	2.45	0.52
39:TC:37:ARG:HH12	39:TC:111:GLU:HB3	1.75	0.52
1:A:146:G:H2'	1:A:147:G:C8	2.43	0.52
1:A:1292:U:H2'	1:A:1293:G:C8	2.45	0.52
2:B:106:C:H1'	22:V:1:MET:HG2	1.92	0.52
2:B:662:G:H2'	2:B:663:G:H8	1.75	0.52
2:B:1568:G:P	5:E:63:ARG:HH22	2.32	0.52
9:I:148:ILE:HA	9:I:151:ILE:HG13	1.92	0.52
11:K:12:ARG:HB3	11:K:50:ASP:OD1	2.10	0.52
12:L:119:PRO:HB2	17:Q:68:TYR:CE2	2.45	0.52
44:TA:8:LEU:HD23	44:TA:96:ILE:HG23	1.91	0.52
1:FB:524:G:H2'	1:FB:525:C:C6	2.44	0.52
1:FB:539:A:H2'	1:FB:540:G:H8	1.70	0.52
1:FB:671:G:O2'	40:UC:80:ARG:NH2	2.41	0.52
2:GB:270(A):A:OP2	2:GB:270(Z):G:N1	2.42	0.52
2:GB:528:A:C2	2:GB:2043:C:H4'	2.45	0.52
2:GB:1257:C:H4'	7:LB:83:PHE:CE1	2.44	0.52
2:GB:1538:G:H2'	2:GB:1539:G:H8	1.74	0.52
2:GB:2139:C:H5	2:GB:2153:G:H21	1.55	0.52
7:LB:36:VAL:HG11	7:LB:183:VAL:HG11	1.90	0.52
12:QB:63:VAL:HG11	12:QB:85:VAL:HG23	1.91	0.52
37:RC:64:VAL:HG22	37:RC:66:VAL:HG13	1.92	0.52
46:AD:117:ARG:NH2	46:AD:123:LYS:O	2.38	0.52
1:A:116:A:H61	1:A:313:A:H1'	1.75	0.52
1:A:743:U:H2'	1:A:744:C:C6	2.45	0.52
1:A:954:G:H2'	1:A:955:U:O4'	2.10	0.52
1:A:997:U:H3'	1:A:998(A):G:H8	1.75	0.52
1:A:1095:U:P	1:A:1108:G:H1	2.33	0.52
1:A:1305:G:N2	1:A:1331:G:H1'	2.24	0.52
2:B:140:A:H8	2:B:1408:C:O2'	1.93	0.52
2:B:372:G:N2	2:B:400:G:H2'	2.24	0.52
2:B:588:U:H2'	2:B:589:C:C6	2.44	0.52
2:B:630:G:N2	2:B:633:A:OP2	2.38	0.52
2:B:716:A:C2	2:B:717:G:H1'	2.45	0.52
2:B:833:U:H1'	13:M:55:ARG:HH21	1.73	0.52
2:B:1045:A:H5"	2:B:1046:A:C5'	2.38	0.52
2:B:2110:G:H4'	2:B:2111:C:OP2	2.07	0.52
2:B:2345:G:OP2	30:DA:38:LYS:HD3	2.10	0.52
5:E:133:LEU:HB2	5:E:173:VAL:HG21	1.92	0.52
6:F:96:PHE:HA	6:F:100:GLU:OE2	2.10	0.52
7:G:64:ILE:HD12	7:G:65:TRP:H	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:115:ARG:O	8:H:136:ARG:NH2	2.40	0.52
25:Y:52:ARG:HH21	25:Y:57:GLU:HG3	1.75	0.52
26:Z:59:ARG:HH11	26:Z:59:ARG:HB2	1.74	0.52
36:LA:79:ASP:HA	36:LA:82:ARG:HB3	1.92	0.52
42:RA:12:ARG:HD3	42:RA:25:ASP:O	2.09	0.52
43:SA:110:GLU:OE2	43:SA:119:ALA:HB1	2.09	0.52
1:FB:394:G:H2'	1:FB:395:C:C6	2.45	0.52
1:FB:1414:U:H3	1:FB:1486:G:H1	1.57	0.52
2:GB:1167:U:H2'	2:GB:1168:G:C8	2.44	0.52
2:GB:1406:U:H2'	2:GB:1407:C:C6	2.45	0.52
2:GB:2407:G:N2	2:GB:2408:U:H1'	2.24	0.52
8:MB:122:PRO:HB3	8:MB:170:ARG:HH21	1.74	0.52
8:MB:165:THR:HB	8:MB:168:GLU:OE2	2.09	0.52
23:BC:56:VAL:HA	23:BC:70:LEU:HD23	1.92	0.52
37:RC:11:ARG:HA	37:RC:14:ILE:HB	1.92	0.52
41:VC:20:ASP:OD2	41:VC:22:LEU:HD23	2.10	0.52
44:YC:8:LEU:HD23	44:YC:96:ILE:HG23	1.90	0.52
50:ED:57:ARG:NH2	50:ED:79:VAL:O	2.42	0.52
1:A:865:A:H5'	1:A:1078:U:C5	2.45	0.52
1:A:1292:U:H2'	1:A:1293:G:H8	1.75	0.52
2:B:363(G):A:H8	2:B:363(G):A:OP2	1.93	0.52
2:B:1323:U:OP1	20:T:84:ARG:HD2	2.10	0.52
2:B:1753:G:C8	17:Q:113:LYS:NZ	2.78	0.52
7:G:144:LYS:HB2	7:G:144:LYS:NZ	2.25	0.52
8:H:118:ARG:HH12	28:BA:41:PRO:HB2	1.75	0.52
22:V:102:CYS:SG	22:V:104:GLY:N	2.83	0.52
35:KA:307:ASN:HA	35:KA:321:ARG:HH12	1.75	0.52
40:PA:11:ASN:HB3	40:PA:14:LEU:HD11	1.92	0.52
48:XA:27:CYS:HB3	48:XA:43:CYS:SG	2.50	0.52
1:FB:1284:C:H3'	1:FB:1285:A:H8	1.74	0.52
2:GB:529:A:H62	2:GB:2041:U:H3	1.56	0.52
2:GB:637:A:OP2	13:RB:116:GLY:N	2.36	0.52
2:GB:805:G:OP2	13:RB:41:ARG:HG3	2.10	0.52
2:GB:2037:G:H2'	2:GB:2038:G:C8	2.45	0.52
2:GB:2369:A:H2'	2:GB:2370:G:C8	2.45	0.52
2:GB:2489:G:O6	2:GB:2490:G:N1	2.43	0.52
5:JB:274:ARG:HH11	5:JB:274:ARG:HG2	1.75	0.52
6:KB:56:PRO:HG2	6:KB:57:LYS:HZ2	1.75	0.52
6:KB:59:VAL:HG11	6:KB:64:LYS:HD3	1.92	0.52
7:LB:125:LEU:HD21	7:LB:199:TRP:CG	2.45	0.52
9:NB:16:SER:OG	9:NB:17:VAL:N	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:NB:137:ASP:HB3	9:NB:140:LYS:HB3	1.92	0.52
38:SC:139:ARG:HH11	38:SC:139:ARG:HG3	1.74	0.52
39:TC:102:ALA:HB2	39:TC:120:THR:HG21	1.92	0.52
47:BD:96:LEU:O	47:BD:110:ARG:NH2	2.42	0.52
1:A:575:G:O2'	1:A:821:G:H5"	2.10	0.52
1:A:600:C:H2'	1:A:601:C:C6	2.45	0.52
2:B:11:G:H22	2:B:2628:C:P	2.33	0.52
2:B:528:A:C2	2:B:2043:C:H4'	2.44	0.52
2:B:686:G:O6	31:EA:12:ARG:NH1	2.43	0.52
2:B:1414:G:H1	2:B:1588:C:H42	1.57	0.52
2:B:1733:G:H2'	2:B:1734:C:O4'	2.10	0.52
12:L:111:PHE:O	12:L:114:ILE:HG12	2.09	0.52
13:M:107:LYS:HB2	13:M:110:TYR:CD2	2.45	0.52
36:LA:61:LEU:HA	36:LA:64:ARG:HG2	1.91	0.52
46:VA:89:ARG:HH12	46:VA:95:GLY:N	2.06	0.52
54:DB:57:ARG:HH11	54:DB:102:GLY:HA3	1.75	0.52
1:FB:191(D):U:H2'	1:FB:191(E):G:C8	2.44	0.52
1:FB:1239:A:H5'	1:FB:1241:G:H1'	1.92	0.52
2:GB:2233:U:H2'	2:GB:2234:G:C8	2.46	0.52
4:IB:4:G:H1	4:IB:69:C:H42	1.57	0.52
5:JB:17:THR:O	5:JB:211:ARG:NH2	2.43	0.52
6:KB:14:ILE:HB	17:VB:14:TYR:CE1	2.45	0.52
6:KB:143:ASN:HD22	6:KB:147:PRO:HD3	1.74	0.52
7:LB:53:THR:H	7:LB:56:GLU:HG3	1.75	0.52
7:LB:167:ALA:HB1	7:LB:173:VAL:HG11	1.92	0.52
18:WB:106:PHE:HA	18:WB:109:LEU:HD12	1.91	0.52
35:PC:311:ASN:O	35:PC:315:GLY:N	2.43	0.52
36:QC:61:LEU:HA	36:QC:64:ARG:HG2	1.91	0.52
37:RC:69:HIS:HA	37:RC:104:GLN:HB2	1.92	0.52
53:HD:28:LYS:NZ	53:HD:30:LEU:HD11	2.25	0.52
1:A:424:G:H8	1:A:424:G:OP2	1.92	0.51
1:A:948:C:H42	1:A:1233:G:H1	1.58	0.51
1:A:1130:A:H2'	1:A:1131:G:C8	2.43	0.51
2:B:612:G:N2	2:B:616:A:O2'	2.42	0.51
2:B:1074:G:N2	2:B:1095:A:O2'	2.42	0.51
2:B:1218:C:H42	2:B:1231:G:H1	1.57	0.51
2:B:1515:C:H2'	2:B:1516:U:C6	2.45	0.51
4:D:19:G:HO2'	4:D:20:U:P	2.33	0.51
7:G:36:VAL:HG11	7:G:183:VAL:HG11	1.91	0.51
7:G:64:ILE:HD13	7:G:65:TRP:CE3	2.45	0.51
14:N:34:LEU:HD11	14:N:129:THR:HB	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:FA:6:THR:HG22	32:FA:62:LEU:HA	1.91	0.51
36:LA:209:ARG:HA	36:LA:237:ALA:HB1	1.92	0.51
41:QA:120:ILE:O	41:QA:124:LEU:HB2	2.11	0.51
42:RA:5:PRO:HG2	42:RA:6:ILE:HD12	1.92	0.51
54:DB:10:LEU:HD12	54:DB:11:SER:H	1.74	0.51
1:FB:885:G:H1	1:FB:912:C:H42	1.59	0.51
1:FB:932:C:H5"	41:VC:4:ARG:CZ	2.40	0.51
1:FB:977:A:H2'	1:FB:978:A:H5"	1.92	0.51
1:FB:1292:U:H2'	1:FB:1293:G:H8	1.75	0.51
2:GB:64:A:C5	21:ZB:66:LEU:HD13	2.45	0.51
2:GB:1449(B):A:H2	2:GB:1530:G:H1'	1.74	0.51
2:GB:1598:C:H2'	2:GB:1599:C:H6	1.75	0.51
2:GB:2163:C:H5'	2:GB:2164:C:H5"	1.92	0.51
2:GB:2602:A:H4'	2:GB:2603:G:OP1	2.09	0.51
8:MB:39:ILE:HB	8:MB:92:VAL:HG13	1.91	0.51
20:YB:10:VAL:HG12	20:YB:12:ILE:HG22	1.91	0.51
32:KC:6:THR:HG22	32:KC:62:LEU:HA	1.93	0.51
36:QC:79:ASP:HA	36:QC:82:ARG:HB3	1.92	0.51
38:SC:140:VAL:HG13	38:SC:144:ASP:OD2	2.10	0.51
41:VC:12:LEU:HB2	41:VC:21:VAL:HG13	1.92	0.51
1:A:1121:U:H2'	1:A:1122:U:C6	2.45	0.51
1:A:1179:A:H5'	43:SA:97:LYS:HE2	1.92	0.51
2:B:906:G:O3'	14:N:67:ARG:NH2	2.42	0.51
2:B:994:C:O2'	2:B:996:A:OP1	2.17	0.51
2:B:1131:G:HO2'	2:B:1132:A:H8	1.59	0.51
2:B:2303:G:H22	2:B:2313:C:N4	2.07	0.51
2:B:2376:A:H2'	2:B:2377:A:O4'	2.10	0.51
3:C:111:U:H2'	3:C:112:G:C8	2.45	0.51
7:G:120:GLU:OE1	13:M:1:MET:N	2.42	0.51
7:G:201:VAL:O	7:G:205:ARG:N	2.43	0.51
10:J:97:ILE:HD12	10:J:142:VAL:HG11	1.92	0.51
15:O:8:ARG:NH1	15:O:39:PRO:HA	2.25	0.51
21:U:8:ILE:O	26:Z:36:ARG:NH2	2.43	0.51
38:NA:94:LEU:HD11	38:NA:200:GLU:HG3	1.92	0.51
43:SA:84:ALA:O	43:SA:88:TYR:HB3	2.10	0.51
44:TA:46:ARG:HG3	44:TA:64:GLU:HB3	1.92	0.51
47:WA:31:LYS:HA	47:WA:31:LYS:HZ3	1.75	0.51
2:GB:226:G:H1'	2:GB:227:A:C8	2.44	0.51
2:GB:910:A:H62	14:SB:12:GLN:HA	1.75	0.51
2:GB:2361:A:O5'	32:KC:27:THR:OG1	2.28	0.51
7:LB:9:ILE:HG21	7:LB:123:LEU:HD23	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:OB:9:LEU:HD13	10:OB:10:GLU:O	2.10	0.51
17:VB:74:ARG:HG2	17:VB:76:PHE:CZ	2.45	0.51
18:WB:28:ARG:HA	18:WB:34:LYS:HB3	1.92	0.51
29:HC:6:VAL:HG13	29:HC:7:PRO:HD2	1.91	0.51
31:JC:12:ARG:HD3	31:JC:46:VAL:HG13	1.92	0.51
38:SC:110:PHE:N	38:SC:110:PHE:CD2	2.77	0.51
39:TC:125:SER:OG	39:TC:126:ARG:N	2.43	0.51
1:A:1517:G:H1'	2:B:1919:A:O3'	2.10	0.51
2:B:628:G:H5"	32:FA:18:ALA:HB2	1.93	0.51
2:B:721:C:H2'	2:B:722:A:H8	1.75	0.51
2:B:751:A:H5'	20:T:90:ARG:HA	1.92	0.51
2:B:1639:U:H4'	2:B:2699:C:H4'	1.91	0.51
2:B:2336:A:H3'	2:B:2337:G:C8	2.45	0.51
2:B:2361:A:P	32:FA:26:LYS:NZ	2.83	0.51
7:G:123:LEU:HD12	7:G:124:LEU:H	1.75	0.51
7:G:165:ARG:O	7:G:168:ARG:HB2	2.09	0.51
10:J:29:TYR:O	10:J:33:ARG:HD2	2.10	0.51
36:LA:118:LEU:HD13	36:LA:142:LEU:HB2	1.92	0.51
43:SA:36:TYR:HE2	43:SA:65:VAL:HG11	1.75	0.51
1:FB:147:G:H1	1:FB:175:C:N4	2.05	0.51
1:FB:952:U:H2'	1:FB:953:G:H8	1.76	0.51
1:FB:1179:A:H5'	43:XC:97:LYS:HE2	1.92	0.51
2:GB:140:A:C8	2:GB:1408:C:O2'	2.59	0.51
2:GB:1998:G:O2'	2:GB:2724:C:O2'	2.27	0.51
6:KB:38:THR:HB	6:KB:40:GLU:HG2	1.92	0.51
14:SB:21:THR:OG1	14:SB:22:LYS:N	2.44	0.51
17:VB:64:ARG:NH1	17:VB:103:ARG:HG2	2.18	0.51
21:ZB:11:PRO:HB3	21:ZB:92:LEU:HD11	1.92	0.51
28:GC:21:VAL:O	28:GC:23:GLU:N	2.43	0.51
43:XC:70:LYS:O	43:XC:74:ILE:N	2.40	0.51
43:XC:70:LYS:O	43:XC:73:GLN:HG2	2.11	0.51
54:ID:56:MET:SD	54:ID:88:VAL:HG11	2.51	0.51
1:A:1318:A:H4'	53:CB:10:PHE:CE2	2.45	0.51
2:B:274:G:H1'	2:B:363(A):G:H22	1.76	0.51
2:B:321:G:C2	2:B:341:G:H4'	2.46	0.51
2:B:994:C:H3'	18:R:54:LYS:HE3	1.92	0.51
2:B:2012:G:OP2	20:T:16:LYS:NZ	2.43	0.51
3:C:4:C:H42	3:C:116:G:H1	1.57	0.51
7:G:146:ALA:O	7:G:148:LEU:HG	2.10	0.51
23:W:80:ARG:CG	23:W:82:ARG:HH12	2.24	0.51
4:IA:27:U:H2'	4:IA:28:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:LA:69:LEU:O	36:LA:163:PHE:N	2.43	0.51
1:FB:511:C:N3	1:FB:541:G:N2	2.58	0.51
1:FB:767:A:H2'	1:FB:768:A:O4'	2.10	0.51
4:IB:35:A:H61	34:MC:13:A:H62	1.59	0.51
9:NB:38:SER:OG	9:NB:40:GLU:OE1	2.25	0.51
11:PB:12:ARG:HB3	11:PB:50:ASP:OD1	2.11	0.51
30:IC:9:LEU:HA	30:IC:54:ILE:HB	1.92	0.51
35:PC:307:ASN:HA	35:PC:321:ARG:HH12	1.75	0.51
36:QC:53:ARG:HH12	36:QC:199:TYR:HA	1.74	0.51
43:XC:84:ALA:O	43:XC:88:TYR:HB3	2.10	0.51
1:A:287:U:H2'	1:A:288:A:C8	2.45	0.51
1:A:517:G:H8	1:A:517:G:OP2	1.93	0.51
1:A:804:U:H5"	1:A:805:C:OP2	2.10	0.51
1:A:1013:G:O2'	1:A:1015:A:N7	2.39	0.51
2:B:974(B):C:OP2	2:B:974(B):C:H4'	2.10	0.51
2:B:1506:C:H2'	2:B:1508:A:C8	2.45	0.51
6:F:14:ILE:HG13	6:F:21:VAL:HG13	1.92	0.51
18:R:53:ARG:HA	18:R:56:ASP:OD2	2.10	0.51
20:T:27:LYS:HD3	20:T:31:GLU:OE2	2.11	0.51
22:V:8:LYS:HZ1	22:V:97:ARG:HD3	1.75	0.51
41:QA:35:LYS:HG2	41:QA:38:LEU:HB2	1.92	0.51
45:UA:34:ASP:OD1	45:UA:38:ASN:HB2	2.11	0.51
1:FB:600:C:H2'	1:FB:601:C:C6	2.46	0.51
1:FB:669:U:OP1	49:DD:48:LYS:NZ	2.27	0.51
1:FB:954:G:H2'	1:FB:955:U:O4'	2.10	0.51
1:FB:1321:C:H1'	53:HD:77:THR:HG21	1.93	0.51
2:GB:6:A:H2'	2:GB:7:G:O4'	2.11	0.51
2:GB:539:G:H2'	2:GB:540:G:C8	2.45	0.51
2:GB:699:A:H2'	2:GB:700:G:O4'	2.11	0.51
2:GB:1494:A:H2'	2:GB:1495:A:C8	2.46	0.51
2:GB:1991:U:H2'	2:GB:1992:G:H5"	1.92	0.51
2:GB:2324:C:O2'	2:GB:2337:G:H5'	2.09	0.51
2:GB:2758:A:C4	9:NB:67:LEU:HD21	2.46	0.51
2:GB:2821:A:OP1	6:KB:110:GLY:N	2.43	0.51
36:QC:145:LEU:HD23	36:QC:149:LEU:HD23	1.93	0.51
37:RC:57:ILE:HD12	37:RC:66:VAL:HG12	1.92	0.51
53:HD:40:ILE:HD12	53:HD:66:MET:HB3	1.90	0.51
1:A:668:G:H1	1:A:738:C:H42	1.59	0.51
1:A:688:G:H2'	1:A:689:C:C6	2.46	0.51
1:A:1098:C:H2'	1:A:1099:G:O4'	2.10	0.51
2:B:270(F):G:H1	2:B:270(V):C:H42	1.56	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1479:G:H5"	2:B:1560:G:H4'	1.92	0.51
2:B:2016:U:O2	29:CA:7:PRO:HG2	2.10	0.51
5:E:52:ARG:CZ	5:E:53:PHE:HE2	2.24	0.51
7:G:9:ILE:HG21	7:G:123:LEU:HD23	1.93	0.51
21:U:60:ARG:NH1	31:EA:47:ARG:HH22	2.08	0.51
23:W:105:VAL:HG11	23:W:138:GLU:HG2	1.93	0.51
53:CB:40:ILE:HD12	53:CB:66:MET:HB3	1.92	0.51
1:FB:504:C:N4	46:AD:115:LYS:NZ	2.54	0.51
1:FB:791:G:N2	1:FB:1497:G:O3'	2.43	0.51
1:FB:1262:C:OP2	55:JD:25:LYS:HD2	2.11	0.51
1:FB:1318:A:H4'	53:HD:10:PHE:CE2	2.46	0.51
2:GB:637:A:C8	13:RB:117:GLU:HG3	2.46	0.51
2:GB:733:G:O6	2:GB:761:A:C8	2.64	0.51
2:GB:1789:A:H2'	2:GB:1790:C:O4'	2.11	0.51
2:GB:2016:U:H6	2:GB:2016:U:O5'	1.94	0.51
2:GB:2286:A:OP1	30:IC:29:ASN:ND2	2.44	0.51
11:PB:12:ARG:HD3	11:PB:50:ASP:OD2	2.11	0.51
17:VB:35:LYS:NZ	17:VB:37:GLY:O	2.28	0.51
18:WB:58:ARG:HH11	18:WB:58:ARG:CG	2.18	0.51
28:GC:16:CYS:SG	28:GC:33:VAL:HB	2.50	0.51
30:IC:9:LEU:HD21	30:IC:25:LYS:HB3	1.93	0.51
36:QC:71:VAL:HB	36:QC:164:VAL:HG22	1.92	0.51
40:UC:3:ARG:HH11	40:UC:3:ARG:CB	2.22	0.51
42:WC:19:VAL:HG23	42:WC:21:LYS:HG2	1.92	0.51
49:DD:8:LYS:NZ	49:DD:31:LEU:HD21	2.24	0.51
1:A:337:C:H2'	1:A:338:A:C8	2.46	0.51
1:A:574:A:N3	1:A:883:C:H1'	2.26	0.51
1:A:618:C:H5'	1:A:619:U:H5"	1.93	0.51
1:A:659:U:OP1	49:YA:5:LYS:NZ	2.44	0.51
1:A:974:A:H8	1:A:974:A:OP1	1.93	0.51
1:A:1421:G:C2	1:A:1480:G:C2	2.99	0.51
2:B:96:G:H4'	26:Z:48:HIS:CD2	2.46	0.51
2:B:735:A:H3'	2:B:736:C:H6	1.76	0.51
2:B:918:A:C5	2:B:919:G:H1'	2.46	0.51
2:B:1113:U:H2'	2:B:1114:G:C8	2.46	0.51
2:B:1594:G:H2'	2:B:1595:G:O4'	2.11	0.51
7:G:164:ARG:HB3	7:G:175:THR:HB	1.92	0.51
8:H:34:LEU:HD23	8:H:161:THR:HB	1.93	0.51
36:LA:145:LEU:HD23	36:LA:149:LEU:HD23	1.93	0.51
41:QA:126:ASP:HB3	41:QA:131:LYS:O	2.11	0.51
1:FB:551:U:H2'	1:FB:552:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:977:A:O2'	1:FB:979:C:OP2	2.25	0.51
1:FB:997:U:H3'	1:FB:998(A):G:H8	1.76	0.51
1:FB:1230:C:H2'	1:FB:1231:G:H8	1.74	0.51
1:FB:1271:G:H2'	1:FB:1272:G:H8	1.74	0.51
1:FB:1289:A:N1	1:FB:1371:G:O2'	2.37	0.51
2:GB:1009:A:OP2	2:GB:1010:A:OP2	2.29	0.51
2:GB:1316:U:H2'	2:GB:1317:A:H8	1.74	0.51
57:GB:9001:BLS:H2'	4:NC:76:A:N3	2.26	0.51
5:JB:79:VAL:HG12	5:JB:113:VAL:HA	1.93	0.51
8:MB:118:ARG:HH12	28:GC:41:PRO:HB2	1.76	0.51
12:QB:17:ARG:HA	12:QB:17:ARG:HE	1.76	0.51
36:QC:187:LEU:HD12	36:QC:203:GLY:HA3	1.92	0.51
38:SC:28:SER:OG	38:SC:30:LYS:HB2	2.11	0.51
41:VC:120:ILE:O	41:VC:124:LEU:HB2	2.10	0.51
43:XC:42:ARG:NH1	43:XC:75:ASP:OD2	2.42	0.51
46:AD:124:LYS:HG3	46:AD:125:PRO:HD2	1.92	0.51
49:DD:18:PHE:CE2	49:DD:21:ASP:HB2	2.44	0.51
1:A:312:C:H2'	1:A:313:A:H8	1.74	0.51
1:A:1510:U:H2'	1:A:1511:G:C8	2.46	0.51
2:B:366:C:OP2	2:B:403:U:O2'	2.28	0.51
2:B:507:A:HO2'	2:B:508:G:P	2.31	0.51
2:B:1328:G:H2'	2:B:1330:C:C5	2.46	0.51
2:B:1449(B):A:H2	2:B:1530:G:H1'	1.75	0.51
2:B:1789:A:H2'	2:B:1790:C:O4'	2.11	0.51
2:B:2099:U:H2'	2:B:2100:G:H8	1.75	0.51
2:B:2317:C:H2'	2:B:2318:G:C5'	2.40	0.51
21:U:5:TYR:CE1	26:Z:30:ARG:HG3	2.46	0.51
31:EA:47:ARG:HA	31:EA:48:LYS:NZ	2.26	0.51
37:MA:179:ARG:HG2	37:MA:206:GLU:HB3	1.92	0.51
47:WA:110:ARG:HH11	47:WA:110:ARG:HA	1.76	0.51
1:FB:8:A:C5	38:SC:209:ARG:HG3	2.46	0.51
1:FB:444:C:H2'	1:FB:445:G:C8	2.46	0.51
2:GB:2766:G:H2'	2:GB:2766:G:N3	2.26	0.51
7:LB:206:ILE:HG22	7:LB:207:GLY:H	1.76	0.51
10:OB:109:ILE:HB	10:OB:130:TYR:CZ	2.46	0.51
28:GC:41:PRO:HB3	28:GC:47:GLN:HG2	1.93	0.51
39:TC:57:LYS:HE3	39:TC:61:TYR:CE2	2.46	0.51
39:TC:87:SER:HB3	39:TC:131:ILE:HD13	1.92	0.51
40:UC:46:ARG:HB2	40:UC:60:PHE:CE1	2.46	0.51
40:UC:61:LEU:HD23	40:UC:63:TYR:HE2	1.76	0.51
44:YC:51:ARG:HG3	44:YC:60:ARG:HA	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:AD:47:LYS:HG2	46:AD:48:PRO:HA	1.93	0.51
55:JD:12:LYS:NZ	55:JD:19:GLY:H	2.09	0.51
1:A:298:A:H2'	1:A:299:G:O4'	2.11	0.51
1:A:1080:A:H5"	1:A:1081:G:OP2	2.10	0.51
2:B:434:U:H1'	2:B:435:C:H5	1.75	0.51
2:B:539:G:H2'	2:B:540:G:C8	2.46	0.51
2:B:637:A:C8	13:M:117:GLU:HG3	2.46	0.51
2:B:1278:A:OP1	15:O:36:THR:HG23	2.11	0.51
2:B:2396:G:H5'	25:Y:25:LYS:HE2	1.93	0.51
2:B:2766:G:H2'	2:B:2766:G:N3	2.26	0.51
10:J:66:GLU:OE2	10:J:69:LYS:HG2	2.11	0.51
16:P:49:VAL:HG21	16:P:76:LYS:HG2	1.92	0.51
27:AA:44:ARG:HH11	27:AA:44:ARG:CB	2.23	0.51
35:KA:342:GLU:OE2	35:KA:345:ILE:HD11	2.10	0.51
1:FB:582:U:C2	1:FB:760:G:C6	2.99	0.51
1:FB:1298:C:H5	41:VC:114:ARG:NH1	2.07	0.51
2:GB:244:A:C2	2:GB:255:A:C4	2.99	0.51
6:KB:2:LYS:HA	6:KB:84:PHE:CD1	2.46	0.51
13:RB:126:VAL:HA	13:RB:146:VAL:O	2.11	0.51
37:RC:72:LYS:HE3	37:RC:73:PRO:HD2	1.93	0.51
40:UC:15:ASP:CG	40:UC:18:GLN:HB2	2.30	0.51
40:UC:33:TYR:HD2	40:UC:75:LEU:HA	1.75	0.51
41:VC:69:VAL:HG12	41:VC:103:TRP:HE3	1.75	0.51
1:A:498:A:H4'	1:A:500:G:OP1	2.09	0.51
1:A:559:A:H4'	1:A:560:U:H5"	1.92	0.51
1:A:1272:G:C2	1:A:1273:G:H1'	2.46	0.51
1:A:1348:U:C2	1:A:1349:A:C8	2.99	0.51
1:A:1423:G:OP1	12:L:49:ARG:NH2	2.41	0.51
2:B:1991:U:H2'	2:B:1992:G:H5"	1.94	0.51
2:B:2099:U:H2'	2:B:2100:G:C8	2.46	0.51
2:B:2192:G:OP2	2:B:2192:G:C8	2.64	0.51
2:B:2757:A:N1	9:I:67:LEU:HD22	2.26	0.51
7:G:78:ILE:HA	7:G:83:PHE:CD2	2.46	0.51
15:O:54:LEU:HD21	15:O:65:LEU:HB3	1.93	0.51
26:Z:17:SER:H	26:Z:20:GLU:CD	2.14	0.51
28:BA:11:PRO:HA	28:BA:25:TYR:HA	1.93	0.51
35:KA:311:ASN:O	35:KA:315:GLY:N	2.44	0.51
39:OA:17:ALA:HA	39:OA:26:PHE:HA	1.92	0.51
47:WA:96:LEU:O	47:WA:110:ARG:NH2	2.43	0.51
1:FB:210:U:O2'	1:FB:216:G:OP2	2.24	0.51
1:FB:251:G:N1	1:FB:266:G:O6	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:1328:C:H2'	1:FB:1329:A:O4'	2.11	0.51
1:FB:1493:A:N3	35:OC:119:THR:HG23	2.26	0.51
2:GB:991:C:OP2	2:GB:1186:G:H5'	2.11	0.51
2:GB:2394:C:N3	4:IB:76:A:O2'	2.41	0.51
2:GB:2833:G:H4'	2:GB:2834:G:OP2	2.11	0.51
5:JB:183:ARG:HH11	5:JB:183:ARG:HG2	1.76	0.51
5:JB:202:LYS:HG3	5:JB:203:ASN:OD1	2.11	0.51
5:JB:206:LEU:HD22	5:JB:211:ARG:HG2	1.93	0.51
10:OB:39:ALA:HB1	10:OB:44:LEU:HD13	1.91	0.51
14:SB:17:LEU:HD21	14:SB:41:TRP:HE1	1.75	0.51
16:UB:71:ARG:HD3	16:UB:107:GLU:OE2	2.11	0.51
17:VB:134:GLU:HG2	17:VB:135:VAL:H	1.74	0.51
20:YB:88:ARG:HG3	20:YB:94:ASP:OD2	2.11	0.51
29:HC:52:TYR:HB3	29:HC:57:VAL:HG21	1.92	0.51
31:JC:47:ARG:HA	31:JC:48:LYS:HZ3	1.76	0.51
42:WC:12:ARG:HD3	42:WC:25:ASP:O	2.11	0.51
43:XC:26:VAL:HA	43:XC:61:ALA:HB3	1.93	0.51
43:XC:93:ARG:HH12	43:XC:97:LYS:CD	2.23	0.51
43:XC:93:ARG:NH1	43:XC:97:LYS:HD3	2.25	0.51
1:A:394:G:H2'	1:A:395:C:C6	2.46	0.50
1:A:554:C:H2'	1:A:555:C:C6	2.46	0.50
2:B:1288:U:C2	2:B:1327:C:O2	2.65	0.50
2:B:1405:U:H2'	2:B:1406:U:C6	2.46	0.50
2:B:2377:A:H2'	2:B:2378:A:C8	2.46	0.50
4:D:41:C:H2'	4:D:42:G:H8	1.76	0.50
35:JA:186:ARG:HA	35:KA:313:PRO:HD2	1.92	0.50
1:FB:238:G:P	51:FD:25:ARG:HH22	2.34	0.50
1:FB:287:U:H2'	1:FB:288:A:C8	2.46	0.50
1:FB:967:5MC:H2'	1:FB:968:A:N7	2.26	0.50
1:FB:1010:G:N2	1:FB:1020:U:H1'	2.26	0.50
2:GB:26:G:C6	2:GB:27:G:N1	2.79	0.50
2:GB:579:G:H2'	2:GB:580:C:C6	2.47	0.50
2:GB:1491:G:H2'	2:GB:1492:G:C8	2.46	0.50
2:GB:1742:C:H5'	2:GB:1743:G:OP2	2.10	0.50
2:GB:2093:G:C6	2:GB:2225:A:C8	2.98	0.50
2:GB:2099:U:H2'	2:GB:2100:G:H8	1.76	0.50
2:GB:2111:C:N4	2:GB:2145:C:O2'	2.44	0.50
2:GB:2781:A:H5"	2:GB:2782:G:H5'	1.93	0.50
3:HB:50:G:OP2	16:UB:62:LYS:HE3	2.11	0.50
25:DC:40:ARG:C	25:DC:40:ARG:HD3	2.32	0.50
25:DC:82:LEU:HD12	25:DC:83:GLU:OE2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:SC:87:GLY:O	38:SC:89:THR:N	2.43	0.50
39:TC:139:LEU:O	39:TC:142:LEU:HB2	2.11	0.50
43:XC:127:LYS:HG3	43:XC:128:ARG:HG3	1.93	0.50
1:A:977:A:O2'	1:A:981:U:N3	2.43	0.50
1:A:1284:C:H3'	1:A:1285:A:H8	1.76	0.50
1:A:1321:C:H1'	53:CB:77:THR:HG21	1.92	0.50
9:I:124:GLU:HB3	9:I:132:ARG:HB3	1.93	0.50
11:K:58:ASP:OD1	11:K:125:GLY:N	2.44	0.50
14:N:35:VAL:HG23	14:N:130:LYS:O	2.12	0.50
17:Q:23:ARG:HB2	17:Q:120:ARG:HH12	1.76	0.50
38:NA:36:ARG:HB3	38:NA:38:TYR:CZ	2.46	0.50
1:FB:186(A):C:H2'	1:FB:186(B):C:C6	2.45	0.50
1:FB:312:C:H2'	1:FB:313:A:H8	1.75	0.50
1:FB:781:A:O2'	1:FB:1522:U:O2	2.30	0.50
2:GB:106:C:H1'	22:AC:1:MET:HG2	1.92	0.50
2:GB:458:G:O2'	2:GB:469:G:O6	2.22	0.50
2:GB:1785:A:O2'	2:GB:1786:A:H2'	2.11	0.50
2:GB:2189:U:H2'	2:GB:2190:G:N7	2.26	0.50
4:IB:41:C:H2'	4:IB:42:G:H8	1.76	0.50
5:JB:132:PRO:HD3	5:JB:190:TYR:CZ	2.46	0.50
8:MB:73:ALA:HB3	8:MB:85:GLY:H	1.76	0.50
14:SB:134:ARG:HH11	23:BC:122:ARG:NE	2.09	0.50
20:YB:30:GLU:OE2	20:YB:33:ARG:HD3	2.10	0.50
36:QC:103:THR:HG23	36:QC:176:GLU:OE1	2.11	0.50
54:ID:86:ARG:HG2	54:ID:86:ARG:HH11	1.77	0.50
2:B:191:A:H2'	2:B:192:C:C6	2.47	0.50
2:B:279:C:OP2	2:B:279:C:C6	2.64	0.50
2:B:1063:G:N2	2:B:1076:C:O2'	2.44	0.50
2:B:2432:A:C4	25:Y:33:LYS:HG3	2.46	0.50
4:D:58:A:H61	4:D:60:U:H2'	1.77	0.50
14:N:75:THR:HG21	14:N:87:LYS:NZ	2.25	0.50
14:N:134:ARG:NH1	23:W:122:ARG:NE	2.58	0.50
35:KA:312:PHE:HB3	35:KA:313:PRO:HD3	1.93	0.50
39:OA:57:LYS:HE3	39:OA:61:TYR:CE2	2.45	0.50
43:SA:127:LYS:HG3	43:SA:128:ARG:HG3	1.94	0.50
45:UA:123:LYS:C	45:UA:125:PHE:H	2.14	0.50
46:VA:25:PRO:O	46:VA:27:LEU:N	2.44	0.50
47:WA:3:ARG:HB2	47:WA:8:GLU:HG3	1.92	0.50
47:WA:92:HIS:CG	47:WA:98:VAL:HG21	2.46	0.50
54:DB:47:GLY:HA2	54:DB:48:LYS:C	2.31	0.50
1:FB:223:U:H2'	1:FB:224:C:H6	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:584:G:H2'	1:FB:585:G:H8	1.75	0.50
1:FB:1010:G:H2'	1:FB:1011:G:H8	1.75	0.50
1:FB:1453:G:H4'	1:FB:1454:G:OP2	2.12	0.50
2:GB:363(E):G:H2'	2:GB:363(F):U:O4'	2.11	0.50
2:GB:848:G:C4	2:GB:933:A:H8	2.29	0.50
2:GB:1689:A:N6	2:GB:1698:A:H2	2.09	0.50
2:GB:2053:G:OP1	6:KB:144:ARG:HG3	2.11	0.50
2:GB:2336:A:H3'	2:GB:2337:G:C8	2.46	0.50
2:GB:2590:A:O3'	5:JB:239:ARG:NH2	2.44	0.50
2:GB:2790:A:H2'	2:GB:2791:C:H5'	1.94	0.50
5:JB:267:SER:C	5:JB:269:PHE:H	2.15	0.50
14:SB:85:LYS:HZ1	24:CC:4:LYS:HE2	1.74	0.50
37:RC:40:ARG:HA	37:RC:43:LEU:HD12	1.92	0.50
45:ZC:120:ARG:HG2	45:ZC:120:ARG:NH1	2.23	0.50
46:AD:28:LYS:HB2	46:AD:33:ARG:HH21	1.76	0.50
1:A:187:C:H2'	1:A:188:U:O4'	2.11	0.50
1:A:1230:C:H2'	1:A:1231:G:H8	1.76	0.50
1:A:1240:U:OP2	41:QA:116:ALA:N	2.43	0.50
1:A:1360:A:H8	1:A:1360:A:OP1	1.95	0.50
2:B:6:A:H2'	2:B:7:G:O4'	2.10	0.50
2:B:26:G:C6	2:B:27:G:N1	2.79	0.50
2:B:270(T):G:H2'	2:B:270(U):G:H8	1.76	0.50
2:B:1341:U:OP1	2:B:1397:U:N3	2.42	0.50
2:B:1526:G:H2'	2:B:1527:G:O4'	2.12	0.50
2:B:1785:A:O2'	2:B:1786:A:H2'	2.12	0.50
2:B:2107:C:O2	2:B:2182:G:N2	2.40	0.50
2:B:2526:G:H1	2:B:2537:U:H3	1.59	0.50
6:F:111:ARG:HB2	6:F:160:TYR:HB3	1.93	0.50
7:G:158:THR:O	7:G:178:PRO:HD3	2.11	0.50
10:J:109:ILE:HB	10:J:130:TYR:CZ	2.47	0.50
14:N:38:GLU:OE2	14:N:127:ILE:HA	2.11	0.50
38:NA:8:VAL:HA	38:NA:11:LEU:HD13	1.93	0.50
52:BB:38:GLU:H	52:BB:38:GLU:CD	2.15	0.50
1:FB:122:G:H2'	1:FB:123:C:O4'	2.11	0.50
1:FB:554:C:H2'	1:FB:555:C:C6	2.46	0.50
1:FB:941:G:N2	1:FB:942:G:H1'	2.27	0.50
1:FB:1248:A:OP1	1:FB:1248:A:H4'	2.10	0.50
1:FB:1266:G:N2	1:FB:1269:A:OP2	2.44	0.50
2:GB:101:G:H1'	26:EC:7:ARG:HH12	1.75	0.50
2:GB:251:A:C5	2:GB:252:G:H1'	2.47	0.50
2:GB:760:G:H2'	2:GB:761:A:O4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:863:A:OP2	14:SB:22:LYS:NZ	2.44	0.50
2:GB:910:A:C6	2:GB:911:A:C6	2.99	0.50
2:GB:1414:G:H1	2:GB:1588:C:H42	1.59	0.50
2:GB:1567:A:O2'	5:JB:63:ARG:NH2	2.45	0.50
3:HB:43:C:OP1	28:GC:6:HIS:NE2	2.44	0.50
8:MB:109:VAL:HG21	28:GC:14:ILE:HG21	1.93	0.50
17:VB:50:ILE:HD13	17:VB:50:ILE:H	1.77	0.50
22:AC:86:ARG:NH1	22:AC:100:ALA:HA	2.26	0.50
37:RC:179:ARG:HG2	37:RC:206:GLU:HB3	1.94	0.50
47:BD:34:LEU:HD22	47:BD:40:ASN:O	2.11	0.50
48:CD:27:CYS:HB3	48:CD:43:CYS:SG	2.51	0.50
1:A:404:U:H2'	1:A:405:U:H6	1.76	0.50
2:B:594:U:H3	2:B:663:G:H1	1.59	0.50
2:B:2488:A:H8	2:B:2488:A:O5'	1.95	0.50
6:F:13:ARG:NH1	6:F:13:ARG:HG2	2.25	0.50
6:F:143:ASN:HD22	6:F:147:PRO:HD3	1.77	0.50
17:Q:51:ARG:HG3	17:Q:98:LYS:HE3	1.92	0.50
38:NA:8:VAL:HG22	38:NA:21:LEU:HD13	1.92	0.50
39:OA:125:SER:OG	39:OA:126:ARG:N	2.44	0.50
44:TA:51:ARG:NH2	44:TA:61:GLU:HB3	2.25	0.50
51:AB:66:SER:OG	51:AB:67:LYS:N	2.42	0.50
1:FB:892:A:O2'	1:FB:1415:G:H4'	2.12	0.50
1:FB:1071:C:H5"	39:TC:49:PRO:HG2	1.94	0.50
1:FB:1417:G:N2	1:FB:1482:G:H2'	2.27	0.50
2:GB:236:C:H2'	2:GB:237:C:C6	2.46	0.50
2:GB:279:C:H2'	2:GB:280:C:C6	2.47	0.50
2:GB:2485:G:H5"	14:SB:46:GLN:HE21	1.75	0.50
2:GB:2809:A:OP2	2:GB:2891:G:N1	2.44	0.50
3:HB:39:A:O2'	3:HB:46:A:N1	2.44	0.50
13:RB:29:LYS:HG2	13:RB:30:THR:HG23	1.92	0.50
1:A:122:G:H2'	1:A:123:C:O4'	2.11	0.50
1:A:924:C:H42	1:A:1392:G:H1	1.60	0.50
1:A:1171:G:H2'	1:A:1172:C:H6	1.76	0.50
2:B:155:C:H41	2:B:171:G:H1	1.59	0.50
2:B:517:C:O2'	20:T:18:ARG:NH2	2.45	0.50
2:B:1367:A:N7	2:B:1368:G:H1'	2.27	0.50
2:B:1382:G:H8	2:B:1382:G:O5'	1.94	0.50
2:B:1538:G:H2'	2:B:1539:G:H8	1.76	0.50
2:B:1971:A:C5	5:E:241:PRO:HG3	2.47	0.50
2:B:2748:A:H2'	2:B:2749:A:C8	2.47	0.50
2:B:2896:C:H2'	2:B:2897:U:H5	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:43:C:OP1	28:BA:6:HIS:NE2	2.45	0.50
4:D:4:G:H1	4:D:69:C:H42	1.58	0.50
8:H:39:ILE:HB	8:H:92:VAL:HG13	1.92	0.50
8:H:71:THR:OG1	8:H:89:GLY:HA3	2.12	0.50
8:H:165:THR:HB	8:H:168:GLU:OE2	2.12	0.50
11:K:76:SER:OG	11:K:77:GLY:N	2.40	0.50
12:L:87:ILE:HD13	12:L:91:LEU:HA	1.94	0.50
21:U:60:ARG:NH1	31:EA:47:ARG:NH2	2.59	0.50
26:Z:68:ARG:HG2	26:Z:68:ARG:NH1	2.27	0.50
28:BA:16:CYS:SG	28:BA:33:VAL:HB	2.51	0.50
39:OA:51:VAL:O	39:OA:55:VAL:N	2.32	0.50
1:FB:974:A:H8	1:FB:974:A:OP1	1.93	0.50
1:FB:1236:A:O2'	1:FB:1304:G:H4'	2.11	0.50
1:FB:1327:C:OP1	55:JD:20:LYS:HB3	2.12	0.50
2:GB:721:C:H2'	2:GB:722:A:H8	1.75	0.50
2:GB:1861:G:H2'	2:GB:1862:G:H8	1.76	0.50
2:GB:2896:C:H2'	2:GB:2897:U:H5	1.76	0.50
7:LB:160:ASN:OD1	7:LB:163:VAL:HB	2.12	0.50
8:MB:115:ARG:O	8:MB:136:ARG:NH2	2.41	0.50
38:SC:192:GLU:CD	38:SC:192:GLU:H	2.15	0.50
1:A:278:G:N2	51:AB:95:TYR:HB3	2.26	0.50
1:A:673:G:H2'	1:A:674:G:C8	2.46	0.50
1:A:689:C:H2'	1:A:690:G:O4'	2.11	0.50
1:A:826:C:O2	42:RA:15:ASN:ND2	2.45	0.50
1:A:969:A:N6	43:SA:128:ARG:O	2.44	0.50
1:A:1328:C:OP1	55:EB:21:TYR:OH	2.30	0.50
2:B:299:A:N1	2:B:322:A:O2'	2.39	0.50
2:B:2189:U:H2'	2:B:2190:G:N7	2.27	0.50
2:B:2790:A:H2'	2:B:2791:C:H5'	1.94	0.50
7:G:64:ILE:HD12	7:G:65:TRP:N	2.27	0.50
9:I:118:PRO:HD2	9:I:121:ILE:HD12	1.94	0.50
9:I:156:ALA:O	9:I:172:LYS:HB3	2.11	0.50
10:J:75:LEU:HD13	10:J:105:HIS:NE2	2.27	0.50
10:J:124:GLY:N	10:J:144:VAL:HG23	2.26	0.50
10:J:133:HIS:HE1	10:J:135:GLU:HB3	1.76	0.50
12:L:68:GLU:H	12:L:68:GLU:CD	2.14	0.50
12:L:116:SER:OG	12:L:117:LEU:N	2.45	0.50
29:CA:52:TYR:HB3	29:CA:57:VAL:HG21	1.94	0.50
30:DA:9:LEU:HD21	30:DA:25:LYS:HB3	1.93	0.50
37:MA:152:ILE:HG23	37:MA:167:TRP:HB3	1.94	0.50
38:NA:87:GLY:O	38:NA:89:THR:N	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:PA:15:ASP:CG	40:PA:18:GLN:HB2	2.31	0.50
41:QA:20:ASP:OD2	41:QA:22:LEU:HD23	2.10	0.50
42:RA:20:TYR:HA	42:RA:65:TYR:CE1	2.47	0.50
2:GB:71:A:H3'	2:GB:71:A:OP2	2.11	0.50
2:GB:433:C:H2'	2:GB:434:U:C6	2.46	0.50
2:GB:783:A:H4'	2:GB:2588:G:H4'	1.93	0.50
2:GB:1693:U:OP2	2:GB:1694:C:H5	1.95	0.50
2:GB:2272:U:H5"	2:GB:2273:A:OP1	2.11	0.50
8:MB:16:ARG:O	8:MB:20:ILE:HG13	2.12	0.50
9:NB:16:SER:HB2	9:NB:27:LYS:HG2	1.93	0.50
16:UB:28:VAL:HG23	16:UB:37:ALA:HB2	1.94	0.50
22:AC:46:LYS:HB3	22:AC:60:PHE:CD1	2.47	0.50
23:BC:126:VAL:HG21	23:BC:161:VAL:HG12	1.94	0.50
31:JC:9:ARG:HH21	31:JC:47:ARG:HD3	1.76	0.50
39:TC:94:ALA:HB2	39:TC:119:LEU:HG	1.94	0.50
40:UC:27:GLN:HA	40:UC:30:LEU:HD12	1.92	0.50
42:WC:11:THR:OG1	42:WC:14:ARG:NH1	2.38	0.50
49:DD:8:LYS:O	49:DD:12:ILE:HG13	2.12	0.50
50:ED:19:ILE:N	50:ED:37:GLY:O	2.45	0.50
1:A:14:U:O2'	1:A:16:A:N7	2.33	0.50
1:A:223:U:H2'	1:A:224:C:H6	1.76	0.50
2:B:288:C:H42	2:B:353:G:H1	1.60	0.50
2:B:514:A:N3	2:B:581:C:O2'	2.40	0.50
2:B:573:G:O2'	2:B:574:C:H3'	2.11	0.50
2:B:1047:G:H2'	2:B:1110:G:N1	2.27	0.50
2:B:1805:U:O2	5:E:50:THR:HB	2.12	0.50
2:B:2623:G:H4'	2:B:2825:G:H8	1.77	0.50
2:B:2836:U:H2'	2:B:2837:G:C8	2.46	0.50
5:E:267:SER:C	5:E:269:PHE:H	2.15	0.50
8:H:44:GLY:O	8:H:47:LYS:HG3	2.12	0.50
8:H:73:ALA:HA	8:H:88:ILE:HD11	1.93	0.50
8:H:113:ARG:NH1	47:WA:2:ALA:O	2.45	0.50
13:M:49:ARG:HH12	32:FA:4:MET:HE3	1.76	0.50
37:MA:30:ARG:HG2	48:XA:36:PHE:O	2.11	0.50
50:ZA:82:GLN:O	50:ZA:83:GLU:HB2	2.12	0.50
1:FB:255:G:OP1	51:FD:69:LYS:NZ	2.43	0.50
1:FB:397:A:H5'	1:FB:398:C:OP1	2.12	0.50
1:FB:580:U:H2'	1:FB:581:G:O4'	2.12	0.50
1:FB:1095:U:P	1:FB:1108:G:H1	2.35	0.50
2:GB:312:G:H5'	2:GB:331:A:O2'	2.12	0.50
2:GB:387:U:OP2	25:DC:20:ARG:NH1	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:445:C:O2'	2:GB:446:G:H5'	2.12	0.50
2:GB:634:C:H2'	2:GB:635:C:C6	2.47	0.50
2:GB:1007:C:OP1	11:PB:35:ARG:NH1	2.42	0.50
2:GB:1291:C:H2'	2:GB:1292:U:C6	2.47	0.50
2:GB:1550:C:H2'	2:GB:1551:C:H6	1.77	0.50
2:GB:1863:G:C6	2:GB:1864:U:C4	3.00	0.50
2:GB:2571:C:O2'	6:KB:146:THR:O	2.28	0.50
2:GB:2745:C:C4	2:GB:2746:U:C4	3.00	0.50
3:HB:53:A:H2'	3:HB:54:G:H8	1.76	0.50
11:PB:76:SER:OG	11:PB:77:GLY:N	2.45	0.50
20:YB:6:ILE:HG12	20:YB:104:THR:HG23	1.94	0.50
29:HC:35:GLU:HG3	29:HC:51:TYR:CB	2.42	0.50
1:A:35:G:H1	1:A:549:C:N4	2.07	0.50
1:A:370:C:H2'	1:A:371:G:C8	2.47	0.50
1:A:1037:C:O2'	1:A:1038:C:H5'	2.12	0.50
1:A:1305:G:C8	55:EB:5:ASP:HA	2.46	0.50
1:A:1428:A:H2'	1:A:1429:C:O4'	2.12	0.50
2:B:807:U:OP2	13:M:41:ARG:NH2	2.44	0.50
2:B:1155:A:O3'	18:R:55:ARG:NH1	2.45	0.50
2:B:1973:G:H2'	2:B:1974:C:H6	1.76	0.50
8:H:9:ARG:O	8:H:12:TYR:HB2	2.12	0.50
8:H:109:VAL:HG21	28:BA:14:ILE:HG21	1.93	0.50
8:H:120:LEU:HB2	8:H:179:PRO:O	2.11	0.50
37:MA:40:ARG:HA	37:MA:43:LEU:HD12	1.94	0.50
40:PA:3:ARG:HH11	40:PA:3:ARG:CB	2.24	0.50
43:SA:93:ARG:HH12	43:SA:97:LYS:CD	2.24	0.50
1:FB:201:C:O2	1:FB:216:G:N1	2.44	0.50
1:FB:335:C:O2'	1:FB:1433:A:N3	2.39	0.50
1:FB:626:U:H2'	1:FB:627:G:C8	2.47	0.50
1:FB:1145:C:OP2	1:FB:1145:C:H6	1.95	0.50
1:FB:1381:U:C2'	1:FB:1382:C:H5'	2.42	0.50
2:GB:155:C:H41	2:GB:171:G:H1	1.60	0.50
2:GB:675:A:H4'	7:LB:67:GLN:OE1	2.12	0.50
2:GB:885:C:O2'	2:GB:890:A:N6	2.45	0.50
2:GB:2098:U:H2'	2:GB:2099:U:O4'	2.12	0.50
2:GB:2099:U:H2'	2:GB:2100:G:C8	2.47	0.50
2:GB:2317:C:H2'	2:GB:2318:G:H5'	1.92	0.50
14:SB:35:VAL:HG23	14:SB:130:LYS:O	2.11	0.50
18:WB:24:TYR:O	18:WB:29:SER:HB3	2.11	0.50
20:YB:59:VAL:HG13	20:YB:60:ASN:H	1.77	0.50
22:AC:79:CYS:SG	22:AC:81:LYS:HB2	2.52	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:RC:3:ASN:HD21	37:RC:4:LYS:HZ2	1.58	0.50
43:XC:3:GLN:OE1	43:XC:20:ARG:NH2	2.41	0.50
44:YC:79:ARG:O	44:YC:83:GLU:HB2	2.12	0.50
47:BD:39:ILE:HD11	47:BD:55:ARG:NH1	2.27	0.50
1:A:421:U:C4	37:MA:127:ARG:NH1	2.80	0.49
1:A:708:C:H2'	1:A:709:G:C8	2.47	0.49
1:A:767:A:H2'	1:A:768:A:O4'	2.12	0.49
1:A:1271:G:H2'	1:A:1272:G:H8	1.75	0.49
2:B:729:G:H2'	2:B:1775:U:H1'	1.93	0.49
3:C:75:G:N2	23:W:87:ASP:OD2	2.45	0.49
7:G:63:LYS:NZ	7:G:75:HIS:O	2.33	0.49
21:U:36:LYS:HG2	21:U:54:VAL:HB	1.94	0.49
23:W:185:GLU:OE1	23:W:185:GLU:N	2.40	0.49
25:Y:52:ARG:HA	25:Y:56:GLN:O	2.13	0.49
37:MA:64:VAL:HG22	37:MA:66:VAL:HG13	1.94	0.49
37:MA:69:HIS:HA	37:MA:104:GLN:HB2	1.93	0.49
38:NA:28:SER:OG	38:NA:30:LYS:HB2	2.12	0.49
38:NA:94:LEU:HA	38:NA:97:LEU:HB2	1.94	0.49
40:PA:27:GLN:HA	40:PA:30:LEU:HB2	1.93	0.49
47:WA:39:ILE:HD11	47:WA:55:ARG:HH12	1.77	0.49
49:YA:55:GLY:O	49:YA:59:MET:HG3	2.12	0.49
54:DB:37:SER:O	54:DB:41:VAL:HG13	2.12	0.49
1:FB:587:G:H8	1:FB:587:G:O5'	1.94	0.49
2:GB:1057:A:H8	2:GB:1086:A:H62	1.60	0.49
2:GB:1657:C:H4'	6:KB:133:LYS:HB2	1.94	0.49
2:GB:1786:A:H1'	2:GB:1938:A:N6	2.27	0.49
3:HB:89(A):G:C6	3:HB:89(B):A:C6	3.00	0.49
4:IB:58:A:H61	4:IB:60:U:H2'	1.76	0.49
8:MB:73:ALA:HA	8:MB:88:ILE:HD11	1.93	0.49
10:OB:72:LEU:HB3	10:OB:140:LEU:HD23	1.93	0.49
14:SB:116:GLU:OE2	14:SB:119:ARG:NH2	2.44	0.49
15:TB:99:LYS:HB2	15:TB:99:LYS:NZ	2.27	0.49
20:YB:27:LYS:HD3	20:YB:31:GLU:OE2	2.11	0.49
23:BC:108:PRO:HB2	23:BC:111:VAL:HG23	1.94	0.49
35:PC:312:PHE:HB3	35:PC:313:PRO:HD3	1.93	0.49
36:QC:177:ALA:HB1	36:QC:182:ILE:HB	1.92	0.49
1:A:139:G:H2'	1:A:140:A:H8	1.77	0.49
1:A:291:C:N4	1:A:309:G:H1	2.10	0.49
1:A:524:G:H2'	1:A:525:C:C6	2.48	0.49
1:A:709:G:H2'	1:A:710:G:C8	2.45	0.49
1:A:867:G:OP2	1:A:867:G:H8	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1010:G:N2	1:A:1020:U:H1'	2.26	0.49
1:A:1110:A:H3'	1:A:1111:A:C8	2.47	0.49
1:A:1298:C:C5	41:QA:114:ARG:NH1	2.80	0.49
1:A:1316:G:O6	53:CB:3:ARG:NH1	2.45	0.49
2:B:95:G:HO2'	26:Z:48:HIS:HD1	1.59	0.49
2:B:501:A:OP1	22:V:19:LYS:NZ	2.44	0.49
2:B:1115:G:H2'	2:B:1116:C:C6	2.47	0.49
2:B:2689:U:P	2:B:2719:G:H22	2.35	0.49
8:H:135:LEU:C	8:H:136:ARG:HG3	2.31	0.49
39:OA:94:ALA:HB2	39:OA:119:LEU:HG	1.94	0.49
47:WA:39:ILE:HD11	47:WA:55:ARG:NH1	2.27	0.49
55:EB:12:LYS:NZ	55:EB:19:GLY:H	2.10	0.49
1:FB:370:C:H2'	1:FB:371:G:C8	2.46	0.49
2:GB:675:A:OP1	7:LB:63:LYS:HD2	2.12	0.49
2:GB:1479:G:H5"	2:GB:1560:G:H4'	1.94	0.49
2:GB:2224:G:H4'	2:GB:2226:C:C2	2.47	0.49
7:LB:53:THR:N	7:LB:56:GLU:HG3	2.27	0.49
9:NB:159:GLU:OE2	9:NB:169:VAL:HG11	2.12	0.49
20:YB:2:GLU:HB2	20:YB:107:LEU:O	2.11	0.49
23:BC:6:LYS:NZ	23:BC:43:GLU:OE2	2.23	0.49
23:BC:30:ASN:ND2	23:BC:31:ARG:HG2	2.27	0.49
26:EC:63:VAL:HG12	26:EC:67:LYS:HG3	1.94	0.49
28:GC:58:ARG:NH1	53:HD:68:GLY:HA3	2.27	0.49
1:A:186(A):C:H2'	1:A:186(B):C:C6	2.47	0.49
1:A:952:U:H2'	1:A:953:G:C8	2.48	0.49
1:A:991:U:H4'	1:A:992:U:H5"	1.94	0.49
1:A:1381:U:H1'	41:QA:79:ARG:NE	2.25	0.49
2:B:1040:C:H2'	2:B:1041:C:C6	2.47	0.49
2:B:2882:A:P	15:O:96:ARG:HH21	2.36	0.49
8:H:77:ILE:HB	8:H:80:PHE:HB2	1.94	0.49
15:O:48:VAL:O	15:O:51:LEU:N	2.45	0.49
39:OA:148:VAL:O	39:OA:152:ARG:HG2	2.12	0.49
2:GB:46:C:OP2	2:GB:215:G:H2'	2.11	0.49
2:GB:1506:C:H2'	2:GB:1508:A:C8	2.47	0.49
2:GB:1971:A:H1'	5:JB:240:ALA:O	2.12	0.49
2:GB:2018:G:C6	2:GB:2019:A:C6	3.00	0.49
2:GB:2630:G:H1'	2:GB:2894:G:H1'	1.95	0.49
3:HB:43:C:O2'	8:MB:95:ARG:HB3	2.11	0.49
9:NB:124:GLU:HB3	9:NB:132:ARG:HB3	1.93	0.49
35:PC:316:ARG:HA	35:PC:327:TYR:HB2	1.95	0.49
39:TC:84:PHE:HB2	39:TC:134:ALA:HB2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:AD:89:ARG:HH12	46:AD:95:GLY:N	2.10	0.49
1:A:238:G:P	51:AB:25:ARG:HH22	2.35	0.49
2:B:274:G:H2'	2:B:275:G:O4'	2.13	0.49
2:B:1015:G:H2'	2:B:1016:G:C8	2.47	0.49
2:B:1689:A:N6	2:B:1698:A:H2	2.10	0.49
2:B:2869:G:H2'	2:B:2870:C:O4'	2.13	0.49
3:C:39:A:O2'	3:C:46:A:N1	2.45	0.49
7:G:206:ILE:HG22	7:G:207:GLY:H	1.78	0.49
11:K:89:LYS:NZ	11:K:93:THR:HG21	2.28	0.49
12:L:22:ILE:HG13	12:L:40:VAL:HG12	1.94	0.49
17:Q:124:ASP:O	17:Q:128:GLU:HB3	2.11	0.49
18:R:94:ASN:HA	18:R:97:ASP:HB3	1.94	0.49
23:W:111:VAL:O	23:W:114:GLY:N	2.45	0.49
24:X:64:ASP:OD2	24:X:64:ASP:N	2.45	0.49
29:CA:6:VAL:HG13	29:CA:7:PRO:HD2	1.94	0.49
4:IA:48:C:O2'	4:IA:59:A:O2'	2.29	0.49
36:LA:178:ARG:NH2	36:LA:198:ASP:OD1	2.45	0.49
39:OA:102:ALA:HB3	39:OA:107:ARG:HB2	1.95	0.49
39:OA:106:PRO:O	39:OA:110:LEU:HG	2.12	0.49
40:PA:61:LEU:HD23	40:PA:63:TYR:HE2	1.76	0.49
45:UA:33:THR:OG1	45:UA:34:ASP:O	2.24	0.49
49:YA:3:ILE:HD11	49:YA:38:ARG:HD2	1.94	0.49
1:FB:1037:C:O2'	1:FB:1038:C:H5'	2.12	0.49
1:FB:1128:C:N4	1:FB:1129:C:H41	2.10	0.49
1:FB:1360:A:H8	1:FB:1360:A:OP1	1.94	0.49
2:GB:1019:U:H3	2:GB:1142(B):A:N6	2.07	0.49
2:GB:1449(B):A:C2	2:GB:1530:G:H1'	2.48	0.49
2:GB:1790:C:H5"	2:GB:1791:A:OP1	2.12	0.49
2:GB:2396:G:H5'	25:DC:25:LYS:HE2	1.94	0.49
2:GB:2562:U:H1'	12:QB:23:ARG:HE	1.77	0.49
3:HB:75:G:N2	23:BC:87:ASP:OD2	2.44	0.49
7:LB:123:LEU:HD12	7:LB:124:LEU:H	1.77	0.49
7:LB:201:VAL:O	7:LB:205:ARG:N	2.45	0.49
11:PB:89:LYS:NZ	11:PB:93:THR:HG21	2.27	0.49
15:TB:104:ARG:HD2	15:TB:109:ALA:HB3	1.94	0.49
37:RC:30:ARG:HG2	48:CD:36:PHE:O	2.12	0.49
37:RC:152:ILE:HG23	37:RC:167:TRP:HB3	1.94	0.49
40:UC:29:ALA:HA	40:UC:32:ASN:ND2	2.27	0.49
45:ZC:123:LYS:C	45:ZC:125:PHE:H	2.16	0.49
46:AD:86:ARG:HH21	46:AD:99:HIS:HD1	1.60	0.49
54:ID:29:LYS:HE2	54:ID:65:LYS:HB3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:501:C:H2'	1:A:502:G:C8	2.47	0.49
1:A:674:G:H2'	1:A:675:A:C8	2.45	0.49
1:A:1381:U:C2'	1:A:1382:C:H5'	2.43	0.49
2:B:336:C:O2'	22:V:35:TYR:OH	2.29	0.49
2:B:496:G:C2	2:B:497:A:H1'	2.47	0.49
2:B:657:U:H2'	2:B:658:C:C6	2.48	0.49
2:B:1190:G:H2'	2:B:1191:G:H8	1.78	0.49
2:B:1786:A:H1'	2:B:1938:A:N6	2.27	0.49
2:B:2153:G:H2'	2:B:2154:G:H8	1.78	0.49
2:B:2361:A:OP1	32:FA:26:LYS:NZ	2.43	0.49
2:B:2515:C:O2	2:B:2570:G:C2	2.66	0.49
3:C:70:C:H2'	3:C:71:C:C6	2.47	0.49
3:C:78:A:C2	3:C:99:A:C4	3.01	0.49
4:D:42:G:N2	4:D:43:A:N3	2.60	0.49
5:E:53:PHE:HE1	5:E:221:VAL:HG13	1.77	0.49
7:G:195:ASP:HB3	7:G:198:ALA:H	1.77	0.49
37:MA:3:ASN:HD21	37:MA:4:LYS:HZ2	1.60	0.49
38:NA:12:CYS:SG	38:NA:31:CYS:SG	3.11	0.49
39:OA:129:ILE:O	39:OA:133:TYR:HB2	2.13	0.49
41:QA:12:LEU:HB2	41:QA:21:VAL:HG13	1.93	0.49
42:RA:22:GLU:O	42:RA:63:LEU:HB2	2.12	0.49
47:WA:110:ARG:NH1	47:WA:110:ARG:HB3	2.28	0.49
49:YA:8:LYS:HZ3	49:YA:31:LEU:HD21	1.77	0.49
1:FB:160:A:H1'	1:FB:344:A:N7	2.27	0.49
1:FB:1171:G:H2'	1:FB:1172:C:H6	1.78	0.49
1:FB:1290:G:H2'	1:FB:1291:G:C8	2.47	0.49
2:GB:288:C:H42	2:GB:353:G:H1	1.59	0.49
2:GB:2488:A:H8	2:GB:2488:A:O5'	1.95	0.49
7:LB:146:ALA:O	7:LB:148:LEU:HG	2.12	0.49
8:MB:23:PHE:CZ	8:MB:168:GLU:HA	2.47	0.49
14:SB:34:LEU:HD11	14:SB:129:THR:HB	1.94	0.49
21:ZB:5:TYR:CE1	26:EC:30:ARG:HG3	2.47	0.49
25:DC:52:ARG:HA	25:DC:56:GLN:O	2.12	0.49
37:RC:150:LYS:HE2	37:RC:152:ILE:HD11	1.93	0.49
50:ED:82:GLN:O	50:ED:83:GLU:HB2	2.13	0.49
1:A:131:C:O2	1:A:231:G:N2	2.38	0.49
1:A:397:A:H5'	1:A:398:C:OP1	2.13	0.49
1:A:1511:G:H8	1:A:1511:G:O5'	1.96	0.49
2:B:236:C:H2'	2:B:237:C:C6	2.48	0.49
2:B:764:A:H5"	5:E:210:GLY:HA3	1.94	0.49
2:B:1049:C:H2'	2:B:1050:A:H8	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1582:C:H2'	2:B:1583:A:H8	1.78	0.49
2:B:2821:A:OP1	6:F:110:GLY:N	2.44	0.49
5:E:206:LEU:HD22	5:E:211:ARG:HG2	1.94	0.49
11:K:35:ARG:HG2	11:K:35:ARG:HH11	1.77	0.49
18:R:31:SER:HB3	18:R:34:LYS:HB2	1.95	0.49
20:T:20:VAL:HA	20:T:23:LEU:HD12	1.94	0.49
23:W:14:LYS:HB2	23:W:17:ALA:HB3	1.94	0.49
32:FA:7:HIS:HD2	32:FA:61:LEU:HD13	1.76	0.49
35:KA:324:LEU:HD12	35:KA:326:LEU:HB2	1.95	0.49
42:RA:91:ARG:HG3	46:VA:7:ILE:HG13	1.93	0.49
55:EB:12:LYS:HZ2	55:EB:19:GLY:H	1.61	0.49
1:FB:444:C:H2'	1:FB:445:G:H8	1.78	0.49
1:FB:708:C:H2'	1:FB:709:G:C8	2.48	0.49
1:FB:836:G:C6	1:FB:851:G:C6	3.01	0.49
1:FB:948:C:H42	1:FB:1233:G:H1	1.60	0.49
2:GB:330:A:H2	2:GB:1210:A:HO2'	1.59	0.49
2:GB:364:C:OP2	2:GB:365:C:OP2	2.30	0.49
2:GB:469:G:O6	31:JC:39:ARG:NH1	2.46	0.49
2:GB:514:A:N3	2:GB:581:C:O2'	2.40	0.49
2:GB:1042:G:C6	2:GB:1043:C:N4	2.81	0.49
2:GB:1063:G:N2	2:GB:1076:C:O2'	2.46	0.49
2:GB:1190:G:H2'	2:GB:1191:G:H8	1.77	0.49
2:GB:1332:G:HO2'	2:GB:1609:A:H2	1.61	0.49
2:GB:1759:A:H1'	2:GB:2711:A:C2	2.48	0.49
2:GB:1800:C:OP2	5:JB:183:ARG:NH2	2.38	0.49
2:GB:2406:U:C4	13:RB:72:PRO:HD2	2.48	0.49
21:ZB:32:PRO:HA	21:ZB:77:LYS:HB2	1.93	0.49
36:QC:118:LEU:HD13	36:QC:142:LEU:HB2	1.95	0.49
41:VC:41:ARG:O	41:VC:45:ASP:HB2	2.12	0.49
44:YC:51:ARG:NH2	44:YC:61:GLU:HB3	2.28	0.49
1:A:219:C:H2'	1:A:220:G:O4'	2.13	0.49
1:A:551:U:H2'	1:A:552:U:C6	2.47	0.49
1:A:613:C:H2'	1:A:614:A:C8	2.48	0.49
1:A:715:A:H2'	1:A:716:A:C8	2.47	0.49
1:A:1006:C:H2'	1:A:1007:C:C5	2.48	0.49
1:A:1089:G:H1	1:A:1096:C:H42	1.61	0.49
2:B:364:C:OP2	2:B:365:C:OP2	2.31	0.49
2:B:675:A:H4'	7:G:67:GLN:OE1	2.13	0.49
2:B:768:G:C4	2:B:769:G:C8	3.00	0.49
2:B:910:A:C6	2:B:911:A:C6	3.00	0.49
2:B:1060:U:H4'	2:B:1061:U:O5'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:116:GLN:HG2	5:E:117:VAL:N	2.28	0.49
13:M:75:ILE:H	13:M:75:ILE:HD12	1.78	0.49
20:T:2:GLU:HB2	20:T:107:LEU:O	2.13	0.49
25:Y:47:GLN:N	25:Y:62:VAL:O	2.41	0.49
28:BA:21:VAL:O	28:BA:23:GLU:N	2.45	0.49
43:SA:25:LYS:HD3	43:SA:60:ASP:OD2	2.12	0.49
43:SA:28:VAL:HG22	43:SA:63:ILE:HD12	1.94	0.49
1:FB:26:A:OP2	1:FB:26:A:H8	1.95	0.49
1:FB:163:C:H2'	1:FB:164:U:O4'	2.13	0.49
1:FB:1070:U:H2'	1:FB:1071:C:C6	2.47	0.49
1:FB:1145:C:H4'	1:FB:1146:A:C8	2.44	0.49
1:FB:1321:C:H4'	47:BD:87:TYR:CE2	2.47	0.49
2:GB:256:A:H2'	2:GB:257:A:C8	2.48	0.49
2:GB:576:U:OP1	2:GB:2503:2MA:OP1	2.30	0.49
2:GB:1587:A:H2'	2:GB:1588:C:C6	2.48	0.49
2:GB:2156:G:H8	2:GB:2156:G:OP2	1.94	0.49
4:IB:42:G:N2	4:IB:43:A:N3	2.60	0.49
8:MB:96:ARG:O	8:MB:98:ARG:N	2.42	0.49
20:YB:86:LEU:HG	20:YB:88:ARG:HD3	1.94	0.49
22:AC:67:LEU:HD23	22:AC:72:VAL:HG23	1.93	0.49
1:A:12:U:H3	1:A:22:G:H1	1.61	0.49
1:A:201:C:O2	1:A:216:G:N1	2.45	0.49
1:A:589:C:OP1	42:RA:5:PRO:HG3	2.13	0.49
1:A:1089:G:H1	1:A:1096:C:N4	2.10	0.49
1:A:1373:G:H5"	41:QA:36:LYS:HZ1	1.75	0.49
1:A:1453:G:H4'	1:A:1454:G:OP2	2.12	0.49
2:B:391:G:C6	2:B:411:G:N2	2.81	0.49
2:B:524:U:H4'	2:B:554:U:H4'	1.95	0.49
2:B:637:A:OP1	13:M:133:SER:OG	2.31	0.49
2:B:644:A:H4'	2:B:645:C:C5	2.46	0.49
2:B:921:G:H5"	2:B:922:U:OP2	2.11	0.49
2:B:1039:G:C6	2:B:1040:C:C4	3.01	0.49
2:B:1587:A:H2'	2:B:1588:C:C6	2.48	0.49
2:B:1928:A:H5"	2:B:1929:G:OP2	2.12	0.49
2:B:2208:U:H4'	5:E:151:LYS:HG2	1.94	0.49
2:B:2324:C:O2'	2:B:2337:G:H5'	2.13	0.49
2:B:2875:C:H2'	2:B:2876:G:O4'	2.12	0.49
10:J:69:LYS:O	10:J:73:GLU:HB2	2.13	0.49
11:K:30:ILE:O	11:K:34:LEU:HD22	2.12	0.49
12:L:13:ASN:HD21	12:L:97:ARG:H	1.58	0.49
12:L:119:PRO:HB2	17:Q:68:TYR:CD2	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:18:GLY:C	22:V:20:TYR:H	2.16	0.49
31:EA:43:THR:HG23	31:EA:44:PRO:O	2.12	0.49
4:IA:54:5MU:H73	4:IA:55:PSU:O2	2.12	0.49
35:KA:316:ARG:HA	35:KA:327:TYR:HB2	1.95	0.49
38:NA:32:ALA:O	38:NA:36:ARG:N	2.41	0.49
38:NA:57:ARG:HH12	39:OA:107:ARG:HH12	1.60	0.49
38:NA:142:PRO:HA	38:NA:185:PHE:HD2	1.78	0.49
40:PA:27:GLN:HA	40:PA:30:LEU:HD12	1.94	0.49
49:YA:63:ARG:HH12	49:YA:87:ILE:HD13	1.75	0.49
1:FB:730:G:C5	1:FB:731:G:H1'	2.48	0.49
1:FB:953:G:H5'	1:FB:965:A:H61	1.78	0.49
1:FB:1190:G:P	37:RC:5:ILE:HB	2.53	0.49
1:FB:1272:G:C2	1:FB:1273:G:H1'	2.48	0.49
2:GB:270(T):G:H5"	25:DC:97:LEU:HD21	1.95	0.49
2:GB:274:G:H2'	2:GB:275:G:O4'	2.12	0.49
2:GB:568:U:O2'	2:GB:570:G:N7	2.32	0.49
2:GB:1060:U:H4'	2:GB:1061:U:O5'	2.12	0.49
2:GB:1113:U:H2'	2:GB:1114:G:C8	2.47	0.49
2:GB:1594:G:H2'	2:GB:1595:G:O4'	2.12	0.49
2:GB:1657:C:O3'	6:KB:133:LYS:HB3	2.13	0.49
2:GB:1923:U:H2'	2:GB:1924:C:C6	2.48	0.49
2:GB:2317:C:H2'	2:GB:2318:G:C5'	2.43	0.49
3:HB:112:G:H2'	3:HB:113:C:C6	2.48	0.49
5:JB:258:LYS:HE2	5:JB:273:ARG:CZ	2.42	0.49
7:LB:65:TRP:CH2	7:LB:72:ARG:NH1	2.80	0.49
8:MB:71:THR:OG1	8:MB:89:GLY:HA3	2.13	0.49
9:NB:156:ALA:O	9:NB:172:LYS:HB3	2.13	0.49
23:BC:14:LYS:HB2	23:BC:17:ALA:HB3	1.92	0.49
23:BC:28:MET:HG3	23:BC:35:ARG:HB3	1.94	0.49
4:NC:15:G:H2'	4:NC:59:A:N1	2.27	0.49
1:A:683:G:H2'	1:A:684:A:O4'	2.13	0.49
1:A:820:U:O2'	1:A:821:G:OP1	2.30	0.49
2:B:634:C:H2'	2:B:635:C:C6	2.48	0.49
2:B:1821:A:H8	2:B:1821:A:O5'	1.96	0.49
2:B:2037:G:H2'	2:B:2038:G:C8	2.47	0.49
2:B:2098:U:H2'	2:B:2099:U:O4'	2.13	0.49
2:B:2351:G:O6	32:FA:39:LYS:HG3	2.13	0.49
3:C:85:G:C2	3:C:86:G:C8	3.00	0.49
6:F:38:THR:HB	6:F:40:GLU:HG2	1.93	0.49
6:F:54:GLN:HB2	6:F:76:ARG:HG3	1.95	0.49
14:N:110:THR:HG22	14:N:111:GLU:H	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:24:TYR:O	18:R:29:SER:HB3	2.12	0.49
22:V:18:GLY:O	22:V:20:TYR:N	2.45	0.49
4:IA:15:G:H2'	4:IA:59:A:N1	2.27	0.49
36:LA:16:HIS:CE1	36:LA:204:ASN:HB2	2.48	0.49
41:QA:41:ARG:O	41:QA:45:ASP:HB2	2.12	0.49
48:XA:13:THR:HG23	48:XA:20:ALA:HB2	1.94	0.49
53:CB:62:ILE:HA	53:CB:66:MET:SD	2.52	0.49
1:FB:216:G:H2'	1:FB:217:C:H6	1.77	0.49
1:FB:574:A:N3	1:FB:883:C:H1'	2.27	0.49
2:GB:176:G:O2'	2:GB:177:G:H5'	2.13	0.49
2:GB:581:C:H2'	2:GB:582:G:C8	2.47	0.49
2:GB:588:U:H2'	2:GB:589:C:C6	2.47	0.49
2:GB:593:G:C6	2:GB:594:U:C4	3.01	0.49
2:GB:998:C:H2'	2:GB:999:U:O4'	2.13	0.49
2:GB:2529:G:H5"	2:GB:2530:A:H5"	1.95	0.49
2:GB:2607:G:H2'	2:GB:2608:G:O4'	2.13	0.49
2:GB:2757:A:N1	9:NB:67:LEU:HD22	2.27	0.49
3:HB:78:A:C2	3:HB:99:A:C4	3.01	0.49
6:KB:192:ASN:OD1	6:KB:192:ASN:N	2.44	0.49
7:LB:10:PRO:CA	7:LB:17:ARG:HH12	2.26	0.49
10:OB:133:HIS:HE1	10:OB:135:GLU:HB3	1.75	0.49
20:YB:12:ILE:O	20:YB:101:SER:OG	2.30	0.49
35:OC:149:MET:HB2	35:OC:163:ILE:HG23	1.95	0.49
42:WC:73:ASP:OD1	42:WC:75:ARG:HG3	2.12	0.49
51:FD:67:LYS:C	51:FD:70:ARG:HH12	2.16	0.49
54:ID:47:GLY:HA2	54:ID:48:LYS:C	2.33	0.49
2:B:1028:A:H8	2:B:1028:A:O5'	1.96	0.49
2:B:1946:U:H2'	2:B:1947:C:C6	2.48	0.49
2:B:2086:U:H2'	2:B:2087:G:C8	2.48	0.49
2:B:2562:U:H1'	12:L:23:ARG:HE	1.77	0.49
2:B:2567:G:H2'	2:B:2568:C:C6	2.48	0.49
2:B:2571:C:O2'	6:F:146:THR:O	2.31	0.49
2:B:2850:A:H2	15:O:61:HIS:CG	2.31	0.49
2:B:2876:G:OP1	17:Q:3:ARG:NH2	2.45	0.49
14:N:134:ARG:HH11	23:W:122:ARG:NE	2.10	0.49
22:V:46:LYS:HB3	22:V:60:PHE:CD1	2.45	0.49
23:W:56:VAL:HA	23:W:70:LEU:HD23	1.94	0.49
48:XA:61:TRP:OXT	48:XA:61:TRP:CG	2.66	0.49
1:FB:554:C:H2'	1:FB:555:C:H6	1.77	0.49
1:FB:860:A:H2'	1:FB:861:G:O4'	2.13	0.49
1:FB:942:G:H21	43:XC:124:GLN:HE21	1.60	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:1099:G:C6	1:FB:1100:C:C2	3.01	0.49
2:GB:395:U:H1'	2:GB:396:G:N7	2.28	0.49
2:GB:458:G:H5"	31:JC:38:GLY:O	2.11	0.49
2:GB:501:A:OP1	22:AC:19:LYS:NZ	2.45	0.49
2:GB:524:U:H4'	2:GB:554:U:H4'	1.94	0.49
2:GB:855:G:H5"	2:GB:856:C:OP2	2.13	0.49
2:GB:1803:A:H2	2:GB:1822:G:N3	2.11	0.49
2:GB:2478:A:OP2	33:LC:2:LYS:HE2	2.13	0.49
2:GB:2516:G:C4	2:GB:2569:G:N2	2.81	0.49
7:LB:7:TYR:O	7:LB:22:ALA:HB3	2.13	0.49
12:QB:120:GLU:OE2	12:QB:122:LEU:HD21	2.13	0.49
20:YB:34:ASN:HA	20:YB:37:ARG:HB2	1.95	0.49
22:AC:99:CYS:SG	22:AC:100:ALA:N	2.85	0.49
23:BC:105:VAL:HG11	23:BC:138:GLU:HG2	1.95	0.49
40:UC:27:GLN:HA	40:UC:30:LEU:HB2	1.94	0.49
42:WC:30:ARG:HA	42:WC:33:GLU:HB3	1.95	0.49
54:ID:37:SER:HB3	54:ID:84:LEU:HD11	1.95	0.49
1:A:1010:G:H2'	1:A:1011:G:H8	1.78	0.48
1:A:1220:G:N2	53:CB:54:GLY:O	2.46	0.48
1:A:1382:C:H2'	1:A:1383:C:H6	1.78	0.48
1:A:1483:A:H1'	2:B:1948:G:H1'	1.95	0.48
2:B:70:G:H5"	2:B:112:U:O2	2.13	0.48
2:B:586:A:H5'	7:G:89:VAL:HG21	1.95	0.48
2:B:979:G:H3'	2:B:980:A:C5'	2.43	0.48
2:B:1451:C:N4	2:B:1459:G:H1	2.11	0.48
5:E:228:PRO:HD3	5:E:235:GLY:N	2.28	0.48
7:G:53:THR:N	7:G:56:GLU:HG3	2.28	0.48
8:H:96:ARG:O	8:H:99:MET:HB3	2.13	0.48
11:K:10:GLU:OE2	11:K:11:PRO:HD2	2.13	0.48
22:V:86:ARG:NH1	22:V:100:ALA:HA	2.28	0.48
37:MA:11:ARG:HA	37:MA:14:ILE:HB	1.94	0.48
41:QA:37:ASN:HA	43:SA:41:VAL:HG13	1.94	0.48
43:SA:70:LYS:O	43:SA:73:GLN:HG2	2.13	0.48
43:SA:93:ARG:NH1	43:SA:97:LYS:HD3	2.26	0.48
46:VA:28:LYS:HB2	46:VA:33:ARG:HH21	1.78	0.48
46:VA:110:VAL:HG23	46:VA:120:TYR:HB3	1.94	0.48
46:VA:124:LYS:HG3	46:VA:125:PRO:HD2	1.95	0.48
54:DB:76:ALA:O	54:DB:80:ARG:HB2	2.13	0.48
1:FB:588:G:H2'	1:FB:589:C:C6	2.47	0.48
2:GB:279:C:H6	2:GB:279:C:OP2	1.94	0.48
2:GB:507:A:HO2'	2:GB:508:G:P	2.33	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1557:C:OP2	2:GB:1558:A:H2'	2.12	0.48
6:KB:134:ILE:O	6:KB:136:ARG:N	2.46	0.48
8:MB:114:ILE:HG22	8:MB:140:ILE:HG21	1.95	0.48
11:PB:96:GLU:O	11:PB:100:GLU:HG3	2.13	0.48
14:SB:43:THR:N	14:SB:46:GLN:OE1	2.35	0.48
17:VB:39:ARG:HH12	17:VB:41:ARG:HD3	1.78	0.48
36:QC:195:ASP:O	42:WC:68:ARG:NH2	2.46	0.48
37:RC:112:SER:O	37:RC:116:VAL:HG23	2.14	0.48
37:RC:125:GLU:HA	37:RC:191:THR:HG22	1.95	0.48
38:SC:8:VAL:HG22	38:SC:21:LEU:HD13	1.93	0.48
45:ZC:25:TYR:CD1	45:ZC:88:GLY:HA2	2.48	0.48
47:BD:31:LYS:NZ	47:BD:31:LYS:HA	2.27	0.48
1:A:989:C:H42	1:A:1217:C:N4	2.10	0.48
1:A:1063:C:H5"	1:A:1064:G:OP2	2.13	0.48
1:A:1236:A:O2'	1:A:1304:G:H4'	2.13	0.48
1:A:1251:A:OP2	43:SA:67:GLY:HA2	2.13	0.48
1:A:1290:G:H2'	1:A:1291:G:C8	2.48	0.48
2:B:548:A:H4'	19:S:19:LYS:NZ	2.28	0.48
2:B:1491:G:H2'	2:B:1492:G:H8	1.77	0.48
2:B:1669:A:H4'	2:B:2549:G:H4'	1.95	0.48
3:C:112:G:H2'	3:C:113:C:C6	2.48	0.48
5:E:145:VAL:HG12	5:E:146:GLU:O	2.13	0.48
14:N:64:ILE:HG13	23:W:178:GLU:HG3	1.95	0.48
26:Z:39:ALA:HB2	26:Z:44:LEU:HD23	1.96	0.48
37:MA:39:ILE:HD12	37:MA:59:ARG:HH22	1.78	0.48
39:OA:37:ARG:NH1	39:OA:111:GLU:HB3	2.27	0.48
42:RA:101:PRO:HG2	42:RA:133:LEU:HD11	1.95	0.48
1:FB:197:A:N6	1:FB:221:C:H5'	2.29	0.48
1:FB:337:C:H2'	1:FB:338:A:H8	1.77	0.48
1:FB:509:A:OP2	1:FB:510:A:OP2	2.31	0.48
1:FB:1275:A:P	1:FB:1275:A:H8	2.35	0.48
1:FB:1442:G:N3	1:FB:1442:G:H2'	2.28	0.48
2:GB:10:G:H4'	2:GB:2801:A:C2	2.48	0.48
2:GB:274:G:H1'	2:GB:363(A):G:H22	1.78	0.48
2:GB:662:G:H2'	2:GB:663:G:C8	2.47	0.48
2:GB:1993:U:H5"	6:KB:128:SER:HB3	1.95	0.48
8:MB:39:ILE:HG13	8:MB:157:ILE:HG22	1.94	0.48
8:MB:135:LEU:C	8:MB:136:ARG:HG3	2.33	0.48
11:PB:30:ILE:HG22	11:PB:34:LEU:HD22	1.95	0.48
15:TB:104:ARG:HB3	15:TB:107:ASP:OD1	2.13	0.48
19:XB:73:SER:OG	19:XB:74:LYS:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:BC:8:TYR:HD2	23:BC:38:TYR:HH	1.61	0.48
23:BC:131:ARG:H	23:BC:131:ARG:HD2	1.78	0.48
37:RC:36:ASP:OD2	37:RC:59:ARG:NH2	2.43	0.48
41:VC:126:ASP:HB3	41:VC:131:LYS:O	2.13	0.48
1:A:160:A:H1'	1:A:344:A:N7	2.28	0.48
1:A:250:A:H4'	1:A:251:G:O5'	2.12	0.48
1:A:953:G:H5'	1:A:965:A:H61	1.78	0.48
1:A:984:C:N3	1:A:1221:G:N2	2.40	0.48
1:A:1054:C:OP2	1:A:1197:G:OP2	2.31	0.48
2:B:1268:A:C2	2:B:2013:A:C4	3.02	0.48
2:B:2156:G:H8	2:B:2156:G:OP2	1.96	0.48
2:B:2716:U:H2'	2:B:2717:G:C8	2.48	0.48
6:F:11:MET:HB3	6:F:24:THR:HA	1.93	0.48
8:H:4:ASP:OD2	8:H:9:ARG:HD2	2.13	0.48
8:H:114:ILE:HG22	8:H:140:ILE:HG21	1.95	0.48
9:I:16:SER:HB3	9:I:27:LYS:N	2.28	0.48
42:RA:34:GLU:O	42:RA:37:ARG:HG3	2.13	0.48
46:VA:86:ARG:HH21	46:VA:99:HIS:HD1	1.60	0.48
54:DB:10:LEU:CD1	54:DB:11:SER:H	2.26	0.48
1:FB:35:G:O2'	46:AD:118:SER:O	2.31	0.48
1:FB:668:G:H1	1:FB:738:C:H42	1.61	0.48
1:FB:870:U:H4'	1:FB:871:U:H5"	1.93	0.48
1:FB:1353:G:OP1	55:JD:10:ARG:NH2	2.46	0.48
2:GB:1592:C:H2'	2:GB:1593:G:H8	1.77	0.48
2:GB:2563:U:O2	2:GB:2565:A:H8	1.96	0.48
3:HB:111:U:H2'	3:HB:112:G:H8	1.78	0.48
8:MB:77:ILE:HB	8:MB:80:PHE:HB2	1.94	0.48
8:MB:139:LEU:HD23	8:MB:139:LEU:H	1.78	0.48
15:TB:60:LEU:HD21	15:TB:64:ARG:NH1	2.27	0.48
19:XB:14:VAL:HG12	19:XB:18:LEU:HD23	1.94	0.48
36:QC:16:HIS:CE1	36:QC:204:ASN:HB2	2.47	0.48
38:SC:53:ASP:O	38:SC:57:ARG:HD3	2.13	0.48
45:ZC:86:GLY:H	45:ZC:112:THR:HG23	1.77	0.48
1:A:327:A:C4	1:A:329:A:C8	3.02	0.48
1:A:1146:A:H2'	1:A:1147:C:O4'	2.13	0.48
1:A:1190:G:P	37:MA:5:ILE:HB	2.53	0.48
2:B:511:U:C5	2:B:512:G:C5	3.01	0.48
2:B:885:C:O2'	2:B:890:A:N6	2.46	0.48
2:B:1341:U:O4	21:U:16:LYS:NZ	2.37	0.48
2:B:1598:C:H2'	2:B:1599:C:H6	1.78	0.48
2:B:1657:C:H2'	2:B:1658:C:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1899:G:H2'	2:B:1899:G:N3	2.28	0.48
2:B:2602:A:H5"	4:IA:75:C:P	2.53	0.48
11:K:7:LYS:HA	11:K:7:LYS:HZ2	1.77	0.48
14:N:116:GLU:OE2	14:N:119:ARG:NH2	2.47	0.48
25:Y:77:ALA:HB2	25:Y:94:LEU:HD21	1.95	0.48
35:JA:185:GLN:HG3	35:JA:198:THR:HG23	1.95	0.48
37:MA:40:ARG:HG2	37:MA:55:VAL:HG11	1.95	0.48
41:QA:69:VAL:HG12	41:QA:103:TRP:HE3	1.78	0.48
46:VA:77:LEU:HD21	46:VA:107:ALA:HB2	1.95	0.48
1:FB:1015:A:H2'	1:FB:1016:A:C8	2.48	0.48
1:FB:1220:G:N2	53:HD:54:GLY:O	2.46	0.48
1:FB:1249:C:H1'	43:XC:69:GLY:O	2.13	0.48
1:FB:1378:C:H5	1:FB:1379:G:C8	2.31	0.48
2:GB:376:C:N4	2:GB:398:G:H1	2.11	0.48
2:GB:380:U:H2'	2:GB:381:G:C8	2.47	0.48
2:GB:434:U:H1'	2:GB:435:C:H5	1.78	0.48
2:GB:618(A):G:H5'	7:LB:205:ARG:NH1	2.29	0.48
2:GB:755:C:H2'	2:GB:756:C:H6	1.78	0.48
2:GB:1047:G:H2'	2:GB:1110:G:N1	2.28	0.48
2:GB:1359:A:C2	2:GB:1372:U:O4	2.66	0.48
5:JB:260:ARG:NH2	5:JB:266:SER:OG	2.46	0.48
10:OB:97:ILE:HD12	10:OB:142:VAL:HG11	1.95	0.48
11:PB:9:VAL:HG11	11:PB:39:ARG:NH2	2.28	0.48
12:QB:2:ILE:HD12	12:QB:8:LEU:HD21	1.95	0.48
14:SB:38:GLU:OE2	14:SB:127:ILE:HA	2.13	0.48
20:YB:78:GLU:HG3	20:YB:79:GLY:N	2.26	0.48
24:CC:41:ARG:HG3	24:CC:41:ARG:NH1	2.29	0.48
35:PC:324:LEU:HD12	35:PC:326:LEU:HB2	1.95	0.48
38:SC:142:PRO:HA	38:SC:185:PHE:HD2	1.78	0.48
42:WC:20:TYR:HA	42:WC:65:TYR:CE1	2.48	0.48
43:XC:25:LYS:HD3	43:XC:60:ASP:OD2	2.14	0.48
49:DD:55:GLY:O	49:DD:59:MET:HG3	2.14	0.48
1:A:293:G:H8	1:A:293:G:OP2	1.95	0.48
1:A:451:A:N6	1:A:480:U:H2'	2.29	0.48
1:A:958:A:N6	53:CB:77:THR:O	2.46	0.48
2:B:395:U:H1'	2:B:396:G:N7	2.28	0.48
2:B:647:G:H8	2:B:647:G:O5'	1.96	0.48
2:B:1019:U:H2'	2:B:1020:A:C8	2.49	0.48
2:B:2351:G:HO2'	2:B:2352:A:H8	1.60	0.48
2:B:2529:G:H5"	2:B:2530:A:H5"	1.96	0.48
2:B:2748:A:H2'	2:B:2749:A:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:132:PRO:HD2	5:E:135:PHE:HD2	1.78	0.48
7:G:102:PRO:O	7:G:106:ARG:HG3	2.14	0.48
8:H:126:ASP:OD2	8:H:127:GLY:N	2.40	0.48
18:R:49:HIS:HA	18:R:52:ARG:HB3	1.96	0.48
36:LA:80:ILE:O	36:LA:84:GLU:HG2	2.13	0.48
39:OA:102:ALA:HB2	39:OA:120:THR:HG21	1.94	0.48
44:TA:79:ARG:O	44:TA:83:GLU:HB2	2.14	0.48
1:FB:278:G:N2	51:FD:95:TYR:HB3	2.28	0.48
1:FB:961:U:OP2	1:FB:1223:C:O4'	2.31	0.48
1:FB:984:C:N3	1:FB:1221:G:N2	2.39	0.48
1:FB:1325:C:OP1	55:JD:15:ARG:HD3	2.13	0.48
2:GB:79:G:O2'	2:GB:346:A:N3	2.36	0.48
2:GB:1314:C:OP1	2:GB:1315:C:OP2	2.31	0.48
2:GB:2852:G:H2'	2:GB:2853:C:C6	2.48	0.48
2:GB:2876:G:OP1	17:VB:3:ARG:NH2	2.46	0.48
7:LB:52:LYS:HA	7:LB:56:GLU:OE1	2.14	0.48
15:TB:26:LYS:HE3	15:TB:70:LEU:O	2.12	0.48
16:UB:12:PHE:HB3	16:UB:16:ASN:HD21	1.78	0.48
20:YB:20:VAL:HA	20:YB:23:LEU:HD12	1.95	0.48
26:EC:17:SER:N	26:EC:20:GLU:OE2	2.46	0.48
43:XC:36:TYR:HE2	43:XC:65:VAL:HG11	1.79	0.48
54:ID:57:ARG:HH11	54:ID:102:GLY:HA3	1.74	0.48
54:ID:86:ARG:HG2	54:ID:86:ARG:NH1	2.27	0.48
1:A:102:G:O2'	1:A:151:A:N3	2.41	0.48
1:A:837:G:C2	1:A:838:G:C8	3.02	0.48
1:A:875:C:O2'	42:RA:14:ARG:HD2	2.13	0.48
1:A:1072:G:N2	36:LA:107:THR:HG21	2.29	0.48
1:A:1252:A:H61	1:A:1285:A:N6	2.12	0.48
1:A:1278:U:H5"	1:A:1279:A:O4'	2.14	0.48
1:A:1331:G:O6	55:EB:7:ARG:NH2	2.47	0.48
2:B:662:G:H2'	2:B:663:G:C8	2.49	0.48
2:B:1426:G:O2'	2:B:1572:A:N6	2.43	0.48
2:B:1590:U:H2'	2:B:1591:G:C8	2.48	0.48
2:B:1657:C:O3'	6:F:133:LYS:HB3	2.14	0.48
2:B:2623:G:H4'	2:B:2825:G:C8	2.49	0.48
5:E:183:ARG:HH11	5:E:183:ARG:HG2	1.78	0.48
6:F:13:ARG:HG2	6:F:13:ARG:HH11	1.79	0.48
7:G:64:ILE:HG13	7:G:76:GLY:O	2.14	0.48
8:H:63:ILE:HG23	8:H:64:THR:HG23	1.96	0.48
12:L:13:ASN:HD21	12:L:97:ARG:HG3	1.75	0.48
44:TA:51:ARG:HG2	44:TA:61:GLU:HG2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:WA:91:ARG:HH12	47:WA:96:LEU:C	2.16	0.48
1:FB:613:C:H2'	1:FB:614:A:C8	2.49	0.48
1:FB:1063:C:H5"	1:FB:1064:G:OP2	2.14	0.48
1:FB:1175:G:OP2	1:FB:1175:G:C8	2.66	0.48
1:FB:1275:A:C8	1:FB:1275:A:OP2	2.66	0.48
1:FB:1493:A:HO2'	1:FB:1494:G:P	2.37	0.48
2:GB:48:G:N1	2:GB:177:G:OP2	2.44	0.48
2:GB:637:A:H8	13:RB:117:GLU:HG3	1.78	0.48
2:GB:1382:G:H8	2:GB:1382:G:O5'	1.96	0.48
2:GB:1586:A:H3'	2:GB:1587:A:H8	1.78	0.48
2:GB:2116:G:O2'	2:GB:2117:A:N3	2.44	0.48
6:KB:12:THR:HB	17:VB:58:ASN:HD21	1.79	0.48
13:RB:3:LEU:HD12	13:RB:3:LEU:H	1.78	0.48
17:VB:23:ARG:HB2	17:VB:120:ARG:HH12	1.78	0.48
32:KC:52:LYS:HB3	32:KC:53:PRO:HD3	1.95	0.48
1:A:163:C:H2'	1:A:164:U:O4'	2.14	0.48
1:A:406:G:H2'	1:A:407:G:C8	2.48	0.48
2:B:140:A:C8	2:B:1408:C:O2'	2.64	0.48
2:B:330:A:O2'	2:B:331:A:C8	2.66	0.48
2:B:929:G:H8	2:B:929:G:O5'	1.96	0.48
2:B:1188:U:O2'	2:B:1189:A:H5'	2.13	0.48
2:B:1448:G:H1'	2:B:1528:A:N1	2.29	0.48
2:B:2369:A:H2'	2:B:2370:G:C8	2.49	0.48
5:E:208:LYS:HG3	5:E:211:ARG:H	1.79	0.48
9:I:13:LYS:HA	9:I:14:GLY:HA2	1.53	0.48
40:PA:61:LEU:HD23	40:PA:63:TYR:CE2	2.48	0.48
1:FB:991:U:H4'	1:FB:992:U:H5"	1.96	0.48
1:FB:1146:A:H2'	1:FB:1147:C:O4'	2.14	0.48
1:FB:1251:A:H2'	1:FB:1252:A:O4'	2.14	0.48
2:GB:637:A:OP1	13:RB:133:SER:OG	2.32	0.48
2:GB:1583:A:H5"	2:GB:1585:C:OP1	2.14	0.48
2:GB:2086:U:H2'	2:GB:2087:G:C8	2.48	0.48
2:GB:2153:G:H2'	2:GB:2154:G:H8	1.79	0.48
2:GB:2591:C:H2'	2:GB:2592:G:C8	2.49	0.48
2:GB:2641:G:P	11:PB:74:ARG:HH21	2.37	0.48
4:IB:64:G:H2'	4:IB:65:C:C6	2.47	0.48
15:TB:21:TYR:HB3	15:TB:47:PHE:CD2	2.49	0.48
24:CC:63:VAL:O	24:CC:81:VAL:HG11	2.14	0.48
39:TC:20:GLN:HG3	39:TC:23:GLY:H	1.79	0.48
39:TC:37:ARG:NH1	39:TC:111:GLU:HB3	2.28	0.48
46:AD:110:VAL:HG23	46:AD:120:TYR:HB3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:JD:9:ARG:HG3	55:JD:10:ARG:HG2	1.96	0.48
1:A:1378:C:H5	1:A:1379:G:C8	2.32	0.48
2:B:593:G:C6	2:B:594:U:C4	3.02	0.48
2:B:768:G:C5	2:B:769:G:N7	2.82	0.48
2:B:885:C:C3'	2:B:886:C:H4'	2.39	0.48
2:B:1206:G:C6	2:B:1207:C:C4	3.01	0.48
2:B:1388:G:H2'	2:B:1389:G:C8	2.48	0.48
2:B:1996:C:H4'	2:B:1997:G:H5'	1.95	0.48
2:B:2272:U:H5"	2:B:2273:A:OP1	2.14	0.48
2:B:2647:U:H2'	2:B:2648:C:C6	2.48	0.48
10:J:9:LEU:HD22	10:J:10:GLU:OE2	2.13	0.48
15:O:105:ARG:HH11	15:O:105:ARG:CG	2.27	0.48
16:P:28:VAL:HG23	16:P:37:ALA:HB2	1.96	0.48
17:Q:55:ASN:H	17:Q:59:THR:HB	1.79	0.48
23:W:103:ARG:HB2	23:W:138:GLU:HA	1.95	0.48
32:FA:6:THR:HG23	32:FA:63:PRO:HD2	1.95	0.48
36:LA:47:THR:HG22	36:LA:51:LEU:HD23	1.96	0.48
48:XA:24:CYS:SG	48:XA:25:VAL:N	2.87	0.48
52:BB:30:ASP:OD2	52:BB:33:ASP:N	2.46	0.48
54:DB:10:LEU:HD12	54:DB:12:ALA:H	1.78	0.48
1:FB:241:C:H42	1:FB:285:G:H1	1.62	0.48
1:FB:406:G:H2'	1:FB:407:G:C8	2.48	0.48
1:FB:688:G:H2'	1:FB:689:C:C6	2.49	0.48
1:FB:750:G:N3	49:DD:23:GLY:HA3	2.29	0.48
1:FB:753:A:H5'	1:FB:754:C:C6	2.49	0.48
1:FB:922:G:O2'	1:FB:1398:A:N1	2.41	0.48
1:FB:1348:U:C2	1:FB:1349:A:C8	3.01	0.48
1:FB:1431:C:H2'	1:FB:1432:G:O4'	2.13	0.48
1:FB:1437:C:H42	1:FB:1464:G:H1	1.61	0.48
2:GB:242:G:O2'	2:GB:254:G:O6	2.20	0.48
2:GB:589:C:H2'	2:GB:590:A:H8	1.77	0.48
2:GB:747:U:O2	2:GB:2014:A:H1'	2.12	0.48
2:GB:1061:U:OP2	2:GB:1062:G:OP2	2.32	0.48
2:GB:1071:G:H1'	2:GB:1089:G:C8	2.49	0.48
2:GB:1111:A:H4'	2:GB:1112:G:OP1	2.13	0.48
2:GB:1932:A:H2'	2:GB:1933:G:O4'	2.13	0.48
2:GB:2279:G:N2	2:GB:2280:G:H1'	2.29	0.48
2:GB:2330:G:H2'	2:GB:2331:G:O4'	2.14	0.48
2:GB:2809:A:OP2	2:GB:2891:G:C2	2.67	0.48
2:GB:2875:C:H2'	2:GB:2876:G:O4'	2.14	0.48
6:KB:93:VAL:HG11	6:KB:181:LEU:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LB:64:ILE:HG13	7:LB:76:GLY:O	2.14	0.48
10:OB:66:GLU:OE2	10:OB:69:LYS:HG2	2.14	0.48
23:BC:103:ARG:HG3	23:BC:136:PHE:HB3	1.96	0.48
4:NC:54:5MU:H73	4:NC:55:PSU:O2	2.14	0.48
37:RC:87:LEU:HD11	37:RC:101:LEU:HD13	1.96	0.48
39:TC:102:ALA:HB3	39:TC:107:ARG:HB2	1.96	0.48
41:VC:16:LEU:HG	43:XC:42:ARG:HA	1.96	0.48
48:CD:13:THR:HG23	48:CD:20:ALA:HB2	1.96	0.48
1:A:967:5MC:H4'	43:SA:125:TYR:OH	2.14	0.48
1:A:1241:G:H5"	1:A:1242:C:OP2	2.14	0.48
2:B:27:G:C4	2:B:512:G:N2	2.82	0.48
2:B:67:U:H2'	2:B:68:G:H8	1.79	0.48
2:B:242:G:O2'	2:B:254:G:O6	2.24	0.48
2:B:363(E):G:H2'	2:B:363(F):U:O4'	2.13	0.48
2:B:492:A:H2'	2:B:493:G:O4'	2.14	0.48
2:B:959:A:N6	2:B:960:A:N1	2.62	0.48
2:B:1542:G:OP2	2:B:1543:A:O2'	2.14	0.48
2:B:2378:A:O2'	16:P:21:THR:HG21	2.13	0.48
2:B:2591:C:H2'	2:B:2592:G:C8	2.49	0.48
3:C:102:G:H21	23:W:73:GLN:HE22	1.60	0.48
3:C:102:G:H21	23:W:73:GLN:NE2	2.11	0.48
9:I:55:PRO:HG2	9:I:61:HIS:NE2	2.29	0.48
23:W:8:TYR:HD2	23:W:38:TYR:CZ	2.32	0.48
27:AA:35:ARG:HH11	27:AA:35:ARG:CB	2.26	0.48
34:HA:14:A:H3'	34:HA:15:A:H8	1.79	0.48
37:MA:109:PRO:HB2	37:MA:119:ARG:HH12	1.79	0.48
37:MA:111:LEU:HB3	37:MA:204:LEU:HD21	1.96	0.48
41:QA:90:GLU:OE2	41:QA:90:GLU:HA	2.14	0.48
50:ZA:19:ILE:N	50:ZA:37:GLY:O	2.47	0.48
1:FB:87:A:H5"	1:FB:88:C:C2	2.49	0.48
1:FB:1132:C:H2'	1:FB:1133:G:C8	2.46	0.48
1:FB:1250:A:H5'	1:FB:1251:A:OP2	2.14	0.48
1:FB:1316:G:O6	53:HD:3:ARG:NH1	2.47	0.48
1:FB:1401:G:OP1	34:MC:18:G:O2'	2.29	0.48
2:GB:302:C:H2'	2:GB:303:U:H6	1.78	0.48
2:GB:644:A:H4'	2:GB:645:C:C5	2.44	0.48
2:GB:1006:C:C2	2:GB:1138:G:N2	2.82	0.48
2:GB:1899:G:H2'	2:GB:1899:G:N3	2.29	0.48
2:GB:2262:U:OP2	24:CC:19:LYS:HE3	2.14	0.48
22:AC:76:CYS:SG	22:AC:78:ALA:HB3	2.54	0.48
26:EC:35:LEU:HB3	26:EC:50:ILE:HG12	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:GC:25:TYR:CD2	28:GC:25:TYR:N	2.82	0.48
35:OC:119:THR:HG22	35:OC:120:GLY:H	1.78	0.48
35:OC:145:ARG:H	35:OC:167:SER:HB2	1.79	0.48
36:QC:80:ILE:O	36:QC:84:GLU:HG2	2.14	0.48
38:SC:196:LEU:HD12	38:SC:196:LEU:HA	1.75	0.48
42:WC:91:ARG:HG3	46:AD:7:ILE:HG13	1.96	0.48
44:YC:49:VAL:CG2	48:CD:41:ARG:HB2	2.44	0.48
51:FD:14:LYS:N	51:FD:14:LYS:HE3	2.29	0.48
1:A:197:A:N6	1:A:221:C:H5'	2.29	0.48
1:A:201:C:H3'	1:A:208:U:H5"	1.96	0.48
1:A:688:G:H2'	1:A:689:C:H6	1.78	0.48
1:A:1238:A:O5'	1:A:1336:C:N4	2.31	0.48
1:A:1299:A:N3	1:A:1299:A:H2'	2.29	0.48
1:A:1327:C:H2'	1:A:1328:C:C6	2.49	0.48
1:A:1348:U:H2'	1:A:1349:A:H8	1.78	0.48
2:B:252:G:OP1	13:M:50:ARG:NH1	2.46	0.48
2:B:380:U:H2'	2:B:381:G:H8	1.78	0.48
2:B:960:A:H5"	2:B:961:C:OP2	2.14	0.48
2:B:2291:U:OP1	2:B:2380:C:O2'	2.29	0.48
2:B:2686:G:H5'	2:B:2687:U:OP2	2.14	0.48
2:B:2852:G:H2'	2:B:2853:C:C6	2.48	0.48
8:H:139:LEU:HD23	8:H:139:LEU:H	1.79	0.48
12:L:101:PRO:HD3	17:Q:67:SER:O	2.12	0.48
15:O:36:THR:HG22	15:O:37:THR:N	2.29	0.48
28:BA:25:TYR:N	28:BA:25:TYR:CD2	2.82	0.48
47:WA:70:LEU:O	47:WA:74:VAL:HG23	2.13	0.48
1:FB:674:G:H2'	1:FB:675:A:C8	2.47	0.48
1:FB:816:A:OP2	1:FB:1527:C:H4'	2.13	0.48
1:FB:837:G:C2	1:FB:838:G:C8	3.02	0.48
1:FB:1004:A:H61	1:FB:1026:G:H5"	1.79	0.48
2:GB:196:A:OP2	13:RB:46:LYS:NZ	2.47	0.48
2:GB:1024:G:C6	2:GB:1025:G:C6	3.02	0.48
2:GB:1394:U:C4	2:GB:1395:A:C6	3.02	0.48
2:GB:1657:C:H2'	2:GB:1658:C:C6	2.48	0.48
2:GB:1870:C:H2'	2:GB:1871:A:O4'	2.14	0.48
2:GB:2581:G:C6	2:GB:2610:C:N3	2.82	0.48
8:MB:9:ARG:O	8:MB:12:TYR:HB2	2.14	0.48
8:MB:174:GLU:HA	8:MB:180:PHE:HE2	1.78	0.48
14:SB:67:ARG:HD2	14:SB:105:GLU:OE2	2.13	0.48
15:TB:54:LEU:HD21	15:TB:65:LEU:HB3	1.96	0.48
17:VB:124:ASP:O	17:VB:128:GLU:HB3	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:BC:94:GLU:O	23:BC:130:PRO:HD3	2.13	0.48
23:BC:152:ALA:HB3	23:BC:166:SER:O	2.13	0.48
28:GC:59:PHE:CE2	53:HD:64:GLU:HG3	2.40	0.48
37:RC:40:ARG:HG2	37:RC:55:VAL:HG11	1.94	0.48
38:SC:3:ARG:NH2	38:SC:4:TYR:HB3	2.25	0.48
38:SC:57:ARG:NH1	39:TC:107:ARG:NH1	2.56	0.48
39:TC:37:ARG:HH12	39:TC:111:GLU:CB	2.27	0.48
42:WC:22:GLU:O	42:WC:63:LEU:HB2	2.13	0.48
46:AD:39:VAL:HG12	46:AD:57:LYS:CB	2.43	0.48
47:BD:39:ILE:HD11	47:BD:55:ARG:HH12	1.78	0.48
1:A:619:U:C4	38:NA:135:LEU:HD11	2.49	0.47
1:A:642:A:H2'	1:A:643:C:C6	2.49	0.47
1:A:1145:C:OP2	1:A:1145:C:H6	1.96	0.47
2:B:64:A:C4	21:U:66:LEU:HD13	2.49	0.47
2:B:67:U:H2'	2:B:68:G:C8	2.49	0.47
2:B:71:A:H3'	2:B:71:A:OP2	2.14	0.47
2:B:760:G:H2'	2:B:761:A:O4'	2.13	0.47
2:B:857:C:N4	2:B:858:U:O4	2.47	0.47
2:B:1322:A:C5	2:B:1323:U:C5	3.02	0.47
2:B:2036:C:H6	2:B:2036:C:H5'	1.79	0.47
2:B:2114:A:H2'	2:B:2115:G:H5'	1.96	0.47
2:B:2247:A:H2'	2:B:2248:C:H6	1.78	0.47
5:E:33:LEU:HD13	5:E:104:TYR:CE2	2.49	0.47
7:G:64:ILE:HD13	7:G:65:TRP:CD2	2.49	0.47
7:G:196:LEU:HA	7:G:196:LEU:HD23	1.66	0.47
8:H:96:ARG:O	8:H:98:ARG:N	2.42	0.47
9:I:25:LYS:HE2	9:I:34:GLU:HB2	1.96	0.47
15:O:104:ARG:HD2	15:O:109:ALA:HB3	1.96	0.47
20:T:17:VAL:HG11	20:T:103:ILE:HD13	1.94	0.47
36:LA:195:ASP:O	42:RA:68:ARG:NH2	2.47	0.47
39:OA:86:ALA:HB3	39:OA:130:ASN:ND2	2.28	0.47
42:RA:81:HIS:HD2	42:RA:104:ARG:HH22	1.61	0.47
1:FB:735:C:H2'	1:FB:736:C:H6	1.79	0.47
1:FB:753:A:OP1	49:DD:69:TYR:OH	2.22	0.47
1:FB:1080:A:H5"	1:FB:1081:G:OP2	2.14	0.47
2:GB:581:C:H2'	2:GB:582:G:H8	1.79	0.47
2:GB:735:A:H3'	2:GB:736:C:H6	1.78	0.47
2:GB:929:G:H8	2:GB:929:G:O5'	1.97	0.47
2:GB:1049:C:H2'	2:GB:1050:A:H8	1.78	0.47
2:GB:1472:A:H61	2:GB:1521:G:H1'	1.77	0.47
2:GB:1846:G:H5"	2:GB:1847:A:OP2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1946:U:H2'	2:GB:1947:C:C6	2.49	0.47
2:GB:2432:A:C4	25:DC:33:LYS:HG3	2.48	0.47
6:KB:54:GLN:HB2	6:KB:76:ARG:HG3	1.95	0.47
8:MB:120:LEU:HB2	8:MB:179:PRO:O	2.14	0.47
9:NB:27:LYS:HA	9:NB:32:GLU:HA	1.96	0.47
10:OB:86:THR:O	10:OB:123:LEU:HB2	2.14	0.47
11:PB:12:ARG:HH22	11:PB:138:LEU:HD11	1.78	0.47
16:UB:25:ARG:NH2	16:UB:40:ILE:HD12	2.29	0.47
21:ZB:8:ILE:O	26:EC:36:ARG:NH2	2.47	0.47
25:DC:47:GLN:N	25:DC:62:VAL:O	2.41	0.47
36:QC:173:ALA:HA	36:QC:176:GLU:HB2	1.95	0.47
38:SC:35:ARG:O	38:SC:37:PRO:HD3	2.14	0.47
39:TC:13:ILE:HG21	39:TC:51:VAL:HG13	1.96	0.47
40:UC:13:ASN:OD1	40:UC:55:ASP:OD1	2.32	0.47
40:UC:67:MET:HE2	40:UC:75:LEU:HD13	1.95	0.47
42:WC:81:HIS:CD2	42:WC:104:ARG:HH22	2.32	0.47
46:AD:39:VAL:HG12	46:AD:57:LYS:HB3	1.95	0.47
47:BD:92:HIS:CG	47:BD:98:VAL:HG21	2.49	0.47
52:GD:30:ASP:OD2	52:GD:33:ASP:N	2.46	0.47
1:A:401:C:O2'	1:A:621:A:N3	2.44	0.47
1:A:740:U:OP2	49:YA:2:PRO:HG3	2.15	0.47
1:A:1015:A:H2'	1:A:1016:A:C8	2.49	0.47
1:A:1437:C:H42	1:A:1464:G:H1	1.62	0.47
2:B:699:A:H2'	2:B:700:G:O4'	2.13	0.47
2:B:817:C:O2'	2:B:839:U:OP1	2.20	0.47
2:B:1627:G:C2	2:B:1628:G:C8	3.02	0.47
2:B:1692:U:O2'	2:B:1693:U:H2'	2.14	0.47
2:B:1790:C:H2'	2:B:1791:A:C5	2.50	0.47
5:E:118:VAL:HG13	5:E:123:ALA:HB1	1.95	0.47
8:H:111:LEU:HD23	8:H:111:LEU:HA	1.76	0.47
10:J:69:LYS:HD2	10:J:73:GLU:OE1	2.14	0.47
11:K:12:ARG:HD3	11:K:50:ASP:OD2	2.14	0.47
15:O:26:LYS:HE3	15:O:70:LEU:O	2.14	0.47
20:T:39:THR:HG22	20:T:44:ALA:HB2	1.96	0.47
25:Y:86:SER:O	25:Y:90:ILE:HG13	2.14	0.47
38:NA:3:ARG:NH2	38:NA:4:TYR:HB3	2.25	0.47
46:VA:39:VAL:HG12	46:VA:57:LYS:CB	2.44	0.47
1:FB:950:U:OP2	47:BD:102:ARG:HG3	2.14	0.47
1:FB:959:A:N1	1:FB:1221:G:O2'	2.32	0.47
1:FB:1228:C:OP1	47:BD:115:LYS:N	2.42	0.47
1:FB:1366:C:O2'	44:YC:60:ARG:NH2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:70:G:H5"	2:GB:112:U:O2	2.15	0.47
2:GB:243:U:OP1	32:KC:6:THR:OG1	2.21	0.47
2:GB:478:A:C6	2:GB:480:A:C6	3.02	0.47
2:GB:1939:5MU:OP1	2:GB:2604:U:O2'	2.28	0.47
2:GB:2127:G:H1'	2:GB:2173:A:H2	1.79	0.47
2:GB:2135:A:N6	2:GB:2155:G:O6	2.48	0.47
6:KB:16:ARG:NH1	6:KB:171:GLU:OE2	2.46	0.47
9:NB:67:LEU:O	9:NB:71:LEU:HB2	2.15	0.47
13:RB:122:PRO:HB3	13:RB:142:GLY:O	2.14	0.47
14:SB:64:ILE:HG13	23:BC:178:GLU:HG3	1.96	0.47
22:AC:90:LEU:HB3	22:AC:92:ASN:OD1	2.13	0.47
36:QC:48:MET:HA	36:QC:51:LEU:HB2	1.96	0.47
40:UC:3:ARG:HH11	40:UC:3:ARG:CG	2.27	0.47
40:UC:94:GLN:HG3	52:GD:32:ARG:HD3	1.95	0.47
41:VC:37:ASN:HA	43:XC:41:VAL:HG13	1.95	0.47
50:ED:43:LYS:HG2	50:ED:48:TRP:CE3	2.49	0.47
54:ID:10:LEU:HD12	54:ID:11:SER:H	1.79	0.47
1:A:23:C:H5	1:A:561:U:O4	1.97	0.47
1:A:791:G:N2	1:A:1497:G:O3'	2.48	0.47
1:A:1274:G:C8	1:A:1274:G:OP2	2.67	0.47
2:B:1567:A:O2'	5:E:63:ARG:NH2	2.46	0.47
57:B:9001:BLS:H2'	4:IA:76:A:C4	2.49	0.47
44:TA:51:ARG:CZ	44:TA:61:GLU:HB3	2.45	0.47
52:BB:70:ILE:H	52:BB:70:ILE:HG13	1.54	0.47
1:FB:219:C:H2'	1:FB:220:G:O4'	2.14	0.47
1:FB:969:A:N6	43:XC:128:ARG:O	2.47	0.47
2:GB:833:U:O2	13:RB:55:ARG:NH2	2.45	0.47
2:GB:1115:G:H2'	2:GB:1116:C:C6	2.49	0.47
2:GB:1278:A:OP1	15:TB:36:THR:HG23	2.14	0.47
2:GB:1490:A:O2'	5:JB:99:ASP:OD1	2.26	0.47
2:GB:1538:G:H2'	2:GB:1539:G:C8	2.49	0.47
2:GB:1814:G:H4'	5:JB:51:VAL:HG21	1.95	0.47
2:GB:2816:C:O2	2:GB:2883:A:O2'	2.27	0.47
8:MB:32:PRO:HB2	8:MB:172:LEU:HD13	1.97	0.47
9:NB:19:VAL:HG12	9:NB:21:PRO:HD3	1.96	0.47
11:PB:30:ILE:HG23	11:PB:52:VAL:HG11	1.97	0.47
37:RC:109:PRO:HB2	37:RC:119:ARG:HH12	1.79	0.47
41:VC:86:GLN:HB2	41:VC:148:ASN:HD22	1.78	0.47
44:YC:40:LEU:HD23	44:YC:69:ASN:HB2	1.95	0.47
54:ID:76:ALA:O	54:ID:80:ARG:HB2	2.14	0.47
1:A:210:U:O2'	1:A:216:G:OP2	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:730:G:C5	1:A:731:G:H1'	2.49	0.47
1:A:943:U:OP2	1:A:943:U:H6	1.97	0.47
1:A:1103:C:H5'	36:LA:98:LEU:HD12	1.96	0.47
2:B:729:G:OP1	5:E:10:THR:OG1	2.21	0.47
2:B:1297:C:O2'	2:B:1302:A:N6	2.47	0.47
2:B:1494:A:H2'	2:B:1495:A:C8	2.49	0.47
2:B:1586:A:H3'	2:B:1587:A:H8	1.80	0.47
2:B:2211:G:H2'	2:B:2212:A:C2	2.50	0.47
2:B:2287:A:N6	2:B:2344:U:H3	2.11	0.47
3:C:48:A:H4'	16:P:95:HIS:HD2	1.79	0.47
4:D:64:G:H2'	4:D:65:C:C6	2.49	0.47
8:H:174:GLU:HA	8:H:180:PHE:HE2	1.80	0.47
10:J:9:LEU:O	10:J:12:LEU:HB3	2.15	0.47
15:O:88:ARG:NH1	15:O:89:ASP:OD1	2.47	0.47
31:EA:12:ARG:HD3	31:EA:46:VAL:HG13	1.97	0.47
4:IA:25:C:H2'	4:IA:26:G:O4'	2.15	0.47
36:LA:103:THR:HG23	36:LA:176:GLU:OE1	2.13	0.47
43:SA:3:GLN:OE1	43:SA:20:ARG:NH2	2.45	0.47
44:TA:79:ARG:HG2	44:TA:83:GLU:OE2	2.15	0.47
51:AB:10:VAL:HG23	51:AB:55:ASP:O	2.14	0.47
54:DB:29:LYS:HE2	54:DB:65:LYS:HB3	1.97	0.47
1:FB:778:G:O2'	45:ZC:120:ARG:O	2.30	0.47
1:FB:920:U:H2'	1:FB:921:U:C6	2.48	0.47
1:FB:976:G:O5'	1:FB:1358:U:O2'	2.32	0.47
1:FB:1299:A:N3	1:FB:1299:A:H2'	2.30	0.47
2:GB:1322:A:C5	2:GB:1323:U:C5	3.02	0.47
2:GB:1789:A:OP1	5:JB:221:VAL:HA	2.14	0.47
2:GB:2728:U:P	12:QB:70:LYS:HZ3	2.37	0.47
2:GB:2748:A:H2'	2:GB:2749:A:C8	2.48	0.47
5:JB:182:LEU:HD23	5:JB:182:LEU:HA	1.77	0.47
9:NB:13:LYS:HA	9:NB:14:GLY:HA2	1.53	0.47
11:PB:58:ASP:OD1	11:PB:125:GLY:N	2.47	0.47
18:WB:104:GLN:NE2	18:WB:105:VAL:HG23	2.29	0.47
4:NC:25:C:H2'	4:NC:26:G:O4'	2.15	0.47
38:SC:94:LEU:HA	38:SC:97:LEU:HB2	1.97	0.47
45:ZC:67:ASP:OD2	45:ZC:71:LYS:HE3	2.14	0.47
47:BD:70:LEU:O	47:BD:74:VAL:HG23	2.14	0.47
49:DD:44:LYS:O	49:DD:47:LYS:NZ	2.48	0.47
1:A:209:U:H4'	1:A:216:G:C2	2.49	0.47
1:A:554:C:H2'	1:A:555:C:H6	1.79	0.47
1:A:779:C:H2'	1:A:780:A:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:976:G:O5'	1:A:1358:U:O2'	2.30	0.47
1:A:1321:C:H4'	47:WA:87:TYR:CE2	2.49	0.47
1:A:1442:G:N3	1:A:1442:G:H2'	2.29	0.47
2:B:338:G:C2'	2:B:339:U:H5'	2.45	0.47
2:B:877:U:H2'	2:B:878:A:H5"	1.96	0.47
2:B:1024:G:C6	2:B:1025:G:C6	3.02	0.47
2:B:1057:A:H8	2:B:1086:A:H62	1.61	0.47
2:B:1394:U:C4	2:B:1395:A:C6	3.02	0.47
2:B:2227:A:O3'	5:E:261:LYS:NZ	2.40	0.47
4:D:18:G:O6	4:D:56:C:N4	2.48	0.47
5:E:78:LYS:HE3	5:E:114:GLY:HA2	1.94	0.47
6:F:134:ILE:O	6:F:136:ARG:N	2.47	0.47
7:G:52:LYS:HA	7:G:56:GLU:OE1	2.15	0.47
14:N:70:PRO:HA	14:N:95:ALA:HB2	1.97	0.47
20:T:34:ASN:HA	20:T:37:ARG:HB2	1.97	0.47
23:W:30:ASN:ND2	23:W:31:ARG:HG2	2.29	0.47
23:W:108:PRO:HB2	23:W:111:VAL:HG23	1.97	0.47
28:BA:57:GLU:HA	28:BA:58:ARG:HA	1.54	0.47
32:FA:17:THR:OG1	32:FA:21:LYS:HB2	2.14	0.47
33:GA:2:LYS:HB2	33:GA:34:GLN:HG2	1.97	0.47
34:HA:18:G:C6	4:IA:35:A:N1	2.82	0.47
4:IA:48:C:HO2'	4:IA:59:A:HO2'	1.61	0.47
38:NA:110:PHE:CD2	38:NA:110:PHE:N	2.82	0.47
38:NA:139:ARG:HH11	38:NA:139:ARG:HG3	1.78	0.47
41:QA:89:MET:HB3	41:QA:90:GLU:H	1.52	0.47
47:WA:34:LEU:HD22	47:WA:40:ASN:O	2.14	0.47
1:FB:131:C:O2	1:FB:231:G:N2	2.39	0.47
1:FB:404:U:H2'	1:FB:405:U:C6	2.50	0.47
1:FB:584:G:H2'	1:FB:585:G:C8	2.49	0.47
1:FB:715:A:H2'	1:FB:716:A:C8	2.49	0.47
1:FB:1274:G:H8	1:FB:1274:G:OP2	1.97	0.47
2:GB:1380:G:O2'	2:GB:1569:A:N6	2.47	0.47
2:GB:1526:G:H2'	2:GB:1527:G:O4'	2.15	0.47
2:GB:2287:A:N6	2:GB:2344:U:H3	2.12	0.47
5:JB:43:ARG:HH11	5:JB:43:ARG:CG	2.07	0.47
7:LB:165:ARG:O	7:LB:168:ARG:HB2	2.13	0.47
9:NB:16:SER:HB3	9:NB:27:LYS:N	2.29	0.47
10:OB:98:ALA:HA	10:OB:109:ILE:HD11	1.97	0.47
12:QB:69:VAL:HG11	12:QB:105:GLU:OE2	2.13	0.47
13:RB:43:GLY:O	13:RB:45:LEU:N	2.44	0.47
16:UB:89:ARG:NH1	16:UB:92:TYR:O	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:BC:5:LEU:HB3	23:BC:47:VAL:HG21	1.96	0.47
28:GC:11:PRO:HA	28:GC:25:TYR:HA	1.97	0.47
29:HC:49:CYS:SG	29:HC:51:TYR:HB2	2.55	0.47
30:IC:39:TYR:OH	30:IC:44:ARG:HG3	2.14	0.47
35:PC:342:GLU:OE2	35:PC:345:ILE:HD11	2.14	0.47
36:QC:193:ASP:HB3	36:QC:196:LEU:HD12	1.96	0.47
37:RC:30:ARG:HB3	37:RC:30:ARG:NH1	2.30	0.47
38:SC:102:ASP:OD2	38:SC:136:PRO:HB3	2.14	0.47
39:TC:17:ALA:HB2	39:TC:26:PHE:HD1	1.78	0.47
39:TC:106:PRO:O	39:TC:110:LEU:HG	2.15	0.47
47:BD:108:ARG:NH1	47:BD:112:GLY:O	2.47	0.47
1:A:241:C:H42	1:A:285:G:H1	1.60	0.47
1:A:344:A:H4'	1:A:345:C:OP2	2.15	0.47
1:A:967:5MC:H2'	1:A:968:A:N7	2.29	0.47
1:A:1220:G:H2'	1:A:1221:G:O4'	2.14	0.47
1:A:1430:C:H2'	1:A:1431:C:H6	1.80	0.47
2:B:137(B):G:H1'	21:U:41:ASN:ND2	2.29	0.47
2:B:251:A:C5	2:B:252:G:H1'	2.50	0.47
2:B:253:C:H2'	2:B:254:G:O4'	2.15	0.47
2:B:454:A:H4'	2:B:455:C:OP2	2.13	0.47
2:B:998:C:H2'	2:B:999:U:O4'	2.15	0.47
2:B:1354:A:C8	2:B:1355:G:C8	3.03	0.47
2:B:2197:U:O2'	2:B:2198:A:OP2	2.28	0.47
7:G:10:PRO:CA	7:G:17:ARG:HH12	2.27	0.47
7:G:53:THR:HG23	7:G:56:GLU:OE1	2.14	0.47
9:I:3:ARG:NH2	9:I:5:GLY:H	2.12	0.47
10:J:113:ARG:HD3	10:J:132:PRO:HA	1.97	0.47
12:L:25:LEU:HB2	12:L:38:VAL:HG23	1.96	0.47
16:P:7:TYR:CZ	16:P:91:PRO:HG2	2.50	0.47
35:JA:149:MET:HB2	35:JA:163:ILE:HG23	1.95	0.47
37:MA:30:ARG:NH1	37:MA:30:ARG:HB3	2.30	0.47
41:QA:16:LEU:HG	43:SA:42:ARG:HA	1.97	0.47
1:FB:986:A:H1'	1:FB:1220:G:N2	2.29	0.47
1:FB:1220:G:H2'	1:FB:1221:G:O4'	2.15	0.47
1:FB:1493:A:C5	2:GB:1913:A:C6	3.03	0.47
2:GB:7:G:H2'	2:GB:8:A:O4'	2.14	0.47
2:GB:363(B):A:H2'	2:GB:363(C):G:H8	1.77	0.47
2:GB:609(B):G:H2'	2:GB:610:C:H6	1.78	0.47
2:GB:1039:G:C6	2:GB:1040:C:C4	3.02	0.47
2:GB:2036:C:H6	2:GB:2036:C:H5'	1.80	0.47
2:GB:2290:G:H2'	2:GB:2291:U:O4'	2.13	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2356:C:O3'	24:CC:20:ARG:HD3	2.15	0.47
2:GB:2836:U:H2'	2:GB:2837:G:H8	1.80	0.47
4:IB:18:G:O6	4:IB:56:C:N4	2.47	0.47
4:IB:73:A:O2'	25:DC:23:LYS:NZ	2.36	0.47
10:OB:124:GLY:N	10:OB:144:VAL:HG23	2.29	0.47
11:PB:9:VAL:HG11	11:PB:39:ARG:HH22	1.79	0.47
25:DC:77:ALA:HB2	25:DC:94:LEU:HD21	1.97	0.47
38:SC:8:VAL:O	38:SC:10:ARG:N	2.41	0.47
38:SC:128:VAL:HA	38:SC:145:GLU:O	2.14	0.47
47:BD:55:ARG:NH1	47:BD:56:LEU:HD13	2.30	0.47
54:ID:10:LEU:CD1	54:ID:11:SER:H	2.27	0.47
1:A:337:C:H2'	1:A:338:A:H8	1.78	0.47
1:A:416:G:H2'	1:A:417:C:O4'	2.15	0.47
1:A:584:G:H2'	1:A:585:G:H8	1.79	0.47
1:A:816:A:OP2	1:A:1527:C:H4'	2.14	0.47
2:B:387:U:OP2	25:Y:20:ARG:NH1	2.47	0.47
2:B:458:G:H5"	31:EA:38:GLY:O	2.15	0.47
2:B:1012:U:C4	11:K:28:THR:HG21	2.49	0.47
2:B:1071:G:H1'	2:B:1089:G:C8	2.50	0.47
2:B:1291:C:H2'	2:B:1292:U:C6	2.50	0.47
2:B:1657:C:H4'	6:F:133:LYS:HB2	1.96	0.47
2:B:2133:G:O2'	2:B:2134:A:OP2	2.27	0.47
2:B:2564:A:OP1	2:B:2648:C:H4'	2.15	0.47
2:B:2685:G:N2	2:B:2724:C:N3	2.53	0.47
3:C:34:U:H6	3:C:34:U:O5'	1.97	0.47
4:D:13:C:H2'	4:D:14:A:H8	1.79	0.47
6:F:178:GLU:OE2	6:F:178:GLU:N	2.42	0.47
10:J:72:LEU:HB3	10:J:140:LEU:HD23	1.97	0.47
11:K:59:LYS:HZ2	11:K:125:GLY:HA2	1.78	0.47
20:T:8:ARG:HB3	20:T:9:TYR:CD2	2.45	0.47
22:V:76:CYS:SG	22:V:78:ALA:HB3	2.54	0.47
23:W:131:ARG:H	23:W:131:ARG:HD2	1.79	0.47
27:AA:7:LYS:HE3	27:AA:32:GLN:O	2.15	0.47
42:RA:31:PHE:O	42:RA:35:ILE:HG13	2.14	0.47
42:RA:87:SER:HB2	42:RA:93:VAL:HB	1.96	0.47
43:SA:4:TYR:HB2	43:SA:88:TYR:CD1	2.49	0.47
50:ZA:57:ARG:NH2	50:ZA:79:VAL:O	2.48	0.47
51:AB:26:GLN:HA	51:AB:36:ILE:O	2.14	0.47
52:BB:71:LYS:HA	52:BB:74:ARG:HD2	1.96	0.47
1:FB:404:U:H2'	1:FB:405:U:H6	1.79	0.47
1:FB:736:C:H2'	1:FB:737:A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:877:C:OP1	42:WC:88:LYS:NZ	2.46	0.47
1:FB:1251:A:OP2	43:XC:67:GLY:HA2	2.13	0.47
1:FB:1285:A:H5"	55:JD:25:LYS:NZ	2.30	0.47
1:FB:1373:G:H5"	41:VC:36:LYS:HZ1	1.78	0.47
2:GB:24:G:O2'	20:YB:78:GLU:O	2.30	0.47
2:GB:111:A:H5'	26:EC:69:ARG:HH22	1.79	0.47
2:GB:570:G:H2'	2:GB:2030:A:C6	2.49	0.47
2:GB:906:G:O3'	14:SB:67:ARG:NH2	2.47	0.47
2:GB:1218:C:OP2	18:WB:15:LYS:HE2	2.14	0.47
2:GB:1639:U:H4'	2:GB:2699:C:H4'	1.96	0.47
2:GB:1905:C:N4	2:GB:1930:G:C2	2.83	0.47
2:GB:2231:C:OP1	25:DC:42:GLN:HA	2.13	0.47
2:GB:2369:A:H2'	2:GB:2370:G:H8	1.80	0.47
2:GB:2508:G:O2'	2:GB:2554:U:O2'	2.32	0.47
3:HB:5:C:OP1	3:HB:61:G:O2'	2.24	0.47
5:JB:61:LEU:HD12	5:JB:61:LEU:HA	1.64	0.47
7:LB:33:LEU:HD12	7:LB:33:LEU:HA	1.73	0.47
11:PB:108:PRO:O	11:PB:113:GLY:HA3	2.15	0.47
16:UB:13:ARG:CG	16:UB:13:ARG:NH1	2.73	0.47
18:WB:94:ASN:HA	18:WB:97:ASP:HB3	1.95	0.47
23:BC:8:TYR:HD2	23:BC:38:TYR:CZ	2.33	0.47
4:NC:31:G:H5"	4:NC:32:5MC:OP2	2.14	0.47
36:QC:71:VAL:N	36:QC:163:PHE:O	2.47	0.47
37:RC:88:ARG:HA	37:RC:91:LEU:HB2	1.96	0.47
41:VC:66:VAL:O	41:VC:70:LYS:HB2	2.14	0.47
42:WC:103:VAL:HG21	42:WC:110:ALA:N	2.29	0.47
46:AD:70:ILE:HG12	46:AD:100:ILE:HD12	1.96	0.47
49:DD:3:ILE:HD11	49:DD:38:ARG:HD2	1.95	0.47
51:FD:100:LYS:HB2	51:FD:100:LYS:NZ	2.29	0.47
1:A:763:G:H2'	1:A:764:C:H6	1.80	0.47
2:B:127:A:H5"	2:B:128:C:O4'	2.14	0.47
2:B:256:A:H2'	2:B:257:A:C8	2.49	0.47
2:B:259:G:O2'	2:B:621:A:O2'	2.29	0.47
2:B:302:C:H2'	2:B:303:U:H6	1.78	0.47
2:B:1170:G:H1	2:B:1179:C:H42	1.62	0.47
2:B:1359:A:C2	2:B:1372:U:O4	2.67	0.47
2:B:1401:G:O2'	2:B:1524:G:O2'	2.31	0.47
2:B:1582:C:H2'	2:B:1583:A:C8	2.50	0.47
2:B:2232:U:OP2	25:Y:40:ARG:NH2	2.36	0.47
2:B:2747:G:O6	2:B:2755:C:H5"	2.15	0.47
3:C:111:U:H2'	3:C:112:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:51:C:H42	4:D:64:G:N2	2.13	0.47
6:F:192:ASN:OD1	6:F:192:ASN:N	2.45	0.47
12:L:17:ARG:HA	12:L:17:ARG:HE	1.80	0.47
14:N:17:LEU:HD21	14:N:41:TRP:HE1	1.78	0.47
17:Q:105:LEU:HB3	17:Q:110:ILE:HG12	1.97	0.47
19:S:73:SER:OG	19:S:74:LYS:N	2.45	0.47
26:Z:16:LEU:O	26:Z:67:LYS:NZ	2.31	0.47
31:EA:9:ARG:HH21	31:EA:47:ARG:HD3	1.80	0.47
36:LA:48:MET:HA	36:LA:51:LEU:HB2	1.95	0.47
38:NA:102:ASP:OD2	38:NA:136:PRO:HB3	2.14	0.47
47:WA:55:ARG:NH1	47:WA:56:LEU:HD13	2.30	0.47
1:FB:251:G:N2	1:FB:253:U:O4	2.48	0.47
1:FB:298:A:H2'	1:FB:299:G:O4'	2.15	0.47
1:FB:416:G:H2'	1:FB:417:C:O4'	2.15	0.47
1:FB:1006:C:H2'	1:FB:1007:C:C5	2.50	0.47
1:FB:1267:C:N3	1:FB:1327:C:H4'	2.30	0.47
1:FB:1274:G:OP2	1:FB:1274:G:C8	2.67	0.47
1:FB:1397:C:O2'	1:FB:1398:A:P	2.72	0.47
2:GB:702:G:H1	2:GB:730:C:H42	1.62	0.47
2:GB:1012:U:C4	11:PB:28:THR:HG21	2.50	0.47
2:GB:1627:G:C2	2:GB:1628:G:C8	3.02	0.47
2:GB:2051:A:H4'	6:KB:141:ILE:HG12	1.97	0.47
2:GB:2584:U:H2'	2:GB:2585:U:H2'	1.97	0.47
4:IB:21:A:OP2	4:IB:59:A:N6	2.47	0.47
5:JB:30:GLU:HB3	5:JB:33:LEU:HD12	1.97	0.47
5:JB:145:VAL:HB	5:JB:155:LEU:HB2	1.96	0.47
6:KB:13:ARG:NH1	6:KB:13:ARG:HG2	2.29	0.47
7:LB:64:ILE:HD12	7:LB:65:TRP:H	1.80	0.47
12:QB:35:VAL:HA	12:QB:62:VAL:HG12	1.97	0.47
15:TB:36:THR:HG22	15:TB:37:THR:N	2.29	0.47
21:ZB:57:LEU:HD12	21:ZB:78:LYS:HB2	1.95	0.47
22:AC:40:GLU:O	22:AC:42:VAL:N	2.48	0.47
27:FC:8:LEU:HG	27:FC:31:LEU:HD22	1.97	0.47
44:YC:45:ARG:HD3	48:CD:36:PHE:CE1	2.48	0.47
1:A:1112:C:H5"	1:A:1113:C:OP2	2.15	0.47
1:A:1249:C:H1'	43:SA:69:GLY:O	2.15	0.47
1:A:1502:A:C8	1:A:1505:G:N2	2.83	0.47
1:A:1532:U:OP2	1:A:1532:U:C6	2.68	0.47
2:B:724:U:H2'	2:B:725:G:O4'	2.14	0.47
2:B:1491:G:N2	2:B:1500:G:H1'	2.30	0.47
2:B:1863:G:C6	2:B:1864:U:C4	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1971:A:H1'	5:E:240:ALA:O	2.14	0.47
2:B:2330:G:H2'	2:B:2331:G:O4'	2.15	0.47
2:B:2615:U:C2	29:CA:7:PRO:HA	2.50	0.47
2:B:2662:A:H2'	2:B:2663:G:O4'	2.14	0.47
11:K:35:ARG:NH1	11:K:35:ARG:HG2	2.29	0.47
15:O:111:LEU:HA	15:O:111:LEU:HD13	1.65	0.47
16:P:89:ARG:NH1	16:P:92:TYR:O	2.48	0.47
32:FA:26:LYS:HE3	32:FA:26:LYS:HB3	1.67	0.47
4:IA:53:G:C5	4:IA:54:5MU:H72	2.50	0.47
35:KA:331:GLU:HA	35:KA:334:GLU:HB3	1.97	0.47
36:LA:53:ARG:NH1	36:LA:199:TYR:HA	2.30	0.47
38:NA:120:LEU:HB3	38:NA:126:ILE:HD11	1.96	0.47
43:SA:123:PRO:O	43:SA:125:TYR:N	2.47	0.47
48:XA:4:LYS:HZ2	48:XA:7:ILE:HG13	1.79	0.47
1:FB:62:U:H2'	1:FB:63:C:C6	2.49	0.47
1:FB:139:G:H2'	1:FB:140:A:H8	1.80	0.47
1:FB:642:A:H2'	1:FB:643:C:C6	2.49	0.47
1:FB:743:U:H2'	1:FB:744:C:H6	1.78	0.47
1:FB:967:5MC:H4'	43:XC:125:TYR:OH	2.15	0.47
1:FB:1077:G:C2	1:FB:1081:G:C6	3.03	0.47
2:GB:270(F):G:C6	2:GB:270(G):U:C4	3.03	0.47
2:GB:885:C:C3'	2:GB:886:C:H4'	2.42	0.47
2:GB:1155:A:O3'	18:WB:55:ARG:NH1	2.47	0.47
2:GB:1170:G:H1	2:GB:1179:C:H42	1.63	0.47
2:GB:1491:G:N2	2:GB:1500:G:H1'	2.30	0.47
2:GB:1677:A:C6	2:GB:1678:G:C5	3.03	0.47
2:GB:1971:A:C5	5:JB:241:PRO:HG3	2.50	0.47
2:GB:2026:C:H42	2:GB:2037:G:H1	1.63	0.47
2:GB:2127:G:H1'	2:GB:2173:A:C2	2.50	0.47
4:IB:15:G:O6	4:IB:59:A:O2'	2.33	0.47
6:KB:13:ARG:HG2	6:KB:13:ARG:HH11	1.80	0.47
6:KB:177:PRO:C	6:KB:179:GLU:H	2.18	0.47
7:LB:19:GLU:OE2	7:LB:19:GLU:HA	2.14	0.47
7:LB:36:VAL:HG12	7:LB:40:GLN:OE1	2.15	0.47
8:MB:39:ILE:HG21	8:MB:60:LEU:HD21	1.96	0.47
8:MB:43:LEU:C	8:MB:45:GLU:H	2.19	0.47
8:MB:96:ARG:O	8:MB:99:MET:HB3	2.14	0.47
12:QB:89:ASN:HB2	12:QB:90:GLN:HE22	1.78	0.47
15:TB:105:ARG:HH11	15:TB:105:ARG:CG	2.27	0.47
26:EC:3:LEU:HD11	26:EC:7:ARG:HH11	1.80	0.47
27:FC:35:ARG:HH11	27:FC:35:ARG:CB	2.27	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:NC:16:C:OP1	4:NC:17:C:N4	2.46	0.47
36:QC:167:PRO:HD3	36:QC:187:LEU:O	2.15	0.47
44:YC:79:ARG:HG2	44:YC:83:GLU:OE2	2.15	0.47
1:A:192:U:H5'	54:DB:102:GLY:HA2	1.97	0.47
1:A:444:C:H2'	1:A:445:G:C8	2.50	0.47
1:A:814:A:N7	1:A:816:A:C4	2.83	0.47
1:A:1004:A:H61	1:A:1026:G:H5"	1.80	0.47
1:A:1250:A:H5'	1:A:1251:A:OP2	2.14	0.47
2:B:57:C:H2'	2:B:58:G:O4'	2.15	0.47
2:B:478:A:C6	2:B:480:A:C6	3.04	0.47
2:B:637:A:H8	13:M:117:GLU:HG3	1.78	0.47
2:B:783:A:O2'	2:B:785:G:OP1	2.26	0.47
2:B:861:A:N3	3:C:79:C:O2'	2.48	0.47
2:B:1153:C:H2'	2:B:1154:G:O4'	2.15	0.47
2:B:1449(B):A:C2	2:B:1530:G:H1'	2.49	0.47
2:B:1553:A:N7	2:B:1555:G:C5	2.83	0.47
2:B:1796:U:H2'	2:B:1797:C:C6	2.50	0.47
2:B:2731:G:C6	2:B:2732:G:C6	3.03	0.47
5:E:71:ASP:OD2	5:E:71:ASP:N	2.37	0.47
7:G:34:TRP:CH2	13:M:8:PRO:HB3	2.50	0.47
9:I:102:ALA:HB2	9:I:116:GLU:OE2	2.15	0.47
22:V:3:VAL:HG21	22:V:32:PRO:O	2.14	0.47
22:V:90:LEU:HB3	22:V:92:ASN:OD1	2.15	0.47
24:X:63:VAL:O	24:X:81:VAL:HG11	2.15	0.47
45:UA:67:ASP:OD2	45:UA:71:LYS:HE3	2.15	0.47
51:AB:54:GLY:O	51:AB:81:ARG:HB2	2.15	0.47
51:AB:67:LYS:C	51:AB:70:ARG:HH12	2.19	0.47
1:FB:32:A:OP2	1:FB:398:C:O2'	2.31	0.47
1:FB:344:A:H4'	1:FB:345:C:OP2	2.15	0.47
1:FB:540:G:H2'	1:FB:541:G:O4'	2.15	0.47
1:FB:942:G:H21	43:XC:124:GLN:NE2	2.13	0.47
1:FB:943:U:OP2	1:FB:943:U:H6	1.98	0.47
1:FB:1010:G:H2'	1:FB:1011:G:C8	2.48	0.47
1:FB:1280:A:H5"	44:YC:40:LEU:HD11	1.97	0.47
2:GB:57:C:H2'	2:GB:58:G:O4'	2.14	0.47
2:GB:496:G:C2	2:GB:497:A:H1'	2.50	0.47
2:GB:781:A:C8	5:JB:219:PRO:HG3	2.50	0.47
2:GB:1003:G:O2'	2:GB:1010:A:N1	2.40	0.47
2:GB:1022:G:C6	2:GB:1140:C:C4	3.03	0.47
2:GB:1062:G:N2	2:GB:1063:G:N7	2.63	0.47
2:GB:1131:G:HO2'	2:GB:1132:A:H8	1.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2106:G:H1	2:GB:2183:C:H42	1.63	0.47
27:FC:38:GLU:HB3	27:FC:39:ASP:H	1.50	0.47
33:LC:25:VAL:HB	33:LC:34:GLN:HB2	1.96	0.47
36:QC:197:VAL:HG11	36:QC:200:ILE:HG23	1.96	0.47
37:RC:88:ARG:HG2	37:RC:99:VAL:HG23	1.96	0.47
37:RC:91:LEU:HB3	37:RC:99:VAL:HG11	1.96	0.47
38:SC:128:VAL:HG12	38:SC:133:VAL:HG21	1.97	0.47
40:UC:61:LEU:HD23	40:UC:63:TYR:CE2	2.50	0.47
45:ZC:79:SER:HB2	45:ZC:106:LYS:NZ	2.30	0.47
47:BD:55:ARG:NH1	47:BD:55:ARG:HB3	2.30	0.47
1:A:201:C:H5'	1:A:208:U:OP2	2.15	0.46
1:A:509:A:OP2	1:A:510:A:OP2	2.32	0.46
1:A:575:G:OP1	1:A:575:G:H4'	2.15	0.46
1:A:1266:G:N2	1:A:1269:A:OP2	2.48	0.46
1:A:1275:A:C8	1:A:1275:A:OP2	2.69	0.46
1:A:1378:C:C5	1:A:1379:G:C8	3.04	0.46
2:B:576:U:OP1	2:B:2503:2MA:OP1	2.32	0.46
2:B:1062:G:N2	2:B:1063:G:N7	2.63	0.46
2:B:1423:G:H2'	2:B:1424:G:H8	1.80	0.46
2:B:1433:U:O2	2:B:1561:G:C2	2.68	0.46
2:B:1999:C:O2	2:B:2687:U:O2'	2.31	0.46
2:B:2019:A:O4'	18:R:34:LYS:HE2	2.15	0.46
2:B:2076:U:H5	2:B:2596:U:O2	1.98	0.46
2:B:2758:A:C4	9:I:67:LEU:HD21	2.50	0.46
4:D:57:A:C2	4:D:58:A:H1'	2.49	0.46
7:G:66:PRO:HG2	7:G:70:THR:HG23	1.97	0.46
12:L:88:ASN:OD1	12:L:92:GLU:HB2	2.14	0.46
15:O:83:ILE:HG23	15:O:86:ARG:HH21	1.79	0.46
16:P:5:THR:HG23	16:P:8:GLU:OE2	2.15	0.46
25:Y:41:ARG:HD3	25:Y:43:TYR:CE1	2.50	0.46
30:DA:27:LYS:HB3	30:DA:27:LYS:HZ3	1.80	0.46
30:DA:39:TYR:OH	30:DA:44:ARG:HG3	2.15	0.46
35:JA:184:VAL:HG22	35:JA:186:ARG:HG3	1.96	0.46
37:MA:87:LEU:HD11	37:MA:101:LEU:HD13	1.97	0.46
39:OA:13:ILE:HG21	39:OA:51:VAL:HG13	1.97	0.46
41:QA:86:GLN:HB2	41:QA:148:ASN:HD22	1.80	0.46
42:RA:103:VAL:HG21	42:RA:110:ALA:N	2.30	0.46
43:SA:45:ALA:HA	43:SA:48:GLU:HB2	1.97	0.46
1:FB:67:C:H2'	1:FB:68:G:C8	2.51	0.46
1:FB:144:G:H1	1:FB:178:C:N4	2.11	0.46
1:FB:160:A:H2'	1:FB:161:A:O4'	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:280:C:N3	51:FD:39:SER:OG	2.35	0.46
1:FB:707:C:H4'	45:ZC:20:TYR:CD2	2.51	0.46
1:FB:908:A:H2'	1:FB:909:A:C8	2.50	0.46
2:GB:1733:G:H2'	2:GB:1734:C:O4'	2.15	0.46
2:GB:2476:A:H2	2:GB:2481:G:H1	1.64	0.46
2:GB:2804:C:H2'	2:GB:2805:G:O4'	2.15	0.46
4:IB:48:C:H5'	4:IB:50:U:P	2.55	0.46
23:BC:70:LEU:HB2	23:BC:91:LEU:HD21	1.97	0.46
37:RC:7:PRO:HB3	37:RC:175:LEU:HD11	1.97	0.46
43:XC:4:TYR:HB2	43:XC:88:TYR:CD1	2.50	0.46
53:HD:61:TYR:CE2	53:HD:63:THR:HG23	2.50	0.46
1:A:570:G:C2	1:A:571:U:C4	3.03	0.46
1:A:603:U:H2'	1:A:604:G:C8	2.50	0.46
1:A:1099:G:C6	1:A:1100:C:C2	3.03	0.46
1:A:1275:A:P	1:A:1275:A:H8	2.37	0.46
2:B:7:G:H2'	2:B:8:A:O4'	2.14	0.46
2:B:370:G:C6	2:B:424:G:N7	2.83	0.46
2:B:1019:U:H3	2:B:1142(B):A:N6	2.09	0.46
2:B:1255:U:C5	7:G:73:ALA:HA	2.50	0.46
2:B:2189:U:H2'	2:B:2190:G:C8	2.51	0.46
2:B:2210:G:H8	2:B:2211:G:C5	2.34	0.46
2:B:2464:C:H42	2:B:2486:G:H1	1.62	0.46
2:B:2485:G:H5"	14:N:46:GLN:HE21	1.80	0.46
2:B:2804:C:H2'	2:B:2805:G:O4'	2.16	0.46
2:B:2867:G:OP2	17:Q:119:LYS:NZ	2.36	0.46
8:H:57:ALA:HA	8:H:60:LEU:HB2	1.96	0.46
8:H:114:ILE:HA	8:H:140:ILE:HD13	1.97	0.46
36:LA:149:LEU:HD12	36:LA:152:PHE:HB3	1.97	0.46
38:NA:128:VAL:HA	38:NA:145:GLU:O	2.15	0.46
41:QA:15:ASP:HA	41:QA:24:THR:HG23	1.98	0.46
1:FB:538:G:H2'	1:FB:539:A:C8	2.50	0.46
1:FB:1323:G:H4'	1:FB:1362(B):C:C2	2.50	0.46
1:FB:1381:U:H1'	41:VC:79:ARG:NE	2.24	0.46
2:GB:330:A:HO2'	2:GB:331:A:H8	1.62	0.46
2:GB:1248:G:C2	18:WB:3:ARG:HD2	2.50	0.46
2:GB:2251:OMG:HN21	57:GB:9001:BLS:C2	2.28	0.46
2:GB:2292:C:OP2	16:UB:17:ARG:NH2	2.49	0.46
2:GB:2340:G:C2	2:GB:2341:G:C5	3.03	0.46
2:GB:2701:C:H3'	2:GB:2702:U:H5"	1.97	0.46
2:GB:2819:G:H2'	2:GB:2821:A:N7	2.30	0.46
3:HB:34:U:H6	3:HB:34:U:O5'	1.99	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:MB:57:ALA:HA	8:MB:60:LEU:HB2	1.97	0.46
15:TB:23:ASN:OD1	15:TB:23:ASN:N	2.49	0.46
15:TB:88:ARG:NH1	15:TB:89:ASP:OD1	2.48	0.46
17:VB:125:ARG:O	17:VB:128:GLU:OE2	2.33	0.46
23:BC:75:ASN:HB2	23:BC:85:HIS:HB3	1.97	0.46
28:GC:57:GLU:HA	28:GC:58:ARG:HA	1.53	0.46
31:JC:47:ARG:HA	31:JC:48:LYS:NZ	2.31	0.46
36:QC:172:ILE:H	36:QC:172:ILE:HD12	1.80	0.46
37:RC:39:ILE:HD12	37:RC:59:ARG:HH22	1.79	0.46
38:SC:162:LEU:HD12	38:SC:178:VAL:HG22	1.96	0.46
44:YC:50:ILE:HA	44:YC:60:ARG:CB	2.39	0.46
1:A:144:G:H1	1:A:178:C:N4	2.11	0.46
1:A:759:A:C8	1:A:760:G:C8	3.04	0.46
1:A:1171:G:H2'	1:A:1172:C:C6	2.50	0.46
2:B:747:U:O2	2:B:2014:A:H1'	2.16	0.46
2:B:1139:G:O2'	2:B:1143:A:N1	2.43	0.46
2:B:1400:G:H2'	2:B:1401:G:C8	2.50	0.46
2:B:2209:C:C2	2:B:2216:G:C2	3.03	0.46
2:B:2369:A:O2'	2:B:2370:G:H5'	2.16	0.46
2:B:2626:C:H2'	2:B:2627:G:C8	2.51	0.46
2:B:2755:C:H6	2:B:2755:C:O5'	1.98	0.46
8:H:114:ILE:HD12	8:H:136:ARG:NH1	2.30	0.46
10:J:98:ALA:HA	10:J:109:ILE:HD11	1.96	0.46
11:K:96:GLU:O	11:K:100:GLU:HG3	2.16	0.46
13:M:29:LYS:HG2	13:M:30:THR:HG23	1.96	0.46
20:T:57:ASN:O	20:T:61:ASN:HB2	2.16	0.46
25:Y:40:ARG:C	25:Y:40:ARG:HD3	2.35	0.46
29:CA:20:ARG:HA	29:CA:23:HIS:CE1	2.50	0.46
36:LA:173:ALA:HA	36:LA:176:GLU:HB2	1.97	0.46
40:PA:11:ASN:N	40:PA:84:ASN:O	2.49	0.46
1:FB:401:C:O2'	1:FB:621:A:N3	2.45	0.46
2:GB:451:C:H4'	7:LB:52:LYS:HZ2	1.81	0.46
2:GB:547:A:H2'	2:GB:548:A:H8	1.78	0.46
2:GB:582:G:H2'	2:GB:583:G:C8	2.50	0.46
2:GB:751:A:C6	2:GB:789:A:C5	3.03	0.46
2:GB:764:A:H5"	5:JB:210:GLY:CA	2.45	0.46
2:GB:1162:G:O3'	19:XB:24:LYS:HE3	2.15	0.46
2:GB:2133:G:O2'	2:GB:2134:A:OP2	2.28	0.46
2:GB:2677:G:N3	2:GB:2731:G:C2	2.83	0.46
2:GB:2716:U:H2'	2:GB:2717:G:H8	1.80	0.46
2:GB:2726:U:O2'	2:GB:2727:G:H8	1.99	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2755:C:H6	2:GB:2755:C:O5'	1.98	0.46
11:PB:7:LYS:HA	11:PB:7:LYS:HZ2	1.79	0.46
11:PB:83:LYS:HB2	11:PB:83:LYS:HZ2	1.79	0.46
11:PB:104:LYS:HB2	11:PB:117:PHE:CE1	2.51	0.46
18:WB:104:GLN:HE21	18:WB:105:VAL:HG23	1.80	0.46
23:BC:118:GLN:N	23:BC:173:ALA:O	2.46	0.46
32:KC:6:THR:HG23	32:KC:63:PRO:HD2	1.96	0.46
32:KC:26:LYS:HB3	32:KC:26:LYS:HE3	1.63	0.46
38:SC:19:LEU:HD12	38:SC:19:LEU:HA	1.68	0.46
53:HD:30:LEU:HD23	53:HD:48:THR:HG23	1.97	0.46
1:A:404:U:H2'	1:A:405:U:C6	2.50	0.46
1:A:1132:C:H2'	1:A:1133:G:C8	2.43	0.46
2:B:243:U:OP2	32:FA:8:LYS:NZ	2.33	0.46
2:B:1111:A:H4'	2:B:1112:G:OP1	2.16	0.46
2:B:1179:C:H2'	2:B:1180:C:C6	2.51	0.46
2:B:2106:G:H1	2:B:2183:C:H42	1.63	0.46
4:D:13:C:H2'	4:D:14:A:C8	2.50	0.46
5:E:145:VAL:HB	5:E:155:LEU:HB2	1.96	0.46
5:E:206:LEU:HA	5:E:206:LEU:HD23	1.38	0.46
6:F:117:MET:HE2	6:F:117:MET:HB3	1.77	0.46
7:G:7:TYR:O	7:G:22:ALA:HB3	2.16	0.46
7:G:36:VAL:HG12	7:G:40:GLN:OE1	2.14	0.46
10:J:38:LEU:O	10:J:43:ASN:ND2	2.49	0.46
12:L:11:ALA:O	12:L:98:VAL:HA	2.16	0.46
32:FA:52:LYS:HB3	32:FA:53:PRO:HD3	1.97	0.46
4:IA:31:G:H5"	4:IA:32:5MC:OP2	2.16	0.46
36:LA:109:SER:OG	36:LA:110:GLN:N	2.48	0.46
37:MA:121:ALA:HB1	37:MA:189:ALA:HB2	1.97	0.46
37:MA:139:GLN:O	37:MA:141:VAL:N	2.41	0.46
38:NA:61:LYS:HA	38:NA:203:VAL:HG22	1.98	0.46
39:OA:37:ARG:HH12	39:OA:111:GLU:CB	2.28	0.46
43:SA:13:ALA:HA	43:SA:67:GLY:HA3	1.98	0.46
49:YA:8:LYS:O	49:YA:12:ILE:HG13	2.15	0.46
53:CB:40:ILE:H	53:CB:40:ILE:HG12	1.48	0.46
1:FB:160:A:H1'	1:FB:344:A:C8	2.51	0.46
1:FB:201:C:H5'	1:FB:208:U:OP2	2.16	0.46
1:FB:255:G:H2'	1:FB:256:U:C6	2.51	0.46
2:GB:33:U:O2'	2:GB:446:G:N2	2.48	0.46
2:GB:297:C:P	22:AC:95:LYS:HZ2	2.37	0.46
2:GB:594:U:H3	2:GB:663:G:H1	1.64	0.46
2:GB:783:A:H2'	2:GB:783:A:N3	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1625:C:H2'	2:GB:1626:G:O4'	2.16	0.46
2:GB:2064:C:H2'	2:GB:2065:C:C6	2.50	0.46
16:UB:7:TYR:CZ	16:UB:91:PRO:HG2	2.51	0.46
23:BC:111:VAL:O	23:BC:114:GLY:N	2.48	0.46
23:BC:146:ILE:H	23:BC:146:ILE:HG13	1.33	0.46
29:HC:36:CYS:SG	29:HC:38:ALA:HB3	2.55	0.46
34:MC:14:A:H3'	34:MC:15:A:H8	1.81	0.46
36:QC:167:PRO:HG3	36:QC:188:ALA:HB2	1.98	0.46
44:YC:5:ARG:HG3	44:YC:73:ASP:HA	1.98	0.46
1:A:836:G:C6	1:A:851:G:C6	3.03	0.46
1:A:975:A:H5"	1:A:975:A:C8	2.51	0.46
1:A:1010:G:H2'	1:A:1011:G:C8	2.50	0.46
1:A:1251:A:H2'	1:A:1252:A:O4'	2.16	0.46
1:A:1397:C:O2'	1:A:1398:A:P	2.74	0.46
2:B:991:C:OP2	2:B:1186:G:H5'	2.14	0.46
2:B:1340:U:H3'	21:U:57:LEU:HD22	1.96	0.46
2:B:1538:G:H2'	2:B:1539:G:C8	2.51	0.46
2:B:1825:A:H2'	2:B:1826:G:C8	2.51	0.46
2:B:2262:U:H4'	2:B:2328:A:H2	1.80	0.46
2:B:2290:G:H2'	2:B:2291:U:O4'	2.14	0.46
2:B:2292:C:OP2	16:P:17:ARG:NH2	2.49	0.46
2:B:2629:A:H1'	2:B:2895:U:O4	2.16	0.46
3:C:75:G:H21	23:W:85:HIS:CE1	2.33	0.46
4:D:48:C:H5'	4:D:50:U:P	2.55	0.46
5:E:52:ARG:H	5:E:52:ARG:HG2	1.24	0.46
8:H:170:ARG:NH1	8:H:174:GLU:OE1	2.42	0.46
12:L:71:ARG:HH12	12:L:104:ARG:CB	2.21	0.46
22:V:41:GLY:O	22:V:44:ILE:HD11	2.16	0.46
42:RA:54:ASP:O	42:RA:56:LYS:HG2	2.16	0.46
43:SA:55:ALA:HA	43:SA:58:ARG:HB3	1.97	0.46
47:WA:31:LYS:O	47:WA:35:GLU:HB2	2.15	0.46
1:FB:779:C:H2'	1:FB:780:A:O4'	2.15	0.46
2:GB:491:G:C2	2:GB:492:A:H1'	2.51	0.46
2:GB:579:G:O2'	2:GB:2019:A:OP1	2.25	0.46
2:GB:956:G:H2'	2:GB:957:A:H2'	1.98	0.46
2:GB:1026:U:H4'	2:GB:1027:A:OP2	2.15	0.46
2:GB:1028:A:H8	2:GB:1028:A:O5'	1.99	0.46
2:GB:1171:G:H3'	2:GB:1173:G:C8	2.51	0.46
2:GB:1308:A:N6	2:GB:1309:G:C2	2.83	0.46
2:GB:2016:U:O2	29:HC:7:PRO:HG2	2.14	0.46
2:GB:2167:U:H2'	2:GB:2168:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2685:G:H4'	12:QB:67:LYS:NZ	2.30	0.46
3:HB:102:G:H21	23:BC:73:GLN:HE22	1.63	0.46
5:JB:118:VAL:HG13	5:JB:123:ALA:HB1	1.97	0.46
8:MB:63:ILE:HG23	8:MB:64:THR:HG23	1.97	0.46
10:OB:57:ARG:HA	10:OB:60:GLU:HB3	1.98	0.46
17:VB:26:ASP:OD1	17:VB:120:ARG:NH2	2.47	0.46
17:VB:80:SER:HB3	17:VB:83:ILE:HG12	1.97	0.46
17:VB:99:LEU:O	17:VB:102:ILE:HG23	2.16	0.46
17:VB:108:ARG:CG	17:VB:112:ARG:HH12	2.21	0.46
18:WB:58:ARG:CG	18:WB:58:ARG:NH1	2.78	0.46
38:SC:141:ARG:HB2	38:SC:141:ARG:CZ	2.46	0.46
40:UC:18:GLN:HA	40:UC:21:LEU:HG	1.97	0.46
42:WC:34:GLU:O	42:WC:37:ARG:HG3	2.15	0.46
52:GD:38:GLU:H	52:GD:38:GLU:CD	2.19	0.46
1:A:67:C:H2'	1:A:68:G:C8	2.51	0.46
1:A:160:A:H2'	1:A:161:A:O4'	2.16	0.46
1:A:360:A:H2'	1:A:361:G:C8	2.50	0.46
1:A:584:G:H2'	1:A:585:G:C8	2.50	0.46
1:A:790:A:C6	1:A:791:G:C6	3.03	0.46
1:A:1274:G:OP2	1:A:1274:G:H8	1.97	0.46
1:A:1342:C:H2'	1:A:1343:G:H8	1.80	0.46
2:B:196:A:OP2	13:M:46:LYS:NZ	2.48	0.46
2:B:380:U:H2'	2:B:381:G:C8	2.51	0.46
2:B:826:U:H2'	2:B:828:U:O4'	2.15	0.46
2:B:959:A:H62	14:N:83:MET:HE1	1.81	0.46
2:B:978:G:C2	2:B:986:C:C2	3.03	0.46
2:B:1490:A:O2'	5:E:99:ASP:OD1	2.31	0.46
2:B:1635:G:O2'	2:B:1636:C:H5'	2.15	0.46
2:B:2127:G:H1'	2:B:2173:A:H2	1.80	0.46
2:B:2639:A:O3'	11:K:97:ARG:NH2	2.48	0.46
2:B:2677:G:N3	2:B:2731:G:C2	2.83	0.46
2:B:2735:G:H2'	2:B:2736:G:H8	1.81	0.46
7:G:141:ALA:O	7:G:144:LYS:HB3	2.15	0.46
8:H:35:GLU:HB2	8:H:160:VAL:O	2.15	0.46
10:J:1:MET:SD	10:J:1:MET:N	2.85	0.46
23:W:126:VAL:HG21	23:W:161:VAL:HG12	1.97	0.46
27:AA:8:LEU:HG	27:AA:31:LEU:HD22	1.98	0.46
27:AA:38:GLU:HB3	27:AA:39:ASP:H	1.47	0.46
28:BA:41:PRO:HA	28:BA:47:GLN:HB2	1.97	0.46
29:CA:40:LYS:HD3	29:CA:46:CYS:HB2	1.97	0.46
41:QA:15:ASP:C	41:QA:17:VAL:H	2.19	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:QA:111:ARG:NH1	41:QA:122:HIS:HB3	2.31	0.46
43:SA:31:GLN:HA	43:SA:35:GLU:OE1	2.15	0.46
44:TA:50:ILE:HA	44:TA:60:ARG:CB	2.40	0.46
54:DB:84:LEU:O	54:DB:88:VAL:HB	2.15	0.46
1:FB:291:C:N4	1:FB:309:G:H1	2.12	0.46
1:FB:538:G:H2'	1:FB:539:A:H8	1.81	0.46
1:FB:559:A:H4'	1:FB:560:U:H5"	1.98	0.46
1:FB:603:U:H2'	1:FB:604:G:C8	2.50	0.46
1:FB:1202:G:H2'	1:FB:1203:C:O4'	2.16	0.46
1:FB:1241:G:H5"	1:FB:1242:C:OP2	2.16	0.46
1:FB:1421:G:C2	1:FB:1480:G:C2	3.04	0.46
2:GB:409:C:O2'	2:GB:410:G:H5'	2.16	0.46
2:GB:593:G:N2	2:GB:665:C:C2	2.84	0.46
2:GB:788:A:N3	31:JC:4:THR:HG23	2.29	0.46
2:GB:791:C:H4'	2:GB:792:G:OP1	2.16	0.46
2:GB:1798:U:H5'	5:JB:259:THR:CG2	2.40	0.46
2:GB:2262:U:H4'	2:GB:2328:A:H2	1.80	0.46
2:GB:2291:U:OP1	2:GB:2381:C:H5'	2.15	0.46
2:GB:2352:A:C4	2:GB:2366:A:C2	3.04	0.46
2:GB:2567:G:H2'	2:GB:2568:C:C6	2.50	0.46
2:GB:2626:C:H2'	2:GB:2627:G:C8	2.51	0.46
4:IB:39:C:H4'	45:ZC:54:ARG:NE	2.30	0.46
5:JB:228:PRO:HD3	5:JB:235:GLY:CA	2.45	0.46
8:MB:25:TYR:CZ	8:MB:32:PRO:HD3	2.51	0.46
8:MB:137:GLU:HG2	8:MB:152:LEU:HD11	1.97	0.46
11:PB:30:ILE:O	11:PB:34:LEU:HD22	2.15	0.46
14:SB:65:PHE:HB2	14:SB:105:GLU:HB2	1.96	0.46
14:SB:110:THR:HG22	14:SB:111:GLU:H	1.81	0.46
19:XB:83:ARG:HG2	19:XB:83:ARG:HH11	1.80	0.46
27:FC:5:LYS:HD2	27:FC:34:GLU:OE2	2.14	0.46
29:HC:40:LYS:HD3	29:HC:46:CYS:HB2	1.98	0.46
35:OC:184:VAL:HG22	35:OC:186:ARG:HG3	1.97	0.46
36:QC:101:MET:HG2	36:QC:152:PHE:HE1	1.80	0.46
1:A:955:U:P	35:JA:137:ARG:HH21	2.39	0.46
2:B:460:A:H5"	2:B:461:C:OP2	2.15	0.46
2:B:1557:C:H5"	2:B:1558:A:OP2	2.16	0.46
2:B:2231:C:OP1	25:Y:42:GLN:HA	2.15	0.46
2:B:2742:C:N4	2:B:2762:G:H1	2.14	0.46
5:E:13:ARG:HA	5:E:16:MET:HE3	1.97	0.46
6:F:128:SER:OG	6:F:129:HIS:N	2.47	0.46
12:L:69:VAL:HG11	12:L:105:GLU:OE2	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:88:LEU:HA	13:M:91:PHE:CE2	2.50	0.46
23:W:75:ASN:HB2	23:W:85:HIS:HB3	1.98	0.46
23:W:94:GLU:O	23:W:130:PRO:HD3	2.16	0.46
36:LA:137:ARG:O	36:LA:141:GLU:HB3	2.16	0.46
36:LA:178:ARG:HB3	42:RA:71:GLY:O	2.15	0.46
38:NA:128:VAL:HG12	38:NA:133:VAL:HG21	1.98	0.46
45:UA:69:ALA:HA	45:UA:72:ALA:HB3	1.98	0.46
46:VA:51:ALA:HB3	46:VA:53:ARG:HH21	1.80	0.46
47:WA:56:LEU:HD12	47:WA:56:LEU:HA	1.82	0.46
47:WA:88:ARG:HA	47:WA:98:VAL:HG13	1.98	0.46
50:ZA:25:ARG:H	50:ZA:25:ARG:HG2	1.61	0.46
1:FB:619:U:N3	38:SC:135:LEU:HD11	2.31	0.46
1:FB:1252:A:H61	1:FB:1285:A:N6	2.13	0.46
2:GB:248:G:C4	2:GB:2431:U:H4'	2.51	0.46
2:GB:338:G:C2'	2:GB:339:U:H5'	2.46	0.46
2:GB:857:C:N4	2:GB:858:U:O4	2.49	0.46
2:GB:1341:U:OP1	2:GB:1397:U:N3	2.42	0.46
2:GB:1430:C:H2'	2:GB:1431:U:C6	2.50	0.46
2:GB:2472:G:H22	2:GB:2477:C:H5'	1.81	0.46
6:KB:174:ASP:O	6:KB:183:LEU:N	2.47	0.46
8:MB:127:GLY:HA2	8:MB:166:ASP:HB2	1.96	0.46
9:NB:137:ASP:HB3	9:NB:140:LYS:HZ1	1.79	0.46
14:SB:20:ALA:HB2	23:BC:79:ARG:HG3	1.98	0.46
19:XB:81:TYR:CE1	19:XB:83:ARG:NH1	2.83	0.46
25:DC:50:ARG:HB3	25:DC:50:ARG:HH11	1.81	0.46
26:EC:68:ARG:HG2	26:EC:68:ARG:NH1	2.27	0.46
4:NC:32:5MC:HM53	4:NC:33:U:O4	2.16	0.46
4:NC:74:C:H3'	4:NC:75:C:C5'	2.45	0.46
36:QC:16:HIS:ND1	36:QC:204:ASN:HB2	2.31	0.46
36:QC:69:LEU:O	36:QC:163:PHE:N	2.48	0.46
36:QC:109:SER:OG	36:QC:110:GLN:N	2.48	0.46
38:SC:157:LEU:HA	38:SC:160:GLN:OE1	2.16	0.46
43:XC:28:VAL:HG22	43:XC:63:ILE:HD12	1.97	0.46
53:HD:21:GLU:OE1	53:HD:25:LYS:HD3	2.16	0.46
1:A:73:G:H1	1:A:97:U:H3	1.63	0.46
1:A:262:A:C6	1:A:263:A:C6	3.04	0.46
1:A:834:C:C4	1:A:835:U:C4	3.04	0.46
1:A:842:C:H4'	1:A:843:U:OP1	2.16	0.46
1:A:981:U:C4	1:A:982:U:N3	2.83	0.46
1:A:1202:G:H2'	1:A:1203:C:O4'	2.16	0.46
1:A:1280:A:H5"	44:TA:40:LEU:HD11	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1450:U:H4'	1:A:1451:A:N7	2.31	0.46
2:B:840:C:H2'	2:B:841:A:C8	2.51	0.46
2:B:1430:C:H2'	2:B:1431:U:C6	2.51	0.46
2:B:1472:A:H61	2:B:1521:G:H1'	1.79	0.46
2:B:2048:G:C6	2:B:2049:G:C5	3.04	0.46
2:B:2127:G:H1'	2:B:2173:A:C2	2.50	0.46
2:B:2570:G:C6	2:B:2571:C:C4	3.04	0.46
6:F:51:PHE:HD2	6:F:77:ILE:HD12	1.80	0.46
8:H:25:TYR:CZ	8:H:32:PRO:HD3	2.50	0.46
17:Q:26:ASP:OD1	17:Q:120:ARG:NH2	2.47	0.46
23:W:5:LEU:HB3	23:W:47:VAL:HG21	1.97	0.46
44:TA:63:PHE:CD1	48:XA:58:LYS:HA	2.50	0.46
51:AB:14:LYS:HZ1	51:AB:53:LEU:HD11	1.81	0.46
1:FB:99:C:H2'	1:FB:101:A:O4'	2.15	0.46
1:FB:262:A:C6	1:FB:263:A:C6	3.04	0.46
1:FB:676:A:H5"	45:ZC:113:PRO:HB2	1.97	0.46
1:FB:683:G:H2'	1:FB:684:A:O4'	2.16	0.46
1:FB:804:U:H5"	1:FB:805:C:OP2	2.15	0.46
1:FB:1327:C:H2'	1:FB:1328:C:C6	2.50	0.46
1:FB:1355:G:H2'	1:FB:1356:G:C8	2.51	0.46
1:FB:1382:C:H2'	1:FB:1383:C:H6	1.81	0.46
2:GB:93:C:H2'	2:GB:94:G:O4'	2.15	0.46
2:GB:918:A:C5	2:GB:919:G:H1'	2.51	0.46
2:GB:971:C:H2'	2:GB:972:G:O4'	2.16	0.46
2:GB:1520:U:H2'	2:GB:1521:G:O4'	2.16	0.46
3:HB:43:C:O2	8:MB:95:ARG:NE	2.34	0.46
9:NB:130:ARG:HB3	9:NB:130:ARG:NH1	2.31	0.46
12:QB:22:ILE:HG13	12:QB:40:VAL:HG12	1.98	0.46
19:XB:40:LEU:HD23	19:XB:41:GLY:N	2.30	0.46
20:YB:8:ARG:HB3	20:YB:9:TYR:CD2	2.51	0.46
20:YB:68:ARG:HD3	20:YB:111:HIS:HA	1.98	0.46
25:DC:86:SER:O	25:DC:90:ILE:HG13	2.16	0.46
41:VC:15:ASP:C	41:VC:17:VAL:H	2.18	0.46
1:A:582:U:C2	1:A:760:G:C6	3.04	0.46
1:A:1145:C:H4'	1:A:1146:A:C8	2.44	0.46
1:A:1324:A:OP2	1:A:1324:A:H8	1.99	0.46
2:B:376:C:N4	2:B:398:G:H1	2.14	0.46
2:B:708:C:H42	2:B:723:G:H1	1.64	0.46
2:B:1788:C:H2'	2:B:1789:A:O4'	2.16	0.46
2:B:1993:U:H5"	6:F:128:SER:HB3	1.96	0.46
4:D:26:G:H2'	4:D:27:U:H6	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:72:LYS:HG2	5:E:103:ARG:NH1	2.31	0.46
7:G:123:LEU:HD12	7:G:124:LEU:N	2.31	0.46
8:H:39:ILE:HG13	8:H:157:ILE:HG22	1.98	0.46
22:V:40:GLU:O	22:V:42:VAL:N	2.49	0.46
36:LA:16:HIS:ND1	36:LA:204:ASN:HB2	2.31	0.46
36:LA:197:VAL:HG11	36:LA:200:ILE:HG23	1.97	0.46
37:MA:35:GLU:CD	37:MA:97:LYS:NZ	2.69	0.46
38:NA:141:ARG:HB2	38:NA:141:ARG:CZ	2.45	0.46
49:YA:82:ILE:O	49:YA:86:GLY:N	2.48	0.46
1:FB:430:A:OP2	38:SC:8:VAL:HG12	2.16	0.46
1:FB:656:C:O2'	49:DD:28:GLN:OE1	2.17	0.46
1:FB:1532:U:OP2	1:FB:1532:U:C6	2.68	0.46
2:GB:239:U:H2'	2:GB:240:G:O4'	2.16	0.46
2:GB:270(F):G:H1	2:GB:270(V):C:H42	1.63	0.46
2:GB:1692:U:H2'	2:GB:1694:C:C5	2.51	0.46
2:GB:1779:U:OP2	2:GB:1784:A:N6	2.36	0.46
2:GB:2071:A:H2'	2:GB:2072:G:C8	2.51	0.46
2:GB:2189:U:H2'	2:GB:2190:G:C8	2.51	0.46
2:GB:2464:C:H42	2:GB:2486:G:H1	1.62	0.46
3:HB:85:G:C2	3:HB:86:G:C8	3.03	0.46
4:IB:51:C:H42	4:IB:64:G:N2	2.13	0.46
20:YB:11:ARG:HH11	20:YB:98:LYS:HB3	1.80	0.46
20:YB:39:THR:HG22	20:YB:44:ALA:HB2	1.98	0.46
25:DC:41:ARG:HD3	25:DC:43:TYR:CE1	2.51	0.46
44:YC:63:PHE:CD1	48:CD:58:LYS:HA	2.51	0.46
1:A:108:G:N1	54:DB:15:ARG:HG2	2.31	0.46
1:A:160:A:H1'	1:A:344:A:C8	2.51	0.46
1:A:546:G:C5	38:NA:3:ARG:O	2.69	0.46
1:A:1239:A:H62	1:A:1299:A:H61	1.61	0.46
1:A:1315:U:H3'	1:A:1316:G:C8	2.50	0.46
1:A:1373:G:H5"	41:QA:36:LYS:HZ3	1.80	0.46
2:B:738:G:C2	2:B:759:G:C5	3.04	0.46
2:B:764:A:H5"	5:E:210:GLY:CA	2.46	0.46
2:B:778:G:C6	2:B:779:U:C4	3.04	0.46
2:B:821:A:H2'	2:B:946:G:O4'	2.16	0.46
2:B:1038:C:H42	2:B:1117:G:H1	1.63	0.46
2:B:2685:G:H4'	12:L:67:LYS:NZ	2.31	0.46
3:C:89(A):G:H2'	3:C:89(B):A:C8	2.51	0.46
6:F:177:PRO:C	6:F:179:GLU:H	2.19	0.46
7:G:167:ALA:HB1	7:G:173:VAL:HG11	1.98	0.46
9:I:153:LYS:HG2	9:I:154:PRO:HD2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:57:ARG:HA	10:J:60:GLU:HB3	1.98	0.46
14:N:111:GLU:OE2	14:N:133:ARG:NH2	2.49	0.46
18:R:82:GLY:HA3	18:R:113:ALA:HB1	1.98	0.46
23:W:99:TYR:CE1	23:W:125:LEU:HB2	2.51	0.46
27:AA:3:ARG:HG2	27:AA:38:GLU:OE2	2.16	0.46
27:AA:39:ASP:OD1	27:AA:44:ARG:NH2	2.48	0.46
36:LA:141:GLU:O	36:LA:145:LEU:HB2	2.16	0.46
53:CB:28:LYS:NZ	53:CB:30:LEU:HD11	2.30	0.46
1:FB:129(B):G:N2	1:FB:189:U:H5"	2.31	0.46
1:FB:737:A:H2'	1:FB:738:C:H6	1.79	0.46
1:FB:1084:G:C5	1:FB:1085:U:C4	3.05	0.46
2:GB:729:G:H2'	2:GB:1775:U:H1'	1.97	0.46
2:GB:1384:A:N3	2:GB:1405:U:H1'	2.30	0.46
2:GB:1652:A:N7	2:GB:1653:G:C6	2.84	0.46
2:GB:2030:A:H4'	2:GB:2031:A:H8	1.81	0.46
2:GB:2747:G:O6	2:GB:2755:C:H5"	2.16	0.46
2:GB:2748:A:H2'	2:GB:2749:A:H8	1.81	0.46
2:GB:2789:C:C2	2:GB:2894:G:N2	2.84	0.46
2:GB:2820:A:P	15:TB:2:ARG:HH22	2.39	0.46
5:JB:133:LEU:CB	5:JB:173:VAL:HG21	2.46	0.46
7:LB:12:LEU:HD23	7:LB:12:LEU:HA	1.70	0.46
8:MB:82:LEU:HD13	8:MB:86:MET:HB2	1.98	0.46
10:OB:84:GLY:HA3	10:OB:87:LYS:O	2.16	0.46
12:QB:68:GLU:H	12:QB:68:GLU:CD	2.18	0.46
23:BC:111:VAL:HG22	23:BC:116:VAL:HA	1.98	0.46
28:GC:33:VAL:HG11	28:GC:36:CYS:HB2	1.97	0.46
32:KC:26:LYS:HB2	32:KC:44:LYS:O	2.16	0.46
4:NC:53:G:C5	4:NC:54:5MU:H72	2.51	0.46
36:QC:141:GLU:O	36:QC:145:LEU:HB2	2.16	0.46
48:CD:61:TRP:OXT	48:CD:61:TRP:CD1	2.69	0.46
1:A:124:G:C5	1:A:125:U:C4	3.04	0.45
1:A:580:U:O2'	49:YA:57:LEU:HD12	2.16	0.45
1:A:613:C:H2'	1:A:614:A:H8	1.81	0.45
1:A:671:G:O2'	40:PA:80:ARG:NH2	2.48	0.45
1:A:841:U:H3'	1:A:842:C:C5'	2.47	0.45
1:A:920:U:H2'	1:A:921:U:C6	2.51	0.45
1:A:1101:A:H4'	1:A:1102:A:O5'	2.17	0.45
1:A:1118:C:H2'	1:A:1119:C:C6	2.51	0.45
1:A:1366:C:H2'	1:A:1367:C:C6	2.51	0.45
1:A:1493:A:O2'	1:A:1494:G:O5'	2.33	0.45
2:B:445:C:O2'	2:B:446:G:H5'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:553:U:O2'	2:B:554:U:H5'	2.17	0.45
2:B:1026:U:H4'	2:B:1027:A:OP2	2.16	0.45
2:B:2008:C:H2'	2:B:2009:G:H8	1.80	0.45
2:B:2407:G:N2	2:B:2408:U:H1'	2.31	0.45
3:C:13:A:O2'	3:C:15:A:H2'	2.16	0.45
37:MA:19:GLU:HA	37:MA:54:ARG:NH2	2.31	0.45
37:MA:112:SER:O	37:MA:116:VAL:HG23	2.16	0.45
41:QA:57:GLU:HB2	41:QA:60:LYS:HE3	1.98	0.45
1:FB:345:C:H5'	1:FB:346:G:C5	2.51	0.45
2:GB:590:A:H2'	2:GB:591:C:O4'	2.16	0.45
2:GB:729:G:C5	5:JB:208:LYS:HB2	2.51	0.45
2:GB:1142(B):A:O2'	2:GB:1143:A:H3'	2.17	0.45
2:GB:1400:G:H2'	2:GB:1401:G:C8	2.51	0.45
2:GB:1511:A:H2'	2:GB:1512:G:H5'	1.98	0.45
2:GB:1590:U:H2'	2:GB:1591:G:C8	2.52	0.45
2:GB:1716:U:H2'	2:GB:1717:G:H8	1.80	0.45
2:GB:2075:U:H2'	2:GB:2238:G:N2	2.31	0.45
2:GB:2114:A:H2'	2:GB:2115:G:H5'	1.98	0.45
2:GB:2727:G:O3'	12:QB:70:LYS:NZ	2.45	0.45
2:GB:2735:G:H1	2:GB:2769:C:H42	1.64	0.45
2:GB:2789:C:H5"	2:GB:2790:A:OP1	2.15	0.45
4:IB:26:G:H2'	4:IB:27:U:H6	1.82	0.45
6:KB:11:MET:HB3	6:KB:24:THR:HA	1.98	0.45
14:SB:85:LYS:HZ3	24:CC:4:LYS:HE2	1.79	0.45
18:WB:88:ILE:HG22	18:WB:90:VAL:HG23	1.98	0.45
24:CC:46:LYS:HA	24:CC:47:PRO:HD3	1.78	0.45
4:NC:53:G:H2'	4:NC:54:5MU:C6	2.51	0.45
35:OC:209:LEU:HD23	35:OC:210:PRO:HD2	1.99	0.45
37:RC:67:THR:HG22	37:RC:102:ASN:HB3	1.98	0.45
42:WC:101:PRO:HG2	42:WC:133:LEU:HD11	1.98	0.45
1:A:266:G:H3'	51:AB:67:LYS:HB2	1.97	0.45
1:A:961:U:OP2	1:A:1223:C:O4'	2.34	0.45
1:A:1313:U:OP1	53:CB:5:LEU:HB2	2.16	0.45
2:B:371:A:H5'	2:B:423:A:H2'	1.97	0.45
2:B:537:C:H2'	2:B:539:G:C8	2.51	0.45
2:B:547:A:H2'	2:B:548:A:H8	1.79	0.45
2:B:674:G:O2'	7:G:74:ARG:HD3	2.16	0.45
2:B:1149:G:H2'	2:B:1150:C:C6	2.52	0.45
2:B:1897:G:H2'	2:B:1898:U:O4'	2.16	0.45
2:B:2152:G:H2'	2:B:2153:G:O4'	2.16	0.45
2:B:2401:U:H4'	30:DA:42:TRP:CH2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:8:4SU:H3'	4:D:13:C:H41	1.81	0.45
5:E:146:GLU:HB2	5:E:189:CYS:HB3	1.97	0.45
14:N:124:LYS:O	14:N:125:LEU:HD23	2.16	0.45
15:O:36:THR:HG22	15:O:37:THR:H	1.81	0.45
17:Q:34:VAL:HG22	17:Q:41:ARG:HG3	1.97	0.45
17:Q:108:ARG:CG	17:Q:112:ARG:HH12	2.22	0.45
23:W:152:ALA:HB3	23:W:166:SER:O	2.16	0.45
24:X:46:LYS:HD3	24:X:78:TYR:CZ	2.51	0.45
26:Z:35:LEU:HD12	26:Z:53:LEU:HD12	1.99	0.45
36:LA:33:TYR:N	36:LA:41:ILE:O	2.42	0.45
38:NA:192:GLU:H	38:NA:192:GLU:CD	2.19	0.45
39:OA:53:LEU:HD12	39:OA:53:LEU:H	1.81	0.45
41:QA:26:PHE:O	41:QA:30:ILE:HG12	2.16	0.45
41:QA:66:VAL:O	41:QA:70:LYS:HB2	2.16	0.45
42:RA:30:ARG:HA	42:RA:33:GLU:HB3	1.98	0.45
42:RA:103:VAL:O	42:RA:106:GLY:N	2.48	0.45
53:CB:12:ASP:O	53:CB:15:LEU:HB3	2.16	0.45
1:FB:707:C:H2'	1:FB:708:C:C6	2.51	0.45
1:FB:881:G:H2'	1:FB:882:C:O4'	2.15	0.45
1:FB:1171:G:H2'	1:FB:1172:C:C6	2.51	0.45
1:FB:1315:U:H3'	1:FB:1316:G:C8	2.51	0.45
1:FB:1349:A:H2'	1:FB:1349:A:N3	2.31	0.45
1:FB:1378:C:OP2	41:VC:2:ALA:HB3	2.16	0.45
1:FB:1428:A:H2'	1:FB:1429:C:O4'	2.16	0.45
2:GB:299:A:N1	2:GB:322:A:O2'	2.40	0.45
2:GB:2101:G:H2'	2:GB:2102:U:O4'	2.16	0.45
2:GB:2211:G:H2'	2:GB:2212:A:C2	2.51	0.45
4:IB:57:A:C2	4:IB:58:A:H1'	2.51	0.45
7:LB:78:ILE:HA	7:LB:83:PHE:CD2	2.51	0.45
7:LB:158:THR:O	7:LB:178:PRO:HD3	2.16	0.45
14:SB:124:LYS:O	14:SB:125:LEU:HD23	2.16	0.45
15:TB:36:THR:HG22	15:TB:37:THR:H	1.82	0.45
16:UB:74:ALA:O	16:UB:78:LEU:HB2	2.15	0.45
18:WB:11:ARG:CG	18:WB:11:ARG:NH1	2.69	0.45
18:WB:46:ALA:O	18:WB:49:HIS:N	2.49	0.45
21:ZB:68:ARG:NH1	21:ZB:69:TYR:CZ	2.84	0.45
23:BC:130:PRO:HD2	23:BC:131:ARG:HH11	1.80	0.45
38:SC:60:GLU:HG3	38:SC:198:VAL:HG23	1.98	0.45
41:VC:89:MET:HB3	41:VC:90:GLU:H	1.55	0.45
41:VC:90:GLU:HA	41:VC:90:GLU:OE2	2.15	0.45
42:WC:18:ARG:HA	42:WC:18:ARG:HE	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:WC:44:PHE:CZ	42:WC:137:VAL:HG12	2.52	0.45
51:FD:95:TYR:O	51:FD:98:LEU:HB2	2.17	0.45
52:GD:54:ARG:HB3	52:GD:54:ARG:NH1	2.31	0.45
1:A:112:G:H4'	1:A:389:A:H4'	1.99	0.45
1:A:527:7MG:HM71	46:VA:49:ASN:HD21	1.82	0.45
1:A:994:A:N3	48:XA:5:ALA:HA	2.31	0.45
1:A:1084:G:C5	1:A:1085:U:C4	3.04	0.45
1:A:1267:C:N3	1:A:1327:C:H4'	2.30	0.45
1:A:1329:A:H5'	47:WA:29:ARG:HD2	1.97	0.45
2:B:17:G:H2'	2:B:18:C:C6	2.51	0.45
2:B:24:G:O2'	20:T:78:GLU:O	2.29	0.45
2:B:144:C:H2'	2:B:145:G:H8	1.79	0.45
2:B:302:C:H2'	2:B:303:U:C6	2.51	0.45
2:B:1680:U:N3	2:B:1764:G:OP2	2.25	0.45
2:B:2057:A:H2'	2:B:2058:A:O4'	2.16	0.45
2:B:2472:G:H22	2:B:2477:C:H5'	1.80	0.45
2:B:2619:C:H4'	6:F:151:TYR:O	2.16	0.45
2:B:2726:U:O2'	2:B:2727:G:H8	1.99	0.45
4:D:38:A:H8	4:D:38:A:O5'	2.00	0.45
4:D:63:G:H2'	4:D:64:G:O4'	2.16	0.45
8:H:43:LEU:C	8:H:45:GLU:H	2.18	0.45
9:I:84:SER:HB2	9:I:134:SER:HA	1.99	0.45
16:P:12:PHE:HB3	16:P:16:ASN:HD21	1.80	0.45
24:X:4:LYS:N	4:IA:74:C:H41	2.15	0.45
26:Z:66:GLU:HB2	26:Z:69:ARG:HE	1.81	0.45
39:OA:91:LEU:HA	39:OA:91:LEU:HD13	1.74	0.45
43:SA:13:ALA:HB2	43:SA:68:GLY:HA3	1.99	0.45
1:FB:391:G:H5"	50:ED:8:ARG:HE	1.81	0.45
1:FB:977:A:C8	1:FB:1223:C:C4	3.05	0.45
1:FB:1378:C:C5	1:FB:1379:G:C8	3.04	0.45
2:GB:643:A:H1'	30:IC:44:ARG:NH1	2.31	0.45
2:GB:1057:A:O4'	2:GB:1086:A:N6	2.49	0.45
2:GB:1170:G:H2'	2:GB:1171:G:O4'	2.16	0.45
2:GB:1183:G:H2'	2:GB:1184:G:H8	1.81	0.45
2:GB:1359:A:N1	2:GB:1372:U:C4	2.85	0.45
2:GB:2013:A:H2	20:YB:88:ARG:HH22	1.64	0.45
2:GB:2537:U:H2'	2:GB:2538:C:C6	2.51	0.45
2:GB:2649:U:H2'	2:GB:2650:U:C6	2.52	0.45
5:JB:132:PRO:HD2	5:JB:135:PHE:HD2	1.81	0.45
10:OB:133:HIS:HA	10:OB:134:PRO:HD3	1.81	0.45
18:WB:68:ALA:O	18:WB:71:GLN:HB2	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:AD:89:ARG:HD2	46:AD:96:VAL:O	2.17	0.45
50:ED:23:ASP:OD1	50:ED:24:ALA:N	2.48	0.45
55:JD:18:TYR:HE2	55:JD:24:ARG:HA	1.82	0.45
1:A:35:G:O2'	46:VA:118:SER:O	2.33	0.45
1:A:860:A:H2'	1:A:861:G:O4'	2.17	0.45
1:A:942:G:H21	43:SA:124:GLN:HE21	1.65	0.45
1:A:1381:U:O2'	41:QA:79:ARG:HG2	2.17	0.45
1:A:1441:G:O5'	1:A:1441:G:H8	1.99	0.45
2:B:635:C:H2'	2:B:636:G:O4'	2.17	0.45
2:B:645:C:H5"	2:B:646:A:OP2	2.16	0.45
2:B:1141:U:OP2	11:K:63:THR:OG1	2.29	0.45
2:B:2649:U:H2'	2:B:2650:U:C6	2.52	0.45
2:B:2681:C:OP2	6:F:109:LYS:NZ	2.39	0.45
3:C:48:A:H4'	16:P:95:HIS:CD2	2.51	0.45
3:C:50:G:OP2	16:P:62:LYS:HE3	2.16	0.45
4:D:48:C:H4'	4:D:49:G:H5"	1.98	0.45
6:F:59:VAL:HG11	6:F:64:LYS:HD3	1.97	0.45
28:BA:33:VAL:HG11	28:BA:36:CYS:HB2	1.97	0.45
4:IA:49:G:H2'	4:IA:50:U:O4'	2.16	0.45
36:LA:69:LEU:HD22	36:LA:159:PRO:HG3	1.98	0.45
38:NA:110:PHE:O	38:NA:161:ASN:ND2	2.48	0.45
39:OA:20:GLN:HG3	39:OA:23:GLY:H	1.81	0.45
46:VA:89:ARG:HD2	46:VA:96:VAL:O	2.17	0.45
1:FB:958:A:N6	53:HD:77:THR:O	2.50	0.45
1:FB:1054:C:OP2	1:FB:1197:G:OP2	2.35	0.45
1:FB:1329:A:H5'	47:BD:29:ARG:HD2	1.98	0.45
1:FB:1333:A:C2	1:FB:1334:G:H1'	2.51	0.45
2:GB:186:G:H2'	2:GB:187:G:H8	1.81	0.45
2:GB:301:G:C4	2:GB:302:C:C5	3.04	0.45
2:GB:1080:C:H6	2:GB:1080:C:OP2	2.00	0.45
2:GB:1154:G:H8	2:GB:1154:G:O5'	2.00	0.45
2:GB:1210:A:C8	2:GB:1212:G:C2	3.05	0.45
2:GB:1789:A:OP1	5:JB:222:ARG:HG3	2.17	0.45
2:GB:1891:G:H8	2:GB:1891:G:O5'	1.99	0.45
2:GB:2094:G:H5'	10:OB:25:TYR:CD1	2.51	0.45
2:GB:2408:U:O5'	2:GB:2408:U:H6	2.00	0.45
3:HB:13:A:O2'	3:HB:15:A:H2'	2.16	0.45
8:MB:9:ARG:HA	8:MB:12:TYR:HB2	1.99	0.45
10:OB:69:LYS:HD2	10:OB:73:GLU:OE1	2.16	0.45
15:TB:9:LYS:O	15:TB:17:ARG:NH1	2.49	0.45
21:ZB:60:ARG:NH1	31:JC:47:ARG:NH2	2.65	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:RC:111:LEU:HB3	37:RC:204:LEU:HD21	1.99	0.45
38:SC:31:CYS:C	38:SC:33:MET:N	2.70	0.45
39:TC:50:GLU:OE2	39:TC:51:VAL:HG23	2.15	0.45
39:TC:79:GLU:HA	39:TC:91:LEU:O	2.17	0.45
47:BD:11:ARG:C	47:BD:13:LYS:H	2.19	0.45
1:A:443:C:H2'	1:A:444:C:C6	2.52	0.45
1:A:648:A:H2'	1:A:649:G:O4'	2.17	0.45
1:A:1349:A:H2'	1:A:1349:A:N3	2.32	0.45
2:B:164:U:H3'	2:B:165:U:O2	2.17	0.45
2:B:1170:G:H1	2:B:1179:C:N4	2.15	0.45
2:B:1359:A:N1	2:B:1372:U:C4	2.84	0.45
2:B:1520:U:H2'	2:B:1521:G:O4'	2.16	0.45
2:B:1815:A:P	5:E:54:ARG:HH22	2.40	0.45
2:B:2053:G:OP1	6:F:144:ARG:HG3	2.16	0.45
2:B:2135:A:N6	2:B:2155:G:O6	2.50	0.45
2:B:2512:C:H5"	2:B:2513:G:OP2	2.16	0.45
2:B:2865:U:C4	2:B:2866:U:C4	3.04	0.45
6:F:2:LYS:HA	6:F:84:PHE:CD1	2.51	0.45
10:J:86:THR:O	10:J:123:LEU:HB2	2.15	0.45
15:O:59:ASP:OD2	15:O:61:HIS:HB3	2.16	0.45
26:Z:63:VAL:HG12	26:Z:67:LYS:HG3	1.99	0.45
37:MA:36:ASP:OD2	37:MA:59:ARG:NH2	2.48	0.45
38:NA:17:VAL:O	38:NA:19:LEU:HD13	2.17	0.45
45:UA:52:GLY:O	45:UA:55:LYS:HG2	2.16	0.45
48:XA:58:LYS:NZ	48:XA:58:LYS:HB3	2.32	0.45
50:ZA:22:THR:OG1	50:ZA:23:ASP:N	2.49	0.45
53:CB:30:LEU:HD23	53:CB:48:THR:HG23	1.98	0.45
54:DB:82:SER:C	54:DB:86:ARG:HG3	2.37	0.45
1:FB:17:U:H2'	1:FB:18:C:H6	1.79	0.45
1:FB:736:C:H2'	1:FB:737:A:H8	1.81	0.45
1:FB:952:U:H2'	1:FB:953:G:C8	2.51	0.45
1:FB:1166:G:O2'	1:FB:1169:A:N7	2.47	0.45
1:FB:1450:U:H4'	1:FB:1451:A:N7	2.32	0.45
2:GB:270(T):G:H2'	2:GB:270(U):G:H8	1.82	0.45
2:GB:553:U:O2'	2:GB:554:U:H5'	2.17	0.45
2:GB:1353:A:C8	2:GB:1377:G:N2	2.85	0.45
2:GB:2012:G:OP2	20:YB:16:LYS:NZ	2.48	0.45
2:GB:2662:A:H2'	2:GB:2663:G:O4'	2.16	0.45
2:GB:2677:G:H1'	2:GB:2731:G:N2	2.31	0.45
4:IB:8:4SU:H3'	4:IB:13:C:H41	1.81	0.45
4:IB:13:C:H2'	4:IB:14:A:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:IB:38:A:H8	4:IB:38:A:O5'	2.00	0.45
6:KB:179:GLU:HA	6:KB:179:GLU:OE2	2.16	0.45
7:LB:116:ASP:OD2	13:RB:1:MET:HB3	2.16	0.45
8:MB:170:ARG:NH1	8:MB:174:GLU:OE1	2.40	0.45
13:RB:97:PRO:HD3	13:RB:126:VAL:O	2.16	0.45
17:VB:54:ARG:HB3	17:VB:54:ARG:HH11	1.80	0.45
21:ZB:60:ARG:NH1	31:JC:47:ARG:HH22	2.13	0.45
22:AC:29:GLU:OE2	22:AC:31:LEU:HD21	2.17	0.45
4:NC:68:C:H2'	4:NC:69:C:O4'	2.16	0.45
36:QC:137:ARG:O	36:QC:141:GLU:HB3	2.17	0.45
37:RC:77:ILE:HG13	37:RC:78:GLY:N	2.31	0.45
47:BD:55:ARG:HB3	47:BD:55:ARG:HH11	1.81	0.45
54:ID:80:ARG:O	54:ID:84:LEU:HB2	2.17	0.45
1:A:34:C:H2'	1:A:35:G:C8	2.52	0.45
1:A:62:U:H2'	1:A:63:C:C6	2.51	0.45
1:A:407:G:O2'	38:NA:116:GLN:HB2	2.16	0.45
1:A:1207:2MG:H2'	1:A:1208:C:C6	2.51	0.45
2:B:41:C:H2'	2:B:43:G:O4'	2.16	0.45
2:B:116:C:OP1	2:B:128:C:N4	2.46	0.45
2:B:270(T):G:H2'	2:B:270(U):G:C8	2.51	0.45
2:B:525:U:H5'	2:B:556:G:OP1	2.17	0.45
2:B:733:G:O6	2:B:761:A:C8	2.69	0.45
2:B:918:A:H8	2:B:918:A:O5'	1.99	0.45
2:B:1142(B):A:O2'	2:B:1143:A:H3'	2.17	0.45
2:B:1471:A:OP2	2:B:1521:G:C2	2.68	0.45
2:B:2340:G:C2	2:B:2341:G:C5	3.05	0.45
2:B:2646:C:OP2	2:B:2732:G:O2'	2.28	0.45
2:B:2755:C:HO2'	2:B:2756:U:H6	1.62	0.45
2:B:2809:A:OP2	2:B:2891:G:N1	2.49	0.45
6:F:31:CYS:HB3	6:F:49:LEU:HB3	1.98	0.45
7:G:158:THR:HA	7:G:195:ASP:HB2	1.99	0.45
8:H:152:LEU:HD22	8:H:153:ARG:H	1.82	0.45
17:Q:100:TYR:CD1	17:Q:103:ARG:NH1	2.85	0.45
19:S:14:VAL:HG12	19:S:18:LEU:HD23	1.98	0.45
21:U:11:PRO:HB3	21:U:92:LEU:HD11	1.97	0.45
4:IA:74:C:H3'	4:IA:75:C:C5'	2.44	0.45
36:LA:149:LEU:O	36:LA:152:PHE:N	2.48	0.45
36:LA:167:PRO:HD3	36:LA:187:LEU:O	2.16	0.45
37:MA:91:LEU:HB3	37:MA:99:VAL:HG11	1.98	0.45
38:NA:162:LEU:HD12	38:NA:178:VAL:HG22	1.98	0.45
44:TA:16:LEU:HD13	44:TA:94:VAL:HG13	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:VA:51:ALA:HB3	46:VA:53:ARG:NH2	2.32	0.45
53:CB:50:ALA:HB1	53:CB:58:VAL:N	2.32	0.45
1:FB:363:A:OP1	46:AD:34:ARG:HG2	2.17	0.45
1:FB:527:7MG:HM71	46:AD:49:ASN:HD21	1.82	0.45
1:FB:790:A:C6	1:FB:791:G:C6	3.05	0.45
1:FB:837:G:H1	1:FB:849:C:N4	2.11	0.45
1:FB:967:5MC:H2'	1:FB:968:A:C8	2.52	0.45
2:GB:138:G:H22	2:GB:1596:A:P	2.40	0.45
2:GB:586:A:H5'	7:LB:89:VAL:HG21	1.98	0.45
2:GB:690:G:O2'	5:JB:43:ARG:NH2	2.50	0.45
2:GB:2019:A:O4'	18:WB:34:LYS:HE2	2.17	0.45
2:GB:2152:G:H2'	2:GB:2153:G:O4'	2.16	0.45
2:GB:2639:A:O3'	11:PB:97:ARG:NH2	2.50	0.45
8:MB:121:ASN:HA	8:MB:122:PRO:HD3	1.76	0.45
10:OB:57:ARG:O	10:OB:60:GLU:HB3	2.15	0.45
21:ZB:5:TYR:CE2	26:EC:30:ARG:HB2	2.51	0.45
22:AC:3:VAL:HG21	22:AC:32:PRO:O	2.16	0.45
27:FC:44:ARG:HH11	27:FC:44:ARG:CB	2.29	0.45
38:SC:12:CYS:HG	38:SC:18:LYS:NZ	2.11	0.45
47:BD:3:ARG:HB2	47:BD:8:GLU:HG3	1.98	0.45
50:ED:8:ARG:HH12	50:ED:15:PRO:CG	2.26	0.45
50:ED:25:ARG:H	50:ED:25:ARG:HG2	1.65	0.45
51:FD:54:GLY:O	51:FD:81:ARG:HB2	2.17	0.45
54:ID:24:LEU:HD13	54:ID:24:LEU:HA	1.82	0.45
1:A:1028(C):C:H2'	1:A:1029:G:H5"	1.98	0.45
1:A:1333:A:C2	1:A:1334:G:H1'	2.51	0.45
2:B:133:C:H5"	2:B:134:C:OP2	2.16	0.45
2:B:270(F):G:H1	2:B:270(V):C:N4	2.14	0.45
2:B:520:G:H2'	2:B:521:G:H8	1.81	0.45
2:B:1005:C:H5"	2:B:1006:C:OP2	2.17	0.45
2:B:1170:G:H2'	2:B:1171:G:O4'	2.16	0.45
2:B:1308:A:N6	2:B:1309:G:C2	2.85	0.45
2:B:1692:U:H2'	2:B:1694:C:C5	2.51	0.45
2:B:1820:U:C4	5:E:160:GLY:HA3	2.51	0.45
2:B:2016:U:H6	2:B:2016:U:O5'	1.99	0.45
2:B:2639:A:H3'	2:B:2640:G:H8	1.82	0.45
2:B:2818:G:HO2'	2:B:2836:U:HO2'	1.64	0.45
2:B:2854:G:H2'	2:B:2855:C:H6	1.81	0.45
9:I:137:ASP:HB3	9:I:140:LYS:HZ1	1.81	0.45
9:I:144:VAL:HA	9:I:147:ASN:HB2	1.99	0.45
11:K:12:ARG:HH22	11:K:138:LEU:HD11	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:122:PRO:HB3	13:M:142:GLY:O	2.16	0.45
16:P:83:LYS:HB2	16:P:111:GLU:CD	2.37	0.45
17:Q:39:ARG:HH12	17:Q:41:ARG:HD3	1.81	0.45
17:Q:99:LEU:O	17:Q:102:ILE:HG23	2.17	0.45
18:R:16:LYS:O	18:R:20:LEU:HG	2.17	0.45
21:U:21:PHE:HA	21:U:26:TYR:HE1	1.82	0.45
21:U:52:VAL:HG23	21:U:84:ALA:HB2	1.99	0.45
35:JA:119:THR:HG22	35:JA:120:GLY:H	1.82	0.45
36:LA:17:PHE:HB3	36:LA:44:LEU:HD11	1.99	0.45
36:LA:193:ASP:HB3	36:LA:196:LEU:HD12	1.99	0.45
39:OA:152:ARG:NH1	42:RA:42:GLU:O	2.49	0.45
42:RA:44:PHE:CZ	42:RA:137:VAL:HG12	2.52	0.45
44:TA:49:VAL:CG2	48:XA:41:ARG:HB2	2.47	0.45
47:WA:80:ARG:HD2	53:CB:65:ASN:HB3	1.98	0.45
53:CB:21:GLU:OE1	53:CB:25:LYS:HD3	2.17	0.45
1:FB:34:C:H2'	1:FB:35:G:C8	2.52	0.45
1:FB:55:A:N7	1:FB:56:U:C2	2.85	0.45
1:FB:161:A:H2'	1:FB:162:A:C8	2.52	0.45
1:FB:593:G:H1	1:FB:646:U:H3	1.63	0.45
1:FB:778:G:H8	1:FB:778:G:O5'	1.99	0.45
1:FB:834:C:C4	1:FB:835:U:C4	3.05	0.45
1:FB:841:U:H3'	1:FB:842:C:C5'	2.46	0.45
1:FB:975:A:H5"	1:FB:975:A:C8	2.52	0.45
1:FB:1118:C:H1'	1:FB:1179:A:C4	2.52	0.45
2:GB:41:C:H2'	2:GB:43:G:O4'	2.17	0.45
2:GB:127:A:H5"	2:GB:128:C:O4'	2.15	0.45
2:GB:754:C:H2'	2:GB:755:C:C6	2.51	0.45
2:GB:979:G:H3'	2:GB:980:A:C5'	2.46	0.45
2:GB:1040:C:H2'	2:GB:1041:C:C6	2.52	0.45
2:GB:1973:G:H2'	2:GB:1974:C:H6	1.81	0.45
2:GB:2564:A:OP1	2:GB:2648:C:H4'	2.17	0.45
2:GB:2731:G:C6	2:GB:2732:G:C6	3.04	0.45
2:GB:2748:A:C4	2:GB:2757:A:C6	3.05	0.45
2:GB:2784:C:H1'	6:KB:37:ARG:NH2	2.31	0.45
4:IB:13:C:H2'	4:IB:14:A:H8	1.81	0.45
16:UB:44:LYS:HB2	16:UB:44:LYS:HZ3	1.80	0.45
25:DC:27:GLU:H	25:DC:27:GLU:HG3	1.61	0.45
41:VC:15:ASP:HA	41:VC:24:THR:HG23	1.98	0.45
41:VC:79:ARG:HA	41:VC:83:ALA:O	2.16	0.45
42:WC:63:LEU:HB3	42:WC:65:TYR:CE2	2.52	0.45
46:AD:51:ALA:HB3	46:AD:53:ARG:NH2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BD:23:TYR:O	47:BD:70:LEU:HD23	2.16	0.45
47:BD:110:ARG:HA	47:BD:110:ARG:HH11	1.81	0.45
50:ED:55:ARG:O	50:ED:58:TYR:HB3	2.16	0.45
1:A:17:U:H2'	1:A:18:C:H6	1.80	0.45
1:A:413:G:H1'	1:A:428:G:H21	1.82	0.45
1:A:421:U:H3'	1:A:422:C:C6	2.52	0.45
1:A:778:G:O2'	45:UA:120:ARG:O	2.35	0.45
1:A:1103:C:H2'	1:A:1104:G:O4'	2.17	0.45
1:A:1110:A:H2'	1:A:1110:A:N3	2.32	0.45
1:A:1279:A:P	44:TA:9:ARG:HH22	2.39	0.45
2:B:180:G:N2	2:B:215:G:O6	2.50	0.45
2:B:882:G:OP2	2:B:882:G:H8	1.99	0.45
2:B:1022:G:C6	2:B:1140:C:C4	3.05	0.45
2:B:1716:U:H2'	2:B:1717:G:H8	1.82	0.45
2:B:2022:U:O2'	2:B:2617:C:H5'	2.17	0.45
5:E:258:LYS:HE2	5:E:273:ARG:CZ	2.46	0.45
8:H:145:THR:OG1	8:H:146:TYR:N	2.48	0.45
13:M:88:LEU:HA	13:M:91:PHE:HE2	1.82	0.45
13:M:119:GLU:HB3	27:FC:1:MET:N	2.31	0.45
24:X:12:ASN:HB2	24:X:13:GLY:H	1.56	0.45
36:LA:60:ASP:O	36:LA:64:ARG:HG2	2.16	0.45
37:MA:77:ILE:HG13	37:MA:78:GLY:N	2.32	0.45
39:OA:64:ARG:HH11	39:OA:64:ARG:HG3	1.80	0.45
39:OA:80:ILE:HD12	39:OA:91:LEU:HB2	1.98	0.45
46:VA:89:ARG:NH1	46:VA:95:GLY:H	2.10	0.45
50:ZA:55:ARG:O	50:ZA:58:TYR:HB3	2.17	0.45
1:FB:73:G:H1	1:FB:97:U:H3	1.64	0.45
1:FB:192:U:H5'	54:ID:102:GLY:HA2	1.99	0.45
1:FB:201:C:H3'	1:FB:208:U:H5"	1.98	0.45
1:FB:266:G:H3'	51:FD:67:LYS:HB2	1.99	0.45
1:FB:293:G:H8	1:FB:293:G:OP2	1.99	0.45
1:FB:523:A:H61	46:AD:92:0TD:CG	2.30	0.45
1:FB:989:C:H42	1:FB:1217:C:N4	2.14	0.45
1:FB:1048:G:OP1	48:CD:4:LYS:HB2	2.17	0.45
1:FB:1124:G:O2'	1:FB:1125:U:OP2	2.31	0.45
1:FB:1348:U:H2'	1:FB:1349:A:H8	1.81	0.45
2:GB:302:C:H2'	2:GB:303:U:C6	2.51	0.45
2:GB:2329:G:H2'	2:GB:2330:G:C8	2.52	0.45
2:GB:2631:G:N3	2:GB:2810:A:H2	2.15	0.45
7:LB:202:PHE:CZ	7:LB:206:ILE:HD11	2.52	0.45
17:VB:22:PHE:HA	17:VB:91:ARG:NH2	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:BC:99:TYR:CE1	23:BC:125:LEU:HB2	2.52	0.45
36:QC:122:PHE:CZ	36:QC:139:LYS:HB2	2.52	0.45
37:RC:121:ALA:HB1	37:RC:189:ALA:HB2	1.97	0.45
53:HD:12:ASP:O	53:HD:15:LEU:HB3	2.16	0.45
54:ID:44:ALA:O	54:ID:91:LEU:HG	2.17	0.45
1:A:363:A:OP1	46:VA:34:ARG:HG2	2.17	0.45
1:A:926:G:C6	1:A:1505:G:C6	3.05	0.45
2:B:825:C:H42	2:B:832:G:H1	1.65	0.45
2:B:910:A:H62	14:N:12:GLN:HA	1.81	0.45
2:B:1057:A:O4'	2:B:1086:A:N6	2.50	0.45
2:B:1491:G:H2'	2:B:1492:G:C8	2.51	0.45
2:B:2286:A:OP1	30:DA:29:ASN:ND2	2.50	0.45
2:B:2631:G:N3	2:B:2810:A:H2	2.15	0.45
2:B:2695:C:H2'	2:B:2696:U:H6	1.79	0.45
4:D:34:C:O5'	4:D:34:C:H6	2.00	0.45
6:F:55:ASN:C	6:F:57:LYS:H	2.20	0.45
7:G:10:PRO:CB	7:G:17:ARG:HH12	2.29	0.45
8:H:99:MET:O	8:H:103:LEU:HB2	2.17	0.45
12:L:24:VAL:HG12	12:L:33:ALA:HB2	1.98	0.45
13:M:97:PRO:HD3	13:M:126:VAL:O	2.16	0.45
13:M:119:GLU:HB3	27:FC:1:MET:H2	1.81	0.45
14:N:62:GLY:O	23:W:178:GLU:HG2	2.16	0.45
23:W:54:HIS:HB2	23:W:101:PRO:HD3	1.99	0.45
39:OA:84:PHE:HB2	39:OA:134:ALA:HB2	1.98	0.45
46:VA:70:ILE:HG12	46:VA:100:ILE:HD12	1.97	0.45
48:XA:24:CYS:HB3	48:XA:28:GLY:H	1.82	0.45
48:XA:40:CYS:SG	48:XA:43:CYS:SG	3.14	0.45
49:YA:4:THR:HG23	49:YA:7:GLU:CD	2.36	0.45
50:ZA:43:LYS:HG2	50:ZA:48:TRP:CE3	2.52	0.45
1:FB:1072:G:C2	1:FB:1073:U:C2	3.05	0.45
1:FB:1110:A:H3'	1:FB:1111:A:C8	2.51	0.45
1:FB:1133:G:H2'	1:FB:1134:G:O4'	2.17	0.45
1:FB:1389:C:H2'	1:FB:1390:U:O4'	2.17	0.45
2:GB:328:U:H4'	22:AC:68:HIS:CD2	2.51	0.45
2:GB:1118:C:H2'	2:GB:1119:C:C6	2.52	0.45
2:GB:2192:G:OP2	2:GB:2192:G:C8	2.70	0.45
57:GB:9001:BLS:H2'	4:NC:76:A:H1'	1.99	0.45
6:KB:131:ALA:O	6:KB:133:LYS:N	2.49	0.45
12:QB:24:VAL:HG12	12:QB:33:ALA:HB2	1.99	0.45
12:QB:25:LEU:HB2	12:QB:38:VAL:HG23	1.99	0.45
13:RB:96:THR:HA	13:RB:126:VAL:HG23	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:SB:62:GLY:O	23:BC:178:GLU:HG2	2.17	0.45
14:SB:85:LYS:HE2	24:CC:7:LEU:HD13	1.99	0.45
28:GC:53:GLU:OE2	28:GC:60:GLN:NE2	2.49	0.45
32:KC:4:MET:O	32:KC:64:TYR:HE2	2.00	0.45
34:MC:21:A:N6	35:OC:198:THR:OG1	2.27	0.45
38:SC:8:VAL:HG13	38:SC:9:CYS:H	1.82	0.45
50:ED:22:THR:OG1	50:ED:23:ASP:N	2.49	0.45
51:FD:58:GLU:OE2	51:FD:75:ARG:NH1	2.46	0.45
1:A:279:A:H4'	1:A:280:C:H5"	1.99	0.45
1:A:438:G:O2'	1:A:494:U:O4	2.31	0.45
1:A:538:G:H2'	1:A:539:A:C8	2.51	0.45
1:A:892:A:H2'	1:A:893:C:H6	1.80	0.45
1:A:1435:G:H8	1:A:1435:G:O5'	2.00	0.45
2:B:71:A:H4'	2:B:72:U:H5"	1.99	0.45
2:B:265:A:C8	2:B:266:G:H1'	2.52	0.45
2:B:797:C:P	7:G:62:ARG:HG3	2.56	0.45
2:B:1128:A:N7	2:B:2489:G:O2'	2.49	0.45
2:B:2020:A:C5	2:B:2022:U:C5	3.05	0.45
2:B:2116:G:O2'	2:B:2117:A:N3	2.46	0.45
2:B:2406:U:C4	13:M:72:PRO:HD2	2.52	0.45
9:I:94:TYR:CZ	9:I:160:LYS:HD3	2.52	0.45
14:N:67:ARG:HD2	14:N:105:GLU:OE2	2.16	0.45
21:U:92:LEU:HD12	21:U:92:LEU:HA	1.66	0.45
23:W:28:MET:HG3	23:W:35:ARG:HB3	1.99	0.45
38:NA:171:GLY:HA2	38:NA:172:PRO:HD3	1.82	0.45
44:TA:40:LEU:HD23	44:TA:69:ASN:HB2	1.98	0.45
1:FB:360:A:H2'	1:FB:361:G:C8	2.52	0.45
1:FB:386:C:C2'	1:FB:387:U:H5'	2.47	0.45
1:FB:570:G:C2	1:FB:571:U:C4	3.05	0.45
1:FB:1007:C:N4	1:FB:1023:G:H21	2.14	0.45
2:GB:556:G:H2'	2:GB:557:U:H6	1.81	0.45
2:GB:953:A:H2'	2:GB:954:G:H8	1.81	0.45
2:GB:1093:G:H22	2:GB:1096:A:C5'	2.30	0.45
2:GB:2615:U:C2	29:HC:7:PRO:HA	2.52	0.45
2:GB:2850:A:H2	15:TB:61:HIS:CG	2.35	0.45
6:KB:31:CYS:HB3	6:KB:49:LEU:HB3	1.99	0.45
9:NB:35:VAL:HG12	9:NB:36:PRO:O	2.17	0.45
12:QB:17:ARG:HA	12:QB:17:ARG:NE	2.32	0.45
14:SB:16:ARG:NH1	14:SB:16:ARG:HB2	2.31	0.45
15:TB:24:GLN:HG2	15:TB:44:LEU:HG	1.98	0.45
37:RC:122:GLU:HB3	37:RC:126:ARG:HH12	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:ZC:38:ASN:HA	45:ZC:39:PRO:HD3	1.78	0.45
52:GD:71:LYS:HA	52:GD:74:ARG:HD2	1.97	0.45
54:ID:10:LEU:HD12	54:ID:12:ALA:H	1.81	0.45
1:A:255:G:OP1	51:AB:69:LYS:NZ	2.49	0.44
1:A:389:A:C6	1:A:390:C:H1'	2.52	0.44
1:A:837:G:H1	1:A:849:C:N4	2.14	0.44
1:A:1007:C:N4	1:A:1023:G:H21	2.15	0.44
1:A:1175:G:OP2	1:A:1175:G:C8	2.69	0.44
1:A:1382:C:H2'	1:A:1383:C:C6	2.52	0.44
2:B:195:A:H61	2:B:198:C:H3'	1.81	0.44
2:B:243:U:OP1	32:FA:6:THR:OG1	2.20	0.44
2:B:844:C:C5	2:B:845:G:C6	3.05	0.44
2:B:1103:A:OP2	2:B:1104:C:H5	2.00	0.44
2:B:1680:U:O2	2:B:1763:G:H3'	2.17	0.44
2:B:2173:A:H2'	2:B:2174:C:O4'	2.18	0.44
2:B:2329:G:H2'	2:B:2330:G:C8	2.52	0.44
2:B:2893:G:O5'	2:B:2893:G:H8	2.01	0.44
6:F:79:ARG:HH11	6:F:79:ARG:CG	2.29	0.44
13:M:96:THR:HA	13:M:126:VAL:HG23	1.98	0.44
18:R:59:ARG:O	18:R:63:VAL:HG23	2.16	0.44
