



Full wwPDB X-ray Structure Validation Report ⓘ

May 14, 2020 – 07:03 pm BST

PDB ID : 6B4V
Title : Antibiotic blasticidin S and E. coli release factor 1 bound to the 70S ribosome
Authors : Svidritskiy, E.; Korostelev, A.A.
Deposited on : 2017-09-27
Resolution : 3.40 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The following versions of software and data (see [references ⓘ](#)) 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 : 2.11
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.11

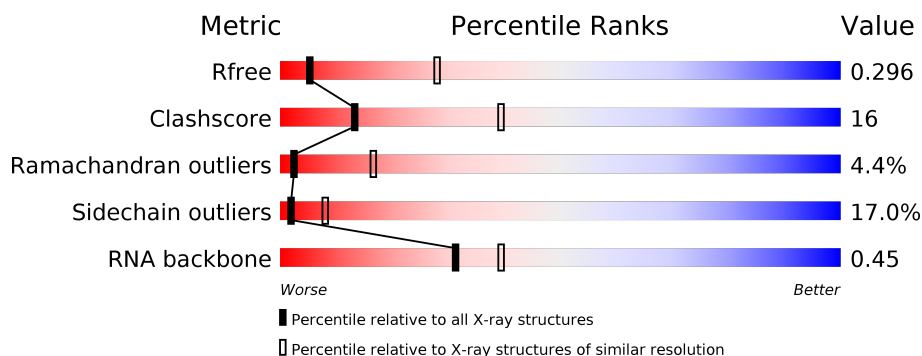
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.40 Å.

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



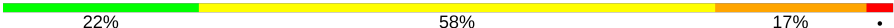
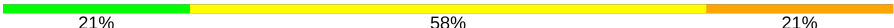
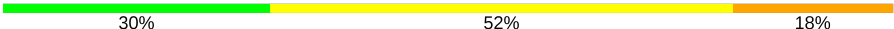
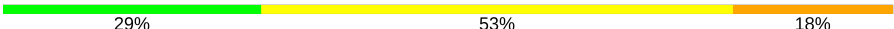






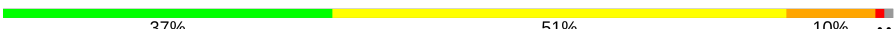
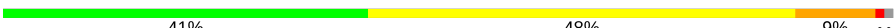







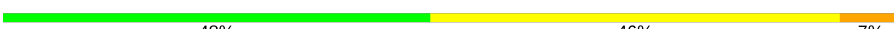





Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	1026 (3.48-3.32)
Clashscore	141614	1055 (3.48-3.32)
Ramachandran outliers	138981	1038 (3.48-3.32)
Sidechain outliers	138945	1038 (3.48-3.32)
RNA backbone	3102	1006 (3.84-2.96)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on 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 $\leq 5\%$.

Mol	Chain	Length	Quality of chain
1	A	1507	<div> <div>38%</div> <div>48%</div> <div>13%</div> </div>
1	EB	1507	<div> <div>38%</div> <div>49%</div> <div>12%</div> <div>.</div> </div>
2	B	2880	<div> <div>40%</div> <div>41%</div> <div>16%</div> <div>.</div> </div>
2	FB	2880	<div> <div>43%</div> <div>41%</div> <div>14%</div> <div>.</div> </div>
3	C	120	<div> <div>45%</div> <div>42%</div> <div>13%</div> </div>
3	GB	120	<div> <div>42%</div> <div>46%</div> <div>13%</div> </div>

























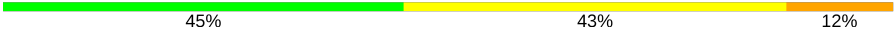
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Mol	Chain	Length	Quality of chain
4	D	77	
4	HB	77	
4	IA	77	
4	MC	77	
5	E	275	
5	IB	275	
6	F	206	
6	JB	206	
7	G	205	
7	KB	205	
8	H	182	
8	LB	182	
9	I	180	
9	MB	180	
10	J	148	
10	NB	148	
11	K	140	
11	OB	140	
12	L	122	
12	PB	122	
13	M	150	
13	QB	150	
14	N	141	
14	RB	141	
15	O	118	





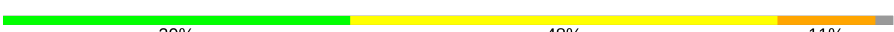
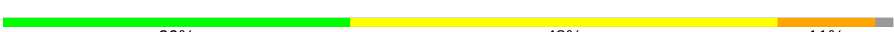








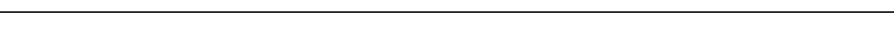
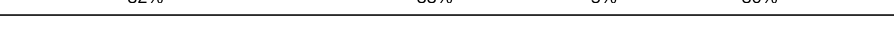
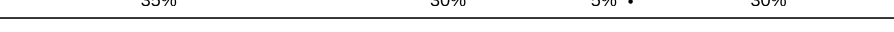

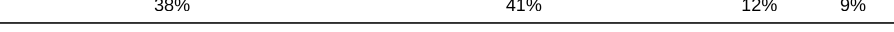






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Mol	Chain	Length	Quality of chain
15	SB	118	
16	P	112	
16	TB	112	
17	Q	146	
17	UB	146	
18	R	118	
18	VB	118	
19	S	101	
19	WB	101	
20	T	113	
20	XB	113	
21	U	96	
21	YB	96	
22	V	110	
22	ZB	110	
23	AC	206	
23	W	206	
24	BC	85	
24	X	85	
25	CC	98	
25	Y	98	
26	DC	72	
26	Z	72	
27	AA	60	
27	EC	60	



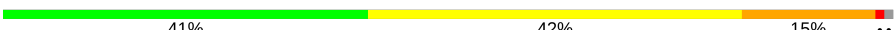
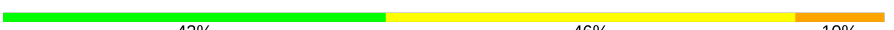
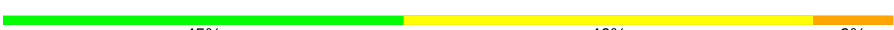
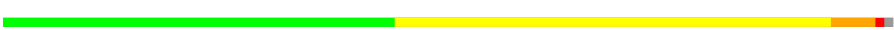


















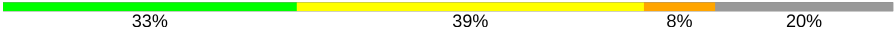
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Mol	Chain	Length	Quality of chain
28	BA	71	
28	FC	71	
29	CA	60	
29	GC	60	
30	DA	54	
30	HC	54	
31	EA	49	
31	IC	49	
32	FA	65	
32	JC	65	
33	GA	37	
33	KC	37	
34	HA	23	
34	LC	23	
35	JA	368	
35	NC	368	
36	KA	256	
36	OC	256	
37	LA	239	
37	PC	239	
38	MA	209	
38	QC	209	
39	NA	162	
39	RC	162	
40	OA	101	

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Mol	Chain	Length	Quality of chain
40	SC	101	
41	PA	156	
41	TC	156	
42	QA	138	
42	UC	138	
43	RA	128	
43	VC	128	
44	SA	105	
44	WC	105	
45	TA	129	
45	XC	129	
46	UA	132	
46	YC	132	
47	VA	126	
47	ZC	126	
48	AD	61	
48	WA	61	
49	BD	89	
49	XA	89	
50	CD	88	
50	YA	88	
51	DD	105	
51	ZA	105	
52	AB	88	
52	ED	88	

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Mol	Chain	Length	Quality of chain
53	BB	93	
53	FD	93	
54	CB	106	
54	GD	106	
55	DB	27	
55	HD	27	

2 Entry composition [i](#)

There are 58 unique types of molecules in this entry. The entry contains 299841 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	EB	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	FB	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
FB	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	GB	120	Total	C	N	O	P	0	0	0
			2576	1146	476	834	120			

- Molecule 4 is a RNA chain called tRNA.

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	HB	77	Total	C	N	O	P	S	0	0	0
			1642	734	297	534	76	1			
4	MC	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	IB	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	JB	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	KB	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	LB	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	MB	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	NB	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	OB	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	PB	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	QB	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	RB	141	Total	C	N	O	S	0	0	0
			1121	715	212	187	7			

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

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

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

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

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

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

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

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

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

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

- 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	XB	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	YB	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	ZB	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	AC	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	BC	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
BC	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	CC	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	DC	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	EC	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	FC	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	GC	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	HC	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	IC	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	JC	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	KC	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	LC	11	Total	C	N	O	P	0	0	0
			220	98	44	67	11			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
35	JA	258	Total 2005	C 1227	N 380	O 390	S 8	0	0	0
35	NC	258	Total 2005	C 1227	N 380	O 390	S 8	0	0	0

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
JA	361	LEU	-	expression tag	UNP A7ZKY5
JA	362	GLU	-	expression tag	UNP A7ZKY5
JA	363	HIS	-	expression tag	UNP A7ZKY5
JA	364	HIS	-	expression tag	UNP A7ZKY5
JA	365	HIS	-	expression tag	UNP A7ZKY5
JA	366	HIS	-	expression tag	UNP A7ZKY5
JA	367	HIS	-	expression tag	UNP A7ZKY5
JA	368	HIS	-	expression tag	UNP A7ZKY5
NC	361	LEU	-	expression tag	UNP A7ZKY5
NC	362	GLU	-	expression tag	UNP A7ZKY5
NC	363	HIS	-	expression tag	UNP A7ZKY5
NC	364	HIS	-	expression tag	UNP A7ZKY5
NC	365	HIS	-	expression tag	UNP A7ZKY5
NC	366	HIS	-	expression tag	UNP A7ZKY5
NC	367	HIS	-	expression tag	UNP A7ZKY5
NC	368	HIS	-	expression tag	UNP A7ZKY5

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

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

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

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

- Molecule 38 is a protein called 30S ribosomal protein S4.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
56	XC	1	Total	Mg	0	0
			1	1		
56	MC	5	Total	Mg	0	0
			5	5		
56	NC	5	Total	Mg	0	0
			5	5		
56	QA	2	Total	Mg	0	0
			2	2		
56	BA	1	Total	Mg	0	0
			1	1		
56	K	4	Total	Mg	0	0
			4	4		
56	JC	1	Total	Mg	0	0
			1	1		
56	VB	1	Total	Mg	0	0
			1	1		
56	B	562	Total	Mg	0	0
			562	562		
56	KA	1	Total	Mg	0	0
			1	1		
56	RC	3	Total	Mg	0	0
			3	3		
56	UA	4	Total	Mg	0	0
			4	4		
56	W	2	Total	Mg	0	0
			2	2		
56	HA	3	Total	Mg	0	0
			3	3		

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
56	EB	206	Total 206	Mg 206	0	0
56	X	1	Total 1	Mg 1	0	0
56	WB	1	Total 1	Mg 1	0	0
56	SC	1	Total 1	Mg 1	0	0
56	DC	1	Total 1	Mg 1	0	0
56	S	2	Total 2	Mg 2	0	0
56	MB	2	Total 2	Mg 2	0	0
56	CA	1	Total 1	Mg 1	0	0
56	J	2	Total 2	Mg 2	0	0
56	ZB	2	Total 2	Mg 2	0	0
56	LC	1	Total 1	Mg 1	0	0
56	TA	3	Total 3	Mg 3	0	0
56	E	1	Total 1	Mg 1	0	0
56	ZA	1	Total 1	Mg 1	0	0
56	VC	1	Total 1	Mg 1	0	0
56	IA	6	Total 6	Mg 6	0	0
56	V	2	Total 2	Mg 2	0	0
56	FB	475	Total 475	Mg 475	0	0
56	IB	4	Total 4	Mg 4	0	0
56	A	214	Total 214	Mg 214	0	0
56	SB	2	Total 2	Mg 2	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
56	GB	15	Total 15	Mg 15	0	0
56	HB	9	Total 9	Mg 9	0	0
56	AB	2	Total 2	Mg 2	0	0
56	BC	1	Total 1	Mg 1	0	0
56	M	5	Total 5	Mg 5	0	0
56	BD	1	Total 1	Mg 1	0	0
56	AA	2	Total 2	Mg 2	0	0
56	PB	1	Total 1	Mg 1	0	0
56	D	5	Total 5	Mg 5	0	0
56	YC	5	Total 5	Mg 5	0	0
56	MA	2	Total 2	Mg 2	0	0
56	NA	2	Total 2	Mg 2	0	0
56	UC	2	Total 2	Mg 2	0	0
56	I	3	Total 3	Mg 3	0	0
56	JA	6	Total 6	Mg 6	0	0
56	XA	6	Total 6	Mg 6	0	0
56	TB	1	Total 1	Mg 1	0	0
56	CC	7	Total 7	Mg 7	0	0
56	Z	4	Total 4	Mg 4	0	0
56	SA	3	Total 3	Mg 3	0	0
56	DA	2	Total 2	Mg 2	0	0

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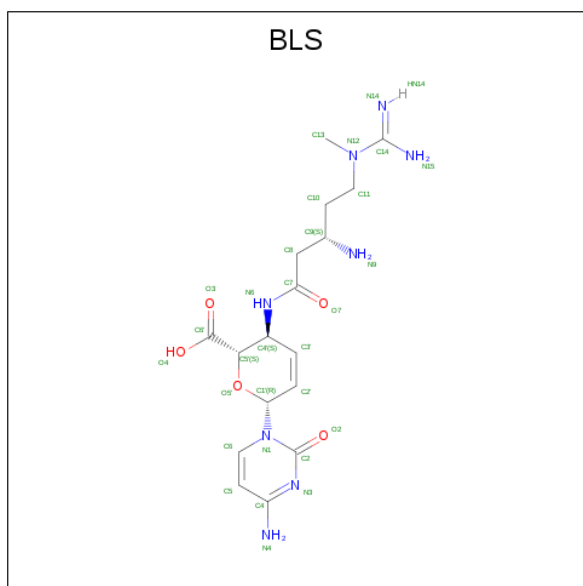
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
56	U	2	Total 2	Mg 2	0	0
56	L	2	Total 2	Mg 2	0	0
56	EA	1	Total 1	Mg 1	0	0
56	LA	2	Total 2	Mg 2	0	0
56	OC	5	Total 5	Mg 5	0	0
56	PC	1	Total 1	Mg 1	0	0
56	G	2	Total 2	Mg 2	0	0
56	Q	2	Total 2	Mg 2	0	0
56	NB	3	Total 3	Mg 3	0	0
56	UB	3	Total 3	Mg 3	0	0
56	WC	1	Total 1	Mg 1	0	0
56	H	1	Total 1	Mg 1	0	0
56	JB	2	Total 2	Mg 2	0	0
56	TC	1	Total 1	Mg 1	0	0
56	C	21	Total 21	Mg 21	0	0
56	QC	4	Total 4	Mg 4	0	0
56	KB	4	Total 4	Mg 4	0	0
56	CB	1	Total 1	Mg 1	0	0
56	CD	1	Total 1	Mg 1	0	0
56	EC	1	Total 1	Mg 1	0	0
56	T	3	Total 3	Mg 3	0	0

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
56	AD	2	Total Mg 2 2	0	0
56	O	2	Total Mg 2 2	0	0
56	FC	1	Total Mg 1 1	0	0
56	Y	1	Total Mg 1 1	0	0
56	OB	3	Total Mg 3 3	0	0
56	F	2	Total Mg 2 2	0	0
56	RB	1	Total Mg 1 1	0	0

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



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

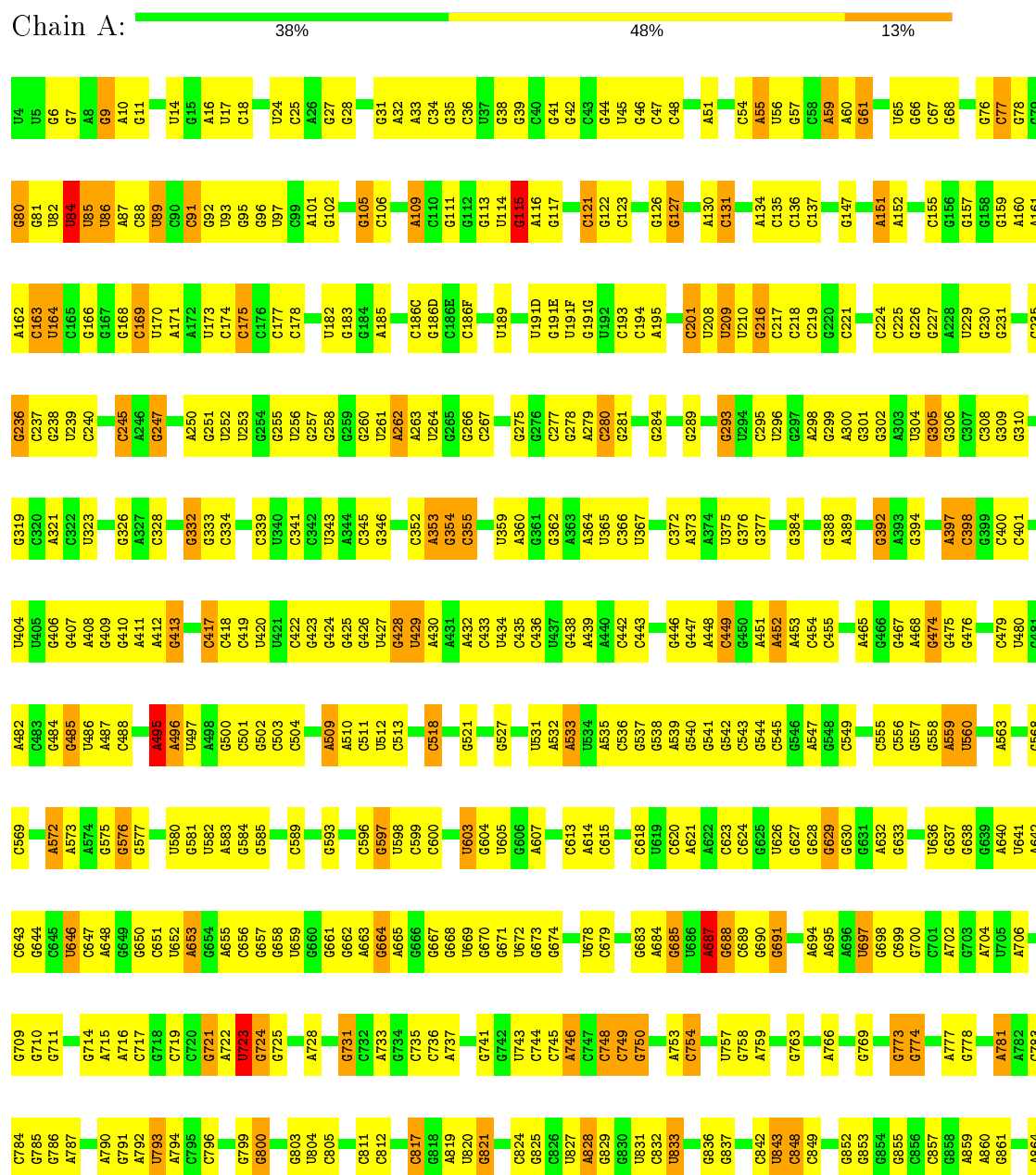
- Molecule 58 is ZINC ION (three-letter code: ZN) (formula: Zn).

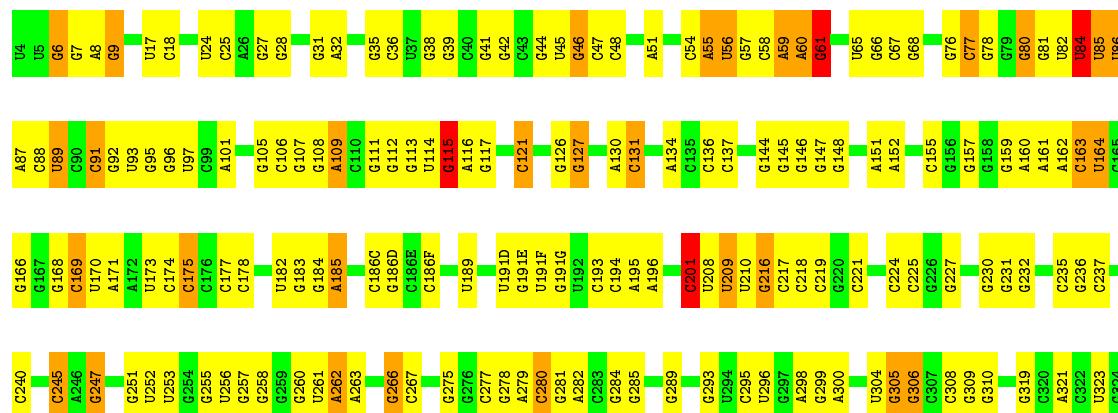
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
58	BA	1	Total 1	Zn 1	0	0
58	CA	1	Total 1	Zn 1	0	0
58	V	1	Total 1	Zn 1	0	0
58	GA	1	Total 1	Zn 1	0	0
58	KC	1	Total 1	Zn 1	0	0
58	DA	1	Total 1	Zn 1	0	0
58	GC	1	Total 1	Zn 1	0	0
58	HC	1	Total 1	Zn 1	0	0
58	ZB	1	Total 1	Zn 1	0	0
58	FC	1	Total 1	Zn 1	0	0

3 Residue-property plots

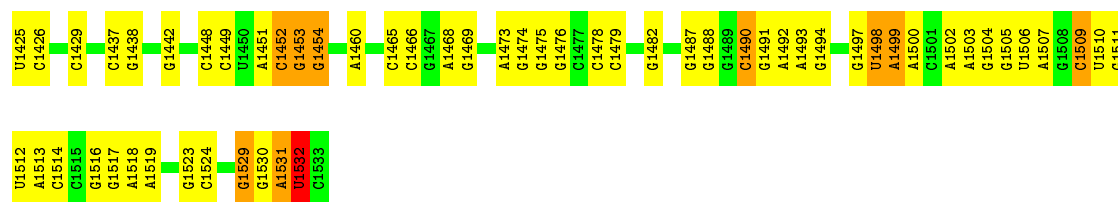
These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according 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



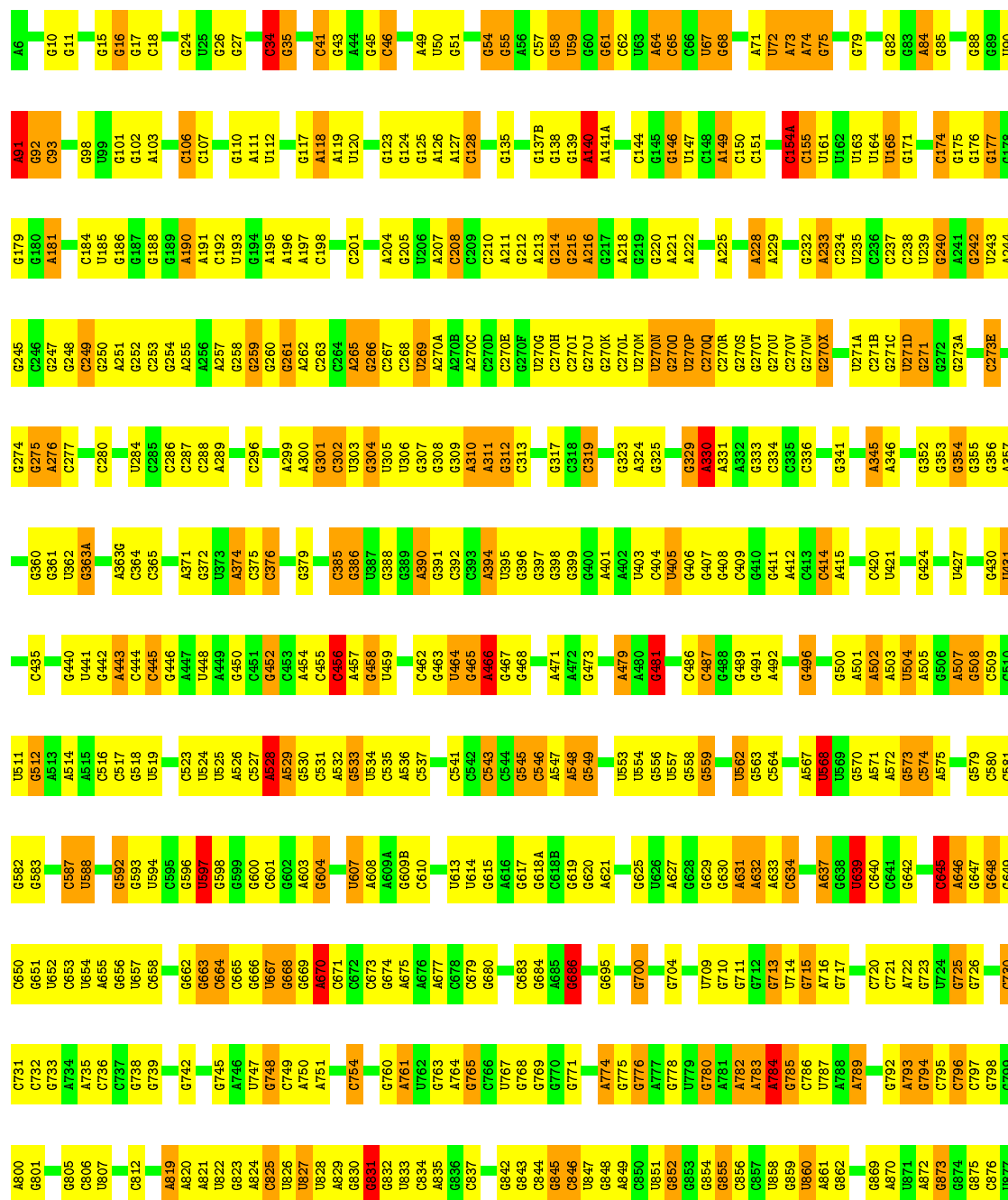


G1353	A1287	G1215	U1148	G1081	G1022	A958	U870	A780	G703	G631	U561	C483	A325
C1358	A1288	G1216	C1149	G1082	G1023	A959	U871	A781	A704	A632	C562	G484	G326
C1359	A1289	C1217		U1083	U1024	U960	A872		A705	G633	A408	G485	A327
A1360	G1290	C1218	A1152	U1084	U1025	U961	A873	G785	A706	U961	C563	U486	C328
G1361	U1291	G1154	C1153	U1085	G1026	C962	G874			U636	A411	A487	G332
C1362A	G1292	G1220	G1155	U1086	C1027	C963	C875	A790	G709	G637	G568	C488	G333
C1362B	G1293	G1221	G1156	G1087	C1028A	A964	G876	C791	G710	G638	C569		C334
A1363	G1294			G1088	C1028B	A965	C877	A792		G639		A495	
C1364	G1295	A1225	A1157		C1028C	G966	C878	A793	G714	A640	A572	A496	C341
U1365	C1296	C1226	C1158	U1094	G1029	C967	C879	A794	A715	U641	A573	C418	C342
C1365	C1297	U1159	U1159	U1095	C1030	A968	C880	C795	A716	G643	A574	U498	U343
C1366	C1298	C1228	G1160	C1096	G1031	A969		C796		G644	G575	C501	A344
C1367	A1298	A1229	C1161		A1032A	C970	A892		C719	G645	G576	G502	C345
G1368	G1300		C1162	G1099	G1032B	G971	C893	G799	C720	C646	G577	C503	
C1369	U1301	G1233	C1163	G1100	G1032C	C972	C894	G800	A722	U647		G423	C352
G1370	U1302		G1164	A1101	G1033	G973	G895		A723	C648	U580	G424	A353
G1371		A1238		A1102	A1034	A974		G803	U723	A649	G581	G425	G354
U1372	G1305	U1240	A1167	C1103	G1035	A975	C899	U804	G724	G650	U582	G426	C355
G1373	A1306	G1241	A1169	G1104	G1036	G976	A900		G725	G651	A509	U427	
A1374	U1307	C1242	A1170		C1037	A977	A901	C811		G652	G583	U428	
A1375	U1308	G1243		C1107	C1038	A978	G902	C812	G730	U653	G584	U429	U359
U1376	G1309			G1108	C1039	A979	A913		G731	C510	U585	A360	A360
A1377		A1245	G1173	A1110	U1040	C985	A914	C817	G732	C513		A431	G361
		U1246	G1174	A1111	A1041	C986		G818	A733	U516		A432	G362
		U1247	G1175	A1112	G1042	A986		A819	G734	G517		C433	A363
A1248	G1177	A1248	G1177	C1112	C1043	G987	G917	U820	C735	C518		U434	A364
C1249	U1178	C1249	A1179	C1113	A1044	G988		G821	G736	C519	C596	U435	U365
G1250	G1179	C1250	C1114	C1114	C1045	C990	G922	C824	A737	G660	U598	C436	
A1251	A1180	A1251	C1115	C1115	A1046	C991	A923	G825	G741	G662	C599		U367
A1252	G1181	A1252	C1116	C1116	G1047	U991	G924		G742	A663	G600	A439	
	G1182		G1117	G1117	U1048	U992	G925	A828	C743	G664	C601	A440	G371
A1256	A1183		C1118	C1118	U1049	G993	G926		U743	A665	A602	C442	C372
U1257	G1184		C1119	C1119	G1050	A994	G927	U831	C744	G666	G603	C443	A373
G1258	U1186			U1120		C995	G928	C832	C745	U671	U604	G444	U375
	G1187			U1121	G1051	G998A	G929	U833	C746	G673	U605	G445	U376
A1261		C1054		U1122	U1056	C999B	G930	U833	C747	U674	G606	G446	G377
C1262		A1055		G1124	U1057	U999	C931		C748	U675	A607	G447	
C1263	G1190	C1264		U1125	G1058	U999	C932	G836	C749	G676	A608	A448	A382
G1265	A1191	C1265		U1126	G1059	A1000	G933	G837	G750	U677	A609	C449	A383
G1266	G1193	C1266		G1127	C1060	G1001	C934		A751	G678	A451	A452	G384
C1267		G1128		G1128	G1061	G1002	A935	C842	C754	U678	G610	A453	
A1268	U1196	C1268		C1129	U1062	G1003	C936	U843		C679	C613	A539	G388
C1269	G1197	A1269			C1063	A1004	A937	C848	U757		A614	A540	A389
C1270	G1198	C1270		C1132	G1064	A1005	A938	C849	G758	G683	C615	G541	C390
G1271	U1199	C1271		G1133	U1065	C1006	G939	U850	A759	A694	G616	G542	
	C1335	G1272		G1134	C1066	C1007	C940	G851		G685	G617	C543	G391
G1274	C1200	C1273		U1135	A1067	C1008	G941	G852	G763	U686	C618	G544	A393
A1275	G1201	A1275		U1136	G1068	G1009	G942	G853		A687	U619	C545	G394
G1276	C1202	G1276		C1137	C1069	G1010		G854	A767	G688	C620	G546	C395
C1277	C1203	C1277		G1138	U1070	G1011	A946	G855		C689	A621	A547	G396
U1278	A1204	U1278		G1139	C1071	U1012	G947	A859	A768	G690	G622	G548	A397
A1279	U1205	A1279		C1140	G1072	A1014	C948	A860	G769	G691	C623	C549	C398
G1280	G1206	G1280		U1073	U1073	A1015	A949	G861	C770	G692	G624		G399
C1281	U1207	C1281		C1141	G1074	U1016			G773	U697	G625	C400	C400
U1282	C1208	U1282		G1142		G1017	U952	A864	G774	G698	U626	A478	
C1283	C1209	G1283		G1143		C1018	G953	A865		C699	G627	C479	
A1284		C1284		G1144	G1077	C1018	G954		A777	G700	G628	U480	U404
U1212	U1212	U1212		C1145	U1078	U1019	U956	C868	G778	C701	G629	A481	U405
A1213	C1213	A1213		A1146	U1079	U1020	U956	G869	C779	A702	G630		G406
C1214	C1214	A1286		C1147	A1080	G1021	U957						



- Molecule 2: 23S ribosomal RNA

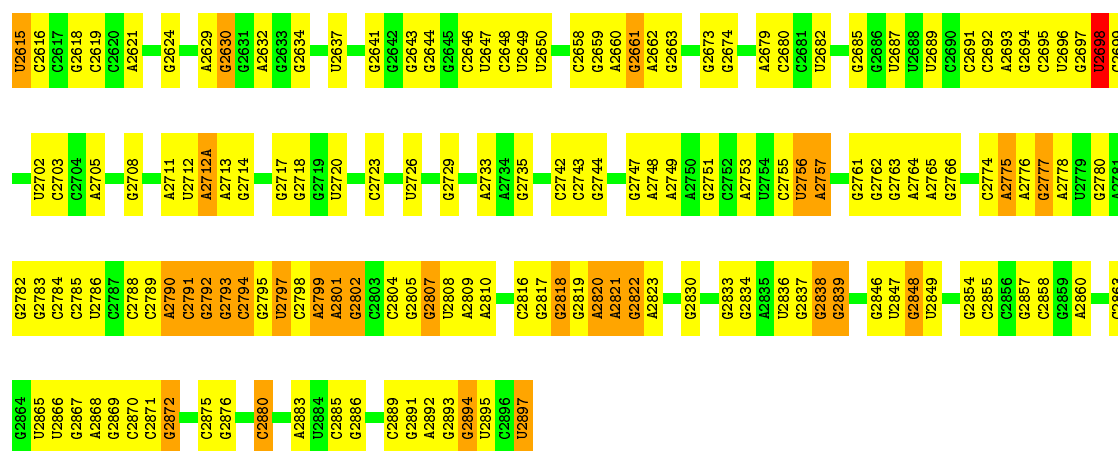
Chain B: 40% 41% 16%



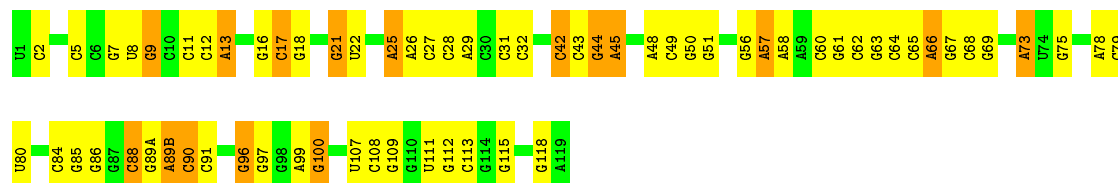
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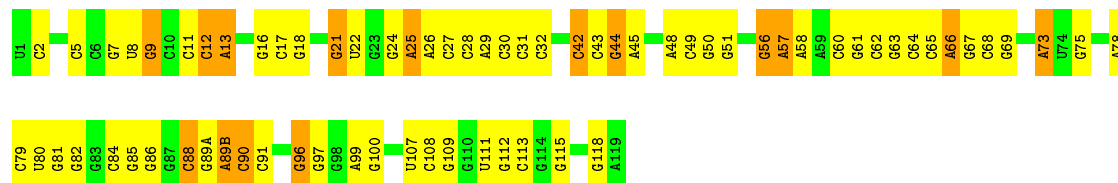
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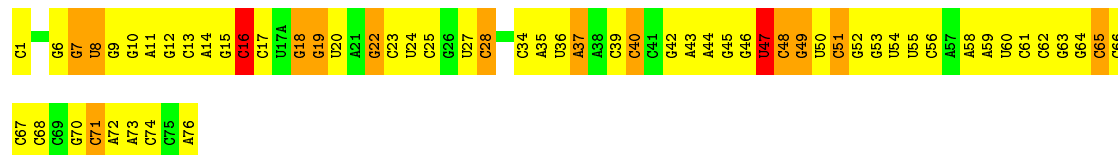
• Molecule 3: 5S ribosomal RNA



• Molecule 3: 5S ribosomal RNA



• Molecule 4: tRNA

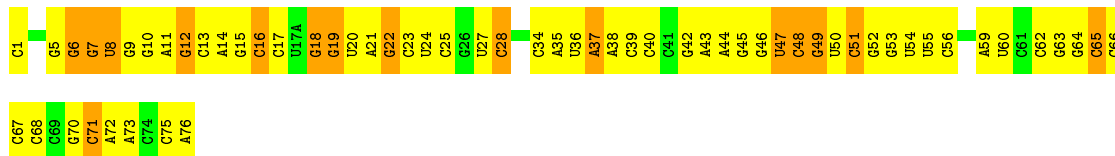


• Molecule 4: tRNA

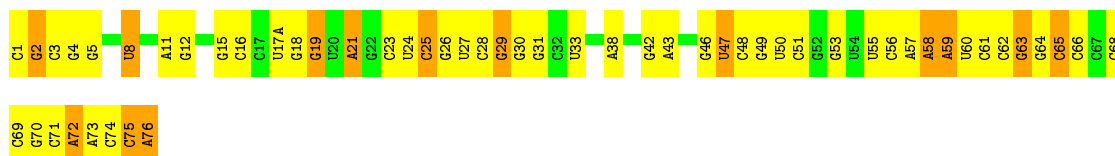




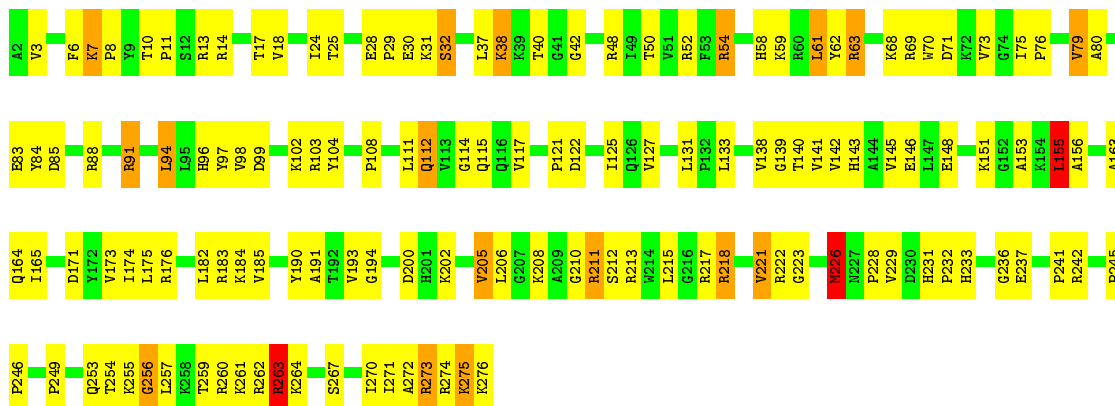
• Molecule 4: tRNA



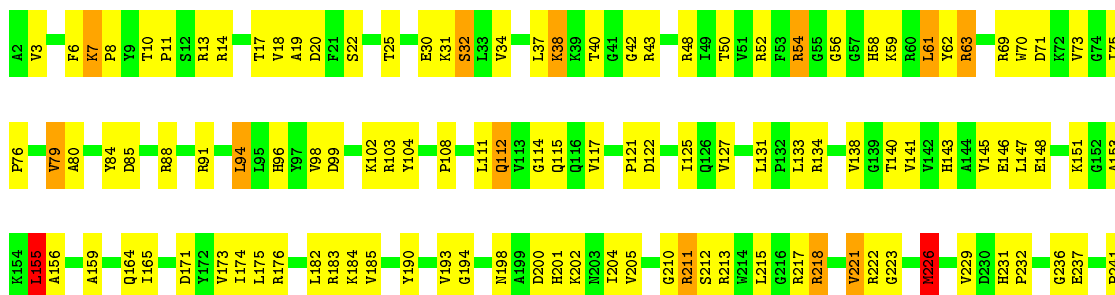
• Molecule 4: tRNA



• Molecule 5: 50S ribosomal protein L2

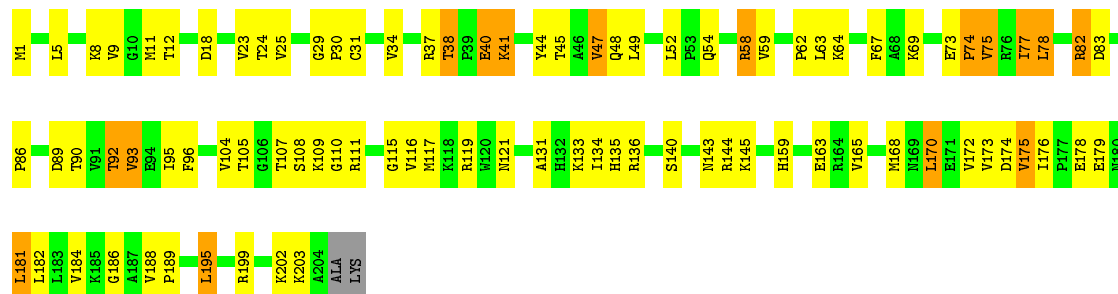


• Molecule 5: 50S ribosomal protein L2

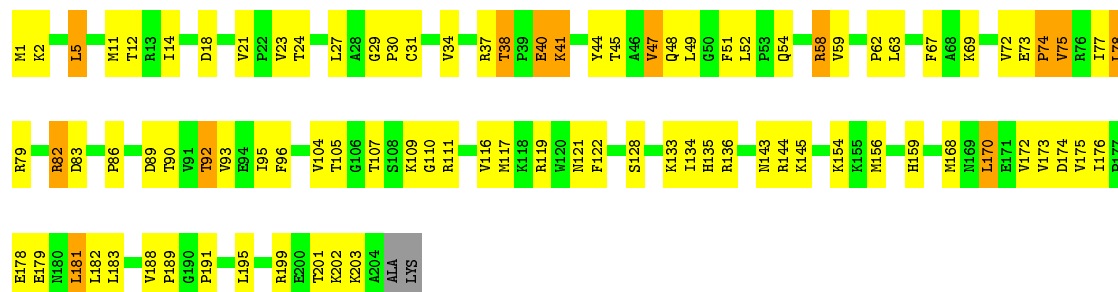




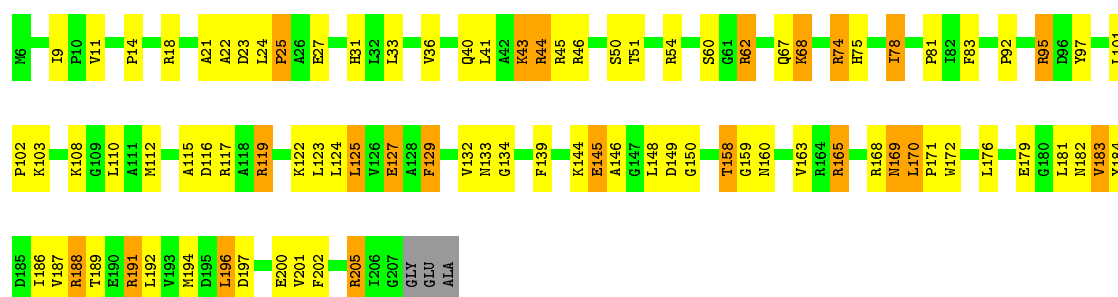
- Molecule 6: 50S ribosomal protein L3



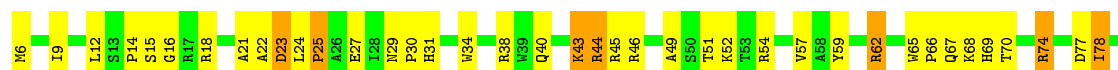
- Molecule 6: 50S ribosomal protein L3

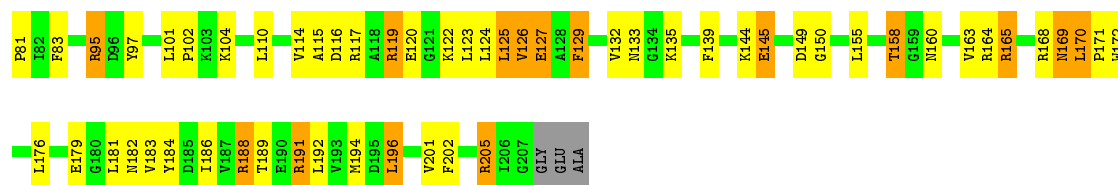


- Molecule 7: 50S ribosomal protein L4



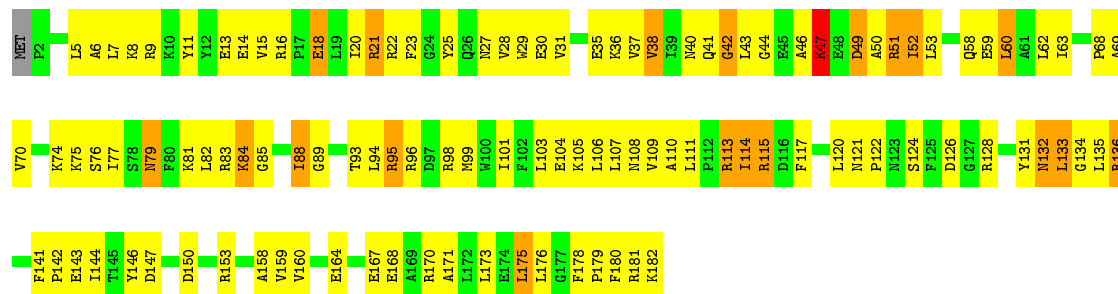
- Molecule 7: 50S ribosomal protein L4





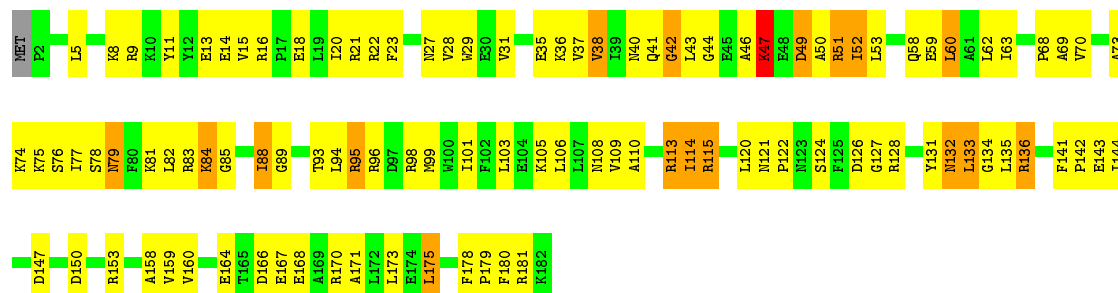
• Molecule 8: 50S ribosomal protein L5

Chain H: 37% 51% 10% ..



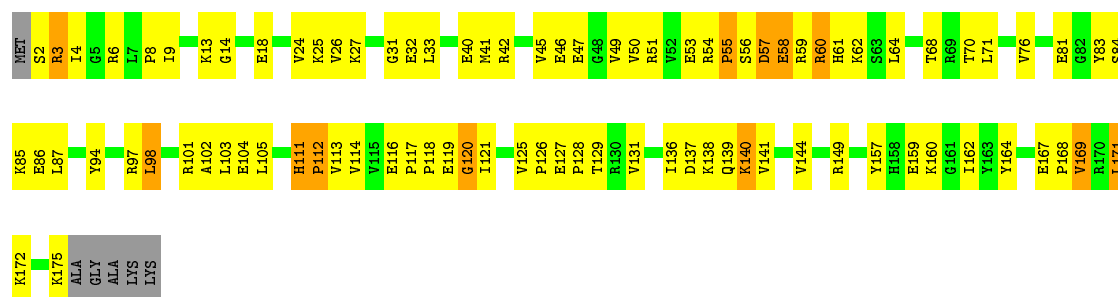
• Molecule 8: 50S ribosomal protein L5

Chain LB: 41% 48% 9% ..



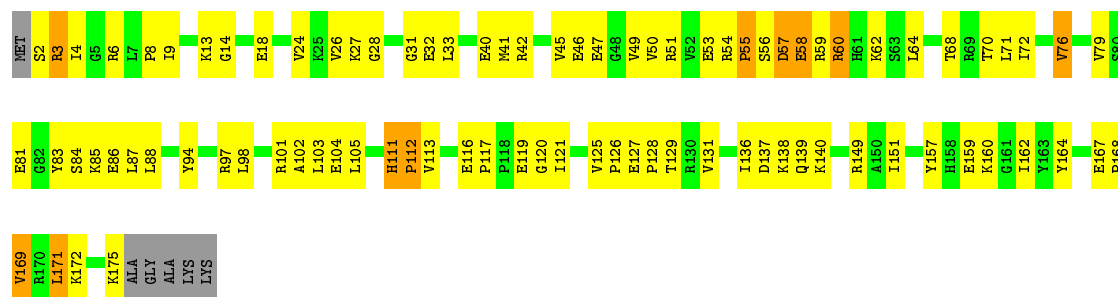
• Molecule 9: 50S ribosomal protein L6

Chain I: 47% 43% 7% .



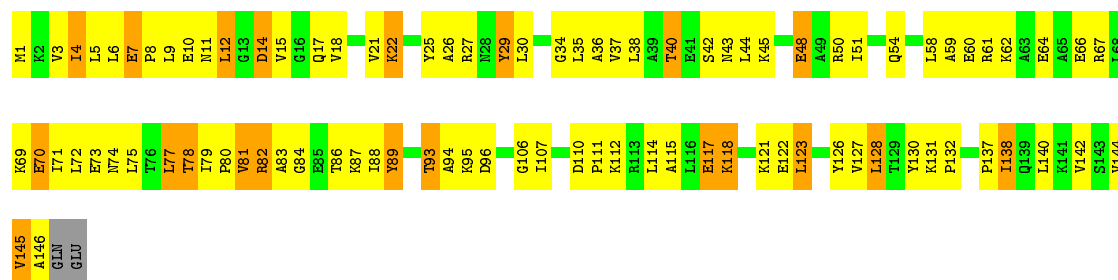
• Molecule 9: 50S ribosomal protein L6

Chain MB: 48% 43% 6% .



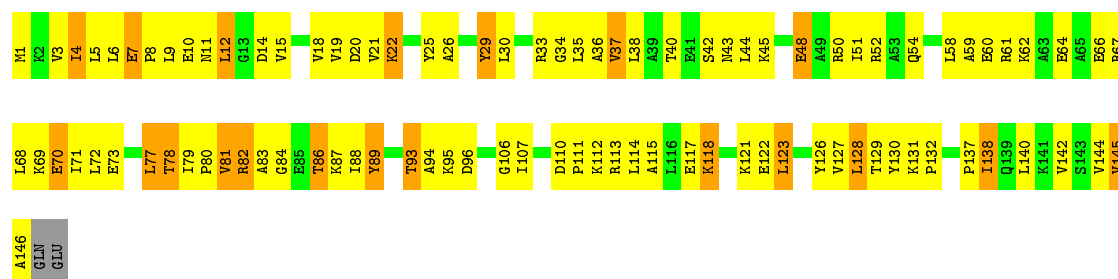
- Molecule 10: 50S ribosomal protein L9

Chain J: 36% 48% 14%



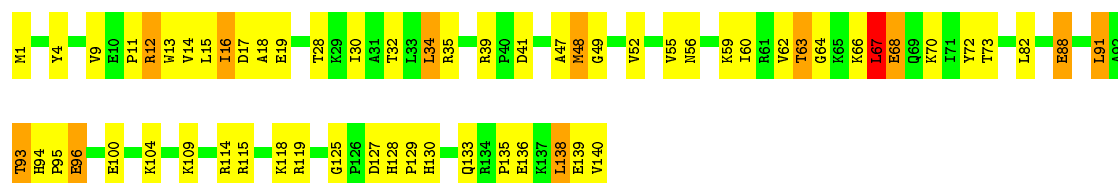
- Molecule 10: 50S ribosomal protein L9

Chain NB: 34% 51% 14%



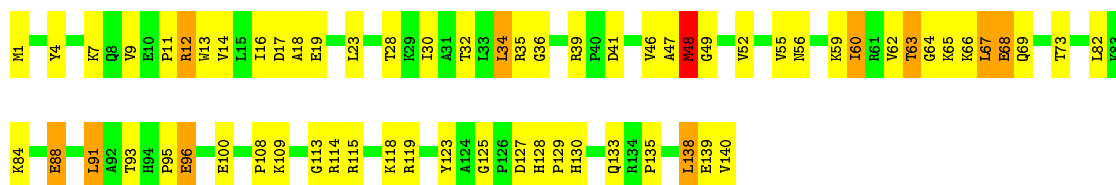
- Molecule 11: 50S ribosomal protein L13

Chain K: 56% 35% 8%

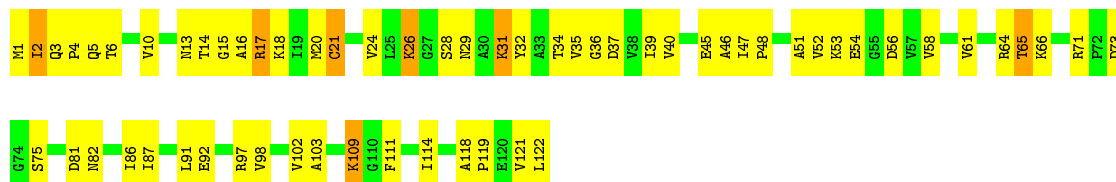


- Molecule 11: 50S ribosomal protein L13

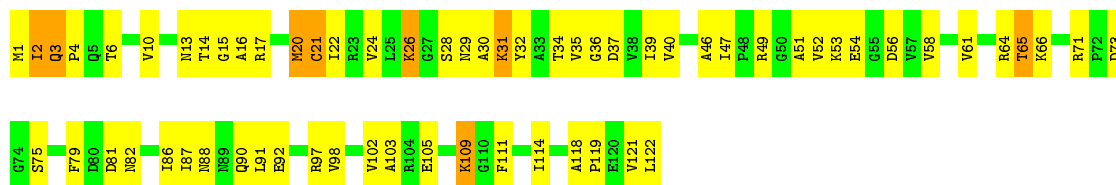
Chain OB: 54% 39% 7%



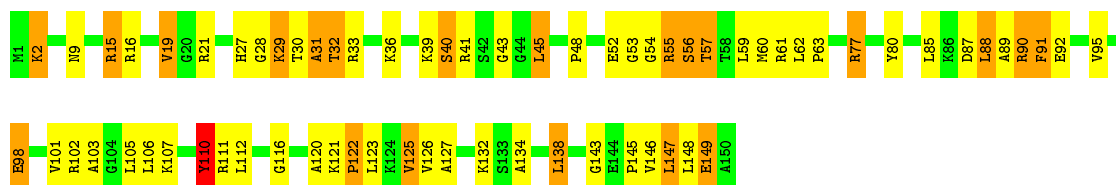
- Molecule 12: 50S ribosomal protein L14



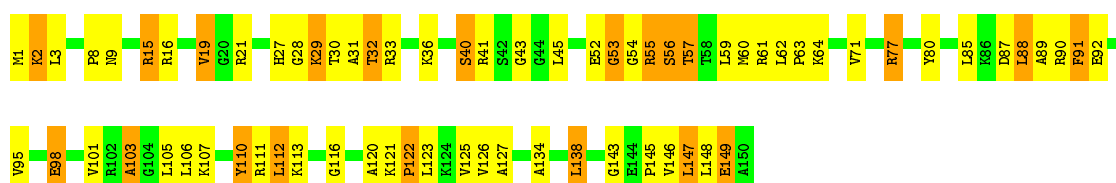
- Molecule 12: 50S ribosomal protein L14



- Molecule 13: 50S ribosomal protein L15

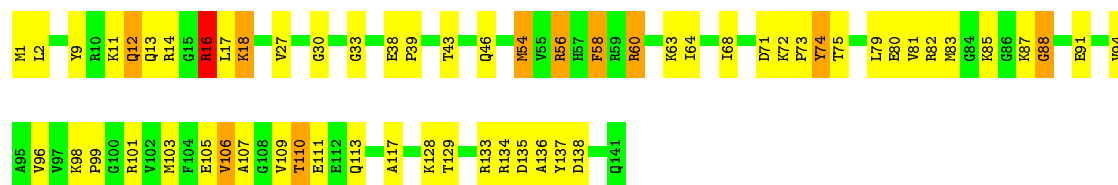


- Molecule 13: 50S ribosomal protein L15



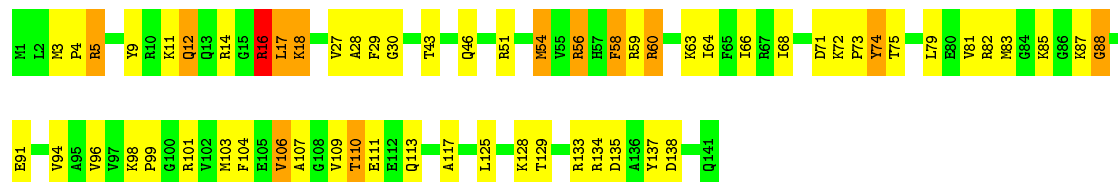
- Molecule 14: 50S ribosomal protein L16





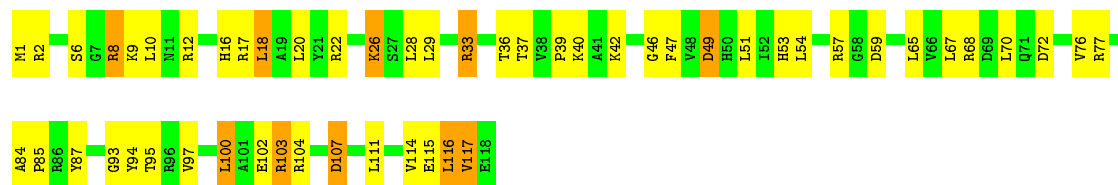
- Molecule 14: 50S ribosomal protein L16

Chain RB: 57% 34% 9%



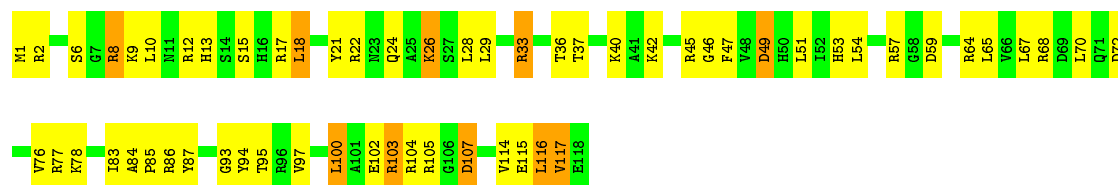
- Molecule 15: 50S ribosomal protein L17

Chain O: 55% 36% 8%



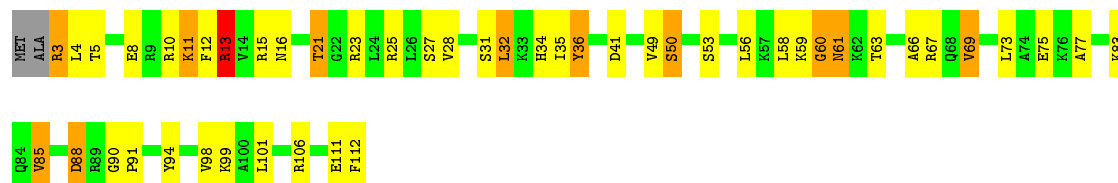
- Molecule 15: 50S ribosomal protein L17

Chain SB: 50% 42% 8%



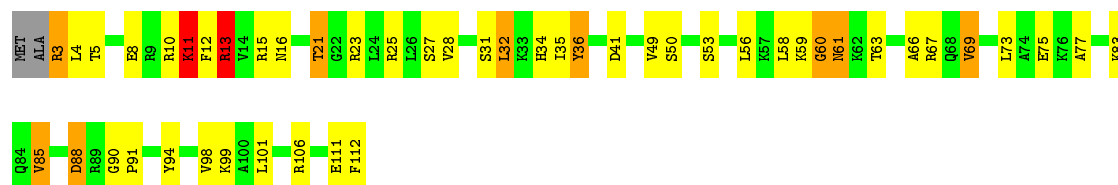
- Molecule 16: 50S ribosomal protein L18

Chain P: 55% 32% 10%



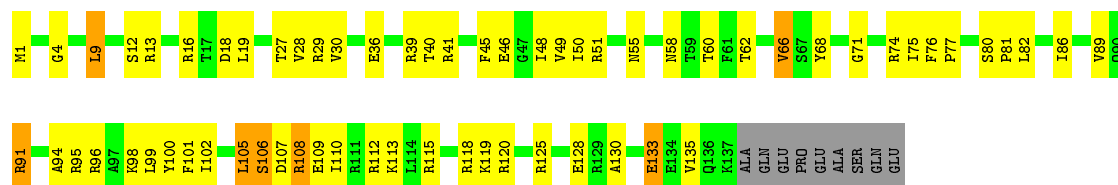
- Molecule 16: 50S ribosomal protein L18

Chain TB: 55% 33% 8%



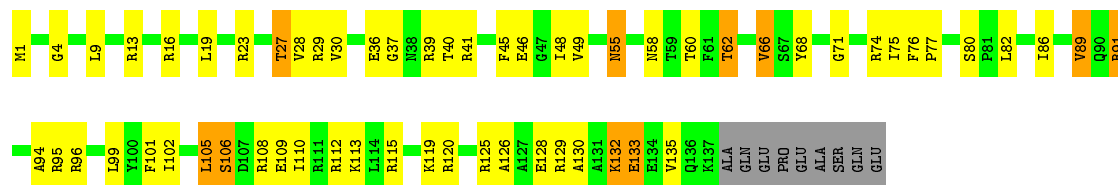
- Molecule 17: 50S ribosomal protein L19

Chain Q:



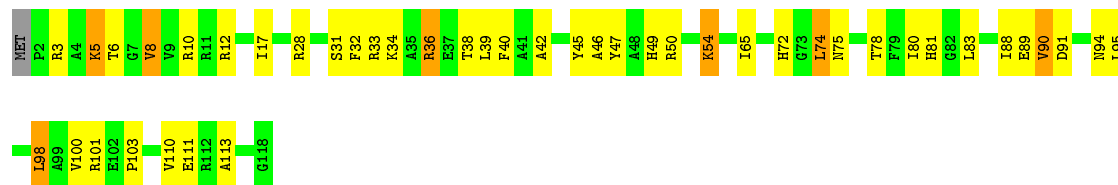
- Molecule 17: 50S ribosomal protein L19

Chain UB:



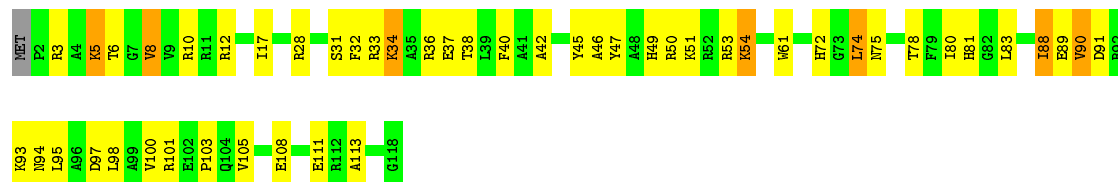
- Molecule 18: 50S ribosomal protein L20

Chain R:



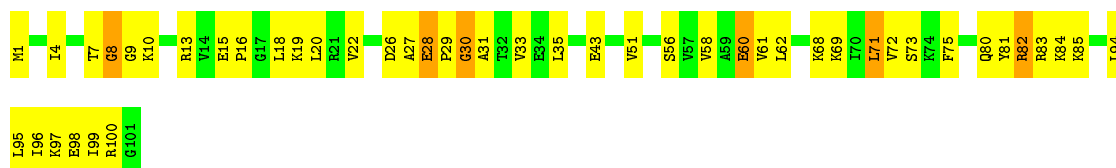
- Molecule 18: 50S ribosomal protein L20

Chain VB:

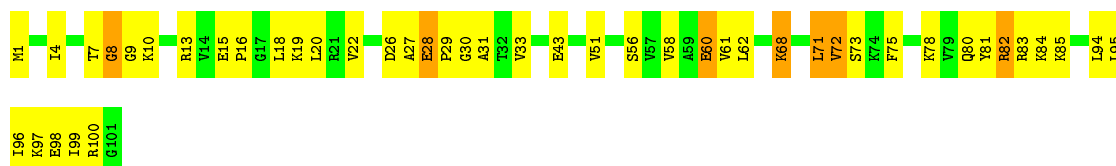


- Molecule 19: 50S ribosomal protein L21

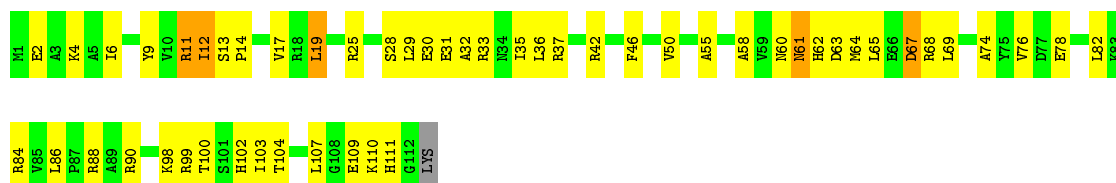
Chain S:



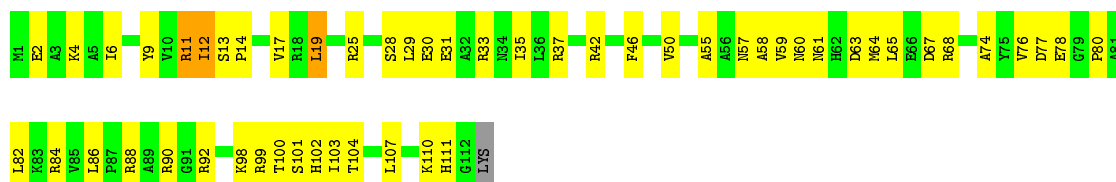
- Molecule 19: 50S ribosomal protein L21



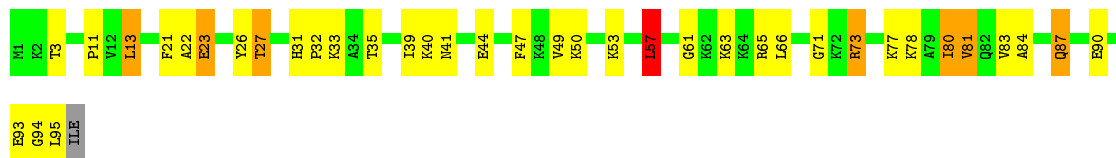
- Molecule 20: 50S ribosomal protein L22



- Molecule 20: 50S ribosomal protein L22

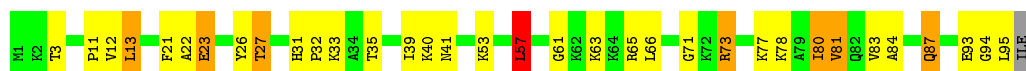


- Molecule 21: 50S ribosomal protein L23

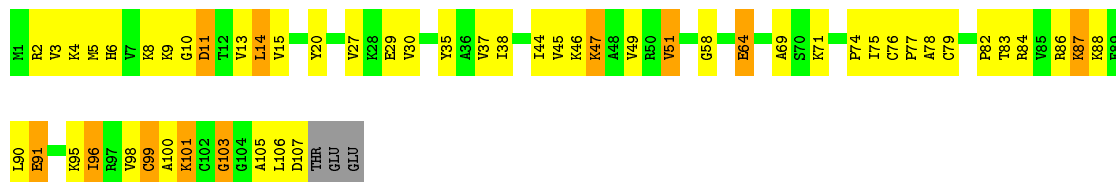


- Molecule 21: 50S ribosomal protein L23

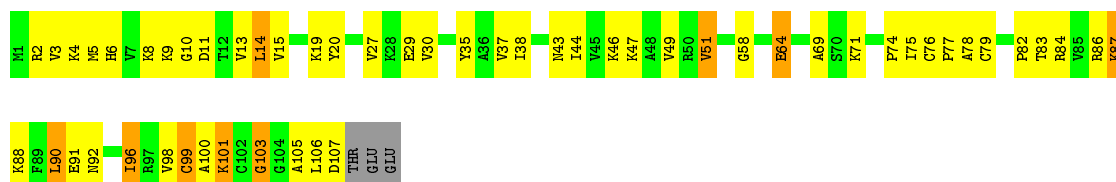




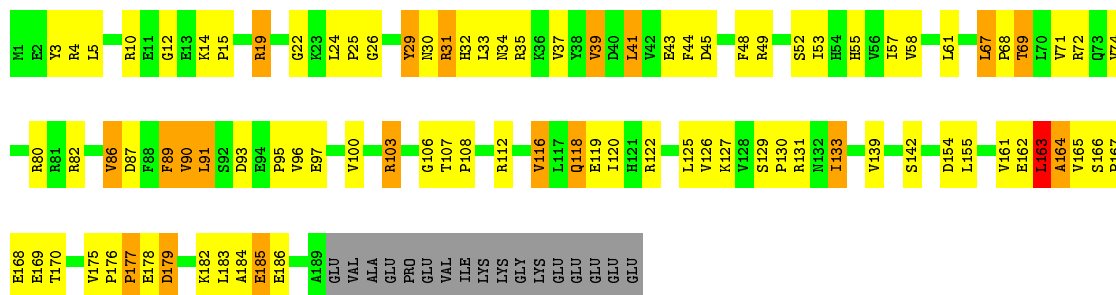
- Molecule 22: 50S ribosomal protein L24



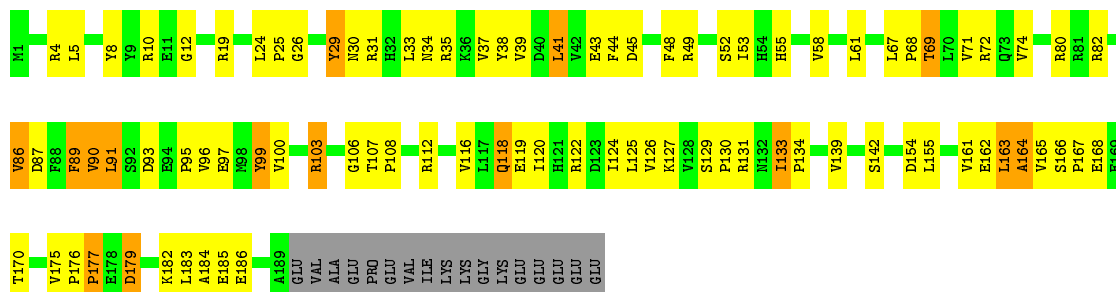
- Molecule 22: 50S ribosomal protein L24



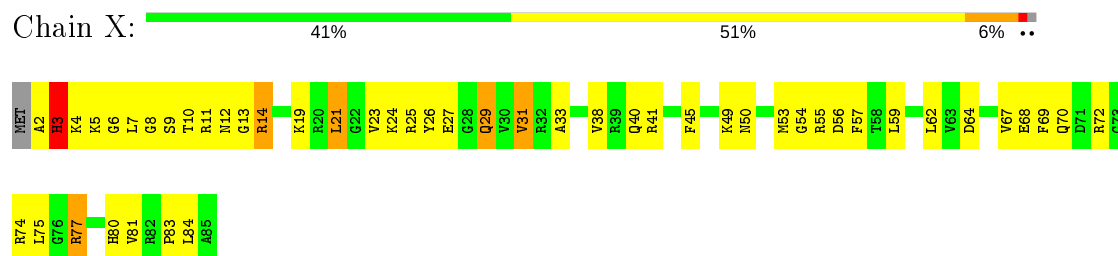
- Molecule 23: 50S ribosomal protein L25



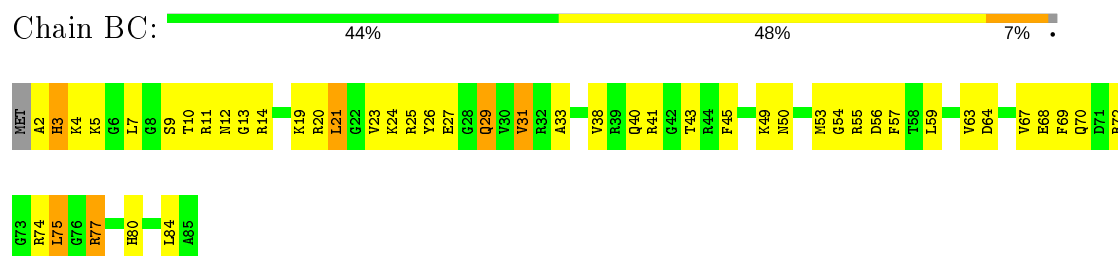
- Molecule 23: 50S ribosomal protein L25



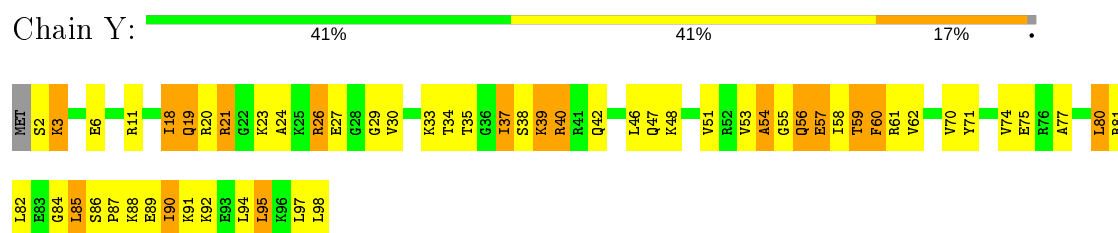
- Molecule 24: 50S ribosomal protein L27



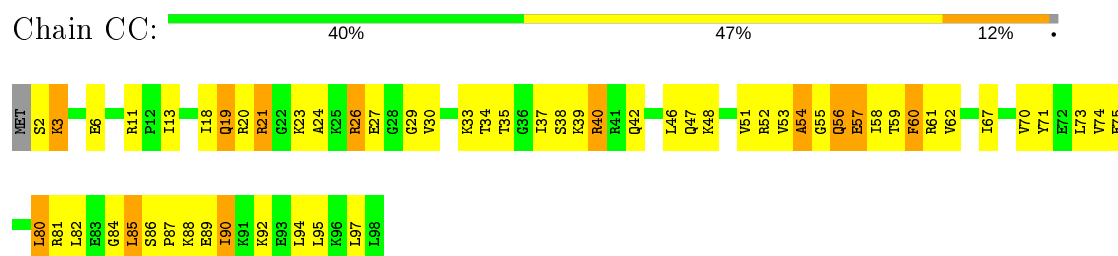
- Molecule 24: 50S ribosomal protein L27



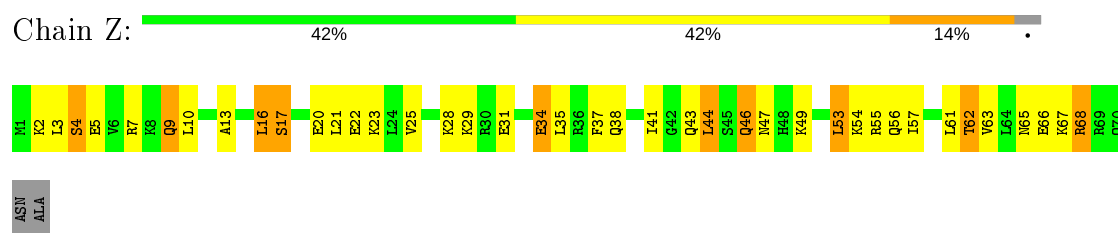
- Molecule 25: 50S ribosomal protein L28



- Molecule 25: 50S ribosomal protein L28

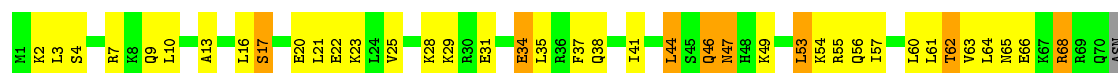


- Molecule 26: 50S ribosomal protein L29



- Molecule 26: 50S ribosomal protein L29

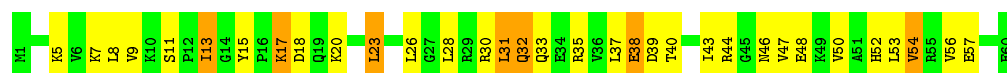
Chain DC: 



ALA

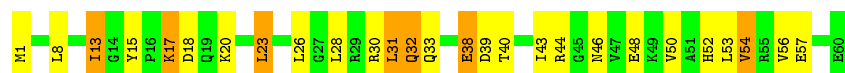
- Molecule 27: 50S ribosomal protein L30

Chain AA: 



- Molecule 27: 50S ribosomal protein L30

Chain EC: 



- Molecule 28: 50S ribosomal protein L31

Chain BA: 



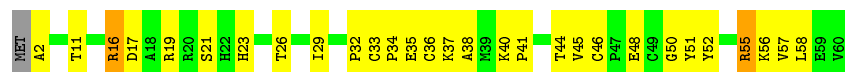
- Molecule 28: 50S ribosomal protein L31

Chain FC: 



- Molecule 29: 50S ribosomal protein L32

Chain CA: 



- Molecule 29: 50S ribosomal protein L32

Chain GC: 



- Molecule 30: 50S ribosomal protein L33

Chain DA: 



- Molecule 30: 50S ribosomal protein L33

Chain HC: 



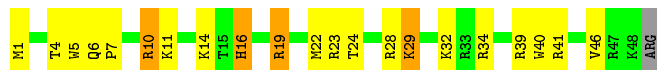
- Molecule 31: 50S ribosomal protein L34

Chain EA: 



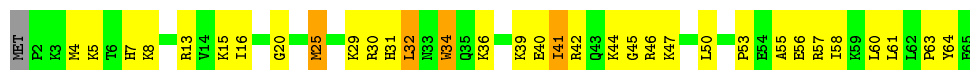
- Molecule 31: 50S ribosomal protein L34

Chain IC: 



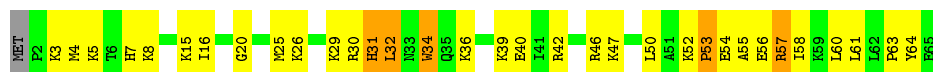
- Molecule 32: 50S ribosomal protein L35

Chain FA: 



- Molecule 32: 50S ribosomal protein L35

Chain JC: 



- Molecule 33: 50S ribosomal protein L36

Chain GA: 

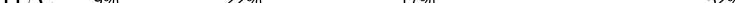


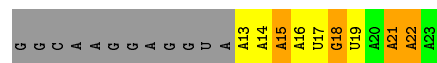
- Molecule 33: 50S ribosomal protein L36

Chain KC: 



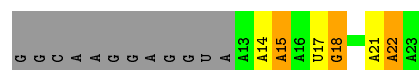
- Molecule 34: mRNA

Chain HA: 



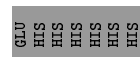
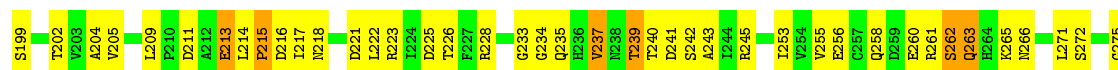
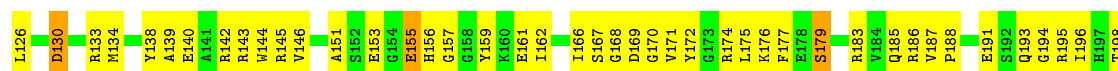
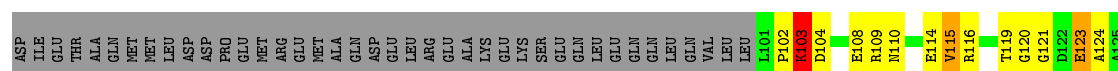
- Molecule 34: mRNA

Chain LC:



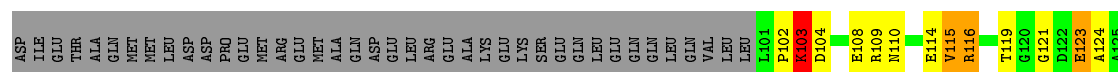
- Molecule 35: Peptide chain release factor 1

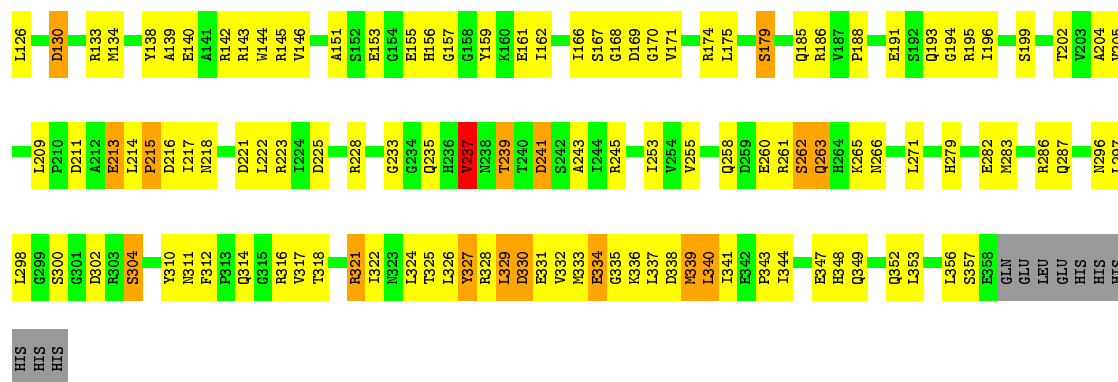
Chain JA: 



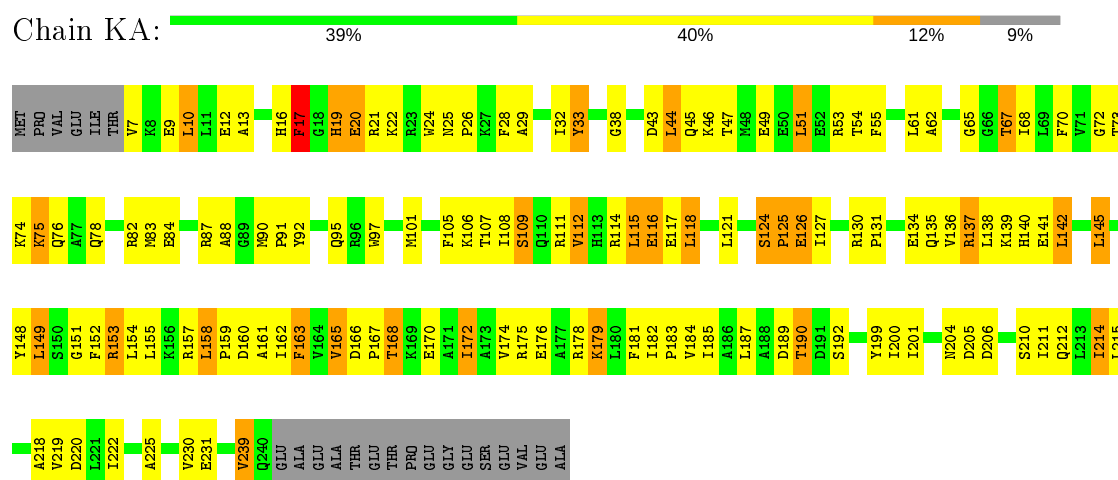
- Molecule 35: Peptide chain release factor 1

Chain NC: 

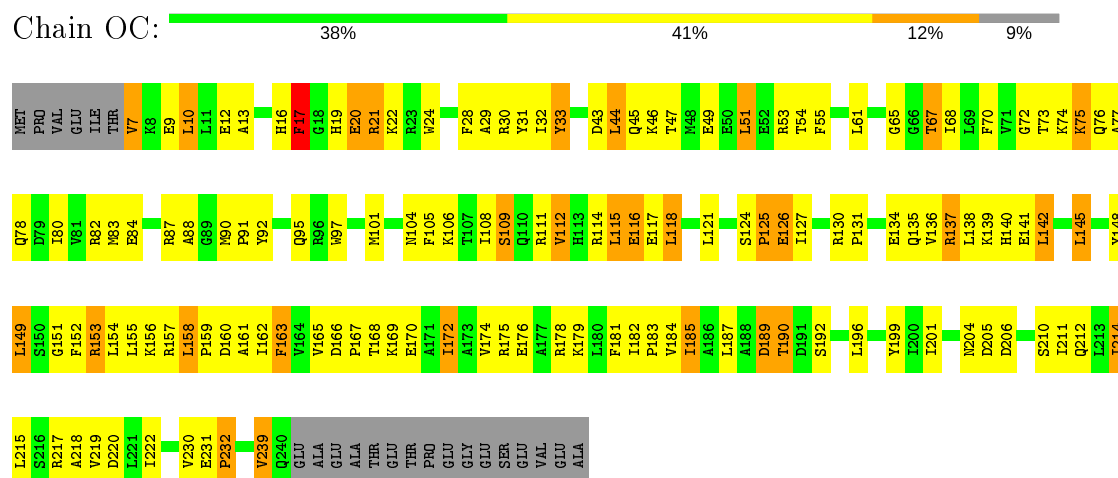




• Molecule 36: 30S ribosomal protein S2

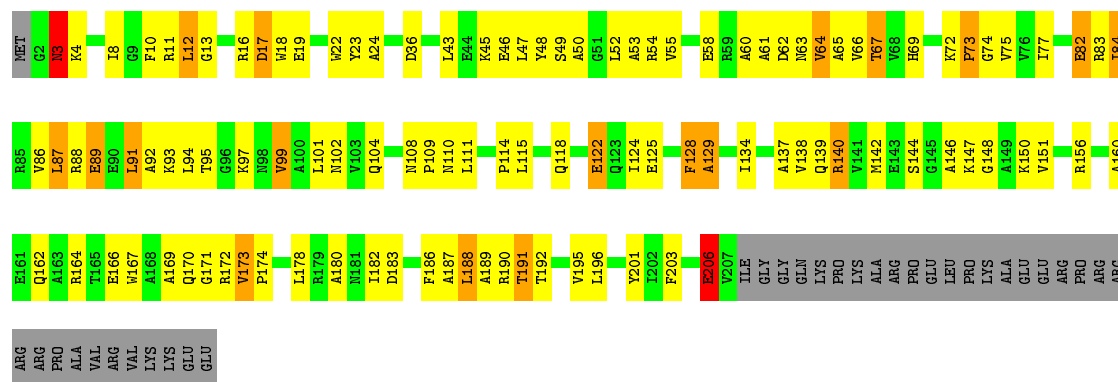


• Molecule 36: 30S ribosomal protein S2



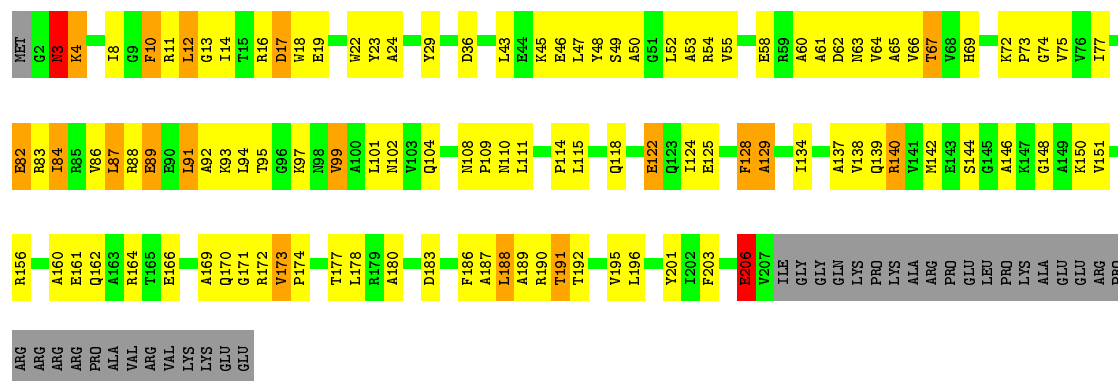
• Molecule 37: 30S ribosomal protein S3





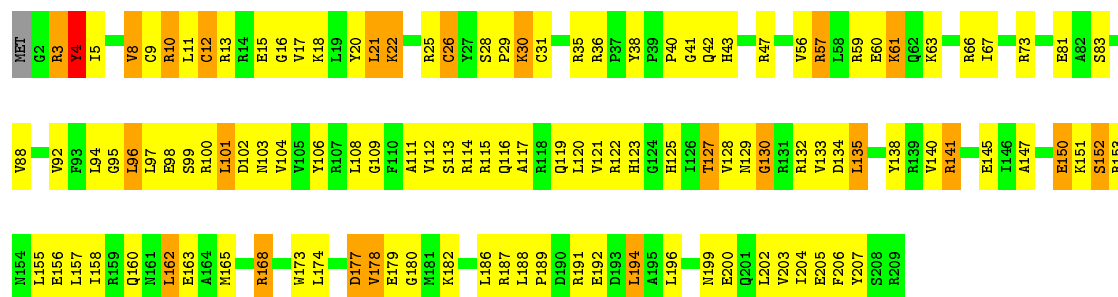
• Molecule 37: 30S ribosomal protein S3

Chain PC:  40% 38% 8% 14%



• Molecule 38: 30S ribosomal protein S4

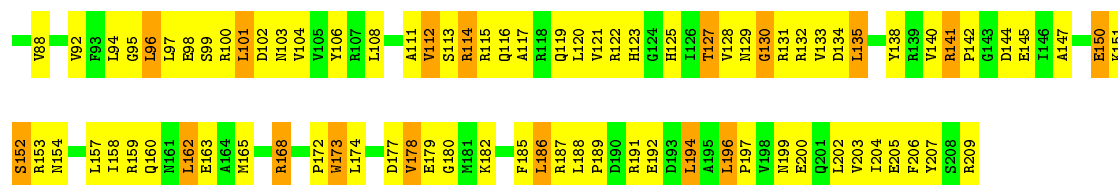
Chain MA:  43% 45% 11%



• Molecule 38: 30S ribosomal protein S4

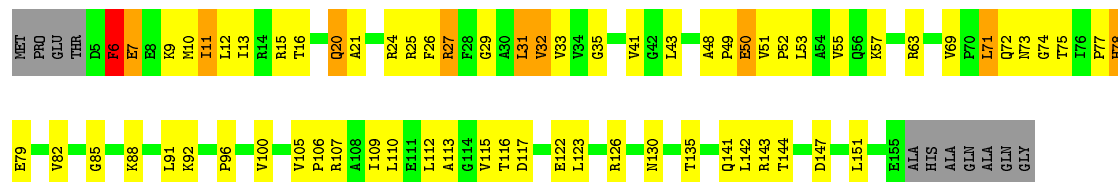
Chain QC:  40% 46% 13%





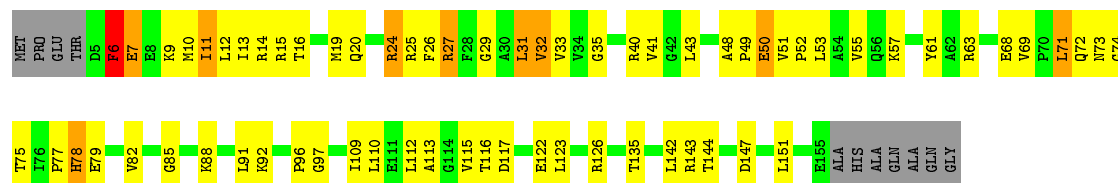
• Molecule 39: 30S ribosomal protein S5

Chain NA: 51% 36% 6% 7%



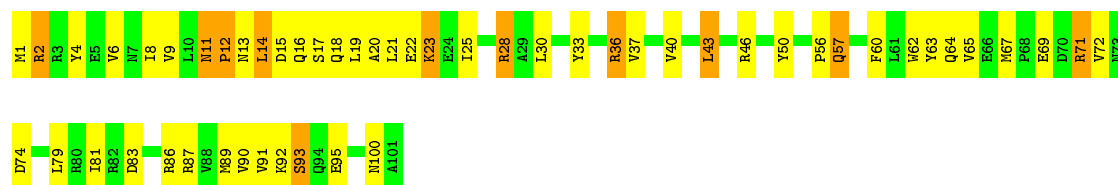
• Molecule 39: 30S ribosomal protein S5

Chain RC: 52% 35% 6% 7%



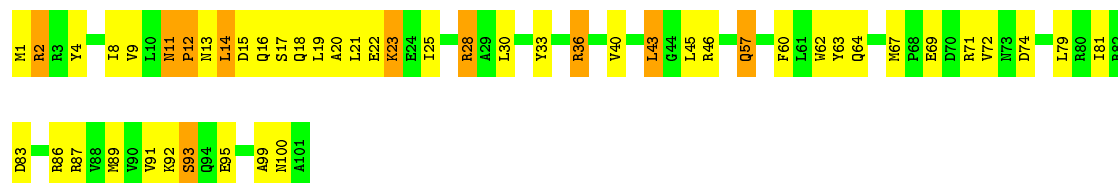
• Molecule 40: 30S ribosomal protein S6

Chain OA: 48% 42% 11%



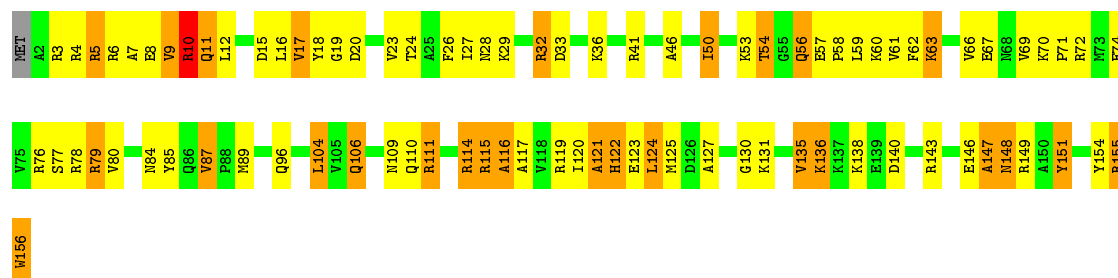
• Molecule 40: 30S ribosomal protein S6

Chain SC: 51% 39% 10%



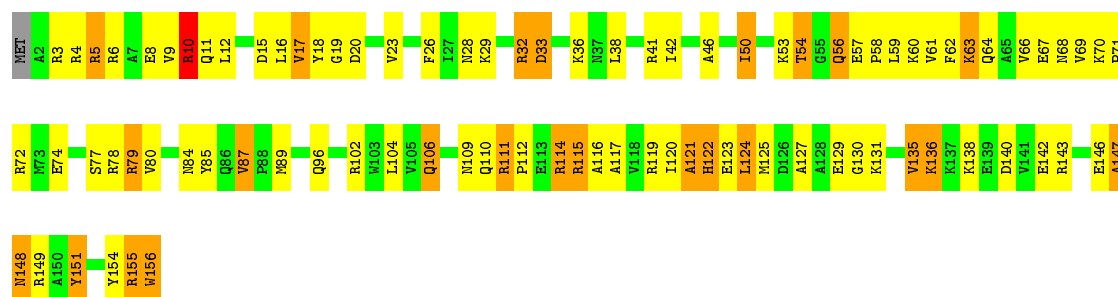
• Molecule 41: 30S ribosomal protein S7

Chain PA: 44% 38% 17% ..



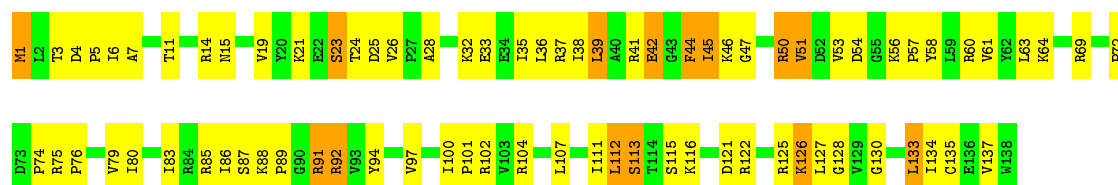
- Molecule 41: 30S ribosomal protein S7

Chain TC: 41% 42% 15% ..



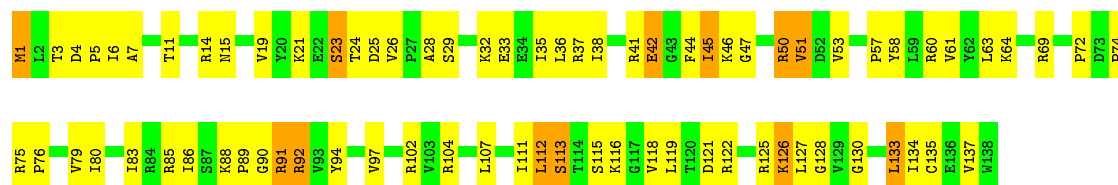
- Molecule 42: 30S ribosomal protein S8

Chain QA: 43% 46% 10%



- Molecule 42: 30S ribosomal protein S8

Chain UC: 45% 46% 9%



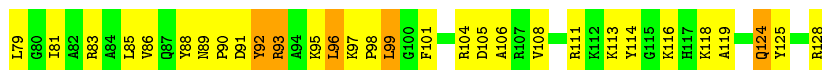
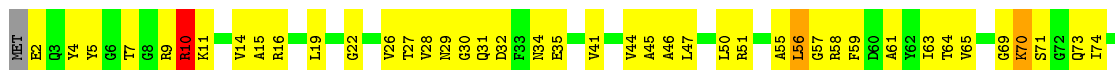
- Molecule 43: 30S ribosomal protein S9

Chain RA: 44% 49% 5% ..

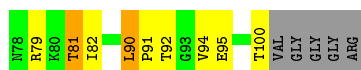




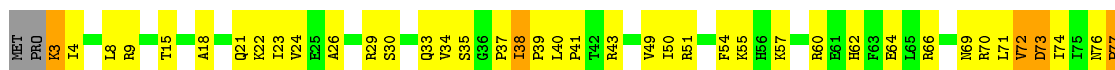
- Molecule 43: 30S ribosomal protein S9



- Molecule 44: 30S ribosomal protein S10



- Molecule 44: 30S ribosomal protein S10



- Molecule 45: 30S ribosomal protein S11

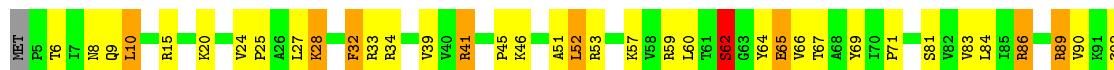


- Molecule 45: 30S ribosomal protein S11

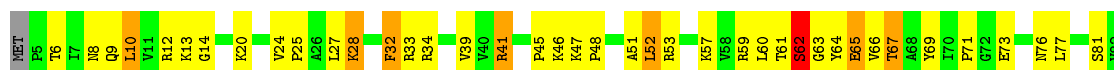




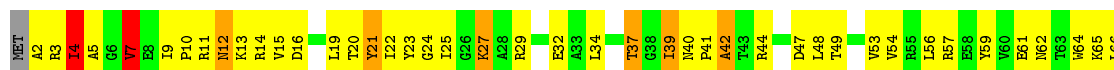
- Molecule 46: 30S ribosomal protein S12



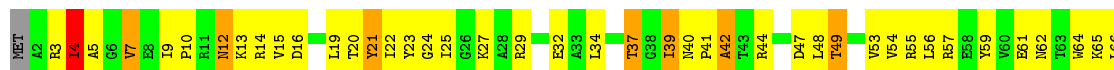
- Molecule 46: 30S ribosomal protein S12



- Molecule 47: 30S ribosomal protein S13



- Molecule 47: 30S ribosomal protein S13



- Molecule 48: 30S ribosomal protein S14 type Z



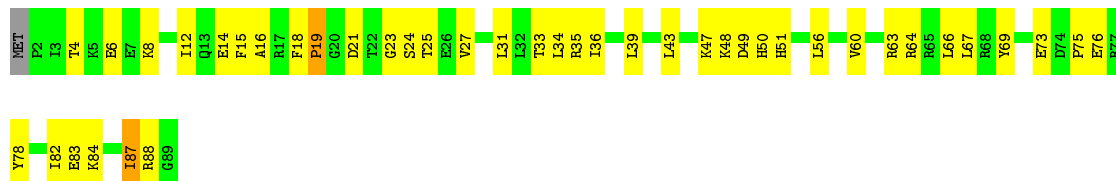
- Molecule 48: 30S ribosomal protein S14 type Z

Chain AD:  46% 46% 7%



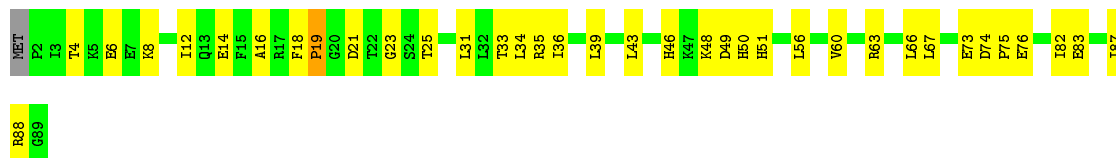
- Molecule 49: 30S ribosomal protein S15

Chain XA:  52% 45%



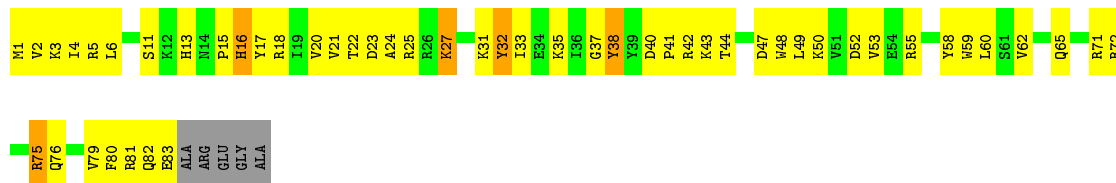
- Molecule 49: 30S ribosomal protein S15

Chain BD:  58% 39%



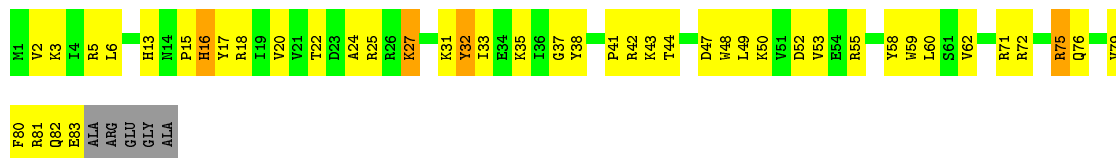
- Molecule 50: 30S ribosomal protein S16

Chain YA:  36% 52% 6% 6%



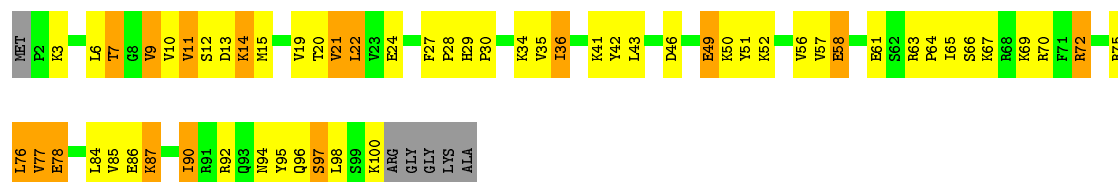
- Molecule 50: 30S ribosomal protein S16

Chain CD:  44% 45% 5% 6%



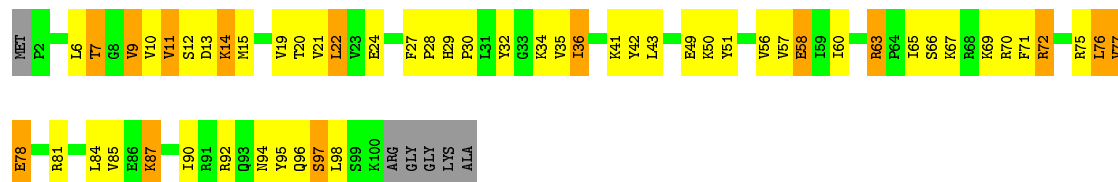
- Molecule 51: 30S ribosomal protein S17

Chain ZA:  39% 40% 15% 6%



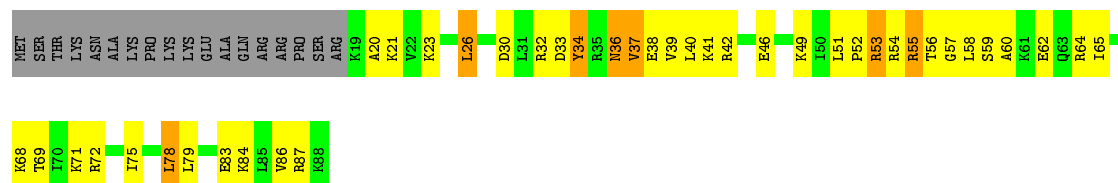
- Molecule 51: 30S ribosomal protein S17

Chain DD: 42% 39% 13% 6%



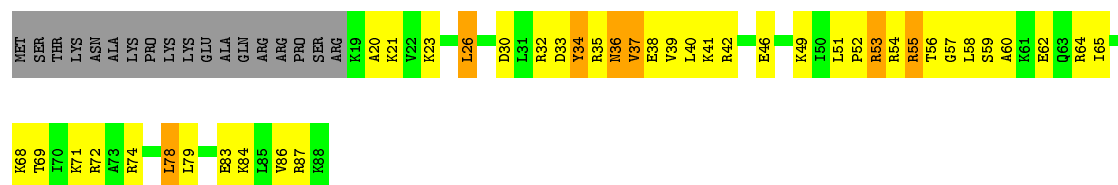
- Molecule 52: 30S ribosomal protein S18

Chain AB: 33% 39% 8% 20%



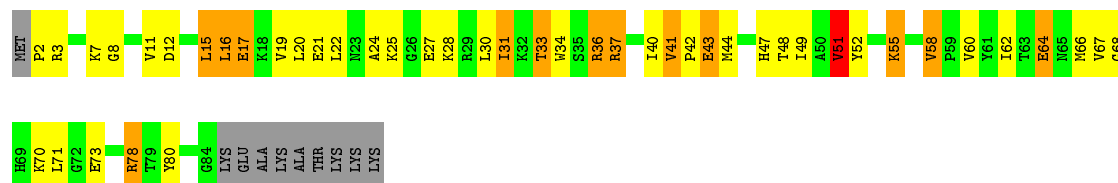
- Molecule 52: 30S ribosomal protein S18

Chain ED: 32% 40% 8% 20%



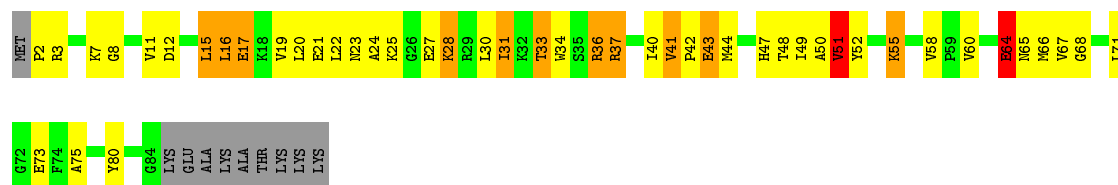
- Molecule 53: 30S ribosomal protein S19

Chain BB: 40% 34% 14% 11%



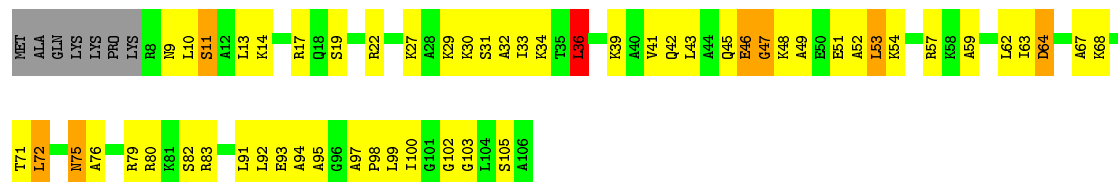
- Molecule 53: 30S ribosomal protein S19

Chain FD: 39% 37% 12% 11%



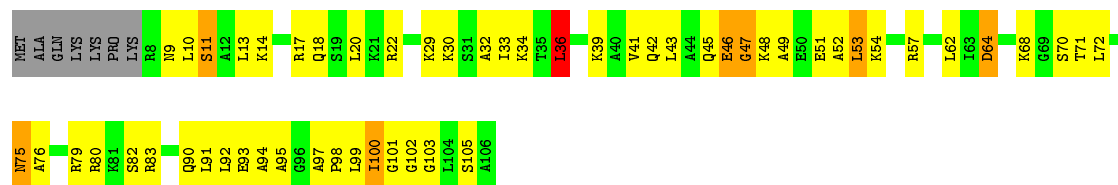
- Molecule 54: 30S ribosomal protein S20

Chain CB: 41% 45% 7% • 7%



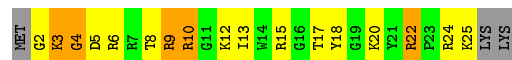
- Molecule 54: 30S ribosomal protein S20

Chain GD: 42% 44% 7% • 7%



- Molecule 55: 30S ribosomal protein Thx

Chain DB: 26% 44% 19% 11%



- Molecule 55: 30S ribosomal protein Thx

Chain HD: 26% 48% 15% 11%



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	211.85Å 452.54Å 624.45Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	50.00 – 3.40 87.52 – 3.40	Depositor EDS
% Data completeness (in resolution range)	99.9 (50.00-3.40) 99.9 (87.52-3.40)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.32 (at 3.41Å)	Xtriage
Refinement program	PHENIX	Depositor
R, R_{free}	(Not available) , (Not available) 0.261 , 0.296	Depositor DCC
R_{free} test set	16277 reflections (2.00%)	wwPDB-VP
Wilson B-factor (Å ²)	100.4	Xtriage
Anisotropy	0.211	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.26 , 62.3	EDS
L-test for twinning ²	$\langle L \rangle = 0.38$, $\langle L^2 \rangle = 0.21$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.89	EDS
Total number of atoms	299841	wwPDB-VP
Average B, all atoms (Å ²)	108.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.57% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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, ZN, M2G, OMG, 2MU, 0TD, MG, BLS, 2MA, 2MG, 5MC, UR3, MA6, 4OC, 4SU, 7MG, PSU

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	0.56	0/35961	1.08	64/56125 (0.1%)
1	EB	0.59	0/35961	1.11	67/56125 (0.1%)
2	B	0.90	35/69214 (0.1%)	1.38	667/108048 (0.6%)
2	FB	0.77	20/69214 (0.0%)	1.28	431/108048 (0.4%)
3	C	0.61	0/2881	1.13	3/4494 (0.1%)
3	GB	0.57	0/2881	1.09	1/4494 (0.0%)
4	D	0.43	0/1744	1.04	7/2719 (0.3%)
4	HB	0.43	0/1744	1.04	8/2719 (0.3%)
4	IA	0.53	0/1744	1.04	0/2719
4	MC	0.51	0/1744	1.03	0/2719
5	E	0.71	3/2195 (0.1%)	0.74	2/2955 (0.1%)
5	IB	0.65	2/2195 (0.1%)	0.73	1/2955 (0.0%)
6	F	0.61	1/1596 (0.1%)	0.65	0/2153
6	JB	0.55	2/1596 (0.1%)	0.62	0/2153
7	G	0.63	0/1621	0.66	0/2194
7	KB	0.55	0/1621	0.64	0/2194
8	H	0.36	0/1496	0.58	0/2013
8	LB	0.35	0/1496	0.57	0/2013
9	I	0.49	0/1356	0.58	0/1834
9	MB	0.36	0/1356	0.54	0/1834
10	J	0.44	0/1152	0.62	0/1559
10	NB	0.41	0/1152	0.60	0/1559
11	K	0.54	0/1148	0.64	0/1547
11	OB	0.44	0/1148	0.61	0/1547
12	L	0.65	0/942	0.64	0/1268
12	PB	0.56	0/942	0.64	0/1268
13	M	0.56	0/1162	0.72	0/1544
13	QB	0.51	0/1162	0.69	0/1544
14	N	0.57	0/1142	0.65	0/1525
14	RB	0.51	0/1142	0.63	0/1525
15	O	0.55	0/982	0.68	0/1312

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
15	SB	0.51	0/982	0.65	0/1312
16	P	0.38	0/887	0.56	0/1180
16	TB	0.38	0/887	0.56	0/1180
17	Q	0.52	0/1157	0.62	0/1544
17	UB	0.50	0/1157	0.61	0/1544
18	R	0.63	0/982	0.63	0/1306
18	VB	0.51	0/982	0.60	0/1306
19	S	0.61	0/790	0.66	0/1057
19	WB	0.55	0/790	0.65	0/1057
20	T	0.67	0/901	0.67	0/1209
20	XB	0.58	0/901	0.62	0/1209
21	U	0.64	0/764	0.72	1/1025 (0.1%)
21	YB	0.57	0/764	0.69	1/1025 (0.1%)
22	V	0.57	0/827	0.66	0/1103
22	ZB	0.49	0/827	0.63	0/1103
23	AC	0.44	0/1527	0.55	0/2073
23	W	0.50	0/1527	0.57	0/2073
24	BC	0.51	0/671	0.69	0/892
24	X	0.53	0/671	0.70	0/892
25	CC	0.55	0/768	0.64	0/1021
25	Y	0.58	0/768	0.69	0/1021
26	DC	0.51	0/594	0.59	0/785
26	Z	0.63	0/594	0.64	0/785
27	AA	0.56	0/482	0.61	0/646
27	EC	0.52	0/482	0.60	0/646
28	BA	0.33	0/565	0.51	0/761
28	FC	0.34	0/565	0.50	0/761
29	CA	0.58	0/474	0.64	0/640
29	GC	0.47	0/474	0.61	0/640
30	DA	0.35	0/460	0.52	0/613
30	HC	0.33	0/460	0.51	0/613
31	EA	0.67	0/426	0.80	0/561
31	IC	0.60	0/426	0.71	0/561
32	FA	0.56	0/525	0.60	0/691
32	JC	0.54	0/525	0.60	0/691
33	GA	0.50	0/310	0.57	0/407
33	KC	0.46	0/310	0.54	0/407
34	HA	0.72	0/247	1.07	0/382
34	LC	0.74	0/247	1.04	0/382
35	JA	0.44	0/2037	0.61	0/2746
35	NC	0.41	0/2037	0.61	0/2746
36	KA	0.44	2/1935 (0.1%)	0.55	0/2609
36	OC	0.46	2/1935 (0.1%)	0.56	0/2609

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
37	LA	0.35	0/1636	0.55	0/2205
37	PC	0.38	0/1636	0.56	0/2205
38	MA	0.40	0/1733	0.57	0/2318
38	QC	0.48	0/1733	0.59	0/2318
39	NA	0.43	0/1171	0.59	0/1576
39	RC	0.48	0/1171	0.62	0/1576
40	OA	0.49	0/856	0.59	0/1154
40	SC	0.46	0/856	0.59	0/1154
41	PA	0.35	0/1276	0.51	0/1709
41	TC	0.33	0/1276	0.50	0/1709
42	QA	0.38	0/1136	0.57	0/1527
42	UC	0.42	0/1136	0.60	0/1527
43	RA	0.32	0/1029	0.57	0/1378
43	VC	0.34	0/1029	0.58	0/1378
44	SA	0.33	0/807	0.54	0/1085
44	WC	0.34	0/807	0.55	0/1085
45	TA	0.44	0/879	0.61	0/1187
45	XC	0.43	0/879	0.62	0/1187
46	UA	0.48	0/963	0.62	0/1287
46	YC	0.50	0/963	0.63	0/1287
47	VA	0.32	0/943	0.58	0/1265
47	ZC	0.34	0/943	0.58	0/1265
48	AD	0.38	0/501	0.53	0/664
48	WA	0.38	0/501	0.52	0/664
49	BD	0.47	0/745	0.55	0/992
49	XA	0.46	0/745	0.56	0/992
50	CD	0.42	0/716	0.56	0/963
50	YA	0.38	0/716	0.53	0/963
51	DD	0.51	0/836	0.57	0/1117
51	ZA	0.46	0/836	0.56	0/1117
52	AB	0.43	0/579	0.55	0/768
52	ED	0.44	0/579	0.54	0/768
53	BB	0.34	0/680	0.57	0/915
53	FD	0.33	0/680	0.56	0/915
54	CB	0.36	0/764	0.56	0/1006
54	GD	0.42	0/764	0.59	0/1006
55	DB	0.35	0/212	0.54	0/277
55	HD	0.32	0/212	0.52	0/277
All	All	0.68	67/322254 (0.0%)	1.11	1253/481306 (0.3%)

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

sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
24	BC	0	1
24	X	0	1
38	MA	0	1
38	QC	0	1
All	All	0	4

All (67) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	945	A	N9-C4	12.76	1.45	1.37
2	B	1762	A	N9-C4	11.81	1.45	1.37
2	FB	945	A	N9-C4	11.72	1.44	1.37
2	B	945	A	C5-C6	10.43	1.50	1.41
2	FB	1762	A	N9-C4	10.17	1.44	1.37
2	B	1142(B)	A	N9-C4	-9.48	1.32	1.37
2	FB	1142(B)	A	N9-C4	-9.22	1.32	1.37
2	B	945	A	N7-C5	8.42	1.44	1.39
36	OC	135	GLN	CD-NE2	-7.92	1.13	1.32
2	B	2593	U	C4-O4	7.78	1.29	1.23
36	KA	135	GLN	CD-NE2	-7.70	1.13	1.32
36	KA	135	GLN	CD-OE1	-7.20	1.08	1.24
5	E	237	GLU	CG-CD	7.09	1.62	1.51
6	JB	143	ASN	CG-OD1	-6.99	1.08	1.24
2	B	945	A	N3-C4	6.96	1.39	1.34
2	B	2271	G	C6-O6	6.90	1.30	1.24
36	OC	135	GLN	CD-OE1	-6.74	1.09	1.24
6	F	143	ASN	CG-OD1	-6.67	1.09	1.24
2	B	750	A	N3-C4	-6.46	1.30	1.34
5	E	237	GLU	CB-CG	6.45	1.64	1.52
2	B	2593	U	C2-N3	6.33	1.42	1.37
2	B	390	A	N9-C4	-6.26	1.34	1.37
5	IB	237	GLU	CG-CD	6.17	1.61	1.51
2	FB	2593	U	C4-O4	6.17	1.28	1.23
2	B	2602	A	N9-C4	6.17	1.41	1.37
2	B	190	A	N9-C4	-6.14	1.34	1.37
5	IB	237	GLU	CB-CG	6.12	1.63	1.52
2	B	1021	A	N9-C4	-6.01	1.34	1.37
2	FB	1762	A	N3-C4	5.97	1.38	1.34
2	FB	2287	A	N9-C4	-5.95	1.34	1.37
2	B	750	A	N9-C4	-5.94	1.34	1.37
2	B	2602	A	N3-C4	5.92	1.38	1.34
2	B	1938	A	N9-C4	-5.91	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	FB	2542	A	N9-C4	-5.91	1.34	1.37
2	FB	394	A	N9-C4	-5.89	1.34	1.37
2	B	677	A	N9-C4	-5.87	1.34	1.37
2	FB	2060	A	N9-C4	-5.85	1.34	1.37
2	B	528	A	N9-C4	-5.84	1.34	1.37
2	B	2245	U	C4-O4	5.77	1.28	1.23
2	B	2577	A	C6-N1	-5.76	1.31	1.35
2	B	330	A	N3-C4	-5.76	1.31	1.34
2	FB	548	A	N9-C4	5.75	1.41	1.37
2	B	466	A	N7-C5	-5.66	1.35	1.39
2	B	1251	C	N1-C6	-5.60	1.33	1.37
2	FB	945	A	N3-C4	5.58	1.38	1.34
2	B	1762	A	N3-C4	5.53	1.38	1.34
2	FB	1247	A	N9-C4	-5.47	1.34	1.37
2	B	1247	A	N9-C4	-5.47	1.34	1.37
2	B	330	A	N9-C4	-5.41	1.34	1.37
6	JB	143	ASN	CG-ND2	-5.39	1.19	1.32
2	B	1785	A	N9-C4	-5.37	1.34	1.37
2	FB	1762	A	C5-C6	5.35	1.45	1.41
2	FB	2629	A	N9-C4	5.32	1.41	1.37
2	FB	2602	A	N9-C4	5.32	1.41	1.37
2	FB	528	A	N9-C4	-5.31	1.34	1.37
2	FB	586	A	N9-C4	-5.26	1.34	1.37
2	B	2287	A	N9-C4	-5.26	1.34	1.37
2	B	73	A	N3-C4	-5.25	1.31	1.34
2	B	251	A	N7-C5	-5.25	1.36	1.39
2	B	270(A)	A	N9-C4	-5.22	1.34	1.37
2	B	2249	U	C4-O4	5.18	1.27	1.23
2	FB	1762	A	C5-C4	5.16	1.42	1.38
2	B	465	G	N7-C5	-5.13	1.36	1.39
2	FB	1960	A	N9-C4	-5.06	1.34	1.37
2	FB	2060	A	N3-C4	-5.06	1.31	1.34
5	E	28	GLU	CG-CD	5.03	1.59	1.51
2	B	793	A	N9-C4	-5.00	1.34	1.37

