



# Full wwPDB X-ray Structure Validation Report ⓘ

Nov 5, 2023 – 12:08 AM EDT

PDB ID : 5VPP  
Title : The 70S P-site tRNA SufA6 complex  
Authors : Hong, S.; Sunita, S.; Dunkle, J.A.; Maehigashi, T.; Dunham, C.M.  
Deposited on : 2017-05-05  
Resolution : 3.90 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](mailto: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 types of validation reports are described at

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

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.36  
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) : 2.36

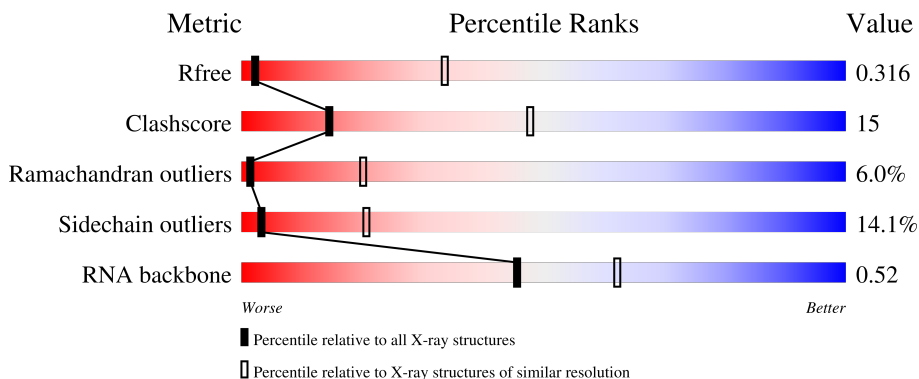
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.90 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	1002 (4.14-3.66)
Clashscore	141614	1004 (4.12-3.68)
Ramachandran outliers	138981	1021 (4.14-3.66)
Sidechain outliers	138945	1014 (4.14-3.66)
RNA backbone	3102	1040 (4.76-3.00)

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

Mol	Chain	Length	Quality of chain
1	RA	2915	
1	YA	2915	
2	RB	122	
2	YB	122	
3	RD	276	
3	YD	276	

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Mol	Chain	Length	Quality of chain
4	RE	206	53% 36% 9% .
4	YE	206	58% 33% 8% .
5	RF	210	64% 28% . .
5	YF	210	63% 28% 5% .
6	RG	182	56% 36% 7% .
6	YG	182	56% 34% 9% .
7	RH	180	53% 31% 9% . 6%
7	YH	180	53% 30% 10% . 6%
8	RI	148	49% 37% 11% ..
8	YI	148	53% 34% 11% .
9	RN	140	59% 35% 5% .
9	YN	140	59% 34% 6% .
10	RO	122	80% 16% .
10	YO	122	74% 21% 5%
11	RP	150	48% 37% 14% .
11	YP	150	51% 33% 15% .
12	RQ	141	57% 35% 6% .
12	YQ	141	57% 37% 5% .
13	RR	118	63% 32% 5%
13	YR	118	62% 32% 6%
14	RS	112	60% 27% 11% ..
14	YS	112	59% 30% 9% ..
15	RT	146	53% 34% 5% . 6%
15	YT	146	48% 38% 8% 6%
16	RU	118	67% 25% 6% ..





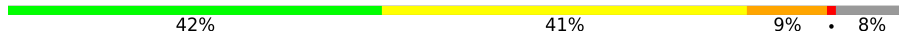
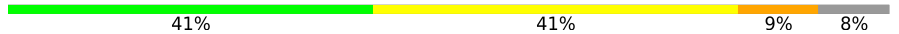
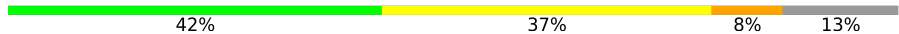
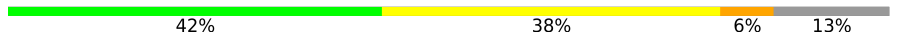
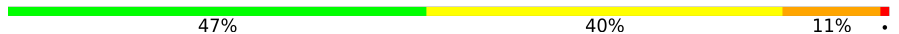
















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Mol	Chain	Length	Quality of chain
16	YU	118	67% 26% . . .
17	RV	101	61% 32% 7%
17	YV	101	60% 33% 6% .
18	RW	113	74% 20% 5%
18	YW	113	70% 23% 7%
19	RX	96	65% 29% . .
19	YX	96	67% 25% . .
20	RY	110	44% 40% 9% 7%
20	YY	110	51% 33% 9% 7%
21	RZ	206	49% 32% 8% 11%
21	YZ	206	47% 33% 9% 11%
22	R0	85	73% 20% . .
22	Y0	85	71% 25% . .
23	R1	98	66% 29% . . .
23	Y1	98	65% 27% 6% . .
24	R2	72	62% 26% 7% .
24	Y2	72	57% 31% 7% . .
25	R3	60	75% 22% . .
25	Y3	60	87% 8% . .
26	R5	60	52% 37% 8% . .
26	Y5	60	50% 33% 13% . .
27	R6	54	28% 41% 22% 9%
27	Y6	54	35% 35% 20% 9%
28	R7	49	69% 27% .
28	Y7	49	71% 24% .

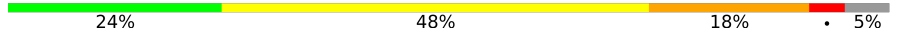



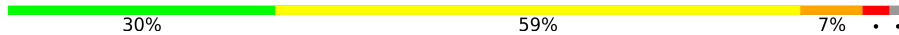



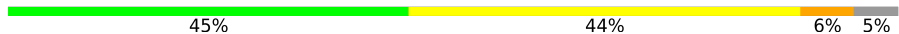
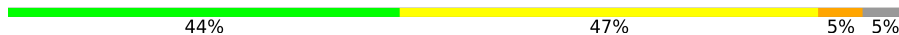
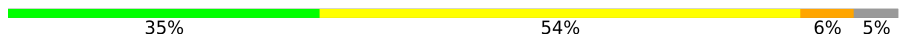
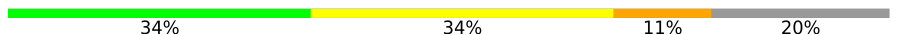
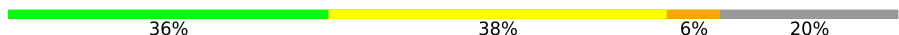












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Mol	Chain	Length	Quality of chain
29	R8	65	 52% 38% 6% . .
29	Y8	65	 60% 26% 11% . .
30	R9	37	 70% 30%
30	Y9	37	 76% 24%
31	QB	256	 42% 41% 9% . 8%
31	XB	256	 41% 41% 9% 8%
32	QC	239	 42% 37% 8% 13%
32	XC	239	 42% 38% 6% 13%
33	QD	209	 47% 40% 11% .
33	XD	209	 48% 43% 7% .
34	QE	162	 51% 37% 5% . 7%
34	XE	162	 49% 39% . . 7%
35	QF	101	 51% 36% 12% .
35	XF	101	 49% 39% 11% .
36	QG	156	 62% 31% 5% . .
36	XG	156	 51% 42% 7% .
37	QH	138	 48% 43% 9% .
37	XH	138	 43% 46% 10% .
38	QI	128	 45% 51% . .
38	XI	128	 54% 36% 9% .
39	QJ	105	 44% 38% 11% . 6%
39	XJ	105	 35% 49% 10% 6%
40	QK	129	 43% 44% 5% 8%
40	XK	129	 47% 36% 10% 8%
41	QL	132	 16% 57% 18% . 5%

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Mol	Chain	Length	Quality of chain
41	XL	132	
42	QM	126	
42	XM	126	
43	QN	61	
43	XN	61	
44	QO	89	
44	XO	89	
45	QP	88	
45	XP	88	
46	QQ	105	
46	XQ	105	
47	QR	88	
47	XR	88	
48	QT	106	
48	XT	106	
49	QA	1521	
49	XA	1521	
50	QS	93	
50	XS	93	
51	R4	71	
51	Y4	71	
52	QX	19	
52	XX	19	
53	QV	78	
53	XV	78	

## 2 Entry composition [i](#)

There are 55 unique types of molecules in this entry. The entry contains 291660 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 23S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
1	RA	2882	Total	C	N	O	P	0	0	0
			62071	27627	11611	19952	2881			
1	YA	2883	Total	C	N	O	P	0	0	0
			62091	27636	11613	19960	2882			

- Molecule 2 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	RB	120	Total	C	N	O	P	0	0	0
			2573	1146	476	832	119			
2	YB	120	Total	C	N	O	P	0	0	0
			2573	1146	476	832	119			

- Molecule 3 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
3	RD	272	Total	C	N	O	S	0	0	0
			2115	1335	420	357	3			
3	YD	272	Total	C	N	O	S	0	0	0
			2115	1335	420	357	3			

- Molecule 4 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
4	RE	205	Total	C	N	O	S	0	0	0
			1568	991	300	271	6			
4	YE	205	Total	C	N	O	S	0	0	0
			1568	991	300	271	6			

- Molecule 5 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	RF	202	Total	C	N	O	S	0	0	0
			1585	1011	297	275	2			
5	YF	202	Total	C	N	O	S	0	0	0
			1585	1011	297	275	2			

- Molecule 6 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	RG	181	Total	C	N	O	S	0	0	0
			1474	942	268	260	4			
6	YG	181	Total	C	N	O	S	0	0	0
			1474	942	268	260	4			

- Molecule 7 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	RH	170	Total	C	N	O	S	0	0	0
			1307	829	245	232	1			
7	YH	170	Total	C	N	O	S	0	0	0
			1307	829	245	232	1			

- Molecule 8 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	RI	146	Total	C	N	O	S	0	0	0
			1136	726	201	208	1			
8	YI	146	Total	C	N	O	S	0	0	0
			1136	726	201	208	1			

- Molecule 9 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	RN	138	Total	C	N	O	S	0	0	0
			1104	712	206	182	4			
9	YN	138	Total	C	N	O	S	0	0	0
			1104	712	206	182	4			

- Molecule 10 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	RO	122	Total	C	N	O	S	0	0	0
			933	588	171	170	4			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
10	YO	122	933	588	171	170	4	0	0	0

- Molecule 11 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
11	RP	150	1145	712	232	198	3	0	0	0
11	YP	150	1145	712	232	198	3	0	0	0

- Molecule 12 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
12	RQ	141	1122	715	212	188	7	0	0	0
12	YQ	141	1122	715	212	188	7	0	0	0

- Molecule 13 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
13	RR	118	968	604	203	160	1	0	0	0
13	YR	118	968	604	203	160	1	0	0	0

- Molecule 14 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
14	RS	111	882	556	176	150	0	0	0
14	YS	111	882	556	176	150	0	0	0

- Molecule 15 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
15	RT	137	1141	710	234	196	1	0	0	0
15	YT	137	1141	710	234	196	1	0	0	0

- Molecule 16 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	RU	117	Total	C	N	O	S	0	0	0
			964	610	202	151	1			
16	YU	117	Total	C	N	O	S	0	0	0
			964	610	202	151	1			

- Molecule 17 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	RV	101	Total	C	N	O	S	0	0	0
			779	501	142	135	1			
17	YV	101	Total	C	N	O	S	0	0	0
			779	501	142	135	1			

- Molecule 18 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
18	RW	113	Total	C	N	O	S	0	0	0
			900	566	177	155	2			
18	YW	113	Total	C	N	O	S	0	0	0
			900	566	177	155	2			

- Molecule 19 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
19	RX	92	Total	C	N	O	0	0	0
			725	471	131	123			
19	YX	92	Total	C	N	O	0	0	0
			725	471	131	123			

- Molecule 20 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
20	RY	102	Total	C	N	O	S	0	0	0
			785	505	150	125	5			
20	YY	102	Total	C	N	O	S	0	0	0
			785	505	150	125	5			

- Molecule 21 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
21	RZ	183	Total	C	N	O	S	0	0	0
			1461	933	260	265	3			
21	YZ	183	Total	C	N	O	S	0	0	0
			1461	933	260	265	3			

- Molecule 22 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	R0	82	Total	C	N	O	S	0	0	0
			648	401	138	108	1			
22	Y0	82	Total	C	N	O	S	0	0	0
			648	401	138	108	1			

- Molecule 23 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	R1	97	Total	C	N	O	S	0	0	0
			763	481	150	131	1			
23	Y1	97	Total	C	N	O	S	0	0	0
			763	481	150	131	1			

- Molecule 24 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	R2	69	Total	C	N	O	S	0	0	0
			581	358	118	104	1			
24	Y2	69	Total	C	N	O	S	0	0	0
			581	358	118	104	1			

- Molecule 25 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
25	R3	59	Total	C	N	O	0	0	0
			469	298	90	81			
25	Y3	59	Total	C	N	O	0	0	0
			469	298	90	81			

- Molecule 26 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	R5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
26	Y5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			

- Molecule 27 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	R6	49	Total	C	N	O	S	0	0	0
			424	264	87	69	4			
27	Y6	49	Total	C	N	O	S	0	0	0
			424	264	87	69	4			

- Molecule 28 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
28	R7	49	Total	C	N	O	S	0	0	0
			430	263	108	57	2			
28	Y7	49	Total	C	N	O	S	0	0	0
			430	263	108	57	2			

- Molecule 29 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
29	R8	64	Total	C	N	O	S	0	0	0
			517	331	102	82	2			
29	Y8	64	Total	C	N	O	S	0	0	0
			517	331	102	82	2			

- Molecule 30 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	R9	37	Total	C	N	O	S	0	0	0
			307	188	68	47	4			
30	Y9	37	Total	C	N	O	S	0	0	0
			307	188	68	47	4			

- Molecule 31 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
31	QB	235	Total	C	N	O	S	0	0	0
			1909	1218	342	344	5			
31	XB	235	Total	C	N	O	S	0	0	0
			1909	1218	342	344	5			

- Molecule 32 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
32	QC	207	Total 1620	C 1022	N 315	O 282	S 1	0	0	0
32	XC	207	Total 1620	C 1022	N 315	O 282	S 1	0	0	0

- Molecule 33 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
33	QD	208	Total 1703	C 1066	N 339	O 291	S 7	0	0	0
33	XD	208	Total 1703	C 1066	N 339	O 291	S 7	0	0	0

- Molecule 34 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
34	QE	151	Total 1155	C 729	N 218	O 204	S 4	0	0	0
34	XE	151	Total 1155	C 729	N 218	O 204	S 4	0	0	0

- Molecule 35 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
35	QF	101	Total 843	C 531	N 155	O 154	S 3	0	0	0
35	XF	101	Total 843	C 531	N 155	O 154	S 3	0	0	0

- Molecule 36 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
36	QG	155	Total 1257	C 781	N 252	O 218	S 6	0	0	0
36	XG	155	Total 1257	C 781	N 252	O 218	S 6	0	0	0

- Molecule 37 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
37	QH	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			
37	XH	138	Total	C	N	O	S	0	0	0
			1116	705	215	193	3			

- Molecule 38 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
38	QI	127	Total	C	N	O	S	0	0	0
			1010	639	197	174				
38	XI	127	Total	C	N	O	S	0	0	0
			1010	639	197	174				

- Molecule 39 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
39	QJ	99	Total	C	N	O	S	0	0	0
			801	504	157	139	1			
39	XJ	99	Total	C	N	O	S	0	0	0
			801	504	157	139	1			

- Molecule 40 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
40	QK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			
40	XK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			

- Molecule 41 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
41	QL	125	Total	C	N	O	S	0	0	0
			975	614	196	164	1			
41	XL	125	Total	C	N	O	S	0	0	0
			975	614	196	164	1			

- Molecule 42 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
42	QM	114	Total	C	N	O	S	0	0	0
			914	565	189	158	2			

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
42	XM	114	Total	C	N	O	S	0	0	0
			914	565	189	158	2			

- Molecule 43 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
43	QN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			
43	XN	60	Total	C	N	O	S	0	0	0
			492	312	104	72	4			

- Molecule 44 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
44	QO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			
44	XO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			

- Molecule 45 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
45	QP	84	Total	C	N	O	S	0	0	0
			705	446	140	118	1			
45	XP	84	Total	C	N	O	S	0	0	0
			705	446	140	118	1			

- Molecule 46 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
46	QQ	100	Total	C	N	O	S	0	0	0
			834	534	155	143	2			
46	XQ	100	Total	C	N	O	S	0	0	0
			834	534	155	143	2			

- Molecule 47 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
47	QR	70	Total	C	N	O	0	0	0
			574	367	112	95			
47	XR	70	Total	C	N	O	0	0	0
			574	367	112	95			

- Molecule 48 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
48	QT	99	Total 763	C 470	N 162	O 129	S 2	0	0	0
48	XT	99	Total 763	C 470	N 162	O 129	S 2	0	0	0

- Molecule 49 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
49	QA	1511	Total 32472	C 14454	N 6013	O 10495	P 1510	0	0	0
49	XA	1515	Total 32554	C 14491	N 6024	O 10525	P 1514	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
QA	458C	G	C	conflict	GB 55771382
XA	458C	G	C	conflict	GB 55771382

- Molecule 50 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
50	XS	79	Total 633	C 405	N 115	O 111	S 2	0	0	0
50	QS	79	Total 633	C 405	N 115	O 111	S 2	0	0	0

- Molecule 51 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
51	R4	34	Total 262	C 169	N 43	O 48	S 2	0	0	0
51	Y4	46	Total 357	C 229	N 59	O 64	S 5	0	0	0

- Molecule 52 is a RNA chain called messenger RNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
52	XX	19	Total 409	C 184	N 81	O 126	P 18	0	0	0

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
52	QX	19	409	184	81	126	18	0	0	0

- Molecule 53 is a RNA chain called P-site tRNA SufA6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
53	XV	78	1670	744	300	548	78	0	0	0
53	QV	78	1670	744	300	548	78	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
XV	38	1MG	-	insertion	GB 1151176235
QV	38	1MG	-	insertion	GB 1151176235

- Molecule 54 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
54	RA	562	Total	Mg	0	0
			562	562		
54	RB	15	Total	Mg	0	0
			15	15		
54	RD	10	Total	Mg	0	0
			10	10		
54	RE	7	Total	Mg	0	0
			7	7		
54	RF	4	Total	Mg	0	0
			4	4		
54	RI	1	Total	Mg	0	0
			1	1		
54	RO	2	Total	Mg	0	0
			2	2		
54	RQ	2	Total	Mg	0	0
			2	2		
54	RR	3	Total	Mg	0	0
			3	3		
54	RT	3	Total	Mg	0	0
			3	3		
54	RU	1	Total	Mg	0	0
			1	1		

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Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
54	RX	2	Total Mg 2 2	0	0
54	RY	1	Total Mg 1 1	0	0
54	R0	2	Total Mg 2 2	0	0
54	R1	3	Total Mg 3 3	0	0
54	R3	1	Total Mg 1 1	0	0
54	R6	1	Total Mg 1 1	0	0
54	R8	3	Total Mg 3 3	0	0
54	YA	379	Total Mg 379 379	0	0
54	YB	10	Total Mg 10 10	0	0
54	YD	4	Total Mg 4 4	0	0
54	YE	5	Total Mg 5 5	0	0
54	YI	1	Total Mg 1 1	0	0
54	YP	1	Total Mg 1 1	0	0
54	YQ	1	Total Mg 1 1	0	0
54	YR	1	Total Mg 1 1	0	0
54	YT	2	Total Mg 2 2	0	0
54	YU	1	Total Mg 1 1	0	0
54	YX	1	Total Mg 1 1	0	0
54	YY	1	Total Mg 1 1	0	0
54	Y0	1	Total Mg 1 1	0	0
54	Y1	1	Total Mg 1 1	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
54	Y8	1	Total 1	Mg 1	0	0
54	QC	1	Total 1	Mg 1	0	0
54	QD	3	Total 3	Mg 3	0	0
54	QE	1	Total 1	Mg 1	0	0
54	QL	3	Total 3	Mg 3	0	0
54	QP	2	Total 2	Mg 2	0	0
54	QQ	2	Total 2	Mg 2	0	0
54	QT	2	Total 2	Mg 2	0	0
54	QA	131	Total 131	Mg 131	0	0
54	XC	1	Total 1	Mg 1	0	0
54	XD	1	Total 1	Mg 1	0	0
54	XE	1	Total 1	Mg 1	0	0
54	XK	1	Total 1	Mg 1	0	0
54	XL	2	Total 2	Mg 2	0	0
54	XM	1	Total 1	Mg 1	0	0
54	XO	1	Total 1	Mg 1	0	0
54	XP	1	Total 1	Mg 1	0	0
54	XA	128	Total 128	Mg 128	0	0

- Molecule 55 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
55	Y9	1	Total 1	Zn 1	0	0

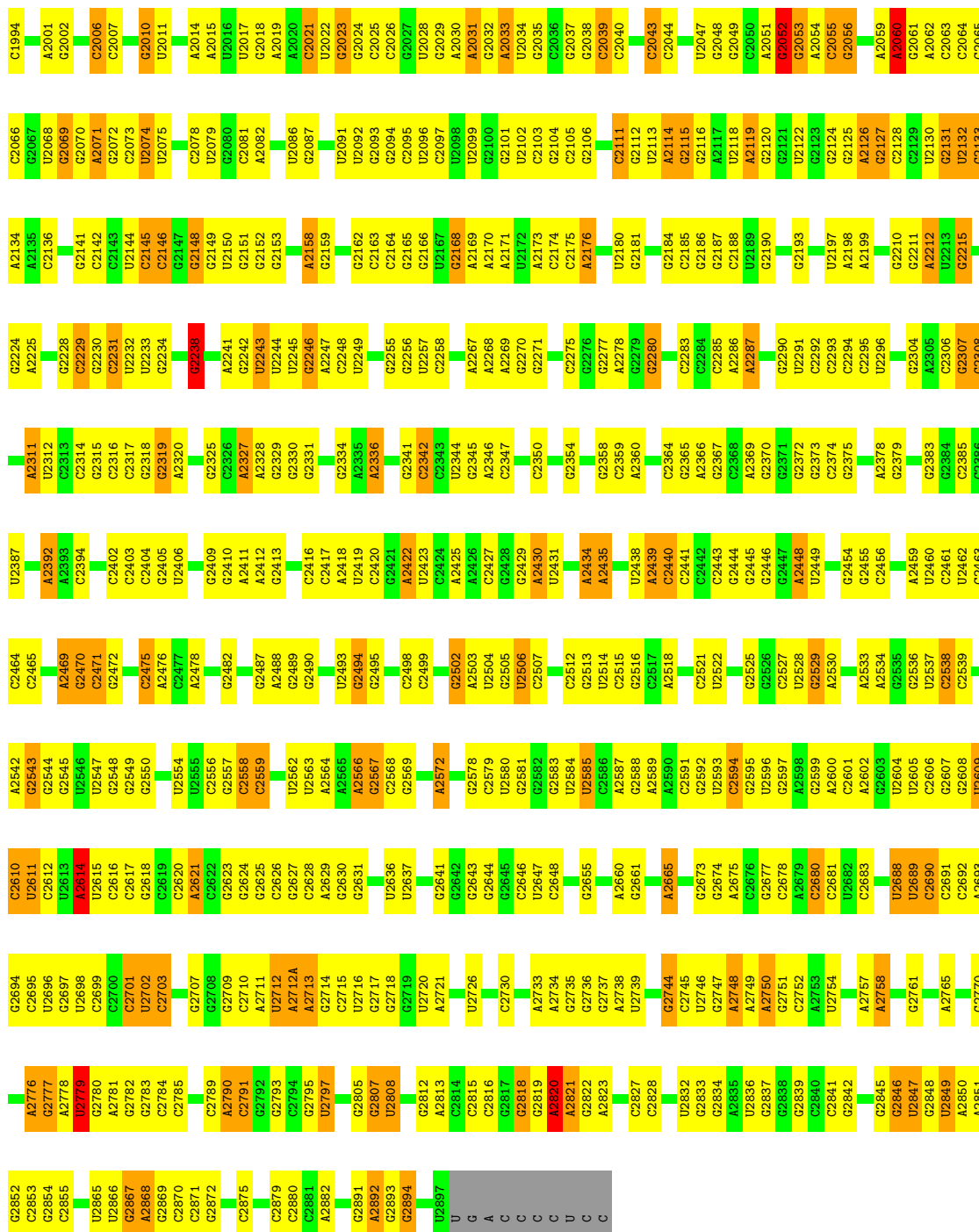
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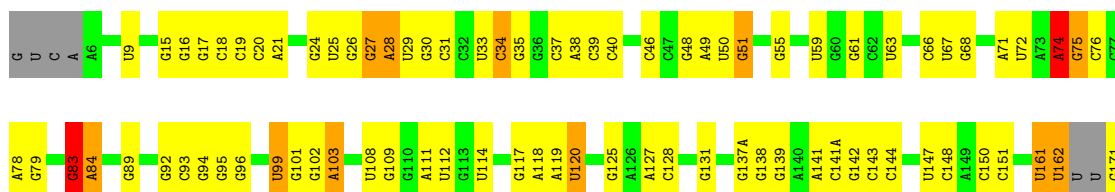
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55	QD	2	Total 2	Zn 2	0	0
55	XD	1	Total 1	Zn 1	0	0







● Molecule 1: 23S rRNA

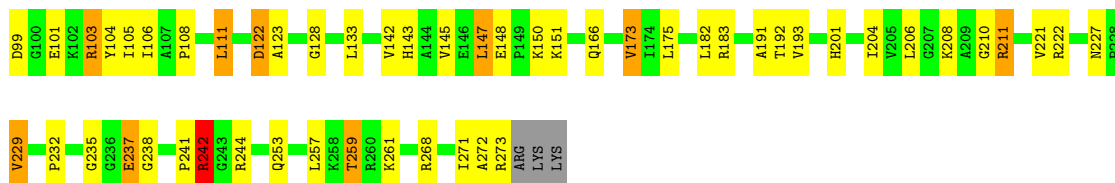




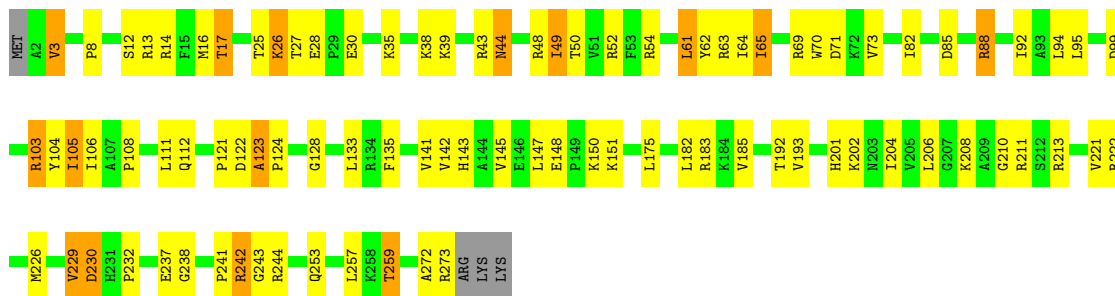


G1236	U1313	G1389	C1458	C1532	A1610	U1680	A1780	G1845	G1935	G2018	G2087	C2164	G2354
A1237	C1314	U1390	G1459	C1533	C1611	G1681	C1781	G1846	G1936	A2019	U2091	G2165	G2275
G1238	C1315	U1391	A1460	U1534	G1612	G1682	C1782	A1847	A1936	A2020	U2092	U2166	G2276
A1241	C1316	U1392	G1461	U1535	G1613	C1686	A1783	A1848	A1937	C2021	U2093	G2167	G2277
G1243	C1317	U1393	A1462	U1536	A1614	U1687	A1784	G1849	A1938	G2022	G2094	G2168	C2355
	C1318	U1394	C1463	A1537	G1615	U1688	A1785	G1850	U1939	G2023	G2095	G2169	C2356
			A1464	G1538	A1616	A1689	A1786	U1851	C1942	G2024	C2096	A2173	A2361
			G1465	U1539	C1617	A1690	A1787	U1852	U1943	C2025	U2099	A2174	G2362
			A1466	U1540	A1618	G1691	C1790	A1853	A1854	C2026	G2100	A2175	C2363
			C1467	U1541	G1622	U1692	A1791	A1854	A1854	G2027	G2101	G2184	C2364
			A1471	U1542	C1625	C1694	G1792	G1858		U2028	U2102	G2185	G2365
			U1329	U1543	G1626	C1695	C1793	U1864		A2031	C2103	C2186	G2366
			U1332	C1403	G1627	G1698	U1794	G1869	A1952	G2032	G2104	G2187	G2367
			C1333	C1404	A1474	A1545A	C1795	U1870	U1955	A2033	G2105	C2190	G2368
			G1334	U1405	G1475	G1546	U1796	A1871	U1956	G2034	G2106	G2191	A2372
			U1335	U1406	A1477	A1547	C1797	A1872	U1957	U2034	C2107	C2188	A2373
			A1336	C1407	G1478	A1548	U1798	G1873	A1960	G2035	C2111	U2197	C2374
			U1337	U1408	A1479	C1549	G1799	G1874	U1961	C2036	G2112	A2198	A2375
			G1338	C1409	G1480	C1550	G1800	G1875	U1962	G2037	U2113	A2199	A2376
				C1410	U1482	C1551	G1801	C1882	U1963	G2038	A2114	G2302	C2380
				C1411	G1483	C1552	A1802	G1883	G1964	G2039	G2115	G2203	C2381
				A1341	A1484	C1553	A1803	U1884	C1967	C2040	G2116	G2204	G2382
				U1342	G1485	C1554	C1804	A1885	U1968	A2042	A2117	A2212	A2383
				A1343	U1486	C1555	U1805	A1886	A1969	C2043	U2118	U2213	A2384
				G1348	U1415	A1558	U1806	C1887	A1970	G2044	U2119	G2215	C2385
				A1349	U1416	G1559	A1809	G1888	A1971	U2047	A2120	G2216	C2386
				U1350	G1417	U1560	U1810	A1889	A1972	G2048	G2121	G2217	U2387
				C1351	C1417	G1561	A1811	A1890	A1973	G2049	U2122	A2225	A2388
				U1352	A1418	C1562	A1812	A1891	G1973	A2051	G2123	G2228	U2389
				C1270	A1419	A1563	A1813	A1892	U1974	G2052	G2124	C2229	C2391
				A1266	A1496	C1564	G1731	C1893	G1980	C2053	G2125	G2230	A2392
				U1271	U1497	A1565	A1732	G1894	A1981	C2054	A2126	G2231	C2393
				U1272	C1498	A1566	A1733	U1897	C1982	C2055	G2127	U2232	C2394
				U1273	U1499	C1567	C1734	G1898	C1983	C2056	C2128	U2233	C2395
				A1278	U1501	A1578	U1579	U1899	G1989	A2059	C2129	G2234	C2402
				G1279	C1502	A1579	C1742	U1900	G1990	A2060	U2130	G2235	A2403
					A1503	A1582	A1652	C1902	C1991	G2061	G2131	G2236	A2404
					C1504	A1583	A1653	G1903	U1991	G2062	U2132	C2237	C2405
					U1505	C1585	A1654	G1904	G1992	A2063	G2133	G2238	U2406
					A1506	A1586	A1655	C1905	U1993	C2064	A2241	A2242	G2407
					A1507	A1587	C1656	G1906	C1996	C2065	G2243	U2243	U2408
					A1508	A1588	C1657	G1907	G1997	C2066	G2244	U2244	G2409
					A1509	C1589	C1658	C1908	G1998	C2067	U2245	U2245	G2410
					A1510	U1590	U1659	C1909	G1999	G2068	G2246	U2246	C2411
					U1511	G1591	C1663	A1912	C1999	U2068	G2141	A2247	A2327
					C1437	C1592	A1664	A1913	G2000	G2069	C2146	A2247	A2328
					U1438	C1593	A1665	A1914	A2001	A2070	G2147	G2250	G2329
					A1439	G1594	G1666	A1915	G2002	A2071	G2148	G2251	G2330
					U1439	A1595	G1667	A1916	G2003	G2072	G2149	G2252	G2331
					C1444	A1596	A1668	A1917	C2006	C2073	U2150	U2253	G2334
					A1444A	A1597	A1669	A1918	C2007	U2074	G2151	G2254	A2335
					C1445	C1599	C1670	C1920	C2008	U2075	G2152	C2255	A2336
					A1446	A1599	U1671	G1769	G2009	U2076	G2153	G2256	G2337
					U1520	C1600	U1672	U1923	G2010	U2077	G2154	A2266	U2344
					G1522	C1601	C1673	C1924	U2011	A2077	G2155	A2267	A2345
					A1447A	C1602	G1674	U1924	A2014	C2081	G2156	A2268	A2346
					C1446	G1603	U1674	U1925	U2015	A2082	G2157	A2269	A2347
					A1448	C1604	C1675	A1927	A2016	C2083	G2158	A2270	C2350
					G1447	G1605	A1676	U1928	U2017	C2084	G2159	U2271	G2429
					A1449	G1606	U1677	G1929	G2016	A2085	A2158	U2272	
					G1449A	C1607	G1678	U1930	U2017	C2086	C2163	A2273	
					C1383	A1528	U1679	U1931		U2086			
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					G1385		C1844	U1931					
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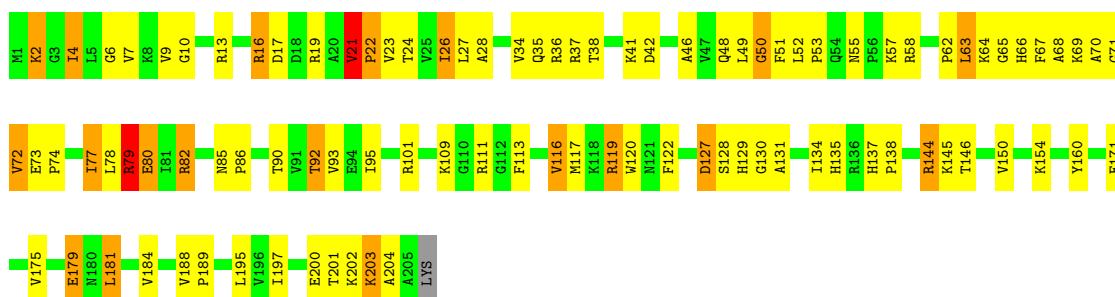




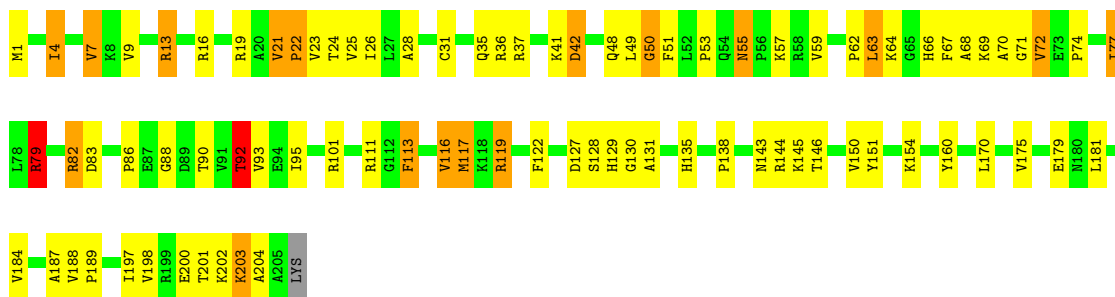
• Molecule 3: 50S ribosomal protein L2



• Molecule 4: 50S ribosomal protein L3

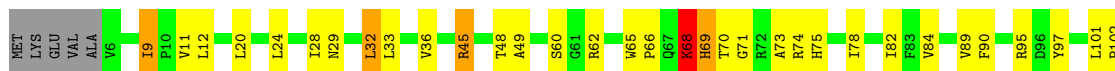


• Molecule 4: 50S ribosomal protein L3



• Molecule 5: 50S ribosomal protein L4





• Molecule 5: 50S ribosomal protein L4



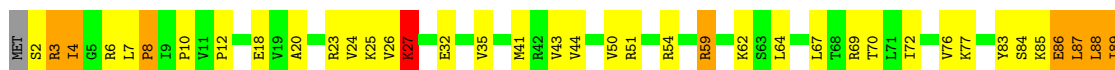
• Molecule 6: 50S ribosomal protein L5

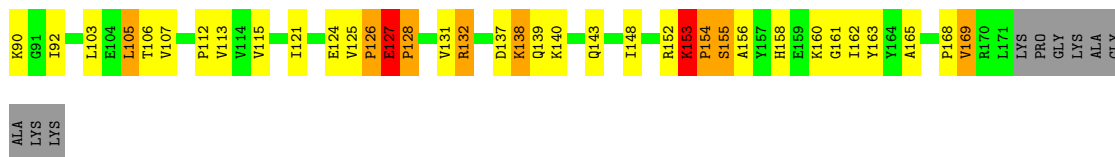


• Molecule 6: 50S ribosomal protein L5



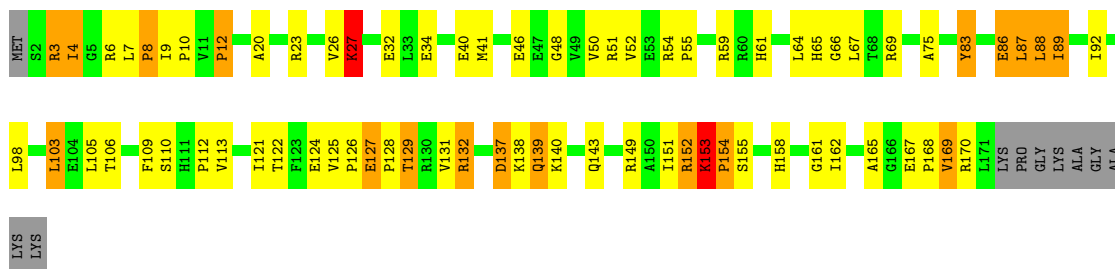
• Molecule 7: 50S ribosomal protein L6





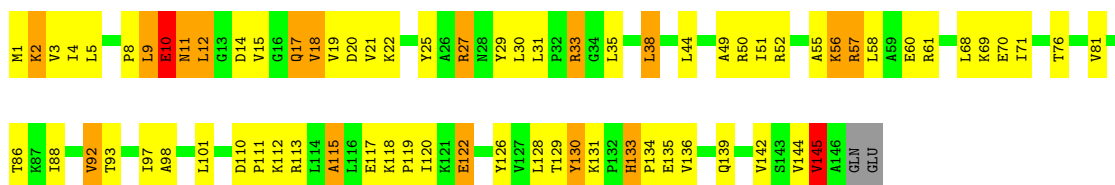
- Molecule 7: 50S ribosomal protein L6

Chain YH: 53% 30% 10% 6%



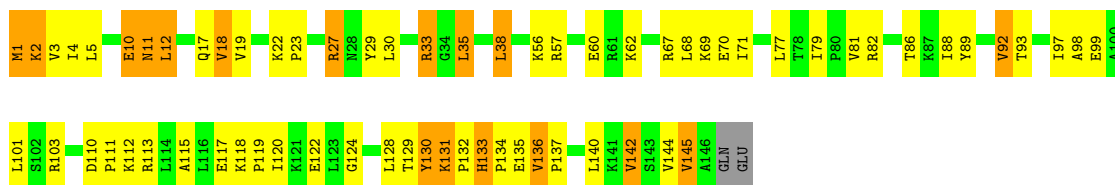
- Molecule 8: 50S ribosomal protein L9

Chain RI: 49% 37% 11% ..