18:R:72:HIS:CD2	18:R:110:VAL:HG21	2.52	0.44
19:S:1:MET:HA	19:S:42:GLY:HA3	1.99	0.44
20:T:62:HIS:O	20:T:64:MET:HG3	2.17	0.44
22:V:84:ARG:O	22:V:100:ALA:HB2	2.17	0.44
29:CA:49:CYS:SG	29:CA:51:TYR:HB2	2.57	0.44
38:NA:174:LEU:HD23	38:NA:185:PHE:HA	1.99	0.44
39:OA:91:LEU:HD12	39:OA:118:ILE:HD11	1.98	0.44
1:FB:129(B):G:O6	1:FB:187:C:O2'	2.28	0.44
1:FB:327:A:C4	1:FB:329:A:C8	3.05	0.44
1:FB:741:G:H2'	1:FB:742:G:C8	2.53	0.44
1:FB:875:C:O2'	42:WC:14:ARG:HD2	2.17	0.44
1:FB:1110:A:H2'	1:FB:1110:A:N3	2.33	0.44
1:FB:1171:G:O2'	1:FB:1172:C:H5'	2.17	0.44
1:FB:1480:G:C6	1:FB:1481:U:N3	2.86	0.44
2:GB:165:U:H2'	2:GB:171:G:O4'	2.18	0.44
2:GB:581:C:OP2	18:WB:33:ARG:HD3	2.17	0.44
2:GB:645:C:H5"	2:GB:646:A:OP2	2.17	0.44
2:GB:1382:G:O3'	2:GB:1573:G:N2	2.50	0.44
2:GB:1607:C:H5"	2:GB:1608:A:H5'	1.99	0.44
4:IB:63:G:H2'	4:IB:64:G:O4'	2.17	0.44
5:JB:112:GLN:O	5:JB:115:GLN:HB3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:JB:146:GLU:HA	5:JB:153:ALA:HA	1.98	0.44
7:LB:65:TRP:CD1	7:LB:70:THR:HG21	2.52	0.44
9:NB:84:SER:HB2	9:NB:134:SER:HA	1.99	0.44
17:VB:3:ARG:O	17:VB:7:ILE:HG12	2.18	0.44
17:VB:106:SER:O	17:VB:110:ILE:HG13	2.16	0.44
21:ZB:36:LYS:HG2	21:ZB:54:VAL:HB	1.98	0.44
37:RC:110:ASN:O	37:RC:141:VAL:HG22	2.17	0.44
39:TC:53:LEU:HD12	39:TC:53:LEU:H	1.82	0.44
43:XC:46:ALA:HB2	43:XC:74:ILE:HG23	1.99	0.44
46:AD:61:THR:C	46:AD:63:GLY:H	2.21	0.44
47:BD:4:ILE:HA	47:BD:5:ALA:HA	1.63	0.44
1:A:109:A:H5'	1:A:110:C:C5	2.53	0.44
1:A:504:C:C2	1:A:542:G:C2	3.05	0.44
1:A:664:G:P	52:BB:64:ARG:HH21	2.40	0.44
1:A:881:G:N7	46:VA:9:GLN:NE2	2.57	0.44
1:A:977:A:C8	1:A:1223:C:C4	3.06	0.44
1:A:1355:G:H2'	1:A:1356:G:C8	2.53	0.44
1:A:1407:5MC:H2'	1:A:1408:A:C8	2.52	0.44
2:B:93:C:H2'	2:B:94:G:O4'	2.17	0.44
2:B:451:C:H4'	7:G:52:LYS:HZ2	1.81	0.44
2:B:846:C:O5'	2:B:846:C:H6	2.00	0.44
2:B:1171:G:H3'	2:B:1173:G:C8	2.52	0.44
2:B:1503:U:H2'	2:B:1504:C:C6	2.53	0.44
2:B:1625:C:H2'	2:B:1626:G:O4'	2.16	0.44
2:B:2306:C:H2'	2:B:2307:G:C8	2.52	0.44
2:B:2454:G:H2'	2:B:2455:G:H8	1.81	0.44
2:B:2727:G:O3'	12:L:70:LYS:NZ	2.50	0.44
13:M:3:LEU:HD12	13:M:3:LEU:H	1.82	0.44
17:Q:80:SER:HB3	17:Q:83:ILE:HG12	1.99	0.44
22:V:35:TYR:CE2	22:V:69:ALA:HB3	2.53	0.44
4:IA:3:C:OP2	4:IA:3:C:H6	1.99	0.44
4:IA:32:5MC:H3'	43:SA:128:ARG:NH2	2.32	0.44
4:IA:68:C:H2'	4:IA:69:C:O4'	2.16	0.44
35:KA:322:ILE:HB	35:KA:324:LEU:H	1.82	0.44
37:MA:153:VAL:HG22	37:MA:198:VAL:HG22	1.99	0.44
38:NA:162:LEU:HD13	38:NA:162:LEU:HA	1.79	0.44
38:NA:187:ARG:HB2	38:NA:188:LEU:HD22	1.98	0.44
39:OA:149:GLU:O	39:OA:153:LYS:HG3	2.18	0.44
47:WA:56:LEU:HD12	47:WA:59:TYR:CE2	2.53	0.44
1:FB:23:C:H5	1:FB:561:U:O4	2.00	0.44
1:FB:209:U:H4'	1:FB:216:G:C2	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:429:U:H3	1:FB:431:A:H62	1.65	0.44
1:FB:648:A:H2'	1:FB:649:G:O4'	2.18	0.44
1:FB:718:G:O6	52:GD:74:ARG:NH1	2.50	0.44
1:FB:755:G:OP2	49:DD:65:ARG:HB3	2.17	0.44
1:FB:1029:G:C1'	1:FB:1032(C):G:H1	2.31	0.44
1:FB:1118:C:H2'	1:FB:1119:C:C6	2.53	0.44
1:FB:1239:A:H62	1:FB:1299:A:H61	1.61	0.44
1:FB:1278:U:H5"	1:FB:1279:A:O4'	2.17	0.44
2:GB:112:U:O4	2:GB:113:G:C2	2.70	0.44
2:GB:1342:A:C6	2:GB:1345:C:C2	3.05	0.44
2:GB:1405:U:H2'	2:GB:1406:U:C6	2.52	0.44
2:GB:1675:C:O2	6:KB:129:HIS:HA	2.17	0.44
3:HB:89(A):G:H2'	3:HB:89(B):A:C8	2.52	0.44
3:HB:102:G:H21	23:BC:73:GLN:NE2	2.15	0.44
5:JB:78:LYS:HE3	5:JB:114:GLY:HA2	1.98	0.44
7:LB:40:GLN:NE2	7:LB:182:ASN:OD1	2.50	0.44
7:LB:123:LEU:HD12	7:LB:124:LEU:N	2.32	0.44
12:QB:88:ASN:OD1	12:QB:92:GLU:HB2	2.17	0.44
23:BC:185:GLU:OE1	23:BC:185:GLU:N	2.45	0.44
35:OC:143:ARG:HH21	35:OC:144:TRP:HE1	1.66	0.44
37:RC:21:ARG:HD2	44:YC:12:ASP:OD2	2.18	0.44
38:SC:134:ASP:O	38:SC:136:PRO:HD3	2.18	0.44
41:VC:51:GLN:O	41:VC:55:GLY:HA2	2.17	0.44
43:XC:45:ALA:HA	43:XC:48:GLU:HB2	1.98	0.44
47:BD:69:GLU:O	47:BD:73:GLU:N	2.43	0.44
51:FD:10:VAL:HG23	51:FD:55:ASP:O	2.18	0.44
1:A:743:U:H2'	1:A:744:C:H6	1.81	0.44
2:B:640:C:H2'	2:B:641:C:C6	2.52	0.44
2:B:1010:A:O3'	18:R:77:SER:OG	2.35	0.44
2:B:1252:G:C2	2:B:1253:A:C2	3.04	0.44
2:B:1274:A:N3	2:B:1297:C:H1'	2.33	0.44
2:B:1952:A:C6	2:B:1953:A:N1	2.85	0.44
2:B:2356:C:O3'	24:X:20:ARG:HD3	2.17	0.44
2:B:2467:C:H2'	2:B:2468:G:O4'	2.17	0.44
2:B:2476:A:H2	2:B:2481:G:H1	1.66	0.44
9:I:38:SER:OG	9:I:40:GLU:OE1	2.28	0.44
11:K:94:HIS:HA	11:K:95:PRO:HD2	1.79	0.44
14:N:12:GLN:HG2	14:N:73:PRO:HD2	2.00	0.44
14:N:19:GLY:HA2	23:W:79:ARG:HH22	1.82	0.44
15:O:99:LYS:HB2	15:O:99:LYS:NZ	2.32	0.44
20:T:62:HIS:O	20:T:64:MET:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:AA:12:PRO:HB2	27:AA:20:LYS:HG2	1.99	0.44
37:MA:3:ASN:ND2	37:MA:4:LYS:HZ2	2.15	0.44
39:OA:90:VAL:O	39:OA:91:LEU:HD13	2.17	0.44
47:WA:11:ARG:C	47:WA:13:LYS:H	2.19	0.44
47:WA:31:LYS:N	47:WA:31:LYS:HD2	2.32	0.44
1:FB:32:A:OP1	1:FB:398:C:H1'	2.17	0.44
1:FB:791:G:H22	1:FB:1498:UR3:P	2.40	0.44
1:FB:1441:G:O5'	1:FB:1441:G:H8	2.00	0.44
2:GB:8:A:H2	2:GB:2896:C:C2	2.35	0.44
2:GB:10:G:H4'	2:GB:2801:A:N1	2.33	0.44
2:GB:65:C:H2'	2:GB:66:C:C6	2.53	0.44
2:GB:1011:G:P	18:WB:77:SER:HG	2.40	0.44
2:GB:1176:G:C8	2:GB:1177:A:C8	3.05	0.44
2:GB:1635:G:O2'	2:GB:1636:C:H5'	2.16	0.44
2:GB:2312:U:OP1	8:MB:74:LYS:HB2	2.16	0.44
6:KB:55:ASN:C	6:KB:57:LYS:H	2.20	0.44
7:LB:10:PRO:HB3	7:LB:17:ARG:HH12	1.81	0.44
14:SB:111:GLU:OE2	14:SB:133:ARG:NH2	2.50	0.44
15:TB:13:HIS:CE1	15:TB:16:HIS:HB2	2.53	0.44
16:UB:30:ARG:NH1	16:UB:97:ARG:HH11	2.14	0.44
20:YB:3:ALA:HB3	20:YB:58:ALA:HB2	1.98	0.44
26:EC:53:LEU:HD23	26:EC:53:LEU:HA	1.84	0.44
33:LC:2:LYS:HB2	33:LC:34:GLN:HG2	1.99	0.44
36:QC:178:ARG:HB3	42:WC:71:GLY:O	2.16	0.44
39:TC:121:LYS:HZ2	39:TC:122:GLU:N	2.13	0.44
44:YC:20:ALA:O	44:YC:24:VAL:HG23	2.18	0.44
49:DD:82:ILE:O	49:DD:86:GLY:N	2.50	0.44
53:HD:65:ASN:O	53:HD:67:VAL:N	2.50	0.44
1:A:429:U:OP1	38:NA:13:ARG:NH1	2.50	0.44
1:A:1378:C:H5"	41:QA:6:ARG:HG3	1.99	0.44
2:B:491:G:C2	2:B:492:A:H1'	2.53	0.44
3:C:17:C:H2'	3:C:18:G:O4'	2.17	0.44
5:E:53:PHE:CD1	5:E:220:HIS:HA	2.52	0.44
5:E:182:LEU:HB2	5:E:272:ALA:HB3	2.00	0.44
6:F:177:PRO:HD2	6:F:178:GLU:OE2	2.16	0.44
14:N:85:LYS:HD3	24:X:7:LEU:HD22	1.99	0.44
17:Q:50:ILE:HD13	17:Q:50:ILE:H	1.81	0.44
17:Q:105:LEU:HD13	17:Q:105:LEU:HA	1.70	0.44
18:R:34:LYS:HA	18:R:34:LYS:HD2	1.71	0.44
20:T:12:ILE:HB	20:T:42:ARG:HH12	1.83	0.44
22:V:90:LEU:HD13	22:V:90:LEU:HA	1.77	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:21:ALA:O	23:W:23:LYS:N	2.50	0.44
23:W:103:ARG:HG3	23:W:136:PHE:HB3	1.99	0.44
26:Z:53:LEU:HA	26:Z:53:LEU:HD23	1.81	0.44
29:CA:35:GLU:HG3	29:CA:51:TYR:CB	2.47	0.44
36:LA:139:LYS:O	36:LA:142:LEU:HB3	2.17	0.44
42:RA:12:ARG:HH11	42:RA:26:VAL:HA	1.82	0.44
42:RA:73:ASP:OD1	42:RA:75:ARG:HG3	2.18	0.44
46:VA:89:ARG:NH1	46:VA:95:GLY:N	2.65	0.44
49:YA:15:PHE:HB3	49:YA:27:VAL:HG22	2.00	0.44
54:DB:72:LEU:HD13	54:DB:77:ALA:HA	2.00	0.44
1:FB:465:A:O2'	1:FB:466:G:H5'	2.16	0.44
1:FB:753:A:H5'	1:FB:754:C:C5	2.52	0.44
1:FB:991:U:C4	1:FB:1212:U:H1'	2.52	0.44
1:FB:1036:G:H3'	1:FB:1037:C:C6	2.53	0.44
1:FB:1153:C:H2'	1:FB:1154:G:O4'	2.18	0.44
1:FB:1235:U:H5"	55:JD:3:LYS:HB2	2.00	0.44
1:FB:1275:A:H8	1:FB:1275:A:OP2	2.00	0.44
1:FB:1381:U:O2'	41:VC:79:ARG:HG2	2.16	0.44
1:FB:1508:G:H2'	1:FB:1509:C:H6	1.83	0.44
2:GB:947:G:N2	2:GB:971:C:C2	2.85	0.44
2:GB:1038:C:H42	2:GB:1117:G:H1	1.65	0.44
2:GB:1374:G:C6	2:GB:1375:C:C4	3.05	0.44
2:GB:1471:A:OP2	2:GB:1521:G:C2	2.70	0.44
2:GB:1582:C:H2'	2:GB:1583:A:H8	1.83	0.44
2:GB:1692:U:O2'	2:GB:1693:U:H2'	2.17	0.44
2:GB:2010:G:H5"	20:YB:42:ARG:HB2	2.00	0.44
2:GB:2016:U:C4	2:GB:2017:U:C4	3.05	0.44
2:GB:2149:G:H5'	2:GB:2150:U:OP2	2.18	0.44
2:GB:2402:C:OP2	2:GB:2402:C:C6	2.70	0.44
2:GB:2443:C:OP1	7:LB:68:LYS:HD3	2.17	0.44
3:HB:17:C:H2'	3:HB:18:G:O4'	2.18	0.44
5:JB:208:LYS:HG3	5:JB:211:ARG:H	1.81	0.44
7:LB:179:GLU:H	7:LB:179:GLU:CD	2.20	0.44
14:SB:70:PRO:HA	14:SB:95:ALA:HB2	2.00	0.44
27:FC:8:LEU:HD13	27:FC:23:LEU:HD21	2.00	0.44
47:BD:87:TYR:HB3	53:HD:73:GLU:HG2	1.99	0.44
1:A:247:G:OP2	51:AB:100:LYS:N	2.51	0.44
1:A:603:U:H2'	1:A:604:G:H8	1.83	0.44
1:A:676:A:H5"	45:UA:113:PRO:HB2	1.99	0.44
1:A:828:A:H2'	1:A:829:G:O4'	2.16	0.44
1:A:1104:G:O5'	36:LA:111:ARG:HD2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1133:G:H2'	1:A:1134:G:O4'	2.18	0.44
1:A:1172:C:H2'	1:A:1173:G:O4'	2.18	0.44
2:B:398:G:H2'	2:B:399:G:C8	2.53	0.44
2:B:827:U:H1'	2:B:2246:G:O2'	2.18	0.44
2:B:1314:C:OP1	2:B:1315:C:OP2	2.36	0.44
2:B:1861:G:H2'	2:B:1862:G:H8	1.83	0.44
2:B:2080:G:H5"	25:Y:19:GLN:HG3	2.00	0.44
2:B:2141:G:H22	2:B:2150:U:H2'	1.83	0.44
2:B:2167:U:H2'	2:B:2168:G:C8	2.53	0.44
2:B:2445:G:OP1	7:G:74:ARG:NH2	2.50	0.44
2:B:2551:C:H2'	2:B:2552:2MU:C6	2.48	0.44
2:B:2819:G:H2'	2:B:2821:A:N7	2.31	0.44
5:E:227:ASN:HB3	5:E:228:PRO:HD2	1.99	0.44
5:E:246:PRO:O	5:E:254:THR:HG22	2.17	0.44
5:E:267:SER:O	5:E:269:PHE:N	2.51	0.44
6:F:52:LEU:HA	6:F:53:PRO:HD3	1.86	0.44
7:G:40:GLN:NE2	7:G:182:ASN:OD1	2.49	0.44
19:S:97:LYS:HD3	19:S:97:LYS:HA	1.84	0.44
23:W:8:TYR:HD2	23:W:38:TYR:HH	1.66	0.44
23:W:70:LEU:HB2	23:W:91:LEU:HD21	2.00	0.44
38:NA:53:ASP:O	38:NA:57:ARG:HD3	2.18	0.44
42:RA:4:ASP:HB2	42:RA:89:PRO:HG3	2.00	0.44
43:SA:36:TYR:CE2	43:SA:65:VAL:HG11	2.53	0.44
45:UA:25:TYR:CD1	45:UA:88:GLY:HA2	2.51	0.44
48:XA:53:LEU:HD22	48:XA:53:LEU:HA	1.72	0.44
53:CB:28:LYS:HZ1	53:CB:30:LEU:HD11	1.82	0.44
1:FB:277:C:C2'	1:FB:278:G:H5'	2.47	0.44
1:FB:298:A:C6	1:FB:299:G:C2	3.06	0.44
1:FB:626:U:H5"	50:ED:38:TYR:CD2	2.53	0.44
1:FB:778:G:H2'	1:FB:779:C:O4'	2.18	0.44
1:FB:826:C:H5'	42:WC:12:ARG:HH21	1.82	0.44
1:FB:833:U:H3	1:FB:853:G:H1	1.65	0.44
1:FB:1101:A:H4'	1:FB:1102:A:O5'	2.18	0.44
2:GB:321:G:P	7:LB:135:LYS:HZ3	2.31	0.44
2:GB:469:G:O6	31:JC:37:LYS:HE2	2.18	0.44
2:GB:574:C:H1'	2:GB:2055:C:C6	2.52	0.44
2:GB:635:C:H2'	2:GB:636:G:O4'	2.18	0.44
2:GB:721:C:H2'	2:GB:722:A:C8	2.52	0.44
2:GB:882:G:H2'	2:GB:883:G:C8	2.52	0.44
2:GB:1103:A:OP2	2:GB:1104:C:H5	2.00	0.44
2:GB:1153:C:H2'	2:GB:1154:G:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1448:G:H1'	2:GB:1528:A:N1	2.32	0.44
2:GB:1669:A:H4'	2:GB:2549:G:H4'	1.99	0.44
2:GB:1825:A:H2'	2:GB:1826:G:C8	2.53	0.44
2:GB:2020:A:C5	2:GB:2022:U:C5	3.05	0.44
2:GB:2022:U:O2'	2:GB:2617:C:H5'	2.18	0.44
2:GB:2297:C:H42	2:GB:2321:G:H1	1.66	0.44
2:GB:2345:G:OP2	30:IC:38:LYS:HD3	2.17	0.44
2:GB:2629:A:H1'	2:GB:2895:U:O4	2.17	0.44
5:JB:165:ILE:HA	5:JB:175:LEU:HD23	2.00	0.44
7:LB:165:ARG:NH1	7:LB:165:ARG:CG	2.80	0.44
11:PB:10:GLU:OE2	11:PB:11:PRO:HD2	2.18	0.44
15:TB:8:ARG:NH1	15:TB:39:PRO:HA	2.33	0.44
15:TB:83:ILE:HG23	15:TB:86:ARG:HH21	1.82	0.44
38:SC:52:SER:O	38:SC:56:VAL:HG23	2.17	0.44
43:XC:13:ALA:HB2	43:XC:68:GLY:HA3	1.99	0.44
44:YC:51:ARG:HG2	44:YC:61:GLU:HG2	1.99	0.44
44:YC:51:ARG:CZ	44:YC:61:GLU:HB3	2.48	0.44
48:CD:31:ARG:HG2	48:CD:31:ARG:HH11	1.82	0.44
1:A:391:G:H5"	50:ZA:8:ARG:HE	1.83	0.44
1:A:596:C:OP2	1:A:597:G:OP2	2.35	0.44
1:A:692:U:H2'	1:A:694:A:OP2	2.17	0.44
1:A:707:C:H4'	45:UA:20:TYR:CD2	2.52	0.44
1:A:1124:G:O2'	1:A:1125:U:OP2	2.29	0.44
1:A:1421:G:O5'	1:A:1421:G:H8	1.99	0.44
2:B:155:C:H3'	2:B:155:C:OP2	2.18	0.44
2:B:581:C:O5'	2:B:581:C:H6	2.00	0.44
2:B:902:C:H2'	2:B:903:C:C6	2.52	0.44
2:B:1846:G:H5"	2:B:1847:A:OP2	2.17	0.44
2:B:2279:G:N2	2:B:2280:G:H1'	2.33	0.44
2:B:2789:C:C2	2:B:2894:G:N2	2.85	0.44
2:B:2883:A:C5'	2:B:2884:U:H5'	2.48	0.44
5:E:53:PHE:CE1	5:E:220:HIS:HA	2.53	0.44
5:E:146:GLU:HA	5:E:153:ALA:HA	1.99	0.44
21:U:13:LEU:HD12	21:U:18:TYR:OH	2.16	0.44
26:Z:9:GLN:NE2	26:Z:56:GLN:HG3	2.32	0.44
36:LA:81:VAL:HA	36:LA:215:LEU:HD11	1.98	0.44
37:MA:179:ARG:HG2	37:MA:207:VAL:H	1.83	0.44
42:RA:120:THR:H	42:RA:123:GLU:HB2	1.83	0.44
55:EB:9:ARG:HG3	55:EB:10:ARG:HG2	1.99	0.44
1:FB:842:C:H4'	1:FB:843:U:OP1	2.17	0.44
1:FB:1028(C):C:H2'	1:FB:1029:G:H5"	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:1112:C:H5"	1:FB:1113:C:OP2	2.18	0.44
1:FB:1237:C:H3'	1:FB:1336:C:N4	2.33	0.44
1:FB:1378:C:H5"	41:VC:6:ARG:HG3	2.00	0.44
2:GB:137(B):G:H2'	2:GB:139:G:N7	2.32	0.44
2:GB:371:A:H5'	2:GB:423:A:H2'	1.99	0.44
2:GB:476:G:N2	2:GB:478:A:H2'	2.33	0.44
2:GB:784:A:C5	5:JB:229:VAL:HG21	2.52	0.44
2:GB:799:G:N1	2:GB:800:A:N6	2.65	0.44
2:GB:829:A:N7	2:GB:2247:A:O2'	2.41	0.44
2:GB:950:G:C6	2:GB:951:C:C4	3.05	0.44
2:GB:978:G:C2	2:GB:986:C:C2	3.05	0.44
2:GB:1335:U:H2'	2:GB:1336:A:H8	1.81	0.44
2:GB:1965:C:H3'	2:GB:1966:A:H2'	1.99	0.44
2:GB:2141:G:H22	2:GB:2150:U:H2'	1.82	0.44
2:GB:2209:C:C2	2:GB:2216:G:C2	3.05	0.44
2:GB:2508:G:H1	2:GB:2580:U:H3	1.65	0.44
2:GB:2572:A:OP1	2:GB:2574:G:H4'	2.18	0.44
2:GB:2809:A:C6	2:GB:2892:A:H1'	2.53	0.44
4:IB:34:C:O5'	4:IB:34:C:H6	2.00	0.44
4:IB:51:C:N4	4:IB:52:G:O6	2.51	0.44
7:LB:59:TYR:HB3	7:LB:60:SER:H	1.49	0.44
9:NB:25:LYS:HE2	9:NB:34:GLU:HB2	1.99	0.44
12:QB:61:VAL:O	12:QB:84:ALA:HB1	2.17	0.44
14:SB:19:GLY:HA2	23:BC:79:ARG:HH22	1.81	0.44
17:VB:34:VAL:HG22	17:VB:41:ARG:HG3	1.99	0.44
21:ZB:44:GLU:HG2	21:ZB:49:VAL:O	2.18	0.44
29:HC:41:PRO:HA	29:HC:42:PRO:HD2	1.70	0.44
31:JC:12:ARG:NH1	31:JC:12:ARG:HG3	2.31	0.44
38:SC:76:ARG:O	38:SC:79:PHE:HB3	2.17	0.44
38:SC:120:LEU:HB3	38:SC:126:ILE:HD11	1.99	0.44
39:TC:140:ARG:HE	39:TC:140:ARG:HB2	1.66	0.44
39:TC:148:VAL:O	39:TC:152:ARG:HG2	2.18	0.44
42:WC:93:VAL:O	42:WC:132:GLU:HA	2.18	0.44
46:AD:112:ASP:OD2	46:AD:112:ASP:N	2.50	0.44
53:HD:22:LEU:HD22	53:HD:47:HIS:CD2	2.53	0.44
1:A:161:A:H2'	1:A:162:A:C8	2.53	0.44
1:A:197:A:H3'	1:A:197:A:OP2	2.18	0.44
1:A:714:G:H2'	1:A:715:A:C8	2.52	0.44
1:A:753:A:H5'	1:A:754:C:C6	2.53	0.44
1:A:892:A:O2'	1:A:1415:G:H4'	2.18	0.44
1:A:1418:A:H2	2:B:1948:G:N3	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1494:G:C6	1:A:1495:U:C4	3.05	0.44
1:A:1496:C:H4'	2:B:1920:4OC:O2'	2.17	0.44
2:B:8:A:H2	2:B:2896:C:C2	2.36	0.44
2:B:10:G:H4'	2:B:2801:A:C2	2.52	0.44
2:B:11:G:C2'	2:B:12:U:H5'	2.48	0.44
2:B:320:A:H4'	2:B:322:A:N7	2.32	0.44
2:B:959:A:C6	2:B:960:A:N1	2.85	0.44
2:B:1183:G:H2'	2:B:1184:G:H8	1.82	0.44
2:B:1632:A:H8	2:B:1632:A:O5'	2.00	0.44
2:B:2262:U:H4'	2:B:2328:A:C2	2.52	0.44
2:B:2358:G:C6	2:B:2359:C:C4	3.06	0.44
6:F:93:VAL:HG11	6:F:181:LEU:O	2.18	0.44
8:H:39:ILE:HG21	8:H:60:LEU:HD21	1.99	0.44
13:M:81:GLN:OE1	13:M:106:LEU:HA	2.18	0.44
16:P:34:HIS:ND1	16:P:34:HIS:N	2.66	0.44
19:S:83:ARG:HG2	19:S:83:ARG:HH11	1.82	0.44
37:MA:7:PRO:HB3	37:MA:175:LEU:HD11	1.99	0.44
41:QA:51:GLN:O	41:QA:55:GLY:HA2	2.18	0.44
41:QA:153:HIS:CD2	45:UA:57:THR:HB	2.52	0.44
44:TA:20:ALA:O	44:TA:24:VAL:HG23	2.17	0.44
46:VA:19:ARG:O	46:VA:21:LYS:NZ	2.51	0.44
1:FB:979:C:H2'	1:FB:980:C:H5'	1.99	0.44
1:FB:1207:2MG:H2'	1:FB:1208:C:C6	2.51	0.44
1:FB:1502:A:C8	1:FB:1505:G:N2	2.86	0.44
2:GB:902:C:H2'	2:GB:903:C:C6	2.53	0.44
2:GB:1064:C:H5'	2:GB:1065:U:OP2	2.17	0.44
2:GB:1170:G:H1	2:GB:1179:C:N4	2.15	0.44
2:GB:1268:A:C2	2:GB:2013:A:C4	3.06	0.44
2:GB:1423:G:H2'	2:GB:1424:G:H8	1.81	0.44
2:GB:1684:C:H2'	2:GB:1685:C:C6	2.53	0.44
2:GB:2026:C:H2'	2:GB:2027:G:O4'	2.18	0.44
2:GB:2401:U:C2'	2:GB:2402:C:H5'	2.48	0.44
2:GB:2443:C:H2'	2:GB:2444:G:H8	1.83	0.44
2:GB:2639:A:H3'	2:GB:2640:G:H8	1.83	0.44
2:GB:2893:G:O5'	2:GB:2893:G:H8	2.00	0.44
4:IB:48:C:H4'	4:IB:49:G:H5"	2.00	0.44
12:QB:89:ASN:C	12:QB:91:LEU:H	2.22	0.44
16:UB:83:LYS:HB2	16:UB:111:GLU:CD	2.36	0.44
16:UB:105:ALA:O	16:UB:110:LEU:HB2	2.18	0.44
30:IC:23:THR:HA	32:KC:34:TRP:HD1	1.83	0.44
36:QC:83:MET:HG2	36:QC:234:PRO:HB2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:QC:178:ARG:NH2	36:QC:198:ASP:OD1	2.51	0.44
38:SC:18:LYS:HD2	38:SC:18:LYS:HA	1.90	0.44
41:VC:111:ARG:NH1	41:VC:122:HIS:HB3	2.32	0.44
46:AD:89:ARG:NH1	46:AD:95:GLY:H	2.15	0.44
50:ED:71:ARG:HA	50:ED:74:LEU:HD12	1.99	0.44
1:A:19:C:H5"	39:OA:86:ALA:HB1	1.98	0.44
1:A:99:C:H2'	1:A:101:A:O4'	2.16	0.44
1:A:540:G:H2'	1:A:541:G:O4'	2.18	0.44
1:A:701:C:O2	1:A:703:G:N1	2.50	0.44
1:A:792:A:H4'	1:A:793:U:O5'	2.17	0.44
1:A:881:G:H2'	1:A:882:C:O4'	2.18	0.44
1:A:969:A:H2'	1:A:970:C:O4'	2.18	0.44
1:A:1109:C:H2'	1:A:1110:A:O4'	2.18	0.44
1:A:1324:A:OP2	1:A:1324:A:C8	2.71	0.44
1:A:1359:C:OP1	48:XA:22:THR:OG1	2.26	0.44
1:A:1427:U:H2'	1:A:1428:A:C8	2.52	0.44
2:B:10:G:H4'	2:B:2801:A:N1	2.33	0.44
2:B:328:U:H4'	22:V:68:HIS:CD2	2.52	0.44
2:B:511:U:H4'	2:B:1235:G:H4'	1.99	0.44
2:B:590:A:H2'	2:B:591:C:O4'	2.17	0.44
2:B:609(B):G:H2'	2:B:610:C:H6	1.81	0.44
2:B:1012:U:O4	11:K:28:THR:HG21	2.17	0.44
2:B:1203:G:N1	2:B:1241:A:OP2	2.45	0.44
2:B:1380:G:O2'	2:B:1569:A:N6	2.51	0.44
2:B:1684:C:H2'	2:B:1685:C:C6	2.53	0.44
2:B:2059:A:H2'	2:B:2503:2MA:HM23	1.99	0.44
2:B:2352:A:C4	2:B:2366:A:C2	3.06	0.44
2:B:2369:A:H2'	2:B:2370:G:H8	1.83	0.44
2:B:2537:U:H2'	2:B:2538:C:C6	2.53	0.44
4:D:15:G:O6	4:D:59:A:O2'	2.34	0.44
4:D:28:C:N4	4:D:42:G:H1	2.12	0.44
6:F:170:LEU:HD23	6:F:170:LEU:HA	1.79	0.44
9:I:149:ARG:NH1	9:I:167:GLU:CD	2.71	0.44
15:O:24:GLN:HG2	15:O:44:LEU:HG	2.00	0.44
17:Q:109:GLU:HG3	17:Q:112:ARG:NH2	2.33	0.44
19:S:28:GLU:O	19:S:30:GLY:N	2.51	0.44
23:W:155:LEU:HD21	23:W:171:ILE:HD12	1.99	0.44
28:BA:50:VAL:HG11	47:WA:64:TRP:HA	1.98	0.44
40:PA:33:TYR:HB2	40:PA:75:LEU:HD12	2.00	0.44
47:WA:3:ARG:H	47:WA:8:GLU:HB2	1.83	0.44
51:AB:7:THR:HG23	51:AB:57:VAL:C	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:AB:14:LYS:N	51:AB:14:LYS:HE3	2.33	0.44
55:EB:18:TYR:HE2	55:EB:24:ARG:HA	1.83	0.44
1:FB:468:A:H4'	50:ED:80:PHE:O	2.17	0.44
1:FB:636:U:H2'	1:FB:637:G:H8	1.82	0.44
1:FB:1284:C:H3'	1:FB:1285:A:C8	2.52	0.44
1:FB:1410:G:O2'	1:FB:1411:C:H5'	2.18	0.44
2:GB:6:A:O2'	11:PB:130:HIS:HB3	2.18	0.44
2:GB:154:G:H1	2:GB:172:C:N4	2.15	0.44
2:GB:827:U:H1'	2:GB:2246:G:O2'	2.18	0.44
2:GB:960:A:H5"	2:GB:961:C:OP2	2.18	0.44
2:GB:1010:A:O3'	18:WB:77:SER:OG	2.33	0.44
2:GB:1017:G:H2'	2:GB:1018:C:C6	2.53	0.44
2:GB:1996:C:H4'	2:GB:1997:G:H5'	1.99	0.44
2:GB:2262:U:H4'	2:GB:2328:A:C2	2.53	0.44
2:GB:2405:G:O2'	2:GB:2411:A:N6	2.50	0.44
4:IB:5:G:O2'	4:IB:6:G:OP2	2.25	0.44
6:KB:177:PRO:HD2	6:KB:178:GLU:OE2	2.18	0.44
7:LB:40:GLN:O	7:LB:44:ARG:HD3	2.17	0.44
8:MB:145:THR:OG1	8:MB:146:TYR:N	2.50	0.44
9:NB:130:ARG:HB3	9:NB:130:ARG:HH11	1.83	0.44
11:PB:19:GLU:HA	11:PB:59:LYS:O	2.17	0.44
12:QB:20:MET:SD	12:QB:44:LYS:HE2	2.58	0.44
13:RB:52:GLU:HG3	13:RB:57:THR:HA	2.00	0.44
14:SB:57:HIS:HD2	14:SB:117:ALA:HB2	1.82	0.44
15:TB:58:GLY:HA2	15:TB:80:PHE:CD2	2.52	0.44
20:YB:12:ILE:HB	20:YB:42:ARG:HH12	1.83	0.44
20:YB:17:VAL:HG11	20:YB:103:ILE:HD13	1.99	0.44
21:ZB:40:LYS:HG3	21:ZB:51:VAL:HG23	1.99	0.44
25:DC:82:LEU:H	25:DC:83:GLU:CD	2.20	0.44
36:QC:130:ARG:HA	36:QC:131:PRO:HD3	1.87	0.44
36:QC:149:LEU:O	36:QC:152:PHE:N	2.46	0.44
38:SC:12:CYS:HG	38:SC:18:LYS:HZ2	1.60	0.44
38:SC:60:GLU:O	38:SC:63:LYS:HB2	2.18	0.44
39:TC:139:LEU:HA	39:TC:142:LEU:CD2	2.47	0.44
44:YC:25:GLU:O	44:YC:29:ARG:HG3	2.17	0.44
53:HD:50:ALA:HB1	53:HD:58:VAL:N	2.32	0.44
1:A:115:G:H4'	1:A:116:A:O5'	2.18	0.44
1:A:445:G:H1	1:A:489:C:H42	1.66	0.44
1:A:741:G:H2'	1:A:742:G:C8	2.53	0.44
1:A:932:C:H5"	41:QA:4:ARG:CZ	2.48	0.44
1:A:967:5MC:H2'	1:A:968:A:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1151:A:C2	44:TA:39:PRO:HG3	2.53	0.44
1:A:1346:A:H61	1:A:1374:A:H3'	1.83	0.44
1:A:1389:C:H2'	1:A:1390:U:O4'	2.18	0.44
2:B:863:A:OP2	14:N:22:LYS:NZ	2.51	0.44
2:B:910:A:N6	2:B:911:A:N6	2.66	0.44
2:B:956:G:H2'	2:B:957:A:H2'	2.00	0.44
2:B:1012:U:C5	11:K:28:THR:HG21	2.53	0.44
2:B:1080:C:H6	2:B:1080:C:OP2	2.01	0.44
2:B:1353:A:C8	2:B:1377:G:N2	2.86	0.44
2:B:1477:A:C6	2:B:1478:G:C5	3.05	0.44
2:B:2018:G:C6	2:B:2019:A:C6	3.06	0.44
2:B:2075:U:H2'	2:B:2238:G:N2	2.32	0.44
3:C:46:A:C5	3:C:47:C:C4	3.06	0.44
5:E:66:ASP:HA	5:E:68:LYS:HZ3	1.82	0.44
6:F:67:PHE:CD1	6:F:74:PRO:HA	2.53	0.44
7:G:59:TYR:HB3	7:G:60:SER:H	1.48	0.44
8:H:9:ARG:HA	8:H:12:TYR:HB2	2.00	0.44
10:J:110:ASP:HA	10:J:111:PRO:HD3	1.86	0.44
15:O:23:ASN:OD1	15:O:23:ASN:N	2.51	0.44
17:Q:54:ARG:HB3	17:Q:54:ARG:HH11	1.81	0.44
19:S:27:ALA:O	19:S:64:HIS:NE2	2.51	0.44
26:Z:9:GLN:HE22	26:Z:56:GLN:HG3	1.82	0.44
28:BA:2:LYS:O	28:BA:6:HIS:HD2	2.01	0.44
35:JA:209:LEU:HD23	35:JA:210:PRO:HD2	2.00	0.44
40:PA:46:ARG:HE	40:PA:46:ARG:HB3	1.66	0.44
47:WA:55:ARG:NH1	47:WA:55:ARG:HB3	2.32	0.44
1:FB:190:G:N7	51:FD:63:ARG:NH2	2.66	0.44
1:FB:428:G:O4'	1:FB:430:A:C8	2.70	0.44
1:FB:688:G:H2'	1:FB:689:C:H6	1.82	0.44
1:FB:763:G:H2'	1:FB:764:C:H6	1.83	0.44
1:FB:1409:C:H2'	1:FB:1410:G:H8	1.83	0.44
2:GB:71:A:H4'	2:GB:72:U:H5"	1.99	0.44
2:GB:539:G:H2'	2:GB:540:G:H8	1.81	0.44
2:GB:558:G:H2'	2:GB:559:G:H8	1.83	0.44
2:GB:568:U:O4	2:GB:973:A:OP2	2.36	0.44
2:GB:774:A:O2'	2:GB:775:G:H5"	2.18	0.44
2:GB:1021:A:H8	2:GB:1021:A:H3'	1.83	0.44
2:GB:2387:U:H4'	24:CC:41:ARG:NH2	2.33	0.44
2:GB:2409:G:H8	2:GB:2409:G:O5'	2.01	0.44
2:GB:2792:G:H8	2:GB:2893:G:H22	1.66	0.44
5:JB:30:GLU:CB	5:JB:33:LEU:HD12	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:JB:231:HIS:CG	5:JB:232:PRO:HD2	2.53	0.44
7:LB:155:LEU:HD23	7:LB:186:ILE:HG12	1.99	0.44
8:MB:35:GLU:HB2	8:MB:160:VAL:O	2.17	0.44
12:QB:13:ASN:HD21	12:QB:97:ARG:N	2.15	0.44
12:QB:22:ILE:HG12	12:QB:41:ALA:HA	1.99	0.44
22:AC:30:VAL:HG22	22:AC:37:VAL:HG12	1.98	0.44
4:NC:48:C:O2'	4:NC:59:A:O2'	2.30	0.44
35:OC:185:GLN:HG3	35:OC:198:THR:HG23	2.00	0.44
35:PC:331:GLU:HA	35:PC:334:GLU:HB3	2.00	0.44
36:QC:47:THR:HG22	36:QC:51:LEU:HD23	1.99	0.44
37:RC:19:GLU:HA	37:RC:54:ARG:NH2	2.33	0.44
43:XC:123:PRO:O	43:XC:125:TYR:N	2.51	0.44
1:A:313:A:H2'	1:A:314:C:C6	2.53	0.43
1:A:345:C:H3'	17:Q:41:ARG:CZ	2.47	0.43
1:A:523:A:H61	46:VA:92:0TD:CG	2.31	0.43
1:A:979:C:H2'	1:A:980:C:H5'	1.99	0.43
1:A:1329:A:O2'	1:A:1330:U:H5'	2.18	0.43
1:A:1435:G:H2'	1:A:1436:U:C6	2.53	0.43
1:A:1483:A:H2	2:B:1959:G:N3	2.16	0.43
2:B:85:G:C5	2:B:98:G:C2	3.06	0.43
2:B:165:U:H2'	2:B:171:G:O4'	2.18	0.43
2:B:312:G:H5'	2:B:331:A:O2'	2.18	0.43
2:B:819:A:P	2:B:1187:G:H22	2.38	0.43
2:B:910:A:C5	14:N:13:GLN:HG3	2.53	0.43
2:B:1186:G:H8	2:B:1186:G:O5'	2.01	0.43
2:B:1290:C:H2'	2:B:1291:C:H6	1.81	0.43
2:B:1923:U:H2'	2:B:1924:C:C6	2.53	0.43
2:B:2262:U:OP2	24:X:19:LYS:HE3	2.17	0.43
3:C:89(A):G:C6	3:C:89(B):A:C6	3.06	0.43
6:F:16:ARG:NH1	6:F:171:GLU:OE2	2.51	0.43
7:G:65:TRP:CH2	7:G:72:ARG:NH1	2.86	0.43
17:Q:64:ARG:NH1	17:Q:103:ARG:HG2	2.25	0.43
24:X:42:GLY:O	24:X:44:ARG:N	2.50	0.43
28:BA:53:GLU:OE2	28:BA:60:GLN:NE2	2.49	0.43
29:CA:40:LYS:NZ	29:CA:44:THR:O	2.30	0.43
31:EA:6:GLN:HA	31:EA:6:GLN:OE1	2.17	0.43
1:FB:86:U:O2'	1:FB:87:A:O4'	2.29	0.43
1:FB:391:G:H5"	50:ED:8:ARG:NE	2.33	0.43
1:FB:769:G:H4'	1:FB:1513:A:H4'	2.00	0.43
1:FB:1172:C:H2'	1:FB:1173:G:O4'	2.17	0.43
1:FB:1319:A:H4'	1:FB:1320:C:OP1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:609(B):G:N2	2:GB:619:G:H1'	2.33	0.43
2:GB:782:A:H2	5:JB:230:ASP:OD2	2.01	0.43
2:GB:1023:U:OP2	2:GB:1025:G:O2'	2.35	0.43
2:GB:1179:C:H2'	2:GB:1180:C:C6	2.52	0.43
2:GB:2439:A:C5	57:GB:9001:BLS:H112	2.53	0.43
2:GB:2602:A:H5"	4:NC:75:C:P	2.58	0.43
2:GB:2689:U:OP2	2:GB:2719:G:N2	2.46	0.43
5:JB:53:PHE:HE1	5:JB:221:VAL:HG13	1.82	0.43
7:LB:53:THR:HG23	7:LB:56:GLU:OE1	2.18	0.43
8:MB:99:MET:O	8:MB:103:LEU:HB2	2.18	0.43
11:PB:15:LEU:HG	11:PB:135:PRO:HB2	2.00	0.43
19:XB:64:HIS:HA	19:XB:92:THR:HA	2.00	0.43
21:ZB:21:PHE:HA	21:ZB:26:TYR:HE1	1.82	0.43
35:OC:182:HIS:HB3	35:PC:310:TYR:HE1	1.82	0.43
36:QC:115:LEU:HG	36:QC:119:GLU:OE2	2.18	0.43
41:VC:153:HIS:CD2	45:ZC:57:THR:HB	2.53	0.43
44:YC:97:GLU:HG2	44:YC:98:ILE:H	1.82	0.43
46:AD:51:ALA:HB3	46:AD:53:ARG:HH21	1.83	0.43
46:AD:79:GLU:O	46:AD:80:HIS:HB2	2.18	0.43
53:HD:27:GLU:HA	53:HD:28:LYS:HA	1.60	0.43
1:A:46:G:O2'	1:A:365:U:H1'	2.18	0.43
1:A:444:C:H2'	1:A:445:G:H8	1.82	0.43
1:A:498:A:H1'	1:A:500:G:C8	2.53	0.43
1:A:728:A:C5	49:YA:54:ARG:HD2	2.52	0.43
1:A:1048:G:P	48:XA:4:LYS:HB2	2.58	0.43
2:B:65:C:H2'	2:B:66:C:C6	2.53	0.43
2:B:266:G:N1	2:B:267:C:C2	2.86	0.43
2:B:278:A:H2'	2:B:279:C:C6	2.53	0.43
2:B:441:U:H2'	2:B:442:G:C8	2.53	0.43
2:B:460:A:H3'	2:B:461:C:H6	1.83	0.43
2:B:885:C:C5	2:B:886:C:H1'	2.52	0.43
2:B:1539:G:H2'	2:B:1540:G:O4'	2.18	0.43
2:B:2190:G:C2	2:B:2191:G:C4	3.06	0.43
2:B:2364:C:OP1	24:X:55:ARG:HD3	2.18	0.43
2:B:2827:C:H2'	2:B:2828:C:C6	2.53	0.43
4:D:48:C:OP1	4:D:59:A:H5'	2.17	0.43
8:H:21:ARG:HG3	8:H:22:ARG:N	2.33	0.43
9:I:130:ARG:NH1	9:I:130:ARG:HB3	2.33	0.43
9:I:159:GLU:OE2	9:I:169:VAL:HG11	2.18	0.43
11:K:72:TYR:CZ	11:K:87:LEU:HD23	2.52	0.43
13:M:46:LYS:HE2	13:M:46:LYS:HB3	1.80	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:88:LEU:HD23	13:M:91:PHE:HE2	1.83	0.43
17:Q:74:ARG:HG2	17:Q:76:PHE:CZ	2.53	0.43
18:R:68:ALA:O	18:R:71:GLN:HB2	2.18	0.43
26:Z:17:SER:N	26:Z:20:GLU:OE2	2.47	0.43
35:JA:110:ASN:HA	35:JA:171:VAL:HG23	2.00	0.43
35:JA:182:HIS:HB3	35:KA:310:TYR:HE1	1.82	0.43
37:MA:67:THR:HG22	37:MA:102:ASN:HB3	1.99	0.43
38:NA:35:ARG:O	38:NA:37:PRO:HD3	2.18	0.43
38:NA:157:LEU:HA	38:NA:160:GLN:OE1	2.18	0.43
44:TA:5:ARG:HG3	44:TA:73:ASP:HA	2.01	0.43
44:TA:97:GLU:HG2	44:TA:98:ILE:H	1.82	0.43
46:VA:117:ARG:NH2	46:VA:123:LYS:O	2.37	0.43
53:CB:39:THR:HG23	53:CB:69:HIS:O	2.18	0.43
1:FB:12:U:H3	1:FB:22:G:H1	1.66	0.43
1:FB:995:C:H4'	48:CD:8:GLU:OE2	2.18	0.43
1:FB:1216:G:O2'	1:FB:1217:C:H5'	2.17	0.43
1:FB:1342:C:H2'	1:FB:1343:G:H8	1.84	0.43
1:FB:1366:C:H2'	1:FB:1367:C:C6	2.53	0.43
2:GB:458:G:O2'	31:JC:39:ARG:HD3	2.18	0.43
2:GB:464:U:H2'	2:GB:465:G:O4'	2.17	0.43
2:GB:783:A:O2'	2:GB:785:G:OP1	2.25	0.43
2:GB:877:U:H2'	2:GB:878:A:H5"	1.99	0.43
2:GB:1902:C:N3	2:GB:1903:G:H1'	2.33	0.43
2:GB:2227:A:O3'	5:JB:261:LYS:NZ	2.37	0.43
2:GB:2666:C:H3'	2:GB:2667:C:H6	1.82	0.43
4:IB:7:G:O2'	4:IB:49:G:O4'	2.34	0.43
5:JB:66:ASP:HA	5:JB:68:LYS:HZ2	1.82	0.43
5:JB:246:PRO:O	5:JB:254:THR:HG22	2.18	0.43
6:KB:48:GLN:HG2	6:KB:78:LEU:HG	2.00	0.43
9:NB:23:ARG:HB2	9:NB:34:GLU:OE2	2.18	0.43
9:NB:126:PRO:HB2	9:NB:130:ARG:NH2	2.27	0.43
12:QB:16:ALA:HB2	12:QB:52:VAL:HG21	1.99	0.43
17:VB:126:ALA:O	17:VB:129:ARG:HB3	2.17	0.43
22:AC:44:ILE:O	22:AC:45:VAL:HG13	2.18	0.43
23:BC:103:ARG:HB2	23:BC:138:GLU:HA	1.99	0.43
26:EC:66:GLU:HB2	26:EC:69:ARG:HE	1.83	0.43
28:GC:2:LYS:O	28:GC:6:HIS:HD2	2.01	0.43
31:JC:6:GLN:OE1	31:JC:6:GLN:HA	2.18	0.43
38:SC:171:GLY:HA2	38:SC:172:PRO:HD3	1.78	0.43
39:TC:127:ASN:HA	39:TC:128:PRO:HD2	1.85	0.43
40:UC:33:TYR:HB2	40:UC:75:LEU:HD12	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:WC:103:VAL:O	42:WC:106:GLY:N	2.51	0.43
1:A:129(B):G:N2	1:A:189:U:H5"	2.33	0.43
1:A:922:G:C6	1:A:923:A:C6	3.06	0.43
1:A:1049:U:OP1	48:XA:3:ARG:HG2	2.17	0.43
1:A:1508:G:H2'	1:A:1509:C:C6	2.53	0.43
2:B:111:A:H5'	26:Z:69:ARG:HH22	1.83	0.43
2:B:176:G:O2'	2:B:177:G:H5'	2.19	0.43
2:B:657:U:H2'	2:B:658:C:H6	1.82	0.43
2:B:721:C:H2'	2:B:722:A:C8	2.52	0.43
2:B:1275:A:C4	15:O:16:HIS:CE1	3.06	0.43
2:B:1557:C:OP2	2:B:1558:A:H2'	2.18	0.43
2:B:2186:G:C2'	2:B:2187:G:H5'	2.49	0.43
2:B:2301:C:H2'	2:B:2302:G:C8	2.53	0.43
2:B:2508:G:H1	2:B:2580:U:H3	1.64	0.43
5:E:53:PHE:HD1	5:E:219:PRO:O	2.01	0.43
7:G:12:LEU:HA	7:G:12:LEU:HD23	1.68	0.43
8:H:127:GLY:HA2	8:H:166:ASP:HB2	1.99	0.43
10:J:57:ARG:O	10:J:60:GLU:HB3	2.17	0.43
12:L:53:LYS:NZ	12:L:53:LYS:HB2	2.33	0.43
14:N:35:VAL:O	14:N:129:THR:HG22	2.18	0.43
14:N:78:PRO:HG2	14:N:81:VAL:HG21	2.00	0.43
17:Q:11:GLU:OE2	17:Q:57:PHE:HD2	2.02	0.43
17:Q:64:ARG:HB2	17:Q:73:GLU:HG3	2.00	0.43
23:W:102:LEU:HD11	23:W:124:ILE:HB	2.00	0.43
30:DA:22:ALA:HB1	32:FA:34:TRP:HA	1.99	0.43
4:IA:53:G:H2'	4:IA:54:5MU:C6	2.53	0.43
36:LA:172:ILE:H	36:LA:172:ILE:HD12	1.83	0.43
42:RA:20:TYR:CE2	42:RA:75:ARG:HD2	2.53	0.43
45:UA:122:LYS:HE2	45:UA:122:LYS:HB3	1.82	0.43
46:VA:39:VAL:HG12	46:VA:57:LYS:HB3	2.01	0.43
53:CB:61:TYR:CE2	53:CB:63:THR:HG23	2.53	0.43
53:CB:81:ARG:HB3	53:CB:82:GLY:H	1.74	0.43
1:FB:128:G:H4'	51:FD:3:LYS:HB3	1.99	0.43
1:FB:1350:A:OP1	43:XC:121:ARG:NE	2.42	0.43
2:GB:133:C:H5"	2:GB:134:C:OP2	2.17	0.43
2:GB:460:A:H3'	2:GB:461:C:H6	1.84	0.43
2:GB:782:A:O2'	5:JB:225:ALA:HB1	2.18	0.43
2:GB:935:C:H2'	2:GB:936:C:C6	2.54	0.43
2:GB:2059:A:H2'	2:GB:2503:2MA:HM23	1.99	0.43
2:GB:2682:U:O2'	6:KB:13:ARG:HG3	2.19	0.43
2:GB:2889:C:H2'	2:GB:2891:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LB:64:ILE:HD12	7:LB:65:TRP:N	2.32	0.43
9:NB:8:PRO:HB3	9:NB:51:ARG:HG3	2.00	0.43
35:OC:188:PRO:C	35:OC:190:THR:H	2.22	0.43
35:PC:322:ILE:HB	35:PC:324:LEU:H	1.83	0.43
39:TC:69:VAL:HA	39:TC:70:PRO:HD2	1.87	0.43
47:BD:80:ARG:HD2	53:HD:65:ASN:HB3	1.98	0.43
47:BD:88:ARG:HA	47:BD:98:VAL:HG13	1.99	0.43
51:FD:58:GLU:CD	51:FD:75:ARG:HD2	2.38	0.43
1:A:4:U:H4'	1:A:5:U:OP2	2.19	0.43
1:A:10:A:OP2	39:OA:126:ARG:HD3	2.19	0.43
1:A:298:A:C6	1:A:299:G:C2	3.06	0.43
1:A:587:G:H4'	42:RA:3:THR:HA	2.00	0.43
1:A:707:C:H2'	1:A:708:C:C6	2.52	0.43
1:A:986:A:H1'	1:A:1220:G:N2	2.33	0.43
2:B:30:G:OP2	18:R:5:LYS:HE3	2.18	0.43
2:B:443:A:N7	7:G:45:ARG:HG2	2.34	0.43
2:B:540:G:H2'	2:B:541:C:C6	2.52	0.43
2:B:595:C:N4	2:B:662:G:H1	2.13	0.43
2:B:618(A):G:H5'	7:G:205:ARG:NH1	2.33	0.43
2:B:732:C:H2'	2:B:733:G:O4'	2.18	0.43
2:B:848:G:C4	2:B:933:A:H8	2.36	0.43
2:B:1061:U:OP2	2:B:1062:G:OP2	2.36	0.43
2:B:1093:G:H22	2:B:1096:A:C5'	2.30	0.43
2:B:1540:G:H5"	2:B:1541:U:OP2	2.18	0.43
2:B:1952:A:N6	2:B:1953:A:N1	2.67	0.43
2:B:2009:G:OP1	20:T:41:LYS:HE2	2.18	0.43
2:B:2408:U:O5'	2:B:2408:U:H6	2.01	0.43
4:D:26:G:H2'	4:D:27:U:C6	2.53	0.43
18:R:90:VAL:HG22	19:S:38:LEU:HD22	2.01	0.43
21:U:29:TRP:CZ3	21:U:78:LYS:HG3	2.54	0.43
23:W:54:HIS:HB3	23:W:99:TYR:O	2.17	0.43
32:FA:39:LYS:HA	32:FA:42:ARG:NH2	2.33	0.43
4:IA:23:C:H2'	4:IA:24:U:C6	2.51	0.43
36:LA:167:PRO:HG3	36:LA:188:ALA:HB2	2.00	0.43
36:LA:231:GLU:HB2	36:LA:232:PRO:HD3	2.01	0.43
38:NA:60:GLU:HG3	38:NA:198:VAL:HG23	1.99	0.43
46:VA:6:THR:OG1	46:VA:7:ILE:N	2.51	0.43
46:VA:26:ALA:HA	46:VA:64:TYR:CE2	2.54	0.43
51:AB:18:THR:HG21	51:AB:43:LEU:HD13	1.99	0.43
1:FB:250:A:H4'	1:FB:251:G:O5'	2.18	0.43
1:FB:922:G:C6	1:FB:923:A:C6	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:1108:G:H5'	37:RC:176:HIS:ND1	2.33	0.43
1:FB:1129:C:H42	1:FB:1143:G:N2	2.16	0.43
2:GB:118:A:N3	2:GB:178:G:H1'	2.33	0.43
2:GB:154:G:N7	2:GB:154(A):C:O2'	2.51	0.43
2:GB:336:C:O2'	22:AC:35:TYR:OH	2.25	0.43
2:GB:398:G:H2'	2:GB:399:G:C8	2.53	0.43
2:GB:990:A:C6	2:GB:1186:G:H1'	2.54	0.43
2:GB:1045:A:H5"	2:GB:1046:A:C5'	2.44	0.43
2:GB:1520:U:O4	2:GB:1521:G:C2	2.71	0.43
2:GB:2547:U:O2	12:QB:23:ARG:NH2	2.51	0.43
7:LB:66:PRO:HG2	7:LB:70:THR:HG23	2.00	0.43
14:SB:75:THR:HG21	14:SB:87:LYS:NZ	2.32	0.43
15:TB:59:ASP:OD2	15:TB:61:HIS:HB3	2.18	0.43
16:UB:74:ALA:HA	16:UB:110:LEU:HD13	2.00	0.43
18:WB:79:PHE:HE1	18:WB:110:VAL:HA	1.83	0.43
19:XB:1:MET:HA	19:XB:42:GLY:HA3	2.01	0.43
22:AC:20:TYR:CD1	22:AC:42:VAL:HG13	2.53	0.43
24:CC:74:ARG:H	24:CC:74:ARG:HG3	1.65	0.43
28:GC:41:PRO:HA	28:GC:47:GLN:HB2	2.01	0.43
37:RC:35:GLU:CD	37:RC:97:LYS:NZ	2.72	0.43
39:TC:28:PHE:CD2	39:TC:50:GLU:HA	2.52	0.43
39:TC:121:LYS:HZ1	39:TC:122:GLU:H	1.62	0.43
42:WC:54:ASP:O	42:WC:56:LYS:HG2	2.19	0.43
42:WC:116:LYS:HG3	42:WC:129:VAL:HG11	2.00	0.43
52:GD:76:LEU:HB3	52:GD:78:LEU:HD12	2.00	0.43
1:A:24:U:H2'	1:A:25:C:C6	2.53	0.43
1:A:942:G:H21	43:SA:124:GLN:NE2	2.17	0.43
1:A:950:U:OP2	47:WA:102:ARG:HG3	2.18	0.43
1:A:1036:G:H3'	1:A:1037:C:C6	2.54	0.43
1:A:1039:C:H5"	1:A:1040:U:OP2	2.18	0.43
1:A:1440:C:N4	1:A:1461:G:H1	2.12	0.43
2:B:570:G:H2'	2:B:2030:A:C6	2.52	0.43
2:B:778:G:O5'	2:B:778:G:H8	2.01	0.43
2:B:2745:C:C4	2:B:2746:U:C4	3.06	0.43
2:B:2789:C:H5"	2:B:2790:A:OP1	2.18	0.43
7:G:116:ASP:OD2	13:M:1:MET:HB3	2.18	0.43
9:I:27:LYS:HA	9:I:32:GLU:HA	2.00	0.43
11:K:108:PRO:O	11:K:113:GLY:HA3	2.19	0.43
16:P:13:ARG:CG	16:P:13:ARG:NH1	2.73	0.43
17:Q:22:PHE:HA	17:Q:91:ARG:NH2	2.33	0.43
20:T:12:ILE:O	20:T:101:SER:OG	2.36	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:AA:31:LEU:HD13	27:AA:32:GLN:N	2.34	0.43
30:DA:23:THR:HA	32:FA:34:TRP:HD1	1.84	0.43
36:LA:9:GLU:HG3	36:LA:217:ARG:NH2	2.33	0.43
36:LA:93:VAL:HG21	36:LA:101:MET:HE1	2.01	0.43
42:RA:107:LEU:HD23	42:RA:107:LEU:HA	1.82	0.43
43:SA:46:ALA:HB2	43:SA:74:ILE:HG23	2.00	0.43
47:WA:55:ARG:HB3	47:WA:55:ARG:HH11	1.83	0.43
53:CB:65:ASN:O	53:CB:67:VAL:N	2.51	0.43
1:FB:108:G:N1	54:ID:15:ARG:HG2	2.34	0.43
1:FB:232:G:H1'	1:FB:262:A:N1	2.33	0.43
1:FB:1195:C:C4	1:FB:1197:G:C8	3.06	0.43
1:FB:1324:A:OP2	1:FB:1324:A:H8	2.01	0.43
1:FB:1346:A:H61	1:FB:1374:A:H3'	1.84	0.43
2:GB:826:U:H2'	2:GB:828:U:O4'	2.18	0.43
2:GB:885:C:C5	2:GB:886:C:H1'	2.53	0.43
2:GB:918:A:N3	3:HB:80:U:O2'	2.48	0.43
2:GB:957:A:H5'	14:SB:76:LYS:HD3	2.01	0.43
2:GB:1166:C:N4	2:GB:1167:U:O4	2.51	0.43
2:GB:1167:U:C2	2:GB:1183:G:N2	2.87	0.43
2:GB:1530:G:O6	2:GB:1542:G:N2	2.52	0.43
2:GB:1717:G:H1	2:GB:1742:C:H42	1.67	0.43
2:GB:2271:G:H2'	2:GB:2272:U:C6	2.54	0.43
2:GB:2322:A:H2'	2:GB:2323:G:O4'	2.18	0.43
2:GB:2351:G:O6	32:KC:39:LYS:HG3	2.18	0.43
2:GB:2735:G:H2'	2:GB:2736:G:H8	1.83	0.43
5:JB:111:LEU:HA	5:JB:111:LEU:HD12	1.82	0.43
7:LB:40:GLN:HA	7:LB:43:LYS:HG2	2.01	0.43
32:KC:61:LEU:C	32:KC:63:PRO:HD3	2.39	0.43
4:NC:74:C:H5"	4:NC:75:C:OP2	2.19	0.43
38:SC:108:LEU:HD23	38:SC:108:LEU:HA	1.84	0.43
39:TC:17:ALA:HA	39:TC:26:PHE:HA	2.00	0.43
40:UC:11:ASN:N	40:UC:84:ASN:O	2.51	0.43
41:VC:69:VAL:HG22	41:VC:135:VAL:HG22	1.99	0.43
43:XC:13:ALA:HA	43:XC:67:GLY:HA3	2.01	0.43
45:ZC:40:ILE:HD13	45:ZC:40:ILE:HA	1.89	0.43
46:AD:77:LEU:HD23	46:AD:77:LEU:HA	1.70	0.43
46:AD:115:LYS:N	46:AD:117:ARG:HG2	2.33	0.43
54:ID:13:LEU:H	54:ID:13:LEU:HG	1.55	0.43
54:ID:84:LEU:O	54:ID:88:VAL:HB	2.19	0.43
1:A:124:G:H4'	1:A:291:C:O2'	2.19	0.43
1:A:778:G:H8	1:A:778:G:O5'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1207:2MG:H2'	1:A:1208:C:H6	1.84	0.43
2:B:270(A):A:OP2	2:B:270(Z):G:N1	2.49	0.43
2:B:479:A:N3	2:B:481:G:H5"	2.33	0.43
2:B:530:G:C6	2:B:2022:U:OP1	2.71	0.43
2:B:1006:C:C2	2:B:1138:G:N2	2.86	0.43
2:B:1007:C:OP1	11:K:35:ARG:NH1	2.51	0.43
2:B:2297:C:H42	2:B:2321:G:H1	1.66	0.43
7:G:160:ASN:OD1	7:G:163:VAL:HB	2.19	0.43
9:I:23:ARG:HB2	9:I:34:GLU:OE2	2.19	0.43
10:J:39:ALA:HB1	10:J:44:LEU:HD13	1.99	0.43
11:K:9:VAL:HG11	11:K:39:ARG:NH2	2.33	0.43
13:M:49:ARG:CB	32:FA:61:LEU:HD21	2.49	0.43
13:M:81:GLN:HG3	13:M:110:TYR:CD2	2.54	0.43
20:T:68:ARG:HG2	20:T:68:ARG:HH11	1.83	0.43
21:U:24:GLY:O	21:U:83:VAL:HG22	2.18	0.43
23:W:70:LEU:HD22	23:W:70:LEU:HA	1.80	0.43
24:X:31:VAL:HG23	24:X:32:ARG:O	2.18	0.43
25:Y:95:LEU:HD13	25:Y:95:LEU:HA	1.76	0.43
37:MA:23:TYR:CZ	44:TA:9:ARG:HG3	2.54	0.43
37:MA:131:ARG:HH11	37:MA:135:LYS:HD2	1.83	0.43
45:UA:85:ARG:HA	45:UA:112:THR:OG1	2.19	0.43
47:WA:101:GLN:HE21	47:WA:101:GLN:HB2	1.48	0.43
49:YA:74:ASP:OD2	49:YA:77:ARG:HD3	2.18	0.43
53:CB:51:VAL:O	53:CB:57:HIS:HA	2.19	0.43
54:DB:30:LYS:HB2	54:DB:30:LYS:HZ2	1.83	0.43
1:FB:353:A:H2'	1:FB:354:G:OP2	2.18	0.43
1:FB:443:C:H2'	1:FB:444:C:C6	2.53	0.43
1:FB:663:A:O3'	52:GD:64:ARG:NH2	2.49	0.43
1:FB:998(A):G:H22	1:FB:1043:C:N4	2.17	0.43
1:FB:1268:A:H4'	55:JD:20:LYS:HB2	2.00	0.43
1:FB:1493:A:C4	35:OC:119:THR:HG23	2.53	0.43
2:GB:64:A:C4	21:ZB:66:LEU:HD13	2.54	0.43
2:GB:330:A:O2'	2:GB:331:A:H8	2.01	0.43
2:GB:724:U:H2'	2:GB:725:G:O4'	2.18	0.43
2:GB:863:A:C8	14:SB:22:LYS:NZ	2.78	0.43
2:GB:1553:A:N7	2:GB:1555:G:C5	2.87	0.43
2:GB:1796:U:H2'	2:GB:1797:C:C6	2.53	0.43
2:GB:1851:U:H2'	2:GB:1852:C:O4'	2.19	0.43
2:GB:2275:C:O2	14:SB:85:LYS:HG3	2.18	0.43
3:HB:70:C:H2'	3:HB:71:C:C6	2.54	0.43
4:IB:51:C:H2'	4:IB:52:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LB:158:THR:HA	7:LB:195:ASP:HB2	2.00	0.43
8:MB:21:ARG:HG3	8:MB:22:ARG:N	2.32	0.43
10:OB:109:ILE:HB	10:OB:130:TYR:CE1	2.54	0.43
13:RB:81:GLN:OE1	13:RB:106:LEU:HA	2.18	0.43
17:VB:100:TYR:CD1	17:VB:103:ARG:NH1	2.86	0.43
35:PC:328:ARG:NH2	35:PC:331:GLU:O	2.52	0.43
38:SC:36:ARG:HD2	38:SC:38:TYR:OH	2.19	0.43
39:TC:80:ILE:HD12	39:TC:91:LEU:HB2	2.00	0.43
39:TC:152:ARG:NH1	42:WC:42:GLU:O	2.47	0.43
46:AD:6:THR:OG1	46:AD:7:ILE:N	2.51	0.43
46:AD:27:LEU:HD22	46:AD:98:TYR:HE1	1.82	0.43
54:ID:82:SER:C	54:ID:86:ARG:HG3	2.39	0.43
1:A:428:G:O4'	1:A:430:A:C8	2.72	0.43
1:A:977:A:O2'	1:A:979:C:OP2	2.24	0.43
2:B:141(B):C:H2'	2:B:142:G:O4'	2.19	0.43
2:B:375:C:H42	2:B:399:G:H1	1.65	0.43
2:B:1021:A:H8	2:B:1021:A:H3'	1.84	0.43
2:B:1258:C:C2	2:B:1259:G:C8	3.07	0.43
2:B:1550:C:OP1	2:B:1727:U:O2'	2.32	0.43
2:B:1937:A:C8	2:B:1939:5MU:H2'	2.53	0.43
2:B:2070:G:H2'	2:B:2071:A:O4'	2.18	0.43
2:B:2783:G:H21	6:F:37:ARG:HH22	1.66	0.43
2:B:2813:A:H2'	2:B:2814:C:O4'	2.18	0.43
4:D:51:C:H2'	4:D:52:G:C8	2.54	0.43
5:E:30:GLU:CB	5:E:33:LEU:HD12	2.49	0.43
6:F:12:THR:HB	17:Q:58:ASN:HD21	1.83	0.43
7:G:114:VAL:HG21	7:G:202:PHE:CZ	2.53	0.43
8:H:73:ALA:HB3	8:H:85:GLY:H	1.84	0.43
8:H:82:LEU:HD13	8:H:86:MET:HB2	2.00	0.43
14:N:73:PRO:HG3	14:N:93:TYR:HE1	1.82	0.43
15:O:58:GLY:HA2	15:O:80:PHE:CD2	2.54	0.43
18:R:58:ARG:CG	18:R:58:ARG:NH1	2.79	0.43
36:LA:121:LEU:HD21	36:LA:130:ARG:HH21	1.84	0.43
37:MA:15:THR:HG23	37:MA:207:VAL:HG11	2.00	0.43
44:TA:25:GLU:O	44:TA:29:ARG:HG3	2.18	0.43
1:FB:277:C:O2'	1:FB:278:G:H5'	2.17	0.43
1:FB:589:C:OP1	42:WC:5:PRO:HG3	2.18	0.43
1:FB:741:G:H2'	1:FB:742:G:H8	1.84	0.43
2:GB:777:A:C2	2:GB:778:G:C4	3.07	0.43
2:GB:1270:C:H5"	2:GB:1271:G:O5'	2.19	0.43
2:GB:2035:G:H3'	2:GB:2036:C:H5'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2129:C:H2'	2:GB:2130:U:H4'	2.01	0.43
2:GB:2512:C:H5"	2:GB:2513:G:OP2	2.18	0.43
2:GB:2526:G:H1	2:GB:2537:U:H3	1.67	0.43
3:HB:30:C:OP2	16:UB:32:LEU:HD11	2.17	0.43
6:KB:70:ALA:HB3	6:KB:72:VAL:HG12	2.00	0.43
8:MB:11:TYR:HB2	8:MB:176:LEU:HD21	2.00	0.43
8:MB:18:GLU:O	8:MB:21:ARG:HB3	2.18	0.43
9:NB:52:VAL:C	9:NB:53:GLU:HG2	2.39	0.43
9:NB:55:PRO:HG2	9:NB:61:HIS:NE2	2.33	0.43
10:OB:9:LEU:O	10:OB:12:LEU:HB3	2.18	0.43
20:YB:57:ASN:O	20:YB:61:ASN:HB2	2.18	0.43
21:ZB:40:LYS:HG3	21:ZB:51:VAL:CG2	2.49	0.43
23:BC:25:PRO:O	23:BC:85:HIS:HA	2.18	0.43
23:BC:65:GLN:O	23:BC:67:LEU:HD22	2.19	0.43
31:JC:12:ARG:HG3	31:JC:12:ARG:HH11	1.84	0.43
4:NC:49:G:H2'	4:NC:50:U:O4'	2.18	0.43
36:QC:74:LYS:NZ	36:QC:76:GLN:OE1	2.41	0.43
38:SC:61:LYS:HA	38:SC:203:VAL:HG22	2.00	0.43
45:ZC:108:ILE:HG13	52:GD:87:ARG:HB3	2.00	0.43
47:BD:81:LEU:O	47:BD:89:GLY:HA3	2.19	0.43
1:A:391:G:H5"	50:ZA:8:ARG:NE	2.33	0.43
1:A:1083:U:H5"	1:A:1084:G:OP2	2.18	0.43
1:A:1220:G:H21	53:CB:54:GLY:CA	2.32	0.43
1:A:1284:C:H3'	1:A:1285:A:C8	2.53	0.43
1:A:1508:G:H2'	1:A:1509:C:H6	1.83	0.43
1:A:1516:G:H2'	1:A:1518:MA6:OP2	2.19	0.43
2:B:33:U:O2'	2:B:446:G:N2	2.52	0.43
2:B:330:A:H2	2:B:1210:A:HO2'	1.63	0.43
2:B:409:C:O2'	2:B:410:G:H5'	2.19	0.43
2:B:784:A:C5	5:E:229:VAL:HG21	2.54	0.43
2:B:871:U:H2'	2:B:872:A:C8	2.54	0.43
2:B:1883:G:HO2'	2:B:1884:A:H8	1.67	0.43
2:B:2082:A:H2'	2:B:2083:G:O4'	2.19	0.43
2:B:2251:OMG:H2'	2:B:2252:G:C8	2.54	0.43
2:B:2401:U:C2'	2:B:2402:C:H5'	2.47	0.43
3:C:40:U:H2'	28:BA:2:LYS:HE2	1.99	0.43
4:D:8:4SU:O2	4:D:48:C:O2	2.36	0.43
4:D:51:C:N4	4:D:52:G:O6	2.52	0.43
6:F:63:LEU:O	6:F:67:PHE:HD2	2.02	0.43
10:J:76:THR:HG23	10:J:141:LYS:HB2	2.01	0.43
10:J:104:GLN:HG2	10:J:105:HIS:HE1	1.78	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:22:ILE:HG12	12:L:41:ALA:HA	1.99	0.43
17:Q:30:VAL:O	17:Q:44:ASP:HA	2.19	0.43
23:W:94:GLU:O	23:W:129:SER:HA	2.19	0.43
29:CA:41:PRO:HA	29:CA:42:PRO:HD2	1.69	0.43
29:CA:42:PRO:O	29:CA:44:THR:HG23	2.19	0.43
4:IA:49:G:N2	4:IA:66:C:N3	2.66	0.43
37:MA:110:ASN:O	37:MA:141:VAL:HG22	2.19	0.43
39:OA:139:LEU:O	39:OA:142:LEU:HB2	2.19	0.43
48:XA:4:LYS:HZ3	48:XA:7:ILE:HG13	1.83	0.43
51:AB:84:LEU:O	51:AB:87:LYS:HG3	2.18	0.43
1:FB:162:A:C5	1:FB:163:C:H1'	2.54	0.43
1:FB:177:C:P	54:ID:65:LYS:NZ	2.92	0.43
1:FB:575:G:C6	1:FB:821:G:N7	2.87	0.43
1:FB:926:G:C6	1:FB:1505:G:C6	3.07	0.43
2:GB:252:G:OP1	13:RB:50:ARG:NH1	2.51	0.43
2:GB:270(P):U:H3	10:OB:56:LYS:HE3	1.83	0.43
2:GB:1012:U:C5	11:PB:28:THR:HG21	2.54	0.43
2:GB:1161:C:H1'	19:XB:8:GLY:O	2.18	0.43
2:GB:1341:U:O2	21:ZB:80:ILE:HD12	2.19	0.43
2:GB:1582:C:H2'	2:GB:1583:A:C8	2.54	0.43
2:GB:1657:C:O2'	2:GB:1658:C:H5'	2.18	0.43
2:GB:1855:G:H8	2:GB:1855:G:O5'	2.02	0.43
2:GB:1914:C:OP2	2:GB:1914:C:H6	2.01	0.43
2:GB:2052:G:C8	6:KB:141:ILE:HD11	2.54	0.43
2:GB:2391:G:O6	2:GB:2425:A:H8	2.02	0.43
2:GB:2392:A:OP2	32:KC:31:HIS:NE2	2.51	0.43
3:HB:48:A:H4'	16:UB:95:HIS:CD2	2.54	0.43
5:JB:52:ARG:CZ	5:JB:53:PHE:HE2	2.31	0.43
5:JB:183:ARG:CG	5:JB:183:ARG:NH1	2.79	0.43
6:KB:36:ARG:HH11	6:KB:85:ASN:CG	2.20	0.43
7:LB:36:VAL:O	7:LB:40:GLN:HG3	2.19	0.43
7:LB:102:PRO:HB2	7:LB:105:VAL:HG23	2.01	0.43
7:LB:160:ASN:HD21	7:LB:163:VAL:HG23	1.84	0.43
9:NB:148:ILE:HG23	9:NB:151:ILE:HD12	2.01	0.43
12:QB:70:LYS:HE2	12:QB:70:LYS:HB3	1.73	0.43
17:VB:23:ARG:NH2	17:VB:120:ARG:HD3	2.34	0.43
18:WB:74:LEU:CD2	18:WB:79:PHE:HB2	2.48	0.43
18:WB:82:GLY:HA3	18:WB:113:ALA:HB1	2.00	0.43
36:QC:81:VAL:HA	36:QC:215:LEU:HD11	2.01	0.43
36:QC:189:ASP:O	36:QC:192:SER:OG	2.23	0.43
37:RC:139:GLN:O	37:RC:141:VAL:N	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:SC:162:LEU:HD13	38:SC:162:LEU:HA	1.76	0.43
39:TC:10:MET:HA	39:TC:32:VAL:HG22	2.01	0.43
42:WC:107:LEU:HD23	42:WC:107:LEU:HA	1.84	0.43
1:A:882:C:O2'	1:A:883:C:H5'	2.19	0.43
1:A:908:A:H2'	1:A:909:A:C8	2.54	0.43
1:A:1029:G:C1'	1:A:1032(C):G:H1	2.32	0.43
1:A:1153:C:H2'	1:A:1154:G:O4'	2.19	0.43
1:A:1434:A:H61	1:A:1467:G:H1'	1.83	0.43
2:B:227:A:C2	2:B:2407:G:H1'	2.54	0.43
2:B:476:G:N2	2:B:478:A:H2'	2.34	0.43
2:B:768:G:C6	2:B:769:G:C5	3.07	0.43
2:B:829:A:N7	2:B:2247:A:O2'	2.42	0.43
2:B:1162:G:O3'	19:S:24:LYS:HE3	2.18	0.43
2:B:1186:G:H2'	2:B:1187:G:O4'	2.18	0.43
2:B:1445:C:H2'	2:B:1446:C:C6	2.54	0.43
2:B:1835:G:N3	2:B:1835:G:H2'	2.34	0.43
2:B:1882:C:H2'	2:B:1883:G:O4'	2.19	0.43
2:B:2030:A:H4'	2:B:2031:A:H8	1.84	0.43
2:B:2309:A:N6	2:B:2310:A:N1	2.66	0.43
5:E:112:GLN:O	5:E:115:GLN:HB3	2.19	0.43
6:F:31:CYS:HB2	6:F:91:VAL:CG2	2.47	0.43
6:F:147:PRO:HB2	6:F:149:ARG:HG3	2.01	0.43
7:G:19:GLU:OE2	7:G:19:GLU:HA	2.17	0.43
7:G:74:ARG:H	7:G:74:ARG:HG3	1.63	0.43
8:H:131:TYR:CG	8:H:132:ASN:N	2.87	0.43
12:L:97:ARG:HE	12:L:97:ARG:HB2	1.72	0.43
20:T:69:LEU:HA	20:T:108:GLY:O	2.19	0.43
21:U:5:TYR:CE2	26:Z:30:ARG:HB2	2.54	0.43
23:W:165:VAL:HB	23:W:166:SER:H	1.61	0.43
35:JA:143:ARG:HH21	35:JA:144:TRP:HE1	1.66	0.43
36:LA:83:MET:HG2	36:LA:234:PRO:HB2	2.01	0.43
38:NA:52:SER:O	38:NA:56:VAL:HG23	2.18	0.43
39:OA:7:GLU:N	39:OA:35:GLY:O	2.41	0.43
41:QA:15:ASP:OD2	41:QA:18:TYR:N	2.33	0.43
41:QA:46:ALA:HB2	41:QA:117:ALA:HB1	2.01	0.43
45:UA:62:GLN:HB2	45:UA:93:GLN:HG3	2.01	0.43
46:VA:79:GLU:O	46:VA:80:HIS:HB2	2.18	0.43
54:DB:80:ARG:O	54:DB:84:LEU:HB2	2.19	0.43
1:FB:598:U:H2'	1:FB:599:C:H6	1.84	0.43
1:FB:1103:C:H2'	1:FB:1104:G:O4'	2.19	0.43
1:FB:1151:A:C2	44:YC:39:PRO:HG3	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:422:A:H2'	2:GB:423:A:C8	2.54	0.43
2:GB:861:A:N3	3:HB:79:C:O2'	2.50	0.43
2:GB:1019:U:H2'	2:GB:1020:A:C8	2.53	0.43
2:GB:1206:G:C6	2:GB:1207:C:C4	3.07	0.43
2:GB:1295:C:O4'	15:TB:23:ASN:ND2	2.42	0.43
2:GB:1356:G:H2'	2:GB:1357:U:O4'	2.19	0.43
2:GB:1444:G:N2	2:GB:1548:C:C2	2.87	0.43
2:GB:1924:C:H2'	2:GB:1925:C:C6	2.54	0.43
2:GB:2186:G:C2'	2:GB:2187:G:H5'	2.49	0.43
2:GB:2623:G:OP1	2:GB:2826:A:O2'	2.19	0.43
2:GB:2711:A:OP1	2:GB:2712(A):A:OP1	2.36	0.43
2:GB:2877:G:H2'	2:GB:2878:U:O4'	2.19	0.43
5:JB:116:GLN:HG2	5:JB:117:VAL:N	2.34	0.43
7:LB:60:SER:OG	7:LB:61:GLY:N	2.51	0.43
7:LB:64:ILE:HD13	7:LB:65:TRP:CD2	2.54	0.43
7:LB:144:LYS:NZ	7:LB:144:LYS:CB	2.82	0.43
10:OB:60:GLU:OE1	10:OB:64:GLU:HB3	2.18	0.43
14:SB:134:ARG:HE	14:SB:134:ARG:HB3	1.70	0.43
16:UB:6:ALA:HA	16:UB:9:ARG:NH1	2.34	0.43
20:YB:68:ARG:HG2	20:YB:68:ARG:HH11	1.84	0.43
30:IC:22:ALA:HB1	32:KC:34:TRP:HA	2.01	0.43
35:PC:322:ILE:HD12	35:PC:324:LEU:HD22	2.01	0.43
36:QC:33:TYR:N	36:QC:41:ILE:O	2.42	0.43
36:QC:61:LEU:HD12	36:QC:64:ARG:HB2	2.00	0.43
38:SC:187:ARG:HB2	38:SC:188:LEU:HD22	2.00	0.43
43:XC:31:GLN:HA	43:XC:35:GLU:OE1	2.19	0.43
45:ZC:52:GLY:O	45:ZC:55:LYS:HG2	2.19	0.43
49:DD:62:GLN:HA	49:DD:62:GLN:HE21	1.83	0.43
1:A:147:G:H1	1:A:175:C:N4	2.05	0.43
1:A:185:A:H1'	54:DB:81:LYS:HZ1	1.84	0.43
1:A:345:C:H5'	1:A:346:G:C5	2.54	0.43
1:A:468:A:H4'	50:ZA:80:PHE:O	2.19	0.43
1:A:538:G:H2'	1:A:539:A:H8	1.84	0.43
1:A:781:A:O2'	1:A:1522:U:O2	2.36	0.43
1:A:1123:A:O2'	1:A:1124:G:H5'	2.18	0.43
1:A:1171:G:O2'	1:A:1172:C:H5'	2.18	0.43
1:A:1453:G:N3	54:DB:39:LYS:HE2	2.34	0.43
2:B:44:A:O2'	2:B:45:G:H5'	2.19	0.43
2:B:1027:A:C2	2:B:2488:A:H5'	2.53	0.43
2:B:1641:A:H3'	2:B:1642:G:C8	2.54	0.43
2:B:1785:A:H4'	2:B:1982:C:O2'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2151:G:N2	2:B:2152:G:O6	2.45	0.43
2:B:2682:U:O2'	6:F:13:ARG:HG3	2.19	0.43
6:F:57:LYS:HE2	6:F:57:LYS:HB2	1.87	0.43
8:H:23:PHE:CZ	8:H:168:GLU:HA	2.54	0.43
12:L:13:ASN:ND2	12:L:97:ARG:O	2.52	0.43
13:M:52:GLU:HG3	13:M:57:THR:HA	2.01	0.43
21:U:31:HIS:HA	21:U:32:PRO:HD3	1.85	0.43
28:BA:50:VAL:HG13	47:WA:65:LYS:HE3	2.01	0.43
31:EA:25:PRO:HA	31:EA:28:ARG:CZ	2.49	0.43
36:LA:101:MET:HG2	36:LA:152:PHE:HE1	1.84	0.43
37:MA:40:ARG:O	37:MA:44:GLU:HG2	2.18	0.43
38:NA:60:GLU:O	38:NA:63:LYS:HB2	2.19	0.43
39:OA:40:ARG:HD3	39:OA:40:ARG:HA	1.88	0.43
43:SA:83:ARG:HD3	43:SA:102:LEU:HD21	2.01	0.43
47:WA:3:ARG:HB2	47:WA:8:GLU:HA	2.01	0.43
53:CB:11:VAL:HB	53:CB:12:ASP:H	1.59	0.43
1:FB:87:A:H5"	1:FB:88:C:N1	2.34	0.43
1:FB:109:A:H5'	1:FB:110:C:C5	2.53	0.43
1:FB:1052:U:O2'	1:FB:1055:A:OP2	2.21	0.43
1:FB:1358:U:OP1	48:CD:35:ARG:HG2	2.19	0.43
1:FB:1435:G:H2'	1:FB:1436:U:C6	2.54	0.43
1:FB:1511:G:H8	1:FB:1511:G:O5'	2.02	0.43
2:GB:30:G:OP2	18:WB:5:LYS:HE3	2.19	0.43
2:GB:164:U:H3'	2:GB:165:U:O2	2.19	0.43
2:GB:540:G:H2'	2:GB:541:C:C6	2.54	0.43
2:GB:640:C:H2'	2:GB:641:C:C6	2.54	0.43
2:GB:657:U:H2'	2:GB:658:C:H6	1.82	0.43
2:GB:797:C:P	7:LB:62:ARG:HG3	2.58	0.43
2:GB:1503:U:H2'	2:GB:1504:C:C6	2.54	0.43
2:GB:1782:C:OP1	2:GB:1783:A:OP2	2.37	0.43
2:GB:2208:U:H4'	5:JB:151:LYS:HG2	2.00	0.43
2:GB:2306:C:H2'	2:GB:2307:G:C8	2.53	0.43
2:GB:2467:C:H2'	2:GB:2468:G:O4'	2.19	0.43
2:GB:2646:C:OP2	2:GB:2732:G:O2'	2.30	0.43
2:GB:2681:C:OP2	6:KB:109:LYS:NZ	2.39	0.43
2:GB:2813:A:H2'	2:GB:2814:C:O4'	2.19	0.43
6:KB:112:GLY:O	6:KB:159:HIS:HA	2.18	0.43
20:YB:18:ARG:HG2	20:YB:76:VAL:HB	2.00	0.43
22:AC:90:LEU:HD13	22:AC:90:LEU:HA	1.73	0.43
24:CC:42:GLY:O	24:CC:44:ARG:N	2.51	0.43
25:DC:16:ASN:HA	25:DC:38:SER:O	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:RC:131:ARG:HH11	37:RC:135:LYS:HD2	1.81	0.43
38:SC:5:ILE:HB	38:SC:6:GLY:H	1.64	0.43
47:BD:31:LYS:HD2	47:BD:31:LYS:N	2.34	0.43
51:FD:26:GLN:HG2	51:FD:37:LYS:HG2	2.01	0.43
53:HD:39:THR:HG23	53:HD:69:HIS:O	2.18	0.43
1:A:353:A:H2'	1:A:354:G:OP2	2.19	0.42
1:A:386:C:C2'	1:A:387:U:H5'	2.48	0.42
1:A:465:A:O2'	1:A:466:G:H5'	2.18	0.42
1:A:591:U:H2'	1:A:592:G:C8	2.54	0.42
1:A:682:G:C2	1:A:709:G:C6	3.07	0.42
1:A:1032(C):G:H8	1:A:1033:G:C4	2.37	0.42
1:A:1441:G:O2'	1:A:1460:A:N6	2.50	0.42
2:B:40:C:H2'	2:B:41:C:C6	2.54	0.42
2:B:394:A:C6	2:B:395:U:N3	2.87	0.42
2:B:496:G:C6	2:B:497:A:C4	3.07	0.42
2:B:660:G:C6	2:B:661:C:C4	3.07	0.42
2:B:1493:C:C5	2:B:2210:G:C4	3.07	0.42
2:B:1963:U:H6	2:B:1963:U:H2'	1.61	0.42
2:B:2466:C:H5"	33:GA:6:SER:HB3	2.02	0.42
2:B:2836:U:H2'	2:B:2837:G:H8	1.84	0.42
5:E:30:GLU:HB3	5:E:33:LEU:HD12	2.01	0.42
5:E:231:HIS:CG	5:E:232:PRO:HD2	2.54	0.42
7:G:60:SER:OG	7:G:61:GLY:N	2.51	0.42
18:R:69:CYS:HB3	18:R:74:LEU:HD22	2.01	0.42
18:R:88:ILE:HG22	18:R:90:VAL:HG23	2.01	0.42
23:W:93:ASP:CB	23:W:131:ARG:HH12	2.32	0.42
23:W:132:ASN:O	23:W:134:PRO:HD3	2.19	0.42
35:JA:188:PRO:C	35:JA:190:THR:H	2.23	0.42
36:LA:23:ARG:HB2	36:LA:23:ARG:CZ	2.49	0.42
38:NA:121:VAL:O	38:NA:134:ASP:HA	2.19	0.42
40:PA:94:GLN:HG3	52:BB:32:ARG:HD3	2.01	0.42
42:RA:102:ARG:H	42:RA:102:ARG:HG3	1.51	0.42
47:WA:96:LEU:O	47:WA:98:VAL:N	2.52	0.42
1:FB:14:U:O2'	1:FB:16:A:N7	2.33	0.42
1:FB:313:A:H2'	1:FB:314:C:C6	2.54	0.42
1:FB:1329:A:O2'	1:FB:1330:U:H5'	2.19	0.42
1:FB:1498:UR3:H2'	34:MC:17:U:OP1	2.19	0.42
2:GB:125:G:H4'	2:GB:126:A:OP2	2.18	0.42
2:GB:361:G:C2	2:GB:362:U:C5	3.07	0.42
2:GB:658:C:H2'	2:GB:659:C:C6	2.54	0.42
2:GB:993:G:OP2	18:WB:51:LYS:NZ	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1051:G:H2'	2:GB:1052:C:C6	2.54	0.42
2:GB:1186:G:H2'	2:GB:1187:G:O4'	2.19	0.42
2:GB:1264:G:H8	2:GB:1264:G:O5'	2.03	0.42
2:GB:1451:C:N4	2:GB:1459:G:H1	2.15	0.42
2:GB:1982:C:O2	2:GB:1982:C:H2'	2.19	0.42
2:GB:2516:G:C6	2:GB:2517:C:C4	3.07	0.42
2:GB:2716:U:H2'	2:GB:2717:G:C8	2.54	0.42
3:HB:75:G:H21	23:BC:85:HIS:CE1	2.35	0.42
5:JB:159:ALA:HB1	5:JB:198:ASN:O	2.19	0.42
7:LB:202:PHE:O	7:LB:206:ILE:HG13	2.19	0.42
14:SB:82:ARG:NE	24:CC:3:HIS:HB3	2.34	0.42
15:TB:99:LYS:HB2	15:TB:99:LYS:HZ3	1.83	0.42
17:VB:33:LYS:HB2	17:VB:82:LEU:HD23	1.99	0.42
27:FC:41:PRO:HA	27:FC:44:ARG:NH1	2.32	0.42
29:HC:48:GLU:O	29:HC:60:VAL:HG21	2.19	0.42
37:RC:11:ARG:HD3	37:RC:15:THR:HB	2.01	0.42
43:XC:83:ARG:HD3	43:XC:102:LEU:HD21	2.01	0.42
46:AD:32:PHE:HE1	46:AD:86:ARG:HG2	1.84	0.42
47:BD:4:ILE:HG21	47:BD:57:ARG:HG2	2.01	0.42
48:CD:37:PHE:HB2	48:CD:39:LEU:HB2	2.00	0.42
1:A:439:A:OP2	1:A:493:G:N1	2.49	0.42
1:A:663:A:O3'	52:BB:64:ARG:NH2	2.46	0.42
1:A:692:U:O2	1:A:694:A:C8	2.72	0.42
1:A:1277:C:H1'	1:A:1282:C:O2	2.19	0.42
1:A:1476:G:H2'	1:A:1477:C:O4'	2.19	0.42
1:A:1521:G:H2'	1:A:1522:U:O4'	2.19	0.42
2:B:189:G:O2'	2:B:207:A:N6	2.50	0.42
2:B:432:A:H2'	2:B:433:C:C6	2.54	0.42
2:B:445:C:OP1	18:R:2:PRO:HA	2.19	0.42
2:B:601:C:OP1	7:G:108:LYS:HE2	2.19	0.42
2:B:643:A:H1'	30:DA:44:ARG:NH1	2.34	0.42
2:B:811:U:C2	2:B:1251:C:C5	3.08	0.42
2:B:947:G:N2	2:B:971:C:C2	2.87	0.42
2:B:990:A:C6	2:B:1186:G:H1'	2.54	0.42
2:B:993:G:OP2	18:R:51:LYS:NZ	2.52	0.42
2:B:1108:U:C4	2:B:1109:C:C4	3.07	0.42
2:B:1176:G:C8	2:B:1177:A:C8	3.07	0.42
2:B:1339:G:H5"	21:U:16:LYS:HD3	2.02	0.42
2:B:2210:G:H3'	2:B:2211:G:H8	1.80	0.42
2:B:2365:G:O6	32:FA:39:LYS:HE3	2.19	0.42
2:B:2544:G:H2'	2:B:2545:G:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:16:SER:HB2	9:I:27:LYS:HG2	2.00	0.42
10:J:91:SER:O	10:J:93:THR:N	2.51	0.42
14:N:55:VAL:HG22	23:W:178:GLU:HB3	2.01	0.42
16:P:51:ALA:H	16:P:73:LEU:HD13	1.84	0.42
17:Q:93:ARG:HB3	17:Q:93:ARG:HH11	1.83	0.42
17:Q:96:ARG:HG3	17:Q:101:PHE:HE2	1.84	0.42
36:LA:130:ARG:HA	36:LA:131:PRO:HD3	1.88	0.42
37:MA:59:ARG:HG2	37:MA:64:VAL:HB	2.01	0.42
37:MA:128:PHE:HD1	37:MA:128:PHE:HA	1.76	0.42
38:NA:155:LEU:HD12	38:NA:155:LEU:HA	1.86	0.42
42:RA:63:LEU:HB3	42:RA:65:TYR:CE2	2.54	0.42
1:FB:255:G:P	51:FD:69:LYS:NZ	2.93	0.42
1:FB:517:G:N2	1:FB:533:A:OP2	2.43	0.42
1:FB:1170:A:OP2	1:FB:1170:A:H8	2.01	0.42
1:FB:1376:U:H2'	1:FB:1377:A:H8	1.79	0.42
1:FB:1382:C:H2'	1:FB:1383:C:C6	2.54	0.42
2:GB:227:A:C2	2:GB:2407:G:H1'	2.55	0.42
2:GB:492:A:H2'	2:GB:493:G:O4'	2.18	0.42
2:GB:510:C:OP1	2:GB:511:U:OP2	2.36	0.42
2:GB:595:C:N4	2:GB:662:G:H1	2.15	0.42
2:GB:827:U:H2'	2:GB:2068:U:C2	2.55	0.42
2:GB:985:C:H2'	2:GB:986:C:C6	2.54	0.42
2:GB:1173:G:H8	2:GB:1173:G:O5'	2.02	0.42
2:GB:2682:U:O2'	17:VB:58:ASN:OD1	2.37	0.42
2:GB:2843:G:H1	2:GB:2874:C:H42	1.66	0.42
10:OB:124:GLY:O	10:OB:143:SER:HA	2.19	0.42
24:CC:4:LYS:N	4:NC:74:C:H41	2.17	0.42
24:CC:46:LYS:HB3	24:CC:78:TYR:CD1	2.54	0.42
26:EC:9:GLN:NE2	26:EC:56:GLN:HG3	2.34	0.42
29:HC:51:TYR:CE1	29:HC:56:LYS:HB2	2.54	0.42
39:TC:64:ARG:HH11	39:TC:64:ARG:HG3	1.83	0.42
45:ZC:34:ASP:OD1	45:ZC:38:ASN:HB2	2.18	0.42
45:ZC:58:PRO:HA	45:ZC:90:GLY:HA3	2.01	0.42
49:DD:4:THR:HG23	49:DD:7:GLU:CD	2.39	0.42
1:A:626:U:H5"	50:ZA:38:TYR:CD2	2.54	0.42
1:A:718:G:O6	52:BB:74:ARG:NH1	2.52	0.42
1:A:1275:A:OP2	1:A:1275:A:H8	2.02	0.42
2:B:237:C:C2	2:B:261:G:N2	2.87	0.42
2:B:971:C:H2'	2:B:972:G:O4'	2.19	0.42
6:F:11:MET:HB2	6:F:23:VAL:O	2.19	0.42
7:G:40:GLN:O	7:G:44:ARG:HD3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:125:LEU:HD21	7:G:199:TRP:CD2	2.54	0.42
8:H:144:ILE:HB	8:H:149:VAL:HG23	2.02	0.42
9:I:136:ILE:HD12	9:I:140:LYS:NZ	2.35	0.42
12:L:38:VAL:HG11	12:L:91:LEU:HD22	2.00	0.42
13:M:50:ARG:HG2	32:FA:61:LEU:HD11	2.01	0.42
13:M:131:SER:HB3	13:M:134:ALA:CB	2.49	0.42
14:N:20:ALA:HB2	23:W:79:ARG:HG3	2.01	0.42
15:O:87:TYR:OH	15:O:116:LEU:HB3	2.19	0.42
17:Q:33:LYS:HB2	17:Q:82:LEU:HD23	2.01	0.42
18:R:80:ILE:O	18:R:83:LEU:N	2.51	0.42
20:T:3:ALA:HB3	20:T:58:ALA:HB2	2.01	0.42
20:T:84:ARG:HB2	20:T:96:ILE:HG22	2.00	0.42
37:MA:37:GLN:NE2	48:XA:52:GLN:OE1	2.52	0.42
39:OA:69:VAL:HA	39:OA:70:PRO:HD2	1.89	0.42
49:YA:43:LEU:HD11	49:YA:53:HIS:HA	2.02	0.42
1:FB:46:G:O2'	1:FB:365:U:H1'	2.19	0.42
1:FB:115:G:H4'	1:FB:116:A:O5'	2.19	0.42
1:FB:186(C):C:N4	1:FB:191(E):G:H1	2.05	0.42
1:FB:701:C:OP1	1:FB:703:G:H5'	2.19	0.42
1:FB:848:C:H2'	1:FB:849:C:O4'	2.20	0.42
2:GB:17:G:H2'	2:GB:18:C:C6	2.55	0.42
2:GB:398:G:H2'	2:GB:399:G:H8	1.84	0.42
2:GB:530:G:C5	2:GB:2022:U:H5"	2.55	0.42
2:GB:1218:C:H42	2:GB:1231:G:H1	1.66	0.42
2:GB:1375:C:O5'	2:GB:1375:C:H6	2.02	0.42
2:GB:1971:A:C4	5:JB:241:PRO:HG3	2.54	0.42
2:GB:2030:A:H4'	2:GB:2031:A:C8	2.54	0.42
2:GB:2466:C:H5"	33:LC:6:SER:HB3	2.01	0.42
8:MB:111:LEU:HD23	8:MB:111:LEU:HA	1.77	0.42
9:NB:153:LYS:HG2	9:NB:154:PRO:HD2	2.00	0.42
10:OB:75:LEU:HD13	10:OB:105:HIS:NE2	2.33	0.42
11:PB:59:LYS:HZ1	11:PB:125:GLY:HA2	1.84	0.42
18:WB:16:LYS:O	18:WB:20:LEU:HG	2.20	0.42
25:DC:73:LEU:HD23	25:DC:73:LEU:HA	1.82	0.42
36:QC:60:ASP:O	36:QC:64:ARG:HG2	2.19	0.42
37:RC:23:TYR:CZ	44:YC:9:ARG:HG3	2.54	0.42
38:SC:15:GLU:HG3	38:SC:19:LEU:HD21	2.00	0.42
40:UC:16:GLN:H	40:UC:16:GLN:CD	2.22	0.42
46:AD:38:THR:O	46:AD:79:GLU:HG3	2.19	0.42
47:BD:31:LYS:O	47:BD:35:GLU:HB2	2.19	0.42
47:BD:56:LEU:HD12	47:BD:59:TYR:CE2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:FD:26:GLN:HA	51:FD:36:ILE:O	2.19	0.42
51:FD:63:ARG:HA	51:FD:64:PRO:HD3	1.92	0.42
53:HD:21:GLU:O	53:HD:25:LYS:HG3	2.20	0.42
54:ID:37:SER:O	54:ID:41:VAL:HG13	2.18	0.42
1:A:1029:G:N2	1:A:1032(C):G:OP2	2.53	0.42
1:A:1077:G:C2	1:A:1081:G:C6	3.08	0.42
1:A:1129:C:H42	1:A:1143:G:N2	2.17	0.42
2:B:125:G:H4'	2:B:126:A:OP2	2.19	0.42
2:B:391:G:C6	2:B:411:G:C2	3.07	0.42
2:B:524:U:H2'	2:B:525:U:C6	2.54	0.42
2:B:569:U:O4	2:B:2498:C:H5"	2.19	0.42
2:B:1069:A:O2'	2:B:1096:A:O5'	2.36	0.42
2:B:1342:A:C6	2:B:1345:C:C2	3.07	0.42
2:B:1429:G:N3	2:B:1568:G:C2	2.87	0.42
2:B:1510:A:C4	2:B:1511:A:C6	3.07	0.42
2:B:2019:A:N6	2:B:2020:A:C5	2.87	0.42
2:B:2611:U:H3'	2:B:2611:U:OP2	2.19	0.42
2:B:2661:G:H2'	2:B:2662:A:O4'	2.19	0.42
2:B:2674:G:H2'	2:B:2675:A:C8	2.53	0.42
2:B:2792:G:H8	2:B:2893:G:H22	1.66	0.42
2:B:2809:A:OP2	2:B:2891:G:C2	2.72	0.42
2:B:2820:A:O4'	15:O:3:HIS:HB3	2.19	0.42
5:E:30:GLU:O	5:E:32:SER:N	2.53	0.42
5:E:36:PRO:HA	5:E:61:LEU:CD1	2.49	0.42
7:G:40:GLN:H	7:G:40:GLN:HG3	1.59	0.42
12:L:80:ASP:OD2	17:Q:71:GLY:HA3	2.19	0.42
13:M:52:GLU:HB3	13:M:55:ARG:HG2	2.01	0.42
18:R:39:LEU:HD23	18:R:39:LEU:HA	1.80	0.42
21:U:23:GLU:OE2	21:U:25:LYS:HD2	2.20	0.42
29:CA:48:GLU:O	29:CA:60:VAL:HG21	2.19	0.42
4:IA:53:G:C8	4:IA:54:5MU:H72	2.54	0.42
37:MA:88:ARG:HG2	37:MA:99:VAL:HG23	2.00	0.42
42:RA:18:ARG:HA	42:RA:18:ARG:HE	1.85	0.42
50:ZA:20:VAL:HG21	50:ZA:32:TYR:CG	2.54	0.42
50:ZA:34:GLU:OE2	50:ZA:55:ARG:HG2	2.19	0.42
54:DB:83:ARG:HA	54:DB:86:ARG:HD3	2.02	0.42
1:FB:17:U:O4'	1:FB:1080:A:H1'	2.20	0.42
1:FB:1109:C:H2'	1:FB:1110:A:O4'	2.19	0.42
1:FB:1148:U:H2'	1:FB:1149:C:O4'	2.19	0.42
2:GB:10:G:H21	2:GB:2801:A:HO2'	1.68	0.42
2:GB:67:U:H2'	2:GB:68:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:101:G:O3'	26:EC:7:ARG:NH1	2.52	0.42
2:GB:270(N):U:H4'	2:GB:270(O):G:C5'	2.50	0.42
2:GB:330:A:O2'	2:GB:331:A:C8	2.71	0.42
2:GB:668:G:N7	2:GB:670:A:C8	2.88	0.42
2:GB:847:U:OP2	2:GB:929:G:O6	2.37	0.42
2:GB:882:G:OP2	2:GB:882:G:H8	2.02	0.42
2:GB:1568:G:H5"	5:JB:61:LEU:HB2	1.99	0.42
2:GB:2032:G:OP2	2:GB:2454:G:O2'	2.36	0.42
2:GB:2298:A:H2'	2:GB:2299:G:O4'	2.19	0.42
2:GB:2409:G:C6	2:GB:2410:G:C5	3.07	0.42
2:GB:2689:U:P	2:GB:2719:G:H22	2.42	0.42
2:GB:2820:A:P	15:TB:2:ARG:NH2	2.93	0.42
6:KB:67:PHE:CD1	6:KB:74:PRO:HA	2.54	0.42
7:LB:101:LEU:O	7:LB:106:ARG:NE	2.35	0.42
8:MB:63:ILE:HD11	8:MB:141:PHE:HB3	2.02	0.42
10:OB:9:LEU:HD22	10:OB:10:GLU:OE2	2.18	0.42
10:OB:110:ASP:HA	10:OB:111:PRO:HD3	1.86	0.42
12:QB:60:ALA:CB	12:QB:86:ILE:HA	2.50	0.42
13:RB:49:ARG:CB	32:KC:61:LEU:HD21	2.48	0.42
19:XB:28:GLU:O	19:XB:30:GLY:N	2.52	0.42
23:BC:102:LEU:HD11	23:BC:124:ILE:HB	2.00	0.42
49:DD:43:LEU:HD11	49:DD:53:HIS:HA	2.02	0.42
50:ED:34:GLU:OE2	50:ED:55:ARG:HG2	2.19	0.42
1:A:563:A:HO2'	1:A:564:C:P	2.32	0.42
1:A:885:G:H1	1:A:912:C:H42	1.68	0.42
1:A:1206:G:O4'	37:MA:194:GLY:HA2	2.20	0.42
1:A:1480:G:C6	1:A:1481:U:N3	2.87	0.42
2:B:449:A:C4	2:B:450:G:C8	3.07	0.42
2:B:449:A:H2'	2:B:450:G:H8	1.84	0.42
2:B:1023:U:OP2	2:B:1025:G:O2'	2.37	0.42
2:B:1027:A:N6	2:B:1126:A:C4	2.87	0.42
2:B:1161:C:H1'	19:S:8:GLY:O	2.20	0.42
2:B:1641:A:H3'	2:B:1642:G:H8	1.84	0.42
2:B:2115:G:C4	2:B:2117:A:C8	3.08	0.42
2:B:2391:G:O6	2:B:2425:A:H8	2.01	0.42
2:B:2409:G:C6	2:B:2410:G:C5	3.08	0.42
4:D:3:C:H42	4:D:70:G:H1	1.67	0.42
4:D:21:A:OP2	4:D:59:A:N6	2.52	0.42
6:F:6:GLY:HA2	6:F:51:PHE:CZ	2.55	0.42
11:K:67:LEU:O	11:K:88:GLU:HG3	2.19	0.42
13:M:136:GLU:HG3	13:M:137:LYS:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:85:LYS:HE2	24:X:7:LEU:HD13	2.01	0.42
18:R:11:ARG:HG3	18:R:11:ARG:NH1	2.18	0.42
18:R:107:ALA:O	18:R:111:GLU:HG2	2.19	0.42
26:Z:3:LEU:HD13	26:Z:4:SER:N	2.34	0.42
26:Z:35:LEU:HB3	26:Z:50:ILE:HG12	2.00	0.42
38:NA:98:GLU:HG3	38:NA:194:LEU:CD2	2.50	0.42
38:NA:196:LEU:HA	38:NA:196:LEU:HD12	1.75	0.42
40:PA:91:VAL:HG22	40:PA:92:LYS:O	2.19	0.42
41:QA:79:ARG:HA	41:QA:83:ALA:O	2.19	0.42
46:VA:61:THR:C	46:VA:63:GLY:H	2.23	0.42
54:DB:30:LYS:HG3	54:DB:34:LYS:HE3	2.02	0.42
54:DB:63:ILE:HD12	54:DB:81:LYS:HG2	2.01	0.42
1:FB:160:A:H1'	1:FB:344:A:C5	2.55	0.42
1:FB:559:A:H4'	1:FB:560:U:H3'	2.01	0.42
1:FB:613:C:H2'	1:FB:614:A:H8	1.84	0.42
1:FB:1493:A:O2'	1:FB:1494:G:O5'	2.37	0.42
2:GB:188:G:H1	2:GB:208:C:H42	1.67	0.42
2:GB:441:U:H2'	2:GB:442:G:C8	2.54	0.42
2:GB:781:A:H2	2:GB:1776:G:N3	2.17	0.42
2:GB:811:U:O3'	2:GB:1251:C:H5'	2.19	0.42
2:GB:932:G:OP1	27:FC:24:LYS:NZ	2.52	0.42
2:GB:959:A:N6	2:GB:960:A:N1	2.67	0.42
2:GB:1027:A:N6	2:GB:1126:A:C4	2.88	0.42
2:GB:1539:G:H2'	2:GB:1540:G:O4'	2.19	0.42
2:GB:1540:G:H5"	2:GB:1541:U:OP2	2.19	0.42
2:GB:1753:G:C8	17:VB:113:LYS:NZ	2.87	0.42
2:GB:2173:A:H2'	2:GB:2174:C:O4'	2.19	0.42
2:GB:2436:G:C5	2:GB:2437:U:C5	3.07	0.42
3:HB:2:C:H2'	3:HB:3:C:C6	2.54	0.42
4:IB:71:C:H2'	4:IB:72:A:C8	2.52	0.42
8:MB:152:LEU:HD22	8:MB:153:ARG:H	1.84	0.42
12:QB:60:ALA:HB2	12:QB:86:ILE:HA	2.01	0.42
12:QB:89:ASN:ND2	12:QB:89:ASN:H	2.17	0.42
15:TB:31:HIS:O	15:TB:33:ARG:N	2.44	0.42
23:BC:54:HIS:HB3	23:BC:99:TYR:O	2.20	0.42
23:BC:71:VAL:HG13	23:BC:86:VAL:HG12	2.02	0.42
27:FC:12:PRO:HB2	27:FC:20:LYS:HG2	2.02	0.42
33:LC:7:VAL:HG12	33:LC:34:GLN:HB3	2.01	0.42
4:NC:19:G:H5"	4:NC:60:U:O4	2.19	0.42
36:QC:23:ARG:HB2	36:QC:23:ARG:HH11	1.80	0.42
37:RC:153:VAL:HG22	37:RC:198:VAL:HG22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:YC:6:ILE:HD11	44:YC:23:ILE:HG21	2.01	0.42
49:DD:15:PHE:HB3	49:DD:27:VAL:HG22	2.01	0.42
49:DD:21:ASP:OD1	49:DD:24:SER:HB2	2.19	0.42
1:A:32:A:OP1	1:A:398:C:H1'	2.20	0.42
1:A:689:C:OP1	45:UA:44:SER:OG	2.35	0.42
1:A:772:U:H2'	1:A:773:G:C8	2.54	0.42
1:A:981:U:H5'	48:XA:21:TYR:CE2	2.55	0.42
1:A:991:U:C4	1:A:1212:U:H1'	2.55	0.42
1:A:1327:C:H2'	1:A:1328:C:H6	1.84	0.42
1:A:1450:U:H4'	1:A:1451:A:C5	2.55	0.42
1:A:1465:C:P	17:Q:108:ARG:HH22	2.43	0.42
2:B:17:G:H2'	2:B:18:C:H6	1.84	0.42
2:B:382:G:H1	2:B:392:C:H42	1.68	0.42
2:B:664:C:H4'	2:B:941:A:OP1	2.19	0.42
2:B:1042:G:C6	2:B:1043:C:C4	3.07	0.42
2:B:1064:C:H5'	2:B:1065:U:OP2	2.19	0.42
2:B:1146:C:C2'	2:B:1147:C:H5'	2.50	0.42
2:B:1855:G:H8	2:B:1855:G:O5'	2.03	0.42
2:B:1905:C:N4	2:B:1930:G:C2	2.86	0.42
2:B:2075:U:C4	2:B:2238:G:C6	3.07	0.42
2:B:2312:U:OP1	8:H:74:LYS:HB2	2.19	0.42
2:B:2478:A:OP2	33:GA:2:LYS:HE2	2.20	0.42
7:G:179:GLU:H	7:G:179:GLU:CD	2.23	0.42
9:I:126:PRO:HB2	9:I:130:ARG:NH2	2.31	0.42
9:I:130:ARG:HB3	9:I:130:ARG:HH11	1.84	0.42
10:J:67:ARG:H	10:J:67:ARG:HG3	1.54	0.42
12:L:17:ARG:HA	12:L:17:ARG:NE	2.34	0.42
15:O:31:HIS:O	15:O:33:ARG:N	2.46	0.42
15:O:67:LEU:HD21	15:O:73:VAL:HA	2.02	0.42
18:R:72:HIS:O	18:R:74:LEU:HD12	2.19	0.42
25:Y:6:GLU:OE1	25:Y:61:ARG:HB3	2.20	0.42
33:GA:25:VAL:HB	33:GA:34:GLN:HB2	2.01	0.42
4:IA:19:G:H5"	4:IA:60:U:O4	2.19	0.42
40:PA:18:GLN:HA	40:PA:21:LEU:HG	2.01	0.42
42:RA:81:HIS:CD2	42:RA:104:ARG:HH22	2.37	0.42
42:RA:116:LYS:HG3	42:RA:129:VAL:HG11	2.01	0.42
47:WA:108:ARG:NH1	47:WA:114:ARG:HA	2.35	0.42
50:ZA:71:ARG:HA	50:ZA:74:LEU:HD12	2.00	0.42
52:BB:46:GLU:OE1	52:BB:85:LEU:HD12	2.19	0.42
1:FB:112:G:H4'	1:FB:389:A:H4'	2.02	0.42
1:FB:149:A:H2'	1:FB:150:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:596:C:OP2	1:FB:597:G:OP2	2.37	0.42
1:FB:759:A:C8	1:FB:760:G:C8	3.08	0.42
1:FB:1307:U:O3'	47:BD:110:ARG:HD3	2.19	0.42
1:FB:1508:G:H2'	1:FB:1509:C:C6	2.53	0.42
2:GB:1012:U:O4	11:PB:28:THR:HG21	2.19	0.42
2:GB:1882:C:H2'	2:GB:1883:G:O4'	2.20	0.42
2:GB:1999:C:H5"	2:GB:2723:C:O2'	2.19	0.42
2:GB:2009:G:OP1	20:YB:41:LYS:HE2	2.20	0.42
2:GB:2026:C:C4	2:GB:2027:G:N7	2.87	0.42
2:GB:2190:G:C2	2:GB:2191:G:C4	3.08	0.42
2:GB:2402:C:OP2	2:GB:2402:C:H6	2.03	0.42
2:GB:2865:U:C4	2:GB:2866:U:C4	3.07	0.42
4:IB:48:C:OP1	4:IB:59:A:H5'	2.19	0.42
5:JB:244:ARG:HB2	5:JB:245:PRO:HD2	2.02	0.42
11:PB:67:LEU:HD23	11:PB:67:LEU:HA	1.93	0.42
16:UB:34:HIS:ND1	16:UB:34:HIS:N	2.67	0.42
22:AC:84:ARG:O	22:AC:100:ALA:HB2	2.20	0.42
26:EC:9:GLN:HE22	26:EC:56:GLN:HG3	1.83	0.42
36:QC:17:PHE:HB3	36:QC:44:LEU:HD11	2.02	0.42
36:QC:188:ALA:HB1	36:QC:192:SER:CB	2.49	0.42
37:RC:150:LYS:O	37:RC:201:TYR:N	2.51	0.42
38:SC:162:LEU:HD12	38:SC:178:VAL:HG13	2.00	0.42
39:TC:76:ILE:H	39:TC:76:ILE:HG13	1.54	0.42
39:TC:90:VAL:O	39:TC:91:LEU:HD13	2.19	0.42
42:WC:120:THR:H	42:WC:123:GLU:HB2	1.84	0.42
46:AD:19:ARG:O	46:AD:21:LYS:NZ	2.53	0.42
49:DD:63:ARG:HH12	49:DD:87:ILE:HD13	1.80	0.42
1:A:6:G:H4'	1:A:298:A:H4'	2.02	0.42
1:A:160:A:H1'	1:A:344:A:C5	2.55	0.42
1:A:186(C):C:N4	1:A:191(E):G:H1	2.08	0.42
1:A:273:A:N6	1:A:274:A:N6	2.68	0.42
1:A:966:M2G:H8	1:A:966:M2G:OP2	2.02	0.42
1:A:1120:G:C2	1:A:1154:G:C2	3.07	0.42
1:A:1120:G:C2	1:A:1154:G:N3	2.88	0.42
1:A:1285:A:H4'	1:A:1286:A:C8	2.54	0.42
2:B:554:U:H1'	2:B:556:G:N7	2.34	0.42
2:B:851:U:O2'	27:AA:42:ALA:O	2.38	0.42
2:B:869:G:H2'	2:B:870:A:H8	1.85	0.42
2:B:1517:G:H2'	2:B:1518:C:C6	2.54	0.42
2:B:1570:A:C6	2:B:1571:A:C6	3.07	0.42
2:B:1803:A:H2	2:B:1822:G:N3	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1971:A:C4	5:E:241:PRO:HG3	2.54	0.42
2:B:2527:C:H5"	33:GA:30:PRO:HB2	2.01	0.42
4:D:6:G:H2'	4:D:7:G:H8	1.85	0.42
5:E:67:PHE:CE1	5:E:106:ILE:HD11	2.55	0.42
8:H:137:GLU:HG2	8:H:152:LEU:HD11	2.01	0.42
10:J:135:GLU:O	10:J:137:PRO:HD3	2.19	0.42
11:K:99:LEU:O	11:K:103:VAL:HG23	2.19	0.42
13:M:19:VAL:HG12	13:M:31:ALA:HB1	2.01	0.42
14:N:13:GLN:O	14:N:72:LYS:HE3	2.19	0.42
23:W:85:HIS:HE1	23:W:87:ASP:OD1	2.02	0.42
28:BA:69:LYS:NZ	53:CB:20:LEU:HD12	2.35	0.42
4:IA:74:C:H5"	4:IA:75:C:OP2	2.19	0.42
36:LA:122:PHE:CZ	36:LA:139:LYS:HB2	2.55	0.42
37:MA:88:ARG:HA	37:MA:91:LEU:HB2	2.01	0.42
38:NA:19:LEU:HA	38:NA:19:LEU:HD12	1.68	0.42
38:NA:134:ASP:O	38:NA:136:PRO:HD3	2.20	0.42
38:NA:162:LEU:HD12	38:NA:178:VAL:HG13	2.01	0.42
40:PA:46:ARG:HB2	40:PA:60:PHE:CE1	2.54	0.42
42:RA:81:HIS:HB2	42:RA:138:TRP:CD1	2.43	0.42
42:RA:97:VAL:HA	42:RA:100:ILE:HG13	2.02	0.42
50:ZA:77:ALA:HB3	50:ZA:79:VAL:HG23	2.02	0.42
1:FB:372:C:H4'	1:FB:373:A:OP1	2.18	0.42
1:FB:468:A:H5"	50:ED:80:PHE:HB3	2.01	0.42
1:FB:587:G:H4'	42:WC:3:THR:HA	2.01	0.42
1:FB:1207:2MG:H2'	1:FB:1208:C:H6	1.85	0.42
1:FB:1258:G:H2'	1:FB:1259:C:H6	1.84	0.42
1:FB:1285:A:H4'	1:FB:1286:A:C8	2.55	0.42
1:FB:1450:U:H4'	1:FB:1451:A:C5	2.55	0.42
2:GB:454:A:H4'	2:GB:455:C:OP2	2.19	0.42
2:GB:460:A:H5"	2:GB:461:C:OP2	2.19	0.42
2:GB:732:C:H2'	2:GB:733:G:O4'	2.19	0.42
2:GB:738:G:C2	2:GB:759:G:C5	3.07	0.42
2:GB:742:G:H2'	2:GB:743:G:C8	2.54	0.42
2:GB:954:G:C5	2:GB:955:C:C5	3.08	0.42
2:GB:1015:G:H2'	2:GB:1016:G:H8	1.83	0.42
2:GB:1069:A:O2'	2:GB:1096:A:O5'	2.38	0.42
2:GB:1493:C:C5	2:GB:2210:G:C4	3.07	0.42
2:GB:1640:C:H5'	2:GB:1641:A:OP2	2.19	0.42
2:GB:1815:A:P	5:JB:54:ARG:HH22	2.42	0.42
2:GB:2454:G:H2'	2:GB:2455:G:H8	1.84	0.42
8:MB:18:GLU:C	8:MB:21:ARG:HB3	2.40	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:MB:114:ILE:HD12	8:MB:136:ARG:NH1	2.35	0.42
18:WB:89:GLU:HB2	19:XB:50:PRO:HB3	2.01	0.42
24:CC:31:VAL:HG23	24:CC:32:ARG:O	2.20	0.42
25:DC:46:LEU:HD23	25:DC:62:VAL:C	2.40	0.42
27:FC:26:LEU:HA	27:FC:26:LEU:HD23	1.74	0.42
4:NC:49:G:N2	4:NC:66:C:N3	2.68	0.42
38:SC:2:GLY:HA3	38:SC:5:ILE:HD11	2.01	0.42
38:SC:21:LEU:O	38:SC:22:LYS:HB2	2.19	0.42
39:TC:51:VAL:HG12	39:TC:55:VAL:HG23	2.02	0.42
39:TC:144:THR:O	39:TC:148:VAL:HG23	2.19	0.42
44:YC:16:LEU:HD13	44:YC:94:VAL:HG13	2.02	0.42
47:BD:39:ILE:HD11	47:BD:56:LEU:HD11	2.01	0.42
48:CD:53:LEU:HD22	48:CD:53:LEU:HA	1.74	0.42
51:FD:43:LEU:HD23	51:FD:43:LEU:HA	1.73	0.42
51:FD:74:LEU:HD22	51:FD:74:LEU:HA	1.73	0.42
1:A:49:U:C4	1:A:364:A:C5	3.07	0.42
1:A:559:A:H4'	1:A:560:U:H3'	2.01	0.42
1:A:685:G:O2'	1:A:686:U:H5'	2.19	0.42
1:A:833:U:H3	1:A:853:G:H1	1.68	0.42
1:A:1064:G:OP1	1:A:1386:G:H4'	2.20	0.42
1:A:1319:A:H4'	1:A:1320:C:OP1	2.19	0.42
2:B:322:A:C6	2:B:340:A:C2	3.07	0.42
2:B:822:U:H2'	2:B:823:G:H8	1.85	0.42
2:B:1173:G:H8	2:B:1173:G:O5'	2.02	0.42
2:B:1291:C:H2'	2:B:1292:U:H6	1.85	0.42
2:B:1817:G:C6	2:B:1818:U:C5	3.07	0.42
2:B:2073:C:O2'	2:B:2074:U:H5'	2.20	0.42
2:B:2101:G:H2'	2:B:2102:U:O4'	2.19	0.42
2:B:2271:G:H2'	2:B:2272:U:C6	2.55	0.42
2:B:2846:G:H2'	2:B:2847:U:O4'	2.20	0.42
5:E:182:LEU:HD23	5:E:182:LEU:HA	1.70	0.42
7:G:10:PRO:HB3	7:G:17:ARG:HH12	1.85	0.42
7:G:34:TRP:CZ2	13:M:8:PRO:HB3	2.55	0.42
9:I:148:ILE:HG23	9:I:151:ILE:HD12	2.02	0.42
16:P:30:ARG:HH11	16:P:97:ARG:HH11	1.68	0.42
17:Q:106:SER:O	17:Q:110:ILE:HG13	2.20	0.42
23:W:93:ASP:HB2	23:W:131:ARG:HH12	1.84	0.42
36:LA:61:LEU:HD12	36:LA:64:ARG:HB2	2.01	0.42
37:MA:124:ILE:H	37:MA:124:ILE:HG13	1.62	0.42
48:XA:31:ARG:HG2	48:XA:31:ARG:HH11	1.84	0.42
50:ZA:8:ARG:HH12	50:ZA:15:PRO:CG	2.29	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:AB:63:ARG:HA	51:AB:64:PRO:HD3	1.89	0.42
1:FB:10:A:OP2	39:TC:126:ARG:HD3	2.20	0.42
1:FB:87:A:H5"	1:FB:88:C:C6	2.54	0.42
1:FB:102:G:O2'	1:FB:151:A:N3	2.45	0.42
1:FB:992:U:H5'	1:FB:993:G:C4	2.55	0.42
1:FB:1064:G:OP1	1:FB:1386:G:H4'	2.19	0.42
1:FB:1195:C:N4	1:FB:1197:G:N7	2.68	0.42
1:FB:1238:A:O5'	1:FB:1336:C:N4	2.32	0.42
2:GB:85:G:C5	2:GB:98:G:C2	3.08	0.42
2:GB:253:C:H2'	2:GB:254:G:O4'	2.20	0.42
2:GB:270(K):G:H3'	2:GB:270(L):C:C6	2.55	0.42
2:GB:602:G:O2'	2:GB:604:G:O2'	2.35	0.42
2:GB:686:G:H8	31:JC:7:PRO:HA	1.84	0.42
2:GB:882:G:N2	2:GB:883:G:N7	2.67	0.42
2:GB:1341:U:O4'	21:ZB:57:LEU:HD23	2.19	0.42
2:GB:1394:U:C5	2:GB:1395:A:C5	3.08	0.42
2:GB:1748:G:H2'	2:GB:1749:A:C8	2.54	0.42
2:GB:2137:C:OP2	2:GB:2137:C:H6	2.02	0.42
2:GB:2166:G:H2'	2:GB:2167:U:C6	2.55	0.42
2:GB:2462:U:C2	2:GB:2489:G:N2	2.88	0.42
2:GB:2591:C:H2'	2:GB:2592:G:H8	1.85	0.42
2:GB:2680:C:H5'	6:KB:189:PRO:HA	2.01	0.42
2:GB:2704:C:H2'	2:GB:2705:A:O4'	2.20	0.42
2:GB:2773:C:H5"	6:KB:164:ARG:HG2	2.01	0.42
2:GB:2866:U:C6	2:GB:2868:A:H1'	2.55	0.42
2:GB:2872:G:O2'	2:GB:2873:A:H5'	2.20	0.42
3:HB:9:G:OP1	16:UB:25:ARG:NH2	2.53	0.42
4:IB:26:G:H2'	4:IB:27:U:C6	2.54	0.42
5:JB:267:SER:O	5:JB:269:PHE:N	2.53	0.42
12:QB:97:ARG:HE	12:QB:97:ARG:HB2	1.66	0.42
13:RB:65:ARG:HG3	13:RB:66:GLY:N	2.35	0.42
18:WB:47:TYR:OH	18:WB:51:LYS:HE2	2.20	0.42
23:BC:116:VAL:HG22	23:BC:117:LEU:HD23	2.02	0.42
26:EC:10:LEU:HD11	26:EC:14:ARG:NH1	2.34	0.42
35:OC:144:TRP:CZ3	35:OC:171:VAL:HG13	2.54	0.42
36:QC:149:LEU:HD12	36:QC:152:PHE:HB3	2.00	0.42
39:TC:41:VAL:HG11	39:TC:109:ILE:HG23	2.01	0.42
42:WC:2:LEU:HB3	42:WC:3:THR:H	1.65	0.42
47:BD:111:LYS:HG2	47:BD:115:LYS:NZ	2.35	0.42
54:ID:50:GLU:HB2	54:ID:100:ILE:HB	2.01	0.42
1:A:177:C:P	54:DB:65:LYS:NZ	2.93	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:485:G:O2'	1:A:486:U:OP2	2.37	0.42
1:A:795:C:H1'	1:A:1506:U:C5	2.54	0.42
1:A:867:G:H2'	1:A:868:C:H6	1.85	0.42
1:A:1216:G:O2'	1:A:1217:C:H5'	2.20	0.42
2:B:270(F):G:C6	2:B:270(G):U:C4	3.07	0.42
2:B:270(T):G:H5"	25:Y:97:LEU:HD21	2.02	0.42
2:B:722:A:H2'	2:B:723:G:C8	2.55	0.42
2:B:979:G:H3'	2:B:980:A:H5"	2.01	0.42
2:B:1509:A:H4'	2:B:1510:A:N3	2.35	0.42
2:B:1717:G:H1	2:B:1742:C:H42	1.68	0.42
2:B:1900:A:N1	2:B:1970:A:C6	2.88	0.42
2:B:2358:G:H22	13:M:55:ARG:NH1	2.14	0.42
2:B:2392:A:OP2	32:FA:31:HIS:NE2	2.51	0.42
2:B:2516:G:C4	2:B:2569:G:N2	2.88	0.42
2:B:2677:G:H1'	2:B:2731:G:N2	2.35	0.42
2:B:2748:A:C4	2:B:2757:A:C6	3.08	0.42
2:B:2843:G:H1	2:B:2874:C:H42	1.67	0.42
8:H:10:LYS:HZ3	8:H:14:GLU:CD	2.23	0.42
8:H:11:TYR:HB2	8:H:176:LEU:HD21	2.02	0.42
9:I:137:ASP:HB3	9:I:140:LYS:NZ	2.35	0.42
11:K:104:LYS:HB2	11:K:117:PHE:CE1	2.54	0.42
19:S:40:LEU:HD23	19:S:41:GLY:N	2.35	0.42
21:U:21:PHE:HA	21:U:26:TYR:CE1	2.55	0.42
4:IA:32:5MC:HM53	4:IA:33:U:O4	2.20	0.42
4:IA:51:C:N3	4:IA:52:G:N7	2.67	0.42
36:LA:75:LYS:H	36:LA:75:LYS:HG3	1.60	0.42
37:MA:72:LYS:HE3	37:MA:73:PRO:HD2	2.01	0.42
37:MA:185:GLY:HA3	37:MA:200:ALA:HB3	2.02	0.42
38:NA:196:LEU:O	38:NA:198:VAL:N	2.49	0.42
47:WA:39:ILE:HD11	47:WA:56:LEU:HD11	2.00	0.42
50:ZA:23:ASP:OD1	50:ZA:24:ALA:N	2.53	0.42
53:CB:21:GLU:O	53:CB:25:LYS:HG3	2.19	0.42
54:DB:44:ALA:O	54:DB:91:LEU:HG	2.19	0.42
1:FB:38:G:C2	1:FB:397:A:C2	3.08	0.42
1:FB:87:A:C2	1:FB:88:C:H1'	2.55	0.42
1:FB:689:C:OP2	45:ZC:55:LYS:NZ	2.50	0.42
1:FB:814:A:N7	1:FB:816:A:C4	2.88	0.42
1:FB:1079:G:OP2	1:FB:1079:G:H8	2.02	0.42
1:FB:1279:A:P	44:YC:9:ARG:HH22	2.41	0.42
2:GB:6:A:N7	2:GB:7:G:C4	2.87	0.42
2:GB:1005:C:H5"	2:GB:1006:C:OP2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1149:G:H2'	2:GB:1150:C:C6	2.55	0.42
2:GB:1488:G:C6	2:GB:1489:U:C4	3.08	0.42
2:GB:1778:U:C5	2:GB:1784:A:C4	3.07	0.42
2:GB:2623:G:H4'	2:GB:2825:G:H8	1.85	0.42
2:GB:2661:G:H2'	2:GB:2662:A:O4'	2.19	0.42
2:GB:2712:U:O2'	2:GB:2713:A:H5'	2.20	0.42
3:HB:48:A:H4'	16:UB:95:HIS:HD2	1.84	0.42
4:IB:23:C:N4	4:IB:24:U:O4	2.52	0.42
5:JB:13:ARG:HA	5:JB:16:MET:HE3	2.01	0.42
7:LB:135:LYS:HZ3	7:LB:135:LYS:HA	1.85	0.42
9:NB:105:LEU:HB3	9:NB:107:VAL:HG13	2.02	0.42
11:PB:72:TYR:CZ	11:PB:87:LEU:HD23	2.55	0.42
12:QB:65:THR:O	12:QB:79:PHE:HB2	2.20	0.42
20:YB:62:HIS:O	20:YB:64:MET:HG3	2.20	0.42
25:DC:95:LEU:HD13	25:DC:95:LEU:HA	1.74	0.42
42:WC:97:VAL:HA	42:WC:100:ILE:HG13	2.02	0.42
42:WC:127:LEU:HB3	42:WC:128:GLY:H	1.74	0.42
47:BD:17:VAL:C	47:BD:19:LEU:H	2.24	0.42
48:CD:23:ARG:NE	48:CD:28:GLY:O	2.53	0.42
48:CD:58:LYS:HB3	48:CD:58:LYS:NZ	2.35	0.42
50:ED:26:ARG:HG3	50:ED:27:LYS:N	2.35	0.42
52:GD:34:TYR:O	52:GD:35:ARG:HG3	2.19	0.42
1:A:261:U:OP2	54:DB:79:ARG:NH2	2.37	0.42
1:A:322:C:N3	1:A:332:G:N2	2.68	0.42
1:A:878:G:H5"	42:RA:90:GLY:HA3	2.01	0.42
1:A:1002:G:H21	1:A:1003:G:H22	1.67	0.42
1:A:1175:G:C2	1:A:1176:A:C5	3.08	0.42
2:B:99:U:C6	2:B:102:G:N1	2.88	0.42
2:B:363(B):A:H2'	2:B:363(C):G:H8	1.79	0.42
2:B:611:C:H2'	2:B:612:G:O4'	2.19	0.42
2:B:1607:C:H5"	2:B:1608:A:H5'	2.02	0.42
2:B:1759:A:H1'	2:B:2711:A:C2	2.55	0.42
2:B:2666:C:H3'	2:B:2667:C:H6	1.85	0.42
2:B:2784:C:H1'	6:F:37:ARG:NH2	2.35	0.42
4:D:7:G:O2'	4:D:49:G:O4'	2.34	0.42
5:E:132:PRO:HD3	5:E:190:TYR:CZ	2.55	0.42
5:E:133:LEU:CB	5:E:173:VAL:HG21	2.50	0.42
12:L:89:ASN:HB2	12:L:90:GLN:NE2	2.34	0.42
12:L:106:LEU:O	12:L:111:PHE:HB2	2.20	0.42
13:M:119:GLU:HA	13:M:137:LYS:HE3	2.02	0.42
14:N:132:VAL:HG11	23:W:81:ARG:NH2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:P:6:ALA:HA	16:P:9:ARG:NH1	2.34	0.42
17:Q:19:LEU:HA	17:Q:20:PRO:HD3	1.98	0.42
20:T:88:ARG:HG3	20:T:94:ASP:OD2	2.20	0.42
21:U:12:VAL:HG21	21:U:27:THR:HG22	2.02	0.42
23:W:65:GLN:O	23:W:67:LEU:HD22	2.20	0.42
25:Y:50:ARG:HB3	25:Y:50:ARG:HH11	1.85	0.42
27:AA:8:LEU:HD13	27:AA:23:LEU:HD21	2.02	0.42
27:AA:41:PRO:HA	27:AA:44:ARG:NH1	2.33	0.42
37:MA:123:GLN:O	37:MA:128:PHE:HB2	2.20	0.42
38:NA:8:VAL:HG13	38:NA:9:CYS:H	1.84	0.42
38:NA:31:CYS:C	38:NA:33:MET:N	2.71	0.42
39:OA:127:ASN:HA	39:OA:128:PRO:HD2	1.87	0.42
40:PA:3:ARG:HH11	40:PA:3:ARG:CG	2.32	0.42
40:PA:25:ILE:H	40:PA:25:ILE:HG13	1.63	0.42
42:RA:2:LEU:HB3	42:RA:3:THR:H	1.64	0.42
51:AB:65:ILE:HB	51:AB:69:LYS:HD2	2.01	0.42
52:BB:71:LYS:O	52:BB:74:ARG:N	2.52	0.42
1:FB:24:U:H2'	1:FB:25:C:C6	2.55	0.42
1:FB:738:C:H4'	40:UC:69:GLU:O	2.20	0.42
1:FB:965:A:C2	1:FB:969:A:C2	3.08	0.42
1:FB:969:A:H2'	1:FB:970:C:O4'	2.20	0.42
1:FB:1435:G:H8	1:FB:1435:G:O5'	2.03	0.42
2:GB:111:A:C5'	26:EC:69:ARG:HH22	2.33	0.42
2:GB:238:C:H2'	2:GB:239:U:O4'	2.20	0.42
2:GB:315:G:H2'	2:GB:316:C:O4'	2.20	0.42
2:GB:565:C:H42	2:GB:576:U:H3	1.68	0.42
2:GB:862:G:H2'	2:GB:863:A:O4'	2.20	0.42
2:GB:894:C:O2'	2:GB:895:U:P	2.78	0.42
2:GB:1835:G:H2'	2:GB:1835:G:N3	2.35	0.42
2:GB:1897:G:H2'	2:GB:1898:U:O4'	2.19	0.42
2:GB:2288:A:H4'	2:GB:2289:G:OP2	2.20	0.42
2:GB:2544:G:H2'	2:GB:2545:G:O4'	2.20	0.42
2:GB:2647:U:H2'	2:GB:2648:C:C6	2.55	0.42
3:HB:40:U:H2'	28:GC:2:LYS:HE2	2.00	0.42
4:IB:3:C:H42	4:IB:70:G:H1	1.67	0.42
6:KB:21:VAL:HA	6:KB:22:PRO:HD2	1.86	0.42
6:KB:79:ARG:HH11	6:KB:79:ARG:CG	2.33	0.42
13:RB:75:ILE:H	13:RB:75:ILE:HD12	1.85	0.42
15:TB:67:LEU:HD21	15:TB:73:VAL:HA	2.01	0.42
18:WB:47:TYR:CZ	18:WB:51:LYS:HE2	2.54	0.42
21:ZB:56:THR:HB	21:ZB:77:LYS:HE2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:EC:39:ALA:HB2	26:EC:44:LEU:HD23	2.02	0.42
36:QC:139:LYS:O	36:QC:142:LEU:HB3	2.20	0.42
39:TC:86:ALA:HB3	39:TC:130:ASN:ND2	2.34	0.42
41:VC:57:GLU:HB2	41:VC:60:LYS:HE3	2.01	0.42
46:AD:57:LYS:HA	46:AD:67:THR:HA	2.00	0.42
47:BD:55:ARG:HH11	47:BD:56:LEU:HD13	1.85	0.42
50:ED:8:ARG:NH1	50:ED:15:PRO:HG3	2.27	0.42
2:B:46:C:OP2	2:B:215:G:H2'	2.20	0.41
2:B:144:C:H2'	2:B:145:G:C8	2.55	0.41
2:B:270(N):U:H4'	2:B:270(O):G:C5'	2.50	0.41
2:B:972:G:C6	2:B:973:A:C6	3.08	0.41
2:B:1218:C:OP2	18:R:15:LYS:HE2	2.20	0.41
2:B:1335:U:H2'	2:B:1336:A:C8	2.52	0.41
2:B:1438:U:O2'	2:B:1439:A:H5'	2.19	0.41
2:B:1568:G:H5"	5:E:61:LEU:HB2	2.01	0.41
2:B:2061:G:H2'	2:B:2501:C:O2'	2.20	0.41
2:B:2369:A:N6	2:B:2382:G:O6	2.52	0.41
2:B:2590:A:O3'	5:E:239:ARG:NH2	2.52	0.41
2:B:2877:G:H2'	2:B:2878:U:O4'	2.20	0.41
3:C:76:G:H2'	3:C:77:U:O4'	2.20	0.41
7:G:33:LEU:HD12	7:G:33:LEU:HA	1.72	0.41
8:H:13:GLU:O	8:H:14:GLU:HB2	2.20	0.41
14:N:16:ARG:NH1	14:N:16:ARG:HB2	2.34	0.41
14:N:60:ARG:HH12	23:W:177:PRO:CG	2.29	0.41
17:Q:94:ALA:HB1	17:Q:99:LEU:HD21	2.01	0.41
21:U:90:GLU:HA	21:U:93:GLU:CG	2.49	0.41
22:V:9:LYS:HA	22:V:10:GLY:HA2	1.72	0.41
24:X:27:GLU:HB2	24:X:69:PHE:CD1	2.55	0.41
28:BA:40:HIS:CG	28:BA:41:PRO:HD2	2.55	0.41
30:DA:40:CYS:HB2	30:DA:43:CYS:HB2	2.01	0.41
38:NA:21:LEU:H	38:NA:21:LEU:HD12	1.85	0.41
41:QA:12:LEU:HD23	41:QA:12:LEU:HA	1.86	0.41
46:VA:7:ILE:HD12	51:AB:34:LYS:HD2	2.01	0.41
47:WA:111:LYS:HG2	47:WA:115:LYS:NZ	2.35	0.41
51:AB:87:LYS:HA	51:AB:90:ILE:HG22	2.02	0.41
1:FB:329:A:H2'	1:FB:332:G:O6	2.20	0.41
1:FB:421:U:H3'	1:FB:422:C:C6	2.54	0.41
1:FB:983:A:H3'	1:FB:983:A:N3	2.35	0.41
1:FB:1050:G:H2'	1:FB:1051:C:C6	2.55	0.41
1:FB:1129:C:H5"	43:XC:16:ARG:NH2	2.33	0.41
1:FB:1480:G:C6	1:FB:1481:U:C2	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:778:G:C6	2:GB:779:U:C4	3.08	0.41
2:GB:807:U:OP2	13:RB:41:ARG:NH2	2.52	0.41
2:GB:1231:G:H2'	2:GB:1232:G:C8	2.55	0.41
2:GB:1937:A:C8	2:GB:1939:5MU:H2'	2.54	0.41
4:IB:19:G:HO2'	4:IB:20:U:P	2.40	0.41
5:JB:227:ASN:HB3	5:JB:228:PRO:HD2	2.01	0.41
6:KB:84:PHE:CE2	6:KB:86:PRO:HD3	2.55	0.41
7:LB:170:LEU:HD12	7:LB:170:LEU:HA	1.84	0.41
12:QB:38:VAL:HG11	12:QB:91:LEU:HD22	2.02	0.41
12:QB:116:SER:OG	12:QB:117:LEU:N	2.53	0.41
12:QB:117:LEU:HA	12:QB:117:LEU:HD23	1.83	0.41
16:UB:5:THR:HG23	16:UB:8:GLU:OE2	2.20	0.41
16:UB:29:PHE:O	16:UB:35:ILE:HD12	2.19	0.41
17:VB:11:GLU:OE2	17:VB:57:PHE:HD2	2.03	0.41
23:BC:8:TYR:HE2	23:BC:23:LYS:NZ	1.96	0.41
23:BC:54:HIS:HB2	23:BC:101:PRO:HD3	2.02	0.41
38:SC:155:LEU:HD12	38:SC:155:LEU:HA	1.90	0.41
39:TC:121:LYS:HZ2	39:TC:121:LYS:HA	1.85	0.41
46:AD:41:ARG:HE	46:AD:41:ARG:HB2	1.67	0.41
53:HD:62:ILE:HA	53:HD:66:MET:SD	2.61	0.41
54:ID:49:ALA:HB3	54:ID:99:LEU:HG	2.01	0.41
1:A:720:C:H2'	1:A:721:G:C8	2.55	0.41
1:A:753:A:H5'	1:A:754:C:C5	2.55	0.41
1:A:1060:C:H2'	1:A:1061:G:H8	1.85	0.41
1:A:1095:U:OP1	1:A:1108:G:N2	2.45	0.41
1:A:1275:A:N6	1:A:1276:G:O6	2.53	0.41
1:A:1324:A:H2'	1:A:1325:C:C6	2.55	0.41
1:A:1343:G:H2'	1:A:1344:C:C6	2.54	0.41
2:B:419:C:H2'	2:B:420:C:O4'	2.19	0.41
2:B:558:G:H2'	2:B:559:G:H8	1.85	0.41
2:B:774:A:O2'	2:B:775:G:H5"	2.20	0.41
2:B:895:U:H4'	2:B:896:A:OP1	2.20	0.41
2:B:999:U:H5"	2:B:1154:G:O6	2.20	0.41
2:B:1356:G:H2'	2:B:1357:U:O4'	2.20	0.41
2:B:1675:C:O2	6:F:129:HIS:HA	2.20	0.41
2:B:1728:G:H5"	2:B:1728:G:N3	2.35	0.41
2:B:1889:A:C6	2:B:1890:A:C6	3.09	0.41
2:B:1920:4OC:CM2	2:B:1921:G:H5'	2.39	0.41
2:B:2549:G:H2'	2:B:2550:G:H8	1.85	0.41
5:E:240:ALA:HA	5:E:241:PRO:HD3	1.92	0.41
6:F:175:VAL:HA	6:F:182:LEU:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:40:GLN:HA	7:G:43:LYS:HG2	2.02	0.41
7:G:202:PHE:CZ	7:G:206:ILE:HD11	2.54	0.41
8:H:130:ASN:OD1	8:H:130:ASN:N	2.53	0.41
9:I:91:GLY:HA3	9:I:94:TYR:CD2	2.54	0.41
13:M:85:LEU:HD23	13:M:120:ALA:HA	2.01	0.41
17:Q:16:ARG:CZ	17:Q:19:LEU:HD21	2.50	0.41
18:R:10:ARG:HG2	18:R:14:HIS:NE2	2.36	0.41
19:S:64:HIS:HA	19:S:92:THR:HA	2.02	0.41
26:Z:41:ILE:O	26:Z:43:GLN:HG2	2.20	0.41
34:HA:14:A:H3'	34:HA:15:A:C8	2.56	0.41
36:LA:70:PHE:CD1	36:LA:163:PHE:HB3	2.55	0.41
37:MA:62:ASP:OD2	37:MA:97:LYS:HG2	2.19	0.41
45:UA:40:ILE:HD13	45:UA:40:ILE:HA	1.84	0.41
46:VA:77:LEU:HD21	46:VA:107:ALA:CB	2.51	0.41
1:FB:124:G:C5	1:FB:125:U:C4	3.07	0.41
1:FB:332:G:O2'	1:FB:333:G:H5'	2.19	0.41
1:FB:498:A:H1'	1:FB:500:G:C8	2.55	0.41
1:FB:692:U:H2'	1:FB:694:A:OP2	2.20	0.41
1:FB:1077:G:H1	39:TC:47:LYS:NZ	2.17	0.41
1:FB:1423:G:H2'	1:FB:1424:C:C6	2.55	0.41
1:FB:1518:MA6:H102	1:FB:1519:MA6:C10	2.50	0.41
2:GB:611:C:H2'	2:GB:612:G:O4'	2.19	0.41
2:GB:844:C:C5	2:GB:845:G:C6	3.08	0.41
2:GB:1146:C:C2'	2:GB:1147:C:H5'	2.49	0.41
2:GB:2011:U:H2'	2:GB:2012:G:O4'	2.20	0.41
2:GB:2071:A:H2'	2:GB:2072:G:H8	1.83	0.41
2:GB:2293:C:H2'	2:GB:2294:C:O4'	2.20	0.41
2:GB:2358:G:C6	2:GB:2359:C:C4	3.08	0.41
2:GB:2637:U:C4	2:GB:2638:G:C6	3.08	0.41
2:GB:2742:C:N4	2:GB:2762:G:H1	2.17	0.41
3:HB:78:A:N3	3:HB:99:A:C6	2.88	0.41
5:JB:217:ARG:CG	5:JB:217:ARG:NH1	2.77	0.41
6:KB:11:MET:CB	6:KB:24:THR:HA	2.50	0.41
7:LB:11:VAL:HB	7:LB:18:ARG:HB2	2.02	0.41
12:QB:11:ALA:O	12:QB:98:VAL:HA	2.20	0.41
13:RB:56:SER:OG	13:RB:61:ARG:HD2	2.21	0.41
14:SB:12:GLN:HG2	14:SB:73:PRO:HD2	2.02	0.41
17:VB:64:ARG:HB2	17:VB:73:GLU:HG3	2.01	0.41
17:VB:105:LEU:HD13	17:VB:105:LEU:HA	1.66	0.41
17:VB:110:ILE:HG13	17:VB:110:ILE:H	1.56	0.41
18:WB:90:VAL:HG22	19:XB:38:LEU:HD22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:ZB:29:TRP:CZ3	21:ZB:78:LYS:HG3	2.55	0.41
37:RC:59:ARG:HG2	37:RC:64:VAL:HB	2.02	0.41
39:TC:32:VAL:O	39:TC:43:LEU:HD12	2.20	0.41
42:WC:87:SER:HB2	42:WC:93:VAL:HB	2.02	0.41
43:XC:121:ARG:NH1	43:XC:121:ARG:HG2	2.34	0.41
54:ID:72:LEU:HD13	54:ID:77:ALA:HA	2.02	0.41
1:A:149:A:H2'	1:A:150:C:C6	2.55	0.41
1:A:255:G:H2'	1:A:256:U:C6	2.55	0.41
1:A:535:A:H4'	1:A:536:C:OP2	2.20	0.41
1:A:658:G:H2'	1:A:659:U:C6	2.56	0.41
1:A:1118:C:H1'	1:A:1179:A:C4	2.54	0.41
1:A:1307:U:O3'	47:WA:110:ARG:HD3	2.21	0.41
1:A:1519:MA6:H102	1:A:1520:G:O2'	2.19	0.41
2:B:188:G:H1	2:B:208:C:H42	1.69	0.41
2:B:330:A:O2'	2:B:331:A:H8	1.97	0.41
2:B:609(B):G:N2	2:B:619:G:H1'	2.35	0.41
2:B:781:A:H2	2:B:1776:G:N3	2.18	0.41
2:B:882:G:N2	2:B:883:G:N7	2.69	0.41
2:B:1003:G:O2'	2:B:1010:A:N1	2.41	0.41
2:B:1341:U:OP2	2:B:1394:U:O2'	2.28	0.41
2:B:1493:C:C4	2:B:2210:G:N3	2.88	0.41
2:B:1666:G:O3'	12:L:6:THR:HG23	2.21	0.41
2:B:2100:G:C2	2:B:2101:G:C4	3.08	0.41
2:B:2137:C:H6	2:B:2137:C:OP2	2.04	0.41
2:B:2433:A:H5"	2:B:2434:A:OP1	2.20	0.41
2:B:2711:A:OP1	2:B:2712(A):A:OP1	2.38	0.41
3:C:43:C:OP1	28:BA:2:LYS:HB2	2.19	0.41
4:D:6:G:H2'	4:D:7:G:C8	2.55	0.41
4:D:41:C:H2'	4:D:42:G:C8	2.55	0.41
10:J:101:LEU:HD13	10:J:101:LEU:HA	1.87	0.41
12:L:13:ASN:HD21	12:L:97:ARG:N	2.18	0.41
12:L:97:ARG:HA	12:L:117:LEU:HD13	2.02	0.41
23:W:116:VAL:HG22	23:W:117:LEU:HD23	2.02	0.41
25:Y:50:ARG:HH11	25:Y:50:ARG:CB	2.34	0.41
29:CA:14:ALA:O	29:CA:18:ALA:N	2.52	0.41
33:GA:15:LYS:HE3	33:GA:15:LYS:HB2	1.88	0.41
35:JA:137:ARG:O	35:JA:141:ALA:HB3	2.21	0.41
38:NA:15:GLU:HG3	38:NA:19:LEU:HD21	2.01	0.41
40:PA:34:GLY:O	40:PA:68:PRO:HD2	2.20	0.41
42:RA:127:LEU:HB3	42:RA:128:GLY:H	1.73	0.41
46:VA:19:ARG:HD2	46:VA:20:LYS:N	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:VA:57:LYS:HA	46:VA:67:THR:HA	2.02	0.41
1:FB:19:C:H5"	39:TC:86:ALA:HB1	2.01	0.41
1:FB:398:C:H2'	1:FB:399:G:C8	2.55	0.41
1:FB:619:U:C4	38:SC:135:LEU:HD11	2.55	0.41
1:FB:1261:A:C6	1:FB:1275:A:H1'	2.55	0.41
1:FB:1424:C:H2'	1:FB:1425:U:O4'	2.20	0.41
2:GB:374:A:H2'	2:GB:375:C:O4'	2.20	0.41
2:GB:419:C:H2'	2:GB:420:C:O4'	2.20	0.41
2:GB:821:A:H2'	2:GB:946:G:O4'	2.20	0.41
2:GB:822:U:H2'	2:GB:823:G:H8	1.86	0.41
2:GB:840:C:H2'	2:GB:841:A:C8	2.55	0.41
2:GB:876:C:H2'	2:GB:877:U:O4'	2.20	0.41
2:GB:1433:U:O2	2:GB:1561:G:N1	2.53	0.41
2:GB:1598:C:H2'	2:GB:1599:C:C6	2.53	0.41
2:GB:1805:U:O2	5:JB:50:THR:HB	2.20	0.41
2:GB:1917:PSU:O2	2:GB:1918:A:N6	2.53	0.41
2:GB:2340:G:H2'	2:GB:2341:G:C8	2.54	0.41
2:GB:2695:C:H2'	2:GB:2696:U:H6	1.83	0.41
5:JB:146:GLU:HB2	5:JB:189:CYS:HB3	2.01	0.41
10:OB:67:ARG:H	10:OB:67:ARG:HG3	1.56	0.41
17:VB:7:ILE:O	17:VB:10:VAL:N	2.53	0.41
22:AC:9:LYS:HA	22:AC:10:GLY:HA2	1.70	0.41
23:BC:155:LEU:HD21	23:BC:171:ILE:HD12	2.02	0.41
38:SC:139:ARG:HG3	38:SC:139:ARG:NH1	2.35	0.41
38:SC:174:LEU:HD23	38:SC:185:PHE:HA	2.02	0.41
39:TC:51:VAL:O	39:TC:55:VAL:HG23	2.20	0.41
39:TC:91:LEU:HD12	39:TC:118:ILE:HD11	2.02	0.41
41:VC:70:LYS:HA	41:VC:71:PRO:HD2	1.89	0.41
51:FD:9:VAL:HG11	51:FD:84:LEU:HD12	2.02	0.41
54:ID:47:GLY:N	54:ID:48:LYS:HB2	2.36	0.41
1:A:190:G:N7	51:AB:63:ARG:NH2	2.67	0.41
1:A:592:G:H1	1:A:647:C:H42	1.67	0.41
1:A:1072:G:C2	1:A:1073:U:C2	3.08	0.41
1:A:1195:C:C4	1:A:1197:G:C8	3.08	0.41
1:A:1358:U:OP1	48:XA:35:ARG:HG2	2.20	0.41
1:A:1493:A:N3	35:JA:119:THR:HG23	2.35	0.41
2:B:6:A:O2'	11:K:130:HIS:HB3	2.20	0.41
2:B:18:C:H2'	2:B:19:C:C6	2.56	0.41
2:B:327:G:H2'	2:B:328:U:C6	2.55	0.41
2:B:398:G:H2'	2:B:399:G:H8	1.84	0.41
2:B:855:G:O2'	24:X:27:GLU:OE2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:865:C:O2	2:B:867:C:N4	2.50	0.41
2:B:1153:C:H5'	18:R:76:TYR:CE2	2.54	0.41
2:B:1286:A:H1'	2:B:1288:U:OP2	2.20	0.41
2:B:1458:C:H4'	2:B:1459:G:O4'	2.19	0.41
2:B:1608:A:H1'	2:B:1610:A:OP2	2.19	0.41
2:B:2026:C:H42	2:B:2037:G:H1	1.67	0.41
2:B:2438:U:H2'	2:B:2439:A:OP2	2.20	0.41
4:D:48:C:H5'	4:D:50:U:OP2	2.20	0.41
5:E:107:ALA:HA	5:E:108:PRO:HD3	1.80	0.41
6:F:11:MET:CB	6:F:24:THR:HA	2.50	0.41
7:G:155:LEU:HD23	7:G:186:ILE:HG12	2.03	0.41
9:I:8:PRO:HB3	9:I:51:ARG:HG3	2.02	0.41
11:K:110:GLY:HA2	11:K:114:ARG:HE	1.85	0.41
14:N:138:ASP:OD1	14:N:138:ASP:N	2.53	0.41
16:P:19:LYS:HG2	16:P:25:ARG:HH11	1.85	0.41
16:P:30:ARG:HH11	16:P:97:ARG:NH1	2.18	0.41
16:P:63:THR:HG22	16:P:97:ARG:HA	2.02	0.41
17:Q:137:LYS:H	17:Q:137:LYS:HG3	1.69	0.41
18:R:74:LEU:CD2	18:R:79:PHE:HB2	2.51	0.41
23:W:107:THR:HA	23:W:108:PRO:HD3	1.84	0.41
29:CA:36:CYS:SG	29:CA:38:ALA:HB3	2.61	0.41
35:JA:143:ARG:HG2	35:JA:144:TRP:HD1	1.86	0.41
36:LA:164:VAL:HG12	36:LA:165:VAL:N	2.36	0.41
37:MA:72:LYS:HA	37:MA:73:PRO:HD3	1.84	0.41
37:MA:122:GLU:HB3	37:MA:126:ARG:HH12	1.84	0.41
41:QA:69:VAL:HG22	41:QA:135:VAL:HG22	2.01	0.41
41:QA:111:ARG:C	41:QA:113:GLU:H	2.24	0.41
47:WA:22:ILE:HG22	47:WA:25:ILE:HG13	2.02	0.41
52:BB:54:ARG:HB3	52:BB:54:ARG:NH1	2.35	0.41
1:FB:1176:A:C6	1:FB:1177:G:C6	3.08	0.41
2:GB:783:A:C2	2:GB:785:G:C8	3.08	0.41
2:GB:959:A:C6	2:GB:960:A:N1	2.88	0.41
2:GB:1021:A:H3'	2:GB:1021:A:C8	2.55	0.41
2:GB:1716:U:H2'	2:GB:1717:G:C8	2.53	0.41
2:GB:1790:C:H2'	2:GB:1791:A:C4	2.55	0.41
2:GB:2037:G:C6	2:GB:2038:G:C6	3.09	0.41
2:GB:2080:G:H5"	25:DC:19:GLN:HG3	2.03	0.41
2:GB:2438:U:H2'	2:GB:2439:A:OP2	2.20	0.41
2:GB:2492:U:C2'	2:GB:2493:U:H5'	2.50	0.41
2:GB:2854:G:H2'	2:GB:2855:C:H6	1.82	0.41
5:JB:94:LEU:HD23	5:JB:94:LEU:HA	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:JB:206:LEU:HA	5:JB:206:LEU:HD23	1.44	0.41
15:TB:70:LEU:HD23	15:TB:70:LEU:HA	1.75	0.41
16:UB:106:ARG:NE	16:UB:112:PHE:OXT	2.53	0.41
18:WB:59:ARG:O	18:WB:63:VAL:HG23	2.20	0.41
18:WB:80:ILE:O	18:WB:83:LEU:N	2.53	0.41
20:YB:111:HIS:ND1	20:YB:111:HIS:N	2.68	0.41
21:ZB:90:GLU:HA	21:ZB:93:GLU:CG	2.50	0.41
23:BC:102:LEU:HA	23:BC:137:ILE:HB	2.02	0.41
25:DC:5:CYS:HB3	25:DC:9:GLY:H	1.85	0.41
30:IC:27:LYS:HB3	30:IC:27:LYS:HZ3	1.86	0.41
38:SC:107:ARG:HH21	38:SC:114:ARG:NH2	2.18	0.41
41:VC:88:PRO:HG3	41:VC:149:ARG:HA	2.02	0.41
45:ZC:83:ILE:HG23	45:ZC:109:VAL:HG23	2.02	0.41
46:AD:8:ASN:HD22	46:AD:8:ASN:C	2.24	0.41
47:BD:96:LEU:O	47:BD:98:VAL:N	2.53	0.41
53:HD:31:ILE:HB	53:HD:32:LYS:H	1.59	0.41
54:ID:13:LEU:HD12	54:ID:14:LYS:H	1.85	0.41
1:A:332:G:C4	1:A:333:G:C8	3.09	0.41
1:A:867:G:O2'	1:A:868:C:H5'	2.20	0.41
1:A:1058:G:H8	1:A:1058:G:O5'	2.03	0.41
1:A:1118:C:H2'	1:A:1119:C:H6	1.86	0.41
1:A:1148:U:H2'	1:A:1149:C:O4'	2.21	0.41
1:A:1261:A:C6	1:A:1275:A:H1'	2.54	0.41
1:A:1446:A:N3	17:Q:118:ARG:NH1	2.67	0.41
2:B:248:G:C4	2:B:2431:U:H4'	2.56	0.41
2:B:729:G:O6	5:E:209:ALA:N	2.44	0.41
2:B:777:A:C2	2:B:778:G:C4	3.08	0.41
2:B:1038:C:N4	2:B:1117:G:H1	2.18	0.41
2:B:1451:C:H4'	2:B:1453:A:C8	2.55	0.41
2:B:1851:U:H3	2:B:1891:G:H1	1.68	0.41
2:B:2402:C:OP2	2:B:2402:C:C6	2.73	0.41
2:B:2505:G:N7	29:CA:3:LYS:NZ	2.68	0.41
2:B:2711:A:P	2:B:2712(A):A:OP2	2.78	0.41
3:C:9:G:OP1	16:P:25:ARG:NH2	2.54	0.41
5:E:33:LEU:HD13	5:E:104:TYR:CD2	2.56	0.41
6:F:36:ARG:HH11	6:F:85:ASN:CG	2.24	0.41
6:F:37:ARG:HD2	6:F:42:ASP:CG	2.40	0.41
6:F:112:GLY:O	6:F:159:HIS:HA	2.20	0.41
7:G:64:ILE:HG13	7:G:64:ILE:H	1.50	0.41
8:H:63:ILE:HD11	8:H:141:PHE:HB3	2.01	0.41
9:I:55:PRO:HG2	9:I:61:HIS:CD2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:116:GLU:O	9:I:118:PRO:HD3	2.21	0.41
9:I:136:ILE:HD12	9:I:140:LYS:HZ1	1.86	0.41
10:J:84:GLY:HA3	10:J:87:LYS:O	2.20	0.41
15:O:79:LEU:HA	15:O:83:ILE:HD12	2.02	0.41
16:P:28:VAL:HG11	16:P:98:VAL:HG11	2.02	0.41
19:S:28:GLU:HA	19:S:29:PRO:HD2	1.88	0.41
22:V:67:LEU:CD2	22:V:72:VAL:HG23	2.51	0.41
24:X:64:ASP:O	24:X:83:PRO:HA	2.21	0.41
38:NA:21:LEU:O	38:NA:22:LYS:HB2	2.21	0.41
42:RA:40:ALA:O	42:RA:42:GLU:N	2.49	0.41
51:AB:72:ARG:H	51:AB:72:ARG:HG2	1.75	0.41
53:CB:22:LEU:HD22	53:CB:47:HIS:CD2	2.56	0.41
54:DB:32:ALA:O	54:DB:36:LEU:HB2	2.20	0.41
54:DB:50:GLU:HB2	54:DB:100:ILE:HB	2.01	0.41
1:FB:123:C:H42	1:FB:238:G:H1	1.69	0.41
1:FB:618:C:H5'	1:FB:619:U:H5"	2.01	0.41
1:FB:909:A:H2'	1:FB:910:C:O4'	2.21	0.41
1:FB:973:G:H3'	1:FB:974:A:H5"	2.03	0.41
1:FB:981:U:H5'	48:CD:21:TYR:CE2	2.55	0.41
1:FB:1039:C:H5"	1:FB:1040:U:OP2	2.21	0.41
1:FB:1324:A:OP2	1:FB:1324:A:C8	2.74	0.41
1:FB:1401:G:H2'	1:FB:1402:4OC:O4'	2.20	0.41
2:GB:11:G:C2'	2:GB:12:U:H5'	2.51	0.41
2:GB:217:G:H2'	2:GB:218:A:O4'	2.20	0.41
2:GB:443:A:N7	7:LB:45:ARG:HG2	2.35	0.41
2:GB:910:A:N6	2:GB:911:A:N6	2.68	0.41
2:GB:1030:G:H8	2:GB:1030:G:O5'	2.04	0.41
2:GB:1323:U:H2'	2:GB:1324:G:H5'	2.03	0.41
2:GB:1557:C:H5"	2:GB:1558:A:OP2	2.20	0.41
2:GB:2056:G:O2'	29:HC:8:LYS:HE3	2.20	0.41
2:GB:2416:C:H2'	2:GB:2417:C:H6	1.84	0.41
2:GB:2611:U:H3'	2:GB:2611:U:OP2	2.20	0.41
2:GB:2619:C:O2'	2:GB:2620:C:H5'	2.20	0.41
5:JB:66:ASP:HA	5:JB:68:LYS:HZ3	1.85	0.41
7:LB:117:ARG:HD3	7:LB:117:ARG:HA	1.84	0.41
10:OB:2:LYS:HA	10:OB:20:ASP:HA	2.02	0.41
10:OB:95:LYS:HA	10:OB:111:PRO:HB3	2.02	0.41
10:OB:135:GLU:O	10:OB:137:PRO:HD3	2.20	0.41
14:SB:85:LYS:HD3	24:CC:7:LEU:HD22	2.01	0.41
17:VB:30:VAL:O	17:VB:44:ASP:HA	2.20	0.41
17:VB:109:GLU:HG3	17:VB:112:ARG:NH2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:AC:55:TYR:HA	22:AC:56:PRO:HD2	1.94	0.41
4:NC:23:C:H2'	4:NC:24:U:C6	2.53	0.41
37:RC:15:THR:HG23	37:RC:207:VAL:HG11	2.01	0.41
39:TC:71:LEU:H	39:TC:71:LEU:HG	1.57	0.41
41:VC:26:PHE:O	41:VC:30:ILE:HG12	2.20	0.41
1:A:162:A:C5	1:A:163:C:H1'	2.56	0.41
1:A:216:G:H2'	1:A:217:C:H6	1.81	0.41
1:A:277:C:O2'	1:A:278:G:H5'	2.20	0.41
1:A:636:U:H2'	1:A:637:G:H8	1.86	0.41
1:A:1050:G:H2'	1:A:1051:C:C6	2.56	0.41
1:A:1060:C:H2'	1:A:1061:G:C8	2.55	0.41
1:A:1298:C:H41	41:QA:114:ARG:HD2	1.85	0.41
2:B:6:A:N7	2:B:7:G:C4	2.89	0.41
2:B:128:C:H2'	2:B:129:C:C6	2.56	0.41
2:B:270(Q):C:O2'	10:J:46:ALA:HA	2.19	0.41
2:B:511:U:H5	2:B:512:G:C5	2.38	0.41
2:B:803:U:C4	2:B:804:A:N7	2.88	0.41
2:B:879:G:H2'	2:B:880:G:O4'	2.20	0.41
2:B:2403:C:N3	2:B:2415:G:C2	2.89	0.41
2:B:2816:C:O2	2:B:2883:A:O2'	2.30	0.41
3:C:30:C:H1'	3:C:58:A:N1	2.35	0.41
4:D:23:C:N4	4:D:24:U:O4	2.53	0.41
5:E:69:ARG:NH1	5:E:105:ILE:HD13	2.35	0.41
5:E:228:PRO:HD3	5:E:235:GLY:CA	2.50	0.41
9:I:50:VAL:HG12	9:I:51:ARG:N	2.34	0.41
11:K:30:ILE:HG23	11:K:52:VAL:HG11	2.01	0.41
12:L:113:LYS:H	12:L:113:LYS:HG2	1.58	0.41
16:P:12:PHE:HB3	16:P:16:ASN:ND2	2.35	0.41
16:P:29:PHE:O	16:P:35:ILE:HD12	2.21	0.41
23:W:111:VAL:HG22	23:W:116:VAL:HA	2.01	0.41
36:LA:54:THR:O	36:LA:58:ILE:HG13	2.21	0.41
41:QA:78:ARG:HG2	41:QA:79:ARG:NH2	2.35	0.41
42:RA:11:THR:HG23	42:RA:14:ARG:HH11	1.86	0.41
43:SA:16:ARG:O	43:SA:63:ILE:HA	2.20	0.41
43:SA:121:ARG:NH1	43:SA:121:ARG:HG2	2.35	0.41
44:TA:45:ARG:HD3	48:XA:36:PHE:HE1	1.86	0.41
49:YA:16:ALA:HB1	49:YA:18:PHE:O	2.21	0.41
1:FB:157:G:N2	1:FB:165:C:C2	2.89	0.41
1:FB:279:A:H4'	1:FB:280:C:H5"	2.02	0.41
1:FB:740:U:OP2	49:DD:2:PRO:HG3	2.21	0.41
1:FB:892:A:C5	1:FB:893:C:C4	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:1277:C:H1'	1:FB:1282:C:O2	2.21	0.41
1:FB:1327:C:H2'	1:FB:1328:C:H6	1.85	0.41
1:FB:1453:G:N3	54:ID:39:LYS:HE2	2.35	0.41
1:FB:1476:G:H2'	1:FB:1477:C:O4'	2.21	0.41
2:GB:266:G:N1	2:GB:267:C:C2	2.89	0.41
2:GB:279:C:OP2	2:GB:279:C:C6	2.72	0.41
2:GB:525:U:O2'	2:GB:526:A:H5'	2.21	0.41
2:GB:1493:C:C4	2:GB:2210:G:N3	2.89	0.41
2:GB:1632:A:H8	2:GB:1632:A:O5'	2.03	0.41
2:GB:1829:A:H2'	2:GB:1830:C:O4'	2.21	0.41
2:GB:2309:A:N6	2:GB:2310:A:N1	2.68	0.41
2:GB:2328:A:H2'	2:GB:2329:G:C8	2.55	0.41
2:GB:2402:C:O4'	2:GB:2403:C:H5	2.04	0.41
2:GB:2685:G:N2	2:GB:2724:C:O2	2.52	0.41
3:HB:3:C:H2'	3:HB:4:C:C6	2.55	0.41
9:NB:121:ILE:HD13	9:NB:144:VAL:HG11	2.02	0.41
11:PB:42:TRP:CE3	18:WB:63:VAL:HG11	2.56	0.41
12:QB:106:LEU:O	12:QB:111:PHE:HB2	2.20	0.41
23:BC:70:LEU:HD22	23:BC:70:LEU:HA	1.80	0.41
25:DC:77:ALA:HA	25:DC:80:LEU:HG	2.02	0.41
28:GC:61:ARG:HH22	53:HD:42:PRO:CG	2.31	0.41
37:RC:54:ARG:HG2	37:RC:55:VAL:O	2.20	0.41
43:XC:34:ASN:O	43:XC:38:GLN:HB2	2.19	0.41
47:BD:101:GLN:HE21	47:BD:101:GLN:HB2	1.53	0.41
50:ED:50:LYS:HD3	50:ED:50:LYS:HA	1.89	0.41
1:A:137:C:H1'	50:ZA:62:VAL:O	2.20	0.41
1:A:505:G:C6	1:A:535:A:C2	3.09	0.41
1:A:736:C:H2'	1:A:737:A:C8	2.56	0.41
1:A:741:G:H2'	1:A:742:G:H8	1.85	0.41
1:A:900:A:H2'	1:A:901:A:C8	2.55	0.41
1:A:1079:G:OP2	1:A:1079:G:H8	2.04	0.41
1:A:1108:G:H5'	37:MA:176:HIS:ND1	2.35	0.41
2:B:137(B):G:H2'	2:B:139:G:N7	2.35	0.41
2:B:217:G:H2'	2:B:218:A:O4'	2.20	0.41
2:B:315:G:H2'	2:B:316:C:O4'	2.21	0.41
2:B:363(A):G:H2'	2:B:363(B):A:H8	1.85	0.41
2:B:598:G:H2'	2:B:599:G:O4'	2.20	0.41
2:B:671:C:H42	2:B:809:G:H1	1.69	0.41
2:B:926:A:H2'	2:B:928:G:H8	1.86	0.41
2:B:1243:G:H2'	2:B:1244:G:O4'	2.21	0.41
2:B:1358:G:O2'	2:B:1373:A:N6	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1671:U:O2	2:B:1673:U:H3'	2.20	0.41
2:B:1982:C:O2	2:B:1982:C:H2'	2.21	0.41
2:B:2141:G:N2	2:B:2142:C:N3	2.69	0.41
3:C:17:C:O2	3:C:67:G:N2	2.40	0.41
10:J:103:ARG:H	10:J:103:ARG:HG2	1.70	0.41
12:L:16:ALA:HB2	12:L:52:VAL:HG21	2.03	0.41
12:L:47:ILE:HD12	12:L:48:PRO:O	2.20	0.41
12:L:107:ARG:HH12	17:Q:37:GLY:N	2.18	0.41
12:L:117:LEU:HA	12:L:117:LEU:HD23	1.85	0.41
14:N:46:GLN:NE2	14:N:126:PRO:HG3	2.36	0.41
23:W:97:GLU:H	23:W:97:GLU:HG3	1.72	0.41
33:GA:7:VAL:HG12	33:GA:34:GLN:HB3	2.01	0.41
38:NA:131:ARG:HH11	38:NA:131:ARG:HG3	1.85	0.41
39:OA:140:ARG:HE	39:OA:140:ARG:HB2	1.65	0.41
51:AB:74:LEU:HD22	51:AB:74:LEU:HA	1.74	0.41
51:AB:95:TYR:O	51:AB:98:LEU:HB2	2.19	0.41
1:FB:177:C:P	54:ID:65:LYS:HZ3	2.39	0.41
1:FB:264:U:O4	1:FB:265:G:C6	2.73	0.41
1:FB:580:U:O2'	49:DD:57:LEU:HD12	2.21	0.41
1:FB:1001:G:N3	1:FB:1001:G:H2'	2.35	0.41
1:FB:1007:C:N4	1:FB:1022:G:H22	2.19	0.41
1:FB:1373:G:H5"	41:VC:36:LYS:HZ3	1.82	0.41
1:FB:1409:C:H2'	1:FB:1410:G:C8	2.55	0.41
2:GB:391:G:C6	2:GB:411:G:N2	2.89	0.41
2:GB:520:G:H2'	2:GB:521:G:H8	1.85	0.41
2:GB:583:G:OP2	18:WB:10:ARG:HD2	2.21	0.41
2:GB:846:C:O5'	2:GB:846:C:H6	2.04	0.41
2:GB:895:U:H4'	2:GB:896:A:OP1	2.20	0.41
2:GB:2369:A:N6	2:GB:2382:G:O6	2.53	0.41
2:GB:2534:A:C6	2:GB:2535:G:C5	3.08	0.41
4:IB:41:C:H2'	4:IB:42:G:C8	2.56	0.41
6:KB:175:VAL:HA	6:KB:182:LEU:HA	2.03	0.41
8:MB:110:ALA:HB2	8:MB:142:PRO:HD3	2.02	0.41
13:RB:90:ARG:HB2	13:RB:91:PHE:H	1.74	0.41
16:UB:111:GLU:H	16:UB:111:GLU:HG3	1.68	0.41
17:VB:6:LEU:O	17:VB:10:VAL:HG23	2.20	0.41
21:ZB:89:ILE:HG22	21:ZB:92:LEU:HB2	2.02	0.41
23:BC:97:GLU:H	23:BC:97:GLU:HG3	1.72	0.41
24:CC:27:GLU:HB2	24:CC:69:PHE:CD1	2.56	0.41
25:DC:75:GLU:O	25:DC:78:LYS:HG3	2.20	0.41
4:NC:21:A:C6	4:NC:46:G:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:OC:137:ARG:O	35:OC:141:ALA:HB3	2.20	0.41
37:RC:179:ARG:HG2	37:RC:207:VAL:H	1.84	0.41
40:UC:34:GLY:O	40:UC:68:PRO:HD2	2.21	0.41
44:YC:49:VAL:O	44:YC:60:ARG:HB2	2.20	0.41
46:AD:20:LYS:O	46:AD:20:LYS:HD2	2.21	0.41
47:BD:3:ARG:HB2	47:BD:8:GLU:HA	2.02	0.41
47:BD:78:ILE:HG23	47:BD:81:LEU:HD12	2.02	0.41
49:DD:62:GLN:HG3	49:DD:66:LEU:HD22	2.02	0.41
1:A:55:A:N7	1:A:56:U:C2	2.89	0.41
1:A:93:U:H2'	1:A:95:G:C8	2.55	0.41
1:A:465:A:H8	1:A:465:A:OP1	2.04	0.41
1:A:1146:A:H2'	1:A:1147:C:H6	1.86	0.41
1:A:1262:C:H42	1:A:1273:G:H1	1.69	0.41
1:A:1498:UR3:OP2	34:HA:16:A:O2'	2.38	0.41
2:B:556:G:H2'	2:B:557:U:H6	1.82	0.41
2:B:581:C:OP2	18:R:33:ARG:HD3	2.20	0.41
2:B:656:G:C6	2:B:657:U:C4	3.08	0.41
2:B:658:C:H2'	2:B:659:C:C6	2.56	0.41
2:B:823:G:C6	2:B:835:A:N1	2.89	0.41
2:B:877:U:C2'	2:B:878:A:H5"	2.50	0.41
2:B:953:A:H2'	2:B:954:G:H8	1.86	0.41
2:B:1058:G:H1'	2:B:1081:U:O2'	2.21	0.41
2:B:1118:C:H2'	2:B:1119:C:C6	2.56	0.41
2:B:1965:C:H3'	2:B:1966:A:H2'	2.02	0.41
2:B:2129:C:H2'	2:B:2130:U:H4'	2.02	0.41
2:B:2192:G:OP2	2:B:2192:G:H8	2.04	0.41
2:B:2210:G:C8	2:B:2211:G:O6	2.73	0.41
2:B:2340:G:H2'	2:B:2341:G:C8	2.56	0.41
2:B:2535:G:N3	2:B:2536:G:C8	2.89	0.41
2:B:2563:U:O2'	2:B:2565:A:N7	2.48	0.41
2:B:2712:U:O2'	2:B:2713:A:H5'	2.21	0.41
3:C:21:G:C2	3:C:22:U:C2	3.09	0.41
5:E:202:LYS:HG3	5:E:203:ASN:OD1	2.21	0.41
7:G:176:LEU:HD13	7:G:181:LEU:HA	2.03	0.41
8:H:61:ALA:O	8:H:65:GLY:N	2.47	0.41
17:Q:64:ARG:HH11	17:Q:64:ARG:CG	2.22	0.41
20:T:68:ARG:HD3	20:T:111:HIS:HA	2.03	0.41
23:W:68:PRO:O	23:W:90:VAL:HA	2.21	0.41
23:W:152:ALA:HA	23:W:171:ILE:HD11	2.03	0.41
25:Y:82:LEU:H	25:Y:83:GLU:CD	2.21	0.41
4:IA:21:A:C6	4:IA:46:G:C5	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:JA:186:ARG:HE	35:KA:312:PHE:HB2	1.86	0.41
37:MA:12:LEU:HD23	37:MA:12:LEU:HA	1.87	0.41
37:MA:32:LEU:HD12	37:MA:32:LEU:HA	1.86	0.41
38:NA:30:LYS:HG2	38:NA:35:ARG:NH1	2.35	0.41
42:RA:9:MET:HA	42:RA:12:ARG:HB3	2.01	0.41
47:WA:55:ARG:HH11	47:WA:56:LEU:HD13	1.86	0.41
49:YA:21:ASP:OD1	49:YA:24:SER:HB2	2.19	0.41
50:ZA:19:ILE:H	50:ZA:19:ILE:HG13	1.66	0.41
53:CB:27:GLU:HA	53:CB:28:LYS:HA	1.60	0.41
1:FB:6:G:H4'	1:FB:298:A:H4'	2.03	0.41
1:FB:370:C:C2	1:FB:392:G:N2	2.89	0.41
1:FB:687:A:H4'	1:FB:688:G:O5'	2.20	0.41
1:FB:728:A:C5	49:DD:54:ARG:HD2	2.56	0.41
1:FB:943:U:C4	1:FB:944:G:N7	2.89	0.41
1:FB:1080:A:C5'	39:TC:16:THR:HG21	2.50	0.41
1:FB:1407:5MC:H2'	1:FB:1408:A:C8	2.55	0.41
1:FB:1410:G:H2'	1:FB:1411:C:C6	2.56	0.41
1:FB:1417:G:O2'	1:FB:1483:A:N6	2.51	0.41
2:GB:382:G:H1	2:GB:392:C:H42	1.67	0.41
2:GB:449:A:C4	2:GB:450:G:C8	3.09	0.41
2:GB:647:G:H2'	2:GB:648:G:O4'	2.21	0.41
2:GB:1165:U:H2'	2:GB:1166:C:C6	2.56	0.41
2:GB:1168:G:C2	2:GB:1182:A:C2	3.09	0.41
2:GB:1183:G:H2'	2:GB:1184:G:C8	2.56	0.41
2:GB:1288:U:H4'	2:GB:1289:C:OP2	2.20	0.41
2:GB:1291:C:H2'	2:GB:1292:U:H6	1.86	0.41
2:GB:1313:U:H5'	2:GB:1314:C:OP2	2.20	0.41
2:GB:1354:A:H2'	2:GB:1355:G:O4'	2.21	0.41
2:GB:2210:G:H8	2:GB:2211:G:C5	2.38	0.41
2:GB:2751:G:H4'	9:NB:4:ILE:HD11	2.03	0.41
3:HB:43:C:OP1	28:GC:2:LYS:HB2	2.20	0.41
8:MB:114:ILE:HA	8:MB:140:ILE:HD13	2.03	0.41
10:OB:76:THR:HG23	10:OB:141:LYS:HB2	2.02	0.41
12:QB:12:ASP:HB2	12:QB:13:ASN:H	1.64	0.41
24:CC:4:LYS:HB3	24:CC:7:LEU:HD11	2.03	0.41
36:QC:53:ARG:NH1	36:QC:199:TYR:HA	2.35	0.41
41:VC:12:LEU:HD23	41:VC:12:LEU:HA	1.86	0.41
46:AD:77:LEU:HD21	46:AD:107:ALA:HB2	2.02	0.41
47:BD:31:LYS:HA	47:BD:31:LYS:HZ3	1.84	0.41
47:BD:31:LYS:HG3	47:BD:35:GLU:OE1	2.21	0.41
49:DD:16:ALA:HB1	49:DD:18:PHE:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:42:G:H1	1:A:400:C:H42	1.69	0.41
1:A:79:G:C6	1:A:80:G:N7	2.89	0.41
1:A:232:G:H1'	1:A:262:A:N1	2.36	0.41
1:A:583:A:O2'	51:AB:91:ARG:NE	2.54	0.41
1:A:692:U:O2'	1:A:694:A:N7	2.46	0.41
1:A:848:C:H2'	1:A:849:C:O4'	2.21	0.41
1:A:1151:A:O2'	1:A:1152:A:H8	2.03	0.41
1:A:1170:A:H8	1:A:1170:A:OP2	2.04	0.41
1:A:1412:C:H42	1:A:1488:G:H1	1.67	0.41
1:A:1446:A:C4	17:Q:118:ARG:NH1	2.88	0.41
2:B:16:G:N3	2:B:17:G:C8	2.89	0.41
2:B:213:A:H2'	2:B:214:G:O4'	2.21	0.41
2:B:226:G:H1'	2:B:227:A:N7	2.35	0.41
2:B:714:U:H2'	2:B:716:A:OP2	2.21	0.41
2:B:751:A:C6	2:B:789:A:C5	3.09	0.41
2:B:752:A:OP1	31:EA:3:ARG:NH2	2.48	0.41
2:B:791:C:H4'	2:B:792:G:OP1	2.21	0.41
2:B:855:G:H5"	2:B:856:C:OP2	2.21	0.41
2:B:1074:G:H22	2:B:1095:A:H1'	1.86	0.41
2:B:1316:U:H2'	2:B:1317:A:H8	1.79	0.41
2:B:1670:C:OP2	2:B:2550:G:OP1	2.38	0.41
2:B:1951:U:H2'	2:B:1953:A:OP2	2.21	0.41
2:B:2079:U:H2'	2:B:2080:G:O4'	2.21	0.41
2:B:2465:C:O2	2:B:2486:G:C2	2.73	0.41
2:B:2489:G:O6	2:B:2490:G:N1	2.53	0.41
2:B:2570:G:C2	2:B:2571:C:C2	3.09	0.41
2:B:2704:C:H2'	2:B:2705:A:O4'	2.21	0.41
3:C:105:G:C2	3:C:106:G:C8	3.09	0.41
5:E:10:THR:HB	5:E:11:PRO:HD2	2.03	0.41
5:E:61:LEU:HD12	5:E:61:LEU:HA	1.61	0.41
5:E:274:ARG:HH11	5:E:274:ARG:HG2	1.80	0.41
6:F:4:ILE:HG12	6:F:5:LEU:N	2.36	0.41
6:F:48:GLN:HG2	6:F:78:LEU:HG	2.02	0.41
8:H:22:ARG:HB2	8:H:23:PHE:CD2	2.56	0.41
8:H:131:TYR:O	8:H:159:VAL:HG22	2.20	0.41
10:J:133:HIS:CD2	10:J:134:PRO:HD2	2.55	0.41
11:K:85:ILE:HD12	11:K:85:ILE:H	1.84	0.41
12:L:66:LYS:HB2	12:L:82:ASN:ND2	2.19	0.41
17:Q:6:LEU:O	17:Q:10:VAL:HG23	2.21	0.41
17:Q:96:ARG:HG3	17:Q:101:PHE:CE2	2.56	0.41
19:S:19:LYS:H	19:S:19:LYS:HG3	1.44	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:50:LYS:HB3	21:U:84:ALA:HB3	2.02	0.41
23:W:126:VAL:HA	23:W:164:ALA:H	1.86	0.41
24:X:4:LYS:HB3	24:X:7:LEU:HD11	2.03	0.41
26:Z:39:ALA:HA	26:Z:44:LEU:HB3	2.02	0.41
27:AA:22:ALA:O	27:AA:26:LEU:N	2.53	0.41
4:IA:29:G:H2'	4:IA:30:G:O4'	2.21	0.41
36:LA:23:ARG:HB2	36:LA:23:ARG:HH11	1.82	0.41
36:LA:115:LEU:HG	36:LA:119:GLU:OE2	2.21	0.41
36:LA:126:GLU:OE1	36:LA:130:ARG:HG3	2.21	0.41
37:MA:73:PRO:O	37:MA:76:VAL:N	2.52	0.41
37:MA:130:VAL:HG11	37:MA:157:ILE:HG23	2.02	0.41
39:OA:147:ASP:HA	39:OA:150:ARG:HH21	1.86	0.41
41:QA:88:PRO:HG3	41:QA:149:ARG:HA	2.03	0.41
46:VA:86:ARG:N	46:VA:99:HIS:O	2.53	0.41
46:VA:89:ARG:HH11	46:VA:97:ARG:HD2	1.86	0.41
46:VA:115:LYS:N	46:VA:117:ARG:HG2	2.36	0.41
47:WA:17:VAL:C	47:WA:19:LEU:H	2.24	0.41
47:WA:78:ILE:HG23	47:WA:81:LEU:HD12	2.01	0.41
48:XA:37:PHE:HB2	48:XA:39:LEU:HB2	2.03	0.41
52:BB:34:TYR:O	52:BB:35:ARG:HG3	2.20	0.41
53:CB:25:LYS:HG3	53:CB:26:GLY:H	1.85	0.41
54:DB:38:LYS:HA	54:DB:41:VAL:HG22	2.03	0.41
1:FB:289:G:C6	1:FB:290:C:N4	2.88	0.41
1:FB:504:C:C2	1:FB:542:G:C2	3.09	0.41
1:FB:528:C:H5'	1:FB:535:A:C6	2.55	0.41
1:FB:575:G:OP1	1:FB:575:G:H4'	2.21	0.41
1:FB:603:U:H2'	1:FB:604:G:H8	1.85	0.41
1:FB:718:G:C8	45:ZC:116:HIS:HB3	2.56	0.41
1:FB:815:A:H4'	1:FB:817:C:C4	2.56	0.41
1:FB:900:A:H2'	1:FB:901:A:C8	2.56	0.41
1:FB:1120:G:C2	1:FB:1154:G:N3	2.89	0.41
1:FB:1412:C:H42	1:FB:1488:G:H1	1.68	0.41
1:FB:1440:C:N4	1:FB:1461:G:H1	2.15	0.41
2:GB:227:A:H4'	2:GB:228:A:O5'	2.21	0.41
2:GB:485:C:N4	2:GB:495:G:H1	2.17	0.41
2:GB:511:U:H4'	2:GB:1235:G:H4'	2.01	0.41
2:GB:706:A:H2'	2:GB:707:G:O4'	2.21	0.41
2:GB:1017:G:H2'	2:GB:1018:C:H6	1.86	0.41
2:GB:1510:A:H2'	2:GB:1511:A:C8	2.56	0.41
2:GB:1821:A:H8	2:GB:1821:A:O5'	2.03	0.41
2:GB:2057:A:H2'	2:GB:2058:A:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2137:C:HO2'	2:GB:2138:C:H6	1.65	0.41
2:GB:2516:G:O6	2:GB:2517:C:N4	2.54	0.41
2:GB:2528:U:O2'	2:GB:2529:G:H3'	2.21	0.41
2:GB:2883:A:C5'	2:GB:2884:U:H5'	2.50	0.41
3:HB:55:U:H4'	8:MB:28:VAL:HG11	2.02	0.41
5:JB:17:THR:OG1	5:JB:204:ILE:HA	2.20	0.41
6:KB:38:THR:N	6:KB:42:ASP:HB2	2.36	0.41
6:KB:52:LEU:HA	6:KB:53:PRO:HD3	1.86	0.41
6:KB:170:LEU:HA	6:KB:170:LEU:HD23	1.82	0.41
8:MB:76:SER:OG	8:MB:83:ARG:HA	2.21	0.41
9:NB:144:VAL:HA	9:NB:147:ASN:HB2	2.03	0.41
10:OB:141:LYS:HB2	10:OB:141:LYS:HE2	1.91	0.41
13:RB:49:ARG:HH12	32:KC:4:MET:CE	2.32	0.41
13:RB:138:LEU:HD23	13:RB:145:PRO:HB3	2.02	0.41
17:VB:16:ARG:CZ	17:VB:19:LEU:HD21	2.51	0.41
17:VB:85:LYS:O	17:VB:86:ILE:HD13	2.20	0.41
20:YB:54:ALA:O	20:YB:57:ASN:HB2	2.20	0.41
21:ZB:57:LEU:CD1	21:ZB:78:LYS:HB2	2.51	0.41
26:EC:3:LEU:HD13	26:EC:4:SER:N	2.36	0.41
4:NC:29:G:H2'	4:NC:30:G:O4'	2.20	0.41
4:NC:35:A:H2'	4:NC:36:U:C6	2.55	0.41
35:OC:187:VAL:H	35:PC:313:PRO:HG2	1.86	0.41
36:QC:70:PHE:CD1	36:QC:163:PHE:HB3	2.56	0.41
37:RC:35:GLU:O	37:RC:39:ILE:N	2.39	0.41
38:SC:106:TYR:HA	38:SC:111:ALA:HB3	2.03	0.41
39:TC:40:ARG:HD3	39:TC:40:ARG:HA	1.89	0.41
40:UC:91:VAL:HG22	40:UC:92:LYS:O	2.21	0.41
50:ED:1:MET:O	50:ED:3:LYS:HG2	2.21	0.41
50:ED:3:LYS:HD2	50:ED:65:GLN:O	2.21	0.41
53:HD:28:LYS:HZ1	53:HD:30:LEU:HD11	1.86	0.41
53:HD:81:ARG:HB3	53:HD:82:GLY:H	1.69	0.41
1:A:383:A:H8	1:A:383:A:O5'	2.04	0.41
1:A:701:C:OP1	1:A:703:G:H5'	2.21	0.41
1:A:1007:C:N4	1:A:1022:G:H22	2.19	0.41
1:A:1166:G:O2'	1:A:1169:A:N7	2.49	0.41
2:B:861:A:C2	2:B:917:A:C4	3.09	0.41
2:B:1021:A:H3'	2:B:1021:A:C8	2.55	0.41
2:B:1032:A:H2	2:B:1122:G:H1	1.69	0.41
2:B:1213:A:N6	2:B:1214:A:C6	2.89	0.41
2:B:1233:C:O5'	2:B:1233:C:H6	2.04	0.41
2:B:1299:G:H3'	2:B:1639:U:O4	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1908:C:O2'	4:IA:12:G:H5"	2.21	0.41
2:B:1914:C:OP2	2:B:1914:C:H6	2.03	0.41
2:B:1988:C:H2'	2:B:1989:G:H8	1.86	0.41
2:B:2117:A:H61	2:B:2172:U:H3	1.69	0.41
2:B:2291:U:OP1	2:B:2381:C:H5'	2.21	0.41
2:B:2549:G:O2'	2:B:2550:G:H5'	2.21	0.41
2:B:2820:A:P	15:O:2:ARG:HH22	2.44	0.41
5:E:183:ARG:CG	5:E:183:ARG:NH1	2.82	0.41
7:G:102:PRO:HB2	7:G:105:VAL:HG23	2.03	0.41
8:H:110:ALA:HB2	8:H:142:PRO:HD3	2.03	0.41
8:H:131:TYR:CE2	8:H:133:LEU:HD22	2.56	0.41
9:I:3:ARG:NH1	9:I:4:ILE:H	2.19	0.41
10:J:101:LEU:HD12	10:J:107:ILE:HG23	2.02	0.41
11:K:19:GLU:HA	11:K:59:LYS:O	2.20	0.41
12:L:12:ASP:HB2	12:L:13:ASN:H	1.61	0.41
12:L:14:THR:OG1	12:L:86:ILE:HD12	2.21	0.41
12:L:63:VAL:HG22	12:L:84:ALA:HA	2.02	0.41
28:BA:14:ILE:HG23	28:BA:31:ILE:HB	2.03	0.41
29:CA:20:ARG:HA	29:CA:23:HIS:ND1	2.35	0.41
36:LA:188:ALA:HB1	36:LA:192:SER:CB	2.51	0.41
37:MA:21:ARG:HD2	44:TA:12:ASP:OD2	2.21	0.41
37:MA:150:LYS:O	37:MA:201:TYR:N	2.52	0.41
38:NA:76:ARG:O	38:NA:79:PHE:HB3	2.21	0.41
39:OA:50:GLU:OE2	39:OA:51:VAL:HG23	2.21	0.41
39:OA:51:VAL:O	39:OA:55:VAL:HG23	2.20	0.41
44:TA:87:THR:C	44:TA:89:ASP:H	2.24	0.41
45:UA:79:SER:HB2	45:UA:106:LYS:NZ	2.36	0.41
46:VA:58:VAL:N	46:VA:66:VAL:O	2.45	0.41
47:WA:23:TYR:O	47:WA:70:LEU:HD23	2.21	0.41
1:FB:69:G:C2	1:FB:73:G:C8	3.09	0.41
1:FB:348:G:C2	1:FB:349:A:C8	3.09	0.41
1:FB:583:A:O2'	51:FD:91:ARG:NE	2.54	0.41
1:FB:658:G:H2'	1:FB:659:U:C6	2.56	0.41
1:FB:676:A:H1'	45:ZC:115:PRO:HB3	2.03	0.41
1:FB:1313:U:OP1	53:HD:5:LEU:HB2	2.21	0.41
2:GB:191:A:H2'	2:GB:192:C:H6	1.85	0.41
2:GB:501:A:C6	2:GB:502:A:C6	3.09	0.41
2:GB:593:G:C5	2:GB:594:U:C5	3.09	0.41
2:GB:647:G:H8	2:GB:647:G:O5'	2.03	0.41
2:GB:708:C:H42	2:GB:723:G:H1	1.67	0.41
2:GB:869:G:H2'	2:GB:870:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1243:G:H2'	2:GB:1244:G:O4'	2.20	0.41
2:GB:1263:U:C4	2:GB:1264:G:C6	3.09	0.41
2:GB:1340:U:OP2	21:ZB:78:LYS:NZ	2.52	0.41
2:GB:1641:A:H3'	2:GB:1642:G:H8	1.86	0.41
2:GB:1641:A:H3'	2:GB:1642:G:C8	2.56	0.41
2:GB:1817:G:C6	2:GB:1818:U:C5	3.09	0.41
2:GB:2167:U:O2'	2:GB:2168:G:O5'	2.39	0.41
2:GB:2251:OMG:H2'	2:GB:2252:G:C8	2.55	0.41
2:GB:2623:G:H4'	2:GB:2825:G:C8	2.56	0.41
2:GB:2843:G:C2	2:GB:2875:C:N3	2.89	0.41
3:HB:11:C:OP2	3:HB:12:C:N4	2.42	0.41
6:KB:75:VAL:HG22	6:KB:76:ARG:H	1.86	0.41
7:LB:91:GLY:HA2	7:LB:92:PRO:HD2	1.74	0.41
9:NB:27:LYS:HE3	9:NB:27:LYS:HB3	1.80	0.41
13:RB:119:GLU:HA	13:RB:137:LYS:HE3	2.02	0.41
24:CC:21:LEU:HD21	24:CC:41:ARG:NH1	2.36	0.41
29:HC:27:PRO:HA	29:HC:28:PRO:HD3	1.92	0.41
35:OC:111:ALA:HB2	35:OC:172:TYR:CD1	2.55	0.41
40:UC:17:SER:O	40:UC:21:LEU:HG	2.21	0.41
42:WC:40:ALA:O	42:WC:42:GLU:N	2.49	0.41
42:WC:83:ILE:HB	42:WC:137:VAL:HG22	2.03	0.41
47:BD:22:ILE:HG22	47:BD:25:ILE:HG13	2.02	0.41
48:CD:40:CYS:HG	48:CD:43:CYS:CB	2.34	0.41
49:DD:24:SER:O	49:DD:27:VAL:N	2.54	0.41
53:HD:25:LYS:HG3	53:HD:26:GLY:H	1.85	0.41
53:HD:61:TYR:HE2	53:HD:63:THR:HG23	1.86	0.41
1:A:87:A:H5"	1:A:88:C:C2	2.57	0.40
1:A:979:C:OP1	1:A:1223:C:N4	2.54	0.40
1:A:1244:C:H2'	1:A:1245:A:C8	2.57	0.40
1:A:1355:G:H1'	1:A:1368:G:N2	2.36	0.40
2:B:238:C:H2'	2:B:239:U:O4'	2.21	0.40
2:B:535:C:O3'	18:R:53:ARG:NH1	2.54	0.40
2:B:660:G:C5	2:B:661:C:C5	3.09	0.40
2:B:1167:U:C2	2:B:1183:G:N2	2.89	0.40
2:B:1323:U:H2'	2:B:1324:G:H5'	2.02	0.40
2:B:1384:A:N3	2:B:1405:U:H1'	2.36	0.40
2:B:1716:U:H2'	2:B:1717:G:C8	2.56	0.40
2:B:2085:C:H2'	2:B:2086:U:O4'	2.20	0.40
2:B:2154:G:H21	2:B:2155:G:H8	1.68	0.40
2:B:2443:C:H2'	2:B:2444:G:H8	1.86	0.40
2:B:2658:C:H2'	2:B:2659:G:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2753:A:O2'	33:GA:15:LYS:NZ	2.53	0.40
3:C:78:A:N3	3:C:99:A:C6	2.89	0.40
6:F:21:VAL:HA	6:F:22:PRO:HD2	1.85	0.40
6:F:70:ALA:HB3	6:F:72:VAL:HG12	2.03	0.40
7:G:101:LEU:HA	7:G:102:PRO:HD3	1.88	0.40
7:G:117:ARG:O	7:G:121:GLY:N	2.54	0.40
8:H:16:ARG:N	8:H:17:PRO:HD2	2.36	0.40
10:J:127:VAL:HA	10:J:140:LEU:O	2.21	0.40
13:M:94:GLU:HB2	13:M:124:LYS:HB3	2.03	0.40
16:P:49:VAL:HG22	16:P:76:LYS:HZ2	1.86	0.40
17:Q:19:LEU:H	17:Q:19:LEU:HG	1.70	0.40
18:R:88:ILE:H	18:R:88:ILE:HG12	1.65	0.40
19:S:81:TYR:CE1	19:S:83:ARG:NH1	2.89	0.40
21:U:57:LEU:HD12	21:U:78:LYS:HB2	2.02	0.40
21:U:89:ILE:HG22	21:U:92:LEU:HB2	2.02	0.40
22:V:99:CYS:SG	22:V:100:ALA:N	2.94	0.40
26:Z:3:LEU:HD11	26:Z:7:ARG:HH11	1.86	0.40
32:FA:14:VAL:HG22	32:FA:24:ALA:HB2	2.03	0.40
37:MA:11:ARG:HD3	37:MA:15:THR:HB	2.03	0.40
44:TA:6:ILE:HD11	44:TA:23:ILE:HG21	2.02	0.40
47:WA:32:GLU:HG2	47:WA:36:LYS:HD2	2.03	0.40
49:YA:50:HIS:O	49:YA:53:HIS:HB3	2.21	0.40
53:CB:53:ASN:HD22	53:CB:75:ALA:HB1	1.86	0.40
1:FB:238:G:C6	1:FB:239:U:C4	3.09	0.40
1:FB:322:C:N3	1:FB:332:G:N2	2.69	0.40
1:FB:332:G:C4	1:FB:333:G:C8	3.09	0.40
1:FB:1216:G:H5"	48:CD:5:ALA:HB2	2.03	0.40
2:GB:768:G:C4	2:GB:769:G:C8	3.09	0.40
2:GB:778:G:C6	2:GB:779:U:N3	2.90	0.40
2:GB:889:C:O2'	2:GB:890:A:C8	2.74	0.40
2:GB:1013:C:H42	2:GB:1149:G:H1	1.68	0.40
2:GB:1788:C:H2'	2:GB:1789:A:O4'	2.21	0.40
2:GB:1942:5MC:OP2	2:GB:1943:U:O2'	2.27	0.40
2:GB:2723:C:O5'	2:GB:2723:C:H6	2.03	0.40
2:GB:2749:A:N1	2:GB:2750:A:N6	2.69	0.40
2:GB:2784:C:H1'	6:KB:37:ARG:HH22	1.86	0.40
3:HB:58:A:H2'	3:HB:59:A:O4'	2.21	0.40
4:IB:35:A:H61	34:MC:13:A:N6	2.19	0.40
6:KB:21:VAL:HG21	6:KB:173:VAL:HG21	2.03	0.40
7:LB:141:ALA:O	7:LB:144:LYS:HB3	2.21	0.40
9:NB:50:VAL:HG12	9:NB:51:ARG:N	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:ZB:50:LYS:HD2	21:ZB:50:LYS:HA	2.00	0.40
23:BC:152:ALA:HA	23:BC:171:ILE:HD11	2.03	0.40
25:DC:6:GLU:OE1	25:DC:61:ARG:HB3	2.21	0.40
25:DC:81:ARG:HB2	25:DC:81:ARG:NH1	2.32	0.40
27:FC:22:ALA:O	27:FC:26:LEU:N	2.54	0.40
4:NC:20:U:H5	4:NC:59:A:N6	2.19	0.40
35:OC:147:GLU:HG2	35:OC:165:LYS:HB3	2.03	0.40
35:OC:187:VAL:HG13	35:OC:195:ARG:O	2.21	0.40
36:QC:69:LEU:HD22	36:QC:159:PRO:HG3	2.02	0.40
36:QC:114:ARG:HA	36:QC:117:GLU:HB2	2.03	0.40
37:RC:123:GLN:O	37:RC:128:PHE:HB2	2.21	0.40
41:VC:71:PRO:HG2	41:VC:91:VAL:HG11	2.03	0.40
42:WC:5:PRO:HB2	42:WC:32:LYS:NZ	2.36	0.40
42:WC:20:TYR:CE2	42:WC:75:ARG:HD2	2.55	0.40
42:WC:29:SER:HB3	42:WC:32:LYS:HD2	2.02	0.40
45:ZC:122:LYS:HE2	45:ZC:122:LYS:HB3	1.81	0.40
47:BD:14:ARG:HE	47:BD:44:ARG:HH12	1.70	0.40
50:ED:19:ILE:H	50:ED:19:ILE:HG13	1.64	0.40
51:FD:14:LYS:HE3	51:FD:14:LYS:H	1.86	0.40
1:A:737:A:H1'	40:PA:73:ASN:OD1	2.21	0.40
1:A:1430:C:H2'	1:A:1431:C:C6	2.56	0.40
2:B:327:G:C2	2:B:328:U:C2	3.09	0.40
2:B:495:G:H1'	20:T:57:ASN:OD1	2.21	0.40
2:B:681:G:H2'	2:B:682:G:O4'	2.21	0.40
2:B:735:A:H3'	2:B:736:C:C6	2.55	0.40
2:B:882:G:H2'	2:B:883:G:C8	2.56	0.40
2:B:1168:G:C2	2:B:1182:A:C2	3.09	0.40
2:B:1530:G:O6	2:B:1542:G:N2	2.54	0.40
2:B:2166:G:H2'	2:B:2167:U:C6	2.56	0.40
2:B:2563:U:O2	2:B:2565:A:H8	2.04	0.40
2:B:2680:C:H5'	6:F:189:PRO:HA	2.02	0.40
2:B:2764:A:H5'	2:B:2765:A:OP2	2.21	0.40
4:D:19:G:H5'	4:D:20:U:H5	1.86	0.40
6:F:5:LEU:HD11	6:F:79:ARG:HB2	2.04	0.40
12:L:15:GLY:O	12:L:47:ILE:HG13	2.22	0.40
13:M:65:ARG:HG3	13:M:66:GLY:N	2.36	0.40
14:N:25:ASP:OD1	23:W:78:LYS:HA	2.21	0.40
14:N:54:MET:HB2	14:N:54:MET:HE3	1.88	0.40
17:Q:45:PHE:CE2	17:Q:74:ARG:HB3	2.57	0.40
23:W:71:VAL:HG13	23:W:86:VAL:HG12	2.04	0.40
31:EA:47:ARG:HA	31:EA:48:LYS:HZ1	1.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:JA:111:ALA:HB2	35:JA:172:TYR:CD1	2.55	0.40
39:OA:32:VAL:O	39:OA:43:LEU:HD12	2.20	0.40
42:RA:100:ILE:HA	42:RA:101:PRO:HD3	1.74	0.40
46:VA:8:ASN:HD22	46:VA:8:ASN:C	2.24	0.40
47:WA:49:THR:HB	47:WA:52:GLU:HB2	2.03	0.40
1:FB:421:U:H4'	1:FB:422:C:OP2	2.21	0.40
1:FB:552:U:H1'	46:AD:32:PHE:CE1	2.56	0.40
1:FB:909:A:H8	1:FB:909:A:O5'	2.04	0.40
1:FB:950:U:H2'	1:FB:951:G:H8	1.86	0.40
1:FB:1097:C:H2'	1:FB:1098:C:C6	2.56	0.40
1:FB:1146:A:H2'	1:FB:1147:C:H6	1.86	0.40
1:FB:1151:A:O2'	1:FB:1152:A:H8	2.05	0.40
1:FB:1338:G:C5'	1:FB:1339:A:OP2	2.67	0.40
1:FB:1493:A:C4	2:GB:1913:A:N6	2.89	0.40
1:FB:1523:G:OP1	45:ZC:123:LYS:HE3	2.21	0.40
2:GB:374:A:C2	2:GB:401:A:C4	3.10	0.40
2:GB:615:G:H2'	7:LB:44:ARG:CZ	2.52	0.40
2:GB:1252:G:C2	2:GB:1253:A:C2	3.09	0.40
2:GB:1479:G:H1'	2:GB:1558:A:OP1	2.21	0.40
2:GB:1657:C:P	6:KB:136:ARG:HG2	2.62	0.40
2:GB:1916:A:H2'	2:GB:1917:PSU:O4'	2.21	0.40
2:GB:2076:U:H5	2:GB:2596:U:O2	2.04	0.40
2:GB:2358:G:H22	13:RB:55:ARG:NH1	2.14	0.40
3:HB:46:A:C5	3:HB:47:C:C4	3.09	0.40
6:KB:51:PHE:CD2	6:KB:77:ILE:HD12	2.54	0.40
8:MB:16:ARG:N	8:MB:17:PRO:HD2	2.35	0.40
10:OB:53:ALA:O	10:OB:57:ARG:HG2	2.21	0.40
15:TB:110:PRO:O	15:TB:111:LEU:HD22	2.20	0.40
15:TB:111:LEU:HA	15:TB:111:LEU:HD13	1.62	0.40
22:AC:51:VAL:HG23	22:AC:58:GLY:HA3	2.03	0.40
23:BC:93:ASP:HB2	23:BC:131:ARG:HH12	1.85	0.40
24:CC:4:LYS:HD3	24:CC:7:LEU:HD11	2.03	0.40
33:LC:15:LYS:HE3	33:LC:15:LYS:HB2	1.88	0.40
36:QC:28:PHE:CD2	36:QC:190:THR:HA	2.57	0.40
36:QC:132:LYS:HA	36:QC:135:GLN:HB3	2.02	0.40
42:WC:9:MET:HA	42:WC:12:ARG:HB3	2.02	0.40
46:AD:89:ARG:NH1	46:AD:95:GLY:N	2.69	0.40
48:CD:61:TRP:OXT	48:CD:61:TRP:CG	2.73	0.40
49:DD:50:HIS:O	49:DD:53:HIS:HB3	2.20	0.40
50:ED:69:THR:O	50:ED:69:THR:OG1	2.38	0.40
1:A:69:G:C2	1:A:73:G:C8	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:123:C:H5"	1:A:311:C:O2'	2.22	0.40
1:A:358:U:H2'	1:A:359:U:C6	2.56	0.40
1:A:888:G:H3'	1:A:889:A:H2'	2.02	0.40
1:A:950:U:H2'	1:A:951:G:H8	1.86	0.40
1:A:1298:C:H5	41:QA:114:ARG:NH1	2.11	0.40
1:A:1498:UR3:H2'	34:HA:17:U:OP1	2.21	0.40
2:B:295:G:O5'	22:V:1:MET:HG3	2.21	0.40
2:B:374:A:C2	2:B:401:A:C4	3.09	0.40
2:B:720:C:H5"	2:B:721:C:OP2	2.21	0.40
2:B:935:C:H2'	2:B:936:C:C6	2.56	0.40
2:B:945:A:C4	2:B:2448:A:C2	3.09	0.40
2:B:1013:C:H42	2:B:1149:G:H1	1.68	0.40
2:B:1152:C:H5"	18:R:80:ILE:CG2	2.51	0.40
2:B:1181:C:H2'	2:B:1182:A:C8	2.56	0.40
2:B:1191:G:OP1	13:M:32:THR:HB	2.22	0.40
2:B:1550:C:H2'	2:B:1551:C:H6	1.86	0.40
2:B:1779:U:OP2	2:B:1784:A:N6	2.46	0.40
2:B:2029:G:H2'	2:B:2031:A:OP1	2.20	0.40
2:B:2038:G:H2'	2:B:2039:C:C6	2.56	0.40
2:B:2661:G:C6	2:B:2662:A:C6	3.08	0.40
2:B:2723:C:O5'	2:B:2723:C:H6	2.04	0.40
6:F:116:VAL:HG13	6:F:117:MET:N	2.36	0.40
9:I:19:VAL:HG12	9:I:21:PRO:HD3	2.03	0.40
10:J:60:GLU:OE1	10:J:64:GLU:HB3	2.20	0.40
12:L:31:LYS:HE2	12:L:31:LYS:HB2	1.63	0.40
14:N:118:LEU:HD23	14:N:118:LEU:HA	1.86	0.40
15:O:104:ARG:HB3	15:O:107:ASP:OD1	2.21	0.40
17:Q:7:ILE:O	17:Q:10:VAL:N	2.55	0.40
20:T:78:GLU:HG3	20:T:79:GLY:N	2.36	0.40
23:W:102:LEU:HA	23:W:137:ILE:HB	2.03	0.40
25:Y:95:LEU:O	25:Y:98:LEU:N	2.45	0.40
37:MA:131:ARG:HH11	37:MA:131:ARG:HG2	1.86	0.40
43:SA:97:LYS:HE3	43:SA:97:LYS:HB3	1.86	0.40
45:UA:120:ARG:NH1	45:UA:126:ARG:HH11	2.11	0.40
47:WA:87:TYR:HB3	53:CB:73:GLU:HG2	2.02	0.40
1:FB:4:U:H4'	1:FB:5:U:OP2	2.21	0.40
1:FB:91:C:H2'	1:FB:92:G:H8	1.87	0.40
1:FB:137:C:H2'	1:FB:138:G:H8	1.85	0.40
1:FB:321:A:C2	1:FB:333:G:C2	3.10	0.40
1:FB:600:C:H2'	1:FB:601:C:H6	1.87	0.40
1:FB:714:G:H2'	1:FB:715:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:FB:875:C:O2'	42:WC:11:THR:HG23	2.21	0.40
1:FB:922:G:N3	1:FB:1398:A:H2	2.20	0.40
1:FB:1058:G:H2'	1:FB:1059:C:O4'	2.21	0.40
1:FB:1060:C:H2'	1:FB:1061:G:C8	2.57	0.40
1:FB:1258:G:H2'	1:FB:1259:C:C6	2.55	0.40
1:FB:1288:A:N3	1:FB:1352:C:O2'	2.46	0.40
1:FB:1434:A:H61	1:FB:1467:G:H1'	1.86	0.40
1:FB:1480:G:N1	1:FB:1481:U:C2	2.90	0.40
2:GB:387:U:H4'	2:GB:388:G:O5'	2.22	0.40
2:GB:394:A:C6	2:GB:395:U:N3	2.89	0.40
2:GB:404:C:O2'	2:GB:405:U:OP2	2.36	0.40
2:GB:530:G:C6	2:GB:2022:U:OP1	2.74	0.40
2:GB:686:G:N3	31:JC:11:LYS:HD2	2.35	0.40
2:GB:720:C:H5"	2:GB:721:C:OP2	2.22	0.40
2:GB:735:A:H3'	2:GB:736:C:C6	2.57	0.40
2:GB:1190:G:H5"	13:RB:32:THR:HA	2.04	0.40
2:GB:1274:A:N3	2:GB:1297:C:H1'	2.37	0.40
2:GB:1344:G:OP1	2:GB:1345:C:H5	2.05	0.40
2:GB:1864:U:OP1	2:GB:2410:G:O2'	2.39	0.40
2:GB:2029:G:C2	2:GB:2033:A:N7	2.89	0.40
2:GB:2489:G:C6	2:GB:2490:G:N1	2.89	0.40
2:GB:2711:A:OP1	2:GB:2712(A):A:P	2.79	0.40
6:KB:37:ARG:HG3	6:KB:44:TYR:CZ	2.57	0.40
14:SB:118:LEU:HD23	14:SB:118:LEU:HA	1.85	0.40
14:SB:138:ASP:OD1	14:SB:138:ASP:N	2.54	0.40
16:UB:62:LYS:HE3	16:UB:62:LYS:HB2	1.90	0.40
23:BC:165:VAL:HB	23:BC:166:SER:H	1.59	0.40
4:NC:15:G:H2'	4:NC:59:A:C2	2.56	0.40
41:VC:78:ARG:HG2	41:VC:79:ARG:NH2	2.36	0.40
42:WC:102:ARG:H	42:WC:102:ARG:HG3	1.53	0.40
45:ZC:34:ASP:O	45:ZC:36:ASP:N	2.54	0.40
45:ZC:120:ARG:NH1	45:ZC:120:ARG:CG	2.85	0.40
50:ED:77:ALA:HB3	50:ED:79:VAL:HG23	2.02	0.40
1:A:91:C:H2'	1:A:92:G:C8	2.57	0.40
1:A:517:G:N2	1:A:533:A:OP2	2.42	0.40
1:A:552:U:H1'	46:VA:32:PHE:CE1	2.57	0.40
1:A:909:A:H2'	1:A:910:C:O4'	2.20	0.40
1:A:998(A):G:H22	1:A:1043:C:N4	2.19	0.40
2:B:65:C:H2'	2:B:66:C:H6	1.86	0.40
2:B:464:U:H2'	2:B:465:G:O4'	2.21	0.40
2:B:900:A:H2'	2:B:901:A:H8	1.82	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:966:G:O4'	2:B:2267:A:N6	2.54	0.40
2:B:1221(A):C:H2'	2:B:1222:C:C6	2.56	0.40
2:B:1375:C:O5'	2:B:1375:C:H6	2.05	0.40
2:B:1423:G:C4	2:B:1424:G:C8	3.09	0.40
2:B:1789:A:OP1	5:E:222:ARG:HG3	2.21	0.40
2:B:2011:U:H2'	2:B:2012:G:O4'	2.22	0.40
2:B:2149:G:H5'	2:B:2150:U:OP2	2.21	0.40
2:B:2543:G:C6	2:B:2544:G:C6	3.10	0.40
2:B:2850:A:OP2	2:B:2866:U:H5	2.05	0.40
3:C:83:G:H5"	27:AA:52:HIS:NE2	2.36	0.40
5:E:111:LEU:HD12	5:E:115:GLN:OE1	2.22	0.40
5:E:213:ARG:NH2	5:E:218:ARG:HD2	2.37	0.40
6:F:18:ASP:HB3	17:Q:82:LEU:HD11	2.02	0.40
6:F:81:ILE:HD13	6:F:81:ILE:HA	1.84	0.40
7:G:113:ALA:HB1	7:G:186:ILE:HG21	2.03	0.40
10:J:145:VAL:HB	10:J:146:ALA:H	1.48	0.40
11:K:9:VAL:HG11	11:K:39:ARG:HH22	1.86	0.40
11:K:89:LYS:O	11:K:92:ALA:HB3	2.22	0.40
13:M:96:THR:HB	13:M:97:PRO:HD2	2.02	0.40
14:N:76:LYS:HB3	14:N:91:GLU:CG	2.47	0.40
17:Q:85:LYS:O	17:Q:86:ILE:HD13	2.22	0.40
18:R:43:GLY:HA3	19:S:73:SER:HB3	2.03	0.40
18:R:85:LYS:HE3	18:R:116:ALA:O	2.21	0.40
23:W:93:ASP:CB	23:W:131:ARG:HH22	2.34	0.40
26:Z:8:LYS:O	26:Z:11:GLU:HG2	2.20	0.40
27:AA:46:ASN:O	27:AA:49:LYS:N	2.55	0.40
35:JA:147:GLU:HG2	35:JA:165:LYS:HB3	2.02	0.40
36:LA:23:ARG:HH11	36:LA:23:ARG:CB	2.35	0.40
38:NA:106:TYR:HA	38:NA:111:ALA:HB3	2.03	0.40
39:OA:144:THR:HG22	39:OA:147:ASP:OD2	2.21	0.40
41:QA:70:LYS:HG3	41:QA:96:GLN:HB3	2.02	0.40
41:QA:105:VAL:O	41:QA:108:ALA:HB3	2.22	0.40
42:RA:83:ILE:HB	42:RA:137:VAL:HG22	2.04	0.40
46:VA:26:ALA:HA	46:VA:64:TYR:CD2	2.56	0.40
46:VA:77:LEU:HD21	46:VA:107:ALA:HA	2.04	0.40
49:YA:62:GLN:HE21	49:YA:62:GLN:HA	1.85	0.40
2:GB:27:G:C4	2:GB:512:G:N2	2.89	0.40
2:GB:99:U:C6	2:GB:102:G:N1	2.89	0.40
2:GB:1458:C:H4'	2:GB:1459:G:O4'	2.21	0.40
2:GB:1510:A:C4	2:GB:1511:A:C6	3.10	0.40
2:GB:1766:U:H2'	2:GB:1767:C:H6	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:2070:G:H2'	2:GB:2071:A:O4'	2.21	0.40
5:JB:10:THR:HB	5:JB:11:PRO:HD2	2.03	0.40
8:MB:22:ARG:HB2	8:MB:23:PHE:CD2	2.56	0.40
9:NB:3:ARG:NH2	9:NB:5:GLY:H	2.20	0.40
10:OB:123:LEU:HD12	10:OB:144:VAL:HB	2.04	0.40
11:PB:125:GLY:HA3	11:PB:126:PRO:HD2	1.80	0.40
15:TB:97:VAL:HG22	15:TB:114:VAL:HG22	2.03	0.40
18:WB:85:LYS:HE3	18:WB:116:ALA:O	2.21	0.40
19:XB:27:ALA:O	19:XB:64:HIS:NE2	2.53	0.40
26:EC:35:LEU:HD12	26:EC:53:LEU:HD12	2.02	0.40
36:QC:126:GLU:OE1	36:QC:130:ARG:HG3	2.21	0.40
46:AD:27:LEU:HD22	46:AD:98:TYR:CE1	2.56	0.40
48:CD:26:ARG:NH1	48:CD:43:CYS:HB3	2.36	0.40
1:A:137:C:H2'	1:A:138:G:H8	1.86	0.40
1:A:708:C:P	45:UA:85:ARG:HH22	2.44	0.40
1:A:922:G:O2'	1:A:1398:A:N1	2.44	0.40
1:A:943:U:OP2	1:A:943:U:C6	2.75	0.40
1:A:1001:G:N3	1:A:1001:G:H2'	2.37	0.40
1:A:1323:G:H4'	1:A:1362(B):C:C2	2.55	0.40
1:A:1424:C:H2'	1:A:1425:U:O4'	2.22	0.40
2:B:387:U:H4'	2:B:388:G:O5'	2.22	0.40
2:B:431:U:O2'	2:B:432:A:H5'	2.22	0.40
2:B:668:G:C5	2:B:670:A:C5	3.09	0.40
2:B:668:G:C6	2:B:670:A:C4	3.09	0.40
2:B:782:A:O2'	5:E:225:ALA:HB1	2.21	0.40
2:B:1024:G:H8	2:B:1024:G:O5'	2.05	0.40
2:B:1117:G:C6	2:B:1118:C:C4	3.10	0.40
2:B:2026:C:C4	2:B:2027:G:N7	2.89	0.40
2:B:2402:C:O4'	2:B:2403:C:H5	2.04	0.40
2:B:2492:U:C2'	2:B:2493:U:H5'	2.52	0.40
2:B:2516:G:C6	2:B:2517:C:C4	3.09	0.40
2:B:2534:A:C6	2:B:2535:G:C5	3.10	0.40
2:B:2674:G:H4'	12:L:30:ALA:HB2	2.04	0.40
9:I:121:ILE:HD13	9:I:144:VAL:HG11	2.04	0.40
11:K:15:LEU:HG	11:K:135:PRO:HB2	2.03	0.40
13:M:94:GLU:HG3	13:M:124:LYS:HG2	2.04	0.40
18:R:79:PHE:HE1	18:R:110:VAL:HA	1.86	0.40
22:V:19:LYS:HB2	22:V:19:LYS:HE2	1.89	0.40
25:Y:11:ARG:HB2	25:Y:12:PRO:HD2	2.03	0.40
27:AA:37:LEU:HD23	27:AA:37:LEU:HA	1.88	0.40
28:BA:69:LYS:HD3	53:CB:20:LEU:HG	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:OA:139:LEU:HA	39:OA:142:LEU:CD2	2.51	0.40
51:AB:58:GLU:CD	51:AB:75:ARG:HD2	2.42	0.40
54:DB:50:GLU:HG3	54:DB:51:GLU:N	2.37	0.40
1:FB:275:G:H2'	1:FB:276:G:H8	1.86	0.40
1:FB:421:U:C5	37:RC:127:ARG:NH1	2.89	0.40
1:FB:878:G:H5"	42:WC:90:GLY:HA3	2.02	0.40
1:FB:888:G:H3'	1:FB:889:A:H2'	2.04	0.40
1:FB:1068:G:N2	1:FB:1191:A:N3	2.70	0.40
1:FB:1123:A:O2'	1:FB:1124:G:H5'	2.21	0.40
1:FB:1175:G:C2	1:FB:1176:A:C5	3.10	0.40
1:FB:1220:G:H21	53:HD:54:GLY:CA	2.34	0.40
1:FB:1265:G:H2'	1:FB:1266:G:O4'	2.21	0.40
1:FB:1275:A:N6	1:FB:1276:G:O6	2.54	0.40
1:FB:1480:G:H2'	1:FB:1481:U:O4'	2.21	0.40
2:GB:226:G:H1'	2:GB:227:A:N7	2.37	0.40
2:GB:327:G:C2	2:GB:328:U:C2	3.09	0.40
2:GB:853:G:O5'	2:GB:853:G:H8	2.05	0.40
2:GB:1042:G:C6	2:GB:1043:C:C4	3.09	0.40
2:GB:1203:G:N1	2:GB:1241:A:OP2	2.51	0.40
2:GB:1270:C:H5"	2:GB:1271:G:C5'	2.52	0.40
2:GB:1728:G:H3'	2:GB:1729:A:H5"	2.03	0.40
2:GB:1827:C:C2'	2:GB:1828:G:H5'	2.52	0.40
2:GB:1835:G:H5'	2:GB:1836:C:OP2	2.21	0.40
2:GB:2023:G:H4'	2:GB:2617:C:O3'	2.20	0.40
2:GB:2771:C:O5'	2:GB:2771:C:H6	2.04	0.40
5:JB:85:ASP:HB2	5:JB:92:ILE:HD13	2.02	0.40
8:MB:111:LEU:O	8:MB:114:ILE:HG23	2.21	0.40
13:RB:88:LEU:HD23	13:RB:91:PHE:HE2	1.86	0.40
15:TB:28:LEU:HD23	15:TB:28:LEU:HA	1.95	0.40
21:ZB:23:GLU:OE2	21:ZB:25:LYS:HD2	2.22	0.40
23:BC:128:VAL:HG21	23:BC:132:ASN:HB2	2.04	0.40
31:JC:2:LYS:HG3	31:JC:6:GLN:NE2	2.35	0.40
4:NC:28:C:O2'	47:BD:118:ALA:HA	2.21	0.40
4:NC:53:G:C8	4:NC:54:5MU:H72	2.57	0.40
36:QC:98:LEU:HA	36:QC:98:LEU:HD13	1.82	0.40
36:QC:178:ARG:NH2	42:WC:74:PRO:HB3	2.37	0.40
36:QC:193:ASP:HA	36:QC:194:PRO:HD3	1.77	0.40
37:RC:6:HIS:CE1	37:RC:8:ILE:HB	2.57	0.40
38:SC:88:VAL:O	38:SC:90:GLY:N	2.54	0.40
41:VC:146:GLU:HG2	41:VC:149:ARG:HD3	2.04	0.40
49:DD:72:ARG:HG2	49:DD:72:ARG:O	2.21	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:GB:1412:A:O2'	8:MB:9:ARG:NH1[1_655]	1.99	0.21