All (1253) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	945	A	C2-N3-C4	21.30	121.25	110.60
2	FB	945	A	C2-N3-C4	17.33	119.27	110.60
2	B	945	A	C5-C6-N1	16.78	126.09	117.70
2	B	945	A	N1-C6-N6	-15.09	109.55	118.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	945	A	C5-C6-N1	15.07	125.23	117.70
2	B	945	A	N3-C4-C5	-13.56	117.31	126.80
2	B	2593	U	N3-C4-C5	-13.48	106.51	114.60
2	FB	945	A	N1-C6-N6	-13.11	110.73	118.60
2	FB	2593	U	N3-C4-C5	-12.96	106.82	114.60
2	B	945	A	C6-N1-C2	-12.23	111.26	118.60
2	FB	2593	U	C6-N1-C2	-11.71	113.97	121.00
2	B	570	G	C5-C6-N1	-11.21	105.90	111.50
2	B	450	G	C5-C6-N1	-10.99	106.00	111.50
2	FB	945	A	N3-C4-C5	-10.94	119.14	126.80
2	B	1671	U	N3-C4-O4	10.58	126.80	119.40
2	B	2033	A	O5'-P-OP2	-10.50	96.25	105.70
2	B	2593	U	C6-N1-C2	-10.43	114.74	121.00
2	B	2271	G	C5-C6-N1	-10.35	106.32	111.50
2	B	528	A	C2-N3-C4	-10.35	105.43	110.60
1	EB	1452	C	C6-N1-C2	-10.07	116.27	120.30
2	B	570	G	C4-C5-N7	-9.84	106.86	110.80
2	FB	1828	G	N9-C4-C5	9.72	109.29	105.40
2	B	1828	G	N9-C4-C5	9.60	109.24	105.40
2	B	2685	G	C5-C6-N1	-9.55	106.72	111.50
2	FB	1828	G	C8-N9-C4	-9.49	102.60	106.40
2	B	2593	U	N3-C4-O4	9.45	126.02	119.40
2	B	1043	C	N1-C2-O2	9.34	124.50	118.90
1	EB	754	C	N1-C2-O2	9.31	124.49	118.90
2	B	1309	G	N1-C6-O6	9.30	125.48	119.90
1	A	754	C	C2-N1-C1'	9.19	128.91	118.80
2	B	1790	C	C5-C4-N4	9.18	126.62	120.20
2	FB	1828	G	C5-C6-O6	9.14	134.08	128.60
2	B	1602	U	N3-C4-C5	-9.04	109.17	114.60
2	B	2447	G	N1-C6-O6	8.97	125.28	119.90
2	FB	528	A	C2-N3-C4	-8.94	106.13	110.60
1	A	754	C	N1-C2-O2	8.91	124.25	118.90
2	B	397	G	N1-C6-O6	8.90	125.24	119.90
2	B	1828	G	C8-N9-C4	-8.89	102.84	106.40
2	FB	495	G	N1-C6-O6	8.89	125.23	119.90
2	B	945	A	C4-C5-N7	-8.88	106.26	110.70
2	B	570	G	C5-C6-O6	8.82	133.89	128.60
1	EB	754	C	C2-N1-C1'	8.75	128.42	118.80
2	B	1043	C	N3-C2-O2	-8.74	115.78	121.90
2	B	1828	G	C5-C6-O6	8.73	133.84	128.60
2	B	2838	G	N1-C6-O6	8.70	125.12	119.90
2	FB	1043	C	N1-C2-O2	8.65	124.09	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	568	U	N3-C4-C5	-8.62	109.43	114.60
2	B	1614	A	O5'-P-OP2	-8.54	98.02	105.70
2	B	1762	A	C8-N9-C4	-8.54	102.39	105.80
2	FB	929	G	N1-C6-O6	8.53	125.02	119.90
2	B	1671	U	N3-C4-C5	-8.51	109.49	114.60
2	B	450	G	C4-C5-C6	8.51	123.90	118.80
2	FB	1965	C	C6-N1-C2	8.48	123.69	120.30
2	FB	1790	C	C5-C4-N4	8.48	126.14	120.20
2	FB	1838	C	C6-N1-C2	8.48	123.69	120.30
2	B	1828	G	C4-C5-N7	-8.47	107.41	110.80
2	B	929	G	N1-C6-O6	8.46	124.98	119.90
2	FB	2249	U	N3-C4-C5	-8.44	109.54	114.60
2	B	2581	G	C8-N9-C4	-8.43	103.03	106.40
2	B	945	A	C6-C5-N7	8.42	138.19	132.30
2	FB	663	G	N1-C6-O6	8.41	124.94	119.90
2	B	1762	A	C2-N3-C4	8.36	114.78	110.60
2	B	2574	G	N1-C6-O6	8.35	124.91	119.90
2	FB	945	A	C6-N1-C2	-8.35	113.59	118.60
2	FB	570	G	C5-C6-N1	-8.29	107.36	111.50
2	FB	1762	A	C8-N9-C4	-8.20	102.52	105.80
2	B	2594	C	C6-N1-C2	-8.16	117.03	120.30
2	FB	945	A	C8-N9-C4	-8.15	102.54	105.80
2	B	945	A	N9-C4-C5	8.13	109.05	105.80
2	B	559	G	C5-C6-N1	-8.10	107.45	111.50
2	FB	379	G	N1-C6-O6	8.09	124.75	119.90
2	B	2235	G	C8-N9-C4	-8.07	103.17	106.40
2	B	1940	U	N3-C4-C5	-8.06	109.76	114.60
2	FB	2505	G	C4-C5-N7	-8.04	107.58	110.80
2	FB	1828	G	C4-C5-N7	-8.03	107.59	110.80
2	B	597	U	C5-C4-O4	8.02	130.71	125.90
2	B	1394	U	C5-C6-N1	8.01	126.70	122.70
2	B	1142(B)	A	C2-N3-C4	-7.97	106.61	110.60
2	B	527	C	C2-N1-C1'	7.95	127.54	118.80
2	B	2593	U	N1-C2-O2	-7.92	117.26	122.80
2	B	945	A	C5-N7-C8	7.91	107.86	103.90
2	B	1838	C	C6-N1-C2	7.89	123.46	120.30
2	FB	1043	C	N3-C2-O2	-7.86	116.40	121.90
2	FB	1671	U	N3-C4-C5	-7.83	109.90	114.60
2	B	2556	C	N1-C2-O2	7.82	123.59	118.90
2	FB	445	C	C6-N1-C2	-7.81	117.17	120.30
2	FB	1309	G	N1-C6-O6	7.80	124.58	119.90
2	B	1202	C	N1-C2-O2	-7.79	114.22	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	2447	G	N1-C6-O6	7.79	124.58	119.90
2	B	945	A	N3-C4-N9	7.79	133.63	127.40
2	FB	1697	G	N1-C6-O6	7.78	124.57	119.90
2	FB	1671	U	N3-C4-O4	7.77	124.84	119.40
2	B	1698	A	C8-N9-C4	-7.76	102.70	105.80
2	B	1790	C	O4'-C1'-N1	7.75	114.40	108.20
1	A	86	U	C2-N1-C1'	7.75	127.00	117.70
2	FB	2502	G	C6-C5-N7	-7.73	125.76	130.40
2	FB	450	G	C5-C6-N1	-7.71	107.64	111.50
2	FB	1187	G	C5-C6-N1	-7.65	107.68	111.50
2	B	62	C	C6-N1-C2	7.64	123.36	120.30
2	FB	1615	C	N3-C2-O2	7.63	127.24	121.90
2	B	128	C	C6-N1-C2	7.62	123.35	120.30
2	FB	597	U	C2-N1-C1'	-7.61	108.57	117.70
2	FB	154(A)	C	C6-N1-C2	-7.59	117.26	120.30
2	B	1386	C	C6-N1-C2	-7.57	117.27	120.30
2	B	1841	U	N3-C4-C5	-7.57	110.06	114.60
2	B	751	A	O5'-P-OP2	-7.55	98.90	105.70
2	B	1607	C	N1-C2-O2	7.53	123.42	118.90
2	FB	450	G	C4-C5-C6	7.53	123.32	118.80
2	FB	2593	U	N3-C4-O4	7.53	124.67	119.40
2	B	526	A	C8-N9-C4	-7.51	102.80	105.80
2	B	2570	G	C5-C6-N1	-7.51	107.75	111.50
1	EB	699	C	C6-N1-C2	-7.50	117.30	120.30
2	B	2570	G	N3-C2-N2	-7.50	114.65	119.90
2	FB	1043	C	C2-N1-C1'	7.49	127.04	118.80
2	B	1021	A	C5-N7-C8	-7.49	100.16	103.90
2	FB	2602	A	OP1-P-O3'	7.48	121.66	105.20
1	EB	86	U	C2-N1-C1'	7.47	126.66	117.70
2	FB	945	A	N9-C4-C5	7.47	108.79	105.80
2	B	548	A	C8-N9-C4	-7.47	102.81	105.80
2	FB	2593	U	C5-C6-N1	7.46	126.43	122.70
2	B	2502	G	C6-C5-N7	-7.45	125.93	130.40
2	B	2602	A	OP1-P-O3'	7.45	121.58	105.20
2	B	330	A	C2-N3-C4	-7.44	106.88	110.60
2	B	1187	G	C5-C6-N1	-7.43	107.79	111.50
2	B	2237	G	O5'-P-OP2	-7.40	99.04	105.70
2	FB	1537	C	C5-C6-N1	7.39	124.69	121.00
2	B	1218	C	C6-N1-C2	7.38	123.25	120.30
2	FB	2271	G	C5-C6-N1	-7.38	107.81	111.50
2	B	1328	G	N3-C4-C5	-7.37	124.92	128.60
2	B	786	C	N1-C2-O2	-7.36	114.48	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	271(B)	C	C6-N1-C2	-7.36	117.36	120.30
2	B	2443	C	C6-N1-C2	-7.35	117.36	120.30
2	B	2576	G	O5'-P-OP2	-7.35	99.09	105.70
4	HB	47	U	C2-N1-C1'	7.34	126.51	117.70
2	FB	570	G	C4-C5-N7	-7.34	107.86	110.80
2	B	1043	C	C2-N1-C1'	7.33	126.87	118.80
2	FB	2447	G	C5-C6-N1	-7.32	107.84	111.50
2	FB	1697	G	C6-C5-N7	-7.32	126.01	130.40
2	FB	597	U	C5-C4-O4	7.30	130.28	125.90
2	B	1614	A	O5'-P-OP1	7.30	119.46	110.70
2	B	2612	C	O5'-P-OP2	7.30	119.46	110.70
2	B	2593	U	C4-C5-C6	7.29	124.07	119.70
2	B	767	U	C5-C4-O4	7.29	130.27	125.90
1	A	293	G	N1-C6-O6	7.28	124.27	119.90
1	A	115	G	N3-C4-C5	-7.28	124.96	128.60
2	FB	124	G	N1-C6-O6	7.27	124.26	119.90
2	B	2210	G	O4'-C1'-N9	7.26	114.01	108.20
2	FB	2210	G	O4'-C1'-N9	7.25	114.00	108.20
2	B	2447	G	C5-C6-N1	-7.24	107.88	111.50
2	B	2442	C	N3-C2-O2	-7.23	116.84	121.90
2	FB	1602	U	N3-C4-C5	-7.23	110.26	114.60
2	B	445	C	C6-N1-C2	-7.23	117.41	120.30
2	B	304	G	C4-C5-N7	-7.22	107.91	110.80
2	B	570	G	C4-C5-C6	7.21	123.13	118.80
2	FB	976	C	C6-N1-C2	-7.20	117.42	120.30
2	B	2032	G	N1-C6-O6	7.20	124.22	119.90
2	B	450	G	C8-N9-C4	-7.18	103.53	106.40
2	B	2574	G	C6-C5-N7	-7.18	126.09	130.40
1	EB	754	C	C6-N1-C1'	-7.17	112.19	120.80
2	B	1840	G	C5-C6-N1	-7.16	107.92	111.50
2	B	304	G	C5-C6-N1	-7.16	107.92	111.50
2	B	330	A	N1-C2-N3	7.14	132.87	129.30
2	FB	559	G	C5-C6-N1	-7.14	107.93	111.50
2	B	1964	G	N1-C6-O6	7.13	124.18	119.90
1	A	922	G	N1-C6-O6	7.12	124.17	119.90
1	A	754	C	C6-N1-C1'	-7.10	112.28	120.80
2	B	16	G	C5-C6-N1	-7.10	107.95	111.50
2	B	1790	C	C6-N1-C1'	7.10	129.32	120.80
2	FB	2570	G	N1-C6-O6	7.09	124.16	119.90
2	B	2616	C	C6-N1-C2	7.09	123.14	120.30
2	B	1537	C	C5-C6-N1	7.08	124.54	121.00
1	EB	1532	U	O4'-C1'-N1	7.08	113.86	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	2576	G	O5'-P-OP2	-7.07	99.33	105.70
2	B	58	G	C5-C6-N1	-7.07	107.97	111.50
2	B	2016	U	O5'-P-OP2	-7.07	99.34	105.70
2	FB	2245	U	C5-C4-O4	7.07	130.14	125.90
2	B	783	A	C8-N9-C4	-7.07	102.97	105.80
2	FB	2061	G	OP2-P-O3'	7.06	120.74	105.20
2	B	2061	G	OP2-P-O3'	7.06	120.73	105.20
2	B	2397	G	N1-C6-O6	7.05	124.13	119.90
2	FB	1187	G	C8-N9-C4	-7.05	103.58	106.40
2	B	154(A)	C	C6-N1-C2	-7.04	117.48	120.30
2	B	1547	C	N1-C2-O2	7.03	123.12	118.90
2	FB	2505	G	N9-C4-C5	7.02	108.21	105.40
2	B	597	U	C2-N1-C1'	-6.99	109.31	117.70
2	B	501	A	C2-N3-C4	-6.99	107.11	110.60
2	B	265	A	O4'-C1'-N9	6.99	113.79	108.20
2	B	1391	U	N1-C2-O2	6.99	127.69	122.80
2	B	1992	G	N3-C4-C5	-6.98	125.11	128.60
2	B	2027	G	N1-C6-O6	6.98	124.09	119.90
2	B	458	G	C5-C6-O6	6.98	132.79	128.60
2	FB	929	G	C6-C5-N7	-6.98	126.22	130.40
2	B	2271	G	N1-C6-O6	6.97	124.08	119.90
2	B	68	G	C5-C6-N1	-6.96	108.02	111.50
2	FB	597	U	C6-N1-C1'	6.96	130.94	121.20
2	FB	1698	A	C6-C5-N7	-6.96	127.43	132.30
2	B	1187	G	C8-N9-C4	-6.95	103.62	106.40
2	B	91	A	N7-C8-N9	6.95	117.27	113.80
2	B	700	G	N1-C6-O6	6.95	124.07	119.90
4	D	47	U	C2-N1-C1'	6.95	126.03	117.70
2	B	964	C	N3-C4-C5	-6.93	119.13	121.90
2	B	2518	A	N1-C6-N6	6.93	122.76	118.60
2	B	512	G	N1-C6-O6	-6.93	115.74	119.90
2	B	379	G	N1-C6-O6	6.91	124.05	119.90
2	B	2055	C	OP2-P-O3'	6.91	120.40	105.20
2	FB	1790	C	N3-C4-N4	-6.91	113.17	118.00
2	FB	2570	G	C5-C6-N1	-6.91	108.05	111.50
1	A	86	U	N3-C2-O2	-6.89	117.37	122.20
2	B	1235	G	C8-N9-C4	-6.89	103.64	106.40
2	B	2429	G	OP2-P-O3'	6.89	120.36	105.20
2	B	16	G	N1-C6-O6	6.89	124.03	119.90
2	B	1021	A	C2-N3-C4	-6.89	107.16	110.60
2	B	2577	A	O5'-P-OP2	-6.88	99.51	105.70
2	B	787	U	O5'-P-OP2	-6.87	99.52	105.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	527	C	C2-N1-C1'	6.87	126.35	118.80
2	B	700	G	C8-N9-C4	-6.85	103.66	106.40
2	B	780	G	C8-N9-C4	-6.84	103.66	106.40
2	FB	1790	C	C6-N1-C1'	6.84	129.01	120.80
2	B	1336	A	N1-C6-N6	-6.83	114.50	118.60
2	B	1129	A	C8-N9-C4	-6.82	103.07	105.80
2	B	1615	C	C6-N1-C2	6.82	123.03	120.30
2	B	1349	A	N1-C6-N6	6.81	122.69	118.60
2	B	1602	U	C4-C5-C6	6.80	123.78	119.70
2	B	1451	C	C6-N1-C2	6.80	123.02	120.30
2	B	1154	G	N3-C4-C5	-6.80	125.20	128.60
2	B	1558	A	C2-N3-C4	-6.80	107.20	110.60
2	FB	2624	G	N1-C6-O6	6.79	123.97	119.90
2	B	450	G	C6-C5-N7	-6.78	126.33	130.40
2	B	1841	U	N3-C4-O4	6.78	124.14	119.40
2	FB	2073	C	N1-C2-O2	-6.78	114.83	118.90
2	FB	1537	C	C6-N1-C2	-6.77	117.59	120.30
2	B	41	C	C6-N1-C2	6.76	123.01	120.30
1	A	1532	U	O4'-C1'-N1	6.75	113.60	108.20
2	FB	1614	A	O5'-P-OP2	-6.75	99.63	105.70
2	B	597	U	C6-N1-C1'	6.73	130.62	121.20
2	B	458	G	N9-C4-C5	6.72	108.09	105.40
2	B	1381	G	N1-C6-O6	6.72	123.93	119.90
2	FB	2447	G	C6-C5-N7	-6.72	126.37	130.40
1	EB	785	G	N1-C6-O6	6.71	123.93	119.90
2	B	570	G	N9-C4-C5	6.71	108.08	105.40
2	B	1698	A	N7-C8-N9	6.71	117.15	113.80
2	FB	1698	A	N1-C6-N6	6.71	122.62	118.60
2	B	1187	G	C4-C5-C6	6.69	122.81	118.80
2	FB	34	C	N1-C2-O2	6.68	122.91	118.90
2	B	2415	G	N1-C6-O6	6.67	123.90	119.90
2	B	391	G	C6-C5-N7	-6.66	126.40	130.40
2	B	251	A	C8-N9-C4	-6.65	103.14	105.80
2	B	1970	A	C8-N9-C4	-6.65	103.14	105.80
2	B	2249	U	N3-C4-C5	-6.65	110.61	114.60
2	B	700	G	C6-C5-N7	-6.65	126.41	130.40
2	FB	1187	G	C4-N9-C1'	6.64	135.14	126.50
2	B	1790	C	N3-C2-O2	-6.64	117.25	121.90
2	B	1778	U	C2-N1-C1'	-6.64	109.73	117.70
2	FB	528	A	C5-C6-N1	-6.63	114.39	117.70
2	B	1187	G	C4-N9-C1'	6.62	135.11	126.50
1	A	754	C	N3-C2-O2	-6.62	117.27	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	456	C	N3-C4-C5	6.62	124.55	121.90
2	B	837	C	C6-N1-C2	-6.61	117.66	120.30
2	B	1193	G	N1-C6-O6	6.61	123.87	119.90
2	FB	1615	C	N1-C2-O2	-6.61	114.94	118.90
2	B	1778	U	N1-C2-O2	-6.60	118.18	122.80
2	FB	548	A	C8-N9-C4	-6.60	103.16	105.80
2	FB	570	G	C5-C6-O6	6.60	132.56	128.60
2	FB	1187	G	C4-C5-C6	6.60	122.76	118.80
2	FB	1975	G	C5-C6-N1	-6.60	108.20	111.50
2	B	59	U	N3-C2-O2	-6.59	117.58	122.20
1	EB	86	U	N3-C2-O2	-6.59	117.59	122.20
2	B	955	C	C6-N1-C2	-6.58	117.67	120.30
2	FB	1698	A	N7-C8-N9	6.57	117.09	113.80
2	B	965	C	C6-N1-C2	-6.57	117.67	120.30
2	FB	1828	G	C5-C6-N1	-6.57	108.21	111.50
2	B	2593	U	N1-C2-N3	6.57	118.84	114.90
2	B	2691	C	C6-N1-C2	-6.57	117.67	120.30
2	B	1768	U	C5-C4-O4	6.56	129.84	125.90
2	B	1189	A	C8-N9-C4	-6.56	103.18	105.80
2	FB	564	C	C6-N1-C2	-6.55	117.68	120.30
2	B	82	G	C5-C6-N1	-6.55	108.22	111.50
2	B	1154	G	C4-N9-C1'	6.54	135.00	126.50
2	B	450	G	C2-N3-C4	-6.54	108.63	111.90
1	EB	1452	C	C2-N1-C1'	6.54	125.99	118.80
2	B	2545	G	C8-N9-C4	-6.53	103.79	106.40
1	EB	121	C	N1-C2-O2	6.53	122.82	118.90
2	FB	2196	C	N1-C2-O2	6.53	122.82	118.90
2	B	2486	G	C8-N9-C4	-6.53	103.79	106.40
2	B	2447	G	C4-C5-C6	6.53	122.72	118.80
2	B	761	A	O5'-P-OP1	-6.52	99.83	105.70
1	EB	1452	C	C5-C6-N1	6.52	124.26	121.00
2	FB	34	C	C5-C6-N1	6.52	124.26	121.00
2	B	761	A	C5-N7-C8	-6.51	100.64	103.90
2	FB	945	A	C6-C5-N7	6.51	136.86	132.30
2	B	2573	C	C6-N1-C2	6.50	122.90	120.30
2	B	1304	C	N3-C4-N4	-6.50	113.45	118.00
2	B	1790	C	N3-C4-N4	-6.50	113.45	118.00
2	FB	2052	G	N1-C6-O6	6.50	123.80	119.90
2	B	2505	G	C5-C6-O6	6.50	132.50	128.60
1	EB	1416	G	C6-C5-N7	-6.50	126.50	130.40
2	FB	1267	U	P-O3'-C3'	6.50	127.50	119.70
2	B	2494	G	N1-C6-O6	6.49	123.80	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2685	G	C2-N3-C4	-6.49	108.66	111.90
2	B	2258	C	C6-N1-C2	-6.48	117.71	120.30
1	EB	1158	C	N1-C2-O2	6.48	122.79	118.90
2	B	1395	A	O4'-C1'-N9	6.47	113.38	108.20
4	HB	75	C	C6-N1-C2	-6.47	117.71	120.30
2	FB	1323	U	N3-C4-O4	6.47	123.93	119.40
1	A	812	C	N1-C2-O2	6.47	122.78	118.90
1	EB	86	U	N1-C2-O2	6.47	127.33	122.80
2	B	1537	C	C6-N1-C2	-6.46	117.72	120.30
2	B	57	C	C6-N1-C2	6.46	122.89	120.30
2	B	1142(B)	A	N3-C4-C5	6.45	131.31	126.80
2	FB	1778	U	C2-N1-C1'	-6.45	109.96	117.70
2	FB	265	A	O4'-C1'-N9	6.45	113.36	108.20
2	FB	391	G	C8-N9-C1'	-6.45	118.62	127.00
2	B	670	A	O4'-C1'-N9	-6.44	103.05	108.20
1	A	1158	C	C2-N1-C1'	6.44	125.88	118.80
2	B	1644	C	C6-N1-C2	-6.44	117.72	120.30
2	B	1327	C	O5'-P-OP1	-6.44	99.91	105.70
2	B	543	C	C2-N1-C1'	6.43	125.88	118.80
2	B	1259	G	N1-C6-O6	-6.43	116.04	119.90
1	EB	691	G	N1-C6-O6	6.43	123.76	119.90
2	FB	2593	U	C4-C5-C6	6.43	123.56	119.70
2	B	1568	G	N3-C4-N9	-6.43	122.14	126.00
2	B	2056	G	C5-C6-O6	-6.43	124.74	128.60
2	FB	1395	A	O4'-C1'-N9	6.42	113.34	108.20
2	FB	1790	C	O4'-C1'-N1	6.42	113.34	108.20
2	B	1558	A	N1-C6-N6	6.41	122.45	118.60
2	FB	1992	G	O4'-C1'-N9	-6.41	103.07	108.20
2	B	208	C	C6-N1-C2	6.41	122.86	120.30
2	FB	34	C	C2-N3-C4	6.40	123.10	119.90
2	FB	2593	U	C2-N3-C4	6.40	130.84	127.00
2	FB	1336	A	N1-C6-N6	-6.39	114.77	118.60
2	FB	2508	G	C5-C6-N1	-6.39	108.31	111.50
1	A	792	A	C8-N9-C4	6.39	108.36	105.80
2	FB	265	A	N1-C6-N6	6.38	122.43	118.60
2	B	929	G	C6-C5-N7	-6.38	126.57	130.40
2	B	2318	G	O4'-C1'-N9	6.38	113.30	108.20
2	FB	90	U	N3-C2-O2	-6.37	117.74	122.20
2	FB	2249	U	N3-C4-O4	6.37	123.86	119.40
2	B	2245	U	N3-C4-C5	-6.37	110.78	114.60
2	FB	592	G	N1-C6-O6	6.37	123.72	119.90
4	D	47	U	N1-C2-O2	6.37	127.26	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	1992	G	P-O3'-C3'	6.37	127.34	119.70
2	FB	2004	G	N1-C6-O6	6.35	123.71	119.90
2	FB	667	U	N3-C4-O4	6.35	123.85	119.40
4	HB	47	U	N1-C2-O2	6.35	127.24	122.80
2	B	1605	C	C6-N1-C2	-6.35	117.76	120.30
2	B	2447	G	C6-C5-N7	-6.34	126.59	130.40
2	B	465	G	C8-N9-C4	-6.34	103.86	106.40
2	FB	2443	C	C6-N1-C2	-6.34	117.76	120.30
2	B	2729	G	C5-C6-N1	-6.34	108.33	111.50
2	FB	210	C	C6-N1-C2	6.34	122.83	120.30
2	B	645	C	C6-N1-C2	-6.34	117.77	120.30
1	EB	1416	G	N1-C6-O6	6.33	123.70	119.90
2	B	684	G	C8-N9-C4	-6.32	103.87	106.40
2	FB	2210	G	C8-N9-C4	-6.32	103.87	106.40
2	B	1640	C	C6-N1-C2	-6.31	117.78	120.30
2	B	1328	G	N3-C4-N9	6.31	129.78	126.00
1	EB	1416	G	C5-C6-N1	-6.30	108.35	111.50
2	B	1391	U	N3-C2-O2	-6.30	117.79	122.20
1	A	306	G	C8-N9-C4	6.29	108.92	106.40
2	FB	1940	U	N3-C4-C5	-6.29	110.83	114.60
2	FB	1381	G	N1-C6-O6	6.29	123.67	119.90
2	B	1682	G	N1-C6-O6	6.29	123.67	119.90
1	EB	186(F)	C	C6-N1-C2	-6.28	117.79	120.30
2	B	1615	C	N3-C2-O2	6.28	126.30	121.90
1	EB	1158	C	C2-N1-C1'	6.28	125.70	118.80
1	EB	767	A	N1-C6-N6	-6.27	114.84	118.60
2	B	2570	G	N1-C6-O6	6.27	123.66	119.90
1	A	86	U	N1-C2-O2	6.27	127.19	122.80
2	B	1154	G	N3-C4-N9	6.27	129.76	126.00
2	FB	91	A	N7-C8-N9	6.27	116.93	113.80
2	FB	2276	G	N1-C6-O6	6.26	123.66	119.90
2	FB	379	G	C5-C6-N1	-6.26	108.37	111.50
2	FB	1296	G	N1-C6-O6	6.26	123.66	119.90
2	B	639	U	C5-C4-O4	6.25	129.65	125.90
2	FB	546	C	C6-N1-C2	-6.23	117.81	120.30
2	B	2066	C	C5-C6-N1	6.21	124.11	121.00
2	B	462	C	N3-C4-C5	6.21	124.39	121.90
2	FB	512	G	O4'-C1'-N9	6.21	113.17	108.20
2	B	492	A	C8-N9-C4	-6.21	103.32	105.80
2	B	1313	U	C2-N1-C1'	6.21	125.15	117.70
2	B	259	G	N1-C6-O6	6.21	123.62	119.90
2	B	1547	C	N3-C2-O2	-6.21	117.55	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2501	C	N3-C4-C5	6.20	124.38	121.90
2	B	2505	G	N9-C4-C5	6.20	107.88	105.40
2	FB	976	C	C5-C6-N1	6.20	124.10	121.00
2	B	528	A	N3-C4-C5	6.19	131.13	126.80
2	B	1204	A	O4'-C1'-N9	6.19	113.15	108.20
2	FB	2698	U	N3-C4-C5	-6.18	110.89	114.60
2	B	1971	A	N1-C6-N6	6.18	122.31	118.60
2	FB	1568	G	C4-N9-C1'	-6.18	118.47	126.50
2	FB	2505	G	C5-C6-O6	6.17	132.31	128.60
1	A	906	G	N1-C6-O6	6.17	123.60	119.90
2	B	1635	G	OP2-P-O3'	6.17	118.78	105.20
2	FB	2442	C	N3-C2-O2	-6.17	117.58	121.90
1	EB	121	C	C6-N1-C1'	-6.16	113.41	120.80
2	B	487	C	C6-N1-C2	-6.16	117.84	120.30
2	B	1244	G	C5-C6-N1	-6.15	108.42	111.50
2	B	2294	C	C6-N1-C2	-6.15	117.84	120.30
2	B	2782	G	N1-C6-O6	6.14	123.59	119.90
2	FB	2574	G	N1-C6-O6	6.14	123.59	119.90
2	B	210	C	C6-N1-C2	6.14	122.76	120.30
2	B	1612	C	N3-C4-C5	6.14	124.36	121.90
2	B	1790	C	C2-N1-C1'	-6.14	112.04	118.80
2	FB	2822	G	N3-C4-N9	-6.14	122.32	126.00
2	B	2299	G	C8-N9-C4	-6.14	103.94	106.40
2	FB	1382	G	C5-C6-N1	-6.13	108.43	111.50
2	FB	528	A	N3-C4-C5	6.13	131.09	126.80
2	FB	1021	A	C2-N3-C4	-6.13	107.53	110.60
2	FB	2033	A	O5'-P-OP2	-6.13	100.18	105.70
2	FB	140	A	N7-C8-N9	6.13	116.86	113.80
2	FB	2016	U	O5'-P-OP2	-6.12	100.19	105.70
2	B	2337	G	C6-C5-N7	-6.12	126.73	130.40
2	FB	1142(B)	A	C2-N3-C4	-6.12	107.54	110.60
2	B	479	A	O4'-C1'-N9	6.12	113.09	108.20
2	FB	2556	C	N1-C2-O2	6.12	122.57	118.90
2	FB	1204	A	O4'-C1'-N9	6.11	113.09	108.20
2	FB	1762	A	N9-C4-C5	6.11	108.25	105.80
2	FB	1024	G	N1-C6-O6	6.11	123.57	119.90
2	B	394	A	C8-N9-C4	6.11	108.24	105.80
1	A	84	U	C5-C6-N1	6.11	125.75	122.70
2	FB	59	U	C6-N1-C2	-6.11	117.34	121.00
2	FB	154(A)	C	O4'-C1'-N1	6.11	113.08	108.20
2	FB	379	G	C6-C5-N7	-6.10	126.74	130.40
2	B	59	U	N3-C4-C5	-6.10	110.94	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1776	G	N3-C4-N9	6.10	129.66	126.00
2	B	1814	G	C4-C5-N7	-6.09	108.37	110.80
2	FB	450	G	N1-C2-N3	6.08	127.55	123.90
2	FB	2616	C	C6-N1-C2	6.08	122.73	120.30
2	FB	2588	G	C4-C5-N7	6.07	113.23	110.80
2	B	1568	G	C4-N9-C1'	-6.06	118.62	126.50
2	B	2838	G	C4-C5-N7	6.06	113.22	110.80
2	FB	1271	G	C8-N9-C4	6.06	108.83	106.40
2	FB	1568	G	N3-C4-N9	-6.06	122.36	126.00
1	A	783	C	C6-N1-C2	6.06	122.72	120.30
2	FB	495	G	C6-C5-N7	-6.05	126.77	130.40
2	B	391	G	C8-N9-C1'	-6.05	119.13	127.00
2	B	479	A	C2-N3-C4	6.05	113.62	110.60
2	FB	1154	G	C6-C5-N7	-6.05	126.77	130.40
1	EB	144	G	N1-C6-O6	6.04	123.53	119.90
2	B	1773	A	OP1-P-O3'	6.04	118.50	105.20
2	FB	2509	G	N1-C6-O6	6.04	123.52	119.90
2	B	2822	G	N3-C4-C5	6.04	131.62	128.60
2	B	2685	G	N3-C4-N9	-6.04	122.38	126.00
2	B	1142	C	N1-C2-O2	6.03	122.52	118.90
1	EB	1416	G	C4-C5-C6	6.03	122.42	118.80
1	A	1503	A	C8-N9-C4	6.03	108.21	105.80
2	FB	1671	U	O5'-P-OP1	-6.03	100.28	105.70
21	YB	57	LEU	CA-CB-CG	6.02	129.14	115.30
2	B	564	C	C6-N1-C2	-6.02	117.89	120.30
2	FB	2507	C	N3-C4-C5	-6.02	119.49	121.90
1	A	221	C	C6-N1-C2	-6.01	117.89	120.30
2	B	394	A	N7-C8-N9	-6.01	110.79	113.80
2	B	794	G	N1-C6-O6	-6.01	116.29	119.90
2	FB	1515	C	C2-N1-C1'	6.01	125.42	118.80
5	IB	237	GLU	N-CA-C	-6.01	94.77	111.00
2	B	2434	A	N1-C6-N6	-6.01	114.99	118.60
2	B	1839	G	C4-C5-N7	-6.01	108.40	110.80
2	B	749	C	C6-N1-C2	6.00	122.70	120.30
2	FB	670	A	O4'-C1'-N9	-6.00	103.40	108.20
4	HB	47	U	N3-C2-O2	-6.00	118.00	122.20
2	B	146	G	N1-C6-O6	6.00	123.50	119.90
2	B	2277	G	C4-C5-C6	5.99	122.40	118.80
2	FB	188	G	N1-C6-O6	5.99	123.50	119.90
2	FB	140	A	N1-C6-N6	5.99	122.19	118.60
2	FB	2032	G	N1-C6-O6	5.99	123.49	119.90
2	FB	2055	C	N1-C2-O2	5.99	122.49	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	528	A	P-O3'-C3'	5.99	126.88	119.70
2	B	976	C	C5-C6-N1	5.99	123.99	121.00
2	FB	592	G	C5-C6-N1	-5.99	108.51	111.50
2	FB	700	G	N1-C6-O6	5.99	123.49	119.90
2	B	2729	G	N1-C6-O6	5.98	123.49	119.90
2	B	2822	G	N3-C4-N9	-5.98	122.41	126.00
2	B	713	G	C8-N9-C4	-5.98	104.01	106.40
2	FB	1698	A	C4-N9-C1'	5.98	137.06	126.30
2	B	1558	A	C5-C6-N1	-5.97	114.71	117.70
2	B	929	G	C2-N3-C4	-5.97	108.91	111.90
2	FB	1024	G	C6-C5-N7	-5.97	126.82	130.40
2	B	431	U	N3-C2-O2	-5.97	118.02	122.20
2	B	796	C	N3-C4-C5	5.97	124.29	121.90
2	FB	2448	A	O5'-P-OP1	-5.97	100.33	105.70
2	B	1698	A	C4-N9-C1'	5.96	137.04	126.30
2	B	193	U	N1-C2-O2	-5.96	118.63	122.80
2	B	730	C	N3-C4-C5	5.96	124.28	121.90
2	B	1339	G	C8-N9-C4	-5.96	104.02	106.40
2	B	1654	A	N1-C6-N6	-5.96	115.03	118.60
1	A	1060	C	C6-N1-C2	-5.96	117.92	120.30
2	B	2838	G	C6-C5-N7	-5.96	126.83	130.40
2	FB	1840	G	N1-C6-O6	5.96	123.47	119.90
2	B	1982	C	C6-N1-C2	5.95	122.68	120.30
2	FB	1108	U	P-O3'-C3'	5.95	126.84	119.70
2	B	2505	G	C4-C5-N7	-5.95	108.42	110.80
2	FB	1762	A	C2-N3-C4	5.95	113.57	110.60
2	B	801	G	N1-C6-O6	-5.94	116.33	119.90
2	B	1992	G	P-O3'-C3'	5.94	126.83	119.70
2	B	58	G	N1-C6-O6	5.94	123.47	119.90
2	B	450	G	N1-C2-N3	5.94	127.46	123.90
2	B	2593	U	C5-C6-N1	5.94	125.67	122.70
2	B	1566	A	O5'-P-OP2	-5.93	100.36	105.70
2	B	2396	G	C8-N9-C4	5.93	108.77	106.40
2	B	249	C	C5-C6-N1	-5.92	118.04	121.00
2	B	1762	A	N3-C4-C5	-5.92	122.65	126.80
2	B	1825	A	N1-C6-N6	-5.92	115.05	118.60
2	B	2206	C	C6-N1-C2	5.92	122.67	120.30
2	B	2400	G	C8-N9-C4	-5.92	104.03	106.40
2	B	1839	G	C5-C6-O6	5.92	132.15	128.60
2	FB	1602	U	C6-N1-C2	-5.92	117.45	121.00
2	FB	2838	G	N1-C6-O6	5.92	123.45	119.90
2	FB	945	A	C4-C5-N7	-5.92	107.74	110.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	1343	G	N3-C4-C5	-5.92	125.64	128.60
3	C	17	C	C6-N1-C2	5.91	122.67	120.30
2	B	1343	G	N3-C4-C5	-5.91	125.64	128.60
2	B	1778	U	C6-N1-C1'	5.91	129.47	121.20
2	B	2037	G	N1-C6-O6	5.91	123.45	119.90
2	FB	2502	G	N1-C6-O6	5.91	123.45	119.90
2	B	2067	G	N1-C6-O6	5.91	123.44	119.90
1	EB	84	U	C5-C6-N1	5.91	125.65	122.70
2	B	1267	U	P-O3'-C3'	5.91	126.79	119.70
1	A	1158	C	N1-C2-O2	5.90	122.44	118.90
1	EB	1494	G	C8-N9-C4	-5.90	104.04	106.40
2	B	54	G	C8-N9-C4	-5.90	104.04	106.40
2	B	1021	A	C4-C5-N7	5.90	113.65	110.70
2	B	154(A)	C	O4'-C1'-N1	5.89	112.92	108.20
2	B	1324	G	C2-N3-C4	-5.89	108.95	111.90
2	FB	2685	G	C5-C6-N1	-5.89	108.56	111.50
2	B	1154	G	C6-C5-N7	-5.88	126.87	130.40
2	FB	1756	G	C5-C6-N1	-5.88	108.56	111.50
2	FB	791	C	C6-N1-C2	5.88	122.65	120.30
2	B	820	A	N1-C6-N6	-5.88	115.07	118.60
2	FB	205	G	N1-C6-O6	-5.88	116.37	119.90
2	FB	2004	G	C5-C6-O6	-5.88	125.08	128.60
2	B	2224	G	C8-N9-C4	-5.88	104.05	106.40
2	B	201	C	N1-C2-O2	5.87	122.42	118.90
2	B	2490	G	C5-C6-N1	-5.87	108.56	111.50
1	A	86	U	C6-N1-C2	-5.87	117.48	121.00
2	B	516	C	C6-N1-C2	-5.86	117.95	120.30
2	B	270(X)	G	N1-C6-O6	5.86	123.42	119.90
1	A	1416	G	C6-C5-N7	-5.86	126.88	130.40
2	FB	2383	G	N1-C6-O6	5.86	123.42	119.90
2	B	2318	G	C8-N9-C4	-5.86	104.06	106.40
3	C	17	C	N3-C4-C5	5.86	124.24	121.90
2	FB	1790	C	C2-N1-C1'	-5.86	112.36	118.80
2	FB	2574	G	C6-C5-N7	-5.85	126.89	130.40
2	FB	307	G	N1-C6-O6	5.85	123.41	119.90
2	B	2500	U	C5-C4-O4	-5.85	122.39	125.90
2	B	784	A	C5-C6-N1	5.85	120.62	117.70
2	B	2032	G	C5-C6-O6	-5.85	125.09	128.60
2	FB	391	G	N9-C4-C5	-5.85	103.06	105.40
2	FB	2318	G	O4'-C1'-N9	5.85	112.88	108.20
2	FB	2383	G	C6-C5-N7	-5.85	126.89	130.40
2	FB	2698	U	C6-N1-C2	-5.85	117.49	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1602	U	N3-C4-O4	5.85	123.49	119.40
2	B	1965	C	C6-N1-C2	5.85	122.64	120.30
2	B	140	A	N7-C8-N9	5.84	116.72	113.80
2	B	2245	U	C5-C4-O4	5.84	129.41	125.90
2	FB	2837	G	C4-C5-N7	5.84	113.14	110.80
2	B	774	A	C6-C5-N7	-5.84	128.21	132.30
2	B	2318	G	N7-C8-N9	5.84	116.02	113.10
2	B	1778	U	N3-C2-O2	5.84	126.29	122.20
1	A	115	G	C4-N9-C1'	5.84	134.09	126.50
2	B	1839	G	N9-C4-C5	5.84	107.74	105.40
2	FB	945	A	N3-C4-N9	5.84	132.07	127.40
2	B	1042	G	C8-N9-C4	-5.84	104.06	106.40
2	B	240	G	C4-C5-C6	5.83	122.30	118.80
2	FB	2603	G	OP1-P-OP2	-5.83	110.85	119.60
2	B	188	G	N1-C6-O6	5.83	123.40	119.90
2	FB	678	C	N3-C4-C5	5.83	124.23	121.90
2	FB	2196	C	C2-N1-C1'	5.83	125.21	118.80
2	B	2056	G	C4-C5-N7	5.83	113.13	110.80
2	B	2359	C	C6-N1-C2	5.83	122.63	120.30
2	FB	1762	A	N3-C4-C5	-5.83	122.72	126.80
2	B	55	G	N3-C2-N2	-5.83	115.82	119.90
2	B	397	G	C5-C6-O6	-5.83	125.10	128.60
2	B	1992	G	C8-N9-C4	-5.83	104.07	106.40
2	B	249	C	C4-C5-C6	5.83	120.31	117.40
1	EB	1278	U	C5-C6-N1	5.83	125.61	122.70
2	B	527	C	C6-N1-C1'	-5.82	113.82	120.80
2	FB	1669	A	C8-N9-C4	-5.82	103.47	105.80
2	FB	2592	G	C8-N9-C4	-5.82	104.07	106.40
2	B	2574	G	C8-N9-C1'	-5.82	119.44	127.00
2	FB	450	G	C4-N9-C1'	5.81	134.06	126.50
2	FB	845	G	C4-N9-C1'	5.81	134.06	126.50
2	B	663	G	C5-C6-N1	-5.81	108.59	111.50
2	B	1328	G	N1-C2-N2	-5.81	110.97	116.20
2	B	391	G	C4-N9-C1'	5.81	134.05	126.50
2	B	1782	C	N3-C4-C5	-5.81	119.58	121.90
1	A	723	U	O4'-C1'-N1	5.80	112.84	108.20
2	B	2554	U	N3-C4-O4	5.80	123.46	119.40
2	B	2838	G	C5-C6-O6	-5.80	125.12	128.60
2	FB	1129	A	O4'-C1'-N9	5.80	112.84	108.20
2	FB	82	G	C5-C6-N1	-5.80	108.60	111.50
2	FB	2624	G	C5-C6-O6	-5.80	125.12	128.60
4	D	34	C	C6-N1-C2	-5.80	117.98	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	512	G	C5-C6-O6	5.79	132.07	128.60
2	B	1698	A	O4'-C1'-N9	5.79	112.83	108.20
2	B	2295	C	C6-N1-C2	-5.79	117.99	120.30
2	B	2609	U	N1-C2-N3	5.79	118.37	114.90
2	B	546	C	N1-C2-O2	5.78	122.37	118.90
2	B	592	G	N1-C6-O6	5.78	123.37	119.90
2	B	911	A	C6-C5-N7	-5.78	128.25	132.30
2	B	1904	G	O5'-P-OP1	5.78	117.64	110.70
1	EB	1413	A	N1-C6-N6	-5.78	115.13	118.60
2	FB	528	A	P-O3'-C3'	5.78	126.63	119.70
2	FB	2436	G	N3-C2-N2	-5.78	115.86	119.90
2	B	512	G	O4'-C1'-N9	5.77	112.82	108.20
2	B	2243	U	N3-C2-O2	-5.77	118.16	122.20
4	D	47	U	N3-C2-O2	-5.77	118.16	122.20
2	FB	543	C	C2-N1-C1'	5.77	125.15	118.80
2	FB	1778	U	C5-C4-O4	5.77	129.36	125.90
2	B	1951	U	O5'-P-OP1	-5.77	100.51	105.70
2	FB	495	G	C5-C6-O6	-5.77	125.14	128.60
2	B	1382	G	C2-N3-C4	-5.76	109.02	111.90
2	FB	312	G	C8-N9-C1'	-5.76	119.50	127.00
1	A	792	A	N7-C8-N9	-5.76	110.92	113.80
2	B	1021	A	N7-C8-N9	5.76	116.68	113.80
2	FB	1568	G	C8-N9-C1'	5.75	134.48	127.00
2	B	600	G	C8-N9-C4	5.75	108.70	106.40
2	B	2271	G	C4-C5-C6	5.75	122.25	118.80
2	B	1910	G	C8-N9-C4	-5.75	104.10	106.40
2	B	2196	C	N1-C2-O2	5.75	122.35	118.90
2	FB	2429	G	OP2-P-O3'	5.75	117.84	105.20
2	B	1837	C	C6-N1-C2	5.75	122.60	120.30
2	FB	2502	G	N7-C8-N9	5.75	115.97	113.10
2	B	825	C	OP1-P-O3'	5.74	117.83	105.20
2	B	325	G	N1-C6-O6	5.74	123.34	119.90
2	FB	1328	G	N3-C4-N9	5.74	129.44	126.00
2	FB	1225	G	N3-C4-C5	-5.74	125.73	128.60
2	FB	1784	A	C5-C6-N6	5.74	128.29	123.70
2	B	1173	G	C8-N9-C4	-5.74	104.11	106.40
2	B	450	G	C4-N9-C1'	5.73	133.96	126.50
2	B	1264	G	C8-N9-C4	-5.73	104.11	106.40
2	B	1657	C	N1-C2-O2	-5.73	115.46	118.90
2	B	1795	C	C6-N1-C2	5.73	122.59	120.30
2	FB	1208	C	N1-C2-O2	-5.73	115.46	118.90
2	B	1568	G	C8-N9-C1'	5.73	134.45	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	685	G	C8-N9-C4	5.72	108.69	106.40
2	B	2587	A	O5'-P-OP1	-5.72	100.55	105.70
2	B	165	U	N3-C2-O2	-5.72	118.19	122.20
2	FB	2585	U	N1-C2-O2	5.72	126.80	122.80
2	B	2426	A	N1-C6-N6	5.72	122.03	118.60
2	B	2711	A	C2-N3-C4	-5.72	107.74	110.60
5	E	237	GLU	N-CA-C	-5.71	95.57	111.00
2	FB	2593	U	N1-C2-N3	5.71	118.33	114.90
1	EB	754	C	N3-C2-O2	-5.71	117.90	121.90
2	B	67	U	N3-C2-O2	5.71	126.19	122.20
2	B	2442	C	N1-C2-O2	5.71	122.32	118.90
2	B	1129	A	O4'-C1'-N9	5.70	112.76	108.20
2	B	1811	G	N1-C6-O6	-5.70	116.48	119.90
1	EB	546	G	C8-N9-C4	-5.70	104.12	106.40
21	U	57	LEU	CA-CB-CG	5.70	128.41	115.30
2	FB	795	C	N3-C2-O2	-5.70	117.91	121.90
2	FB	2052	G	C5-C6-O6	-5.70	125.18	128.60
2	FB	512	G	N1-C6-O6	-5.69	116.48	119.90
2	FB	1142	C	N1-C2-O2	5.69	122.32	118.90
2	B	2410	G	N1-C6-O6	5.69	123.31	119.90
2	B	2592	G	C8-N9-C4	-5.69	104.12	106.40
2	B	2768	C	C5-C6-N1	-5.69	118.16	121.00
2	FB	456	C	C6-N1-C2	5.68	122.57	120.30
2	B	2830	G	N1-C6-O6	5.68	123.31	119.90
2	B	852	G	N1-C6-O6	5.68	123.31	119.90
2	FB	93	C	C6-N1-C2	-5.68	118.03	120.30
2	FB	124	G	C5-C6-O6	-5.68	125.19	128.60
2	B	65	C	C6-N1-C2	-5.67	118.03	120.30
2	B	1021	A	N1-C6-N6	5.67	122.00	118.60
2	B	2581	G	N9-C4-C5	5.67	107.67	105.40
2	B	832	G	C8-N9-C4	-5.67	104.13	106.40
1	EB	115	G	C4-N9-C1'	5.66	133.86	126.50
2	FB	1698	A	C4-C5-C6	5.66	119.83	117.00
2	B	733	G	C5-N7-C8	-5.66	101.47	104.30
2	B	750	A	N9-C4-C5	5.66	108.06	105.80
2	B	2594	C	C5-C6-N1	5.66	123.83	121.00
2	B	59	U	C6-N1-C2	-5.65	117.61	121.00
2	B	648	G	C5-C6-N1	-5.65	108.67	111.50
2	FB	1698	A	C8-N9-C4	-5.65	103.54	105.80
1	EB	691	G	C6-C5-N7	-5.65	127.01	130.40
2	FB	527	C	C6-N1-C1'	-5.65	114.02	120.80
2	B	2196	C	C2-N1-C1'	5.65	125.01	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2574	G	C4-N9-C1'	5.64	133.83	126.50
2	B	374	A	N1-C2-N3	5.64	132.12	129.30
2	FB	1642	G	N1-C6-O6	5.64	123.28	119.90
2	FB	1756	G	N1-C6-O6	5.64	123.28	119.90
2	FB	1762	A	N1-C6-N6	-5.64	115.22	118.60
2	FB	2337	G	C5-C6-O6	-5.63	125.22	128.60
2	B	140	A	N1-C6-N6	5.63	121.98	118.60
2	B	2474	C	N3-C4-C5	-5.63	119.65	121.90
2	FB	1497	U	C2-N1-C1'	5.63	124.45	117.70
2	B	450	G	N7-C8-N9	5.63	115.91	113.10
2	B	431	U	C6-N1-C2	-5.62	117.62	121.00
2	FB	976	C	N3-C4-N4	5.62	121.94	118.00
2	FB	2020	A	O5'-P-OP2	-5.62	100.64	105.70
2	B	1790	C	C4-C5-C6	5.62	120.21	117.40
1	EB	812	C	C6-N1-C2	-5.62	118.05	120.30
2	B	543	C	N1-C2-O2	5.62	122.27	118.90
2	B	2717	G	N1-C6-O6	5.62	123.27	119.90
1	A	711	G	N1-C6-O6	5.62	123.27	119.90
1	A	1378	C	C6-N1-C2	-5.62	118.05	120.30
2	B	733	G	N7-C8-N9	5.62	115.91	113.10
2	B	742	G	C2-N3-C4	-5.62	109.09	111.90
2	FB	34	C	N1-C2-N3	-5.61	115.27	119.20
1	EB	433	C	C6-N1-C2	-5.61	118.06	120.30
2	B	177	G	N3-C4-C5	-5.61	125.80	128.60
1	A	86	U	C5-C6-N1	5.61	125.50	122.70
2	B	533	G	C4-N9-C1'	5.61	133.79	126.50
2	FB	304	G	C5-C6-N1	-5.61	108.70	111.50
2	FB	1187	G	N7-C8-N9	5.60	115.90	113.10
2	B	379	G	C6-C5-N7	-5.60	127.04	130.40
2	FB	2629	A	C2-N3-C4	5.60	113.40	110.60
2	B	570	G	N1-C2-N3	5.60	127.26	123.90
2	B	574	C	C6-N1-C2	5.60	122.54	120.30
2	FB	2581	G	C8-N9-C4	-5.60	104.16	106.40
2	B	948	G	C8-N9-C4	5.59	108.64	106.40
2	B	1154	G	C4-C5-C6	5.59	122.16	118.80
1	EB	201	C	C6-N1-C2	-5.59	118.06	120.30
2	FB	2447	G	C4-C5-C6	5.59	122.15	118.80
2	B	271(B)	C	O4'-C1'-N1	5.59	112.67	108.20
2	B	952	G	C8-N9-C4	-5.59	104.17	106.40
2	FB	265	A	C6-C5-N7	-5.59	128.39	132.30
2	B	1264	G	N3-C4-C5	-5.58	125.81	128.60
2	FB	1154	G	C4-N9-C1'	5.58	133.76	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	1161	C	C6-N1-C2	-5.58	118.07	120.30
2	B	57	C	C5-C6-N1	-5.58	118.21	121.00
2	B	1684	C	N3-C4-N4	-5.58	114.09	118.00
2	FB	491	G	N3-C4-C5	-5.58	125.81	128.60
2	B	651	G	C6-C5-N7	-5.58	127.05	130.40
2	B	1383	C	N1-C2-O2	5.58	122.25	118.90
2	B	2597	G	O5'-P-OP1	5.58	117.39	110.70
2	B	778	G	C8-N9-C4	-5.58	104.17	106.40
2	B	165	U	N1-C2-O2	5.57	126.70	122.80
2	B	784	A	C8-N9-C4	-5.57	103.57	105.80
2	B	2595	G	N1-C6-O6	5.57	123.24	119.90
2	B	154(A)	C	C5-C6-N1	5.57	123.79	121.00
2	B	527	C	C5-C6-N1	5.57	123.78	121.00
2	FB	1361	G	C8-N9-C4	5.57	108.63	106.40
2	FB	2062	A	N9-C4-C5	-5.57	103.57	105.80
1	A	906	G	C6-C5-N7	-5.57	127.06	130.40
2	B	1225	G	C8-N9-C4	-5.57	104.17	106.40
2	B	240	G	N3-C4-C5	-5.57	125.82	128.60
2	B	761	A	C4-C5-C6	-5.56	114.22	117.00
2	B	258	G	C8-N9-C4	5.56	108.62	106.40
2	B	686	G	C2-N3-C4	-5.55	109.12	111.90
2	B	568	U	C6-N1-C2	-5.55	117.67	121.00
2	B	1024	G	N1-C6-O6	5.55	123.23	119.90
2	B	2383	G	C6-C5-N7	-5.55	127.07	130.40
2	B	452	G	N3-C4-C5	-5.54	125.83	128.60
2	FB	1828	G	N3-C2-N2	-5.54	116.02	119.90
2	B	1336	A	C5-C6-N1	5.54	120.47	117.70
2	B	228	A	N1-C6-N6	5.54	121.92	118.60
2	FB	1381	G	C6-C5-N7	-5.54	127.08	130.40
2	FB	1568	G	N3-C4-C5	5.53	131.37	128.60
2	FB	570	G	C4-C5-C6	5.53	122.12	118.80
1	EB	121	C	C6-N1-C2	5.53	122.51	120.30
2	FB	2863	C	C6-N1-C2	5.53	122.51	120.30
2	B	2583	G	N3-C4-C5	-5.53	125.84	128.60
4	D	25	C	N1-C2-O2	5.53	122.22	118.90
2	B	245	G	C8-N9-C4	-5.52	104.19	106.40
2	B	374	A	C2-N3-C4	-5.52	107.84	110.60
2	B	1998	G	N3-C4-N9	-5.52	122.69	126.00
1	A	1452	C	C2-N1-C1'	5.52	124.87	118.80
2	B	742	G	N1-C6-O6	5.52	123.21	119.90
2	FB	667	U	N3-C4-C5	-5.52	111.29	114.60
2	FB	761	A	C4-C5-C6	-5.52	114.24	117.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2595	G	C4-C5-N7	5.52	113.01	110.80
2	B	312	G	C8-N9-C1'	-5.52	119.83	127.00
2	FB	687	C	C6-N1-C2	-5.52	118.09	120.30
2	FB	2582	G	O5'-P-OP1	-5.52	100.73	105.70
2	B	1756	G	N1-C6-O6	5.51	123.21	119.90
2	B	1790	C	O5'-P-OP1	-5.51	100.74	105.70
2	FB	450	G	C8-N9-C4	-5.51	104.19	106.40
2	FB	2837	G	C5-N7-C8	-5.51	101.54	104.30
2	FB	2241	A	C8-N9-C4	5.51	108.00	105.80
2	B	2321	G	C4-N9-C1'	5.51	133.66	126.50
2	FB	771	G	N1-C6-O6	5.51	123.20	119.90
2	B	2582	G	O5'-P-OP1	-5.50	100.75	105.70
1	EB	616	G	N3-C4-C5	-5.50	125.85	128.60
2	B	397	G	C2-N3-C4	-5.50	109.15	111.90
2	FB	179	G	N1-C6-O6	5.50	123.20	119.90
2	B	1671	U	C4-C5-C6	5.50	123.00	119.70
2	B	1975	G	C5-C6-N1	-5.50	108.75	111.50
1	EB	723	U	O4'-C1'-N1	5.50	112.60	108.20
2	FB	1021	A	C5-N7-C8	-5.50	101.15	103.90
2	FB	1142(B)	A	N3-C4-C5	5.50	130.65	126.80
2	FB	226	G	N1-C6-O6	5.49	123.20	119.90
2	FB	1304	C	N3-C4-N4	-5.49	114.16	118.00
1	A	812	C	N3-C2-O2	-5.49	118.06	121.90
1	EB	6	G	C4-N9-C1'	5.49	133.64	126.50
2	B	1781	C	C6-N1-C2	5.49	122.50	120.30
2	B	88	G	N1-C6-O6	5.49	123.19	119.90
2	B	1783	A	OP2-P-O3'	5.49	117.27	105.20
1	EB	894	G	N1-C6-O6	5.49	123.19	119.90
2	FB	59	U	N3-C4-C5	-5.49	111.31	114.60
2	B	458	G	C8-N9-C4	-5.49	104.21	106.40
1	EB	115	G	N3-C4-C5	-5.48	125.86	128.60
2	B	2228	G	N1-C6-O6	5.48	123.19	119.90
1	EB	1429	C	C6-N1-C2	-5.48	118.11	120.30
2	B	2245	U	C4-C5-C6	5.48	122.99	119.70
2	B	2494	G	C6-C5-N7	-5.48	127.11	130.40
2	B	68	G	C4-C5-C6	5.47	122.08	118.80
2	B	252	G	C4-N9-C1'	5.47	133.62	126.50
2	B	252	G	C6-C5-N7	-5.47	127.12	130.40
2	B	1703	G	N1-C6-O6	5.47	123.18	119.90
2	FB	1310	G	C6-C5-N7	-5.47	127.12	130.40
2	FB	2067	G	C8-N9-C4	-5.47	104.21	106.40
2	FB	259	G	N1-C6-O6	5.47	123.18	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2037	G	C5-C6-O6	-5.47	125.32	128.60
2	B	651	G	N1-C6-O6	5.46	123.18	119.90
2	B	2383	G	C4-N9-C1'	5.46	133.60	126.50
2	B	2436	G	C5-C6-N1	-5.46	108.77	111.50
2	FB	1108	U	OP1-P-O3'	5.46	117.22	105.20
2	FB	2043	C	C6-N1-C2	-5.46	118.11	120.30
2	FB	1963	U	N1-C2-O2	5.46	126.62	122.80
2	B	2321	G	N3-C4-C5	-5.46	125.87	128.60
2	FB	307	G	C6-C5-N7	-5.46	127.12	130.40
2	FB	1313	U	C2-N1-C1'	5.46	124.25	117.70
1	A	1416	G	C4-N9-C1'	5.46	133.59	126.50
2	FB	1698	A	O4'-C1'-N9	5.46	112.56	108.20
2	FB	1762	A	O5'-P-OP1	5.46	117.25	110.70
2	FB	2055	C	OP2-P-O3'	5.46	117.20	105.20
2	B	1337	G	N1-C6-O6	-5.45	116.63	119.90
2	FB	783	A	N1-C6-N6	-5.45	115.33	118.60
2	B	1239	G	C5-C6-N1	-5.45	108.78	111.50
2	B	2505	G	C5-C6-N1	-5.45	108.78	111.50
2	B	1284	A	C8-N9-C4	-5.45	103.62	105.80
2	FB	1651	G	C6-C5-N7	-5.45	127.13	130.40
2	B	613	U	N3-C2-O2	-5.44	118.39	122.20
1	A	115	G	P-O3'-C3'	5.44	126.23	119.70
2	B	733	G	C8-N9-C4	-5.44	104.22	106.40
2	B	700	G	N7-C8-N9	5.44	115.82	113.10
2	B	949	C	N3-C4-C5	-5.44	119.72	121.90
2	B	2235	G	N7-C8-N9	5.44	115.82	113.10
2	FB	1574	C	C6-N1-C2	-5.44	118.12	120.30
2	B	667	U	N3-C4-C5	-5.44	111.34	114.60
2	B	1970	A	N7-C8-N9	5.44	116.52	113.80
2	B	1326	U	C5-C6-N1	5.43	125.42	122.70
1	A	1452	C	N1-C2-O2	5.43	122.16	118.90
2	B	45	G	C5-C6-O6	-5.42	125.34	128.60
2	B	2092	U	C5-C4-O4	5.42	129.16	125.90
2	B	2577	A	N1-C6-N6	-5.42	115.34	118.60
2	FB	1533	C	N1-C2-O2	5.42	122.15	118.90
1	A	115	G	N3-C4-N9	5.42	129.25	126.00
1	A	883	C	N1-C2-O2	5.42	122.15	118.90
2	B	2501	C	N3-C4-N4	-5.42	114.20	118.00
2	B	1698	A	C6-C5-N7	-5.42	128.51	132.30
2	B	1803	A	O5'-P-OP2	-5.42	100.82	105.70
2	FB	2839	G	N1-C6-O6	5.42	123.15	119.90
2	B	2383	G	C8-N9-C1'	-5.42	119.96	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	140	A	C5-N7-C8	-5.41	101.19	103.90
1	A	785	G	N1-C6-O6	5.41	123.15	119.90
2	B	2073	C	N1-C2-O2	-5.41	115.65	118.90
2	FB	124	G	N3-C4-C5	5.41	131.31	128.60
2	FB	2055	C	N3-C2-O2	-5.41	118.11	121.90
2	B	2581	G	N7-C8-N9	5.41	115.80	113.10
2	FB	758	C	C6-N1-C2	5.41	122.46	120.30
2	FB	2318	G	C8-N9-C4	-5.40	104.24	106.40
1	A	121	C	C6-N1-C1'	-5.40	114.32	120.80
2	FB	48	G	C8-N9-C4	-5.40	104.24	106.40
2	B	1940	U	C6-N1-C2	-5.40	117.76	121.00
2	FB	533	G	C4-N9-C1'	5.40	133.52	126.50
2	B	2337	G	N1-C6-O6	5.40	123.14	119.90
1	EB	1488	G	N1-C6-O6	5.40	123.14	119.90
2	FB	165	U	N3-C2-O2	-5.40	118.42	122.20
2	B	2210	G	C8-N9-C4	-5.40	104.24	106.40
2	B	2444	G	N3-C4-N9	5.40	129.24	126.00
2	B	2574	G	C5-C6-N1	-5.40	108.80	111.50
2	B	34	C	C5-C6-N1	5.39	123.70	121.00
2	B	1324	G	N3-C2-N2	-5.39	116.12	119.90
2	B	2447	G	OP1-P-O3'	5.39	117.07	105.20
1	A	1488	G	N1-C6-O6	5.39	123.14	119.90
2	FB	2383	G	C8-N9-C1'	-5.39	119.99	127.00
2	B	2583	G	C4-N9-C1'	5.39	133.51	126.50
2	B	1314	C	OP2-P-O3'	5.39	117.05	105.20
2	B	792	G	N3-C4-C5	-5.38	125.91	128.60
2	FB	140	A	C5-N7-C8	-5.38	101.21	103.90
2	B	1022	G	N9-C4-C5	5.38	107.55	105.40
2	B	776	G	C5-C6-O6	5.38	131.83	128.60
2	FB	1154	G	N3-C4-N9	5.38	129.22	126.00
2	B	806	C	C5-C6-N1	5.37	123.69	121.00
2	B	481	G	O5'-P-OP2	-5.37	100.87	105.70
2	FB	1566	A	O5'-P-OP2	-5.37	100.86	105.70
2	FB	1899	G	C8-N9-C4	-5.37	104.25	106.40
4	HB	47	U	C5-C6-N1	5.37	125.39	122.70
2	B	831	G	N1-C6-O6	5.37	123.12	119.90
2	B	2034	U	C2-N1-C1'	5.37	124.14	117.70
2	B	2866	U	O4'-C1'-N1	5.37	112.49	108.20
2	FB	615	G	O4'-C1'-N9	5.37	112.49	108.20
1	A	1415	G	N1-C6-O6	5.37	123.12	119.90
2	B	554	U	C5-C4-O4	5.37	129.12	125.90
2	B	2502	G	C4-C5-N7	5.37	112.95	110.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	2837	G	N7-C8-N9	5.37	115.78	113.10
2	B	673	C	OP1-P-O3'	5.36	117.00	105.20
1	A	91	C	C6-N1-C2	-5.36	118.16	120.30
2	B	783	A	N7-C8-N9	5.36	116.48	113.80
2	B	2444	G	N3-C4-C5	-5.36	125.92	128.60
2	FB	528	A	N1-C6-N6	5.36	121.81	118.60
2	B	1258	C	C6-N1-C2	5.36	122.44	120.30
2	B	312	G	C4-N9-C1'	5.35	133.46	126.50
2	B	2299	G	N7-C8-N9	5.35	115.78	113.10
2	FB	751	A	O5'-P-OP2	-5.35	100.88	105.70
1	A	117	G	N1-C6-O6	5.35	123.11	119.90
2	B	1992	G	O4'-C1'-N9	-5.35	103.92	108.20
2	FB	2570	G	N3-C2-N2	-5.35	116.15	119.90
2	B	1963	U	C2-N1-C1'	5.35	124.12	117.70
2	FB	647	G	N1-C6-O6	5.34	123.11	119.90
2	B	1309	G	C5-C6-N1	-5.34	108.83	111.50
2	FB	1635	G	OP2-P-O3'	5.34	116.95	105.20
2	FB	2517	C	O4'-C1'-N1	5.34	112.47	108.20
2	FB	323	G	C5-C6-O6	-5.34	125.40	128.60
2	B	1688	U	C5-C4-O4	5.34	129.10	125.90
2	B	2502	G	N1-C6-O6	5.34	123.10	119.90
2	B	468	G	C8-N9-C4	-5.34	104.27	106.40
1	A	800	G	C6-C5-N7	-5.33	127.20	130.40
2	FB	2574	G	C4-N9-C1'	5.33	133.44	126.50
2	B	1951	U	N3-C4-C5	-5.33	111.40	114.60
2	FB	1762	A	C4-C5-N7	-5.32	108.04	110.70
2	B	543	C	C6-N1-C2	-5.32	118.17	120.30
2	FB	2228	G	N1-C6-O6	5.32	123.09	119.90
2	FB	2444	G	N3-C4-N9	5.32	129.19	126.00
2	FB	2502	G	C8-N9-C4	-5.32	104.27	106.40
2	B	34	C	N1-C2-O2	5.32	122.09	118.90
2	B	845	G	C4-N9-C1'	5.32	133.41	126.50
2	FB	1965	C	C5-C6-N1	-5.32	118.34	121.00
2	B	1688	U	N1-C2-N3	5.31	118.09	114.90
2	FB	1802	A	N1-C6-N6	-5.31	115.41	118.60
2	B	2304	G	C5-C6-N1	-5.31	108.84	111.50
2	B	1824	G	C5-C6-O6	-5.31	125.42	128.60
2	FB	465	G	N3-C4-C5	-5.30	125.95	128.60
2	FB	2556	C	N3-C2-O2	-5.30	118.19	121.90
4	HB	34	C	C6-N1-C2	-5.30	118.18	120.30
2	B	2056	G	N1-C6-O6	5.30	123.08	119.90
2	FB	2685	G	N3-C2-N2	-5.30	116.19	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2075	U	C5-C6-N1	-5.30	120.05	122.70
2	B	982	C	N3-C4-C5	5.30	124.02	121.90
2	B	1308	A	N1-C6-N6	-5.30	115.42	118.60
1	EB	86	U	C5-C6-N1	5.30	125.35	122.70
1	A	117	G	C5-C6-O6	-5.30	125.42	128.60
2	B	341	G	N1-C6-O6	5.30	123.08	119.90
2	B	2698	U	N3-C4-C5	-5.30	111.42	114.60
2	FB	1163	G	N1-C6-O6	5.30	123.08	119.90
2	FB	391	G	C4-N9-C1'	5.29	133.38	126.50
2	FB	818	G	C5-C6-N1	-5.29	108.85	111.50
2	FB	2258	C	C6-N1-C2	-5.29	118.18	120.30
2	FB	2612	C	O5'-P-OP2	5.29	117.05	110.70
2	FB	2685	G	C2-N3-C4	-5.29	109.25	111.90
2	B	1784	A	N1-C6-N6	-5.29	115.43	118.60
4	D	16	C	C6-N1-C2	-5.29	118.19	120.30
1	EB	780	A	C8-N9-C4	-5.29	103.69	105.80
2	FB	1022	G	N9-C4-C5	5.28	107.51	105.40
2	FB	1795	C	N3-C4-C5	5.28	124.01	121.90
2	FB	2397	G	N1-C6-O6	5.28	123.07	119.90
2	B	2553	G	N3-C2-N2	5.28	123.59	119.90
2	FB	2337	G	N1-C6-O6	5.28	123.06	119.90
1	A	1416	G	N1-C6-O6	5.27	123.06	119.90
1	EB	46	G	C8-N9-C4	5.27	108.51	106.40
2	FB	2897	U	C2-N1-C1'	5.27	124.03	117.70
2	B	2685	G	C4-C5-N7	-5.27	108.69	110.80
2	B	1328	G	N1-C6-O6	-5.27	116.74	119.90
2	FB	491	G	C8-N9-C4	-5.26	104.29	106.40
2	FB	512	G	C5-C6-O6	5.26	131.76	128.60
2	B	2818	G	N1-C6-O6	5.26	123.06	119.90
2	FB	312	G	C4-N9-C1'	5.26	133.34	126.50
2	FB	1345	C	N1-C2-O2	-5.26	115.74	118.90
4	HB	75	C	C5-C6-N1	5.26	123.63	121.00
3	C	60	C	C6-N1-C2	-5.26	118.20	120.30
2	B	1210	A	P-O3'-C3'	5.26	126.01	119.70
2	B	942	G	C8-N9-C4	-5.25	104.30	106.40
1	A	894	G	N1-C6-O6	5.25	123.05	119.90
2	B	1841	U	C6-N1-C2	-5.25	117.85	121.00
2	B	2504	U	N3-C4-C5	5.25	117.75	114.60
2	B	2582	G	O5'-P-OP2	5.25	117.00	110.70
2	B	2585	U	C2-N1-C1'	5.25	124.00	117.70
2	FB	1298	C	C6-N1-C2	-5.25	118.20	120.30
2	B	2553	G	N3-C4-N9	5.25	129.15	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	EB	1416	G	C4-N9-C1'	5.25	133.33	126.50
2	FB	1599	C	N1-C2-O2	5.25	122.05	118.90
2	FB	2442	C	N1-C2-O2	5.25	122.05	118.90
1	EB	306	G	N3-C4-C5	5.25	131.22	128.60
2	FB	711	G	N1-C6-O6	5.25	123.05	119.90
2	FB	826	U	N1-C2-O2	-5.25	119.13	122.80
2	B	270(A)	A	C2-N3-C4	-5.25	107.98	110.60
2	FB	1573	G	C8-N9-C4	5.25	108.50	106.40
2	B	651	G	C8-N9-C4	-5.24	104.30	106.40
2	FB	273(C)	C	C6-N1-C2	-5.24	118.20	120.30
2	FB	1633	G	C4-C5-C6	5.24	121.94	118.80
2	B	2577	A	C5-C6-N1	5.24	120.32	117.70
2	B	825	C	C4-C5-C6	-5.24	114.78	117.40
2	B	1671	U	O5'-P-OP1	-5.24	100.99	105.70
1	EB	221	C	C6-N1-C2	-5.24	118.20	120.30
2	FB	2838	G	C5-C6-O6	-5.24	125.46	128.60
1	A	91	C	C5-C6-N1	5.24	123.62	121.00
2	B	1835	G	O5'-P-OP1	-5.24	100.99	105.70
2	B	2502	G	N7-C8-N9	5.24	115.72	113.10
2	FB	2059	A	C8-N9-C4	5.23	107.89	105.80
2	B	1154	G	C8-N9-C1'	-5.23	120.20	127.00
2	B	1756	G	C5-C6-N1	-5.23	108.88	111.50
2	B	2894	G	N3-C4-N9	-5.23	122.86	126.00
1	A	883	C	N3-C2-O2	-5.23	118.24	121.90
1	EB	505	G	C6-C5-N7	-5.23	127.26	130.40
2	B	1130	U	N3-C2-O2	-5.23	118.54	122.20
2	B	2897	U	C2-N1-C1'	5.23	123.97	117.70
2	FB	1776	G	C4-C5-N7	5.23	112.89	110.80
2	B	543	C	N3-C2-O2	-5.23	118.24	121.90
2	B	2570	G	C2-N3-C4	-5.22	109.29	111.90
2	FB	945	A	C5-N7-C8	5.22	106.51	103.90
2	B	974(A)	G	C4-C5-N7	5.22	112.89	110.80
2	B	1600	C	N3-C4-C5	5.22	123.99	121.90
2	B	1698	A	N9-C1'-C2'	5.22	120.79	114.00
1	EB	687	A	P-O3'-C3'	5.22	125.97	119.70
2	FB	1891	G	N1-C6-O6	5.22	123.03	119.90
2	FB	2279	G	N1-C6-O6	-5.22	116.77	119.90
2	FB	1602	U	C4-C5-C6	5.22	122.83	119.70
2	FB	1669	A	N7-C8-N9	5.22	116.41	113.80
2	B	2049	G	C2-N3-C4	-5.22	109.29	111.90
2	B	2449	U	N1-C2-O2	-5.22	119.15	122.80
2	B	201	C	N3-C2-O2	-5.22	118.25	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	1696	G	C8-N9-C4	-5.22	104.31	106.40
2	B	2593	U	C2-N3-C4	5.21	130.13	127.00
1	A	699	C	C6-N1-C2	-5.21	118.22	120.30
2	B	1142(B)	A	N3-C4-N9	-5.21	123.23	127.40
2	B	1840	G	C4-C5-C6	5.21	121.93	118.80
2	B	1992	G	N3-C4-N9	5.21	129.13	126.00
2	B	949	C	N3-C4-N4	5.21	121.65	118.00
2	B	1353	A	OP2-P-O3'	5.21	116.67	105.20
2	FB	1043	C	C6-N1-C1'	-5.21	114.55	120.80
2	B	982	C	C4-C5-C6	-5.21	114.80	117.40
2	B	1324	G	C5-C6-N1	-5.21	108.90	111.50
2	B	1615	C	N1-C2-O2	-5.21	115.78	118.90
2	B	929	G	C4-C5-N7	5.21	112.88	110.80
2	B	2490	G	N1-C6-O6	5.20	123.02	119.90
2	B	664	C	C6-N1-C2	5.20	122.38	120.30
2	B	2277	G	C4-N9-C1'	5.20	133.26	126.50
2	FB	933	A	C5-N7-C8	-5.20	101.30	103.90
2	B	2586	C	OP1-P-O3'	5.20	116.63	105.20
2	FB	1768	U	O4'-C1'-N1	5.20	112.36	108.20
2	B	754	C	C6-N1-C2	-5.20	118.22	120.30
2	B	1204	A	N1-C2-N3	5.19	131.90	129.30
1	A	121	C	C2-N1-C1'	5.19	124.51	118.80
2	B	1204	A	C2-N3-C4	-5.19	108.00	110.60
2	B	68	G	C6-C5-N7	-5.19	127.28	130.40
2	B	934	G	O5'-P-OP2	-5.19	101.03	105.70
1	EB	121	C	C5-C4-N4	-5.19	116.57	120.20
2	B	1309	G	C6-C5-N7	-5.19	127.29	130.40
2	B	2699	C	C6-N1-C2	5.18	122.37	120.30
2	FB	466	A	N1-C6-N6	5.18	121.71	118.60
2	FB	663	G	C5-C6-N1	-5.18	108.91	111.50
2	FB	2848	G	O4'-C1'-N9	5.18	112.35	108.20
4	HB	25	C	N1-C2-O2	5.18	122.01	118.90
1	A	121	C	N1-C2-O2	5.18	122.01	118.90
2	B	528	A	C5-C6-N1	-5.18	115.11	117.70
1	EB	61	G	C5-C6-N1	-5.18	108.91	111.50
2	B	2258	C	N3-C4-C5	-5.18	119.83	121.90
2	B	2033	A	N7-C8-N9	-5.17	111.21	113.80
2	FB	68	G	C5-C6-N1	-5.17	108.91	111.50
2	B	2124	G	O4'-C1'-N9	5.17	112.34	108.20
2	B	379	G	C5-C6-N1	-5.17	108.92	111.50
2	B	1774	C	C5-C6-N1	5.17	123.58	121.00
2	FB	1651	G	N1-C6-O6	5.17	123.00	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	FB	2035	G	N3-C2-N2	-5.17	116.28	119.90
2	FB	1043	C	C6-N1-C2	-5.17	118.23	120.30
2	B	496	G	N1-C6-O6	5.16	123.00	119.90
2	B	976	C	C6-N1-C2	-5.16	118.23	120.30
2	B	2501	C	OP2-P-O3'	5.16	116.56	105.20
2	FB	574	C	C6-N1-C2	5.16	122.36	120.30
2	FB	1298	C	O5'-P-OP1	-5.16	101.06	105.70
2	FB	671	C	C5-C6-N1	-5.16	118.42	121.00
2	FB	2439	A	C5'-C4'-O4'	-5.16	102.91	109.10
2	B	2424	C	C2-N1-C1'	-5.16	113.13	118.80
2	FB	1783	A	OP2-P-O3'	5.15	116.54	105.20
2	FB	933	A	N7-C8-N9	5.15	116.38	113.80
2	B	1326	U	OP2-P-O3'	5.15	116.53	105.20
2	B	2848	G	O4'-C1'-N9	5.15	112.32	108.20
2	FB	1264	G	N3-C4-C5	-5.15	126.03	128.60
2	B	473	G	C8-N9-C4	5.15	108.46	106.40
2	FB	1778	U	C6-N1-C1'	5.15	128.41	121.20
1	A	687	A	P-O3'-C3'	5.15	125.88	119.70
2	B	2033	A	OP1-P-OP2	5.15	127.32	119.60
2	B	2542	A	C8-N9-C4	5.15	107.86	105.80
2	B	1012	U	C5-C4-O4	5.15	128.99	125.90
2	B	1828	G	C5-C6-N1	-5.14	108.93	111.50
2	B	750	A	N1-C6-N6	-5.14	115.52	118.60
2	B	852	G	C5-C6-O6	-5.14	125.52	128.60
2	B	1401	G	C8-N9-C4	-5.14	104.34	106.40
2	FB	2602	A	C2-N3-C4	5.14	113.17	110.60
2	B	1154	G	N1-C6-O6	5.14	122.98	119.90
2	B	1936	A	C4-C5-N7	5.14	113.27	110.70
2	FB	1960	A	C8-N9-C4	5.14	107.86	105.80
2	B	1157	G	C6-C5-N7	-5.14	127.32	130.40
2	B	1043	C	C6-N1-C2	-5.14	118.25	120.30
1	EB	615	C	C5-C6-N1	5.14	123.57	121.00
2	FB	792	G	N3-C4-C5	-5.14	126.03	128.60
2	B	146	G	C5-C6-N1	-5.13	108.93	111.50
2	B	242	G	C8-N9-C1'	5.13	133.68	127.00
2	B	2410	G	C4-C5-N7	5.13	112.85	110.80
2	FB	645	C	C6-N1-C2	-5.13	118.25	120.30
2	FB	2583	G	N3-C4-C5	-5.13	126.03	128.60
2	B	2517	C	OP2-P-O3'	5.13	116.49	105.20
2	FB	29	U	N3-C4-O4	5.13	122.99	119.40
2	FB	687	C	C5-C6-N1	5.13	123.56	121.00
2	FB	2698	U	C5-C4-O4	5.13	128.98	125.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	236	G	C4-C5-C6	5.13	121.88	118.80
2	B	524	U	N3-C4-C5	-5.13	111.52	114.60
1	EB	495	A	P-O3'-C3'	5.13	125.85	119.70
2	FB	491	G	N1-C2-N3	5.13	126.98	123.90
2	FB	2383	G	C4-N9-C1'	5.13	133.17	126.50
2	FB	2447	G	OP1-P-O3'	5.12	116.47	105.20
2	FB	958	U	N1-C2-O2	5.12	126.39	122.80
2	FB	1852	C	C6-N1-C2	-5.12	118.25	120.30
2	B	179	G	C5-C6-N1	-5.12	108.94	111.50
2	B	1320	C	N1-C2-O2	-5.12	115.83	118.90
2	FB	776	G	C5-C6-O6	5.12	131.67	128.60
2	FB	2271	G	C6-C5-N7	-5.12	127.33	130.40
2	B	397	G	C4-C5-N7	5.12	112.85	110.80
2	B	801	G	C5-C6-O6	5.12	131.67	128.60
2	B	789	A	OP2-P-O3'	5.12	116.46	105.20
2	B	2028	U	N3-C2-O2	5.12	125.78	122.20
2	B	2765	A	C8-N9-C4	-5.12	103.75	105.80
2	B	516	C	C5-C6-N1	5.11	123.56	121.00
2	B	1422	G	C5-C6-N1	-5.11	108.94	111.50
2	FB	2276	G	C6-C5-N7	-5.11	127.33	130.40
2	B	774	A	C5-N7-C8	-5.11	101.34	103.90
2	B	2870	C	C6-N1-C2	-5.11	118.25	120.30
2	FB	742	G	C6-C5-N7	-5.11	127.33	130.40
2	B	397	G	N3-C4-C5	5.11	131.16	128.60
2	FB	37	C	C6-N1-C2	-5.11	118.26	120.30
2	FB	1296	G	C2-N3-C4	-5.11	109.34	111.90
2	B	501	A	C5-C6-N1	-5.11	115.14	117.70
2	B	2035	G	N7-C8-N9	-5.11	110.55	113.10
2	B	2249	U	N3-C4-O4	5.11	122.98	119.40
2	B	2508	G	C5-C6-N1	-5.11	108.94	111.50
1	A	913	A	P-O3'-C3'	5.11	125.83	119.70
2	B	2509	G	N1-C6-O6	5.11	122.97	119.90
2	B	1022	G	C8-N9-C1'	5.10	133.63	127.00
2	B	1326	U	C6-N1-C2	-5.10	117.94	121.00
2	FB	1828	G	N1-C2-N3	5.10	126.96	123.90
2	B	1184	G	N1-C6-O6	5.10	122.96	119.90
1	EB	91	C	C6-N1-C2	-5.10	118.26	120.30
2	FB	2501	C	OP2-P-O3'	5.10	116.42	105.20
2	FB	1828	G	N3-C4-N9	-5.10	122.94	126.00
2	B	106	C	C6-N1-C2	-5.10	118.26	120.30
2	B	138	G	N1-C6-O6	5.10	122.96	119.90
2	FB	2837	G	C8-N9-C4	-5.10	104.36	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2897	U	N1-C2-O2	5.10	126.37	122.80
1	EB	112	G	C8-N9-C4	-5.10	104.36	106.40
2	B	832	G	C4-N9-C1'	5.09	133.12	126.50
2	B	1497	U	C2-N1-C1'	5.09	123.81	117.70
2	FB	465	G	N1-C2-N3	5.09	126.96	123.90
2	FB	668	G	C2-N3-C4	-5.09	109.35	111.90
2	B	1779	U	C2-N1-C1'	5.09	123.81	117.70
2	B	2385	C	C6-N1-C2	5.09	122.34	120.30
2	FB	528	A	C6-N1-C2	5.09	121.66	118.60
1	A	1473	A	C5-C6-N1	5.09	120.25	117.70
2	FB	2577	A	O5'-P-OP2	-5.09	101.12	105.70
1	EB	115	G	N3-C4-N9	5.09	129.05	126.00
2	B	786	C	O5'-P-OP2	-5.09	101.12	105.70
2	B	2046	G	C4-C5-N7	5.09	112.83	110.80
2	B	2710	C	C6-N1-C2	-5.09	118.27	120.30
2	FB	265	A	C4-C5-N7	5.09	113.24	110.70
2	FB	1218	C	C6-N1-C2	5.08	122.33	120.30
3	GB	60	C	C6-N1-C2	-5.08	118.27	120.30
1	EB	306	G	C8-N9-C4	5.08	108.43	106.40
2	FB	2124	G	O4'-C1'-N9	5.08	112.26	108.20
2	B	1043	C	C6-N1-C1'	-5.08	114.71	120.80
2	FB	489	G	C8-N9-C4	-5.08	104.37	106.40
2	FB	845	G	N3-C4-N9	5.08	129.05	126.00
2	B	2055	C	N3-C2-O2	-5.08	118.35	121.90
2	FB	2585	U	C2-N1-C1'	5.08	123.79	117.70
1	A	691	G	C6-C5-N7	-5.07	127.36	130.40
1	A	1099	G	N9-C4-C5	5.07	107.43	105.40
2	B	750	A	N1-C2-N3	5.07	131.84	129.30
2	FB	1326	U	OP2-P-O3'	5.07	116.35	105.20
2	B	197	A	OP2-P-O3'	5.07	116.35	105.20
2	FB	801	G	C4-C5-N7	-5.07	108.77	110.80
2	B	2504	U	OP1-P-OP2	-5.07	112.00	119.60
2	FB	944	G	C5-C6-N1	-5.07	108.97	111.50
2	FB	1826	G	N3-C4-C5	-5.07	126.07	128.60
2	FB	391	G	N3-C4-N9	5.06	129.04	126.00
1	A	250	A	N1-C6-N6	-5.06	115.56	118.60
2	B	778	G	N7-C8-N9	5.06	115.63	113.10
2	FB	270(I)	C	C6-N1-C2	-5.06	118.28	120.30
2	FB	2578	G	C5-C6-O6	5.06	131.64	128.60
2	FB	379	G	C4-C5-C6	5.06	121.83	118.80
2	B	786	C	OP1-P-O3'	5.06	116.33	105.20
2	B	1371	G	C8-N9-C4	-5.06	104.38	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	263	ARG	NE-CZ-NH1	5.06	122.83	120.30
2	FB	1697	G	C4-C5-N7	5.06	112.82	110.80
2	FB	2338	G	C5-C6-O6	-5.06	125.57	128.60
1	A	495	A	OP1-P-O3'	5.05	116.32	105.20
2	B	270(Q)	C	N1-C2-O2	5.05	121.93	118.90
2	B	2449	U	N3-C2-O2	5.05	125.74	122.20
2	FB	1328	G	N3-C4-C5	-5.05	126.07	128.60
2	B	1381	G	C5-C6-N1	-5.05	108.97	111.50
4	D	25	C	C2-N1-C1'	5.05	124.36	118.80
2	FB	489	G	N1-C6-O6	-5.05	116.87	119.90
2	B	462	C	C4-C5-C6	-5.05	114.88	117.40
2	B	725	G	N3-C4-C5	-5.05	126.08	128.60
2	B	1021	A	C6-C5-N7	-5.05	128.77	132.30
2	B	2442	C	C2-N1-C1'	5.05	124.36	118.80
2	B	2602	A	C2-N3-C4	5.05	113.12	110.60
2	FB	465	G	C8-N9-C4	-5.05	104.38	106.40
2	FB	1615	C	C6-N1-C2	5.05	122.32	120.30
2	FB	2574	G	C8-N9-C1'	-5.05	120.44	127.00
2	B	1600	C	C2-N3-C4	-5.05	117.38	119.90
2	B	742	G	C6-C5-N7	-5.05	127.37	130.40
2	B	1024	G	C6-C5-N7	-5.05	127.37	130.40
2	FB	929	G	C5-C6-O6	-5.05	125.57	128.60
2	FB	1759	A	C2-N3-C4	-5.05	108.08	110.60
2	FB	2321	G	C4-N9-C1'	5.05	133.06	126.50
2	FB	1811	G	N3-C2-N2	5.04	123.43	119.90
1	A	1469	G	C5-C6-N1	-5.04	108.98	111.50
2	B	2502	G	C8-N9-C4	-5.04	104.38	106.40
2	B	1304	C	N3-C4-C5	5.04	123.92	121.90
2	FB	761	A	N1-C6-N6	-5.04	115.58	118.60
2	FB	1323	U	C5-C6-N1	5.04	125.22	122.70
2	B	2224	G	N7-C8-N9	5.04	115.62	113.10
1	EB	699	C	C5-C6-N1	5.04	123.52	121.00
2	FB	1663	C	N1-C2-O2	-5.04	115.88	118.90
2	FB	1790	C	O5'-P-OP1	-5.04	101.17	105.70
1	EB	568	G	N3-C4-C5	-5.04	126.08	128.60
2	B	2018	G	C8-N9-C4	-5.04	104.39	106.40
2	FB	955	C	C6-N1-C2	-5.04	118.29	120.30
2	FB	1970	A	C8-N9-C4	-5.04	103.79	105.80
2	FB	270(P)	U	C2-N1-C1'	5.03	123.74	117.70
2	B	1251	C	N3-C2-O2	-5.03	118.38	121.90
2	B	34	C	C2-N3-C4	5.03	122.41	119.90
2	B	671	C	C2-N1-C1'	-5.03	113.27	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	EB	117	G	N1-C6-O6	5.03	122.92	119.90
1	EB	1158	C	N3-C2-O2	-5.03	118.38	121.90
1	EB	6	G	C8-N9-C1'	-5.03	120.47	127.00
2	FB	122	G	C8-N9-C4	5.03	108.41	106.40
2	B	742	G	C5-C6-N1	-5.02	108.99	111.50
2	B	2612	C	OP1-P-OP2	-5.02	112.07	119.60
2	FB	465	G	C4-C5-N7	-5.02	108.79	110.80
2	FB	862	G	C8-N9-C4	-5.02	104.39	106.40
2	B	1904	G	N3-C4-C5	-5.02	126.09	128.60
1	A	186(F)	C	C6-N1-C2	-5.02	118.29	120.30
2	B	270(P)	U	C2-N1-C1'	5.02	123.72	117.70
2	FB	2838	G	C6-C5-N7	-5.02	127.39	130.40
2	FB	947	G	C5-C6-N1	-5.02	108.99	111.50
2	FB	1210	A	P-O3'-C3'	5.02	125.72	119.70
2	FB	1844	C	C6-N1-C2	-5.02	118.29	120.30
2	FB	2766	G	C6-C5-N7	-5.02	127.39	130.40
1	EB	505	G	C4-C5-N7	5.02	112.81	110.80
2	FB	1825	A	N1-C6-N6	-5.01	115.59	118.60
2	FB	1355	G	N1-C6-O6	5.01	122.91	119.90
2	B	794	G	C5-C6-O6	5.01	131.61	128.60
2	B	1975	G	N1-C6-O6	5.01	122.91	119.90
2	FB	489	G	C5-C6-O6	5.01	131.60	128.60
2	B	265	A	N7-C8-N9	5.01	116.30	113.80
2	FB	2415	G	N1-C6-O6	5.01	122.91	119.90
2	FB	795	C	N1-C2-O2	5.01	121.90	118.90
1	EB	285	G	C5-C6-N1	-5.00	109.00	111.50
2	FB	799	G	C5-C6-O6	-5.00	125.60	128.60
1	EB	1509	C	N3-C4-C5	-5.00	119.90	121.90
2	FB	396	G	N3-C4-C5	-5.00	126.10	128.60
2	FB	929	G	C4-C5-N7	5.00	112.80	110.80
2	B	2365	G	N3-C4-C5	-5.00	126.10	128.60

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
24	BC	84	LEU	Peptide
38	MA	21	LEU	Peptide
38	QC	21	LEU	Peptide
24	X	84	LEU	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	32394	0	16368	745	0
1	EB	32394	0	16366	711	0
2	B	62031	0	31274	1148	0
2	FB	62031	0	31274	1141	1
3	C	2576	0	1305	54	0
3	GB	2576	0	1305	60	0
4	D	1642	0	841	45	0
4	HB	1642	0	841	40	0
4	IA	1642	0	841	54	0
4	MC	1642	0	841	49	0
5	E	2145	0	2234	113	0
5	IB	2145	0	2234	105	0
6	F	1563	0	1629	63	0
6	JB	1563	0	1629	63	0
7	G	1586	0	1632	77	0
7	KB	1586	0	1632	79	0
8	H	1471	0	1526	98	0
8	LB	1471	0	1526	87	1
9	I	1330	0	1407	56	0
9	MB	1330	0	1407	58	0
10	J	1137	0	1225	57	0
10	NB	1137	0	1225	59	0
11	K	1121	0	1195	43	0
11	OB	1121	0	1195	46	0
12	L	932	0	994	36	0
12	PB	932	0	994	40	0
13	M	1145	0	1228	58	0
13	QB	1145	0	1228	59	0
14	N	1121	0	1179	53	0
14	RB	1121	0	1179	55	0
15	O	968	0	1033	46	0
15	SB	968	0	1033	45	0
16	P	877	0	938	45	0
16	TB	877	0	938	42	0
17	Q	1143	0	1211	56	0
17	UB	1143	0	1211	53	0
18	R	964	0	1022	34	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	VB	964	0	1022	42	0
19	S	779	0	852	26	0
19	WB	779	0	852	31	0
20	T	890	0	951	38	0
20	XB	890	0	951	39	0
21	U	750	0	814	25	0
21	YB	750	0	814	24	0
22	V	814	0	906	33	0
22	ZB	814	0	906	36	0
23	AC	1495	0	1521	59	0
23	W	1495	0	1521	74	0
24	BC	662	0	688	39	0
24	X	662	0	688	36	0
25	CC	761	0	837	40	0
25	Y	761	0	837	42	0
26	DC	592	0	654	28	0
26	Z	592	0	654	29	0
27	AA	477	0	529	22	0
27	EC	477	0	529	18	0
28	BA	552	0	537	26	0
28	FC	552	0	537	21	0
29	CA	460	0	480	15	0
29	GC	460	0	480	17	0
30	DA	453	0	476	19	0
30	HC	453	0	476	19	0
31	EA	418	0	467	19	0
31	IC	418	0	467	17	0
32	FA	517	0	582	26	0
32	JC	517	0	582	26	0
33	GA	307	0	335	14	0
33	KC	307	0	335	17	0
34	HA	220	0	108	14	0
34	LC	220	0	108	5	0
35	JA	2005	0	1964	108	0
35	NC	2005	0	1964	95	0
36	KA	1900	0	1951	87	0
36	OC	1900	0	1951	93	0
37	LA	1612	0	1677	74	0
37	PC	1612	0	1677	74	0
38	MA	1703	0	1767	102	0
38	QC	1703	0	1767	105	0
39	NA	1155	0	1213	48	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
39	RC	1155	0	1213	45	0
40	OA	843	0	857	41	0
40	SC	843	0	857	42	0
41	PA	1257	0	1296	84	0
41	TC	1257	0	1296	77	0
42	QA	1116	0	1177	65	0
42	UC	1116	0	1177	65	0
43	RA	1011	0	1043	60	0
43	VC	1011	0	1043	61	0
44	SA	794	0	840	44	0
44	WC	794	0	840	43	0
45	TA	864	0	881	51	0
45	XC	864	0	881	50	0
46	UA	958	0	1047	41	0
46	YC	958	0	1047	52	0
47	VA	933	0	992	64	0
47	ZC	933	0	992	63	0
48	AD	492	0	533	32	0
48	WA	492	0	533	37	0
49	BD	734	0	771	26	0
49	XA	734	0	771	30	0
50	CD	700	0	720	40	0
50	YA	700	0	720	48	0
51	DD	823	0	893	46	0
51	ZA	823	0	893	42	0
52	AB	574	0	644	41	0
52	ED	574	0	644	42	0
53	BB	665	0	686	52	0
53	FD	665	0	686	54	0
54	CB	762	0	859	36	0
54	GD	762	0	859	39	0
55	DB	208	0	221	24	0
55	HD	208	0	221	21	0
56	A	214	0	0	0	0
56	AA	2	0	0	0	0
56	AB	2	0	0	0	0
56	AD	2	0	0	0	0
56	B	562	0	0	0	0
56	BA	1	0	0	0	0
56	BC	1	0	0	0	0
56	BD	1	0	0	0	0
56	C	21	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	CA	1	0	0	0	0
56	CB	1	0	0	0	0
56	CC	7	0	0	0	0
56	CD	1	0	0	0	0
56	D	5	0	0	0	0
56	DA	2	0	0	0	0
56	DC	1	0	0	0	0
56	E	1	0	0	0	0
56	EA	1	0	0	0	0
56	EB	206	0	0	0	0
56	EC	1	0	0	0	0
56	F	2	0	0	0	0
56	FB	475	0	0	0	0
56	FC	1	0	0	0	0
56	G	2	0	0	0	0
56	GB	15	0	0	0	0
56	H	1	0	0	0	0
56	HA	3	0	0	0	0
56	HB	9	0	0	0	0
56	I	3	0	0	0	0
56	IA	6	0	0	0	0
56	IB	4	0	0	0	0
56	J	2	0	0	0	0
56	JA	6	0	0	0	0
56	JB	2	0	0	0	0
56	JC	1	0	0	0	0
56	K	4	0	0	0	0
56	KA	1	0	0	0	0
56	KB	4	0	0	0	0
56	L	2	0	0	0	0
56	LA	2	0	0	0	0
56	LC	1	0	0	0	0
56	M	5	0	0	0	0
56	MA	2	0	0	0	0
56	MB	2	0	0	0	0
56	MC	5	0	0	0	0
56	NA	2	0	0	0	0
56	NB	3	0	0	0	0
56	NC	5	0	0	0	0
56	O	2	0	0	0	0
56	OB	3	0	0	0	0
56	OC	5	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
56	PB	1	0	0	0	0
56	PC	1	0	0	0	0
56	Q	2	0	0	0	0
56	QA	2	0	0	0	0
56	QC	4	0	0	0	0
56	RB	1	0	0	0	0
56	RC	3	0	0	0	0
56	S	2	0	0	0	0
56	SA	3	0	0	0	0
56	SB	2	0	0	0	0
56	SC	1	0	0	0	0
56	T	3	0	0	0	0
56	TA	3	0	0	0	0
56	TB	1	0	0	0	0
56	TC	1	0	0	0	0
56	U	2	0	0	0	0
56	UA	4	0	0	0	0
56	UB	3	0	0	0	0
56	UC	2	0	0	0	0
56	V	2	0	0	0	0
56	VB	1	0	0	0	0
56	VC	1	0	0	0	0
56	W	2	0	0	0	0
56	WB	1	0	0	0	0
56	WC	1	0	0	0	0
56	X	1	0	0	0	0
56	XA	6	0	0	0	0
56	XC	1	0	0	0	0
56	Y	1	0	0	0	0
56	YC	5	0	0	0	0
56	Z	4	0	0	0	0
56	ZA	1	0	0	0	0
56	ZB	2	0	0	0	0
57	B	30	0	24	2	0
57	FB	30	0	24	1	0
58	BA	1	0	0	0	0
58	CA	1	0	0	0	0
58	DA	1	0	0	0	0
58	FC	1	0	0	0	0
58	GA	1	0	0	0	0
58	GC	1	0	0	0	0
58	HC	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
58	KC	1	0	0	0	0
58	V	1	0	0	0	0
58	ZB	1	0	0	0	0
All	All	299841	0	203748	7838	1

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 16.

All (7838) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:QC:18:LYS:NZ	38:QC:26:CYS:SG	2.00	1.34
38:MA:9:CYS:SG	38:MA:18:LYS:NZ	2.05	1.30
38:QC:9:CYS:SG	38:QC:18:LYS:NZ	2.03	1.29
2:B:630:G:OP2	32:FA:15:LYS:NZ	1.65	1.29
38:MA:18:LYS:NZ	38:MA:26:CYS:SG	2.04	1.28
2:FB:630:G:OP2	32:JC:15:LYS:NZ	1.65	1.27
2:FB:2040:C:OP2	11:OB:109:LYS:NZ	1.76	1.19
38:MA:9:CYS:HG	38:MA:18:LYS:NZ	1.39	1.17
2:B:2040:C:OP2	11:K:109:LYS:NZ	1.79	1.15
31:EA:19:ARG:HH11	31:EA:19:ARG:HG2	1.02	1.14
31:IC:19:ARG:HG2	31:IC:19:ARG:HH11	1.08	1.12
1:A:339:C:OP2	12:L:97:ARG:NH1	1.83	1.11
2:B:574:C:N3	6:F:145:LYS:NZ	2.03	1.05
1:EB:1346:A:N6	1:EB:1375:A:OP2	1.90	1.04
12:L:53:LYS:N	12:L:56:ASP:OD2	1.92	1.02
26:Z:28:LYS:NZ	26:Z:56:GLN:OE1	1.93	1.01
1:A:346:G:OP1	17:Q:41:ARG:NH1	1.92	1.01
7:KB:205:ARG:HB2	7:KB:205:ARG:HH11	1.25	1.01
2:B:2279:G:OP2	24:X:11:ARG:NH2	1.94	1.01
1:A:1346:A:N6	1:A:1375:A:OP2	1.94	1.00
1:EB:931:C:H42	1:EB:1386:G:H1	1.06	1.00
5:E:63:ARG:HH11	5:E:63:ARG:HG3	1.27	0.99
2:FB:1798:U:OP2	5:IB:273:ARG:NH2	1.96	0.98
2:FB:2279:G:OP2	24:BC:11:ARG:NH2	1.97	0.98
38:QC:9:CYS:HG	38:QC:18:LYS:NZ	1.62	0.98
52:ED:38:GLU:O	52:ED:41:LYS:NZ	1.95	0.98
5:IB:63:ARG:HH11	5:IB:63:ARG:HG3	1.26	0.97
35:NC:191:GLU:OE1	35:NC:195:ARG:NH1	1.96	0.97
2:FB:574:C:N3	6:JB:145:LYS:NZ	2.12	0.97
1:EB:1302:U:OP1	47:ZC:13:LYS:NZ	1.98	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2313:C:OP2	8:LB:74:LYS:NZ	1.99	0.96
7:G:205:ARG:HB2	7:G:205:ARG:HH11	1.27	0.95
2:FB:1567:A:OP2	5:IB:84:TYR:OH	1.84	0.95
52:AB:38:GLU:O	52:AB:41:LYS:NZ	1.98	0.95
2:B:1364:G:OP2	25:Y:3:LYS:HG3	1.66	0.95
25:Y:26:ARG:HH11	25:Y:26:ARG:HB2	1.28	0.95
5:IB:61:LEU:O	5:IB:63:ARG:NH1	2.00	0.95
12:PB:46:ALA:N	12:PB:54:GLU:OE2	2.00	0.95
1:A:978:A:OP2	1:A:1362(B):C:N4	2.00	0.94
25:CC:26:ARG:HB2	25:CC:26:ARG:HH11	1.29	0.94
2:B:2133:G:N3	2:B:2158:A:N6	2.15	0.94
2:B:307:G:N2	2:B:310:A:OP2	2.00	0.94
2:B:1798:U:OP2	5:E:273:ARG:NH2	1.99	0.94
2:B:2313:C:OP2	8:H:74:LYS:NZ	2.01	0.94
35:JA:191:GLU:OE1	35:JA:195:ARG:NH1	2.00	0.93
1:EB:978:A:OP2	1:EB:1362(B):C:N4	2.01	0.93
20:T:110:LYS:NZ	20:T:111:HIS:O	2.02	0.93
1:A:1316:G:N1	1:A:1319:A:OP2	2.01	0.93
39:NA:79:GLU:N	39:NA:79:GLU:OE2	2.01	0.93
2:B:1754:C:OP1	17:Q:96:ARG:NH1	2.00	0.93
2:FB:2818:G:OP2	15:SB:42:LYS:NZ	2.02	0.92
2:FB:307:G:N2	2:FB:310:A:OP2	2.03	0.92
2:FB:2133:G:N3	2:FB:2158:A:N6	2.17	0.92
1:EB:877:C:OP1	42:UC:88:LYS:NZ	2.02	0.92
2:FB:2867:G:OP2	17:UB:119:LYS:NZ	2.01	0.92
39:RC:79:GLU:OE2	39:RC:79:GLU:N	2.00	0.92
1:A:1302:U:OP1	47:VA:13:LYS:NZ	2.02	0.92
1:A:931:C:H42	1:A:1386:G:H1	1.09	0.92
2:B:392:C:H5"	2:B:409:C:H5"	1.51	0.92
1:A:664:G:H22	1:A:741:G:H1	1.17	0.92
26:DC:28:LYS:NZ	26:DC:56:GLN:OE1	2.01	0.91
20:XB:110:LYS:NZ	20:XB:111:HIS:O	2.03	0.91
1:A:1226:C:O2'	47:VA:111:LYS:NZ	2.04	0.91
5:E:61:LEU:O	5:E:63:ARG:NH1	2.02	0.91
41:TC:78:ARG:NH1	41:TC:154:TYR:O	2.02	0.91
41:PA:78:ARG:NH1	41:PA:154:TYR:O	2.04	0.91
1:A:877:C:OP1	42:QA:88:LYS:NZ	2.04	0.91
31:EA:19:ARG:HG2	31:EA:19:ARG:NH1	1.80	0.91
2:B:1992:G:O2'	2:B:1993:U:OP2	1.89	0.90
2:FB:2347:C:OP1	30:HC:38:LYS:NZ	2.05	0.90
2:B:2786:U:OP1	6:F:69:LYS:NZ	2.05	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:LB:44:GLY:O	8:LB:47:LYS:NZ	2.05	0.90
2:FB:1364:G:OP2	25:CC:3:LYS:HG3	1.70	0.90
1:EB:1226:C:O2'	47:ZC:111:LYS:NZ	2.05	0.90
12:PB:53:LYS:N	12:PB:56:ASP:OD2	2.03	0.90
2:FB:392:C:H5''	2:FB:409:C:H5''	1.53	0.90
31:IC:10:ARG:NH1	31:IC:14:LYS:HE3	1.86	0.90
12:L:46:ALA:N	12:L:54:GLU:OE2	2.04	0.90
17:Q:74:ARG:HH11	17:Q:76:PHE:HE1	1.19	0.90
1:A:310:G:OP2	50:YA:27:LYS:NZ	2.04	0.89
35:JA:330:ASP:HA	35:JA:333:MET:HB2	1.52	0.89
12:PB:2:ILE:HG22	12:PB:6:THR:HG21	1.53	0.89
2:B:819:A:OP2	2:B:1187:G:N2	2.04	0.89
1:EB:1316:G:N1	1:EB:1319:A:OP2	2.04	0.89
2:B:2347:C:OP1	30:DA:38:LYS:NZ	2.05	0.89
2:FB:2786:U:OP1	6:JB:69:LYS:NZ	2.05	0.89
2:FB:1992:G:O2'	2:FB:1993:U:OP2	1.90	0.88
2:FB:1754:C:OP1	17:UB:96:ARG:NH1	2.05	0.88
6:JB:38:THR:HG1	6:JB:41:LYS:H	1.19	0.88
2:B:1286:A:O2'	2:B:1288:U:OP2	1.89	0.88
48:WA:27:CYS:SG	48:WA:28:GLY:N	2.46	0.88
16:P:5:THR:N	16:P:8:GLU:OE2	2.06	0.88
2:FB:1286:A:O2'	2:FB:1288:U:OP2	1.91	0.87
17:UB:91:ARG:HH11	17:UB:91:ARG:HB3	1.38	0.87
4:D:12:G:H22	4:D:24:U:H3	1.22	0.87
4:MC:33:U:OP2	43:VC:128:ARG:NH2	2.06	0.87
16:TB:5:THR:N	16:TB:8:GLU:OE2	2.07	0.87
31:EA:10:ARG:NH1	31:EA:14:LYS:HE3	1.90	0.87
1:EB:310:G:OP2	50:CD:27:LYS:NZ	2.07	0.87
9:MB:42:ARG:HB2	9:MB:53:GLU:HB2	1.57	0.87
40:OA:28:ARG:HB3	40:OA:28:ARG:HH11	1.39	0.87
1:EB:1213:A:O2'	1:EB:1215:G:N7	2.08	0.86
48:AD:27:CYS:SG	48:AD:28:GLY:N	2.47	0.86
17:UB:74:ARG:HH11	17:UB:76:PHE:HE1	1.20	0.86
2:B:847:U:O4	2:B:933:A:N6	2.08	0.86
4:HB:50:U:H3	4:HB:64:G:H1	1.20	0.86
1:EB:1261:A:H5''	55:HD:25:LYS:HZ3	1.40	0.86
1:A:36:C:OP1	46:UA:123:LYS:NZ	2.09	0.86
6:F:38:THR:HG1	6:F:41:LYS:H	1.19	0.86
1:A:1375:A:O2'	41:PA:29:LYS:NZ	2.09	0.86
2:B:2298:A:H62	2:B:2318:G:H8	1.22	0.86
8:LB:98:ARG:HB2	8:LB:98:ARG:HH11	1.40	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:YA:53:VAL:HG12	50:YA:79:VAL:HG22	1.57	0.86
2:FB:819:A:OP2	2:FB:1187:G:N2	2.09	0.86
2:B:2867:G:OP2	17:Q:119:LYS:NZ	2.09	0.85
2:B:1567:A:OP2	5:E:84:TYR:OH	1.94	0.85
8:H:44:GLY:O	8:H:47:LYS:NZ	2.08	0.85
25:Y:23:LYS:HB3	25:Y:29:GLY:HA3	1.58	0.85
5:IB:263:ARG:HH11	5:IB:263:ARG:HG3	1.42	0.85
4:D:50:U:H3	4:D:64:G:H1	1.21	0.85
1:A:252:U:O2	1:A:275:G:N2	2.09	0.85
31:IC:19:ARG:HG2	31:IC:19:ARG:NH1	1.87	0.85
2:B:2818:G:OP2	15:O:42:LYS:NZ	2.10	0.85
17:Q:91:ARG:HB3	17:Q:91:ARG:HH11	1.40	0.85
1:A:1075:C:OP1	36:KA:179:LYS:NZ	2.09	0.85
2:FB:1536:A:OP2	2:FB:1537:C:N4	2.08	0.85
35:JA:326:LEU:HD13	35:JA:328:ARG:HB3	1.59	0.85
1:EB:36:C:OP1	46:YC:123:LYS:NZ	2.10	0.85
2:FB:442:G:H4'	7:KB:46:ARG:HG3	1.59	0.84
5:E:218:ARG:HH11	5:E:218:ARG:HG3	1.40	0.84
24:X:4:LYS:O	4:IA:74:C:N4	2.08	0.84
30:DA:8:LYS:HB2	30:DA:54:ILE:HG21	1.60	0.84
31:EA:10:ARG:HH11	31:EA:14:LYS:HE3	1.42	0.84
2:FB:1226:A:OP1	19:WB:84:LYS:NZ	2.09	0.84
9:I:42:ARG:HB2	9:I:53:GLU:HB2	1.59	0.84
2:B:2637:U:OP1	6:F:82:ARG:NH1	2.10	0.84
31:IC:10:ARG:HH11	31:IC:14:LYS:HE3	1.40	0.84
8:LB:132:ASN:HB3	8:LB:158:ALA:HA	1.57	0.84
1:A:1213:A:O2'	1:A:1215:G:N7	2.09	0.84
1:A:1305:G:OP2	55:DB:2:GLY:N	2.11	0.84
5:E:263:ARG:HH11	5:E:263:ARG:HG3	1.41	0.84
2:B:2316:C:O2	8:H:128:ARG:NH1	2.10	0.84
12:L:31:LYS:NZ	12:L:31:LYS:HB2	1.93	0.84
12:L:2:ILE:HG22	12:L:6:THR:HG21	1.58	0.84
40:SC:28:ARG:HH11	40:SC:28:ARG:HB3	1.43	0.84
16:TB:3:ARG:HH11	16:TB:3:ARG:HB3	1.42	0.83
2:FB:1379:A:H4'	2:FB:1380:G:OP2	1.77	0.83
15:O:87:TYR:OH	15:O:117:VAL:O	1.96	0.83
2:FB:2316:C:O2	8:LB:128:ARG:NH1	2.12	0.83
35:NC:326:LEU:HD13	35:NC:328:ARG:HB3	1.60	0.83
14:N:134:ARG:HH11	23:W:122:ARG:HE	1.26	0.83
2:FB:2298:A:H62	2:FB:2318:G:H8	1.22	0.83
4:HB:12:G:H22	4:HB:24:U:H3	1.24	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1270:C:OP2	55:DB:24:ARG:NH2	2.12	0.83
1:EB:664:G:H22	1:EB:741:G:H1	1.25	0.83
24:BC:4:LYS:O	4:MC:74:C:N4	2.12	0.83
2:B:1536:A:OP2	2:B:1537:C:N4	2.12	0.82
2:FB:140:A:H8	2:FB:1408:C:HO2'	1.25	0.82
12:PB:31:LYS:NZ	12:PB:31:LYS:HB2	1.94	0.82
35:NC:330:ASP:HA	35:NC:333:MET:HB2	1.59	0.82
16:P:3:ARG:HH11	16:P:3:ARG:HB3	1.42	0.82
1:EB:1375:A:O2'	41:TC:29:LYS:NZ	2.12	0.82
48:WA:27:CYS:HB3	48:WA:43:CYS:SG	2.20	0.82
52:AB:53:ARG:HH12	52:AB:60:ALA:HA	1.42	0.82
15:SB:87:TYR:OH	15:SB:117:VAL:O	1.97	0.82
52:ED:53:ARG:HH12	52:ED:60:ALA:HA	1.43	0.82
1:A:967:5MC:HO2'	43:RA:125:TYR:HH	1.26	0.82
1:A:1523:G:OP1	45:TA:123:LYS:NZ	2.12	0.82
4:D:71:C:H2'	4:D:72:A:H8	1.42	0.82
23:W:93:ASP:HA	23:W:131:ARG:HH12	1.45	0.82
48:AD:27:CYS:HB3	48:AD:43:CYS:SG	2.20	0.82
10:J:3:VAL:HG12	10:J:38:LEU:HA	1.61	0.81
47:VA:54:VAL:HG13	47:VA:57:ARG:HH12	1.45	0.81
47:ZC:54:VAL:HG13	47:ZC:57:ARG:HH12	1.43	0.81
40:SC:91:VAL:HG11	52:ED:72:ARG:HH12	1.45	0.81
7:G:145:GLU:N	7:G:145:GLU:OE2	2.13	0.81
46:YC:60:LEU:HD21	46:YC:66:VAL:HG22	1.62	0.81
25:CC:23:LYS:HB3	25:CC:29:GLY:HA3	1.61	0.81
30:HC:8:LYS:HB2	30:HC:54:ILE:HG21	1.62	0.81
1:A:134:A:N6	50:YA:25:ARG:HH12	1.77	0.81
2:B:517:C:OP1	29:CA:16:ARG:NH2	2.14	0.81
1:EB:1270:C:OP2	55:HD:24:ARG:NH2	2.13	0.81
41:TC:72:ARG:HH21	41:TC:138:LYS:NZ	1.79	0.81
1:A:1265:G:H1	1:A:1270:C:H42	1.28	0.81
8:H:98:ARG:HB2	8:H:98:ARG:HH11	1.46	0.81
35:JA:329:LEU:O	35:JA:331:GLU:N	2.14	0.81
2:B:1171:G:N2	2:B:1178:C:N3	2.28	0.81
18:R:94:ASN:HD22	19:S:4:ILE:HD12	1.44	0.81
1:A:537:G:OP1	46:UA:113:ARG:NH2	2.13	0.81
42:UC:50:ARG:HH11	42:UC:50:ARG:HA	1.46	0.81
2:B:2602:A:H5'	4:IA:74:C:H5''	1.63	0.81
14:N:18:LYS:O	14:N:98:LYS:NZ	2.14	0.81
4:MC:75:C:H5''	35:NC:261:ARG:HG3	1.63	0.81
26:DC:22:GLU:OE2	26:DC:68:ARG:NH2	2.13	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:CD:53:VAL:HG12	50:CD:79:VAL:HG22	1.63	0.80
2:FB:994:C:O2'	2:FB:996:A:OP1	1.99	0.80
16:P:28:VAL:HG11	16:P:98:VAL:HG13	1.63	0.80
8:H:132:ASN:HB3	8:H:158:ALA:HA	1.61	0.80
7:KB:122:LYS:HD2	7:KB:191:ARG:HD3	1.63	0.80
2:B:507:A:O2'	2:B:508:G:OP2	1.97	0.80
2:FB:847:U:O4	2:FB:933:A:N6	2.14	0.80
1:A:278:G:OP2	51:ZA:92:ARG:NH2	2.13	0.80
1:EB:659:U:H3	1:EB:746:A:H61	1.29	0.80
38:QC:18:LYS:NZ	38:QC:21:LEU:O	2.15	0.80
2:B:1019:U:H3	2:B:1142(B):A:H62	1.29	0.80
2:B:2833:G:H4'	2:B:2834:G:OP2	1.81	0.80
2:B:1379:A:H4'	2:B:1380:G:OP2	1.80	0.80
12:PB:21:CYS:HB2	12:PB:39:ILE:HD12	1.64	0.80
52:AB:32:ARG:HA	52:AB:69:THR:HG21	1.64	0.80
40:OA:91:VAL:HG11	52:AB:72:ARG:HH12	1.47	0.80
2:B:155:C:H5	2:B:171:G:H1	1.27	0.80
4:MC:18:G:H21	4:MC:57:A:H62	1.29	0.80
41:PA:72:ARG:HH21	41:PA:138:LYS:NZ	1.80	0.80
1:EB:362:G:O3'	46:YC:33:ARG:NH1	2.15	0.80
2:FB:2637:U:OP1	6:JB:82:ARG:NH1	2.15	0.80
2:B:1753:G:OP2	17:Q:115:ARG:NH2	2.15	0.79
2:FB:286:C:H42	2:FB:355:G:H1	1.31	0.79
14:N:60:ARG:HH12	23:W:177:PRO:HG3	1.46	0.79
2:FB:1019:U:H3	2:FB:1142(B):A:H62	1.29	0.79
10:NB:3:VAL:HG12	10:NB:38:LEU:HA	1.65	0.79
1:EB:134:A:N6	50:CD:25:ARG:HH12	1.80	0.79
7:KB:145:GLU:N	7:KB:145:GLU:OE2	2.15	0.79
2:B:2795:G:H21	2:B:2799:A:H8	1.31	0.79
2:B:286:C:H42	2:B:355:G:H1	1.31	0.79
14:RB:60:ARG:HH12	23:AC:177:PRO:HG3	1.48	0.79
4:IA:18:G:H21	4:IA:57:A:H62	1.29	0.79
51:DD:13:ASP:H	51:DD:14:LYS:NZ	1.79	0.79
35:NC:329:LEU:O	35:NC:331:GLU:N	2.16	0.79
1:A:659:U:H3	1:A:746:A:H61	1.31	0.79
2:FB:517:C:OP1	29:GC:16:ARG:NH2	2.15	0.79
8:LB:98:ARG:HB2	8:LB:98:ARG:NH1	1.98	0.79
41:PA:111:ARG:HH11	41:PA:111:ARG:HB3	1.48	0.79
12:PB:35:VAL:HG11	12:PB:103:ALA:HB3	1.63	0.79
19:S:27:ALA:HB1	19:S:31:ALA:HB3	1.65	0.78
38:MA:18:LYS:NZ	38:MA:21:LEU:O	2.16	0.78