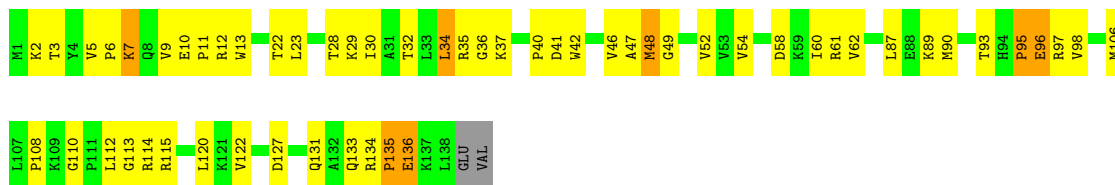
- Molecule 8: 50S ribosomal protein L9

Chain YI: 53% 34% 11%



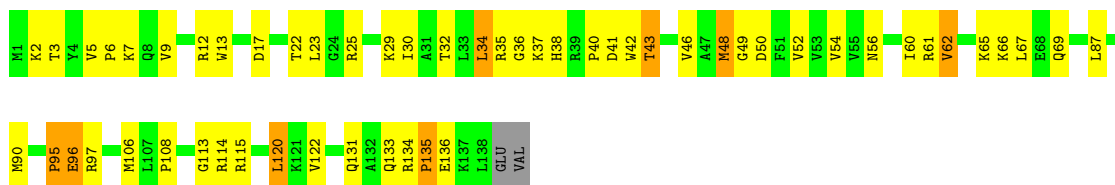
- Molecule 9: 50S ribosomal protein L13

Chain RN: 59% 35% 5%




- Molecule 9: 50S ribosomal protein L13

Chain YN:  59% 34% 6%




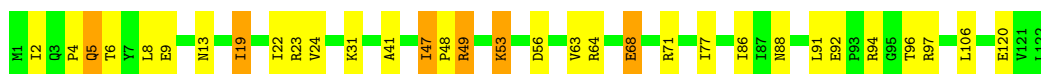
- Molecule 10: 50S ribosomal protein L14

Chain RO:  80% 16%



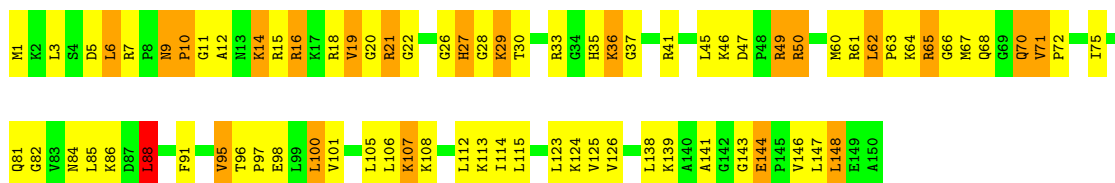
- Molecule 10: 50S ribosomal protein L14

Chain YO:  74% 21% 5%



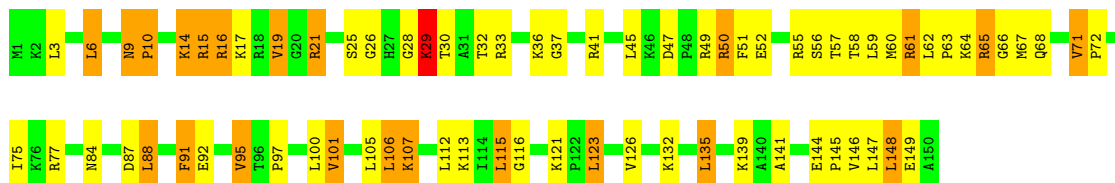
- Molecule 11: 50S ribosomal protein L15

Chain RP:  48% 37% 14%



- Molecule 11: 50S ribosomal protein L15

Chain YP:  51% 33% 15%



- Molecule 12: 50S ribosomal protein L16

Chain RQ:  57% 35% 6%





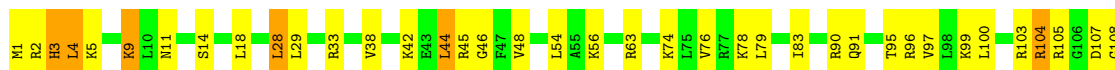
- Molecule 12: 50S ribosomal protein L16

Chain YQ: 57% 37% 5%



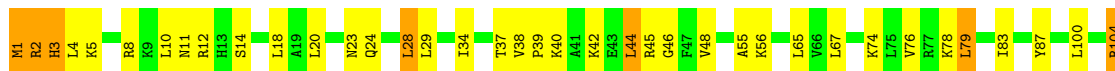
- Molecule 13: 50S ribosomal protein L17

Chain RR: 63% 32% 5%



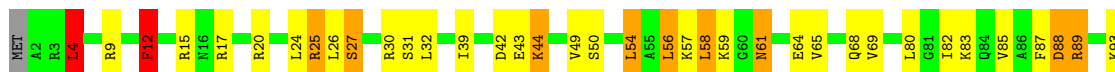
- Molecule 13: 50S ribosomal protein L17

Chain YR: 62% 32% 6%



- Molecule 14: 50S ribosomal protein L18

Chain RS: 60% 27% 11%



- Molecule 14: 50S ribosomal protein L18

Chain YS: 59% 30% 9%

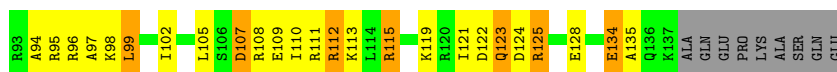
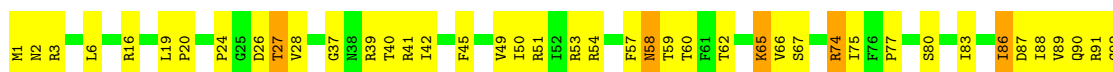




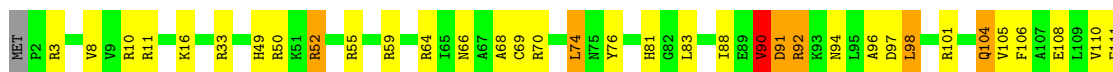
• Molecule 15: 50S ribosomal protein L19



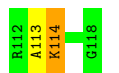
• Molecule 15: 50S ribosomal protein L19



• Molecule 16: 50S ribosomal protein L20



• Molecule 16: 50S ribosomal protein L20



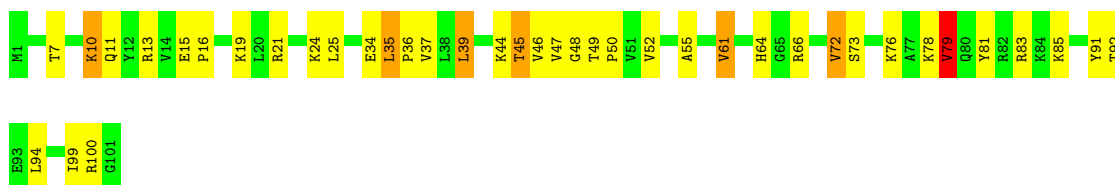
• Molecule 17: 50S ribosomal protein L21






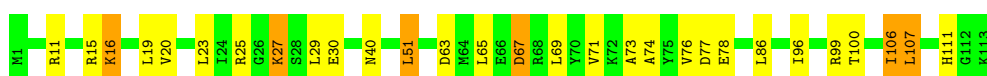
- Molecule 17: 50S ribosomal protein L21

Chain YV:  60% 33% 6%



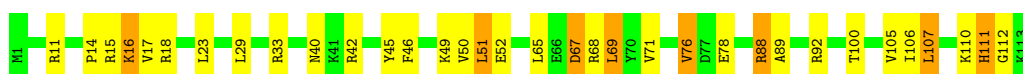
- Molecule 18: 50S ribosomal protein L22

Chain RW:  74% 20% 5%



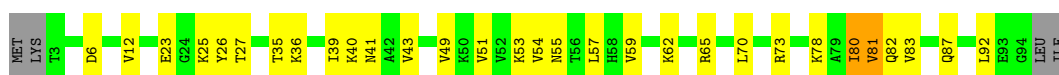
- Molecule 18: 50S ribosomal protein L22

Chain YW:  70% 23% 7%



- Molecule 19: 50S ribosomal protein L23

Chain RX:  65% 29% 6%



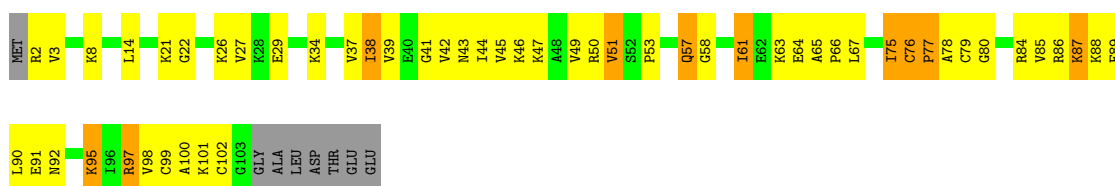
- Molecule 19: 50S ribosomal protein L23

Chain YX:  67% 25% 8%



- Molecule 20: 50S ribosomal protein L24

Chain RY:  44% 40% 9% 7%



- Molecule 20: 50S ribosomal protein L24

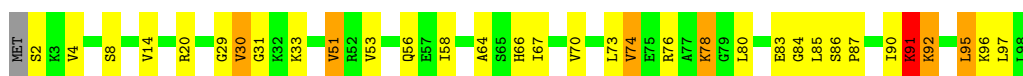


Chain R1:  66% 29% ..



- Molecule 23: 50S ribosomal protein L28

Chain Y1:  65% 27% 6% ..



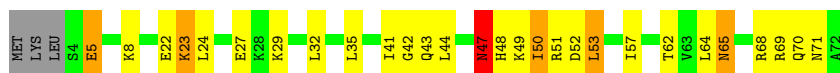
- Molecule 24: 50S ribosomal protein L29

Chain R2:  62% 26% 7% .



- Molecule 24: 50S ribosomal protein L29

Chain Y2:  57% 31% 7% ..




- Molecule 25: 50S ribosomal protein L30

Chain R3:  75% 22% ..



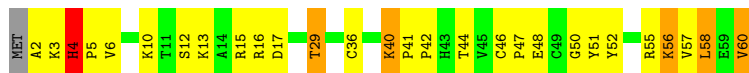
- Molecule 25: 50S ribosomal protein L30

Chain Y3:  87% 8% ..



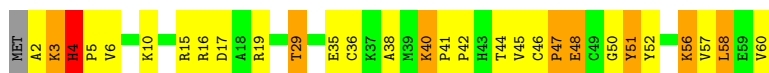
- Molecule 26: 50S ribosomal protein L32

Chain R5:  52% 37% 8% ..

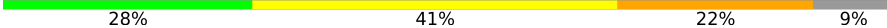


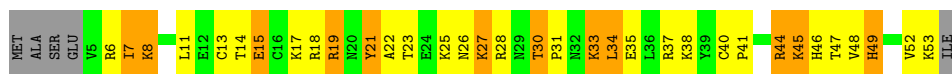
- Molecule 26: 50S ribosomal protein L32

Chain Y5:  50% 33% 13% ..



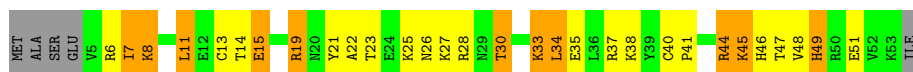
- Molecule 27: 50S ribosomal protein L33

Chain R6:  28% 41% 22% 9%



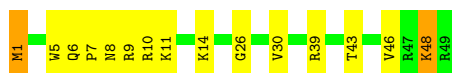
- Molecule 27: 50S ribosomal protein L33

Chain Y6:  35% 35% 20% 9%



- Molecule 28: 50S ribosomal protein L34

Chain R7:  69% 27% .



- Molecule 28: 50S ribosomal protein L34

Chain Y7:  71% 24% .



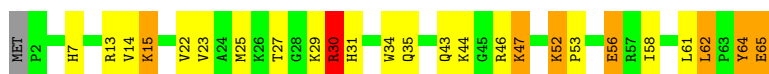
- Molecule 29: 50S ribosomal protein L35

Chain R8:  52% 38% 6% ..



- Molecule 29: 50S ribosomal protein L35

Chain Y8:  60% 26% 11% ..




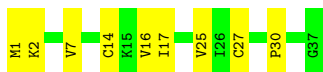
- Molecule 30: 50S ribosomal protein L36

Chain R9:  70% 30%



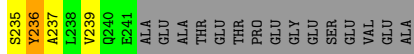
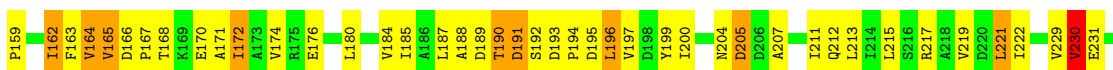
- Molecule 30: 50S ribosomal protein L36

Chain Y9:  76% 24%



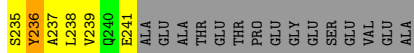
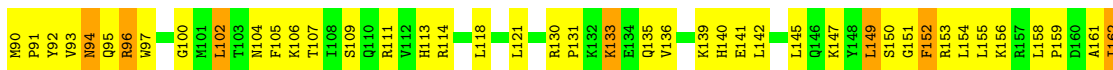
- Molecule 31: 30S ribosomal protein S2

Chain QB:  42% 41% 9% 8%



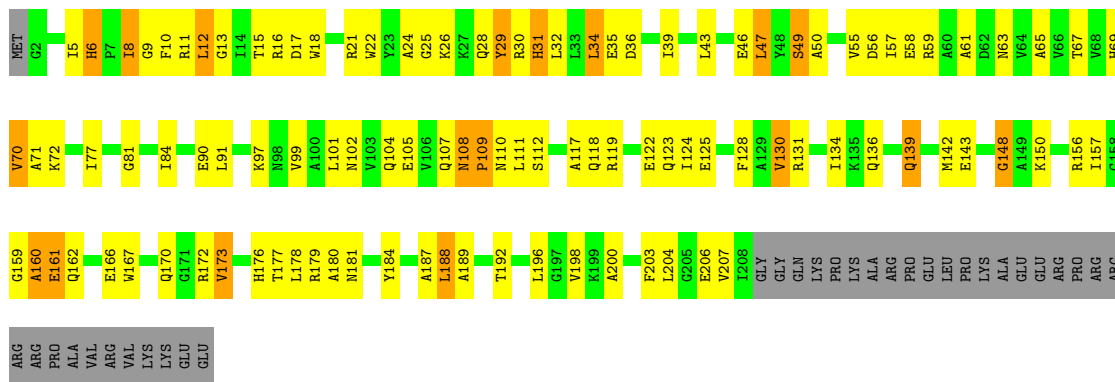
- Molecule 31: 30S ribosomal protein S2

Chain XB:  41% 41% 9% 8%

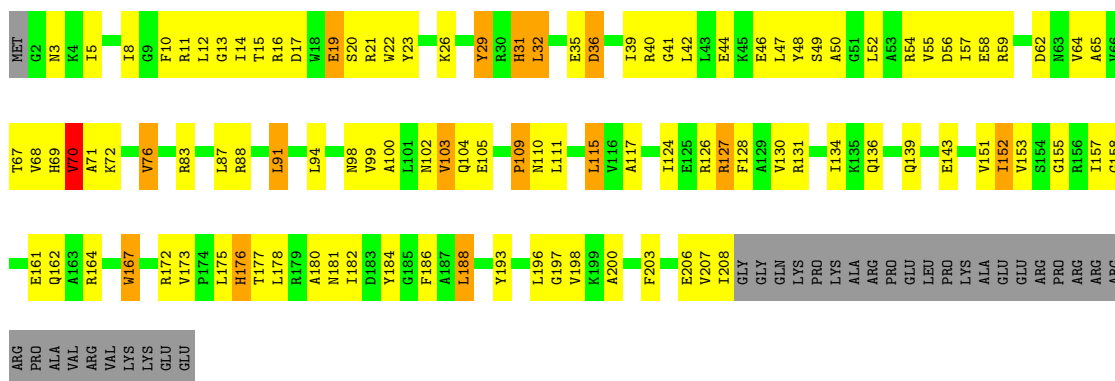


- Molecule 32: 30S ribosomal protein S3

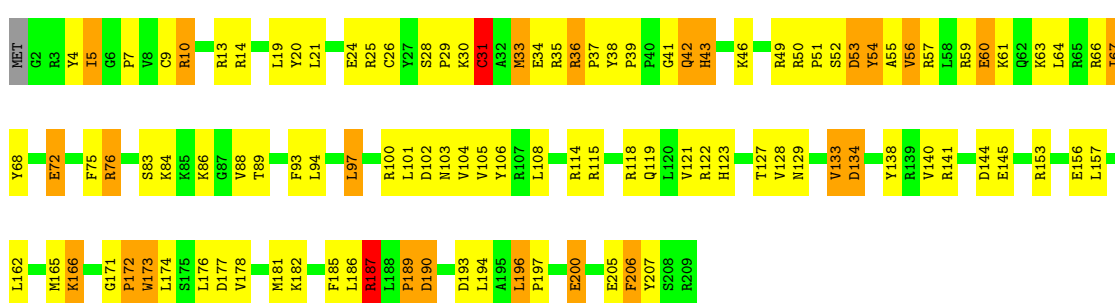
Chain QC:  42% 37% 8% 13%



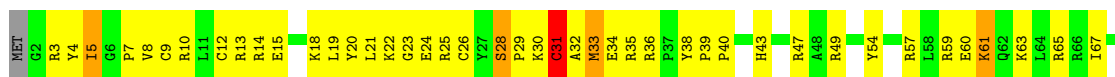
• Molecule 32: 30S ribosomal protein S3

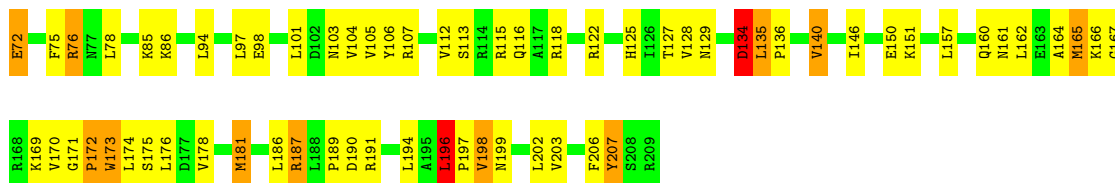


• Molecule 33: 30S ribosomal protein S4

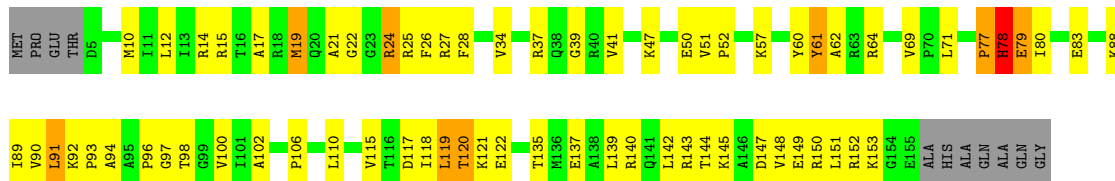


• Molecule 33: 30S ribosomal protein S4

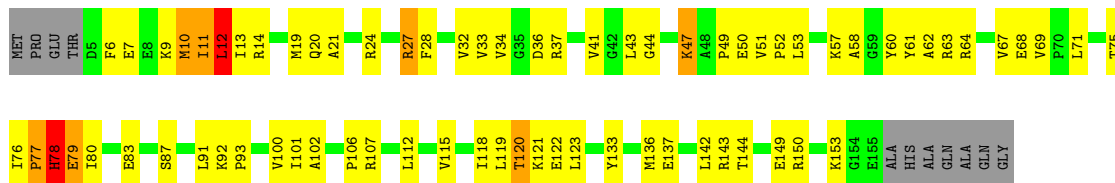




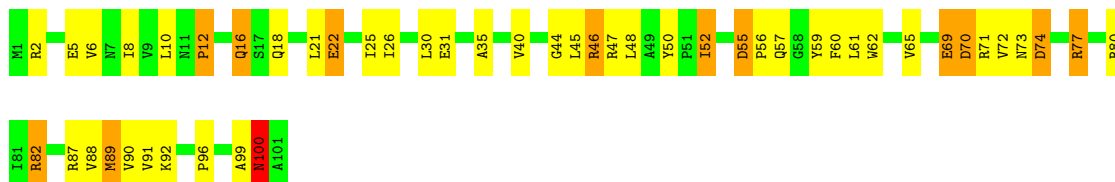
- Molecule 34: 30S ribosomal protein S5



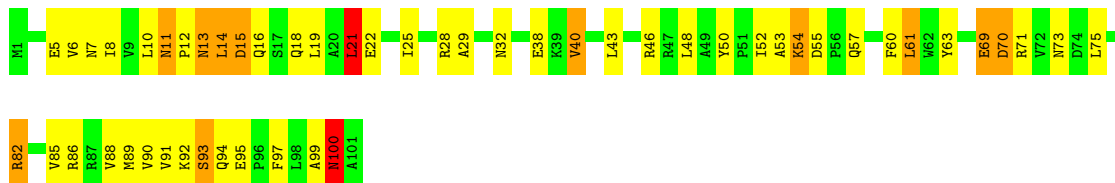
- Molecule 34: 30S ribosomal protein S5



- Molecule 35: 30S ribosomal protein S6

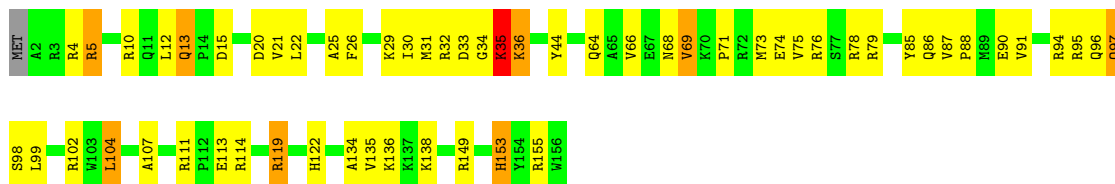


- Molecule 35: 30S ribosomal protein S6



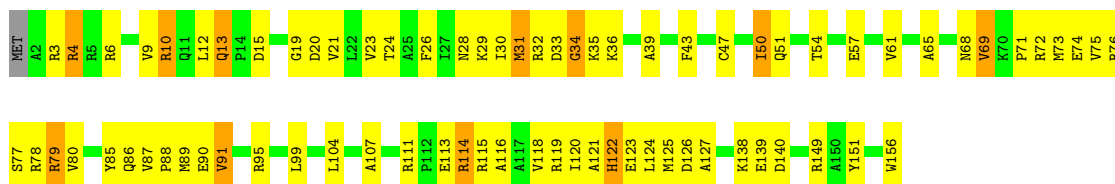
- Molecule 36: 30S ribosomal protein S7

Chain QG:  62% 31% 5% ..



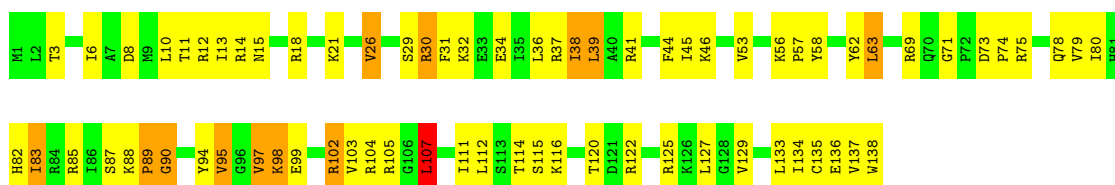
• Molecule 36: 30S ribosomal protein S7

Chain XG:  51% 42% 7% .



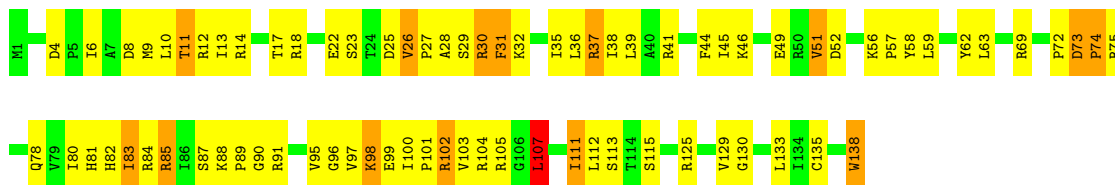
• Molecule 37: 30S ribosomal protein S8

Chain QH:  48% 43% 9% .



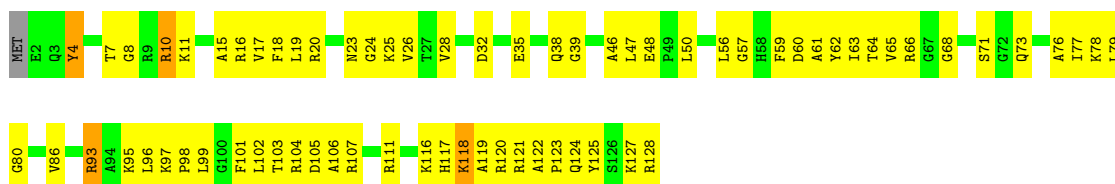
• Molecule 37: 30S ribosomal protein S8

Chain XH:  43% 46% 10% .



• Molecule 38: 30S ribosomal protein S9

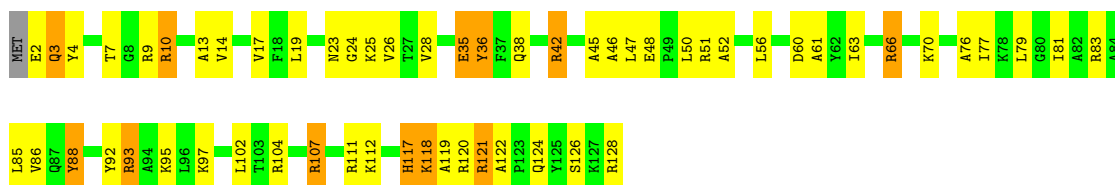
Chain QI:  45% 51% ..





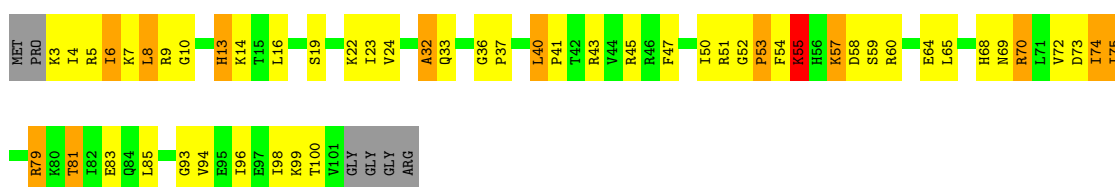
- Molecule 38: 30S ribosomal protein S9

Chain XI:  54% 36% 9%



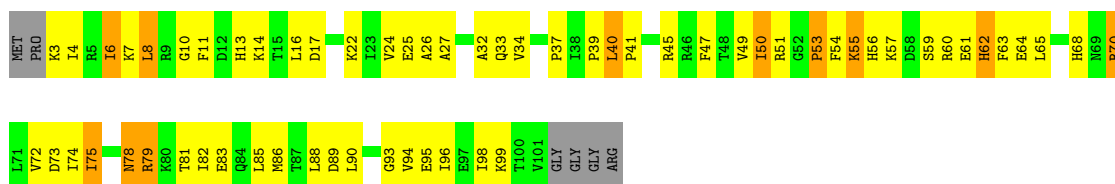
- Molecule 39: 30S ribosomal protein S10

Chain QJ:  44% 38% 11% 6%



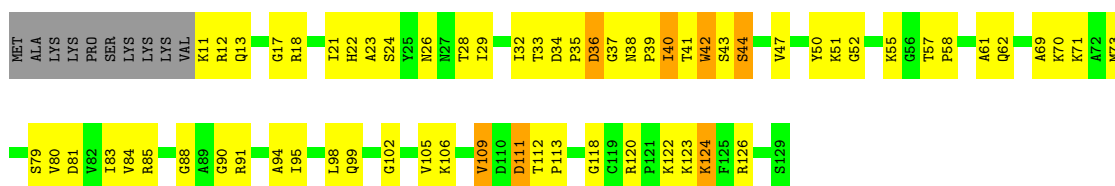
- Molecule 39: 30S ribosomal protein S10

Chain XJ:  35% 49% 10% 6%



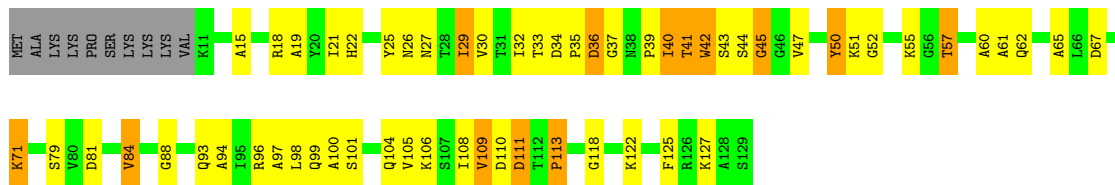
- Molecule 40: 30S ribosomal protein S11

Chain QK:  43% 44% 5% 8%

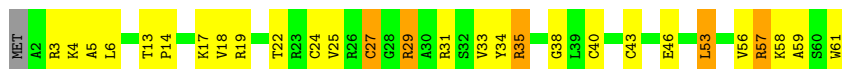


- Molecule 40: 30S ribosomal protein S11

Chain XK:  47% 36% 10% 8%



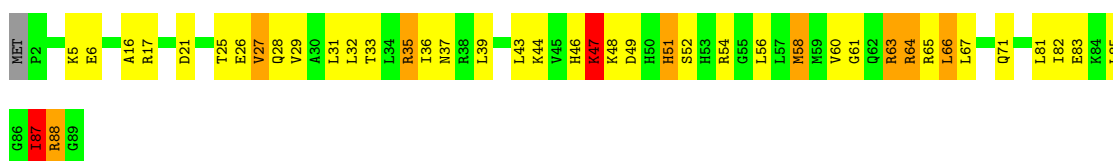




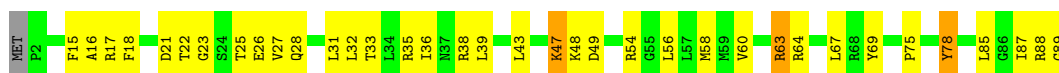
- Molecule 43: 30S ribosomal protein S14 type Z



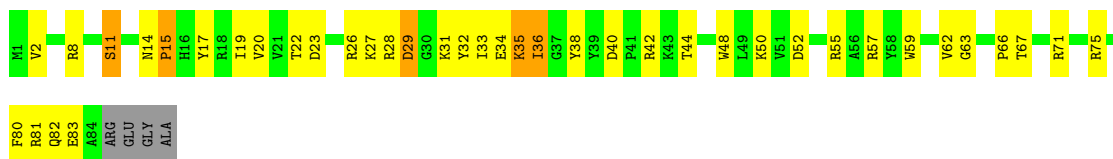
- Molecule 44: 30S ribosomal protein S15



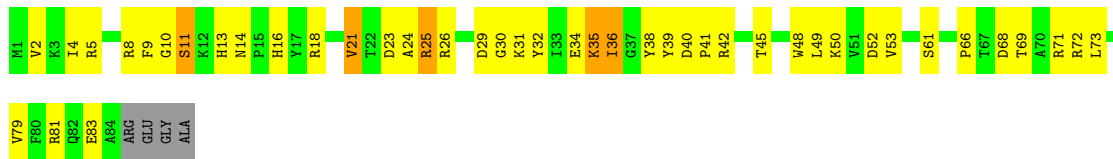
- Molecule 44: 30S ribosomal protein S15



- Molecule 45: 30S ribosomal protein S16

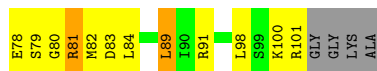
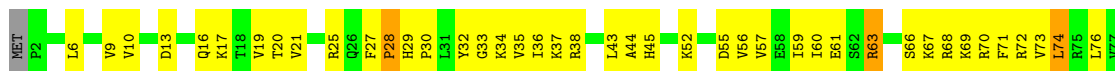


- Molecule 45: 30S ribosomal protein S16

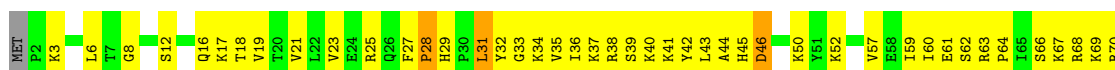
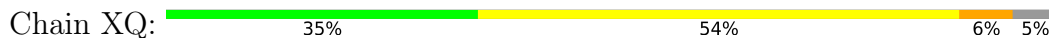


- Molecule 46: 30S ribosomal protein S17





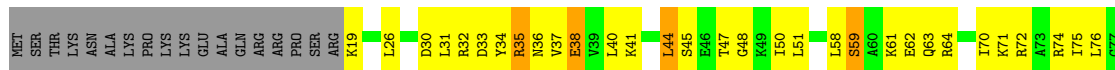
• Molecule 46: 30S ribosomal protein S17



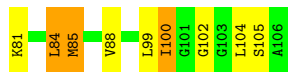
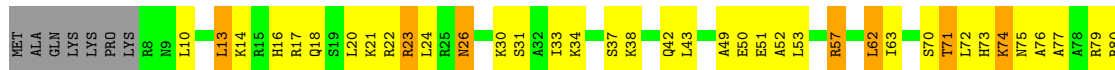
• Molecule 47: 30S ribosomal protein S18



• Molecule 48: 30S ribosomal protein S18

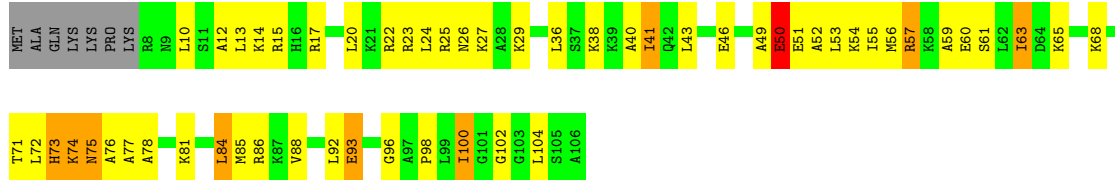


• Molecule 48: 30S ribosomal protein S20

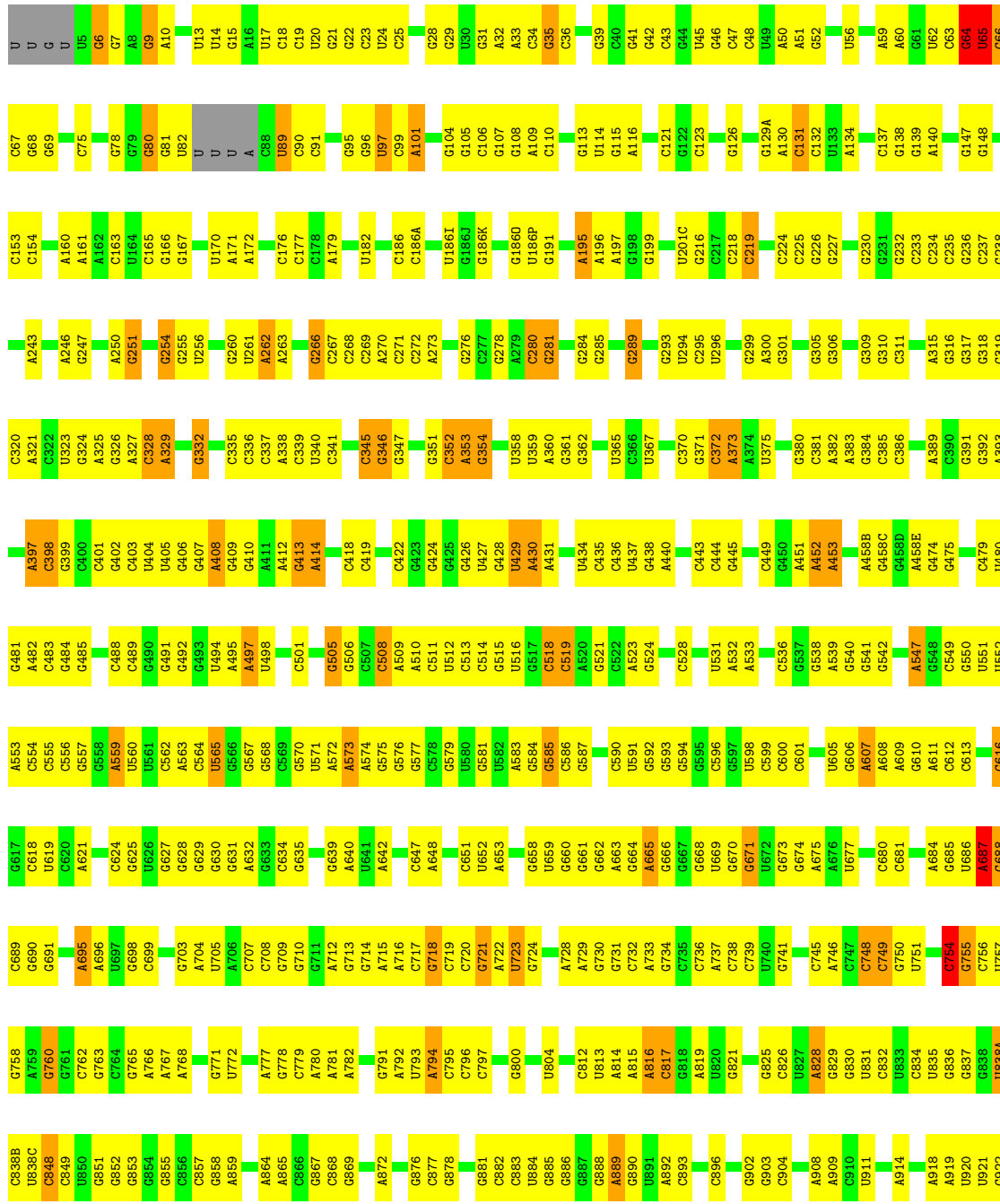


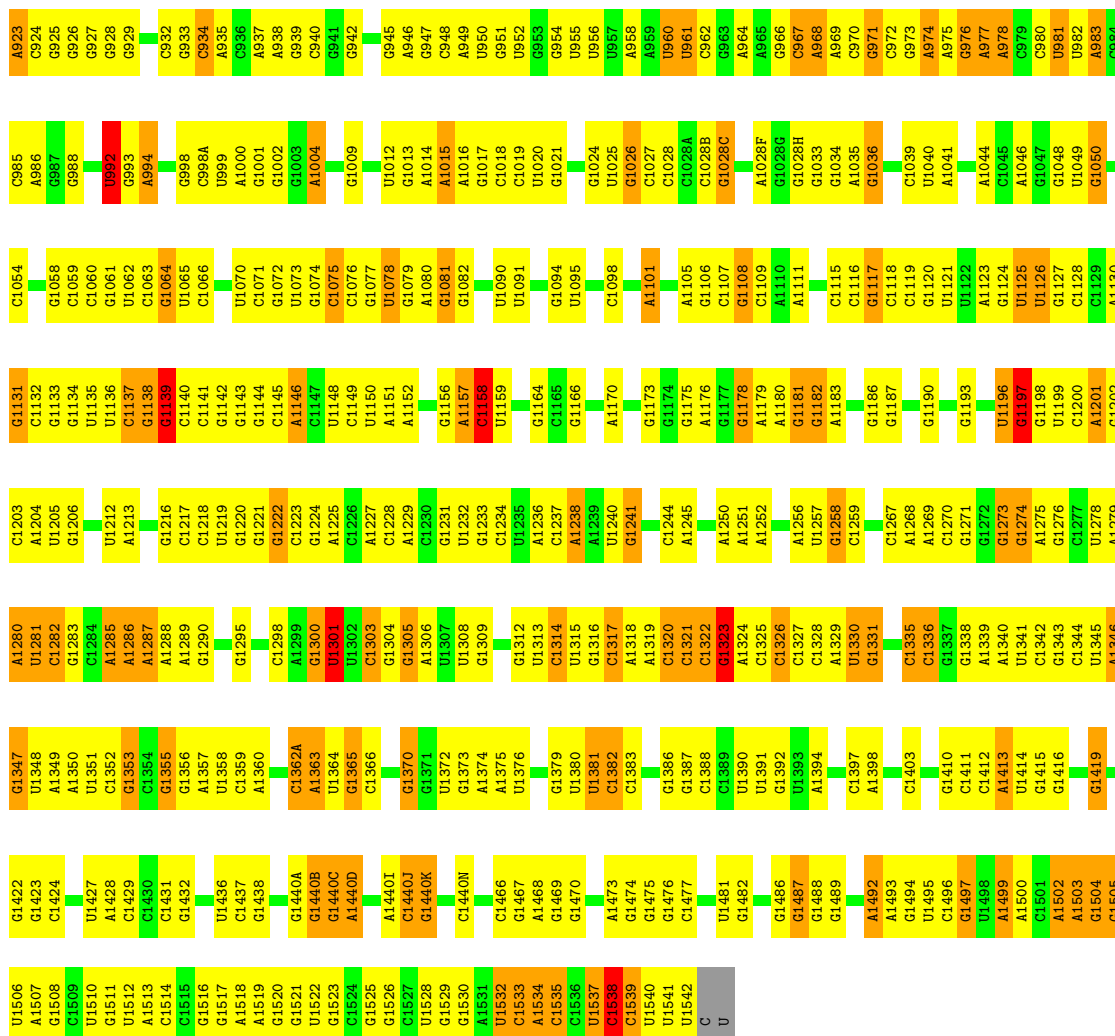
• Molecule 48: 30S ribosomal protein S20