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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
5	E	273/275 (99%)	243 (89%)	24 (9%)	6 (2%)	6 29
5	JB	273/275 (99%)	245 (90%)	22 (8%)	6 (2%)	6 29
6	F	202/206 (98%)	166 (82%)	28 (14%)	8 (4%)	3 18
6	KB	202/206 (98%)	167 (83%)	29 (14%)	6 (3%)	4 23
7	G	200/205 (98%)	173 (86%)	24 (12%)	3 (2%)	10 36
7	LB	200/205 (98%)	172 (86%)	25 (12%)	3 (2%)	10 36
8	H	179/182 (98%)	134 (75%)	37 (21%)	8 (4%)	2 16
8	MB	179/182 (98%)	134 (75%)	37 (21%)	8 (4%)	2 16
9	I	172/180 (96%)	134 (78%)	32 (19%)	6 (4%)	3 21
9	NB	172/180 (96%)	134 (78%)	32 (19%)	6 (4%)	3 21
10	J	144/148 (97%)	111 (77%)	23 (16%)	10 (7%)	1 8
10	OB	144/148 (97%)	111 (77%)	24 (17%)	9 (6%)	1 9
11	K	138/140 (99%)	115 (83%)	17 (12%)	6 (4%)	2 17
11	PB	138/140 (99%)	118 (86%)	15 (11%)	5 (4%)	3 21
12	L	120/122 (98%)	110 (92%)	9 (8%)	1 (1%)	19 51
12	QB	120/122 (98%)	108 (90%)	9 (8%)	3 (2%)	5 26
13	M	148/150 (99%)	126 (85%)	12 (8%)	10 (7%)	1 8
13	RB	148/150 (99%)	124 (84%)	14 (10%)	10 (7%)	1 8
14	N	139/141 (99%)	120 (86%)	17 (12%)	2 (1%)	11 37

