Full wwPDB X-ray Structure Validation Report (i)

Oct 9, 2023 – 09:37 PM EDT

PDB ID	:	6BOK
Title	:	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	:	3.55 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 (1)) were used in the production of this report:

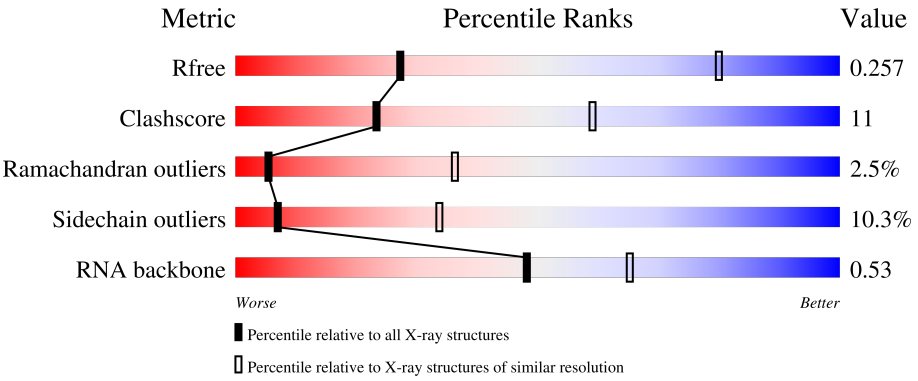
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (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 3.55 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	1020 (3.62-3.50)
Clashscore	141614	1100 (3.62-3.50)
Ramachandran outliers	138981	1065 (3.62-3.50)
Sidechain outliers	138945	1066 (3.62-3.50)
RNA backbone	3102	1008 (4.10-3.00)

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	49% 41% 9% ·
1	DB	1507	49% 41% 9% ·
2	B	2880	43% 41% 14% ·
2	EB	2880	47% 39% 12% ·
3	C	120	52% 37% 9% ·
3	FB	120	53% 39% 7% ·

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Mol	Chain	Length	Quality of chain
4	D	77	35% 58% 6%
4	GB	77	31% 61% 8%
4	IA	77	65% 29% 6%
4	LC	77	71% 23%
5	E	275	60% 34% 5%
5	HB	275	63% 32% 5%
6	F	206	62% 32% 5%
6	IB	206	66% 28% 5%
7	G	205	56% 36% 7%
7	JB	205	60% 32% 7%
8	H	182	50% 43% 7%
8	KB	182	54% 39% 7%
9	I	180	55% 37%
9	LB	180	56% 37%
10	J	148	53% 38% 7%
10	MB	148	55% 36% 7%
11	K	140	63% 34%
11	NB	140	63% 35%
12	L	122	57% 42%
12	OB	122	59% 41%
13	M	150	64% 31% 5%
13	PB	150	65% 29% 5%
14	N	141	72% 21% 6%
14	QB	141	66% 28% 6%
15	O	118	54% 40% 6%

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Mol	Chain	Length	Quality of chain
15	RB	118	51% 44% 5%
16	P	112	71% 25%
16	SB	112	71% 24%
17	Q	146	63% 24% 7% 6%
17	TB	146	62% 27% 5% 6%
18	R	118	70% 24% 5%
18	UB	118	64% 32%
19	S	101	64% 27% 8%
19	VB	101	65% 26% 8%
20	T	113	59% 35%
20	WB	113	63% 33%
21	U	96	78% 20%
21	XB	96	77% 22%
22	V	110	59% 30% 8%
22	YB	110	63% 28% 6%
23	W	206	57% 28% 7% 8%
23	ZB	206	59% 27% 6% 8%
24	AC	85	67% 27% 5%
24	X	85	65% 31%
25	BC	98	62% 32% 5%
25	Y	98	61% 33% 5%
26	CC	72	71% 25%
26	Z	72	68% 28%
27	AA	60	62% 33% 5%
27	DC	60	60% 37%

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Mol	Chain	Length	Quality of chain
28	BA	71	56% 34% 7%
28	EC	71	58% 32% 7%
29	CA	60	62% 32% 5%
29	FC	60	60% 33% 5%
30	DA	54	65% 31%
30	GC	54	65% 31%
31	EA	49	53% 37% 8%
31	HC	49	49% 43% 6%
32	FA	65	66% 23% 9%
32	IC	65	60% 31% 8%
33	GA	37	51% 46%
33	JC	37	49% 49%
34	HA	27	11% 15% 11% 59%
34	KC	27	7% 22% 11% 59%
35	JA	256	50% 33% 7% 9%
35	MC	256	48% 36% 7% 9%
36	KA	239	54% 28% 14%
36	NC	239	54% 28% 5% 14%
37	LA	209	58% 33% 7%
37	OC	209	57% 34% 7%
38	MA	162	51% 38% 7%
38	PC	162	49% 39% 6% 7%
39	NA	101	47% 46% 8%
39	QC	101	52% 38% 10%
40	OA	156	66% 31%

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Mol	Chain	Length	Quality of chain
40	RC	156	65% 31%
41	PA	138	51% 43% 5%
41	SC	138	50% 46%
42	QA	128	57% 34% 7%
42	TC	128	60% 30% 8%
43	RA	105	51% 41% 7%
43	UC	105	50% 42% 7%
44	SA	129	60% 29% 10%
44	VC	129	60% 29% 10%
45	TA	132	61% 26% 5% 8%
45	WC	132	60% 27% 5% 8%
46	UA	126	49% 37% 7% 7%
46	XC	126	48% 38% 6% 7%
47	VA	61	66% 31%
47	YC	61	70% 28%
48	WA	89	55% 38% 6%
48	ZC	89	60% 34% 6%
49	AD	88	65% 26% 6%
49	XA	88	66% 26% 6%
50	BD	105	68% 23% 6%
50	YA	105	69% 22% 6%
51	CD	88	55% 20% 5% 20%
51	ZA	88	58% 17% 5% 20%
52	AB	93	52% 33% 11%
52	DD	93	48% 38% 11%

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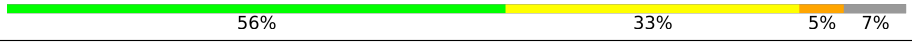
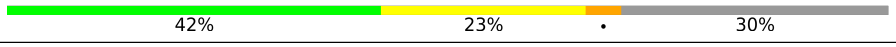
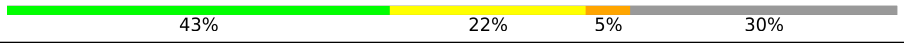
Mol	Chain	Length	Quality of chain
53	BB	106	
53	ED	106	
54	CB	27	
54	FD	27	
55	GD	365	
55	HD	365	

2 Entry composition (i)

There are 57 unique types of molecules in this entry. The entry contains 299566 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
1	A	1507	Total	C	N	O	P	0	0	0
			32394	14424	5998	10465	1507			
1	DB	1507	Total	C	N	O	P	0	0	0
			32394	14424	5998	10465	1507			

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

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

There are 2 discrepancies between the modelled and reference sequences:

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

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

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

- Molecule 4 is a RNA chain called 16S ribosomal RNA.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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
AC	11	ARG	LYS	conflict	UNP Q72HR3

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Molecule 34 is a RNA chain called mRNA.

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

- Molecule 35 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
35	JA	234	Total	C	N	O	S	0	0	0
			1900	1213	341	341	5			
35	MC	234	Total	C	N	O	S	0	0	0
			1900	1213	341	341	5			

- Molecule 36 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
36	KA	206	Total	C	N	O	S	0	0	0
			1612	1016	314	281	1			
36	NC	206	Total	C	N	O	S	0	0	0
			1612	1016	314	281	1			

- Molecule 37 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
37	LA	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			
37	OC	208	Total	C	N	O	S	0	0	0
			1703	1066	339	291	7			

- Molecule 38 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
38	MA	151	Total	C	N	O	S	0	0	0
			1155	729	218	204	4			
38	PC	151	Total	C	N	O	S	0	0	0
			1155	729	218	204	4			

- Molecule 39 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	NA	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			
39	QC	101	Total	C	N	O	S	0	0	0
			843	531	155	154	3			

- Molecule 40 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	OA	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	RC	155	Total	C	N	O	S	0	0	0
			1257	781	252	218	6			

- Molecule 41 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
41	PA	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			
41	SC	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			

- Molecule 42 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
42	QA	127	Total	C	N	O	0	0	0
			1011	639	198	174			
42	TC	127	Total	C	N	O	0	0	0
			1011	639	198	174			

- Molecule 43 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
43	RA	98	Total	C	N	O	S	0	0	0
			794	499	156	138	1			
43	UC	98	Total	C	N	O	S	0	0	0
			794	499	156	138	1			

- Molecule 44 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
44	SA	116	Total	C	N	O	S	0	0	0
			864	537	164	160	3			
44	VC	116	Total	C	N	O	S	0	0	0
			864	537	164	160	3			

- Molecule 45 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
45	TA	122	Total	C	N	O	S	0	0	0
			958	604	193	159	2			
45	WC	122	Total	C	N	O	S	0	0	0
			958	604	193	159	2			

- Molecule 46 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
46	UA	117	Total	C	N	O	S	0	0	0
			933	577	192	162	2			
46	XC	117	Total	C	N	O	S	0	0	0
			933	577	192	162	2			

- Molecule 47 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
47	VA	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			
47	YC	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			

- Molecule 48 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
48	WA	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			
48	ZC	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

- Molecule 49 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
49	XA	83	Total	C	N	O	S	0	0	0
			700	443	139	117	1			
49	AD	83	Total	C	N	O	S	0	0	0
			700	443	139	117	1			

- Molecule 50 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
50	YA	99	Total	C	N	O	S	0	0	0
			823	528	152	141	2			
50	BD	99	Total	C	N	O	S	0	0	0
			823	528	152	141	2			

- Molecule 51 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
51	ZA	70	Total	C	N	O	0	0	0
			574	367	112	95			
51	CD	70	Total	C	N	O	0	0	0
			574	367	112	95			

- Molecule 52 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
52	AB	83	Total	C	N	O	S	0	0	0
			665	424	124	115	2			
52	DD	83	Total	C	N	O	S	0	0	0
			665	424	124	115	2			

- Molecule 53 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
53	BB	99	Total	C	N	O	S	0	0	0
			762	469	162	129	2			
53	ED	99	Total	C	N	O	S	0	0	0
			762	469	162	129	2			

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

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
54	CB	24	Total	C	N	O	0	0	0
			208	128	50	30			
54	FD	24	Total	C	N	O	0	0	0
			208	128	50	30			

- Molecule 55 is a protein called Peptide chain release factor 1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
55	GD	255	Total	C	N	O	S	0	0	0
			1980	1214	374	384	8			
55	HD	255	Total	C	N	O	S	0	0	0
			1980	1214	374	384	8			

There are 22 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
GD	?	-	ASP	deletion	UNP B7MKB3
GD	?	-	ARG	deletion	UNP B7MKB3
GD	?	-	SER	deletion	UNP B7MKB3

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

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

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	A	160	Total Mg 160 160	0	0
56	B	514	Total Mg 514 514	0	0
56	C	23	Total Mg 23 23	0	0
56	D	6	Total Mg 6 6	0	0
56	E	4	Total Mg 4 4	0	0
56	F	1	Total Mg 1 1	0	0
56	G	4	Total Mg 4 4	0	0
56	H	1	Total Mg 1 1	0	0
56	I	3	Total Mg 3 3	0	0
56	J	5	Total Mg 5 5	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	K	2	Total Mg 2 2	0	0
56	L	7	Total Mg 7 7	0	0
56	M	4	Total Mg 4 4	0	0
56	N	3	Total Mg 3 3	0	0
56	O	1	Total Mg 1 1	0	0
56	P	2	Total Mg 2 2	0	0
56	Q	3	Total Mg 3 3	0	0
56	R	4	Total Mg 4 4	0	0
56	S	3	Total Mg 3 3	0	0
56	T	2	Total Mg 2 2	0	0
56	U	2	Total Mg 2 2	0	0
56	V	5	Total Mg 5 5	0	0
56	W	12	Total Mg 12 12	0	0
56	Y	4	Total Mg 4 4	0	0
56	Z	3	Total Mg 3 3	0	0
56	CA	1	Total Mg 1 1	0	0
56	EA	1	Total Mg 1 1	0	0
56	FA	1	Total Mg 1 1	0	0
56	HA	1	Total Mg 1 1	0	0
56	IA	8	Total Mg 8 8	0	0
56	JA	3	Total Mg 3 3	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	KA	1	Total Mg 1 1	0	0
56	LA	1	Total Mg 1 1	0	0
56	MA	3	Total Mg 3 3	0	0
56	NA	2	Total Mg 2 2	0	0
56	OA	3	Total Mg 3 3	0	0
56	PA	2	Total Mg 2 2	0	0
56	RA	2	Total Mg 2 2	0	0
56	SA	1	Total Mg 1 1	0	0
56	TA	3	Total Mg 3 3	0	0
56	VA	2	Total Mg 2 2	0	0
56	WA	3	Total Mg 3 3	0	0
56	YA	2	Total Mg 2 2	0	0
56	ZA	1	Total Mg 1 1	0	0
56	AB	1	Total Mg 1 1	0	0
56	BB	1	Total Mg 1 1	0	0
56	DB	177	Total Mg 177 177	0	0
56	EB	395	Total Mg 395 395	0	0
56	FB	17	Total Mg 17 17	0	0
56	GB	5	Total Mg 5 5	0	0
56	HB	8	Total Mg 8 8	0	0
56	IB	3	Total Mg 3 3	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	JB	2	Total Mg 2 2	0	0
56	KB	1	Total Mg 1 1	0	0
56	LB	5	Total Mg 5 5	0	0
56	MB	2	Total Mg 2 2	0	0
56	NB	1	Total Mg 1 1	0	0
56	OB	3	Total Mg 3 3	0	0
56	PB	2	Total Mg 2 2	0	0
56	QB	3	Total Mg 3 3	0	0
56	RB	5	Total Mg 5 5	0	0
56	SB	1	Total Mg 1 1	0	0
56	TB	5	Total Mg 5 5	0	0
56	VB	1	Total Mg 1 1	0	0
56	WB	3	Total Mg 3 3	0	0
56	XB	2	Total Mg 2 2	0	0
56	YB	3	Total Mg 3 3	0	0
56	ZB	2	Total Mg 2 2	0	0
56	AC	2	Total Mg 2 2	0	0
56	BC	1	Total Mg 1 1	0	0
56	DC	1	Total Mg 1 1	0	0
56	FC	1	Total Mg 1 1	0	0
56	HC	1	Total Mg 1 1	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	IC	2	Total Mg 2 2	0	0
56	JC	1	Total Mg 1 1	0	0
56	KC	1	Total Mg 1 1	0	0
56	LC	8	Total Mg 8 8	0	0
56	MC	3	Total Mg 3 3	0	0
56	PC	2	Total Mg 2 2	0	0
56	QC	2	Total Mg 2 2	0	0
56	RC	2	Total Mg 2 2	0	0
56	SC	1	Total Mg 1 1	0	0
56	TC	2	Total Mg 2 2	0	0
56	UC	1	Total Mg 1 1	0	0
56	WC	2	Total Mg 2 2	0	0
56	XC	2	Total Mg 2 2	0	0
56	YC	1	Total Mg 1 1	0	0
56	ZC	1	Total Mg 1 1	0	0
56	AD	1	Total Mg 1 1	0	0
56	BD	2	Total Mg 2 2	0	0
56	CD	2	Total Mg 2 2	0	0
56	ED	1	Total Mg 1 1	0	0
56	GD	5	Total Mg 5 5	0	0
56	HD	3	Total Mg 3 3	0	0

- Molecule 57 is ZINC ION (three-letter code: ZN) (formula: Zn).

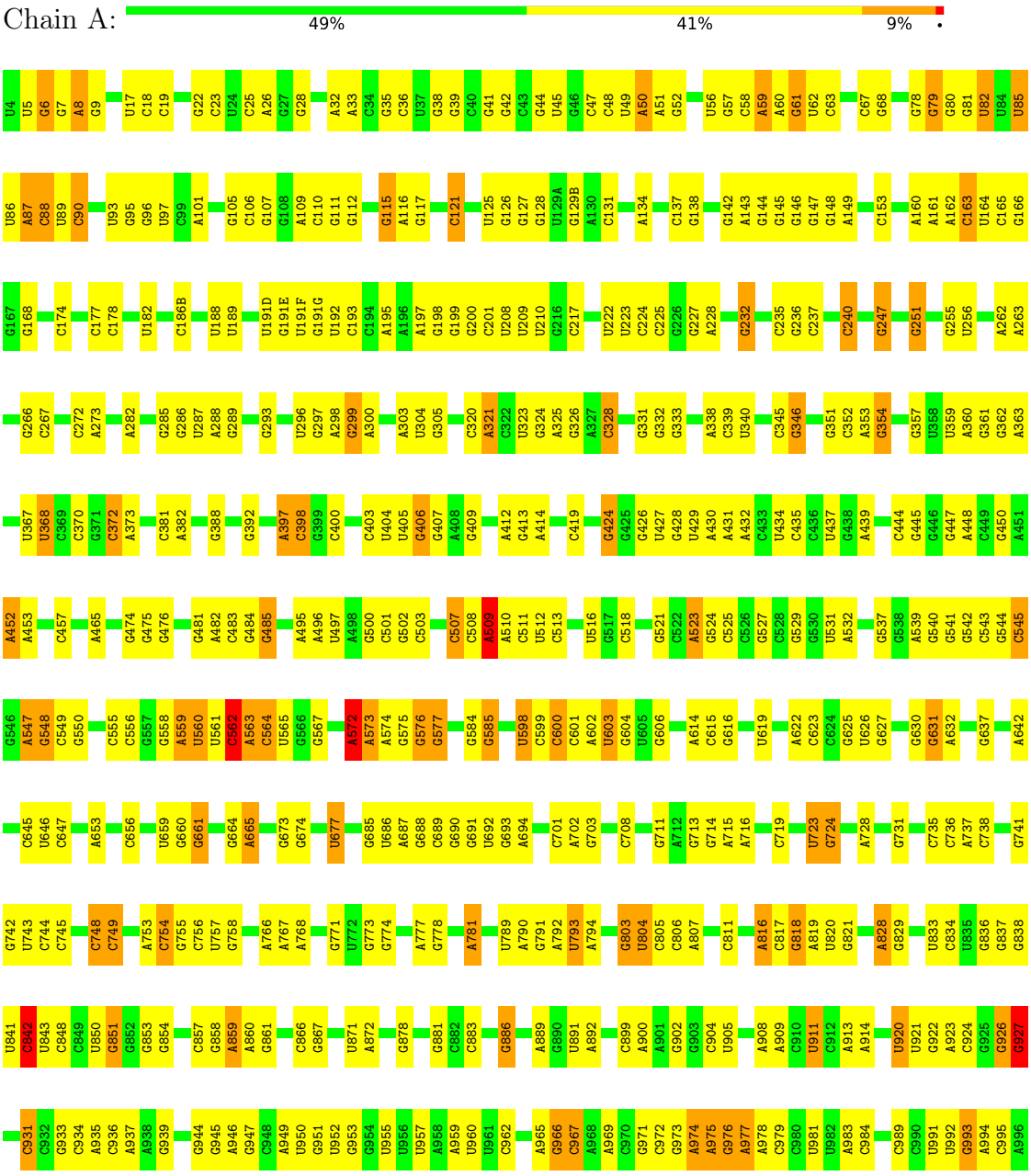
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
57	V	1	Total Zn 1 1	0	0
57	BA	1	Total Zn 1 1	0	0
57	CA	1	Total Zn 1 1	0	0
57	DA	1	Total Zn 1 1	0	0
57	GA	1	Total Zn 1 1	0	0
57	YB	1	Total Zn 1 1	0	0
57	EC	1	Total Zn 1 1	0	0
57	FC	1	Total Zn 1 1	0	0
57	GC	1	Total Zn 1 1	0	0
57	JC	1	Total Zn 1 1	0	0

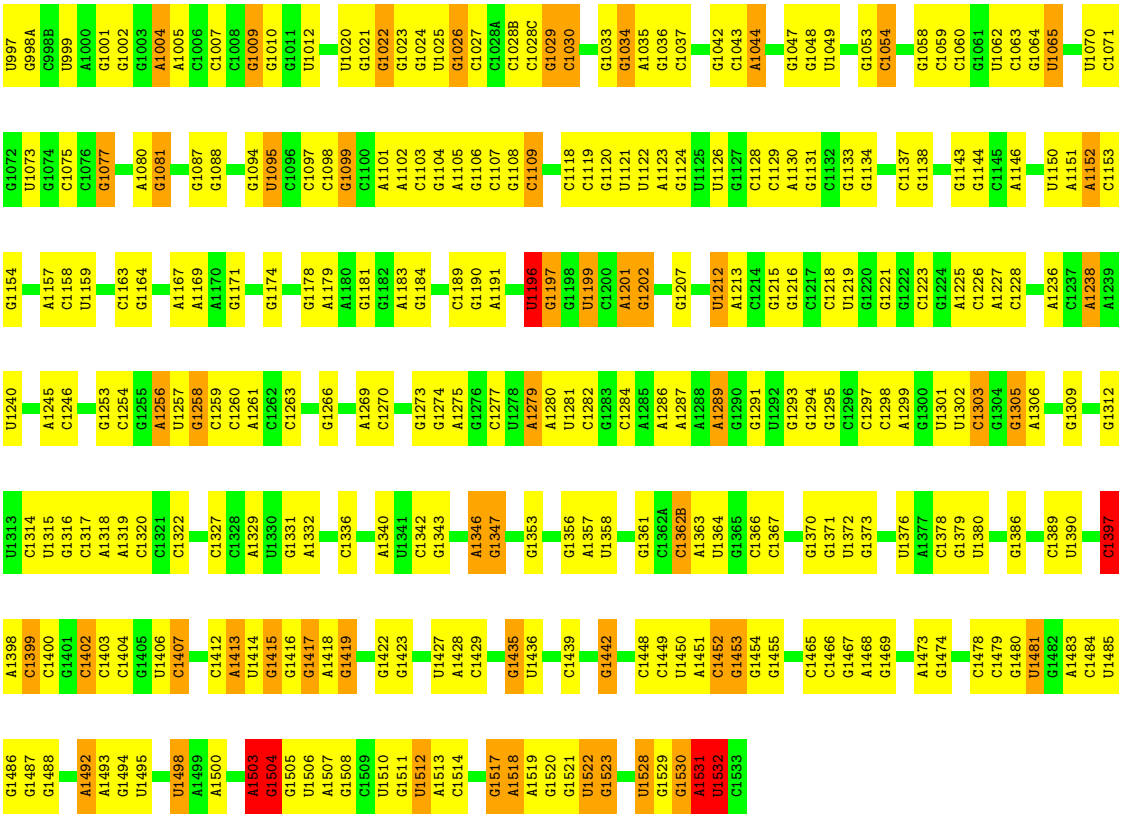
3 Residue-property plots (i)

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

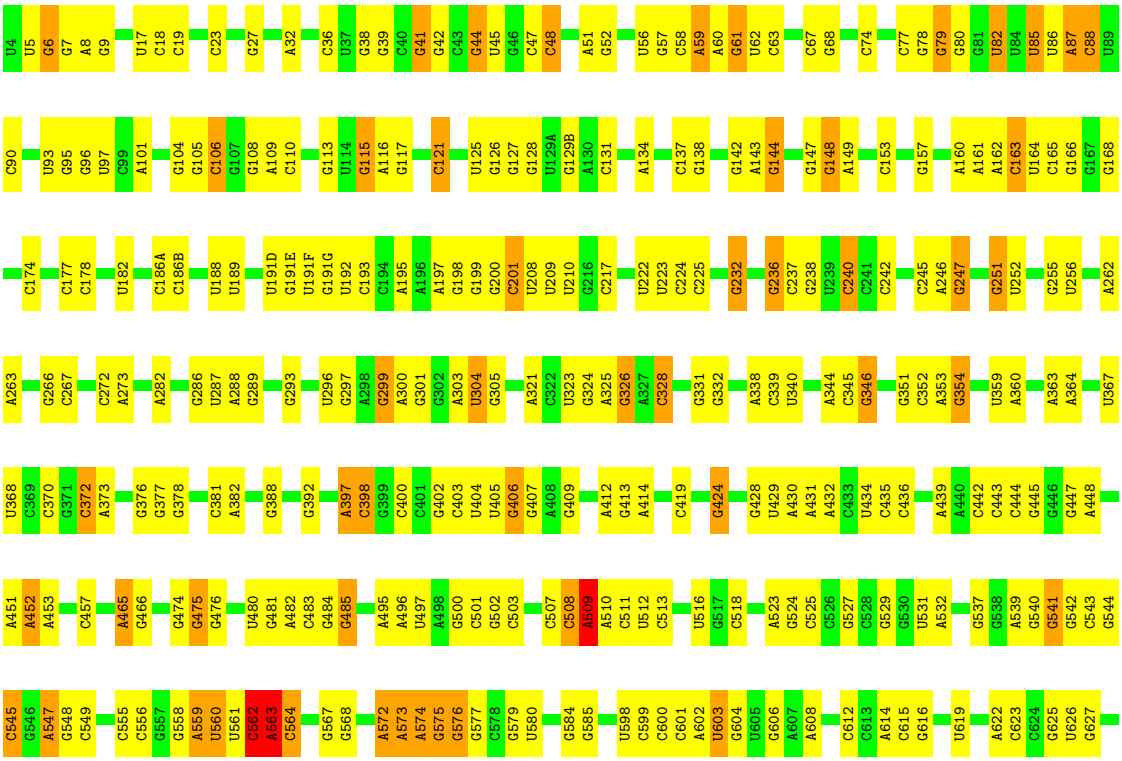
Chain A:

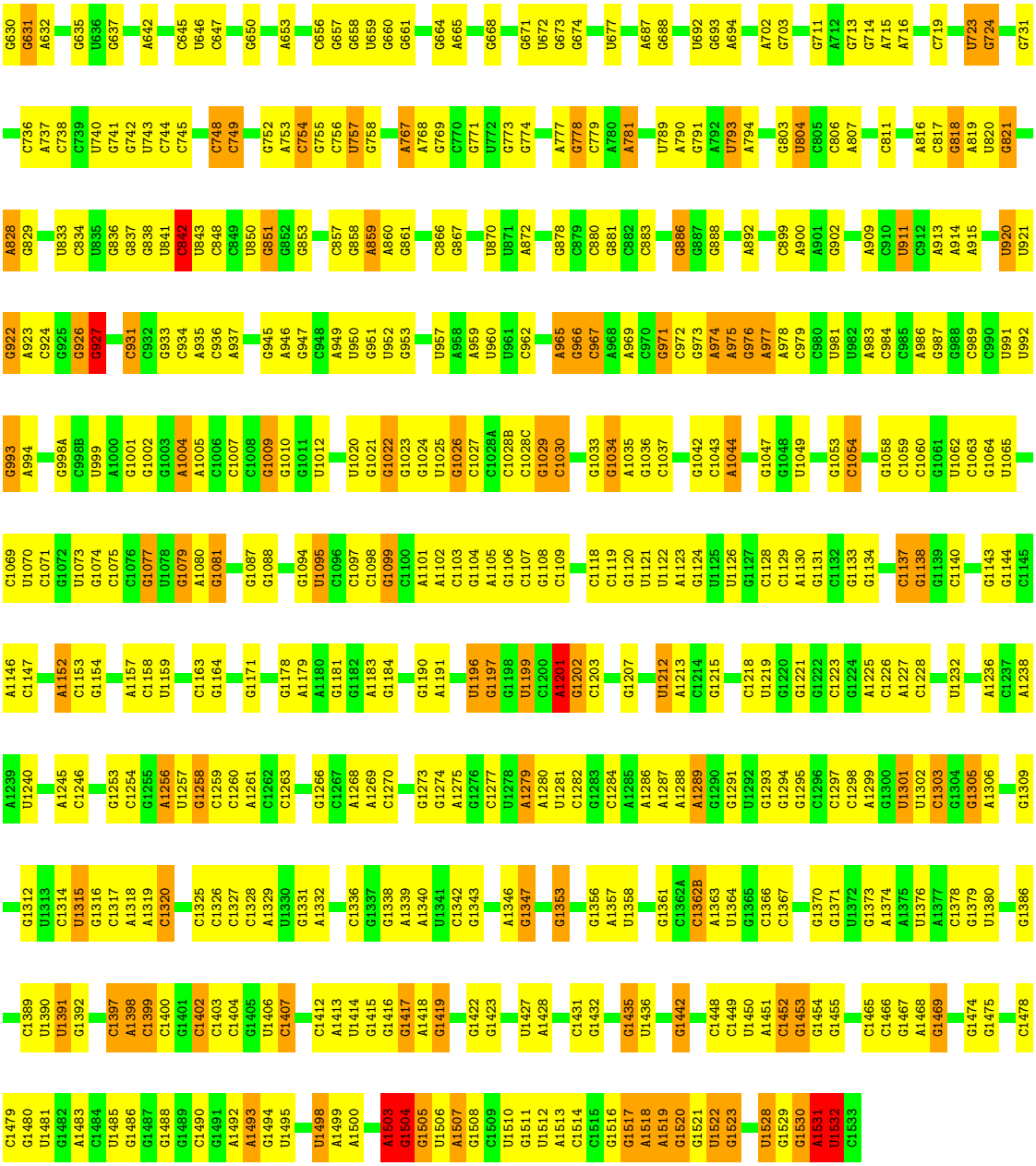




• Molecule 1: 16S ribosomal RNA

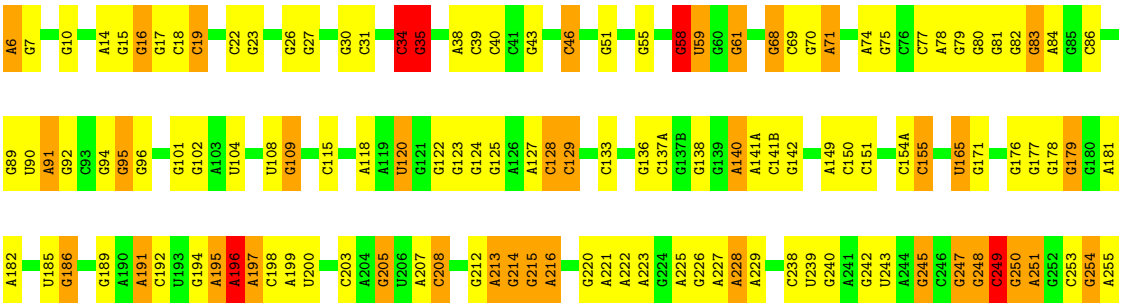
Chain DB:

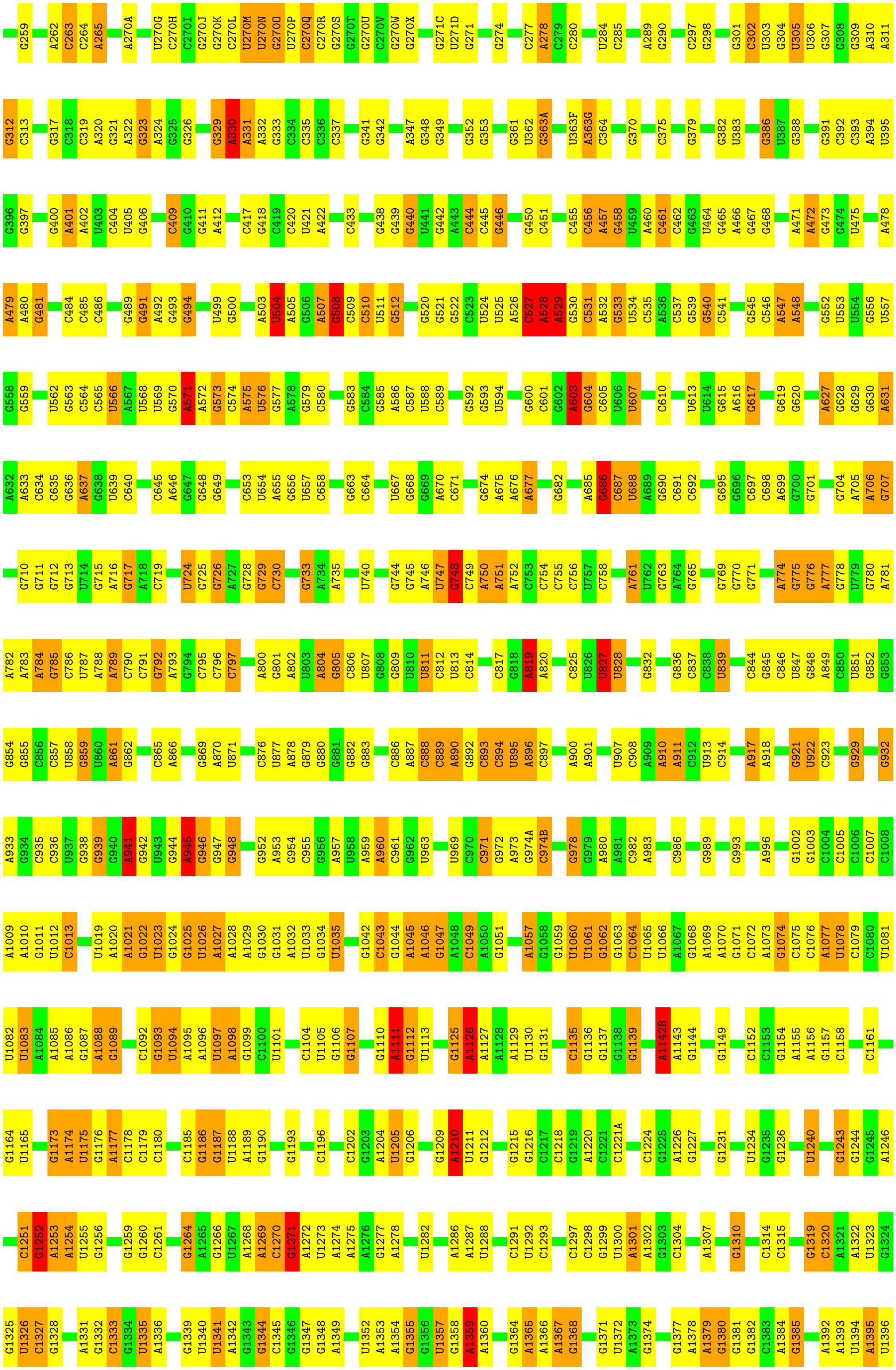




• Molecule 2: 23S ribosomal RNA

Chain B:

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G312 C313 G317 C318 C319 A320 G321 A322 G323 A324 G325 G326 G329 A330 A331 A332 G333 C334 C335 C336 C337 G341 G342 A347 G348 G349 G352 G353 G361 U362 G363A U363F A363G C364 G370 C375 G379 G382 U383 G386 U387 G388 G391 C392 C393 A394 U395
G396 G397 G400 A401 A402 U403 C404 U405 G406 C409 G410 G411 A412 C417 G418 C419 C420 U421 A422 C433 G438 G439 G440 U441 G442 A443 C444 C445 G446 G450 C451 C455 C456 A457 G458 U459 A460 C461 C462 G463 U464 G465 A466 G467 G468 A471 A472 G473 G474 U475 A478
A479 A480 G481 C484 C485 C486 G489 G491 A492 G493 G494 U499 G500 A503 U504 A505 G506 A507 G508 C509 C510 U511 G512 G520 G521 G522 C523 U524 U525 A526 C527 A528 A529 G530 C531 A532 G533 U534 C535 A536 C537 G539 G540 C541 G545 C546 A547 A548 G552 U553 U554 G556 U557
G558 G559 U562 G563 C564 C565 U566 A567 U568 U569 G570 A571 A572 G573 C574 A575 U576 G577 A578 G579 C580 G583 C584 G585 A586 C587 U588 C589 G592 G593 U594 G600 C601 G602 A603 G604 C605 U606 U607 C610 U613 U614 G615 A616 G617 G619 G620 A627 G628 G629 G630 A631
A632 A633 C634 C635 G636 A637 G638 U639 C640 C645 A646 G647 G648 G649 C653 U654 A655 G656 U657 C658 G663 C664 U667 G668 G669 A670 C671 G674 A675 A676 A677 G682 A685 G686 C687 U688 A689 G690 C691 C692 G695 G696 C697 C698 A699 G700 G701 G704 A705 A706 G707
G710 G711 G712 G713 U714 G715 A716 G717 A718 C719 U724 G725 G726 A727 G728 G729 C730 G733 A734 A735 U740 G744 G745 A746 U747 G748 C749 A750 A751 A752 C753 C754 C755 C756 U757 C758 A761 U762 G763 A764 G765 G769 G770 G771 A774 G775 G776 A777 G778 U779 G780 A781
A782 A783 A784 G785 C786 U787 A788 A789 C790 C791 G792 A793 G794 C795 C796 C797 A800 G801 A802 U803 A804 G805 C806 U807 G808 G809 U810 U811 C812 U813 C814 C817 G818 A819 A820 C825 U826 U827 U828 G832 G836 C837 C838 U839 C844 G845 C846 U847 G848 A849 C850 U851 G852 G853
G854 G855 C856 C857 U858 G859 U860 A861 G862 C865 A866 G869 A870 U871 C876 U877 A878 G879 G880 G881 G882 G883 C886 A887 C888 C889 A890 G892 C893 C894 U895 A896 C897 A900 A901 U907 C908 A909 A910 A911 C912 U913 C914 A917 A918 G921 U922 C923 G929 G932
A933 G934 C935 C936 U937 G938 G939 G940 A941 G942 U943 G944 A945 G946 G947 G948 G952 A953 G954 C955 G956 A957 U958 A959 A960 C961 G962 U963 U969 C970 C971 G972 A973 G974A C974B G978 G979 A980 A981 C982 A983 C986 G989 G993 A996 G1002 G1003 C1004 C1005 C1006 C1007 C1008
A1009 A1010 G1011 U1012 C1013 U1019 A1020 A1021 G1022 U1023 G1024 G1025 U1026 A1027 A1028 A1029 G1030 G1031 A1032 U1033 G1034 U1035 G1042 C1043 G1044 A1045 A1046 G1047 A1048 C1049 A1050 G1051 A1057 G1058 G1059 U1060 U1061 G1062 G1063 C1064 U1065 U1066 A1067 G1068 A1069 A1070 G1071 C1072 A1073 G1074 C1075 C1076 A1077 U1078 C1079 C1080 U1081
U1082 U1083 A1084 A1085 A1086 G1087 A1088 G1089 C1092 G1093 U1094 A1095 A1096 U1097 A1098 G1099 C1100 U1101 C1104 U1105 G1106 G1107 G1110 A1111 G1112 U1113 G1125 A1126 A1127 A1128 A1129 U1130 G1131 C1135 G1136 C1137 G1138 G1139 A1142B A1143 G1144 G1149 C1152 C1153 G1154 A1155 A1156 G1157 C1158 C1161
G1164 U1165 G1173 A1174 U1175 G1176 A1177 C1178 C1179 C1180 C1185 G1186 G1187 U1188 A1189 G1190 G1193 C1196 C1202 G1203 A1204 U1205 G1206 G1209 A1210 U1211 G1212 G1215 G1216 C1217 C1218 G1219 A1220 C1221 C1221A C1224 G1225 A1226 G1227 G1231 U1234 G1235 G1236 U1240 G1243 G1244 G1245 A1246
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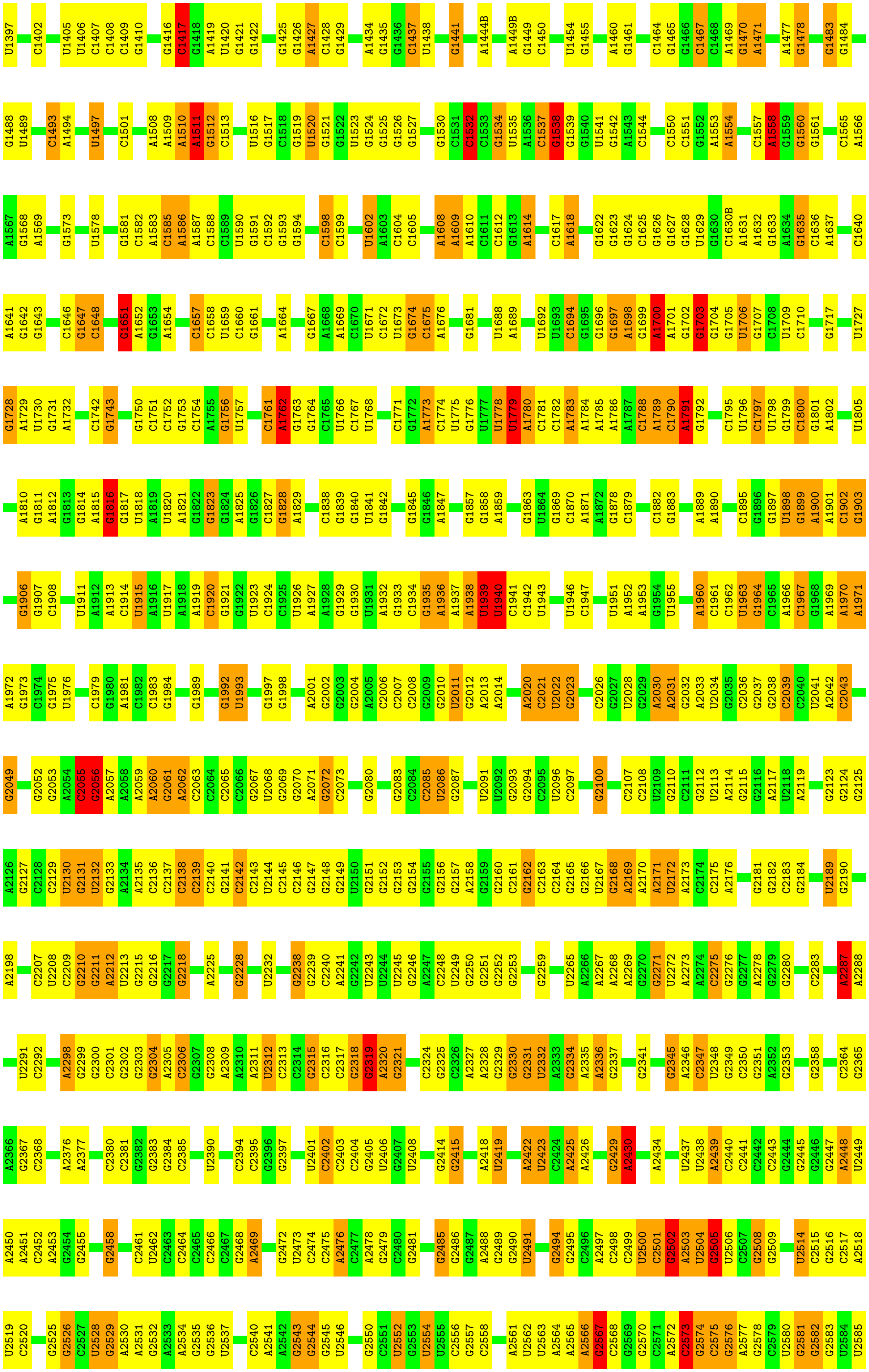
G1325 U1326 C1327 G1328 A1331 G1332 C1333 G1334 U1335 A1336 G1339 U1340 U1341 A1342 G1343 G1344 C1345 G1346 G1347 G1348 A1349 U1352 A1353 A1354 G1355 G1356 U1357 G1358 A1359 A1360 G1364 A1365 A1366 A1367 G1368 G1371 U1372 A1373 G1374 G1377 A1378 A1379 G1380 G1381 G1382 C1383 A1384 G1385 A1392 A1393 U1394 A1395 U1396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G1488 U1489 C1493 A1494 U1497 C1501 A1508 A1509 A1510 A1511 G1512 C1513 U1516 G1517 C1518 G1519 U1520 G1521 G1522 U1523 G1524 G1525 G1526 G1527 G1530 C1531 C1532 C1533 G1534 U1535 A1536 C1537 G1538 G1539 G1540 U1541 G1542 A1543 C1544 C1550 C1551 G1552 A1553 A1554 C1557 A1558 G1559 G1560 G1561 C1565 A1566
A1567 G1568 A1569 G1573 U1578 G1581 C1582 A1583 C1585 A1586 A1587 C1588 C1589 U1590 G1591 C1592 G1593 G1594 C1598 C1599 U1602 A1603 C1604 C1605 A1608 A1609 A1610 C1611 C1612 G1613 A1614 C1617 A1618 G1622 G1623 G1624 C1625 G1626 G1627 G1628 U1629 G1630 C1630B A1631 A1632 G1633 A1634 G1635 C1636 A1637 C1640
A1641 G1642 G1643 C1646 G1647 C1648 G1651 A1652 G1653 A1654 C1657 C1658 U1659 C1660 G1661 A1664 G1667 A1668 A1669 C1670 U1671 C1672 U1673 G1674 C1675 A1676 G1681 U1688 A1689 U1692 U1693 C1694 G1695 G1696 G1697 A1698 G1699 A1700 A1701 G1702 G1703 G1704 G1705 U1706 G1707 C1708 U1709 C1710 G1717 U1727
G1728 A1729 U1730 G1731 A1732 C1742 G1743 G1750 C1751 C1752 G1753 C1754 A1755 G1756 U1757 C1761 A1762 G1763 G1764 C1765 U1766 C1767 U1768 C1771 G1772 A1773 C1774 U1775 G1776 U1777 U1778 U1779 A1780 C1781 G1782 A1783 A1784 A1785 A1786 A1787 C1788 A1789 C1790 A1791 G1792 C1795 U1796 C1797 U1798 G1799 C1800 G1801 A1802 U1805
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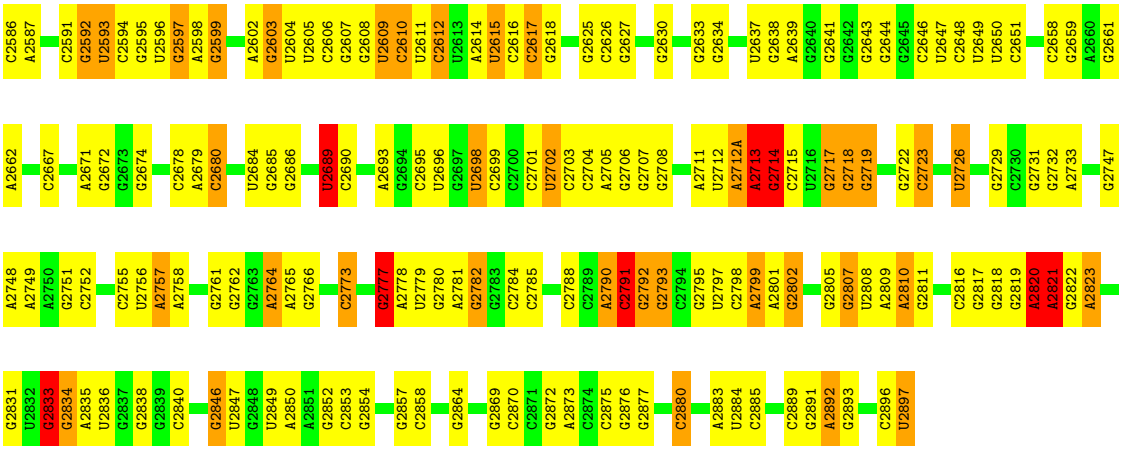

• Molecule 2: 23S ribosomal RNA

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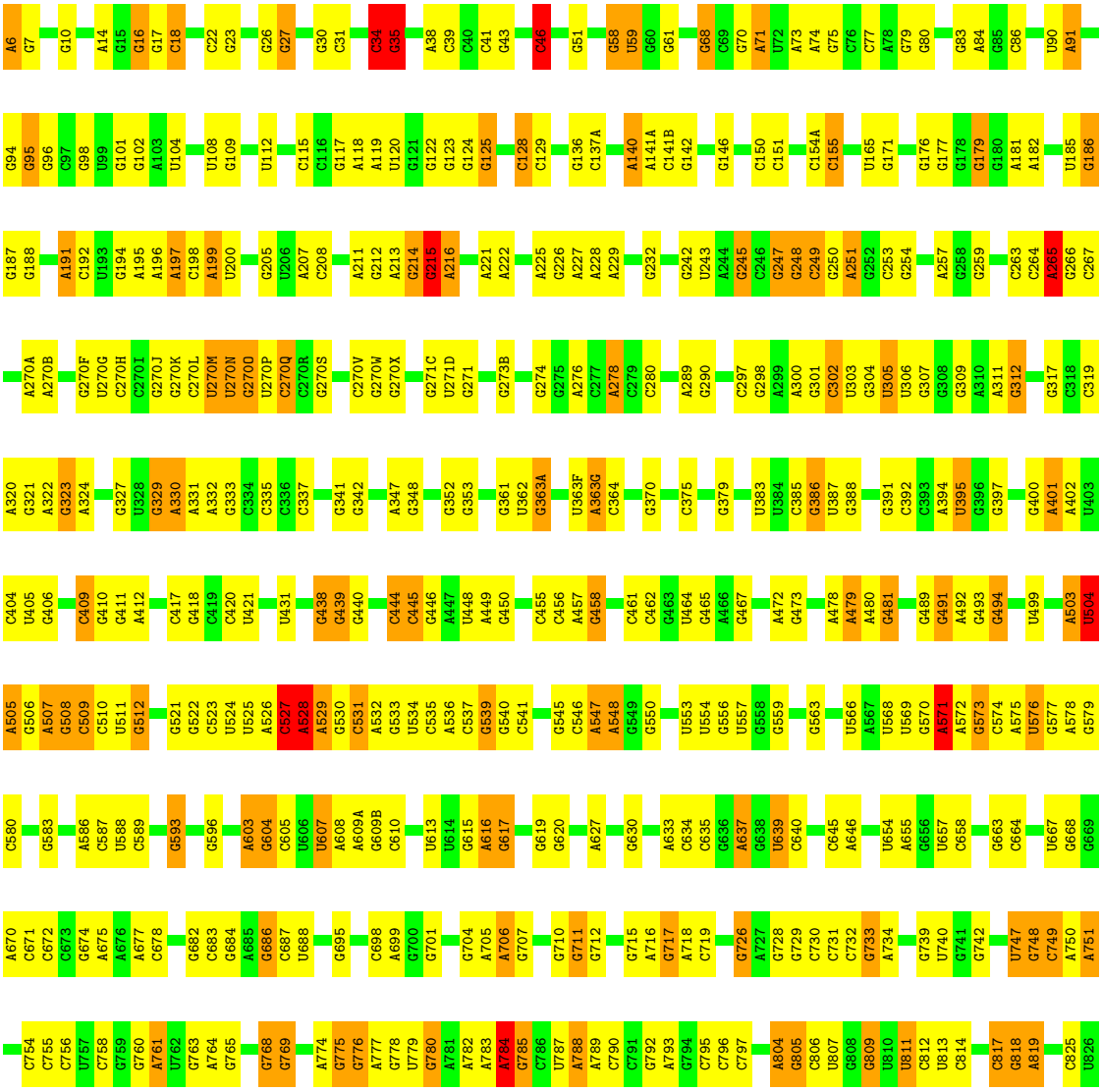

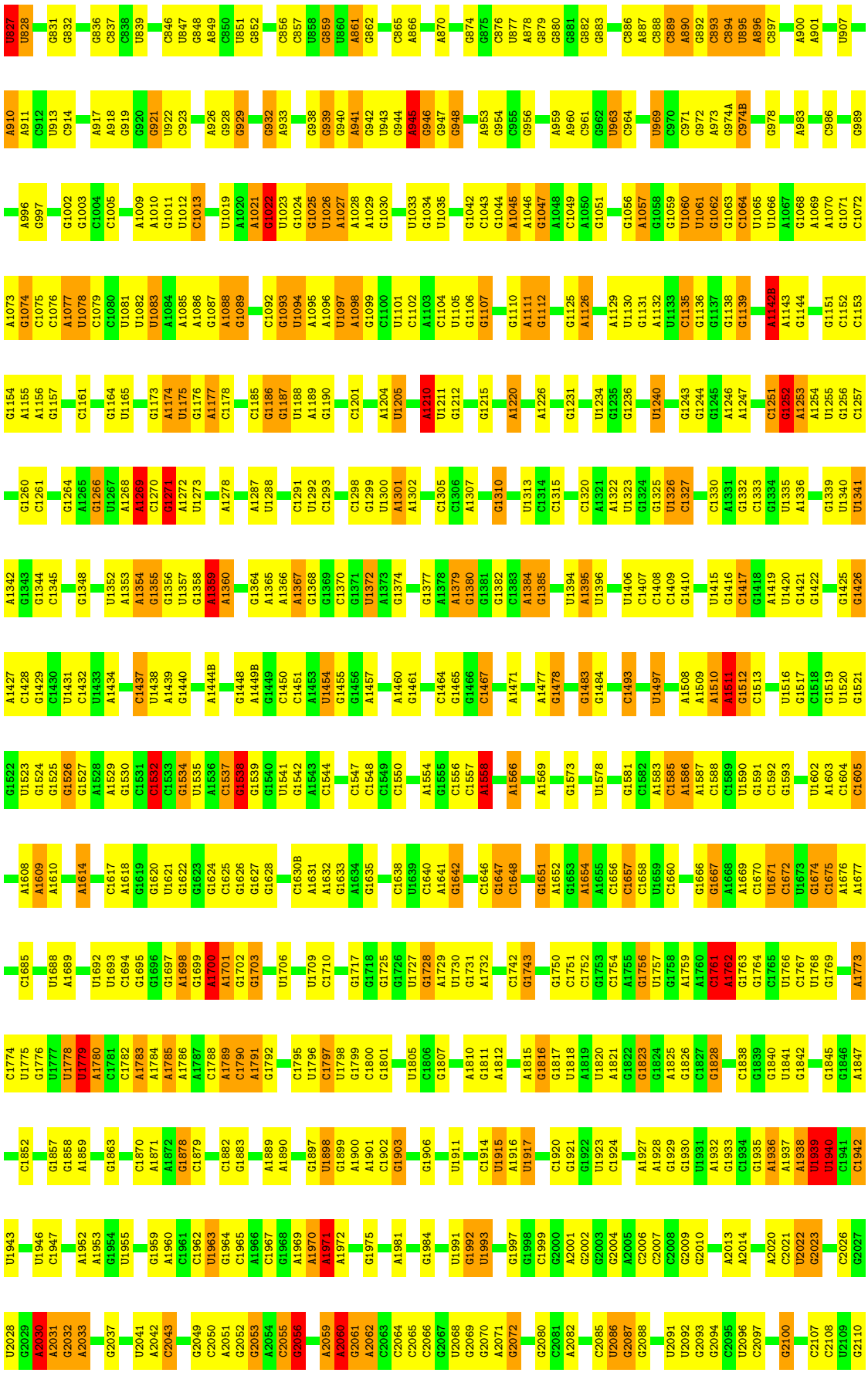
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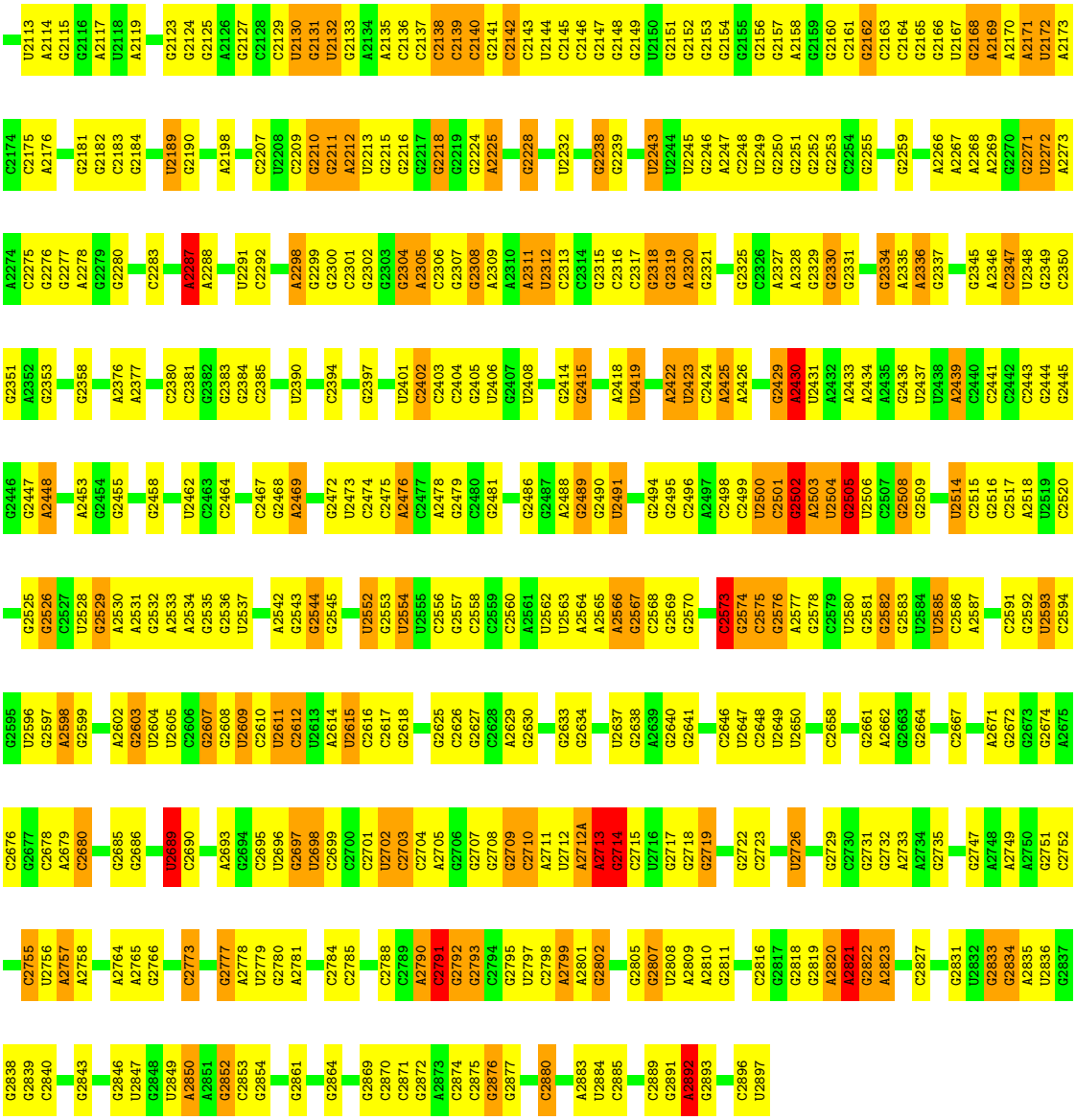
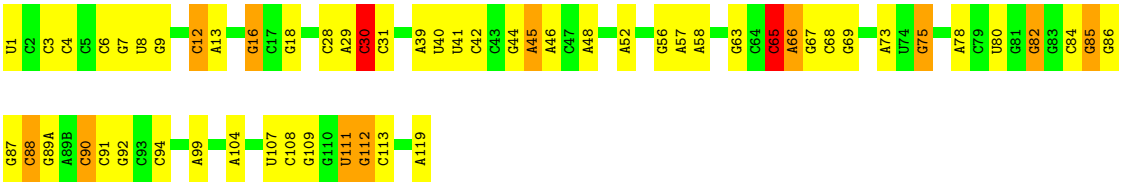


• Molecule 3: 5S ribosomal RNA

Chain C:



• Molecule 3: 5S ribosomal RNA

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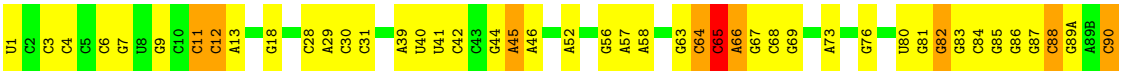

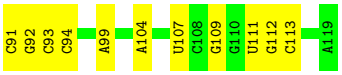

• Molecule 4: 16S ribosomal RNA

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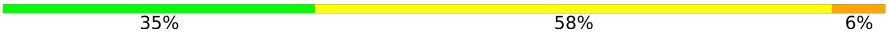

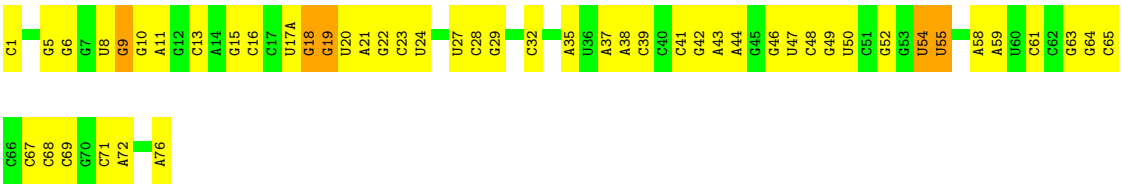

• Molecule 4: 16S ribosomal RNA

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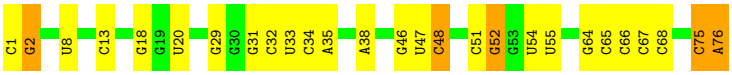

• Molecule 4: 16S ribosomal RNA

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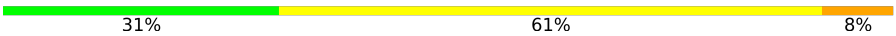
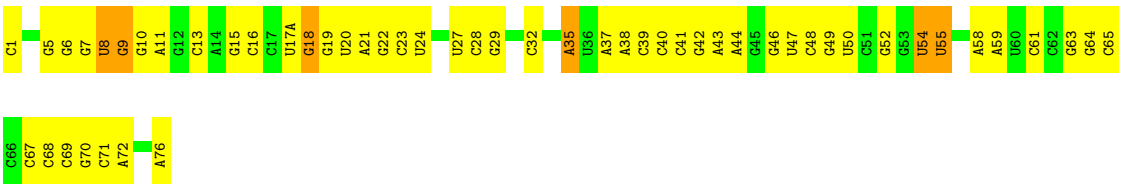


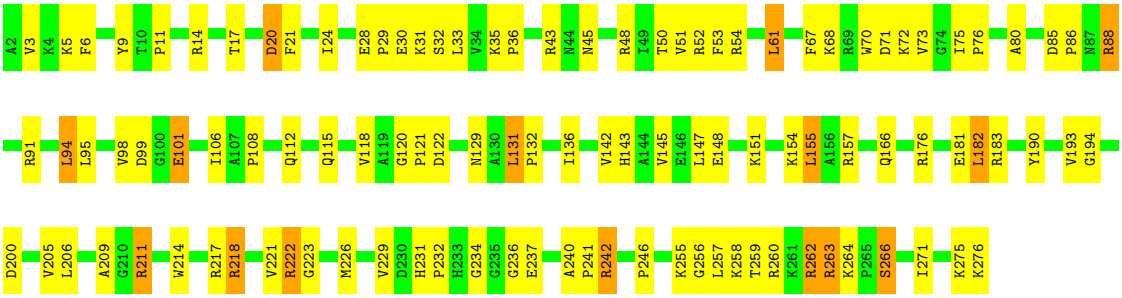


• Molecule 4: 16S ribosomal RNA

Chain LC:

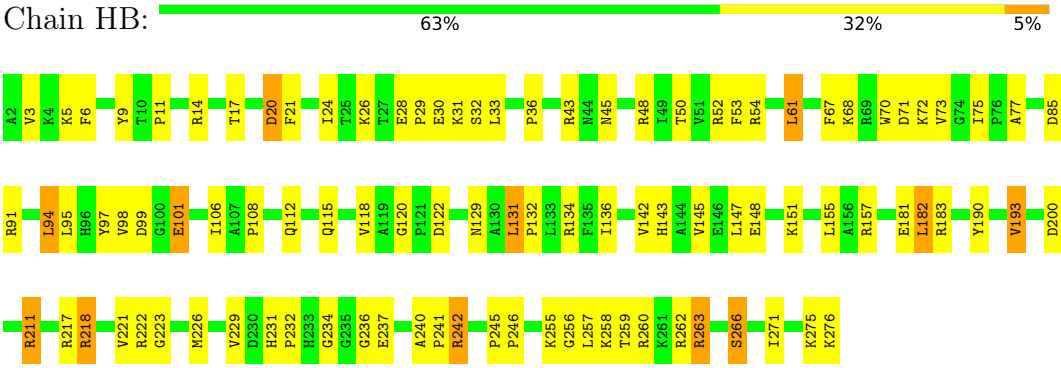
• Molecule 5: 50S ribosomal protein L2

Chain E:



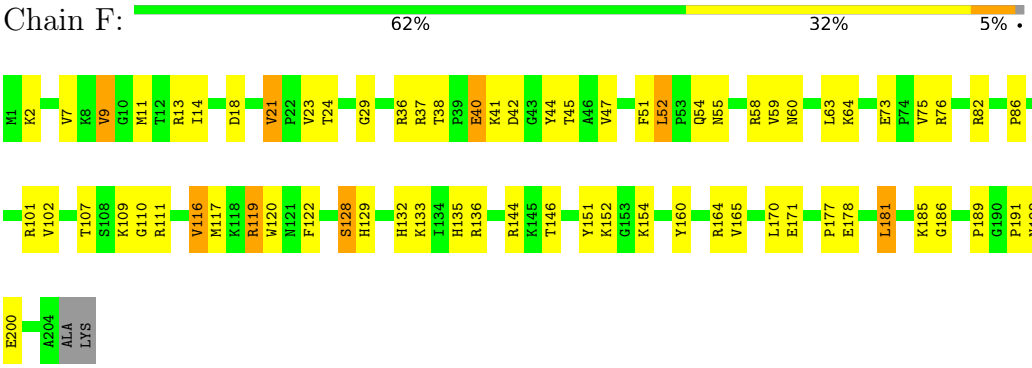
• Molecule 5: 50S ribosomal protein L2

Chain HB:



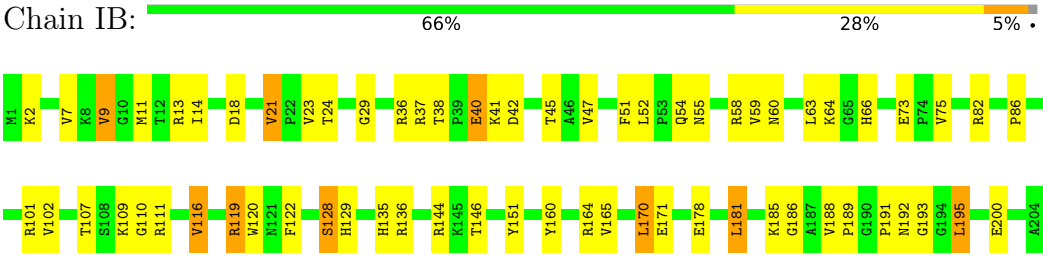
• Molecule 6: 50S ribosomal protein L3

Chain F:



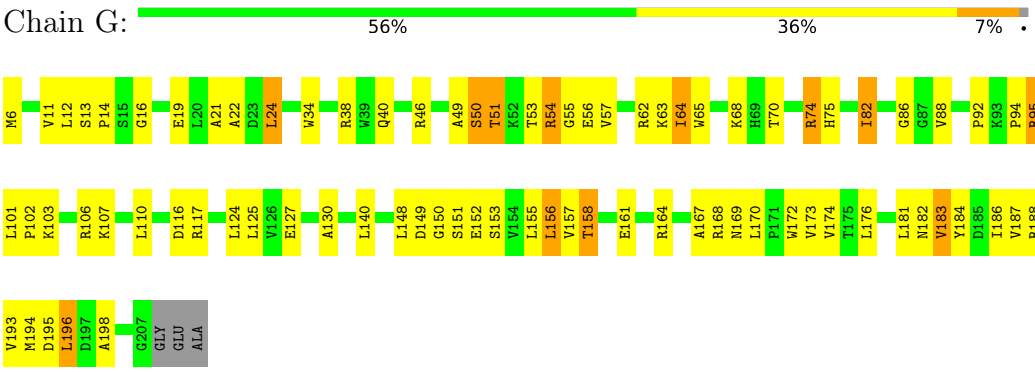
• Molecule 6: 50S ribosomal protein L3

Chain IB:



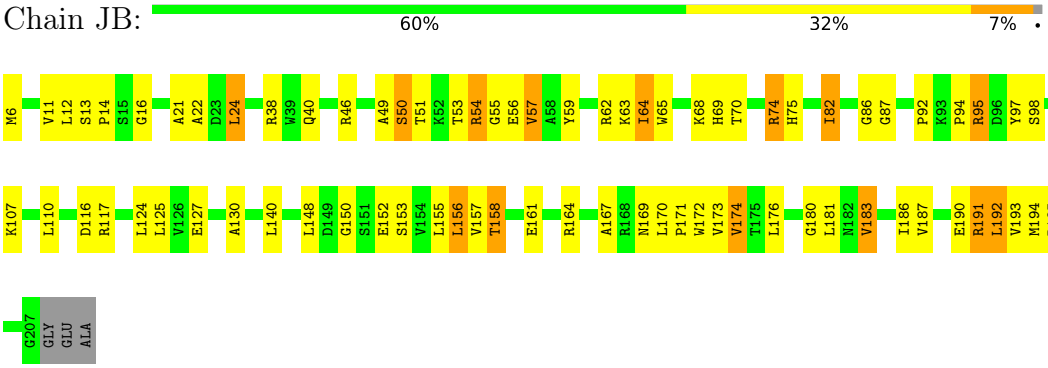
• Molecule 7: 50S ribosomal protein L4

Chain G:



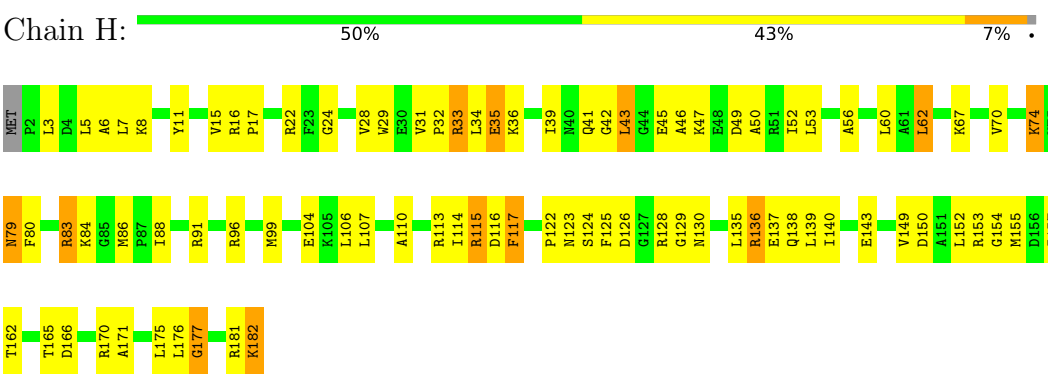
• Molecule 7: 50S ribosomal protein L4

Chain JB:



• Molecule 8: 50S ribosomal protein L5

Chain H:



• Molecule 8: 50S ribosomal protein L5

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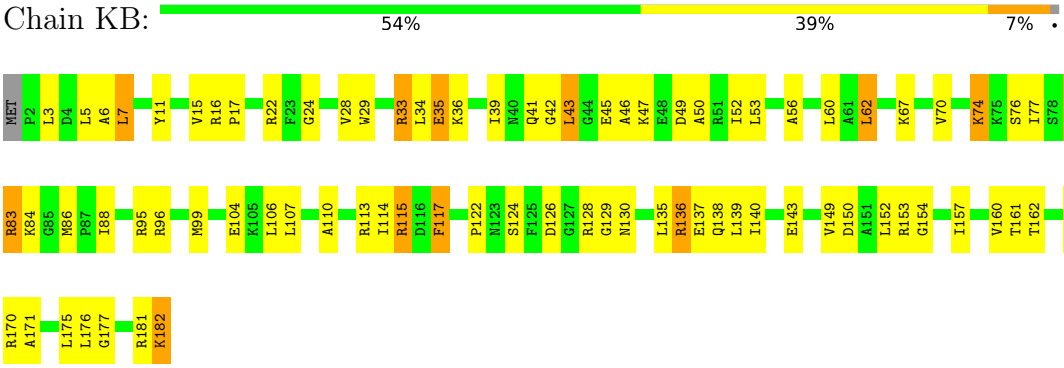

• Molecule 9: 50S ribosomal protein L6

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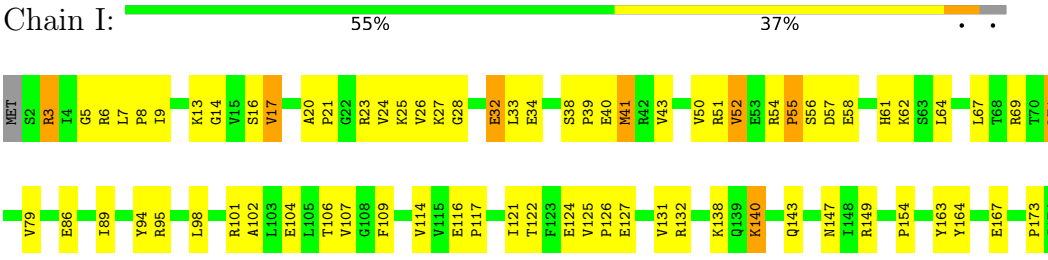
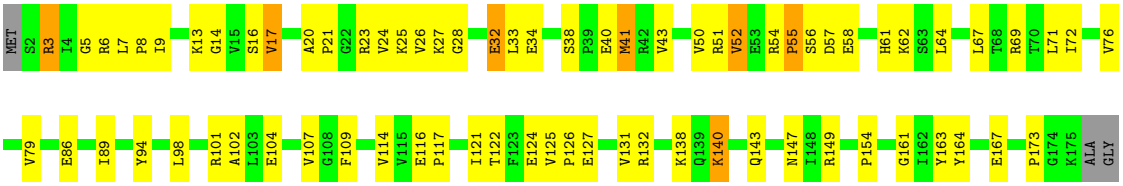


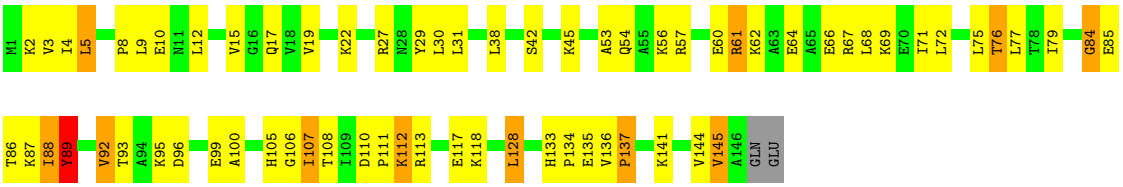
• Molecule 9: 50S ribosomal protein L6

Chain LB:



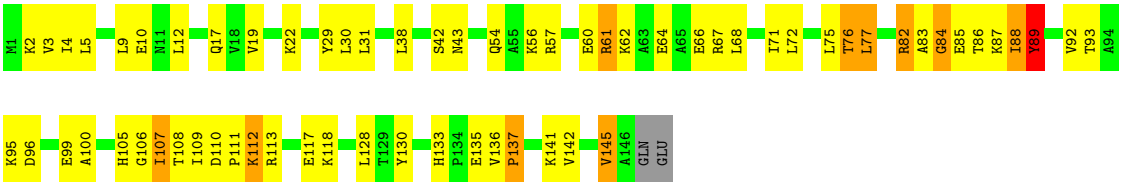
• Molecule 10: 50S ribosomal protein L9

Chain J:



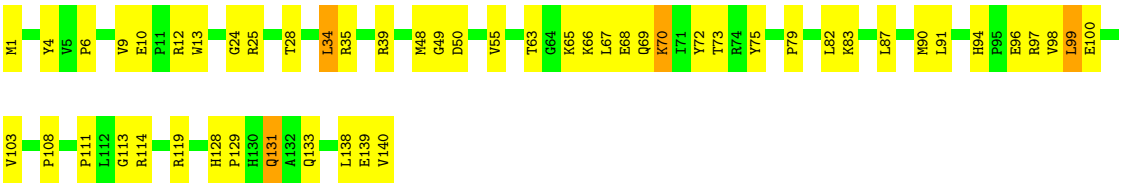
• Molecule 10: 50S ribosomal protein L9

Chain MB:



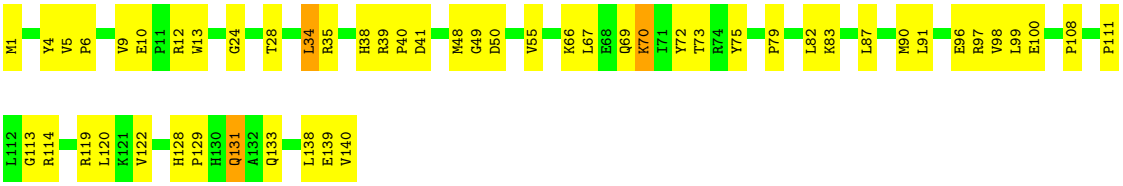
• Molecule 11: 50S ribosomal protein L13

Chain K:



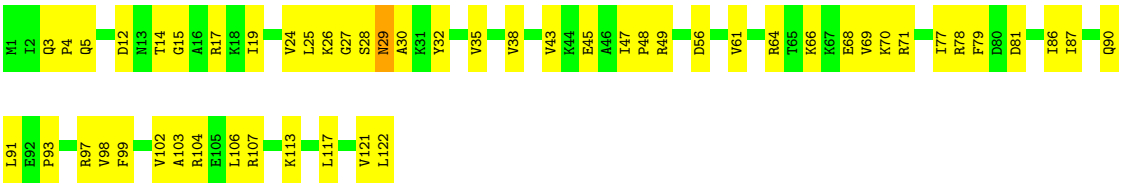
• Molecule 11: 50S ribosomal protein L13

Chain NB:



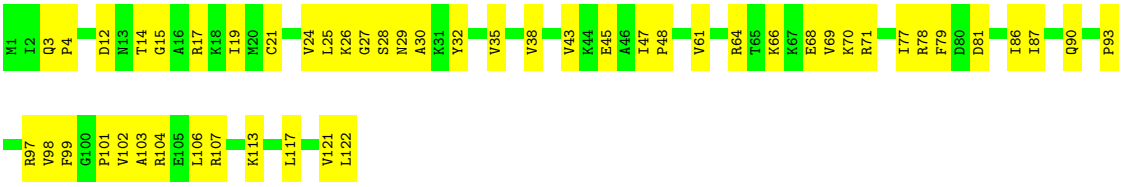
• Molecule 12: 50S ribosomal protein L14

Chain L:



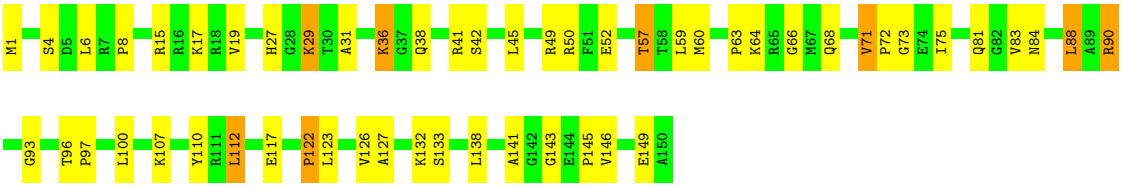
• Molecule 12: 50S ribosomal protein L14

Chain OB:



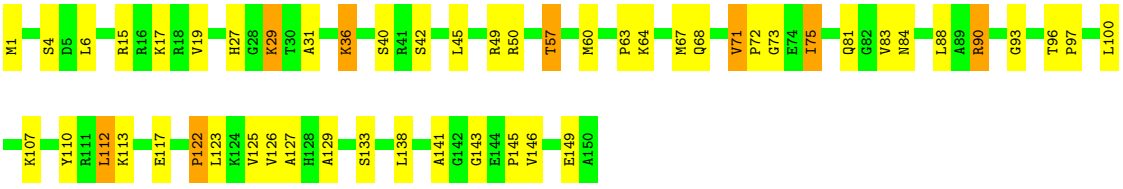
• Molecule 13: 50S ribosomal protein L15

Chain M:



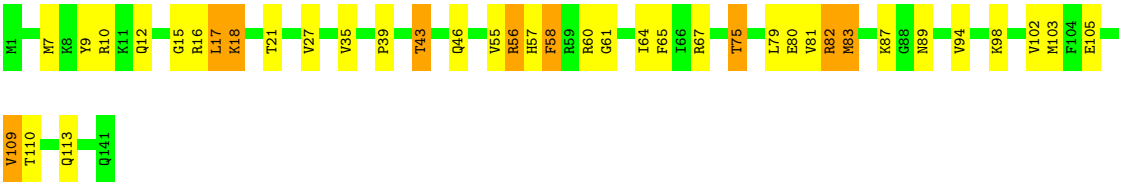
• Molecule 13: 50S ribosomal protein L15

Chain PB:



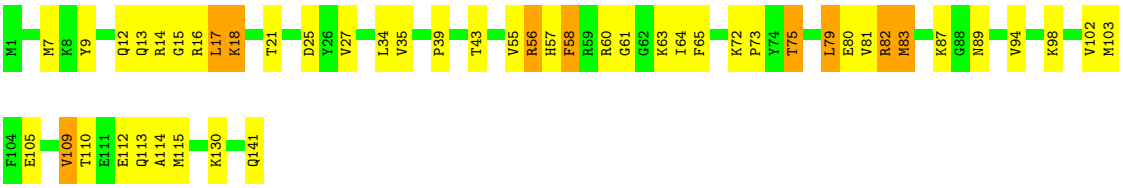
• Molecule 14: 50S ribosomal protein L16

Chain N:



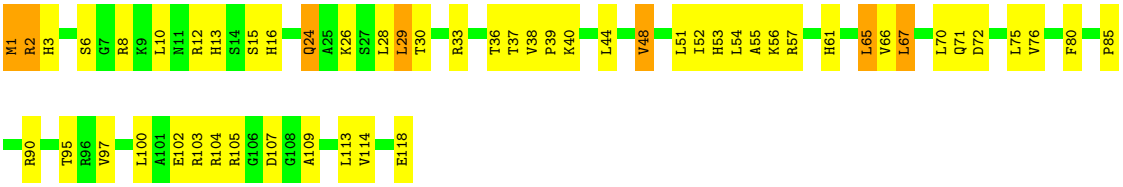
• Molecule 14: 50S ribosomal protein L16

Chain QB:



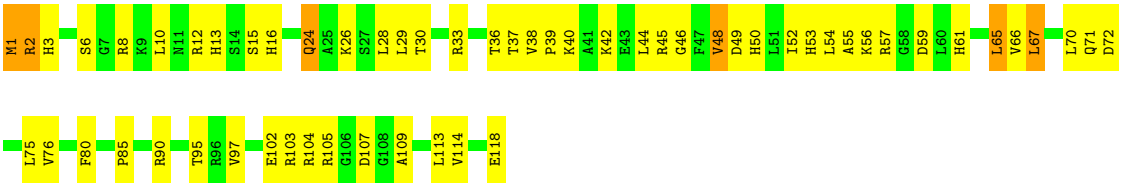
• Molecule 15: 50S ribosomal protein L17

Chain O:



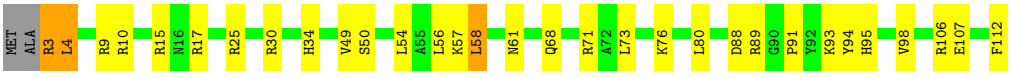
• Molecule 15: 50S ribosomal protein L17

Chain RB:



• Molecule 16: 50S ribosomal protein L18

Chain P:

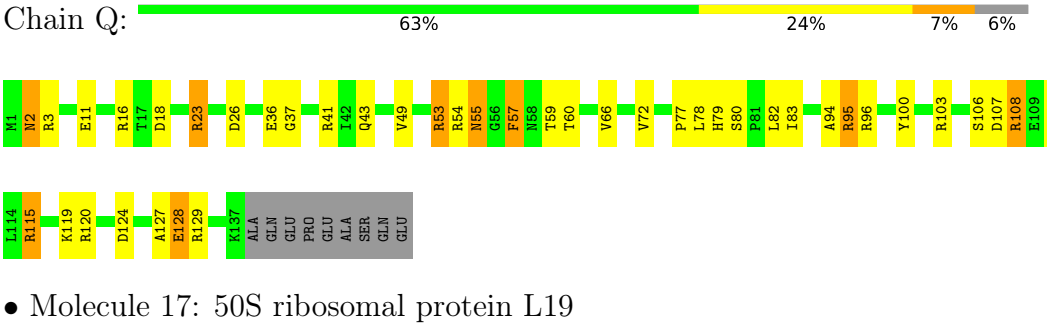


• Molecule 16: 50S ribosomal protein L18

Chain SB:

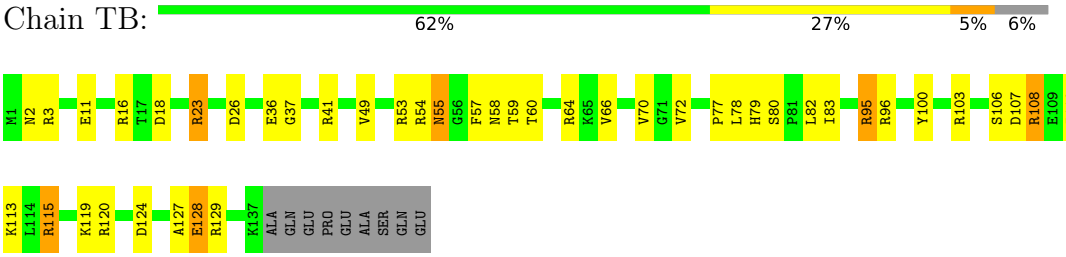
• Molecule 17: 50S ribosomal protein L19

Chain Q:



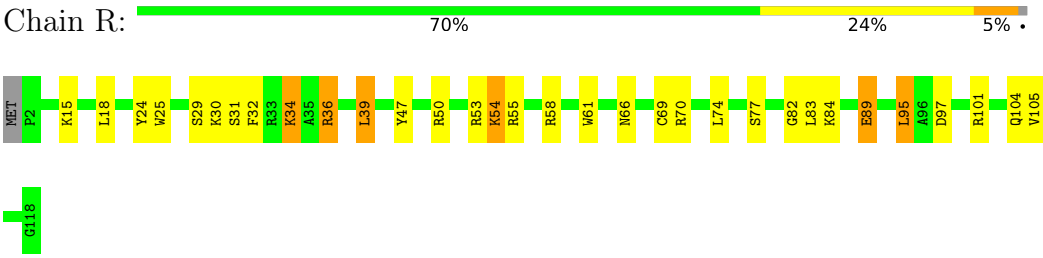
• Molecule 17: 50S ribosomal protein L19

Chain TB:



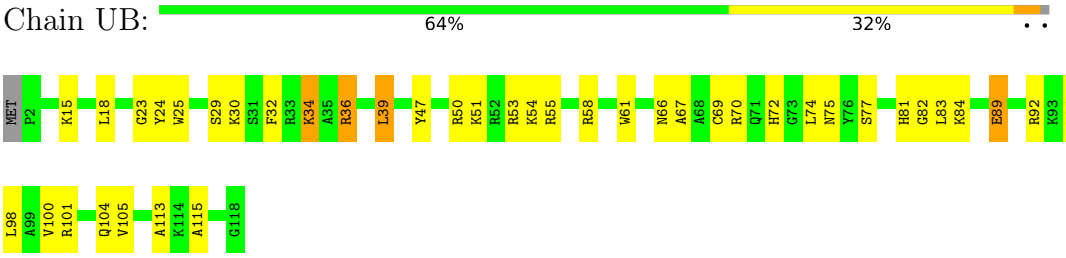
• Molecule 18: 50S ribosomal protein L20

Chain R:



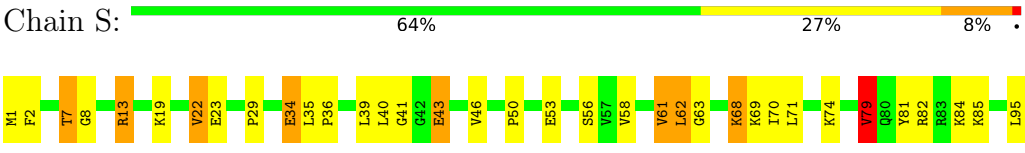
• Molecule 18: 50S ribosomal protein L20

Chain UB:



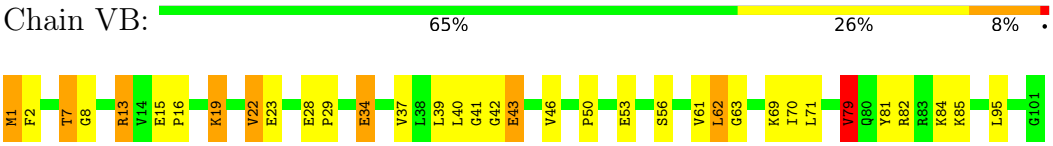
• Molecule 19: 50S ribosomal protein L21

Chain S:



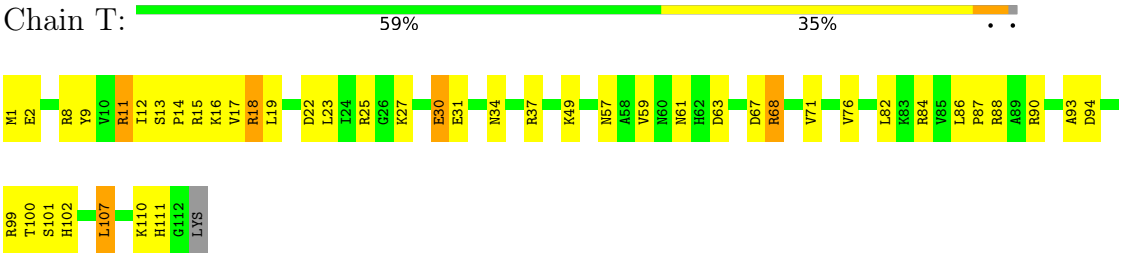
• Molecule 19: 50S ribosomal protein L21

Chain VB:



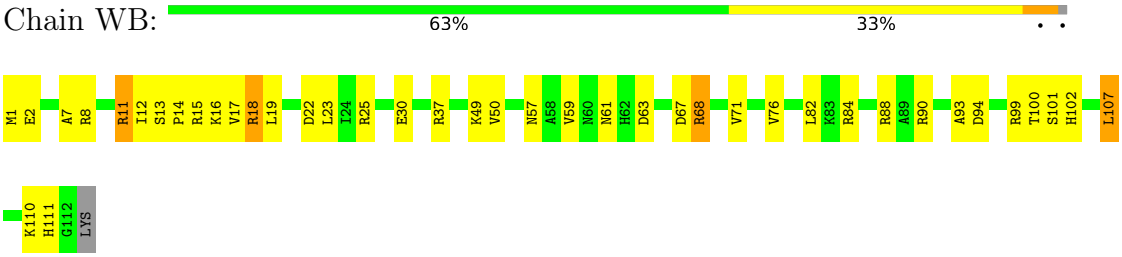
• Molecule 20: 50S ribosomal protein L22

Chain T:



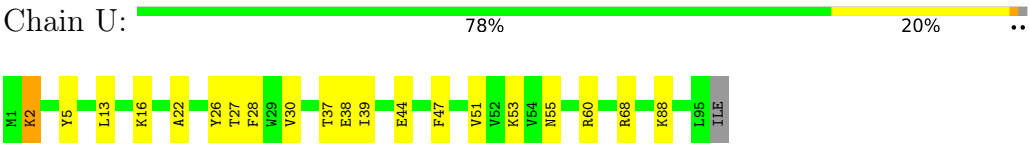
• Molecule 20: 50S ribosomal protein L22

Chain WB:



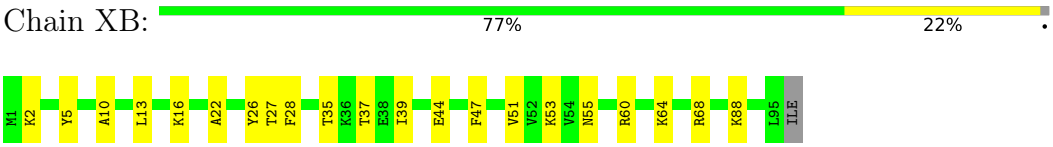
• Molecule 21: 50S ribosomal protein L23

Chain U:



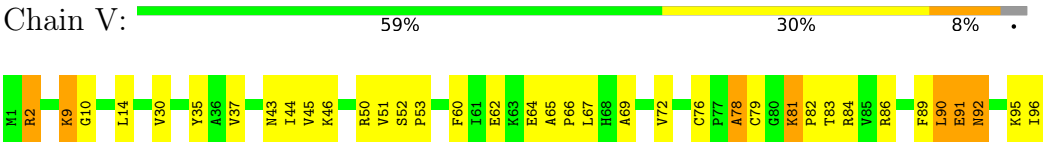
• Molecule 21: 50S ribosomal protein L23

Chain XB:



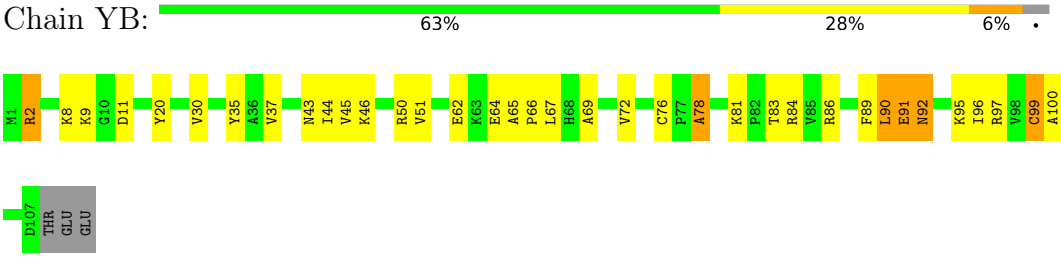
• Molecule 22: 50S ribosomal protein L24

Chain V:



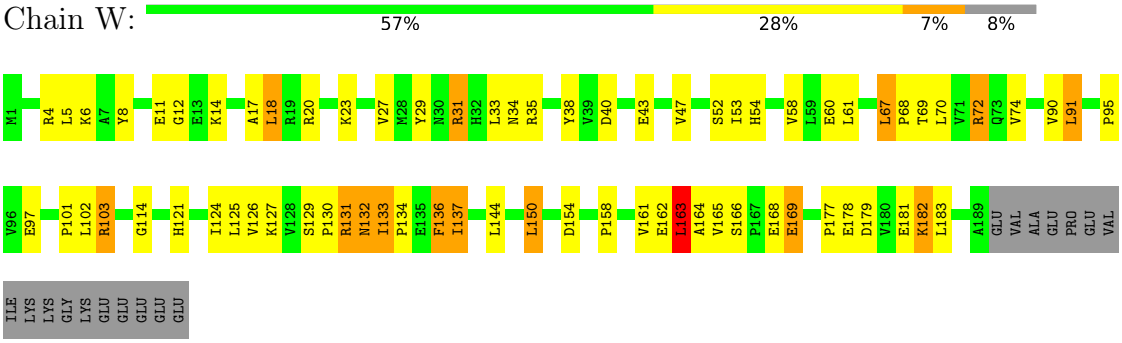
• Molecule 22: 50S ribosomal protein L24

Chain YB:



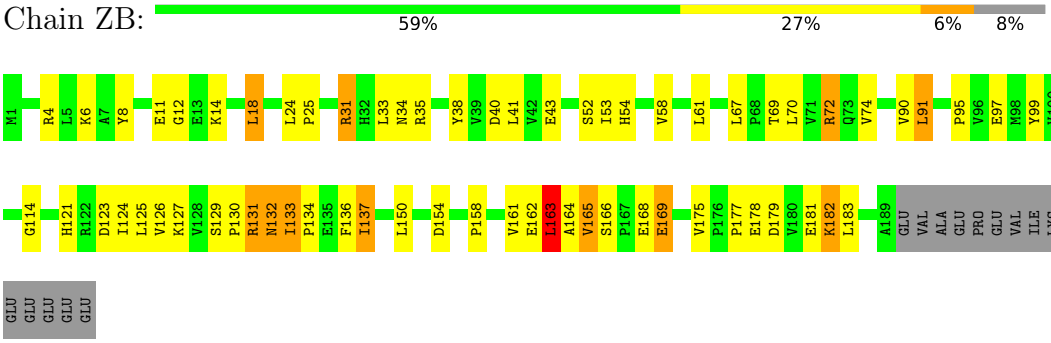
• Molecule 23: 50S ribosomal protein L25

Chain W:



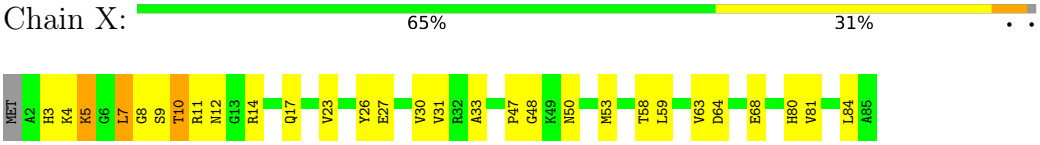
• Molecule 23: 50S ribosomal protein L25

Chain ZB:



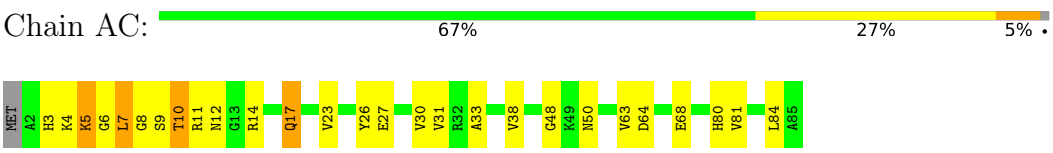
• Molecule 24: 50S ribosomal protein L27

Chain X:



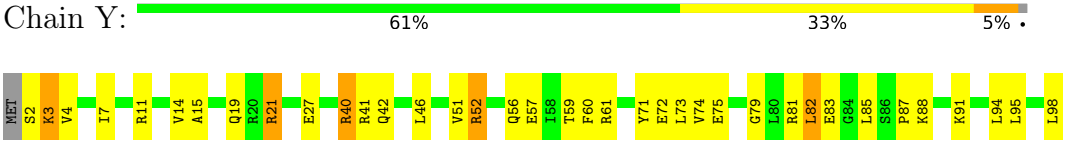
• Molecule 24: 50S ribosomal protein L27

Chain AC:



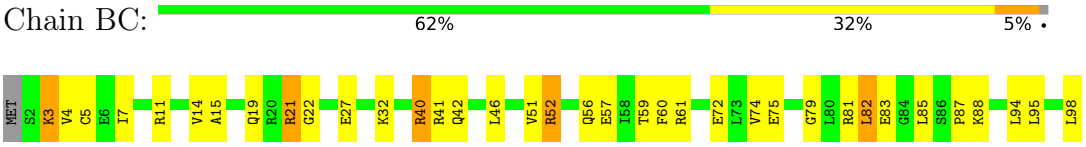
• Molecule 25: 50S ribosomal protein L28

Chain Y:



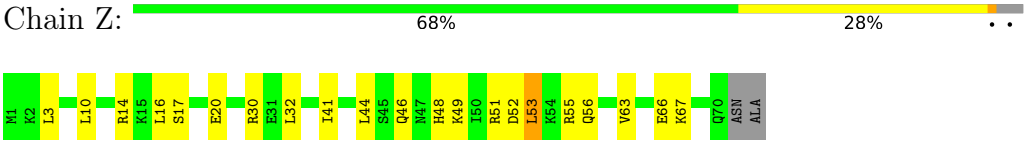
• Molecule 25: 50S ribosomal protein L28

Chain BC:



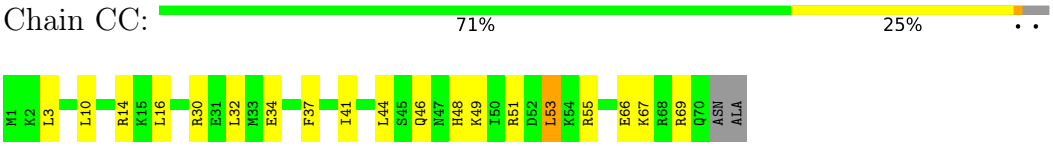
• Molecule 26: 50S ribosomal protein L29

Chain Z:



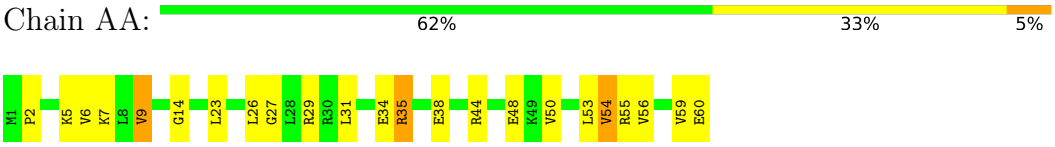
• Molecule 26: 50S ribosomal protein L29

Chain CC:



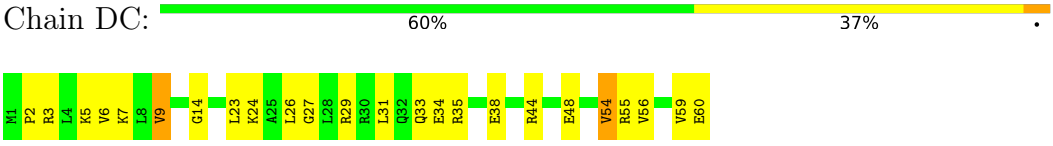
• Molecule 27: 50S ribosomal protein L30

Chain AA:



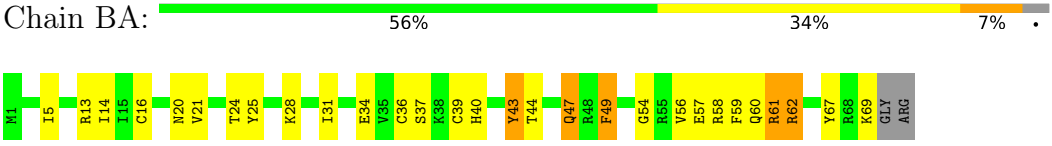
• Molecule 27: 50S ribosomal protein L30

Chain DC:



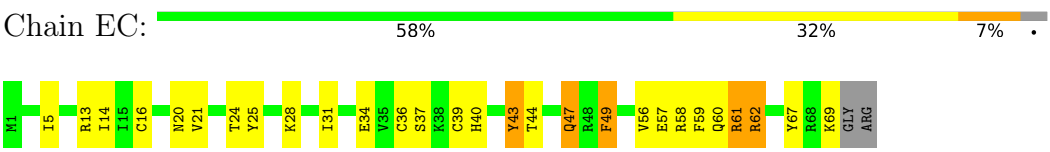
• Molecule 28: 50S ribosomal protein L31

Chain BA:



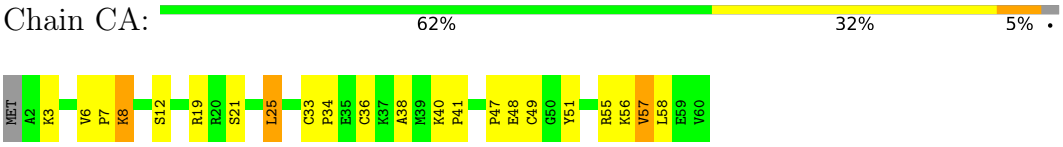
• Molecule 28: 50S ribosomal protein L31

Chain EC:



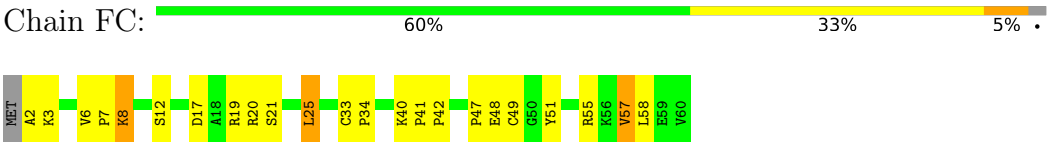
• Molecule 29: 50S ribosomal protein L32

Chain CA:



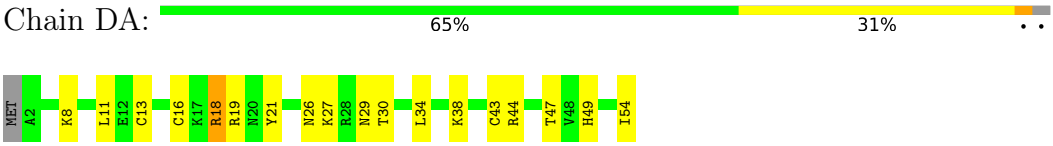
• Molecule 29: 50S ribosomal protein L32

Chain FC:



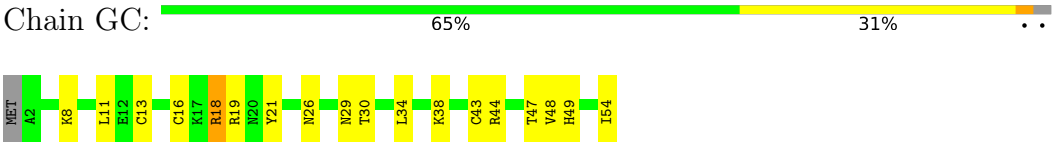
• Molecule 30: 50S ribosomal protein L33

Chain DA:



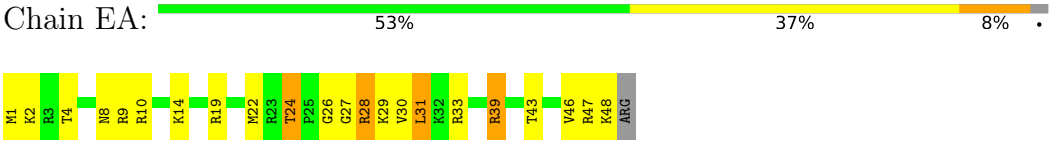
• Molecule 30: 50S ribosomal protein L33

Chain GC:



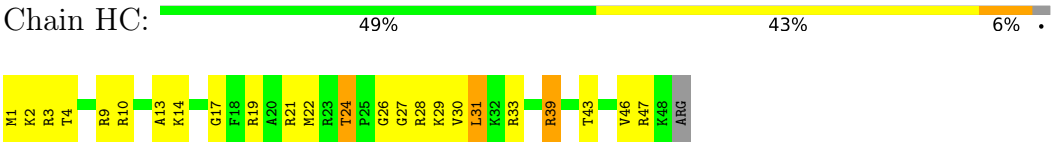
• Molecule 31: 50S ribosomal protein L34

Chain EA:



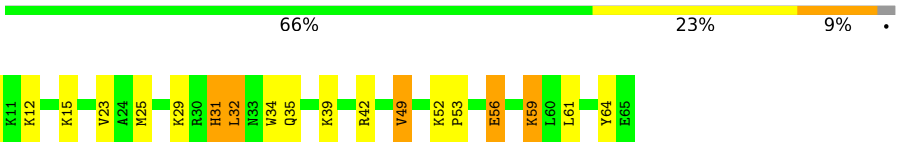
• Molecule 31: 50S ribosomal protein L34

Chain HC:



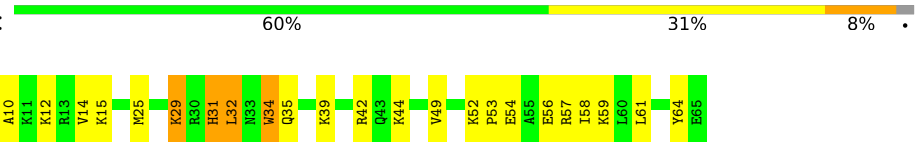
• Molecule 32: 50S ribosomal protein L35

Chain FA:



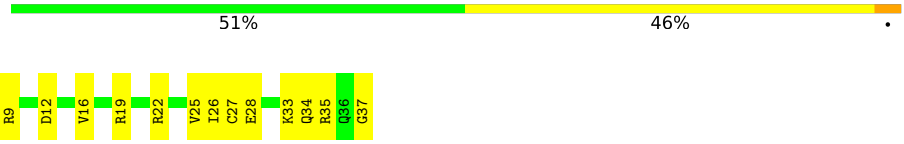
• Molecule 32: 50S ribosomal protein L35

Chain IC:



• Molecule 33: 50S ribosomal protein L36

Chain GA:



• Molecule 33: 50S ribosomal protein L36

Chain JC:

• Molecule 34: mRNA

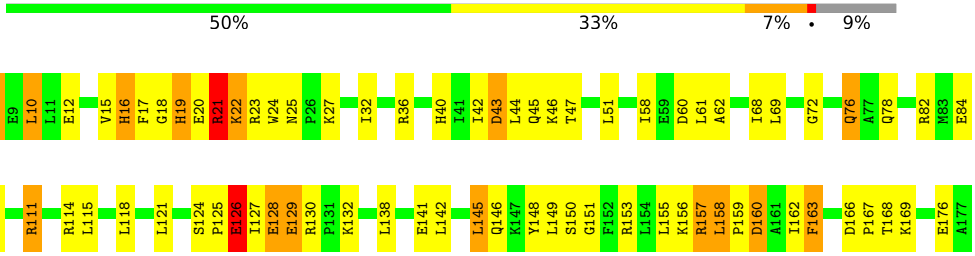
Chain HA:

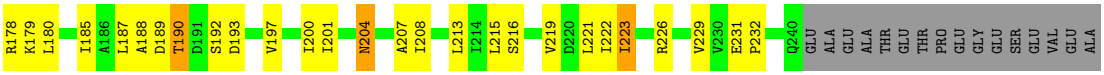
• Molecule 34: mRNA

Chain KC:

• Molecule 35: 30S ribosomal protein S2

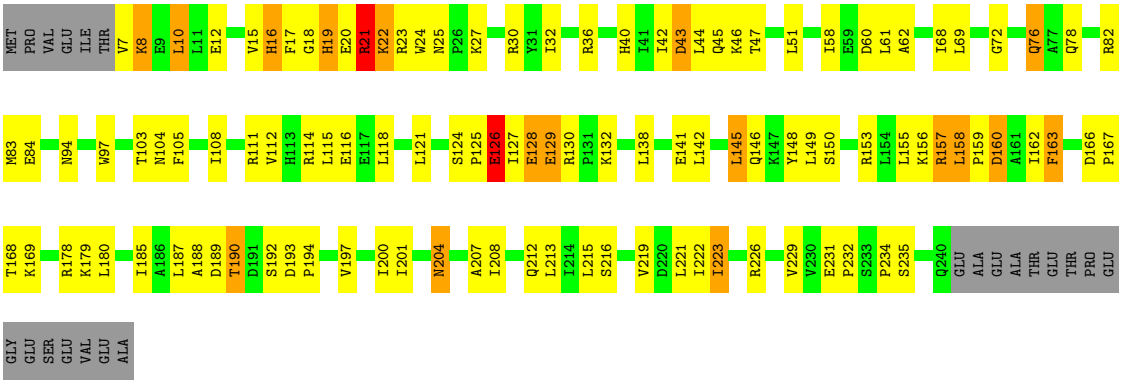
Chain JA:





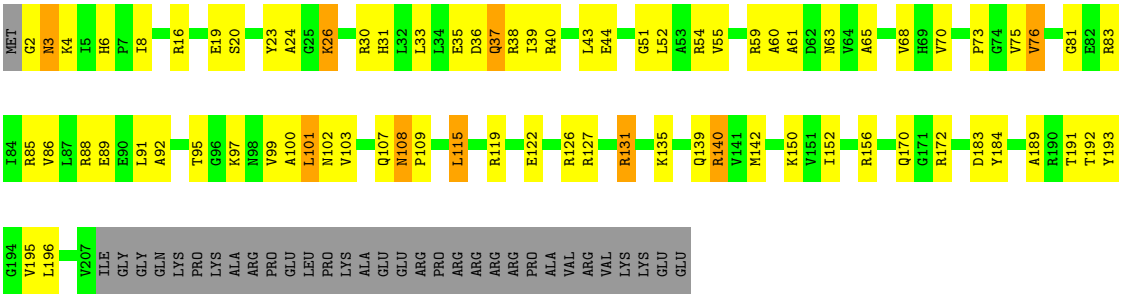
• Molecule 35: 30S ribosomal protein S2

Chain MC:



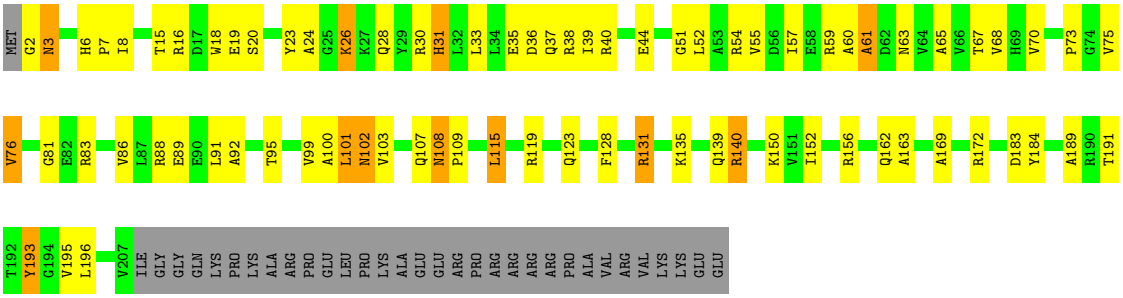
• Molecule 36: 30S ribosomal protein S3

Chain KA:



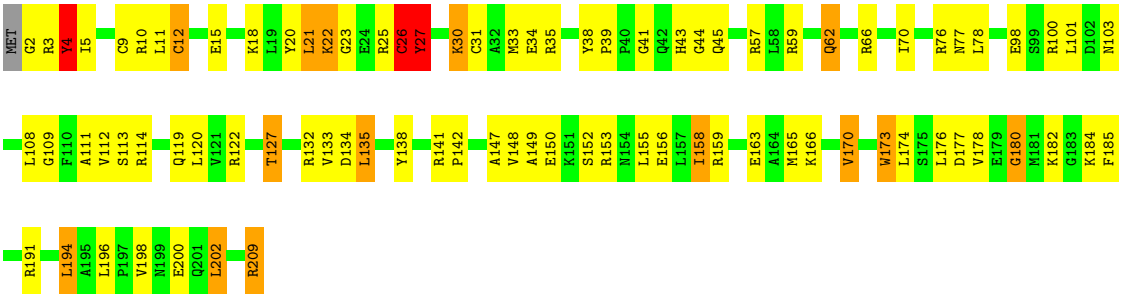
• Molecule 36: 30S ribosomal protein S3

Chain NC:



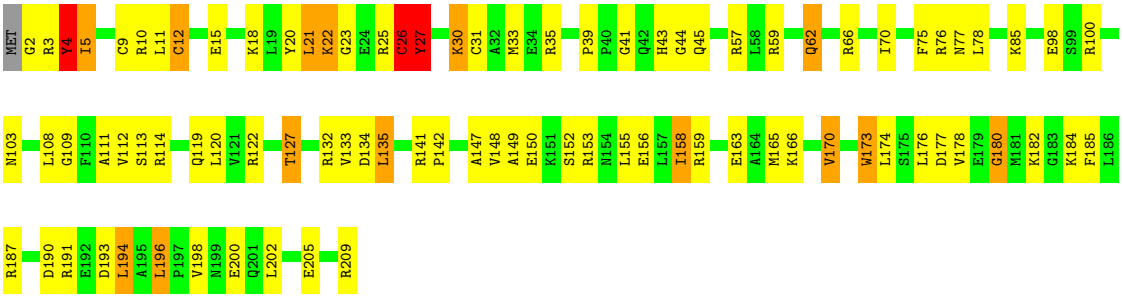
• Molecule 37: 30S ribosomal protein S4

Chain LA:



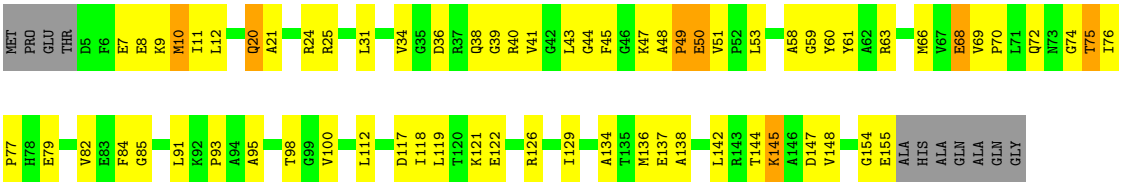
• Molecule 37: 30S ribosomal protein S4

Chain OC:



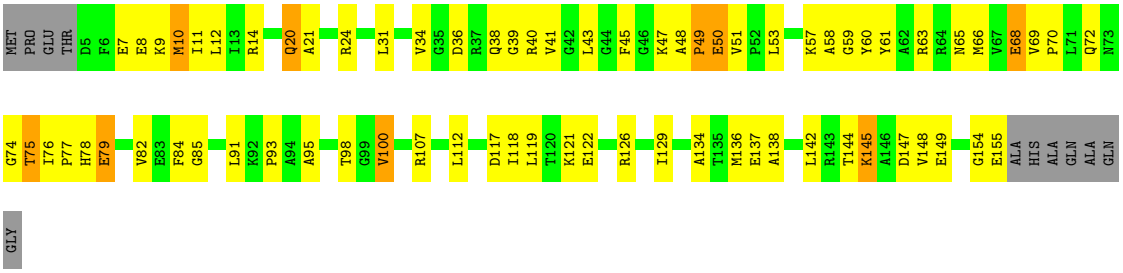
• Molecule 38: 30S ribosomal protein S5

Chain MA:



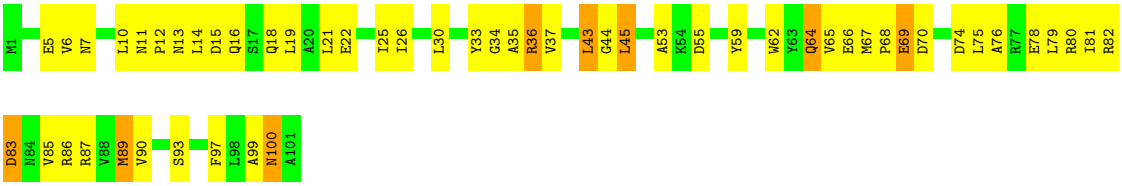
• Molecule 38: 30S ribosomal protein S5

Chain PC:



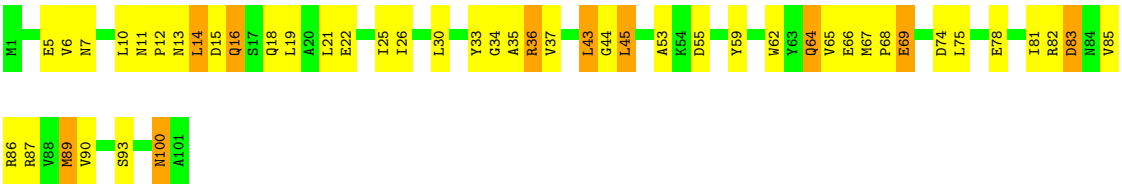
• Molecule 39: 30S ribosomal protein S6

Chain NA:



• Molecule 39: 30S ribosomal protein S6

Chain QC:

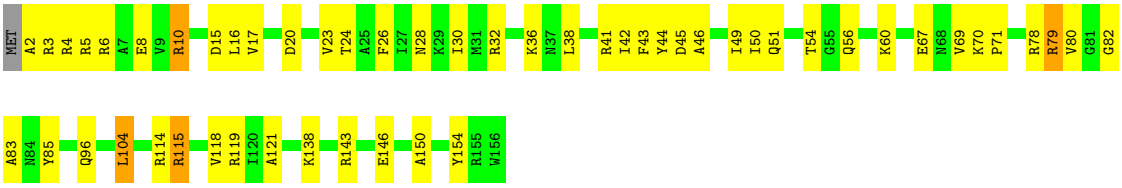


• Molecule 40: 30S ribosomal protein S7

Chain OA:

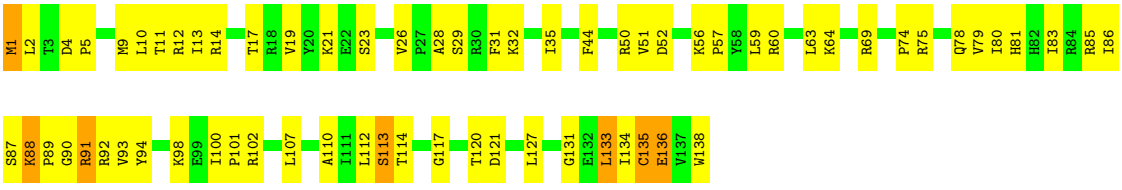
• Molecule 40: 30S ribosomal protein S7

Chain RC:



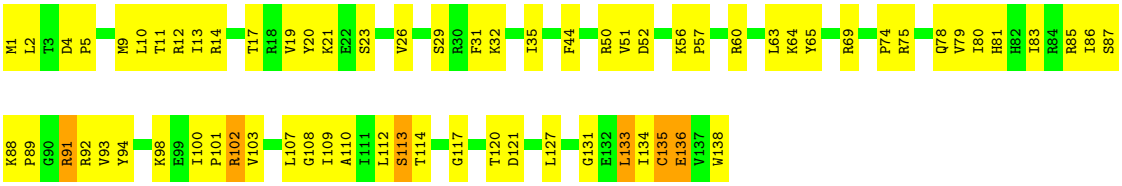
• Molecule 41: 30S ribosomal protein S8

Chain PA:



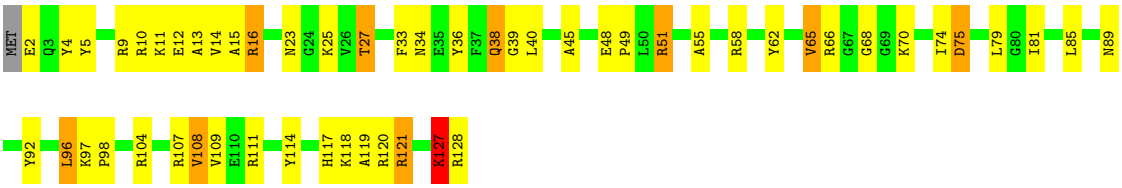
• Molecule 41: 30S ribosomal protein S8

Chain SC:



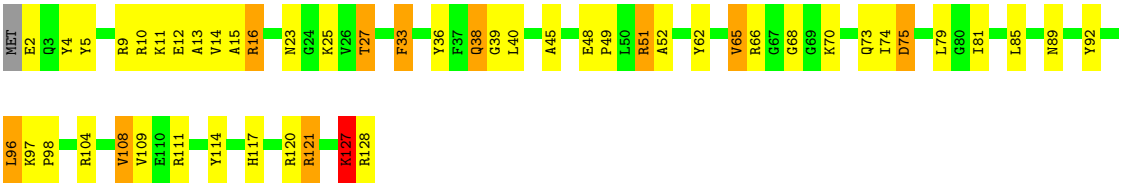
• Molecule 42: 30S ribosomal protein S9

Chain QA:



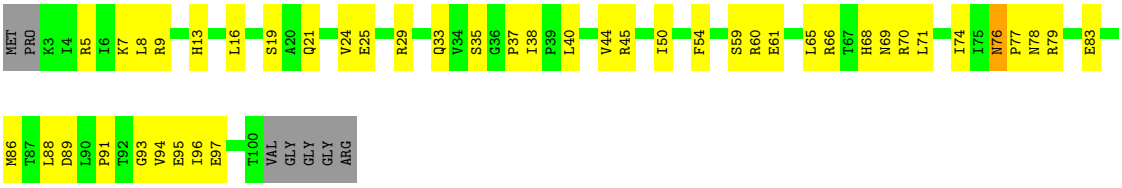
• Molecule 42: 30S ribosomal protein S9

Chain TC:



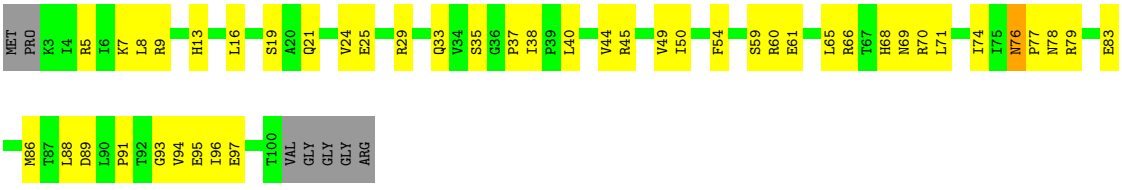
• Molecule 43: 30S ribosomal protein S10

Chain RA:



• Molecule 43: 30S ribosomal protein S10

Chain UC:

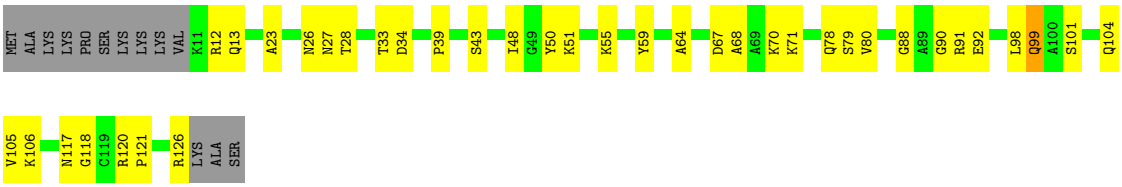


• Molecule 44: 30S ribosomal protein S11

Chain SA:

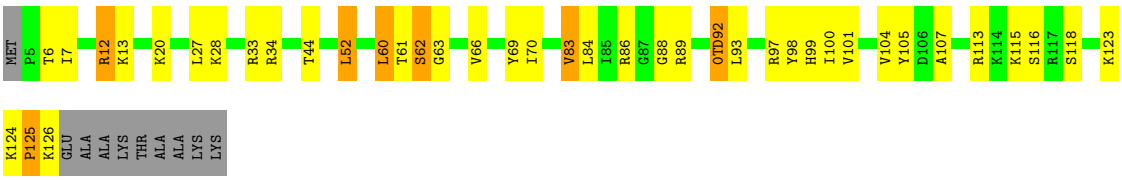
• Molecule 44: 30S ribosomal protein S11

Chain VC:



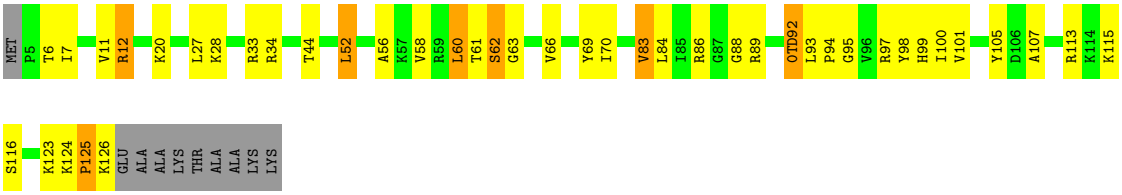
• Molecule 45: 30S ribosomal protein S12

Chain TA:



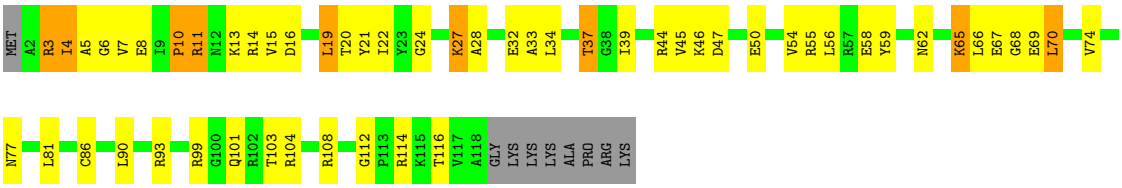
• Molecule 45: 30S ribosomal protein S12

Chain WC:



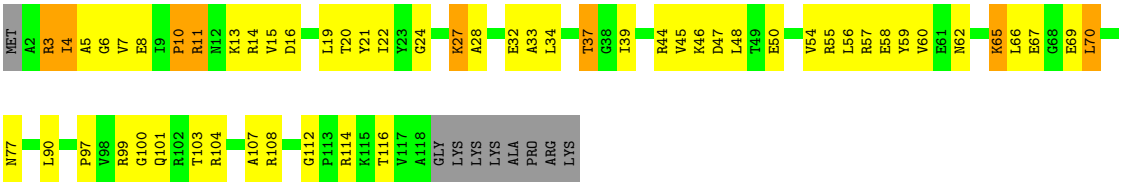
• Molecule 46: 30S ribosomal protein S13

Chain UA:



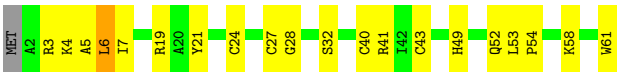
• Molecule 46: 30S ribosomal protein S13

Chain XC:



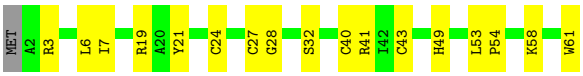
• Molecule 47: 30S ribosomal protein S14 type Z

Chain VA:



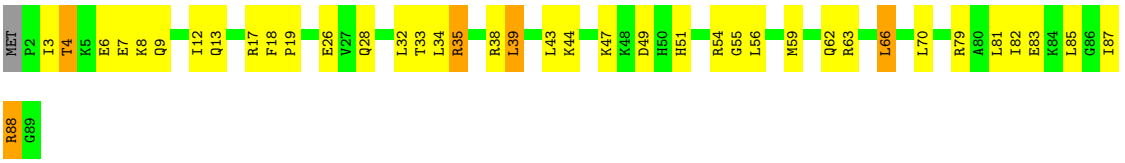
• Molecule 47: 30S ribosomal protein S14 type Z

Chain YC:



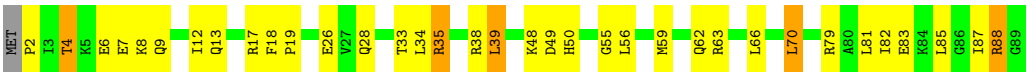
• Molecule 48: 30S ribosomal protein S15

Chain WA:



• Molecule 48: 30S ribosomal protein S15

Chain ZC:



• Molecule 49: 30S ribosomal protein S16

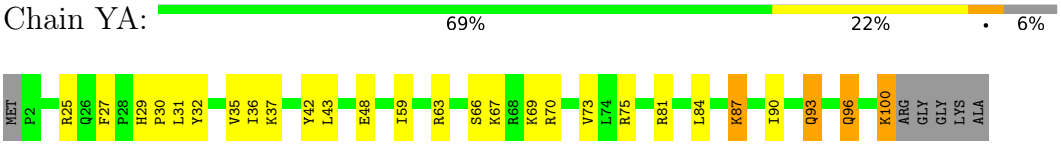
Chain XA:

• Molecule 49: 30S ribosomal protein S16

Chain AD:

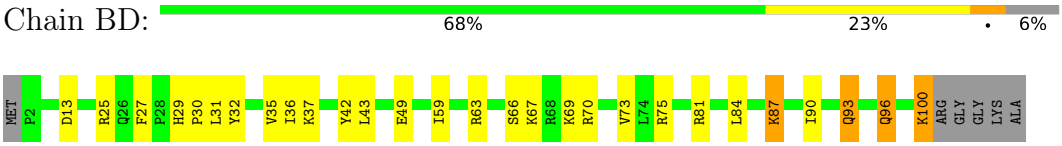
• Molecule 50: 30S ribosomal protein S17

Chain YA:



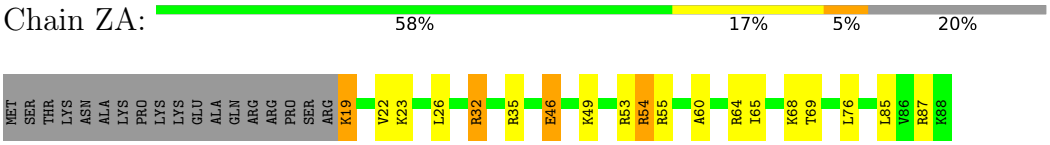
• Molecule 50: 30S ribosomal protein S17

Chain BD:



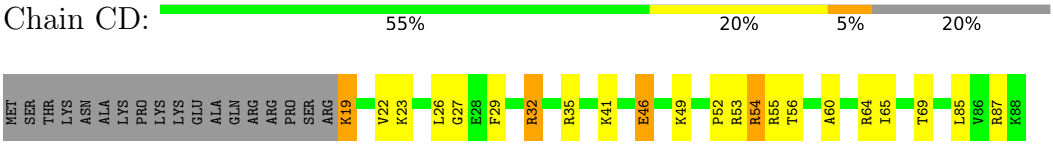
• Molecule 51: 30S ribosomal protein S18

Chain ZA:



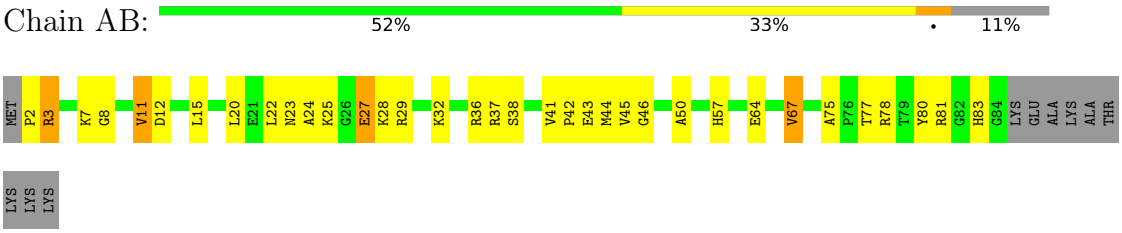
• Molecule 51: 30S ribosomal protein S18

Chain CD:



• Molecule 52: 30S ribosomal protein S19

Chain AB:

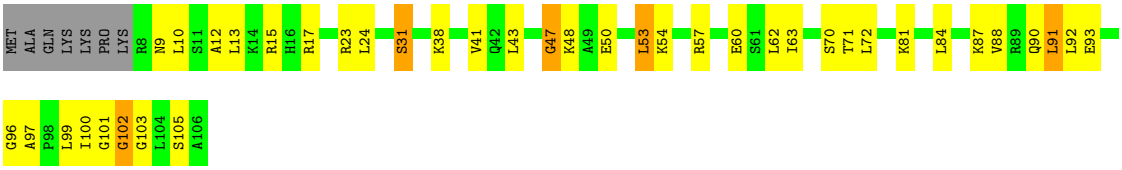


• Molecule 52: 30S ribosomal protein S19

Chain DD:

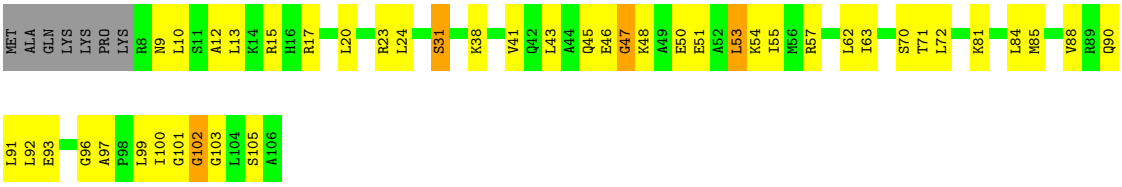
• Molecule 53: 30S ribosomal protein S20

Chain BB:



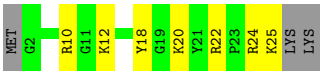
• Molecule 53: 30S ribosomal protein S20

Chain ED:



• Molecule 54: 30S ribosomal protein Thx

Chain CB:

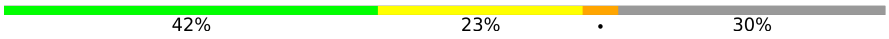


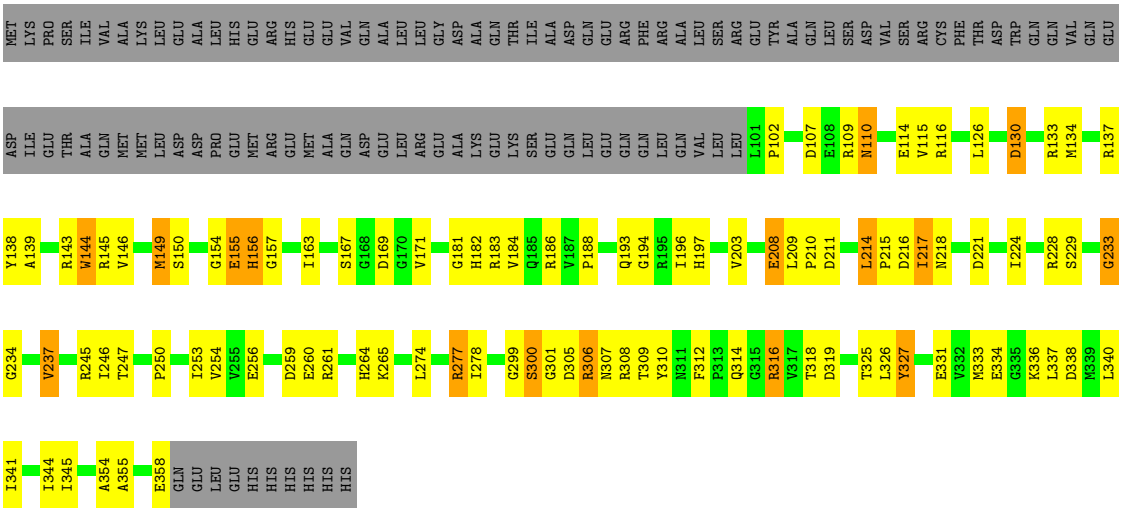
• Molecule 54: 30S ribosomal protein Thx

Chain FD:

• Molecule 55: Peptide chain release factor 1

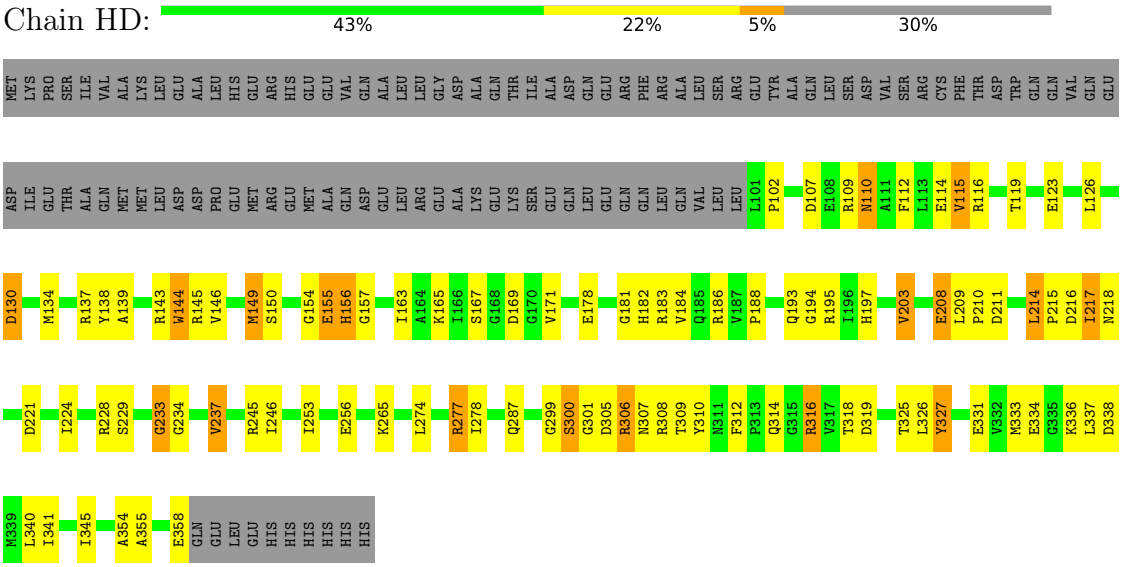
Chain GD:





• Molecule 55: Peptide chain release factor 1

Chain HD:


43%
22%
5%
30%
MET LYS PRO SER ILE VAL ALA LYS LEU GLU ALA LEU HIS GLU ARG HIS GLU GLU VAL GLN ALA LEU LEU GLY ASP ALA GLN THR ILE ALA ASP GLN GLU ARG PHE ARG ALA LEU SER ARG GLU TYR ALA GLN LEU SER ASP VAL SER ARG CYS PHE THR ASP TRP GLN GLN VAL GLN GLU
ASP ILE GLU THR ALA GLN MET MET LEU ASP ASP PRO GLU MET ARG GLU MET ALA GLN ASP GLU LEU ARG GLU ALA LYS GLU LYS SER GLU GLN LEU GLU GLN GLN LEU GLN VAL LEU LEU L101 P102 D107 E108 R109 N110 A111 F112 L113 E114 V115 R116 T119 E123 L126
D130 M134 R137 Y138 A139 R143 W144 R145 V146 M149 S150 G154 E155 H156 G157 I163 A164 K165 I166 S167 G168 D169 G170 V171 E178 G181 H182 R183 V184 Q185 R186 V187 P188 Q193 G194 R195 I196 H197 V203 E208 L209 P210 D211 L214 P215 D216 I217 N218
D221 I224 R228 S229 G233 G234 V237 R245 I246 I253 E256 K265 L274 R277 I278 Q287 G299 S300 G301 D305 R306 N307 R308 T309 Y310 N311 F312 P313 G314 G315 R316 V317 T318 D319 T325 L326 Y327 E331 V332 M333 E334 G335 K336 L337 D338
M339 L340 T341 I345 A354 A355 E358 GLN GLU LEU GLU HIS HIS HIS HIS HIS HIS

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	210.82Å 450.45Å 615.17Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 3.55 68.93 – 3.55	Depositor EDS
% Data completeness (in resolution range)	100.0 (50.00-3.55) 99.9 (68.93-3.55)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.28 (at 3.58Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	(Not available) , (Not available) 0.221 , 0.257	Depositor DCC
R_{free} test set	13965 reflections (2.00%)	wwPDB-VP
Wilson B-factor (Å^2)	124.9	Xtriage
Anisotropy	0.055	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 81.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.40$, $< L^2 > = 0.22$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.91	EDS
Total number of atoms	299566	wwPDB-VP
Average B, all atoms (Å^2)	128.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.52% 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

5.1 Standard geometry

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

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	0.66	8/35961 (0.0%)	1.15	147/56125 (0.3%)
1	DB	0.69	5/35961 (0.0%)	1.18	176/56125 (0.3%)
2	B	1.01	76/69214 (0.1%)	1.49	1088/108048 (1.0%)
2	EB	0.88	60/69214 (0.1%)	1.38	770/108048 (0.7%)
3	C	0.69	0/2881	1.20	18/4494 (0.4%)
3	FB	0.61	0/2881	1.09	11/4494 (0.2%)
4	D	0.47	0/1744	0.88	0/2719
4	GB	0.48	0/1744	0.88	0/2719
4	IA	0.74	0/1744	1.17	7/2719 (0.3%)
4	LC	0.70	1/1744 (0.1%)	1.12	5/2719 (0.2%)
5	E	0.78	4/2195 (0.2%)	0.74	0/2955
5	HB	0.70	3/2195 (0.1%)	0.72	0/2955
6	F	0.63	0/1596	0.67	0/2153
6	IB	0.57	0/1596	0.65	0/2153
7	G	0.70	0/1621	0.69	0/2194
7	JB	0.61	0/1621	0.65	0/2194
8	H	0.44	0/1496	0.57	0/2013
8	KB	0.40	0/1496	0.56	0/2013
9	I	0.52	0/1356	0.56	0/1834
9	LB	0.38	0/1356	0.52	0/1834
10	J	0.51	0/1152	0.58	0/1559
10	MB	0.47	0/1152	0.58	0/1559
11	K	0.62	0/1148	0.66	0/1547
11	NB	0.51	0/1148	0.63	0/1547
12	L	0.67	0/942	0.68	0/1268
12	OB	0.67	0/942	0.67	0/1268
13	M	0.64	0/1162	0.69	0/1544
13	PB	0.56	0/1162	0.67	0/1544
14	N	0.67	0/1142	0.63	0/1525
14	QB	0.60	0/1142	0.63	0/1525
15	O	0.60	0/982	0.72	0/1312
15	RB	0.57	0/982	0.68	0/1312

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
16	P	0.45	0/887	0.58	0/1180
16	SB	0.40	0/887	0.53	0/1180
17	Q	0.61	0/1157	0.65	0/1544
17	TB	0.58	0/1157	0.65	0/1544
18	R	0.67	0/982	0.68	0/1306
18	UB	0.57	0/982	0.65	0/1306
19	S	0.65	0/790	0.67	0/1057
19	VB	0.56	0/790	0.65	0/1057
20	T	0.74	0/901	0.73	0/1209
20	WB	0.65	0/901	0.69	0/1209
21	U	0.76	0/764	0.69	0/1025
21	XB	0.63	0/764	0.65	0/1025
22	V	0.64	0/827	0.66	0/1103
22	YB	0.60	0/827	0.65	0/1103
23	W	0.49	0/1527	0.58	0/2073
23	ZB	0.43	0/1527	0.55	0/2073
24	AC	0.61	0/671	0.71	0/892
24	X	0.71	0/671	0.73	0/892
25	BC	0.65	0/768	0.71	0/1021
25	Y	0.70	0/768	0.72	0/1021
26	CC	0.57	0/594	0.60	0/785
26	Z	0.68	0/594	0.64	0/785
27	AA	0.60	0/482	0.62	0/646
27	DC	0.57	0/482	0.63	0/646
28	BA	0.42	0/565	0.46	0/761
28	EC	0.39	0/565	0.46	0/761
29	CA	0.60	0/474	0.63	0/640
29	FC	0.55	0/474	0.64	0/640
30	DA	0.41	0/460	0.50	0/613
30	GC	0.40	0/460	0.48	0/613
31	EA	0.79	0/426	0.89	3/561 (0.5%)
31	HC	0.69	0/426	0.78	1/561 (0.2%)
32	FA	0.74	1/525 (0.2%)	0.68	0/691
32	IC	0.61	0/525	0.66	0/691
33	GA	0.45	0/310	0.53	0/407
33	JC	0.46	0/310	0.53	0/407
34	HA	1.01	0/247	1.24	3/382 (0.8%)
34	KC	1.01	0/247	1.14	0/382
35	JA	0.41	0/1935	0.55	0/2609
35	MC	0.41	0/1935	0.54	0/2609
36	KA	0.41	0/1636	0.53	0/2205
36	NC	0.40	0/1636	0.53	0/2205
37	LA	0.51	1/1733 (0.1%)	0.60	1/2318 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
37	OC	0.58	1/1733 (0.1%)	0.62	1/2318 (0.0%)
38	MA	0.48	0/1171	0.61	0/1576
38	PC	0.51	0/1171	0.63	0/1576
39	NA	0.53	0/856	0.59	0/1154
39	QC	0.50	0/856	0.59	0/1154
40	OA	0.42	0/1276	0.51	0/1709
40	RC	0.44	0/1276	0.52	0/1709
41	PA	0.45	0/1136	0.59	0/1527
41	SC	0.46	0/1136	0.60	0/1527
42	QA	0.36	0/1029	0.49	0/1378
42	TC	0.36	0/1029	0.49	0/1378
43	RA	0.38	0/807	0.49	0/1085
43	UC	0.38	0/807	0.49	0/1085
44	SA	0.52	0/879	0.61	0/1187
44	VC	0.50	0/879	0.61	0/1187
45	TA	0.55	0/963	0.63	0/1287
45	WC	0.56	0/963	0.63	0/1287
46	UA	0.38	0/943	0.53	0/1265
46	XC	0.38	0/943	0.52	0/1265
47	VA	0.42	0/501	0.54	0/664
47	YC	0.39	0/501	0.53	0/664
48	WA	0.50	0/745	0.56	0/992
48	ZC	0.51	0/745	0.56	0/992
49	AD	0.49	0/716	0.58	0/963
49	XA	0.40	0/716	0.55	0/963
50	BD	0.53	0/836	0.58	0/1117
50	YA	0.52	0/836	0.59	0/1117
51	CD	0.50	0/579	0.55	0/768
51	ZA	0.52	0/579	0.57	0/768
52	AB	0.36	0/680	0.51	0/915
52	DD	0.35	0/680	0.51	0/915
53	BB	0.40	0/764	0.52	0/1006
53	ED	0.44	0/764	0.55	0/1006
54	CB	0.35	0/212	0.46	0/277
54	FD	0.36	0/212	0.46	0/277
55	GD	0.54	0/2012	0.62	0/2713
55	HD	0.48	0/2012	0.60	0/2713
All	All	0.77	160/322204 (0.0%)	1.18	2231/481240 (0.5%)

All (160) bond length outliers are listed below:

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1762	A	N9-C4	14.42	1.46	1.37
2	EB	1762	A	N9-C4	13.35	1.45	1.37
2	B	1142(B)	A	N9-C4	-10.33	1.31	1.37
1	A	1503	A	N9-C4	9.28	1.43	1.37
1	A	1531	A	N9-C4	9.11	1.43	1.37
2	EB	1762	A	C5-C6	8.99	1.49	1.41
2	B	1762	A	N3-C4	8.96	1.40	1.34
2	EB	1142(B)	A	N9-C4	-8.80	1.32	1.37
2	B	1762	A	C5-C4	8.69	1.44	1.38
2	B	1602	U	C4-O4	8.60	1.30	1.23
37	OC	12	CYS	CB-SG	8.57	1.96	1.82
2	B	2593	U	C4-O4	8.22	1.30	1.23
2	EB	1762	A	N7-C5	8.14	1.44	1.39
1	DB	1503	A	N9-C4	8.00	1.42	1.37
2	EB	1762	A	C5-C4	7.91	1.44	1.38
2	B	1762	A	C5-C6	7.78	1.48	1.41
5	E	237	GLU	CG-CD	7.76	1.63	1.51
1	DB	1531	A	N9-C4	7.64	1.42	1.37
2	EB	2593	U	C4-O4	7.54	1.29	1.23
2	EB	1762	A	N3-C4	7.51	1.39	1.34
2	EB	1783	A	N9-C4	-7.37	1.33	1.37
2	B	2271	G	C6-O6	7.35	1.30	1.24
2	B	1762	A	N7-C5	7.34	1.43	1.39
2	EB	251	A	N3-C4	-7.34	1.30	1.34
37	LA	12	CYS	CB-SG	7.18	1.94	1.82
2	B	528	A	N9-C4	-7.18	1.33	1.37
2	EB	251	A	N9-C4	-7.08	1.33	1.37
2	EB	2430	A	N9-C4	-7.02	1.33	1.37
2	EB	1026	U	N1-C2	6.99	1.44	1.38
2	EB	1780	A	N9-C4	-6.91	1.33	1.37
2	B	1566	A	N9-C4	-6.86	1.33	1.37
2	EB	2271	G	C6-O6	6.84	1.30	1.24
2	EB	804	A	N9-C4	-6.82	1.33	1.37
2	EB	528	A	N9-C4	-6.80	1.33	1.37
2	B	1026	U	N1-C2	6.79	1.44	1.38
2	B	1671	U	C2-N3	6.79	1.42	1.37
2	EB	1981	A	N9-C4	-6.73	1.33	1.37
2	B	1021	A	N9-C4	-6.71	1.33	1.37
2	B	2249	U	C4-O4	6.68	1.28	1.23
2	EB	548	A	N9-C4	6.65	1.41	1.37
2	B	688	U	C4-O4	6.60	1.28	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1531	A	N3-C4	6.51	1.38	1.34
2	B	1783	A	N9-C4	-6.51	1.33	1.37
2	B	1671	U	C4-O4	6.50	1.28	1.23
2	B	790	C	N3-C4	6.48	1.38	1.33
2	EB	199	A	N9-C4	-6.46	1.33	1.37
2	EB	2585	U	N1-C2	6.46	1.44	1.38
2	B	330	A	N9-C4	-6.43	1.33	1.37
2	B	2585	U	N1-C2	6.42	1.44	1.38
2	EB	1671	U	C4-O4	6.40	1.28	1.23
2	B	2245	U	C4-O4	6.38	1.28	1.23
2	EB	1762	A	C6-N6	6.29	1.39	1.33
2	EB	1609	A	N9-C4	-6.28	1.34	1.37
2	B	945	A	C5-C6	-6.26	1.35	1.41
1	DB	1503	A	C5-C6	6.24	1.46	1.41
2	B	2028	U	C4-O4	6.21	1.28	1.23
2	EB	2060	A	N9-C4	-6.21	1.34	1.37
5	HB	237	GLU	CG-CD	6.18	1.61	1.51
2	B	1762	A	C6-N6	6.14	1.38	1.33
5	E	237	GLU	CB-CG	6.12	1.63	1.52
2	B	2585	U	C2-N3	6.12	1.42	1.37
2	EB	1783	A	N3-C4	-6.12	1.31	1.34
2	B	251	A	N3-C4	-6.11	1.31	1.34
2	B	761	A	N9-C4	-6.11	1.34	1.37
2	B	945	A	N9-C4	-6.07	1.34	1.37
2	B	1780	A	N9-C4	-6.06	1.34	1.37
2	EB	945	A	C5-C6	-6.04	1.35	1.41
2	B	1142(B)	A	C5-C6	-6.01	1.35	1.41
5	HB	237	GLU	CB-CG	6.00	1.63	1.52
2	EB	2053	G	C5-C6	-6.00	1.36	1.42
2	EB	1671	U	N3-C4	5.95	1.43	1.38
2	EB	1810	A	N9-C4	-5.95	1.34	1.37
2	B	1046	A	N9-C4	5.91	1.41	1.37
1	DB	1531	A	N3-C4	5.89	1.38	1.34
2	B	1618	A	C5-C6	-5.88	1.35	1.41
2	B	1609	A	N9-C4	-5.86	1.34	1.37
2	B	6	A	N9-C4	5.83	1.41	1.37
2	EB	2593	U	C2-N3	5.79	1.41	1.37
2	B	127	A	N9-C4	-5.77	1.34	1.37
2	B	1608	A	N9-C4	-5.74	1.34	1.37
2	EB	761	A	N9-C4	-5.70	1.34	1.37
2	B	2606	C	N1-C6	-5.70	1.33	1.37
2	EB	733	G	N9-C8	5.69	1.41	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	1251	C	N1-C6	-5.67	1.33	1.37
2	EB	276	A	N9-C4	5.66	1.41	1.37
2	EB	945	A	N9-C4	-5.64	1.34	1.37
2	B	790	C	C2-N3	5.64	1.40	1.35
1	A	781	A	N9-C4	-5.63	1.34	1.37
2	EB	2249	U	C4-O4	5.62	1.28	1.23
2	B	1566	A	N3-C4	-5.59	1.31	1.34
2	B	123	G	N9-C8	-5.59	1.33	1.37
2	EB	1021	A	N9-C4	-5.58	1.34	1.37
1	A	1503	A	N7-C5	5.55	1.42	1.39
2	EB	2028	U	C4-O4	5.55	1.28	1.23
2	EB	1963	U	N1-C2	5.55	1.43	1.38
2	EB	1367	A	N3-C4	-5.54	1.31	1.34
2	EB	1602	U	C4-O4	5.54	1.28	1.23
2	B	460	A	N3-C4	-5.53	1.31	1.34
2	EB	1342	A	N9-C4	-5.51	1.34	1.37
2	EB	1671	U	C2-N3	5.51	1.41	1.37
5	HB	28	GLU	CG-CD	5.51	1.60	1.51
2	EB	2542	A	N9-C4	-5.50	1.34	1.37
2	B	2287	A	N9-C4	-5.49	1.34	1.37
2	EB	1132	A	N9-C4	-5.48	1.34	1.37
2	B	2764	A	N9-C4	-5.47	1.34	1.37
2	B	460	A	N9-C4	-5.46	1.34	1.37
2	EB	2629	A	N9-C4	5.46	1.41	1.37
2	B	1802	A	N9-C4	-5.46	1.34	1.37
32	FA	56	GLU	CG-CD	5.45	1.60	1.51
1	DB	1503	A	N3-C4	5.44	1.38	1.34
2	EB	1511	A	N9-C4	5.44	1.41	1.37
2	B	1271	G	C6-O6	5.43	1.29	1.24
1	A	1503	A	N3-C4	5.42	1.38	1.34
2	B	2060	A	N9-C4	-5.42	1.34	1.37
2	EB	2436	G	C2-N3	-5.42	1.28	1.32
2	B	653	C	N1-C6	5.41	1.40	1.37
4	LC	1	C	N1-C2	5.41	1.45	1.40
2	B	1142(B)	A	N3-C4	-5.36	1.31	1.34
2	B	1367	A	N9-C4	-5.36	1.34	1.37
2	B	548	A	N9-C4	5.34	1.41	1.37
2	EB	6	A	N9-C4	5.33	1.41	1.37
2	B	1187	G	C6-O6	5.31	1.28	1.24
2	B	1963	U	N1-C2	5.31	1.43	1.38
2	EB	2287	A	N9-C4	-5.31	1.34	1.37
2	B	251	A	N9-C4	-5.30	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	E	28	GLU	CG-CD	5.29	1.59	1.51
2	EB	734	A	N9-C4	-5.29	1.34	1.37
2	B	750	A	N9-C4	-5.28	1.34	1.37
2	B	1810	A	N9-C4	-5.28	1.34	1.37
2	B	71	A	N7-C5	-5.25	1.36	1.39
2	B	251	A	C5-C4	-5.24	1.35	1.38
2	B	1511	A	N9-C4	5.23	1.41	1.37
2	B	1221(A)	C	N3-C4	-5.22	1.30	1.33
2	B	797	C	N1-C6	-5.21	1.34	1.37
2	B	1602	U	C2-N3	5.20	1.41	1.37
2	B	1825	A	C6-N1	-5.19	1.31	1.35
2	B	790	C	C4-C5	5.17	1.47	1.43
2	B	2062	A	N7-C5	5.17	1.42	1.39
2	B	255	A	N9-C4	-5.16	1.34	1.37
2	B	69	C	N1-C6	-5.15	1.34	1.37
2	EB	330	A	N9-C4	-5.15	1.34	1.37
2	B	2593	U	C2-N3	5.15	1.41	1.37
2	B	781	A	N3-C4	-5.13	1.31	1.34
2	B	2833	G	C5-C4	5.12	1.42	1.38
2	EB	251	A	C5-C4	-5.12	1.35	1.38
2	EB	1187	G	C6-O6	5.11	1.28	1.24
1	A	1503	A	C5-C6	5.10	1.45	1.41
5	E	237	GLU	CD-OE2	5.10	1.31	1.25
1	A	1531	A	N7-C5	5.10	1.42	1.39
2	B	2061	G	C6-O6	5.09	1.28	1.24
2	EB	1654	A	N9-C4	-5.06	1.34	1.37
2	EB	2439	A	N9-C4	-5.05	1.34	1.37
2	B	530	G	C2-N3	5.04	1.36	1.32
2	EB	570	G	C6-O6	5.03	1.28	1.24
2	EB	504	U	N3-C4	5.03	1.43	1.38
2	B	917	A	N9-C4	-5.02	1.34	1.37
2	EB	1566	A	C5-C6	-5.02	1.36	1.41
2	B	819	A	N9-C4	-5.01	1.34	1.37
2	EB	706	A	N9-C4	-5.01	1.34	1.37
2	EB	503	A	N3-C4	-5.00	1.31	1.34