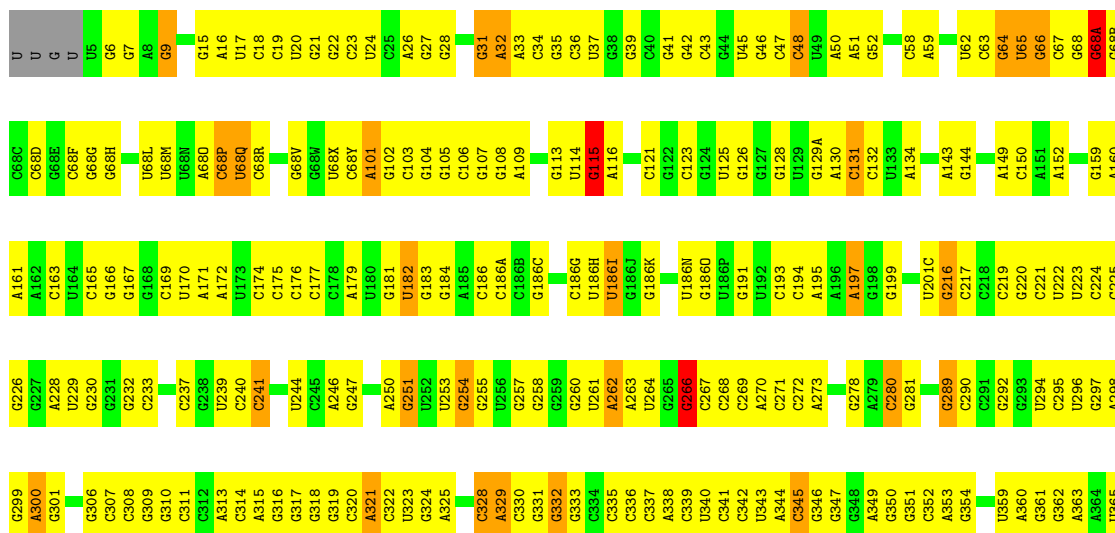


• Molecule 49: 16S rRNA





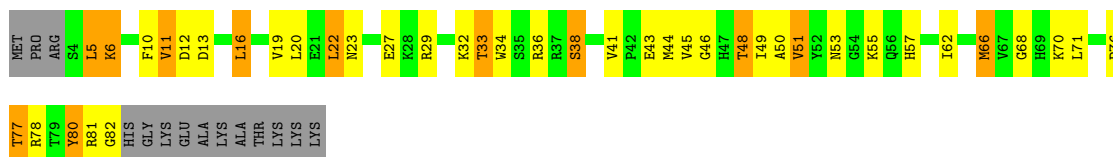
• Molecule 49: 16S rRNA



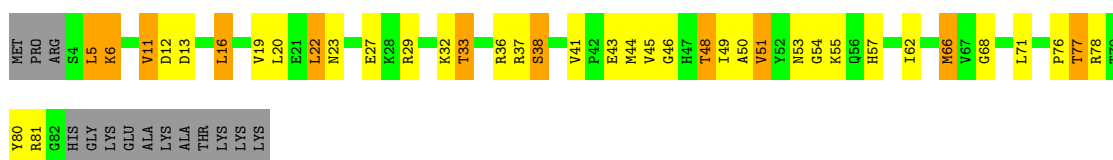
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A1394	C1328	U1257	A1183	G1108	G1033	G972	G903	G821	C745	G674	G605	A535	U437	U867
C1397	A1329	G1268	G1186	C1109	A1034	G973	G906	C824	C748	A675	G606	C536	C438	C370
G1400	C1259	C1269	A1187	C1112	A1035	A974	A907	G825	A975	A676	A607	C537	A440	G371
C1409	A1332	A1261	G1188	C1115	G1036	A975	A908	C826	C749	A677	A608	G538	C443	C372
G1410	A1333	C1262	C1189	C1116	C1038	G976	A909	U827	G750	A678	A609	G539	C444	A373
C1411	G1334	G1263	G1190	C1117	C1039	A977	A910	A828	U751	C680	G610	G540	C445	A374
C1412	C1264	C1264	G1193	C1118	U1040	A978	U911	G829	G752	C681	A611	G541	G445	U375
A1413	G1265	G1265	G1196	C1119	A1041	C980	A914	G832	C754	C682	C613	C545	G446	G376
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G1415	A1269	A1269	G1198	U1121	A1044	U982	A919	C834	C756	A685	G615	G547	A453	G378
G1419	G1344	C1270	G1199	G1122	G1045	C983	A918	U835	C757	U686	G616	A547	G458A	C379
C1420	A1345	G1271	G1124	U1125	A1046	C984	U920	C836	C758	C688	C618	U551	U458B	G380
G1421	C1272	C1272	C1200	G1126	U1047	A985	U921	U838A	C760	C689	U619	U552	A458C	C381
C1422	G1273	G1273	G1201	U1127	G1048	A986	U922	C838B	G761	C690	G620	U553	A458D	A382
G1423	A1348	G1274	G1202	C1128	U1049	C987	A923	U838C	G762	G691	A621	C554	G458E	A383
C1424	A1349	A1204	C1203	C1129	G1050	C988	G924	C848	G763	U692	G622	C555	G474	G384
U1425	A1205	A1205	G1193	C1130	G1051	U992	G925	C849	C764	G693	C623	C556	U480	G388
C1426	A1280	A1280	G1194	U1131	U1052	G993	G926	U850	C765	A701	G624	C557	U481	A389
U1427	A1281	G1206	G1195	G1132	G1053	A994	G927	G851	A766	A695	G625	C558	A482	G392
A1428	C1282	G1282	G1196	U1133	C1054	C995	G928	G852	A767	A696	U626	C559	C483	C394
C1431	G1283	C1283	U1212	U1135	U1056	A996	G929	G853	A768	C702	G627	C560	C484	C395
G1432	C1284	A1284	A1213	C1137	G1057	C998A	G930	G855	C770	G703	G633	C562	G485	G396
C1433	A1285	A1285	G1216	G1138	U1058	U999	C932	C856	A771	A704	G634	A963	C491	C397
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G1436	G1288	G1288	G1219	C1145	G1061	G1002	A935	A859	C778	C707	G638	C566	U494	G399
C1437	A1289	A1289	U1219	C1146	U1062	G1003	G939	G864	C779	C708	G639	C567	U495	C400
C1438	C1296	C1296	G1222	A1147	G1064	A1004	C940	A865	A781	G711	A642	C568	U496	C401
G1440B	C1297	C1297	G1223	C1148	U1066	C1007	C941	A866	C784	A712	C643	C569	U497	C402
C1440C	A1298	A1298	G1224	U1149	C1066	C1008	G942	C867	C785	A713	G644	C570	U498	G403
G1440E	G1300	A1299	G1225	U1150	G1009	A946	A946	C868	C786	G714	C645	C571	U499	C404
C1440F	U1301	U1301	A1226	A1151	U1010	G1010	G947	C869	A787	A715	U646	C572	C501	U405
C1440G	C1302	C1302	A1227	A1152	G1011	G1011	C948	U870	U788	A716	C647	C573	C501	G406
U1440H	U1303	G1303	C1228	A1157	U1012	U1012	A949	U871	U789	C717	A648	C574	C501	G407
C1440J	G1304	G1304	G1229	C1158	C1075	G1013	U950	A872	A790	G718	A649	C575	U508	A408
G1440K	A1374	A1374	C1230	C1159	U1077	A1014	G951	C875	A791	C719	G650	C576	C508	G409
C1463	A1375	A1306	G1231	G1160	U1078	A1015	U952	U876	A792	C720	C651	C577	A509	A412
G1464	C1376	A1306	U1232	C1161	G1079	A1016	G953	C877	U793	G721	U652	C581	A510	G413
C1465	G1309	G1309	G1233	C1166	A1080	G1017	G954	C878	A794	A722	A653	C582	A511	G414
C1466	C1310	C1310	U1234	G1167	G1081	C1018	U955	C879	G799	U723	G654	C583	C513	C422
G1467	A1314	A1314	A1235	A1167	U1082	C1019	U956	C880	G800	G727	G658	C584	C514	G423
C1468	C1315	C1315	C1236	A1169	U1083	U1020	U957	C881	G806	A728	U659	C585	C515	G424
G1469	A1316	A1316	C1237	A1170	G1084	G1021	A958	G881	A807	A729	G660	C586	C516	G425
G1470	C1317	C1317	U1240	G1171	G1094	G1022	U960	G888	C806	A807	G661	C587	C517	G426
C1476	A1318	A1318	G1241	C1172	U1095	G1023	U961	A889	C806	A807	G662	C588	C518	C427
C1477	G1385	G1385	C1242	G1173	C1096	U1025	G962	G890	C811	C732	A663	C589	C519	U427
C1478	C1320	C1320	C1243	G1174	G1097	G1026	G963	G891	C812	A733	G664	C590	C520	G428
C1479	A1321	A1321	C1244	G1175	C1098	G1027	U964	C893	C813	G734	A665	C591	C521	G429
G1480	C1322	C1322	A1245	A1176	G1099	G1028	A965	C894	C814	C735	G666	C592	C522	U429
U1481	G1323	G1323	G1177	G1100	C1028A	G966	G967	C896	A815	C736	G667	C593	C523	A430
C1482	A1324	A1324	G1178	A1101	C1028B	C967	C968	C899	A816	A737	G668	C594	C524	A431
A1483	C1325	C1325	A1179	A1105	G1028C	A968	A969	A900	C817	C738	C601	C595	C525	A432
C1484	G1326	G1326	G1181	G1106	G1028D	A969	C970	A901	G818	A737	C602	C596	C526	A433
														U434
														C435



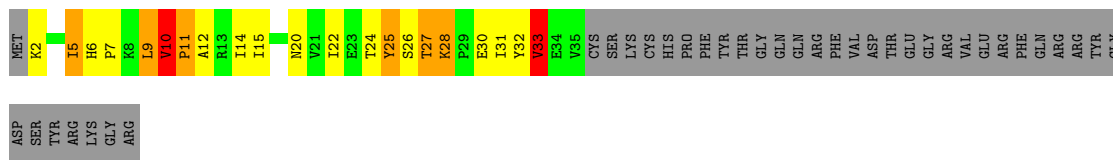
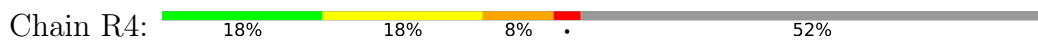
• Molecule 50: 30S ribosomal protein S19



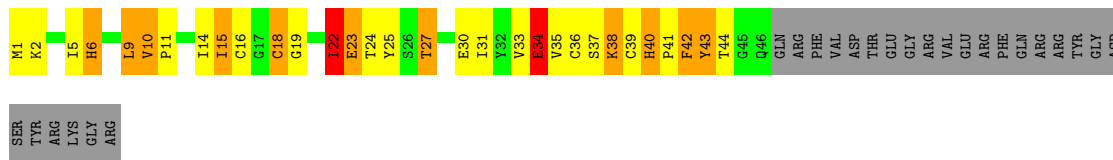
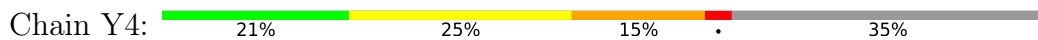
• Molecule 50: 30S ribosomal protein S19



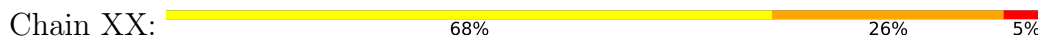
• Molecule 51: 50S ribosomal protein L31



• Molecule 51: 50S ribosomal protein L31

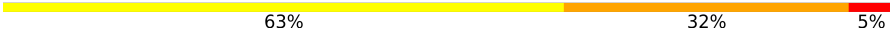


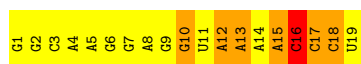
• Molecule 52: messenger RNA



• Molecule 52: messenger RNA

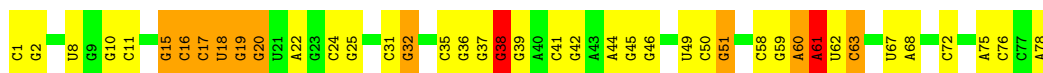


Chain QX:  63% 32% 5%



- Molecule 53: P-site tRNA SufA6

Chain XV:  47% 37% 13%



- Molecule 53: P-site tRNA SufA6

Chain QV:  49% 32% 13% 6%



## 4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, $\alpha$ , $\beta$ , $\gamma$	210.75Å 450.05Å 626.64Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	16.60 – 3.90 49.96 – 3.90	Depositor EDS
% Data completeness (in resolution range)	98.3 (16.60-3.90) 98.2 (49.96-3.90)	Depositor EDS
$R_{merge}$	(Not available)	Depositor
$R_{sym}$	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ <sup>1</sup>	1.36 (at 3.88Å)	Xtrriage
Refinement program	PHENIX	Depositor
R, $R_{free}$	(Not available) , (Not available) 0.272 , 0.316	Depositor DCC
$R_{free}$ test set	23266 reflections (4.42%)	wwPDB-VP
Wilson B-factor (Å <sup>2</sup> )	128.1	Xtrriage
Anisotropy	0.334	Xtrriage
Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> )	0.25 , 47.3	EDS
L-test for twinning <sup>2</sup>	$\langle  L  \rangle = 0.35$ , $\langle L^2 \rangle = 0.17$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
$F_o, F_c$ correlation	0.89	EDS
Total number of atoms	291660	wwPDB-VP
Average B, all atoms (Å <sup>2</sup> )	123.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.88% of the height of the origin peak. No significant pseudotranslation is detected.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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 i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: MG, 1MG, ZN

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	RA	0.31	11/69520 (0.0%)	0.97	171/108525 (0.2%)
1	YA	0.29	1/69543 (0.0%)	0.96	137/108563 (0.1%)
2	RB	0.29	0/2878	0.99	11/4490 (0.2%)
2	YB	0.29	0/2878	0.99	9/4490 (0.2%)
3	RD	0.28	0/2165	0.54	0/2919
3	YD	0.27	0/2165	0.53	0/2919
4	RE	0.29	0/1601	0.60	2/2160 (0.1%)
4	YE	0.32	1/1601 (0.1%)	0.59	1/2160 (0.0%)
5	RF	0.28	0/1620	0.55	1/2194 (0.0%)
5	YF	0.27	0/1620	0.51	0/2194
6	RG	0.28	0/1499	0.55	0/2016
6	YG	0.26	0/1499	0.51	0/2016
7	RH	0.28	0/1332	0.56	0/1802
7	YH	0.30	0/1332	0.61	1/1802 (0.1%)
8	RI	0.26	0/1151	0.61	0/1558
8	YI	0.27	0/1151	0.60	0/1558
9	RN	0.26	0/1131	0.51	0/1525
9	YN	0.26	0/1131	0.50	0/1525
10	RO	0.26	0/943	0.51	0/1269
10	YO	0.26	0/943	0.51	0/1269
11	RP	0.28	0/1162	0.65	1/1544 (0.1%)
11	YP	0.28	0/1162	0.63	0/1544
12	RQ	0.31	0/1143	0.58	0/1527
12	YQ	0.28	0/1143	0.55	0/1527
13	RR	0.26	0/982	0.55	0/1312
13	YR	0.29	0/982	0.57	0/1312
14	RS	0.27	0/892	0.58	0/1187
14	YS	0.27	0/892	0.60	0/1187
15	RT	0.35	0/1155	0.65	2/1542 (0.1%)
15	YT	0.32	0/1155	0.59	0/1542
16	RU	0.28	0/982	0.54	0/1306
16	YU	0.25	0/982	0.47	0/1306

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
17	RV	0.26	0/790	0.55	0/1057
17	YV	0.27	0/790	0.58	1/1057 (0.1%)
18	RW	0.26	0/911	0.48	0/1220
18	YW	0.26	0/911	0.51	0/1220
19	RX	0.28	0/739	0.49	0/993
19	YX	0.30	0/739	0.51	0/993
20	RY	0.31	0/798	0.61	0/1064
20	YY	0.30	0/798	0.60	0/1064
21	RZ	0.28	0/1493	0.57	0/2026
21	YZ	0.27	0/1493	0.58	1/2026 (0.0%)
22	R0	0.26	0/657	0.53	0/874
22	Y0	0.33	0/657	0.56	0/874
23	R1	0.31	0/770	0.58	0/1022
23	Y1	0.29	0/770	0.55	0/1022
24	R2	0.25	0/583	0.53	0/771
24	Y2	0.23	0/583	0.49	0/771
25	R3	0.27	0/474	0.51	0/635
25	Y3	0.22	0/474	0.44	0/635
26	R5	0.26	0/473	0.57	0/639
26	Y5	0.27	0/473	0.55	0/639
27	R6	0.27	0/431	0.63	0/575
27	Y6	0.25	0/431	0.61	0/575
28	R7	0.24	0/438	0.48	0/575
28	Y7	0.23	0/438	0.45	0/575
29	R8	0.27	0/525	0.58	0/691
29	Y8	0.33	0/525	0.60	0/691
30	R9	0.24	0/310	0.51	0/407
30	Y9	0.23	0/310	0.48	0/407
31	QB	0.28	0/1944	0.58	0/2621
31	XB	0.27	0/1944	0.59	0/2621
32	QC	0.26	0/1644	0.57	0/2216
32	XC	0.27	0/1644	0.60	0/2216
33	QD	0.45	2/1733 (0.1%)	0.70	4/2318 (0.2%)
33	XD	0.30	0/1733	0.62	0/2318
34	QE	0.28	0/1171	0.58	0/1576
34	XE	0.26	0/1171	0.58	1/1576 (0.1%)
35	QF	0.25	0/856	0.59	0/1154
35	XF	0.27	0/856	0.60	1/1154 (0.1%)
36	QG	0.25	0/1276	0.51	0/1709
36	XG	0.26	0/1276	0.51	0/1709
37	QH	0.26	0/1136	0.58	0/1527
37	XH	0.27	0/1136	0.58	0/1527
38	QI	0.29	0/1029	0.55	0/1379

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
38	XI	0.26	0/1029	0.55	0/1379
39	QJ	0.26	0/814	0.53	0/1095
39	XJ	0.26	0/814	0.57	0/1095
40	QK	0.28	0/900	0.54	0/1213
40	XK	0.27	0/900	0.54	0/1213
41	QL	0.28	0/991	0.68	0/1327
41	XL	0.30	0/991	0.74	1/1327 (0.1%)
42	QM	0.25	0/924	0.57	0/1238
42	XM	0.29	0/924	0.64	0/1238
43	QN	0.28	0/501	0.56	0/664
43	XN	0.30	0/501	0.59	0/664
44	QO	0.24	0/745	0.55	0/992
44	XO	0.34	1/745 (0.1%)	0.55	0/992
45	QP	0.26	0/721	0.62	0/970
45	XP	0.26	0/721	0.60	0/970
46	QQ	0.28	0/847	0.61	0/1131
46	XQ	0.27	0/847	0.59	0/1131
47	QR	0.28	0/579	0.62	0/768
47	XR	0.28	0/579	0.65	0/768
48	QT	0.23	0/765	0.53	0/1007
48	XT	0.24	0/765	0.50	0/1007
49	QA	0.25	0/36347	0.90	37/56727 (0.1%)
49	XA	0.31	6/36439 (0.0%)	0.96	86/56872 (0.2%)
50	QS	0.23	0/646	0.49	0/870
50	XS	0.24	0/646	0.49	0/870
51	R4	0.34	0/267	0.63	0/362
51	Y4	0.27	0/366	0.57	0/495
52	QX	0.22	0/459	0.89	2/715 (0.3%)
52	XX	0.21	0/459	0.89	2/715 (0.3%)
53	QV	0.22	0/1839	0.87	9/2866 (0.3%)
53	XV	0.17	0/1839	0.78	2/2866 (0.1%)
All	All	0.29	22/315578 (0.0%)	0.87	483/472056 (0.1%)

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
1	RA	0	2
3	RD	0	1
7	RH	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
7	YH	0	2
11	RP	0	1
15	RT	0	1
21	YZ	0	1
23	R1	0	1
29	R8	0	1
33	QD	0	1
33	XD	0	1
49	XA	0	2
53	QV	0	1
All	All	0	17

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	XA	771	G	C1'-N9	18.11	1.75	1.48
1	RA	1558	A	C1'-N9	17.07	1.74	1.48
1	RA	1913	A	C5'-C4'	16.54	1.71	1.51
49	XA	771	G	C4'-O4'	14.31	1.64	1.45
1	RA	1463	C	C5'-C4'	12.46	1.66	1.51
1	RA	1765	C	C1'-N1	11.16	1.65	1.48
49	XA	771	G	O4'-C1'	10.56	1.55	1.41
1	RA	1913	A	C1'-N9	10.46	1.64	1.48
33	QD	196	LEU	C-N	9.64	1.52	1.34
1	RA	1913	A	O4'-C1'	8.79	1.53	1.41
1	RA	1913	A	C4'-O4'	8.74	1.56	1.45
49	XA	771	G	C3'-C2'	8.10	1.61	1.52
1	RA	1443	G	N9-C8	6.66	1.42	1.37
4	YE	55	ASN	C-N	6.31	1.46	1.34
1	RA	1913	A	C3'-C2'	6.21	1.59	1.52
1	RA	1463	C	O4'-C1'	6.03	1.49	1.41
44	XO	15	PHE	C-O	6.00	1.34	1.23
1	YA	2000	G	N7-C5	5.63	1.42	1.39
33	QD	50	ARG	CG-CD	-5.43	1.38	1.51
49	XA	727	G	C2'-C1'	5.39	1.59	1.53
49	XA	1065	U	C2-N3	5.32	1.41	1.37
1	RA	1463	C	C1'-N1	5.10	1.56	1.48

All (483) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
49	XA	771	G	O4'-C1'-N9	26.71	129.57	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	1558	A	C8-N9-C1'	-26.16	80.62	127.70
1	RA	1558	A	O4'-C1'-N9	-24.62	88.50	108.20
1	RA	1463	C	C2-N1-C1'	24.24	145.47	118.80
1	RA	1762	A	N1-C6-N6	-24.02	104.19	118.60
1	RA	1558	A	C4-N9-C1'	23.56	168.70	126.30
1	RA	1463	C	C6-N1-C1'	-21.70	94.76	120.80
49	XA	1065	U	C2-N3-C4	-21.23	114.26	127.00
49	XA	1065	U	N1-C2-N3	19.19	126.41	114.90
1	RA	1762	A	C5-C6-N6	17.39	137.62	123.70
1	YA	658	C	C6-N1-C2	-15.91	113.94	120.30
1	RA	1913	A	O4'-C1'-N9	14.90	120.12	108.20
49	XA	1065	U	C4-C5-C6	14.72	128.53	119.70
49	XA	1065	U	C5-C6-N1	-14.35	115.52	122.70
1	RA	1913	A	C5'-C4'-O4'	14.04	125.95	109.10
49	XA	1390	U	N3-C4-O4	13.49	128.84	119.40
1	RA	2434	A	C4-N9-C1'	13.49	150.58	126.30
1	RA	2434	A	C8-N9-C1'	-13.46	103.48	127.70
49	XA	1390	U	C4-C5-C6	13.40	127.74	119.70
1	YA	2000	G	C8-N9-C4	13.29	111.72	106.40
2	YB	79	C	C6-N1-C2	-13.15	115.04	120.30
49	XA	1065	U	N1-C2-O2	-12.97	113.72	122.80
1	RA	1463	C	O4'-C1'-N1	12.88	118.50	108.20
1	RA	1632	A	N1-C6-N6	12.62	126.17	118.60
49	XA	239	U	N3-C4-O4	11.51	127.46	119.40
1	YA	2000	G	N1-C6-O6	-11.22	113.17	119.90
1	RA	1443	G	N1-C2-N3	-11.18	117.19	123.90
1	RA	1913	A	C8-N9-C1'	-11.08	107.76	127.70
1	RA	1443	G	C2-N3-C4	11.02	117.41	111.90
1	RA	1913	A	C4-N9-C1'	10.96	146.02	126.30
1	RA	1464	C	C2-N1-C1'	10.76	130.64	118.80
1	RA	1443	G	C4-C5-C6	-10.68	112.39	118.80
33	QD	49	ARG	NE-CZ-NH2	-10.65	114.98	120.30
49	QA	1492	A	OP1-P-O3'	-10.61	81.85	105.20
1	YA	2000	G	C5-C6-N1	10.38	116.69	111.50
1	RA	2231	C	C6-N1-C2	-10.35	116.16	120.30
49	XA	1390	U	N3-C4-C5	-10.29	108.43	114.60
1	RA	1632	A	C5-C6-N6	-10.25	115.50	123.70
49	QA	1139	G	C8-N9-C1'	-10.16	113.80	127.00
49	QA	1492	A	OP2-P-O3'	-10.03	83.14	105.20
1	RA	1632	A	C6-C5-N7	-9.87	125.39	132.30
49	QA	1139	G	C4-N9-C1'	9.84	139.29	126.50
1	RA	1464	C	C6-N1-C1'	-9.82	109.01	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	1443	G	C5-C6-N1	9.62	116.31	111.50
1	YA	2000	G	N7-C8-N9	-9.54	108.33	113.10
49	XA	727	G	C8-N9-C1'	-9.53	114.61	127.00
49	QA	1502	A	O5'-P-OP1	-9.50	97.15	105.70
1	RA	1632	A	C5-N7-C8	-9.46	99.17	103.90
1	YA	2000	G	C4-N9-C1'	-9.21	114.53	126.50
49	XA	1532	U	C2-N1-C1'	9.15	128.68	117.70
1	RA	1462	C	C2-N1-C1'	9.13	128.84	118.80
1	YA	981	A	N1-C2-N3	-9.11	124.75	129.30
1	RA	1677	A	C4-C5-N7	8.91	115.15	110.70
1	YA	1125	G	C5-C6-N1	8.84	115.92	111.50
1	RA	1632	A	C4-C5-N7	8.84	115.12	110.70
49	QA	1158	C	C2-N1-C1'	8.81	128.49	118.80
49	XA	1432	G	N1-C2-N2	8.80	124.12	116.20
1	RA	1631	A	N1-C6-N6	8.80	123.88	118.60
49	XA	1390	U	N1-C2-N3	8.73	120.14	114.90
1	YA	2000	G	C6-C5-N7	8.71	135.62	130.40
1	YA	658	C	N1-C2-O2	-8.64	113.72	118.90
1	RA	331	A	C8-N9-C4	8.59	109.23	105.80
1	RA	2614	A	C6-N1-C2	-8.42	113.55	118.60
1	YA	981	A	C2-N3-C4	8.39	114.79	110.60
2	RB	31	C	N1-C2-O2	8.29	123.87	118.90
1	RA	1313	U	C2-N1-C1'	8.26	127.61	117.70
1	RA	1631	A	C6-C5-N7	-8.21	126.55	132.30
1	RA	1731	G	C4-C5-N7	-8.19	107.52	110.80
1	RA	1762	A	C8-N9-C4	-8.16	102.54	105.80
1	YA	334	C	C6-N1-C2	-8.10	117.06	120.30
49	QA	1301	U	C2-N1-C1'	8.05	127.36	117.70
1	RA	1677	A	C5-N7-C8	-7.99	99.91	103.90
1	RA	2091	U	C4-C5-C6	7.98	124.49	119.70
49	XA	754	C	C2-N1-C1'	7.98	127.58	118.80
1	YA	1642	G	C6-C5-N7	-7.92	125.65	130.40
49	XA	1301	U	C2-N1-C1'	7.89	127.17	117.70
53	QV	20	G	C5'-C4'-O4'	-7.88	99.64	109.10
1	YA	2000	G	C4-C5-C6	-7.87	114.08	118.80
2	YB	31	C	N1-C2-O2	7.85	123.61	118.90
1	YA	1314	C	C2-N1-C1'	7.82	127.40	118.80
49	XA	1019	C	N3-C2-O2	-7.77	116.46	121.90
49	XA	1532	U	C6-N1-C1'	-7.76	110.34	121.20
1	YA	2501	C	C2-N1-C1'	-7.73	110.30	118.80
49	XA	771	G	C5'-C4'-O4'	-7.72	99.84	109.10
1	RA	69	C	N3-C4-C5	-7.69	118.82	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
49	XA	1532	U	O4'-C1'-N1	7.69	114.35	108.20
1	RA	761	A	C4-C5-N7	7.67	114.53	110.70
1	YA	658	C	C5-C6-N1	7.67	124.83	121.00
49	QA	1301	U	N1-C2-O2	7.63	128.14	122.80
1	RA	1462	C	C6-N1-C1'	-7.63	111.64	120.80
2	RB	66	A	C2-N3-C4	7.58	114.39	110.60
49	XA	838(A)	U	C2-N1-C1'	7.55	126.76	117.70
1	RA	2091	U	N3-C4-O4	7.53	124.67	119.40
1	RA	2091	U	N1-C2-N3	7.47	119.38	114.90
49	XA	771	G	O4'-C4'-C3'	-7.47	96.53	104.00
2	YB	31	C	C2-N1-C1'	7.44	126.99	118.80
49	XA	838(A)	U	N1-C2-O2	7.38	127.97	122.80
53	QV	32	G	C8-N9-C1'	-7.38	117.40	127.00
1	YA	1313	U	C2-N1-C1'	7.38	126.55	117.70
53	QV	20	G	C8-N9-C1'	-7.31	117.50	127.00
1	RA	1463	C	C5'-C4'-O4'	7.31	117.87	109.10
53	QV	20	G	C4-N9-C1'	7.31	136.00	126.50
1	RA	2525	G	N3-C2-N2	-7.28	114.81	119.90
1	YA	1613	G	N7-C8-N9	-7.26	109.47	113.10
1	YA	1652	A	C2-N3-C4	-7.26	106.97	110.60
1	YA	2501	C	C6-N1-C1'	7.20	129.44	120.80
1	RA	2229	C	C5-C4-N4	7.18	125.22	120.20
49	QA	1158	C	N1-C2-O2	7.17	123.20	118.90
1	RA	1443	G	C6-C5-N7	7.17	134.70	130.40
1	RA	1762	A	N9-C4-C5	7.17	108.67	105.80
1	YA	1642	G	C8-N9-C4	-7.16	103.54	106.40
1	YA	2002	G	N3-C4-N9	-7.14	121.72	126.00
1	YA	1613	G	C2-N3-C4	7.13	115.47	111.90
1	YA	2002	G	N1-C6-O6	-7.13	115.62	119.90
1	YA	2002	G	C6-C5-N7	7.12	134.67	130.40
1	RA	1765	C	C2-N1-C1'	-7.10	110.99	118.80
49	QA	1493	A	OP1-P-OP2	7.07	130.21	119.60
1	YA	1643	G	N3-C4-N9	-7.06	121.76	126.00
2	RB	81	G	C6-N1-C2	-7.03	120.88	125.10
49	XA	1390	U	C5-C6-N1	-7.03	119.19	122.70
49	XA	239	U	C5-C4-O4	-7.00	121.70	125.90
34	XE	12	LEU	CA-CB-CG	6.99	131.37	115.30
1	YA	1351	C	C2-N3-C4	-6.98	116.41	119.90
1	YA	1658	C	C6-N1-C2	-6.97	117.51	120.30
1	RA	2525	G	N3-C4-N9	-6.97	121.82	126.00
1	YA	1642	G	C5-C6-O6	-6.96	124.43	128.60
49	XA	1310	G	N3-C4-N9	-6.96	121.83	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	1677	A	N9-C4-C5	-6.95	103.02	105.80
49	XA	838(A)	U	N3-C2-O2	-6.94	117.34	122.20
33	QD	49	ARG	CB-CA-C	6.92	124.24	110.40
49	XA	727	G	C4-N9-C1'	6.92	135.49	126.50
33	QD	49	ARG	C-N-CA	6.92	138.99	121.70
1	RA	227	A	P-O3'-C3'	6.90	127.98	119.70
49	XA	300	A	N7-C8-N9	6.88	117.24	113.80
1	RA	1631	A	C5-C6-N6	-6.88	118.20	123.70
53	QV	20	G	C2'-C3'-O3'	-6.88	94.37	109.50
1	YA	1411	C	C2-N1-C1'	6.87	126.36	118.80
1	YA	2506	U	C2-N1-C1'	6.87	125.94	117.70
49	XA	300	A	C2-N3-C4	6.87	114.03	110.60
2	YB	76	G	N1-C6-O6	6.86	124.02	119.90
1	RA	1631	A	C5-N7-C8	-6.86	100.47	103.90
1	RA	1731	G	N1-C6-O6	6.86	124.02	119.90
49	XA	1260	C	N3-C2-O2	-6.86	117.10	121.90
2	RB	31	C	C2-N1-C1'	6.85	126.33	118.80
1	RA	761	A	C5-N7-C8	-6.84	100.48	103.90
15	RT	6	LEU	CA-CB-CG	-6.84	99.57	115.30
49	XA	1432	G	C5-C6-N1	6.84	114.92	111.50
53	XV	17	C	O4'-C1'-N1	-6.84	102.73	108.20
49	XA	1301	U	N1-C2-O2	6.82	127.58	122.80
1	YA	1407	C	C2-N1-C1'	6.80	126.28	118.80
1	YA	1642	G	C4-C5-N7	6.78	113.51	110.80
1	RA	1631	A	C4-C5-N7	6.76	114.08	110.70
1	YA	974(A)	C	C4-C5-C6	6.75	120.77	117.40
49	QA	754	C	C2-N1-C1'	6.71	126.18	118.80
49	XA	239	U	N3-C2-O2	-6.69	117.52	122.20
49	XA	1432	G	C2-N3-C4	6.68	115.24	111.90
1	YA	2490	G	C4-N9-C1'	6.65	135.15	126.50
41	XL	60	LEU	CA-CB-CG	6.64	130.56	115.30
1	YA	1652	A	N1-C2-N3	6.63	132.61	129.30
1	YA	974(A)	C	C2-N3-C4	-6.59	116.60	119.90
1	RA	227	A	OP2-P-O3'	6.57	119.65	105.20
1	YA	1125	G	N1-C6-O6	-6.56	115.97	119.90
49	XA	853	G	C8-N9-C4	-6.52	103.79	106.40
1	YA	387	U	C5-C6-N1	6.51	125.95	122.70
49	XA	266	G	N1-C2-N2	6.50	122.05	116.20
1	YA	1658	C	C2-N1-C1'	6.49	125.94	118.80
49	XA	1391	U	N3-C2-O2	-6.49	117.66	122.20
1	RA	270(Y)	G	N1-C2-N2	6.48	122.03	116.20
1	YA	1658	C	N1-C2-O2	6.47	122.78	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	YA	2002	G	C4-C5-C6	-6.45	114.93	118.80
49	XA	1534	A	C4-N9-C1'	6.45	137.91	126.30
1	RA	585	G	N3-C4-N9	-6.44	122.14	126.00
1	RA	595	C	C5-C6-N1	6.42	124.21	121.00
49	QA	1158	C	C6-N1-C1'	-6.41	113.11	120.80
1	RA	2701	C	N3-C2-O2	-6.40	117.42	121.90
1	RA	1264	G	N7-C8-N9	-6.39	109.91	113.10
1	RA	1762	A	C6-C5-N7	6.39	136.77	132.30
49	XA	1521	G	N9-C4-C5	-6.38	102.85	105.40
1	YA	1779	U	C2-N1-C1'	6.38	125.35	117.70
1	RA	2060	A	P-O3'-C3'	6.38	127.35	119.70
53	QV	20	G	P-O3'-C3'	6.35	127.33	119.70
1	RA	2701	C	N1-C2-N3	6.35	123.64	119.20
1	YA	1314	C	C6-N1-C1'	-6.35	113.18	120.80
49	XA	1054	C	C2-N1-C1'	6.34	125.77	118.80
49	XA	239	U	N3-C4-C5	-6.34	110.80	114.60
1	RA	2229	C	C6-N1-C2	-6.33	117.77	120.30
49	XA	1534	A	C8-N9-C1'	-6.33	116.31	127.70
1	RA	2779	U	C2-N1-C1'	6.32	125.28	117.70
1	RA	1331	A	N9-C4-C5	6.30	108.32	105.80
49	QA	1538	C	O4'-C1'-N1	-6.28	103.18	108.20
1	RA	1731	G	N9-C4-C5	6.26	107.90	105.40
1	RA	846	C	N1-C2-O2	6.25	122.65	118.90
1	RA	270(Y)	G	N3-C2-N2	-6.24	115.53	119.90
49	XA	754	C	N1-C2-O2	6.22	122.63	118.90
1	YA	2490	G	C8-N9-C1'	-6.21	118.92	127.00
1	RA	1264	G	C6-C5-N7	6.21	134.13	130.40
1	YA	192	C	O4'-C1'-N1	6.21	113.17	108.20
1	YA	495	G	N3-C2-N2	-6.20	115.56	119.90
1	RA	1264	G	C2-N3-C4	6.18	114.99	111.90
49	XA	1158	C	N1-C2-O2	6.17	122.60	118.90
49	QA	754	C	N1-C2-O2	6.16	122.60	118.90
1	RA	1882	C	C2-N1-C1'	6.16	125.58	118.80
49	QA	1301	U	N3-C2-O2	-6.15	117.89	122.20
49	XA	115	G	P-O3'-C3'	6.14	127.07	119.70
49	XA	1432	G	N3-C2-N2	-6.14	115.60	119.90
1	RA	331	A	N7-C8-N9	-6.13	110.73	113.80
1	YA	1775	U	C5-C4-O4	-6.12	122.23	125.90
15	RT	3	ARG	NE-CZ-NH1	6.09	123.35	120.30
1	YA	1406	U	C2-N1-C1'	6.09	125.01	117.70
1	RA	1765	C	N1-C1'-C2'	-6.09	105.30	112.00
1	RA	1443	G	C8-N9-C4	-6.08	103.97	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	YA	1613	G	N3-C2-N2	6.08	124.16	119.90
1	RA	331	A	C5-N7-C8	6.08	106.94	103.90
1	YA	828	U	C2-N1-C1'	6.07	124.98	117.70
1	YA	1474	C	C5-C6-N1	6.07	124.03	121.00
1	RA	2506	U	C2-N1-C1'	6.06	124.97	117.70
1	YA	1351	C	C6-N1-C2	6.05	122.72	120.30
49	XA	1432	G	N1-C2-N3	-6.04	120.28	123.90
49	QA	64	G	N9-C1'-C2'	-6.03	105.36	112.00
1	YA	387	U	C2-N3-C4	6.03	130.62	127.00
1	RA	2238	G	O4'-C1'-N9	6.02	113.02	108.20
1	RA	1417	C	C2-N1-C1'	6.02	125.42	118.80
1	RA	2052	G	C8-N9-C1'	6.02	134.83	127.00
1	RA	1264	G	C5-C6-N1	6.02	114.51	111.50
49	XA	1117	G	C8-N9-C1'	6.01	134.81	127.00
53	QV	20	G	N9-C1'-C2'	6.01	121.81	114.00
49	XA	1158	C	C2-N1-C1'	6.00	125.40	118.80
49	XA	754	C	C6-N1-C1'	-5.99	113.61	120.80
49	XA	735	C	C2-N1-C1'	5.99	125.38	118.80
1	YA	1613	G	N1-C2-N3	-5.98	120.31	123.90
1	RA	222	A	P-O3'-C3'	5.98	126.88	119.70
49	XA	1224	G	N3-C4-N9	-5.97	122.42	126.00
1	YA	2699	C	C6-N1-C2	-5.97	117.91	120.30
1	RA	2594	C	N1-C2-O2	-5.95	115.33	118.90
1	YA	1897	G	N3-C4-N9	-5.95	122.43	126.00
1	RA	585	G	C5-N7-C8	-5.94	101.33	104.30
1	RA	1762	A	N7-C8-N9	5.94	116.77	113.80
2	RB	81	G	N3-C4-C5	-5.93	125.63	128.60
1	YA	1535	U	N1-C2-O2	5.93	126.95	122.80
1	RA	120	U	C2-N1-C1'	5.92	124.80	117.70
5	RF	68	LYS	CD-CE-NZ	-5.92	98.09	111.70
1	YA	265	A	O4'-C1'-N9	5.92	112.93	108.20
49	XA	1390	U	N3-C2-O2	-5.91	118.06	122.20
1	RA	2538	C	C6-N1-C2	-5.91	117.94	120.30
49	XA	1117	G	C4-N9-C1'	-5.90	118.83	126.50
1	RA	270(Y)	G	C8-N9-C4	-5.89	104.05	106.40
17	YV	35	LEU	CA-CB-CG	5.88	128.82	115.30
49	XA	68(A)	G	O4'-C1'-N9	-5.88	103.50	108.20
1	YA	495	G	N9-C4-C5	5.87	107.75	105.40
1	YA	1643	G	N3-C4-C5	5.87	131.53	128.60
4	YE	21	VAL	C-N-CD	-5.87	107.69	120.60
49	XA	1364	U	C2-N1-C1'	5.86	124.73	117.70
49	XA	1064	G	P-O3'-C3'	5.84	126.71	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	1677	A	C6-C5-N7	-5.84	128.22	132.30
49	XA	1301	U	N3-C2-O2	-5.83	118.12	122.20
1	RA	1689	A	C8-N9-C4	-5.83	103.47	105.80
49	XA	771	G	C1'-O4'-C4'	5.83	114.57	109.90
1	RA	1331	A	C8-N9-C4	-5.82	103.47	105.80
49	QA	29	G	N3-C4-N9	-5.81	122.51	126.00
1	RA	828	U	C2-N1-C1'	5.81	124.67	117.70
1	RA	1312	U	P-O3'-C3'	5.80	126.66	119.70
49	QA	718	G	C4-N9-C1'	5.77	134.00	126.50
2	YB	44	G	C8-N9-C1'	5.76	134.49	127.00
1	YA	2002	G	N3-C4-C5	5.76	131.48	128.60
1	YA	2681	C	P-O3'-C3'	5.76	126.61	119.70
49	XA	727	G	N9-C1'-C2'	-5.75	105.67	112.00
1	YA	1914	C	N1-C2-O2	5.75	122.35	118.90
49	QA	1036	G	C4-N9-C1'	5.75	133.98	126.50
1	RA	1313	U	C6-N1-C1'	-5.75	113.15	121.20
1	RA	1462	C	N1-C2-O2	5.75	122.35	118.90
1	RA	1180	C	C2-N1-C1'	5.75	125.12	118.80
49	XA	266	G	C5-C6-N1	5.75	114.37	111.50
1	RA	69	C	C6-N1-C2	-5.74	118.00	120.30
2	RB	31	C	N3-C2-O2	-5.73	117.89	121.90
1	YA	530	G	O4'-C1'-N9	5.73	112.78	108.20
4	RE	21	VAL	C-N-CD	-5.73	108.00	120.60
1	RA	1443	G	C5-N7-C8	-5.72	101.44	104.30
49	XA	687	A	O4'-C1'-N9	5.72	112.78	108.20
1	YA	1385	G	O4'-C1'-N9	5.71	112.77	108.20
1	YA	270(Y)	G	C8-N9-C4	-5.71	104.12	106.40
1	YA	753	C	C5-C6-N1	5.70	123.85	121.00
1	RA	1264	G	C8-N9-C4	5.69	108.68	106.40
1	RA	1462	C	N3-C2-O2	-5.69	117.92	121.90
1	YA	1882	C	C2-N1-C1'	5.68	125.04	118.80
1	RA	2701	C	C2-N3-C4	-5.66	117.07	119.90
1	YA	1997	G	N3-C4-N9	5.66	129.40	126.00
1	RA	2614	A	C5-C6-N1	5.66	120.53	117.70
49	QA	1336	C	C2-N1-C1'	5.65	125.02	118.80
1	RA	1407	C	C2-N1-C1'	5.65	125.02	118.80
1	YA	748	G	C8-N9-C1'	5.65	134.34	127.00
49	XA	239	U	N1-C2-O2	5.63	126.74	122.80
1	RA	424	G	N3-C4-N9	-5.62	122.63	126.00
1	YA	463	G	C4-N9-C1'	-5.62	119.20	126.50
1	RA	2490	G	N7-C8-N9	5.61	115.90	113.10
1	YA	1411	C	C6-N1-C1'	-5.61	114.07	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	669	G	C4-N9-C1'	5.60	133.78	126.50
2	RB	81	G	N1-C2-N3	5.60	127.26	123.90
1	RA	331	A	C5-C6-N6	5.59	128.18	123.70
2	RB	81	G	C4-C5-N7	-5.59	108.56	110.80
1	YA	270(Z)	U	C2-N1-C1'	-5.59	110.99	117.70
2	YB	44	G	C4-N9-C1'	-5.59	119.23	126.50
1	RA	1251	C	C4-C5-C6	-5.59	114.61	117.40
35	XF	21	LEU	CA-CB-CG	5.58	128.14	115.30
1	YA	1914	C	N3-C2-O2	-5.57	118.00	121.90
49	QA	754	C	N3-C2-O2	-5.57	118.00	121.90
49	XA	1158	C	C6-N1-C2	-5.57	118.07	120.30
1	RA	2779	U	C6-N1-C1'	-5.56	113.41	121.20
49	XA	300	A	N1-C2-N3	-5.55	126.52	129.30
1	YA	1822	G	N3-C4-N9	-5.55	122.67	126.00
2	RB	66	A	C5-C6-N1	5.55	120.47	117.70
2	YB	31	C	N3-C2-O2	-5.54	118.02	121.90
1	RA	2525	G	N1-C6-O6	-5.53	116.58	119.90
49	QA	65	U	O4'-C1'-N1	-5.53	103.78	108.20
1	YA	658	C	N1-C2-N3	5.53	123.07	119.20
1	YA	974(A)	C	N3-C4-N4	5.53	121.87	118.00
1	YA	1313	U	N3-C2-O2	-5.53	118.33	122.20
1	RA	1847	A	O4'-C1'-N9	5.52	112.62	108.20
1	YA	1930	G	C8-N9-C1'	5.52	134.18	127.00
1	RA	345	A	OP1-P-O3'	5.52	117.34	105.20
1	YA	192	C	C6-N1-C1'	5.52	127.42	120.80
49	XA	1158	C	N3-C2-O2	-5.52	118.04	121.90
7	YH	88	LEU	CA-CB-CG	5.51	127.98	115.30
52	XX	16	C	C2-N1-C1'	5.50	124.85	118.80
1	YA	83	G	N1-C6-O6	5.50	123.20	119.90
49	XA	728	A	O4'-C1'-N9	5.49	112.59	108.20
52	QX	16	C	C2-N1-C1'	5.49	124.84	118.80
49	QA	1036	G	C8-N9-C1'	-5.49	119.87	127.00
1	RA	2525	G	N9-C4-C5	5.48	107.59	105.40
1	YA	1125	G	C2-N3-C4	5.48	114.64	111.90
1	YA	1642	G	C5-N7-C8	-5.48	101.56	104.30
49	QA	29	G	N9-C4-C5	5.46	107.58	105.40
49	XA	1260	C	N1-C2-O2	5.46	122.18	118.90
49	QA	687	A	P-O3'-C3'	5.46	126.25	119.70
1	YA	1535	U	N3-C2-O2	-5.46	118.38	122.20
1	YA	1643	G	C4-N9-C1'	-5.46	119.41	126.50
1	RA	29	U	C5-C4-O4	5.45	129.17	125.90
1	YA	463	G	C8-N9-C1'	5.45	134.08	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	1992	G	OP2-P-O3'	5.44	117.17	105.20
1	YA	99	U	OP2-P-O3'	5.43	117.15	105.20
1	RA	730	C	C6-N1-C2	-5.43	118.13	120.30
1	YA	669	G	C4-N9-C1'	5.43	133.56	126.50
1	YA	981	A	C4-C5-C6	-5.43	114.29	117.00
1	YA	379	G	N1-C6-O6	5.43	123.16	119.90
1	RA	846	C	N3-C2-O2	-5.42	118.10	121.90
1	RA	2614	A	N1-C2-N3	5.42	132.01	129.30
1	YA	944	G	C4-N9-C1'	5.42	133.54	126.50
49	QA	35	G	N3-C4-N9	5.41	129.25	126.00
1	RA	258	G	C4-C5-N7	-5.41	108.64	110.80
1	YA	1658	C	N3-C2-O2	-5.40	118.12	121.90
1	RA	595	C	C6-N1-C2	-5.40	118.14	120.30
1	YA	748	G	C4-N9-C1'	-5.40	119.48	126.50
1	YA	846	C	P-O3'-C3'	5.40	126.18	119.70
1	RA	2538	C	N3-C4-C5	-5.40	119.74	121.90
1	YA	974(A)	C	C2-N1-C1'	5.39	124.73	118.80
49	XA	771	G	C4'-C3'-C2'	5.39	108.00	102.60
1	RA	2680	C	N1-C2-O2	5.39	122.14	118.90
1	YA	1775	U	N3-C4-O4	5.39	123.17	119.40
1	RA	345	A	N9-C1'-C2'	-5.39	106.07	112.00
1	YA	1613	G	C5-C6-N1	5.39	114.19	111.50
49	XA	1432	G	C4-C5-N7	5.39	112.95	110.80
1	RA	1731	G	C5-C6-O6	-5.39	125.37	128.60
1	YA	2712(A)	A	N7-C8-N9	5.39	116.49	113.80
1	YA	1897	G	C6-C5-N7	5.38	133.63	130.40
1	YA	1535	U	C2-N1-C1'	5.38	124.16	117.70
1	RA	1628	G	N9-C4-C5	-5.38	103.25	105.40
1	YA	2712	U	P-O3'-C3'	5.37	126.15	119.70
49	QA	1075	C	C2-N1-C1'	5.37	124.70	118.80
1	YA	444	C	C2-N1-C1'	-5.37	112.90	118.80
1	RA	493	G	N3-C4-N9	-5.36	122.78	126.00
49	QA	1538	C	OP1-P-O3'	5.36	117.00	105.20
49	QA	1301	U	C6-N1-C1'	-5.35	113.70	121.20
1	RA	404	C	P-O3'-C3'	5.34	126.11	119.70
1	RA	828	U	N1-C2-O2	5.33	126.53	122.80
49	QA	1158	C	N3-C2-O2	-5.33	118.17	121.90
1	YA	2894	G	O4'-C1'-N9	5.33	112.46	108.20
49	XA	1390	U	C5-C4-O4	-5.33	122.70	125.90
1	RA	205	G	O4'-C1'-N9	-5.32	103.94	108.20
2	YB	31	C	C6-N1-C1'	-5.32	114.42	120.80
1	RA	2525	G	C5-C6-O6	5.31	131.79	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	2506	U	N1-C2-O2	5.31	126.52	122.80
1	RA	761	A	N9-C4-C5	-5.31	103.68	105.80
1	RA	1443	G	C5-C6-O6	-5.31	125.42	128.60
11	RP	88	LEU	CA-CB-CG	5.30	127.49	115.30
49	XA	1432	G	C8-N9-C4	-5.30	104.28	106.40
21	YZ	150	LEU	CA-CB-CG	5.30	127.48	115.30
49	XA	735	C	N1-C2-O2	5.29	122.08	118.90
1	RA	222	A	OP1-P-O3'	5.29	116.85	105.20
49	XA	300	A	C5-N7-C8	-5.29	101.25	103.90
1	YA	2000	G	C2-N3-C4	5.28	114.54	111.90
1	RA	2060	A	OP2-P-O3'	5.28	116.82	105.20
1	YA	1663	C	N3-C2-O2	-5.28	118.20	121.90
49	XA	1521	G	C5-C6-O6	-5.28	125.43	128.60
1	YA	1652	A	C6-C5-N7	-5.26	128.61	132.30
2	RB	47	C	N1-C2-O2	5.26	122.06	118.90
2	RB	81	G	N3-C2-N2	-5.24	116.23	119.90
1	RA	270(Y)	G	C2-N3-C4	5.24	114.52	111.90
1	RA	2688	U	C2-N1-C1'	5.24	123.99	117.70
1	YA	1930	G	C4-N9-C1'	-5.24	119.69	126.50
1	RA	1535	U	C2-N1-C1'	5.23	123.98	117.70
1	RA	2701	C	C6-N1-C2	-5.23	118.21	120.30
49	QA	718	G	C8-N9-C1'	-5.23	120.20	127.00
49	XA	1301	U	C6-N1-C1'	-5.23	113.88	121.20
1	RA	1463	C	C5'-C4'-C3'	5.22	124.36	116.00
1	YA	1643	G	C8-N9-C1'	5.22	133.79	127.00
1	YA	1026	U	P-O3'-C3'	5.22	125.96	119.70
49	XA	1310	G	N3-C4-C5	5.22	131.21	128.60
1	YA	1613	G	C5-N7-C8	5.21	106.91	104.30
1	RA	856	C	C2-N1-C1'	5.21	124.53	118.80
1	RA	1913	A	O5'-P-OP1	-5.21	101.02	105.70
1	YA	74	A	O4'-C1'-N9	-5.21	104.03	108.20
1	YA	1930	G	N3-C4-N9	-5.21	122.88	126.00
1	RA	2490	G	C5-N7-C8	-5.20	101.70	104.30
49	XA	1301	U	C5-C6-N1	5.20	125.30	122.70
1	YA	1558	A	P-O3'-C3'	5.19	125.93	119.70
1	RA	585	G	N3-C4-C5	5.19	131.19	128.60
1	RA	1443	G	C4-C5-N7	5.18	112.87	110.80
1	YA	1666	G	C8-N9-C1'	5.18	133.73	127.00
1	YA	1643	G	C5-C6-O6	5.17	131.71	128.60
1	YA	2408	U	C5-C6-N1	5.17	125.28	122.70
1	YA	1465	G	N3-C4-N9	-5.17	122.90	126.00
1	YA	1506	C	N1-C2-O2	5.17	122.00	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	RA	2701	C	N3-C4-C5	5.17	123.97	121.90
1	RA	2538	C	C5-C4-N4	5.16	123.81	120.20
1	YA	1313	U	N1-C2-O2	5.16	126.41	122.80
49	XA	1364	U	C6-N1-C1'	-5.16	113.98	121.20
49	XA	853	G	C6-C5-N7	-5.15	127.31	130.40
1	YA	1666	G	C4-N9-C1'	-5.15	119.81	126.50
49	QA	1301	U	C5-C6-N1	5.15	125.27	122.70
1	RA	2820	A	O4'-C1'-N9	5.14	112.32	108.20
49	XA	1521	G	C8-N9-C4	5.14	108.46	106.40
49	XA	1328	C	N3-C2-O2	-5.14	118.30	121.90
1	YA	1332	G	C4-N9-C1'	5.14	133.18	126.50
49	QA	992	U	P-O3'-C3'	5.13	125.86	119.70
1	RA	530	G	O4'-C1'-N9	5.13	112.31	108.20
1	RA	2229	C	N3-C4-C5	-5.12	119.85	121.90
1	YA	1914	C	C6-N1-C2	-5.12	118.25	120.30
1	YA	270(Y)	G	N1-C2-N2	5.12	120.81	116.20
49	XA	735	C	C6-N1-C1'	-5.12	114.66	120.80
1	RA	1598	C	C2-N1-C1'	5.12	124.43	118.80
1	RA	1640	C	C2-N1-C1'	5.11	124.42	118.80
49	QA	1197	G	C4-N9-C1'	5.11	133.14	126.50
53	XV	61	A	O5'-P-OP1	-5.10	101.11	105.70
1	RA	2010	G	N3-C4-N9	-5.10	122.94	126.00
4	RE	27	LEU	CA-CB-CG	5.10	127.03	115.30
1	YA	271(B)	G	P-O3'-C3'	5.10	125.82	119.70
1	YA	828	U	N1-C2-O2	5.09	126.36	122.80
52	XX	16	C	C6-N1-C1'	-5.09	114.69	120.80
1	RA	397	G	N3-C4-N9	-5.08	122.95	126.00
1	YA	2712(A)	A	C8-N9-C4	-5.08	103.77	105.80
1	RA	2091	U	C2-N3-C4	-5.08	123.95	127.00
53	QV	61	A	O5'-P-OP1	-5.08	101.13	105.70
49	QA	838(A)	U	C2-N1-C1'	5.08	123.79	117.70
2	YB	44	G	N3-C4-N9	-5.07	122.96	126.00
52	QX	16	C	C6-N1-C1'	-5.07	114.71	120.80
1	YA	2440	C	C2-N1-C1'	-5.07	113.22	118.80
1	RA	2490	G	C8-N9-C4	-5.07	104.37	106.40
1	YA	1180	C	C2-N1-C1'	5.06	124.37	118.80
1	RA	2052	G	C4-N9-C1'	-5.06	119.93	126.50
53	QV	15	G	C4-N9-C1'	5.06	133.07	126.50
1	RA	585	G	C4-C5-C6	-5.06	115.77	118.80
1	RA	1443	G	N3-C4-N9	-5.05	122.97	126.00
1	YA	271(B)	G	C4-N9-C1'	5.05	133.06	126.50
1	RA	1762	A	C4-C5-C6	-5.05	114.48	117.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	YA	2468	G	O4'-C1'-N9	5.04	112.24	108.20
1	RA	2053	G	C5-N7-C8	-5.04	101.78	104.30
1	YA	83	G	C5-C6-O6	-5.04	125.57	128.60
1	YA	1845	G	N3-C4-N9	-5.04	122.97	126.00
1	YA	974(A)	C	N1-C2-N3	5.04	122.73	119.20
1	RA	2525	G	C6-C5-N7	5.04	133.42	130.40
1	RA	730	C	N3-C2-O2	-5.04	118.37	121.90
49	QA	1326	C	C2-N1-C1'	5.03	124.34	118.80
1	YA	2056	G	N1-C6-O6	5.03	122.92	119.90
1	YA	2506	U	N1-C2-O2	5.03	126.32	122.80
49	XA	992	U	P-O3'-C3'	5.03	125.74	119.70
49	QA	1323	G	N3-C4-N9	5.03	129.02	126.00
49	XA	620	C	C2-N1-C1'	5.02	124.33	118.80
1	RA	271(C)	U	P-O3'-C3'	5.02	125.72	119.70
1	RA	2074	U	C6-N1-C2	-5.02	117.99	121.00
1	RA	2559	C	N1-C2-O2	5.02	121.91	118.90
1	RA	761	A	C6-C5-N7	-5.01	128.79	132.30
1	RA	1631	A	C8-N9-C4	-5.01	103.80	105.80
1	RA	2006	C	N1-C2-O2	5.01	121.91	118.90
33	QD	49	ARG	NE-CZ-NH1	5.01	122.80	120.30