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	SB	139/141 (99%)	121 (87%)	15 (11%)	3 (2%)	6	29
15	O	116/118 (98%)	99 (85%)	12 (10%)	5 (4%)	2	17
15	TB	116/118 (98%)	97 (84%)	13 (11%)	6 (5%)	2	13
16	P	108/112 (96%)	82 (76%)	23 (21%)	3 (3%)	5	24
16	UB	108/112 (96%)	83 (77%)	22 (20%)	3 (3%)	5	24
17	Q	135/146 (92%)	118 (87%)	13 (10%)	4 (3%)	4	23
17	VB	135/146 (92%)	117 (87%)	15 (11%)	3 (2%)	6	29
18	R	115/118 (98%)	106 (92%)	9 (8%)	0	100	100
18	WB	115/118 (98%)	106 (92%)	8 (7%)	1 (1%)	17	49
19	S	99/101 (98%)	85 (86%)	10 (10%)	4 (4%)	3	18
19	XB	99/101 (98%)	84 (85%)	12 (12%)	3 (3%)	4	23
20	T	110/113 (97%)	97 (88%)	11 (10%)	2 (2%)	8	32
20	YB	110/113 (97%)	98 (89%)	12 (11%)	0	100	100
21	U	93/96 (97%)	83 (89%)	8 (9%)	2 (2%)	6	29
21	ZB	93/96 (97%)	85 (91%)	6 (6%)	2 (2%)	6	29
22	AC	105/110 (96%)	83 (79%)	16 (15%)	6 (6%)	1	12
22	V	105/110 (96%)	83 (79%)	14 (13%)	8 (8%)	1	6
23	BC	187/206 (91%)	137 (73%)	43 (23%)	7 (4%)	3	20
23	W	187/206 (91%)	139 (74%)	41 (22%)	7 (4%)	3	20
24	CC	82/85 (96%)	70 (85%)	8 (10%)	4 (5%)	2	14
24	X	82/85 (96%)	71 (87%)	8 (10%)	3 (4%)	3	20
25	DC	95/98 (97%)	87 (92%)	7 (7%)	1 (1%)	14	44
25	Y	95/98 (97%)	86 (90%)	8 (8%)	1 (1%)	14	44
26	EC	68/72 (94%)	61 (90%)	4 (6%)	3 (4%)	2	16
26	Z	68/72 (94%)	59 (87%)	6 (9%)	3 (4%)	2	16
27	AA	58/60 (97%)	44 (76%)	12 (21%)	2 (3%)	3	21
27	FC	58/60 (97%)	45 (78%)	11 (19%)	2 (3%)	3	21
28	BA	67/71 (94%)	43 (64%)	16 (24%)	8 (12%)	0	3
28	GC	67/71 (94%)	44 (66%)	15 (22%)	8 (12%)	0	3
29	CA	57/60 (95%)	50 (88%)	6 (10%)	1 (2%)	8	32
29	HC	57/60 (95%)	49 (86%)	8 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
30	DA	51/54 (94%)	42 (82%)	8 (16%)	1 (2%)	7	30
30	IC	51/54 (94%)	42 (82%)	8 (16%)	1 (2%)	7	30
31	EA	46/49 (94%)	41 (89%)	5 (11%)	0	100	100
31	JC	46/49 (94%)	38 (83%)	8 (17%)	0	100	100
32	FA	62/65 (95%)	53 (86%)	9 (14%)	0	100	100
32	KC	62/65 (95%)	53 (86%)	9 (14%)	0	100	100
33	GA	35/37 (95%)	24 (69%)	8 (23%)	3 (9%)	1	5
33	LC	35/37 (95%)	24 (69%)	8 (23%)	3 (9%)	1	5
35	JA	108/365 (30%)	84 (78%)	18 (17%)	6 (6%)	2	12
35	KA	53/365 (14%)	31 (58%)	13 (24%)	9 (17%)	0	0
35	OC	108/365 (30%)	83 (77%)	19 (18%)	6 (6%)	2	12
35	PC	53/365 (14%)	31 (58%)	14 (26%)	8 (15%)	0	0
36	LA	232/256 (91%)	176 (76%)	40 (17%)	16 (7%)	1	8
36	QC	232/256 (91%)	174 (75%)	41 (18%)	17 (7%)	1	7
37	MA	204/239 (85%)	166 (81%)	28 (14%)	10 (5%)	2	14
37	RC	204/239 (85%)	167 (82%)	25 (12%)	12 (6%)	1	11
38	NA	206/209 (99%)	162 (79%)	35 (17%)	9 (4%)	2	16
38	SC	206/209 (99%)	158 (77%)	39 (19%)	9 (4%)	2	16
39	OA	149/162 (92%)	126 (85%)	19 (13%)	4 (3%)	5	26
39	TC	149/162 (92%)	124 (83%)	20 (13%)	5 (3%)	3	21
40	PA	99/101 (98%)	81 (82%)	14 (14%)	4 (4%)	3	18
40	UC	99/101 (98%)	82 (83%)	13 (13%)	4 (4%)	3	18
41	QA	153/156 (98%)	121 (79%)	24 (16%)	8 (5%)	2	13
41	VC	153/156 (98%)	121 (79%)	24 (16%)	8 (5%)	2	13
42	RA	136/138 (99%)	106 (78%)	25 (18%)	5 (4%)	3	20
42	WC	136/138 (99%)	106 (78%)	25 (18%)	5 (4%)	3	20
43	SA	125/128 (98%)	91 (73%)	28 (22%)	6 (5%)	2	15
43	XC	125/128 (98%)	93 (74%)	25 (20%)	7 (6%)	2	12
44	TA	96/105 (91%)	72 (75%)	15 (16%)	9 (9%)	0	4
44	YC	96/105 (91%)	75 (78%)	12 (12%)	9 (9%)	0	4
45	UA	114/129 (88%)	87 (76%)	23 (20%)	4 (4%)	3	21