All (2231) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	2053	G	N1-C6-O6	19.40	131.54	119.90
2	EB	2053	G	C5-C6-O6	-15.62	119.23	128.60
2	B	2053	G	N1-C6-O6	15.42	129.15	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2593	U	N3-C4-C5	-14.85	105.69	114.60
2	B	1602	U	N3-C4-C5	-14.74	105.75	114.60
2	B	450	G	C5-C6-N1	-14.31	104.35	111.50
2	B	2447	G	N1-C6-O6	14.25	128.45	119.90
2	EB	733	G	N1-C6-O6	14.10	128.36	119.90
2	B	733	G	N1-C6-O6	13.89	128.23	119.90
2	B	2502	G	N1-C6-O6	13.80	128.18	119.90
2	B	2271	G	C5-C6-N1	-13.69	104.66	111.50
2	B	2053	G	C5-C6-O6	-13.51	120.49	128.60
2	EB	2593	U	N3-C4-C5	-13.44	106.53	114.60
2	B	733	G	C5-C6-O6	-13.36	120.58	128.60
2	EB	197	A	O5'-P-OP2	-13.34	93.69	105.70
2	B	197	A	O5'-P-OP2	-13.21	93.81	105.70
2	B	733	G	C5-N7-C8	-12.87	97.86	104.30
2	B	1671	U	N3-C4-C5	-12.87	106.88	114.60
2	B	1671	U	N3-C4-O4	12.70	128.29	119.40
2	EB	733	G	C4-C5-N7	12.49	115.80	110.80
2	B	733	G	C4-C5-N7	12.40	115.76	110.80
2	B	1142(B)	A	C2-N3-C4	-12.32	104.44	110.60
2	EB	733	G	C5-C6-O6	-12.29	121.22	128.60
2	EB	733	G	C5-N7-C8	-12.29	98.15	104.30
2	B	1790	C	N3-C4-N4	-12.26	109.42	118.00
2	EB	1671	U	N3-C4-O4	12.00	127.80	119.40
1	DB	1452	C	C6-N1-C2	-11.98	115.51	120.30
2	B	2544	G	N1-C6-O6	11.81	126.98	119.90
2	EB	1187	G	C5-C6-N1	-11.59	105.70	111.50
2	EB	2271	G	C5-C6-N1	-11.50	105.75	111.50
2	B	1614	A	O5'-P-OP2	-11.41	95.43	105.70
2	B	1828	G	C8-N9-C4	-11.41	101.84	106.40
1	A	117	G	N1-C6-O6	11.33	126.70	119.90
2	B	2685	G	C5-C6-N1	-11.26	105.87	111.50
2	EB	2053	G	C4-C5-N7	11.23	115.29	110.80
2	B	2061	G	N1-C6-O6	11.15	126.59	119.90
1	DB	117	G	N1-C6-O6	11.09	126.55	119.90
2	EB	2574	G	O5'-P-OP2	-11.06	95.75	105.70
2	B	576	U	O5'-P-OP2	-11.00	95.80	105.70
2	EB	1187	G	N1-C6-O6	10.88	126.43	119.90
2	EB	2447	G	N1-C6-O6	10.88	126.43	119.90
2	B	450	G	N1-C6-O6	10.86	126.42	119.90
2	EB	2544	G	N1-C6-O6	10.86	126.42	119.90
2	B	1187	G	C5-C6-N1	-10.83	106.08	111.50
2	EB	1602	U	N3-C4-C5	-10.79	108.13	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	391	G	N1-C6-O6	10.68	126.31	119.90
2	B	733	G	N7-C8-N9	10.68	118.44	113.10
1	A	529	G	N1-C6-O6	10.68	126.31	119.90
1	DB	529	G	N1-C6-O6	10.63	126.28	119.90
2	EB	1828	G	C8-N9-C4	-10.61	102.16	106.40
2	B	1756	G	C5-C6-N1	-10.61	106.20	111.50
2	EB	2053	G	C6-C5-N7	-10.61	124.04	130.40
2	EB	733	G	N7-C8-N9	10.59	118.40	113.10
1	A	1452	C	C6-N1-C2	-10.53	116.09	120.30
2	B	1021	A	C2-N3-C4	-10.47	105.37	110.60
2	B	528	A	C5-N7-C8	-10.43	98.69	103.90
2	B	2593	U	C6-N1-C2	-10.39	114.76	121.00
2	B	2249	U	N3-C4-C5	-10.39	108.37	114.60
2	B	2397	G	N1-C6-O6	10.29	126.08	119.90
2	EB	1828	G	N9-C4-C5	10.25	109.50	105.40
2	B	1840	G	N1-C6-O6	10.24	126.04	119.90
2	B	865	C	C6-N1-C2	10.16	124.36	120.30
2	EB	450	G	C5-C6-N1	-10.14	106.43	111.50
2	B	2271	G	N1-C6-O6	10.14	125.98	119.90
2	B	783	A	O5'-P-OP1	-10.12	96.59	105.70
2	B	1381	G	N1-C6-O6	10.09	125.95	119.90
2	EB	728	G	N1-C6-O6	10.08	125.95	119.90
2	EB	1627	G	N1-C6-O6	10.08	125.95	119.90
2	B	2028	U	N3-C4-C5	-10.07	108.56	114.60
2	B	2610	C	C6-N1-C2	9.98	124.29	120.30
2	B	1936	A	N1-C6-N6	9.91	124.54	118.60
2	EB	510	C	O5'-P-OP2	-9.87	96.82	105.70
2	B	2502	G	O5'-P-OP1	-9.86	96.83	105.70
1	DB	754	C	N1-C2-O2	9.84	124.81	118.90
2	B	2447	G	C5-C6-N1	-9.83	106.58	111.50
1	A	754	C	N1-C2-O2	9.82	124.80	118.90
2	B	945	A	N1-C6-N6	9.82	124.49	118.60
2	B	2592	G	C8-N9-C4	-9.82	102.47	106.40
2	EB	945	A	N1-C6-N6	9.80	124.48	118.60
2	B	450	G	C4-C5-C6	9.78	124.67	118.80
2	B	2228	G	N1-C6-O6	9.77	125.76	119.90
2	B	2238	G	O5'-P-OP2	-9.71	96.96	105.70
2	EB	2573	C	C6-N1-C2	9.68	124.17	120.30
2	B	688	U	N3-C4-O4	9.65	126.16	119.40
2	EB	2580	U	N3-C4-C5	-9.61	108.83	114.60
2	EB	1671	U	N3-C4-C5	-9.61	108.84	114.60
2	B	2245	U	N3-C4-C5	-9.60	108.84	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	528	A	C4-C5-N7	9.60	115.50	110.70
2	EB	570	G	C5-C6-N1	-9.57	106.72	111.50
2	EB	2502	G	O5'-P-OP1	-9.55	97.10	105.70
2	EB	1828	G	C5-C6-O6	9.55	134.33	128.60
2	B	1332	G	O5'-P-OP2	-9.44	97.21	105.70
2	B	1828	G	N9-C4-C5	9.43	109.17	105.40
2	EB	397	G	N1-C6-O6	9.38	125.53	119.90
2	EB	865	C	C6-N1-C2	9.38	124.05	120.30
2	EB	2685	G	C5-C6-N1	-9.31	106.85	111.50
2	EB	2061	G	N1-C6-O6	9.30	125.48	119.90
2	B	194	G	C2-N3-C4	-9.30	107.25	111.90
2	B	2685	G	N1-C6-O6	9.29	125.47	119.90
1	A	117	G	C5-C6-O6	-9.27	123.04	128.60
2	B	2505	G	C8-N9-C4	-9.24	102.70	106.40
2	B	948	G	C5-C6-N1	-9.23	106.89	111.50
2	B	1790	C	O5'-P-OP1	-9.22	97.40	105.70
2	EB	2502	G	N1-C6-O6	9.20	125.42	119.90
2	B	761	A	C5-N7-C8	-9.19	99.31	103.90
2	B	2573	C	C6-N1-C2	9.18	123.97	120.30
2	EB	1780	A	C8-N9-C4	9.16	109.46	105.80
2	EB	2505	G	C5-C6-O6	9.16	134.09	128.60
2	B	1828	G	C5-C6-O6	9.13	134.08	128.60
2	EB	2447	G	C8-N9-C4	9.11	110.05	106.40
2	B	2593	U	N1-C2-O2	-9.11	116.42	122.80
2	B	391	G	C6-C5-N7	-9.11	124.94	130.40
1	DB	293	G	N1-C6-O6	9.10	125.36	119.90
2	EB	1762	A	C4-C5-N7	-9.09	106.16	110.70
2	EB	2593	U	C6-N1-C2	-9.09	115.55	121.00
2	B	1142(B)	A	N1-C6-N6	9.08	124.05	118.60
2	B	1602	U	C4-C5-C6	9.06	125.14	119.70
2	EB	1790	C	N3-C4-N4	-8.99	111.71	118.00
2	B	790	C	O5'-P-OP2	-8.98	97.62	105.70
2	EB	191	A	C8-N9-C4	-8.93	102.23	105.80
2	B	2556	C	N1-C2-O2	8.92	124.25	118.90
2	B	1790	C	C5-C4-N4	8.91	126.44	120.20
3	C	87	G	C8-N9-C4	8.91	109.96	106.40
4	LC	48	C	C6-N1-C2	8.90	123.86	120.30
2	EB	140	A	N7-C8-N9	8.89	118.25	113.80
2	B	330	A	C2-N3-C4	-8.87	106.16	110.60
2	B	2490	G	C5-C6-N1	-8.87	107.07	111.50
2	B	1614	A	O5'-P-OP1	8.86	121.33	110.70
2	EB	391	G	N1-C6-O6	8.85	125.21	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	293	G	N1-C6-O6	8.84	125.21	119.90
2	B	1814	G	C5-C6-N1	-8.84	107.08	111.50
2	B	2228	G	C5-C6-N1	-8.84	107.08	111.50
2	B	787	U	O5'-P-OP2	-8.84	97.75	105.70
2	B	1981	A	C5-N7-C8	-8.80	99.50	103.90
2	B	191	A	C8-N9-C4	-8.77	102.29	105.80
2	B	1840	G	C5-C6-N1	-8.77	107.11	111.50
2	B	1240	U	C5-C4-O4	8.75	131.15	125.90
2	EB	1960	A	C8-N9-C4	8.74	109.30	105.80
1	A	372	C	C6-N1-C2	8.73	123.79	120.30
2	EB	783	A	N1-C6-N6	-8.71	113.38	118.60
2	B	461	C	N1-C2-O2	-8.71	113.68	118.90
2	B	2502	G	C6-C5-N7	-8.70	125.18	130.40
2	EB	1624	G	N1-C6-O6	8.70	125.12	119.90
2	B	1347	G	N1-C6-O6	8.69	125.12	119.90
2	B	2544	G	C5-C6-N1	-8.69	107.15	111.50
2	EB	2238	G	O5'-P-OP2	-8.68	97.89	105.70
2	B	248	G	N1-C6-O6	8.68	125.11	119.90
2	B	2505	G	N9-C4-C5	8.67	108.87	105.40
2	B	2576	G	O5'-P-OP2	-8.67	97.89	105.70
2	B	2641	G	C8-N9-C4	8.66	109.86	106.40
2	EB	2028	U	N3-C4-C5	-8.61	109.44	114.60
2	EB	1838	C	C6-N1-C2	8.59	123.74	120.30
1	A	754	C	C2-N1-C1'	8.58	128.24	118.80
1	A	117	G	C4-C5-N7	8.56	114.23	110.80
2	EB	2249	U	N3-C4-C5	-8.55	109.47	114.60
2	B	140	A	N7-C8-N9	8.54	118.07	113.80
2	EB	1021	A	C2-N3-C4	-8.53	106.33	110.60
2	B	1602	U	C6-N1-C2	-8.52	115.89	121.00
2	B	1627	G	N1-C6-O6	8.52	125.01	119.90
37	OC	12	CYS	CA-CB-SG	8.50	129.29	114.00
2	EB	548	A	C8-N9-C4	-8.49	102.41	105.80
2	B	19	C	C6-N1-C2	8.48	123.69	120.30
2	B	2052	G	C5-C6-O6	-8.48	123.51	128.60
2	B	1992	G	N3-C4-C5	-8.48	124.36	128.60
2	B	1558	A	C2-N3-C4	-8.47	106.36	110.60
1	DB	121	C	N1-C2-O2	8.45	123.97	118.90
2	EB	1936	A	N1-C6-N6	8.45	123.67	118.60
1	DB	1503	A	C2-N3-C4	8.45	114.82	110.60
2	EB	811	U	C5-C4-O4	8.44	130.96	125.90
2	B	1142(B)	A	N3-C4-C5	8.41	132.69	126.80
2	B	2430	A	N1-C6-N6	-8.41	113.56	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2685	G	N3-C2-N2	-8.40	114.02	119.90
2	EB	1936	A	N9-C4-C5	-8.38	102.45	105.80
2	B	1187	G	N1-C6-O6	8.37	124.92	119.90
1	DB	754	C	C2-N1-C1'	8.37	128.00	118.80
2	B	1698	A	C2-N3-C4	-8.36	106.42	110.60
2	EB	2610	C	C6-N1-C2	8.36	123.64	120.30
2	B	1558	A	N1-C6-N6	8.36	123.61	118.60
1	DB	529	G	C5-C6-O6	-8.35	123.59	128.60
2	EB	1602	U	C4-C5-C6	8.34	124.70	119.70
2	B	570	G	C5-C6-N1	-8.33	107.33	111.50
1	DB	117	G	C5-C6-O6	-8.33	123.60	128.60
2	EB	1532	C	C6-N1-C2	-8.33	116.97	120.30
2	B	16	G	C5-C6-N1	-8.32	107.34	111.50
2	B	128	C	C6-N1-C2	8.31	123.62	120.30
2	B	213	A	C8-N9-C4	8.31	109.12	105.80
2	B	1441	G	C5-C6-N1	-8.29	107.35	111.50
2	B	1756	G	N1-C6-O6	8.28	124.87	119.90
2	EB	2593	U	N1-C2-O2	-8.27	117.01	122.80
1	DB	1417	G	C5-C6-N1	-8.27	107.37	111.50
2	EB	1142(B)	A	C2-N3-C4	-8.27	106.47	110.60
2	EB	450	G	C4-C5-C6	8.26	123.76	118.80
2	B	248	G	C5-C6-O6	-8.26	123.65	128.60
2	B	1845	G	N1-C6-O6	8.25	124.85	119.90
2	EB	2722	G	N1-C6-O6	8.24	124.84	119.90
2	EB	195	A	C5-N7-C8	-8.23	99.78	103.90
2	B	479	A	N1-C6-N6	-8.23	113.66	118.60
2	EB	929	G	N1-C6-O6	8.23	124.84	119.90
2	EB	2245	U	N3-C4-C5	-8.22	109.67	114.60
2	EB	570	G	C4-C5-N7	-8.21	107.52	110.80
2	B	2719	G	C5-C6-N1	-8.21	107.40	111.50
2	B	929	G	N1-C6-O6	8.20	124.82	119.90
2	EB	1624	G	C5-C6-O6	-8.19	123.69	128.60
2	B	1703	G	N1-C6-O6	8.19	124.81	119.90
2	EB	1790	C	O5'-P-OP1	-8.17	98.35	105.70
2	B	2052	G	N1-C6-O6	8.16	124.80	119.90
1	A	121	C	N1-C2-O2	8.15	123.79	118.90
2	EB	1789	A	O5'-P-OP1	-8.15	98.36	105.70
2	EB	1981	A	C5-N7-C8	-8.14	99.83	103.90
2	B	688	U	N3-C4-C5	-8.14	109.72	114.60
2	EB	140	A	C8-N9-C4	-8.13	102.55	105.80
34	HA	15	A	C8-N9-C4	8.12	109.05	105.80
2	B	2545	G	N1-C6-O6	8.12	124.77	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	1628	G	N1-C6-O6	8.12	124.77	119.90
2	B	1791	A	N1-C6-N6	-8.09	113.75	118.60
2	B	140	A	C5-N7-C8	-8.08	99.86	103.90
2	B	391	G	C5-C6-O6	-8.08	123.75	128.60
2	EB	733	G	C6-C5-N7	-8.06	125.56	130.40
2	B	16	G	N1-C6-O6	8.05	124.73	119.90
2	B	568	U	N3-C4-C5	-8.01	109.80	114.60
2	B	2241	A	N1-C2-N3	8.00	133.30	129.30
2	B	1671	U	C6-N1-C2	-8.00	116.20	121.00
2	B	1936	A	N9-C4-C5	-8.00	102.60	105.80
2	B	528	A	N3-C4-C5	7.99	132.39	126.80
2	B	948	G	N1-C6-O6	7.98	124.69	119.90
2	B	2593	U	N3-C4-O4	7.98	124.99	119.40
2	B	1271	G	O5'-P-OP2	-7.98	98.52	105.70
2	B	1190	G	N1-C6-O6	7.97	124.68	119.90
2	EB	929	G	C5-C6-N1	-7.97	107.51	111.50
2	EB	1762	A	C5-N7-C8	7.97	107.89	103.90
2	B	2838	G	N1-C6-O6	7.97	124.68	119.90
2	B	375	C	O5'-P-OP2	-7.97	98.53	105.70
2	EB	2052	G	N1-C6-O6	7.97	124.68	119.90
2	B	1628	G	N1-C6-O6	7.95	124.67	119.90
2	B	1789	A	O5'-P-OP1	-7.95	98.55	105.70
2	B	1973	G	N1-C6-O6	7.94	124.66	119.90
2	B	304	G	C5-C6-N1	-7.93	107.53	111.50
2	B	2415	G	C5-C6-N1	-7.92	107.54	111.50
1	DB	945	G	N1-C6-O6	7.92	124.65	119.90
2	EB	2580	U	C6-N1-C2	-7.92	116.25	121.00
2	B	548	A	C8-N9-C4	-7.89	102.64	105.80
2	EB	2414	G	N1-C6-O6	7.89	124.63	119.90
2	B	1023	U	O5'-P-OP1	-7.87	98.62	105.70
2	EB	1841	U	N3-C4-C5	-7.86	109.88	114.60
2	B	1441	G	N1-C6-O6	7.85	124.61	119.90
2	B	379	G	N1-C6-O6	7.85	124.61	119.90
2	B	520	G	N1-C6-O6	7.84	124.61	119.90
2	EB	1240	U	C5-C4-O4	7.84	130.61	125.90
2	B	404	C	C6-N1-C2	7.84	123.43	120.30
2	B	2304	G	N3-C4-N9	-7.82	121.31	126.00
2	EB	776	G	C5-C6-N1	-7.82	107.59	111.50
2	EB	2685	G	N3-C2-N2	-7.81	114.43	119.90
2	B	1671	U	C4-C5-C6	7.81	124.39	119.70
2	EB	2593	U	N3-C4-O4	7.81	124.86	119.40
2	EB	527	C	C2-N1-C1'	7.80	127.38	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	IA	48	C	C6-N1-C2	7.80	123.42	120.30
2	B	2580	U	N3-C4-C5	-7.79	109.93	114.60
2	B	1325	G	N3-C4-N9	7.79	130.67	126.00
2	EB	528	A	N3-C4-C5	7.78	132.24	126.80
2	B	1240	U	N3-C4-C5	-7.76	109.94	114.60
1	DB	1452	C	C5-C6-N1	7.76	124.88	121.00
2	B	974(B)	C	C6-N1-C2	7.74	123.40	120.30
37	LA	12	CYS	CA-CB-SG	7.74	127.93	114.00
2	EB	2053	G	C5-N7-C8	-7.74	100.43	104.30
3	C	87	G	N7-C8-N9	-7.73	109.23	113.10
2	B	2053	G	C4-C5-N7	7.73	113.89	110.80
2	EB	2614	A	C6-N1-C2	-7.73	113.96	118.60
2	B	1271	G	C5-C6-N1	-7.72	107.64	111.50
2	EB	1298	C	O5'-P-OP1	-7.71	98.76	105.70
2	EB	2505	G	C5-C6-N1	-7.71	107.65	111.50
2	B	2505	G	C5-C6-O6	7.71	133.22	128.60
2	EB	2447	G	C5-C6-N1	-7.71	107.65	111.50
2	B	2502	G	C5-C6-N1	-7.70	107.65	111.50
1	A	1503	A	C2-N3-C4	7.69	114.45	110.60
2	B	1936	A	C4-C5-N7	7.69	114.55	110.70
2	EB	806	C	O5'-P-OP1	-7.69	98.78	105.70
2	EB	330	A	C2-N3-C4	-7.68	106.76	110.60
2	B	1240	U	C6-N1-C2	-7.68	116.39	121.00
2	EB	1756	G	N1-C6-O6	7.68	124.51	119.90
1	DB	117	G	C6-C5-N7	-7.67	125.80	130.40
2	EB	528	A	C5-N7-C8	-7.67	100.06	103.90
2	EB	2614	A	N1-C2-N3	7.66	133.13	129.30
2	B	1347	G	C5-C6-N1	-7.66	107.67	111.50
1	A	529	G	C5-C6-O6	-7.66	124.00	128.60
2	B	2449	U	C5-C4-O4	-7.66	121.31	125.90
2	EB	2276	G	N1-C6-O6	7.65	124.49	119.90
1	DB	326	G	C5-C6-N1	-7.65	107.68	111.50
2	B	2464	C	C6-N1-C2	7.64	123.36	120.30
2	EB	1635	G	OP2-P-O3'	7.64	122.00	105.20
2	B	2055	C	OP2-P-O3'	7.63	121.99	105.20
4	IA	13	C	C6-N1-C2	-7.63	117.25	120.30
2	B	409	C	O5'-P-OP1	7.61	119.83	110.70
2	B	733	G	C6-C5-N7	-7.60	125.84	130.40
2	B	2241	A	C2-N3-C4	-7.60	106.80	110.60
1	DB	117	G	C4-C5-N7	7.60	113.84	110.80
2	B	2593	U	C4-C5-C6	7.60	124.26	119.70
2	B	2022	U	N1-C2-N3	-7.59	110.34	114.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	804	A	C8-N9-C4	7.59	108.83	105.80
2	B	1244	G	C5-C6-N1	-7.59	107.71	111.50
2	B	945	A	C4-C5-N7	7.58	114.49	110.70
2	B	2846	G	C5-C6-N1	-7.58	107.71	111.50
2	B	1307	A	C8-N9-C4	7.57	108.83	105.80
2	EB	2447	G	N9-C4-C5	-7.57	102.37	105.40
2	B	2036	C	N1-C2-O2	-7.57	114.36	118.90
1	A	842	C	C6-N1-C2	-7.57	117.27	120.30
2	B	2773	C	C6-N1-C2	7.56	123.32	120.30
2	EB	758	C	C6-N1-C2	7.56	123.32	120.30
2	B	1602	U	N3-C4-O4	7.55	124.69	119.40
2	B	527	C	C2-N1-C1'	7.55	127.10	118.80
2	EB	577	G	N1-C6-O6	7.54	124.42	119.90
2	EB	2698	U	C6-N1-C2	-7.54	116.48	121.00
2	B	1869	G	N1-C6-O6	7.52	124.41	119.90
1	A	23	C	C6-N1-C2	-7.52	117.29	120.30
2	EB	577	G	C6-C5-N7	-7.50	125.90	130.40
2	EB	397	G	C5-C6-O6	-7.50	124.10	128.60
2	B	1142(B)	A	C5-N7-C8	-7.49	100.16	103.90
2	B	1635	G	OP2-P-O3'	7.46	121.61	105.20
2	B	1348	G	N1-C6-O6	7.46	124.37	119.90
2	EB	2059	A	O5'-P-OP2	-7.45	99.00	105.70
2	EB	2419	U	N3-C4-C5	-7.43	110.14	114.60
2	B	2494	G	N1-C6-O6	7.43	124.36	119.90
2	B	1024	G	C5-C6-O6	-7.42	124.15	128.60
2	B	1236	G	C5-C6-N1	-7.42	107.79	111.50
2	B	945	A	C2-N3-C4	-7.42	106.89	110.60
2	B	1355	G	N1-C6-O6	7.42	124.35	119.90
2	EB	1614	A	O5'-P-OP2	-7.40	99.04	105.70
1	A	112	G	N1-C6-O6	7.40	124.34	119.90
2	B	2502	G	C5-C6-O6	-7.38	124.17	128.60
2	B	1780	A	C8-N9-C4	7.38	108.75	105.80
2	B	1021	A	N1-C2-N3	7.37	132.99	129.30
2	EB	1602	U	C6-N1-C2	-7.36	116.58	121.00
2	EB	1788	C	OP1-P-O3'	7.36	121.39	105.20
2	EB	391	G	C6-C5-N7	-7.35	125.99	130.40
2	B	195	A	C5-N7-C8	-7.34	100.23	103.90
2	B	1762	A	C8-N9-C4	-7.34	102.86	105.80
2	B	1193	G	C5-C6-N1	-7.33	107.83	111.50
2	EB	512	G	O4'-C1'-N9	7.33	114.07	108.20
1	A	117	G	N9-C4-C5	-7.33	102.47	105.40
2	B	1271	G	N1-C6-O6	7.33	124.30	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1762	A	C6-N1-C2	7.32	122.99	118.60
2	B	2698	U	C6-N1-C2	-7.31	116.61	121.00
2	EB	2088	G	N1-C6-O6	7.31	124.29	119.90
2	EB	527	C	C6-N1-C1'	-7.31	112.03	120.80
2	EB	1756	G	C5-C6-N1	-7.30	107.85	111.50
2	EB	2052	G	C5-C6-O6	-7.30	124.22	128.60
2	EB	16	G	N1-C6-O6	7.29	124.28	119.90
2	B	512	G	O4'-C1'-N9	7.28	114.03	108.20
2	EB	305	U	N3-C4-C5	-7.28	110.23	114.60
2	B	2056	G	C4-C5-N7	7.28	113.71	110.80
2	EB	2641	G	C8-N9-C4	7.28	109.31	106.40
2	B	2491	U	C5-C4-O4	-7.27	121.54	125.90
2	B	921	G	C5-C6-N1	-7.26	107.87	111.50
2	B	1319	G	N1-C6-O6	7.25	124.25	119.90
2	B	2698	U	N3-C4-C5	-7.25	110.25	114.60
1	DB	372	C	C6-N1-C2	7.24	123.20	120.30
2	EB	804	A	C8-N9-C4	7.23	108.69	105.80
2	B	1664	A	C8-N9-C4	-7.23	102.91	105.80
2	B	1602	U	N1-C2-N3	7.22	119.23	114.90
2	B	1532	C	C6-N1-C2	-7.22	117.41	120.30
1	A	509	A	C8-N9-C4	-7.21	102.91	105.80
2	EB	128	C	C6-N1-C2	7.21	123.19	120.30
2	EB	1698	A	C2-N3-C4	-7.21	107.00	110.60
2	B	1024	G	C4-C5-N7	7.21	113.68	110.80
2	EB	939	G	N1-C6-O6	7.21	124.22	119.90
2	EB	1816	G	N1-C6-O6	7.20	124.22	119.90
2	B	123	G	C8-N9-C4	7.20	109.28	106.40
2	EB	1327	C	N3-C4-C5	-7.19	119.02	121.90
1	DB	351	G	OP2-P-O3'	7.18	121.00	105.20
2	B	1381	G	C5-C6-N1	-7.18	107.91	111.50
2	EB	1840	G	N1-C6-O6	7.17	124.20	119.90
2	EB	1671	U	C5-C6-N1	7.17	126.29	122.70
2	B	1964	G	C8-N9-C4	7.17	109.27	106.40
2	EB	1646	C	C6-N1-C2	7.17	123.17	120.30
2	EB	1703	G	N1-C6-O6	7.15	124.19	119.90
2	EB	2010	G	C8-N9-C4	-7.14	103.54	106.40
2	B	383	U	N3-C2-O2	-7.14	117.20	122.20
2	EB	733	G	C8-N9-C4	-7.14	103.54	106.40
2	EB	1603	A	O5'-P-OP2	-7.13	99.28	105.70
2	B	1366	A	N1-C2-N3	7.13	132.86	129.30
2	EB	2489	G	C5-C6-O6	-7.12	124.33	128.60
2	EB	2505	G	C4-C5-N7	-7.12	107.95	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	450	G	N1-C6-O6	7.11	124.17	119.90
2	B	2059	A	N1-C6-N6	7.11	122.86	118.60
2	EB	569	U	N1-C2-O2	7.11	127.77	122.80
2	B	2271	G	C4-C5-C6	7.10	123.06	118.80
2	B	2061	G	C5-C6-N1	-7.10	107.95	111.50
2	B	2449	U	N3-C4-O4	7.10	124.37	119.40
2	B	2489	G	N1-C6-O6	7.10	124.16	119.90
2	B	527	C	C6-N1-C1'	-7.08	112.30	120.80
2	B	777	A	C5-N7-C8	-7.08	100.36	103.90
2	B	2232	U	N3-C4-C5	-7.08	110.35	114.60
2	EB	1271	G	O5'-P-OP2	-7.08	99.33	105.70
2	B	1154	G	N1-C6-O6	7.07	124.14	119.90
2	B	70	G	N1-C6-O6	7.07	124.14	119.90
2	B	2447	G	C6-C5-N7	-7.07	126.16	130.40
1	DB	1232	U	C5-C6-N1	7.07	126.23	122.70
2	B	2249	U	C2-N3-C4	7.06	131.24	127.00
2	EB	2061	G	O5'-P-OP1	-7.06	99.34	105.70
2	B	869	G	C5-C6-N1	-7.06	107.97	111.50
1	DB	282	A	N1-C6-N6	7.06	122.83	118.60
1	DB	608	A	C8-N9-C4	7.05	108.62	105.80
2	EB	1828	G	C5-C6-N1	-7.05	107.97	111.50
2	B	2612	C	OP1-P-OP2	-7.05	109.03	119.60
2	EB	2509	G	N1-C6-O6	7.05	124.13	119.90
1	DB	842	C	C6-N1-C2	-7.05	117.48	120.30
2	EB	528	A	C6-N1-C2	7.05	122.83	118.60
2	B	775	G	N1-C6-O6	-7.04	115.67	119.90
2	EB	1142(B)	A	N3-C4-C5	7.04	131.73	126.80
2	B	1210	A	C8-N9-C4	-7.04	102.98	105.80
2	EB	2544	G	C6-C5-N7	-7.03	126.18	130.40
2	B	2330	G	N1-C6-O6	7.02	124.11	119.90
1	A	562	C	C6-N1-C2	7.02	123.11	120.30
2	EB	2489	G	N1-C6-O6	7.01	124.11	119.90
2	EB	1190	G	N1-C6-O6	7.00	124.10	119.90
2	B	191	A	N9-C4-C5	6.99	108.60	105.80
2	EB	2053	G	N9-C4-C5	-6.99	102.60	105.40
2	EB	2218	G	N1-C6-O6	6.98	124.09	119.90
2	EB	2612	C	OP1-P-OP2	-6.98	109.13	119.60
2	EB	68	G	C5-C6-N1	-6.98	108.01	111.50
1	A	1495	U	N3-C4-C5	-6.97	110.42	114.60
1	DB	818	G	N3-C4-N9	-6.97	121.81	126.00
2	EB	2022	U	N1-C2-N3	-6.97	110.72	114.90
1	A	117	G	C6-C5-N7	-6.96	126.22	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	450	G	C6-C5-N7	-6.96	126.22	130.40
2	EB	1762	A	C5-C6-N6	6.96	129.27	123.70
2	B	1838	C	C6-N1-C2	6.96	123.08	120.30
1	DB	576	G	N1-C6-O6	6.96	124.08	119.90
2	B	2593	U	N1-C2-N3	6.96	119.07	114.90
2	EB	2358	G	N1-C6-O6	-6.95	115.73	119.90
2	EB	2838	G	N1-C6-O6	6.95	124.07	119.90
2	B	120	U	O5'-P-OP2	6.95	119.04	110.70
2	B	859	G	C8-N9-C4	6.95	109.18	106.40
1	DB	509	A	C8-N9-C4	-6.95	103.02	105.80
2	EB	568	U	N3-C4-C5	-6.95	110.43	114.60
2	EB	265	A	N1-C6-N6	6.95	122.77	118.60
2	B	520	G	C5-C6-O6	-6.94	124.43	128.60
2	B	576	U	O5'-P-OP1	6.94	119.03	110.70
2	EB	2791	C	C6-N1-C2	-6.94	117.52	120.30
2	EB	195	A	C4-C5-C6	-6.94	113.53	117.00
2	B	1823	G	N1-C6-O6	6.92	124.05	119.90
2	B	2610	C	N1-C2-N3	-6.92	114.36	119.20
2	B	865	C	N3-C4-C5	6.92	124.67	121.90
2	B	869	G	N1-C6-O6	6.91	124.05	119.90
2	B	2053	G	C6-C5-N7	-6.91	126.25	130.40
2	EB	1395	A	O4'-C1'-N9	6.91	113.73	108.20
2	B	1366	A	C8-N9-C4	-6.90	103.04	105.80
2	B	939	G	N1-C6-O6	6.90	124.04	119.90
2	B	2248	C	O5'-P-OP1	-6.90	99.49	105.70
2	B	528	A	N1-C6-N6	6.90	122.74	118.60
2	B	1255	U	N1-C2-O2	6.89	127.63	122.80
1	DB	899	C	C5-C6-N1	6.89	124.45	121.00
2	EB	571	A	O5'-P-OP2	-6.89	99.50	105.70
2	B	2592	G	N7-C8-N9	6.89	116.55	113.10
2	EB	711	G	N1-C6-O6	6.89	124.03	119.90
2	B	2419	U	N3-C4-C5	-6.89	110.47	114.60
2	B	775	G	N7-C8-N9	-6.89	109.66	113.10
2	B	1814	G	C4-C5-C6	6.89	122.93	118.80
2	B	2439	A	C2-N3-C4	-6.88	107.16	110.60
2	B	570	G	C5-C6-O6	6.88	132.72	128.60
2	B	1624	G	N1-C6-O6	6.87	124.02	119.90
2	EB	1660	C	C6-N1-C2	-6.87	117.55	120.30
2	EB	1992	G	P-O3'-C3'	6.86	127.94	119.70
2	B	2249	U	N3-C4-O4	6.86	124.20	119.40
2	EB	323	G	N1-C6-O6	6.86	124.02	119.90
2	B	575	A	C6-N1-C2	-6.86	114.48	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2597	G	O5'-P-OP1	6.86	118.93	110.70
2	B	220	G	C5-C6-N1	-6.85	108.07	111.50
2	EB	764	A	N1-C6-N6	6.85	122.71	118.60
2	B	2265	U	N3-C2-O2	-6.85	117.41	122.20
2	B	1215	G	N1-C6-O6	6.84	124.01	119.90
3	C	108	C	C6-N1-C2	6.84	123.04	120.30
2	B	770	G	C5-C6-O6	-6.84	124.49	128.60
2	B	948	G	O5'-P-OP1	6.84	118.91	110.70
1	DB	1467	G	O5'-P-OP2	-6.84	99.55	105.70
2	EB	2072	G	N9-C4-C5	-6.83	102.67	105.40
2	B	1125	G	N1-C6-O6	6.83	124.00	119.90
2	B	832	G	N1-C6-O6	6.83	124.00	119.90
2	EB	596	G	C5-C6-N1	-6.83	108.09	111.50
2	B	450	G	C4-N9-C1'	6.83	135.37	126.50
2	B	790	C	N3-C4-C5	-6.82	119.17	121.90
2	EB	2508	G	C8-N9-C4	6.82	109.13	106.40
2	B	1298	C	O5'-P-OP1	-6.82	99.56	105.70
2	EB	2436	G	N3-C2-N2	-6.82	115.13	119.90
2	B	801	G	N1-C2-N3	6.82	127.99	123.90
2	EB	827	U	O5'-P-OP1	6.82	118.88	110.70
1	DB	1522	U	C6-N1-C2	-6.82	116.91	121.00
2	EB	2505	G	N9-C4-C5	6.82	108.13	105.40
2	B	527	C	N1-C2-O2	6.81	122.99	118.90
2	B	593	G	C5-C6-N1	-6.81	108.09	111.50
2	EB	1769	G	N1-C6-O6	6.81	123.99	119.90
1	A	529	G	C6-C5-N7	-6.81	126.31	130.40
2	B	2061	G	O5'-P-OP1	-6.81	99.57	105.70
2	B	577	G	N1-C6-O6	6.81	123.98	119.90
2	EB	259	G	N1-C6-O6	6.80	123.98	119.90
2	B	2053	G	N9-C4-C5	-6.80	102.68	105.40
2	B	2430	A	N9-C4-C5	6.80	108.52	105.80
2	EB	1762	A	C5-C6-N1	-6.80	114.30	117.70
2	B	2544	G	C6-C5-N7	-6.80	126.32	130.40
4	IA	1	C	N1-C2-O2	6.80	122.98	118.90
2	B	1297	C	C6-N1-C2	-6.79	117.58	120.30
2	EB	2304	G	N3-C4-N9	-6.79	121.93	126.00
2	B	827	U	O5'-P-OP1	6.78	118.84	110.70
2	EB	526	A	O5'-P-OP2	-6.78	99.59	105.70
2	EB	528	A	C4-C5-N7	6.78	114.09	110.70
2	EB	2064	C	N1-C2-O2	-6.78	114.83	118.90
1	A	1522	U	N3-C4-C5	-6.78	110.53	114.60
2	EB	787	U	O5'-P-OP2	-6.77	99.61	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1240	U	N1-C2-N3	6.77	118.96	114.90
1	DB	1495	U	N3-C4-C5	-6.77	110.54	114.60
2	EB	795	C	C6-N1-C2	-6.77	117.59	120.30
1	DB	1504	G	O5'-P-OP1	-6.76	99.61	105.70
2	EB	2053	G	N3-C2-N2	-6.76	115.17	119.90
2	B	35	G	N1-C6-O6	6.76	123.96	119.90
2	B	2028	U	C4-C5-C6	6.76	123.76	119.70
2	EB	494	G	N1-C6-O6	6.76	123.95	119.90
2	B	559	G	N1-C6-O6	6.75	123.95	119.90
2	B	2509	G	N1-C6-O6	6.75	123.95	119.90
1	DB	144	G	N1-C6-O6	6.75	123.95	119.90
2	B	2717	G	N1-C6-O6	6.75	123.95	119.90
2	EB	2580	U	C5-C4-O4	6.75	129.95	125.90
2	EB	2714	G	O5'-P-OP2	6.74	118.79	110.70
2	B	1628	G	C5-C6-N1	-6.74	108.13	111.50
2	EB	569	U	C2-N1-C1'	6.73	125.78	117.70
2	B	761	A	C4-C5-N7	6.73	114.06	110.70
2	B	2545	G	C5-C6-N1	-6.73	108.14	111.50
2	B	1244	G	N1-C6-O6	6.73	123.94	119.90
2	B	2011	U	N1-C2-O2	-6.72	118.09	122.80
1	A	1452	C	C5-C6-N1	6.72	124.36	121.00
1	DB	1099	G	C5-C6-O6	6.72	132.63	128.60
1	A	1481	U	N3-C4-C5	-6.72	110.57	114.60
2	B	2232	U	C5-C4-O4	6.72	129.93	125.90
2	B	1869	G	N3-C4-C5	6.71	131.96	128.60
2	B	1142(B)	A	C4-C5-N7	6.71	114.06	110.70
2	EB	2037	G	N1-C6-O6	6.70	123.92	119.90
2	EB	1762	A	N9-C4-C5	6.70	108.48	105.80
2	EB	2032	G	N1-C6-O6	6.70	123.92	119.90
2	B	2072	G	C4-C5-N7	6.70	113.48	110.80
2	B	1310	G	N1-C6-O6	6.70	123.92	119.90
2	EB	409	C	O5'-P-OP1	6.69	118.73	110.70
2	EB	1142(B)	A	C5-N7-C8	-6.69	100.56	103.90
2	EB	1823	G	N1-C6-O6	6.68	123.91	119.90
2	B	2318	G	O4'-C1'-N9	6.68	113.54	108.20
2	B	945	A	C5-C6-N6	-6.67	118.36	123.70
2	B	472	A	N1-C2-N3	6.67	132.64	129.30
2	EB	140	A	C5-N7-C8	-6.67	100.56	103.90
2	B	2037	G	N1-C6-O6	6.67	123.90	119.90
2	EB	305	U	C5-C4-O4	6.66	129.90	125.90
2	B	566	U	N3-C4-C5	6.66	118.59	114.60
2	EB	695	G	C5-C6-N1	-6.66	108.17	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	82	G	C5-C6-N1	-6.66	108.17	111.50
2	EB	776	G	C5-C6-O6	6.65	132.59	128.60
2	B	733	G	C8-N9-C4	-6.65	103.74	106.40
2	EB	1310	G	N1-C6-O6	6.65	123.89	119.90
2	EB	2271	G	C4-C5-C6	6.65	122.79	118.80
2	B	2053	G	N3-C2-N2	-6.65	115.25	119.90
2	EB	534	U	N3-C4-C5	-6.65	110.61	114.60
2	EB	1840	G	C5-C6-N1	-6.65	108.18	111.50
2	B	820	A	N1-C6-N6	-6.65	114.61	118.60
2	B	1327	C	C6-N1-C2	-6.64	117.64	120.30
2	B	2820	A	C8-N9-C4	-6.64	103.14	105.80
2	B	2614	A	C6-N1-C2	-6.64	114.62	118.60
2	EB	1240	U	N3-C2-O2	-6.64	117.55	122.20
2	B	865	C	N1-C2-N3	-6.63	114.56	119.20
2	B	40	C	C6-N1-C2	6.63	122.95	120.30
2	EB	2429	G	OP2-P-O3'	6.63	119.78	105.20
2	B	461	C	C4-C5-C6	6.62	120.71	117.40
2	B	304	G	C4-C5-N7	-6.62	108.15	110.80
2	B	751	A	N1-C6-N6	-6.62	114.63	118.60
2	B	1762	A	C5-C6-N1	-6.62	114.39	117.70
2	EB	2502	G	C6-C5-N7	-6.62	126.43	130.40
2	B	2689	U	N3-C2-O2	-6.61	117.57	122.20
2	B	751	A	N9-C4-C5	6.61	108.44	105.80
2	B	122	G	N1-C6-O6	6.61	123.87	119.90
2	B	1024	G	C5-N7-C8	-6.61	101.00	104.30
2	B	2719	G	N1-C6-O6	6.61	123.87	119.90
2	B	58	G	C5-C6-N1	-6.61	108.20	111.50
2	B	1566	A	C2-N3-C4	-6.60	107.30	110.60
2	EB	197	A	C8-N9-C4	-6.60	103.16	105.80
2	EB	2544	G	C5-C6-O6	-6.60	124.64	128.60
1	DB	754	C	C6-N1-C1'	-6.59	112.89	120.80
2	EB	1698	A	C5-N7-C8	-6.59	100.60	103.90
2	B	592	G	N1-C6-O6	6.59	123.86	119.90
2	B	935	C	C6-N1-C2	6.59	122.94	120.30
2	B	2508	G	N1-C6-O6	6.59	123.85	119.90
1	DB	1303	C	C6-N1-C2	-6.59	117.66	120.30
2	EB	267	C	C6-N1-C2	6.59	122.94	120.30
1	A	1303	C	C6-N1-C2	-6.58	117.67	120.30
2	B	451	C	C6-N1-C2	6.58	122.93	120.30
2	EB	391	G	C8-N9-C1'	-6.58	118.44	127.00
2	EB	528	A	C2-N3-C4	-6.58	107.31	110.60
2	B	1992	G	P-O3'-C3'	6.58	127.59	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2782	G	N1-C6-O6	6.58	123.84	119.90
1	DB	1522	U	N3-C4-C5	-6.58	110.66	114.60
2	EB	2575	C	O5'-P-OP1	-6.58	99.78	105.70
2	EB	531	C	C6-N1-C2	6.57	122.93	120.30
2	B	248	G	C4-C5-N7	6.57	113.43	110.80
2	B	1779	U	C2-N1-C1'	6.56	125.57	117.70
2	B	35	G	C5-C6-O6	-6.55	124.67	128.60
2	B	1936	A	C5-C6-N6	-6.55	118.46	123.70
2	EB	1215	G	N1-C6-O6	6.55	123.83	119.90
1	DB	240	C	C6-N1-C2	-6.55	117.68	120.30
1	A	351	G	OP2-P-O3'	6.55	119.60	105.20
2	B	929	G	C5-C6-N1	-6.55	108.23	111.50
2	B	2641	G	N7-C8-N9	-6.55	109.83	113.10
2	B	2447	G	C8-N9-C4	6.54	109.02	106.40
2	B	2091	U	N3-C4-C5	-6.54	110.67	114.60
1	A	240	C	C6-N1-C2	-6.54	117.68	120.30
2	EB	1240	U	C6-N1-C2	-6.54	117.08	121.00
2	B	569	U	N1-C2-O2	6.54	127.38	122.80
2	B	2020	A	C6-N1-C2	-6.54	114.68	118.60
2	EB	747	U	C6-N1-C2	6.53	124.92	121.00
1	A	529	G	C4-C5-N7	6.53	113.41	110.80
2	EB	2570	G	N1-C6-O6	6.53	123.82	119.90
2	EB	943	U	O5'-P-OP1	-6.53	99.83	105.70
2	EB	2689	U	N3-C2-O2	-6.52	117.63	122.20
2	B	446	G	C8-N9-C4	6.52	109.01	106.40
2	EB	2614	A	OP1-P-O3'	6.52	119.54	105.20
2	B	1365	A	N1-C6-N6	6.52	122.51	118.60
2	B	2532	G	N1-C6-O6	6.52	123.81	119.90
2	EB	248	G	C5-C6-O6	-6.52	124.69	128.60
2	EB	783	A	N9-C4-C5	6.51	108.41	105.80
2	B	770	G	N1-C6-O6	6.51	123.81	119.90
2	B	2593	U	C2-N3-C4	6.51	130.91	127.00
2	B	1992	G	N1-C6-O6	-6.51	116.00	119.90
1	DB	568	G	C8-N9-C4	-6.50	103.80	106.40
1	DB	793	U	N1-C2-O2	-6.50	118.25	122.80
2	B	1841	U	N3-C4-C5	-6.50	110.70	114.60
2	B	1699	G	C5-C6-O6	6.49	132.50	128.60
2	B	1560	G	N1-C6-O6	6.49	123.80	119.90
2	EB	2287	A	C2-N3-C4	-6.49	107.36	110.60
2	EB	191	A	N9-C4-C5	6.49	108.39	105.80
2	EB	2271	G	N1-C6-O6	6.49	123.79	119.90
2	B	2341	G	C5-C6-N1	-6.48	108.26	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	270(B)	A	C8-N9-C4	-6.48	103.21	105.80
2	EB	1699	G	C8-N9-C4	-6.48	103.81	106.40
2	B	305	U	N3-C4-C5	-6.48	110.72	114.60
2	B	2458	G	C6-C5-N7	-6.47	126.52	130.40
2	EB	1271	G	N1-C6-O6	6.47	123.78	119.90
2	EB	1780	A	N9-C4-C5	-6.47	103.21	105.80
2	EB	2593	U	C4-C5-C6	6.47	123.58	119.70
2	EB	831	G	C5-C6-N1	-6.47	108.27	111.50
1	DB	326	G	C4-C5-N7	-6.46	108.22	110.80
2	EB	304	G	C4-C5-N7	-6.45	108.22	110.80
2	EB	701	G	N1-C6-O6	6.44	123.77	119.90
2	EB	832	G	N1-C6-O6	6.44	123.76	119.90
2	EB	1231	G	C5-C6-N1	-6.44	108.28	111.50
1	A	1054	C	N3-C4-C5	-6.44	119.33	121.90
2	B	203	C	O5'-P-OP2	6.44	118.42	110.70
2	B	1698	A	N7-C8-N9	6.43	117.02	113.80
2	B	1137	G	N1-C6-O6	6.43	123.76	119.90
2	EB	2232	U	N3-C4-C5	-6.43	110.74	114.60
2	B	375	C	O5'-P-OP1	6.43	118.42	110.70
1	DB	1432	G	N1-C6-O6	6.43	123.76	119.90
2	EB	2415	G	C5-C6-N1	-6.42	108.29	111.50
1	DB	529	G	C6-C5-N7	-6.42	126.55	130.40
2	EB	122	G	N1-C6-O6	6.42	123.75	119.90
2	B	713	G	C5-C6-N1	-6.42	108.29	111.50
2	EB	2698	U	N3-C4-C5	-6.42	110.75	114.60
2	B	391	G	C4-N9-C1'	6.41	134.84	126.50
2	B	1703	G	C5-C6-N1	-6.41	108.29	111.50
1	DB	541	G	N1-C6-O6	6.41	123.75	119.90
2	B	699	A	C5-C6-N6	-6.41	118.57	123.70
2	B	2321	G	C8-N9-C4	-6.41	103.84	106.40
2	EB	123	G	N1-C6-O6	6.41	123.75	119.90
1	A	781	A	C8-N9-C4	6.41	108.36	105.80
2	B	1427	A	C8-N9-C4	6.41	108.36	105.80
2	B	1558	A	N3-C4-C5	6.41	131.28	126.80
2	EB	1633	G	C5-C6-N1	-6.41	108.30	111.50
2	EB	1780	A	C2-N3-C4	-6.40	107.40	110.60
2	EB	1936	A	C4-C5-N7	6.40	113.90	110.70
2	B	2570	G	N1-C6-O6	6.39	123.73	119.90
1	DB	242	C	C6-N1-C2	6.39	122.86	120.30
2	EB	504	U	C5-C6-N1	6.39	125.89	122.70
1	DB	789	U	C6-N1-C2	-6.39	117.17	121.00
1	DB	1069	C	C6-N1-C2	-6.39	117.75	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	DB	562	C	C6-N1-C2	6.38	122.85	120.30
2	EB	1190	G	C5-C6-O6	-6.38	124.77	128.60
2	B	2447	G	N9-C4-C5	-6.38	102.85	105.40
2	EB	527	C	N1-C2-O2	6.38	122.73	118.90
2	EB	1783	A	C2-N3-C4	-6.38	107.41	110.60
2	B	1382	G	C5-C6-N1	-6.37	108.31	111.50
2	B	2543	G	N1-C6-O6	-6.37	116.08	119.90
2	B	528	A	N7-C8-N9	6.37	116.99	113.80
1	DB	870	U	C6-N1-C2	6.37	124.82	121.00
2	EB	570	G	C4-C5-C6	6.37	122.62	118.80
2	B	1216	G	N1-C6-O6	6.37	123.72	119.90
2	B	569	U	C2-N1-C1'	6.37	125.34	117.70
2	EB	379	G	C5-C6-N1	-6.37	108.32	111.50
2	B	2574	G	O5'-P-OP2	-6.37	99.97	105.70
2	EB	1187	G	C6-C5-N7	-6.37	126.58	130.40
4	LC	1	C	N1-C2-O2	6.37	122.72	118.90
2	EB	1326	U	OP2-P-O3'	6.36	119.20	105.20
2	EB	2709	G	C5-C6-N1	-6.36	108.32	111.50
2	B	178	G	C5-C6-N1	-6.36	108.32	111.50
1	DB	1435	G	N1-C6-O6	6.36	123.72	119.90
2	EB	2061	G	C5-C6-N1	-6.36	108.32	111.50
2	B	337	C	C5-C6-N1	-6.36	117.82	121.00
2	B	861	A	OP2-P-O3'	6.36	119.19	105.20
2	B	1558	A	N9-C4-C5	-6.36	103.26	105.80
2	B	124	G	N1-C6-O6	6.36	123.71	119.90
2	B	783	A	C8-N9-C4	-6.35	103.26	105.80
2	B	1331	A	C2-N3-C4	-6.35	107.42	110.60
1	A	773	G	N1-C6-O6	6.35	123.71	119.90
2	B	115	C	C5-C6-N1	-6.35	117.83	121.00
2	EB	1138	G	N3-C4-C5	-6.35	125.43	128.60
2	B	194	G	N1-C2-N3	6.35	127.71	123.90
2	B	688	U	C5-C6-N1	6.35	125.87	122.70
2	B	2429	G	OP2-P-O3'	6.34	119.16	105.20
2	EB	2861	G	N1-C6-O6	6.34	123.71	119.90
2	EB	576	U	O5'-P-OP2	-6.34	99.99	105.70
2	EB	945	A	C4-C5-N7	6.34	113.87	110.70
2	B	2698	U	N1-C2-N3	6.34	118.70	114.90
2	B	1259	G	C5-C6-O6	-6.34	124.80	128.60
2	EB	783	A	C8-N9-C4	-6.34	103.27	105.80
2	EB	1790	C	C5-C4-N4	6.34	124.64	120.20
2	EB	2026	C	C6-N1-C2	6.33	122.83	120.30
2	B	583	G	C8-N9-C4	-6.33	103.87	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1828	G	N1-C6-O6	-6.33	116.10	119.90
2	EB	197	A	O5'-P-OP1	6.33	118.29	110.70
2	EB	2714	G	O5'-P-OP1	-6.33	100.00	105.70
1	A	1503	A	N1-C6-N6	-6.32	114.81	118.60
2	B	186	G	N1-C6-O6	6.32	123.69	119.90
2	B	1377	G	N3-C4-C5	-6.32	125.44	128.60
2	B	1936	A	O5'-P-OP2	-6.32	100.01	105.70
2	EB	2570	G	N3-C2-N2	-6.32	115.47	119.90
2	EB	1965	C	C6-N1-C2	6.32	122.83	120.30
2	EB	2556	C	N1-C2-O2	6.32	122.69	118.90
2	B	663	G	C5-C6-N1	-6.31	108.34	111.50
2	EB	1898	U	N3-C4-C5	-6.31	110.81	114.60
2	B	687	C	N3-C4-C5	-6.31	119.38	121.90
2	EB	1828	G	N3-C4-N9	-6.31	122.22	126.00
1	DB	117	G	N9-C4-C5	-6.30	102.88	105.40
2	EB	2030	A	C8-N9-C4	6.29	108.32	105.80
2	B	526	A	O5'-P-OP2	-6.29	100.04	105.70
2	B	2452	C	N3-C4-N4	6.29	122.40	118.00
2	EB	769	G	C5-C6-O6	-6.29	124.83	128.60
2	B	1825	A	C8-N9-C4	-6.29	103.28	105.80
2	B	191	A	N1-C2-N3	6.29	132.44	129.30
2	EB	2685	G	C4-C5-N7	-6.29	108.28	110.80
2	B	839	U	C5-C4-O4	6.29	129.67	125.90
2	EB	2055	C	OP2-P-O3'	6.29	119.03	105.20
2	EB	1348	G	N1-C6-O6	6.29	123.67	119.90
1	A	1485	U	C5-C6-N1	-6.28	119.56	122.70
2	B	648	G	C5-C6-N1	-6.28	108.36	111.50
2	B	2250	G	O5'-P-OP2	-6.28	100.05	105.70
2	EB	197	A	OP2-P-O3'	6.28	119.02	105.20
2	EB	948	G	C5-C6-N1	-6.28	108.36	111.50
2	B	138	G	N1-C6-O6	6.28	123.67	119.90
2	B	1325	G	N1-C2-N2	-6.28	110.55	116.20
2	B	2838	G	C6-C5-N7	-6.28	126.63	130.40
1	DB	1099	G	N1-C6-O6	-6.27	116.14	119.90
2	EB	663	G	C5-C6-N1	-6.27	108.36	111.50
2	EB	919	G	N1-C6-O6	6.27	123.66	119.90
2	B	249	C	C6-N1-C2	6.27	122.81	120.30
2	EB	1620	G	N1-C6-O6	6.26	123.66	119.90
1	A	754	C	C6-N1-C1'	-6.26	113.28	120.80
2	B	1323	U	N3-C4-O4	6.26	123.78	119.40
2	B	1325	G	N3-C4-C5	-6.26	125.47	128.60
2	B	1366	A	C4-C5-C6	6.26	120.13	117.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2331	G	C5-C6-N1	-6.26	108.37	111.50
2	EB	1366	A	N1-C2-N3	6.26	132.43	129.30
2	B	1828	G	N7-C8-N9	6.26	116.23	113.10
3	C	52	A	N1-C6-N6	6.26	122.36	118.60
4	IA	29	G	N1-C6-O6	6.26	123.66	119.90
2	EB	1356	G	C5-C6-N1	-6.26	108.37	111.50
1	DB	372	C	N3-C4-C5	6.26	124.40	121.90
2	B	510	C	O5'-P-OP2	-6.26	100.07	105.70
2	B	2039	C	N3-C4-C5	-6.26	119.40	121.90
2	EB	1024	G	C4-C5-N7	6.26	113.30	110.80
2	B	761	A	N3-C4-C5	6.25	131.18	126.80
2	B	1193	G	N1-C6-O6	6.25	123.65	119.90
2	B	1898	U	C5-C4-O4	6.25	129.65	125.90
2	B	1779	U	C5-C4-O4	-6.25	122.15	125.90
1	DB	376	G	N1-C6-O6	6.25	123.65	119.90
4	IA	75	C	OP2-P-O3'	6.25	118.94	105.20
1	DB	650	G	C5-C6-N1	-6.25	108.38	111.50
2	B	2580	U	C5-C4-O4	6.24	129.65	125.90
2	B	326	G	C5-C6-N1	-6.24	108.38	111.50
2	B	1024	G	N7-C8-N9	6.24	116.22	113.10
2	B	1333	C	N3-C4-C5	6.24	124.39	121.90
2	EB	570	G	C5-C6-O6	6.24	132.34	128.60
2	B	2546	U	N3-C4-C5	-6.24	110.86	114.60
1	A	754	C	N3-C2-O2	-6.24	117.53	121.90
2	B	391	G	C8-N9-C1'	-6.23	118.90	127.00
1	DB	293	G	C6-C5-N7	-6.23	126.66	130.40
1	A	28	G	C8-N9-C4	-6.23	103.91	106.40
2	B	83	G	N1-C6-O6	6.23	123.64	119.90
2	B	1314	C	C6-N1-C2	-6.23	117.81	120.30
1	DB	27	G	N1-C6-O6	6.23	123.64	119.90
2	EB	1828	G	C4-C5-N7	-6.23	108.31	110.80
2	EB	1602	U	N1-C2-N3	6.22	118.63	114.90
2	EB	2582	G	C8-N9-C4	-6.22	103.91	106.40
2	B	383	U	N1-C2-O2	6.22	127.16	122.80
2	B	713	G	N1-C6-O6	6.22	123.63	119.90
2	EB	2773	C	C6-N1-C2	6.22	122.79	120.30
2	B	2073	C	N1-C2-N3	6.22	123.55	119.20
2	B	2599	G	N3-C4-N9	-6.22	122.27	126.00
1	A	1504	G	O5'-P-OP1	-6.21	100.11	105.70
1	A	1397	C	O4'-C1'-N1	6.21	113.17	108.20
1	DB	773	G	N1-C6-O6	6.21	123.62	119.90
2	B	1790	C	C2-N1-C1'	-6.21	111.97	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	DB	804	U	C5-C4-O4	6.20	129.62	125.90
2	EB	124	G	C5-C6-N1	-6.20	108.40	111.50
2	EB	921	G	C5-C6-N1	-6.20	108.40	111.50
2	EB	1628	G	C5-C6-N1	-6.20	108.40	111.50
1	A	232	G	N1-C6-O6	6.20	123.62	119.90
2	EB	2318	G	O4'-C1'-N9	6.20	113.16	108.20
2	EB	1332	G	O5'-P-OP2	-6.20	100.12	105.70
2	B	601	C	N3-C4-C5	-6.19	119.42	121.90
2	EB	1429	G	N9-C4-C5	6.19	107.88	105.40
2	B	2502	G	C4-C5-N7	6.19	113.28	110.80
2	B	1979	C	C6-N1-C2	-6.19	117.83	120.30
2	EB	2061	G	C6-C5-N7	-6.19	126.69	130.40
2	EB	2576	G	O5'-P-OP2	-6.19	100.13	105.70
2	B	748	G	N3-C4-C5	-6.18	125.51	128.60
1	DB	529	G	C4-C5-N7	6.18	113.27	110.80
2	B	2415	G	N1-C6-O6	6.18	123.61	119.90
1	DB	880	C	C6-N1-C2	6.18	122.77	120.30
2	EB	1377	G	N3-C4-C5	-6.18	125.51	128.60
2	B	409	C	O5'-P-OP2	-6.18	100.14	105.70
2	EB	865	C	N3-C4-C5	6.18	124.37	121.90
1	DB	331	G	N7-C8-N9	6.18	116.19	113.10
1	A	886	G	C5-C6-N1	-6.17	108.41	111.50
2	B	2037	G	C5-C6-O6	-6.17	124.89	128.60
2	B	2061	G	O5'-P-OP2	6.17	118.11	110.70
1	DB	148	G	N1-C6-O6	6.17	123.60	119.90
2	EB	1142(B)	A	C4-C5-N7	6.17	113.78	110.70
2	B	1661	G	N1-C6-O6	6.17	123.60	119.90
2	EB	1558	A	C2-N3-C4	-6.17	107.52	110.60
2	EB	2822	G	O5'-P-OP1	-6.17	100.15	105.70
2	B	775	G	C8-N9-C4	6.17	108.87	106.40
2	B	1395	A	O4'-C1'-N9	6.17	113.13	108.20
2	B	2083	G	C5-C6-N1	-6.17	108.42	111.50
3	FB	87	G	C8-N9-C4	6.17	108.87	106.40
1	DB	1532	U	C2-N1-C1'	6.16	125.09	117.70
2	EB	672	C	C6-N1-C2	-6.16	117.83	120.30
2	EB	401	A	N1-C6-N6	-6.16	114.91	118.60
2	B	2726	U	C5-C6-N1	-6.15	119.62	122.70
2	B	1698	A	C5-N7-C8	-6.15	100.82	103.90
2	EB	1672	C	C6-N1-C2	-6.15	117.84	120.30
2	B	140	A	C8-N9-C4	-6.15	103.34	105.80
2	B	1698	A	C8-N9-C4	-6.14	103.34	105.80
1	A	944	G	N1-C6-O6	-6.14	116.22	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	942	G	OP2-P-O3'	6.14	118.70	105.20
2	B	1402	C	C6-N1-C2	-6.13	117.85	120.30
2	B	2086	U	N3-C2-O2	-6.13	117.91	122.20
2	B	1368	G	C5-C6-O6	-6.13	124.92	128.60
2	B	2494	G	N9-C4-C5	-6.12	102.95	105.40
2	EB	751	A	N1-C6-N6	-6.12	114.93	118.60
2	B	534	U	C5-C4-O4	6.12	129.57	125.90
2	B	197	A	OP2-P-O3'	6.12	118.66	105.20
2	B	670	A	OP1-P-O3'	6.12	118.65	105.20
2	B	783	A	OP1-P-OP2	6.12	128.77	119.60
2	B	825	C	OP1-P-O3'	6.11	118.65	105.20
2	B	1981	A	C4-C5-N7	6.11	113.76	110.70
2	B	342	G	C5-C6-O6	-6.11	124.93	128.60
2	B	1142(B)	A	C5-C6-N1	-6.11	114.64	117.70
2	EB	2010	G	N7-C8-N9	6.11	116.16	113.10
2	EB	2043	C	C6-N1-C2	-6.11	117.86	120.30
2	EB	667	U	N3-C4-O4	6.11	123.68	119.40
2	EB	2224	G	C5-C6-N1	-6.11	108.45	111.50
2	B	939	G	C5-C6-N1	-6.11	108.45	111.50
2	B	2083	G	N1-C6-O6	6.11	123.56	119.90
2	EB	948	G	N1-C6-O6	6.11	123.56	119.90
2	B	1325	G	N3-C2-N2	6.11	124.17	119.90
2	B	1992	G	C8-N9-C4	-6.11	103.96	106.40
2	EB	945	A	N9-C4-C5	-6.11	103.36	105.80
2	B	305	U	C5-C4-O4	6.10	129.56	125.90
2	B	504	U	N1-C2-O2	6.10	127.07	122.80
2	B	1186	G	O5'-P-OP1	-6.10	100.21	105.70
2	B	194	G	C5-C6-N1	-6.10	108.45	111.50
2	B	870	A	C5-C6-N6	-6.10	118.82	123.70
2	B	1602	U	C5-C4-O4	6.10	129.56	125.90
2	EB	754	C	C6-N1-C2	6.10	122.74	120.30
2	B	802	A	C4-C5-C6	6.09	120.05	117.00
2	EB	2612	C	C6-N1-C2	6.09	122.74	120.30
1	A	1413	A	N1-C6-N6	-6.09	114.94	118.60
2	B	1185	C	OP2-P-O3'	6.09	118.60	105.20
2	B	1326	U	OP2-P-O3'	6.09	118.60	105.20
2	B	1024	G	C6-C5-N7	-6.09	126.75	130.40
2	B	486	C	C6-N1-C2	6.09	122.73	120.30
2	EB	379	G	N1-C6-O6	6.08	123.55	119.90
2	EB	2593	U	N1-C2-N3	6.08	118.55	114.90
2	B	1976	U	C4-C5-C6	6.08	123.35	119.70
2	B	1753	G	N1-C6-O6	-6.08	116.25	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1259	G	N1-C6-O6	6.08	123.55	119.90
2	EB	2228	G	N1-C6-O6	6.08	123.55	119.90
2	B	109	G	C8-N9-C4	6.07	108.83	106.40
2	B	1637	A	N1-C2-N3	6.07	132.34	129.30
1	DB	1531	A	C2-N3-C4	6.07	113.64	110.60
2	EB	2059	A	C8-N9-C4	6.07	108.23	105.80
2	EB	2610	C	N1-C2-N3	-6.07	114.95	119.20
2	B	2489	G	C5-C6-O6	-6.07	124.96	128.60
1	DB	331	G	N1-C6-O6	6.07	123.54	119.90
1	DB	842	C	N1-C2-O2	6.07	122.54	118.90
2	B	208	C	C6-N1-C2	6.07	122.73	120.30
31	EA	39	ARG	NE-CZ-NH1	6.07	123.33	120.30
2	EB	2419	U	N3-C4-O4	6.07	123.65	119.40
2	B	699	A	N1-C6-N6	6.07	122.24	118.60
2	B	1470	G	C5-C6-N1	-6.07	108.47	111.50
1	DB	899	C	C2-N3-C4	6.07	122.93	119.90
2	B	945	A	N3-C4-C5	6.06	131.04	126.80
2	B	2447	G	C5-C6-O6	-6.06	124.97	128.60
1	DB	48	C	C6-N1-C2	6.06	122.72	120.30
3	C	111	U	C5-C4-O4	6.05	129.53	125.90
2	EB	1251	C	N1-C2-O2	6.05	122.53	118.90
1	DB	754	C	N3-C2-O2	-6.05	117.66	121.90
1	A	1488	G	N1-C6-O6	6.05	123.53	119.90
2	B	761	A	C2-N3-C4	-6.05	107.57	110.60
2	B	758	C	C5-C6-N1	-6.05	117.97	121.00
2	B	978	G	N1-C6-O6	6.05	123.53	119.90
2	EB	404	C	C6-N1-C2	6.05	122.72	120.30
2	B	1790	C	O5'-P-OP2	6.05	117.95	110.70
2	EB	2453	A	O5'-P-OP2	6.05	117.96	110.70
2	B	569	U	N3-C2-O2	-6.04	117.97	122.20
2	EB	1807	G	C5-C6-N1	-6.04	108.48	111.50
2	B	1623	G	N1-C6-O6	6.04	123.52	119.90
1	A	1512	U	C5-C4-O4	6.04	129.52	125.90
2	EB	1698	A	N1-C6-N6	6.04	122.22	118.60
2	EB	2603	G	C8-N9-C4	6.04	108.81	106.40
2	B	122	G	N9-C4-C5	-6.03	102.99	105.40
2	B	855	G	N1-C6-O6	6.03	123.52	119.90
2	EB	1370	C	C6-N1-C2	6.03	122.71	120.30
1	A	945	G	N1-C6-O6	6.03	123.52	119.90
2	B	330	A	C8-N9-C4	6.03	108.21	105.80
2	B	1707	G	N1-C6-O6	6.03	123.52	119.90
2	EB	718	A	N1-C6-N6	6.02	122.21	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	265	A	C5-N7-C8	-6.02	100.89	103.90
2	B	724	U	N3-C4-C5	-6.02	110.99	114.60
2	B	1771	C	N1-C2-O2	-6.02	115.29	118.90
2	B	2414	G	N1-C6-O6	6.02	123.51	119.90
2	EB	1667	G	C5-C6-O6	-6.02	124.99	128.60
1	A	282	A	N1-C6-N6	6.01	122.21	118.60
2	EB	375	C	O5'-P-OP2	-6.01	100.29	105.70
2	B	787	U	O5'-P-OP1	6.01	117.91	110.70
2	B	2061	G	C6-C5-N7	-6.01	126.79	130.40
2	EB	761	A	C5-N7-C8	-6.00	100.90	103.90
2	B	2245	U	C4-C5-C6	6.00	123.30	119.70
2	EB	194	G	C2-N3-C4	-6.00	108.90	111.90
2	EB	2397	G	N1-C6-O6	6.00	123.50	119.90
2	EB	1325	G	N3-C4-N9	6.00	129.60	126.00
2	B	751	A	O5'-P-OP2	-6.00	100.31	105.70
2	B	1651	G	C2-N3-C4	-6.00	108.90	111.90
3	FB	11	C	C6-N1-C2	6.00	122.70	120.30
2	B	1397	U	N3-C2-O2	-5.99	118.00	122.20
2	B	570	G	C4-C5-N7	-5.99	108.40	110.80
2	B	802	A	C8-N9-C4	-5.99	103.40	105.80
2	B	1762	A	C5-C6-N6	5.99	128.49	123.70
2	B	2276	G	N1-C6-O6	5.99	123.49	119.90
3	FB	82	G	C5-C6-N1	-5.99	108.50	111.50
2	B	189	G	N1-C6-O6	5.99	123.49	119.90
2	B	450	G	C8-N9-C1'	-5.99	119.22	127.00
2	EB	728	G	N9-C4-C5	-5.99	103.00	105.40
1	A	286	G	N1-C6-O6	5.99	123.49	119.90
2	B	548	A	N7-C8-N9	5.99	116.79	113.80
2	B	1371	G	C5-C6-N1	-5.99	108.51	111.50
2	B	1612	C	C6-N1-C2	5.99	122.69	120.30
2	B	2026	C	C6-N1-C2	5.98	122.69	120.30
2	B	456	C	C6-N1-C2	5.98	122.69	120.30
2	B	1788	C	OP1-P-O3'	5.98	118.35	105.20
1	DB	299	G	C5-C6-N1	-5.98	108.51	111.50
2	B	1756	G	C4-C5-C6	5.97	122.39	118.80
2	EB	2072	G	C5-C6-O6	-5.97	125.02	128.60
2	B	2610	C	N1-C2-O2	5.97	122.48	118.90
2	EB	2298	A	N1-C6-N6	-5.97	115.02	118.60
2	B	2567	G	C5-C6-N1	-5.97	108.52	111.50
1	DB	922	G	C8-N9-C4	-5.97	104.01	106.40
2	B	2528	U	C5-C4-O4	5.97	129.48	125.90
2	B	1368	G	C5-C6-N1	5.97	114.48	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1558	A	C5-C6-N1	-5.97	114.72	117.70
2	EB	304	G	N9-C4-C5	5.97	107.79	105.40
2	EB	1429	G	C8-N9-C4	-5.97	104.01	106.40
2	EB	1627	G	C5-C6-N1	-5.97	108.52	111.50
2	EB	1240	U	C4-C5-C6	5.96	123.28	119.70
2	B	1538	G	C8-N9-C4	-5.96	104.02	106.40
2	EB	2061	G	C4-C5-C6	5.96	122.38	118.80
1	A	773	G	C5-C6-O6	-5.96	125.02	128.60
2	B	1274	A	C2-N3-C4	-5.96	107.62	110.60
2	EB	1638	C	N1-C2-O2	-5.96	115.32	118.90
2	B	1277	G	N3-C2-N2	-5.96	115.73	119.90
2	B	1762	A	C4-C5-N7	-5.96	107.72	110.70
2	B	2318	G	N7-C8-N9	5.95	116.08	113.10
2	EB	1231	G	N1-C6-O6	5.95	123.47	119.90
2	EB	1695	G	N1-C6-O6	5.95	123.47	119.90
1	DB	886	G	C5-C6-N1	-5.95	108.52	111.50
2	B	697	C	C6-N1-C2	5.95	122.68	120.30
2	B	728	G	N1-C6-O6	5.95	123.47	119.90
4	IA	31	G	N1-C6-O6	5.95	123.47	119.90
2	B	1286	A	C8-N9-C4	-5.95	103.42	105.80
2	B	1627	G	C5-C6-N1	-5.95	108.53	111.50
2	EB	825	C	OP1-P-O3'	5.95	118.29	105.20
1	A	754	C	C5-C6-N1	5.95	123.97	121.00
2	B	941	A	N1-C6-N6	-5.95	115.03	118.60
2	B	208	C	C5-C6-N1	-5.95	118.03	121.00
1	A	576	G	C8-N9-C1'	-5.94	119.28	127.00
2	B	1951	U	N3-C4-C5	-5.94	111.03	114.60
1	DB	1397	C	O4'-C1'-N1	5.94	112.95	108.20
2	EB	672	C	N3-C2-O2	-5.94	117.74	121.90
2	B	1254	A	C8-N9-C4	-5.94	103.42	105.80
2	B	2614	A	OP1-P-O3'	5.94	118.27	105.20
2	EB	1240	U	N3-C4-C5	-5.94	111.04	114.60
2	B	945	A	C5-N7-C8	-5.94	100.93	103.90
2	EB	728	G	C5-C6-N1	-5.94	108.53	111.50
4	LC	2	G	C8-N9-C4	5.94	108.77	106.40
1	A	789	U	N3-C4-C5	-5.93	111.04	114.60
2	B	585	G	C8-N9-C4	-5.93	104.03	106.40
2	B	811	U	O5'-P-OP1	-5.93	100.36	105.70
2	B	1706	U	N3-C4-C5	-5.93	111.04	114.60
2	B	2010	G	C8-N9-C4	-5.93	104.03	106.40
2	B	2726	U	C6-N1-C2	5.93	124.56	121.00
2	EB	2062	A	C8-N9-C4	5.93	108.17	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	1698	A	O4'-C1'-N9	5.92	112.94	108.20
2	B	1778	U	C2-N1-C1'	-5.92	110.59	117.70
2	EB	1355	G	N1-C6-O6	5.92	123.45	119.90
1	A	1531	A	C2-N3-C4	5.92	113.56	110.60
2	B	945	A	N9-C4-C5	-5.92	103.43	105.80
2	EB	1617	C	C6-N1-C2	5.92	122.67	120.30
2	EB	450	G	C6-C5-N7	-5.92	126.85	130.40
2	EB	1842	G	C8-N9-C4	5.91	108.77	106.40
2	EB	2430	A	N9-C4-C5	5.91	108.17	105.80
2	B	1698	A	O4'-C1'-N9	5.91	112.93	108.20
2	B	195	A	C4-C5-C6	-5.91	114.05	117.00
2	EB	1234	U	C5-C4-O4	5.91	129.45	125.90
2	B	1609	A	C2-N3-C4	-5.91	107.65	110.60
2	EB	2346	A	N9-C4-C5	5.91	108.16	105.80
2	B	2091	U	C4-C5-C6	5.91	123.24	119.70
2	B	1435	G	C5-C6-O6	-5.90	125.06	128.60
1	DB	232	G	C5-C6-N1	-5.90	108.55	111.50
1	DB	1199	U	C5-C4-O4	5.90	129.44	125.90
2	EB	391	G	C4-N9-C1'	5.90	134.17	126.50
2	EB	942	G	OP2-P-O3'	5.90	118.18	105.20
2	B	2580	U	C6-N1-C2	-5.90	117.46	121.00
2	B	2575	C	O5'-P-OP1	-5.90	100.39	105.70
4	LC	48	C	C5-C6-N1	-5.90	118.05	121.00
2	EB	342	G	N1-C6-O6	5.90	123.44	119.90
2	B	528	A	C6-N1-C2	5.89	122.14	118.60
2	B	2451	A	C2-N3-C4	-5.89	107.65	110.60
2	EB	34	C	C2-N3-C4	5.89	122.85	119.90
2	B	71	A	C5-N7-C8	-5.89	100.95	103.90
2	B	1240	U	C4-C5-C6	5.89	123.23	119.70
2	B	1816	G	N1-C6-O6	5.89	123.43	119.90
2	EB	1975	G	N1-C6-O6	5.89	123.43	119.90
2	B	613	U	N3-C2-O2	-5.89	118.08	122.20
2	B	685	A	C8-N9-C4	-5.89	103.44	105.80
2	B	695	G	C5-C6-N1	-5.89	108.56	111.50
2	B	1024	G	N1-C6-O6	5.89	123.43	119.90
1	DB	752	G	N1-C6-O6	5.89	123.43	119.90
2	EB	1614	A	O5'-P-OP1	5.89	117.76	110.70
2	EB	2609	U	C5-C6-N1	-5.89	119.76	122.70
2	B	1667	G	C8-N9-C4	5.88	108.75	106.40
2	B	1768	U	C5-C4-O4	5.88	129.43	125.90
2	B	1762	A	C2-N3-C4	5.88	113.54	110.60
2	EB	1706	U	N3-C4-C5	-5.88	111.07	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	533	G	C5-C6-O6	5.88	132.13	128.60
2	B	1845	G	C5-C6-O6	-5.88	125.07	128.60
2	B	464	U	N1-C2-N3	5.88	118.42	114.90
2	B	1757	U	C6-N1-C2	5.88	124.53	121.00
2	B	2049	G	C5-C6-N1	5.88	114.44	111.50
1	A	886	G	N1-C6-O6	5.87	123.42	119.90
1	DB	886	G	N1-C6-O6	5.87	123.42	119.90
2	EB	1695	G	C5-C6-O6	-5.87	125.08	128.60
2	B	1231	G	N1-C6-O6	5.87	123.42	119.90
2	B	1671	U	C5-C6-N1	5.87	125.64	122.70
2	B	2618	G	C8-N9-C4	-5.87	104.05	106.40
1	DB	286	G	N1-C6-O6	5.87	123.42	119.90
2	EB	391	G	N9-C4-C5	-5.87	103.05	105.40
2	EB	942	G	C5-C6-N1	-5.87	108.56	111.50
2	EB	1201	C	C6-N1-C2	5.87	122.65	120.30
1	A	1492	A	C8-N9-C4	-5.87	103.45	105.80
2	EB	505	A	C8-N9-C4	-5.87	103.45	105.80
2	EB	1620	G	C5-C6-N1	-5.87	108.57	111.50
2	B	530	G	N3-C2-N2	5.87	124.01	119.90
2	B	2491	U	O5'-P-OP2	5.87	117.74	110.70
2	B	1190	G	C4-C5-N7	5.87	113.15	110.80
2	B	1240	U	N3-C2-O2	-5.86	118.10	122.20
2	EB	728	G	C6-C5-N7	-5.86	126.88	130.40
2	EB	122	G	N9-C4-C5	-5.86	103.06	105.40
2	EB	450	G	C4-N9-C1'	5.86	134.12	126.50
2	B	128	C	C5-C6-N1	-5.86	118.07	121.00
1	DB	1532	U	C5-C6-N1	5.86	125.63	122.70
2	EB	198	C	O5'-P-OP1	-5.86	100.43	105.70
2	B	1270	C	C6-N1-C2	5.86	122.64	120.30
2	B	1402	C	N3-C4-C5	-5.86	119.56	121.90
1	A	576	G	N1-C6-O6	5.85	123.41	119.90
1	A	1435	G	C5-C6-N1	-5.85	108.57	111.50
2	B	391	G	N9-C4-C5	-5.85	103.06	105.40
2	B	1622	G	N1-C6-O6	5.85	123.41	119.90
2	B	2501	C	C6-N1-C2	5.85	122.64	120.30
2	B	2059	A	C5-C6-N6	-5.85	119.02	123.70
2	B	127	A	C8-N9-C4	5.85	108.14	105.80
2	B	676	A	N1-C6-N6	5.85	122.11	118.60
2	B	2715	C	N3-C4-C5	5.85	124.24	121.90
1	DB	778	G	N1-C6-O6	5.85	123.41	119.90
2	EB	2464	C	C6-N1-C2	5.85	122.64	120.30
2	EB	747	U	C5-C4-O4	-5.84	122.39	125.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1622	G	C5-C6-O6	-5.84	125.10	128.60
2	B	2013	A	OP2-P-O3'	5.84	118.05	105.20
2	B	2218	G	N1-C6-O6	5.84	123.40	119.90
2	B	2614	A	C5-C6-N1	5.84	120.62	117.70
2	EB	125	G	C8-N9-C4	-5.84	104.06	106.40
2	B	70	G	C6-C5-N7	-5.84	126.90	130.40
2	EB	1341	U	OP2-P-O3'	5.84	118.04	105.20
2	B	1614	A	N1-C2-N3	5.83	132.22	129.30
2	B	2550	G	O5'-P-OP1	5.83	117.70	110.70
2	B	2576	G	OP1-P-O3'	5.83	118.03	105.20
1	DB	328	C	N1-C2-O2	5.83	122.40	118.90
2	EB	2259	G	N1-C6-O6	5.83	123.40	119.90
2	EB	945	A	C2-N3-C4	-5.83	107.68	110.60
2	EB	1231	G	N3-C4-C5	5.83	131.51	128.60
2	B	1224	C	C6-N1-C2	5.83	122.63	120.30
1	DB	793	U	C5-C4-O4	5.83	129.40	125.90
1	DB	106	C	OP2-P-O3'	5.83	118.02	105.20
2	EB	2876	G	C8-N9-C4	5.83	108.73	106.40
1	A	778	G	N1-C6-O6	5.82	123.39	119.90
2	B	2593	U	C6-N1-C1'	5.82	129.35	121.20
2	B	2021	C	N3-C2-O2	-5.82	117.83	121.90
2	B	1992	G	C5-C6-N1	5.82	114.41	111.50
2	EB	2576	G	OP1-P-O3'	5.82	118.00	105.20
2	EB	1210	A	N1-C2-N3	5.82	132.21	129.30
2	B	1779	U	C6-N1-C1'	-5.82	113.06	121.20
2	EB	2447	G	N7-C8-N9	-5.82	110.19	113.10
2	EB	2218	G	C5-C6-N1	-5.81	108.59	111.50
2	EB	2580	U	C2-N3-C4	5.81	130.49	127.00
2	B	2603	G	N3-C4-C5	5.81	131.50	128.60
2	EB	1898	U	C6-N1-C2	-5.81	117.51	121.00
2	B	787	U	N1-C2-O2	-5.81	118.73	122.80
2	B	1598	C	C6-N1-C2	5.81	122.62	120.30
2	B	993	G	N3-C4-N9	-5.80	122.52	126.00
3	C	75	G	C8-N9-C4	5.80	108.72	106.40
2	B	735	A	C8-N9-C4	5.80	108.12	105.80
1	DB	1503	A	N1-C6-N6	-5.80	115.12	118.60
2	B	2240	C	C6-N1-C2	5.80	122.62	120.30
2	B	2458	G	C4-N9-C1'	5.80	134.04	126.50
1	DB	1469	G	N1-C6-O6	5.80	123.38	119.90
2	EB	2726	U	C6-N1-C2	5.80	124.48	121.00
1	DB	574	A	O5'-P-OP1	-5.80	100.48	105.70
31	HC	39	ARG	NE-CZ-NH2	-5.80	117.40	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1007	C	C6-N1-C2	5.79	122.62	120.30
2	B	391	G	N3-C4-N9	5.79	129.48	126.00
1	DB	364	A	N1-C2-N3	5.79	132.20	129.30
2	EB	974(B)	C	C6-N1-C2	5.79	122.62	120.30
1	A	1512	U	N3-C4-C5	-5.79	111.12	114.60
2	B	2403	C	N3-C2-O2	-5.79	117.85	121.90
4	IA	46	G	N1-C6-O6	-5.79	116.42	119.90
2	EB	1671	U	C6-N1-C2	-5.79	117.53	121.00
2	EB	2092	U	C5-C4-O4	5.79	129.37	125.90
1	A	320	C	C6-N1-C2	5.79	122.61	120.30
2	EB	1666	G	C8-N9-C4	5.79	108.72	106.40
2	B	631	A	N1-C6-N6	5.79	122.07	118.60
2	B	2072	G	N1-C6-O6	5.79	123.37	119.90
1	DB	1099	G	N9-C4-C5	5.79	107.72	105.40
2	EB	2713	A	OP2-P-O3'	5.79	117.93	105.20
2	B	2777	G	O4'-C1'-N9	-5.78	103.58	108.20
1	DB	945	G	C5-C6-O6	-5.78	125.13	128.60
1	DB	702	A	N1-C6-N6	5.78	122.06	118.60
2	EB	1647	G	O5'-P-OP2	5.78	117.63	110.70
2	EB	2424	C	C6-N1-C2	5.77	122.61	120.30
2	B	19	C	C5-C6-N1	-5.77	118.11	121.00
2	B	559	G	C5-C6-N1	-5.77	108.61	111.50
2	B	1992	G	C2-N3-C4	5.77	114.79	111.90
2	B	179	G	C5-C6-N1	-5.77	108.62	111.50
2	B	1906	G	C5-C6-N1	-5.77	108.62	111.50
2	B	1981	A	C4-C5-C6	-5.77	114.12	117.00
2	EB	539	G	C8-N9-C4	5.77	108.71	106.40
2	EB	963	U	O5'-P-OP1	-5.77	100.51	105.70
3	C	16	G	N1-C6-O6	5.77	123.36	119.90
2	EB	1698	A	N7-C8-N9	5.77	116.68	113.80
2	B	1902	C	N3-C4-C5	5.76	124.20	121.90
2	EB	945	A	C5-C6-N6	-5.76	119.09	123.70
2	EB	2072	G	C4-C5-N7	5.76	113.11	110.80
2	B	2714	G	O5'-P-OP2	5.76	117.62	110.70
2	EB	528	A	N9-C4-C5	-5.76	103.50	105.80
2	EB	409	C	O5'-P-OP2	-5.76	100.52	105.70
2	EB	613	U	O4'-C1'-N1	5.76	112.81	108.20
2	EB	2004	G	N1-C6-O6	5.76	123.36	119.90
2	B	1898	U	N3-C4-C5	-5.76	111.15	114.60
2	EB	323	G	C5-C6-O6	-5.76	125.15	128.60
2	B	610	C	N3-C4-C5	5.75	124.20	121.90
1	DB	304	U	N3-C4-C5	-5.75	111.15	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	186	G	N1-C6-O6	5.75	123.35	119.90
1	A	603	U	C6-N1-C2	-5.75	117.55	121.00
2	B	2494	G	C8-N9-C4	5.75	108.70	106.40
2	EB	124	G	N1-C6-O6	5.75	123.35	119.90
2	B	196	A	C8-N9-C4	-5.75	103.50	105.80
2	EB	534	U	C6-N1-C2	-5.75	117.55	121.00
2	EB	2330	G	N1-C6-O6	5.75	123.35	119.90
1	A	1532	U	C2-N1-C1'	5.74	124.59	117.70
2	EB	211	A	C8-N9-C4	5.74	108.10	105.80
2	EB	809	G	O5'-P-OP2	-5.74	100.53	105.70
2	EB	2593	U	C2-N3-C4	5.74	130.44	127.00
2	B	802	A	N1-C2-N3	5.74	132.17	129.30
1	DB	576	G	C5-C6-N1	-5.73	108.63	111.50
2	EB	861	A	OP2-P-O3'	5.73	117.81	105.20
1	A	285	G	N1-C6-O6	5.73	123.34	119.90
2	B	1565	C	N1-C2-O2	-5.73	115.46	118.90
2	EB	68	G	N1-C6-O6	5.73	123.34	119.90
1	DB	1503	A	C5-N7-C8	5.73	106.76	103.90
2	EB	1970	A	N7-C8-N9	5.73	116.66	113.80
2	EB	2685	G	N1-C2-N2	5.73	121.35	116.20
2	EB	1271	G	C5-C6-N1	-5.72	108.64	111.50
2	B	349	G	C4-C5-N7	-5.72	108.51	110.80
2	EB	1556	C	O5'-P-OP2	-5.72	100.55	105.70
2	EB	1642	G	N1-C6-O6	5.72	123.33	119.90
2	B	422	A	C8-N9-C4	-5.72	103.51	105.80
2	B	2397	G	C5-C6-O6	-5.72	125.17	128.60
1	DB	1505	G	N1-C6-O6	5.72	123.33	119.90
2	EB	1422	G	N1-C6-O6	5.72	123.33	119.90
2	B	827	U	O5'-P-OP2	-5.72	100.56	105.70
2	B	1489	U	C5-C4-O4	5.72	129.33	125.90
2	B	1111	A	C8-N9-C4	5.71	108.09	105.80
2	B	1131	G	C4-C5-N7	5.71	113.08	110.80
2	EB	400	G	N1-C6-O6	5.71	123.33	119.90
2	EB	1186	G	O5'-P-OP1	-5.71	100.56	105.70
2	EB	1251	C	N1-C2-N3	-5.71	115.20	119.20
2	EB	2680	C	C6-N1-C2	5.71	122.58	120.30
2	B	1022	G	C4-C5-N7	-5.71	108.52	110.80
2	EB	2474	C	C6-N1-C2	5.71	122.58	120.30
2	B	304	G	N3-C2-N2	-5.71	115.90	119.90
3	C	112	G	N1-C6-O6	5.71	123.33	119.90
2	EB	1783	A	OP2-P-O3'	5.71	117.76	105.20
2	B	379	G	C5-C6-N1	-5.71	108.65	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	DB	965	A	C8-N9-C4	5.71	108.08	105.80
2	EB	1790	C	O5'-P-OP2	5.71	117.55	110.70
2	B	751	A	C8-N9-C4	-5.70	103.52	105.80
1	A	293	G	C5-C6-O6	-5.70	125.18	128.60
2	B	1374	G	N1-C6-O6	5.70	123.32	119.90
4	LC	30	G	N1-C6-O6	5.70	123.32	119.90
2	B	861	A	C8-N9-C4	-5.70	103.52	105.80
2	B	2593	U	C5-C4-O4	5.70	129.32	125.90
2	EB	1828	G	N7-C8-N9	5.70	115.95	113.10
2	B	457	A	N1-C6-N6	-5.70	115.18	118.60
2	EB	2573	C	C5-C6-N1	-5.70	118.15	121.00
1	A	773	G	C8-N9-C4	5.70	108.68	106.40
2	B	2838	G	C5-C6-O6	-5.69	125.18	128.60
1	A	711	G	N1-C6-O6	5.69	123.31	119.90
3	FB	76	G	N1-C6-O6	5.69	123.31	119.90
2	B	2576	G	N1-C6-O6	5.69	123.31	119.90
2	B	2713	A	OP2-P-O3'	5.69	117.72	105.20
2	B	859	G	N7-C8-N9	-5.69	110.26	113.10
2	EB	559	G	N1-C6-O6	5.69	123.31	119.90
2	EB	2439	A	C5-N7-C8	-5.69	101.06	103.90
3	FB	65	C	C2-N1-C1'	5.69	125.06	118.80
2	B	58	G	N1-C6-O6	5.68	123.31	119.90
2	EB	859	G	C8-N9-C4	5.68	108.67	106.40
2	EB	1769	G	C5-C6-N1	-5.68	108.66	111.50
2	B	777	A	N7-C8-N9	5.68	116.64	113.80
2	B	2395	C	N1-C2-O2	-5.68	115.49	118.90
1	DB	668	G	N1-C6-O6	5.68	123.31	119.90
3	FB	99	A	OP2-P-O3'	5.68	117.70	105.20
2	B	2065	C	C6-N1-C2	5.68	122.57	120.30
2	B	2447	G	C4-C5-C6	5.68	122.21	118.80
1	A	1435	G	C2-N3-C4	-5.68	109.06	111.90
2	EB	1240	U	N1-C2-N3	5.68	118.31	114.90
2	B	1021	A	C5-N7-C8	-5.67	101.06	103.90
2	B	1131	G	O5'-P-OP2	-5.67	100.59	105.70
2	B	1842	G	N1-C6-O6	5.67	123.31	119.90
2	EB	504	U	C2-N1-C1'	5.67	124.51	117.70
2	EB	1142(B)	A	N1-C6-N6	5.67	122.00	118.60
2	B	330	A	N1-C2-N3	5.67	132.14	129.30
2	B	2052	G	C6-C5-N7	-5.67	127.00	130.40
2	B	1660	C	C6-N1-C2	-5.67	118.03	120.30
1	DB	331	G	C5-N7-C8	-5.67	101.46	104.30
2	B	1703	G	C6-C5-N7	-5.67	127.00	130.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	911	A	N1-C6-N6	5.67	122.00	118.60
2	EB	2082	A	N1-C6-N6	5.67	122.00	118.60
2	B	382	G	N3-C2-N2	-5.67	115.93	119.90
2	B	2693	A	N1-C6-N6	5.67	122.00	118.60
2	EB	1852	C	C6-N1-C2	-5.67	118.03	120.30
2	B	804	A	N9-C4-C5	-5.66	103.53	105.80
2	B	1193	G	C2-N3-C4	-5.66	109.07	111.90
2	B	1970	A	C8-N9-C4	-5.66	103.53	105.80
1	DB	1158	C	C2-N1-C1'	5.66	125.03	118.80
1	A	293	G	C6-C5-N7	-5.66	127.00	130.40
2	B	1355	G	C5-C6-O6	-5.66	125.20	128.60
2	EB	577	G	C4-C5-N7	5.66	113.06	110.80
2	B	1315	C	O5'-P-OP1	-5.66	100.61	105.70
2	EB	2715	C	N3-C4-C5	5.66	124.16	121.90
2	B	460	A	N1-C2-N3	5.66	132.13	129.30
2	EB	1382	G	N3-C4-N9	-5.66	122.61	126.00
2	EB	2228	G	C5-C6-N1	-5.66	108.67	111.50
1	A	1189	C	N1-C2-O2	5.65	122.29	118.90
1	A	1196	U	C5-C6-N1	5.65	125.53	122.70
2	B	613	U	O4'-C1'-N1	5.65	112.72	108.20
2	B	2346	A	N9-C4-C5	5.65	108.06	105.80
2	EB	699	A	C5-C6-N6	-5.65	119.18	123.70
2	EB	1992	G	O4'-C1'-N9	-5.65	103.68	108.20
2	B	677	A	O5'-P-OP2	-5.65	100.62	105.70
2	EB	548	A	N7-C8-N9	5.65	116.62	113.80
2	EB	1244	G	C5-C6-N1	-5.65	108.68	111.50
2	EB	2553	G	C6-C5-N7	-5.65	127.01	130.40
2	B	400	G	N1-C6-O6	5.64	123.29	119.90
2	EB	742	G	N1-C6-O6	5.64	123.29	119.90
2	EB	2271	G	C4-C5-N7	-5.64	108.54	110.80
2	B	2659	G	C5-C6-N1	-5.64	108.68	111.50
31	EA	39	ARG	NE-CZ-NH2	-5.64	117.48	120.30
1	A	600	C	C6-N1-C2	5.64	122.56	120.30
2	B	1348	G	N3-C4-C5	5.64	131.42	128.60
2	EB	1697	G	N1-C6-O6	5.64	123.28	119.90
2	EB	35	G	N1-C6-O6	5.64	123.28	119.90
2	EB	2458	G	C4-N9-C1'	5.64	133.83	126.50
2	B	1190	G	C5-C6-O6	-5.63	125.22	128.60
1	DB	1467	G	N7-C8-N9	-5.63	110.28	113.10
2	EB	1382	G	C5-C6-N1	-5.63	108.68	111.50
2	EB	1667	G	N9-C4-C5	-5.63	103.15	105.40
2	B	2259	G	C5-C6-O6	-5.63	125.22	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2582	G	C8-N9-C4	-5.63	104.15	106.40
2	B	1471	A	C8-N9-C4	-5.63	103.55	105.80
2	EB	2061	G	OP2-P-O3'	5.63	117.58	105.20
2	B	1149	G	C8-N9-C4	5.62	108.65	106.40
2	EB	2088	G	C6-C5-N7	-5.62	127.03	130.40
2	B	529	A	N1-C6-N6	-5.62	115.22	118.60
2	B	922	U	N3-C4-C5	-5.62	111.23	114.60
2	B	1269	A	N7-C8-N9	5.62	116.61	113.80
1	A	1467	G	O5'-P-OP2	-5.62	100.64	105.70
2	B	528	A	C2-N3-C4	-5.62	107.79	110.60
2	B	123	G	N1-C6-O6	5.62	123.27	119.90
2	EB	805	G	C8-N9-C4	-5.62	104.15	106.40
2	EB	1936	A	C8-N9-C4	5.62	108.05	105.80
2	B	575	A	N1-C2-N3	5.62	132.11	129.30
2	B	1664	A	N7-C8-N9	5.62	116.61	113.80
2	B	2570	G	C5-C6-N1	-5.62	108.69	111.50
2	EB	445	C	OP2-P-O3'	5.62	117.56	105.20
2	EB	1698	A	C5-C6-N1	-5.61	114.89	117.70
2	B	1936	A	C5-N7-C8	-5.61	101.09	103.90
2	B	1783	A	OP2-P-O3'	5.61	117.54	105.20
2	EB	726	G	O4'-C1'-N9	5.61	112.69	108.20
2	B	450	G	C2-N3-C4	-5.61	109.10	111.90
2	B	1790	C	N3-C4-C5	5.61	124.14	121.90
1	A	115	G	P-O3'-C3'	5.60	126.42	119.70
2	B	2723	C	N3-C2-O2	-5.60	117.98	121.90
2	B	663	G	C4-C5-N7	-5.60	108.56	110.80
2	B	2782	G	C5-C6-O6	-5.60	125.24	128.60
2	EB	593	G	C5-C6-N1	-5.60	108.70	111.50
2	B	2419	U	C6-N1-C2	-5.60	117.64	121.00
2	B	2698	U	C4-C5-C6	5.60	123.06	119.70
2	EB	610	C	N3-C4-C5	5.60	124.14	121.90
2	B	754	C	C6-N1-C2	5.59	122.54	120.30
2	B	2473	U	C2-N1-C1'	5.59	124.41	117.70
1	DB	603	U	C6-N1-C2	-5.59	117.64	121.00
1	A	803	G	C8-N9-C4	-5.59	104.16	106.40
2	B	1935	G	N3-C4-C5	5.59	131.40	128.60
3	C	99	A	OP2-P-O3'	5.59	117.50	105.20
2	EB	410	G	OP1-P-O3'	5.59	117.50	105.20
2	EB	1252	G	O4'-C1'-N9	-5.59	103.73	108.20
1	A	1196	U	C6-N1-C2	-5.59	117.65	121.00
1	A	804	U	C5-C4-O4	5.59	129.25	125.90
2	B	1193	G	N1-C2-N3	5.59	127.25	123.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2617	C	C2-N3-C4	-5.59	117.11	119.90
1	DB	74	C	C6-N1-C2	-5.59	118.06	120.30
2	EB	699	A	N1-C6-N6	5.59	121.95	118.60
2	B	466	A	OP2-P-O3'	5.58	117.48	105.20
2	B	980	A	C8-N9-C4	-5.58	103.57	105.80
2	B	2556	C	C2-N1-C1'	5.58	124.94	118.80
2	EB	1024	G	C5-C6-O6	-5.58	125.25	128.60
2	B	1869	G	C5-C6-N1	-5.58	108.71	111.50
2	B	197	A	OP1-P-O3'	-5.58	92.93	105.20
2	B	865	C	C4-C5-C6	-5.58	114.61	117.40
2	EB	678	C	O5'-P-OP2	-5.58	100.68	105.70
2	B	2505	G	C4-C5-N7	-5.58	108.57	110.80
2	EB	1757	U	C6-N1-C2	5.58	124.35	121.00
1	A	792	A	C8-N9-C4	5.58	108.03	105.80
2	B	240	G	N3-C4-C5	-5.58	125.81	128.60
2	B	2532	G	C6-C5-N7	-5.58	127.06	130.40
1	DB	1232	U	C6-N1-C2	-5.57	117.66	121.00
2	EB	1840	G	N1-C2-N3	5.57	127.24	123.90
2	B	248	G	C5-N7-C8	-5.57	101.51	104.30
2	B	220	G	N1-C6-O6	5.57	123.24	119.90
2	B	312	G	C8-N9-C4	5.57	108.63	106.40
2	B	746	A	O4'-C1'-N9	5.57	112.66	108.20
2	EB	195	A	C4-C5-N7	5.57	113.48	110.70
2	EB	2056	G	C4-C5-N7	5.57	113.03	110.80
2	EB	780	G	N1-C6-O6	5.56	123.24	119.90
2	EB	870	A	C8-N9-C4	5.56	108.03	105.80
2	B	583	G	N7-C8-N9	5.56	115.88	113.10
1	DB	475	G	N1-C6-O6	5.56	123.23	119.90
1	DB	1522	U	N1-C2-N3	5.56	118.24	114.90
2	EB	747	U	N3-C2-O2	5.56	126.09	122.20
2	EB	34	C	P-O3'-C3'	5.56	126.37	119.70
2	EB	684	G	N3-C4-C5	5.56	131.38	128.60
2	EB	1187	G	C4-C5-C6	5.56	122.14	118.80
2	EB	1657	C	OP1-P-O3'	5.56	117.43	105.20
2	EB	2009	G	N1-C6-O6	5.56	123.23	119.90
2	B	735	A	C2-N3-C4	-5.55	107.82	110.60
2	B	747	U	N3-C2-O2	5.55	126.09	122.20
3	C	30	C	C6-N1-C2	-5.55	118.08	120.30
2	EB	2603	G	N3-C4-C5	5.55	131.38	128.60
2	EB	1667	G	C4-C5-N7	5.55	113.02	110.80
2	B	2056	G	N9-C4-C5	-5.55	103.18	105.40
2	B	569	U	C6-N1-C1'	-5.55	113.44	121.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	695	G	N1-C6-O6	5.55	123.23	119.90
2	B	2543	G	C5-C6-O6	5.55	131.93	128.60
1	DB	927	G	C4-C5-N7	-5.55	108.58	110.80
2	EB	1940	U	N3-C4-C5	-5.55	111.27	114.60
2	EB	2430	A	N1-C6-N6	-5.55	115.27	118.60
2	B	2043	C	N3-C2-O2	-5.54	118.02	121.90
1	A	771	G	C8-N9-C4	5.54	108.62	106.40
2	EB	1642	G	C5-C6-O6	-5.54	125.27	128.60
2	B	855	G	C5-C6-N1	-5.54	108.73	111.50
2	EB	337	C	C6-N1-C2	5.54	122.52	120.30
2	EB	2032	G	C5-C6-O6	-5.54	125.28	128.60
2	B	806	C	O5'-P-OP1	-5.54	100.71	105.70
1	DB	563	A	N7-C8-N9	5.54	116.57	113.80
2	EB	122	G	C5-C6-O6	-5.54	125.28	128.60
1	DB	711	G	C8-N9-C4	5.54	108.61	106.40
2	B	804	A	N1-C6-N6	5.53	121.92	118.60
2	B	2821	A	C8-N9-C4	-5.53	103.59	105.80
2	B	520	G	C6-C5-N7	-5.53	127.08	130.40
3	C	65	C	N1-C2-O2	5.53	122.22	118.90
1	DB	293	G	C5-C6-O6	-5.53	125.28	128.60
2	EB	1384	A	C8-N9-C4	5.53	108.01	105.80
2	B	1368	G	C6-N1-C2	-5.53	121.78	125.10
2	EB	1685	C	C6-N1-C2	5.53	122.51	120.30
2	B	451	C	N1-C2-O2	5.53	122.22	118.90
2	EB	534	U	C5-C4-O4	5.53	129.22	125.90
1	DB	911	U	C5-C4-O4	5.52	129.21	125.90
2	EB	946	G	N1-C6-O6	5.52	123.21	119.90
2	EB	2544	G	C2-N3-C4	-5.52	109.14	111.90
2	EB	1700	A	O5'-P-OP2	5.52	117.32	110.70
2	EB	2255	G	N1-C6-O6	5.52	123.21	119.90
2	B	1210	A	N7-C8-N9	5.52	116.56	113.80
2	EB	1632	A	C8-N9-C4	5.52	108.01	105.80
2	EB	2061	G	O5'-P-OP2	5.52	117.32	110.70
2	EB	1695	G	C6-C5-N7	-5.52	127.09	130.40
1	A	28	G	N7-C8-N9	5.51	115.86	113.10
2	B	84	A	C8-N9-C4	5.51	108.01	105.80
2	B	698	C	C6-N1-C2	5.51	122.51	120.30
2	B	946	G	C8-N9-C4	5.51	108.61	106.40
2	B	2346	A	N1-C6-N6	-5.51	115.29	118.60
2	EB	46	C	C6-N1-C2	5.51	122.51	120.30
2	EB	569	U	C6-N1-C1'	-5.51	113.48	121.20
1	A	286	G	C5-C6-N1	-5.51	108.74	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	DB	331	G	C6-C5-N7	-5.51	127.09	130.40
1	DB	757	U	C5-C4-O4	5.51	129.21	125.90
1	DB	1435	G	C5-C6-N1	-5.51	108.74	111.50
2	B	534	U	N3-C4-C5	-5.51	111.30	114.60
2	B	1558	A	C4-C5-N7	5.51	113.45	110.70
2	B	1700	A	C8-N9-C4	5.51	108.00	105.80
2	B	1913	A	C8-N9-C4	5.51	108.00	105.80
2	B	2245	U	C5-C4-O4	5.51	129.21	125.90
2	B	2332	U	C5-C4-O4	5.51	129.21	125.90
2	B	391	G	C4-C5-N7	5.51	113.00	110.80
2	B	775	G	C5-N7-C8	5.51	107.05	104.30
2	B	2397	G	C6-C5-N7	-5.51	127.10	130.40
2	EB	2272	U	C2-N3-C4	-5.51	123.70	127.00
2	B	752	A	N1-C2-N3	5.50	132.05	129.30
2	EB	2443	C	C4-C5-C6	5.50	120.15	117.40
2	EB	2458	G	C6-C5-N7	-5.50	127.10	130.40
1	A	1397	C	C6-N1-C2	-5.50	118.10	120.30
2	B	1558	A	C6-N1-C2	5.50	121.90	118.60
3	C	52	A	C5-C6-N6	-5.50	119.30	123.70
2	EB	530	G	C2-N3-C4	5.50	114.65	111.90
2	EB	1377	G	C8-N9-C4	-5.50	104.20	106.40
1	A	927	G	C8-N9-C4	-5.50	104.20	106.40
2	EB	191	A	C6-N1-C2	-5.50	115.30	118.60
2	B	1998	G	N1-C6-O6	-5.50	116.60	119.90
1	DB	576	G	C6-C5-N7	-5.49	127.10	130.40
2	EB	528	A	C5-C6-N1	-5.49	114.95	117.70
2	B	2397	G	C5-C6-N1	-5.49	108.76	111.50
2	B	2897	U	N3-C2-O2	-5.49	118.36	122.20
2	EB	2777	G	O4'-C1'-N9	-5.49	103.81	108.20
2	B	1989	G	N1-C6-O6	5.49	123.19	119.90
2	EB	747	U	O5'-P-OP1	-5.49	100.76	105.70
2	B	270(U)	G	C8-N9-C4	5.48	108.59	106.40
2	B	198	C	O5'-P-OP1	-5.48	100.77	105.70
2	B	468	G	N1-C2-N3	5.48	127.19	123.90
2	B	1790	C	C5-C6-N1	-5.48	118.26	121.00
2	B	2061	G	N9-C4-C5	-5.48	103.21	105.40
2	EB	2022	U	C6-N1-C2	5.48	124.29	121.00
2	B	1914	C	C6-N1-C2	-5.48	118.11	120.30
2	B	2491	U	N1-C2-N3	-5.48	111.61	114.90
2	EB	395	U	N1-C2-O2	-5.48	118.97	122.80
2	EB	559	G	C5-C6-N1	-5.48	108.76	111.50
2	EB	768	G	C5-C6-O6	-5.48	125.31	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	81	G	C2-N3-C4	-5.47	109.16	111.90
2	B	1131	G	N1-C6-O6	5.47	123.19	119.90
2	B	2857	G	N1-C6-O6	-5.47	116.61	119.90
2	EB	1790	C	C2-N1-C1'	-5.47	112.78	118.80
1	DB	115	G	P-O3'-C3'	5.47	126.27	119.70
2	B	1643	G	N1-C6-O6	5.47	123.18	119.90
2	EB	1354	A	N1-C6-N6	5.47	121.88	118.60
2	B	1266	G	C5-C6-O6	-5.47	125.32	128.60
1	DB	767	A	N1-C6-N6	-5.47	115.32	118.60
2	EB	1921	G	N1-C6-O6	5.47	123.18	119.90
2	B	706	A	C8-N9-C4	5.47	107.99	105.80
2	B	1646	C	OP1-P-O3'	5.47	117.23	105.20
34	HA	15	A	N7-C8-N9	-5.47	111.07	113.80
2	B	1773	A	C8-N9-C4	-5.47	103.61	105.80
2	B	2567	G	N1-C6-O6	5.47	123.18	119.90
1	DB	301	G	N1-C6-O6	5.47	123.18	119.90
1	DB	1077	G	C5-C6-N1	-5.47	108.77	111.50
2	B	16	G	C4-C5-C6	5.46	122.08	118.80
2	B	1617	C	C5-C6-N1	-5.46	118.27	121.00
2	B	1704	G	N1-C6-O6	5.46	123.18	119.90
2	EB	577	G	C5-C6-O6	-5.46	125.32	128.60
2	B	129	C	O5'-P-OP2	-5.46	100.78	105.70
2	B	2651	C	C6-N1-C2	-5.46	118.11	120.30
2	B	568	U	C5-C4-O4	5.46	129.18	125.90
2	EB	2087	G	N1-C6-O6	5.46	123.18	119.90
2	B	761	A	C4-C5-C6	-5.46	114.27	117.00
2	B	1624	G	N3-C2-N2	-5.46	116.08	119.90
2	B	165	U	N3-C2-O2	-5.46	118.38	122.20
2	B	2324	C	C6-N1-C2	5.46	122.48	120.30
2	EB	2514	U	C5-C4-O4	5.45	129.17	125.90
2	EB	874	G	C8-N9-C4	5.45	108.58	106.40
2	EB	2033	A	C8-N9-C4	5.45	107.98	105.80
2	EB	2821	A	C8-N9-C4	-5.45	103.62	105.80
2	EB	2065	C	N3-C2-O2	5.45	125.71	121.90
1	A	121	C	N3-C2-O2	-5.45	118.09	121.90
2	B	68	G	C5-C6-N1	-5.45	108.78	111.50
2	B	1566	A	N1-C2-N3	5.45	132.02	129.30
3	C	85	G	N1-C6-O6	5.45	123.17	119.90
2	EB	2318	G	N7-C8-N9	5.45	115.82	113.10
2	B	724	U	C5-C4-O4	5.44	129.17	125.90
2	EB	1215	G	C5-C6-N1	-5.44	108.78	111.50
2	B	946	G	N1-C6-O6	5.44	123.17	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	18	C	C6-N1-C2	-5.44	118.12	120.30
2	EB	1372	U	N1-C2-N3	-5.44	111.64	114.90
2	B	2820	A	N7-C8-N9	5.44	116.52	113.80
2	B	391	G	C4-C5-C6	5.44	122.06	118.80
2	B	832	G	C4-N9-C1'	5.44	133.57	126.50
2	EB	997	G	C4-C5-N7	5.44	112.97	110.80
2	B	2689	U	N1-C2-O2	5.44	126.61	122.80
2	B	1264	G	OP2-P-O3'	5.43	117.16	105.20
2	EB	431	U	C6-N1-C2	-5.43	117.74	121.00
2	B	1282	U	C5-C4-O4	5.43	129.16	125.90
2	B	786	C	OP1-P-O3'	5.43	117.14	105.20
2	B	1790	C	C2-N3-C4	-5.43	117.19	119.90
2	EB	1605	C	C6-N1-C2	-5.43	118.13	120.30
2	EB	1959	G	N3-C4-C5	-5.43	125.89	128.60
2	EB	2443	C	N3-C4-C5	-5.43	119.73	121.90
2	B	1780	A	N1-C6-N6	5.43	121.86	118.60
2	B	2315	G	C8-N9-C4	5.43	108.57	106.40
2	EB	1725	G	N1-C6-O6	5.43	123.16	119.90
2	EB	2249	U	C2-N3-C4	5.43	130.26	127.00
2	B	2501	C	C2-N3-C4	-5.42	117.19	119.90
2	EB	2433	A	N1-C2-N3	5.42	132.01	129.30
2	B	1646	C	C6-N1-C2	5.42	122.47	120.30
2	B	1773	A	OP1-P-O3'	5.42	117.13	105.20
1	DB	1391	U	C5-C4-O4	5.42	129.15	125.90
2	B	1497	U	C2-N1-C1'	5.42	124.20	117.70
2	B	2582	G	N7-C8-N9	5.42	115.81	113.10
1	DB	1503	A	C4-C5-N7	-5.42	107.99	110.70
2	EB	1633	G	N1-C6-O6	5.42	123.15	119.90
2	B	2304	G	N3-C4-C5	5.42	131.31	128.60
2	B	2581	G	N3-C4-C5	-5.42	125.89	128.60
1	DB	1467	G	N1-C6-O6	-5.42	116.65	119.90
1	A	572	A	C8-N9-C4	-5.42	103.63	105.80
1	A	661	G	C5-C6-N1	-5.42	108.79	111.50
2	B	417	C	C6-N1-C2	-5.42	118.13	120.30
2	B	1814	G	N1-C6-O6	5.41	123.15	119.90
2	EB	1247	A	N1-C6-N6	5.41	121.85	118.60
2	B	1617	C	C6-N1-C2	5.41	122.47	120.30
2	B	1341	U	OP2-P-O3'	5.41	117.11	105.20
2	B	2877	G	N1-C6-O6	5.41	123.15	119.90
2	EB	327	G	C5-C6-N1	-5.41	108.79	111.50
2	B	401	A	N1-C6-N6	-5.41	115.36	118.60
2	EB	1139	G	N1-C6-O6	5.41	123.14	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	2467	C	N3-C4-C5	-5.41	119.74	121.90
2	EB	2719	G	N1-C6-O6	5.41	123.14	119.90
2	B	726	G	O4'-C1'-N9	5.40	112.52	108.20
2	B	1395	A	N1-C2-N3	5.40	132.00	129.30
2	B	1637	A	C2-N3-C4	-5.40	107.90	110.60
1	DB	1490	C	C6-N1-C2	5.40	122.46	120.30
2	EB	945	A	OP2-P-O3'	5.40	117.08	105.20
2	EB	1628	G	N3-C2-N2	-5.40	116.12	119.90
1	A	523	A	N1-C6-N6	5.40	121.84	118.60
2	EB	943	U	N3-C4-C5	-5.40	111.36	114.60
1	A	331	G	C4-C5-N7	5.40	112.96	110.80
2	EB	2838	G	C6-C5-N7	-5.40	127.16	130.40
2	B	259	G	N1-C6-O6	5.40	123.14	119.90
2	B	936	C	C6-N1-C2	5.39	122.46	120.30
2	B	2447	G	C2-N3-C4	-5.39	109.20	111.90
2	EB	1845	G	N1-C6-O6	5.39	123.14	119.90
2	B	15	G	C5-C6-N1	-5.39	108.80	111.50
2	B	528	A	N9-C4-C5	-5.39	103.64	105.80
2	B	1349	A	N1-C6-N6	5.39	121.83	118.60
2	B	1635	G	OP1-P-O3'	-5.39	93.34	105.20
2	B	2544	G	C2-N3-C4	-5.39	109.20	111.90
1	DB	842	C	N3-C2-O2	-5.39	118.12	121.90
1	A	1109	C	OP2-P-O3'	5.39	117.06	105.20
2	EB	2685	G	N1-C6-O6	5.39	123.13	119.90
2	EB	391	G	C4-C5-C6	5.39	122.03	118.80
2	EB	417	C	C6-N1-C2	-5.39	118.14	120.30
2	EB	2877	G	N1-C6-O6	5.39	123.13	119.90
2	B	2304	G	C8-N9-C1'	5.38	134.00	127.00
2	EB	1142(B)	A	N9-C4-C5	-5.38	103.65	105.80
2	EB	784	A	C6-N1-C2	-5.38	115.37	118.60
2	B	393	C	O5'-P-OP2	5.38	117.16	110.70
2	B	1307	A	N7-C8-N9	-5.38	111.11	113.80
2	B	1538	G	N7-C8-N9	5.38	115.79	113.10
2	B	433	C	N3-C4-C5	5.38	124.05	121.90
2	B	922	U	C5-C4-O4	5.38	129.13	125.90
2	B	1936	A	C2-N3-C4	-5.38	107.91	110.60
2	EB	1022	G	C4-C5-N7	-5.38	108.65	110.80
1	A	728	A	N1-C2-N3	5.38	131.99	129.30
2	B	2043	C	C6-N1-C2	-5.38	118.15	120.30
2	B	2271	G	C8-N9-C1'	-5.38	120.01	127.00
1	DB	108	G	C8-N9-C4	-5.38	104.25	106.40
2	EB	775	G	N1-C6-O6	-5.38	116.67	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	804	A	C2-N3-C4	-5.38	107.91	110.60
1	A	121	C	C2-N1-C1'	5.38	124.72	118.80
1	A	598	U	N3-C4-C5	-5.38	111.37	114.60
2	B	1976	U	C5-C6-N1	-5.38	120.01	122.70
2	B	2004	G	C6-C5-N7	-5.38	127.17	130.40
1	DB	635	G	N1-C6-O6	5.38	123.12	119.90
2	EB	568	U	C5-C4-O4	5.38	129.13	125.90
2	EB	2585	U	N1-C2-O2	5.38	126.56	122.80
2	B	1251	C	N1-C2-O2	5.37	122.12	118.90
2	EB	787	U	O5'-P-OP1	5.37	117.15	110.70
2	B	1632	A	C8-N9-C4	5.37	107.95	105.80
2	B	1779	U	N1-C2-O2	5.37	126.56	122.80
3	C	78	A	N1-C2-N3	5.37	131.99	129.30
2	EB	2735	G	N3-C4-C5	5.37	131.28	128.60
2	EB	1992	G	N3-C4-C5	-5.37	125.92	128.60
2	EB	960	A	N1-C6-N6	5.37	121.82	118.60
2	B	1142(B)	A	N3-C4-N9	-5.37	123.11	127.40
1	DB	576	G	C8-N9-C1'	-5.37	120.03	127.00
1	A	911	U	C5-C4-O4	5.36	129.12	125.90
1	DB	113	G	N7-C8-N9	5.36	115.78	113.10
2	B	2762	G	N1-C6-O6	5.36	123.12	119.90
2	EB	1857	G	N1-C6-O6	5.36	123.11	119.90
2	B	1348	G	C5-C6-O6	-5.36	125.39	128.60
2	B	2008	C	C5-C6-N1	-5.36	118.32	121.00
1	DB	781	A	N1-C6-N6	5.36	121.81	118.60
2	EB	247	G	N3-C4-C5	-5.36	125.92	128.60
2	EB	1185	C	OP2-P-O3'	5.36	116.99	105.20
1	A	818	G	N3-C4-N9	-5.36	122.79	126.00
2	B	562	U	OP2-P-O3'	5.36	116.98	105.20
1	DB	563	A	P-O3'-C3'	5.36	126.13	119.70
2	EB	2614	A	C4-C5-C6	5.36	119.68	117.00
1	DB	1528	U	O5'-P-OP1	5.35	117.12	110.70
2	B	123	G	N9-C4-C5	-5.35	103.26	105.40
2	B	2550	G	O5'-P-OP2	-5.35	100.88	105.70
1	DB	915	A	C8-N9-C4	5.35	107.94	105.80
1	DB	1397	C	N1-C2-O2	5.35	122.11	118.90
2	EB	2526	G	C5-C6-N1	-5.35	108.82	111.50
2	EB	1785	A	C5-N7-C8	-5.35	101.22	103.90
2	EB	2618	G	C6-N1-C2	-5.35	121.89	125.10
1	A	1523	G	C4-C5-C6	5.35	122.01	118.80
2	B	61	G	C2-N3-C4	-5.35	109.23	111.90
1	DB	508	C	N3-C2-O2	-5.34	118.16	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	2609	U	O5'-P-OP2	-5.34	100.89	105.70
2	B	1778	U	N3-C2-O2	5.34	125.94	122.20
2	B	2582	G	O5'-P-OP2	5.34	117.11	110.70
1	DB	44	G	C5-C6-N1	-5.34	108.83	111.50
2	EB	2532	G	N1-C6-O6	5.34	123.10	119.90
2	B	1697	G	N1-C6-O6	5.34	123.10	119.90
2	B	1966	A	C8-N9-C4	5.34	107.94	105.80
2	EB	1236	G	C5-C6-N1	-5.34	108.83	111.50
2	EB	2249	U	N3-C4-O4	5.33	123.13	119.40
2	B	804	A	C5-C6-N6	-5.33	119.43	123.70
2	B	2609	U	C2-N3-C4	-5.33	123.80	127.00
1	DB	331	G	C4-C5-N7	5.33	112.93	110.80
1	DB	922	G	C6-C5-N7	-5.33	127.20	130.40
1	A	1415	G	C5-C6-N1	-5.33	108.83	111.50
2	B	1629	U	C6-N1-C2	-5.33	117.80	121.00
2	B	1975	G	C5-C6-O6	-5.33	125.40	128.60
2	B	2053	G	C5-N7-C8	-5.33	101.63	104.30
2	B	2643	G	C5-C6-O6	-5.33	125.40	128.60
2	B	1187	G	C6-N1-C2	5.33	128.30	125.10
2	EB	2697	G	N1-C6-O6	5.33	123.10	119.90
1	A	927	G	C5-C6-N1	-5.33	108.84	111.50
1	A	944	G	C5-C6-O6	5.33	131.80	128.60
2	B	763	G	N3-C4-C5	-5.33	125.94	128.60
2	B	1470	G	N1-C6-O6	5.33	123.10	119.90
2	B	2430	A	OP2-P-O3'	5.33	116.92	105.20
1	DB	635	G	C5-C6-N1	-5.33	108.84	111.50
2	EB	726	G	C8-N9-C4	-5.33	104.27	106.40
2	EB	1627	G	C6-C5-N7	-5.33	127.20	130.40
2	EB	1981	A	C4-C5-N7	5.33	113.36	110.70
2	EB	2850	A	N1-C2-N3	5.33	131.96	129.30
2	B	2719	G	N3-C4-C5	5.33	131.26	128.60
2	EB	827	U	O5'-P-OP2	-5.33	100.91	105.70
2	EB	2346	A	C8-N9-C4	-5.33	103.67	105.80
1	A	1199	U	C5-C4-O4	5.32	129.09	125.90
1	A	1523	G	C5-C6-N1	-5.32	108.84	111.50
2	B	2086	U	C5-C4-O4	5.32	129.09	125.90
2	B	2639	A	C8-N9-C4	5.32	107.93	105.80
2	EB	1024	G	C5-N7-C8	-5.32	101.64	104.30
2	B	2318	G	C6-C5-N7	-5.32	127.21	130.40
3	C	52	A	N9-C4-C5	-5.32	103.67	105.80
2	B	527	C	C5-C4-N4	-5.32	116.48	120.20
2	B	2067	G	C5-C6-O6	-5.32	125.41	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	DB	1399	C	C6-N1-C2	-5.32	118.17	120.30
2	EB	570	G	C5-N7-C8	5.32	106.96	104.30
2	EB	663	G	C4-C5-C6	5.32	121.99	118.80
2	EB	2259	G	C4-C5-N7	5.32	112.93	110.80
2	B	1266	G	C8-N9-C4	5.32	108.53	106.40
3	C	65	C	C2-N1-C1'	5.32	124.65	118.80
3	FB	76	G	C5-C6-O6	-5.32	125.41	128.60
2	B	1126	A	O5'-P-OP1	-5.32	100.92	105.70
2	B	2474	C	C6-N1-C2	5.32	122.43	120.30
1	DB	1522	U	C4-C5-C6	5.32	122.89	119.70
2	EB	391	G	N3-C4-N9	5.32	129.19	126.00
2	B	1304	C	C5-C6-N1	-5.31	118.34	121.00
1	DB	41	G	N1-C6-O6	5.31	123.09	119.90
2	B	1269	A	C5-N7-C8	-5.31	101.24	103.90
2	EB	775	G	N7-C8-N9	-5.31	110.44	113.10
2	B	1753	G	C5-C6-O6	5.31	131.78	128.60
2	B	2491	U	C6-N1-C2	5.31	124.19	121.00
2	EB	1251	C	O5'-P-OP2	-5.31	100.92	105.70
2	EB	2088	G	C5-C6-N1	-5.31	108.85	111.50
2	EB	763	G	N1-C2-N3	5.31	127.08	123.90
2	EB	1266	G	C5-C6-O6	-5.31	125.42	128.60
2	EB	1382	G	N3-C4-C5	5.31	131.25	128.60
2	B	1895	C	N3-C4-C5	5.30	124.02	121.90
2	B	2748	A	C2-N3-C4	-5.30	107.95	110.60
1	DB	821	G	C8-N9-C4	5.30	108.52	106.40
2	EB	874	G	N3-C4-C5	5.30	131.25	128.60
2	EB	1187	G	N7-C8-N9	5.30	115.75	113.10
2	EB	2593	U	C6-N1-C1'	5.30	128.62	121.20
2	B	776	G	C5-C6-N1	-5.30	108.85	111.50
2	B	2791	C	C6-N1-C2	-5.30	118.18	120.30
2	B	600	G	C8-N9-C4	5.30	108.52	106.40
2	B	1840	G	C4-C5-C6	5.30	121.98	118.80
2	B	2072	G	C6-C5-N7	-5.30	127.22	130.40
1	DB	201	C	C6-N1-C2	-5.30	118.18	120.30
2	EB	312	G	N9-C4-C5	-5.30	103.28	105.40
2	B	1216	G	C5-C6-N1	-5.30	108.85	111.50
2	EB	788	A	C8-N9-C4	5.30	107.92	105.80
2	EB	2266	A	O5'-P-OP2	-5.30	100.93	105.70
2	EB	2439	A	OP1-P-O3'	5.30	116.86	105.20
2	B	960	A	C8-N9-C4	5.30	107.92	105.80
2	B	676	A	N9-C4-C5	-5.29	103.68	105.80
2	B	783	A	N9-C4-C5	5.29	107.92	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	DB	104	G	N1-C6-O6	5.29	123.08	119.90
1	A	298	A	N1-C6-N6	-5.29	115.42	118.60
2	B	472	A	C6-N1-C2	-5.29	115.42	118.60
2	B	1627	G	C6-C5-N7	-5.29	127.22	130.40
2	B	1825	A	N1-C2-N3	5.29	131.95	129.30
2	EB	1243	G	C5-C6-N1	-5.29	108.85	111.50
2	EB	1325	G	N3-C4-C5	-5.29	125.95	128.60
2	B	613	U	C2-N1-C1'	5.29	124.05	117.70
2	EB	2852	G	N1-C6-O6	5.29	123.08	119.90
1	A	1503	A	C5-N7-C8	5.29	106.55	103.90
2	B	1857	G	C5-C6-N1	-5.29	108.86	111.50
2	B	1756	G	C2-N3-C4	-5.29	109.26	111.90
2	B	2458	G	C8-N9-C4	-5.29	104.28	106.40
2	EB	1374	G	N1-C6-O6	5.29	123.07	119.90
2	EB	1779	U	C6-N1-C1'	-5.29	113.80	121.20
1	A	357	G	N1-C6-O6	5.29	123.07	119.90
2	B	2086	U	N1-C2-N3	5.29	118.07	114.90
2	B	2061	G	OP2-P-O3'	5.28	116.83	105.20
2	B	2461	C	C6-N1-C2	5.28	122.41	120.30
2	EB	2581	G	C5-C6-O6	5.28	131.77	128.60
1	A	766	A	O5'-P-OP1	-5.28	100.95	105.70
2	EB	1307	A	C8-N9-C4	5.28	107.91	105.80
2	B	305	U	C4-C5-C6	5.28	122.87	119.70
2	B	1624	G	C2-N3-C4	-5.28	109.26	111.90
2	EB	1635	G	OP1-P-O3'	-5.28	93.58	105.20
1	A	702	A	N1-C6-N6	5.28	121.77	118.60
2	B	1377	G	N1-C2-N3	5.28	127.07	123.90
2	B	2858	C	C6-N1-C2	5.28	122.41	120.30
2	EB	2693	A	N1-C6-N6	5.28	121.77	118.60
1	A	1399	C	N3-C2-O2	-5.28	118.20	121.90
2	B	1520	U	C5-C4-O4	5.28	129.07	125.90
1	DB	1431	C	C6-N1-C2	-5.28	118.19	120.30
1	A	1528	U	O5'-P-OP1	5.28	117.03	110.70
2	B	205	G	C8-N9-C4	5.28	108.51	106.40
2	B	1762	A	N9-C4-C5	5.27	107.91	105.80
1	DB	1079	G	C4-C5-N7	-5.27	108.69	110.80
2	EB	438	G	N1-C6-O6	5.27	123.06	119.90
2	B	603	A	C8-N9-C4	5.27	107.91	105.80
2	B	1961	C	N3-C4-C5	5.27	124.01	121.90
1	DB	1532	U	C5-C4-O4	-5.27	122.74	125.90
2	EB	698	C	C5-C6-N1	-5.27	118.36	121.00
2	EB	2473	U	C2-N1-C1'	5.27	124.02	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	59	U	C6-N1-C2	-5.27	117.84	121.00
2	B	1614	A	C8-N9-C4	-5.27	103.69	105.80
2	B	2617	C	N3-C4-C5	5.26	124.01	121.90
1	DB	232	G	N1-C6-O6	5.26	123.06	119.90
1	DB	1099	G	N3-C4-N9	-5.26	122.84	126.00
1	A	1158	C	C2-N1-C1'	5.26	124.59	118.80
2	B	2318	G	C4-C5-N7	5.26	112.91	110.80
2	EB	1706	U	C4-C5-C6	5.26	122.86	119.70
1	DB	331	G	C8-N9-C4	-5.26	104.30	106.40
2	EB	2318	G	C4-C5-N7	5.26	112.91	110.80
1	A	232	G	C5-C6-N1	-5.26	108.87	111.50
1	A	507	C	C6-N1-C2	5.26	122.40	120.30
2	B	946	G	C2-N3-C4	-5.26	109.27	111.90
2	EB	1426	G	C4-C5-N7	-5.26	108.70	110.80
2	EB	1602	U	N3-C4-O4	5.26	123.08	119.40
2	B	1327	C	N3-C4-C5	-5.26	119.80	121.90
1	A	331	G	C5-N7-C8	-5.26	101.67	104.30
2	EB	216	A	O5'-P-OP2	-5.26	100.97	105.70
2	EB	2593	U	C5-C6-N1	5.26	125.33	122.70
2	B	2453	A	O5'-P-OP2	5.25	117.01	110.70
2	EB	2755	C	C5-C6-N1	5.25	123.63	121.00
2	B	1378	A	C8-N9-C4	5.25	107.90	105.80
2	EB	1970	A	C8-N9-C4	-5.25	103.70	105.80
2	B	2440	C	N3-C4-C5	-5.25	119.80	121.90
2	B	528	A	C4-C5-C6	-5.25	114.38	117.00
2	B	2587	A	C6-N1-C2	-5.25	115.45	118.60
2	B	2782	G	C6-C5-N7	-5.25	127.25	130.40
2	EB	128	C	N3-C4-C5	5.25	124.00	121.90
2	EB	2032	G	C5-N7-C8	-5.25	101.67	104.30
2	B	1629	U	N3-C4-C5	-5.25	111.45	114.60
1	DB	1488	G	N1-C6-O6	5.25	123.05	119.90
2	EB	2086	U	C5-C4-O4	5.25	129.05	125.90
1	A	576	G	C4-C5-C6	5.25	121.95	118.80
2	EB	1779	U	C5-C4-O4	-5.25	122.75	125.90
2	EB	2053	G	C2-N3-C4	-5.25	109.28	111.90
2	EB	248	G	N1-C6-O6	5.25	123.05	119.90
2	EB	701	G	C5-C6-O6	-5.24	125.45	128.60
2	EB	1646	C	OP1-P-O3'	5.24	116.73	105.20
1	A	111	G	C5-C6-N1	-5.24	108.88	111.50
1	A	691	G	N3-C4-N9	5.24	129.15	126.00
1	A	945	G	C5-C6-O6	-5.24	125.46	128.60
2	B	801	G	C6-N1-C2	-5.24	121.95	125.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1422	G	N1-C6-O6	5.24	123.04	119.90
2	EB	449	A	OP2-P-O3'	5.24	116.73	105.20
2	EB	1257	C	C6-N1-C2	-5.24	118.20	120.30
1	A	805	C	N3-C4-C5	5.24	124.00	121.90
2	B	649	G	N3-C4-C5	-5.24	125.98	128.60
2	B	870	A	N1-C6-N6	5.24	121.74	118.60
2	B	1319	G	C5-C6-O6	-5.24	125.46	128.60
2	B	1558	A	C8-N9-C4	5.24	107.89	105.80
2	B	1961	C	C6-N1-C2	5.24	122.40	120.30
2	B	2287	A	C2-N3-C4	-5.24	107.98	110.60
2	B	2450	A	O5'-P-OP2	-5.24	100.99	105.70
2	B	2061	G	C5-C6-O6	-5.24	125.46	128.60
2	B	2497	A	C5-N7-C8	-5.24	101.28	103.90
2	EB	1330	C	N3-C4-C5	5.24	124.00	121.90
2	B	2072	G	C5-C6-O6	-5.24	125.46	128.60
2	EB	784	A	N1-C6-N6	-5.24	115.46	118.60
2	B	465	G	C8-N9-C4	-5.23	104.31	106.40
2	B	933	A	O4'-C1'-N9	5.23	112.39	108.20
2	EB	2587	A	N1-C6-N6	5.23	121.74	118.60
2	B	2873	A	N1-C6-N6	5.23	121.74	118.60
2	EB	1573	G	C8-N9-C4	5.23	108.49	106.40
2	B	1234	U	N3-C2-O2	-5.23	118.54	122.20
1	DB	563	A	C8-N9-C4	-5.23	103.71	105.80
2	EB	1187	G	C6-N1-C2	5.23	128.24	125.10
1	A	677	U	C6-N1-C2	-5.23	117.86	121.00
2	B	1840	G	C6-C5-N7	-5.23	127.26	130.40
2	B	1960	A	C8-N9-C4	5.23	107.89	105.80
2	B	2063	C	N3-C4-C5	-5.23	119.81	121.90
2	EB	2575	C	N1-C2-O2	-5.23	115.76	118.90
1	A	842	C	N3-C4-C5	-5.23	119.81	121.90
2	B	2546	U	C5-C4-O4	5.23	129.04	125.90
2	B	564	C	C6-N1-C2	-5.22	118.21	120.30
2	B	775	G	C5-C6-O6	5.22	131.73	128.60
2	EB	2458	G	N3-C4-N9	5.22	129.13	126.00
2	B	2706	G	N1-C6-O6	5.22	123.03	119.90
2	EB	2439	A	C2-N3-C4	-5.22	107.99	110.60
2	B	265	A	N7-C8-N9	5.22	116.41	113.80
2	B	570	G	N9-C4-C5	5.22	107.49	105.40
2	B	726	G	C8-N9-C4	-5.22	104.31	106.40
2	B	1327	C	C5-C6-N1	5.22	123.61	121.00
2	EB	464	U	N3-C4-C5	-5.22	111.47	114.60
2	EB	2245	U	C4-C5-C6	5.22	122.83	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1035	U	C5-C4-O4	5.22	129.03	125.90
1	A	22	G	N1-C6-O6	5.22	123.03	119.90
1	A	331	G	N7-C8-N9	5.22	115.71	113.10
2	B	2686	G	C4-N9-C1'	5.22	133.28	126.50
2	B	2846	G	N1-C6-O6	5.22	123.03	119.90
2	EB	2598	A	C2-N3-C4	-5.22	107.99	110.60
1	A	781	A	N9-C4-C5	-5.21	103.71	105.80
2	B	1252	G	O4'-C1'-N9	-5.21	104.03	108.20
2	B	2439	A	OP1-P-O3'	5.21	116.67	105.20
2	B	2452	C	C2-N1-C1'	5.21	124.54	118.80
2	B	2567	G	C2-N3-C4	-5.21	109.29	111.90
2	EB	1003	G	N1-C6-O6	5.21	123.03	119.90
1	A	665	A	N1-C6-N6	-5.21	115.47	118.60
2	B	982	C	O4'-C1'-N1	-5.21	104.03	108.20
1	A	117	G	C5-N7-C8	-5.21	101.70	104.30
2	B	571	A	O5'-P-OP2	-5.21	101.01	105.70
2	B	2514	U	C5-C4-O4	5.21	129.03	125.90
2	EB	695	G	N1-C6-O6	5.21	123.03	119.90
2	EB	695	G	O5'-P-OP2	-5.21	101.01	105.70
2	EB	1695	G	C4-C5-N7	5.21	112.88	110.80
2	B	540	G	N1-C6-O6	5.21	123.02	119.90
1	A	899	C	C5-C6-N1	5.21	123.60	121.00
2	B	68	G	N3-C2-N2	-5.20	116.26	119.90
2	B	1297	C	C5-C6-N1	5.20	123.60	121.00
2	EB	960	A	C4-C5-N7	5.20	113.30	110.70
2	EB	2318	G	C6-C5-N7	-5.20	127.28	130.40
1	A	251	G	O4'-C1'-N9	-5.20	104.04	108.20
2	B	980	A	N7-C8-N9	5.20	116.40	113.80
2	B	1402	C	C4-C5-C6	5.20	120.00	117.40
2	EB	2514	U	N3-C4-C5	-5.20	111.48	114.60
2	B	2439	A	O4'-C1'-N9	-5.20	104.04	108.20
3	C	87	G	C5-N7-C8	5.20	106.90	104.30
2	B	1021	A	C8-N9-C4	-5.20	103.72	105.80
2	B	2319	G	N3-C4-C5	5.20	131.20	128.60
2	EB	948	G	C2-N3-C4	-5.20	109.30	111.90
1	A	562	C	N3-C4-C5	5.20	123.98	121.90
2	B	791	C	N3-C4-C5	5.20	123.98	121.90
2	B	1131	G	N3-C4-C5	5.20	131.20	128.60
1	DB	246	A	O5'-P-OP2	-5.20	101.02	105.70
2	EB	1366	A	N9-C4-C5	5.20	107.88	105.80
2	EB	2607	G	N3-C4-N9	5.20	129.12	126.00
2	B	397	G	N1-C6-O6	5.19	123.02	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1346	A	C8-N9-C4	5.19	107.88	105.80
2	B	179	G	C8-N9-C1'	-5.19	120.25	127.00
2	B	1941	C	C6-N1-C2	5.19	122.38	120.30
2	B	82	G	C5-C6-N1	-5.19	108.91	111.50
2	B	1021	A	N7-C8-N9	5.19	116.40	113.80
2	B	1633	G	C4-C5-C6	5.19	121.92	118.80
2	EB	505	A	C5-C6-N1	5.19	120.30	117.70
2	EB	1936	A	O5'-P-OP2	-5.19	101.03	105.70
2	EB	2056	G	O4'-C1'-N9	-5.19	104.05	108.20
2	B	583	G	N1-C2-N3	5.19	127.01	123.90
2	B	747	U	C6-N1-C2	5.19	124.11	121.00
2	EB	2582	G	C4-N9-C1'	5.19	133.25	126.50
2	EB	304	G	C5-C6-N1	-5.19	108.91	111.50
2	EB	933	A	O4'-C1'-N9	5.19	112.35	108.20
2	EB	1315	C	O5'-P-OP1	-5.19	101.03	105.70
2	B	1326	U	N3-C2-O2	-5.18	118.57	122.20
2	B	1618	A	C5-C6-N6	-5.18	119.55	123.70
1	DB	106	C	N1-C2-O2	-5.18	115.79	118.90
2	EB	1269	A	C8-N9-C4	-5.18	103.73	105.80
2	EB	2569	G	OP1-P-O3'	5.18	116.61	105.20
2	B	1021	A	N3-C4-N9	-5.18	123.25	127.40
2	B	1043	C	N1-C2-O2	5.18	122.01	118.90
2	B	2490	G	C5-C6-O6	5.18	131.71	128.60
2	EB	146	G	N1-C6-O6	5.18	123.01	119.90
2	B	2593	U	C5-C6-N1	5.18	125.29	122.70
2	B	1816	G	C5-C6-N1	-5.18	108.91	111.50
2	EB	2545	G	N1-C6-O6	5.18	123.01	119.90
2	B	971	C	C6-N1-C2	5.18	122.37	120.30
2	B	196	A	N7-C8-N9	5.18	116.39	113.80
2	B	1314	C	OP2-P-O3'	5.18	116.59	105.20
2	B	2306	C	C6-N1-C2	5.17	122.37	120.30
2	EB	257	A	C8-N9-C4	5.17	107.87	105.80
2	B	1359	A	N1-C6-N6	5.17	121.70	118.60
2	B	1797	C	C6-N1-C2	5.17	122.37	120.30
2	EB	387	U	O5'-P-OP2	-5.17	101.05	105.70
2	EB	1538	G	C8-N9-C4	-5.17	104.33	106.40
2	B	1349	A	N9-C4-C5	-5.17	103.73	105.80
2	B	1614	A	N7-C8-N9	5.17	116.38	113.80
2	B	2680	C	C6-N1-C2	5.17	122.37	120.30
2	B	475	U	C6-N1-C2	-5.17	117.90	121.00
2	EB	1778	U	C2-N1-C1'	-5.17	111.50	117.70
3	FB	52	A	N9-C4-C5	-5.17	103.73	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	802	A	N7-C8-N9	5.16	116.38	113.80
2	EB	1454	U	N3-C2-O2	5.16	125.81	122.20
2	B	2519	U	O5'-P-OP1	-5.16	101.05	105.70
2	EB	2686	G	C4-N9-C1'	5.16	133.21	126.50
2	B	1657	C	OP1-P-O3'	5.16	116.55	105.20
2	B	1964	G	N7-C8-N9	-5.16	110.52	113.10
2	B	2250	G	N1-C6-O6	-5.16	116.81	119.90
2	EB	2248	C	O5'-P-OP2	5.16	116.89	110.70
1	DB	108	G	N7-C8-N9	5.16	115.68	113.10
1	DB	1523	G	C4-C5-C6	5.16	121.89	118.80
2	EB	596	G	C2-N3-C4	-5.16	109.32	111.90
2	B	59	U	C5-C4-O4	5.15	128.99	125.90
2	B	1773	A	N1-C2-N3	5.15	131.88	129.30
1	A	1481	U	C4-C5-C6	5.15	122.79	119.70
2	B	508	G	C4-C5-N7	-5.15	108.74	110.80
2	B	1158	C	C6-N1-C2	5.15	122.36	120.30
2	B	1969	A	OP2-P-O3'	5.15	116.54	105.20
2	B	2718	G	N1-C6-O6	5.15	122.99	119.90
1	DB	612	C	C6-N1-C2	5.15	122.36	120.30
2	EB	195	A	N7-C8-N9	5.15	116.38	113.80
2	EB	1367	A	N1-C2-N3	5.15	131.88	129.30
1	A	50	A	N1-C6-N6	5.15	121.69	118.60
2	B	667	U	N3-C4-O4	5.15	123.00	119.40
1	DB	945	G	C6-C5-N7	-5.15	127.31	130.40
2	B	2644	G	C5-C6-N1	-5.15	108.93	111.50
2	B	140	A	C5-C6-N1	-5.14	115.13	117.70
2	B	1659	U	N3-C2-O2	5.14	125.80	122.20
2	B	2714	G	O5'-P-OP1	-5.14	101.07	105.70
1	DB	771	G	C8-N9-C4	5.14	108.46	106.40
2	EB	2437	U	N3-C4-C5	-5.14	111.51	114.60
1	A	112	G	C5-C6-N1	-5.14	108.93	111.50
2	B	2070	G	N1-C6-O6	5.14	122.98	119.90
2	EB	790	C	O5'-P-OP2	-5.14	101.07	105.70
2	B	531	C	C2-N3-C4	-5.14	117.33	119.90
2	B	1981	A	N7-C8-N9	5.14	116.37	113.80
2	EB	1538	G	N7-C8-N9	5.14	115.67	113.10
2	EB	1672	C	C2-N1-C1'	5.14	124.45	118.80
2	EB	1698	A	C6-C5-N7	-5.14	128.70	132.30
2	B	55	G	C5-C6-N1	-5.14	108.93	111.50
2	EB	754	C	C5-C6-N1	-5.14	118.43	121.00
1	A	1417	G	C5-C6-N1	-5.14	108.93	111.50
2	B	198	C	O5'-P-OP2	5.14	116.86	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1780	A	C2-N3-C4	-5.14	108.03	110.60
1	DB	793	U	N1-C2-N3	5.14	117.98	114.90
1	A	1512	U	C6-N1-C2	-5.13	117.92	121.00
2	B	213	A	N7-C8-N9	-5.13	111.23	113.80
2	B	792	G	OP2-P-O3'	5.13	116.49	105.20
2	EB	2272	U	C5-C6-N1	-5.13	120.13	122.70
2	B	761	A	N7-C8-N9	5.13	116.37	113.80
2	B	1243	G	C5-C6-N1	-5.13	108.93	111.50
1	DB	1417	G	C4-C5-C6	5.13	121.88	118.80
2	EB	59	U	C5-C4-O4	5.13	128.98	125.90
2	EB	330	A	C8-N9-C4	5.13	107.85	105.80
2	EB	728	G	C5-C6-O6	-5.13	125.52	128.60
2	EB	2490	G	C5-C6-N1	-5.13	108.94	111.50
2	EB	2599	G	N3-C4-N9	-5.13	122.92	126.00
1	A	576	G	C4-N9-C1'	5.13	133.17	126.50
2	B	259	G	C4-C5-N7	5.13	112.85	110.80
2	B	2581	G	C8-N9-C4	-5.13	104.35	106.40
1	DB	789	U	N3-C4-C5	-5.13	111.52	114.60
2	EB	404	C	N3-C4-C5	5.13	123.95	121.90
2	EB	2710	C	N3-C2-O2	-5.13	118.31	121.90
1	A	299	G	C5-C6-N1	-5.13	108.94	111.50
2	B	195	A	C4-C5-N7	5.13	113.26	110.70
2	B	648	G	N1-C6-O6	5.12	122.97	119.90
2	B	1275	A	N1-C6-N6	5.12	121.67	118.60
2	B	1900	A	N1-C2-N3	5.12	131.86	129.30
2	EB	1305	C	N1-C2-O2	-5.12	115.83	118.90
2	EB	1497	U	N1-C2-O2	5.12	126.39	122.80
1	A	677	U	N3-C2-O2	-5.12	118.61	122.20
2	B	2056	G	N3-C4-N9	5.12	129.07	126.00
2	EB	2544	G	C5-C6-N1	-5.12	108.94	111.50
2	B	1344	G	C8-N9-C4	-5.12	104.35	106.40
2	EB	465	G	C8-N9-C4	-5.12	104.35	106.40
2	EB	2582	G	OP2-P-O3'	5.12	116.47	105.20
2	B	228	A	N1-C6-N6	5.12	121.67	118.60
2	B	1667	G	N9-C4-C5	-5.12	103.35	105.40
1	A	842	C	N3-C2-O2	-5.12	118.32	121.90
2	B	2616	C	N3-C2-O2	5.12	125.48	121.90
2	EB	2430	A	C8-N9-C4	-5.12	103.75	105.80
2	B	2485	G	N1-C6-O6	5.12	122.97	119.90
1	DB	1467	G	C6-C5-N7	5.12	133.47	130.40
2	EB	670	A	OP1-P-O3'	5.12	116.45	105.20
2	EB	1231	G	C2-N3-C4	-5.12	109.34	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	2560	C	N3-C4-N4	5.12	121.58	118.00
2	B	442	G	C8-N9-C4	5.11	108.44	106.40
2	B	1127	A	C8-N9-C4	5.11	107.84	105.80
1	DB	282	A	C5-C6-N6	-5.11	119.61	123.70
3	FB	65	C	N1-C2-O2	5.11	121.97	118.90
1	DB	1137	C	C6-N1-C2	-5.11	118.25	120.30
2	EB	479	A	N1-C6-N6	-5.11	115.53	118.60
2	B	746	A	C8-N9-C4	-5.11	103.76	105.80
2	B	2056	G	C5-N7-C8	-5.11	101.75	104.30
2	EB	330	A	N3-C4-C5	5.11	130.38	126.80
2	B	2298	A	N1-C6-N6	-5.11	115.53	118.60
2	EB	1969	A	OP2-P-O3'	5.11	116.44	105.20
1	A	1099	G	N9-C4-C5	5.11	107.44	105.40
2	B	2275	C	C6-N1-C2	5.11	122.34	120.30
2	B	2574	G	N1-C6-O6	5.11	122.96	119.90
2	EB	1627	G	C5-C6-O6	-5.11	125.54	128.60
2	B	687	C	C6-N1-C2	-5.11	118.26	120.30
2	B	1335	U	N1-C2-N3	5.11	117.96	114.90
2	B	1427	A	N7-C8-N9	-5.10	111.25	113.80
2	EB	179	G	C5-C6-N1	-5.10	108.95	111.50
2	B	1573	G	C8-N9-C4	5.10	108.44	106.40
2	EB	1131	G	O5'-P-OP2	-5.10	101.11	105.70
2	B	1899	G	C5-C6-N1	-5.10	108.95	111.50
2	B	1983	C	C5-C6-N1	-5.10	118.45	121.00
2	EB	1761	C	O5'-P-OP2	-5.10	101.11	105.70
2	B	1699	G	C4-C5-N7	-5.10	108.76	110.80
2	EB	1762	A	O4'-C1'-N9	5.10	112.28	108.20
3	FB	87	G	N7-C8-N9	-5.10	110.55	113.10
2	B	471	A	N1-C2-N3	5.10	131.85	129.30
2	B	701	G	N1-C6-O6	5.10	122.96	119.90
2	B	2686	G	N3-C4-N9	5.10	129.06	126.00
2	EB	805	G	N7-C8-N9	5.10	115.65	113.10
2	EB	817	C	N3-C2-O2	-5.10	118.33	121.90
2	EB	1429	G	N1-C6-O6	-5.10	116.84	119.90
2	EB	1779	U	OP1-P-O3'	5.10	116.41	105.20
2	EB	2508	G	N1-C6-O6	5.10	122.96	119.90
2	B	1186	G	N1-C6-O6	5.10	122.96	119.90
2	EB	2277	G	N1-C6-O6	5.10	122.96	119.90
2	EB	2287	A	N1-C6-N6	5.10	121.66	118.60
2	EB	2532	G	C6-C5-N7	-5.10	127.34	130.40
2	B	783	A	N1-C6-N6	-5.09	115.54	118.60
2	B	854	G	C5-C6-N1	-5.09	108.95	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2505	G	N3-C4-N9	-5.09	122.94	126.00
2	EB	2218	G	C2-N3-C4	-5.09	109.35	111.90
2	B	1348	G	C2-N3-C4	-5.09	109.35	111.90
2	EB	831	G	N3-C2-N2	-5.09	116.33	119.90
1	A	298	A	C8-N9-C4	-5.09	103.76	105.80
2	B	828	U	C5-C6-N1	-5.09	120.15	122.70
2	B	1629	U	N1-C2-N3	5.09	117.95	114.90
1	A	576	G	C5-C6-N1	-5.09	108.95	111.50
2	B	1647	G	OP1-P-O3'	5.09	116.39	105.20
2	EB	27	G	N3-C4-C5	5.09	131.15	128.60
2	EB	2502	G	C5-C6-N1	-5.09	108.95	111.50
1	A	328	C	N1-C2-O2	5.09	121.95	118.90
2	EB	2640	G	N1-C6-O6	5.09	122.95	119.90
2	B	594	U	C5-C4-O4	5.09	128.95	125.90
2	B	1328	G	N3-C4-N9	5.09	129.05	126.00
1	DB	23	C	N3-C4-C5	-5.09	119.86	121.90
1	DB	888	G	C5-C6-O6	5.09	131.65	128.60
2	EB	2243	U	O5'-P-OP1	5.09	116.80	110.70
2	EB	528	A	N1-C6-N6	5.08	121.65	118.60
2	EB	439	G	N1-C6-O6	5.08	122.95	119.90
2	EB	969	U	C5-C4-O4	5.08	128.95	125.90
2	EB	1024	G	N7-C8-N9	5.08	115.64	113.10
2	EB	2827	C	N3-C4-C5	-5.08	119.87	121.90
2	B	197	A	O5'-P-OP1	5.08	116.80	110.70
1	DB	1201	A	P-O3'-C3'	5.08	125.80	119.70
1	A	789	U	C6-N1-C2	-5.08	117.95	121.00
34	HA	15	A	N9-C4-C5	-5.08	103.77	105.80
2	EB	929	G	C6-C5-N7	-5.08	127.35	130.40
2	EB	1940	U	C6-N1-C2	-5.08	117.95	121.00
2	B	216	A	O5'-P-OP2	-5.08	101.13	105.70
2	B	1788	C	O5'-P-OP2	-5.08	101.13	105.70
2	EB	639	U	C5-C4-O4	5.08	128.94	125.90
2	EB	1779	U	C2-N1-C1'	5.08	123.79	117.70
2	EB	2505	G	C8-N9-C4	-5.08	104.37	106.40
2	B	1417	C	C4-C5-C6	5.07	119.94	117.40
2	B	2319	G	C5-N7-C8	-5.07	101.76	104.30
1	DB	899	C	C2-N1-C1'	5.07	124.38	118.80
2	EB	2271	G	N1-C2-N3	5.07	126.94	123.90
2	B	530	G	N1-C2-N3	-5.07	120.86	123.90
1	A	754	C	C2-N3-C4	5.07	122.44	119.90
2	B	832	G	C8-N9-C1'	-5.07	120.41	127.00
2	B	1753	G	C4-C5-N7	-5.07	108.77	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	2232	U	C5-C4-O4	5.07	128.94	125.90
2	EB	2585	U	N3-C2-O2	-5.07	118.65	122.20
2	B	504	U	C2-N1-C1'	5.07	123.78	117.70
2	B	707	G	C5-C6-N1	-5.07	108.97	111.50
2	B	774	A	C2-N3-C4	5.07	113.13	110.60
2	B	2034	U	C5-C4-O4	-5.07	122.86	125.90
2	EB	795	C	N1-C2-N3	5.07	122.75	119.20
2	EB	1359	A	C2-N3-C4	-5.07	108.07	110.60
2	EB	1703	G	C6-C5-N7	-5.07	127.36	130.40
2	B	440	G	N1-C6-O6	5.07	122.94	119.90
2	B	871	U	N1-C2-O2	-5.07	119.25	122.80
2	B	1940	U	C6-N1-C2	-5.07	117.96	121.00
2	EB	698	C	C6-N1-C2	5.07	122.33	120.30
2	EB	1426	G	C5-C6-O6	5.07	131.64	128.60
2	EB	2028	U	C4-C5-C6	5.07	122.74	119.70
2	B	908	C	C6-N1-C2	-5.06	118.28	120.30
1	DB	650	G	N1-C6-O6	5.06	122.94	119.90
2	EB	2709	G	N1-C6-O6	5.06	122.94	119.90
1	A	576	G	C6-C5-N7	-5.06	127.36	130.40
2	B	2341	G	C8-N9-C4	-5.06	104.38	106.40
2	EB	215	G	C5-C6-O6	-5.06	125.57	128.60
2	EB	494	G	C5-C6-O6	-5.06	125.57	128.60
2	EB	683	C	C6-N1-C2	-5.06	118.28	120.30
2	EB	1698	A	C4-C5-N7	5.06	113.23	110.70
2	B	1173	G	C8-N9-C4	-5.06	104.38	106.40
2	B	1829	A	C5-C6-N1	5.06	120.23	117.70
2	B	494	G	C4-C5-N7	5.05	112.82	110.80
2	B	1632	A	C5-C6-N1	5.05	120.23	117.70
2	EB	1981	A	N3-C4-C5	5.05	130.34	126.80
2	B	1323	U	N3-C4-C5	-5.05	111.57	114.60
2	B	801	G	N1-C2-N2	-5.05	111.65	116.20
1	DB	304	U	C4-C5-C6	5.05	122.73	119.70
2	EB	577	G	OP2-P-O3'	5.05	116.31	105.20
2	EB	2250	G	C8-N9-C4	-5.05	104.38	106.40
2	B	259	G	C5-C6-O6	-5.05	125.57	128.60
2	B	1397	U	N1-C2-O2	5.05	126.33	122.80
2	B	2061	G	N3-C4-N9	5.05	129.03	126.00
1	DB	1523	G	C5-C6-N1	-5.05	108.97	111.50
2	EB	115	C	C6-N1-C2	5.05	122.32	120.30
2	EB	818	G	C4-N9-C1'	5.05	133.06	126.50
2	B	213	A	C2-N3-C4	-5.05	108.08	110.60
2	B	312	G	C5-C6-N1	-5.05	108.98	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	960	A	N1-C6-N6	5.05	121.63	118.60
1	DB	1054	C	N3-C4-C5	-5.05	119.88	121.90
2	EB	1526	G	N9-C4-C5	-5.05	103.38	105.40
2	EB	2066	C	N1-C2-O2	-5.05	115.87	118.90
2	EB	2271	G	C8-N9-C1'	-5.05	120.44	127.00
2	B	465	G	C5-C6-N1	-5.04	108.98	111.50
2	B	819	A	C5-N7-C8	-5.04	101.38	103.90
2	B	1139	G	N1-C6-O6	5.04	122.92	119.90
2	B	2358	G	N1-C6-O6	-5.04	116.88	119.90
1	DB	236	G	N1-C6-O6	5.04	122.92	119.90
1	DB	1391	U	C5-C6-N1	-5.04	120.18	122.70
2	B	789	A	OP2-P-O3'	5.04	116.29	105.20
2	B	552	G	N1-C6-O6	5.04	122.92	119.90
2	B	1381	G	C6-C5-N7	-5.04	127.38	130.40
2	B	1781	C	C6-N1-C2	5.04	122.31	120.30
2	B	2259	G	N1-C6-O6	5.04	122.92	119.90
2	B	2321	G	C4-N9-C1'	5.04	133.05	126.50
2	EB	534	U	N1-C2-N3	5.04	117.92	114.90
2	EB	1497	U	C2-N1-C1'	5.04	123.75	117.70
2	EB	2542	A	C4-C5-N7	5.04	113.22	110.70
1	DB	1520	G	C5-C6-N1	-5.04	108.98	111.50
2	B	1778	U	C5-C4-O4	5.04	128.92	125.90
2	B	2817	G	N3-C4-C5	-5.04	126.08	128.60
31	EA	28	ARG	NE-CZ-NH1	-5.04	117.78	120.30
2	EB	2013	A	OP2-P-O3'	5.04	116.28	105.20
3	FB	64	C	C6-N1-C2	5.04	122.31	120.30
2	B	254	G	C5-C6-O6	-5.03	125.58	128.60
2	B	460	A	C2-N3-C4	-5.03	108.08	110.60
2	B	724	U	C6-N1-C2	-5.03	117.98	121.00
2	B	2526	G	C5-C6-N1	-5.03	108.98	111.50
2	EB	1773	A	OP1-P-O3'	5.03	116.27	105.20
2	B	263	C	N3-C2-O2	-5.03	118.38	121.90
2	B	1926	U	N3-C2-O2	-5.03	118.68	122.20
2	EB	2491	U	O5'-P-OP2	5.03	116.74	110.70
2	EB	2892	A	C8-N9-C4	-5.03	103.79	105.80
2	B	247	G	N3-C4-N9	5.03	129.02	126.00
1	DB	240	C	N3-C4-C5	-5.03	119.89	121.90
2	EB	739	G	C8-N9-C4	5.03	108.41	106.40
2	EB	940	G	N1-C6-O6	5.03	122.92	119.90
1	A	1077	G	N1-C6-O6	5.03	122.92	119.90
1	A	585	G	N1-C6-O6	5.03	122.92	119.90
2	EB	570	G	N9-C4-C5	5.03	107.41	105.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	1845	G	C8-N9-C4	5.03	108.41	106.40
1	A	793	U	C5-C4-O4	5.03	128.91	125.90
2	B	140	A	C2-N3-C4	-5.03	108.09	110.60
2	B	1940	U	N3-C4-C5	-5.03	111.58	114.60
2	B	2341	G	N1-C6-O6	5.03	122.92	119.90
2	B	2561	A	N1-C6-N6	5.03	121.61	118.60
2	EB	2061	G	C8-N9-C1'	-5.03	120.47	127.00
2	EB	2501	C	N1-C2-O2	-5.03	115.88	118.90
2	EB	2004	G	C6-C5-N7	-5.02	127.39	130.40
2	B	729	G	P-O3'-C3'	5.02	125.73	119.70
2	B	963	U	O5'-P-OP2	5.02	116.73	110.70
2	B	1429	G	C8-N9-C4	-5.02	104.39	106.40
2	B	1633	G	C5-C6-N1	-5.02	108.99	111.50
1	DB	1503	A	N3-C4-C5	-5.02	123.28	126.80
2	EB	188	G	C5-N7-C8	-5.02	101.79	104.30
2	EB	1797	C	C6-N1-C2	5.02	122.31	120.30
2	B	248	G	N3-C4-C5	5.02	131.11	128.60
2	B	775	G	C4-C5-N7	-5.02	108.79	110.80
2	EB	1327	C	C6-N1-C2	-5.02	118.29	120.30
1	DB	1077	G	N1-C6-O6	5.02	122.91	119.90
2	EB	1768	U	C5-C4-O4	5.01	128.91	125.90
2	EB	1971	A	O5'-P-OP2	-5.01	101.19	105.70
2	EB	2070	G	O5'-P-OP2	5.01	116.72	110.70
1	A	1523	G	C4-N9-C1'	5.01	133.02	126.50
2	B	686	G	C4-C5-N7	5.01	112.81	110.80
2	B	1435	G	C4-C5-N7	5.01	112.81	110.80
2	EB	2091	U	N3-C4-C5	-5.01	111.59	114.60
1	A	362	G	N1-C6-O6	5.01	122.91	119.90
2	B	1275	A	C8-N9-C4	5.01	107.80	105.80
2	B	1357	U	C4-C5-C6	5.01	122.71	119.70
2	EB	1622	G	C5-C6-O6	-5.01	125.59	128.60
2	EB	2431	U	C5-C4-O4	5.01	128.91	125.90
2	B	133	C	N1-C2-O2	-5.01	115.89	118.90
2	EB	2140	C	C6-N1-C2	-5.01	118.30	120.30
1	A	701	C	C6-N1-C2	5.01	122.30	120.30
2	B	2085	C	C5-C6-N1	-5.01	118.50	121.00
2	B	2573	C	C5-C6-N1	-5.01	118.50	121.00
2	EB	1621	U	OP2-P-O3'	5.01	116.22	105.20
2	B	1921	G	N1-C6-O6	5.00	122.90	119.90
2	EB	1700	A	C2-N3-C4	-5.00	108.10	110.60
2	B	34	C	P-O3'-C3'	5.00	125.70	119.70
2	B	854	G	C2-N3-C4	-5.00	109.40	111.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	EB	1769	G	C6-C5-N7	-5.00	127.40	130.40
2	EB	2419	U	C6-N1-C2	-5.00	118.00	121.00

There are no chirality outliers.

There are no planarity outliers.

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	505	0
1	DB	32394	0	16367	492	0
2	B	62031	0	31275	829	0
2	EB	62031	0	31275	802	0
3	C	2576	0	1305	35	0
3	FB	2576	0	1305	35	0
4	D	1642	0	841	26	0
4	GB	1642	0	841	29	0
4	IA	1642	0	841	12	0
4	LC	1642	0	841	10	0
5	E	2145	0	2234	91	0
5	HB	2145	0	2234	78	0
6	F	1563	0	1629	61	0
6	IB	1563	0	1629	55	0
7	G	1586	0	1632	65	0
7	JB	1586	0	1632	61	0
8	H	1471	0	1526	67	0
8	KB	1471	0	1526	62	0
9	I	1330	0	1407	57	0
9	LB	1330	0	1407	51	0
10	J	1137	0	1225	50	0
10	MB	1137	0	1225	40	0
11	K	1121	0	1195	34	0
11	NB	1121	0	1195	31	0
12	L	932	0	994	32	0
12	OB	932	0	994	27	0
13	M	1145	0	1228	40	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
13	PB	1145	0	1228	35	0
14	N	1121	0	1179	36	0
14	QB	1121	0	1179	42	0
15	O	968	0	1033	39	0
15	RB	968	0	1033	43	0
16	P	877	0	938	28	0
16	SB	877	0	938	29	0
17	Q	1143	0	1211	37	0
17	TB	1143	0	1211	33	0
18	R	964	0	1022	25	0
18	UB	964	0	1022	30	0
19	S	779	0	852	28	0
19	VB	779	0	852	29	0
20	T	890	0	951	34	0
20	WB	890	0	951	26	0
21	U	750	0	814	14	0
21	XB	750	0	814	14	0
22	V	814	0	907	28	0
22	YB	814	0	907	25	0
23	W	1495	0	1521	51	0
23	ZB	1495	0	1521	50	0
24	AC	662	0	688	23	0
24	X	662	0	688	23	0
25	BC	761	0	837	28	0
25	Y	761	0	837	30	0
26	CC	592	0	654	16	0
26	Z	592	0	654	16	0
27	AA	477	0	529	16	0
27	DC	477	0	529	16	0
28	BA	552	0	537	23	0
28	EC	552	0	537	22	0
29	CA	460	0	484	17	0
29	FC	460	0	484	19	0
30	DA	453	0	477	11	0
30	GC	453	0	477	11	0
31	EA	418	0	467	17	0
31	HC	418	0	467	17	0
32	FA	517	0	582	17	0
32	IC	517	0	582	19	0
33	GA	307	0	338	15	0
33	JC	307	0	337	16	0
34	HA	220	0	108	7	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
34	KC	220	0	108	9	0
35	JA	1900	0	1951	69	0
35	MC	1900	0	1951	69	0
36	KA	1612	0	1677	49	0
36	NC	1612	0	1677	48	0
37	LA	1703	0	1765	74	0
37	OC	1703	0	1765	68	0
38	MA	1155	0	1213	45	0
38	PC	1155	0	1213	51	0
39	NA	843	0	857	44	0
39	QC	843	0	857	40	0
40	OA	1257	0	1296	38	0
40	RC	1257	0	1296	42	0
41	PA	1116	0	1177	49	0
41	SC	1116	0	1177	48	0
42	QA	1011	0	1043	43	0
42	TC	1011	0	1043	43	0
43	RA	794	0	840	25	0
43	UC	794	0	840	27	0
44	SA	864	0	881	25	0
44	VC	864	0	881	21	0
45	TA	958	0	1047	31	0
45	WC	958	0	1047	31	0
46	UA	933	0	992	50	0
46	XC	933	0	992	47	0
47	VA	492	0	533	20	0
47	YC	492	0	533	17	0
48	WA	734	0	771	31	0
48	ZC	734	0	771	27	0
49	AD	700	0	720	20	0
49	XA	700	0	720	20	0
50	BD	823	0	893	24	0
50	YA	823	0	893	21	0
51	CD	574	0	644	17	0
51	ZA	574	0	644	19	0
52	AB	665	0	686	28	0
52	DD	665	0	686	29	0
53	BB	762	0	859	27	0
53	ED	762	0	859	27	0
54	CB	208	0	221	4	0
54	FD	208	0	221	12	0
55	GD	1980	0	1942	69	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	HD	1980	0	1942	63	0
56	A	160	0	0	0	0
56	AB	1	0	0	0	0
56	AC	2	0	0	0	0
56	AD	1	0	0	0	0
56	B	514	0	0	0	0
56	BB	1	0	0	0	0
56	BC	1	0	0	0	0
56	BD	2	0	0	0	0
56	C	23	0	0	0	0
56	CA	1	0	0	0	0
56	CD	2	0	0	0	0
56	D	6	0	0	0	0
56	DB	177	0	0	0	0
56	DC	1	0	0	0	0
56	E	4	0	0	0	0
56	EA	1	0	0	0	0
56	EB	395	0	0	0	0
56	ED	1	0	0	0	0
56	F	1	0	0	0	0
56	FA	1	0	0	0	0
56	FB	17	0	0	0	0
56	FC	1	0	0	0	0
56	G	4	0	0	0	0
56	GB	5	0	0	0	0
56	GD	5	0	0	0	0
56	H	1	0	0	0	0
56	HA	1	0	0	0	0
56	HB	8	0	0	0	0
56	HC	1	0	0	0	0
56	HD	3	0	0	0	0
56	I	3	0	0	0	0
56	IA	8	0	0	0	0
56	IB	3	0	0	0	0
56	IC	2	0	0	0	0
56	J	5	0	0	0	0
56	JA	3	0	0	0	0
56	JB	2	0	0	0	0
56	JC	1	0	0	0	0
56	K	2	0	0	0	0
56	KA	1	0	0	0	0
56	KB	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	KC	1	0	0	0	0
56	L	7	0	0	0	0
56	LA	1	0	0	0	0
56	LB	5	0	0	0	0
56	LC	8	0	0	0	0
56	M	4	0	0	0	0
56	MA	3	0	0	0	0
56	MB	2	0	0	0	0
56	MC	3	0	0	0	0
56	N	3	0	0	0	0
56	NA	2	0	0	0	0
56	NB	1	0	0	0	0
56	O	1	0	0	0	0
56	OA	3	0	0	0	0
56	OB	3	0	0	0	0
56	P	2	0	0	0	0
56	PA	2	0	0	0	0
56	PB	2	0	0	0	0
56	PC	2	0	0	0	0
56	Q	3	0	0	0	0
56	QB	3	0	0	0	0
56	QC	2	0	0	0	0
56	R	4	0	0	0	0
56	RA	2	0	0	0	0
56	RB	5	0	0	0	0
56	RC	2	0	0	0	0
56	S	3	0	0	0	0
56	SA	1	0	0	0	0
56	SB	1	0	0	0	0
56	SC	1	0	0	0	0
56	T	2	0	0	0	0
56	TA	3	0	0	0	0
56	TB	5	0	0	0	0
56	TC	2	0	0	0	0
56	U	2	0	0	0	0
56	UC	1	0	0	0	0
56	V	5	0	0	0	0
56	VA	2	0	0	0	0
56	VB	1	0	0	0	0
56	W	12	0	0	0	0
56	WA	3	0	0	0	0
56	WB	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	WC	2	0	0	0	0
56	XB	2	0	0	0	0
56	XC	2	0	0	0	0
56	Y	4	0	0	0	0
56	YA	2	0	0	0	0
56	YB	3	0	0	0	0
56	YC	1	0	0	0	0
56	Z	3	0	0	0	0
56	ZA	1	0	0	0	0
56	ZB	2	0	0	0	0
56	ZC	1	0	0	0	0
57	BA	1	0	0	0	0
57	CA	1	0	0	0	0
57	DA	1	0	0	0	0
57	EC	1	0	0	0	0
57	FC	1	0	0	0	0
57	GA	1	0	0	0	0
57	GC	1	0	0	0	0
57	JC	1	0	0	0	0
57	V	1	0	0	0	0
57	YB	1	0	0	0	0
All	All	299566	0	203671	5481	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 11.