There are no chirality outliers.

All (17) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
33	QD	31	CYS	Peptide
53	QV	32	G	Sidechain
23	R1	49	VAL	Peptide
29	R8	30	ARG	Peptide
1	RA	1558	A	Sidechain
1	RA	1765	C	Sidechain
3	RD	235	GLY	Mainchain
7	RH	127	GLU	Peptide
7	RH	153	LYS	Peptide
11	RP	35	HIS	Peptide
15	RT	5	ALA	Peptide
49	XA	727	G	Sidechain
49	XA	771	G	Sidechain
33	XD	31	CYS	Peptide
7	YH	127	GLU	Peptide
7	YH	153	LYS	Peptide
21	YZ	181	GLU	Peptide

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	RA	62071	0	31249	1298	0
1	YA	62091	0	31283	1245	0
2	RB	2573	0	1299	53	0
2	YB	2573	0	1304	49	0
3	RD	2115	0	2191	68	0
3	YD	2115	0	2194	63	0
4	RE	1568	0	1632	58	0
4	YE	1568	0	1633	51	0
5	RF	1585	0	1630	48	0
5	YF	1585	0	1632	53	0
6	RG	1474	0	1535	68	0
6	YG	1474	0	1535	56	0
7	RH	1307	0	1382	54	0
7	YH	1307	0	1382	54	0
8	RI	1136	0	1223	44	0
8	YI	1136	0	1223	42	0
9	RN	1104	0	1180	33	0
9	YN	1104	0	1180	35	0
10	RO	933	0	995	13	0
10	YO	933	0	996	22	0
11	RP	1145	0	1228	54	0
11	YP	1145	0	1228	69	0
12	RQ	1122	0	1179	39	0
12	YQ	1122	0	1179	35	0
13	RR	968	0	1032	34	0
13	YR	968	0	1031	28	0
14	RS	882	0	943	33	0
14	YS	882	0	943	36	0
15	RT	1141	0	1200	39	0
15	YT	1141	0	1201	45	0
16	RU	964	0	1022	30	0
16	YU	964	0	1022	32	0
17	RV	779	0	852	22	0
17	YV	779	0	852	22	0
18	RW	900	0	964	13	0
18	YW	900	0	964	21	0
19	RX	725	0	778	18	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
19	YX	725	0	778	21	0
20	RY	785	0	877	30	0
20	YY	785	0	877	30	0
21	RZ	1461	0	1493	46	0
21	YZ	1461	0	1493	51	0
22	R0	648	0	671	18	0
22	Y0	648	0	672	18	0
23	R1	763	0	846	21	0
23	Y1	763	0	847	26	0
24	R2	581	0	629	15	0
24	Y2	581	0	629	14	0
25	R3	469	0	518	10	0
25	Y3	469	0	518	3	0
26	R5	459	0	480	25	0
26	Y5	459	0	479	25	0
27	R6	424	0	450	26	0
27	Y6	424	0	450	23	0
28	R7	430	0	480	11	0
28	Y7	430	0	480	12	0
29	R8	517	0	582	23	0
29	Y8	517	0	582	24	0
30	R9	307	0	338	7	0
30	Y9	307	0	335	5	0
31	QB	1909	0	1957	99	0
31	XB	1909	0	1957	100	0
32	QC	1620	0	1688	63	0
32	XC	1620	0	1687	74	0
33	QD	1703	0	1762	97	0
33	XD	1703	0	1765	83	0
34	QE	1155	0	1213	52	0
34	XE	1155	0	1213	47	0
35	QF	843	0	857	32	0
35	XF	843	0	857	42	0
36	QG	1257	0	1296	34	0
36	XG	1257	0	1296	56	0
37	QH	1116	0	1177	52	0
37	XH	1116	0	1177	73	0
38	QI	1010	0	1035	58	0
38	XI	1010	0	1037	55	0
39	QJ	801	0	849	51	0
39	XJ	801	0	849	46	0
40	QK	885	0	904	48	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
40	XK	885	0	904	47	0
41	QL	975	0	1062	109	0
41	XL	975	0	1061	88	0
42	QM	914	0	971	33	0
42	XM	914	0	971	54	0
43	QN	492	0	533	26	0
43	XN	492	0	533	34	0
44	QO	734	0	771	39	0
44	XO	734	0	768	27	0
45	QP	705	0	724	38	0
45	XP	705	0	725	39	0
46	QQ	834	0	903	48	0
46	XQ	834	0	904	59	0
47	QR	574	0	644	35	0
47	XR	574	0	644	40	0
48	QT	763	0	861	33	0
48	XT	763	0	861	44	0
49	QA	32472	0	16387	843	0
49	XA	32554	0	16414	909	0
50	QS	633	0	655	28	0
50	XS	633	0	655	28	0
51	R4	262	0	272	25	0
51	Y4	357	0	362	29	0
52	QX	409	0	209	49	0
52	XX	409	0	209	53	0
53	QV	1670	0	845	49	0
53	XV	1670	0	845	30	0
54	QA	131	0	0	0	0
54	QC	1	0	0	0	0
54	QD	3	0	0	0	0
54	QE	1	0	0	0	0
54	QL	3	0	0	0	0
54	QP	2	0	0	0	0
54	QQ	2	0	0	0	0
54	QT	2	0	0	0	0
54	R0	2	0	0	0	0
54	R1	3	0	0	0	0
54	R3	1	0	0	0	0
54	R6	1	0	0	0	0
54	R8	3	0	0	0	0
54	RA	562	0	0	0	0
54	RB	15	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
54	RD	10	0	0	0	0
54	RE	7	0	0	0	0
54	RF	4	0	0	0	0
54	RI	1	0	0	0	0
54	RO	2	0	0	0	0
54	RQ	2	0	0	0	0
54	RR	3	0	0	0	0
54	RT	3	0	0	0	0
54	RU	1	0	0	0	0
54	RX	2	0	0	0	0
54	RY	1	0	0	0	0
54	XA	128	0	0	0	0
54	XC	1	0	0	0	0
54	XD	1	0	0	0	0
54	XE	1	0	0	0	0
54	XK	1	0	0	0	0
54	XL	2	0	0	0	0
54	XM	1	0	0	0	0
54	XO	1	0	0	0	0
54	XP	1	0	0	0	0
54	Y0	1	0	0	0	0
54	Y1	1	0	0	0	0
54	Y8	1	0	0	0	0
54	YA	379	0	0	0	0
54	YB	10	0	0	0	0
54	YD	4	0	0	0	0
54	YE	5	0	0	0	0
54	YI	1	0	0	0	0
54	YP	1	0	0	0	0
54	YQ	1	0	0	0	0
54	YR	1	0	0	0	0
54	YT	2	0	0	0	0
54	YU	1	0	0	0	0
54	YX	1	0	0	0	0
54	YY	1	0	0	0	0
55	QD	2	0	0	0	0
55	XD	1	0	0	0	0
55	Y9	1	0	0	0	0
All	All	291660	0	197069	7411	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 15.