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	ZC	114/129 (88%)	87 (76%)	24 (21%)	3 (3%)	5	26
46	AD	119/132 (90%)	91 (76%)	20 (17%)	8 (7%)	1	8
46	VA	119/132 (90%)	89 (75%)	22 (18%)	8 (7%)	1	8
47	BD	115/126 (91%)	90 (78%)	18 (16%)	7 (6%)	1	10
47	WA	115/126 (91%)	91 (79%)	18 (16%)	6 (5%)	2	13
48	CD	58/61 (95%)	45 (78%)	12 (21%)	1 (2%)	9	34
48	XA	58/61 (95%)	44 (76%)	13 (22%)	1 (2%)	9	34
49	DD	86/89 (97%)	67 (78%)	16 (19%)	3 (4%)	3	21
49	YA	86/89 (97%)	68 (79%)	14 (16%)	4 (5%)	2	15
50	ED	81/88 (92%)	72 (89%)	8 (10%)	1 (1%)	13	41
50	ZA	81/88 (92%)	71 (88%)	9 (11%)	1 (1%)	13	41
51	AB	97/105 (92%)	78 (80%)	15 (16%)	4 (4%)	3	18
51	FD	97/105 (92%)	81 (84%)	11 (11%)	5 (5%)	2	13
52	BB	68/88 (77%)	63 (93%)	4 (6%)	1 (2%)	10	36
52	GD	68/88 (77%)	61 (90%)	5 (7%)	2 (3%)	4	24
53	CB	81/93 (87%)	58 (72%)	16 (20%)	7 (9%)	1	5
53	HD	81/93 (87%)	58 (72%)	17 (21%)	6 (7%)	1	7
54	DB	97/106 (92%)	79 (81%)	11 (11%)	7 (7%)	1	7
54	ID	97/106 (92%)	79 (81%)	12 (12%)	6 (6%)	1	10
55	EB	22/27 (82%)	18 (82%)	2 (9%)	2 (9%)	1	4
55	JD	22/27 (82%)	18 (82%)	2 (9%)	2 (9%)	1	4
All	All	11806/13576 (87%)	9599 (81%)	1713 (14%)	494 (4%)	3	18