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:38:G:H22	1:A:397:A:H5''	1.46	0.78
2:B:2142:C:N4	2:B:2149:G:O6	2.17	0.78
2:B:862:G:H5'	14:N:18:LYS:HZ1	1.47	0.78
52:ED:32:ARG:HA	52:ED:69:THR:HG21	1.66	0.78
40:SC:16:GLN:HA	40:SC:19:LEU:HB3	1.65	0.78
41:TC:5:ARG:NH1	41:TC:6:ARG:O	2.16	0.78
43:VC:7:THR:O	43:VC:83:ARG:NH2	2.16	0.78
2:B:1434:A:H61	2:B:1558:A:H62	1.31	0.78
8:H:51:ARG:O	8:H:53:LEU:N	2.16	0.78
14:N:60:ARG:NH1	23:W:177:PRO:HG3	1.98	0.78
2:FB:2294:C:OP2	16:TB:13:ARG:NH2	2.17	0.78
15:O:36:THR:HG22	15:O:37:THR:H	1.49	0.78
1:A:642:A:N3	42:QA:113:SER:OG	2.15	0.78
2:B:748:G:O6	20:T:90:ARG:NH1	2.16	0.78
2:FB:2833:G:H4'	2:FB:2834:G:OP2	1.84	0.78
2:FB:507:A:O2'	2:FB:508:G:OP2	2.01	0.78
40:OA:16:GLN:HA	40:OA:19:LEU:HB3	1.66	0.78
1:A:964:A:O2'	44:SA:55:LYS:NZ	2.15	0.78
1:A:1318:A:OP1	53:BB:7:LYS:NZ	2.16	0.78
13:M:52:GLU:O	13:M:54:GLY:N	2.16	0.78
1:EB:1531:A:H8	1:EB:1531:A:OP2	1.67	0.78
4:HB:71:C:H2'	4:HB:72:A:H8	1.48	0.78
41:PA:5:ARG:NH1	41:PA:6:ARG:O	2.17	0.78
40:OA:28:ARG:HB3	40:OA:28:ARG:NH1	1.97	0.77
1:EB:1314:C:N4	53:FD:2:PRO:O	2.16	0.77
17:UB:77:PRO:HG2	17:UB:80:SER:HB2	1.67	0.77
25:Y:3:LYS:HB2	25:Y:61:ARG:HH11	1.49	0.77
1:EB:642:A:N3	42:UC:113:SER:OG	2.16	0.77
45:XC:12:ARG:HB3	45:XC:12:ARG:HH11	1.49	0.77
26:Z:22:GLU:OE2	26:Z:68:ARG:NH2	2.16	0.77
1:A:1531:A:H8	1:A:1531:A:OP2	1.66	0.77
1:A:255:G:OP1	51:ZA:69:LYS:NZ	2.17	0.77
2:FB:568:U:OP1	2:FB:945:A:N6	2.17	0.77
1:EB:252:U:O2	1:EB:275:G:N2	2.16	0.77
10:NB:7:GLU:HG3	10:NB:8:PRO:HD2	1.67	0.77
37:PC:88:ARG:HE	37:PC:101:LEU:HB3	1.48	0.77
4:IA:33:U:OP2	43:RA:128:ARG:NH2	2.18	0.77
20:T:68:ARG:NH1	20:T:110:LYS:O	2.16	0.77
2:FB:2789:C:O2	2:FB:2894:G:N2	2.18	0.77
54:GD:91:LEU:HA	54:GD:94:ALA:HB3	1.66	0.77
7:KB:205:ARG:HH11	7:KB:205:ARG:CB	1.98	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:UA:60:LEU:HD21	46:UA:66:VAL:HG22	1.65	0.77
1:EB:967:5MC:HO2'	43:VC:125:TYR:HH	1.30	0.77
23:W:30:ASN:HD21	23:W:33:LEU:HB3	1.49	0.77
47:VA:81:LEU:HD22	47:VA:88:ARG:HH12	1.50	0.77
1:EB:657:G:H2'	1:EB:658:G:H8	1.50	0.77
36:KA:162:ILE:HD11	36:KA:184:VAL:HG13	1.66	0.77
15:SB:97:VAL:HG12	15:SB:114:VAL:HG22	1.67	0.77
16:TB:28:VAL:HG11	16:TB:98:VAL:HG13	1.67	0.77
1:EB:537:G:OP1	46:YC:113:ARG:NH2	2.18	0.76
2:FB:155:C:H5	2:FB:171:G:H1	1.30	0.76
51:ZA:13:ASP:H	51:ZA:14:LYS:HZ2	1.32	0.76
1:A:657:G:H2'	1:A:658:G:H8	1.50	0.76
1:EB:667:G:H4'	49:BD:51:HIS:CE1	2.21	0.76
42:QA:50:ARG:HH11	42:QA:50:ARG:HA	1.51	0.76
14:RB:134:ARG:HH11	23:AC:122:ARG:HE	1.29	0.76
1:EB:1523:G:OP1	45:XC:123:LYS:NZ	2.18	0.76
1:EB:962:C:H42	1:EB:973:G:H1	1.32	0.76
2:FB:1071:G:N2	2:FB:1087:G:O6	2.18	0.76
4:MC:47:U:OP2	4:MC:47:U:H4'	1.84	0.76
51:ZA:13:ASP:H	51:ZA:14:LYS:NZ	1.83	0.76
1:EB:278:G:OP2	51:DD:92:ARG:NH2	2.18	0.76
2:FB:1264:G:OP1	29:GC:19:ARG:NH2	2.17	0.76
2:FB:2012:G:OP1	20:XB:11:ARG:NH2	2.13	0.76
37:LA:88:ARG:HE	37:LA:101:LEU:HB3	1.47	0.76
15:SB:36:THR:HG22	15:SB:37:THR:H	1.51	0.76
17:UB:66:VAL:HA	17:UB:71:GLY:HA2	1.68	0.76
1:A:1139:G:N2	1:A:1142:G:O6	2.18	0.76
1:A:962:C:H42	1:A:973:G:H1	1.34	0.76
2:B:2378:A:H4'	16:P:23:ARG:NH1	2.01	0.76
39:RC:142:LEU:O	39:RC:143:ARG:NH1	2.17	0.76
1:EB:1148:U:H5'	43:VC:9:ARG:HH22	1.51	0.76
1:A:929:G:H1	1:A:1388:C:H42	1.34	0.76
53:FD:30:LEU:HB2	53:FD:48:THR:HB	1.66	0.76
12:L:35:VAL:HG11	12:L:103:ALA:HB3	1.67	0.76
8:LB:51:ARG:O	8:LB:53:LEU:N	2.16	0.76
41:TC:111:ARG:HB3	41:TC:111:ARG:HH11	1.49	0.76
20:XB:68:ARG:NH1	20:XB:110:LYS:O	2.18	0.76
2:B:1226:A:OP1	19:S:84:LYS:NZ	2.18	0.76
1:EB:1318:A:OP1	53:FD:7:LYS:NZ	2.19	0.76
7:G:205:ARG:CB	7:G:205:ARG:HH11	1.99	0.76
1:A:1148:U:H5'	43:RA:9:ARG:HH22	1.51	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1365:A:O2'	25:Y:11:ARG:NH2	2.17	0.75
33:KC:2:LYS:HD3	33:KC:4:ARG:HH21	1.49	0.75
14:RB:30:GLY:HA2	14:RB:107:ALA:HB2	1.69	0.75
2:B:994:C:O2'	2:B:996:A:OP1	2.03	0.75
2:FB:2820:A:OP2	15:SB:2:ARG:NH2	2.19	0.75
15:O:97:VAL:HG12	15:O:114:VAL:HG22	1.67	0.75
1:A:952:U:H2'	1:A:953:G:H8	1.50	0.75
7:G:122:LYS:HD2	7:G:191:ARG:HD3	1.67	0.75
36:KA:105:PHE:O	36:KA:109:SER:OG	2.04	0.75
12:L:21:CYS:HB2	12:L:39:ILE:HD12	1.67	0.75
35:NC:317:VAL:HB	35:NC:329:LEU:HD13	1.67	0.75
43:RA:7:THR:O	43:RA:83:ARG:NH2	2.20	0.75
2:FB:862:G:H5'	14:RB:18:LYS:HZ1	1.49	0.75
2:FB:2552:2MU:H2'	2:FB:2554:U:OP2	1.86	0.75
35:JA:317:VAL:HB	35:JA:329:LEU:HD13	1.67	0.75
2:FB:2142:C:N4	2:FB:2149:G:O6	2.19	0.75
22:V:77:PRO:HD3	22:V:106:LEU:HB3	1.69	0.75
1:EB:1265:G:H1	1:EB:1270:C:H42	1.32	0.75
1:EB:539:A:H2'	1:EB:540:G:H8	1.52	0.75
40:SC:36:ARG:HB2	40:SC:36:ARG:NH1	2.02	0.75
14:RB:60:ARG:NH1	23:AC:177:PRO:HG3	2.01	0.75
2:B:1754:C:P	17:Q:96:ARG:HH12	2.09	0.75
1:EB:1139:G:N2	1:EB:1142:G:O6	2.20	0.75
2:FB:2093:G:H1	2:FB:2196:C:H42	1.33	0.75
1:A:186(C):C:H2'	1:A:186(D):G:C8	2.22	0.74
1:EB:952:U:H2'	1:EB:953:G:H8	1.52	0.74
2:FB:2795:G:H21	2:FB:2799:A:H8	1.33	0.74
2:FB:2378:A:H4'	16:TB:23:ARG:NH1	2.02	0.74
2:B:1788:C:OP1	5:E:222:ARG:NH2	2.19	0.74
35:JA:332:VAL:HG23	35:JA:337:LEU:HA	1.70	0.74
1:A:949:A:H1'	1:A:1364:U:H3	1.53	0.74
7:KB:24:LEU:HD23	7:KB:25:PRO:HD2	1.69	0.74
35:NC:332:VAL:HG23	35:NC:337:LEU:HA	1.69	0.74
12:PB:34:THR:OG1	12:PB:35:VAL:N	2.20	0.74
39:RC:50:GLU:OE2	39:RC:51:VAL:N	2.21	0.74
25:CC:3:LYS:HB2	25:CC:61:ARG:HH11	1.52	0.74
51:DD:94:ASN:O	51:DD:97:SER:OG	2.05	0.74
2:FB:1612:C:N4	2:FB:1619:G:O6	2.18	0.74
2:FB:993:G:OP1	18:VB:50:ARG:NH2	2.20	0.74
37:PC:203:PHE:HZ	37:PC:206:GLU:HG3	1.52	0.74
17:Q:77:PRO:HG2	17:Q:80:SER:HB2	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:7:GLU:HG3	10:J:8:PRO:HD2	1.69	0.74
2:B:2039:C:C5'	11:K:109:LYS:HZ2	2.01	0.74
40:SC:28:ARG:NH1	40:SC:28:ARG:HB3	2.02	0.74
2:FB:2821:A:OP2	2:FB:2822:G:OP2	2.05	0.74
11:K:68:GLU:N	11:K:68:GLU:OE2	2.21	0.74
42:UC:86:ILE:HG21	42:UC:133:LEU:HD13	1.70	0.74
1:A:61:G:H1	1:A:106:C:H42	1.36	0.74
51:DD:13:ASP:H	51:DD:14:LYS:HZ2	1.36	0.74
34:HA:21:A:N6	35:JA:198:THR:OG1	2.20	0.74
39:NA:50:GLU:OE2	39:NA:51:VAL:N	2.20	0.74
18:VB:8:VAL:HG13	18:VB:12:ARG:HG3	1.68	0.74
23:AC:30:ASN:HD21	23:AC:33:LEU:HB3	1.51	0.74
2:B:2210:G:H3'	2:B:2211:G:C8	2.23	0.74
2:B:2502:G:H5'	2:B:2503:2MA:H5''	1.69	0.74
50:CD:22:THR:HA	50:CD:33:ILE:HG12	1.70	0.74
8:H:98:ARG:NH1	8:H:98:ARG:HB2	2.03	0.74
51:ZA:7:THR:HG23	51:ZA:58:GLU:HB3	1.69	0.74
1:A:995:C:O2	48:WA:4:LYS:NZ	2.21	0.74
2:B:1531:C:H41	2:B:1539:G:H1	1.36	0.74
2:B:2821:A:OP2	2:B:2822:G:OP2	2.06	0.74
14:N:30:GLY:HA2	14:N:107:ALA:HB2	1.69	0.74
19:WB:27:ALA:HB1	19:WB:31:ALA:HB3	1.69	0.74
26:DC:46:GLN:HB2	26:DC:49:LYS:HG3	1.70	0.74
1:EB:1524:C:OP1	45:XC:120:ARG:NH1	2.20	0.74
2:FB:1434:A:H61	2:FB:1558:A:H62	1.34	0.74
2:B:1007:C:H5''	11:K:35:ARG:HH11	1.52	0.74
18:R:8:VAL:HG13	18:R:12:ARG:HG3	1.69	0.74
1:A:468:A:H5'	50:YA:75:ARG:HH12	1.52	0.74
1:A:667:G:H4'	49:XA:51:HIS:CE1	2.22	0.73
53:BB:30:LEU:HB2	53:BB:48:THR:HB	1.67	0.73
1:EB:1258:G:O6	1:EB:1277:C:N4	2.17	0.73
20:T:30:GLU:HA	20:T:33:ARG:HD2	1.69	0.73
1:A:942:G:N2	43:RA:124:GLN:OE1	2.21	0.73
2:B:1170:G:C2	2:B:1171:G:H1'	2.23	0.73
2:FB:2299:G:N2	2:FB:2317:C:O2	2.20	0.73
7:G:117:ARG:NH2	7:G:189:THR:O	2.18	0.73
1:A:539:A:H2'	1:A:540:G:H8	1.53	0.73
2:B:270(J):G:H2'	2:B:270(K):G:H8	1.53	0.73
2:FB:1042:G:H22	2:FB:1113:U:H3	1.33	0.73
2:FB:1173:G:H2'	2:FB:1175:U:H5''	1.70	0.73
5:IB:218:ARG:HH11	5:IB:218:ARG:HG3	1.52	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:10:GLU:O	10:J:12:LEU:N	2.21	0.73
11:K:9:VAL:HG23	11:K:11:PRO:HD3	1.67	0.73
45:TA:80:VAL:H	45:TA:104:GLN:HB3	1.52	0.73
26:Z:46:GLN:HB2	26:Z:49:LYS:HG3	1.69	0.73
1:A:1064:G:N2	1:A:1190:G:O2'	2.22	0.73
1:A:503:C:OP1	46:UA:119:LYS:NZ	2.18	0.73
23:AC:93:ASP:HA	23:AC:131:ARG:HH12	1.53	0.73
2:B:1071:G:N2	2:B:1087:G:O6	2.19	0.73
2:B:243:U:OP2	32:FA:8:LYS:NZ	2.15	0.73
3:GB:85:G:H1	3:GB:91:C:H42	1.32	0.73
8:H:135:LEU:HA	8:H:136:ARG:NH1	2.03	0.73
17:Q:66:VAL:HA	17:Q:71:GLY:HA2	1.70	0.73
2:FB:748:G:O6	20:XB:90:ARG:NH1	2.22	0.73
47:ZC:88:ARG:HB2	47:ZC:88:ARG:HH11	1.52	0.73
1:EB:38:G:H22	1:EB:397:A:H5''	1.52	0.73
45:TA:79:SER:HB2	45:TA:106:LYS:HE3	1.69	0.73
2:B:287:C:O2	2:B:354:G:N2	2.18	0.73
2:B:61:G:N2	2:B:93:C:O2	2.15	0.73
2:FB:2347:C:H42	2:FB:2370:G:H1	1.35	0.73
8:H:60:LEU:HB3	8:H:68:PRO:HG2	1.70	0.73
40:OA:36:ARG:HB2	40:OA:36:ARG:NH1	2.03	0.73
41:PA:106:GLN:O	41:PA:110:GLN:NE2	2.21	0.73
13:QB:52:GLU:O	13:QB:54:GLY:N	2.21	0.73
45:TA:12:ARG:HH11	45:TA:12:ARG:HB3	1.54	0.73
2:B:2093:G:H1	2:B:2196:C:H42	1.35	0.73
2:B:2294:C:OP2	16:P:13:ARG:NH2	2.22	0.73
53:BB:12:ASP:HB2	53:BB:15:LEU:HD13	1.71	0.73
51:DD:28:PRO:HA	51:DD:35:VAL:HA	1.71	0.73
1:EB:136:C:H42	1:EB:227:G:H1	1.34	0.73
9:I:164:TYR:HB2	9:I:167:GLU:HB2	1.70	0.73
4:MC:5:G:N2	4:MC:68:C:O2	2.21	0.73
55:DB:2:GLY:O	55:DB:4:GLY:N	2.22	0.73
33:GA:2:LYS:HD3	33:GA:4:ARG:HH21	1.54	0.73
4:MC:53:G:H1	4:MC:61:C:H42	1.35	0.73
1:A:973:G:OP1	44:SA:57:LYS:NZ	2.20	0.73
43:VC:26:VAL:HA	43:VC:61:ALA:HB3	1.70	0.73
2:B:528:A:O2'	2:B:529:A:O5'	2.05	0.73
1:EB:468:A:H5'	50:CD:75:ARG:HH12	1.54	0.73
2:FB:2039:C:C5'	11:OB:109:LYS:HZ2	2.02	0.73
2:FB:270(J):G:H2'	2:FB:270(K):G:H8	1.53	0.73
17:Q:125:ARG:HA	17:Q:128:GLU:HG2	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:SC:36:ARG:HB2	40:SC:36:ARG:HH11	1.54	0.73
22:V:51:VAL:HG22	22:V:58:GLY:HA3	1.69	0.73
1:EB:973:G:OP1	44:WC:57:LYS:NZ	2.21	0.73
1:EB:191(D):U:H2'	1:EB:191(E):G:H8	1.54	0.72
2:FB:2069:G:N2	2:FB:2442:C:O2	2.20	0.72
2:B:1042:G:H22	2:B:1113:U:H3	1.35	0.72
1:EB:929:G:H1	1:EB:1388:C:H42	1.37	0.72
54:CB:91:LEU:HA	54:CB:94:ALA:HB3	1.71	0.72
2:FB:1365:A:O2'	25:CC:11:ARG:NH2	2.22	0.72
1:EB:503:C:OP1	46:YC:119:LYS:NZ	2.18	0.72
2:FB:528:A:O2'	2:FB:529:A:O5'	2.04	0.72
8:LB:135:LEU:HA	8:LB:136:ARG:NH1	2.04	0.72
2:FB:2300:G:H1	2:FB:2316:C:H42	1.37	0.72
9:MB:164:TYR:HB2	9:MB:167:GLU:HB2	1.70	0.72
39:NA:142:LEU:O	39:NA:143:ARG:NH1	2.22	0.72
47:VA:94:ARG:HH11	47:VA:96:LEU:HD12	1.52	0.72
23:W:93:ASP:HA	23:W:131:ARG:NH1	2.04	0.72
1:A:1314:C:N4	53:BB:2:PRO:O	2.20	0.72
9:I:137:ASP:OD2	9:I:139:GLN:N	2.22	0.72
4:IA:47:U:H4'	4:IA:47:U:OP2	1.86	0.72
4:IA:5:G:N2	4:IA:68:C:O2	2.21	0.72
37:PC:53:ALA:HB2	37:PC:115:LEU:HG	1.71	0.72
13:QB:56:SER:HB2	13:QB:61:ARG:HD2	1.70	0.72
45:XC:79:SER:HB2	45:XC:106:LYS:HE3	1.71	0.72
2:B:568:U:OP1	2:B:945:A:N6	2.19	0.72
2:FB:1412:A:H61	2:FB:1590:U:H3	1.38	0.72
2:FB:243:U:OP2	32:JC:8:LYS:NZ	2.22	0.72
53:FD:12:ASP:HB2	53:FD:15:LEU:HD13	1.72	0.72
36:OC:130:ARG:NH1	36:OC:137:ARG:HH22	1.86	0.72
2:B:2849:U:OP1	17:Q:95:ARG:NH1	2.22	0.72
50:YA:22:THR:HA	50:YA:33:ILE:HG12	1.70	0.72
1:EB:255:G:OP1	51:DD:69:LYS:NZ	2.22	0.72
1:EB:942:G:N2	43:VC:124:GLN:OE1	2.23	0.72
2:FB:61:G:N2	2:FB:93:C:O2	2.16	0.72
1:A:191(D):U:H2'	1:A:191(E):G:H8	1.55	0.72
1:A:407:G:OP1	38:MA:115:ARG:NE	2.22	0.72
1:A:512:U:H2'	1:A:513:C:H6	1.53	0.72
2:B:1441:G:H2'	2:B:1442:G:H8	1.54	0.72
1:EB:1064:G:N2	1:EB:1190:G:O2'	2.22	0.72
1:EB:186(C):C:H2'	1:EB:186(D):G:C8	2.24	0.72
7:G:24:LEU:HD23	7:G:25:PRO:HD2	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:5:LEU:HD22	8:H:101:ILE:HD13	1.72	0.72
42:UC:3:THR:OG1	42:UC:4:ASP:N	2.22	0.72
10:J:71:ILE:HG13	10:J:72:LEU:HG	1.72	0.72
1:A:1258:G:O6	1:A:1277:C:N4	2.16	0.71
55:HD:2:GLY:O	55:HD:4:GLY:N	2.22	0.71
4:IA:53:G:H1	4:IA:61:C:H42	1.35	0.71
11:OB:9:VAL:HG23	11:OB:11:PRO:HD3	1.70	0.71
47:VA:3:ARG:NH1	47:VA:4:ILE:HG22	2.04	0.71
1:A:1524:C:OP1	45:TA:120:ARG:NH1	2.22	0.71
2:FB:2210:G:H3'	2:FB:2211:G:C8	2.25	0.71
35:JA:174:ARG:NH1	35:JA:338:ASP:OD1	2.23	0.71
36:KA:130:ARG:NH1	36:KA:137:ARG:HH22	1.87	0.71
38:MA:22:LYS:HB2	38:MA:26:CYS:HB2	1.70	0.71
20:T:60:ASN:C	20:T:61:ASN:HD22	1.93	0.71
48:WA:9:LYS:HB3	48:WA:9:LYS:NZ	2.05	0.71
21:YB:84:ALA:HB3	21:YB:87:GLN:HG3	1.71	0.71
5:E:263:ARG:CG	5:E:263:ARG:HH11	2.04	0.71
40:SC:18:GLN:HA	40:SC:21:LEU:HB3	1.72	0.71
44:WC:50:ILE:HD12	48:AD:41:ARG:HH21	1.56	0.71
2:FB:430:G:H5''	2:FB:431:U:OP2	1.91	0.71
8:LB:5:LEU:HD22	8:LB:101:ILE:HD13	1.73	0.71
4:MC:62:C:H2'	4:MC:63:G:C8	2.26	0.71
47:ZC:81:LEU:HD22	47:ZC:88:ARG:HH12	1.53	0.71
52:AB:58:LEU:HD12	52:AB:62:GLU:HB3	1.72	0.71
2:FB:1531:C:H41	2:FB:1539:G:H1	1.36	0.71
38:QC:22:LYS:HB2	38:QC:26:CYS:HB2	1.71	0.71
43:RA:26:VAL:HA	43:RA:61:ALA:HB3	1.73	0.71
2:FB:862:G:H5'	14:RB:18:LYS:NZ	2.04	0.71
2:FB:1923:U:O2'	4:MC:12:G:O2'	1.96	0.71
40:OA:9:VAL:HB	40:OA:87:ARG:HB2	1.72	0.71
2:B:1070:A:H3'	2:B:1071:G:H5'	1.71	0.71
2:B:1264:G:OP1	29:CA:19:ARG:NH2	2.21	0.71
2:B:993:G:OP1	18:R:50:ARG:NH2	2.24	0.71
17:Q:106:SER:HB3	17:Q:109:GLU:OE2	1.90	0.71
40:SC:9:VAL:HB	40:SC:87:ARG:HB2	1.72	0.71
47:ZC:94:ARG:HH11	47:ZC:96:LEU:HD12	1.56	0.71
2:B:1056:G:HO2'	2:B:1086:A:HO2'	1.39	0.71
2:FB:1863:G:H1	2:FB:1879:C:H42	1.39	0.71
36:KA:115:LEU:HD21	36:KA:153:ARG:HE	1.55	0.71
2:FB:441:U:O2	7:KB:46:ARG:NH2	2.23	0.71
40:OA:36:ARG:HB2	40:OA:36:ARG:HH11	1.55	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1394:U:H5''	2:B:1395:A:OP2	1.91	0.71
53:BB:58:VAL:HG23	53:BB:60:VAL:H	1.56	0.71
1:A:1422:G:H5''	12:L:48:PRO:HB3	1.71	0.71
1:EB:877:C:HO2'	42:UC:3:THR:HG1	1.36	0.71
1:EB:931:C:N4	1:EB:1386:G:H1	1.85	0.71
1:EB:44:G:H1	1:EB:398:C:H42	1.39	0.71
1:EB:512:U:H2'	1:EB:513:C:H6	1.53	0.71
2:FB:1170:G:C2	2:FB:1171:G:H1'	2.26	0.71
4:IA:49:G:H22	4:IA:65:C:H42	1.39	0.71
1:A:438:G:H4'	38:MA:123:HIS:CD2	2.26	0.71
42:QA:3:THR:OG1	42:QA:4:ASP:N	2.21	0.71
1:EB:1129:C:H5''	43:VC:16:ARG:NH1	2.06	0.71
1:A:1368:G:OP1	44:SA:62:HIS:NE2	2.23	0.70
1:A:1484:C:HO2'	2:B:1960:A:HO2'	1.34	0.70
1:A:637:G:H2'	1:A:638:G:H8	1.56	0.70
1:EB:448:A:OP2	1:EB:485:G:N2	2.21	0.70
1:EB:949:A:H1'	1:EB:1364:U:H3	1.55	0.70
53:FD:16:LEU:HA	53:FD:19:VAL:HB	1.73	0.70
1:EB:1261:A:H5''	55:HD:25:LYS:NZ	2.06	0.70
10:NB:71:ILE:HG13	10:NB:72:LEU:HG	1.73	0.70
1:A:953:G:H5'	1:A:965:A:H61	1.54	0.70
2:FB:1007:C:H5''	11:OB:35:ARG:HH11	1.56	0.70
2:FB:1441:G:H2'	2:FB:1442:G:H8	1.55	0.70
53:FD:58:VAL:HG23	53:FD:60:VAL:H	1.56	0.70
35:NC:174:ARG:NH1	35:NC:338:ASP:OD1	2.24	0.70
1:A:1162:C:N4	1:A:1174:G:O6	2.25	0.70
22:V:83:THR:OG1	22:V:84:ARG:N	2.21	0.70
19:WB:15:GLU:HG3	19:WB:16:PRO:HD2	1.73	0.70
1:A:603:U:H2'	1:A:604:G:H8	1.56	0.70
25:CC:26:ARG:CB	25:CC:26:ARG:HH11	2.03	0.70
2:FB:587:C:OP2	13:QB:21:ARG:NH1	2.23	0.70
41:TC:46:ALA:HB2	41:TC:117:ALA:HB1	1.72	0.70
21:U:21:PHE:O	21:U:23:GLU:N	2.23	0.70
21:U:84:ALA:HB3	21:U:87:GLN:HG3	1.72	0.70
45:XC:12:ARG:NH1	45:XC:12:ARG:HB3	2.06	0.70
2:FB:2502:G:H5'	2:FB:2503:2MA:H5''	1.74	0.70
37:LA:53:ALA:HB2	37:LA:115:LEU:HG	1.72	0.70
37:PC:139:GLN:HB3	37:PC:140:ARG:HH12	1.57	0.70
41:TC:111:ARG:HB3	41:TC:111:ARG:NH1	2.06	0.70
45:XC:80:VAL:H	45:XC:104:GLN:HB3	1.55	0.70
46:YC:24:VAL:HB	46:YC:27:LEU:HD23	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:719:C:H1'	52:AB:49:LYS:HB3	1.73	0.70
1:A:933:G:O6	41:PA:3:ARG:NH2	2.25	0.70
2:FB:580:C:H2'	2:FB:581:C:H6	1.55	0.70
19:WB:60:GLU:HB2	19:WB:95:LEU:HB3	1.74	0.70
40:OA:18:GLN:HA	40:OA:21:LEU:HB3	1.74	0.70
40:SC:2:ARG:NH1	40:SC:69:GLU:OE2	2.21	0.70
4:IA:62:C:H2'	4:IA:63:G:C8	2.26	0.70
22:ZB:83:THR:OG1	22:ZB:84:ARG:N	2.23	0.70
2:B:1412:A:H61	2:B:1590:U:H3	1.40	0.70
4:D:1:C:H42	4:D:72:A:H61	1.40	0.70
1:EB:953:G:H5'	1:EB:965:A:H61	1.55	0.70
36:OC:16:HIS:HD2	36:OC:44:LEU:HD23	1.56	0.70
41:PA:111:ARG:NH1	41:PA:111:ARG:HB3	2.06	0.70
1:A:877:C:HO2'	42:QA:3:THR:HG1	1.38	0.70
17:UB:28:VAL:HG11	17:UB:49:VAL:HG23	1.74	0.70
47:VA:95:GLY:O	47:VA:110:ARG:NH1	2.25	0.70
23:W:107:THR:O	23:W:112:ARG:NH2	2.25	0.70
2:B:2602:A:H4'	2:B:2603:G:OP1	1.91	0.69
2:B:529:A:OP2	2:B:529:A:H4'	1.91	0.69
53:BB:16:LEU:HA	53:BB:19:VAL:HB	1.73	0.69
16:P:3:ARG:HB3	16:P:3:ARG:NH1	2.07	0.69
47:ZC:3:ARG:NH1	47:ZC:4:ILE:HG22	2.07	0.69
1:A:1054:C:H41	34:HA:22:A:H61	1.37	0.69
51:DD:7:THR:HG23	51:DD:58:GLU:HB3	1.74	0.69
2:FB:1022:G:H22	2:FB:1142(B):A:H2	1.37	0.69
2:FB:861:A:O2'	14:RB:18:LYS:NZ	2.25	0.69
2:FB:444:C:OP1	7:KB:45:ARG:NH2	2.24	0.69
15:SB:103:ARG:HG2	15:SB:103:ARG:HH11	1.56	0.69
42:UC:111:ILE:HG13	42:UC:134:ILE:HB	1.73	0.69
47:VA:14:ARG:HE	47:VA:42:ALA:HA	1.58	0.69
22:ZB:77:PRO:HD3	22:ZB:106:LEU:HB3	1.74	0.69
2:B:1173:G:H2'	2:B:1175:U:H5''	1.72	0.69
49:BD:8:LYS:HZ3	49:BD:31:LEU:HD21	1.55	0.69
5:E:261:LYS:HD3	5:E:263:ARG:NH1	2.07	0.69
2:FB:1788:C:OP1	5:IB:222:ARG:NH2	2.25	0.69
12:PB:71:ARG:HH11	17:UB:74:ARG:HH21	1.39	0.69
4:D:71:C:H2'	4:D:72:A:C8	2.27	0.69
20:XB:30:GLU:HA	20:XB:33:ARG:HD2	1.73	0.69
51:ZA:28:PRO:HA	51:ZA:35:VAL:HA	1.73	0.69
2:FB:1246:A:OP1	7:KB:38:ARG:NH2	2.16	0.69
4:IA:75:C:H5''	35:JA:261:ARG:HG3	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:LB:60:LEU:HB3	8:LB:68:PRO:HG2	1.72	0.69
35:NC:169:ASP:OD2	35:NC:170:GLY:N	2.26	0.69
25:CC:2:SER:HB3	25:CC:46:LEU:HD12	1.75	0.69
1:EB:719:C:H1'	52:ED:49:LYS:HB3	1.72	0.69
2:FB:2128:C:N4	2:FB:2160:G:O6	2.26	0.69
38:MA:119:GLN:HG3	38:MA:123:HIS:CE1	2.28	0.69
36:OC:162:ILE:HD11	36:OC:184:VAL:HG13	1.72	0.69
40:SC:100:ASN:H	52:ED:23:LYS:HZ1	1.40	0.69
17:UB:125:ARG:HA	17:UB:128:GLU:HG2	1.73	0.69
5:E:164:GLN:OE1	5:E:176:ARG:NH2	2.25	0.69
1:EB:964:A:O2'	44:WC:55:LYS:NZ	2.21	0.69
2:FB:1070:A:H3'	2:FB:1071:G:H5'	1.73	0.69
2:FB:1587:A:H2'	2:FB:1588:C:C6	2.27	0.69
6:JB:168:MET:HE2	6:JB:203:LYS:HE2	1.74	0.69
9:MB:58:GLU:HB3	9:MB:60:ARG:H	1.58	0.69
35:NC:316:ARG:HG2	35:NC:327:TYR:HB2	1.75	0.69
39:RC:78:HIS:HE2	39:RC:142:LEU:HA	1.57	0.69
1:EB:637:G:H2'	1:EB:638:G:H8	1.57	0.69
2:FB:1394:U:H5''	2:FB:1395:A:OP2	1.92	0.69
2:FB:2602:A:H4'	2:FB:2603:G:OP1	1.90	0.69
5:IB:263:ARG:CG	5:IB:263:ARG:HH11	2.04	0.69
35:NC:188:PRO:HG2	35:NC:191:GLU:HB2	1.75	0.69
42:QA:111:ILE:HG13	42:QA:134:ILE:HB	1.75	0.69
7:KB:116:ASP:OD2	13:QB:1:MET:HB2	1.92	0.69
1:A:362:G:O3'	46:UA:33:ARG:NH1	2.25	0.69
5:E:63:ARG:CG	5:E:63:ARG:HH11	2.03	0.69
2:B:2469:A:H4'	14:N:56:ARG:HG2	1.73	0.69
1:EB:603:U:H2'	1:EB:604:G:H8	1.58	0.69
5:IB:37:LEU:HB2	5:IB:62:TYR:HB2	1.74	0.69
5:IB:63:ARG:HH11	5:IB:63:ARG:CG	2.05	0.69
6:JB:179:GLU:HB3	6:JB:181:LEU:HD22	1.75	0.69
44:SA:21:GLN:HA	44:SA:24:VAL:HB	1.75	0.69
1:A:1138:G:H2'	1:A:1140:C:C4	2.28	0.69
3:C:85:G:H1	3:C:91:C:H42	1.40	0.69
2:FB:2793:G:N2	2:FB:2794:C:O2	2.26	0.69
5:IB:17:THR:O	5:IB:211:ARG:NH2	2.24	0.69
36:OC:105:PHE:O	36:OC:109:SER:OG	2.11	0.69
24:X:27:GLU:HG3	24:X:68:GLU:HA	1.75	0.69
2:B:1587:A:H2'	2:B:1588:C:C6	2.28	0.68
2:B:2402:C:H6	2:B:2402:C:OP2	1.76	0.68
2:B:2069:G:N2	2:B:2442:C:O2	2.25	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2793:G:N2	2:B:2794:C:O2	2.26	0.68
2:FB:892:G:H5''	2:FB:893:C:OP2	1.93	0.68
36:KA:53:ARG:HH12	36:KA:199:TYR:HD1	1.40	0.68
36:OC:172:ILE:HG13	36:OC:175:ARG:HH21	1.57	0.68
41:TC:106:GLN:O	41:TC:110:GLN:NE2	2.24	0.68
47:VA:29:ARG:NH1	47:VA:64:TRP:HB3	2.08	0.68
22:ZB:51:VAL:HG22	22:ZB:58:GLY:HA3	1.74	0.68
1:A:931:C:N4	1:A:1386:G:H1	1.88	0.68
2:B:141(A):A:N1	2:B:1595:G:O2'	2.24	0.68
2:B:214:G:O2'	2:B:215:G:O4'	2.11	0.68
2:B:2347:C:H42	2:B:2370:G:H1	1.41	0.68
3:C:57:A:OP2	3:C:58:A:OP2	2.11	0.68
8:H:42:GLY:HA2	8:H:89:GLY:HA3	1.75	0.68
41:PA:46:ALA:HB2	41:PA:117:ALA:HB1	1.74	0.68
19:S:15:GLU:HG3	19:S:16:PRO:HD2	1.74	0.68
15:SB:59:ASP:OD1	15:SB:59:ASP:N	2.25	0.68
23:AC:97:GLU:HG2	23:AC:127:LYS:HG2	1.73	0.68
2:B:2141:G:N2	2:B:2150:U:O2'	2.25	0.68
2:B:2795:G:O2'	2:B:2799:A:N6	2.26	0.68
2:FB:1449(B):A:OP2	2:FB:1449(B):A:H8	1.77	0.68
2:FB:1754:C:P	17:UB:96:ARG:HH12	2.17	0.68
2:FB:91:A:C8	2:FB:92:G:C8	2.81	0.68
47:VA:88:ARG:HB2	47:VA:88:ARG:HH11	1.56	0.68
2:B:1449(B):A:OP2	2:B:1449(B):A:H8	1.77	0.68
2:FB:1753:G:OP2	17:UB:115:ARG:NH2	2.26	0.68
13:M:57:THR:HG23	13:M:60:MET:HB2	1.73	0.68
38:MA:141:ARG:HB3	38:MA:141:ARG:HH11	1.57	0.68
10:NB:10:GLU:O	10:NB:12:LEU:N	2.25	0.68
35:NC:338:ASP:HA	35:NC:341:ILE:HG22	1.76	0.68
1:A:1219:U:OP1	48:WA:19:ARG:NH2	2.27	0.68
1:A:411:A:OP1	38:MA:30:LYS:NZ	2.17	0.68
2:B:2313:C:O4'	8:H:40:ASN:ND2	2.26	0.68
2:B:588:U:P	13:M:16:ARG:HH22	2.17	0.68
5:E:17:THR:O	5:E:211:ARG:NH2	2.25	0.68
1:EB:61:G:H1	1:EB:106:C:H42	1.42	0.68
2:FB:2298:A:N6	2:FB:2318:G:H8	1.91	0.68
2:FB:2334:G:O6	24:BC:74:ARG:NH2	2.25	0.68
5:IB:80:ALA:HB3	5:IB:94:LEU:HB3	1.75	0.68
25:Y:26:ARG:HH11	25:Y:26:ARG:CB	2.03	0.68
1:A:1261:A:C6	1:A:1262:C:H1'	2.29	0.68
1:A:136:C:H42	1:A:227:G:H1	1.40	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:165:ARG:HA	7:G:168:ARG:HD3	1.76	0.68
3:GB:57:A:OP2	3:GB:58:A:OP2	2.12	0.68
36:KA:166:ASP:OD1	36:KA:168:THR:OG1	2.12	0.68
36:KA:16:HIS:HD2	36:KA:44:LEU:HD23	1.58	0.68
15:SB:18:LEU:HD21	15:SB:22:ARG:NH1	2.08	0.68
47:ZC:54:VAL:CG1	47:ZC:57:ARG:HH12	2.06	0.68
2:B:2300:G:H1	2:B:2316:C:H42	1.39	0.68
2:B:796:C:H2'	2:B:797:C:C6	2.28	0.68
25:CC:80:LEU:HB3	25:CC:82:LEU:HD23	1.76	0.68
2:FB:2114:A:O2'	2:FB:2168:G:OP1	2.12	0.68
8:H:46:ALA:HA	8:H:49:ASP:HB2	1.75	0.68
9:MB:137:ASP:OD2	9:MB:139:GLN:N	2.27	0.68
42:QA:86:ILE:HG21	42:QA:133:LEU:HD13	1.76	0.68
1:EB:933:G:O6	41:TC:3:ARG:NH2	2.26	0.68
1:A:773:G:O3'	5:E:202:LYS:NZ	2.26	0.68
52:AB:53:ARG:HH12	52:AB:60:ALA:CA	2.07	0.68
2:B:858:U:OP2	24:X:77:ARG:NH2	2.26	0.68
4:HB:1:C:H42	4:HB:72:A:H61	1.41	0.68
6:JB:34:VAL:HG21	6:JB:78:LEU:HD11	1.76	0.68
38:QC:18:LYS:HE2	38:QC:21:LEU:H	1.59	0.68
41:TC:72:ARG:HH21	41:TC:138:LYS:HZ2	1.41	0.68
17:UB:106:SER:HB3	17:UB:109:GLU:OE2	1.93	0.68
48:AD:27:CYS:HB3	48:AD:43:CYS:HG	1.56	0.68
2:B:1405:U:H2'	2:B:1406:U:C6	2.28	0.68
2:B:2573:C:H41	35:JA:239:THR:HA	1.59	0.68
53:BB:19:VAL:HA	53:BB:22:LEU:HD12	1.76	0.68
2:FB:261:G:HO2'	2:FB:609(B):G:HO2'	1.41	0.68
13:M:91:PHE:O	13:M:121:LYS:NZ	2.26	0.68
1:A:147:G:H1	1:A:175:C:H42	1.41	0.68
1:A:277:C:OP2	51:ZA:41:LYS:NZ	2.25	0.68
2:B:1044:G:N2	2:B:1111:A:N3	2.42	0.68
2:B:234:C:H2'	2:B:235:U:H6	1.59	0.68
2:B:2444:G:OP2	7:G:68:LYS:NZ	2.16	0.68
4:MC:49:G:H22	4:MC:65:C:H42	1.38	0.68
45:TA:12:ARG:NH1	45:TA:12:ARG:HB3	2.08	0.68
1:EB:1138:G:H2'	1:EB:1140:C:C4	2.29	0.67
2:FB:1582:C:H2'	2:FB:1583:A:C8	2.29	0.67
8:H:93:THR:HG21	8:H:95:ARG:HH21	1.59	0.67
3:GB:45:A:O4'	8:LB:95:ARG:NH1	2.27	0.67
15:O:103:ARG:HG2	15:O:103:ARG:HH11	1.59	0.67
44:WC:3:LYS:HD3	44:WC:4:ILE:HG13	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1508:A:HO2'	2:B:1510:A:H2	1.40	0.67
2:B:2168:G:H2'	2:B:2170:A:OP2	1.95	0.67
30:DA:9:LEU:HD11	30:DA:34:LEU:HD12	1.77	0.67
1:EB:643:C:H2'	1:EB:644:G:H8	1.59	0.67
2:FB:1312:U:OP2	21:YB:63:LYS:NZ	2.19	0.67
33:KC:12:ASP:N	33:KC:12:ASP:OD1	2.25	0.67
1:A:539:A:H2'	1:A:540:G:C8	2.30	0.67
37:PC:16:ARG:HH12	48:AD:50:LYS:HE3	1.60	0.67
2:B:1342:A:O2'	2:B:1344:G:OP2	2.13	0.67
28:BA:62:ARG:NH1	28:BA:62:ARG:HA	2.10	0.67
5:E:274:ARG:HG2	5:E:274:ARG:HH11	1.59	0.67
1:EB:931:C:N3	1:EB:1386:G:N2	2.30	0.67
2:FB:2039:C:H5''	11:OB:109:LYS:HZ2	1.58	0.67
36:KA:46:LYS:HB3	36:KA:46:LYS:NZ	2.09	0.67
41:PA:151:TYR:OH	45:TA:54:ARG:NH1	2.27	0.67
1:A:714:G:H2'	1:A:715:A:C8	2.30	0.67
2:FB:1278:A:H2'	2:FB:1279:G:C8	2.30	0.67
2:FB:2168:G:H2'	2:FB:2170:A:OP2	1.94	0.67
9:I:58:GLU:HB3	9:I:60:ARG:H	1.59	0.67
36:OC:51:LEU:HD22	36:OC:201:ILE:HD12	1.77	0.67
14:RB:18:LYS:O	14:RB:98:LYS:NZ	2.19	0.67
48:AD:9:LYS:NZ	48:AD:9:LYS:HB3	2.09	0.67
1:EB:1054:C:OP2	1:EB:1197:G:OP2	2.13	0.67
2:FB:1216:G:OP2	18:VB:12:ARG:NH2	2.25	0.67
2:FB:2278:A:H8	24:BC:12:ASN:HD22	1.42	0.67
14:N:134:ARG:NH1	23:W:122:ARG:HE	1.92	0.67
40:OA:46:ARG:HH22	52:AB:37:VAL:HG11	1.60	0.67
36:OC:53:ARG:HH12	36:OC:199:TYR:HD1	1.40	0.67
41:PA:16:LEU:HD21	43:RA:45:ALA:HB2	1.77	0.67
44:WC:21:GLN:HA	44:WC:24:VAL:HB	1.75	0.67
25:Y:80:LEU:HB3	25:Y:82:LEU:HD23	1.76	0.67
1:A:44:G:H1	1:A:398:C:H42	1.42	0.67
2:B:588:U:OP1	13:M:16:ARG:NH2	2.28	0.67
2:B:889:C:O2'	2:B:890:A:O4'	2.13	0.67
2:B:892:G:H5''	2:B:893:C:OP2	1.94	0.67
4:D:8:4SU:O2	4:D:15:G:O6	2.13	0.67
14:RB:54:MET:HB3	14:RB:117:ALA:HB1	1.77	0.67
16:TB:3:ARG:HB3	16:TB:3:ARG:NH1	2.09	0.67
25:Y:2:SER:HB3	25:Y:46:LEU:HD12	1.76	0.67
1:EB:1266:G:H2'	1:EB:1268:A:OP2	1.95	0.67
2:FB:2143:C:N3	2:FB:2148:G:N2	2.42	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2402:C:H6	2:FB:2402:C:OP2	1.77	0.67
5:IB:274:ARG:HH11	5:IB:274:ARG:HG2	1.58	0.67
15:O:18:LEU:HD21	15:O:22:ARG:NH1	2.10	0.67
38:QC:119:GLN:HG3	38:QC:123:HIS:CE1	2.29	0.67
1:A:448:A:OP2	1:A:485:G:N2	2.23	0.67
1:A:931:C:N3	1:A:1386:G:N2	2.31	0.67
2:FB:1029:A:H5''	14:RB:128:LYS:HE2	1.76	0.67
2:FB:2287:A:H2	2:FB:2346:A:H62	1.42	0.67
37:LA:203:PHE:HZ	37:LA:206:GLU:HG3	1.59	0.67
14:N:80:GLU:OE2	35:JA:262:SER:HB2	1.95	0.67
1:A:1129:C:H5''	43:RA:16:ARG:NH1	2.09	0.67
2:B:1849:G:H2'	2:B:1850:G:H8	1.58	0.67
2:FB:588:U:C5'	13:QB:16:ARG:HH12	2.07	0.67
2:B:2756:U:H5''	33:GA:19:ARG:HG2	1.74	0.67
36:KA:172:ILE:HG13	36:KA:175:ARG:HH21	1.60	0.67
3:C:9:G:OP1	16:P:25:ARG:NH2	2.27	0.67
51:ZA:94:ASN:O	51:ZA:97:SER:OG	2.12	0.67
23:AC:52:SER:OG	23:AC:53:ILE:N	2.24	0.67
2:B:1029:A:H5''	14:N:128:LYS:HE2	1.77	0.67
2:FB:588:U:P	13:QB:16:ARG:HH22	2.18	0.67
35:JA:188:PRO:HG2	35:JA:191:GLU:HB2	1.77	0.67
35:JA:316:ARG:HG2	35:JA:327:TYR:HB2	1.76	0.67
37:LA:92:ALA:HB2	37:LA:99:VAL:HG22	1.77	0.67
38:MA:18:LYS:HE2	38:MA:21:LEU:H	1.60	0.67
23:W:45:ASP:OD1	23:W:49:ARG:NH1	2.28	0.67
46:YC:41:ARG:HH11	46:YC:41:ARG:HG2	1.61	0.66
47:ZC:29:ARG:NH1	47:ZC:64:TRP:HB3	2.10	0.66
1:A:643:C:H2'	1:A:644:G:H8	1.60	0.66
2:B:2552:2MU:H2'	2:B:2554:U:OP2	1.95	0.66
2:B:91:A:C8	2:B:92:G:C8	2.83	0.66
49:BD:33:THR:HG23	49:BD:63:ARG:NH1	2.10	0.66
12:L:34:THR:OG1	12:L:35:VAL:N	2.24	0.66
27:AA:44:ARG:HG2	27:AA:48:GLU:OE2	1.96	0.66
2:FB:2141:G:N2	2:FB:2150:U:O2'	2.27	0.66
8:LB:42:GLY:HA2	8:LB:89:GLY:HA3	1.76	0.66
43:RA:10:ARG:NH1	43:RA:11:LYS:HD2	2.10	0.66
42:UC:50:ARG:HA	42:UC:50:ARG:NH1	2.11	0.66
14:RB:134:ARG:NH1	23:AC:122:ARG:HE	1.94	0.66
2:B:2474:C:H5'	2:B:2475:C:OP2	1.95	0.66
2:B:861:A:O2'	14:N:18:LYS:NZ	2.29	0.66
49:BD:16:ALA:HB1	49:BD:21:ASP:HB3	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:FD:41:VAL:HG13	53:FD:43:GLU:H	1.60	0.66
15:O:59:ASP:OD1	15:O:59:ASP:N	2.26	0.66
37:PC:189:ALA:HB3	37:PC:196:LEU:HB2	1.76	0.66
13:QB:88:LEU:HD21	13:QB:95:VAL:HG11	1.77	0.66
43:RA:5:TYR:HH	43:RA:7:THR:HG1	1.43	0.66
47:VA:81:LEU:HD22	47:VA:88:ARG:NH1	2.11	0.66
23:AC:93:ASP:HA	23:AC:131:ARG:NH1	2.10	0.66
2:B:2298:A:N6	2:B:2318:G:H8	1.92	0.66
2:B:181:A:H1'	2:B:435:C:H5'	1.77	0.66
1:EB:539:A:H2'	1:EB:540:G:C8	2.30	0.66
39:NA:144:THR:H	39:NA:147:ASP:HB2	1.60	0.66
13:QB:91:PHE:O	13:QB:121:LYS:NZ	2.29	0.66
41:TC:89:MET:HG2	41:TC:156:TRP:HE1	1.60	0.66
1:A:1107:C:H5''	37:LA:173:VAL:HG23	1.75	0.66
2:B:2114:A:O2'	2:B:2168:G:OP1	2.12	0.66
2:B:686:G:O5'	31:EA:11:LYS:NZ	2.28	0.66
1:EB:1261:A:C6	1:EB:1262:C:H1'	2.30	0.66
2:FB:889:C:O2'	2:FB:890:A:O4'	2.13	0.66
7:KB:24:LEU:HD22	7:KB:115:ALA:HB2	1.77	0.66
37:LA:189:ALA:HB3	37:LA:196:LEU:HB2	1.76	0.66
36:OC:115:LEU:HD21	36:OC:153:ARG:HE	1.60	0.66
2:FB:2469:A:H4'	14:RB:56:ARG:HG2	1.77	0.66
23:W:52:SER:OG	23:W:53:ILE:N	2.28	0.66
23:AC:45:ASP:OD1	23:AC:49:ARG:NH1	2.28	0.66
2:B:1216:G:OP2	18:R:12:ARG:NH2	2.25	0.66
1:EB:773:G:O3'	5:IB:202:LYS:NZ	2.28	0.66
35:JA:338:ASP:HA	35:JA:341:ILE:HG22	1.76	0.66
46:UA:24:VAL:HB	46:UA:27:LEU:HD23	1.77	0.66
22:V:35:TYR:CE2	22:V:69:ALA:HB3	2.30	0.66
2:B:1056:G:H5''	2:B:1057:A:H4'	1.77	0.66
2:B:2591:C:H2'	2:B:2592:G:H8	1.61	0.66
2:FB:1587:A:H2'	2:FB:1588:C:H6	1.59	0.66
2:FB:1663:C:HO2'	2:FB:1664:A:H8	1.42	0.66
4:HB:8:4SU:O2	4:HB:15:G:O6	2.13	0.66
17:Q:28:VAL:HG11	17:Q:49:VAL:HG23	1.77	0.66
1:A:1251:A:HO2'	1:A:1369:C:HO2'	1.34	0.66
2:FB:2529:G:OP1	9:MB:172:LYS:NZ	2.23	0.66
2:FB:2756:U:H5''	33:KC:19:ARG:HG2	1.76	0.66
37:LA:139:GLN:HB3	37:LA:140:ARG:HH12	1.60	0.66
39:NA:50:GLU:HB3	39:NA:53:LEU:HG	1.77	0.66
36:OC:47:THR:O	36:OC:51:LEU:N	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1654:A:OP2	15:SB:1:MET:N	2.29	0.66
2:B:1278:A:H2'	2:B:1279:G:C8	2.31	0.66
1:EB:495:A:H4'	1:EB:496:A:OP1	1.96	0.66
1:EB:613:C:H42	1:EB:627:G:H1	1.42	0.66
2:FB:1179:C:H2'	2:FB:1180:C:H6	1.61	0.66
2:FB:1405:U:H2'	2:FB:1406:U:C6	2.31	0.66
2:FB:1508:A:HO2'	2:FB:1510:A:H2	1.44	0.66
2:B:2312:U:H2'	8:H:40:ASN:HD21	1.61	0.66
2:B:2175:C:H5''	2:B:2176:A:OP2	1.96	0.65
2:B:2573:C:N4	35:JA:239:THR:HA	2.11	0.65
1:EB:1129:C:H5''	43:VC:16:ARG:HH12	1.61	0.65
1:EB:893:C:N4	1:EB:894:G:O6	2.29	0.65
2:FB:2820:A:P	15:SB:2:ARG:HH22	2.19	0.65
35:JA:223:ARG:HH22	35:JA:245:ARG:NH1	1.94	0.65
11:K:19:GLU:HA	11:K:59:LYS:HB3	1.77	0.65
12:L:31:LYS:HB2	12:L:31:LYS:HZ2	1.58	0.65
8:LB:46:ALA:HA	8:LB:49:ASP:HB2	1.78	0.65
2:B:2820:A:OP2	15:O:2:ARG:NH2	2.29	0.65
40:OA:2:ARG:NH1	40:OA:69:GLU:OE2	2.24	0.65
37:PC:140:ARG:N	37:PC:140:ARG:HH11	1.94	0.65
23:W:97:GLU:HG2	23:W:127:LYS:HG2	1.76	0.65
1:A:559:A:H4'	1:A:560:U:H5'	1.78	0.65
1:A:637:G:H2'	1:A:638:G:C8	2.31	0.65
2:B:1843:C:H2'	2:B:1844:C:H6	1.61	0.65
24:BC:21:LEU:HD23	24:BC:41:ARG:NH1	2.11	0.65
49:BD:8:LYS:NZ	49:BD:31:LEU:HD21	2.12	0.65
53:FD:19:VAL:HA	53:FD:22:LEU:HD12	1.77	0.65
4:MC:69:C:H2'	4:MC:70:G:H8	1.61	0.65
41:PA:72:ARG:HH21	41:PA:138:LYS:HZ2	1.45	0.65
43:RA:29:ASN:O	43:RA:31:GLN:N	2.28	0.65
24:X:21:LEU:HD23	24:X:41:ARG:NH1	2.11	0.65
20:XB:60:ASN:C	20:XB:61:ASN:HD22	2.00	0.65
47:ZC:88:ARG:NH1	47:ZC:88:ARG:HB2	2.12	0.65
2:B:2128:C:N4	2:B:2160:G:O6	2.30	0.65
2:B:2143:C:N3	2:B:2148:G:N2	2.44	0.65
53:BB:41:VAL:HG13	53:BB:43:GLU:H	1.61	0.65
1:EB:134:A:H61	50:CD:25:ARG:HH12	1.43	0.65
5:IB:96:HIS:HD2	5:IB:102:LYS:HG2	1.61	0.65
2:B:2039:C:H5'	11:K:109:LYS:HZ2	1.61	0.65
11:OB:68:GLU:OE2	11:OB:68:GLU:N	2.29	0.65
43:VC:29:ASN:O	43:VC:31:GLN:N	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1055:A:N7	1:A:1200:C:N4	2.44	0.65
2:B:1056:G:O2'	2:B:1086:A:O2'	2.13	0.65
2:B:1582:C:H2'	2:B:1583:A:C8	2.32	0.65
2:B:2287:A:H2	2:B:2346:A:H62	1.43	0.65
24:BC:27:GLU:HG3	24:BC:68:GLU:HA	1.78	0.65
1:EB:559:A:H4'	1:EB:560:U:H5'	1.79	0.65
1:EB:613:C:OP2	38:QC:84:LYS:NZ	2.27	0.65
2:FB:1044:G:N2	2:FB:1111:A:N3	2.45	0.65
35:NC:338:ASP:O	35:NC:340:LEU:N	2.30	0.65
37:PC:92:ALA:HB2	37:PC:99:VAL:HG22	1.79	0.65
49:XA:16:ALA:HB1	49:XA:21:ASP:HB3	1.78	0.65
51:ZA:11:VAL:HG12	51:ZA:85:VAL:HG13	1.77	0.65
47:ZC:29:ARG:HH11	47:ZC:64:TRP:HB3	1.62	0.65
1:A:1266:G:H2'	1:A:1268:A:OP2	1.96	0.65
52:AB:20:ALA:O	52:AB:55:ARG:NH2	2.30	0.65
1:EB:932:C:H5''	41:TC:4:ARG:HG3	1.79	0.65
2:FB:323:G:H2'	7:KB:169:ASN:ND2	2.11	0.65
2:FB:232:G:N2	2:FB:420:C:OP1	2.22	0.65
3:C:45:A:O4'	8:H:95:ARG:NH1	2.29	0.65
41:PA:89:MET:HG2	41:PA:156:TRP:HE1	1.61	0.65
43:RA:22:GLY:H	43:RA:59:PHE:HA	1.62	0.65
43:RA:51:ARG:HG2	43:RA:51:ARG:HH11	1.61	0.65
47:ZC:95:GLY:O	47:ZC:110:ARG:NH1	2.30	0.65
1:A:1288:A:N3	1:A:1352:C:O2'	2.27	0.65
2:B:2127:G:H1'	2:B:2162:G:H22	1.61	0.65
2:B:2564:A:C2	2:B:2647:U:H4'	2.32	0.65
6:F:168:MET:HE2	6:F:203:LYS:HE2	1.78	0.65
2:FB:1038:C:H42	2:FB:1117:G:H1	1.43	0.65
2:FB:2287:A:N6	2:FB:2344:U:H3	1.94	0.65
43:VC:10:ARG:NH1	43:VC:11:LYS:HD2	2.11	0.65
1:EB:1162:C:N4	1:EB:1174:G:O6	2.29	0.65
1:EB:637:G:H2'	1:EB:638:G:C8	2.31	0.65
47:VA:29:ARG:HH11	47:VA:64:TRP:HB3	1.61	0.65
2:B:2278:A:H8	24:X:12:ASN:HD22	1.41	0.65
2:B:1179:C:H2'	2:B:1180:C:H6	1.62	0.65
8:H:122:PRO:HD3	8:H:181:ARG:HG2	1.77	0.65
39:NA:35:GLY:HA3	39:NA:112:LEU:HB3	1.79	0.65
19:S:60:GLU:HB2	19:S:95:LEU:HB3	1.76	0.65
40:SC:46:ARG:HH22	52:ED:37:VAL:HG11	1.60	0.65
2:B:2794:C:N4	2:B:2802:G:O6	2.30	0.65
2:B:548:A:H2'	2:B:549:G:O4'	1.96	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:603:U:H2'	1:EB:604:G:C8	2.32	0.65
52:ED:53:ARG:HH12	52:ED:60:ALA:CA	2.09	0.65
39:NA:11:ILE:HG22	39:NA:12:LEU:H	1.62	0.65
36:OC:121:LEU:HD12	36:OC:126:GLU:HB2	1.79	0.65
1:EB:1107:C:H5''	37:PC:173:VAL:HG23	1.79	0.65
40:SC:91:VAL:HG11	52:ED:72:ARG:NH1	2.10	0.65
43:VC:22:GLY:H	43:VC:59:PHE:HA	1.62	0.65
2:B:1815:A:OP2	5:E:54:ARG:NH2	2.30	0.65
1:EB:113:G:H1'	1:EB:354:G:H5'	1.78	0.65
30:HC:13:CYS:SG	30:HC:14:THR:N	2.70	0.65
38:MA:94:LEU:HA	38:MA:97:LEU:HD12	1.79	0.65
23:W:19:ARG:HG3	23:W:19:ARG:HH11	1.62	0.65
21:YB:21:PHE:O	21:YB:23:GLU:N	2.29	0.65
2:B:140:A:H8	2:B:1408:C:HO2'	1.42	0.64
5:E:96:HIS:HD2	5:E:102:LYS:HG2	1.60	0.64
1:EB:1270:C:H2'	1:EB:1271:G:C8	2.32	0.64
2:FB:1805:U:H2'	2:FB:1806:C:H6	1.62	0.64
2:FB:1813:G:O2'	5:IB:42:GLY:O	2.14	0.64
37:LA:58:GLU:HG3	37:LA:65:ALA:HB3	1.77	0.64
12:PB:64:ARG:NH1	12:PB:81:ASP:OD1	2.30	0.64
38:QC:141:ARG:HH11	38:QC:141:ARG:HB3	1.62	0.64
38:QC:173:TRP:CD2	38:QC:189:PRO:HB3	2.32	0.64
2:FB:2849:U:OP1	17:UB:95:ARG:NH1	2.29	0.64
5:E:218:ARG:HH11	5:E:218:ARG:CG	2.10	0.64
2:B:1658:C:OP1	6:F:135:HIS:NE2	2.30	0.64
2:FB:1056:G:H5''	2:FB:1057:A:H4'	1.79	0.64
14:N:54:MET:HB3	14:N:117:ALA:HB1	1.77	0.64
39:RC:11:ILE:HG22	39:RC:12:LEU:H	1.61	0.64
44:SA:3:LYS:HD3	44:SA:4:ILE:HG13	1.79	0.64
2:B:232:G:N2	2:B:420:C:OP1	2.22	0.64
47:ZC:86:CYS:HB2	53:FD:73:GLU:HG2	1.79	0.64
2:B:588:U:C5'	13:M:16:ARG:HH12	2.10	0.64
1:A:438:G:H4'	38:MA:123:HIS:HD2	1.62	0.64
1:A:603:U:H2'	1:A:604:G:C8	2.32	0.64
1:A:614:A:H2'	1:A:615:C:C6	2.33	0.64
52:AB:53:ARG:NH1	52:AB:60:ALA:HA	2.11	0.64
1:EB:1305:G:OP2	55:HD:2:GLY:N	2.30	0.64
2:FB:1056:G:O2'	2:FB:1086:A:O2'	2.15	0.64
2:FB:1257:C:H4'	7:KB:83:PHE:CD1	2.32	0.64
2:FB:2602:A:H5'	4:MC:74:C:H5''	1.78	0.64
2:FB:796:C:H2'	2:FB:797:C:C6	2.33	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:LB:122:PRO:HD3	8:LB:181:ARG:HG2	1.77	0.64
14:N:137:TYR:HE2	23:W:49:ARG:NH1	1.95	0.64
10:NB:83:ALA:HA	10:NB:88:ILE:HG12	1.79	0.64
35:NC:123:GLU:HA	35:NC:126:LEU:HD12	1.79	0.64
12:PB:31:LYS:HZ2	12:PB:31:LYS:HB2	1.63	0.64
11:OB:4:TYR:CD2	18:VB:100:VAL:HG11	2.31	0.64
1:EB:8:A:N6	38:QC:205:GLU:O	2.31	0.64
27:EC:44:ARG:HG2	27:EC:48:GLU:OE2	1.97	0.64
11:OB:19:GLU:HA	11:OB:59:LYS:HB3	1.80	0.64
1:EB:1347:G:N1	1:EB:1374:A:OP2	2.31	0.64
28:FC:62:ARG:HA	28:FC:62:ARG:NH1	2.12	0.64
55:HD:6:ARG:HG3	55:HD:6:ARG:HH11	1.62	0.64
11:K:88:GLU:OE1	11:K:88:GLU:N	2.30	0.64
8:LB:75:LYS:HA	8:LB:84:LYS:HG2	1.80	0.64
2:FB:2602:A:H5''	4:MC:75:C:P	2.37	0.64
11:OB:88:GLU:HA	11:OB:91:LEU:HB2	1.80	0.64
39:RC:144:THR:H	39:RC:147:ASP:HB2	1.61	0.64
47:VA:54:VAL:CG1	47:VA:57:ARG:HH12	2.09	0.64
1:A:134:A:H61	50:YA:25:ARG:HH12	1.43	0.64
2:B:1022:G:H22	2:B:1142(B):A:H2	1.46	0.64
2:B:2306:C:H3'	2:B:2307:G:H2'	1.80	0.64
3:C:75:G:O3'	23:W:10:ARG:NH1	2.30	0.64
1:EB:376:G:H5''	50:CD:5:ARG:HD2	1.80	0.64
55:DB:6:ARG:HH11	55:DB:6:ARG:HG3	1.63	0.64
2:FB:2287:A:H62	2:FB:2344:U:H3	1.46	0.64
2:FB:2795:G:O2'	2:FB:2799:A:N6	2.28	0.64
36:KA:47:THR:O	36:KA:51:LEU:N	2.31	0.64
37:PC:58:GLU:HG3	37:PC:65:ALA:HB3	1.78	0.64
41:TC:20:ASP:HB3	41:TC:23:VAL:HG23	1.78	0.64
47:ZC:14:ARG:HE	47:ZC:42:ALA:HA	1.63	0.64
1:A:613:C:H42	1:A:627:G:H1	1.44	0.64
2:B:1038:C:H42	2:B:1117:G:H1	1.44	0.64
2:B:1587:A:H2'	2:B:1588:C:H6	1.61	0.64
2:FB:2127:G:H1'	2:FB:2162:G:H22	1.62	0.64
36:OC:88:ALA:HB2	36:OC:219:VAL:HG13	1.80	0.64
49:XA:33:THR:HG23	49:XA:63:ARG:NH1	2.13	0.64
2:B:1708:C:H42	2:B:1750:G:H1	1.44	0.64
1:EB:277:C:OP2	51:DD:41:LYS:NZ	2.24	0.64
1:EB:614:A:H2'	1:EB:615:C:C6	2.33	0.64
52:ED:56:THR:OG1	52:ED:57:GLY:N	2.31	0.64
2:FB:2115:G:H4'	2:FB:2167:U:H1'	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:748:G:OP1	20:XB:88:ARG:NH2	2.31	0.64
37:LA:140:ARG:HH11	37:LA:140:ARG:N	1.96	0.64
38:MA:21:LEU:N	38:MA:26:CYS:SG	2.71	0.64
38:QC:94:LEU:HA	38:QC:97:LEU:HD12	1.79	0.64
1:EB:1347:G:N2	1:EB:1374:A:OP2	2.31	0.64
6:F:179:GLU:HB3	6:F:181:LEU:HD22	1.80	0.64
2:FB:1843:C:H2'	2:FB:1844:C:H6	1.63	0.64
2:FB:249:C:O2'	13:QB:64:LYS:NZ	2.23	0.64
3:GB:89(A):G:H2'	3:GB:89(B):A:C8	2.33	0.64
30:HC:9:LEU:HD11	30:HC:34:LEU:HD12	1.80	0.64
17:UB:91:ARG:HH11	17:UB:91:ARG:CB	2.11	0.64
47:VA:86:CYS:HB2	53:BB:73:GLU:HG2	1.78	0.64
2:B:2115:G:H4'	2:B:2167:U:H1'	1.79	0.63
2:B:442:G:H4'	7:G:46:ARG:HG3	1.80	0.63
30:HC:17:LYS:NZ	30:HC:50:ARG:HH21	1.95	0.63
2:FB:2621:A:O2'	6:JB:159:HIS:ND1	2.31	0.63
7:KB:117:ARG:NH2	7:KB:189:THR:O	2.26	0.63
8:LB:93:THR:HG21	8:LB:95:ARG:HH21	1.62	0.63
1:A:542:G:H5'	38:MA:41:GLY:HA3	1.80	0.63
10:NB:83:ALA:HB3	10:NB:146:ALA:HA	1.79	0.63
45:TA:108:ILE:HD11	52:AB:87:ARG:HD2	1.80	0.63
41:TC:67:GLU:HA	41:TC:70:LYS:HD3	1.80	0.63
1:EB:1117:G:O3'	43:VC:104:ARG:NH1	2.31	0.63
52:AB:26:LEU:HD23	52:AB:42:ARG:HD2	1.79	0.63
5:E:146:GLU:HA	5:E:153:ALA:HA	1.80	0.63
5:E:80:ALA:HB3	5:E:94:LEU:HB3	1.80	0.63
4:HB:28:C:H42	4:HB:42:G:H1	1.46	0.63
5:IB:263:ARG:H	5:IB:263:ARG:HH11	1.46	0.63
7:KB:165:ARG:HA	7:KB:168:ARG:HD3	1.79	0.63
9:MB:64:LEU:O	9:MB:68:THR:OG1	2.14	0.63
41:PA:69:VAL:HG22	41:PA:135:VAL:HG13	1.81	0.63
1:A:1270:C:H2'	1:A:1271:G:C8	2.33	0.63
1:A:1320:C:O2	53:BB:36:ARG:NH1	2.32	0.63
1:EB:1032(B):G:H2'	1:EB:1032(C):G:H4'	1.80	0.63
2:FB:2133:G:H1'	2:FB:2158:A:H61	1.63	0.63
8:H:106:LEU:HA	8:H:110:ALA:HB3	1.80	0.63
9:I:87:LEU:HD23	9:I:164:TYR:HA	1.79	0.63
17:Q:30:VAL:HG22	17:Q:86:ILE:HG23	1.78	0.63
15:SB:9:LYS:HA	15:SB:17:ARG:NH1	2.13	0.63
1:A:1269:A:H5''	55:DB:24:ARG:NH2	2.14	0.63
23:AC:139:VAL:HG22	23:AC:155:LEU:HD21	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1863:G:H1	2:B:1879:C:H42	1.46	0.63
2:B:580:C:H2'	2:B:581:C:H6	1.62	0.63
49:BD:8:LYS:NZ	49:BD:31:LEU:HD11	2.13	0.63
30:DA:13:CYS:SG	30:DA:14:THR:N	2.70	0.63
1:EB:1029:G:OP1	1:EB:1032(C):G:N2	2.31	0.63
2:FB:1849:G:H2'	2:FB:1850:G:H8	1.62	0.63
40:SC:15:ASP:O	40:SC:19:LEU:N	2.28	0.63
42:UC:7:ALA:HB2	42:UC:85:ARG:HD2	1.79	0.63
46:YC:32:PHE:HD1	46:YC:86:ARG:HB3	1.63	0.63
1:A:1032(B):G:H2'	1:A:1032(C):G:H4'	1.81	0.63
1:EB:1055:A:N7	1:EB:1200:C:N4	2.46	0.63
1:EB:377:G:P	50:CD:5:ARG:HH11	2.21	0.63
2:FB:1918:A:O2'	2:FB:1920:4OC:N4	2.32	0.63
2:FB:414:C:H2'	2:FB:415:A:C8	2.33	0.63
11:K:4:TYR:CD2	18:R:100:VAL:HG11	2.33	0.63
46:UA:32:PHE:HD1	46:UA:86:ARG:HB3	1.63	0.63
3:C:5:C:H42	3:C:115:G:H1	1.45	0.63
1:EB:1251:A:HO2'	1:EB:1369:C:HO2'	1.40	0.63
2:FB:2175:C:H5''	2:FB:2176:A:OP2	1.99	0.63
2:FB:2591:C:H2'	2:FB:2592:G:H8	1.63	0.63
2:FB:529:A:H4'	2:FB:529:A:OP2	1.98	0.63
41:TC:57:GLU:HB3	41:TC:60:LYS:HE2	1.81	0.63
1:A:1067:A:N1	1:A:1108:G:O2'	2.28	0.63
1:A:81:G:H2'	1:A:82:U:C5	2.33	0.63
2:B:2351:G:OP2	32:FA:46:ARG:NH1	2.29	0.63
2:B:268:C:H42	2:B:424:G:H1	1.45	0.63
54:CB:57:ARG:NH1	54:CB:102:GLY:O	2.31	0.63
2:FB:2794:C:N4	2:FB:2802:G:O6	2.32	0.63
53:FD:33:THR:OG1	53:FD:34:TRP:N	2.32	0.63
7:G:101:LEU:HD12	7:G:102:PRO:HD2	1.81	0.63
33:GA:12:ASP:N	33:GA:12:ASP:OD1	2.30	0.63
35:JA:169:ASP:OD2	35:JA:170:GLY:N	2.32	0.63
7:KB:40:GLN:NE2	7:KB:184:TYR:HB2	2.14	0.63
9:MB:87:LEU:HD23	9:MB:164:TYR:HA	1.80	0.63
45:TA:21:ILE:HA	45:TA:30:VAL:HG12	1.80	0.63
48:WA:27:CYS:HB3	48:WA:43:CYS:HG	1.62	0.63
1:A:376:G:H5''	50:YA:5:ARG:HD2	1.81	0.63
2:B:1846:G:H1	2:B:1894:C:H42	1.46	0.63
2:B:2790:A:O2'	2:B:2893:G:O2'	2.09	0.63
2:FB:2444:G:OP2	7:KB:68:LYS:NZ	2.32	0.63
7:G:144:LYS:NZ	7:G:144:LYS:HB3	2.14	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:24:LEU:HD22	7:G:115:ALA:HB2	1.81	0.63
3:GB:5:C:H42	3:GB:115:G:H1	1.44	0.63
8:H:60:LEU:HA	8:H:63:ILE:HD12	1.81	0.63
2:FB:2572:A:N3	6:JB:144:ARG:NH1	2.47	0.63
1:A:45:U:H2'	1:A:46:G:C8	2.34	0.63
1:A:668:G:H4'	49:XA:48:LYS:HB2	1.80	0.63
2:FB:1274:A:OP1	2:FB:1646:C:N4	2.30	0.63
35:JA:191:GLU:HA	35:JA:191:GLU:OE2	1.98	0.63
37:LA:17:ASP:OD2	37:LA:54:ARG:NH2	2.31	0.63
41:PA:67:GLU:HA	41:PA:70:LYS:HD3	1.81	0.63
37:PC:72:LYS:O	37:PC:74:GLY:N	2.30	0.63
20:T:90:ARG:HG2	20:T:90:ARG:HH11	1.64	0.63
23:W:139:VAL:HG22	23:W:155:LEU:HD21	1.81	0.63
40:OA:91:VAL:HG11	52:AB:72:ARG:NH1	2.13	0.62
2:FB:181:A:H1'	2:FB:435:C:H5'	1.80	0.62
15:O:9:LYS:HA	15:O:17:ARG:NH1	2.13	0.62
37:PC:125:GLU:HA	37:PC:191:THR:HG23	1.81	0.62
43:RA:28:VAL:HA	43:RA:63:ILE:HG23	1.81	0.62
44:SA:79:ARG:NH1	44:SA:82:ILE:HG21	2.14	0.62
2:B:1205:U:H4'	2:B:1206:G:OP2	1.97	0.62
2:B:587:C:OP2	13:M:21:ARG:NH1	2.30	0.62
2:FB:1839:G:H5'	2:FB:1840:G:OP2	1.98	0.62
37:LA:125:GLU:HA	37:LA:191:THR:HG23	1.81	0.62
38:MA:173:TRP:CD2	38:MA:189:PRO:HB3	2.34	0.62
10:NB:6:LEU:HD21	10:NB:37:VAL:HG12	1.80	0.62
42:QA:50:ARG:HA	42:QA:50:ARG:NH1	2.13	0.62
20:T:6:ILE:HG12	20:T:104:THR:HG23	1.81	0.62
26:Z:54:LYS:HA	26:Z:57:ILE:HD12	1.81	0.62
2:B:2146:C:H6	2:B:2146:C:OP2	1.81	0.62
2:B:2109:U:O2'	2:B:2181:G:N2	2.33	0.62
2:B:2439:A:C8	2:B:2439:A:H5''	2.34	0.62
28:BA:12:ALA:HB3	28:BA:26:SER:HB3	1.80	0.62
1:EB:279:A:H4'	1:EB:280:C:H5''	1.81	0.62
2:FB:1430:C:H2'	2:FB:1431:U:H6	1.65	0.62
2:FB:686:G:O5'	31:IC:11:LYS:NZ	2.32	0.62
36:OC:46:LYS:HB3	36:OC:46:LYS:NZ	2.13	0.62
39:RC:35:GLY:HA3	39:RC:112:LEU:HB3	1.82	0.62
21:U:27:THR:HG23	21:U:80:ILE:HG23	1.81	0.62
21:YB:11:PRO:HG2	21:YB:13:LEU:HD11	1.81	0.62
1:A:1217:C:H2'	1:A:1218:C:C6	2.34	0.62
1:A:279:A:H4'	1:A:280:C:H5''	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:932:C:H5''	41:PA:4:ARG:HG3	1.80	0.62
2:B:1087:G:H22	2:B:1102:C:H42	1.48	0.62
2:B:2425:A:H4'	2:B:2426:A:H5''	1.80	0.62
2:B:862:G:H5'	14:N:18:LYS:NZ	2.14	0.62
35:NC:153:GLU:HA	35:NC:159:TYR:H	1.62	0.62
42:QA:41:ARG:HG3	42:QA:41:ARG:HH11	1.65	0.62
20:T:11:ARG:NH1	20:T:99:ARG:O	2.33	0.62
2:B:1430:C:H2'	2:B:1431:U:H6	1.63	0.62
1:A:1325:C:H5'	55:DB:15:ARG:HD2	1.80	0.62
1:EB:147:G:H1	1:EB:175:C:H42	1.46	0.62
6:F:34:VAL:HG21	6:F:78:LEU:HD11	1.81	0.62
2:FB:548:A:H2'	2:FB:549:G:O4'	2.00	0.62
4:HB:71:C:H2'	4:HB:72:A:C8	2.31	0.62
4:IA:69:C:H2'	4:IA:70:G:H8	1.63	0.62
11:K:88:GLU:HA	11:K:91:LEU:HB2	1.80	0.62
36:OC:166:ASP:OD1	36:OC:168:THR:OG1	2.16	0.62
45:XC:21:ILE:HA	45:XC:30:VAL:HG12	1.81	0.62
1:A:1117:G:O3'	43:RA:104:ARG:NH1	2.32	0.62
1:A:1513:A:H2'	1:A:1514:C:C6	2.35	0.62
1:EB:668:G:H4'	49:BD:48:LYS:HB2	1.82	0.62
5:E:37:LEU:HB2	5:E:62:TYR:HB2	1.81	0.62
32:FA:50:LEU:HB2	32:FA:55:ALA:HB2	1.81	0.62
2:FB:273(E):C:OP2	2:FB:273(E):C:H6	1.83	0.62
36:KA:158:LEU:HD12	36:KA:159:PRO:HD2	1.81	0.62
18:VB:94:ASN:HD22	19:WB:4:ILE:HD12	1.64	0.62
1:A:893:C:N4	1:A:894:G:O6	2.33	0.62
1:EB:1132:C:O2	1:EB:1142:G:N2	2.29	0.62
2:FB:1853:A:H2'	2:FB:1854:A:C8	2.34	0.62
2:FB:2474:C:H5'	2:FB:2475:C:OP2	1.99	0.62
30:HC:23:THR:OG1	30:HC:24:GLU:N	2.30	0.62
5:IB:127:VAL:HA	5:IB:193:VAL:HG23	1.82	0.62
7:KB:54:ARG:HD2	7:KB:81:PRO:HD3	1.80	0.62
8:LB:106:LEU:HA	8:LB:110:ALA:HB3	1.80	0.62
41:PA:57:GLU:HB3	41:PA:60:LYS:HE2	1.81	0.62
12:PB:36:GLY:HA3	12:PB:109:LYS:HE3	1.82	0.62
45:TA:79:SER:HA	45:TA:104:GLN:HB2	1.82	0.62
1:A:1132:C:O2	1:A:1142:G:N2	2.29	0.62
2:B:1020:A:H4'	2:B:1021:A:O5'	2.00	0.62
2:B:2529:G:OP1	9:I:172:LYS:NZ	2.25	0.62
2:B:2662:A:H2'	2:B:2663:G:O4'	2.00	0.62
1:EB:1217:C:H2'	1:EB:1218:C:C6	2.35	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:81:G:H2'	1:EB:82:U:C5	2.34	0.62
8:H:75:LYS:HA	8:H:84:LYS:HG2	1.82	0.62
13:QB:57:THR:HG23	13:QB:60:MET:HB2	1.81	0.62
47:VA:3:ARG:HH12	47:VA:4:ILE:HG22	1.63	0.62
20:XB:90:ARG:HH11	20:XB:90:ARG:HG2	1.64	0.62
2:B:829:A:N7	2:B:2247:A:O2'	2.33	0.62
2:B:2480:C:N4	2:B:2481:G:O6	2.33	0.62
26:DC:54:LYS:HA	26:DC:57:ILE:HD12	1.82	0.62
2:FB:588:U:OP1	13:QB:16:ARG:NH2	2.31	0.62
34:HA:22:A:H62	35:JA:195:ARG:HG2	1.65	0.62
3:C:29:A:OP2	16:P:31:SER:HB2	2.00	0.62
16:P:85:VAL:O	16:P:112:PHE:HB3	1.99	0.62
52:ED:26:LEU:HD23	52:ED:42:ARG:HD2	1.82	0.62
2:FB:1708:C:H42	2:FB:1750:G:H1	1.48	0.62
2:FB:2107:C:H2'	2:FB:2108:C:O4'	2.00	0.62
2:FB:239:U:H2'	2:FB:240:G:O4'	2.00	0.62
2:FB:768:G:H2'	2:FB:769:G:C8	2.35	0.62
28:FC:12:ALA:HB3	28:FC:26:SER:HB3	1.81	0.62
36:OC:20:GLU:OE2	36:OC:206:ASP:OD2	2.17	0.62
19:WB:28:GLU:O	19:WB:30:GLY:N	2.33	0.62
1:A:345:C:H3'	17:Q:41:ARG:CZ	2.29	0.61
2:B:1063:G:O6	2:B:1076:C:O2'	2.15	0.61
3:C:89(A):G:H2'	3:C:89(B):A:C8	2.34	0.61
1:EB:1347:G:H22	1:EB:1374:A:P	2.23	0.61
1:EB:509:A:N3	1:EB:543:C:O2'	2.33	0.61
2:FB:1063:G:O6	2:FB:1076:C:O2'	2.15	0.61
36:KA:51:LEU:HD22	36:KA:201:ILE:HD12	1.82	0.61
38:MA:125:HIS:ND1	38:MA:152:SER:OG	2.33	0.61
37:PC:17:ASP:OD2	37:PC:54:ARG:NH2	2.33	0.61
1:A:1129:C:H5''	43:RA:16:ARG:HH12	1.65	0.61
39:RC:50:GLU:HB3	39:RC:53:LEU:HG	1.81	0.61
18:VB:94:ASN:ND2	19:WB:4:ILE:HG23	2.15	0.61
2:B:2334:G:O6	24:X:74:ARG:NH2	2.33	0.61
1:A:113:G:H1'	1:A:354:G:H5'	1.82	0.61
1:A:662:G:H2'	1:A:663:A:C8	2.35	0.61
23:AC:80:ARG:HG2	23:AC:82:ARG:HH11	1.64	0.61
1:EB:45:U:H2'	1:EB:46:G:C8	2.35	0.61
2:FB:2299:G:N1	2:FB:2317:C:N3	2.43	0.61
7:G:95:ARG:HB3	7:G:97:TYR:CE2	2.34	0.61
7:KB:101:LEU:HD12	7:KB:102:PRO:HD2	1.80	0.61
36:OC:134:GLU:O	36:OC:138:LEU:HG	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:QA:121:ASP:HB2	42:QA:125:ARG:HH21	1.65	0.61
19:S:75:PHE:HE1	19:S:82:ARG:NH1	1.98	0.61
17:UB:16:ARG:HD3	17:UB:19:LEU:HD11	1.81	0.61
43:VC:28:VAL:HA	43:VC:63:ILE:HG23	1.82	0.61
1:A:512:U:H2'	1:A:513:C:C6	2.34	0.61
23:AC:130:PRO:HG2	23:AC:131:ARG:HH11	1.66	0.61
2:B:1063:G:H5''	2:B:1064:C:OP2	2.01	0.61
2:B:2133:G:H1'	2:B:2158:A:H61	1.64	0.61
2:B:747:U:O2	2:B:2014:A:H1'	2.01	0.61
52:ED:58:LEU:HD12	52:ED:62:GLU:HB3	1.81	0.61
2:FB:2545:G:O2'	2:FB:2565:A:N1	2.28	0.61
38:MA:12:CYS:O	38:MA:16:GLY:N	2.32	0.61
35:NC:260:GLU:O	35:NC:266:ASN:ND2	2.33	0.61
18:R:5:LYS:HB2	18:R:5:LYS:NZ	2.14	0.61
2:B:748:G:OP1	20:T:88:ARG:NH2	2.33	0.61
21:U:11:PRO:HG2	21:U:13:LEU:HD11	1.82	0.61
1:A:1029:G:OP1	1:A:1032(C):G:N2	2.33	0.61
2:B:274:G:N3	2:B:363(A):G:N2	2.49	0.61
2:FB:274:G:N3	2:FB:363(A):G:N2	2.48	0.61
5:IB:85:ASP:OD2	5:IB:88:ARG:NH1	2.33	0.61
36:KA:134:GLU:O	36:KA:138:LEU:HG	2.00	0.61
38:QC:36:ARG:NH1	38:QC:38:TYR:OH	2.33	0.61
18:R:111:GLU:OE2	18:R:111:GLU:HA	2.00	0.61
2:B:991:C:H42	2:B:1163:G:H1	1.47	0.61
5:E:85:ASP:OD2	5:E:88:ARG:NH1	2.34	0.61
2:FB:2123:G:H2'	2:FB:2124:G:H5''	1.83	0.61
2:FB:2306:C:H3'	2:FB:2307:G:H2'	1.81	0.61
40:OA:100:ASN:H	52:AB:23:LYS:NZ	1.98	0.61
17:Q:91:ARG:HH11	17:Q:91:ARG:CB	2.13	0.61
41:TC:16:LEU:HD21	43:VC:45:ALA:HB2	1.83	0.61
1:A:774:G:OP1	5:E:202:LYS:NZ	2.33	0.61
2:B:1024:G:HO2'	2:B:1144:G:HO2'	1.49	0.61
2:B:1210:A:H5''	2:B:1212:G:O4'	1.99	0.61
1:EB:662:G:H2'	1:EB:663:A:C8	2.35	0.61
2:FB:234:C:H2'	2:FB:235:U:H6	1.65	0.61
3:GB:12:C:OP2	3:GB:12:C:C6	2.54	0.61
2:FB:1658:C:OP1	6:JB:135:HIS:NE2	2.33	0.61
37:LA:18:TRP:H	37:LA:18:TRP:HE3	1.48	0.61
1:A:109:A:C6	1:A:326:G:C6	2.88	0.61
1:A:495:A:H4'	1:A:496:A:OP1	2.00	0.61
1:A:509:A:N3	1:A:543:C:O2'	2.29	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1466:G:H2'	2:B:1547:C:H41	1.64	0.61
2:B:2107:C:H2'	2:B:2108:C:O4'	2.01	0.61
2:B:588:U:H5''	13:M:16:ARG:HH12	1.63	0.61
30:DA:17:LYS:NZ	30:DA:50:ARG:HH21	1.99	0.61
4:IA:37:A:H5'	35:JA:155:GLU:OE1	2.00	0.61
5:IB:164:GLN:OE1	5:IB:176:ARG:NH2	2.34	0.61
35:JA:115:VAL:HG13	35:JA:162:ILE:HG23	1.83	0.61
36:KA:121:LEU:HD12	36:KA:126:GLU:HB2	1.81	0.61
42:QA:5:PRO:HB2	42:QA:32:LYS:HE2	1.83	0.61
19:S:100:ARG:HG2	19:S:100:ARG:HH11	1.66	0.61
41:TC:69:VAL:HG22	41:TC:135:VAL:HG13	1.83	0.61
42:UC:64:LYS:HB3	42:UC:79:VAL:HG21	1.83	0.61
46:YC:71:PRO:O	46:YC:102:ARG:NH1	2.33	0.61
1:A:1004:A:N6	1:A:1025:U:O2'	2.27	0.61
1:A:1054:C:OP2	1:A:1197:G:OP2	2.17	0.61
2:B:2565:A:H5''	2:B:2566:A:OP2	2.01	0.61
2:B:630:G:OP1	32:FA:47:LYS:NZ	2.33	0.61
2:FB:1087:G:H22	2:FB:1102:C:H42	1.49	0.61
2:FB:545:G:H21	2:FB:548:A:H62	1.49	0.61
28:FC:58:ARG:NE	53:FD:68:GLY:HA3	2.15	0.61
10:J:83:ALA:HB3	10:J:146:ALA:HA	1.82	0.61
37:PC:52:LEU:HD11	37:PC:55:VAL:HG22	1.81	0.61
13:QB:138:LEU:HD12	13:QB:143:GLY:HA3	1.82	0.61
47:VA:88:ARG:NH1	47:VA:88:ARG:HB2	2.16	0.61
1:A:201:C:N4	1:A:209:U:H1'	2.16	0.61
48:AD:21:TYR:HE1	48:AD:23:ARG:HH11	1.49	0.61
2:B:1171:G:H2'	2:B:1173:G:O4'	2.00	0.61
1:EB:1205:U:H4'	37:PC:195:VAL:HG21	1.83	0.61
2:FB:1093:G:H3'	2:FB:1094:U:H5''	1.83	0.61
2:FB:2439:A:H5''	2:FB:2439:A:C8	2.36	0.61
10:NB:128:LEU:HG	10:NB:140:LEU:HB3	1.83	0.61
42:UC:5:PRO:HB2	42:UC:32:LYS:HE2	1.83	0.61
45:XC:32:ILE:HB	45:XC:41:THR:HG22	1.82	0.61
26:Z:31:GLU:HG3	26:Z:53:LEU:HD11	1.83	0.61
47:ZC:81:LEU:HD22	47:ZC:88:ARG:NH1	2.16	0.61
14:RB:137:TYR:HE2	23:AC:49:ARG:NH1	1.98	0.61
23:AC:48:PHE:HE1	23:AC:71:VAL:HG21	1.64	0.61
2:B:1718:G:H1	2:B:1741:C:H42	1.47	0.61
2:B:1800:C:OP2	5:E:183:ARG:NH2	2.33	0.61
2:B:2123:G:H2'	2:B:2124:G:H5''	1.83	0.61
2:B:2572:A:C4	6:F:144:ARG:NH1	2.69	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:262:A:H2'	2:B:263:C:O4'	2.00	0.61
2:B:270(G):U:H3	2:B:270(U):G:H1	1.49	0.61
2:B:768:G:H2'	2:B:769:G:C8	2.36	0.61
2:FB:140:A:H8	2:FB:1408:C:O2'	1.84	0.61
2:FB:463:G:N2	2:FB:466:A:OP2	2.32	0.61
11:K:66:LYS:O	11:K:68:GLU:N	2.34	0.61
37:PC:180:ALA:HA	37:PC:206:GLU:HA	1.82	0.61
20:T:11:ARG:HA	20:T:100:THR:HG22	1.82	0.61
41:TC:5:ARG:NH1	41:TC:6:ARG:H	1.99	0.61
22:ZB:35:TYR:CE2	22:ZB:69:ALA:HB3	2.36	0.61
2:B:1918:A:O2'	2:B:1920:4OC:N4	2.34	0.60
28:BA:69:LYS:NZ	53:BB:43:GLU:HG2	2.16	0.60
5:E:127:VAL:HA	5:E:193:VAL:HG23	1.83	0.60
5:E:182:LEU:HB2	5:E:272:ALA:HB3	1.83	0.60
2:FB:1091:G:H1	2:FB:1100:C:H42	1.49	0.60
2:FB:588:U:H5''	13:QB:16:ARG:HH12	1.66	0.60
5:IB:182:LEU:HB2	5:IB:272:ALA:HB3	1.83	0.60
35:JA:214:LEU:O	35:JA:216:ASP:N	2.31	0.60
1:A:1422:G:H5''	12:L:48:PRO:CB	2.30	0.60
8:LB:98:ARG:HH11	8:LB:98:ARG:CB	2.14	0.60
14:N:27:VAL:N	14:N:138:ASP:OD2	2.34	0.60
38:QC:21:LEU:N	38:QC:26:CYS:SG	2.74	0.60
46:UA:41:ARG:HG2	46:UA:41:ARG:HH11	1.66	0.60
23:AC:19:ARG:HH11	23:AC:19:ARG:HG3	1.66	0.60
2:B:2749:A:P	9:I:3:ARG:HH22	2.22	0.60
2:B:444:C:OP1	7:G:45:ARG:NH2	2.34	0.60
1:EB:1368:G:OP1	44:WC:62:HIS:NE2	2.32	0.60
1:EB:186(C):C:H2'	1:EB:186(D):G:H8	1.65	0.60
2:FB:2327:A:H2'	2:FB:2328:A:C8	2.36	0.60
2:FB:2593:U:H2'	2:FB:2594:C:H6	1.65	0.60
2:FB:271(C):G:H4'	2:FB:271(D):U:H5''	1.83	0.60
10:J:6:LEU:HD21	10:J:37:VAL:HG12	1.82	0.60
35:JA:123:GLU:HA	35:JA:126:LEU:HD12	1.81	0.60
37:LA:180:ALA:HA	37:LA:206:GLU:HA	1.84	0.60
13:M:88:LEU:HD21	13:M:95:VAL:HG11	1.82	0.60
39:NA:78:HIS:HD1	42:QA:104:ARG:HD2	1.65	0.60
11:OB:73:THR:HB	11:OB:82:LEU:HD11	1.82	0.60
17:Q:36:GLU:HG3	17:Q:41:ARG:HE	1.66	0.60
49:XA:8:LYS:HZ3	49:XA:31:LEU:HD21	1.65	0.60
1:A:1325:C:H4'	55:DB:17:THR:HG21	1.84	0.60
1:A:1531:A:C8	1:A:1531:A:OP2	2.53	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:662:G:H1	1:A:743:U:H3	1.47	0.60
2:B:1204:A:C2	2:B:1206:G:C2	2.89	0.60
2:B:1274:A:OP1	2:B:1646:C:N4	2.34	0.60
2:B:2593:U:H2'	2:B:2594:C:H6	1.67	0.60
4:D:28:C:H42	4:D:42:G:H1	1.49	0.60
1:EB:992:U:H5''	1:EB:993:G:C5	2.36	0.60
32:JC:16:ILE:HG23	32:JC:20:GLY:HA2	1.82	0.60
35:NC:223:ARG:HH22	35:NC:245:ARG:NH1	1.98	0.60
35:NC:262:SER:OG	35:NC:263:GLN:N	2.34	0.60
36:OC:158:LEU:HD12	36:OC:159:PRO:HD2	1.83	0.60
17:UB:30:VAL:HG22	17:UB:86:ILE:HG23	1.82	0.60
23:W:130:PRO:HG2	23:W:131:ARG:HH11	1.66	0.60
1:A:1288:A:H4'	55:DB:13:ILE:HD11	1.82	0.60
2:B:2572:A:N3	6:F:144:ARG:NH1	2.49	0.60
2:FB:2146:C:OP2	2:FB:2146:C:H6	1.84	0.60
2:FB:2662:A:H2'	2:FB:2663:G:O4'	2.02	0.60
2:FB:768:G:H2'	2:FB:769:G:H8	1.66	0.60
2:B:2306:C:N4	8:H:42:GLY:O	2.35	0.60
9:I:64:LEU:O	9:I:68:THR:OG1	2.17	0.60
4:IA:49:G:H1	4:IA:65:C:N4	1.99	0.60
35:JA:262:SER:OG	35:JA:263:GLN:N	2.33	0.60
36:KA:130:ARG:HG3	36:KA:138:LEU:HD11	1.83	0.60
14:N:12:GLN:HB2	14:N:73:PRO:HD2	1.82	0.60
41:TC:78:ARG:HG2	41:TC:79:ARG:HG3	1.82	0.60
26:Z:21:LEU:O	26:Z:25:VAL:HG12	2.02	0.60
1:A:1347:G:N2	1:A:1374:A:OP2	2.35	0.60
2:B:1430:C:H2'	2:B:1431:U:C6	2.36	0.60
2:B:1853:A:H2'	2:B:1854:A:C8	2.37	0.60
53:BB:33:THR:OG1	53:BB:34:TRP:N	2.35	0.60
4:D:19:G:OP1	4:D:60:U:N3	2.33	0.60
1:EB:1320:C:O2	53:FD:36:ARG:NH1	2.34	0.60
2:FB:1205:U:C5	7:KB:171:PRO:HA	2.36	0.60
2:FB:547:A:H3'	2:FB:548:A:C8	2.37	0.60
2:FB:918:A:N3	3:GB:80:U:O2'	2.33	0.60
36:KA:10:LEU:HA	36:KA:12:GLU:OE2	2.02	0.60
2:FB:1031:G:H4'	33:KC:6:SER:HB2	1.84	0.60
37:PC:11:ARG:O	37:PC:14:ILE:N	2.27	0.60
19:WB:75:PHE:HE1	19:WB:82:ARG:NH1	1.99	0.60
47:ZC:92:HIS:CE1	47:ZC:98:VAL:HG21	2.37	0.60
3:GB:75:G:O3'	23:AC:10:ARG:NH1	2.33	0.60
2:B:1093:G:H3'	2:B:1094:U:H5''	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:512:U:H2'	1:EB:513:C:C6	2.35	0.60
1:EB:721:G:H4'	1:EB:722:A:O4'	2.01	0.60
2:FB:2593:U:H2'	2:FB:2594:C:C6	2.36	0.60
2:FB:270(G):U:H3	2:FB:270(U):G:H1	1.50	0.60
54:GD:97:ALA:O	54:GD:99:LEU:N	2.34	0.60
2:B:2039:C:H5''	11:K:109:LYS:HZ2	1.67	0.60
37:LA:52:LEU:HD11	37:LA:55:VAL:HG22	1.82	0.60
8:LB:60:LEU:HA	8:LB:63:ILE:HD12	1.81	0.60
13:M:56:SER:HB2	13:M:61:ARG:HD2	1.82	0.60
36:OC:16:HIS:CE1	36:OC:204:ASN:H	2.20	0.60
41:PA:20:ASP:HB3	41:PA:23:VAL:HG23	1.82	0.60
37:PC:108:ASN:ND2	37:PC:144:SER:OG	2.34	0.60
43:VC:51:ARG:HG2	43:VC:51:ARG:HH11	1.67	0.60
46:YC:62:SER:HB2	46:YC:64:TYR:HD2	1.67	0.60
2:B:154(A):C:OP1	2:B:155:C:H5'	2.01	0.60
2:B:1755:A:OP2	17:Q:113:LYS:NZ	2.33	0.60
2:B:414:C:H2'	2:B:415:A:C8	2.36	0.60
2:B:731:C:H2'	2:B:732:C:H6	1.65	0.60
24:BC:24:LYS:O	24:BC:25:ARG:NH1	2.35	0.60
51:DD:11:VAL:HG12	51:DD:85:VAL:HG13	1.83	0.60
1:EB:28:G:O2'	1:EB:296:U:OP1	2.19	0.60
1:EB:626:U:H2'	1:EB:627:G:C8	2.36	0.60
2:FB:1800:C:OP2	5:IB:183:ARG:NH2	2.34	0.60
10:J:93:THR:OG1	10:J:94:ALA:N	2.34	0.60
35:JA:151:ALA:HB1	35:JA:159:TYR:HE1	1.66	0.60
35:JA:213:GLU:HG2	35:JA:279:HIS:NE2	2.17	0.60
6:JB:117:MET:SD	6:JB:136:ARG:HG3	2.41	0.60
37:LA:72:LYS:O	37:LA:74:GLY:N	2.34	0.60
16:TB:5:THR:HG23	16:TB:8:GLU:OE2	2.02	0.60
1:A:1347:G:N1	1:A:1374:A:OP2	2.32	0.60
1:A:430:A:OP2	38:MA:8:VAL:HG13	2.01	0.60
1:A:992:U:H5''	1:A:993:G:C5	2.35	0.60
52:AB:56:THR:OG1	52:AB:57:GLY:N	2.33	0.60
2:B:239:U:H2'	2:B:240:G:O4'	2.02	0.60
2:B:637:A:OP2	13:M:116:GLY:N	2.32	0.60
2:B:883:G:H5'	2:B:884:C:OP2	2.00	0.60
1:EB:1288:A:N3	1:EB:1352:C:O2'	2.26	0.60
2:FB:2893:G:H8	2:FB:2893:G:O5'	1.84	0.60
4:MC:49:G:H1	4:MC:65:C:N4	1.99	0.60
35:NC:191:GLU:HA	35:NC:191:GLU:OE2	2.01	0.60
41:TC:111:ARG:HD2	41:TC:123:GLU:HB2	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:91:C:H2'	1:A:92:G:H8	1.66	0.60
23:AC:107:THR:O	23:AC:112:ARG:NH2	2.34	0.60
2:B:1091:G:H1	2:B:1100:C:H42	1.49	0.60
2:B:1115:G:H2'	2:B:1116:C:C6	2.37	0.60
2:B:1654:A:OP2	15:O:1:MET:N	2.33	0.60
2:B:1805:U:H2'	2:B:1806:C:H6	1.66	0.60
2:B:300:A:H1'	2:B:319:C:H1'	1.84	0.60
52:ED:53:ARG:NH1	52:ED:60:ALA:HA	2.14	0.60
7:G:54:ARG:HD2	7:G:81:PRO:HD3	1.84	0.60
36:KA:20:GLU:OE2	36:KA:206:ASP:OD2	2.20	0.60
37:PC:50:ALA:HB2	37:PC:75:VAL:HG11	1.83	0.60
21:U:31:HIS:CE1	21:U:33:LYS:HB2	2.37	0.60
19:WB:75:PHE:HD1	19:WB:82:ARG:HG3	1.67	0.60
44:WC:79:ARG:NH1	44:WC:82:ILE:HG21	2.16	0.60
49:XA:8:LYS:NZ	49:XA:31:LEU:HD11	2.17	0.60
49:XA:4:THR:HB	49:XA:6:GLU:OE2	2.02	0.60
1:A:235:C:H5'	51:ZA:70:ARG:HG2	1.84	0.60
1:A:628:G:H2'	1:A:629:G:O4'	2.01	0.60
14:RB:137:TYR:HE2	23:AC:49:ARG:HH11	1.50	0.60
48:AD:24:CYS:HB3	48:AD:29:ARG:H	1.67	0.60
2:B:1247:A:H62	13:M:15:ARG:HH12	1.50	0.60
2:B:1291:C:H2'	2:B:1292:U:C6	2.37	0.60
2:B:2893:G:O5'	2:B:2893:G:H8	1.85	0.60
1:EB:162:A:C5	1:EB:163:C:H1'	2.37	0.60
2:FB:137(B):G:N3	21:YB:41:ASN:ND2	2.48	0.60
2:FB:2101:G:H1	2:FB:2188:C:H42	1.50	0.60
35:JA:153:GLU:HA	35:JA:159:TYR:H	1.65	0.60
11:K:56:ASN:N	11:K:125:GLY:O	2.33	0.60
12:L:64:ARG:NH1	12:L:81:ASP:OD1	2.34	0.60
38:MA:138:TYR:HE2	38:MA:140:VAL:HA	1.67	0.60
37:PC:83:ARG:HA	37:PC:86:VAL:HG22	1.84	0.60
45:TA:61:ALA:HB1	45:TA:94:ALA:HB2	1.83	0.60
2:B:137(B):G:N3	21:U:41:ASN:ND2	2.48	0.60
52:AB:55:ARG:HB3	52:AB:55:ARG:NH1	2.17	0.59
2:B:1657:C:H2'	2:B:1658:C:H6	1.66	0.59
2:B:1663:C:HO2'	2:B:1664:A:H8	1.50	0.59
2:B:270(K):G:N1	2:B:270(O):G:C6	2.70	0.59
2:B:918:A:N3	3:C:80:U:O2'	2.33	0.59
1:EB:442:C:H2'	1:EB:443:C:C6	2.37	0.59
2:FB:2692:C:H42	2:FB:2717:G:H1	1.50	0.59
2:FB:580:C:H2'	2:FB:581:C:C6	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:PA:111:ARG:HD2	41:PA:123:GLU:HB2	1.84	0.59
16:TB:85:VAL:O	16:TB:112:PHE:HB3	2.01	0.59
46:UA:71:PRO:O	46:UA:102:ARG:NH1	2.33	0.59
2:B:2630:G:H1'	2:B:2894:G:H1'	1.84	0.59
1:EB:673:G:H2'	1:EB:674:G:C8	2.37	0.59
1:EB:837:G:H1	1:EB:849:C:H42	1.50	0.59
2:FB:1210:A:H5''	2:FB:1212:G:O4'	2.01	0.59
2:FB:1846:G:H1	2:FB:1894:C:H42	1.50	0.59
10:NB:93:THR:OG1	10:NB:94:ALA:N	2.34	0.59
38:QC:12:CYS:O	38:QC:16:GLY:N	2.35	0.59
1:A:673:G:H2'	1:A:674:G:C8	2.37	0.59
2:B:2591:C:H2'	2:B:2592:G:C8	2.37	0.59
1:A:1320:C:N3	53:BB:36:ARG:HD3	2.17	0.59
3:C:7:G:H1	3:C:113:C:H42	1.50	0.59
1:EB:91:C:H2'	1:EB:92:G:H8	1.67	0.59
2:FB:1205:U:H4'	2:FB:1206:G:OP2	2.01	0.59
2:FB:268:C:H42	2:FB:424:G:H1	1.48	0.59
2:FB:713:G:H2'	2:FB:714:U:C6	2.37	0.59
1:A:1028(A):C:N3	1:A:1033:G:N1	2.51	0.59
2:B:2271:G:H2'	2:B:2272:U:C6	2.37	0.59
1:EB:1334:G:H5''	1:EB:1335:C:OP2	2.01	0.59
2:FB:1020:A:H4'	2:FB:1021:A:O5'	2.00	0.59
37:LA:108:ASN:ND2	37:LA:144:SER:OG	2.35	0.59
45:XC:26:ASN:ND2	45:XC:26:ASN:O	2.35	0.59
2:B:270(C):A:N1	2:B:273(A):G:O2'	2.30	0.59
1:EB:1251:A:H2'	1:EB:1252:A:C8	2.37	0.59
52:ED:36:ASN:HD21	52:ED:39:VAL:HB	1.66	0.59
52:ED:20:ALA:O	52:ED:55:ARG:NH2	2.36	0.59
2:FB:1430:C:H2'	2:FB:1431:U:C6	2.38	0.59
2:FB:154(A):C:O2'	2:FB:155:C:N3	2.35	0.59
2:FB:1796:U:H2'	2:FB:1797:C:C6	2.37	0.59
9:I:125:VAL:HA	9:I:131:VAL:HG22	1.82	0.59
12:L:71:ARG:HH11	17:Q:74:ARG:HH21	1.49	0.59
1:A:1191:A:OP1	37:LA:3:ASN:ND2	2.36	0.59
42:QA:122:ARG:HA	42:QA:125:ARG:HB2	1.84	0.59
42:QA:4:ASP:OD2	42:QA:6:ILE:N	2.35	0.59
18:R:83:LEU:HD12	18:R:113:ALA:HB2	1.83	0.59
14:RB:12:GLN:HB2	14:RB:73:PRO:HD2	1.85	0.59
42:UC:51:VAL:HG11	42:UC:60:ARG:HG3	1.85	0.59
44:WC:30:SER:HB2	44:WC:81:THR:HG23	1.85	0.59
1:A:1334:G:H5''	1:A:1335:C:OP2	2.03	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:463:G:N2	2:B:466:A:OP2	2.35	0.59
2:B:580:C:H2'	2:B:581:C:C6	2.37	0.59
2:FB:1077:A:H62	2:FB:1079:C:H1'	1.68	0.59
2:FB:154(A):C:OP1	2:FB:155:C:H5'	2.03	0.59
2:FB:528:A:HO2'	2:FB:529:A:P	2.26	0.59
4:IA:1:C:H5'	4:IA:2:G:H8	1.68	0.59
13:QB:28:GLY:O	13:QB:30:THR:N	2.36	0.59
1:A:162:A:C5	1:A:163:C:H1'	2.37	0.59
2:B:2287:A:N6	2:B:2344:U:H3	2.01	0.59
54:CB:34:LYS:O	54:CB:36:LEU:N	2.34	0.59
51:DD:66:SER:HG	51:DD:69:LYS:H	1.51	0.59
1:EB:1033:G:H2'	1:EB:1034:G:C8	2.38	0.59
1:EB:1289:A:H3'	1:EB:1290:G:H8	1.67	0.59
1:EB:130:A:O2'	1:EB:131:C:O5'	2.20	0.59
1:EB:501:C:OP1	46:YC:117:ARG:NH2	2.35	0.59
45:XC:108:ILE:HD11	52:ED:87:ARG:HD2	1.84	0.59
2:FB:888:C:H2'	2:FB:889:C:C6	2.38	0.59
36:OC:10:LEU:HA	36:OC:12:GLU:OE2	2.02	0.59
34:HA:13:A:N6	41:PA:80:VAL:HG12	2.17	0.59
12:PB:3:GLN:O	12:PB:6:THR:OG1	2.12	0.59
38:QC:21:LEU:O	38:QC:26:CYS:SG	2.60	0.59
41:TC:79:ARG:HD3	41:TC:80:VAL:H	1.67	0.59
42:UC:4:ASP:HB2	42:UC:89:PRO:HG3	1.82	0.59
23:W:4:ARG:HG2	23:W:58:VAL:HB	1.85	0.59
45:XC:61:ALA:HB1	45:XC:94:ALA:HB2	1.84	0.59
1:A:952:U:H2'	1:A:953:G:C8	2.37	0.59
52:AB:53:ARG:NH1	52:AB:59:SER:O	2.36	0.59
2:B:1028:A:N6	2:B:1125:G:H2'	2.18	0.59
26:DC:25:VAL:HG23	26:DC:57:ILE:HG23	1.85	0.59
1:EB:1028(A):C:N3	1:EB:1033:G:N1	2.50	0.59
1:EB:1184:G:H2'	1:EB:1185:G:H8	1.67	0.59
2:FB:414:C:H2'	2:FB:415:A:H8	1.68	0.59
2:FB:91:A:H8	2:FB:92:G:C8	2.21	0.59
14:N:137:TYR:HE2	23:W:49:ARG:HH11	1.48	0.59
35:NC:130:ASP:O	35:NC:134:MET:HG3	2.03	0.59
35:NC:214:LEU:O	35:NC:216:ASP:N	2.32	0.59
37:PC:67:THR:HG23	37:PC:102:ASN:HB3	1.85	0.59
42:QA:104:ARG:HB3	42:QA:107:LEU:HB2	1.85	0.59
1:EB:1346:A:C8	41:TC:10:ARG:NH1	2.70	0.59
20:XB:82:LEU:HD23	20:XB:84:ARG:HH21	1.68	0.59
2:B:72:U:H3	26:Z:62:THR:HG23	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:24:U:H2'	1:A:25:C:H6	1.68	0.59
2:B:2692:C:H42	2:B:2717:G:H1	1.51	0.59
2:B:547:A:H3'	2:B:548:A:C8	2.38	0.59
1:EB:1067:A:N1	1:EB:1108:G:O2'	2.32	0.59
1:EB:1118:C:H1'	1:EB:1179:A:C5	2.38	0.59
2:FB:1079:C:N4	2:FB:1088:A:O4'	2.36	0.59
3:GB:11:C:H3'	3:GB:12:C:H6	1.67	0.59
8:H:113:ARG:HD2	47:VA:2:ALA:HB3	1.85	0.59
5:IB:96:HIS:CD2	5:IB:102:LYS:HG2	2.37	0.59
5:IB:263:ARG:H	5:IB:263:ARG:NH1	2.00	0.59
2:B:270(R):C:H4'	10:J:42:SER:HB2	1.84	0.59
35:JA:130:ASP:N	35:JA:130:ASP:OD1	2.34	0.59
1:A:1346:A:C8	41:PA:10:ARG:NH1	2.70	0.59
40:SC:33:TYR:HE1	40:SC:74:ASP:HB3	1.68	0.59
1:A:442:C:H2'	1:A:443:C:C6	2.37	0.59
2:B:2101:G:H1	2:B:2188:C:H42	1.49	0.59
5:E:96:HIS:CD2	5:E:102:LYS:HG2	2.37	0.59
2:FB:2117:A:H61	2:FB:2171:A:H61	1.51	0.59
2:FB:991:C:H42	2:FB:1163:G:H1	1.50	0.59
7:G:40:GLN:NE2	7:G:184:TYR:HB2	2.17	0.59
10:J:83:ALA:HA	10:J:88:ILE:HG12	1.84	0.59
11:K:30:ILE:HG22	11:K:34:LEU:HD22	1.85	0.59
37:LA:83:ARG:HA	37:LA:86:VAL:HG22	1.85	0.59
2:FB:2306:C:N4	8:LB:42:GLY:O	2.36	0.59
37:PC:114:PRO:O	37:PC:118:GLN:NE2	2.32	0.59
42:QA:7:ALA:HB2	42:QA:85:ARG:HD2	1.83	0.59
43:VC:89:ASN:HB3	43:VC:92:TYR:CZ	2.38	0.59
1:A:1118:C:H1'	1:A:1179:A:C5	2.38	0.58
1:A:186(C):C:H2'	1:A:186(D):G:H8	1.64	0.58
1:A:784:C:H4'	2:B:1837:C:OP1	2.03	0.58
2:B:2593:U:H2'	2:B:2594:C:C6	2.38	0.58
2:B:270(V):C:H2'	2:B:270(W):G:C8	2.38	0.58
26:DC:37:PHE:O	26:DC:41:ILE:HG13	2.02	0.58
1:EB:1376:U:H2'	1:EB:1377:A:H8	1.68	0.58
2:FB:2564:A:C2	2:FB:2647:U:H4'	2.38	0.58
2:FB:300:A:H1'	2:FB:319:C:H1'	1.85	0.58
8:H:121:ASN:O	8:H:131:TYR:OH	2.13	0.58
1:EB:1327:C:OP1	55:HD:20:LYS:HB2	2.02	0.58
38:MA:12:CYS:HB3	38:MA:18:LYS:HA	1.85	0.58
11:OB:13:TRP:CE2	11:OB:133:GLN:HG2	2.38	0.58
36:OC:130:ARG:HG3	36:OC:138:LEU:HD11	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:RA:29:ASN:HA	43:RA:64:THR:HA	1.85	0.58
1:A:691:G:O6	45:TA:52:GLY:HA2	2.03	0.58
41:TC:5:ARG:CZ	41:TC:6:ARG:H	2.16	0.58
18:VB:83:LEU:HD12	18:VB:113:ALA:HB2	1.85	0.58
43:VC:79:LEU:HD11	43:VC:83:ARG:HH12	1.68	0.58
50:YA:75:ARG:HB2	50:YA:75:ARG:HH11	1.68	0.58
2:B:1340:U:H4'	2:B:1341:U:OP2	2.02	0.58
2:B:1342:A:N1	2:B:1345:C:C2	2.71	0.58
2:FB:1171:G:H2'	2:FB:1173:G:O4'	2.03	0.58
2:FB:2109:U:O2'	2:FB:2181:G:N2	2.36	0.58
1:EB:191(G):G:C4	54:GD:105:SER:HB3	2.38	0.58
4:HB:10:G:H2'	4:HB:11:A:C8	2.38	0.58
13:M:28:GLY:O	13:M:30:THR:N	2.36	0.58
9:MB:125:VAL:HA	9:MB:131:VAL:HG22	1.83	0.58
11:OB:88:GLU:OE1	11:OB:88:GLU:N	2.36	0.58
12:PB:31:LYS:HZ3	12:PB:31:LYS:HB2	1.68	0.58
49:XA:82:ILE:HD12	49:XA:88:ARG:NH2	2.18	0.58
2:B:2563:U:H2'	2:B:2565:A:OP2	2.03	0.58
2:B:768:G:H2'	2:B:769:G:H8	1.68	0.58
47:VA:87:TYR:H	53:BB:73:GLU:HG3	1.69	0.58
36:KA:91:PRO:HG2	36:KA:155:LEU:HD13	1.85	0.58
15:O:36:THR:HG22	15:O:37:THR:N	2.18	0.58
40:OA:100:ASN:H	52:AB:23:LYS:HZ1	1.48	0.58
47:ZC:110:ARG:NH1	47:ZC:110:ARG:HB3	2.18	0.58
1:A:1009:G:H2'	1:A:1010:G:H8	1.69	0.58
1:A:1251:A:H2'	1:A:1252:A:C8	2.38	0.58
1:A:753:A:H5'	1:A:754:C:C5	2.37	0.58
27:AA:17:LYS:HA	27:AA:20:LYS:HB2	1.84	0.58
2:B:1897:G:H2'	2:B:1898:U:O4'	2.04	0.58
2:B:2117:A:H61	2:B:2171:A:H61	1.51	0.58
2:B:2556:C:H2'	2:B:2557:G:O4'	2.03	0.58
2:B:270(J):G:O2'	25:Y:81:ARG:NH1	2.36	0.58
2:B:2756:U:H1'	2:B:2757:A:H5''	1.84	0.58
2:B:528:A:N1	2:B:2042:A:H2'	2.19	0.58
1:EB:1132:C:H2'	1:EB:1133:G:C8	2.38	0.58
1:EB:628:G:H2'	1:EB:629:G:O4'	2.04	0.58
6:F:92:THR:OG1	6:F:93:VAL:N	2.35	0.58
2:FB:2846:G:H2'	2:FB:2847:U:O4'	2.03	0.58
2:FB:630:G:OP1	32:JC:47:LYS:NZ	2.37	0.58
2:FB:72:U:H3	26:DC:62:THR:HG23	1.68	0.58
7:G:9:ILE:HG21	7:G:125:LEU:HD23	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2313:C:C4'	8:H:40:ASN:HD22	2.16	0.58
42:QA:64:LYS:HB3	42:QA:79:VAL:HG21	1.85	0.58
2:FB:1247:A:H62	13:QB:15:ARG:HH12	1.51	0.58
21:U:21:PHE:C	21:U:23:GLU:H	2.07	0.58
45:XC:79:SER:HA	45:XC:104:GLN:HB2	1.85	0.58
21:YB:31:HIS:CE1	21:YB:33:LYS:HB2	2.38	0.58
23:AC:74:VAL:HG22	23:AC:86:VAL:HG12	1.85	0.58
2:B:1043:C:H2'	2:B:1044:G:H8	1.69	0.58
2:B:1406:U:H2'	2:B:1407:C:C6	2.38	0.58
2:B:270(J):G:H2'	2:B:270(K):G:C8	2.38	0.58
2:B:713:G:H2'	2:B:714:U:C6	2.39	0.58
4:D:45:G:H2'	4:D:46:G:H8	1.69	0.58
2:FB:1043:C:H2'	2:FB:1044:G:H8	1.69	0.58
2:FB:141(A):A:N1	2:FB:1595:G:O2'	2.23	0.58
2:FB:1510:A:H2'	2:FB:1511:A:C8	2.39	0.58
2:FB:1812:A:H2'	2:FB:1813:G:H8	1.68	0.58
2:FB:2805:G:N2	2:FB:2807:G:N7	2.51	0.58
2:FB:858:U:OP2	24:BC:77:ARG:NH2	2.37	0.58
4:HB:19:G:OP1	4:HB:60:U:N3	2.35	0.58
1:A:542:G:OP1	38:MA:10:ARG:NH2	2.36	0.58
38:MA:92:VAL:O	38:MA:96:LEU:HD22	2.04	0.58
2:FB:2749:A:P	9:MB:3:ARG:HH22	2.26	0.58
43:RA:58:ARG:HD2	43:RA:59:PHE:CE1	2.39	0.58
43:RA:29:ASN:N	43:RA:63:ILE:O	2.36	0.58
42:UC:45:ILE:HD13	42:UC:61:VAL:HG13	1.85	0.58
47:ZC:87:TYR:H	53:FD:73:GLU:HG3	1.68	0.58
1:A:1004:A:OP1	1:A:1023:G:N1	2.31	0.58
1:A:1401:G:H2'	1:A:1402:4OC:O4'	2.02	0.58
2:B:1071:G:H21	2:B:1089:G:H21	1.49	0.58
2:B:2846:G:H2'	2:B:2847:U:O4'	2.04	0.58
2:B:91:A:H8	2:B:92:G:C8	2.22	0.58
1:EB:1490:C:N4	1:EB:1491:G:O6	2.36	0.58
1:EB:24:U:H2'	1:EB:25:C:H6	1.69	0.58
2:FB:2298:A:H2'	2:FB:2299:G:O4'	2.02	0.58
2:FB:270(K):G:N1	2:FB:270(O):G:C6	2.72	0.58
3:GB:9:G:OP1	16:TB:25:ARG:NH2	2.29	0.58
35:JA:179:SER:HB3	35:JA:297:LEU:HD11	1.86	0.58
7:KB:43:LYS:HB3	7:KB:43:LYS:NZ	2.19	0.58
41:PA:78:ARG:HG2	41:PA:79:ARG:HG3	1.83	0.58
17:Q:29:ARG:HG3	17:Q:46:GLU:HB3	1.86	0.58
42:UC:121:ASP:HB2	42:UC:125:ARG:HH21	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:VB:111:GLU:HA	18:VB:111:GLU:OE2	2.04	0.58
43:VC:29:ASN:N	43:VC:63:ILE:O	2.37	0.58
50:YA:15:PRO:HB2	50:YA:41:PRO:HG2	1.84	0.58
1:A:17:U:HO2'	1:A:1079:G:HO2'	1.50	0.58
2:B:1031:G:H4'	33:GA:6:SER:HB2	1.86	0.58
2:B:2797:U:H5'	2:B:2798:C:C4	2.38	0.58
2:B:545:G:H21	2:B:548:A:H62	1.49	0.58
2:B:888:C:H2'	2:B:889:C:C6	2.39	0.58
1:EB:310:G:P	50:CD:27:LYS:NZ	2.77	0.58
4:D:10:G:H2'	4:D:11:A:C8	2.38	0.58
5:E:264:LYS:O	5:E:267:SER:OG	2.18	0.58
2:FB:2246:G:H2'	2:FB:2247:A:C8	2.39	0.58
2:FB:507:A:HO2'	2:FB:508:G:P	2.25	0.58
39:NA:11:ILE:HB	39:NA:31:LEU:HB3	1.85	0.58
36:OC:160:ASP:O	36:OC:182:ILE:HG23	2.03	0.58
36:OC:75:LYS:HA	36:OC:78:GLN:HB2	1.84	0.58
41:TC:16:LEU:HD23	43:VC:44:VAL:HG23	1.85	0.58
21:YB:32:PRO:HA	21:YB:77:LYS:HB2	1.84	0.58
1:A:1033:G:H2'	1:A:1034:G:C8	2.38	0.58
1:A:1373:G:H5''	41:PA:36:LYS:HE3	1.86	0.58
1:A:1347:G:H22	1:A:1374:A:P	2.26	0.58
2:B:2795:G:H1'	2:B:2802:G:C2	2.39	0.58
2:B:486:C:H2'	2:B:487:C:H6	1.68	0.58
53:BB:19:VAL:O	53:BB:22:LEU:HB2	2.04	0.58
26:DC:31:GLU:HG3	26:DC:53:LEU:HD11	1.85	0.58
27:EC:17:LYS:HA	27:EC:20:LYS:HB2	1.86	0.58
2:FB:214:G:O2'	2:FB:215:G:O4'	2.16	0.58
1:EB:1320:C:N3	53:FD:36:ARG:HD3	2.19	0.58
3:GB:12:C:H6	3:GB:12:C:OP2	1.86	0.58
2:FB:2351:G:OP2	32:JC:46:ARG:NH1	2.37	0.58
38:QC:18:LYS:NZ	38:QC:31:CYS:SG	2.73	0.58
39:RC:11:ILE:HB	39:RC:31:LEU:HB3	1.86	0.58
47:VA:19:LEU:HB3	47:VA:25:ILE:HG21	1.86	0.58
20:XB:11:ARG:HA	20:XB:100:THR:HG22	1.85	0.58
1:A:1132:C:H2'	1:A:1133:G:C8	2.38	0.58
1:A:1205:U:H4'	37:LA:195:VAL:HG21	1.86	0.58
1:A:1473:A:H2'	1:A:1474:G:C8	2.39	0.58
2:B:1077:A:H62	2:B:1079:C:H1'	1.68	0.58
2:B:1607:C:H4'	2:B:1608:A:H5''	1.86	0.58
1:EB:260:G:OP2	54:GD:83:ARG:NH1	2.36	0.58
1:EB:663:A:O3'	52:ED:64:ARG:NH2	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1115:G:H2'	2:FB:1116:C:C6	2.39	0.58
2:FB:1582:C:H2'	2:FB:1583:A:H8	1.66	0.58
2:FB:270(V):C:H2'	2:FB:270(W):G:C8	2.39	0.58
54:GD:57:ARG:NH1	54:GD:102:GLY:O	2.37	0.58
32:JC:50:LEU:HB2	32:JC:55:ALA:HB2	1.86	0.58
35:NC:214:LEU:HD12	35:NC:215:PRO:HD2	1.84	0.58
42:QA:23:SER:OG	42:QA:24:THR:N	2.36	0.58
38:QC:12:CYS:HB3	38:QC:18:LYS:HA	1.86	0.58
38:QC:18:LYS:HZ3	38:QC:26:CYS:HG	1.50	0.58
43:RA:79:LEU:HD11	43:RA:83:ARG:HH12	1.69	0.58
22:V:35:TYR:CD2	22:V:69:ALA:HB3	2.39	0.58
2:B:2262:U:OP2	24:X:19:LYS:NZ	2.37	0.58
21:YB:3:THR:HG21	26:DC:29:LYS:HD3	1.86	0.58
2:FB:630:G:H5''	32:JC:47:LYS:HZ1	1.69	0.58
39:NA:96:PRO:HA	39:NA:117:ASP:OD2	2.04	0.58
41:PA:79:ARG:HD3	41:PA:80:VAL:H	1.69	0.58
2:FB:1652:A:OP1	15:SB:8:ARG:NH1	2.37	0.58
42:UC:104:ARG:HB3	42:UC:107:LEU:HB2	1.86	0.58
42:UC:122:ARG:HA	42:UC:125:ARG:HB2	1.85	0.58
47:VA:97:PRO:HD3	47:VA:110:ARG:HB2	1.85	0.58
43:VC:29:ASN:HA	43:VC:64:THR:HA	1.84	0.58
47:ZC:90:LEU:O	47:ZC:94:ARG:NE	2.37	0.58
1:A:193:C:H2'	1:A:194:C:H6	1.68	0.57
1:A:721:G:H4'	1:A:722:A:O4'	2.03	0.57
2:B:2680:C:H5'	6:F:189:PRO:HA	1.86	0.57
2:B:2805:G:N2	2:B:2807:G:N7	2.52	0.57
1:EB:1009:G:H2'	1:EB:1010:G:H8	1.69	0.57
1:EB:1099:G:OP2	36:OC:148:TYR:OH	2.22	0.57
1:EB:1122:U:O4	1:EB:1123:A:N6	2.37	0.57
1:EB:955:U:H2'	1:EB:956:U:O4'	2.04	0.57
2:FB:2591:C:H2'	2:FB:2592:G:C8	2.39	0.57
38:MA:3:ARG:HH11	38:MA:4:TYR:CB	2.17	0.57
2:FB:2602:A:H5''	4:MC:75:C:OP2	2.02	0.57
35:NC:115:VAL:HG13	35:NC:162:ILE:HG23	1.86	0.57
40:OA:33:TYR:HE1	40:OA:74:ASP:HB3	1.69	0.57
38:QC:127:THR:HG23	38:QC:147:ALA:HB3	1.85	0.57
19:S:75:PHE:HD1	19:S:82:ARG:HG3	1.67	0.57
20:T:9:TYR:H	20:T:102:HIS:HD2	1.52	0.57
2:FB:2379:G:H4'	16:TB:21:THR:HG21	1.86	0.57
19:WB:81:TYR:CE1	19:WB:83:ARG:HD3	2.39	0.57
1:A:1137:C:H5'	1:A:1138:G:C4	2.39	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:310:G:P	50:YA:27:LYS:NZ	2.77	0.57
2:B:1411:C:H5''	2:B:1412:A:OP2	2.03	0.57
2:B:2096:U:H2'	2:B:2097:C:C6	2.39	0.57
2:B:374:A:C2	2:B:401:A:C4	2.92	0.57
30:DA:23:THR:OG1	30:DA:24:GLU:N	2.35	0.57
2:FB:1063:G:H5''	2:FB:1064:C:OP2	2.03	0.57
2:FB:1718:G:H1	2:FB:1741:C:H42	1.51	0.57
2:B:441:U:O2	7:G:46:ARG:NH2	2.37	0.57
17:Q:60:THR:HG22	17:Q:77:PRO:HA	1.85	0.57
18:VB:78:THR:O	18:VB:81:HIS:N	2.37	0.57
1:A:1285:A:OP1	1:A:1286:A:N6	2.35	0.57
1:A:17:U:H2'	1:A:18:C:C6	2.39	0.57
1:A:837:G:H1	1:A:849:C:H42	1.52	0.57
2:B:1140:C:OP2	11:K:66:LYS:NZ	2.37	0.57
2:FB:1897:G:H2'	2:FB:1898:U:O4'	2.03	0.57
2:FB:2096:U:H2'	2:FB:2097:C:C6	2.39	0.57
2:FB:321:G:OP2	7:KB:135:LYS:HA	2.05	0.57
5:IB:8:PRO:HB3	5:IB:14:ARG:HG3	1.86	0.57
37:LA:45:LYS:HG3	37:LA:46:GLU:HG3	1.86	0.57
35:NC:213:GLU:HG2	35:NC:279:HIS:NE2	2.19	0.57
12:PB:14:THR:HG21	12:PB:86:ILE:HB	1.86	0.57
37:PC:18:TRP:HE3	37:PC:18:TRP:H	1.51	0.57
44:SA:30:SER:HB2	44:SA:81:THR:HG23	1.86	0.57
2:B:24:G:O2'	20:T:78:GLU:O	2.17	0.57
45:TA:85:ARG:NH1	45:TA:111:ASP:HB3	2.18	0.57
47:VA:23:TYR:HB3	47:VA:67:GLU:HG3	1.86	0.57
18:VB:5:LYS:NZ	18:VB:5:LYS:HB2	2.19	0.57
43:VC:56:LEU:HD12	43:VC:56:LEU:H	1.69	0.57
1:A:1376:U:H2'	1:A:1377:A:H8	1.70	0.57
2:B:46:C:OP2	2:B:215:G:H2'	2.04	0.57
1:A:1317:C:O2	53:BB:37:ARG:NH2	2.35	0.57
31:EA:34:ARG:HG2	31:EA:39:ARG:HG3	1.86	0.57
1:EB:1095:U:P	1:EB:1108:G:H1	2.27	0.57
1:EB:353:A:H8	1:EB:353:A:H5'	1.69	0.57
1:EB:753:A:H5'	1:EB:754:C:C5	2.38	0.57
2:FB:1071:G:H21	2:FB:1089:G:H21	1.51	0.57
2:FB:1817:G:OP1	5:IB:88:ARG:NH2	2.37	0.57
35:JA:338:ASP:O	35:JA:340:LEU:N	2.37	0.57
2:FB:2572:A:C4	6:JB:144:ARG:NH1	2.72	0.57
11:K:47:ALA:HB2	11:K:115:ARG:HD3	1.87	0.57
35:NC:151:ALA:HB1	35:NC:159:TYR:HE1	1.68	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:OC:101:MET:HA	36:OC:108:ILE:HG13	1.86	0.57
1:A:1374:A:O3'	41:PA:28:ASN:ND2	2.38	0.57
40:SC:100:ASN:H	52:ED:23:LYS:NZ	2.01	0.57
42:UC:33:GLU:HA	42:UC:36:LEU:HD12	1.87	0.57
46:YC:57:LYS:HE2	46:YC:57:LYS:HA	1.87	0.57
1:A:880:C:OP2	46:UA:9:GLN:HG3	2.05	0.57
49:BD:82:ILE:HD12	49:BD:88:ARG:NH2	2.19	0.57
54:CB:30:LYS:NZ	54:CB:30:LYS:HB2	2.18	0.57
1:EB:1033:G:H2'	1:EB:1034:G:H8	1.69	0.57
1:EB:162:A:N6	1:EB:163:C:O2	2.37	0.57
1:EB:41:G:H2'	1:EB:42:G:C8	2.39	0.57
1:EB:1475:G:H4'	2:FB:1689:A:H4'	1.85	0.57
2:FB:2790:A:O2'	2:FB:2893:G:O2'	2.11	0.57
2:FB:637:A:OP2	13:QB:116:GLY:N	2.36	0.57
2:FB:883:G:H5'	2:FB:884:C:OP2	2.04	0.57
4:HB:67:C:H2'	4:HB:68:C:C6	2.39	0.57
35:JA:260:GLU:O	35:JA:266:ASN:ND2	2.37	0.57
35:NC:179:SER:HB3	35:NC:297:LEU:HD11	1.87	0.57
2:FB:1140:C:P	11:OB:66:LYS:HZ3	2.26	0.57
1:A:1289:A:H3'	1:A:1290:G:H8	1.69	0.57
2:B:528:A:HO2'	2:B:529:A:P	2.25	0.57
3:C:13:A:N1	3:C:69:G:O2'	2.30	0.57
1:EB:1070:U:H2'	1:EB:1071:C:H6	1.69	0.57
2:FB:1823:G:OP1	5:IB:54:ARG:NH1	2.37	0.57
2:FB:774:A:H5''	5:IB:48:ARG:NH2	2.19	0.57
36:KA:16:HIS:CE1	36:KA:204:ASN:H	2.23	0.57
36:KA:75:LYS:HA	36:KA:78:GLN:HB2	1.87	0.57
11:OB:66:LYS:O	11:OB:68:GLU:N	2.38	0.57
2:FB:587:C:P	13:QB:21:ARG:HH12	2.26	0.57
21:U:35:THR:O	21:U:39:ILE:HG13	2.03	0.57
47:VA:110:ARG:NH1	47:VA:110:ARG:HB3	2.19	0.57
1:A:1000:A:H62	1:A:1003:G:N2	2.02	0.57
1:A:1265:G:H2'	1:A:1266:G:O4'	2.05	0.57
1:A:1239:A:H62	1:A:1299:A:N6	2.02	0.57
1:A:1360:A:H3'	1:A:1361:G:H8	1.69	0.57
1:A:155:C:H42	1:A:166:G:H1	1.53	0.57
2:B:1839:G:H5'	2:B:1840:G:OP2	2.04	0.57
2:B:271(C):G:H4'	2:B:271(D):U:H5''	1.86	0.57
49:BD:4:THR:HB	49:BD:6:GLU:OE2	2.05	0.57
32:FA:16:ILE:HG23	32:FA:20:GLY:HA2	1.85	0.57
2:FB:126:A:OP2	31:IC:19:ARG:HB2	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1466:G:H2'	2:FB:1547:C:H41	1.68	0.57
2:B:2557:G:H4'	35:JA:245:ARG:HH12	1.69	0.57
8:LB:113:ARG:CG	8:LB:113:ARG:HH11	2.17	0.57
39:NA:27:ARG:HG2	39:NA:49:PRO:HA	1.86	0.57
2:B:2820:A:P	15:O:2:ARG:HH22	2.28	0.57
43:RA:89:ASN:HB3	43:RA:92:TYR:CZ	2.38	0.57
45:TA:26:ASN:ND2	45:TA:26:ASN:O	2.37	0.57
46:UA:89:ARG:HG2	46:UA:97:ARG:HA	1.87	0.57
42:UC:41:ARG:HH11	42:UC:41:ARG:HG3	1.69	0.57
1:A:191(G):G:C4	54:CB:105:SER:HB3	2.40	0.57
2:B:1321:A:H2'	2:B:1322:A:C8	2.40	0.57
2:B:273(E):C:H6	2:B:273(E):C:OP2	1.87	0.57
28:BA:62:ARG:HA	28:BA:62:ARG:HH11	1.70	0.57
2:FB:2563:U:H2'	2:FB:2565:A:OP2	2.03	0.57
2:FB:2797:U:H5'	2:FB:2798:C:C4	2.40	0.57
2:FB:731:C:H2'	2:FB:732:C:H6	1.70	0.57
11:K:73:THR:HB	11:K:82:LEU:HD11	1.86	0.57
7:KB:144:LYS:HB3	7:KB:144:LYS:NZ	2.20	0.57
2:FB:2313:C:O4'	8:LB:40:ASN:ND2	2.37	0.57
38:MA:111:ALA:HB1	38:MA:116:GLN:HG2	1.86	0.57
38:MA:150:GLU:O	38:MA:152:SER:N	2.36	0.57
37:PC:11:ARG:O	37:PC:13:GLY:N	2.37	0.57
42:QA:51:VAL:HG11	42:QA:60:ARG:HG3	1.87	0.57
6:JB:12:THR:HB	17:UB:58:ASN:HD21	1.69	0.57
23:W:74:VAL:HG22	23:W:86:VAL:HG12	1.86	0.57
21:YB:94:GLY:HA3	21:YB:95:LEU:C	2.25	0.57
1:A:955:U:H2'	1:A:956:U:O4'	2.04	0.57
2:B:1079:C:N4	2:B:1088:A:O4'	2.38	0.57
2:B:2545:G:O2'	2:B:2565:A:N1	2.24	0.57
2:B:414:C:H2'	2:B:415:A:H8	1.70	0.57
1:EB:1510:U:H2'	1:EB:1511:G:C8	2.39	0.57
2:FB:1814:G:OP1	5:IB:40:THR:HG21	2.04	0.57
2:FB:2357:U:OP1	24:BC:20:ARG:NE	2.29	0.57
38:MA:9:CYS:HB2	38:MA:22:LYS:HG2	1.87	0.57
21:U:3:THR:HG21	26:Z:29:LYS:HD3	1.84	0.57
17:UB:36:GLU:HG3	17:UB:41:ARG:HE	1.70	0.57
48:WA:24:CYS:HB3	48:WA:29:ARG:H	1.70	0.57
20:XB:6:ILE:HG12	20:XB:104:THR:HG23	1.87	0.57
50:YA:52:ASP:HB3	50:YA:55:ARG:HB2	1.87	0.57
51:ZA:84:LEU:O	51:ZA:87:LYS:HG3	2.05	0.57
1:A:1510:U:H2'	1:A:1511:G:C8	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:AB:36:ASN:HD21	52:AB:39:VAL:HB	1.69	0.57
2:B:1179:C:H2'	2:B:1180:C:C6	2.40	0.57
2:B:305:U:H2'	2:B:306:U:C6	2.39	0.57
1:EB:1000:A:H3'	1:EB:1002:G:H22	1.70	0.57
1:EB:1137:C:H5'	1:EB:1138:G:C4	2.40	0.57
1:EB:452:A:OP1	50:CD:43:LYS:NZ	2.37	0.57
2:FB:84:A:OP2	22:ZB:8:LYS:NZ	2.36	0.57
4:HB:45:G:H2'	4:HB:46:G:H8	1.69	0.57
1:EB:430:A:OP2	38:QC:8:VAL:HG13	2.04	0.57
43:RA:96:LEU:H	43:RA:98:PRO:HD2	1.70	0.57
22:ZB:35:TYR:CD2	22:ZB:69:ALA:HB3	2.40	0.57
1:A:1084:G:H5'	1:A:1102:A:OP2	2.05	0.56
1:A:501:C:OP1	46:UA:117:ARG:NH2	2.38	0.56
2:B:955:C:OP1	14:N:87:LYS:NZ	2.34	0.56
53:BB:51:VAL:H	53:BB:58:VAL:HG22	1.69	0.56
3:C:85:G:H2'	3:C:86:G:C8	2.40	0.56
4:D:67:C:H2'	4:D:68:C:C6	2.40	0.56
51:DD:84:LEU:O	51:DD:87:LYS:HG3	2.05	0.56
2:B:1971:A:N3	5:E:241:PRO:HD3	2.20	0.56
1:EB:67:C:H2'	1:EB:68:G:C8	2.39	0.56
5:IB:79:VAL:HG21	5:IB:112:GLN:O	2.05	0.56
35:JA:202:THR:HB	35:JA:298:LEU:HG	1.87	0.56
2:B:1007:C:H5''	11:K:35:ARG:NH1	2.19	0.56
7:KB:205:ARG:HB2	7:KB:205:ARG:NH1	2.09	0.56
7:KB:95:ARG:HB3	7:KB:97:TYR:CE2	2.40	0.56
2:B:1068:G:N2	2:B:1095:A:N7	2.53	0.56
2:B:207:A:H2'	2:B:208:C:O4'	2.04	0.56
2:B:2246:G:H2'	2:B:2247:A:C8	2.40	0.56
24:BC:70:GLN:HG2	24:BC:72:ARG:HG3	1.87	0.56
5:E:75:ILE:HG22	5:E:76:PRO:O	2.05	0.56
2:FB:2756:U:H1'	2:FB:2757:A:H5''	1.87	0.56
35:JA:316:ARG:HB2	35:JA:316:ARG:NH1	2.20	0.56
36:KA:160:ASP:O	36:KA:182:ILE:HG23	2.06	0.56
2:FB:1257:C:H4'	7:KB:83:PHE:CE1	2.40	0.56
2:B:2358:G:H1	13:M:55:ARG:HH12	1.54	0.56
13:QB:77:ARG:HH11	13:QB:77:ARG:HG2	1.70	0.56
24:X:8:GLY:HA3	4:IA:2:G:O5'	2.05	0.56
26:Z:25:VAL:HG23	26:Z:57:ILE:HG23	1.86	0.56
22:ZB:15:VAL:HG11	22:ZB:20:TYR:HB2	1.87	0.56
47:ZC:19:LEU:HB3	47:ZC:25:ILE:HG21	1.86	0.56
23:AC:162:GLU:O	23:AC:164:ALA:N	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1510:A:H2'	2:B:1511:A:C8	2.41	0.56
2:B:2749:A:OP1	9:I:3:ARG:NH2	2.36	0.56
24:BC:53:MET:HG3	24:BC:59:LEU:HD23	1.87	0.56
54:CB:97:ALA:O	54:CB:99:LEU:N	2.37	0.56
50:CD:49:LEU:HD12	50:CD:50:LYS:H	1.70	0.56
50:CD:75:ARG:HH11	50:CD:75:ARG:HB2	1.70	0.56
1:EB:1360:A:H3'	1:EB:1361:G:H8	1.69	0.56
1:EB:1513:A:H2'	1:EB:1514:C:C6	2.40	0.56
2:FB:1028:A:N6	2:FB:1125:G:H2'	2.20	0.56
2:FB:207:A:H2'	2:FB:208:C:O4'	2.05	0.56
2:FB:2316:C:H1'	8:LB:128:ARG:NH1	2.21	0.56
2:FB:270(C):A:N1	2:FB:273(A):G:O2'	2.30	0.56
6:JB:47:VAL:HG11	6:JB:86:PRO:HD2	1.87	0.56
36:KA:101:MET:HA	36:KA:108:ILE:HG13	1.87	0.56
36:KA:61:LEU:O	36:KA:65:GLY:N	2.38	0.56
8:LB:153:ARG:HB2	8:LB:153:ARG:NH1	2.20	0.56
11:OB:56:ASN:N	11:OB:125:GLY:O	2.35	0.56
45:TA:67:ASP:OD2	45:TA:71:LYS:HE3	2.05	0.56
20:XB:14:PRO:HA	20:XB:17:VAL:HG12	1.87	0.56
45:XC:27:ASN:OD1	45:XC:28:THR:N	2.38	0.56
1:A:1184:G:H2'	1:A:1185:G:H8	1.71	0.56
1:A:1242:C:H42	1:A:1295:G:H22	1.52	0.56
1:A:177:C:H2'	1:A:178:C:C6	2.41	0.56
1:A:401:C:O2'	1:A:621:A:N3	2.35	0.56
2:B:2327:A:H2'	2:B:2328:A:C8	2.40	0.56
53:BB:15:LEU:O	53:BB:17:GLU:N	2.38	0.56
3:C:11:C:H3'	3:C:12:C:H6	1.70	0.56
26:DC:31:GLU:HA	26:DC:34:GLU:HB3	1.87	0.56
5:E:263:ARG:H	5:E:263:ARG:HH11	1.50	0.56
1:EB:662:G:H1	1:EB:743:U:H3	1.54	0.56
2:FB:1019:U:OP1	2:FB:1035:U:O2'	2.14	0.56
2:FB:270(J):G:H2'	2:FB:270(K):G:C8	2.37	0.56
2:FB:288:C:H2'	2:FB:289:A:C8	2.41	0.56
2:FB:479:A:N3	2:FB:481:G:H5''	2.20	0.56
4:IA:19:G:OP1	4:IA:60:U:N3	2.38	0.56
2:FB:1815:A:OP2	5:IB:54:ARG:NH2	2.37	0.56
14:N:135:ASP:OD2	14:N:137:TYR:HD2	1.88	0.56
39:NA:72:GLN:N	39:NA:75:THR:O	2.34	0.56
35:NC:202:THR:HB	35:NC:298:LEU:HG	1.87	0.56
36:OC:91:PRO:HG2	36:OC:155:LEU:HD13	1.87	0.56
41:PA:16:LEU:HD23	43:RA:44:VAL:HG23	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:QA:4:ASP:HB2	42:QA:89:PRO:HG3	1.86	0.56
1:A:657:G:H2'	1:A:658:G:C8	2.37	0.56
2:B:2262:U:P	24:X:19:LYS:HZ3	2.28	0.56
2:B:2287:A:H62	2:B:2344:U:H3	1.52	0.56
2:B:780:G:C2	2:B:782:A:C2	2.93	0.56
53:BB:31:ILE:HD11	53:BB:49:ILE:HG12	1.87	0.56
25:CC:90:ILE:O	25:CC:94:LEU:N	2.37	0.56
2:B:1814:G:OP1	5:E:40:THR:HG21	2.05	0.56
2:B:1813:G:O2'	5:E:42:GLY:O	2.24	0.56
1:EB:593:G:H1	1:EB:646:U:H3	1.53	0.56
1:EB:620:C:H2'	1:EB:621:A:O4'	2.06	0.56
27:EC:30:ARG:HH11	27:EC:30:ARG:HG3	1.70	0.56
2:FB:1922:G:H2'	2:FB:1923:U:O4'	2.05	0.56
2:FB:2171:A:O2'	2:FB:2172:U:H5''	2.05	0.56
2:B:1140:C:P	11:K:66:LYS:NZ	2.79	0.56
9:MB:85:LYS:HE3	9:MB:138:LYS:NZ	2.20	0.56
42:QA:33:GLU:HA	42:QA:36:LEU:HD12	1.88	0.56
14:RB:135:ASP:OD2	14:RB:137:TYR:HD2	1.88	0.56
45:TA:32:ILE:HB	45:TA:41:THR:HG22	1.86	0.56
1:EB:964:A:HO2'	44:WC:55:LYS:HZ3	1.52	0.56
1:A:1218:C:H2'	1:A:1219:U:H6	1.70	0.56
1:A:162:A:N6	1:A:163:C:O2	2.39	0.56
1:A:7:G:H5'	1:A:298:A:O4'	2.06	0.56
2:B:1082:U:H2'	2:B:1083:U:H4'	1.88	0.56
50:CD:15:PRO:HB2	50:CD:41:PRO:HG2	1.88	0.56
1:EB:366:C:H1'	1:EB:394:G:H22	1.70	0.56
2:FB:2425:A:H4'	2:FB:2426:A:H5''	1.87	0.56
2:FB:2630:G:H1'	2:FB:2894:G:H1'	1.85	0.56
2:B:1257:C:H4'	7:G:83:PHE:CD1	2.39	0.56
36:KA:88:ALA:HB2	36:KA:219:VAL:HG13	1.86	0.56
11:OB:30:ILE:HG22	11:OB:34:LEU:HD22	1.88	0.56
11:OB:30:ILE:HG23	11:OB:52:VAL:HG11	1.86	0.56
38:QC:3:ARG:HH11	38:QC:4:TYR:CB	2.18	0.56
47:ZC:54:VAL:HG13	47:ZC:57:ARG:NH1	2.19	0.56
1:A:663:A:O3'	52:AB:64:ARG:NH2	2.38	0.56
2:B:830:G:H4'	2:B:831:G:OP2	2.05	0.56
4:D:42:G:H2'	4:D:43:A:C8	2.40	0.56
1:EB:1016:A:O2'	1:EB:1217:C:O2'	2.23	0.56
1:EB:1070:U:H2'	1:EB:1071:C:C6	2.40	0.56
1:EB:952:U:H2'	1:EB:953:G:C8	2.39	0.56
2:FB:1607:C:H4'	2:FB:1608:A:H5''	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2556:C:H2'	2:FB:2557:G:O4'	2.06	0.56
2:FB:2565:A:H5''	2:FB:2566:A:OP2	2.06	0.56
2:B:2443:C:H5''	7:G:68:LYS:HD2	1.88	0.56
8:H:108:ASN:HA	28:BA:37:SER:HB2	1.87	0.56
4:HB:52:G:H1	4:HB:62:C:H42	1.53	0.56
4:IA:75:C:H4'	4:IA:75:C:OP1	2.05	0.56
6:JB:31:CYS:HB3	6:JB:49:LEU:HD12	1.88	0.56
21:U:31:HIS:HE1	21:U:33:LYS:HB2	1.70	0.56
17:UB:60:THR:HG22	17:UB:77:PRO:HA	1.87	0.56
43:VC:58:ARG:HD2	43:VC:59:PHE:CE1	2.41	0.56
50:YA:43:LYS:HE3	50:YA:48:TRP:CH2	2.41	0.56
50:YA:75:ARG:HB2	50:YA:75:ARG:NH1	2.21	0.56
21:YB:57:LEU:HD13	21:YB:78:LYS:HB3	1.87	0.56
47:ZC:110:ARG:HH11	47:ZC:110:ARG:HB3	1.71	0.56
1:A:260:G:OP2	54:CB:83:ARG:NH1	2.38	0.56
1:A:41:G:H2'	1:A:42:G:C8	2.41	0.56
23:AC:5:LEU:HD11	23:AC:43:GLU:HB3	1.86	0.56
1:EB:1054:C:H41	34:LC:22:A:H61	1.54	0.56
1:EB:46:G:H2'	1:EB:366:C:H5	1.71	0.56
1:EB:7:G:H5'	1:EB:298:A:O4'	2.05	0.56
4:MC:53:G:H1	4:MC:61:C:N4	2.04	0.56
40:SC:46:ARG:HB2	40:SC:60:PHE:CE1	2.40	0.56
1:EB:1373:G:H5''	41:TC:36:LYS:HE3	1.86	0.56
1:A:820:U:H4'	1:A:821:G:OP2	2.06	0.56
2:B:2171:A:O2'	2:B:2172:U:H5''	2.06	0.56
2:B:674:G:O2'	7:G:67:GLN:NE2	2.35	0.56
1:EB:376:G:O3'	50:CD:5:ARG:NH1	2.39	0.56
9:I:171:LEU:HD22	9:I:172:LYS:H	1.71	0.56
12:L:87:ILE:HD12	12:L:91:LEU:HA	1.88	0.56
15:O:57:ARG:HD2	15:O:59:ASP:OD1	2.05	0.56
36:OC:139:LYS:HG2	36:OC:140:HIS:HD2	1.71	0.56
18:R:101:ARG:O	18:R:103:PRO:HD3	2.06	0.56
18:VB:17:ILE:HG13	18:VB:32:PHE:HE1	1.71	0.56
48:WA:21:TYR:HE1	48:WA:23:ARG:HH11	1.52	0.56
24:X:40:GLN:HE21	24:X:57:PHE:HB3	1.70	0.56
45:XC:87:THR:OG1	45:XC:87:THR:O	2.23	0.56
21:YB:35:THR:O	21:YB:39:ILE:HG13	2.05	0.56
23:AC:10:ARG:NH2	23:AC:26:GLY:O	2.39	0.56
23:AC:69:THR:HG23	23:AC:90:VAL:HG13	1.88	0.56
50:CD:75:ARG:NH1	50:CD:75:ARG:HB2	2.21	0.56
1:EB:1000:A:H62	1:EB:1003:G:N2	2.04	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:1103:C:H2'	1:EB:1104:G:O4'	2.05	0.56
1:EB:1265:G:H2'	1:EB:1266:G:O4'	2.05	0.56
1:EB:17:U:H2'	1:EB:18:C:C6	2.40	0.56
2:FB:1342:A:O2'	2:FB:1344:G:OP2	2.23	0.56
2:B:1257:C:H4'	7:G:83:PHE:CE1	2.41	0.56
12:L:14:THR:HG21	12:L:86:ILE:HB	1.87	0.56
13:M:77:ARG:HH11	13:M:77:ARG:HG2	1.71	0.56
41:PA:26:PHE:HE2	41:PA:124:LEU:HD11	1.71	0.56
17:Q:94:ALA:HB1	17:Q:99:LEU:HD21	1.87	0.56
1:A:878:G:H5'	42:QA:89:PRO:HG2	1.86	0.56
14:RB:111:GLU:CD	14:RB:133:ARG:HH12	2.08	0.56
14:RB:27:VAL:N	14:RB:138:ASP:OD2	2.39	0.56
41:TC:53:LYS:NZ	41:TC:53:LYS:HB3	2.20	0.56
47:ZC:97:PRO:HD3	47:ZC:110:ARG:HB2	1.87	0.56
1:A:1103:C:H2'	1:A:1104:G:O4'	2.05	0.56
1:A:922:G:H2'	1:A:923:A:C8	2.40	0.56
1:EB:235:C:H5'	51:DD:70:ARG:HG2	1.88	0.56
1:EB:1401:G:H2'	1:EB:1402:4OC:O4'	2.06	0.56
2:FB:1068:G:N2	2:FB:1095:A:N7	2.55	0.56
53:FD:19:VAL:O	53:FD:22:LEU:HB2	2.05	0.56
8:H:27:ASN:OD1	8:H:28:VAL:N	2.36	0.56
37:LA:67:THR:HG23	37:LA:102:ASN:HB3	1.88	0.56
35:NC:130:ASP:OD1	35:NC:130:ASP:N	2.38	0.56
41:PA:53:LYS:HB3	41:PA:53:LYS:NZ	2.21	0.56
43:RA:10:ARG:HG3	43:RA:105:ASP:OD2	2.05	0.56
19:S:28:GLU:O	19:S:30:GLY:N	2.38	0.56
47:VA:37:THR:HG21	47:VA:56:LEU:HA	1.88	0.56
1:A:407:G:H5'	38:MA:115:ARG:HG2	1.88	0.55
52:AB:55:ARG:HB3	52:AB:55:ARG:HH11	1.70	0.55
23:AC:4:ARG:HG2	23:AC:58:VAL:HB	1.88	0.55
23:AC:91:LEU:HD12	23:AC:96:VAL:HG11	1.86	0.55
2:B:154(A):C:O2'	2:B:155:C:N3	2.39	0.55
52:ED:59:SER:HB3	52:ED:62:GLU:HB2	1.88	0.55
2:FB:268:C:N3	2:FB:424:G:N2	2.49	0.55
2:FB:345:A:N3	2:FB:346:A:N6	2.52	0.55
7:G:170:LEU:HD12	7:G:171:PRO:HD2	1.88	0.55
7:G:40:GLN:OE1	7:G:182:ASN:HB2	2.07	0.55
7:G:95:ARG:NH1	7:G:97:TYR:OH	2.39	0.55
10:J:128:LEU:HG	10:J:140:LEU:HB3	1.88	0.55
2:FB:2305:A:H1'	8:LB:136:ARG:HG3	1.88	0.55
4:MC:1:C:H5'	4:MC:2:G:H8	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:QB:138:LEU:HD21	13:QB:145:PRO:HB3	1.87	0.55
19:WB:8:GLY:O	19:WB:10:LYS:N	2.38	0.55
1:A:1266:G:C4	1:A:1268:A:OP2	2.60	0.55
1:A:1490:C:N4	1:A:1491:G:O6	2.40	0.55
2:B:1657:C:H4'	6:F:133:LYS:HB3	1.89	0.55
1:EB:1218:C:H2'	1:EB:1219:U:H6	1.71	0.55
1:EB:1251:A:O2'	1:EB:1369:C:O2'	2.14	0.55
2:FB:1007:C:H5''	11:OB:35:ARG:NH1	2.20	0.55
2:FB:2055:C:H4'	2:FB:2056:G:H5''	1.88	0.55
5:IB:75:ILE:HG22	5:IB:76:PRO:O	2.05	0.55
14:N:111:GLU:CD	14:N:133:ARG:HH12	2.07	0.55
41:PA:5:ARG:NH1	41:PA:6:ARG:H	2.04	0.55
38:QC:150:GLU:O	38:QC:152:SER:N	2.39	0.55
21:U:94:GLY:HA3	21:U:95:LEU:C	2.27	0.55
24:X:50:ASN:ND2	24:X:81:VAL:O	2.33	0.55
1:A:1085:U:H5''	1:A:1086:U:H5	1.71	0.55
1:A:1190:G:H2'	37:LA:3:ASN:HB2	1.87	0.55
1:A:299:G:H2'	1:A:300:A:C8	2.42	0.55
2:B:1817:G:OP1	5:E:88:ARG:NH2	2.40	0.55
30:DA:17:LYS:HZ3	30:DA:50:ARG:HH21	1.53	0.55
5:E:261:LYS:HD3	5:E:263:ARG:HH12	1.71	0.55
1:EB:1144:G:H21	1:EB:1146:A:H62	1.54	0.55
1:EB:193:C:H2'	1:EB:194:C:H6	1.71	0.55
3:GB:29:A:OP2	16:TB:31:SER:HB2	2.06	0.55
5:IB:261:LYS:HD3	5:IB:263:ARG:NH1	2.22	0.55
35:JA:324:LEU:HD12	35:JA:325:THR:H	1.72	0.55
13:M:138:LEU:HD21	13:M:145:PRO:HB3	1.88	0.55
18:R:72:HIS:O	18:R:74:LEU:HD12	2.06	0.55
39:RC:27:ARG:HG2	39:RC:49:PRO:HA	1.88	0.55
20:T:90:ARG:HG2	20:T:90:ARG:NH1	2.22	0.55
23:W:80:ARG:HG2	23:W:82:ARG:HH11	1.69	0.55
47:ZC:37:THR:HG21	47:ZC:56:LEU:HA	1.88	0.55
2:B:1393:A:H5''	2:B:1394:U:OP2	2.07	0.55
1:EB:1239:A:H62	1:EB:1299:A:N6	2.04	0.55
2:B:607:U:OP1	7:G:102:PRO:HA	2.06	0.55
4:HB:64:G:H2'	4:HB:65:C:O4'	2.06	0.55
4:IA:49:G:H1	4:IA:65:C:H42	1.53	0.55
15:O:70:LEU:O	15:O:72:ASP:N	2.34	0.55
38:QC:8:VAL:C	38:QC:10:ARG:H	2.10	0.55
19:S:18:LEU:HB3	19:S:96:ILE:HG13	1.89	0.55