All (5481) 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)
37:LA:18:LYS:NZ	37:LA:31:CYS:SG	2.10	1.23
37:OC:18:LYS:NZ	37:OC:31:CYS:SG	2.10	1.23
37:OC:12:CYS:SG	37:OC:18:LYS:NZ	2.24	1.11
10:J:60:GLU:HG3	10:J:61:ARG:HH12	1.11	1.09
10:MB:60:GLU:HG3	10:MB:61:ARG:HH12	1.19	1.05
9:I:3:ARG:HB2	9:I:3:ARG:HH11	1.15	1.04
9:LB:3:ARG:HH11	9:LB:3:ARG:HB2	1.20	1.03
37:LA:12:CYS:SG	37:LA:18:LYS:NZ	2.33	1.01
2:B:2298:A:H62	2:B:2318:G:H8	1.08	0.99
43:UC:61:GLU:OE2	47:YC:58:LYS:NZ	1.95	0.99
1:DB:363:A:OP2	45:WC:34:ARG:NH1	1.95	0.98
2:B:1043:C:H41	2:B:1112:G:H1	1.09	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:3:ARG:HB2	9:I:3:ARG:NH1	1.80	0.97
48:ZC:35:ARG:HG3	48:ZC:35:ARG:HH11	1.30	0.97
2:EB:1043:C:H41	2:EB:1112:G:H1	1.10	0.96
2:EB:2298:A:H62	2:EB:2318:G:H8	1.07	0.96
2:B:2094:G:OP1	10:J:22:LYS:NZ	1.98	0.96
1:DB:1279:A:OP2	43:UC:9:ARG:NH2	1.99	0.95
1:A:1279:A:OP2	43:RA:9:ARG:NH2	2.00	0.95
2:B:2784:C:H1'	6:F:37:ARG:HH12	1.30	0.95
48:WA:35:ARG:HH11	48:WA:35:ARG:HG3	1.31	0.95
1:A:363:A:OP2	45:TA:34:ARG:NH1	2.00	0.94
17:Q:60:THR:HG22	17:Q:77:PRO:HA	1.49	0.93
2:EB:2784:C:H1'	6:IB:37:ARG:HH12	1.32	0.93
3:C:82:G:H1	3:C:94:C:H42	1.17	0.92
2:EB:2316:C:O2'	8:KB:128:ARG:NH1	2.02	0.92
25:Y:21:ARG:HH11	25:Y:21:ARG:HG3	1.34	0.92
2:EB:1270:C:H5"	2:EB:1271:G:H5'	1.53	0.91
25:BC:21:ARG:HH11	25:BC:21:ARG:HG3	1.35	0.91
9:LB:3:ARG:HB2	9:LB:3:ARG:NH1	1.85	0.91
17:TB:60:THR:HG22	17:TB:77:PRO:HA	1.53	0.90
2:B:2316:C:O2'	8:H:128:ARG:NH1	2.03	0.90
43:RA:61:GLU:OE2	47:VA:58:LYS:NZ	2.05	0.90
15:RB:97:VAL:HG12	15:RB:114:VAL:HG22	1.54	0.90
2:B:1270:C:H5"	2:B:1271:G:H5'	1.53	0.89
50:YA:66:SER:O	50:YA:70:ARG:NH1	2.05	0.89
39:QC:36:ARG:HH12	39:QC:66:GLU:HB2	1.36	0.89
3:FB:82:G:H1	3:FB:94:C:H42	1.19	0.89
4:LC:33:U:OP2	42:TC:128:ARG:NH2	2.04	0.88
2:EB:1379:A:H4'	2:EB:1380:G:OP2	1.73	0.88
7:G:46:ARG:HG2	7:G:46:ARG:HH11	1.36	0.88
5:E:218:ARG:HG3	5:E:218:ARG:HH11	1.37	0.88
1:A:1295:G:O2'	46:UA:14:ARG:NH1	2.07	0.88
43:UC:69:ASN:O	43:UC:70:ARG:NH1	2.07	0.88
2:B:1652:A:OP1	15:O:8:ARG:NH1	2.07	0.87
7:JB:46:ARG:HH11	7:JB:46:ARG:HG2	1.37	0.87
15:O:97:VAL:HG12	15:O:114:VAL:HG22	1.57	0.87
46:UA:37:THR:HG22	46:UA:55:ARG:HH12	1.38	0.87
8:KB:56:ALA:HB2	8:KB:153:ARG:HH11	1.40	0.86
2:B:819:A:OP2	2:B:1187:G:N2	2.09	0.86
37:OC:9:CYS:HG	37:OC:31:CYS:HG	1.21	0.86
2:EB:819:A:OP2	2:EB:1187:G:N2	2.09	0.86
43:RA:69:ASN:O	43:RA:70:ARG:NH1	2.07	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:1652:A:OP1	15:RB:8:ARG:NH1	2.08	0.86
1:DB:1118:C:OP1	42:TC:104:ARG:NH1	2.09	0.85
1:DB:1295:G:O2'	46:XC:14:ARG:NH1	2.09	0.85
39:NA:36:ARG:HH12	39:NA:66:GLU:HB2	1.40	0.85
1:DB:1077:G:N2	1:DB:1080:A:OP2	2.10	0.85
1:A:1118:C:OP1	42:QA:104:ARG:NH1	2.10	0.85
9:I:16:SER:HB2	9:I:27:LYS:HB2	1.59	0.84
25:Y:52:ARG:NH1	25:Y:57:GLU:HB2	1.91	0.84
1:DB:1128:C:H5"	42:TC:66:ARG:HH12	1.42	0.84
7:JB:116:ASP:OD2	13:PB:1:MET:N	2.10	0.84
4:IA:33:U:OP2	42:QA:128:ARG:NH2	2.09	0.84
2:EB:1264:G:OP1	29:FC:19:ARG:NH2	2.10	0.84
46:XC:37:THR:HG22	46:XC:55:ARG:HH12	1.42	0.84
24:X:5:LYS:HD2	55:GD:265:LYS:HE3	1.57	0.84
2:B:2747:G:OP1	9:I:138:LYS:NZ	2.10	0.84
18:R:97:ASP:OD1	18:R:101:ARG:NH1	2.11	0.84
35:JA:69:LEU:HB3	35:JA:162:ILE:HG22	1.58	0.84
2:EB:617:G:OP1	7:JB:40:GLN:NE2	2.11	0.84
22:V:102:CYS:SG	22:V:103:GLY:N	2.50	0.83
37:LA:26:CYS:HA	37:LA:31:CYS:HB2	1.60	0.83
50:BD:66:SER:O	50:BD:70:ARG:NH1	2.10	0.83
2:B:1264:G:OP1	29:CA:19:ARG:NH2	2.10	0.83
7:G:117:ARG:HH12	13:M:1:MET:H2	1.24	0.83
2:EB:2809:A:OP2	2:EB:2891:G:N1	2.10	0.83
16:P:56:LEU:HB3	16:P:58:LEU:HD23	1.59	0.83
41:PA:79:VAL:HG23	41:PA:80:ILE:HG13	1.60	0.83
8:H:56:ALA:HB2	8:H:153:ARG:HH11	1.40	0.83
9:LB:16:SER:HB2	9:LB:27:LYS:HB2	1.60	0.83
5:HB:218:ARG:HH11	5:HB:218:ARG:HG3	1.42	0.82
20:WB:18:ARG:HB2	20:WB:18:ARG:HH11	1.42	0.82
46:XC:14:ARG:HG3	46:XC:44:ARG:NH1	1.94	0.82
35:JA:21:ARG:NH1	35:JA:23:ARG:HD3	1.94	0.82
41:SC:79:VAL:HG23	41:SC:80:ILE:HG13	1.61	0.82
1:A:1128:C:H5"	42:QA:66:ARG:HH12	1.43	0.82
1:DB:1353:G:OP1	54:FD:10:ARG:NH1	2.13	0.81
26:Z:14:ARG:NH1	26:Z:66:GLU:OE1	2.13	0.81
46:UA:14:ARG:HG3	46:UA:44:ARG:NH1	1.95	0.81
35:MC:69:LEU:HB3	35:MC:162:ILE:HG22	1.62	0.81
40:OA:70:LYS:HB2	40:OA:96:GLN:HG2	1.62	0.81
37:OC:26:CYS:HA	37:OC:31:CYS:HB2	1.62	0.81
36:KA:131:ARG:HH11	36:KA:135:LYS:HE3	1.45	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:213:A:H5”	2:EB:214:G:OP2	1.79	0.81
35:JA:189:ASP:HB3	35:JA:204:ASN:HA	1.63	0.81
2:EB:249:C:O2’	13:PB:64:LYS:NZ	2.13	0.81
2:EB:270(M):U:O2’	2:EB:270(O):G:N2	2.14	0.81
1:A:403:C:O2’	37:LA:122:ARG:NH2	2.13	0.81
1:DB:673:G:H5”	39:QC:87:ARG:NH1	1.95	0.81
2:EB:807:U:OP1	13:PB:36:LYS:NZ	2.14	0.81
6:F:36:ARG:NH1	6:F:86:PRO:O	2.14	0.81
16:SB:56:LEU:HB3	16:SB:58:LEU:HD23	1.62	0.81
11:K:49:GLY:O	11:K:119:ARG:NH1	2.15	0.80
41:PA:10:LEU:HD22	41:PA:83:ILE:HD11	1.62	0.80
51:ZA:54:ARG:HE	51:ZA:54:ARG:H	1.29	0.80
2:B:1754:C:OP1	17:Q:96:ARG:NH1	2.15	0.80
18:UB:97:ASP:OD1	18:UB:101:ARG:NH1	2.14	0.80
40:RC:70:LYS:HB2	40:RC:96:GLN:HG2	1.63	0.80
37:LA:177:ASP:OD2	37:LA:180:GLY:HA3	1.81	0.80
2:B:807:U:OP1	13:M:36:LYS:NZ	2.14	0.80
2:B:2646:C:OP2	2:B:2732:G:O2’	1.99	0.80
8:H:136:ARG:HE	8:H:136:ARG:H	1.30	0.80
8:H:115:ARG:HD2	46:UA:7:VAL:HG22	1.64	0.80
36:NC:131:ARG:HH11	36:NC:135:LYS:HE3	1.47	0.80
20:T:22:ASP:HA	20:T:25:ARG:HH12	1.46	0.80
33:GA:25:VAL:HB	33:GA:34:GLN:HB3	1.64	0.80
8:KB:136:ARG:HE	8:KB:136:ARG:H	1.28	0.80
33:JC:25:VAL:HB	33:JC:34:GLN:HB3	1.64	0.80
2:B:1379:A:H4’	2:B:1380:G:OP2	1.78	0.79
44:SA:120:ARG:HH12	44:SA:126:ARG:NH1	1.79	0.79
5:HB:275:LYS:HE3	5:HB:276:LYS:HG3	1.64	0.79
26:Z:16:LEU:O	26:Z:67:LYS:NZ	2.16	0.79
2:B:249:C:O2’	13:M:64:LYS:NZ	2.14	0.79
2:EB:2394:C:N3	4:GB:76:A:O2’	2.15	0.79
2:EB:2747:G:OP1	9:LB:138:LYS:NZ	2.14	0.79
11:NB:49:GLY:O	11:NB:119:ARG:NH1	2.15	0.79
13:M:126:VAL:HG22	13:M:146:VAL:HB	1.63	0.79
2:EB:547:A:H3’	2:EB:548:A:C8	2.17	0.79
2:EB:2646:C:OP2	2:EB:2732:G:O2’	2.01	0.79
18:UB:69:CYS:HB3	18:UB:74:LEU:HD12	1.65	0.79
7:JB:117:ARG:HH12	13:PB:1:MET:H2	1.27	0.79
41:SC:135:CYS:SG	41:SC:136:GLU:N	2.55	0.79
2:B:2795:G:H1’	2:B:2802:G:H21	1.48	0.78
37:LA:191:ARG:HH21	37:LA:200:GLU:HG2	1.47	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:278:A:H61	2:EB:362:U:H3	1.30	0.78
4:GB:50:U:H3	4:GB:64:G:H1	1.29	0.78
20:WB:22:ASP:HA	20:WB:25:ARG:HH12	1.47	0.78
25:BC:52:ARG:NH1	25:BC:57:GLU:HB2	1.98	0.78
2:B:547:A:H3'	2:B:548:A:C8	2.19	0.78
2:EB:1467:C:H42	2:EB:1525:G:H1	1.32	0.78
35:MC:178:ARG:HH12	41:SC:74:PRO:HB3	1.48	0.78
15:RB:54:LEU:HD23	15:RB:66:VAL:HG23	1.66	0.78
12:L:71:ARG:HH21	12:L:77:ILE:HG21	1.47	0.78
35:MC:189:ASP:HB3	35:MC:204:ASN:HA	1.65	0.78
1:A:1266:G:N2	1:A:1269:A:OP2	2.17	0.77
1:DB:409:G:OP2	37:OC:22:LYS:HE2	1.82	0.77
24:AC:5:LYS:NZ	24:AC:5:LYS:HB2	1.98	0.77
2:EB:2795:G:H1'	2:EB:2802:G:H21	1.49	0.77
2:B:213:A:H5"	2:B:214:G:OP2	1.85	0.77
2:B:1467:C:H42	2:B:1525:G:H1	1.33	0.77
37:LA:18:LYS:NZ	37:LA:31:CYS:HG	1.82	0.77
20:WB:11:ARG:HA	20:WB:100:THR:HG22	1.66	0.77
2:B:270(M):U:O2'	2:B:270(O):G:N2	2.17	0.77
1:A:1077:G:N2	1:A:1080:A:OP2	2.14	0.77
2:B:1761:C:H3'	2:B:1762:A:H5"	1.67	0.77
21:U:5:TYR:HE1	26:Z:30:ARG:HH11	1.31	0.77
6:IB:36:ARG:NH1	6:IB:86:PRO:O	2.16	0.77
6:F:37:ARG:HA	6:F:42:ASP:OD2	1.83	0.77
43:RA:8:LEU:HB2	43:RA:70:ARG:HB3	1.67	0.77
50:BD:93:GLN:O	50:BD:96:GLN:NE2	2.17	0.77
5:E:275:LYS:HE3	5:E:276:LYS:HG3	1.67	0.77
27:AA:27:GLY:HA3	27:AA:35:ARG:NH1	2.00	0.77
53:ED:100:ILE:HG12	53:ED:102:GLY:H	1.49	0.77
20:T:18:ARG:HB2	20:T:18:ARG:HH11	1.49	0.77
50:YA:93:GLN:O	50:YA:96:GLN:NE2	2.16	0.77
37:OC:191:ARG:HH21	37:OC:200:GLU:HG2	1.49	0.77
2:B:2809:A:OP2	2:B:2891:G:N1	2.13	0.76
35:JA:178:ARG:HH12	41:PA:74:PRO:HB3	1.50	0.76
37:OC:177:ASP:OD2	37:OC:180:GLY:HA3	1.85	0.76
1:DB:1266:G:N2	1:DB:1269:A:OP2	2.18	0.76
2:B:270(K):G:O6	2:B:270(Q):C:N4	2.19	0.76
20:T:18:ARG:HD3	20:T:76:VAL:HB	1.67	0.76
2:B:1434:A:H61	2:B:1558:A:H62	1.34	0.76
2:EB:1754:C:OP1	17:TB:96:ARG:NH1	2.19	0.76
3:FB:18:G:H1	3:FB:65:C:H42	1.33	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:WB:18:ARG:HD3	20:WB:76:VAL:HB	1.66	0.76
2:B:2469:A:H4'	14:N:56:ARG:HG2	1.67	0.76
20:T:11:ARG:HA	20:T:100:THR:HG22	1.68	0.76
2:EB:1761:C:H3'	2:EB:1762:A:H5"	1.66	0.76
16:P:3:ARG:HH11	16:P:4:LEU:H	1.34	0.76
18:R:69:CYS:HB3	18:R:74:LEU:HD12	1.65	0.76
46:UA:37:THR:HG22	46:UA:55:ARG:NH1	2.01	0.76
50:YA:90:ILE:HA	50:YA:93:GLN:HG2	1.68	0.76
24:AC:5:LYS:HD2	55:HD:265:LYS:HE3	1.68	0.76
4:D:50:U:H3	4:D:64:G:H1	1.30	0.76
35:MC:21:ARG:NH1	35:MC:23:ARG:HD3	2.00	0.75
37:OC:15:GLU:OE1	37:OC:66:ARG:NH1	2.18	0.75
41:SC:10:LEU:HD22	41:SC:83:ILE:HD11	1.66	0.75
5:E:108:PRO:HB3	5:E:143:HIS:CE1	2.21	0.75
2:EB:270(K):G:O6	2:EB:270(Q):C:N4	2.20	0.75
13:PB:126:VAL:HG22	13:PB:146:VAL:HB	1.66	0.75
42:QA:23:ASN:HD21	42:QA:25:LYS:HE2	1.50	0.75
1:DB:1503:A:N6	34:KC:13:A:OP1	2.18	0.75
27:DC:27:GLY:HA3	27:DC:35:ARG:NH1	2.01	0.75
50:BD:90:ILE:HA	50:BD:93:GLN:HG2	1.68	0.75
1:A:673:G:H5"	39:NA:87:ARG:NH1	2.01	0.75
2:B:1043:C:N4	2:B:1112:G:H1	1.83	0.75
1:DB:1124:G:H5"	43:UC:35:SER:HB2	1.67	0.75
5:HB:147:LEU:HG	5:HB:155:LEU:HD21	1.67	0.75
51:CD:54:ARG:HE	51:CD:54:ARG:H	1.31	0.75
2:B:2394:C:N3	4:D:76:A:O2'	2.18	0.75
1:DB:931:C:H42	1:DB:1386:G:H1	1.34	0.75
43:UC:8:LEU:HB2	43:UC:70:ARG:HB3	1.68	0.75
1:A:539:A:OP2	45:TA:115:LYS:HE2	1.87	0.74
2:B:918:A:N3	3:C:80:U:O2'	2.20	0.74
15:O:56:LYS:NZ	15:O:90:ARG:O	2.19	0.74
28:EC:58:ARG:HH21	52:DD:68:GLY:HA3	1.51	0.74
2:B:278:A:H61	2:B:362:U:H3	1.34	0.74
2:EB:857:C:H4'	24:AC:23:VAL:HG21	1.67	0.74
5:HB:108:PRO:HB3	5:HB:143:HIS:CE1	2.22	0.74
12:OB:71:ARG:HH21	12:OB:77:ILE:HG21	1.52	0.74
35:JA:155:LEU:HD12	35:JA:157:ARG:HH21	1.52	0.74
1:DB:957:U:H5"	52:DD:81:ARG:HH12	1.52	0.74
1:A:339:C:OP2	12:L:97:ARG:NH1	2.21	0.74
2:B:2023:G:H5'	2:B:2617:C:H4'	1.70	0.74
15:O:12:ARG:HH11	15:O:12:ARG:HG3	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:54:LEU:HD23	15:O:66:VAL:HG23	1.70	0.74
55:HD:126:LEU:HG	55:HD:157:GLY:H	1.53	0.74
53:BB:100:ILE:HG12	53:BB:102:GLY:H	1.52	0.74
6:F:128:SER:OG	6:F:129:HIS:N	2.18	0.74
24:X:5:LYS:NZ	24:X:5:LYS:HB2	2.01	0.74
15:RB:118:GLU:OE2	15:RB:118:GLU:N	2.20	0.74
16:SB:3:ARG:HH11	16:SB:4:LEU:H	1.34	0.74
48:WA:35:ARG:HG3	48:WA:35:ARG:NH1	2.03	0.73
1:A:1124:G:H5"	43:RA:35:SER:HB2	1.68	0.73
1:A:1238:A:N6	1:A:1301:U:O2	2.20	0.73
39:NA:36:ARG:HH11	39:NA:36:ARG:HB3	1.52	0.73
3:C:18:G:H1	3:C:65:C:H42	1.35	0.73
2:EB:2023:G:H5'	2:EB:2617:C:H4'	1.70	0.73
2:EB:2469:A:H4'	14:QB:56:ARG:HG2	1.70	0.73
6:IB:37:ARG:HA	6:IB:42:ASP:OD2	1.88	0.73
28:BA:62:ARG:NH1	28:BA:62:ARG:HA	2.03	0.73
37:LA:15:GLU:OE1	37:LA:66:ARG:NH1	2.21	0.73
14:QB:75:THR:HG21	14:QB:87:LYS:NZ	2.03	0.73
26:CC:14:ARG:NH1	26:CC:66:GLU:OE1	2.21	0.73
2:B:1364:G:OP2	25:Y:3:LYS:HG3	1.89	0.73
41:PA:135:CYS:SG	41:PA:136:GLU:N	2.62	0.73
1:DB:1256:A:OP2	36:NC:26:LYS:NZ	2.20	0.73
38:MA:50:GLU:HB3	38:MA:53:LEU:HD13	1.71	0.73
1:DB:539:A:OP2	45:WC:115:LYS:HE2	1.89	0.73
10:MB:72:LEU:HD23	10:MB:75:LEU:HD21	1.69	0.73
10:J:72:LEU:HD23	10:J:75:LEU:HD21	1.70	0.72
28:BA:16:CYS:HB2	28:BA:20:ASN:HB2	1.71	0.72
1:DB:452:A:OP1	49:AD:43:LYS:NZ	2.22	0.72
6:IB:128:SER:OG	6:IB:129:HIS:N	2.20	0.72
7:JB:54:ARG:HG3	7:JB:54:ARG:HH11	1.54	0.72
42:TC:23:ASN:HD21	42:TC:25:LYS:HE2	1.52	0.72
2:B:857:C:H4'	24:X:23:VAL:HG21	1.71	0.72
7:G:117:ARG:HH12	13:M:1:MET:N	1.86	0.72
35:MC:155:LEU:HD12	35:MC:157:ARG:HH21	1.55	0.72
38:PC:31:LEU:HD22	38:PC:43:LEU:HD11	1.71	0.72
38:PC:122:GLU:O	38:PC:126:ARG:NH1	2.23	0.72
7:G:53:THR:HG23	7:G:55:GLY:H	1.53	0.72
9:I:3:ARG:NH2	9:I:5:GLY:H	1.88	0.72
45:TA:60:LEU:HD21	45:TA:66:VAL:HG22	1.72	0.72
38:MA:145:LYS:NZ	38:MA:145:LYS:HB3	2.03	0.72
22:V:83:THR:OG1	22:V:84:ARG:N	2.18	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:OC:12:CYS:HG	37:OC:18:LYS:NZ	1.85	0.72
39:QC:36:ARG:HB3	39:QC:36:ARG:HH11	1.54	0.72
39:QC:36:ARG:HB3	39:QC:36:ARG:NH1	2.05	0.72
10:J:60:GLU:HG3	10:J:61:ARG:NH1	1.96	0.72
2:EB:1043:C:N4	2:EB:1112:G:H1	1.86	0.72
10:J:60:GLU:CG	10:J:61:ARG:HH12	1.96	0.72
16:P:15:ARG:NH1	16:P:88:ASP:OD2	2.23	0.72
2:EB:1083:U:H2'	2:EB:1085:A:OP2	1.89	0.72
2:B:1658:C:OP1	6:F:135:HIS:NE2	2.23	0.71
1:DB:692:U:O4	44:VC:26:ASN:ND2	2.23	0.71
52:AB:3:ARG:NH1	52:AB:7:LYS:HG3	2.05	0.71
1:DB:642:A:N3	41:SC:113:SER:OG	2.23	0.71
1:A:957:U:H5"	52:AB:81:ARG:HH12	1.55	0.71
2:EB:1434:A:H61	2:EB:1558:A:H62	1.35	0.71
2:EB:2500:U:H5"	2:EB:2501:C:OP2	1.91	0.71
45:WC:60:LEU:HD21	45:WC:66:VAL:HG22	1.72	0.71
1:A:931:C:H42	1:A:1386:G:H1	1.38	0.71
15:O:118:GLU:OE2	15:O:118:GLU:N	2.22	0.71
22:YB:102:CYS:SG	22:YB:103:GLY:N	2.64	0.71
40:RC:150:ALA:HA	44:VC:59:TYR:HB3	1.72	0.71
1:A:692:U:O4	44:SA:26:ASN:ND2	2.24	0.71
2:B:2577:A:OP2	29:CA:3:LYS:NZ	2.24	0.71
27:AA:26:LEU:O	27:AA:35:ARG:NH1	2.24	0.71
1:DB:523:A:N6	45:WC:92:0TD:OD2	2.19	0.71
16:SB:15:ARG:NH1	16:SB:88:ASP:OD2	2.23	0.71
28:EC:62:ARG:NH1	28:EC:62:ARG:HA	2.06	0.71
35:JA:32:ILE:HD11	35:JA:40:HIS:HB3	1.73	0.71
46:XC:37:THR:HG22	46:XC:55:ARG:NH1	2.05	0.71
50:BD:81:ARG:HB3	50:BD:84:LEU:HD23	1.72	0.71
1:A:1279:A:O2'	1:A:1281:U:OP2	2.04	0.71
1:A:1320:C:O2	52:AB:36:ARG:NH1	2.23	0.71
52:AB:32:LYS:HA	52:AB:50:ALA:HB3	1.71	0.71
2:EB:1658:C:OP1	6:IB:135:HIS:NE2	2.22	0.71
12:OB:35:VAL:HG11	12:OB:103:ALA:HB3	1.73	0.71
1:A:1179:A:H5"	42:QA:97:LYS:NZ	2.06	0.70
2:B:1083:U:H2'	2:B:1085:A:OP2	1.90	0.70
27:DC:26:LEU:O	27:DC:35:ARG:NH1	2.24	0.70
28:EC:16:CYS:HB2	28:EC:20:ASN:HB2	1.73	0.70
1:A:664:G:H22	1:A:741:G:H1	1.39	0.70
39:NA:36:ARG:HB3	39:NA:36:ARG:NH1	2.05	0.70
1:DB:664:G:H22	1:DB:741:G:H1	1.38	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:AD:82:GLN:OE1	49:AD:83:GLU:N	2.24	0.70
15:O:36:THR:HG22	15:O:37:THR:H	1.56	0.70
23:W:131:ARG:HB2	23:W:131:ARG:HH11	1.56	0.70
45:TA:33:ARG:HE	45:TA:62:SER:HB3	1.56	0.70
2:EB:780:G:OP1	5:HB:218:ARG:NH2	2.25	0.70
2:EB:2833:G:H4'	2:EB:2834:G:OP2	1.90	0.70
38:PC:145:LYS:HB3	38:PC:145:LYS:NZ	2.07	0.70
7:G:54:ARG:HH11	7:G:54:ARG:HG3	1.55	0.70
24:AC:9:SER:O	24:AC:10:THR:OG1	2.05	0.70
38:MA:31:LEU:HD22	38:MA:43:LEU:HD11	1.73	0.70
2:EB:918:A:N3	3:FB:80:U:O2'	2.25	0.70
36:KA:60:ALA:HB3	36:KA:63:ASN:HB2	1.73	0.70
44:VC:120:ARG:HH12	44:VC:126:ARG:NH1	1.90	0.70
2:B:1082:U:H2'	2:B:1083:U:H4'	1.73	0.70
2:B:2500:U:H5"	2:B:2501:C:OP2	1.91	0.70
42:QA:96:LEU:H	42:QA:98:PRO:HD2	1.55	0.70
5:HB:85:ASP:OD2	5:HB:88:ARG:NH1	2.25	0.70
42:TC:96:LEU:H	42:TC:98:PRO:HD2	1.56	0.70
5:E:147:LEU:HG	5:E:155:LEU:HD21	1.73	0.70
17:Q:23:ARG:HD3	17:Q:120:ARG:NH1	2.06	0.70
2:EB:1082:U:H2'	2:EB:1083:U:H4'	1.74	0.70
20:WB:13:SER:HB3	20:WB:16:LYS:HD2	1.72	0.70
23:ZB:6:LYS:HD3	23:ZB:43:GLU:OE2	1.92	0.70
7:JB:103:LYS:HG2	7:JB:106:ARG:NH1	2.07	0.70
39:NA:87:ARG:HH11	39:NA:87:ARG:HG3	1.55	0.69
2:B:386:G:H5"	2:B:388:G:H22	1.57	0.69
4:D:18:G:H1	4:D:55:PSU:H1'	1.56	0.69
8:KB:16:ARG:HH21	8:KB:28:VAL:HG12	1.57	0.69
55:GD:126:LEU:HG	55:GD:157:GLY:H	1.56	0.69
2:B:2210:G:H3'	2:B:2211:G:C8	2.28	0.69
14:N:79:LEU:HD13	14:N:80:GLU:HB2	1.73	0.69
23:W:6:LYS:HD3	23:W:43:GLU:OE2	1.92	0.69
1:A:403:C:HO2'	37:LA:122:ARG:HH21	1.39	0.69
1:A:642:A:N3	41:PA:113:SER:OG	2.25	0.69
1:A:1327:C:OP1	54:CB:12:LYS:NZ	2.25	0.69
16:P:3:ARG:HH11	16:P:4:LEU:N	1.91	0.69
1:DB:1320:C:O2	52:DD:36:ARG:NH1	2.25	0.69
5:HB:24:ILE:HD11	5:HB:91:ARG:HD2	1.74	0.69
52:DD:3:ARG:NH1	52:DD:7:LYS:HG3	2.07	0.69
13:M:57:THR:HG23	13:M:60:MET:HB2	1.73	0.69
42:TC:15:ALA:HB2	42:TC:65:VAL:HG23	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1484:C:HO2'	2:B:1960:A:HO2'	1.40	0.69
7:G:54:ARG:HG3	7:G:54:ARG:NH1	2.06	0.69
11:K:34:LEU:O	11:K:49:GLY:HA3	1.91	0.69
38:MA:122:GLU:O	38:MA:126:ARG:NH1	2.26	0.69
49:XA:82:GLN:OE1	49:XA:83:GLU:N	2.26	0.69
7:JB:53:THR:HG23	7:JB:55:GLY:H	1.56	0.69
7:JB:54:ARG:HG3	7:JB:54:ARG:NH1	2.05	0.69
38:PC:50:GLU:HB3	38:PC:53:LEU:HD13	1.73	0.69
52:DD:32:LYS:HA	52:DD:50:ALA:HB3	1.75	0.69
7:G:50:SER:HB2	7:G:94:PRO:HD3	1.75	0.69
16:SB:3:ARG:HH11	16:SB:4:LEU:N	1.91	0.69
19:VB:82:ARG:HG3	19:VB:82:ARG:HH11	1.57	0.69
39:NA:15:ASP:OD1	39:NA:18:GLN:N	2.23	0.69
21:XB:44:GLU:HG3	21:XB:51:VAL:HG23	1.75	0.69
26:CC:16:LEU:O	26:CC:67:LYS:NZ	2.26	0.69
39:QC:87:ARG:HG3	39:QC:87:ARG:HH11	1.58	0.69
1:A:523:A:N6	45:TA:92:0TD:OD2	2.24	0.68
37:LA:39:PRO:HG2	37:LA:44:GLY:HA3	1.75	0.68
1:A:1071:C:H5"	38:MA:49:PRO:HG2	1.75	0.68
40:OA:67:GLU:OE2	40:OA:70:LYS:HD3	1.93	0.68
4:GB:18:G:H1	4:GB:55:PSU:H1'	1.56	0.68
12:L:35:VAL:HG11	12:L:103:ALA:HB3	1.74	0.68
1:DB:1279:A:O2'	1:DB:1281:U:OP2	2.06	0.68
8:KB:35:GLU:HG3	8:KB:160:VAL:HG23	1.76	0.68
7:G:53:THR:HG22	7:G:56:GLU:HG3	1.75	0.68
36:NC:60:ALA:HB3	36:NC:63:ASN:HB2	1.76	0.68
48:ZC:9:GLN:HB3	48:ZC:13:GLN:HE21	1.59	0.68
4:D:9:G:N2	4:D:46:G:N7	2.42	0.68
35:JA:155:LEU:HD21	35:JA:159:PRO:HD3	1.75	0.68
1:DB:1077:G:H1	38:PC:47:LYS:HE2	1.58	0.68
2:B:1657:C:H2'	2:B:1658:C:H6	1.57	0.68
2:B:2313:C:OP2	8:H:74:LYS:NZ	2.24	0.68
9:LB:89:ILE:HG22	9:LB:94:TYR:HB3	1.75	0.68
3:C:104:A:OP1	23:W:72:ARG:NH1	2.25	0.68
5:E:108:PRO:HB3	5:E:143:HIS:HE1	1.59	0.68
12:OB:64:ARG:NH1	12:OB:81:ASP:OD1	2.27	0.68
13:PB:57:THR:HG23	13:PB:60:MET:HB2	1.76	0.68
14:QB:17:LEU:HD12	14:QB:39:PRO:HB2	1.76	0.68
5:E:24:ILE:HD11	5:E:91:ARG:HD2	1.74	0.68
36:KA:20:SER:OG	36:KA:40:ARG:NH2	2.27	0.68
42:QA:15:ALA:HB2	42:QA:65:VAL:HG23	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:607:U:OP1	7:G:103:LYS:N	2.19	0.68
4:D:49:G:N2	4:D:65:C:O2	2.27	0.68
14:N:75:THR:HG21	14:N:87:LYS:NZ	2.08	0.68
2:EB:586:A:N1	2:EB:809:G:O2'	2.22	0.68
23:ZB:95:PRO:HA	23:ZB:130:PRO:HD3	1.76	0.68
44:VC:51:LYS:HA	44:VC:55:LYS:HE3	1.76	0.68
1:A:1314:C:N4	52:AB:2:PRO:O	2.28	0.67
2:B:1434:A:H61	2:B:1558:A:N6	1.91	0.67
9:I:143:GLN:HE21	9:I:147:ASN:HD21	1.42	0.67
50:YA:81:ARG:HB3	50:YA:84:LEU:HD23	1.77	0.67
1:DB:1314:C:N4	52:DD:2:PRO:O	2.26	0.67
2:B:2137:C:O2	2:B:2154:G:N2	2.23	0.67
5:HB:218:ARG:HG3	5:HB:218:ARG:NH1	2.08	0.67
1:DB:959:A:O2'	1:DB:984:C:O2'	2.09	0.67
39:QC:33:TYR:HB2	39:QC:75:LEU:HD12	1.76	0.67
2:B:2094:G:P	10:J:22:LYS:HZ2	2.18	0.67
10:J:29:TYR:HD1	10:J:30:LEU:HD23	1.60	0.67
12:L:64:ARG:NH1	12:L:81:ASP:OD1	2.27	0.67
5:E:218:ARG:HG3	5:E:218:ARG:NH1	2.08	0.67
2:EB:2577:A:OP2	29:FC:3:LYS:NZ	2.28	0.67
1:A:1054:C:OP2	1:A:1197:G:OP2	2.12	0.67
6:IB:29:GLY:H	6:IB:93:VAL:HG22	1.60	0.67
23:ZB:131:ARG:HH11	23:ZB:131:ARG:HB2	1.59	0.67
27:AA:59:VAL:HG22	27:AA:60:GLU:H	1.60	0.67
2:EB:2849:U:O4	17:TB:23:ARG:NH2	2.28	0.67
35:MC:153:ARG:O	35:MC:156:LYS:NZ	2.25	0.67
37:LA:9:CYS:HG	37:LA:31:CYS:HG	1.40	0.67
2:B:861:A:O3'	14:N:18:LYS:NZ	2.28	0.67
23:W:95:PRO:HA	23:W:130:PRO:HD3	1.77	0.67
1:DB:1316:G:N1	1:DB:1319:A:OP2	2.24	0.67
14:QB:79:LEU:HD13	14:QB:80:GLU:HB2	1.75	0.67
39:QC:15:ASP:OD1	39:QC:18:GLN:N	2.23	0.67
1:DB:1047:G:HO2'	1:DB:1215:G:HO2'	1.38	0.66
4:GB:9:G:N2	4:GB:46:G:N7	2.43	0.66
46:XC:3:ARG:NH1	46:XC:8:GLU:HG3	2.10	0.66
2:B:2304:G:H22	2:B:2312:U:H3	1.43	0.66
2:B:2833:G:H4'	2:B:2834:G:OP2	1.94	0.66
1:DB:134:A:H61	49:AD:25:ARG:NH1	1.93	0.66
45:WC:52:LEU:HD13	55:HD:305:ASP:OD2	1.94	0.66
55:HD:224:ILE:HG12	55:HD:246:ILE:HG12	1.77	0.66
46:UA:3:ARG:NH1	46:UA:8:GLU:HG3	2.10	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:134:A:H61	49:AD:25:ARG:HH12	1.42	0.66
1:DB:547:A:OP2	37:OC:2:GLY:HA2	1.95	0.66
1:DB:1179:A:H5"	42:TC:97:LYS:NZ	2.11	0.66
2:EB:1310:G:H1	2:EB:1604:C:H42	1.42	0.66
5:HB:30:GLU:O	5:HB:32:SER:N	2.29	0.66
7:JB:50:SER:HB2	7:JB:94:PRO:HD3	1.77	0.66
21:XB:5:TYR:HE1	26:CC:30:ARG:HH11	1.41	0.66
28:BA:34:GLU:HG3	46:UA:3:ARG:HA	1.76	0.66
3:FB:90:C:H5'	14:QB:16:ARG:NH2	2.10	0.66
1:A:959:A:O2'	1:A:984:C:O2'	2.10	0.66
7:JB:53:THR:HG22	7:JB:56:GLU:HG3	1.77	0.66
9:LB:3:ARG:NH2	9:LB:5:GLY:H	1.94	0.66
9:LB:116:GLU:HG2	9:LB:117:PRO:HD2	1.78	0.66
35:MC:32:ILE:HD11	35:MC:40:HIS:HB3	1.78	0.66
38:PC:59:GLY:O	38:PC:63:ARG:NH1	2.28	0.66
41:PA:12:ARG:HD2	41:PA:26:VAL:HG12	1.77	0.66
48:WA:39:LEU:HD13	48:WA:56:LEU:HB2	1.77	0.66
1:DB:559:A:H4'	1:DB:560:U:H3'	1.77	0.66
1:DB:1318:A:OP1	52:DD:7:LYS:NZ	2.25	0.66
4:GB:49:G:N2	4:GB:65:C:O2	2.27	0.66
10:MB:110:ASP:HB3	10:MB:113:ARG:HB2	1.78	0.66
12:OB:12:ASP:OD2	12:OB:14:THR:HG23	1.95	0.66
22:YB:83:THR:OG1	22:YB:84:ARG:N	2.25	0.66
36:NC:20:SER:OG	36:NC:40:ARG:NH2	2.29	0.66
2:EB:309:G:N3	2:EB:329:G:O2'	2.29	0.66
9:LB:143:GLN:HE21	9:LB:147:ASN:HD21	1.44	0.66
11:NB:34:LEU:O	11:NB:49:GLY:HA3	1.96	0.66
1:A:36:C:OP1	45:TA:123:LYS:NZ	2.29	0.66
2:B:780:G:OP1	5:E:218:ARG:NH2	2.28	0.66
3:C:90:C:H5'	14:N:16:ARG:NH2	2.11	0.66
1:DB:36:C:OP1	45:WC:123:LYS:NZ	2.28	0.66
1:DB:1054:C:OP2	1:DB:1197:G:OP2	2.13	0.66
2:EB:2210:G:H3'	2:EB:2211:G:C8	2.31	0.66
1:A:955:U:OP1	55:GD:133:ARG:NH1	2.28	0.66
2:EB:1889:A:H2'	2:EB:1890:A:C8	2.30	0.66
5:HB:108:PRO:HB3	5:HB:143:HIS:HE1	1.61	0.66
52:DD:50:ALA:HB1	52:DD:57:HIS:HB3	1.78	0.66
1:A:452:A:OP1	49:XA:43:LYS:NZ	2.29	0.66
1:A:1075:C:H5"	35:JA:179:LYS:NZ	2.11	0.66
1:A:1318:A:OP1	52:AB:7:LYS:NZ	2.23	0.66
2:B:617:G:OP1	7:G:40:GLN:NE2	2.22	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:85:ASP:OD2	5:E:88:ARG:NH1	2.26	0.66
49:XA:53:VAL:HG13	49:XA:79:VAL:HG22	1.78	0.66
27:DC:59:VAL:HG22	27:DC:60:GLU:H	1.59	0.66
1:A:572:A:H5'	1:A:573:A:OP2	1.96	0.65
2:B:1889:A:H2'	2:B:1890:A:C8	2.31	0.65
5:E:30:GLU:O	5:E:32:SER:N	2.29	0.65
1:DB:656:C:H4'	48:ZC:62:GLN:HE22	1.61	0.65
48:ZC:35:ARG:HG3	48:ZC:35:ARG:NH1	2.05	0.65
2:B:2100:G:H1	2:B:2189:U:H3	1.44	0.65
2:B:2135:A:N7	2:B:2137:C:N4	2.44	0.65
40:RC:67:GLU:OE2	40:RC:70:LYS:HD3	1.96	0.65
2:B:2151:G:N2	2:B:2152:G:O6	2.28	0.65
15:RB:12:ARG:HH11	15:RB:12:ARG:HG3	1.62	0.65
20:T:110:LYS:NZ	20:T:111:HIS:O	2.28	0.65
22:V:37:VAL:HG21	22:V:72:VAL:HG21	1.78	0.65
44:SA:51:LYS:HA	44:SA:55:LYS:HE3	1.78	0.65
15:RB:36:THR:HG22	15:RB:37:THR:H	1.62	0.65
41:SC:11:THR:HG23	41:SC:14:ARG:NH1	2.09	0.65
2:B:245:G:H5'	13:M:73:GLY:HA2	1.78	0.65
2:B:1483:G:H2'	2:B:1484:G:H8	1.61	0.65
7:G:95:ARG:NH1	7:G:97:TYR:OH	2.30	0.65
22:V:90:LEU:HD12	22:V:96:ILE:HG21	1.78	0.65
31:EA:22:MET:O	31:EA:28:ARG:NH1	2.29	0.65
7:JB:46:ARG:HG2	7:JB:46:ARG:NH1	2.08	0.65
43:UC:50:ILE:HB	47:YC:41:ARG:NH1	2.11	0.65
1:A:134:A:H61	49:XA:25:ARG:HH12	1.43	0.65
2:EB:2304:G:H22	2:EB:2312:U:H3	1.45	0.65
8:KB:16:ARG:NH2	8:KB:28:VAL:O	2.29	0.65
2:EB:1805:U:O2	5:HB:50:THR:HB	1.97	0.65
10:MB:29:TYR:HD1	10:MB:30:LEU:HD23	1.59	0.65
53:ED:10:LEU:HB3	53:ED:12:ALA:H	1.62	0.65
1:A:656:C:H4'	48:WA:62:GLN:HE22	1.62	0.65
24:X:27:GLU:HG3	24:X:68:GLU:HA	1.79	0.65
53:BB:10:LEU:HB3	53:BB:12:ALA:H	1.61	0.65
2:EB:322:A:OP2	7:JB:169:ASN:HB2	1.96	0.65
2:EB:1246:A:OP1	7:JB:38:ARG:NH2	2.27	0.65
29:FC:47:PRO:HG2	29:FC:48:GLU:OE2	1.97	0.65
35:MC:155:LEU:HD21	35:MC:159:PRO:HD3	1.78	0.65
2:B:674:G:H1'	7:G:74:ARG:HD2	1.78	0.65
2:B:2390:U:OP2	32:FA:35:GLN:NE2	2.30	0.65
6:F:9:VAL:HG23	17:Q:3:ARG:HB2	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:16:ARG:HH21	8:H:28:VAL:HG12	1.60	0.65
2:EB:1011:G:OP2	18:UB:66:ASN:ND2	2.29	0.65
2:EB:2875:C:O2'	17:TB:2:ASN:OD1	2.13	0.65
12:L:12:ASP:OD2	12:L:14:THR:HG23	1.95	0.65
21:U:44:GLU:HG3	21:U:51:VAL:HG23	1.79	0.65
17:TB:16:ARG:HH12	17:TB:83:ILE:HB	1.62	0.65
2:B:2708:G:O2'	15:O:71:GLN:NE2	2.30	0.64
9:I:116:GLU:HG2	9:I:117:PRO:HD2	1.79	0.64
2:EB:2100:G:H1	2:EB:2189:U:H3	1.44	0.64
55:GD:214:LEU:O	55:GD:216:ASP:N	2.30	0.64
2:B:1310:G:H1	2:B:1604:C:H42	1.44	0.64
10:J:110:ASP:HB3	10:J:113:ARG:HB2	1.78	0.64
2:EB:1364:G:OP2	25:BC:3:LYS:HG3	1.97	0.64
19:VB:43:GLU:H	19:VB:43:GLU:CD	2.00	0.64
44:VC:67:ASP:OD2	44:VC:71:LYS:HE2	1.97	0.64
55:GD:233:GLY:HA3	55:GD:237:VAL:HB	1.77	0.64
2:B:1805:U:O2	5:E:50:THR:HB	1.98	0.64
17:Q:11:GLU:OE1	17:Q:57:PHE:HB3	1.97	0.64
44:SA:99:GLN:HG3	44:SA:105:VAL:HG21	1.79	0.64
9:LB:17:VAL:HG11	9:LB:50:VAL:HG11	1.78	0.64
44:VC:99:GLN:HG3	44:VC:105:VAL:HG21	1.78	0.64
41:PA:51:VAL:HG21	41:PA:60:ARG:HH12	1.63	0.64
41:SC:9:MET:HG3	41:SC:26:VAL:HG11	1.79	0.64
1:A:501:C:H2'	1:A:502:G:H8	1.62	0.64
1:A:542:G:OP1	37:LA:10:ARG:NH2	2.26	0.64
38:MA:40:ARG:NH1	38:MA:68:GLU:HB3	2.12	0.64
2:EB:2137:C:O2	2:EB:2154:G:N2	2.25	0.64
2:EB:2567:G:H2'	2:EB:2568:C:C6	2.32	0.64
2:B:386:G:H5"	2:B:388:G:N2	2.11	0.64
2:B:1270:C:C5'	2:B:1271:G:H5'	2.27	0.64
45:TA:70:ILE:HG12	45:TA:100:ILE:HD12	1.78	0.64
1:A:1503:A:N6	34:HA:13:A:OP1	2.31	0.64
15:O:24:GLN:HG2	15:O:44:LEU:HG	1.79	0.64
22:V:30:VAL:HG13	22:V:37:VAL:HG12	1.80	0.64
36:NC:139:GLN:HB3	36:NC:140:ARG:NH1	2.13	0.64
2:B:101:G:H4'	2:B:102:G:OP2	1.98	0.64
37:OC:39:PRO:HG2	37:OC:44:GLY:HA3	1.79	0.64
41:SC:51:VAL:HG21	41:SC:60:ARG:HH12	1.62	0.64
1:A:1179:A:H5"	42:QA:97:LYS:HZ3	1.63	0.64
2:B:1011:G:OP2	18:R:66:ASN:ND2	2.29	0.64
19:S:85:LYS:NZ	19:S:85:LYS:HB3	2.12	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:CA:47:PRO:HG2	29:CA:48:GLU:OE2	1.98	0.64
41:PA:11:THR:HG23	41:PA:14:ARG:NH1	2.13	0.64
2:EB:1270:C:C5'	2:EB:1271:G:H5'	2.26	0.64
2:EB:2135:A:N7	2:EB:2137:C:N4	2.43	0.64
24:AC:5:LYS:HB2	24:AC:5:LYS:HZ2	1.60	0.64
38:PC:82:VAL:HG21	38:PC:138:ALA:HA	1.79	0.64
55:HD:354:ALA:HB1	55:HD:358:GLU:OE2	1.97	0.64
2:B:2784:C:H1'	6:F:37:ARG:NH1	2.09	0.64
24:X:9:SER:O	24:X:10:THR:OG1	2.13	0.64
50:YA:96:GLN:NE2	50:YA:96:GLN:H	1.96	0.64
1:DB:501:C:H2'	1:DB:502:G:H8	1.63	0.64
2:EB:2785:C:OP1	6:IB:41:LYS:NZ	2.30	0.64
2:B:1800:C:OP1	5:E:264:LYS:NZ	2.20	0.63
2:B:2573:C:N4	55:GD:228:ARG:HD2	2.13	0.63
7:G:46:ARG:HG2	7:G:46:ARG:NH1	2.10	0.63
7:G:152:GLU:OE1	7:G:191:ARG:NH1	2.30	0.63
19:S:82:ARG:HH11	19:S:82:ARG:HG3	1.62	0.63
1:DB:403:C:HO2'	37:OC:122:ARG:HH21	1.45	0.63
1:DB:1054:C:N4	55:HD:194:GLY:O	2.31	0.63
1:DB:1261:A:H5"	54:FD:25:LYS:NZ	2.13	0.63
2:EB:2573:C:N4	55:HD:228:ARG:HD2	2.13	0.63
22:YB:90:LEU:HD12	22:YB:96:ILE:HG21	1.80	0.63
1:A:1128:C:H42	1:A:1144:G:H1	1.46	0.63
1:A:1256:A:OP2	36:KA:26:LYS:NZ	2.23	0.63
7:G:103:LYS:HG2	7:G:106:ARG:NH1	2.12	0.63
20:T:22:ASP:HA	20:T:25:ARG:NH1	2.13	0.63
22:YB:44:ILE:HA	22:YB:64:GLU:HA	1.80	0.63
41:SC:12:ARG:HD2	41:SC:26:VAL:HG12	1.78	0.63
55:GD:301:GLY:HA3	55:GD:306:ARG:NH1	2.13	0.63
2:B:307:G:N2	2:B:309:G:H3'	2.14	0.63
6:F:29:GLY:H	6:F:93:VAL:HG22	1.63	0.63
2:EB:2151:G:N2	2:EB:2152:G:O6	2.31	0.63
2:EB:2799:A:HO2'	2:EB:2802:G:HO2'	1.46	0.63
3:FB:85:G:H1	3:FB:91:C:H42	1.44	0.63
2:B:2327:A:H2'	2:B:2328:A:C8	2.33	0.63
41:PA:9:MET:HG3	41:PA:26:VAL:HG11	1.78	0.63
54:CB:24:ARG:HG3	54:CB:25:LYS:HG2	1.80	0.63
2:EB:77:C:H5"	26:CC:10:LEU:HD11	1.79	0.63
2:EB:2390:U:OP2	32:IC:35:GLN:NE2	2.31	0.63
38:PC:58:ALA:HA	38:PC:61:TYR:HB2	1.81	0.63
39:QC:5:GLU:HG3	39:QC:93:SER:HB3	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:559:A:H4'	1:A:560:U:H3'	1.79	0.63
1:A:1004:A:O2'	1:A:1036:G:N2	2.31	0.63
2:B:309:G:N3	2:B:329:G:O2'	2.31	0.63
2:B:704:G:O2'	2:B:726:G:N2	2.27	0.63
2:B:2849:U:O4	17:Q:23:ARG:NH2	2.31	0.63
2:EB:1175:U:H2'	2:EB:1176:G:H8	1.64	0.63
20:WB:22:ASP:HA	20:WB:25:ARG:NH1	2.12	0.63
24:AC:7:LEU:H	4:LC:2:G:H5'	1.63	0.63
55:GD:114:GLU:HG3	55:GD:163:ILE:HG12	1.80	0.63
40:OA:56:GLN:HB3	40:OA:60:LYS:HE3	1.80	0.63
2:B:2345:G:N3	2:B:2381:C:H2'	2.14	0.63
2:B:2349:G:OP2	32:FA:42:ARG:HD3	1.98	0.63
39:NA:33:TYR:HB2	39:NA:75:LEU:HD12	1.81	0.63
52:AB:50:ALA:HB1	52:AB:57:HIS:HB3	1.81	0.63
5:HB:142:VAL:HG23	5:HB:193:VAL:HA	1.80	0.63
24:AC:27:GLU:HG3	24:AC:68:GLU:HA	1.80	0.63
37:OC:18:LYS:HE3	37:OC:20:TYR:H	1.64	0.63
2:B:861:A:H2'	2:B:862:G:O4'	1.99	0.63
8:H:35:GLU:HG3	8:H:160:VAL:HG23	1.80	0.63
1:DB:503:C:OP2	45:WC:116:SER:OG	2.15	0.63
1:DB:572:A:H5'	1:DB:573:A:OP2	1.99	0.63
2:EB:2141:G:N2	2:EB:2151:G:O2'	2.31	0.63
2:EB:2168:G:H2'	2:EB:2170:A:OP2	1.98	0.63
45:WC:33:ARG:HE	45:WC:62:SER:HB3	1.64	0.63
1:A:1021:G:H2'	1:A:1022:G:H4'	1.81	0.63
14:N:17:LEU:HD12	14:N:39:PRO:HB2	1.81	0.63
1:DB:82:U:C2	1:DB:85:U:H5	2.17	0.63
1:A:1370:G:H5"	42:QA:12:GLU:HG3	1.81	0.62
37:LA:12:CYS:HG	37:LA:18:LYS:NZ	1.96	0.62
2:EB:1537:C:H3'	2:EB:1538:G:H8	1.62	0.62
31:HC:22:MET:O	31:HC:28:ARG:NH1	2.32	0.62
48:ZC:56:LEU:HA	48:ZC:59:MET:HE2	1.80	0.62
5:E:217:ARG:HG2	5:E:217:ARG:HH11	1.65	0.62
9:I:89:ILE:HG22	9:I:94:TYR:HB3	1.81	0.62
2:EB:1993:U:H4'	6:IB:128:SER:HB3	1.82	0.62
20:WB:110:LYS:NZ	20:WB:111:HIS:O	2.33	0.62
36:NC:44:GLU:HA	36:NC:52:LEU:HD21	1.79	0.62
55:GD:354:ALA:HB1	55:GD:358:GLU:OE2	1.99	0.62
1:A:232:G:H1'	1:A:262:A:N1	2.14	0.62
46:UA:10:PRO:HG3	46:UA:21:TYR:HD1	1.63	0.62
45:WC:70:ILE:HG12	45:WC:100:ILE:HD12	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:HD:182:HIS:HB3	55:HD:310:TYR:HE1	1.63	0.62
2:B:1537:C:H3'	2:B:1538:G:H8	1.63	0.62
2:EB:861:A:O3'	14:QB:18:LYS:NZ	2.33	0.62
50:BD:96:GLN:NE2	50:BD:96:GLN:H	1.97	0.62
55:HD:214:LEU:O	55:HD:216:ASP:N	2.32	0.62
1:A:1305:G:N2	1:A:1331:G:H1'	2.14	0.62
1:DB:1071:C:H5"	38:PC:49:PRO:HG2	1.82	0.62
2:EB:386:G:H5"	2:EB:388:G:H22	1.64	0.62
2:EB:2306:C:N4	8:KB:42:GLY:O	2.32	0.62
1:A:1191:A:OP2	36:KA:3:ASN:ND2	2.32	0.62
2:B:2567:G:H2'	2:B:2568:C:C6	2.34	0.62
44:SA:67:ASP:OD2	44:SA:71:LYS:HE2	2.00	0.62
2:EB:861:A:H2'	2:EB:862:G:O4'	2.00	0.62
2:B:2141:G:N2	2:B:2151:G:O2'	2.32	0.62
2:B:2875:C:O2'	17:Q:2:ASN:OD1	2.16	0.62
9:I:17:VAL:HG11	9:I:50:VAL:HG11	1.82	0.62
28:BA:36:CYS:SG	28:BA:37:SER:N	2.72	0.62
38:MA:148:VAL:HG21	41:PA:107:LEU:HD22	1.81	0.62
1:DB:1004:A:O2'	1:DB:1036:G:N2	2.32	0.62
14:N:10:ARG:NH1	4:IA:64:G:H4'	2.15	0.62
25:Y:21:ARG:HH11	25:Y:21:ARG:CG	2.12	0.62
43:RA:7:LYS:HB3	43:RA:97:GLU:HB2	1.82	0.62
7:JB:152:GLU:OE1	7:JB:191:ARG:NH1	2.33	0.62
23:ZB:40:ASP:HB3	23:ZB:43:GLU:HB2	1.82	0.62
24:X:5:LYS:HB2	24:X:5:LYS:HZ2	1.61	0.62
1:DB:1191:A:OP2	36:NC:3:ASN:ND2	2.33	0.62
2:EB:243:U:OP1	32:IC:6:THR:OG1	2.12	0.62
2:EB:527:C:N4	2:EB:2779:U:OP2	2.32	0.62
1:A:547:A:OP2	37:LA:2:GLY:HA2	1.99	0.62
1:A:1128:C:H5"	42:QA:66:ARG:NH1	2.14	0.62
2:B:2315:G:OP1	8:H:36:LYS:NZ	2.29	0.62
19:S:43:GLU:H	19:S:43:GLU:CD	2.01	0.62
23:W:179:ASP:OD2	23:W:181:GLU:HG2	2.00	0.62
38:MA:82:VAL:HG21	38:MA:138:ALA:HA	1.81	0.62
1:DB:1376:U:O4	40:RC:10:ARG:NH1	2.32	0.62
2:EB:307:G:N2	2:EB:309:G:H3'	2.15	0.62
2:EB:2749:A:OP1	9:LB:3:ARG:NH1	2.33	0.62
7:JB:95:ARG:NH1	7:JB:97:TYR:OH	2.33	0.62
38:PC:40:ARG:NH1	38:PC:68:GLU:HB3	2.15	0.62
2:B:1688:U:O2	2:B:1700:A:H5'	1.99	0.61
1:DB:1179:A:H5"	42:TC:97:LYS:HZ3	1.63	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:JB:12:LEU:HG	7:JB:124:LEU:HD11	1.81	0.61
11:NB:12:ARG:NH1	11:NB:50:ASP:OD2	2.33	0.61
11:NB:39:ARG:HE	11:NB:48:MET:HE2	1.65	0.61
1:A:134:A:H61	49:XA:25:ARG:NH1	1.97	0.61
2:B:2168:G:H2'	2:B:2170:A:OP2	2.00	0.61
2:B:2799:A:HO2'	2:B:2802:G:HO2'	1.48	0.61
33:GA:9:ARG:NH1	33:GA:16:VAL:HG23	2.15	0.61
39:NA:5:GLU:HG3	39:NA:93:SER:HB3	1.82	0.61
1:DB:79:G:H1	1:DB:90:C:H42	1.47	0.61
1:DB:1305:G:N2	1:DB:1331:G:H1'	2.16	0.61
2:EB:2345:G:N3	2:EB:2381:C:H2'	2.15	0.61
17:TB:23:ARG:HD3	17:TB:120:ARG:NH1	2.15	0.61
1:DB:1021:G:H2'	1:DB:1022:G:H4'	1.82	0.61
2:EB:101:G:H4'	2:EB:102:G:OP2	1.99	0.61
2:EB:1434:A:H61	2:EB:1558:A:N6	1.97	0.61
2:EB:1530:G:H1	2:EB:1541:U:H3	1.47	0.61
2:EB:2615:U:C2	29:FC:7:PRO:HA	2.35	0.61
5:E:142:VAL:HG23	5:E:193:VAL:HA	1.82	0.61
1:DB:661:G:H1	1:DB:744:C:H42	1.48	0.61
1:A:1517:G:H3'	1:A:1518:MA6:H8	1.81	0.61
36:KA:44:GLU:HA	36:KA:52:LEU:HD21	1.81	0.61
1:DB:1412:C:H2'	1:DB:1413:A:C8	2.36	0.61
1:DB:1513:A:H2'	1:DB:1514:C:C6	2.35	0.61
2:EB:2690:C:N4	2:EB:2713:A:H1'	2.14	0.61
19:VB:82:ARG:HG3	19:VB:82:ARG:NH1	2.15	0.61
33:JC:9:ARG:NH1	33:JC:16:VAL:HG23	2.15	0.61
2:B:2756:U:H3'	33:GA:19:ARG:HG3	1.82	0.61
10:J:27:ARG:HD2	25:Y:71:TYR:CE2	2.36	0.61
17:Q:16:ARG:HH12	17:Q:83:ILE:HB	1.66	0.61
38:MA:10:MET:O	38:MA:12:LEU:N	2.33	0.61
38:MA:58:ALA:HA	38:MA:61:TYR:HB2	1.82	0.61
2:EB:2349:G:OP2	32:IC:42:ARG:HD3	2.00	0.61
17:TB:26:ASP:O	17:TB:49:VAL:HG12	2.00	0.61
36:NC:115:LEU:HD22	36:NC:119:ARG:HH21	1.66	0.61
1:A:191(G):G:O2'	53:BB:101:GLY:O	2.18	0.61
1:A:1513:A:H2'	1:A:1514:C:C6	2.35	0.61
2:B:363(G):A:C8	2:B:363(G):A:OP2	2.53	0.61
2:B:1175:U:H2'	2:B:1176:G:H8	1.64	0.61
5:E:17:THR:O	5:E:211:ARG:NH2	2.33	0.61
10:J:10:GLU:N	10:J:10:GLU:OE2	2.33	0.61
1:DB:232:G:H1'	1:DB:262:A:N1	2.16	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:637:A:H5"	13:PB:117:GLU:HG2	1.81	0.61
2:EB:2327:A:H2'	2:EB:2328:A:C8	2.36	0.61
36:NC:35:GLU:HA	36:NC:38:ARG:HD2	1.82	0.61
1:A:165:C:H2'	1:A:166:G:C8	2.36	0.61
2:B:18:C:O2'	2:B:553:U:OP1	2.19	0.61
2:B:1534:G:O2'	2:B:1538:G:N2	2.33	0.61
37:LA:111:ALA:HB2	37:LA:120:LEU:HD12	1.82	0.61
46:UA:33:ALA:O	46:UA:37:THR:OG1	2.15	0.61
1:DB:147:G:N2	1:DB:148:G:H1'	2.15	0.61
1:DB:191(F):U:O2	53:ED:105:SER:OG	2.17	0.61
2:EB:1817:G:OP1	5:HB:88:ARG:NH2	2.32	0.61
2:EB:2807:G:H1	2:EB:2893:G:H22	1.49	0.61
10:MB:10:GLU:N	10:MB:10:GLU:OE2	2.34	0.61
10:MB:95:LYS:HA	10:MB:111:PRO:HB3	1.83	0.61
15:RB:24:GLN:HG2	15:RB:44:LEU:HG	1.82	0.61
40:RC:56:GLN:HB3	40:RC:60:LYS:HE3	1.82	0.61
46:XC:10:PRO:HG3	46:XC:21:TYR:HD1	1.65	0.61
1:A:82:U:C2	1:A:85:U:H5	2.19	0.61
1:A:191(F):U:O2	53:BB:105:SER:OG	2.16	0.61
2:B:2680:C:H5'	6:F:189:PRO:HA	1.81	0.61
2:B:2816:C:O2	2:B:2883:A:O2'	2.18	0.61
6:F:171:GLU:HB3	6:F:185:LYS:HB3	1.83	0.61
48:WA:56:LEU:HA	48:WA:59:MET:HE2	1.81	0.61
1:DB:501:C:H2'	1:DB:502:G:C8	2.36	0.61
2:EB:1107:G:H8	2:EB:1107:G:OP2	1.83	0.61
2:EB:1903:G:OP2	5:HB:241:PRO:HB2	2.00	0.61
23:ZB:8:TYR:HB2	23:ZB:38:TYR:CE2	2.35	0.61
23:ZB:95:PRO:HB3	23:ZB:129:SER:HA	1.81	0.61
55:GD:182:HIS:HB3	55:GD:310:TYR:HE1	1.65	0.61
2:B:2807:G:H1	2:B:2893:G:H22	1.48	0.61
4:IA:75:C:OP2	55:GD:261:ARG:NH2	2.34	0.61
36:KA:35:GLU:HA	36:KA:38:ARG:HD2	1.82	0.61
36:KA:139:GLN:HB3	36:KA:140:ARG:NH1	2.16	0.61
38:MA:59:GLY:O	38:MA:63:ARG:NH1	2.34	0.61
1:DB:677:U:H3	1:DB:713:G:H22	1.49	0.61
2:EB:712:G:H1	2:EB:719:C:H42	1.48	0.61
20:WB:68:ARG:HH11	20:WB:111:HIS:HA	1.66	0.61
39:QC:78:GLU:O	39:QC:81:ILE:HG22	2.01	0.61
1:A:656:C:O2'	48:WA:28:GLN:OE1	2.19	0.60
2:B:2543:G:H2'	2:B:2544:G:C8	2.36	0.60
6:F:191:PRO:O	6:F:193:GLY:N	2.33	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:44:ILE:HA	22:V:64:GLU:HA	1.82	0.60
28:BA:34:GLU:OE2	46:UA:3:ARG:HG2	2.01	0.60
2:EB:1483:G:H2'	2:EB:1484:G:H8	1.65	0.60
22:YB:37:VAL:HG21	22:YB:72:VAL:HG21	1.83	0.60
33:JC:27:CYS:SG	33:JC:28:GLU:N	2.73	0.60
55:GD:183:ARG:HH21	55:GD:309:THR:HG21	1.65	0.60
1:A:1316:G:N1	1:A:1319:A:OP2	2.26	0.60
2:B:1523:U:H2'	2:B:1524:G:C8	2.36	0.60
2:B:1778:U:H2'	2:B:1784:A:N6	2.16	0.60
3:C:57:A:OP2	3:C:58:A:OP2	2.18	0.60
35:JA:128:GLU:O	35:JA:132:LYS:NZ	2.32	0.60
39:NA:78:GLU:O	39:NA:81:ILE:HG22	2.01	0.60
44:SA:79:SER:HB2	44:SA:106:LYS:HD2	1.83	0.60
46:UA:39:ILE:HG12	46:UA:55:ARG:HH22	1.66	0.60
1:DB:656:C:O2'	48:ZC:28:GLN:OE1	2.19	0.60
24:X:5:LYS:HB3	55:GD:265:LYS:NZ	2.16	0.60
1:A:1054:C:N4	55:GD:194:GLY:O	2.33	0.60
2:B:712:G:H1	2:B:719:C:H42	1.46	0.60
43:RA:5:ARG:HD3	43:RA:71:LEU:HD11	1.83	0.60
2:EB:2712:U:O2'	2:EB:2712(A):A:H5"	2.01	0.60
21:XB:26:TYR:OH	21:XB:88:LYS:HD3	2.01	0.60
31:HC:10:ARG:NH1	31:HC:14:LYS:HE3	2.16	0.60
46:XC:39:ILE:HG12	46:XC:55:ARG:HH22	1.66	0.60
48:ZC:39:LEU:HD13	48:ZC:56:LEU:HB2	1.82	0.60
1:A:200:G:H1	1:A:217:C:H42	1.50	0.60
2:B:2749:A:OP1	9:I:3:ARG:NH1	2.27	0.60
35:JA:153:ARG:O	35:JA:156:LYS:NZ	2.27	0.60
1:DB:1298:C:H2'	40:RC:114:ARG:HH12	1.67	0.60
2:EB:2597:G:H2'	2:EB:2598:A:C8	2.37	0.60
19:VB:34:GLU:HG2	19:VB:56:SER:HB2	1.83	0.60
1:A:501:C:H2'	1:A:502:G:C8	2.37	0.60
2:B:2312:U:H5'	8:H:88:ILE:HD11	1.82	0.60
12:L:79:PHE:CD1	17:Q:72:VAL:HG22	2.37	0.60
23:W:95:PRO:HB3	23:W:129:SER:HA	1.83	0.60
2:EB:1657:C:H2'	2:EB:1658:C:H6	1.66	0.60
8:KB:113:ARG:HH11	28:EC:34:GLU:HG2	1.67	0.60
14:QB:18:LYS:O	14:QB:98:LYS:NZ	2.28	0.60
23:ZB:179:ASP:OD2	23:ZB:181:GLU:HG2	2.01	0.60
55:HD:114:GLU:HG3	55:HD:163:ILE:HG12	1.82	0.60
2:B:1196:C:HO2'	2:B:1227:G:HO2'	1.49	0.60
2:B:1530:G:H1	2:B:1541:U:H3	1.47	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:72:ARG:NH2	23:W:97:GLU:O	2.33	0.60
39:NA:43:LEU:HD21	51:ZA:35:ARG:HH21	1.65	0.60
1:DB:1128:C:H5"	42:TC:66:ARG:NH1	2.14	0.60
2:EB:2312:U:H5'	8:KB:88:ILE:HD11	1.82	0.60
14:QB:35:VAL:HG22	14:QB:102:VAL:HG22	1.84	0.60
1:A:878:G:H5'	41:PA:89:PRO:HG2	1.83	0.60
2:B:527:C:N4	2:B:2779:U:OP2	2.35	0.60
2:B:1126:A:H8	2:B:1126:A:OP1	1.85	0.60
2:B:1903:G:OP2	5:E:241:PRO:HB2	2.02	0.60
25:Y:52:ARG:HH12	25:Y:57:GLU:HB2	1.65	0.60
1:A:677:U:H3	1:A:713:G:H22	1.48	0.60
2:B:796:C:H2'	2:B:797:C:C6	2.37	0.60
2:B:900:A:H2'	2:B:901:A:H8	1.67	0.60
1:DB:978:A:OP2	1:DB:1362(B):C:N4	2.34	0.60
1:DB:1517:G:H3'	1:DB:1518:MA6:H8	1.82	0.60
2:EB:2141:G:H1	2:EB:2151:G:H1'	1.67	0.60
1:A:325:A:OP2	53:BB:70:SER:HB3	2.02	0.60
1:A:927:G:H1	1:A:1390:U:H3	1.49	0.60
19:S:34:GLU:HG2	19:S:56:SER:HB2	1.83	0.60
48:WA:85:LEU:HB3	48:WA:87:ILE:HG23	1.84	0.60
1:DB:191(G):G:O2'	53:ED:101:GLY:O	2.20	0.60
1:DB:1022:G:C5	1:DB:1023:G:H1'	2.37	0.60
2:EB:572:A:H5"	2:EB:573:G:OP2	2.02	0.60
2:EB:2708:G:O2'	15:RB:71:GLN:NE2	2.35	0.60
2:EB:2784:C:H1'	6:IB:37:ARG:NH1	2.10	0.60
8:H:143:GLU:HA	28:BA:28:LYS:HD3	1.83	0.59
9:I:9:ILE:HB	9:I:50:VAL:HG23	1.83	0.59
17:Q:26:ASP:O	17:Q:49:VAL:HG12	2.02	0.59
48:WA:9:GLN:HB3	48:WA:13:GLN:HE21	1.65	0.59
2:EB:17:G:H2'	2:EB:18:C:C6	2.37	0.59
22:YB:84:ARG:O	22:YB:100:ALA:HB2	2.02	0.59
40:RC:85:TYR:HD2	40:RC:154:TYR:HE2	1.49	0.59
2:B:556:G:H2'	2:B:557:U:C6	2.37	0.59
1:DB:165:C:H2'	1:DB:166:G:C8	2.36	0.59
2:EB:1291:C:H2'	2:EB:1292:U:C6	2.37	0.59
2:EB:2287:A:O2'	2:EB:2288:A:O5'	2.20	0.59
15:RB:56:LYS:NZ	15:RB:90:ARG:O	2.30	0.59
23:ZB:72:ARG:NH2	23:ZB:97:GLU:O	2.35	0.59
39:QC:43:LEU:HD21	51:CD:35:ARG:HH21	1.65	0.59
55:HD:233:GLY:HA3	55:HD:237:VAL:HB	1.83	0.59
1:A:1022:G:C5	1:A:1023:G:H1'	2.37	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2531:A:N3	2:B:2658:C:O2'	2.31	0.59
2:B:2593:U:H2'	2:B:2594:C:C6	2.38	0.59
2:B:2648:C:H2'	2:B:2649:U:C6	2.38	0.59
3:FB:57:A:OP2	3:FB:58:A:OP2	2.20	0.59
10:MB:61:ARG:NH1	10:MB:64:GLU:OE2	2.35	0.59
41:SC:85:ARG:NH1	41:SC:87:SER:O	2.35	0.59
2:B:2142:C:N4	2:B:2148:G:O6	2.34	0.59
5:E:73:VAL:HG23	5:E:120:GLY:HA2	1.84	0.59
8:H:137:GLU:HG2	8:H:152:LEU:HD13	1.84	0.59
9:I:41:MET:N	9:I:41:MET:SD	2.75	0.59
11:K:35:ARG:HG2	11:K:35:ARG:HH11	1.67	0.59
40:OA:85:TYR:HD2	40:OA:154:TYR:HE2	1.50	0.59
2:EB:2462:U:H1'	2:EB:2491:U:O4	2.02	0.59
2:EB:2849:U:OP2	17:TB:95:ARG:NH1	2.36	0.59
2:EB:2889:C:H2'	2:EB:2891:G:O4'	2.02	0.59
31:HC:24:THR:HG23	31:HC:27:GLY:HA3	1.83	0.59
43:UC:7:LYS:HB3	43:UC:97:GLU:HB2	1.82	0.59
55:HD:183:ARG:HH21	55:HD:309:THR:HG21	1.65	0.59
2:B:566:U:H5"	13:M:29:LYS:HE3	1.84	0.59
19:S:68:LYS:HE3	19:S:69:LYS:H	1.67	0.59
36:KA:115:LEU:HD22	36:KA:119:ARG:HH21	1.67	0.59
1:DB:646:U:H2'	1:DB:647:C:C6	2.38	0.59
2:EB:245:G:O6	32:IC:8:LYS:HE3	2.03	0.59
2:EB:796:C:H2'	2:EB:797:C:C6	2.38	0.59
2:EB:2313:C:OP2	8:KB:74:LYS:NZ	2.32	0.59
1:A:1376:U:O4	40:OA:10:ARG:NH1	2.35	0.59
14:N:35:VAL:HG22	14:N:102:VAL:HG22	1.84	0.59
28:BA:40:HIS:HB3	28:BA:43:TYR:HB2	1.85	0.59
6:IB:151:TYR:HB2	11:NB:79:PRO:HD3	1.85	0.59
11:NB:10:GLU:HA	11:NB:10:GLU:OE2	2.00	0.59
46:XC:11:ARG:HA	46:XC:45:VAL:HB	1.83	0.59
55:GD:224:ILE:HG12	55:GD:246:ILE:HG12	1.83	0.59
10:J:93:THR:HG23	10:J:95:LYS:H	1.67	0.59
11:K:12:ARG:NH1	11:K:50:ASP:OD2	2.35	0.59
15:O:70:LEU:O	15:O:72:ASP:N	2.27	0.59
1:DB:966:M2G:HM13	1:DB:967:5MC:H1'	1.84	0.59
1:DB:1223:C:P	52:DD:78:ARG:HH21	2.26	0.59
5:HB:36:PRO:HA	5:HB:61:LEU:HD12	1.85	0.59
1:A:507:C:OP2	1:A:508:C:O2'	2.12	0.59
1:A:979:C:O2	47:VA:19:ARG:NH1	2.35	0.59
1:A:1080:A:H5"	1:A:1081:G:OP2	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:77:C:H5"	26:Z:10:LEU:HD11	1.85	0.59
3:C:82:G:H1	3:C:94:C:N4	1.97	0.59
13:M:81:GLN:HB2	13:M:110:TYR:HD1	1.68	0.59
19:S:82:ARG:HG3	19:S:82:ARG:NH1	2.16	0.59
23:W:179:ASP:O	23:W:182:LYS:HB3	2.03	0.59
1:DB:927:G:H1	1:DB:1390:U:H3	1.49	0.59
2:EB:1278:A:OP1	15:RB:36:THR:HG23	2.02	0.59
2:EB:1689:A:H62	2:EB:1698:A:H2	1.51	0.59
2:EB:2319:G:H22	16:SB:3:ARG:NH1	2.01	0.59
5:HB:217:ARG:HG2	5:HB:217:ARG:HH11	1.67	0.59
35:MC:128:GLU:O	35:MC:132:LYS:NZ	2.36	0.59
37:OC:111:ALA:HB2	37:OC:120:LEU:HD12	1.83	0.59
44:VC:79:SER:HB2	44:VC:106:LYS:HD2	1.85	0.59
2:B:140:A:H8	2:B:1408:C:HO2'	1.47	0.59
2:B:1278:A:OP1	15:O:36:THR:HG23	2.03	0.59
2:B:2287:A:O2'	2:B:2288:A:O5'	2.18	0.59
2:B:2306:C:N4	8:H:42:GLY:O	2.36	0.59
20:T:14:PRO:HG3	20:T:101:SER:HB3	1.84	0.59
41:PA:87:SER:OG	41:PA:93:VAL:N	2.34	0.59
2:EB:1523:U:H2'	2:EB:1524:G:C8	2.37	0.59
2:EB:1790:C:H5"	2:EB:1791:A:OP1	2.02	0.59
53:ED:43:LEU:O	53:ED:48:LYS:HB2	2.03	0.59
1:A:1289:A:N1	1:A:1371:G:O2'	2.27	0.59
2:B:2785:C:OP1	6:F:41:LYS:NZ	2.36	0.59
3:C:85:G:H1	3:C:91:C:H42	1.49	0.59
12:L:19:ILE:HG22	12:L:43:VAL:HA	1.84	0.59
15:O:12:ARG:HG3	15:O:12:ARG:NH1	2.17	0.59
20:T:13:SER:HB3	20:T:16:LYS:HD2	1.85	0.59
1:DB:1370:G:H5"	42:TC:12:GLU:HG3	1.84	0.59
2:EB:302:C:H2'	2:EB:303:U:H6	1.67	0.59
9:LB:25:LYS:HB3	9:LB:27:LYS:NZ	2.18	0.59
35:MC:16:HIS:HE1	35:MC:42:ILE:HD12	1.66	0.59
1:DB:1128:C:H42	1:DB:1144:G:H1	1.49	0.58
1:DB:1289:A:N1	1:DB:1371:G:O2'	2.30	0.58
9:LB:9:ILE:HB	9:LB:50:VAL:HG23	1.83	0.58
17:TB:127:ALA:O	17:TB:129:ARG:N	2.34	0.58
14:N:81:VAL:HG12	24:X:5:LYS:NZ	2.18	0.58
37:LA:18:LYS:HE3	37:LA:20:TYR:H	1.68	0.58
1:DB:1269:A:N1	1:DB:1312:G:O2'	2.25	0.58
19:VB:40:LEU:HB2	19:VB:46:VAL:HB	1.85	0.58
48:ZC:85:LEU:HB3	48:ZC:87:ILE:HG23	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:DD:20:LEU:HD13	52:DD:23:ASN:HD22	1.68	0.58
1:A:147:G:N2	1:A:148:G:H1'	2.18	0.58
2:B:34:C:O2'	2:B:35:G:O5'	2.21	0.58
11:K:10:GLU:HA	11:K:10:GLU:OE2	2.02	0.58
2:EB:1778:U:H2'	2:EB:1784:A:N6	2.18	0.58
2:EB:2006:C:O2'	2:EB:2823:A:N3	2.36	0.58
1:A:886:G:H1	1:A:911:U:H3	1.50	0.58
2:B:637:A:H5"	13:M:117:GLU:HG2	1.85	0.58
2:B:2131:G:OP2	2:B:2132:U:O2'	2.16	0.58
2:B:2141:G:H1	2:B:2151:G:H1'	1.68	0.58
5:E:67:PHE:HE1	5:E:106:ILE:HD11	1.68	0.58
2:EB:2680:C:H5'	6:IB:189:PRO:HA	1.83	0.58
5:HB:67:PHE:HE1	5:HB:106:ILE:HD11	1.68	0.58
6:IB:9:VAL:HG23	17:TB:3:ARG:HB2	1.85	0.58
54:FD:18:TYR:HA	54:FD:22:ARG:HD3	1.85	0.58
1:A:1104:G:H4'	35:JA:111:ARG:HD3	1.86	0.58
1:A:1412:C:H2'	1:A:1413:A:C8	2.38	0.58
2:B:572:A:H5"	2:B:573:G:OP2	2.04	0.58
9:I:7:LEU:HD12	9:I:8:PRO:HD2	1.84	0.58
1:DB:507:C:OP2	1:DB:508:C:O2'	2.15	0.58
2:EB:386:G:H5"	2:EB:388:G:N2	2.18	0.58
2:EB:2145:C:H4'	2:EB:2146:C:OP2	2.03	0.58
2:EB:2253:G:O6	24:AC:4:LYS:HB2	2.03	0.58
13:PB:71:VAL:HG12	13:PB:72:PRO:HA	1.84	0.58
24:AC:10:THR:HG22	24:AC:12:ASN:H	1.68	0.58
25:BC:56:GLN:HB3	25:BC:87:PRO:HG3	1.86	0.58
33:JC:7:VAL:HG12	33:JC:34:GLN:HG2	1.86	0.58
49:AD:53:VAL:HG13	49:AD:79:VAL:HG22	1.86	0.58
2:B:1557:C:H5"	2:B:1558:A:OP2	2.04	0.58
2:B:1795:C:O2	5:E:255:LYS:HE3	2.03	0.58
2:B:2597:G:H2'	2:B:2598:A:C8	2.38	0.58
13:M:71:VAL:HG12	13:M:72:PRO:HA	1.86	0.58
31:EA:10:ARG:NH1	31:EA:14:LYS:HE3	2.19	0.58
2:EB:140:A:H8	2:EB:1408:C:O2'	1.86	0.58
16:SB:4:LEU:HD12	16:SB:9:ARG:HG3	1.86	0.58
2:B:1689:A:H62	2:B:1698:A:H2	1.49	0.58
2:B:2712:U:O2'	2:B:2712(A):A:H5"	2.03	0.58
41:PA:19:VAL:HG23	41:PA:21:LYS:HG2	1.85	0.58
37:OC:166:LYS:HG2	37:OC:178:VAL:HG21	1.85	0.58
38:PC:10:MET:O	38:PC:12:LEU:N	2.36	0.58
55:GD:155:GLU:HG3	55:GD:156:HIS:ND1	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1073:U:O2'	35:JA:104:ASN:ND2	2.37	0.58
1:A:1298:C:H2'	40:OA:114:ARG:HH12	1.68	0.58
2:B:1088:A:O2'	2:B:1089:G:OP2	2.14	0.58
2:B:1107:G:OP2	2:B:1107:G:H8	1.87	0.58
19:S:62:LEU:HD21	19:S:95:LEU:HB2	1.86	0.58
37:LA:12:CYS:HB3	37:LA:33:MET:HG2	1.86	0.58
38:MA:145:LYS:HB3	38:MA:145:LYS:HZ3	1.68	0.58
2:EB:2153:G:N2	2:EB:2154:G:O6	2.37	0.58
2:EB:2315:G:OP1	8:KB:36:LYS:NZ	2.28	0.58
2:EB:2377:A:H4'	16:SB:112:PHE:OXT	2.04	0.58
2:EB:2816:C:O2	2:EB:2883:A:O2'	2.20	0.58
8:KB:41:GLN:HE22	8:KB:56:ALA:HB1	1.68	0.58
25:BC:21:ARG:HH11	25:BC:21:ARG:CG	2.13	0.58
41:SC:69:ARG:NE	41:SC:75:ARG:O	2.35	0.58
42:TC:9:ARG:HB3	42:TC:14:VAL:HG13	1.84	0.58
2:B:2564:A:OP1	2:B:2648:C:H4'	2.04	0.58
23:W:8:TYR:HB2	23:W:38:TYR:CE2	2.38	0.58
1:DB:325:A:OP2	53:ED:70:SER:HB3	2.03	0.58
2:EB:2445:G:OP1	7:JB:74:ARG:NH2	2.37	0.58
4:GB:54:5MU:HN3	4:GB:58:A:H62	1.52	0.58
7:JB:161:GLU:OE2	7:JB:164:ARG:HD3	2.03	0.58
2:B:245:G:O6	32:FA:8:LYS:HE3	2.04	0.58
2:B:2153:G:N2	2:B:2154:G:O6	2.36	0.58
2:B:2445:G:OP1	7:G:74:ARG:NH2	2.36	0.58
2:EB:1688:U:O2	2:EB:1700:A:H5'	2.04	0.58
3:FB:104:A:OP1	23:ZB:72:ARG:NH1	2.31	0.58
8:KB:143:GLU:HA	28:EC:28:LYS:HD3	1.85	0.58
19:VB:85:LYS:NZ	19:VB:85:LYS:HB3	2.19	0.58
35:MC:58:ILE:O	35:MC:62:ALA:N	2.28	0.58
53:ED:38:LYS:HA	53:ED:41:VAL:HG22	1.86	0.58
55:HD:218:ASN:HB3	55:HD:221:ASP:OD2	2.04	0.58
1:A:297:G:N2	1:A:300:A:OP2	2.34	0.57
1:A:966:M2G:HM13	1:A:967:5MC:H1'	1.84	0.57
2:B:479:A:N3	2:B:481:G:H5"	2.19	0.57
2:B:1019:U:H3	2:B:1142(B):A:H62	1.51	0.57
2:B:1923:U:H2'	2:B:1924:C:C6	2.39	0.57
2:B:2139:C:H42	2:B:2153:G:H1'	1.69	0.57
2:B:2889:C:H2'	2:B:2891:G:O4'	2.03	0.57
8:KB:181:ARG:HH11	8:KB:181:ARG:HB2	1.69	0.57
19:VB:22:VAL:HG12	19:VB:23:GLU:H	1.68	0.57
22:YB:30:VAL:HG13	22:YB:37:VAL:HG12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:UC:5:ARG:HD3	43:UC:71:LEU:HD11	1.85	0.57
2:B:784:A:C5	5:E:229:VAL:HG21	2.39	0.57
2:B:1028:A:N3	2:B:2486:G:O2'	2.29	0.57
2:B:2145:C:H4'	2:B:2146:C:OP2	2.03	0.57
2:B:2690:C:N4	2:B:2713:A:H1'	2.19	0.57
17:Q:127:ALA:O	17:Q:129:ARG:N	2.34	0.57
33:GA:35:ARG:NH1	33:GA:37:GLY:OXT	2.36	0.57
46:UA:11:ARG:HA	46:UA:45:VAL:HB	1.86	0.57
1:DB:926:G:H22	34:KC:15:A:H5"	1.69	0.57
1:DB:1080:A:H5"	1:DB:1081:G:OP2	2.04	0.57
1:DB:1130:A:H2'	1:DB:1131:G:C8	2.39	0.57
2:EB:270(J):G:H4'	25:BC:81:ARG:HE	1.69	0.57
2:EB:1060:U:N3	2:EB:1088:A:H1'	2.19	0.57
4:GB:7:G:H5"	4:GB:8:4SU:H5	1.86	0.57
6:IB:171:GLU:HB3	6:IB:185:LYS:HB3	1.85	0.57
8:KB:34:LEU:H	8:KB:34:LEU:HD12	1.68	0.57
8:KB:137:GLU:HG2	8:KB:152:LEU:HD13	1.86	0.57
1:A:79:G:H1	1:A:90:C:H42	1.50	0.57
7:G:153:SER:OG	7:G:190:GLU:HG3	2.03	0.57
1:DB:878:G:H5'	41:SC:89:PRO:HG2	1.86	0.57
2:EB:630:G:N2	2:EB:633:A:OP2	2.35	0.57
2:EB:1534:G:O2'	2:EB:1538:G:N2	2.37	0.57
23:ZB:127:LYS:H	23:ZB:164:ALA:HB2	1.70	0.57
1:A:1269:A:N1	1:A:1312:G:O2'	2.24	0.57
2:B:302:C:H2'	2:B:303:U:H6	1.69	0.57
2:B:910:A:H62	14:N:12:GLN:HA	1.69	0.57
2:B:1778:U:H2'	2:B:1784:A:H62	1.69	0.57
2:B:2564:A:C2	2:B:2647:U:H4'	2.39	0.57
2:B:2747:G:O6	2:B:2755:C:H5"	2.04	0.57
11:K:39:ARG:HE	11:K:48:MET:HE2	1.70	0.57
13:M:63:PRO:HG2	32:FA:25:MET:HB2	1.84	0.57
35:JA:58:ILE:O	35:JA:62:ALA:N	2.27	0.57
1:DB:886:G:H1	1:DB:911:U:H3	1.53	0.57
2:EB:439:G:H2'	2:EB:440:G:C8	2.39	0.57
2:EB:1795:C:O2	5:HB:255:LYS:HE3	2.04	0.57
2:EB:2142:C:N4	2:EB:2148:G:O6	2.36	0.57
2:EB:2543:G:H2'	2:EB:2544:G:C8	2.38	0.57
2:EB:2756:U:H4'	2:EB:2757:A:OP1	2.03	0.57
12:OB:68:GLU:HB3	12:OB:78:ARG:HB2	1.87	0.57
23:ZB:54:HIS:HB3	23:ZB:101:PRO:HD3	1.87	0.57
2:B:2094:G:P	10:J:22:LYS:NZ	2.76	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2253:G:O6	24:X:4:LYS:HB2	2.04	0.57
2:B:2637:U:C4	2:B:2638:G:C6	2.92	0.57
2:B:2756:U:OP2	33:GA:19:ARG:NH2	2.28	0.57
6:F:14:ILE:HG13	6:F:21:VAL:HG13	1.86	0.57
7:G:155:LEU:HD12	7:G:174:VAL:HB	1.84	0.57
8:H:113:ARG:HH11	28:BA:34:GLU:HG2	1.70	0.57
27:AA:38:GLU:HA	27:AA:38:GLU:OE2	2.05	0.57
29:CA:49:CYS:SG	29:CA:51:TYR:HB2	2.44	0.57
2:EB:245:G:H5'	13:PB:73:GLY:HA2	1.85	0.57
2:EB:394:A:N6	2:EB:395:U:O4	2.37	0.57
2:EB:1034:G:H2'	2:EB:1035:U:O4'	2.05	0.57
2:EB:2723:C:OP2	6:IB:109:LYS:NZ	2.38	0.57
35:MC:188:ALA:HB1	35:MC:192:SER:HB2	1.86	0.57
38:PC:36:ASP:OD1	38:PC:38:GLN:N	2.37	0.57
2:B:2317:C:H2'	2:B:2318:G:H5'	1.86	0.57
24:X:10:THR:HG22	24:X:12:ASN:H	1.69	0.57
28:BA:44:THR:O	28:BA:47:GLN:NE2	2.37	0.57
1:DB:523:A:H61	45:WC:92:0TD:CG	2.13	0.57
2:EB:848:G:H2'	2:EB:849:A:C8	2.39	0.57
2:EB:1796:U:H4'	5:HB:256:GLY:H	1.70	0.57
19:VB:62:LEU:HD21	19:VB:95:LEU:HB2	1.87	0.57
45:WC:28:LYS:HD3	45:WC:62:SER:HB2	1.87	0.57
1:A:1415:G:H2'	1:A:1416:G:H8	1.69	0.57
2:B:2139:C:H3'	2:B:2140:C:H6	1.68	0.57
7:G:161:GLU:OE2	7:G:164:ARG:HD3	2.05	0.57
35:JA:166:ASP:HB3	35:JA:169:LYS:HB3	1.87	0.57
42:QA:9:ARG:HB3	42:QA:14:VAL:HG13	1.87	0.57
2:EB:2131:G:OP2	2:EB:2132:U:O2'	2.18	0.57
35:MC:129:GLU:OE2	35:MC:130:ARG:HG3	2.04	0.57
41:SC:11:THR:HG23	41:SC:14:ARG:HH12	1.69	0.57
2:B:2805:G:N2	2:B:2807:G:O6	2.35	0.57
7:G:127:GLU:HG2	7:G:196:LEU:HD22	1.86	0.57
45:TA:84:LEU:HD23	45:TA:101:VAL:HG21	1.86	0.57
2:EB:674:G:H1'	7:JB:74:ARG:HD2	1.87	0.57
2:EB:1815:A:OP2	5:HB:54:ARG:NH2	2.38	0.57
17:TB:11:GLU:OE1	17:TB:57:PHE:HB3	2.05	0.57
28:EC:44:THR:O	28:EC:47:GLN:NE2	2.37	0.57
1:A:1455:G:H5"	53:BB:31:SER:HB3	1.86	0.57
2:B:851:U:H2'	2:B:852:G:C8	2.39	0.57
2:B:1291:C:H2'	2:B:1292:U:C6	2.40	0.57
2:B:1993:U:H4'	6:F:128:SER:HB3	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:41:GLN:HE22	8:H:56:ALA:HB1	1.69	0.57
17:Q:54:ARG:HA	17:Q:59:THR:OG1	2.05	0.57
33:GA:7:VAL:HG12	33:GA:34:GLN:HG2	1.86	0.57
34:HA:21:A:H2'	55:GD:197:HIS:CD2	2.40	0.57
2:EB:616:A:C4	7:JB:180:GLY:HA2	2.40	0.57
25:BC:21:ARG:HG3	25:BC:21:ARG:NH1	2.14	0.57
1:A:407:G:O4'	37:LA:119:GLN:NE2	2.38	0.57
1:A:1009:G:N2	1:A:1020:U:O2	2.36	0.57
2:B:270(J):G:H4'	25:Y:81:ARG:HE	1.69	0.57
2:B:586:A:N1	2:B:809:G:O2'	2.30	0.57
2:B:1077:A:H3'	2:B:1078:U:H4'	1.86	0.57
2:B:1817:G:OP1	5:E:88:ARG:NH2	2.37	0.57
14:N:80:GLU:HG3	55:GD:264:HIS:HD2	1.68	0.57
1:DB:200:G:H1	1:DB:217:C:H42	1.51	0.57
1:DB:397:A:H5'	1:DB:398:C:OP1	2.04	0.57
2:EB:900:A:H2'	2:EB:901:A:H8	1.70	0.57
2:EB:1173:G:H2'	2:EB:1175:U:H5"	1.86	0.57
2:EB:1557:C:H5"	2:EB:1558:A:OP2	2.05	0.57
6:IB:14:ILE:HG13	6:IB:21:VAL:HG13	1.87	0.57
8:KB:83:ARG:O	8:KB:86:MET:HB3	2.05	0.57
11:NB:35:ARG:HG2	11:NB:35:ARG:HH11	1.70	0.57
21:XB:60:ARG:NH1	31:HC:47:ARG:NH2	2.53	0.57
42:TC:114:TYR:HE1	43:UC:59:SER:HA	1.69	0.57
2:B:155:C:H41	2:B:171:G:H1	1.53	0.56
4:D:10:G:H2'	4:D:11:A:C8	2.41	0.56
5:E:112:GLN:O	5:E:115:GLN:HB3	2.04	0.56
9:I:21:PRO:HG2	9:I:23:ARG:HH12	1.70	0.56
12:L:71:ARG:NH2	12:L:122:LEU:O	2.38	0.56
44:SA:120:ARG:NH1	44:SA:126:ARG:NH1	2.52	0.56
1:DB:1261:A:H5"	54:FD:25:LYS:HZ2	1.70	0.56
2:EB:2747:G:O6	2:EB:2755:C:H5"	2.05	0.56
9:LB:7:LEU:HD12	9:LB:8:PRO:HD2	1.87	0.56
51:CD:19:LYS:NZ	51:CD:19:LYS:HB3	2.20	0.56
55:HD:155:GLU:HG3	55:HD:156:HIS:ND1	2.20	0.56
2:B:289:A:H2'	2:B:290:G:O4'	2.06	0.56
2:B:1510:A:H2'	2:B:1511:A:C8	2.40	0.56
19:S:40:LEU:HB2	19:S:46:VAL:HB	1.86	0.56
31:EA:24:THR:HG23	31:EA:27:GLY:HA3	1.87	0.56
35:JA:25:ASN:HD21	35:JA:27:LYS:HB2	1.70	0.56
2:EB:1077:A:H3'	2:EB:1078:U:H4'	1.86	0.56
6:IB:2:LYS:NZ	6:IB:95:ILE:O	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1047:G:HO2'	1:A:1215:G:HO2'	1.45	0.56
23:W:102:LEU:HD22	23:W:137:ILE:HG21	1.87	0.56
24:X:7:LEU:H	4:IA:2:G:H5'	1.71	0.56
42:QA:40:LEU:HD11	42:QA:70:LYS:HD3	1.87	0.56
1:DB:191(D):U:H2'	1:DB:191(E):G:C8	2.40	0.56
2:EB:910:A:H62	14:QB:12:GLN:HA	1.70	0.56
2:EB:1510:A:H2'	2:EB:1511:A:C8	2.41	0.56
2:EB:1923:U:H2'	2:EB:1924:C:C6	2.41	0.56
9:LB:154:PRO:HB3	9:LB:163:TYR:CZ	2.40	0.56
13:PB:93:GLY:H	13:PB:123:LEU:HD22	1.71	0.56
14:QB:43:THR:HA	14:QB:94:VAL:HG12	1.86	0.56
14:QB:55:VAL:HG11	23:ZB:183:LEU:HD21	1.87	0.56
14:QB:75:THR:HG21	14:QB:87:LYS:HZ1	1.70	0.56
22:YB:50:ARG:NH1	22:YB:50:ARG:HB2	2.20	0.56
28:EC:36:CYS:SG	28:EC:37:SER:N	2.77	0.56
35:MC:166:ASP:HB3	35:MC:169:LYS:HB3	1.87	0.56
41:SC:44:PHE:HD1	41:SC:80:ILE:HG12	1.70	0.56
41:SC:87:SER:OG	41:SC:93:VAL:N	2.34	0.56
42:TC:5:TYR:HE1	42:TC:16:ARG:HB2	1.69	0.56
55:HD:109:ARG:NH1	55:HD:210:PRO:HD3	2.20	0.56
1:A:125:U:H2'	1:A:126:G:C8	2.41	0.56
1:A:564:C:O2'	41:PA:91:ARG:NH2	2.30	0.56
1:A:661:G:H1	1:A:744:C:H42	1.54	0.56
2:B:1709:U:H2'	2:B:1710:C:C6	2.40	0.56
9:I:154:PRO:HB3	9:I:163:TYR:CZ	2.41	0.56
23:W:40:ASP:HB3	23:W:43:GLU:HB2	1.86	0.56
4:IA:76:A:H3'	55:GD:234:GLY:HA3	1.86	0.56
2:EB:2711:A:OP2	2:EB:2712(A):A:OP2	2.24	0.56
7:JB:155:LEU:HD12	7:JB:174:VAL:HB	1.88	0.56
23:ZB:179:ASP:O	23:ZB:182:LYS:HB3	2.05	0.56
40:RC:16:LEU:HD11	42:TC:45:ALA:HB2	1.87	0.56
1:A:87:A:H2	1:A:88:C:H1'	1.70	0.56
1:A:165:C:H2'	1:A:166:G:H8	1.71	0.56
1:A:1223:C:P	52:AB:78:ARG:HH21	2.29	0.56
2:B:630:G:N2	2:B:633:A:OP2	2.36	0.56
2:B:882:G:H2'	2:B:883:G:C8	2.40	0.56
2:B:1081:U:H5'	2:B:1082:U:OP2	2.06	0.56
9:I:124:GLU:HB3	9:I:132:ARG:HB3	1.88	0.56
1:DB:87:A:H2	1:DB:88:C:H1'	1.70	0.56
2:EB:2557:G:H2'	2:EB:2558:C:C6	2.41	0.56
7:JB:157:VAL:HB	7:JB:194:MET:HG2	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:MB:84:GLY:O	10:MB:86:THR:N	2.37	0.56
19:VB:8:GLY:HA3	19:VB:23:GLU:HB2	1.86	0.56
37:OC:23:GLY:HA3	37:OC:112:VAL:HG12	1.87	0.56
1:A:191(D):U:H2'	1:A:191(E):G:C8	2.41	0.56
2:B:392:C:H5"	2:B:409:C:H5"	1.87	0.56
2:B:1799:G:H8	5:E:181:GLU:OE2	1.88	0.56
2:B:2462:U:H1'	2:B:2491:U:O4	2.05	0.56
4:D:54:5MU:HN3	4:D:58:A:H62	1.54	0.56
1:DB:564:C:O2'	41:SC:91:ARG:NH2	2.29	0.56
1:DB:1427:U:H2'	1:DB:1428:A:C8	2.41	0.56
1:DB:1510:U:H2'	1:DB:1511:G:C8	2.41	0.56
2:EB:566:U:H5"	13:PB:29:LYS:HE3	1.86	0.56
7:JB:181:LEU:HD11	7:JB:186:ILE:HD11	1.87	0.56
15:RB:13:HIS:CE1	15:RB:15:SER:HB2	2.41	0.56
28:EC:40:HIS:HB3	28:EC:43:TYR:HB2	1.87	0.56
39:QC:53:ALA:HB3	39:QC:86:ARG:NH1	2.21	0.56
2:B:1034:G:H2'	2:B:1035:U:O4'	2.06	0.56
2:B:2557:G:H2'	2:B:2558:C:C6	2.40	0.56
6:F:18:ASP:HB3	17:Q:82:LEU:HD21	1.86	0.56
41:PA:51:VAL:HG11	41:PA:60:ARG:NH1	2.20	0.56
45:TA:52:LEU:HD13	55:GD:305:ASP:OD2	2.06	0.56
1:DB:165:C:H2'	1:DB:166:G:H8	1.70	0.56
1:DB:1347:G:N2	1:DB:1373:G:H2'	2.21	0.56
2:EB:535:C:O3'	18:UB:53:ARG:NH1	2.39	0.56
2:EB:1126:A:H8	2:EB:1126:A:OP1	1.89	0.56
2:EB:1538:G:C8	2:EB:1538:G:OP2	2.59	0.56
2:EB:2637:U:C4	2:EB:2638:G:C6	2.93	0.56
2:EB:2648:C:H2'	2:EB:2649:U:C6	2.41	0.56
12:OB:66:LYS:HD2	12:OB:79:PHE:O	2.06	0.56
12:OB:71:ARG:NH2	12:OB:122:LEU:O	2.39	0.56
23:ZB:14:LYS:O	23:ZB:18:LEU:HB2	2.06	0.56
55:GD:218:ASN:HB3	55:GD:221:ASP:OD2	2.06	0.56
7:G:117:ARG:NH1	13:M:1:MET:H2	2.01	0.56
13:M:81:GLN:HB2	13:M:110:TYR:CD1	2.40	0.56
21:U:26:TYR:OH	21:U:88:LYS:HD3	2.06	0.56
1:DB:17:U:H2'	1:DB:18:C:C6	2.41	0.56
2:EB:1901:A:OP2	5:HB:255:LYS:HE2	2.06	0.56
7:JB:153:SER:OG	7:JB:190:GLU:HG3	2.06	0.56
55:GD:109:ARG:NH1	55:GD:210:PRO:HD3	2.21	0.56
2:B:242:G:H5"	32:FA:64:TYR:CE2	2.41	0.56
2:B:1060:U:N3	2:B:1088:A:H1'	2.21	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:LA:150:GLU:HA	37:LA:153:ARG:NH1	2.21	0.56
43:RA:33:GLN:HE21	43:RA:76:ASN:HB2	1.70	0.56
2:EB:489:G:N7	20:WB:49:LYS:NZ	2.54	0.56
2:EB:1341:U:OP2	2:EB:1394:U:O2'	2.24	0.56
8:KB:46:ALA:HA	8:KB:49:ASP:HB2	1.86	0.56
14:QB:81:VAL:HG12	24:AC:5:LYS:NZ	2.20	0.56
17:TB:54:ARG:HA	17:TB:59:THR:OG1	2.06	0.56
1:A:646:U:H2'	1:A:647:C:C6	2.41	0.56
2:B:1246:A:OP1	7:G:38:ARG:NH2	2.34	0.56
2:B:1943:U:OP1	55:GD:277:ARG:NH2	2.35	0.56
2:B:2712:U:H1'	2:B:2712(A):A:C8	2.41	0.56
2:B:2849:U:OP2	17:Q:95:ARG:NH1	2.39	0.56
8:H:83:ARG:O	8:H:86:MET:HB3	2.06	0.56
10:J:3:VAL:HG12	10:J:38:LEU:HA	1.88	0.56
40:OA:16:LEU:HD11	42:QA:45:ALA:HB2	1.88	0.56
40:OA:50:ILE:HD11	40:OA:121:ALA:HA	1.88	0.56
6:IB:45:THR:O	6:IB:82:ARG:HD2	2.06	0.56
12:OB:19:ILE:HG22	12:OB:43:VAL:HA	1.87	0.56
1:A:664:G:H5"	51:ZA:64:ARG:NH1	2.21	0.55
1:A:1427:U:H2'	1:A:1428:A:C8	2.42	0.55
2:B:2313:C:P	8:H:74:LYS:HZ3	2.29	0.55
6:F:111:ARG:HA	15:O:1:MET:SD	2.46	0.55
45:TA:83:VAL:HG23	45:TA:107:ALA:HB2	1.88	0.55
48:WA:39:LEU:HB3	48:WA:56:LEU:HD12	1.88	0.55
1:DB:1009:G:N2	1:DB:1020:U:O2	2.35	0.55
2:EB:155:C:H41	2:EB:171:G:H1	1.54	0.55
2:EB:1799:G:H8	5:HB:181:GLU:OE2	1.89	0.55
2:EB:2808:U:O2	2:EB:2892:A:N6	2.39	0.55
35:MC:216:SER:HA	35:MC:219:VAL:HG12	1.88	0.55
2:B:17:G:H2'	2:B:18:C:C6	2.41	0.55
2:B:1044:G:O2'	2:B:1111:A:N1	2.36	0.55
2:B:2853:C:H2'	2:B:2854:G:C8	2.40	0.55
8:H:34:LEU:H	8:H:34:LEU:HD12	1.71	0.55
9:I:86:GLU:HG2	9:I:132:ARG:HG3	1.88	0.55
19:S:29:PRO:HB3	19:S:63:GLY:HA2	1.88	0.55
35:JA:188:ALA:HB1	35:JA:192:SER:HB2	1.87	0.55
52:AB:36:ARG:NH2	52:AB:75:ALA:O	2.37	0.55
1:DB:137:C:H2'	1:DB:138:G:H8	1.71	0.55
1:DB:323:U:H2'	1:DB:324:G:O4'	2.06	0.55
1:DB:509:A:N3	1:DB:543:C:O2'	2.32	0.55
1:DB:614:A:H2'	1:DB:615:C:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:619:U:C2	37:OC:135:LEU:HD21	2.41	0.55
1:DB:833:U:H3	1:DB:853:G:H1	1.54	0.55
1:DB:881:G:OP2	45:WC:12:ARG:NH2	2.39	0.55
2:EB:503:A:H4'	2:EB:504:U:H5"	1.89	0.55
2:EB:1111:A:H2'	2:EB:1111:A:OP2	2.06	0.55
2:EB:2756:U:H3'	33:JC:19:ARG:HG3	1.87	0.55
6:IB:59:VAL:HG11	6:IB:64:LYS:HD3	1.88	0.55
2:B:630:G:OP2	32:FA:15:LYS:NZ	2.26	0.55
2:B:2756:U:H4'	2:B:2757:A:OP1	2.05	0.55
8:H:16:ARG:NH2	8:H:28:VAL:O	2.39	0.55
25:Y:21:ARG:HG3	25:Y:21:ARG:NH1	2.13	0.55
37:LA:166:LYS:HG2	37:LA:178:VAL:HG21	1.88	0.55
40:OA:15:ASP:OD2	40:OA:44:TYR:OH	2.24	0.55
51:ZA:19:LYS:HB3	51:ZA:19:LYS:NZ	2.21	0.55
1:DB:820:U:H4'	1:DB:821:G:OP2	2.07	0.55
1:DB:1036:G:H21	1:DB:1037:C:H41	1.51	0.55
2:EB:851:U:H2'	2:EB:852:G:C8	2.41	0.55
2:EB:1587:A:H2'	2:EB:1588:C:C6	2.41	0.55
2:EB:2139:C:H42	2:EB:2153:G:H1'	1.72	0.55
2:EB:2514:U:H2'	2:EB:2515:C:C6	2.42	0.55
2:EB:2593:U:H2'	2:EB:2594:C:C6	2.41	0.55
12:OB:79:PHE:CD1	17:TB:72:VAL:HG22	2.41	0.55
23:ZB:52:SER:OG	23:ZB:53:ILE:N	2.39	0.55
25:BC:40:ARG:NH2	25:BC:42:GLN:HG2	2.20	0.55
55:GD:316:ARG:HH21	55:GD:327:TYR:HB3	1.70	0.55
55:GD:338:ASP:HA	55:GD:341:ILE:HG12	1.87	0.55
1:A:978:A:OP2	1:A:1362(B):C:N4	2.38	0.55
1:A:1418:A:H5"	1:A:1419:G:OP2	2.06	0.55
2:B:1021:A:OP2	11:K:65:LYS:NZ	2.32	0.55
2:B:1045:A:H1'	2:B:1047:G:N3	2.21	0.55
2:B:1292:U:H2'	2:B:1293:C:C6	2.42	0.55
2:B:2799:A:O2'	2:B:2802:G:O2'	2.24	0.55
17:Q:106:SER:O	17:Q:110:ILE:HG13	2.07	0.55
22:V:89:PHE:HD1	22:V:95:LYS:HB3	1.72	0.55
27:AA:6:VAL:HG12	27:AA:56:VAL:HG22	1.88	0.55
1:DB:1005:A:H1'	1:DB:1026:G:C2	2.42	0.55
2:EB:607:U:OP1	7:JB:103:LYS:N	2.25	0.55
2:EB:686:G:N2	2:EB:788:A:H61	2.05	0.55
48:ZC:39:LEU:HB3	48:ZC:56:LEU:HD12	1.89	0.55
1:A:1036:G:H21	1:A:1037:C:H41	1.53	0.55
2:B:1173:G:H2'	2:B:1175:U:H5"	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1538:G:OP2	2:B:1538:G:C8	2.60	0.55
2:B:1796:U:H4'	5:E:256:GLY:H	1.71	0.55
2:B:2210:G:H3'	2:B:2211:G:N7	2.22	0.55
12:L:66:LYS:HD2	12:L:79:PHE:O	2.05	0.55
43:RA:50:ILE:HB	47:VA:41:ARG:NH1	2.21	0.55
1:DB:1448:C:H2'	1:DB:1449:C:C6	2.41	0.55
2:EB:1065:U:H5'	2:EB:1074:G:H21	1.71	0.55
2:EB:2805:G:N2	2:EB:2807:G:O6	2.31	0.55
13:PB:63:PRO:HG2	32:IC:25:MET:HB2	1.89	0.55
54:FD:24:ARG:HG3	54:FD:25:LYS:HG2	1.87	0.55
1:A:953:G:H5'	1:A:965:A:H61	1.72	0.55
1:A:1070:U:H2'	1:A:1071:C:C6	2.41	0.55
2:B:394:A:N6	2:B:395:U:O4	2.40	0.55
2:B:545:G:N2	2:B:547:A:OP2	2.39	0.55
2:B:2808:U:O2	2:B:2892:A:N6	2.40	0.55
16:P:4:LEU:HD12	16:P:9:ARG:HG3	1.87	0.55
35:JA:76:GLN:NE2	35:JA:207:ALA:O	2.40	0.55
37:LA:30:LYS:HA	37:LA:35:ARG:HD2	1.89	0.55
1:DB:616:G:H1'	1:DB:625:G:N2	2.22	0.55
2:EB:335:C:OP2	22:YB:84:ARG:HD3	2.06	0.55
2:EB:1778:U:H2'	2:EB:1784:A:H62	1.72	0.55
2:EB:1870:C:H2'	2:EB:1871:A:O4'	2.07	0.55
2:EB:2502:G:H5"	2:EB:2503:2MA:H5"	1.89	0.55
2:EB:2564:A:C2	2:EB:2647:U:H4'	2.42	0.55
4:GB:1:C:N4	4:GB:72:A:H61	2.04	0.55
8:KB:129:GLY:O	8:KB:130:ASN:ND2	2.39	0.55
16:SB:54:LEU:O	16:SB:57:LYS:NZ	2.28	0.55
30:GC:16:CYS:SG	30:GC:18:ARG:HB2	2.46	0.55
37:OC:150:GLU:HA	37:OC:153:ARG:HH11	1.70	0.55
1:A:603:U:H2'	1:A:604:G:C8	2.42	0.55
1:A:626:U:H2'	1:A:627:G:C8	2.41	0.55
1:A:820:U:H4'	1:A:821:G:OP2	2.06	0.55
2:B:363(F):U:H3'	2:B:363(G):A:C8	2.41	0.55
2:B:1681:G:O2'	2:B:1762:A:O2'	2.21	0.55
2:B:1923:U:H2'	2:B:1924:C:H6	1.70	0.55
8:H:115:ARG:HH11	8:H:140:ILE:HD11	1.71	0.55
28:BA:14:ILE:HG12	28:BA:31:ILE:HG13	1.89	0.55
46:UA:50:GLU:O	46:UA:54:VAL:HG23	2.07	0.55
1:DB:632:A:OP1	41:SC:98:LYS:NZ	2.40	0.55
1:DB:1070:U:H2'	1:DB:1071:C:C6	2.41	0.55
1:DB:1422:G:H2'	1:DB:1423:G:H8	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:882:G:H2'	2:EB:883:G:C8	2.40	0.55
2:EB:1009:A:OP2	2:EB:1010:A:OP2	2.25	0.55
2:EB:1407:C:H2'	2:EB:1408:C:H6	1.71	0.55
4:GB:10:G:H2'	4:GB:11:A:C8	2.41	0.55
10:MB:111:PRO:HG2	10:MB:112:LYS:HD2	1.88	0.55
55:HD:301:GLY:HA3	55:HD:306:ARG:NH1	2.21	0.55
2:B:1417:C:H42	2:B:1581:G:H1	1.54	0.55
2:B:1464:C:H2'	2:B:1465:G:C8	2.42	0.55
33:GA:7:VAL:HA	33:GA:34:GLN:NE2	2.22	0.55
39:NA:87:ARG:NH1	39:NA:87:ARG:HG3	2.20	0.55
43:RA:21:GLN:HA	43:RA:24:VAL:HG12	1.88	0.55
1:DB:953:G:H5'	1:DB:965:A:H61	1.71	0.55
1:DB:1422:G:H2'	1:DB:1423:G:C8	2.42	0.55
2:EB:1088:A:O2'	2:EB:1089:G:OP2	2.20	0.55
36:NC:36:ASP:HB2	36:NC:59:ARG:HH21	1.72	0.55
37:OC:59:ARG:NH2	37:OC:66:ARG:NH1	2.54	0.55
41:SC:19:VAL:HG23	41:SC:21:LYS:HG2	1.88	0.55
46:XC:33:ALA:O	46:XC:37:THR:OG1	2.15	0.55
46:XC:37:THR:HB	46:XC:39:ILE:HG13	1.89	0.55
1:A:56:U:H2'	1:A:57:G:C8	2.42	0.55
1:A:1373:G:O6	42:QA:11:LYS:NZ	2.39	0.55
2:B:489:G:N7	20:T:49:LYS:NZ	2.54	0.55
2:B:1341:U:OP2	2:B:1394:U:O2'	2.20	0.55
9:I:25:LYS:HB3	9:I:27:LYS:NZ	2.22	0.55
40:OA:23:VAL:HG13	40:OA:43:PHE:CE2	2.42	0.55
42:QA:114:TYR:HE1	43:RA:59:SER:HA	1.72	0.55
2:EB:363(G):A:C8	2:EB:363(G):A:OP2	2.59	0.55
2:EB:2139:C:H3'	2:EB:2140:C:H6	1.71	0.55
2:EB:2667:C:H1'	9:LB:109:PHE:HD1	1.71	0.55
9:LB:3:ARG:HG2	9:LB:6:ARG:CZ	2.36	0.55
33:JC:7:VAL:HA	33:JC:34:GLN:NE2	2.22	0.55
38:PC:84:PHE:HB2	38:PC:134:ALA:HB2	1.89	0.55
55:HD:316:ARG:HH21	55:HD:327:TYR:HB3	1.70	0.55
1:A:1347:G:N2	1:A:1373:G:H2'	2.22	0.55
1:A:1422:G:H2'	1:A:1423:G:C8	2.42	0.55
2:B:637:A:OP1	13:M:133:SER:OG	2.19	0.55
2:B:1226:A:OP1	19:S:84:LYS:NZ	2.32	0.55
2:B:1254:A:N1	7:G:82:ILE:HD11	2.22	0.55
11:K:9:VAL:HG11	11:K:48:MET:HB2	1.89	0.55
35:JA:216:SER:HA	35:JA:219:VAL:HG12	1.89	0.55
37:LA:23:GLY:HA3	37:LA:112:VAL:HG12	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:LA:150:GLU:HA	37:LA:153:ARG:HH11	1.71	0.55
38:MA:50:GLU:OE2	38:MA:51:VAL:HG23	2.06	0.55
42:QA:117:HIS:HB2	42:QA:121:ARG:HD3	1.89	0.55
52:AB:11:VAL:HG23	52:AB:38:SER:HB2	1.88	0.55
54:CB:18:TYR:HA	54:CB:22:ARG:HD3	1.88	0.55
2:EB:889:C:O2'	2:EB:890:A:O4'	2.25	0.55
2:EB:1709:U:H2'	2:EB:1710:C:C6	2.42	0.55
5:HB:5:LYS:HE3	5:HB:6:PHE:H	1.72	0.55
5:HB:17:THR:O	5:HB:211:ARG:NH2	2.36	0.55
19:VB:29:PRO:HB3	19:VB:63:GLY:HA2	1.88	0.55
25:BC:22:GLY:O	25:BC:32:LYS:NZ	2.28	0.55
43:UC:33:GLN:HE21	43:UC:76:ASN:HB2	1.72	0.55
2:B:249:C:O2	32:FA:12:LYS:NZ	2.36	0.54
2:B:503:A:H4'	2:B:504:U:H5"	1.89	0.54
2:B:1592:C:H2'	2:B:1593:G:H8	1.72	0.54
2:B:2291:U:H2'	2:B:2292:C:C6	2.42	0.54
2:B:2661:G:H2'	2:B:2662:A:C8	2.42	0.54
3:C:88:C:H2'	3:C:89(A):G:O4'	2.07	0.54
19:S:22:VAL:HG12	19:S:23:GLU:H	1.72	0.54
20:T:11:ARG:NH1	20:T:99:ARG:O	2.38	0.54
41:PA:85:ARG:NH1	41:PA:87:SER:O	2.39	0.54
44:SA:12:ARG:NH2	44:SA:13:GLN:HE22	2.05	0.54
1:DB:626:U:H2'	1:DB:627:G:C8	2.43	0.54
1:DB:1379:G:O6	40:RC:2:ALA:HB3	2.06	0.54
2:EB:479:A:N3	2:EB:481:G:H5"	2.22	0.54
2:EB:556:G:H2'	2:EB:557:U:C6	2.41	0.54
2:EB:2163:C:OP1	2:EB:2165:G:N2	2.39	0.54
2:EB:2317:C:H2'	2:EB:2318:G:H5'	1.89	0.54
2:EB:2790:A:H2'	2:EB:2791:C:H5'	1.88	0.54
39:QC:87:ARG:NH1	39:QC:87:ARG:HG3	2.22	0.54
40:RC:41:ARG:HG3	40:RC:42:ILE:HD13	1.89	0.54
40:RC:50:ILE:HD11	40:RC:121:ALA:HA	1.88	0.54
1:A:1448:C:H2'	1:A:1449:C:C6	2.43	0.54
2:B:1587:A:H2'	2:B:1588:C:C6	2.42	0.54
5:E:131:LEU:HD13	5:E:136:ILE:HG12	1.90	0.54
20:T:68:ARG:HH11	20:T:111:HIS:HA	1.72	0.54
30:DA:16:CYS:SG	30:DA:18:ARG:HB2	2.48	0.54
36:KA:55:VAL:HG22	36:KA:68:VAL:HG13	1.88	0.54
53:BB:43:LEU:O	53:BB:48:LYS:HB2	2.08	0.54
1:DB:186(B):C:N3	53:ED:105:SER:HB2	2.21	0.54
1:DB:1415:G:H2'	1:DB:1416:G:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:2718:G:O2'	2:EB:2847:U:OP1	2.18	0.54
2:EB:2747:G:P	9:LB:138:LYS:HZ2	2.30	0.54
5:HB:73:VAL:HG23	5:HB:120:GLY:HA2	1.89	0.54
16:SB:15:ARG:HG2	16:SB:15:ARG:HH11	1.71	0.54
20:WB:14:PRO:HG3	20:WB:101:SER:HB3	1.87	0.54
37:OC:150:GLU:HA	37:OC:153:ARG:NH1	2.22	0.54
40:RC:23:VAL:HG13	40:RC:43:PHE:CE2	2.41	0.54
1:A:186(B):C:N3	53:BB:105:SER:HB2	2.22	0.54
1:A:1029:G:H2'	1:A:1030:C:H5'	1.89	0.54
2:B:1790:C:H5"	2:B:1791:A:OP1	2.07	0.54
5:E:36:PRO:HA	5:E:61:LEU:HD12	1.89	0.54
6:F:92:THR:O	6:F:95:ILE:HG23	2.07	0.54
12:L:25:LEU:O	12:L:27:GLY:N	2.41	0.54
14:N:55:VAL:HG11	23:W:183:LEU:HD21	1.89	0.54
18:R:47:TYR:HA	18:R:50:ARG:NH2	2.21	0.54
22:V:84:ARG:O	22:V:100:ALA:HB2	2.06	0.54
38:MA:8:GLU:HG2	38:MA:34:VAL:HG12	1.90	0.54
42:QA:10:ARG:NH1	42:QA:75:ASP:OD1	2.41	0.54
52:AB:22:LEU:HD11	52:AB:29:ARG:HB2	1.89	0.54
1:DB:237:C:O3'	50:BD:25:ARG:NH1	2.36	0.54
2:EB:34:C:O2'	2:EB:35:G:O5'	2.24	0.54
2:EB:1915:5MU:O2'	55:HD:287:GLN:OE1	2.21	0.54
2:EB:2476:A:H2	2:EB:2481:G:H1	1.55	0.54
1:A:1380:U:O2	40:OA:3:ARG:NH1	2.40	0.54
2:B:889:C:O2'	2:B:890:A:O4'	2.26	0.54
2:B:2163:C:OP1	2:B:2165:G:N2	2.39	0.54
17:Q:120:ARG:O	17:Q:124:ASP:HB2	2.08	0.54
46:UA:7:VAL:HG12	46:UA:8:GLU:H	1.72	0.54
1:DB:933:G:N7	40:RC:3:ARG:NH2	2.53	0.54
1:DB:1373:G:O6	42:TC:11:LYS:NZ	2.41	0.54
2:EB:784:A:H5'	2:EB:785:G:OP1	2.07	0.54
2:EB:1175:U:H2'	2:EB:1176:G:C8	2.42	0.54
2:EB:1519:G:C6	2:EB:1520:U:C4	2.95	0.54
5:HB:68:LYS:HD2	5:HB:70:TRP:CZ2	2.43	0.54
18:UB:89:GLU:HB2	19:VB:50:PRO:HB3	1.89	0.54
22:YB:89:PHE:HD1	22:YB:95:LYS:HB3	1.72	0.54
52:DD:42:PRO:O	52:DD:44:MET:N	2.38	0.54
1:A:957:U:H2'	1:A:959:A:OP2	2.07	0.54
2:B:2315:G:H2'	2:B:2316:C:C6	2.42	0.54
2:B:2406:U:C2	13:M:72:PRO:HG2	2.43	0.54
7:G:12:LEU:HG	7:G:124:LEU:HD11	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:3:LEU:HD23	8:H:5:LEU:HD11	1.89	0.54
15:O:48:VAL:HG23	15:O:95:THR:HG21	1.89	0.54
40:OA:78:ARG:HG2	40:OA:79:ARG:H	1.72	0.54
42:QA:5:TYR:HE1	42:QA:16:ARG:HB2	1.71	0.54
1:DB:664:G:H5"	51:CD:64:ARG:NH1	2.23	0.54
2:EB:1019:U:H3	2:EB:1142(B):A:H62	1.56	0.54
2:EB:1357:U:H2'	2:EB:1358:G:O4'	2.08	0.54
3:FB:88:C:H2'	3:FB:89(A):G:O4'	2.08	0.54
12:OB:79:PHE:HD1	17:TB:72:VAL:HG22	1.72	0.54
1:A:287:U:H2'	1:A:288:A:H8	1.72	0.54
1:A:323:U:H2'	1:A:324:G:O4'	2.07	0.54
1:A:409:G:OP2	37:LA:22:LYS:HE2	2.07	0.54
2:B:535:C:O3'	18:R:53:ARG:NH1	2.40	0.54
2:B:635:C:O2'	2:B:639:U:OP1	2.25	0.54
2:B:1901:A:OP2	5:E:255:LYS:HE2	2.07	0.54
6:F:47:VAL:HG11	6:F:86:PRO:HD2	1.89	0.54
6:F:151:TYR:HB2	11:K:79:PRO:HD3	1.90	0.54
12:L:47:ILE:HD12	12:L:48:PRO:O	2.08	0.54
1:DB:957:U:H2'	1:DB:959:A:OP2	2.08	0.54
1:DB:1029:G:H2'	1:DB:1030:C:H5'	1.90	0.54
1:DB:1293:G:H2'	1:DB:1294:G:C8	2.42	0.54
2:EB:142:G:H1'	21:XB:37:THR:HG21	1.89	0.54
2:EB:2712:U:H1'	2:EB:2712(A):A:C8	2.42	0.54
42:TC:117:HIS:HB2	42:TC:121:ARG:HD3	1.90	0.54
55:GD:245:ARG:HG3	55:GD:256:GLU:HG3	1.89	0.54
10:J:57:ARG:O	10:J:60:GLU:HB3	2.07	0.54
12:L:68:GLU:HB3	12:L:78:ARG:HB2	1.88	0.54
12:L:107:ARG:HD3	17:Q:37:GLY:H	1.72	0.54
24:X:12:ASN:HA	24:X:14:ARG:NH2	2.22	0.54
44:SA:48:ILE:HD11	44:SA:64:ALA:HA	1.90	0.54
46:UA:44:ARG:HB2	46:UA:47:ASP:OD2	2.08	0.54
5:HB:112:GLN:O	5:HB:115:GLN:HB3	2.08	0.54
8:KB:115:ARG:HH11	8:KB:140:ILE:HD11	1.72	0.54
11:NB:67:LEU:HA	11:NB:87:LEU:HD12	1.90	0.54
35:MC:25:ASN:HD21	35:MC:27:LYS:HB2	1.73	0.54
36:NC:108:ASN:HD22	36:NC:109:PRO:HD2	1.72	0.54
1:A:1178:G:N2	1:A:1181:G:OP2	2.40	0.54
2:B:848:G:H2'	2:B:849:A:C8	2.43	0.54
2:B:1065:U:H5'	2:B:1074:G:H21	1.73	0.54
2:B:1508:A:H3'	2:B:1509:A:C8	2.42	0.54
2:B:2792:G:N1	2:B:2805:G:H1'	2.22	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:PA:11:THR:HG23	41:PA:14:ARG:HH12	1.71	0.54
41:PA:44:PHE:HD1	41:PA:80:ILE:HG12	1.72	0.54
41:PA:110:ALA:HB3	41:PA:121:ASP:HB3	1.88	0.54
1:DB:1178:G:N2	1:DB:1181:G:OP2	2.40	0.54
1:DB:1291:G:O2'	42:TC:38:GLN:OE1	2.25	0.54
2:EB:481:G:C4	2:EB:507:A:C2	2.96	0.54
2:EB:2567:G:H2'	2:EB:2568:C:H6	1.72	0.54
6:IB:2:LYS:HG3	6:IB:200:GLU:HB2	1.89	0.54
11:NB:73:THR:HB	11:NB:82:LEU:HD11	1.90	0.54
40:RC:15:ASP:OD2	40:RC:44:TYR:OH	2.26	0.54
40:RC:78:ARG:HG2	40:RC:79:ARG:H	1.73	0.54
41:SC:11:THR:HA	41:SC:14:ARG:NH1	2.21	0.54
43:UC:21:GLN:HA	43:UC:24:VAL:HG12	1.90	0.54
45:WC:83:VAL:HG23	45:WC:107:ALA:HB2	1.90	0.54
1:A:708:C:OP1	44:SA:85:ARG:NH2	2.41	0.54
1:A:754:C:O2	1:A:754:C:H2'	2.07	0.54
2:B:1789:A:H2'	2:B:1790:C:O4'	2.07	0.54
2:B:2113:U:H2'	2:B:2114:A:H8	1.73	0.54
12:L:71:ARG:HH12	12:L:104:ARG:HB3	1.73	0.54
12:L:79:PHE:HD1	17:Q:72:VAL:HG22	1.72	0.54
19:S:8:GLY:HA3	19:S:23:GLU:HB2	1.89	0.54
23:W:70:LEU:HG	23:W:91:LEU:HD21	1.90	0.54
25:Y:56:GLN:HB3	25:Y:87:PRO:HG3	1.90	0.54
36:KA:108:ASN:HD22	36:KA:109:PRO:HD2	1.72	0.54
1:DB:558:G:C8	1:DB:559:A:H2'	2.43	0.54
1:DB:1414:U:H3	1:DB:1486:G:H1	1.56	0.54
2:EB:1081:U:H5'	2:EB:1082:U:OP2	2.06	0.54
2:EB:2529:G:H5"	2:EB:2530:A:H5"	1.89	0.54
2:EB:2853:C:H2'	2:EB:2854:G:C8	2.42	0.54
6:IB:47:VAL:HG11	6:IB:86:PRO:HD2	1.89	0.54
13:PB:81:GLN:HB2	13:PB:110:TYR:CD1	2.43	0.54
42:TC:10:ARG:HG2	42:TC:11:LYS:HG3	1.90	0.54
1:A:523:A:H61	45:TA:92:0TD:CG	2.18	0.54
1:A:757:U:H2'	1:A:758:G:O4'	2.08	0.54
2:B:17:G:H4'	18:R:25:TRP:NE1	2.23	0.54
2:B:1657:C:H2'	2:B:1658:C:C6	2.42	0.54
2:B:2319:G:H22	16:P:3:ARG:NH1	2.05	0.54
8:H:46:ALA:HA	8:H:49:ASP:HB2	1.90	0.54
8:H:138:GLN:HE22	8:H:149:VAL:HG13	1.72	0.54
20:T:90:ARG:HG2	20:T:90:ARG:HH11	1.72	0.54
23:W:179:ASP:OD2	23:W:181:GLU:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:JA:168:THR:HG23	35:JA:192:SER:HA	1.90	0.54
52:AB:20:LEU:HD13	52:AB:23:ASN:HD22	1.72	0.54
1:DB:664:G:OP1	51:CD:64:ARG:NH1	2.39	0.54
2:EB:635:C:O2'	2:EB:639:U:OP1	2.24	0.54
2:EB:2756:U:OP2	33:JC:19:ARG:NH2	2.30	0.54
9:LB:41:MET:N	9:LB:41:MET:SD	2.81	0.54
11:NB:128:HIS:O	11:NB:131:GLN:NE2	2.27	0.54
12:OB:47:ILE:HD12	12:OB:48:PRO:O	2.08	0.54
1:A:59:A:H1'	1:A:354:G:N2	2.23	0.53
2:B:481:G:C4	2:B:507:A:C2	2.96	0.53
2:B:2552:2MU:H6	2:B:2552:2MU:O5'	2.08	0.53
48:WA:82:ILE:HD12	48:WA:88:ARG:HH21	1.73	0.53
1:DB:757:U:H2'	1:DB:758:G:O4'	2.07	0.53
1:DB:1005:A:H4'	1:DB:1037:C:N3	2.23	0.53
2:EB:2113:U:H2'	2:EB:2114:A:H8	1.72	0.53
6:IB:11:MET:HG2	6:IB:24:THR:HB	1.90	0.53
13:PB:81:GLN:HB2	13:PB:110:TYR:HD1	1.73	0.53
28:EC:24:THR:OG1	28:EC:25:TYR:N	2.41	0.53
37:OC:12:CYS:HB3	37:OC:33:MET:HG2	1.90	0.53
37:OC:150:GLU:H	37:OC:150:GLU:CD	2.11	0.53
1:A:1503:A:O2'	1:A:1504:G:O5'	2.25	0.53
2:B:142:G:H1'	21:U:37:THR:HG21	1.91	0.53
2:B:2563:U:H4'	12:L:28:SER:HA	1.91	0.53
6:F:116:VAL:HG13	6:F:122:PHE:HB2	1.90	0.53
19:S:13:ARG:HG3	19:S:13:ARG:NH1	2.23	0.53
23:W:132:ASN:OD1	23:W:132:ASN:N	2.42	0.53
32:FA:31:HIS:CD2	32:FA:32:LEU:HD22	2.43	0.53
33:GA:27:CYS:SG	33:GA:28:GLU:N	2.81	0.53
35:JA:129:GLU:OE2	35:JA:130:ARG:HG3	2.08	0.53
46:UA:15:VAL:O	46:UA:19:LEU:HD13	2.08	0.53
1:DB:1448:C:H2'	1:DB:1449:C:H6	1.73	0.53
2:EB:1270:C:O2'	2:EB:1648:C:OP2	2.20	0.53
2:EB:2291:U:H2'	2:EB:2292:C:C6	2.43	0.53
4:GB:5:G:H1	4:GB:68:C:H42	1.56	0.53
5:HB:52:ARG:HB2	5:HB:53:PHE:CD2	2.43	0.53
12:OB:71:ARG:HH12	12:OB:104:ARG:HB3	1.73	0.53
35:MC:16:HIS:O	35:MC:18:GLY:N	2.41	0.53
44:VC:48:ILE:HD11	44:VC:64:ALA:HA	1.89	0.53
1:A:574:A:N3	1:A:883:C:H1'	2.24	0.53
1:A:616:G:H1'	1:A:625:G:N2	2.22	0.53
1:A:933:G:N7	40:OA:3:ARG:NH2	2.56	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:46:C:OP2	2:B:215:G:H2'	2.09	0.53
2:B:1585:C:H4'	2:B:1586:A:OP2	2.07	0.53
2:B:2514:U:H2'	2:B:2515:C:C6	2.42	0.53
7:G:53:THR:HG22	7:G:56:GLU:CG	2.39	0.53
8:H:165:THR:OG1	8:H:166:ASP:N	2.41	0.53
13:M:122:PRO:HB3	13:M:141:ALA:O	2.07	0.53
22:V:35:TYR:CE2	22:V:69:ALA:HB3	2.43	0.53
45:TA:28:LYS:HD3	45:TA:62:SER:HB2	1.90	0.53
1:DB:407:G:O4'	37:OC:119:GLN:NE2	2.40	0.53
1:DB:1087:G:H2'	1:DB:1088:G:C8	2.43	0.53
2:EB:1022:G:H22	2:EB:1142(B):A:H2	1.56	0.53
6:IB:18:ASP:HB3	17:TB:82:LEU:HD21	1.89	0.53
7:JB:140:LEU:HD11	7:JB:170:LEU:HD11	1.90	0.53
30:GC:13:CYS:HB3	30:GC:47:THR:HG21	1.90	0.53
36:NC:18:TRP:CD1	47:YC:54:PRO:HA	2.44	0.53
37:OC:30:LYS:HA	37:OC:35:ARG:HD2	1.90	0.53
45:WC:124:LYS:HD2	45:WC:125:PRO:HD2	1.91	0.53
55:HD:130:ASP:HB3	55:HD:333:MET:HE1	1.89	0.53
1:A:1073:U:H3	1:A:1102:A:H61	1.55	0.53
2:B:1062:G:H5"	2:B:1064:C:H1'	1.90	0.53
2:B:1870:C:H2'	2:B:1871:A:O4'	2.07	0.53
20:T:82:LEU:HD23	20:T:84:ARG:CZ	2.39	0.53
51:ZA:32:ARG:HA	51:ZA:69:THR:HG21	1.90	0.53
1:DB:1455:G:H5"	53:ED:31:SER:HB3	1.91	0.53
2:EB:271(C):G:H4'	2:EB:271(D):U:H5"	1.91	0.53
2:EB:1789:A:H2'	2:EB:1790:C:O4'	2.08	0.53
3:FB:28:C:H2'	3:FB:29:A:C8	2.43	0.53
8:KB:165:THR:OG1	8:KB:166:ASP:N	2.41	0.53
10:MB:76:THR:HB	10:MB:141:LYS:HE2	1.90	0.53
25:BC:52:ARG:HH12	25:BC:57:GLU:HB2	1.73	0.53
27:DC:38:GLU:HA	27:DC:38:GLU:OE2	2.09	0.53
40:RC:38:LEU:O	40:RC:42:ILE:HG12	2.09	0.53
1:A:1510:U:H2'	1:A:1511:G:C8	2.43	0.53
2:B:888:C:C2	46:UA:93:ARG:NH1	2.76	0.53
7:G:117:ARG:NH2	7:G:189:THR:O	2.38	0.53
21:U:60:ARG:NH1	31:EA:47:ARG:NH2	2.57	0.53
39:NA:26:ILE:O	39:NA:30:LEU:HG	2.09	0.53
53:BB:38:LYS:HA	53:BB:41:VAL:HG22	1.90	0.53
2:EB:1512:G:H2'	2:EB:1513:C:C6	2.43	0.53
2:EB:2698:U:H2'	2:EB:2699:C:C6	2.43	0.53
9:LB:21:PRO:HG2	9:LB:23:ARG:HH12	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:WB:71:VAL:HA	20:WB:107:LEU:HD12	1.91	0.53
43:UC:25:GLU:O	43:UC:29:ARG:HG2	2.09	0.53
1:A:1005:A:H1'	1:A:1026:G:C2	2.43	0.53
2:B:2476:A:H2	2:B:2481:G:H1	1.57	0.53
2:B:2790:A:H2'	2:B:2791:C:H5'	1.90	0.53
23:W:54:HIS:HB3	23:W:101:PRO:HD3	1.90	0.53
28:BA:24:THR:OG1	28:BA:25:TYR:N	2.42	0.53
46:UA:37:THR:HB	46:UA:39:ILE:HG13	1.90	0.53
1:DB:59:A:H1'	1:DB:354:G:N2	2.23	0.53
1:DB:1129:C:H42	1:DB:1143:G:H1	1.57	0.53
2:EB:2552:2MU:H2'	2:EB:2554:U:OP2	2.09	0.53
19:VB:7:THR:HG23	19:VB:22:VAL:HG11	1.91	0.53
2:B:1519:G:C6	2:B:1520:U:C4	2.96	0.53
2:B:1816:G:C6	5:E:35:LYS:NZ	2.75	0.53
2:B:2320:A:H2'	2:B:2320:A:N3	2.23	0.53
42:QA:9:ARG:H	42:QA:79:LEU:HD23	1.72	0.53
1:DB:909:A:N3	1:DB:1413:A:O2'	2.40	0.53
2:EB:1483:G:H2'	2:EB:1484:G:C8	2.44	0.53
11:NB:72:TYR:HE2	11:NB:87:LEU:HD23	1.74	0.53
15:RB:12:ARG:HG3	15:RB:12:ARG:NH1	2.23	0.53
1:A:426:G:OP1	37:LA:38:TYR:OH	2.26	0.53
1:A:1226:C:H2'	46:UA:103:THR:HB	1.91	0.53
2:B:140:A:H8	2:B:1408:C:O2'	1.90	0.53
2:B:274:G:H1'	2:B:363(A):G:N2	2.24	0.53
2:B:1175:U:H2'	2:B:1176:G:C8	2.43	0.53
28:BA:56:VAL:HG22	28:BA:61:ARG:HA	1.90	0.53
42:QA:10:ARG:HG2	42:QA:11:LYS:HG3	1.90	0.53
48:WA:18:PHE:HB2	48:WA:19:PRO:HD2	1.90	0.53
1:DB:287:U:H2'	1:DB:288:A:H8	1.73	0.53
1:DB:754:C:O2	1:DB:754:C:H2'	2.08	0.53
1:DB:892:A:O2'	1:DB:1415:G:H4'	2.08	0.53
2:EB:1364:G:OP2	25:BC:61:ARG:NH1	2.41	0.53
9:LB:124:GLU:HB3	9:LB:132:ARG:HB3	1.90	0.53
35:MC:51:LEU:HD12	35:MC:201:ILE:HD12	1.91	0.53
41:SC:110:ALA:HB3	41:SC:121:ASP:HB3	1.90	0.53
1:A:983:A:H5'	1:A:984:C:OP2	2.09	0.53
2:B:140:A:C8	2:B:1408:C:O2'	2.62	0.53
2:B:2667:C:H1'	9:I:109:PHE:HD1	1.74	0.53
20:T:23:LEU:HD22	29:CA:25:LEU:HD13	1.91	0.53
39:NA:22:GLU:O	39:NA:25:ILE:HG12	2.09	0.53
43:RA:25:GLU:O	43:RA:29:ARG:HG2	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:141(A):A:H5"	2:EB:141(B):C:OP2	2.09	0.53
2:EB:289:A:H2'	2:EB:290:G:O4'	2.09	0.53
2:EB:847:U:OP2	2:EB:929:G:O6	2.27	0.53
2:EB:1045:A:H1'	2:EB:1047:G:N3	2.24	0.53
2:EB:1059:G:H22	2:EB:1081:U:H1'	1.74	0.53
2:EB:1291:C:H2'	2:EB:1292:U:H6	1.72	0.53
6:IB:111:ARG:HA	15:RB:1:MET:SD	2.49	0.53
39:QC:12:PRO:HG3	39:QC:55:ASP:OD2	2.08	0.53
42:TC:9:ARG:H	42:TC:79:LEU:HD23	1.73	0.53
55:HD:338:ASP:HA	55:HD:341:ILE:HG12	1.89	0.53
1:A:1273:G:H2'	1:A:1274:G:O4'	2.09	0.53
1:A:1291:G:H4'	42:QA:39:GLY:HA3	1.91	0.53
1:A:1320:C:N3	52:AB:36:ARG:HD3	2.24	0.53
2:B:363(G):A:OP2	2:B:363(G):A:H8	1.92	0.53
2:B:851:U:H2'	2:B:852:G:H8	1.74	0.53
2:B:2831:G:P	6:F:58:ARG:HH12	2.31	0.53
10:J:84:GLY:O	10:J:86:THR:N	2.41	0.53
35:JA:16:HIS:HE1	35:JA:42:ILE:HD12	1.72	0.53
35:JA:16:HIS:O	35:JA:18:GLY:N	2.41	0.53
1:DB:936:C:H2'	1:DB:937:A:O4'	2.09	0.53
2:EB:461:C:H2'	2:EB:462:C:H6	1.73	0.53
2:EB:2094:G:OP1	10:MB:22:LYS:NZ	2.42	0.53
8:KB:67:LYS:HD3	28:EC:5:ILE:HD12	1.90	0.53
8:KB:138:GLN:HE22	8:KB:149:VAL:HG13	1.73	0.53
23:ZB:132:ASN:OD1	23:ZB:132:ASN:N	2.42	0.53
2:B:207:A:H2'	2:B:208:C:O4'	2.08	0.52
2:B:2508:G:P	55:GD:228:ARG:HH22	2.31	0.52
5:E:52:ARG:HB2	5:E:53:PHE:CD2	2.44	0.52
33:GA:2:LYS:HZ1	33:GA:4:ARG:HE	1.55	0.52
36:KA:36:ASP:HB2	36:KA:59:ARG:HH21	1.73	0.52
39:NA:83:ASP:OD1	39:NA:83:ASP:N	2.41	0.52
40:OA:26:PHE:O	40:OA:30:ILE:HG13	2.09	0.52
41:PA:13:ILE:O	41:PA:17:THR:HG23	2.08	0.52
52:AB:42:PRO:O	52:AB:44:MET:N	2.40	0.52
1:DB:56:U:H2'	1:DB:57:G:C8	2.44	0.52
1:DB:979:C:O2	47:YC:19:ARG:NH1	2.42	0.52
1:DB:1226:C:H2'	46:XC:103:THR:HB	1.91	0.52
2:EB:96:G:H4'	26:CC:48:HIS:CD2	2.43	0.52
2:EB:207:A:H2'	2:EB:208:C:O4'	2.09	0.52
2:EB:576:U:OP1	2:EB:2503:2MA:OP1	2.27	0.52
2:EB:2564:A:OP1	2:EB:2648:C:H4'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:HB:131:LEU:HD13	5:HB:136:ILE:HG12	1.90	0.52
6:IB:119:ARG:HG2	6:IB:120:TRP:CE2	2.44	0.52
35:MC:43:ASP:OD2	35:MC:46:LYS:HB2	2.09	0.52
37:OC:142:PRO:HA	37:OC:185:PHE:HD2	1.73	0.52
1:A:1414:U:H3	1:A:1486:G:H1	1.57	0.52
6:F:11:MET:HG2	6:F:24:THR:HB	1.91	0.52
7:G:116:ASP:OD2	13:M:1:MET:N	2.42	0.52
10:J:61:ARG:NH1	10:J:64:GLU:OE2	2.42	0.52
16:P:15:ARG:HG2	16:P:15:ARG:HH11	1.75	0.52
22:V:50:ARG:NH1	22:V:50:ARG:HB2	2.25	0.52
48:WA:82:ILE:HD12	48:WA:88:ARG:NH2	2.24	0.52
49:XA:53:VAL:HG12	49:XA:57:ARG:HH11	1.74	0.52
1:DB:481:G:O2'	1:DB:483:C:N4	2.37	0.52
2:EB:392:C:H5"	2:EB:409:C:H5"	1.90	0.52
7:JB:62:ARG:HG2	7:JB:63:LYS:O	2.09	0.52
9:LB:55:PRO:HD2	9:LB:61:HIS:HD2	1.74	0.52
10:MB:57:ARG:O	10:MB:60:GLU:HB3	2.08	0.52
15:RB:104:ARG:HG2	15:RB:109:ALA:HB3	1.91	0.52
38:PC:50:GLU:OE2	38:PC:51:VAL:HG23	2.09	0.52
40:RC:20:ASP:HB3	40:RC:23:VAL:HG23	1.91	0.52
1:A:603:U:H2'	1:A:604:G:H8	1.74	0.52
1:A:1129:C:H42	1:A:1143:G:H1	1.57	0.52
2:B:537:C:H2'	2:B:539:G:H8	1.73	0.52
2:B:969:U:H4'	27:AA:14:GLY:O	2.09	0.52
2:B:2718:G:O2'	2:B:2847:U:OP1	2.17	0.52
36:KA:150:LYS:HE3	36:KA:152:ILE:HD11	1.91	0.52
1:DB:973:G:H3'	1:DB:974:A:H5"	1.91	0.52
2:EB:17:G:H4'	18:UB:25:TRP:NE1	2.23	0.52
2:EB:302:C:H2'	2:EB:303:U:C6	2.44	0.52
2:EB:2031:A:C6	2:EB:2498:C:H1'	2.45	0.52
16:SB:3:ARG:NH1	16:SB:3:ARG:HA	2.23	0.52
17:TB:106:SER:O	17:TB:110:ILE:HG13	2.09	0.52
17:TB:120:ARG:O	17:TB:124:ASP:HB2	2.09	0.52
23:ZB:125:LEU:HG	23:ZB:164:ALA:HB3	1.91	0.52
28:EC:14:ILE:HG12	28:EC:31:ILE:HG13	1.92	0.52
36:NC:60:ALA:N	36:NC:63:ASN:O	2.40	0.52
46:XC:15:VAL:O	46:XC:19:LEU:HD13	2.09	0.52
1:A:44:G:H2'	1:A:45:U:O4'	2.10	0.52
1:A:1087:G:H2'	1:A:1088:G:C8	2.44	0.52
2:B:1111:A:OP2	2:B:1111:A:H2'	2.09	0.52
6:F:2:LYS:HG3	6:F:200:GLU:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:90:GLN:N	12:L:90:GLN:OE1	2.42	0.52
30:DA:13:CYS:HB3	30:DA:47:THR:HG21	1.91	0.52
38:MA:36:ASP:OD1	38:MA:38:GLN:N	2.40	0.52
1:DB:953:G:N7	46:XC:104:ARG:NH2	2.46	0.52
1:DB:1253:G:H1	1:DB:1284:C:H42	1.58	0.52
2:EB:232:G:N2	2:EB:420:C:OP1	2.30	0.52
2:EB:242:G:H5"	32:IC:64:TYR:CE2	2.44	0.52
2:EB:1538:G:H8	2:EB:1538:G:OP2	1.92	0.52
17:TB:64:ARG:HH11	17:TB:64:ARG:HG3	1.75	0.52
19:VB:13:ARG:NH1	19:VB:13:ARG:HG3	2.25	0.52
29:FC:49:CYS:SG	29:FC:51:TYR:HB2	2.50	0.52
48:ZC:4:THR:O	48:ZC:7:GLU:HB3	2.10	0.52
1:A:1005:A:H4'	1:A:1037:C:N3	2.24	0.52
1:A:1075:C:H5"	35:JA:179:LYS:HZ1	1.74	0.52
2:B:1164:G:C6	2:B:1165:U:C4	2.98	0.52
2:B:2228:G:OP2	5:E:263:ARG:NH2	2.40	0.52
2:B:2377:A:H4'	16:P:112:PHE:OXT	2.09	0.52
4:D:1:C:N4	4:D:72:A:H61	2.06	0.52
7:G:50:SER:HA	7:G:92:PRO:O	2.09	0.52
10:J:111:PRO:HG2	10:J:112:LYS:HD2	1.92	0.52
21:U:5:TYR:HE1	26:Z:30:ARG:NH1	2.04	0.52
46:UA:3:ARG:NH2	46:UA:4:ILE:HG23	2.23	0.52
2:EB:686:G:H21	2:EB:788:A:H61	1.56	0.52
2:EB:1322:A:N1	2:EB:1333:C:O2'	2.37	0.52
2:EB:2563:U:H4'	12:OB:28:SER:HA	1.90	0.52
2:EB:2792:G:N1	2:EB:2805:G:H1'	2.25	0.52
8:KB:3:LEU:HD23	8:KB:5:LEU:HD11	1.91	0.52
12:OB:87:ILE:HG22	12:OB:93:PRO:HA	1.91	0.52
28:EC:56:VAL:HG22	28:EC:61:ARG:HA	1.90	0.52
41:SC:13:ILE:O	41:SC:17:THR:HG23	2.09	0.52
48:ZC:88:ARG:NH2	48:ZC:88:ARG:HB3	2.25	0.52
1:A:224:C:H2'	1:A:225:C:C6	2.44	0.52
1:A:981:U:H5'	47:VA:21:TYR:CE2	2.44	0.52
2:B:34:C:HO2'	2:B:35:G:H8	1.54	0.52
2:B:83:G:N2	2:B:102:G:H1'	2.24	0.52
2:B:1483:G:H2'	2:B:1484:G:C8	2.42	0.52
1:DB:297:G:N2	1:DB:300:A:OP2	2.41	0.52
1:DB:957:U:OP1	52:DD:81:ARG:NH1	2.43	0.52
1:DB:1500:A:H5"	1:DB:1508:G:H5"	1.92	0.52
2:EB:312:G:H5'	2:EB:331:A:O2'	2.10	0.52
2:EB:2210:G:H3'	2:EB:2211:G:N7	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:2353:G:O2'	24:AC:33:ALA:O	2.21	0.52
4:GB:37:A:H2'	4:GB:38:A:C8	2.45	0.52
6:IB:92:THR:O	6:IB:95:ILE:HG23	2.10	0.52
35:MC:76:GLN:HB2	35:MC:208:ILE:HG12	1.91	0.52
51:CD:32:ARG:HA	51:CD:69:THR:HG21	1.91	0.52
1:A:614:A:H2'	1:A:615:C:C6	2.45	0.52
1:A:1373:G:H5"	40:OA:36:LYS:HB2	1.91	0.52
1:A:1379:G:O6	40:OA:2:ALA:HB3	2.08	0.52
2:B:2528:U:H3	2:B:2535:G:H1	1.57	0.52
2:B:2529:G:H5"	2:B:2530:A:H5"	1.90	0.52
5:E:183:ARG:HG2	5:E:183:ARG:HH11	1.74	0.52
6:F:45:THR:O	6:F:82:ARG:HD2	2.09	0.52
7:G:14:PRO:HD2	7:G:127:GLU:OE2	2.10	0.52
39:NA:18:GLN:HG3	39:NA:21:LEU:HD23	1.90	0.52
1:DB:833:U:H2'	1:DB:834:C:C6	2.44	0.52
2:EB:247:G:H4'	2:EB:386:G:C5	2.45	0.52
2:EB:507:A:O2'	2:EB:508:G:OP2	2.25	0.52
2:EB:1044:G:O2'	2:EB:1111:A:N1	2.36	0.52
2:EB:1464:C:H2'	2:EB:1465:G:C8	2.45	0.52
9:LB:86:GLU:HG2	9:LB:132:ARG:HG3	1.92	0.52
10:MB:60:GLU:CG	10:MB:61:ARG:HH12	2.05	0.52
38:PC:45:PHE:HE2	38:PC:47:LYS:HE3	1.75	0.52
55:GD:144:TRP:CE2	55:GD:171:VAL:HG22	2.44	0.52
2:B:302:C:H2'	2:B:303:U:C6	2.44	0.52
2:B:1173:G:H3'	2:B:1174:A:H4'	1.91	0.52
10:J:75:LEU:HD13	10:J:105:HIS:CD2	2.45	0.52
4:IA:34:C:H2'	4:IA:35:A:C8	2.45	0.52
41:PA:69:ARG:NE	41:PA:75:ARG:O	2.39	0.52
1:DB:125:U:H2'	1:DB:126:G:C8	2.44	0.52
2:EB:784:A:C5	5:HB:229:VAL:HG21	2.43	0.52
2:EB:1173:G:H3'	2:EB:1174:A:H4'	1.91	0.52
2:EB:2792:G:H2'	2:EB:2793:G:H8	1.74	0.52
23:ZB:102:LEU:HD22	23:ZB:137:ILE:HG21	1.92	0.52
44:VC:12:ARG:NH2	44:VC:13:GLN:HE22	2.08	0.52
1:A:1389:C:H2'	1:A:1390:U:O4'	2.09	0.52
2:B:445:C:O2'	2:B:446:G:H5'	2.10	0.52
2:B:1059:G:H22	2:B:1081:U:H1'	1.75	0.52
2:B:2792:G:H2'	2:B:2793:G:H8	1.74	0.52
9:I:149:ARG:NH2	9:I:167:GLU:OE1	2.39	0.52
12:L:17:ARG:HD2	12:L:45:GLU:OE1	2.09	0.52
13:M:93:GLY:H	13:M:123:LEU:HD22	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:81:VAL:HG12	24:X:5:LYS:HZ3	1.74	0.52
25:Y:40:ARG:NH2	25:Y:42:GLN:HG2	2.24	0.52
1:DB:164:U:H2'	1:DB:165:C:C6	2.45	0.52
1:DB:1049:U:OP1	47:YC:3:ARG:HB2	2.10	0.52
1:DB:1389:C:H2'	1:DB:1390:U:O4'	2.10	0.52
1:DB:1500:A:OP2	1:DB:1505:G:OP2	2.27	0.52
2:EB:637:A:H8	13:PB:117:GLU:HG3	1.74	0.52
2:EB:1508:A:H3'	2:EB:1509:A:C8	2.45	0.52
2:EB:2320:A:H2'	2:EB:2320:A:N3	2.25	0.52
2:EB:2820:A:OP2	15:RB:2:ARG:NH2	2.43	0.52
14:QB:60:ARG:NH2	23:ZB:114:GLY:HA3	2.24	0.52
36:NC:150:LYS:HE3	36:NC:152:ILE:HD11	1.92	0.52
38:PC:145:LYS:HB3	38:PC:145:LYS:HZ2	1.75	0.52
2:B:747:U:O2	2:B:2014:A:H1'	2.10	0.52
2:B:955:C:OP1	14:N:87:LYS:HE3	2.11	0.52
2:B:2418:A:H2'	2:B:2419:U:O4'	2.10	0.52
37:LA:150:GLU:H	37:LA:150:GLU:CD	2.12	0.52
44:SA:27:ASN:OD1	44:SA:28:THR:N	2.41	0.52
1:DB:444:C:H2'	1:DB:445:G:H8	1.75	0.52
1:DB:574:A:N3	1:DB:883:C:H1'	2.25	0.52
1:DB:833:U:H2'	1:DB:834:C:H6	1.74	0.52
1:DB:1453:G:H4'	1:DB:1454:G:OP2	2.09	0.52
2:EB:117:G:OP2	2:EB:119:A:O2'	2.24	0.52
2:EB:896:A:OP2	2:EB:896:A:H4'	2.09	0.52
10:MB:75:LEU:HD13	10:MB:105:HIS:CD2	2.45	0.52
27:DC:6:VAL:HG12	27:DC:56:VAL:HG22	1.91	0.52
42:TC:11:LYS:O	42:TC:13:ALA:N	2.37	0.52
1:A:397:A:H5'	1:A:398:C:OP1	2.10	0.51
1:A:632:A:OP1	41:PA:98:LYS:NZ	2.43	0.51
1:A:1293:G:H2'	1:A:1294:G:C8	2.45	0.51
2:B:1516:U:H2'	2:B:1517:G:H8	1.75	0.51
2:B:2615:U:C2	29:CA:7:PRO:HA	2.45	0.51
2:B:2853:C:H2'	2:B:2854:G:H8	1.75	0.51
18:R:32:PHE:CZ	18:R:36:ARG:NH1	2.78	0.51
18:R:58:ARG:HA	18:R:61:TRP:CE3	2.45	0.51
23:W:97:GLU:HB2	23:W:125:LEU:HD11	1.93	0.51
1:DB:603:U:H2'	1:DB:604:G:C8	2.44	0.51
2:EB:249:C:O2	32:IC:12:LYS:NZ	2.37	0.51
2:EB:2291:U:OP1	2:EB:2380:C:O2'	2.26	0.51
5:HB:129:ASN:O	5:HB:193:VAL:HG12	2.10	0.51
6:IB:191:PRO:O	6:IB:193:GLY:N	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:KB:79:ASN:OD1	8:KB:79:ASN:N	2.43	0.51
12:OB:14:THR:HG21	12:OB:86:ILE:HB	1.92	0.51
28:EC:49:PHE:HE1	46:XC:62:ASN:HD22	1.58	0.51
31:HC:29:LYS:O	31:HC:33:ARG:HG3	2.09	0.51
36:NC:189:ALA:HB3	36:NC:196:LEU:HB2	1.91	0.51
42:TC:27:THR:HG23	42:TC:62:TYR:HA	1.92	0.51
42:TC:40:LEU:HD11	42:TC:70:LYS:HD3	1.92	0.51
1:A:953:G:N7	46:UA:104:ARG:NH2	2.45	0.51
1:A:973:G:H3'	1:A:974:A:H5"	1.91	0.51
1:A:1087:G:H1	1:A:1098:C:H42	1.58	0.51
1:A:1498:UR3:OP2	34:HA:16:A:O2'	2.24	0.51
2:B:1728:G:H8	2:B:1732:A:H62	1.57	0.51
2:B:2701:C:H2'	2:B:2702:U:H2'	1.92	0.51
2:B:2747:G:P	9:I:138:LYS:HZ2	2.32	0.51
4:D:37:A:H2'	4:D:38:A:C8	2.46	0.51
23:W:125:LEU:HG	23:W:164:ALA:HB3	1.92	0.51
1:DB:222:U:H2'	1:DB:223:U:C6	2.45	0.51
2:EB:540:G:H2'	2:EB:541:C:C6	2.45	0.51
3:FB:112:G:H2'	3:FB:113:C:C6	2.45	0.51
32:IC:56:GLU:HA	32:IC:59:LYS:HG3	1.93	0.51
35:MC:229:VAL:HB	35:MC:231:GLU:OE2	2.10	0.51
52:DD:22:LEU:HD11	52:DD:29:ARG:HB2	1.91	0.51
52:DD:36:ARG:NH2	52:DD:75:ALA:O	2.39	0.51
1:A:1253:G:H1	1:A:1284:C:H42	1.57	0.51
2:B:479:A:HO2'	2:B:481:G:H8	1.58	0.51
3:C:3:C:H2'	3:C:4:C:H6	1.74	0.51
14:N:10:ARG:HH12	4:IA:64:G:H4'	1.73	0.51
17:Q:55:ASN:H	17:Q:59:THR:HB	1.74	0.51
23:W:127:LYS:H	23:W:164:ALA:HB2	1.75	0.51
26:Z:32:LEU:HB2	26:Z:53:LEU:HD12	1.92	0.51
35:JA:118:LEU:HD21	35:JA:138:LEU:HD22	1.92	0.51
46:UA:3:ARG:NH1	46:UA:3:ARG:HB3	2.26	0.51
52:AB:24:ALA:HB3	52:AB:25:LYS:HE2	1.91	0.51
1:DB:1073:U:H3	1:DB:1102:A:H61	1.56	0.51
1:DB:1503:A:O2'	1:DB:1504:G:O5'	2.29	0.51
2:EB:528:A:H2'	11:NB:114:ARG:NH2	2.26	0.51
2:EB:588:U:H2'	2:EB:589:C:C6	2.45	0.51
2:EB:932:G:OP1	27:DC:29:ARG:NH2	2.44	0.51
2:EB:1614:A:C2	20:WB:93:ALA:HB2	2.46	0.51
2:EB:2791:C:H4'	2:EB:2792:G:H5'	1.93	0.51
5:HB:240:ALA:HB1	5:HB:241:PRO:HD2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:MC:76:GLN:NE2	35:MC:207:ALA:O	2.44	0.51
45:WC:84:LEU:HD23	45:WC:101:VAL:HG21	1.92	0.51
48:ZC:82:ILE:HD12	48:ZC:88:ARG:HH21	1.75	0.51
2:B:2348:U:O2'	2:B:2349:G:H5'	2.11	0.51
13:M:138:LEU:HD23	13:M:145:PRO:HB3	1.90	0.51
20:T:90:ARG:HG2	20:T:90:ARG:NH1	2.26	0.51
25:Y:51:VAL:HG21	25:Y:74:VAL:HG21	1.93	0.51
46:UA:11:ARG:HH12	46:UA:46:LYS:HD2	1.74	0.51
49:XA:22:THR:HA	49:XA:33:ILE:HG12	1.92	0.51
53:BB:54:LYS:HA	53:BB:57:ARG:HH21	1.75	0.51
1:DB:186(A):C:O2'	53:ED:85:MET:SD	2.68	0.51
1:DB:983:A:H5'	1:DB:984:C:OP2	2.11	0.51
2:EB:2552:2MU:O5'	2:EB:2552:2MU:H6	2.10	0.51
15:RB:70:LEU:O	15:RB:72:ASP:N	2.32	0.51
24:AC:7:LEU:CD1	24:AC:8:GLY:H	2.24	0.51
40:RC:26:PHE:O	40:RC:30:ILE:HG13	2.10	0.51
41:SC:51:VAL:HG11	41:SC:60:ARG:NH1	2.26	0.51
46:XC:44:ARG:HB2	46:XC:47:ASP:OD2	2.11	0.51
52:DD:11:VAL:HG23	52:DD:38:SER:HB2	1.92	0.51
1:A:1356:G:H2'	1:A:1357:A:C8	2.45	0.51
2:B:2031:A:H1'	2:B:2455:G:O2'	2.10	0.51
8:H:96:ARG:O	8:H:99:MET:HB3	2.11	0.51
23:W:14:LYS:O	23:W:18:LEU:HB2	2.11	0.51
49:XA:58:TYR:O	49:XA:61:SER:OG	2.27	0.51
2:EB:1923:U:H2'	2:EB:1924:C:H6	1.74	0.51
5:HB:17:THR:HB	5:HB:205:VAL:H	1.75	0.51
8:KB:76:SER:OG	8:KB:83:ARG:HA	2.11	0.51
23:ZB:70:LEU:HG	23:ZB:91:LEU:HD21	1.91	0.51
23:ZB:179:ASP:OD2	23:ZB:181:GLU:N	2.42	0.51
46:XC:50:GLU:O	46:XC:54:VAL:HG23	2.10	0.51
1:A:503:C:OP2	45:TA:116:SER:OG	2.21	0.51
2:B:439:G:H2'	2:B:440:G:C8	2.45	0.51
2:B:900:A:H2'	2:B:901:A:C8	2.45	0.51
2:B:1823:G:OP1	5:E:54:ARG:NH1	2.43	0.51
6:F:7:VAL:HG23	6:F:51:PHE:HE2	1.74	0.51
8:H:11:TYR:HA	8:H:15:VAL:HB	1.93	0.51
2:EB:17:G:H2'	2:EB:18:C:H6	1.74	0.51
2:EB:1299:G:H22	2:EB:1640:C:H5"	1.76	0.51
2:EB:1796:U:H2'	2:EB:1797:C:C6	2.46	0.51
2:EB:2671:A:H2'	2:EB:2672:G:C8	2.46	0.51
18:UB:83:LEU:HD12	18:UB:113:ALA:HB2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:XB:28:PHE:CE1	21:XB:47:PHE:HE2	2.28	0.51
38:PC:118:ILE:HG12	38:PC:119:LEU:N	2.25	0.51
41:SC:112:LEU:HA	41:SC:134:ILE:HG12	1.92	0.51
46:XC:33:ALA:HA	46:XC:59:TYR:HE2	1.75	0.51
1:A:222:U:H2'	1:A:223:U:C6	2.45	0.51
1:A:444:C:H2'	1:A:445:G:H8	1.76	0.51
1:A:447:G:O6	1:A:485:G:O2'	2.21	0.51
1:A:558:G:C8	1:A:559:A:H2'	2.45	0.51
1:A:833:U:H2'	1:A:834:C:C6	2.46	0.51
1:A:1130:A:H2'	1:A:1131:G:C8	2.45	0.51
2:B:687:C:H5"	31:EA:2:LYS:HE2	1.93	0.51
2:B:1538:G:H8	2:B:1538:G:OP2	1.92	0.51
15:O:10:LEU:O	15:O:12:ARG:HG3	2.10	0.51
22:V:76:CYS:SG	22:V:78:ALA:HB3	2.50	0.51
1:DB:563:A:O2'	1:DB:564:C:OP2	2.18	0.51
1:DB:723:U:H4'	1:DB:724:G:OP2	2.10	0.51
1:DB:828:A:H2'	1:DB:829:G:O4'	2.11	0.51
1:DB:1273:G:H2'	1:DB:1274:G:O4'	2.10	0.51
2:EB:270(W):G:H2'	2:EB:270(X):G:H8	1.76	0.51
2:EB:2228:G:OP2	5:HB:263:ARG:NH2	2.44	0.51
2:EB:2328:A:H2'	2:EB:2329:G:C8	2.46	0.51
5:HB:30:GLU:HB3	5:HB:33:LEU:HD12	1.93	0.51
7:JB:53:THR:HG22	7:JB:56:GLU:CG	2.39	0.51
12:OB:107:ARG:HD3	17:TB:37:GLY:H	1.75	0.51
15:RB:48:VAL:HG23	15:RB:95:THR:HG21	1.92	0.51
46:XC:3:ARG:NH2	46:XC:4:ILE:HG23	2.25	0.51
46:XC:108:ARG:O	46:XC:112:GLY:N	2.43	0.51
55:HD:137:ARG:NH1	55:HD:334:GLU:HG3	2.25	0.51
1:A:946:A:H2'	1:A:947:G:C8	2.46	0.51
2:B:1357:U:H2'	2:B:1358:G:O4'	2.10	0.51
10:J:95:LYS:HA	10:J:111:PRO:HB3	1.91	0.51
29:CA:40:LYS:HG3	29:CA:41:PRO:O	2.10	0.51
36:KA:60:ALA:N	36:KA:63:ASN:O	2.43	0.51
46:UA:108:ARG:O	46:UA:112:GLY:N	2.44	0.51
2:EB:1532:C:H42	2:EB:1539:G:H1	1.59	0.51
2:EB:2351:G:O6	32:IC:39:LYS:HG3	2.11	0.51
2:EB:2880:C:O2'	15:RB:90:ARG:HD3	2.10	0.51
22:YB:43:ASN:HD22	22:YB:65:ALA:HB3	1.75	0.51
35:MC:168:THR:HG23	35:MC:192:SER:HA	1.91	0.51
37:OC:43:HIS:C	37:OC:45:GLN:H	2.13	0.51
48:ZC:18:PHE:HB2	48:ZC:19:PRO:HD2	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:DD:3:ARG:NH2	52:DD:7:LYS:HE2	2.25	0.51
55:HD:245:ARG:HG3	55:HD:256:GLU:HG3	1.92	0.51
1:A:262:A:C6	1:A:263:A:C6	2.99	0.51
1:A:1422:G:H2'	1:A:1423:G:H8	1.75	0.51
2:B:528:A:O2'	2:B:529:A:O5'	2.19	0.51
2:B:1915:5MU:P	55:GD:116:ARG:HH22	2.33	0.51
3:C:28:C:OP1	16:P:34:HIS:HB2	2.10	0.51
9:I:25:LYS:HG2	9:I:34:GLU:HG3	1.92	0.51
16:P:3:ARG:NH1	16:P:3:ARG:HA	2.26	0.51
1:DB:44:G:H2'	1:DB:45:U:O4'	2.11	0.51
1:DB:404:U:H2'	1:DB:405:U:H6	1.76	0.51
2:EB:270(K):G:N1	2:EB:270(Q):C:N3	2.54	0.51
2:EB:1062:G:H5"	2:EB:1064:C:H1'	1.92	0.51
2:EB:2831:G:P	6:IB:58:ARG:HH12	2.34	0.51
7:JB:127:GLU:HG2	7:JB:196:LEU:HD22	1.93	0.51
4:LC:65:C:H2'	4:LC:66:C:H6	1.76	0.51
1:A:17:U:H2'	1:A:18:C:C6	2.45	0.51
1:A:562:C:H4'	1:A:563:A:H5'	1.91	0.51
1:A:619:U:C2	37:LA:135:LEU:HD21	2.46	0.51
2:B:576:U:OP1	2:B:2503:2MA:OP1	2.27	0.51
2:B:2698:U:H2'	2:B:2699:C:C6	2.46	0.51
5:E:17:THR:HB	5:E:205:VAL:H	1.76	0.51
9:I:55:PRO:HD2	9:I:61:HIS:HD2	1.76	0.51
35:JA:76:GLN:HB2	35:JA:208:ILE:HG12	1.93	0.51
37:LA:142:PRO:HA	37:LA:185:PHE:HD2	1.76	0.51
39:NA:53:ALA:HB3	39:NA:86:ARG:NH1	2.25	0.51
41:PA:11:THR:HA	41:PA:14:ARG:NH1	2.25	0.51
46:UA:14:ARG:N	46:UA:44:ARG:HH11	2.09	0.51
2:EB:1164:G:C6	2:EB:1165:U:C4	2.99	0.51
6:IB:7:VAL:HG23	6:IB:51:PHE:HE2	1.75	0.51
10:MB:96:ASP:HA	10:MB:99:GLU:HB2	1.93	0.51
48:ZC:82:ILE:HD12	48:ZC:88:ARG:NH2	2.25	0.51
1:A:304:U:H2'	1:A:305:G:C8	2.46	0.50
1:A:850:U:H2'	1:A:851:G:C8	2.46	0.50
2:B:637:A:H8	13:M:117:GLU:HG3	1.76	0.50
2:B:2086:U:H2'	2:B:2087:G:C8	2.46	0.50
2:B:2143:C:O2'	2:B:2148:G:N2	2.43	0.50
2:B:2792:G:H1	2:B:2805:G:H1'	1.75	0.50
8:H:116:ASP:OD2	46:UA:68:GLY:HA3	2.11	0.50
8:H:181:ARG:HB2	8:H:181:ARG:HH11	1.76	0.50
11:K:72:TYR:HE2	11:K:87:LEU:HD23	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:61:LEU:HD23	23:W:67:LEU:HD23	1.92	0.50
25:Y:4:VAL:HG21	25:Y:11:ARG:NH1	2.26	0.50
35:JA:114:ARG:HE	35:JA:118:LEU:HG	1.76	0.50
36:KA:37:GLN:NE2	47:VA:52:GLN:OE1	2.43	0.50
48:WA:4:THR:O	48:WA:7:GLU:HB3	2.10	0.50
1:DB:1036:G:H21	1:DB:1037:C:N4	2.10	0.50
1:DB:1498:UR3:O2'	34:KC:17:U:OP1	2.23	0.50
2:EB:46:C:OP2	2:EB:215:G:H2'	2.11	0.50
2:EB:83:G:N2	2:EB:102:G:H1'	2.25	0.50
2:EB:274:G:H1'	2:EB:363(A):G:N2	2.26	0.50
2:EB:2531:A:N3	2:EB:2658:C:O2'	2.31	0.50
2:EB:2661:G:H2'	2:EB:2662:A:C8	2.46	0.50
7:JB:64:ILE:HD11	7:JB:75:HIS:HB2	1.93	0.50
32:IC:31:HIS:CD2	32:IC:32:LEU:HD22	2.46	0.50
39:QC:83:ASP:OD1	39:QC:83:ASP:N	2.43	0.50
45:WC:89:ARG:HA	45:WC:97:ARG:HA	1.92	0.50
46:XC:3:ARG:NH1	46:XC:3:ARG:HB3	2.27	0.50
55:GD:214:LEU:HD23	55:GD:214:LEU:H	1.77	0.50
1:A:850:U:H2'	1:A:851:G:H8	1.76	0.50
2:B:2006:C:O2'	2:B:2823:A:N3	2.43	0.50
2:B:2031:A:C6	2:B:2498:C:H1'	2.46	0.50
8:H:129:GLY:O	8:H:130:ASN:ND2	2.45	0.50
11:K:128:HIS:O	11:K:131:GLN:NE2	2.28	0.50
19:S:13:ARG:HG3	19:S:13:ARG:HH11	1.75	0.50
39:NA:12:PRO:HG3	39:NA:55:ASP:OD2	2.11	0.50
40:OA:28:ASN:OD1	40:OA:36:LYS:NZ	2.45	0.50
48:WA:35:ARG:NH1	48:WA:35:ARG:CG	2.74	0.50
1:DB:160:A:H2'	1:DB:161:A:O4'	2.11	0.50
1:DB:224:C:H2'	1:DB:225:C:C6	2.46	0.50
1:DB:512:U:H2'	1:DB:513:C:C6	2.46	0.50
1:DB:946:A:H2'	1:DB:947:G:C8	2.47	0.50
1:DB:1291:G:H4'	42:TC:39:GLY:HA3	1.93	0.50
1:DB:1380:U:O2	40:RC:3:ARG:NH1	2.44	0.50
2:EB:947:G:H2'	2:EB:948:G:H8	1.77	0.50
2:EB:1060:U:H4'	2:EB:1061:U:H3'	1.93	0.50
2:EB:2334:G:H5'	16:SB:9:ARG:HG2	1.92	0.50
13:PB:97:PRO:HA	13:PB:100:LEU:HD12	1.94	0.50
36:NC:65:ALA:HA	36:NC:100:ALA:CB	2.42	0.50
1:A:881:G:OP2	45:TA:12:ARG:NH2	2.44	0.50
2:B:588:U:H2'	2:B:589:C:C6	2.46	0.50
2:B:890:A:H2'	2:B:892:G:C8	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2021:C:OP1	29:CA:12:SER:OG	2.23	0.50
2:B:2317:C:C2'	2:B:2318:G:H5'	2.42	0.50
2:B:2328:A:H2'	2:B:2329:G:C8	2.46	0.50
2:B:2334:G:H5'	16:P:9:ARG:HG2	1.94	0.50
4:D:5:G:H1	4:D:68:C:H42	1.59	0.50
7:G:11:VAL:HG22	7:G:125:LEU:HB2	1.92	0.50
14:N:43:THR:HA	14:N:94:VAL:HG12	1.93	0.50
37:LA:133:VAL:HG13	37:LA:135:LEU:HD22	1.93	0.50
42:QA:81:ILE:O	42:QA:85:LEU:HG	2.11	0.50
1:DB:1034:G:H2'	1:DB:1035:A:H8	1.76	0.50
2:EB:1287:A:C5	2:EB:1288:U:C4	3.00	0.50
2:EB:1932:A:H2'	2:EB:1933:G:O4'	2.11	0.50
2:EB:2780:G:H4'	2:EB:2781:A:OP2	2.11	0.50
6:IB:21:VAL:HG22	6:IB:23:VAL:HG23	1.93	0.50
8:KB:56:ALA:HB2	8:KB:153:ARG:NH1	2.20	0.50
17:TB:100:TYR:CD1	17:TB:103:ARG:NH1	2.79	0.50
20:WB:68:ARG:NH1	20:WB:111:HIS:HA	2.25	0.50
37:OC:98:GLU:HG3	37:OC:194:LEU:HD22	1.93	0.50
1:A:345:C:H3'	17:Q:41:ARG:CZ	2.41	0.50
1:A:359:U:H2'	1:A:360:A:C8	2.46	0.50
1:A:509:A:N3	1:A:543:C:O2'	2.35	0.50
1:A:790:A:OP1	4:IA:38:A:O2'	2.28	0.50
1:A:936:C:H2'	1:A:937:A:O4'	2.11	0.50
1:A:1218:C:H2'	1:A:1219:U:C6	2.46	0.50
2:B:461:C:H2'	2:B:462:C:H6	1.77	0.50
2:B:715:G:H2'	2:B:716:A:C8	2.45	0.50
2:B:1364:G:OP2	25:Y:61:ARG:NH1	2.44	0.50
2:B:2347:C:O2'	30:DA:21:TYR:OH	2.29	0.50
2:B:2791:C:H5"	2:B:2893:G:H2'	1.94	0.50
2:B:2821:A:OP2	2:B:2822:G:OP2	2.27	0.50
8:H:76:SER:OG	8:H:83:ARG:HA	2.11	0.50
19:S:7:THR:HG23	19:S:22:VAL:HG11	1.93	0.50
40:OA:26:PHE:CE2	40:OA:30:ILE:HD11	2.46	0.50
2:EB:716:A:C2	2:EB:717:G:H1'	2.46	0.50
2:EB:2141:G:H22	2:EB:2151:G:H1'	1.77	0.50
2:EB:2853:C:H2'	2:EB:2854:G:H8	1.77	0.50
3:FB:28:C:OP1	16:SB:31:SER:OG	2.25	0.50
19:VB:69:LYS:O	19:VB:70:ILE:HD13	2.11	0.50
37:OC:98:GLU:OE2	37:OC:103:ASN:ND2	2.40	0.50
1:A:137:C:H2'	1:A:138:G:H8	1.75	0.50
1:A:381:C:H2'	1:A:382:A:O4'	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:723:U:H4'	1:A:724:G:OP2	2.10	0.50
1:A:1342:C:H2'	1:A:1343:G:C8	2.47	0.50
2:B:1407:C:H2'	2:B:1408:C:H6	1.75	0.50
2:B:1717:G:H1	2:B:1742:C:H42	1.60	0.50
5:E:148:GLU:OE2	5:E:151:LYS:NZ	2.42	0.50
9:I:3:ARG:HG2	9:I:6:ARG:CZ	2.41	0.50
23:W:52:SER:OG	23:W:53:ILE:N	2.45	0.50
1:DB:381:C:H2'	1:DB:382:A:O4'	2.12	0.50
1:DB:603:U:H2'	1:DB:604:G:H8	1.76	0.50
1:DB:1320:C:N3	52:DD:36:ARG:HD3	2.26	0.50
2:EB:136:G:H2'	2:EB:137(A):C:H6	1.77	0.50
2:EB:361:G:C2	2:EB:362:U:H5	2.30	0.50
2:EB:1437:C:H2'	2:EB:1438:U:C6	2.46	0.50
11:NB:108:PRO:O	11:NB:113:GLY:HA3	2.12	0.50
17:TB:26:ASP:OD1	17:TB:120:ARG:NH2	2.35	0.50
39:QC:44:GLY:HA2	39:QC:59:TYR:CE1	2.46	0.50
46:XC:14:ARG:N	46:XC:44:ARG:HH11	2.10	0.50
49:AD:53:VAL:HG12	49:AD:57:ARG:HH11	1.75	0.50
52:DD:27:GLU:HG3	52:DD:28:LYS:HA	1.93	0.50
52:DD:44:MET:O	52:DD:46:GLY:N	2.45	0.50
53:ED:90:GLN:HA	53:ED:93:GLU:HB3	1.92	0.50
1:A:833:U:H3	1:A:853:G:H1	1.58	0.50
1:A:1317:C:O2	52:AB:37:ARG:NH2	2.44	0.50
2:B:528:A:H2'	11:K:114:ARG:NH2	2.27	0.50
2:B:748:G:H2'	2:B:750:A:N7	2.27	0.50
2:B:1754:C:OP2	17:Q:113:LYS:HE3	2.12	0.50
20:T:82:LEU:HD23	20:T:84:ARG:NH1	2.26	0.50
38:MA:84:PHE:HB2	38:MA:134:ALA:HB2	1.94	0.50
39:NA:44:GLY:HA2	39:NA:59:TYR:CE1	2.46	0.50
46:UA:24:GLY:HA2	46:UA:70:LEU:HD12	1.93	0.50
1:DB:1118:C:H1'	1:DB:1179:A:C5	2.47	0.50
1:DB:1427:U:H2'	1:DB:1428:A:H8	1.77	0.50
2:EB:2315:G:H2'	2:EB:2316:C:C6	2.47	0.50
15:RB:10:LEU:O	15:RB:12:ARG:HG3	2.12	0.50
20:WB:12:ILE:HD13	20:WB:17:VAL:HG22	1.93	0.50
33:JC:2:LYS:HZ1	33:JC:4:ARG:HE	1.58	0.50
35:MC:160:ASP:OD1	35:MC:160:ASP:N	2.45	0.50
49:AD:12:LYS:HG2	49:AD:13:HIS:CD2	2.47	0.50
2:B:270(W):G:H2'	2:B:270(X):G:H8	1.77	0.50
2:B:847:U:OP2	2:B:929:G:O6	2.29	0.50
5:E:11:PRO:O	5:E:14:ARG:HG2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:129:ASN:O	5:E:193:VAL:HG12	2.12	0.50
35:JA:15:VAL:HG21	35:JA:213:LEU:HG	1.94	0.50
41:PA:78:GLN:HG3	41:PA:80:ILE:H	1.77	0.50
1:DB:87:A:C2	1:DB:88:C:H1'	2.47	0.50
1:DB:1218:C:H2'	1:DB:1219:U:C6	2.47	0.50
2:EB:1252:G:C2	2:EB:1253:A:C2	3.00	0.50
2:EB:2209:C:H1'	2:EB:2216:G:N2	2.26	0.50
2:EB:2840:C:H5"	15:RB:53:HIS:CD2	2.47	0.50
4:GB:15:G:H2'	4:GB:59:A:N1	2.27	0.50
23:ZB:158:PRO:O	23:ZB:161:VAL:HB	2.12	0.50
27:DC:44:ARG:O	27:DC:48:GLU:HG3	2.10	0.50
38:PC:8:GLU:HG2	38:PC:34:VAL:HG12	1.94	0.50
39:QC:67:MET:HG3	39:QC:68:PRO:HD2	1.94	0.50
52:DD:3:ARG:NH1	52:DD:8:GLY:O	2.45	0.50
55:HD:331:GLU:HB3	55:HD:336:LYS:HE2	1.93	0.50
1:A:828:A:H2'	1:A:829:G:O4'	2.12	0.50
2:B:271(C):G:H4'	2:B:271(D):U:H5"	1.92	0.50
25:Y:7:ILE:HG23	25:Y:98:LEU:HD11	1.94	0.50
45:TA:89:ARG:HA	45:TA:97:ARG:HA	1.94	0.50
1:DB:1266:G:O2'	1:DB:1268:A:N7	2.38	0.50
2:EB:458:G:O2'	31:HC:39:ARG:HD3	2.12	0.50
2:EB:1516:U:H2'	2:EB:1517:G:H8	1.75	0.50
2:EB:1942:5MC:HM53	2:EB:1943:U:C2	2.47	0.50
2:EB:2143:C:O2'	2:EB:2148:G:N2	2.41	0.50
2:EB:2821:A:OP2	2:EB:2822:G:OP2	2.28	0.50
40:RC:28:ASN:OD1	40:RC:36:LYS:NZ	2.45	0.50
2:B:2502:G:H5"	2:B:2503:2MA:H5"	1.93	0.50
2:B:2840:C:H5"	15:O:53:HIS:CD2	2.47	0.50
6:F:59:VAL:HG11	6:F:64:LYS:HD3	1.92	0.50
6:F:93:VAL:HG11	6:F:181:LEU:O	2.11	0.50
7:G:192:LEU:HD22	7:G:194:MET:HG3	1.94	0.50
28:BA:49:PHE:HE1	46:UA:62:ASN:HD22	1.60	0.50
33:GA:6:SER:O	33:GA:6:SER:OG	2.29	0.50
1:DB:981:U:H5'	47:YC:21:TYR:CE2	2.47	0.50
1:DB:1133:G:C2	1:DB:1134:G:H1'	2.46	0.50
40:RC:150:ALA:HB2	44:VC:50:TYR:CZ	2.47	0.50
41:SC:31:PHE:O	41:SC:35:ILE:HG13	2.12	0.50
55:HD:110:ASN:HB3	55:HD:167:SER:HA	1.93	0.50
1:A:105:G:C5	1:A:106:C:C4	3.00	0.49
1:A:512:U:H2'	1:A:513:C:C6	2.47	0.49
1:A:715:A:H2'	1:A:716:A:C8	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:896:A:H4'	2:B:896:A:OP2	2.11	0.49
2:B:2565:A:H5"	2:B:2566:A:OP2	2.12	0.49
2:B:2723:C:OP2	6:F:109:LYS:NZ	2.42	0.49
10:J:96:ASP:HA	10:J:99:GLU:HB2	1.93	0.49
11:K:67:LEU:HA	11:K:87:LEU:HD12	1.93	0.49
13:M:49:ARG:HB3	32:FA:61:LEU:HD21	1.94	0.49
35:JA:231:GLU:H	35:JA:232:PRO:HD2	1.78	0.49
40:OA:150:ALA:HB2	44:SA:50:TYR:OH	2.11	0.49
1:DB:237:C:H5"	50:BD:25:ARG:NH1	2.27	0.49
1:DB:262:A:C6	1:DB:263:A:C6	2.99	0.49
1:DB:977:A:H2'	1:DB:978:A:H5"	1.94	0.49
2:EB:320:A:H4'	2:EB:322:A:C8	2.46	0.49
2:EB:704:G:O2'	2:EB:726:G:N2	2.39	0.49
2:EB:882:G:H2'	2:EB:883:G:H8	1.77	0.49
2:EB:1028:A:N3	2:EB:2486:G:O2'	2.33	0.49
15:RB:37:THR:OG1	15:RB:40:LYS:HB2	2.12	0.49
22:YB:35:TYR:CE2	22:YB:69:ALA:HB3	2.47	0.49
33:JC:35:ARG:NH1	33:JC:37:GLY:OXT	2.45	0.49
49:AD:22:THR:HA	49:AD:33:ILE:HG12	1.94	0.49
1:A:87:A:C2	1:A:88:C:H1'	2.47	0.49
1:A:236:G:H5"	50:YA:42:TYR:OH	2.12	0.49
1:A:924:C:H5'	1:A:1399:C:OP2	2.12	0.49
1:A:957:U:OP1	52:AB:81:ARG:NH1	2.45	0.49
2:B:1512:G:H2'	2:B:1513:C:C6	2.47	0.49
2:B:2671:A:H2'	2:B:2672:G:C8	2.48	0.49
3:C:28:C:H2'	3:C:29:A:C8	2.47	0.49
35:JA:21:ARG:HH11	35:JA:23:ARG:HD3	1.71	0.49
38:MA:144:THR:HG22	38:MA:147:ASP:CG	2.32	0.49
1:DB:1070:U:H2'	1:DB:1071:C:H6	1.76	0.49
1:DB:1196:U:H6	1:DB:1196:U:H5'	1.77	0.49
1:DB:1356:G:H2'	1:DB:1357:A:C8	2.47	0.49
2:EB:2401:U:H3	2:EB:2415:G:H1	1.60	0.49
40:RC:26:PHE:CE2	40:RC:30:ILE:HD11	2.47	0.49
1:A:857:C:H2'	1:A:858:G:O4'	2.13	0.49
1:A:1034:G:H2'	1:A:1035:A:H8	1.77	0.49
1:A:1047:G:O2'	1:A:1215:G:O2'	2.25	0.49
1:A:1415:G:H2'	1:A:1416:G:C8	2.47	0.49
8:H:67:LYS:HD3	28:BA:5:ILE:HD12	1.93	0.49
18:R:83:LEU:HD12	18:R:113:ALA:HB2	1.93	0.49
19:S:85:LYS:HB3	19:S:85:LYS:HZ3	1.77	0.49
22:V:66:PRO:O	22:V:67:LEU:HD23	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:83:GLU:OE2	25:Y:83:GLU:N	2.46	0.49
35:JA:82:ARG:HB2	35:JA:94:ASN:HD22	1.76	0.49
37:LA:108:LEU:HD22	37:LA:176:LEU:HD13	1.93	0.49
41:PA:112:LEU:HA	41:PA:134:ILE:HG12	1.94	0.49
2:EB:18:C:O2'	2:EB:553:U:OP1	2.29	0.49
2:EB:851:U:H2'	2:EB:852:G:H8	1.77	0.49
2:EB:2406:U:C2	13:PB:72:PRO:HG2	2.47	0.49
9:LB:56:SER:OG	9:LB:57:ASP:N	2.44	0.49
38:PC:45:PHE:HD2	38:PC:47:LYS:HZ1	1.59	0.49
55:HD:144:TRP:CE2	55:HD:171:VAL:HG22	2.47	0.49
2:B:1614:A:C2	20:T:93:ALA:HB2	2.47	0.49
9:I:121:ILE:HG12	9:I:140:LYS:HD2	1.95	0.49
14:N:60:ARG:NH2	23:W:114:GLY:HA3	2.26	0.49
22:V:45:VAL:O	22:V:62:GLU:HA	2.12	0.49
52:AB:27:GLU:HG3	52:AB:28:LYS:HA	1.95	0.49
1:DB:192:U:H2'	1:DB:193:C:C6	2.48	0.49
2:EB:270(N):U:H4'	2:EB:270(O):G:H5'	1.94	0.49
2:EB:945:A:C4	2:EB:2448:A:C2	3.00	0.49
3:FB:85:G:H1	3:FB:91:C:N4	2.10	0.49
8:KB:41:GLN:HG2	8:KB:154:GLY:O	2.13	0.49
8:KB:77:ILE:HG22	8:KB:80:PHE:H	1.76	0.49
8:KB:96:ARG:O	8:KB:99:MET:HB3	2.12	0.49
17:TB:55:ASN:H	17:TB:59:THR:HB	1.77	0.49
52:DD:24:ALA:HB3	52:DD:25:LYS:HE2	1.94	0.49
1:A:247:G:OP2	50:YA:100:LYS:N	2.45	0.49
1:A:1070:U:H2'	1:A:1071:C:H6	1.76	0.49
1:A:1133:G:C2	1:A:1134:G:H1'	2.47	0.49
2:B:751:A:H5'	20:T:90:ARG:HA	1.94	0.49
2:B:1027:A:C2	2:B:2488:A:H5'	2.47	0.49
2:B:1592:C:H2'	2:B:1593:G:C8	2.48	0.49
2:B:2791:C:H4'	2:B:2792:G:H5'	1.93	0.49
7:G:64:ILE:HD11	7:G:75:HIS:HB2	1.94	0.49
37:LA:127:THR:HG23	37:LA:147:ALA:HB3	1.95	0.49
53:BB:13:LEU:HB2	53:BB:17:ARG:NH1	2.28	0.49
9:LB:3:ARG:HG2	9:LB:6:ARG:NH1	2.27	0.49
9:LB:149:ARG:NH2	9:LB:167:GLU:OE1	2.41	0.49
19:VB:13:ARG:HG3	19:VB:13:ARG:HH11	1.78	0.49
29:FC:25:LEU:H	29:FC:25:LEU:HD12	1.77	0.49
38:PC:76:ILE:HG13	38:PC:93:PRO:HG3	1.95	0.49
46:XC:108:ARG:NH2	46:XC:114:ARG:HA	2.28	0.49
53:ED:47:GLY:HA2	53:ED:48:LYS:C	2.32	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:125:U:H2'	1:A:126:G:H8	1.76	0.49
1:A:920:U:H2'	1:A:921:U:C6	2.47	0.49
1:A:1087:G:N1	1:A:1088:G:O6	2.46	0.49
1:A:1291:G:O2'	42:QA:38:GLN:OE1	2.30	0.49
2:B:1187:G:H5"	19:S:81:TYR:CE1	2.48	0.49
2:B:1761:C:H3'	2:B:1762:A:C5'	2.41	0.49
2:B:1932:A:H2'	2:B:1933:G:O4'	2.13	0.49
2:B:2093:G:H5'	10:J:22:LYS:HD2	1.93	0.49
2:B:2141:G:H22	2:B:2151:G:H1'	1.77	0.49
2:B:2648:C:H2'	2:B:2649:U:H6	1.77	0.49
9:I:56:SER:OG	9:I:57:ASP:N	2.46	0.49
35:JA:51:LEU:HD12	35:JA:201:ILE:HD12	1.95	0.49
40:OA:38:LEU:O	40:OA:42:ILE:HG12	2.12	0.49
40:OA:71:PRO:HA	40:OA:138:LYS:HE3	1.94	0.49
44:SA:121:PRO:HG2	44:SA:126:ARG:HB2	1.94	0.49
46:UA:27:LYS:HB2	46:UA:27:LYS:NZ	2.27	0.49
1:DB:304:U:H2'	1:DB:305:G:C8	2.48	0.49
1:DB:850:U:H2'	1:DB:851:G:H8	1.77	0.49
1:DB:1095:U:OP1	1:DB:1108:G:N2	2.35	0.49
2:EB:140:A:C8	2:EB:1408:C:O2'	2.61	0.49
2:EB:1210:A:C8	2:EB:1212:G:C2	3.01	0.49
2:EB:1728:G:H8	2:EB:1732:A:H62	1.59	0.49
3:FB:3:C:H2'	3:FB:4:C:H6	1.76	0.49
4:GB:23:C:H2'	4:GB:24:U:C6	2.47	0.49
10:MB:3:VAL:HG12	10:MB:38:LEU:HA	1.94	0.49
10:MB:62:LYS:O	10:MB:66:GLU:HB2	2.13	0.49
11:NB:13:TRP:CE2	11:NB:133:GLN:HG2	2.48	0.49
20:WB:82:LEU:HD23	20:WB:84:ARG:CZ	2.43	0.49
50:BD:84:LEU:HD12	50:BD:87:LYS:HE2	1.94	0.49
53:ED:54:LYS:HA	53:ED:57:ARG:HH21	1.77	0.49
55:HD:145:ARG:HB3	55:HD:167:SER:HB2	1.95	0.49
1:A:62:U:H2'	1:A:63:C:H6	1.78	0.49
1:A:345:C:H3'	17:Q:41:ARG:NH2	2.27	0.49
2:B:1291:C:H2'	2:B:1292:U:H6	1.76	0.49
2:B:2171:A:O2'	2:B:2172:U:H5"	2.13	0.49
2:B:2267:A:H5"	2:B:2268:A:H5'	1.94	0.49
30:DA:11:LEU:HB3	30:DA:49:HIS:HB3	1.93	0.49
51:ZA:53:ARG:HH21	51:ZA:60:ALA:N	2.11	0.49
1:DB:1095:U:H5"	1:DB:1109:C:O2	2.12	0.49
2:EB:86:C:H4'	2:EB:104:U:H1'	1.95	0.49
2:EB:2689:U:P	2:EB:2719:G:H22	2.36	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:FB:12:C:OP2	3:FB:12:C:H6	1.96	0.49
8:KB:11:TYR:HA	8:KB:15:VAL:HB	1.94	0.49
9:LB:102:ALA:HA	9:LB:117:PRO:HD3	1.95	0.49
23:ZB:97:GLU:HB2	23:ZB:125:LEU:HD11	1.94	0.49
25:BC:51:VAL:HG21	25:BC:74:VAL:HG21	1.95	0.49
1:A:1118:C:H1'	1:A:1179:A:C5	2.48	0.49
2:B:1011:G:H5"	18:R:77:SER:OG	2.13	0.49
2:B:1537:C:H3'	2:B:1538:G:C8	2.46	0.49
6:F:111:ARG:HD3	6:F:160:TYR:HD2	1.77	0.49
6:F:119:ARG:HG2	6:F:120:TRP:CE2	2.47	0.49
8:H:122:PRO:HD2	8:H:181:ARG:NH1	2.28	0.49
48:WA:44:LYS:O	48:WA:47:LYS:NZ	2.39	0.49
1:DB:1009:G:H2'	1:DB:1010:G:C8	2.48	0.49
1:DB:1493:A:N3	55:HD:119:THR:HG23	2.28	0.49
2:EB:2335:A:C8	2:EB:2337:G:C5	3.01	0.49
2:EB:2348:U:O2'	2:EB:2349:G:H5'	2.13	0.49
8:KB:16:ARG:HB3	8:KB:17:PRO:HD3	1.95	0.49
15:RB:52:ILE:O	15:RB:55:ALA:N	2.46	0.49
27:DC:7:LYS:HB2	27:DC:34:GLU:HG2	1.95	0.49
38:PC:148:VAL:HG21	41:SC:107:LEU:HD22	1.95	0.49
41:SC:81:HIS:HB2	41:SC:138:TRP:CD1	2.48	0.49
45:WC:61:THR:C	45:WC:63:GLY:H	2.16	0.49
1:A:434:U:H2'	1:A:435:C:C6	2.48	0.49
1:A:1075:C:H5"	35:JA:179:LYS:HZ2	1.78	0.49
2:B:729:G:H2'	2:B:1775:U:H1'	1.95	0.49
2:B:1322:A:N1	2:B:1333:C:O2'	2.39	0.49
5:E:5:LYS:HE3	5:E:6:PHE:H	1.78	0.49
24:X:7:LEU:CD1	24:X:8:GLY:H	2.26	0.49
35:JA:58:ILE:HA	35:JA:61:LEU:HB3	1.93	0.49
38:MA:70:PRO:HB2	38:MA:77:PRO:HG3	1.93	0.49
42:QA:48:GLU:OE2	42:QA:51:ARG:HD2	2.13	0.49
1:DB:562:C:H4'	1:DB:563:A:H5'	1.94	0.49
2:EB:630:G:OP2	32:IC:15:LYS:NZ	2.27	0.49
2:EB:969:U:H4'	27:DC:14:GLY:O	2.13	0.49
3:FB:28:C:OP1	16:SB:34:HIS:HB2	2.12	0.49
17:TB:108:ARG:HH21	17:TB:112:ARG:HH22	1.60	0.49
30:GC:11:LEU:HB3	30:GC:49:HIS:HB3	1.95	0.49
36:NC:162:GLN:NE2	36:NC:163:ALA:O	2.38	0.49
55:GD:110:ASN:HB3	55:GD:167:SER:HA	1.94	0.49
1:A:164:U:H2'	1:A:165:C:C6	2.47	0.49
2:B:2112:G:O2'	4:D:19:G:O2'	2.20	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2211:G:H2'	2:B:2212:A:C2	2.48	0.49
8:H:76:SER:HB2	8:H:84:LYS:HB3	1.95	0.49
33:GA:2:LYS:HB3	33:GA:2:LYS:HE2	1.64	0.49
38:MA:45:PHE:HE2	38:MA:47:LYS:HE3	1.78	0.49
47:VA:40:CYS:SG	47:VA:43:CYS:SG	3.11	0.49
52:AB:3:ARG:NH2	52:AB:7:LYS:HE2	2.28	0.49
53:BB:90:GLN:HA	53:BB:93:GLU:HB3	1.94	0.49
1:DB:753:A:H5'	1:DB:754:C:C5	2.47	0.49
2:EB:444:C:H4'	7:JB:49:ALA:HB2	1.95	0.49
2:EB:1177:A:H2'	2:EB:1178:C:O4'	2.12	0.49
2:EB:2086:U:H2'	2:EB:2087:G:C8	2.48	0.49
2:EB:2246:G:H1'	2:EB:2426:A:C2	2.47	0.49
2:EB:2347:C:O2'	30:GC:21:TYR:OH	2.30	0.49
2:EB:2791:C:H5"	2:EB:2893:G:H2'	1.95	0.49
5:HB:183:ARG:HG2	5:HB:183:ARG:HH11	1.77	0.49
9:LB:121:ILE:HG12	9:LB:140:LYS:HD2	1.95	0.49
13:PB:49:ARG:HB3	32:IC:61:LEU:HD21	1.95	0.49
37:OC:191:ARG:HE	37:OC:200:GLU:CD	2.16	0.49
43:UC:24:VAL:HG21	43:UC:37:PRO:HD3	1.94	0.49
48:ZC:55:GLY:O	48:ZC:59:MET:HG3	2.12	0.49
53:ED:23:ARG:HH11	53:ED:24:LEU:HD22	1.77	0.49
1:A:192:U:H2'	1:A:193:C:C6	2.48	0.48
1:A:481:G:O2'	1:A:483:C:N4	2.42	0.48
1:A:977:A:H2'	1:A:978:A:H5"	1.95	0.48
1:A:1009:G:H2'	1:A:1010:G:C8	2.48	0.48
1:A:1107:C:OP1	36:KA:172:ARG:HB2	2.13	0.48
2:B:17:G:H4'	18:R:25:TRP:HE1	1.77	0.48
2:B:686:G:N2	2:B:788:A:H61	2.11	0.48
2:B:1060:U:H4'	2:B:1061:U:H3'	1.95	0.48
2:B:1252:G:C2	2:B:1253:A:C2	3.00	0.48
2:B:1784:A:H4'	2:B:1785:A:C5'	2.43	0.48
2:B:2291:U:OP1	2:B:2380:C:O2'	2.28	0.48
2:B:2552:2MU:H2'	2:B:2554:U:OP2	2.12	0.48
3:C:112:G:H2'	3:C:113:C:C6	2.48	0.48
10:J:67:ARG:HH11	10:J:68:LEU:CD1	2.25	0.48
10:J:76:THR:HB	10:J:141:LYS:HE2	1.93	0.48
12:L:87:ILE:HG22	12:L:93:PRO:HA	1.95	0.48
20:T:71:VAL:HA	20:T:107:LEU:HD12	1.94	0.48
30:DA:26:ASN:HB3	30:DA:29:ASN:HB2	1.96	0.48
39:NA:7:ASN:HB2	39:NA:89:MET:HB3	1.95	0.48
52:AB:44:MET:O	52:AB:46:GLY:N	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:359:U:H2'	1:DB:360:A:C8	2.47	0.48
1:DB:475:G:H2'	1:DB:476:G:C8	2.47	0.48
1:DB:1105:A:H2'	1:DB:1106:G:H8	1.78	0.48
2:EB:548:A:H4'	19:VB:19:LYS:HZ1	1.78	0.48
2:EB:2211:G:H2'	2:EB:2212:A:C2	2.48	0.48
5:HB:43:ARG:HA	5:HB:48:ARG:O	2.12	0.48
11:NB:138:LEU:HD23	11:NB:139:GLU:N	2.28	0.48
16:SB:10:ARG:HH21	16:SB:91:PRO:HB2	1.76	0.48
17:TB:113:LYS:O	17:TB:115:ARG:NH1	2.46	0.48
1:A:1448:C:H2'	1:A:1449:C:H6	1.76	0.48
2:B:34:C:O2'	2:B:35:G:H8	1.96	0.48
2:B:243:U:OP1	32:FA:6:THR:OG1	2.22	0.48
2:B:280:C:C2	2:B:361:G:N2	2.80	0.48
2:B:499:U:H5'	22:V:46:LYS:HD3	1.94	0.48
2:B:882:G:H2'	2:B:883:G:H8	1.78	0.48
2:B:1156:A:OP1	18:R:55:ARG:NH1	2.46	0.48
5:E:240:ALA:HB1	5:E:241:PRO:HD2	1.95	0.48
10:J:9:LEU:HD12	10:J:10:GLU:OE2	2.12	0.48
37:LA:109:GLY:HA3	37:LA:165:MET:SD	2.53	0.48
49:XA:25:ARG:HH11	49:XA:25:ARG:HG3	1.77	0.48
1:DB:62:U:H2'	1:DB:63:C:H6	1.78	0.48
1:DB:860:A:H2'	1:DB:861:G:O4'	2.13	0.48
1:DB:1295:G:HO2'	46:XC:14:ARG:NH1	2.12	0.48
1:DB:1342:C:H2'	1:DB:1343:G:C8	2.48	0.48
1:DB:1418:A:H5"	1:DB:1419:G:OP2	2.13	0.48
2:EB:1152:C:OP1	18:UB:84:LYS:HD2	2.12	0.48
2:EB:1292:U:H2'	2:EB:1293:C:C6	2.48	0.48
2:EB:1754:C:OP2	17:TB:113:LYS:HE3	2.13	0.48
5:HB:67:PHE:CE1	5:HB:106:ILE:HD11	2.48	0.48
6:IB:116:VAL:HG13	6:IB:122:PHE:HB2	1.94	0.48
10:MB:57:ARG:O	10:MB:61:ARG:NH2	2.47	0.48
13:PB:122:PRO:O	13:PB:123:LEU:HD23	2.12	0.48
37:OC:158:ILE:HG13	37:OC:159:ARG:N	2.27	0.48
39:QC:22:GLU:O	39:QC:25:ILE:HG12	2.13	0.48
46:XC:7:VAL:HG12	46:XC:8:GLU:H	1.78	0.48
48:ZC:17:ARG:HD3	48:ZC:26:GLU:OE2	2.13	0.48
1:A:563:A:O2'	1:A:564:C:OP2	2.21	0.48
1:A:664:G:OP1	51:ZA:64:ARG:NH1	2.45	0.48
1:A:748:C:H1'	1:A:749:C:OP2	2.12	0.48
1:A:926:G:H22	34:HA:15:A:H5"	1.78	0.48
2:B:945:A:C4	2:B:2448:A:C2	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2085:C:O3'	5:E:262:ARG:NH1	2.46	0.48
2:B:2161:C:H2'	2:B:2162:G:C8	2.48	0.48
2:B:2850:A:H2	15:O:61:HIS:CG	2.32	0.48
4:D:52:G:H1'	4:D:63:G:N2	2.29	0.48
7:G:157:VAL:HB	7:G:194:MET:HG2	1.94	0.48
9:I:3:ARG:CZ	9:I:5:GLY:H	2.26	0.48
11:K:73:THR:HB	11:K:82:LEU:HD11	1.95	0.48
36:KA:189:ALA:HB3	36:KA:196:LEU:HB2	1.94	0.48
45:TA:61:THR:C	45:TA:63:GLY:H	2.16	0.48
1:DB:1417:G:O2'	1:DB:1483:A:N6	2.46	0.48
2:EB:253:C:H2'	2:EB:254:G:O4'	2.13	0.48
2:EB:540:G:H2'	2:EB:541:C:H6	1.78	0.48
2:EB:947:G:H2'	2:EB:948:G:C8	2.48	0.48
2:EB:2528:U:H3	2:EB:2535:G:H1	1.59	0.48
12:OB:90:GLN:OE1	12:OB:90:GLN:N	2.46	0.48
17:TB:16:ARG:NH1	17:TB:83:ILE:HB	2.27	0.48
19:VB:2:PHE:CE2	19:VB:41:GLY:HA3	2.48	0.48
28:EC:58:ARG:NH2	52:DD:68:GLY:HA3	2.25	0.48
35:MC:155:LEU:HA	35:MC:157:ARG:HH21	1.78	0.48
36:NC:68:VAL:HB	36:NC:103:VAL:HG13	1.96	0.48
37:OC:12:CYS:SG	37:OC:26:CYS:SG	3.12	0.48
40:RC:71:PRO:HA	40:RC:138:LYS:HE3	1.94	0.48
41:SC:86:ILE:HG21	41:SC:133:LEU:HD13	1.94	0.48
2:B:639:U:H2'	2:B:640:C:C6	2.49	0.48
2:B:890:A:H2'	2:B:892:G:H8	1.78	0.48
2:B:2345:G:OP2	30:DA:38:LYS:HG2	2.12	0.48
32:FA:56:GLU:HA	32:FA:59:LYS:HG3	1.95	0.48
35:JA:145:LEU:HD23	35:JA:149:LEU:HD13	1.95	0.48
43:RA:24:VAL:HG21	43:RA:37:PRO:HD3	1.95	0.48
1:DB:444:C:H2'	1:DB:445:G:C8	2.48	0.48
1:DB:452:A:O2'	1:DB:453:A:OP2	2.26	0.48
1:DB:1097:C:H2'	1:DB:1098:C:C6	2.48	0.48
1:DB:1317:C:O2	52:DD:37:ARG:NH2	2.46	0.48
2:EB:1188:U:H4'	19:VB:79:VAL:HG22	1.95	0.48
2:EB:1761:C:H3'	2:EB:1762:A:C5'	2.40	0.48
2:EB:1902:C:OP1	5:HB:242:ARG:HD2	2.13	0.48
2:EB:2582:G:N2	2:EB:2583:G:H1'	2.29	0.48
4:GB:35:A:H61	34:KC:13:A:H62	1.61	0.48
5:HB:132:PRO:HD3	5:HB:190:TYR:CZ	2.49	0.48
8:KB:107:LEU:HD22	8:KB:177:GLY:O	2.14	0.48
16:SB:76:LYS:O	16:SB:80:LEU:HD13	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:JC:2:LYS:HB3	33:JC:2:LYS:HE2	1.62	0.48
40:RC:78:ARG:HG2	40:RC:79:ARG:HG2	1.95	0.48
40:RC:115:ARG:O	40:RC:118:VAL:HB	2.13	0.48
49:AD:25:ARG:HG3	49:AD:25:ARG:HH11	1.78	0.48
55:GD:186:ARG:HB3	55:GD:312:PHE:HB2	1.94	0.48
1:A:160:A:H2'	1:A:161:A:O4'	2.13	0.48
1:A:448:A:OP2	1:A:485:G:N2	2.36	0.48
1:A:475:G:H2'	1:A:476:G:C8	2.49	0.48
1:A:555:C:H2'	1:A:556:C:C6	2.48	0.48
1:A:833:U:H2'	1:A:834:C:H6	1.77	0.48
1:A:1036:G:H21	1:A:1037:C:N4	2.11	0.48
2:B:141(A):A:H5"	2:B:141(B):C:OP2	2.13	0.48
2:B:361:G:C2	2:B:362:U:H5	2.32	0.48
2:B:784:A:C6	5:E:229:VAL:HG21	2.49	0.48
2:B:1902:C:H5'	5:E:246:PRO:HD3	1.94	0.48
2:B:2422:A:H4'	2:B:2423:U:OP1	2.13	0.48
2:B:2593:U:H2'	2:B:2594:C:H6	1.77	0.48
2:B:2649:U:H2'	2:B:2650:U:C6	2.49	0.48
4:D:15:G:H2'	4:D:59:A:N1	2.27	0.48
11:K:4:TYR:OH	11:K:6:PRO:HA	2.13	0.48
15:O:52:ILE:O	15:O:55:ALA:N	2.46	0.48
15:O:104:ARG:HG2	15:O:109:ALA:HB3	1.94	0.48
19:S:69:LYS:O	19:S:70:ILE:HD13	2.13	0.48
41:PA:114:THR:HG22	41:PA:131:GLY:HA3	1.95	0.48
48:WA:3:ILE:HG23	48:WA:7:GLU:OE2	2.14	0.48
1:DB:434:U:H2'	1:DB:435:C:C6	2.48	0.48
1:DB:1412:C:H2'	1:DB:1413:A:H8	1.78	0.48
2:EB:604:G:C6	2:EB:605:C:C4	3.02	0.48
2:EB:769:G:H5'	2:EB:1379:A:N6	2.28	0.48
2:EB:839:U:H3	2:EB:939:G:H1	1.60	0.48
2:EB:2171:A:O2'	2:EB:2172:U:H5"	2.14	0.48
2:EB:2422:A:H4'	2:EB:2423:U:OP1	2.13	0.48
5:HB:145:VAL:HB	5:HB:155:LEU:HB2	1.95	0.48
5:HB:260:ARG:NH2	5:HB:266:SER:OG	2.47	0.48
7:JB:153:SER:OG	7:JB:190:GLU:N	2.46	0.48
15:RB:26:LYS:O	15:RB:30:THR:HG23	2.13	0.48
17:TB:18:ASP:OD2	17:TB:18:ASP:N	2.47	0.48
18:UB:47:TYR:HA	18:UB:50:ARG:NH2	2.28	0.48
25:BC:4:VAL:HG21	25:BC:11:ARG:NH1	2.28	0.48
35:MC:47:THR:O	35:MC:51:LEU:N	2.43	0.48
39:QC:7:ASN:HB2	39:QC:89:MET:HB3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:VC:33:THR:HA	44:VC:39:PRO:HA	1.95	0.48
1:A:162:A:C5	1:A:163:C:H1'	2.48	0.48
1:A:952:U:H2'	1:A:953:G:H8	1.78	0.48
2:B:715:G:H2'	2:B:716:A:H8	1.78	0.48
2:B:769:G:H5'	2:B:1379:A:N6	2.28	0.48
2:B:1177:A:H2'	2:B:1178:C:O4'	2.14	0.48
4:D:43:A:H2'	4:D:44:A:C8	2.47	0.48
18:R:89:GLU:HB2	19:S:50:PRO:HB3	1.96	0.48
27:AA:44:ARG:O	27:AA:48:GLU:HG3	2.14	0.48
35:JA:229:VAL:HB	35:JA:231:GLU:OE2	2.14	0.48
36:KA:65:ALA:HA	36:KA:100:ALA:CB	2.44	0.48
53:BB:23:ARG:HH11	53:BB:24:LEU:HD22	1.77	0.48
1:DB:1478:C:H2'	1:DB:1479:C:H6	1.79	0.48
1:DB:1511:G:C6	1:DB:1512:U:C4	3.01	0.48
2:EB:1326:U:O2'	2:EB:1327:C:H5'	2.14	0.48
2:EB:1550:C:OP1	2:EB:1727:U:O2'	2.28	0.48
2:EB:1651:G:N2	2:EB:2007:C:C2	2.81	0.48
2:EB:1779:U:C6	2:EB:1783:A:N7	2.81	0.48
2:EB:2515:C:O2'	2:EB:2516:G:H5'	2.14	0.48
3:FB:66:A:H61	3:FB:107:U:H2'	1.79	0.48
9:LB:38:SER:OG	9:LB:40:GLU:OE2	2.31	0.48
4:LC:34:C:H2'	4:LC:35:A:C8	2.47	0.48
35:MC:30:ARG:HH21	35:MC:194:PRO:HB2	1.78	0.48
39:QC:22:GLU:OE1	39:QC:82:ARG:NH2	2.46	0.48
46:XC:3:ARG:NH1	46:XC:8:GLU:HA	2.28	0.48
55:GD:331:GLU:HB3	55:GD:336:LYS:HE2	1.94	0.48
1:A:339:C:H2'	1:A:340:U:C6	2.49	0.48
1:A:448:A:P	1:A:485:G:H22	2.36	0.48
1:A:626:U:H2'	1:A:627:G:H8	1.78	0.48
1:A:1228:C:H4'	46:UA:116:THR:HA	1.96	0.48
1:A:1366:C:H2'	1:A:1367:C:H6	1.78	0.48
1:A:1517:G:H1'	2:B:1919:A:O3'	2.14	0.48
2:B:270(K):G:N1	2:B:270(Q):C:N3	2.53	0.48
2:B:1902:C:OP1	5:E:242:ARG:HD2	2.14	0.48
9:I:58:GLU:HG2	9:I:61:HIS:HB2	1.96	0.48
15:O:12:ARG:NH1	15:O:12:ARG:CG	2.77	0.48
20:T:27:LYS:HG3	20:T:31:GLU:OE2	2.14	0.48
21:U:5:TYR:OH	26:Z:30:ARG:HD2	2.13	0.48
36:KA:86:VAL:HA	36:KA:89:GLU:HB2	1.95	0.48
40:OA:115:ARG:O	40:OA:118:VAL:HB	2.13	0.48
42:QA:11:LYS:O	42:QA:13:ALA:N	2.39	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:UA:33:ALA:HA	46:UA:59:TYR:HE2	1.78	0.48
48:WA:55:GLY:O	48:WA:59:MET:HG3	2.12	0.48
1:DB:1228:C:H4'	46:XC:116:THR:HA	1.95	0.48
2:EB:363(F):U:H3'	2:EB:363(G):A:C8	2.48	0.48
2:EB:363(G):A:O2'	2:EB:364:C:OP2	2.30	0.48
2:EB:603:A:N7	2:EB:655:A:C5	2.81	0.48
2:EB:900:A:H2'	2:EB:901:A:C8	2.49	0.48
2:EB:2001:A:H2'	2:EB:2002:G:C8	2.49	0.48
2:EB:2496:C:H5'	14:QB:83:MET:HE3	1.96	0.48
5:HB:132:PRO:HG3	5:HB:190:TYR:CE2	2.48	0.48
7:JB:11:VAL:HG22	7:JB:125:LEU:HB2	1.96	0.48
9:LB:26:VAL:HG12	9:LB:79:VAL:HG21	1.95	0.48
10:MB:67:ARG:HH11	10:MB:68:LEU:CD1	2.27	0.48
36:NC:35:GLU:O	36:NC:39:ILE:HG12	2.14	0.48
50:BD:31:LEU:HD23	50:BD:32:TYR:CZ	2.48	0.48
1:A:1009:G:H2'	1:A:1010:G:H8	1.79	0.48
1:A:1021:G:C2	1:A:1022:G:H1'	2.49	0.48
2:B:270(S):G:O2'	25:Y:79:GLY:HA3	2.14	0.48
2:B:628:G:H2'	2:B:629:G:H8	1.78	0.48
2:B:716:A:C2	2:B:717:G:H1'	2.48	0.48
2:B:947:G:H2'	2:B:948:G:H8	1.79	0.48
17:Q:36:GLU:HG3	17:Q:41:ARG:HE	1.78	0.48
17:Q:108:ARG:HH21	17:Q:112:ARG:HH22	1.62	0.48
23:W:158:PRO:O	23:W:161:VAL:HB	2.14	0.48
40:OA:41:ARG:HG3	40:OA:42:ILE:HD13	1.95	0.48
48:WA:9:GLN:NE2	48:WA:12:ILE:HD12	2.29	0.48
2:EB:263:C:H2'	2:EB:264:C:O4'	2.14	0.48
2:EB:2031:A:H1'	2:EB:2455:G:O2'	2.14	0.48
2:EB:2209:C:O2	2:EB:2216:G:N1	2.47	0.48
15:RB:44:LEU:O	15:RB:48:VAL:HG22	2.13	0.48
35:MC:82:ARG:HB2	35:MC:94:ASN:HD22	1.78	0.48
43:UC:91:PRO:O	43:UC:94:VAL:HG22	2.13	0.48
1:A:237:C:H5"	50:YA:25:ARG:NH1	2.28	0.48
1:A:673:G:H2'	1:A:674:G:C8	2.48	0.48
1:A:736:C:H2'	1:A:737:A:C8	2.48	0.48
1:A:1453:G:H4'	1:A:1454:G:OP2	2.13	0.48
2:B:540:G:H2'	2:B:541:C:C6	2.48	0.48
2:B:604:G:C6	2:B:605:C:C4	3.02	0.48
2:B:1437:C:H2'	2:B:1438:U:C6	2.48	0.48
2:B:1812:A:O2'	5:E:45:ASN:N	2.46	0.48
4:D:22:G:H2'	4:D:23:C:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:23:C:H2'	4:D:24:U:C6	2.49	0.48
7:G:148:LEU:HD11	7:G:193:VAL:HG21	1.96	0.48
8:H:41:GLN:HG2	8:H:154:GLY:O	2.14	0.48
15:O:55:ALA:HA	15:O:80:PHE:CE2	2.49	0.48
20:T:82:LEU:HB3	20:T:84:ARG:NH1	2.28	0.48
23:W:72:ARG:HD3	23:W:72:ARG:HA	1.66	0.48
25:Y:21:ARG:CG	25:Y:21:ARG:NH1	2.75	0.48
27:AA:9:VAL:HG11	27:AA:55:ARG:HH11	1.79	0.48
37:LA:9:CYS:SG	37:LA:31:CYS:SG	3.04	0.48
38:MA:20:GLN:OE1	38:MA:21:ALA:N	2.46	0.48
46:UA:70:LEU:O	46:UA:74:VAL:HG23	2.14	0.48
46:UA:108:ARG:NH2	46:UA:114:ARG:HA	2.29	0.48
1:DB:544:G:H2'	1:DB:545:C:C6	2.49	0.48
1:DB:715:A:H2'	1:DB:716:A:C8	2.49	0.48
2:EB:38:A:H2'	2:EB:39:C:C6	2.49	0.48
2:EB:619:G:H5"	2:EB:620:G:OP2	2.14	0.48
2:EB:2317:C:C2'	2:EB:2318:G:H5'	2.44	0.48
2:EB:2713:A:H3'	2:EB:2714:G:H5"	1.96	0.48
2:EB:2792:G:H1	2:EB:2805:G:H1'	1.78	0.48
9:LB:3:ARG:CZ	9:LB:5:GLY:H	2.27	0.48
18:UB:58:ARG:HA	18:UB:61:TRP:CE3	2.49	0.48
29:FC:40:LYS:HG3	29:FC:41:PRO:O	2.13	0.48
4:LC:76:A:H3'	55:HD:234:GLY:HA3	1.96	0.48
37:OC:12:CYS:HG	37:OC:18:LYS:HZ3	1.50	0.48
37:OC:59:ARG:NH2	37:OC:66:ARG:HH12	2.11	0.48
38:PC:144:THR:HG22	38:PC:147:ASP:CG	2.34	0.48
44:VC:90:GLY:O	44:VC:92:GLU:N	2.47	0.48
2:B:26:G:C6	2:B:27:G:N1	2.82	0.48
2:B:511:U:C5	2:B:512:G:C5	3.02	0.48
2:B:537:C:H2'	2:B:539:G:C8	2.49	0.48
2:B:1796:U:H2'	2:B:1797:C:C6	2.49	0.48
2:B:2711:A:OP2	2:B:2712(A):A:OP2	2.32	0.48
5:E:30:GLU:HB3	5:E:33:LEU:HD12	1.95	0.48
8:H:16:ARG:HB3	8:H:17:PRO:HD3	1.95	0.48
11:K:63:THR:O	11:K:66:LYS:HE3	2.14	0.48
21:U:2:LYS:NZ	21:U:38:GLU:OE2	2.35	0.48
41:PA:5:PRO:HB2	41:PA:32:LYS:NZ	2.28	0.48
1:DB:247:G:OP2	50:BD:100:LYS:N	2.45	0.48
1:DB:1240:U:OP1	40:RC:119:ARG:NH2	2.47	0.48
2:EB:545:G:N2	2:EB:547:A:OP2	2.45	0.48
2:EB:922:U:H2'	2:EB:923:C:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:2161:C:H2'	2:EB:2162:G:C8	2.49	0.48
5:HB:11:PRO:O	5:HB:14:ARG:HG2	2.13	0.48
11:NB:9:VAL:HG11	11:NB:48:MET:HB2	1.94	0.48
12:OB:25:LEU:O	12:OB:27:GLY:N	2.46	0.48
53:ED:54:LYS:HG2	53:ED:57:ARG:HH21	1.79	0.48
55:HD:214:LEU:H	55:HD:214:LEU:HD23	1.79	0.48
1:A:1196:U:H6	1:A:1196:U:H5'	1.79	0.47
1:A:1511:G:C6	1:A:1512:U:C4	3.01	0.47
2:B:136:G:H2'	2:B:137(A):C:H6	1.77	0.47
2:B:270(N):U:H4'	2:B:270(O):G:H5'	1.95	0.47
2:B:688:U:OP2	31:EA:2:LYS:NZ	2.42	0.47
2:B:932:G:OP1	27:AA:29:ARG:NH2	2.47	0.47
2:B:1532:C:H42	2:B:1539:G:H1	1.61	0.47
2:B:1550:C:OP1	2:B:1727:U:O2'	2.29	0.47
2:B:2181:G:H2'	2:B:2182:G:C8	2.49	0.47
2:B:2298:A:H2'	2:B:2299:G:O4'	2.13	0.47
2:B:2567:G:H2'	2:B:2568:C:H6	1.76	0.47
2:B:2820:A:OP2	15:O:2:ARG:NH2	2.47	0.47
5:E:75:ILE:H	5:E:75:ILE:HD12	1.78	0.47
10:J:96:ASP:O	10:J:100:ALA:N	2.40	0.47
22:V:89:PHE:O	22:V:91:GLU:N	2.43	0.47
37:LA:191:ARG:HE	37:LA:200:GLU:CD	2.18	0.47
1:DB:1074:G:O4'	35:MC:104:ASN:ND2	2.47	0.47
2:EB:394:A:C6	2:EB:395:U:C4	3.02	0.47
2:EB:571:A:C8	2:EB:2030:A:N6	2.82	0.47
2:EB:817:C:H4'	2:EB:932:G:C5	2.49	0.47
2:EB:1717:G:H1	2:EB:1742:C:H42	1.62	0.47
2:EB:2141:G:N1	2:EB:2142:C:O2	2.47	0.47
35:MC:58:ILE:HA	35:MC:61:LEU:HB3	1.95	0.47
39:QC:100:ASN:HA	51:CD:23:LYS:HZ1	1.78	0.47
41:SC:103:VAL:HB	41:SC:108:GLY:O	2.13	0.47
48:ZC:26:GLU:HG2	48:ZC:81:LEU:HD22	1.96	0.47
2:B:94:G:H2'	2:B:95:G:O4'	2.15	0.47
2:B:2472:G:H2'	2:B:2475:C:H42	1.78	0.47
3:C:3:C:H2'	3:C:4:C:C6	2.49	0.47
5:E:43:ARG:HA	5:E:48:ARG:O	2.14	0.47
5:E:67:PHE:CE1	5:E:106:ILE:HD11	2.49	0.47
17:Q:16:ARG:NH1	17:Q:83:ILE:HB	2.29	0.47
40:OA:150:ALA:HB2	44:SA:50:TYR:CZ	2.49	0.47
48:WA:88:ARG:NH2	48:WA:88:ARG:HB3	2.29	0.47
1:DB:736:C:H2'	1:DB:737:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:1105:A:H2'	1:DB:1106:G:C8	2.49	0.47
1:DB:1298:C:C4	40:RC:114:ARG:HD2	2.49	0.47
1:DB:1301:U:H2'	1:DB:1303:C:C5	2.48	0.47
2:EB:185:U:H2'	2:EB:186:G:C8	2.49	0.47
2:EB:511:U:C5	2:EB:512:G:C5	3.02	0.47
2:EB:1019:U:HO2'	2:EB:1021:A:H2	1.58	0.47
2:EB:1786:A:H1'	2:EB:1938:A:N6	2.28	0.47
2:EB:2330:G:H2'	2:EB:2331:G:O4'	2.14	0.47
2:EB:2607:G:H2'	2:EB:2608:G:O4'	2.14	0.47
2:EB:2850:A:H2	15:RB:61:HIS:CG	2.31	0.47
3:FB:84:C:H42	3:FB:92:G:H1	1.62	0.47
4:GB:52:G:H1'	4:GB:63:G:N2	2.29	0.47
24:AC:12:ASN:HA	24:AC:14:ARG:NH2	2.29	0.47
37:OC:155:LEU:HD22	37:OC:156:GLU:H	1.79	0.47
45:WC:69:TYR:HD2	45:WC:99:HIS:CD2	2.33	0.47
1:A:110:C:O2'	49:XA:25:ARG:O	2.33	0.47
1:A:537:G:H5"	45:TA:113:ARG:NH1	2.29	0.47
1:A:892:A:O2'	1:A:1415:G:H4'	2.14	0.47
1:A:1417:G:O2'	1:A:1483:A:N6	2.47	0.47
2:B:1043:C:H5	2:B:1112:G:H22	1.62	0.47
5:E:20:ASP:O	5:E:21:PHE:HB2	2.14	0.47
5:E:231:HIS:ND1	5:E:232:PRO:HD2	2.29	0.47
8:H:79:ASN:N	8:H:79:ASN:OD1	2.47	0.47
14:N:21:THR:HA	14:N:98:LYS:HB2	1.96	0.47
19:S:2:PHE:CE2	19:S:41:GLY:HA3	2.50	0.47
35:JA:43:ASP:OD2	35:JA:46:LYS:HB2	2.13	0.47
39:NA:33:TYR:HE2	39:NA:78:GLU:HG3	1.80	0.47
52:AB:3:ARG:NH1	52:AB:8:GLY:O	2.47	0.47
1:DB:1347:G:N7	42:TC:10:ARG:NH2	2.62	0.47
2:EB:521:G:H2'	2:EB:522:G:C8	2.50	0.47
2:EB:953:A:O2'	2:EB:954:G:H5'	2.14	0.47
2:EB:1156:A:OP1	18:UB:55:ARG:NH1	2.47	0.47
2:EB:1339:G:H5"	21:XB:16:LYS:HD3	1.96	0.47
2:EB:1415:U:O2'	2:EB:1417:C:OP1	2.26	0.47
2:EB:2418:A:H2'	2:EB:2419:U:O4'	2.14	0.47
5:HB:148:GLU:HB2	5:HB:151:LYS:HD2	1.97	0.47
8:KB:41:GLN:HE21	8:KB:43:LEU:HD21	1.79	0.47
14:QB:21:THR:HA	14:QB:98:LYS:HB2	1.96	0.47
22:YB:89:PHE:O	22:YB:91:GLU:N	2.47	0.47
25:BC:83:GLU:OE2	25:BC:83:GLU:N	2.47	0.47
37:OC:155:LEU:O	37:OC:159:ARG:HG3	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:QC:26:ILE:O	39:QC:30:LEU:HG	2.14	0.47
48:ZC:35:ARG:NH1	48:ZC:35:ARG:CG	2.74	0.47
1:A:38:G:C2	1:A:397:A:C2	3.02	0.47
1:A:1004:A:H5"	1:A:1024:G:H22	1.80	0.47
1:A:1301:U:H2'	1:A:1303:C:C5	2.49	0.47
2:B:619:G:H5"	2:B:620:G:OP2	2.15	0.47
2:B:1675:C:H2'	2:B:1676:A:O4'	2.15	0.47
2:B:1789:A:OP2	5:E:222:ARG:NH1	2.48	0.47
8:H:41:GLN:HE21	8:H:43:LEU:HD21	1.79	0.47
11:K:138:LEU:HD23	11:K:139:GLU:N	2.29	0.47
20:T:88:ARG:HG3	20:T:94:ASP:OD2	2.14	0.47
39:NA:15:ASP:O	39:NA:19:LEU:HB2	2.14	0.47
39:NA:22:GLU:OE1	39:NA:82:ARG:NH2	2.46	0.47
42:QA:27:THR:HG23	42:QA:62:TYR:HA	1.96	0.47
49:XA:12:LYS:HG2	49:XA:13:HIS:CD2	2.50	0.47
1:DB:38:G:C2	1:DB:397:A:C2	3.02	0.47
1:DB:296:U:H2'	1:DB:297:G:C8	2.49	0.47
1:DB:976:G:O5'	1:DB:1358:U:O2'	2.32	0.47
2:EB:1766:U:H2'	2:EB:1767:C:H6	1.79	0.47
7:JB:13:SER:HB3	7:JB:16:GLY:O	2.14	0.47
13:PB:138:LEU:HD23	13:PB:145:PRO:HB3	1.96	0.47
20:WB:11:ARG:NH1	20:WB:99:ARG:O	2.46	0.47
30:GC:8:LYS:HB2	30:GC:54:ILE:HG12	1.97	0.47
30:GC:19:ARG:HG3	30:GC:19:ARG:NH1	2.28	0.47
36:NC:55:VAL:HG22	36:NC:68:VAL:HG13	1.96	0.47
37:OC:127:THR:HG23	37:OC:147:ALA:HB3	1.97	0.47
37:OC:196:LEU:HB3	37:OC:198:VAL:HG12	1.97	0.47
39:QC:18:GLN:HG3	39:QC:21:LEU:HD23	1.96	0.47
39:QC:30:LEU:HD23	39:QC:75:LEU:HD11	1.95	0.47
40:RC:70:LYS:HA	40:RC:71:PRO:HD3	1.68	0.47
46:XC:11:ARG:HH12	46:XC:46:LYS:HD2	1.78	0.47
55:GD:138:TYR:HE1	55:GD:338:ASP:OD2	1.97	0.47
55:HD:134:MET:HG3	55:HD:337:LEU:HD21	1.96	0.47
1:A:67:C:H2'	1:A:68:G:C8	2.49	0.47
1:A:262:A:H2'	1:A:263:A:C8	2.49	0.47
1:A:1427:U:H2'	1:A:1428:A:H8	1.76	0.47
2:B:1009:A:OP2	2:B:1010:A:OP2	2.32	0.47
2:B:1791:A:H3'	2:B:1792:G:H8	1.79	0.47
2:B:2529:G:OP2	2:B:2530:A:H8	1.97	0.47
14:N:27:VAL:HA	14:N:105:GLU:OE2	2.14	0.47
19:S:85:LYS:NZ	19:S:85:LYS:CB	2.76	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:90:LEU:HB2	22:V:96:ILE:HG23	1.96	0.47
36:KA:131:ARG:NH1	36:KA:135:LYS:HE3	2.23	0.47
40:OA:78:ARG:HG2	40:OA:79:ARG:HG2	1.96	0.47
1:DB:299:G:H2'	1:DB:300:A:C8	2.49	0.47
1:DB:850:U:H2'	1:DB:851:G:C8	2.49	0.47
2:EB:1025:G:C4	2:EB:1135:C:H1'	2.49	0.47
7:JB:158:THR:O	7:JB:164:ARG:HD2	2.15	0.47
9:LB:25:LYS:HG2	9:LB:34:GLU:HG3	1.95	0.47
10:MB:60:GLU:HG3	10:MB:61:ARG:NH1	2.04	0.47
31:HC:26:GLY:O	31:HC:30:VAL:HG23	2.14	0.47
37:OC:108:LEU:HD22	37:OC:176:LEU:HD13	1.96	0.47
38:PC:9:LYS:HB2	38:PC:112:LEU:HD11	1.97	0.47
46:XC:39:ILE:HD12	46:XC:56:LEU:HD22	1.97	0.47
1:A:983:A:OP1	47:VA:6:LEU:HD21	2.14	0.47
1:A:1309:G:N7	46:UA:99:ARG:NH2	2.63	0.47
2:B:223:A:HO2'	2:B:420:C:HO2'	1.52	0.47
2:B:2689:U:P	2:B:2719:G:H22	2.37	0.47
14:N:65:PHE:HB2	14:N:105:GLU:HB2	1.96	0.47
30:DA:13:CYS:HB2	30:DA:16:CYS:HB3	1.95	0.47
39:NA:67:MET:HG3	39:NA:68:PRO:HD2	1.96	0.47
39:NA:100:ASN:HA	51:ZA:23:LYS:HZ1	1.79	0.47
44:SA:43:SER:HB2	44:SA:68:ALA:HB2	1.97	0.47
46:UA:3:ARG:HH11	46:UA:8:GLU:HG3	1.80	0.47
1:DB:1087:G:N1	1:DB:1088:G:O6	2.47	0.47
2:EB:197:A:N6	2:EB:2430:A:H2'	2.30	0.47
2:EB:455:C:N3	2:EB:472:A:H2'	2.29	0.47
2:EB:578:A:OP1	2:EB:1255:U:O2'	2.27	0.47
2:EB:1585:C:H4'	2:EB:1586:A:OP2	2.14	0.47
2:EB:1863:G:H1	2:EB:1879:C:H42	1.61	0.47
2:EB:2319:G:H22	16:SB:3:ARG:CZ	2.27	0.47
2:EB:2529:G:OP2	2:EB:2530:A:H8	1.97	0.47
2:EB:2697:G:C2	2:EB:2711:A:C2	3.03	0.47
5:HB:75:ILE:O	5:HB:118:VAL:HG23	2.14	0.47
18:UB:83:LEU:CD1	18:UB:113:ALA:HB2	2.44	0.47
31:HC:9:ARG:NH2	31:HC:47:ARG:HD3	2.29	0.47
42:TC:23:ASN:ND2	42:TC:25:LYS:HE2	2.27	0.47
55:GD:109:ARG:HH12	55:GD:210:PRO:HG3	1.80	0.47
55:GD:130:ASP:HB3	55:GD:333:MET:HE1	1.95	0.47
55:GD:139:ALA:HA	55:GD:144:TRP:HE3	1.78	0.47
1:A:87:A:H5"	1:A:88:C:C6	2.50	0.47
1:A:444:C:H2'	1:A:445:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:626:U:H5”	49:XA:38:TYR:CD2	2.50	0.47
1:A:860:A:H2’	1:A:861:G:O4’	2.15	0.47
1:A:978:A:O2’	1:A:1322:C:N3	2.46	0.47
1:A:1097:C:H2’	1:A:1098:C:C6	2.49	0.47
1:A:1240:U:OP1	40:OA:119:ARG:NH2	2.47	0.47
2:B:320:A:H4’	2:B:322:A:C8	2.50	0.47
2:B:1270:C:O2’	2:B:1648:C:OP2	2.29	0.47
2:B:1553:A:HO2’	2:B:1554:A:H8	1.62	0.47
2:B:2336:A:H3’	2:B:2337:G:H8	1.79	0.47
2:B:2478:A:H2’	2:B:2479:G:O4’	2.15	0.47
2:B:2713:A:H3’	2:B:2714:G:H5”	1.97	0.47
2:B:2836:U:C4	2:B:2883:A:N6	2.83	0.47
4:D:10:G:H2’	4:D:11:A:H8	1.79	0.47
4:D:67:C:H2’	4:D:68:C:C6	2.50	0.47
9:I:3:ARG:HH21	9:I:5:GLY:H	1.63	0.47
11:K:35:ARG:HG2	11:K:35:ARG:NH1	2.30	0.47
16:P:76:LYS:O	16:P:80:LEU:HD13	2.15	0.47
22:V:2:ARG:H	22:V:2:ARG:HD3	1.79	0.47
28:BA:13:ARG:HH11	28:BA:21:VAL:HG11	1.80	0.47
28:BA:59:PHE:HA	52:AB:67:VAL:HG21	1.97	0.47
34:HA:22:A:H62	55:GD:196:ILE:HG22	1.80	0.47
38:MA:144:THR:HG23	38:MA:147:ASP:H	1.80	0.47
40:OA:20:ASP:HB3	40:OA:23:VAL:HG23	1.97	0.47
41:PA:23:SER:HA	41:PA:63:LEU:HD23	1.97	0.47
42:QA:5:TYR:CE1	42:QA:16:ARG:HB2	2.50	0.47
43:RA:91:PRO:O	43:RA:94:VAL:HG22	2.14	0.47
47:VA:53:LEU:HD23	47:VA:54:PRO:HD2	1.97	0.47
52:AB:29:ARG:NH1	52:AB:29:ARG:HA	2.30	0.47
1:DB:87:A:H5”	1:DB:88:C:C6	2.50	0.47
1:DB:537:G:H5”	45:WC:113:ARG:NH1	2.30	0.47
1:DB:626:U:H5”	49:AD:38:TYR:CD2	2.50	0.47
1:DB:1297:C:OP1	46:XC:13:LYS:HE3	2.15	0.47
1:DB:1309:G:N7	46:XC:99:ARG:NH2	2.63	0.47
1:DB:1475:G:H4’	2:EB:1689:A:H4’	1.96	0.47
1:DB:1530:G:H2’	1:DB:1531:A:H5”	1.97	0.47
2:EB:251:A:OP1	13:PB:50:ARG:NH2	2.48	0.47
2:EB:478:A:C6	2:EB:480:A:C6	3.03	0.47
2:EB:657:U:H2’	2:EB:658:C:C6	2.50	0.47
2:EB:911:A:H2’	14:QB:9:TYR:OH	2.15	0.47
2:EB:1288:U:C2	2:EB:1327:C:O2	2.67	0.47
2:EB:2498:C:O2’	2:EB:2499:C:H5’	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:KB:182:LYS:HE2	8:KB:182:LYS:HB2	1.67	0.47
9:LB:9:ILE:HG12	9:LB:69:ARG:CZ	2.44	0.47
18:UB:82:GLY:HA3	18:UB:113:ALA:HB1	1.97	0.47
20:WB:88:ARG:HG3	20:WB:94:ASP:OD2	2.15	0.47
22:YB:45:VAL:O	22:YB:62:GLU:HA	2.15	0.47
22:YB:76:CYS:SG	22:YB:78:ALA:HB3	2.54	0.47
22:YB:99:CYS:SG	22:YB:100:ALA:N	2.87	0.47
25:BC:21:ARG:CG	25:BC:21:ARG:NH1	2.76	0.47
26:CC:32:LEU:HB2	26:CC:53:LEU:HD12	1.96	0.47
28:EC:13:ARG:HH11	28:EC:21:VAL:HG11	1.78	0.47
35:MC:84:GLU:O	35:MC:219:VAL:HG21	2.15	0.47
35:MC:145:LEU:HD23	35:MC:149:LEU:HD13	1.96	0.47
38:PC:12:LEU:HB3	38:PC:31:LEU:HB2	1.95	0.47
41:SC:78:GLN:HG3	41:SC:80:ILE:H	1.79	0.47
42:TC:48:GLU:OE2	42:TC:51:ARG:HD2	2.13	0.47
44:VC:23:ALA:HB1	44:VC:88:GLY:HA3	1.97	0.47
46:XC:24:GLY:HA2	46:XC:70:LEU:HD12	1.97	0.47
1:A:42:G:H1	1:A:400:C:H42	1.63	0.47
1:A:359:U:H2'	1:A:360:A:H8	1.80	0.47
1:A:370:C:C2	1:A:392:G:C2	3.03	0.47
1:A:1402:4OC:H2'	1:A:1403:C:O4'	2.15	0.47
2:B:108:U:H2'	2:B:109:G:C8	2.50	0.47
2:B:579:G:H2'	2:B:580:C:C6	2.50	0.47
2:B:751:A:C6	2:B:789:A:C5	3.03	0.47
2:B:1818:U:H2'	5:E:157:ARG:HG3	1.97	0.47
8:H:32:PRO:HA	8:H:162:THR:OG1	2.15	0.47
16:P:54:LEU:O	16:P:57:LYS:NZ	2.33	0.47
18:R:82:GLY:HA3	18:R:113:ALA:HB1	1.97	0.47
20:T:57:ASN:HA	20:T:61:ASN:HD22	1.80	0.47
23:W:11:GLU:HB3	23:W:12:GLY:H	1.43	0.47
23:W:124:ILE:HG23	23:W:126:VAL:HG23	1.97	0.47
28:BA:61:ARG:NH1	28:BA:62:ARG:HH22	2.12	0.47
33:GA:2:LYS:NZ	33:GA:4:ARG:HE	2.12	0.47
37:LA:59:ARG:NH2	37:LA:66:ARG:NH1	2.63	0.47
48:WA:33:THR:HG23	48:WA:63:ARG:NH1	2.30	0.47
1:DB:523:A:N1	45:WC:92:0TD:H6	2.30	0.47
1:DB:555:C:H2'	1:DB:556:C:C6	2.50	0.47
1:DB:1147:C:HO2'	42:TC:5:TYR:HH	1.62	0.47
2:EB:445:C:O2'	2:EB:446:G:H5'	2.15	0.47
2:EB:705:A:H1'	5:HB:9:TYR:CE2	2.50	0.47
2:EB:1029:A:H5"	2:EB:1030:G:OP2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:1187:G:H5"	19:VB:81:TYR:CE1	2.49	0.47
2:EB:1971:A:N3	5:HB:241:PRO:HD3	2.30	0.47
2:EB:2565:A:H5"	2:EB:2566:A:OP2	2.14	0.47
2:EB:2627:G:O2'	2:EB:2781:A:N1	2.43	0.47
3:FB:112:G:H2'	3:FB:113:C:H6	1.78	0.47
18:UB:34:LYS:HD2	18:UB:34:LYS:HA	1.50	0.47
35:MC:15:VAL:HG21	35:MC:213:LEU:HG	1.95	0.47
47:YC:53:LEU:HD23	47:YC:54:PRO:HD2	1.95	0.47
2:B:247:G:H4'	2:B:386:G:C5	2.50	0.47
2:B:1210:A:C8	2:B:1212:G:C2	3.02	0.47
2:B:2784:C:H2'	2:B:2785:C:H6	1.80	0.47
5:E:223:GLY:HA2	5:E:226:MET:HG3	1.96	0.47
8:H:50:ALA:C	8:H:52:ILE:H	2.18	0.47
8:H:171:ALA:O	8:H:175:LEU:HG	2.14	0.47
9:I:38:SER:OG	9:I:40:GLU:OE2	2.32	0.47
35:JA:155:LEU:HA	35:JA:157:ARG:HH21	1.80	0.47
1:DB:67:C:H2'	1:DB:68:G:C8	2.50	0.47
1:DB:524:G:H2'	1:DB:525:C:C6	2.50	0.47
1:DB:920:U:H2'	1:DB:921:U:C6	2.50	0.47
1:DB:1009:G:H2'	1:DB:1010:G:H8	1.80	0.47
1:DB:1531:A:H5'	1:DB:1532:U:O2	2.14	0.47
2:EB:729:G:H2'	2:EB:1775:U:H1'	1.96	0.47
2:EB:1537:C:H3'	2:EB:1538:G:C8	2.46	0.47
21:XB:5:TYR:HE1	26:CC:30:ARG:NH1	2.11	0.47
30:GC:13:CYS:HB2	30:GC:16:CYS:HB3	1.96	0.47
38:PC:144:THR:HG23	38:PC:147:ASP:H	1.79	0.47
47:YC:40:CYS:SG	47:YC:43:CYS:SG	3.12	0.47
55:HD:195:ARG:HH21	55:HD:197:HIS:HE1	1.61	0.47
1:A:255:G:H2'	1:A:256:U:C6	2.50	0.47
1:A:1329:A:P	46:UA:28:ALA:HB3	2.54	0.47
2:B:185:U:H2'	2:B:186:G:C8	2.50	0.47
2:B:839:U:H3	2:B:939:G:H1	1.63	0.47
2:B:2376:A:N6	16:P:89:ARG:HD3	2.29	0.47
2:B:2880:C:O2'	15:O:90:ARG:HD3	2.14	0.47
3:C:85:G:H1	3:C:91:C:N4	2.13	0.47
3:C:112:G:H2'	3:C:113:C:H6	1.80	0.47
6:F:11:MET:HG2	6:F:24:THR:HA	1.96	0.47
10:J:57:ARG:O	10:J:61:ARG:NH2	2.48	0.47
11:K:66:LYS:O	11:K:70:LYS:HB3	2.15	0.47
35:JA:160:ASP:OD1	35:JA:160:ASP:N	2.47	0.47
39:NA:35:ALA:HB1	39:NA:65:VAL:CG2	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:404:U:H2'	1:DB:405:U:C6	2.50	0.47
2:EB:300:A:OP2	22:YB:86:ARG:NH2	2.48	0.47
2:EB:448:U:O4	2:EB:583:G:H1'	2.15	0.47
2:EB:1592:C:H2'	2:EB:1593:G:H8	1.80	0.47
2:EB:2021:C:OP1	29:FC:12:SER:OG	2.24	0.47
2:EB:2494:G:O2'	14:QB:80:GLU:HA	2.15	0.47
2:EB:2637:U:OP1	6:IB:82:ARG:NH1	2.48	0.47
23:ZB:163:LEU:HD12	23:ZB:163:LEU:H	1.80	0.47
37:OC:191:ARG:HH21	37:OC:200:GLU:CG	2.25	0.47
38:PC:70:PRO:HB2	38:PC:77:PRO:HG3	1.96	0.47
39:QC:6:VAL:HG22	39:QC:90:VAL:HG22	1.97	0.47
39:QC:62:TRP:CH2	39:QC:64:GLN:HB2	2.50	0.47
1:A:60:A:H4'	1:A:61:G:H5'	1.96	0.46
1:A:93:U:H2'	1:A:95:G:C8	2.50	0.46
1:A:404:U:H2'	1:A:405:U:H6	1.80	0.46
1:A:1095:U:H5"	1:A:1109:C:O2	2.15	0.46
2:B:444:C:H4'	7:G:49:ALA:HB2	1.98	0.46
2:B:827:U:H2'	2:B:2068:U:C2	2.50	0.46
2:B:921:G:H2'	2:B:922:U:O4'	2.15	0.46
2:B:1204:A:H61	2:B:1240:U:H2'	1.80	0.46
2:B:1784:A:H4'	2:B:1785:A:H5"	1.97	0.46
2:B:1815:A:OP2	5:E:54:ARG:NH2	2.49	0.46
2:B:2023:G:H4'	2:B:2617:C:O3'	2.14	0.46
2:B:2113:U:H2'	2:B:2114:A:C8	2.50	0.46
3:C:12:C:OP2	3:C:12:C:H6	1.98	0.46
5:E:85:ASP:OD1	5:E:86:PRO:HD2	2.16	0.46
5:E:132:PRO:HG3	5:E:190:TYR:CE2	2.50	0.46
7:G:107:LYS:HD3	7:G:107:LYS:HA	1.73	0.46
20:T:68:ARG:NH1	20:T:111:HIS:HA	2.30	0.46
25:Y:15:ALA:O	25:Y:40:ARG:HG3	2.14	0.46
39:NA:6:VAL:HG22	39:NA:90:VAL:HG22	1.97	0.46
48:WA:26:GLU:HG2	48:WA:81:LEU:HD22	1.95	0.46
1:DB:42:G:H1	1:DB:400:C:H42	1.64	0.46
1:DB:424:G:OP2	1:DB:424:G:H8	1.99	0.46
1:DB:584:G:H2'	1:DB:585:G:C8	2.50	0.46
1:DB:781:A:H4'	1:DB:1522:U:O2'	2.15	0.46
1:DB:1327:C:OP1	54:FD:20:LYS:HB3	2.16	0.46
2:EB:938:G:H2'	2:EB:939:G:H8	1.79	0.46
2:EB:2023:G:H4'	2:EB:2617:C:O3'	2.15	0.46
3:FB:1:U:OP2	3:FB:1:U:H6	1.98	0.46
6:IB:111:ARG:HD3	6:IB:160:TYR:HD2	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:JB:170:LEU:HB2	7:JB:173:VAL:HB	1.97	0.46
12:OB:17:ARG:HD2	12:OB:45:GLU:OE1	2.15	0.46
13:PB:19:VAL:HB	13:PB:31:ALA:HB1	1.97	0.46
14:QB:75:THR:HA	14:QB:89:ASN:O	2.16	0.46
17:TB:36:GLU:HG3	17:TB:41:ARG:HE	1.80	0.46
27:DC:3:ARG:NH1	27:DC:60:GLU:HG3	2.30	0.46
37:OC:70:ILE:HD11	37:OC:100:ARG:NH1	2.30	0.46
41:SC:103:VAL:HG21	41:SC:109:ILE:C	2.36	0.46
50:BD:69:LYS:O	50:BD:70:ARG:HD2	2.15	0.46
51:CD:53:ARG:HH21	51:CD:60:ALA:N	2.12	0.46
53:ED:63:ILE:HD12	53:ED:81:LYS:HG2	1.96	0.46
1:A:424:G:H8	1:A:424:G:OP2	1.98	0.46
1:A:737:A:H2'	1:A:738:C:C6	2.50	0.46
1:A:1297:C:OP1	46:UA:13:LYS:HE3	2.14	0.46
2:B:253:C:H2'	2:B:254:G:O4'	2.14	0.46
2:B:1155:A:O3'	18:R:55:ARG:NH1	2.49	0.46
2:B:2141:G:N1	2:B:2142:C:O2	2.48	0.46
2:B:2498:C:O2'	2:B:2499:C:H5'	2.15	0.46
2:B:2591:C:H2'	2:B:2592:G:C8	2.51	0.46
10:J:87:LYS:HE2	10:J:89:TYR:CD1	2.50	0.46
13:M:59:LEU:HD11	32:FA:10:ALA:HA	1.97	0.46
18:R:83:LEU:CD1	18:R:113:ALA:HB2	2.45	0.46
22:V:46:LYS:HG2	22:V:60:PHE:CD1	2.51	0.46
28:BA:61:ARG:NH1	28:BA:62:ARG:NH2	2.63	0.46
37:LA:98:GLU:HG3	37:LA:194:LEU:HD22	1.97	0.46
1:DB:999:U:H1'	1:DB:1042:G:N2	2.29	0.46
1:DB:1245:A:H2'	1:DB:1246:C:C6	2.50	0.46
1:DB:1415:G:H2'	1:DB:1416:G:C8	2.50	0.46
1:DB:1512:U:H2'	1:DB:1513:A:C8	2.50	0.46
2:EB:747:U:O2	2:EB:2014:A:H1'	2.15	0.46
2:EB:848:G:O6	2:EB:929:G:H2'	2.15	0.46
2:EB:1047:G:H2'	2:EB:1110:G:H1	1.80	0.46
2:EB:1359:A:H2	2:EB:1372:U:O4	1.98	0.46
2:EB:1943:U:OP1	55:HD:277:ARG:NH2	2.41	0.46
2:EB:2085:C:O3'	5:HB:262:ARG:NH1	2.48	0.46
2:EB:2094:G:P	10:MB:22:LYS:NZ	2.88	0.46
2:EB:2591:C:H2'	2:EB:2592:G:C8	2.50	0.46
2:EB:2648:C:H2'	2:EB:2649:U:H6	1.80	0.46
2:EB:2818:G:O2'	2:EB:2819:G:H5'	2.15	0.46
11:NB:66:LYS:O	11:NB:70:LYS:HB3	2.15	0.46
27:DC:9:VAL:HG11	27:DC:55:ARG:HH11	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:JC:4:ARG:NH1	33:JC:8:LYS:NZ	2.63	0.46
35:MC:7:VAL:HG21	35:MC:221:LEU:HD21	1.98	0.46
36:NC:6:HIS:HD2	36:NC:8:ILE:H	1.62	0.46
39:QC:15:ASP:OD2	39:QC:18:GLN:HB3	2.15	0.46
55:GD:299:GLY:H	55:GD:306:ARG:HH22	1.64	0.46
1:A:677:U:H1'	44:SA:119:CYS:SG	2.56	0.46
1:A:1095:U:OP1	1:A:1108:G:N2	2.36	0.46
1:A:1105:A:H2'	1:A:1106:G:H8	1.80	0.46
1:A:1152:A:H2'	1:A:1153:C:C6	2.51	0.46
1:A:1226:C:H4'	52:AB:80:TYR:CZ	2.51	0.46
2:B:263:C:H2'	2:B:264:C:O4'	2.15	0.46
6:F:111:ARG:N	6:F:111:ARG:HD2	2.30	0.46
10:J:61:ARG:HA	10:J:61:ARG:HH11	1.81	0.46
10:J:62:LYS:O	10:J:66:GLU:HB2	2.15	0.46
31:EA:9:ARG:NH2	31:EA:47:ARG:HD3	2.30	0.46
31:EA:26:GLY:O	31:EA:30:VAL:HG23	2.16	0.46
39:NA:30:LEU:HD23	39:NA:75:LEU:HD11	1.96	0.46
40:OA:150:ALA:HA	44:SA:59:TYR:HB3	1.98	0.46
41:PA:101:PRO:HG2	41:PA:133:LEU:HD11	1.96	0.46
1:DB:96:G:C6	1:DB:97:U:C4	3.03	0.46
1:DB:428:G:O4'	1:DB:430:A:C8	2.69	0.46
1:DB:673:G:H2'	1:DB:674:G:C8	2.49	0.46
2:EB:639:U:H2'	2:EB:640:C:C6	2.50	0.46
2:EB:880:G:H1	2:EB:897:C:H42	1.63	0.46
2:EB:929:G:H8	2:EB:929:G:O5'	1.99	0.46
2:EB:1093:G:H1	2:EB:1097:U:H5	1.63	0.46
2:EB:1914:C:O3'	55:HD:116:ARG:NH1	2.48	0.46
2:EB:2071:A:H2'	2:EB:2072:G:C8	2.50	0.46
15:RB:13:HIS:CE1	15:RB:16:HIS:HB2	2.50	0.46
23:ZB:102:LEU:HD21	23:ZB:124:ILE:HG22	1.98	0.46
23:ZB:124:ILE:HG23	23:ZB:126:VAL:HG23	1.98	0.46
25:BC:40:ARG:HH22	25:BC:42:GLN:HG2	1.78	0.46
35:MC:118:LEU:HD21	35:MC:138:LEU:HD22	1.96	0.46
35:MC:219:VAL:O	35:MC:222:ILE:HB	2.16	0.46
37:OC:10:ARG:HG3	37:OC:11:LEU:HD12	1.97	0.46
38:PC:75:THR:OG1	38:PC:76:ILE:N	2.48	0.46
44:VC:121:PRO:HG2	44:VC:126:ARG:HB2	1.97	0.46
55:HD:299:GLY:H	55:HD:306:ARG:HH22	1.63	0.46
1:A:1500:A:H5"	1:A:1508:G:H5"	1.98	0.46
2:B:547:A:H5"	2:B:548:A:OP2	2.16	0.46
2:B:603:A:N7	2:B:655:A:C5	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:628:G:H2'	2:B:629:G:C8	2.50	0.46
2:B:848:G:O6	2:B:929:G:H2'	2.16	0.46
2:B:1477:A:H2'	2:B:1478:G:O4'	2.15	0.46
3:C:8:U:O3'	16:P:25:ARG:NH2	2.37	0.46
5:E:176:ARG:HG3	5:E:182:LEU:HD12	1.98	0.46
5:E:257:LEU:HD12	5:E:258:LYS:N	2.31	0.46
6:F:54:GLN:OE1	6:F:55:ASN:N	2.43	0.46
9:I:3:ARG:HG2	9:I:6:ARG:NH1	2.31	0.46
17:Q:36:GLU:CG	17:Q:41:ARG:HE	2.28	0.46
22:V:79:CYS:SG	22:V:81:LYS:HB2	2.55	0.46
36:KA:33:LEU:HA	36:KA:36:ASP:HB3	1.96	0.46
37:LA:25:ARG:C	37:LA:27:TYR:H	2.16	0.46
39:NA:12:PRO:HG2	39:NA:13:ASN:HD22	1.80	0.46
41:PA:91:ARG:HB2	45:TA:7:ILE:HG12	1.97	0.46
1:DB:60:A:H4'	1:DB:61:G:H5'	1.98	0.46
1:DB:748:C:H1'	1:DB:749:C:OP2	2.16	0.46
1:DB:926:G:N2	34:KC:15:A:H5"	2.30	0.46
1:DB:1004:A:H5"	1:DB:1024:G:N2	2.30	0.46
1:DB:1130:A:H2'	1:DB:1131:G:H8	1.81	0.46
2:EB:17:G:H4'	18:UB:25:TRP:HE1	1.79	0.46
2:EB:2336:A:H3'	2:EB:2337:G:H8	1.81	0.46
2:EB:2846:G:H2'	2:EB:2847:U:O4'	2.16	0.46
3:FB:6:C:H2'	3:FB:7:G:C8	2.50	0.46
7:JB:192:LEU:HD22	7:JB:194:MET:HG3	1.96	0.46
7:JB:195:ASP:HB3	7:JB:198:ALA:HB3	1.97	0.46
8:KB:50:ALA:C	8:KB:52:ILE:H	2.19	0.46
9:LB:58:GLU:HG2	9:LB:61:HIS:HB2	1.97	0.46
9:LB:72:ILE:O	9:LB:76:VAL:HG23	2.15	0.46
51:CD:22:VAL:HG23	51:CD:55:ARG:O	2.16	0.46
1:A:753:A:H5'	1:A:754:C:C5	2.50	0.46
1:A:1004:A:H5"	1:A:1024:G:N2	2.31	0.46
1:A:1043:C:H2'	1:A:1044:A:O4'	2.16	0.46
2:B:38:A:H2'	2:B:39:C:C6	2.50	0.46
2:B:1583:A:H5'	2:B:1585:C:H5"	1.97	0.46
2:B:2319:G:H22	16:P:3:ARG:CZ	2.29	0.46
2:B:2401:U:H2'	2:B:2402:C:O4'	2.16	0.46
2:B:2582:G:N2	2:B:2583:G:H1'	2.30	0.46
2:B:2607:G:H2'	2:B:2608:G:O4'	2.16	0.46
5:E:75:ILE:O	5:E:118:VAL:HG23	2.15	0.46
5:E:80:ALA:HB3	5:E:94:LEU:HB3	1.98	0.46
8:H:77:ILE:HG22	8:H:80:PHE:H	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:125:VAL:HG22	9:I:131:VAL:HG22	1.98	0.46
22:V:43:ASN:HD22	22:V:65:ALA:HB3	1.81	0.46
23:W:102:LEU:HD21	23:W:124:ILE:HG22	1.98	0.46
25:Y:98:LEU:HD23	25:Y:98:LEU:OXT	2.14	0.46
32:FA:52:LYS:HB3	32:FA:53:PRO:HD3	1.97	0.46
35:JA:10:LEU:HA	35:JA:12:GLU:OE1	2.15	0.46
37:LA:134:ASP:C	37:LA:135:LEU:HD13	2.36	0.46
53:BB:63:ILE:HD12	53:BB:81:LYS:HG2	1.98	0.46
1:DB:105:G:C5	1:DB:106:C:C4	3.04	0.46
1:DB:622:A:C8	1:DB:623:C:C6	3.03	0.46
1:DB:1468:A:H2'	1:DB:1469:G:O4'	2.15	0.46
2:EB:361:G:C2	2:EB:362:U:C5	3.03	0.46
2:EB:784:A:C6	5:HB:229:VAL:HG21	2.51	0.46
2:EB:1367:A:N7	2:EB:1368:G:H1'	2.31	0.46
4:GB:22:G:H2'	4:GB:23:C:C6	2.51	0.46
13:PB:122:PRO:HB3	13:PB:141:ALA:O	2.15	0.46
15:RB:55:ALA:HA	15:RB:80:PHE:CE2	2.51	0.46
55:GD:137:ARG:NH1	55:GD:334:GLU:HG3	2.31	0.46
55:GD:139:ALA:HA	55:GD:144:TRP:CE3	2.50	0.46
55:GD:181:GLY:O	55:GD:307:ASN:HB2	2.16	0.46
1:A:1298:C:C4	40:OA:114:ARG:HD2	2.51	0.46
2:B:347:A:H2'	2:B:348:G:C8	2.50	0.46
2:B:587:C:C6	2:B:671:C:H1'	2.51	0.46
5:E:5:LYS:HD2	5:E:5:LYS:HA	1.59	0.46
5:E:155:LEU:HD22	5:E:155:LEU:H	1.81	0.46
5:E:206:LEU:HD23	5:E:206:LEU:HA	1.52	0.46
8:H:114:ILE:HD11	8:H:117:PHE:CG	2.51	0.46
9:I:13:LYS:HA	9:I:14:GLY:HA2	1.60	0.46
13:M:97:PRO:HA	13:M:100:LEU:HD12	1.98	0.46
14:N:58:PHE:HB3	14:N:113:GLN:NE2	2.31	0.46
19:S:29:PRO:HA	19:S:61:VAL:HG22	1.97	0.46
35:JA:84:GLU:O	35:JA:219:VAL:HG21	2.15	0.46
36:KA:88:ARG:HD3	36:KA:101:LEU:HB3	1.98	0.46
38:MA:75:THR:OG1	38:MA:76:ILE:N	2.49	0.46
38:MA:137:GLU:OE2	38:MA:137:GLU:HA	2.16	0.46
43:RA:9:ARG:HA	43:RA:68:HIS:O	2.15	0.46
44:SA:79:SER:HA	44:SA:104:GLN:HB3	1.96	0.46
45:TA:125:PRO:HB2	45:TA:126:LYS:H	1.60	0.46
50:YA:48:GLU:OE2	50:YA:48:GLU:N	2.38	0.46
51:ZA:22:VAL:HG23	51:ZA:55:ARG:O	2.16	0.46
1:DB:1043:C:H2'	1:DB:1044:A:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:1107:C:OP1	36:NC:172:ARG:HB2	2.15	0.46
2:EB:363(G):A:OP2	2:EB:363(G):A:H8	1.99	0.46
2:EB:811:U:C2	2:EB:1251:C:C5	3.03	0.46
2:EB:1027:A:C2	2:EB:2488:A:H5'	2.51	0.46
2:EB:1385:G:O2'	2:EB:1396:U:O2	2.29	0.46
2:EB:1590:U:H2'	2:EB:1591:G:C8	2.50	0.46
2:EB:1674:G:N2	2:EB:1677:A:N1	2.59	0.46
2:EB:2059:A:H2'	2:EB:2503:2MA:HM23	1.98	0.46
2:EB:2113:U:H2'	2:EB:2114:A:C8	2.50	0.46
10:MB:110:ASP:HA	10:MB:111:PRO:HD2	1.76	0.46
13:PB:84:ASN:OD1	13:PB:117:GLU:HB2	2.15	0.46
16:SB:15:ARG:NH1	16:SB:15:ARG:HG2	2.30	0.46
25:BC:82:LEU:O	25:BC:85:LEU:HD13	2.16	0.46
26:CC:48:HIS:CE1	26:CC:49:LYS:HG3	2.51	0.46
36:NC:3:ASN:N	36:NC:3:ASN:OD1	2.49	0.46
38:PC:48:ALA:O	38:PC:50:GLU:N	2.49	0.46
41:SC:91:ARG:HB2	45:WC:7:ILE:HG12	1.96	0.46
41:SC:102:ARG:H	41:SC:102:ARG:HD2	1.80	0.46
1:A:419:C:H5"	1:A:513:C:O4'	2.16	0.46
1:A:841:U:H3'	1:A:842:C:H5"	1.98	0.46
2:B:1043:C:C5	2:B:1044:G:C8	3.03	0.46
3:C:31:C:H4'	8:H:29:TRP:CH2	2.51	0.46
6:F:21:VAL:HG22	6:F:23:VAL:HG23	1.97	0.46
6:F:37:ARG:HD3	6:F:42:ASP:CG	2.36	0.46
9:I:25:LYS:HB3	9:I:27:LYS:HZ2	1.79	0.46
10:J:110:ASP:HA	10:J:111:PRO:HD2	1.76	0.46
14:N:75:THR:HG21	14:N:87:LYS:HZ3	1.79	0.46
30:DA:8:LYS:HB2	30:DA:54:ILE:HG12	1.96	0.46
1:DB:924:C:H5'	1:DB:1399:C:OP2	2.16	0.46
1:DB:1021:G:C2	1:DB:1022:G:H1'	2.50	0.46
2:EB:733:G:O6	2:EB:761:A:C8	2.69	0.46
2:EB:1798:U:H5'	5:HB:259:THR:OG1	2.15	0.46
2:EB:2301:C:H2'	2:EB:2302:G:C8	2.50	0.46
2:EB:2592:G:C6	2:EB:2593:U:N3	2.83	0.46
4:GB:28:C:H2'	4:GB:29:G:C8	2.51	0.46
5:HB:71:ASP:OD2	5:HB:72:LYS:N	2.43	0.46
8:KB:39:ILE:HD12	8:KB:157:ILE:HG12	1.98	0.46
8:KB:114:ILE:HD11	8:KB:117:PHE:CG	2.50	0.46
11:NB:35:ARG:HG2	11:NB:35:ARG:NH1	2.30	0.46
13:PB:84:ASN:HB3	13:PB:117:GLU:O	2.16	0.46
22:YB:90:LEU:HB2	22:YB:96:ILE:HG23	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:PC:7:GLU:O	38:PC:34:VAL:HA	2.16	0.46
41:SC:81:HIS:HB2	41:SC:138:TRP:HD1	1.81	0.46
46:XC:6:GLY:HA3	46:XC:67:GLU:HG3	1.97	0.46
54:FD:6:ARG:O	54:FD:12:LYS:HE3	2.15	0.46
1:A:96:G:C6	1:A:97:U:C4	3.03	0.46
2:B:27:G:N2	2:B:512:G:H1'	2.31	0.46
2:B:706:A:H2'	2:B:707:G:O4'	2.16	0.46
2:B:1299:G:H22	2:B:1640:C:H5"	1.81	0.46
2:B:1406:U:H2'	2:B:1407:C:C6	2.51	0.46
2:B:2096:U:H2'	2:B:2097:C:C6	2.51	0.46
2:B:2526:G:H1	2:B:2537:U:H3	1.64	0.46
2:B:2852:G:H2'	2:B:2853:C:C6	2.50	0.46
4:D:68:C:H2'	4:D:69:C:C6	2.51	0.46
10:J:68:LEU:O	10:J:71:ILE:HG13	2.16	0.46
26:Z:46:GLN:HB3	26:Z:48:HIS:CE1	2.50	0.46
27:AA:5:LYS:HD3	27:AA:34:GLU:OE2	2.16	0.46
36:KA:35:GLU:O	36:KA:39:ILE:HG12	2.15	0.46
38:MA:76:ILE:HG13	38:MA:93:PRO:HG3	1.97	0.46
42:QA:13:ALA:HB2	42:QA:68:GLY:HA3	1.97	0.46
44:SA:33:THR:HA	44:SA:39:PRO:HA	1.97	0.46
1:DB:110:C:O2'	49:AD:25:ARG:O	2.34	0.46
1:DB:339:C:H2'	1:DB:340:U:C6	2.51	0.46
1:DB:359:U:H2'	1:DB:360:A:H8	1.80	0.46
1:DB:1119:C:H2'	1:DB:1120:G:H8	1.81	0.46
2:EB:38:A:H2'	2:EB:39:C:H6	1.80	0.46
2:EB:90:U:H1'	2:EB:91:A:C8	2.50	0.46
2:EB:165:U:H2'	2:EB:171:G:O4'	2.16	0.46
2:EB:687:C:H5"	31:HC:2:LYS:HE2	1.96	0.46
2:EB:1335:U:H2'	2:EB:1336:A:C8	2.51	0.46
2:EB:1946:U:H2'	2:EB:1947:C:C6	2.51	0.46
14:QB:109:VAL:HG13	14:QB:113:GLN:HB3	1.98	0.46
26:CC:51:ARG:O	26:CC:55:ARG:HG2	2.16	0.46
40:RC:69:VAL:HG21	40:RC:104:LEU:HD21	1.98	0.46
41:SC:92:ARG:HB3	41:SC:94:TYR:CE2	2.50	0.46
44:VC:120:ARG:NH1	44:VC:126:ARG:NH1	2.60	0.46
51:CD:46:GLU:OE2	51:CD:85:LEU:HD12	2.15	0.46
55:GD:130:ASP:N	55:GD:130:ASP:OD1	2.46	0.46
1:A:1346:A:H5"	42:QA:120:ARG:NH1	2.30	0.46
1:A:1435:G:H2'	1:A:1436:U:C6	2.51	0.46
2:B:96:G:H4'	26:Z:48:HIS:CD2	2.50	0.46
2:B:922:U:H2'	2:B:923:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2495:G:OP1	14:N:82:ARG:HD2	2.15	0.46
2:B:2531:A:H61	2:B:2662:A:H61	1.64	0.46
5:E:263:ARG:HH11	5:E:263:ARG:HG2	1.81	0.46
7:G:195:ASP:HB3	7:G:198:ALA:HB3	1.98	0.46
8:H:135:LEU:HD13	8:H:135:LEU:HA	1.66	0.46
23:W:31:ARG:H	23:W:31:ARG:HG2	1.59	0.46
35:JA:7:VAL:HG21	35:JA:221:LEU:HD21	1.98	0.46
53:BB:47:GLY:HA2	53:BB:48:LYS:C	2.36	0.46
1:DB:177:C:H2'	1:DB:178:C:H6	1.80	0.46
1:DB:811:C:H4'	1:DB:900:A:N6	2.31	0.46
2:EB:150:C:H2'	2:EB:151:C:C6	2.51	0.46
2:EB:921:G:H2'	2:EB:922:U:O4'	2.15	0.46
2:EB:1153:C:OP1	18:UB:92:ARG:NH2	2.47	0.46
2:EB:1625:C:H2'	2:EB:1626:G:O4'	2.15	0.46
6:IB:11:MET:HG2	6:IB:24:THR:HA	1.96	0.46
10:MB:96:ASP:O	10:MB:100:ALA:N	2.43	0.46
23:ZB:95:PRO:CA	23:ZB:130:PRO:HD3	2.45	0.46
25:BC:46:LEU:HD23	25:BC:46:LEU:HA	1.73	0.46
35:MC:142:LEU:O	35:MC:146:GLN:HG3	2.16	0.46
35:MC:231:GLU:H	35:MC:232:PRO:HD2	1.81	0.46
36:NC:6:HIS:ND1	47:YC:49:HIS:HB3	2.30	0.46
45:WC:69:TYR:HB3	45:WC:99:HIS:HD2	1.81	0.46
51:CD:52:PRO:O	51:CD:56:THR:HG23	2.15	0.46
1:A:859:A:H2'	1:A:860:A:O4'	2.16	0.46
1:A:973:G:H1'	43:RA:54:PHE:CD1	2.51	0.46
2:B:16:G:H2'	2:B:17:G:H8	1.81	0.46
2:B:86:C:H4'	2:B:104:U:H1'	1.97	0.46
2:B:478:A:C6	2:B:480:A:C6	3.04	0.46
2:B:817:C:H4'	2:B:932:G:C5	2.51	0.46
2:B:1025:G:C4	2:B:1135:C:H1'	2.51	0.46
2:B:1047:G:H2'	2:B:1110:G:H22	1.80	0.46
2:B:1057:A:N6	2:B:1059:G:N7	2.64	0.46
2:B:1625:C:H2'	2:B:1626:G:O4'	2.15	0.46
2:B:1754:C:P	17:Q:96:ARG:HH12	2.38	0.46
2:B:1790:C:O2'	5:E:209:ALA:HB2	2.16	0.46
9:I:43:VAL:HA	9:I:52:VAL:HG12	1.98	0.46
15:O:13:HIS:CE1	15:O:16:HIS:HB2	2.51	0.46
15:O:26:LYS:O	15:O:30:THR:HG23	2.15	0.46
26:Z:51:ARG:O	26:Z:55:ARG:HG2	2.15	0.46
1:DB:56:U:H2'	1:DB:57:G:H8	1.81	0.46
1:DB:125:U:H2'	1:DB:126:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:198:G:C2	1:DB:199:G:C4	3.04	0.46
1:DB:714:G:H2'	1:DB:715:A:C8	2.51	0.46
1:DB:1378:C:C5	1:DB:1379:G:C8	3.04	0.46
2:EB:26:G:C6	2:EB:27:G:N1	2.84	0.46
2:EB:751:A:C6	2:EB:789:A:C5	3.04	0.46
2:EB:1924:C:H4'	4:LC:13:C:H4'	1.98	0.46
2:EB:2557:G:H2'	2:EB:2558:C:H6	1.80	0.46
4:GB:68:C:H2'	4:GB:69:C:C6	2.51	0.46
8:KB:171:ALA:O	8:KB:175:LEU:HG	2.16	0.46
12:OB:15:GLY:O	12:OB:47:ILE:HG13	2.15	0.46
31:HC:31:LEU:HD13	31:HC:31:LEU:HA	1.56	0.46
37:OC:173:TRP:CD1	37:OC:173:TRP:N	2.83	0.46
46:XC:3:ARG:HH11	46:XC:8:GLU:HG3	1.81	0.46
50:BD:27:PHE:CE1	50:BD:36:ILE:HD11	2.51	0.46
53:ED:13:LEU:HB2	53:ED:17:ARG:NH1	2.31	0.46
55:GD:109:ARG:HG3	55:GD:208:GLU:HB2	1.98	0.46
55:HD:188:PRO:HD3	55:HD:197:HIS:HB2	1.98	0.46
1:A:544:G:H2'	1:A:545:C:C6	2.52	0.45
1:A:950:U:H2'	1:A:951:G:H8	1.82	0.45
1:A:1346:A:H5"	42:QA:120:ARG:HH12	1.81	0.45
2:B:150:C:H2'	2:B:151:C:C6	2.51	0.45
2:B:2292:C:OP1	16:P:17:ARG:NH2	2.48	0.45
11:K:25:ARG:H	11:K:25:ARG:HG2	1.59	0.45
11:K:96:GLU:H	11:K:96:GLU:CD	2.19	0.45
17:Q:18:ASP:OD2	17:Q:18:ASP:N	2.47	0.45
25:Y:19:GLN:OE1	25:Y:19:GLN:HA	2.17	0.45
31:EA:8:ASN:C	31:EA:8:ASN:OD1	2.55	0.45
31:EA:31:LEU:HA	31:EA:31:LEU:HD13	1.58	0.45
36:KA:6:HIS:ND1	47:VA:49:HIS:HB3	2.31	0.45
38:MA:12:LEU:HB3	38:MA:31:LEU:HB2	1.98	0.45
50:YA:31:LEU:HD23	50:YA:32:TYR:CZ	2.51	0.45
1:DB:41:G:C2	1:DB:402:G:C2	3.04	0.45
1:DB:806:C:H2'	1:DB:807:A:C8	2.50	0.45
1:DB:949:A:H1'	1:DB:1364:U:C2	2.51	0.45
1:DB:1129:C:H1'	1:DB:1130:A:N7	2.31	0.45
1:DB:1152:A:H5"	43:UC:13:HIS:CG	2.51	0.45
2:EB:731:C:H2'	2:EB:732:C:H6	1.81	0.45
2:EB:1354:A:H2'	2:EB:1355:G:O4'	2.16	0.45
2:EB:2267:A:H5"	2:EB:2268:A:H5'	1.97	0.45
2:EB:2678:C:H2'	2:EB:2679:A:O4'	2.16	0.45
6:IB:111:ARG:N	6:IB:111:ARG:HD2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:IC:54:GLU:O	32:IC:58:ILE:HG13	2.16	0.45
42:TC:10:ARG:NH1	42:TC:75:ASP:OD1	2.48	0.45
42:TC:13:ALA:HB2	42:TC:68:GLY:HA3	1.97	0.45
1:A:56:U:H2'	1:A:57:G:H8	1.80	0.45
1:A:781:A:H4'	1:A:1522:U:O2'	2.15	0.45
2:B:301:G:H1'	2:B:302:C:C6	2.51	0.45
2:B:511:U:H5	2:B:512:G:C5	2.34	0.45
2:B:844:C:C5	2:B:845:G:C6	3.04	0.45
2:B:2404:C:H2'	2:B:2405:G:O4'	2.16	0.45
7:G:46:ARG:NH1	7:G:46:ARG:CG	2.79	0.45
9:I:98:LEU:HD11	9:I:125:VAL:H	1.82	0.45
20:T:8:ARG:O	20:T:9:TYR:HB2	2.16	0.45
21:U:28:PHE:CE1	21:U:47:PHE:HE2	2.34	0.45
25:Y:60:PHE:HE1	25:Y:95:LEU:HD11	1.80	0.45
41:PA:86:ILE:HG21	41:PA:133:LEU:HD13	1.98	0.45
46:UA:3:ARG:HD3	46:UA:8:GLU:OE1	2.16	0.45
48:WA:79:ARG:HD2	48:WA:79:ARG:HA	1.78	0.45
1:DB:626:U:H2'	1:DB:627:G:H8	1.82	0.45
1:DB:923:A:H2'	1:DB:924:C:C6	2.51	0.45
1:DB:974:A:H8	1:DB:974:A:OP1	1.99	0.45
1:DB:1398:A:H5"	1:DB:1399:C:OP1	2.17	0.45
2:EB:1260:G:C6	2:EB:1261:C:C4	3.04	0.45
2:EB:1583:A:H5'	2:EB:1585:C:H5"	1.96	0.45
2:EB:2313:C:P	8:KB:74:LYS:HZ3	2.38	0.45
2:EB:2649:U:H2'	2:EB:2650:U:C6	2.52	0.45
3:FB:3:C:H2'	3:FB:4:C:C6	2.51	0.45
10:MB:133:HIS:CD2	10:MB:135:GLU:HB3	2.51	0.45
16:SB:50:SER:O	16:SB:76:LYS:NZ	2.38	0.45
23:ZB:31:ARG:H	23:ZB:31:ARG:HG2	1.56	0.45
33:JC:2:LYS:NZ	33:JC:4:ARG:HE	2.14	0.45
33:JC:12:ASP:OD1	33:JC:12:ASP:N	2.48	0.45
41:SC:100:ILE:HA	41:SC:101:PRO:HD3	1.74	0.45
45:WC:125:PRO:HB2	45:WC:126:LYS:H	1.62	0.45
46:XC:3:ARG:HD3	46:XC:8:GLU:OE1	2.15	0.45
53:ED:53:LEU:HD12	53:ED:103:GLY:HA3	1.99	0.45
1:A:428:G:O4'	1:A:430:A:C8	2.69	0.45
1:A:693:G:H2'	1:A:694:A:C8	2.51	0.45
1:A:923:A:H2'	1:A:924:C:C6	2.52	0.45
2:B:394:A:C6	2:B:395:U:C4	3.04	0.45
2:B:805:G:O4'	13:M:38:GLN:NE2	2.47	0.45
2:B:1344:G:H4'	2:B:1384:A:C5	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1353:A:H2'	2:B:1354:A:C8	2.52	0.45
2:B:2443:C:OP1	7:G:68:LYS:HD3	2.16	0.45
7:G:110:LEU:HD11	7:G:181:LEU:HG	1.98	0.45
7:G:158:THR:O	7:G:164:ARG:HD2	2.16	0.45
9:I:20:ALA:HB1	9:I:21:PRO:HD2	1.98	0.45
35:JA:197:VAL:HB	35:JA:200:ILE:HG12	1.98	0.45
37:LA:173:TRP:CD1	37:LA:173:TRP:N	2.85	0.45
41:PA:81:HIS:HB2	41:PA:138:TRP:CD1	2.51	0.45
45:TA:105:TYR:C	45:TA:107:ALA:H	2.18	0.45
1:DB:370:C:C2	1:DB:392:G:C2	3.04	0.45
1:DB:857:C:H2'	1:DB:858:G:O4'	2.15	0.45
2:EB:18:C:H4'	18:UB:23:GLY:O	2.16	0.45
2:EB:226:G:C2	2:EB:227:A:C6	3.04	0.45
2:EB:706:A:H2'	2:EB:707:G:O4'	2.16	0.45
2:EB:748:G:H2'	2:EB:750:A:N7	2.31	0.45
2:EB:768:G:O2'	2:EB:1379:A:N1	2.41	0.45
2:EB:892:G:H2'	2:EB:893:C:H4'	1.99	0.45
2:EB:1364:G:P	25:BC:3:LYS:HG3	2.56	0.45
2:EB:1657:C:H2'	2:EB:1658:C:C6	2.49	0.45
2:EB:2141:G:H2'	2:EB:2142:C:H4'	1.98	0.45
2:EB:2376:A:N6	16:SB:89:ARG:HD3	2.31	0.45
2:EB:2773:C:OP1	6:IB:164:ARG:NE	2.46	0.45
7:JB:53:THR:HG22	7:JB:56:GLU:OE2	2.16	0.45
51:CD:53:ARG:H	51:CD:54:ARG:HH21	1.65	0.45
53:ED:43:LEU:HD23	53:ED:43:LEU:HA	1.81	0.45
1:A:1062:U:H2'	1:A:1063:C:C6	2.52	0.45
2:B:947:G:H2'	2:B:948:G:C8	2.51	0.45
5:E:260:ARG:NH2	5:E:266:SER:OG	2.48	0.45
6:F:52:LEU:O	6:F:76:ARG:N	2.39	0.45
9:I:9:ILE:HG12	9:I:69:ARG:CZ	2.47	0.45
15:O:100:LEU:HA	15:O:100:LEU:HD13	1.59	0.45
37:LA:158:ILE:HG13	37:LA:159:ARG:N	2.32	0.45
39:NA:11:ASN:OD1	39:NA:12:PRO:HD2	2.16	0.45
48:WA:85:LEU:HD23	48:WA:85:LEU:HA	1.77	0.45
53:BB:54:LYS:HG2	53:BB:57:ARG:HH21	1.82	0.45
1:DB:153:C:H42	1:DB:168:G:H1	1.64	0.45
1:DB:255:G:H2'	1:DB:256:U:C6	2.51	0.45
1:DB:973:G:H1'	43:UC:54:PHE:CD1	2.51	0.45
1:DB:991:U:C4	1:DB:1212:U:H1'	2.50	0.45
2:EB:71:A:H5"	2:EB:73:A:C8	2.52	0.45
2:EB:553:U:O2'	2:EB:554:U:H5'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:573:G:O2'	2:EB:574:C:H3'	2.16	0.45
2:EB:2526:G:H1	2:EB:2537:U:H3	1.63	0.45
3:FB:82:G:H1	3:FB:94:C:N4	1.99	0.45
10:MB:136:VAL:HA	10:MB:137:PRO:HD3	1.81	0.45
18:UB:74:LEU:HB2	18:UB:75:ASN:H	1.64	0.45
36:NC:183:ASP:OD1	36:NC:184:TYR:N	2.49	0.45
43:UC:16:LEU:O	43:UC:19:SER:OG	2.29	0.45
55:HD:139:ALA:HA	55:HD:144:TRP:HE3	1.81	0.45
1:A:922:G:C2	1:A:923:A:C4	3.04	0.45
1:A:1022:G:C6	1:A:1023:G:H1'	2.52	0.45
1:A:1129:C:H1'	1:A:1130:A:N7	2.31	0.45
2:B:38:A:H2'	2:B:39:C:H6	1.82	0.45
2:B:571:A:C8	2:B:2030:A:N6	2.84	0.45
2:B:1287:A:C5	2:B:1288:U:C4	3.03	0.45
2:B:1705:G:C6	2:B:1706:U:C4	3.05	0.45
2:B:2330:G:H2'	2:B:2331:G:O4'	2.17	0.45
2:B:2818:G:O2'	2:B:2819:G:H5'	2.16	0.45
5:E:121:PRO:HA	5:E:132:PRO:HD2	1.99	0.45
6:F:151:TYR:CZ	6:F:154:LYS:HD3	2.52	0.45
8:H:11:TYR:OH	8:H:16:ARG:NH1	2.50	0.45
14:N:75:THR:HG21	14:N:87:LYS:HZ1	1.78	0.45
17:Q:100:TYR:CD1	17:Q:103:ARG:NH1	2.83	0.45
18:R:39:LEU:HA	18:R:39:LEU:HD13	1.76	0.45
35:JA:121:LEU:HD23	35:JA:125:PRO:HG2	1.99	0.45
35:JA:126:GLU:CD	35:JA:130:ARG:HB2	2.36	0.45
41:PA:64:LYS:HG2	41:PA:79:VAL:HG11	1.98	0.45
43:RA:38:ILE:HB	43:RA:71:LEU:HB3	1.97	0.45
1:DB:162:A:C5	1:DB:163:C:H1'	2.51	0.45
1:DB:1373:G:H5"	40:RC:36:LYS:HB2	1.97	0.45
2:EB:547:A:H5"	2:EB:548:A:OP2	2.17	0.45
2:EB:550:G:O2'	2:EB:1220:A:N3	2.42	0.45
2:EB:796:C:H2'	2:EB:797:C:H6	1.80	0.45
2:EB:836:G:C5	2:EB:837:C:C4	3.05	0.45
2:EB:1657:C:OP1	6:IB:136:ARG:N	2.48	0.45
2:EB:2096:U:H2'	2:EB:2097:C:C6	2.52	0.45
2:EB:2345:G:OP2	30:GC:38:LYS:HG2	2.15	0.45
18:UB:32:PHE:CZ	18:UB:36:ARG:NH1	2.84	0.45
24:AC:23:VAL:HG13	24:AC:38:VAL:HG22	1.98	0.45
36:NC:86:VAL:HA	36:NC:89:GLU:HB2	1.98	0.45
37:OC:62:GLN:HE21	37:OC:62:GLN:HA	1.82	0.45
37:OC:127:THR:HA	37:OC:132:ARG:HA	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:PC:39:GLY:O	38:PC:69:VAL:HG12	2.17	0.45
38:PC:45:PHE:CE2	38:PC:47:LYS:HE3	2.51	0.45
41:SC:23:SER:HA	41:SC:63:LEU:HD23	1.97	0.45
55:HD:139:ALA:HA	55:HD:144:TRP:CE3	2.51	0.45
55:HD:181:GLY:O	55:HD:307:ASN:HB2	2.16	0.45
1:A:1105:A:H2'	1:A:1106:G:C8	2.52	0.45
1:A:1245:A:H2'	1:A:1246:C:C6	2.51	0.45
1:A:1295:G:HO2'	46:UA:14:ARG:NH1	2.13	0.45
1:A:1465:C:H2'	1:A:1466:C:O4'	2.17	0.45
2:B:312:G:H5'	2:B:331:A:O2'	2.17	0.45
2:B:1093:G:H1	2:B:1097:U:H5	1.64	0.45
2:B:1156:A:H4'	2:B:1157:G:OP2	2.17	0.45
2:B:1441:G:C2	2:B:1551:C:N3	2.85	0.45
2:B:2168:G:H2'	2:B:2169:A:H3'	1.99	0.45
2:B:2494:G:O2'	14:N:80:GLU:HA	2.17	0.45
8:H:56:ALA:HB2	8:H:153:ARG:NH1	2.21	0.45
10:J:10:GLU:C	10:J:12:LEU:H	2.20	0.45
14:N:64:ILE:HG13	23:W:178:GLU:HG3	1.99	0.45
14:N:109:VAL:HG13	14:N:113:GLN:HB3	1.98	0.45
31:EA:19:ARG:NH1	31:EA:19:ARG:HG2	2.31	0.45
45:TA:124:LYS:HD2	45:TA:125:PRO:HD2	1.99	0.45
53:BB:13:LEU:O	53:BB:17:ARG:HG3	2.16	0.45
1:DB:93:U:H2'	1:DB:95:G:C8	2.52	0.45
1:DB:1329:A:P	46:XC:28:ALA:HB3	2.57	0.45
2:EB:2575:C:OP1	6:IB:144:ARG:HD2	2.16	0.45
2:EB:2593:U:H2'	2:EB:2594:C:H6	1.81	0.45
2:EB:2811:G:H1	2:EB:2889:C:H42	1.64	0.45
20:WB:90:ARG:HG2	20:WB:90:ARG:HH11	1.82	0.45
23:ZB:61:LEU:HD23	23:ZB:67:LEU:HD23	1.97	0.45
32:IC:52:LYS:HB3	32:IC:53:PRO:HD3	1.99	0.45
35:MC:155:LEU:HA	35:MC:157:ARG:NH2	2.32	0.45
48:ZC:33:THR:HG23	48:ZC:63:ARG:NH1	2.31	0.45
49:AD:53:VAL:O	49:AD:57:ARG:HG3	2.17	0.45
52:DD:29:ARG:NH1	52:DD:29:ARG:HA	2.30	0.45
53:ED:9:ASN:C	53:ED:10:LEU:HD22	2.37	0.45
1:A:6:G:O2'	1:A:7:G:H5"	2.17	0.45
1:A:198:G:C2	1:A:199:G:C4	3.04	0.45
1:A:999:U:H1'	1:A:1042:G:N2	2.31	0.45
2:B:27:G:C4	2:B:512:G:N2	2.85	0.45
2:B:90:U:H1'	2:B:91:A:C8	2.52	0.45
2:B:938:G:H2'	2:B:939:G:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:978:G:C2	2:B:986:C:C2	3.05	0.45
2:B:1786:A:H1'	2:B:1938:A:N6	2.32	0.45
2:B:2071:A:H2'	2:B:2072:G:C8	2.52	0.45
2:B:2577:A:H5'	29:CA:3:LYS:NZ	2.31	0.45
10:J:133:HIS:HA	10:J:134:PRO:HD3	1.78	0.45
14:N:75:THR:HA	14:N:89:ASN:O	2.17	0.45
22:V:86:ARG:NH1	22:V:100:ALA:O	2.50	0.45
27:AA:31:LEU:HA	27:AA:31:LEU:HD23	1.76	0.45
31:EA:47:ARG:O	31:EA:48:LYS:HG3	2.16	0.45
37:LA:43:HIS:C	37:LA:45:GLN:H	2.19	0.45
38:MA:39:GLY:O	38:MA:69:VAL:HG12	2.17	0.45
51:ZA:53:ARG:H	51:ZA:54:ARG:HH21	1.63	0.45
2:EB:30:G:H2'	2:EB:31:C:C6	2.52	0.45
2:EB:71:A:H3'	2:EB:71:A:OP2	2.16	0.45
2:EB:587:C:C6	2:EB:671:C:H1'	2.52	0.45
2:EB:733:G:H8	2:EB:733:G:O5'	1.99	0.45
2:EB:827:U:H2'	2:EB:2068:U:C2	2.52	0.45
2:EB:890:A:H2'	2:EB:892:G:C8	2.52	0.45
2:EB:1011:G:C2	2:EB:1013:C:C2	3.04	0.45
2:EB:1301:A:H2	2:EB:1626:G:N3	2.14	0.45
2:EB:2784:C:H2'	2:EB:2785:C:C6	2.52	0.45
2:EB:2821:A:H2'	2:EB:2822:G:O4'	2.17	0.45
4:GB:67:C:H2'	4:GB:68:C:C6	2.52	0.45
6:IB:37:ARG:HD3	6:IB:42:ASP:CG	2.37	0.45
7:JB:46:ARG:NH1	7:JB:46:ARG:CG	2.78	0.45
7:JB:110:LEU:HD11	7:JB:181:LEU:HG	1.99	0.45
10:MB:61:ARG:HA	10:MB:61:ARG:HH11	1.82	0.45
21:XB:35:THR:O	21:XB:39:ILE:HG13	2.17	0.45
35:MC:223:ILE:HA	35:MC:226:ARG:HB3	1.99	0.45
36:NC:19:GLU:HG2	36:NC:54:ARG:NH1	2.32	0.45
38:PC:98:THR:HB	38:PC:117:ASP:HB3	1.98	0.45
38:PC:145:LYS:HB3	38:PC:145:LYS:HZ3	1.81	0.45
42:TC:11:LYS:C	42:TC:13:ALA:H	2.19	0.45
49:AD:58:TYR:O	49:AD:61:SER:OG	2.29	0.45
50:BD:84:LEU:O	50:BD:87:LYS:HG3	2.17	0.45
1:A:338:A:C6	1:A:339:C:C4	3.05	0.45
1:A:909:A:N3	1:A:1413:A:O2'	2.42	0.45
1:A:975:A:O2'	47:VA:32:SER:OG	2.32	0.45
1:A:1049:U:OP1	47:VA:3:ARG:HB2	2.17	0.45
1:A:1163:C:H2'	1:A:1164:G:C8	2.52	0.45
1:A:1422:G:O3'	12:L:49:ARG:NH1	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:165:U:H2'	2:B:171:G:O4'	2.17	0.45
2:B:573:G:O2'	2:B:574:C:H3'	2.17	0.45
2:B:733:G:O5'	2:B:733:G:H8	1.99	0.45
2:B:1029:A:H5"	2:B:1030:G:OP2	2.17	0.45
2:B:1935:G:H1'	2:B:1964:G:N2	2.32	0.45
2:B:2141:G:H2'	2:B:2142:C:H4'	1.98	0.45
2:B:2401:U:H3	2:B:2415:G:H1	1.63	0.45
2:B:2784:C:H2'	2:B:2785:C:C6	2.51	0.45
5:E:61:LEU:HD12	5:E:61:LEU:HA	1.75	0.45
11:K:48:MET:HE2	11:K:48:MET:HB2	1.81	0.45
16:P:10:ARG:HH21	16:P:91:PRO:HB2	1.80	0.45
24:X:50:ASN:HB2	24:X:81:VAL:HB	1.99	0.45
38:MA:121:LYS:HD3	38:MA:122:GLU:N	2.31	0.45
50:YA:29:HIS:HA	50:YA:30:PRO:HD3	1.79	0.45
1:DB:598:U:H2'	1:DB:599:C:H6	1.82	0.45
1:DB:606:G:H21	1:DB:631:G:H2'	1.81	0.45
1:DB:1449:C:H2'	1:DB:1450:U:O4'	2.17	0.45
2:EB:537:C:H2'	2:EB:539:G:H8	1.82	0.45
2:EB:978:G:C2	2:EB:986:C:C2	3.05	0.45
2:EB:2701:C:H2'	2:EB:2702:U:H2'	1.98	0.45
5:HB:263:ARG:HG2	5:HB:263:ARG:HH11	1.82	0.45
9:LB:25:LYS:HB3	9:LB:27:LYS:HZ2	1.82	0.45
15:RB:42:LYS:O	15:RB:45:ARG:HG2	2.17	0.45
20:WB:8:ARG:HA	20:WB:102:HIS:HA	1.99	0.45
24:AC:48:GLY:HA3	24:AC:80:HIS:ND1	2.32	0.45
29:FC:41:PRO:HA	29:FC:42:PRO:HD3	1.84	0.45
39:QC:16:GLN:H	39:QC:16:GLN:HG3	1.39	0.45
41:SC:20:TYR:HA	41:SC:65:TYR:CZ	2.52	0.45
42:TC:81:ILE:O	42:TC:85:LEU:HG	2.16	0.45
46:XC:27:LYS:HB2	46:XC:27:LYS:NZ	2.32	0.45
1:A:991:U:C4	1:A:1212:U:H1'	2.51	0.45
2:B:58:G:C6	2:B:59:U:C4	3.05	0.45
2:B:270(J):G:H4'	25:Y:81:ARG:NE	2.32	0.45
2:B:270(R):C:O3'	10:J:42:SER:HB2	2.17	0.45
2:B:489:G:H2'	2:B:491:G:O4'	2.17	0.45
2:B:675:A:C4	2:B:804:A:C2	3.05	0.45
2:B:929:G:H8	2:B:929:G:O5'	2.00	0.45
2:B:1051:G:H4'	2:B:2752:C:H4'	1.99	0.45
2:B:1604:C:H2'	2:B:1605:C:H6	1.82	0.45
2:B:1799:G:C8	5:E:181:GLU:OE2	2.70	0.45
2:B:2503:2MA:H4'	2:B:2504:U:OP1	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2581:G:C6	2:B:2610:C:N3	2.85	0.45
5:E:72:LYS:NZ	5:E:101:GLU:HB3	2.31	0.45
11:K:13:TRP:CE2	11:K:133:GLN:HG2	2.52	0.45
15:O:37:THR:OG1	15:O:40:LYS:HB2	2.16	0.45
23:W:5:LEU:HD13	23:W:47:VAL:HG21	1.99	0.45
23:W:162:GLU:O	23:W:164:ALA:N	2.50	0.45
37:LA:21:LEU:H	37:LA:21:LEU:HG	1.57	0.45
38:MA:9:LYS:HB2	38:MA:112:LEU:HD11	1.99	0.45
48:WA:51:HIS:O	48:WA:54:ARG:HB3	2.16	0.45
50:YA:69:LYS:O	50:YA:70:ARG:HD2	2.16	0.45
1:DB:926:G:N2	34:KC:15:A:OP2	2.46	0.45
2:EB:1526:G:C6	2:EB:1527:G:C2	3.05	0.45
2:EB:1902:C:H5'	5:HB:246:PRO:HD3	1.99	0.45
2:EB:2712(A):A:H5'	2:EB:2713:A:OP2	2.17	0.45
8:KB:106:LEU:HD12	8:KB:110:ALA:HB3	1.99	0.45
9:LB:13:LYS:HA	9:LB:14:GLY:HA2	1.59	0.45
10:MB:75:LEU:HD13	10:MB:105:HIS:NE2	2.32	0.45
10:MB:87:LYS:HE2	10:MB:89:TYR:CD1	2.51	0.45
31:HC:19:ARG:NH1	31:HC:19:ARG:HG2	2.31	0.45
44:VC:79:SER:HA	44:VC:104:GLN:HB3	1.98	0.45
53:ED:50:GLU:H	53:ED:99:LEU:HD12	1.82	0.45
1:A:296:U:H2'	1:A:297:G:C8	2.52	0.45
1:A:542:G:P	37:LA:10:ARG:HH22	2.37	0.45
1:A:559:A:H4'	1:A:560:U:H5"	1.99	0.45
1:A:660:G:H1	1:A:745:C:H42	1.65	0.45
1:A:790:A:C6	1:A:791:G:C6	3.05	0.45
2:B:910:A:C6	2:B:911:A:C6	3.04	0.45
2:B:1093:G:H3'	2:B:1094:U:H5"	1.98	0.45
2:B:2678:C:H2'	2:B:2679:A:O4'	2.17	0.45
4:D:39:C:H4'	44:SA:54:ARG:HH22	1.82	0.45
7:G:140:LEU:HD11	7:G:170:LEU:HD11	1.99	0.45
10:J:4:ILE:HA	10:J:17:GLN:O	2.17	0.45
22:V:43:ASN:CG	22:V:67:LEU:HD21	2.38	0.45
4:IA:65:C:H2'	4:IA:66:C:H6	1.81	0.45
36:KA:6:HIS:HD2	36:KA:8:ILE:H	1.64	0.45
36:KA:19:GLU:HG2	36:KA:54:ARG:NH1	2.32	0.45
37:LA:120:LEU:HD23	37:LA:120:LEU:HA	1.75	0.45
39:NA:100:ASN:HA	51:ZA:23:LYS:NZ	2.32	0.45
42:QA:70:LYS:O	42:QA:74:ILE:HG13	2.17	0.45
46:UA:6:GLY:HA3	46:UA:67:GLU:HG3	1.97	0.45
2:EB:1344:G:H4'	2:EB:1384:A:C5	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:1640:C:H5'	2:EB:1641:A:OP2	2.17	0.45
2:EB:1675:C:H2'	2:EB:1676:A:O4'	2.17	0.45
2:EB:1939:5MU:H3'	2:EB:1940:U:H5'	1.99	0.45
5:HB:223:GLY:HA2	5:HB:226:MET:HG3	1.98	0.45
7:JB:167:ALA:HB1	7:JB:173:VAL:HG11	1.99	0.45
8:KB:113:ARG:NH1	28:EC:34:GLU:HG2	2.30	0.45
8:KB:138:GLN:HB3	8:KB:153:ARG:O	2.17	0.45
14:QB:25:ASP:OD1	14:QB:25:ASP:N	2.48	0.45
14:QB:112:GLU:HA	14:QB:115:MET:HB2	1.98	0.45
16:SB:91:PRO:HG2	16:SB:92:TYR:CE1	2.52	0.45
35:MC:212:GLN:NE2	35:MC:235:SER:HB3	2.32	0.45
39:QC:15:ASP:O	39:QC:19:LEU:HB2	2.16	0.45
48:ZC:9:GLN:NE2	48:ZC:12:ILE:HD12	2.32	0.45
55:HD:154:GLY:O	55:HD:156:HIS:N	2.50	0.45
1:A:1412:C:H2'	1:A:1413:A:H8	1.82	0.44
2:B:321:G:O3'	7:G:168:ARG:NH2	2.46	0.44
2:B:1582:C:H2'	2:B:1583:A:C8	2.52	0.44
5:E:72:LYS:HZ2	5:E:101:GLU:HB3	1.81	0.44
5:E:148:GLU:HB2	5:E:151:LYS:HD2	1.99	0.44
6:F:7:VAL:HG23	6:F:51:PHE:CE2	2.52	0.44
14:N:43:THR:HG23	14:N:46:GLN:CD	2.37	0.44
16:P:57:LYS:HD3	16:P:57:LYS:HA	1.75	0.44
24:X:48:GLY:HA3	24:X:80:HIS:ND1	2.32	0.44
35:JA:155:LEU:HA	35:JA:157:ARG:NH2	2.31	0.44
35:JA:219:VAL:O	35:JA:222:ILE:HB	2.17	0.44
37:LA:21:LEU:O	37:LA:26:CYS:SG	2.76	0.44
44:SA:90:GLY:O	44:SA:92:GLU:N	2.50	0.44
50:YA:31:LEU:HD23	50:YA:32:TYR:CE2	2.52	0.44
50:YA:66:SER:OG	50:YA:67:LYS:N	2.50	0.44
53:BB:9:ASN:C	53:BB:10:LEU:HD22	2.38	0.44
2:EB:70:G:H5"	2:EB:112:U:O2	2.18	0.44
2:EB:664:C:H4'	2:EB:941:A:OP1	2.17	0.44
2:EB:1043:C:C5	2:EB:1044:G:C8	3.05	0.44
2:EB:1510:A:C8	2:EB:1511:A:C8	3.05	0.44
2:EB:2478:A:H2'	2:EB:2479:G:O4'	2.17	0.44
2:EB:2784:C:H2'	2:EB:2785:C:H6	1.82	0.44
7:JB:14:PRO:HD2	7:JB:127:GLU:OE2	2.17	0.44
7:JB:107:LYS:HD3	7:JB:107:LYS:HA	1.71	0.44
10:MB:10:GLU:C	10:MB:12:LEU:H	2.20	0.44
35:MC:19:HIS:HB2	35:MC:204:ASN:HB3	1.99	0.44
36:NC:91:LEU:O	36:NC:95:THR:HG23	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:ZC:6:GLU:CD	48:ZC:6:GLU:H	2.20	0.44
55:GD:188:PRO:HD3	55:GD:197:HIS:HB2	1.99	0.44
1:A:599:C:H2'	1:A:600:C:C6	2.52	0.44
1:A:689:C:H2'	1:A:690:G:O4'	2.16	0.44
1:A:811:C:H4'	1:A:900:A:N6	2.31	0.44
2:B:18:C:H2'	2:B:19:C:C6	2.52	0.44
2:B:330:A:HO2'	2:B:331:A:H8	1.64	0.44
2:B:1520:U:H2'	2:B:1521:G:O4'	2.17	0.44
2:B:1702:G:C6	2:B:1703:G:C5	3.05	0.44
2:B:1779:U:C6	2:B:1783:A:N7	2.85	0.44
2:B:2846:G:H2'	2:B:2847:U:O4'	2.17	0.44
3:C:1:U:OP2	3:C:1:U:H6	2.00	0.44
10:J:79:ILE:O	10:J:144:VAL:HA	2.18	0.44
15:O:30:THR:HG22	15:O:75:LEU:HD13	1.98	0.44
18:R:104:GLN:NE2	18:R:105:VAL:HG23	2.32	0.44
28:BA:59:PHE:CD1	28:BA:60:GLN:HG3	2.52	0.44
36:KA:3:ASN:N	36:KA:3:ASN:OD1	2.49	0.44
37:LA:70:ILE:HD11	37:LA:100:ARG:NH1	2.33	0.44
37:LA:196:LEU:HB3	37:LA:198:VAL:HG12	1.99	0.44
46:UA:3:ARG:NH1	46:UA:8:GLU:HA	2.33	0.44
53:BB:50:GLU:H	53:BB:99:LEU:HD12	1.82	0.44
53:BB:84:LEU:O	53:BB:88:VAL:HG23	2.16	0.44
1:DB:1004:A:H5"	1:DB:1024:G:H22	1.81	0.44
1:DB:1022:G:C6	1:DB:1023:G:H1'	2.51	0.44
1:DB:1062:U:H2'	1:DB:1063:C:C6	2.51	0.44
2:EB:59:U:H3	2:EB:68:G:H1	1.65	0.44
2:EB:1057:A:N6	2:EB:1059:G:N7	2.64	0.44
2:EB:1417:C:H42	2:EB:1581:G:H1	1.65	0.44
2:EB:2108:C:O2	2:EB:2182:G:N2	2.50	0.44
3:FB:39:A:H2'	3:FB:40:U:C6	2.51	0.44
4:GB:10:G:H2'	4:GB:11:A:H8	1.80	0.44
5:HB:182:LEU:HB3	5:HB:271:ILE:HB	1.98	0.44
7:JB:148:LEU:HD11	7:JB:193:VAL:HG21	1.99	0.44
8:KB:135:LEU:HD13	8:KB:135:LEU:HA	1.63	0.44
10:MB:56:LYS:O	10:MB:60:GLU:HB2	2.17	0.44
14:QB:81:VAL:HG12	24:AC:5:LYS:HZ3	1.80	0.44
16:SB:49:VAL:HG22	16:SB:50:SER:H	1.81	0.44
52:DD:3:ARG:HH22	52:DD:7:LYS:HE2	1.80	0.44
1:A:272:C:H2'	1:A:273:A:C8	2.52	0.44
1:A:889:A:H5'	1:A:891:U:H1'	1.98	0.44
1:A:1119:C:H2'	1:A:1120:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1256:A:H2	1:A:1277:C:C2	2.34	0.44
2:B:17:G:H2'	2:B:18:C:H6	1.82	0.44
2:B:270(R):C:OP1	10:J:45:LYS:NZ	2.50	0.44
2:B:361:G:C2	2:B:362:U:C5	3.05	0.44
2:B:363(G):A:O2'	2:B:364:C:OP2	2.34	0.44
2:B:1202:C:H42	2:B:1243:G:H1	1.65	0.44
2:B:1510:A:C8	2:B:1511:A:C8	3.05	0.44
4:D:52:G:H1'	4:D:63:G:H22	1.82	0.44
5:E:71:ASP:N	5:E:71:ASP:OD2	2.50	0.44
8:H:6:ALA:N	8:H:104:GLU:OE2	2.50	0.44
11:K:108:PRO:O	11:K:113:GLY:HA3	2.17	0.44
12:L:15:GLY:O	12:L:47:ILE:HG13	2.16	0.44
13:M:90:ARG:NH1	13:M:90:ARG:HB3	2.33	0.44
15:O:13:HIS:CE1	15:O:15:SER:HB2	2.52	0.44
15:O:67:LEU:HD23	15:O:76:VAL:HG21	1.99	0.44
24:X:5:LYS:HB3	55:GD:265:LYS:HZ2	1.81	0.44
30:DA:19:ARG:HG3	30:DA:19:ARG:NH1	2.31	0.44
36:KA:91:LEU:O	36:KA:95:THR:HG23	2.17	0.44
37:LA:4:TYR:HD2	37:LA:4:TYR:HA	1.64	0.44
37:LA:127:THR:HA	37:LA:132:ARG:HA	1.99	0.44
41:PA:92:ARG:HB3	41:PA:94:TYR:CE2	2.52	0.44
43:RA:79:ARG:O	43:RA:83:GLU:HG3	2.18	0.44
1:DB:1004:A:N6	1:DB:1026:G:O5'	2.50	0.44
2:EB:511:U:H5	2:EB:512:G:C5	2.35	0.44
2:EB:715:G:H2'	2:EB:716:A:C8	2.52	0.44
2:EB:1161:C:O2'	19:VB:8:GLY:HA2	2.17	0.44
2:EB:2123:G:H1	2:EB:2175:C:H42	1.66	0.44
2:EB:2130:U:H2'	2:EB:2131:G:H21	1.82	0.44
6:IB:40:GLU:H	6:IB:40:GLU:HG3	1.47	0.44
22:YB:8:LYS:HG2	22:YB:11:ASP:OD2	2.17	0.44
41:SC:114:THR:O	41:SC:117:GLY:N	2.43	0.44
45:WC:28:LYS:HB2	45:WC:33:ARG:HH21	1.83	0.44
1:A:58:C:O2'	1:A:388:G:N7	2.42	0.44
1:A:457:C:H42	1:A:475:G:H1	1.66	0.44
1:A:995:C:O2'	47:VA:4:LYS:HE2	2.17	0.44
2:B:30:G:H2'	2:B:31:C:C6	2.53	0.44
2:B:43:G:N2	2:B:438:G:C4	2.86	0.44
2:B:59:U:H3	2:B:68:G:H1	1.66	0.44
2:B:953:A:O2'	2:B:954:G:H5'	2.17	0.44
2:B:2108:C:O2	2:B:2182:G:N2	2.51	0.44
2:B:2316:C:H1'	8:H:128:ARG:CZ	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2773:C:OP1	6:F:164:ARG:NE	2.41	0.44
6:F:47:VAL:HG11	6:F:86:PRO:CD	2.47	0.44
14:N:83:MET:HE2	14:N:83:MET:HB2	1.65	0.44
20:T:31:GLU:O	20:T:34:ASN:N	2.51	0.44
35:JA:103:THR:HA	35:JA:180:LEU:HD11	2.00	0.44
1:DB:345:C:H5'	1:DB:346:G:C5	2.52	0.44
1:DB:1201:A:H1'	1:DB:1202:G:OP2	2.17	0.44
1:DB:1226:C:H4'	52:DD:80:TYR:CZ	2.53	0.44
2:EB:270(A):A:H1'	2:EB:370:G:C2	2.53	0.44
2:EB:321:G:C4	2:EB:341:G:H4'	2.53	0.44
2:EB:603:A:C8	2:EB:655:A:C6	3.05	0.44
2:EB:1409:C:H2'	2:EB:1410:G:C8	2.52	0.44
2:EB:1450:C:N4	2:EB:1451:C:H41	2.16	0.44
2:EB:2852:G:H2'	2:EB:2853:C:C6	2.52	0.44
3:FB:12:C:OP2	3:FB:12:C:C6	2.70	0.44
7:JB:50:SER:HA	7:JB:92:PRO:O	2.17	0.44
14:QB:61:GLY:HA2	23:ZB:177:PRO:HB2	2.00	0.44
18:UB:104:GLN:NE2	18:UB:105:VAL:HG23	2.32	0.44
19:VB:19:LYS:H	19:VB:19:LYS:HG2	1.54	0.44
36:NC:36:ASP:OD2	36:NC:57:ILE:HG21	2.17	0.44
36:NC:91:LEU:HD23	36:NC:99:VAL:HA	1.99	0.44
36:NC:92:ALA:HA	36:NC:95:THR:OG1	2.17	0.44
38:PC:95:ALA:O	38:PC:98:THR:OG1	2.20	0.44
41:SC:127:LEU:HD13	41:SC:127:LEU:HA	1.88	0.44
55:GD:134:MET:HG3	55:GD:337:LEU:HD21	1.99	0.44
55:HD:115:VAL:HA	55:HD:203:VAL:HA	2.00	0.44
1:A:224:C:H2'	1:A:225:C:H6	1.83	0.44
1:A:346:G:OP2	17:Q:43:GLN:NE2	2.48	0.44
1:A:542:G:H5'	37:LA:41:GLY:HA3	1.99	0.44
1:A:756:C:H2'	1:A:757:U:O4'	2.18	0.44
1:A:1004:A:N6	1:A:1026:G:O5'	2.51	0.44
1:A:1347:G:N7	42:QA:10:ARG:NH2	2.65	0.44
2:B:312:G:C6	2:B:313:C:C4	3.05	0.44
2:B:458:G:O2'	31:EA:39:ARG:HD3	2.17	0.44
2:B:636:G:OP1	13:M:132:LYS:HE2	2.17	0.44
2:B:692:C:N3	2:B:771:G:C2	2.86	0.44
2:B:1641:A:H2'	2:B:1642:G:O4'	2.18	0.44
6:F:152:LYS:HE3	6:F:152:LYS:HB3	1.87	0.44
8:H:106:LEU:HD12	8:H:110:ALA:HB3	1.98	0.44
9:I:72:ILE:O	9:I:76:VAL:HG23	2.17	0.44
9:I:102:ALA:HA	9:I:117:PRO:HD3	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:144:LEU:HD21	23:W:150:LEU:HG	2.00	0.44
27:AA:7:LYS:HB2	27:AA:34:GLU:HG2	1.98	0.44
36:KA:43:LEU:HD23	36:KA:43:LEU:HA	1.82	0.44
38:MA:98:THR:HB	38:MA:117:ASP:HB3	1.98	0.44
39:NA:62:TRP:CH2	39:NA:64:GLN:HB2	2.52	0.44
51:ZA:46:GLU:OE2	51:ZA:85:LEU:HD12	2.18	0.44
1:DB:447:G:O6	1:DB:485:G:O2'	2.23	0.44
1:DB:1309:G:O2'	46:XC:77:ASN:ND2	2.51	0.44
2:EB:6:A:C2	2:EB:7:G:C8	3.06	0.44
2:EB:506:G:H5"	2:EB:509:C:O2'	2.17	0.44
2:EB:637:A:OP1	13:PB:133:SER:OG	2.24	0.44
2:EB:1204:A:H61	2:EB:1240:U:H2'	1.83	0.44
2:EB:2298:A:H2'	2:EB:2299:G:O4'	2.16	0.44
2:EB:2300:G:H2'	2:EB:2301:C:C6	2.52	0.44
2:EB:2516:G:C6	2:EB:2517:C:N4	2.85	0.44
2:EB:2603:G:C6	2:EB:2604:U:C4	3.06	0.44
2:EB:2704:C:H2'	2:EB:2705:A:O4'	2.18	0.44
4:GB:52:G:H1'	4:GB:63:G:H22	1.83	0.44
5:HB:218:ARG:NH1	5:HB:218:ARG:CG	2.78	0.44
7:JB:54:ARG:HA	7:JB:87:GLY:HA3	1.99	0.44
38:PC:137:GLU:OE2	38:PC:137:GLU:HA	2.17	0.44
42:TC:108:VAL:HG12	42:TC:109:VAL:H	1.83	0.44
1:A:35:G:C2	1:A:550:G:C2	3.06	0.44
1:A:539:A:H2'	1:A:540:G:C8	2.53	0.44
1:A:949:A:H1'	1:A:1364:U:C2	2.53	0.44
1:A:962:C:H42	1:A:973:G:H1	1.64	0.44
2:B:176:G:O2'	2:B:177:G:H5'	2.18	0.44
2:B:836:G:C5	2:B:837:C:C4	3.06	0.44
2:B:1301:A:H2	2:B:1626:G:N3	2.16	0.44
2:B:1342:A:OP2	2:B:1602:U:O4	2.35	0.44
2:B:1590:U:H2'	2:B:1591:G:C8	2.53	0.44
2:B:2135:A:H2'	2:B:2136:C:H5'	1.99	0.44
2:B:2425:A:H4'	2:B:2426:A:H5"	1.99	0.44
7:G:167:ALA:HB1	7:G:173:VAL:HG11	1.99	0.44
8:H:33:ARG:O	8:H:162:THR:HG23	2.17	0.44
15:O:38:VAL:HB	15:O:39:PRO:HD3	1.98	0.44
29:CA:25:LEU:HD12	29:CA:25:LEU:H	1.81	0.44
43:RA:16:LEU:O	43:RA:19:SER:OG	2.27	0.44
1:DB:767:A:H2'	1:DB:768:A:O4'	2.18	0.44
1:DB:1075:C:H5"	35:MC:179:LYS:NZ	2.33	0.44
1:DB:1163:C:H2'	1:DB:1164:G:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:1442:G:H2'	1:DB:1442:G:N3	2.32	0.44
1:DB:1465:C:H2'	1:DB:1466:C:O4'	2.17	0.44
2:EB:46:C:H42	2:EB:179:G:H1	1.64	0.44
2:EB:1511:A:C8	2:EB:1512:G:C8	3.05	0.44
2:EB:2508:G:P	55:HD:228:ARG:HH22	2.40	0.44
8:KB:6:ALA:N	8:KB:104:GLU:OE2	2.49	0.44
8:KB:43:LEU:C	8:KB:45:GLU:H	2.21	0.44
8:KB:76:SER:HB2	8:KB:84:LYS:HB3	1.99	0.44
9:LB:101:ARG:HH11	9:LB:122:THR:HG22	1.83	0.44
19:VB:71:LEU:HD13	19:VB:71:LEU:HA	1.76	0.44
25:BC:15:ALA:O	25:BC:40:ARG:HG3	2.18	0.44
25:BC:98:LEU:HD23	25:BC:98:LEU:OXT	2.18	0.44
40:RC:104:LEU:HD13	40:RC:104:LEU:HA	1.84	0.44
41:SC:5:PRO:HB2	41:SC:32:LYS:NZ	2.32	0.44
44:VC:43:SER:HB2	44:VC:68:ALA:HB2	2.00	0.44
53:ED:84:LEU:O	53:ED:88:VAL:HG23	2.17	0.44
1:A:106:C:H2'	1:A:107:G:H8	1.83	0.44
1:A:262:A:N6	1:A:263:A:N6	2.66	0.44
1:A:837:G:H2'	1:A:838:G:H8	1.81	0.44
2:B:1288:U:C2	2:B:1327:C:O2	2.71	0.44
2:B:1319:G:O2'	2:B:1320:C:H5'	2.18	0.44
2:B:1742:C:H5'	2:B:1743:G:OP2	2.18	0.44
7:G:65:TRP:HD1	7:G:70:THR:HG21	1.83	0.44
7:G:195:ASP:HB3	7:G:198:ALA:CB	2.47	0.44
8:H:107:LEU:HD22	8:H:177:GLY:O	2.18	0.44
20:T:8:ARG:HA	20:T:102:HIS:HA	1.98	0.44
20:T:19:LEU:HB3	29:CA:25:LEU:HD11	2.00	0.44
21:U:5:TYR:CZ	26:Z:30:ARG:HD2	2.53	0.44
23:W:69:THR:HG22	23:W:90:VAL:HA	2.00	0.44
37:LA:108:LEU:HD23	37:LA:108:LEU:HA	1.75	0.44
47:VA:53:LEU:HD23	47:VA:53:LEU:HA	1.82	0.44
1:DB:262:A:H2'	1:DB:263:A:C8	2.53	0.44
1:DB:837:G:H2'	1:DB:838:G:H8	1.83	0.44
2:EB:347:A:H2'	2:EB:348:G:C8	2.52	0.44
2:EB:1406:U:H2'	2:EB:1407:C:C6	2.53	0.44
2:EB:2135:A:H2'	2:EB:2136:C:H5'	2.00	0.44
2:EB:2788:C:O2'	2:EB:2809:A:N3	2.50	0.44
3:FB:64:C:H5"	3:FB:65:C:OP2	2.18	0.44
8:KB:84:LYS:HE3	8:KB:84:LYS:HB2	1.81	0.44
8:KB:114:ILE:HD11	8:KB:117:PHE:CD1	2.53	0.44
24:AC:23:VAL:HB	24:AC:26:TYR:HE1	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:BC:72:GLU:O	25:BC:75:GLU:HB3	2.18	0.44
35:MC:83:MET:SD	35:MC:234:PRO:HB2	2.58	0.44
38:PC:31:LEU:HA	38:PC:31:LEU:HD23	1.69	0.44
41:SC:101:PRO:HG2	41:SC:133:LEU:HD11	1.99	0.44
42:TC:5:TYR:CE1	42:TC:16:ARG:HB2	2.49	0.44
43:UC:49:VAL:O	43:UC:60:ARG:HB3	2.18	0.44
44:VC:98:LEU:O	44:VC:101:SER:OG	2.23	0.44
55:GD:137:ARG:HD3	55:GD:334:GLU:O	2.18	0.44
55:HD:138:TYR:HE1	55:HD:338:ASP:OD2	2.01	0.44
1:A:714:G:H2'	1:A:715:A:C8	2.53	0.44
1:A:1064:G:H4'	1:A:1065:U:OP1	2.18	0.44
1:A:1366:C:H2'	1:A:1367:C:C6	2.52	0.44
1:A:1418:A:C2	1:A:1483:A:C2	3.05	0.44
1:A:1442:G:N3	1:A:1442:G:H2'	2.33	0.44
2:B:664:C:H4'	2:B:941:A:OP1	2.18	0.44
7:G:181:LEU:HD11	7:G:186:ILE:HD11	1.98	0.44
25:Y:46:LEU:HD23	25:Y:46:LEU:HA	1.79	0.44
1:DB:368:U:H6	1:DB:368:U:H2'	1.53	0.44
1:DB:645:C:H2'	1:DB:646:U:O4'	2.18	0.44
1:DB:1256:A:H2	1:DB:1277:C:C2	2.35	0.44
2:EB:894:C:O2'	2:EB:895:U:OP2	2.30	0.44
2:EB:1125:G:H3'	2:EB:1126:A:H5"	1.98	0.44
2:EB:2401:U:H2'	2:EB:2402:C:O4'	2.18	0.44
7:JB:150:GLY:HA2	7:JB:172:TRP:CE3	2.53	0.44
23:ZB:69:THR:HG22	23:ZB:90:VAL:HA	1.99	0.44
23:ZB:166:SER:O	23:ZB:169:GLU:HB2	2.18	0.44
28:EC:61:ARG:NH1	28:EC:62:ARG:NH2	2.66	0.44
35:MC:121:LEU:HD23	35:MC:125:PRO:HG2	2.00	0.44
36:NC:33:LEU:HA	36:NC:36:ASP:HB3	1.99	0.44
38:PC:48:ALA:C	38:PC:50:GLU:H	2.20	0.44
38:PC:144:THR:O	38:PC:148:VAL:HG23	2.17	0.44
39:QC:11:ASN:OD1	39:QC:12:PRO:HD2	2.18	0.44
43:UC:38:ILE:HB	43:UC:71:LEU:HB3	1.99	0.44
1:A:540:G:C6	1:A:541:G:C5	3.06	0.44
1:A:1531:A:H5'	1:A:1532:U:O2	2.18	0.44
2:B:565:C:H2'	2:B:566:U:O4'	2.18	0.44
2:B:733:G:O6	2:B:761:A:C8	2.71	0.44
2:B:1152:C:OP1	18:R:84:LYS:HD2	2.18	0.44
2:B:1568:G:H5"	5:E:61:LEU:HD22	2.00	0.44
2:B:2626:C:H2'	2:B:2627:G:C8	2.53	0.44
2:B:2729:G:H4'	6:F:186:GLY:HA2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2780:G:H4'	2:B:2781:A:OP2	2.17	0.44
7:G:156:LEU:HD22	7:G:156:LEU:HA	1.72	0.44
9:I:38:SER:HA	9:I:39:PRO:HD3	1.86	0.44
24:X:5:LYS:HB3	55:GD:265:LYS:HZ1	1.81	0.44
24:X:23:VAL:HB	24:X:26:TYR:HE1	1.82	0.44
35:JA:115:LEU:HB2	35:JA:145:LEU:HD22	2.00	0.44
35:JA:157:ARG:HE	35:JA:157:ARG:N	2.16	0.44
37:LA:155:LEU:HD22	37:LA:156:GLU:H	1.82	0.44
37:LA:155:LEU:O	37:LA:159:ARG:HG3	2.18	0.44
39:NA:12:PRO:HG2	39:NA:13:ASN:ND2	2.33	0.44
39:NA:15:ASP:OD2	39:NA:18:GLN:HB3	2.18	0.44
45:TA:28:LYS:HB2	45:TA:33:ARG:HH21	1.83	0.44
46:UA:39:ILE:HD12	46:UA:56:LEU:HD22	1.99	0.44
1:DB:756:C:O4'	41:SC:1:MET:HG2	2.18	0.44
1:DB:952:U:H2'	1:DB:953:G:H8	1.81	0.44
1:DB:1087:G:H1	1:DB:1098:C:H42	1.66	0.44
1:DB:1391:U:H2'	1:DB:1392:G:C8	2.53	0.44
1:DB:1516:G:N1	1:DB:1519:MA6:OP2	2.51	0.44
2:EB:270(W):G:H2'	2:EB:270(X):G:C8	2.53	0.44
2:EB:1254:A:N1	7:JB:82:ILE:HD11	2.32	0.44
2:EB:1791:A:H3'	2:EB:1792:G:H8	1.82	0.44
2:EB:2674:G:H4'	12:OB:30:ALA:HB2	2.00	0.44
2:EB:2870:C:H2'	2:EB:2871:C:O4'	2.18	0.44
3:FB:31:C:H4'	8:KB:29:TRP:CH2	2.52	0.44
10:MB:93:THR:HG23	10:MB:95:LYS:H	1.83	0.44
14:QB:58:PHE:HB3	14:QB:113:GLN:NE2	2.33	0.44
14:QB:65:PHE:HB2	14:QB:105:GLU:HB2	1.99	0.44
20:WB:19:LEU:HB3	29:FC:25:LEU:HD11	2.00	0.44
30:GC:26:ASN:HB3	30:GC:29:ASN:HB2	2.00	0.44
35:MC:40:HIS:CG	35:MC:190:THR:HG21	2.52	0.44
35:MC:114:ARG:HE	35:MC:118:LEU:HG	1.81	0.44
46:XC:16:ASP:HB3	46:XC:34:LEU:HD11	2.00	0.44
55:HD:308:ARG:HA	55:HD:319:ASP:HA	2.00	0.44
1:A:41:G:H2'	1:A:42:G:C8	2.53	0.43
1:A:142:G:H2'	1:A:143:A:C8	2.53	0.43
1:A:299:G:H2'	1:A:300:A:C8	2.53	0.43
1:A:1449:C:H2'	1:A:1450:U:O4'	2.17	0.43
2:B:545:G:C2	2:B:547:A:OP2	2.71	0.43
2:B:880:G:H1	2:B:897:C:H42	1.65	0.43
2:B:2123:G:H1	2:B:2175:C:H42	1.64	0.43
2:B:2674:G:H4'	12:L:30:ALA:HB2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2704:C:H2'	2:B:2705:A:O4'	2.17	0.43
2:B:2822:G:OP2	6:F:110:GLY:O	2.36	0.43
3:C:6:C:H2'	3:C:7:G:C8	2.53	0.43
6:F:132:HIS:CE1	6:F:133:LYS:HE2	2.53	0.43
7:G:64:ILE:HD11	7:G:75:HIS:CB	2.48	0.43
10:J:56:LYS:O	10:J:60:GLU:HB2	2.18	0.43
13:M:6:LEU:HA	13:M:6:LEU:HD23	1.71	0.43
45:TA:13:LYS:HE3	45:TA:13:LYS:HB3	1.72	0.43
1:DB:339:C:OP2	12:OB:97:ARG:NH1	2.51	0.43
1:DB:922:G:C2	1:DB:923:A:C4	3.06	0.43
1:DB:1435:G:H2'	1:DB:1436:U:C6	2.53	0.43
2:EB:297:C:H2'	2:EB:298:G:O4'	2.18	0.43
2:EB:634:C:H2'	2:EB:635:C:C6	2.53	0.43
2:EB:1353:A:H2'	2:EB:1354:A:C8	2.53	0.43
2:EB:2472:G:H2'	2:EB:2475:C:H42	1.82	0.43
4:GB:21:A:HO2'	4:GB:46:G:H1	1.65	0.43
10:MB:68:LEU:O	10:MB:71:ILE:HG13	2.17	0.43
18:UB:39:LEU:HA	18:UB:39:LEU:HD13	1.72	0.43
19:VB:37:VAL:HG12	19:VB:39:LEU:H	1.83	0.43
28:EC:61:ARG:NH1	28:EC:62:ARG:HH22	2.15	0.43
31:HC:13:ALA:O	31:HC:17:GLY:HA3	2.18	0.43
35:MC:7:VAL:HG23	35:MC:8:LYS:NZ	2.33	0.43
35:MC:23:ARG:HB2	35:MC:23:ARG:NH1	2.33	0.43
38:PC:20:GLN:OE1	38:PC:21:ALA:N	2.51	0.43
50:BD:43:LEU:HD23	50:BD:43:LEU:HA	1.77	0.43
50:BD:66:SER:OG	50:BD:67:LYS:N	2.50	0.43
55:GD:334:GLU:HA	55:GD:334:GLU:OE2	2.17	0.43
1:A:1099:G:OP2	35:JA:148:TYR:OH	2.36	0.43
1:A:1120:G:H2'	1:A:1121:U:C6	2.54	0.43
1:A:1152:A:H5"	43:RA:13:HIS:CG	2.52	0.43
2:B:1161:C:O2'	19:S:8:GLY:HA2	2.18	0.43
2:B:1335:U:H2'	2:B:1336:A:C8	2.54	0.43
2:B:1367:A:N7	2:B:1368:G:H1'	2.33	0.43
2:B:1405:U:H2'	2:B:1406:U:C6	2.53	0.43
2:B:1651:G:N2	2:B:2007:C:C2	2.86	0.43
2:B:1839:G:C8	2:B:1927:A:H1'	2.54	0.43
2:B:2515:C:O2'	2:B:2516:G:H5'	2.18	0.43
2:B:2758:A:C4	9:I:67:LEU:HD21	2.53	0.43
3:C:39:A:H2'	3:C:40:U:C6	2.53	0.43
7:G:13:SER:HB3	7:G:16:GLY:O	2.18	0.43
9:I:26:VAL:HG12	9:I:79:VAL:HG21	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:24:GLY:O	11:K:28:THR:HG23	2.18	0.43
13:M:17:LYS:HD2	13:M:27:HIS:CE1	2.53	0.43
25:Y:82:LEU:O	25:Y:85:LEU:HD13	2.19	0.43
33:GA:4:ARG:NH1	33:GA:8:LYS:NZ	2.66	0.43
39:NA:82:ARG:HB2	39:NA:85:VAL:HG23	2.00	0.43
49:XA:25:ARG:NH1	49:XA:25:ARG:HG3	2.34	0.43
1:DB:1203:C:OP1	47:YC:3:ARG:NE	2.51	0.43
2:EB:270(S):G:O2'	25:BC:79:GLY:HA3	2.17	0.43
2:EB:2711:A:OP1	2:EB:2712(A):A:OP1	2.36	0.43
4:GB:43:A:H2'	4:GB:44:A:C8	2.53	0.43
5:HB:245:PRO:HA	5:HB:246:PRO:HD3	1.88	0.43
11:NB:96:GLU:CD	11:NB:96:GLU:H	2.21	0.43
14:QB:81:VAL:HB	24:AC:7:LEU:HD23	2.00	0.43
14:QB:83:MET:HB2	14:QB:83:MET:HE2	1.58	0.43
15:RB:67:LEU:HD23	15:RB:76:VAL:HG21	1.99	0.43
16:SB:49:VAL:HG13	16:SB:73:LEU:HD11	2.00	0.43
31:HC:10:ARG:NH1	31:HC:14:LYS:CE	2.80	0.43
32:IC:10:ALA:O	32:IC:14:VAL:HG22	2.19	0.43
36:NC:40:ARG:HG3	36:NC:55:VAL:HB	1.99	0.43
1:A:8:A:C5	37:LA:209:ARG:HB2	2.54	0.43
2:B:603:A:C8	2:B:655:A:C6	3.06	0.43
2:B:1339:G:H5"	21:U:16:LYS:HD3	2.00	0.43
2:B:1657:C:OP1	6:F:136:ARG:N	2.48	0.43
2:B:2164:C:H42	2:B:2166:G:N2	2.17	0.43
6:F:2:LYS:NZ	6:F:95:ILE:O	2.30	0.43
7:G:149:ASP:OD2	7:G:151:SER:HB3	2.18	0.43
8:H:182:LYS:HB2	8:H:182:LYS:HE2	1.58	0.43
11:K:72:TYR:CE2	11:K:87:LEU:HD23	2.53	0.43
16:P:49:VAL:HG13	16:P:73:LEU:HD11	2.00	0.43
18:R:32:PHE:HZ	18:R:36:ARG:NH1	2.16	0.43
23:W:69:THR:HG22	23:W:90:VAL:HG22	2.00	0.43
25:Y:3:LYS:HB2	25:Y:61:ARG:HH12	1.82	0.43
33:GA:12:ASP:OD1	33:GA:12:ASP:N	2.45	0.43
47:VA:3:ARG:CZ	47:VA:3:ARG:HA	2.48	0.43
1:DB:237:C:H5"	50:BD:25:ARG:CZ	2.48	0.43
1:DB:622:A:C8	1:DB:623:C:C5	3.06	0.43
1:DB:737:A:H2'	1:DB:738:C:C6	2.53	0.43
1:DB:756:C:H2'	1:DB:757:U:O4'	2.18	0.43
1:DB:931:C:N4	1:DB:1386:G:H1	2.10	0.43
2:EB:108:U:H2'	2:EB:109:G:C8	2.54	0.43
2:EB:499:U:H5'	22:YB:46:LYS:HD3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:890:A:H2'	2:EB:892:G:H8	1.83	0.43
2:EB:971:C:H2'	2:EB:972:G:O4'	2.18	0.43
2:EB:1011:G:H5"	18:UB:77:SER:OG	2.19	0.43
2:EB:1260:G:H2'	2:EB:1261:C:O4'	2.17	0.43
2:EB:2093:G:C6	2:EB:2225:A:C8	3.06	0.43
6:IB:60:ASN:OD1	6:IB:60:ASN:N	2.49	0.43
7:JB:24:LEU:HD12	7:JB:24:LEU:HA	1.80	0.43
7:JB:195:ASP:HB3	7:JB:198:ALA:CB	2.49	0.43
37:OC:134:ASP:C	37:OC:135:LEU:HD13	2.39	0.43
38:PC:145:LYS:HE2	38:PC:149:GLU:OE1	2.18	0.43
39:QC:35:ALA:HB1	39:QC:65:VAL:CG2	2.48	0.43
55:HD:186:ARG:HB3	55:HD:312:PHE:HB2	2.01	0.43
1:A:177:C:H2'	1:A:178:C:H6	1.82	0.43
1:A:564:C:HO2'	41:PA:91:ARG:HH22	1.57	0.43
1:A:1118:C:H2'	1:A:1119:C:C6	2.53	0.43
1:A:1512:U:H2'	1:A:1513:A:C8	2.53	0.43
2:B:280:C:N3	2:B:361:G:N2	2.67	0.43
2:B:455:C:N3	2:B:472:A:H2'	2.33	0.43
2:B:876:C:H2'	2:B:877:U:O4'	2.19	0.43
2:B:1818:U:O2'	5:E:154:LYS:O	2.30	0.43
2:B:2684:U:OP1	17:Q:53:ARG:HD3	2.19	0.43
2:B:2747:G:C2	2:B:2756:U:C5	3.06	0.43
4:D:28:C:H2'	4:D:29:G:C8	2.53	0.43
6:F:40:GLU:H	6:F:40:GLU:HG3	1.44	0.43
7:G:24:LEU:HA	7:G:24:LEU:HD12	1.71	0.43
9:I:27:LYS:HA	9:I:32:GLU:HB3	2.01	0.43
11:K:39:ARG:HE	11:K:48:MET:CE	2.31	0.43
22:V:9:LYS:HA	22:V:10:GLY:HA2	1.63	0.43
30:DA:44:ARG:HG2	30:DA:44:ARG:HH11	1.83	0.43
38:MA:118:ILE:HG12	38:MA:119:LEU:N	2.33	0.43
39:NA:99:ALA:HB1	51:ZA:23:LYS:HE2	2.00	0.43
42:QA:11:LYS:C	42:QA:13:ALA:H	2.18	0.43
52:AB:41:VAL:HG22	52:AB:44:MET:SD	2.58	0.43
1:DB:272:C:H2'	1:DB:273:A:C8	2.53	0.43
1:DB:475:G:H2'	1:DB:476:G:H8	1.82	0.43
1:DB:598:U:H2'	1:DB:599:C:C6	2.52	0.43
1:DB:1240:U:C6	40:RC:32:ARG:NH1	2.86	0.43
2:EB:548:A:H4'	19:VB:19:LYS:NZ	2.33	0.43
2:EB:2316:C:H1'	8:KB:128:ARG:NH1	2.34	0.43
2:EB:2729:G:H4'	6:IB:186:GLY:HA2	1.99	0.43
7:JB:65:TRP:CD1	7:JB:70:THR:HG21	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:TB:78:LEU:HD23	17:TB:79:HIS:NE2	2.32	0.43
18:UB:94:ASN:O	18:UB:98:LEU:HG	2.17	0.43
20:WB:57:ASN:HA	20:WB:61:ASN:HD22	1.83	0.43
21:XB:60:ARG:CZ	31:HC:47:ARG:HH22	2.31	0.43
23:ZB:11:GLU:HB3	23:ZB:12:GLY:H	1.46	0.43
32:IC:29:LYS:HG3	32:IC:44:LYS:HB2	2.00	0.43
35:MC:103:THR:HA	35:MC:180:LEU:HD11	2.00	0.43
37:OC:59:ARG:HH21	37:OC:66:ARG:NH1	2.15	0.43
37:OC:133:VAL:HG13	37:OC:135:LEU:HD22	1.98	0.43
38:PC:121:LYS:HD3	38:PC:122:GLU:N	2.33	0.43
55:GD:154:GLY:O	55:GD:156:HIS:N	2.51	0.43
1:A:397:A:N6	1:A:548:G:C5	2.86	0.43
2:B:911:A:H2'	14:N:9:TYR:OH	2.18	0.43
2:B:1049:C:O2	2:B:1113:U:H4'	2.19	0.43
2:B:1104:C:H2'	2:B:1105:U:C6	2.53	0.43
2:B:1205:U:H4'	2:B:1206:G:OP2	2.18	0.43
2:B:2001:A:H2'	2:B:2002:G:C8	2.53	0.43
2:B:2575:C:OP1	6:F:144:ARG:HD2	2.19	0.43
2:B:2722:G:H2'	2:B:2723:C:C6	2.54	0.43
7:G:65:TRP:CD1	7:G:70:THR:HG21	2.53	0.43
20:T:12:ILE:HD13	20:T:17:VAL:HG22	2.00	0.43
26:Z:48:HIS:CE1	26:Z:49:LYS:HG3	2.53	0.43
35:JA:142:LEU:O	35:JA:146:GLN:HG3	2.18	0.43
37:LA:170:VAL:HB	37:LA:174:LEU:HB2	2.00	0.43
48:WA:6:GLU:H	48:WA:6:GLU:CD	2.22	0.43
48:WA:17:ARG:HD3	48:WA:26:GLU:OE2	2.19	0.43
51:ZA:65:ILE:HD12	51:ZA:65:ILE:HA	1.92	0.43
1:DB:137:C:H2'	1:DB:138:G:C8	2.51	0.43
1:DB:838:G:HO2'	1:DB:841:U:H6	1.66	0.43
1:DB:1346:A:H5"	42:TC:120:ARG:NH1	2.34	0.43
1:DB:1402:4OC:H2'	1:DB:1403:C:O4'	2.18	0.43
2:EB:401:A:C2	2:EB:402:A:C4	3.07	0.43
2:EB:1002:G:O5'	2:EB:1002:G:H8	2.01	0.43
2:EB:1820:U:H4'	2:EB:1821:A:OP2	2.18	0.43
3:FB:45:A:C4	3:FB:46:A:C8	3.06	0.43
23:ZB:103:ARG:CZ	23:ZB:103:ARG:HA	2.48	0.43
31:HC:21:ARG:HG2	31:HC:21:ARG:HH11	1.84	0.43
33:JC:6:SER:O	33:JC:6:SER:OG	2.31	0.43
39:QC:33:TYR:HE2	39:QC:78:GLU:HG3	1.83	0.43
55:GD:314:GLN:HB3	55:GD:316:ARG:HD2	2.00	0.43
1:A:8:A:C6	37:LA:209:ARG:HB2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:237:C:O3'	50:YA:25:ARG:NH1	2.39	0.43
1:A:1478:C:H2'	1:A:1479:C:H6	1.83	0.43
2:B:777:A:C2	2:B:778:G:C4	3.07	0.43
2:B:807:U:OP2	13:M:41:ARG:NH2	2.51	0.43
2:B:892:G:H2'	2:B:893:C:H4'	1.99	0.43
2:B:1047:G:H2'	2:B:1110:G:H1	1.84	0.43
18:R:54:LYS:HE2	18:R:54:LYS:HB2	1.83	0.43
23:W:166:SER:O	23:W:169:GLU:HB2	2.18	0.43
24:X:47:PRO:HB3	24:X:59:LEU:HD22	2.01	0.43
27:AA:6:VAL:HB	27:AA:54:VAL:HG21	2.01	0.43
28:BA:57:GLU:HA	28:BA:58:ARG:HA	1.63	0.43
31:EA:19:ARG:HG2	31:EA:19:ARG:HH11	1.84	0.43
35:JA:157:ARG:HE	35:JA:157:ARG:H	1.67	0.43
36:KA:92:ALA:HA	36:KA:95:THR:OG1	2.19	0.43
37:LA:10:ARG:HG3	37:LA:11:LEU:HD12	2.00	0.43
37:LA:12:CYS:SG	37:LA:26:CYS:SG	3.17	0.43
41:PA:63:LEU:HD13	41:PA:63:LEU:HA	1.78	0.43
1:DB:80:G:C2	1:DB:90:C:C2	3.06	0.43
1:DB:338:A:C6	1:DB:339:C:C4	3.06	0.43
1:DB:693:G:H2'	1:DB:694:A:C8	2.53	0.43
1:DB:1152:A:H2'	1:DB:1153:C:C6	2.53	0.43
2:EB:34:C:O2'	2:EB:35:G:C8	2.72	0.43
2:EB:270(J):G:H4'	25:BC:81:ARG:NE	2.33	0.43
2:EB:1742:C:H5'	2:EB:1743:G:OP2	2.18	0.43
2:EB:1971:A:N3	5:HB:240:ALA:HA	2.33	0.43
2:EB:2181:G:H2'	2:EB:2182:G:C8	2.53	0.43
2:EB:2495:G:OP1	14:QB:82:ARG:HD2	2.18	0.43
6:IB:93:VAL:HG11	6:IB:181:LEU:O	2.18	0.43
6:IB:188:VAL:HG13	6:IB:189:PRO:HD2	1.99	0.43
17:TB:36:GLU:CG	17:TB:41:ARG:HE	2.31	0.43
20:WB:23:LEU:HD22	29:FC:25:LEU:HD13	1.99	0.43
28:EC:57:GLU:HA	28:EC:58:ARG:HA	1.64	0.43
34:KC:19:U:C4	34:KC:20:A:C6	3.06	0.43
35:MC:10:LEU:HA	35:MC:12:GLU:OE1	2.17	0.43
35:MC:61:LEU:HD23	35:MC:68:ILE:HD11	2.01	0.43
37:OC:21:LEU:O	37:OC:26:CYS:SG	2.75	0.43
39:QC:100:ASN:HA	51:CD:23:LYS:NZ	2.34	0.43
42:TC:70:LYS:O	42:TC:74:ILE:HG13	2.18	0.43
46:XC:4:ILE:HD12	46:XC:57:ARG:HA	2.01	0.43
49:AD:4:ILE:HA	49:AD:20:VAL:O	2.19	0.43
1:A:601:C:H42	1:A:637:G:H1	1.65	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1064:G:H21	1:A:1190:G:H1'	1.82	0.43
2:B:524:U:H2'	2:B:525:U:C6	2.54	0.43
2:B:1186:G:H2'	2:B:1187:G:O4'	2.18	0.43
2:B:1326:U:O2'	2:B:1327:C:H5'	2.18	0.43
2:B:1560:G:H2'	2:B:1561:G:H8	1.84	0.43
2:B:1788:C:H2'	2:B:1789:A:O4'	2.19	0.43
2:B:1920:4OC:H1'	2:B:1920:4OC:HM23	1.47	0.43
2:B:1946:U:H2'	2:B:1947:C:C6	2.54	0.43
2:B:2301:C:H2'	2:B:2302:G:C8	2.53	0.43
3:C:12:C:OP2	3:C:12:C:C6	2.72	0.43
7:G:62:ARG:HG2	7:G:63:LYS:O	2.18	0.43
9:I:64:LEU:HA	9:I:64:LEU:HD23	1.76	0.43
13:M:90:ARG:HB3	13:M:90:ARG:HH11	1.83	0.43
17:Q:26:ASP:OD1	17:Q:120:ARG:NH2	2.41	0.43
17:Q:78:LEU:HD23	17:Q:79:HIS:NE2	2.34	0.43
20:T:86:LEU:HD12	20:T:87:PRO:HD2	2.01	0.43
26:Z:53:LEU:HD22	26:Z:53:LEU:HA	1.79	0.43
37:LA:163:GLU:HA	37:LA:166:LYS:HE2	1.99	0.43
52:AB:3:ARG:HH22	52:AB:7:LYS:HE2	1.82	0.43
1:DB:474:G:H5'	49:AD:81:ARG:HG3	2.01	0.43
2:EB:319:C:H2'	2:EB:320:A:O4'	2.19	0.43
2:EB:817:C:H2'	2:EB:818:G:O4'	2.19	0.43
2:EB:1268:A:H2'	2:EB:1269:A:O4'	2.19	0.43
2:EB:2498:C:OP2	2:EB:2499:C:OP2	2.36	0.43
2:EB:2611:U:H2'	29:FC:2:ALA:O	2.18	0.43
2:EB:2667:C:H1'	9:LB:109:PHE:CD1	2.52	0.43
2:EB:2698:U:H2'	2:EB:2699:C:H6	1.83	0.43
7:JB:57:VAL:HG13	7:JB:59:TYR:H	1.84	0.43
7:JB:183:VAL:O	7:JB:187:VAL:HG12	2.18	0.43
8:KB:138:GLN:HE21	8:KB:149:VAL:HG22	1.83	0.43
9:LB:25:LYS:HB3	9:LB:27:LYS:HZ3	1.83	0.43
11:NB:72:TYR:CE2	11:NB:87:LEU:HD23	2.53	0.43
13:PB:6:LEU:HD23	13:PB:6:LEU:HA	1.71	0.43
35:MC:22:LYS:HA	35:MC:22:LYS:HZ2	1.84	0.43
37:OC:25:ARG:C	37:OC:27:TYR:H	2.17	0.43
39:QC:12:PRO:HG2	39:QC:13:ASN:HD22	1.84	0.43
1:A:93:U:H2'	1:A:95:G:H8	1.83	0.43
1:A:368:U:H6	1:A:368:U:H2'	1.56	0.43
1:A:1118:C:H2'	1:A:1119:C:H6	1.84	0.43
1:A:1152:A:H2'	1:A:1153:C:H6	1.84	0.43
1:A:1201:A:H1'	1:A:1202:G:OP2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1439:C:OP1	53:BB:38:LYS:NZ	2.31	0.43
2:B:657:U:H2'	2:B:658:C:C6	2.54	0.43
2:B:1511:A:C8	2:B:1512:G:C8	3.07	0.43
2:B:2207:C:C2	2:B:2218:G:C2	3.06	0.43
3:C:84:C:H42	3:C:92:G:H1	1.66	0.43
5:E:182:LEU:HB3	5:E:271:ILE:HB	2.01	0.43
7:G:51:THR:HB	7:G:88:VAL:HG21	2.01	0.43
8:H:39:ILE:HD12	8:H:157:ILE:HG12	2.01	0.43
12:L:91:LEU:HD23	12:L:91:LEU:HA	1.79	0.43
16:P:49:VAL:HG22	16:P:50:SER:H	1.83	0.43
24:X:7:LEU:H	4:IA:2:G:C5'	2.31	0.43
4:IA:67:C:H2'	4:IA:68:C:H6	1.84	0.43
36:KA:73:PRO:HA	36:KA:76:VAL:HG23	2.00	0.43
38:MA:144:THR:O	38:MA:148:VAL:HG23	2.18	0.43
45:TA:27:LEU:HD13	45:TA:98:TYR:CE1	2.53	0.43
53:BB:60:GLU:HG3	53:BB:81:LYS:HD2	2.01	0.43
1:DB:790:A:C6	1:DB:791:G:C6	3.06	0.43
1:DB:1058:G:H2'	1:DB:1059:C:O4'	2.19	0.43
1:DB:1325:C:H5"	54:FD:15:ARG:HD3	2.00	0.43
1:DB:1326:C:OP1	54:FD:12:LYS:HE2	2.19	0.43
2:EB:270(G):U:H2'	2:EB:270(H):C:C6	2.53	0.43
2:EB:301:G:H1'	2:EB:302:C:C6	2.54	0.43
2:EB:1060:U:O2'	2:EB:1061:U:OP2	2.25	0.43
2:EB:1205:U:C4	7:JB:171:PRO:HA	2.53	0.43
2:EB:2503:2MA:H4'	2:EB:2504:U:OP1	2.17	0.43
5:HB:206:LEU:HD23	5:HB:206:LEU:HA	1.47	0.43
5:HB:257:LEU:HD12	5:HB:258:LYS:N	2.33	0.43
8:KB:181:ARG:HB2	8:KB:181:ARG:NH1	2.31	0.43
11:NB:4:TYR:CD2	18:UB:100:VAL:HG11	2.53	0.43
14:QB:34:LEU:HD12	14:QB:34:LEU:HA	1.82	0.43
15:RB:38:VAL:HB	15:RB:39:PRO:HD3	2.01	0.43
15:RB:80:PHE:O	15:RB:85:PRO:HD3	2.18	0.43
36:NC:88:ARG:HD3	36:NC:101:LEU:HB3	2.00	0.43
38:PC:77:PRO:HB2	38:PC:78:HIS:CD2	2.54	0.43
41:SC:4:ASP:HB2	41:SC:89:PRO:HG3	2.01	0.43
49:AD:6:LEU:HD22	49:AD:70:ALA:HB2	2.01	0.43
55:HD:314:GLN:HB3	55:HD:316:ARG:HD2	2.01	0.43
1:A:406:G:H1'	1:A:495:A:C6	2.54	0.43
1:A:474:G:H5'	49:XA:81:ARG:HG3	2.01	0.43
1:A:735:C:OP1	51:ZA:68:LYS:HE3	2.19	0.43
2:B:79:G:H2'	2:B:80:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:297:C:H2'	2:B:298:G:O4'	2.18	0.43
2:B:774:A:H2'	2:B:774:A:N3	2.34	0.43
2:B:1002:G:H8	2:B:1002:G:O5'	2.01	0.43
2:B:1042:G:H2'	2:B:1043:C:O2	2.19	0.43
2:B:1188:U:O2'	2:B:1189:A:H5'	2.19	0.43
2:B:1364:G:P	25:Y:3:LYS:HG3	2.58	0.43
2:B:2055:C:H5'	2:B:2056:G:O5'	2.18	0.43
2:B:2056:G:O2'	29:CA:8:LYS:NZ	2.48	0.43
2:B:2437:U:H2'	2:B:2438:U:C6	2.53	0.43
2:B:2731:G:C6	2:B:2732:G:C6	3.06	0.43
2:B:2821:A:OP2	15:O:3:HIS:NE2	2.52	0.43
6:F:94:GLU:OE1	6:F:177:PRO:HB3	2.19	0.43
6:F:101:ARG:HD3	6:F:171:GLU:HA	2.00	0.43
8:H:50:ALA:HB3	8:H:52:ILE:HG13	2.00	0.43
21:U:30:VAL:HG21	21:U:39:ILE:HD11	2.01	0.43
26:Z:63:VAL:HA	26:Z:66:GLU:HG2	2.01	0.43
27:AA:53:LEU:HD23	27:AA:53:LEU:HA	1.69	0.43
36:KA:127:ARG:NH2	36:KA:192:THR:OG1	2.52	0.43
38:MA:48:ALA:C	38:MA:50:GLU:H	2.22	0.43
41:PA:4:ASP:HB2	41:PA:89:PRO:HG3	2.01	0.43
1:DB:236:G:H5"	50:BD:42:TYR:OH	2.19	0.43
1:DB:657:G:C2	1:DB:658:G:C8	3.07	0.43
1:DB:926:G:C6	1:DB:1505:G:C6	3.07	0.43
1:DB:975:A:O2'	47:YC:32:SER:OG	2.26	0.43
1:DB:1103:C:H2'	1:DB:1104:G:O4'	2.19	0.43
1:DB:1499:A:OP2	1:DB:1500:A:OP2	2.36	0.43
1:DB:1521:G:H2'	1:DB:1522:U:O4'	2.19	0.43
2:EB:79:G:H2'	2:EB:80:G:H8	1.84	0.43
2:EB:94:G:H2'	2:EB:95:G:O4'	2.17	0.43
2:EB:710:G:H2'	2:EB:711:G:C8	2.53	0.43
2:EB:876:C:H2'	2:EB:877:U:O4'	2.18	0.43
2:EB:1818:U:H2'	5:HB:157:ARG:HG3	2.00	0.43
5:HB:77:ALA:HB2	5:HB:97:TYR:CD1	2.54	0.43
9:LB:64:LEU:HD23	9:LB:64:LEU:HA	1.83	0.43
22:YB:43:ASN:CG	22:YB:67:LEU:HD21	2.39	0.43
24:AC:7:LEU:H	4:LC:2:G:C5'	2.31	0.43
37:OC:113:SER:OG	37:OC:114:ARG:N	2.52	0.43
38:PC:40:ARG:CZ	38:PC:68:GLU:HB3	2.49	0.43
47:YC:27:CYS:HB3	47:YC:43:CYS:SG	2.59	0.43
55:GD:169:ASP:OD1	55:GD:169:ASP:N	2.52	0.43
55:HD:112:PHE:CE2	55:HD:165:LYS:HB2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:87:A:H5”	1:A:88:C:C5	2.54	0.43
1:A:237:C:H5”	50:YA:25:ARG:CZ	2.48	0.43
1:A:404:U:H2’	1:A:405:U:C6	2.53	0.43
1:A:645:C:H2’	1:A:646:U:O4’	2.18	0.43
2:B:91:A:H2’	2:B:92:G:H8	1.84	0.43
2:B:674:G:O2’	7:G:74:ARG:HD3	2.19	0.43
2:B:1899:G:H2’	2:B:1899:G:N3	2.34	0.43
2:B:1939:5MU:O2	2:B:1967:C:H4’	2.19	0.43
2:B:2376:A:N3	16:P:106:ARG:NH2	2.67	0.43
2:B:2884:U:H2’	2:B:2885:C:O4’	2.19	0.43
3:C:68:C:H2’	3:C:69:G:O4’	2.19	0.43
8:H:114:ILE:HD11	8:H:117:PHE:CD1	2.54	0.43
8:H:122:PRO:HD2	8:H:181:ARG:HH11	1.83	0.43
13:M:19:VAL:HB	13:M:31:ALA:HB1	2.00	0.43
13:M:81:GLN:OE1	13:M:107:LYS:N	2.51	0.43
15:O:65:LEU:HD12	15:O:65:LEU:HA	1.80	0.43
23:W:23:LYS:HG2	23:W:38:TYR:HE1	1.84	0.43
36:KA:20:SER:HG	36:KA:40:ARG:HH22	1.64	0.43
46:UA:16:ASP:HB3	46:UA:34:LEU:HD11	2.00	0.43
47:VA:27:CYS:HB3	47:VA:43:CYS:SG	2.59	0.43
53:BB:87:LYS:O	53:BB:91:LEU:HB2	2.19	0.43
1:DB:540:G:C6	1:DB:541:G:C5	3.06	0.43
2:EB:270(F):G:H1	2:EB:270(V):C:H42	1.67	0.43
2:EB:522:G:C6	2:EB:523:C:C4	3.07	0.43
2:EB:1093:G:H3’	2:EB:1094:U:H5”	2.00	0.43
2:EB:1155:A:O3’	18:UB:55:ARG:NH1	2.52	0.43
2:EB:2319:G:H3’	2:EB:2319:G:OP1	2.18	0.43
2:EB:2514:U:H2’	2:EB:2515:C:H6	1.82	0.43
2:EB:2707:G:H2’	2:EB:2708:G:H8	1.84	0.43
5:HB:72:LYS:NZ	5:HB:101:GLU:HB3	2.33	0.43
9:LB:125:VAL:HG22	9:LB:131:VAL:HG22	2.00	0.43
12:OB:122:LEU:HD23	12:OB:122:LEU:HA	1.89	0.43
25:BC:60:PHE:HE1	25:BC:95:LEU:HD11	1.84	0.43
32:IC:34:TRP:CG	32:IC:35:GLN:N	2.87	0.43
42:TC:33:PHE:HD2	42:TC:33:PHE:HA	1.65	0.43
45:WC:105:TYR:C	45:WC:107:ALA:H	2.23	0.43
55:GD:145:ARG:HB3	55:GD:167:SER:HB2	2.01	0.43
55:HD:109:ARG:HH12	55:HD:210:PRO:HG3	1.84	0.43
1:A:41:G:H2’	1:A:42:G:H8	1.84	0.42
1:A:541:G:H2’	1:A:542:G:H8	1.83	0.42
1:A:1058:G:H2’	1:A:1059:C:O4’	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:250:G:H2'	2:B:251:A:C8	2.53	0.42
2:B:960:A:H8	2:B:960:A:O5'	2.02	0.42
2:B:1021:A:C8	2:B:1021:A:H3'	2.54	0.42
2:B:1268:A:H2'	2:B:1269:A:O4'	2.20	0.42
2:B:2508:G:OP1	55:GD:228:ARG:NH2	2.46	0.42
2:B:2711:A:OP1	2:B:2712(A):A:OP1	2.37	0.42
6:F:11:MET:HG2	6:F:24:THR:CB	2.49	0.42
6:F:181:LEU:HD12	6:F:181:LEU:HA	1.81	0.42
12:L:28:SER:O	12:L:29:ASN:HB3	2.19	0.42
19:S:35:LEU:HA	19:S:36:PRO:HD3	1.81	0.42
24:X:53:MET:HA	24:X:58:THR:O	2.19	0.42
36:KA:23:TYR:CG	36:KA:24:ALA:N	2.87	0.42
36:KA:40:ARG:HG3	36:KA:55:VAL:HB	2.00	0.42
36:KA:91:LEU:HD23	36:KA:99:VAL:HA	2.00	0.42
38:MA:7:GLU:O	38:MA:34:VAL:HA	2.19	0.42
39:NA:70:ASP:OD2	39:NA:70:ASP:N	2.48	0.42
42:QA:108:VAL:HG12	42:QA:109:VAL:H	1.85	0.42
1:DB:18:C:H2'	1:DB:19:C:O4'	2.19	0.42
1:DB:599:C:H2'	1:DB:600:C:C6	2.54	0.42
1:DB:1415:G:H1	1:DB:1485:U:H3	1.67	0.42
2:EB:191:A:H2'	2:EB:192:C:C6	2.54	0.42
2:EB:280:C:C2	2:EB:361:G:N2	2.87	0.42
2:EB:1027:A:N6	2:EB:1126:A:C4	2.87	0.42
2:EB:1520:U:H2'	2:EB:1521:G:O4'	2.19	0.42
2:EB:1825:A:C2	2:EB:1826:G:C4	3.07	0.42
2:EB:2808:U:O2'	2:EB:2809:A:H5'	2.19	0.42
6:IB:110:GLY:O	15:RB:3:HIS:CE1	2.72	0.42
14:QB:72:LYS:HA	14:QB:73:PRO:HD2	1.83	0.42
29:FC:17:ASP:N	29:FC:17:ASP:OD2	2.52	0.42
38:PC:79:GLU:H	38:PC:79:GLU:HG2	1.57	0.42
42:TC:89:ASN:HB3	42:TC:92:TYR:CE2	2.54	0.42
44:VC:99:GLN:HE21	44:VC:99:GLN:HB2	1.55	0.42
46:XC:65:LYS:HB3	46:XC:70:LEU:HA	2.01	0.42
55:HD:109:ARG:HG3	55:HD:208:GLU:HB2	2.01	0.42
2:B:322:A:P	7:G:168:ARG:HH21	2.42	0.42
2:B:521:G:H2'	2:B:522:G:C8	2.54	0.42
2:B:862:G:P	14:N:18:LYS:HZ3	2.41	0.42
2:B:1359:A:H2	2:B:1372:U:O4	2.01	0.42
2:B:1441:G:N2	2:B:1551:C:C2	2.88	0.42
2:B:2183:C:H2'	2:B:2184:G:H8	1.84	0.42
4:D:21:A:HO2'	4:D:46:G:H1	1.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:145:VAL:HB	5:E:155:LEU:HB2	1.99	0.42
5:E:214:TRP:CD1	5:E:214:TRP:N	2.85	0.42
8:H:176:LEU:HA	8:H:176:LEU:HD23	1.72	0.42
10:J:136:VAL:HA	10:J:137:PRO:HD3	1.80	0.42
16:P:71:ARG:NE	16:P:107:GLU:OE1	2.45	0.42
16:P:93:LYS:O	16:P:95:HIS:N	2.53	0.42
17:Q:107:ASP:O	17:Q:111:ARG:HB2	2.19	0.42
19:S:71:LEU:HA	19:S:71:LEU:HD13	1.67	0.42
20:T:82:LEU:HD23	20:T:84:ARG:NH2	2.35	0.42
25:Y:60:PHE:HA	25:Y:91:LYS:HZ1	1.83	0.42
28:BA:58:ARG:HA	28:BA:58:ARG:HD2	1.88	0.42
35:JA:19:HIS:HB2	35:JA:204:ASN:HB3	2.01	0.42
35:JA:97:TRP:HH2	35:JA:176:GLU:CD	2.23	0.42
38:MA:31:LEU:HD11	38:MA:129:ILE:HA	2.00	0.42
42:QA:89:ASN:HB3	42:QA:92:TYR:CE2	2.54	0.42
50:YA:27:PHE:CE1	50:YA:36:ILE:HD11	2.53	0.42
1:DB:978:A:C4	1:DB:1319:A:C2	3.08	0.42
1:DB:1528:U:C2	1:DB:1530:G:C8	3.06	0.42
2:EB:34:C:O2'	2:EB:35:G:H8	2.01	0.42
2:EB:58:G:C6	2:EB:59:U:C4	3.06	0.42
2:EB:274:G:OP2	2:EB:274:G:H8	2.02	0.42
2:EB:301:G:C4	2:EB:302:C:C5	3.06	0.42
2:EB:774:A:H2'	2:EB:774:A:N3	2.34	0.42
2:EB:1547:C:H2'	2:EB:1548:C:C6	2.54	0.42
2:EB:2516:G:C6	2:EB:2517:C:C4	3.08	0.42
6:IB:111:ARG:HD3	6:IB:160:TYR:CD2	2.55	0.42
8:KB:122:PRO:HD2	8:KB:181:ARG:NH1	2.34	0.42
13:PB:112:LEU:HD12	13:PB:127:ALA:HB2	2.00	0.42
23:ZB:54:HIS:CG	23:ZB:101:PRO:HD3	2.54	0.42
26:CC:30:ARG:O	26:CC:34:GLU:HG2	2.19	0.42
28:EC:59:PHE:CD1	28:EC:60:GLN:HG3	2.53	0.42
29:FC:19:ARG:C	29:FC:21:SER:H	2.20	0.42
35:MC:115:LEU:HB2	35:MC:145:LEU:HD22	2.01	0.42
36:NC:73:PRO:HA	36:NC:76:VAL:HG23	2.01	0.42
37:OC:108:LEU:HD23	37:OC:170:VAL:HG11	2.00	0.42
37:OC:149:ALA:HB3	37:OC:152:SER:HB2	2.00	0.42
39:QC:82:ARG:HB2	39:QC:85:VAL:HG23	2.00	0.42
55:HD:110:ASN:HB2	55:HD:208:GLU:HG3	2.01	0.42
1:A:109:A:C6	1:A:326:G:C6	3.07	0.42
1:A:540:G:C5	1:A:541:G:C5	3.07	0.42
1:A:659:U:OP1	48:WA:8:LYS:HD3	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:803:G:H2'	1:A:804:U:O4'	2.19	0.42
1:A:926:G:C6	1:A:1505:G:C6	3.07	0.42
2:B:301:G:C4	2:B:302:C:C5	3.06	0.42
2:B:335:C:OP2	22:V:84:ARG:HD3	2.19	0.42
2:B:755:C:H2'	2:B:756:C:C6	2.54	0.42
2:B:894:C:O2'	2:B:895:U:OP2	2.31	0.42
2:B:2300:G:H2'	2:B:2301:C:C6	2.54	0.42
5:E:33:LEU:HD23	5:E:33:LEU:HA	1.88	0.42
6:F:38:THR:H	6:F:42:ASP:HB2	1.85	0.42
7:G:34:TRP:CE2	13:M:8:PRO:HD3	2.54	0.42
26:Z:52:ASP:O	26:Z:56:GLN:HG3	2.19	0.42
36:KA:52:LEU:HD13	36:KA:55:VAL:HG23	2.00	0.42
36:KA:68:VAL:HB	36:KA:103:VAL:HG13	2.01	0.42
38:MA:144:THR:HG22	38:MA:147:ASP:OD2	2.19	0.42
44:SA:67:ASP:HA	44:SA:70:LYS:HD3	2.02	0.42
1:DB:58:C:O2'	1:DB:388:G:N7	2.46	0.42
1:DB:109:A:C6	1:DB:326:G:C6	3.07	0.42
1:DB:161:A:H2'	1:DB:162:A:C8	2.53	0.42
1:DB:539:A:H2'	1:DB:540:G:C8	2.55	0.42
1:DB:962:C:H42	1:DB:973:G:H1	1.65	0.42
2:EB:751:A:H5'	20:WB:90:ARG:HA	2.00	0.42
4:GB:70:G:C2	4:GB:71:C:C6	3.07	0.42
9:LB:98:LEU:HD11	9:LB:125:VAL:H	1.84	0.42
10:MB:87:LYS:HE2	10:MB:89:TYR:HD1	1.84	0.42
26:CC:46:GLN:HB3	26:CC:48:HIS:CE1	2.54	0.42
36:NC:65:ALA:HA	36:NC:100:ALA:HB2	2.01	0.42
41:SC:114:THR:HG22	41:SC:131:GLY:HA3	1.99	0.42
55:GD:308:ARG:HA	55:GD:319:ASP:HA	2.01	0.42
1:A:606:G:H21	1:A:631:G:H2'	1.85	0.42
1:A:1486:G:C6	1:A:1487:G:C6	3.08	0.42
2:B:686:G:H21	2:B:788:A:H61	1.67	0.42
2:B:2603:G:C6	2:B:2604:U:C4	3.08	0.42
3:C:66:A:H61	3:C:107:U:H2'	1.85	0.42
6:F:37:ARG:HD2	6:F:44:TYR:CZ	2.55	0.42
7:G:183:VAL:O	7:G:187:VAL:HG12	2.19	0.42
11:K:91:LEU:HD13	11:K:98:VAL:HG21	2.01	0.42
12:L:14:THR:HG21	12:L:86:ILE:HB	2.00	0.42
13:M:50:ARG:O	13:M:52:GLU:HG3	2.19	0.42
22:V:14:LEU:HD23	22:V:82:PRO:HB3	2.02	0.42
35:JA:215:LEU:HD23	35:JA:215:LEU:HA	1.85	0.42
1:DB:738:C:H5"	39:QC:69:GLU:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:1306:A:H1'	1:DB:1332:A:C2	2.55	0.42
1:DB:1480:G:H2'	1:DB:1481:U:O4'	2.20	0.42
2:EB:27:G:C4	2:EB:512:G:N2	2.87	0.42
2:EB:176:G:O2'	2:EB:177:G:H5'	2.19	0.42
2:EB:813:U:H2'	2:EB:814:C:C6	2.54	0.42
2:EB:913:U:H4'	2:EB:914:C:OP1	2.19	0.42
2:EB:1021:A:C8	2:EB:1021:A:H3'	2.54	0.42
2:EB:1047:G:H2'	2:EB:1110:G:H22	1.84	0.42
2:EB:1226:A:OP1	19:VB:84:LYS:NZ	2.41	0.42
2:EB:1467:C:N4	2:EB:1525:G:H1	2.10	0.42
2:EB:1799:G:C8	5:HB:181:GLU:OE2	2.70	0.42
2:EB:2425:A:H4'	2:EB:2426:A:H5"	2.01	0.42
2:EB:2536:G:C6	2:EB:2537:U:C4	3.07	0.42
2:EB:2836:U:C4	2:EB:2883:A:N6	2.87	0.42
3:FB:111:U:H2'	3:FB:112:G:H8	1.84	0.42
7:JB:64:ILE:HD11	7:JB:75:HIS:CB	2.49	0.42
8:KB:29:TRP:O	8:KB:33:ARG:NH1	2.52	0.42
10:MB:77:LEU:HB3	10:MB:142:VAL:HG13	2.01	0.42
13:PB:113:LYS:HA	13:PB:129:ALA:O	2.19	0.42
15:RB:13:HIS:ND1	15:RB:15:SER:HB2	2.34	0.42
23:ZB:40:ASP:OD2	23:ZB:41:LEU:N	2.52	0.42
35:MC:126:GLU:CD	35:MC:130:ARG:HB2	2.39	0.42
35:MC:197:VAL:HB	35:MC:200:ILE:HG12	2.01	0.42
40:RC:80:VAL:HB	40:RC:83:ALA:O	2.20	0.42
47:YC:3:ARG:CZ	47:YC:3:ARG:HA	2.49	0.42
48:ZC:48:LYS:O	48:ZC:50:HIS:N	2.50	0.42
1:A:235:C:H2'	1:A:236:G:C8	2.54	0.42
2:B:1125:G:H3'	2:B:1126:A:H5"	2.00	0.42
2:B:1179:C:H2'	2:B:1180:C:C6	2.55	0.42
2:B:1385:G:O2'	2:B:1396:U:O2	2.31	0.42
2:B:1582:C:H2'	2:B:1583:A:H8	1.85	0.42
2:B:1673:U:H5'	2:B:1674:G:OP2	2.19	0.42
2:B:1827:C:C2'	2:B:1828:G:H5'	2.50	0.42
2:B:1952:A:C6	2:B:1953:A:N1	2.87	0.42
5:E:275:LYS:HG2	5:E:276:LYS:H	1.84	0.42
13:M:112:LEU:HD12	13:M:127:ALA:HB2	2.01	0.42
18:R:95:LEU:HD12	18:R:95:LEU:HA	1.87	0.42
35:JA:223:ILE:HA	35:JA:226:ARG:HB3	2.01	0.42
41:PA:100:ILE:HA	41:PA:101:PRO:HD3	1.76	0.42
41:PA:114:THR:O	41:PA:117:GLY:N	2.50	0.42
44:SA:38:ASN:HA	44:SA:39:PRO:HD3	1.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:76:LEU:HD13	51:ZA:76:LEU:HA	1.87	0.42
1:DB:87:A:H5"	1:DB:88:C:C5	2.55	0.42
1:DB:457:C:H42	1:DB:475:G:H1	1.67	0.42
1:DB:660:G:H1	1:DB:745:C:H42	1.68	0.42
1:DB:978:A:OP1	1:DB:1361:G:N1	2.43	0.42
1:DB:1034:G:H2'	1:DB:1035:A:C8	2.55	0.42
1:DB:1261:A:N1	1:DB:1275:A:H1'	2.35	0.42
2:EB:250:G:H2'	2:EB:251:A:C8	2.55	0.42
2:EB:1952:A:C6	2:EB:1953:A:N1	2.87	0.42
2:EB:2060:A:OP1	7:JB:69:HIS:N	2.45	0.42
2:EB:2758:A:C4	9:LB:67:LEU:HD21	2.54	0.42
5:HB:155:LEU:H	5:HB:155:LEU:HD22	1.84	0.42
11:NB:4:TYR:OH	11:NB:6:PRO:HA	2.19	0.42
23:ZB:69:THR:HG22	23:ZB:90:VAL:HG22	2.01	0.42
30:GC:44:ARG:HG2	30:GC:44:ARG:HH11	1.85	0.42
36:NC:193:TYR:HE1	36:NC:196:LEU:HD11	1.85	0.42
37:OC:18:LYS:HE3	37:OC:20:TYR:N	2.34	0.42
48:ZC:79:ARG:HA	48:ZC:79:ARG:HD2	1.82	0.42
55:HD:130:ASP:OD1	55:HD:130:ASP:N	2.53	0.42
1:A:1216:G:H5"	47:VA:5:ALA:HB1	2.02	0.42
2:B:27:G:C2	2:B:512:G:N3	2.87	0.42
2:B:108:U:H2'	2:B:109:G:H8	1.84	0.42
2:B:270(W):G:H2'	2:B:270(X):G:C8	2.55	0.42
2:B:631:A:H1'	13:M:66:GLY:HA2	2.02	0.42
2:B:1820:U:H4'	2:B:1821:A:OP2	2.20	0.42
2:B:2695:C:H2'	2:B:2696:U:C6	2.55	0.42
2:B:2761:G:O2'	9:I:143:GLN:NE2	2.53	0.42
8:H:138:GLN:HB3	8:H:153:ARG:O	2.19	0.42
9:I:54:ARG:CZ	9:I:62:LYS:HG2	2.50	0.42
10:J:8:PRO:HG3	10:J:15:VAL:HG12	2.01	0.42
32:FA:8:LYS:O	32:FA:12:LYS:HG3	2.20	0.42
36:KA:75:VAL:HG12	36:KA:83:ARG:NH1	2.34	0.42
40:OA:80:VAL:HB	40:OA:83:ALA:O	2.20	0.42
45:TA:27:LEU:HD13	45:TA:98:TYR:HE1	1.84	0.42
50:YA:59:ILE:HG22	50:YA:73:VAL:HA	2.02	0.42
53:BB:92:LEU:O	53:BB:96:GLY:N	2.52	0.42
1:DB:778:G:H2'	1:DB:779:C:O4'	2.19	0.42
1:DB:1522:U:H2'	1:DB:1523:G:C8	2.55	0.42
2:EB:96:G:OP1	26:CC:46:GLN:NE2	2.45	0.42
2:EB:489:G:H2'	2:EB:491:G:O4'	2.20	0.42
2:EB:1186:G:H2'	2:EB:1187:G:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:1425:G:N1	2:EB:1426:G:C2	2.88	0.42
2:EB:2050:C:N4	2:EB:2051:A:C6	2.88	0.42
2:EB:2731:G:C6	2:EB:2732:G:C6	3.08	0.42
2:EB:2821:A:OP2	15:RB:3:HIS:NE2	2.52	0.42
5:HB:71:ASP:OD2	5:HB:71:ASP:N	2.50	0.42
6:IB:38:THR:O	6:IB:42:ASP:N	2.52	0.42
8:KB:11:TYR:OH	8:KB:16:ARG:NH1	2.52	0.42
9:LB:20:ALA:HB1	9:LB:21:PRO:HD2	2.02	0.42
15:RB:65:LEU:HA	15:RB:65:LEU:HD12	1.82	0.42
21:XB:10:ALA:HA	26:CC:37:PHE:CE1	2.54	0.42
23:ZB:137:ILE:HD11	23:ZB:158:PRO:HD3	2.02	0.42
37:OC:109:GLY:HA3	37:OC:165:MET:SD	2.59	0.42
43:UC:9:ARG:HA	43:UC:68:HIS:O	2.20	0.42
44:VC:67:ASP:HA	44:VC:70:LYS:HD3	2.00	0.42
49:AD:25:ARG:NH1	49:AD:25:ARG:HG3	2.34	0.42
1:A:35:G:O2'	45:TA:118:SER:O	2.28	0.42
1:A:601:C:H2'	1:A:602:A:C8	2.54	0.42
1:A:741:G:H2'	1:A:742:G:O4'	2.19	0.42
1:A:1277:C:H1'	1:A:1282:C:H1'	2.01	0.42
1:A:1378:C:C5	1:A:1379:G:C8	3.07	0.42
1:A:1406:U:H2'	1:A:1407:5MC:O4'	2.19	0.42
1:A:1530:G:H2'	1:A:1531:A:H5"	2.00	0.42
2:B:191:A:H2'	2:B:192:C:C6	2.55	0.42
2:B:2335:A:C8	2:B:2337:G:C5	3.07	0.42
2:B:2846:G:C5	2:B:2847:U:C5	3.08	0.42
3:C:45:A:H2'	3:C:46:A:O4'	2.20	0.42
9:I:101:ARG:HH11	9:I:122:THR:HG22	1.83	0.42
10:J:61:ARG:NH1	10:J:61:ARG:N	2.67	0.42
10:J:69:LYS:HD2	10:J:136:VAL:HG13	2.01	0.42
12:L:25:LEU:HA	12:L:25:LEU:HD23	1.58	0.42
18:R:24:TYR:HB2	18:R:29:SER:HB3	2.01	0.42
37:LA:4:TYR:CE1	37:LA:66:ARG:HG2	2.54	0.42
39:NA:35:ALA:HB1	39:NA:65:VAL:HG21	2.02	0.42
53:BB:53:LEU:HD12	53:BB:103:GLY:HA3	2.01	0.42
1:DB:222:U:H2'	1:DB:223:U:H6	1.84	0.42
1:DB:325:A:H2'	1:DB:326:G:O4'	2.20	0.42
1:DB:719:C:O2'	51:CD:49:LYS:HB3	2.19	0.42
1:DB:753:A:H5'	1:DB:754:C:C6	2.55	0.42
1:DB:927:G:C2	1:DB:1391:U:O2	2.72	0.42
1:DB:1064:G:H21	1:DB:1190:G:H1'	1.85	0.42
1:DB:1347:G:H22	1:DB:1374:A:P	2.42	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:910:A:C5	14:QB:13:GLN:HG3	2.54	0.42
2:EB:1098:A:H3'	2:EB:1099:G:C8	2.54	0.42
2:EB:1266:G:OP2	29:FC:20:ARG:NE	2.52	0.42
2:EB:2404:C:H2'	2:EB:2405:G:O4'	2.20	0.42
2:EB:2625:G:H2'	2:EB:2626:C:O4'	2.20	0.42
2:EB:2839:G:H4'	15:RB:49:ASP:HB3	2.02	0.42
10:MB:72:LEU:HD21	10:MB:107:ILE:HD13	2.02	0.42
14:QB:27:VAL:HA	14:QB:105:GLU:OE2	2.19	0.42
37:OC:85:LYS:HE2	37:OC:85:LYS:HB2	1.88	0.42
43:UC:65:LEU:HD12	43:UC:66:ARG:H	1.85	0.42
47:YC:53:LEU:HD23	47:YC:53:LEU:HA	1.82	0.42
48:ZC:70:LEU:HD22	48:ZC:70:LEU:HA	1.84	0.42
53:ED:9:ASN:O	53:ED:10:LEU:HD22	2.20	0.42
55:HD:253:ILE:HD11	55:HD:278:ILE:HG13	2.01	0.42
1:A:137:C:H2'	1:A:138:G:C8	2.54	0.42
1:A:598:U:H2'	1:A:599:C:C6	2.54	0.42
1:A:1309:G:O2'	46:UA:77:ASN:ND2	2.52	0.42
2:B:78:A:H2'	2:B:79:G:C8	2.54	0.42
2:B:322:A:OP2	7:G:169:ASN:HB2	2.19	0.42
2:B:811:U:C2	2:B:1251:C:C5	3.07	0.42
2:B:1260:G:C6	2:B:1261:C:C4	3.08	0.42
2:B:2115:G:H2'	2:B:2117:A:N7	2.35	0.42
2:B:2331:G:C6	2:B:2332:U:C4	3.08	0.42
5:E:260:ARG:NH2	5:E:264:LYS:HD3	2.35	0.42
6:F:110:GLY:O	15:O:3:HIS:CE1	2.72	0.42
10:J:87:LYS:HE2	10:J:89:TYR:HD1	1.85	0.42
11:K:94:HIS:HB3	11:K:97:ARG:HG3	2.01	0.42
20:T:30:GLU:OE2	20:T:30:GLU:HA	2.17	0.42
35:JA:61:LEU:HD23	35:JA:68:ILE:HD11	2.00	0.42
46:UA:81:LEU:HD22	46:UA:86:CYS:SG	2.60	0.42
1:DB:147:G:C2	1:DB:148:G:H1'	2.54	0.42
1:DB:431:A:H2'	1:DB:432:A:O4'	2.19	0.42
1:DB:601:C:H42	1:DB:637:G:H1	1.68	0.42
1:DB:926:G:C6	1:DB:1505:G:C5	3.08	0.42
1:DB:971:G:H22	1:DB:1363:A:P	2.43	0.42
1:DB:993:G:H4'	1:DB:994:A:OP2	2.20	0.42
2:EB:755:C:H2'	2:EB:756:C:C6	2.55	0.42
2:EB:1043:C:H5	2:EB:1112:G:H22	1.66	0.42
2:EB:1104:C:H2'	2:EB:1105:U:C6	2.54	0.42
2:EB:1656:C:H2'	2:EB:1657:C:C6	2.55	0.42
2:EB:1692:U:H2'	2:EB:1694:C:C5	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:2884:U:H2'	2:EB:2885:C:O4'	2.20	0.42
4:GB:63:G:H2'	4:GB:64:G:C8	2.55	0.42
6:IB:47:VAL:HG11	6:IB:86:PRO:CD	2.49	0.42
11:NB:39:ARG:HA	11:NB:40:PRO:HD3	1.88	0.42
15:RB:57:ARG:HB3	15:RB:59:ASP:OD1	2.20	0.42
16:SB:106:ARG:NE	16:SB:112:PHE:O	2.52	0.42
18:UB:47:TYR:O	18:UB:51:LYS:HG3	2.20	0.42
19:VB:85:LYS:HB3	19:VB:85:LYS:HZ3	1.83	0.42
21:XB:64:LYS:HD3	21:XB:64:LYS:HA	1.81	0.42
22:YB:90:LEU:O	22:YB:92:ASN:N	2.53	0.42
23:ZB:133:ILE:HA	23:ZB:134:PRO:HD2	1.95	0.42
25:BC:19:GLN:OE1	25:BC:19:GLN:HA	2.18	0.42
36:NC:119:ARG:O	36:NC:123:GLN:HG3	2.20	0.42
39:QC:10:LEU:HA	39:QC:10:LEU:HD23	1.80	0.42
45:WC:93:LEU:HA	45:WC:94:PRO:HD3	1.76	0.42
51:CD:65:ILE:HD12	51:CD:65:ILE:HA	1.90	0.42
55:GD:314:GLN:HB2	55:GD:316:ARG:HG2	2.02	0.42
1:A:80:G:C2	1:A:90:C:C2	3.08	0.42
1:A:345:C:H5'	1:A:346:G:C5	2.55	0.42
1:A:577:G:H1'	1:A:816:A:C4	2.55	0.42
1:A:939:G:P	40:OA:95:ARG:HH22	2.42	0.42
1:A:981:U:H5'	47:VA:21:TYR:CZ	2.55	0.42
1:A:1054:C:N3	34:HA:22:A:C6	2.88	0.42
1:A:1103:C:OP1	35:JA:96:ARG:NH2	2.52	0.42
1:A:1122:U:O4	1:A:1123:A:N6	2.53	0.42
1:A:1468:A:H2'	1:A:1469:G:O4'	2.20	0.42
2:B:277:C:O2'	2:B:278:A:H8	2.03	0.42
2:B:510:C:OP1	2:B:511:U:OP2	2.38	0.42
2:B:795:C:H2'	2:B:796:C:C6	2.55	0.42
2:B:1188:U:H4'	19:S:79:VAL:HG22	2.01	0.42
2:B:1897:G:H2'	2:B:1898:U:O4'	2.20	0.42
2:B:2138:C:H2'	2:B:2139:C:C6	2.55	0.42
2:B:2139:C:H3'	2:B:2140:C:C6	2.51	0.42
2:B:2287:A:HO2'	2:B:2288:A:P	2.42	0.42
2:B:2351:G:O6	32:FA:39:LYS:HG3	2.20	0.42
2:B:2516:G:C6	2:B:2517:C:N4	2.88	0.42
2:B:2869:G:H2'	2:B:2870:C:O4'	2.20	0.42
18:R:15:LYS:HD2	18:R:15:LYS:HA	1.93	0.42
29:CA:33:CYS:HA	29:CA:34:PRO:HD2	1.90	0.42
36:KA:95:THR:O	36:KA:97:LYS:HG3	2.20	0.42
37:LA:31:CYS:O	37:LA:34:GLU:N	2.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:LA:62:GLN:HE21	37:LA:62:GLN:HA	1.84	0.42
1:DB:419:C:H5"	1:DB:513:C:O4'	2.20	0.42
2:EB:273(B):G:C2	2:EB:364:C:C2	3.08	0.42
2:EB:383:U:H2'	2:EB:385:C:H5	1.84	0.42
2:EB:2444:G:OP2	7:JB:68:LYS:HD2	2.20	0.42
2:EB:2626:C:H2'	2:EB:2627:G:C8	2.55	0.42
11:NB:24:GLY:O	11:NB:28:THR:HG23	2.19	0.42
17:TB:107:ASP:O	17:TB:111:ARG:HB2	2.20	0.42
4:LC:9:G:O2'	4:LC:10:G:N7	2.52	0.42
35:MC:126:GLU:CD	35:MC:127:ILE:H	2.23	0.42
37:OC:187:ARG:NH2	37:OC:193:ASP:OD2	2.45	0.42
40:RC:80:VAL:HG21	40:RC:85:TYR:HB2	2.01	0.42
46:XC:66:LEU:O	46:XC:69:GLU:HB3	2.20	0.42
52:DD:41:VAL:HG22	52:DD:44:MET:SD	2.59	0.42
55:GD:155:GLU:HG3	55:GD:156:HIS:CE1	2.55	0.42
55:HD:217:ILE:H	55:HD:217:ILE:HG13	1.53	0.42
1:A:272:C:H2'	1:A:273:A:H8	1.84	0.42
1:A:437:U:H5'	37:LA:155:LEU:HD11	2.02	0.42
1:A:622:A:C8	1:A:623:C:C6	3.08	0.42
1:A:806:C:H2'	1:A:807:A:C8	2.55	0.42
1:A:974:A:H8	1:A:974:A:OP1	2.02	0.42
1:A:1254:C:OP1	43:RA:45:ARG:HB3	2.20	0.42
1:A:1258:G:H2'	1:A:1259:C:C6	2.55	0.42
2:B:89:G:C6	2:B:90:U:C4	3.08	0.42
2:B:270(A):A:H1'	2:B:370:G:C2	2.55	0.42
2:B:305:U:H2'	2:B:306:U:C6	2.55	0.42
2:B:2667:C:H1'	9:I:109:PHE:CD1	2.53	0.42
8:H:77:ILE:HD13	8:H:77:ILE:HA	1.90	0.42
12:L:3:GLN:HG3	12:L:4:PRO:O	2.20	0.42
14:N:61:GLY:HA2	23:W:177:PRO:HB2	2.02	0.42
15:O:80:PHE:O	15:O:85:PRO:HD3	2.19	0.42
36:KA:183:ASP:OD1	36:KA:184:TYR:N	2.53	0.42
37:LA:101:LEU:HB2	37:LA:138:TYR:HB3	2.01	0.42
39:NA:45:LEU:H	39:NA:45:LEU:HG	1.58	0.42
41:PA:127:LEU:HD13	41:PA:127:LEU:HA	1.87	0.42
50:YA:43:LEU:HD23	50:YA:43:LEU:HA	1.75	0.42
1:DB:435:C:H2'	1:DB:436:C:C6	2.55	0.42
1:DB:540:G:C5	1:DB:541:G:C5	3.07	0.42
1:DB:579:G:H2'	1:DB:580:U:C6	2.55	0.42
1:DB:1060:C:N4	36:NC:2:GLY:HA3	2.35	0.42
2:EB:16:G:H2'	2:EB:17:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:EB:43:G:N2	2:EB:438:G:C4	2.88	0.42
2:EB:323:G:C6	2:EB:333:G:C5	3.08	0.42
2:EB:715:G:H2'	2:EB:716:A:H8	1.84	0.42
2:EB:911:A:H2'	14:QB:9:TYR:CZ	2.55	0.42
2:EB:1431:U:H2'	2:EB:1432:C:C6	2.54	0.42
2:EB:1439:A:H2'	2:EB:1440:G:O4'	2.19	0.42
2:EB:1541:U:H2'	2:EB:1542:G:O4'	2.20	0.42
2:EB:1701:A:H5"	2:EB:1702:G:OP2	2.20	0.42
2:EB:2404:C:H1'	13:PB:67:MET:HE1	2.01	0.42
6:IB:54:GLN:OE1	6:IB:55:ASN:N	2.48	0.42
6:IB:63:LEU:HA	6:IB:63:LEU:HD23	1.75	0.42
6:IB:170:LEU:HD12	6:IB:170:LEU:HA	1.70	0.42
9:LB:28:GLY:HA3	9:LB:79:VAL:HB	2.02	0.42
9:LB:54:ARG:CZ	9:LB:62:LYS:HG2	2.49	0.42
13:PB:17:LYS:HD2	13:PB:27:HIS:CE1	2.55	0.42
14:QB:64:ILE:HG13	23:ZB:178:GLU:HG3	2.01	0.42
19:VB:15:GLU:HB3	19:VB:16:PRO:HD2	2.01	0.42
20:WB:82:LEU:HD23	20:WB:84:ARG:NH1	2.35	0.42
26:CC:66:GLU:HA	26:CC:69:ARG:HH21	1.85	0.42
27:DC:5:LYS:HD3	27:DC:34:GLU:OE2	2.20	0.42
35:MC:116:GLU:HG2	35:MC:153:ARG:HH22	1.85	0.42
35:MC:179:LYS:HE3	35:MC:179:LYS:HB2	1.87	0.42
39:QC:22:GLU:O	39:QC:26:ILE:HG23	2.20	0.42
40:RC:46:ALA:O	40:RC:50:ILE:HG13	2.20	0.42
41:SC:56:LYS:HA	41:SC:57:PRO:HD3	1.81	0.42
46:XC:45:VAL:O	46:XC:48:LEU:HB2	2.20	0.42
50:BD:31:LEU:HD23	50:BD:32:TYR:CE2	2.55	0.42
1:A:756:C:O4'	41:PA:1:MET:HG2	2.19	0.41
1:A:854:G:H3'	1:A:871:U:O4	2.20	0.41
1:A:976:G:O5'	1:A:1358:U:O2'	2.37	0.41
2:B:6:A:C2	2:B:7:G:C8	3.08	0.41
2:B:1187:G:H8	2:B:1187:G:O5'	2.03	0.41
2:B:1260:G:H2'	2:B:1261:C:O4'	2.19	0.41
2:B:1464:C:H2'	2:B:1465:G:H8	1.82	0.41
2:B:1526:G:C6	2:B:1527:G:C2	3.07	0.41
2:B:1598:C:H2'	2:B:1599:C:H6	1.85	0.41
2:B:1692:U:H2'	2:B:1694:C:C5	2.55	0.41
3:C:111:U:H2'	3:C:112:G:H8	1.85	0.41
5:E:95:LEU:HD23	5:E:95:LEU:HA	1.83	0.41
9:I:95:ARG:HG3	9:I:106:THR:HB	2.02	0.41
13:M:88:LEU:HD23	13:M:88:LEU:HA	1.83	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:67:ARG:NH1	14:N:105:GLU:OE2	2.53	0.41
16:P:15:ARG:NH1	16:P:15:ARG:HG2	2.34	0.41
20:T:86:LEU:HG	20:T:88:ARG:HD3	2.02	0.41
23:W:4:ARG:NH2	23:W:60:GLU:HG2	2.35	0.41
23:W:133:ILE:HA	23:W:134:PRO:HD2	1.94	0.41
35:JA:167:PRO:HG2	35:JA:188:ALA:HB2	2.02	0.41
37:LA:149:ALA:HB3	37:LA:152:SER:HB2	2.02	0.41
41:PA:31:PHE:O	41:PA:35:ILE:HG13	2.20	0.41
41:PA:86:ILE:O	41:PA:88:LYS:HD2	2.20	0.41
42:QA:127:LYS:HB2	42:QA:127:LYS:HE3	1.79	0.41
45:TA:69:TYR:HD2	45:TA:99:HIS:CD2	2.38	0.41
1:DB:93:U:H2'	1:DB:95:G:H8	1.84	0.41
1:DB:601:C:H2'	1:DB:602:A:C8	2.55	0.41
1:DB:1120:G:H2'	1:DB:1121:U:C6	2.55	0.41
1:DB:1277:C:H1'	1:DB:1282:C:H1'	2.02	0.41
1:DB:1346:A:OP1	42:TC:120:ARG:NH1	2.44	0.41
2:EB:524:U:H2'	2:EB:525:U:C6	2.55	0.41
2:EB:528:A:HO2'	2:EB:529:A:P	2.42	0.41
2:EB:579:G:H2'	2:EB:580:C:C6	2.54	0.41
2:EB:674:G:O2'	7:JB:74:ARG:HD3	2.20	0.41
2:EB:1042:G:H2'	2:EB:1043:C:O2	2.19	0.41
2:EB:1322:A:C5	2:EB:1323:U:C5	3.08	0.41
2:EB:1477:A:H2'	2:EB:1478:G:O4'	2.19	0.41
2:EB:1759:A:C8	2:EB:2696:U:H1'	2.55	0.41
2:EB:2168:G:H2'	2:EB:2169:A:H3'	2.01	0.41
2:EB:2676:C:O2	2:EB:2732:G:N2	2.51	0.41
2:EB:2709:G:O2'	2:EB:2710:C:H5'	2.19	0.41
10:MB:9:LEU:HD12	10:MB:10:GLU:OE2	2.20	0.41
10:MB:42:SER:OG	10:MB:43:ASN:N	2.53	0.41
14:QB:75:THR:HG21	14:QB:87:LYS:HZ3	1.80	0.41
15:RB:67:LEU:HD22	15:RB:67:LEU:HA	1.90	0.41
23:ZB:24:LEU:HA	23:ZB:25:PRO:HD2	1.91	0.41
23:ZB:162:GLU:O	23:ZB:164:ALA:N	2.53	0.41
46:XC:97:PRO:HG3	46:XC:107:ALA:HB1	2.02	0.41
55:GD:110:ASN:OD1	55:GD:110:ASN:N	2.52	0.41
55:GD:149:MET:HB2	55:GD:150:SER:H	1.56	0.41
55:HD:137:ARG:HD3	55:HD:334:GLU:O	2.19	0.41
55:HD:169:ASP:OD1	55:HD:169:ASP:N	2.53	0.41
1:A:25:C:H2'	1:A:26:A:C8	2.55	0.41
1:A:67:C:H2'	1:A:68:G:H8	1.84	0.41
2:B:319:C:H2'	2:B:320:A:O4'	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:507:A:O2'	2:B:508:G:OP2	2.32	0.41
2:B:813:U:H2'	2:B:814:C:C6	2.55	0.41
2:B:836:G:H2'	2:B:837:C:C6	2.55	0.41
2:B:952:G:C6	2:B:953:A:N7	2.88	0.41
2:B:1002:G:C6	2:B:1003:G:C5	3.09	0.41
2:B:1019:U:OP1	2:B:1035:U:O2'	2.26	0.41
2:B:1425:G:N1	2:B:1426:G:C2	2.88	0.41
2:B:2038:G:H2'	2:B:2039:C:O4'	2.19	0.41
2:B:2209:C:O2	2:B:2216:G:N1	2.53	0.41
2:B:2246:G:H1'	2:B:2426:A:C2	2.55	0.41
2:B:2406:U:H5"	2:B:2408:U:OP2	2.19	0.41
2:B:2637:U:OP1	6:F:82:ARG:NH1	2.53	0.41
3:C:45:A:C4	3:C:46:A:C8	3.08	0.41
8:H:43:LEU:C	8:H:45:GLU:H	2.23	0.41
18:R:34:LYS:HD2	18:R:34:LYS:HA	1.48	0.41
35:JA:22:LYS:HZ2	35:JA:22:LYS:HA	1.85	0.41
35:JA:126:GLU:CD	35:JA:127:ILE:H	2.24	0.41
35:JA:163:PHE:HD1	35:JA:163:PHE:HA	1.71	0.41
37:LA:30:LYS:HG3	37:LA:35:ARG:NH1	2.36	0.41
37:LA:194:LEU:HD12	37:LA:194:LEU:O	2.20	0.41
38:MA:9:LYS:HZ3	38:MA:10:MET:H	1.69	0.41
48:WA:28:GLN:O	48:WA:32:LEU:HD23	2.20	0.41
50:YA:84:LEU:HD12	50:YA:87:LYS:HE2	2.02	0.41
1:DB:67:C:H2'	1:DB:68:G:H8	1.85	0.41
1:DB:403:C:O2'	37:OC:122:ARG:NH2	2.36	0.41
1:DB:1346:A:H5"	42:TC:120:ARG:HH12	1.86	0.41
1:DB:1366:C:H2'	1:DB:1367:C:H6	1.84	0.41
2:EB:1448:G:O2'	2:EB:1529:A:N1	2.43	0.41
2:EB:2292:C:OP1	16:SB:17:ARG:NH2	2.50	0.41
2:EB:2403:C:N3	2:EB:2415:G:C2	2.88	0.41
6:IB:7:VAL:HG23	6:IB:51:PHE:CE2	2.53	0.41
6:IB:181:LEU:HD12	6:IB:181:LEU:HA	1.84	0.41
7:JB:156:LEU:HD22	7:JB:156:LEU:HA	1.77	0.41
10:MB:109:ILE:HB	10:MB:130:TYR:CZ	2.55	0.41
11:NB:120:LEU:HG	11:NB:122:VAL:HG23	2.02	0.41
15:RB:54:LEU:O	15:RB:57:ARG:HB2	2.19	0.41
18:UB:15:LYS:HD2	18:UB:15:LYS:HA	1.94	0.41
33:JC:1:MET:SD	33:JC:35:ARG:HB2	2.60	0.41
36:NC:61:ALA:C	36:NC:63:ASN:H	2.23	0.41
38:PC:53:LEU:O	38:PC:57:LYS:N	2.51	0.41
43:UC:79:ARG:O	43:UC:83:GLU:HG3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:HD:149:MET:HB2	55:HD:150:SER:H	1.56	0.41
1:A:540:G:H2'	1:A:541:G:O4'	2.20	0.41
1:A:598:U:H2'	1:A:599:C:H6	1.86	0.41
1:A:1034:G:H2'	1:A:1035:A:C8	2.55	0.41
1:A:1060:C:N4	36:KA:2:GLY:HA3	2.35	0.41
1:A:1221:G:OP1	52:AB:36:ARG:HD2	2.21	0.41
1:A:1347:G:HO2'	1:A:1373:G:H1	1.65	0.41
2:B:46:C:H42	2:B:179:G:H1	1.68	0.41
2:B:195:A:H5"	2:B:196:A:OP2	2.21	0.41
2:B:270(G):U:H2'	2:B:270(H):C:C6	2.55	0.41
2:B:528:A:OP2	11:K:114:ARG:NH2	2.53	0.41
2:B:545:G:N2	2:B:548:A:H62	2.18	0.41
2:B:1098:A:H3'	2:B:1099:G:C8	2.55	0.41
2:B:2130:U:H2'	2:B:2131:G:H21	1.85	0.41
2:B:2209:C:H1'	2:B:2216:G:N2	2.34	0.41
2:B:2271:G:H2'	2:B:2272:U:C6	2.55	0.41
2:B:2505:G:O6	2:B:2576:G:H2'	2.20	0.41
2:B:2821:A:H2'	2:B:2822:G:O4'	2.20	0.41
7:G:101:LEU:HG	7:G:102:PRO:HD2	2.02	0.41
27:AA:50:VAL:O	27:AA:54:VAL:HG12	2.20	0.41
28:BA:62:ARG:HA	28:BA:62:ARG:CZ	2.49	0.41
29:CA:19:ARG:C	29:CA:21:SER:H	2.23	0.41
38:MA:145:LYS:HB3	38:MA:145:LYS:HZ2	1.81	0.41
40:OA:46:ALA:O	40:OA:50:ILE:HG13	2.20	0.41
40:OA:69:VAL:HG21	40:OA:104:LEU:HD21	2.02	0.41
41:PA:56:LYS:HA	41:PA:57:PRO:HD3	1.80	0.41
41:PA:81:HIS:HB2	41:PA:138:TRP:HD1	1.84	0.41
49:XA:19:ILE:H	49:XA:19:ILE:HG13	1.75	0.41
1:DB:59:A:N3	1:DB:59:A:H2'	2.34	0.41
1:DB:1366:C:O3'	43:UC:60:ARG:NH2	2.53	0.41
2:EB:760:G:H2'	2:EB:761:A:O4'	2.19	0.41
2:EB:1310:G:H1	2:EB:1604:C:N4	2.13	0.41
2:EB:1641:A:H2'	2:EB:1642:G:O4'	2.20	0.41
2:EB:2053:G:H1	2:EB:2616:C:H42	1.69	0.41
3:FB:86:G:H1	3:FB:90:C:H42	1.67	0.41
5:HB:95:LEU:HA	5:HB:95:LEU:HD23	1.83	0.41
5:HB:231:HIS:ND1	5:HB:232:PRO:HD2	2.35	0.41
11:NB:38:HIS:O	18:UB:67:ALA:HB1	2.21	0.41
12:OB:113:LYS:O	12:OB:117:LEU:HG	2.20	0.41
13:PB:81:GLN:OE1	13:PB:107:LYS:N	2.50	0.41
16:SB:93:LYS:O	16:SB:95:HIS:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:UB:24:TYR:HB2	18:UB:29:SER:HB3	2.03	0.41
23:ZB:53:ILE:HD11	23:ZB:99:TYR:HB2	2.03	0.41
27:DC:6:VAL:HB	27:DC:54:VAL:HG21	2.02	0.41
35:MC:167:PRO:HG2	35:MC:188:ALA:HB2	2.01	0.41
42:TC:127:LYS:HE3	42:TC:127:LYS:HB2	1.82	0.41
55:GD:110:ASN:HB2	55:GD:208:GLU:HG3	2.01	0.41
55:HD:110:ASN:OD1	55:HD:110:ASN:N	2.53	0.41
55:HD:156:HIS:HA	55:HD:157:GLY:HA2	1.75	0.41
1:A:222:U:H2'	1:A:223:U:H6	1.85	0.41
1:A:300:A:H1'	1:A:565:U:O2	2.20	0.41
1:A:1129:C:O2	1:A:1130:A:N6	2.38	0.41
1:A:1301:U:H2'	1:A:1303:C:H5	1.84	0.41
1:A:1397:C:N3	1:A:1402:4OC:OP1	2.54	0.41
2:B:705:A:H1'	5:E:9:TYR:CE2	2.55	0.41
2:B:710:G:H2'	2:B:711:G:C8	2.55	0.41
2:B:729:G:H5'	2:B:730:C:H5"	2.01	0.41
2:B:1031:G:O6	2:B:1032:A:N6	2.53	0.41
2:B:1394:U:O2	21:U:16:LYS:NZ	2.52	0.41
2:B:1593:G:C6	2:B:1594:G:C6	3.08	0.41
2:B:1766:U:H2'	2:B:1767:C:H6	1.85	0.41
2:B:2536:G:C6	2:B:2537:U:C4	3.08	0.41
3:C:16:G:N2	3:C:69:G:H1'	2.35	0.41
3:C:29:A:H2'	3:C:30:C:O4'	2.20	0.41
7:G:40:GLN:HE22	7:G:182:ASN:HB2	1.85	0.41
9:I:55:PRO:HD2	9:I:61:HIS:CD2	2.55	0.41
10:J:133:HIS:CD2	10:J:135:GLU:HB3	2.55	0.41
11:K:99:LEU:O	11:K:103:VAL:HG23	2.20	0.41
17:Q:113:LYS:O	17:Q:115:ARG:NH1	2.53	0.41
20:T:110:LYS:HA	20:T:110:LYS:HD2	1.86	0.41
23:W:17:ALA:HA	23:W:20:ARG:NH1	2.36	0.41
23:W:103:ARG:CZ	23:W:103:ARG:HA	2.50	0.41
28:BA:13:ARG:HH11	28:BA:21:VAL:CG1	2.34	0.41
31:EA:10:ARG:HH11	31:EA:14:LYS:HE3	1.85	0.41
35:JA:40:HIS:CG	35:JA:190:THR:HG21	2.55	0.41
37:LA:4:TYR:HE1	37:LA:66:ARG:HA	1.84	0.41
37:LA:113:SER:OG	37:LA:114:ARG:N	2.53	0.41
38:MA:40:ARG:CZ	38:MA:68:GLU:HB3	2.50	0.41
39:NA:76:ALA:O	39:NA:80:ARG:HG3	2.20	0.41
1:DB:41:G:H2'	1:DB:42:G:C8	2.55	0.41
1:DB:406:G:H1'	1:DB:495:A:C6	2.56	0.41
1:DB:540:G:H2'	1:DB:541:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:542:G:H5'	37:OC:41:GLY:HA3	2.01	0.41
1:DB:841:U:H3'	1:DB:842:C:H5"	2.01	0.41
1:DB:1079:G:O3'	38:PC:14:ARG:NH2	2.53	0.41
1:DB:1122:U:O4	1:DB:1123:A:N6	2.54	0.41
1:DB:1138:G:H2'	1:DB:1140:C:C5	2.55	0.41
1:DB:1258:G:H2'	1:DB:1259:C:C6	2.55	0.41
1:DB:1288:A:O3'	54:FD:10:ARG:NH2	2.53	0.41
2:EB:536:A:H2'	2:EB:537:C:C6	2.56	0.41
2:EB:1674:G:N3	2:EB:1676:A:N6	2.69	0.41
2:EB:2531:A:H61	2:EB:2662:A:H61	1.69	0.41
2:EB:2582:G:H21	2:EB:2583:G:H1'	1.84	0.41
2:EB:2717:G:C6	2:EB:2718:G:N7	2.89	0.41
9:LB:27:LYS:HA	9:LB:32:GLU:HB3	2.01	0.41
23:ZB:33:LEU:HG	23:ZB:34:ASN:N	2.36	0.41
23:ZB:125:LEU:HB3	23:ZB:165:VAL:HG13	2.02	0.41
26:CC:53:LEU:HD22	26:CC:53:LEU:HA	1.77	0.41
36:NC:67:THR:HG22	36:NC:102:ASN:HB3	2.02	0.41
37:OC:4:TYR:CE1	37:OC:66:ARG:HG2	2.55	0.41
38:PC:9:LYS:HZ3	38:PC:10:MET:H	1.67	0.41
39:QC:25:ILE:HD11	39:QC:82:ARG:HG3	2.03	0.41
39:QC:45:LEU:H	39:QC:45:LEU:HG	1.55	0.41
40:RC:45:ASP:O	40:RC:49:ILE:HG12	2.20	0.41
40:RC:56:GLN:N	40:RC:56:GLN:OE1	2.53	0.41
41:SC:63:LEU:HD13	41:SC:63:LEU:HA	1.77	0.41
1:A:452:A:O2'	1:A:453:A:OP2	2.25	0.41
1:A:564:C:H5'	50:YA:32:TYR:HE1	1.86	0.41
1:A:743:U:H2'	1:A:744:C:C6	2.55	0.41
1:A:1528:U:C2	1:A:1530:G:C8	3.09	0.41
2:B:197:A:N6	2:B:2430:A:H2'	2.35	0.41
2:B:323:G:C6	2:B:333:G:C5	3.08	0.41
2:B:784:A:H5'	2:B:785:G:OP1	2.20	0.41
2:B:858:U:O2	2:B:2268:A:H2'	2.19	0.41
2:B:1310:G:H1	2:B:1604:C:N4	2.15	0.41
2:B:1696:G:H3'	2:B:1697:G:H8	1.85	0.41
3:C:104:A:O4'	23:W:29:TYR:HE1	2.04	0.41
6:F:111:ARG:HD3	6:F:160:TYR:CD2	2.55	0.41
10:J:60:GLU:O	10:J:64:GLU:N	2.43	0.41
13:M:84:ASN:OD1	13:M:117:GLU:HB2	2.20	0.41
15:O:33:ARG:HH12	29:CA:58:LEU:HA	1.86	0.41
22:V:52:SER:HB2	22:V:53:PRO:HD2	2.03	0.41
22:V:90:LEU:O	22:V:92:ASN:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:NA:97:PHE:CB	51:ZA:32:ARG:HH11	2.34	0.41
42:QA:23:ASN:ND2	42:QA:25:LYS:HE2	2.24	0.41
42:QA:34:ASN:O	42:QA:38:GLN:NE2	2.52	0.41
45:TA:93:LEU:HD23	45:TA:93:LEU:HA	1.80	0.41
46:UA:20:THR:C	46:UA:22:ILE:H	2.24	0.41
53:BB:43:LEU:HD23	53:BB:43:LEU:HA	1.84	0.41
1:DB:41:G:H2'	1:DB:42:G:H8	1.85	0.41
1:DB:287:U:H2'	1:DB:288:A:C8	2.54	0.41
2:EB:84:A:N1	2:EB:98:G:O2'	2.49	0.41
2:EB:186:G:H2'	2:EB:187:G:C8	2.54	0.41
2:EB:608:A:H2'	2:EB:609(A):A:C8	2.56	0.41
2:EB:1043:C:H2'	2:EB:1044:G:H5'	2.03	0.41
2:EB:1604:C:H2'	2:EB:1605:C:H6	1.84	0.41
2:EB:1784:A:H4'	2:EB:1785:A:C5'	2.50	0.41
2:EB:1935:G:H1'	2:EB:1964:G:N2	2.35	0.41
2:EB:2577:A:H5'	29:FC:3:LYS:NZ	2.35	0.41
2:EB:2846:G:C5	2:EB:2847:U:C5	3.08	0.41
4:GB:42:G:H5'	40:RC:143:ARG:NH1	2.35	0.41
5:HB:20:ASP:O	5:HB:21:PHE:HB2	2.21	0.41
15:RB:30:THR:HG22	15:RB:75:LEU:HD13	2.02	0.41
27:DC:31:LEU:C	27:DC:33:GLN:H	2.24	0.41
35:MC:21:ARG:HH11	35:MC:23:ARG:HD3	1.79	0.41
36:NC:123:GLN:HB3	36:NC:128:PHE:HD2	1.85	0.41
49:AD:73:LEU:HA	49:AD:73:LEU:HD23	1.84	0.41
50:BD:81:ARG:HD2	50:BD:81:ARG:HA	1.89	0.41
51:CD:27:GLY:O	51:CD:29:PHE:HD2	2.03	0.41
55:GD:253:ILE:HD11	55:GD:278:ILE:HG13	2.02	0.41
1:A:127:G:C2	1:A:128:G:C8	3.09	0.41
1:A:324:G:O2'	1:A:326:G:N7	2.40	0.41
1:A:866:C:C4	1:A:867:G:H1'	2.56	0.41
1:A:1191:A:H5"	36:KA:4:LYS:HZ2	1.86	0.41
1:A:1370:G:H2'	1:A:1371:G:H8	1.86	0.41
2:B:226:G:C2	2:B:227:A:C6	3.08	0.41
2:B:492:A:H2'	2:B:493:G:O4'	2.20	0.41
2:B:913:U:H4'	2:B:914:C:OP1	2.20	0.41
2:B:1064:C:O2'	2:B:1074:G:N2	2.53	0.41
2:B:1142(B):A:C5	2:B:1144:G:C5	3.08	0.41
2:B:1488:G:H1	2:B:1501:C:H42	1.68	0.41
2:B:1774:C:O5'	2:B:1774:C:H6	2.03	0.41
2:B:2183:C:H2'	2:B:2184:G:C8	2.56	0.41
2:B:2208:U:H4'	5:E:151:LYS:HG2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:63:G:H2'	4:D:64:G:C8	2.55	0.41
7:G:170:LEU:HB2	7:G:173:VAL:HB	2.02	0.41
8:H:29:TRP:O	8:H:33:ARG:NH1	2.54	0.41
9:I:7:LEU:HA	9:I:8:PRO:HD3	1.77	0.41
10:J:72:LEU:HD21	10:J:107:ILE:HD13	2.03	0.41
12:L:56:ASP:N	12:L:56:ASP:OD1	2.52	0.41
12:L:113:LYS:O	12:L:117:LEU:HG	2.21	0.41
19:S:58:VAL:HG21	19:S:100:ARG:NH1	2.34	0.41
23:W:163:LEU:H	23:W:163:LEU:HD12	1.85	0.41
25:Y:2:SER:HB3	25:Y:46:LEU:HD12	2.01	0.41
29:CA:36:CYS:SG	29:CA:38:ALA:HB2	2.61	0.41
37:LA:26:CYS:SG	37:LA:31:CYS:SG	3.03	0.41
37:LA:98:GLU:OE2	37:LA:103:ASN:ND2	2.43	0.41
38:MA:45:PHE:CE2	38:MA:47:LYS:HE3	2.55	0.41
41:PA:4:ASP:HA	41:PA:5:PRO:HD2	1.90	0.41
42:QA:118:LYS:HB3	42:QA:119:ALA:H	1.67	0.41
45:TA:104:VAL:O	45:TA:107:ALA:HB3	2.21	0.41
49:XA:53:VAL:O	49:XA:57:ARG:HG3	2.21	0.41
1:DB:448:A:P	1:DB:485:G:H22	2.41	0.41
1:DB:1118:C:H2'	1:DB:1119:C:C6	2.56	0.41
1:DB:1254:C:OP1	43:UC:45:ARG:HB3	2.20	0.41
1:DB:1370:G:H2'	1:DB:1371:G:H8	1.86	0.41
2:EB:1693:U:O2'	5:HB:14:ARG:NH2	2.54	0.41
2:EB:1774:C:O5'	2:EB:1774:C:H6	2.04	0.41
2:EB:2307:G:N2	2:EB:2311:A:O2'	2.54	0.41
2:EB:2505:G:O6	2:EB:2576:G:H2'	2.21	0.41
3:FB:81:G:C6	3:FB:82:G:C5	3.09	0.41
5:HB:26:LYS:HE2	5:HB:94:LEU:HD12	2.03	0.41
8:KB:176:LEU:HD23	8:KB:176:LEU:HA	1.76	0.41
9:LB:43:VAL:HA	9:LB:52:VAL:HG12	2.01	0.41
16:SB:57:LYS:HA	16:SB:57:LYS:HD3	1.75	0.41
16:SB:71:ARG:NE	16:SB:107:GLU:OE1	2.47	0.41
23:ZB:40:ASP:HB3	23:ZB:43:GLU:CB	2.50	0.41
31:HC:3:ARG:HD3	31:HC:3:ARG:HA	1.85	0.41
35:MC:69:LEU:O	35:MC:163:PHE:N	2.52	0.41
35:MC:112:VAL:HG22	35:MC:149:LEU:HD23	2.02	0.41
35:MC:215:LEU:HD23	35:MC:215:LEU:HA	1.80	0.41
37:OC:23:GLY:HA3	37:OC:112:VAL:CG1	2.50	0.41
43:UC:49:VAL:HB	47:YC:41:ARG:HB2	2.02	0.41
45:WC:11:VAL:HG13	50:BD:29:HIS:HD2	1.85	0.41
45:WC:56:ALA:O	45:WC:58:VAL:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:ED:92:LEU:O	53:ED:96:GLY:N	2.53	0.41
55:GD:319:ASP:OD2	55:GD:344:ILE:HD11	2.21	0.41
1:A:18:C:H2'	1:A:19:C:O4'	2.20	0.41
1:A:96:G:H2'	1:A:97:U:C6	2.56	0.41
1:A:997:U:H3	1:A:1044:A:H61	1.68	0.41
1:A:1366:C:O3'	43:RA:60:ARG:NH2	2.52	0.41
1:A:1372:U:H2'	1:A:1373:G:O4'	2.21	0.41
2:B:22:C:H2'	2:B:23:G:O4'	2.21	0.41
2:B:321:G:C4	2:B:341:G:H4'	2.56	0.41
2:B:394:A:O2'	2:B:395:U:H5'	2.21	0.41
2:B:2316:C:H1'	8:H:128:ARG:NH1	2.35	0.41
2:B:2707:G:H2'	2:B:2708:G:H8	1.85	0.41
5:E:68:LYS:HD2	5:E:70:TRP:CZ2	2.55	0.41
5:E:166:GLN:HE21	5:E:166:GLN:HB3	1.66	0.41
7:G:150:GLY:HA2	7:G:172:TRP:CE3	2.56	0.41
8:H:135:LEU:HB2	8:H:155:MET:HG2	2.02	0.41
10:J:75:LEU:HD13	10:J:105:HIS:NE2	2.36	0.41
15:O:29:LEU:HD12	15:O:29:LEU:HA	1.89	0.41
16:P:17:ARG:NH1	16:P:17:ARG:HG2	2.35	0.41
16:P:68:GLN:OE1	16:P:71:ARG:NH1	2.54	0.41
21:U:53:LYS:HD3	21:U:55:ASN:HD21	1.85	0.41
25:Y:40:ARG:HE	25:Y:40:ARG:HB2	1.77	0.41
27:AA:26:LEU:HD23	27:AA:26:LEU:HA	1.90	0.41
31:EA:29:LYS:O	31:EA:33:ARG:HG3	2.20	0.41
37:LA:148:VAL:HG21	37:LA:158:ILE:HD13	2.02	0.41
38:MA:95:ALA:O	38:MA:98:THR:OG1	2.22	0.41
39:NA:10:LEU:HD23	39:NA:10:LEU:HA	1.77	0.41
41:PA:86:ILE:HD13	41:PA:86:ILE:HA	1.88	0.41
42:QA:111:ARG:HD2	47:VA:61:TRP:NE1	2.36	0.41
1:DB:272:C:H2'	1:DB:273:A:H8	1.86	0.41
1:DB:743:U:H2'	1:DB:744:C:C6	2.56	0.41
1:DB:803:G:H2'	1:DB:804:U:O4'	2.21	0.41
1:DB:1315:U:H2'	1:DB:1316:G:O4'	2.21	0.41
2:EB:479:A:H1'	2:EB:480:A:H5"	2.02	0.41
2:EB:768:G:H2'	2:EB:769:G:H8	1.85	0.41
2:EB:1105:U:H2'	2:EB:1106:G:H8	1.86	0.41
2:EB:1188:U:O2'	2:EB:1189:A:H5'	2.21	0.41
2:EB:2056:G:O2'	29:FC:8:LYS:NZ	2.49	0.41
2:EB:2115:G:H2'	2:EB:2117:A:N7	2.36	0.41
2:EB:2488:A:C6	2:EB:2489:G:C6	3.07	0.41
2:EB:2707:G:H2'	2:EB:2708:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:FB:45:A:O4'	8:KB:95:ARG:NH1	2.54	0.41
3:FB:83:G:H1	3:FB:93:C:H42	1.69	0.41
11:NB:5:VAL:HA	11:NB:6:PRO:HD3	1.86	0.41
11:NB:97:ARG:HA	11:NB:100:GLU:HB2	2.03	0.41
14:QB:17:LEU:HD23	14:QB:17:LEU:H	1.85	0.41
16:SB:15:ARG:HG2	16:SB:88:ASP:OD2	2.20	0.41
23:ZB:127:LYS:N	23:ZB:164:ALA:HB2	2.35	0.41
28:EC:13:ARG:HH11	28:EC:21:VAL:CG1	2.34	0.41
37:OC:4:TYR:HD2	37:OC:4:TYR:HA	1.65	0.41
44:VC:27:ASN:OD1	44:VC:28:THR:N	2.46	0.41
52:DD:18:LYS:HE3	52:DD:31:ILE:HG23	2.02	0.41
55:HD:178:GLU:OE2	55:HD:308:ARG:NH1	2.53	0.41
2:B:155:C:H6	2:B:155:C:H2'	1.70	0.41
2:B:238:C:H2'	2:B:239:U:O4'	2.21	0.41
2:B:627:A:C4	2:B:636:G:N2	2.88	0.41
2:B:1354:A:H2'	2:B:1355:G:O4'	2.20	0.41
2:B:1493:C:H4'	2:B:1494:A:OP2	2.21	0.41
2:B:1541:U:H2'	2:B:1542:G:O4'	2.19	0.41
2:B:1863:G:H1	2:B:1879:C:H42	1.67	0.41
4:D:41:C:H2'	4:D:42:G:H8	1.86	0.41
6:F:38:THR:O	6:F:42:ASP:N	2.53	0.41
9:I:101:ARG:HH11	9:I:122:THR:CG2	2.34	0.41
4:IA:51:C:C4	4:IA:52:G:N7	2.89	0.41
35:JA:47:THR:O	35:JA:51:LEU:N	2.47	0.41
45:TA:69:TYR:HB3	45:TA:99:HIS:HD2	1.85	0.41
48:WA:39:LEU:O	48:WA:43:LEU:HG	2.21	0.41
48:WA:66:LEU:HA	48:WA:66:LEU:HD12	1.82	0.41
49:XA:60:LEU:HA	49:XA:60:LEU:HD13	1.80	0.41
51:ZA:54:ARG:H	51:ZA:54:ARG:NE	2.08	0.41
1:DB:238:G:P	50:BD:25:ARG:HH22	2.43	0.41
1:DB:324:G:O2'	1:DB:326:G:N7	2.38	0.41
1:DB:836:G:C6	1:DB:851:G:C6	3.09	0.41
2:EB:710:G:H2'	2:EB:711:G:H8	1.85	0.41
2:EB:1151:G:O3'	18:UB:81:HIS:HB2	2.21	0.41
2:EB:1153:C:H2'	2:EB:1154:G:O4'	2.21	0.41
2:EB:1156:A:H4'	2:EB:1157:G:OP2	2.21	0.41
2:EB:1359:A:H2'	2:EB:1360:A:H5'	2.03	0.41
2:EB:2406:U:H5"	2:EB:2408:U:OP2	2.21	0.41
5:HB:5:LYS:HD2	5:HB:5:LYS:HA	1.63	0.41
5:HB:75:ILE:HD12	5:HB:75:ILE:H	1.85	0.41
5:HB:118:VAL:N	5:HB:129:ASN:OD1	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:LB:164:TYR:HB2	9:LB:167:GLU:HB2	2.03	0.41
11:NB:128:HIS:HA	11:NB:129:PRO:HD3	1.91	0.41
19:VB:28:GLU:HA	19:VB:29:PRO:HD2	1.87	0.41
20:WB:82:LEU:HB3	20:WB:84:ARG:NH1	2.36	0.41
21:XB:5:TYR:OH	26:CC:30:ARG:HD2	2.21	0.41
23:ZB:4:ARG:HG2	23:ZB:58:VAL:HB	2.02	0.41
24:AC:5:LYS:HB3	55:HD:265:LYS:NZ	2.36	0.41
24:AC:50:ASN:HB2	24:AC:81:VAL:HB	2.03	0.41
28:EC:62:ARG:HA	28:EC:62:ARG:CZ	2.50	0.41
35:MC:157:ARG:HE	35:MC:157:ARG:N	2.18	0.41
36:NC:150:LYS:HG3	36:NC:169:ALA:HB2	2.01	0.41
37:OC:108:LEU:HD23	37:OC:108:LEU:HA	1.77	0.41
37:OC:163:GLU:HA	37:OC:166:LYS:HE2	2.01	0.41
41:SC:86:ILE:HG13	41:SC:133:LEU:HD22	2.03	0.41
45:WC:27:LEU:HD13	45:WC:98:TYR:CE1	2.56	0.41
48:ZC:34:LEU:HD12	48:ZC:34:LEU:HA	1.91	0.41
51:CD:41:LYS:HB3	51:CD:41:LYS:HE3	1.83	0.41
55:GD:138:TYR:OH	55:GD:341:ILE:HD11	2.21	0.41
55:GD:247:THR:HG23	55:GD:254:VAL:HG12	2.02	0.41
1:A:427:U:C4	1:A:428:G:C6	3.09	0.41
1:A:431:A:H2'	1:A:432:A:O4'	2.21	0.41
1:A:450:G:H4'	49:XA:41:PRO:O	2.21	0.41
1:A:524:G:H2'	1:A:525:C:C6	2.55	0.41
1:A:577:G:C8	1:A:816:A:C6	3.08	0.41
1:A:719:C:O2'	51:ZA:49:LYS:HB3	2.20	0.41
1:A:738:C:H5"	39:NA:69:GLU:HB2	2.02	0.41
1:A:836:G:C6	1:A:851:G:C6	3.08	0.41
1:A:952:U:H2'	1:A:953:G:C8	2.55	0.41
1:A:978:A:C4	1:A:1319:A:C2	3.09	0.41
1:A:1005:A:N1	1:A:1024:G:H1'	2.36	0.41
1:A:1123:A:H2	1:A:1150:U:H3	1.69	0.41
1:A:1167:A:H2'	1:A:1169:A:O4'	2.21	0.41
1:A:1473:A:H2'	1:A:1474:G:C8	2.56	0.41
2:B:185:U:H2'	2:B:186:G:H8	1.86	0.41
2:B:243:U:OP2	32:FA:8:LYS:NZ	2.53	0.41
2:B:656:G:C6	2:B:657:U:C4	3.09	0.41
2:B:724:U:H2'	2:B:725:G:O4'	2.21	0.41
2:B:744:G:H2'	2:B:745:G:O4'	2.21	0.41
2:B:1020:A:H4'	2:B:1021:A:O5'	2.20	0.41
2:B:1105:U:H2'	2:B:1106:G:H8	1.86	0.41
2:B:1798:U:H5'	5:E:259:THR:OG1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1907:G:H2'	2:B:1908:C:C6	2.56	0.41
2:B:1939:5MU:H3'	2:B:1940:U:H5'	2.02	0.41
2:B:2056:G:OP2	2:B:2057:A:OP2	2.39	0.41
2:B:2119:A:H2	2:B:2170:A:H2'	1.84	0.41
2:B:2168:G:O2'	2:B:2170:A:N7	2.54	0.41
2:B:2466:C:C2	2:B:2485:G:C2	3.09	0.41
2:B:2712(A):A:H5'	2:B:2713:A:OP2	2.19	0.41
2:B:2810:A:H2'	2:B:2811:G:O4'	2.21	0.41
5:E:52:ARG:HB2	5:E:53:PHE:CE2	2.56	0.41
5:E:75:ILE:HG22	5:E:76:PRO:O	2.21	0.41
6:F:63:LEU:HD23	6:F:63:LEU:HA	1.79	0.41
8:H:62:LEU:HD22	8:H:62:LEU:HA	1.86	0.41
8:H:123:ASN:C	8:H:125:PHE:H	2.24	0.41
10:J:5:LEU:H	10:J:5:LEU:HD12	1.85	0.41
12:L:102:VAL:HB	12:L:106:LEU:HD12	2.03	0.41
15:O:54:LEU:O	15:O:57:ARG:HB2	2.20	0.41
19:S:74:LYS:HA	19:S:74:LYS:HD2	1.90	0.41
23:W:33:LEU:HG	23:W:34:ASN:N	2.36	0.41
23:W:68:PRO:O	23:W:91:LEU:N	2.48	0.41
25:Y:72:GLU:O	25:Y:75:GLU:HB3	2.21	0.41
35:JA:7:VAL:HG23	35:JA:8:LYS:NZ	2.35	0.41
35:JA:76:GLN:H	35:JA:76:GLN:HG3	1.65	0.41
35:JA:82:ARG:HB2	35:JA:94:ASN:ND2	2.36	0.41
36:KA:131:ARG:HH11	36:KA:135:LYS:CE	2.25	0.41
38:MA:48:ALA:O	38:MA:50:GLU:N	2.54	0.41
38:MA:50:GLU:OE2	38:MA:51:VAL:N	2.44	0.41
38:MA:69:VAL:HA	38:MA:70:PRO:HD3	1.79	0.41
39:NA:14:LEU:HD23	39:NA:14:LEU:HA	1.80	0.41
39:NA:75:LEU:O	39:NA:79:LEU:HG	2.21	0.41
41:PA:28:ALA:HA	41:PA:59:LEU:HG	2.02	0.41
42:QA:55:ALA:HA	42:QA:58:ARG:HB2	2.03	0.41
43:RA:7:LYS:HZ1	43:RA:40:LEU:HD23	1.86	0.41
43:RA:96:ILE:HD12	43:RA:96:ILE:O	2.21	0.41
44:SA:23:ALA:HB1	44:SA:88:GLY:HA3	2.01	0.41
47:VA:24:CYS:HB3	47:VA:28:GLY:H	1.85	0.41
48:WA:34:LEU:HD12	48:WA:34:LEU:HA	1.95	0.41
1:DB:6:G:O2'	1:DB:7:G:H5"	2.20	0.41
1:DB:127:G:C2	1:DB:128:G:C8	3.09	0.41
1:DB:142:G:H2'	1:DB:143:A:C8	2.56	0.41
1:DB:303:A:H2'	1:DB:304:U:O4'	2.21	0.41
1:DB:377:G:H2'	1:DB:378:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:442:C:H2'	1:DB:443:C:C6	2.56	0.41
1:DB:740:U:OP2	48:ZC:2:PRO:HB3	2.21	0.41
1:DB:769:G:H4'	1:DB:1513:A:H4'	2.02	0.41
1:DB:1240:U:C5	40:RC:32:ARG:NH1	2.89	0.41
1:DB:1328:C:H2'	1:DB:1329:A:C8	2.55	0.41
1:DB:1406:U:H2'	1:DB:1407:5MC:O4'	2.21	0.41
2:EB:1493:C:N3	2:EB:2210:G:C4	2.88	0.41
2:EB:1667:G:O2'	2:EB:1991:U:O4	2.31	0.41
2:EB:1786:A:C2	2:EB:1938:A:C5	3.08	0.41
2:EB:1812:A:O2'	5:HB:45:ASN:N	2.54	0.41
2:EB:1897:G:H2'	2:EB:1898:U:O4'	2.21	0.41
2:EB:1899:G:N3	2:EB:1899:G:H2'	2.36	0.41
2:EB:1916:A:H2'	2:EB:1917:PSU:O4'	2.21	0.41
2:EB:1999:C:H4'	2:EB:2723:C:O2	2.21	0.41
2:EB:2119:A:H2	2:EB:2170:A:H2'	1.85	0.41
2:EB:2164:C:H42	2:EB:2166:G:N2	2.19	0.41
2:EB:2207:C:C2	2:EB:2218:G:C2	3.09	0.41
2:EB:2319:G:N2	16:SB:3:ARG:HA	2.36	0.41
2:EB:2533:A:H4'	2:EB:2664:G:H4'	2.03	0.41
2:EB:2633:G:H2'	2:EB:2634:G:O4'	2.21	0.41
2:EB:2695:C:O2'	2:EB:2696:U:H5'	2.21	0.41
2:EB:2869:G:H2'	2:EB:2870:C:O4'	2.21	0.41
4:GB:28:C:H2'	4:GB:29:G:H8	1.86	0.41
4:GB:38:A:H2'	4:GB:39:C:O4'	2.20	0.41
4:GB:40:C:H2'	4:GB:41:C:C6	2.56	0.41
5:HB:61:LEU:HD12	5:HB:61:LEU:HA	1.83	0.41
6:IB:11:MET:HG2	6:IB:24:THR:CB	2.50	0.41
6:IB:101:ARG:HD3	6:IB:171:GLU:HA	2.03	0.41
8:KB:33:ARG:O	8:KB:162:THR:HG23	2.21	0.41
8:KB:62:LEU:HA	8:KB:62:LEU:HD22	1.83	0.41
9:LB:154:PRO:HA	9:LB:161:GLY:HA3	2.02	0.41
11:NB:41:ASP:OD1	11:NB:48:MET:HE1	2.21	0.41
12:OB:101:PRO:HD2	17:TB:70:VAL:HB	2.03	0.41
13:PB:49:ARG:HB3	32:IC:61:LEU:CD2	2.51	0.41
13:PB:75:ILE:H	13:PB:75:ILE:HG12	1.77	0.41
13:PB:90:ARG:HB3	13:PB:90:ARG:NH1	2.36	0.41
20:WB:7:ALA:HB3	20:WB:50:VAL:HG22	2.02	0.41
22:YB:2:ARG:H	22:YB:2:ARG:HD3	1.84	0.41
22:YB:20:TYR:CZ	22:YB:43:ASN:HA	2.56	0.41
22:YB:66:PRO:O	22:YB:67:LEU:HD23	2.20	0.41
34:KC:13:A:H2'	34:KC:14:A:H4'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:NC:6:HIS:HA	36:NC:7:PRO:HD2	1.95	0.41
37:OC:12:CYS:SG	37:OC:31:CYS:SG	3.18	0.41
37:OC:170:VAL:HB	37:OC:174:LEU:HB2	2.03	0.41
37:OC:190:ASP:O	37:OC:193:ASP:HB2	2.21	0.41
38:PC:118:ILE:HG12	38:PC:119:LEU:H	1.85	0.41
46:XC:20:THR:C	46:XC:22:ILE:H	2.24	0.41
50:BD:59:ILE:HG22	50:BD:73:VAL:HA	2.02	0.41
54:FD:12:LYS:HB3	54:FD:17:THR:O	2.20	0.41
55:GD:221:ASP:HB2	55:GD:250:PRO:HD3	2.03	0.41
55:GD:306:ARG:HE	55:GD:306:ARG:HB2	1.69	0.41
1:A:81:G:N2	1:A:89:U:O2	2.54	0.41
1:A:745:C:H1'	1:A:836:G:O2'	2.21	0.41
1:A:978:A:OP1	1:A:1361:G:N1	2.41	0.41
1:A:1261:A:N1	1:A:1275:A:H1'	2.36	0.41
1:A:1423:G:P	12:L:49:ARG:HH12	2.44	0.41
2:B:262:A:H2'	2:B:263:C:O4'	2.20	0.41
2:B:307:G:H22	2:B:310:A:P	2.44	0.41
2:B:706:A:C2	2:B:707:G:H1'	2.56	0.41
2:B:911:A:H2'	14:N:9:TYR:CZ	2.56	0.41
2:B:1392:A:C6	2:B:1393:A:C6	3.09	0.41
2:B:2303:G:H1	2:B:2313:C:H42	1.69	0.41
2:B:2777:G:C8	2:B:2777:G:H3'	2.56	0.41
2:B:2864:G:OP1	17:Q:119:LYS:HE3	2.22	0.41
5:E:142:VAL:HA	5:E:194:GLY:H	1.85	0.41
9:I:55:PRO:HB2	9:I:56:SER:H	1.72	0.41
9:I:164:TYR:HB2	9:I:167:GLU:HB2	2.01	0.41
12:L:4:PRO:O	12:L:5:GLN:HB2	2.21	0.41
14:N:79:LEU:O	14:N:80:GLU:HB3	2.21	0.41
29:CA:51:TYR:CE2	29:CA:56:LYS:HD3	2.55	0.41
31:EA:10:ARG:NH1	31:EA:14:LYS:CE	2.83	0.41
33:GA:2:LYS:NZ	33:GA:4:ARG:NE	2.69	0.41
34:HA:19:U:C4	34:HA:20:A:C6	3.09	0.41
36:KA:65:ALA:HA	36:KA:100:ALA:HB2	2.02	0.41
40:OA:70:LYS:HA	40:OA:71:PRO:HD3	1.68	0.41
42:QA:107:ARG:H	42:QA:107:ARG:HG2	1.65	0.41
46:UA:65:LYS:HB3	46:UA:70:LEU:HA	2.02	0.41
46:UA:66:LEU:O	46:UA:69:GLU:HB3	2.21	0.41
49:XA:14:ASN:N	49:XA:15:PRO:HD3	2.35	0.41
52:AB:29:ARG:HA	52:AB:29:ARG:HH11	1.86	0.41
1:DB:77:C:H2'	1:DB:78:G:C8	2.56	0.41
1:DB:78:G:H2'	1:DB:79:G:O4'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:DB:465:A:O2'	1:DB:466:G:H5'	2.21	0.41
1:DB:859:A:H2'	1:DB:860:A:O4'	2.21	0.41
1:DB:866:C:C4	1:DB:867:G:H1'	2.56	0.41
1:DB:950:U:H2'	1:DB:951:G:H8	1.85	0.41
1:DB:1366:C:H2'	1:DB:1367:C:C6	2.56	0.41
2:EB:305:U:H2'	2:EB:306:U:C6	2.56	0.41
2:EB:545:G:C2	2:EB:547:A:OP2	2.74	0.41
2:EB:675:A:C4	2:EB:804:A:C2	3.09	0.41
2:EB:1051:G:H4'	2:EB:2752:C:H4'	2.02	0.41
2:EB:1493:C:H42	2:EB:2210:G:H1'	1.86	0.41
2:EB:1592:C:H2'	2:EB:1593:G:C8	2.56	0.41
2:EB:1823:G:OP1	5:HB:54:ARG:NH1	2.50	0.41
2:EB:1882:C:H2'	2:EB:1883:G:O4'	2.20	0.41
2:EB:1927:A:C6	2:EB:1928:A:C6	3.08	0.41
2:EB:2316:C:H1'	8:KB:128:ARG:CZ	2.50	0.41
21:XB:53:LYS:HD3	21:XB:55:ASN:HD21	1.85	0.41
23:ZB:123:ASP:OD2	23:ZB:123:ASP:N	2.54	0.41
38:PC:31:LEU:HD11	38:PC:129:ILE:HA	2.03	0.41
46:XC:59:TYR:CD2	46:XC:60:VAL:HG13	2.56	0.41
50:BD:29:HIS:HA	50:BD:30:PRO:HD3	1.75	0.41
1:A:49:U:C2	1:A:361:G:N2	2.89	0.40
1:A:59:A:H2'	1:A:59:A:N3	2.36	0.40
1:A:125:U:C2	1:A:126:G:N7	2.89	0.40
1:A:145:G:N2	1:A:146:G:H1'	2.36	0.40
1:A:767:A:H2'	1:A:768:A:O4'	2.21	0.40
1:A:1048:G:OP1	47:VA:3:ARG:HB3	2.21	0.40
1:A:1240:U:C2	40:OA:32:ARG:HD2	2.56	0.40
1:A:1500:A:OP2	1:A:1505:G:OP2	2.39	0.40
2:B:284:U:H2'	2:B:285:C:C6	2.56	0.40
2:B:362:U:O2'	2:B:363(A):G:H5"	2.21	0.40
2:B:484:C:H2'	2:B:485:C:C6	2.56	0.40
2:B:900:A:C4	2:B:901:A:C8	3.09	0.40
2:B:1011:G:C2	2:B:1013:C:C2	3.09	0.40
2:B:1469:A:H2'	2:B:1470:G:O4'	2.21	0.40
2:B:1778:U:O2'	2:B:1779:U:H5'	2.21	0.40
2:B:2071:A:H2'	2:B:2072:G:H8	1.86	0.40
2:B:2353:G:O2'	24:X:33:ALA:O	2.29	0.40
2:B:2572:A:C8	6:F:144:ARG:HD3	2.56	0.40
2:B:2811:G:H1	2:B:2889:C:H42	1.67	0.40
8:H:115:ARG:NH2	46:UA:7:VAL:HG13	2.36	0.40
9:I:28:GLY:HA3	9:I:79:VAL:HB	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:67:LEU:O	9:I:71:LEU:HB2	2.21	0.40
13:M:122:PRO:O	13:M:123:LEU:HD23	2.21	0.40
15:O:48:VAL:HA	15:O:51:LEU:HD12	2.03	0.40
23:W:4:ARG:HG2	23:W:58:VAL:HB	2.03	0.40
23:W:95:PRO:CA	23:W:130:PRO:HD3	2.48	0.40
23:W:137:ILE:HD11	23:W:158:PRO:HD3	2.03	0.40
40:OA:22:LEU:HA	40:OA:25:ALA:HB3	2.03	0.40
42:QA:48:GLU:N	42:QA:49:PRO:HD2	2.36	0.40
43:RA:65:LEU:HD12	43:RA:66:ARG:H	1.86	0.40
46:UA:4:ILE:HA	46:UA:5:ALA:HA	1.73	0.40
1:DB:540:G:H2'	1:DB:541:G:C8	2.56	0.40
1:DB:659:U:OP1	48:ZC:8:LYS:HD3	2.21	0.40
1:DB:671:G:H2'	1:DB:672:U:O4'	2.21	0.40
1:DB:741:G:H2'	1:DB:742:G:O4'	2.21	0.40
1:DB:1152:A:H2'	1:DB:1153:C:H6	1.87	0.40
1:DB:1269:A:H5'	54:FD:19:GLY:HA2	2.02	0.40
1:DB:1338:G:C6	1:DB:1339:A:C6	3.09	0.40
1:DB:1403:C:H1'	1:DB:1500:A:N1	2.36	0.40
2:EB:687:C:H2'	2:EB:688:U:O4'	2.22	0.40
2:EB:828:U:C5	2:EB:2247:A:H4'	2.56	0.40
2:EB:1457:A:C2	2:EB:2703:C:N3	2.89	0.40
2:EB:1751:C:H2'	2:EB:1752:C:C6	2.56	0.40
2:EB:2305:A:C6	2:EB:2306:C:C4	3.10	0.40
8:KB:7:LEU:HD22	8:KB:7:LEU:HA	1.92	0.40
14:QB:79:LEU:O	14:QB:80:GLU:HB3	2.20	0.40
14:QB:109:VAL:HG12	14:QB:114:ALA:HB2	2.03	0.40
35:MC:163:PHE:HD1	35:MC:163:PHE:HA	1.72	0.40
36:NC:23:TYR:CG	36:NC:24:ALA:N	2.89	0.40
37:OC:205:GLU:OE2	38:PC:100:VAL:HG23	2.21	0.40
40:RC:146:GLU:HA	40:RC:146:GLU:OE2	2.20	0.40
46:XC:4:ILE:HA	46:XC:5:ALA:HA	1.72	0.40
53:ED:45:GLN:HB3	53:ED:46:GLU:OE2	2.21	0.40
1:A:153:C:H42	1:A:168:G:H1	1.69	0.40
1:A:227:G:H2'	1:A:228:A:C8	2.56	0.40
1:A:287:U:H2'	1:A:288:A:C8	2.54	0.40
1:A:584:G:H2'	1:A:585:G:C8	2.57	0.40
1:A:685:G:C2	1:A:686:U:C4	3.09	0.40
1:A:904:C:H2'	1:A:905:U:O4'	2.22	0.40
1:A:993:G:H4'	1:A:994:A:OP2	2.21	0.40
1:A:1150:U:O4	1:A:1151:A:N6	2.51	0.40
1:A:1240:U:C6	40:OA:32:ARG:NH1	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:401:A:C2	2:B:402:A:C4	3.09	0.40
2:B:1409:C:H2'	2:B:1410:G:C8	2.56	0.40
2:B:1449:G:H2'	2:B:1450:C:C6	2.56	0.40
2:B:1882:C:H2'	2:B:1883:G:O4'	2.21	0.40
2:B:2367:G:O2'	2:B:2368:C:H5'	2.21	0.40
2:B:2788:C:O2'	2:B:2809:A:N3	2.49	0.40
3:C:75:G:H1'	23:W:27:VAL:HG11	2.03	0.40
5:E:51:VAL:HG11	5:E:54:ARG:NH1	2.36	0.40
26:Z:17:SER:O	26:Z:20:GLU:N	2.46	0.40
36:KA:142:MET:HG3	36:KA:170:GLN:HB2	2.04	0.40
53:BB:101:GLY:O	53:BB:103:GLY:N	2.54	0.40
1:DB:977:A:O2'	1:DB:979:C:OP2	2.31	0.40
1:DB:1240:U:C2	40:RC:32:ARG:HD2	2.56	0.40
1:DB:1347:G:N2	1:DB:1374:A:O5'	2.47	0.40
1:DB:1474:G:H4'	2:EB:1701:A:N3	2.36	0.40
2:EB:778:G:C6	2:EB:779:U:N3	2.89	0.40
2:EB:1056:G:N2	2:EB:1102:C:OP2	2.52	0.40
2:EB:2138:C:H2'	2:EB:2139:C:C6	2.55	0.40
6:IB:195:LEU:HA	6:IB:195:LEU:HD22	1.78	0.40
9:LB:55:PRO:HD2	9:LB:61:HIS:CD2	2.55	0.40
14:QB:34:LEU:HD12	14:QB:130:LYS:O	2.21	0.40
19:VB:1:MET:HA	19:VB:42:GLY:HA3	2.03	0.40
24:AC:6:GLY:O	4:LC:1:C:O2'	2.35	0.40
30:GC:19:ARG:HG3	30:GC:19:ARG:HH11	1.85	0.40
36:NC:139:GLN:HB3	36:NC:140:ARG:CZ	2.52	0.40
39:QC:14:LEU:HA	39:QC:14:LEU:HD23	1.81	0.40
47:YC:24:CYS:HB3	47:YC:28:GLY:H	1.86	0.40
49:AD:38:TYR:CZ	49:AD:50:LYS:HB2	2.56	0.40
55:GD:314:GLN:CB	55:GD:316:ARG:HG2	2.51	0.40
1:A:303:A:H2'	1:A:304:U:O4'	2.20	0.40
1:A:321:A:C2	1:A:333:G:C2	3.10	0.40
1:A:523:A:N1	45:TA:92:0TD:H6	2.37	0.40
1:A:1327:C:OP1	54:CB:20:LYS:HB3	2.21	0.40
2:B:971:C:H2'	2:B:972:G:O4'	2.22	0.40
2:B:1971:A:N3	5:E:240:ALA:HA	2.36	0.40
2:B:2011:U:H2'	2:B:2012:G:O4'	2.21	0.40
2:B:2514:U:H2'	2:B:2515:C:H6	1.84	0.40
2:B:2540:C:H2'	2:B:2541:A:O4'	2.22	0.40
2:B:2633:G:H2'	2:B:2634:G:O4'	2.21	0.40
2:B:2808:U:O2'	2:B:2809:A:H5'	2.22	0.40
4:D:71:C:H2'	4:D:72:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:60:ASN:OD1	6:F:60:ASN:N	2.51	0.40
8:H:31:VAL:HA	8:H:32:PRO:HD3	1.91	0.40
11:K:97:ARG:HA	11:K:100:GLU:HB2	2.03	0.40
11:K:128:HIS:HA	11:K:129:PRO:HD3	1.93	0.40
30:DA:27:LYS:HD2	30:DA:27:LYS:HA	1.91	0.40
32:FA:23:VAL:HG12	32:FA:49:VAL:HA	2.02	0.40
35:JA:23:ARG:NH1	35:JA:23:ARG:HB2	2.36	0.40
37:LA:108:LEU:HD23	37:LA:170:VAL:HG11	2.02	0.40
38:MA:43:LEU:HD12	38:MA:44:GLY:H	1.86	0.40
41:PA:69:ARG:O	41:PA:74:PRO:HA	2.22	0.40
49:XA:38:TYR:CZ	49:XA:50:LYS:HB2	2.56	0.40
1:DB:251:G:H4'	1:DB:252:U:O5'	2.21	0.40
1:DB:574:A:H5"	1:DB:575:G:OP2	2.21	0.40
1:DB:1507:A:C2	1:DB:1508:G:C4	3.09	0.40
2:EB:22:C:H2'	2:EB:23:G:O4'	2.21	0.40
2:EB:41:C:H2'	2:EB:43:G:O4'	2.21	0.40
2:EB:265:A:H1'	2:EB:266:G:O4'	2.22	0.40
2:EB:634:C:H2'	2:EB:635:C:H6	1.87	0.40
2:EB:956:G:OP2	14:QB:14:ARG:NH1	2.52	0.40
2:EB:2041:U:H2'	2:EB:2042:A:C8	2.57	0.40
2:EB:2592:G:C6	2:EB:2593:U:C2	3.09	0.40
10:MB:82:ARG:HB3	10:MB:83:ALA:H	1.78	0.40
12:OB:3:GLN:HG3	12:OB:4:PRO:O	2.22	0.40
15:RB:33:ARG:HH12	29:FC:58:LEU:HA	1.86	0.40
31:HC:27:GLY:O	31:HC:30:VAL:HB	2.22	0.40
32:IC:53:PRO:O	32:IC:57:ARG:HG3	2.22	0.40
34:KC:21:A:H2'	55:HD:197:HIS:CD2	2.57	0.40
35:MC:21:ARG:HB3	35:MC:22:LYS:H	1.62	0.40
35:MC:105:PHE:HA	35:MC:108:ILE:HG22	2.04	0.40
36:NC:28:GLN:HA	36:NC:31:HIS:CE1	2.56	0.40
43:UC:96:ILE:O	43:UC:96:ILE:HD12	2.21	0.40
45:WC:89:ARG:HH12	45:WC:95:GLY:H	1.69	0.40
55:GD:217:ILE:H	55:GD:217:ILE:HG13	1.53	0.40
55:HD:314:GLN:CB	55:HD:316:ARG:HG2	2.52	0.40
55:HD:334:GLU:HA	55:HD:334:GLU:OE2	2.20	0.40
1:A:147:G:C2	1:A:148:G:H1'	2.55	0.40
1:A:161:A:H2'	1:A:162:A:C8	2.57	0.40
1:A:908:A:H2'	1:A:909:A:C8	2.56	0.40
1:A:1103:C:H2'	1:A:1104:G:O4'	2.22	0.40
1:A:1480:G:H2'	1:A:1481:U:O4'	2.21	0.40
1:A:1522:U:H2'	1:A:1523:G:C8	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:528:A:P	11:K:114:ARG:HH22	2.44	0.40
2:B:634:C:H2'	2:B:635:C:C6	2.56	0.40
2:B:690:G:H2'	2:B:691:C:C6	2.56	0.40
2:B:1635:G:C2	2:B:1636:C:C2	3.09	0.40
2:B:1751:C:H2'	2:B:1752:C:C6	2.57	0.40
2:B:2364:C:H2'	2:B:2365:G:O4'	2.21	0.40
2:B:2582:G:H21	2:B:2583:G:H1'	1.87	0.40
2:B:2595:G:N2	2:B:2599:G:C5	2.90	0.40
3:C:48:A:P	16:P:30:ARG:HH22	2.44	0.40
3:C:86:G:H1	3:C:90:C:H42	1.68	0.40
7:G:184:TYR:O	7:G:188:ARG:HB2	2.21	0.40
8:H:138:GLN:HE21	8:H:149:VAL:HG22	1.86	0.40
10:J:53:ALA:HB1	10:J:57:ARG:NH1	2.37	0.40
10:J:128:LEU:HD12	10:J:128:LEU:H	1.86	0.40
17:Q:129:ARG:HD2	17:Q:129:ARG:O	2.21	0.40
35:JA:149:LEU:O	35:JA:151:GLY:N	2.55	0.40
36:KA:35:GLU:HG3	36:KA:59:ARG:HH22	1.87	0.40
36:KA:85:ARG:HG2	36:KA:88:ARG:NH2	2.36	0.40
37:LA:202:LEU:HD12	37:LA:202:LEU:HA	1.76	0.40
38:MA:20:GLN:HE21	38:MA:25:ARG:NH2	2.19	0.40
1:DB:262:A:N6	1:DB:263:A:N6	2.69	0.40
1:DB:344:A:H4'	1:DB:345:C:OP2	2.21	0.40
1:DB:952:U:H2'	1:DB:953:G:C8	2.57	0.40
1:DB:986:A:C6	1:DB:987:G:C6	3.09	0.40
1:DB:1099:G:OP2	35:MC:148:TYR:OH	2.40	0.40
1:DB:1301:U:H2'	1:DB:1303:C:H5	1.85	0.40
2:EB:492:A:H2'	2:EB:493:G:O4'	2.21	0.40
2:EB:777:A:C2	2:EB:778:G:C4	3.10	0.40
2:EB:926:A:H2'	2:EB:928:G:H8	1.87	0.40
2:EB:1670:C:C4	2:EB:1671:U:C2	3.09	0.40
2:EB:2307:G:H5'	2:EB:2308:G:C2	2.56	0.40
3:FB:11:C:H3'	3:FB:12:C:C6	2.56	0.40
3:FB:45:A:H2'	3:FB:46:A:O4'	2.21	0.40
7:JB:117:ARG:NH1	7:JB:117:ARG:HG2	2.36	0.40
12:OB:102:VAL:HB	12:OB:106:LEU:HD12	2.02	0.40
24:AC:17:GLN:N	24:AC:17:GLN:HE21	2.20	0.40
25:BC:3:LYS:HB3	25:BC:4:VAL:H	1.59	0.40
4:LC:2:G:H2'	4:LC:3:C:C6	2.57	0.40
36:NC:75:VAL:HG12	36:NC:83:ARG:NH1	2.36	0.40
37:OC:70:ILE:HG23	37:OC:75:PHE:HB2	2.04	0.40
40:RC:80:VAL:HG11	40:RC:85:TYR:CD2	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:SC:64:LYS:HG2	41:SC:79:VAL:HG11	2.03	0.40
42:TC:48:GLU:N	42:TC:49:PRO:HD2	2.36	0.40
42:TC:111:ARG:HD2	47:YC:61:TRP:CE2	2.56	0.40
45:WC:124:LYS:HA	45:WC:125:PRO:HD2	1.93	0.40
53:ED:51:GLU:O	53:ED:55:ILE:HG12	2.21	0.40
1:A:78:G:H2'	1:A:79:G:O4'	2.22	0.40
1:A:1306:A:H1'	1:A:1332:A:C2	2.57	0.40
1:A:1521:G:H2'	1:A:1522:U:O4'	2.22	0.40
2:B:331:A:C4	2:B:1209:G:C6	3.09	0.40
2:B:500:G:N2	2:B:503:A:C8	2.90	0.40
2:B:957:A:N1	2:B:2458:G:H4'	2.37	0.40
2:B:2041:U:H2'	2:B:2042:A:C8	2.55	0.40
2:B:2557:G:H2'	2:B:2558:C:H6	1.83	0.40
2:B:2625:G:H2'	2:B:2626:C:O4'	2.22	0.40
2:B:2637:U:H1'	2:B:2782:G:N2	2.37	0.40
2:B:2717:G:C6	2:B:2718:G:N7	2.90	0.40
22:V:99:CYS:SG	22:V:100:ALA:N	2.95	0.40
23:W:136:PHE:HD1	23:W:136:PHE:HA	1.77	0.40
36:KA:122:GLU:O	36:KA:126:ARG:HG2	2.22	0.40
40:OA:56:GLN:OE1	40:OA:56:GLN:N	2.55	0.40
44:SA:27:ASN:ND2	44:SA:55:LYS:HD3	2.37	0.40
1:DB:96:G:H2'	1:DB:97:U:C6	2.56	0.40
1:DB:157:G:C2	1:DB:165:C:C2	3.10	0.40
1:DB:451:A:C2	1:DB:480:U:C4	3.09	0.40
1:DB:1221:G:OP1	52:DD:36:ARG:HD2	2.22	0.40
1:DB:1293:G:H2'	1:DB:1294:G:H8	1.86	0.40
1:DB:1347:G:HO2'	1:DB:1373:G:H1	1.68	0.40
2:EB:748:G:H5'	2:EB:749:C:OP2	2.22	0.40
2:EB:836:G:H2'	2:EB:837:C:C6	2.57	0.40
2:EB:932:G:P	27:DC:24:LYS:HZ1	2.45	0.40
2:EB:963:U:H2'	2:EB:964:C:C6	2.57	0.40
2:EB:1142(B):A:C5	2:EB:1144:G:C5	3.10	0.40
2:EB:1791:A:N6	2:EB:1828:G:O2'	2.55	0.40
2:EB:1878:G:C6	2:EB:1879:C:C4	3.10	0.40
2:EB:2183:C:H2'	2:EB:2184:G:H8	1.86	0.40
2:EB:2271:G:H2'	2:EB:2272:U:C6	2.57	0.40
2:EB:2301:C:H2'	2:EB:2302:G:H8	1.86	0.40
2:EB:2839:G:H5'	15:RB:46:GLY:HA2	2.04	0.40
2:EB:2843:G:H1	2:EB:2874:C:H42	1.69	0.40
2:EB:2864:G:OP1	17:TB:119:LYS:HE3	2.22	0.40
3:FB:68:C:H2'	3:FB:69:G:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:MB:4:ILE:HA	10:MB:17:GLN:O	2.21	0.40
11:NB:91:LEU:HD13	11:NB:98:VAL:HG21	2.04	0.40
14:QB:63:LYS:NZ	23:ZB:175:VAL:HG21	2.37	0.40
15:RB:50:HIS:O	15:RB:54:LEU:HB2	2.22	0.40
25:BC:7:ILE:HG23	25:BC:98:LEU:HD11	2.03	0.40
27:DC:31:LEU:HA	27:DC:31:LEU:HD23	1.77	0.40
29:FC:33:CYS:HA	29:FC:34:PRO:HD2	1.89	0.40
33:JC:2:LYS:NZ	33:JC:4:ARG:NE	2.70	0.40
38:PC:77:PRO:HB2	38:PC:78:HIS:HD2	1.87	0.40
42:TC:65:VAL:HG21	42:TC:73:GLN:HB3	2.03	0.40
43:UC:7:LYS:HZ1	43:UC:40:LEU:HD23	1.86	0.40
46:XC:3:ARG:HH11	46:XC:8:GLU:CG	2.34	0.40
49:AD:67:THR:O	49:AD:71:ARG:N	2.50	0.40
50:BD:13:ASP:O	50:BD:49:GLU:OE2	2.40	0.40
53:ED:20:LEU:HD23	53:ED:20:LEU:HA	1.92	0.40
55:HD:195:ARG:HH21	55:HD:197:HIS:CE1	2.38	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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%)	25 (9%)	5 (2%)	8 43
5	HB	273/275 (99%)	243 (89%)	25 (9%)	5 (2%)	8 43
6	F	202/206 (98%)	180 (89%)	20 (10%)	2 (1%)	15 55
6	IB	202/206 (98%)	181 (90%)	19 (9%)	2 (1%)	15 55
7	G	200/205 (98%)	187 (94%)	9 (4%)	4 (2%)	7 42
7	JB	200/205 (98%)	186 (93%)	10 (5%)	4 (2%)	7 42
8	H	179/182 (98%)	152 (85%)	20 (11%)	7 (4%)	3 27