All (7411) 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)
49:QA:1339:A:C2	53:QV:32:G:H1'	1.41	1.52
1:RA:1558:A:N9	1:RA:1558:A:C1'	1.74	1.48
49:XA:771:G:N9	49:XA:771:G:C1'	1.75	1.46
49:XA:1531:A:C5	49:XA:1532:U:O4	1.70	1.42
49:XA:771:G:C4'	49:XA:771:G:O4'	1.64	1.41
49:XA:1531:A:C6	49:XA:1532:U:O4	1.72	1.41
1:RA:1558:A:C1'	1:RA:1558:A:C8	2.03	1.40
49:XA:1532:U:O2	52:XX:13:A:N6	1.62	1.29
49:XA:1531:A:C5	49:XA:1532:U:C4	2.25	1.24
49:QA:1339:A:C2	53:QV:32:G:C1'	2.30	1.13
1:RA:1542:G:O6	1:RA:1543:A:N6	1.83	1.10
38:XI:107:ARG:HA	49:XA:1347:G:H5'	1.35	1.09
1:RA:137(A):G:O6	1:RA:139:G:O2'	1.71	1.07
49:XA:1531:A:C4	49:XA:1532:U:C4	2.43	1.06
1:RA:704:G:O2'	1:RA:726:G:N2	1.89	1.04
36:QG:113:GLU:HB2	36:QG:119:ARG:HG2	1.38	1.04
49:XA:372:C:N4	49:XA:389:A:H62	1.55	1.03
1:RA:2169:A:N6	53:QV:19:G:N2	2.07	1.01
49:XA:1533:C:C5	49:XA:1534:A:N3	2.29	1.00
1:YA:2712:U:HO2'	1:YA:2712(A):A:H8	1.04	1.00
1:RA:2701:C:H3'	1:RA:2702:U:H5''	1.43	1.00
1:YA:2112:G:O6	53:XV:19:G:N2	1.93	1.00
53:XV:19:G:N3	53:XV:58:C:N4	2.11	0.98
49:XA:372:C:H42	49:XA:389:A:N6	1.61	0.98
41:QL:58:VAL:HG12	41:QL:60:LEU:H	1.25	0.98
49:XA:68(A):G:H2'	49:XA:68(B):G:H8	1.29	0.97
49:QA:372:C:H42	49:QA:389:A:H62	1.07	0.97
53:XV:18:U:H3	53:XV:60:A:N6	1.62	0.97
49:QA:1539:C:O2	52:QX:6:G:N2	1.96	0.96
53:XV:19:G:OP1	53:XV:20:G:N2	1.97	0.96
49:XA:1532:U:O2'	52:XX:13:A:N6	1.98	0.96
52:XX:16:C:H2'	52:XX:17:C:H6	1.30	0.96
49:QA:1381:U:HO2'	49:QA:1382:C:H6	1.12	0.96
52:QX:16:C:H2'	52:QX:17:C:H6	1.31	0.96
47:QR:49:LYS:HG2	49:QA:718:G:H21	1.30	0.96
1:RA:2169:A:H62	53:QV:19:G:N2	1.63	0.95
49:QA:687:A:H62	49:QA:703:G:H21	1.14	0.94
1:YA:2701:C:H3'	1:YA:2702:U:H5''	1.50	0.94
52:XX:13:A:C2	52:XX:14:A:C2	2.56	0.94
52:QX:13:A:C2	52:QX:14:A:C2	2.56	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:XG:28:ASN:HB3	49:XA:1374:A:H4'	1.50	0.93
33:XD:122:ARG:HD3	33:XD:136:PRO:HD3	1.51	0.92
1:RA:1632:A:N6	1:RA:1762:A:C2	2.22	0.92
52:QX:16:C:H2'	52:QX:17:C:C6	2.05	0.92
42:XM:91:ARG:HH22	42:XM:103:THR:HG21	1.33	0.91
41:QL:45:PRO:HA	41:QL:92:ASP:HB3	1.52	0.91
52:XX:16:C:H2'	52:XX:17:C:C6	2.05	0.91
1:YA:259:G:H21	1:YA:621:A:H8	1.18	0.91
32:XC:22:TRP:HA	39:XJ:93:GLY:HA2	1.52	0.91
1:YA:676:A:H8	1:YA:2069:G:H21	1.12	0.91
6:RG:61:ALA:HB1	51:R4:7:PRO:HG3	1.53	0.90
49:XA:765:G:H1	49:XA:812:C:HO2'	0.92	0.90
5:RF:68:LYS:O	5:RF:70:THR:N	2.05	0.90
1:YA:498:G:N3	20:YY:47:LYS:NZ	2.20	0.90
49:QA:1339:A:H1'	53:QV:42:G:H21	1.37	0.89
33:XD:26:CYS:HA	33:XD:31:CYS:HA	1.55	0.89
49:XA:1533:C:H5	49:XA:1534:A:N3	1.67	0.89
40:XK:62:GLN:HG2	40:XK:93:GLN:HB3	1.54	0.89
49:XA:1532:U:O2	52:XX:13:A:C6	2.25	0.89
1:RA:1332:G:N2	1:RA:1610:A:N7	2.21	0.89
1:YA:137(A):G:O6	1:YA:139:G:O2'	1.90	0.89
49:XA:68(A):G:H2'	49:XA:68(B):G:C8	2.07	0.89
1:RA:2096:U:H3	1:RA:2193:G:H1	1.21	0.88
40:QK:111:ASP:HA	47:QR:84:LYS:HG3	1.54	0.88
37:QH:3:THR:HB	49:QA:587:G:H4'	1.55	0.88
44:XO:48:LYS:HB2	49:XA:668:G:H4'	1.53	0.88
46:XQ:16:GLN:HE22	49:XA:254:G:H21	1.22	0.88
49:XA:674:G:H2'	49:XA:675:A:H8	1.38	0.88
1:RA:1558:A:C8	1:RA:1558:A:H1'	2.06	0.87
49:QA:1338:G:N2	53:QV:31:C:O2	2.07	0.87
32:XC:50:ALA:HB1	32:XC:72:LYS:HG3	1.56	0.87
49:XA:771:G:N9	49:XA:771:G:H1'	1.88	0.87
21:YZ:151:HIS:HB3	21:YZ:170:THR:HA	1.55	0.87
49:QA:687:A:H62	49:QA:703:G:N2	1.74	0.86
38:XI:2:GLU:N	38:XI:88:TYR:HH	1.74	0.86
49:XA:1531:A:H2'	49:XA:1532:U:C6	2.10	0.86
20:RY:87:LYS:HD3	20:RY:92:ASN:HB3	1.57	0.85
1:YA:2580:U:H4'	4:YE:130:GLY:HA3	1.58	0.85
31:XB:69:LEU:HB2	31:XB:162:ILE:HB	1.58	0.85
2:RB:80:U:H2'	2:RB:81:G:H21	1.41	0.85
41:XL:45:PRO:HA	41:XL:92:ASP:HB3	1.58	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2394:C:H42	53:QV:78:A:H1'	1.40	0.85
49:QA:266:G:H5'	49:QA:268:C:H41	1.41	0.85
1:RA:674:G:H1'	5:RF:74:ARG:HD3	1.57	0.85
11:RP:126:VAL:HG12	11:RP:147:LEU:HD21	1.59	0.84
49:QA:20:U:O2'	49:QA:573:A:N6	2.10	0.84
49:QA:980:C:H5''	49:QA:981:U:H5	1.41	0.84
41:QL:35:GLY:HA2	41:QL:58:VAL:HA	1.58	0.84
45:XP:31:LYS:HG2	45:XP:32:TYR:H	1.41	0.84
1:YA:2745:C:O2	7:YH:139:GLN:NE2	2.10	0.84
49:XA:1347:G:N2	49:XA:1374:A:OP2	2.10	0.84
1:YA:277:C:H5'	1:YA:278:A:H5''	1.57	0.84
47:QR:74:ARG:HG2	47:QR:79:LEU:HD22	1.58	0.84
1:RA:1558:A:C1'	1:RA:1558:A:H8	1.86	0.83
1:RA:2060:A:OP2	5:RF:71:GLY:HA2	1.78	0.83
37:XH:95:VAL:HG22	37:XH:99:GLU:HB3	1.60	0.83
49:XA:372:C:H42	49:XA:389:A:H62	0.84	0.83
1:YA:2126:A:N6	1:YA:2163:C:O2'	2.11	0.83
1:RA:2527:C:H5''	30:R9:30:PRO:HB2	1.60	0.83
49:QA:1535:C:N3	52:QX:10:G:O6	2.11	0.83
34:QE:79:GLU:HG2	37:QH:104:ARG:HA	1.60	0.83
39:XJ:51:ARG:NH1	49:XA:1061:G:OP1	2.10	0.83
1:RA:1652:A:N6	13:RR:11:ASN:OD1	2.10	0.82
25:R3:10:LYS:HE2	25:R3:15:TYR:OH	1.79	0.82
1:YA:442:G:H1'	5:YF:48:THR:HG21	1.61	0.82
49:QA:835:U:O2	49:QA:851:G:N2	2.11	0.82
3:RD:69:ARG:NH2	3:RD:128:GLY:O	2.12	0.82
38:QI:93:ARG:HH22	38:QI:97:LYS:HD3	1.44	0.82
49:XA:1306:A:N6	49:XA:1331:G:O2'	2.12	0.82
21:YZ:94:GLU:HB2	21:YZ:130:PRO:HD2	1.60	0.82
6:RG:61:ALA:HB2	6:RG:68:PRO:HD3	1.61	0.82
1:YA:200:U:O2	1:YA:386:G:N2	2.12	0.82
1:RA:2808:U:H3	1:RA:2892:A:H62	1.28	0.82
48:QT:23:ARG:HH12	48:QT:24:LEU:HD23	1.44	0.82
40:XK:108:ILE:HD13	47:XR:87:ARG:HG2	1.61	0.82
1:RA:270(T):G:H5''	23:R1:97:LEU:HD22	1.60	0.82
1:RA:768:G:O2'	1:RA:1379:A:N6	2.13	0.82
49:QA:1306:A:N6	49:QA:1331:G:O2'	2.13	0.81
26:Y5:40:LYS:HG2	26:Y5:47:PRO:HD2	1.62	0.81
1:RA:1631:A:N6	1:RA:1762:A:C2	2.45	0.81
40:XK:34:ASP:O	40:XK:36:ASP:N	2.13	0.81
1:YA:2015:A:H1'	26:Y5:2:ALA:HA	1.62	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:1241:G:H1	49:XA:1296:C:H42	1.28	0.81
49:QA:1339:A:H2	53:QV:32:G:H1'	1.41	0.81
31:XB:91:PRO:HG2	31:XB:155:LEU:HB2	1.63	0.81
31:QB:78:GLN:HG3	31:QB:94:ASN:HB2	1.62	0.81
33:QD:5:ILE:HG21	49:QA:406:G:H5''	1.61	0.81
49:QA:372:C:N4	49:QA:389:A:H62	1.78	0.80
49:XA:1137:C:O2'	49:XA:1138:G:N2	2.13	0.80
25:R3:10:LYS:NZ	25:R3:15:TYR:OH	2.15	0.80
32:QC:22:TRP:HA	39:QJ:93:GLY:HA2	1.62	0.80
49:QA:674:G:H2'	49:QA:675:A:H8	1.45	0.80
49:XA:392:G:HO2'	49:XA:483:C:HO2'	1.29	0.80
41:XL:58:VAL:HG12	41:XL:60:LEU:H	1.46	0.80
31:XB:12:GLU:HA	31:XB:16:HIS:HD2	1.46	0.80
1:YA:83:G:N2	1:YA:103:A:OP2	2.14	0.80
49:QA:1414:U:H2'	49:QA:1415:G:H8	1.45	0.80
1:RA:1422:G:H1	1:RA:1576:U:H3	1.30	0.80
39:QJ:36:GLY:HA3	49:QA:1123:A:H4'	1.63	0.80
49:QA:1532:U:H1'	52:QX:13:A:H61	1.47	0.80
1:RA:137(A):G:C6	1:RA:139:G:O2'	2.34	0.80
1:YA:581:C:H2'	1:YA:582:G:H8	1.47	0.80
36:XG:78:ARG:HB3	36:XG:85:TYR:HB2	1.63	0.80
37:QH:38:ILE:HD13	37:QH:41:ARG:HH12	1.47	0.80
49:QA:673:G:H2'	49:QA:674:G:C8	2.17	0.80
31:XB:95:GLN:OE1	31:XB:96:ARG:NH2	2.15	0.80
1:RA:715:G:H22	44:QO:43:LEU:HG	1.47	0.79
26:R5:55:ARG:HG3	26:R5:57:VAL:H	1.45	0.79
41:XL:6:THR:O	41:XL:8:ASN:N	2.15	0.79
1:RA:242:G:H5''	29:R8:62:LEU:HD13	1.65	0.79
41:XL:85:ILE:HG13	41:XL:98:TYR:HB3	1.62	0.79
1:YA:1667:G:O2'	1:YA:1991:U:O4	1.99	0.79
41:QL:23:LYS:HE2	41:QL:89:ARG:HD3	1.63	0.79
9:RN:95:PRO:O	9:RN:97:ARG:N	2.15	0.79
1:YA:242:G:H5''	29:Y8:62:LEU:HD13	1.64	0.79
49:QA:1535:C:N3	52:QX:10:G:C6	2.51	0.79
43:YN:17:LYS:HD2	49:XA:1316:G:H5''	1.64	0.79
49:XA:1414:U:H2'	49:XA:1415:G:H8	1.46	0.79
7:YH:153:LYS:HG3	7:YH:161:GLY:HA2	1.64	0.79
41:QL:70:ILE:HG22	41:QL:100:ILE:HD12	1.65	0.79
8:RI:5:LEU:HD11	8:RI:19:VAL:HG12	1.64	0.79
49:QA:992:U:H3	49:QA:1044:A:H62	1.30	0.79
1:RA:1427:A:N6	1:RA:1571:A:OP2	2.15	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:XH:10:LEU:HB3	37:XH:83:ILE:HD11	1.65	0.79
1:RA:270(R):G:N3	23:R1:78:LYS:NZ	2.30	0.79
1:RA:2431:U:N3	1:RA:2434:A:OP2	2.16	0.79
8:YI:144:VAL:HG13	8:YI:145:VAL:HG13	1.62	0.79
9:YN:95:PRO:O	9:YN:97:ARG:N	2.16	0.78
6:YG:47:LYS:HD3	6:YG:81:LYS:HB2	1.63	0.78
49:XA:992:U:H3	49:XA:1044:A:H62	1.31	0.78
49:XA:1010:G:H2'	49:XA:1011:G:C8	2.18	0.78
24:Y2:47:ASN:O	24:Y2:49:LYS:N	2.16	0.78
42:QM:45:VAL:HG23	42:QM:48:LEU:HD12	1.64	0.78
41:XL:39:VAL:HG12	41:XL:40:VAL:H	1.48	0.78
1:RA:2169:A:N6	53:QV:19:G:H22	1.80	0.78
1:YA:482:A:H4'	20:YY:47:LYS:HD2	1.65	0.78
1:YA:2030:A:H4'	1:YA:2031:A:H8	1.48	0.78
38:XI:9:ARG:O	38:XI:104:ARG:NH1	2.17	0.78
1:RA:996:A:OP2	16:RU:94:ASN:ND2	2.16	0.78
36:QG:29:LYS:HD2	36:QG:102:ARG:HG3	1.63	0.78
15:YT:123:GLN:O	15:YT:125:ARG:N	2.17	0.78
41:QL:33:ARG:HB3	41:QL:60:LEU:HD22	1.65	0.78
1:RA:1607:C:N4	1:RA:1622:G:OP2	2.16	0.77
41:QL:34:ARG:HB2	41:QL:61:THR:HG23	1.65	0.77
45:QP:36:ILE:HB	45:QP:52:ASP:HB3	1.66	0.77
1:YA:345:A:O2'	1:YA:347:A:N6	2.17	0.77
37:XH:11:THR:HA	37:XH:14:ARG:HD2	1.65	0.77
32:XC:104:GLN:HG2	32:XC:105:GLU:H	1.49	0.77
1:RA:573:G:OP2	17:RV:78:LYS:NZ	2.17	0.77
1:RA:2293:C:H5''	14:RS:89:ARG:HH12	1.49	0.77
49:XA:34:C:H2'	49:XA:35:G:H8	1.49	0.77
37:QH:11:THR:HA	37:QH:14:ARG:HD2	1.67	0.77
40:XK:51:LYS:HA	40:XK:55:LYS:HE3	1.65	0.77
25:R3:10:LYS:CE	25:R3:15:TYR:OH	2.31	0.77
42:QM:108:ARG:HH12	42:QM:111:LYS:HB3	1.48	0.77
53:QV:32:G:H1	53:QV:41:C:H42	1.32	0.77
44:QO:64:ARG:HH22	49:QA:581:G:H5''	1.50	0.77
49:QA:1500:A:H5''	49:QA:1508:G:H5''	1.66	0.77
34:XE:50:GLU:HG3	34:XE:52:PRO:HD2	1.67	0.77
49:XA:1205:U:H2'	49:XA:1206:G:H8	1.48	0.77
49:XA:1500:A:H5''	49:XA:1508:G:H5''	1.64	0.77
33:QD:26:CYS:HB3	33:QD:31:CYS:SG	2.24	0.77
41:QL:74:GLY:O	41:QL:102:ARG:NH2	2.18	0.77
42:QM:24:GLY:H	49:QA:1330:U:H5'	1.49	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:QL:56:ALA:HB3	41:QL:68:ALA:HB3	1.65	0.77
49:XA:1531:A:C8	49:XA:1532:U:C5	2.73	0.77
53:QV:19:G:OP1	53:QV:20:G:N2	2.18	0.77
1:YA:2328:A:H2'	1:YA:2329:G:C8	2.20	0.77
6:YG:112:PRO:HB3	51:Y4:37:SER:HB2	1.67	0.77
7:YH:153:LYS:HG2	7:YH:162:ILE:HG13	1.67	0.77
1:YA:265:A:N6	1:YA:427:U:O2'	2.18	0.76
49:QA:17:U:O2	49:QA:1079:G:N2	2.18	0.76
49:QA:664:G:H22	49:QA:741:G:H1	1.30	0.76
1:YA:620:G:H4'	1:YA:621:A:H5''	1.68	0.76
6:RG:64:THR:HG23	6:RG:66:GLN:H	1.47	0.76
1:YA:2061:G:OP1	5:YF:68:LYS:NZ	2.18	0.76
49:QA:438:G:H21	49:QA:497:A:H62	1.33	0.76
33:QD:171:GLY:O	33:QD:173:TRP:N	2.18	0.76
1:RA:1779:U:OP2	1:RA:1784:A:N6	2.18	0.76
31:XB:91:PRO:HB3	31:XB:152:PHE:HA	1.67	0.76
33:XD:196:LEU:HB2	33:XD:197:PRO:HD2	1.65	0.76
49:XA:713:G:H2'	49:XA:714:G:C8	2.21	0.76
45:QP:57:ARG:NH2	45:QP:81:ARG:O	2.19	0.76
49:XA:673:G:H2'	49:XA:674:G:C8	2.21	0.76
1:RA:358:U:H2'	1:RA:359:A:H8	1.48	0.76
32:QC:58:GLU:HB2	32:QC:65:ALA:HB3	1.66	0.76
49:XA:17:U:O2	49:XA:1079:G:N2	2.19	0.76
1:RA:380:U:H2'	1:RA:381:G:H8	1.51	0.76
1:RA:1980:G:O2'	1:RA:1982:C:OP2	2.04	0.76
16:RU:66:ASN:O	16:RU:70:ARG:HB2	1.84	0.76
29:Y8:29:LYS:O	29:Y8:31:HIS:N	2.19	0.76
36:XG:76:ARG:NH1	36:XG:89:MET:SD	2.58	0.76
1:RA:537:C:OP1	1:RA:995:C:N4	2.18	0.76
11:YP:61:ARG:HD2	29:Y8:13:ARG:HD2	1.68	0.76
1:RA:910:A:H62	12:RQ:12:GLN:HA	1.51	0.75
13:RR:56:LYS:NZ	13:RR:90:ARG:O	2.20	0.75
53:XV:32:G:H1	53:XV:41:C:H42	1.32	0.75
37:QH:36:LEU:HA	37:QH:39:LEU:HB2	1.67	0.75
53:XV:18:U:N3	53:XV:60:A:C6	2.53	0.75
1:RA:2328:A:H2'	1:RA:2329:G:C8	2.22	0.75
1:YA:1658:C:H2'	1:YA:1659:U:C6	2.22	0.75
46:QQ:81:ARG:HH21	46:QQ:83:ASP:HB2	1.50	0.75
49:QA:437:U:H3	49:QA:495:A:H62	1.35	0.75
34:XE:27:ARG:HG2	34:XE:49:PRO:HA	1.66	0.75
1:RA:239:U:H3	1:RA:258:G:H1	1.31	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2580:U:H4'	4:RE:130:GLY:HA3	1.68	0.75
33:QD:133:VAL:HG12	33:QD:134:ASP:H	1.52	0.75
49:QA:1403:C:O2	49:QA:1499:A:N6	2.20	0.75
49:XA:1531:A:C6	49:XA:1532:U:C4	2.67	0.75
1:RA:1558:A:H1'	1:RA:1558:A:H8	1.46	0.75
32:QC:176:HIS:HB3	49:QA:1111:A:H61	1.50	0.75
46:QQ:28:PRO:HA	46:QQ:35:VAL:HA	1.68	0.75
1:RA:141:A:H8	1:RA:1595:G:H21	1.35	0.75
21:YZ:145:GLU:HG3	21:YZ:146:ILE:HG12	1.69	0.75
49:XA:1537:U:O2'	49:XA:1538:C:O5'	2.04	0.75
4:RE:62:PRO:O	4:RE:64:LYS:N	2.20	0.75
15:YT:24:PRO:HA	15:YT:49:VAL:HG13	1.69	0.75
23:Y1:29:GLY:O	23:Y1:31:GLY:N	2.20	0.75
36:XG:114:ARG:HA	49:XA:1298:C:H41	1.51	0.75
40:XK:47:VAL:HG22	49:XA:688:G:H4'	1.67	0.75
20:RY:79:CYS:SG	20:RY:80:GLY:N	2.60	0.75
27:Y6:11:LEU:HD11	27:Y6:51:GLU:HG3	1.68	0.75
47:QR:45:SER:HB3	47:QR:51:LEU:HD11	1.67	0.74
31:XB:133:LYS:HB3	49:XA:1158:C:H4'	1.70	0.74
2:RB:33:G:H5'	6:RG:2:PRO:HG3	1.69	0.74
11:YP:88:LEU:HD12	11:YP:95:VAL:HG11	1.69	0.74
31:QB:87:ARG:HG2	31:QB:219:VAL:HG11	1.69	0.74
38:QI:128:ARG:NH2	49:QA:1231:G:OP1	2.19	0.74
33:XD:33:MET:C	33:XD:35:ARG:H	1.88	0.74
1:RA:272:G:H2'	1:RA:273:G:H8	1.51	0.74
49:QA:687:A:N6	49:QA:703:G:H21	1.84	0.74
21:RZ:19:ARG:NH1	21:RZ:84:GLU:O	2.20	0.74
43:XN:50:LYS:O	43:XN:52:GLN:N	2.17	0.74
48:XT:54:LYS:HA	48:XT:57:ARG:HE	1.52	0.74
1:YA:2646:C:OP2	1:YA:2732:G:O2'	2.03	0.74
32:QC:130:VAL:HG11	32:QC:157:ILE:HG21	1.70	0.74
46:QQ:100:LYS:NZ	49:QA:246:A:OP2	2.20	0.74
4:YE:50:GLY:HA2	4:YE:77:ILE:HA	1.67	0.74
6:YG:64:THR:HG23	6:YG:66:GLN:H	1.51	0.74
41:QL:85:ILE:HG13	41:QL:98:TYR:HB3	1.70	0.74
49:QA:1535:C:O2	52:QX:10:G:N1	2.20	0.74
23:R1:29:GLY:O	23:R1:31:GLY:N	2.19	0.74
32:QC:17:ASP:HB3	32:QC:21:ARG:HH12	1.52	0.74
36:QG:35:LYS:HD2	49:QA:1290:G:H4'	1.69	0.74
13:RR:104:ARG:HD2	13:RR:111:LEU:HD21	1.69	0.74
41:QL:71:PRO:HD2	41:QL:102:ARG:HD3	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:80:G:N2	49:QA:89:U:O2	2.16	0.74
51:R4:10:VAL:HG22	51:R4:11:PRO:HD2	1.70	0.74
1:RA:1681:G:O2'	1:RA:1762:A:O2'	2.06	0.74
1:RA:2693:A:H2'	1:RA:2694:G:H8	1.51	0.74
31:QB:95:GLN:HG3	31:QB:148:TYR:HA	1.69	0.73
33:QD:67:ILE:O	33:QD:114:ARG:NH1	2.19	0.73
1:RA:1636:C:H2'	1:RA:1637:A:C8	2.23	0.73
42:QM:14:ARG:NH1	49:QA:1295:G:O2'	2.21	0.73
36:XG:111:ARG:HH22	36:XG:126:ASP:HB2	1.52	0.73
43:XN:29:ARG:NH2	49:XA:974:A:OP2	2.20	0.73
27:Y6:41:PRO:HG2	27:Y6:45:LYS:H	1.54	0.73
39:QJ:16:LEU:HD23	39:QJ:94:VAL:HG11	1.70	0.73
32:XC:161:GLU:HG3	49:XA:1055:A:H4'	1.71	0.73
1:RA:2115:G:N2	1:RA:2165:G:N7	2.34	0.73
21:RZ:165:VAL:HG11	21:RZ:169:GLU:HB2	1.70	0.73
1:YA:1899:G:H21	1:YA:1902:C:N4	1.85	0.73
44:QO:85:LEU:HD22	44:QO:87:ILE:HG12	1.70	0.73
48:QT:79:ARG:NH2	49:QA:261:U:OP2	2.20	0.73
51:Y4:9:LEU:H	51:Y4:27:THR:HG23	1.53	0.73
1:RA:2404:C:H1'	11:RP:67:MET:HE1	1.70	0.73
1:RA:676:A:H8	1:RA:2069:G:H21	1.37	0.73
5:RF:197:ASP:O	5:RF:199:TRP:N	2.21	0.73
1:YA:2848:G:O2'	1:YA:2867:G:N2	2.22	0.73
5:YF:197:ASP:O	5:YF:199:TRP:N	2.22	0.73
37:XH:30:ARG:NH1	49:XA:590:C:OP2	2.22	0.73
1:RA:482:A:H4'	20:RY:47:LYS:HD2	1.70	0.73
1:RA:1558:A:N9	1:RA:1558:A:O4'	2.21	0.73
49:QA:1414:U:H2'	49:QA:1415:G:C8	2.24	0.73
49:QA:1469:G:H2'	49:QA:1470:G:H8	1.54	0.73
41:XL:33:ARG:HG2	41:XL:60:LEU:HD12	1.70	0.73
44:XO:60:VAL:HG13	44:XO:63:ARG:HH21	1.54	0.73
4:RE:50:GLY:HA2	4:RE:77:ILE:HA	1.70	0.73
49:XA:979:C:OP1	49:XA:1223:C:N4	2.21	0.73
1:RA:2169:A:H62	53:QV:19:G:H21	1.33	0.72
35:QF:69:GLU:HB2	49:QA:738:C:H5''	1.70	0.72
3:YD:148:GLU:HB2	3:YD:151:LYS:HD2	1.71	0.72
49:XA:1151:A:H2'	49:XA:1152:A:H8	1.52	0.72
12:RQ:17:LEU:HD23	12:RQ:96:VAL:HG23	1.69	0.72
3:YD:44:ASN:HB3	3:YD:49:ILE:HA	1.72	0.72
31:QB:71:VAL:HG22	31:QB:93:VAL:HB	1.71	0.72
34:QE:19:MET:SD	49:QA:15:G:H1'	2.30	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:QT:49:ALA:HB1	48:QT:53:LEU:HD23	1.70	0.72
32:XC:88:ARG:HH21	32:XC:100:ALA:HA	1.52	0.72
37:XH:96:GLY:H	37:XH:99:GLU:HB2	1.52	0.72
51:Y4:1:MET:SD	51:Y4:6:HIS:NE2	2.61	0.72
33:QD:122:ARG:HH21	49:QA:403:C:H4'	1.54	0.72
31:XB:104:ASN:HB3	31:XB:107:THR:HB	1.70	0.72
1:YA:1678:G:H21	1:YA:1989:G:H22	1.37	0.72
14:YS:59:LYS:HD3	14:YS:60:GLY:H	1.54	0.72
49:QA:413:G:H4'	49:QA:414:A:H5''	1.71	0.72
34:QE:39:GLY:HA2	34:QE:71:LEU:HD11	1.72	0.72
49:XA:1062:U:H2'	49:XA:1063:C:C6	2.25	0.72
1:RA:259:G:H21	1:RA:621:A:H8	1.37	0.72
1:RA:2151:G:H2'	1:RA:2152:G:H8	1.54	0.72
1:YA:775:G:H4'	1:YA:776:G:H5'	1.71	0.72
37:QH:95:VAL:HG22	37:QH:99:GLU:HB3	1.71	0.72
1:RA:2011:U:OP2	18:RW:16:LYS:NZ	2.22	0.72
1:RA:2392:A:H8	11:RP:60:MET:HG2	1.55	0.72
10:YO:97:ARG:NH1	49:XA:339:C:OP2	2.23	0.72
46:QQ:27:PHE:HE2	46:QQ:30:PRO:HD3	1.55	0.72
49:QA:926:G:C6	52:QX:19:U:C5	2.77	0.72
31:XB:171:ALA:HA	31:XB:174:VAL:HB	1.70	0.72
38:XI:42:ARG:HA	38:XI:45:ALA:HB3	1.71	0.72
46:XQ:91:ARG:HG2	49:XA:583:A:H4'	1.72	0.72
1:RA:24:G:O2'	18:RW:78:GLU:O	2.08	0.72
1:RA:620:G:H4'	1:RA:621:A:H5''	1.71	0.72
6:RG:47:LYS:HD3	6:RG:81:LYS:HB2	1.72	0.72
1:YA:1569:A:H5'	3:YD:61:LEU:HD21	1.72	0.72
8:YI:93:THR:HG22	8:YI:119:PRO:HB3	1.71	0.72
18:YW:18:ARG:HG3	18:YW:76:VAL:HG13	1.71	0.72
49:XA:1532:U:C2	52:XX:13:A:N6	2.37	0.72
1:YA:34:C:H41	1:YA:447:A:H61	1.37	0.71
1:YA:250:G:OP2	29:Y8:13:ARG:NH2	2.23	0.71
3:YD:69:ARG:NH2	3:YD:128:GLY:O	2.22	0.71
15:YT:26:ASP:HB3	15:YT:92:GLY:H	1.55	0.71
38:XI:120:ARG:HB2	49:XA:1349:A:H5'	1.71	0.71
1:RA:581:C:H2'	1:RA:582:G:H8	1.54	0.71
7:RH:125:VAL:HG22	7:RH:131:VAL:HG13	1.71	0.71
2:YB:80:U:O2	2:YB:81:G:N2	2.22	0.71
40:XK:44:SER:OG	40:XK:45:GLY:N	2.23	0.71
49:XA:165:C:H2'	49:XA:166:G:H8	1.53	0.71
1:RA:530:G:C2	1:RA:2022:U:OP1	2.43	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:918:A:N3	2:RB:80:U:O2'	2.23	0.71
1:YA:2867:G:HO2'	1:YA:2868:A:H8	1.38	0.71
31:XB:212:GLN:HG3	31:XB:235:SER:HB3	1.71	0.71
49:XA:1255:G:O2'	49:XA:1258:G:N3	2.23	0.71
13:YR:42:LYS:HA	13:YR:45:ARG:HD2	1.72	0.71
48:QT:85:MET:SD	49:QA:186:C:O2'	2.48	0.71
49:QA:1535:C:C2	52:QX:10:G:N1	2.57	0.71
1:RA:704:G:HO2'	1:RA:726:G:H22	1.38	0.71
24:R2:47:ASN:O	24:R2:49:LYS:N	2.23	0.71
27:R6:11:LEU:HD23	27:R6:26:ASN:HB3	1.71	0.71
38:QL:111:ARG:HH12	49:QA:1187:G:H4'	1.56	0.71
41:XL:102:ARG:HG2	41:XL:109:GLY:HA2	1.71	0.71
42:XM:94:ARG:HE	50:XS:81:ARG:HB3	1.56	0.71
49:XA:771:G:C1'	49:XA:771:G:C8	2.73	0.71
6:RG:34:LEU:HB2	6:RG:172:LEU:HD21	1.72	0.71
49:QA:950:U:H3	49:QA:1231:G:H1	1.39	0.71
41:XL:56:ALA:HB3	41:XL:68:ALA:HB3	1.71	0.71
49:XA:890:G:O2'	49:XA:906:G:O6	2.09	0.71
1:RA:626:U:O4	11:RP:81:GLN:NE2	2.21	0.71
1:RA:1224:G:N2	1:RA:1227:A:OP2	2.21	0.71
8:RI:4:ILE:HD11	8:RI:44:LEU:HD12	1.71	0.71
14:YS:24:LEU:HB2	14:YS:85:VAL:HG12	1.73	0.71
33:QD:115:ARG:HB3	49:QA:407:G:H5''	1.71	0.71
42:XM:24:GLY:H	49:XA:1330:U:H5'	1.56	0.71
1:RA:2808:U:H3	1:RA:2892:A:N6	1.88	0.71
44:QO:21:ASP:OD2	49:QA:750:G:O2'	2.07	0.71
3:RD:61:LEU:O	3:RD:63:ARG:NH1	2.24	0.71
16:YU:92:ARG:NH2	17:YV:11:GLN:H	1.88	0.71
31:XB:209:ARG:HD3	31:XB:239:VAL:HG11	1.73	0.71
1:RA:1833:U:O2'	1:RA:1969:A:N1	2.23	0.70
19:RX:57:LEU:HD11	19:RX:78:LYS:HD2	1.72	0.70
1:YA:1359:A:OP2	1:YA:1371:G:N2	2.21	0.70
14:YS:78:LEU:HD21	14:YS:108:GLY:HA3	1.71	0.70
22:Y0:10:THR:HG22	22:Y0:12:ASN:H	1.55	0.70
37:QH:69:ARG:HH22	37:QH:75:ARG:HB3	1.54	0.70
49:QA:1270:C:O2'	49:QA:1314:C:OP1	2.09	0.70
1:YA:587:C:OP2	11:YP:21:ARG:NH2	2.24	0.70
21:YZ:182:LYS:HG3	21:YZ:183:LEU:HD23	1.73	0.70
3:RD:148:GLU:HB2	3:RD:151:LYS:HD2	1.72	0.70
8:RI:4:ILE:HG12	8:RI:18:VAL:HG22	1.72	0.70
1:YA:674:G:H1'	5:YF:74:ARG:HD3	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:XO:23:GLY:O	44:XO:28:GLN:NE2	2.24	0.70
1:RA:2068:U:H3	1:RA:2430:A:H2	1.40	0.70
15:RT:24:PRO:HA	15:RT:49:VAL:HG13	1.73	0.70
8:YI:130:TYR:HB3	8:YI:136:VAL:HG13	1.73	0.70
12:RQ:83:MET:HB2	22:R0:7:LEU:HD12	1.73	0.70
20:RY:86:ARG:HB2	20:RY:95:LYS:HD2	1.73	0.70
43:QN:31:ARG:NH1	49:QA:977:A:OP1	2.21	0.70
49:XA:1309:G:H2'	49:XA:1310:G:C8	2.27	0.70
49:XA:1354:C:H2'	49:XA:1355:G:H8	1.55	0.70
1:RA:2701:C:N4	1:RA:2703:C:OP2	2.25	0.70
28:R7:9:ARG:NH1	28:R7:48:LYS:HD2	2.07	0.70
33:XD:171:GLY:O	33:XD:173:TRP:N	2.25	0.70
49:XA:684:A:H2'	49:XA:685:G:C8	2.25	0.70
49:XA:1535:C:N4	52:XX:10:G:N2	2.40	0.70
15:YT:27:THR:HG23	15:YT:90:GLN:HB3	1.74	0.70
33:XD:60:GLU:HG2	33:XD:198:VAL:HG13	1.73	0.70
41:XL:44:THR:HG22	41:XL:50:SER:HA	1.73	0.70
1:RA:2122:U:H3	1:RA:2176:A:H61	1.40	0.70
1:YA:1980:G:O2'	1:YA:1982:C:OP2	2.10	0.70
33:QD:51:PRO:HB2	33:QD:56:VAL:HG13	1.72	0.70
36:QG:22:LEU:HD21	36:QG:66:VAL:HG21	1.74	0.70
47:QR:36:ASN:HB3	47:QR:39:VAL:HB	1.74	0.70
42:XM:4:ILE:HG23	42:XM:57:ARG:HB2	1.72	0.70
1:RA:2031:A:N3	1:RA:2455:G:O2'	2.25	0.70
5:RF:157:VAL:HB	5:RF:194:MET:HB3	1.73	0.70
1:YA:1310:G:OP2	28:Y7:9:ARG:NH1	2.25	0.70
1:YA:1338:G:N7	19:YX:62:LYS:NZ	2.35	0.70
7:YH:20:ALA:HB3	7:YH:23:ARG:HG2	1.74	0.70
7:YH:86:GLU:HG3	7:YH:165:ALA:H	1.56	0.70
32:QC:11:ARG:HB2	32:QC:16:ARG:HB2	1.73	0.70
39:QJ:55:LYS:H	39:QJ:55:LYS:HD2	1.56	0.70
40:QK:33:THR:HG22	40:QK:39:PRO:HA	1.73	0.70
1:RA:576:U:H2'	1:RA:577:G:C8	2.27	0.70
1:YA:581:C:H2'	1:YA:582:G:C8	2.27	0.70
1:YA:1049:C:H2'	1:YA:1050:A:H5''	1.74	0.70
1:YA:1728:G:H8	1:YA:1732:A:H62	1.40	0.70
4:YE:201:THR:HG22	4:YE:203:LYS:H	1.55	0.70
21:YZ:60:GLU:HA	21:YZ:66:SER:HA	1.74	0.70
49:QA:975:A:H4'	49:QA:976:G:H5''	1.74	0.70
49:QA:1286:A:N6	49:QA:1355:G:OP1	2.23	0.70
1:YA:1678:G:N2	1:YA:1989:G:H22	1.90	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:2287:A:H62	1:YA:2344:U:H3	1.40	0.69
31:XB:12:GLU:HA	31:XB:16:HIS:CD2	2.26	0.69
49:XA:1028(B):C:H42	49:XA:1028(G):G:H1	1.38	0.69
49:XA:1532:U:O2'	49:XA:1533:C:OP1	2.09	0.69
7:RH:152:ARG:HG3	7:RH:153:LYS:HD2	1.74	0.69
8:RI:98:ALA:HB2	8:RI:111:PRO:HB3	1.74	0.69
24:R2:41:ILE:HD11	24:R2:44:LEU:HD12	1.74	0.69
2:YB:37:C:O2	14:YS:95:HIS:NE2	2.20	0.69
24:R2:29:LYS:HE3	24:R2:57:ILE:HG21	1.75	0.69
1:YA:1272:A:OP2	1:YA:1647:G:OP1	2.10	0.69
36:QG:78:ARG:NH1	36:QG:155:ARG:O	2.25	0.69
45:QP:26:ARG:HH21	49:QA:310:G:H5''	1.55	0.69
32:XC:157:ILE:HD13	32:XC:164:ARG:HB2	1.73	0.69
46:XQ:60:ILE:HG23	46:XQ:72:ARG:HB2	1.72	0.69
49:XA:975:A:H4'	49:XA:976:G:H5''	1.74	0.69
1:RA:372:G:N2	1:RA:401:A:OP2	2.24	0.69
1:RA:530:G:O2'	1:RA:532:A:N7	2.26	0.69
1:RA:2075:U:OP1	3:RD:244:ARG:NH1	2.25	0.69
1:RA:2712:U:HO2'	1:RA:2712(A):A:H8	1.38	0.69
2:RB:37:C:O2	14:RS:95:HIS:NE2	2.25	0.69
1:YA:589:C:H2'	1:YA:590:A:H8	1.55	0.69
1:YA:1062:G:H2'	1:YA:1063:G:C8	2.27	0.69
46:QQ:60:ILE:HG23	46:QQ:72:ARG:HB3	1.73	0.69
49:XA:771:G:O4'	49:XA:771:G:C5'	2.40	0.69
49:XA:1157:A:H2'	49:XA:1181:G:H22	1.57	0.69
1:RA:1649:G:O2'	13:RR:107:ASP:OD1	2.11	0.69
12:RQ:37:LEU:HD21	12:RQ:130:LYS:HE3	1.74	0.69
1:YA:1796:U:H2'	1:YA:1797:C:H6	1.56	0.69
20:YY:79:CYS:SG	20:YY:80:GLY:N	2.65	0.69
37:QH:83:ILE:HG22	37:QH:137:VAL:HG13	1.73	0.69
41:XL:9:GLN:NE2	49:XA:881:G:OP2	2.25	0.69
45:XP:9:PHE:HE2	45:XP:18:ARG:HB2	1.57	0.69
26:R5:46:CYS:HB2	26:R5:50:GLY:HA3	1.73	0.69
5:YF:107:LYS:HD2	5:YF:206:ILE:HA	1.73	0.69
41:QL:90:VAL:HG22	41:QL:96:VAL:HG11	1.74	0.69
49:QA:1124:G:H1	49:QA:1149:C:H42	1.38	0.69
35:XF:99:ALA:HB2	47:XR:31:LEU:HG	1.75	0.69
37:XH:31:PHE:CZ	49:XA:643:C:H5'	2.28	0.69
1:RA:2037:G:H2'	1:RA:2038:G:C8	2.28	0.69
1:YA:530:G:O2'	1:YA:532:A:N7	2.25	0.69
5:YF:157:VAL:HB	5:YF:194:MET:HB3	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:QB:97:TRP:CH2	31:QB:176:GLU:HG3	2.27	0.69
7:RH:121:ILE:HG13	7:RH:140:LYS:HD2	1.75	0.69
14:RS:26:LEU:HB3	14:RS:87:PHE:HA	1.74	0.69
4:YE:24:THR:HG21	4:YE:188:VAL:HG11	1.72	0.69
13:YR:56:LYS:NZ	13:YR:87:TYR:O	2.25	0.69
33:QD:172:PRO:HD2	33:QD:194:LEU:HD21	1.75	0.69
49:QA:1300:G:O2'	49:QA:1303:C:N4	2.24	0.69
49:QA:1539:C:H2'	49:QA:1540:U:C6	2.28	0.69
31:XB:178:ARG:HD3	37:XH:73:ASP:H	1.57	0.69
42:XM:80:ARG:NH2	49:XA:1310:G:OP1	2.26	0.69
45:XP:38:TYR:CE1	45:XP:50:LYS:HG3	2.28	0.69
49:XA:17:U:H2'	49:XA:18:C:C6	2.28	0.69
49:XA:922:G:H2'	49:XA:923:A:C8	2.27	0.69
1:RA:139:G:H22	1:RA:1596:A:H4'	1.57	0.69
1:YA:414:C:O2	1:YA:1864:U:O2'	2.10	0.69
1:YA:819:A:OP2	1:YA:1187:G:N2	2.23	0.69
1:YA:1224:G:N2	1:YA:1227:A:OP2	2.22	0.69
49:QA:1340:A:H1'	53:QV:32:G:O2'	1.92	0.69
42:XM:45:VAL:HG23	42:XM:48:LEU:HD12	1.75	0.69
42:XM:91:ARG:NH2	49:XA:1226:C:OP2	2.26	0.69
1:RA:1636:C:H2'	1:RA:1637:A:H8	1.57	0.69
1:YA:2584:U:H2'	1:YA:2585:U:H2'	1.73	0.69
16:YU:8:VAL:HG23	16:YU:11:ARG:HH21	1.58	0.69