All (494) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	E	122	ASP
7	G	130	ALA
8	H	12	TYR
8	H	43	LEU
8	H	47	LYS
11	K	111	PRO
13	M	29	LYS
15	O	2	ARG
22	V	92	ASN

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Mol	Chain	Res	Type
24	X	43	THR
24	X	84	LEU
25	Y	3	LYS
26	Z	42	GLY
26	Z	43	GLN
26	Z	48	HIS
27	AA	38	GLU
28	BA	22	ILE
28	BA	52	THR
28	BA	56	VAL
35	JA	207	PRO
35	KA	323	ASN
35	KA	329	LEU
36	LA	17	PHE
36	LA	103	THR
36	LA	104	ASN
36	LA	124	SER
36	LA	165	VAL
37	MA	26	LYS
37	MA	100	ALA
38	NA	5	ILE
42	RA	42	GLU
43	SA	41	VAL
45	UA	89	ALA
45	UA	124	LYS
47	WA	3	ARG
52	BB	36	ASN
53	CB	9	VAL
53	CB	66	MET
54	DB	94	ALA
54	DB	99	LEU
5	JB	122	ASP
7	LB	130	ALA
8	MB	12	TYR
8	MB	43	LEU
8	MB	47	LYS
11	PB	111	PRO
13	RB	29	LYS
22	AC	92	ASN
24	CC	43	THR
24	CC	84	LEU
25	DC	3	LYS

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Mol	Chain	Res	Type
26	EC	42	GLY
26	EC	43	GLN
27	FC	38	GLU
28	GC	22	ILE
28	GC	52	THR
28	GC	56	VAL
35	OC	207	PRO
35	PC	323	ASN
35	PC	329	LEU
36	QC	17	PHE
36	QC	103	THR
36	QC	104	ASN
36	QC	124	SER
36	QC	165	VAL
37	RC	26	LYS
38	SC	5	ILE
42	WC	42	GLU
43	XC	41	VAL
45	ZC	89	ALA
45	ZC	124	LYS
47	BD	3	ARG
52	GD	36	ASN
53	HD	66	MET
54	ID	94	ALA
54	ID	99	LEU
5	E	26	LYS
5	E	236	GLY
7	G	7	TYR
8	H	14	GLU
8	H	63	ILE
8	H	163	ALA
9	I	21	PRO
9	I	47	GLU
10	J	42	SER
10	J	122	GLU
10	J	145	VAL
12	L	27	GLY
13	M	44	GLY
14	N	15	GLY
15	O	107	ASP
17	Q	18	ASP
19	S	64	HIS

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Mol	Chain	Res	Type
22	V	2	ARG
22	V	19	LYS
22	V	41	GLY
22	V	94	LYS
22	V	105	ALA
23	W	22	GLY
23	W	65	GLN
23	W	111	VAL
24	X	83	PRO
28	BA	38	LYS
28	BA	55	ARG
30	DA	32	ASN
33	GA	16	VAL
35	JA	143	ARG
35	KA	314	GLN
35	KA	324	LEU
35	KA	328	ARG
36	LA	150	SER
36	LA	208	ILE
37	MA	141	VAL
37	MA	172	ARG
38	NA	4	TYR
39	OA	65	ASN
40	PA	38	GLU
40	PA	42	GLU
41	QA	4	ARG
43	SA	70	LYS
43	SA	124	GLN
44	TA	16	LEU
46	VA	18	VAL
46	VA	26	ALA
46	VA	123	LYS
47	WA	42	ALA
47	WA	100	GLY
47	WA	116	THR
49	YA	80	ALA
51	AB	77	VAL
51	AB	99	SER
53	CB	11	VAL
54	DB	102	GLY
5	JB	26	LYS
8	MB	14	GLU

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Mol	Chain	Res	Type
8	MB	50	ALA
8	MB	63	ILE
8	MB	163	ALA
9	NB	21	PRO
9	NB	47	GLU
10	OB	12	LEU
10	OB	42	SER
10	OB	122	GLU
10	OB	145	VAL
12	QB	27	GLY
13	RB	43	GLY
13	RB	44	GLY
13	RB	76	LYS
15	TB	2	ARG
15	TB	107	ASP
17	VB	18	ASP
19	XB	64	HIS
22	AC	19	LYS
22	AC	105	ALA
23	BC	22	GLY
23	BC	65	GLN
23	BC	111	VAL
24	CC	83	PRO
26	EC	48	HIS
28	GC	38	LYS
28	GC	55	ARG
30	IC	32	ASN
33	LC	16	VAL
35	OC	143	ARG
35	PC	314	GLN
35	PC	324	LEU
35	PC	328	ARG
36	QC	208	ILE
37	RC	3	ASN
37	RC	100	ALA
37	RC	141	VAL
37	RC	172	ARG
38	SC	4	TYR
39	TC	65	ASN
40	UC	38	GLU
40	UC	42	GLU
41	VC	4	ARG

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Mol	Chain	Res	Type
41	VC	54	THR
43	XC	70	LYS
43	XC	124	GLN
44	YC	16	LEU
46	AD	18	VAL
46	AD	26	ALA
46	AD	123	LYS
47	BD	42	ALA
47	BD	100	GLY
47	BD	116	THR
49	DD	80	ALA
51	FD	77	VAL
51	FD	99	SER
53	HD	9	VAL
53	HD	11	VAL
54	ID	102	GLY
6	F	94	GLU
6	F	132	HIS
7	G	190	GLU
8	H	50	ALA
9	I	17	VAL
9	I	101	ARG
10	J	12	LEU
10	J	135	GLU
11	K	126	PRO
13	M	43	GLY
13	M	76	LYS
13	M	117	GLU
17	Q	126	ALA
19	S	29	PRO
19	S	78	LYS
23	W	21	ALA
35	JA	139	ALA
36	LA	16	HIS
36	LA	237	ALA
37	MA	3	ASN
37	MA	30	ARG
37	MA	60	ALA
38	NA	32	ALA
38	NA	42	GLN
41	QA	54	THR
41	QA	85	TYR

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Mol	Chain	Res	Type
41	QA	89	MET
42	RA	41	ARG
42	RA	127	LEU
44	TA	33	GLN
44	TA	78	ASN
44	TA	93	GLY
46	VA	51	ALA
47	WA	97	PRO
49	YA	23	GLY
49	YA	79	ARG
51	AB	97	SER
53	CB	25	LYS
53	CB	31	ILE
54	DB	95	ALA
6	KB	132	HIS
6	KB	135	HIS
7	LB	7	TYR
7	LB	190	GLU
9	NB	17	VAL
9	NB	101	ARG
10	OB	135	GLU
11	PB	41	ASP
11	PB	126	PRO
13	RB	38	GLN
13	RB	117	GLU
17	VB	55	ASN
17	VB	126	ALA
21	ZB	22	ALA
22	AC	41	GLY
22	AC	94	LYS
23	BC	13	GLU
28	GC	49	PHE
35	OC	139	ALA
36	QC	16	HIS
36	QC	125	PRO
36	QC	150	SER
36	QC	194	PRO
36	QC	237	ALA
37	RC	30	ARG
37	RC	60	ALA
38	SC	32	ALA
38	SC	42	GLN

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Mol	Chain	Res	Type
41	VC	89	MET
42	WC	127	LEU
44	YC	33	GLN
44	YC	78	ASN
44	YC	93	GLY
46	AD	51	ALA
46	AD	62	SER
47	BD	97	PRO
53	HD	25	LYS
53	HD	31	ILE
54	ID	95	ALA
5	E	268	ARG
6	F	52	LEU
10	J	127	VAL
11	K	41	ASP
11	K	76	SER
14	N	70	PRO
15	O	117	VAL
20	T	60	ASN
21	U	40	LYS
23	W	13	GLU
23	W	141	VAL
28	BA	49	PHE
33	GA	7	VAL
35	JA	160	LYS
35	KA	311	ASN
35	KA	315	GLY
35	KA	321	ARG
36	LA	10	LEU
36	LA	125	PRO
36	LA	158	LEU
36	LA	194	PRO
37	MA	127	ARG
37	MA	139	GLN
38	NA	22	LYS
38	NA	46	LYS
39	OA	11	ILE
39	OA	74	GLY
41	QA	16	LEU
41	QA	79	ARG
44	TA	37	PRO
45	UA	101	SER

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Mol	Chain	Res	Type
46	VA	62	SER
50	ZA	81	ARG
51	AB	98	LEU
55	EB	6	ARG
5	JB	268	ARG
6	KB	52	LEU
6	KB	94	GLU
12	QB	112	MET
13	RB	91	PHE
14	SB	15	GLY
19	XB	29	PRO
35	OC	160	LYS
35	PC	311	ASN
35	PC	315	GLY
35	PC	321	ARG
36	QC	126	GLU
36	QC	158	LEU
37	RC	127	ARG
38	SC	22	LYS
38	SC	46	LYS
39	TC	11	ILE
39	TC	74	GLY
41	VC	16	LEU
41	VC	79	ARG
41	VC	85	TYR
42	WC	41	ARG
44	YC	27	ALA
44	YC	37	PRO
44	YC	88	LEU
45	ZC	101	SER
49	DD	23	GLY
49	DD	79	ARG
50	ED	81	ARG
51	FD	14	LYS
51	FD	97	SER
51	FD	98	LEU
55	JD	6	ARG
6	F	179	GLU
8	H	138	GLN
11	K	51	PHE
13	M	88	LEU
13	M	91	PHE

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Mol	Chain	Res	Type
15	O	39	PRO
16	P	33	LYS
16	P	61	ASN
16	P	93	LYS
17	Q	55	ASN
17	Q	58	ASN
20	T	64	MET
21	U	22	ALA
23	W	157	LEU
36	LA	126	GLU
38	NA	88	VAL
40	PA	62	TRP
41	QA	17	VAL
43	SA	54	ASP
43	SA	96	LEU
43	SA	107	ARG
44	TA	27	ALA
44	TA	77	PRO
46	VA	25	PRO
54	DB	71	THR
54	DB	93	GLU
5	JB	236	GLY
8	MB	138	GLN
10	OB	30	LEU
11	PB	76	SER
13	RB	88	LEU
14	SB	70	PRO
14	SB	110	THR
15	TB	39	PRO
15	TB	56	LYS
15	TB	117	VAL
16	UB	33	LYS
16	UB	61	ASN
16	UB	93	LYS
18	WB	93	LYS
23	BC	21	ALA
23	BC	141	VAL
23	BC	157	LEU
28	GC	50	VAL
33	LC	7	VAL
36	QC	10	LEU
37	RC	139	GLN

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Mol	Chain	Res	Type
40	UC	62	TRP
43	XC	96	LEU
43	XC	107	ARG
44	YC	77	PRO
46	AD	25	PRO
46	AD	86	ARG
47	BD	23	TYR
54	ID	93	GLU
5	E	125	ILE
6	F	133	LYS
10	J	81	VAL
10	J	92	VAL
13	M	38	GLN
22	V	103	GLY
28	BA	50	VAL
29	CA	42	PRO
35	KA	358	GLU
36	LA	228	GLY
38	NA	147	ALA
42	RA	3	THR
44	TA	88	LEU
45	UA	117	ASN
46	VA	119	LYS
46	VA	125	PRO
47	WA	40	ASN
9	NB	24	VAL
10	OB	81	VAL
10	OB	127	VAL
21	ZB	40	LYS
22	AC	103	GLY
35	OC	105	PRO
36	QC	228	GLY
37	RC	82	GLU
38	SC	9	CYS
38	SC	88	VAL
41	VC	17	VAL
42	WC	54	ASP
43	XC	54	ASP
43	XC	58	ARG
46	AD	125	PRO
52	GD	23	LYS
6	F	56	PRO

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Mol	Chain	Res	Type
10	J	106	GLY
28	BA	19	GLY
35	JA	105	PRO
36	LA	231	GLU
53	CB	59	PRO
9	NB	37	VAL
10	OB	106	GLY
13	RB	122	PRO
15	TB	32	GLY
28	GC	19	GLY
47	BD	40	ASN
53	HD	59	PRO
6	F	130	GLY
6	F	172	VAL
9	I	24	VAL
9	I	37	VAL
11	K	135	PRO
15	O	32	GLY
37	MA	14	ILE
42	RA	128	GLY
54	DB	47	GLY
6	KB	56	PRO
6	KB	130	GLY
11	PB	135	PRO
12	QB	93	PRO
35	OC	121	GLY
36	QC	231	GLU
37	RC	14	ILE
39	TC	154	GLY
40	UC	81	ILE
42	WC	128	GLY
54	ID	47	GLY
5	E	256	GLY
13	M	122	PRO
27	AA	59	VAL
33	GA	10	ILE
44	TA	74	ILE
48	XA	14	PRO
49	YA	86	GLY
53	CB	76	PRO
5	JB	125	ILE
5	JB	256	GLY

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Mol	Chain	Res	Type
33	LC	10	ILE
36	QC	127	ILE
38	SC	90	GLY
48	CD	14	PRO
22	V	45	VAL
35	JA	121	GLY
38	NA	40	PRO
39	OA	154	GLY
40	PA	81	ILE
41	QA	112	PRO
24	CC	73	GLY
27	FC	59	VAL
44	YC	74	ILE
10	J	134	PRO
19	S	79	VAL
55	EB	19	GLY
19	XB	61	VAL
37	RC	66	VAL
39	TC	85	GLY
41	VC	112	PRO
55	JD	19	GLY
13	M	72	PRO
13	RB	72	PRO

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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
5	E	217/217 (100%)	177 (82%)	40 (18%)	1 5
5	JB	217/217 (100%)	176 (81%)	41 (19%)	1 4
6	F	165/166 (99%)	139 (84%)	26 (16%)	2 10
6	KB	165/166 (99%)	139 (84%)	26 (16%)	2 10
7	G	161/162 (99%)	136 (84%)	25 (16%)	2 11
7	LB	161/162 (99%)	134 (83%)	27 (17%)	2 8

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	H	154/156 (99%)	121 (79%)	33 (21%)	1	3
8	MB	154/156 (99%)	121 (79%)	33 (21%)	1	3
9	I	144/148 (97%)	123 (85%)	21 (15%)	3	12
9	NB	144/148 (97%)	122 (85%)	22 (15%)	2	11
10	J	122/124 (98%)	95 (78%)	27 (22%)	1	2
10	OB	122/124 (98%)	94 (77%)	28 (23%)	1	2
11	K	119/119 (100%)	99 (83%)	20 (17%)	2	8
11	PB	119/119 (100%)	98 (82%)	21 (18%)	2	6
12	L	100/100 (100%)	88 (88%)	12 (12%)	5	19
12	QB	100/100 (100%)	87 (87%)	13 (13%)	4	16
13	M	116/116 (100%)	86 (74%)	30 (26%)	0	2
13	RB	116/116 (100%)	86 (74%)	30 (26%)	0	2
14	N	111/111 (100%)	94 (85%)	17 (15%)	2	11
14	SB	111/111 (100%)	94 (85%)	17 (15%)	2	11
15	O	101/101 (100%)	83 (82%)	18 (18%)	2	6
15	TB	101/101 (100%)	84 (83%)	17 (17%)	2	8
16	P	87/88 (99%)	72 (83%)	15 (17%)	2	8
16	UB	87/88 (99%)	73 (84%)	14 (16%)	2	10
17	Q	121/128 (94%)	97 (80%)	24 (20%)	1	4
17	VB	121/128 (94%)	96 (79%)	25 (21%)	1	3
18	R	93/94 (99%)	82 (88%)	11 (12%)	5	19
18	WB	93/94 (99%)	82 (88%)	11 (12%)	5	19
19	S	82/82 (100%)	64 (78%)	18 (22%)	1	3
19	XB	82/82 (100%)	64 (78%)	18 (22%)	1	3
20	T	91/92 (99%)	78 (86%)	13 (14%)	3	13
20	YB	91/92 (99%)	79 (87%)	12 (13%)	4	15
21	U	77/78 (99%)	70 (91%)	7 (9%)	9	32
21	ZB	77/78 (99%)	68 (88%)	9 (12%)	5	20
22	AC	87/91 (96%)	71 (82%)	16 (18%)	1	5
22	V	87/91 (96%)	71 (82%)	16 (18%)	1	5
23	BC	163/179 (91%)	133 (82%)	30 (18%)	1	5

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
23	W	163/179 (91%)	133 (82%)	30 (18%)	1	5
24	CC	66/67 (98%)	54 (82%)	12 (18%)	1	6
24	X	66/67 (98%)	53 (80%)	13 (20%)	1	4
25	DC	81/83 (98%)	64 (79%)	17 (21%)	1	3
25	Y	81/83 (98%)	67 (83%)	14 (17%)	2	7
26	EC	66/67 (98%)	60 (91%)	6 (9%)	9	32
26	Z	66/67 (98%)	59 (89%)	7 (11%)	6	24
27	AA	52/52 (100%)	38 (73%)	14 (27%)	0	1
27	FC	52/52 (100%)	37 (71%)	15 (29%)	0	1
28	BA	59/63 (94%)	44 (75%)	15 (25%)	0	2
28	GC	59/63 (94%)	44 (75%)	15 (25%)	0	2
29	CA	51/52 (98%)	43 (84%)	8 (16%)	2	10
29	HC	51/52 (98%)	43 (84%)	8 (16%)	2	10
30	DA	51/52 (98%)	41 (80%)	10 (20%)	1	4
30	IC	51/52 (98%)	41 (80%)	10 (20%)	1	4
31	EA	41/42 (98%)	33 (80%)	8 (20%)	1	4
31	JC	41/42 (98%)	33 (80%)	8 (20%)	1	4
32	FA	54/55 (98%)	50 (93%)	4 (7%)	13	42
32	KC	54/55 (98%)	49 (91%)	5 (9%)	9	31
33	GA	34/34 (100%)	33 (97%)	1 (3%)	42	69
33	LC	34/34 (100%)	33 (97%)	1 (3%)	42	69
35	JA	85/305 (28%)	68 (80%)	17 (20%)	1	3
35	KA	50/305 (16%)	38 (76%)	12 (24%)	0	2
35	OC	85/305 (28%)	68 (80%)	17 (20%)	1	3
35	PC	50/305 (16%)	38 (76%)	12 (24%)	0	2
36	LA	202/220 (92%)	156 (77%)	46 (23%)	1	2
36	QC	202/220 (92%)	154 (76%)	48 (24%)	0	2
37	MA	160/188 (85%)	137 (86%)	23 (14%)	3	13
37	RC	160/188 (85%)	138 (86%)	22 (14%)	3	14
38	NA	180/181 (99%)	155 (86%)	25 (14%)	3	13
38	SC	180/181 (99%)	155 (86%)	25 (14%)	3	13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
39	OA	116/123 (94%)	93 (80%)	23 (20%)	1	4
39	TC	116/123 (94%)	94 (81%)	22 (19%)	1	4
40	PA	90/90 (100%)	79 (88%)	11 (12%)	5	18
40	UC	90/90 (100%)	78 (87%)	12 (13%)	4	15
41	QA	126/127 (99%)	105 (83%)	21 (17%)	2	8
41	VC	126/127 (99%)	105 (83%)	21 (17%)	2	8
42	RA	119/119 (100%)	105 (88%)	14 (12%)	5	19
42	WC	119/119 (100%)	106 (89%)	13 (11%)	6	23
43	SA	98/99 (99%)	79 (81%)	19 (19%)	1	4
43	XC	98/99 (99%)	79 (81%)	19 (19%)	1	4
44	TA	88/92 (96%)	72 (82%)	16 (18%)	1	6
44	YC	88/92 (96%)	71 (81%)	17 (19%)	1	4
45	UA	88/99 (89%)	77 (88%)	11 (12%)	4	17
45	ZC	88/99 (89%)	77 (88%)	11 (12%)	4	17
46	AD	102/108 (94%)	84 (82%)	18 (18%)	2	6
46	VA	102/108 (94%)	84 (82%)	18 (18%)	2	6
47	BD	94/101 (93%)	74 (79%)	20 (21%)	1	3
47	WA	94/101 (93%)	74 (79%)	20 (21%)	1	3
48	CD	49/50 (98%)	42 (86%)	7 (14%)	3	13
48	XA	49/50 (98%)	42 (86%)	7 (14%)	3	13
49	DD	79/80 (99%)	62 (78%)	17 (22%)	1	3
49	YA	79/80 (99%)	62 (78%)	17 (22%)	1	3
50	ED	72/74 (97%)	60 (83%)	12 (17%)	2	8
50	ZA	72/74 (97%)	61 (85%)	11 (15%)	2	11
51	AB	94/97 (97%)	77 (82%)	17 (18%)	1	6
51	FD	94/97 (97%)	76 (81%)	18 (19%)	1	4
52	BB	61/77 (79%)	49 (80%)	12 (20%)	1	4
52	GD	61/77 (79%)	50 (82%)	11 (18%)	1	6
53	CB	72/80 (90%)	57 (79%)	15 (21%)	1	3
53	HD	72/80 (90%)	58 (81%)	14 (19%)	1	4
54	DB	76/82 (93%)	66 (87%)	10 (13%)	4	15

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
54	ID	76/82 (93%)	66 (87%)	10 (13%)	4 15
55	EB	19/22 (86%)	15 (79%)	4 (21%)	1 3
55	JD	19/22 (86%)	15 (79%)	4 (21%)	1 3
All	All	9972/11276 (88%)	8229 (82%)	1743 (18%)	2 7

All (1743) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	E	12	SER
5	E	23	GLU
5	E	26	LYS
5	E	30	GLU
5	E	37	LEU
5	E	52	ARG
5	E	59	LYS
5	E	68	LYS
5	E	69	ARG
5	E	73	VAL
5	E	87	ASN
5	E	92	ILE
5	E	94	LEU
5	E	99	ASP
5	E	116	GLN
5	E	131	LEU
5	E	138	VAL
5	E	141	VAL
5	E	150	LYS
5	E	155	LEU
5	E	157	ARG
5	E	168	ARG
5	E	171	ASP
5	E	173	VAL
5	E	183	ARG
5	E	200	ASP
5	E	212	SER
5	E	215	LEU
5	E	217	ARG
5	E	220	HIS
5	E	221	VAL
5	E	229	VAL
5	E	230	ASP

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Mol	Chain	Res	Type
5	E	237	GLU
5	E	242	ARG
5	E	263	ARG
5	E	266	SER
5	E	271	ILE
5	E	274	ARG
5	E	275	LYS
6	F	1	MET
6	F	9	VAL
6	F	13	ARG
6	F	21	VAL
6	F	38	THR
6	F	40	GLU
6	F	49	LEU
6	F	69	LYS
6	F	79	ARG
6	F	83	ASP
6	F	84	PHE
6	F	91	VAL
6	F	92	THR
6	F	117	MET
6	F	119	ARG
6	F	129	HIS
6	F	146	THR
6	F	149	ARG
6	F	154	LYS
6	F	160	TYR
6	F	163	GLU
6	F	167	VAL
6	F	173	VAL
6	F	192	ASN
6	F	195	LEU
6	F	199	ARG
7	G	6	MET
7	G	7	TYR
7	G	15	SER
7	G	17	ARG
7	G	33	LEU
7	G	38	ARG
7	G	51	THR
7	G	56	GLU
7	G	57	VAL

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Mol	Chain	Res	Type
7	G	64	ILE
7	G	70	THR
7	G	72	ARG
7	G	74	ARG
7	G	84	VAL
7	G	100	THR
7	G	110	LEU
7	G	116	ASP
7	G	132	VAL
7	G	144	LYS
7	G	160	ASN
7	G	176	LEU
7	G	182	ASN
7	G	183	VAL
7	G	192	LEU
7	G	195	ASP
8	H	7	LEU
8	H	28	VAL
8	H	38	VAL
8	H	43	LEU
8	H	48	GLU
8	H	49	ASP
8	H	51	ARG
8	H	52	ILE
8	H	53	LEU
8	H	54	GLU
8	H	60	LEU
8	H	70	VAL
8	H	71	THR
8	H	77	ILE
8	H	78	SER
8	H	82	LEU
8	H	103	LEU
8	H	111	LEU
8	H	115	ARG
8	H	116	ASP
8	H	123	ASN
8	H	130	ASN
8	H	135	LEU
8	H	136	ARG
8	H	139	LEU
8	H	143	GLU

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Mol	Chain	Res	Type
8	H	144	ILE
8	H	146	TYR
8	H	156	ASP
8	H	157	ILE
8	H	159	VAL
8	H	161	THR
8	H	170	ARG
9	I	3	ARG
9	I	17	VAL
9	I	24	VAL
9	I	27	LYS
9	I	33	LEU
9	I	40	GLU
9	I	53	GLU
9	I	58	GLU
9	I	61	HIS
9	I	71	LEU
9	I	83	TYR
9	I	84	SER
9	I	98	LEU
9	I	106	THR
9	I	114	VAL
9	I	122	THR
9	I	131	VAL
9	I	136	ILE
9	I	143	GLN
9	I	144	VAL
9	I	169	VAL
10	J	1	MET
10	J	5	LEU
10	J	7	GLU
10	J	9	LEU
10	J	10	GLU
10	J	19	VAL
10	J	22	LYS
10	J	41	GLU
10	J	43	ASN
10	J	47	LEU
10	J	48	GLU
10	J	61	ARG
10	J	67	ARG
10	J	73	GLU