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
8	KB	179/182 (98%)	151 (84%)	22 (12%)	6 (3%)	3 31
9	I	172/180 (96%)	155 (90%)	14 (8%)	3 (2%)	9 45
9	LB	172/180 (96%)	154 (90%)	15 (9%)	3 (2%)	9 45
10	J	144/148 (97%)	118 (82%)	17 (12%)	9 (6%)	1 17
10	MB	144/148 (97%)	118 (82%)	16 (11%)	10 (7%)	1 15
11	K	138/140 (99%)	125 (91%)	12 (9%)	1 (1%)	22 62
11	NB	138/140 (99%)	126 (91%)	11 (8%)	1 (1%)	22 62
12	L	120/122 (98%)	106 (88%)	12 (10%)	2 (2%)	9 45
12	OB	120/122 (98%)	106 (88%)	12 (10%)	2 (2%)	9 45
13	M	148/150 (99%)	132 (89%)	11 (7%)	5 (3%)	3 31
13	PB	148/150 (99%)	131 (88%)	12 (8%)	5 (3%)	3 31
14	N	139/141 (99%)	126 (91%)	11 (8%)	2 (1%)	11 48
14	QB	139/141 (99%)	125 (90%)	12 (9%)	2 (1%)	11 48
15	O	116/118 (98%)	109 (94%)	5 (4%)	2 (2%)	9 45
15	RB	116/118 (98%)	107 (92%)	7 (6%)	2 (2%)	9 45
16	P	108/112 (96%)	99 (92%)	7 (6%)	2 (2%)	8 42
16	SB	108/112 (96%)	100 (93%)	6 (6%)	2 (2%)	8 42
17	Q	135/146 (92%)	118 (87%)	12 (9%)	5 (4%)	3 28
17	TB	135/146 (92%)	118 (87%)	13 (10%)	4 (3%)	4 33
18	R	115/118 (98%)	106 (92%)	8 (7%)	1 (1%)	17 57
18	UB	115/118 (98%)	107 (93%)	7 (6%)	1 (1%)	17 57
19	S	99/101 (98%)	91 (92%)	6 (6%)	2 (2%)	7 42
19	VB	99/101 (98%)	89 (90%)	8 (8%)	2 (2%)	7 42
20	T	110/113 (97%)	104 (94%)	4 (4%)	2 (2%)	8 43
20	WB	110/113 (97%)	103 (94%)	5 (4%)	2 (2%)	8 43
21	U	93/96 (97%)	84 (90%)	8 (9%)	1 (1%)	14 54
21	XB	93/96 (97%)	84 (90%)	8 (9%)	1 (1%)	14 54
22	V	105/110 (96%)	89 (85%)	11 (10%)	5 (5%)	2 22
22	YB	105/110 (96%)	91 (87%)	9 (9%)	5 (5%)	2 22
23	W	187/206 (91%)	165 (88%)	21 (11%)	1 (0%)	29 67
23	ZB	187/206 (91%)	165 (88%)	21 (11%)	1 (0%)	29 67