33:XD:103:ASN:HA	33:XD:106:TYR:HB3	1.75	0.69
2:YB:31:C:H41	14:YS:32:LEU:HD13	1.58	0.68
21:YZ:89:PHE:HE1	21:YZ:96:VAL:HG21	1.57	0.68
13:RR:3:HIS:O	13:RR:5:LYS:N	2.26	0.68
33:XD:76:ARG:NH1	33:XD:207:TYR:OH	2.25	0.68
38:XI:2:GLU:HG3	38:XI:3:GLN:HE22	1.55	0.68
38:XI:122:ALA:HB3	49:XA:1343:G:H4'	1.75	0.68
1:RA:971:C:O2'	1:RA:983:A:N3	2.27	0.68
11:RP:61:ARG:HH12	29:R8:22:VAL:HG12	1.58	0.68
36:QG:25:ALA:O	36:QG:29:LYS:HG2	1.92	0.68
49:QA:21:G:H2'	49:QA:22:G:C8	2.29	0.68
49:QA:677:U:H3	49:QA:713:G:H22	1.39	0.68
49:XA:701:C:OP1	49:XA:702:A:O2'	2.11	0.68
13:RR:97:VAL:HG22	13:RR:114:VAL:HG22	1.73	0.68
1:YA:1780:A:OP2	1:YA:1782:C:OP2	2.11	0.68
34:QE:14:ARG:HH12	49:QA:1079:G:H4'	1.59	0.68
39:QJ:40:LEU:HD13	39:QJ:41:PRO:HD2	1.74	0.68
40:QK:55:LYS:NZ	49:QA:690:G:O6	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:1028(H):G:H2'	49:XA:1033:G:C8	2.28	0.68
5:RF:167:ALA:HB1	5:RF:173:VAL:HG11	1.75	0.68
19:RX:53:LYS:HB2	19:RX:82:GLN:HB3	1.75	0.68
22:R0:10:THR:HG22	22:R0:12:ASN:H	1.58	0.68
1:YA:141:A:H8	1:YA:1595:G:H21	1.42	0.68
1:YA:2304:G:H22	1:YA:2312:U:H3	1.39	0.68
8:YI:4:ILE:HG12	8:YI:18:VAL:HG22	1.74	0.68
13:YR:78:LYS:HE2	13:YR:83:ILE:HD11	1.74	0.68
34:XE:100:VAL:HG12	34:XE:118:ILE:HG22	1.75	0.68
1:RA:630:G:N2	1:RA:633:A:OP2	2.21	0.68
1:RA:2131:G:H4'	1:RA:2132:U:H4'	1.76	0.68
1:RA:2693:A:H2'	1:RA:2694:G:C8	2.28	0.68
20:RY:29:GLU:HB3	20:RY:38:ILE:HG12	1.74	0.68
1:YA:483:A:H4'	20:YY:49:VAL:HA	1.75	0.68
1:YA:1791:A:N6	1:YA:1828:G:O2'	2.24	0.68
45:QP:26:ARG:NH2	49:QA:310:G:H5''	2.08	0.68
43:XN:24:CYS:HB2	43:XN:28:GLY:H	1.58	0.68
1:YA:2693:A:H2'	1:YA:2694:G:H8	1.58	0.68
7:YH:152:ARG:HG3	7:YH:153:LYS:HD2	1.75	0.68
41:XL:45:PRO:HD2	41:XL:49:ASN:HB2	1.74	0.68
49:XA:1151:A:H2'	49:XA:1152:A:C8	2.27	0.68
1:RA:1062:G:N7	1:RA:1088:A:O2'	2.22	0.68
3:YD:65:ILE:H	3:YD:65:ILE:HD13	1.59	0.68
39:QJ:55:LYS:NZ	49:QA:1199:U:O2'	2.20	0.68
49:XA:1224:G:O2'	49:XA:1322:C:OP2	2.12	0.68
1:RA:1693:U:O2'	3:RD:14:ARG:NH2	2.27	0.68
1:YA:729:G:OP2	3:YD:13:ARG:NH1	2.26	0.68
11:YP:62:LEU:HB2	29:Y8:30:ARG:HH11	1.59	0.68
31:QB:97:TRP:HH2	31:QB:176:GLU:HG3	1.59	0.68
32:QC:56:ASP:HB2	32:QC:67:THR:HB	1.76	0.68
39:QJ:3:LYS:N	39:QJ:75:ILE:O	2.27	0.68
49:QA:1317:C:H2'	49:QA:1318:A:O4'	1.94	0.68
41:XL:70:ILE:HG13	41:XL:72:GLY:H	1.58	0.68
1:RA:2375:G:N2	1:RA:2378:A:OP2	2.26	0.68
6:RG:105:LYS:HG3	6:RG:142:PRO:HG3	1.75	0.68
39:QJ:45:ARG:HB3	39:QJ:65:LEU:HB2	1.76	0.68
45:QP:40:ASP:HB3	45:QP:48:TRP:HB3	1.76	0.68
49:XA:1531:A:N6	49:XA:1532:U:O4	2.26	0.68
1:RA:463:G:N2	1:RA:466:A:OP2	2.23	0.67
1:RA:2114:A:N6	1:RA:2119:A:N7	2.42	0.67
1:YA:1796:U:H2'	1:YA:1797:C:C6	2.29	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:YG:6:ALA:N	51:Y4:23:GLU:HG2	2.09	0.67
38:QI:117:HIS:N	38:QI:121:ARG:O	2.26	0.67
49:QA:427:U:O2'	49:QA:541:G:OP1	2.11	0.67
1:RA:958:U:OP2	12:RQ:14:ARG:NH1	2.28	0.67
49:QA:41:G:H2'	49:QA:42:G:H8	1.59	0.67
39:XJ:41:PRO:HA	49:XA:1151:A:H5'	1.76	0.67
1:RA:1638:C:O2	1:RA:2698:U:O2'	2.11	0.67
1:YA:299:A:H5'	20:YY:84:ARG:HH21	1.59	0.67
1:YA:1830:C:H2'	1:YA:1831:G:H8	1.60	0.67
1:YA:2068:U:H3	1:YA:2430:A:H2	1.43	0.67
1:YA:2328:A:H2'	1:YA:2329:G:H8	1.58	0.67
7:YH:153:LYS:HB3	7:YH:154:PRO:HD3	1.77	0.67
44:QO:82:ILE:HD11	44:QO:88:ARG:HG2	1.74	0.67
34:XE:57:LYS:NZ	49:XA:1073:U:OP1	2.26	0.67
42:XM:65:LYS:HE3	42:XM:70:LEU:HD23	1.74	0.67
45:XP:14:ASN:HA	45:XP:42:ARG:HH21	1.58	0.67
46:XQ:43:LEU:HD12	46:XQ:69:LYS:HA	1.77	0.67
1:RA:589:C:H2'	1:RA:590:A:C8	2.29	0.67
11:RP:71:VAL:HG13	11:RP:72:PRO:HD3	1.76	0.67
1:YA:1341:U:OP2	1:YA:1394:U:O2'	2.10	0.67
38:QI:103:THR:HG23	49:QA:1180:A:H5''	1.77	0.67
49:QA:981:U:H3'	49:QA:982:U:H2'	1.74	0.67
33:XD:15:GLU:HB3	33:XD:63:LYS:HE2	1.75	0.67
41:QL:41:ARG:HD2	41:QL:55:VAL:HG11	1.75	0.67
31:XB:71:VAL:HB	31:XB:164:VAL:HG23	1.74	0.67
44:XO:23:GLY:HA3	49:XA:750:G:N3	2.09	0.67
1:RA:691:C:H2'	1:RA:692:C:H6	1.58	0.67
7:RH:106:THR:HG22	7:RH:112:PRO:HB3	1.77	0.67
49:QA:438:G:O2'	49:QA:494:U:O4	2.12	0.67
49:QA:1221:G:OP1	49:QA:1321:C:N4	2.23	0.67
31:XB:155:LEU:HD11	31:XB:159:PRO:HD3	1.75	0.67
31:XB:168:THR:HG23	31:XB:192:SER:HB2	1.77	0.67
40:XK:113:PRO:HB3	49:XA:676:A:H4'	1.74	0.67
49:XA:316:G:OP2	49:XA:351:G:O2'	2.11	0.67
52:QX:13:A:C6	52:QX:14:A:N1	2.63	0.67
1:RA:732:C:H2'	1:RA:733:G:O4'	1.94	0.67
2:RB:80:U:O2	2:RB:81:G:N2	2.24	0.67
1:YA:1061:U:H3'	1:YA:1062:G:H5''	1.75	0.67
1:YA:1316:U:H2'	1:YA:1317:A:H8	1.60	0.67
8:YI:92:VAL:HG13	8:YI:120:ILE:HG23	1.77	0.67
33:QD:59:ARG:HH12	33:QD:66:ARG:HH12	1.42	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1126:U:H3'	49:QA:1127:G:H8	1.59	0.67
49:QA:1339:A:H2	53:QV:32:G:C1'	2.00	0.67
32:XC:11:ARG:HB3	32:XC:15:THR:HB	1.77	0.67
49:XA:1414:U:H2'	49:XA:1415:G:C8	2.30	0.67
50:XS:51:VAL:HG21	50:XS:71:LEU:HD21	1.77	0.67
21:RZ:60:GLU:HA	21:RZ:66:SER:HA	1.77	0.67
31:QB:51:LEU:HD22	31:QB:55:PHE:HE2	1.59	0.67
42:QM:25:ILE:HG23	42:QM:29:ARG:HB2	1.76	0.67
44:QO:58:MET:N	44:QO:58:MET:SD	2.67	0.67
41:XL:35:GLY:HA2	41:XL:58:VAL:HA	1.77	0.67
49:XA:1300:G:N2	49:XA:1335:C:O4'	2.28	0.67
1:RA:2422:A:O4'	53:QV:78:A:C6	2.48	0.67
6:RG:142:PRO:HB2	51:R4:31:ILE:HG12	1.75	0.67
36:QG:33:ASP:OD1	49:QA:1350:A:O2'	2.13	0.67
49:QA:165:C:H2'	49:QA:166:G:H8	1.60	0.67
49:QA:816:A:OP2	49:QA:1526:G:O2'	2.12	0.67
39:XJ:39:PRO:HB3	39:XJ:70:ARG:HE	1.60	0.67
1:RA:589:C:H2'	1:RA:590:A:H8	1.61	0.67
1:YA:372:G:N2	1:YA:401:A:OP2	2.26	0.67
1:YA:2037:G:H2'	1:YA:2038:G:C8	2.30	0.67
5:YF:110:LEU:HD11	5:YF:181:LEU:HD13	1.77	0.67
26:Y5:56:LYS:H	26:Y5:56:LYS:HD2	1.59	0.67
41:XL:70:ILE:HG13	41:XL:72:GLY:N	2.09	0.67
1:RA:530:G:N1	1:RA:2022:U:OP1	2.28	0.66
1:RA:2422:A:O4'	53:QV:78:A:N6	2.28	0.66
1:RA:2469:A:H5''	1:RA:2470:G:C8	2.30	0.66
49:QA:362:G:N2	49:QA:365:U:OP2	2.28	0.66
49:QA:392:G:H2'	49:QA:393:A:H8	1.60	0.66
40:XK:21:ILE:HD11	40:XK:98:LEU:HD11	1.75	0.66
49:XA:21:G:H2'	49:XA:22:G:C8	2.30	0.66
49:XA:728:A:H2'	49:XA:729:A:C8	2.29	0.66
1:RA:272:G:H2'	1:RA:273:G:C8	2.30	0.66
1:RA:2848:G:O2'	1:RA:2867:G:N2	2.27	0.66
1:YA:2329:G:H2'	1:YA:2330:G:C8	2.30	0.66
44:QO:54:ARG:HH21	49:QA:579:G:H4'	1.59	0.66
40:XK:21:ILE:HB	40:XK:84:VAL:HA	1.77	0.66
49:XA:272:C:H2'	49:XA:273:A:H8	1.60	0.66
49:XA:728:A:H2'	49:XA:729:A:H8	1.57	0.66
52:XX:13:A:C6	52:XX:14:A:N1	2.63	0.66
1:YA:1899:G:N2	1:YA:1902:C:N4	2.44	0.66
1:YA:2392:A:H8	11:YP:60:MET:HG2	1.61	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:YH:154:PRO:HD3	7:YH:162:ILE:H	1.60	0.66
38:QI:11:LYS:NZ	49:QA:1347:G:N7	2.42	0.66
45:QP:8:ARG:HE	45:QP:15:PRO:HA	1.60	0.66
1:YA:1019:U:H3	1:YA:1142(A):A:H62	1.44	0.66
1:YA:2010:G:H5''	18:YW:42:ARG:HB2	1.78	0.66
41:QL:24:VAL:HG21	49:QA:553:A:H5''	1.77	0.66
49:QA:1381:U:O2'	49:QA:1382:C:H6	1.76	0.66
38:XI:97:LYS:HE2	49:XA:1178:G:N7	2.10	0.66
41:XL:123:LYS:HA	49:XA:36:C:H5''	1.76	0.66
1:RA:1667:G:O2'	1:RA:1991:U:O4	2.13	0.66
1:RA:2287:A:N6	1:RA:2344:U:H3	1.93	0.66
21:RZ:150:LEU:HD21	21:RZ:172:ALA:HB3	1.78	0.66
1:YA:573:G:OP2	17:YV:78:LYS:NZ	2.27	0.66
33:QD:36:ARG:NH2	49:QA:427:U:OP2	2.28	0.66
39:QJ:57:LYS:HZ1	49:QA:1366:C:H4'	1.60	0.66
49:QA:1532:U:H1'	52:QX:13:A:N6	2.10	0.66
32:XC:155:GLY:HA3	32:XC:196:LEU:HD12	1.77	0.66
49:XA:297:G:N2	49:XA:300:A:OP2	2.29	0.66
1:RA:1558:A:H4'	1:RA:1559:G:O5'	1.93	0.66
3:YD:71:ASP:HB2	3:YD:103:ARG:HH22	1.60	0.66
6:YG:98:ARG:NH1	51:Y4:1:MET:SD	2.69	0.66
21:YZ:144:LEU:HD11	21:YZ:149:SER:HA	1.77	0.66
31:QB:132:LYS:HG2	49:QA:1158:C:H1'	1.78	0.66
40:QK:47:VAL:HA	49:QA:688:G:H5'	1.76	0.66
42:QM:26:GLY:H	49:QA:1329:A:H5''	1.60	0.66
39:XJ:55:LYS:HD3	49:XA:963:G:H21	1.59	0.66
42:XM:91:ARG:NH2	42:XM:103:THR:HG21	2.10	0.66
48:XT:22:ARG:NH2	49:XA:105:G:OP1	2.28	0.66
22:R0:68:GLU:OE1	22:R0:82:ARG:NH1	2.29	0.66
46:QQ:29:HIS:HB3	46:QQ:33:GLY:H	1.60	0.66
49:QA:372:C:H42	49:QA:389:A:N6	1.88	0.66
1:RA:823:G:H2'	1:RA:824:A:H8	1.61	0.66
1:YA:691:C:H2'	1:YA:692:C:H6	1.61	0.66
49:QA:713:G:H2'	49:QA:714:G:C8	2.31	0.66
40:XK:79:SER:HB3	40:XK:106:LYS:HE2	1.77	0.66
41:XL:124:LYS:O	41:XL:126:LYS:N	2.29	0.66
49:XA:401:C:O2'	49:XA:621:A:N3	2.27	0.66
49:XA:1039:C:H2'	49:XA:1040:U:C6	2.31	0.66
49:XA:1150:U:H2'	49:XA:1151:A:C8	2.31	0.66
1:RA:2392:A:C8	11:RP:60:MET:HG2	2.31	0.66
20:RY:42:VAL:HG12	20:RY:65:ALA:HB3	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:861:A:N3	2:YB:79:C:O2'	2.29	0.66
32:QC:142:MET:HG3	32:QC:170:GLN:HB3	1.77	0.66
33:QD:108:LEU:HD13	33:QD:174:LEU:HB3	1.78	0.66
49:XA:977:A:N6	49:XA:1224:G:OP1	2.28	0.66
1:RA:1026:U:H4'	1:RA:1027:A:OP1	1.96	0.66
1:RA:1210:A:H5''	1:RA:1211:U:H3'	1.77	0.66
1:RA:2749:A:H4'	7:RH:62:LYS:HB3	1.78	0.66
1:YA:2112:G:O6	53:XV:19:G:C2	2.49	0.66
1:YA:2591:C:H2'	1:YA:2592:G:C8	2.31	0.66
15:YT:122:ASP:OD2	49:XA:1440(C):G:O2'	2.11	0.66
44:QO:82:ILE:HG13	44:QO:87:ILE:HG13	1.76	0.66
49:QA:982:U:O4	49:QA:1223:C:N3	2.29	0.66
49:QA:999:U:O4	49:QA:1000:A:N6	2.29	0.66
41:XL:70:ILE:HG22	41:XL:100:ILE:HD12	1.77	0.66
41:XL:102:ARG:HG3	41:XL:107:ALA:HB1	1.76	0.66
1:RA:117:G:OP2	1:RA:119:A:O2'	2.14	0.65
1:RA:2805:G:H2'	1:RA:2807:G:C8	2.30	0.65
1:YA:589:C:H2'	1:YA:590:A:C8	2.32	0.65
1:YA:2292:C:P	14:YS:17:ARG:HH22	2.18	0.65
4:YE:119:ARG:HG2	4:YE:160:TYR:HB2	1.77	0.65
16:YU:74:LEU:HD23	16:YU:114:LYS:HD3	1.78	0.65
45:QP:19:ILE:H	45:QP:38:TYR:HA	1.59	0.65
49:QA:587:G:N1	49:QA:754:C:OP2	2.28	0.65
32:XC:22:TRP:HB3	32:XC:59:ARG:H	1.61	0.65
52:QX:13:A:N1	52:QX:14:A:C2	2.64	0.65
15:RT:26:ASP:HB3	15:RT:92:GLY:H	1.60	0.65
11:YP:58:THR:O	11:YP:61:ARG:NE	2.28	0.65
36:QG:98:SER:HB3	49:QA:1376:U:OP1	1.96	0.65
33:XD:134:ASP:OD2	33:XD:134:ASP:N	2.29	0.65
41:XL:42:THR:OG1	41:XL:43:VAL:N	2.28	0.65
49:XA:1532:U:O2	52:XX:13:A:C5	2.49	0.65
1:YA:2115:G:N2	1:YA:2165:G:N7	2.44	0.65
7:YH:129:THR:OG1	7:YH:129:THR:O	2.13	0.65
12:YQ:111:GLU:OE1	12:YQ:133:ARG:NH2	2.29	0.65
49:QA:116:A:OP2	49:QA:289:G:P	2.55	0.65
36:XG:13:GLN:O	36:XG:24:THR:HG21	1.97	0.65
1:YA:1416:G:H2'	1:YA:1417:C:C6	2.32	0.65
1:YA:2392:A:C8	11:YP:60:MET:HG2	2.32	0.65
9:YN:62:VAL:HG12	9:YN:66:LYS:HD3	1.78	0.65
33:QD:187:ARG:HH21	33:QD:189:PRO:HB3	1.60	0.65
49:QA:28:G:O2'	49:QA:296:U:OP1	2.14	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:551:U:H2'	49:QA:552:U:C6	2.32	0.65
49:XA:1532:U:C2'	52:XX:13:A:H61	2.09	0.65
1:RA:2111:C:N3	1:RA:2118:U:O2'	2.29	0.65
7:RH:86:GLU:HG3	7:RH:165:ALA:H	1.61	0.65
11:RP:47:ASP:OD1	11:RP:50:ARG:NH2	2.30	0.65
1:YA:309:G:N3	1:YA:329:G:O2'	2.29	0.65
1:YA:796:C:H2'	1:YA:797:C:C6	2.32	0.65
1:YA:1210:A:H5''	1:YA:1211:U:H3'	1.76	0.65
4:YE:62:PRO:O	4:YE:64:LYS:N	2.30	0.65
36:QG:78:ARG:HB3	36:QG:85:TYR:HB2	1.79	0.65
49:QA:1222:G:OP1	50:QS:78:ARG:NH2	2.28	0.65
40:XK:61:ALA:HB1	40:XK:94:ALA:HB2	1.78	0.65
49:XA:1304:G:H21	49:XA:1333:A:H62	1.44	0.65
29:R8:49:VAL:HG23	29:R8:53:PRO:HB3	1.79	0.65
31:QB:91:PRO:HB3	31:QB:152:PHE:HA	1.78	0.65
38:QI:65:VAL:HG11	38:QI:77:ILE:HD11	1.77	0.65
49:QA:1128:C:H1'	49:QA:1146:A:H61	1.62	0.65
49:XA:452:A:O2'	49:XA:453:A:O5'	2.15	0.65
4:RE:23:VAL:HA	4:RE:184:VAL:O	1.97	0.65
6:RG:54:GLU:HA	6:RG:57:ALA:HB3	1.78	0.65
11:YP:71:VAL:HG13	11:YP:72:PRO:HD3	1.78	0.65
31:QB:212:GLN:HG3	31:QB:235:SER:OG	1.97	0.65
38:QI:20:ARG:O	38:QI:60:ASP:N	2.30	0.65
49:QA:674:G:H2'	49:QA:675:A:C8	2.28	0.65
49:QA:686:U:O4	49:QA:703:G:O2'	2.14	0.65
49:QA:1077:G:N2	49:QA:1080:A:OP2	2.29	0.65
46:XQ:19:VAL:HB	46:XQ:44:ALA:HB3	1.79	0.65
49:XA:1348:U:H2'	49:XA:1349:A:H8	1.62	0.65
49:XA:1393:U:HO2'	49:XA:1501:C:HO2'	1.38	0.65
2:RB:15:A:H5'	2:RB:16:G:C8	2.32	0.65
1:YA:1285:G:N2	1:YA:1329:U:OP1	2.28	0.65
11:YP:19:VAL:HG13	11:YP:21:ARG:H	1.62	0.65
41:QL:34:ARG:HD3	41:QL:82:VAL:HG13	1.79	0.65
33:XD:172:PRO:O	33:XD:187:ARG:NH1	2.30	0.65
49:XA:258:G:H1	49:XA:268:C:H42	1.45	0.65
1:RA:1539:G:H2'	1:RA:1540:G:H8	1.62	0.65
7:RH:153:LYS:HG3	7:RH:161:GLY:HA2	1.77	0.65
27:R6:41:PRO:HG2	27:R6:45:LYS:H	1.62	0.65
1:YA:117:G:OP2	1:YA:119:A:O2'	2.13	0.65
49:QA:324:G:N2	49:QA:327:A:OP2	2.30	0.65
49:QA:1028(C):G:N2	49:QA:1028(F):A:OP2	2.30	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:XD:170:VAL:HG13	33:XD:176:LEU:HD23	1.79	0.65
46:XQ:16:GLN:NE2	49:XA:254:G:H21	1.94	0.65
1:RA:84:A:N1	1:RA:98:G:O2'	2.29	0.65
2:RB:42:C:O2	6:RG:93:THR:N	2.21	0.65
1:YA:1779:U:OP2	1:YA:1784:A:N6	2.24	0.65
38:QI:96:LEU:HA	38:QI:99:LEU:HD23	1.79	0.65
49:QA:428:G:H4'	49:QA:429:U:OP1	1.96	0.65
49:QA:1314:C:H2'	49:QA:1315:U:H6	1.62	0.65
34:XE:79:GLU:HG2	37:XH:104:ARG:HA	1.79	0.65
52:XX:13:A:N1	52:XX:14:A:C2	2.64	0.65
1:RA:442:G:H1'	5:RF:48:THR:HG21	1.79	0.64
1:RA:1678:G:N2	1:RA:1989:G:H22	1.94	0.64
1:RA:1796:U:H2'	1:RA:1797:C:H6	1.62	0.64
1:YA:532:A:H4'	1:YA:533:G:C8	2.32	0.64
4:YE:9:VAL:HB	4:YE:25:VAL:HG23	1.80	0.64
12:YQ:81:VAL:HG23	22:Y0:7:LEU:HD21	1.77	0.64
31:QB:19:HIS:CG	31:QB:20:GLU:H	2.14	0.64
34:QE:57:LYS:NZ	49:QA:1073:U:OP1	2.24	0.64
42:QM:108:ARG:HG2	42:QM:114:ARG:HG3	1.79	0.64
49:QA:373:A:O2'	49:QA:451:A:N6	2.24	0.64
46:XQ:82:MET:O	46:XQ:85:VAL:N	2.30	0.64
49:XA:1128:C:O2'	49:XA:1130:A:N7	2.31	0.64
52:XX:17:C:N3	52:XX:18:C:C5	2.65	0.64
1:RA:1854:A:H62	1:RA:1888:G:H8	1.45	0.64
8:RI:8:PRO:HD3	8:RI:15:VAL:HG13	1.79	0.64
47:QR:49:LYS:HG2	49:QA:718:G:N2	2.08	0.64
49:QA:1522:U:H2'	49:QA:1523:G:H8	1.62	0.64
49:XA:652:U:O4	49:XA:752:G:O2'	2.14	0.64
1:RA:514:A:H2'	1:RA:515:A:H8	1.61	0.64
8:RI:133:HIS:HB2	8:RI:134:PRO:HD2	1.80	0.64
1:YA:142:G:H2'	1:YA:143:C:C6	2.32	0.64
1:YA:270(T):G:H5''	23:Y1:97:LEU:HD22	1.78	0.64
38:QI:120:ARG:HB3	49:QA:1344:C:H4'	1.79	0.64
46:QQ:72:ARG:HG2	46:QQ:73:VAL:H	1.62	0.64
33:XD:5:ILE:HD13	49:XA:406:G:H5''	1.80	0.64
39:XJ:40:LEU:HD13	39:XJ:41:PRO:HD2	1.80	0.64
49:XA:674:G:H2'	49:XA:675:A:C8	2.27	0.64
1:RA:1054:A:H2'	1:RA:1055:G:C8	2.33	0.64
8:RI:3:VAL:HG12	8:RI:38:LEU:HA	1.79	0.64
26:R5:4:HIS:HB3	26:R5:5:PRO:HD3	1.78	0.64
1:YA:1353:A:H2'	1:YA:1354:A:C8	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:QB:211:ILE:O	31:QB:215:LEU:HG	1.98	0.64
34:QE:83:GLU:HB2	34:QE:88:LYS:HD3	1.78	0.64
40:QK:34:ASP:O	40:QK:36:ASP:N	2.30	0.64
49:QA:947:G:HO2'	49:QA:1306:A:HO2'	1.35	0.64
49:QA:976:G:O4'	49:QA:1363:A:N6	2.31	0.64
49:QA:1287:A:H2'	49:QA:1288:A:C8	2.32	0.64
49:XA:582:U:OP2	49:XA:758:G:N1	2.27	0.64
49:XA:1319:A:O2'	49:XA:1323:G:N7	2.25	0.64
1:RA:1853:A:N3	1:RA:2233:U:O2'	2.27	0.64
4:RE:201:THR:HG22	4:RE:203:LYS:H	1.61	0.64
26:Y5:38:ALA:HB3	26:Y5:40:LYS:HE3	1.80	0.64
33:QD:141:ARG:NH1	49:QA:616:G:OP2	2.28	0.64
49:QA:714:G:H2'	49:QA:715:A:C8	2.32	0.64
52:QX:17:C:N3	52:QX:18:C:C5	2.65	0.64
1:RA:659:C:H2'	1:RA:660:G:H8	1.62	0.64
1:RA:1113:U:H2'	1:RA:1114:G:H8	1.62	0.64
6:RG:114:ILE:HD13	6:RG:140:ILE:HG21	1.80	0.64
21:RZ:144:LEU:HG	21:RZ:150:LEU:HD12	1.79	0.64
23:R1:87:PRO:O	23:R1:91:LYS:N	2.26	0.64
1:YA:743:G:O2'	1:YA:1659:U:OP1	2.14	0.64
1:YA:2081:C:H2'	1:YA:2082:A:H8	1.63	0.64
13:YR:74:LYS:O	13:YR:76:VAL:N	2.30	0.64
49:QA:677:U:O2	49:QA:777:A:O2'	2.15	0.64
49:QA:922:G:H2'	49:QA:923:A:C8	2.32	0.64
49:QA:1339:A:N1	53:QV:32:G:H1'	2.08	0.64
1:RA:840:C:H2'	1:RA:841:A:H8	1.59	0.64
1:RA:1918:A:O2'	1:RA:1920:C:N4	2.31	0.64
1:YA:1000:A:H2'	1:YA:1001:A:C8	2.32	0.64
1:YA:2287:A:N6	1:YA:2344:U:H3	1.95	0.64
3:YD:108:PRO:HB3	3:YD:143:HIS:CE1	2.32	0.64
12:YQ:37:LEU:HD21	12:YQ:130:LYS:HE3	1.78	0.64
12:YQ:104:PHE:HE1	12:YQ:125:LEU:HD11	1.63	0.64
20:YY:76:CYS:HB3	20:YY:96:ILE:HD13	1.79	0.64
21:YZ:141:VAL:HG23	21:YZ:144:LEU:HB2	1.80	0.64
36:QG:15:ASP:OD2	36:QG:44:TYR:OH	2.14	0.64
41:XL:29:GLY:O	49:XA:363:A:N6	2.31	0.64
41:XL:45:PRO:O	41:XL:47:LYS:N	2.29	0.64
49:XA:1040:U:H2'	49:XA:1041:A:C8	2.33	0.64
49:XA:1285:A:H4'	49:XA:1286:A:O5'	1.97	0.64
1:RA:1141:U:H1'	1:RA:1142(A):A:C6	2.33	0.64
1:RA:1411:C:H42	1:RA:1591:G:H1	1.44	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1972:A:H2'	1:RA:1973:G:H8	1.62	0.64
1:YA:1518:C:H2'	1:YA:1519:G:H8	1.63	0.64
9:YN:13:TRP:HB2	9:YN:133:GLN:HG3	1.78	0.64
31:QB:69:LEU:HB3	31:QB:71:VAL:HG23	1.80	0.64
33:QD:10:ARG:HB2	49:QA:429:U:OP1	1.98	0.64
44:QO:43:LEU:HD22	44:QO:47:LYS:HB2	1.78	0.64
46:QQ:21:VAL:HG21	46:QQ:59:ILE:HD11	1.80	0.64
49:QA:1117:G:H21	49:QA:1180:A:H1'	1.61	0.64
47:XR:58:LEU:HD12	47:XR:62:GLU:HB3	1.79	0.64
52:XX:11:U:H3	52:XX:12:A:H62	1.46	0.64
1:RA:1653:G:C6	13:RR:9:LYS:HB3	2.33	0.64
1:RA:2111:C:H4'	53:QV:19:G:O6	1.98	0.64
1:RA:2701:C:H3'	1:RA:2702:U:C5'	2.23	0.64
1:YA:2086:U:H2'	1:YA:2087:G:C8	2.33	0.64
15:YT:57:PHE:O	15:YT:58:ASN:ND2	2.31	0.64
40:QK:21:ILE:HD11	40:QK:98:LEU:HD11	1.80	0.64
49:QA:902:G:H2'	49:QA:903:G:H8	1.63	0.64
49:QA:1126:U:H1'	49:QA:1280:A:C5	2.32	0.64
36:XG:73:MET:HG2	36:XG:90:GLU:HG2	1.80	0.64
49:XA:244:U:H3	49:XA:893:C:H42	1.45	0.64
51:Y4:10:VAL:HG22	51:Y4:11:PRO:HD2	1.79	0.64
1:RA:2306:C:H2'	1:RA:2307:G:H21	1.63	0.64
1:RA:2591:C:H2'	1:RA:2592:G:H8	1.63	0.64
29:R8:36:LYS:HB3	29:R8:40:GLU:HG2	1.80	0.64
6:YG:145:THR:O	6:YG:147:ASP:N	2.29	0.64
11:YP:64:LYS:C	11:YP:66:GLY:H	2.00	0.64
27:Y6:41:PRO:HD2	27:Y6:46:HIS:N	2.12	0.64
41:QL:6:THR:O	41:QL:8:ASN:N	2.31	0.64
44:QO:49:ASP:OD2	49:QA:666:G:N2	2.31	0.64
34:XE:10:MET:HA	34:XE:32:VAL:HG13	1.80	0.64
38:XI:2:GLU:HG3	38:XI:3:GLN:NE2	2.12	0.64
40:XK:22:HIS:HB3	40:XK:29:ILE:HG22	1.79	0.64
40:XK:111:ASP:HA	47:XR:84:LYS:HG3	1.79	0.64
49:XA:1077:G:N2	49:XA:1080:A:OP2	2.26	0.64
1:RA:514:A:H2'	1:RA:515:A:C8	2.33	0.63
1:RA:729:G:OP2	3:RD:13:ARG:NH1	2.31	0.63
1:RA:1370:C:O2'	1:RA:1811:G:O2'	2.16	0.63
1:RA:2133:G:H1'	1:RA:2158:A:H61	1.61	0.63
1:RA:2892:A:H2'	1:RA:2893:G:O4'	1.99	0.63
7:RH:20:ALA:HB3	7:RH:23:ARG:HG2	1.80	0.63
1:YA:1296:G:OP1	1:YA:2709:G:O2'	2.13	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:2705:A:O2'	1:YA:2852:G:OP1	2.15	0.63
32:QC:22:TRP:HB3	32:QC:59:ARG:H	1.63	0.63
37:XH:85:ARG:HH12	37:XH:135:CYS:HB3	1.61	0.63
49:XA:359:U:H2'	49:XA:360:A:H8	1.62	0.63
49:XA:737:A:H2'	49:XA:738:C:C6	2.33	0.63
49:XA:1323:G:H2'	49:XA:1324:A:C8	2.33	0.63
1:RA:1408:C:H2'	1:RA:1409:C:C6	2.33	0.63
1:RA:1791:A:N6	1:RA:1828:G:O2'	2.31	0.63
1:YA:161:U:H3'	1:YA:162:U:H5''	1.80	0.63
3:YD:61:LEU:O	3:YD:63:ARG:NH1	2.28	0.63
3:YD:241:PRO:O	3:YD:243:GLY:N	2.32	0.63
49:QA:1259:C:O2'	49:QA:1283:G:N2	2.28	0.63
49:XA:583:A:N6	49:XA:758:G:O2'	2.30	0.63
20:RY:49:VAL:O	20:RY:51:VAL:N	2.32	0.63
33:QD:57:ARG:HB3	33:QD:206:PHE:HB2	1.81	0.63
44:QO:36:ILE:HG23	44:QO:56:LEU:HD11	1.81	0.63
31:XB:20:GLU:HB2	31:XB:190:THR:HB	1.80	0.63
32:XC:29:TYR:OH	43:YN:54:PRO:O	2.17	0.63
33:XD:30:LYS:HD2	33:XD:35:ARG:HH21	1.63	0.63
49:XA:23:C:H2'	49:XA:24:U:C6	2.32	0.63
49:XA:1531:A:C4	49:XA:1532:U:C5	2.87	0.63
1:RA:221:A:H4'	1:RA:222:A:O5'	1.98	0.63
1:RA:581:C:H2'	1:RA:582:G:C8	2.33	0.63
1:YA:1068:G:O2'	1:YA:1096:A:N3	2.31	0.63
15:YT:62:THR:HG22	15:YT:75:ILE:HG12	1.80	0.63
49:QA:921:U:H2'	49:QA:922:G:O4'	1.98	0.63
38:XI:86:VAL:HG13	38:XI:93:ARG:HB3	1.81	0.63
39:XJ:7:LYS:NZ	49:XA:1279:A:OP2	2.31	0.63
43:YN:24:CYS:SG	43:YN:40:CYS:N	2.72	0.63
49:XA:634:C:H2'	49:XA:635:G:C8	2.33	0.63
8:RI:93:THR:HG22	8:RI:119:PRO:HB3	1.79	0.63
14:RS:88:ASP:O	14:RS:89:ARG:HB3	1.98	0.63
32:QC:12:LEU:HB2	43:QN:57:ARG:HH21	1.63	0.63
37:QH:69:ARG:NH1	37:QH:75:ARG:O	2.32	0.63
45:QP:8:ARG:HA	45:QP:17:TYR:HA	1.80	0.63
46:QQ:16:GLN:HE22	49:QA:273:A:H1'	1.62	0.63
49:QA:1347:G:N1	49:QA:1374:A:OP2	2.28	0.63
51:Y4:16:CYS:SG	51:Y4:33:VAL:HB	2.39	0.63
1:RA:577:G:O2'	1:RA:1254:A:OP1	2.17	0.63
6:RG:114:ILE:HD11	6:RG:140:ILE:HD13	1.81	0.63
49:QA:1339:A:N3	53:QV:32:G:H1'	2.06	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:XQ:84:LEU:HD23	46:XQ:84:LEU:H	1.63	0.63
49:XA:413:G:H1'	49:XA:428:G:H21	1.62	0.63
49:XA:684:A:H2'	49:XA:685:G:H8	1.62	0.63
49:XA:1028(A):C:N3	49:XA:1028(B):C:N4	2.46	0.63
34:QE:151:LEU:HB3	37:QH:79:VAL:HG22	1.80	0.63
44:QO:16:ALA:HA	44:QO:27:VAL:HG22	1.80	0.63
49:QA:266:G:O2'	49:QA:268:C:OP2	2.16	0.63
39:XJ:45:ARG:HB3	39:XJ:65:LEU:HB2	1.81	0.63
41:XL:95:GLY:C	41:XL:97:ARG:H	2.02	0.63
1:RA:137(A):G:N3	19:RX:41:ASN:ND2	2.44	0.63
1:YA:574:C:N4	1:YA:2034:U:OP1	2.30	0.63
1:YA:1403:C:H5''	1:YA:1471:A:H1'	1.80	0.63
1:YA:2815:C:H5'	26:Y5:29:THR:HG21	1.81	0.63
31:QB:142:LEU:O	31:QB:146:GLN:NE2	2.24	0.63
38:QI:121:ARG:HH22	49:QA:1343:G:N2	1.96	0.63
41:QL:102:ARG:HG3	41:QL:107:ALA:HB1	1.81	0.63
49:QA:401:C:O2'	49:QA:621:A:N3	2.30	0.63
37:XH:26:VAL:HG12	37:XH:59:LEU:HB3	1.79	0.63
1:RA:1316:U:H2'	1:RA:1317:A:H8	1.63	0.63
3:RD:27:THR:HG21	3:RD:81:ALA:HB1	1.81	0.63
21:RZ:166:SER:HB2	21:RZ:168:GLU:N	2.13	0.63
1:YA:1165:U:H2'	1:YA:1166:C:C6	2.34	0.63
1:YA:2470:G:OP1	12:YQ:56:ARG:NH1	2.31	0.63
49:XA:745:C:OP1	49:XA:851:G:O2'	2.16	0.63
50:XS:19:VAL:HA	50:XS:22:LEU:HB2	1.80	0.63
1:RA:764:A:H5'	3:RD:210:GLY:HA2	1.81	0.62
1:RA:2245:U:H5'	1:RA:2246:G:H5'	1.80	0.62
20:RY:46:LYS:HB2	20:RY:61:ILE:HG22	1.81	0.62
1:YA:392:C:H5''	1:YA:409:C:H5''	1.81	0.62
5:YF:167:ALA:HB1	5:YF:173:VAL:HG11	1.80	0.62
49:QA:1510:U:H2'	49:QA:1511:G:H8	1.64	0.62
35:XF:5:GLU:HG3	35:XF:93:SER:HA	1.80	0.62
38:XI:10:ARG:HB2	38:XI:76:ALA:HA	1.80	0.62
51:R4:9:LEU:HA	51:R4:27:THR:HA	1.81	0.62
13:RR:74:LYS:O	13:RR:76:VAL:N	2.29	0.62
1:YA:848:G:H2'	1:YA:849:A:C8	2.34	0.62
7:YH:26:VAL:HG11	7:YH:75:ALA:HB1	1.80	0.62
7:YH:41:MET:HE1	7:YH:64:LEU:HB3	1.81	0.62
21:YZ:80:ARG:HH21	21:YZ:82:ARG:HH22	1.44	0.62
40:QK:22:HIS:CE1	40:QK:24:SER:HB2	2.34	0.62
41:QL:57:LYS:HD3	41:QL:65:GLU:HB2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:QM:81:LEU:HD11	42:QM:88:ARG:HH21	1.64	0.62
31:XB:131:PRO:HB2	31:XB:133:LYS:HE3	1.80	0.62
41:XL:93:LEU:O	41:XL:95:GLY:N	2.32	0.62
1:YA:2092:U:OP1	1:YA:2199:A:O2'	2.16	0.62
20:YY:96:ILE:HG13	20:YY:98:VAL:H	1.65	0.62
41:XL:33:ARG:NH1	49:XA:363:A:N7	2.48	0.62
46:XQ:45:HIS:H	46:XQ:72:ARG:HA	1.62	0.62
49:XA:260:G:H2'	49:XA:261:U:C6	2.34	0.62
49:XA:1205:U:H2'	49:XA:1206:G:C8	2.34	0.62
1:RA:1550:C:OP1	1:RA:1727:U:O2'	2.10	0.62
1:RA:2328:A:H2'	1:RA:2329:G:H8	1.62	0.62
1:RA:2440:C:H5''	1:RA:2587:A:H4'	1.82	0.62
2:RB:50:G:H5''	14:RS:61:ASN:ND2	2.14	0.62
7:RH:89:ILE:HG22	7:RH:162:ILE:HG12	1.81	0.62
4:YE:1:MET:N	4:YE:83:ASP:O	2.32	0.62
17:YV:24:LYS:HA	17:YV:92:THR:HG23	1.81	0.62
36:QG:64:GLN:O	36:QG:68:ASN:ND2	2.26	0.62
41:QL:58:VAL:HG12	41:QL:60:LEU:N	2.07	0.62
31:XB:15:VAL:HG11	31:XB:209:ARG:HH21	1.64	0.62
1:RA:2073:C:H2'	1:RA:2074:U:C6	2.34	0.62
1:YA:2849:U:OP2	15:YT:95:ARG:NH1	2.32	0.62
3:YD:43:ARG:NH1	3:YD:44:ASN:OD1	2.31	0.62
9:YN:35:ARG:O	9:YN:37:LYS:N	2.31	0.62
34:QE:77:PRO:HG3	34:QE:143:ARG:O	1.99	0.62
1:RA:1043:C:H42	1:RA:1112:G:H1	1.46	0.62
1:RA:1417:C:H2'	1:RA:1418:G:O4'	1.99	0.62
1:RA:2867:G:O2'	1:RA:2868:A:H8	1.82	0.62
20:RY:95:LYS:HB3	20:RY:100:ALA:HA	1.81	0.62
1:YA:2185:C:H2'	1:YA:2186:G:H8	1.65	0.62
10:YO:47:ILE:HG13	10:YO:48:PRO:HD2	1.81	0.62
33:QD:103:ASN:HA	33:QD:106:TYR:HB3	1.81	0.62
37:QH:85:ARG:NH1	37:QH:134:ILE:O	2.32	0.62
39:QJ:70:ARG:NH1	49:QA:1151:A:O2'	2.33	0.62
49:XA:45:U:H2'	49:XA:46:G:C8	2.35	0.62
49:XA:877:C:H2'	49:XA:878:G:H8	1.65	0.62
50:XS:13:ASP:HA	50:XS:16:LEU:HB2	1.81	0.62
50:QS:6:LYS:HD3	50:QS:6:LYS:H	1.65	0.62
1:RA:949:C:H2'	1:RA:950:G:C8	2.34	0.62
1:YA:278:A:H2'	1:YA:279:C:C6	2.35	0.62
1:YA:776:G:N7	1:YA:793:A:O2'	2.27	0.62
17:YV:76:LYS:HB2	17:YV:81:TYR:HB3	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:YY:76:CYS:SG	20:YY:77:PRO:HD2	2.40	0.62
49:QA:864:A:H2'	49:QA:865:A:C8	2.34	0.62
1:RA:1054:A:H2'	1:RA:1055:G:H8	1.65	0.62
1:RA:1358:G:N1	1:RA:1372:U:OP2	2.29	0.62