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Mol	Chain	Res	Type
10	J	77	LEU
10	J	88	ILE
10	J	96	ASP
10	J	101	LEU
10	J	107	ILE
10	J	108	THR
10	J	109	ILE
10	J	117	GLU
10	J	121	LYS
10	J	128	LEU
10	J	140	LEU
10	J	144	VAL
10	J	145	VAL
11	K	1	MET
11	K	7	LYS
11	K	8	GLN
11	K	9	VAL
11	K	28	THR
11	K	32	THR
11	K	34	LEU
11	K	43	THR
11	K	48	MET
11	K	55	VAL
11	K	62	VAL
11	K	63	THR
11	K	67	LEU
11	K	73	THR
11	K	85	ILE
11	K	91	LEU
11	K	96	GLU
11	K	115	ARG
11	K	130	HIS
11	K	131	GLN
12	L	17	ARG
12	L	21	CYS
12	L	38	VAL
12	L	53	LYS
12	L	65	THR
12	L	69	VAL
12	L	75	SER
12	L	82	ASN
12	L	89	ASN

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Mol	Chain	Res	Type
12	L	99	PHE
12	L	113	LYS
12	L	114	ILE
13	M	2	LYS
13	M	5	ASP
13	M	14	LYS
13	M	16	ARG
13	M	19	VAL
13	M	45	LEU
13	M	57	THR
13	M	59	LEU
13	M	61	ARG
13	M	65	ARG
13	M	67	MET
13	M	71	VAL
13	M	75	ILE
13	M	77	ARG
13	M	79	ARG
13	M	81	GLN
13	M	88	LEU
13	M	90	ARG
13	M	91	PHE
13	M	92	GLU
13	M	99	LEU
13	M	105	LEU
13	M	112	LEU
13	M	114	ILE
13	M	117	GLU
13	M	125	VAL
13	M	126	VAL
13	M	136	GLU
13	M	146	VAL
13	M	149	GLU
14	N	8	LYS
14	N	10	ARG
14	N	12	GLN
14	N	16	ARG
14	N	17	LEU
14	N	21	THR
14	N	35	VAL
14	N	55	VAL
14	N	56	ARG

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Mol	Chain	Res	Type
14	N	58	PHE
14	N	68	ILE
14	N	82	ARG
14	N	96	VAL
14	N	101	ARG
14	N	110	THR
14	N	131	ILE
14	N	138	ASP
15	O	6	SER
15	O	15	SER
15	O	20	LEU
15	O	23	ASN
15	O	24	GLN
15	O	28	LEU
15	O	29	LEU
15	O	35	THR
15	O	44	LEU
15	O	65	LEU
15	O	67	LEU
15	O	72	ASP
15	O	76	VAL
15	O	82	GLU
15	O	102	GLU
15	O	103	ARG
15	O	105	ARG
15	O	111	LEU
16	P	13	ARG
16	P	21	THR
16	P	28	VAL
16	P	34	HIS
16	P	35	ILE
16	P	36	TYR
16	P	42	ASP
16	P	44	LYS
16	P	49	VAL
16	P	59	LYS
16	P	67	ARG
16	P	78	LEU
16	P	92	TYR
16	P	98	VAL
16	P	111	GLU
17	Q	1	MET

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Mol	Chain	Res	Type
17	Q	3	ARG
17	Q	6	LEU
17	Q	12	SER
17	Q	17	THR
17	Q	18	ASP
17	Q	19	LEU
17	Q	50	ILE
17	Q	51	ARG
17	Q	53	ARG
17	Q	54	ARG
17	Q	57	PHE
17	Q	59	THR
17	Q	64	ARG
17	Q	72	VAL
17	Q	74	ARG
17	Q	102	ILE
17	Q	105	LEU
17	Q	106	SER
17	Q	115	ARG
17	Q	119	LYS
17	Q	124	ASP
17	Q	128	GLU
17	Q	129	ARG
18	R	11	ARG
18	R	15	LYS
18	R	18	LEU
18	R	36	ARG
18	R	70	ARG
18	R	72	HIS
18	R	74	LEU
18	R	88	ILE
18	R	97	ASP
18	R	101	ARG
18	R	108	GLU
19	S	7	THR
19	S	19	LYS
19	S	26	ASP
19	S	32	THR
19	S	33	VAL
19	S	38	LEU
19	S	46	VAL
19	S	51	VAL

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Mol	Chain	Res	Type
19	S	53	GLU
19	S	56	SER
19	S	61	VAL
19	S	68	LYS
19	S	71	LEU
19	S	73	SER
19	S	79	VAL
19	S	82	ARG
19	S	88	ARG
19	S	95	LEU
20	T	11	ARG
20	T	19	LEU
20	T	28	SER
20	T	33	ARG
20	T	35	ILE
20	T	39	THR
20	T	63	ASP
20	T	78	GLU
20	T	84	ARG
20	T	86	LEU
20	T	101	SER
20	T	107	LEU
20	T	111	HIS
21	U	23	GLU
21	U	30	VAL
21	U	51	VAL
21	U	53	LYS
21	U	54	VAL
21	U	68	ARG
21	U	81	VAL
22	V	2	ARG
22	V	3	VAL
22	V	5	MET
22	V	8	LYS
22	V	9	LYS
22	V	43	ASN
22	V	44	ILE
22	V	45	VAL
22	V	51	VAL
22	V	55	TYR
22	V	72	VAL
22	V	83	THR

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Mol	Chain	Res	Type
22	V	90	LEU
22	V	96	ILE
22	V	97	ARG
22	V	106	LEU
23	W	5	LEU
23	W	8	TYR
23	W	13	GLU
23	W	24	LEU
23	W	30	ASN
23	W	31	ARG
23	W	33	LEU
23	W	37	VAL
23	W	50	GLN
23	W	54	HIS
23	W	67	LEU
23	W	70	LEU
23	W	72	ARG
23	W	76	LEU
23	W	78	LYS
23	W	80	ARG
23	W	86	VAL
23	W	104	PHE
23	W	121	HIS
23	W	132	ASN
23	W	146	ILE
23	W	150	LEU
23	W	157	LEU
23	W	161	VAL
23	W	165	VAL
23	W	168	GLU
23	W	171	ILE
23	W	175	VAL
23	W	179	ASP
23	W	180	VAL
24	X	10	THR
24	X	12	ASN
24	X	31	VAL
24	X	37	LEU
24	X	64	ASP
24	X	66	VAL
24	X	67	VAL
24	X	68	GLU

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Mol	Chain	Res	Type
24	X	70	GLN
24	X	74	ARG
24	X	75	LEU
24	X	80	HIS
24	X	84	LEU
25	Y	27	GLU
25	Y	40	ARG
25	Y	41	ARG
25	Y	47	GLN
25	Y	51	VAL
25	Y	52	ARG
25	Y	59	THR
25	Y	61	ARG
25	Y	75	GLU
25	Y	81	ARG
25	Y	82	LEU
25	Y	95	LEU
25	Y	97	LEU
25	Y	98	LEU
26	Z	3	LEU
26	Z	6	VAL
26	Z	17	SER
26	Z	24	LEU
26	Z	52	ASP
26	Z	59	ARG
26	Z	66	GLU
27	AA	6	VAL
27	AA	10	LYS
27	AA	18	ASP
27	AA	29	ARG
27	AA	31	LEU
27	AA	32	GLN
27	AA	33	GLN
27	AA	35	ARG
27	AA	38	GLU
27	AA	40	THR
27	AA	44	ARG
27	AA	54	VAL
27	AA	56	VAL
27	AA	59	VAL
28	BA	9	LEU
28	BA	22	ILE

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Mol	Chain	Res	Type
28	BA	24	THR
28	BA	25	TYR
28	BA	31	ILE
28	BA	33	VAL
28	BA	34	GLU
28	BA	36	CYS
28	BA	40	HIS
28	BA	44	THR
28	BA	49	PHE
28	BA	61	ARG
28	BA	65	ASP
28	BA	67	TYR
28	BA	68	ARG
29	CA	22	HIS
29	CA	25	LEU
29	CA	26	THR
29	CA	29	ILE
29	CA	33	CYS
29	CA	48	GLU
29	CA	55	ARG
29	CA	59	GLU
30	DA	6	ARG
30	DA	7	ILE
30	DA	9	LEU
30	DA	10	LEU
30	DA	14	THR
30	DA	27	LYS
30	DA	34	LEU
30	DA	43	CYS
30	DA	44	ARG
30	DA	52	VAL
31	EA	4	THR
31	EA	23	ARG
31	EA	24	THR
31	EA	29	LYS
31	EA	41	ARG
31	EA	43	THR
31	EA	46	VAL
31	EA	48	LYS
32	FA	6	THR
32	FA	11	LYS
32	FA	31	HIS

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Mol	Chain	Res	Type
32	FA	50	LEU
33	GA	10	ILE
35	JA	103	LYS
35	JA	104	ASP
35	JA	106	ASP
35	JA	107	ASP
35	JA	108	GLU
35	JA	109	ARG
35	JA	133	ARG
35	JA	142	ARG
35	JA	143	ARG
35	JA	156	HIS
35	JA	159	TYR
35	JA	171	VAL
35	JA	172	TYR
35	JA	174	ARG
35	JA	177	PHE
35	JA	190	THR
35	JA	193	GLN
35	KA	306	ARG
35	KA	317	VAL
35	KA	329	LEU
35	KA	332	VAL
35	KA	334	GLU
35	KA	338	ASP
35	KA	341	ILE
35	KA	347	GLU
35	KA	348	HIS
35	KA	352	GLN
35	KA	356	LEU
35	KA	359	GLN
36	LA	7	VAL
36	LA	10	LEU
36	LA	17	PHE
36	LA	19	HIS
36	LA	21	ARG
36	LA	33	TYR
36	LA	40	HIS
36	LA	50	GLU
36	LA	51	LEU
36	LA	52	GLU
36	LA	54	THR

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Mol	Chain	Res	Type
36	LA	74	LYS
36	LA	75	LYS
36	LA	76	GLN
36	LA	78	GLN
36	LA	79	ASP
36	LA	81	VAL
36	LA	82	ARG
36	LA	98	LEU
36	LA	119	GLU
36	LA	126	GLU
36	LA	127	ILE
36	LA	136	VAL
36	LA	140	HIS
36	LA	141	GLU
36	LA	145	LEU
36	LA	152	PHE
36	LA	156	LYS
36	LA	160	ASP
36	LA	168	THR
36	LA	172	ILE
36	LA	176	GLU
36	LA	187	LEU
36	LA	190	THR
36	LA	196	LEU
36	LA	200	ILE
36	LA	208	ILE
36	LA	210	SER
36	LA	212	GLN
36	LA	213	LEU
36	LA	215	LEU
36	LA	223	ILE
36	LA	226	ARG
36	LA	229	VAL
36	LA	230	VAL
36	LA	238	LEU
37	MA	16	ARG
37	MA	31	HIS
37	MA	37	GLN
37	MA	55	VAL
37	MA	66	VAL
37	MA	70	VAL
37	MA	72	LYS

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Mol	Chain	Res	Type
37	MA	85	ARG
37	MA	87	LEU
37	MA	94	LEU
37	MA	101	LEU
37	MA	102	ASN
37	MA	103	VAL
37	MA	105	GLU
37	MA	118	GLN
37	MA	124	ILE
37	MA	128	PHE
37	MA	140	ARG
37	MA	144	SER
37	MA	172	ARG
37	MA	175	LEU
37	MA	188	LEU
37	MA	195	VAL
38	NA	18	LYS
38	NA	19	LEU
38	NA	21	LEU
38	NA	26	CYS
38	NA	33	MET
38	NA	47	ARG
38	NA	50	ARG
38	NA	61	LYS
38	NA	73	ARG
38	NA	76	ARG
38	NA	80	GLU
38	NA	97	LEU
38	NA	116	GLN
38	NA	127	THR
38	NA	135	LEU
38	NA	141	ARG
38	NA	155	LEU
38	NA	168	ARG
38	NA	169	LYS
38	NA	173	TRP
38	NA	175	SER
38	NA	179	GLU
38	NA	182	LYS
38	NA	188	LEU
38	NA	194	LEU
39	OA	12	LEU

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Mol	Chain	Res	Type
39	OA	16	THR
39	OA	25	ARG
39	OA	26	PHE
39	OA	38	GLN
39	OA	41	VAL
39	OA	45	PHE
39	OA	50	GLU
39	OA	66	MET
39	OA	68	GLU
39	OA	69	VAL
39	OA	71	LEU
39	OA	72	GLN
39	OA	73	ASN
39	OA	80	ILE
39	OA	84	PHE
39	OA	91	LEU
39	OA	119	LEU
39	OA	120	THR
39	OA	121	LYS
39	OA	133	TYR
39	OA	142	LEU
39	OA	149	GLU
40	PA	3	ARG
40	PA	15	ASP
40	PA	16	GLN
40	PA	40	VAL
40	PA	52	ILE
40	PA	70	ASP
40	PA	73	ASN
40	PA	77	ARG
40	PA	94	GLN
40	PA	97	PHE
40	PA	98	LEU
41	QA	16	LEU
41	QA	17	VAL
41	QA	24	THR
41	QA	37	ASN
41	QA	47	CYS
41	QA	49	ILE
41	QA	50	ILE
41	QA	54	THR
41	QA	59	LEU

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Mol	Chain	Res	Type
41	QA	76	ARG
41	QA	79	ARG
41	QA	98	SER
41	QA	104	LEU
41	QA	110	GLN
41	QA	113	GLU
41	QA	118	VAL
41	QA	124	LEU
41	QA	129	GLU
41	QA	142	GLU
41	QA	155	ARG
41	QA	156	TRP
42	RA	3	THR
42	RA	10	LEU
42	RA	18	ARG
42	RA	25	ASP
42	RA	30	ARG
42	RA	37	ARG
42	RA	45	ILE
42	RA	77	GLU
42	RA	82	HIS
42	RA	83	ILE
42	RA	91	ARG
42	RA	97	VAL
42	RA	105	ARG
42	RA	129	VAL
43	SA	5	TYR
43	SA	7	THR
43	SA	23	ASN
43	SA	31	GLN
43	SA	32	ASP
43	SA	36	TYR
43	SA	40	LEU
43	SA	41	VAL
43	SA	42	ARG
43	SA	51	ARG
43	SA	59	PHE
43	SA	73	GLN
43	SA	75	ASP
43	SA	87	GLN
43	SA	102	LEU
43	SA	105	ASP

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Mol	Chain	Res	Type
43	SA	111	ARG
43	SA	113	LYS
43	SA	121	ARG
44	TA	4	ILE
44	TA	13	HIS
44	TA	15	THR
44	TA	34	VAL
44	TA	44	VAL
44	TA	45	ARG
44	TA	49	VAL
44	TA	62	HIS
44	TA	68	HIS
44	TA	72	VAL
44	TA	73	ASP
44	TA	74	ILE
44	TA	80	LYS
44	TA	81	THR
44	TA	96	ILE
44	TA	98	ILE
45	UA	11	LYS
45	UA	12	ARG
45	UA	21	ILE
45	UA	25	TYR
45	UA	33	THR
45	UA	44	SER
45	UA	63	LEU
45	UA	73	MET
45	UA	79	SER
45	UA	81	ASP
45	UA	95	ILE
46	VA	6	THR
46	VA	7	ILE
46	VA	8	ASN
46	VA	11	VAL
46	VA	13	LYS
46	VA	19	ARG
46	VA	20	LYS
46	VA	24	VAL
46	VA	27	LEU
46	VA	52	LEU
46	VA	55	VAL
46	VA	60	LEU

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Mol	Chain	Res	Type
46	VA	66	VAL
46	VA	67	THR
46	VA	97	ARG
46	VA	104	VAL
46	VA	112	ASP
46	VA	117	ARG
47	WA	4	ILE
47	WA	7	VAL
47	WA	9	ILE
47	WA	12	ASN
47	WA	22	ILE
47	WA	31	LYS
47	WA	32	GLU
47	WA	43	THR
47	WA	46	LYS
47	WA	55	ARG
47	WA	56	LEU
47	WA	60	VAL
47	WA	66	LEU
47	WA	67	GLU
47	WA	82	MET
47	WA	92	HIS
47	WA	101	GLN
47	WA	108	ARG
47	WA	109	THR
47	WA	117	VAL
48	XA	3	ARG
48	XA	12	ARG
48	XA	13	THR
48	XA	23	ARG
48	XA	33	VAL
48	XA	42	ILE
48	XA	53	LEU
49	YA	4	THR
49	YA	13	GLN
49	YA	17	ARG
49	YA	22	THR
49	YA	25	THR
49	YA	27	VAL
49	YA	31	LEU
49	YA	35	ARG
49	YA	39	LEU

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Mol	Chain	Res	Type
49	YA	56	LEU
49	YA	57	LEU
49	YA	62	GLN
49	YA	67	LEU
49	YA	70	LEU
49	YA	79	ARG
49	YA	83	GLU
49	YA	87	ILE
50	ZA	1	MET
50	ZA	2	VAL
50	ZA	8	ARG
50	ZA	20	VAL
50	ZA	25	ARG
50	ZA	42	ARG
50	ZA	54	GLU
50	ZA	57	ARG
50	ZA	68	ASP
50	ZA	69	THR
50	ZA	72	ARG
51	AB	3	LYS
51	AB	4	LYS
51	AB	9	VAL
51	AB	11	VAL
51	AB	13	ASP
51	AB	14	LYS
51	AB	24	GLU
51	AB	35	VAL
51	AB	45	HIS
51	AB	57	VAL
51	AB	63	ARG
51	AB	69	LYS
51	AB	72	ARG
51	AB	74	LEU
51	AB	75	ARG
51	AB	87	LYS
51	AB	96	GLN
52	BB	25	THR
52	BB	29	PHE
52	BB	35	ARG
52	BB	37	VAL
52	BB	38	GLU
52	BB	46	GLU

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Mol	Chain	Res	Type
52	BB	53	ARG
52	BB	55	ARG
52	BB	75	ILE
52	BB	76	LEU
52	BB	79	LEU
52	BB	82	THR
53	CB	9	VAL
53	CB	11	VAL
53	CB	17	GLU
53	CB	22	LEU
53	CB	37	ARG
53	CB	40	ILE
53	CB	41	VAL
53	CB	47	HIS
53	CB	58	VAL
53	CB	61	TYR
53	CB	63	THR
53	CB	73	GLU
53	CB	77	THR
53	CB	79	THR
53	CB	81	ARG
54	DB	10	LEU
54	DB	13	LEU
54	DB	20	LEU
54	DB	30	LYS
54	DB	45	GLN
54	DB	62	LEU
54	DB	75	ASN
54	DB	84	LEU
54	DB	88	VAL
54	DB	92	LEU
55	EB	8	THR
55	EB	13	ILE
55	EB	15	ARG
55	EB	17	THR
5	JB	9	TYR
5	JB	12	SER
5	JB	23	GLU
5	JB	26	LYS
5	JB	30	GLU
5	JB	37	LEU
5	JB	52	ARG

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Mol	Chain	Res	Type
5	JB	59	LYS
5	JB	68	LYS
5	JB	69	ARG
5	JB	73	VAL
5	JB	87	ASN
5	JB	92	ILE
5	JB	94	LEU
5	JB	99	ASP
5	JB	116	GLN
5	JB	131	LEU
5	JB	138	VAL
5	JB	141	VAL
5	JB	150	LYS
5	JB	155	LEU
5	JB	168	ARG
5	JB	171	ASP
5	JB	173	VAL
5	JB	183	ARG
5	JB	200	ASP
5	JB	211	ARG
5	JB	212	SER
5	JB	215	LEU
5	JB	220	HIS
5	JB	221	VAL
5	JB	226	MET
5	JB	229	VAL
5	JB	230	ASP
5	JB	237	GLU
5	JB	242	ARG
5	JB	263	ARG
5	JB	266	SER
5	JB	271	ILE
5	JB	274	ARG
5	JB	275	LYS
6	KB	1	MET
6	KB	9	VAL
6	KB	13	ARG
6	KB	21	VAL
6	KB	38	THR
6	KB	40	GLU
6	KB	49	LEU
6	KB	69	LYS

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Mol	Chain	Res	Type
6	KB	79	ARG
6	KB	83	ASP
6	KB	84	PHE
6	KB	91	VAL
6	KB	92	THR
6	KB	119	ARG
6	KB	127	ASP
6	KB	129	HIS
6	KB	146	THR
6	KB	149	ARG
6	KB	154	LYS
6	KB	160	TYR
6	KB	163	GLU
6	KB	167	VAL
6	KB	173	VAL
6	KB	192	ASN
6	KB	195	LEU
6	KB	199	ARG
7	LB	6	MET
7	LB	7	TYR
7	LB	15	SER
7	LB	17	ARG
7	LB	33	LEU
7	LB	38	ARG
7	LB	44	ARG
7	LB	51	THR
7	LB	56	GLU
7	LB	57	VAL
7	LB	64	ILE
7	LB	70	THR
7	LB	72	ARG
7	LB	74	ARG
7	LB	84	VAL
7	LB	100	THR
7	LB	110	LEU
7	LB	116	ASP
7	LB	132	VAL
7	LB	144	LYS
7	LB	158	THR
7	LB	160	ASN
7	LB	176	LEU
7	LB	182	ASN

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Mol	Chain	Res	Type
7	LB	183	VAL
7	LB	192	LEU
7	LB	195	ASP
8	MB	7	LEU
8	MB	28	VAL
8	MB	38	VAL
8	MB	43	LEU
8	MB	48	GLU
8	MB	49	ASP
8	MB	51	ARG
8	MB	52	ILE
8	MB	53	LEU
8	MB	54	GLU
8	MB	60	LEU
8	MB	70	VAL
8	MB	71	THR
8	MB	77	ILE
8	MB	78	SER
8	MB	82	LEU
8	MB	103	LEU
8	MB	111	LEU
8	MB	115	ARG
8	MB	116	ASP
8	MB	123	ASN
8	MB	130	ASN
8	MB	135	LEU
8	MB	136	ARG
8	MB	139	LEU
8	MB	143	GLU
8	MB	144	ILE
8	MB	146	TYR
8	MB	156	ASP
8	MB	157	ILE
8	MB	159	VAL
8	MB	161	THR
8	MB	170	ARG
9	NB	3	ARG
9	NB	17	VAL
9	NB	24	VAL
9	NB	27	LYS
9	NB	33	LEU
9	NB	40	GLU

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Mol	Chain	Res	Type
9	NB	53	GLU
9	NB	58	GLU
9	NB	61	HIS
9	NB	71	LEU
9	NB	83	TYR
9	NB	84	SER
9	NB	98	LEU
9	NB	106	THR
9	NB	114	VAL
9	NB	122	THR
9	NB	131	VAL
9	NB	136	ILE
9	NB	139	GLN
9	NB	143	GLN
9	NB	144	VAL
9	NB	169	VAL
10	OB	1	MET
10	OB	5	LEU
10	OB	7	GLU
10	OB	9	LEU
10	OB	10	GLU
10	OB	19	VAL
10	OB	22	LYS
10	OB	41	GLU
10	OB	43	ASN
10	OB	47	LEU
10	OB	48	GLU
10	OB	61	ARG
10	OB	67	ARG
10	OB	73	GLU
10	OB	77	LEU
10	OB	88	ILE
10	OB	96	ASP
10	OB	101	LEU
10	OB	105	HIS
10	OB	107	ILE
10	OB	108	THR
10	OB	109	ILE
10	OB	117	GLU
10	OB	121	LYS
10	OB	128	LEU
10	OB	140	LEU

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Mol	Chain	Res	Type
10	OB	144	VAL
10	OB	145	VAL
11	PB	1	MET
11	PB	7	LYS
11	PB	8	GLN
11	PB	9	VAL
11	PB	28	THR
11	PB	32	THR
11	PB	34	LEU
11	PB	43	THR
11	PB	48	MET
11	PB	55	VAL
11	PB	62	VAL
11	PB	63	THR
11	PB	67	LEU
11	PB	73	THR
11	PB	85	ILE
11	PB	91	LEU
11	PB	96	GLU
11	PB	115	ARG
11	PB	127	ASP
11	PB	130	HIS
11	PB	131	GLN
12	QB	17	ARG
12	QB	21	CYS
12	QB	38	VAL
12	QB	53	LYS
12	QB	65	THR
12	QB	69	VAL
12	QB	75	SER
12	QB	82	ASN
12	QB	89	ASN
12	QB	97	ARG
12	QB	99	PHE
12	QB	113	LYS
12	QB	114	ILE
13	RB	2	LYS
13	RB	5	ASP
13	RB	14	LYS
13	RB	16	ARG
13	RB	19	VAL
13	RB	45	LEU

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Mol	Chain	Res	Type
13	RB	57	THR
13	RB	59	LEU
13	RB	61	ARG
13	RB	65	ARG
13	RB	67	MET
13	RB	71	VAL
13	RB	75	ILE
13	RB	77	ARG
13	RB	79	ARG
13	RB	81	GLN
13	RB	88	LEU
13	RB	90	ARG
13	RB	91	PHE
13	RB	92	GLU
13	RB	99	LEU
13	RB	105	LEU
13	RB	112	LEU
13	RB	114	ILE
13	RB	117	GLU
13	RB	125	VAL
13	RB	126	VAL
13	RB	136	GLU
13	RB	146	VAL
13	RB	149	GLU
14	SB	7	MET
14	SB	8	LYS
14	SB	10	ARG
14	SB	12	GLN
14	SB	16	ARG
14	SB	17	LEU
14	SB	21	THR
14	SB	35	VAL
14	SB	55	VAL
14	SB	56	ARG
14	SB	58	PHE
14	SB	68	ILE
14	SB	82	ARG
14	SB	101	ARG
14	SB	110	THR
14	SB	131	ILE
14	SB	138	ASP
15	TB	6	SER

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Mol	Chain	Res	Type
15	TB	15	SER
15	TB	20	LEU
15	TB	23	ASN
15	TB	28	LEU
15	TB	29	LEU
15	TB	35	THR
15	TB	44	LEU
15	TB	65	LEU
15	TB	67	LEU
15	TB	72	ASP
15	TB	76	VAL
15	TB	82	GLU
15	TB	102	GLU
15	TB	103	ARG
15	TB	105	ARG
15	TB	111	LEU
16	UB	13	ARG
16	UB	28	VAL
16	UB	34	HIS
16	UB	35	ILE
16	UB	36	TYR
16	UB	42	ASP
16	UB	44	LYS
16	UB	49	VAL
16	UB	59	LYS
16	UB	67	ARG
16	UB	78	LEU
16	UB	92	TYR
16	UB	98	VAL
16	UB	111	GLU
17	VB	1	MET
17	VB	3	ARG
17	VB	6	LEU
17	VB	12	SER
17	VB	17	THR
17	VB	18	ASP
17	VB	19	LEU
17	VB	50	ILE
17	VB	51	ARG
17	VB	53	ARG
17	VB	54	ARG
17	VB	57	PHE

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Mol	Chain	Res	Type
17	VB	59	THR
17	VB	64	ARG
17	VB	72	VAL
17	VB	74	ARG
17	VB	96	ARG
17	VB	102	ILE
17	VB	105	LEU
17	VB	106	SER
17	VB	115	ARG
17	VB	119	LYS
17	VB	124	ASP
17	VB	128	GLU
17	VB	129	ARG
18	WB	11	ARG
18	WB	15	LYS
18	WB	18	LEU
18	WB	36	ARG
18	WB	70	ARG
18	WB	72	HIS
18	WB	74	LEU
18	WB	88	ILE
18	WB	97	ASP
18	WB	101	ARG
18	WB	108	GLU
19	XB	7	THR
19	XB	19	LYS
19	XB	26	ASP
19	XB	32	THR
19	XB	33	VAL
19	XB	38	LEU
19	XB	46	VAL
19	XB	51	VAL
19	XB	53	GLU
19	XB	56	SER
19	XB	61	VAL
19	XB	68	LYS
19	XB	71	LEU
19	XB	73	SER
19	XB	79	VAL
19	XB	82	ARG
19	XB	88	ARG
19	XB	95	LEU

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Mol	Chain	Res	Type
20	YB	11	ARG
20	YB	28	SER
20	YB	33	ARG
20	YB	35	ILE
20	YB	39	THR
20	YB	63	ASP
20	YB	78	GLU
20	YB	84	ARG
20	YB	86	LEU
20	YB	101	SER
20	YB	107	LEU
20	YB	111	HIS
21	ZB	23	GLU
21	ZB	30	VAL
21	ZB	35	THR
21	ZB	49	VAL
21	ZB	51	VAL
21	ZB	53	LYS
21	ZB	54	VAL
21	ZB	68	ARG
21	ZB	81	VAL
22	AC	2	ARG
22	AC	3	VAL
22	AC	5	MET
22	AC	8	LYS
22	AC	9	LYS
22	AC	43	ASN
22	AC	44	ILE
22	AC	45	VAL
22	AC	51	VAL
22	AC	55	TYR
22	AC	72	VAL
22	AC	83	THR
22	AC	90	LEU
22	AC	96	ILE
22	AC	97	ARG
22	AC	106	LEU
23	BC	5	LEU
23	BC	8	TYR
23	BC	13	GLU
23	BC	24	LEU
23	BC	30	ASN

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Mol	Chain	Res	Type
23	BC	31	ARG
23	BC	33	LEU
23	BC	50	GLN
23	BC	54	HIS
23	BC	67	LEU
23	BC	69	THR
23	BC	70	LEU
23	BC	72	ARG
23	BC	76	LEU
23	BC	78	LYS
23	BC	80	ARG
23	BC	86	VAL
23	BC	104	PHE
23	BC	121	HIS
23	BC	132	ASN
23	BC	146	ILE
23	BC	150	LEU
23	BC	157	LEU
23	BC	161	VAL
23	BC	165	VAL
23	BC	168	GLU
23	BC	171	ILE
23	BC	175	VAL
23	BC	179	ASP
23	BC	180	VAL
24	CC	10	THR
24	CC	12	ASN
24	CC	31	VAL
24	CC	37	LEU
24	CC	64	ASP
24	CC	67	VAL
24	CC	68	GLU
24	CC	70	GLN
24	CC	74	ARG
24	CC	75	LEU
24	CC	80	HIS
24	CC	84	LEU
25	DC	26	ARG
25	DC	27	GLU
25	DC	30	VAL
25	DC	38	SER
25	DC	40	ARG

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Mol	Chain	Res	Type
25	DC	41	ARG
25	DC	47	GLN
25	DC	51	VAL
25	DC	52	ARG
25	DC	59	THR
25	DC	61	ARG
25	DC	75	GLU
25	DC	81	ARG
25	DC	82	LEU
25	DC	95	LEU
25	DC	97	LEU
25	DC	98	LEU
26	EC	3	LEU
26	EC	6	VAL
26	EC	17	SER
26	EC	52	ASP
26	EC	59	ARG
26	EC	66	GLU
27	FC	6	VAL
27	FC	10	LYS
27	FC	18	ASP
27	FC	29	ARG
27	FC	31	LEU
27	FC	32	GLN
27	FC	33	GLN
27	FC	35	ARG
27	FC	37	LEU
27	FC	38	GLU
27	FC	40	THR
27	FC	44	ARG
27	FC	54	VAL
27	FC	56	VAL
27	FC	59	VAL
28	GC	9	LEU
28	GC	22	ILE
28	GC	24	THR
28	GC	25	TYR
28	GC	31	ILE
28	GC	33	VAL
28	GC	34	GLU
28	GC	36	CYS
28	GC	40	HIS

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Mol	Chain	Res	Type
28	GC	44	THR
28	GC	49	PHE
28	GC	61	ARG
28	GC	65	ASP
28	GC	67	TYR
28	GC	68	ARG
29	HC	22	HIS
29	HC	25	LEU
29	HC	26	THR
29	HC	29	ILE
29	HC	33	CYS
29	HC	48	GLU
29	HC	55	ARG
29	HC	59	GLU
30	IC	6	ARG
30	IC	7	ILE
30	IC	9	LEU
30	IC	10	LEU
30	IC	14	THR
30	IC	27	LYS
30	IC	34	LEU
30	IC	43	CYS
30	IC	44	ARG
30	IC	52	VAL
31	JC	4	THR
31	JC	23	ARG
31	JC	24	THR
31	JC	29	LYS
31	JC	41	ARG
31	JC	43	THR
31	JC	46	VAL
31	JC	48	LYS
32	KC	6	THR
32	KC	11	LYS
32	KC	31	HIS
32	KC	32	LEU
32	KC	50	LEU
33	LC	10	ILE
35	OC	103	LYS
35	OC	104	ASP
35	OC	106	ASP
35	OC	107	ASP

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Mol	Chain	Res	Type
35	OC	108	GLU
35	OC	109	ARG
35	OC	133	ARG
35	OC	142	ARG
35	OC	143	ARG
35	OC	156	HIS
35	OC	159	TYR
35	OC	171	VAL
35	OC	172	TYR
35	OC	174	ARG
35	OC	177	PHE
35	OC	190	THR
35	OC	193	GLN
35	PC	306	ARG
35	PC	317	VAL
35	PC	329	LEU
35	PC	332	VAL
35	PC	334	GLU
35	PC	338	ASP
35	PC	341	ILE
35	PC	347	GLU
35	PC	348	HIS
35	PC	352	GLN
35	PC	356	LEU
35	PC	359	GLN
36	QC	7	VAL
36	QC	10	LEU
36	QC	17	PHE
36	QC	19	HIS
36	QC	21	ARG
36	QC	32	ILE
36	QC	33	TYR
36	QC	40	HIS
36	QC	50	GLU
36	QC	51	LEU
36	QC	52	GLU
36	QC	54	THR
36	QC	60	ASP
36	QC	74	LYS
36	QC	75	LYS
36	QC	76	GLN
36	QC	78	GLN

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Mol	Chain	Res	Type
36	QC	79	ASP
36	QC	81	VAL
36	QC	82	ARG
36	QC	98	LEU
36	QC	106	LYS
36	QC	119	GLU
36	QC	126	GLU
36	QC	127	ILE
36	QC	136	VAL
36	QC	140	HIS
36	QC	141	GLU
36	QC	145	LEU
36	QC	152	PHE
36	QC	156	LYS
36	QC	160	ASP
36	QC	168	THR
36	QC	172	ILE
36	QC	176	GLU
36	QC	185	ILE
36	QC	187	LEU
36	QC	190	THR
36	QC	196	LEU
36	QC	200	ILE
36	QC	208	ILE
36	QC	212	GLN
36	QC	215	LEU
36	QC	223	ILE
36	QC	226	ARG
36	QC	229	VAL
36	QC	230	VAL
36	QC	238	LEU
37	RC	16	ARG
37	RC	31	HIS
37	RC	37	GLN
37	RC	55	VAL
37	RC	66	VAL
37	RC	70	VAL
37	RC	72	LYS
37	RC	85	ARG
37	RC	87	LEU
37	RC	94	LEU
37	RC	101	LEU

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Mol	Chain	Res	Type
37	RC	102	ASN
37	RC	103	VAL
37	RC	105	GLU
37	RC	118	GLN
37	RC	124	ILE
37	RC	128	PHE
37	RC	144	SER
37	RC	172	ARG
37	RC	175	LEU
37	RC	188	LEU
37	RC	195	VAL
38	SC	18	LYS
38	SC	19	LEU
38	SC	21	LEU
38	SC	26	CYS
38	SC	33	MET
38	SC	47	ARG
38	SC	50	ARG
38	SC	61	LYS
38	SC	73	ARG
38	SC	76	ARG
38	SC	80	GLU
38	SC	97	LEU
38	SC	116	GLN
38	SC	127	THR
38	SC	135	LEU
38	SC	141	ARG
38	SC	155	LEU
38	SC	168	ARG
38	SC	169	LYS
38	SC	173	TRP
38	SC	175	SER
38	SC	179	GLU
38	SC	182	LYS
38	SC	188	LEU
38	SC	194	LEU
39	TC	12	LEU
39	TC	16	THR
39	TC	25	ARG
39	TC	26	PHE
39	TC	38	GLN
39	TC	45	PHE

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Mol	Chain	Res	Type
39	TC	50	GLU
39	TC	66	MET
39	TC	68	GLU
39	TC	69	VAL
39	TC	71	LEU
39	TC	72	GLN
39	TC	73	ASN
39	TC	80	ILE
39	TC	84	PHE
39	TC	91	LEU
39	TC	119	LEU
39	TC	120	THR
39	TC	121	LYS
39	TC	133	TYR
39	TC	142	LEU
39	TC	149	GLU
40	UC	1	MET
40	UC	3	ARG
40	UC	15	ASP
40	UC	16	GLN
40	UC	40	VAL
40	UC	52	ILE
40	UC	70	ASP
40	UC	73	ASN
40	UC	77	ARG
40	UC	94	GLN
40	UC	97	PHE
40	UC	98	LEU
41	VC	16	LEU
41	VC	17	VAL
41	VC	24	THR
41	VC	37	ASN
41	VC	47	CYS
41	VC	49	ILE
41	VC	50	ILE
41	VC	54	THR
41	VC	59	LEU
41	VC	76	ARG
41	VC	79	ARG
41	VC	98	SER
41	VC	104	LEU
41	VC	110	GLN

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Mol	Chain	Res	Type
41	VC	113	GLU
41	VC	118	VAL
41	VC	124	LEU
41	VC	129	GLU
41	VC	142	GLU
41	VC	155	ARG
41	VC	156	TRP
42	WC	3	THR
42	WC	10	LEU
42	WC	18	ARG
42	WC	25	ASP
42	WC	30	ARG
42	WC	37	ARG
42	WC	77	GLU
42	WC	82	HIS
42	WC	83	ILE
42	WC	91	ARG
42	WC	97	VAL
42	WC	105	ARG
42	WC	129	VAL
43	XC	5	TYR
43	XC	7	THR
43	XC	23	ASN
43	XC	31	GLN
43	XC	32	ASP
43	XC	36	TYR
43	XC	40	LEU
43	XC	41	VAL
43	XC	42	ARG
43	XC	51	ARG
43	XC	59	PHE
43	XC	73	GLN
43	XC	75	ASP
43	XC	87	GLN
43	XC	102	LEU
43	XC	105	ASP
43	XC	111	ARG
43	XC	113	LYS
43	XC	121	ARG
44	YC	4	ILE
44	YC	13	HIS
44	YC	15	THR

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Mol	Chain	Res	Type
44	YC	34	VAL
44	YC	44	VAL
44	YC	45	ARG
44	YC	49	VAL
44	YC	62	HIS
44	YC	66	ARG
44	YC	68	HIS
44	YC	72	VAL
44	YC	73	ASP
44	YC	74	ILE
44	YC	80	LYS
44	YC	81	THR
44	YC	96	ILE
44	YC	98	ILE
45	ZC	11	LYS
45	ZC	12	ARG
45	ZC	21	ILE
45	ZC	25	TYR
45	ZC	33	THR
45	ZC	63	LEU
45	ZC	73	MET
45	ZC	79	SER
45	ZC	81	ASP
45	ZC	95	ILE
45	ZC	117	ASN
46	AD	6	THR
46	AD	7	ILE
46	AD	8	ASN
46	AD	11	VAL
46	AD	13	LYS
46	AD	19	ARG
46	AD	20	LYS
46	AD	24	VAL
46	AD	27	LEU
46	AD	52	LEU
46	AD	55	VAL
46	AD	60	LEU
46	AD	66	VAL
46	AD	67	THR
46	AD	97	ARG
46	AD	104	VAL
46	AD	112	ASP

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Mol	Chain	Res	Type
46	AD	117	ARG
47	BD	4	ILE
47	BD	7	VAL
47	BD	9	ILE
47	BD	12	ASN
47	BD	22	ILE
47	BD	31	LYS
47	BD	32	GLU
47	BD	43	THR
47	BD	46	LYS
47	BD	55	ARG
47	BD	56	LEU
47	BD	60	VAL
47	BD	66	LEU
47	BD	67	GLU
47	BD	82	MET
47	BD	92	HIS
47	BD	101	GLN
47	BD	108	ARG
47	BD	109	THR
47	BD	117	VAL
48	CD	3	ARG
48	CD	12	ARG
48	CD	13	THR
48	CD	23	ARG
48	CD	33	VAL
48	CD	42	ILE
48	CD	53	LEU
49	DD	4	THR
49	DD	13	GLN
49	DD	17	ARG
49	DD	22	THR
49	DD	25	THR
49	DD	27	VAL
49	DD	31	LEU
49	DD	35	ARG
49	DD	39	LEU
49	DD	56	LEU
49	DD	57	LEU
49	DD	62	GLN
49	DD	67	LEU
49	DD	70	LEU

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Mol	Chain	Res	Type
49	DD	79	ARG
49	DD	83	GLU
49	DD	87	ILE
50	ED	1	MET
50	ED	2	VAL
50	ED	6	LEU
50	ED	8	ARG
50	ED	20	VAL
50	ED	25	ARG
50	ED	42	ARG
50	ED	54	GLU
50	ED	57	ARG
50	ED	68	ASP
50	ED	69	THR
50	ED	72	ARG
51	FD	3	LYS
51	FD	4	LYS
51	FD	9	VAL
51	FD	11	VAL
51	FD	13	ASP
51	FD	14	LYS
51	FD	24	GLU
51	FD	35	VAL
51	FD	45	HIS
51	FD	57	VAL
51	FD	63	ARG
51	FD	69	LYS
51	FD	72	ARG
51	FD	74	LEU
51	FD	75	ARG
51	FD	87	LYS
51	FD	96	GLN
51	FD	100	LYS
52	GD	29	PHE
52	GD	35	ARG
52	GD	37	VAL
52	GD	38	GLU
52	GD	46	GLU
52	GD	53	ARG
52	GD	55	ARG
52	GD	75	ILE
52	GD	76	LEU

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Mol	Chain	Res	Type
52	GD	79	LEU
52	GD	82	THR
53	HD	9	VAL
53	HD	11	VAL
53	HD	17	GLU
53	HD	22	LEU
53	HD	37	ARG
53	HD	40	ILE
53	HD	41	VAL
53	HD	47	HIS
53	HD	58	VAL
53	HD	63	THR
53	HD	73	GLU
53	HD	77	THR
53	HD	79	THR
53	HD	81	ARG
54	ID	10	LEU
54	ID	13	LEU
54	ID	20	LEU
54	ID	30	LYS
54	ID	45	GLN
54	ID	62	LEU
54	ID	75	ASN
54	ID	84	LEU
54	ID	88	VAL
54	ID	92	LEU
55	JD	8	THR
55	JD	13	ILE
55	JD	15	ARG
55	JD	17	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
10	J	17	GLN
12	L	82	ASN
12	L	89	ASN
12	L	90	GLN
15	O	24	GLN
25	Y	47	GLN
33	GA	36	GLN
35	KA	311	ASN

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Mol	Chain	Res	Type
38	NA	201	GLN
39	OA	141	GLN
44	TA	68	HIS
45	UA	22	HIS
47	WA	101	GLN
10	OB	17	GLN
12	QB	82	ASN
12	QB	89	ASN
12	QB	90	GLN
15	TB	24	GLN
16	UB	16	ASN
33	LC	36	GLN
35	PC	311	ASN
38	SC	201	GLN
39	TC	141	GLN
44	YC	68	HIS
45	ZC	22	HIS
47	BD	101	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1502/1507 (99%)	347 (23%)	12 (0%)
1	FB	1502/1507 (99%)	343 (22%)	12 (0%)
2	B	2876/2880 (99%)	658 (22%)	22 (0%)
2	GB	2876/2880 (99%)	658 (22%)	22 (0%)
3	C	119/120 (99%)	19 (15%)	0
3	HB	119/120 (99%)	20 (16%)	0
34	HA	9/27 (33%)	3 (33%)	0
34	MC	9/27 (33%)	3 (33%)	0
4	D	76/77 (98%)	27 (35%)	0
4	IA	76/77 (98%)	20 (26%)	0
4	IB	76/77 (98%)	26 (34%)	0
4	NC	76/77 (98%)	19 (25%)	0
All	All	9316/9376 (99%)	2143 (23%)	68 (0%)

All (2143) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	G
1	A	13	U

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Mol	Chain	Res	Type
1	A	22	G
1	A	26	A
1	A	31	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	50	A
1	A	51	A
1	A	52	G
1	A	58	C
1	A	61	G
1	A	79	G
1	A	80	G
1	A	82	U
1	A	84	U
1	A	85	U
1	A	86	U
1	A	87	A
1	A	88	C
1	A	101	A
1	A	115	G
1	A	116	A
1	A	121	C
1	A	122	G
1	A	131	C
1	A	144	G
1	A	163	C
1	A	169	C
1	A	173	U
1	A	174	C
1	A	176	C
1	A	180	U
1	A	182	U
1	A	185	A
1	A	188	U
1	A	195	A
1	A	197	A
1	A	201	C
1	A	208	U
1	A	209	U
1	A	210	U

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Mol	Chain	Res	Type
1	A	216	G
1	A	218	C
1	A	222	U
1	A	226	G
1	A	233	C
1	A	243	A
1	A	245	C
1	A	247	G
1	A	251	G
1	A	266	G
1	A	268	C
1	A	278	G
1	A	279	A
1	A	280	C
1	A	281	G
1	A	289	G
1	A	291	C
1	A	297	G
1	A	298	A
1	A	306	G
1	A	319	G
1	A	321	A
1	A	324	G
1	A	328	C
1	A	329	A
1	A	330	C
1	A	332	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	367	U
1	A	372	C
1	A	373	A
1	A	384	G
1	A	388	G
1	A	392	G
1	A	397	A
1	A	398	C
1	A	404	U
1	A	406	G
1	A	412	A
1	A	413	G

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Mol	Chain	Res	Type
1	A	423	G
1	A	429	U
1	A	439	A
1	A	442	C
1	A	452	A
1	A	458	C
1	A	464	G
1	A	465	A
1	A	466	G
1	A	467	G
1	A	482	A
1	A	484	G
1	A	485	G
1	A	486	U
1	A	494	U
1	A	495	A
1	A	496	A
1	A	497	U
1	A	500	G
1	A	505	G
1	A	508	C
1	A	509	A
1	A	511	C
1	A	518	C
1	A	519	C
1	A	521	G
1	A	531	U
1	A	532	A
1	A	536	C
1	A	547	A
1	A	559	A
1	A	561	U
1	A	562	C
1	A	563	A
1	A	564	C
1	A	567	G
1	A	568	G
1	A	572	A
1	A	573	A
1	A	576	G
1	A	577	G
1	A	579	G

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Mol	Chain	Res	Type
1	A	607	A
1	A	616	G
1	A	618	C
1	A	630	G
1	A	631	G
1	A	640	A
1	A	653	A
1	A	665	A
1	A	666	G
1	A	672	U
1	A	688	G
1	A	695	A
1	A	701	C
1	A	702	A
1	A	724	G
1	A	729	A
1	A	731	G
1	A	734	G
1	A	749	C
1	A	759	A
1	A	760	G
1	A	777	A
1	A	793	U
1	A	794	A
1	A	810	C
1	A	815	A
1	A	816	A
1	A	817	C
1	A	818	G
1	A	821	G
1	A	826	C
1	A	828	A
1	A	842	C
1	A	843	U
1	A	848	C
1	A	853	G
1	A	855	G
1	A	859	A
1	A	873	A
1	A	886	G
1	A	899	C
1	A	902	G

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Mol	Chain	Res	Type
1	A	908	A
1	A	914	A
1	A	916	G
1	A	926	G
1	A	927	G
1	A	934	C
1	A	935	A
1	A	941	G
1	A	943	U
1	A	952	U
1	A	958	A
1	A	960	U
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	982	U
1	A	988	G
1	A	990	C
1	A	992	U
1	A	993	G
1	A	994	A
1	A	1001	G
1	A	1002	G
1	A	1004	A
1	A	1005	A
1	A	1006	C
1	A	1007	C
1	A	1009	G
1	A	1011	G
1	A	1023	G
1	A	1024	G
1	A	1025	U
1	A	1026	G
1	A	1028(C)	C
1	A	1029	G
1	A	1030	C
1	A	1031	G
1	A	1032(A)	A
1	A	1032(B)	G

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Mol	Chain	Res	Type
1	A	1032(C)	G
1	A	1033	G
1	A	1038	C
1	A	1039	C
1	A	1040	U
1	A	1041	A
1	A	1042	G
1	A	1044	A
1	A	1045	C
1	A	1046	A
1	A	1053	G
1	A	1064	G
1	A	1065	U
1	A	1067	A
1	A	1079	G
1	A	1081	G
1	A	1085	U
1	A	1094	G
1	A	1095	U
1	A	1096	C
1	A	1101	A
1	A	1118	C
1	A	1122	U
1	A	1126	U
1	A	1129	C
1	A	1136	U
1	A	1137	C
1	A	1138	G
1	A	1139	G
1	A	1140	C
1	A	1144	G
1	A	1145	C
1	A	1146	A
1	A	1152	A
1	A	1159	U
1	A	1160	G
1	A	1163	C
1	A	1167	A
1	A	1170	A
1	A	1172	C
1	A	1174	G
1	A	1175	G

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Mol	Chain	Res	Type
1	A	1179	A
1	A	1183	A
1	A	1185	G
1	A	1189	C
1	A	1192	C
1	A	1193	G
1	A	1196	U
1	A	1197	G
1	A	1202	G
1	A	1209	C
1	A	1212	U
1	A	1213	A
1	A	1214	C
1	A	1217	C
1	A	1218	C
1	A	1225	A
1	A	1228	C
1	A	1234	C
1	A	1236	A
1	A	1238	A
1	A	1240	U
1	A	1241	G
1	A	1247	U
1	A	1248	A
1	A	1251	A
1	A	1252	A
1	A	1257	U
1	A	1258	G
1	A	1265	G
1	A	1267	C
1	A	1274	G
1	A	1277	C
1	A	1278	U
1	A	1279	A
1	A	1280	A
1	A	1281	U
1	A	1282	C
1	A	1285	A
1	A	1286	A
1	A	1287	A
1	A	1288	A
1	A	1296	C

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Mol	Chain	Res	Type
1	A	1297	C
1	A	1298	C
1	A	1299	A
1	A	1302	U
1	A	1305	G
1	A	1307	U
1	A	1310	G
1	A	1314	C
1	A	1315	U
1	A	1316	G
1	A	1317	C
1	A	1318	A
1	A	1320	C
1	A	1322	C
1	A	1324	A
1	A	1335	C
1	A	1336	C
1	A	1338	G
1	A	1339	A
1	A	1346	A
1	A	1347	G
1	A	1353	G
1	A	1356	G
1	A	1362(B)	C
1	A	1363	A
1	A	1370	G
1	A	1379	G
1	A	1382	C
1	A	1394	A
1	A	1395	C
1	A	1397	C
1	A	1398	A
1	A	1419	G
1	A	1429	C
1	A	1442	G
1	A	1451	A
1	A	1452	C
1	A	1487	G
1	A	1492	A
1	A	1493	A
1	A	1494	G
1	A	1497	G

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Mol	Chain	Res	Type
1	A	1498	UR3
1	A	1499	A
1	A	1502	A
1	A	1504	G
1	A	1506	U
1	A	1517	G
1	A	1529	G
1	A	1530	G
1	A	1532	U
2	B	12	U
2	B	34	C
2	B	35	G
2	B	39	C
2	B	46	C
2	B	50	U
2	B	61	G
2	B	64	A
2	B	71	A
2	B	74	A
2	B	75	G
2	B	91	A
2	B	95	G
2	B	99	U
2	B	118	A
2	B	120	U
2	B	125	G
2	B	131	G
2	B	133	C
2	B	149	A
2	B	154(A)	C
2	B	155	C
2	B	162	U
2	B	163	U
2	B	164	U
2	B	181	A
2	B	188	G
2	B	196	A
2	B	199	A
2	B	204	A
2	B	205	G
2	B	214	G
2	B	215	G

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Mol	Chain	Res	Type
2	B	216	A
2	B	220	G
2	B	222	A
2	B	225	A
2	B	228	A
2	B	229	A
2	B	233	A
2	B	248	G
2	B	249	C
2	B	264	C
2	B	269	U
2	B	270(M)	U
2	B	270(N)	U
2	B	270(O)	G
2	B	270(P)	U
2	B	270(Q)	C
2	B	271	G
2	B	276	A
2	B	278	A
2	B	279	C
2	B	288	C
2	B	294	A
2	B	311	A
2	B	317	G
2	B	322	A
2	B	323	G
2	B	324	A
2	B	329	G
2	B	330	A
2	B	331	A
2	B	334	C
2	B	339	U
2	B	342	G
2	B	346	A
2	B	352	G
2	B	353	G
2	B	362	U
2	B	363(A)	G
2	B	363(G)	A
2	B	372	G
2	B	376	C
2	B	380	U

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Mol	Chain	Res	Type
2	B	385	C
2	B	386	G
2	B	404	C
2	B	405	U
2	B	411	G
2	B	412	A
2	B	416	C
2	B	418	G
2	B	444	C
2	B	448	U
2	B	454	A
2	B	455	C
2	B	457	A
2	B	464	U
2	B	471	A
2	B	473	G
2	B	481	G
2	B	492	A
2	B	494	G
2	B	501	A
2	B	505	A
2	B	507	A
2	B	508	G
2	B	509	C
2	B	518	G
2	B	527	C
2	B	529	A
2	B	530	G
2	B	531	C
2	B	532	A
2	B	533	G
2	B	546	C
2	B	548	A
2	B	549	G
2	B	550	G
2	B	562	U
2	B	563	G
2	B	573	G
2	B	574	C
2	B	575	A
2	B	587	C
2	B	595	C

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Mol	Chain	Res	Type
2	B	603	A
2	B	604	G
2	B	607	U
2	B	609(B)	G
2	B	613	U
2	B	615	G
2	B	616	A
2	B	617	G
2	B	618(A)	G
2	B	627	A
2	B	629	G
2	B	634	C
2	B	637	A
2	B	645	C
2	B	646	A
2	B	651	G
2	B	652	U
2	B	654	U
2	B	656	G
2	B	668	G
2	B	670	A
2	B	671	C
2	B	673	C
2	B	682	G
2	B	686	G
2	B	701	G
2	B	702	G
2	B	708	C
2	B	717	G
2	B	720	C
2	B	722	A
2	B	730	C
2	B	738	G
2	B	749	C
2	B	758	C
2	B	765	G
2	B	769	G
2	B	775	G
2	B	776	G
2	B	779	U
2	B	782	A
2	B	784	A

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Mol	Chain	Res	Type
2	B	785	G
2	B	788	A
2	B	790	C
2	B	792	G
2	B	800	A
2	B	801	G
2	B	805	G
2	B	812	C
2	B	819	A
2	B	822	U
2	B	825	C
2	B	826	U
2	B	827	U
2	B	828	U
2	B	830	G
2	B	831	G
2	B	846	C
2	B	855	G
2	B	859	G
2	B	860	U
2	B	863	A
2	B	866	A
2	B	869	G
2	B	878	A
2	B	879	G
2	B	882	G
2	B	884	C
2	B	886	C
2	B	887	A
2	B	888	C
2	B	889	C
2	B	890	A
2	B	893	C
2	B	894	C
2	B	895	U
2	B	896	A
2	B	907	U
2	B	910	A
2	B	914	C
2	B	915	C
2	B	917	A
2	B	921	G

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Mol	Chain	Res	Type
2	B	931	G
2	B	932	G
2	B	938	G
2	B	941	A
2	B	945	A
2	B	946	G
2	B	958	U
2	B	961	C
2	B	973	A
2	B	974(A)	G
2	B	974(B)	C
2	B	978	G
2	B	980	A
2	B	983	A
2	B	996	A
2	B	1005	C
2	B	1012	U
2	B	1013	C
2	B	1016	G
2	B	1021	A
2	B	1022	G
2	B	1023	U
2	B	1024	G
2	B	1026	U
2	B	1027	A
2	B	1033	U
2	B	1038	C
2	B	1039	G
2	B	1045	A
2	B	1046	A
2	B	1047	G
2	B	1048	A
2	B	1050	A
2	B	1053	C
2	B	1054	A
2	B	1055	G
2	B	1056	G
2	B	1057	A
2	B	1059	G
2	B	1060	U
2	B	1061	U
2	B	1063	G

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Mol	Chain	Res	Type
2	B	1064	C
2	B	1065	U
2	B	1067	A
2	B	1068	G
2	B	1070	A
2	B	1071	G
2	B	1073	A
2	B	1074	G
2	B	1075	C
2	B	1076	C
2	B	1077	A
2	B	1078	U
2	B	1079	C
2	B	1080	C
2	B	1081	U
2	B	1082	U
2	B	1083	U
2	B	1084	A
2	B	1085	A
2	B	1086	A
2	B	1087	G
2	B	1088	A
2	B	1089	G
2	B	1090	U
2	B	1091	G
2	B	1092	C
2	B	1093	G
2	B	1094	U
2	B	1098	A
2	B	1099	G
2	B	1100	C
2	B	1101	U
2	B	1107	G
2	B	1111	A
2	B	1112	G
2	B	1113	U
2	B	1129	A
2	B	1130	U
2	B	1135	C
2	B	1136	G
2	B	1139	G
2	B	1142(B)	A

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Mol	Chain	Res	Type
2	B	1143	A
2	B	1147	C
2	B	1174	A
2	B	1175	U
2	B	1177	A
2	B	1205	U
2	B	1210	A
2	B	1211	U
2	B	1218	C
2	B	1220	A
2	B	1227	G
2	B	1240	U
2	B	1244	G
2	B	1248	G
2	B	1249	U
2	B	1252	G
2	B	1253	A
2	B	1256	G
2	B	1271	G
2	B	1272	A
2	B	1273	U
2	B	1275	A
2	B	1287	A
2	B	1300	U
2	B	1301	A
2	B	1313	U
2	B	1329	U
2	B	1347	G
2	B	1352	U
2	B	1359	A
2	B	1360	A
2	B	1365	A
2	B	1378	A
2	B	1379	A
2	B	1384	A
2	B	1385	G
2	B	1386	C
2	B	1394	U
2	B	1395	A
2	B	1396	U
2	B	1403	C
2	B	1416	G

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Mol	Chain	Res	Type
2	B	1417	C
2	B	1419	A
2	B	1424	G
2	B	1428	C
2	B	1437	C
2	B	1444(B)	A
2	B	1449(B)	A
2	B	1449	G
2	B	1453	A
2	B	1454	U
2	B	1455	G
2	B	1460	A
2	B	1467	C
2	B	1471	A
2	B	1483	G
2	B	1493	C
2	B	1497	U
2	B	1510	A
2	B	1511	A
2	B	1524	G
2	B	1525	G
2	B	1532	C
2	B	1534	G
2	B	1535	U
2	B	1537	C
2	B	1539	G
2	B	1543	A
2	B	1544	C
2	B	1554	A
2	B	1558	A
2	B	1559	G
2	B	1566	A
2	B	1569	A
2	B	1570	A
2	B	1578	U
2	B	1583	A
2	B	1585	C
2	B	1588	C
2	B	1595	G
2	B	1602	U
2	B	1608	A
2	B	1609	A

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Mol	Chain	Res	Type
2	B	1616	A
2	B	1618	A
2	B	1630(B)	C
2	B	1637	A
2	B	1640	C
2	B	1644	C
2	B	1648	C
2	B	1654	A
2	B	1669	A
2	B	1674	G
2	B	1675	C
2	B	1681	G
2	B	1700	A
2	B	1701	A
2	B	1717	G
2	B	1728	G
2	B	1729	A
2	B	1730	U
2	B	1731	G
2	B	1743	G
2	B	1746	G
2	B	1747	G
2	B	1757	U
2	B	1761	C
2	B	1762	A
2	B	1763	G
2	B	1764	G
2	B	1771	C
2	B	1773	A
2	B	1776	G
2	B	1791	A
2	B	1800	C
2	B	1801	G
2	B	1811	G
2	B	1816	G
2	B	1826	G
2	B	1829	A
2	B	1830	C
2	B	1833	U
2	B	1847	A
2	B	1859	A
2	B	1880	C

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Mol	Chain	Res	Type
2	B	1882	C
2	B	1900	A
2	B	1903	G
2	B	1906	G
2	B	1929	G
2	B	1930	G
2	B	1937	A
2	B	1938	A
2	B	1939	5MU
2	B	1940	U
2	B	1941	C
2	B	1955	U
2	B	1963	U
2	B	1964	G
2	B	1966	A
2	B	1967	C
2	B	1970	A
2	B	1971	A
2	B	1972	A
2	B	1993	U
2	B	1997	G
2	B	2020	A
2	B	2023	G
2	B	2031	A
2	B	2032	G
2	B	2033	A
2	B	2036	C
2	B	2039	C
2	B	2043	C
2	B	2051	A
2	B	2052	G
2	B	2055	C
2	B	2056	G
2	B	2060	A
2	B	2061	G
2	B	2062	A
2	B	2063	C
2	B	2069	G
2	B	2072	G
2	B	2102	U
2	B	2111	C
2	B	2116	G

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Mol	Chain	Res	Type
2	B	2117	A
2	B	2122	U
2	B	2124	G
2	B	2125	G
2	B	2127	G
2	B	2128	C
2	B	2129	C
2	B	2130	U
2	B	2131	G
2	B	2132	U
2	B	2133	G
2	B	2134	A
2	B	2135	A
2	B	2136	C
2	B	2137	C
2	B	2138	C
2	B	2139	C
2	B	2142	C
2	B	2143	C
2	B	2145	C
2	B	2146	C
2	B	2147	G
2	B	2148	G
2	B	2149	G
2	B	2150	U
2	B	2152	G
2	B	2157	G
2	B	2158	A
2	B	2159	G
2	B	2162	G
2	B	2163	C
2	B	2164	C
2	B	2165	G
2	B	2166	G
2	B	2167	U
2	B	2168	G
2	B	2169	A
2	B	2171	A
2	B	2172	U
2	B	2173	A
2	B	2174	C
2	B	2176	A

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Mol	Chain	Res	Type
2	B	2178	C
2	B	2183	C
2	B	2187	G
2	B	2189	U
2	B	2190	G
2	B	2192	G
2	B	2198	A
2	B	2210	G
2	B	2211	G
2	B	2212	A
2	B	2213	U
2	B	2225	A
2	B	2226	C
2	B	2234	G
2	B	2238	G
2	B	2239	G
2	B	2246	G
2	B	2251	OMG
2	B	2252	G
2	B	2269	A
2	B	2273	A
2	B	2275	C
2	B	2278	A
2	B	2283	C
2	B	2286	A
2	B	2287	A
2	B	2288	A
2	B	2289	G
2	B	2297	C
2	B	2305	A
2	B	2308	G
2	B	2311	A
2	B	2318	G
2	B	2319	G
2	B	2320	A
2	B	2321	G
2	B	2325	G
2	B	2327	A
2	B	2335	A
2	B	2336	A
2	B	2340	G
2	B	2344	U

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Mol	Chain	Res	Type
2	B	2345	G
2	B	2347	C
2	B	2354	G
2	B	2383	G
2	B	2385	C
2	B	2386	C
2	B	2396	G
2	B	2402	C
2	B	2406	U
2	B	2414	G
2	B	2420	C
2	B	2422	A
2	B	2425	A
2	B	2427	C
2	B	2428	G
2	B	2429	G
2	B	2430	A
2	B	2434	A
2	B	2435	A
2	B	2436	G
2	B	2439	A
2	B	2440	C
2	B	2441	C
2	B	2445	G
2	B	2448	A
2	B	2464	C
2	B	2465	C
2	B	2468	G
2	B	2475	C
2	B	2476	A
2	B	2478	A
2	B	2487	G
2	B	2489	G
2	B	2493	U
2	B	2502	G
2	B	2504	U
2	B	2505	G
2	B	2507	C
2	B	2513	G
2	B	2518	A
2	B	2520	C
2	B	2525	G

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Mol	Chain	Res	Type
2	B	2529	G
2	B	2542	A
2	B	2543	G
2	B	2549	G
2	B	2554	U
2	B	2555	U
2	B	2566	A
2	B	2567	G
2	B	2568	C
2	B	2572	A
2	B	2573	C
2	B	2576	G
2	B	2578	G
2	B	2585	U
2	B	2586	C
2	B	2596	U
2	B	2602	A
2	B	2603	G
2	B	2609	U
2	B	2611	U
2	B	2612	C
2	B	2615	U
2	B	2623	G
2	B	2635	C
2	B	2662	A
2	B	2667	C
2	B	2686	G
2	B	2689	U
2	B	2691	C
2	B	2702	U
2	B	2703	C
2	B	2711	A
2	B	2712(A)	A
2	B	2713	A
2	B	2714	G
2	B	2718	G
2	B	2724	C
2	B	2726	U
2	B	2732	G
2	B	2733	A
2	B	2748	A
2	B	2757	A

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Mol	Chain	Res	Type
2	B	2758	A
2	B	2764	A
2	B	2765	A
2	B	2766	G
2	B	2769	C
2	B	2778	A
2	B	2790	A
2	B	2791	C
2	B	2793	G
2	B	2794	C
2	B	2795	G
2	B	2797	U
2	B	2798	C
2	B	2799	A
2	B	2801	A
2	B	2802	G
2	B	2807	G
2	B	2809	A
2	B	2818	G
2	B	2820	A
2	B	2821	A
2	B	2825	G
2	B	2833	G
2	B	2835	A
2	B	2836	U
2	B	2870	C
2	B	2872	G
2	B	2873	A
2	B	2876	G
2	B	2879	C
2	B	2880	C
2	B	2883	A
2	B	2886	G
2	B	2892	A
2	B	2894	G
2	B	2895	U
2	B	2897	U
3	C	2	C
3	C	8	U
3	C	9	G
3	C	13	A
3	C	22	U

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Mol	Chain	Res	Type
3	C	30	C
3	C	35	U
3	C	41	U
3	C	42	C
3	C	44	G
3	C	53	A
3	C	63	G
3	C	65	C
3	C	66	A
3	C	73	A
3	C	87	G
3	C	90	C
3	C	105	G
3	C	109	G
4	D	7	G
4	D	8	4SU
4	D	9	G
4	D	10	G
4	D	12	G
4	D	15	G
4	D	16	C
4	D	17	C
4	D	17(A)	U
4	D	18	G
4	D	19	G
4	D	20	U
4	D	22	G
4	D	23	C
4	D	24	U
4	D	26	G
4	D	34	C
4	D	35	A
4	D	40	C
4	D	47	U
4	D	48	C
4	D	53	G
4	D	55	PSU
4	D	61	C
4	D	64	G
4	D	66	C
4	D	71	C
34	HA	16	A

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Mol	Chain	Res	Type
34	HA	21	A
34	HA	22	A
4	IA	3	C
4	IA	12	G
4	IA	17(A)	U
4	IA	18	G
4	IA	19	G
4	IA	21	A
4	IA	22	G
4	IA	25	C
4	IA	31	G
4	IA	42	G
4	IA	46	G
4	IA	48	C
4	IA	51	C
4	IA	56	C
4	IA	59	A
4	IA	72	A
4	IA	73	A
4	IA	74	C
4	IA	75	C
4	IA	76	A
1	FB	9	G
1	FB	13	U
1	FB	22	G
1	FB	26	A
1	FB	31	G
1	FB	32	A
1	FB	39	G
1	FB	47	C
1	FB	48	C
1	FB	50	A
1	FB	51	A
1	FB	52	G
1	FB	58	C
1	FB	61	G
1	FB	79	G
1	FB	80	G
1	FB	82	U
1	FB	84	U
1	FB	85	U
1	FB	86	U

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Mol	Chain	Res	Type
1	FB	87	A
1	FB	88	C
1	FB	101	A
1	FB	115	G
1	FB	116	A
1	FB	121	C
1	FB	122	G
1	FB	131	C
1	FB	144	G
1	FB	163	C
1	FB	169	C
1	FB	173	U
1	FB	174	C
1	FB	176	C
1	FB	180	U
1	FB	182	U
1	FB	185	A
1	FB	188	U
1	FB	195	A
1	FB	197	A
1	FB	201	C
1	FB	208	U
1	FB	209	U
1	FB	210	U
1	FB	216	G
1	FB	218	C
1	FB	222	U
1	FB	226	G
1	FB	233	C
1	FB	243	A
1	FB	247	G
1	FB	251	G
1	FB	266	G
1	FB	268	C
1	FB	278	G
1	FB	279	A
1	FB	280	C
1	FB	281	G
1	FB	289	G
1	FB	291	C
1	FB	297	G
1	FB	298	A

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Mol	Chain	Res	Type
1	FB	306	G
1	FB	319	G
1	FB	321	A
1	FB	324	G
1	FB	328	C
1	FB	329	A
1	FB	330	C
1	FB	332	G
1	FB	352	C
1	FB	353	A
1	FB	354	G
1	FB	367	U
1	FB	372	C
1	FB	373	A
1	FB	384	G
1	FB	388	G
1	FB	392	G
1	FB	397	A
1	FB	398	C
1	FB	404	U
1	FB	406	G
1	FB	412	A
1	FB	413	G
1	FB	423	G
1	FB	429	U
1	FB	439	A
1	FB	442	C
1	FB	452	A
1	FB	458	C
1	FB	464	G
1	FB	465	A
1	FB	466	G
1	FB	467	G
1	FB	482	A
1	FB	484	G
1	FB	485	G
1	FB	486	U
1	FB	494	U
1	FB	495	A
1	FB	496	A
1	FB	497	U
1	FB	500	G

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Mol	Chain	Res	Type
1	FB	505	G
1	FB	508	C
1	FB	509	A
1	FB	511	C
1	FB	518	C
1	FB	519	C
1	FB	531	U
1	FB	532	A
1	FB	536	C
1	FB	547	A
1	FB	559	A
1	FB	561	U
1	FB	562	C
1	FB	563	A
1	FB	564	C
1	FB	567	G
1	FB	568	G
1	FB	572	A
1	FB	573	A
1	FB	575	G
1	FB	576	G
1	FB	577	G
1	FB	579	G
1	FB	607	A
1	FB	616	G
1	FB	618	C
1	FB	630	G
1	FB	631	G
1	FB	653	A
1	FB	665	A
1	FB	666	G
1	FB	672	U
1	FB	688	G
1	FB	695	A
1	FB	701	C
1	FB	702	A
1	FB	724	G
1	FB	729	A
1	FB	731	G
1	FB	734	G
1	FB	749	C
1	FB	759	A

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Mol	Chain	Res	Type
1	FB	760	G
1	FB	777	A
1	FB	793	U
1	FB	794	A
1	FB	810	C
1	FB	815	A
1	FB	816	A
1	FB	817	C
1	FB	818	G
1	FB	821	G
1	FB	826	C
1	FB	828	A
1	FB	842	C
1	FB	843	U
1	FB	848	C
1	FB	853	G
1	FB	855	G
1	FB	859	A
1	FB	873	A
1	FB	886	G
1	FB	899	C
1	FB	902	G
1	FB	914	A
1	FB	916	G
1	FB	926	G
1	FB	927	G
1	FB	934	C
1	FB	935	A
1	FB	941	G
1	FB	943	U
1	FB	958	A
1	FB	960	U
1	FB	969	A
1	FB	971	G
1	FB	974	A
1	FB	975	A
1	FB	976	G
1	FB	977	A
1	FB	982	U
1	FB	988	G
1	FB	990	C
1	FB	992	U

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Mol	Chain	Res	Type
1	FB	993	G
1	FB	994	A
1	FB	1001	G
1	FB	1002	G
1	FB	1004	A
1	FB	1005	A
1	FB	1006	C
1	FB	1007	C
1	FB	1009	G
1	FB	1011	G
1	FB	1023	G
1	FB	1024	G
1	FB	1025	U
1	FB	1026	G
1	FB	1028(C)	C
1	FB	1029	G
1	FB	1030	C
1	FB	1031	G
1	FB	1032(A)	A
1	FB	1032(B)	G
1	FB	1032(C)	G
1	FB	1033	G
1	FB	1038	C
1	FB	1039	C
1	FB	1040	U
1	FB	1041	A
1	FB	1042	G
1	FB	1044	A
1	FB	1045	C
1	FB	1046	A
1	FB	1053	G
1	FB	1064	G
1	FB	1065	U
1	FB	1067	A
1	FB	1079	G
1	FB	1081	G
1	FB	1085	U
1	FB	1094	G
1	FB	1095	U
1	FB	1096	C
1	FB	1101	A
1	FB	1118	C

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Mol	Chain	Res	Type
1	FB	1122	U
1	FB	1123	A
1	FB	1126	U
1	FB	1129	C
1	FB	1136	U
1	FB	1137	C
1	FB	1138	G
1	FB	1139	G
1	FB	1140	C
1	FB	1144	G
1	FB	1145	C
1	FB	1146	A
1	FB	1152	A
1	FB	1159	U
1	FB	1160	G
1	FB	1163	C
1	FB	1167	A
1	FB	1170	A
1	FB	1172	C
1	FB	1174	G
1	FB	1175	G
1	FB	1179	A
1	FB	1183	A
1	FB	1185	G
1	FB	1189	C
1	FB	1192	C
1	FB	1193	G
1	FB	1196	U
1	FB	1197	G
1	FB	1202	G
1	FB	1209	C
1	FB	1212	U
1	FB	1213	A
1	FB	1214	C
1	FB	1217	C
1	FB	1218	C
1	FB	1225	A
1	FB	1228	C
1	FB	1234	C
1	FB	1236	A
1	FB	1238	A
1	FB	1240	U

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Mol	Chain	Res	Type
1	FB	1241	G
1	FB	1247	U
1	FB	1248	A
1	FB	1251	A
1	FB	1252	A
1	FB	1257	U
1	FB	1258	G
1	FB	1265	G
1	FB	1267	C
1	FB	1274	G
1	FB	1277	C
1	FB	1278	U
1	FB	1279	A
1	FB	1280	A
1	FB	1281	U
1	FB	1285	A
1	FB	1286	A
1	FB	1287	A
1	FB	1288	A
1	FB	1296	C
1	FB	1297	C
1	FB	1298	C
1	FB	1299	A
1	FB	1302	U
1	FB	1305	G
1	FB	1307	U
1	FB	1310	G
1	FB	1314	C
1	FB	1315	U
1	FB	1316	G
1	FB	1317	C
1	FB	1318	A
1	FB	1320	C
1	FB	1322	C
1	FB	1324	A
1	FB	1335	C
1	FB	1336	C
1	FB	1338	G
1	FB	1344	C
1	FB	1346	A
1	FB	1347	G
1	FB	1353	G

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Mol	Chain	Res	Type
1	FB	1356	G
1	FB	1362(B)	C
1	FB	1363	A
1	FB	1370	G
1	FB	1379	G
1	FB	1382	C
1	FB	1394	A
1	FB	1397	C
1	FB	1398	A
1	FB	1419	G
1	FB	1429	C
1	FB	1442	G
1	FB	1451	A
1	FB	1452	C
1	FB	1487	G
1	FB	1492	A
1	FB	1493	A
1	FB	1494	G
1	FB	1497	G
1	FB	1498	UR3
1	FB	1499	A
1	FB	1502	A
1	FB	1504	G
1	FB	1506	U
1	FB	1507	A
1	FB	1517	G
1	FB	1529	G
1	FB	1530	G
1	FB	1532	U
2	GB	12	U
2	GB	34	C
2	GB	35	G
2	GB	39	C
2	GB	46	C
2	GB	50	U
2	GB	59	U
2	GB	61	G
2	GB	63	U
2	GB	71	A
2	GB	74	A
2	GB	75	G
2	GB	91	A

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Mol	Chain	Res	Type
2	GB	99	U
2	GB	118	A
2	GB	120	U
2	GB	125	G
2	GB	131	G
2	GB	133	C
2	GB	149	A
2	GB	154(A)	C
2	GB	155	C
2	GB	162	U
2	GB	163	U
2	GB	164	U
2	GB	181	A
2	GB	188	G
2	GB	196	A
2	GB	199	A
2	GB	204	A
2	GB	205	G
2	GB	214	G
2	GB	215	G
2	GB	216	A
2	GB	220	G
2	GB	222	A
2	GB	225	A
2	GB	228	A
2	GB	229	A
2	GB	233	A
2	GB	248	G
2	GB	249	C
2	GB	264	C
2	GB	269	U
2	GB	270(M)	U
2	GB	270(N)	U
2	GB	270(O)	G
2	GB	270(P)	U
2	GB	270(Q)	C
2	GB	271	G
2	GB	276	A
2	GB	278	A
2	GB	279	C
2	GB	288	C
2	GB	294	A

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Mol	Chain	Res	Type
2	GB	311	A
2	GB	322	A
2	GB	323	G
2	GB	324	A
2	GB	329	G
2	GB	330	A
2	GB	331	A
2	GB	334	C
2	GB	339	U
2	GB	342	G
2	GB	346	A
2	GB	352	G
2	GB	353	G
2	GB	362	U
2	GB	363(A)	G
2	GB	363(G)	A
2	GB	372	G
2	GB	376	C
2	GB	380	U
2	GB	385	C
2	GB	386	G
2	GB	404	C
2	GB	405	U
2	GB	411	G
2	GB	412	A
2	GB	416	C
2	GB	418	G
2	GB	444	C
2	GB	448	U
2	GB	454	A
2	GB	455	C
2	GB	457	A
2	GB	464	U
2	GB	471	A
2	GB	473	G
2	GB	481	G
2	GB	492	A
2	GB	494	G
2	GB	501	A
2	GB	505	A
2	GB	507	A
2	GB	508	G

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Mol	Chain	Res	Type
2	GB	509	C
2	GB	518	G
2	GB	527	C
2	GB	529	A
2	GB	530	G
2	GB	531	C
2	GB	532	A
2	GB	533	G
2	GB	546	C
2	GB	548	A
2	GB	549	G
2	GB	550	G
2	GB	562	U
2	GB	563	G
2	GB	573	G
2	GB	574	C
2	GB	575	A
2	GB	595	C
2	GB	603	A
2	GB	604	G
2	GB	607	U
2	GB	609(B)	G
2	GB	613	U
2	GB	615	G
2	GB	616	A
2	GB	617	G
2	GB	627	A
2	GB	629	G
2	GB	634	C
2	GB	637	A
2	GB	645	C
2	GB	646	A
2	GB	651	G
2	GB	652	U
2	GB	654	U
2	GB	656	G
2	GB	668	G
2	GB	670	A
2	GB	671	C
2	GB	682	G
2	GB	686	G
2	GB	701	G

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Mol	Chain	Res	Type
2	GB	702	G
2	GB	708	C
2	GB	717	G
2	GB	720	C
2	GB	722	A
2	GB	723	G
2	GB	730	C
2	GB	738	G
2	GB	749	C
2	GB	758	C
2	GB	765	G
2	GB	775	G
2	GB	776	G
2	GB	779	U
2	GB	782	A
2	GB	784	A
2	GB	785	G
2	GB	788	A
2	GB	789	A
2	GB	790	C
2	GB	792	G
2	GB	800	A
2	GB	801	G
2	GB	805	G
2	GB	812	C
2	GB	819	A
2	GB	822	U
2	GB	825	C
2	GB	826	U
2	GB	827	U
2	GB	828	U
2	GB	831	G
2	GB	846	C
2	GB	855	G
2	GB	859	G
2	GB	860	U
2	GB	863	A
2	GB	865	C
2	GB	866	A
2	GB	869	G
2	GB	878	A
2	GB	879	G

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Mol	Chain	Res	Type
2	GB	882	G
2	GB	884	C
2	GB	886	C
2	GB	887	A
2	GB	888	C
2	GB	889	C
2	GB	890	A
2	GB	893	C
2	GB	894	C
2	GB	895	U
2	GB	896	A
2	GB	899	A
2	GB	907	U
2	GB	910	A
2	GB	914	C
2	GB	915	C
2	GB	917	A
2	GB	921	G
2	GB	931	G
2	GB	932	G
2	GB	938	G
2	GB	941	A
2	GB	945	A
2	GB	946	G
2	GB	958	U
2	GB	961	C
2	GB	973	A
2	GB	974(A)	G
2	GB	974(B)	C
2	GB	978	G
2	GB	980	A
2	GB	983	A
2	GB	996	A
2	GB	1005	C
2	GB	1009	A
2	GB	1012	U
2	GB	1013	C
2	GB	1016	G
2	GB	1021	A
2	GB	1022	G
2	GB	1023	U
2	GB	1024	G

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Mol	Chain	Res	Type
2	GB	1026	U
2	GB	1027	A
2	GB	1033	U
2	GB	1038	C
2	GB	1039	G
2	GB	1045	A
2	GB	1046	A
2	GB	1047	G
2	GB	1048	A
2	GB	1050	A
2	GB	1053	C
2	GB	1054	A
2	GB	1055	G
2	GB	1056	G
2	GB	1057	A
2	GB	1059	G
2	GB	1060	U
2	GB	1061	U
2	GB	1064	C
2	GB	1065	U
2	GB	1066	U
2	GB	1067	A
2	GB	1068	G
2	GB	1070	A
2	GB	1071	G
2	GB	1073	A
2	GB	1074	G
2	GB	1075	C
2	GB	1076	C
2	GB	1077	A
2	GB	1078	U
2	GB	1079	C
2	GB	1080	C
2	GB	1081	U
2	GB	1082	U
2	GB	1083	U
2	GB	1084	A
2	GB	1085	A
2	GB	1086	A
2	GB	1087	G
2	GB	1088	A
2	GB	1089	G