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
24	AC	82/85 (96%)	70 (85%)	10 (12%)	2 (2%)	6 37
24	X	82/85 (96%)	69 (84%)	11 (13%)	2 (2%)	6 37
25	BC	95/98 (97%)	84 (88%)	10 (10%)	1 (1%)	14 54
25	Y	95/98 (97%)	86 (90%)	8 (8%)	1 (1%)	14 54
26	CC	68/72 (94%)	65 (96%)	3 (4%)	0	100 100
26	Z	68/72 (94%)	65 (96%)	3 (4%)	0	100 100
27	AA	58/60 (97%)	53 (91%)	4 (7%)	1 (2%)	9 45
27	DC	58/60 (97%)	53 (91%)	4 (7%)	1 (2%)	9 45
28	BA	67/71 (94%)	47 (70%)	19 (28%)	1 (2%)	10 47
28	EC	67/71 (94%)	47 (70%)	20 (30%)	0	100 100
29	CA	57/60 (95%)	52 (91%)	4 (7%)	1 (2%)	8 43
29	FC	57/60 (95%)	51 (90%)	5 (9%)	1 (2%)	8 43
30	DA	51/54 (94%)	47 (92%)	4 (8%)	0	100 100
30	GC	51/54 (94%)	47 (92%)	4 (8%)	0	100 100
31	EA	46/49 (94%)	46 (100%)	0	0	100 100
31	HC	46/49 (94%)	46 (100%)	0	0	100 100
32	FA	62/65 (95%)	59 (95%)	3 (5%)	0	100 100
32	IC	62/65 (95%)	58 (94%)	4 (6%)	0	100 100
33	GA	35/37 (95%)	27 (77%)	8 (23%)	0	100 100
33	JC	35/37 (95%)	27 (77%)	8 (23%)	0	100 100
35	JA	232/256 (91%)	189 (82%)	29 (12%)	14 (6%)	1 17
35	MC	232/256 (91%)	188 (81%)	30 (13%)	14 (6%)	1 17
36	KA	204/239 (85%)	172 (84%)	24 (12%)	8 (4%)	3 27
36	NC	204/239 (85%)	172 (84%)	24 (12%)	8 (4%)	3 27
37	LA	206/209 (99%)	179 (87%)	20 (10%)	7 (3%)	3 31
37	OC	206/209 (99%)	182 (88%)	16 (8%)	8 (4%)	3 27
38	MA	149/162 (92%)	132 (89%)	11 (7%)	6 (4%)	3 26
38	PC	149/162 (92%)	132 (89%)	10 (7%)	7 (5%)	2 22
39	NA	99/101 (98%)	88 (89%)	9 (9%)	2 (2%)	7 42
39	QC	99/101 (98%)	89 (90%)	8 (8%)	2 (2%)	7 42
40	OA	153/156 (98%)	133 (87%)	13 (8%)	7 (5%)	2 23