15:SB:33:ARG:NH1	15:SB:115:GLU:HB3	2.21	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:YB:27:THR:HG23	21:YB:80:ILE:HG23	1.87	0.55
1:A:1008:C:H3'	1:A:1009:G:H8	1.72	0.55
1:A:998(B):C:H42	1:A:1042:G:H1	1.54	0.55
2:B:1860:G:OP2	2:B:1860:G:H8	1.89	0.55
2:B:2567:G:H2'	2:B:2568:C:C6	2.42	0.55
1:EB:191(D):U:H2'	1:EB:191(E):G:C8	2.40	0.55
1:EB:599:C:H2'	1:EB:600:C:C6	2.42	0.55
1:EB:714:G:H2'	1:EB:715:A:C8	2.42	0.55
6:F:34:VAL:HG11	6:F:78:LEU:HD21	1.89	0.55
2:FB:1179:C:H2'	2:FB:1180:C:C6	2.40	0.55
2:FB:1356:G:H2'	2:FB:1357:U:H6	1.72	0.55
2:FB:1406:U:H2'	2:FB:1407:C:C6	2.42	0.55
2:FB:1491:G:H5'	5:IB:99:ASP:OD2	2.07	0.55
2:FB:270(G):U:O2	2:FB:270(U):G:N2	2.35	0.55
2:FB:2795:G:H1'	2:FB:2802:G:C2	2.41	0.55
8:H:124:SER:HB2	8:H:131:TYR:HE1	1.71	0.55
11:K:13:TRP:CE2	11:K:133:GLN:HG2	2.41	0.55
36:KA:84:GLU:HG2	36:KA:215:LEU:HD21	1.89	0.55
37:LA:50:ALA:HB2	37:LA:75:VAL:HG11	1.88	0.55
8:LB:49:ASP:N	8:LB:49:ASP:OD2	2.37	0.55
4:MC:49:G:H1	4:MC:65:C:H42	1.53	0.55
35:NC:316:ARG:HB2	35:NC:316:ARG:NH1	2.22	0.55
2:FB:807:U:OP2	13:QB:36:LYS:HD3	2.07	0.55
46:UA:57:LYS:HA	46:UA:57:LYS:HE2	1.87	0.55
42:UC:14:ARG:HE	42:UC:83:ILE:HG23	1.71	0.55
18:VB:94:ASN:HD22	19:WB:4:ILE:HG23	1.71	0.55
43:VC:96:LEU:H	43:VC:98:PRO:HD2	1.70	0.55
25:Y:57:GLU:HG2	25:Y:58:ILE:N	2.21	0.55
50:YA:81:ARG:HB3	50:YA:83:GLU:HG2	1.89	0.55
1:A:1033:G:H2'	1:A:1034:G:H8	1.70	0.55
1:A:82:U:C5	1:A:85:U:H5''	2.42	0.55
2:B:2055:C:H4'	2:B:2056:G:H5''	1.87	0.55
2:B:430:G:H5''	2:B:431:U:OP2	2.07	0.55
54:CB:46:GLU:HB3	54:CB:48:LYS:NZ	2.21	0.55
1:EB:177:C:H2'	1:EB:178:C:C6	2.41	0.55
2:FB:1429:G:H2'	2:FB:1430:C:C6	2.42	0.55
4:IA:53:G:H1	4:IA:61:C:N4	2.05	0.55
11:K:30:ILE:HG23	11:K:52:VAL:HG11	1.87	0.55
10:NB:5:LEU:H	10:NB:5:LEU:HD12	1.72	0.55
42:QA:45:ILE:HD13	42:QA:61:VAL:HG13	1.89	0.55
42:UC:23:SER:OG	42:UC:24:THR:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:48:PHE:HE1	23:W:71:VAL:HG21	1.71	0.55
1:A:939:G:H2'	1:A:940:C:C6	2.42	0.55
2:B:1203:G:O6	2:B:1204:A:N6	2.40	0.55
2:B:1839:G:N3	2:B:1839:G:H2'	2.21	0.55
28:BA:57:GLU:OE2	28:BA:58:ARG:HG2	2.06	0.55
50:CD:81:ARG:HB3	50:CD:83:GLU:HG2	1.88	0.55
52:ED:68:LYS:HA	52:ED:68:LYS:HZ2	1.72	0.55
2:FB:1204:A:C2	2:FB:1206:G:C2	2.94	0.55
2:FB:1342:A:N1	2:FB:1345:C:C2	2.75	0.55
2:FB:2557:G:H2'	2:FB:2558:C:H6	1.72	0.55
8:LB:44:GLY:HA2	8:LB:88:ILE:HG22	1.88	0.55
41:PA:5:ARG:CZ	41:PA:6:ARG:H	2.19	0.55
1:EB:1191:A:OP1	37:PC:3:ASN:ND2	2.40	0.55
38:QC:138:TYR:HE2	38:QC:140:VAL:HA	1.72	0.55
41:TC:26:PHE:HE2	41:TC:124:LEU:HD11	1.71	0.55
17:UB:109:GLU:HA	17:UB:112:ARG:HH22	1.72	0.55
19:WB:100:ARG:HG2	19:WB:100:ARG:HH11	1.72	0.55
1:A:1095:U:P	1:A:1108:G:H1	2.30	0.55
27:AA:30:ARG:HG3	27:AA:30:ARG:HH11	1.72	0.55
2:B:2459:A:H5''	2:B:2460:U:OP2	2.07	0.55
2:B:1568:G:P	5:E:63:ARG:HH22	2.29	0.55
1:EB:413:G:O2'	1:EB:428:G:N2	2.39	0.55
1:EB:880:C:OP2	46:YC:9:GLN:HG3	2.06	0.55
2:FB:262:A:H2'	2:FB:263:C:O4'	2.07	0.55
2:FB:568:U:O2'	2:FB:570:G:N7	2.33	0.55
54:GD:51:GLU:HA	54:GD:54:LYS:HE2	1.89	0.55
8:H:44:GLY:HA2	8:H:88:ILE:HG22	1.88	0.55
38:MA:102:ASP:HA	38:MA:121:VAL:HG21	1.89	0.55
16:P:5:THR:HG23	16:P:8:GLU:OE2	2.06	0.55
20:T:82:LEU:HD23	20:T:84:ARG:HH21	1.72	0.55
23:W:162:GLU:O	23:W:164:ALA:N	2.40	0.55
47:ZC:3:ARG:HH12	47:ZC:4:ILE:HG22	1.69	0.55
1:A:533:A:O2'	1:A:535:A:OP2	2.24	0.55
1:A:861:G:OP1	42:QA:75:ARG:NH2	2.28	0.55
2:B:2124:G:O6	2:B:2175:C:O2'	2.17	0.55
28:BA:58:ARG:HG3	53:BB:68:GLY:HA3	1.88	0.55
24:BC:23:VAL:HA	24:BC:38:VAL:HG22	1.89	0.55
50:CD:52:ASP:HB3	50:CD:55:ARG:HB2	1.88	0.55
5:E:263:ARG:H	5:E:263:ARG:NH1	2.05	0.55
1:EB:1084:G:H5'	1:EB:1102:A:OP2	2.06	0.55
2:FB:2347:C:N3	2:FB:2370:G:N2	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2567:G:H2'	2:FB:2568:C:C6	2.42	0.55
2:FB:848:G:O6	2:FB:929:G:H2'	2.07	0.55
7:KB:9:ILE:HG21	7:KB:125:LEU:HD23	1.88	0.55
8:LB:124:SER:HB2	8:LB:131:TYR:HE1	1.72	0.55
15:O:33:ARG:NH1	15:O:115:GLU:HB3	2.21	0.55
15:O:49:ASP:OD1	15:O:95:THR:OG1	2.24	0.55
38:QC:102:ASP:HA	38:QC:121:VAL:HG21	1.89	0.55
38:QC:9:CYS:HB2	38:QC:22:LYS:HG2	1.89	0.55
44:SA:50:ILE:HD12	48:WA:41:ARG:HH21	1.71	0.55
1:A:1000:A:H3'	1:A:1002:G:H22	1.72	0.55
1:A:715:A:H2'	1:A:716:A:C8	2.42	0.55
2:B:507:A:HO2'	2:B:508:G:P	2.27	0.55
50:CD:18:ARG:HG2	50:CD:35:LYS:HG3	1.89	0.55
1:EB:109:A:C6	1:EB:326:G:C6	2.94	0.55
1:EB:201:C:N4	1:EB:209:U:H1'	2.21	0.55
1:EB:664:G:P	52:ED:64:ARG:HH21	2.30	0.55
2:FB:2291:U:H2'	2:FB:2292:C:C6	2.42	0.55
2:FB:2480:C:N4	2:FB:2481:G:O6	2.40	0.55
8:H:171:ALA:O	8:H:175:LEU:HB2	2.07	0.55
5:IB:79:VAL:HG22	5:IB:115:GLN:O	2.07	0.55
10:J:10:GLU:C	10:J:12:LEU:H	2.09	0.55
38:MA:36:ARG:NH1	38:MA:38:TYR:OH	2.39	0.55
36:OC:61:LEU:O	36:OC:65:GLY:N	2.40	0.55
40:SC:33:TYR:CE1	40:SC:74:ASP:HB3	2.42	0.55
46:UA:62:SER:HB2	46:UA:64:TYR:HD2	1.72	0.55
45:XC:16:SER:OG	45:XC:106:LYS:NZ	2.39	0.55
26:Z:31:GLU:HA	26:Z:34:GLU:HB3	1.89	0.55
2:B:1063:G:H22	2:B:1088:A:H61	1.55	0.54
2:B:1446:C:H2'	2:B:1447:G:H8	1.71	0.54
30:DA:26:ASN:HB3	30:DA:29:ASN:HB2	1.88	0.54
5:E:79:VAL:HG21	5:E:112:GLN:O	2.07	0.54
2:FB:1516:U:H2'	2:FB:1517:G:H8	1.72	0.54
2:FB:2358:G:H1	13:QB:55:ARG:HH12	1.55	0.54
2:FB:940:G:H2'	2:FB:941:A:O4'	2.06	0.54
7:G:78:ILE:HA	7:G:83:PHE:CE2	2.42	0.54
9:I:56:SER:OG	9:I:57:ASP:N	2.40	0.54
35:JA:322:ILE:HG12	35:JA:344:ILE:HG12	1.90	0.54
36:KA:160:ASP:HA	36:KA:182:ILE:HD12	1.88	0.54
2:FB:443:A:C5	7:KB:45:ARG:HD2	2.42	0.54
34:HA:13:A:N6	41:PA:80:VAL:O	2.39	0.54
20:T:11:ARG:NH1	20:T:98:LYS:C	2.61	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:310:G:P	50:YA:27:LYS:HZ3	2.24	0.54
1:A:410:G:O6	38:MA:22:LYS:NZ	2.40	0.54
1:A:556:C:H2'	1:A:557:G:O4'	2.07	0.54
48:AD:24:CYS:HB3	48:AD:28:GLY:H	1.71	0.54
2:B:1053:C:H4'	2:B:1107:G:H22	1.71	0.54
2:B:1516:U:H2'	2:B:1517:G:C8	2.42	0.54
2:B:2109:U:H1'	2:B:2181:G:H22	1.71	0.54
2:B:848:G:O6	2:B:929:G:H2'	2.07	0.54
54:CB:51:GLU:HA	54:CB:54:LYS:HE2	1.89	0.54
2:B:1491:G:H5'	5:E:99:ASP:OD2	2.08	0.54
2:B:1309:G:H4'	31:EA:7:PRO:HB2	1.89	0.54
52:ED:55:ARG:HB3	52:ED:55:ARG:NH1	2.22	0.54
2:FB:46:C:OP2	2:FB:215:G:H2'	2.07	0.54
2:FB:2693:A:H2'	2:FB:2694:G:H8	1.72	0.54
8:H:49:ASP:N	8:H:49:ASP:OD2	2.39	0.54
5:IB:143:HIS:ND1	5:IB:194:GLY:O	2.39	0.54
2:FB:1568:G:P	5:IB:63:ARG:HH22	2.30	0.54
11:K:34:LEU:O	11:K:49:GLY:HA3	2.07	0.54
37:LA:11:ARG:O	37:LA:13:GLY:N	2.41	0.54
8:LB:171:ALA:O	8:LB:175:LEU:HB2	2.08	0.54
2:FB:2555:U:H1'	35:NC:228:ARG:HH21	1.73	0.54
2:FB:588:U:H5'	13:QB:16:ARG:HH12	1.71	0.54
44:SA:64:GLU:OE2	44:SA:66:ARG:HD3	2.07	0.54
45:TA:87:THR:OG1	45:TA:87:THR:O	2.24	0.54
23:W:91:LEU:HD12	23:W:96:VAL:HG11	1.89	0.54
45:XC:73:MET:HG3	45:XC:103:LEU:HD21	1.90	0.54
50:YA:18:ARG:HG2	50:YA:35:LYS:HG3	1.89	0.54
21:YB:31:HIS:HE1	21:YB:33:LYS:HB2	1.72	0.54
1:A:1070:U:H2'	1:A:1071:C:C6	2.42	0.54
2:B:1582:C:H2'	2:B:1583:A:H8	1.70	0.54
2:B:2445:G:OP1	7:G:74:ARG:NH2	2.41	0.54
2:B:568:U:OP1	13:M:36:LYS:NZ	2.40	0.54
3:C:78:A:C2	3:C:99:A:C4	2.95	0.54
55:DB:10:ARG:HH22	55:DB:13:ILE:HD13	1.72	0.54
51:DD:76:LEU:HG	51:DD:77:VAL:N	2.22	0.54
1:EB:1184:G:H2'	1:EB:1185:G:C8	2.42	0.54
2:FB:1291:C:H2'	2:FB:1292:U:C6	2.43	0.54
4:HB:10:G:H2'	4:HB:11:A:H8	1.72	0.54
13:M:138:LEU:HD12	13:M:143:GLY:HA3	1.87	0.54
13:M:59:LEU:HD23	32:FA:58:ILE:HD13	1.88	0.54
42:QA:14:ARG:HE	42:QA:83:ILE:HG23	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:QC:177:ASP:HB3	38:QC:182:LYS:HG3	1.88	0.54
15:SB:36:THR:HG22	15:SB:37:THR:N	2.19	0.54
43:VC:83:ARG:HA	43:VC:86:VAL:HG22	1.88	0.54
23:W:19:ARG:HG3	23:W:19:ARG:NH1	2.23	0.54
1:A:626:U:H2'	1:A:627:G:C8	2.42	0.54
2:B:1922:G:H2'	2:B:1923:U:O4'	2.07	0.54
3:C:8:U:OP1	16:P:15:ARG:NH2	2.41	0.54
4:D:52:G:H1	4:D:62:C:H42	1.55	0.54
1:EB:859:A:OP2	1:EB:869:G:N2	2.39	0.54
2:FB:302:C:H2'	2:FB:303:U:C6	2.43	0.54
2:FB:829:A:N7	2:FB:2247:A:O2'	2.34	0.54
8:H:113:ARG:HH11	8:H:113:ARG:CG	2.19	0.54
4:IA:16:C:H5'	4:IA:59:A:C2	2.43	0.54
38:MA:18:LYS:HG3	38:MA:20:TYR:H	1.72	0.54
1:A:1078:U:O2'	39:NA:130:ASN:OD1	2.13	0.54
36:OC:84:GLU:HG2	36:OC:215:LEU:HD21	1.89	0.54
2:B:2379:G:H4'	16:P:21:THR:HG21	1.90	0.54
40:SC:95:GLU:HA	40:SC:95:GLU:OE2	2.07	0.54
2:FB:2682:U:O2'	17:UB:58:ASN:OD1	2.25	0.54
25:Y:90:ILE:O	25:Y:94:LEU:N	2.41	0.54
1:A:377:G:P	50:YA:5:ARG:HH11	2.31	0.54
23:AC:125:LEU:HD23	23:AC:164:ALA:O	2.06	0.54
2:B:1038:C:N3	2:B:1117:G:N2	2.41	0.54
2:FB:1778:U:H2'	2:FB:1784:A:N6	2.22	0.54
2:FB:2791:C:OP1	2:FB:2892:A:N6	2.41	0.54
2:FB:861:A:H2'	2:FB:862:G:O4'	2.08	0.54
3:GB:28:C:OP1	16:TB:31:SER:OG	2.21	0.54
4:HB:42:G:H2'	4:HB:43:A:C8	2.42	0.54
35:JA:138:TYR:HE1	35:JA:338:ASP:OD2	1.90	0.54
13:M:32:THR:OG1	13:M:32:THR:O	2.19	0.54
35:NC:218:ASN:HB3	35:NC:221:ASP:OD2	2.07	0.54
43:RA:83:ARG:HA	43:RA:86:VAL:HG22	1.88	0.54
20:XB:9:TYR:H	20:XB:102:HIS:HD2	1.54	0.54
25:Y:20:ARG:HB3	25:Y:34:THR:HA	1.89	0.54
21:YB:21:PHE:C	21:YB:23:GLU:H	2.09	0.54
2:FB:1755:A:OP2	17:UB:113:LYS:NZ	2.41	0.54
2:FB:780:G:C2	2:FB:782:A:C2	2.96	0.54
8:H:98:ARG:CB	8:H:98:ARG:HH11	2.19	0.54
4:MC:19:G:OP1	4:MC:60:U:N3	2.41	0.54
41:PA:62:PHE:O	41:PA:63:LYS:HG3	2.08	0.54
19:WB:18:LEU:HB3	19:WB:96:ILE:HG13	1.90	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:WC:34:VAL:HA	44:WC:74:ILE:HG22	1.88	0.54
45:XC:85:ARG:NH1	45:XC:111:ASP:HB3	2.22	0.54
1:A:892:A:O2'	1:A:1415:G:H4'	2.08	0.54
2:B:1047:G:H1'	2:B:1111:A:N6	2.23	0.54
2:B:1796:U:H2'	2:B:1797:C:C6	2.43	0.54
49:BD:39:LEU:O	49:BD:43:LEU:HG	2.08	0.54
3:C:12:C:C6	3:C:12:C:OP2	2.60	0.54
1:EB:159:G:O2'	1:EB:161:A:N7	2.32	0.54
1:EB:736:C:H2'	1:EB:737:A:C8	2.42	0.54
2:FB:1531:C:N4	2:FB:1540:G:O6	2.41	0.54
2:FB:270(J):G:O2'	25:CC:81:ARG:NH1	2.40	0.54
28:FC:21:VAL:O	28:FC:23:GLU:N	2.41	0.54
8:H:153:ARG:HB2	8:H:153:ARG:NH1	2.22	0.54
9:I:3:ARG:NH1	9:I:3:ARG:HA	2.23	0.54
2:B:911:A:H2'	14:N:9:TYR:OH	2.08	0.54
1:A:1043:C:H2'	1:A:1044:A:H5''	1.89	0.54
2:B:1516:U:H2'	2:B:1517:G:H8	1.73	0.54
2:B:1585:C:H4'	2:B:1586:A:OP2	2.08	0.54
5:E:8:PRO:HB3	5:E:14:ARG:HG3	1.88	0.54
1:EB:1367:C:H5'	44:WC:60:ARG:CZ	2.38	0.54
1:EB:584:G:H2'	1:EB:585:G:C8	2.43	0.54
1:EB:401:C:O2'	1:EB:621:A:N3	2.34	0.54
1:EB:685:G:N2	1:EB:704:A:OP2	2.40	0.54
1:EB:878:G:H5'	42:UC:89:PRO:HG2	1.90	0.54
1:EB:993:G:O2'	1:EB:994:A:N7	2.40	0.54
6:F:31:CYS:HB3	6:F:49:LEU:HD12	1.90	0.54
2:FB:1053:C:H4'	2:FB:1107:G:H22	1.73	0.54
2:FB:1340:U:H4'	2:FB:1341:U:OP2	2.08	0.54
2:B:1140:C:P	11:K:66:LYS:HZ3	2.30	0.54
35:NC:138:TYR:HE1	35:NC:338:ASP:OD2	1.90	0.54
11:OB:123:TYR:OH	11:OB:130:HIS:NE2	2.37	0.54
41:PA:146:GLU:O	41:PA:148:ASN:N	2.38	0.54
2:B:1216:G:P	18:R:12:ARG:HH21	2.31	0.54
2:B:534:U:H5'	18:R:42:ALA:HB1	1.89	0.54
22:V:2:ARG:O	22:V:4:LYS:N	2.41	0.54
44:WC:90:LEU:HD23	44:WC:94:VAL:HB	1.90	0.54
47:ZC:48:LEU:HD23	47:ZC:53:VAL:HG22	1.90	0.54
1:A:957:U:H2'	1:A:959:A:OP2	2.08	0.54
2:B:184:C:H2'	2:B:185:U:C6	2.43	0.54
49:BD:88:ARG:NH2	49:BD:88:ARG:HB3	2.23	0.54
1:EB:1004:A:N6	1:EB:1025:U:O2'	2.26	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:ED:53:ARG:NH1	52:ED:59:SER:O	2.41	0.54
6:F:47:VAL:HG11	6:F:86:PRO:HD2	1.90	0.54
2:FB:1516:U:H2'	2:FB:1517:G:C8	2.43	0.54
2:FB:1790:C:H5''	2:FB:1791:A:OP1	2.08	0.54
54:GD:30:LYS:HB2	54:GD:30:LYS:NZ	2.23	0.54
2:B:2316:C:H1'	8:H:128:ARG:NH1	2.23	0.54
35:JA:139:ALA:HA	35:JA:144:TRP:HE3	1.73	0.54
41:PA:12:LEU:HD12	41:PA:12:LEU:H	1.73	0.54
17:UB:29:ARG:HG3	17:UB:46:GLU:HB3	1.89	0.54
23:W:125:LEU:HD23	23:W:164:ALA:O	2.08	0.54
2:B:1532:C:H41	2:B:1539:G:N2	2.05	0.54
1:EB:152:A:N7	1:EB:169:C:N4	2.56	0.54
2:FB:2661:G:H2'	2:FB:2662:A:C8	2.43	0.54
2:FB:2698:U:H2'	2:FB:2699:C:C6	2.43	0.54
2:FB:879:G:H1	2:FB:899:A:H1'	1.73	0.54
53:FD:31:ILE:HD11	53:FD:49:ILE:HG12	1.89	0.54
10:J:5:LEU:H	10:J:5:LEU:HD12	1.73	0.54
6:JB:38:THR:OG1	6:JB:41:LYS:N	2.30	0.54
8:LB:108:ASN:HA	28:FC:37:SER:HB2	1.89	0.54
13:M:107:LYS:HB2	13:M:110:TYR:CD2	2.43	0.54
38:QC:111:ALA:HB1	38:QC:116:GLN:HG2	1.90	0.54
14:RB:71:ASP:N	14:RB:71:ASP:OD1	2.37	0.54
20:T:29:LEU:HG	20:T:33:ARG:HE	1.73	0.54
22:V:15:VAL:HG11	22:V:20:TYR:HB2	1.90	0.54
47:VA:94:ARG:HB3	47:VA:96:LEU:HG	1.89	0.54
2:FB:1216:G:P	18:VB:12:ARG:HH21	2.30	0.54
24:X:24:LYS:O	24:X:25:ARG:NH1	2.41	0.54
24:X:53:MET:HG3	24:X:59:LEU:HD23	1.90	0.54
1:A:1227:A:OP1	53:BB:80:TYR:OH	2.26	0.53
1:A:651:C:H2'	1:A:652:U:C6	2.43	0.53
1:A:67:C:H2'	1:A:68:G:C8	2.43	0.53
1:A:736:C:H2'	1:A:737:A:C8	2.42	0.53
2:B:1641:A:H2'	2:B:1642:G:O4'	2.08	0.53
2:B:2305:A:H1'	8:H:136:ARG:HG3	1.90	0.53
2:B:220:G:O2'	2:B:233:A:N3	2.33	0.53
2:B:2597:G:H2'	2:B:2598:A:C8	2.43	0.53
4:D:10:G:H2'	4:D:11:A:H8	1.72	0.53
26:DC:44:LEU:HD12	26:DC:46:GLN:O	2.08	0.53
5:E:261:LYS:HD3	5:E:263:ARG:CZ	2.38	0.53
1:EB:1004:A:OP1	1:EB:1023:G:N1	2.29	0.53
1:EB:1049:U:H4'	1:EB:1050:G:H5''	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:715:A:H2'	1:EB:716:A:C8	2.42	0.53
2:FB:244:A:C2	2:FB:255:A:C4	2.96	0.53
2:FB:2795:G:N2	2:FB:2801:A:OP2	2.41	0.53
2:FB:84:A:N1	2:FB:98:G:O2'	2.37	0.53
28:FC:62:ARG:HA	28:FC:62:ARG:HH11	1.72	0.53
53:FD:51:VAL:H	53:FD:58:VAL:HG22	1.73	0.53
10:J:4:ILE:HG23	10:J:18:VAL:HB	1.91	0.53
8:LB:121:ASN:O	8:LB:131:TYR:OH	2.16	0.53
2:B:907:U:O2'	14:N:101:ARG:NH2	2.41	0.53
40:OA:95:GLU:OE2	40:OA:95:GLU:HA	2.08	0.53
44:SA:34:VAL:HA	44:SA:74:ILE:HG22	1.89	0.53
40:SC:62:TRP:CZ3	40:SC:64:GLN:HB2	2.43	0.53
23:W:69:THR:HG23	23:W:90:VAL:HG13	1.90	0.53
48:WA:24:CYS:HB3	48:WA:28:GLY:H	1.73	0.53
20:XB:90:ARG:HG2	20:XB:90:ARG:NH1	2.24	0.53
45:XC:92:GLU:HA	45:XC:95:ILE:HB	1.90	0.53
2:B:2621:A:O2'	6:F:159:HIS:ND1	2.30	0.53
1:EB:1032(C):G:H5'	1:EB:1033:G:OP2	2.09	0.53
1:EB:929:G:H1	1:EB:1388:C:N4	2.04	0.53
2:FB:1082:U:H2'	2:FB:1083:U:H4'	1.90	0.53
2:FB:374:A:C2	2:FB:401:A:C4	2.96	0.53
2:FB:464:U:H2'	2:FB:465:G:O4'	2.07	0.53
35:JA:130:ASP:O	35:JA:134:MET:HG3	2.08	0.53
35:NC:108:GLU:HB3	35:NC:170:GLY:HA2	1.90	0.53
35:NC:322:ILE:HG12	35:NC:344:ILE:HG12	1.90	0.53
11:OB:96:GLU:O	11:OB:100:GLU:HB2	2.08	0.53
16:P:34:HIS:HB3	16:P:53:SER:HB3	1.89	0.53
16:P:94:TYR:HE2	16:P:99:LYS:HE3	1.73	0.53
41:PA:70:LYS:HB3	41:PA:70:LYS:NZ	2.23	0.53
37:PC:45:LYS:HG3	37:PC:46:GLU:HG3	1.90	0.53
17:Q:62:THR:HG23	17:Q:75:ILE:HG12	1.90	0.53
45:TA:82:VAL:HB	45:TA:108:ILE:HG22	1.89	0.53
21:U:57:LEU:HD13	21:U:78:LYS:HB3	1.89	0.53
47:VA:92:HIS:CE1	47:VA:98:VAL:HG21	2.42	0.53
18:VB:101:ARG:O	18:VB:103:PRO:HD3	2.07	0.53
24:X:54:GLY:O	24:X:56:ASP:N	2.37	0.53
20:XB:25:ARG:NH2	20:XB:74:ALA:O	2.42	0.53
51:ZA:95:TYR:O	51:ZA:97:SER:N	2.40	0.53
22:ZB:30:VAL:HG23	22:ZB:37:VAL:HG12	1.90	0.53
1:A:413:G:O2'	1:A:428:G:N2	2.41	0.53
2:B:1495:A:H2'	2:B:1496:A:C8	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2557:G:H2'	2:B:2558:C:H6	1.74	0.53
2:B:464:U:H2'	2:B:465:G:O4'	2.08	0.53
2:B:261:G:HO2'	2:B:609(B):G:HO2'	1.53	0.53
2:B:610:C:H42	2:B:618(A):G:H1	1.56	0.53
2:FB:1047:G:H1'	2:FB:1111:A:N6	2.23	0.53
2:FB:17:G:H2'	2:FB:18:C:C6	2.43	0.53
2:FB:2708:G:OP1	15:SB:68:ARG:NH1	2.38	0.53
2:FB:979:G:H2'	2:FB:982:C:H42	1.73	0.53
3:GB:7:G:H1	3:GB:113:C:H42	1.56	0.53
8:H:105:LYS:NZ	8:H:143:GLU:OE1	2.27	0.53
5:IB:263:ARG:NH1	5:IB:263:ARG:HG3	2.18	0.53
8:LB:173:LEU:HB3	8:LB:178:PHE:CD2	2.43	0.53
38:MA:119:GLN:O	38:MA:123:HIS:ND1	2.25	0.53
38:MA:141:ARG:HB3	38:MA:141:ARG:NH1	2.23	0.53
38:MA:9:CYS:HG	38:MA:18:LYS:HZ1	1.45	0.53
4:MC:65:C:H2'	4:MC:66:C:H5'	1.90	0.53
44:WC:64:GLU:OE2	44:WC:66:ARG:HD3	2.08	0.53
49:XA:8:LYS:NZ	49:XA:31:LEU:HD21	2.23	0.53
22:ZB:88:LYS:HB3	22:ZB:96:ILE:HG23	1.91	0.53
2:B:1981:A:H5''	2:B:1982:C:OP2	2.08	0.53
2:B:2029:G:H2'	2:B:2031:A:OP1	2.08	0.53
2:B:2148:G:H2'	2:B:2149:G:H8	1.74	0.53
2:B:2698:U:H2'	2:B:2699:C:C6	2.44	0.53
29:CA:45:VAL:HG22	29:CA:52:TYR:HB2	1.89	0.53
30:DA:9:LEU:HD13	30:DA:25:LYS:HD3	1.90	0.53
51:DD:95:TYR:O	51:DD:97:SER:N	2.40	0.53
5:E:79:VAL:HG22	5:E:115:GLN:O	2.08	0.53
1:EB:998(B):C:H42	1:EB:1042:G:H1	1.55	0.53
1:EB:1266:G:C4	1:EB:1268:A:OP2	2.62	0.53
1:EB:501:C:H2'	1:EB:502:G:C8	2.44	0.53
1:EB:82:U:C5	1:EB:85:U:H5''	2.43	0.53
2:FB:1173:G:H2'	2:FB:1175:U:C5'	2.39	0.53
2:FB:1935:G:H3'	2:FB:1962:5MC:HN41	1.74	0.53
2:FB:2159:G:H2'	2:FB:2160:G:C8	2.44	0.53
2:FB:583:G:OP2	18:VB:10:ARG:HD2	2.08	0.53
2:FB:459:U:H4'	31:IC:40:TRP:CZ3	2.44	0.53
37:LA:64:VAL:HG22	37:LA:99:VAL:HA	1.90	0.53
2:B:807:U:OP2	13:M:36:LYS:HD3	2.09	0.53
15:SB:70:LEU:O	15:SB:72:ASP:N	2.32	0.53
21:U:32:PRO:HA	21:U:77:LYS:HB2	1.89	0.53
22:V:99:CYS:SG	22:V:100:ALA:N	2.81	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:YC:8:ASN:HB2	51:DD:34:LYS:NZ	2.22	0.53
1:A:152:A:N7	1:A:169:C:N4	2.56	0.53
1:A:54:C:O2'	1:A:55:A:H5'	2.08	0.53
1:A:949:A:H1'	1:A:1364:U:N3	2.23	0.53
2:B:1654:A:H1'	2:B:2823:A:H5'	1.91	0.53
2:B:2291:U:H2'	2:B:2292:C:C6	2.43	0.53
2:B:455:C:H3'	2:B:456:C:H5''	1.89	0.53
2:B:607:U:OP1	7:G:103:LYS:N	2.39	0.53
4:D:64:G:H2'	4:D:65:C:O4'	2.09	0.53
30:DA:39:TYR:HB2	30:DA:46:HIS:CE1	2.42	0.53
1:EB:968:A:H8	1:EB:968:A:OP1	1.92	0.53
2:FB:1532:C:H41	2:FB:1539:G:N2	2.06	0.53
2:FB:2581:G:H4'	2:FB:2582:G:C8	2.44	0.53
8:H:135:LEU:HA	8:H:136:ARG:HH11	1.74	0.53
35:NC:119:THR:OG1	35:NC:302:ASP:HB2	2.09	0.53
47:VA:110:ARG:HH11	47:VA:110:ARG:HB3	1.74	0.53
26:Z:44:LEU:HD12	26:Z:46:GLN:O	2.07	0.53
1:A:1070:U:H2'	1:A:1071:C:H6	1.72	0.53
1:A:1144:G:H21	1:A:1146:A:H62	1.54	0.53
3:C:42:C:H5''	8:H:69:ALA:HB2	1.89	0.53
50:CD:32:TYR:HD2	50:CD:32:TYR:H	1.55	0.53
1:EB:1531:A:C8	1:EB:1531:A:OP2	2.55	0.53
1:EB:619:U:H5'	38:QC:131:ARG:NH1	2.24	0.53
1:EB:995:C:O2	48:AD:4:LYS:NZ	2.38	0.53
6:F:12:THR:HB	17:Q:58:ASN:HD21	1.71	0.53
2:FB:1077:A:N6	2:FB:1079:C:H1'	2.23	0.53
2:FB:1445:C:H2'	2:FB:1446:C:C6	2.43	0.53
2:FB:528:A:N1	2:FB:2042:A:H2'	2.23	0.53
54:GD:46:GLU:HB3	54:GD:48:LYS:NZ	2.24	0.53
30:HC:17:LYS:NZ	30:HC:50:ARG:NH2	2.56	0.53
4:IA:1:C:H41	4:IA:72:A:N6	2.06	0.53
5:IB:146:GLU:HA	5:IB:153:ALA:HA	1.91	0.53
9:MB:40:GLU:HB2	9:MB:60:ARG:HH22	1.73	0.53
4:MC:58:A:N6	4:MC:61:C:O2	2.41	0.53
2:FB:2039:C:H5'	11:OB:109:LYS:HZ2	1.73	0.53
38:QC:18:LYS:HD3	38:QC:31:CYS:SG	2.49	0.53
1:EB:426:G:OP1	38:QC:36:ARG:NH1	2.41	0.53
19:S:81:TYR:CE1	19:S:83:ARG:HD3	2.43	0.53
45:TA:27:ASN:OD1	45:TA:28:THR:N	2.41	0.53
42:UC:11:THR:HG22	42:UC:15:ASN:HD21	1.74	0.53
24:X:27:GLU:HA	24:X:67:VAL:HG12	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:24:G:O2'	20:XB:78:GLU:O	2.21	0.53
1:A:1120:G:H2'	1:A:1121:U:H6	1.74	0.53
1:A:278:G:OP2	51:ZA:41:LYS:HE2	2.09	0.53
2:B:1063:G:N2	2:B:1088:A:H61	2.06	0.53
2:B:1657:C:H2'	2:B:1658:C:C6	2.43	0.53
2:B:1742:C:H5'	2:B:1743:G:OP2	2.08	0.53
2:B:1778:U:H2'	2:B:1784:A:N6	2.24	0.53
2:B:270(G):U:O2	2:B:270(U):G:N2	2.33	0.53
2:B:2795:G:HO2'	2:B:2799:A:H62	1.54	0.53
1:EB:1085:U:H5''	1:EB:1086:U:H5	1.74	0.53
1:EB:1317:C:O2	53:FD:37:ARG:NH2	2.40	0.53
1:EB:452:A:H4'	50:CD:72:ARG:HH12	1.74	0.53
2:FB:1860:G:OP2	2:FB:1860:G:H8	1.92	0.53
2:FB:185:U:H4'	2:FB:218:A:H4'	1.91	0.53
2:FB:2573:C:N4	35:NC:239:THR:HA	2.24	0.53
2:FB:2795:G:HO2'	2:FB:2799:A:H62	1.54	0.53
2:FB:830:G:H4'	2:FB:831:G:OP2	2.09	0.53
3:GB:85:G:H2'	3:GB:86:G:C8	2.43	0.53
30:HC:12:GLU:HA	30:HC:19:ARG:HG3	1.90	0.53
30:HC:39:TYR:HB2	30:HC:46:HIS:CE1	2.43	0.53
10:J:87:LYS:HD2	10:J:89:TYR:CD2	2.44	0.53
6:JB:92:THR:OG1	6:JB:93:VAL:N	2.41	0.53
7:KB:170:LEU:HD12	7:KB:171:PRO:HD2	1.91	0.53
3:GB:42:C:H5''	8:LB:69:ALA:HB2	1.91	0.53
8:LB:78:SER:N	4:MC:56:C:O2'	2.41	0.53
9:MB:171:LEU:HD22	9:MB:172:LYS:H	1.73	0.53
9:MB:3:ARG:HA	9:MB:3:ARG:NH1	2.24	0.53
39:RC:96:PRO:HA	39:RC:117:ASP:OD2	2.07	0.53
41:TC:111:ARG:NE	41:TC:122:HIS:O	2.42	0.53
41:TC:50:ILE:HD12	41:TC:58:PRO:HB3	1.89	0.53
22:V:101:LYS:HD2	22:V:101:LYS:H	1.73	0.53
43:VC:10:ARG:HG3	43:VC:105:ASP:OD2	2.08	0.53
1:EB:1372:U:H5''	43:VC:71:SER:HB3	1.91	0.53
23:W:10:ARG:NH2	23:W:26:GLY:O	2.42	0.53
1:A:1062:U:H2'	1:A:1063:C:C6	2.44	0.53
1:A:91:C:H2'	1:A:92:G:C8	2.44	0.53
2:B:1253:A:H4'	2:B:1254:A:OP2	2.09	0.53
2:B:1796:U:H4'	5:E:256:GLY:H	1.73	0.53
2:B:2693:A:H2'	2:B:2694:G:H8	1.73	0.53
25:CC:57:GLU:HG2	25:CC:58:ILE:N	2.23	0.53
26:DC:35:LEU:HD12	26:DC:53:LEU:HD12	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:1043:C:H2'	1:EB:1044:A:H5''	1.90	0.53
1:EB:1170:A:OP2	1:EB:1170:A:H8	1.91	0.53
1:EB:556:C:H2'	1:EB:557:G:O4'	2.09	0.53
1:EB:820:U:H4'	1:EB:821:G:OP2	2.07	0.53
2:FB:969:U:OP1	27:EC:17:LYS:N	2.42	0.53
8:H:113:ARG:HH11	8:H:113:ARG:HG3	1.74	0.53
8:H:40:ASN:OD1	8:H:42:GLY:N	2.40	0.53
30:HC:26:ASN:HB3	30:HC:29:ASN:HB2	1.89	0.53
11:K:12:ARG:HD3	11:K:14:VAL:HG23	1.89	0.53
36:KA:74:LYS:NZ	36:KA:76:GLN:HB2	2.23	0.53
2:FB:2445:G:OP1	7:KB:74:ARG:NH2	2.42	0.53
11:OB:34:LEU:O	11:OB:49:GLY:HA3	2.08	0.53
13:QB:107:LYS:HB2	13:QB:110:TYR:CD2	2.43	0.53
38:QC:92:VAL:O	38:QC:96:LEU:HD22	2.07	0.53
22:V:9:LYS:HB2	22:V:29:GLU:HA	1.89	0.53
18:VB:72:HIS:O	18:VB:74:LEU:HD12	2.09	0.53
1:A:1134:G:H3'	1:A:1135:U:O4'	2.09	0.53
1:A:1178:G:OP2	43:RA:97:LYS:HE2	2.09	0.53
1:A:160:A:H2'	1:A:161:A:O4'	2.09	0.53
1:A:46:G:H2'	1:A:366:C:H5	1.74	0.53
1:A:366:C:H1'	1:A:394:G:H22	1.74	0.53
2:B:154(A):C:H2'	2:B:161:U:C5	2.44	0.53
2:B:1817:G:C6	2:B:1818:U:C5	2.97	0.53
2:B:2099:U:H2'	2:B:2100:G:C8	2.44	0.53
2:B:807:U:OP2	13:M:41:ARG:NH2	2.42	0.53
53:BB:3:ARG:NH2	53:BB:8:GLY:O	2.39	0.53
5:E:125:ILE:HG23	5:E:193:VAL:HG11	1.91	0.53
1:EB:1008:C:H3'	1:EB:1009:G:H8	1.74	0.53
1:EB:160:A:H2'	1:EB:161:A:O4'	2.09	0.53
6:F:117:MET:SD	6:F:136:ARG:HG3	2.49	0.53
2:FB:1742:C:H5'	2:FB:1743:G:OP2	2.08	0.53
2:FB:2875:C:O2'	17:UB:4:GLY:HA3	2.09	0.53
5:IB:125:ILE:HG23	5:IB:193:VAL:HG11	1.91	0.53
5:IB:210:GLY:O	5:IB:213:ARG:N	2.41	0.53
36:KA:13:ALA:HB1	36:KA:44:LEU:HD22	1.90	0.53
35:NC:324:LEU:HD12	35:NC:325:THR:H	1.73	0.53
1:EB:1190:G:H2'	37:PC:3:ASN:HB2	1.89	0.53
17:Q:109:GLU:HA	17:Q:112:ARG:HH22	1.74	0.53
44:SA:90:LEU:HD23	44:SA:94:VAL:HB	1.91	0.53
41:TC:60:LYS:HA	41:TC:63:LYS:HD2	1.90	0.53
19:WB:68:LYS:HD2	19:WB:68:LYS:H	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2262:U:P	24:X:19:LYS:NZ	2.82	0.53
24:X:49:LYS:HG3	24:X:80:HIS:ND1	2.23	0.53
50:YA:49:LEU:HD12	50:YA:50:LYS:H	1.73	0.53
46:YC:53:ARG:NH1	46:YC:92:0TD:OD1	2.42	0.53
23:AC:19:ARG:HG3	23:AC:19:ARG:NH1	2.24	0.53
2:B:1429:G:H2'	2:B:1430:C:C6	2.44	0.53
2:B:784:A:H5'	2:B:785:G:OP1	2.09	0.53
49:BD:8:LYS:HZ3	49:BD:31:LEU:HD11	1.73	0.53
5:E:121:PRO:HD3	5:E:190:TYR:OH	2.09	0.53
1:EB:922:G:H2'	1:EB:923:A:C8	2.44	0.53
1:EB:939:G:H2'	1:EB:940:C:C6	2.43	0.53
53:FD:12:ASP:O	53:FD:15:LEU:HB2	2.09	0.53
2:B:797:C:OP2	7:G:62:ARG:HG3	2.09	0.53
8:H:38:VAL:HG23	8:H:158:ALA:HB3	1.90	0.53
8:H:8:LYS:NZ	8:H:9:ARG:HG3	2.24	0.53
2:FB:1993:U:H4'	6:JB:128:SER:OG	2.08	0.53
8:LB:113:ARG:HG3	8:LB:113:ARG:HH11	1.74	0.53
8:LB:27:ASN:OD1	8:LB:28:VAL:N	2.42	0.53
41:PA:70:LYS:HG2	41:PA:96:GLN:HG2	1.90	0.53
37:PC:64:VAL:HG22	37:PC:99:VAL:HA	1.89	0.53
41:TC:12:LEU:HD12	41:TC:12:LEU:H	1.74	0.53
41:TC:130:GLY:O	41:TC:136:LYS:NZ	2.41	0.53
17:UB:55:ASN:O	17:UB:55:ASN:ND2	2.38	0.53
51:ZA:76:LEU:HG	51:ZA:77:VAL:N	2.22	0.53
1:A:397:A:N3	1:A:397:A:H3'	2.25	0.52
23:AC:106:GLY:HA3	23:AC:142:SER:HB2	1.91	0.52
2:B:1203:G:O2'	13:M:2:LYS:NZ	2.31	0.52
51:DD:57:VAL:HG12	51:DD:76:LEU:HA	1.91	0.52
1:EB:657:G:H2'	1:EB:658:G:C8	2.37	0.52
1:EB:691:G:O6	45:XC:52:GLY:HA2	2.10	0.52
1:EB:800:G:O5'	1:EB:800:G:H8	1.92	0.52
2:FB:1203:G:O6	2:FB:1204:A:N6	2.41	0.52
2:FB:2271:G:H2'	2:FB:2272:U:C6	2.43	0.52
8:H:150:ASP:OD2	8:H:150:ASP:N	2.41	0.52
15:O:67:LEU:HD12	15:O:76:VAL:HG21	1.91	0.52
41:PA:130:GLY:O	41:PA:136:LYS:NZ	2.42	0.52
39:RC:9:LYS:HB3	39:RC:33:VAL:HG13	1.90	0.52
46:UA:8:ASN:HB2	51:ZA:34:LYS:NZ	2.24	0.52
5:E:263:ARG:HG3	5:E:263:ARG:NH1	2.18	0.52
1:EB:678:U:H2'	1:EB:679:C:C6	2.45	0.52
2:FB:851:U:H2'	2:FB:852:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:173:LEU:HB3	8:H:178:PHE:CD2	2.44	0.52
9:I:85:LYS:HE3	9:I:138:LYS:NZ	2.24	0.52
5:IB:108:PRO:HD2	5:IB:111:LEU:HD22	1.91	0.52
35:JA:186:ARG:HB3	35:JA:312:PHE:HB2	1.91	0.52
38:MA:26:CYS:SG	38:MA:31:CYS:SG	3.04	0.52
9:MB:8:PRO:HB3	9:MB:51:ARG:HB3	1.90	0.52
4:MC:75:C:H4'	4:MC:75:C:OP1	2.08	0.52
12:PB:26:LYS:HD2	12:PB:37:ASP:OD2	2.10	0.52
38:QC:191:ARG:NH2	38:QC:200:GLU:OE1	2.39	0.52
45:XC:34:ASP:OD2	45:XC:38:ASN:HB2	2.09	0.52
50:YA:42:ARG:HB3	50:YA:44:THR:HG23	1.91	0.52
47:ZC:14:ARG:HD2	47:ZC:44:ARG:HE	1.74	0.52
1:A:1032(C):G:H5'	1:A:1033:G:OP2	2.09	0.52
1:A:1184:G:H2'	1:A:1185:G:C8	2.45	0.52
1:A:193:C:H2'	1:A:194:C:C6	2.43	0.52
1:A:774:G:P	5:E:202:LYS:NZ	2.82	0.52
2:B:1935:G:H3'	2:B:1962:5MC:HN41	1.74	0.52
2:B:270(N):U:H4'	2:B:270(O):G:H5'	1.91	0.52
2:B:84:A:OP2	22:V:8:LYS:NZ	2.33	0.52
2:B:860:U:C2	2:B:2268:A:C8	2.98	0.52
3:C:12:C:OP2	3:C:12:C:H6	1.93	0.52
1:EB:1124:G:H21	1:EB:1127:G:H22	1.57	0.52
1:EB:1201:A:H1'	1:EB:1202:G:OP2	2.08	0.52
1:EB:1287:A:H2'	1:EB:1288:A:C8	2.44	0.52
1:EB:1351:U:H2'	1:EB:1352:C:C6	2.45	0.52
1:EB:1511:G:H2'	1:EB:1512:U:O4'	2.09	0.52
2:FB:1271:G:N2	2:FB:1617:C:O4'	2.42	0.52
2:FB:2335:A:C8	2:FB:2337:G:C5	2.98	0.52
2:FB:2792:G:H2'	2:FB:2793:G:H8	1.74	0.52
2:FB:486:C:H2'	2:FB:487:C:H6	1.73	0.52
2:FB:238:C:O2'	2:FB:608:A:N3	2.40	0.52
7:G:95:ARG:HB3	7:G:97:TYR:HE2	1.73	0.52
4:IA:65:C:H2'	4:IA:66:C:H5'	1.91	0.52
44:SA:15:THR:HA	44:SA:18:ALA:HB3	1.89	0.52
47:VA:90:LEU:O	47:VA:94:ARG:NE	2.41	0.52
48:WA:40:CYS:SG	48:WA:43:CYS:SG	3.08	0.52
22:ZB:14:LEU:HD22	22:ZB:82:PRO:HB3	1.91	0.52
1:A:593:G:H1	1:A:646:U:H3	1.57	0.52
1:A:993:G:O2'	1:A:994:A:N7	2.43	0.52
52:AB:53:ARG:HH12	52:AB:59:SER:C	2.12	0.52
2:B:2295:C:P	16:P:10:ARG:HD3	2.49	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:633:A:O2'	2:B:2404:C:OP1	2.22	0.52
2:B:2432:A:H5''	2:B:2433:A:OP2	2.09	0.52
2:B:2792:G:H2'	2:B:2793:G:H8	1.75	0.52
2:B:299:A:H5''	2:B:300:A:OP2	2.10	0.52
2:B:774:A:H5''	5:E:48:ARG:NH2	2.25	0.52
2:B:851:U:H2'	2:B:852:G:C8	2.45	0.52
24:BC:27:GLU:HA	24:BC:67:VAL:HG12	1.92	0.52
50:CD:13:HIS:O	50:CD:42:ARG:NH2	2.31	0.52
5:E:108:PRO:HD2	5:E:111:LEU:HD22	1.91	0.52
1:EB:811:C:H4'	1:EB:900:A:N6	2.24	0.52
52:ED:55:ARG:HH11	52:ED:55:ARG:HB3	1.74	0.52
2:FB:1024:G:HO2'	2:FB:1144:G:HO2'	1.54	0.52
2:FB:1495:A:H2'	2:FB:1496:A:C8	2.44	0.52
2:FB:1805:U:H2'	2:FB:1806:C:C6	2.44	0.52
2:FB:302:C:H2'	2:FB:303:U:H6	1.75	0.52
2:FB:821:A:H2'	2:FB:946:G:H5''	1.91	0.52
29:GC:34:PRO:HA	29:GC:37:LYS:NZ	2.24	0.52
54:GD:11:SER:O	54:GD:11:SER:OG	2.28	0.52
13:M:19:VAL:HB	13:M:31:ALA:HB1	1.90	0.52
10:NB:10:GLU:C	10:NB:12:LEU:H	2.08	0.52
38:QC:202:LEU:HA	38:QC:205:GLU:OE2	2.10	0.52
43:RA:56:LEU:HD12	43:RA:56:LEU:H	1.74	0.52
41:TC:70:LYS:HB3	41:TC:70:LYS:NZ	2.24	0.52
42:UC:4:ASP:OD2	42:UC:6:ILE:N	2.43	0.52
44:WC:15:THR:HA	44:WC:18:ALA:HB3	1.91	0.52
26:Z:37:PHE:O	26:Z:41:ILE:HG13	2.09	0.52
1:A:1018:C:H2'	1:A:1019:C:O4'	2.09	0.52
1:A:1087:G:H2'	1:A:1088:G:C8	2.45	0.52
1:A:1218:C:H2'	1:A:1219:U:C6	2.44	0.52
1:A:1531:A:H3'	1:A:1532:U:C5'	2.39	0.52
2:B:2298:A:H2'	2:B:2299:G:O4'	2.09	0.52
2:B:2865:U:C4	2:B:2866:U:C4	2.96	0.52
2:B:307:G:H21	2:B:330:A:H62	1.56	0.52
2:B:596:G:H2'	2:B:597:U:O4'	2.09	0.52
2:B:861:A:N3	3:C:79:C:O2'	2.39	0.52
5:E:175:LEU:HD12	5:E:185:VAL:HG21	1.90	0.52
5:E:29:PRO:HA	5:E:83:GLU:OE1	2.09	0.52
1:EB:1261:A:OP1	55:HD:25:LYS:NZ	2.31	0.52
1:EB:397:A:N3	1:EB:397:A:H3'	2.25	0.52
2:FB:1063:G:N2	2:FB:1088:A:H61	2.08	0.52
2:FB:1991:U:H2'	2:FB:1992:G:H5''	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:747:U:O2	2:FB:2014:A:H1'	2.10	0.52
2:FB:2531:A:H5'	9:MB:157:TYR:CZ	2.44	0.52
1:A:926:G:H22	34:HA:16:A:P	2.33	0.52
9:I:111:HIS:H	9:I:111:HIS:CD2	2.27	0.52
8:LB:105:LYS:NZ	8:LB:143:GLU:OE1	2.30	0.52
39:NA:33:VAL:HG22	39:NA:112:LEU:HD12	1.90	0.52
36:OC:114:ARG:HH12	36:OC:118:LEU:HD22	1.75	0.52
45:TA:79:SER:HA	45:TA:104:GLN:CB	2.39	0.52
16:TB:34:HIS:HB3	16:TB:53:SER:HB3	1.92	0.52
22:V:99:CYS:SG	22:V:101:LYS:N	2.83	0.52
43:VC:16:ARG:O	43:VC:63:ILE:HG13	2.10	0.52
45:XC:82:VAL:HB	45:XC:108:ILE:HG22	1.91	0.52
22:ZB:29:GLU:HG2	22:ZB:30:VAL:N	2.24	0.52
1:A:1034:G:H2'	1:A:1035:A:C8	2.44	0.52
1:A:105:G:H5'	1:A:106:C:OP2	2.10	0.52
1:A:1236:A:OP2	55:DB:3:LYS:HD3	2.09	0.52
1:A:77:C:H2'	1:A:78:G:H5'	1.91	0.52
2:B:2661:G:H2'	2:B:2662:A:C8	2.44	0.52
3:C:43:C:H2'	3:C:44:G:H5''	1.92	0.52
1:EB:1342:C:H2'	1:EB:1343:G:H8	1.73	0.52
1:EB:54:C:O2'	1:EB:55:A:H5'	2.10	0.52
1:EB:651:C:H2'	1:EB:652:U:C6	2.45	0.52
1:EB:967:5MC:H3'	1:EB:968:A:H5''	1.92	0.52
27:EC:23:LEU:HD13	27:EC:50:VAL:HG11	1.92	0.52
32:FA:56:GLU:HA	32:FA:56:GLU:OE2	2.10	0.52
2:FB:1021:A:H8	2:FB:1021:A:H3'	1.74	0.52
2:FB:2393:A:H5''	13:QB:63:PRO:HB3	1.92	0.52
2:FB:2557:G:H2'	2:FB:2558:C:C6	2.45	0.52
2:FB:34:C:O2'	2:FB:35:G:OP1	2.26	0.52
55:HD:12:LYS:HB3	55:HD:17:THR:O	2.10	0.52
2:FB:630:G:H5''	32:JC:47:LYS:NZ	2.24	0.52
7:KB:150:GLY:HA2	7:KB:172:TRP:CD2	2.45	0.52
4:MC:1:C:H41	4:MC:72:A:N6	2.07	0.52
4:MC:16:C:H5'	4:MC:59:A:C2	2.45	0.52
20:T:14:PRO:HA	20:T:17:VAL:HG12	1.90	0.52
23:W:106:GLY:HA3	23:W:142:SER:HB2	1.92	0.52
49:XA:18:PHE:HB2	49:XA:19:PRO:HD2	1.92	0.52
1:A:1367:C:H5'	44:SA:60:ARG:CZ	2.40	0.52
48:AD:9:LYS:HG2	48:AD:12:ARG:HH21	1.73	0.52
2:B:2795:G:N2	2:B:2801:A:OP2	2.42	0.52
2:B:443:A:H1'	2:B:1201:C:O4'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:662:G:C2	2:B:663:G:C5	2.98	0.52
49:BD:56:LEU:O	49:BD:60:VAL:HG23	2.10	0.52
1:EB:126:G:OP1	1:EB:605:U:O2'	2.27	0.52
1:EB:933:G:OP2	41:TC:3:ARG:HB3	2.10	0.52
1:EB:9:G:H5''	39:RC:126:ARG:HD3	1.92	0.52
2:FB:1688:U:O2	2:FB:1700:A:H5'	2.09	0.52
2:FB:240:G:O2'	2:FB:257:A:N6	2.36	0.52
2:FB:662:G:C2	2:FB:663:G:C5	2.98	0.52
35:JA:328:ARG:CZ	35:JA:339:MET:HB3	2.40	0.52
7:KB:78:ILE:HA	7:KB:83:PHE:CE2	2.45	0.52
37:PC:148:GLY:HA2	37:PC:171:GLY:HA3	1.92	0.52
16:TB:27:SER:HA	16:TB:88:ASP:OD2	2.10	0.52
50:YA:32:TYR:HE1	50:YA:35:LYS:HB2	1.74	0.52
47:ZC:23:TYR:HB3	47:ZC:67:GLU:HG3	1.91	0.52
47:ZC:54:VAL:HA	47:ZC:57:ARG:NH1	2.25	0.52
47:ZC:94:ARG:HB3	47:ZC:96:LEU:HG	1.91	0.52
1:A:1049:U:H4'	1:A:1050:G:H5''	1.92	0.52
1:A:1531:A:H3'	1:A:1532:U:H5''	1.90	0.52
1:A:191(D):U:H2'	1:A:191(E):G:C8	2.40	0.52
1:A:929:G:H1	1:A:1388:C:N4	2.03	0.52
2:B:1077:A:N6	2:B:1079:C:H1'	2.24	0.52
2:B:1177:A:H3'	2:B:1178:C:C6	2.45	0.52
2:B:2335:A:C8	2:B:2337:G:C5	2.98	0.52
1:A:1318:A:H1'	53:BB:37:ARG:HE	1.75	0.52
1:EB:376:G:OP1	50:CD:5:ARG:HB2	2.08	0.52
55:DB:18:TYR:CG	55:DB:24:ARG:HD3	2.45	0.52
1:A:1269:A:H5''	55:DB:24:ARG:HH21	1.74	0.52
5:E:133:LEU:HB3	5:E:173:VAL:HG21	1.91	0.52
1:EB:1028(A):C:C4	1:EB:1028(B):C:H1'	2.43	0.52
1:EB:643:C:H2'	1:EB:644:G:C8	2.44	0.52
1:EB:77:C:H2'	1:EB:78:G:H5'	1.91	0.52
1:EB:91:C:H2'	1:EB:92:G:C8	2.45	0.52
32:FA:7:HIS:ND1	32:FA:61:LEU:HD13	2.24	0.52
2:FB:2597:G:H2'	2:FB:2598:A:C8	2.44	0.52
2:FB:794:G:H2'	2:FB:795:C:C6	2.45	0.52
4:HB:28:C:N4	4:HB:42:G:H1	2.07	0.52
35:JA:108:GLU:HB3	35:JA:170:GLY:HA2	1.92	0.52
4:MC:49:G:N2	4:MC:65:C:H42	2.07	0.52
12:PB:87:ILE:HD12	12:PB:91:LEU:HA	1.91	0.52
38:QC:28:SER:O	38:QC:30:LYS:N	2.43	0.52
20:T:12:ILE:HB	20:T:42:ARG:HH12	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:757:U:H2'	1:A:758:G:O4'	2.09	0.52
23:AC:97:GLU:OE2	23:AC:127:LYS:HE2	2.10	0.52
2:B:2341:G:H2'	2:B:2342:C:O4'	2.10	0.52
2:B:2393:A:H5''	13:M:63:PRO:HB3	1.91	0.52
2:B:2799:A:O2'	2:B:2801:A:H5''	2.10	0.52
28:BA:21:VAL:O	28:BA:23:GLU:N	2.43	0.52
2:FB:2262:U:OP2	24:BC:19:LYS:NZ	2.42	0.52
2:B:126:A:OP2	31:EA:19:ARG:HB2	2.10	0.52
1:EB:1134:G:H3'	1:EB:1135:U:O4'	2.10	0.52
1:EB:501:C:H2'	1:EB:502:G:H8	1.75	0.52
2:FB:597:U:H2'	2:FB:598:G:C8	2.44	0.52
7:G:192:LEU:HD21	7:G:194:MET:HE3	1.92	0.52
10:J:8:PRO:HD3	10:J:15:VAL:HB	1.90	0.52
35:JA:218:ASN:HB3	35:JA:221:ASP:OD2	2.09	0.52
8:LB:124:SER:HB2	8:LB:131:TYR:CE1	2.45	0.52
41:TC:149:ARG:HD3	45:XC:59:TYR:CZ	2.44	0.52
1:A:1120:G:H2'	1:A:1121:U:C6	2.44	0.52
1:A:1135:U:H4'	1:A:1138:G:C6	2.45	0.52
1:A:1314:C:H2'	1:A:1315:U:C6	2.45	0.52
1:A:1342:C:H2'	1:A:1343:G:H8	1.75	0.52
1:A:1453:G:O6	54:CB:54:LYS:NZ	2.39	0.52
1:A:1453:G:H4'	1:A:1454:G:OP2	2.08	0.52
1:A:582:U:H2'	1:A:583:A:C8	2.45	0.52
2:B:270(J):G:H1	2:B:270(R):C:H42	1.57	0.52
2:B:270(V):C:H2'	2:B:270(W):G:H8	1.75	0.52
2:B:774:A:N3	2:B:774:A:H2'	2.24	0.52
53:BB:12:ASP:O	53:BB:15:LEU:HB2	2.10	0.52
5:E:6:PHE:CE1	5:E:13:ARG:NH1	2.78	0.52
1:EB:1242:C:H42	1:EB:1295:G:H22	1.58	0.52
1:EB:1374:A:O3'	41:TC:28:ASN:ND2	2.42	0.52
1:EB:155:C:H42	1:EB:166:G:H1	1.56	0.52
1:EB:54:C:N4	1:EB:353:A:OP2	2.39	0.52
2:FB:154(A):C:H2'	2:FB:161:U:C5	2.45	0.52
2:FB:1839:G:H2'	2:FB:1839:G:N3	2.25	0.52
2:FB:2341:G:H2'	2:FB:2342:C:O4'	2.10	0.52
2:FB:2400:G:OP2	2:FB:2400:G:H8	1.92	0.52
2:FB:511:U:C5	2:FB:512:G:C5	2.97	0.52
28:FC:69:LYS:HE3	53:FD:23:ASN:HD22	1.75	0.52
7:G:179:GLU:OE1	7:G:179:GLU:N	2.34	0.52
3:GB:43:C:H2'	3:GB:44:G:H5''	1.92	0.52
36:KA:139:LYS:HG2	36:KA:140:HIS:HD2	1.75	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:KA:149:LEU:HD12	36:KA:152:PHE:HB3	1.92	0.52
12:L:31:LYS:HZ3	12:L:31:LYS:HB2	1.71	0.52
1:EB:1403:C:N4	34:LC:18:G:OP1	2.43	0.52
57:FB:9001:BLS:H2'	4:MC:76:A:N3	2.25	0.52
1:A:933:G:OP2	41:PA:3:ARG:HB3	2.10	0.52
42:QA:121:ASP:O	42:QA:125:ARG:N	2.43	0.52
18:R:78:THR:O	18:R:81:HIS:N	2.43	0.52
39:RC:33:VAL:HG22	39:RC:112:LEU:HD12	1.92	0.52
20:T:12:ILE:HG12	20:T:13:SER:N	2.24	0.52
16:TB:15:ARG:NH1	16:TB:90:GLY:HA2	2.25	0.52
3:GB:50:G:OP1	16:TB:61:ASN:ND2	2.41	0.52
46:UA:102:ARG:HB3	46:UA:109:GLY:HA2	1.90	0.52
22:V:29:GLU:HG2	22:V:30:VAL:N	2.25	0.52
18:VB:6:THR:HG21	18:VB:10:ARG:NH1	2.25	0.52
2:B:2387:U:H1'	24:X:41:ARG:HE	1.75	0.52
26:Z:43:GLN:HA	26:Z:43:GLN:OE1	2.10	0.52
26:Z:63:VAL:O	26:Z:66:GLU:HG2	2.09	0.52
1:A:1069:C:O2'	1:A:1192:C:O2	2.27	0.51
2:B:2516:G:C6	2:B:2517:C:N4	2.78	0.51
2:B:879:G:H1	2:B:899:A:H1'	1.75	0.51
29:CA:51:TYR:HE2	29:CA:56:LYS:HE2	1.75	0.51
1:EB:468:A:O2'	50:CD:82:GLN:N	2.44	0.51
1:EB:1120:G:H2'	1:EB:1121:U:C6	2.45	0.51
1:EB:359:U:H2'	1:EB:360:A:C8	2.45	0.51
2:FB:220:G:O2'	2:FB:233:A:N3	2.36	0.51
2:FB:2785:C:OP1	6:JB:41:LYS:NZ	2.44	0.51
24:X:2:ALA:HB3	4:IA:75:C:O2	2.10	0.51
7:KB:14:PRO:HD2	7:KB:127:GLU:CD	2.31	0.51
1:A:407:G:H4'	38:MA:116:GLN:HA	1.92	0.51
37:PC:88:ARG:HG3	37:PC:99:VAL:HG23	1.91	0.51
2:B:2849:U:P	17:Q:95:ARG:NH1	2.83	0.51
45:TA:34:ASP:OD2	45:TA:38:ASN:HB2	2.09	0.51
18:VB:36:ARG:HD3	18:VB:40:PHE:CZ	2.46	0.51
23:W:5:LEU:HD11	23:W:43:GLU:HB3	1.91	0.51
20:XB:12:ILE:HB	20:XB:42:ARG:HH12	1.75	0.51
1:A:1207:2MG:HM23	1:A:1208:C:H1'	1.92	0.51
1:A:1287:A:H2'	1:A:1288:A:C8	2.45	0.51
1:A:967:5MC:H3'	1:A:968:A:H5''	1.93	0.51
23:AC:72:ARG:HG2	23:AC:89:PHE:HB2	1.92	0.51
2:B:155:C:OP2	2:B:155:C:H3'	2.09	0.51
2:B:2557:G:H2'	2:B:2558:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:BC:54:GLY:C	24:BC:56:ASP:H	2.13	0.51
1:EB:1178:G:OP2	43:VC:97:LYS:HE2	2.11	0.51
7:G:150:GLY:HA2	7:G:172:TRP:CD2	2.45	0.51
55:HD:10:ARG:HH22	55:HD:13:ILE:HD13	1.75	0.51
38:MA:138:TYR:CE2	38:MA:140:VAL:HA	2.43	0.51
14:N:134:ARG:HH11	23:W:122:ARG:NE	2.03	0.51
39:NA:88:LYS:HB3	39:NA:123:LEU:HB2	1.92	0.51
35:NC:186:ARG:HB3	35:NC:312:PHE:HB2	1.92	0.51
36:OC:167:PRO:HG2	36:OC:192:SER:HB2	1.92	0.51
2:B:2875:C:O2'	17:Q:4:GLY:HA3	2.11	0.51
38:QC:125:HIS:ND1	38:QC:152:SER:OG	2.44	0.51
15:SB:33:ARG:HH11	15:SB:33:ARG:HB2	1.75	0.51
44:WC:49:VAL:HB	48:AD:41:ARG:HB2	1.92	0.51
24:X:70:GLN:HG2	24:X:72:ARG:HG3	1.91	0.51
49:XA:8:LYS:HZ3	49:XA:31:LEU:HD11	1.74	0.51
22:ZB:2:ARG:O	22:ZB:4:LYS:N	2.43	0.51
1:A:354:G:N2	1:A:388:G:O2'	2.35	0.51
1:A:620:C:H2'	1:A:621:A:O4'	2.09	0.51
2:B:1291:C:H2'	2:B:1292:U:H6	1.73	0.51
50:CD:32:TYR:HE1	50:CD:35:LYS:HB2	1.76	0.51
5:E:274:ARG:NH1	5:E:274:ARG:HG2	2.25	0.51
2:FB:2438:U:O2'	2:FB:2440:C:OP1	2.26	0.51
37:LA:148:GLY:HA2	37:LA:171:GLY:HA3	1.91	0.51
38:MA:127:THR:HG23	38:MA:147:ALA:HB3	1.91	0.51
4:MC:27:U:H2'	4:MC:28:C:C6	2.45	0.51
2:FB:2094:G:OP1	10:NB:22:LYS:HG3	2.10	0.51
41:PA:69:VAL:O	41:PA:71:PRO:HD3	2.10	0.51
38:QC:8:VAL:HA	38:QC:11:LEU:HD13	1.91	0.51
38:QC:9:CYS:SG	38:QC:21:LEU:O	2.68	0.51
41:TC:70:LYS:HG2	41:TC:96:GLN:HG2	1.93	0.51
41:TC:79:ARG:HD3	41:TC:80:VAL:N	2.26	0.51
47:VA:61:GLU:OE1	47:VA:62:ASN:ND2	2.43	0.51
1:A:1028(A):C:C4	1:A:1028(B):C:H1'	2.45	0.51
1:A:636:U:H2'	1:A:637:G:C8	2.46	0.51
2:B:1271:G:N2	2:B:1617:C:O4'	2.44	0.51
2:B:2210:G:H3'	2:B:2211:G:H8	1.75	0.51
49:BD:76:GLU:HA	49:BD:76:GLU:OE2	2.11	0.51
5:E:143:HIS:ND1	5:E:194:GLY:O	2.41	0.51
1:EB:1135:U:H4'	1:EB:1138:G:C6	2.45	0.51
1:EB:949:A:H1'	1:EB:1364:U:N3	2.25	0.51
2:FB:1796:U:H4'	5:IB:256:GLY:H	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2718:G:O2'	2:FB:2847:U:OP1	2.26	0.51
1:EB:1288:A:H4'	55:HD:13:ILE:HD11	1.92	0.51
9:I:9:ILE:HB	9:I:50:VAL:HG23	1.91	0.51
10:J:118:LYS:NZ	10:J:121:LYS:HE3	2.24	0.51
32:JC:7:HIS:ND1	32:JC:61:LEU:HD13	2.26	0.51
38:MA:57:ARG:HB3	38:MA:206:PHE:HB2	1.93	0.51
10:NB:78:THR:O	10:NB:80:PRO:HD3	2.11	0.51
36:OC:92:TYR:CE2	36:OC:151:GLY:HA3	2.45	0.51
2:FB:250:G:OP2	13:QB:60:MET:HE1	2.10	0.51
14:RB:60:ARG:HH11	14:RB:60:ARG:HG3	1.76	0.51
39:RC:72:GLN:N	39:RC:75:THR:O	2.43	0.51
23:W:72:ARG:HG2	23:W:89:PHE:HB2	1.92	0.51
2:B:1021:A:H8	2:B:1021:A:H3'	1.75	0.51
2:B:1790:C:H5''	2:B:1791:A:OP1	2.10	0.51
2:B:2819:G:C6	2:B:2821:A:C2	2.99	0.51
2:B:440:G:H2'	2:B:441:U:C6	2.45	0.51
25:CC:20:ARG:HB3	25:CC:34:THR:HA	1.93	0.51
50:CD:42:ARG:HB3	50:CD:44:THR:HG23	1.92	0.51
1:EB:1037:C:H2'	1:EB:1038:C:O4'	2.10	0.51
1:EB:1207:2MG:HM23	1:EB:1208:C:H1'	1.93	0.51
1:EB:1453:G:H4'	1:EB:1454:G:OP2	2.09	0.51
1:EB:332:G:OP2	54:GD:10:LEU:HD23	2.10	0.51
35:JA:214:LEU:HD12	35:JA:215:PRO:HD2	1.91	0.51
8:LB:170:ARG:NH1	8:LB:180:PHE:CD2	2.79	0.51
38:MA:21:LEU:O	38:MA:26:CYS:SG	2.68	0.51
9:MB:111:HIS:CD2	9:MB:111:HIS:H	2.28	0.51
40:OA:15:ASP:O	40:OA:19:LEU:N	2.33	0.51
36:OC:115:LEU:HB2	36:OC:145:LEU:HD22	1.93	0.51
36:OC:155:LEU:HD23	36:OC:159:PRO:HD3	1.92	0.51
41:PA:149:ARG:HD3	45:TA:59:TYR:CZ	2.45	0.51
17:UB:74:ARG:NH1	17:UB:76:PHE:HE1	1.99	0.51
42:UC:25:ASP:OD2	42:UC:60:ARG:HG2	2.11	0.51
22:V:88:LYS:HB3	22:V:96:ILE:HG23	1.92	0.51
25:Y:88:LYS:HE2	25:Y:92:LYS:NZ	2.25	0.51
1:A:868:C:H2'	1:A:869:G:O4'	2.11	0.51
2:B:2012:G:OP1	20:T:11:ARG:NH2	2.21	0.51
4:D:63:G:H2'	4:D:64:G:C8	2.45	0.51
1:EB:1062:U:H2'	1:EB:1063:C:C6	2.46	0.51
1:EB:892:A:O2'	1:EB:1415:G:H4'	2.10	0.51
6:F:47:VAL:O	6:F:49:LEU:HD23	2.10	0.51
2:FB:1412:A:N6	2:FB:1590:U:H3	2.06	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2148:G:H2'	2:FB:2149:G:H8	1.74	0.51
2:FB:455:C:H3'	2:FB:456:C:H5''	1.91	0.51
37:LA:88:ARG:HG3	37:LA:99:VAL:HG23	1.92	0.51
38:MA:3:ARG:NH1	38:MA:4:TYR:HB3	2.26	0.51
4:MC:18:G:N2	4:MC:57:A:H62	2.03	0.51
10:NB:118:LYS:NZ	10:NB:121:LYS:HE3	2.25	0.51
11:OB:12:ARG:HD3	11:OB:14:VAL:HG23	1.93	0.51
36:OC:44:LEU:H	36:OC:44:LEU:HD12	1.76	0.51
41:PA:143:ARG:O	41:PA:147:ALA:N	2.36	0.51
17:Q:16:ARG:HD3	17:Q:19:LEU:HD11	1.91	0.51
44:SA:33:GLN:HB3	44:SA:76:ASN:HB3	1.92	0.51
25:Y:91:LYS:O	25:Y:95:LEU:HD22	2.11	0.51
50:YA:13:HIS:O	50:YA:42:ARG:NH2	2.29	0.51
1:A:1109:C:H2'	1:A:1110:A:O4'	2.10	0.51
1:A:1378:C:OP1	41:PA:7:ALA:N	2.31	0.51
1:A:224:C:H2'	1:A:225:C:C6	2.46	0.51
2:B:2649:U:H2'	2:B:2650:U:H6	1.76	0.51
2:B:2854:G:H2'	2:B:2855:C:C6	2.45	0.51
2:B:557:U:H2'	2:B:558:G:H8	1.75	0.51
2:B:748:G:C6	20:T:90:ARG:NH1	2.77	0.51
24:BC:54:GLY:O	24:BC:56:ASP:N	2.37	0.51
5:E:275:LYS:HG2	5:E:276:LYS:H	1.75	0.51
1:EB:1003:G:O2'	1:EB:1039:C:N3	2.42	0.51
1:EB:1330:U:O4	1:EB:1331:G:N1	2.43	0.51
1:EB:261:U:H5''	1:EB:262:A:OP2	2.11	0.51
1:EB:700:G:H4'	1:EB:704:A:H1'	1.92	0.51
1:EB:828:A:H4'	1:EB:828:A:OP1	2.11	0.51
2:FB:1446:C:H2'	2:FB:1447:G:H8	1.76	0.51
2:FB:1964:G:O2'	2:FB:1967:C:OP2	2.21	0.51
2:FB:596:G:H2'	2:FB:597:U:O4'	2.11	0.51
2:FB:646:A:H2'	2:FB:647:G:O4'	2.10	0.51
7:G:169:ASN:ND2	7:G:169:ASN:O	2.27	0.51
3:GB:44:G:OP1	28:FC:1:MET:N	2.39	0.51
4:IA:18:G:H1'	4:IA:58:A:C2	2.46	0.51
12:L:114:ILE:O	12:L:118:ALA:N	2.44	0.51
8:LB:37:VAL:HG22	8:LB:159:VAL:HG12	1.92	0.51
1:A:438:G:OP1	38:MA:125:HIS:HE1	1.93	0.51
40:OA:33:TYR:CE1	40:OA:74:ASP:HB3	2.44	0.51
38:QC:138:TYR:CE2	38:QC:140:VAL:HA	2.46	0.51
38:QC:141:ARG:HB3	38:QC:141:ARG:NH1	2.25	0.51
18:R:90:VAL:HG11	18:R:95:LEU:HD13	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:WC:33:GLN:HB3	44:WC:76:ASN:HB3	1.92	0.51
20:XB:31:GLU:O	20:XB:35:ILE:HG13	2.11	0.51
51:ZA:57:VAL:HG12	51:ZA:76:LEU:HA	1.92	0.51
1:A:599:C:H2'	1:A:600:C:C6	2.45	0.51
52:AB:59:SER:HB3	52:AB:62:GLU:HB2	1.92	0.51
2:B:1539:G:H2'	2:B:1540:G:C8	2.46	0.51
2:B:288:C:H2'	2:B:289:A:C8	2.45	0.51
2:B:280:C:N3	2:B:361:G:N2	2.59	0.51
2:B:940:G:H2'	2:B:941:A:O4'	2.10	0.51
1:A:1453:G:H1'	54:CB:39:LYS:NZ	2.26	0.51
4:D:48:C:C6	4:D:59:A:H5'	2.46	0.51
1:EB:599:C:H4'	42:UC:130:GLY:HA3	1.92	0.51
1:EB:948:C:H42	1:EB:1233:G:H1	1.59	0.51
2:FB:1984:G:C6	2:FB:1985:G:N7	2.79	0.51
2:FB:270(N):U:H4'	2:FB:270(O):G:H5'	1.93	0.51
9:I:3:ARG:CZ	9:I:4:ILE:H	2.24	0.51
6:JB:67:PHE:CD2	6:JB:74:PRO:HA	2.46	0.51
8:LB:8:LYS:NZ	8:LB:9:ARG:HG3	2.26	0.51
10:NB:69:LYS:HG3	10:NB:138:ILE:HG23	1.93	0.51
10:NB:4:ILE:HG23	10:NB:18:VAL:HB	1.93	0.51
17:UB:62:THR:HG23	17:UB:75:ILE:HG12	1.93	0.51
20:XB:11:ARG:NH1	20:XB:99:ARG:O	2.43	0.51
1:A:1034:G:H2'	1:A:1035:A:H8	1.76	0.51
1:A:375:U:H3	1:A:389:A:H61	1.58	0.51
1:A:558:G:C8	1:A:559:A:H2'	2.45	0.51
49:BD:48:LYS:O	49:BD:50:HIS:N	2.44	0.51
29:CA:51:TYR:CE2	29:CA:56:LYS:HE2	2.46	0.51
31:EA:29:LYS:HZ3	31:EA:29:LYS:HB3	1.76	0.51
1:EB:1002:G:H2'	1:EB:1003:G:O4'	2.10	0.51
1:EB:230:G:H2'	1:EB:231:G:O4'	2.10	0.51
1:EB:969:A:OP1	44:WC:55:LYS:NZ	2.41	0.51
2:FB:1021:A:H62	2:FB:1141:U:H3	1.58	0.51
2:FB:2006:C:O2'	2:FB:2823:A:N3	2.43	0.51
8:H:170:ARG:NH1	8:H:180:PHE:CD2	2.79	0.51
5:IB:218:ARG:CG	5:IB:218:ARG:HH11	2.21	0.51
1:A:1190:G:H3'	37:LA:3:ASN:HD22	1.76	0.51
38:MA:28:SER:O	38:MA:30:LYS:N	2.43	0.51
40:OA:46:ARG:HB2	40:OA:60:PHE:CE1	2.46	0.51
36:OC:29:ALA:HA	36:OC:32:ILE:HB	1.93	0.51
36:OC:68:ILE:O	36:OC:90:MET:HB3	2.10	0.51
12:PB:114:ILE:O	12:PB:118:ALA:N	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:QB:31:ALA:O	13:QB:33:ARG:N	2.44	0.51
2:FB:568:U:OP1	13:QB:36:LYS:NZ	2.44	0.51
38:QC:119:GLN:O	38:QC:123:HIS:ND1	2.29	0.51
39:RC:79:GLU:HB3	39:RC:92:LYS:HA	1.93	0.51
45:TA:73:MET:HG3	45:TA:103:LEU:HD21	1.92	0.51
41:TC:120:ILE:HG22	41:TC:124:LEU:HD12	1.93	0.51
42:UC:38:ILE:O	42:UC:42:GLU:HB2	2.11	0.51
47:VA:48:LEU:HD23	47:VA:53:VAL:HG22	1.93	0.51
1:A:501:C:H2'	1:A:502:G:C8	2.45	0.51
1:A:501:C:H2'	1:A:502:G:H8	1.76	0.51
2:B:140:A:H8	2:B:1408:C:O2'	1.92	0.51
2:B:2159:G:H2'	2:B:2160:G:C8	2.46	0.51
2:B:500:G:N2	2:B:502:A:H3'	2.26	0.51
49:BD:33:THR:HG23	49:BD:63:ARG:HH11	1.77	0.51
1:EB:1109:C:H2'	1:EB:1110:A:O4'	2.11	0.51
1:EB:959:A:H1'	1:EB:985:C:H4'	1.91	0.51
6:F:134:ILE:O	6:F:136:ARG:N	2.44	0.51
2:FB:1523:U:H2'	2:FB:1524:G:C8	2.46	0.51
2:FB:2133:G:H1'	2:FB:2158:A:N6	2.26	0.51
2:FB:2660:A:N7	9:MB:175:LYS:NZ	2.55	0.51
2:FB:2865:U:C4	2:FB:2866:U:C4	2.98	0.51
2:FB:955:C:OP1	14:RB:87:LYS:NZ	2.41	0.51
9:I:3:ARG:HG2	9:I:6:ARG:HB3	1.93	0.51
9:I:40:GLU:HB2	9:I:60:ARG:HH22	1.76	0.51
36:KA:95:GLN:HB2	36:KA:148:TYR:HA	1.92	0.51
2:FB:2314:C:H5''	8:LB:36:LYS:NZ	2.25	0.51
40:OA:22:GLU:O	40:OA:25:ILE:HG12	2.11	0.51
40:OA:69:GLU:O	40:OA:72:VAL:HG12	2.11	0.51
36:OC:160:ASP:HA	36:OC:182:ILE:HD12	1.92	0.51
41:PA:57:GLU:OE2	41:PA:59:LEU:HD23	2.11	0.51
39:RC:52:PRO:HA	39:RC:55:VAL:HB	1.93	0.51
45:TA:16:SER:OG	45:TA:106:LYS:NZ	2.44	0.51
52:AB:34:TYR:HA	52:AB:40:LEU:HD11	1.93	0.50
2:B:1386:C:H2'	2:B:1387:C:C6	2.46	0.50
2:B:1786:A:H1'	2:B:1938:A:N6	2.26	0.50
2:B:1991:U:H2'	2:B:1992:G:H5''	1.93	0.50
2:B:268:C:N3	2:B:424:G:N2	2.50	0.50
2:B:268:C:N4	2:B:424:G:H1	2.10	0.50
2:B:630:G:H5''	32:FA:47:LYS:HZ1	1.76	0.50
1:EB:1163:C:H42	1:EB:1173:G:H1	1.59	0.50
1:EB:636:U:H2'	1:EB:637:G:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:757:U:H2'	1:EB:758:G:O4'	2.11	0.50
1:EB:825:G:H1	1:EB:875:C:H42	1.58	0.50
2:FB:523:C:H4'	2:FB:541:C:O2	2.11	0.50
2:FB:557:U:H2'	2:FB:558:G:H8	1.76	0.50
53:FD:3:ARG:NH2	53:FD:8:GLY:O	2.40	0.50
3:GB:78:A:C2	3:GB:99:A:C4	2.98	0.50
30:HC:9:LEU:HD13	30:HC:25:LYS:HD3	1.92	0.50
6:JB:92:THR:HG23	6:JB:95:ILE:HG23	1.91	0.50
7:KB:95:ARG:NH1	7:KB:97:TYR:OH	2.44	0.50
8:LB:150:ASP:OD2	8:LB:150:ASP:N	2.45	0.50
38:MA:18:LYS:HG3	38:MA:20:TYR:N	2.26	0.50
38:MA:18:LYS:HD3	38:MA:31:CYS:SG	2.52	0.50
9:MB:3:ARG:HG2	9:MB:6:ARG:HB3	1.92	0.50
15:O:33:ARG:HH11	15:O:33:ARG:HB2	1.77	0.50
18:R:17:ILE:HG13	18:R:32:PHE:HE1	1.76	0.50
19:S:8:GLY:O	19:S:10:LYS:N	2.39	0.50
45:TA:12:ARG:HH11	45:TA:12:ARG:CB	2.23	0.50
41:TC:146:GLU:O	41:TC:148:ASN:N	2.37	0.50
22:V:14:LEU:HD22	22:V:82:PRO:HB3	1.91	0.50
1:A:468:A:OP1	50:YA:75:ARG:NH2	2.36	0.50
1:A:749:C:O2'	1:A:750:G:H5'	2.12	0.50
48:AD:9:LYS:HB3	48:AD:9:LYS:HZ3	1.73	0.50
2:B:1051:G:C2	2:B:1052:C:H1'	2.46	0.50
2:B:11:G:H8	2:B:11:G:O5'	1.94	0.50
2:B:1465:G:H2'	2:B:1466:G:O4'	2.11	0.50
2:B:2795:G:HO2'	2:B:2799:A:N6	2.07	0.50
2:B:302:C:H2'	2:B:303:U:C6	2.46	0.50
2:B:861:A:H2'	2:B:862:G:O4'	2.11	0.50
1:EB:589:C:H42	1:EB:650:G:H1	1.59	0.50
2:FB:1063:G:H22	2:FB:1088:A:H61	1.58	0.50
2:FB:184:C:H2'	2:FB:185:U:C6	2.46	0.50
2:FB:2649:U:H2'	2:FB:2650:U:H6	1.76	0.50
2:FB:847:U:OP2	2:FB:929:G:O6	2.29	0.50
28:FC:57:GLU:OE2	28:FC:58:ARG:HG2	2.10	0.50
53:FD:30:LEU:HD13	53:FD:48:THR:HG22	1.92	0.50
2:B:2314:C:H5''	8:H:36:LYS:NZ	2.27	0.50
4:HB:63:G:H2'	4:HB:64:G:C8	2.46	0.50
2:B:2531:A:H5'	9:I:157:TYR:CZ	2.46	0.50
5:IB:63:ARG:NH1	5:IB:63:ARG:HG3	2.05	0.50
35:JA:321:ARG:NH1	35:JA:344:ILE:HD13	2.26	0.50
36:KA:68:ILE:O	36:KA:90:MET:HB3	2.10	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:KA:92:TYR:CE2	36:KA:151:GLY:HA3	2.47	0.50
40:OA:50:TYR:OH	52:AB:75:ILE:O	2.28	0.50
41:PA:50:ILE:HD12	41:PA:58:PRO:HB3	1.93	0.50
17:Q:9:LEU:O	17:Q:12:SER:OG	2.27	0.50
44:SA:23:ILE:HD12	44:SA:26:ALA:HB3	1.93	0.50
41:TC:69:VAL:O	41:TC:71:PRO:HD3	2.10	0.50
45:XC:67:ASP:OD2	45:XC:71:LYS:HE3	2.10	0.50
46:YC:102:ARG:HB3	46:YC:109:GLY:HA2	1.93	0.50
1:A:323:U:O3'	54:CB:22:ARG:HD3	2.12	0.50
1:A:709:G:H2'	1:A:710:G:H8	1.76	0.50
2:B:1067:A:H5'	2:B:1095:A:H61	1.76	0.50
2:B:2143:C:H1'	2:B:2149:G:N2	2.26	0.50
2:B:2531:A:C6	2:B:2532:G:C5	3.00	0.50
2:B:2660:A:H2'	2:B:2661:G:O4'	2.11	0.50
2:B:1637:A:H4'	2:B:2711:A:O2'	2.12	0.50
2:B:665:C:H2'	2:B:666:G:H8	1.74	0.50
2:B:664:C:H2'	2:B:665:C:H6	1.75	0.50
24:BC:31:VAL:HG11	24:BC:67:VAL:HG23	1.93	0.50
25:CC:19:GLN:OE1	25:CC:19:GLN:HA	2.05	0.50
30:DA:17:LYS:NZ	30:DA:50:ARG:NH2	2.60	0.50
51:DD:56:VAL:HB	51:DD:78:GLU:HB2	1.92	0.50
1:EB:1006:C:N3	1:EB:1007:C:N4	2.60	0.50
1:EB:1018:C:H2'	1:EB:1019:C:O4'	2.11	0.50
40:SC:100:ASN:N	52:ED:23:LYS:HZ1	2.09	0.50
2:FB:1357:U:H2'	2:FB:1358:G:O4'	2.11	0.50
2:FB:1585:C:H4'	2:FB:1586:A:OP2	2.12	0.50
2:FB:1787:A:H2'	2:FB:1787:A:N3	2.26	0.50
2:FB:663:G:C6	2:FB:664:C:C4	3.00	0.50
53:FD:15:LEU:O	53:FD:17:GLU:N	2.44	0.50
53:FD:41:VAL:HG22	53:FD:42:PRO:HD2	1.92	0.50
54:GD:46:GLU:HB3	54:GD:48:LYS:HZ2	1.77	0.50
8:H:124:SER:HB2	8:H:131:TYR:CE1	2.45	0.50
4:HB:70:G:H2'	4:HB:71:C:C6	2.45	0.50
9:I:45:VAL:HG13	9:I:50:VAL:HG12	1.93	0.50
12:L:36:GLY:HA3	12:L:109:LYS:HE3	1.93	0.50
4:MC:18:G:H1'	4:MC:58:A:C2	2.46	0.50
16:P:56:LEU:HB3	16:P:58:LEU:HG	1.93	0.50
17:Q:74:ARG:NH1	17:Q:76:PHE:HE1	1.99	0.50
43:RA:46:ALA:HB2	43:RA:74:ILE:HG23	1.93	0.50
17:UB:91:ARG:HH12	17:UB:120:ARG:HH12	1.58	0.50
39:RC:78:HIS:ND1	42:UC:104:ARG:HD2	2.26	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:875:G:H4'	23:W:170:THR:HG21	1.93	0.50
1:A:1005:A:N7	1:A:1006:C:O2'	2.42	0.50
1:A:1003:G:O2'	1:A:1039:C:N3	2.42	0.50
2:B:1823:G:OP1	5:E:54:ARG:NH1	2.44	0.50
2:B:2133:G:H1'	2:B:2158:A:N6	2.26	0.50
2:B:244:A:C2	2:B:255:A:C4	3.00	0.50
2:B:523:C:H4'	2:B:541:C:O2	2.11	0.50
1:EB:114:U:H2'	1:EB:115:G:C8	2.46	0.50
2:FB:1323:U:OP1	20:XB:98:LYS:NZ	2.43	0.50
2:FB:1786:A:H1'	2:FB:1938:A:N6	2.27	0.50
2:FB:195:A:H61	2:FB:198:C:H3'	1.75	0.50
2:FB:2109:U:H1'	2:FB:2181:G:H22	1.76	0.50
29:GC:45:VAL:HG22	29:GC:52:TYR:HB2	1.93	0.50
54:GD:34:LYS:O	54:GD:36:LEU:N	2.39	0.50
8:H:37:VAL:HG22	8:H:159:VAL:HG12	1.94	0.50
11:K:17:ASP:OD1	11:K:18:ALA:N	2.37	0.50
7:KB:179:GLU:OE1	7:KB:179:GLU:N	2.33	0.50
7:KB:40:GLN:OE1	7:KB:182:ASN:HB2	2.11	0.50
38:MA:8:VAL:HA	38:MA:11:LEU:HD13	1.93	0.50
35:NC:114:GLU:HB3	35:NC:204:ALA:O	2.11	0.50
36:OC:210:SER:O	36:OC:214:ILE:HG22	2.11	0.50
38:QC:18:LYS:HG3	38:QC:20:TYR:H	1.76	0.50
1:A:1125:U:C5	44:SA:38:ILE:HG21	2.47	0.50
16:TB:56:LEU:HB3	16:TB:58:LEU:HG	1.93	0.50
16:TB:11:LYS:HG2	16:TB:91:PRO:HD3	1.93	0.50
46:UA:53:ARG:NH1	46:UA:92:OTD:OD1	2.45	0.50
22:V:9:LYS:HD2	22:V:29:GLU:HB2	1.94	0.50
22:ZB:101:LYS:HD2	22:ZB:101:LYS:H	1.75	0.50
1:A:1163:C:H42	1:A:1173:G:H1	1.60	0.50
1:A:589:C:H42	1:A:650:G:H1	1.60	0.50
1:A:940:C:H2'	1:A:941:G:H8	1.77	0.50
2:B:1072:C:N4	2:B:1092:C:H41	2.09	0.50
2:B:2364:C:H2'	2:B:2365:G:O4'	2.12	0.50
2:B:2376:A:N3	16:P:106:ARG:NH2	2.56	0.50
2:B:265:A:H1'	2:B:266:G:O4'	2.12	0.50
2:B:312:G:H4'	2:B:331:A:C2	2.46	0.50
24:BC:49:LYS:HG3	24:BC:80:HIS:ND1	2.26	0.50
50:CD:3:LYS:HG3	50:CD:24:ALA:HB2	1.94	0.50
1:EB:1120:G:H2'	1:EB:1121:U:H6	1.75	0.50
1:EB:1516:G:N1	1:EB:1519:MA6:OP2	2.44	0.50
1:EB:957:U:H2'	1:EB:959:A:OP2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:67:PHE:CD2	6:F:74:PRO:HA	2.46	0.50
2:FB:2143:C:H1'	2:FB:2149:G:N2	2.26	0.50
2:FB:2854:G:H2'	2:FB:2855:C:C6	2.46	0.50
2:FB:586:A:N1	2:FB:809:G:O2'	2.39	0.50
4:IA:58:A:N6	4:IA:61:C:O2	2.45	0.50
34:HA:19:U:N3	35:JA:120:GLY:O	2.40	0.50
7:KB:160:ASN:ND2	7:KB:163:VAL:HG23	2.27	0.50
2:FB:2751:G:OP2	9:MB:2:SER:HB3	2.11	0.50
2:B:994:C:O2	19:S:10:LYS:HE3	2.11	0.50
15:SB:57:ARG:HD2	15:SB:59:ASP:OD1	2.11	0.50
17:UB:48:ILE:HD12	17:UB:48:ILE:H	1.76	0.50
25:Y:86:SER:HB3	25:Y:89:GLU:CG	2.42	0.50
51:ZA:10:VAL:HG13	51:ZA:19:VAL:HG13	1.92	0.50
1:A:1000:A:H62	1:A:1003:G:H21	1.60	0.50
1:A:177:C:H2'	1:A:178:C:H6	1.77	0.50
1:A:230:G:H2'	1:A:231:G:O4'	2.11	0.50
1:A:584:G:H2'	1:A:585:G:C8	2.46	0.50
1:A:825:G:H1	1:A:875:C:H42	1.59	0.50
2:B:1345:C:OP2	2:B:1346:G:OP2	2.28	0.50
2:B:195:A:H61	2:B:198:C:H3'	1.76	0.50
2:B:2168:G:O2'	2:B:2170:A:N7	2.45	0.50
2:B:503:A:H4'	2:B:504:U:H5''	1.93	0.50
2:B:72:U:N3	26:Z:62:THR:HG23	2.27	0.50
2:FB:1177:A:H3'	2:FB:1178:C:C6	2.47	0.50
2:FB:2091:U:H1'	25:CC:47:GLN:HG3	1.94	0.50
2:FB:2262:U:P	24:BC:19:LYS:HZ3	2.35	0.50
7:G:182:ASN:O	7:G:186:ILE:HG13	2.11	0.50
4:HB:13:C:H1'	4:HB:23:C:H42	1.77	0.50
55:HD:18:TYR:CG	55:HD:24:ARG:HD3	2.45	0.50
2:FB:1971:A:N3	5:IB:241:PRO:HD3	2.26	0.50
36:KA:115:LEU:HB2	36:KA:145:LEU:HD22	1.94	0.50
36:KA:178:ARG:HB3	42:QA:72:PRO:HA	1.94	0.50
37:LA:114:PRO:O	37:LA:118:GLN:NE2	2.34	0.50
4:MC:62:C:H2'	4:MC:63:G:H8	1.73	0.50
41:PA:69:VAL:HG13	41:PA:135:VAL:HA	1.93	0.50
20:T:17:VAL:HG13	20:T:76:VAL:HG21	1.92	0.50
45:TA:62:GLN:O	45:TA:66:LEU:HG	2.11	0.50
47:VA:15:VAL:HB	47:VA:41:PRO:HA	1.94	0.50
18:VB:28:ARG:NH1	18:VB:38:THR:OG1	2.40	0.50
44:WC:26:ALA:HA	44:WC:29:ARG:CZ	2.42	0.50
49:XA:4:THR:OG1	49:XA:6:GLU:HG2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:88:ARG:NH2	49:XA:88:ARG:HB3	2.26	0.50
20:XB:29:LEU:HG	20:XB:33:ARG:HE	1.77	0.50
25:Y:20:ARG:HB2	25:Y:33:LYS:O	2.10	0.50
26:Z:35:LEU:HD12	26:Z:53:LEU:HD12	1.92	0.50
47:ZC:9:ILE:HG22	47:ZC:22:ILE:HD11	1.94	0.50
47:ZC:39:ILE:HG13	47:ZC:56:LEU:HD13	1.94	0.50
1:A:948:C:H42	1:A:1233:G:H1	1.59	0.50
2:B:574:C:C4	2:B:2033:A:H5''	2.47	0.50
54:CB:11:SER:O	54:CB:11:SER:OG	2.28	0.50
1:EB:1218:C:H2'	1:EB:1219:U:C6	2.47	0.50
1:EB:1227:A:OP1	53:FD:80:TYR:OH	2.25	0.50
2:FB:2099:U:H2'	2:FB:2100:G:C8	2.47	0.50
2:FB:2693:A:H2'	2:FB:2694:G:C8	2.46	0.50
6:JB:59:VAL:HG21	6:JB:74:PRO:HB3	1.94	0.50
36:OC:149:LEU:HD12	36:OC:152:PHE:HB3	1.94	0.50
16:P:11:LYS:HG2	16:P:91:PRO:HD3	1.93	0.50
38:QC:63:LYS:O	38:QC:67:ILE:HG13	2.12	0.50
22:V:101:LYS:HD2	22:V:101:LYS:N	2.27	0.50
18:VB:90:VAL:HG11	18:VB:95:LEU:HD13	1.94	0.50
22:ZB:98:VAL:HB	22:ZB:103:GLY:O	2.11	0.50
1:A:114:U:H2'	1:A:115:G:C8	2.46	0.50
2:B:1317:A:H5''	2:B:1318:C:OP2	2.11	0.50
2:B:1523:U:H2'	2:B:1524:G:C8	2.46	0.50
2:B:240:G:O2'	2:B:257:A:N6	2.39	0.50
2:B:27:G:N2	2:B:512:G:H1'	2.27	0.50
2:B:557:U:H2'	2:B:558:G:C8	2.47	0.50
2:B:630:G:H5''	32:FA:47:LYS:NZ	2.26	0.50
2:B:663:G:C6	2:B:664:C:C4	3.00	0.50
2:B:67:U:H2'	2:B:68:G:H8	1.75	0.50
26:DC:20:GLU:HA	26:DC:23:LYS:HE2	1.93	0.50
1:EB:1437:C:H2'	1:EB:1438:G:H8	1.77	0.50
1:EB:685:G:N1	1:EB:704:A:OP2	2.37	0.50
8:H:132:ASN:N	8:H:132:ASN:OD1	2.45	0.50
4:IA:49:G:N2	4:IA:65:C:H42	2.08	0.50
2:FB:692:C:OP1	5:IB:56:GLY:N	2.45	0.50
10:J:122:GLU:O	10:J:126:TYR:OH	2.28	0.50
35:JA:204:ALA:HB2	35:JA:298:LEU:HD12	1.94	0.50
35:JA:119:THR:OG1	35:JA:302:ASP:HB2	2.12	0.50
8:LB:76:SER:OG	8:LB:84:LYS:HG3	2.11	0.50
35:NC:145:ARG:HB3	35:NC:167:SER:HB2	1.94	0.50
42:QA:38:ILE:O	42:QA:42:GLU:HB2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:QC:129:ASN:N	38:QC:145:GLU:O	2.40	0.50
20:T:9:TYR:H	20:T:102:HIS:CD2	2.30	0.50
17:UB:105:LEU:HD22	17:UB:106:SER:H	1.77	0.50
19:WB:43:GLU:H	19:WB:43:GLU:CD	2.14	0.50
20:XB:17:VAL:HG13	20:XB:76:VAL:HG21	1.94	0.50
1:A:332:G:OP2	54:CB:10:LEU:HD23	2.11	0.50
52:AB:65:ILE:O	52:AB:69:THR:HG23	2.12	0.50
45:TA:108:ILE:HD12	52:AB:87:ARG:HH11	1.77	0.50
2:B:1065:U:O2'	2:B:1069:A:N6	2.45	0.50
2:B:1406:U:H2'	2:B:1407:C:H6	1.76	0.50
2:B:1464:C:H1'	2:B:1529:A:H1'	1.93	0.50
2:B:2751:G:OP2	9:I:2:SER:HB3	2.11	0.50
2:B:619:G:H5''	2:B:620:G:OP2	2.11	0.50
53:BB:41:VAL:HG22	53:BB:42:PRO:HD2	1.94	0.50
31:EA:19:ARG:CG	31:EA:19:ARG:NH1	2.63	0.50
1:EB:1465:C:H2'	1:EB:1466:C:O4'	2.12	0.50
1:EB:299:G:H2'	1:EB:300:A:C8	2.47	0.50
2:FB:1048:A:N1	2:FB:1112:G:O2'	2.32	0.50
2:FB:1465:G:H2'	2:FB:1466:G:O4'	2.11	0.50
2:FB:1923:U:H2'	2:FB:1924:C:C6	2.46	0.50
2:FB:336:C:O2'	22:ZB:35:TYR:OH	2.30	0.50
2:FB:547:A:C5	2:FB:548:A:C6	3.00	0.50
2:FB:797:C:OP2	7:KB:62:ARG:HG3	2.12	0.50
2:FB:979:G:H2'	2:FB:982:C:N4	2.27	0.50
28:FC:67:TYR:CE1	53:FD:41:VAL:HG21	2.47	0.50
33:GA:24:TYR:HD2	33:GA:24:TYR:H	1.59	0.50
2:FB:2228:G:P	5:IB:261:LYS:HZ3	2.35	0.50
10:J:84:GLY:N	10:J:88:ILE:HG23	2.26	0.50
37:LA:108:ASN:HB3	37:LA:111:LEU:HD12	1.94	0.50
37:LA:22:TRP:HZ3	37:LA:24:ALA:HB2	1.76	0.50
2:B:670:A:H5'	13:M:43:GLY:HA2	1.94	0.50
16:P:15:ARG:NE	16:P:25:ARG:HH21	2.10	0.50
2:FB:907:U:O2'	14:RB:101:ARG:NH2	2.44	0.50
49:XA:48:LYS:O	49:XA:50:HIS:N	2.44	0.50
47:ZC:15:VAL:HB	47:ZC:41:PRO:HA	1.94	0.50
1:A:1511:G:H2'	1:A:1512:U:O4'	2.12	0.49
2:B:1027:A:N6	2:B:1126:A:C4	2.80	0.49
2:B:1149:G:H2'	2:B:1150:C:C6	2.47	0.49
2:B:664:C:H2'	2:B:665:C:C6	2.47	0.49
30:DA:12:GLU:HA	30:DA:19:ARG:HG3	1.94	0.49
55:DB:5:ASP:OD2	55:DB:8:THR:HG23	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:DD:10:VAL:HG13	51:DD:19:VAL:HG13	1.93	0.49
5:E:142:VAL:HG12	5:E:163:ALA:O	2.11	0.49
2:FB:1411:C:H5''	2:FB:1412:A:OP2	2.12	0.49
2:FB:2168:G:O2'	2:FB:2170:A:N7	2.45	0.49
2:FB:301:G:H4'	2:FB:302:C:OP1	2.12	0.49
2:FB:307:G:H21	2:FB:330:A:H62	1.60	0.49
8:H:16:ARG:O	8:H:20:ILE:HG13	2.12	0.49
2:FB:1657:C:H4'	6:JB:133:LYS:HB3	1.93	0.49
37:LA:109:PRO:C	37:LA:111:LEU:H	2.15	0.49
8:LB:77:ILE:H	8:LB:82:LEU:HB2	1.76	0.49
38:MA:177:ASP:HB3	38:MA:182:LYS:HG3	1.94	0.49
9:MB:9:ILE:HB	9:MB:50:VAL:HG23	1.93	0.49
40:OA:100:ASN:N	52:AB:23:LYS:NZ	2.60	0.49
36:OC:33:TYR:CG	36:OC:43:ASP:OD2	2.65	0.49
36:OC:74:LYS:NZ	36:OC:76:GLN:HB2	2.26	0.49
12:PB:13:ASN:HD21	12:PB:97:ARG:HB2	1.77	0.49
38:QC:3:ARG:NH1	38:QC:4:TYR:HB3	2.27	0.49
38:QC:92:VAL:O	38:QC:95:GLY:N	2.45	0.49
44:SA:35:SER:HB3	44:SA:73:ASP:OD2	2.11	0.49
43:VC:79:LEU:CD1	43:VC:83:ARG:HH12	2.24	0.49
51:ZA:9:VAL:HG13	51:ZA:56:VAL:HG22	1.94	0.49
1:A:353:A:H5'	1:A:353:A:H8	1.77	0.49
1:A:597:G:H5''	1:A:598:U:OP2	2.12	0.49
2:B:1045:A:N3	2:B:1047:G:N2	2.60	0.49
2:B:1357:U:H2'	2:B:1358:G:O4'	2.12	0.49
2:B:176:G:O2'	2:B:177:G:H5'	2.12	0.49
2:B:2749:A:H2'	9:I:59:ARG:HH21	1.75	0.49
2:B:280:C:C2	2:B:361:G:N2	2.80	0.49
2:B:547:A:C5	2:B:548:A:C6	2.99	0.49
2:B:58:G:C6	2:B:59:U:C4	3.00	0.49
2:B:974(B):C:H4'	2:B:974(B):C:OP2	2.12	0.49
5:E:218:ARG:CG	5:E:218:ARG:NH1	2.71	0.49
5:E:275:LYS:HE2	5:E:276:LYS:HB2	1.95	0.49
1:EB:1347:G:O2'	1:EB:1373:G:O6	2.22	0.49
2:FB:1045:A:H5''	2:FB:1111:A:H61	1.77	0.49
2:FB:1688:U:H2'	2:FB:1698:A:N6	2.27	0.49
2:FB:2029:G:H2'	2:FB:2031:A:OP1	2.12	0.49
2:FB:2364:C:H2'	2:FB:2365:G:O4'	2.12	0.49
2:FB:270(J):G:H1	2:FB:270(R):C:H42	1.59	0.49
2:FB:663:G:C5	2:FB:664:C:C4	3.00	0.49
54:GD:9:ASN:O	54:GD:10:LEU:HD13	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1054:C:N4	34:HA:22:A:H61	2.08	0.49
10:J:78:THR:O	10:J:80:PRO:HD3	2.12	0.49
8:LB:38:VAL:HG23	8:LB:158:ALA:HB3	1.94	0.49
10:NB:122:GLU:O	10:NB:126:TYR:OH	2.25	0.49
36:OC:28:PHE:CD2	36:OC:190:THR:HA	2.47	0.49
36:OC:13:ALA:HB1	36:OC:44:LEU:HD22	1.93	0.49
41:PA:60:LYS:HA	41:PA:63:LYS:HD2	1.94	0.49
41:PA:79:ARG:HD3	41:PA:80:VAL:N	2.27	0.49
12:L:119:PRO:HB2	17:Q:68:TYR:CD2	2.47	0.49
41:TC:57:GLU:OE2	41:TC:59:LEU:HD23	2.12	0.49
46:UA:52:LEU:HD22	46:UA:52:LEU:H	1.76	0.49
1:A:1226:C:H5''	47:VA:103:THR:HG21	1.95	0.49
48:WA:9:LYS:HG2	48:WA:12:ARG:HH21	1.77	0.49
24:X:23:VAL:HA	24:X:38:VAL:HG22	1.93	0.49
1:A:1037:C:H2'	1:A:1038:C:O4'	2.12	0.49
1:A:1137:C:H5'	1:A:1138:G:N3	2.27	0.49
1:A:61:G:H1	1:A:106:C:N4	2.08	0.49
1:A:678:U:H2'	1:A:679:C:C6	2.47	0.49
2:B:1021:A:C8	2:B:1021:A:H3'	2.47	0.49
2:B:1688:U:O2	2:B:1700:A:H5'	2.12	0.49
2:B:794:G:H2'	2:B:795:C:C6	2.46	0.49
2:B:886:C:H2'	2:B:887:A:O4'	2.11	0.49
54:CB:43:LEU:O	54:CB:47:GLY:N	2.44	0.49
5:E:10:THR:HB	5:E:11:PRO:HD2	1.94	0.49
1:EB:1373:G:H8	1:EB:1373:G:O5'	1.94	0.49
6:F:38:THR:OG1	6:F:41:LYS:N	2.33	0.49
6:F:92:THR:HG23	6:F:95:ILE:HG23	1.93	0.49
2:FB:1345:C:OP2	2:FB:1346:G:OP2	2.30	0.49
2:FB:1490:A:H4'	2:FB:1491:G:OP2	2.12	0.49
2:FB:1539:G:H2'	2:FB:1540:G:C8	2.47	0.49
2:FB:2129:C:H2'	2:FB:2130:U:H5'	1.94	0.49
2:FB:274:G:OP2	2:FB:274:G:H8	1.96	0.49
8:H:23:PHE:CZ	8:H:168:GLU:HA	2.47	0.49
36:KA:114:ARG:HH12	36:KA:118:LEU:HD22	1.77	0.49
39:NA:9:LYS:HB3	39:NA:33:VAL:HG13	1.93	0.49
35:NC:139:ALA:HA	35:NC:144:TRP:HE3	1.78	0.49
37:PC:142:MET:SD	37:PC:146:ALA:HB3	2.52	0.49
43:RA:99:LEU:HB3	43:RA:101:PHE:CE2	2.47	0.49
47:VA:54:VAL:HA	47:VA:57:ARG:NH1	2.26	0.49
47:VA:39:ILE:HG13	47:VA:56:LEU:HD13	1.94	0.49
43:VC:118:LYS:HZ3	43:VC:118:LYS:HB3	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:WC:51:ARG:HA	48:AD:45:ARG:HE	1.77	0.49
49:XA:76:GLU:HA	49:XA:76:GLU:OE2	2.12	0.49
1:A:859:A:H2'	1:A:860:A:O4'	2.11	0.49
2:B:1434:A:H61	2:B:1558:A:N6	2.06	0.49
2:B:17:G:H2'	2:B:18:C:C6	2.47	0.49
2:B:1966:A:H4'	2:B:1967:C:OP1	2.11	0.49
2:B:2400:G:OP2	2:B:2400:G:H8	1.96	0.49
26:DC:47:ASN:H	26:DC:47:ASN:ND2	2.09	0.49
1:EB:1034:G:H2'	1:EB:1035:A:C8	2.46	0.49
1:EB:1129:C:O2'	1:EB:1139:G:N7	2.41	0.49
1:EB:1069:C:O2'	1:EB:1192:C:O2	2.29	0.49
1:EB:1473:A:H2'	1:EB:1474:G:C8	2.47	0.49
1:EB:189:U:H3	51:DD:72:ARG:HH12	1.59	0.49
1:EB:487:A:H5''	1:EB:488:C:OP2	2.12	0.49
1:EB:538:G:OP2	46:YC:115:LYS:HB2	2.12	0.49
1:EB:926:G:C6	1:EB:1505:G:C6	3.00	0.49
2:FB:1817:G:C6	2:FB:1818:U:C5	3.01	0.49
2:FB:2150:U:H2'	2:FB:2151:G:C8	2.48	0.49
2:FB:2246:G:H2'	2:FB:2247:A:H8	1.77	0.49
2:FB:2583:G:H2'	2:FB:2584:U:O4'	2.13	0.49
2:FB:774:A:OP1	5:IB:48:ARG:NH2	2.45	0.49
2:FB:2786:U:O2'	6:JB:62:PRO:O	2.19	0.49
38:MA:30:LYS:HA	38:MA:35:ARG:HD2	1.93	0.49
39:NA:79:GLU:HB3	39:NA:92:LYS:HA	1.94	0.49
13:QB:32:THR:OG1	13:QB:32:THR:O	2.25	0.49
15:SB:46:GLY:HA2	15:SB:49:ASP:HB2	1.95	0.49
40:SC:8:ILE:HD11	40:SC:79:LEU:HD13	1.93	0.49
45:TA:92:GLU:HA	45:TA:95:ILE:HB	1.93	0.49
41:TC:62:PHE:O	41:TC:63:LYS:HG3	2.11	0.49
47:VA:14:ARG:HD2	47:VA:44:ARG:HE	1.77	0.49
1:A:376:G:O3'	50:YA:5:ARG:NH1	2.46	0.49
26:Z:4:SER:O	26:Z:7:ARG:HB3	2.12	0.49
1:A:735:C:H5'	52:AB:71:LYS:HD3	1.94	0.49
2:B:1171:G:H3'	2:B:1173:G:C8	2.48	0.49
2:B:1812:A:H2'	2:B:1813:G:H8	1.78	0.49
2:B:1854:A:H2'	2:B:1855:G:O4'	2.13	0.49
2:B:2150:U:H2'	2:B:2151:G:C8	2.47	0.49
2:B:2649:U:H2'	2:B:2650:U:C6	2.48	0.49
3:C:107:U:H2'	3:C:108:C:H5''	1.94	0.49
4:D:28:C:N3	4:D:42:G:N2	2.57	0.49
55:DB:12:LYS:HB3	55:DB:17:THR:O	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:210:GLY:O	5:E:213:ARG:N	2.42	0.49
1:EB:278:G:OP2	51:DD:41:LYS:HE2	2.12	0.49
1:EB:542:G:OP1	38:QC:10:ARG:NH2	2.44	0.49
2:FB:2660:A:H2'	2:FB:2661:G:O4'	2.12	0.49
29:GC:51:TYR:CE2	29:GC:56:LYS:HE2	2.48	0.49
2:FB:2227:A:O3'	5:IB:261:LYS:NZ	2.46	0.49
35:JA:145:ARG:HB3	35:JA:167:SER:HB2	1.94	0.49
35:JA:243:ALA:HB1	35:JA:258:GLN:HG2	1.94	0.49
13:QB:59:LEU:HD23	32:JC:58:ILE:HD13	1.93	0.49
38:MA:191:ARG:NH2	38:MA:200:GLU:OE1	2.44	0.49
9:MB:149:ARG:HA	9:MB:162:ILE:HD12	1.95	0.49
4:MC:69:C:H2'	4:MC:70:G:C8	2.46	0.49
2:FB:2573:C:H41	35:NC:239:THR:HA	1.77	0.49
15:O:57:ARG:HD2	15:O:59:ASP:CG	2.33	0.49
1:A:599:C:H4'	42:QA:130:GLY:HA3	1.95	0.49
4:D:39:C:H4'	45:TA:54:ARG:NH2	2.27	0.49
24:X:31:VAL:HG11	24:X:67:VAL:HG23	1.93	0.49
24:X:54:GLY:C	24:X:56:ASP:H	2.14	0.49
49:XA:39:LEU:O	49:XA:43:LEU:HG	2.12	0.49
45:XC:12:ARG:CB	45:XC:12:ARG:HH11	2.22	0.49
46:YC:57:LYS:HZ1	46:YC:67:THR:HG22	1.78	0.49
1:A:1002:G:H2'	1:A:1003:G:O4'	2.11	0.49
1:A:1518:MA6:H2'	1:A:1519:MA6:C8	2.42	0.49
2:B:1173:G:H2'	2:B:1175:U:C5'	2.42	0.49
2:B:1984:G:C6	2:B:1985:G:N7	2.80	0.49
2:B:593:G:C6	2:B:594:U:C4	3.01	0.49
4:D:16:C:H3'	4:D:16:C:OP2	2.13	0.49
30:DA:25:LYS:HE2	30:DA:51:GLU:OE2	2.13	0.49
1:EB:1167:A:H2'	1:EB:1169:A:C8	2.47	0.49
1:EB:412:A:N1	38:QC:35:ARG:HB3	2.26	0.49
1:EB:706:A:H5''	45:XC:22:HIS:CE1	2.48	0.49
2:FB:15:G:C2	2:FB:16:G:C8	3.00	0.49
2:FB:2401:U:OP1	30:HC:18:ARG:NH2	2.45	0.49
2:FB:299:A:H5''	2:FB:300:A:OP2	2.12	0.49
2:FB:807:U:OP2	13:QB:41:ARG:NH2	2.45	0.49
2:FB:975:G:C2	2:FB:990:A:C8	3.00	0.49
4:IA:62:C:H2'	4:IA:63:G:H8	1.73	0.49
2:FB:2749:A:H2'	9:MB:59:ARG:HH21	1.77	0.49
11:OB:138:LEU:HD12	11:OB:140:VAL:HG22	1.95	0.49
3:C:9:G:P	16:P:25:ARG:HH22	2.36	0.49
19:S:80:GLN:HA	19:S:82:ARG:NH1	2.28	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:SB:10:LEU:O	15:SB:12:ARG:HG3	2.12	0.49
2:FB:1453:A:O3'	15:SB:77:ARG:NH1	2.46	0.49
23:W:24:LEU:HD12	23:W:25:PRO:HD2	1.95	0.49
25:Y:84:GLY:O	25:Y:85:LEU:HD22	2.12	0.49
21:YB:61:GLY:HA3	21:YB:73:ARG:O	2.12	0.49
1:A:1478:C:H2'	1:A:1479:C:C6	2.48	0.49
1:A:468:A:O2'	50:YA:82:GLN:N	2.45	0.49
27:AA:38:GLU:O	27:AA:40:THR:N	2.38	0.49
48:AD:24:CYS:SG	48:AD:27:CYS:SG	3.11	0.49
2:B:185:U:H4'	2:B:218:A:H4'	1.94	0.49
2:B:2139:C:H6	2:B:2139:C:OP2	1.96	0.49
2:B:2398:U:H2'	2:B:2399:G:C8	2.48	0.49
2:B:2679:A:C2	2:B:2729:G:C2	3.01	0.49
53:BB:51:VAL:N	53:BB:58:VAL:HG22	2.26	0.49
4:D:28:C:N4	4:D:42:G:H1	2.09	0.49
1:EB:1297:C:H4'	1:EB:1298:C:H5'	1.94	0.49
1:EB:193:C:H2'	1:EB:194:C:C6	2.48	0.49
2:FB:860:U:C2	2:FB:2268:A:C8	3.00	0.49
2:FB:440:G:H2'	2:FB:441:U:C6	2.48	0.49
2:FB:886:C:H2'	2:FB:887:A:O4'	2.13	0.49
7:G:14:PRO:HD2	7:G:127:GLU:CD	2.33	0.49
8:H:44:GLY:N	8:H:88:ILE:O	2.30	0.49
2:B:2585:U:H5	4:IA:76:A:O3'	1.96	0.49
10:J:48:GLU:OE1	10:J:48:GLU:N	2.45	0.49
10:J:58:LEU:C	10:J:60:GLU:H	2.16	0.49
6:JB:134:ILE:O	6:JB:136:ARG:N	2.46	0.49
36:KA:33:TYR:CG	36:KA:43:ASP:OD2	2.66	0.49
37:LA:82:GLU:HA	37:LA:82:GLU:OE2	2.13	0.49
2:FB:2315:G:H21	8:LB:128:ARG:HH22	1.61	0.49
38:MA:60:GLU:OE1	38:MA:199:ASN:N	2.46	0.49
3:C:50:G:OP1	16:P:61:ASN:ND2	2.46	0.49
1:A:964:A:HO2'	44:SA:55:LYS:HZ3	1.53	0.49
17:UB:109:GLU:HA	17:UB:112:ARG:NH2	2.27	0.49
47:VA:74:VAL:O	47:VA:78:ILE:HG12	2.13	0.49
2:FB:329:G:OP2	22:ZB:71:LYS:HD2	2.13	0.49
47:ZC:82:MET:SD	47:ZC:93:ARG:HG3	2.53	0.49
2:B:1019:U:OP1	2:B:1035:U:O2'	2.20	0.49
2:B:1531:C:N4	2:B:1540:G:O6	2.46	0.49
2:B:2795:G:H1'	2:B:2802:G:N2	2.28	0.49
2:B:721:C:H2'	2:B:722:A:C8	2.48	0.49
2:B:842:G:N2	2:B:937:U:C2	2.81	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1320:C:C2	53:BB:36:ARG:NH1	2.81	0.49
49:BD:18:PHE:HB2	49:BD:19:PRO:HD2	1.95	0.49
51:DD:13:ASP:H	51:DD:14:LYS:HZ3	1.58	0.49
1:EB:1079:G:H2'	1:EB:1080:A:C8	2.48	0.49
52:ED:65:ILE:O	52:ED:69:THR:HG23	2.12	0.49
6:F:67:PHE:CZ	6:F:75:VAL:HG12	2.48	0.49
2:FB:1072:C:N4	2:FB:1092:C:H41	2.11	0.49
2:FB:1069:A:OP2	2:FB:1095:A:C5	2.65	0.49
2:FB:1203:G:O2'	13:QB:2:LYS:NZ	2.37	0.49
2:FB:1952:A:C6	2:FB:1953:A:N1	2.81	0.49
2:FB:2094:G:H5'	10:NB:25:TYR:CD1	2.48	0.49
2:FB:2611:U:H2'	29:GC:2:ALA:O	2.13	0.49
3:GB:66:A:H61	3:GB:108:C:H5''	1.78	0.49
3:GB:8:U:OP1	16:TB:15:ARG:NH2	2.45	0.49
8:H:76:SER:OG	8:H:84:LYS:HG3	2.12	0.49
9:I:111:HIS:H	9:I:111:HIS:HD2	1.60	0.49
2:B:2659:G:H4'	9:I:175:LYS:HD3	1.93	0.49
36:KA:87:ARG:NH2	36:KA:220:ASP:OD2	2.36	0.49
14:N:98:LYS:HB3	14:N:99:PRO:HD2	1.94	0.49
16:P:83:LYS:HB3	16:P:111:GLU:CD	2.33	0.49
41:PA:72:ARG:HH21	41:PA:138:LYS:HZ1	1.60	0.49
17:Q:112:ARG:HB3	17:Q:112:ARG:CZ	2.43	0.49
18:R:65:ILE:HD11	18:R:95:LEU:HB3	1.95	0.49
44:SA:69:ASN:O	44:SA:70:ARG:NH1	2.46	0.49
46:UA:41:ARG:HG2	46:UA:41:ARG:NH1	2.28	0.49
46:UA:46:LYS:HD3	46:UA:94:PRO:HD3	1.95	0.49
43:VC:46:ALA:HB2	43:VC:74:ILE:HG23	1.95	0.49
43:VC:91:ASP:O	43:VC:93:ARG:N	2.38	0.49
1:A:1201:A:H1'	1:A:1202:G:OP2	2.12	0.49
1:A:261:U:H5''	1:A:262:A:OP2	2.12	0.49
2:B:79:G:H1	2:B:107:C:H42	1.59	0.49
2:B:1321:A:H2'	2:B:1322:A:H8	1.77	0.49
2:B:2189:U:H2'	2:B:2190:G:C8	2.48	0.49
2:B:345:A:N3	2:B:346:A:N6	2.60	0.49
2:B:646:A:H2'	2:B:647:G:O4'	2.13	0.49
2:B:663:G:C5	2:B:664:C:C4	3.00	0.49
2:B:833:U:H2'	2:B:834:C:C6	2.48	0.49
4:D:63:G:H2'	4:D:64:G:H8	1.77	0.49
51:DD:67:LYS:O	51:DD:70:ARG:NH1	2.46	0.49
1:EB:1066:C:H5'	1:EB:1067:A:OP2	2.13	0.49
1:EB:170:U:H2'	1:EB:171:A:H8	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:218:C:H2'	1:EB:219:C:C6	2.48	0.49
2:FB:1239:G:C6	2:FB:1240:U:C4	3.01	0.49
2:FB:1310:G:H1	2:FB:1604:C:H42	1.60	0.49
31:IC:34:ARG:HG2	31:IC:39:ARG:HG3	1.94	0.49
12:L:15:GLY:O	12:L:47:ILE:HG13	2.13	0.49
40:OA:15:ASP:OD1	40:OA:15:ASP:N	2.41	0.49
40:OA:62:TRP:CZ3	40:OA:64:GLN:HB2	2.48	0.49
41:PA:111:ARG:NE	41:PA:122:HIS:O	2.46	0.49
41:PA:140:ASP:O	41:PA:143:ARG:N	2.44	0.49
39:NA:78:HIS:HD1	42:QA:104:ARG:HH11	1.60	0.49
41:TC:140:ASP:O	41:TC:143:ARG:N	2.45	0.49
47:VA:54:VAL:HG13	47:VA:57:ARG:NH1	2.21	0.49
44:WC:40:LEU:HG	44:WC:41:PRO:HD2	1.95	0.49
1:A:1373:G:H8	1:A:1373:G:O5'	1.96	0.49
2:B:174:C:H5''	2:B:175:G:OP2	2.13	0.49
2:B:234:C:H2'	2:B:235:U:C6	2.44	0.49
2:B:394:A:N6	2:B:395:U:O4	2.45	0.49
2:B:597:U:H2'	2:B:598:G:C8	2.47	0.49
2:FB:1021:A:H3'	2:FB:1021:A:C8	2.47	0.49
2:FB:1038:C:N3	2:FB:1117:G:N2	2.39	0.49
2:FB:1027:A:N6	2:FB:1126:A:C4	2.81	0.49
2:FB:11:G:O5'	2:FB:11:G:H8	1.96	0.49
2:FB:451:C:H4'	7:KB:52:LYS:HE2	1.94	0.49
2:FB:861:A:N3	3:GB:79:C:O2'	2.38	0.49
2:B:675:A:H4'	7:G:67:GLN:OE1	2.13	0.49
4:IA:18:G:H1'	4:IA:58:A:H2	1.78	0.49
13:M:107:LYS:HB2	13:M:110:TYR:HD2	1.78	0.49
10:NB:95:LYS:HA	10:NB:111:PRO:HB3	1.95	0.49
10:NB:77:LEU:HB3	10:NB:142:VAL:HG22	1.94	0.49
36:OC:118:LEU:HG	36:OC:142:LEU:HB2	1.95	0.49
37:PC:22:TRP:HZ3	37:PC:24:ALA:HB2	1.78	0.49
38:QC:9:CYS:HG	38:QC:18:LYS:HZ1	1.52	0.49
24:X:26:TYR:O	24:X:29:GLN:HB2	2.13	0.49
46:YC:84:LEU:HD23	46:YC:104:VAL:HG21	1.94	0.49
1:EB:1226:C:H5''	47:ZC:103:THR:HG21	1.94	0.49
1:A:1372:U:H5''	43:RA:71:SER:HB3	1.95	0.48
1:A:518:C:OP1	35:JA:183:ARG:NH2	2.46	0.48
1:A:700:G:H4'	1:A:704:A:H1'	1.96	0.48
2:B:1069:A:OP2	2:B:1095:A:C5	2.66	0.48
2:B:2774:C:H2'	2:B:2775:A:O4'	2.11	0.48
2:B:307:G:H21	2:B:330:A:N6	2.11	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:668:G:O2'	49:BD:46:HIS:HB3	2.13	0.48
25:CC:51:VAL:HG21	25:CC:74:VAL:HG21	1.95	0.48
26:DC:63:VAL:O	26:DC:66:GLU:HG2	2.13	0.48
1:EB:1190:G:H3'	37:PC:3:ASN:HD22	1.78	0.48
1:EB:1285:A:OP1	1:EB:1286:A:N6	2.37	0.48
2:FB:443:A:H1'	2:FB:1201:C:O4'	2.13	0.48
2:FB:2210:G:H3'	2:FB:2211:G:H8	1.77	0.48
2:FB:67:U:H2'	2:FB:68:G:H8	1.76	0.48
7:G:160:ASN:ND2	7:G:163:VAL:HG23	2.27	0.48
7:G:43:LYS:NZ	7:G:43:LYS:HB3	2.28	0.48
4:HB:48:C:C6	4:HB:59:A:H5'	2.48	0.48
9:I:149:ARG:HA	9:I:162:ILE:HD12	1.95	0.48
10:J:79:ILE:O	10:J:144:VAL:HA	2.13	0.48
12:L:66:LYS:HB2	12:L:82:ASN:OD1	2.13	0.48
42:QA:11:THR:HG22	42:QA:15:ASN:HD21	1.77	0.48
23:W:97:GLU:OE2	23:W:127:LYS:HE2	2.13	0.48
46:YC:89:ARG:HG2	46:YC:97:ARG:HA	1.94	0.48
1:A:262:A:C6	1:A:263:A:C6	3.01	0.48
1:A:664:G:P	52:AB:64:ARG:HH21	2.36	0.48
2:B:1340:U:H4'	2:B:1394:U:O2'	2.13	0.48
2:B:1855:G:H1	2:B:1887:C:H42	1.61	0.48
2:B:275:G:OP1	2:B:275:G:H4'	2.11	0.48
2:B:2785:C:OP1	6:F:41:LYS:NZ	2.46	0.48
2:B:2838:G:H2'	2:B:2839:G:C8	2.49	0.48
2:B:64:A:O3'	21:U:71:GLY:HA3	2.13	0.48
3:C:112:G:H2'	3:C:113:C:C6	2.48	0.48
50:CD:20:VAL:HG22	50:CD:32:TYR:HD1	1.78	0.48
1:EB:295:C:H2'	1:EB:296:U:O4'	2.13	0.48
1:EB:58:C:O2'	1:EB:388:G:N7	2.29	0.48
1:EB:749:C:O2'	1:EB:750:G:H5'	2.12	0.48
1:EB:96:G:C6	1:EB:97:U:C4	3.01	0.48
27:EC:38:GLU:O	27:EC:40:THR:N	2.42	0.48
2:FB:1024:G:H8	2:FB:1024:G:O5'	1.96	0.48
2:FB:2138:C:H2'	2:FB:2139:C:C6	2.48	0.48
2:FB:2531:A:C6	2:FB:2532:G:C5	3.01	0.48
2:FB:2659:G:H4'	9:MB:175:LYS:HD3	1.94	0.48
2:FB:503:A:H4'	2:FB:504:U:H5''	1.95	0.48
2:B:1125:G:H5'	33:GA:37:GLY:O	2.14	0.48
8:H:115:ARG:HH21	8:H:115:ARG:HB3	1.78	0.48
5:IB:145:VAL:HB	5:IB:155:LEU:HB2	1.94	0.48
35:JA:329:LEU:HG	35:JA:330:ASP:H	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:LA:128:PHE:HD1	37:LA:129:ALA:H	1.61	0.48
39:NA:52:PRO:HA	39:NA:55:VAL:HB	1.95	0.48
35:NC:204:ALA:HB2	35:NC:298:LEU:HD12	1.95	0.48
14:RB:110:THR:OG1	14:RB:113:GLN:OE1	2.29	0.48
41:TC:50:ILE:HG21	41:TC:61:VAL:HG11	1.95	0.48
12:PB:119:PRO:HB2	17:UB:68:TYR:CD2	2.47	0.48
2:FB:559:G:H21	18:VB:49:HIS:CD2	2.31	0.48
2:FB:994:C:O2	19:WB:10:LYS:HE3	2.13	0.48
51:ZA:56:VAL:HB	51:ZA:78:GLU:HB2	1.96	0.48
1:A:540:G:H2'	1:A:541:G:O4'	2.13	0.48
2:B:2693:A:H2'	2:B:2694:G:C8	2.47	0.48
2:B:929:G:O5'	2:B:929:G:H8	1.96	0.48
53:BB:30:LEU:HD13	53:BB:48:THR:HG22	1.94	0.48
1:EB:1325:C:H5'	55:HD:15:ARG:HD2	1.95	0.48
1:EB:1531:A:H3'	1:EB:1532:U:H5''	1.95	0.48
2:FB:1051:G:C2	2:FB:1052:C:H1'	2.49	0.48
2:FB:1641:A:H2'	2:FB:1642:G:O4'	2.13	0.48
2:FB:1751:C:H2'	2:FB:1752:C:C6	2.48	0.48
10:J:50:ARG:O	10:J:54:GLN:HG2	2.12	0.48
11:K:39:ARG:NH2	11:K:41:ASP:OD1	2.46	0.48
7:KB:169:ASN:O	7:KB:169:ASN:ND2	2.30	0.48
39:NA:100:VAL:HG11	39:NA:107:ARG:HG3	1.95	0.48
36:OC:205:ASP:HA	36:OC:211:ILE:HD11	1.94	0.48
16:P:3:ARG:O	16:P:4:LEU:HD23	2.13	0.48
37:PC:109:PRO:C	37:PC:111:LEU:H	2.16	0.48
13:QB:149:GLU:HA	13:QB:149:GLU:OE2	2.13	0.48
39:RC:51:VAL:HB	39:RC:52:PRO:HD3	1.95	0.48
39:RC:82:VAL:O	39:RC:88:LYS:HA	2.13	0.48
15:SB:47:PHE:O	15:SB:51:LEU:HG	2.13	0.48
42:UC:28:ALA:HB3	42:UC:57:PRO:HB2	1.96	0.48
47:VA:12:ASN:O	47:VA:44:ARG:HD3	2.12	0.48
20:XB:58:ALA:HB1	20:XB:64:MET:HG3	1.95	0.48
42:QA:91:ARG:HG3	51:ZA:34:LYS:N	2.28	0.48
22:ZB:101:LYS:HD2	22:ZB:101:LYS:N	2.28	0.48
1:A:1162:C:H2'	1:A:1163:C:C6	2.49	0.48
1:A:811:C:H4'	1:A:900:A:N6	2.28	0.48
1:A:977:A:H2'	1:A:978:A:H5''	1.95	0.48
2:B:271(C):G:N7	2:B:421:U:H2'	2.28	0.48
2:B:26:G:C6	2:B:27:G:N1	2.81	0.48
2:B:910:A:C5	14:N:13:GLN:HG3	2.48	0.48
54:CB:32:ALA:O	54:CB:36:LEU:HB2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:CD:43:LYS:HE3	50:CD:48:TRP:CH2	2.49	0.48
1:EB:572:A:N3	1:EB:917:G:H1'	2.29	0.48
1:EB:959:A:H2	1:EB:1221:G:H21	1.59	0.48
2:FB:1278:A:OP1	15:SB:36:THR:HG23	2.13	0.48
2:FB:2799:A:O2'	2:FB:2801:A:H5''	2.13	0.48
2:FB:2788:C:O2'	2:FB:2809:A:N3	2.46	0.48
2:FB:464:U:HO2'	31:IC:16:HIS:CE1	2.31	0.48
2:FB:548:A:C2	2:FB:549:G:H1'	2.49	0.48
2:FB:774:A:H2'	2:FB:774:A:N3	2.27	0.48
7:G:122:LYS:O	7:G:191:ARG:HD2	2.13	0.48
7:G:192:LEU:HD21	7:G:194:MET:CE	2.43	0.48
3:GB:11:C:H3'	3:GB:12:C:C6	2.45	0.48
4:HB:63:G:H2'	4:HB:64:G:H8	1.78	0.48
6:JB:34:VAL:HG11	6:JB:78:LEU:HD21	1.94	0.48
11:K:114:ARG:O	11:K:118:LYS:HG3	2.13	0.48
38:MA:117:ALA:HA	38:MA:120:LEU:HD13	1.96	0.48
10:NB:87:LYS:HD2	10:NB:89:TYR:CD2	2.48	0.48
15:O:104:ARG:HD3	15:O:107:ASP:OD1	2.13	0.48
13:QB:36:LYS:O	13:QB:40:SER:HB3	2.13	0.48
2:FB:911:A:H2'	14:RB:9:TYR:OH	2.14	0.48
16:TB:83:LYS:HB3	16:TB:111:GLU:CD	2.33	0.48
41:TC:72:ARG:NH2	41:TC:138:LYS:NZ	2.55	0.48
21:YB:26:TYR:O	21:YB:81:VAL:HG23	2.13	0.48
1:A:1079:G:H2'	1:A:1080:A:C8	2.48	0.48
1:A:580:U:H2'	1:A:581:G:O4'	2.13	0.48
1:A:572:A:N3	1:A:917:G:H1'	2.28	0.48
2:B:1075:C:H5''	2:B:1076:C:H6	1.78	0.48
2:B:2343:C:H2'	2:B:2344:U:H6	1.79	0.48
2:B:869:G:H2'	2:B:870:A:H8	1.78	0.48
50:CD:3:LYS:N	50:CD:22:THR:O	2.27	0.48
5:E:215:LEU:HB2	5:E:217:ARG:HG3	1.96	0.48
1:EB:1384:C:H2'	1:EB:1385:G:H8	1.79	0.48
1:EB:262:A:C6	1:EB:263:A:C6	3.00	0.48
1:EB:377:G:OP1	50:CD:5:ARG:NH1	2.46	0.48
1:EB:861:G:OP1	42:UC:75:ARG:NH2	2.31	0.48
2:FB:1901:A:OP2	5:IB:255:LYS:NZ	2.46	0.48
2:FB:670:A:H5'	13:QB:43:GLY:HA2	1.95	0.48
2:FB:74:A:H5'	2:FB:75:G:O4'	2.14	0.48
1:EB:1453:G:H1'	54:GD:39:LYS:NZ	2.29	0.48
10:J:70:GLU:OE2	10:J:70:GLU:N	2.46	0.48
2:FB:2680:C:H5'	6:JB:189:PRO:HA	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:KA:118:LEU:HG	36:KA:142:LEU:HB2	1.94	0.48
37:LA:16:ARG:HH12	48:WA:50:LYS:HE3	1.78	0.48
8:LB:8:LYS:HZ1	8:LB:9:ARG:HG3	1.78	0.48
38:MA:127:THR:OG1	38:MA:130:GLY:O	2.31	0.48
35:NC:353:LEU:O	35:NC:357:SER:HB2	2.13	0.48
11:OB:47:ALA:HB2	11:OB:115:ARG:HD3	1.94	0.48
16:P:15:ARG:HE	16:P:25:ARG:NH2	2.11	0.48
15:SB:26:LYS:HD2	15:SB:70:LEU:HA	1.95	0.48
47:VA:15:VAL:O	47:VA:19:LEU:HD13	2.14	0.48
43:VC:31:GLN:HB3	43:VC:35:GLU:OE1	2.14	0.48
50:YA:32:TYR:HD2	50:YA:32:TYR:H	1.60	0.48
22:ZB:75:ILE:HA	22:ZB:82:PRO:HA	1.95	0.48
1:A:988:G:N2	1:A:1016:A:N3	2.62	0.48
1:A:1351:U:H2'	1:A:1352:C:C6	2.49	0.48
1:A:467:G:O6	1:A:468:A:N6	2.47	0.48
1:A:59:A:H1'	1:A:354:G:N2	2.28	0.48
1:A:803:G:C6	1:A:804:U:C4	3.02	0.48
1:A:959:A:H1'	1:A:985:C:H4'	1.94	0.48
27:AA:44:ARG:O	27:AA:47:VAL:N	2.33	0.48
2:B:2135:A:H61	2:B:2155:G:H22	1.61	0.48
2:B:67:U:H2'	2:B:68:G:C8	2.49	0.48
2:B:844:C:O5'	2:B:845:G:N2	2.47	0.48
2:B:84:A:N1	2:B:98:G:O2'	2.42	0.48
14:RB:82:ARG:NE	24:BC:3:HIS:HB2	2.27	0.48
1:EB:991:U:O4	1:EB:1212:U:O2'	2.28	0.48
2:FB:1067:A:H5'	2:FB:1095:A:H61	1.79	0.48
2:FB:1125:G:H5'	33:KC:37:GLY:O	2.13	0.48
2:FB:1175:U:H5	2:FB:1177:A:C5	2.32	0.48
2:FB:1356:G:H2'	2:FB:1357:U:C6	2.49	0.48
2:FB:1789:A:H2'	2:FB:1790:C:O4'	2.13	0.48
2:FB:2774:C:H2'	2:FB:2775:A:O4'	2.13	0.48
2:FB:545:G:C2	2:FB:547:A:OP2	2.66	0.48
3:GB:111:U:H2'	3:GB:112:G:C8	2.48	0.48
11:K:138:LEU:HD12	11:K:140:VAL:HG22	1.96	0.48
7:KB:184:TYR:HE2	7:KB:188:ARG:NH1	2.12	0.48
39:NA:151:LEU:HB3	42:QA:79:VAL:HG22	1.95	0.48
39:RC:88:LYS:HB3	39:RC:123:LEU:HB2	1.96	0.48
17:UB:94:ALA:HB1	17:UB:99:LEU:HD21	1.95	0.48
1:A:1316:G:O2'	48:WA:18:VAL:HG11	2.14	0.48
25:Y:70:VAL:HG12	25:Y:71:TYR:HD2	1.78	0.48
1:A:697:U:H5''	1:A:698:G:OP2	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:93:U:H2'	1:A:95:G:C8	2.49	0.48
2:B:969:U:OP1	27:AA:17:LYS:HD2	2.13	0.48
23:AC:126:VAL:HG11	23:AC:161:VAL:HG22	1.94	0.48
23:AC:33:LEU:HG	23:AC:34:ASN:N	2.28	0.48
2:B:1125:G:H5''	2:B:1126:A:H5''	1.96	0.48
2:B:1923:U:H2'	2:B:1924:C:C6	2.49	0.48
2:B:2219:G:H2'	2:B:2224:G:H5'	1.95	0.48
2:B:2402:C:C6	2:B:2402:C:OP2	2.63	0.48
2:B:794:G:C2	2:B:795:C:C2	3.02	0.48
1:EB:735:C:H5'	52:ED:71:LYS:HD3	1.95	0.48
1:EB:940:C:H2'	1:EB:941:G:H8	1.79	0.48
2:FB:1086:A:H5'	2:FB:1087:G:H5'	1.95	0.48
2:FB:1586:A:H2'	2:FB:1587:A:O4'	2.14	0.48
2:FB:1797:C:O2'	5:IB:259:THR:OG1	2.31	0.48
2:FB:1863:G:H1	2:FB:1879:C:N4	2.08	0.48
2:FB:214:G:H1'	2:FB:216:A:O2'	2.13	0.48
2:FB:2658:C:H5'	9:MB:160:LYS:NZ	2.28	0.48
2:FB:270(V):C:H2'	2:FB:270(W):G:H8	1.77	0.48
2:FB:2749:A:OP1	9:MB:3:ARG:NH2	2.44	0.48
2:FB:2795:G:HO2'	2:FB:2799:A:N6	2.07	0.48
2:FB:2838:G:H2'	2:FB:2839:G:C8	2.48	0.48
4:HB:28:C:N3	4:HB:42:G:N2	2.56	0.48
5:IB:133:LEU:HB3	5:IB:173:VAL:HG21	1.96	0.48
5:IB:274:ARG:HG2	5:IB:274:ARG:NH1	2.26	0.48
2:FB:686:G:C2	31:IC:11:LYS:HD2	2.49	0.48
31:IC:5:TRP:O	31:IC:6:GLN:NE2	2.32	0.48
35:JA:186:ARG:HD3	35:JA:312:PHE:HD2	1.78	0.48
36:KA:70:PHE:CE1	36:KA:163:PHE:HD1	2.32	0.48
7:KB:129:PHE:HB2	7:KB:132:VAL:HG22	1.96	0.48
10:NB:58:LEU:C	10:NB:60:GLU:H	2.16	0.48
2:B:1652:A:OP1	15:O:8:ARG:NH1	2.47	0.48
37:PC:43:LEU:O	37:PC:47:LEU:HB2	2.14	0.48
42:QA:11:THR:HG23	42:QA:14:ARG:NH1	2.28	0.48
42:QA:19:VAL:HG23	42:QA:21:LYS:HG2	1.95	0.48
14:N:82:ARG:NE	24:X:3:HIS:HB2	2.27	0.48
1:A:1006:C:N3	1:A:1007:C:N4	2.61	0.48
1:A:1248:A:C2	43:RA:70:LYS:HD2	2.48	0.48
1:A:1292:U:H2'	1:A:1293:G:C8	2.49	0.48
1:A:446:G:H2'	1:A:447:G:C8	2.49	0.48
1:A:643:C:H2'	1:A:644:G:C8	2.44	0.48
1:A:894:G:C6	1:A:895:G:C6	3.02	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:959:A:H2	1:A:1221:G:H21	1.60	0.48
2:B:1043:C:H2'	2:B:1044:G:C8	2.49	0.48
2:B:2166:G:N2	2:B:2167:U:O4	2.47	0.48
2:B:2183:C:H2'	2:B:2184:G:C8	2.49	0.48
2:B:2584:U:H2'	2:B:2585:U:H2'	1.95	0.48
2:B:511:U:C5	2:B:512:G:C5	3.02	0.48
2:B:238:C:O2'	2:B:608:A:N3	2.42	0.48
2:B:979:G:H2'	2:B:982:C:N4	2.28	0.48
50:CD:20:VAL:HG22	50:CD:32:TYR:CD1	2.49	0.48
4:D:45:G:H2'	4:D:46:G:C8	2.49	0.48
1:EB:1318:A:H1'	53:FD:37:ARG:HE	1.78	0.48
1:EB:1397:C:O2'	1:EB:1398:A:H5'	2.14	0.48
1:EB:177:C:H2'	1:EB:178:C:H6	1.77	0.48
1:EB:973:G:H1'	44:WC:54:PHE:HD1	1.79	0.48
2:FB:1171:G:H3'	2:FB:1173:G:C8	2.48	0.48
2:FB:557:U:H2'	2:FB:558:G:C8	2.48	0.48
2:FB:848:G:H2'	2:FB:849:A:C8	2.48	0.48
3:GB:112:G:H2'	3:GB:113:C:C6	2.48	0.48
29:GC:51:TYR:HE2	29:GC:56:LYS:HE2	1.79	0.48
9:I:40:GLU:O	9:I:41:MET:HG3	2.14	0.48
35:JA:324:LEU:HD11	35:JA:326:LEU:HD23	1.95	0.48
35:JA:335:GLY:O	35:JA:337:LEU:N	2.47	0.48
36:KA:53:ARG:HG2	36:KA:53:ARG:NH1	2.28	0.48
8:LB:16:ARG:O	8:LB:20:ILE:HG13	2.13	0.48
13:QB:19:VAL:HB	13:QB:31:ALA:HB1	1.94	0.48
39:RC:13:ILE:HG23	39:RC:29:GLY:O	2.13	0.48
19:S:18:LEU:HG	19:S:20:LEU:H	1.79	0.48
44:SA:26:ALA:HA	44:SA:29:ARG:CZ	2.44	0.48
15:SB:100:LEU:HD13	15:SB:100:LEU:HA	1.52	0.48
40:SC:43:LEU:H	40:SC:43:LEU:HD22	1.78	0.48
44:WC:35:SER:HB3	44:WC:73:ASP:OD2	2.13	0.48
49:XA:33:THR:HG23	49:XA:63:ARG:HH11	1.79	0.48
45:XC:79:SER:HA	45:XC:104:GLN:CB	2.44	0.48
45:XC:112:THR:HA	45:XC:113:PRO:HD3	1.70	0.48
1:A:1298:C:H2'	41:PA:114:ARG:HH12	1.79	0.48
1:A:1417:G:C6	1:A:1482:G:C6	3.02	0.48
1:A:80:G:N2	1:A:89:U:H3	2.11	0.48
2:B:2029:G:H2'	2:B:2030:A:H5''	1.96	0.48
2:B:2166:G:H2'	2:B:2167:U:H5''	1.96	0.48
4:D:70:G:H2'	4:D:71:C:C6	2.49	0.48
1:EB:701:C:OP1	1:EB:702:A:O2'	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:ED:53:ARG:HH12	52:ED:59:SER:C	2.17	0.48
6:F:18:ASP:HA	17:Q:82:LEU:HD11	1.96	0.48
2:FB:305:U:H2'	2:FB:306:U:C6	2.48	0.48
2:FB:833:U:H2'	2:FB:834:C:C6	2.49	0.48
7:G:127:GLU:HA	7:G:196:LEU:HB2	1.95	0.48
7:G:40:GLN:O	7:G:44:ARG:HG2	2.12	0.48
8:LB:23:PHE:CZ	8:LB:168:GLU:HA	2.49	0.48
38:MA:129:ASN:N	38:MA:145:GLU:O	2.36	0.48
14:N:16:ARG:HD2	14:N:16:ARG:HA	1.70	0.48
10:NB:70:GLU:N	10:NB:70:GLU:OE2	2.47	0.48
1:A:1349:A:P	43:RA:118:LYS:NZ	2.87	0.48
14:RB:135:ASP:OD2	14:RB:137:TYR:CD2	2.65	0.48
42:UC:121:ASP:O	42:UC:125:ARG:N	2.46	0.48
47:VA:9:ILE:HG22	47:VA:22:ILE:HD11	1.95	0.48
25:Y:24:ALA:HB3	25:Y:27:GLU:HB2	1.96	0.48
46:YC:46:LYS:HD3	46:YC:94:PRO:HD3	1.95	0.48
47:ZC:20:THR:C	47:ZC:22:ILE:H	2.17	0.48
1:A:971:G:OP1	1:A:972:C:H5''	2.13	0.48
2:B:1899:G:H2'	2:B:1899:G:N3	2.28	0.48
2:B:2315:G:H5''	2:B:2316:C:OP2	2.14	0.48
2:B:2584:U:O2'	35:JA:234:GLY:HA2	2.13	0.48
2:B:261:G:O2'	2:B:609(B):G:O2'	2.24	0.48
2:B:394:A:C6	2:B:395:U:C4	3.02	0.48
2:B:398:G:H2'	2:B:399:G:H8	1.78	0.48
5:E:40:THR:HG23	5:E:42:GLY:H	1.79	0.48
1:EB:1000:A:H62	1:EB:1003:G:H21	1.62	0.48
1:EB:1226:C:H6	47:ZC:103:THR:HB	1.79	0.48
1:EB:189:U:H3	51:DD:72:ARG:NH1	2.12	0.48
1:EB:409:G:H3'	1:EB:410:G:H8	1.79	0.48
1:EB:435:C:H2'	1:EB:436:C:H6	1.79	0.48
1:EB:580:U:H2'	1:EB:581:G:O4'	2.13	0.48
2:FB:304:G:C6	2:FB:305:U:C4	3.02	0.48
2:FB:548:A:C4	2:FB:549:G:H1'	2.49	0.48
2:B:601:C:OP1	7:G:108:LYS:HE3	2.13	0.48
11:K:104:LYS:HE2	11:K:104:LYS:HB3	1.67	0.48
7:KB:114:VAL:HG21	7:KB:202:PHE:CE1	2.49	0.48
38:MA:18:LYS:HZ3	38:MA:26:CYS:HG	1.58	0.48
16:P:15:ARG:NH1	16:P:90:GLY:HA2	2.29	0.48
41:PA:120:ILE:HG22	41:PA:124:LEU:HD12	1.95	0.48
38:QC:133:VAL:HG22	38:QC:135:LEU:H	1.79	0.48
2:FB:2708:G:H5'	15:SB:68:ARG:HG3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:SC:4:TYR:CD1	40:SC:92:LYS:HA	2.49	0.48
41:TC:72:ARG:HH21	41:TC:138:LYS:HZ1	1.60	0.48
23:W:166:SER:HB3	23:W:169:GLU:HB2	1.96	0.48
1:A:1122:U:O4	1:A:1123:A:N6	2.46	0.47
1:A:555:C:H2'	1:A:556:C:C6	2.49	0.47
2:B:1523:U:H2'	2:B:1524:G:H8	1.79	0.47
2:B:1805:U:H2'	2:B:1806:C:C6	2.48	0.47
28:BA:9:LEU:HG	28:BA:27:THR:HG22	1.95	0.47
55:DB:5:ASP:HB3	55:DB:8:THR:OG1	2.14	0.47
2:B:771:G:OP1	31:EA:10:ARG:NH1	2.47	0.47
1:EB:1155:G:OP2	1:EB:1155:G:H8	1.97	0.47
1:EB:1342:C:H2'	1:EB:1343:G:C8	2.48	0.47
1:EB:1531:A:H3'	1:EB:1532:U:C5'	2.43	0.47
1:EB:80:G:N2	1:EB:89:U:H3	2.11	0.47
6:F:67:PHE:CE2	6:F:74:PRO:HA	2.49	0.47
6:F:95:ILE:HG13	6:F:96:PHE:CD2	2.49	0.47
2:FB:1019:U:H3	2:FB:1142(B):A:N6	2.04	0.47
2:FB:1309:G:H4'	31:IC:7:PRO:HB2	1.96	0.47
2:FB:1441:G:H2'	2:FB:1442:G:C8	2.43	0.47
2:FB:375:C:H2'	2:FB:376:C:C6	2.49	0.47
10:J:69:LYS:HG3	10:J:138:ILE:HG23	1.96	0.47
36:KA:28:PHE:CD2	36:KA:190:THR:HA	2.49	0.47
36:KA:67:THR:HG21	36:KA:155:LEU:HD11	1.95	0.47
9:MB:45:VAL:HG13	9:MB:50:VAL:HG12	1.96	0.47
36:OC:95:GLN:HB2	36:OC:148:TYR:HA	1.96	0.47
16:P:15:ARG:HE	16:P:25:ARG:HH21	1.61	0.47
12:PB:16:ALA:HB2	12:PB:52:VAL:HG21	1.96	0.47
13:QB:147:LEU:H	13:QB:147:LEU:HD23	1.79	0.47
43:RA:10:ARG:HH12	43:RA:11:LYS:HD2	1.77	0.47
40:SC:1:MET:HA	40:SC:67:MET:O	2.13	0.47
2:B:329:G:OP2	22:V:71:LYS:HD2	2.14	0.47
46:YC:46:LYS:HE3	46:YC:92:0TD:H4	1.95	0.47
22:ZB:9:LYS:HB2	22:ZB:29:GLU:HA	1.96	0.47
1:A:1265:G:H1	1:A:1270:C:N4	2.05	0.47
2:B:1038:C:N4	2:B:1117:G:H1	2.12	0.47
2:B:1441:G:H2'	2:B:1442:G:C8	2.43	0.47
2:B:1863:G:H2'	2:B:1864:U:O4'	2.15	0.47
2:B:2129:C:H2'	2:B:2130:U:H5'	1.95	0.47
2:B:2708:G:H5'	15:O:68:ARG:HG3	1.97	0.47
2:B:301:G:H4'	2:B:302:C:OP1	2.13	0.47
1:EB:1034:G:H2'	1:EB:1035:A:H8	1.77	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2139:C:OP2	2:FB:2139:C:H6	1.98	0.47
2:FB:2343:C:H2'	2:FB:2344:U:H6	1.79	0.47
2:FB:2805:G:N2	2:FB:2807:G:O6	2.46	0.47
2:FB:2838:G:C6	2:FB:2839:G:C6	3.02	0.47
2:FB:268:C:N4	2:FB:424:G:H1	2.11	0.47
8:LB:181:ARG:HA	28:FC:42:PHE:HZ	1.78	0.47
8:H:15:VAL:HG13	8:H:175:LEU:HD13	1.96	0.47
4:HB:54:5MU:H73	4:HB:55:PSU:C2	2.49	0.47
35:JA:193:GLN:O	35:JA:195:ARG:N	2.47	0.47
35:JA:217:ILE:H	35:JA:217:ILE:HG13	1.50	0.47
14:N:71:ASP:OD1	14:N:71:ASP:N	2.33	0.47
39:NA:53:LEU:O	39:NA:57:LYS:N	2.47	0.47
39:NA:82:VAL:O	39:NA:88:LYS:HA	2.14	0.47
15:O:12:ARG:HD3	15:O:16:HIS:CD2	2.49	0.47
2:B:2682:U:O2'	17:Q:58:ASN:OD1	2.30	0.47
13:QB:107:LYS:HB2	13:QB:110:TYR:HD2	1.79	0.47
38:QC:57:ARG:HB3	38:QC:206:PHE:HB2	1.96	0.47
18:R:45:TYR:O	18:R:49:HIS:ND1	2.36	0.47
16:TB:94:TYR:HE2	16:TB:99:LYS:HE3	1.79	0.47
17:UB:91:ARG:NH1	17:UB:120:ARG:NH1	2.61	0.47
36:OC:178:ARG:HB3	42:UC:72:PRO:HA	1.95	0.47
22:V:75:ILE:HA	22:V:82:PRO:HA	1.95	0.47
43:VC:99:LEU:HB3	43:VC:101:PHE:CE2	2.49	0.47
23:W:175:VAL:HG23	23:W:176:PRO:O	2.14	0.47
20:XB:11:ARG:NH1	20:XB:98:LYS:C	2.68	0.47
50:YA:3:LYS:HG3	50:YA:24:ALA:HB2	1.96	0.47
1:A:723:U:HO2'	1:A:724:G:C5'	2.26	0.47
2:B:1021:A:H62	2:B:1141:U:H3	1.59	0.47
2:B:1448:G:H4'	2:B:1543:A:OP1	2.15	0.47
2:B:1688:U:H2'	2:B:1698:A:N6	2.30	0.47
2:B:214:G:H1'	2:B:216:A:O2'	2.14	0.47
2:B:2246:G:H2'	2:B:2247:A:H8	1.79	0.47
2:B:2792:G:N2	2:B:2805:G:H1'	2.29	0.47
2:B:979:G:H2'	2:B:982:C:H42	1.78	0.47
50:CD:75:ARG:HB3	50:CD:80:PHE:HD2	1.79	0.47
1:EB:1077:G:N2	1:EB:1080:A:OP2	2.40	0.47
1:EB:1087:G:H2'	1:EB:1088:G:C8	2.48	0.47
1:EB:1320:C:C2	53:FD:36:ARG:NH1	2.83	0.47
1:EB:407:G:OP1	38:QC:115:ARG:NE	2.47	0.47
1:EB:540:G:H2'	1:EB:541:G:O4'	2.14	0.47
1:EB:748:C:H6	1:EB:748:C:O5'	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1038:C:N4	2:FB:1117:G:H1	2.11	0.47
2:FB:935:C:H2'	2:FB:936:C:C6	2.49	0.47
55:HD:5:ASP:HB3	55:HD:8:THR:OG1	2.15	0.47
9:I:105:LEU:H	9:I:113:VAL:HB	1.78	0.47
4:IA:18:G:N2	4:IA:57:A:H62	2.03	0.47
5:IB:264:LYS:O	5:IB:267:SER:OG	2.23	0.47
10:J:14:ASP:O	10:J:17:GLN:HB2	2.14	0.47
11:K:15:LEU:N	11:K:136:GLU:O	2.45	0.47
36:KA:19:HIS:ND1	36:KA:204:ASN:OD1	2.46	0.47
38:MA:8:VAL:C	38:MA:10:ARG:H	2.16	0.47
10:NB:82:ARG:HB2	10:NB:88:ILE:HD13	1.97	0.47
37:PC:83:ARG:O	37:PC:87:LEU:HB2	2.13	0.47
21:U:93:GLU:OE2	21:U:93:GLU:N	2.47	0.47
42:UC:112:LEU:HA	42:UC:134:ILE:HG12	1.96	0.47
47:VA:27:LYS:NZ	55:DB:20:LYS:NZ	2.62	0.47
47:VA:94:ARG:NH1	47:VA:96:LEU:HD12	2.24	0.47
44:WC:51:ARG:HB3	48:AD:45:ARG:HH21	1.79	0.47
1:A:1077:G:N2	1:A:1080:A:OP2	2.37	0.47