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Mol	Chain	Res	Type
2	GB	1090	U
2	GB	1091	G
2	GB	1092	C
2	GB	1093	G
2	GB	1094	U
2	GB	1098	A
2	GB	1099	G
2	GB	1100	C
2	GB	1101	U
2	GB	1107	G
2	GB	1111	A
2	GB	1112	G
2	GB	1113	U
2	GB	1129	A
2	GB	1130	U
2	GB	1135	C
2	GB	1136	G
2	GB	1139	G
2	GB	1142(B)	A
2	GB	1143	A
2	GB	1147	C
2	GB	1174	A
2	GB	1175	U
2	GB	1177	A
2	GB	1205	U
2	GB	1210	A
2	GB	1211	U
2	GB	1218	C
2	GB	1220	A
2	GB	1227	G
2	GB	1240	U
2	GB	1244	G
2	GB	1248	G
2	GB	1249	U
2	GB	1252	G
2	GB	1253	A
2	GB	1256	G
2	GB	1271	G
2	GB	1272	A
2	GB	1273	U
2	GB	1275	A
2	GB	1276	A

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Mol	Chain	Res	Type
2	GB	1300	U
2	GB	1301	A
2	GB	1302	A
2	GB	1313	U
2	GB	1329	U
2	GB	1347	G
2	GB	1352	U
2	GB	1359	A
2	GB	1360	A
2	GB	1365	A
2	GB	1378	A
2	GB	1379	A
2	GB	1384	A
2	GB	1385	G
2	GB	1386	C
2	GB	1394	U
2	GB	1395	A
2	GB	1396	U
2	GB	1403	C
2	GB	1416	G
2	GB	1417	C
2	GB	1419	A
2	GB	1424	G
2	GB	1428	C
2	GB	1437	C
2	GB	1444(B)	A
2	GB	1449(B)	A
2	GB	1449	G
2	GB	1453	A
2	GB	1454	U
2	GB	1455	G
2	GB	1460	A
2	GB	1467	C
2	GB	1471	A
2	GB	1483	G
2	GB	1493	C
2	GB	1497	U
2	GB	1510	A
2	GB	1511	A
2	GB	1524	G
2	GB	1525	G
2	GB	1532	C

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Mol	Chain	Res	Type
2	GB	1534	G
2	GB	1535	U
2	GB	1537	C
2	GB	1539	G
2	GB	1543	A
2	GB	1544	C
2	GB	1554	A
2	GB	1558	A
2	GB	1559	G
2	GB	1566	A
2	GB	1569	A
2	GB	1578	U
2	GB	1583	A
2	GB	1585	C
2	GB	1588	C
2	GB	1595	G
2	GB	1602	U
2	GB	1608	A
2	GB	1609	A
2	GB	1616	A
2	GB	1618	A
2	GB	1630(B)	C
2	GB	1637	A
2	GB	1640	C
2	GB	1644	C
2	GB	1648	C
2	GB	1654	A
2	GB	1669	A
2	GB	1674	G
2	GB	1675	C
2	GB	1681	G
2	GB	1700	A
2	GB	1701	A
2	GB	1717	G
2	GB	1728	G
2	GB	1729	A
2	GB	1730	U
2	GB	1731	G
2	GB	1743	G
2	GB	1746	G
2	GB	1747	G
2	GB	1757	U

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Mol	Chain	Res	Type
2	GB	1761	C
2	GB	1762	A
2	GB	1763	G
2	GB	1764	G
2	GB	1771	C
2	GB	1773	A
2	GB	1776	G
2	GB	1791	A
2	GB	1800	C
2	GB	1801	G
2	GB	1811	G
2	GB	1816	G
2	GB	1826	G
2	GB	1829	A
2	GB	1830	C
2	GB	1833	U
2	GB	1847	A
2	GB	1859	A
2	GB	1880	C
2	GB	1882	C
2	GB	1900	A
2	GB	1903	G
2	GB	1906	G
2	GB	1929	G
2	GB	1930	G
2	GB	1937	A
2	GB	1938	A
2	GB	1939	5MU
2	GB	1940	U
2	GB	1941	C
2	GB	1955	U
2	GB	1963	U
2	GB	1964	G
2	GB	1966	A
2	GB	1967	C
2	GB	1970	A
2	GB	1971	A
2	GB	1972	A
2	GB	1993	U
2	GB	1997	G
2	GB	2020	A
2	GB	2023	G

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Mol	Chain	Res	Type
2	GB	2031	A
2	GB	2032	G
2	GB	2033	A
2	GB	2036	C
2	GB	2039	C
2	GB	2043	C
2	GB	2051	A
2	GB	2052	G
2	GB	2055	C
2	GB	2056	G
2	GB	2060	A
2	GB	2061	G
2	GB	2062	A
2	GB	2063	C
2	GB	2069	G
2	GB	2072	G
2	GB	2093	G
2	GB	2102	U
2	GB	2111	C
2	GB	2116	G
2	GB	2117	A
2	GB	2122	U
2	GB	2124	G
2	GB	2125	G
2	GB	2127	G
2	GB	2128	C
2	GB	2129	C
2	GB	2130	U
2	GB	2131	G
2	GB	2132	U
2	GB	2133	G
2	GB	2134	A
2	GB	2135	A
2	GB	2136	C
2	GB	2137	C
2	GB	2138	C
2	GB	2139	C
2	GB	2142	C
2	GB	2143	C
2	GB	2145	C
2	GB	2146	C
2	GB	2147	G

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Mol	Chain	Res	Type
2	GB	2148	G
2	GB	2149	G
2	GB	2150	U
2	GB	2152	G
2	GB	2157	G
2	GB	2158	A
2	GB	2159	G
2	GB	2162	G
2	GB	2163	C
2	GB	2164	C
2	GB	2165	G
2	GB	2166	G
2	GB	2167	U
2	GB	2168	G
2	GB	2169	A
2	GB	2171	A
2	GB	2172	U
2	GB	2173	A
2	GB	2174	C
2	GB	2176	A
2	GB	2178	C
2	GB	2183	C
2	GB	2187	G
2	GB	2189	U
2	GB	2190	G
2	GB	2192	G
2	GB	2198	A
2	GB	2210	G
2	GB	2211	G
2	GB	2212	A
2	GB	2213	U
2	GB	2225	A
2	GB	2226	C
2	GB	2234	G
2	GB	2238	G
2	GB	2239	G
2	GB	2246	G
2	GB	2251	OMG
2	GB	2252	G
2	GB	2269	A
2	GB	2273	A
2	GB	2275	C

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Mol	Chain	Res	Type
2	GB	2278	A
2	GB	2282	G
2	GB	2283	C
2	GB	2286	A
2	GB	2287	A
2	GB	2288	A
2	GB	2289	G
2	GB	2297	C
2	GB	2305	A
2	GB	2308	G
2	GB	2311	A
2	GB	2318	G
2	GB	2319	G
2	GB	2320	A
2	GB	2321	G
2	GB	2325	G
2	GB	2327	A
2	GB	2334	G
2	GB	2335	A
2	GB	2336	A
2	GB	2340	G
2	GB	2344	U
2	GB	2345	G
2	GB	2347	C
2	GB	2354	G
2	GB	2356	C
2	GB	2383	G
2	GB	2385	C
2	GB	2386	C
2	GB	2396	G
2	GB	2402	C
2	GB	2406	U
2	GB	2420	C
2	GB	2422	A
2	GB	2425	A
2	GB	2427	C
2	GB	2428	G
2	GB	2429	G
2	GB	2430	A
2	GB	2434	A
2	GB	2436	G
2	GB	2439	A

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Mol	Chain	Res	Type
2	GB	2440	C
2	GB	2441	C
2	GB	2445	G
2	GB	2448	A
2	GB	2464	C
2	GB	2465	C
2	GB	2468	G
2	GB	2475	C
2	GB	2476	A
2	GB	2478	A
2	GB	2487	G
2	GB	2489	G
2	GB	2493	U
2	GB	2502	G
2	GB	2504	U
2	GB	2505	G
2	GB	2507	C
2	GB	2513	G
2	GB	2518	A
2	GB	2520	C
2	GB	2525	G
2	GB	2529	G
2	GB	2542	A
2	GB	2543	G
2	GB	2549	G
2	GB	2554	U
2	GB	2555	U
2	GB	2566	A
2	GB	2567	G
2	GB	2568	C
2	GB	2572	A
2	GB	2573	C
2	GB	2576	G
2	GB	2585	U
2	GB	2586	C
2	GB	2596	U
2	GB	2602	A
2	GB	2603	G
2	GB	2609	U
2	GB	2611	U
2	GB	2612	C
2	GB	2615	U

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Mol	Chain	Res	Type
2	GB	2623	G
2	GB	2635	C
2	GB	2662	A
2	GB	2667	C
2	GB	2686	G
2	GB	2689	U
2	GB	2691	C
2	GB	2702	U
2	GB	2703	C
2	GB	2711	A
2	GB	2712(A)	A
2	GB	2713	A
2	GB	2714	G
2	GB	2718	G
2	GB	2724	C
2	GB	2726	U
2	GB	2732	G
2	GB	2733	A
2	GB	2748	A
2	GB	2757	A
2	GB	2758	A
2	GB	2764	A
2	GB	2765	A
2	GB	2766	G
2	GB	2769	C
2	GB	2778	A
2	GB	2790	A
2	GB	2791	C
2	GB	2793	G
2	GB	2794	C
2	GB	2795	G
2	GB	2797	U
2	GB	2798	C
2	GB	2799	A
2	GB	2801	A
2	GB	2802	G
2	GB	2807	G
2	GB	2809	A
2	GB	2818	G
2	GB	2820	A
2	GB	2821	A
2	GB	2825	G

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Mol	Chain	Res	Type
2	GB	2833	G
2	GB	2835	A
2	GB	2836	U
2	GB	2870	C
2	GB	2872	G
2	GB	2873	A
2	GB	2876	G
2	GB	2879	C
2	GB	2880	C
2	GB	2883	A
2	GB	2886	G
2	GB	2892	A
2	GB	2894	G
2	GB	2895	U
2	GB	2897	U
3	HB	2	C
3	HB	8	U
3	HB	9	G
3	HB	13	A
3	HB	22	U
3	HB	24	G
3	HB	30	C
3	HB	35	U
3	HB	41	U
3	HB	42	C
3	HB	44	G
3	HB	53	A
3	HB	63	G
3	HB	65	C
3	HB	66	A
3	HB	73	A
3	HB	87	G
3	HB	90	C
3	HB	105	G
3	HB	109	G
4	IB	8	4SU
4	IB	9	G
4	IB	10	G
4	IB	12	G
4	IB	15	G
4	IB	16	C
4	IB	17	C

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Mol	Chain	Res	Type
4	IB	17(A)	U
4	IB	18	G
4	IB	19	G
4	IB	20	U
4	IB	22	G
4	IB	23	C
4	IB	24	U
4	IB	26	G
4	IB	34	C
4	IB	35	A
4	IB	40	C
4	IB	47	U
4	IB	48	C
4	IB	53	G
4	IB	55	PSU
4	IB	61	C
4	IB	64	G
4	IB	66	C
4	IB	71	C
34	MC	16	A
34	MC	21	A
34	MC	22	A
4	NC	3	C
4	NC	12	G
4	NC	17(A)	U
4	NC	18	G
4	NC	19	G
4	NC	21	A
4	NC	22	G
4	NC	25	C
4	NC	31	G
4	NC	46	G
4	NC	48	C
4	NC	51	C
4	NC	56	C
4	NC	59	A
4	NC	72	A
4	NC	73	A
4	NC	74	C
4	NC	75	C
4	NC	76	A

All (68) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	81	G
1	A	115	G
1	A	210	U
1	A	498	A
1	A	560	U
1	A	563	A
1	A	687	A
1	A	748	C
1	A	913	A
1	A	1201	A
1	A	1240	U
1	A	1491	G
2	B	34	C
2	B	222	A
2	B	352	G
2	B	507	A
2	B	528	A
2	B	614	U
2	B	974(A)	G
2	B	1026	U
2	B	1060	U
2	B	1080	C
2	B	1210	A
2	B	1558	A
2	B	1608	A
2	B	1939	5MU
2	B	1992	G
2	B	2062	A
2	B	2110	G
2	B	2251	OMG
2	B	2405	G
2	B	2439	A
2	B	2602	A
2	B	2756	U
1	FB	81	G
1	FB	115	G
1	FB	210	U
1	FB	498	A
1	FB	560	U
1	FB	563	A
1	FB	687	A
1	FB	748	C
1	FB	913	A

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Mol	Chain	Res	Type
1	FB	1201	A
1	FB	1240	U
1	FB	1491	G
2	GB	34	C
2	GB	352	G
2	GB	507	A
2	GB	528	A
2	GB	614	U
2	GB	974(A)	G
2	GB	1026	U
2	GB	1060	U
2	GB	1080	C
2	GB	1210	A
2	GB	1275	A
2	GB	1558	A
2	GB	1608	A
2	GB	1939	5MU
2	GB	1992	G
2	GB	2062	A
2	GB	2110	G
2	GB	2251	OMG
2	GB	2405	G
2	GB	2439	A
2	GB	2602	A
2	GB	2756	U

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

64 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
1	7MG	A	527	1	22,26,27	3.22	7 (31%)	29,39,42	2.05	8 (27%)
46	0TD	VA	92	46	7,9,10	1.79	1 (14%)	6,11,13	3.11	4 (66%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	PSU	GB	1911	2	18,21,22	1.54	3 (16%)	22,30,33	2.02	7 (31%)
2	5MU	B	1939	2	19,22,23	2.05	4 (21%)	28,32,35	2.58	8 (28%)
2	5MU	GB	1915	2	19,22,23	1.99	3 (15%)	28,32,35	2.16	8 (28%)
4	5MC	IB	32	4	18,22,23	1.61	3 (16%)	26,32,35	1.11	2 (7%)
2	2MU	B	2552	2	19,22,24	2.68	5 (26%)	26,31,36	2.18	7 (26%)
2	PSU	B	1911	2	18,21,22	1.32	1 (5%)	22,30,33	1.97	7 (31%)
1	2MG	FB	1207	1	18,26,27	2.34	4 (22%)	16,38,41	1.32	3 (18%)
1	5MC	A	1404	1	18,22,23	1.77	4 (22%)	26,32,35	1.24	5 (19%)
1	UR3	A	1498	1	19,22,23	1.77	1 (5%)	26,32,35	1.17	1 (3%)
2	PSU	B	1917	2	18,21,22	1.71	2 (11%)	22,30,33	1.68	4 (18%)
1	5MC	FB	967	1	18,22,23	1.59	4 (22%)	26,32,35	1.39	5 (19%)
4	4SU	IA	8	4	18,21,22	4.79	7 (38%)	26,30,33	5.73	10 (38%)
2	2MA	B	2503	2	17,25,26	1.34	2 (11%)	17,37,40	1.09	2 (11%)
4	5MU	IA	54	4	19,22,23	2.05	3 (15%)	28,32,35	2.02	6 (21%)
2	5MC	GB	1942	2	18,22,23	1.62	3 (16%)	26,32,35	1.58	3 (11%)
1	7MG	FB	527	1	22,26,27	3.36	7 (31%)	29,39,42	2.14	8 (27%)
1	PSU	FB	516	1	18,21,22	1.73	3 (16%)	22,30,33	1.31	3 (13%)
1	5MC	A	1400	1	18,22,23	1.58	3 (16%)	26,32,35	1.35	4 (15%)
4	5MC	NC	32	4	18,22,23	1.67	3 (16%)	26,32,35	1.08	2 (7%)
2	OMG	GB	2251	2	18,26,27	2.25	5 (27%)	19,38,41	1.60	6 (31%)
1	2MG	A	1207	1	18,26,27	2.40	4 (22%)	16,38,41	1.34	3 (18%)
4	PSU	IB	55	4	18,21,22	1.61	2 (11%)	22,30,33	1.62	4 (18%)
4	PSU	D	55	4	18,21,22	1.64	2 (11%)	22,30,33	1.64	4 (18%)
4	5MU	D	54	4	19,22,23	2.07	3 (15%)	28,32,35	2.09	7 (25%)
1	5MC	A	967	1	18,22,23	1.66	4 (22%)	26,32,35	1.42	4 (15%)
1	PSU	A	516	1	18,21,22	1.57	3 (16%)	22,30,33	1.34	2 (9%)
1	MA6	FB	1519	1	19,26,27	1.77	3 (15%)	18,38,41	1.42	2 (11%)
2	OMG	B	2251	2	18,26,27	2.21	3 (16%)	19,38,41	1.64	6 (31%)
4	PSU	IA	55	4	18,21,22	1.59	2 (11%)	22,30,33	1.74	4 (18%)
1	5MC	FB	1407	1	18,22,23	1.74	3 (16%)	26,32,35	1.11	3 (11%)
1	UR3	FB	1498	1	19,22,23	1.78	1 (5%)	26,32,35	1.26	2 (7%)
1	M2G	FB	966	1	20,27,28	2.49	5 (25%)	22,40,43	1.25	4 (18%)
1	4OC	A	1402	1	20,23,24	1.08	2 (10%)	26,32,35	1.21	2 (7%)
1	5MC	FB	1400	1	18,22,23	1.57	4 (22%)	26,32,35	1.17	2 (7%)
2	4OC	B	1920	2,56	19,22,24	1.17	1 (5%)	26,31,35	1.51	2 (7%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	4OC	GB	1920	2	19,22,24	1.10	1 (5%)	26,31,35	1.42	1 (3%)
46	0TD	AD	92	46	7,9,10	1.75	1 (14%)	6,11,13	3.07	4 (66%)
1	5MC	A	1407	1	18,22,23	1.72	3 (16%)	26,32,35	1.18	3 (11%)
1	5MC	FB	1404	1	18,22,23	1.53	3 (16%)	26,32,35	1.13	2 (7%)
2	5MU	B	1915	2	19,22,23	2.00	3 (15%)	28,32,35	2.27	9 (32%)
1	4OC	FB	1402	1	20,23,24	1.03	2 (10%)	26,32,35	1.29	2 (7%)
1	MA6	FB	1518	1	19,26,27	1.56	3 (15%)	18,38,41	1.47	2 (11%)
2	5MU	GB	1939	2	19,22,23	2.22	4 (21%)	28,32,35	2.40	8 (28%)
2	2MU	GB	2552	2	19,22,24	2.52	5 (26%)	26,31,36	2.18	7 (26%)
2	5MC	GB	1962	2	18,22,23	1.71	4 (22%)	26,32,35	1.38	2 (7%)
1	MA6	A	1519	1	19,26,27	1.43	3 (15%)	18,38,41	1.37	1 (5%)
2	PSU	GB	2605	2	18,21,22	1.68	3 (16%)	22,30,33	2.17	6 (27%)
4	5MC	IA	32	4	18,22,23	1.68	3 (16%)	26,32,35	0.98	2 (7%)
4	4SU	NC	8	4	18,21,22	4.52	7 (38%)	26,30,33	6.05	10 (38%)
4	5MU	NC	54	4	19,22,23	2.07	3 (15%)	28,32,35	2.00	7 (25%)
4	PSU	NC	55	4	18,21,22	1.66	2 (11%)	22,30,33	1.69	4 (18%)
1	M2G	A	966	1	20,27,28	2.51	3 (15%)	22,40,43	1.33	4 (18%)
4	5MU	IB	54	4	19,22,23	2.04	3 (15%)	28,32,35	2.09	7 (25%)
4	4SU	IB	8	4	18,21,22	4.45	7 (38%)	26,30,33	5.76	11 (42%)
4	5MC	D	32	4	18,22,23	1.64	3 (16%)	26,32,35	1.11	2 (7%)
1	MA6	A	1518	1	19,26,27	1.66	3 (15%)	18,38,41	1.40	3 (16%)
4	4SU	D	8	4	18,21,22	4.58	7 (38%)	26,30,33	5.78	10 (38%)
2	5MC	B	1942	2	18,22,23	1.68	3 (16%)	26,32,35	1.42	3 (11%)
2	PSU	GB	1917	2	18,21,22	1.75	2 (11%)	22,30,33	1.70	4 (18%)
2	5MC	B	1962	2	18,22,23	1.79	4 (22%)	26,32,35	1.46	3 (11%)
2	PSU	B	2605	2	18,21,22	1.48	2 (11%)	22,30,33	1.98	5 (22%)
2	2MA	GB	2503	2	17,25,26	1.34	2 (11%)	17,37,40	1.09	2 (11%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
46	0TD	VA	92	46	-	4/7/12/14	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	GB	1911	2	-	0/7/25/26	0/2/2/2
2	5MU	B	1939	2	-	1/7/25/26	0/2/2/2
2	5MU	GB	1915	2	-	0/7/25/26	0/2/2/2
4	5MC	IB	32	4	-	0/7/25/26	0/2/2/2
2	2MU	B	2552	2	-	1/9/27/28	0/2/2/2
2	PSU	B	1911	2	-	0/7/25/26	0/2/2/2
1	2MG	FB	1207	1	-	0/5/27/28	0/3/3/3
1	5MC	A	1404	1	-	0/7/25/26	0/2/2/2
1	UR3	A	1498	1	-	2/7/25/26	0/2/2/2
2	PSU	B	1917	2	-	0/7/25/26	0/2/2/2
1	5MC	FB	967	1	-	0/7/25/26	0/2/2/2
4	4SU	IA	8	4	-	2/7/25/26	0/2/2/2
2	2MA	B	2503	2	-	2/3/25/26	0/3/3/3
4	5MU	IA	54	4	-	0/7/25/26	0/2/2/2
2	5MC	GB	1942	2	-	0/7/25/26	0/2/2/2
1	7MG	FB	527	1	-	2/7/37/38	0/3/3/3
1	PSU	FB	516	1	-	0/7/25/26	0/2/2/2
1	5MC	A	1400	1	-	0/7/25/26	0/2/2/2
4	5MC	NC	32	4	-	0/7/25/26	0/2/2/2
2	OMG	GB	2251	2	-	3/5/27/28	0/3/3/3
1	2MG	A	1207	1	-	0/5/27/28	0/3/3/3
4	PSU	IB	55	4	-	1/7/25/26	0/2/2/2
4	PSU	D	55	4	-	1/7/25/26	0/2/2/2
4	5MU	D	54	4	-	0/7/25/26	0/2/2/2
1	5MC	A	967	1	-	0/7/25/26	0/2/2/2
1	PSU	A	516	1	-	0/7/25/26	0/2/2/2
1	MA6	FB	1519	1	-	4/7/29/30	0/3/3/3
2	OMG	B	2251	2	-	3/5/27/28	0/3/3/3
4	PSU	IA	55	4	-	2/7/25/26	0/2/2/2
1	5MC	FB	1407	1	-	0/7/25/26	0/2/2/2
1	UR3	FB	1498	1	-	2/7/25/26	0/2/2/2
1	M2G	FB	966	1	-	0/7/29/30	0/3/3/3
1	4OC	A	1402	1	-	1/9/29/30	0/2/2/2
1	5MC	FB	1400	1	-	0/7/25/26	0/2/2/2
2	4OC	B	1920	2,56	-	1/9/27/30	0/2/2/2
2	4OC	GB	1920	2	-	1/9/27/30	0/2/2/2
46	0TD	AD	92	46	-	2/7/12/14	-
1	5MC	A	1407	1	-	0/7/25/26	0/2/2/2
1	5MC	FB	1404	1	-	0/7/25/26	0/2/2/2
2	5MU	B	1915	2	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	4OC	FB	1402	1	-	2/9/29/30	0/2/2/2
1	MA6	FB	1518	1	-	3/7/29/30	0/3/3/3
2	5MU	GB	1939	2	-	0/7/25/26	0/2/2/2
2	2MU	GB	2552	2	-	1/9/27/28	0/2/2/2
2	5MC	GB	1962	2	-	2/7/25/26	0/2/2/2
1	MA6	A	1519	1	-	4/7/29/30	0/3/3/3
2	PSU	GB	2605	2	-	0/7/25/26	0/2/2/2
4	5MC	IA	32	4	-	0/7/25/26	0/2/2/2
4	4SU	NC	8	4	-	2/7/25/26	0/2/2/2
4	5MU	NC	54	4	-	0/7/25/26	0/2/2/2
4	PSU	NC	55	4	-	1/7/25/26	0/2/2/2
1	M2G	A	966	1	-	0/7/29/30	0/3/3/3
4	5MU	IB	54	4	-	0/7/25/26	0/2/2/2
4	4SU	IB	8	4	-	1/7/25/26	0/2/2/2
4	5MC	D	32	4	-	0/7/25/26	0/2/2/2
1	MA6	A	1518	1	-	3/7/29/30	0/3/3/3
4	4SU	D	8	4	-	1/7/25/26	0/2/2/2
2	5MC	B	1942	2	-	0/7/25/26	0/2/2/2
2	PSU	GB	1917	2	-	1/7/25/26	0/2/2/2
2	5MC	B	1962	2	-	2/7/25/26	0/2/2/2
2	PSU	B	2605	2	-	0/7/25/26	0/2/2/2
2	2MA	GB	2503	2	-	2/3/25/26	0/3/3/3

All (209) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	IA	8	4SU	C4-N3	12.96	1.51	1.37
4	D	8	4SU	C4-N3	12.04	1.50	1.37
4	NC	8	4SU	C4-N3	11.76	1.50	1.37
4	IA	8	4SU	O2-C2	11.39	1.43	1.23
4	D	8	4SU	O2-C2	11.38	1.43	1.23
4	IB	8	4SU	C4-N3	11.36	1.49	1.37
4	IB	8	4SU	O2-C2	11.34	1.43	1.23
4	NC	8	4SU	O2-C2	11.30	1.43	1.23
1	FB	527	7MG	O6-C6	10.35	1.43	1.23
1	A	527	7MG	O6-C6	10.04	1.42	1.23
1	FB	527	7MG	C5-N7	8.55	1.45	1.35
1	A	1207	2MG	O6-C6	8.51	1.40	1.23
1	FB	1207	2MG	O6-C6	8.44	1.40	1.23
2	B	2552	2MU	O4-C4	8.42	1.40	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	FB	966	M2G	O6-C6	8.16	1.39	1.23
1	A	966	M2G	O6-C6	7.89	1.39	1.23
2	B	2251	OMG	O6-C6	7.65	1.38	1.23
2	GB	2552	2MU	O4-C4	7.62	1.39	1.24
1	A	527	7MG	C5-N7	7.38	1.44	1.35
2	GB	2251	OMG	O6-C6	6.97	1.37	1.23
1	FB	1498	UR3	O4-C4	6.97	1.38	1.23
1	A	1498	UR3	O4-C4	6.90	1.38	1.23
4	IA	54	5MU	O4-C4	6.18	1.35	1.23
4	IA	8	4SU	C4-S4	6.11	1.79	1.68
2	GB	1939	5MU	C4-C5	-6.08	1.34	1.44
2	GB	1915	5MU	O4-C4	6.08	1.35	1.23
4	NC	54	5MU	O4-C4	6.07	1.35	1.23
4	IA	8	4SU	C6-C5	6.03	1.49	1.35
4	D	54	5MU	O4-C4	6.02	1.35	1.23
4	D	8	4SU	C6-C5	6.01	1.49	1.35
4	IB	54	5MU	O4-C4	5.97	1.34	1.23
4	NC	8	4SU	C6-C5	5.94	1.48	1.35
2	GB	1939	5MU	O4-C4	5.82	1.34	1.23
4	IB	8	4SU	C6-C5	5.81	1.48	1.35
4	NC	54	5MU	C4-C5	-5.76	1.35	1.44
2	B	1915	5MU	C4-C5	-5.74	1.35	1.44
2	B	1939	5MU	O4-C4	5.64	1.34	1.23
4	D	54	5MU	C4-C5	-5.60	1.35	1.44
2	B	1915	5MU	O4-C4	5.60	1.34	1.23
4	IA	54	5MU	C4-C5	-5.59	1.35	1.44
4	NC	8	4SU	C4-S4	5.53	1.78	1.68
4	NC	55	PSU	C6-C5	5.52	1.41	1.35
2	B	1939	5MU	C4-C5	-5.51	1.35	1.44
4	IB	54	5MU	C4-C5	-5.49	1.35	1.44
2	GB	1917	PSU	C6-C5	5.38	1.41	1.35
2	B	1917	PSU	C6-C5	5.37	1.41	1.35
4	D	8	4SU	C4-S4	5.37	1.78	1.68
4	IB	8	4SU	C4-S4	5.27	1.78	1.68
4	IA	55	PSU	C6-C5	5.25	1.41	1.35
1	FB	516	PSU	C6-C5	5.25	1.41	1.35
2	B	2552	2MU	C3'-C2'	-5.21	1.41	1.52
2	GB	2605	PSU	C6-C5	5.21	1.41	1.35
4	D	55	PSU	C6-C5	5.18	1.41	1.35
2	GB	1915	5MU	C4-C5	-5.18	1.36	1.44
4	IA	8	4SU	C2-N1	5.17	1.46	1.38
4	IB	55	PSU	C6-C5	5.13	1.41	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	966	M2G	C2-N2	4.98	1.44	1.35
1	A	527	7MG	C8-N9	-4.98	1.43	1.46
1	FB	1519	MA6	C4-N3	4.84	1.42	1.35
1	A	966	M2G	C2-N3	4.83	1.36	1.30
2	GB	2552	2MU	C3'-C2'	-4.81	1.42	1.52
4	D	8	4SU	C2-N1	4.75	1.46	1.38
2	GB	1911	PSU	C6-C5	4.75	1.40	1.35
4	IB	8	4SU	C2-N1	4.75	1.46	1.38
1	A	516	PSU	C6-C5	4.58	1.40	1.35
1	FB	966	M2G	C2-N3	4.55	1.36	1.30
1	FB	966	M2G	C2-N2	4.55	1.43	1.35
2	B	1962	5MC	C4-N4	4.53	1.45	1.34
2	B	2605	PSU	C6-C5	4.53	1.40	1.35
1	A	1518	MA6	C4-N3	4.49	1.41	1.35
2	B	1942	5MC	C4-N4	4.46	1.45	1.34
1	FB	1519	MA6	C6-N1	4.41	1.39	1.33
4	NC	8	4SU	C2-N1	4.32	1.45	1.38
1	FB	527	7MG	C4-N9	4.31	1.42	1.37
1	A	1404	5MC	C4-N4	4.29	1.45	1.34
2	GB	1962	5MC	C4-N4	4.16	1.44	1.34
1	FB	527	7MG	C8-N9	-4.15	1.43	1.46
1	A	967	5MC	C4-N4	4.14	1.44	1.34
1	FB	1407	5MC	C6-C5	4.13	1.41	1.34
4	NC	32	5MC	C4-N4	4.10	1.44	1.34
1	FB	1407	5MC	C4-N4	4.09	1.44	1.34
1	A	527	7MG	C4-N9	4.08	1.42	1.37
4	IA	32	5MC	C6-C5	4.05	1.41	1.34
2	GB	2503	2MA	C8-N7	4.05	1.41	1.35
4	NC	32	5MC	C6-C5	4.03	1.41	1.34
4	D	32	5MC	C6-C5	4.03	1.41	1.34
1	A	1519	MA6	C4-N3	4.03	1.41	1.35
4	IA	32	5MC	C4-N4	4.03	1.44	1.34
1	A	1407	5MC	C4-N4	4.02	1.44	1.34
1	A	1404	5MC	C6-C5	4.01	1.41	1.34
1	A	1400	5MC	C4-N4	4.01	1.44	1.34
1	FB	967	5MC	C4-N4	3.99	1.44	1.34
1	FB	1518	MA6	C4-N3	3.97	1.41	1.35
4	D	32	5MC	C4-N4	3.96	1.44	1.34
1	FB	1518	MA6	C6-N1	3.95	1.38	1.33
4	IB	32	5MC	C4-N4	3.95	1.44	1.34
1	A	1407	5MC	C6-C5	3.95	1.41	1.34
1	A	1518	MA6	C6-N1	3.94	1.38	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	GB	1942	5MC	C4-N4	3.92	1.44	1.34
2	B	1911	PSU	C6-C5	3.89	1.39	1.35
4	IB	32	5MC	C6-C5	3.88	1.41	1.34
1	FB	1400	5MC	C4-N4	3.84	1.44	1.34
1	A	1407	5MC	C6-N1	-3.81	1.31	1.38
2	B	2503	2MA	C8-N7	3.75	1.41	1.35
2	B	1962	5MC	C6-N1	-3.75	1.31	1.38
2	GB	1942	5MC	C6-N1	-3.74	1.31	1.38
1	FB	1404	5MC	C4-N4	3.66	1.43	1.34
2	B	1920	4OC	C4-N4	3.64	1.42	1.33
1	A	967	5MC	C6-N1	-3.63	1.31	1.38
1	FB	1407	5MC	C6-N1	-3.60	1.31	1.38
46	AD	92	0TD	CB-SB	-3.60	1.78	1.82
2	GB	1962	5MC	C6-C5	3.59	1.40	1.34
1	FB	967	5MC	C6-N1	-3.58	1.31	1.38
2	GB	1962	5MC	C6-N1	-3.56	1.32	1.38
46	VA	92	0TD	CB-SB	-3.52	1.78	1.82
2	GB	1942	5MC	C6-C5	3.51	1.40	1.34
2	B	1942	5MC	C6-C5	3.51	1.40	1.34
1	A	1207	2MG	C2-N2	3.45	1.41	1.33
1	A	1404	5MC	C6-N1	-3.43	1.32	1.38
1	FB	1400	5MC	C6-C5	3.40	1.40	1.34
1	FB	1404	5MC	C6-C5	3.38	1.40	1.34
2	GB	1920	4OC	C4-N4	3.37	1.41	1.33
2	GB	2251	OMG	C2-N2	3.36	1.42	1.34
2	B	1962	5MC	C6-C5	3.35	1.40	1.34
1	A	527	7MG	C6-N1	-3.34	1.32	1.38
1	A	1400	5MC	C6-N1	-3.33	1.32	1.38
2	GB	2251	OMG	C6-N1	-3.32	1.32	1.37
1	FB	1207	2MG	C2-N2	3.31	1.40	1.33
2	GB	1917	PSU	C6-N1	3.29	1.41	1.36
1	FB	527	7MG	C6-N1	-3.23	1.32	1.38
4	NC	32	5MC	C6-N1	-3.23	1.32	1.38
2	B	1942	5MC	C6-N1	-3.23	1.32	1.38
4	D	32	5MC	C6-N1	-3.14	1.32	1.38
1	A	1400	5MC	C6-C5	3.14	1.39	1.34
4	IA	8	4SU	C5-C4	3.10	1.46	1.42
1	A	967	5MC	C6-C5	3.09	1.39	1.34
1	FB	1400	5MC	C6-N1	-3.07	1.32	1.38
4	IA	32	5MC	C6-N1	-3.00	1.32	1.38
1	FB	967	5MC	C6-C5	2.99	1.39	1.34
4	IB	32	5MC	C6-N1	-2.98	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	FB	527	7MG	C2-N2	2.97	1.41	1.34
1	FB	516	PSU	C6-N1	2.97	1.41	1.36
2	GB	2552	2MU	C4-N3	-2.97	1.33	1.38
1	A	1518	MA6	C2-N1	2.96	1.39	1.33
1	FB	1519	MA6	C2-N1	2.94	1.39	1.33
4	D	8	4SU	C5-C4	2.93	1.46	1.42
1	FB	1404	5MC	C6-N1	-2.91	1.33	1.38
2	GB	1939	5MU	C6-C5	2.90	1.39	1.34
1	A	527	7MG	C2-N2	2.89	1.41	1.34
1	FB	1402	4OC	C4-N4	2.89	1.41	1.35
4	NC	8	4SU	C2-N3	-2.88	1.32	1.38
1	A	1402	4OC	C4-N4	2.88	1.41	1.35
4	D	55	PSU	C6-N1	2.87	1.41	1.36
1	FB	1518	MA6	C2-N1	2.86	1.39	1.33
2	B	1917	PSU	C6-N1	2.82	1.40	1.36
1	A	1519	MA6	C6-N1	2.79	1.37	1.33
4	NC	8	4SU	C5-C4	2.75	1.46	1.42
1	FB	527	7MG	C2-N3	2.75	1.39	1.33
4	IB	8	4SU	C2-N3	-2.72	1.33	1.38
4	IB	55	PSU	C6-N1	2.71	1.40	1.36
2	GB	2503	2MA	C6-N6	2.71	1.39	1.28
1	A	516	PSU	C6-N1	2.71	1.40	1.36
1	A	1402	4OC	C4-N3	2.70	1.37	1.32
2	GB	2251	OMG	C5-C6	-2.67	1.42	1.47
2	B	2605	PSU	C6-N1	2.65	1.40	1.36
2	GB	2605	PSU	C6-N1	2.65	1.40	1.36
2	B	2251	OMG	C2-N2	2.63	1.40	1.34
1	A	1207	2MG	C5-C6	-2.62	1.42	1.47
1	A	527	7MG	C2-N3	2.61	1.39	1.33
2	B	1962	5MC	C4-N3	2.60	1.38	1.34
1	A	1519	MA6	C2-N1	2.57	1.38	1.33
4	IB	54	5MU	C6-C5	2.53	1.38	1.34
2	B	1939	5MU	C6-C5	2.52	1.38	1.34
1	FB	1402	4OC	C4-N3	2.50	1.37	1.32
2	GB	1915	5MU	C6-C5	2.50	1.38	1.34
4	D	54	5MU	C6-C5	2.49	1.38	1.34
2	GB	1939	5MU	C2-N1	-2.49	1.34	1.38
1	FB	1207	2MG	C5-C6	-2.47	1.42	1.47
2	B	2503	2MA	C6-N6	2.45	1.38	1.28
4	NC	55	PSU	C6-N1	2.45	1.40	1.36
4	IA	55	PSU	C6-N1	2.41	1.40	1.36
2	B	1939	5MU	C2-N1	-2.38	1.34	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	GB	1911	PSU	C6-N1	2.37	1.40	1.36
1	A	1404	5MC	C4-N3	2.34	1.38	1.34
4	IB	8	4SU	C5-C4	2.30	1.45	1.42
2	B	2552	2MU	C2'-C1'	-2.29	1.47	1.53
1	A	1207	2MG	C2-N1	-2.27	1.33	1.36
2	GB	1911	PSU	O4'-C1'	-2.26	1.40	1.43
4	IA	54	5MU	C6-C5	2.26	1.38	1.34
2	GB	2552	2MU	O4'-C4'	-2.25	1.40	1.45
4	D	8	4SU	C2-N3	-2.24	1.34	1.38
4	IA	8	4SU	C2-N3	-2.22	1.34	1.38
2	B	2251	OMG	C6-N1	-2.22	1.34	1.37
2	GB	2251	OMG	C5-C4	-2.19	1.37	1.43
2	GB	1962	5MC	C4-N3	2.15	1.37	1.34
1	FB	516	PSU	C1'-C5	2.14	1.55	1.50
1	FB	966	M2G	C5-C4	-2.13	1.37	1.43
2	B	2552	2MU	O4'-C4'	-2.12	1.40	1.45
4	NC	54	5MU	C6-C5	2.12	1.38	1.34
1	FB	966	M2G	C6-N1	-2.11	1.34	1.37
1	A	516	PSU	C1'-C5	2.09	1.55	1.50
2	B	2552	2MU	C5'-C4'	-2.08	1.45	1.51
1	FB	1400	5MC	C4-N3	2.07	1.37	1.34
2	GB	2605	PSU	C1'-C5	2.06	1.54	1.50
1	FB	967	5MC	C4-N3	2.05	1.37	1.34
2	B	1915	5MU	C6-C5	2.04	1.37	1.34
1	A	967	5MC	C4-N3	2.03	1.37	1.34
2	GB	2552	2MU	C2'-C1'	-2.03	1.47	1.53
1	FB	1207	2MG	C2-N1	-2.00	1.33	1.36

All (288) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	IB	8	4SU	S4-C4-N3	-16.20	104.25	120.21
4	NC	8	4SU	C4-N3-C2	-14.89	112.88	127.34
4	IA	8	4SU	C4-N3-C2	-14.28	113.47	127.34
4	D	8	4SU	C4-N3-C2	-13.64	114.09	127.34
4	D	8	4SU	S4-C4-N3	-13.13	107.28	120.21
4	NC	8	4SU	S4-C4-N3	-13.05	107.35	120.21
4	IB	8	4SU	C5-C4-S4	-12.49	108.37	124.47
4	D	8	4SU	C1'-N1-C2	12.37	139.97	117.57
4	IB	8	4SU	C4-N3-C2	-12.13	115.56	127.34
4	D	8	4SU	C5-C4-S4	-12.09	108.89	124.47
4	IA	8	4SU	C1'-N1-C2	11.92	139.14	117.57

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	NC	8	4SU	C1'-N1-C2	11.83	138.99	117.57
4	IA	8	4SU	C5-C4-S4	-11.12	110.14	124.47
4	NC	8	4SU	C5-C4-S4	-10.91	110.41	124.47
4	IA	8	4SU	S4-C4-N3	-10.88	109.49	120.21
4	NC	8	4SU	O2-C2-N1	-9.70	109.89	122.79
4	NC	8	4SU	C1'-N1-C6	-9.67	99.75	120.84
4	D	8	4SU	C1'-N1-C6	-9.62	99.87	120.84
4	IA	8	4SU	C1'-N1-C6	-9.57	99.97	120.84
4	IB	8	4SU	C1'-N1-C6	-9.52	100.09	120.84
4	IB	8	4SU	C1'-N1-C2	9.33	134.45	117.57
4	IA	8	4SU	O2-C2-N1	-8.98	110.86	122.79
4	D	8	4SU	O2-C2-N1	-6.89	113.62	122.79
4	NC	8	4SU	O2-C2-N3	-6.77	108.90	121.50
4	IB	8	4SU	O2-C2-N1	-6.70	113.89	122.79
4	IA	8	4SU	O2-C2-N3	-6.44	109.51	121.50
2	B	1915	5MU	C5-C4-N3	6.26	120.65	115.31
2	B	1939	5MU	C4-N3-C2	-6.13	119.42	127.35
2	GB	2605	PSU	C4-N3-C2	-5.62	118.24	126.34
2	GB	1939	5MU	C4-N3-C2	-5.61	120.08	127.35
4	IB	54	5MU	C5-C4-N3	5.59	120.08	115.31
2	GB	2552	2MU	C4-N3-C2	-5.55	119.26	126.58
4	D	54	5MU	C5-C4-N3	5.42	119.94	115.31
2	GB	2552	2MU	N3-C2-N1	5.39	122.04	114.89
2	GB	1942	5MC	C5-C6-N1	-5.33	117.85	123.34
2	GB	1920	4OC	CM2-O2'-C2'	5.33	128.52	114.52
2	B	1920	4OC	CM2-O2'-C2'	5.26	128.34	114.52
2	GB	2605	PSU	N1-C2-N3	5.26	121.08	115.13
2	B	1939	5MU	O2-C2-N1	-5.24	115.82	122.79
2	B	2552	2MU	O2-C2-N1	-5.18	115.89	122.79
4	D	8	4SU	C5-C6-N1	-5.17	113.15	121.81
1	FB	527	7MG	C5-C6-N1	5.17	120.09	110.99
2	GB	1962	5MC	C5-C6-N1	-5.13	118.06	123.34
2	GB	1939	5MU	O4-C4-C5	-5.12	118.97	124.90
4	D	54	5MU	C4-N3-C2	-5.09	120.76	127.35
4	NC	8	4SU	C5-C6-N1	-5.09	113.29	121.81
4	IB	54	5MU	C4-N3-C2	-5.08	120.77	127.35
2	GB	1915	5MU	C5-C4-N3	5.07	119.64	115.31
2	B	1915	5MU	C4-N3-C2	-5.07	120.79	127.35
4	NC	54	5MU	C5-C4-N3	5.04	119.61	115.31
1	FB	527	7MG	N9-C4-N3	5.03	132.99	125.47
1	A	527	7MG	C5-C6-N1	5.02	119.83	110.99
2	B	1962	5MC	C5-C6-N1	-4.98	118.21	123.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	1915	5MU	C4-N3-C2	-4.95	120.94	127.35
4	NC	8	4SU	C6-C5-C4	-4.95	115.67	119.95
2	GB	1939	5MU	N3-C2-N1	4.94	121.45	114.89
2	B	1939	5MU	N3-C2-N1	4.91	121.41	114.89
46	VA	92	0TD	CSB-SB-CB	4.90	111.31	102.44
2	B	2552	2MU	N3-C2-N1	4.90	121.39	114.89
4	IA	54	5MU	C5-C4-N3	4.89	119.49	115.31
2	GB	1939	5MU	C5-C4-N3	4.87	119.47	115.31
1	FB	1498	UR3	C4-N3-C2	-4.84	120.01	124.56
2	GB	1911	PSU	N1-C2-N3	4.84	120.61	115.13
4	IA	8	4SU	C5-C6-N1	-4.82	113.73	121.81
2	B	1939	5MU	C5-C4-N3	4.80	119.41	115.31
1	FB	527	7MG	C2-N3-C4	4.79	120.83	112.30
2	B	2605	PSU	C4-N3-C2	-4.78	119.45	126.34
2	B	1939	5MU	C5-C6-N1	-4.78	118.42	123.34
1	A	527	7MG	N9-C4-N3	4.77	132.60	125.47
4	IA	54	5MU	C4-N3-C2	-4.73	121.22	127.35
1	A	1519	MA6	N3-C2-N1	-4.70	121.33	128.68
46	AD	92	0TD	CSB-SB-CB	4.69	110.93	102.44
4	NC	54	5MU	C4-N3-C2	-4.68	121.29	127.35
2	B	2552	2MU	C4-N3-C2	-4.63	120.47	126.58
2	GB	1939	5MU	O2-C2-N1	-4.62	116.65	122.79
2	GB	1911	PSU	C4-N3-C2	-4.62	119.69	126.34
4	IA	54	5MU	O4-C4-C5	-4.62	119.55	124.90
4	NC	54	5MU	O4-C4-C5	-4.56	119.61	124.90
1	FB	1519	MA6	N3-C2-N1	-4.55	121.57	128.68
4	IA	55	PSU	N1-C2-N3	4.55	120.28	115.13
1	A	527	7MG	C2-N3-C4	4.53	120.37	112.30
2	B	1911	PSU	N1-C2-N3	4.52	120.25	115.13
2	B	1942	5MC	C5-C6-N1	-4.50	118.70	123.34
2	B	1911	PSU	C6-C5-C4	4.43	121.30	118.20
2	B	2605	PSU	N1-C2-N3	4.40	120.12	115.13
1	A	1498	UR3	C4-N3-C2	-4.39	120.43	124.56
4	IB	8	4SU	C5-C6-N1	-4.38	114.48	121.81
4	NC	55	PSU	N1-C2-N3	4.36	120.07	115.13
1	FB	1402	4OC	CM4-N4-C4	-4.32	114.01	122.45
2	B	1915	5MU	O4-C4-C5	-4.31	119.90	124.90
1	FB	527	7MG	C5-C4-N3	-4.30	119.93	128.13
2	GB	2552	2MU	O2-C2-N1	-4.28	117.10	122.79
4	D	54	5MU	O4-C4-C5	-4.25	119.98	124.90
4	D	8	4SU	C6-C5-C4	-4.24	116.28	119.95
1	FB	1518	MA6	N3-C2-N1	-4.19	122.12	128.68

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	GB	1915	5MU	O4-C4-C5	-4.16	120.07	124.90
4	D	55	PSU	N1-C2-N3	4.12	119.80	115.13
1	A	527	7MG	C5-C4-N3	-4.12	120.29	128.13
2	GB	1917	PSU	N1-C2-N3	4.08	119.75	115.13
2	B	1917	PSU	N1-C2-N3	4.07	119.74	115.13
4	D	54	5MU	N3-C2-N1	4.04	120.25	114.89
4	IB	55	PSU	N1-C2-N3	4.00	119.66	115.13
4	IA	8	4SU	C6-C5-C4	-3.98	116.51	119.95
4	D	55	PSU	C4-N3-C2	-3.97	120.62	126.34
4	IB	54	5MU	O4-C4-C5	-3.95	120.32	124.90
4	IB	54	5MU	N3-C2-N1	3.91	120.08	114.89
1	A	1518	MA6	N3-C2-N1	-3.90	122.58	128.68
2	B	1939	5MU	C6-C5-C4	3.90	121.29	118.03
2	GB	1942	5MC	CM5-C5-C6	-3.84	117.72	122.85
4	IB	8	4SU	C6-C5-C4	-3.84	116.62	119.95
4	IB	55	PSU	C4-N3-C2	-3.83	120.82	126.34
2	GB	1917	PSU	C4-N3-C2	-3.82	120.84	126.34
1	A	1402	4OC	CM4-N4-C4	-3.82	115.00	122.45
1	A	1407	5MC	C5-C6-N1	-3.80	119.43	123.34
4	IB	8	4SU	O2-C2-N3	-3.80	114.43	121.50
4	IA	55	PSU	C4-N3-C2	-3.75	120.93	126.34
2	GB	1911	PSU	O2-C2-N1	-3.73	118.68	122.79
1	FB	967	5MC	C1'-N1-C6	-3.73	114.91	121.12
1	FB	1518	MA6	N1-C6-N6	3.73	120.98	117.06
46	AD	92	0TD	OD2-CG-CB	3.72	121.19	113.15
2	B	1917	PSU	C4-N3-C2	-3.69	121.02	126.34
2	B	1911	PSU	C4-N3-C2	-3.69	121.02	126.34
2	GB	1915	5MU	N3-C2-N1	3.64	119.73	114.89
1	A	967	5MC	C1'-N1-C6	-3.62	115.10	121.12
2	B	1942	5MC	O2-C2-N3	-3.59	116.49	122.33
4	NC	55	PSU	C4-N3-C2	-3.59	121.17	126.34
4	NC	8	4SU	N3-C2-N1	-3.57	110.15	114.89
2	B	1939	5MU	O4-C4-C5	-3.55	120.79	124.90
2	B	2605	PSU	C5-C6-N1	-3.53	116.82	122.11
4	NC	32	5MC	C5-C6-N1	-3.52	119.72	123.34
46	VA	92	0TD	OD2-CG-CB	3.51	120.72	113.15
1	A	516	PSU	C4-N3-C2	-3.50	121.29	126.34
46	VA	92	0TD	CB-CA-N	-3.50	101.63	109.10
4	D	8	4SU	O2-C2-N3	-3.49	115.01	121.50
4	IA	54	5MU	N3-C2-N1	3.45	119.47	114.89
1	A	1400	5MC	C5-C6-N1	-3.43	119.81	123.34
2	B	1915	5MU	N3-C2-N1	3.42	119.44	114.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	IB	8	4SU	N3-C2-N1	3.40	119.41	114.89
2	GB	1915	5MU	C5-C6-N1	-3.39	119.85	123.34
1	A	967	5MC	C5-C6-N1	-3.39	119.86	123.34
4	NC	54	5MU	N3-C2-N1	3.38	119.37	114.89
46	AD	92	0TD	CB-CA-N	-3.36	101.95	109.10
4	IB	32	5MC	C5-C6-N1	-3.35	119.89	123.34
2	GB	2605	PSU	C5-C6-N1	-3.35	117.08	122.11
1	FB	1407	5MC	C5-C6-N1	-3.35	119.89	123.34
2	GB	1939	5MU	C5-C6-N1	-3.34	119.91	123.34
2	B	1915	5MU	C5-C6-N1	-3.32	119.92	123.34
2	B	2251	OMG	O3'-C3'-C2'	3.30	120.53	111.17
1	FB	516	PSU	C4-N3-C2	-3.24	121.66	126.34
1	A	1400	5MC	C1'-N1-C6	-3.23	115.75	121.12
2	B	2605	PSU	C6-C5-C4	3.22	120.45	118.20
1	A	967	5MC	CM5-C5-C6	-3.20	118.57	122.85
4	IA	32	5MC	C5-C6-N1	-3.20	120.05	123.34
4	IB	8	4SU	C6-N1-C2	3.18	125.06	120.99
1	A	1518	MA6	N1-C6-N6	3.17	120.39	117.06
1	A	1404	5MC	C5-C6-N1	-3.13	120.12	123.34
1	A	966	M2G	O6-C6-C5	-3.12	118.27	124.37
2	B	1939	5MU	C5M-C5-C6	-3.12	118.68	122.85
1	FB	1404	5MC	C5-C6-N1	-3.08	120.17	123.34
2	GB	2552	2MU	C5-C4-N3	3.08	119.45	114.84
4	D	32	5MC	C5-C6-N1	-3.06	120.19	123.34
2	B	1917	PSU	O2-C2-N1	-3.06	119.43	122.79
1	FB	527	7MG	O6-C6-C5	-3.05	120.05	127.54
2	B	1911	PSU	O2-C2-N1	-3.04	119.44	122.79
1	FB	1400	5MC	C5-C6-N1	-3.02	120.23	123.34
1	FB	1207	2MG	C5-C6-N1	3.02	119.28	113.95
4	IB	54	5MU	C5-C6-N1	-2.99	120.26	123.34
2	GB	1911	PSU	C6-C5-C4	2.98	120.28	118.20
2	GB	1917	PSU	O2-C2-N1	-2.98	119.51	122.79
1	A	966	M2G	C5-C6-N1	2.96	119.17	113.95
1	A	1207	2MG	C5-C6-N1	2.92	119.10	113.95
2	B	1917	PSU	C6-N1-C2	-2.90	119.71	122.68
2	GB	2251	OMG	C5-C6-N1	2.88	119.03	113.95
1	FB	967	5MC	C5-C6-N1	-2.88	120.38	123.34
1	A	1207	2MG	C8-N7-C5	2.87	108.47	102.99
1	A	527	7MG	O6-C6-C5	-2.87	120.51	127.54
4	D	54	5MU	C5-C6-N1	-2.85	120.41	123.34
1	FB	1207	2MG	C8-N7-C5	2.82	108.36	102.99
2	GB	1915	5MU	C6-C5-C4	2.82	120.39	118.03

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	FB	967	5MC	CM5-C5-C6	-2.81	119.09	122.85
2	B	1915	5MU	C1'-N1-C2	2.80	122.64	117.57
1	FB	966	M2G	C5-C6-N1	2.79	118.87	113.95
2	B	1915	5MU	C5M-C5-C6	-2.78	119.13	122.85
2	GB	2251	OMG	O3'-C3'-C2'	2.78	119.05	111.17
1	A	516	PSU	N1-C2-N3	2.77	118.27	115.13
2	GB	1915	5MU	C5M-C5-C6	-2.75	119.18	122.85
46	VA	92	0TD	OD2-CG-OD1	-2.75	117.85	124.09
2	GB	2503	2MA	C5-C6-N1	2.74	118.74	114.02
2	GB	1915	5MU	C1'-N1-C2	2.73	122.51	117.57
46	AD	92	0TD	OD2-CG-OD1	-2.72	117.91	124.09
4	NC	55	PSU	C6-N1-C2	-2.71	119.91	122.68
1	FB	966	M2G	C8-N7-C5	2.71	108.15	102.99
1	A	966	M2G	C8-N7-C5	2.71	108.15	102.99
2	B	2503	2MA	C8-N7-C5	2.70	108.14	102.99
2	B	1962	5MC	C5-C4-N4	-2.67	117.48	121.48
4	IA	8	4SU	N3-C2-N1	-2.67	111.34	114.89
4	IA	55	PSU	C6-N1-C2	-2.67	119.95	122.68
2	GB	2251	OMG	C2-N1-C6	-2.65	120.21	125.10
2	B	2251	OMG	C8-N7-C5	2.65	108.03	102.99
2	B	2552	2MU	O4'-C1'-N1	2.64	114.39	108.36
1	FB	1400	5MC	C1'-N1-C6	-2.64	116.74	121.12
4	D	8	4SU	N3-C2-N1	2.59	118.33	114.89
4	NC	55	PSU	O2-C2-N1	-2.59	119.94	122.79
1	FB	516	PSU	N1-C2-N3	2.59	118.06	115.13
4	IA	55	PSU	O2-C2-N1	-2.59	119.94	122.79
2	B	2251	OMG	C5-C6-N1	2.57	118.48	113.95
1	FB	527	7MG	C4-C5-N7	2.56	109.09	105.53
2	B	2251	OMG	O6-C6-C5	-2.56	119.38	124.37
1	FB	1519	MA6	N1-C6-N6	2.55	119.74	117.06
1	FB	527	7MG	C6-C5-C4	-2.55	117.37	122.62
2	B	2503	2MA	C5-C6-N1	2.54	118.40	114.02
2	GB	2503	2MA	C8-N7-C5	2.53	107.81	102.99
1	FB	1407	5MC	CM5-C5-C6	-2.53	119.47	122.85
1	A	1400	5MC	O2-C2-N3	-2.52	118.23	122.33
2	B	2605	PSU	O2-C2-N3	-2.51	117.08	121.82
1	A	1407	5MC	CM5-C5-C6	-2.51	119.50	122.85
1	A	1407	5MC	C5-C4-N3	-2.50	118.97	121.67
2	GB	2605	PSU	C5-C4-N3	2.49	122.22	116.58
2	GB	1917	PSU	C6-C5-C4	2.47	119.92	118.20
1	A	527	7MG	C6-C5-C4	-2.47	117.53	122.62
2	GB	2251	OMG	C8-N7-C5	2.45	107.66	102.99

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	IA	54	5MU	C5-C6-N1	-2.45	120.82	123.34
4	NC	54	5MU	C5-C6-N1	-2.45	120.82	123.34
2	GB	1942	5MC	O2-C2-N3	-2.45	118.35	122.33
2	GB	2251	OMG	O6-C6-C5	-2.44	119.61	124.37
2	B	1911	PSU	C6-N1-C2	-2.43	120.19	122.68
2	GB	1939	5MU	C6-C5-C4	2.43	120.06	118.03
4	IB	32	5MC	CM5-C5-C6	-2.43	119.61	122.85
1	FB	966	M2G	C2-N1-C6	-2.43	119.68	123.71
2	B	2552	2MU	O4-C4-C5	-2.43	120.89	125.16
1	FB	1407	5MC	C5-C4-N3	-2.41	119.07	121.67
2	B	2552	2MU	O4'-C4'-C5'	-2.40	101.47	109.37
2	B	1920	4OC	N4-C4-N3	2.40	122.17	117.97
1	A	527	7MG	C4-C5-N7	2.38	108.84	105.53
2	GB	1962	5MC	C4-N3-C2	-2.38	117.47	120.69
1	A	1404	5MC	N4-C4-N3	2.36	122.78	118.48
2	GB	2605	PSU	O2-C2-N1	-2.35	120.20	122.79
2	B	1962	5MC	C4-N3-C2	-2.34	117.53	120.69
4	IA	54	5MU	C5M-C5-C6	-2.33	119.74	122.85
2	B	2251	OMG	C2-N1-C6	-2.32	120.82	125.10
1	A	1404	5MC	C5-C4-N3	-2.31	119.18	121.67
1	FB	1404	5MC	C5-C4-N4	-2.31	118.03	121.48
2	GB	2552	2MU	O4'-C1'-N1	2.31	113.63	108.36
1	A	1404	5MC	C5-C4-N4	-2.30	118.03	121.48
2	GB	1939	5MU	C6-N1-C2	-2.28	118.99	121.30
2	B	1911	PSU	O4'-C1'-C2'	2.27	108.34	105.14
1	A	1400	5MC	O2-C2-N1	2.26	123.56	118.89
4	NC	54	5MU	C5M-C5-C6	-2.26	119.83	122.85
1	FB	967	5MC	C1'-N1-C2	2.25	123.45	118.42
4	D	54	5MU	C6-N1-C2	-2.25	119.01	121.30
2	GB	1911	PSU	C5-C6-N1	-2.25	118.73	122.11
1	FB	527	7MG	C2-N1-C6	-2.24	121.02	125.10
4	IB	54	5MU	C5M-C5-C6	-2.24	119.86	122.85
4	NC	32	5MC	C5-C4-N3	-2.22	119.27	121.67
4	D	32	5MC	O2-C2-N3	-2.22	118.73	122.33
1	FB	967	5MC	O2-C2-N3	-2.21	118.73	122.33
1	FB	966	M2G	O6-C6-C5	-2.21	120.06	124.37
1	A	1518	MA6	C4-C5-N7	-2.19	107.11	109.40
1	FB	516	PSU	O4-C4-C5	-2.17	118.38	124.05
2	GB	1911	PSU	O4-C4-C5	-2.16	118.39	124.05
2	B	2552	2MU	C5-C4-N3	2.15	118.05	114.84
1	A	966	M2G	C2-N1-C6	-2.15	120.15	123.71
2	GB	2605	PSU	C6-C5-C4	2.14	119.70	118.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	FB	1498	UR3	C3U-N3-C2	2.14	121.07	117.31
4	IB	54	5MU	C6-N1-C2	-2.12	119.15	121.30
2	B	1915	5MU	C5M-C5-C4	2.12	121.09	118.77
2	B	1942	5MC	CM5-C5-C6	-2.11	120.03	122.85
1	A	1404	5MC	C1'-N1-C6	-2.11	117.62	121.12
1	A	1402	4OC	C5-C4-N4	-2.11	118.32	122.61
4	D	55	PSU	O4'-C1'-C2'	2.09	108.09	105.14
1	A	967	5MC	O2-C2-N3	-2.09	118.93	122.33
2	B	1915	5MU	C6-C5-C4	2.08	119.77	118.03
2	GB	2552	2MU	O4-C4-C5	-2.08	121.50	125.16
4	IB	55	PSU	O4'-C1'-C2'	2.08	108.08	105.14
2	GB	2552	2MU	O4'-C4'-C5'	-2.08	102.53	109.37
1	A	527	7MG	C2-N1-C6	-2.08	121.31	125.10
4	NC	54	5MU	O2-C2-N1	-2.07	120.03	122.79
4	IA	32	5MC	C5-C4-N3	-2.06	119.45	121.67
2	B	1911	PSU	C5-C6-N1	-2.05	119.03	122.11
1	FB	1207	2MG	O6-C6-C5	-2.05	120.37	124.37
4	IB	55	PSU	O2-C2-N1	-2.05	120.54	122.79
4	D	55	PSU	O2-C2-N1	-2.03	120.55	122.79
1	A	1207	2MG	O6-C6-C5	-2.03	120.41	124.37
2	GB	1911	PSU	O4'-C1'-C2'	2.03	108.00	105.14
2	GB	2251	OMG	C3'-C2'-C1'	-2.02	99.09	102.89
1	FB	1402	4OC	CM2-O2'-C2'	2.01	119.81	114.52
2	B	2251	OMG	C3'-C2'-C1'	-2.01	99.11	102.89
4	D	54	5MU	C5M-C5-C6	-2.01	120.17	122.85

There are no chirality outliers.

All (62) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1402	4OC	C1'-C2'-O2'-CM2
1	A	1498	UR3	O4'-C4'-C5'-O5'
1	A	1498	UR3	C3'-C4'-C5'-O5'
1	A	1518	MA6	C5-C6-N6-C9
1	A	1518	MA6	C5-C6-N6-C10
1	A	1519	MA6	O4'-C4'-C5'-O5'
2	B	1920	4OC	C3'-C2'-O2'-CM2
2	B	2251	OMG	C1'-C2'-O2'-CM2
46	VA	92	0TD	O-C-CA-CB
46	VA	92	0TD	CG-CB-SB-CSB
1	FB	1402	4OC	C1'-C2'-O2'-CM2
1	FB	1498	UR3	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	FB	1498	UR3	C3'-C4'-C5'-O5'
1	FB	1518	MA6	C5-C6-N6-C9
1	FB	1518	MA6	C5-C6-N6-C10
1	FB	1519	MA6	O4'-C4'-C5'-O5'
2	GB	1920	4OC	C3'-C2'-O2'-CM2
2	GB	2251	OMG	C1'-C2'-O2'-CM2
46	AD	92	0TD	O-C-CA-CB
46	AD	92	0TD	CG-CB-SB-CSB
4	D	8	4SU	C4'-C5'-O5'-P
4	IB	8	4SU	C4'-C5'-O5'-P
1	A	1519	MA6	C3'-C4'-C5'-O5'
2	B	2251	OMG	O4'-C4'-C5'-O5'
1	FB	1519	MA6	C3'-C4'-C5'-O5'
2	B	1962	5MC	O4'-C4'-C5'-O5'
2	GB	2251	OMG	O4'-C4'-C5'-O5'
1	A	1518	MA6	N1-C6-N6-C9
1	FB	1518	MA6	N1-C6-N6-C9
2	B	2251	OMG	C3'-C4'-C5'-O5'
4	IA	8	4SU	C2'-C1'-N1-C2
4	NC	8	4SU	C2'-C1'-N1-C2
2	GB	1962	5MC	O4'-C4'-C5'-O5'
2	GB	2251	OMG	C3'-C4'-C5'-O5'
1	A	1519	MA6	C5-C6-N6-C9
1	FB	1519	MA6	C5-C6-N6-C9
4	NC	8	4SU	C2'-C1'-N1-C6
4	IA	8	4SU	C2'-C1'-N1-C6
2	GB	2503	2MA	O4'-C4'-C5'-O5'
4	D	55	PSU	C4'-C5'-O5'-P
4	IB	55	PSU	C4'-C5'-O5'-P
2	B	1962	5MC	C3'-C4'-C5'-O5'
2	B	2503	2MA	O4'-C4'-C5'-O5'
1	FB	1519	MA6	C4'-C5'-O5'-P
1	A	1519	MA6	C4'-C5'-O5'-P
1	A	527	7MG	C3'-C4'-C5'-O5'
4	IA	55	PSU	O4'-C1'-C5-C4
4	NC	55	PSU	O4'-C1'-C5-C4
2	B	2552	2MU	C3'-C2'-O2'-C6'
2	GB	2552	2MU	C3'-C2'-O2'-C6'
2	GB	1962	5MC	C3'-C4'-C5'-O5'
46	VA	92	0TD	CA-CB-SB-CSB
1	FB	527	7MG	C3'-C4'-C5'-O5'
2	GB	1917	PSU	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
4	IA	55	PSU	O4'-C1'-C5-C6
2	GB	2503	2MA	C3'-C4'-C5'-O5'
46	VA	92	0TD	SB-CB-CG-OD1
2	B	1939	5MU	O4'-C4'-C5'-O5'
2	B	2503	2MA	C3'-C4'-C5'-O5'
1	FB	1402	4OC	O4'-C4'-C5'-O5'
1	A	527	7MG	C4'-C5'-O5'-P
1	FB	527	7MG	C4'-C5'-O5'-P

There are no ring outliers.

43 monomers are involved in 78 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	527	7MG	1	0
46	VA	92	0TD	1	0
2	B	1939	5MU	1	0
2	GB	1915	5MU	1	0
2	B	2552	2MU	1	0
1	FB	1207	2MG	3	0
1	A	1498	UR3	2	0
1	FB	967	5MC	4	0
2	B	2503	2MA	3	0
4	IA	54	5MU	4	0
2	GB	1942	5MC	1	0
1	FB	527	7MG	1	0
4	NC	32	5MC	2	0
2	GB	2251	OMG	3	0
1	A	1207	2MG	3	0
1	A	967	5MC	4	0
1	FB	1519	MA6	1	0
2	B	2251	OMG	3	0
4	IA	55	PSU	1	0
1	FB	1407	5MC	1	0
1	FB	1498	UR3	3	0
1	FB	966	M2G	1	0
1	A	1402	4OC	1	0
2	B	1920	4OC	4	0
2	GB	1920	4OC	1	0
46	AD	92	0TD	1	0
1	A	1407	5MC	1	0
2	B	1915	5MU	1	0
1	FB	1402	4OC	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	FB	1518	MA6	1	0
2	GB	1939	5MU	2	0
2	GB	1962	5MC	1	0
1	A	1519	MA6	1	0
4	IA	32	5MC	3	0
4	NC	54	5MU	4	0
4	NC	55	PSU	1	0
1	A	966	M2G	2	0
4	IB	8	4SU	2	0
1	A	1518	MA6	1	0
4	D	8	4SU	3	0
2	GB	1917	PSU	2	0
2	B	1962	5MC	1	0
2	GB	2503	2MA	3	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 1440 ligands modelled in this entry, 1438 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
57	BLS	B	9001	-	28,31,31	3.12	10 (35%)	28,43,43	2.77	11 (39%)
57	BLS	GB	9001	-	28,31,31	3.12	10 (35%)	28,43,43	2.35	9 (32%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
57	BLS	B	9001	-	-	7/21/38/38	0/2/2/2
57	BLS	GB	9001	-	-	7/21/38/38	0/2/2/2

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
57	B	9001	BLS	C14-N12	8.87	1.54	1.35
57	GB	9001	BLS	C14-N12	8.44	1.53	1.35
57	GB	9001	BLS	C7-N6	7.66	1.50	1.34
57	B	9001	BLS	C7-N6	6.79	1.48	1.34
57	B	9001	BLS	C11-N12	5.07	1.57	1.47
57	B	9001	BLS	O5'-C5'	5.06	1.51	1.43
57	B	9001	BLS	C3'-C2'	4.86	1.48	1.33
57	GB	9001	BLS	C11-N12	4.76	1.56	1.47
57	GB	9001	BLS	O5'-C5'	4.63	1.51	1.43
57	GB	9001	BLS	C3'-C2'	4.60	1.47	1.33
57	GB	9001	BLS	C13-N12	4.47	1.61	1.45
57	B	9001	BLS	C4-N4	4.34	1.48	1.35
57	B	9001	BLS	C13-N12	4.29	1.60	1.45
57	GB	9001	BLS	C4-N4	4.20	1.47	1.35
57	B	9001	BLS	C4'-N6	2.60	1.50	1.46
57	GB	9001	BLS	C5'-C6'	-2.57	1.47	1.53
57	GB	9001	BLS	C4'-C5'	-2.38	1.47	1.53
57	B	9001	BLS	C5'-C6'	-2.30	1.48	1.53
57	GB	9001	BLS	C4'-N6	2.19	1.49	1.46
57	B	9001	BLS	C4'-C5'	-2.17	1.48	1.53

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	B	9001	BLS	C1'-C2'-C3'	-8.94	110.80	122.52
57	GB	9001	BLS	C1'-C2'-C3'	-7.21	113.08	122.52
57	B	9001	BLS	C10-C11-N12	5.48	120.97	112.15
57	GB	9001	BLS	C10-C11-N12	5.44	120.91	112.15
57	B	9001	BLS	C4-N3-C2	3.95	120.34	116.34
57	B	9001	BLS	N15-C14-N12	3.48	122.71	118.53
57	B	9001	BLS	O4-C6'-O3	3.26	131.49	124.09
57	B	9001	BLS	O3-C6'-C5'	-3.12	109.36	120.81
57	GB	9001	BLS	O5'-C1'-C2'	-3.10	111.46	113.13
57	GB	9001	BLS	C4-N3-C2	3.09	119.47	116.34
57	GB	9001	BLS	O4-C6'-O3	3.04	131.00	124.09
57	B	9001	BLS	O5'-C1'-C2'	-2.99	111.52	113.13
57	B	9001	BLS	C4'-C5'-C6'	-2.55	107.01	112.01

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
57	GB	9001	BLS	O3-C6'-C5'	-2.53	111.55	120.81
57	GB	9001	BLS	C3'-C4'-N6	-2.39	106.21	110.60
57	GB	9001	BLS	C4'-C3'-C2'	-2.38	111.31	120.00
57	B	9001	BLS	C5-C4-N3	-2.24	119.14	121.72
57	GB	9001	BLS	N15-C14-N12	2.13	121.08	118.53
57	B	9001	BLS	N4-C4-N3	2.12	119.84	116.49
57	B	9001	BLS	C4'-C3'-C2'	-2.09	112.38	120.00

There are no chirality outliers.

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
57	B	9001	BLS	C11-C10-C9-C8
57	B	9001	BLS	C11-C10-C9-N9
57	B	9001	BLS	C10-C11-N12-C13
57	B	9001	BLS	C10-C11-N12-C14
57	GB	9001	BLS	C11-C10-C9-C8
57	GB	9001	BLS	C11-C10-C9-N9
57	GB	9001	BLS	C10-C11-N12-C13
57	GB	9001	BLS	C10-C11-N12-C14
57	B	9001	BLS	N6-C7-C8-C9
57	GB	9001	BLS	N6-C7-C8-C9
57	GB	9001	BLS	O7-C7-C8-C9
57	B	9001	BLS	O7-C7-C8-C9
57	B	9001	BLS	C7-C8-C9-N9
57	GB	9001	BLS	C7-C8-C9-N9

There are no ring outliers.

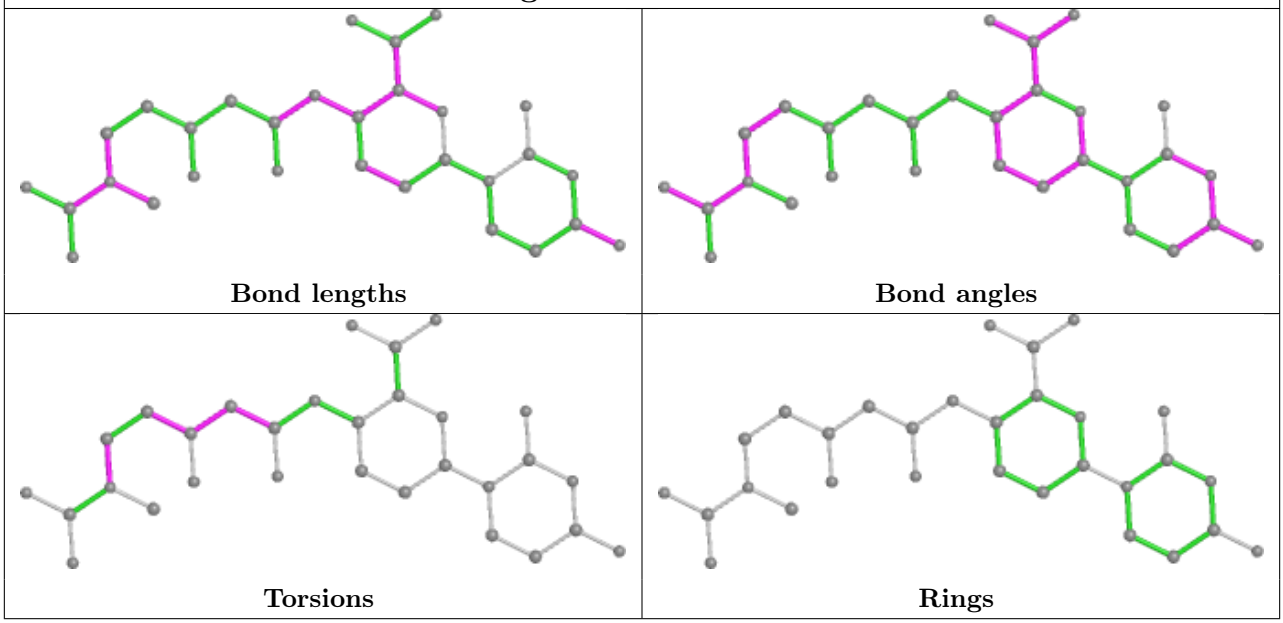
2 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
57	B	9001	BLS	4	0
57	GB	9001	BLS	7	0

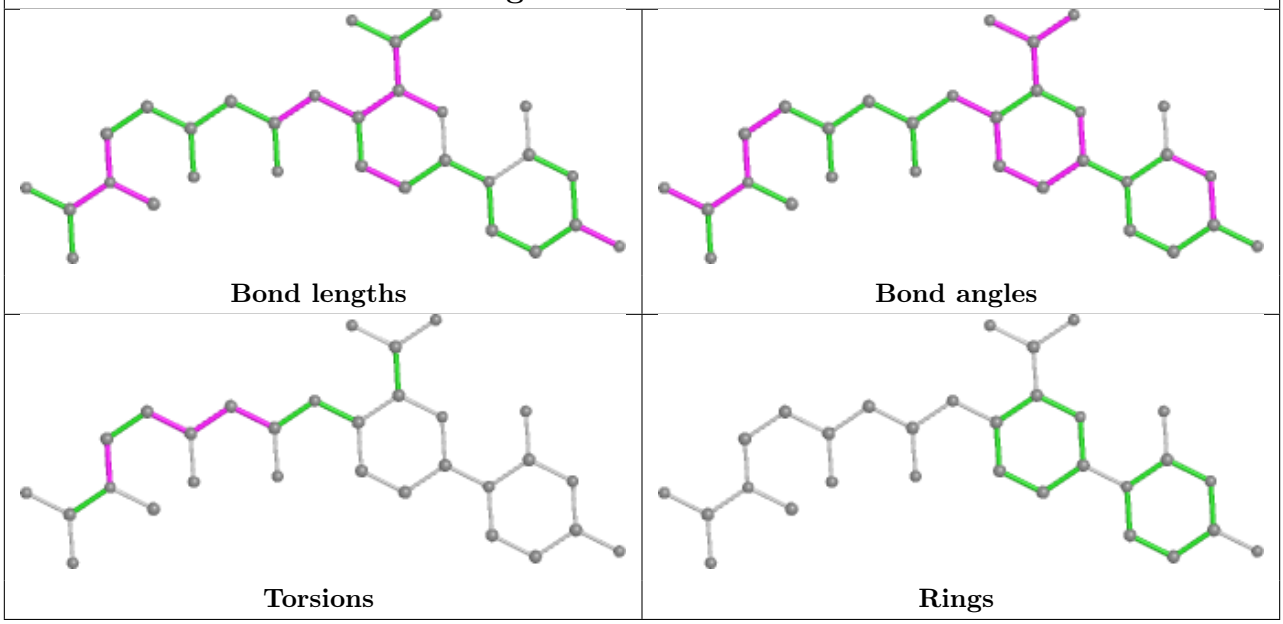
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the

average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand BLS B 9001



Ligand BLS GB 9001



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data (i)

6.1 Protein, DNA and RNA chains (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

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

Unable to reproduce the depositors R factor - this section is therefore empty.

6.3 Carbohydrates (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

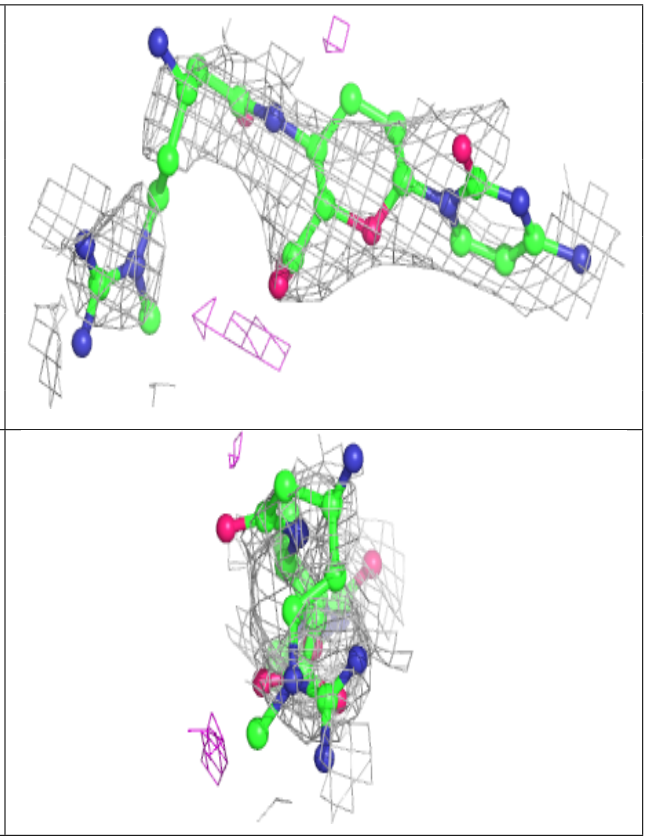
6.4 Ligands (i)

Unable to reproduce the depositors R factor - this section is therefore empty.

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

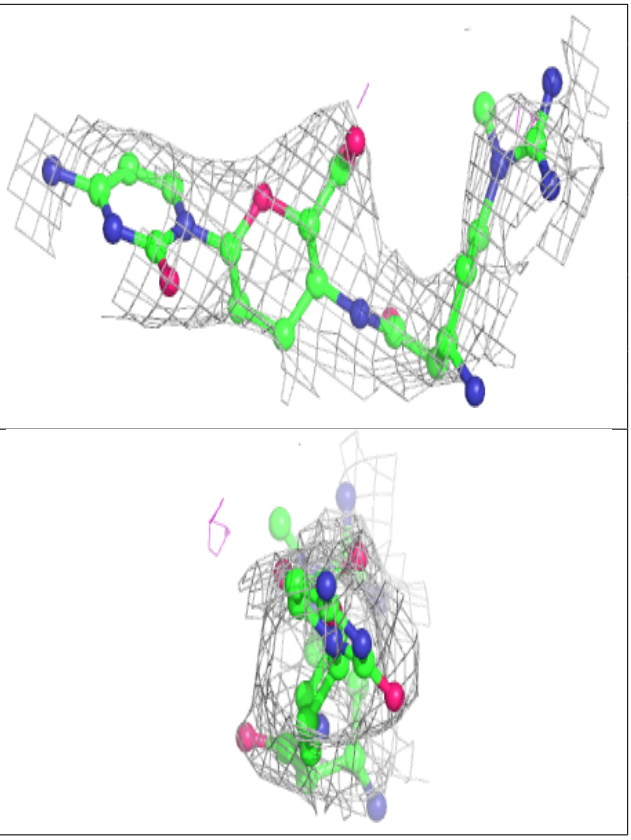
Electron density around BLS B 9001:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around BLS GB 9001:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



6.5 Other polymers (i)

Unable to reproduce the depositors R factor - this section is therefore empty.