1:RA:2680:C:H5'	4:RE:189:PRO:HA	1.80	0.62
16:RU:92:ARG:O	16:RU:92:ARG:HG2	2.00	0.62
1:YA:580:C:H2'	1:YA:581:C:C6	2.35	0.62
1:YA:1266:G:O5'	18:YW:15:ARG:NH2	2.33	0.62
1:YA:1342:A:OP1	19:YX:36:LYS:NZ	2.30	0.62
31:QB:19:HIS:HB2	31:QB:204:ASN:ND2	2.14	0.62
45:QP:20:VAL:HA	45:QP:35:LYS:HA	1.82	0.62
49:QA:538:G:H2'	49:QA:539:A:H8	1.63	0.62
31:XB:167:PRO:HG2	31:XB:192:SER:HB3	1.81	0.62
35:XF:12:PRO:HG3	35:XF:57:GLN:HG3	1.80	0.62
42:XM:16:ASP:HB3	42:XM:41:PRO:HB3	1.82	0.62
49:XA:545:C:H2'	49:XA:546:G:C8	2.35	0.62
1:RA:2126:A:H4'	1:RA:2127:G:O5'	2.00	0.62
1:RA:2233:U:H2'	1:RA:2234:G:C8	2.34	0.62
1:RA:2591:C:H2'	1:RA:2592:G:C8	2.35	0.62
14:RS:15:ARG:HH11	14:RS:25:ARG:HH21	1.48	0.62
27:R6:25:LYS:HE2	27:R6:27:LYS:HD3	1.82	0.62
9:YN:30:ILE:HG23	9:YN:52:VAL:HG11	1.82	0.62
49:QA:518:C:H4'	49:QA:519:C:H5''	1.81	0.62
49:QA:712:A:H2'	49:QA:713:G:C8	2.34	0.62
32:XC:29:TYR:HA	32:XC:32:LEU:HD11	1.81	0.62
32:XC:48:TYR:O	32:XC:50:ALA:N	2.33	0.62
41:XL:24:VAL:HG21	49:XA:553:A:H5''	1.82	0.62
49:XA:715:A:H2'	49:XA:716:A:C8	2.35	0.62
1:YA:2327:A:H2'	1:YA:2328:A:C8	2.35	0.62
1:YA:2758:A:C4	7:YH:67:LEU:HD21	2.35	0.62
16:YU:83:LEU:HD12	16:YU:113:ALA:HB2	1.81	0.62
32:QC:11:ARG:HB3	32:QC:15:THR:HB	1.82	0.62
33:QD:101:LEU:HA	33:QD:104:VAL:HB	1.81	0.62
46:QQ:17:LYS:HD2	49:QA:255:G:H4'	1.82	0.62
1:RA:2093:G:OP2	8:RI:22:LYS:HD3	2.00	0.61
8:RI:57:ARG:HA	8:RI:60:GLU:HB3	1.82	0.61
1:YA:823:G:H2'	1:YA:824:A:H8	1.64	0.61
1:YA:1105:U:H2'	1:YA:1106:G:H8	1.65	0.61
1:YA:2233:U:H2'	1:YA:2234:G:C8	2.35	0.61
1:YA:2306:C:H3'	1:YA:2307:G:H5''	1.80	0.61
1:YA:2377:A:H2'	1:YA:2378:A:C8	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:QI:28:VAL:HG13	38:QI:63:ILE:HB	1.80	0.61
50:QS:19:VAL:HA	50:QS:22:LEU:HB2	1.80	0.61
1:RA:37:C:H2'	1:RA:38:A:H8	1.65	0.61
1:RA:796:C:H2'	1:RA:797:C:C6	2.35	0.61
1:RA:2865:U:OP2	1:RA:2866:U:O2'	2.17	0.61
21:RZ:52:SER:O	21:RZ:54:HIS:N	2.33	0.61
1:YA:1598:C:H5'	19:YX:36:LYS:HB2	1.82	0.61
2:YB:24:G:H1'	2:YB:27:C:N4	2.15	0.61
13:YR:3:HIS:O	13:YR:5:LYS:N	2.31	0.61
31:QB:171:ALA:HA	31:QB:174:VAL:HB	1.81	0.61
35:QF:12:PRO:HG3	35:QF:57:GLN:HG3	1.80	0.61
49:QA:707:C:H2'	49:QA:708:C:C6	2.35	0.61
31:XB:191:ASP:OD1	31:XB:192:SER:N	2.33	0.61
49:XA:714:G:H2'	49:XA:715:A:C8	2.35	0.61
49:XA:973:G:H3'	49:XA:974:A:H5''	1.82	0.61
49:XA:1535:C:C4	52:XX:10:G:N2	2.68	0.61
1:RA:74:A:H4'	1:RA:75:G:O5'	1.99	0.61
21:YZ:182:LYS:HG3	21:YZ:183:LEU:HA	1.80	0.61
37:QH:87:SER:HB2	37:QH:133:LEU:O	2.00	0.61
42:XM:115:LYS:NZ	49:XA:1228:C:OP1	2.33	0.61
49:XA:165:C:H2'	49:XA:166:G:C8	2.36	0.61
1:RA:2852:G:H1	1:RA:2865:U:H3	1.49	0.61
15:RT:18:ASP:OD1	15:RT:18:ASP:N	2.31	0.61
1:YA:2784:C:O2'	4:YE:37:ARG:NH1	2.33	0.61
1:YA:2870:C:H2'	1:YA:2871:C:O4'	1.99	0.61
33:QD:173:TRP:NE1	33:QD:174:LEU:HG	2.15	0.61
49:QA:888:G:H3'	49:QA:889:A:H5''	1.81	0.61
46:XQ:17:LYS:HD2	49:XA:255:G:H4'	1.82	0.61
49:XA:33:A:H2'	49:XA:34:C:C6	2.35	0.61
49:XA:1533:C:C6	49:XA:1534:A:N3	2.68	0.61
52:QX:11:U:H3	52:QX:12:A:H62	1.46	0.61
6:RG:27:ASN:HB3	6:RG:30:GLU:HG3	1.80	0.61
1:YA:996:A:H4'	16:YU:92:ARG:NE	2.15	0.61
1:YA:1062:G:H2'	1:YA:1063:G:H8	1.64	0.61
10:YO:88:ASN:HD21	10:YO:92:GLU:HB2	1.66	0.61
16:YU:97:ASP:OD1	16:YU:101:ARG:NH1	2.33	0.61
49:QA:272:C:H2'	49:QA:273:A:H8	1.64	0.61
49:QA:1535:C:C4	52:QX:10:G:O6	2.54	0.61
49:XA:599:C:H2'	49:XA:600:C:C6	2.35	0.61
49:XA:736:C:H2'	49:XA:737:A:C8	2.35	0.61
49:XA:811:C:O2'	49:XA:901:A:N1	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:1040:U:H2'	49:XA:1041:A:H8	1.64	0.61
50:QS:13:ASP:HA	50:QS:16:LEU:HB2	1.82	0.61
1:RA:263:C:H2'	1:RA:264:C:O4'	2.00	0.61
1:RA:877:U:H4'	1:RA:878:A:OP1	2.00	0.61
1:RA:2469:A:H5''	1:RA:2470:G:H8	1.64	0.61
1:RA:2543:G:H21	1:RA:2646:C:H5''	1.65	0.61
1:YA:2405:G:O2'	1:YA:2411:A:N6	2.33	0.61
1:YA:2591:C:H2'	1:YA:2592:G:H8	1.64	0.61
7:YH:6:ARG:NE	7:YH:54:ARG:HH12	1.98	0.61
28:Y7:9:ARG:HH21	28:Y7:48:LYS:HD2	1.65	0.61
40:QK:51:LYS:HA	40:QK:55:LYS:HE3	1.82	0.61
46:QQ:91:ARG:NH1	49:QA:583:A:O2'	2.32	0.61
32:XC:44:GLU:O	32:XC:48:TYR:HB2	2.00	0.61
49:XA:17:U:H2'	49:XA:18:C:H6	1.63	0.61
49:XA:45:U:H2'	49:XA:46:G:H8	1.66	0.61
1:RA:1337:G:OP2	19:RX:73:ARG:NH2	2.33	0.61
1:RA:1768:U:H3	1:RA:1984:G:H1	1.46	0.61
29:R8:51:ALA:O	29:R8:52:LYS:HB3	2.01	0.61
1:YA:1947:C:HO2'	49:XA:1483:A:HO2'	1.48	0.61
1:YA:2693:A:H2'	1:YA:2694:G:C8	2.35	0.61
44:QO:36:ILE:HD13	44:QO:60:VAL:HG22	1.82	0.61
49:QA:359:U:H2'	49:QA:360:A:H8	1.64	0.61
33:XD:3:ARG:HH21	33:XD:118:ARG:HE	1.49	0.61
49:XA:28:G:O2'	49:XA:296:U:OP1	2.18	0.61
1:RA:784:A:O4'	3:RD:227:ASN:ND2	2.33	0.61
7:RH:8:PRO:HG2	7:RH:69:ARG:HE	1.66	0.61
17:RV:52:VAL:HG21	17:RV:55:ALA:HB3	1.81	0.61
18:RW:71:VAL:HA	18:RW:107:LEU:HD12	1.83	0.61
1:YA:188:G:H5'	23:Y1:14:VAL:HG21	1.81	0.61
1:YA:732:C:H2'	1:YA:733:G:O4'	2.01	0.61
1:YA:2131:G:H4'	1:YA:2132:U:H4'	1.82	0.61
20:YY:87:LYS:HD3	20:YY:92:ASN:HB3	1.81	0.61
41:QL:93:LEU:O	41:QL:95:GLY:N	2.33	0.61
46:QQ:61:GLU:HA	46:QQ:71:PHE:HD1	1.65	0.61
1:RA:498:G:N3	20:RY:47:LYS:NZ	2.46	0.61
1:RA:2683:C:OP1	15:RT:53:ARG:NH2	2.34	0.61
13:RR:78:LYS:HE2	13:RR:83:ILE:HD11	1.83	0.61
17:RV:49:THR:HB	17:RV:50:PRO:HD2	1.81	0.61
1:YA:665:C:H2'	1:YA:666:G:H8	1.65	0.61
1:YA:1811:G:H2'	1:YA:1812:A:H8	1.65	0.61
1:YA:1824:G:OP1	3:YD:52:ARG:NH1	2.31	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:1833:U:O2'	1:YA:1969:A:N1	2.30	0.61
1:YA:1853:A:N3	1:YA:2233:U:O2'	2.29	0.61
1:YA:2111:C:N3	1:YA:2118:U:O2'	2.34	0.61
8:YI:5:LEU:HD21	8:YI:12:LEU:HB3	1.83	0.61
8:YI:89:TYR:HA	49:QA:358:U:H5'	1.83	0.61
31:QB:32:ILE:HD12	31:QB:42:ILE:HA	1.82	0.61
41:QL:58:VAL:HG11	41:QL:60:LEU:HD23	1.83	0.61
49:QA:835:U:H3	49:QA:851:G:H1	1.49	0.61
39:XJ:49:VAL:HG21	43:XN:41:ARG:HA	1.82	0.61
1:RA:1542:G:O6	1:RA:1543:A:C6	2.51	0.61
1:RA:2394:C:H42	53:QV:78:A:C1'	2.12	0.61
2:RB:50:G:H5''	14:RS:61:ASN:HD21	1.66	0.61
13:RR:38:VAL:HG22	13:RR:112:ALA:HB2	1.83	0.61
1:YA:1316:U:H2'	1:YA:1317:A:C8	2.35	0.61
7:YH:4:ILE:HB	7:YH:6:ARG:HG2	1.83	0.61
21:YZ:58:VAL:O	21:YZ:60:GLU:N	2.34	0.61
41:QL:84:LEU:HB2	41:QL:101:VAL:HG23	1.82	0.61
31:XB:162:ILE:O	31:XB:162:ILE:HG13	1.99	0.61
36:XG:68:ASN:ND2	36:XG:127:ALA:O	2.34	0.61
37:XH:12:ARG:NH1	37:XH:25:ASP:O	2.30	0.61
39:XJ:16:LEU:HD23	39:XJ:94:VAL:HG21	1.81	0.61
49:XA:1354:C:H2'	49:XA:1355:G:C8	2.36	0.61
1:RA:2461:C:H2'	1:RA:2462:U:C6	2.35	0.60
2:RB:48:A:H2'	2:RB:49:C:C6	2.36	0.60
15:RT:3:ARG:O	15:RT:7:ILE:HG12	2.01	0.60
1:YA:1283:G:N2	1:YA:1286:A:OP2	2.33	0.60
1:YA:1991:U:H2'	1:YA:1992:G:H5''	1.83	0.60
9:YN:6:PRO:HG3	9:YN:41:ASP:HB2	1.83	0.60
37:QH:88:LYS:O	37:QH:90:GLY:N	2.32	0.60
37:XH:98:LYS:HD3	37:XH:98:LYS:H	1.66	0.60
46:XQ:60:ILE:HD13	46:XQ:72:ARG:HH21	1.65	0.60
49:XA:166:G:H2'	49:XA:167:G:H8	1.65	0.60
1:RA:242:G:H4'	1:RA:243:U:O5'	2.02	0.60
1:RA:1570:A:H2'	1:RA:1571:A:C8	2.34	0.60
1:RA:2015:A:H1'	26:R5:2:ALA:HA	1.83	0.60
8:RI:115:ALA:HB3	8:RI:128:LEU:HD12	1.82	0.60
1:YA:856:C:O2'	1:YA:857:C:OP1	2.19	0.60
1:YA:1190:G:OP1	11:YP:30:THR:OG1	2.15	0.60
1:YA:1906:G:H8	1:YA:1929:G:HO2'	1.48	0.60
1:YA:1960:A:HO2'	49:XA:1484:C:HO2'	1.47	0.60
12:YQ:83:MET:HB2	22:Y0:7:LEU:HD22	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:XR:75:ILE:HD12	49:XA:734:G:H21	1.66	0.60
48:XT:40:ALA:HB2	48:XT:55:ILE:HG21	1.82	0.60
49:XA:864:A:H2'	49:XA:865:A:C8	2.36	0.60
49:XA:1319:A:OP1	50:XS:70:LYS:NZ	2.34	0.60
1:RA:1571:A:H2'	1:RA:1572:A:C8	2.37	0.60
1:YA:38:A:H2'	1:YA:39:C:C6	2.36	0.60
2:YB:45:A:OP2	6:YG:96:ARG:NH1	2.34	0.60
14:YS:26:LEU:HB3	14:YS:87:PHE:HA	1.83	0.60
14:YS:106:ARG:HA	14:YS:110:LEU:HD21	1.82	0.60
31:QB:162:ILE:HG13	31:QB:162:ILE:O	2.01	0.60
35:QF:74:ASP:OD1	35:QF:74:ASP:N	2.35	0.60
49:QA:17:U:H2'	49:QA:18:C:C6	2.36	0.60
49:QA:126:G:OP1	49:QA:605:U:O2'	2.18	0.60
43:YN:24:CYS:SG	43:YN:40:CYS:HB3	2.41	0.60
49:XA:1321:C:H3'	49:XA:1322:C:H5''	1.82	0.60
49:XA:1342:C:H2'	49:XA:1343:G:C8	2.36	0.60
4:RE:2:LYS:HD3	4:RE:95:ILE:HG22	1.81	0.60
6:RG:136:ARG:O	6:RG:154:GLY:HA2	2.00	0.60
1:YA:205:G:O2'	1:YA:206:U:OP2	2.18	0.60
1:YA:582:G:H2'	1:YA:583:G:H8	1.65	0.60
1:YA:2344:U:OP1	27:Y6:38:LYS:HD3	2.00	0.60
49:QA:262:A:H2'	49:QA:263:A:C8	2.37	0.60
49:QA:541:G:H2'	49:QA:542:G:H8	1.67	0.60
49:QA:1119:C:H2'	49:QA:1120:G:H8	1.65	0.60
37:XH:28:ALA:HB2	37:XH:57:PRO:O	2.01	0.60
37:XH:85:ARG:HA	37:XH:85:ARG:HH11	1.66	0.60
49:XA:152:A:N6	49:XA:169:C:C4	2.69	0.60
49:XA:556:C:H2'	49:XA:557:G:H8	1.65	0.60
53:XV:18:U:H3	53:XV:60:A:H61	1.46	0.60
4:RE:95:ILE:HD12	4:RE:95:ILE:H	1.66	0.60
7:RH:115:VAL:HG11	7:RH:148:ILE:HD11	1.83	0.60
14:RS:106:ARG:HA	14:RS:110:LEU:HD11	1.82	0.60
1:YA:251:A:OP1	29:Y8:7:HIS:NE2	2.26	0.60
1:YA:383:U:H2'	1:YA:385:C:H5	1.65	0.60
1:YA:906:G:HO2'	12:YQ:67:ARG:HH21	1.45	0.60
1:YA:1802:A:H2'	1:YA:1803:A:C8	2.37	0.60
1:YA:2867:G:O2'	1:YA:2868:A:H8	1.85	0.60
23:Y1:92:LYS:HG3	23:Y1:96:LYS:HB2	1.83	0.60
31:QB:71:VAL:HB	31:QB:164:VAL:HG23	1.83	0.60
49:QA:1320:C:H2'	49:QA:1321:C:C6	2.37	0.60
31:XB:167:PRO:O	31:XB:171:ALA:HB2	2.02	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:XB:235:SER:OG	31:XB:236:TYR:N	2.33	0.60
35:XF:13:ASN:N	35:XF:13:ASN:HD22	1.98	0.60
1:RA:856:C:O2'	1:RA:857:C:OP1	2.16	0.60
1:RA:969:U:H2'	1:RA:970:C:C6	2.37	0.60
1:RA:1403:C:H5''	1:RA:1471:A:H1'	1.84	0.60
3:RD:206:LEU:HD22	3:RD:211:ARG:HG2	1.84	0.60
15:RT:3:ARG:HB2	15:RT:6:LEU:HB3	1.82	0.60
1:YA:1942:C:OP2	1:YA:1943:U:O2'	2.17	0.60
1:YA:2093:G:H5'	8:YI:22:LYS:HD3	1.84	0.60
1:YA:2514:U:H2'	1:YA:2515:C:C6	2.37	0.60
33:QD:122:ARG:NH1	33:QD:134:ASP:OD1	2.34	0.60
46:QQ:57:VAL:HG12	46:QQ:76:LEU:HG	1.82	0.60
47:QR:44:LEU:HD13	47:QR:79:LEU:HD21	1.83	0.60
49:QA:926:G:O6	52:QX:19:U:C5	2.55	0.60
1:RA:111:A:H4'	24:R2:69:ARG:NH2	2.16	0.60
1:RA:530:G:O2'	1:RA:2021:C:O2'	2.20	0.60
1:RA:1631:A:H2'	1:RA:1632:A:O4'	2.02	0.60
2:RB:15:A:H5'	2:RB:16:G:H8	1.64	0.60
1:YA:630:G:OP1	29:Y8:46:ARG:NH1	2.35	0.60
45:QP:28:ARG:NH1	49:QA:375:U:O2	2.34	0.60
49:XA:1028(H):G:H2'	49:XA:1033:G:H8	1.67	0.60
1:RA:27:G:N2	1:RA:513:A:OP2	2.34	0.60
1:RA:1859:A:N6	1:RA:1883:G:O2'	2.35	0.60
1:RA:2074:U:HO2'	1:RA:2597:G:HO2'	1.45	0.60
1:YA:640:C:H2'	1:YA:641:C:C6	2.37	0.60
1:YA:2133:G:H1'	1:YA:2158:A:H61	1.67	0.60
1:YA:2677:G:H2'	1:YA:2678:C:C6	2.37	0.60
26:Y5:45:VAL:HG11	26:Y5:57:VAL:HG12	1.84	0.60
32:QC:11:ARG:O	32:QC:13:GLY:N	2.35	0.60
49:QA:452:A:O2'	49:QA:453:A:O5'	2.19	0.60
34:XE:14:ARG:HH22	49:XA:1079:G:H4'	1.67	0.60
49:XA:928:G:H2'	49:XA:929:G:C8	2.37	0.60
1:RA:2853:C:H2'	1:RA:2854:G:H8	1.67	0.60
3:RD:25:THR:O	3:RD:27:THR:N	2.35	0.60
21:RZ:7:ALA:O	21:RZ:62:PRO:HD3	2.02	0.60
1:YA:67:U:H3	1:YA:74:A:H2	1.49	0.60
1:YA:2051:A:H5'	1:YA:2578:G:O4'	2.01	0.60
49:XA:1322:C:O2'	49:XA:1323:G:H5'	2.02	0.60
49:XA:1532:U:C1'	52:XX:13:A:N6	2.65	0.60
1:RA:715:G:N2	44:QO:43:LEU:HG	2.17	0.60
1:RA:2291:U:O2'	1:RA:2374:C:O2	2.18	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1118:C:H1'	49:QA:1179:A:C4	2.37	0.60
49:QA:1314:C:OP2	50:QS:6:LYS:HD2	2.01	0.60
33:XD:162:LEU:HD11	33:XD:181:MET:HG3	1.83	0.60
1:RA:2815:C:H5'	26:R5:29:THR:HG21	1.82	0.59
9:RN:46:VAL:HG13	9:RN:48:MET:HG3	1.84	0.59
1:YA:2245:U:H5'	1:YA:2246:G:H5'	1.83	0.59
1:YA:2294:C:OP2	14:YS:13:ARG:NH1	2.35	0.59
49:QA:955:U:H1'	49:QA:1227:A:H61	1.65	0.59
36:XG:74:GLU:O	36:XG:88:PRO:HA	2.02	0.59
42:XM:61:GLU:HA	42:XM:66:LEU:HD11	1.82	0.59
43:XN:41:ARG:HG3	43:XN:42:ILE:H	1.66	0.59
49:XA:321:A:N6	49:XA:329:A:OP2	2.34	0.59
49:XA:946:A:H2'	49:XA:947:G:H8	1.66	0.59
49:XA:950:U:H3	49:XA:1231:G:H1	1.50	0.59
1:RA:390:A:H1'	1:RA:391:G:C8	2.37	0.59
1:RA:631:A:OP2	29:R8:46:ARG:NH2	2.34	0.59
1:RA:1796:U:H2'	1:RA:1797:C:C6	2.37	0.59
1:YA:877:U:H4'	1:YA:878:A:OP1	2.02	0.59
1:YA:1204:A:H1'	1:YA:1206:G:C8	2.37	0.59
15:YT:102:ILE:HB	15:YT:110:ILE:HD13	1.84	0.59
49:QA:877:C:H2'	49:QA:878:G:H8	1.65	0.59
49:XA:859:A:OP2	49:XA:869:G:N1	2.29	0.59
1:RA:922:U:H2'	1:RA:923:C:C6	2.37	0.59
1:RA:1164:G:H2'	1:RA:1165:U:C6	2.37	0.59
1:RA:1297:C:H2'	1:RA:1298:C:C6	2.37	0.59
7:RH:87:LEU:HD22	7:RH:162:ILE:HG22	1.82	0.59
9:RN:133:GLN:HB2	9:RN:135:PRO:HD3	1.83	0.59
12:RQ:31:ASP:OD1	12:RQ:134:ARG:NH1	2.35	0.59
21:RZ:146:ILE:HA	21:RZ:174:VAL:HB	1.84	0.59
1:YA:689:A:H2'	1:YA:690:G:C8	2.37	0.59
1:YA:1405:U:H2'	1:YA:1406:U:C6	2.37	0.59
1:YA:1478:G:H2'	1:YA:1479:G:H8	1.67	0.59
1:YA:1728:G:N1	1:YA:1730:U:OP2	2.36	0.59
7:YH:55:PRO:HG2	7:YH:61:HIS:CE1	2.37	0.59
31:QB:32:ILE:HG21	31:QB:40:HIS:HB3	1.83	0.59
31:QB:108:ILE:HG21	31:QB:152:PHE:HZ	1.67	0.59
37:QH:21:LYS:O	37:QH:63:LEU:HD11	2.02	0.59
49:QA:980:C:H5''	49:QA:981:U:C5	2.30	0.59
49:QA:1432:G:O2'	49:QA:1468:A:N6	2.35	0.59
31:XB:71:VAL:HG22	31:XB:93:VAL:HB	1.83	0.59
33:XD:115:ARG:NH2	49:XA:408:A:OP2	2.33	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:XP:26:ARG:NH2	49:XA:310:G:H5''	2.18	0.59
48:XT:65:LYS:HE2	48:XT:68:LYS:NZ	2.17	0.59
1:RA:859:G:N2	1:RA:917:A:OP2	2.35	0.59
1:RA:993:G:OP1	16:RU:50:ARG:NH2	2.35	0.59
1:RA:2372:G:H2'	1:RA:2373:G:H8	1.67	0.59
1:YA:783:A:H2'	1:YA:784:A:H4'	1.84	0.59
1:YA:1026:U:H4'	1:YA:1027:A:OP1	2.02	0.59
1:YA:1341:U:O4'	19:YX:57:LEU:HD23	2.01	0.59
1:YA:2115:G:O2'	1:YA:2166:G:OP1	2.20	0.59
1:YA:2525:G:H2'	1:YA:2526:G:H8	1.68	0.59
1:YA:2647:U:H2'	1:YA:2648:C:H6	1.68	0.59
32:XC:11:ARG:HB2	32:XC:16:ARG:HB2	1.83	0.59
33:XD:7:PRO:HA	49:XA:430:A:O5'	2.02	0.59
44:XO:36:ILE:HG23	44:XO:56:LEU:HD11	1.83	0.59
49:XA:413:G:H4'	49:XA:414:A:H5''	1.83	0.59
49:XA:967:C:H3'	49:XA:968:A:H2'	1.85	0.59
49:XA:1020:U:H2'	49:XA:1021:G:H8	1.68	0.59
49:XA:1386:G:H2'	49:XA:1387:G:C8	2.37	0.59
49:XA:1532:U:H2'	49:XA:1534:A:C2	2.37	0.59
51:R4:11:PRO:HA	51:R4:25:TYR:CD1	2.37	0.59
5:RF:192:LEU:HD22	5:RF:194:MET:HG2	1.85	0.59
6:RG:106:LEU:HA	6:RG:110:ALA:HB3	1.83	0.59
1:YA:1907:G:H1	1:YA:1923:U:H3	1.50	0.59
21:YZ:103:ARG:HB2	21:YZ:138:GLU:HG2	1.84	0.59
33:QD:26:CYS:HA	33:QD:31:CYS:HA	1.84	0.59
49:QA:1285:A:H4'	49:QA:1286:A:O5'	2.03	0.59
37:XH:17:THR:HA	37:XH:78:GLN:HE21	1.68	0.59
49:XA:403:C:N4	49:XA:547:A:OP1	2.35	0.59
49:XA:1166:G:N2	49:XA:1170:A:OP2	2.25	0.59
1:RA:414:C:O2	1:RA:1864:U:O2'	2.18	0.59
1:RA:987:G:O2'	1:RA:1000:A:N3	2.27	0.59
23:R1:58:ILE:HD11	23:R1:86:SER:HB2	1.84	0.59
1:YA:910:A:H62	12:YQ:12:GLN:HA	1.68	0.59
1:YA:2074:U:HO2'	1:YA:2597:G:HO2'	1.48	0.59
4:YE:7:VAL:HG13	4:YE:51:PHE:HE1	1.66	0.59
8:YI:133:HIS:HB2	8:YI:134:PRO:HD2	1.83	0.59
31:XB:235:SER:O	31:XB:237:ALA:N	2.35	0.59
46:XQ:28:PRO:HA	46:XQ:35:VAL:HA	1.83	0.59
49:XA:816:A:OP2	49:XA:1526:G:O2'	2.21	0.59
1:RA:1462:C:O3'	1:RA:2703:C:H5'	2.02	0.59
1:RA:1942:C:OP2	1:RA:1943:U:O2'	2.13	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:RF:107:LYS:HE3	5:RF:206:ILE:HD12	1.84	0.59
11:RP:19:VAL:HG13	11:RP:21:ARG:H	1.67	0.59
1:YA:307:G:H21	1:YA:330:A:N6	1.98	0.59
1:YA:1309:G:H4'	28:Y7:7:PRO:HB2	1.85	0.59
1:YA:1479:G:N7	1:YA:1510:A:N6	2.50	0.59
1:YA:2788:C:O2'	1:YA:2809:A:N3	2.36	0.59
5:YF:63:LYS:HE2	5:YF:67:GLN:HB2	1.84	0.59
7:YH:86:GLU:HG3	7:YH:165:ALA:N	2.17	0.59
23:Y1:53:VAL:HG22	23:Y1:74:VAL:HG13	1.84	0.59
38:QI:118:LYS:O	38:QI:120:ARG:N	2.32	0.59
49:QA:429:U:H3	49:QA:431:A:H62	1.51	0.59
31:XB:70:PHE:HE1	31:XB:90:MET:HB2	1.66	0.59
33:XD:9:CYS:HB3	33:XD:12:CYS:SG	2.42	0.59
39:XJ:27:ALA:HB2	39:XJ:85:LEU:HD11	1.85	0.59
1:RA:139:G:N2	1:RA:1596:A:H4'	2.18	0.59
1:RA:1113:U:H2'	1:RA:1114:G:C8	2.38	0.59
6:RG:62:LEU:HD13	51:R4:28:LYS:HE3	1.83	0.59
7:RH:41:MET:HG3	7:RH:54:ARG:HA	1.83	0.59
1:YA:24:G:O2'	18:YW:78:GLU:O	2.20	0.59
1:YA:724:U:H2'	1:YA:725:G:O4'	2.03	0.59
1:YA:1972:A:H2'	1:YA:1973:G:H8	1.68	0.59
1:YA:2229:C:H2'	1:YA:2230:G:H8	1.68	0.59
1:YA:2647:U:H2'	1:YA:2648:C:C6	2.37	0.59
1:YA:2809:A:H2'	1:YA:2810:A:C8	2.37	0.59
41:QL:117:ARG:NH2	49:QA:501:C:OP1	2.36	0.59
42:QM:101:GLN:NE2	49:QA:949:A:OP1	2.35	0.59
49:QA:1145:C:H4'	49:QA:1146:A:H8	1.67	0.59
39:XJ:40:LEU:HD21	49:XA:1280:A:C8	2.37	0.59
40:XK:98:LEU:O	40:XK:101:SER:OG	2.20	0.59
49:XA:922:G:H2'	49:XA:923:A:H8	1.68	0.59
1:RA:271(C):U:H4'	1:RA:271:G:OP2	2.03	0.59
1:RA:1807:G:N2	1:RA:1810:A:OP2	2.35	0.59
1:RA:2306:C:H2'	1:RA:2307:G:N2	2.18	0.59
10:RO:102:VAL:HB	10:RO:106:LEU:HD12	1.84	0.59
12:RQ:52:VAL:O	12:RQ:56:ARG:HB2	2.03	0.59
17:RV:24:LYS:HA	17:RV:92:THR:HG23	1.83	0.59
23:R1:53:VAL:HG11	23:R1:90:ILE:HD11	1.85	0.59
1:YA:49:A:N7	1:YA:120:U:H5	2.01	0.59
1:YA:270:A:OP2	1:YA:270(Y):G:N2	2.36	0.59
1:YA:2680:C:H5'	4:YE:189:PRO:HA	1.84	0.59
15:YT:16:ARG:HE	15:YT:19:LEU:HD21	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:YX:60:ARG:HH22	28:Y7:47:ARG:HH12	1.51	0.59
21:YZ:19:ARG:NH1	21:YZ:84:GLU:O	2.34	0.59
40:QK:18:ARG:HA	40:QK:81:ASP:HB2	1.85	0.59
44:QO:49:ASP:OD2	44:QO:52:SER:OG	2.20	0.59
49:QA:33:A:H2'	49:QA:34:C:C6	2.37	0.59
48:XT:27:LYS:NZ	49:XA:1437:C:OP2	2.35	0.59
51:Y4:23:GLU:O	51:Y4:25:TYR:N	2.35	0.59
1:YA:510:C:H2'	1:YA:511:U:O4'	2.02	0.59
1:YA:1019:U:HO2'	1:YA:1021:A:H2	1.51	0.59
12:YQ:30:GLY:HA2	12:YQ:107:ALA:HB2	1.85	0.59
24:Y2:22:GLU:OE2	24:Y2:68:ARG:NH2	2.34	0.59
39:QJ:57:LYS:HB2	49:QA:972:C:H4'	1.85	0.59
49:QA:137:C:H2'	49:QA:138:G:H8	1.68	0.59
49:QA:352:C:O2'	49:QA:354:G:OP1	2.15	0.59
49:QA:627:G:H2'	49:QA:628:G:O4'	2.03	0.59
35:XF:92:LYS:O	35:XF:94:GLN:N	2.35	0.59
40:XK:118:GLY:HA2	49:XA:716:A:N3	2.16	0.59
49:XA:1018:C:H2'	49:XA:1019:C:C6	2.38	0.59
1:RA:2443:C:H2'	1:RA:2444:G:H8	1.68	0.58
1:RA:2626:C:H2'	1:RA:2627:G:C8	2.38	0.58
12:RQ:12:GLN:HG2	12:RQ:73:PRO:HD2	1.85	0.58
12:RQ:24:GLY:O	12:RQ:26:TYR:N	2.34	0.58
1:YA:33:U:O4	1:YA:446:G:O2'	2.21	0.58
1:YA:252:G:OP2	11:YP:50:ARG:NH1	2.36	0.58
1:YA:1024:G:OP2	1:YA:1025:G:O2'	2.21	0.58
1:YA:1203:G:N1	1:YA:1241:A:OP2	2.31	0.58
1:YA:2327:A:N7	1:YA:2388:A:N6	2.50	0.58
33:QD:115:ARG:HE	49:QA:408:A:P	2.26	0.58
49:QA:1499:A:OP2	49:QA:1505:G:OP1	2.21	0.58
33:XD:14:ARG:CZ	33:XD:39:PRO:HB3	2.32	0.58
39:XJ:62:HIS:HD2	43:XN:61:TRP:HZ3	1.50	0.58
1:RA:1728:G:N1	1:RA:1730:U:OP2	2.36	0.58
3:RD:65:ILE:HD13	3:RD:65:ILE:H	1.68	0.58
8:RI:2:LYS:HA	8:RI:20:ASP:HA	1.84	0.58
1:YA:1444(A):A:H4'	1:YA:1460:A:O2'	2.03	0.58
34:QE:94:ALA:HB2	34:QE:119:LEU:HD22	1.85	0.58
43:QN:29:ARG:NH2	49:QA:974:A:OP2	2.36	0.58
49:QA:427:U:OP2	49:QA:428:G:O2'	2.19	0.58
49:QA:1300:G:N2	49:QA:1335:C:O4'	2.35	0.58
49:QA:1323:G:H2'	49:QA:1324:A:C8	2.38	0.58
31:XB:181:PHE:HE1	37:XH:72:PRO:HD3	1.68	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:XD:72:GLU:HB2	33:XD:76:ARG:HH12	1.68	0.58
42:XM:60:VAL:HG12	42:XM:66:LEU:HD21	1.85	0.58
1:RA:2327:A:H2'	1:RA:2328:A:C8	2.38	0.58
3:RD:24:ILE:HD11	3:RD:91:ARG:HD2	1.85	0.58
6:RG:142:PRO:HB3	51:R4:31:ILE:HG21	1.85	0.58
11:RP:98:GLU:HA	11:RP:101:VAL:HG12	1.86	0.58
18:RW:29:LEU:HD22	18:RW:69:LEU:HD11	1.85	0.58
21:RZ:110:GLY:HA2	21:RZ:111:VAL:C	2.23	0.58
1:YA:220:G:O2'	1:YA:233:A:N3	2.32	0.58
1:YA:483:A:H5'	20:YY:49:VAL:HG22	1.84	0.58
1:YA:1203:G:O6	1:YA:1204:A:N6	2.36	0.58
1:YA:1297:C:H2'	1:YA:1298:C:C6	2.38	0.58
1:YA:1434:A:H61	1:YA:1558:A:N6	2.02	0.58
1:YA:2649:U:H2'	1:YA:2650:U:C6	2.38	0.58
17:YV:52:VAL:HG21	17:YV:55:ALA:HB3	1.85	0.58
32:QC:50:ALA:HB1	32:QC:72:LYS:HG3	1.85	0.58
49:QA:715:A:H2'	49:QA:716:A:C8	2.38	0.58
49:QA:1081:G:H2'	49:QA:1082:G:H8	1.67	0.58
49:QA:1205:U:H2'	49:QA:1206:G:C8	2.38	0.58
32:XC:17:ASP:HB3	32:XC:21:ARG:NH1	2.18	0.58
32:XC:20:SER:HB3	32:XC:57:ILE:HD13	1.84	0.58
40:XK:122:LYS:HG3	49:XA:779:C:H5''	1.85	0.58
50:XS:6:LYS:H	50:XS:6:LYS:HD3	1.68	0.58
1:RA:1353:A:H2'	1:RA:1354:A:C8	2.39	0.58
12:RQ:20:ALA:HA	12:RQ:98:LYS:HB3	1.84	0.58
19:RX:55:ASN:HB2	19:RX:80:ILE:HG23	1.85	0.58
24:R2:42:GLY:O	24:R2:44:LEU:N	2.37	0.58
1:YA:383:U:H2'	1:YA:385:C:C5	2.38	0.58
1:YA:487:C:H2'	1:YA:488:G:O4'	2.04	0.58
1:YA:918:A:N3	2:YB:80:U:O2'	2.36	0.58
31:QB:101:MET:HG3	31:QB:108:ILE:HG12	1.85	0.58
34:QE:22:GLY:HA2	49:QA:1193:G:H4'	1.85	0.58
43:QN:35:ARG:HG3	49:QA:1358:U:H5''	1.85	0.58
48:QT:33:ILE:HD11	48:QT:62:LEU:HD13	1.85	0.58
32:XC:55:VAL:HA	32:XC:68:VAL:HA	1.84	0.58
37:XH:37:ARG:HD3	37:XH:41:ARG:HD3	1.85	0.58
45:XP:10:GLY:HA3	45:XP:14:ASN:O	2.04	0.58
52:XX:6:G:H2'	52:XX:7:G:H8	1.67	0.58
1:RA:273:G:C2	1:RA:273(A):G:C8	2.91	0.58
1:RA:840:C:H2'	1:RA:841:A:C8	2.38	0.58
1:RA:896:A:N3	21:RZ:146:ILE:HD11	2.18	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:RD:182:LEU:H	3:RD:272:ALA:HB3	1.68	0.58
8:RI:88:ILE:HG12	8:RI:122:GLU:H	1.66	0.58
1:YA:764:A:N3	3:YD:213:ARG:NH1	2.51	0.58
1:YA:1178:C:H2'	1:YA:1179:C:C6	2.38	0.58
1:YA:1408:C:H2'	1:YA:1409:C:C6	2.38	0.58
1:YA:1658:C:H2'	1:YA:1659:U:H6	1.65	0.58
8:YI:129:THR:HA	8:YI:137:PRO:HA	1.85	0.58
24:Y2:29:LYS:HE3	24:Y2:57:ILE:HG21	1.84	0.58
49:QA:320:C:H2'	49:QA:321:A:C8	2.38	0.58
49:XA:335:C:H2'	49:XA:336:C:C6	2.39	0.58
49:XA:1119:C:H2'	49:XA:1120:G:H8	1.67	0.58
1:RA:2688:U:H6	1:RA:2721:A:H62	1.51	0.58
20:RY:91:GLU:HG3	20:RY:92:ASN:H	1.69	0.58
30:R9:25:VAL:HB	30:R9:34:GLN:HB2	1.86	0.58
3:YD:35:LYS:HG2	3:YD:64:ILE:H	1.67	0.58
31:QB:88:ALA:HB2	31:QB:219:VAL:HG22	1.86	0.58
31:QB:156:LYS:O	31:QB:157:ARG:HB2	2.04	0.58
49:QA:949:A:H2'	49:QA:950:U:C6	2.38	0.58
49:QA:1259:C:HO2'	49:QA:1283:G:H21	1.52	0.58
33:XD:196:LEU:HB2	33:XD:197:PRO:CD	2.31	0.58
46:XQ:67:LYS:HE3	49:XA:266:G:H2'	1.85	0.58
49:XA:1532:U:C1'	52:XX:13:A:H61	2.17	0.58
1:RA:1416:G:H2'	1:RA:1417:C:C6	2.39	0.58
38:QI:105:ASP:HB3	38:QI:107:ARG:HG2	1.85	0.58
49:QA:1128:C:H2'	49:QA:1139:G:O6	2.04	0.58
31:XB:68:ILE:HA	31:XB:161:ALA:O	2.04	0.58
32:XC:11:ARG:O	32:XC:13:GLY:N	2.37	0.58
41:XL:55:VAL:O	41:XL:68:ALA:N	2.36	0.58
1:RA:743:G:O2'	1:RA:1659:U:OP1	2.21	0.58
1:RA:1007:C:H5''	9:RN:35:ARG:NH1	2.19	0.58
1:RA:2074:U:O2'	1:RA:2597:G:O2'	2.17	0.58
26:R5:40:LYS:HG2	26:R5:47:PRO:HD2	1.86	0.58
1:YA:554:U:H2'	1:YA:556:G:C8	2.39	0.58
1:YA:657:U:H2'	1:YA:658:C:C6	2.39	0.58
1:YA:1497:U:H5''	1:YA:1498:C:H5	1.68	0.58
1:YA:2334:G:H5'	14:YS:9:ARG:HG2	1.85	0.58
2:YB:80:U:H2'	2:YB:81:G:H21	1.68	0.58
6:YG:94:LEU:HD12	6:YG:99:MET:HA	1.86	0.58
33:QD:173:TRP:HD1	33:QD:186:LEU:H	1.51	0.58
41:QL:8:ASN:OD1	46:QQ:34:LYS:NZ	2.23	0.58
49:QA:928:G:H2'	49:QA:929:G:C8	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:XC:20:SER:O	43:XN:54:PRO:HB3	2.04	0.58
33:XD:19:LEU:O	33:XD:21:LEU:N	2.35	0.58
1:RA:38:A:H2'	1:RA:39:C:C6	2.39	0.58
1:RA:1658:C:H2'	1:RA:1659:U:C6	2.38	0.58
29:R8:39:LYS:O	29:R8:43:GLN:HB2	2.04	0.58
1:YA:2024:G:H2'	1:YA:2025:C:H6	1.68	0.58
1:YA:2047:U:H2'	1:YA:2048:G:H8	1.68	0.58
6:YG:6:ALA:H	51:Y4:23:GLU:HG2	1.68	0.58
35:QF:69:GLU:O	35:QF:71:ARG:N	2.36	0.58
41:QL:53:ARG:HG3	41:QL:69:TYR:CZ	2.39	0.58
43:QN:19:ARG:HD3	49:QA:980:C:H1'	1.85	0.58
48:QT:49:ALA:O	48:QT:52:ALA:N	2.37	0.58
49:QA:67:C:O2'	49:QA:171:A:N3	2.36	0.58
32:XC:20:SER:HB2	32:XC:22:TRP:NE1	2.19	0.58
38:XI:93:ARG:HH22	49:XA:1178:G:H5'	1.69	0.58
49:XA:58:C:O2'	49:XA:388:G:N7	2.35	0.58
23:R1:92:LYS:HG3	23:R1:96:LYS:HB2	1.85	0.58
26:R5:58:LEU:HD13	26:R5:60:VAL:HG12	1.86	0.58
1:YA:216:A:H2'	1:YA:217:G:H8	1.68	0.58
1:YA:1055:G:N3	1:YA:1085:A:H2	2.01	0.58
1:YA:1130:U:O2'	1:YA:1131:G:O5'	2.21	0.58
3:YD:35:LYS:HZ1	3:YD:104:TYR:HB2	1.68	0.58
7:YH:153:LYS:HB3	7:YH:154:PRO:CD	2.33	0.58
11:YP:126:VAL:HG13	11:YP:145:PRO:HB2	1.86	0.58
33:QD:33:MET:O	33:QD:35:ARG:N	2.34	0.58
41:QL:118:SER:OG	49:QA:501:C:O3'	2.20	0.58
31:XB:32:ILE:HG21	31:XB:40:HIS:HB3	1.86	0.58
37:XH:91:ARG:HH22	46:XQ:32:TYR:HA	1.68	0.58
48:XT:74:LYS:H	48:XT:74:LYS:HD3	1.69	0.58
49:XA:1266:G:N2	49:XA:1269:A:OP2	2.26	0.58