1:A:1296:C:N4	1:A:1297:C:H41	2.12	0.47
1:A:1320:C:H2'	1:A:1321:C:O4'	2.14	0.47
1:A:376:G:OP1	50:YA:5:ARG:HB2	2.14	0.47
1:EB:1219:U:OP1	48:AD:19:ARG:NH2	2.43	0.47
2:B:1075:C:H5''	2:B:1076:C:C6	2.50	0.47
2:B:2052:G:H8	2:B:2052:G:O5'	1.98	0.47
2:B:2094:G:OP1	10:J:22:LYS:HG3	2.14	0.47
2:B:2210:G:C8	2:B:2211:G:N7	2.82	0.47
2:B:686:G:C2	31:EA:11:LYS:HD2	2.50	0.47
2:B:935:C:H2'	2:B:936:C:C6	2.50	0.47
8:H:181:ARG:HA	28:BA:42:PHE:HZ	1.78	0.47
1:EB:1349:A:H5''	43:VC:118:LYS:HZ1	1.80	0.47
1:EB:59:A:H1'	1:EB:354:G:N2	2.29	0.47
1:EB:584:G:H2'	1:EB:585:G:H8	1.79	0.47
2:FB:1464:C:H1'	2:FB:1529:A:H1'	1.95	0.47
2:FB:1654:A:H1'	2:FB:2823:A:H5'	1.95	0.47
2:FB:2124:G:O6	2:FB:2175:C:O2'	2.17	0.47
2:FB:2183:C:H2'	2:FB:2184:G:C8	2.49	0.47
2:FB:2402:C:OP2	2:FB:2402:C:C6	2.64	0.47
2:FB:2512:C:H5''	2:FB:2513:G:OP2	2.15	0.47
2:FB:2649:U:H2'	2:FB:2650:U:C6	2.48	0.47
2:FB:265:A:H1'	2:FB:266:G:O4'	2.15	0.47
2:FB:2795:G:H1'	2:FB:2802:G:N2	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:GB:89(A):G:H2'	3:GB:89(B):A:H8	1.79	0.47
55:HD:5:ASP:OD2	55:HD:8:THR:HG23	2.14	0.47
5:IB:175:LEU:HD12	5:IB:185:VAL:HG21	1.96	0.47
36:KA:29:ALA:HA	36:KA:32:ILE:HB	1.96	0.47
8:LB:115:ARG:HB3	8:LB:115:ARG:HH21	1.79	0.47
2:B:587:C:P	13:M:21:ARG:HH12	2.37	0.47
9:MB:3:ARG:CZ	9:MB:4:ILE:H	2.28	0.47
9:MB:56:SER:OG	9:MB:57:ASP:N	2.46	0.47
14:N:135:ASP:OD2	14:N:137:TYR:HB2	2.15	0.47
14:N:56:ARG:HG3	14:N:56:ARG:O	2.14	0.47
14:N:87:LYS:HG2	14:N:88:GLY:N	2.30	0.47
35:NC:186:ARG:HD3	35:NC:312:PHE:HD2	1.79	0.47
36:OC:75:LYS:H	36:OC:75:LYS:CD	2.26	0.47
37:PC:150:LYS:HG3	37:PC:169:ALA:HB2	1.96	0.47
37:PC:203:PHE:CZ	37:PC:206:GLU:HG3	2.41	0.47
22:V:30:VAL:HG23	22:V:37:VAL:HG12	1.96	0.47
23:W:93:ASP:CA	23:W:131:ARG:HH12	2.23	0.47
23:W:26:GLY:C	23:W:37:VAL:HG22	2.34	0.47
20:XB:19:LEU:HA	20:XB:19:LEU:HD12	1.69	0.47
2:FB:748:G:C6	20:XB:90:ARG:NH1	2.82	0.47
1:A:1245:A:H8	1:A:1245:A:OP2	1.98	0.47
1:A:1465:C:H2'	1:A:1466:C:O4'	2.14	0.47
1:A:584:G:H2'	1:A:585:G:H8	1.80	0.47
1:A:685:G:N2	1:A:704:A:OP2	2.46	0.47
1:A:968:A:H8	1:A:968:A:OP1	1.98	0.47
27:AA:11:SER:OG	27:AA:13:ILE:HG13	2.15	0.47
27:AA:26:LEU:HD21	27:AA:46:ASN:HB3	1.96	0.47
48:AD:26:ARG:NH1	48:AD:43:CYS:SG	2.87	0.47
2:B:1091:G:H2'	2:B:1091:G:N3	2.30	0.47
2:B:1787:A:H2'	2:B:1787:A:N3	2.29	0.47
2:B:2462:U:C2	2:B:2489:G:N2	2.83	0.47
2:B:302:C:H2'	2:B:303:U:H6	1.80	0.47
29:CA:32:PRO:HB3	29:CA:37:LYS:HD3	1.96	0.47
1:EB:1011:G:H1	1:EB:1018:C:H42	1.61	0.47
1:EB:1094:G:O2'	1:EB:1108:G:N2	2.47	0.47
1:EB:1068:G:N2	1:EB:1191:A:N3	2.50	0.47
1:EB:558:G:C8	1:EB:559:A:H2'	2.50	0.47
2:FB:1051:G:C6	2:FB:1052:C:C2	3.03	0.47
2:FB:1075:C:H5''	2:FB:1076:C:H6	1.80	0.47
2:FB:1608:A:HO2'	2:FB:1610:A:P	2.38	0.47
2:FB:2207:C:H2'	2:FB:2208:U:O4'	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2295:C:P	16:TB:10:ARG:HD3	2.54	0.47
2:FB:1662:C:O2'	2:FB:2687:U:OP1	2.24	0.47
2:FB:26:G:C6	2:FB:27:G:N1	2.82	0.47
2:FB:271(C):G:N7	2:FB:421:U:H2'	2.29	0.47
5:IB:10:THR:HB	5:IB:11:PRO:HD2	1.95	0.47
35:JA:138:TYR:OH	35:JA:174:ARG:HD2	2.14	0.47
32:JC:4:MET:O	32:JC:64:TYR:HE2	1.97	0.47
8:LB:44:GLY:N	8:LB:88:ILE:O	2.27	0.47
38:MA:109:GLY:HA3	38:MA:165:MET:SD	2.55	0.47
38:MA:150:GLU:OE2	38:MA:153:ARG:HD2	2.14	0.47
38:MA:18:LYS:CE	38:MA:21:LEU:H	2.26	0.47
10:NB:84:GLY:N	10:NB:88:ILE:HG23	2.29	0.47
35:NC:329:LEU:HG	35:NC:330:ASP:H	1.79	0.47
16:P:27:SER:HA	16:P:88:ASP:OD2	2.15	0.47
17:Q:105:LEU:HD22	17:Q:106:SER:H	1.79	0.47
17:Q:109:GLU:HA	17:Q:112:ARG:NH2	2.30	0.47
3:GB:9:G:P	16:TB:25:ARG:HH22	2.37	0.47
6:JB:18:ASP:HA	17:UB:82:LEU:HD11	1.97	0.47
42:UC:19:VAL:HG23	42:UC:21:LYS:HG2	1.96	0.47
47:VA:13:LYS:HG2	47:VA:14:ARG:H	1.79	0.47
23:W:126:VAL:HG11	23:W:161:VAL:HG22	1.96	0.47
47:ZC:74:VAL:O	47:ZC:78:ILE:HG12	2.15	0.47
1:A:1265:G:N2	1:A:1270:C:N3	2.62	0.47
1:A:130:A:O2'	1:A:131:C:O5'	2.24	0.47
1:A:1397:C:N3	1:A:1402:4OC:OP1	2.48	0.47
1:A:1400:5MC:O5'	1:A:1400:5MC:H6	1.97	0.47
1:A:28:G:O2'	1:A:296:U:OP1	2.26	0.47
1:A:781:A:OP2	1:A:800:G:N2	2.36	0.47
1:A:940:C:H2'	1:A:941:G:C8	2.50	0.47
1:A:9:G:H5''	39:NA:126:ARG:HD3	1.96	0.47
23:AC:183:LEU:HD23	23:AC:186:GLU:OE1	2.15	0.47
2:B:150:C:H2'	2:B:151:C:C6	2.50	0.47
2:B:1914:C:OP2	2:B:1915:5MU:H71	2.13	0.47
2:B:2438:U:O2'	2:B:2440:C:OP1	2.28	0.47
2:B:637:A:N6	2:B:652:U:H4'	2.30	0.47
28:BA:14:ILE:HB	28:BA:22:ILE:HB	1.97	0.47
1:EB:1137:C:H5'	1:EB:1138:G:N3	2.30	0.47
1:EB:582:U:H2'	1:EB:583:A:C8	2.49	0.47
2:FB:1011:G:H4'	18:VB:75:ASN:HD22	1.80	0.47
2:FB:1831:G:C6	2:FB:1832:C:N4	2.83	0.47
2:FB:2052:G:O5'	2:FB:2052:G:H8	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2140:C:H1'	2:FB:2152:G:H1	1.80	0.47
2:FB:2189:U:H2'	2:FB:2190:G:C8	2.50	0.47
2:FB:2210:G:C8	2:FB:2211:G:N7	2.82	0.47
2:FB:2742:C:OP1	33:KC:35:ARG:NE	2.45	0.47
2:FB:300:A:H2'	2:FB:334:C:H1'	1.96	0.47
7:G:132:VAL:HG12	7:G:139:PHE:HA	1.95	0.47
9:I:101:ARG:NH1	9:I:121:ILE:O	2.47	0.47
9:I:83:TYR:CD1	9:I:138:LYS:HD3	2.50	0.47
9:I:83:TYR:CE1	9:I:138:LYS:HD3	2.50	0.47
35:JA:326:LEU:HD21	35:JA:339:MET:O	2.14	0.47
36:KA:46:LYS:HB3	36:KA:46:LYS:HZ3	1.77	0.47
13:M:92:GLU:HA	13:M:123:LEU:HD21	1.97	0.47
9:MB:164:TYR:N	9:MB:167:GLU:OE1	2.37	0.47
14:N:135:ASP:OD2	14:N:137:TYR:CD2	2.66	0.47
36:OC:201:ILE:HD13	36:OC:201:ILE:HA	1.79	0.47
42:QA:126:LYS:HA	42:QA:126:LYS:HD3	1.51	0.47
18:VB:45:TYR:O	18:VB:49:HIS:ND1	2.38	0.47
43:VC:47:LEU:HD23	43:VC:50:LEU:HB2	1.95	0.47
1:EB:1248:A:C2	43:VC:70:LYS:HD2	2.49	0.47
19:WB:80:GLN:HA	19:WB:82:ARG:NH1	2.30	0.47
44:WC:24:VAL:HG22	44:WC:72:VAL:HG11	1.96	0.47
50:YA:20:VAL:HG13	50:YA:32:TYR:HB2	1.95	0.47
1:A:1453:G:C4'	1:A:1454:G:OP2	2.63	0.47
1:A:38:G:N2	1:A:397:A:H5''	2.22	0.47
48:AD:40:CYS:SG	48:AD:43:CYS:SG	3.13	0.47
2:B:1248:G:C5	18:R:3:ARG:HB2	2.50	0.47
2:B:127:A:H5''	2:B:128:C:C6	2.50	0.47
2:B:1356:G:H2'	2:B:1357:U:H6	1.79	0.47
1:A:1483:A:H1'	2:B:1948:G:O4'	2.15	0.47
2:B:2531:A:N6	2:B:2532:G:C6	2.82	0.47
2:B:2648:C:H2'	2:B:2649:U:H6	1.80	0.47
2:B:270(W):G:C4	2:B:270(X):G:C8	3.03	0.47
2:B:667:U:H2'	2:B:668:G:O4'	2.14	0.47
2:B:843:G:N2	2:B:936:C:C2	2.82	0.47
28:BA:69:LYS:HZ3	53:BB:43:GLU:HG2	1.79	0.47
2:FB:2356:C:O3'	24:BC:20:ARG:HD3	2.15	0.47
29:CA:34:PRO:HA	29:CA:37:LYS:NZ	2.30	0.47
25:CC:88:LYS:HE2	25:CC:92:LYS:NZ	2.30	0.47
4:D:13:C:H1'	4:D:23:C:H42	1.79	0.47
26:DC:46:GLN:HG2	26:DC:46:GLN:H	1.40	0.47
1:EB:1314:C:H2'	1:EB:1315:U:C6	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:533:A:O2'	1:EB:535:A:OP2	2.32	0.47
1:EB:640:A:N3	42:UC:115:SER:HB2	2.29	0.47
2:FB:1523:U:H2'	2:FB:1524:G:H8	1.80	0.47
2:FB:15:G:H1	2:FB:525:U:H3	1.61	0.47
2:FB:1899:G:H2'	2:FB:1899:G:N3	2.30	0.47
2:FB:1927:A:H2'	2:FB:1928:A:C8	2.50	0.47
2:FB:191:A:H2'	2:FB:192:C:C6	2.49	0.47
53:FD:51:VAL:N	53:FD:58:VAL:HG22	2.29	0.47
7:G:116:ASP:HA	7:G:119:ARG:HD3	1.96	0.47
9:I:8:PRO:HB3	9:I:51:ARG:HB3	1.95	0.47
13:M:89:ALA:O	13:M:91:PHE:N	2.48	0.47
35:NC:324:LEU:HD11	35:NC:326:LEU:HD23	1.97	0.47
1:A:345:C:H3'	17:Q:41:ARG:NH1	2.29	0.47
17:Q:55:ASN:ND2	17:Q:55:ASN:O	2.45	0.47
42:QA:53:VAL:HB	42:QA:58:TYR:CD2	2.49	0.47
38:QC:98:GLU:HG3	38:QC:194:LEU:HD22	1.95	0.47
15:SB:33:ARG:O	15:SB:33:ARG:HG3	2.15	0.47
45:TA:67:ASP:C	45:TA:67:ASP:OD2	2.53	0.47
25:Y:54:ALA:O	25:Y:56:GLN:N	2.48	0.47
51:ZA:66:SER:HG	51:ZA:69:LYS:H	1.52	0.47
22:ZB:9:LYS:HD2	22:ZB:29:GLU:HB2	1.97	0.47
1:A:1077:G:C2	1:A:1081:G:C6	3.03	0.47
1:A:1129:C:OP2	1:A:1129:C:H6	1.97	0.47
1:A:1330:U:O4	1:A:1331:G:N1	2.47	0.47
1:A:159:G:O2'	1:A:161:A:N7	2.33	0.47
1:A:722:A:N6	1:A:724:G:C2	2.82	0.47
1:A:92:G:H2'	1:A:93:U:O4'	2.15	0.47
23:AC:118:GLN:O	23:AC:120:ILE:HD12	2.15	0.47
2:B:1175:U:H5	2:B:1177:A:C5	2.32	0.47
2:B:1446:C:H2'	2:B:1447:G:C8	2.49	0.47
2:B:1608:A:HO2'	2:B:1610:A:P	2.37	0.47
2:B:2138:C:H2'	2:B:2139:C:C6	2.49	0.47
2:B:573:G:O2'	2:B:574:C:H3'	2.14	0.47
2:B:782:A:N7	5:E:221:VAL:HG11	2.30	0.47
2:B:998:C:H2'	2:B:999:U:O4'	2.14	0.47
53:BB:31:ILE:H	53:BB:31:ILE:HD13	1.80	0.47
29:CA:50:GLY:O	29:CA:57:VAL:N	2.42	0.47
50:CD:27:LYS:HG3	50:CD:27:LYS:H	1.37	0.47
5:E:146:GLU:HG2	5:E:190:TYR:O	2.15	0.47
5:E:145:VAL:HB	5:E:155:LEU:HB2	1.95	0.47
1:EB:1125:U:C5	44:WC:38:ILE:HG21	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:41:G:H2'	1:EB:42:G:H8	1.79	0.47
1:EB:964:A:N3	1:EB:969:A:O2'	2.45	0.47
6:F:111:ARG:HA	15:O:1:MET:SD	2.54	0.47
2:FB:1919:A:C8	2:FB:1920:4OC:H5	2.50	0.47
2:FB:2346:A:H5'	2:FB:2383:G:O4'	2.15	0.47
2:FB:782:A:N7	5:IB:221:VAL:HG11	2.29	0.47
3:GB:107:U:H2'	3:GB:108:C:H5''	1.95	0.47
29:GC:40:LYS:HE3	29:GC:44:THR:O	2.15	0.47
9:I:46:GLU:HB2	9:I:49:VAL:HG12	1.95	0.47
36:KA:53:ARG:HG2	36:KA:53:ARG:HH11	1.80	0.47
37:LA:134:ILE:O	37:LA:137:ALA:N	2.48	0.47
37:LA:8:ILE:HD13	37:LA:16:ARG:NH1	2.29	0.47
38:MA:18:LYS:NZ	38:MA:31:CYS:SG	2.78	0.47
16:P:49:VAL:HG11	16:P:77:ALA:HB2	1.95	0.47
43:RA:31:GLN:HB3	43:RA:35:GLU:OE1	2.15	0.47
43:RA:51:ARG:HG2	43:RA:51:ARG:NH1	2.29	0.47
17:UB:91:ARG:NH1	17:UB:120:ARG:HH12	2.13	0.47
22:V:98:VAL:HB	22:V:103:GLY:O	2.14	0.47
43:VC:9:ARG:NH1	43:VC:14:VAL:HG22	2.29	0.47
43:VC:5:TYR:OH	43:VC:7:THR:OG1	2.24	0.47
1:A:1049:U:OP1	48:WA:3:ARG:HD2	2.15	0.47
44:WC:23:ILE:HD12	44:WC:26:ALA:HB3	1.97	0.47
45:XC:96:ARG:HB2	45:XC:96:ARG:HE	1.55	0.47
26:Z:16:LEU:O	26:Z:67:LYS:NZ	2.34	0.47
1:A:1397:C:O2'	1:A:1398:A:H5'	2.15	0.47
1:A:817:C:H42	1:A:1529:G:H1	1.63	0.47
2:B:1086:A:H5'	2:B:1087:G:H5'	1.97	0.47
2:B:1751:C:H2'	2:B:1752:C:C6	2.50	0.47
2:B:2346:A:H5'	2:B:2383:G:O4'	2.15	0.47
2:B:403:U:H4'	2:B:404:C:H5'	1.97	0.47
2:B:674:G:O2'	7:G:74:ARG:HD3	2.15	0.47
25:CC:54:ALA:O	25:CC:56:GLN:N	2.48	0.47
55:DB:20:LYS:HE2	55:DB:20:LYS:HB3	1.64	0.47
1:EB:1298:C:H2'	41:TC:114:ARG:HH12	1.80	0.47
1:EB:479:C:H2'	1:EB:480:U:C6	2.50	0.47
1:EB:575:G:H4'	1:EB:576:G:H5''	1.96	0.47
1:EB:770:C:O2'	1:EB:899:C:N3	2.43	0.47
2:FB:1309:G:O5'	2:FB:1309:G:H8	1.97	0.47
2:FB:1637:A:H4'	2:FB:2711:A:O2'	2.15	0.47
2:FB:1657:C:O2'	2:FB:1658:C:H5'	2.15	0.47
1:EB:702:A:N6	2:FB:1848:A:N1	2.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:573:G:O2'	2:FB:574:C:H3'	2.15	0.47
2:FB:58:G:C6	2:FB:59:U:C4	3.03	0.47
7:G:40:GLN:HE22	7:G:184:TYR:H	1.63	0.47
29:GC:50:GLY:O	29:GC:57:VAL:N	2.40	0.47
4:HB:65:C:H2'	4:HB:66:C:C6	2.50	0.47
35:JA:109:ARG:O	35:JA:171:VAL:HB	2.15	0.47
35:JA:329:LEU:CG	35:JA:330:ASP:H	2.27	0.47
6:JB:95:ILE:HG13	6:JB:96:PHE:CD2	2.50	0.47
11:K:94:HIS:HA	11:K:96:GLU:OE2	2.15	0.47
36:KA:75:LYS:H	36:KA:75:LYS:CD	2.26	0.47
8:LB:59:GLU:HB3	8:LB:144:ILE:HD12	1.96	0.47
38:MA:192:GLU:CD	38:MA:192:GLU:H	2.18	0.47
38:MA:98:GLU:HG3	38:MA:194:LEU:HD22	1.96	0.47
35:NC:326:LEU:HD21	35:NC:339:MET:O	2.15	0.47
37:PC:139:GLN:HB3	37:PC:140:ARG:NH1	2.26	0.47
2:B:559:G:H21	18:R:49:HIS:CD2	2.32	0.47
14:RB:60:ARG:NH1	14:RB:60:ARG:HG3	2.30	0.47
40:SC:100:ASN:N	52:ED:23:LYS:NZ	2.63	0.47
20:T:31:GLU:O	20:T:35:ILE:HG13	2.15	0.47
45:XC:109:VAL:HG12	52:ED:86:VAL:HG13	1.96	0.47
46:YC:117:ARG:HG2	46:YC:122:THR:HB	1.97	0.47
1:A:1030:C:C5	1:A:1031:G:H1'	2.50	0.47
1:A:1062:U:H2'	1:A:1063:C:C5	2.49	0.47
1:A:926:G:C6	1:A:1505:G:C6	3.03	0.47
52:AB:68:LYS:HZ2	52:AB:68:LYS:HA	1.79	0.47
2:B:479:A:N3	2:B:481:G:H5''	2.30	0.47
2:B:821:A:H2'	2:B:946:G:H5''	1.95	0.47
25:CC:40:ARG:NH2	25:CC:42:GLN:HG2	2.30	0.47
51:DD:13:ASP:OD2	51:DD:14:LYS:NZ	2.48	0.47
1:EB:1422:G:H2'	1:EB:1423:G:C8	2.50	0.47
1:EB:715:A:H2'	1:EB:716:A:H8	1.80	0.47
1:EB:877:C:O2'	42:UC:3:THR:OG1	2.18	0.47
2:FB:1091:G:H2'	2:FB:1091:G:N3	2.30	0.47
2:FB:1762:A:OP1	2:FB:1762:A:H4'	2.14	0.47
2:FB:574:C:C4	2:FB:2033:A:H5''	2.50	0.47
28:FC:9:LEU:HG	28:FC:27:THR:HG22	1.96	0.47
55:HD:6:ARG:HG3	55:HD:6:ARG:NH1	2.29	0.47
10:J:88:ILE:HD12	10:J:89:TYR:O	2.15	0.47
11:K:91:LEU:O	11:K:93:THR:N	2.47	0.47
11:K:96:GLU:O	11:K:100:GLU:HB2	2.15	0.47
36:KA:97:TRP:HH2	36:KA:176:GLU:OE2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:1054:C:N4	34:LC:22:A:H61	2.13	0.47
13:M:98:GLU:CD	13:M:98:GLU:H	2.16	0.47
38:MA:202:LEU:HA	38:MA:205:GLU:OE2	2.15	0.47
14:N:110:THR:OG1	14:N:113:GLN:HB2	2.14	0.47
14:N:63:LYS:HD3	23:W:175:VAL:HG21	1.95	0.47
35:NC:213:GLU:HG2	35:NC:279:HIS:CE1	2.50	0.47
35:NC:262:SER:OG	35:NC:265:LYS:HB2	2.14	0.47
11:OB:114:ARG:O	11:OB:118:LYS:HG3	2.15	0.47
11:OB:128:HIS:HA	11:OB:129:PRO:HD3	1.71	0.47
17:Q:107:ASP:O	17:Q:110:ILE:HG22	2.13	0.47
38:QC:18:LYS:HG3	38:QC:20:TYR:N	2.29	0.47
43:RA:106:ALA:O	43:RA:108:VAL:HG23	2.15	0.47
39:RC:6:PHE:O	39:RC:7:GLU:HB2	2.15	0.47
40:SC:20:ALA:O	40:SC:23:LYS:N	2.48	0.47
45:TA:18:ARG:NH2	45:TA:35:PRO:O	2.46	0.47
17:UB:74:ARG:NH1	17:UB:76:PHE:CE1	2.79	0.47
47:VA:57:ARG:HH11	47:VA:57:ARG:HB3	1.80	0.47
25:Y:19:GLN:OE1	25:Y:19:GLN:HA	2.08	0.47
1:A:1179:A:H2'	1:A:1180:A:O4'	2.15	0.47
1:A:1342:C:H2'	1:A:1343:G:C8	2.50	0.47
1:A:247:G:OP2	51:ZA:100:LYS:N	2.44	0.47
1:A:748:C:H4'	1:A:749:C:O5'	2.15	0.47
1:A:96:G:C6	1:A:97:U:C4	3.03	0.47
1:A:998(B):C:N4	1:A:1042:G:H1	2.13	0.47
2:B:1115:G:C2	2:B:1116:C:C2	3.03	0.47
2:B:1651:G:C2	2:B:1652:A:C4	3.03	0.47
2:B:571:A:C8	2:B:2030:A:N6	2.82	0.47
1:EB:987:G:H1	1:EB:1218:C:H42	1.63	0.47
1:EB:420:U:H2'	1:EB:422:C:C5	2.49	0.47
1:EB:435:C:H2'	1:EB:436:C:C6	2.50	0.47
1:EB:722:A:N6	1:EB:724:G:C2	2.82	0.47
1:EB:85:U:H5	1:EB:86:U:C6	2.33	0.47
1:EB:932:C:H4'	41:TC:4:ARG:NH1	2.30	0.47
2:FB:1321:A:H2'	2:FB:1322:A:C8	2.50	0.47
2:FB:67:U:H2'	2:FB:68:G:C8	2.50	0.47
2:FB:871:U:OP1	14:RB:5:ARG:HG3	2.15	0.47
2:B:2753:A:O2'	33:GA:15:LYS:NZ	2.47	0.47
8:H:8:LYS:HZ1	8:H:9:ARG:HG3	1.79	0.47
5:IB:37:LEU:HD12	5:IB:38:LYS:N	2.31	0.47
10:J:74:ASN:OD1	10:J:75:LEU:N	2.48	0.47
35:JA:262:SER:OG	35:JA:265:LYS:HB2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:KB:116:ASP:HA	7:KB:119:ARG:HD3	1.96	0.47
12:L:65:THR:OG1	12:L:66:LYS:N	2.43	0.47
3:C:90:C:OP1	14:N:16:ARG:NH2	2.48	0.47
15:O:10:LEU:O	15:O:12:ARG:HG3	2.15	0.47
38:QC:11:LEU:HD23	38:QC:66:ARG:HD3	1.97	0.47
38:QC:12:CYS:SG	38:QC:18:LYS:HE3	2.55	0.47
14:RB:43:THR:N	14:RB:46:GLN:OE1	2.44	0.47
2:FB:1287:A:OP1	15:SB:105:ARG:HB3	2.15	0.47
20:T:62:HIS:O	20:T:64:MET:N	2.48	0.47
47:VA:34:LEU:HD13	47:VA:41:PRO:HG3	1.96	0.47
48:WA:53:LEU:HD13	48:WA:53:LEU:HA	1.68	0.47
21:YB:93:GLU:OE2	21:YB:93:GLU:N	2.48	0.47
46:YC:52:LEU:HD22	46:YC:52:LEU:H	1.80	0.47
47:ZC:12:ASN:O	47:ZC:44:ARG:HD3	2.14	0.47
47:ZC:14:ARG:HA	47:ZC:44:ARG:HG2	1.97	0.47
1:A:295:C:H2'	1:A:296:U:O4'	2.15	0.46
23:AC:24:LEU:HB2	23:AC:41:LEU:HD13	1.97	0.46
2:B:15:G:H1	2:B:525:U:H3	1.63	0.46
2:B:2792:G:H22	2:B:2805:G:H1'	1.80	0.46
2:B:922:U:H2'	2:B:923:C:C6	2.51	0.46
2:B:971:C:OP1	2:B:989:G:N2	2.33	0.46
3:C:11:C:H3'	3:C:12:C:C6	2.49	0.46
1:EB:723:U:O2'	1:EB:724:G:O5'	2.27	0.46
1:EB:790:A:OP1	4:MC:38:A:O2'	2.19	0.46
1:EB:925:G:C2	1:EB:927:G:C8	3.03	0.46
2:FB:1667:G:O2'	2:FB:1991:U:O4	2.26	0.46
2:FB:2166:G:N2	2:FB:2167:U:O4	2.48	0.46
2:FB:2712:U:O2'	2:FB:2712(A):A:H5''	2.15	0.46
2:FB:1750:G:N3	2:FB:2860:A:H2	2.12	0.46
2:FB:444:C:H1'	7:KB:49:ALA:HA	1.96	0.46
2:FB:50:U:H4'	2:FB:51:G:OP2	2.15	0.46
8:H:173:LEU:HD23	8:H:173:LEU:HA	1.75	0.46
4:HB:45:G:H2'	4:HB:46:G:C8	2.49	0.46
5:IB:226:MET:HG2	5:IB:226:MET:H	1.38	0.46
35:JA:114:GLU:HB3	35:JA:204:ALA:O	2.15	0.46
36:KA:141:GLU:O	36:KA:145:LEU:HB2	2.15	0.46
36:KA:87:ARG:NH2	36:KA:230:VAL:HB	2.30	0.46
7:KB:40:GLN:O	7:KB:44:ARG:HG2	2.15	0.46
4:MC:18:G:H1'	4:MC:58:A:H2	1.79	0.46
1:A:9:G:H5'	39:NA:122:GLU:OE1	2.15	0.46
36:OC:70:PHE:CE1	36:OC:163:PHE:HD1	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:932:C:H4'	41:PA:4:ARG:NH1	2.30	0.46
12:PB:66:LYS:HB2	12:PB:82:ASN:OD1	2.15	0.46
38:QC:22:LYS:HD2	38:QC:25:ARG:HD3	1.97	0.46
38:QC:41:GLY:C	38:QC:43:HIS:H	2.19	0.46
43:RA:9:ARG:NH1	43:RA:14:VAL:HG22	2.30	0.46
16:TB:32:LEU:H	16:TB:32:LEU:HG	1.33	0.46
36:OC:178:ARG:NH2	42:UC:74:PRO:HB3	2.30	0.46
47:VA:20:THR:C	47:VA:22:ILE:H	2.19	0.46
45:XC:18:ARG:NH2	45:XC:35:PRO:O	2.48	0.46
50:YA:20:VAL:HG22	50:YA:32:TYR:HD1	1.80	0.46
47:ZC:89:GLY:O	47:ZC:93:ARG:HB2	2.15	0.46
1:A:1124:G:H21	1:A:1127:G:H22	1.62	0.46
1:A:1265:G:C2	1:A:1266:G:H1'	2.51	0.46
1:A:1278:U:H5''	1:A:1279:A:O4'	2.15	0.46
1:A:769:G:H4'	1:A:1513:A:H4'	1.96	0.46
1:A:252:U:H5'	1:A:253:U:OP2	2.16	0.46
1:A:937:A:H5''	1:A:938:A:OP2	2.15	0.46
2:B:1047:G:O2'	2:B:1110:G:N2	2.47	0.46
2:B:1445:C:H2'	2:B:1446:C:C6	2.50	0.46
55:DB:18:TYR:CD1	55:DB:22:ARG:HG2	2.50	0.46
51:DD:43:LEU:HD23	51:DD:43:LEU:HA	1.62	0.46
1:EB:1265:G:C2	1:EB:1266:G:H1'	2.51	0.46
1:EB:986:A:O2'	53:FD:55:LYS:HD2	2.15	0.46
2:FB:1914:C:OP2	2:FB:1915:5MU:H71	2.16	0.46
2:FB:2345:G:N3	2:FB:2381:C:H2'	2.30	0.46
9:I:127:GLU:HB2	9:I:128:PRO:HD2	1.96	0.46
5:IB:253:GLN:HB2	5:IB:257:LEU:HD22	1.95	0.46
35:JA:121:GLY:O	35:JA:124:ALA:N	2.47	0.46
35:JA:213:GLU:HG2	35:JA:279:HIS:CE1	2.49	0.46
12:L:98:VAL:HG11	12:L:114:ILE:HG23	1.97	0.46
8:LB:136:ARG:CZ	8:LB:136:ARG:H	2.29	0.46
13:M:31:ALA:O	13:M:33:ARG:N	2.48	0.46
38:MA:101:LEU:HD13	38:MA:133:VAL:HG11	1.97	0.46
41:PA:76:ARG:HD3	41:PA:76:ARG:HA	1.76	0.46
42:QA:28:ALA:HB3	42:QA:57:PRO:HB2	1.96	0.46
13:QB:92:GLU:HA	13:QB:123:LEU:HD21	1.97	0.46
38:QC:18:LYS:CE	38:QC:21:LEU:H	2.26	0.46
1:A:1349:A:H5''	43:RA:118:LYS:HZ1	1.80	0.46
38:QC:88:VAL:HG13	39:RC:97:GLY:HA3	1.98	0.46
44:SA:40:LEU:HG	44:SA:41:PRO:HD2	1.96	0.46
45:TA:109:VAL:HG12	52:AB:86:VAL:HG13	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:684:A:O2'	45:TA:39:PRO:O	2.31	0.46
48:WA:24:CYS:SG	48:WA:27:CYS:SG	3.14	0.46
37:LA:19:GLU:HB2	48:WA:52:GLN:HG2	1.97	0.46
45:XC:31:THR:HG23	45:XC:42:TRP:HB3	1.96	0.46
47:ZC:13:LYS:HG2	47:ZC:14:ARG:H	1.80	0.46
1:A:1126:U:O2	1:A:1280:A:H5'	2.15	0.46
2:B:1051:G:C6	2:B:1052:C:C2	3.03	0.46
2:B:1586:A:H2'	2:B:1587:A:O4'	2.14	0.46
2:B:1607:C:H4'	2:B:1608:A:C5'	2.45	0.46
2:B:848:G:H2'	2:B:849:A:C8	2.51	0.46
2:B:847:U:OP2	2:B:929:G:O6	2.33	0.46
3:C:66:A:H61	3:C:108:C:H5''	1.79	0.46
50:CD:20:VAL:HG13	50:CD:32:TYR:HB2	1.97	0.46
1:A:1244:C:OP1	55:DB:9:ARG:HB2	2.15	0.46
1:EB:1030:C:C5	1:EB:1031:G:H1'	2.50	0.46
1:EB:1077:G:C2	1:EB:1081:G:C6	3.02	0.46
1:EB:1278:U:H5''	1:EB:1279:A:O4'	2.15	0.46
1:EB:417:C:H2'	1:EB:418:C:H6	1.79	0.46
1:EB:661:G:H1	1:EB:744:C:H42	1.63	0.46
1:EB:753:A:H5'	1:EB:754:C:H5	1.79	0.46
1:EB:868:C:H2'	1:EB:869:G:O4'	2.14	0.46
2:FB:1045:A:C5'	2:FB:1111:A:H61	2.28	0.46
2:FB:1386:C:H2'	2:FB:1387:C:C6	2.51	0.46
2:FB:155:C:H3'	2:FB:155:C:OP2	2.16	0.46
2:FB:355:G:C2	2:FB:356:G:C8	3.04	0.46
2:FB:619:G:H5''	2:FB:620:G:OP2	2.15	0.46
2:FB:667:U:H2'	2:FB:668:G:O4'	2.16	0.46
2:FB:844:C:O5'	2:FB:845:G:N2	2.48	0.46
3:GB:48:A:H2'	3:GB:49:C:C6	2.50	0.46
2:B:2315:G:H21	8:H:128:ARG:HH22	1.63	0.46
55:HD:18:TYR:CD1	55:HD:22:ARG:HG2	2.49	0.46
5:IB:246:PRO:HB2	5:IB:254:THR:HG22	1.97	0.46
10:J:64:GLU:N	10:J:64:GLU:OE2	2.49	0.46
6:JB:47:VAL:O	6:JB:49:LEU:HD23	2.16	0.46
32:JC:63:PRO:HG2	32:JC:64:TYR:CD2	2.51	0.46
36:KA:167:PRO:HG2	36:KA:192:SER:HB2	1.97	0.46
36:KA:205:ASP:HA	36:KA:211:ILE:HD11	1.97	0.46
2:FB:2314:C:H4'	8:LB:38:VAL:HG21	1.97	0.46
9:MB:105:LEU:H	9:MB:113:VAL:HB	1.79	0.46
10:NB:8:PRO:HD3	10:NB:15:VAL:HB	1.95	0.46
15:O:47:PHE:O	15:O:51:LEU:HG	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:PB:13:ASN:ND2	12:PB:97:ARG:HB2	2.31	0.46
42:QA:121:ASP:HB2	42:QA:125:ARG:NH2	2.30	0.46
41:TC:32:ARG:HG3	41:TC:33:ASP:OD2	2.14	0.46
46:UA:25:PRO:O	46:UA:28:LYS:HE2	2.16	0.46
17:UB:39:ARG:HB3	17:UB:39:ARG:HH11	1.80	0.46
46:YC:25:PRO:O	46:YC:28:LYS:HE2	2.15	0.46
47:ZC:61:GLU:OE1	47:ZC:62:ASN:ND2	2.49	0.46
1:A:1297:C:H4'	1:A:1298:C:H5'	1.96	0.46
1:A:170:U:H2'	1:A:171:A:H8	1.79	0.46
1:A:452:A:H4'	50:YA:72:ARG:HH12	1.81	0.46
2:B:117:G:H5''	2:B:118:A:OP2	2.16	0.46
2:B:1222:C:H42	2:B:1227:G:H1	1.63	0.46
2:B:1278:A:OP1	15:O:36:THR:HG23	2.16	0.46
2:B:2521:C:H2'	2:B:2522:U:C6	2.51	0.46
2:B:270(U):G:H2'	2:B:270(V):C:C6	2.51	0.46
2:B:18:C:O2'	2:B:553:U:OP1	2.33	0.46
2:B:822:U:H2'	2:B:823:G:H8	1.80	0.46
3:C:111:U:H2'	3:C:112:G:C8	2.51	0.46
55:DB:6:ARG:NH1	55:DB:6:ARG:HG3	2.30	0.46
26:DC:21:LEU:O	26:DC:25:VAL:HG12	2.13	0.46
26:DC:53:LEU:HD23	26:DC:53:LEU:HA	1.63	0.46
5:E:108:PRO:HG2	5:E:111:LEU:HB2	1.97	0.46
1:EB:1126:U:O2	1:EB:1280:A:H5'	2.16	0.46
1:EB:1478:C:H2'	1:EB:1479:C:C6	2.50	0.46
1:EB:467:G:O6	1:EB:468:A:N6	2.48	0.46
1:EB:792:A:O2'	1:EB:794:A:N7	2.40	0.46
1:EB:92:G:H2'	1:EB:93:U:O4'	2.13	0.46
6:F:108:SER:OG	6:F:163:GLU:HG3	2.15	0.46
2:FB:1400:G:C6	2:FB:1401:G:C6	3.03	0.46
2:FB:213:A:O2'	2:FB:214:G:H5'	2.15	0.46
2:FB:72:U:N3	26:DC:62:THR:HG23	2.31	0.46
2:FB:787:U:H5''	2:FB:788:A:H5'	1.96	0.46
53:FD:41:VAL:HG12	53:FD:44:MET:HG3	1.97	0.46
8:H:59:GLU:HB3	8:H:144:ILE:HD12	1.98	0.46
8:H:77:ILE:H	8:H:82:LEU:HB2	1.81	0.46
4:HB:16:C:H3'	4:HB:16:C:OP2	2.15	0.46
9:I:103:LEU:HD21	9:I:105:LEU:HD21	1.97	0.46
5:IB:6:PHE:CE1	5:IB:13:ARG:NH1	2.83	0.46
35:JA:316:ARG:HA	35:JA:327:TYR:HA	1.96	0.46
36:KA:68:ILE:HD12	36:KA:161:ALA:HB3	1.98	0.46
38:MA:127:THR:HB	38:MA:132:ARG:HA	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:MA:160:GLN:O	38:MA:163:GLU:HB3	2.15	0.46
38:MA:13:ARG:HB2	38:MA:40:PRO:HD3	1.97	0.46
3:C:90:C:H5'	14:N:16:ARG:HH22	1.80	0.46
10:NB:50:ARG:O	10:NB:54:GLN:HG2	2.15	0.46
42:QA:97:VAL:HG21	42:QA:128:GLY:HA2	1.97	0.46
38:QC:127:THR:OG1	38:QC:130:GLY:O	2.30	0.46
38:QC:158:ILE:O	38:QC:162:LEU:HB2	2.15	0.46
43:RA:79:LEU:CD1	43:RA:83:ARG:HH12	2.27	0.46
19:S:85:LYS:NZ	19:S:85:LYS:HB3	2.31	0.46
44:SA:51:ARG:HA	48:WA:45:ARG:HE	1.79	0.46
20:T:11:ARG:HH12	20:T:98:LYS:C	2.19	0.46
41:TC:54:THR:HB	41:TC:56:GLN:HG3	1.98	0.46
41:TC:77:SER:HB3	41:TC:84:ASN:OD1	2.16	0.46
42:UC:97:VAL:HG21	42:UC:128:GLY:HA2	1.97	0.46
1:A:1384:C:H2'	1:A:1385:G:H8	1.79	0.46
52:AB:30:ASP:HB3	52:AB:33:ASP:HB2	1.97	0.46
2:B:101:G:O3'	26:Z:7:ARG:NH2	2.49	0.46
2:B:1384:A:N3	2:B:1405:U:H1'	2.30	0.46
2:B:1750:G:N3	2:B:2860:A:H2	2.14	0.46
2:B:2093:G:O6	2:B:2225:A:H2'	2.15	0.46
2:B:2847:U:O4	2:B:2848:G:N1	2.49	0.46
2:B:629:G:H1	2:B:634:C:H42	1.63	0.46
2:B:833:U:H2'	2:B:834:C:H6	1.80	0.46
2:B:849:A:N6	2:B:929:G:O2'	2.42	0.46
4:D:65:C:H2'	4:D:66:C:C6	2.50	0.46
26:DC:60:LEU:O	26:DC:64:LEU:N	2.43	0.46
51:DD:9:VAL:HG13	51:DD:56:VAL:HG22	1.98	0.46
5:E:260:ARG:HG2	5:E:261:LYS:O	2.15	0.46
1:EB:1118:C:H1'	1:EB:1179:A:C4	2.50	0.46
1:EB:1453:G:C4'	1:EB:1454:G:OP2	2.63	0.46
1:EB:410:G:H2'	1:EB:429:U:C4	2.50	0.46
1:EB:518:C:C5	1:EB:530:G:C4	3.03	0.46
1:EB:709:G:H2'	1:EB:710:G:H8	1.80	0.46
2:FB:1464:C:H2'	2:FB:1465:G:C8	2.51	0.46
2:FB:2075:U:C4	2:FB:2238:G:C6	3.04	0.46
2:FB:247:G:H4'	2:FB:386:G:C5	2.51	0.46
2:FB:253:C:H2'	2:FB:254:G:O4'	2.15	0.46
2:FB:398:G:H2'	2:FB:399:G:H8	1.78	0.46
2:FB:55:G:H2'	2:FB:56:A:H8	1.81	0.46
2:FB:711:G:N2	2:FB:720:C:N3	2.55	0.46
2:FB:875:G:H4'	23:AC:170:THR:HG21	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:FC:14:ILE:HB	28:FC:22:ILE:HB	1.97	0.46
53:FD:49:ILE:HG21	53:FD:71:LEU:HD11	1.98	0.46
4:HB:1:C:N4	4:HB:72:A:H61	2.11	0.46
37:LA:83:ARG:O	37:LA:87:LEU:HB2	2.15	0.46
10:NB:64:GLU:N	10:NB:64:GLU:OE2	2.48	0.46
40:OA:40:VAL:HG13	40:OA:63:TYR:CD1	2.50	0.46
36:OC:109:SER:HA	36:OC:112:VAL:HB	1.98	0.46
37:PC:86:VAL:HA	37:PC:89:GLU:HB2	1.97	0.46
38:QC:61:LYS:HG2	38:QC:203:VAL:HG13	1.98	0.46
18:R:6:THR:HG21	18:R:10:ARG:NH1	2.31	0.46
14:RB:110:THR:OG1	14:RB:113:GLN:HB2	2.15	0.46
14:RB:16:ARG:HA	14:RB:16:ARG:HD2	1.60	0.46
1:A:1279:A:C2	44:SA:43:ARG:NH1	2.83	0.46
6:JB:111:ARG:HA	15:SB:1:MET:SD	2.56	0.46
16:TB:35:ILE:HG21	16:TB:66:ALA:HB2	1.98	0.46
41:TC:69:VAL:HA	41:TC:138:LYS:HG3	1.96	0.46
17:UB:112:ARG:CZ	17:UB:112:ARG:HB3	2.44	0.46
49:XA:36:ILE:HD12	49:XA:63:ARG:HD3	1.97	0.46
21:YB:84:ALA:O	21:YB:87:GLN:HB2	2.16	0.46
1:A:1162:C:H2'	1:A:1163:C:C5	2.51	0.46
1:A:1167:A:H2'	1:A:1169:A:C8	2.50	0.46
1:A:479:C:H2'	1:A:480:U:C6	2.51	0.46
1:A:828:A:H4'	1:A:828:A:OP1	2.15	0.46
27:AA:40:THR:HG23	27:AA:43:ILE:HD12	1.98	0.46
27:AA:8:LEU:HB2	27:AA:28:LEU:HD13	1.97	0.46
2:B:1085:A:C2	2:B:1086:A:H1'	2.50	0.46
2:B:1112:G:H2'	2:B:1113:U:C6	2.51	0.46
2:B:1535:U:H3'	2:B:1537:C:H42	1.81	0.46
2:B:1762:A:H4'	2:B:1762:A:OP1	2.14	0.46
2:B:1789:A:H2'	2:B:1790:C:O4'	2.15	0.46
2:B:2581:G:H4'	2:B:2582:G:C8	2.50	0.46
2:B:459:U:H4'	31:EA:40:TRP:CZ3	2.51	0.46
1:A:986:A:O2'	53:BB:55:LYS:HD2	2.15	0.46
1:EB:266:G:H3'	51:DD:67:LYS:HB2	1.98	0.46
1:EB:1136:U:H4'	1:EB:1137:C:OP2	2.16	0.46
1:EB:1179:A:H2'	1:EB:1180:A:O4'	2.16	0.46
1:EB:1241:G:H2'	1:EB:1242:C:C6	2.51	0.46
1:EB:1292:U:H2'	1:EB:1293:G:C8	2.49	0.46
2:FB:1058:G:O6	2:FB:1088:A:H4'	2.16	0.46
2:FB:1510:A:C6	2:FB:1511:A:N6	2.84	0.46
7:G:31:HIS:HB2	13:M:9:ASN:OD1	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:IA:27:U:H2'	4:IA:28:C:C6	2.51	0.46
31:IC:29:LYS:NZ	31:IC:29:LYS:HB3	2.31	0.46
7:KB:182:ASN:O	7:KB:186:ILE:HG13	2.16	0.46
2:B:588:U:H5'	13:M:16:ARG:HH12	1.79	0.46
38:MA:103:ASN:O	38:MA:106:TYR:HB3	2.16	0.46
24:BC:2:ALA:N	4:MC:75:C:H2'	2.31	0.46
37:PC:186:PHE:CE2	37:PC:188:LEU:HB2	2.50	0.46
15:SB:67:LEU:HD12	15:SB:76:VAL:HG21	1.96	0.46
46:UA:117:ARG:HG2	46:UA:122:THR:HB	1.98	0.46
22:V:9:LYS:HA	22:V:10:GLY:HA2	1.51	0.46
22:V:13:VAL:HG12	22:V:74:PRO:HA	1.97	0.46
46:YC:84:LEU:HB2	46:YC:105:TYR:CD2	2.50	0.46
47:ZC:54:VAL:HA	47:ZC:57:ARG:HH12	1.81	0.46
47:ZC:84:ILE:HG13	47:ZC:85:GLY:H	1.80	0.46
1:A:126:G:OP1	1:A:605:U:O2'	2.31	0.46
1:A:42:G:H1	1:A:400:C:H42	1.62	0.46
1:A:410:G:H2'	1:A:429:U:C4	2.50	0.46
2:B:1045:A:H5''	2:B:1111:A:H61	1.81	0.46
2:B:1424:G:H2'	2:B:1425:G:O4'	2.15	0.46
2:B:1464:C:H2'	2:B:1465:G:C8	2.51	0.46
54:CB:59:ALA:O	54:CB:63:ILE:HG13	2.16	0.46
51:DD:27:PHE:CE1	51:DD:36:ILE:HD11	2.51	0.46
1:EB:1422:G:H2'	1:EB:1423:G:H8	1.80	0.46
1:EB:555:C:H2'	1:EB:556:C:C6	2.51	0.46
1:EB:671:G:C2	1:EB:672:U:C2	3.04	0.46
52:ED:30:ASP:HB3	52:ED:33:ASP:HB2	1.98	0.46
32:FA:34:TRP:H	32:FA:34:TRP:HE3	1.63	0.46
2:FB:1288:U:C2	2:FB:1327:C:O2	2.69	0.46
2:FB:2134:A:OP2	2:FB:2156:G:N2	2.49	0.46
2:FB:2135:A:H61	2:FB:2155:G:H22	1.62	0.46
2:FB:2166:G:H2'	2:FB:2167:U:H5''	1.97	0.46
2:FB:2262:U:P	24:BC:19:LYS:NZ	2.89	0.46
2:FB:2401:U:H3'	2:FB:2402:C:C6	2.51	0.46
2:FB:2869:G:H2'	2:FB:2870:C:O4'	2.16	0.46
53:FD:27:GLU:HA	53:FD:28:LYS:HA	1.60	0.46
3:GB:21:G:C6	3:GB:22:U:C2	3.03	0.46
54:GD:17:ARG:HE	54:GD:17:ARG:HB2	1.59	0.46
54:GD:32:ALA:O	54:GD:36:LEU:HB2	2.15	0.46
4:IA:48:C:O2'	4:IA:59:A:O2'	2.32	0.46
10:J:81:VAL:HB	10:J:83:ALA:HB2	1.97	0.46
32:JC:34:TRP:HE3	32:JC:34:TRP:H	1.64	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:KA:155:LEU:HD23	36:KA:159:PRO:HD3	1.97	0.46
38:QC:192:GLU:H	38:QC:192:GLU:CD	2.18	0.46
14:RB:110:THR:HG1	14:RB:113:GLN:HB2	1.81	0.46
1:EB:1298:C:C6	41:TC:114:ARG:NH1	2.84	0.46
46:UA:84:LEU:HB2	46:UA:105:TYR:CD2	2.50	0.46
23:W:52:SER:HG	23:W:53:ILE:H	1.63	0.46
1:A:1358:U:H5''	48:WA:34:TYR:HA	1.98	0.46
24:X:33:ALA:N	24:X:64:ASP:OD1	2.48	0.46
22:ZB:86:ARG:HG2	22:ZB:87:LYS:H	1.79	0.46
47:ZC:57:ARG:NH1	47:ZC:57:ARG:HB3	2.31	0.46
1:A:1118:C:H1'	1:A:1179:A:C4	2.50	0.46
1:A:979:C:H41	1:A:1360:A:H62	1.64	0.46
1:A:1347:G:O2'	1:A:1373:G:O6	2.24	0.46
1:A:685:G:N1	1:A:704:A:OP2	2.43	0.46
1:A:998(B):C:N3	1:A:1042:G:N2	2.62	0.46
2:B:123:G:H2'	2:B:124:G:O4'	2.16	0.46
2:B:1493:C:C4	2:B:2210:G:C4	3.03	0.46
2:B:1466:G:C2'	2:B:1547:C:H41	2.29	0.46
2:B:2290:G:C6	2:B:2291:U:N3	2.84	0.46
2:B:2708:G:OP1	15:O:68:ARG:NH1	2.45	0.46
2:FB:2387:U:H1'	24:BC:41:ARG:HE	1.81	0.46
2:B:2344:U:H3'	30:DA:37:ARG:HB2	1.97	0.46
1:EB:1167:A:H8	1:EB:1167:A:OP1	1.99	0.46
1:EB:446:G:H2'	1:EB:447:G:C8	2.50	0.46
1:EB:959:A:H5''	1:EB:960:U:OP2	2.16	0.46
2:FB:1047:G:O2'	2:FB:1110:G:N2	2.47	0.46
2:FB:1638:C:H1'	2:FB:2698:U:O2'	2.16	0.46
2:FB:242:G:C8	32:JC:5:LYS:HG2	2.50	0.46
2:FB:323:G:H2'	7:KB:169:ASN:HD21	1.80	0.46
2:FB:665:C:H2'	2:FB:666:G:H8	1.80	0.46
28:FC:67:TYR:HE1	53:FD:41:VAL:HG21	1.81	0.46
8:H:120:LEU:N	8:H:179:PRO:O	2.49	0.46
34:HA:22:A:H62	35:JA:195:ARG:CG	2.29	0.46
8:LB:35:GLU:OE2	8:LB:160:VAL:HG12	2.16	0.46
9:MB:111:HIS:H	9:MB:111:HIS:HD2	1.62	0.46
39:NA:51:VAL:HB	39:NA:52:PRO:HD3	1.97	0.46
2:B:1453:A:O3'	15:O:77:ARG:NH1	2.49	0.46
12:PB:88:ASN:HD21	12:PB:90:GLN:HB2	1.80	0.46
37:PC:82:GLU:HA	37:PC:82:GLU:OE2	2.16	0.46
1:A:973:G:H1'	44:SA:54:PHE:HD1	1.80	0.46
40:SC:45:LEU:HD11	40:SC:57:GLN:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:ZB:38:ILE:HD11	22:ZB:64:GLU:HB3	1.96	0.46
1:A:1261:A:N6	1:A:1262:C:O2	2.48	0.46
1:A:1287:A:C2	1:A:1353:G:H1'	2.50	0.46
1:A:1437:C:H2'	1:A:1438:G:H8	1.80	0.46
1:A:1478:C:H2'	1:A:1479:C:H6	1.80	0.46
1:A:423:G:N3	1:A:423:G:H3'	2.31	0.46
1:A:424:G:H2'	1:A:425:G:H8	1.80	0.46
2:B:2140:C:H1'	2:B:2152:G:H1	1.81	0.46
2:B:2196:C:N4	2:B:2197:U:O4	2.48	0.46
2:B:300:A:H2'	2:B:334:C:H1'	1.97	0.46
2:B:604:G:C6	2:B:625:G:C2	3.03	0.46
54:CB:93:GLU:HA	54:CB:97:ALA:HA	1.98	0.46
5:E:146:GLU:CA	5:E:153:ALA:HA	2.46	0.46
5:E:63:ARG:HG3	5:E:63:ARG:NH1	2.08	0.46
1:EB:224:C:H2'	1:EB:225:C:C6	2.51	0.46
1:EB:937:A:H5''	1:EB:938:A:OP2	2.16	0.46
2:FB:1077:A:O4'	2:FB:1088:A:N6	2.49	0.46
2:FB:1125:G:H5''	2:FB:1126:A:H5''	1.98	0.46
2:FB:1176:G:H5'	2:FB:1177:A:OP2	2.15	0.46
2:FB:1278:A:H2'	2:FB:1279:G:H8	1.77	0.46
2:FB:275:G:H4'	2:FB:275:G:OP1	2.16	0.46
54:GD:14:LYS:HA	54:GD:17:ARG:CZ	2.46	0.46
4:HB:70:G:H2'	4:HB:71:C:H6	1.80	0.46
10:J:64:GLU:HA	10:J:67:ARG:HG2	1.98	0.46
7:KB:132:VAL:HG12	7:KB:139:PHE:HA	1.96	0.46
7:KB:54:ARG:NH2	7:KB:77:ASP:OD1	2.49	0.46
13:M:80:TYR:HA	13:M:111:ARG:O	2.15	0.46
9:MB:72:ILE:O	9:MB:76:VAL:HG22	2.16	0.46
10:NB:42:SER:OG	10:NB:43:ASN:N	2.49	0.46
35:NC:328:ARG:CZ	35:NC:339:MET:HB3	2.46	0.46
36:OC:16:HIS:CD2	36:OC:44:LEU:HD23	2.45	0.46
12:PB:98:VAL:HG11	12:PB:114:ILE:HG23	1.97	0.46
13:QB:127:ALA:O	13:QB:148:LEU:N	2.49	0.46
7:KB:120:GLU:OE1	13:QB:1:MET:N	2.49	0.46
2:B:1011:G:H4'	18:R:75:ASN:HD22	1.81	0.46
43:RA:16:ARG:O	43:RA:63:ILE:HG13	2.16	0.46
20:T:110:LYS:HD2	20:T:110:LYS:HA	1.74	0.46
16:TB:3:ARG:NH1	16:TB:4:LEU:N	2.64	0.46
42:UC:37:ARG:HB3	42:UC:37:ARG:HE	1.59	0.46
51:ZA:22:LEU:HA	51:ZA:22:LEU:HD13	1.57	0.46
1:A:671:G:C2	1:A:672:U:C2	3.03	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:AC:44:PHE:CZ	23:AC:86:VAL:HG11	2.51	0.46
23:AC:72:ARG:HD3	23:AC:72:ARG:HA	1.75	0.46
2:B:2630:G:H1'	2:B:2894:G:C1'	2.46	0.46
2:B:545:G:H21	2:B:548:A:N6	2.13	0.46
25:CC:84:GLY:O	25:CC:85:LEU:HD22	2.17	0.46
1:EB:1162:C:H2'	1:EB:1163:C:C6	2.51	0.46
1:EB:1178:G:N2	1:EB:1180:A:H3'	2.31	0.46
1:EB:754:C:O2	1:EB:754:C:H2'	2.15	0.46
2:FB:127:A:H5''	2:FB:128:C:C6	2.51	0.46
2:FB:1448:G:H4'	2:FB:1543:A:OP1	2.14	0.46
2:FB:1027:A:C2	2:FB:2488:A:H5'	2.51	0.46
2:FB:929:G:H8	2:FB:929:G:O5'	1.99	0.46
2:FB:945:A:C5	2:FB:2448:A:N1	2.84	0.46
8:H:7:LEU:HD11	8:H:176:LEU:HD22	1.97	0.46
4:HB:8:4SU:H2'	4:HB:22:G:H1	1.81	0.46
5:IB:261:LYS:HD3	5:IB:263:ARG:CZ	2.46	0.46
35:JA:133:ARG:HG3	35:JA:133:ARG:HH11	1.80	0.46
36:KA:54:THR:OG1	36:KA:201:ILE:HD11	2.16	0.46
7:KB:127:GLU:HA	7:KB:196:LEU:HB2	1.97	0.46
8:LB:46:ALA:HB3	8:LB:53:LEU:HD23	1.98	0.46
13:M:126:VAL:HG12	13:M:148:LEU:HB2	1.97	0.46
38:MA:61:LYS:HG2	38:MA:203:VAL:HG13	1.97	0.46
35:NC:223:ARG:HH22	35:NC:245:ARG:HH11	1.63	0.46
41:PA:69:VAL:HA	41:PA:138:LYS:HG3	1.98	0.46
18:R:36:ARG:HD3	18:R:40:PHE:CZ	2.51	0.46
43:RA:118:LYS:HB3	43:RA:118:LYS:HZ3	1.81	0.46
43:RA:47:LEU:HD23	43:RA:50:LEU:HB2	1.97	0.46
16:TB:66:ALA:O	16:TB:69:VAL:HG22	2.16	0.46
28:BA:34:GLU:OE2	47:VA:3:ARG:HD2	2.16	0.46
49:XA:75:PRO:O	49:XA:78:TYR:HB3	2.16	0.46
50:YA:75:ARG:HB3	50:YA:80:PHE:HD2	1.80	0.46
46:YC:110:VAL:HG22	46:YC:120:TYR:HB3	1.98	0.46
47:ZC:34:LEU:HD13	47:ZC:41:PRO:HG3	1.97	0.46
1:A:1226:C:H6	47:VA:103:THR:HB	1.80	0.45
1:A:1494:G:O2'	2:B:1912:A:O3'	2.35	0.45
1:A:359:U:H2'	1:A:360:A:C8	2.52	0.45
1:A:748:C:O5'	1:A:748:C:H6	1.99	0.45
23:AC:133:ILE:HA	23:AC:134:PRO:HD3	1.80	0.45
2:B:137(B):G:H1'	21:U:41:ASN:ND2	2.31	0.45
2:B:1389:G:H2'	2:B:1390:U:C6	2.51	0.45
2:B:2585:U:O4	35:JA:235:GLN:HB2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1662:C:O2'	2:B:2687:U:OP1	2.30	0.45
2:B:75:G:N2	2:B:112:U:O2	2.50	0.45
25:CC:26:ARG:CG	25:CC:26:ARG:HH11	2.28	0.45
51:DD:12:SER:HA	51:DD:14:LYS:HZ3	1.80	0.45
5:E:139:GLY:H	5:E:165:ILE:HB	1.82	0.45
1:EB:1053:G:H4'	1:EB:1054:C:H3'	1.97	0.45
1:EB:1125:U:O2	1:EB:1126:U:O2'	2.31	0.45
1:EB:1148:U:H5'	43:VC:9:ARG:NH2	2.26	0.45
1:EB:647:C:H2'	1:EB:648:A:C8	2.51	0.45
1:EB:859:A:H2'	1:EB:860:A:O4'	2.16	0.45
2:FB:1307:A:N6	2:FB:1606:G:O2'	2.49	0.45
2:FB:1509:A:H4'	2:FB:1510:A:N3	2.31	0.45
2:FB:185:U:H2'	2:FB:186:G:H8	1.81	0.45
2:FB:2324:C:H5''	2:FB:2325:G:H5'	1.98	0.45
2:FB:2398:U:H2'	2:FB:2399:G:C8	2.51	0.45
2:FB:2459:A:H5''	2:FB:2460:U:OP2	2.16	0.45
2:FB:2867:G:HO2'	2:FB:2868:A:P	2.38	0.45
2:FB:394:A:N6	2:FB:395:U:O4	2.48	0.45
2:FB:403:U:H4'	2:FB:404:C:H5'	1.97	0.45
2:FB:466:A:N3	2:FB:683:C:H1'	2.30	0.45
2:FB:879:G:H22	2:FB:899:A:H1'	1.81	0.45
9:I:18:GLU:O	9:I:24:VAL:HG23	2.16	0.45
2:FB:771:G:OP1	31:IC:10:ARG:NH1	2.49	0.45
10:J:87:LYS:HG2	10:J:89:TYR:N	2.31	0.45
35:JA:139:ALA:HA	35:JA:144:TRP:CE3	2.52	0.45
6:JB:2:LYS:H	6:JB:2:LYS:HG2	1.55	0.45
11:K:95:PRO:HD2	11:K:96:GLU:OE2	2.16	0.45
7:KB:126:VAL:HG11	7:KB:129:PHE:CZ	2.51	0.45
37:LA:139:GLN:HB3	37:LA:140:ARG:NH1	2.29	0.45
9:MB:28:GLY:N	9:MB:31:GLY:O	2.47	0.45
36:OC:9:GLU:HG2	36:OC:10:LEU:H	1.81	0.45
36:OC:118:LEU:HB3	36:OC:142:LEU:HD12	1.99	0.45
36:OC:170:GLU:O	36:OC:174:VAL:HG23	2.16	0.45
36:OC:68:ILE:HD12	36:OC:161:ALA:HB3	1.98	0.45
36:OC:97:TRP:HH2	36:OC:176:GLU:OE2	1.99	0.45
41:PA:50:ILE:HG21	41:PA:61:VAL:HG11	1.98	0.45
17:Q:74:ARG:NH1	17:Q:76:PHE:CE1	2.80	0.45
14:RB:98:LYS:HB3	14:RB:99:PRO:HD2	1.99	0.45
45:TA:82:VAL:HB	45:TA:108:ILE:HA	1.98	0.45
47:VA:57:ARG:HB3	47:VA:57:ARG:NH1	2.31	0.45
23:W:24:LEU:HB3	23:W:39:VAL:HG23	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:44:PHE:CZ	23:W:86:VAL:HG11	2.51	0.45
19:WB:75:PHE:HD1	19:WB:82:ARG:CG	2.29	0.45
1:A:750:G:N3	49:XA:23:GLY:HA3	2.31	0.45
20:XB:14:PRO:HG2	20:XB:78:GLU:HG3	1.97	0.45
1:A:137:C:H1'	50:YA:62:VAL:O	2.15	0.45
47:ZC:24:GLY:HA3	47:ZC:66:LEU:HD12	1.96	0.45
23:AC:166:SER:HA	23:AC:167:PRO:HD3	1.81	0.45
23:AC:175:VAL:HG23	23:AC:176:PRO:O	2.16	0.45
2:B:135:G:H1	2:B:144:C:H42	1.64	0.45
2:B:2071:A:H2'	2:B:2072:G:C8	2.51	0.45
2:B:375:C:H2'	2:B:376:C:C6	2.51	0.45
2:B:534:U:H2'	2:B:535:C:C6	2.52	0.45
2:B:536:A:H2'	2:B:537:C:C6	2.51	0.45
2:B:975:G:C2	2:B:990:A:C8	3.04	0.45
1:A:1320:C:C4	53:BB:36:ARG:HD3	2.51	0.45
53:BB:40:ILE:HB	53:BB:67:VAL:HA	1.98	0.45
49:BD:36:ILE:HD12	49:BD:63:ARG:HD3	1.98	0.45
29:CA:33:CYS:HB3	29:CA:36:CYS:SG	2.55	0.45
1:EB:1299:A:H2'	1:EB:1299:A:N3	2.31	0.45
1:EB:977:A:H2'	1:EB:978:A:H5''	1.97	0.45
32:FA:4:MET:O	32:FA:64:TYR:HE2	1.98	0.45
2:FB:1340:U:H4'	2:FB:1394:U:O2'	2.16	0.45
2:FB:1829:A:H3'	2:FB:1830:C:C6	2.51	0.45
2:FB:49:A:H4'	2:FB:50:U:H5''	1.98	0.45
2:FB:869:G:H2'	2:FB:870:A:H8	1.80	0.45
53:FD:51:VAL:HG12	53:FD:52:TYR:H	1.81	0.45
7:G:158:THR:OG1	7:G:159:GLY:N	2.49	0.45
7:G:181:LEU:HG	7:G:186:ILE:HD11	1.97	0.45
8:H:146:TYR:HD2	47:VA:11:ARG:HH12	1.63	0.45
2:B:2314:C:H5''	8:H:36:LYS:HZ1	1.81	0.45
4:HB:18:G:H22	4:HB:54:5MU:HN3	1.63	0.45
6:JB:11:MET:HB3	6:JB:24:THR:HA	1.98	0.45
6:JB:67:PHE:CZ	6:JB:75:VAL:HG12	2.51	0.45
7:KB:192:LEU:HD21	7:KB:194:MET:HE3	1.98	0.45
8:LB:11:TYR:HA	8:LB:15:VAL:HB	1.97	0.45
8:LB:15:VAL:HG13	8:LB:175:LEU:HD13	1.98	0.45
13:M:36:LYS:O	13:M:40:SER:HB3	2.17	0.45
38:MA:133:VAL:HG22	38:MA:135:LEU:H	1.82	0.45
38:MA:11:LEU:O	38:MA:15:GLU:HG2	2.15	0.45
14:N:110:THR:OG1	14:N:113:GLN:OE1	2.34	0.45
40:OA:100:ASN:OD1	52:AB:23:LYS:NZ	2.35	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:OC:156:LYS:NZ	36:OC:156:LYS:HB2	2.31	0.45
12:PB:73:ASP:OD2	12:PB:75:SER:HB3	2.16	0.45
17:Q:91:ARG:HH12	17:Q:120:ARG:HH12	1.65	0.45
18:R:28:ARG:NH1	18:R:38:THR:OG1	2.39	0.45
1:EB:9:G:H5'	39:RC:122:GLU:OE1	2.16	0.45
16:TB:12:PHE:O	16:TB:16:ASN:N	2.38	0.45
25:Y:56:GLN:OE1	25:Y:87:PRO:HG3	2.16	0.45
46:YC:73:GLU:H	46:YC:110:VAL:HG11	1.81	0.45
22:ZB:64:GLU:OE2	22:ZB:64:GLU:HA	2.16	0.45
1:A:1256:A:N1	1:A:1277:C:H2'	2.31	0.45
1:A:189:U:H3	51:ZA:72:ARG:HH12	1.63	0.45
1:A:417:C:H2'	1:A:418:C:H6	1.82	0.45
1:A:778:G:H8	1:A:778:G:O5'	1.99	0.45
1:A:800:G:H8	1:A:800:G:O5'	1.98	0.45
1:A:85:U:H5	1:A:86:U:C6	2.34	0.45
1:A:91:C:C2	1:A:92:G:N7	2.85	0.45
2:B:1027:A:C2	2:B:2488:A:H5'	2.51	0.45
2:B:1400:G:C6	2:B:1401:G:C6	3.04	0.45
2:B:1716:U:H3	2:B:1743:G:H1	1.65	0.45
2:B:2347:C:N3	2:B:2370:G:N2	2.42	0.45
2:B:2436:G:C6	2:B:2437:U:C4	3.04	0.45
2:B:2537:U:H2'	2:B:2538:C:H6	1.80	0.45
2:B:700:G:H1	2:B:732:C:H42	1.63	0.45
54:CB:29:LYS:O	54:CB:33:ILE:HG12	2.16	0.45
25:CC:85:LEU:HD13	25:CC:85:LEU:HA	1.83	0.45
1:EB:1062:U:H2'	1:EB:1063:C:C5	2.51	0.45
1:EB:1362(A):C:O2'	1:EB:1362(B):C:O4'	2.25	0.45
1:EB:157:G:H1	1:EB:164:U:H3	1.63	0.45
1:EB:778:G:H8	1:EB:778:G:O5'	1.99	0.45
6:F:78:LEU:HD12	6:F:78:LEU:HA	1.73	0.45
2:FB:2436:G:C6	2:FB:2437:U:C4	3.05	0.45
2:FB:273(E):C:C6	2:FB:273(E):C:OP2	2.66	0.45
2:FB:2743:C:OP1	33:KC:33:LYS:HE2	2.17	0.45
29:GC:16:ARG:HG3	29:GC:17:ASP:N	2.31	0.45
2:B:2658:C:H5'	9:I:160:LYS:NZ	2.31	0.45
5:IB:145:VAL:HG12	5:IB:146:GLU:O	2.16	0.45
10:J:62:LYS:O	10:J:66:GLU:HG2	2.16	0.45
2:FB:2783:G:H21	6:JB:37:ARG:HH12	1.64	0.45
33:KC:24:TYR:H	33:KC:24:TYR:HD2	1.62	0.45
8:LB:81:LYS:HD2	8:LB:81:LYS:HA	1.63	0.45
38:MA:158:ILE:O	38:MA:162:LEU:HB2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:NC:138:TYR:OH	35:NC:174:ARG:HD2	2.16	0.45
35:NC:271:LEU:HD23	35:NC:271:LEU:HA	1.78	0.45
15:O:36:THR:CG2	15:O:37:THR:H	2.26	0.45
40:OA:4:TYR:CD1	40:OA:92:LYS:HA	2.51	0.45
36:OC:116:GLU:HG2	36:OC:117:GLU:N	2.30	0.45
37:PC:186:PHE:CG	37:PC:187:ALA:N	2.84	0.45
17:Q:39:ARG:HB3	17:Q:39:ARG:HH11	1.81	0.45
38:QC:117:ALA:O	38:QC:121:VAL:HG23	2.16	0.45
38:QC:150:GLU:OE2	38:QC:150:GLU:HA	2.13	0.45
22:V:38:ILE:HD11	22:V:64:GLU:HB3	1.97	0.45
47:VA:14:ARG:HA	47:VA:44:ARG:HG2	1.98	0.45
47:VA:82:MET:SD	47:VA:93:ARG:HG3	2.56	0.45
23:W:179:ASP:O	23:W:182:LYS:HB2	2.16	0.45
44:WC:4:ILE:HB	44:WC:74:ILE:HG13	1.99	0.45
20:XB:12:ILE:HG12	20:XB:13:SER:N	2.30	0.45
25:Y:53:VAL:HG21	25:Y:94:LEU:HD11	1.97	0.45
26:Z:10:LEU:HA	26:Z:13:ALA:HB3	1.97	0.45
47:ZC:57:ARG:HH11	47:ZC:57:ARG:HB3	1.81	0.45
1:A:1000:A:H2	1:A:1040:U:H3	1.65	0.45
1:A:1155:G:H8	1:A:1155:G:OP2	1.98	0.45
1:A:1499:A:OP2	1:A:1505:G:OP2	2.35	0.45
1:A:1513:A:H2'	1:A:1514:C:H6	1.78	0.45
1:A:575:G:H4'	1:A:576:G:H5''	1.97	0.45
1:A:987:G:H1	1:A:1218:C:H42	1.65	0.45
2:B:1412:A:N6	2:B:1590:U:H3	2.09	0.45
2:B:1686:C:C2	2:B:1703:G:N2	2.85	0.45
2:B:2558:C:H2'	2:B:2559:C:O4'	2.15	0.45
2:B:2646:C:H2'	2:B:2647:U:O4'	2.16	0.45
2:B:2648:C:H2'	2:B:2649:U:C6	2.51	0.45
2:B:2885:C:N3	2:B:2886:G:H1'	2.31	0.45
2:B:2791:C:OP1	2:B:2892:A:N6	2.48	0.45
2:B:323:G:H2'	7:G:169:ASN:ND2	2.31	0.45
2:B:336:C:O2'	22:V:35:TYR:OH	2.33	0.45
2:B:466:A:N3	2:B:683:C:H1'	2.31	0.45
2:B:562:U:C2	2:B:572:A:C8	3.04	0.45
25:CC:70:VAL:O	25:CC:73:LEU:N	2.49	0.45
2:FB:270(K):G:H5'	25:CC:81:ARG:HH12	1.81	0.45
5:E:182:LEU:HD23	5:E:182:LEU:HA	1.81	0.45
5:E:231:HIS:CD2	5:E:249:PRO:HA	2.52	0.45
1:EB:1064:G:O6	1:EB:1193:G:N1	2.49	0.45
2:B:2820:A:C8	6:F:109:LYS:HE3	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:11:MET:HB2	6:F:23:VAL:O	2.16	0.45
2:FB:1863:G:H2'	2:FB:1864:U:O4'	2.16	0.45
2:FB:1981:A:H5''	2:FB:1982:C:OP2	2.16	0.45
2:FB:2314:C:H5''	8:LB:36:LYS:HZ1	1.80	0.45
2:FB:2521:C:H2'	2:FB:2522:U:C6	2.51	0.45
2:FB:394:A:C6	2:FB:395:U:C4	3.05	0.45
2:FB:827:U:H2'	2:FB:2068:U:C2	2.51	0.45
53:FD:31:ILE:H	53:FD:31:ILE:HD13	1.82	0.45
8:H:16:ARG:HD3	8:H:31:VAL:HG11	1.99	0.45
5:IB:79:VAL:HG23	5:IB:114:GLY:N	2.31	0.45
5:IB:155:LEU:HB3	5:IB:156:ALA:H	1.52	0.45
10:J:26:ALA:HA	10:J:30:LEU:HB2	1.97	0.45
35:JA:144:TRP:CD1	35:JA:168:GLY:HA3	2.51	0.45
35:JA:223:ARG:HH22	35:JA:245:ARG:HH11	1.63	0.45
6:JB:201:THR:OG1	6:JB:202:LYS:N	2.50	0.45
7:KB:181:LEU:HD12	7:KB:181:LEU:HA	1.88	0.45
12:L:10:VAL:HG21	12:L:16:ALA:O	2.16	0.45
13:M:147:LEU:HD23	13:M:147:LEU:H	1.81	0.45
38:MA:9:CYS:SG	38:MA:21:LEU:O	2.74	0.45
9:MB:18:GLU:OE2	9:MB:27:LYS:NZ	2.45	0.45
4:MC:11:A:H61	4:MC:24:U:H3	1.63	0.45
10:NB:25:TYR:O	10:NB:29:TYR:HB3	2.16	0.45
35:NC:243:ALA:HB1	35:NC:258:GLN:HG2	1.98	0.45
4:MC:75:C:H5'	35:NC:261:ARG:HH11	1.81	0.45
11:OB:108:PRO:O	11:OB:113:GLY:HA3	2.17	0.45
12:PB:15:GLY:O	12:PB:47:ILE:HG13	2.17	0.45
38:QC:60:GLU:OE1	38:QC:199:ASN:N	2.45	0.45
43:RA:92:TYR:O	43:RA:96:LEU:HB2	2.16	0.45
19:S:100:ARG:NH1	19:S:100:ARG:HG2	2.28	0.45
2:FB:1252:G:N3	18:VB:33:ARG:HD2	2.32	0.45
43:VC:47:LEU:HD22	43:VC:51:ARG:HH11	1.80	0.45
50:YA:20:VAL:HG22	50:YA:32:TYR:CD1	2.51	0.45
1:A:1094:G:O2'	1:A:1108:G:N2	2.50	0.45
1:A:1148:U:H5'	43:RA:9:ARG:NH2	2.25	0.45
2:B:1019:U:H3	2:B:1142(B):A:N6	2.07	0.45
2:B:1278:A:H2'	2:B:1279:G:H8	1.77	0.45
2:B:2052:G:C6	2:B:2053:G:N7	2.84	0.45
2:B:631:A:H5''	2:B:632:A:OP2	2.15	0.45
2:B:760:G:H2'	2:B:761:A:O4'	2.15	0.45
49:BD:88:ARG:HH21	49:BD:88:ARG:HB3	1.81	0.45
2:B:2611:U:H2'	29:CA:2:ALA:O	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:CC:48:LYS:HE3	25:CC:59:THR:HB	1.98	0.45
1:EB:1287:A:C2	1:EB:1353:G:H1'	2.51	0.45
1:EB:137:C:H1'	50:CD:62:VAL:O	2.16	0.45
1:EB:76:G:H2'	1:EB:77:C:C6	2.52	0.45
1:EB:894:G:C6	1:EB:895:G:C6	3.04	0.45
27:EC:15:TYR:CE2	27:EC:53:LEU:HD21	2.51	0.45
2:FB:2156:G:H2'	2:FB:2157:G:C6	2.51	0.45
2:FB:2198:A:O4'	10:NB:33:ARG:NH2	2.50	0.45
2:FB:2692:C:O2	2:FB:2847:U:H4'	2.17	0.45
2:FB:760:G:H2'	2:FB:761:A:O4'	2.17	0.45
7:G:123:LEU:HD13	7:G:192:LEU:HD22	1.98	0.45
4:IA:69:C:H2'	4:IA:70:G:C8	2.48	0.45
5:IB:70:TRP:HB3	5:IB:190:TYR:CE2	2.52	0.45
2:FB:1797:C:HO2'	5:IB:259:THR:HG1	1.63	0.45
10:J:87:LYS:HG2	10:J:89:TYR:H	1.82	0.45
35:JA:265:LYS:HB3	35:JA:265:LYS:HE2	1.87	0.45
33:KC:3:VAL:HG13	33:KC:37:GLY:HA2	1.98	0.45
37:LA:186:PHE:CE2	37:LA:188:LEU:HB2	2.52	0.45
9:MB:85:LYS:HE3	9:MB:138:LYS:HZ1	1.81	0.45
10:NB:62:LYS:O	10:NB:66:GLU:HG2	2.17	0.45
35:NC:316:ARG:HA	35:NC:327:TYR:HA	1.98	0.45
2:B:2319:G:H22	16:P:3:ARG:HE	1.63	0.45
41:TC:69:VAL:HG13	41:TC:135:VAL:HA	1.97	0.45
21:U:84:ALA:O	21:U:87:GLN:HB2	2.17	0.45
42:UC:75:ARG:HA	42:UC:76:PRO:HD3	1.82	0.45
42:UC:92:ARG:HB3	42:UC:94:TYR:CE2	2.51	0.45
43:VC:50:LEU:HD23	43:VC:85:LEU:HD11	1.98	0.45
43:VC:92:TYR:O	43:VC:96:LEU:HB2	2.16	0.45
1:EB:684:A:O2'	45:XC:39:PRO:O	2.30	0.45
45:XC:52:GLY:H	45:XC:55:LYS:HE2	1.81	0.45
2:B:2091:U:H1'	25:Y:47:GLN:HG3	1.99	0.45
22:ZB:9:LYS:HA	22:ZB:10:GLY:HA2	1.55	0.45
1:A:1021:G:N2	1:A:1022:G:H1'	2.32	0.45
1:A:1176:A:H2'	1:A:1177:G:C8	2.52	0.45
1:A:1068:G:N2	1:A:1191:A:N3	2.54	0.45
1:A:136:C:H4'	50:YA:65:GLN:HE21	1.81	0.45
52:AB:53:ARG:HH12	52:AB:60:ALA:N	2.15	0.45
2:B:1702:G:H8	2:B:1702:G:O5'	2.00	0.45
2:B:2522:U:H3	2:B:2543:G:H1	1.64	0.45
1:EB:293:G:H8	1:EB:293:G:OP2	2.00	0.45
2:FB:1056:G:HO2'	2:FB:1086:A:HO2'	1.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1632:A:C6	2:FB:1633:G:C6	3.05	0.45
2:FB:1651:G:C2	2:FB:1652:A:C4	3.05	0.45
2:FB:441:U:H2'	2:FB:442:G:C8	2.52	0.45
53:FD:11:VAL:HG22	53:FD:15:LEU:HD22	1.98	0.45
33:GA:29:ASN:HA	33:GA:30:PRO:HD3	1.87	0.45
35:JA:328:ARG:NH2	35:JA:339:MET:HB3	2.32	0.45
14:N:60:ARG:HG3	14:N:60:ARG:HH11	1.82	0.45
35:NC:329:LEU:CG	35:NC:330:ASP:H	2.30	0.45
15:O:26:LYS:HD2	15:O:70:LEU:HA	1.97	0.45
42:QA:37:ARG:HE	42:QA:37:ARG:HB3	1.57	0.45
14:RB:134:ARG:HH11	23:AC:122:ARG:NE	2.05	0.45
44:SA:57:LYS:HE3	44:SA:60:ARG:HH22	1.81	0.45
41:TC:29:LYS:HZ1	41:TC:102:ARG:HE	1.65	0.45
1:EB:644:G:H4'	42:UC:92:ARG:NH1	2.31	0.45
47:VA:54:VAL:HA	47:VA:57:ARG:HH12	1.81	0.45
18:VB:33:ARG:O	18:VB:37:GLU:HG3	2.17	0.45
2:FB:994:C:OP1	18:VB:53:ARG:NH2	2.50	0.45
50:YA:27:LYS:HG3	50:YA:27:LYS:H	1.45	0.45
46:YC:32:PHE:HB2	46:YC:84:LEU:HD11	1.98	0.45
1:A:1064:G:O6	1:A:1193:G:N1	2.50	0.45
1:A:1134:G:H5'	1:A:1135:U:OP2	2.17	0.45
1:A:1228:C:OP1	47:VA:108:ARG:NH1	2.45	0.45
1:A:1422:G:H2'	1:A:1423:G:C8	2.52	0.45
1:A:420:U:H2'	1:A:422:C:C5	2.52	0.45
1:A:754:C:H2'	1:A:754:C:O2	2.16	0.45
23:AC:53:ILE:HG13	23:AC:71:VAL:O	2.16	0.45
2:B:2602:A:H5''	4:IA:75:C:P	2.57	0.45
24:BC:11:ARG:O	24:BC:11:ARG:HD2	2.16	0.45
24:BC:40:GLN:HE21	24:BC:57:PHE:HB3	1.82	0.45
3:C:68:C:H2'	3:C:69:G:O4'	2.17	0.45
55:DB:6:ARG:NH1	55:DB:15:ARG:NH2	2.65	0.45
5:E:246:PRO:HB2	5:E:254:THR:HG22	1.99	0.45
1:EB:261:U:H5	54:GD:79:ARG:NE	2.15	0.45
1:EB:688:G:H2'	1:EB:689:C:H6	1.81	0.45
1:EB:702:A:C6	2:FB:1848:A:C6	3.05	0.45
1:EB:81:G:O6	1:EB:86:U:H5''	2.17	0.45
1:EB:940:C:H2'	1:EB:941:G:C8	2.51	0.45
2:FB:1358:G:O2'	2:FB:1373:A:N6	2.50	0.45
2:FB:2217:G:H2'	2:FB:2218:G:H8	1.82	0.45
2:FB:2648:C:H2'	2:FB:2649:U:H6	1.82	0.45
2:FB:275:G:C8	2:FB:276:A:H1'	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2809:A:H62	2:FB:2891:G:H2'	1.82	0.45
2:FB:265:A:N6	2:FB:427:U:O2'	2.50	0.45
2:FB:774:A:H5''	5:IB:48:ARG:HH21	1.82	0.45
2:FB:875:G:H2'	2:FB:876:C:O4'	2.17	0.45
28:FC:58:ARG:O	28:FC:61:ARG:HB3	2.16	0.45
53:FD:40:ILE:HB	53:FD:67:VAL:HA	1.99	0.45
33:GA:3:VAL:HG13	33:GA:37:GLY:HA2	1.99	0.45
54:GD:41:VAL:HG23	54:GD:42:GLN:HG2	1.99	0.45
5:IB:275:LYS:NZ	5:IB:275:LYS:HB3	2.32	0.45
5:IB:30:GLU:O	5:IB:32:SER:N	2.49	0.45
5:IB:40:THR:HG23	5:IB:42:GLY:H	1.82	0.45
35:JA:353:LEU:O	35:JA:357:SER:HB2	2.16	0.45
36:KA:16:HIS:CD2	36:KA:44:LEU:HD23	2.46	0.45
37:LA:186:PHE:CG	37:LA:187:ALA:N	2.85	0.45
13:M:127:ALA:O	13:M:148:LEU:N	2.50	0.45
10:NB:64:GLU:HA	10:NB:67:ARG:HG2	1.98	0.45
12:PB:102:VAL:HG23	12:PB:121:VAL:HG22	1.99	0.45
37:PC:16:ARG:HH12	48:AD:50:LYS:CE	2.28	0.45
37:PC:88:ARG:HA	37:PC:91:LEU:HB2	1.98	0.45
17:Q:50:ILE:HG22	17:Q:102:ILE:HD11	1.97	0.45
42:QA:35:ILE:HG13	42:QA:111:ILE:HD12	1.99	0.45
38:QC:100:ARG:O	38:QC:104:VAL:HG23	2.16	0.45
38:QC:18:LYS:C	38:QC:20:TYR:H	2.19	0.45
14:RB:135:ASP:OD2	14:RB:137:TYR:HB2	2.16	0.45
40:SC:18:GLN:HG3	40:SC:21:LEU:HD22	1.99	0.45
2:B:84:A:H3'	22:V:8:LYS:HB2	1.99	0.45
46:YC:62:SER:HB2	46:YC:64:TYR:CD2	2.50	0.45
1:A:236:G:H5''	51:ZA:42:TYR:OH	2.16	0.45
1:A:1202:G:H2'	1:A:1203:C:O4'	2.17	0.45
1:A:1517:G:H1'	2:B:1919:A:O3'	2.15	0.45
1:A:1518:MA6:H102	1:A:1519:MA6:C10	2.46	0.45
1:A:409:G:H3'	1:A:410:G:H8	1.81	0.45
1:A:998(B):C:H2'	1:A:999:U:C6	2.52	0.45
27:AA:13:ILE:HG13	27:AA:13:ILE:H	1.50	0.45
3:GB:73:A:H61	23:AC:29:TYR:HE1	1.65	0.45
2:B:1270:C:H5''	2:B:1271:G:O5'	2.16	0.45
2:B:1309:G:H8	2:B:1309:G:O5'	1.98	0.45
2:B:1927:A:H2'	2:B:1928:A:C8	2.52	0.45
2:B:250:G:OP2	13:M:60:MET:HE1	2.17	0.45
2:B:2592:G:C6	2:B:2593:U:C2	3.05	0.45
2:B:270(U):G:H2'	2:B:270(V):C:H6	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2729:G:O2'	6:F:186:GLY:HA3	2.17	0.45
2:B:2718:G:O2'	2:B:2847:U:OP1	2.30	0.45
53:BB:15:LEU:C	53:BB:17:GLU:H	2.20	0.45
2:FB:2355:C:O3'	24:BC:24:LYS:HE3	2.17	0.45
3:C:63:G:C6	3:C:64:C:C4	3.04	0.45
3:C:89(A):G:H2'	3:C:89(B):A:H8	1.81	0.45
25:CC:56:GLN:OE1	25:CC:87:PRO:HG3	2.16	0.45
1:EB:1216:G:H2'	1:EB:1217:C:C6	2.51	0.45
1:EB:1279:A:C2	44:WC:43:ARG:NH1	2.85	0.45
1:EB:769:G:H4'	1:EB:1513:A:H4'	1.98	0.45
1:EB:161:A:H2'	1:EB:162:A:C8	2.52	0.45
1:EB:723:U:HO2'	1:EB:724:G:C5'	2.30	0.45
1:EB:91:C:C2	1:EB:92:G:N7	2.85	0.45
2:FB:1424:G:H2'	2:FB:1425:G:O4'	2.17	0.45
2:FB:1589:C:H2'	2:FB:1590:U:C6	2.52	0.45
2:FB:2210:G:H3'	2:FB:2211:G:N7	2.31	0.45
2:FB:2315:G:H5''	2:FB:2316:C:OP2	2.17	0.45
2:FB:633:A:O2'	2:FB:2404:C:OP1	2.24	0.45
2:FB:2531:A:N6	2:FB:2532:G:C6	2.84	0.45
2:FB:629:G:H1	2:FB:634:C:H42	1.65	0.45
8:H:96:ARG:O	8:H:99:MET:HB3	2.17	0.45
1:EB:1325:C:H4'	55:HD:17:THR:HG21	1.98	0.45
36:KA:105:PHE:CE2	36:KA:158:LEU:HB2	2.52	0.45
7:KB:155:LEU:HB2	7:KB:189:THR:HG21	1.99	0.45
37:LA:69:HIS:HA	37:LA:104:GLN:O	2.17	0.45
8:LB:135:LEU:HA	8:LB:136:ARG:HH11	1.78	0.45
14:N:58:PHE:HZ	14:N:106:VAL:HG11	1.82	0.45
39:NA:13:ILE:HG23	39:NA:29:GLY:O	2.16	0.45
10:NB:26:ALA:HA	10:NB:30:LEU:HB2	1.99	0.45
35:NC:144:TRP:CD1	35:NC:168:GLY:HA3	2.51	0.45
40:OA:43:LEU:HD21	40:OA:62:TRP:HB2	1.97	0.45
36:OC:87:ARG:NH2	36:OC:230:VAL:HB	2.31	0.45
16:P:3:ARG:NH1	16:P:4:LEU:N	2.65	0.45
1:A:640:A:N3	42:QA:115:SER:HB2	2.32	0.45
38:QC:117:ALA:HA	38:QC:120:LEU:HD13	1.97	0.45
38:QC:150:GLU:OE2	38:QC:153:ARG:HD2	2.17	0.45
14:RB:17:LEU:HA	14:RB:17:LEU:HD12	1.76	0.45
39:RC:9:LYS:HB2	39:RC:112:LEU:HD11	1.99	0.45
20:T:32:ALA:O	20:T:36:LEU:HG	2.17	0.45
41:TC:78:ARG:HG3	41:TC:156:TRP:HZ3	1.82	0.45
25:Y:98:LEU:HA	25:Y:98:LEU:HD23	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:968:A:C8	1:A:1062:U:H4'	2.52	0.45
2:B:1263:U:C4	2:B:1264:G:C6	3.05	0.45
2:B:1669:A:C8	12:L:5:GLN:HG3	2.52	0.45
2:B:2579:C:H2'	2:B:2580:U:O4'	2.16	0.45
2:B:2743:C:OP1	33:GA:33:LYS:HE2	2.16	0.45
2:B:50:U:H4'	2:B:51:G:OP2	2.16	0.45
2:B:259:G:O2'	2:B:621:A:O2'	2.23	0.45
53:BB:41:VAL:HG12	53:BB:44:MET:HG3	1.97	0.45
24:BC:54:GLY:O	24:BC:57:PHE:N	2.44	0.45
54:CB:46:GLU:HB3	54:CB:48:LYS:HZ2	1.80	0.45
2:B:2348:U:H5'	30:DA:21:TYR:OH	2.17	0.45
1:EB:1404:5MC:O2	1:EB:1519:MA6:O2'	2.28	0.45
1:EB:748:C:H4'	1:EB:749:C:O5'	2.16	0.45
2:FB:79:G:H1	2:FB:107:C:H42	1.65	0.45
2:FB:146:G:C6	2:FB:147:U:C4	3.05	0.45
2:FB:2309:A:H8	2:FB:2309:A:O5'	1.99	0.45
2:FB:1955:U:H5'	2:FB:2551:C:O2'	2.17	0.45
2:FB:2816:C:H42	2:FB:2830:G:H1	1.65	0.45
2:FB:514:A:H1'	2:FB:581:C:O2'	2.17	0.45
7:G:146:ALA:HB3	7:G:148:LEU:HG	1.98	0.45
8:H:136:ARG:H	8:H:136:ARG:CZ	2.30	0.45
6:JB:67:PHE:CE2	6:JB:74:PRO:HA	2.52	0.45
33:KC:9:ARG:HG2	33:KC:14:CYS:HB3	1.98	0.45
37:LA:74:GLY:HA2	37:LA:77:ILE:HD12	1.99	0.45
14:N:72:LYS:HA	14:N:73:PRO:HD3	1.70	0.45
35:NC:222:LEU:HD12	35:NC:222:LEU:HA	1.82	0.45
15:O:57:ARG:HD2	15:O:59:ASP:OD2	2.17	0.45
11:OB:130:HIS:O	11:OB:135:PRO:HD3	2.17	0.45
11:OB:36:GLY:HA3	11:OB:49:GLY:HA2	1.99	0.45
2:FB:1140:C:P	11:OB:66:LYS:NZ	2.90	0.45
16:P:66:ALA:O	16:P:69:VAL:HG22	2.17	0.45
12:PB:65:THR:OG1	12:PB:66:LYS:N	2.49	0.45
17:Q:48:ILE:H	17:Q:48:ILE:HD12	1.81	0.45
18:R:5:LYS:HZ2	18:R:5:LYS:HB2	1.82	0.45
39:RC:71:LEU:HD21	39:RC:113:ALA:O	2.16	0.45
2:FB:1277:G:O2'	15:SB:24:GLN:HG2	2.16	0.45
1:A:1228:C:P	47:VA:108:ARG:HH22	2.39	0.45
22:ZB:99:CYS:SG	22:ZB:101:LYS:N	2.90	0.45
1:A:1072:G:N2	36:KA:107:THR:HG21	2.32	0.45
1:A:1170:A:H8	1:A:1170:A:OP2	2.00	0.45
1:A:1241:G:H2'	1:A:1242:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:715:A:H2'	1:A:716:A:H8	1.80	0.45
1:A:76:G:H2'	1:A:77:C:C6	2.52	0.45
27:AA:23:LEU:HD13	27:AA:50:VAL:HG11	1.99	0.45
27:AA:50:VAL:O	27:AA:54:VAL:HB	2.17	0.45
2:B:1058:G:O6	2:B:1088:A:H4'	2.16	0.45
2:B:1072:C:H5''	2:B:1073:A:H5'	1.98	0.45
2:B:1077:A:O4'	2:B:1088:A:N6	2.50	0.45
2:B:1206:G:C2	2:B:1207:C:C2	3.05	0.45
2:B:331:A:C4	2:B:1209:G:C6	3.04	0.45
2:B:1510:A:C6	2:B:1511:A:N6	2.85	0.45
2:B:1676:A:H2'	2:B:1677:A:O4'	2.17	0.45
2:B:2134:A:OP2	2:B:2156:G:N2	2.49	0.45
2:B:2377:A:H2'	2:B:2378:A:C8	2.52	0.45
2:B:2447:G:C4	2:B:2500:U:C5	3.05	0.45
2:B:2821:A:OP2	6:F:110:GLY:HA3	2.17	0.45
2:B:2889:C:H2'	2:B:2891:G:O4'	2.17	0.45
2:B:445:C:N4	2:B:446:G:O6	2.49	0.45
2:B:452:G:C2	2:B:458:G:C5	3.05	0.45
2:B:797:C:OP1	7:G:60:SER:OG	2.34	0.45
25:CC:6:GLU:OE2	25:CC:60:PHE:HD1	1.99	0.45
5:E:79:VAL:HG23	5:E:114:GLY:N	2.32	0.45
1:EB:1320:C:H2'	1:EB:1321:C:O4'	2.16	0.45
2:FB:1011:G:H1'	2:FB:1013:C:O4'	2.17	0.45
2:FB:137(B):G:H1'	21:YB:41:ASN:ND2	2.32	0.45
2:FB:1393:A:H5''	2:FB:1394:U:OP2	2.17	0.45
2:FB:1657:C:H2'	2:FB:1658:C:H6	1.81	0.45
2:FB:280:C:N3	2:FB:361:G:N2	2.65	0.45
7:G:50:SER:HA	7:G:92:PRO:O	2.17	0.45
4:IA:72:A:H5''	4:IA:73:A:N7	2.32	0.45
5:IB:20:ASP:C	5:IB:22:SER:H	2.20	0.45
5:IB:223:GLY:HA3	5:IB:231:HIS:CE1	2.52	0.45
7:KB:192:LEU:HD21	7:KB:194:MET:CE	2.47	0.45
37:LA:43:LEU:O	37:LA:47:LEU:HB2	2.16	0.45
37:LA:93:LYS:HB3	37:LA:94:LEU:HD22	1.99	0.45
35:NC:121:GLY:O	35:NC:124:ALA:N	2.50	0.45
35:NC:321:ARG:NH1	35:NC:344:ILE:HD13	2.32	0.45
35:NC:348:HIS:CE1	35:NC:352:GLN:HE21	2.35	0.45
36:OC:153:ARG:O	36:OC:155:LEU:N	2.49	0.45
41:PA:125:MET:HG2	41:PA:125:MET:H	1.59	0.45
42:UC:116:LYS:HB3	42:UC:116:LYS:HE2	1.75	0.45
48:WA:37:PHE:HD1	48:WA:39:LEU:HD12	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:WB:100:ARG:HG2	19:WB:100:ARG:NH1	2.32	0.45
45:XC:62:GLN:O	45:XC:66:LEU:HG	2.17	0.45
46:YC:41:ARG:NH1	46:YC:41:ARG:HG2	2.26	0.45
51:ZA:67:LYS:O	51:ZA:70:ARG:NH1	2.50	0.45
1:A:1432:G:OP1	17:Q:108:ARG:N	2.50	0.44
1:A:582:U:OP1	49:XA:64:ARG:NH1	2.50	0.44
2:B:1289:C:H2'	2:B:1290:C:H6	1.82	0.44
2:B:2419:U:H2'	2:B:2420:C:C6	2.52	0.44
2:B:442:G:C2	2:B:444:C:C4	3.04	0.44
1:EB:998(B):C:N4	1:EB:1042:G:H1	2.15	0.44
1:EB:1134:G:H5'	1:EB:1135:U:OP2	2.17	0.44
1:EB:333:G:H2'	1:EB:334:C:C6	2.52	0.44
52:ED:34:TYR:HA	52:ED:40:LEU:HD11	1.97	0.44
6:F:59:VAL:HG21	6:F:74:PRO:HB3	1.99	0.44
2:FB:1732:A:H2'	2:FB:1733:G:O4'	2.17	0.44
2:FB:2508:G:H2'	2:FB:2509:G:H8	1.81	0.44
2:FB:270(W):G:C4	2:FB:270(X):G:C8	3.05	0.44
1:EB:1313:U:O4	53:FD:2:PRO:HA	2.17	0.44
8:H:164:GLU:OE2	8:H:164:GLU:HA	2.17	0.44
9:I:102:ALA:HA	9:I:117:PRO:HD3	1.99	0.44
6:JB:40:GLU:HG3	6:JB:41:LYS:N	2.32	0.44
36:KA:44:LEU:HD12	36:KA:44:LEU:H	1.82	0.44
7:KB:31:HIS:HB2	13:QB:9:ASN:OD1	2.17	0.44
37:LA:8:ILE:HD13	37:LA:16:ARG:HH11	1.82	0.44
37:LA:183:ASP:O	37:LA:201:TYR:HA	2.18	0.44
8:LB:40:ASN:OD1	8:LB:42:GLY:N	2.50	0.44
10:NB:10:GLU:OE2	10:NB:10:GLU:N	2.44	0.44
35:NC:110:ASN:HB3	35:NC:167:SER:HA	1.99	0.44
36:OC:161:ALA:HB1	36:OC:185:ILE:HD11	1.99	0.44
36:OC:54:THR:OG1	36:OC:201:ILE:HD11	2.16	0.44
41:PA:127:ALA:HA	41:PA:135:VAL:HG21	2.00	0.44
41:PA:72:ARG:NH2	41:PA:138:LYS:NZ	2.58	0.44
15:SB:13:HIS:CD2	15:SB:15:SER:HB3	2.52	0.44
16:TB:49:VAL:HG11	16:TB:77:ALA:HB2	1.98	0.44
41:TC:143:ARG:O	41:TC:147:ALA:N	2.35	0.44
17:UB:132:LYS:HE2	17:UB:132:LYS:HB3	1.80	0.44
43:VC:10:ARG:HH12	43:VC:11:LYS:HD2	1.79	0.44
23:W:14:LYS:HA	23:W:15:PRO:HD2	1.70	0.44
25:Y:90:ILE:HG12	25:Y:90:ILE:H	1.55	0.44
47:ZC:49:THR:O	47:ZC:53:VAL:HG23	2.17	0.44
1:A:1216:G:H2'	1:A:1217:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:991:U:O4	1:A:1212:U:O2'	2.29	0.44
14:RB:63:LYS:HD3	23:AC:175:VAL:HG21	1.99	0.44
2:B:1045:A:C5'	2:B:1111:A:H61	2.31	0.44
2:B:2522:U:N3	2:B:2765:A:N7	2.65	0.44
2:B:1955:U:H5'	2:B:2551:C:O2'	2.17	0.44
2:B:2697:G:H2'	2:B:2698:U:O4'	2.17	0.44
2:B:273(A):G:N2	2:B:365:C:C2	2.86	0.44
2:B:548:A:C4	2:B:549:G:H1'	2.51	0.44
2:B:609(B):G:H2'	2:B:610:C:C6	2.52	0.44
2:B:665:C:H2'	2:B:666:G:C8	2.51	0.44
2:B:680:G:C2	2:B:798:G:C2	3.04	0.44
2:B:898:C:H2'	2:B:899:A:O4'	2.16	0.44
24:BC:33:ALA:N	24:BC:64:ASP:OD1	2.50	0.44
49:BD:4:THR:OG1	49:BD:6:GLU:HG2	2.18	0.44
54:CB:49:ALA:O	54:CB:53:LEU:HB2	2.17	0.44
54:CB:9:ASN:O	54:CB:10:LEU:HD13	2.16	0.44
1:EB:1293:G:H2'	1:EB:1294:G:O4'	2.17	0.44
1:EB:1453:G:O6	54:GD:54:LYS:NZ	2.37	0.44
1:EB:597:G:H5''	1:EB:598:U:OP2	2.17	0.44
1:EB:724:G:C2	1:EB:725:G:C8	3.04	0.44
2:FB:1106:G:C2	2:FB:1107:G:C5	3.05	0.44
2:FB:1149:G:H2'	2:FB:1150:C:C6	2.52	0.44
2:FB:1854:A:H2'	2:FB:1855:G:O4'	2.17	0.44
2:FB:2584:U:H2'	2:FB:2585:U:H2'	1.99	0.44
2:FB:2646:C:H2'	2:FB:2647:U:O4'	2.18	0.44
53:FD:40:ILE:HB	53:FD:67:VAL:O	2.18	0.44
33:GA:16:VAL:HA	33:GA:25:VAL:HG22	1.99	0.44
9:I:54:ARG:HA	9:I:55:PRO:HD3	1.82	0.44
4:IA:42:G:N2	4:IA:43:A:H1'	2.32	0.44
5:IB:63:ARG:NH1	5:IB:63:ARG:CG	2.71	0.44
35:JA:302:ASP:C	35:JA:304:SER:H	2.20	0.44
35:NC:335:GLY:O	35:NC:337:LEU:N	2.50	0.44
40:OA:20:ALA:O	40:OA:23:LYS:N	2.50	0.44
1:EB:1206:G:H4'	37:PC:192:THR:O	2.17	0.44
37:PC:61:ALA:C	37:PC:63:ASN:H	2.19	0.44
42:QA:69:ARG:HD3	42:QA:75:ARG:O	2.18	0.44
38:QC:101:LEU:HD13	38:QC:133:VAL:HG11	1.99	0.44
18:R:91:ASP:O	18:R:95:LEU:HB2	2.17	0.44
39:RC:6:PHE:CE2	39:RC:63:ARG:HG2	2.52	0.44
19:S:1:MET:HE3	19:S:99:ILE:HD12	2.00	0.44
45:TA:98:LEU:HA	45:TA:101:SER:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:VA:89:GLY:O	47:VA:93:ARG:HB2	2.17	0.44
23:W:182:LYS:HB3	23:W:186:GLU:OE2	2.17	0.44
20:XB:9:TYR:H	20:XB:102:HIS:CD2	2.33	0.44
20:XB:11:ARG:NH1	20:XB:98:LYS:HB3	2.33	0.44
45:XC:67:ASP:OD2	45:XC:67:ASP:C	2.55	0.44
22:ZB:105:ALA:HB1	22:ZB:107:ASP:H	1.82	0.44
1:A:1178:G:N2	1:A:1180:A:H3'	2.32	0.44
1:A:1284:C:OP2	1:A:1285:A:H2'	2.17	0.44
1:A:261:U:H5	54:CB:79:ARG:NE	2.15	0.44
1:A:744:C:H2'	1:A:745:C:C6	2.51	0.44
1:A:974:A:H8	1:A:974:A:OP1	2.01	0.44
2:B:1889:A:N1	2:B:2234:G:H1'	2.33	0.44
2:B:444:C:O2'	2:B:445:C:H5'	2.18	0.44
53:BB:11:VAL:HG22	53:BB:15:LEU:HD22	1.99	0.44
53:BB:27:GLU:HA	53:BB:28:LYS:HA	1.62	0.44
1:EB:145:G:N2	1:EB:146:G:H1'	2.32	0.44
1:EB:236:G:H5''	51:DD:42:TYR:OH	2.17	0.44
1:EB:423:G:N3	1:EB:423:G:H3'	2.33	0.44
1:EB:61:G:H1	1:EB:106:C:N4	2.12	0.44
1:EB:971:G:C8	1:EB:1365:G:H4'	2.52	0.44
2:FB:1045:A:N3	2:FB:1047:G:N2	2.64	0.44
2:FB:1065:U:O2'	2:FB:1069:A:N6	2.50	0.44
2:FB:1075:C:H5''	2:FB:1076:C:C6	2.51	0.44
2:FB:1112:G:H2'	2:FB:1113:U:C6	2.52	0.44
2:FB:1636:C:H2'	2:FB:1637:A:C8	2.52	0.44
2:FB:2348:U:H5'	30:HC:21:TYR:OH	2.18	0.44
2:FB:2409:G:H2'	2:FB:2410:G:O4'	2.17	0.44
2:FB:2592:G:C6	2:FB:2593:U:C2	3.05	0.44
2:FB:2819:G:C6	2:FB:2821:A:C2	3.04	0.44
2:FB:308:G:C6	2:FB:309:G:C6	3.05	0.44
2:FB:922:U:H2'	2:FB:923:C:C6	2.52	0.44
7:G:129:PHE:HB2	7:G:132:VAL:HG22	2.00	0.44
8:H:81:LYS:HA	8:H:81:LYS:HD2	1.61	0.44
4:IA:25:C:H3'	4:IA:26:G:H8	1.83	0.44
5:IB:253:GLN:HB2	5:IB:257:LEU:CD2	2.47	0.44
5:IB:71:ASP:HB2	5:IB:103:ARG:HH12	1.82	0.44
36:KA:210:SER:O	36:KA:214:ILE:HG22	2.16	0.44
12:L:26:LYS:HD2	12:L:37:ASP:OD2	2.17	0.44
38:MA:59:ARG:O	38:MA:63:LYS:HG3	2.17	0.44
9:MB:83:TYR:HD2	9:MB:136:ILE:O	1.99	0.44
4:MC:25:C:H3'	4:MC:26:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:NA:6:PHE:O	39:NA:7:GLU:HB2	2.18	0.44
39:NA:71:LEU:HD23	39:NA:115:VAL:HG22	1.99	0.44
35:NC:311:ASN:HD22	35:NC:316:ARG:NH2	2.15	0.44
15:O:53:HIS:HB2	15:O:94:TYR:CE2	2.52	0.44
36:OC:141:GLU:O	36:OC:145:LEU:HB2	2.17	0.44
41:PA:76:ARG:O	41:PA:87:VAL:N	2.45	0.44
37:PC:128:PHE:HD1	37:PC:129:ALA:H	1.65	0.44
19:S:98:GLU:OE1	19:S:100:ARG:NH1	2.51	0.44
2:FB:2849:U:P	17:UB:95:ARG:NH1	2.91	0.44
23:W:116:VAL:HG23	23:W:175:VAL:HG22	1.99	0.44
44:SA:51:ARG:HB3	48:WA:45:ARG:HH21	1.81	0.44
44:WC:9:ARG:HB2	44:WC:95:GLU:OE2	2.18	0.44
45:XC:38:ASN:HA	45:XC:39:PRO:HD3	1.80	0.44
1:A:1167:A:P	1:A:1167:A:H8	2.39	0.44
1:A:191(F):U:H2'	1:A:191(G):G:C8	2.52	0.44
1:A:731:G:OP1	1:A:766:A:H1'	2.17	0.44
52:AB:52:PRO:O	52:AB:56:THR:HG23	2.18	0.44
45:TA:108:ILE:CD1	52:AB:87:ARG:HH11	2.30	0.44
23:AC:52:SER:HG	23:AC:53:ILE:H	1.59	0.44
2:B:1490:A:H4'	2:B:1491:G:OP2	2.17	0.44
2:B:1919:A:C8	2:B:1920:4OC:H5	2.52	0.44
2:B:2026:C:H2'	2:B:2027:G:O4'	2.17	0.44
2:B:2210:G:H3'	2:B:2211:G:N7	2.31	0.44
2:B:2405:G:OP1	13:M:77:ARG:NH2	2.51	0.44
2:B:2516:G:O6	2:B:2517:C:N4	2.51	0.44
2:B:2892:A:H2'	2:B:2893:G:O4'	2.18	0.44
2:B:711:G:N2	2:B:720:C:N3	2.53	0.44
5:E:79:VAL:HG23	5:E:114:GLY:H	1.82	0.44
1:EB:1134:G:H2'	1:EB:1138:G:O6	2.17	0.44
1:EB:1270:C:H2'	1:EB:1271:G:H8	1.82	0.44
1:EB:1256:A:N1	1:EB:1277:C:H2'	2.33	0.44
1:EB:38:G:N2	1:EB:397:A:H5''	2.27	0.44
1:EB:746:A:H5''	1:EB:747:C:OP2	2.17	0.44
1:EB:803:G:C6	1:EB:804:U:C4	3.05	0.44
1:EB:93:U:H2'	1:EB:95:G:C8	2.53	0.44
2:FB:1027:A:C6	2:FB:1126:A:C4	3.06	0.44
2:FB:1263:U:C4	2:FB:1264:G:C6	3.06	0.44
2:FB:2126:A:N6	2:FB:2163:C:H4'	2.32	0.44
2:FB:2419:U:H2'	2:FB:2420:C:C6	2.52	0.44
2:FB:270(J):G:H4'	25:CC:81:ARG:CZ	2.48	0.44
2:FB:2747:G:O6	2:FB:2755:C:H5''	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2808:U:O2'	2:FB:2809:A:H5'	2.17	0.44
2:FB:374:A:N6	2:FB:400:G:O2'	2.47	0.44
2:FB:41:C:H2'	2:FB:43:G:O4'	2.18	0.44
2:FB:998:C:H2'	2:FB:999:U:O4'	2.18	0.44
3:GB:61:G:C6	3:GB:62:C:C4	3.05	0.44
34:HA:22:A:N6	35:JA:195:ARG:HA	2.32	0.44
9:I:54:ARG:NH1	9:I:62:LYS:HG2	2.33	0.44
4:IA:1:C:H5'	4:IA:2:G:C8	2.52	0.44
10:J:82:ARG:HB2	10:J:88:ILE:HD13	2.00	0.44
35:JA:271:LEU:HD23	35:JA:271:LEU:HA	1.79	0.44
36:KA:181:PHE:O	36:KA:183:PRO:HD3	2.17	0.44
33:KC:29:ASN:HA	33:KC:30:PRO:HD3	1.86	0.44
12:L:16:ALA:HB2	12:L:52:VAL:HG21	1.98	0.44
14:N:43:THR:N	14:N:46:GLN:OE1	2.47	0.44
14:N:74:TYR:HD2	14:N:75:THR:N	2.15	0.44
41:PA:121:ALA:O	41:PA:123:GLU:N	2.43	0.44
38:QC:12:CYS:SG	38:QC:18:LYS:HD2	2.57	0.44
46:UA:53:ARG:HB3	46:UA:69:TYR:HE1	1.83	0.44
42:UC:86:ILE:HG13	42:UC:133:LEU:HD22	1.98	0.44
42:UC:45:ILE:HD12	42:UC:47:GLY:N	2.32	0.44
23:W:30:ASN:HA	23:W:89:PHE:HE1	1.83	0.44
19:WB:1:MET:HE3	19:WB:99:ILE:HD12	2.00	0.44
47:ZC:4:ILE:HA	47:ZC:5:ALA:HA	1.55	0.44
1:A:1167:A:OP1	1:A:1167:A:H8	2.00	0.44
2:B:1024:G:O5'	2:B:1024:G:H8	2.01	0.44
2:B:1971:A:C2	5:E:241:PRO:HD3	2.53	0.44
2:B:2126:A:C8	2:B:2126:A:OP2	2.71	0.44
2:B:2126:A:N6	2:B:2163:C:H4'	2.32	0.44
2:B:2536:G:C6	2:B:2537:U:C4	3.06	0.44
2:B:2643:G:H2'	2:B:2644:G:O4'	2.18	0.44
3:C:28:C:OP1	16:P:31:SER:OG	2.26	0.44
3:C:96:G:C5	3:C:97:G:C8	3.06	0.44
54:CB:14:LYS:HA	54:CB:17:ARG:CZ	2.47	0.44
26:DC:2:LYS:HB2	26:DC:2:LYS:HE2	1.86	0.44
5:E:218:ARG:NH1	5:E:218:ARG:HG3	2.17	0.44
1:EB:1417:G:C6	1:EB:1482:G:C6	3.06	0.44
1:EB:790:A:H61	1:EB:1498:UR3:P	2.41	0.44
6:F:37:ARG:HD2	6:F:44:TYR:OH	2.17	0.44
2:FB:2361:A:OP2	32:JC:26:LYS:HE3	2.17	0.44
2:FB:2599:G:C2	2:FB:2600:A:C4	3.05	0.44
2:FB:261:G:O2'	2:FB:609(B):G:O2'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:329:G:O6	22:ZB:19:LYS:N	2.48	0.44
2:FB:406:G:H8	2:FB:406:G:O5'	2.01	0.44
2:FB:833:U:H2'	2:FB:834:C:H6	1.82	0.44
7:G:205:ARG:NH1	7:G:205:ARG:HB2	2.12	0.44
35:JA:110:ASN:HB3	35:JA:167:SER:HA	1.99	0.44
4:IA:75:C:H5'	35:JA:261:ARG:HH11	1.82	0.44
7:KB:123:LEU:HD12	7:KB:124:LEU:N	2.32	0.44
33:KC:8:LYS:H	33:KC:8:LYS:HG3	1.48	0.44
8:LB:132:ASN:N	8:LB:132:ASN:OD1	2.50	0.44
38:MA:178:VAL:C	38:MA:180:GLY:H	2.20	0.44
38:MA:92:VAL:O	38:MA:95:GLY:N	2.51	0.44
10:NB:88:ILE:HD12	10:NB:89:TYR:O	2.18	0.44
35:NC:191:GLU:OE1	35:NC:195:ARG:HD3	2.17	0.44
11:OB:39:ARG:NH2	11:OB:41:ASP:OD1	2.50	0.44
36:OC:46:LYS:HB3	36:OC:46:LYS:HZ3	1.81	0.44
16:P:59:LYS:HA	16:P:59:LYS:HD2	1.83	0.44
37:PC:60:ALA:HB3	37:PC:63:ASN:HB2	1.99	0.44
13:QB:3:LEU:HA	13:QB:3:LEU:HD13	1.85	0.44
38:QC:30:LYS:HA	38:QC:35:ARG:HD2	1.99	0.44
45:TA:52:GLY:H	45:TA:55:LYS:HE2	1.82	0.44
25:Y:86:SER:HB3	25:Y:89:GLU:HG2	1.98	0.44
1:A:201:C:C4	1:A:209:U:H1'	2.53	0.44
1:A:623:C:H2'	1:A:624:C:O4'	2.18	0.44
1:A:803:G:H2'	1:A:804:U:O4'	2.17	0.44
2:B:191:A:H2'	2:B:192:C:C6	2.52	0.44
2:B:2545:G:H2'	2:B:2546:U:O4'	2.18	0.44
2:B:2788:C:O2'	2:B:2809:A:N3	2.50	0.44
2:B:304:G:C6	2:B:305:U:C4	3.05	0.44
2:B:704:G:O2'	2:B:726:G:N2	2.48	0.44
24:BC:75:LEU:HD23	24:BC:75:LEU:HA	1.86	0.44
4:D:70:G:O2'	4:D:71:C:H5'	2.18	0.44
26:DC:10:LEU:HA	26:DC:13:ALA:HB3	2.00	0.44
1:EB:1021:G:N2	1:EB:1022:G:H1'	2.32	0.44
1:EB:1261:A:N6	1:EB:1262:C:O2	2.51	0.44
1:EB:532:A:H2'	37:PC:161:GLU:OE2	2.18	0.44
1:EB:962:C:N4	1:EB:973:G:H1	2.07	0.44
2:FB:969:U:OP1	27:EC:17:LYS:HD2	2.18	0.44
2:FB:101:G:H4'	2:FB:102:G:OP2	2.18	0.44
2:FB:1050:A:H2'	2:FB:1051:G:C8	2.53	0.44
2:FB:1708:C:H5''	2:FB:1709:U:OP2	2.18	0.44
2:FB:2543:G:H2'	2:FB:2544:G:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2579:C:H2'	2:FB:2580:U:O4'	2.17	0.44
2:FB:2615:U:C2	29:GC:7:PRO:HA	2.53	0.44
2:FB:2792:G:N2	2:FB:2805:G:H1'	2.32	0.44
2:FB:700:G:H1	2:FB:732:C:H42	1.66	0.44
2:FB:980:A:N6	2:FB:981:A:N1	2.66	0.44
54:GD:53:LEU:HD22	54:GD:53:LEU:HA	1.77	0.44
4:HB:7:G:H2'	4:HB:49:G:H5''	1.99	0.44
4:IA:11:A:H61	4:IA:24:U:H3	1.64	0.44
5:IB:159:ALA:HB1	5:IB:198:ASN:O	2.18	0.44
35:NC:314:GLN:N	35:NC:314:GLN:OE1	2.51	0.44
15:O:46:GLY:HA2	15:O:49:ASP:HB2	1.98	0.44
16:P:5:THR:O	16:P:8:GLU:HG2	2.17	0.44
12:PB:61:VAL:HG21	12:PB:111:PHE:CE1	2.52	0.44
2:FB:2563:U:H4'	12:PB:28:SER:HA	2.00	0.44
37:PC:148:GLY:HA3	37:PC:172:ARG:O	2.18	0.44
17:Q:91:ARG:NH1	17:Q:120:ARG:NH1	2.66	0.44
42:QA:92:ARG:HB3	42:QA:94:TYR:CE2	2.52	0.44
38:QC:154:ASN:O	38:QC:159:ARG:HD2	2.18	0.44
14:RB:72:LYS:HB3	14:RB:94:VAL:HG23	1.98	0.44
39:RC:110:LEU:HB3	39:RC:115:VAL:HB	2.00	0.44
45:TA:75:TYR:CD2	45:TA:75:TYR:N	2.85	0.44
45:TA:20:TYR:CE1	45:TA:83:ILE:HD12	2.53	0.44
21:U:61:GLY:HA3	21:U:73:ARG:O	2.18	0.44
47:VA:4:ILE:HA	47:VA:5:ALA:HA	1.58	0.44
43:VC:106:ALA:O	43:VC:108:VAL:HG23	2.18	0.44
23:W:177:PRO:HB2	23:W:178:GLU:H	1.65	0.44
23:W:3:TYR:O	23:W:58:VAL:N	2.39	0.44
49:XA:56:LEU:O	49:XA:60:VAL:HG23	2.18	0.44
51:ZA:27:PHE:CE1	51:ZA:36:ILE:HD11	2.53	0.44
1:A:925:G:C2	1:A:927:G:C8	3.06	0.44
2:B:1509:A:OP2	2:B:1509:A:H8	2.00	0.44
2:B:185:U:H2'	2:B:186:G:C8	2.53	0.44
2:B:2401:U:H3'	2:B:2402:C:C6	2.52	0.44
2:B:2429:G:N7	13:M:56:SER:OG	2.45	0.44
2:B:945:A:C5	2:B:2448:A:N1	2.86	0.44
2:B:2871:C:H5''	2:B:2872:G:OP1	2.17	0.44
2:B:489:G:H2'	2:B:491:G:O4'	2.18	0.44
53:BB:16:LEU:HB3	53:BB:20:LEU:HG	2.00	0.44
49:BD:33:THR:OG1	49:BD:63:ARG:HD2	2.16	0.44
3:C:61:G:C6	3:C:62:C:C4	3.06	0.44
54:CB:67:ALA:HA	54:CB:72:LEU:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:CC:70:VAL:HG12	25:CC:71:TYR:HD2	1.82	0.44
26:DC:47:ASN:H	26:DC:47:ASN:HD22	1.66	0.44
46:YC:10:LEU:HD13	51:DD:32:TYR:CZ	2.53	0.44
5:E:30:GLU:O	5:E:32:SER:N	2.51	0.44
1:EB:1265:G:N2	1:EB:1270:C:N3	2.66	0.44
1:EB:27:G:C6	1:EB:557:G:C2	3.05	0.44
1:EB:448:A:O2'	1:EB:449:C:H5'	2.17	0.44
1:EB:475:G:H2'	1:EB:476:G:C8	2.53	0.44
2:FB:1406:U:H2'	2:FB:1407:C:H6	1.81	0.44
2:FB:1971:A:C4	5:IB:241:PRO:HG3	2.53	0.44
2:FB:2052:G:C6	2:FB:2053:G:N7	2.86	0.44
2:FB:2315:G:C6	2:FB:2316:C:N4	2.86	0.44
2:FB:2867:G:O2'	2:FB:2868:A:OP2	2.31	0.44
2:FB:579:G:H2'	2:FB:580:C:C6	2.52	0.44
2:FB:828:U:O4	2:FB:2247:A:H1'	2.17	0.44
8:H:115:ARG:CZ	47:VA:7:VAL:HG13	2.48	0.44
8:H:59:GLU:O	8:H:63:ILE:HG13	2.18	0.44
55:HD:6:ARG:NH1	55:HD:15:ARG:NH2	2.66	0.44
35:JA:191:GLU:OE1	35:JA:195:ARG:HD3	2.18	0.44
35:NC:193:GLN:O	35:NC:195:ARG:N	2.51	0.44
16:P:35:ILE:HG21	16:P:66:ALA:HB2	2.00	0.44
17:Q:99:LEU:O	17:Q:102:ILE:HG12	2.17	0.44
14:RB:87:LYS:HG2	14:RB:88:GLY:N	2.32	0.44
40:SC:46:ARG:HB2	40:SC:60:PHE:HE1	1.80	0.44
40:SC:40:VAL:HG13	40:SC:63:TYR:CD1	2.53	0.44
48:WA:37:PHE:CD1	48:WA:39:LEU:HD12	2.52	0.44
44:WC:30:SER:HB3	44:WC:80:LYS:HG2	1.99	0.44
1:A:1011:G:H1	1:A:1018:C:H42	1.65	0.44
1:A:690:G:OP2	45:TA:27:ASN:HB3	2.17	0.44
1:A:723:U:O2'	1:A:724:G:O5'	2.27	0.44
1:A:790:A:C6	1:A:791:G:C6	3.06	0.44
2:B:1164:G:H2'	2:B:1165:U:O4'	2.17	0.44
2:B:2156:G:H2'	2:B:2157:G:C6	2.53	0.44
2:B:2277:G:O3'	14:N:11:LYS:HD2	2.17	0.44
2:B:2329:G:H2'	2:B:2330:G:C8	2.52	0.44
2:B:2343:C:O2'	2:B:2373:G:O2'	2.36	0.44
2:B:2459:A:H2'	2:B:2459:A:N3	2.33	0.44
2:B:288:C:H2'	2:B:289:A:H8	1.83	0.44
1:EB:946:A:O2'	1:EB:1333:A:N3	2.45	0.44
1:EB:1400:5MC:H6	1:EB:1400:5MC:O5'	2.00	0.44
1:EB:305:G:OP2	1:EB:305:G:H8	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:35:G:C6	1:EB:36:C:N4	2.86	0.44
1:EB:417:C:H2'	1:EB:418:C:C6	2.53	0.44
2:FB:1047:G:HO2'	2:FB:1048:A:H8	1.66	0.44
2:FB:1364:G:N7	25:CC:3:LYS:HD2	2.33	0.44
2:FB:2344:U:H3'	30:HC:37:ARG:HB2	2.00	0.44
2:FB:2377:A:H2'	2:FB:2378:A:C8	2.53	0.44
2:FB:2522:U:H3	2:FB:2543:G:H1	1.66	0.44
2:FB:288:C:H2'	2:FB:289:A:H8	1.80	0.44
54:GD:76:ALA:O	54:GD:80:ARG:HB2	2.18	0.44
9:I:141:VAL:HA	9:I:144:VAL:HG12	2.00	0.44
5:IB:174:ILE:HG12	5:IB:184:LYS:HG2	1.99	0.44
35:JA:330:ASP:O	35:JA:334:GLU:N	2.51	0.44
35:JA:349:GLN:HA	35:JA:352:GLN:HB2	1.99	0.44
11:K:128:HIS:HA	11:K:129:PRO:HD3	1.69	0.44
36:KA:109:SER:HA	36:KA:112:VAL:HB	2.00	0.44
9:MB:101:ARG:HG3	9:MB:117:PRO:HG3	1.99	0.44
40:OA:6:VAL:HG22	40:OA:90:VAL:HG22	2.00	0.44
40:OA:8:ILE:HD11	40:OA:79:LEU:HD13	1.98	0.44
41:PA:89:MET:CE	41:PA:155:ARG:HB2	2.47	0.44
39:NA:78:HIS:HD1	42:QA:104:ARG:NH1	2.15	0.44
13:QB:107:LYS:O	13:QB:110:TYR:HB2	2.17	0.44
1:A:1349:A:P	43:RA:118:LYS:HZ1	2.41	0.44
15:SB:49:ASP:OD1	15:SB:95:THR:OG1	2.34	0.44
20:T:19:LEU:HD12	20:T:19:LEU:HA	1.64	0.44
41:TC:71:PRO:HA	41:TC:138:LYS:HE2	1.99	0.44
42:UC:11:THR:HG22	42:UC:15:ASN:ND2	2.32	0.44
18:VB:51:LYS:HG2	18:VB:51:LYS:H	1.62	0.44
24:X:50:ASN:ND2	24:X:83:PRO:HD3	2.33	0.44
2:FB:2012:G:P	20:XB:11:ARG:HH22	2.31	0.44
45:XC:82:VAL:HB	45:XC:108:ILE:HA	1.98	0.44
51:ZA:84:LEU:HA	51:ZA:87:LYS:HG3	1.99	0.44
47:ZC:114:ARG:O	47:ZC:116:THR:N	2.51	0.44
1:A:1124:G:H22	1:A:1149:C:H42	1.66	0.44
1:A:1349:A:H2'	1:A:1349:A:N3	2.32	0.44
2:B:111:A:C2	2:B:112:U:C2	3.06	0.44
2:B:1153:C:H2'	2:B:1154:G:O4'	2.17	0.44
2:B:2345:G:N3	2:B:2381:C:H2'	2.33	0.44
2:B:2426:A:H3'	2:B:2427:C:H5'	1.99	0.44
2:B:2744:G:H1'	2:B:2761:G:N2	2.33	0.44
2:B:458:G:N2	2:B:459:U:O4	2.48	0.44
28:BA:67:TYR:HE1	53:BB:41:VAL:HG21	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:BC:26:TYR:O	24:BC:29:GLN:HB2	2.18	0.44
2:B:2401:U:OP1	30:DA:18:ARG:NH2	2.51	0.44
51:DD:84:LEU:HA	51:DD:87:LYS:HG3	2.00	0.44
5:E:261:LYS:HD3	5:E:263:ARG:NH2	2.33	0.44
5:E:68:LYS:O	5:E:70:TRP:N	2.47	0.44
1:EB:1117:G:H5''	43:VC:104:ARG:HH12	1.83	0.44
1:EB:1499:A:OP2	1:EB:1505:G:OP2	2.36	0.44
1:EB:455:C:H42	1:EB:477:G:H1	1.66	0.44
27:EC:13:ILE:HG13	27:EC:13:ILE:H	1.59	0.44
27:EC:31:LEU:HD13	27:EC:32:GLN:H	1.83	0.44
6:F:163:GLU:O	6:F:165:VAL:HG23	2.18	0.44
6:F:174:ASP:OD1	6:F:175:VAL:N	2.47	0.44
2:FB:1322:A:C5	2:FB:1323:U:C5	3.06	0.44
2:FB:1565:C:C2	2:FB:1567:A:C8	3.06	0.44
2:FB:1676:A:H2'	2:FB:1677:A:O4'	2.18	0.44
2:FB:2129:C:C2'	2:FB:2130:U:H5'	2.47	0.44
2:FB:2630:G:H1'	2:FB:2894:G:C1'	2.48	0.44
2:FB:2648:C:H2'	2:FB:2649:U:C6	2.53	0.44
2:FB:270(G):U:H2'	2:FB:270(H):C:C6	2.53	0.44
2:FB:270(U):G:H2'	2:FB:270(V):C:C6	2.53	0.44
2:FB:2783:G:H2'	2:FB:2784:C:C6	2.53	0.44
2:FB:375:C:H5''	2:FB:408:G:H5''	1.98	0.44
2:FB:534:U:H5'	18:VB:42:ALA:HB1	1.99	0.44
2:FB:581:C:H2'	2:FB:582:G:C8	2.53	0.44
2:FB:721:C:H2'	2:FB:722:A:C8	2.52	0.44
2:FB:90:U:H4'	2:FB:91:A:O5'	2.18	0.44
2:FB:974(B):C:H4'	2:FB:974(B):C:OP2	2.15	0.44
3:GB:90:C:OP1	14:RB:16:ARG:NH2	2.51	0.44
54:GD:45:GLN:HA	54:GD:91:LEU:HD21	2.00	0.44
54:GD:93:GLU:HA	54:GD:97:ALA:HA	2.00	0.44
9:I:13:LYS:HA	9:I:14:GLY:HA2	1.67	0.44
9:I:56:SER:H	9:I:61:HIS:CE1	2.36	0.44
4:IA:48:C:H2'	4:IA:59:A:H4'	1.99	0.44
32:JC:36:LYS:HD2	32:JC:40:GLU:HG2	2.00	0.44
38:MA:155:LEU:HD13	38:MA:155:LEU:HA	1.88	0.44
38:MA:21:LEU:HA	38:MA:21:LEU:HD23	1.49	0.44
9:MB:101:ARG:NH1	9:MB:121:ILE:O	2.50	0.44
4:MC:50:U:H2'	4:MC:51:C:C6	2.53	0.44
15:O:9:LYS:HA	15:O:17:ARG:HH11	1.83	0.44
42:QA:45:ILE:HD12	42:QA:47:GLY:N	2.33	0.44
38:QC:114:ARG:HG2	38:QC:114:ARG:H	1.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:QC:78:LEU:HD23	38:QC:78:LEU:N	2.33	0.44
39:RC:27:ARG:HB3	39:RC:27:ARG:HE	1.56	0.44
42:UC:53:VAL:HB	42:UC:58:TYR:CD2	2.53	0.44
43:VC:69:GLY:O	43:VC:73:GLN:HG3	2.18	0.44
23:W:103:ARG:HG2	23:W:103:ARG:HH11	1.83	0.44
23:W:22:GLY:O	23:W:41:LEU:HB2	2.18	0.44
49:XA:15:PHE:CE1	49:XA:84:LYS:HD3	2.53	0.44
1:A:448:A:O2'	1:A:449:C:H5'	2.18	0.43
23:AC:179:ASP:O	23:AC:182:LYS:HB2	2.17	0.43
2:B:1047:G:HO2'	2:B:1110:G:H22	1.65	0.43
2:B:1344:G:C2	2:B:1385:G:C8	3.06	0.43
2:B:2522:U:H5''	2:B:2523:G:OP2	2.18	0.43
2:B:2601:C:OP2	57:B:9001:BLS:N14	2.51	0.43
2:B:49:A:H4'	2:B:50:U:H5''	2.00	0.43
4:D:18:G:H22	4:D:54:5MU:HN3	1.65	0.43
51:DD:29:HIS:CG	51:DD:30:PRO:HD2	2.52	0.43
5:E:71:ASP:HB2	5:E:103:ARG:HH12	1.82	0.43
1:EB:994:A:N1	1:EB:1047:G:H4'	2.32	0.43
1:EB:1320:C:C4	53:FD:36:ARG:HD3	2.53	0.43
1:EB:833:U:H3	1:EB:853:G:H1	1.65	0.43
52:ED:51:LEU:HA	52:ED:52:PRO:HD3	1.84	0.43
6:F:1:MET:HB3	6:F:83:ASP:O	2.17	0.43
2:FB:1535:U:H3'	2:FB:1537:C:H42	1.83	0.43
2:FB:1794:U:H2'	2:FB:1795:C:H6	1.84	0.43
2:FB:185:U:H2'	2:FB:186:G:C8	2.53	0.43
2:FB:276:A:H5''	2:FB:277:C:C6	2.53	0.43
2:FB:307:G:H21	2:FB:330:A:N6	2.15	0.43
2:FB:604:G:C6	2:FB:625:G:C2	3.06	0.43
2:FB:639:U:H2'	2:FB:640:C:C6	2.53	0.43
2:FB:780:G:OP1	5:IB:218:ARG:NH2	2.50	0.43
2:FB:784:A:H5'	2:FB:785:G:OP1	2.18	0.43
2:FB:898:C:H2'	2:FB:899:A:O4'	2.17	0.43
3:GB:16:G:N2	3:GB:69:G:H1'	2.33	0.43
30:HC:38:LYS:HB2	30:HC:49:HIS:CE1	2.52	0.43
4:IA:29:G:C2	4:IA:30:G:C8	3.06	0.43
5:IB:215:LEU:HB2	5:IB:217:ARG:HG3	2.00	0.43
5:IB:275:LYS:HG2	5:IB:276:LYS:H	1.82	0.43
35:JA:126:LEU:CD2	35:JA:157:GLY:HA3	2.48	0.43
12:L:13:ASN:OD1	12:L:13:ASN:N	2.48	0.43
9:MB:127:GLU:HB2	9:MB:128:PRO:HD2	1.99	0.43
4:MC:48:C:H2'	4:MC:59:A:H4'	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:NA:110:LEU:HB3	39:NA:115:VAL:HB	1.99	0.43
10:NB:130:TYR:CE2	10:NB:132:PRO:HG3	2.53	0.43
3:C:50:G:P	16:P:63:THR:HG23	2.58	0.43
39:RC:10:MET:HA	39:RC:32:VAL:HG23	2.00	0.43
40:SC:62:TRP:O	40:SC:62:TRP:HE3	2.00	0.43
21:U:63:LYS:HE3	21:U:63:LYS:HB2	1.75	0.43
46:UA:110:VAL:HG22	46:UA:120:TYR:HB3	2.00	0.43
47:VA:24:GLY:HA3	47:VA:66:LEU:HD12	2.00	0.43
44:WC:69:ASN:O	44:WC:70:ARG:NH1	2.51	0.43
26:Z:5:GLU:O	26:Z:9:GLN:HB2	2.18	0.43
1:A:1086:U:H3	1:A:1099:G:H22	1.66	0.43
1:A:1371:G:C6	1:A:1372:U:C4	3.06	0.43
1:A:1500:A:OP2	1:A:1505:G:OP2	2.36	0.43
1:A:661:G:H1	1:A:744:C:H42	1.66	0.43
1:A:687:A:N3	1:A:688:G:H1'	2.33	0.43
1:A:748:C:H1'	1:A:749:C:OP2	2.18	0.43
1:EB:1060:C:OP1	48:AD:45:ARG:NH2	2.49	0.43
2:B:1070:A:H3'	2:B:1071:G:C5'	2.44	0.43
2:B:1355:G:P	5:E:38:LYS:HZ2	2.41	0.43
2:B:1621:U:H5''	2:B:1622:G:OP1	2.17	0.43
2:B:2146:C:C6	2:B:2146:C:OP2	2.68	0.43
2:B:2480:C:N4	2:B:2481:G:C6	2.86	0.43
2:B:2543:G:H2'	2:B:2544:G:C8	2.53	0.43
2:B:657:U:H2'	2:B:658:C:C6	2.54	0.43
24:BC:2:ALA:HA	4:MC:76:A:H62	1.83	0.43
25:CC:46:LEU:HA	25:CC:46:LEU:HD23	1.70	0.43
1:EB:1347:G:C2	1:EB:1374:A:OP2	2.71	0.43
1:EB:542:G:H5'	38:QC:41:GLY:HA3	1.99	0.43
1:EB:803:G:H2'	1:EB:804:U:O4'	2.18	0.43
52:ED:68:LYS:NZ	52:ED:68:LYS:HA	2.33	0.43
32:FA:32:LEU:HD12	32:FA:32:LEU:HA	1.84	0.43
2:FB:1289:C:H2'	2:FB:1290:C:H6	1.83	0.43
2:FB:2432:A:H5''	2:FB:2433:A:OP2	2.17	0.43
2:FB:2516:G:C6	2:FB:2517:C:N4	2.86	0.43
2:FB:2695:C:H2'	2:FB:2696:U:C6	2.52	0.43
53:FD:16:LEU:HB3	53:FD:20:LEU:HG	2.00	0.43
3:GB:88:C:H2'	3:GB:89(A):G:C8	2.53	0.43
8:H:11:TYR:HA	8:H:15:VAL:HB	2.00	0.43
2:B:2314:C:H4'	8:H:38:VAL:HG21	1.99	0.43
4:HB:38:A:H2'	4:HB:39:C:O4'	2.18	0.43
5:IB:121:PRO:HD3	5:IB:190:TYR:OH	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:82:ARG:C	10:J:88:ILE:HG12	2.38	0.43
36:KA:153:ARG:O	36:KA:155:LEU:N	2.50	0.43
8:LB:16:ARG:HD3	8:LB:31:VAL:HG11	2.00	0.43
9:MB:94:TYR:CE2	9:MB:160:LYS:HG2	2.53	0.43
10:NB:48:GLU:OE1	10:NB:48:GLU:N	2.50	0.43
35:NC:349:GLN:HA	35:NC:352:GLN:HB2	2.00	0.43
36:OC:155:LEU:CD1	36:OC:157:ARG:HB3	2.48	0.43
41:PA:89:MET:HE3	41:PA:155:ARG:HB2	2.00	0.43
41:PA:87:VAL:HG13	41:PA:151:TYR:O	2.18	0.43
12:PB:118:ALA:HA	12:PB:119:PRO:HD2	1.81	0.43
2:FB:1666:G:H4'	12:PB:6:THR:HG23	2.00	0.43
13:QB:89:ALA:O	13:QB:91:PHE:N	2.50	0.43
38:QC:196:LEU:HA	38:QC:197:PRO:HD3	1.81	0.43
2:B:995:C:OP2	18:R:54:LYS:NZ	2.51	0.43
43:RA:50:LEU:HD23	43:RA:85:LEU:HD11	1.99	0.43
45:TA:34:ASP:HB2	45:TA:35:PRO:CD	2.47	0.43
1:EB:1292:U:OP2	41:TC:41:ARG:NH2	2.51	0.43
21:U:31:HIS:HA	21:U:32:PRO:HD3	1.89	0.43
18:VB:83:LEU:HG	18:VB:88:ILE:HD12	1.99	0.43
25:Y:88:LYS:HE2	25:Y:92:LYS:HZ1	1.82	0.43
51:ZA:46:ASP:OD2	51:ZA:49:GLU:HA	2.18	0.43
47:ZC:80:ARG:O	47:ZC:84:ILE:HG12	2.18	0.43
47:ZC:94:ARG:NH1	47:ZC:96:LEU:HD12	2.28	0.43
1:A:24:U:H2'	1:A:25:C:C6	2.51	0.43
1:A:256:U:H2'	1:A:257:G:O4'	2.18	0.43
1:A:664:G:N2	1:A:741:G:H1	1.99	0.43
1:A:824:C:C1'	42:QA:1:MET:H1	2.31	0.43
48:AD:37:PHE:HD1	48:AD:39:LEU:HD12	1.83	0.43
2:B:1829:A:H3'	2:B:1830:C:C6	2.53	0.43
2:B:1889:A:H2'	2:B:1890:A:C8	2.53	0.43
2:B:2001:A:H2'	2:B:2002:G:O4'	2.18	0.43
2:B:2217:G:H2'	2:B:2218:G:H8	1.83	0.43
2:B:1638:C:H1'	2:B:2698:U:O2'	2.17	0.43
2:B:486:C:H2'	2:B:487:C:C6	2.50	0.43
2:B:875:G:H2'	2:B:876:C:O4'	2.18	0.43
3:C:61:G:H2'	3:C:62:C:O4'	2.18	0.43
54:CB:17:ARG:HB2	54:CB:17:ARG:HE	1.59	0.43
50:CD:58:TYR:HB3	50:CD:59:TRP:CD1	2.53	0.43
2:B:1789:A:OP1	5:E:222:ARG:HG3	2.18	0.43
1:EB:1500:A:OP2	1:EB:1505:G:OP2	2.37	0.43
1:EB:354:G:N2	1:EB:388:G:O2'	2.41	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:689:C:OP1	45:XC:44:SER:OG	2.27	0.43
1:EB:790:A:C6	1:EB:791:G:C6	3.05	0.43
6:F:134:ILE:C	6:F:136:ARG:H	2.21	0.43
6:F:104:VAL:HG21	6:F:188:VAL:HG22	2.00	0.43
2:FB:105:C:H2'	2:FB:106:C:C6	2.54	0.43
2:FB:1287:A:C5	2:FB:1288:U:C4	3.06	0.43
2:FB:1349:A:H5''	2:FB:1350:C:H5''	2.00	0.43
2:FB:1446:C:H2'	2:FB:1447:G:C8	2.53	0.43
2:FB:135:G:H1	2:FB:144:C:H42	1.65	0.43
2:FB:2516:G:C4	2:FB:2569:G:N2	2.86	0.43
2:FB:2889:C:H2'	2:FB:2891:G:O4'	2.18	0.43
2:FB:649:G:H2'	2:FB:650:C:O4'	2.18	0.43
54:GD:75:ASN:OD1	54:GD:75:ASN:N	2.51	0.43
5:IB:261:LYS:HD3	5:IB:263:ARG:NH2	2.32	0.43
2:B:2563:U:H4'	12:L:28:SER:HA	2.00	0.43
37:LA:150:LYS:HG3	37:LA:169:ALA:HB2	1.99	0.43
8:LB:113:ARG:CG	8:LB:113:ARG:NH1	2.78	0.43
8:LB:96:ARG:O	8:LB:99:MET:HB3	2.18	0.43
10:NB:115:ALA:HB2	10:NB:131:LYS:HE2	2.00	0.43
35:NC:166:ILE:O	35:NC:171:VAL:HG11	2.18	0.43
2:FB:2585:U:O4	35:NC:235:GLN:HB2	2.19	0.43
37:PC:91:LEU:HB3	37:PC:99:VAL:HG21	2.00	0.43
17:Q:28:VAL:CG1	17:Q:49:VAL:HG23	2.48	0.43
13:QB:85:LEU:HD13	13:QB:120:ALA:HB2	2.00	0.43
16:TB:5:THR:O	16:TB:8:GLU:HG2	2.17	0.43
41:TC:146:GLU:C	41:TC:148:ASN:H	2.19	0.43
17:UB:102:ILE:HD12	17:UB:110:ILE:HD11	2.00	0.43
22:V:29:GLU:O	22:V:38:ILE:HG22	2.18	0.43
22:V:86:ARG:HG2	22:V:87:LYS:H	1.83	0.43
49:XA:8:LYS:HG2	49:XA:12:ILE:HD11	2.01	0.43
25:Y:39:LYS:HB3	25:Y:39:LYS:HZ2	1.83	0.43
25:Y:6:GLU:OE2	25:Y:60:PHE:HD1	2.01	0.43
48:AD:42:ILE:O	48:AD:46:GLU:N	2.36	0.43
2:B:1027:A:C6	2:B:1126:A:C4	3.07	0.43
2:B:1517:G:C2	2:B:1518:C:C2	3.06	0.43
2:B:2275:C:O2	14:N:85:LYS:HG2	2.19	0.43
2:B:2324:C:O2'	2:B:2337:G:H5'	2.19	0.43
2:B:2747:G:O6	2:B:2755:C:H5''	2.18	0.43
2:B:875:G:C4'	23:W:170:THR:HG21	2.47	0.43
24:BC:45:PHE:CE1	24:BC:69:PHE:HE2	2.36	0.43
25:CC:53:VAL:HG21	25:CC:94:LEU:HD11	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:223:GLY:HA3	5:E:231:HIS:CE1	2.53	0.43
1:EB:1135:U:H4'	1:EB:1138:G:C5	2.54	0.43
1:EB:323:U:O3'	54:GD:22:ARG:HD3	2.18	0.43
6:F:54:GLN:HE21	6:F:58:ARG:HB3	1.83	0.43
2:FB:1352:U:O2	2:FB:1570:A:H2	2.00	0.43
2:FB:1716:U:H3	2:FB:1743:G:H1	1.64	0.43
2:FB:2171:A:HO2'	2:FB:2172:U:H5''	1.83	0.43
2:FB:2290:G:C6	2:FB:2291:U:N3	2.87	0.43
2:FB:2329:G:H2'	2:FB:2330:G:C8	2.53	0.43
28:FC:57:GLU:HA	28:FC:58:ARG:HA	1.63	0.43
3:GB:26:A:C5	3:GB:27:C:C4	3.06	0.43
10:J:130:TYR:CE2	10:J:132:PRO:HG3	2.53	0.43
6:JB:134:ILE:C	6:JB:136:ARG:H	2.22	0.43
32:JC:56:GLU:HA	32:JC:56:GLU:OE2	2.18	0.43
37:LA:173:VAL:N	37:LA:174:PRO:HD3	2.33	0.43
13:M:148:LEU:HD23	13:M:149:GLU:N	2.33	0.43
38:MA:11:LEU:HD23	38:MA:66:ARG:HD3	2.01	0.43
4:MC:29:G:C2	4:MC:30:G:C8	3.06	0.43
39:NA:15:ARG:HD2	39:NA:26:PHE:CE1	2.53	0.43
10:NB:128:LEU:HB2	10:NB:129:THR:H	1.61	0.43
10:NB:79:ILE:O	10:NB:144:VAL:HA	2.18	0.43
16:P:32:LEU:HG	16:P:32:LEU:H	1.32	0.43
41:PA:54:THR:HB	41:PA:56:GLN:HG3	2.00	0.43
37:PC:138:VAL:HG11	37:PC:170:GLN:HB3	2.01	0.43
17:Q:81:PRO:HG2	17:Q:82:LEU:HD12	2.01	0.43
43:RA:55:ALA:O	43:RA:57:GLY:N	2.51	0.43
14:RB:58:PHE:HZ	14:RB:106:VAL:HG11	1.83	0.43
2:FB:862:G:P	14:RB:18:LYS:HZ3	2.41	0.43
15:SB:37:THR:OG1	15:SB:40:LYS:HG3	2.18	0.43
20:T:55:ALA:O	20:T:58:ALA:HB3	2.17	0.43
46:UA:84:LEU:HB2	46:UA:105:TYR:CE2	2.53	0.43
23:W:30:ASN:HA	23:W:89:PHE:CE1	2.53	0.43
44:WC:50:ILE:HD12	48:AD:41:ARG:NH2	2.29	0.43
46:YC:76:ASN:OD1	46:YC:77:LEU:HD23	2.18	0.43
1:A:46:G:O2'	1:A:365:U:H1'	2.18	0.43
1:A:376:G:H1'	1:A:389:A:H2	1.83	0.43
1:A:724:G:C2	1:A:725:G:C8	3.06	0.43
1:A:81:G:O6	1:A:86:U:H5''	2.19	0.43
1:A:81:G:N2	1:A:89:U:O2	2.51	0.43
2:B:754:C:O2'	2:B:1272:A:N1	2.48	0.43
2:B:2259:G:C2	2:B:2282:G:C6	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:237:C:C2	2:B:261:G:C2	3.06	0.43
3:C:99:A:C4	3:C:100:G:C8	3.06	0.43
1:EB:1115:C:H2'	1:EB:1116:C:H5'	1.99	0.43
1:EB:1143:G:H2'	1:EB:1144:G:C8	2.53	0.43
1:EB:1124:G:H22	1:EB:1149:C:H42	1.65	0.43
1:EB:998(B):C:H2'	1:EB:999:U:C6	2.54	0.43
27:EC:8:LEU:HB2	27:EC:28:LEU:HD13	1.99	0.43
2:FB:1164:G:H2'	2:FB:1165:U:O4'	2.18	0.43
2:FB:1384:A:N3	2:FB:1405:U:H1'	2.33	0.43
2:FB:1616:A:H4'	2:FB:1617:C:OP2	2.18	0.43
2:FB:1734:C:H2'	2:FB:1735:U:O4'	2.18	0.43
2:FB:2093:G:H4'	10:NB:25:TYR:H	1.83	0.43
2:FB:2373:G:H2'	2:FB:2374:C:C6	2.54	0.43
2:FB:2376:A:N3	16:TB:106:ARG:NH2	2.60	0.43
2:FB:633:A:H1'	2:FB:2403:C:O3'	2.18	0.43
2:FB:2643:G:H2'	2:FB:2644:G:O4'	2.18	0.43
2:FB:2792:G:H22	2:FB:2805:G:H1'	1.82	0.43
3:GB:30:C:H2'	3:GB:31:C:H5'	2.00	0.43
3:GB:90:C:H5'	14:RB:16:ARG:HH22	1.82	0.43
5:IB:147:LEU:HA	5:IB:147:LEU:HD12	1.78	0.43
10:J:114:LEU:HD13	10:J:130:TYR:HD1	1.84	0.43
35:JA:174:ARG:HD3	35:JA:341:ILE:HD13	2.00	0.43
8:LB:143:GLU:O	28:FC:28:LYS:HD2	2.19	0.43
38:MA:113:SER:O	38:MA:116:GLN:HB3	2.18	0.43
38:MA:12:CYS:SG	38:MA:18:LYS:HE3	2.58	0.43
9:MB:102:ALA:HA	9:MB:117:PRO:HD3	1.99	0.43
9:MB:13:LYS:HA	9:MB:14:GLY:HA2	1.64	0.43
39:NA:71:LEU:HD21	39:NA:113:ALA:O	2.17	0.43
15:O:33:ARG:HG3	15:O:33:ARG:O	2.18	0.43
11:OB:63:THR:HB	11:OB:64:GLY:H	1.61	0.43
13:QB:121:LYS:HA	13:QB:122:PRO:HD2	1.73	0.43
2:B:996:A:H4'	18:R:91:ASP:OD2	2.17	0.43
39:RC:53:LEU:O	39:RC:57:LYS:N	2.51	0.43
39:RC:57:LYS:HG2	39:RC:61:TYR:CE2	2.53	0.43
15:SB:104:ARG:HD3	15:SB:107:ASP:OD1	2.19	0.43
41:TC:125:MET:H	41:TC:125:MET:HG2	1.59	0.43
46:UA:39:VAL:HG12	46:UA:57:LYS:HB2	2.01	0.43
42:UC:118:VAL:O	42:UC:119:LEU:HD23	2.18	0.43
19:WB:18:LEU:HG	19:WB:20:LEU:H	1.84	0.43
25:Y:48:LYS:HE3	25:Y:59:THR:HB	1.99	0.43
46:YC:46:LYS:HG2	46:YC:92:0TD:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:ZA:29:HIS:CG	51:ZA:30:PRO:HD2	2.53	0.43
47:ZC:10:PRO:HG2	47:ZC:21:TYR:CD2	2.53	0.43
1:A:1135:U:H4'	1:A:1138:G:C5	2.54	0.43
1:A:1206:G:H4'	37:LA:192:THR:O	2.18	0.43
1:A:1270:C:H2'	1:A:1271:G:H8	1.83	0.43
1:A:305:G:OP2	1:A:305:G:H8	2.02	0.43
1:A:428:G:C8	1:A:430:A:C4	3.07	0.43
23:AC:99:TYR:HA	23:AC:124:ILE:O	2.19	0.43
2:B:1263:U:H2'	2:B:1264:G:C8	2.53	0.43
2:B:1461:G:H2'	2:B:1462:C:H6	1.84	0.43
2:B:185:U:H2'	2:B:186:G:H8	1.82	0.43
2:B:2376:A:C2	2:B:2377:A:H1'	2.53	0.43
2:B:2472:G:H2'	2:B:2475:C:H42	1.84	0.43
4:D:54:5MU:H73	4:D:55:PSU:C2	2.52	0.43
5:E:174:ILE:HG12	5:E:184:LYS:HG2	2.01	0.43
5:E:24:ILE:HD11	5:E:91:ARG:HD3	2.01	0.43
1:EB:988:G:N2	1:EB:1016:A:N3	2.63	0.43
1:EB:1000:A:H2	1:EB:1040:U:H3	1.66	0.43
1:EB:1176:A:H2'	1:EB:1177:G:C8	2.54	0.43
1:EB:1349:A:N3	1:EB:1349:A:H2'	2.34	0.43
1:EB:568:G:N2	1:EB:569:C:C2	2.87	0.43
1:EB:687:A:N3	1:EB:688:G:H1'	2.33	0.43
1:EB:750:G:N3	49:BD:23:GLY:HA3	2.33	0.43
27:EC:8:LEU:HD12	27:EC:53:LEU:O	2.18	0.43
6:F:40:GLU:HG3	6:F:41:LYS:N	2.34	0.43
32:FA:39:LYS:HA	32:FA:42:ARG:NH1	2.34	0.43
32:FA:50:LEU:CB	32:FA:55:ALA:HB2	2.48	0.43
2:FB:1206:G:C2	2:FB:1207:C:C2	3.07	0.43
2:FB:1341:U:OP2	2:FB:1394:U:O2'	2.28	0.43
2:FB:1473:G:H2'	2:FB:1474:C:O4'	2.18	0.43
2:FB:1479:G:H5''	2:FB:1560:G:H4'	2.01	0.43
2:FB:1669:A:C2	2:FB:1994:C:H1'	2.54	0.43
2:FB:2776:A:H4'	2:FB:2777:G:H5''	2.01	0.43
2:FB:2885:C:N3	2:FB:2886:G:H1'	2.34	0.43
2:FB:662:G:N1	2:FB:663:G:C5	2.87	0.43
53:FD:25:LYS:C	53:FD:27:GLU:H	2.22	0.43
53:FD:64:GLU:HB3	53:FD:65:ASN:H	1.53	0.43
2:B:2305:A:H5''	8:H:134:GLY:HA3	2.01	0.43
9:I:111:HIS:HB2	9:I:112:PRO:HD2	2.00	0.43
5:IB:275:LYS:HE2	5:IB:276:LYS:HB2	2.00	0.43
35:JA:142:ARG:HB2	35:JA:144:TRP:CD2	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:JA:172:TYR:O	35:JA:176:LYS:N	2.50	0.43
35:JA:222:LEU:HA	35:JA:222:LEU:HD12	1.76	0.43
6:JB:104:VAL:HG11	6:JB:188:VAL:HG22	2.00	0.43
36:KA:118:LEU:HB3	36:KA:142:LEU:HD12	2.00	0.43
37:LA:140:ARG:HA	37:LA:140:ARG:HD3	1.31	0.43
37:LA:86:VAL:HA	37:LA:89:GLU:HB2	1.99	0.43
9:MB:54:ARG:HA	9:MB:55:PRO:HD3	1.82	0.43
9:MB:83:TYR:CD1	9:MB:138:LYS:HD3	2.53	0.43
36:OC:67:THR:HG21	36:OC:155:LEU:HD11	2.01	0.43
19:S:75:PHE:HD1	19:S:82:ARG:CG	2.32	0.43
12:PB:71:ARG:NH1	17:UB:74:ARG:HH21	2.13	0.43
43:VC:15:ALA:HB2	43:VC:65:VAL:HG23	2.00	0.43
23:W:31:ARG:HG3	23:W:32:HIS:CD2	2.53	0.43
23:W:33:LEU:HG	23:W:34:ASN:N	2.33	0.43
48:WA:26:ARG:NH1	48:WA:43:CYS:SG	2.91	0.43
19:WB:68:LYS:N	19:WB:68:LYS:HD2	2.32	0.43
44:WC:57:LYS:HE3	44:WC:60:ARG:HH22	1.83	0.43
20:XB:64:MET:H	20:XB:64:MET:HG2	1.69	0.43
1:A:1313:U:O4	53:BB:2:PRO:HA	2.19	0.43
1:A:1323:G:H2'	1:A:1324:A:C8	2.53	0.43
2:B:1978:A:H2'	2:B:1979:C:C6	2.53	0.43
2:B:2071:A:C2	2:B:2072:G:C5	3.07	0.43
2:B:2123:G:C2'	2:B:2124:G:H5''	2.48	0.43
2:B:548:A:C2	2:B:549:G:H1'	2.53	0.43
2:B:579:G:H2'	2:B:580:C:C6	2.53	0.43
28:BA:48:ARG:HH22	28:BA:52:THR:HA	1.84	0.43
29:CA:37:LYS:HD3	29:CA:37:LYS:HA	1.62	0.43
2:FB:2079:U:OP1	25:CC:21:ARG:NH2	2.52	0.43
1:EB:1049:U:OP1	48:AD:3:ARG:HB2	2.18	0.43
1:EB:1288:A:C6	1:EB:1289:A:C5	3.06	0.43
1:EB:191(F):U:H2'	1:EB:191(G):G:C8	2.53	0.43
1:EB:375:U:H3	1:EB:389:A:H61	1.65	0.43
2:FB:1389:G:H2'	2:FB:1390:U:C6	2.53	0.43
2:FB:198:C:O2'	2:FB:199:A:H5'	2.18	0.43
2:FB:2017:U:O2'	29:GC:9:LYS:HD2	2.19	0.43