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
40	RC	153/156 (98%)	133 (87%)	13 (8%)	7 (5%)	2 23
41	PA	136/138 (99%)	125 (92%)	9 (7%)	2 (2%)	10 47
41	SC	136/138 (99%)	126 (93%)	9 (7%)	1 (1%)	22 62
42	QA	125/128 (98%)	105 (84%)	17 (14%)	3 (2%)	6 37
42	TC	125/128 (98%)	105 (84%)	16 (13%)	4 (3%)	4 31
43	RA	96/105 (91%)	81 (84%)	12 (12%)	3 (3%)	4 32
43	UC	96/105 (91%)	81 (84%)	12 (12%)	3 (3%)	4 32
44	SA	114/129 (88%)	101 (89%)	10 (9%)	3 (3%)	5 35
44	VC	114/129 (88%)	101 (89%)	9 (8%)	4 (4%)	3 30
45	TA	119/132 (90%)	104 (87%)	11 (9%)	4 (3%)	3 31
45	WC	119/132 (90%)	104 (87%)	11 (9%)	4 (3%)	3 31
46	UA	115/126 (91%)	102 (89%)	12 (10%)	1 (1%)	17 57
46	XC	115/126 (91%)	102 (89%)	11 (10%)	2 (2%)	9 45
47	VA	58/61 (95%)	52 (90%)	6 (10%)	0	100 100
47	YC	58/61 (95%)	52 (90%)	6 (10%)	0	100 100
48	WA	86/89 (97%)	80 (93%)	4 (5%)	2 (2%)	6 38
48	ZC	86/89 (97%)	81 (94%)	3 (4%)	2 (2%)	6 38
49	AD	81/88 (92%)	73 (90%)	7 (9%)	1 (1%)	13 52
49	XA	81/88 (92%)	73 (90%)	7 (9%)	1 (1%)	13 52
50	BD	97/105 (92%)	90 (93%)	7 (7%)	0	100 100
50	YA	97/105 (92%)	90 (93%)	7 (7%)	0	100 100
51	CD	68/88 (77%)	62 (91%)	5 (7%)	1 (2%)	10 47
51	ZA	68/88 (77%)	61 (90%)	6 (9%)	1 (2%)	10 47
52	AB	81/93 (87%)	63 (78%)	14 (17%)	4 (5%)	2 21
52	DD	81/93 (87%)	63 (78%)	14 (17%)	4 (5%)	2 21
53	BB	97/106 (92%)	90 (93%)	3 (3%)	4 (4%)	3 26
53	ED	97/106 (92%)	90 (93%)	3 (3%)	4 (4%)	3 26
54	CB	22/27 (82%)	18 (82%)	4 (18%)	0	100 100
54	FD	22/27 (82%)	18 (82%)	4 (18%)	0	100 100
55	GD	253/365 (69%)	207 (82%)	35 (14%)	11 (4%)	2 24
55	HD	253/365 (69%)	206 (81%)	37 (15%)	10 (4%)	3 26

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	11990/12846 (93%)	10568 (88%)	1121 (9%)	301 (2%)	5 36

All (301) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
5	E	31	LYS
6	F	192	ASN
7	G	21	ALA
7	G	130	ALA
8	H	74	LYS
8	H	126	ASP
9	I	126	PRO
10	J	89	TYR
11	K	111	PRO
12	L	26	LYS
12	L	29	ASN
13	M	149	GLU
16	P	94	TYR
19	S	53	GLU
22	V	92	ASN
23	W	163	LEU
24	X	3	HIS
24	X	10	THR
35	JA	17	PHE
37	LA	26	CYS
38	MA	11	ILE
40	OA	4	ARG
5	HB	31	LYS
6	IB	192	ASN
7	JB	21	ALA
7	JB	130	ALA
8	KB	74	LYS
8	KB	126	ASP
9	LB	126	PRO
10	MB	89	TYR
11	NB	111	PRO
12	OB	26	LYS
12	OB	29	ASN
13	PB	149	GLU
16	SB	94	TYR
19	VB	53	GLU
22	YB	92	ASN

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Mol	Chain	Res	Type
23	ZB	163	LEU
24	AC	3	HIS
24	AC	10	THR
35	MC	17	PHE
37	OC	26	CYS
38	PC	11	ILE
40	RC	4	ARG
5	E	122	ASP
5	E	234	GLY
5	E	236	GLY
7	G	86	GLY
8	H	47	LYS
9	I	55	PRO
9	I	173	PRO
10	J	92	VAL
13	M	143	GLY
15	O	2	ARG
18	R	115	ALA
20	T	68	ARG
22	V	78	ALA
22	V	91	GLU
25	Y	3	LYS
27	AA	2	PRO
35	JA	128	GLU
36	KA	61	ALA
37	LA	3	ARG
38	MA	66	MET
38	MA	85	GLY
39	NA	34	GLY
40	OA	6	ARG
40	OA	51	GLN
40	OA	54	THR
42	QA	51	ARG
42	QA	96	LEU
42	QA	127	LYS
43	RA	77	PRO
44	SA	91	ARG
45	TA	12	ARG
45	TA	62	SER
45	TA	125	PRO
49	XA	82	GLN
52	AB	45	VAL

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Mol	Chain	Res	Type
52	AB	67	VAL
53	BB	102	GLY
5	HB	122	ASP
5	HB	234	GLY
5	HB	236	GLY
7	JB	86	GLY
8	KB	47	LYS
9	LB	55	PRO
9	LB	173	PRO
13	PB	143	GLY
15	RB	2	ARG
18	UB	115	ALA
19	VB	79	VAL
20	WB	68	ARG
22	YB	78	ALA
22	YB	91	GLU
25	BC	3	LYS
27	DC	2	PRO
35	MC	128	GLU
36	NC	61	ALA
37	OC	3	ARG
37	OC	4	TYR
38	PC	85	GLY
39	QC	34	GLY
40	RC	51	GLN
40	RC	54	THR
40	RC	79	ARG
42	TC	51	ARG
42	TC	96	LEU
42	TC	127	LYS
43	UC	77	PRO
44	VC	91	ARG
45	WC	12	ARG
45	WC	62	SER
45	WC	125	PRO
49	AD	82	GLN
52	DD	45	VAL
52	DD	67	VAL
53	ED	102	GLY
55	GD	144	TRP
55	HD	144	TRP
7	G	22	ALA

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Mol	Chain	Res	Type
8	H	24	GLY
8	H	43	LEU
8	H	124	SER
10	J	85	GLU
10	J	88	ILE
13	M	29	LYS
13	M	36	LYS
13	M	122	PRO
15	O	107	ASP
21	U	22	ALA
22	V	103	GLY
35	JA	36	ARG
35	JA	43	ASP
35	JA	124	SER
35	JA	150	SER
36	KA	26	LYS
36	KA	107	GLN
37	LA	4	TYR
37	LA	180	GLY
40	OA	79	ARG
43	RA	78	ASN
52	AB	27	GLU
8	KB	43	LEU
8	KB	124	SER
10	MB	84	GLY
10	MB	85	GLU
10	MB	88	ILE
13	PB	29	LYS
13	PB	36	LYS
13	PB	122	PRO
20	WB	63	ASP
21	XB	22	ALA
22	YB	103	GLY
35	MC	36	ARG
35	MC	43	ASP
35	MC	124	SER
35	MC	150	SER
36	NC	26	LYS
36	NC	102	ASN
36	NC	107	GLN
37	OC	180	GLY
38	PC	66	MET

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Mol	Chain	Res	Type
40	RC	6	ARG
40	RC	82	GLY
43	UC	78	ASN
52	DD	27	GLU
52	DD	43	GLU
55	GD	102	PRO
55	GD	340	LEU
55	HD	102	PRO
55	HD	340	LEU
5	E	29	PRO
6	F	52	LEU
10	J	84	GLY
10	J	106	GLY
10	J	117	GLU
17	Q	55	ASN
19	S	79	VAL
20	T	63	ASP
35	JA	20	GLU
35	JA	78	GLN
35	JA	158	LEU
35	JA	204	ASN
36	KA	3	ASN
36	KA	102	ASN
36	KA	156	ARG
37	LA	30	LYS
39	NA	100	ASN
51	ZA	87	ARG
52	AB	43	GLU
53	BB	97	ALA
5	HB	29	PRO
6	IB	52	LEU
7	JB	22	ALA
8	KB	24	GLY
10	MB	106	GLY
10	MB	117	GLU
10	MB	145	VAL
16	SB	61	ASN
17	TB	55	ASN
35	MC	20	GLU
35	MC	78	GLN
35	MC	158	LEU
37	OC	22	LYS

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Mol	Chain	Res	Type
37	OC	27	TYR
37	OC	30	LYS
39	QC	100	ASN
48	ZC	49	ASP
51	CD	87	ARG
53	ED	71	THR
53	ED	97	ALA
55	GD	217	ILE
55	GD	300	SER
55	HD	217	ILE
10	J	137	PRO
10	J	145	VAL
16	P	61	ASN
17	Q	2	ASN
35	JA	21	ARG
35	JA	126	GLU
37	LA	22	LYS
37	LA	27	TYR
38	MA	49	PRO
40	OA	82	GLY
41	PA	2	LEU
44	SA	78	GLN
48	WA	49	ASP
48	WA	88	ARG
53	BB	47	GLY
53	BB	71	THR
10	MB	82	ARG
10	MB	137	PRO
14	QB	57	HIS
17	TB	58	ASN
17	TB	95	ARG
35	MC	21	ARG
35	MC	126	GLU
35	MC	204	ASN
36	NC	3	ASN
36	NC	156	ARG
38	PC	49	PRO
38	PC	65	ASN
42	TC	52	ALA
44	VC	78	GLN
44	VC	117	ASN
48	ZC	88	ARG

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Mol	Chain	Res	Type
55	GD	143	ARG
55	GD	155	GLU
55	GD	259	ASP
55	HD	143	ARG
55	HD	215	PRO
55	HD	300	SER
55	HD	355	ALA
14	N	57	HIS
17	Q	94	ALA
17	Q	95	ARG
17	Q	128	GLU
22	V	51	VAL
43	RA	93	GLY
45	TA	88	GLY
46	UA	10	PRO
15	RB	107	ASP
17	TB	128	GLU
29	FC	57	VAL
41	SC	2	LEU
43	UC	93	GLY
55	GD	215	PRO
55	GD	355	ALA
55	HD	155	GLU
29	CA	57	VAL
38	MA	154	GLY
14	QB	15	GLY
22	YB	51	VAL
45	WC	88	GLY
46	XC	10	PRO
55	GD	233	GLY
36	KA	51	GLY
38	MA	74	GLY
44	SA	118	GLY
10	MB	92	VAL
38	PC	74	GLY
44	VC	118	GLY
53	ED	47	GLY
55	HD	233	GLY
8	H	177	GLY
14	N	15	GLY
35	JA	72	GLY
36	KA	81	GLY

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Mol	Chain	Res	Type
35	MC	72	GLY
36	NC	81	GLY
37	OC	5	ILE
38	PC	154	GLY
46	XC	100	GLY
28	BA	54	GLY
35	JA	223	ILE
40	OA	17	VAL
41	PA	90	GLY
35	MC	223	ILE
36	NC	51	GLY
40	RC	17	VAL

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%)	197 (91%)	20 (9%)	9 38
5	HB	217/217 (100%)	197 (91%)	20 (9%)	9 38
6	F	165/166 (99%)	145 (88%)	20 (12%)	5 26
6	IB	165/166 (99%)	145 (88%)	20 (12%)	5 26
7	G	161/162 (99%)	142 (88%)	19 (12%)	5 28
7	JB	161/162 (99%)	142 (88%)	19 (12%)	5 28
8	H	154/156 (99%)	134 (87%)	20 (13%)	4 24
8	KB	154/156 (99%)	136 (88%)	18 (12%)	5 28
9	I	144/148 (97%)	130 (90%)	14 (10%)	8 35
9	LB	144/148 (97%)	130 (90%)	14 (10%)	8 35
10	J	122/124 (98%)	105 (86%)	17 (14%)	3 21
10	MB	122/124 (98%)	106 (87%)	16 (13%)	4 23
11	K	119/119 (100%)	107 (90%)	12 (10%)	7 34
11	NB	119/119 (100%)	108 (91%)	11 (9%)	9 38

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
12	L	100/100 (100%)	91 (91%)	9 (9%)	9	39
12	OB	100/100 (100%)	90 (90%)	10 (10%)	7	35
13	M	116/116 (100%)	103 (89%)	13 (11%)	6	30
13	PB	116/116 (100%)	101 (87%)	15 (13%)	4	24
14	N	111/111 (100%)	99 (89%)	12 (11%)	6	32
14	QB	111/111 (100%)	98 (88%)	13 (12%)	5	28
15	O	101/101 (100%)	89 (88%)	12 (12%)	5	27
15	RB	101/101 (100%)	89 (88%)	12 (12%)	5	27
16	P	87/88 (99%)	83 (95%)	4 (5%)	27	61
16	SB	87/88 (99%)	83 (95%)	4 (5%)	27	61
17	Q	121/128 (94%)	112 (93%)	9 (7%)	13	45
17	TB	121/128 (94%)	113 (93%)	8 (7%)	16	50
18	R	93/94 (99%)	83 (89%)	10 (11%)	6	32
18	UB	93/94 (99%)	84 (90%)	9 (10%)	8	35
19	S	82/82 (100%)	70 (85%)	12 (15%)	3	20
19	VB	82/82 (100%)	72 (88%)	10 (12%)	5	26
20	T	91/92 (99%)	81 (89%)	10 (11%)	6	31
20	WB	91/92 (99%)	81 (89%)	10 (11%)	6	31
21	U	77/78 (99%)	73 (95%)	4 (5%)	23	58
21	XB	77/78 (99%)	73 (95%)	4 (5%)	23	58
22	V	87/91 (96%)	81 (93%)	6 (7%)	15	48
22	YB	87/91 (96%)	81 (93%)	6 (7%)	15	48
23	W	163/179 (91%)	142 (87%)	21 (13%)	4	24
23	ZB	163/179 (91%)	143 (88%)	20 (12%)	4	26
24	AC	66/67 (98%)	57 (86%)	9 (14%)	3	22
24	X	66/67 (98%)	57 (86%)	9 (14%)	3	22
25	BC	81/83 (98%)	70 (86%)	11 (14%)	3	22
25	Y	81/83 (98%)	70 (86%)	11 (14%)	3	22
26	CC	66/67 (98%)	62 (94%)	4 (6%)	18	53
26	Z	66/67 (98%)	62 (94%)	4 (6%)	18	53
27	AA	52/52 (100%)	48 (92%)	4 (8%)	13	44

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
27	DC	52/52 (100%)	49 (94%)	3 (6%)	20 55
28	BA	59/63 (94%)	51 (86%)	8 (14%)	3 22
28	EC	59/63 (94%)	51 (86%)	8 (14%)	3 22
29	CA	51/52 (98%)	46 (90%)	5 (10%)	8 35
29	FC	51/52 (98%)	46 (90%)	5 (10%)	8 35
30	DA	51/52 (98%)	47 (92%)	4 (8%)	12 43
30	GC	51/52 (98%)	46 (90%)	5 (10%)	8 35
31	EA	41/42 (98%)	35 (85%)	6 (15%)	3 20
31	HC	41/42 (98%)	35 (85%)	6 (15%)	3 20
32	FA	54/55 (98%)	47 (87%)	7 (13%)	4 24
32	IC	54/55 (98%)	48 (89%)	6 (11%)	6 31
33	GA	34/34 (100%)	30 (88%)	4 (12%)	5 28
33	JC	34/34 (100%)	30 (88%)	4 (12%)	5 28
35	JA	202/220 (92%)	177 (88%)	25 (12%)	4 25
35	MC	202/220 (92%)	177 (88%)	25 (12%)	4 25
36	KA	160/188 (85%)	146 (91%)	14 (9%)	10 40
36	NC	160/188 (85%)	145 (91%)	15 (9%)	8 37
37	LA	180/181 (99%)	159 (88%)	21 (12%)	5 28
37	OC	180/181 (99%)	157 (87%)	23 (13%)	4 24
38	MA	116/123 (94%)	100 (86%)	16 (14%)	3 22
38	PC	116/123 (94%)	99 (85%)	17 (15%)	3 19
39	NA	90/90 (100%)	80 (89%)	10 (11%)	6 31
39	QC	90/90 (100%)	79 (88%)	11 (12%)	5 26
40	OA	126/127 (99%)	120 (95%)	6 (5%)	25 60
40	RC	126/127 (99%)	120 (95%)	6 (5%)	25 60
41	PA	119/119 (100%)	107 (90%)	12 (10%)	7 34
41	SC	119/119 (100%)	108 (91%)	11 (9%)	9 38
42	QA	98/99 (99%)	86 (88%)	12 (12%)	5 26
42	TC	98/99 (99%)	86 (88%)	12 (12%)	5 26
43	RA	88/92 (96%)	81 (92%)	7 (8%)	12 43
43	UC	88/92 (96%)	81 (92%)	7 (8%)	12 43

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
44	SA	88/99 (89%)	85 (97%)	3 (3%)	37 69
44	VC	88/99 (89%)	85 (97%)	3 (3%)	37 69
45	TA	102/108 (94%)	95 (93%)	7 (7%)	15 48
45	WC	102/108 (94%)	95 (93%)	7 (7%)	15 48
46	UA	94/101 (93%)	82 (87%)	12 (13%)	4 24
46	XC	94/101 (93%)	83 (88%)	11 (12%)	5 28
47	VA	49/50 (98%)	47 (96%)	2 (4%)	30 64
47	YC	49/50 (98%)	47 (96%)	2 (4%)	30 64
48	WA	79/80 (99%)	72 (91%)	7 (9%)	9 39
48	ZC	79/80 (99%)	72 (91%)	7 (9%)	9 39
49	AD	72/74 (97%)	66 (92%)	6 (8%)	11 41
49	XA	72/74 (97%)	66 (92%)	6 (8%)	11 41
50	BD	94/97 (97%)	86 (92%)	8 (8%)	10 41
50	YA	94/97 (97%)	86 (92%)	8 (8%)	10 41
51	CD	61/77 (79%)	56 (92%)	5 (8%)	11 42
51	ZA	61/77 (79%)	56 (92%)	5 (8%)	11 42
52	AB	72/80 (90%)	65 (90%)	7 (10%)	8 35
52	DD	72/80 (90%)	65 (90%)	7 (10%)	8 35
53	BB	76/82 (93%)	70 (92%)	6 (8%)	12 43
53	ED	76/82 (93%)	70 (92%)	6 (8%)	12 43
54	CB	19/22 (86%)	18 (95%)	1 (5%)	22 58
54	FD	19/22 (86%)	18 (95%)	1 (5%)	22 58
55	GD	206/305 (68%)	179 (87%)	27 (13%)	4 23
55	HD	206/305 (68%)	179 (87%)	27 (13%)	4 23
All	All	10114/10666 (95%)	9077 (90%)	1037 (10%)	7 34

All (1037) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	E	3	VAL
5	E	20	ASP
5	E	61	LEU
5	E	88	ARG
5	E	94	LEU

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Mol	Chain	Res	Type
5	E	98	VAL
5	E	99	ASP
5	E	101	GLU
5	E	131	LEU
5	E	155	LEU
5	E	182	LEU
5	E	200	ASP
5	E	211	ARG
5	E	218	ARG
5	E	221	VAL
5	E	222	ARG
5	E	242	ARG
5	E	262	ARG
5	E	263	ARG
5	E	266	SER
6	F	9	VAL
6	F	13	ARG
6	F	21	VAL
6	F	40	GLU
6	F	73	GLU
6	F	75	VAL
6	F	92	THR
6	F	93	VAL
6	F	102	VAL
6	F	107	THR
6	F	116	VAL
6	F	117	MET
6	F	119	ARG
6	F	128	SER
6	F	146	THR
6	F	165	VAL
6	F	170	LEU
6	F	178	GLU
6	F	181	LEU
6	F	195	LEU
7	G	6	MET
7	G	19	GLU
7	G	24	LEU
7	G	50	SER
7	G	51	THR
7	G	54	ARG
7	G	57	VAL

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Mol	Chain	Res	Type
7	G	64	ILE
7	G	74	ARG
7	G	82	ILE
7	G	95	ARG
7	G	98	SER
7	G	156	LEU
7	G	158	THR
7	G	176	LEU
7	G	183	VAL
7	G	191	ARG
7	G	192	LEU
7	G	196	LEU
8	H	7	LEU
8	H	8	LYS
8	H	22	ARG
8	H	33	ARG
8	H	35	GLU
8	H	53	LEU
8	H	60	LEU
8	H	62	LEU
8	H	70	VAL
8	H	79	ASN
8	H	83	ARG
8	H	91	ARG
8	H	115	ARG
8	H	117	PHE
8	H	136	ARG
8	H	139	LEU
8	H	150	ASP
8	H	161	THR
8	H	170	ARG
8	H	182	LYS
9	I	3	ARG
9	I	17	VAL
9	I	24	VAL
9	I	32	GLU
9	I	33	LEU
9	I	41	MET
9	I	51	ARG
9	I	52	VAL
9	I	71	LEU
9	I	104	GLU