2:FB:531:C:C5	2:FB:2035:G:C2	3.06	0.43
2:FB:234:C:H2'	2:FB:235:U:C6	2.49	0.43
2:FB:2472:G:H2'	2:FB:2475:C:H42	1.83	0.43
2:FB:2593:U:H3	2:FB:2600:A:H61	1.66	0.43
2:FB:2679:A:C2	2:FB:2729:G:C2	3.06	0.43
2:FB:645:C:H5''	2:FB:646:A:OP2	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:GB:13:A:N1	3:GB:69:G:O2'	2.33	0.43
29:GC:41:PRO:HG2	29:GC:44:THR:OG1	2.18	0.43
2:FB:2017:U:H4'	29:GC:8:LYS:O	2.19	0.43
8:H:46:ALA:HB3	8:H:53:LEU:HD23	2.01	0.43
35:JA:139:ALA:O	35:JA:144:TRP:HB2	2.18	0.43
8:LB:73:ALA:HB3	8:LB:85:GLY:H	1.83	0.43
4:MC:8:4SU:O2'	4:MC:21:A:N1	2.39	0.43
40:OA:1:MET:HA	40:OA:67:MET:O	2.18	0.43
36:OC:163:PHE:HA	36:OC:163:PHE:HD2	1.69	0.43
36:OC:187:LEU:H	36:OC:187:LEU:HD23	1.84	0.43
41:PA:60:LYS:HG2	41:PA:60:LYS:H	1.72	0.43
41:PA:58:PRO:HA	41:PA:61:VAL:HG12	2.01	0.43
38:QC:112:VAL:HB	38:QC:113:SER:H	1.62	0.43
43:RA:69:GLY:O	43:RA:73:GLN:HG3	2.19	0.43
44:SA:4:ILE:HB	44:SA:74:ILE:HG13	2.00	0.43
40:SC:12:PRO:O	40:SC:14:LEU:N	2.51	0.43
20:T:58:ALA:HB1	20:T:64:MET:HG3	2.01	0.43
1:A:1226:C:N4	47:VA:104:ARG:HE	2.17	0.43
2:FB:996:A:H4'	18:VB:91:ASP:OD2	2.19	0.43
18:VB:94:ASN:O	18:VB:97:ASP:HB3	2.19	0.43
48:WA:42:ILE:HG22	48:WA:46:GLU:HG3	2.01	0.43
19:WB:98:GLU:OE1	19:WB:100:ARG:NH1	2.51	0.43
24:X:11:ARG:HD2	24:X:11:ARG:O	2.19	0.43
24:X:23:VAL:HG22	24:X:38:VAL:HG22	2.00	0.43
50:YA:6:LEU:HG	50:YA:17:TYR:HB3	2.00	0.43
26:Z:61:LEU:HA	26:Z:61:LEU:HD23	1.79	0.43
47:ZC:15:VAL:O	47:ZC:19:LEU:HD13	2.19	0.43
1:A:1299:A:H2'	1:A:1299:A:N3	2.33	0.43
1:A:1305:G:OP2	1:A:1305:G:C8	2.71	0.43
1:A:238:G:C6	1:A:239:U:C4	3.07	0.43
1:A:6:G:H4'	1:A:298:A:H4'	2.01	0.43
1:A:432:A:H3'	1:A:433:C:C6	2.53	0.43
1:A:688:G:H2'	1:A:689:C:H6	1.83	0.43
1:A:843:U:C5	1:A:848:C:H1'	2.54	0.43
1:A:585:G:O2'	1:A:879:C:H5''	2.19	0.43
2:B:106:C:H2'	2:B:107:C:H6	1.84	0.43
2:B:1106:G:C2	2:B:1107:G:C5	3.06	0.43
2:B:1473:G:H2'	2:B:1474:C:O4'	2.19	0.43
2:B:1734:C:H2'	2:B:1735:U:O4'	2.19	0.43
2:B:1843:C:H2'	2:B:1844:C:C6	2.48	0.43
2:B:211:A:H8	2:B:211:A:O5'	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2583:G:H2'	2:B:2584:U:O4'	2.19	0.43
2:B:310:A:O2'	2:B:311:A:OP2	2.28	0.43
25:CC:20:ARG:HB2	25:CC:33:LYS:O	2.19	0.43
4:D:50:U:H2'	4:D:51:C:C6	2.54	0.43
30:DA:38:LYS:HB2	30:DA:49:HIS:CE1	2.54	0.43
5:E:58:HIS:ND1	5:E:59:LYS:O	2.33	0.43
31:EA:3:ARG:HD3	31:EA:3:ARG:HA	1.72	0.43
1:EB:1029:G:H5'	1:EB:1030:C:OP2	2.18	0.43
1:EB:1196:U:H3'	1:EB:1197:G:C5'	2.48	0.43
1:EB:24:U:H2'	1:EB:25:C:C6	2.51	0.43
6:F:9:VAL:HG22	6:F:25:VAL:O	2.18	0.43
32:FA:40:GLU:O	32:FA:44:LYS:HG3	2.19	0.43
2:FB:83:G:N2	2:FB:102:G:H1'	2.34	0.43
2:FB:1085:A:C2	2:FB:1086:A:H1'	2.54	0.43
2:FB:2126:A:OP2	2:FB:2126:A:C8	2.72	0.43
2:FB:2128:C:H5'	2:FB:2129:C:OP2	2.19	0.43
2:FB:2180:U:H2'	2:FB:2181:G:O4'	2.19	0.43
2:FB:219:G:C6	2:FB:220:G:C6	3.07	0.43
2:FB:442:G:C2	2:FB:444:C:C4	3.06	0.43
3:GB:99:A:C4	3:GB:100:G:C8	3.07	0.43
54:GD:18:GLN:O	54:GD:20:LEU:N	2.52	0.43
9:I:41:MET:HG2	9:I:55:PRO:HD3	2.00	0.43
4:IA:43:A:OP2	4:IA:43:A:H8	2.01	0.43
10:J:27:ARG:HD3	25:Y:71:TYR:CE1	2.53	0.43
32:JC:54:GLU:O	32:JC:57:ARG:HG3	2.18	0.43
11:K:67:LEU:HA	11:K:67:LEU:HD13	1.82	0.43
38:MA:165:MET:HA	38:MA:168:ARG:HB2	2.00	0.43
9:MB:113:VAL:HG11	9:MB:151:ILE:HD13	2.01	0.43
35:NC:103:LYS:HD2	35:NC:104:ASP:H	1.84	0.43
15:O:53:HIS:HB2	15:O:94:TYR:HE2	1.84	0.43
36:OC:92:TYR:CZ	36:OC:151:GLY:HA3	2.54	0.43
41:PA:146:GLU:C	41:PA:148:ASN:H	2.20	0.43
37:PC:108:ASN:HB3	37:PC:111:LEU:HD12	2.00	0.43
37:PC:93:LYS:HB3	37:PC:94:LEU:HD22	2.00	0.43
42:QA:116:LYS:HB3	42:QA:116:LYS:HE2	1.76	0.43
13:QB:126:VAL:HG12	13:QB:148:LEU:HB2	2.00	0.43
15:SB:36:THR:CG2	15:SB:37:THR:H	2.27	0.43
16:TB:112:PHE:CD1	16:TB:112:PHE:OXT	2.72	0.43
41:TC:111:ARG:HA	41:TC:112:PRO:HD3	1.86	0.43
21:U:26:TYR:O	21:U:81:VAL:HG23	2.18	0.43
17:UB:28:VAL:CG1	17:UB:49:VAL:HG23	2.47	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:UC:107:LEU:HA	42:UC:107:LEU:HD23	1.89	0.43
18:VB:3:ARG:NH1	18:VB:5:LYS:HB3	2.34	0.43
43:VC:118:LYS:CB	43:VC:118:LYS:NZ	2.81	0.43
44:WC:90:LEU:HA	44:WC:91:PRO:HD3	1.90	0.43
2:B:855:G:O2'	24:X:27:GLU:OE2	2.24	0.43
50:YA:50:LYS:HE2	50:YA:50:LYS:HB2	1.83	0.43
21:YB:63:LYS:HE3	21:YB:63:LYS:HB2	1.74	0.43
22:ZB:10:GLY:HA2	22:ZB:27:VAL:HB	2.01	0.43
1:A:408:A:H61	1:A:434:U:H3	1.67	0.43
1:A:833:U:H3	1:A:853:G:H1	1.66	0.43
2:B:1312:U:OP2	21:U:63:LYS:NZ	2.39	0.43
2:B:149:A:H2'	2:B:150:C:O4'	2.18	0.43
2:B:2527:C:H2'	2:B:2528:U:O4'	2.19	0.43
2:B:2747:G:C2	2:B:2756:U:H5	2.36	0.43
2:B:309:G:C6	2:B:330:A:C2	3.07	0.43
2:B:545:G:C2	2:B:547:A:OP2	2.72	0.43
2:B:639:U:H2'	2:B:640:C:C6	2.54	0.43
2:B:669:G:H2'	2:B:669:G:N3	2.34	0.43
5:E:140:THR:O	5:E:165:ILE:HG12	2.19	0.43
1:EB:1228:C:OP1	47:ZC:108:ARG:NH1	2.44	0.43
1:EB:1353:G:OP1	55:HD:10:ARG:NH1	2.52	0.43
1:EB:1518:MA6:H102	1:EB:1519:MA6:C10	2.49	0.43
1:EB:376:G:H1'	1:EB:389:A:H2	1.83	0.43
1:EB:46:G:H2'	1:EB:366:C:C5	2.53	0.43
1:EB:688:G:C5	1:EB:700:G:C2	3.06	0.43
27:EC:30:ARG:HG3	27:EC:30:ARG:NH1	2.33	0.43
2:FB:1043:C:H2'	2:FB:1044:G:C8	2.49	0.43
2:FB:1253:A:H4'	2:FB:1254:A:OP2	2.18	0.43
2:FB:1368:G:OP1	31:IC:28:ARG:NH2	2.50	0.43
2:FB:1466:G:C2'	2:FB:1547:C:H41	2.30	0.43
2:FB:1682:G:C5	2:FB:1683:C:C4	3.07	0.43
2:FB:1966:A:H4'	2:FB:1967:C:OP1	2.18	0.43
2:FB:2026:C:H2'	2:FB:2027:G:O4'	2.18	0.43
2:FB:2305:A:H5''	8:LB:134:GLY:HA3	2.01	0.43
2:FB:2316:C:H1'	8:LB:128:ARG:CZ	2.49	0.43
2:FB:270(U):G:H2'	2:FB:270(V):C:H6	1.84	0.43
2:FB:445:C:N4	2:FB:446:G:O6	2.52	0.43
8:H:113:ARG:CG	8:H:113:ARG:NH1	2.80	0.43
8:H:143:GLU:O	28:BA:28:LYS:HD2	2.18	0.43
34:HA:17:U:C2'	34:HA:18:G:H5'	2.49	0.43
10:J:95:LYS:HA	10:J:111:PRO:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:JC:31:HIS:CE1	32:JC:32:LEU:HD22	2.54	0.43
32:JC:32:LEU:HA	32:JC:32:LEU:HD12	1.84	0.43
36:KA:116:GLU:HG2	36:KA:117:GLU:N	2.32	0.43
7:KB:43:LYS:HB3	7:KB:43:LYS:HZ3	1.84	0.43
8:LB:51:ARG:C	8:LB:53:LEU:H	2.18	0.43
8:LB:58:GLN:O	8:LB:62:LEU:HD13	2.19	0.43
13:M:107:LYS:O	13:M:110:TYR:HB2	2.19	0.43
38:MA:100:ARG:O	38:MA:104:VAL:HG23	2.19	0.43
39:NA:6:PHE:CE2	39:NA:63:ARG:HG2	2.53	0.43
36:OC:9:GLU:HG2	36:OC:10:LEU:N	2.33	0.43
16:P:12:PHE:O	16:P:16:ASN:N	2.40	0.43
41:PA:78:ARG:HG3	41:PA:156:TRP:HZ3	1.83	0.43
16:TB:59:LYS:HD2	16:TB:59:LYS:HA	1.88	0.43
41:TC:151:TYR:OH	45:XC:54:ARG:NH1	2.42	0.43
46:UA:45:PRO:HD3	46:UA:51:ALA:O	2.18	0.43
36:OC:178:ARG:CZ	42:UC:74:PRO:HB3	2.48	0.43
22:V:105:ALA:HB1	22:V:107:ASP:H	1.83	0.43
47:VA:80:ARG:O	47:VA:84:ILE:HG12	2.19	0.43
45:XC:66:LEU:HB3	45:XC:70:LYS:HE3	2.01	0.43
25:Y:40:ARG:NH2	25:Y:42:GLN:HG2	2.34	0.43
1:A:1115:C:H2'	1:A:1116:C:H5'	2.00	0.43
1:A:1288:A:C6	1:A:1289:A:C5	3.07	0.43
1:A:1292:U:OP2	41:PA:41:ARG:NH2	2.52	0.43
1:A:1410:G:H2'	1:A:1411:C:C6	2.54	0.43
1:A:293:G:H8	1:A:293:G:OP2	2.01	0.43
1:A:31:G:H8	1:A:31:G:OP1	2.02	0.43
1:A:34:C:H2'	1:A:35:G:C8	2.53	0.43
1:A:533:A:N6	1:A:536:C:O2	2.52	0.43
1:A:568:G:N2	1:A:569:C:C2	2.87	0.43
2:B:146:G:C6	2:B:147:U:C4	3.07	0.43
2:B:2118:U:C4	2:B:2149:G:H1'	2.54	0.43
2:B:271(D):U:H5'	2:B:271:G:OP2	2.19	0.43
2:B:64:A:H2'	2:B:65:C:C6	2.54	0.43
3:C:9:G:C2	3:C:112:G:C4	3.07	0.43
3:C:21:G:C2	3:C:22:U:H1'	2.54	0.43
29:CA:16:ARG:HG3	29:CA:17:ASP:N	2.34	0.43
4:D:70:G:H2'	4:D:71:C:H6	1.84	0.43
2:B:2347:C:O2'	30:DA:21:TYR:OH	2.21	0.43
1:EB:1009:G:H2'	1:EB:1010:G:C8	2.52	0.43
1:EB:1115:C:C2'	1:EB:1116:C:H5'	2.48	0.43
1:EB:1397:C:N3	1:EB:1402:4OC:OP1	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:974:A:OP1	1:EB:974:A:H8	2.01	0.43
32:FA:61:LEU:HD23	32:FA:61:LEU:HA	1.69	0.43
2:FB:2118:U:C4	2:FB:2149:G:H1'	2.54	0.43
2:FB:2782:G:C2	2:FB:2783:G:C8	3.07	0.43
33:GA:6:SER:OG	33:GA:6:SER:O	2.34	0.43
3:GB:68:C:H2'	3:GB:69:G:O4'	2.18	0.43
8:H:83:ARG:O	8:H:85:GLY:N	2.52	0.43
9:I:31:GLY:HA3	9:I:136:ILE:HD13	2.01	0.43
4:IA:3:C:N4	4:IA:4:G:O6	2.52	0.43
6:JB:116:VAL:HG21	6:JB:122:PHE:CD2	2.54	0.43
6:JB:154:LYS:HG3	6:JB:156:MET:HG3	2.01	0.43
36:KA:170:GLU:O	36:KA:174:VAL:HG23	2.19	0.43
12:L:119:PRO:HB2	17:Q:68:TYR:CE2	2.54	0.43
37:LA:23:TYR:CG	37:LA:24:ALA:N	2.86	0.43
9:MB:41:MET:HG2	9:MB:55:PRO:HD3	2.01	0.43
10:NB:114:LEU:HD11	10:NB:128:LEU:HD12	2.00	0.43
35:NC:324:LEU:HD22	35:NC:343:PRO:HG2	2.01	0.43
40:OA:56:PRO:HG2	40:OA:57:GLN:HG3	2.01	0.43
11:OB:17:ASP:OD1	11:OB:18:ALA:N	2.47	0.43
11:OB:23:LEU:HA	11:OB:60:ILE:HD12	2.01	0.43
36:OC:181:PHE:O	36:OC:183:PRO:HD3	2.18	0.43
2:B:2319:G:N1	16:P:3:ARG:HA	2.34	0.43
37:PC:66:VAL:O	37:PC:102:ASN:HB2	2.18	0.43
1:EB:1111:A:H2	37:PC:177:THR:HG23	1.83	0.43
43:RA:50:LEU:HD21	43:RA:81:ILE:HG21	2.01	0.43
39:RC:109:ILE:HD13	39:RC:135:THR:HG21	2.01	0.43
19:S:22:VAL:HG22	19:S:94:LEU:HD23	2.01	0.43
1:A:538:G:OP2	46:UA:115:LYS:HB2	2.18	0.43
23:W:185:GLU:H	23:W:185:GLU:CD	2.21	0.43
1:A:1250:A:H2'	1:A:1251:A:O4'	2.18	0.42
1:A:805:C:O5'	1:A:805:C:H6	2.02	0.42
1:A:953:G:C2	1:A:954:G:H1'	2.54	0.42
2:B:1349:A:H5''	2:B:1350:C:H5''	2.01	0.42
2:B:140:A:C8	2:B:1408:C:O2'	2.66	0.42
2:B:2148:G:H2'	2:B:2149:G:C8	2.53	0.42
2:B:862:G:O5'	2:B:862:G:H8	2.01	0.42
53:BB:49:ILE:HG21	53:BB:71:LEU:HD11	2.00	0.42
50:CD:6:LEU:HG	50:CD:17:TYR:HB3	1.99	0.42
4:D:8:4SU:H2'	4:D:22:G:H1	1.84	0.42
4:D:7:G:H2'	4:D:49:G:H5''	2.00	0.42
5:E:275:LYS:HG2	5:E:276:LYS:N	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:37:LEU:HD12	5:E:38:LYS:N	2.34	0.42
5:E:68:LYS:C	5:E:70:TRP:H	2.22	0.42
1:EB:1281:U:O2'	1:EB:1282:C:H5'	2.19	0.42
1:EB:147:G:N2	1:EB:148:G:N3	2.67	0.42
1:EB:444:C:H2'	1:EB:445:G:C8	2.54	0.42
1:EB:730:G:C5	1:EB:731:G:H1'	2.54	0.42
1:EB:971:G:OP1	1:EB:972:C:H5''	2.18	0.42
1:EB:979:C:H41	1:EB:1360:A:H62	1.66	0.42
27:EC:31:LEU:HD13	27:EC:32:GLN:N	2.33	0.42
2:FB:1344:G:C2	2:FB:1385:G:C8	3.07	0.42
2:FB:1509:A:H8	2:FB:1509:A:OP2	2.01	0.42
2:FB:191:A:H2'	2:FB:192:C:H6	1.83	0.42
2:FB:1946:U:H2'	2:FB:1947:C:C6	2.54	0.42
2:FB:2319:G:OP1	2:FB:2319:G:H3'	2.19	0.42
2:FB:2331:G:N2	2:FB:2385:C:C4	2.87	0.42
2:FB:270(K):G:H2'	2:FB:270(K):G:N3	2.34	0.42
2:FB:2632:A:H1'	2:FB:2810:A:C2	2.54	0.42
2:FB:398:G:H2'	2:FB:399:G:C8	2.54	0.42
3:GB:61:G:H2'	3:GB:62:C:O4'	2.18	0.42
3:GB:63:G:C6	3:GB:64:C:C4	3.07	0.42
9:I:83:TYR:HD2	9:I:136:ILE:O	2.02	0.42
2:FB:1798:U:P	5:IB:273:ARG:HH21	2.28	0.42
10:J:25:TYR:O	10:J:29:TYR:HB3	2.19	0.42
2:FB:2054:A:OP1	6:JB:145:LYS:HE2	2.18	0.42
36:KA:124:SER:HB3	36:KA:125:PRO:HD3	2.01	0.42
36:KA:218:ALA:O	36:KA:222:ILE:HG12	2.19	0.42
7:KB:65:TRP:HB2	7:KB:66:PRO:CD	2.49	0.42
13:M:132:LYS:HG2	13:M:132:LYS:H	1.58	0.42
38:MA:88:VAL:O	38:MA:92:VAL:HG23	2.19	0.42
35:NC:318:THR:HG22	35:NC:325:THR:HA	2.01	0.42
36:OC:105:PHE:CE2	36:OC:158:LEU:HB2	2.54	0.42
37:PC:122:GLU:HA	37:PC:125:GLU:HB3	2.02	0.42
42:QA:41:ARG:HG3	42:QA:41:ARG:NH1	2.29	0.42
43:RA:47:LEU:HD22	43:RA:51:ARG:HH11	1.84	0.42
39:RC:19:MET:SD	39:RC:24:ARG:HG2	2.59	0.42
40:SC:11:ASN:HD22	40:SC:14:LEU:HG	1.84	0.42
45:TA:31:THR:HG23	45:TA:42:TRP:HB3	2.00	0.42
42:UC:126:LYS:HA	42:UC:126:LYS:HD3	1.57	0.42
23:W:103:ARG:CZ	23:W:103:ARG:HA	2.49	0.42
23:W:67:LEU:HA	23:W:67:LEU:HD13	1.86	0.42
48:WA:41:ARG:HG3	48:WA:42:ILE:HG12	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:WB:22:VAL:HG22	19:WB:94:LEU:HD23	2.01	0.42
45:XC:103:LEU:HD23	45:XC:103:LEU:HA	1.80	0.42
46:YC:126:LYS:HD2	46:YC:126:LYS:HA	1.84	0.42
22:ZB:90:LEU:HD13	22:ZB:90:LEU:HA	1.81	0.42
47:ZC:29:ARG:HH11	47:ZC:64:TRP:CB	2.30	0.42
1:A:1136:U:H4'	1:A:1137:C:OP2	2.19	0.42
1:A:130:A:HO2'	1:A:131:C:P	2.41	0.42
1:A:1519:MA6:H102	1:A:1520:G:O2'	2.19	0.42
1:A:54:C:N4	1:A:353:A:OP2	2.41	0.42
23:AC:48:PHE:CE1	23:AC:71:VAL:HG21	2.50	0.42
2:B:1485:G:H5''	2:B:1486:A:OP2	2.18	0.42
2:B:1509:A:H4'	2:B:1510:A:N3	2.35	0.42
2:B:1636:C:H2'	2:B:1637:A:C8	2.54	0.42
2:B:1638:C:H2'	2:B:1639:U:O4'	2.20	0.42
2:B:1732:A:H2'	2:B:1733:G:O4'	2.18	0.42
2:B:1952:A:C6	2:B:1953:A:N1	2.88	0.42
2:B:2129:C:C2'	2:B:2130:U:H5'	2.49	0.42
2:B:2783:G:H2'	2:B:2784:C:C6	2.54	0.42
28:BA:57:GLU:HA	28:BA:58:ARG:HA	1.64	0.42
53:BB:25:LYS:C	53:BB:27:GLU:H	2.22	0.42
3:C:25:A:N3	3:C:25:A:H2'	2.33	0.42
4:D:12:G:N2	4:D:24:U:H3	2.04	0.42
26:DC:61:LEU:HA	26:DC:61:LEU:HD23	1.71	0.42
1:EB:1308:U:H2'	1:EB:1309:G:H8	1.84	0.42
1:EB:217:C:H2'	1:EB:218:C:C6	2.55	0.42
1:EB:252:U:H5'	1:EB:253:U:OP2	2.19	0.42
2:FB:1115:G:C2	2:FB:1116:C:C2	3.06	0.42
2:FB:1855:G:H1	2:FB:1887:C:H42	1.67	0.42
2:FB:2258:C:O2'	2:FB:2426:A:H4'	2.20	0.42
2:FB:251:A:C5	2:FB:252:G:H1'	2.54	0.42
2:FB:2729:G:O2'	6:JB:170:LEU:HD11	2.19	0.42
2:FB:273(A):G:N2	2:FB:365:C:C2	2.86	0.42
2:FB:309:G:C6	2:FB:330:A:C2	3.07	0.42
2:FB:280:C:C2	2:FB:361:G:N2	2.87	0.42
2:FB:599:G:C2	2:FB:600:G:C8	3.07	0.42
2:B:443:A:C5	7:G:45:ARG:HD2	2.54	0.42
4:HB:50:U:H2'	4:HB:51:C:C6	2.53	0.42
35:JA:126:LEU:HD23	35:JA:157:GLY:HA3	2.00	0.42
11:K:16:ILE:HA	11:K:16:ILE:HD13	1.89	0.42
11:K:70:LYS:HZ3	11:K:72:TYR:HE1	1.67	0.42
36:KA:62:ALA:HB1	36:KA:225:ALA:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:KB:95:ARG:HB3	7:KB:97:TYR:HE2	1.79	0.42
12:L:73:ASP:OD2	12:L:75:SER:HB3	2.19	0.42
13:M:85:LEU:HD13	13:M:120:ALA:HB2	2.01	0.42
9:MB:83:TYR:CE1	9:MB:138:LYS:HD3	2.55	0.42
39:NA:10:MET:HA	39:NA:32:VAL:HG23	2.02	0.42
35:NC:279:HIS:O	35:NC:282:GLU:HG3	2.19	0.42
35:NC:302:ASP:C	35:NC:304:SER:H	2.21	0.42
36:OC:30:ARG:HD2	36:OC:31:TYR:CE2	2.54	0.42
41:PA:77:SER:HB3	41:PA:84:ASN:OD1	2.19	0.42
13:QB:98:GLU:H	13:QB:98:GLU:CD	2.22	0.42
39:RC:151:LEU:HB3	42:UC:79:VAL:HG22	2.01	0.42
16:TB:15:ARG:NE	16:TB:25:ARG:HH21	2.17	0.42
1:A:563:A:OP2	46:UA:15:ARG:HG3	2.19	0.42
46:UA:62:SER:HB2	46:UA:64:TYR:CD2	2.54	0.42
23:W:68:PRO:O	23:W:90:VAL:HA	2.19	0.42
44:WC:8:LEU:HB2	44:WC:70:ARG:HB2	2.01	0.42
24:X:25:ARG:HA	24:X:25:ARG:HD3	1.81	0.42
20:XB:9:TYR:HD1	20:XB:102:HIS:HE2	1.67	0.42
46:YC:39:VAL:HG12	46:YC:57:LYS:HB2	1.99	0.42
1:A:1066:C:H5'	1:A:1067:A:OP2	2.19	0.42
1:A:157:G:H1	1:A:164:U:H3	1.67	0.42
27:AA:23:LEU:HD12	27:AA:23:LEU:HA	1.72	0.42
48:AD:37:PHE:CD1	48:AD:39:LEU:HD12	2.54	0.42
2:B:1937:A:C8	2:B:1939:5MU:H2'	2.54	0.42
2:B:2135:A:N6	2:B:2155:G:H1	2.18	0.42
2:B:296:C:O3'	22:V:95:LYS:NZ	2.45	0.42
2:B:642:G:H21	2:B:646:A:H2	1.67	0.42
1:EB:1306:A:H1'	1:EB:1332:A:N1	2.34	0.42
1:EB:836:G:C6	1:EB:851:G:C6	3.07	0.42
2:FB:1607:C:H4'	2:FB:1608:A:C5'	2.50	0.42
2:FB:2219:G:H2'	2:FB:2224:G:H5'	2.01	0.42
2:FB:2343:C:O2'	2:FB:2373:G:O2'	2.36	0.42
2:FB:312:G:H4'	2:FB:331:A:C2	2.55	0.42
2:FB:851:U:H2'	2:FB:852:G:H8	1.83	0.42
7:G:33:LEU:O	7:G:36:VAL:N	2.52	0.42
8:H:58:GLN:O	8:H:62:LEU:HD13	2.19	0.42
30:HC:17:LYS:HZ1	30:HC:50:ARG:NH2	2.17	0.42
5:IB:140:THR:O	5:IB:165:ILE:HG12	2.19	0.42
35:JA:298:LEU:HD23	35:JA:299:GLY:O	2.20	0.42
8:LB:120:LEU:N	8:LB:179:PRO:O	2.51	0.42
10:NB:110:ASP:OD1	10:NB:112:LYS:N	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:NB:87:LYS:HG2	10:NB:89:TYR:N	2.34	0.42
15:O:100:LEU:HA	15:O:100:LEU:HD13	1.46	0.42
11:OB:46:VAL:HG23	11:OB:48:MET:HG2	2.01	0.42
37:PC:183:ASP:O	37:PC:201:TYR:HA	2.18	0.42
42:QA:107:LEU:HD23	42:QA:107:LEU:HA	1.82	0.42
38:QC:88:VAL:O	38:QC:92:VAL:HG23	2.20	0.42
15:SB:57:ARG:HD2	15:SB:59:ASP:CG	2.40	0.42
2:FB:2705:A:H2	15:SB:64:ARG:NH1	2.17	0.42
40:SC:11:ASN:HB2	40:SC:86:ARG:CZ	2.49	0.42
20:T:46:PHE:O	20:T:50:VAL:HG23	2.19	0.42
20:T:25:ARG:NH2	20:T:74:ALA:O	2.51	0.42
46:UA:117:ARG:CG	46:UA:122:THR:HB	2.50	0.42
46:UA:51:ALA:HB3	46:UA:53:ARG:NH2	2.34	0.42
47:VA:84:ILE:HG13	47:VA:85:GLY:H	1.84	0.42
43:VC:55:ALA:O	43:VC:57:GLY:N	2.51	0.42
23:W:163:LEU:H	23:W:163:LEU:HG	1.54	0.42
23:W:93:ASP:HB3	23:W:131:ARG:HH22	1.84	0.42
48:WA:58:LYS:HB3	48:WA:58:LYS:HE3	1.85	0.42
49:XA:33:THR:OG1	49:XA:63:ARG:HD2	2.19	0.42
22:ZB:13:VAL:HG12	22:ZB:74:PRO:HA	2.01	0.42
1:A:1074:G:C2	1:A:1075:C:C2	3.07	0.42
1:A:1115:C:C2'	1:A:1116:C:H5'	2.48	0.42
1:A:1165:C:N4	1:A:1166:G:O6	2.52	0.42
1:A:1484:C:H2'	1:A:1485:U:O4'	2.19	0.42
1:A:1516:G:N1	1:A:1519:MA6:OP2	2.51	0.42
1:A:161:A:H2'	1:A:162:A:C8	2.54	0.42
1:A:27:G:C6	1:A:557:G:C2	3.07	0.42
1:A:632:A:H2'	1:A:633:G:O4'	2.19	0.42
1:A:865:A:H5'	1:A:1078:U:C5	2.54	0.42
23:AC:182:LYS:HB3	23:AC:186:GLU:OE2	2.19	0.42
2:B:1252:G:N3	18:R:33:ARG:HD2	2.34	0.42
2:B:1310:G:H1	2:B:1604:C:H42	1.66	0.42
2:B:1914:C:OP2	2:B:1915:5MU:C5M	2.68	0.42
2:B:2071:A:H2'	2:B:2072:G:H8	1.83	0.42
2:B:2139:C:H3'	2:B:2140:C:C6	2.55	0.42
2:B:2180:U:H2'	2:B:2181:G:O4'	2.18	0.42
2:B:2782:G:C2	2:B:2783:G:C8	3.07	0.42
2:B:2869:G:H2'	2:B:2870:C:O4'	2.20	0.42
2:B:441:U:H2'	2:B:442:G:C8	2.54	0.42
28:BA:58:ARG:O	28:BA:61:ARG:HB3	2.19	0.42
29:CA:41:PRO:HG2	29:CA:44:THR:OG1	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:CC:24:ALA:HB3	25:CC:27:GLU:HB2	2.01	0.42
4:D:71:C:C2	4:D:72:A:C8	3.07	0.42
5:E:155:LEU:HD12	5:E:155:LEU:HA	1.75	0.42
1:EB:1478:C:H2'	1:EB:1479:C:H6	1.84	0.42
1:EB:84:U:H6	1:EB:84:U:H3'	1.84	0.42
27:EC:40:THR:HG23	27:EC:43:ILE:HD12	2.01	0.42
2:FB:101:G:O3'	26:DC:7:ARG:NH2	2.52	0.42
2:FB:1021:A:C3'	2:FB:1021:A:C8	3.03	0.42
2:FB:2110:G:H4'	2:FB:2111:C:OP2	2.19	0.42
2:FB:2455:G:N2	2:FB:2498:C:C4	2.88	0.42
2:FB:2892:A:H2'	2:FB:2893:G:O4'	2.19	0.42
2:FB:379:G:C6	2:FB:380:U:C5	3.07	0.42
2:FB:576:U:OP1	2:FB:2503:2MA:OP1	2.38	0.42
7:G:123:LEU:HD12	7:G:124:LEU:N	2.33	0.42
29:GC:32:PRO:HB3	29:GC:37:LYS:HD3	2.01	0.42
54:GD:49:ALA:O	54:GD:53:LEU:HB2	2.19	0.42
10:J:69:LYS:HA	10:J:138:ILE:HG21	2.01	0.42
10:J:9:LEU:HA	10:J:9:LEU:HD13	1.87	0.42
35:JA:103:LYS:HD2	35:JA:104:ASP:H	1.83	0.42
6:JB:109:LYS:NZ	6:JB:191:PRO:HA	2.35	0.42
6:JB:18:ASP:HB3	17:UB:82:LEU:HD21	2.01	0.42
6:JB:48:GLN:HG2	6:JB:78:LEU:HG	2.02	0.42
2:FB:2637:U:H5''	6:JB:82:ARG:HH12	1.85	0.42
33:KC:24:TYR:HA	33:KC:35:ARG:HA	2.01	0.42
2:B:1669:A:H8	12:L:5:GLN:HG3	1.83	0.42
8:LB:173:LEU:HA	8:LB:173:LEU:HD23	1.75	0.42
39:NA:15:ARG:NH1	39:NA:26:PHE:CZ	2.84	0.42
39:NA:48:ALA:HB1	39:NA:49:PRO:HD2	2.00	0.42
35:NC:260:GLU:H	35:NC:266:ASN:HD21	1.66	0.42
36:OC:53:ARG:NH1	36:OC:53:ARG:HG2	2.35	0.42
17:Q:51:ARG:HD2	17:Q:100:TYR:OH	2.18	0.42
13:QB:95:VAL:HB	13:QB:125:VAL:HG12	2.01	0.42
43:RA:15:ALA:HB2	43:RA:65:VAL:HG23	2.01	0.42
14:RB:74:TYR:HD2	14:RB:75:THR:N	2.17	0.42
44:SA:24:VAL:HG22	44:SA:72:VAL:HG11	2.00	0.42
41:TC:60:LYS:O	41:TC:63:LYS:HB2	2.19	0.42
46:UA:126:LYS:HD2	46:UA:126:LYS:HA	1.81	0.42
46:UA:59:ARG:HG3	46:UA:65:GLU:HG2	2.01	0.42
22:V:75:ILE:O	22:V:106:LEU:HD13	2.18	0.42
22:V:45:VAL:O	22:V:47:LYS:N	2.52	0.42
43:VC:50:LEU:HD21	43:VC:81:ILE:HG21	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:72:ARG:HD3	23:W:72:ARG:HA	1.74	0.42
48:WA:9:LYS:HZ2	48:WA:9:LYS:HB3	1.83	0.42
45:XC:34:ASP:HB2	45:XC:35:PRO:CD	2.49	0.42
50:YA:40:ASP:HA	50:YA:41:PRO:HD3	1.75	0.42
26:Z:2:LYS:HE2	26:Z:2:LYS:HB2	1.75	0.42
26:Z:53:LEU:HD23	26:Z:53:LEU:HA	1.57	0.42
1:A:1143:G:H2'	1:A:1144:G:C8	2.54	0.42
1:A:1206:G:C6	1:A:1207:2MG:C5	3.08	0.42
1:A:1306:A:H1'	1:A:1332:A:N1	2.34	0.42
1:A:218:C:H2'	1:A:219:C:C6	2.54	0.42
1:A:245:C:C2	1:A:284:G:C2	3.07	0.42
1:A:418:C:H2'	1:A:419:C:C6	2.54	0.42
1:A:832:C:H2'	1:A:833:U:O4'	2.20	0.42
48:AD:6:LEU:HD12	48:AD:6:LEU:HA	1.77	0.42
2:B:1057:A:N6	2:B:1059:G:O4'	2.52	0.42
2:B:1307:A:N6	2:B:1606:G:O2'	2.52	0.42
2:B:1436:G:H1	2:B:1556:C:H42	1.66	0.42
2:B:414:C:H4'	2:B:1879:C:O2	2.18	0.42
2:B:2409:G:H2'	2:B:2410:G:O4'	2.19	0.42
2:B:398:G:H2'	2:B:399:G:C8	2.54	0.42
2:B:645:C:H5''	2:B:646:A:OP2	2.19	0.42
2:B:763:G:C2	2:B:765:G:C4	3.07	0.42
53:BB:37:ARG:O	53:BB:70:LYS:HE3	2.18	0.42
3:C:16:G:N2	3:C:69:G:H1'	2.34	0.42
5:E:226:MET:H	5:E:226:MET:HG2	1.46	0.42
1:EB:1086:U:H3	1:EB:1099:G:H22	1.67	0.42
1:EB:1144:G:H21	1:EB:1146:A:N6	2.17	0.42
1:EB:1245:A:OP2	1:EB:1245:A:H8	2.02	0.42
1:EB:343:U:H2'	1:EB:345:C:C5	2.55	0.42
1:EB:767:A:H2'	1:EB:768:A:O4'	2.19	0.42
32:FA:39:LYS:HA	32:FA:42:ARG:HH12	1.85	0.42
2:FB:1153:C:H2'	2:FB:1154:G:O4'	2.20	0.42
2:FB:331:A:C4	2:FB:1209:G:C6	3.07	0.42
2:FB:1511:A:H2'	2:FB:1512:G:H5'	2.02	0.42
2:FB:2001:A:H2'	2:FB:2002:G:O4'	2.20	0.42
2:FB:2060:A:OP1	7:KB:69:HIS:N	2.32	0.42
2:FB:322:A:O4'	2:FB:340:A:H1'	2.20	0.42
2:FB:948:G:N2	2:FB:970:C:O2	2.52	0.42
28:FC:58:ARG:CZ	53:FD:68:GLY:HA3	2.49	0.42
9:I:94:TYR:CE2	9:I:160:LYS:HG2	2.54	0.42
5:IB:218:ARG:NH1	5:IB:218:ARG:CG	2.80	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:IB:260:ARG:HG2	5:IB:261:LYS:O	2.19	0.42
4:IA:75:C:C6	35:JA:261:ARG:HB3	2.54	0.42
37:LA:48:TYR:OH	37:LA:122:GLU:HG3	2.19	0.42
37:LA:138:VAL:HG11	37:LA:170:GLN:HB3	2.00	0.42
13:M:121:LYS:HA	13:M:122:PRO:HD2	1.73	0.42
38:MA:22:LYS:HD2	38:MA:25:ARG:HD3	2.01	0.42
9:MB:46:GLU:HB2	9:MB:49:VAL:HG12	2.01	0.42
10:NB:34:GLY:O	10:NB:36:ALA:N	2.53	0.42
35:NC:109:ARG:O	35:NC:171:VAL:HB	2.19	0.42
40:OA:43:LEU:H	40:OA:43:LEU:HD22	1.85	0.42
36:OC:125:PRO:HB2	36:OC:126:GLU:H	1.70	0.42
36:OC:21:ARG:HB3	36:OC:22:LYS:H	1.57	0.42
16:P:60:GLY:O	16:P:61:ASN:HB3	2.19	0.42
41:PA:115:ARG:O	41:PA:119:ARG:HG3	2.19	0.42
12:PB:20:MET:O	12:PB:22:ILE:HG23	2.19	0.42
12:PB:49:ARG:HA	12:PB:53:LYS:NZ	2.34	0.42
38:QC:127:THR:HB	38:QC:132:ARG:HA	2.00	0.42
44:SA:90:LEU:HA	44:SA:91:PRO:HD3	1.93	0.42
20:T:4:LYS:HE3	20:T:6:ILE:HG13	2.00	0.42
46:UA:84:LEU:HD23	46:UA:104:VAL:HG21	2.01	0.42
43:VC:22:GLY:N	43:VC:59:PHE:HA	2.33	0.42
1:EB:1228:C:P	47:ZC:108:ARG:HH22	2.43	0.42
1:A:1280:A:O2'	1:A:1281:U:H5'	2.20	0.42
1:A:1350:A:C5	1:A:1351:U:C4	3.08	0.42
1:A:1422:G:H2'	1:A:1423:G:H8	1.85	0.42
1:A:411:A:H3'	1:A:411:A:H8	1.84	0.42
1:A:41:G:H2'	1:A:42:G:H8	1.82	0.42
1:A:435:C:H2'	1:A:436:C:C6	2.55	0.42
1:A:544:G:C2	1:A:545:C:C2	3.08	0.42
48:AD:53:LEU:HD13	48:AD:53:LEU:HA	1.70	0.42
2:B:1205:U:C5	7:G:171:PRO:HA	2.55	0.42
2:B:1382:G:O5'	2:B:1382:G:H8	2.01	0.42
2:B:1702:G:C6	2:B:1703:G:C5	3.07	0.42
2:B:1920:4OC:O2	2:B:1920:4OC:H2'	2.20	0.42
2:B:2030:A:H5''	2:B:2031:A:OP1	2.19	0.42
2:B:270(K):G:N3	2:B:270(K):G:H2'	2.35	0.42
2:B:725:G:C6	2:B:726:G:N1	2.88	0.42
53:BB:16:LEU:HD23	53:BB:20:LEU:HD21	2.01	0.42
55:DB:6:ARG:HH12	55:DB:15:ARG:NH1	2.18	0.42
1:EB:1079:G:O3'	39:RC:14:ARG:NH2	2.53	0.42
1:EB:1246:C:H2'	1:EB:1247:U:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:1341:U:O2'	1:EB:1342:C:H5'	2.20	0.42
1:EB:1425:U:H1'	1:EB:1476:G:N2	2.34	0.42
1:EB:533:A:N6	1:EB:536:C:O2	2.53	0.42
1:EB:538:G:H2'	1:EB:539:A:O4'	2.19	0.42
1:EB:690:G:OP2	45:XC:27:ASN:HB3	2.19	0.42
27:EC:26:LEU:HD21	27:EC:46:ASN:HB3	2.02	0.42
2:B:2733:A:N6	6:F:202:LYS:O	2.53	0.42
2:FB:1292:U:H2'	2:FB:1293:C:C6	2.54	0.42
2:FB:174:C:H5''	2:FB:175:G:OP2	2.20	0.42
2:FB:2215:G:H2'	2:FB:2216:G:H8	1.84	0.42
2:FB:2600:A:H2'	2:FB:2601:C:H6	1.85	0.42
2:FB:271(D):U:H5'	2:FB:271:G:OP2	2.20	0.42
2:FB:857:C:N3	2:FB:858:U:C4	2.87	0.42
28:FC:61:ARG:O	28:FC:62:ARG:HB2	2.19	0.42
3:GB:25:A:H2'	3:GB:25:A:N3	2.35	0.42
3:GB:78:A:H2'	3:GB:79:C:O4'	2.19	0.42
30:HC:17:LYS:HZ3	30:HC:50:ARG:HH21	1.63	0.42
4:IA:50:U:H2'	4:IA:51:C:C6	2.54	0.42
36:KA:125:PRO:HB2	36:KA:126:GLU:H	1.71	0.42
2:FB:2526:G:O2'	33:KC:1:MET:HB2	2.19	0.42
12:L:102:VAL:HG23	12:L:121:VAL:HG22	2.00	0.42
37:LA:73:PRO:O	37:LA:77:ILE:HG13	2.20	0.42
38:MA:117:ALA:O	38:MA:121:VAL:HG23	2.19	0.42
39:NA:9:LYS:HB2	39:NA:112:LEU:HD11	2.02	0.42
10:NB:81:VAL:HG12	10:NB:88:ILE:HD11	2.01	0.42
35:NC:217:ILE:H	35:NC:217:ILE:HG13	1.47	0.42
15:O:12:ARG:HD3	15:O:16:HIS:HD2	1.82	0.42
38:QC:119:GLN:HG3	38:QC:123:HIS:ND1	2.34	0.42
38:QC:11:LEU:O	38:QC:15:GLU:HG2	2.19	0.42
38:QC:178:VAL:C	38:QC:180:GLY:H	2.22	0.42
19:S:43:GLU:H	19:S:43:GLU:CD	2.22	0.42
44:SA:46:ARG:NH1	48:WA:61:TRP:CZ2	2.87	0.42
15:SB:83:ILE:O	15:SB:86:ARG:HB2	2.19	0.42
40:SC:22:GLU:O	40:SC:25:ILE:HG12	2.19	0.42
1:A:706:A:H5''	45:TA:22:HIS:CE1	2.53	0.42
41:TC:71:PRO:HA	41:TC:142:GLU:OE2	2.20	0.42
42:UC:121:ASP:HB2	42:UC:125:ARG:NH2	2.33	0.42
18:VB:61:TRP:CH2	18:VB:93:LYS:HB2	2.54	0.42
25:Y:46:LEU:HD23	25:Y:46:LEU:HA	1.76	0.42
2:FB:64:A:O3'	21:YB:71:GLY:HA3	2.20	0.42
1:A:1029:G:H5'	1:A:1030:C:OP2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:962:C:N4	1:A:973:G:H1	2.09	0.42
2:B:1231:G:H2'	2:B:1232:G:C8	2.55	0.42
2:B:1508:A:H3'	2:B:1509:A:C8	2.54	0.42
2:B:2026:C:N3	2:B:2037:G:N2	2.66	0.42
2:B:2805:G:N2	2:B:2807:G:O6	2.46	0.42
2:B:2815:C:H2'	2:B:2816:C:H6	1.85	0.42
2:B:2006:C:O2'	2:B:2823:A:N3	2.52	0.42
2:B:312:G:C6	2:B:313:C:C4	3.08	0.42
2:B:514:A:H1'	2:B:581:C:O2'	2.19	0.42
28:BA:48:ARG:NH1	28:BA:51:ASP:O	2.53	0.42
3:C:26:A:C5	3:C:27:C:C4	3.07	0.42
25:CC:86:SER:HB3	25:CC:89:GLU:CG	2.49	0.42
51:DD:50:LYS:HG3	51:DD:51:TYR:CD2	2.54	0.42
5:E:253:GLN:HB2	5:E:257:LEU:HD22	2.01	0.42
1:EB:1136:U:H5''	1:EB:1137:C:O5'	2.19	0.42
1:EB:1162:C:H2'	1:EB:1163:C:C5	2.55	0.42
1:EB:1250:A:H2'	1:EB:1251:A:O4'	2.19	0.42
1:EB:1371:G:C6	1:EB:1372:U:C4	3.07	0.42
1:EB:298:A:H8	1:EB:298:A:OP1	2.02	0.42
40:SC:99:ALA:HB1	52:ED:23:LYS:HE2	2.02	0.42
40:SC:62:TRP:CD1	52:ED:35:ARG:HD3	2.54	0.42
2:FB:1072:C:H5''	2:FB:1073:A:H5'	2.00	0.42
2:FB:1378:A:O2'	2:FB:1379:A:H5''	2.19	0.42
2:FB:2847:U:O4	2:FB:2848:G:N1	2.53	0.42
2:FB:308:G:H2'	2:FB:309:G:C8	2.54	0.42
2:FB:330:A:H8	2:FB:330:A:H2'	1.72	0.42
2:FB:414:C:H4'	2:FB:1879:C:O2	2.20	0.42
2:FB:596:G:N2	2:FB:662:G:C4	2.88	0.42
8:H:18:GLU:HA	8:H:21:ARG:HG2	2.01	0.42
8:H:25:TYR:CD1	8:H:30:GLU:HG3	2.55	0.42
34:HA:21:A:H62	35:JA:198:THR:HG1	1.58	0.42
4:HB:43:A:H2'	4:HB:44:A:O4'	2.19	0.42
4:IA:49:G:C2	4:IA:50:U:C2	3.08	0.42
6:JB:54:GLN:HE21	6:JB:58:ARG:HB3	1.84	0.42
32:JC:8:LYS:HD2	32:JC:8:LYS:HA	1.76	0.42
7:KB:122:LYS:O	7:KB:191:ARG:HD2	2.20	0.42
7:KB:65:TRP:CD1	7:KB:70:THR:HG21	2.54	0.42
9:MB:103:LEU:HD21	9:MB:105:LEU:HD21	2.01	0.42
4:MC:3:C:N4	4:MC:4:G:O6	2.53	0.42
39:NA:141:GLN:C	39:NA:143:ARG:NH1	2.73	0.42
10:NB:64:GLU:HG3	10:NB:67:ARG:NE	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:NC:175:LEU:O	35:NC:205:VAL:HG11	2.20	0.42
11:OB:30:ILE:O	11:OB:34:LEU:N	2.45	0.42
41:PA:60:LYS:O	41:PA:63:LYS:HB2	2.20	0.42
17:Q:130:ALA:HA	17:Q:133:GLU:OE2	2.20	0.42
42:QA:100:ILE:HA	42:QA:101:PRO:HD3	1.87	0.42
13:QB:80:TYR:HA	13:QB:111:ARG:O	2.20	0.42
38:QC:157:LEU:H	38:QC:157:LEU:HD22	1.85	0.42
38:QC:157:LEU:N	38:QC:157:LEU:HD22	2.34	0.42
39:RC:32:VAL:O	39:RC:43:LEU:HD12	2.19	0.42
23:W:133:ILE:H	23:W:133:ILE:HG13	1.51	0.42
23:W:183:LEU:HD23	23:W:186:GLU:OE1	2.20	0.42
24:X:62:LEU:HA	24:X:62:LEU:HD23	1.71	0.42
45:XC:75:TYR:CD2	45:XC:75:TYR:N	2.87	0.42
51:ZA:9:VAL:O	51:ZA:21:VAL:HA	2.20	0.42
1:A:1296:C:H4'	1:A:1302:U:O4	2.20	0.42
1:A:1505:G:H2'	34:HA:15:A:OP2	2.20	0.42
1:A:217:C:H2'	1:A:218:C:C6	2.55	0.42
1:A:702:A:H5'	2:B:1848:A:H1'	2.02	0.42
1:A:753:A:H5'	1:A:754:C:H5	1.82	0.42
23:AC:103:ARG:HG2	23:AC:103:ARG:HH11	1.85	0.42
2:B:1087:G:H22	2:B:1102:C:N4	2.16	0.42
2:B:1301:A:O2'	2:B:1302:A:H3'	2.20	0.42
2:B:190:A:N3	2:B:679:C:O2'	2.46	0.42
2:B:2123:G:H2'	2:B:2123:G:N3	2.35	0.42
2:B:2128:C:H5'	2:B:2129:C:OP2	2.19	0.42
2:B:1493:C:N4	2:B:2210:G:H1'	2.35	0.42
2:B:2262:U:H4'	2:B:2328:A:C2	2.54	0.42
2:B:253:C:H2'	2:B:254:G:O4'	2.19	0.42
2:B:2808:U:O2'	2:B:2809:A:H5'	2.20	0.42
2:B:247:G:H4'	2:B:386:G:C5	2.54	0.42
3:C:88:C:H2'	3:C:89(A):G:C8	2.55	0.42
54:CB:75:ASN:N	54:CB:75:ASN:OD1	2.52	0.42
46:YC:10:LEU:HD22	51:DD:32:TYR:CE2	2.55	0.42
1:EB:277:C:P	51:DD:41:LYS:HZ1	2.37	0.42
51:DD:78:GLU:OE1	51:DD:81:ARG:HD3	2.20	0.42
1:EB:1072:G:H2'	1:EB:1073:U:C6	2.55	0.42
1:EB:1349:A:P	43:VC:118:LYS:NZ	2.93	0.42
1:EB:1347:G:N2	1:EB:1373:G:H2'	2.35	0.42
1:EB:247:G:O2'	1:EB:282:A:N1	2.47	0.42
1:EB:545:C:O2'	1:EB:549:C:OP1	2.32	0.42
1:EB:998(B):C:N3	1:EB:1042:G:N2	2.64	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:XC:108:ILE:HD12	52:ED:87:ARG:HH11	1.85	0.42
2:FB:1024:G:O2'	2:FB:1144:G:O2'	2.28	0.42
2:FB:1459:G:H5''	2:FB:1460:A:OP2	2.19	0.42
2:FB:1517:G:C2	2:FB:1518:C:C2	3.07	0.42
2:FB:1821:A:O5'	2:FB:1821:A:H8	2.03	0.42
2:FB:2135:A:N6	2:FB:2155:G:H1	2.17	0.42
2:FB:2558:C:H2'	2:FB:2559:C:O4'	2.19	0.42
2:FB:609(B):G:N2	2:FB:619:G:H1'	2.35	0.42
54:GD:29:LYS:O	54:GD:33:ILE:HG12	2.19	0.42
2:B:2316:C:H1'	8:H:128:ARG:CZ	2.49	0.42
9:I:137:ASP:HB3	9:I:140:LYS:HB2	2.02	0.42
31:IC:19:ARG:NH1	31:IC:19:ARG:CG	2.69	0.42
10:J:115:ALA:HB2	10:J:131:LYS:HE2	2.00	0.42
10:J:42:SER:OG	10:J:43:ASN:N	2.52	0.42
35:JA:166:ILE:O	35:JA:171:VAL:HG11	2.19	0.42
7:KB:34:TRP:NE1	13:QB:8:PRO:HD3	2.34	0.42
8:LB:15:VAL:HA	8:LB:175:LEU:HD13	2.01	0.42
9:MB:3:ARG:HG3	9:MB:6:ARG:H	1.85	0.42
9:MB:40:GLU:O	9:MB:41:MET:HG3	2.20	0.42
10:NB:9:LEU:HD13	10:NB:9:LEU:HA	1.85	0.42
42:QA:39:LEU:HD13	42:QA:44:PHE:CD2	2.55	0.42
14:RB:56:ARG:O	14:RB:56:ARG:HG3	2.18	0.42
44:SA:23:ILE:HA	44:SA:26:ALA:HB3	2.02	0.42
44:SA:76:ASN:HA	44:SA:77:PRO:HD3	1.82	0.42
16:TB:60:GLY:O	16:TB:61:ASN:HB3	2.20	0.42
46:UA:10:LEU:HD23	46:UA:10:LEU:HA	1.88	0.42
46:UA:32:PHE:HB2	46:UA:84:LEU:HD11	2.02	0.42
1:EB:824:C:C1'	42:UC:1:MET:H2	2.32	0.42
43:VC:51:ARG:HG2	43:VC:51:ARG:NH1	2.34	0.42
14:N:137:TYR:CE2	23:W:49:ARG:NH1	2.83	0.42
1:A:1049:U:OP1	48:WA:3:ARG:HB2	2.20	0.42
44:WC:4:ILE:O	44:WC:74:ILE:HG12	2.20	0.42
50:YA:21:VAL:HG11	50:YA:59:TRP:CE3	2.55	0.42
46:YC:84:LEU:HB2	46:YC:105:TYR:CE2	2.55	0.42
26:Z:54:LYS:HE3	26:Z:54:LYS:HB2	1.84	0.42
1:A:1269:A:N3	1:A:1326:C:H1'	2.35	0.42
1:A:126:G:H2'	1:A:127:G:O4'	2.20	0.42
1:A:1438:G:H2'	1:A:1439:C:H6	1.84	0.42
1:A:225:C:H2'	1:A:226:G:H8	1.84	0.42
1:A:84:U:H3'	1:A:84:U:H6	1.85	0.42
2:B:1176:G:H5'	2:B:1177:A:OP2	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1708:C:N4	2:B:1750:G:H1	2.12	0.42
2:B:2695:C:H2'	2:B:2696:U:C6	2.54	0.42
2:B:375:C:H5''	2:B:408:G:H5''	2.01	0.42
2:B:528:A:O2'	11:K:114:ARG:NH2	2.52	0.42
2:B:2602:A:H61	57:B:9001:BLS:H131	1.85	0.42
53:BB:40:ILE:HA	53:BB:44:MET:SD	2.60	0.42
3:C:32:C:C2	3:C:51:G:N2	2.88	0.42
54:CB:30:LYS:HZ1	54:CB:30:LYS:HB2	1.83	0.42
2:B:764:A:H5'	5:E:210:GLY:CA	2.49	0.42
1:EB:1226:C:N4	47:ZC:104:ARG:HE	2.17	0.42
1:EB:1284:C:OP2	1:EB:1285:A:H2'	2.20	0.42
1:EB:1425:U:H2'	1:EB:1426:C:C6	2.55	0.42
1:EB:539:A:OP2	46:YC:115:LYS:HE2	2.20	0.42
1:EB:973:G:H1'	44:WC:54:PHE:CD1	2.55	0.42
2:B:2786:U:O2'	6:F:62:PRO:O	2.23	0.42
32:FA:63:PRO:HG2	32:FA:64:TYR:CD2	2.54	0.42
2:FB:1239:G:C6	2:FB:1240:U:N3	2.88	0.42
2:FB:1291:C:H2'	2:FB:1292:U:H6	1.82	0.42
2:FB:1485:G:H5''	2:FB:1486:A:OP2	2.20	0.42
2:FB:1537:C:H3'	2:FB:1537:C:H6	1.85	0.42
2:FB:2744:G:H1'	2:FB:2761:G:N2	2.34	0.42
2:FB:27:G:N2	2:FB:512:G:H1'	2.34	0.42
2:FB:674:G:O2'	7:KB:67:GLN:NE2	2.42	0.42
2:FB:846:C:C2	2:FB:847:U:C5	3.08	0.42
3:GB:29:A:H8	3:GB:29:A:O5'	2.03	0.42
54:GD:47:GLY:HA2	54:GD:48:LYS:C	2.40	0.42
8:H:114:ILE:HD12	8:H:117:PHE:CD1	2.54	0.42
8:H:181:ARG:NE	8:H:182:LYS:HE2	2.34	0.42
30:HC:15:GLU:OE2	30:HC:45:LYS:NZ	2.40	0.42
9:I:18:GLU:OE2	9:I:27:LYS:NZ	2.44	0.42
2:FB:764:A:H5'	5:IB:210:GLY:CA	2.49	0.42
10:J:64:GLU:HG3	10:J:67:ARG:NE	2.35	0.42
2:B:2573:C:N4	35:JA:228:ARG:HH11	2.17	0.42
7:KB:144:LYS:HB3	7:KB:144:LYS:HZ3	1.83	0.42
7:KB:15:SER:OG	7:KB:16:GLY:N	2.53	0.42
4:MC:43:A:OP2	4:MC:43:A:H8	2.02	0.42
4:MC:64:G:C2	4:MC:65:C:C4	3.08	0.42
39:NA:105:VAL:O	39:NA:109:ILE:HD12	2.20	0.42
10:NB:86:THR:HB	10:NB:122:GLU:OE2	2.19	0.42
10:NB:68:LEU:N	10:NB:70:GLU:OE2	2.53	0.42
40:OA:71:ARG:NH1	40:OA:71:ARG:HG2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:OB:65:LYS:O	11:OB:69:GLN:HB2	2.19	0.42
36:OC:80:ILE:HG13	36:OC:80:ILE:H	1.74	0.42
12:PB:119:PRO:HB2	17:UB:68:TYR:CE2	2.55	0.42
44:SA:51:ARG:HG2	44:SA:61:GLU:HB2	2.02	0.42
40:SC:69:GLU:O	40:SC:72:VAL:HG12	2.20	0.42
2:B:2012:G:P	20:T:11:ARG:HH22	2.36	0.42
18:VB:105:VAL:O	18:VB:108:GLU:HB3	2.20	0.42
2:FB:1011:G:H4'	18:VB:75:ASN:ND2	2.35	0.42
43:VC:65:VAL:HG21	43:VC:73:GLN:HB3	2.02	0.42
49:XA:39:LEU:HD23	49:XA:39:LEU:HA	1.87	0.42
2:B:270(J):G:H4'	25:Y:81:ARG:CZ	2.50	0.42
26:Z:20:GLU:HA	26:Z:23:LYS:HE2	2.02	0.42
51:ZA:13:ASP:OD2	51:ZA:14:LYS:NZ	2.52	0.42
1:A:264:U:O2'	51:ZA:64:PRO:O	2.24	0.42
1:A:1074:G:H1	1:A:1083:U:H3	1.67	0.42
1:A:1135:U:H6	1:A:1135:U:O5'	2.03	0.42
1:A:1341:U:O2'	1:A:1342:C:H5'	2.20	0.42
1:A:189:U:H3	51:ZA:72:ARG:NH1	2.17	0.42
23:AC:24:LEU:HD12	23:AC:25:PRO:HD2	2.02	0.42
48:AD:41:ARG:HG3	48:AD:42:ILE:HG12	2.02	0.42
2:B:1412:A:C5'	2:B:1413:G:OP2	2.68	0.42
2:B:1657:C:O2'	2:B:1658:C:H5'	2.20	0.42
2:B:1682:G:C5	2:B:1683:C:C4	3.08	0.42
1:A:1409:C:H5''	2:B:1915:5MU:O4	2.19	0.42
2:B:1946:U:H2'	2:B:1947:C:C6	2.55	0.42
2:B:2093:G:H1	2:B:2196:C:N4	2.09	0.42
2:B:2343:C:H2'	2:B:2344:U:C6	2.55	0.42
2:B:2571:C:C4	2:B:2574:G:C8	3.08	0.42
2:B:270(G):U:H2'	2:B:270(H):C:C6	2.54	0.42
2:B:528:A:H1'	2:B:529:A:OP1	2.20	0.42
2:FB:2331:G:H4'	24:BC:43:THR:H	1.85	0.42
4:D:53:G:C6	4:D:54:5MU:H72	2.55	0.42
1:EB:1005:A:N7	1:EB:1006:C:O2'	2.40	0.42
1:EB:1129:C:OP2	1:EB:1129:C:H6	2.03	0.42
1:EB:979:C:H1'	1:EB:1317:C:H42	1.85	0.42
1:EB:245:C:C2	1:EB:284:G:C2	3.08	0.42
1:EB:382:A:H2'	1:EB:383:A:C8	2.55	0.42
1:EB:609:A:C5	1:EB:610:G:C8	3.08	0.42
1:EB:976:G:C8	1:EB:1358:U:C2	3.08	0.42
2:B:2572:A:C2	6:F:144:ARG:NH1	2.88	0.42
2:FB:1057:A:N6	2:FB:1059:G:O4'	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1338:G:C6	2:FB:1339:G:C5	3.08	0.42
2:FB:1812:A:H2'	2:FB:1813:G:C8	2.52	0.42
2:FB:211:A:H8	2:FB:211:A:O5'	2.03	0.42
2:FB:2123:G:H2'	2:FB:2123:G:N3	2.34	0.42
2:FB:2161:C:H2'	2:FB:2162:G:O4'	2.20	0.42
2:FB:2343:C:H2'	2:FB:2344:U:C6	2.54	0.42
2:FB:2427:C:H5''	2:FB:2429:G:H5'	2.02	0.42
2:FB:2031:A:C6	2:FB:2498:C:H1'	2.55	0.42
2:FB:700:G:C6	2:FB:733:G:N2	2.88	0.42
2:FB:843:G:N2	2:FB:936:C:C2	2.88	0.42
7:G:202:PHE:O	7:G:205:ARG:HB3	2.20	0.42
1:EB:325:A:OP2	54:GD:70:SER:HB3	2.20	0.42
8:H:6:ALA:N	8:H:104:GLU:OE2	2.53	0.42
6:JB:176:ILE:HG13	6:JB:181:LEU:HB2	2.01	0.42
36:KA:74:LYS:HZ1	36:KA:76:GLN:HB2	1.85	0.42
36:KA:9:GLU:HG2	36:KA:10:LEU:H	1.85	0.42
7:KB:29:ASN:HA	7:KB:30:PRO:HD2	1.86	0.42
33:KC:6:SER:OG	33:KC:6:SER:O	2.31	0.42
38:MA:119:GLN:HG3	38:MA:123:HIS:ND1	2.34	0.42
9:MB:137:ASP:HB3	9:MB:140:LYS:HB2	2.01	0.42
14:N:135:ASP:OD1	14:N:136:ALA:N	2.53	0.42
15:O:84:ALA:HB3	15:O:85:PRO:HD3	2.02	0.42
37:PC:77:ILE:HA	37:PC:84:ILE:HD12	2.02	0.42
1:A:827:U:O2'	42:QA:19:VAL:HG11	2.20	0.42
13:QB:116:GLY:HA2	13:QB:134:ALA:HB2	2.02	0.42
18:R:95:LEU:O	18:R:98:LEU:HD12	2.19	0.42
43:RA:124:GLN:HE21	43:RA:124:GLN:HB3	1.66	0.42
39:RC:71:LEU:HD23	39:RC:115:VAL:HG22	2.02	0.42
39:RC:78:HIS:CE1	42:UC:104:ARG:NH1	2.88	0.42
44:SA:3:LYS:O	44:SA:100:THR:HA	2.20	0.42
44:SA:79:ARG:O	44:SA:82:ILE:HG22	2.20	0.42
23:W:24:LEU:HB2	23:W:41:LEU:HD13	2.01	0.42
44:SA:46:ARG:NH1	48:WA:61:TRP:CE2	2.87	0.42
19:WB:85:LYS:HB3	19:WB:85:LYS:NZ	2.35	0.42
44:WC:26:ALA:HA	44:WC:29:ARG:NE	2.34	0.42
1:A:1022:G:H2'	1:A:1022:G:N3	2.34	0.41
1:A:1117:G:H5''	43:RA:104:ARG:HH12	1.85	0.41
1:A:1380:U:C5	41:PA:3:ARG:HD3	2.55	0.41
1:A:538:G:H2'	1:A:539:A:O4'	2.20	0.41
2:B:1550:C:OP1	2:B:1727:U:O2'	2.28	0.41
2:B:2811:G:N2	2:B:2891:G:H1'	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:649:G:H2'	2:B:650:C:O4'	2.20	0.41
2:B:709:U:H2'	2:B:710:G:C8	2.54	0.41
2:B:73:A:H2'	2:B:74:A:OP2	2.20	0.41
2:B:900:A:H2'	2:B:901:A:C8	2.55	0.41
49:BD:74:ASP:HA	49:BD:75:PRO:HD2	1.90	0.41
25:CC:52:ARG:HA	25:CC:57:GLU:HA	2.01	0.41
4:D:22:G:C6	4:D:46:G:N1	2.88	0.41
4:D:58:A:N6	4:D:61:C:C2	2.88	0.41
30:DA:15:GLU:OE2	30:DA:45:LYS:NZ	2.42	0.41
51:DD:63:ARG:HG3	51:DD:63:ARG:H	1.70	0.41
5:E:155:LEU:HB3	5:E:156:ALA:H	1.54	0.41
1:EB:1084:G:OP1	1:EB:1086:U:C2	2.74	0.41
1:EB:1202:G:H2'	1:EB:1203:C:O4'	2.19	0.41
1:EB:232:G:H1'	1:EB:262:A:N1	2.35	0.41
1:EB:544:G:H2'	1:EB:545:C:C6	2.55	0.41
6:F:11:MET:HB3	6:F:24:THR:HA	2.02	0.41
2:FB:149:A:H2'	2:FB:150:C:O4'	2.21	0.41
2:FB:1949:G:H1	2:FB:1957:C:H42	1.68	0.41
2:FB:2093:G:H1	2:FB:2196:C:N4	2.07	0.41
2:FB:2148:G:H2'	2:FB:2149:G:C8	2.54	0.41
2:FB:2320:A:C8	2:FB:2333:A:N6	2.88	0.41
2:FB:2618:G:C6	2:FB:2619:C:C4	3.08	0.41
2:FB:269:U:C4	2:FB:271(A):U:C2	3.08	0.41
2:FB:2822:G:OP2	6:JB:110:GLY:O	2.38	0.41
2:FB:444:C:O2'	2:FB:445:C:H5'	2.19	0.41
2:FB:711:G:N2	2:FB:720:C:C2	2.85	0.41
2:FB:842:G:N2	2:FB:937:U:C2	2.88	0.41
2:FB:909:A:C6	2:FB:912:C:C2	3.08	0.41
53:FD:16:LEU:HD23	53:FD:20:LEU:HD21	2.02	0.41
5:IB:182:LEU:O	5:IB:271:ILE:HG12	2.20	0.41
10:J:128:LEU:HD11	10:J:140:LEU:HD12	2.01	0.41
10:J:77:LEU:HB3	10:J:142:VAL:HG22	2.02	0.41
35:JA:245:ARG:HD3	35:JA:256:GLU:HB3	2.02	0.41
6:JB:14:ILE:HG13	6:JB:21:VAL:HG13	2.01	0.41
11:K:130:HIS:O	11:K:135:PRO:HD3	2.19	0.41
36:KA:25:ASN:HA	36:KA:26:PRO:HD3	1.88	0.41
8:LB:127:GLY:N	8:LB:166:ASP:OD1	2.52	0.41
8:LB:59:GLU:O	8:LB:63:ILE:HG13	2.20	0.41
38:MA:63:LYS:O	38:MA:67:ILE:HG13	2.20	0.41
9:MB:31:GLY:HA3	9:MB:136:ILE:HD13	2.02	0.41
39:NA:69:VAL:HG11	39:NA:113:ALA:HB1	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:NA:20:GLN:OE1	39:NA:21:ALA:N	2.53	0.41
35:NC:133:ARG:HH11	35:NC:133:ARG:HG3	1.84	0.41
37:PC:23:TYR:CG	37:PC:24:ALA:N	2.87	0.41
37:PC:74:GLY:HA2	37:PC:77:ILE:HD12	2.00	0.41
42:QA:75:ARG:HA	42:QA:76:PRO:HD3	1.83	0.41
38:QC:142:PRO:HB3	38:QC:186:LEU:O	2.20	0.41
43:RA:77:ILE:HA	43:RA:80:GLY:HA3	2.01	0.41
2:FB:2277:G:O3'	14:RB:11:LYS:HD2	2.20	0.41
39:RC:69:VAL:HG11	39:RC:113:ALA:HB1	2.02	0.41
19:S:71:LEU:HD22	19:S:71:LEU:HA	1.71	0.41
43:VC:19:LEU:HD21	43:VC:81:ILE:HG23	2.02	0.41
23:W:107:THR:HA	23:W:108:PRO:HD3	1.87	0.41
25:Y:18:ILE:HD13	25:Y:37:ILE:HG12	2.01	0.41
46:YC:45:PRO:HD3	46:YC:51:ALA:O	2.20	0.41
35:NC:304:SER:HB2	46:YC:52:LEU:HD11	2.02	0.41
46:YC:90:VAL:HG12	46:YC:93:LEU:H	1.85	0.41
26:Z:41:ILE:H	26:Z:41:ILE:HG13	1.68	0.41
47:ZC:40:ASN:OD1	47:ZC:41:PRO:HD2	2.19	0.41
47:ZC:91:ARG:HA	47:ZC:94:ARG:HB2	2.02	0.41
1:A:1084:G:OP1	1:A:1086:U:C2	2.74	0.41
1:A:1293:G:H2'	1:A:1294:G:O4'	2.19	0.41
1:A:946:A:O2'	1:A:1333:A:N3	2.46	0.41
1:A:1363:A:H1'	1:A:1365:G:N7	2.35	0.41
1:A:355:C:H5''	1:A:389:A:OP2	2.20	0.41
1:A:375:U:H3	1:A:389:A:N6	2.18	0.41
1:A:640:A:C6	1:A:641:U:C4	3.08	0.41
27:AA:5:LYS:HE2	27:AA:5:LYS:HB3	1.90	0.41
37:PC:19:GLU:HB2	48:AD:52:GLN:HG2	2.02	0.41
2:B:1709:U:H2'	2:B:1710:C:C6	2.55	0.41
2:B:1798:U:H5'	5:E:259:THR:OG1	2.20	0.41
2:B:2427:C:H5''	2:B:2429:G:H5'	2.02	0.41
2:B:2478:A:H2'	2:B:2479:G:O4'	2.20	0.41
2:B:2618:G:C6	2:B:2619:C:C4	3.08	0.41
2:B:388:G:H2'	2:B:390:A:N7	2.35	0.41
2:B:655:A:N3	2:B:656:G:H1'	2.35	0.41
2:B:827:U:H2'	2:B:2068:U:C2	2.56	0.41
2:B:84:A:N1	2:B:103:A:C5	2.87	0.41
2:B:879:G:H22	2:B:899:A:H1'	1.84	0.41
53:BB:40:ILE:HB	53:BB:67:VAL:O	2.20	0.41
5:E:145:VAL:HG12	5:E:146:GLU:O	2.20	0.41
1:EB:1074:G:H1	1:EB:1083:U:H3	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:EB:1167:A:H8	1:EB:1167:A:P	2.42	0.41
1:EB:1280:A:O2'	1:EB:1281:U:H5'	2.20	0.41
1:EB:1296:C:N4	1:EB:1297:C:H41	2.17	0.41
1:EB:1437:C:H2'	1:EB:1438:G:C8	2.54	0.41
1:EB:1448:C:H2'	1:EB:1449:C:C6	2.56	0.41
1:EB:333:G:H2'	1:EB:334:C:H6	1.84	0.41
1:EB:371:G:N3	1:EB:391:G:N2	2.68	0.41
1:EB:394:G:H2'	1:EB:395:C:H6	1.85	0.41
1:EB:479:C:H2'	1:EB:480:U:H6	1.85	0.41
1:EB:639:G:C2	1:EB:640:A:C8	3.08	0.41
1:EB:744:C:H2'	1:EB:745:C:C6	2.55	0.41
6:F:24:THR:HG22	6:F:184:VAL:O	2.20	0.41
2:FB:1407:C:H2'	2:FB:1408:C:C6	2.55	0.41
2:FB:2552:2MU:C2	2:FB:2554:U:H5''	2.50	0.41
2:FB:275:G:H3'	2:FB:276:A:O4'	2.20	0.41
2:FB:890:A:O2'	2:FB:892:G:H5'	2.20	0.41
53:FD:15:LEU:C	53:FD:17:GLU:H	2.23	0.41
53:FD:30:LEU:HD11	53:FD:50:ALA:HB2	2.01	0.41
8:H:20:ILE:HG13	8:H:20:ILE:H	1.63	0.41
8:H:94:LEU:O	8:H:99:MET:HB2	2.19	0.41
4:HB:70:G:O2'	4:HB:71:C:H5'	2.20	0.41
30:HC:25:LYS:HE2	30:HC:51:GLU:OE2	2.20	0.41
9:I:25:LYS:HE3	9:I:27:LYS:HD3	2.03	0.41
5:IB:111:LEU:HD12	5:IB:115:GLN:OE1	2.20	0.41
10:J:48:GLU:H	10:J:48:GLU:CD	2.23	0.41
32:JC:52:LYS:HB3	32:JC:53:PRO:HD3	2.02	0.41
11:K:41:ASP:OD1	11:K:41:ASP:N	2.53	0.41
36:KA:201:ILE:HA	36:KA:201:ILE:HD13	1.78	0.41
37:LA:142:MET:SD	37:LA:146:ALA:HB3	2.60	0.41
37:LA:147:LYS:HA	37:LA:147:LYS:HD3	1.78	0.41
38:MA:41:GLY:C	38:MA:43:HIS:H	2.24	0.41
41:PA:9:VAL:O	41:PA:11:GLN:N	2.54	0.41
12:PB:105:GLU:OE1	12:PB:105:GLU:N	2.53	0.41
37:PC:48:TYR:OH	37:PC:122:GLU:HG3	2.20	0.41
38:QC:172:PRO:HG2	38:QC:173:TRP:HD1	1.85	0.41
18:R:74:LEU:H	18:R:74:LEU:HD12	1.85	0.41
43:RA:58:ARG:HB3	43:RA:59:PHE:CE2	2.55	0.41
43:RA:91:ASP:O	43:RA:93:ARG:N	2.42	0.41
15:SB:53:HIS:HB2	15:SB:94:TYR:CE2	2.54	0.41
45:TA:35:PRO:O	45:TA:37:GLY:N	2.46	0.41
16:TB:15:ARG:HE	16:TB:25:ARG:HH21	1.68	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:47:PHE:O	21:U:49:VAL:N	2.51	0.41
49:XA:24:SER:HB3	49:XA:27:VAL:HG23	2.02	0.41
45:XC:20:TYR:CE1	45:XC:83:ILE:HD12	2.55	0.41
1:A:1124:G:H4'	44:SA:38:ILE:HG12	2.02	0.41
1:A:1222:G:H5''	53:BB:78:ARG:NH2	2.36	0.41
1:A:447:G:O6	1:A:485:G:O2'	2.30	0.41
1:A:689:C:OP1	45:TA:44:SER:OG	2.21	0.41
2:B:1026:U:H4'	2:B:1027:A:OP2	2.20	0.41
2:B:1354:A:C8	2:B:1355:G:C8	3.08	0.41
2:B:1368:G:OP1	31:EA:28:ARG:NH2	2.47	0.41
2:B:1520:U:H2'	2:B:1521:G:O4'	2.20	0.41
2:B:1817:G:H2'	2:B:1818:U:H5'	2.02	0.41
2:B:1937:A:O2'	2:B:1939:5MU:OP2	2.33	0.41
2:B:2009:G:C6	2:B:2010:G:N7	2.88	0.41
2:B:2495:G:OP2	24:X:3:HIS:HB3	2.20	0.41
2:B:308:G:H2'	2:B:309:G:C8	2.55	0.41
2:B:855:G:C6	2:B:856:C:N3	2.88	0.41
2:B:872:A:N6	2:B:873:G:O6	2.53	0.41
28:BA:57:GLU:CD	28:BA:58:ARG:HG2	2.40	0.41
14:RB:82:ARG:HH11	24:BC:4:LYS:HB2	1.85	0.41
3:C:48:A:H2'	3:C:49:C:C6	2.56	0.41
54:CB:41:VAL:HG23	54:CB:42:GLN:HG2	2.02	0.41
25:CC:80:LEU:HA	25:CC:80:LEU:HD13	1.85	0.41
4:D:43:A:H2'	4:D:44:A:O4'	2.19	0.41
51:DD:22:LEU:HD13	51:DD:22:LEU:HA	1.56	0.41
5:E:97:TYR:HE2	5:E:103:ARG:HB2	1.86	0.41
1:EB:6:G:H4'	1:EB:298:A:H4'	2.02	0.41
1:EB:308:C:H2'	1:EB:309:G:C8	2.55	0.41
1:EB:42:G:H1	1:EB:400:C:H42	1.69	0.41
1:EB:623:C:H2'	1:EB:624:C:O4'	2.19	0.41
1:EB:832:C:H2'	1:EB:833:U:O4'	2.19	0.41
32:FA:25:MET:HE1	32:FA:47:LYS:HG3	2.01	0.41
2:FB:1070:A:H3'	2:FB:1071:G:C5'	2.45	0.41
2:FB:1267:U:O2'	2:FB:1268:A:O5'	2.34	0.41
2:FB:1322:A:H2'	2:FB:1323:U:H6	1.85	0.41
2:FB:150:C:H2'	2:FB:151:C:C6	2.54	0.41
2:FB:2478:A:H2'	2:FB:2479:G:O4'	2.20	0.41
2:FB:2051:A:H5'	2:FB:2578:G:O4'	2.21	0.41
2:FB:458:G:H22	2:FB:469:G:H2'	1.85	0.41
2:FB:546:C:C5	2:FB:547:A:C4	3.08	0.41
2:FB:725:G:C6	2:FB:726:G:N1	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:98:LEU:HB3	9:I:103:LEU:HA	2.02	0.41
4:IA:51:C:O2	4:IA:64:G:N2	2.53	0.41
35:JA:177:PHE:O	35:JA:321:ARG:NH2	2.53	0.41
35:JA:311:ASN:HD22	35:JA:316:ARG:NH2	2.18	0.41
7:KB:12:LEU:HA	7:KB:12:LEU:HD23	1.90	0.41
37:LA:139:GLN:CB	37:LA:140:ARG:HH12	2.32	0.41
37:LA:134:ILE:HG23	37:LA:151:VAL:HB	2.02	0.41
13:M:101:VAL:HA	13:M:106:LEU:O	2.20	0.41
13:M:45:LEU:HD13	13:M:48:PRO:HG3	2.03	0.41
14:N:33:GLY:HA2	14:N:105:GLU:HA	2.02	0.41
14:N:72:LYS:HB3	14:N:94:VAL:HG23	2.01	0.41
35:NC:114:GLU:OE1	35:NC:116:ARG:NH1	2.44	0.41
11:OB:41:ASP:N	11:OB:41:ASP:OD1	2.53	0.41
36:OC:17:PHE:HA	36:OC:44:LEU:HD21	2.02	0.41
37:PC:108:ASN:HA	37:PC:109:PRO:HD3	1.85	0.41
37:PC:134:ILE:O	37:PC:137:ALA:N	2.52	0.41
42:QA:85:ARG:HD3	42:QA:87:SER:O	2.21	0.41
13:QB:106:LEU:HD22	13:QB:112:LEU:HG	2.02	0.41
38:QC:12:CYS:HA	38:QC:15:GLU:HB2	2.03	0.41
2:B:1152:C:H5''	18:R:80:ILE:HG21	2.02	0.41
14:RB:79:LEU:HA	14:RB:79:LEU:HD23	1.76	0.41
44:SA:9:ARG:HB2	44:SA:95:GLU:OE2	2.21	0.41
40:SC:18:GLN:CA	40:SC:21:LEU:HB3	2.46	0.41
20:T:67:ASP:OD2	20:T:67:ASP:N	2.53	0.41
21:U:44:GLU:OE1	21:U:50:LYS:NZ	2.41	0.41
46:UA:90:VAL:HG12	46:UA:93:LEU:H	1.85	0.41
17:UB:126:ALA:HA	17:UB:129:ARG:NH1	2.34	0.41
42:UC:69:ARG:HD3	42:UC:75:ARG:O	2.19	0.41
1:EB:1187:G:H4'	43:VC:111:ARG:NH1	2.35	0.41
44:WC:37:PRO:HA	44:WC:71:LEU:O	2.20	0.41
44:WC:76:ASN:HA	44:WC:77:PRO:HD3	1.85	0.41
46:YC:53:ARG:HB3	46:YC:69:TYR:HE1	1.84	0.41
26:Z:68:ARG:HG2	26:Z:68:ARG:H	1.59	0.41
51:ZA:52:LYS:HA	51:ZA:52:LYS:HD3	1.75	0.41
47:ZC:37:THR:O	47:ZC:55:ARG:NH1	2.37	0.41
1:A:1134:G:H2'	1:A:1138:G:O6	2.21	0.41
1:A:1226:C:H4'	53:BB:80:TYR:OH	2.20	0.41
1:A:1347:G:C2	1:A:1374:A:OP2	2.73	0.41
1:A:1399:C:C2	1:A:1401:G:C6	3.09	0.41
1:A:613:C:H2'	1:A:614:A:H8	1.85	0.41
23:AC:68:PRO:O	23:AC:90:VAL:HA	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1288:U:C2	2:B:1327:C:O2	2.74	0.41
2:B:1469:A:H2'	2:B:1470:G:O4'	2.21	0.41
2:B:15:G:C2	2:B:16:G:C8	3.08	0.41
2:B:2207:C:H2'	2:B:2208:U:O4'	2.19	0.41
2:B:2227:A:C4	2:B:2228:G:C8	3.09	0.41
2:B:2373:G:H2'	2:B:2374:C:C6	2.55	0.41
2:B:2666:C:H3'	2:B:2667:C:H6	1.85	0.41
2:B:273(E):C:C6	2:B:273(E):C:OP2	2.71	0.41
2:B:2747:G:C2	2:B:2756:U:C5	3.08	0.41
2:B:405:U:H4'	2:B:406:G:OP2	2.20	0.41
2:B:545:G:N2	2:B:548:A:H62	2.16	0.41
2:B:581:C:H2'	2:B:582:G:C8	2.56	0.41
28:BA:40:HIS:C	28:BA:42:PHE:H	2.23	0.41
42:UC:91:ARG:HG3	51:DD:34:LYS:N	2.35	0.41
1:EB:1022:G:H2'	1:EB:1022:G:N3	2.35	0.41
1:EB:1197:G:OP1	1:EB:1198:G:OP2	2.38	0.41
1:EB:201:C:C4	1:EB:209:U:H1'	2.54	0.41
1:EB:236:G:H2'	1:EB:237:C:O4'	2.20	0.41
1:EB:82:U:H2'	1:EB:84:U:H5	1.85	0.41
2:FB:1128:A:N7	2:FB:2489:G:O2'	2.50	0.41
2:FB:1210:A:H2'	2:FB:1210:A:N3	2.35	0.41
2:FB:1359:A:N3	2:FB:1359:A:H5'	2.34	0.41
2:FB:2163:C:H3'	2:FB:2164:C:C5'	2.51	0.41
2:FB:2753:A:O2'	33:KC:15:LYS:NZ	2.52	0.41
2:FB:921:G:H4'	2:FB:2269:A:C5	2.56	0.41
3:GB:21:G:C2	3:GB:22:U:H1'	2.55	0.41
3:GB:32:C:C2	3:GB:51:G:N2	2.88	0.41
3:GB:81:G:C6	3:GB:82:G:C5	3.08	0.41
54:GD:54:LYS:HA	54:GD:57:ARG:NH2	2.36	0.41
4:HB:22:G:C6	4:HB:46:G:N1	2.88	0.41
5:IB:79:VAL:HG23	5:IB:114:GLY:H	1.84	0.41
10:J:34:GLY:O	10:J:36:ALA:N	2.53	0.41
35:JA:175:LEU:O	35:JA:205:VAL:HG11	2.21	0.41
35:JA:349:GLN:O	35:JA:352:GLN:HB2	2.21	0.41
6:JB:5:LEU:HD12	6:JB:51:PHE:HB2	2.02	0.41
1:A:1072:G:H21	36:KA:107:THR:HG21	1.85	0.41
36:KA:187:LEU:H	36:KA:187:LEU:HD23	1.85	0.41
36:KA:200:ILE:H	36:KA:200:ILE:HG13	1.65	0.41
7:KB:123:LEU:HD13	7:KB:192:LEU:HD22	2.02	0.41
7:KB:158:THR:O	7:KB:164:ARG:HD3	2.20	0.41
37:LA:66:VAL:O	37:LA:102:ASN:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:LA:148:GLY:HA3	37:LA:172:ARG:O	2.20	0.41
9:MB:54:ARG:NH1	9:MB:62:LYS:HG2	2.36	0.41
14:N:79:LEU:HD23	14:N:79:LEU:HA	1.76	0.41
40:OA:18:GLN:HG3	40:OA:21:LEU:HD22	2.01	0.41
36:OC:7:VAL:O	36:OC:217:ARG:NH2	2.54	0.41
41:PA:32:ARG:HG3	41:PA:33:ASP:OD2	2.20	0.41
2:FB:2674:G:H4'	12:PB:30:ALA:HB2	2.03	0.41
42:QA:46:LYS:HG3	42:QA:63:LEU:O	2.20	0.41
42:QA:54:ASP:O	42:QA:56:LYS:HG2	2.20	0.41
45:TA:52:GLY:N	45:TA:55:LYS:HE2	2.35	0.41
23:W:57:ILE:O	23:W:69:THR:OG1	2.33	0.41
20:XB:11:ARG:HD3	20:XB:82:LEU:HD13	2.02	0.41
4:D:74:C:H4'	25:Y:23:LYS:HB2	2.02	0.41
25:Y:77:ALA:HB2	25:Y:94:LEU:HD21	2.03	0.41
50:YA:35:LYS:HG2	50:YA:37:GLY:H	1.84	0.41
50:YA:75:ARG:HA	50:YA:80:PHE:HB2	2.01	0.41
1:A:255:G:P	51:ZA:69:LYS:NZ	2.93	0.41
1:A:1009:G:H2'	1:A:1010:G:C8	2.52	0.41
1:A:1136:U:H5''	1:A:1137:C:O5'	2.20	0.41
1:A:1279:A:O2'	1:A:1281:U:OP2	2.32	0.41
1:A:33:A:C6	1:A:34:C:C4	3.08	0.41
1:A:487:A:H5''	1:A:488:C:OP2	2.21	0.41
1:A:582:U:H2'	1:A:583:A:H8	1.84	0.41
1:A:644:G:H4'	42:QA:92:ARG:NH1	2.36	0.41
1:A:647:C:H2'	1:A:648:A:C8	2.56	0.41
1:A:976:G:C8	1:A:1358:U:C2	3.08	0.41
27:AA:35:ARG:HH21	27:AA:37:LEU:HD21	1.86	0.41
27:AA:15:TYR:CE2	27:AA:53:LEU:HD21	2.55	0.41
52:AB:26:LEU:HB3	52:AB:42:ARG:NH2	2.36	0.41
2:B:1488:G:H1	2:B:1501:C:H42	1.67	0.41
2:B:1829:A:H3'	2:B:1830:C:C5	2.55	0.41
2:B:2011:U:H2'	2:B:2012:G:O4'	2.20	0.41
2:B:1654:A:N6	2:B:2049:G:OP1	2.51	0.41
2:B:2101:G:N2	2:B:2188:C:N3	2.44	0.41
2:B:308:G:C6	2:B:309:G:C6	3.08	0.41
2:B:715:G:C6	2:B:716:A:C5	3.09	0.41
2:B:774:A:H5''	5:E:48:ARG:HH21	1.85	0.41
2:B:846:C:C2	2:B:847:U:C5	3.08	0.41
24:BC:25:ARG:HD3	24:BC:25:ARG:HA	1.78	0.41
2:FB:2495:G:OP2	24:BC:3:HIS:HB3	2.20	0.41
50:CD:35:LYS:HG2	50:CD:37:GLY:H	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:DC:17:SER:HB3	26:DC:20:GLU:OE2	2.20	0.41
1:EB:1127:G:H5'	1:EB:1280:A:O2'	2.20	0.41
1:EB:1323:G:H2'	1:EB:1324:A:C8	2.56	0.41
1:EB:1473:A:H4'	2:FB:1702:G:H4'	2.02	0.41
1:EB:456:C:H42	1:EB:476:G:H1	1.68	0.41
1:EB:947:G:C6	1:EB:948:C:C4	3.09	0.41
6:F:8:LYS:NZ	6:F:188:VAL:O	2.45	0.41
6:F:77:ILE:HG13	6:F:195:LEU:HD11	2.01	0.41
2:FB:1077:A:N6	2:FB:1079:C:O2	2.52	0.41
2:FB:1638:C:H2'	2:FB:1639:U:O4'	2.19	0.41
2:FB:1754:C:H2'	2:FB:1755:A:O4'	2.21	0.41
2:FB:2029:G:H2'	2:FB:2030:A:H5''	2.03	0.41
2:FB:2071:A:H2'	2:FB:2072:G:C8	2.55	0.41
2:FB:322:A:H1'	2:FB:339:U:O2	2.20	0.41
2:FB:662:G:N1	2:FB:663:G:C6	2.88	0.41
2:FB:665:C:H2'	2:FB:666:G:C8	2.56	0.41
33:GA:26:ILE:H	33:GA:26:ILE:HG13	1.64	0.41
3:GB:85:G:H1	3:GB:91:C:N4	2.08	0.41
29:GC:36:CYS:C	29:GC:38:ALA:H	2.24	0.41
8:H:25:TYR:OH	8:H:168:GLU:OE1	2.39	0.41
31:IC:19:ARG:HH11	31:IC:19:ARG:CG	2.00	0.41
2:B:270(R):C:O3'	10:J:42:SER:HB2	2.21	0.41
2:FB:2351:G:O6	32:JC:39:LYS:HE2	2.20	0.41
37:LA:88:ARG:HA	37:LA:91:LEU:HB2	2.01	0.41
8:LB:164:GLU:HA	8:LB:164:GLU:OE2	2.20	0.41
8:LB:79:ASN:OD1	8:LB:79:ASN:N	2.54	0.41
8:LB:94:LEU:O	8:LB:99:MET:HB2	2.21	0.41
38:MA:101:LEU:HB2	38:MA:138:TYR:HB3	2.03	0.41
38:MA:12:CYS:CB	38:MA:18:LYS:HA	2.50	0.41
4:MC:15:G:H2'	4:MC:59:A:N1	2.36	0.41
40:OA:11:ASN:HB2	40:OA:86:ARG:CZ	2.50	0.41
36:OC:74:LYS:HB2	36:OC:74:LYS:HE2	1.93	0.41
37:PC:134:ILE:HG23	37:PC:151:VAL:HB	2.02	0.41
13:QB:112:LEU:HD22	13:QB:113:LYS:N	2.36	0.41
38:QC:141:ARG:HB2	38:QC:144:ASP:OD2	2.21	0.41
39:RC:48:ALA:HB1	39:RC:49:PRO:HD2	2.01	0.41
15:SB:21:TYR:HB3	15:SB:47:PHE:CD2	2.55	0.41
15:SB:84:ALA:HB3	15:SB:85:PRO:HD3	2.01	0.41
16:TB:28:VAL:HG13	16:TB:101:LEU:HD13	2.03	0.41
16:TB:4:LEU:HD22	16:TB:8:GLU:CD	2.41	0.41
41:TC:64:GLN:O	41:TC:68:ASN:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:RC:78:HIS:ND1	42:UC:104:ARG:NH1	2.68	0.41
23:W:48:PHE:CE1	23:W:71:VAL:HG21	2.55	0.41
24:X:45:PHE:CE1	24:X:69:PHE:HE2	2.38	0.41
21:YB:31:HIS:HA	21:YB:32:PRO:HD3	1.92	0.41
46:YC:59:ARG:HG3	46:YC:65:GLU:HG2	2.02	0.41
46:YC:8:ASN:HB2	51:DD:34:LYS:HZ2	1.84	0.41
51:ZA:43:LEU:HD23	51:ZA:43:LEU:HA	1.66	0.41
22:ZB:75:ILE:O	22:ZB:106:LEU:HD13	2.20	0.41
2:FB:84:A:H3'	22:ZB:8:LYS:HB2	2.02	0.41
1:A:1002:G:H2'	1:A:1003:G:C4'	2.51	0.41
1:A:1100:C:C2	1:A:1102:A:H5'	2.56	0.41
1:A:1176:A:C6	1:A:1177:G:C6	3.09	0.41
1:A:1319:A:H4'	1:A:1320:C:OP1	2.19	0.41
1:A:102:G:O2'	1:A:151:A:N3	2.45	0.41
1:A:1523:G:C5	1:A:1524:C:C5	3.09	0.41
1:A:301:G:C2	1:A:302:G:C4	3.09	0.41
1:A:479:C:H2'	1:A:480:U:H6	1.84	0.41
1:A:541:G:H2'	1:A:542:G:H8	1.86	0.41
1:A:688:G:C5	1:A:700:G:C2	3.09	0.41
1:A:716:A:C6	1:A:717:C:C4	3.09	0.41
1:A:864:A:C6	1:A:865:A:C6	3.09	0.41
23:AC:107:THR:HA	23:AC:108:PRO:HD3	1.87	0.41
2:B:2514:U:H2'	2:B:2515:C:C6	2.55	0.41
2:B:2867:G:HO2'	2:B:2868:A:P	2.44	0.41
2:B:851:U:H2'	2:B:852:G:H8	1.84	0.41
28:BA:61:ARG:O	28:BA:62:ARG:HB2	2.19	0.41
3:C:25:A:C2	3:C:26:A:C4	3.09	0.41
54:CB:76:ALA:O	54:CB:80:ARG:HB2	2.21	0.41
54:CB:45:GLN:HA	54:CB:91:LEU:HD21	2.03	0.41
25:CC:58:ILE:HD11	25:CC:90:ILE:HD12	2.03	0.41
4:D:40:C:H4'	41:PA:147:ALA:O	2.20	0.41
5:E:63:ARG:CG	5:E:63:ARG:NH1	2.70	0.41
5:E:7:LYS:HG2	5:E:8:PRO:HD2	2.01	0.41
31:EA:29:LYS:NZ	31:EA:29:LYS:HB3	2.35	0.41
1:EB:184:G:H2'	1:EB:185:A:H8	1.86	0.41
1:EB:160:A:H1'	1:EB:344:A:N7	2.36	0.41
1:EB:359:U:H2'	1:EB:360:A:H8	1.84	0.41
1:EB:516:PSU:O2'	1:EB:519:C:N3	2.53	0.41
1:EB:601:C:H2'	1:EB:602:A:C8	2.55	0.41
1:EB:81:G:N2	1:EB:89:U:O2	2.54	0.41
52:ED:26:LEU:HB3	52:ED:42:ARG:NH2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:FA:36:LYS:HD2	32:FA:40:GLU:HG2	2.02	0.41
32:FA:41:ILE:HG13	32:FA:41:ILE:H	1.54	0.41
2:FB:106:C:H2'	2:FB:107:C:H6	1.85	0.41
2:FB:1152:C:H5''	18:VB:80:ILE:HG21	2.03	0.41
2:FB:116:C:H2'	2:FB:117:G:O4'	2.20	0.41
2:FB:1930:G:O2'	2:FB:1968:G:O6	2.25	0.41
2:FB:2078:C:C4	2:FB:2079:U:C4	3.08	0.41
2:FB:2574:G:H2'	2:FB:2575:C:O4'	2.21	0.41
2:FB:545:G:H21	2:FB:548:A:N6	2.14	0.41
2:FB:625:G:C6	2:FB:626:U:C4	3.08	0.41
53:FD:40:ILE:HA	53:FD:44:MET:SD	2.61	0.41
3:GB:49:C:H2'	3:GB:50:G:H8	1.86	0.41
8:H:103:LEU:O	8:H:107:LEU:HG	2.21	0.41
4:HB:36:U:H2'	4:HB:37:A:O4'	2.21	0.41
5:IB:261:LYS:HD3	5:IB:263:ARG:HH12	1.85	0.41
36:KA:17:PHE:HA	36:KA:44:LEU:HD21	2.03	0.41
12:L:17:ARG:HB3	12:L:17:ARG:HE	1.74	0.41
13:M:116:GLY:HA2	13:M:134:ALA:HB2	2.02	0.41
38:MA:162:LEU:HA	38:MA:162:LEU:HD23	1.76	0.41
38:MA:94:LEU:HD23	38:MA:97:LEU:HD12	2.03	0.41
4:MC:23:C:H2'	4:MC:24:U:C6	2.55	0.41
39:NA:106:PRO:O	39:NA:110:LEU:HG	2.20	0.41
10:NB:69:LYS:HA	10:NB:138:ILE:HG21	2.02	0.41
36:OC:114:ARG:HA	36:OC:114:ARG:HD2	1.93	0.41
36:OC:153:ARG:C	36:OC:155:LEU:H	2.24	0.41
3:C:115:G:H5'	16:P:50:SER:OG	2.20	0.41
16:P:4:LEU:HD22	16:P:8:GLU:CD	2.41	0.41
12:PB:64:ARG:HG2	12:PB:79:PHE:CD2	2.55	0.41
37:PC:8:ILE:HD13	37:PC:16:ARG:NH1	2.36	0.41
36:KA:178:ARG:NH2	42:QA:74:PRO:HB3	2.36	0.41
14:RB:28:ALA:HB3	14:RB:29:PHE:CE2	2.55	0.41
44:SA:38:ILE:HA	44:SA:39:PRO:HD3	1.85	0.41
16:TB:23:ARG:HH11	16:TB:23:ARG:CB	2.33	0.41
1:EB:1380:U:C5	41:TC:3:ARG:HD3	2.55	0.41
41:TC:87:VAL:HG13	41:TC:151:TYR:O	2.20	0.41
17:UB:27:THR:O	17:UB:89:VAL:HG23	2.21	0.41
17:UB:91:ARG:HH11	17:UB:91:ARG:CG	2.33	0.41
43:VC:114:TYR:C	43:VC:116:LYS:H	2.24	0.41
48:WA:6:LEU:HA	48:WA:6:LEU:HD12	1.79	0.41
2:FB:495:G:O2'	20:XB:57:ASN:HB3	2.20	0.41
21:YB:12:VAL:HB	21:YB:27:THR:HB	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Z:17:SER:HB3	26:Z:20:GLU:CD	2.41	0.41
51:ZA:3:LYS:HD3	51:ZA:61:GLU:O	2.21	0.41
1:A:544:G:H2'	1:A:545:C:C6	2.56	0.41
1:A:655:A:C2	1:A:656:C:C2	3.09	0.41
1:A:957:U:H1'	1:A:960:U:N3	2.36	0.41
2:B:1058:G:H22	2:B:1080:C:H42	1.68	0.41
2:B:1308:A:C2	2:B:1309:G:H1'	2.56	0.41
2:B:1373:A:H2'	2:B:1374:G:O4'	2.21	0.41
2:B:1795:C:H1'	5:E:255:LYS:NZ	2.36	0.41
2:B:1850:G:H1	2:B:1892:C:H42	1.68	0.41
2:B:2163:C:H3'	2:B:2164:C:C5'	2.51	0.41
2:B:2271:G:H2'	2:B:2272:U:H6	1.81	0.41
2:B:2291:U:OP1	2:B:2381:C:H5'	2.20	0.41
2:B:633:A:H1'	2:B:2403:C:O3'	2.20	0.41
2:B:2447:G:O2'	2:B:2500:U:OP2	2.26	0.41
2:B:269:U:C4	2:B:271(A):U:C2	3.08	0.41
2:B:2863:C:H2'	2:B:2864:G:C8	2.56	0.41
2:B:360:G:H2'	2:B:361:G:C8	2.55	0.41
2:B:74:A:H5'	2:B:75:G:O4'	2.20	0.41
53:BB:51:VAL:HG12	53:BB:52:TYR:H	1.86	0.41
3:C:21:G:C6	3:C:22:U:C2	3.09	0.41
29:CA:55:ARG:O	29:CA:57:VAL:HG23	2.21	0.41
54:CB:36:LEU:O	54:CB:39:LYS:HB3	2.21	0.41
25:CC:90:ILE:HG12	25:CC:90:ILE:H	1.53	0.41
51:DD:60:ILE:O	51:DD:71:PHE:HA	2.20	0.41
5:E:233:HIS:N	5:E:233:HIS:CD2	2.86	0.41
1:EB:1008:C:H3'	1:EB:1009:G:C8	2.55	0.41
1:EB:1138:G:H2'	1:EB:1140:C:C5	2.56	0.41
1:EB:1203:C:H2'	1:EB:1204:A:H8	1.86	0.41
1:EB:371:G:C2	1:EB:391:G:C2	3.09	0.41
52:ED:53:ARG:HH12	52:ED:60:ALA:N	2.17	0.41
2:FB:1040:C:H2'	2:FB:1041:C:O4'	2.21	0.41
2:FB:1289:C:H2'	2:FB:1290:C:C6	2.56	0.41
2:FB:1686:C:H2'	2:FB:1687:G:O4'	2.21	0.41
2:FB:2462:U:C2	2:FB:2489:G:N2	2.88	0.41
2:FB:388:G:H2'	2:FB:390:A:N7	2.36	0.41
2:FB:797:C:H2'	2:FB:798:G:O4'	2.21	0.41
7:G:144:LYS:HZ3	7:G:144:LYS:HB3	1.82	0.41
3:GB:24:G:C8	3:GB:56:G:C8	3.08	0.41
5:IB:19:ALA:HB2	5:IB:204:ILE:HD11	2.02	0.41
4:IA:75:C:C5	35:JA:261:ARG:HB3	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:61:VAL:HG21	12:L:111:PHE:CE1	2.55	0.41
37:LA:11:ARG:NH1	37:LA:182:ILE:HD11	2.36	0.41
37:LA:16:ARG:HH12	48:WA:50:LYS:CE	2.34	0.41
37:LA:61:ALA:C	37:LA:63:ASN:H	2.22	0.41
2:FB:2305:A:N3	8:LB:136:ARG:HG3	2.36	0.41
14:N:60:ARG:HG3	14:N:60:ARG:NH1	2.35	0.41
35:NC:241:ASP:OD1	35:NC:241:ASP:N	2.54	0.41
15:O:20:LEU:HD21	15:O:40:LYS:HD3	2.01	0.41
15:O:37:THR:OG1	15:O:40:LYS:HG3	2.20	0.41
41:PA:24:THR:HA	41:PA:27:ILE:HG13	2.02	0.41
39:NA:78:HIS:ND1	42:QA:104:ARG:HD2	2.33	0.41
42:QA:25:ASP:OD2	42:QA:60:ARG:HG2	2.21	0.41
38:QC:41:GLY:O	38:QC:43:HIS:N	2.53	0.41
44:SA:8:LEU:HB2	44:SA:70:ARG:HB2	2.03	0.41
41:TC:89:MET:CE	41:TC:155:ARG:HB2	2.50	0.41
1:EB:875:C:O2'	42:UC:14:ARG:HD2	2.21	0.41
18:VB:74:LEU:HD12	18:VB:74:LEU:H	1.86	0.41
48:WA:47:LEU:HB3	48:WA:53:LEU:CD2	2.50	0.41
44:SA:65:LEU:HB2	48:WA:56:VAL:HG12	2.02	0.41
2:FB:571:A:O2'	19:WB:78:LYS:HE2	2.21	0.41
25:Y:3:LYS:CB	25:Y:61:ARG:HH11	2.24	0.41
46:YC:117:ARG:CG	46:YC:122:THR:HB	2.50	0.41
1:A:1242:C:H42	1:A:1295:G:N2	2.19	0.41
1:A:1244:C:P	55:DB:9:ARG:HB2	2.61	0.41
1:A:1242:C:N4	1:A:1295:G:H22	2.18	0.41
1:A:216:G:H2'	1:A:217:C:O4'	2.20	0.41
1:A:343:U:H2'	1:A:345:C:C5	2.56	0.41
1:A:411:A:C8	1:A:411:A:H3'	2.56	0.41
1:A:475:G:H2'	1:A:476:G:C8	2.56	0.41
1:A:793:U:H6	1:A:793:U:H2'	1.62	0.41
1:A:82:U:H5"	1:A:84:U:OP2	2.21	0.41
27:AA:7:LYS:HG2	27:AA:9:VAL:HG13	2.03	0.41
52:AB:58:LEU:HD13	52:AB:58:LEU:HA	1.82	0.41
2:B:1287:A:C5	2:B:1288:U:C4	3.09	0.41
2:B:1289:C:H2'	2:B:1290:C:C6	2.55	0.41
2:B:1402:C:H6	2:B:1402:C:O5'	2.04	0.41
2:B:1412:A:H3'	2:B:1413:G:H8	1.83	0.41
1:A:1484:C:O2'	2:B:1960:A:O2'	2.14	0.41
2:B:1669:A:C2	2:B:1994:C:H1'	2.55	0.41
2:B:2305:A:N3	8:H:136:ARG:HG3	2.35	0.41
2:B:2542:A:H4'	2:B:2543:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:355:G:C2	2:B:356:G:C8	3.08	0.41
2:B:738:G:C6	2:B:739:G:C2	3.08	0.41
24:BC:19:LYS:HG3	24:BC:41:ARG:NH2	2.36	0.41
3:C:31:C:H4'	8:H:29:TRP:CH2	2.56	0.41
51:DD:10:VAL:HG22	51:DD:19:VAL:HG11	2.02	0.41
1:EB:130:A:OP2	51:DD:63:ARG:HG2	2.21	0.41
5:E:182:LEU:O	5:E:271:ILE:HG12	2.20	0.41
2:B:464:U:O2'	31:EA:16:HIS:NE2	2.52	0.41
1:EB:1028(A):C:H6	1:EB:1028(A):C:O5'	2.04	0.41
1:EB:1057:G:N2	1:EB:1204:A:H1'	2.35	0.41
1:EB:1014:A:C2	1:EB:1219:U:H1'	2.55	0.41
1:EB:1505:G:H2'	34:LC:15:A:OP2	2.21	0.41
1:EB:432:A:H3'	1:EB:433:C:C6	2.55	0.41
1:EB:451:A:N7	1:EB:481:G:C6	2.89	0.41
52:ED:52:PRO:O	52:ED:56:THR:HG23	2.20	0.41
2:FB:1206:G:C6	2:FB:1207:C:C4	3.09	0.41
2:FB:2123:G:C2'	2:FB:2124:G:H5''	2.49	0.41
2:FB:2209:C:O2	2:FB:2216:G:C2	2.74	0.41
2:FB:2426:A:H3'	2:FB:2427:C:H5'	2.03	0.41
2:FB:593:G:C6	2:FB:594:U:C4	3.09	0.41
7:G:108:LYS:HG2	7:G:112:MET:HE3	2.03	0.41
8:H:121:ASN:HA	8:H:122:PRO:HD3	1.76	0.41
8:H:35:GLU:OE2	8:H:160:VAL:HG12	2.20	0.41
4:HB:53:G:C6	4:HB:54:5MU:H72	2.56	0.41
6:JB:11:MET:HB2	6:JB:23:VAL:O	2.20	0.41
2:FB:242:G:P	32:JC:3:LYS:HZ2	2.43	0.41
36:KA:178:ARG:CZ	42:QA:74:PRO:HB3	2.51	0.41
7:KB:45:ARG:HE	7:KB:45:ARG:HB3	1.43	0.41
8:LB:114:ILE:H	8:LB:114:ILE:HG13	1.62	0.41
38:MA:12:CYS:HA	38:MA:15:GLU:HB2	2.03	0.41
38:MA:150:GLU:OE2	38:MA:150:GLU:HA	2.19	0.41
14:N:64:ILE:HG12	14:N:106:VAL:HG13	2.03	0.41
14:N:1:MET:C	14:N:2:LEU:HD22	2.41	0.41
39:NA:32:VAL:O	39:NA:43:LEU:HD12	2.21	0.41
10:NB:48:GLU:O	10:NB:52:ARG:HB2	2.20	0.41
10:NB:71:ILE:O	10:NB:72:LEU:HD23	2.21	0.41
36:OC:218:ALA:O	36:OC:222:ILE:HG12	2.20	0.41
17:Q:94:ALA:HB2	17:Q:99:LEU:HD11	2.02	0.41
38:QC:160:GLN:O	38:QC:163:GLU:HB3	2.21	0.41
38:QC:165:MET:HA	38:QC:168:ARG:HB2	2.03	0.41
14:RB:64:ILE:HG12	14:RB:106:VAL:HG13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2470:G:OP1	14:RB:59:ARG:NH2	2.54	0.41
15:SB:95:THR:HG22	15:SB:116:LEU:HB3	2.01	0.41
45:TA:96:ARG:HE	45:TA:96:ARG:HB2	1.58	0.41
41:TC:129:GLU:HB3	41:TC:130:GLY:H	1.72	0.41
41:TC:38:LEU:O	41:TC:42:ILE:HG13	2.21	0.41
42:UC:121:ASP:N	42:UC:121:ASP:OD1	2.50	0.41
42:UC:29:SER:HB3	42:UC:32:LYS:HB2	2.02	0.41
42:UC:46:LYS:HG3	42:UC:63:LEU:O	2.21	0.41
43:VC:89:ASN:ND2	43:VC:91:ASP:OD2	2.52	0.41
44:WC:79:ARG:O	44:WC:82:ILE:HG22	2.20	0.41
1:A:135:C:O2	50:YA:1:MET:HB2	2.20	0.41
1:A:1057:G:N2	1:A:1204:A:H1'	2.36	0.41
1:A:10:A:H2'	1:A:11:G:C8	2.55	0.41
1:A:1517:G:C8	2:B:1920:4OC:OP1	2.73	0.41
1:A:417:C:H2'	1:A:418:C:C6	2.55	0.41
1:A:786:G:H2'	1:A:787:A:O4'	2.21	0.41
1:A:829:G:H1	1:A:857:C:H42	1.68	0.41
2:B:1276:A:HO2'	15:O:16:HIS:CE1	2.38	0.41
2:B:137(B):G:H2'	2:B:139:G:N7	2.36	0.41
2:B:1461:G:H2'	2:B:1462:C:C6	2.56	0.41
2:B:2345:G:H1'	2:B:2382:G:H5'	2.01	0.41
2:B:2403:C:N3	2:B:2415:G:C2	2.89	0.41
2:B:2519:U:C6	2:B:2542:A:N6	2.89	0.41
2:B:2660:A:N7	9:I:175:LYS:NZ	2.54	0.41
2:B:275:G:C8	2:B:276:A:H1'	2.55	0.41
2:B:275:G:H3'	2:B:276:A:O4'	2.21	0.41
2:B:2809:A:H62	2:B:2891:G:H2'	1.86	0.41
2:B:735:A:H3'	2:B:736:C:H6	1.86	0.41
2:B:890:A:O2'	2:B:892:G:H5'	2.20	0.41
2:B:909:A:C6	2:B:912:C:C2	3.09	0.41
2:B:980:A:N6	2:B:981:A:N1	2.68	0.41
53:BB:33:THR:HG23	53:BB:51:VAL:HA	2.03	0.41
1:EB:1074:G:O4'	36:OC:104:ASN:ND2	2.53	0.41
1:EB:111:G:H5''	50:CD:27:LYS:HG2	2.01	0.41
1:EB:1279:A:O2'	1:EB:1281:U:OP2	2.35	0.41
1:EB:397:A:H5'	1:EB:398:C:OP1	2.20	0.41
6:F:29:GLY:HA2	6:F:30:PRO:HA	1.79	0.41
32:FA:29:LYS:HZ3	32:FA:45:GLY:HA2	1.86	0.41
2:FB:123:G:H2'	2:FB:124:G:O4'	2.21	0.41
2:FB:1422:G:C6	2:FB:1423:G:C5	3.09	0.41
2:FB:1469:A:H2'	2:FB:1470:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1829:A:H3'	2:FB:1830:C:C5	2.55	0.41
2:FB:2123:G:H1	2:FB:2174:C:H42	1.67	0.41
2:FB:2255:G:C6	2:FB:2256:G:C5	3.09	0.41
2:FB:2361:A:OP1	32:JC:26:LYS:HD2	2.21	0.41
2:FB:255:A:N6	2:FB:256:A:C6	2.89	0.41
2:FB:657:U:H2'	2:FB:658:C:C6	2.56	0.41
2:FB:995:C:OP2	18:VB:54:LYS:NZ	2.53	0.41
53:FD:55:LYS:O	53:FD:55:LYS:HG3	2.20	0.41
7:G:145:GLU:CA	7:G:145:GLU:OE2	2.68	0.41
33:GA:8:LYS:HG3	33:GA:8:LYS:H	1.52	0.41
54:GD:100:ILE:HD13	54:GD:101:GLY:H	1.85	0.41
54:GD:90:GLN:O	54:GD:94:ALA:N	2.48	0.41
5:IB:134:ARG:HB2	5:IB:134:ARG:HE	1.62	0.41
5:IB:58:HIS:ND1	5:IB:59:LYS:O	2.31	0.41
5:IB:7:LYS:HG2	5:IB:8:PRO:HD2	2.03	0.41
10:J:110:ASP:OD1	10:J:112:LYS:N	2.54	0.41
35:JA:272:SER:C	35:JA:275:GLY:H	2.24	0.41
6:JB:37:ARG:HD2	6:JB:44:TYR:OH	2.21	0.41
13:M:95:VAL:HB	13:M:125:VAL:HG12	2.01	0.41
1:A:407:G:P	38:MA:115:ARG:HH11	2.44	0.41
38:MA:157:LEU:HD22	38:MA:157:LEU:N	2.36	0.41
35:NC:144:TRP:HB3	35:NC:145:ARG:H	1.64	0.41
40:OA:12:PRO:O	40:OA:14:LEU:N	2.54	0.41
11:OB:95:PRO:HD2	11:OB:96:GLU:OE2	2.21	0.41
36:OC:189:ASP:HB2	36:OC:190:THR:H	1.72	0.41
41:PA:57:GLU:HA	41:PA:58:PRO:HD3	1.93	0.41
41:PA:70:LYS:NZ	41:PA:70:LYS:CB	2.83	0.41
42:QA:112:LEU:HA	42:QA:134:ILE:HG12	2.02	0.41
13:QB:121:LYS:O	13:QB:123:LEU:N	2.54	0.41
38:QC:13:ARG:HB2	38:QC:40:PRO:HD3	2.03	0.41
43:RA:47:LEU:O	43:RA:47:LEU:HD23	2.21	0.41
14:RB:3:MET:HA	14:RB:4:PRO:HD2	1.92	0.41
19:S:35:LEU:HA	19:S:35:LEU:HD23	1.85	0.41
19:S:68:LYS:HG2	19:S:69:LYS:N	2.35	0.41
40:SC:4:TYR:HA	40:SC:93:SER:H	1.86	0.41
46:UA:46:LYS:HE3	46:UA:92:0TD:H4	2.01	0.41
42:UC:11:THR:HG23	42:UC:14:ARG:NH1	2.36	0.41
18:VB:74:LEU:HD22	18:VB:75:ASN:O	2.21	0.41
19:WB:72:VAL:HG22	19:WB:85:LYS:HB2	2.02	0.41
19:WB:75:PHE:CE1	19:WB:82:ARG:NH1	2.83	0.41
20:XB:46:PHE:O	20:XB:50:VAL:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:51:VAL:HG21	25:Y:74:VAL:HG21	2.03	0.41
50:YA:3:LYS:O	50:YA:4:ILE:HD13	2.20	0.41
50:YA:58:TYR:HB3	50:YA:59:TRP:CD1	2.56	0.41
21:YB:73:ARG:NH1	21:YB:73:ARG:HG3	2.36	0.41
46:YC:51:ALA:HB3	46:YC:53:ARG:NH2	2.36	0.41
1:A:1234:C:H2'	1:A:1235:U:O4'	2.21	0.41
1:A:1256:A:H61	1:A:1277:C:H3'	1.86	0.41
1:A:236:G:H2'	1:A:237:C:O4'	2.21	0.41
1:A:308:C:H2'	1:A:309:G:C8	2.56	0.41
1:A:426:G:OP1	38:MA:36:ARG:NH1	2.54	0.41
23:AC:8:TYR:HB2	23:AC:38:TYR:CE2	2.56	0.41
2:B:1817:G:C5	2:B:1818:U:C5	3.09	0.41
2:B:2359:C:H2'	2:B:2360:A:C8	2.55	0.41
2:B:2632:A:H1'	2:B:2810:A:C2	2.56	0.41
2:B:270(S):G:C6	2:B:270(T):G:C6	3.09	0.41
2:B:274:G:H8	2:B:274:G:OP2	2.04	0.41
2:B:265:A:N6	2:B:427:U:O2'	2.51	0.41
29:CA:36:CYS:C	29:CA:38:ALA:H	2.23	0.41
1:EB:1296:C:H4'	1:EB:1302:U:O4	2.20	0.41
1:EB:1358:U:OP1	48:AD:35:ARG:HG2	2.21	0.41
1:EB:196:A:OP1	54:GD:68:LYS:NZ	2.41	0.41
1:EB:646:U:H2'	1:EB:647:C:C6	2.55	0.41
27:EC:50:VAL:O	27:EC:54:VAL:HB	2.20	0.41
6:F:18:ASP:HB3	17:Q:82:LEU:HD21	2.03	0.41
6:F:59:VAL:HB	6:F:64:LYS:HE2	2.03	0.41
2:FB:1790:C:H2'	2:FB:1791:A:C5	2.56	0.41
2:FB:2019:A:N6	2:FB:2020:A:C5	2.89	0.41
2:FB:824:A:H1'	2:FB:2358:G:N7	2.36	0.41
2:FB:2817:G:O2'	2:FB:2836:U:O2	2.33	0.41
2:FB:2838:G:H1	2:FB:2880:C:H42	1.67	0.41
2:FB:2849:U:O4	17:UB:23:ARG:NH1	2.51	0.41
2:FB:664:C:H2'	2:FB:665:C:C6	2.56	0.41
2:FB:690:G:O2'	5:IB:43:ARG:NH2	2.51	0.41
2:FB:784:A:O2'	2:FB:785:G:H5''	2.20	0.41
2:FB:896:A:H4'	2:FB:896:A:OP2	2.21	0.41
1:EB:1226:C:H4'	53:FD:80:TYR:OH	2.21	0.41
7:G:150:GLY:HA2	7:G:172:TRP:CE3	2.56	0.41
7:G:197:ASP:O	7:G:200:GLU:HB3	2.21	0.41
3:GB:17:C:H2'	3:GB:18:G:O4'	2.21	0.41
3:GB:96:G:C5	3:GB:97:G:C8	3.09	0.41
4:HB:21:A:H5'	4:HB:48:C:H42	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:3:ARG:HG3	9:I:6:ARG:H	1.85	0.41
4:IA:2:G:H2'	4:IA:3:C:C6	2.55	0.41
4:IA:55:PSU:O5'	4:IA:55:PSU:H6	2.04	0.41
32:JC:39:LYS:HA	32:JC:42:ARG:NH1	2.36	0.41
7:KB:101:LEU:HD12	7:KB:101:LEU:HA	1.93	0.41
37:LA:22:TRP:CZ3	37:LA:24:ALA:HB2	2.56	0.41
37:LA:77:ILE:HA	37:LA:84:ILE:HD12	2.02	0.41
9:MB:18:GLU:O	9:MB:24:VAL:HG23	2.21	0.41
9:MB:28:GLY:HA3	9:MB:79:VAL:HB	2.02	0.41
14:N:38:GLU:HA	14:N:39:PRO:HD3	1.96	0.41
35:NC:126:LEU:CD2	35:NC:157:GLY:HA3	2.51	0.41
35:NC:146:VAL:HA	35:NC:166:ILE:CD1	2.51	0.41
35:NC:216:ASP:HB3	35:NC:217:ILE:H	1.78	0.41
35:NC:237:VAL:HG21	35:NC:261:ARG:CZ	2.50	0.41
35:NC:340:LEU:C	35:NC:343:PRO:HD2	2.41	0.41
11:OB:7:LYS:HA	11:OB:7:LYS:HD3	1.75	0.41
36:OC:131:PRO:HB2	36:OC:134:GLU:HB2	2.02	0.41
16:P:36:TYR:N	16:P:36:TYR:CD1	2.88	0.41
41:PA:104:LEU:HA	41:PA:104:LEU:HD13	1.82	0.41
37:PC:190:ARG:HA	37:PC:195:VAL:HG22	2.03	0.41
13:QB:148:LEU:HD23	13:QB:149:GLU:N	2.36	0.41
38:QC:3:ARG:HH11	38:QC:4:TYR:HB3	1.86	0.41
18:R:83:LEU:CD1	18:R:113:ALA:HB2	2.51	0.41
43:RA:118:LYS:NZ	43:RA:118:LYS:CB	2.83	0.41
1:A:1249:C:O2'	43:RA:68:GLY:O	2.23	0.41
15:SB:53:HIS:HB2	15:SB:94:TYR:HE2	1.86	0.41
16:TB:36:TYR:CD1	16:TB:36:TYR:N	2.89	0.41
41:TC:5:ARG:HA	41:TC:5:ARG:NE	2.36	0.41
17:UB:105:LEU:HD13	17:UB:106:SER:O	2.21	0.41
47:VA:40:ASN:OD1	47:VA:41:PRO:HD2	2.20	0.41
23:W:166:SER:HA	23:W:167:PRO:HD3	1.80	0.41
49:XA:87:ILE:HG12	49:XA:87:ILE:H	1.61	0.41
45:XC:104:GLN:HG3	45:XC:106:LYS:N	2.35	0.41
1:A:111:G:H5''	50:YA:27:LYS:HG2	2.02	0.41
46:YC:47:LYS:HA	46:YC:48:PRO:HA	1.84	0.41
46:YC:61:THR:C	46:YC:63:GLY:H	2.23	0.41
51:ZA:50:LYS:HG3	51:ZA:51:TYR:CD2	2.55	0.41
22:ZB:99:CYS:SG	22:ZB:100:ALA:N	2.94	0.41
22:ZB:29:GLU:O	22:ZB:38:ILE:HG22	2.20	0.41
1:A:1053:G:H4'	1:A:1054:C:H3'	2.02	0.41
1:A:1114:C:O5'	1:A:1114:C:H6	2.04	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1138:G:H2'	1:A:1140:C:C5	2.56	0.41
1:A:1196:U:H3'	1:A:1197:G:C5'	2.51	0.41
1:A:979:C:H1'	1:A:1317:C:H42	1.86	0.41
1:A:1349:A:H3'	1:A:1350:A:H8	1.85	0.41
1:A:1448:C:H2'	1:A:1449:C:C6	2.56	0.41
1:A:503:C:H2'	1:A:504:C:C6	2.55	0.41
1:A:687:A:H1'	1:A:688:G:OP2	2.20	0.41
1:A:753:A:OP1	49:XA:69:TYR:OH	2.37	0.41
2:B:1063:G:N2	2:B:1077:A:O4'	2.51	0.41
2:B:1201:C:H42	2:B:1244:G:H1	1.69	0.41
2:B:2123:G:H1	2:B:2174:C:H42	1.69	0.41
2:B:2135:A:H61	2:B:2155:G:N2	2.19	0.41
2:B:2279:G:O6	24:X:14:ARG:HG3	2.21	0.41
2:B:2852:G:H2'	2:B:2853:C:C6	2.56	0.41
2:B:455:C:C3'	2:B:456:C:H5''	2.51	0.41
2:B:518:G:H2'	2:B:519:U:C6	2.56	0.41
28:BA:13:ARG:CZ	28:BA:21:VAL:HG11	2.51	0.41
49:BD:8:LYS:HG2	49:BD:12:ILE:HD11	2.04	0.41
25:CC:67:ILE:HA	25:CC:67:ILE:HD13	1.85	0.41
50:CD:75:ARG:HA	50:CD:80:PHE:HB2	2.02	0.41
47:VA:27:LYS:NZ	55:DB:20:LYS:HZ3	2.19	0.41
1:EB:1287:A:H2'	1:EB:1288:A:H8	1.85	0.41
1:EB:1509:C:H2'	1:EB:1510:U:O4'	2.21	0.41
1:EB:31:G:H5'	1:EB:306:G:N2	2.36	0.41
1:EB:424:G:H2'	1:EB:425:G:H8	1.86	0.41
1:EB:849:C:C4	1:EB:850:U:C4	3.09	0.41
6:F:176:ILE:HG13	6:F:181:LEU:HB2	2.03	0.41
2:B:242:G:C8	32:FA:5:LYS:HG2	2.56	0.41
2:FB:1140:C:OP2	11:OB:66:LYS:NZ	2.39	0.41
2:FB:762:U:N3	2:FB:1431:U:OP1	2.52	0.41
2:FB:1520:U:H2'	2:FB:1521:G:O4'	2.21	0.41
2:FB:2262:U:H4'	2:FB:2328:A:C2	2.56	0.41
2:FB:2857:G:N2	2:FB:2860:A:OP2	2.53	0.41
2:FB:2871:C:H5''	2:FB:2872:G:OP1	2.21	0.41
2:FB:286:C:N4	2:FB:355:G:H1	2.09	0.41
2:FB:794:G:C2	2:FB:795:C:C2	3.08	0.41
2:FB:882:G:H2'	2:FB:883:G:O4'	2.21	0.41
28:FC:48:ARG:HH22	28:FC:52:THR:HA	1.86	0.41
29:GC:55:ARG:O	29:GC:57:VAL:HG23	2.21	0.41
54:GD:43:LEU:O	54:GD:47:GLY:N	2.52	0.41
5:IB:148:GLU:HB2	5:IB:151:LYS:HD2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:IB:155:LEU:HD12	5:IB:155:LEU:HA	1.75	0.41
6:JB:104:VAL:HG21	6:JB:188:VAL:HG22	2.02	0.41
11:K:63:THR:HB	11:K:64:GLY:H	1.55	0.41
11:K:88:GLU:H	11:K:88:GLU:CD	2.24	0.41
36:KA:155:LEU:CD1	36:KA:157:ARG:HB3	2.51	0.41
36:KA:165:VAL:O	36:KA:167:PRO:HD3	2.21	0.41
37:LA:60:ALA:HB3	37:LA:63:ASN:HB2	2.02	0.41
34:LC:17:U:C2'	34:LC:18:G:H5'	2.50	0.41
13:M:98:GLU:O	13:M:101:VAL:HG22	2.21	0.41
13:M:102:ARG:HE	13:M:102:ARG:HB2	1.70	0.41
13:M:39:LYS:HD2	13:M:45:LEU:HD21	2.03	0.41
9:MB:111:HIS:HB2	9:MB:112:PRO:HD2	2.02	0.41
10:NB:128:LEU:HD11	10:NB:140:LEU:HD12	2.03	0.41
35:NC:330:ASP:O	35:NC:334:GLU:N	2.54	0.41
15:O:95:THR:HA	15:O:116:LEU:HA	2.03	0.41
1:EB:1192:C:OP2	37:PC:4:LYS:NZ	2.54	0.41
38:QC:103:ASN:O	38:QC:106:TYR:HB3	2.21	0.41
19:S:75:PHE:CE1	19:S:82:ARG:NH1	2.83	0.41
42:UC:35:ILE:HG13	42:UC:111:ILE:HD12	2.02	0.41
23:W:118:GLN:O	23:W:120:ILE:HD12	2.20	0.41
3:C:73:A:H61	23:W:29:TYR:HE1	1.67	0.41
46:YC:89:ARG:NH1	46:YC:95:GLY:H	2.19	0.41
1:A:1144:G:H21	1:A:1146:A:N6	2.18	0.40
1:A:1246:C:H2'	1:A:1247:U:O4'	2.21	0.40
1:A:435:C:H2'	1:A:436:C:H6	1.84	0.40
1:A:652:U:O2'	1:A:653:A:OP2	2.30	0.40
1:A:694:A:H2'	1:A:695:A:O4'	2.21	0.40
2:B:101:G:H4'	2:B:102:G:OP2	2.21	0.40
2:B:1165:U:H2'	2:B:1166:C:C6	2.57	0.40
2:B:117:G:C6	2:B:119:A:C6	3.09	0.40
2:B:1709:U:C2	2:B:1750:G:N2	2.90	0.40
2:B:1890:A:H3'	2:B:1891:G:H8	1.86	0.40
2:B:1971:A:C4	5:E:241:PRO:HG3	2.56	0.40
2:B:2161:C:H2'	2:B:2162:G:O4'	2.21	0.40
2:B:2320:A:C8	2:B:2333:A:N6	2.89	0.40
2:B:2682:U:O4'	6:F:12:THR:HA	2.22	0.40
2:B:307:G:O5'	2:B:307:G:H8	2.04	0.40
2:B:385:C:O2'	2:B:390:A:N1	2.51	0.40
2:B:722:A:H2'	2:B:723:G:O4'	2.21	0.40
5:E:145:VAL:HG13	5:E:191:ALA:HB2	2.03	0.40
5:E:148:GLU:HB2	5:E:151:LYS:HD2	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:205:VAL:O	5:E:206:LEU:C	2.59	0.40
1:EB:126:G:H2'	1:EB:127:G:O4'	2.21	0.40
1:EB:1396:A:O4'	1:EB:1398:A:H1'	2.21	0.40
1:EB:1512:U:H2'	1:EB:1513:A:C8	2.56	0.40
1:EB:256:U:H2'	1:EB:257:G:O4'	2.21	0.40
1:EB:56:U:H6	1:EB:56:U:OP2	2.04	0.40
1:EB:864:A:C6	1:EB:865:A:C6	3.09	0.40
52:ED:74:ARG:HG2	52:ED:79:LEU:O	2.21	0.40
6:F:168:MET:HB3	6:F:168:MET:HE3	1.96	0.40
2:FB:1932:A:H2'	2:FB:1933:G:O4'	2.21	0.40
2:FB:2104:G:H2'	2:FB:2105:C:C6	2.57	0.40
2:FB:1493:C:C4	2:FB:2210:G:C4	3.08	0.40
2:FB:2602:A:H1'	2:FB:2603:G:H5''	2.03	0.40
2:FB:463:G:H5'	2:FB:464:U:OP2	2.21	0.40
2:FB:540:G:C6	2:FB:541:C:C4	3.09	0.40
2:FB:579:G:C6	2:FB:580:C:N4	2.89	0.40
2:FB:867:C:H2'	2:FB:868:U:H6	1.85	0.40
7:G:11:VAL:HA	7:G:125:LEU:O	2.21	0.40
7:G:122:LYS:HB3	7:G:191:ARG:HA	2.03	0.40
7:G:45:ARG:NH1	7:G:97:TYR:CE1	2.89	0.40
3:GB:9:G:C2	3:GB:112:G:C4	3.09	0.40
3:GB:21:G:N2	3:GB:62:C:N3	2.59	0.40
8:H:79:ASN:OD1	8:H:79:ASN:N	2.54	0.40
9:I:101:ARG:HG3	9:I:117:PRO:HG3	2.02	0.40
4:IA:39:C:H2'	4:IA:40:C:C6	2.56	0.40
10:J:40:THR:HB	10:J:43:ASN:H	1.86	0.40
2:FB:2572:A:C2	6:JB:144:ARG:NH1	2.89	0.40
6:JB:78:LEU:O	6:JB:79:ARG:NH1	2.45	0.40
13:M:110:TYR:HA	13:M:110:TYR:HD1	1.80	0.40
13:M:149:GLU:HA	13:M:149:GLU:OE2	2.21	0.40
39:NA:151:LEU:HA	39:NA:151:LEU:HD13	1.88	0.40
35:NC:283:MET:SD	35:NC:286:ARG:HG3	2.61	0.40
36:OC:108:ILE:HA	36:OC:108:ILE:HD13	1.91	0.40
36:OC:114:ARG:HH12	36:OC:118:LEU:CD2	2.33	0.40
17:Q:91:ARG:CG	17:Q:91:ARG:HH11	2.33	0.40
1:EB:613:C:P	38:QC:84:LYS:HZ3	2.40	0.40
44:SA:26:ALA:HA	44:SA:29:ARG:NE	2.36	0.40
20:T:11:ARG:NH1	20:T:98:LYS:HB3	2.35	0.40
41:TC:115:ARG:O	41:TC:119:ARG:HG3	2.20	0.40
1:A:539:A:OP2	46:UA:115:LYS:HE2	2.21	0.40
17:UB:95:ARG:HA	17:UB:95:ARG:HD2	1.91	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:XC:36:ASP:N	45:XC:36:ASP:OD2	2.54	0.40
45:XC:98:LEU:HA	45:XC:101:SER:HB3	2.02	0.40
1:A:1190:G:H3'	37:LA:3:ASN:ND2	2.36	0.40
1:A:122:G:H2'	1:A:123:C:O4'	2.21	0.40
1:A:1320:C:N3	53:BB:36:ARG:NH1	2.67	0.40
1:A:545:C:O2'	1:A:549:C:OP1	2.31	0.40
48:AD:7:ILE:HG13	48:AD:23:ARG:HG2	2.03	0.40
2:B:1024:G:H5''	2:B:1025:G:H5''	2.02	0.40
2:B:1128:A:N7	2:B:2489:G:O2'	2.52	0.40
2:B:2031:A:C6	2:B:2498:C:H1'	2.57	0.40
2:B:2130:U:O2	2:B:2131:G:N2	2.55	0.40
2:B:2331:G:C6	2:B:2332:U:C4	3.09	0.40
2:B:2393:A:O2'	32:FA:13:ARG:NH2	2.47	0.40
2:B:2455:G:N2	2:B:2498:C:C4	2.89	0.40
2:B:2516:G:C6	2:B:2517:C:C4	3.09	0.40
2:B:2626:C:O2'	2:B:2627:G:H5'	2.21	0.40
2:B:609(B):G:N2	2:B:619:G:H1'	2.36	0.40
2:B:85:G:C5	2:B:98:G:C2	3.10	0.40
2:B:900:A:H2'	2:B:901:A:H8	1.85	0.40
2:B:90:U:H4'	2:B:91:A:O5'	2.21	0.40
28:BA:28:LYS:HD3	28:BA:31:ILE:HG22	2.02	0.40
24:BC:50:ASN:HB3	24:BC:63:VAL:HG22	2.03	0.40
54:CB:27:LYS:O	54:CB:31:SER:HB2	2.21	0.40
4:D:1:C:N4	4:D:72:A:H61	2.12	0.40
1:EB:1399:C:C2	1:EB:1401:G:C6	3.09	0.40
1:EB:549:C:H6	1:EB:549:C:O5'	2.04	0.40
1:EB:82:U:H5''	1:EB:84:U:OP2	2.21	0.40
1:EB:859:A:OP2	1:EB:869:G:N1	2.50	0.40
13:M:121:LYS:HA	27:EC:1:MET:HE2	2.02	0.40
2:FB:1169:G:N2	2:FB:1181:C:N3	2.70	0.40
2:FB:1263:U:H2'	2:FB:1264:G:C8	2.57	0.40
2:FB:1461:G:H2'	2:FB:1462:C:H6	1.86	0.40
2:FB:1508:A:H3'	2:FB:1509:A:C8	2.57	0.40
2:FB:1853:A:H2'	2:FB:1854:A:H8	1.83	0.40
2:FB:1999:C:H4'	2:FB:2723:C:O2	2.21	0.40
2:FB:2409:G:C5	2:FB:2410:G:C8	3.09	0.40
2:FB:24:G:O2'	20:XB:77:ASP:HB3	2.21	0.40
2:FB:2545:G:H2'	2:FB:2546:U:O4'	2.21	0.40
2:FB:536:A:H2'	2:FB:537:C:C6	2.57	0.40
2:FB:997:G:N3	2:FB:997:G:H2'	2.36	0.40
28:FC:69:LYS:HE3	53:FD:23:ASN:ND2	2.35	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:FD:41:VAL:CG2	53:FD:42:PRO:HD2	2.51	0.40
53:FD:58:VAL:HG11	53:FD:75:ALA:HB1	2.03	0.40
7:G:41:LEU:HD21	7:G:184:TYR:CE1	2.56	0.40
7:G:74:ARG:O	7:G:75:HIS:ND1	2.54	0.40
1:EB:325:A:OP2	54:GD:70:SER:CB	2.70	0.40
4:HB:5:G:O2'	4:HB:6:G:H5''	2.21	0.40
10:J:117:GLU:HB3	10:J:118:LYS:H	1.71	0.40
35:JA:240:THR:O	35:JA:242:SER:N	2.54	0.40
6:JB:1:MET:HB3	6:JB:83:ASP:O	2.21	0.40
7:KB:6:MET:N	7:KB:23:ASP:HA	2.36	0.40
8:LB:83:ARG:O	8:LB:85:GLY:N	2.54	0.40
9:MB:111:HIS:CD2	9:MB:111:HIS:N	2.89	0.40
39:NA:78:HIS:NE2	39:NA:142:LEU:HA	2.36	0.40
35:NC:142:ARG:HB2	35:NC:144:TRP:CD2	2.56	0.40
11:OB:19:GLU:HB3	11:OB:59:LYS:HG2	2.04	0.40
11:OB:65:LYS:O	11:OB:68:GLU:OE2	2.39	0.40
16:P:28:VAL:HG13	16:P:101:LEU:HD13	2.04	0.40
12:PB:10:VAL:HG21	12:PB:16:ALA:O	2.21	0.40
17:Q:98:LYS:HB3	17:Q:100:TYR:CE2	2.56	0.40
38:QC:113:SER:O	38:QC:116:GLN:HB3	2.21	0.40
14:RB:104:PHE:HE2	14:RB:125:LEU:HD11	1.86	0.40
14:RB:51:ARG:HG3	14:RB:66:ILE:HD11	2.04	0.40
39:RC:15:ARG:NH1	39:RC:26:PHE:CZ	2.82	0.40
40:SC:43:LEU:HD21	40:SC:62:TRP:HB2	2.03	0.40
16:TB:15:ARG:HE	16:TB:25:ARG:NH2	2.19	0.40
42:UC:90:GLY:O	51:DD:34:LYS:HE3	2.21	0.40
19:WB:71:LEU:HA	19:WB:71:LEU:HD22	1.69	0.40
49:XA:88:ARG:HH21	49:XA:88:ARG:HB3	1.85	0.40
20:XB:4:LYS:HE3	20:XB:6:ILE:HG13	2.03	0.40
1:A:626:U:H5''	50:YA:38:TYR:CE2	2.56	0.40
51:ZA:12:SER:HA	51:ZA:14:LYS:HZ3	1.85	0.40
22:ZB:20:TYR:CZ	22:ZB:43:ASN:HA	2.55	0.40
1:A:1206:G:C4	1:A:1207:2MG:C8	3.10	0.40
1:A:1265:G:C8	1:A:1271:G:N2	2.89	0.40
1:A:1287:A:N3	1:A:1353:G:H1'	2.37	0.40
1:A:1362(A):C:O2'	1:A:1362(B):C:O4'	2.29	0.40
1:A:1437:C:H2'	1:A:1438:G:C8	2.55	0.40
1:A:14:U:O2'	1:A:16:A:N7	2.45	0.40
1:A:229:U:O2'	50:YA:23:ASP:OD2	2.40	0.40
1:A:486:U:H2'	1:A:487:A:H8	1.86	0.40
1:A:669:U:H2'	1:A:670:G:C8	2.57	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:728:A:H8	1:A:728:A:O5'	2.05	0.40
27:AA:8:LEU:HD12	27:AA:53:LEU:O	2.22	0.40
52:AB:51:LEU:HA	52:AB:52:PRO:HD3	1.84	0.40
52:AB:79:LEU:HA	52:AB:79:LEU:HD23	1.76	0.40
2:B:1021:A:C8	2:B:1021:A:C3'	3.04	0.40
2:B:1423:G:H1	2:B:1575:C:H42	1.68	0.40
2:B:1444(B):A:OP2	2:B:1445:C:N4	2.38	0.40
2:B:1655:A:O2'	6:F:115:GLY:HA2	2.21	0.40
2:B:2079:U:OP1	25:Y:21:ARG:NH2	2.54	0.40
2:B:2128:C:H3'	2:B:2129:C:C6	2.57	0.40
2:B:218:A:H8	2:B:218:A:O5'	2.03	0.40
2:B:2593:U:H3	2:B:2600:A:H61	1.70	0.40
2:B:2599:G:C2	2:B:2600:A:C4	3.10	0.40
2:B:406:G:H2'	2:B:407:G:O4'	2.22	0.40
2:B:592:G:N2	2:B:666:G:C5	2.89	0.40
2:B:645:C:H4'	2:B:646:A:OP2	2.20	0.40
2:B:662:G:N1	2:B:663:G:C5	2.90	0.40
2:B:774:A:OP1	5:E:48:ARG:NH2	2.55	0.40
2:B:854:G:C2	2:B:855:G:C5	3.09	0.40
8:H:101:ILE:HD11	28:BA:24:THR:OG1	2.21	0.40
3:C:16:G:C6	3:C:69:G:C2	3.08	0.40
3:C:17:C:H2'	3:C:18:G:O4'	2.22	0.40
3:C:44:G:OP1	28:BA:1:MET:N	2.42	0.40
54:CB:14:LYS:HA	54:CB:17:ARG:NH2	2.37	0.40
4:D:36:U:H2'	4:D:37:A:O4'	2.21	0.40
4:D:47:U:O2	4:D:47:U:H2'	2.21	0.40
26:DC:17:SER:HB3	26:DC:20:GLU:CD	2.42	0.40
26:DC:64:LEU:O	26:DC:68:ARG:HG2	2.21	0.40
31:EA:5:TRP:O	31:EA:6:GLN:NE2	2.31	0.40
1:EB:1002:G:H2'	1:EB:1003:G:C4'	2.51	0.40
1:EB:1135:U:O5'	1:EB:1135:U:H6	2.04	0.40
1:EB:1389:C:H2'	1:EB:1390:U:O4'	2.21	0.40
1:EB:486:U:H2'	1:EB:487:A:H8	1.86	0.40
1:EB:60:A:N1	1:EB:107:G:O2'	2.51	0.40
1:EB:817:C:H42	1:EB:1529:G:H1	1.69	0.40
2:FB:1063:G:N2	2:FB:1077:A:O4'	2.51	0.40
2:FB:1337:G:H2'	2:FB:1338:G:O4'	2.22	0.40
2:FB:1367:A:N7	2:FB:1368:G:H1'	2.36	0.40
2:FB:1890:A:H3'	2:FB:1891:G:H8	1.86	0.40
2:FB:2071:A:C2	2:FB:2072:G:C5	3.09	0.40
2:FB:2292:C:O2'	2:FB:2375:G:H4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:2846:G:C6	2:FB:2847:U:N3	2.90	0.40
2:FB:486:C:H2'	2:FB:487:C:C6	2.53	0.40
2:FB:600:G:N2	2:FB:605:C:O3'	2.54	0.40
2:FB:64:A:H2'	2:FB:65:C:C6	2.56	0.40
2:FB:680:G:C2	2:FB:798:G:C2	3.09	0.40
7:G:183:VAL:O	7:G:187:VAL:HG23	2.21	0.40
54:GD:14:LYS:HA	54:GD:17:ARG:NH2	2.36	0.40
54:GD:64:ASP:N	54:GD:64:ASP:OD2	2.54	0.40
8:H:51:ARG:C	8:H:53:LEU:H	2.18	0.40
4:IA:10:G:N2	4:IA:26:G:H1'	2.35	0.40
35:JA:187:VAL:HA	35:JA:188:PRO:HD2	1.89	0.40
35:JA:314:GLN:OE1	35:JA:314:GLN:N	2.55	0.40
2:FB:2682:U:O4'	6:JB:12:THR:HA	2.22	0.40
6:JB:174:ASP:HB3	6:JB:183:LEU:HD22	2.04	0.40
36:KA:131:PRO:HB2	36:KA:134:GLU:HB2	2.03	0.40
2:FB:606:U:OP2	7:KB:104:LYS:HE3	2.21	0.40
12:L:18:LYS:HB2	12:L:45:GLU:HB2	2.03	0.40
37:LA:151:VAL:O	37:LA:167:TRP:HB2	2.21	0.40
37:LA:190:ARG:HA	37:LA:195:VAL:HG22	2.03	0.40
8:LB:103:LEU:HG	8:LB:103:LEU:H	1.68	0.40
38:MA:108:LEU:HD23	38:MA:108:LEU:HA	1.85	0.40
10:NB:87:LYS:HG2	10:NB:89:TYR:H	1.87	0.40
40:OA:46:ARG:HB2	40:OA:60:PHE:HE1	1.84	0.40
40:OA:4:TYR:HA	40:OA:93:SER:H	1.86	0.40
40:OA:37:VAL:HA	40:OA:65:VAL:HG12	2.02	0.40
36:OC:87:ARG:NH2	36:OC:220:ASP:OD2	2.36	0.40
36:OC:230:VAL:HG12	36:OC:232:PRO:HD2	2.02	0.40
2:B:2295:C:OP2	16:P:10:ARG:HD3	2.21	0.40
37:PC:69:HIS:HA	37:PC:104:GLN:O	2.21	0.40
38:QC:108:LEU:HA	38:QC:108:LEU:HD23	1.84	0.40
38:QC:21:LEU:HA	38:QC:21:LEU:HD23	1.52	0.40
38:QC:8:VAL:C	38:QC:10:ARG:N	2.72	0.40
18:R:80:ILE:HA	18:R:80:ILE:HD13	1.84	0.40
2:FB:2275:C:O2	14:RB:85:LYS:HG2	2.22	0.40
44:SA:4:ILE:O	44:SA:74:ILE:HG12	2.21	0.40
20:T:29:LEU:HD22	20:T:69:LEU:HD12	2.03	0.40
45:TA:103:LEU:HD23	45:TA:103:LEU:HA	1.82	0.40
45:TA:36:ASP:OD2	45:TA:36:ASP:N	2.53	0.40
41:TC:127:ALA:HA	41:TC:135:VAL:HG21	2.04	0.40
41:TC:87:VAL:HG11	41:TC:155:ARG:HA	2.03	0.40
17:UB:130:ALA:HA	17:UB:133:GLU:OE2	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:10:GLY:HA2	22:V:27:VAL:HB	2.03	0.40
47:VA:10:PRO:HG2	47:VA:21:TYR:CD2	2.56	0.40
18:VB:91:ASP:O	18:VB:95:LEU:HB2	2.21	0.40
44:WC:39:PRO:HA	44:WC:70:ARG:NH1	2.36	0.40
25:Y:26:ARG:HH11	25:Y:26:ARG:CG	2.33	0.40
51:ZA:66:SER:HB3	51:ZA:69:LYS:HD3	2.03	0.40
51:ZA:86:GLU:O	51:ZA:90:ILE:HB	2.21	0.40
1:A:1240:U:OP2	41:PA:116:ALA:HB2	2.21	0.40
1:A:1281:U:O2'	1:A:1282:C:H5'	2.21	0.40
1:A:1298:C:C6	41:PA:114:ARG:NH1	2.89	0.40
1:A:1483:A:H1'	2:B:1948:G:C1'	2.52	0.40
1:A:392:G:OP1	50:YA:13:HIS:N	2.37	0.40
1:A:474:G:H2'	1:A:475:G:H8	1.87	0.40
1:A:706:A:HO2'	45:TA:31:THR:HG1	1.68	0.40
1:A:790:A:H61	1:A:1498:UR3:P	2.44	0.40
1:A:848:C:C6	1:A:848:C:OP2	2.74	0.40
1:A:947:G:C6	1:A:948:C:C4	3.10	0.40
27:AA:30:ARG:HG3	27:AA:30:ARG:NH1	2.37	0.40
27:AA:31:LEU:HA	27:AA:31:LEU:HD22	1.97	0.40
23:AC:30:ASN:HA	23:AC:89:PHE:HE1	1.86	0.40
2:B:1565:C:C2	2:B:1567:A:C8	3.09	0.40
2:B:1593:G:C2	2:B:1594:G:C4	3.10	0.40
2:B:1939:5MU:OP1	2:B:2604:U:O2'	2.39	0.40
2:B:2258:C:O2'	2:B:2426:A:H4'	2.21	0.40
2:B:2508:G:H2'	2:B:2509:G:H8	1.86	0.40
2:B:448:U:O4	2:B:583:G:H1'	2.22	0.40
2:B:731:C:H2'	2:B:732:C:C6	2.52	0.40
53:BB:62:ILE:H	53:BB:62:ILE:HD12	1.86	0.40
1:EB:741:G:H5'	49:BD:39:LEU:HD21	2.02	0.40
54:CB:64:ASP:N	54:CB:64:ASP:OD2	2.54	0.40
54:CB:68:LYS:HE2	54:CB:68:LYS:HB3	1.77	0.40
51:DD:66:SER:HB3	51:DD:69:LYS:HD3	2.03	0.40
5:E:208:LYS:HG3	5:E:211:ARG:H	1.85	0.40
5:E:245:PRO:HG2	5:E:253:GLN:HE22	1.86	0.40
1:EB:1468:A:H2'	1:EB:1469:G:O4'	2.22	0.40
1:EB:843:U:C5	1:EB:848:C:H1'	2.56	0.40
2:B:2729:G:O2'	6:F:170:LEU:HD11	2.21	0.40
2:B:2783:G:H21	6:F:37:ARG:HH12	1.68	0.40
2:FB:162:U:H2'	2:FB:164:U:C4	2.56	0.40
2:FB:2347:C:N4	2:FB:2370:G:H1	2.11	0.40
2:FB:2762:G:H2'	2:FB:2763:G:O4'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:330:A:C2	2:FB:1210:A:O2'	2.73	0.40
2:FB:637:A:N6	2:FB:652:U:H4'	2.36	0.40
7:G:205:ARG:CG	7:G:205:ARG:HH11	2.34	0.40
55:HD:20:LYS:HE2	55:HD:20:LYS:HB3	1.62	0.40
9:I:118:PRO:O	9:I:120:GLY:N	2.55	0.40
4:IA:64:G:C2	4:IA:65:C:C4	3.09	0.40
35:JA:130:ASP:O	35:JA:133:ARG:N	2.54	0.40
6:JB:29:GLY:HA2	6:JB:30:PRO:HA	1.83	0.40
36:KA:22:LYS:HE2	36:KA:38:GLY:HA2	2.04	0.40
7:KB:122:LYS:HB3	7:KB:191:ARG:HA	2.04	0.40
7:KB:57:VAL:HG22	7:KB:59:TYR:CE2	2.56	0.40
3:GB:31:C:H4'	8:LB:29:TRP:CH2	2.56	0.40
38:MA:18:LYS:HE2	38:MA:21:LEU:N	2.31	0.40
38:MA:98:GLU:HA	38:MA:103:ASN:ND2	2.37	0.40
4:MC:55:PSU:O5'	4:MC:55:PSU:H6	2.05	0.40
39:NA:109:ILE:HD13	39:NA:135:THR:HG21	2.03	0.40
10:NB:110:ASP:OD1	10:NB:113:ARG:N	2.36	0.40
10:NB:121:LYS:HB2	10:NB:122:GLU:H	1.73	0.40
35:NC:169:ASP:C	35:NC:169:ASP:OD2	2.60	0.40
36:OC:74:LYS:HB3	36:OC:169:LYS:HD3	2.03	0.40
37:PC:173:VAL:N	37:PC:174:PRO:HD3	2.37	0.40
37:PC:11:ARG:NE	37:PC:180:ALA:O	2.54	0.40
38:QC:142:PRO:HA	38:QC:185:PHE:HD2	1.85	0.40
38:QC:59:ARG:O	38:QC:63:LYS:HG3	2.20	0.40
18:R:39:LEU:HA	18:R:39:LEU:HD23	1.79	0.40
43:RA:65:VAL:HG21	43:RA:73:GLN:HB3	2.04	0.40
1:A:973:G:H1'	44:SA:54:PHE:CD1	2.56	0.40
15:SB:78:LYS:O	15:SB:83:ILE:HG12	2.22	0.40
45:TA:38:ASN:HA	45:TA:39:PRO:HD3	1.81	0.40
3:GB:50:G:P	16:TB:63:THR:HG23	2.61	0.40
21:U:73:ARG:HG3	21:U:73:ARG:NH1	2.37	0.40
18:VB:34:LYS:HE3	18:VB:37:GLU:OE1	2.21	0.40
1:EB:1349:A:OP1	43:VC:119:ALA:HB3	2.21	0.40
43:VC:58:ARG:HB3	43:VC:59:PHE:CE2	2.56	0.40
23:W:29:TYR:CD2	23:W:29:TYR:N	2.90	0.40
48:WA:7:ILE:HG13	48:WA:23:ARG:HG2	2.04	0.40
48:WA:9:LYS:HB3	48:WA:9:LYS:HZ3	1.81	0.40
18:VB:94:ASN:ND2	19:WB:4:ILE:HD12	2.35	0.40
22:ZB:90:LEU:HB3	22:ZB:92:ASN:OD1	2.21	0.40
1:A:1125:U:O2	1:A:1126:U:O2'	2.27	0.40
1:A:971:G:C8	1:A:1365:G:H4'	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:333:G:H2'	1:A:334:C:C6	2.57	0.40
1:A:651:C:H2'	1:A:652:U:H6	1.86	0.40
1:A:891:U:H2'	1:A:891:U:O2	2.21	0.40
1:A:959:A:H5''	1:A:960:U:OP2	2.21	0.40
27:AA:31:LEU:HD13	27:AA:32:GLN:N	2.36	0.40
23:AC:26:GLY:C	23:AC:37:VAL:HG22	2.42	0.40
23:AC:30:ASN:HA	23:AC:89:PHE:CE1	2.56	0.40
2:B:2110:G:H4'	2:B:2111:C:OP2	2.21	0.40
2:B:824:A:H1'	2:B:2358:G:N7	2.37	0.40
2:B:34:C:HO2'	2:B:35:G:P	2.44	0.40
2:B:41:C:H2'	2:B:43:G:O4'	2.21	0.40
2:B:464:U:HO2'	31:EA:16:HIS:CE1	2.40	0.40
4:D:67:C:N3	4:D:68:C:N4	2.70	0.40
1:EB:107:G:H2'	1:EB:108:G:O4'	2.21	0.40
1:EB:1265:G:C8	1:EB:1271:G:N2	2.89	0.40
1:EB:1410:G:H2'	1:EB:1411:C:C6	2.57	0.40
1:EB:1413:A:H2'	1:EB:1414:U:O4'	2.22	0.40
1:EB:216:G:H2'	1:EB:217:C:O4'	2.21	0.40
1:EB:427:U:O4	1:EB:428:G:C6	2.75	0.40
1:EB:632:A:H2'	1:EB:633:G:O4'	2.21	0.40
1:EB:667:G:OP1	1:EB:732:C:O2'	2.27	0.40
1:EB:687:A:H1'	1:EB:688:G:OP2	2.20	0.40
52:ED:58:LEU:HD13	52:ED:58:LEU:HA	1.88	0.40
6:F:48:GLN:HG2	6:F:78:LEU:HG	2.03	0.40
2:FB:1141:U:OP2	11:OB:63:THR:OG1	2.40	0.40
2:FB:1247:A:H62	13:QB:15:ARG:NH1	2.19	0.40
2:FB:1270:C:H5''	2:FB:1271:G:O5'	2.22	0.40
2:FB:1313:U:H2'	2:FB:1610:A:C2	2.56	0.40
2:FB:1686:C:C2	2:FB:1703:G:N2	2.90	0.40
2:FB:2345:G:H1'	2:FB:2382:G:H5'	2.03	0.40
2:FB:2522:U:H5''	2:FB:2523:G:OP2	2.21	0.40
2:FB:318:C:H2'	2:FB:319:C:H6	1.86	0.40
7:G:184:TYR:HE2	7:G:188:ARG:NH1	2.19	0.40
3:GB:16:G:C6	3:GB:69:G:C2	3.10	0.40
8:H:111:LEU:HD23	8:H:111:LEU:HA	1.88	0.40
1:A:1054:C:N4	34:HA:22:A:N1	2.70	0.40
10:J:87:LYS:HG2	10:J:88:ILE:N	2.36	0.40
6:JB:54:GLN:NE2	6:JB:58:ARG:HB3	2.37	0.40
36:KA:87:ARG:HH21	36:KA:220:ASP:CG	2.22	0.40
33:KC:8:LYS:O	33:KC:34:GLN:NE2	2.54	0.40
37:LA:18:TRP:N	37:LA:18:TRP:CE3	2.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:MA:5:ILE:H	38:MA:5:ILE:HG12	1.61	0.40
10:NB:19:VAL:HB	10:NB:20:ASP:H	1.76	0.40
15:O:100:LEU:HB2	15:O:111:LEU:O	2.21	0.40
15:O:37:THR:HB	15:O:39:PRO:HD2	2.04	0.40
11:OB:73:THR:HG22	11:OB:84:LYS:HG2	2.02	0.40
41:PA:71:PRO:HA	41:PA:138:LYS:HE2	2.01	0.40
37:PC:10:PHE:HD2	37:PC:11:ARG:NH1	2.20	0.40
42:QA:11:THR:HG22	42:QA:15:ASN:ND2	2.36	0.40
13:QB:101:VAL:O	13:QB:103:ALA:N	2.49	0.40
2:FB:831:G:N2	13:QB:53:GLY:O	2.52	0.40
39:RC:40:ARG:HD3	39:RC:68:GLU:HA	2.04	0.40
40:SC:14:LEU:HA	40:SC:14:LEU:HD23	1.63	0.40
41:TC:121:ALA:O	41:TC:123:GLU:N	2.44	0.40
44:WC:3:LYS:O	44:WC:100:THR:HA	2.22	0.40
20:XB:55:ALA:O	20:XB:58:ALA:HB3	2.21	0.40
45:XC:16:SER:HA	45:XC:79:SER:O	2.22	0.40
46:YC:13:LYS:HB3	46:YC:13:LYS:HE2	1.87	0.40
46:YC:33:ARG:HD3	46:YC:33:ARG:HA	1.92	0.40

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

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:FB:1412:A:O2'	8:LB:9:ARG:NH1[1_655]	2.16	0.04

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%)	238 (87%)	27 (10%)	8 (3%)	4	24
5	IB	273/275 (99%)	238 (87%)	27 (10%)	8 (3%)	4	24

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	F	202/206 (98%)	171 (85%)	25 (12%)	6 (3%)	4	23
6	JB	202/206 (98%)	171 (85%)	26 (13%)	5 (2%)	5	26
7	G	200/205 (98%)	173 (86%)	22 (11%)	5 (2%)	5	26
7	KB	200/205 (98%)	170 (85%)	26 (13%)	4 (2%)	7	30
8	H	179/182 (98%)	137 (76%)	29 (16%)	13 (7%)	1	7
8	LB	179/182 (98%)	135 (75%)	31 (17%)	13 (7%)	1	7
9	I	172/180 (96%)	138 (80%)	24 (14%)	10 (6%)	1	11
9	MB	172/180 (96%)	138 (80%)	25 (14%)	9 (5%)	2	13
10	J	144/148 (97%)	108 (75%)	27 (19%)	9 (6%)	1	9
10	NB	144/148 (97%)	108 (75%)	27 (19%)	9 (6%)	1	9
11	K	138/140 (99%)	120 (87%)	12 (9%)	6 (4%)	2	17
11	OB	138/140 (99%)	121 (88%)	11 (8%)	6 (4%)	2	17
12	L	120/122 (98%)	105 (88%)	11 (9%)	4 (3%)	4	22
12	PB	120/122 (98%)	105 (88%)	11 (9%)	4 (3%)	4	22
13	M	148/150 (99%)	115 (78%)	24 (16%)	9 (6%)	1	10
13	QB	148/150 (99%)	117 (79%)	24 (16%)	7 (5%)	2	15
14	N	139/141 (99%)	113 (81%)	22 (16%)	4 (3%)	4	24
14	RB	139/141 (99%)	114 (82%)	20 (14%)	5 (4%)	3	21
15	O	116/118 (98%)	100 (86%)	14 (12%)	2 (2%)	9	34
15	SB	116/118 (98%)	101 (87%)	12 (10%)	3 (3%)	5	26
16	P	108/112 (96%)	88 (82%)	17 (16%)	3 (3%)	5	24
16	TB	108/112 (96%)	88 (82%)	16 (15%)	4 (4%)	3	20
17	Q	135/146 (92%)	111 (82%)	20 (15%)	4 (3%)	4	23
17	UB	135/146 (92%)	112 (83%)	19 (14%)	4 (3%)	4	23
18	R	115/118 (98%)	104 (90%)	9 (8%)	2 (2%)	9	34
18	VB	115/118 (98%)	104 (90%)	9 (8%)	2 (2%)	9	34
19	S	99/101 (98%)	80 (81%)	14 (14%)	5 (5%)	2	14
19	WB	99/101 (98%)	81 (82%)	14 (14%)	4 (4%)	3	18
20	T	110/113 (97%)	101 (92%)	9 (8%)	0	100	100
20	XB	110/113 (97%)	100 (91%)	9 (8%)	1 (1%)	17	49
21	U	93/96 (97%)	80 (86%)	10 (11%)	3 (3%)	4	22

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
21	YB	93/96 (97%)	82 (88%)	8 (9%)	3 (3%)	4	22
22	V	105/110 (96%)	83 (79%)	15 (14%)	7 (7%)	1	8
22	ZB	105/110 (96%)	84 (80%)	16 (15%)	5 (5%)	2	15
23	AC	187/206 (91%)	153 (82%)	26 (14%)	8 (4%)	2	17
23	W	187/206 (91%)	150 (80%)	29 (16%)	8 (4%)	2	17
24	BC	82/85 (96%)	67 (82%)	11 (13%)	4 (5%)	2	14
24	X	82/85 (96%)	66 (80%)	10 (12%)	6 (7%)	1	7
25	CC	95/98 (97%)	81 (85%)	10 (10%)	4 (4%)	3	18
25	Y	95/98 (97%)	81 (85%)	10 (10%)	4 (4%)	3	18
26	DC	68/72 (94%)	65 (96%)	2 (3%)	1 (2%)	10	36
26	Z	68/72 (94%)	65 (96%)	2 (3%)	1 (2%)	10	36
27	AA	58/60 (97%)	49 (84%)	8 (14%)	1 (2%)	9	34
27	EC	58/60 (97%)	51 (88%)	6 (10%)	1 (2%)	9	34
28	BA	67/71 (94%)	44 (66%)	14 (21%)	9 (13%)	0	1
28	FC	67/71 (94%)	44 (66%)	16 (24%)	7 (10%)	0	3
29	CA	57/60 (95%)	50 (88%)	7 (12%)	0	100	100
29	GC	57/60 (95%)	51 (90%)	6 (10%)	0	100	100
30	DA	51/54 (94%)	35 (69%)	12 (24%)	4 (8%)	1	6
30	HC	51/54 (94%)	35 (69%)	12 (24%)	4 (8%)	1	6
31	EA	46/49 (94%)	42 (91%)	4 (9%)	0	100	100
31	IC	46/49 (94%)	43 (94%)	3 (6%)	0	100	100
32	FA	62/65 (95%)	56 (90%)	5 (8%)	1 (2%)	9	34
32	JC	62/65 (95%)	57 (92%)	3 (5%)	2 (3%)	4	22
33	GA	35/37 (95%)	33 (94%)	2 (6%)	0	100	100
33	KC	35/37 (95%)	32 (91%)	3 (9%)	0	100	100
35	JA	256/368 (70%)	197 (77%)	46 (18%)	13 (5%)	2	14
35	NC	256/368 (70%)	197 (77%)	44 (17%)	15 (6%)	1	11
36	KA	232/256 (91%)	180 (78%)	38 (16%)	14 (6%)	1	10
36	OC	232/256 (91%)	180 (78%)	36 (16%)	16 (7%)	1	8
37	LA	204/239 (85%)	158 (78%)	35 (17%)	11 (5%)	2	13
37	PC	204/239 (85%)	158 (78%)	35 (17%)	11 (5%)	2	13

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	MA	206/209 (99%)	159 (77%)	33 (16%)	14 (7%)	1	8
38	QC	206/209 (99%)	159 (77%)	34 (16%)	13 (6%)	1	9
39	NA	149/162 (92%)	121 (81%)	21 (14%)	7 (5%)	2	15
39	RC	149/162 (92%)	120 (80%)	22 (15%)	7 (5%)	2	15
40	OA	99/101 (98%)	81 (82%)	16 (16%)	2 (2%)	7	30
40	SC	99/101 (98%)	83 (84%)	14 (14%)	2 (2%)	7	30
41	PA	153/156 (98%)	115 (75%)	25 (16%)	13 (8%)	1	5
41	TC	153/156 (98%)	114 (74%)	26 (17%)	13 (8%)	1	5
42	QA	136/138 (99%)	120 (88%)	15 (11%)	1 (1%)	22	55
42	UC	136/138 (99%)	119 (88%)	16 (12%)	1 (1%)	22	55
43	RA	125/128 (98%)	94 (75%)	22 (18%)	9 (7%)	1	7
43	VC	125/128 (98%)	94 (75%)	23 (18%)	8 (6%)	1	9
44	SA	96/105 (91%)	81 (84%)	14 (15%)	1 (1%)	15	46
44	WC	96/105 (91%)	82 (85%)	13 (14%)	1 (1%)	15	46
45	TA	114/129 (88%)	91 (80%)	16 (14%)	7 (6%)	1	10
45	XC	114/129 (88%)	91 (80%)	17 (15%)	6 (5%)	2	13
46	UA	119/132 (90%)	97 (82%)	20 (17%)	2 (2%)	9	34
46	YC	119/132 (90%)	96 (81%)	19 (16%)	4 (3%)	3	21
47	VA	115/126 (91%)	82 (71%)	25 (22%)	8 (7%)	1	7
47	ZC	115/126 (91%)	81 (70%)	25 (22%)	9 (8%)	1	6
48	AD	58/61 (95%)	48 (83%)	7 (12%)	3 (5%)	2	13
48	WA	58/61 (95%)	47 (81%)	9 (16%)	2 (3%)	3	21
49	BD	86/89 (97%)	72 (84%)	11 (13%)	3 (4%)	3	21
49	XA	86/89 (97%)	72 (84%)	10 (12%)	4 (5%)	2	15
50	CD	81/88 (92%)	70 (86%)	9 (11%)	2 (2%)	5	26
50	YA	81/88 (92%)	70 (86%)	9 (11%)	2 (2%)	5	26
51	DD	97/105 (92%)	80 (82%)	14 (14%)	3 (3%)	4	23
51	ZA	97/105 (92%)	79 (81%)	15 (16%)	3 (3%)	4	23
52	AB	68/88 (77%)	59 (87%)	7 (10%)	2 (3%)	4	24
52	ED	68/88 (77%)	58 (85%)	8 (12%)	2 (3%)	4	24
53	BB	81/93 (87%)	56 (69%)	19 (24%)	6 (7%)	1	7

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
53	FD	81/93 (87%)	58 (72%)	17 (21%)	6 (7%)	1	7
54	CB	97/106 (92%)	74 (76%)	14 (14%)	9 (9%)	0	4
54	GD	97/106 (92%)	75 (77%)	14 (14%)	8 (8%)	1	5
55	DB	22/27 (82%)	15 (68%)	5 (23%)	2 (9%)	1	4
55	HD	22/27 (82%)	15 (68%)	5 (23%)	2 (9%)	1	4
All	All	11996/12852 (93%)	9782 (82%)	1686 (14%)	528 (4%)	2	16

All (528) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
8	H	47	LYS
8	H	51	ARG
8	H	52	ILE
8	H	84	LYS
8	H	126	ASP
9	I	126	PRO
10	J	11	ASN
11	K	67	LEU
13	M	29	LYS
13	M	32	THR
13	M	53	GLY
13	M	122	PRO
14	N	17	LEU
21	U	22	ALA
22	V	3	VAL
22	V	46	LYS
22	V	78	ALA
23	W	163	LEU
23	W	184	ALA
35	JA	102	PRO
35	JA	194	GLY
35	JA	330	ASP
36	KA	82	ARG
36	KA	125	PRO
38	MA	112	VAL
41	PA	54	THR
41	PA	114	ARG
43	RA	56	LEU
45	TA	91	ARG
47	VA	104	ARG

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Mol	Chain	Res	Type
51	ZA	49	GLU
53	BB	64	GLU
54	CB	98	PRO
55	DB	3	LYS
8	LB	47	LYS
8	LB	51	ARG
8	LB	52	ILE
8	LB	84	LYS
9	MB	126	PRO
10	NB	11	ASN
11	OB	67	LEU
13	QB	29	LYS
13	QB	32	THR
13	QB	53	GLY
13	QB	55	ARG
13	QB	122	PRO
14	RB	17	LEU
21	YB	22	ALA
22	ZB	46	LYS
22	ZB	78	ALA
23	AC	163	LEU
23	AC	184	ALA
35	NC	102	PRO
35	NC	194	GLY
35	NC	330	ASP
36	OC	82	ARG
36	OC	125	PRO
36	OC	154	LEU
37	PC	12	LEU
37	PC	206	GLU
38	QC	112	VAL
41	TC	114	ARG
43	VC	56	LEU
45	XC	91	ARG
47	ZC	104	ARG
51	DD	49	GLU
53	FD	64	GLU
54	GD	98	PRO
55	HD	3	LYS
5	E	122	ASP
5	E	226	MET
5	E	236	GLY

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Mol	Chain	Res	Type
6	F	58	ARG
7	G	21	ALA
8	H	133	LEU
9	I	81	GLU
10	J	117	GLU
11	K	68	GLU
11	K	93	THR
13	M	55	ARG
13	M	90	ARG
14	N	16	ARG
15	O	107	ASP
18	R	46	ALA
19	S	29	PRO
21	U	23	GLU
22	V	51	VAL
23	W	177	PRO
24	X	55	ARG
25	Y	55	GLY
25	Y	97	LEU
26	Z	44	LEU
27	AA	39	ASP
28	BA	5	ILE
28	BA	22	ILE
28	BA	47	GLN
30	DA	12	GLU
35	JA	155	GLU
35	JA	262	SER
35	JA	340	LEU
36	KA	106	LYS
36	KA	124	SER
36	KA	154	LEU
36	KA	165	VAL
37	LA	10	PHE
37	LA	12	LEU
37	LA	206	GLU
38	MA	22	LYS
38	MA	30	LYS
38	MA	47	ARG
38	MA	130	GLY
38	MA	151	LYS
38	MA	152	SER
38	MA	186	LEU

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Mol	Chain	Res	Type
39	NA	11	ILE
39	NA	77	PRO
41	PA	19	GLY
43	RA	30	GLY
43	RA	92	TYR
43	RA	124	GLN
44	SA	77	PRO
46	UA	65	GLU
47	VA	67	GLU
48	WA	3	ARG
49	XA	14	GLU
49	XA	19	PRO
52	AB	34	TYR
53	BB	15	LEU
53	BB	24	ALA
54	CB	36	LEU
54	CB	95	ALA
54	CB	103	GLY
5	IB	31	LYS
5	IB	122	ASP
5	IB	155	LEU
5	IB	226	MET
5	IB	236	GLY
6	JB	58	ARG
7	KB	21	ALA
8	LB	126	ASP
8	LB	133	LEU
9	MB	81	GLU
10	NB	117	GLU
11	OB	68	GLU
11	OB	91	LEU
11	OB	93	THR
13	QB	90	ARG
14	RB	16	ARG
15	SB	107	ASP
18	VB	46	ALA
19	WB	29	PRO
21	YB	23	GLU
22	ZB	3	VAL
22	ZB	51	VAL
23	AC	177	PRO
24	BC	55	ARG

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Mol	Chain	Res	Type
25	CC	97	LEU
27	EC	39	ASP
28	FC	5	ILE
28	FC	22	ILE
28	FC	47	GLN
30	HC	12	GLU
35	NC	155	GLU
35	NC	262	SER
35	NC	340	LEU
36	OC	106	LYS
36	OC	124	SER
36	OC	165	VAL
37	PC	10	PHE
37	PC	160	ALA
38	QC	22	LYS
38	QC	30	LYS
38	QC	47	ARG
38	QC	130	GLY
38	QC	152	SER
38	QC	186	LEU
39	RC	11	ILE
39	RC	77	PRO
41	TC	19	GLY
41	TC	54	THR
41	TC	116	ALA
42	UC	50	ARG
43	VC	30	GLY
43	VC	92	TYR
43	VC	124	GLN
44	WC	77	PRO
46	YC	62	SER
46	YC	65	GLU
47	ZC	21	TYR
47	ZC	67	GLU
48	AD	3	ARG
49	BD	14	GLU
49	BD	19	PRO
53	FD	15	LEU
53	FD	24	ALA
53	FD	66	MET
54	GD	36	LEU
54	GD	95	ALA

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Mol	Chain	Res	Type
54	GD	103	GLY
5	E	31	LYS
5	E	69	ARG
5	E	155	LEU
6	F	52	LEU
6	F	74	PRO
7	G	22	ALA
8	H	14	GLU
9	I	168	PRO
10	J	29	TYR
11	K	91	LEU
12	L	4	PRO
12	L	26	LYS
12	L	51	ALA
14	N	60	ARG
17	Q	45	PHE
18	R	47	TYR
19	S	8	GLY
21	U	40	LYS
23	W	12	GLY
24	X	9	SER
25	Y	3	LYS
28	BA	62	ARG
28	BA	63	TYR
35	JA	143	ARG
35	JA	215	PRO
35	JA	263	GLN
36	KA	20	GLU
36	KA	126	GLU
36	KA	158	LEU
37	LA	160	ALA
38	MA	4	TYR
38	MA	42	GLN
38	MA	99	SER
39	NA	6	PHE
39	NA	24	ARG
41	PA	10	ARG
41	PA	63	LYS
41	PA	116	ALA
41	PA	121	ALA
41	PA	122	HIS
41	PA	147	ALA

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Mol	Chain	Res	Type
41	PA	148	ASN
42	QA	50	ARG
43	RA	96	LEU
45	TA	36	ASP
46	UA	62	SER
47	VA	21	TYR
47	VA	82	MET
50	YA	31	LYS
53	BB	16	LEU
53	BB	66	MET
54	CB	46	GLU
54	CB	92	LEU
5	IB	69	ARG
6	JB	52	LEU
6	JB	74	PRO
7	KB	22	ALA
9	MB	168	PRO
10	NB	29	TYR
10	NB	123	LEU
12	PB	4	PRO
12	PB	29	ASN
14	RB	60	ARG
14	RB	88	GLY
17	UB	45	PHE
17	UB	101	PHE
19	WB	9	GLY
21	YB	40	LYS
23	AC	12	GLY
24	BC	9	SER
25	CC	3	LYS
25	CC	55	GLY
26	DC	44	LEU
28	FC	63	TYR
35	NC	215	PRO
35	NC	263	GLN
36	OC	20	GLU
36	OC	127	ILE
36	OC	158	LEU
37	PC	110	ASN
37	PC	162	GLN
38	QC	42	GLN
38	QC	151	LYS

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Mol	Chain	Res	Type
39	RC	6	PHE
39	RC	7	GLU
40	SC	13	ASN
41	TC	63	LYS
41	TC	147	ALA
41	TC	148	ASN
43	VC	96	LEU
45	XC	36	ASP
47	ZC	82	MET
50	CD	16	HIS
51	DD	96	GLN
52	ED	34	TYR
53	FD	16	LEU
54	GD	46	GLU
54	GD	92	LEU
6	F	89	ASP
7	G	133	ASN
8	H	22	ARG
8	H	42	GLY
8	H	50	ALA
9	I	112	PRO
9	I	159	GLU
10	J	35	LEU
10	J	59	ALA
11	K	48	MET
13	M	31	ALA
13	M	103	ALA
13	M	110	TYR
17	Q	18	ASP
17	Q	101	PHE
19	S	97	LYS
22	V	103	GLY
23	W	31	ARG
23	W	164	ALA
25	Y	54	ALA
28	BA	20	ASN
30	DA	4	GLU
30	DA	16	CYS
35	JA	103	LYS
35	JA	233	GLY
36	KA	127	ILE
37	LA	3	ASN

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Mol	Chain	Res	Type
37	LA	73	PRO
37	LA	110	ASN
38	MA	29	PRO
39	NA	7	GLU
40	OA	13	ASN
41	PA	11	GLN
41	PA	85	TYR
43	RA	88	TYR
45	TA	34	ASP
47	VA	42	ALA
49	XA	49	ASP
51	ZA	96	GLN
54	CB	52	ALA
6	JB	89	ASP
7	KB	133	ASN
8	LB	14	GLU
8	LB	22	ARG
8	LB	42	GLY
8	LB	50	ALA
9	MB	159	GLU
10	NB	35	LEU
10	NB	59	ALA
11	OB	48	MET
12	PB	26	LYS
12	PB	51	ALA
13	QB	103	ALA
16	TB	11	LYS
19	WB	8	GLY
19	WB	97	LYS
22	ZB	103	GLY
23	AC	31	ARG
23	AC	164	ALA
25	CC	54	ALA
28	FC	20	ASN
28	FC	62	ARG
30	HC	4	GLU
30	HC	16	CYS
35	NC	103	LYS
35	NC	143	ARG
35	NC	233	GLY
35	NC	336	LYS
36	OC	126	GLU

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Mol	Chain	Res	Type
36	OC	149	LEU
37	PC	3	ASN
37	PC	73	PRO
37	PC	129	ALA
37	PC	156	ARG
38	QC	4	TYR
38	QC	99	SER
39	RC	24	ARG
41	TC	10	ARG
41	TC	11	GLN
41	TC	85	TYR
41	TC	121	ALA
41	TC	122	HIS
43	VC	88	TYR
49	BD	49	ASP
50	CD	31	LYS
54	GD	52	ALA
5	E	232	PRO
6	F	131	ALA
8	H	13	GLU
11	K	63	THR
12	L	29	ASN
16	P	13	ARG
16	P	61	ASN
17	Q	9	LEU
22	V	11	ASP
23	W	39	VAL
24	X	3	HIS
30	DA	3	SER
35	JA	336	LYS
36	KA	17	PHE
36	KA	149	LEU
37	LA	99	VAL
37	LA	129	ALA
37	LA	156	ARG
41	PA	17	VAL
43	RA	10	ARG
50	YA	16	HIS
5	IB	232	PRO
9	MB	112	PRO
11	OB	63	THR
15	SB	45	ARG

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Mol	Chain	Res	Type
16	TB	13	ARG
16	TB	61	ASN
17	UB	9	LEU
18	VB	47	TYR
23	AC	39	VAL
24	BC	7	LEU
30	HC	3	SER
35	NC	339	MET
36	OC	17	PHE
36	OC	77	ALA
37	PC	99	VAL
38	QC	29	PRO
38	QC	179	GLU
43	VC	10	ARG
46	YC	12	ARG
47	ZC	42	ALA
47	ZC	115	LYS
51	DD	97	SER
9	I	119	GLU
10	J	123	LEU
19	S	9	GLY
22	V	91	GLU
24	X	7	LEU
24	X	13	GLY
28	BA	41	PRO
28	BA	42	PHE
28	BA	51	ASP
36	KA	72	GLY
37	LA	162	GLN
38	MA	179	GLU
43	RA	94	ALA
45	TA	99	GLN
49	XA	47	LYS
51	ZA	97	SER
52	AB	78	LEU
53	BB	51	VAL
54	CB	19	SER
54	CB	47	GLY
8	LB	13	GLU
9	MB	119	GLU
14	RB	5	ARG
20	XB	80	PRO

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Mol	Chain	Res	Type
24	BC	13	GLY
32	JC	29	LYS
35	NC	300	SER
36	OC	72	GLY
36	OC	239	VAL
41	TC	17	VAL
46	YC	14	GLY
47	ZC	84	ILE
48	AD	55	GLY
52	ED	78	LEU
53	FD	51	VAL
5	E	256	GLY
9	I	120	GLY
14	N	88	GLY
36	KA	239	VAL
39	NA	85	GLY
40	OA	12	PRO
45	TA	49	GLY
45	TA	105	VAL
47	VA	84	ILE
48	WA	55	GLY
5	IB	256	GLY
8	LB	109	VAL
9	MB	55	PRO
9	MB	120	GLY
10	NB	137	PRO
10	NB	145	VAL
28	FC	41	PRO
39	RC	85	GLY
45	XC	34	ASP
54	GD	47	GLY
7	G	134	GLY
8	H	109	VAL
8	H	142	PRO
9	I	55	PRO
10	J	137	PRO
10	J	145	VAL
16	P	60	GLY
32	FA	53	PRO
35	JA	237	VAL
39	NA	74	GLY
47	VA	4	ILE

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Mol	Chain	Res	Type
55	DB	4	GLY
10	NB	106	GLY
23	AC	95	PRO
39	RC	74	GLY
40	SC	12	PRO
45	XC	105	VAL
47	ZC	4	ILE
55	HD	4	GLY
7	G	25	PRO
15	O	93	GLY
19	S	30	GLY
23	W	95	PRO
43	RA	90	PRO
47	VA	7	VAL
6	JB	172	VAL
8	LB	142	PRO
15	SB	93	GLY
16	TB	60	GLY
32	JC	53	PRO
35	NC	237	VAL
43	VC	90	PRO
45	XC	49	GLY
9	I	114	VAL
9	I	169	VAL
10	J	106	GLY
45	TA	48	ILE
9	MB	169	VAL
17	UB	37	GLY
36	OC	232	PRO
45	XC	48	ILE
47	ZC	7	VAL
48	AD	14	PRO
6	F	172	VAL
24	X	6	GLY
38	MA	56	VAL
7	KB	25	PRO

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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%)	178 (82%)	39 (18%)	1	6
5	IB	217/217 (100%)	176 (81%)	41 (19%)	1	4
6	F	165/166 (99%)	136 (82%)	29 (18%)	2	6
6	JB	165/166 (99%)	137 (83%)	28 (17%)	2	8
7	G	161/162 (99%)	132 (82%)	29 (18%)	1	6
7	KB	161/162 (99%)	132 (82%)	29 (18%)	1	6
8	H	154/156 (99%)	131 (85%)	23 (15%)	3	12
8	LB	154/156 (99%)	131 (85%)	23 (15%)	3	12
9	I	144/148 (97%)	122 (85%)	22 (15%)	2	11
9	MB	144/148 (97%)	122 (85%)	22 (15%)	2	11
10	J	122/124 (98%)	92 (75%)	30 (25%)	0	2
10	NB	122/124 (98%)	91 (75%)	31 (25%)	0	2
11	K	119/119 (100%)	102 (86%)	17 (14%)	3	13
11	OB	119/119 (100%)	102 (86%)	17 (14%)	3	13
12	L	100/100 (100%)	85 (85%)	15 (15%)	3	12
12	PB	100/100 (100%)	85 (85%)	15 (15%)	3	12
13	M	116/116 (100%)	92 (79%)	24 (21%)	1	3
13	QB	116/116 (100%)	93 (80%)	23 (20%)	1	4
14	N	111/111 (100%)	93 (84%)	18 (16%)	2	9
14	RB	111/111 (100%)	93 (84%)	18 (16%)	2	9
15	O	101/101 (100%)	86 (85%)	15 (15%)	3	12
15	SB	101/101 (100%)	86 (85%)	15 (15%)	3	12
16	P	87/88 (99%)	73 (84%)	14 (16%)	2	10
16	TB	87/88 (99%)	73 (84%)	14 (16%)	2	10
17	Q	121/128 (94%)	108 (89%)	13 (11%)	6	24
17	UB	121/128 (94%)	106 (88%)	15 (12%)	4	17
18	R	93/94 (99%)	81 (87%)	12 (13%)	4	16
18	VB	93/94 (99%)	83 (89%)	10 (11%)	6	24
19	S	82/82 (100%)	66 (80%)	16 (20%)	1	4
19	WB	82/82 (100%)	65 (79%)	17 (21%)	1	3

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
20	T	91/92 (99%)	77 (85%)	14 (15%)	2	11
20	XB	91/92 (99%)	76 (84%)	15 (16%)	2	9
21	U	77/78 (99%)	65 (84%)	12 (16%)	2	11
21	YB	77/78 (99%)	66 (86%)	11 (14%)	3	13
22	V	87/91 (96%)	71 (82%)	16 (18%)	1	5
22	ZB	87/91 (96%)	71 (82%)	16 (18%)	1	5
23	AC	163/179 (91%)	137 (84%)	26 (16%)	2	10
23	W	163/179 (91%)	137 (84%)	26 (16%)	2	10
24	BC	66/67 (98%)	57 (86%)	9 (14%)	3	14
24	X	66/67 (98%)	57 (86%)	9 (14%)	3	14
25	CC	81/83 (98%)	61 (75%)	20 (25%)	0	2
25	Y	81/83 (98%)	61 (75%)	20 (25%)	0	2
26	DC	66/67 (98%)	52 (79%)	14 (21%)	1	3
26	Z	66/67 (98%)	52 (79%)	14 (21%)	1	3
27	AA	52/52 (100%)	40 (77%)	12 (23%)	1	2
27	EC	52/52 (100%)	40 (77%)	12 (23%)	1	2
28	BA	59/63 (94%)	50 (85%)	9 (15%)	2	11
28	FC	59/63 (94%)	50 (85%)	9 (15%)	2	11
29	CA	51/52 (98%)	39 (76%)	12 (24%)	1	2
29	GC	51/52 (98%)	39 (76%)	12 (24%)	1	2
30	DA	51/52 (98%)	42 (82%)	9 (18%)	2	6
30	HC	51/52 (98%)	42 (82%)	9 (18%)	2	6
31	EA	41/42 (98%)	30 (73%)	11 (27%)	0	1
31	IC	41/42 (98%)	29 (71%)	12 (29%)	0	1
32	FA	54/55 (98%)	46 (85%)	8 (15%)	3	12
32	JC	54/55 (98%)	47 (87%)	7 (13%)	4	16
33	GA	34/34 (100%)	31 (91%)	3 (9%)	10	33
33	KC	34/34 (100%)	31 (91%)	3 (9%)	10	33
35	JA	209/308 (68%)	176 (84%)	33 (16%)	2	10
35	NC	209/308 (68%)	178 (85%)	31 (15%)	3	12
36	KA	202/220 (92%)	164 (81%)	38 (19%)	1	4

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	OC	202/220 (92%)	164 (81%)	38 (19%)	1	4
37	LA	160/188 (85%)	133 (83%)	27 (17%)	2	8
37	PC	160/188 (85%)	133 (83%)	27 (17%)	2	8
38	MA	180/181 (99%)	146 (81%)	34 (19%)	1	4
38	QC	180/181 (99%)	145 (81%)	35 (19%)	1	4
39	NA	116/123 (94%)	102 (88%)	14 (12%)	5	18
39	RC	116/123 (94%)	102 (88%)	14 (12%)	5	18
40	OA	90/90 (100%)	75 (83%)	15 (17%)	2	8
40	SC	90/90 (100%)	75 (83%)	15 (17%)	2	8
41	PA	126/127 (99%)	100 (79%)	26 (21%)	1	3
41	TC	126/127 (99%)	99 (79%)	27 (21%)	1	3
42	QA	119/119 (100%)	100 (84%)	19 (16%)	2	10
42	UC	119/119 (100%)	101 (85%)	18 (15%)	3	12
43	RA	98/99 (99%)	86 (88%)	12 (12%)	5	18
43	VC	98/99 (99%)	86 (88%)	12 (12%)	5	18
44	SA	88/92 (96%)	79 (90%)	9 (10%)	7	26
44	WC	88/92 (96%)	80 (91%)	8 (9%)	9	32
45	TA	88/99 (89%)	71 (81%)	17 (19%)	1	4
45	XC	88/99 (89%)	71 (81%)	17 (19%)	1	4
46	UA	102/108 (94%)	85 (83%)	17 (17%)	2	8
46	YC	102/108 (94%)	85 (83%)	17 (17%)	2	8
47	VA	94/101 (93%)	71 (76%)	23 (24%)	0	2
47	ZC	94/101 (93%)	72 (77%)	22 (23%)	1	2
48	AD	49/50 (98%)	42 (86%)	7 (14%)	3	13
48	WA	49/50 (98%)	42 (86%)	7 (14%)	3	13
49	BD	79/80 (99%)	71 (90%)	8 (10%)	7	27
49	XA	79/80 (99%)	71 (90%)	8 (10%)	7	27
50	CD	72/74 (97%)	62 (86%)	10 (14%)	3	13
50	YA	72/74 (97%)	61 (85%)	11 (15%)	2	11
51	DD	94/97 (97%)	72 (77%)	22 (23%)	1	2
51	ZA	94/97 (97%)	72 (77%)	22 (23%)	1	2

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
52	AB	61/77 (79%)	50 (82%)	11 (18%)	1	6
52	ED	61/77 (79%)	50 (82%)	11 (18%)	1	6
53	BB	72/80 (90%)	58 (81%)	14 (19%)	1	4
53	FD	72/80 (90%)	59 (82%)	13 (18%)	1	6
54	CB	76/82 (93%)	65 (86%)	11 (14%)	3	12
54	GD	76/82 (93%)	65 (86%)	11 (14%)	3	12
55	DB	19/22 (86%)	15 (79%)	4 (21%)	1	3
55	HD	19/22 (86%)	15 (79%)	4 (21%)	1	3
All	All	10120/10672 (95%)	8397 (83%)	1723 (17%)	2	8

All (1723) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	E	3	VAL
5	E	7	LYS
5	E	18	VAL
5	E	25	THR
5	E	32	SER
5	E	38	LYS
5	E	50	THR
5	E	52	ARG
5	E	54	ARG
5	E	61	LEU
5	E	63	ARG
5	E	73	VAL
5	E	79	VAL
5	E	91	ARG
5	E	94	LEU
5	E	98	VAL
5	E	104	TYR
5	E	112	GLN
5	E	117	VAL
5	E	131	LEU
5	E	138	VAL
5	E	141	VAL
5	E	155	LEU
5	E	171	ASP
5	E	200	ASP
5	E	205	VAL

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Mol	Chain	Res	Type
5	E	211	ARG
5	E	212	SER
5	E	218	ARG
5	E	221	VAL
5	E	226	MET
5	E	228	PRO
5	E	229	VAL
5	E	242	ARG
5	E	262	ARG
5	E	263	ARG
5	E	270	ILE
5	E	273	ARG
5	E	275	LYS
6	F	5	LEU
6	F	38	THR
6	F	40	GLU
6	F	41	LYS
6	F	45	THR
6	F	47	VAL
6	F	63	LEU
6	F	73	GLU
6	F	75	VAL
6	F	77	ILE
6	F	78	LEU
6	F	82	ARG
6	F	90	THR
6	F	92	THR
6	F	93	VAL
6	F	105	THR
6	F	107	THR
6	F	116	VAL
6	F	119	ARG
6	F	121	ASN
6	F	140	SER
6	F	170	LEU
6	F	173	VAL
6	F	175	VAL
6	F	178	GLU
6	F	181	LEU
6	F	182	LEU
6	F	195	LEU
6	F	199	ARG

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Mol	Chain	Res	Type
7	G	18	ARG
7	G	23	ASP
7	G	27	GLU
7	G	43	LYS
7	G	44	ARG
7	G	51	THR
7	G	62	ARG
7	G	68	LYS
7	G	74	ARG
7	G	78	ILE
7	G	95	ARG
7	G	110	LEU
7	G	119	ARG
7	G	125	LEU
7	G	127	GLU
7	G	129	PHE
7	G	145	GLU
7	G	149	ASP
7	G	158	THR
7	G	165	ARG
7	G	169	ASN
7	G	170	LEU
7	G	176	LEU
7	G	183	VAL
7	G	188	ARG
7	G	191	ARG
7	G	196	LEU
7	G	201	VAL
7	G	205	ARG
8	H	18	GLU
8	H	21	ARG
8	H	38	VAL
8	H	41	GLN
8	H	43	LEU
8	H	47	LYS
8	H	49	ASP
8	H	52	ILE
8	H	60	LEU
8	H	70	VAL
8	H	79	ASN
8	H	88	ILE
8	H	95	ARG

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Mol	Chain	Res	Type
8	H	113	ARG
8	H	114	ILE
8	H	115	ARG
8	H	132	ASN
8	H	133	LEU
8	H	136	ARG
8	H	141	PHE
8	H	147	ASP
8	H	167	GLU
8	H	175	LEU
9	I	3	ARG
9	I	26	VAL
9	I	32	GLU
9	I	33	LEU
9	I	47	GLU
9	I	57	ASP
9	I	58	GLU
9	I	60	ARG
9	I	70	THR
9	I	71	LEU
9	I	76	VAL
9	I	84	SER
9	I	86	GLU
9	I	97	ARG
9	I	98	LEU
9	I	104	GLU
9	I	111	HIS
9	I	116	GLU
9	I	129	THR
9	I	140	LYS
9	I	169	VAL
9	I	171	LEU
10	J	1	MET
10	J	4	ILE
10	J	7	GLU
10	J	12	LEU
10	J	14	ASP
10	J	21	VAL
10	J	22	LYS
10	J	40	THR
10	J	44	LEU
10	J	45	LYS

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Mol	Chain	Res	Type
10	J	48	GLU
10	J	51	ILE
10	J	61	ARG
10	J	70	GLU
10	J	73	GLU
10	J	77	LEU
10	J	78	THR
10	J	81	VAL
10	J	82	ARG
10	J	86	THR
10	J	89	TYR
10	J	93	THR
10	J	96	ASP
10	J	107	ILE
10	J	118	LYS
10	J	123	LEU
10	J	127	VAL
10	J	128	LEU
10	J	138	ILE
10	J	145	VAL
11	K	1	MET
11	K	12	ARG
11	K	16	ILE
11	K	28	THR
11	K	32	THR
11	K	34	LEU
11	K	48	MET
11	K	55	VAL
11	K	60	ILE
11	K	62	VAL
11	K	67	LEU
11	K	88	GLU
11	K	96	GLU
11	K	119	ARG
11	K	127	ASP
11	K	138	LEU
11	K	139	GLU
12	L	1	MET
12	L	2	ILE
12	L	3	GLN
12	L	17	ARG
12	L	20	MET

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Mol	Chain	Res	Type
12	L	21	CYS
12	L	24	VAL
12	L	31	LYS
12	L	32	TYR
12	L	40	VAL
12	L	58	VAL
12	L	65	THR
12	L	92	GLU
12	L	109	LYS
12	L	122	LEU
13	M	2	LYS
13	M	15	ARG
13	M	19	VAL
13	M	27	HIS
13	M	29	LYS
13	M	40	SER
13	M	45	LEU
13	M	56	SER
13	M	57	THR
13	M	62	LEU
13	M	77	ARG
13	M	87	ASP
13	M	88	LEU
13	M	90	ARG
13	M	91	PHE
13	M	98	GLU
13	M	105	LEU
13	M	110	TYR
13	M	112	LEU
13	M	125	VAL
13	M	138	LEU
13	M	146	VAL
13	M	147	LEU
13	M	149	GLU
14	N	12	GLN
14	N	14	ARG
14	N	16	ARG
14	N	18	LYS
14	N	54	MET
14	N	56	ARG
14	N	58	PHE
14	N	68	ILE

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Mol	Chain	Res	Type
14	N	74	TYR
14	N	81	VAL
14	N	83	MET
14	N	91	GLU
14	N	96	VAL
14	N	103	MET
14	N	106	VAL
14	N	109	VAL
14	N	110	THR
14	N	129	THR
15	O	6	SER
15	O	8	ARG
15	O	18	LEU
15	O	26	LYS
15	O	28	LEU
15	O	29	LEU
15	O	33	ARG
15	O	49	ASP
15	O	54	LEU
15	O	65	LEU
15	O	100	LEU
15	O	102	GLU
15	O	103	ARG
15	O	116	LEU
15	O	117	VAL
16	P	3	ARG
16	P	11	LYS
16	P	13	ARG
16	P	21	THR
16	P	32	LEU
16	P	36	TYR
16	P	41	ASP
16	P	50	SER
16	P	67	ARG
16	P	69	VAL
16	P	73	LEU
16	P	75	GLU
16	P	85	VAL
16	P	88	ASP
17	Q	1	MET
17	Q	13	ARG
17	Q	27	THR

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Mol	Chain	Res	Type
17	Q	40	THR
17	Q	66	VAL
17	Q	89	VAL
17	Q	91	ARG
17	Q	105	LEU
17	Q	106	SER
17	Q	108	ARG
17	Q	118	ARG
17	Q	133	GLU
17	Q	135	VAL
18	R	5	LYS
18	R	8	VAL
18	R	31	SER
18	R	34	LYS
18	R	36	ARG
18	R	54	LYS
18	R	74	LEU
18	R	88	ILE
18	R	89	GLU
18	R	90	VAL
18	R	98	LEU
18	R	110	VAL
19	S	7	THR
19	S	13	ARG
19	S	19	LYS
19	S	26	ASP
19	S	28	GLU
19	S	33	VAL
19	S	51	VAL
19	S	56	SER
19	S	58	VAL
19	S	60	GLU
19	S	61	VAL
19	S	62	LEU
19	S	71	LEU
19	S	72	VAL
19	S	73	SER
19	S	82	ARG
20	T	2	GLU
20	T	11	ARG
20	T	12	ILE
20	T	19	LEU

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Mol	Chain	Res	Type
20	T	28	SER
20	T	37	ARG
20	T	61	ASN
20	T	63	ASP
20	T	65	LEU
20	T	67	ASP
20	T	86	LEU
20	T	103	ILE
20	T	107	LEU
20	T	109	GLU
21	U	13	LEU
21	U	27	THR
21	U	53	LYS
21	U	57	LEU
21	U	65	ARG
21	U	66	LEU
21	U	73	ARG
21	U	80	ILE
21	U	81	VAL
21	U	83	VAL
21	U	87	GLN
21	U	90	GLU
22	V	5	MET
22	V	6	HIS
22	V	11	ASP
22	V	14	LEU
22	V	44	ILE
22	V	47	LYS
22	V	49	VAL
22	V	64	GLU
22	V	76	CYS
22	V	79	CYS
22	V	87	LYS
22	V	90	LEU
22	V	91	GLU
22	V	96	ILE
22	V	99	CYS
22	V	101	LYS
23	W	19	ARG
23	W	29	TYR
23	W	35	ARG
23	W	41	LEU

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Mol	Chain	Res	Type
23	W	55	HIS
23	W	61	LEU
23	W	67	LEU
23	W	69	THR
23	W	86	VAL
23	W	87	ASP
23	W	89	PHE
23	W	90	VAL
23	W	91	LEU
23	W	100	VAL
23	W	103	ARG
23	W	116	VAL
23	W	118	GLN
23	W	119	GLU
23	W	129	SER
23	W	133	ILE
23	W	154	ASP
23	W	163	LEU
23	W	165	VAL
23	W	168	GLU
23	W	179	ASP
23	W	185	GLU
24	X	3	HIS
24	X	5	LYS
24	X	10	THR
24	X	14	ARG
24	X	21	LEU
24	X	29	GLN
24	X	31	VAL
24	X	75	LEU
24	X	77	ARG
25	Y	18	ILE
25	Y	19	GLN
25	Y	21	ARG
25	Y	26	ARG
25	Y	30	VAL
25	Y	35	THR
25	Y	37	ILE
25	Y	38	SER
25	Y	39	LYS
25	Y	40	ARG
25	Y	56	GLN

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Mol	Chain	Res	Type
25	Y	57	GLU
25	Y	59	THR
25	Y	60	PHE
25	Y	62	VAL
25	Y	75	GLU
25	Y	80	LEU
25	Y	85	LEU
25	Y	90	ILE
25	Y	95	LEU
26	Z	3	LEU
26	Z	4	SER
26	Z	9	GLN
26	Z	16	LEU
26	Z	17	SER
26	Z	34	GLU
26	Z	38	GLN
26	Z	46	GLN
26	Z	47	ASN
26	Z	53	LEU
26	Z	55	ARG
26	Z	62	THR
26	Z	65	ASN
26	Z	68	ARG
27	AA	13	ILE
27	AA	17	LYS
27	AA	18	ASP
27	AA	23	LEU
27	AA	31	LEU
27	AA	32	GLN
27	AA	33	GLN
27	AA	38	GLU
27	AA	52	HIS
27	AA	54	VAL
27	AA	56	VAL
27	AA	57	GLU
28	BA	3	GLU
28	BA	15	ILE
28	BA	31	ILE
28	BA	32	TYR
28	BA	46	GLN
28	BA	58	ARG
28	BA	61	ARG

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Mol	Chain	Res	Type
28	BA	62	ARG
28	BA	67	TYR
29	CA	11	THR
29	CA	16	ARG
29	CA	21	SER
29	CA	23	HIS
29	CA	26	THR
29	CA	29	ILE
29	CA	35	GLU
29	CA	40	LYS
29	CA	46	CYS
29	CA	48	GLU
29	CA	55	ARG
29	CA	58	LEU
30	DA	5	VAL
30	DA	7	ILE
30	DA	14	THR
30	DA	15	GLU
30	DA	19	ARG
30	DA	24	GLU
30	DA	36	LEU
30	DA	42	TRP
30	DA	46	HIS
31	EA	1	MET
31	EA	4	THR
31	EA	10	ARG
31	EA	16	HIS
31	EA	19	ARG
31	EA	22	MET
31	EA	23	ARG
31	EA	24	THR
31	EA	29	LYS
31	EA	32	LYS
31	EA	46	VAL
32	FA	25	MET
32	FA	30	ARG
32	FA	31	HIS
32	FA	32	LEU
32	FA	34	TRP
32	FA	41	ILE
32	FA	57	ARG
32	FA	60	LEU

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Mol	Chain	Res	Type
33	GA	7	VAL
33	GA	12	ASP
33	GA	24	TYR
35	JA	103	LYS
35	JA	115	VAL
35	JA	116	ARG
35	JA	123	GLU
35	JA	130	ASP
35	JA	140	GLU
35	JA	146	VAL
35	JA	156	HIS
35	JA	161	GLU
35	JA	179	SER
35	JA	185	GLN
35	JA	196	ILE
35	JA	199	SER
35	JA	209	LEU
35	JA	211	ASP
35	JA	213	GLU
35	JA	225	ASP
35	JA	226	THR
35	JA	237	VAL
35	JA	239	THR
35	JA	241	ASP
35	JA	253	ILE
35	JA	255	VAL
35	JA	287	GLN
35	JA	296	ASN
35	JA	304	SER
35	JA	310	TYR
35	JA	321	ARG
35	JA	327	TYR
35	JA	329	LEU
35	JA	334	GLU
35	JA	347	GLU
35	JA	356	LEU
36	KA	7	VAL
36	KA	10	LEU
36	KA	17	PHE
36	KA	19	HIS
36	KA	21	ARG
36	KA	24	TRP

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Mol	Chain	Res	Type
36	KA	33	TYR
36	KA	44	LEU
36	KA	45	GLN
36	KA	49	GLU
36	KA	51	LEU
36	KA	55	PHE
36	KA	67	THR
36	KA	73	THR
36	KA	75	LYS
36	KA	83	MET
36	KA	109	SER
36	KA	111	ARG
36	KA	112	VAL
36	KA	115	LEU
36	KA	116	GLU
36	KA	118	LEU
36	KA	136	VAL
36	KA	137	ARG
36	KA	142	LEU
36	KA	145	LEU
36	KA	153	ARG
36	KA	163	PHE
36	KA	168	THR
36	KA	172	ILE
36	KA	179	LYS
36	KA	185	ILE
36	KA	189	ASP
36	KA	190	THR
36	KA	212	GLN
36	KA	214	ILE
36	KA	231	GLU
36	KA	239	VAL
37	LA	3	ASN
37	LA	4	LYS
37	LA	12	LEU
37	LA	17	ASP
37	LA	36	ASP
37	LA	49	SER
37	LA	62	ASP
37	LA	64	VAL
37	LA	67	THR
37	LA	82	GLU

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Mol	Chain	Res	Type
37	LA	84	ILE
37	LA	87	LEU
37	LA	89	GLU
37	LA	91	LEU
37	LA	95	THR
37	LA	97	LYS
37	LA	122	GLU
37	LA	124	ILE
37	LA	128	PHE
37	LA	140	ARG
37	LA	164	ARG
37	LA	166	GLU
37	LA	173	VAL
37	LA	178	LEU
37	LA	188	LEU
37	LA	191	THR
37	LA	206	GLU
38	MA	3	ARG
38	MA	4	TYR
38	MA	8	VAL
38	MA	10	ARG
38	MA	12	CYS
38	MA	17	VAL
38	MA	26	CYS
38	MA	57	ARG
38	MA	61	LYS
38	MA	73	ARG
38	MA	81	GLU
38	MA	83	SER
38	MA	96	LEU
38	MA	101	LEU
38	MA	114	ARG
38	MA	122	ARG
38	MA	127	THR
38	MA	128	VAL
38	MA	134	ASP
38	MA	135	LEU
38	MA	141	ARG
38	MA	150	GLU
38	MA	156	GLU
38	MA	162	LEU
38	MA	168	ARG

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Mol	Chain	Res	Type
38	MA	174	LEU
38	MA	177	ASP
38	MA	178	VAL
38	MA	187	ARG
38	MA	188	LEU
38	MA	194	LEU
38	MA	196	LEU
38	MA	204	ILE
38	MA	207	TYR
39	NA	6	PHE
39	NA	16	THR
39	NA	20	GLN
39	NA	25	ARG
39	NA	27	ARG
39	NA	31	LEU
39	NA	32	VAL
39	NA	41	VAL
39	NA	50	GLU
39	NA	71	LEU
39	NA	73	ASN
39	NA	78	HIS
39	NA	91	LEU
39	NA	116	THR
40	OA	2	ARG
40	OA	11	ASN
40	OA	14	LEU
40	OA	17	SER
40	OA	23	LYS
40	OA	28	ARG
40	OA	30	LEU
40	OA	36	ARG
40	OA	43	LEU
40	OA	57	GLN
40	OA	71	ARG
40	OA	81	ILE
40	OA	83	ASP
40	OA	89	MET
40	OA	93	SER
41	PA	5	ARG
41	PA	8	GLU
41	PA	9	VAL
41	PA	10	ARG

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Mol	Chain	Res	Type
41	PA	15	ASP
41	PA	17	VAL
41	PA	18	TYR
41	PA	32	ARG
41	PA	50	ILE
41	PA	56	GLN
41	PA	66	VAL
41	PA	74	GLU
41	PA	79	ARG
41	PA	87	VAL
41	PA	104	LEU
41	PA	106	GLN
41	PA	109	ASN
41	PA	111	ARG
41	PA	115	ARG
41	PA	124	LEU
41	PA	131	LYS
41	PA	135	VAL
41	PA	136	LYS
41	PA	151	TYR
41	PA	155	ARG
41	PA	156	TRP
42	QA	1	MET
42	QA	23	SER
42	QA	26	VAL
42	QA	39	LEU
42	QA	42	GLU
42	QA	44	PHE
42	QA	45	ILE
42	QA	51	VAL
42	QA	80	ILE
42	QA	91	ARG
42	QA	92	ARG
42	QA	102	ARG
42	QA	112	LEU
42	QA	113	SER
42	QA	126	LYS
42	QA	127	LEU
42	QA	133	LEU
42	QA	135	CYS
42	QA	137	VAL
43	RA	2	GLU

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Mol	Chain	Res	Type
43	RA	4	TYR
43	RA	10	ARG
43	RA	27	THR
43	RA	32	ASP
43	RA	34	ASN
43	RA	41	VAL
43	RA	70	LYS
43	RA	93	ARG
43	RA	95	LYS
43	RA	99	LEU
43	RA	113	LYS
44	SA	3	LYS
44	SA	22	LYS
44	SA	38	ILE
44	SA	72	VAL
44	SA	73	ASP
44	SA	77	PRO
44	SA	81	THR
44	SA	90	LEU
44	SA	92	THR
45	TA	14	VAL
45	TA	26	ASN
45	TA	31	THR
45	TA	36	ASP
45	TA	40	ILE
45	TA	41	THR
45	TA	54	ARG
45	TA	67	ASP
45	TA	75	TYR
45	TA	77	MET
45	TA	87	THR
45	TA	93	GLN
45	TA	111	ASP
45	TA	114	VAL
45	TA	116	HIS
45	TA	117	ASN
45	TA	119	CYS
46	UA	6	THR
46	UA	10	LEU
46	UA	20	LYS
46	UA	28	LYS
46	UA	32	PHE

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Mol	Chain	Res	Type
46	UA	34	ARG
46	UA	41	ARG
46	UA	52	LEU
46	UA	62	SER
46	UA	67	THR
46	UA	81	SER
46	UA	83	VAL
46	UA	86	ARG
46	UA	89	ARG
46	UA	101	VAL
46	UA	116	SER
46	UA	123	LYS
47	VA	4	ILE
47	VA	7	VAL
47	VA	12	ASN
47	VA	16	ASP
47	VA	27	LYS
47	VA	32	GLU
47	VA	37	THR
47	VA	39	ILE
47	VA	47	ASP
47	VA	49	THR
47	VA	59	TYR
47	VA	65	LYS
47	VA	67	GLU
47	VA	87	TYR
47	VA	88	ARG
47	VA	90	LEU
47	VA	98	VAL
47	VA	99	ARG
47	VA	103	THR
47	VA	105	THR
47	VA	106	ASN
47	VA	109	THR
47	VA	116	THR
48	WA	13	THR
48	WA	17	LYS
48	WA	27	CYS
48	WA	41	ARG
48	WA	47	LEU
48	WA	53	LEU
48	WA	56	VAL

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Mol	Chain	Res	Type
49	XA	25	THR
49	XA	34	LEU
49	XA	35	ARG
49	XA	66	LEU
49	XA	67	LEU
49	XA	73	GLU
49	XA	83	GLU
49	XA	87	ILE
50	YA	2	VAL
50	YA	11	SER
50	YA	16	HIS
50	YA	27	LYS
50	YA	32	TYR
50	YA	38	TYR
50	YA	47	ASP
50	YA	60	LEU
50	YA	71	ARG
50	YA	75	ARG
50	YA	76	GLN
51	ZA	6	LEU
51	ZA	7	THR
51	ZA	9	VAL
51	ZA	11	VAL
51	ZA	14	LYS
51	ZA	15	MET
51	ZA	20	THR
51	ZA	21	VAL
51	ZA	22	LEU
51	ZA	24	GLU
51	ZA	36	ILE
51	ZA	58	GLU
51	ZA	63	ARG
51	ZA	65	ILE
51	ZA	72	ARG
51	ZA	75	ARG
51	ZA	76	LEU
51	ZA	77	VAL
51	ZA	78	GLU
51	ZA	87	LYS
51	ZA	90	ILE
51	ZA	98	LEU
52	AB	21	LYS

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Mol	Chain	Res	Type
52	AB	26	LEU
52	AB	36	ASN
52	AB	37	VAL
52	AB	46	GLU
52	AB	53	ARG
52	AB	54	ARG
52	AB	55	ARG
52	AB	78	LEU
52	AB	83	GLU
52	AB	84	LYS
53	BB	17	GLU
53	BB	21	GLU
53	BB	31	ILE
53	BB	33	THR
53	BB	36	ARG
53	BB	37	ARG
53	BB	41	VAL
53	BB	43	GLU
53	BB	47	HIS
53	BB	51	VAL
53	BB	55	LYS
53	BB	58	VAL
53	BB	64	GLU
53	BB	78	ARG
54	CB	11	SER
54	CB	13	LEU
54	CB	36	LEU
54	CB	53	LEU
54	CB	62	LEU
54	CB	64	ASP
54	CB	71	THR
54	CB	72	LEU
54	CB	75	ASN
54	CB	82	SER
54	CB	100	ILE
55	DB	9	ARG
55	DB	10	ARG
55	DB	22	ARG
55	DB	25	LYS
5	IB	3	VAL
5	IB	7	LYS
5	IB	18	VAL

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Mol	Chain	Res	Type
5	IB	25	THR
5	IB	32	SER
5	IB	34	VAL
5	IB	38	LYS
5	IB	50	THR
5	IB	52	ARG
5	IB	54	ARG
5	IB	61	LEU
5	IB	63	ARG
5	IB	73	VAL
5	IB	79	VAL
5	IB	91	ARG
5	IB	94	LEU
5	IB	98	VAL
5	IB	104	TYR
5	IB	112	GLN
5	IB	117	VAL
5	IB	131	LEU
5	IB	138	VAL
5	IB	141	VAL
5	IB	155	LEU
5	IB	171	ASP
5	IB	200	ASP
5	IB	201	HIS
5	IB	205	VAL
5	IB	211	ARG
5	IB	212	SER
5	IB	218	ARG
5	IB	221	VAL
5	IB	226	MET
5	IB	229	VAL
5	IB	242	ARG
5	IB	261	LYS
5	IB	262	ARG
5	IB	263	ARG
5	IB	270	ILE
5	IB	273	ARG
5	IB	275	LYS
6	JB	5	LEU
6	JB	27	LEU
6	JB	38	THR
6	JB	40	GLU