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Mol	Chain	Res	Type
9	I	107	VAL
9	I	114	VAL
9	I	127	GLU
9	I	140	LYS
10	J	2	LYS
10	J	5	LEU
10	J	19	VAL
10	J	31	LEU
10	J	54	GLN
10	J	61	ARG
10	J	76	THR
10	J	77	LEU
10	J	88	ILE
10	J	89	TYR
10	J	92	VAL
10	J	107	ILE
10	J	108	THR
10	J	112	LYS
10	J	118	LYS
10	J	128	LEU
10	J	145	VAL
11	K	1	MET
11	K	34	LEU
11	K	55	VAL
11	K	68	GLU
11	K	69	GLN
11	K	70	LYS
11	K	75	TYR
11	K	83	LYS
11	K	90	MET
11	K	99	LEU
11	K	131	GLN
11	K	140	VAL
12	L	24	VAL
12	L	32	TYR
12	L	38	VAL
12	L	61	VAL
12	L	69	VAL
12	L	70	LYS
12	L	98	VAL
12	L	99	PHE
12	L	121	VAL

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Mol	Chain	Res	Type
13	M	4	SER
13	M	15	ARG
13	M	42	SER
13	M	45	LEU
13	M	57	THR
13	M	68	GLN
13	M	71	VAL
13	M	75	ILE
13	M	83	VAL
13	M	88	LEU
13	M	90	ARG
13	M	96	THR
13	M	112	LEU
14	N	7	MET
14	N	17	LEU
14	N	18	LYS
14	N	43	THR
14	N	56	ARG
14	N	58	PHE
14	N	75	THR
14	N	82	ARG
14	N	83	MET
14	N	103	MET
14	N	109	VAL
14	N	110	THR
15	O	1	MET
15	O	6	SER
15	O	24	GLN
15	O	28	LEU
15	O	29	LEU
15	O	48	VAL
15	O	65	LEU
15	O	67	LEU
15	O	102	GLU
15	O	103	ARG
15	O	105	ARG
15	O	113	LEU
16	P	3	ARG
16	P	4	LEU
16	P	58	LEU
16	P	98	VAL
17	Q	23	ARG

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Mol	Chain	Res	Type
17	Q	53	ARG
17	Q	57	PHE
17	Q	66	VAL
17	Q	80	SER
17	Q	108	ARG
17	Q	112	ARG
17	Q	115	ARG
17	Q	128	GLU
18	R	18	LEU
18	R	30	LYS
18	R	31	SER
18	R	34	LYS
18	R	36	ARG
18	R	39	LEU
18	R	54	LYS
18	R	70	ARG
18	R	89	GLU
18	R	95	LEU
19	S	1	MET
19	S	7	THR
19	S	13	ARG
19	S	19	LYS
19	S	22	VAL
19	S	34	GLU
19	S	39	LEU
19	S	43	GLU
19	S	61	VAL
19	S	62	LEU
19	S	68	LYS
19	S	79	VAL
20	T	1	MET
20	T	2	GLU
20	T	11	ARG
20	T	15	ARG
20	T	18	ARG
20	T	30	GLU
20	T	37	ARG
20	T	59	VAL
20	T	67	ASP
20	T	107	LEU
21	U	2	LYS
21	U	13	LEU

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Mol	Chain	Res	Type
21	U	27	THR
21	U	68	ARG
22	V	2	ARG
22	V	9	LYS
22	V	81	LYS
22	V	90	LEU
22	V	97	ARG
22	V	99	CYS
23	W	18	LEU
23	W	31	ARG
23	W	35	ARG
23	W	67	LEU
23	W	72	ARG
23	W	74	VAL
23	W	91	LEU
23	W	103	ARG
23	W	121	HIS
23	W	131	ARG
23	W	132	ASN
23	W	133	ILE
23	W	136	PHE
23	W	137	ILE
23	W	150	LEU
23	W	154	ASP
23	W	163	LEU
23	W	165	VAL
23	W	168	GLU
23	W	169	GLU
23	W	182	LYS
24	X	5	LYS
24	X	7	LEU
24	X	11	ARG
24	X	17	GLN
24	X	30	VAL
24	X	31	VAL
24	X	63	VAL
24	X	64	ASP
24	X	84	LEU
25	Y	14	VAL
25	Y	21	ARG
25	Y	27	GLU
25	Y	40	ARG

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Mol	Chain	Res	Type
25	Y	41	ARG
25	Y	52	ARG
25	Y	59	THR
25	Y	73	LEU
25	Y	82	LEU
25	Y	88	LYS
25	Y	94	LEU
26	Z	3	LEU
26	Z	41	ILE
26	Z	44	LEU
26	Z	53	LEU
27	AA	9	VAL
27	AA	23	LEU
27	AA	35	ARG
27	AA	54	VAL
28	BA	39	CYS
28	BA	43	TYR
28	BA	47	GLN
28	BA	49	PHE
28	BA	61	ARG
28	BA	62	ARG
28	BA	67	TYR
28	BA	69	LYS
29	CA	6	VAL
29	CA	8	LYS
29	CA	25	LEU
29	CA	55	ARG
29	CA	57	VAL
30	DA	18	ARG
30	DA	30	THR
30	DA	34	LEU
30	DA	43	CYS
31	EA	1	MET
31	EA	4	THR
31	EA	24	THR
31	EA	31	LEU
31	EA	43	THR
31	EA	46	VAL
32	FA	6	THR
32	FA	29	LYS
32	FA	31	HIS
32	FA	32	LEU

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Mol	Chain	Res	Type
32	FA	34	TRP
32	FA	49	VAL
32	FA	59	LYS
33	GA	7	VAL
33	GA	22	ARG
33	GA	26	ILE
33	GA	33	LYS
35	JA	8	LYS
35	JA	10	LEU
35	JA	16	HIS
35	JA	19	HIS
35	JA	21	ARG
35	JA	22	LYS
35	JA	24	TRP
35	JA	44	LEU
35	JA	45	GLN
35	JA	60	ASP
35	JA	76	GLN
35	JA	97	TRP
35	JA	111	ARG
35	JA	126	GLU
35	JA	129	GLU
35	JA	141	GLU
35	JA	145	LEU
35	JA	157	ARG
35	JA	158	LEU
35	JA	160	ASP
35	JA	163	PHE
35	JA	185	ILE
35	JA	187	LEU
35	JA	190	THR
35	JA	193	ASP
36	KA	16	ARG
36	KA	30	ARG
36	KA	31	HIS
36	KA	37	GLN
36	KA	70	VAL
36	KA	76	VAL
36	KA	101	LEU
36	KA	108	ASN
36	KA	115	LEU
36	KA	131	ARG

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Mol	Chain	Res	Type
36	KA	140	ARG
36	KA	191	THR
36	KA	193	TYR
36	KA	195	VAL
37	LA	4	TYR
37	LA	5	ILE
37	LA	21	LEU
37	LA	26	CYS
37	LA	27	TYR
37	LA	57	ARG
37	LA	62	GLN
37	LA	76	ARG
37	LA	77	ASN
37	LA	78	LEU
37	LA	127	THR
37	LA	135	LEU
37	LA	141	ARG
37	LA	158	ILE
37	LA	170	VAL
37	LA	173	TRP
37	LA	182	LYS
37	LA	184	LYS
37	LA	194	LEU
37	LA	202	LEU
37	LA	209	ARG
38	MA	10	MET
38	MA	20	GLN
38	MA	24	ARG
38	MA	41	VAL
38	MA	50	GLU
38	MA	60	TYR
38	MA	68	GLU
38	MA	72	GLN
38	MA	75	THR
38	MA	79	GLU
38	MA	91	LEU
38	MA	100	VAL
38	MA	136	MET
38	MA	142	LEU
38	MA	145	LYS
38	MA	155	GLU
39	NA	16	GLN

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Mol	Chain	Res	Type
39	NA	36	ARG
39	NA	37	VAL
39	NA	43	LEU
39	NA	45	LEU
39	NA	64	GLN
39	NA	69	GLU
39	NA	74	ASP
39	NA	83	ASP
39	NA	89	MET
40	OA	5	ARG
40	OA	8	GLU
40	OA	10	ARG
40	OA	24	THR
40	OA	104	LEU
40	OA	115	ARG
41	PA	1	MET
41	PA	29	SER
41	PA	50	ARG
41	PA	52	ASP
41	PA	88	LYS
41	PA	91	ARG
41	PA	102	ARG
41	PA	113	SER
41	PA	120	THR
41	PA	133	LEU
41	PA	135	CYS
41	PA	136	GLU
42	QA	2	GLU
42	QA	4	TYR
42	QA	16	ARG
42	QA	27	THR
42	QA	33	PHE
42	QA	36	TYR
42	QA	38	GLN
42	QA	65	VAL
42	QA	75	ASP
42	QA	108	VAL
42	QA	121	ARG
42	QA	127	LYS
43	RA	44	VAL
43	RA	74	ILE
43	RA	76	ASN

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Mol	Chain	Res	Type
43	RA	86	MET
43	RA	88	LEU
43	RA	89	ASP
43	RA	95	GLU
44	SA	34	ASP
44	SA	80	VAL
44	SA	99	GLN
45	TA	6	THR
45	TA	20	LYS
45	TA	44	THR
45	TA	52	LEU
45	TA	60	LEU
45	TA	83	VAL
45	TA	86	ARG
46	UA	3	ARG
46	UA	4	ILE
46	UA	11	ARG
46	UA	19	LEU
46	UA	27	LYS
46	UA	32	GLU
46	UA	37	THR
46	UA	58	GLU
46	UA	65	LYS
46	UA	70	LEU
46	UA	90	LEU
46	UA	101	GLN
47	VA	6	LEU
47	VA	7	ILE
48	WA	4	THR
48	WA	35	ARG
48	WA	38	ARG
48	WA	39	LEU
48	WA	66	LEU
48	WA	70	LEU
48	WA	83	GLU
49	XA	11	SER
49	XA	20	VAL
49	XA	60	LEU
49	XA	67	THR
49	XA	72	ARG
49	XA	82	GLN
50	YA	35	VAL

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Mol	Chain	Res	Type
50	YA	37	LYS
50	YA	63	ARG
50	YA	75	ARG
50	YA	87	LYS
50	YA	93	GLN
50	YA	96	GLN
50	YA	100	LYS
51	ZA	19	LYS
51	ZA	26	LEU
51	ZA	32	ARG
51	ZA	46	GLU
51	ZA	54	ARG
52	AB	3	ARG
52	AB	11	VAL
52	AB	12	ASP
52	AB	15	LEU
52	AB	64	GLU
52	AB	77	THR
52	AB	83	HIS
53	BB	15	ARG
53	BB	31	SER
53	BB	53	LEU
53	BB	62	LEU
53	BB	72	LEU
53	BB	91	LEU
54	CB	10	ARG
5	HB	3	VAL
5	HB	20	ASP
5	HB	61	LEU
5	HB	88	ARG
5	HB	94	LEU
5	HB	98	VAL
5	HB	99	ASP
5	HB	101	GLU
5	HB	131	LEU
5	HB	134	ARG
5	HB	182	LEU
5	HB	193	VAL
5	HB	200	ASP
5	HB	211	ARG
5	HB	218	ARG
5	HB	221	VAL

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Mol	Chain	Res	Type
5	HB	222	ARG
5	HB	242	ARG
5	HB	263	ARG
5	HB	266	SER
6	IB	9	VAL
6	IB	13	ARG
6	IB	21	VAL
6	IB	40	GLU
6	IB	66	HIS
6	IB	73	GLU
6	IB	75	VAL
6	IB	92	THR
6	IB	93	VAL
6	IB	102	VAL
6	IB	107	THR
6	IB	116	VAL
6	IB	119	ARG
6	IB	128	SER
6	IB	146	THR
6	IB	165	VAL
6	IB	170	LEU
6	IB	178	GLU
6	IB	181	LEU
6	IB	195	LEU
7	JB	6	MET
7	JB	24	LEU
7	JB	50	SER
7	JB	51	THR
7	JB	54	ARG
7	JB	57	VAL
7	JB	64	ILE
7	JB	74	ARG
7	JB	82	ILE
7	JB	95	ARG
7	JB	98	SER
7	JB	156	LEU
7	JB	158	THR
7	JB	174	VAL
7	JB	176	LEU
7	JB	183	VAL
7	JB	191	ARG
7	JB	192	LEU

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Mol	Chain	Res	Type
7	JB	196	LEU
8	KB	7	LEU
8	KB	22	ARG
8	KB	33	ARG
8	KB	35	GLU
8	KB	53	LEU
8	KB	60	LEU
8	KB	62	LEU
8	KB	70	VAL
8	KB	79	ASN
8	KB	83	ARG
8	KB	115	ARG
8	KB	117	PHE
8	KB	136	ARG
8	KB	139	LEU
8	KB	150	ASP
8	KB	161	THR
8	KB	170	ARG
8	KB	182	LYS
9	LB	3	ARG
9	LB	17	VAL
9	LB	24	VAL
9	LB	32	GLU
9	LB	33	LEU
9	LB	41	MET
9	LB	51	ARG
9	LB	52	VAL
9	LB	71	LEU
9	LB	104	GLU
9	LB	107	VAL
9	LB	114	VAL
9	LB	127	GLU
9	LB	140	LYS
10	MB	2	LYS
10	MB	5	LEU
10	MB	19	VAL
10	MB	31	LEU
10	MB	54	GLN
10	MB	61	ARG
10	MB	76	THR
10	MB	77	LEU
10	MB	88	ILE

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Mol	Chain	Res	Type
10	MB	89	TYR
10	MB	107	ILE
10	MB	108	THR
10	MB	112	LYS
10	MB	118	LYS
10	MB	128	LEU
10	MB	145	VAL
11	NB	1	MET
11	NB	34	LEU
11	NB	55	VAL
11	NB	69	GLN
11	NB	70	LYS
11	NB	75	TYR
11	NB	83	LYS
11	NB	90	MET
11	NB	99	LEU
11	NB	131	GLN
11	NB	140	VAL
12	OB	21	CYS
12	OB	24	VAL
12	OB	32	TYR
12	OB	38	VAL
12	OB	61	VAL
12	OB	69	VAL
12	OB	70	LYS
12	OB	98	VAL
12	OB	99	PHE
12	OB	121	VAL
13	PB	4	SER
13	PB	15	ARG
13	PB	40	SER
13	PB	42	SER
13	PB	45	LEU
13	PB	57	THR
13	PB	68	GLN
13	PB	71	VAL
13	PB	75	ILE
13	PB	83	VAL
13	PB	88	LEU
13	PB	90	ARG
13	PB	96	THR
13	PB	112	LEU

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Mol	Chain	Res	Type
13	PB	125	VAL
14	QB	7	MET
14	QB	17	LEU
14	QB	18	LYS
14	QB	56	ARG
14	QB	58	PHE
14	QB	75	THR
14	QB	79	LEU
14	QB	82	ARG
14	QB	83	MET
14	QB	103	MET
14	QB	109	VAL
14	QB	110	THR
14	QB	141	GLN
15	RB	1	MET
15	RB	6	SER
15	RB	24	GLN
15	RB	28	LEU
15	RB	29	LEU
15	RB	48	VAL
15	RB	65	LEU
15	RB	67	LEU
15	RB	102	GLU
15	RB	103	ARG
15	RB	105	ARG
15	RB	113	LEU
16	SB	3	ARG
16	SB	4	LEU
16	SB	58	LEU
16	SB	98	VAL
17	TB	23	ARG
17	TB	53	ARG
17	TB	66	VAL
17	TB	80	SER
17	TB	108	ARG
17	TB	112	ARG
17	TB	115	ARG
17	TB	128	GLU
18	UB	18	LEU
18	UB	30	LYS
18	UB	34	LYS
18	UB	36	ARG

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Mol	Chain	Res	Type
18	UB	39	LEU
18	UB	54	LYS
18	UB	70	ARG
18	UB	72	HIS
18	UB	89	GLU
19	VB	1	MET
19	VB	7	THR
19	VB	13	ARG
19	VB	19	LYS
19	VB	22	VAL
19	VB	34	GLU
19	VB	43	GLU
19	VB	61	VAL
19	VB	62	LEU
19	VB	79	VAL
20	WB	1	MET
20	WB	2	GLU
20	WB	11	ARG
20	WB	15	ARG
20	WB	18	ARG
20	WB	30	GLU
20	WB	37	ARG
20	WB	59	VAL
20	WB	67	ASP
20	WB	107	LEU
21	XB	2	LYS
21	XB	13	LEU
21	XB	27	THR
21	XB	68	ARG
22	YB	2	ARG
22	YB	9	LYS
22	YB	81	LYS
22	YB	90	LEU
22	YB	97	ARG
22	YB	99	CYS
23	ZB	18	LEU
23	ZB	31	ARG
23	ZB	35	ARG
23	ZB	72	ARG
23	ZB	74	VAL
23	ZB	91	LEU
23	ZB	103	ARG

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Mol	Chain	Res	Type
23	ZB	121	HIS
23	ZB	131	ARG
23	ZB	132	ASN
23	ZB	133	ILE
23	ZB	136	PHE
23	ZB	137	ILE
23	ZB	150	LEU
23	ZB	154	ASP
23	ZB	163	LEU
23	ZB	165	VAL
23	ZB	168	GLU
23	ZB	169	GLU
23	ZB	182	LYS
24	AC	5	LYS
24	AC	7	LEU
24	AC	11	ARG
24	AC	17	GLN
24	AC	30	VAL
24	AC	31	VAL
24	AC	63	VAL
24	AC	64	ASP
24	AC	84	LEU
25	BC	5	CYS
25	BC	14	VAL
25	BC	21	ARG
25	BC	27	GLU
25	BC	40	ARG
25	BC	41	ARG
25	BC	52	ARG
25	BC	59	THR
25	BC	82	LEU
25	BC	88	LYS
25	BC	94	LEU
26	CC	3	LEU
26	CC	41	ILE
26	CC	44	LEU
26	CC	53	LEU
27	DC	9	VAL
27	DC	23	LEU
27	DC	54	VAL
28	EC	39	CYS
28	EC	43	TYR

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Mol	Chain	Res	Type
28	EC	47	GLN
28	EC	49	PHE
28	EC	61	ARG
28	EC	62	ARG
28	EC	67	TYR
28	EC	69	LYS
29	FC	6	VAL
29	FC	8	LYS
29	FC	25	LEU
29	FC	55	ARG
29	FC	57	VAL
30	GC	18	ARG
30	GC	30	THR
30	GC	34	LEU
30	GC	43	CYS
30	GC	48	VAL
31	HC	1	MET
31	HC	4	THR
31	HC	24	THR
31	HC	31	LEU
31	HC	43	THR
31	HC	46	VAL
32	IC	6	THR
32	IC	29	LYS
32	IC	31	HIS
32	IC	32	LEU
32	IC	34	TRP
32	IC	49	VAL
33	JC	7	VAL
33	JC	22	ARG
33	JC	26	ILE
33	JC	33	LYS
35	MC	8	LYS
35	MC	10	LEU
35	MC	16	HIS
35	MC	19	HIS
35	MC	21	ARG
35	MC	22	LYS
35	MC	24	TRP
35	MC	44	LEU
35	MC	45	GLN
35	MC	60	ASP

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Mol	Chain	Res	Type
35	MC	76	GLN
35	MC	97	TRP
35	MC	111	ARG
35	MC	126	GLU
35	MC	129	GLU
35	MC	141	GLU
35	MC	145	LEU
35	MC	157	ARG
35	MC	158	LEU
35	MC	160	ASP
35	MC	163	PHE
35	MC	185	ILE
35	MC	187	LEU
35	MC	190	THR
35	MC	193	ASP
36	NC	15	THR
36	NC	16	ARG
36	NC	30	ARG
36	NC	31	HIS
36	NC	37	GLN
36	NC	70	VAL
36	NC	76	VAL
36	NC	101	LEU
36	NC	108	ASN
36	NC	115	LEU
36	NC	131	ARG
36	NC	140	ARG
36	NC	191	THR
36	NC	193	TYR
36	NC	195	VAL
37	OC	4	TYR
37	OC	5	ILE
37	OC	21	LEU
37	OC	26	CYS
37	OC	27	TYR
37	OC	57	ARG
37	OC	62	GLN
37	OC	76	ARG
37	OC	77	ASN
37	OC	78	LEU
37	OC	127	THR
37	OC	135	LEU

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Mol	Chain	Res	Type
37	OC	141	ARG
37	OC	148	VAL
37	OC	158	ILE
37	OC	170	VAL
37	OC	173	TRP
37	OC	182	LYS
37	OC	184	LYS
37	OC	194	LEU
37	OC	196	LEU
37	OC	202	LEU
37	OC	209	ARG
38	PC	10	MET
38	PC	20	GLN
38	PC	24	ARG
38	PC	41	VAL
38	PC	50	GLU
38	PC	60	TYR
38	PC	68	GLU
38	PC	72	GLN
38	PC	75	THR
38	PC	79	GLU
38	PC	91	LEU
38	PC	100	VAL
38	PC	107	ARG
38	PC	136	MET
38	PC	142	LEU
38	PC	145	LYS
38	PC	155	GLU
39	QC	14	LEU
39	QC	16	GLN
39	QC	36	ARG
39	QC	37	VAL
39	QC	43	LEU
39	QC	45	LEU
39	QC	64	GLN
39	QC	69	GLU
39	QC	74	ASP
39	QC	83	ASP
39	QC	89	MET
40	RC	5	ARG
40	RC	8	GLU
40	RC	10	ARG

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Mol	Chain	Res	Type
40	RC	24	THR
40	RC	104	LEU
40	RC	115	ARG
41	SC	29	SER
41	SC	50	ARG
41	SC	52	ASP
41	SC	88	LYS
41	SC	91	ARG
41	SC	102	ARG
41	SC	113	SER
41	SC	120	THR
41	SC	133	LEU
41	SC	135	CYS
41	SC	136	GLU
42	TC	2	GLU
42	TC	4	TYR
42	TC	16	ARG
42	TC	27	THR
42	TC	33	PHE
42	TC	36	TYR
42	TC	38	GLN
42	TC	65	VAL
42	TC	75	ASP
42	TC	108	VAL
42	TC	121	ARG
42	TC	127	LYS
43	UC	44	VAL
43	UC	74	ILE
43	UC	76	ASN
43	UC	86	MET
43	UC	88	LEU
43	UC	89	ASP
43	UC	95	GLU
44	VC	34	ASP
44	VC	80	VAL
44	VC	99	GLN
45	WC	6	THR
45	WC	20	LYS
45	WC	44	THR
45	WC	52	LEU
45	WC	60	LEU
45	WC	83	VAL

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Mol	Chain	Res	Type
45	WC	86	ARG
46	XC	3	ARG
46	XC	4	ILE
46	XC	11	ARG
46	XC	27	LYS
46	XC	32	GLU
46	XC	37	THR
46	XC	58	GLU
46	XC	65	LYS
46	XC	70	LEU
46	XC	90	LEU
46	XC	101	GLN
47	YC	6	LEU
47	YC	7	ILE
48	ZC	4	THR
48	ZC	35	ARG
48	ZC	38	ARG
48	ZC	39	LEU
48	ZC	66	LEU
48	ZC	70	LEU
48	ZC	83	GLU
49	AD	11	SER
49	AD	20	VAL
49	AD	60	LEU
49	AD	67	THR
49	AD	72	ARG
49	AD	82	GLN
50	BD	35	VAL
50	BD	37	LYS
50	BD	63	ARG
50	BD	75	ARG
50	BD	87	LYS
50	BD	93	GLN
50	BD	96	GLN
50	BD	100	LYS
51	CD	19	LYS
51	CD	26	LEU
51	CD	32	ARG
51	CD	46	GLU
51	CD	54	ARG
52	DD	3	ARG
52	DD	11	VAL

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Mol	Chain	Res	Type
52	DD	12	ASP
52	DD	15	LEU
52	DD	64	GLU
52	DD	77	THR
52	DD	83	HIS
53	ED	15	ARG
53	ED	31	SER
53	ED	53	LEU
53	ED	62	LEU
53	ED	72	LEU
53	ED	91	LEU
54	FD	10	ARG
55	GD	107	ASP
55	GD	110	ASN
55	GD	115	VAL
55	GD	130	ASP
55	GD	146	VAL
55	GD	149	MET
55	GD	156	HIS
55	GD	184	VAL
55	GD	193	GLN
55	GD	203	VAL
55	GD	208	GLU
55	GD	209	LEU
55	GD	211	ASP
55	GD	214	LEU
55	GD	229	SER
55	GD	237	VAL
55	GD	260	GLU
55	GD	274	LEU
55	GD	277	ARG
55	GD	300	SER
55	GD	306	ARG
55	GD	316	ARG
55	GD	318	THR
55	GD	325	THR
55	GD	326	LEU
55	GD	327	TYR
55	GD	345	ILE
55	HD	107	ASP
55	HD	110	ASN
55	HD	115	VAL

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Mol	Chain	Res	Type
55	HD	123	GLU
55	HD	130	ASP
55	HD	146	VAL
55	HD	149	MET
55	HD	156	HIS
55	HD	184	VAL
55	HD	193	GLN
55	HD	203	VAL
55	HD	208	GLU
55	HD	209	LEU
55	HD	211	ASP
55	HD	214	LEU
55	HD	229	SER
55	HD	237	VAL
55	HD	274	LEU
55	HD	277	ARG
55	HD	300	SER
55	HD	306	ARG
55	HD	316	ARG
55	HD	318	THR
55	HD	325	THR
55	HD	326	LEU
55	HD	327	TYR
55	HD	345	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (113) such sidechains are listed below:

Mol	Chain	Res	Type
5	E	112	GLN
6	F	132	HIS
7	G	8	GLN
8	H	41	GLN
9	I	61	HIS
9	I	143	GLN
10	J	54	GLN
11	K	69	GLN
13	M	27	HIS
14	N	123	HIS
15	O	24	GLN
15	O	50	HIS
15	O	71	GLN
16	P	61	ASN

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Mol	Chain	Res	Type
16	P	84	GLN
17	Q	58	ASN
17	Q	136	GLN
21	U	55	ASN
21	U	82	GLN
22	V	43	ASN
23	W	50	GLN
24	X	17	GLN
28	BA	47	GLN
33	GA	34	GLN
35	JA	25	ASN
36	KA	104	GLN
36	KA	108	ASN
36	KA	123	GLN
36	KA	136	GLN
36	KA	139	GLN
36	KA	170	GLN
37	LA	62	GLN
37	LA	119	GLN
37	LA	160	GLN
39	NA	13	ASN
39	NA	64	GLN
39	NA	94	GLN
40	OA	96	GLN
40	OA	97	GLN
42	QA	23	ASN
43	RA	33	GLN
44	SA	99	GLN
46	UA	77	ASN
46	UA	101	GLN
48	WA	9	GLN
48	WA	13	GLN
49	XA	65	GLN
50	YA	26	GLN
50	YA	96	GLN
52	AB	23	ASN
5	HB	112	GLN
5	HB	166	GLN
6	IB	132	HIS
7	JB	8	GLN
8	KB	41	GLN
9	LB	61	HIS

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Mol	Chain	Res	Type
9	LB	143	GLN
10	MB	54	GLN
11	NB	69	GLN
12	OB	3	GLN
13	PB	27	HIS
15	RB	50	HIS
15	RB	71	GLN
16	SB	61	ASN
16	SB	84	GLN
17	TB	58	ASN
17	TB	136	GLN
21	XB	82	GLN
22	YB	43	ASN
23	ZB	50	GLN
23	ZB	73	GLN
23	ZB	75	ASN
24	AC	17	GLN
33	JC	34	GLN
35	MC	25	ASN
36	NC	104	GLN
36	NC	108	ASN
36	NC	123	GLN
36	NC	136	GLN
36	NC	139	GLN
36	NC	170	GLN
37	OC	62	GLN
37	OC	119	GLN
37	OC	160	GLN
39	QC	13	ASN
39	QC	64	GLN
39	QC	94	GLN
40	RC	86	GLN
40	RC	96	GLN
40	RC	97	GLN
42	TC	23	ASN
43	UC	33	GLN
44	VC	38	ASN
44	VC	99	GLN
46	XC	77	ASN
46	XC	101	GLN
48	ZC	9	GLN
48	ZC	13	GLN

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Mol	Chain	Res	Type
49	AD	65	GLN
50	BD	26	GLN
50	BD	96	GLN
52	DD	23	ASN
55	GD	185	GLN
55	GD	197	HIS
55	GD	236	HIS
55	GD	264	HIS
55	GD	287	GLN
55	GD	320	HIS
55	GD	352	GLN
55	HD	197	HIS
55	HD	236	HIS
55	HD	320	HIS
55	HD	352	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1502/1507 (99%)	228 (15%)	10 (0%)
1	DB	1502/1507 (99%)	223 (14%)	10 (0%)
2	B	2876/2880 (99%)	498 (17%)	15 (0%)
2	EB	2876/2880 (99%)	496 (17%)	15 (0%)
3	C	119/120 (99%)	18 (15%)	0
3	FB	119/120 (99%)	17 (14%)	0
34	HA	9/27 (33%)	4 (44%)	1 (11%)
34	KC	9/27 (33%)	4 (44%)	1 (11%)
4	D	76/77 (98%)	13 (17%)	0
4	GB	76/77 (98%)	13 (17%)	0
4	IA	76/77 (98%)	7 (9%)	0
4	LC	76/77 (98%)	7 (9%)	0
All	All	9316/9376 (99%)	1528 (16%)	52 (0%)

All (1528) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	5	U
1	A	6	G
1	A	8	A
1	A	9	G
1	A	32	A

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Mol	Chain	Res	Type
1	A	33	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	59	A
1	A	61	G
1	A	79	G
1	A	82	U
1	A	85	U
1	A	86	U
1	A	87	A
1	A	88	C
1	A	90	C
1	A	101	A
1	A	116	A
1	A	121	C
1	A	129(B)	G
1	A	131	C
1	A	144	G
1	A	149	A
1	A	163	C
1	A	174	C
1	A	182	U
1	A	188	U
1	A	189	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
1	A	240	C
1	A	247	G
1	A	251	G
1	A	266	G
1	A	267	C
1	A	289	G
1	A	321	A
1	A	328	C

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Mol	Chain	Res	Type
1	A	332	G
1	A	346	G
1	A	352	C
1	A	353	A
1	A	354	G
1	A	367	U
1	A	368	U
1	A	372	C
1	A	373	A
1	A	397	A
1	A	398	C
1	A	406	G
1	A	412	A
1	A	413	G
1	A	414	A
1	A	424	G
1	A	429	U
1	A	439	A
1	A	452	A
1	A	465	A
1	A	482	A
1	A	484	G
1	A	485	G
1	A	496	A
1	A	497	U
1	A	500	G
1	A	509	A
1	A	510	A
1	A	511	C
1	A	518	C
1	A	521	G
1	A	531	U
1	A	532	A
1	A	545	C
1	A	547	A
1	A	548	G
1	A	549	C
1	A	559	A
1	A	560	U
1	A	561	U
1	A	562	C
1	A	564	C

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Mol	Chain	Res	Type
1	A	567	G
1	A	573	A
1	A	575	G
1	A	576	G
1	A	577	G
1	A	630	G
1	A	631	G
1	A	653	A
1	A	665	A
1	A	688	G
1	A	703	G
1	A	723	U
1	A	724	G
1	A	731	G
1	A	749	C
1	A	755	G
1	A	774	G
1	A	777	A
1	A	793	U
1	A	794	A
1	A	816	A
1	A	817	C
1	A	818	G
1	A	819	A
1	A	828	A
1	A	842	C
1	A	843	U
1	A	848	C
1	A	851	G
1	A	859	A
1	A	872	A
1	A	902	G
1	A	914	A
1	A	920	U
1	A	926	G
1	A	927	G
1	A	931	C
1	A	934	C
1	A	935	A
1	A	960	U
1	A	969	A
1	A	971	G

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Mol	Chain	Res	Type
1	A	972	C
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	989	C
1	A	992	U
1	A	993	G
1	A	998(A)	G
1	A	1001	G
1	A	1002	G
1	A	1004	A
1	A	1007	C
1	A	1009	G
1	A	1012	U
1	A	1022	G
1	A	1025	U
1	A	1026	G
1	A	1027	C
1	A	1028(B)	C
1	A	1028(C)	C
1	A	1029	G
1	A	1030	C
1	A	1033	G
1	A	1034	G
1	A	1044	A
1	A	1053	G
1	A	1065	U
1	A	1081	G
1	A	1094	G
1	A	1095	U
1	A	1101	A
1	A	1126	U
1	A	1137	C
1	A	1138	G
1	A	1146	A
1	A	1152	A
1	A	1154	G
1	A	1157	A
1	A	1159	U
1	A	1171	G
1	A	1174	G

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Mol	Chain	Res	Type
1	A	1183	A
1	A	1184	G
1	A	1196	U
1	A	1197	G
1	A	1199	U
1	A	1201	A
1	A	1202	G
1	A	1212	U
1	A	1213	A
1	A	1225	A
1	A	1227	A
1	A	1236	A
1	A	1238	A
1	A	1256	A
1	A	1257	U
1	A	1258	G
1	A	1260	C
1	A	1263	C
1	A	1270	C
1	A	1279	A
1	A	1280	A
1	A	1286	A
1	A	1287	A
1	A	1289	A
1	A	1299	A
1	A	1302	U
1	A	1305	G
1	A	1315	U
1	A	1336	C
1	A	1340	A
1	A	1347	G
1	A	1353	G
1	A	1362(B)	C
1	A	1363	A
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	1453	G

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Mol	Chain	Res	Type
1	A	1492	A
1	A	1493	A
1	A	1494	G
1	A	1503	A
1	A	1504	G
1	A	1506	U
1	A	1507	A
1	A	1517	G
1	A	1520	G
1	A	1529	G
1	A	1530	G
1	A	1531	A
1	A	1532	U
2	B	10	G
2	B	14	A
2	B	34	C
2	B	35	G
2	B	46	C
2	B	51	G
2	B	58	G
2	B	61	G
2	B	71	A
2	B	74	A
2	B	75	G
2	B	91	A
2	B	95	G
2	B	118	A
2	B	120	U
2	B	125	G
2	B	128	C
2	B	129	C
2	B	149	A
2	B	154(A)	C
2	B	155	C
2	B	181	A
2	B	182	A
2	B	196	A
2	B	199	A
2	B	200	U
2	B	205	G
2	B	212	G
2	B	214	G

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Mol	Chain	Res	Type
2	B	215	G
2	B	216	A
2	B	221	A
2	B	222	A
2	B	225	A
2	B	228	A
2	B	229	A
2	B	245	G
2	B	248	G
2	B	249	C
2	B	250	G
2	B	265	A
2	B	270(L)	C
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	278	A
2	B	302	C
2	B	311	A
2	B	317	G
2	B	323	G
2	B	324	A
2	B	329	G
2	B	330	A
2	B	331	A
2	B	332	A
2	B	352	G
2	B	353	G
2	B	363(A)	G
2	B	363(G)	A
2	B	386	G
2	B	405	U
2	B	406	G
2	B	411	G
2	B	412	A
2	B	418	G
2	B	421	U
2	B	444	C
2	B	456	C

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Mol	Chain	Res	Type
2	B	457	A
2	B	458	G
2	B	467	G
2	B	473	G
2	B	481	G
2	B	491	G
2	B	494	G
2	B	504	U
2	B	505	A
2	B	508	G
2	B	509	C
2	B	527	C
2	B	528	A
2	B	529	A
2	B	531	C
2	B	532	A
2	B	533	G
2	B	546	C
2	B	547	A
2	B	563	G
2	B	571	A
2	B	573	G
2	B	575	A
2	B	603	A
2	B	604	G
2	B	607	U
2	B	615	G
2	B	616	A
2	B	617	G
2	B	627	A
2	B	637	A
2	B	645	C
2	B	646	A
2	B	654	U
2	B	668	G
2	B	677	A
2	B	682	G
2	B	686	G
2	B	717	G
2	B	730	C
2	B	740	U
2	B	748	G

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Mol	Chain	Res	Type
2	B	749	C
2	B	765	G
2	B	775	G
2	B	776	G
2	B	782	A
2	B	784	A
2	B	785	G
2	B	792	G
2	B	793	A
2	B	800	A
2	B	805	G
2	B	812	C
2	B	819	A
2	B	827	U
2	B	828	U
2	B	846	C
2	B	859	G
2	B	866	A
2	B	878	A
2	B	879	G
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	917	A
2	B	932	G
2	B	941	A
2	B	944	G
2	B	945	A
2	B	946	G
2	B	959	A
2	B	961	C
2	B	973	A
2	B	974(A)	G
2	B	974(B)	C

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Mol	Chain	Res	Type
2	B	983	A
2	B	989	G
2	B	996	A
2	B	1005	C
2	B	1012	U
2	B	1013	C
2	B	1022	G
2	B	1023	U
2	B	1025	G
2	B	1026	U
2	B	1027	A
2	B	1033	U
2	B	1045	A
2	B	1046	A
2	B	1047	G
2	B	1049	C
2	B	1057	A
2	B	1060	U
2	B	1061	U
2	B	1062	G
2	B	1063	G
2	B	1064	C
2	B	1066	U
2	B	1068	G
2	B	1069	A
2	B	1070	A
2	B	1071	G
2	B	1072	C
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	1083	U
2	B	1086	A
2	B	1087	G
2	B	1088	A
2	B	1089	G
2	B	1092	C
2	B	1093	G

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Mol	Chain	Res	Type
2	B	1094	U
2	B	1095	A
2	B	1096	A
2	B	1097	U
2	B	1098	A
2	B	1101	U
2	B	1107	G
2	B	1111	A
2	B	1112	G
2	B	1126	A
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
2	B	1143	A
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	1252	G
2	B	1253	A
2	B	1256	G
2	B	1271	G
2	B	1272	A
2	B	1273	U
2	B	1300	U
2	B	1301	A
2	B	1302	A
2	B	1320	C
2	B	1340	U
2	B	1345	C
2	B	1352	U
2	B	1359	A
2	B	1360	A
2	B	1365	A
2	B	1380	G

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Mol	Chain	Res	Type
2	B	1385	G
2	B	1395	A
2	B	1416	G
2	B	1417	C
2	B	1419	A
2	B	1420	U
2	B	1421	G
2	B	1427	A
2	B	1428	C
2	B	1437	C
2	B	1444(B)	A
2	B	1449(B)	A
2	B	1454	U
2	B	1455	G
2	B	1460	A
2	B	1461	G
2	B	1467	C
2	B	1471	A
2	B	1478	G
2	B	1483	G
2	B	1493	C
2	B	1497	U
2	B	1510	A
2	B	1511	A
2	B	1512	G
2	B	1532	C
2	B	1534	G
2	B	1535	U
2	B	1537	C
2	B	1538	G
2	B	1544	C
2	B	1554	A
2	B	1558	A
2	B	1569	A
2	B	1578	U
2	B	1585	C
2	B	1586	A
2	B	1608	A
2	B	1609	A
2	B	1610	A
2	B	1618	A
2	B	1630(B)	C

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Mol	Chain	Res	Type
2	B	1631	A
2	B	1647	G
2	B	1648	C
2	B	1651	G
2	B	1654	A
2	B	1669	A
2	B	1672	C
2	B	1674	G
2	B	1675	C
2	B	1694	C
2	B	1700	A
2	B	1701	A
2	B	1703	G
2	B	1728	G
2	B	1729	A
2	B	1730	U
2	B	1731	G
2	B	1743	G
2	B	1750	G
2	B	1756	G
2	B	1761	C
2	B	1762	A
2	B	1763	G
2	B	1764	G
2	B	1773	A
2	B	1776	G
2	B	1779	U
2	B	1780	A
2	B	1782	C
2	B	1791	A
2	B	1800	C
2	B	1801	G
2	B	1811	G
2	B	1816	G
2	B	1847	A
2	B	1858	G
2	B	1859	A
2	B	1878	G
2	B	1900	A
2	B	1903	G
2	B	1906	G
2	B	1929	G

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Mol	Chain	Res	Type
2	B	1930	G
2	B	1934	C
2	B	1936	A
2	B	1937	A
2	B	1938	A
2	B	1939	5MU
2	B	1940	U
2	B	1955	U
2	B	1963	U
2	B	1967	C
2	B	1970	A
2	B	1971	A
2	B	1972	A
2	B	1984	G
2	B	1992	G
2	B	1993	U
2	B	1997	G
2	B	2020	A
2	B	2022	U
2	B	2023	G
2	B	2030	A
2	B	2031	A
2	B	2032	G
2	B	2033	A
2	B	2043	C
2	B	2049	G
2	B	2055	C
2	B	2056	G
2	B	2060	A
2	B	2061	G
2	B	2062	A
2	B	2069	G
2	B	2080	G
2	B	2100	G
2	B	2107	C
2	B	2110	G
2	B	2124	G
2	B	2125	G
2	B	2127	G
2	B	2129	C
2	B	2130	U
2	B	2131	G

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Mol	Chain	Res	Type
2	B	2132	U
2	B	2133	G
2	B	2138	C
2	B	2139	C
2	B	2142	C
2	B	2144	U
2	B	2147	G
2	B	2149	G
2	B	2156	G
2	B	2157	G
2	B	2158	A
2	B	2160	G
2	B	2162	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	2176	A
2	B	2189	U
2	B	2190	G
2	B	2198	A
2	B	2210	G
2	B	2211	G
2	B	2212	A
2	B	2213	U
2	B	2215	G
2	B	2225	A
2	B	2238	G
2	B	2239	G
2	B	2243	U
2	B	2252	G
2	B	2269	A
2	B	2273	A
2	B	2275	C
2	B	2278	A
2	B	2280	G
2	B	2283	C
2	B	2287	A
2	B	2305	A
2	B	2308	G

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Mol	Chain	Res	Type
2	B	2309	A
2	B	2311	A
2	B	2312	U
2	B	2319	G
2	B	2320	A
2	B	2321	G
2	B	2325	G
2	B	2334	G
2	B	2336	A
2	B	2345	G
2	B	2347	C
2	B	2350	C
2	B	2383	G
2	B	2384	G
2	B	2385	C
2	B	2402	C
2	B	2422	A
2	B	2423	U
2	B	2425	A
2	B	2429	G
2	B	2430	A
2	B	2434	A
2	B	2439	A
2	B	2441	C
2	B	2448	A
2	B	2468	G
2	B	2469	A
2	B	2476	A
2	B	2500	U
2	B	2502	G
2	B	2504	U
2	B	2505	G
2	B	2506	U
2	B	2518	A
2	B	2520	C
2	B	2525	G
2	B	2529	G
2	B	2534	A
2	B	2554	U
2	B	2562	U
2	B	2566	A
2	B	2567	G

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Mol	Chain	Res	Type
2	B	2573	C
2	B	2574	G
2	B	2578	G
2	B	2586	C
2	B	2596	U
2	B	2602	A
2	B	2609	U
2	B	2611	U
2	B	2612	C
2	B	2615	U
2	B	2630	G
2	B	2689	U
2	B	2702	U
2	B	2703	C
2	B	2712(A)	A
2	B	2713	A
2	B	2714	G
2	B	2726	U
2	B	2733	A
2	B	2751	G
2	B	2757	A
2	B	2764	A
2	B	2765	A
2	B	2766	G
2	B	2777	G
2	B	2778	A
2	B	2790	A
2	B	2791	C
2	B	2792	G
2	B	2793	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	2810	A
2	B	2820	A
2	B	2821	A
2	B	2823	A
2	B	2833	G
2	B	2834	G

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Mol	Chain	Res	Type
2	B	2835	A
2	B	2872	G
2	B	2876	G
2	B	2880	C
2	B	2892	A
2	B	2896	C
2	B	2897	U
3	C	9	G
3	C	12	C
3	C	13	A
3	C	30	C
3	C	41	U
3	C	42	C
3	C	44	G
3	C	45	A
3	C	56	G
3	C	63	G
3	C	65	C
3	C	66	A
3	C	67	G
3	C	73	A
3	C	88	C
3	C	90	C
3	C	109	G
3	C	119	A
4	D	6	G
4	D	9	G
4	D	13	C
4	D	16	C
4	D	17(A)	U
4	D	18	G
4	D	19	G
4	D	20	U
4	D	27	U
4	D	35	A
4	D	47	U
4	D	48	C
4	D	61	C
34	HA	14	A
34	HA	15	A
34	HA	16	A
34	HA	21	A

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Mol	Chain	Res	Type
4	IA	2	G
4	IA	18	G
4	IA	20	U
4	IA	47	U
4	IA	48	C
4	IA	52	G
4	IA	76	A
1	DB	5	U
1	DB	6	G
1	DB	8	A
1	DB	9	G
1	DB	32	A
1	DB	39	G
1	DB	47	C
1	DB	48	C
1	DB	51	A
1	DB	52	G
1	DB	59	A
1	DB	61	G
1	DB	79	G
1	DB	82	U
1	DB	85	U
1	DB	86	U
1	DB	87	A
1	DB	88	C
1	DB	101	A
1	DB	116	A
1	DB	121	C
1	DB	129(B)	G
1	DB	131	C
1	DB	144	G
1	DB	149	A
1	DB	163	C
1	DB	174	C
1	DB	182	U
1	DB	188	U
1	DB	189	U
1	DB	195	A
1	DB	197	A
1	DB	201	C
1	DB	208	U
1	DB	209	U

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Mol	Chain	Res	Type
1	DB	210	U
1	DB	240	C
1	DB	245	C
1	DB	247	G
1	DB	251	G
1	DB	266	G
1	DB	267	C
1	DB	289	G
1	DB	321	A
1	DB	328	C
1	DB	332	G
1	DB	346	G
1	DB	352	C
1	DB	353	A
1	DB	354	G
1	DB	367	U
1	DB	372	C
1	DB	373	A
1	DB	397	A
1	DB	398	C
1	DB	406	G
1	DB	412	A
1	DB	413	G
1	DB	414	A
1	DB	424	G
1	DB	429	U
1	DB	439	A
1	DB	452	A
1	DB	465	A
1	DB	482	A
1	DB	484	G
1	DB	485	G
1	DB	496	A
1	DB	497	U
1	DB	500	G
1	DB	509	A
1	DB	510	A
1	DB	511	C
1	DB	518	C
1	DB	531	U
1	DB	532	A
1	DB	545	C

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Mol	Chain	Res	Type
1	DB	547	A
1	DB	548	G
1	DB	549	C
1	DB	559	A
1	DB	560	U
1	DB	561	U
1	DB	562	C
1	DB	564	C
1	DB	567	G
1	DB	573	A
1	DB	575	G
1	DB	576	G
1	DB	577	G
1	DB	630	G
1	DB	631	G
1	DB	653	A
1	DB	665	A
1	DB	688	G
1	DB	703	G
1	DB	723	U
1	DB	724	G
1	DB	731	G
1	DB	749	C
1	DB	755	G
1	DB	774	G
1	DB	777	A
1	DB	793	U
1	DB	794	A
1	DB	816	A
1	DB	817	C
1	DB	818	G
1	DB	819	A
1	DB	828	A
1	DB	842	C
1	DB	843	U
1	DB	848	C
1	DB	851	G
1	DB	859	A
1	DB	872	A
1	DB	902	G
1	DB	914	A
1	DB	920	U

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Mol	Chain	Res	Type
1	DB	926	G
1	DB	927	G
1	DB	931	C
1	DB	934	C
1	DB	935	A
1	DB	960	U
1	DB	969	A
1	DB	971	G
1	DB	972	C
1	DB	974	A
1	DB	975	A
1	DB	976	G
1	DB	977	A
1	DB	989	C
1	DB	992	U
1	DB	993	G
1	DB	998(A)	G
1	DB	1001	G
1	DB	1002	G
1	DB	1004	A
1	DB	1007	C
1	DB	1009	G
1	DB	1012	U
1	DB	1022	G
1	DB	1025	U
1	DB	1026	G
1	DB	1027	C
1	DB	1028(B)	C
1	DB	1028(C)	C
1	DB	1029	G
1	DB	1030	C
1	DB	1033	G
1	DB	1034	G
1	DB	1044	A
1	DB	1053	G
1	DB	1065	U
1	DB	1081	G
1	DB	1094	G
1	DB	1095	U
1	DB	1101	A
1	DB	1126	U
1	DB	1137	C

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Mol	Chain	Res	Type
1	DB	1138	G
1	DB	1146	A
1	DB	1152	A
1	DB	1154	G
1	DB	1157	A
1	DB	1159	U
1	DB	1171	G
1	DB	1183	A
1	DB	1184	G
1	DB	1196	U
1	DB	1197	G
1	DB	1199	U
1	DB	1201	A
1	DB	1202	G
1	DB	1212	U
1	DB	1213	A
1	DB	1225	A
1	DB	1227	A
1	DB	1236	A
1	DB	1238	A
1	DB	1256	A
1	DB	1257	U
1	DB	1258	G
1	DB	1260	C
1	DB	1263	C
1	DB	1270	C
1	DB	1279	A
1	DB	1280	A
1	DB	1286	A
1	DB	1287	A
1	DB	1289	A
1	DB	1299	A
1	DB	1301	U
1	DB	1302	U
1	DB	1305	G
1	DB	1315	U
1	DB	1320	C
1	DB	1336	C
1	DB	1340	A
1	DB	1347	G
1	DB	1353	G
1	DB	1362(B)	C

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Mol	Chain	Res	Type
1	DB	1397	C
1	DB	1398	A
1	DB	1419	G
1	DB	1442	G
1	DB	1451	A
1	DB	1452	C
1	DB	1453	G
1	DB	1492	A
1	DB	1493	A
1	DB	1494	G
1	DB	1503	A
1	DB	1504	G
1	DB	1506	U
1	DB	1507	A
1	DB	1517	G
1	DB	1520	G
1	DB	1529	G
1	DB	1530	G
1	DB	1531	A
1	DB	1532	U
2	EB	10	G
2	EB	14	A
2	EB	34	C
2	EB	35	G
2	EB	46	C
2	EB	51	G
2	EB	58	G
2	EB	61	G
2	EB	71	A
2	EB	74	A
2	EB	75	G
2	EB	91	A
2	EB	95	G
2	EB	118	A
2	EB	120	U
2	EB	125	G
2	EB	128	C
2	EB	129	C
2	EB	154(A)	C
2	EB	155	C
2	EB	181	A
2	EB	182	A

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Mol	Chain	Res	Type
2	EB	196	A
2	EB	199	A
2	EB	200	U
2	EB	205	G
2	EB	212	G
2	EB	214	G
2	EB	215	G
2	EB	216	A
2	EB	221	A
2	EB	222	A
2	EB	225	A
2	EB	228	A
2	EB	229	A
2	EB	245	G
2	EB	248	G
2	EB	249	C
2	EB	265	A
2	EB	270(L)	C
2	EB	270(M)	U
2	EB	270(N)	U
2	EB	270(O)	G
2	EB	270(P)	U
2	EB	270(Q)	C
2	EB	271	G
2	EB	278	A
2	EB	302	C
2	EB	311	A
2	EB	317	G
2	EB	324	A
2	EB	329	G
2	EB	330	A
2	EB	332	A
2	EB	352	G
2	EB	353	G
2	EB	363(A)	G
2	EB	363(G)	A
2	EB	386	G
2	EB	405	U
2	EB	406	G
2	EB	411	G
2	EB	412	A
2	EB	418	G

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Mol	Chain	Res	Type
2	EB	421	U
2	EB	444	C
2	EB	456	C
2	EB	457	A
2	EB	458	G
2	EB	467	G
2	EB	473	G
2	EB	481	G
2	EB	491	G
2	EB	494	G
2	EB	504	U
2	EB	505	A
2	EB	508	G
2	EB	509	C
2	EB	527	C
2	EB	528	A
2	EB	529	A
2	EB	531	C
2	EB	532	A
2	EB	533	G
2	EB	546	C
2	EB	547	A
2	EB	563	G
2	EB	571	A
2	EB	573	G
2	EB	575	A
2	EB	593	G
2	EB	603	A
2	EB	604	G
2	EB	607	U
2	EB	609(B)	G
2	EB	615	G
2	EB	616	A
2	EB	617	G
2	EB	627	A
2	EB	637	A
2	EB	645	C
2	EB	646	A
2	EB	654	U
2	EB	668	G
2	EB	677	A
2	EB	682	G

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Mol	Chain	Res	Type
2	EB	686	G
2	EB	717	G
2	EB	730	C
2	EB	740	U
2	EB	748	G
2	EB	749	C
2	EB	765	G
2	EB	775	G
2	EB	776	G
2	EB	782	A
2	EB	784	A
2	EB	785	G
2	EB	792	G
2	EB	793	A
2	EB	805	G
2	EB	812	C
2	EB	819	A
2	EB	827	U
2	EB	828	U
2	EB	846	C
2	EB	856	C
2	EB	859	G
2	EB	866	A
2	EB	878	A
2	EB	879	G
2	EB	886	C
2	EB	887	A
2	EB	888	C
2	EB	889	C
2	EB	890	A
2	EB	893	C
2	EB	894	C
2	EB	895	U
2	EB	896	A
2	EB	907	U
2	EB	910	A
2	EB	917	A
2	EB	932	G
2	EB	941	A
2	EB	944	G
2	EB	945	A
2	EB	946	G

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Mol	Chain	Res	Type
2	EB	959	A
2	EB	961	C
2	EB	973	A
2	EB	974(A)	G
2	EB	974(B)	C
2	EB	983	A
2	EB	989	G
2	EB	996	A
2	EB	1005	C
2	EB	1012	U
2	EB	1013	C
2	EB	1022	G
2	EB	1023	U
2	EB	1025	G
2	EB	1026	U
2	EB	1027	A
2	EB	1033	U
2	EB	1045	A
2	EB	1046	A
2	EB	1047	G
2	EB	1049	C
2	EB	1057	A
2	EB	1060	U
2	EB	1061	U
2	EB	1062	G
2	EB	1063	G
2	EB	1064	C
2	EB	1066	U
2	EB	1068	G
2	EB	1069	A
2	EB	1070	A
2	EB	1071	G
2	EB	1072	C
2	EB	1073	A
2	EB	1074	G
2	EB	1075	C
2	EB	1076	C
2	EB	1077	A
2	EB	1078	U
2	EB	1079	C
2	EB	1083	U
2	EB	1086	A

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Mol	Chain	Res	Type
2	EB	1087	G
2	EB	1088	A
2	EB	1089	G
2	EB	1092	C
2	EB	1093	G
2	EB	1094	U
2	EB	1095	A
2	EB	1096	A
2	EB	1097	U
2	EB	1098	A
2	EB	1101	U
2	EB	1107	G
2	EB	1111	A
2	EB	1112	G
2	EB	1126	A
2	EB	1129	A
2	EB	1130	U
2	EB	1135	C
2	EB	1136	G
2	EB	1139	G
2	EB	1142(B)	A
2	EB	1143	A
2	EB	1174	A
2	EB	1175	U
2	EB	1177	A
2	EB	1205	U
2	EB	1210	A
2	EB	1211	U
2	EB	1220	A
2	EB	1252	G
2	EB	1253	A
2	EB	1256	G
2	EB	1269	A
2	EB	1271	G
2	EB	1272	A
2	EB	1273	U
2	EB	1300	U
2	EB	1301	A
2	EB	1302	A
2	EB	1313	U
2	EB	1320	C
2	EB	1340	U

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Mol	Chain	Res	Type
2	EB	1345	C
2	EB	1352	U
2	EB	1359	A
2	EB	1360	A
2	EB	1365	A
2	EB	1380	G
2	EB	1385	G
2	EB	1395	A
2	EB	1416	G
2	EB	1417	C
2	EB	1419	A
2	EB	1420	U
2	EB	1421	G
2	EB	1427	A
2	EB	1428	C
2	EB	1437	C
2	EB	1444(B)	A
2	EB	1449(B)	A
2	EB	1454	U
2	EB	1455	G
2	EB	1460	A
2	EB	1461	G
2	EB	1467	C
2	EB	1471	A
2	EB	1478	G
2	EB	1483	G
2	EB	1493	C
2	EB	1497	U
2	EB	1510	A
2	EB	1511	A
2	EB	1512	G
2	EB	1532	C
2	EB	1534	G
2	EB	1535	U
2	EB	1537	C
2	EB	1538	G
2	EB	1544	C
2	EB	1554	A
2	EB	1558	A
2	EB	1566	A
2	EB	1569	A
2	EB	1578	U

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Mol	Chain	Res	Type
2	EB	1585	C
2	EB	1586	A
2	EB	1608	A
2	EB	1609	A
2	EB	1610	A
2	EB	1618	A
2	EB	1630(B)	C
2	EB	1631	A
2	EB	1647	G
2	EB	1648	C
2	EB	1651	G
2	EB	1654	A
2	EB	1669	A
2	EB	1672	C
2	EB	1674	G
2	EB	1675	C
2	EB	1700	A
2	EB	1701	A
2	EB	1703	G
2	EB	1728	G
2	EB	1729	A
2	EB	1730	U
2	EB	1731	G
2	EB	1743	G
2	EB	1750	G
2	EB	1756	G
2	EB	1761	C
2	EB	1762	A
2	EB	1763	G
2	EB	1764	G
2	EB	1773	A
2	EB	1776	G
2	EB	1779	U
2	EB	1780	A
2	EB	1782	C
2	EB	1791	A
2	EB	1800	C
2	EB	1801	G
2	EB	1811	G
2	EB	1816	G
2	EB	1847	A
2	EB	1858	G

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Mol	Chain	Res	Type
2	EB	1859	A
2	EB	1878	G
2	EB	1900	A
2	EB	1903	G
2	EB	1906	G
2	EB	1929	G
2	EB	1930	G
2	EB	1936	A
2	EB	1937	A
2	EB	1938	A
2	EB	1939	5MU
2	EB	1940	U
2	EB	1955	U
2	EB	1963	U
2	EB	1967	C
2	EB	1970	A
2	EB	1971	A
2	EB	1972	A
2	EB	1984	G
2	EB	1992	G
2	EB	1993	U
2	EB	1997	G
2	EB	2020	A
2	EB	2022	U
2	EB	2023	G
2	EB	2030	A
2	EB	2031	A
2	EB	2032	G
2	EB	2033	A
2	EB	2043	C
2	EB	2049	G
2	EB	2055	C
2	EB	2056	G
2	EB	2060	A
2	EB	2061	G
2	EB	2062	A
2	EB	2069	G
2	EB	2080	G
2	EB	2100	G
2	EB	2107	C
2	EB	2110	G
2	EB	2124	G

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Mol	Chain	Res	Type
2	EB	2125	G
2	EB	2127	G
2	EB	2129	C
2	EB	2130	U
2	EB	2131	G
2	EB	2132	U
2	EB	2133	G
2	EB	2138	C
2	EB	2139	C
2	EB	2142	C
2	EB	2144	U
2	EB	2147	G
2	EB	2149	G
2	EB	2156	G
2	EB	2157	G
2	EB	2158	A
2	EB	2160	G
2	EB	2162	G
2	EB	2167	U
2	EB	2168	G
2	EB	2169	A
2	EB	2171	A
2	EB	2172	U
2	EB	2173	A
2	EB	2176	A
2	EB	2189	U
2	EB	2190	G
2	EB	2198	A
2	EB	2210	G
2	EB	2211	G
2	EB	2212	A
2	EB	2213	U
2	EB	2215	G
2	EB	2225	A
2	EB	2238	G
2	EB	2239	G
2	EB	2243	U
2	EB	2252	G
2	EB	2269	A
2	EB	2273	A
2	EB	2275	C
2	EB	2278	A

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Mol	Chain	Res	Type
2	EB	2280	G
2	EB	2283	C
2	EB	2287	A
2	EB	2305	A
2	EB	2308	G
2	EB	2309	A
2	EB	2311	A
2	EB	2312	U
2	EB	2319	G
2	EB	2320	A
2	EB	2321	G
2	EB	2325	G
2	EB	2334	G
2	EB	2336	A
2	EB	2347	C
2	EB	2350	C
2	EB	2383	G
2	EB	2384	G
2	EB	2385	C
2	EB	2402	C
2	EB	2422	A
2	EB	2423	U
2	EB	2425	A
2	EB	2429	G
2	EB	2430	A
2	EB	2434	A
2	EB	2439	A
2	EB	2441	C
2	EB	2448	A
2	EB	2468	G
2	EB	2469	A
2	EB	2476	A
2	EB	2500	U
2	EB	2502	G
2	EB	2504	U
2	EB	2505	G
2	EB	2506	U
2	EB	2518	A
2	EB	2520	C
2	EB	2525	G
2	EB	2529	G
2	EB	2534	A

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Mol	Chain	Res	Type
2	EB	2554	U
2	EB	2562	U
2	EB	2566	A
2	EB	2567	G
2	EB	2573	C
2	EB	2574	G
2	EB	2578	G
2	EB	2585	U
2	EB	2586	C
2	EB	2596	U
2	EB	2602	A
2	EB	2609	U
2	EB	2611	U
2	EB	2612	C
2	EB	2615	U
2	EB	2630	G
2	EB	2689	U
2	EB	2702	U
2	EB	2703	C
2	EB	2712(A)	A
2	EB	2713	A
2	EB	2714	G
2	EB	2726	U
2	EB	2733	A
2	EB	2751	G
2	EB	2757	A
2	EB	2764	A
2	EB	2765	A
2	EB	2766	G
2	EB	2777	G
2	EB	2778	A
2	EB	2790	A
2	EB	2791	C
2	EB	2792	G
2	EB	2793	G
2	EB	2797	U
2	EB	2798	C
2	EB	2799	A
2	EB	2801	A
2	EB	2802	G
2	EB	2807	G
2	EB	2810	A

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Mol	Chain	Res	Type
2	EB	2820	A
2	EB	2821	A
2	EB	2823	A
2	EB	2833	G
2	EB	2834	G
2	EB	2835	A
2	EB	2872	G
2	EB	2876	G
2	EB	2880	C
2	EB	2892	A
2	EB	2896	C
2	EB	2897	U
3	FB	9	G
3	FB	12	C
3	FB	13	A
3	FB	30	C
3	FB	41	U
3	FB	42	C
3	FB	44	G
3	FB	45	A
3	FB	56	G
3	FB	63	G
3	FB	65	C
3	FB	66	A
3	FB	67	G
3	FB	73	A
3	FB	88	C
3	FB	90	C
3	FB	109	G
4	GB	6	G
4	GB	9	G
4	GB	13	C
4	GB	16	C
4	GB	17(A)	U
4	GB	18	G
4	GB	19	G
4	GB	20	U
4	GB	27	U
4	GB	35	A
4	GB	47	U
4	GB	48	C
4	GB	61	C

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Mol	Chain	Res	Type
34	KC	14	A
34	KC	15	A
34	KC	16	A
34	KC	21	A
4	LC	2	G
4	LC	18	G
4	LC	20	U
4	LC	47	U
4	LC	48	C
4	LC	52	G
4	LC	76	A

All (52) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	115	G
1	A	509	A
1	A	560	U
1	A	563	A
1	A	572	A
1	A	687	A
1	A	723	U
1	A	748	C
1	A	913	A
1	A	1201	A
2	B	34	C
2	B	196	A
2	B	507	A
2	B	528	A
2	B	784	A
2	B	974(A)	G
2	B	1060	U
2	B	1088	A
2	B	1210	A
2	B	1379	A
2	B	1608	A
2	B	1992	G
2	B	2032	G
2	B	2422	A
2	B	2833	G
34	HA	22	A
1	DB	115	G

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Mol	Chain	Res	Type
1	DB	509	A
1	DB	560	U
1	DB	563	A
1	DB	572	A
1	DB	687	A
1	DB	723	U
1	DB	748	C
1	DB	913	A
1	DB	1201	A
2	EB	34	C
2	EB	196	A
2	EB	507	A
2	EB	528	A
2	EB	784	A
2	EB	974(A)	G
2	EB	1060	U
2	EB	1210	A
2	EB	1301	A
2	EB	1379	A
2	EB	1608	A
2	EB	1992	G
2	EB	2032	G
2	EB	2422	A
2	EB	2833	G
34	KC	22	A

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	$\#\|Z\| > 2$
2	5MU	EB	1939	2	19,22,23	2.19	4 (21%)	28,32,35	2.57	8 (28%)
2	PSU	EB	2605	2	18,21,22	1.44	2 (11%)	22,30,33	1.54	4 (18%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
1	M2G	DB	966	1	20,27,28	2.48	5 (25%)	22,40,43	1.27	3 (13%)
45	0TD	TA	92	45	7,9,10	1.50	1 (14%)	6,11,13	3.26	3 (50%)
4	5MC	IA	32	4	18,22,23	1.80	3 (16%)	26,32,35	1.23	3 (11%)
2	5MC	B	1942	2	18,22,23	1.50	3 (16%)	26,32,35	1.40	4 (15%)
4	PSU	D	55	4	18,21,22	1.70	2 (11%)	22,30,33	1.38	2 (9%)
4	4SU	IA	8	4	18,21,22	4.63	7 (38%)	26,30,33	5.01	11 (42%)
2	5MU	B	1939	2	19,22,23	2.25	3 (15%)	28,32,35	2.44	8 (28%)
2	OMG	EB	2251	2,4	18,26,27	2.23	5 (27%)	19,38,41	1.41	4 (21%)
4	5MU	LC	54	4	19,22,23	2.20	3 (15%)	28,32,35	1.80	7 (25%)
2	PSU	B	2605	2	18,21,22	1.55	3 (16%)	22,30,33	1.57	4 (18%)
4	4SU	D	8	4	18,21,22	4.68	7 (38%)	26,30,33	5.20	10 (38%)
1	5MC	A	967	1	18,22,23	1.68	3 (16%)	26,32,35	1.33	3 (11%)
4	5MC	D	32	4	18,22,23	1.68	3 (16%)	26,32,35	0.98	2 (7%)
2	5MC	EB	1962	2,56	18,22,23	1.66	4 (22%)	26,32,35	1.26	2 (7%)
4	5MU	GB	54	4	19,22,23	2.05	3 (15%)	28,32,35	2.10	8 (28%)
2	PSU	B	1917	2	18,21,22	1.72	3 (16%)	22,30,33	1.71	5 (22%)
1	5MC	A	1404	1	18,22,23	1.72	3 (16%)	26,32,35	1.22	1 (3%)
2	5MU	B	1915	2	19,22,23	1.93	3 (15%)	28,32,35	2.43	6 (21%)
1	MA6	DB	1519	1	19,26,27	1.47	3 (15%)	18,38,41	1.28	2 (11%)
2	4OC	EB	1920	2	19,22,24	1.06	1 (5%)	26,31,35	0.84	0
1	2MG	DB	1207	1	18,26,27	2.37	3 (16%)	16,38,41	1.29	2 (12%)
4	5MU	D	54	4	19,22,23	2.08	3 (15%)	28,32,35	1.97	8 (28%)
2	PSU	EB	1917	2	18,21,22	1.66	2 (11%)	22,30,33	1.69	5 (22%)
4	PSU	GB	55	4	18,21,22	1.60	3 (16%)	22,30,33	1.47	3 (13%)
4	5MC	LC	32	4	18,22,23	1.78	3 (16%)	26,32,35	1.29	3 (11%)
1	PSU	A	516	1	18,21,22	1.88	3 (16%)	22,30,33	1.38	4 (18%)
1	7MG	A	527	1	22,26,27	3.18	7 (31%)	29,39,42	1.98	8 (27%)
1	UR3	A	1498	1	19,22,23	1.77	2 (10%)	26,32,35	1.34	3 (11%)
2	5MC	B	1962	2	18,22,23	1.64	3 (16%)	26,32,35	1.32	2 (7%)
1	M2G	A	966	1	20,27,28	2.53	5 (25%)	22,40,43	1.35	4 (18%)
1	PSU	DB	516	1	18,21,22	1.77	3 (16%)	22,30,33	1.27	3 (13%)
1	4OC	DB	1402	1	20,23,24	1.08	2 (10%)	26,32,35	1.58	7 (26%)
1	5MC	A	1400	1	18,22,23	1.73	3 (16%)	26,32,35	1.22	3 (11%)
1	2MG	A	1207	1	18,26,27	2.36	3 (16%)	16,38,41	1.24	2 (12%)
1	5MC	DB	1404	1	18,22,23	1.76	3 (16%)	26,32,35	1.29	3 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
45	0TD	WC	92	45	7,9,10	1.70	1 (14%)	6,11,13	3.08	3 (50%)
2	2MA	EB	2503	2	17,25,26	1.36	2 (11%)	17,37,40	1.06	2 (11%)
4	4SU	LC	8	4	18,21,22	4.57	7 (38%)	26,30,33	5.81	11 (42%)
4	PSU	LC	55	4	18,21,22	1.85	3 (16%)	22,30,33	1.59	5 (22%)
2	5MU	EB	1915	2	19,22,23	2.00	3 (15%)	28,32,35	2.28	5 (17%)
1	5MC	DB	967	1	18,22,23	1.74	4 (22%)	26,32,35	1.34	3 (11%)
4	5MU	IA	54	56,4	19,22,23	2.12	3 (15%)	28,32,35	2.18	10 (35%)
2	OMG	B	2251	2,4	18,26,27	2.26	3 (16%)	19,38,41	1.23	2 (10%)
1	MA6	DB	1518	1	19,26,27	1.43	3 (15%)	18,38,41	1.53	2 (11%)
1	MA6	A	1518	1	19,26,27	1.53	3 (15%)	18,38,41	1.41	2 (11%)
1	7MG	DB	527	1	22,26,27	3.14	7 (31%)	29,39,42	2.15	9 (31%)
2	2MA	B	2503	2	17,25,26	1.33	2 (11%)	17,37,40	1.17	2 (11%)
1	5MC	A	1407	1	18,22,23	1.59	3 (16%)	26,32,35	1.24	1 (3%)
1	4OC	A	1402	1	20,23,24	1.11	2 (10%)	26,32,35	1.31	5 (19%)
2	2MU	EB	2552	2,56	19,22,24	2.56	4 (21%)	26,31,36	2.19	6 (23%)
2	5MC	EB	1942	2	18,22,23	1.59	3 (16%)	26,32,35	1.45	4 (15%)
4	5MC	GB	32	4	18,22,23	1.64	3 (16%)	26,32,35	1.14	3 (11%)
1	5MC	DB	1407	1	18,22,23	1.64	3 (16%)	26,32,35	1.15	2 (7%)
2	4OC	B	1920	2	19,22,24	1.16	1 (5%)	26,31,35	0.85	0
4	PSU	IA	55	4	18,21,22	1.85	2 (11%)	22,30,33	1.74	4 (18%)
2	PSU	EB	1911	2	18,21,22	1.53	2 (11%)	22,30,33	1.93	6 (27%)
1	5MC	DB	1400	1	18,22,23	1.66	3 (16%)	26,32,35	1.27	4 (15%)
4	4SU	GB	8	4	18,21,22	4.51	7 (38%)	26,30,33	6.01	9 (34%)
1	MA6	A	1519	1	19,26,27	1.58	3 (15%)	18,38,41	1.28	2 (11%)
1	UR3	DB	1498	1	19,22,23	1.90	1 (5%)	26,32,35	1.26	3 (11%)
2	2MU	B	2552	2	19,22,24	2.71	4 (21%)	26,31,36	2.14	7 (26%)
2	PSU	B	1911	2	18,21,22	1.47	2 (11%)	22,30,33	1.59	4 (18%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	5MU	EB	1939	2	-	0/7/25/26	0/2/2/2
2	PSU	EB	2605	2	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	M2G	DB	966	1	-	0/7/29/30	0/3/3/3
45	0TD	TA	92	45	-	4/7/12/14	-
4	5MC	IA	32	4	-	0/7/25/26	0/2/2/2
2	5MC	B	1942	2	-	0/7/25/26	0/2/2/2
4	PSU	D	55	4	-	0/7/25/26	0/2/2/2
4	4SU	IA	8	4	-	0/7/25/26	0/2/2/2
2	5MU	B	1939	2	-	0/7/25/26	0/2/2/2
2	OMG	EB	2251	2,4	-	1/5/27/28	0/3/3/3
4	5MU	LC	54	4	-	0/7/25/26	0/2/2/2
2	PSU	B	2605	2	-	0/7/25/26	0/2/2/2
4	4SU	D	8	4	-	2/7/25/26	0/2/2/2
1	5MC	A	967	1	-	0/7/25/26	0/2/2/2
4	5MC	D	32	4	-	0/7/25/26	0/2/2/2
2	5MC	EB	1962	2,56	-	0/7/25/26	0/2/2/2
4	5MU	GB	54	4	-	0/7/25/26	0/2/2/2
2	PSU	B	1917	2	-	0/7/25/26	0/2/2/2
1	5MC	A	1404	1	-	0/7/25/26	0/2/2/2
2	5MU	B	1915	2	-	0/7/25/26	0/2/2/2
1	MA6	DB	1519	1	-	3/7/29/30	0/3/3/3
2	4OC	EB	1920	2	-	3/9/27/30	0/2/2/2
1	2MG	DB	1207	1	-	0/5/27/28	0/3/3/3
4	5MU	D	54	4	-	0/7/25/26	0/2/2/2
2	PSU	EB	1917	2	-	0/7/25/26	0/2/2/2
4	PSU	GB	55	4	-	0/7/25/26	0/2/2/2
4	5MC	LC	32	4	-	0/7/25/26	0/2/2/2
1	PSU	A	516	1	-	0/7/25/26	0/2/2/2
1	7MG	A	527	1	-	2/7/37/38	0/3/3/3
1	UR3	A	1498	1	-	0/7/25/26	0/2/2/2
2	5MC	B	1962	2	-	0/7/25/26	0/2/2/2
1	M2G	A	966	1	-	0/7/29/30	0/3/3/3
1	PSU	DB	516	1	-	0/7/25/26	0/2/2/2
1	4OC	DB	1402	1	-	2/9/29/30	0/2/2/2
1	5MC	A	1400	1	-	2/7/25/26	0/2/2/2
1	2MG	A	1207	1	-	0/5/27/28	0/3/3/3
1	5MC	DB	1404	1	-	0/7/25/26	0/2/2/2
45	0TD	WC	92	45	-	5/7/12/14	-
2	2MA	EB	2503	2	-	2/3/25/26	0/3/3/3
4	4SU	LC	8	4	-	0/7/25/26	0/2/2/2
4	PSU	LC	55	4	-	0/7/25/26	0/2/2/2
2	5MU	EB	1915	2	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	5MC	DB	967	1	-	0/7/25/26	0/2/2/2
4	5MU	IA	54	56,4	-	0/7/25/26	0/2/2/2
2	OMG	B	2251	2,4	-	1/5/27/28	0/3/3/3
1	MA6	DB	1518	1	-	2/7/29/30	0/3/3/3
1	MA6	A	1518	1	-	2/7/29/30	0/3/3/3
1	7MG	DB	527	1	-	2/7/37/38	0/3/3/3
2	2MA	B	2503	2	-	2/3/25/26	0/3/3/3
1	5MC	A	1407	1	-	0/7/25/26	0/2/2/2
1	4OC	A	1402	1	-	2/9/29/30	0/2/2/2
2	2MU	EB	2552	2,56	-	0/9/27/28	0/2/2/2
2	5MC	EB	1942	2	-	0/7/25/26	0/2/2/2
4	5MC	GB	32	4	-	0/7/25/26	0/2/2/2
1	5MC	DB	1407	1	-	0/7/25/26	0/2/2/2
2	4OC	B	1920	2	-	4/9/27/30	0/2/2/2
4	PSU	IA	55	4	-	0/7/25/26	0/2/2/2
2	PSU	EB	1911	2	-	0/7/25/26	0/2/2/2
1	5MC	DB	1400	1	-	2/7/25/26	0/2/2/2
4	4SU	GB	8	4	-	2/7/25/26	0/2/2/2
1	MA6	A	1519	1	-	3/7/29/30	0/3/3/3
1	UR3	DB	1498	1	-	0/7/25/26	0/2/2/2
2	2MU	B	2552	2	-	0/9/27/28	0/2/2/2
2	PSU	B	1911	2	-	0/7/25/26	0/2/2/2

All (206) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	8	4SU	C4-N3	12.43	1.50	1.37
4	LC	8	4SU	C4-N3	12.16	1.50	1.37
4	IA	8	4SU	C4-N3	11.78	1.50	1.37
4	GB	8	4SU	C4-N3	11.67	1.50	1.37
4	IA	8	4SU	O2-C2	11.58	1.44	1.23
4	D	8	4SU	O2-C2	11.37	1.43	1.23
4	GB	8	4SU	O2-C2	10.92	1.43	1.23
4	LC	8	4SU	O2-C2	10.89	1.42	1.23
1	A	527	7MG	O6-C6	9.88	1.42	1.23
1	DB	527	7MG	O6-C6	9.44	1.41	1.23
2	B	2552	2MU	O4-C4	8.52	1.41	1.24
1	A	1207	2MG	O6-C6	8.50	1.40	1.23
2	EB	2552	2MU	O4-C4	8.50	1.41	1.24
1	DB	1207	2MG	O6-C6	8.38	1.40	1.23

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	DB	966	M2G	O6-C6	8.29	1.40	1.23
1	A	966	M2G	O6-C6	8.24	1.40	1.23
1	DB	527	7MG	C5-N7	8.22	1.45	1.35
1	A	527	7MG	C5-N7	7.81	1.44	1.35
1	DB	1498	UR3	O4-C4	7.64	1.40	1.23
2	B	2251	OMG	O6-C6	7.63	1.38	1.23
2	EB	2251	OMG	O6-C6	7.18	1.37	1.23
4	LC	54	5MU	O4-C4	7.07	1.37	1.23
1	A	1498	UR3	O4-C4	6.64	1.37	1.23
4	IA	54	5MU	O4-C4	6.45	1.35	1.23
2	EB	1939	5MU	O4-C4	6.39	1.35	1.23
2	B	1939	5MU	O4-C4	6.39	1.35	1.23
4	D	54	5MU	O4-C4	6.28	1.35	1.23
4	D	8	4SU	C6-C5	6.18	1.49	1.35
4	GB	8	4SU	C6-C5	6.16	1.49	1.35
4	GB	54	5MU	O4-C4	6.11	1.35	1.23
2	EB	1915	5MU	O4-C4	6.02	1.35	1.23
4	D	8	4SU	C4-S4	5.89	1.79	1.68
4	IA	55	PSU	C6-C5	5.84	1.42	1.35
4	IA	8	4SU	C2-N1	5.83	1.47	1.38
4	IA	8	4SU	C6-C5	5.83	1.48	1.35
4	LC	8	4SU	C6-C5	5.83	1.48	1.35
4	LC	8	4SU	C2-N1	5.82	1.47	1.38
4	GB	8	4SU	C4-S4	5.69	1.79	1.68
2	B	1915	5MU	O4-C4	5.58	1.34	1.23
2	B	1939	5MU	C4-C5	-5.55	1.35	1.44
4	LC	55	PSU	C6-C5	5.50	1.41	1.35
4	LC	8	4SU	C4-S4	5.48	1.78	1.68
4	IA	8	4SU	C4-S4	5.46	1.78	1.68
4	IA	54	5MU	C4-C5	-5.44	1.35	1.44
2	B	2552	2MU	C3'-C2'	-5.40	1.40	1.52
1	A	516	PSU	C6-C5	5.37	1.41	1.35
4	D	54	5MU	C4-C5	-5.35	1.35	1.44
4	GB	54	5MU	C4-C5	-5.34	1.35	1.44
2	B	1917	PSU	C6-C5	5.25	1.41	1.35
4	D	55	PSU	C6-C5	5.25	1.41	1.35
2	EB	1939	5MU	C4-C5	-5.17	1.36	1.44
4	LC	54	5MU	C4-C5	-5.17	1.36	1.44
4	GB	8	4SU	C2-N1	5.15	1.46	1.38
2	EB	1917	PSU	C6-C5	5.12	1.41	1.35
4	GB	55	PSU	C6-C5	5.06	1.41	1.35
2	EB	1915	5MU	C4-C5	-5.01	1.36	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	EB	1911	PSU	C6-C5	4.87	1.41	1.35
1	A	966	M2G	C2-N3	4.85	1.36	1.30
4	D	8	4SU	C2-N1	4.84	1.46	1.38
4	IA	32	5MC	C6-C5	4.84	1.42	1.34
1	DB	516	PSU	C6-C5	4.83	1.40	1.35
4	LC	32	5MC	C6-C5	4.75	1.42	1.34
2	B	1915	5MU	C4-C5	-4.73	1.36	1.44
1	A	966	M2G	C2-N2	4.70	1.44	1.35
2	EB	2552	2MU	C3'-C2'	-4.64	1.42	1.52
1	DB	966	M2G	C2-N2	4.61	1.44	1.35
1	A	527	7MG	C8-N9	-4.57	1.43	1.46
2	B	1911	PSU	C6-C5	4.48	1.40	1.35
1	A	1400	5MC	C6-C5	4.43	1.41	1.34
2	EB	2605	PSU	C6-C5	4.43	1.40	1.35
1	DB	967	5MC	C4-N4	4.35	1.45	1.34
4	LC	32	5MC	C4-N4	4.35	1.45	1.34
1	A	1519	MA6	C4-N3	4.34	1.41	1.35
1	DB	966	M2G	C2-N3	4.18	1.35	1.30
4	IA	32	5MC	C4-N4	4.16	1.44	1.34
1	A	967	5MC	C4-N4	4.14	1.44	1.34
4	D	32	5MC	C6-C5	4.13	1.41	1.34
2	B	1962	5MC	C4-N4	4.13	1.44	1.34
1	A	1518	MA6	C4-N3	4.08	1.41	1.35
1	A	1404	5MC	C6-C5	4.08	1.41	1.34
2	B	1962	5MC	C6-N1	-4.07	1.31	1.38
1	DB	1404	5MC	C4-N4	4.07	1.44	1.34
2	B	2503	2MA	C8-N7	4.06	1.41	1.35
1	DB	1400	5MC	C6-C5	4.05	1.41	1.34
1	DB	1400	5MC	C4-N4	4.05	1.44	1.34
2	B	2605	PSU	C6-C5	4.02	1.40	1.35
4	D	32	5MC	C4-N4	4.02	1.44	1.34
1	A	1400	5MC	C4-N4	4.00	1.44	1.34
2	EB	1962	5MC	C4-N4	4.00	1.44	1.34
4	GB	32	5MC	C4-N4	3.99	1.44	1.34
4	GB	32	5MC	C6-C5	3.98	1.41	1.34
2	EB	2503	2MA	C8-N7	3.92	1.41	1.35
1	DB	527	7MG	C4-N9	3.92	1.42	1.37
1	DB	1518	MA6	C4-N3	3.90	1.41	1.35
1	DB	1407	5MC	C6-N1	-3.88	1.31	1.38
1	DB	1404	5MC	C6-N1	-3.87	1.31	1.38
1	DB	1404	5MC	C6-C5	3.86	1.40	1.34
1	DB	1407	5MC	C4-N4	3.79	1.43	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1407	5MC	C4-N4	3.75	1.43	1.34
1	A	1407	5MC	C6-N1	-3.74	1.31	1.38
2	EB	2251	OMG	C2-N2	3.74	1.43	1.34
1	A	1404	5MC	C4-N4	3.73	1.43	1.34
2	EB	1942	5MC	C4-N4	3.72	1.43	1.34
1	DB	1519	MA6	C4-N3	3.70	1.40	1.35
1	A	967	5MC	C6-N1	-3.70	1.31	1.38
1	DB	1518	MA6	C6-N1	3.70	1.38	1.33
2	B	1920	4OC	C4-N4	3.68	1.42	1.33
1	DB	967	5MC	C6-C5	3.67	1.40	1.34
1	A	527	7MG	C4-N9	3.67	1.42	1.37
1	A	1518	MA6	C6-N1	3.67	1.38	1.33
1	A	1207	2MG	C2-N2	3.65	1.41	1.33
2	EB	1942	5MC	C6-N1	-3.58	1.31	1.38
1	A	1519	MA6	C6-N1	3.58	1.38	1.33
2	EB	1962	5MC	C6-N1	-3.57	1.31	1.38
1	DB	527	7MG	C8-N9	-3.56	1.44	1.46
1	A	516	PSU	C6-N1	3.53	1.42	1.36
1	DB	967	5MC	C6-N1	-3.52	1.32	1.38
1	A	1407	5MC	C6-C5	3.50	1.40	1.34
1	DB	1207	2MG	C2-N2	3.49	1.41	1.33
2	B	1942	5MC	C6-N1	-3.48	1.32	1.38
1	A	967	5MC	C6-C5	3.47	1.40	1.34
1	DB	1407	5MC	C6-C5	3.47	1.40	1.34
2	EB	1962	5MC	C6-C5	3.46	1.40	1.34
2	B	2605	PSU	C6-N1	3.43	1.41	1.36
1	DB	1519	MA6	C6-N1	3.40	1.38	1.33
45	WC	92	0TD	CB-SB	-3.40	1.78	1.82
4	LC	55	PSU	C6-N1	3.39	1.41	1.36
2	B	1942	5MC	C4-N4	3.38	1.42	1.34
1	DB	516	PSU	C6-N1	3.38	1.41	1.36
2	B	2251	OMG	C2-N2	3.35	1.42	1.34
2	EB	1920	4OC	C4-N4	3.34	1.41	1.33
1	A	527	7MG	C2-N2	3.30	1.42	1.34
1	DB	527	7MG	C2-N2	3.26	1.42	1.34
2	B	1939	5MU	C6-C5	3.26	1.39	1.34
2	EB	1942	5MC	C6-C5	3.23	1.39	1.34
4	GB	32	5MC	C6-N1	-3.22	1.32	1.38
2	B	1942	5MC	C6-C5	3.21	1.39	1.34
1	DB	527	7MG	C6-N1	-3.19	1.32	1.38
1	A	1402	4OC	C4-N4	3.17	1.42	1.35
4	IA	55	PSU	C6-N1	3.16	1.41	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	55	PSU	C6-N1	3.15	1.41	1.36
1	A	1519	MA6	C2-N1	3.07	1.39	1.33
1	DB	1519	MA6	C2-N1	3.07	1.39	1.33
4	IA	8	4SU	C5-C4	3.02	1.46	1.42
4	LC	54	5MU	C6-C5	3.02	1.39	1.34
1	DB	1400	5MC	C6-N1	-3.01	1.32	1.38
4	D	32	5MC	C6-N1	-2.99	1.32	1.38
1	DB	1402	4OC	C4-N4	2.99	1.42	1.35
1	A	1404	5MC	C6-N1	-2.98	1.33	1.38
1	A	527	7MG	C6-N1	-2.93	1.33	1.38
2	EB	1939	5MU	C6-C5	2.91	1.39	1.34
2	EB	2503	2MA	C6-N6	2.89	1.40	1.28
4	GB	55	PSU	C6-N1	2.87	1.41	1.36
2	B	1962	5MC	C6-C5	2.86	1.39	1.34
4	GB	54	5MU	C6-C5	2.83	1.39	1.34
4	IA	54	5MU	C6-C5	2.83	1.39	1.34
2	B	1917	PSU	C6-N1	2.82	1.40	1.36
2	EB	2251	OMG	C6-N1	-2.81	1.33	1.37
1	A	1400	5MC	C6-N1	-2.80	1.33	1.38
2	EB	1917	PSU	C6-N1	2.78	1.40	1.36
1	A	1402	4OC	C4-N3	2.73	1.37	1.32
4	D	8	4SU	C5-C4	2.72	1.46	1.42
2	B	2503	2MA	C6-N6	2.72	1.39	1.28
1	A	516	PSU	C1'-C5	2.71	1.56	1.50
45	TA	92	0TD	CB-SB	-2.70	1.79	1.82
1	DB	1402	4OC	C4-N3	2.70	1.37	1.32
1	DB	516	PSU	C1'-C5	2.69	1.56	1.50
2	EB	2605	PSU	C6-N1	2.69	1.40	1.36
4	D	54	5MU	C6-C5	2.69	1.39	1.34
2	B	2552	2MU	C3'-C4'	-2.67	1.46	1.53
1	DB	1207	2MG	C5-C6	-2.67	1.42	1.47
2	EB	1911	PSU	C6-N1	2.67	1.40	1.36
1	A	1518	MA6	C2-N1	2.67	1.38	1.33
1	DB	527	7MG	C2-N3	2.64	1.39	1.33
2	B	1915	5MU	C6-C5	2.62	1.38	1.34
4	LC	32	5MC	C6-N1	-2.62	1.33	1.38
2	EB	1915	5MU	C6-C5	2.59	1.38	1.34
2	B	1911	PSU	C6-N1	2.57	1.40	1.36
2	B	2552	2MU	O3'-C3'	-2.56	1.37	1.43
2	B	2251	OMG	C6-N1	-2.56	1.34	1.37
2	B	2605	PSU	O4'-C1'	-2.56	1.40	1.43
1	A	527	7MG	C2-N3	2.56	1.39	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	EB	2552	2MU	C3'-C4'	-2.54	1.46	1.53
4	GB	8	4SU	C2-N3	-2.52	1.33	1.38
1	A	1207	2MG	C5-C6	-2.47	1.42	1.47
4	IA	32	5MC	C6-N1	-2.43	1.33	1.38
4	LC	8	4SU	C2-N3	-2.37	1.33	1.38
4	GB	55	PSU	C1'-C5	2.35	1.55	1.50
4	D	8	4SU	C2-N3	-2.31	1.33	1.38
4	GB	8	4SU	C5-C4	2.31	1.45	1.42
1	DB	967	5MC	C4-N3	2.27	1.38	1.34
1	DB	966	M2G	C6-N1	-2.26	1.34	1.37
4	LC	55	PSU	C2-N1	2.25	1.39	1.36
1	DB	1518	MA6	C2-N1	2.20	1.38	1.33
4	IA	8	4SU	C2-N3	-2.18	1.34	1.38
1	DB	966	M2G	C5-C4	-2.17	1.37	1.43
2	EB	1962	5MC	C4-N3	2.17	1.37	1.34
1	A	966	M2G	C5-C4	-2.16	1.37	1.43
2	EB	2552	2MU	O3'-C3'	-2.10	1.38	1.43
2	EB	2251	OMG	C5-C6	-2.09	1.43	1.47
2	EB	1939	5MU	C2-N1	-2.09	1.35	1.38
2	EB	2251	OMG	C5-C4	-2.09	1.37	1.43
1	A	966	M2G	C6-N1	-2.08	1.34	1.37
2	B	1917	PSU	O4'-C1'	-2.07	1.41	1.43
1	A	1498	UR3	C4-N3	-2.05	1.36	1.40
4	LC	8	4SU	C5-C4	2.02	1.45	1.42

All (276) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	GB	8	4SU	C4-N3-C2	-19.62	108.28	127.34
4	LC	8	4SU	C4-N3-C2	-16.78	111.03	127.34
4	LC	8	4SU	C1'-N1-C2	13.81	142.57	117.57
4	GB	8	4SU	C1'-N1-C2	11.30	138.02	117.57
4	IA	8	4SU	S4-C4-N3	-11.22	109.15	120.21
4	D	8	4SU	C1'-N1-C2	11.18	137.82	117.57
4	IA	8	4SU	C1'-N1-C2	10.97	137.42	117.57
4	D	8	4SU	O2-C2-N1	-10.80	108.44	122.79
4	GB	8	4SU	O2-C2-N1	-10.76	108.49	122.79
4	IA	8	4SU	C4-N3-C2	-10.39	117.25	127.34
4	IA	8	4SU	C1'-N1-C6	-10.27	98.45	120.84
4	LC	8	4SU	C6-C5-C4	-10.22	111.10	119.95
4	GB	8	4SU	C1'-N1-C6	-10.12	98.77	120.84
4	LC	8	4SU	C1'-N1-C6	-10.07	98.89	120.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	8	4SU	C1'-N1-C6	-9.96	99.12	120.84
4	D	8	4SU	C4-N3-C2	-9.01	118.58	127.34
4	LC	8	4SU	C5-C4-S4	-8.82	113.10	124.47
4	D	8	4SU	S4-C4-N3	-8.63	111.70	120.21
4	IA	8	4SU	C5-C4-S4	-8.14	113.98	124.47
2	B	1915	5MU	C5-C4-N3	7.84	122.01	115.31
4	D	8	4SU	C6-C5-C4	-7.84	113.16	119.95
4	D	8	4SU	O2-C2-N3	-7.81	106.95	121.50
4	GB	8	4SU	C6-C5-C4	-7.37	113.57	119.95
4	GB	8	4SU	C5-C4-S4	-7.21	115.17	124.47
4	GB	8	4SU	O2-C2-N3	-7.00	108.46	121.50
4	D	8	4SU	C5-C4-S4	-6.88	115.61	124.47
45	TA	92	0TD	CSB-SB-CB	6.87	114.87	102.44
2	EB	1915	5MU	C5-C4-N3	6.74	121.06	115.31
2	EB	1939	5MU	N3-C2-N1	6.56	123.60	114.89
2	B	1939	5MU	N3-C2-N1	6.32	123.28	114.89
45	WC	92	0TD	CSB-SB-CB	6.29	113.82	102.44
2	B	1915	5MU	C4-N3-C2	-5.97	119.62	127.35
4	GB	8	4SU	S4-C4-N3	-5.86	114.44	120.21
2	EB	1939	5MU	C4-N3-C2	-5.68	120.00	127.35
1	DB	527	7MG	C5-C6-N1	5.59	120.83	110.99
4	LC	8	4SU	S4-C4-N3	-5.57	114.72	120.21
2	EB	1915	5MU	C4-N3-C2	-5.50	120.23	127.35
4	IA	8	4SU	C5-C4-N3	5.50	119.79	114.69
2	EB	2552	2MU	C4-N3-C2	-5.46	119.37	126.58
2	B	2552	2MU	N3-C2-N1	5.40	122.06	114.89
2	EB	1915	5MU	O4-C4-C5	-5.24	118.82	124.90
2	B	1939	5MU	C4-N3-C2	-5.24	120.57	127.35
2	B	2552	2MU	C4-N3-C2	-5.12	119.82	126.58
4	IA	8	4SU	O2-C2-N3	-5.08	112.04	121.50
4	IA	8	4SU	O2-C2-N1	-5.07	116.05	122.79
2	EB	1911	PSU	C4-N3-C2	-5.05	119.06	126.34
1	DB	1518	MA6	N3-C2-N1	-5.04	120.80	128.68
2	EB	2552	2MU	O2-C2-N1	-5.03	116.10	122.79
4	GB	54	5MU	C4-N3-C2	-5.03	120.84	127.35
4	GB	54	5MU	C5-C4-N3	5.03	119.60	115.31
2	EB	2552	2MU	N3-C2-N1	5.01	121.54	114.89
2	EB	1939	5MU	C6-C5-C4	4.92	122.15	118.03
4	LC	8	4SU	C5-C6-N1	-4.90	113.61	121.81
4	IA	54	5MU	N3-C2-N1	4.82	121.29	114.89
1	A	527	7MG	C5-C6-N1	4.76	119.38	110.99
4	IA	8	4SU	N3-C2-N1	4.72	121.15	114.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	54	5MU	C4-N3-C2	-4.71	121.25	127.35
1	DB	527	7MG	C2-N3-C4	4.67	120.62	112.30
4	IA	54	5MU	C4-N3-C2	-4.67	121.31	127.35
2	EB	1911	PSU	N1-C2-N3	4.65	120.40	115.13
4	D	8	4SU	C5-C6-N1	-4.62	114.06	121.81
4	D	54	5MU	C5-C4-N3	4.60	119.24	115.31
1	A	1498	UR3	C4-N3-C2	-4.59	120.25	124.56
1	A	967	5MC	C5-C6-N1	-4.50	118.71	123.34
4	LC	8	4SU	N3-C2-N1	4.50	120.86	114.89
1	DB	1498	UR3	C4-N3-C2	-4.50	120.33	124.56
1	DB	967	5MC	C5-C6-N1	-4.46	118.75	123.34
2	EB	1942	5MC	C5-C6-N1	-4.46	118.75	123.34
2	B	2605	PSU	C4-N3-C2	-4.46	119.92	126.34
1	A	1518	MA6	N3-C2-N1	-4.43	121.75	128.68
1	A	527	7MG	C2-N3-C4	4.42	120.18	112.30
2	B	1939	5MU	C6-C5-C4	4.42	121.72	118.03
2	B	2552	2MU	O2-C2-N1	-4.36	116.99	122.79
2	EB	1939	5MU	C5-C6-N1	-4.31	118.91	123.34
4	GB	54	5MU	N3-C2-N1	4.30	120.60	114.89
1	A	1407	5MC	C5-C6-N1	-4.28	118.93	123.34
1	A	1404	5MC	C5-C6-N1	-4.28	118.94	123.34
4	IA	55	PSU	N1-C2-N3	4.27	119.97	115.13
2	B	1962	5MC	C5-C6-N1	-4.24	118.98	123.34
2	EB	1962	5MC	C5-C6-N1	-4.22	118.99	123.34
1	DB	1404	5MC	C5-C6-N1	-4.20	119.02	123.34
2	EB	2605	PSU	C4-N3-C2	-4.12	120.41	126.34
2	B	1915	5MU	N3-C2-N1	4.11	120.34	114.89
4	LC	8	4SU	O2-C2-N1	-4.10	117.34	122.79
2	B	1915	5MU	O4-C4-C5	-4.07	120.18	124.90
2	EB	1917	PSU	C4-N3-C2	-4.07	120.47	126.34
2	B	1942	5MC	C5-C6-N1	-4.07	119.15	123.34
2	B	1917	PSU	N1-C2-N3	4.02	119.68	115.13
2	EB	1917	PSU	N1-C2-N3	4.00	119.66	115.13
4	LC	54	5MU	C4-N3-C2	-3.99	122.19	127.35
4	IA	55	PSU	C4-N3-C2	-3.99	120.60	126.34
4	LC	8	4SU	O2-C2-N3	-3.96	114.12	121.50
2	B	1939	5MU	C6-N1-C2	-3.95	117.30	121.30
4	D	54	5MU	N3-C2-N1	3.92	120.09	114.89
1	DB	527	7MG	N9-C4-N3	3.92	131.33	125.47
4	IA	54	5MU	C6-N1-C2	-3.91	117.34	121.30
4	LC	55	PSU	C4-N3-C2	-3.91	120.71	126.34
1	DB	527	7MG	C5-C4-N3	-3.90	120.69	128.13

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1917	PSU	C4-N3-C2	-3.88	120.74	126.34
1	A	1519	MA6	N3-C2-N1	-3.88	122.62	128.68
2	B	1911	PSU	C4-N3-C2	-3.87	120.76	126.34
1	DB	1400	5MC	C5-C6-N1	-3.87	119.36	123.34
2	B	1939	5MU	C5-C6-N1	-3.84	119.39	123.34
2	EB	1939	5MU	O2-C2-N1	-3.79	117.75	122.79
4	IA	54	5MU	O4-C4-C5	-3.79	120.51	124.90
4	GB	55	PSU	C4-N3-C2	-3.78	120.90	126.34
4	GB	54	5MU	O4-C4-C5	-3.77	120.53	124.90
4	LC	54	5MU	N3-C2-N1	3.74	119.85	114.89
4	GB	32	5MC	C5-C6-N1	-3.73	119.50	123.34
4	LC	32	5MC	C5-C6-N1	-3.71	119.53	123.34
4	IA	32	5MC	C5-C6-N1	-3.70	119.53	123.34
1	A	527	7MG	N9-C4-N3	3.70	131.00	125.47
1	DB	1407	5MC	C5-C6-N1	-3.69	119.54	123.34
4	IA	54	5MU	C6-C5-C4	3.68	121.11	118.03
1	A	527	7MG	C5-C4-N3	-3.64	121.19	128.13
2	B	1911	PSU	N1-C2-N3	3.62	119.23	115.13
2	EB	1939	5MU	C6-N1-C2	-3.60	117.65	121.30
1	DB	1519	MA6	N3-C2-N1	-3.55	123.13	128.68
1	DB	527	7MG	O6-C6-C5	-3.55	118.83	127.54
4	IA	54	5MU	C5-C4-N3	3.55	118.34	115.31
2	EB	1915	5MU	N3-C2-N1	3.54	119.58	114.89
2	B	1939	5MU	O2-C2-N1	-3.53	118.09	122.79
4	D	54	5MU	O4-C4-C5	-3.53	120.81	124.90
4	D	55	PSU	C4-N3-C2	-3.50	121.29	126.34
4	GB	55	PSU	N1-C2-N3	3.48	119.08	115.13
4	LC	54	5MU	O4-C4-C5	-3.44	120.91	124.90
2	B	2503	2MA	C5-C6-N1	3.44	119.96	114.02
2	EB	2552	2MU	O4-C4-C5	-3.44	119.11	125.16
2	EB	1915	5MU	C5-C6-N1	-3.40	119.84	123.34
2	EB	2605	PSU	N1-C2-N3	3.35	118.93	115.13
2	EB	1939	5MU	C5M-C5-C6	-3.30	118.44	122.85
4	LC	54	5MU	C6-C5-C4	3.29	120.78	118.03
4	LC	55	PSU	N1-C2-N3	3.26	118.83	115.13
1	A	516	PSU	C4-N3-C2	-3.26	121.64	126.34
4	D	55	PSU	N1-C2-N3	3.25	118.81	115.13
1	A	1400	5MC	C5-C6-N1	-3.24	120.00	123.34
4	IA	8	4SU	C5-C6-N1	-3.23	116.41	121.81
4	D	32	5MC	C5-C6-N1	-3.22	120.02	123.34
2	EB	2552	2MU	C5-C4-N3	3.18	119.60	114.84
1	A	527	7MG	O6-C6-C5	-3.18	119.73	127.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	GB	8	4SU	C5-C6-N1	-3.17	116.50	121.81
45	TA	92	0TD	OD2-CG-OD1	-3.12	117.00	124.09
1	DB	1402	4OC	CM4-N4-C4	-3.12	116.36	122.45
4	LC	54	5MU	C5-C4-N3	3.11	117.97	115.31
4	D	54	5MU	C5-C6-N1	-3.09	120.16	123.34
1	A	966	M2G	C5-C6-N1	3.04	119.32	113.95
1	DB	1402	4OC	C6-C5-C4	3.03	120.67	116.96
2	B	1917	PSU	O2-C2-N1	-3.02	119.47	122.79
2	B	1915	5MU	C5-C6-N1	-3.01	120.24	123.34
1	A	1402	4OC	CM4-N4-C4	-3.01	116.57	122.45
4	LC	32	5MC	O2-C2-N3	-3.01	117.44	122.33
1	A	966	M2G	C2-N1-C6	-3.00	118.73	123.71
1	DB	966	M2G	C5-C6-N1	2.98	119.21	113.95
1	DB	1207	2MG	C8-N7-C5	2.98	108.66	102.99
45	WC	92	0TD	OD2-CG-OD1	-2.97	117.34	124.09
1	DB	516	PSU	C4-N3-C2	-2.96	122.07	126.34
2	B	2552	2MU	O5'-C5'-C4'	2.95	119.03	108.99
2	EB	2251	OMG	C5-C6-N1	2.95	119.16	113.95
2	B	1962	5MC	CM5-C5-C6	-2.93	118.94	122.85
2	B	2552	2MU	O4-C4-C5	-2.89	120.08	125.16
4	GB	54	5MU	C5-C6-N1	-2.87	120.38	123.34
4	LC	54	5MU	C5-C6-N1	-2.87	120.39	123.34
2	EB	2503	2MA	C8-N7-C5	2.85	108.42	102.99
2	EB	2251	OMG	CM2-O2'-C2'	2.84	121.99	114.52
1	DB	516	PSU	C6-C5-C4	-2.84	116.21	118.20
1	DB	1207	2MG	C5-C6-N1	2.84	118.97	113.95
2	B	1939	5MU	C5-C4-N3	2.82	117.72	115.31
1	A	1207	2MG	C8-N7-C5	2.82	108.35	102.99
1	DB	527	7MG	C6-C5-C4	-2.81	116.82	122.62
1	DB	1402	4OC	C1'-N1-C6	-2.79	114.75	120.84
2	EB	1939	5MU	C5-C4-N3	2.78	117.68	115.31
1	A	1400	5MC	CM5-C5-C6	-2.78	119.14	122.85
1	DB	1402	4OC	C5-C4-N4	-2.77	116.96	122.61
1	A	966	M2G	C8-N7-C5	2.75	108.22	102.99
4	GB	54	5MU	C6-N1-C2	-2.72	118.54	121.30
4	IA	32	5MC	O2-C2-N3	-2.72	117.90	122.33
1	DB	1400	5MC	CM5-C5-C6	-2.72	119.22	122.85
1	A	527	7MG	N2-C2-N1	2.71	122.48	116.71
2	EB	1942	5MC	C1'-N1-C6	-2.70	116.63	121.12
1	DB	966	M2G	C2-N1-C6	-2.68	119.26	123.71
2	B	2605	PSU	N1-C2-N3	2.68	118.16	115.13
2	EB	1911	PSU	O2-C2-N1	-2.67	119.85	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	IA	54	5MU	C1'-N1-C2	2.66	122.39	117.57
1	A	516	PSU	C6-C5-C4	-2.65	116.34	118.20
2	B	2605	PSU	C5-C6-N1	-2.65	118.13	122.11
2	B	1942	5MC	C5-C4-N4	-2.64	117.53	121.48
2	B	2605	PSU	C5-C4-N3	2.64	122.55	116.58
2	EB	2552	2MU	O5'-C5'-C4'	2.64	117.97	108.99
4	IA	54	5MU	C5-C6-N1	-2.64	120.62	123.34
2	B	1939	5MU	C5M-C5-C6	-2.63	119.34	122.85
1	DB	527	7MG	N2-C2-N1	2.62	122.30	116.71
1	A	1400	5MC	O2-C2-N3	-2.61	118.08	122.33
4	IA	54	5MU	C5M-C5-C6	-2.61	119.36	122.85
1	DB	966	M2G	C8-N7-C5	2.61	107.96	102.99
2	EB	1911	PSU	C5-C6-N1	-2.60	118.22	122.11
2	B	2251	OMG	C8-N7-C5	2.59	107.93	102.99
2	B	2552	2MU	C5-C4-N3	2.58	118.69	114.84
2	EB	1942	5MC	C5-C4-N4	-2.58	117.63	121.48
1	DB	967	5MC	C1'-N1-C6	-2.56	116.86	121.12
2	B	2251	OMG	C5-C6-N1	2.56	118.47	113.95
1	A	527	7MG	C6-C5-C4	-2.55	117.36	122.62
2	B	2503	2MA	C8-N7-C5	2.54	107.84	102.99
1	DB	1404	5MC	CM5-C5-C6	-2.54	119.46	122.85
2	B	1917	PSU	C6-C5-C4	2.53	119.96	118.20
1	DB	967	5MC	CM5-C5-C6	-2.52	119.48	122.85
1	DB	1519	MA6	C4-C5-N7	-2.52	106.78	109.40
2	EB	2503	2MA	C5-C6-N1	2.52	118.36	114.02
1	DB	527	7MG	C2-N1-C6	-2.49	120.55	125.10
2	EB	1917	PSU	C6-C5-C4	2.49	119.94	118.20
1	A	1207	2MG	C5-C6-N1	2.47	118.32	113.95
4	LC	32	5MC	C5-C4-N3	-2.47	119.01	121.67
1	A	1402	4OC	C6-C5-C4	2.46	119.97	116.96
4	D	54	5MU	C6-C5-C4	2.45	120.08	118.03
4	LC	54	5MU	C6-N1-C2	-2.44	118.83	121.30
1	DB	1404	5MC	C5-C4-N3	-2.43	119.05	121.67
2	EB	1962	5MC	CM5-C5-C6	-2.43	119.61	122.85
2	EB	2251	OMG	C8-N7-C5	2.42	107.60	102.99
4	LC	55	PSU	C5-C6-N1	-2.41	118.49	122.11
4	D	8	4SU	C5-C4-N3	2.41	116.93	114.69
1	A	1402	4OC	C5-C4-N4	-2.40	117.72	122.61
1	A	967	5MC	C1'-N1-C6	-2.39	117.14	121.12
4	GB	54	5MU	C6-C5-C4	2.39	120.03	118.03
4	IA	8	4SU	C6-N1-C2	2.38	124.04	120.99
1	DB	1402	4OC	C1'-N1-C2	2.38	123.73	118.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	DB	1402	4OC	CM2-O2'-C2'	2.37	120.73	114.52
2	B	1942	5MC	O2-C2-N3	-2.37	118.48	122.33
45	WC	92	0TD	OD2-CG-CB	2.35	118.24	113.15
1	A	967	5MC	CM5-C5-C6	-2.35	119.71	122.85
2	EB	1917	PSU	O2-C2-N1	-2.35	120.21	122.79
4	IA	32	5MC	C5-C4-N3	-2.34	119.15	121.67
1	DB	1400	5MC	O2-C2-N3	-2.33	118.53	122.33
1	A	1519	MA6	C4-C5-N7	-2.32	106.98	109.40
2	B	1915	5MU	C5M-C5-C4	2.32	121.32	118.77
2	EB	2605	PSU	C5-C4-N3	2.31	121.80	116.58
4	D	54	5MU	C5M-C5-C6	-2.30	119.78	122.85
4	LC	8	4SU	C6-N1-C2	-2.29	118.06	120.99
4	IA	55	PSU	C6-C5-C4	2.29	119.80	118.20
1	A	1518	MA6	C4-C5-N7	-2.29	107.02	109.40
1	A	516	PSU	C5-C4-N3	2.28	121.74	116.58
45	TA	92	0TD	OD2-CG-CB	2.28	118.08	113.15
1	DB	1498	UR3	C3U-N3-C2	2.28	121.31	117.31
2	B	2552	2MU	C6-N1-C2	-2.27	118.09	120.99
2	B	1942	5MC	C1'-N1-C6	-2.27	117.35	121.12
1	DB	1400	5MC	C5-C4-N3	-2.27	119.23	121.67
1	DB	516	PSU	C5-C4-N3	2.26	121.69	116.58
4	IA	54	5MU	O2-C2-N3	-2.25	117.31	121.50
1	DB	527	7MG	C6-C5-N7	2.24	135.44	131.91
1	DB	1498	UR3	O2-C2-N1	-2.22	117.52	122.72
4	GB	54	5MU	C5M-C5-C6	-2.22	119.89	122.85
2	EB	2251	OMG	C2-N1-C6	-2.21	121.02	125.10
2	B	1911	PSU	C6-C5-C4	2.21	119.74	118.20
4	GB	55	PSU	O2-C2-N1	-2.21	120.36	122.79
1	A	1498	UR3	C6-N1-C2	-2.21	119.81	121.79
2	EB	1917	PSU	C5-C6-N1	-2.19	118.82	122.11
2	EB	1911	PSU	C5-C4-N3	2.18	121.51	116.58
2	EB	2605	PSU	O4-C4-C5	-2.18	118.35	124.05
4	IA	55	PSU	C5-C6-N1	-2.17	118.86	122.11
4	GB	32	5MC	C5-C4-N3	-2.16	119.34	121.67
1	A	1402	4OC	C1'-N1-C2	2.16	123.23	118.42
4	LC	55	PSU	C6-C5-C4	2.14	119.69	118.20
2	B	1911	PSU	C5-C6-N1	-2.13	118.91	122.11
2	B	1917	PSU	C5-C6-N1	-2.13	118.91	122.11
1	DB	1402	4OC	O2-C2-N3	-2.13	118.86	122.33
1	A	516	PSU	O2-C2-N1	-2.13	120.45	122.79
1	DB	1518	MA6	N1-C6-N6	2.12	119.28	117.06
1	A	1402	4OC	C1'-N1-C6	-2.10	116.26	120.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	D	54	5MU	C6-N1-C2	-2.10	119.17	121.30
4	LC	55	PSU	O4-C4-C5	-2.07	118.65	124.05
4	GB	32	5MC	CM5-C5-C6	-2.06	120.10	122.85
1	A	1498	UR3	O2-C2-N1	-2.06	117.90	122.72
1	A	966	M2G	CM2-N2-CM1	2.06	122.14	115.77
2	EB	1942	5MC	O2-C2-N3	-2.05	118.99	122.33
4	D	32	5MC	C5-C4-N3	-2.05	119.46	121.67
1	DB	1407	5MC	C5-C4-N4	-2.02	118.45	121.48
1	A	527	7MG	C6-C5-N7	2.02	135.09	131.91
2	EB	1911	PSU	O4-C4-C5	-2.01	118.79	124.05

There are no chirality outliers.

All (48) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	1518	MA6	C5-C6-N6-C9
1	A	1519	MA6	O4'-C4'-C5'-O5'
1	A	1519	MA6	C3'-C4'-C5'-O5'
2	B	1920	4OC	C1'-C2'-O2'-CM2
2	B	2251	OMG	C1'-C2'-O2'-CM2
45	TA	92	0TD	CA-CB-SB-CSB
45	TA	92	0TD	SB-CB-CG-OD2
1	DB	1519	MA6	O4'-C4'-C5'-O5'
1	DB	1519	MA6	C3'-C4'-C5'-O5'
2	EB	1920	4OC	C1'-C2'-O2'-CM2
2	EB	2251	OMG	C1'-C2'-O2'-CM2
45	WC	92	0TD	O-C-CA-CB
45	WC	92	0TD	SB-CB-CG-OD2
1	A	1402	4OC	O4'-C4'-C5'-O5'
2	B	1920	4OC	O4'-C4'-C5'-O5'
2	B	1920	4OC	C3'-C4'-C5'-O5'
1	DB	1402	4OC	O4'-C4'-C5'-O5'
2	EB	1920	4OC	O4'-C4'-C5'-O5'
2	EB	1920	4OC	C3'-C4'-C5'-O5'
4	D	8	4SU	C2'-C1'-N1-C2
4	GB	8	4SU	C2'-C1'-N1-C2
1	A	1402	4OC	C3'-C4'-C5'-O5'
1	A	527	7MG	C3'-C4'-C5'-O5'
1	DB	1402	4OC	C3'-C4'-C5'-O5'
4	D	8	4SU	C2'-C1'-N1-C6
4	GB	8	4SU	C2'-C1'-N1-C6
1	DB	1518	MA6	C5-C6-N6-C9

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Mol	Chain	Res	Type	Atoms
1	DB	1400	5MC	O4'-C4'-C5'-O5'
1	DB	527	7MG	C3'-C4'-C5'-O5'
1	A	1519	MA6	C4'-C5'-O5'-P
1	DB	1519	MA6	C4'-C5'-O5'-P
45	TA	92	0TD	SB-CB-CG-OD1
45	WC	92	0TD	SB-CB-CG-OD1
1	DB	1400	5MC	C3'-C4'-C5'-O5'
1	A	1518	MA6	C5-C6-N6-C10
1	DB	1518	MA6	C5-C6-N6-C10
2	EB	2503	2MA	C4'-C5'-O5'-P
1	A	1400	5MC	O4'-C4'-C5'-O5'
2	B	2503	2MA	C4'-C5'-O5'-P
1	A	527	7MG	O4'-C4'-C5'-O5'
45	WC	92	0TD	CA-CB-SB-CSB
2	B	2503	2MA	O4'-C4'-C5'-O5'
1	DB	527	7MG	O4'-C4'-C5'-O5'
45	TA	92	0TD	CG-CB-SB-CSB
45	WC	92	0TD	CG-CB-SB-CSB
1	A	1400	5MC	C3'-C4'-C5'-O5'
2	EB	2503	2MA	O4'-C4'-C5'-O5'
2	B	1920	4OC	C2'-C1'-N1-C2

There are no ring outliers.

31 monomers are involved in 42 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	EB	1939	5MU	1	0
1	DB	966	M2G	1	0
45	TA	92	0TD	3	0
4	D	55	PSU	1	0
2	B	1939	5MU	2	0
1	A	967	5MC	1	0
4	GB	54	5MU	1	0
2	B	1915	5MU	1	0
1	DB	1519	MA6	1	0
4	D	54	5MU	1	0
2	EB	1917	PSU	1	0
4	GB	55	PSU	1	0
1	A	1498	UR3	1	0
1	A	966	M2G	1	0
1	DB	1402	4OC	1	0
45	WC	92	0TD	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	EB	2503	2MA	4	0
2	EB	1915	5MU	1	0
1	DB	967	5MC	1	0
1	DB	1518	MA6	1	0
1	A	1518	MA6	1	0
2	B	2503	2MA	3	0
1	A	1407	5MC	1	0
1	A	1402	4OC	2	0
2	EB	2552	2MU	2	0
2	EB	1942	5MC	1	0
1	DB	1407	5MC	1	0
2	B	1920	4OC	1	0
4	GB	8	4SU	1	0
1	DB	1498	UR3	1	0
2	B	2552	2MU	2	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 1528 ligands modelled in this entry, 1528 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

6.2 Non-standard residues in protein, DNA, RNA chains

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

6.3 Carbohydrates

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

6.4 Ligands

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

6.5 Other polymers

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