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Mol	Chain	Res	Type
6	JB	41	LYS
6	JB	45	THR
6	JB	47	VAL
6	JB	63	LEU
6	JB	72	VAL
6	JB	73	GLU
6	JB	75	VAL
6	JB	77	ILE
6	JB	78	LEU
6	JB	82	ARG
6	JB	90	THR
6	JB	92	THR
6	JB	105	THR
6	JB	107	THR
6	JB	119	ARG
6	JB	121	ASN
6	JB	170	LEU
6	JB	173	VAL
6	JB	175	VAL
6	JB	178	GLU
6	JB	181	LEU
6	JB	182	LEU
6	JB	195	LEU
6	JB	199	ARG
7	KB	18	ARG
7	KB	23	ASP
7	KB	27	GLU
7	KB	43	LYS
7	KB	44	ARG
7	KB	51	THR
7	KB	62	ARG
7	KB	74	ARG
7	KB	78	ILE
7	KB	95	ARG
7	KB	110	LEU
7	KB	119	ARG
7	KB	125	LEU
7	KB	126	VAL
7	KB	127	GLU
7	KB	129	PHE
7	KB	145	GLU
7	KB	149	ASP

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Mol	Chain	Res	Type
7	KB	158	THR
7	KB	165	ARG
7	KB	169	ASN
7	KB	170	LEU
7	KB	176	LEU
7	KB	183	VAL
7	KB	188	ARG
7	KB	191	ARG
7	KB	196	LEU
7	KB	201	VAL
7	KB	205	ARG
8	LB	18	GLU
8	LB	21	ARG
8	LB	38	VAL
8	LB	41	GLN
8	LB	43	LEU
8	LB	47	LYS
8	LB	49	ASP
8	LB	52	ILE
8	LB	60	LEU
8	LB	70	VAL
8	LB	79	ASN
8	LB	88	ILE
8	LB	95	ARG
8	LB	113	ARG
8	LB	114	ILE
8	LB	115	ARG
8	LB	132	ASN
8	LB	133	LEU
8	LB	136	ARG
8	LB	141	PHE
8	LB	147	ASP
8	LB	167	GLU
8	LB	175	LEU
9	MB	3	ARG
9	MB	26	VAL
9	MB	32	GLU
9	MB	33	LEU
9	MB	47	GLU
9	MB	57	ASP
9	MB	58	GLU
9	MB	60	ARG

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Mol	Chain	Res	Type
9	MB	70	THR
9	MB	71	LEU
9	MB	76	VAL
9	MB	84	SER
9	MB	86	GLU
9	MB	88	LEU
9	MB	97	ARG
9	MB	98	LEU
9	MB	104	GLU
9	MB	111	HIS
9	MB	116	GLU
9	MB	129	THR
9	MB	169	VAL
9	MB	171	LEU
10	NB	1	MET
10	NB	4	ILE
10	NB	7	GLU
10	NB	12	LEU
10	NB	14	ASP
10	NB	21	VAL
10	NB	22	LYS
10	NB	37	VAL
10	NB	40	THR
10	NB	44	LEU
10	NB	45	LYS
10	NB	48	GLU
10	NB	51	ILE
10	NB	61	ARG
10	NB	70	GLU
10	NB	73	GLU
10	NB	77	LEU
10	NB	78	THR
10	NB	81	VAL
10	NB	82	ARG
10	NB	86	THR
10	NB	89	TYR
10	NB	93	THR
10	NB	96	ASP
10	NB	107	ILE
10	NB	118	LYS
10	NB	123	LEU
10	NB	127	VAL

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Mol	Chain	Res	Type
10	NB	128	LEU
10	NB	138	ILE
10	NB	145	VAL
11	OB	1	MET
11	OB	12	ARG
11	OB	16	ILE
11	OB	28	THR
11	OB	32	THR
11	OB	34	LEU
11	OB	48	MET
11	OB	55	VAL
11	OB	60	ILE
11	OB	62	VAL
11	OB	67	LEU
11	OB	88	GLU
11	OB	96	GLU
11	OB	119	ARG
11	OB	127	ASP
11	OB	138	LEU
11	OB	139	GLU
12	PB	1	MET
12	PB	2	ILE
12	PB	3	GLN
12	PB	17	ARG
12	PB	20	MET
12	PB	21	CYS
12	PB	24	VAL
12	PB	31	LYS
12	PB	32	TYR
12	PB	40	VAL
12	PB	58	VAL
12	PB	65	THR
12	PB	92	GLU
12	PB	109	LYS
12	PB	122	LEU
13	QB	2	LYS
13	QB	15	ARG
13	QB	19	VAL
13	QB	27	HIS
13	QB	29	LYS
13	QB	40	SER
13	QB	45	LEU

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Mol	Chain	Res	Type
13	QB	56	SER
13	QB	57	THR
13	QB	62	LEU
13	QB	71	VAL
13	QB	77	ARG
13	QB	87	ASP
13	QB	88	LEU
13	QB	91	PHE
13	QB	98	GLU
13	QB	105	LEU
13	QB	110	TYR
13	QB	112	LEU
13	QB	138	LEU
13	QB	146	VAL
13	QB	147	LEU
13	QB	149	GLU
14	RB	12	GLN
14	RB	14	ARG
14	RB	16	ARG
14	RB	18	LYS
14	RB	54	MET
14	RB	56	ARG
14	RB	58	PHE
14	RB	68	ILE
14	RB	74	TYR
14	RB	81	VAL
14	RB	83	MET
14	RB	91	GLU
14	RB	96	VAL
14	RB	103	MET
14	RB	106	VAL
14	RB	109	VAL
14	RB	110	THR
14	RB	129	THR
15	SB	6	SER
15	SB	8	ARG
15	SB	18	LEU
15	SB	26	LYS
15	SB	28	LEU
15	SB	29	LEU
15	SB	33	ARG
15	SB	49	ASP

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Mol	Chain	Res	Type
15	SB	54	LEU
15	SB	65	LEU
15	SB	100	LEU
15	SB	102	GLU
15	SB	103	ARG
15	SB	116	LEU
15	SB	117	VAL
16	TB	3	ARG
16	TB	11	LYS
16	TB	13	ARG
16	TB	21	THR
16	TB	32	LEU
16	TB	36	TYR
16	TB	41	ASP
16	TB	50	SER
16	TB	67	ARG
16	TB	69	VAL
16	TB	73	LEU
16	TB	75	GLU
16	TB	85	VAL
16	TB	88	ASP
17	UB	1	MET
17	UB	13	ARG
17	UB	27	THR
17	UB	40	THR
17	UB	55	ASN
17	UB	62	THR
17	UB	66	VAL
17	UB	89	VAL
17	UB	91	ARG
17	UB	105	LEU
17	UB	106	SER
17	UB	108	ARG
17	UB	132	LYS
17	UB	133	GLU
17	UB	135	VAL
18	VB	5	LYS
18	VB	8	VAL
18	VB	31	SER
18	VB	34	LYS
18	VB	54	LYS
18	VB	74	LEU

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Mol	Chain	Res	Type
18	VB	88	ILE
18	VB	89	GLU
18	VB	90	VAL
18	VB	98	LEU
19	WB	7	THR
19	WB	13	ARG
19	WB	19	LYS
19	WB	26	ASP
19	WB	28	GLU
19	WB	33	VAL
19	WB	51	VAL
19	WB	56	SER
19	WB	58	VAL
19	WB	60	GLU
19	WB	61	VAL
19	WB	62	LEU
19	WB	68	LYS
19	WB	71	LEU
19	WB	72	VAL
19	WB	73	SER
19	WB	82	ARG
20	XB	2	GLU
20	XB	11	ARG
20	XB	12	ILE
20	XB	19	LEU
20	XB	28	SER
20	XB	37	ARG
20	XB	59	VAL
20	XB	63	ASP
20	XB	65	LEU
20	XB	67	ASP
20	XB	86	LEU
20	XB	92	ARG
20	XB	101	SER
20	XB	103	ILE
20	XB	107	LEU
21	YB	13	LEU
21	YB	27	THR
21	YB	53	LYS
21	YB	57	LEU
21	YB	65	ARG
21	YB	66	LEU

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Mol	Chain	Res	Type
21	YB	73	ARG
21	YB	80	ILE
21	YB	81	VAL
21	YB	83	VAL
21	YB	87	GLN
22	ZB	5	MET
22	ZB	6	HIS
22	ZB	11	ASP
22	ZB	14	LEU
22	ZB	44	ILE
22	ZB	47	LYS
22	ZB	49	VAL
22	ZB	64	GLU
22	ZB	76	CYS
22	ZB	79	CYS
22	ZB	87	LYS
22	ZB	90	LEU
22	ZB	91	GLU
22	ZB	96	ILE
22	ZB	99	CYS
22	ZB	101	LYS
23	AC	29	TYR
23	AC	35	ARG
23	AC	41	LEU
23	AC	55	HIS
23	AC	61	LEU
23	AC	67	LEU
23	AC	69	THR
23	AC	86	VAL
23	AC	87	ASP
23	AC	89	PHE
23	AC	90	VAL
23	AC	91	LEU
23	AC	99	TYR
23	AC	100	VAL
23	AC	103	ARG
23	AC	116	VAL
23	AC	118	GLN
23	AC	119	GLU
23	AC	129	SER
23	AC	133	ILE
23	AC	154	ASP

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Mol	Chain	Res	Type
23	AC	163	LEU
23	AC	165	VAL
23	AC	168	GLU
23	AC	179	ASP
23	AC	185	GLU
24	BC	3	HIS
24	BC	5	LYS
24	BC	10	THR
24	BC	14	ARG
24	BC	21	LEU
24	BC	29	GLN
24	BC	31	VAL
24	BC	75	LEU
24	BC	77	ARG
25	CC	13	ILE
25	CC	18	ILE
25	CC	19	GLN
25	CC	21	ARG
25	CC	26	ARG
25	CC	30	VAL
25	CC	35	THR
25	CC	37	ILE
25	CC	38	SER
25	CC	39	LYS
25	CC	40	ARG
25	CC	56	GLN
25	CC	57	GLU
25	CC	60	PHE
25	CC	62	VAL
25	CC	75	GLU
25	CC	80	LEU
25	CC	85	LEU
25	CC	90	ILE
25	CC	95	LEU
26	DC	3	LEU
26	DC	4	SER
26	DC	9	GLN
26	DC	16	LEU
26	DC	17	SER
26	DC	34	GLU
26	DC	38	GLN
26	DC	46	GLN

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Mol	Chain	Res	Type
26	DC	47	ASN
26	DC	53	LEU
26	DC	55	ARG
26	DC	62	THR
26	DC	65	ASN
26	DC	68	ARG
27	EC	13	ILE
27	EC	17	LYS
27	EC	18	ASP
27	EC	23	LEU
27	EC	31	LEU
27	EC	32	GLN
27	EC	33	GLN
27	EC	38	GLU
27	EC	52	HIS
27	EC	54	VAL
27	EC	56	VAL
27	EC	57	GLU
28	FC	5	ILE
28	FC	15	ILE
28	FC	31	ILE
28	FC	32	TYR
28	FC	46	GLN
28	FC	58	ARG
28	FC	61	ARG
28	FC	62	ARG
28	FC	67	TYR
29	GC	11	THR
29	GC	16	ARG
29	GC	21	SER
29	GC	23	HIS
29	GC	28	PRO
29	GC	29	ILE
29	GC	35	GLU
29	GC	40	LYS
29	GC	46	CYS
29	GC	48	GLU
29	GC	55	ARG
29	GC	58	LEU
30	HC	5	VAL
30	HC	7	ILE
30	HC	14	THR

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Mol	Chain	Res	Type
30	HC	15	GLU
30	HC	19	ARG
30	HC	24	GLU
30	HC	36	LEU
30	HC	42	TRP
30	HC	46	HIS
31	IC	1	MET
31	IC	4	THR
31	IC	10	ARG
31	IC	16	HIS
31	IC	19	ARG
31	IC	22	MET
31	IC	23	ARG
31	IC	24	THR
31	IC	29	LYS
31	IC	32	LYS
31	IC	41	ARG
31	IC	46	VAL
32	JC	25	MET
32	JC	30	ARG
32	JC	31	HIS
32	JC	32	LEU
32	JC	34	TRP
32	JC	57	ARG
32	JC	60	LEU
33	KC	7	VAL
33	KC	12	ASP
33	KC	24	TYR
35	NC	103	LYS
35	NC	115	VAL
35	NC	116	ARG
35	NC	123	GLU
35	NC	130	ASP
35	NC	140	GLU
35	NC	156	HIS
35	NC	161	GLU
35	NC	179	SER
35	NC	185	GLN
35	NC	196	ILE
35	NC	199	SER
35	NC	209	LEU
35	NC	211	ASP

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Mol	Chain	Res	Type
35	NC	213	GLU
35	NC	225	ASP
35	NC	237	VAL
35	NC	239	THR
35	NC	241	ASP
35	NC	253	ILE
35	NC	255	VAL
35	NC	287	GLN
35	NC	296	ASN
35	NC	304	SER
35	NC	310	TYR
35	NC	321	ARG
35	NC	327	TYR
35	NC	329	LEU
35	NC	334	GLU
35	NC	347	GLU
35	NC	356	LEU
36	OC	7	VAL
36	OC	10	LEU
36	OC	17	PHE
36	OC	19	HIS
36	OC	21	ARG
36	OC	24	TRP
36	OC	33	TYR
36	OC	44	LEU
36	OC	45	GLN
36	OC	49	GLU
36	OC	51	LEU
36	OC	55	PHE
36	OC	67	THR
36	OC	73	THR
36	OC	75	LYS
36	OC	83	MET
36	OC	109	SER
36	OC	111	ARG
36	OC	112	VAL
36	OC	115	LEU
36	OC	116	GLU
36	OC	118	LEU
36	OC	136	VAL
36	OC	137	ARG
36	OC	142	LEU

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Mol	Chain	Res	Type
36	OC	145	LEU
36	OC	153	ARG
36	OC	163	PHE
36	OC	172	ILE
36	OC	179	LYS
36	OC	185	ILE
36	OC	189	ASP
36	OC	190	THR
36	OC	196	LEU
36	OC	212	GLN
36	OC	214	ILE
36	OC	231	GLU
36	OC	239	VAL
37	PC	3	ASN
37	PC	4	LYS
37	PC	12	LEU
37	PC	17	ASP
37	PC	29	TYR
37	PC	36	ASP
37	PC	49	SER
37	PC	62	ASP
37	PC	67	THR
37	PC	82	GLU
37	PC	84	ILE
37	PC	87	LEU
37	PC	89	GLU
37	PC	91	LEU
37	PC	95	THR
37	PC	97	LYS
37	PC	122	GLU
37	PC	124	ILE
37	PC	128	PHE
37	PC	140	ARG
37	PC	164	ARG
37	PC	166	GLU
37	PC	173	VAL
37	PC	178	LEU
37	PC	188	LEU
37	PC	191	THR
37	PC	206	GLU
38	QC	3	ARG
38	QC	4	TYR

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Mol	Chain	Res	Type
38	QC	8	VAL
38	QC	10	ARG
38	QC	12	CYS
38	QC	17	VAL
38	QC	26	CYS
38	QC	57	ARG
38	QC	59	ARG
38	QC	61	LYS
38	QC	73	ARG
38	QC	81	GLU
38	QC	83	SER
38	QC	96	LEU
38	QC	101	LEU
38	QC	114	ARG
38	QC	122	ARG
38	QC	127	THR
38	QC	128	VAL
38	QC	134	ASP
38	QC	135	LEU
38	QC	141	ARG
38	QC	150	GLU
38	QC	162	LEU
38	QC	168	ARG
38	QC	173	TRP
38	QC	174	LEU
38	QC	178	VAL
38	QC	187	ARG
38	QC	188	LEU
38	QC	194	LEU
38	QC	196	LEU
38	QC	204	ILE
38	QC	207	TYR
38	QC	209	ARG
39	RC	6	PHE
39	RC	16	THR
39	RC	20	GLN
39	RC	25	ARG
39	RC	27	ARG
39	RC	31	LEU
39	RC	32	VAL
39	RC	41	VAL
39	RC	50	GLU

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Mol	Chain	Res	Type
39	RC	71	LEU
39	RC	73	ASN
39	RC	78	HIS
39	RC	91	LEU
39	RC	116	THR
40	SC	2	ARG
40	SC	11	ASN
40	SC	14	LEU
40	SC	17	SER
40	SC	23	LYS
40	SC	28	ARG
40	SC	30	LEU
40	SC	36	ARG
40	SC	43	LEU
40	SC	57	GLN
40	SC	71	ARG
40	SC	81	ILE
40	SC	83	ASP
40	SC	89	MET
40	SC	93	SER
41	TC	5	ARG
41	TC	8	GLU
41	TC	9	VAL
41	TC	10	ARG
41	TC	15	ASP
41	TC	17	VAL
41	TC	18	TYR
41	TC	32	ARG
41	TC	33	ASP
41	TC	50	ILE
41	TC	56	GLN
41	TC	66	VAL
41	TC	74	GLU
41	TC	79	ARG
41	TC	87	VAL
41	TC	104	LEU
41	TC	106	GLN
41	TC	109	ASN
41	TC	111	ARG
41	TC	115	ARG
41	TC	124	LEU
41	TC	131	LYS

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Mol	Chain	Res	Type
41	TC	135	VAL
41	TC	136	LYS
41	TC	151	TYR
41	TC	155	ARG
41	TC	156	TRP
42	UC	1	MET
42	UC	23	SER
42	UC	26	VAL
42	UC	42	GLU
42	UC	44	PHE
42	UC	45	ILE
42	UC	51	VAL
42	UC	80	ILE
42	UC	91	ARG
42	UC	92	ARG
42	UC	102	ARG
42	UC	112	LEU
42	UC	113	SER
42	UC	126	LYS
42	UC	127	LEU
42	UC	133	LEU
42	UC	135	CYS
42	UC	137	VAL
43	VC	2	GLU
43	VC	4	TYR
43	VC	10	ARG
43	VC	27	THR
43	VC	32	ASP
43	VC	34	ASN
43	VC	41	VAL
43	VC	70	LYS
43	VC	93	ARG
43	VC	95	LYS
43	VC	99	LEU
43	VC	113	LYS
44	WC	3	LYS
44	WC	22	LYS
44	WC	38	ILE
44	WC	72	VAL
44	WC	73	ASP
44	WC	81	THR
44	WC	90	LEU

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Mol	Chain	Res	Type
44	WC	92	THR
45	XC	14	VAL
45	XC	26	ASN
45	XC	31	THR
45	XC	36	ASP
45	XC	40	ILE
45	XC	41	THR
45	XC	54	ARG
45	XC	67	ASP
45	XC	75	TYR
45	XC	77	MET
45	XC	87	THR
45	XC	93	GLN
45	XC	111	ASP
45	XC	114	VAL
45	XC	116	HIS
45	XC	117	ASN
45	XC	119	CYS
46	YC	6	THR
46	YC	10	LEU
46	YC	20	LYS
46	YC	28	LYS
46	YC	32	PHE
46	YC	34	ARG
46	YC	41	ARG
46	YC	52	LEU
46	YC	62	SER
46	YC	67	THR
46	YC	81	SER
46	YC	83	VAL
46	YC	86	ARG
46	YC	89	ARG
46	YC	101	VAL
46	YC	116	SER
46	YC	123	LYS
47	ZC	4	ILE
47	ZC	7	VAL
47	ZC	12	ASN
47	ZC	16	ASP
47	ZC	27	LYS
47	ZC	32	GLU
47	ZC	37	THR

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Mol	Chain	Res	Type
47	ZC	39	ILE
47	ZC	47	ASP
47	ZC	49	THR
47	ZC	59	TYR
47	ZC	65	LYS
47	ZC	67	GLU
47	ZC	87	TYR
47	ZC	88	ARG
47	ZC	90	LEU
47	ZC	98	VAL
47	ZC	99	ARG
47	ZC	103	THR
47	ZC	105	THR
47	ZC	109	THR
47	ZC	116	THR
48	AD	13	THR
48	AD	17	LYS
48	AD	27	CYS
48	AD	41	ARG
48	AD	47	LEU
48	AD	53	LEU
48	AD	56	VAL
49	BD	25	THR
49	BD	34	LEU
49	BD	35	ARG
49	BD	66	LEU
49	BD	67	LEU
49	BD	73	GLU
49	BD	83	GLU
49	BD	87	ILE
50	CD	2	VAL
50	CD	16	HIS
50	CD	27	LYS
50	CD	32	TYR
50	CD	38	TYR
50	CD	47	ASP
50	CD	60	LEU
50	CD	71	ARG
50	CD	75	ARG
50	CD	76	GLN
51	DD	6	LEU
51	DD	7	THR

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Mol	Chain	Res	Type
51	DD	9	VAL
51	DD	11	VAL
51	DD	14	LYS
51	DD	15	MET
51	DD	20	THR
51	DD	21	VAL
51	DD	22	LEU
51	DD	24	GLU
51	DD	36	ILE
51	DD	58	GLU
51	DD	63	ARG
51	DD	65	ILE
51	DD	72	ARG
51	DD	75	ARG
51	DD	76	LEU
51	DD	77	VAL
51	DD	78	GLU
51	DD	87	LYS
51	DD	90	ILE
51	DD	98	LEU
52	ED	21	LYS
52	ED	26	LEU
52	ED	36	ASN
52	ED	37	VAL
52	ED	46	GLU
52	ED	53	ARG
52	ED	54	ARG
52	ED	55	ARG
52	ED	78	LEU
52	ED	83	GLU
52	ED	84	LYS
53	FD	17	GLU
53	FD	21	GLU
53	FD	28	LYS
53	FD	31	ILE
53	FD	33	THR
53	FD	36	ARG
53	FD	37	ARG
53	FD	41	VAL
53	FD	43	GLU
53	FD	47	HIS
53	FD	51	VAL

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Mol	Chain	Res	Type
53	FD	55	LYS
53	FD	64	GLU
54	GD	11	SER
54	GD	13	LEU
54	GD	36	LEU
54	GD	53	LEU
54	GD	62	LEU
54	GD	64	ASP
54	GD	71	THR
54	GD	72	LEU
54	GD	75	ASN
54	GD	82	SER
54	GD	100	ILE
55	HD	9	ARG
55	HD	10	ARG
55	HD	22	ARG
55	HD	25	LYS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (33) such sidechains are listed below:

Mol	Chain	Res	Type
5	E	166	GLN
7	G	40	GLN
18	R	94	ASN
20	T	61	ASN
23	W	73	GLN
35	JA	185	GLN
35	JA	311	ASN
35	JA	348	HIS
36	KA	140	HIS
37	LA	3	ASN
37	LA	63	ASN
41	PA	109	ASN
41	PA	110	GLN
45	TA	26	ASN
47	VA	62	ASN
53	BB	23	ASN
7	KB	40	GLN
14	RB	13	GLN
18	VB	94	ASN
23	AC	73	GLN
35	NC	185	GLN

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Mol	Chain	Res	Type
35	NC	348	HIS
36	OC	16	HIS
36	OC	140	HIS
37	PC	3	ASN
37	PC	63	ASN
41	TC	109	ASN
41	TC	110	GLN
45	XC	26	ASN
47	ZC	62	ASN
49	BD	46	HIS
52	ED	36	ASN
53	FD	23	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	1502/1507 (99%)	330 (21%)	13 (0%)
1	EB	1502/1507 (99%)	330 (21%)	13 (0%)
2	B	2876/2880 (99%)	644 (22%)	22 (0%)
2	FB	2876/2880 (99%)	642 (22%)	23 (0%)
3	C	119/120 (99%)	22 (18%)	1 (0%)
3	GB	119/120 (99%)	21 (17%)	1 (0%)
34	HA	9/23 (39%)	5 (55%)	0
34	LC	9/23 (39%)	5 (55%)	0
4	D	76/77 (98%)	25 (32%)	0
4	HB	76/77 (98%)	26 (34%)	0
4	IA	76/77 (98%)	20 (26%)	0
4	MC	76/77 (98%)	20 (26%)	0
All	All	9316/9368 (99%)	2090 (22%)	73 (0%)

All (2090) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	9	G
1	A	32	A
1	A	39	G
1	A	47	C
1	A	48	C
1	A	51	A
1	A	55	A
1	A	56	U

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Mol	Chain	Res	Type
1	A	57	G
1	A	59	A
1	A	60	A
1	A	61	G
1	A	65	U
1	A	66	G
1	A	77	C
1	A	80	G
1	A	84	U
1	A	85	U
1	A	87	A
1	A	88	C
1	A	89	U
1	A	101	A
1	A	105	G
1	A	109	A
1	A	116	A
1	A	121	C
1	A	127	G
1	A	131	C
1	A	151	A
1	A	163	C
1	A	164	U
1	A	168	G
1	A	169	C
1	A	173	U
1	A	174	C
1	A	175	C
1	A	182	U
1	A	183	G
1	A	185	A
1	A	195	A
1	A	201	C
1	A	208	U
1	A	209	U
1	A	210	U
1	A	216	G
1	A	240	C
1	A	245	C
1	A	247	G
1	A	251	G
1	A	258	G

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Mol	Chain	Res	Type
1	A	262	A
1	A	266	G
1	A	267	C
1	A	280	C
1	A	281	G
1	A	289	G
1	A	304	U
1	A	305	G
1	A	319	G
1	A	321	A
1	A	328	C
1	A	332	G
1	A	341	C
1	A	352	C
1	A	353	A
1	A	354	G
1	A	355	C
1	A	364	A
1	A	367	U
1	A	372	C
1	A	373	A
1	A	384	G
1	A	392	G
1	A	397	A
1	A	398	C
1	A	404	U
1	A	406	G
1	A	412	A
1	A	413	G
1	A	417	C
1	A	427	U
1	A	428	G
1	A	429	U
1	A	439	A
1	A	449	C
1	A	451	A
1	A	452	A
1	A	453	A
1	A	454	C
1	A	455	C
1	A	465	A
1	A	474	G

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Mol	Chain	Res	Type
1	A	482	A
1	A	484	G
1	A	485	G
1	A	495	A
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	527	7MG
1	A	531	U
1	A	532	A
1	A	533	A
1	A	547	A
1	A	559	A
1	A	560	U
1	A	572	A
1	A	573	A
1	A	576	G
1	A	577	G
1	A	596	C
1	A	597	G
1	A	603	U
1	A	607	A
1	A	618	C
1	A	629	G
1	A	630	G
1	A	646	U
1	A	653	A
1	A	664	G
1	A	665	A
1	A	683	G
1	A	687	A
1	A	688	G
1	A	697	U
1	A	721	G
1	A	723	U
1	A	724	G
1	A	731	G

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Mol	Chain	Res	Type
1	A	733	A
1	A	746	A
1	A	749	C
1	A	750	G
1	A	759	A
1	A	763	G
1	A	773	G
1	A	774	G
1	A	777	A
1	A	781	A
1	A	793	U
1	A	794	A
1	A	796	C
1	A	799	G
1	A	817	C
1	A	819	A
1	A	821	G
1	A	828	A
1	A	831	U
1	A	833	U
1	A	836	G
1	A	842	C
1	A	843	U
1	A	848	C
1	A	852	G
1	A	855	G
1	A	870	U
1	A	872	A
1	A	873	A
1	A	902	G
1	A	914	A
1	A	916	G
1	A	922	G
1	A	926	G
1	A	927	G
1	A	931	C
1	A	934	C
1	A	935	A
1	A	937	A
1	A	956	U
1	A	960	U
1	A	966	M2G

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Mol	Chain	Res	Type
1	A	968	A
1	A	969	A
1	A	971	G
1	A	974	A
1	A	975	A
1	A	976	G
1	A	977	A
1	A	989	C
1	A	992	U
1	A	993	G
1	A	994	A
1	A	998(A)	G
1	A	1000	A
1	A	1001	G
1	A	1004	A
1	A	1005	A
1	A	1006	C
1	A	1007	C
1	A	1008	C
1	A	1009	G
1	A	1012	U
1	A	1015	A
1	A	1022	G
1	A	1023	G
1	A	1024	G
1	A	1025	U
1	A	1027	C
1	A	1028(A)	C
1	A	1028(B)	C
1	A	1028(C)	C
1	A	1029	G
1	A	1030	C
1	A	1032(A)	A
1	A	1032(B)	G
1	A	1032(C)	G
1	A	1033	G
1	A	1037	C
1	A	1044	A
1	A	1046	A
1	A	1048	G
1	A	1053	G
1	A	1060	C

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Mol	Chain	Res	Type
1	A	1065	U
1	A	1081	G
1	A	1094	G
1	A	1095	U
1	A	1096	C
1	A	1101	A
1	A	1104	G
1	A	1112	C
1	A	1113	C
1	A	1115	C
1	A	1116	C
1	A	1124	G
1	A	1125	U
1	A	1126	U
1	A	1129	C
1	A	1132	C
1	A	1136	U
1	A	1137	C
1	A	1139	G
1	A	1140	C
1	A	1145	C
1	A	1148	U
1	A	1152	A
1	A	1154	G
1	A	1155	G
1	A	1157	A
1	A	1159	U
1	A	1160	G
1	A	1164	G
1	A	1175	G
1	A	1178	G
1	A	1182	G
1	A	1191	A
1	A	1196	U
1	A	1197	G
1	A	1202	G
1	A	1207	2MG
1	A	1209	C
1	A	1212	U
1	A	1213	A
1	A	1225	A
1	A	1226	C

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Mol	Chain	Res	Type
1	A	1227	A
1	A	1229	A
1	A	1238	A
1	A	1241	G
1	A	1245	A
1	A	1250	A
1	A	1252	A
1	A	1256	A
1	A	1257	U
1	A	1258	G
1	A	1263	C
1	A	1265	G
1	A	1266	G
1	A	1268	A
1	A	1269	A
1	A	1274	G
1	A	1275	A
1	A	1279	A
1	A	1280	A
1	A	1282	C
1	A	1285	A
1	A	1286	A
1	A	1287	A
1	A	1293	G
1	A	1299	A
1	A	1300	G
1	A	1315	U
1	A	1320	C
1	A	1322	C
1	A	1329	A
1	A	1334	G
1	A	1336	C
1	A	1345	U
1	A	1346	A
1	A	1347	G
1	A	1359	C
1	A	1360	A
1	A	1362(B)	C
1	A	1363	A
1	A	1364	U
1	A	1365	G
1	A	1370	G

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Mol	Chain	Res	Type
1	A	1397	C
1	A	1398	A
1	A	1406	U
1	A	1412	C
1	A	1419	G
1	A	1442	G
1	A	1451	A
1	A	1452	C
1	A	1453	G
1	A	1454	G
1	A	1460	A
1	A	1487	G
1	A	1490	C
1	A	1492	A
1	A	1493	A
1	A	1497	G
1	A	1498	UR3
1	A	1499	A
1	A	1502	A
1	A	1503	A
1	A	1504	G
1	A	1506	U
1	A	1507	A
1	A	1517	G
1	A	1529	G
1	A	1530	G
1	A	1531	A
1	A	1532	U
2	B	10	G
2	B	34	C
2	B	35	G
2	B	46	C
2	B	54	G
2	B	55	G
2	B	61	G
2	B	64	A
2	B	71	A
2	B	72	U
2	B	74	A
2	B	75	G
2	B	84	A
2	B	91	A

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Mol	Chain	Res	Type
2	B	92	G
2	B	93	C
2	B	110	G
2	B	118	A
2	B	120	U
2	B	125	G
2	B	140	A
2	B	149	A
2	B	154(A)	C
2	B	155	C
2	B	163	U
2	B	164	U
2	B	165	U
2	B	174	C
2	B	181	A
2	B	196	A
2	B	204	A
2	B	205	G
2	B	212	G
2	B	213	A
2	B	214	G
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	233	A
2	B	248	G
2	B	249	C
2	B	260	G
2	B	261	G
2	B	266	G
2	B	267	C
2	B	269	U
2	B	270(E)	C
2	B	270(I)	C
2	B	270(L)	C
2	B	270(M)	U
2	B	270(N)	U
2	B	270(O)	G

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Mol	Chain	Res	Type
2	B	270(P)	U
2	B	270(Q)	C
2	B	271(D)	U
2	B	271	G
2	B	273(E)	C
2	B	275	G
2	B	276	A
2	B	277	C
2	B	284	U
2	B	302	C
2	B	310	A
2	B	311	A
2	B	317	G
2	B	319	C
2	B	324	A
2	B	329	G
2	B	330	A
2	B	333	G
2	B	345	A
2	B	352	G
2	B	353	G
2	B	354	G
2	B	357	A
2	B	362	U
2	B	363(A)	G
2	B	363(G)	A
2	B	364	C
2	B	371	A
2	B	372	G
2	B	376	C
2	B	385	C
2	B	386	G
2	B	396	G
2	B	405	U
2	B	411	G
2	B	412	A
2	B	414	C
2	B	443	A
2	B	454	A
2	B	456	C
2	B	457	A
2	B	464	U

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Mol	Chain	Res	Type
2	B	466	A
2	B	467	G
2	B	471	A
2	B	481	G
2	B	496	G
2	B	502	A
2	B	504	U
2	B	505	A
2	B	508	G
2	B	509	C
2	B	528	A
2	B	529	A
2	B	530	G
2	B	531	C
2	B	532	A
2	B	533	G
2	B	543	C
2	B	546	C
2	B	549	G
2	B	556	G
2	B	562	U
2	B	563	G
2	B	567	A
2	B	568	U
2	B	573	G
2	B	575	A
2	B	587	C
2	B	588	U
2	B	597	U
2	B	603	A
2	B	604	G
2	B	607	U
2	B	614	U
2	B	615	G
2	B	617	G
2	B	627	A
2	B	631	A
2	B	632	A
2	B	634	C
2	B	637	A
2	B	639	U
2	B	645	C

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Mol	Chain	Res	Type
2	B	646	A
2	B	648	G
2	B	653	C
2	B	654	U
2	B	668	G
2	B	670	A
2	B	686	G
2	B	695	G
2	B	715	G
2	B	717	G
2	B	730	C
2	B	745	G
2	B	748	G
2	B	765	G
2	B	775	G
2	B	776	G
2	B	782	A
2	B	783	A
2	B	784	A
2	B	785	G
2	B	789	A
2	B	793	A
2	B	800	A
2	B	805	G
2	B	812	C
2	B	819	A
2	B	825	C
2	B	826	U
2	B	827	U
2	B	828	U
2	B	831	G
2	B	835	A
2	B	846	C
2	B	855	G
2	B	859	G
2	B	860	U
2	B	873	G
2	B	878	A
2	B	882	G
2	B	883	G
2	B	887	A
2	B	888	C

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Mol	Chain	Res	Type
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	931	G
2	B	932	G
2	B	938	G
2	B	941	A
2	B	945	A
2	B	946	G
2	B	958	U
2	B	959	A
2	B	961	C
2	B	968	G
2	B	973	A
2	B	974(A)	G
2	B	974(B)	C
2	B	975	G
2	B	978	G
2	B	980	A
2	B	983	A
2	B	989	G
2	B	990	A
2	B	996	A
2	B	1005	C
2	B	1012	U
2	B	1013	C
2	B	1021	A
2	B	1022	G
2	B	1023	U
2	B	1024	G
2	B	1025	G
2	B	1026	U
2	B	1027	A
2	B	1030	G
2	B	1033	U
2	B	1038	C
2	B	1039	G
2	B	1043	C

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Mol	Chain	Res	Type
2	B	1045	A
2	B	1046	A
2	B	1047	G
2	B	1051	G
2	B	1054	A
2	B	1057	A
2	B	1058	G
2	B	1059	G
2	B	1060	U
2	B	1061	U
2	B	1062	G
2	B	1063	G
2	B	1064	C
2	B	1065	U
2	B	1066	U
2	B	1067	A
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	1075	C
2	B	1076	C
2	B	1077	A
2	B	1078	U
2	B	1079	C
2	B	1082	U
2	B	1083	U
2	B	1085	A
2	B	1087	G
2	B	1088	A
2	B	1089	G
2	B	1092	C
2	B	1093	G
2	B	1094	U
2	B	1095	A
2	B	1096	A
2	B	1097	U
2	B	1098	A
2	B	1099	G
2	B	1100	C

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Mol	Chain	Res	Type
2	B	1101	U
2	B	1104	C
2	B	1105	U
2	B	1107	G
2	B	1111	A
2	B	1112	G
2	B	1116	C
2	B	1125	G
2	B	1126	A
2	B	1129	A
2	B	1130	U
2	B	1131	G
2	B	1132	A
2	B	1135	C
2	B	1136	G
2	B	1139	G
2	B	1142(B)	A
2	B	1143	A
2	B	1155	A
2	B	1156	A
2	B	1171	G
2	B	1174	A
2	B	1175	U
2	B	1176	G
2	B	1177	A
2	B	1205	U
2	B	1211	U
2	B	1212	G
2	B	1220	A
2	B	1227	G
2	B	1248	G
2	B	1249	U
2	B	1251	C
2	B	1252	G
2	B	1253	A
2	B	1256	G
2	B	1267	U
2	B	1268	A
2	B	1271	G
2	B	1272	A
2	B	1273	U
2	B	1287	A

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Mol	Chain	Res	Type
2	B	1300	U
2	B	1301	A
2	B	1302	A
2	B	1309	G
2	B	1312	U
2	B	1317	A
2	B	1325	G
2	B	1345	C
2	B	1349	A
2	B	1352	U
2	B	1359	A
2	B	1360	A
2	B	1365	A
2	B	1378	A
2	B	1379	A
2	B	1384	A
2	B	1385	G
2	B	1386	C
2	B	1388	G
2	B	1394	U
2	B	1395	A
2	B	1403	C
2	B	1406	U
2	B	1411	C
2	B	1412	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	1429	G
2	B	1444(B)	A
2	B	1449(B)	A
2	B	1453	A
2	B	1454	U
2	B	1455	G
2	B	1459	G
2	B	1460	A
2	B	1461	G
2	B	1467	C

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Mol	Chain	Res	Type
2	B	1471	A
2	B	1475	G
2	B	1478	G
2	B	1483	G
2	B	1485	G
2	B	1489	U
2	B	1493	C
2	B	1497	U
2	B	1508	A
2	B	1509	A
2	B	1510	A
2	B	1511	A
2	B	1515	C
2	B	1530	G
2	B	1532	C
2	B	1534	G
2	B	1535	U
2	B	1536	A
2	B	1537	C
2	B	1538	G
2	B	1544	C
2	B	1558	A
2	B	1559	G
2	B	1561	G
2	B	1566	A
2	B	1569	A
2	B	1570	A
2	B	1578	U
2	B	1585	C
2	B	1587	A
2	B	1602	U
2	B	1608	A
2	B	1616	A
2	B	1618	A
2	B	1622	G
2	B	1630(B)	C
2	B	1647	G
2	B	1648	C
2	B	1654	A
2	B	1669	A
2	B	1674	G
2	B	1685	C

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Mol	Chain	Res	Type
2	B	1699	G
2	B	1700	A
2	B	1701	A
2	B	1708	C
2	B	1729	A
2	B	1730	U
2	B	1731	G
2	B	1743	G
2	B	1748	G
2	B	1750	G
2	B	1756	G
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	1791	A
2	B	1800	C
2	B	1808	U
2	B	1811	G
2	B	1816	G
2	B	1827	C
2	B	1829	A
2	B	1830	C
2	B	1833	U
2	B	1839	G
2	B	1847	A
2	B	1848	A
2	B	1878	G
2	B	1879	C
2	B	1889	A
2	B	1898	U
2	B	1900	A
2	B	1903	G
2	B	1905	C
2	B	1906	G
2	B	1913	A
2	B	1914	C
2	B	1919	A
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	1938	A
2	B	1940	U
2	B	1941	C
2	B	1952	A
2	B	1955	U
2	B	1963	U
2	B	1966	A
2	B	1967	C
2	B	1970	A
2	B	1971	A
2	B	1972	A
2	B	1981	A
2	B	1991	U
2	B	1992	G
2	B	1993	U
2	B	1997	G
2	B	2002	G
2	B	2020	A
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	2055	C
2	B	2056	G
2	B	2060	A
2	B	2061	G
2	B	2062	A
2	B	2069	G
2	B	2087	G
2	B	2100	G
2	B	2110	G
2	B	2118	U
2	B	2122	U
2	B	2124	G
2	B	2125	G
2	B	2126	A
2	B	2127	G

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Mol	Chain	Res	Type
2	B	2129	C
2	B	2130	U
2	B	2132	U
2	B	2133	G
2	B	2134	A
2	B	2136	C
2	B	2137	C
2	B	2138	C
2	B	2142	C
2	B	2145	C
2	B	2146	C
2	B	2148	G
2	B	2152	G
2	B	2156	G
2	B	2157	G
2	B	2158	A
2	B	2162	G
2	B	2164	C
2	B	2165	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	2175	C
2	B	2176	A
2	B	2180	U
2	B	2181	G
2	B	2185	C
2	B	2187	G
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	2225	A
2	B	2226	C
2	B	2227	A
2	B	2238	G

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Mol	Chain	Res	Type
2	B	2239	G
2	B	2246	G
2	B	2252	G
2	B	2269	A
2	B	2275	C
2	B	2278	A
2	B	2279	G
2	B	2283	C
2	B	2286	A
2	B	2287	A
2	B	2288	A
2	B	2305	A
2	B	2308	G
2	B	2309	A
2	B	2311	A
2	B	2312	U
2	B	2316	C
2	B	2319	G
2	B	2320	A
2	B	2321	G
2	B	2325	G
2	B	2327	A
2	B	2334	G
2	B	2336	A
2	B	2343	C
2	B	2347	C
2	B	2350	C
2	B	2358	G
2	B	2379	G
2	B	2383	G
2	B	2385	C
2	B	2396	G
2	B	2402	C
2	B	2406	U
2	B	2413	G
2	B	2414	G
2	B	2422	A
2	B	2425	A
2	B	2426	A
2	B	2427	C
2	B	2429	G
2	B	2430	A

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Mol	Chain	Res	Type
2	B	2432	A
2	B	2434	A
2	B	2435	A
2	B	2439	A
2	B	2440	C
2	B	2441	C
2	B	2448	A
2	B	2459	A
2	B	2470	G
2	B	2476	A
2	B	2484	G
2	B	2501	C
2	B	2502	G
2	B	2504	U
2	B	2505	G
2	B	2506	U
2	B	2513	G
2	B	2518	A
2	B	2520	C
2	B	2522	U
2	B	2525	G
2	B	2529	G
2	B	2554	U
2	B	2566	A
2	B	2567	G
2	B	2571	C
2	B	2572	A
2	B	2573	C
2	B	2582	G
2	B	2585	U
2	B	2586	C
2	B	2597	G
2	B	2602	A
2	B	2603	G
2	B	2609	U
2	B	2612	C
2	B	2615	U
2	B	2630	G
2	B	2634	G
2	B	2641	G
2	B	2661	G
2	B	2673	G

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Mol	Chain	Res	Type
2	B	2689	U
2	B	2691	C
2	B	2698	U
2	B	2702	U
2	B	2703	C
2	B	2711	A
2	B	2712(A)	A
2	B	2713	A
2	B	2714	G
2	B	2720	U
2	B	2726	U
2	B	2733	A
2	B	2735	G
2	B	2748	A
2	B	2757	A
2	B	2764	A
2	B	2765	A
2	B	2775	A
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	2794	C
2	B	2797	U
2	B	2799	A
2	B	2801	A
2	B	2802	G
2	B	2804	C
2	B	2807	G
2	B	2818	G
2	B	2820	A
2	B	2821	A
2	B	2858	C
2	B	2872	G
2	B	2876	G
2	B	2880	C
2	B	2883	A
2	B	2894	G
2	B	2895	U
2	B	2897	U

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Mol	Chain	Res	Type
3	C	2	C
3	C	9	G
3	C	13	A
3	C	21	G
3	C	25	A
3	C	42	C
3	C	44	G
3	C	45	A
3	C	56	G
3	C	57	A
3	C	65	C
3	C	66	A
3	C	67	G
3	C	73	A
3	C	84	C
3	C	88	C
3	C	89(B)	A
3	C	90	C
3	C	96	G
3	C	100	G
3	C	109	G
3	C	118	G
4	D	6	G
4	D	7	G
4	D	8	4SU
4	D	9	G
4	D	14	A
4	D	16	C
4	D	17	C
4	D	18	G
4	D	19	G
4	D	20	U
4	D	22	G
4	D	27	U
4	D	28	C
4	D	35	A
4	D	37	A
4	D	40	C
4	D	47	U
4	D	48	C
4	D	49	G
4	D	51	C

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Mol	Chain	Res	Type
4	D	56	C
4	D	65	C
4	D	71	C
4	D	73	A
4	D	76	A
34	HA	14	A
34	HA	15	A
34	HA	18	G
34	HA	21	A
34	HA	22	A
4	IA	2	G
4	IA	8	4SU
4	IA	17(A)	U
4	IA	19	G
4	IA	21	A
4	IA	25	C
4	IA	29	G
4	IA	31	G
4	IA	42	G
4	IA	46	G
4	IA	47	U
4	IA	58	A
4	IA	59	A
4	IA	63	G
4	IA	65	C
4	IA	71	C
4	IA	72	A
4	IA	73	A
4	IA	75	C
4	IA	76	A
1	EB	9	G
1	EB	32	A
1	EB	39	G
1	EB	47	C
1	EB	48	C
1	EB	51	A
1	EB	55	A
1	EB	56	U
1	EB	57	G
1	EB	59	A
1	EB	60	A
1	EB	61	G

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Mol	Chain	Res	Type
1	EB	65	U
1	EB	66	G
1	EB	77	C
1	EB	80	G
1	EB	84	U
1	EB	85	U
1	EB	87	A
1	EB	88	C
1	EB	89	U
1	EB	101	A
1	EB	105	G
1	EB	109	A
1	EB	116	A
1	EB	121	C
1	EB	127	G
1	EB	131	C
1	EB	151	A
1	EB	163	C
1	EB	164	U
1	EB	168	G
1	EB	169	C
1	EB	173	U
1	EB	174	C
1	EB	175	C
1	EB	182	U
1	EB	183	G
1	EB	185	A
1	EB	195	A
1	EB	201	C
1	EB	208	U
1	EB	209	U
1	EB	210	U
1	EB	216	G
1	EB	240	C
1	EB	245	C
1	EB	247	G
1	EB	251	G
1	EB	258	G
1	EB	262	A
1	EB	266	G
1	EB	267	C
1	EB	280	C

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Mol	Chain	Res	Type
1	EB	281	G
1	EB	289	G
1	EB	304	U
1	EB	305	G
1	EB	319	G
1	EB	321	A
1	EB	328	C
1	EB	332	G
1	EB	341	C
1	EB	352	C
1	EB	353	A
1	EB	354	G
1	EB	355	C
1	EB	364	A
1	EB	367	U
1	EB	372	C
1	EB	373	A
1	EB	384	G
1	EB	392	G
1	EB	397	A
1	EB	398	C
1	EB	404	U
1	EB	406	G
1	EB	412	A
1	EB	413	G
1	EB	417	C
1	EB	427	U
1	EB	428	G
1	EB	429	U
1	EB	439	A
1	EB	449	C
1	EB	451	A
1	EB	452	A
1	EB	453	A
1	EB	454	C
1	EB	455	C
1	EB	465	A
1	EB	474	G
1	EB	482	A
1	EB	484	G
1	EB	485	G
1	EB	495	A

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Mol	Chain	Res	Type
1	EB	496	A
1	EB	497	U
1	EB	500	G
1	EB	509	A
1	EB	510	A
1	EB	511	C
1	EB	518	C
1	EB	521	G
1	EB	527	7MG
1	EB	531	U
1	EB	532	A
1	EB	533	A
1	EB	547	A
1	EB	559	A
1	EB	560	U
1	EB	562	C
1	EB	564	C
1	EB	572	A
1	EB	573	A
1	EB	576	G
1	EB	577	G
1	EB	596	C
1	EB	607	A
1	EB	618	C
1	EB	629	G
1	EB	630	G
1	EB	646	U
1	EB	653	A
1	EB	664	G
1	EB	665	A
1	EB	683	G
1	EB	687	A
1	EB	688	G
1	EB	697	U
1	EB	721	G
1	EB	723	U
1	EB	724	G
1	EB	731	G
1	EB	733	A
1	EB	746	A
1	EB	749	C
1	EB	750	G

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Mol	Chain	Res	Type
1	EB	759	A
1	EB	763	G
1	EB	773	G
1	EB	774	G
1	EB	777	A
1	EB	781	A
1	EB	793	U
1	EB	794	A
1	EB	796	C
1	EB	799	G
1	EB	817	C
1	EB	819	A
1	EB	821	G
1	EB	828	A
1	EB	831	U
1	EB	833	U
1	EB	836	G
1	EB	842	C
1	EB	843	U
1	EB	848	C
1	EB	852	G
1	EB	855	G
1	EB	870	U
1	EB	872	A
1	EB	873	A
1	EB	902	G
1	EB	914	A
1	EB	922	G
1	EB	926	G
1	EB	927	G
1	EB	931	C
1	EB	934	C
1	EB	935	A
1	EB	937	A
1	EB	956	U
1	EB	960	U
1	EB	966	M2G
1	EB	968	A
1	EB	969	A
1	EB	971	G
1	EB	974	A
1	EB	975	A

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Mol	Chain	Res	Type
1	EB	976	G
1	EB	977	A
1	EB	989	C
1	EB	992	U
1	EB	993	G
1	EB	994	A
1	EB	998(A)	G
1	EB	1000	A
1	EB	1001	G
1	EB	1004	A
1	EB	1005	A
1	EB	1006	C
1	EB	1007	C
1	EB	1008	C
1	EB	1009	G
1	EB	1012	U
1	EB	1015	A
1	EB	1022	G
1	EB	1023	G
1	EB	1024	G
1	EB	1025	U
1	EB	1027	C
1	EB	1028(A)	C
1	EB	1028(B)	C
1	EB	1028(C)	C
1	EB	1029	G
1	EB	1030	C
1	EB	1031	G
1	EB	1032(A)	A
1	EB	1032(B)	G
1	EB	1032(C)	G
1	EB	1033	G
1	EB	1037	C
1	EB	1044	A
1	EB	1046	A
1	EB	1048	G
1	EB	1053	G
1	EB	1060	C
1	EB	1065	U
1	EB	1081	G
1	EB	1094	G
1	EB	1095	U

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Mol	Chain	Res	Type
1	EB	1096	C
1	EB	1101	A
1	EB	1104	G
1	EB	1112	C
1	EB	1113	C
1	EB	1116	C
1	EB	1124	G
1	EB	1125	U
1	EB	1126	U
1	EB	1129	C
1	EB	1132	C
1	EB	1136	U
1	EB	1137	C
1	EB	1139	G
1	EB	1140	C
1	EB	1145	C
1	EB	1148	U
1	EB	1152	A
1	EB	1154	G
1	EB	1155	G
1	EB	1157	A
1	EB	1159	U
1	EB	1160	G
1	EB	1164	G
1	EB	1175	G
1	EB	1178	G
1	EB	1182	G
1	EB	1191	A
1	EB	1196	U
1	EB	1197	G
1	EB	1202	G
1	EB	1207	2MG
1	EB	1209	C
1	EB	1212	U
1	EB	1213	A
1	EB	1214	C
1	EB	1225	A
1	EB	1226	C
1	EB	1227	A
1	EB	1229	A
1	EB	1238	A
1	EB	1241	G

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Mol	Chain	Res	Type
1	EB	1245	A
1	EB	1250	A
1	EB	1252	A
1	EB	1256	A
1	EB	1257	U
1	EB	1258	G
1	EB	1263	C
1	EB	1265	G
1	EB	1266	G
1	EB	1268	A
1	EB	1269	A
1	EB	1274	G
1	EB	1275	A
1	EB	1279	A
1	EB	1280	A
1	EB	1282	C
1	EB	1285	A
1	EB	1286	A
1	EB	1287	A
1	EB	1293	G
1	EB	1299	A
1	EB	1300	G
1	EB	1315	U
1	EB	1320	C
1	EB	1322	C
1	EB	1329	A
1	EB	1334	G
1	EB	1336	C
1	EB	1345	U
1	EB	1346	A
1	EB	1347	G
1	EB	1359	C
1	EB	1360	A
1	EB	1362(B)	C
1	EB	1363	A
1	EB	1364	U
1	EB	1365	G
1	EB	1370	G
1	EB	1397	C
1	EB	1398	A
1	EB	1406	U
1	EB	1412	C

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Mol	Chain	Res	Type
1	EB	1419	G
1	EB	1442	G
1	EB	1451	A
1	EB	1452	C
1	EB	1453	G
1	EB	1454	G
1	EB	1460	A
1	EB	1487	G
1	EB	1490	C
1	EB	1492	A
1	EB	1493	A
1	EB	1497	G
1	EB	1498	UR3
1	EB	1499	A
1	EB	1502	A
1	EB	1503	A
1	EB	1504	G
1	EB	1506	U
1	EB	1507	A
1	EB	1517	G
1	EB	1529	G
1	EB	1530	G
1	EB	1531	A
1	EB	1532	U
2	FB	10	G
2	FB	34	C
2	FB	35	G
2	FB	46	C
2	FB	54	G
2	FB	55	G
2	FB	61	G
2	FB	64	A
2	FB	71	A
2	FB	72	U
2	FB	74	A
2	FB	75	G
2	FB	91	A
2	FB	92	G
2	FB	93	C
2	FB	110	G
2	FB	118	A
2	FB	120	U

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Mol	Chain	Res	Type
2	FB	125	G
2	FB	140	A
2	FB	149	A
2	FB	154(A)	C
2	FB	155	C
2	FB	163	U
2	FB	165	U
2	FB	174	C
2	FB	181	A
2	FB	196	A
2	FB	205	G
2	FB	212	G
2	FB	213	A
2	FB	214	G
2	FB	215	G
2	FB	216	A
2	FB	221	A
2	FB	222	A
2	FB	225	A
2	FB	228	A
2	FB	229	A
2	FB	233	A
2	FB	248	G
2	FB	249	C
2	FB	260	G
2	FB	261	G
2	FB	266	G
2	FB	267	C
2	FB	269	U
2	FB	270(E)	C
2	FB	270(I)	C
2	FB	270(L)	C
2	FB	270(M)	U
2	FB	270(N)	U
2	FB	270(O)	G
2	FB	270(Q)	C
2	FB	271(C)	G
2	FB	271	G
2	FB	273(E)	C
2	FB	275	G
2	FB	276	A
2	FB	277	C

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Mol	Chain	Res	Type
2	FB	284	U
2	FB	302	C
2	FB	310	A
2	FB	311	A
2	FB	317	G
2	FB	319	C
2	FB	324	A
2	FB	329	G
2	FB	330	A
2	FB	333	G
2	FB	345	A
2	FB	352	G
2	FB	353	G
2	FB	354	G
2	FB	357	A
2	FB	362	U
2	FB	363(A)	G
2	FB	363(G)	A
2	FB	364	C
2	FB	371	A
2	FB	372	G
2	FB	376	C
2	FB	385	C
2	FB	386	G
2	FB	396	G
2	FB	405	U
2	FB	411	G
2	FB	412	A
2	FB	414	C
2	FB	443	A
2	FB	456	C
2	FB	457	A
2	FB	464	U
2	FB	466	A
2	FB	467	G
2	FB	471	A
2	FB	481	G
2	FB	496	G
2	FB	502	A
2	FB	504	U
2	FB	505	A
2	FB	508	G

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Mol	Chain	Res	Type
2	FB	509	C
2	FB	528	A
2	FB	529	A
2	FB	530	G
2	FB	531	C
2	FB	532	A
2	FB	533	G
2	FB	543	C
2	FB	546	C
2	FB	549	G
2	FB	556	G
2	FB	562	U
2	FB	563	G
2	FB	567	A
2	FB	568	U
2	FB	573	G
2	FB	575	A
2	FB	587	C
2	FB	588	U
2	FB	597	U
2	FB	603	A
2	FB	604	G
2	FB	607	U
2	FB	614	U
2	FB	615	G
2	FB	617	G
2	FB	627	A
2	FB	631	A
2	FB	632	A
2	FB	634	C
2	FB	637	A
2	FB	639	U
2	FB	645	C
2	FB	646	A
2	FB	648	G
2	FB	653	C
2	FB	654	U
2	FB	668	G
2	FB	670	A
2	FB	686	G
2	FB	695	G
2	FB	715	G

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Mol	Chain	Res	Type
2	FB	717	G
2	FB	730	C
2	FB	748	G
2	FB	758	C
2	FB	765	G
2	FB	775	G
2	FB	776	G
2	FB	782	A
2	FB	783	A
2	FB	784	A
2	FB	785	G
2	FB	789	A
2	FB	793	A
2	FB	800	A
2	FB	805	G
2	FB	812	C
2	FB	819	A
2	FB	825	C
2	FB	827	U
2	FB	828	U
2	FB	831	G
2	FB	835	A
2	FB	846	C
2	FB	855	G
2	FB	859	G
2	FB	860	U
2	FB	873	G
2	FB	878	A
2	FB	882	G
2	FB	883	G
2	FB	887	A
2	FB	888	C
2	FB	893	C
2	FB	894	C
2	FB	895	U
2	FB	896	A
2	FB	907	U
2	FB	910	A
2	FB	917	A
2	FB	931	G
2	FB	932	G
2	FB	938	G

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Mol	Chain	Res	Type
2	FB	941	A
2	FB	945	A
2	FB	946	G
2	FB	958	U
2	FB	959	A
2	FB	961	C
2	FB	968	G
2	FB	973	A
2	FB	974(A)	G
2	FB	974(B)	C
2	FB	975	G
2	FB	978	G
2	FB	980	A
2	FB	983	A
2	FB	989	G
2	FB	990	A
2	FB	996	A
2	FB	1012	U
2	FB	1013	C
2	FB	1021	A
2	FB	1022	G
2	FB	1023	U
2	FB	1024	G
2	FB	1025	G
2	FB	1026	U
2	FB	1027	A
2	FB	1030	G
2	FB	1033	U
2	FB	1038	C
2	FB	1039	G
2	FB	1043	C
2	FB	1045	A
2	FB	1046	A
2	FB	1047	G
2	FB	1051	G
2	FB	1054	A
2	FB	1057	A
2	FB	1058	G
2	FB	1059	G
2	FB	1060	U
2	FB	1061	U
2	FB	1062	G

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Mol	Chain	Res	Type
2	FB	1063	G
2	FB	1064	C
2	FB	1065	U
2	FB	1066	U
2	FB	1067	A
2	FB	1068	G
2	FB	1069	A
2	FB	1070	A
2	FB	1071	G
2	FB	1072	C
2	FB	1073	A
2	FB	1075	C
2	FB	1076	C
2	FB	1077	A
2	FB	1078	U
2	FB	1079	C
2	FB	1082	U
2	FB	1083	U
2	FB	1085	A
2	FB	1087	G
2	FB	1088	A
2	FB	1089	G
2	FB	1092	C
2	FB	1093	G
2	FB	1094	U
2	FB	1095	A
2	FB	1096	A
2	FB	1097	U
2	FB	1098	A
2	FB	1099	G
2	FB	1100	C
2	FB	1101	U
2	FB	1104	C
2	FB	1105	U
2	FB	1107	G
2	FB	1110	G
2	FB	1111	A
2	FB	1112	G
2	FB	1116	C
2	FB	1125	G
2	FB	1126	A
2	FB	1129	A

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Mol	Chain	Res	Type
2	FB	1130	U
2	FB	1131	G
2	FB	1132	A
2	FB	1135	C
2	FB	1136	G
2	FB	1139	G
2	FB	1142(B)	A
2	FB	1143	A
2	FB	1155	A
2	FB	1156	A
2	FB	1171	G
2	FB	1174	A
2	FB	1175	U
2	FB	1176	G
2	FB	1177	A
2	FB	1205	U
2	FB	1211	U
2	FB	1212	G
2	FB	1220	A
2	FB	1227	G
2	FB	1248	G
2	FB	1249	U
2	FB	1251	C
2	FB	1252	G
2	FB	1253	A
2	FB	1256	G
2	FB	1267	U
2	FB	1268	A
2	FB	1271	G
2	FB	1272	A
2	FB	1273	U
2	FB	1287	A
2	FB	1300	U
2	FB	1301	A
2	FB	1302	A
2	FB	1303	G
2	FB	1309	G
2	FB	1312	U
2	FB	1317	A
2	FB	1325	G
2	FB	1345	C
2	FB	1349	A

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Mol	Chain	Res	Type
2	FB	1352	U
2	FB	1359	A
2	FB	1360	A
2	FB	1365	A
2	FB	1378	A
2	FB	1379	A
2	FB	1380	G
2	FB	1384	A
2	FB	1385	G
2	FB	1386	C
2	FB	1388	G
2	FB	1394	U
2	FB	1395	A
2	FB	1403	C
2	FB	1411	C
2	FB	1412	A
2	FB	1416	G
2	FB	1417	C
2	FB	1419	A
2	FB	1420	U
2	FB	1421	G
2	FB	1427	A
2	FB	1428	C
2	FB	1429	G
2	FB	1444(B)	A
2	FB	1449(B)	A
2	FB	1453	A
2	FB	1454	U
2	FB	1455	G
2	FB	1459	G
2	FB	1460	A
2	FB	1461	G
2	FB	1467	C
2	FB	1471	A
2	FB	1475	G
2	FB	1478	G
2	FB	1483	G
2	FB	1485	G
2	FB	1493	C
2	FB	1497	U
2	FB	1508	A
2	FB	1509	A

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Mol	Chain	Res	Type
2	FB	1510	A
2	FB	1511	A
2	FB	1515	C
2	FB	1530	G
2	FB	1532	C
2	FB	1534	G
2	FB	1535	U
2	FB	1536	A
2	FB	1537	C
2	FB	1538	G
2	FB	1544	C
2	FB	1558	A
2	FB	1559	G
2	FB	1561	G
2	FB	1566	A
2	FB	1569	A
2	FB	1570	A
2	FB	1578	U
2	FB	1585	C
2	FB	1587	A
2	FB	1602	U
2	FB	1608	A
2	FB	1616	A
2	FB	1618	A
2	FB	1622	G
2	FB	1630(B)	C
2	FB	1646	C
2	FB	1647	G
2	FB	1648	C
2	FB	1654	A
2	FB	1669	A
2	FB	1674	G
2	FB	1685	C
2	FB	1699	G
2	FB	1700	A
2	FB	1701	A
2	FB	1708	C
2	FB	1729	A
2	FB	1730	U
2	FB	1731	G
2	FB	1743	G
2	FB	1748	G

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Mol	Chain	Res	Type
2	FB	1750	G
2	FB	1756	G
2	FB	1759	A
2	FB	1762	A
2	FB	1763	G
2	FB	1764	G
2	FB	1773	A
2	FB	1776	G
2	FB	1779	U
2	FB	1780	A
2	FB	1791	A
2	FB	1800	C
2	FB	1811	G
2	FB	1816	G
2	FB	1827	C
2	FB	1829	A
2	FB	1830	C
2	FB	1833	U
2	FB	1839	G
2	FB	1847	A
2	FB	1848	A
2	FB	1878	G
2	FB	1879	C
2	FB	1889	A
2	FB	1898	U
2	FB	1900	A
2	FB	1903	G
2	FB	1905	C
2	FB	1906	G
2	FB	1913	A
2	FB	1914	C
2	FB	1918	A
2	FB	1919	A
2	FB	1929	G
2	FB	1930	G
2	FB	1934	C
2	FB	1936	A
2	FB	1938	A
2	FB	1940	U
2	FB	1941	C
2	FB	1952	A
2	FB	1955	U

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Mol	Chain	Res	Type
2	FB	1963	U
2	FB	1966	A
2	FB	1967	C
2	FB	1970	A
2	FB	1971	A
2	FB	1972	A
2	FB	1981	A
2	FB	1991	U
2	FB	1992	G
2	FB	1993	U
2	FB	1997	G
2	FB	2002	G
2	FB	2020	A
2	FB	2023	G
2	FB	2030	A
2	FB	2031	A
2	FB	2032	G
2	FB	2033	A
2	FB	2043	C
2	FB	2055	C
2	FB	2056	G
2	FB	2060	A
2	FB	2061	G
2	FB	2062	A
2	FB	2069	G
2	FB	2087	G
2	FB	2110	G
2	FB	2118	U
2	FB	2122	U
2	FB	2124	G
2	FB	2125	G
2	FB	2126	A
2	FB	2127	G
2	FB	2129	C
2	FB	2130	U
2	FB	2132	U
2	FB	2133	G
2	FB	2134	A
2	FB	2136	C
2	FB	2137	C
2	FB	2138	C
2	FB	2142	C

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Mol	Chain	Res	Type
2	FB	2145	C
2	FB	2146	C
2	FB	2148	G
2	FB	2152	G
2	FB	2156	G
2	FB	2157	G
2	FB	2158	A
2	FB	2162	G
2	FB	2164	C
2	FB	2165	G
2	FB	2167	U
2	FB	2168	G
2	FB	2169	A
2	FB	2171	A
2	FB	2172	U
2	FB	2173	A
2	FB	2175	C
2	FB	2176	A
2	FB	2180	U
2	FB	2181	G
2	FB	2185	C
2	FB	2187	G
2	FB	2189	U
2	FB	2190	G
2	FB	2198	A
2	FB	2210	G
2	FB	2211	G
2	FB	2212	A
2	FB	2213	U
2	FB	2225	A
2	FB	2226	C
2	FB	2227	A
2	FB	2238	G
2	FB	2239	G
2	FB	2246	G
2	FB	2252	G
2	FB	2269	A
2	FB	2275	C
2	FB	2278	A
2	FB	2279	G
2	FB	2283	C
2	FB	2286	A

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Mol	Chain	Res	Type
2	FB	2287	A
2	FB	2288	A
2	FB	2305	A
2	FB	2308	G
2	FB	2309	A
2	FB	2311	A
2	FB	2312	U
2	FB	2316	C
2	FB	2319	G
2	FB	2320	A
2	FB	2321	G
2	FB	2325	G
2	FB	2327	A
2	FB	2334	G
2	FB	2336	A
2	FB	2343	C
2	FB	2347	C
2	FB	2350	C
2	FB	2358	G
2	FB	2379	G
2	FB	2383	G
2	FB	2385	C
2	FB	2396	G
2	FB	2402	C
2	FB	2406	U
2	FB	2413	G
2	FB	2414	G
2	FB	2422	A
2	FB	2425	A
2	FB	2426	A
2	FB	2427	C
2	FB	2429	G
2	FB	2430	A
2	FB	2432	A
2	FB	2434	A
2	FB	2435	A
2	FB	2439	A
2	FB	2440	C
2	FB	2441	C
2	FB	2448	A
2	FB	2458	G
2	FB	2459	A

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Mol	Chain	Res	Type
2	FB	2470	G
2	FB	2476	A
2	FB	2484	G
2	FB	2501	C
2	FB	2502	G
2	FB	2504	U
2	FB	2505	G
2	FB	2506	U
2	FB	2513	G
2	FB	2518	A
2	FB	2520	C
2	FB	2522	U
2	FB	2525	G
2	FB	2529	G
2	FB	2554	U
2	FB	2566	A
2	FB	2567	G
2	FB	2571	C
2	FB	2572	A
2	FB	2573	C
2	FB	2582	G
2	FB	2585	U
2	FB	2586	C
2	FB	2596	U
2	FB	2597	G
2	FB	2602	A
2	FB	2603	G
2	FB	2609	U
2	FB	2612	C
2	FB	2615	U
2	FB	2630	G
2	FB	2634	G
2	FB	2641	G
2	FB	2661	G
2	FB	2673	G
2	FB	2689	U
2	FB	2691	C
2	FB	2697	G
2	FB	2698	U
2	FB	2702	U
2	FB	2703	C
2	FB	2712(A)	A

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Mol	Chain	Res	Type
2	FB	2713	A
2	FB	2714	G
2	FB	2720	U
2	FB	2726	U
2	FB	2733	A
2	FB	2735	G
2	FB	2748	A
2	FB	2757	A
2	FB	2764	A
2	FB	2765	A
2	FB	2775	A
2	FB	2777	G
2	FB	2778	A
2	FB	2780	G
2	FB	2790	A
2	FB	2791	C
2	FB	2792	G
2	FB	2793	G
2	FB	2794	C
2	FB	2797	U
2	FB	2799	A
2	FB	2801	A
2	FB	2802	G
2	FB	2804	C
2	FB	2807	G
2	FB	2818	G
2	FB	2820	A
2	FB	2821	A
2	FB	2858	C
2	FB	2872	G
2	FB	2876	G
2	FB	2880	C
2	FB	2883	A
2	FB	2894	G
2	FB	2895	U
2	FB	2897	U
3	GB	2	C
3	GB	9	G
3	GB	12	C
3	GB	13	A
3	GB	21	G
3	GB	25	A

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Mol	Chain	Res	Type
3	GB	42	C
3	GB	44	G
3	GB	56	G
3	GB	57	A
3	GB	65	C
3	GB	66	A
3	GB	67	G
3	GB	73	A
3	GB	84	C
3	GB	88	C
3	GB	89(B)	A
3	GB	90	C
3	GB	96	G
3	GB	109	G
3	GB	118	G
4	HB	6	G
4	HB	7	G
4	HB	8	4SU
4	HB	9	G
4	HB	12	G
4	HB	14	A
4	HB	16	C
4	HB	17	C
4	HB	18	G
4	HB	19	G
4	HB	20	U
4	HB	22	G
4	HB	27	U
4	HB	28	C
4	HB	35	A
4	HB	37	A
4	HB	40	C
4	HB	47	U
4	HB	48	C
4	HB	49	G
4	HB	51	C
4	HB	56	C
4	HB	65	C
4	HB	71	C
4	HB	73	A
4	HB	76	A
34	LC	14	A

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Mol	Chain	Res	Type
34	LC	15	A
34	LC	18	G
34	LC	21	A
34	LC	22	A
4	MC	2	G
4	MC	8	4SU
4	MC	17(A)	U
4	MC	19	G
4	MC	21	A
4	MC	25	C
4	MC	29	G
4	MC	31	G
4	MC	42	G
4	MC	46	G
4	MC	47	U
4	MC	58	A
4	MC	59	A
4	MC	63	G
4	MC	65	C
4	MC	71	C
4	MC	72	A
4	MC	73	A
4	MC	75	C
4	MC	76	A

All (73) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	A	115	G
1	A	495	A
1	A	509	A
1	A	687	A
1	A	723	U
1	A	748	C
1	A	842	C
1	A	913	A
1	A	1032(A)	A
1	A	1136	U
1	A	1201	A
1	A	1358	U
1	A	1453	G
2	B	34	C

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Mol	Chain	Res	Type
2	B	196	A
2	B	301	G
2	B	507	A
2	B	528	A
2	B	545	G
2	B	645	C
2	B	784	A
2	B	1026	U
2	B	1060	U
2	B	1210	A
2	B	1267	U
2	B	1420	U
2	B	1531	C
2	B	1913	A
2	B	1939	5MU
2	B	1944	U
2	B	1992	G
2	B	2145	C
2	B	2439	A
2	B	2602	A
2	B	2756	U
3	C	65	C
1	EB	115	G
1	EB	495	A
1	EB	509	A
1	EB	687	A
1	EB	723	U
1	EB	748	C
1	EB	842	C
1	EB	913	A
1	EB	1032(A)	A
1	EB	1136	U
1	EB	1201	A
1	EB	1358	U
1	EB	1453	G
2	FB	34	C
2	FB	301	G
2	FB	507	A
2	FB	528	A
2	FB	545	G
2	FB	645	C
2	FB	784	A

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Mol	Chain	Res	Type
2	FB	958	U
2	FB	974(A)	G
2	FB	1026	U
2	FB	1060	U
2	FB	1210	A
2	FB	1267	U
2	FB	1379	A
2	FB	1420	U
2	FB	1531	C
2	FB	1939	5MU
2	FB	1944	U
2	FB	1992	G
2	FB	2145	C
2	FB	2439	A
2	FB	2602	A
2	FB	2756	U
3	GB	65	C

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

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	FB	1915	2	15,22,23	1.67	3 (20%)	16,32,35	2.12	2 (12%)
1	5MC	A	967	1	15,22,23	1.40	2 (13%)	19,32,35	1.15	2 (10%)
4	4SU	HB	8	4	14,21,22	6.52	3 (21%)	15,30,33	2.77	2 (13%)
2	5MU	B	1939	2	15,22,23	1.64	4 (26%)	16,32,35	1.63	2 (12%)
1	PSU	A	516	1	17,21,22	1.78	4 (23%)	20,30,33	3.54	6 (30%)
1	5MC	A	1404	1	15,22,23	1.32	1 (6%)	19,32,35	1.14	2 (10%)
1	7MG	EB	527	1	22,26,27	2.27	7 (31%)	28,39,42	1.94	7 (25%)
2	2MU	FB	2552	2	14,22,24	2.32	3 (21%)	14,31,36	1.46	2 (14%)
1	4OC	EB	1402	1	16,23,24	0.87	1 (6%)	17,32,35	2.16	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
46	0TD	YC	92	46	4,9,10	1.42	1 (25%)	3,11,13	0.96	0
4	PSU	MC	55	4	17,21,22	1.62	3 (17%)	20,30,33	3.40	5 (25%)
2	5MC	FB	1942	56,2	15,22,23	1.53	2 (13%)	19,32,35	1.44	4 (21%)
1	5MC	EB	967	1	15,22,23	1.41	2 (13%)	19,32,35	1.33	3 (15%)
2	4OC	B	1920	2	15,22,24	0.93	1 (6%)	17,31,35	1.51	3 (17%)
1	M2G	A	966	1	20,27,28	2.25	4 (20%)	22,40,43	1.74	5 (22%)
4	5MU	IA	54	4	15,22,23	1.71	3 (20%)	16,32,35	1.85	1 (6%)
1	5MC	EB	1400	1	15,22,23	1.41	2 (13%)	19,32,35	1.32	2 (10%)
2	PSU	FB	1917	2	17,21,22	1.55	3 (17%)	20,30,33	3.35	6 (30%)
2	PSU	B	1911	2	17,21,22	1.70	3 (17%)	20,30,33	3.81	5 (25%)
1	UR3	A	1498	1	14,22,23	1.60	1 (7%)	15,32,35	0.80	0
1	MA6	EB	1519	1	19,26,27	1.59	3 (15%)	18,38,41	1.22	2 (11%)
2	2MA	FB	2503	56,2	17,25,26	1.50	2 (11%)	19,37,40	1.81	3 (15%)
4	4SU	D	8	4	14,21,22	6.51	3 (21%)	15,30,33	2.77	2 (13%)
2	2MU	B	2552	2	14,22,24	2.46	3 (21%)	14,31,36	1.47	1 (7%)
2	5MU	B	1915	56,2	15,22,23	1.63	3 (20%)	16,32,35	1.61	2 (12%)
1	5MC	A	1407	1	15,22,23	1.33	2 (13%)	19,32,35	1.18	1 (5%)
1	5MC	EB	1404	1	15,22,23	1.33	2 (13%)	19,32,35	1.22	2 (10%)
1	UR3	EB	1498	1	14,22,23	1.57	1 (7%)	15,32,35	0.83	0
4	PSU	IA	55	4	17,21,22	1.63	3 (17%)	20,30,33	3.42	5 (25%)
1	7MG	A	527	1	22,26,27	2.18	7 (31%)	28,39,42	1.85	8 (28%)
4	5MU	D	54	4	15,22,23	1.70	3 (20%)	16,32,35	1.88	2 (12%)
2	PSU	B	2605	2	17,21,22	1.83	3 (17%)	20,30,33	3.54	6 (30%)
46	0TD	UA	92	46	4,9,10	1.68	1 (25%)	3,11,13	1.40	1 (33%)
2	5MC	B	1942	2	15,22,23	1.34	2 (13%)	19,32,35	1.56	4 (21%)
4	4SU	IA	8	4	14,21,22	6.51	3 (21%)	15,30,33	2.75	2 (13%)
4	5MU	HB	54	4	15,22,23	1.65	3 (20%)	16,32,35	1.85	2 (12%)
4	4SU	MC	8	4	14,21,22	6.52	3 (21%)	15,30,33	2.73	2 (13%)
4	5MU	MC	54	4	15,22,23	1.78	3 (20%)	16,32,35	2.02	1 (6%)
1	2MG	A	1207	1	19,26,27	2.45	2 (10%)	21,38,41	1.84	7 (33%)
1	MA6	A	1518	1	19,26,27	1.69	3 (15%)	18,38,41	1.57	2 (11%)
1	M2G	EB	966	1	20,27,28	2.21	4 (20%)	22,40,43	1.72	5 (22%)
1	PSU	EB	516	1	17,21,22	1.72	4 (23%)	20,30,33	3.67	6 (30%)
2	PSU	FB	2605	2	17,21,22	1.51	3 (17%)	20,30,33	3.18	6 (30%)
1	MA6	A	1519	1	19,26,27	1.72	3 (15%)	18,38,41	1.23	2 (11%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
1	5MC	A	1400	1	15,22,23	1.47	2 (13%)	19,32,35	1.24	2 (10%)
2	5MC	B	1962	2	15,22,23	1.38	2 (13%)	19,32,35	1.28	3 (15%)
2	OMG	FB	2251	2,4	18,26,27	1.81	2 (11%)	20,38,41	1.65	5 (25%)
2	5MU	FB	1939	2	15,22,23	1.53	3 (20%)	16,32,35	1.77	3 (18%)
1	MA6	EB	1518	1	19,26,27	1.77	3 (15%)	18,38,41	1.69	3 (16%)
2	4OC	FB	1920	2	15,22,24	0.89	1 (6%)	17,31,35	1.43	3 (17%)
2	5MC	FB	1962	2	15,22,23	1.52	2 (13%)	19,32,35	1.32	4 (21%)
1	2MG	EB	1207	1,56	19,26,27	2.46	2 (10%)	21,38,41	1.98	7 (33%)
2	OMG	B	2251	2	18,26,27	1.90	4 (22%)	20,38,41	1.76	5 (25%)
2	2MA	B	2503	2	17,25,26	1.47	4 (23%)	19,37,40	2.07	3 (15%)
2	PSU	B	1917	2	17,21,22	1.37	3 (17%)	20,30,33	3.26	6 (30%)
2	PSU	FB	1911	2	17,21,22	1.74	4 (23%)	20,30,33	3.27	5 (25%)
1	4OC	A	1402	1	16,23,24	0.86	1 (6%)	17,32,35	1.92	2 (11%)
4	PSU	HB	55	4	17,21,22	1.71	4 (23%)	20,30,33	3.44	5 (25%)
4	PSU	D	55	4	17,21,22	1.65	4 (23%)	20,30,33	3.47	5 (25%)
4	5MC	D	32	4	15,22,23	1.45	2 (13%)	19,32,35	1.45	3 (15%)
1	5MC	EB	1407	1	15,22,23	1.39	2 (13%)	19,32,35	1.22	2 (10%)
4	5MC	HB	32	4	15,22,23	1.44	2 (13%)	19,32,35	1.37	3 (15%)
4	5MC	MC	32	4	15,22,23	1.44	2 (13%)	19,32,35	1.66	5 (26%)
4	5MC	IA	32	4	15,22,23	1.51	2 (13%)	19,32,35	1.72	4 (21%)

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	FB	1915	2	-	0/5/25/26	0/2/2/2
1	5MC	A	967	1	-	0/5/25/26	0/2/2/2
4	4SU	HB	8	4	-	1/5/25/26	0/2/2/2
2	5MU	B	1939	2	-	0/5/25/26	0/2/2/2
1	PSU	A	516	1	-	1/7/25/26	0/2/2/2
1	5MC	A	1404	1	-	0/5/25/26	0/2/2/2
1	7MG	EB	527	1	-	3/7/37/38	0/3/3/3
2	2MU	FB	2552	2	-	1/7/27/28	0/2/2/2
1	4OC	EB	1402	1	-	4/9/29/30	0/2/2/2
46	0TD	YC	92	46	-	1/3/12/14	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	PSU	MC	55	4	-	0/7/25/26	0/2/2/2
2	5MC	FB	1942	56,2	-	0/5/25/26	0/2/2/2
1	5MC	EB	967	1	-	0/5/25/26	0/2/2/2
2	4OC	B	1920	2	-	1/7/27/30	0/2/2/2
1	M2G	A	966	1	-	1/7/29/30	0/3/3/3
4	5MU	IA	54	4	-	0/5/25/26	0/2/2/2
1	5MC	EB	1400	1	-	0/5/25/26	0/2/2/2
2	PSU	FB	1917	2	-	2/7/25/26	0/2/2/2
2	PSU	B	1911	2	-	0/7/25/26	0/2/2/2
1	UR3	A	1498	1	-	2/5/25/26	0/2/2/2
1	MA6	EB	1519	1	-	6/7/29/30	0/3/3/3
2	2MA	FB	2503	56,2	-	1/3/25/26	0/3/3/3
4	4SU	D	8	4	-	1/5/25/26	0/2/2/2
2	2MU	B	2552	2	-	1/7/27/28	0/2/2/2
2	5MU	B	1915	56,2	-	0/5/25/26	0/2/2/2
1	5MC	A	1407	1	-	0/5/25/26	0/2/2/2
1	5MC	EB	1404	1	-	0/5/25/26	0/2/2/2
1	UR3	EB	1498	1	-	2/5/25/26	0/2/2/2
4	PSU	IA	55	4	-	0/7/25/26	0/2/2/2
1	7MG	A	527	1	-	3/7/37/38	0/3/3/3
4	5MU	D	54	4	-	0/5/25/26	0/2/2/2
2	PSU	B	2605	2	-	0/7/25/26	0/2/2/2
46	0TD	UA	92	46	-	1/3/12/14	-
2	5MC	B	1942	2	-	0/5/25/26	0/2/2/2
4	4SU	IA	8	4	-	0/5/25/26	0/2/2/2
4	5MU	HB	54	4	-	0/5/25/26	0/2/2/2
4	4SU	MC	8	4	-	0/5/25/26	0/2/2/2
4	5MU	MC	54	4	-	0/5/25/26	0/2/2/2
1	2MG	A	1207	1	-	4/5/27/28	0/3/3/3
1	MA6	A	1518	1	-	5/7/29/30	0/3/3/3
1	M2G	EB	966	1	-	1/7/29/30	0/3/3/3
1	PSU	EB	516	1	-	1/7/25/26	0/2/2/2
2	PSU	FB	2605	2	-	0/7/25/26	0/2/2/2
1	MA6	A	1519	1	-	6/7/29/30	0/3/3/3
1	5MC	A	1400	1	-	0/5/25/26	0/2/2/2
2	5MC	B	1962	2	-	2/5/25/26	0/2/2/2
2	OMG	FB	2251	2,4	-	2/5/27/28	0/3/3/3
2	5MU	FB	1939	2	-	0/5/25/26	0/2/2/2
1	MA6	EB	1518	1	-	5/7/29/30	0/3/3/3
2	4OC	FB	1920	2	-	1/7/27/30	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	5MC	FB	1962	2	-	1/5/25/26	0/2/2/2
1	2MG	EB	1207	1,56	-	4/5/27/28	0/3/3/3
2	OMG	B	2251	2	-	3/5/27/28	0/3/3/3
2	2MA	B	2503	2	-	1/3/25/26	0/3/3/3
2	PSU	B	1917	2	-	2/7/25/26	0/2/2/2
2	PSU	FB	1911	2	-	0/7/25/26	0/2/2/2
1	4OC	A	1402	1	-	4/9/29/30	0/2/2/2
4	PSU	HB	55	4	-	1/7/25/26	0/2/2/2
4	PSU	D	55	4	-	1/7/25/26	0/2/2/2
4	5MC	D	32	4	-	0/5/25/26	0/2/2/2
1	5MC	EB	1407	1	-	0/5/25/26	0/2/2/2
4	5MC	HB	32	4	-	0/5/25/26	0/2/2/2
4	5MC	MC	32	4	-	0/5/25/26	0/2/2/2
4	5MC	IA	32	4	-	0/5/25/26	0/2/2/2

All (173) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	MC	8	4SU	C4-S4	-23.84	1.23	1.67
4	HB	8	4SU	C4-S4	-23.81	1.23	1.67
4	IA	8	4SU	C4-S4	-23.80	1.23	1.67
4	D	8	4SU	C4-S4	-23.79	1.23	1.67
1	A	1207	2MG	C2-N2	8.06	1.40	1.34
1	EB	1207	2MG	C2-N2	7.96	1.40	1.34
1	EB	527	7MG	O6-C6	7.18	1.42	1.24
1	A	527	7MG	O6-C6	6.98	1.42	1.24
1	EB	1207	2MG	O6-C6	6.52	1.40	1.24
2	B	2552	2MU	O4-C4	6.37	1.40	1.24
1	A	1207	2MG	O6-C6	6.33	1.40	1.24
1	EB	966	M2G	C2-N2	6.18	1.44	1.34
1	EB	966	M2G	O6-C6	6.14	1.40	1.24
1	A	966	M2G	O6-C6	6.08	1.39	1.24
2	FB	2552	2MU	O4-C4	5.97	1.39	1.24
1	A	966	M2G	C2-N2	5.88	1.44	1.34
2	B	2251	OMG	O6-C6	5.66	1.38	1.24
1	A	1498	UR3	O4-C4	5.53	1.38	1.24
2	FB	2251	OMG	O6-C6	5.51	1.38	1.24
1	EB	1498	UR3	O4-C4	5.45	1.38	1.24
1	A	1518	MA6	C4-N3	5.10	1.42	1.35
1	EB	1518	MA6	C4-N3	5.04	1.42	1.35
1	A	1519	MA6	C4-N3	4.77	1.42	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	2552	2MU	C3'-C2'	-4.74	1.42	1.52
1	EB	1519	MA6	C4-N3	4.63	1.42	1.35
2	FB	2552	2MU	C3'-C2'	-4.51	1.42	1.52
1	A	516	PSU	C4-N3	4.42	1.40	1.33
2	B	1911	PSU	C4-N3	4.41	1.40	1.33
4	MC	54	5MU	O4-C4	4.38	1.35	1.24
4	D	54	5MU	O4-C4	4.38	1.35	1.24
4	HB	55	PSU	C4-N3	4.37	1.40	1.33
1	A	1400	5MC	C4-N4	4.36	1.45	1.34
4	D	8	4SU	C5-C4	4.36	1.43	1.38
4	HB	8	4SU	C5-C4	4.34	1.43	1.38
2	B	1939	5MU	O4-C4	4.32	1.35	1.24
2	B	2605	PSU	C5-C1'	4.31	1.55	1.52
2	FB	1962	5MC	C4-N4	4.30	1.44	1.34
2	FB	2251	OMG	C2-N2	4.29	1.42	1.33
4	D	55	PSU	C4-N3	4.28	1.40	1.33
4	HB	32	5MC	C4-N4	4.27	1.44	1.34
4	D	32	5MC	C4-N4	4.25	1.44	1.34
4	IA	54	5MU	O4-C4	4.24	1.35	1.24
4	MC	32	5MC	C4-N4	4.20	1.44	1.34
2	B	2503	2MA	C8-N7	4.18	1.42	1.34
1	A	1404	5MC	C4-N4	4.18	1.44	1.34
2	FB	2503	2MA	C8-N7	4.17	1.42	1.34
4	HB	54	5MU	O4-C4	4.14	1.35	1.24
4	IA	8	4SU	C5-C4	4.14	1.43	1.38
4	IA	32	5MC	C4-N4	4.14	1.44	1.34
4	MC	8	4SU	C5-C4	4.13	1.43	1.38
1	EB	516	PSU	C4-N3	4.13	1.40	1.33
4	IA	55	PSU	C4-N3	4.12	1.40	1.33
2	FB	1915	5MU	O4-C4	4.12	1.34	1.24
1	EB	967	5MC	C4-N4	4.12	1.44	1.34
2	B	2251	OMG	C2-N2	4.11	1.42	1.33
1	EB	1407	5MC	C4-N4	4.11	1.44	1.34
2	B	2605	PSU	C4-N3	4.10	1.40	1.33
2	FB	1942	5MC	C4-N4	4.09	1.44	1.34
2	FB	1911	PSU	C4-N3	4.09	1.40	1.33
1	A	967	5MC	C4-N4	4.08	1.44	1.34
4	MC	55	PSU	C4-N3	4.07	1.40	1.33
1	EB	1400	5MC	C4-N4	4.05	1.44	1.34
1	A	1519	MA6	C6-N1	3.93	1.38	1.33
2	B	1915	5MU	O4-C4	3.90	1.34	1.24
1	EB	527	7MG	C2-N2	3.90	1.41	1.33

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	EB	1518	MA6	C6-N1	3.90	1.38	1.33
2	FB	1939	5MU	O4-C4	3.86	1.34	1.24
2	FB	1942	5MC	C5-C4	-3.85	1.35	1.41
2	FB	1917	PSU	C4-N3	3.84	1.39	1.33
4	MC	54	5MU	C4-N3	3.73	1.39	1.33
2	FB	1911	PSU	C5-C1'	3.73	1.55	1.52
2	B	1942	5MC	C4-N4	3.71	1.43	1.34
1	EB	1404	5MC	C4-N4	3.70	1.43	1.34
1	EB	527	7MG	C6-C5	3.70	1.46	1.41
1	A	527	7MG	C2-N2	3.69	1.41	1.33
2	B	1962	5MC	C4-N4	3.61	1.43	1.34
1	A	1407	5MC	C4-N4	3.60	1.43	1.34
2	B	1917	PSU	C4-N3	3.56	1.39	1.33
1	A	516	PSU	C5-C1'	3.55	1.55	1.52
1	A	1518	MA6	C6-N1	3.52	1.38	1.33
1	EB	516	PSU	C5-C1'	3.47	1.55	1.52
4	D	54	5MU	C4-N3	3.47	1.39	1.33
4	IA	54	5MU	C4-N3	3.44	1.39	1.33
2	FB	1915	5MU	C4-N3	3.43	1.39	1.33
4	IA	32	5MC	C5-C4	-3.41	1.36	1.41
2	B	1962	5MC	C5-C4	-3.41	1.36	1.41
1	A	516	PSU	C6-N1	3.40	1.41	1.34
2	B	2605	PSU	C6-N1	3.38	1.41	1.34
2	FB	1962	5MC	C5-C4	-3.32	1.36	1.41
2	FB	2605	PSU	C4-N3	3.32	1.38	1.33
1	EB	516	PSU	C6-N1	3.31	1.41	1.34
1	A	527	7MG	C6-C5	3.30	1.46	1.41
4	HB	54	5MU	C4-N3	3.30	1.38	1.33
2	FB	1939	5MU	C4-C5	-3.30	1.34	1.41
2	FB	2605	PSU	C5-C1'	3.28	1.55	1.52
2	B	1942	5MC	C5-C4	-3.26	1.36	1.41
2	B	1911	PSU	C5-C1'	3.26	1.55	1.52
4	MC	55	PSU	C5-C1'	3.23	1.55	1.52
4	MC	32	5MC	C5-C4	-3.21	1.36	1.41
1	EB	1518	MA6	C2-N1	3.21	1.39	1.33
2	FB	1917	PSU	C6-N1	3.19	1.41	1.34
2	FB	2503	2MA	C2-N1	3.19	1.39	1.34
4	D	55	PSU	C6-N1	3.18	1.41	1.34
1	EB	1519	MA6	C6-N1	3.17	1.37	1.33
1	A	1519	MA6	C2-N1	3.15	1.39	1.33
2	B	1915	5MU	C4-N3	3.15	1.38	1.33
1	A	966	M2G	C4-N3	3.13	1.40	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	HB	55	PSU	C6-N1	3.10	1.41	1.34
1	A	1407	5MC	C5-C4	-3.10	1.36	1.41
1	A	967	5MC	C5-C4	-3.07	1.36	1.41
1	EB	967	5MC	C5-C4	-3.07	1.36	1.41
2	FB	1915	5MU	C4-C5	-3.02	1.35	1.41
2	B	1911	PSU	C6-N1	3.00	1.40	1.34
1	EB	1400	5MC	C5-C4	-3.00	1.37	1.41
2	FB	1911	PSU	C6-N1	2.98	1.40	1.34
46	UA	92	0TD	CB-SB	-2.97	1.77	1.84
2	FB	2605	PSU	C6-N1	2.96	1.40	1.34
1	EB	1404	5MC	C5-C4	-2.95	1.37	1.41
4	IA	55	PSU	C5-C1'	2.93	1.54	1.52
1	EB	1519	MA6	C2-N1	2.91	1.39	1.33
2	B	1915	5MU	C4-C5	-2.90	1.35	1.41
4	HB	55	PSU	C5-C1'	2.90	1.54	1.52
4	IA	55	PSU	C6-N1	2.87	1.40	1.34
4	MC	55	PSU	C6-N1	2.87	1.40	1.34
1	A	527	7MG	C4-N9	2.84	1.43	1.38
4	IA	54	5MU	C4-C5	-2.84	1.35	1.41
4	MC	54	5MU	C4-C5	-2.83	1.35	1.41
1	A	966	M2G	C6-C5	2.83	1.46	1.41
4	D	32	5MC	C5-C4	-2.81	1.37	1.41
1	EB	527	7MG	C5-N7	2.81	1.44	1.39
1	A	1400	5MC	C5-C4	-2.81	1.37	1.41
1	A	527	7MG	CM7-N7	-2.79	1.41	1.46
1	A	1518	MA6	C2-N1	2.77	1.39	1.33
1	EB	527	7MG	C2-N3	2.74	1.40	1.35
2	B	1939	5MU	C4-C5	-2.74	1.35	1.41
1	EB	527	7MG	CM7-N7	-2.72	1.41	1.46
1	EB	527	7MG	C4-N9	2.69	1.43	1.38
1	EB	1407	5MC	C5-C4	-2.64	1.37	1.41
2	B	1917	PSU	C6-N1	2.63	1.40	1.34
4	D	54	5MU	C4-C5	-2.61	1.35	1.41
2	B	2552	2MU	O3'-C3'	-2.59	1.36	1.43
4	HB	54	5MU	C4-C5	-2.59	1.36	1.41
1	EB	966	M2G	C4-N3	2.52	1.39	1.35
2	B	1939	5MU	C4-N3	2.51	1.37	1.33
2	B	2503	2MA	C2-N3	-2.49	1.29	1.34
2	FB	1920	4OC	C4-N4	2.49	1.42	1.35
4	HB	32	5MC	C5-C4	-2.49	1.37	1.41
2	B	1917	PSU	O4'-C1'	-2.48	1.40	1.44
4	D	55	PSU	C5-C1'	2.47	1.54	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	527	7MG	C5-N7	2.47	1.44	1.39
1	A	1402	4OC	C4-N4	2.45	1.41	1.36
2	B	1920	4OC	C4-N4	2.44	1.42	1.35
4	MC	8	4SU	C6-C5	-2.44	1.32	1.38
46	YC	92	0TD	CB-SB	-2.40	1.78	1.84
1	A	527	7MG	C2-N3	2.39	1.39	1.35
1	EB	516	PSU	O4'-C1'	-2.37	1.41	1.44
2	FB	1917	PSU	O4'-C1'	-2.35	1.41	1.44
2	FB	1939	5MU	C4-N3	2.35	1.37	1.33
1	EB	966	M2G	C6-C5	2.34	1.45	1.41
1	EB	1402	4OC	C4-N4	2.33	1.41	1.36
1	A	516	PSU	O4'-C1'	-2.31	1.41	1.44
2	B	2251	OMG	C4-N3	2.31	1.39	1.35
4	IA	8	4SU	C6-C5	-2.28	1.33	1.38
2	B	2503	2MA	C2-N1	2.26	1.38	1.34
4	HB	8	4SU	C6-C5	-2.18	1.33	1.38
2	B	2503	2MA	C6-C5	-2.18	1.37	1.41
4	D	8	4SU	C6-C5	-2.11	1.33	1.38
4	HB	55	PSU	C6-C5	2.11	1.41	1.38
2	B	2251	OMG	C6-C5	2.11	1.45	1.41
4	D	55	PSU	O4'-C1'	-2.05	1.41	1.44
2	B	1939	5MU	C2-N3	-2.03	1.34	1.38
2	FB	1911	PSU	C6-C5	2.02	1.41	1.38
2	FB	2552	2MU	O3'-C3'	-2.02	1.38	1.43

All (212) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1911	PSU	N1-C2-N3	-13.20	117.93	128.43
1	EB	516	PSU	N1-C2-N3	-12.81	118.25	128.43
1	A	516	PSU	N1-C2-N3	-12.35	118.61	128.43
2	B	2605	PSU	N1-C2-N3	-11.99	118.90	128.43
4	MC	55	PSU	N1-C2-N3	-11.57	119.23	128.43
4	D	55	PSU	N1-C2-N3	-11.56	119.24	128.43
4	IA	55	PSU	N1-C2-N3	-11.40	119.37	128.43
4	HB	55	PSU	N1-C2-N3	-11.31	119.44	128.43
2	FB	1911	PSU	N1-C2-N3	-10.98	119.70	128.43
2	FB	1917	PSU	N1-C2-N3	-10.90	119.77	128.43
2	B	1917	PSU	N1-C2-N3	-10.66	119.96	128.43
2	FB	2605	PSU	N1-C2-N3	-10.62	119.99	128.43
2	B	1911	PSU	C4-N3-C2	8.16	122.03	115.14
4	HB	8	4SU	C2-N3-C4	8.08	126.87	115.15

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	IA	8	4SU	C2-N3-C4	8.02	126.78	115.15
4	D	8	4SU	C2-N3-C4	8.02	126.78	115.15
1	EB	1402	4OC	CM4-N4-C4	-7.99	116.10	122.97
4	MC	8	4SU	C2-N3-C4	7.99	126.73	115.15
2	FB	1915	5MU	C4-N3-C2	7.75	121.68	115.14
4	HB	55	PSU	C4-N3-C2	7.64	121.59	115.14
4	IA	55	PSU	C4-N3-C2	7.46	121.44	115.14
4	D	55	PSU	C4-N3-C2	7.46	121.44	115.14
4	MC	54	5MU	C4-N3-C2	7.40	121.39	115.14
2	B	2503	2MA	C2-N3-C4	7.35	121.49	115.52
1	EB	516	PSU	C4-N3-C2	7.33	121.33	115.14
4	MC	55	PSU	C4-N3-C2	7.15	121.18	115.14
2	FB	1911	PSU	C4-N3-C2	7.13	121.16	115.14
4	D	8	4SU	C5-C4-N3	-6.85	114.67	123.83
1	A	516	PSU	C4-N3-C2	6.80	120.88	115.14
1	A	1402	4OC	CM4-N4-C4	-6.76	117.16	122.97
4	HB	8	4SU	C5-C4-N3	-6.75	114.80	123.83
4	IA	54	5MU	C4-N3-C2	6.70	120.80	115.14
4	IA	8	4SU	C5-C4-N3	-6.67	114.90	123.83
4	D	54	5MU	C4-N3-C2	6.67	120.78	115.14
4	MC	8	4SU	C5-C4-N3	-6.65	114.93	123.83
4	HB	54	5MU	C4-N3-C2	6.60	120.71	115.14
2	B	1917	PSU	C4-N3-C2	6.16	120.34	115.14
2	FB	1917	PSU	C4-N3-C2	6.14	120.32	115.14
2	FB	2503	2MA	C2-N3-C4	5.81	120.24	115.52
2	B	1915	5MU	C4-N3-C2	5.53	119.81	115.14
2	B	2605	PSU	C5-C6-N1	-5.30	117.93	124.44
1	EB	527	7MG	N3-C4-N9	5.25	133.65	126.91
2	B	2605	PSU	C4-N3-C2	5.22	119.55	115.14
2	FB	2605	PSU	C4-N3-C2	5.08	119.43	115.14
2	FB	1917	PSU	C5-C6-N1	-5.03	118.26	124.44
2	B	1939	5MU	C4-N3-C2	4.92	119.30	115.14
2	FB	1939	5MU	C4-N3-C2	4.87	119.25	115.14
4	HB	55	PSU	C5-C4-N3	-4.84	119.13	125.36
2	B	2605	PSU	C6-N1-C2	4.81	123.30	115.36
1	EB	1518	MA6	N1-C6-N6	4.79	122.10	117.06
1	A	527	7MG	N3-C4-N9	4.71	132.95	126.91
2	FB	2605	PSU	C5-C6-N1	-4.59	118.80	124.44
4	D	55	PSU	C5-C4-N3	-4.58	119.47	125.36
4	IA	55	PSU	C5-C4-N3	-4.53	119.52	125.36
4	IA	32	5MC	CM5-C5-C4	-4.48	117.18	121.72
1	EB	527	7MG	C5-C4-N3	-4.45	119.23	126.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	527	7MG	C5-C4-N3	-4.37	119.36	126.49
2	B	1917	PSU	C5-C4-N3	-4.36	119.75	125.36
2	B	1917	PSU	C5-C6-N1	-4.35	119.10	124.44
2	B	1911	PSU	C5-C4-N3	-4.29	119.83	125.36
2	FB	1917	PSU	C5-C4-N3	-4.27	119.85	125.36
4	MC	32	5MC	CM5-C5-C4	-4.26	117.41	121.72
1	EB	1518	MA6	N3-C2-N1	-4.21	122.10	128.68
1	A	1518	MA6	N3-C2-N1	-4.20	122.11	128.68
2	FB	1911	PSU	C5-C4-N3	-4.11	120.06	125.36
4	MC	55	PSU	C5-C4-N3	-4.10	120.08	125.36
1	A	1519	MA6	N3-C2-N1	-4.08	122.30	128.68
1	A	1207	2MG	C2-N3-C4	4.05	119.88	115.28
2	B	1920	4OC	C2-N3-C4	4.01	120.40	116.34
1	EB	1400	5MC	C2-N3-C4	4.01	120.86	116.02
1	A	1518	MA6	N1-C6-N6	3.97	121.24	117.06
2	B	1942	5MC	C5-C6-N1	-3.92	117.97	122.19
1	A	966	M2G	C2-N3-C4	3.92	119.72	115.28
1	EB	516	PSU	C6-N1-C2	3.79	121.61	115.36
1	A	516	PSU	C6-N1-C2	3.76	121.56	115.36
1	EB	1207	2MG	C2-N3-C4	3.76	119.54	115.28
1	EB	1207	2MG	CM2-N2-C2	-3.73	119.08	123.59
2	FB	1917	PSU	C6-N1-C2	3.73	121.51	115.36
1	EB	1519	MA6	N3-C2-N1	-3.72	122.86	128.68
2	FB	2605	PSU	C6-N1-C2	3.67	121.42	115.36
2	B	2251	OMG	C2-N3-C4	3.67	119.55	115.36
2	FB	1920	4OC	C2-N3-C4	3.65	120.04	116.34
1	A	1400	5MC	C2-N3-C4	3.65	120.42	116.02
2	B	1911	PSU	C6-N1-C2	3.63	121.34	115.36
1	EB	516	PSU	C5-C4-N3	-3.61	120.71	125.36
4	HB	32	5MC	C2-N3-C4	3.59	120.35	116.02
1	A	516	PSU	C5-C6-N1	-3.58	120.04	124.44
4	IA	32	5MC	N4-C4-N3	3.57	122.08	117.03
1	EB	1207	2MG	C5-C6-N1	-3.56	118.56	123.43
1	EB	966	M2G	C2-N3-C4	3.53	119.29	115.28
1	A	1407	5MC	C5-C6-N1	-3.51	118.41	122.19
2	FB	1939	5MU	C5-C6-N1	-3.51	118.42	122.19
4	D	32	5MC	C2-N3-C4	3.50	120.24	116.02
1	EB	966	M2G	C5-C6-N1	-3.47	118.68	123.43
1	A	516	PSU	C5-C4-N3	-3.47	120.90	125.36
2	FB	2503	2MA	C5-C6-N1	-3.46	119.43	123.06
2	B	1917	PSU	C6-N1-C2	3.45	121.06	115.36
2	FB	2251	OMG	C5-C6-N1	-3.43	118.74	123.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	966	M2G	C1'-N9-C4	-3.43	120.62	126.64
2	B	2251	OMG	N3-C2-N1	-3.39	122.70	127.22
1	EB	1207	2MG	C4-C5-N7	-3.36	105.89	109.40
1	EB	516	PSU	C5-C6-N1	-3.34	120.33	124.44
1	EB	527	7MG	N1-C2-N3	-3.32	120.20	125.42
1	EB	1404	5MC	C5-C6-N1	-3.31	118.63	122.19
1	EB	966	M2G	C6-N1-C2	3.28	120.09	116.18
1	EB	527	7MG	C4-N9-C1'	3.26	134.33	126.60
1	A	1207	2MG	CM2-N2-C2	-3.25	119.67	123.59
4	MC	55	PSU	C6-N1-C2	3.24	120.70	115.36
2	FB	2251	OMG	C2-N3-C4	3.24	119.06	115.36
4	D	55	PSU	C5-C6-N1	-3.22	120.47	124.44
1	A	1404	5MC	C5-C6-N1	-3.22	118.72	122.19
1	A	527	7MG	C4-N9-C1'	3.21	134.22	126.60
1	EB	966	M2G	C1'-N9-C4	-3.20	121.02	126.64
4	D	55	PSU	C6-N1-C2	3.19	120.63	115.36
1	EB	967	5MC	C2-N3-C4	3.16	119.83	116.02
2	B	1942	5MC	CM5-C5-C4	-3.12	118.57	121.72
1	EB	1407	5MC	C5-C6-N1	-3.10	118.85	122.19
1	A	1207	2MG	C5-C6-N1	-3.08	119.22	123.43
1	EB	527	7MG	C6-N1-C2	3.07	120.80	115.93
4	IA	55	PSU	C6-N1-C2	3.06	120.41	115.36
2	FB	2251	OMG	N3-C2-N1	-3.06	123.14	127.22
2	B	2251	OMG	C5-C6-N1	-3.05	119.26	123.43
1	A	527	7MG	C6-N1-C2	3.05	120.77	115.93
2	B	1962	5MC	C5-C6-N1	-3.04	118.92	122.19
4	HB	55	PSU	C6-N1-C2	2.98	120.27	115.36
4	MC	32	5MC	N4-C4-N3	2.97	121.23	117.03
1	EB	1207	2MG	C6-N1-C2	2.94	120.45	115.18
4	HB	55	PSU	C5-C6-N1	-2.91	120.86	124.44
4	MC	55	PSU	C5-C6-N1	-2.90	120.87	124.44
2	B	2552	2MU	C6'-O2'-C2'	2.90	122.13	114.52
2	B	1962	5MC	N4-C4-N3	2.90	121.12	117.03
4	MC	32	5MC	C2-N3-C4	2.89	119.51	116.02
4	IA	55	PSU	C5-C6-N1	-2.88	120.90	124.44
1	A	527	7MG	N1-C2-N3	-2.88	120.90	125.42
1	EB	1407	5MC	C2-N3-C4	2.87	119.48	116.02
2	FB	1942	5MC	N4-C4-N3	2.87	121.09	117.03
1	A	1207	2MG	C4-C5-N7	-2.86	106.42	109.40
2	FB	2552	2MU	O2'-C2'-C1'	2.85	114.75	109.09
2	FB	1962	5MC	N4-C4-N3	2.83	121.04	117.03
2	FB	1942	5MC	C5-C6-N1	-2.83	119.14	122.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	2503	2MA	C5-C6-N1	-2.83	120.09	123.06
2	B	1920	4OC	CM2-O2'-C2'	2.83	121.94	114.52
2	B	2251	OMG	C6-N1-C2	2.79	120.37	115.93
1	EB	527	7MG	C2-N3-C4	2.77	121.55	113.89
1	A	967	5MC	C2-N3-C4	2.77	119.36	116.02
2	FB	2251	OMG	C6-N1-C2	2.76	120.32	115.93
2	FB	1911	PSU	C6-N1-C2	2.76	119.91	115.36
2	B	1911	PSU	C5-C6-N1	-2.74	121.07	124.44
4	D	32	5MC	N4-C4-N3	2.74	120.91	117.03
2	FB	2605	PSU	C5-C4-N3	-2.72	121.86	125.36
2	B	2251	OMG	CM2-O2'-C2'	2.72	121.65	114.52
2	FB	1942	5MC	CM5-C5-C4	-2.71	118.98	121.72
4	D	32	5MC	CM5-C5-C4	-2.69	118.99	121.72
2	B	1939	5MU	C5-C6-N1	-2.69	119.30	122.19
1	A	527	7MG	C6-C5-C4	2.68	118.07	115.20
1	A	966	M2G	C5-C6-N1	-2.65	119.81	123.43
2	FB	2251	OMG	CM2-O2'-C2'	2.60	121.36	114.52
4	IA	32	5MC	C2-N3-C4	2.60	119.16	116.02
1	A	1207	2MG	C1'-N9-C4	2.60	131.21	126.64
2	FB	2503	2MA	C4-C5-N7	-2.58	106.71	109.40
4	HB	32	5MC	N4-C4-N3	2.58	120.68	117.03
1	EB	1519	MA6	C4-C5-N7	-2.58	106.71	109.40
1	A	966	M2G	C6-N1-C2	2.57	119.24	116.18
2	FB	1942	5MC	C2-N3-C4	2.56	119.10	116.02
2	FB	1920	4OC	CM2-O2'-C2'	2.56	121.23	114.52
2	B	1920	4OC	N4-C4-N3	2.55	120.52	116.49
2	B	2605	PSU	C5-C4-N3	-2.53	122.10	125.36
1	A	1207	2MG	C6-N1-C2	2.53	119.70	115.18
1	EB	1404	5MC	C2-N3-C4	2.52	119.06	116.02
1	A	527	7MG	C2-N3-C4	2.51	120.83	113.89
1	EB	1400	5MC	N4-C4-N3	2.51	120.58	117.03
2	B	2503	2MA	N3-C2-N1	-2.50	121.11	125.72
1	A	966	M2G	CM2-N2-C2	-2.50	118.91	121.29
2	B	1942	5MC	N4-C4-N3	2.48	120.54	117.03
2	FB	2605	PSU	O4'-C1'-C5	2.48	113.77	109.93
1	EB	1207	2MG	C1'-N9-C4	2.47	130.99	126.64
2	B	2605	PSU	O4'-C1'-C5	2.47	113.76	109.93
1	EB	967	5MC	C5-C6-N1	-2.47	119.53	122.19
2	FB	1920	4OC	N4-C4-N3	2.47	120.39	116.49
1	A	967	5MC	C5-C6-N1	-2.45	119.56	122.19
2	FB	1962	5MC	CM5-C5-C4	-2.44	119.25	121.72
1	EB	527	7MG	C6-C5-C4	2.42	117.80	115.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	EB	967	5MC	N4-C4-N3	2.40	120.42	117.03
1	A	1400	5MC	N4-C4-N3	2.37	120.39	117.03
1	EB	516	PSU	O4'-C1'-C2'	2.35	108.46	104.66
4	D	54	5MU	C5-C6-N1	-2.33	119.68	122.19
2	FB	1962	5MC	C2-N3-C4	2.26	118.74	116.02
1	A	1404	5MC	C2-N3-C4	2.24	118.72	116.02
1	EB	1207	2MG	N3-C2-N1	-2.24	122.69	126.23
1	A	1519	MA6	C4-C5-N7	-2.22	107.08	109.40
46	UA	92	0TD	CSB-SB-CB	2.22	106.21	101.85
1	A	516	PSU	O4'-C1'-C2'	2.21	108.24	104.66
4	HB	32	5MC	CM5-C5-C4	-2.20	119.49	121.72
2	FB	1962	5MC	C5-C6-N1	-2.20	119.83	122.19
2	B	1942	5MC	C6-C5-C4	2.16	121.63	116.30
4	HB	54	5MU	C5-C6-N1	-2.16	119.87	122.19
2	FB	1911	PSU	C5-C6-N1	-2.16	121.79	124.44
1	A	1402	4OC	C5-C4-N3	-2.14	119.54	123.16
2	FB	2552	2MU	C6'-O2'-C2'	2.14	120.15	114.52
2	FB	1917	PSU	O4'-C1'-C2'	2.14	108.13	104.66
4	IA	32	5MC	C5-C6-N1	-2.14	119.89	122.19
2	FB	1915	5MU	C5-C6-N1	-2.08	119.95	122.19
4	MC	32	5MC	C6-C5-C4	2.08	121.42	116.30
4	MC	32	5MC	C5-C6-N1	-2.07	119.96	122.19
2	B	1915	5MU	C5-C6-N1	-2.07	119.97	122.19
1	EB	966	M2G	CM1-N2-C2	-2.05	119.33	121.29
2	FB	1939	5MU	C5M-C5-C4	-2.05	117.70	121.37
1	A	1207	2MG	N3-C2-N1	-2.04	123.01	126.23
1	EB	1518	MA6	C1'-N9-C4	2.04	130.22	126.64
1	A	527	7MG	N2-C2-N1	2.02	120.39	117.25
2	B	1917	PSU	O4'-C1'-C2'	2.02	107.93	104.66
2	B	1962	5MC	CM5-C5-C4	-2.01	119.69	121.72

There are no chirality outliers.

All (76) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	HB	8	4SU	O4'-C1'-N1-C6
1	EB	527	7MG	C3'-C4'-C5'-O5'
2	FB	2552	2MU	C1'-C2'-O2'-C6'
1	EB	1402	4OC	N3-C4-N4-CM4
1	EB	1402	4OC	C5-C4-N4-CM4
2	B	1920	4OC	C2'-C1'-N1-C6
1	EB	1519	MA6	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	EB	1519	MA6	C5-C6-N6-C9
1	EB	1519	MA6	C5-C6-N6-C10
4	D	8	4SU	O4'-C1'-N1-C6
2	B	2552	2MU	C1'-C2'-O2'-C6'
1	A	527	7MG	C3'-C4'-C5'-O5'
1	A	1207	2MG	O4'-C4'-C5'-O5'
1	A	1207	2MG	C3'-C4'-C5'-O5'
1	A	1207	2MG	N1-C2-N2-CM2
1	A	1207	2MG	N3-C2-N2-CM2
1	A	1518	MA6	O4'-C4'-C5'-O5'
1	A	1518	MA6	C3'-C4'-C5'-O5'
1	A	1518	MA6	C5-C6-N6-C9
1	A	1519	MA6	O4'-C4'-C5'-O5'
1	A	1519	MA6	C5-C6-N6-C9
1	A	1519	MA6	C5-C6-N6-C10
2	FB	2251	OMG	C1'-C2'-O2'-CM2
1	EB	1518	MA6	O4'-C4'-C5'-O5'
1	EB	1518	MA6	C3'-C4'-C5'-O5'
1	EB	1518	MA6	C5-C6-N6-C9
2	FB	1920	4OC	C2'-C1'-N1-C6
1	EB	1207	2MG	O4'-C4'-C5'-O5'
1	EB	1207	2MG	C3'-C4'-C5'-O5'
1	EB	1207	2MG	N1-C2-N2-CM2
1	EB	1207	2MG	N3-C2-N2-CM2
2	B	2251	OMG	C1'-C2'-O2'-CM2
1	A	1402	4OC	N3-C4-N4-CM4
1	A	1402	4OC	C5-C4-N4-CM4
1	A	1498	UR3	O4'-C4'-C5'-O5'
1	EB	1519	MA6	C3'-C4'-C5'-O5'
1	EB	1498	UR3	O4'-C4'-C5'-O5'
1	A	1519	MA6	C3'-C4'-C5'-O5'
1	EB	1402	4OC	O4'-C4'-C5'-O5'
1	A	1498	UR3	C3'-C4'-C5'-O5'
1	EB	1498	UR3	C3'-C4'-C5'-O5'
1	EB	1519	MA6	N1-C6-N6-C9
1	A	1518	MA6	N1-C6-N6-C9
1	A	1519	MA6	N1-C6-N6-C9
1	EB	1518	MA6	N1-C6-N6-C9
1	EB	527	7MG	O4'-C4'-C5'-O5'
1	A	527	7MG	O4'-C4'-C5'-O5'
1	EB	1402	4OC	C3'-C4'-C5'-O5'
1	A	1402	4OC	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
1	A	1518	MA6	C5-C6-N6-C10
1	A	1402	4OC	C3'-C4'-C5'-O5'
1	EB	516	PSU	O4'-C1'-C5-C4
1	EB	1519	MA6	C4'-C5'-O5'-P
1	A	1519	MA6	C4'-C5'-O5'-P
1	A	527	7MG	C4'-C5'-O5'-P
1	EB	1518	MA6	C5-C6-N6-C10
2	B	2251	OMG	O4'-C4'-C5'-O5'
2	B	1917	PSU	O4'-C4'-C5'-O5'
1	EB	527	7MG	C4'-C5'-O5'-P
1	A	966	M2G	C4'-C5'-O5'-P
1	EB	966	M2G	C4'-C5'-O5'-P
1	A	516	PSU	O4'-C1'-C5-C4
2	FB	1917	PSU	O4'-C4'-C5'-O5'
2	B	1962	5MC	O4'-C4'-C5'-O5'
2	FB	2503	2MA	O4'-C4'-C5'-O5'
2	B	2251	OMG	C3'-C4'-C5'-O5'
2	B	1917	PSU	C3'-C4'-C5'-O5'
2	FB	2251	OMG	O4'-C4'-C5'-O5'
2	B	2503	2MA	O4'-C4'-C5'-O5'
2	B	1962	5MC	C3'-C4'-C5'-O5'
2	FB	1962	5MC	O4'-C4'-C5'-O5'
46	YC	92	0TD	CG-CB-SB-CSB
46	UA	92	0TD	CG-CB-SB-CSB
2	FB	1917	PSU	C3'-C4'-C5'-O5'
4	D	55	PSU	C3'-C4'-C5'-O5'
4	HB	55	PSU	C3'-C4'-C5'-O5'

There are no ring outliers.

38 monomers are involved in 63 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	FB	1915	5MU	1	0
1	A	967	5MC	2	0
4	HB	8	4SU	2	0
2	B	1939	5MU	3	0
2	FB	2552	2MU	2	0
1	EB	1402	4OC	2	0
46	YC	92	0TD	3	0
4	MC	55	PSU	1	0
1	EB	967	5MC	2	0
2	B	1920	4OC	4	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	EB	1400	5MC	1	0
1	A	1498	UR3	1	0
1	EB	1519	MA6	3	0
2	FB	2503	2MA	2	0
4	D	8	4SU	2	0
2	B	2552	2MU	1	0
2	B	1915	5MU	3	0
1	EB	1404	5MC	1	0
1	EB	1498	UR3	1	0
4	IA	55	PSU	1	0
4	D	54	5MU	3	0
46	UA	92	0TD	2	0
4	HB	54	5MU	3	0
4	MC	8	4SU	1	0
1	A	1207	2MG	3	0
1	A	1518	MA6	2	0
1	EB	516	PSU	1	0
1	A	1519	MA6	4	0
1	A	1400	5MC	1	0
2	B	1962	5MC	1	0
1	EB	1518	MA6	1	0
2	FB	1920	4OC	2	0
2	FB	1962	5MC	1	0
1	EB	1207	2MG	1	0
2	B	2503	2MA	1	0
1	A	1402	4OC	2	0
4	HB	55	PSU	1	0
4	D	55	PSU	1	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 1695 ligands modelled in this entry, 1693 are monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
57	BLS	FB	9001	-	25,31,31	3.34	9 (36%)	23,43,43	2.28	9 (39%)
57	BLS	B	9001	-	25,31,31	3.32	10 (40%)	23,43,43	2.11	10 (43%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
57	BLS	FB	9001	-	-	4/17/38/38	0/2/2/2
57	BLS	B	9001	-	-	4/17/38/38	0/2/2/2

All (19) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
57	FB	9001	BLS	C14-N12	8.72	1.54	1.35
57	B	9001	BLS	C14-N12	8.36	1.53	1.35
57	FB	9001	BLS	C7-N6	7.24	1.49	1.34
57	B	9001	BLS	C7-N6	7.05	1.49	1.34
57	B	9001	BLS	O5'-C5'	6.00	1.51	1.44
57	FB	9001	BLS	O5'-C5'	5.67	1.51	1.44
57	FB	9001	BLS	C11-N12	5.02	1.56	1.47
57	B	9001	BLS	C3'-C2'	5.01	1.48	1.33
57	B	9001	BLS	C11-N12	4.85	1.56	1.47
57	FB	9001	BLS	C3'-C2'	4.77	1.47	1.33
57	FB	9001	BLS	C13-N12	4.60	1.61	1.45
57	B	9001	BLS	C13-N12	4.35	1.60	1.45
57	B	9001	BLS	C4-N4	4.26	1.47	1.35
57	FB	9001	BLS	C4-N4	3.90	1.46	1.35
57	FB	9001	BLS	C4'-C5'	-3.77	1.47	1.53
57	B	9001	BLS	C4'-C5'	-3.57	1.47	1.53
57	B	9001	BLS	C4'-N6	2.36	1.49	1.46
57	B	9001	BLS	C8-C9	-2.08	1.50	1.53
57	FB	9001	BLS	C4'-N6	2.01	1.49	1.46

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	FB	9001	BLS	O5'-C1'-C2'	-5.79	110.00	113.13
57	FB	9001	BLS	C1'-C2'-C3'	-4.63	116.46	122.52
57	B	9001	BLS	C1'-C2'-C3'	-4.10	117.15	122.52
57	B	9001	BLS	O5'-C1'-C2'	-3.50	111.24	113.13
57	B	9001	BLS	C13-N12-C11	3.43	122.85	115.89
57	FB	9001	BLS	C10-C11-N12	3.33	117.52	112.15
57	B	9001	BLS	C4'-N6-C7	-3.33	119.57	123.13
57	B	9001	BLS	C2-N3-C4	3.21	119.59	116.34
57	FB	9001	BLS	C4'-N6-C7	-3.11	119.80	123.13
57	FB	9001	BLS	C13-N12-C11	2.91	121.80	115.89
57	FB	9001	BLS	C3'-C4'-N6	-2.56	105.89	110.60
57	B	9001	BLS	C10-C11-N12	2.52	116.20	112.15
57	B	9001	BLS	C3'-C4'-N6	-2.48	106.05	110.60
57	FB	9001	BLS	C8-C7-N6	2.47	119.56	116.33
57	B	9001	BLS	C11-C10-C9	2.45	119.13	114.52
57	FB	9001	BLS	C2-N3-C4	2.45	118.82	116.34
57	B	9001	BLS	C8-C7-N6	2.32	119.36	116.33
57	B	9001	BLS	N4-C4-N3	2.22	120.00	116.49
57	FB	9001	BLS	C11-C10-C9	2.01	118.29	114.52

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
57	FB	9001	BLS	N6-C7-C8-C9
57	FB	9001	BLS	O7-C7-C8-C9
57	FB	9001	BLS	C9-C10-C11-N12
57	B	9001	BLS	N6-C7-C8-C9
57	B	9001	BLS	O7-C7-C8-C9
57	B	9001	BLS	C9-C10-C11-N12
57	FB	9001	BLS	C5'-C4'-N6-C7
57	B	9001	BLS	C5'-C4'-N6-C7

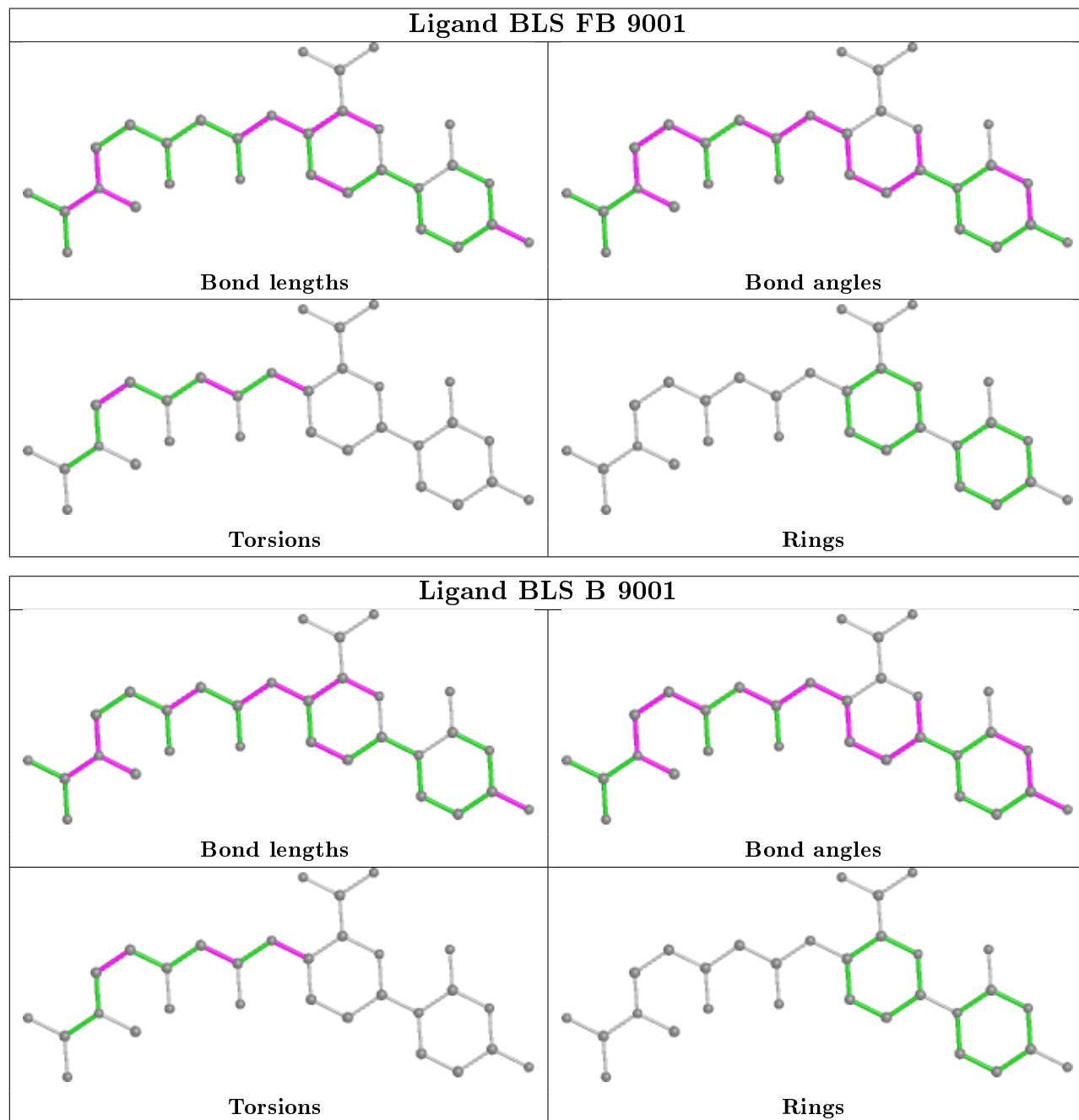
There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
57	FB	9001	BLS	1	0
57	B	9001	BLS	2	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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

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

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

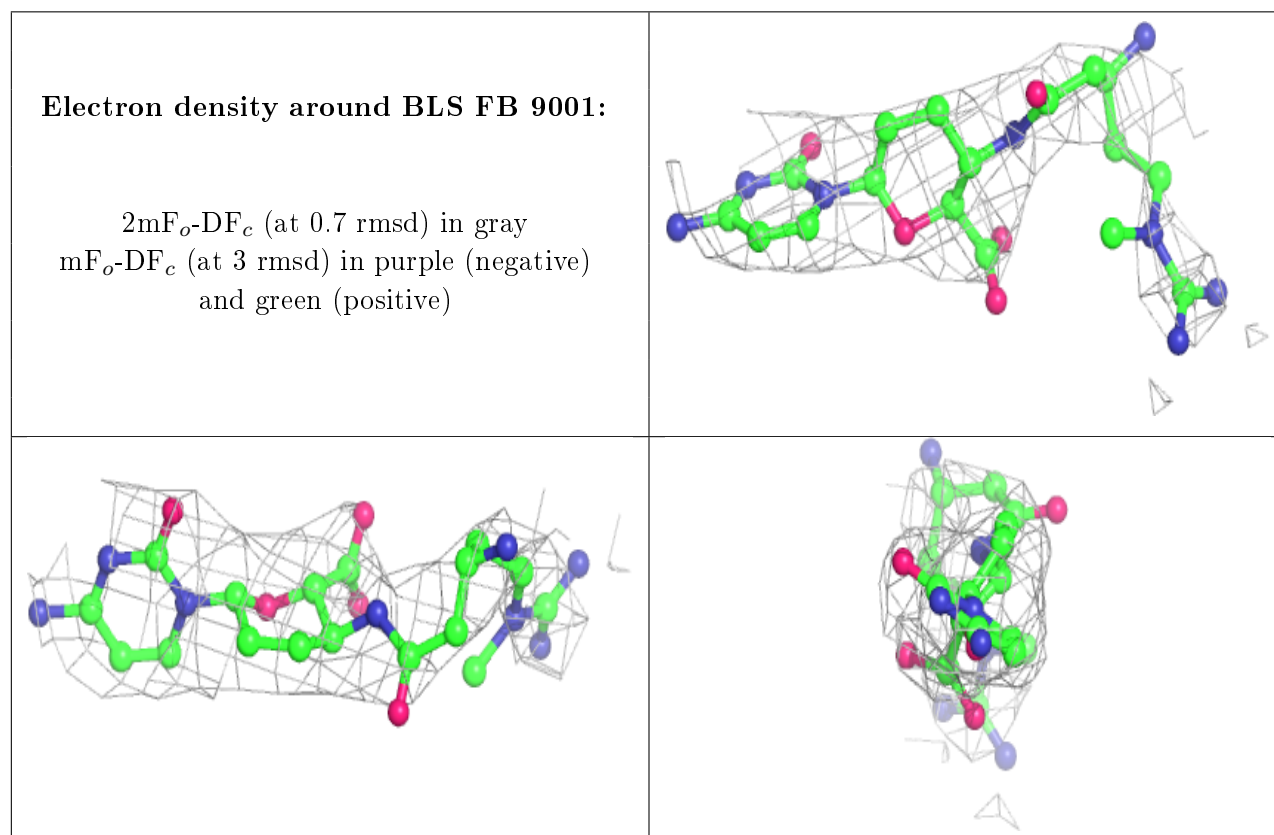
6.3 Carbohydrates [i](#)

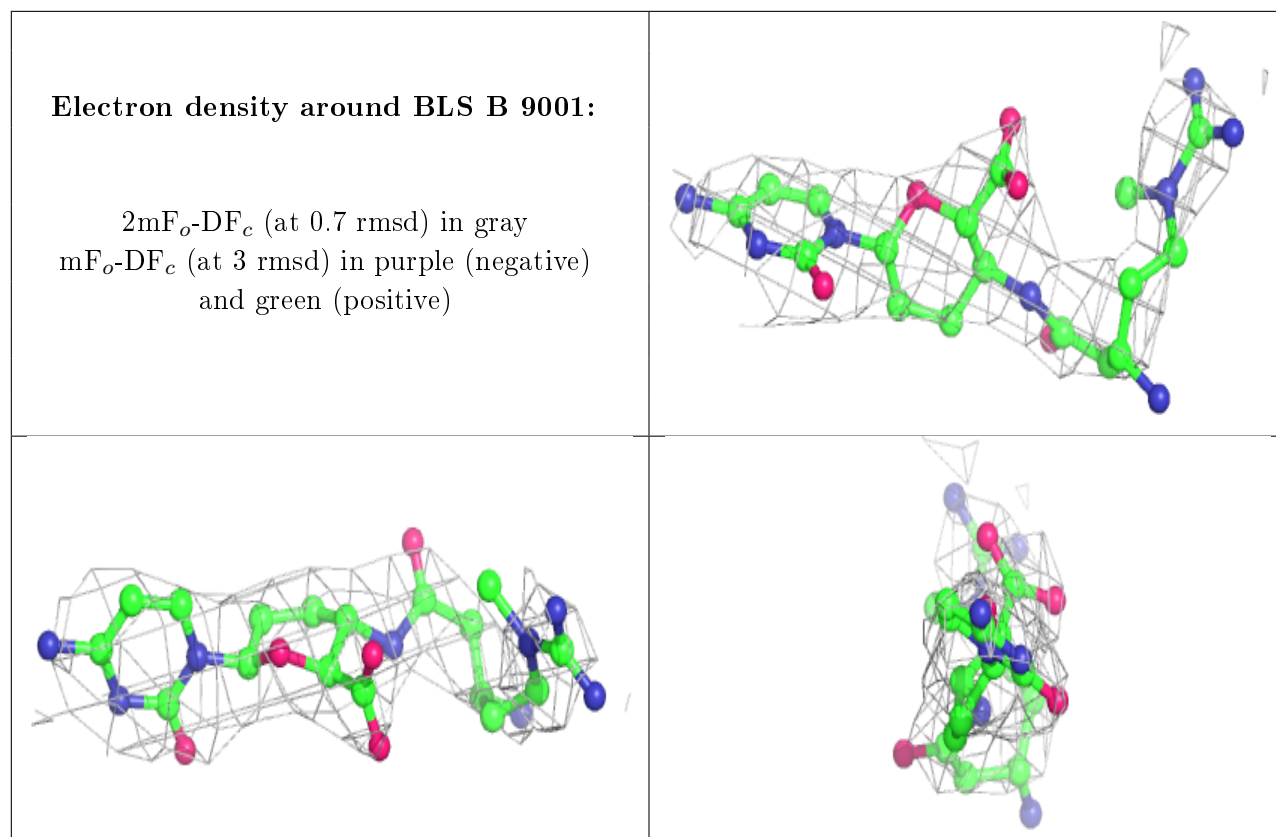
Unable to reproduce the depositors R factor - this section is therefore empty.

6.4 Ligands [i](#)

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

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





6.5 Other polymers [i](#)

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