49:XA:1516:G:N2	49:XA:1519:A:OP2	2.32	0.58
52:QX:6:G:H2'	52:QX:7:G:H8	1.68	0.58
1:RA:262:A:N3	1:RA:430:G:O2'	2.30	0.57
1:RA:1230:C:H2'	1:RA:1231:G:H8	1.69	0.57
1:RA:2103:C:H2'	1:RA:2104:G:H8	1.69	0.57
1:RA:2893:G:H5''	1:RA:2894:G:O5'	2.04	0.57
7:RH:154:PRO:HD3	7:RH:162:ILE:H	1.68	0.57
19:RX:43:VAL:HG13	19:RX:51:VAL:HG21	1.86	0.57
1:YA:968:G:OP1	25:Y3:17:LYS:NZ	2.36	0.57
1:YA:2024:G:H2'	1:YA:2025:C:C6	2.39	0.57
42:QM:13:LYS:HD2	42:QM:18:ALA:HB2	1.84	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:QN:5:ALA:HB2	49:QA:1216:G:H5''	1.85	0.57
31:XB:181:PHE:CE1	37:XH:72:PRO:HD3	2.39	0.57
32:XC:59:ARG:HD3	32:XC:64:VAL:HG22	1.86	0.57
36:XG:79:ARG:H	36:XG:79:ARG:HD2	1.69	0.57
39:XJ:82:ILE:O	39:XJ:86:MET:HG2	2.04	0.57
1:RA:307:G:H21	1:RA:330:A:N6	2.01	0.57
1:RA:551:G:H5'	1:RA:1220:A:H1'	1.85	0.57
1:RA:574:C:N3	4:RE:145:LYS:NZ	2.51	0.57
1:RA:864:G:H1'	1:RA:914:C:H42	1.67	0.57
1:RA:2475:C:H42	1:RA:2529:G:H22	1.50	0.57
17:RV:21:ARG:HD2	17:RV:91:TYR:CE1	2.39	0.57
1:YA:597:U:H2'	1:YA:598:G:C8	2.38	0.57
1:YA:603:A:H5''	1:YA:655:A:H61	1.68	0.57
1:YA:2025:C:H2'	1:YA:2026:C:C6	2.38	0.57
1:YA:2126:A:H4'	1:YA:2127:G:O5'	2.02	0.57
9:YN:133:GLN:HB2	9:YN:135:PRO:HD3	1.86	0.57
33:QD:54:TYR:CE2	49:QA:508:C:H4'	2.38	0.57
33:QD:64:LEU:HD21	33:QD:97:LEU:HD11	1.86	0.57
37:QH:97:VAL:HG13	37:QH:98:LYS:H	1.69	0.57
38:QI:121:ARG:HH22	49:QA:1343:G:H21	1.49	0.57
49:QA:116:A:OP2	49:QA:289:G:OP2	2.21	0.57
49:QA:551:U:H2'	49:QA:552:U:H6	1.67	0.57
49:QA:791:G:O6	49:QA:792:A:N6	2.37	0.57
49:QA:1314:C:H2'	49:QA:1315:U:C6	2.39	0.57
49:QA:1321:C:H2'	50:QS:78:ARG:HH21	1.69	0.57
31:XB:161:ALA:HA	31:XB:183:PRO:O	2.04	0.57
33:XD:15:GLU:HA	33:XD:59:ARG:HH22	1.69	0.57
49:XA:552:U:H2'	49:XA:553:A:H8	1.69	0.57
1:RA:392:C:H5''	1:RA:409:C:H5''	1.86	0.57
1:RA:823:G:H2'	1:RA:824:A:C8	2.39	0.57
1:RA:863:A:H2'	1:RA:864:G:H8	1.68	0.57
2:RB:48:A:OP2	14:RS:30:ARG:NH2	2.37	0.57
1:YA:690:G:H2'	1:YA:691:C:C6	2.39	0.57
1:YA:878:A:H3'	1:YA:879:G:H8	1.69	0.57
1:YA:2836:U:H2'	1:YA:2837:G:C8	2.39	0.57
47:QR:56:THR:HB	47:QR:58:LEU:HD23	1.86	0.57
49:QA:266:G:H5'	49:QA:268:C:N4	2.15	0.57
33:XD:173:TRP:HZ3	33:XD:194:LEU:HD21	1.69	0.57
42:XM:26:GLY:H	49:XA:1329:A:H5''	1.69	0.57
49:XA:888:G:H3'	49:XA:889:A:H5''	1.86	0.57
49:XA:1268:A:N3	49:XA:1326:C:O2'	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2169:A:N6	53:QV:19:G:H21	1.90	0.57
3:RD:241:PRO:O	3:RD:242:ARG:HB2	2.05	0.57
29:R8:26:LYS:HB3	29:R8:44:LYS:HG3	1.87	0.57
1:YA:2030:A:H4'	1:YA:2031:A:C8	2.35	0.57
1:YA:2630:G:O4'	1:YA:2894:G:H1'	2.04	0.57
6:YG:15:VAL:HG21	6:YG:176:LEU:HD23	1.86	0.57
36:QG:74:GLU:O	36:QG:88:PRO:HA	2.05	0.57
40:QK:51:LYS:HE3	49:QA:695:A:H5''	1.87	0.57
41:QL:24:VAL:HG12	41:QL:98:TYR:HE2	1.69	0.57
41:QL:45:PRO:HD2	41:QL:49:ASN:HB2	1.86	0.57
46:QQ:21:VAL:HG23	46:QQ:44:ALA:HB2	1.86	0.57
49:QA:17:U:H2'	49:QA:18:C:H6	1.70	0.57
49:QA:1000:A:H2'	49:QA:1001:G:C8	2.38	0.57
33:XD:33:MET:C	33:XD:35:ARG:N	2.57	0.57
49:XA:406:G:H2'	49:XA:407:G:H8	1.69	0.57
49:XA:662:G:H2'	49:XA:663:A:C8	2.39	0.57
49:XA:748:C:H4'	49:XA:749:C:O5'	2.05	0.57
1:RA:1405:U:H2'	1:RA:1406:U:C6	2.39	0.57
1:RA:1939:U:OP1	1:RA:2604:U:O2'	2.22	0.57
15:RT:39:ARG:HG2	15:RT:40:THR:H	1.70	0.57
16:RU:52:ARG:HA	16:RU:55:ARG:HG3	1.85	0.57
1:YA:1399:C:H2'	1:YA:1400:G:H8	1.69	0.57
1:YA:2185:C:H2'	1:YA:2186:G:C8	2.38	0.57
1:YA:2291:U:H2'	1:YA:2292:C:C6	2.39	0.57
1:YA:2527:C:H5''	30:Y9:30:PRO:HB2	1.87	0.57
32:QC:59:ARG:HA	32:QC:63:ASN:O	2.04	0.57
33:QD:25:ARG:O	33:QD:30:LYS:O	2.22	0.57
49:QA:438:G:N2	49:QA:497:A:H62	2.02	0.57
49:QA:1535:C:O2	52:QX:10:G:C2	2.57	0.57
32:XC:19:GLU:HB3	32:XC:40:ARG:NH2	2.19	0.57
35:XF:18:GLN:O	35:XF:22:GLU:HG2	2.04	0.57
38:XI:26:VAL:HG22	38:XI:61:ALA:HB3	1.86	0.57
38:XI:120:ARG:HD2	49:XA:1344:C:H4'	1.87	0.57
41:XL:34:ARG:HD3	41:XL:82:VAL:HG13	1.86	0.57
49:XA:34:C:H2'	49:XA:35:G:C8	2.35	0.57
1:RA:1336:A:H2'	1:RA:1337:G:C8	2.39	0.57
1:RA:1930:G:H2'	1:RA:1968:G:H1	1.68	0.57
1:RA:1936:A:C2	1:RA:1962:C:O2	2.57	0.57
1:RA:2630:G:H2'	1:RA:2631:G:H8	1.70	0.57
1:RA:2698:U:H2'	1:RA:2699:C:C6	2.40	0.57
1:YA:221:A:H4'	1:YA:222:A:O5'	2.03	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:380:U:H2'	1:YA:381:G:H8	1.69	0.57
1:YA:2618:G:H21	4:YE:150:VAL:HG21	1.68	0.57
1:YA:2626:C:H2'	1:YA:2627:G:C8	2.40	0.57
16:YU:90:VAL:O	16:YU:92:ARG:N	2.38	0.57
43:QN:6:LEU:HD22	49:QA:981:U:H5''	1.86	0.57
49:QA:757:U:H2'	49:QA:758:G:O4'	2.04	0.57
49:XA:269:C:H2'	49:XA:270:A:H8	1.69	0.57
49:XA:1386:G:H2'	49:XA:1387:G:H8	1.68	0.57
49:XA:1510:U:H2'	49:XA:1511:G:C8	2.40	0.57
52:QX:17:C:H2'	52:QX:18:C:H5'	1.87	0.57
1:RA:140:A:H8	1:RA:1408:C:HO2'	1.51	0.57
1:RA:691:C:H2'	1:RA:692:C:C6	2.39	0.57
1:RA:996:A:H4'	16:RU:92:ARG:HE	1.68	0.57
1:RA:1035:U:H3	1:RA:1120:G:H1	1.52	0.57
1:RA:1066:U:N3	1:RA:1069:A:OP2	2.31	0.57
1:RA:1528:A:H2'	1:RA:1529:A:C8	2.40	0.57
1:RA:1528:A:H2'	1:RA:1529:A:H8	1.69	0.57
1:RA:2875:C:H4'	15:RT:5:ALA:HB2	1.86	0.57
1:YA:1930:G:H2'	1:YA:1968:G:N1	2.20	0.57
38:QI:46:ALA:HA	38:QI:78:LYS:HB2	1.86	0.57
46:QQ:34:LYS:NZ	49:QA:585:G:O2'	2.32	0.57
49:QA:359:U:H2'	49:QA:360:A:C8	2.39	0.57
49:QA:1151:A:H2'	49:QA:1152:A:C8	2.40	0.57
33:XD:26:CYS:CA	33:XD:31:CYS:HA	2.31	0.57
34:XE:27:ARG:HH21	34:XE:49:PRO:HG3	1.69	0.57
38:XI:7:THR:OG1	38:XI:83:ARG:NH1	2.37	0.57
1:RA:239:U:H2'	1:RA:240:G:O4'	2.05	0.57
1:YA:2674:G:H2'	1:YA:2675:A:H8	1.70	0.57
14:YS:106:ARG:HA	14:YS:110:LEU:HD11	1.87	0.57
41:QL:53:ARG:HH21	49:QA:521:G:H5''	1.70	0.57
49:QA:293:G:O6	49:QA:305:G:C6	2.58	0.57
49:QA:541:G:H2'	49:QA:542:G:C8	2.39	0.57
49:QA:556:C:H2'	49:QA:557:G:H8	1.70	0.57
49:QA:1196:U:OP1	49:QA:1197:G:H5''	2.04	0.57
49:QA:1469:G:H2'	49:QA:1470:G:C8	2.38	0.57
49:QA:1510:U:H2'	49:QA:1511:G:C8	2.39	0.57
34:XE:34:VAL:H	34:XE:62:ALA:HB1	1.68	0.57
48:XT:57:ARG:HH11	48:XT:102:GLY:HA3	1.70	0.57
49:XA:1014:A:H2'	49:XA:1015:A:C8	2.40	0.57
49:XA:1135:U:H4'	49:XA:1136:U:C5	2.40	0.57
1:RA:387:U:P	23:R1:20:ARG:HH12	2.28	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:RH:124:GLU:HB3	7:RH:132:ARG:HG3	1.87	0.57
1:YA:587:C:O2	11:YP:33:ARG:NH1	2.37	0.57
1:YA:1292:U:H2'	1:YA:1293:C:C6	2.40	0.57
5:YF:66:PRO:O	5:YF:68:LYS:N	2.34	0.57
6:YG:161:THR:HG22	6:YG:163:ALA:H	1.70	0.57
20:YY:95:LYS:HB3	20:YY:100:ALA:HA	1.87	0.57
49:QA:438:G:H21	49:QA:497:A:N6	1.99	0.57
49:QA:539:A:H2'	49:QA:540:G:H8	1.70	0.57
49:QA:1218:C:H2'	49:QA:1219:U:C6	2.40	0.57
49:QA:1300:G:O2'	49:QA:1301:U:O5'	2.22	0.57
42:XM:16:ASP:HA	42:XM:34:LEU:HD11	1.87	0.57
49:XA:946:A:O2'	49:XA:1333:A:N3	2.35	0.57
1:RA:640:C:H2'	1:RA:641:C:C6	2.39	0.57
1:RA:1035:U:OP1	7:RH:59:ARG:NH1	2.37	0.57
1:RA:1050:A:H5'	1:RA:1050:A:N3	2.19	0.57
3:YD:142:VAL:HG23	3:YD:193:VAL:HA	1.86	0.57
5:YF:184:TYR:CE2	5:YF:188:ARG:HD2	2.40	0.57
8:YI:129:THR:HG22	8:YI:137:PRO:HB3	1.85	0.57
13:YR:1:MET:O	13:YR:2:ARG:HG3	2.05	0.57
15:YT:16:ARG:HD3	15:YT:19:LEU:HD11	1.87	0.57
16:YU:66:ASN:O	16:YU:70:ARG:HB2	2.04	0.57
31:QB:51:LEU:HD22	31:QB:55:PHE:CE2	2.39	0.57
32:QC:91:LEU:HB3	32:QC:99:VAL:HG12	1.87	0.57
49:QA:1198:G:H2'	49:QA:1199:U:C6	2.40	0.57
32:XC:52:LEU:HD11	32:XC:55:VAL:HG12	1.87	0.57
45:XP:36:ILE:HB	45:XP:52:ASP:HB3	1.87	0.57
49:XA:266:G:O2'	49:XA:268:C:OP2	2.23	0.57
52:XX:17:C:H2'	52:XX:18:C:H5'	1.86	0.57
53:XV:18:U:N3	53:XV:60:A:N6	2.44	0.57
1:RA:270(F):U:H2'	1:RA:270(G):C:C6	2.39	0.56
1:RA:2291:U:H2'	1:RA:2292:C:C6	2.39	0.56
1:RA:2308:G:H1	1:RA:2311:A:H2	1.52	0.56
12:RQ:116:GLU:O	12:RQ:120:ILE:HG12	2.05	0.56
14:RS:24:LEU:HB2	14:RS:85:VAL:HG12	1.86	0.56
1:YA:1930:G:N2	1:YA:1969:A:OP2	2.30	0.56
1:YA:2151:G:H2'	1:YA:2152:G:C8	2.40	0.56
2:YB:31:C:N4	14:YS:32:LEU:HD13	2.20	0.56
9:YN:13:TRP:O	9:YN:135:PRO:HD2	2.05	0.56
28:Y7:35:ARG:HG3	28:Y7:42:LEU:HD11	1.86	0.56
38:QI:66:ARG:NH1	49:QA:1250:A:OP1	2.37	0.56
45:QP:23:ASP:OD1	45:QP:26:ARG:HG3	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:1380:U:H4'	49:XA:1381:U:H5'	1.86	0.56
1:RA:188:G:H5'	23:R1:14:VAL:HG21	1.87	0.56
1:RA:307:G:H21	1:RA:330:A:H62	1.53	0.56
1:RA:468:G:H4'	5:RF:62:ARG:HH12	1.68	0.56
1:RA:1138:G:H21	9:RN:106:MET:HE3	1.69	0.56
1:RA:2549:G:H2'	1:RA:2550:G:H8	1.71	0.56
1:RA:2716:U:H2'	1:RA:2717:G:H8	1.70	0.56
1:RA:2853:C:H2'	1:RA:2854:G:C8	2.39	0.56
6:RG:7:LEU:N	6:RG:104:GLU:OE2	2.38	0.56
13:RR:104:ARG:HD3	13:RR:109:ALA:HB3	1.86	0.56
27:R6:41:PRO:HD2	27:R6:46:HIS:N	2.20	0.56
1:YA:270:A:OP2	1:YA:270(Y):G:C2	2.58	0.56
1:YA:297:C:H2'	1:YA:298:G:O4'	2.04	0.56
1:YA:387:U:P	23:Y1:20:ARG:HH12	2.29	0.56
1:YA:698:C:O2'	1:YA:734:A:N6	2.38	0.56
2:YB:28:C:H2'	2:YB:29:A:H8	1.70	0.56
7:YH:89:ILE:O	7:YH:89:ILE:HG12	2.05	0.56
24:Y2:42:GLY:O	24:Y2:44:LEU:N	2.35	0.56
49:QA:45:U:H2'	49:QA:46:G:H8	1.69	0.56
49:QA:593:G:H2'	49:QA:594:G:H8	1.70	0.56
49:QA:662:G:H2'	49:QA:663:A:C8	2.39	0.56
49:QA:1275:A:H2'	49:QA:1276:G:C8	2.39	0.56
49:QA:1372:U:H2'	49:QA:1373:G:O4'	2.04	0.56
33:XD:28:SER:HB2	33:XD:29:PRO:CD	2.34	0.56
44:XO:88:ARG:NE	44:XO:88:ARG:HA	2.21	0.56
1:RA:760:G:H2'	1:RA:761:A:O4'	2.05	0.56
1:RA:1991:U:H2'	1:RA:1992:G:H5''	1.87	0.56
8:RI:92:VAL:HG13	8:RI:120:ILE:HG23	1.87	0.56
13:RR:33:ARG:HG3	13:RR:115:GLU:HB3	1.86	0.56
16:RU:90:VAL:HG22	17:RV:39:LEU:HB3	1.87	0.56
21:RZ:166:SER:HB2	21:RZ:168:GLU:H	1.70	0.56
1:YA:270(I):G:H21	23:Y1:78:LYS:HZ1	1.52	0.56
1:YA:660:G:O3'	5:YF:38:ARG:NH2	2.39	0.56
1:YA:1412:A:H2'	1:YA:1413:G:C8	2.40	0.56
1:YA:1540:G:H2'	1:YA:1541:U:C6	2.41	0.56
1:YA:1754:C:OP1	15:YT:96:ARG:NH1	2.38	0.56
1:YA:2064:C:H2'	1:YA:2065:C:C6	2.40	0.56
2:YB:44:G:H1'	2:YB:47:C:H42	1.70	0.56
8:YI:88:ILE:HG12	8:YI:122:GLU:H	1.69	0.56
9:YN:40:PRO:HB3	16:YU:68:ALA:HB2	1.87	0.56
12:YQ:89:ASN:O	12:YQ:92:GLY:N	2.31	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:QD:19:LEU:HB2	33:QD:21:LEU:HG	1.87	0.56
41:QL:39:VAL:HG12	41:QL:40:VAL:H	1.70	0.56
41:QL:43:VAL:HG12	41:QL:44:THR:H	1.70	0.56
46:QQ:10:VAL:HA	46:QQ:21:VAL:HG22	1.88	0.56
49:QA:848:C:H2'	49:QA:849:C:C6	2.41	0.56
49:QA:946:A:H2'	49:QA:947:G:C8	2.41	0.56
49:QA:960:U:H4'	49:QA:961:U:H5''	1.87	0.56
31:XB:11:LEU:HD22	31:XB:213:LEU:HD11	1.87	0.56
34:XE:34:VAL:HG11	34:XE:63:ARG:HG3	1.87	0.56
37:XH:38:ILE:HG12	37:XH:41:ARG:HH12	1.70	0.56
37:XH:39:LEU:HB3	37:XH:45:ILE:HG12	1.87	0.56
39:XJ:50:ILE:HA	39:XJ:60:ARG:HA	1.87	0.56
40:XK:84:VAL:HG22	40:XK:110:ASP:HA	1.87	0.56
42:XM:77:ASN:HD22	49:XA:1310:G:H5'	1.69	0.56
49:XA:407:G:H2'	49:XA:408:A:C8	2.40	0.56
49:XA:651:C:H2'	49:XA:652:U:C6	2.41	0.56
49:XA:1218:C:H2'	49:XA:1219:U:C6	2.41	0.56
49:XA:1532:U:H1'	52:XX:13:A:N6	2.21	0.56
1:RA:1130:U:O2'	1:RA:1131:G:O5'	2.23	0.56
1:RA:1769:G:H2'	1:RA:1770:G:H8	1.70	0.56
15:RT:111:ARG:O	15:RT:112:ARG:HG3	2.05	0.56
1:YA:24:G:H2'	1:YA:25:U:C6	2.40	0.56
1:YA:680:G:H2'	1:YA:681:G:C8	2.39	0.56
1:YA:703:U:H2'	1:YA:704:G:O4'	2.06	0.56
39:QJ:74:ILE:HD12	39:QJ:75:ILE:HD12	1.87	0.56
49:QA:165:C:H2'	49:QA:166:G:C8	2.40	0.56
49:QA:266:G:H22	49:QA:271:C:H41	1.54	0.56
49:QA:1151:A:H2'	49:QA:1152:A:H8	1.70	0.56
49:QA:1156:G:H1'	49:QA:1179:A:H61	1.70	0.56
35:XF:43:LEU:HB3	35:XF:60:PHE:HB2	1.87	0.56
37:XH:115:SER:HA	49:XA:642:A:C8	2.40	0.56
49:XA:946:A:H2'	49:XA:947:G:C8	2.41	0.56
49:XA:951:G:N3	49:XA:970:C:O2'	2.37	0.56
49:XA:977:A:HO2'	49:XA:981:U:H3	0.62	0.56
1:RA:1116:C:H2'	1:RA:1117:G:H8	1.69	0.56
9:RN:35:ARG:O	9:RN:37:LYS:N	2.38	0.56
16:RU:90:VAL:O	16:RU:92:ARG:N	2.38	0.56
21:RZ:52:SER:C	21:RZ:54:HIS:H	2.09	0.56
27:R6:17:LYS:HB3	27:R6:44:ARG:HH22	1.71	0.56
1:YA:520:G:H2'	1:YA:521:G:C8	2.40	0.56
13:YR:104:ARG:HB3	13:YR:107:ASP:OD1	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:QE:102:ALA:HB2	34:QE:120:THR:HG23	1.88	0.56
40:QK:83:ILE:HA	40:QK:109:VAL:HB	1.88	0.56
43:QN:53:LEU:HD13	43:QN:56:VAL:HG21	1.87	0.56
49:QA:1236:A:H4'	49:QA:1304:G:H4'	1.86	0.56
36:XG:32:ARG:O	36:XG:34:GLY:N	2.35	0.56
37:XH:49:GLU:HG3	37:XH:51:VAL:HG22	1.87	0.56
41:XL:55:VAL:HG23	41:XL:56:ALA:H	1.71	0.56
49:XA:634:C:H2'	49:XA:635:G:H8	1.69	0.56
49:XA:692:U:O2'	49:XA:694:A:N7	2.29	0.56
49:XA:1388:C:H2'	49:XA:1389:C:C6	2.41	0.56
1:RA:2630:G:H2'	1:RA:2631:G:C8	2.41	0.56
1:RA:2718:G:O2'	1:RA:2847:U:OP1	2.24	0.56
4:RE:67:PHE:O	4:RE:69:LYS:N	2.37	0.56
1:YA:303:U:H2'	1:YA:304:G:H8	1.69	0.56
1:YA:947:G:H2'	1:YA:948:G:C8	2.40	0.56
1:YA:1230:C:H2'	1:YA:1231:G:C8	2.41	0.56
1:YA:1336:A:H2'	1:YA:1337:G:C8	2.41	0.56
7:YH:41:MET:HG3	7:YH:54:ARG:HA	1.88	0.56
14:YS:10:ARG:NH2	14:YS:91:PRO:O	2.38	0.56
27:Y6:7:ILE:HG13	27:Y6:8:LYS:H	1.71	0.56
41:QL:28:LYS:O	41:QL:28:LYS:HD3	2.06	0.56
41:QL:37:CYS:HA	41:QL:57:LYS:H	1.70	0.56
49:QA:19:C:H2'	49:QA:20:U:C6	2.40	0.56
49:QA:934:C:N3	49:QA:937:A:N6	2.53	0.56
49:QA:1137:C:O2'	49:QA:1138:G:N2	2.38	0.56
49:QA:1345:U:H4'	49:QA:1346:A:H5'	1.88	0.56
33:XD:13:ARG:HG3	33:XD:33:MET:CE	2.34	0.56
33:XD:128:VAL:HG13	33:XD:146:ILE:HG13	1.87	0.56
40:XK:109:VAL:HA	47:XR:85:LEU:O	2.05	0.56
41:XL:113:ARG:HE	41:XL:116:SER:H	1.51	0.56
48:XT:63:ILE:HG21	48:XT:81:LYS:HD2	1.87	0.56
49:XA:143:A:H2	49:XA:220:G:H22	1.51	0.56
49:XA:1119:C:H2'	49:XA:1120:G:C8	2.40	0.56
52:XX:1:G:H2'	52:XX:2:G:C8	2.41	0.56
52:XX:17:C:C4	52:XX:18:C:C5	2.93	0.56
52:QX:17:C:C4	52:QX:18:C:C5	2.93	0.56
1:RA:250:G:OP2	29:R8:13:ARG:NH2	2.39	0.56
1:RA:270(L):U:H2'	8:RI:50:ARG:HD2	1.88	0.56
1:RA:947:G:H2'	1:RA:948:G:C8	2.41	0.56
1:RA:1316:U:H2'	1:RA:1317:A:C8	2.40	0.56
1:RA:2186:G:H2'	1:RA:2187:G:H8	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:RE:24:THR:HG21	4:RE:188:VAL:HG11	1.88	0.56
15:RT:26:ASP:O	15:RT:49:VAL:HG12	2.06	0.56
1:YA:363(A):A:H2'	1:YA:363(B):G:H8	1.69	0.56
1:YA:2186:G:H2'	1:YA:2187:G:C8	2.41	0.56
15:YT:26:ASP:O	15:YT:49:VAL:HG12	2.06	0.56
27:Y6:41:PRO:HD2	27:Y6:46:HIS:H	1.70	0.56
33:QD:24:GLU:HB2	49:QA:409:G:H5'	1.85	0.56
34:QE:50:GLU:HG3	34:QE:52:PRO:HD2	1.88	0.56
32:XC:131:ARG:HA	32:XC:134:ILE:HG22	1.87	0.56
37:XH:96:GLY:HA2	37:XH:130:GLY:HA3	1.87	0.56
1:RA:216:A:H2'	1:RA:217:G:H8	1.71	0.56
1:RA:2103:C:H2'	1:RA:2104:G:C8	2.41	0.56
16:RU:74:LEU:HD23	16:RU:114:LYS:HD3	1.88	0.56
21:RZ:93:ASP:N	21:RZ:93:ASP:OD1	2.39	0.56
1:YA:631:A:OP2	29:Y8:46:ARG:NH2	2.39	0.56
1:YA:760:G:H2'	1:YA:761:A:O4'	2.06	0.56
1:YA:1203:G:H3'	1:YA:1204:A:H5''	1.87	0.56
1:YA:2151:G:H2'	1:YA:2152:G:H8	1.70	0.56
5:YF:117:ARG:NH2	5:YF:189:THR:O	2.39	0.56
49:QA:976:G:N2	49:QA:1362(A):C:OP2	2.36	0.56
49:QA:1090:U:H2'	49:QA:1091:U:C6	2.41	0.56
49:QA:1166:G:N2	49:QA:1170:A:OP2	2.30	0.56
33:XD:85:LYS:NZ	49:XA:614:A:OP2	2.36	0.56
41:XL:52:LEU:HG	41:XL:53:ARG:H	1.69	0.56
41:XL:95:GLY:O	41:XL:97:ARG:N	2.32	0.56
1:RA:220:G:H22	1:RA:427:U:H2'	1.71	0.56
1:RA:1418:G:O6	1:RA:1578:U:H5''	2.05	0.56
1:RA:2101:G:H2'	1:RA:2102:U:C6	2.41	0.56
4:RE:70:ALA:O	4:RE:72:VAL:N	2.39	0.56
25:R3:8:LEU:HD13	25:R3:31:LEU:HD23	1.87	0.56
1:YA:857:C:H2'	1:YA:858:U:C6	2.41	0.56
1:YA:1678:G:H2'	1:YA:1679:U:H6	1.71	0.56
1:YA:2543:G:HO2'	1:YA:2645:G:HO2'	1.53	0.56
31:QB:95:GLN:OE1	31:QB:96:ARG:NH2	2.39	0.56
40:QK:120:ARG:HD2	49:QA:779:C:H1'	1.87	0.56
49:QA:658:G:H2'	49:QA:659:U:C6	2.40	0.56
49:QA:1270:C:H2'	49:QA:1271:G:C8	2.41	0.56
41:XL:21:LYS:HD3	49:XA:909:A:OP1	2.05	0.56
49:XA:1074:G:H1	49:XA:1083:U:H3	1.52	0.56
52:QX:1:G:H2'	52:QX:2:G:C8	2.41	0.56
1:RA:587:C:OP2	11:RP:21:ARG:NH2	2.31	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:593:G:H2'	1:RA:594:U:C6	2.40	0.56
1:RA:919:G:N2	1:RA:2269:A:OP2	2.35	0.56
1:RA:1163:G:OP1	17:RV:24:LYS:NZ	2.39	0.56
1:RA:1547:C:H2'	1:RA:1548:C:C6	2.41	0.56
15:RT:102:ILE:HB	15:RT:110:ILE:HD13	1.88	0.56
1:YA:753:C:O5'	1:YA:753:C:H6	1.88	0.56
1:YA:1430:C:H2'	1:YA:1431:U:C6	2.41	0.56
12:YQ:20:ALA:HA	12:YQ:98:LYS:HB3	1.88	0.56
12:YQ:116:GLU:O	12:YQ:120:ILE:HG12	2.06	0.56
20:YY:56:PRO:O	20:YY:58:GLY:N	2.39	0.56
33:QD:134:ASP:OD2	49:QA:619:U:N3	2.39	0.56
33:QD:197:PRO:HD3	35:XF:16:GLN:HB3	1.88	0.56
39:QJ:50:ILE:HG22	39:QJ:60:ARG:HG2	1.88	0.56
46:QQ:9:VAL:HG13	46:QQ:56:VAL:HG22	1.87	0.56
46:QQ:66:SER:HB3	46:QQ:69:LYS:HB3	1.87	0.56
47:QR:58:LEU:HD12	47:QR:62:GLU:HB3	1.88	0.56
49:QA:397:A:N7	49:QA:547:A:O2'	2.39	0.56
42:XM:31:LYS:HA	42:XM:34:LEU:HD12	1.88	0.56
45:XP:24:ALA:O	45:XP:26:ARG:N	2.35	0.56
45:XP:30:GLY:HA2	49:XA:309:G:O3'	2.07	0.56
49:XA:683:G:H2'	49:XA:684:A:C8	2.41	0.56
49:XA:1124:G:O2'	49:XA:1126:U:O4	2.22	0.56
49:XA:1233:G:O2'	49:XA:1364:U:O2'	2.22	0.56
1:RA:1273:U:H5''	1:RA:1646:C:H41	1.72	0.55
1:RA:1771:C:H2'	1:RA:1772:G:C8	2.40	0.55
1:RA:2056:G:N2	26:R5:4:HIS:O	2.39	0.55
1:YA:20:C:H2'	1:YA:21:A:C8	2.41	0.55
1:YA:898:C:H2'	1:YA:899:A:O4'	2.05	0.55
1:YA:964:C:O2'	1:YA:2273:A:N3	2.31	0.55
11:YP:61:ARG:NH1	29:Y8:56:GLU:OE2	2.39	0.55
15:YT:26:ASP:HB2	15:YT:90:GLN:O	2.06	0.55
23:Y1:87:PRO:O	23:Y1:91:LYS:N	2.33	0.55
49:QA:398:C:H2'	49:QA:399:G:H8	1.71	0.55
49:QA:1343:G:H2'	49:QA:1344:C:C6	2.41	0.55
41:XL:9:GLN:HE21	49:XA:880:C:H3'	1.71	0.55
49:XA:292:G:H21	49:XA:608:A:H61	1.53	0.55
49:XA:445:G:H2'	49:XA:446:G:H8	1.71	0.55
49:XA:538:G:H2'	49:XA:539:A:H8	1.70	0.55
49:XA:1382:C:H2'	49:XA:1383:C:H6	1.70	0.55
1:RA:859:G:HO2'	1:RA:916:G:H1	1.52	0.55
1:RA:2827:C:H2'	1:RA:2828:C:C6	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:RH:105:LEU:HD13	7:RH:105:LEU:H	1.71	0.55
21:RZ:80:ARG:HH21	21:RZ:82:ARG:HH12	1.54	0.55
1:YA:171:G:H2'	1:YA:172:C:C6	2.41	0.55
1:YA:414:C:H2'	1:YA:415:A:C8	2.41	0.55
1:YA:1642:G:H2'	1:YA:1643:G:O4'	2.06	0.55
1:YA:2364:C:H2'	1:YA:2365:G:O4'	2.06	0.55
3:YD:85:ASP:OD2	3:YD:88:ARG:NH1	2.34	0.55
13:YR:38:VAL:HG22	13:YR:112:ALA:HB2	1.88	0.55
39:QJ:43:ARG:NH1	49:QA:1279:A:N1	2.54	0.55
47:QR:38:GLU:HA	47:QR:41:LYS:HB3	1.87	0.55
48:QT:76:ALA:HB1	48:QT:79:ARG:HH21	1.71	0.55
49:QA:235:C:H2'	49:QA:236:G:H8	1.71	0.55
49:QA:538:G:H2'	49:QA:539:A:C8	2.41	0.55
31:XB:78:GLN:HG3	31:XB:94:ASN:HB2	1.87	0.55
42:XM:16:ASP:OD2	42:XM:16:ASP:N	2.37	0.55
49:XA:68(Y):C:H2'	49:XA:101:A:C8	2.41	0.55
49:XA:1531:A:N9	49:XA:1532:U:C5	2.74	0.55
1:RA:459:U:OP2	28:R7:39:ARG:NH1	2.39	0.55
1:RA:1682:G:H5'	1:RA:1762:A:H1'	1.87	0.55
1:RA:1919:A:N1	49:QA:1495:U:O2'	2.34	0.55
1:RA:2387:U:O2'	22:R0:19:LYS:NZ	2.39	0.55
1:RA:2744:G:H21	7:RH:143:GLN:HE21	1.54	0.55
5:RF:66:PRO:O	5:RF:68:LYS:N	2.38	0.55
11:RP:85:LEU:HA	11:RP:88:LEU:HD22	1.88	0.55
37:QH:11:THR:O	37:QH:15:ASN:ND2	2.39	0.55
49:QA:918:A:H2'	49:QA:919:A:C8	2.42	0.55
49:QA:1419:G:O6	49:QA:1482:G:C6	2.59	0.55
47:XR:45:SER:HB3	47:XR:51:LEU:HD11	1.87	0.55
1:RA:946:G:O6	1:RA:972:G:N2	2.39	0.55
1:RA:1360:A:H62	1:RA:1371:G:H21	1.52	0.55
1:RA:1657:C:H2'	1:RA:1658:C:C6	2.42	0.55
1:RA:2078:C:H2'	1:RA:2079:U:C6	2.41	0.55
6:RG:105:LYS:CG	6:RG:142:PRO:HG3	2.36	0.55
1:YA:172:C:H2'	1:YA:173:G:C8	2.41	0.55
1:YA:247:G:H4'	1:YA:386:G:C5	2.42	0.55
1:YA:500:G:N1	1:YA:503:A:OP2	2.35	0.55
1:YA:579:G:O2'	1:YA:2019:A:OP1	2.19	0.55
1:YA:1444:G:H2'	1:YA:1445:C:C5	2.41	0.55
32:QC:187:ALA:HB3	32:QC:198:VAL:HB	1.87	0.55
34:QE:19:MET:HA	34:QE:24:ARG:HA	1.87	0.55
37:QH:44:PHE:HE1	37:QH:80:ILE:HG13	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:QL:30:ALA:HB1	41:QL:33:ARG:HB2	1.87	0.55
49:QA:170:U:H2'	49:QA:171:A:C8	2.42	0.55
1:RA:121:G:H4'	1:RA:149:A:H5'	1.88	0.55
1:RA:2294:C:H2'	1:RA:2295:C:H6	1.72	0.55
12:RQ:35:VAL:HG13	12:RQ:130:LYS:HB3	1.89	0.55
26:R5:56:LYS:H	26:R5:56:LYS:HD2	1.72	0.55
1:YA:823:G:H2'	1:YA:824:A:C8	2.41	0.55
1:YA:1059:G:H3'	1:YA:1060:U:H5''	1.89	0.55
1:YA:1853:A:H2'	1:YA:1854:A:C8	2.42	0.55
1:YA:2627:G:O2'	1:YA:2781:A:N1	2.37	0.55
31:QB:100:GLY:O	31:QB:104:ASN:HB2	2.07	0.55
33:QD:165:MET:SD	33:QD:176:LEU:HD22	2.47	0.55
34:QE:17:ALA:HA	34:QE:26:PHE:HA	1.88	0.55
44:QO:29:VAL:HG13	44:QO:63:ARG:HG3	1.89	0.55
49:QA:139:G:H2'	49:QA:140:A:C8	2.41	0.55
49:QA:924:C:H2'	49:QA:925:G:C8	2.42	0.55
49:QA:1018:C:H2'	49:QA:1019:C:C6	2.42	0.55
49:QA:1382:C:H2'	49:QA:1383:C:H6	1.71	0.55
31:XB:111:ARG:HE	31:XB:145:LEU:HD11	1.72	0.55
33:XD:31:CYS:N	33:XD:33:MET:H	2.04	0.55
36:XG:104:LEU:HD12	36:XG:123:GLU:HG3	1.88	0.55
42:XM:99:ARG:HB3	42:XM:101:GLN:HG3	1.89	0.55
49:XA:428:G:H4'	49:XA:429:U:OP1	2.05	0.55
49:XA:1342:C:H2'	49:XA:1343:G:H8	1.69	0.55
49:XA:1533:C:C5	49:XA:1534:A:H1'	2.41	0.55
49:XA:1535:C:H42	52:XX:11:U:H1'	1.71	0.55
52:XX:18:C:C4	52:XX:19:U:C4	2.95	0.55
1:RA:698:C:O2'	1:RA:734:A:N6	2.39	0.55
1:RA:1430:C:H2'	1:RA:1431:U:C6	2.42	0.55
1:RA:1682:G:OP2	1:RA:1699:G:N2	2.35	0.55
10:RO:49:ARG:NH2	49:QA:1423:G:OP1	2.40	0.55
20:RY:95:LYS:HA	20:RY:101:LYS:H	1.71	0.55
1:YA:1108:U:H2'	1:YA:1109:C:C6	2.41	0.55
1:YA:2432:A:C8	23:Y1:33:LYS:HE2	2.42	0.55
4:YE:74:PRO:HG2	4:YE:77:ILE:HG23	1.87	0.55
7:YH:10:PRO:HD2	7:YH:50:VAL:O	2.06	0.55
12:YQ:24:GLY:O	12:YQ:26:TYR:N	2.36	0.55
21:YZ:149:SER:HB2	21:YZ:172:ALA:O	2.06	0.55
27:Y6:14:THR:O	27:Y6:49:HIS:HA	2.07	0.55
49:QA:1175:G:H2'	49:QA:1176:A:H8	1.72	0.55
49:QA:1268:A:O2'	49:QA:1326:C:H4'	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:730:G:C5	49:XA:731:G:H1'	2.41	0.55
49:XA:987:G:H2'	49:XA:988:G:C8	2.42	0.55
49:XA:1203:C:H2'	49:XA:1204:A:H8	1.72	0.55
1:RA:796:C:H2'	1:RA:797:C:H6	1.71	0.55
1:RA:844:C:H2'	1:RA:845:G:O4'	2.07	0.55
1:RA:948:G:OP1	1:RA:962:G:OP1	2.25	0.55
8:RI:55:ALA:HA	8:RI:58:LEU:HB3	1.88	0.55
20:RY:44:ILE:HG13	20:RY:45:VAL:N	2.21	0.55
1:YA:1675:C:H2'	1:YA:1676:A:O4'	2.06	0.55
1:YA:2246:G:H2'	1:YA:2247:A:C8	2.42	0.55
1:YA:2375:G:N2	1:YA:2378:A:OP2	2.39	0.55
1:YA:2737:G:H2'	1:YA:2738:A:C8	2.42	0.55
4:YE:95:ILE:H	4:YE:95:ILE:HD12	1.71	0.55
23:Y1:51:VAL:HG11	23:Y1:74:VAL:HG21	1.89	0.55
49:QA:272:C:H2'	49:QA:273:A:C8	2.42	0.55
49:QA:358:U:H2'	49:QA:359:U:H6	1.72	0.55
46:XQ:40:LYS:HG2	46:XQ:42:TYR:CZ	2.42	0.55
49:XA:1469:G:H2'	49:XA:1470:G:H8	1.71	0.55
52:QX:10:G:H3'	52:QX:11:U:C6	2.41	0.55
1:RA:270(S):G:H2'	1:RA:270(T):G:H8	1.72	0.55
1:RA:1657:C:H2'	1:RA:1658:C:H6	1.72	0.55
1:RA:2625:G:H2'	1:RA:2626:C:C6	2.42	0.55
9:RN:54:VAL:HB	9:RN:122:VAL:HG22	1.88	0.55
11:RP:114:ILE:HD13	11:RP:125:VAL:HG21	1.88	0.55
1:YA:764:A:H5'	3:YD:210:GLY:HA2	1.88	0.55
1:YA:1811:G:H2'	1:YA:1812:A:C8	2.41	0.55
1:YA:2055:C:H4'	1:YA:2056:G:H5''	1.89	0.55
1:YA:2306:C:H2'	1:YA:2307:G:N2	2.22	0.55
1:YA:2572:A:OP1	1:YA:2574:G:O2'	2.23	0.55
29:Y8:22:VAL:HB	29:Y8:53:PRO:HB3	1.89	0.55
31:QB:102:LEU:HB2	31:QB:176:GLU:HB3	1.89	0.55
32:QC:160:ALA:O	32:QC:162:GLN:N	2.40	0.55
33:QD:72:GLU:HA	33:QD:75:PHE:HB3	1.88	0.55
49:QA:599:C:H2'	49:QA:600:C:C6	2.41	0.55
49:QA:709:G:H2'	49:QA:710:G:C8	2.42	0.55
49:QA:928:G:H2'	49:QA:929:G:H8	1.71	0.55
49:QA:1119:C:H2'	49:QA:1120:G:C8	2.41	0.55
49:QA:1142:G:H3'	49:QA:1143:G:H8	1.72	0.55
38:XI:28:VAL:HG13	38:XI:63:ILE:HB	1.87	0.55
41:XL:100:ILE:HG22	41:XL:102:ARG:H	1.72	0.55
43:YN:8:GLU:HA	43:YN:11:LYS:HB2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:638:G:H2'	49:XA:639:G:H8	1.71	0.55
49:XA:757:U:O2'	49:XA:879:C:O2	2.24	0.55
49:XA:1157:A:H61	49:XA:1180:A:H2'	1.72	0.55
52:XX:4:A:H2'	52:XX:5:A:H8	1.71	0.55
1:RA:806:C:P	11:RP:41:ARG:HH11	2.29	0.55
1:RA:1196:C:H2'	1:RA:1197:G:H8	1.72	0.55
1:RA:1230:C:H2'	1:RA:1231:G:C8	2.42	0.55
1:YA:374:A:H1'	1:YA:401:A:N6	2.21	0.55
1:YA:731:C:OP2	1:YA:761:A:OP1	2.24	0.55
1:YA:2103:C:H2'	1:YA:2104:G:C8	2.41	0.55
1:YA:2553:G:C2	1:YA:2583:G:H1'	2.42	0.55
11:YP:135:LEU:O	11:YP:139:LYS:HB2	2.07	0.55
19:YX:43:VAL:HG13	19:YX:51:VAL:HG21	1.89	0.55
26:Y5:16:ARG:NH1	26:Y5:17:ASP:OD1	2.40	0.55
41:QL:101:VAL:HG11	41:QL:104:VAL:HG13	1.89	0.55
41:QL:118:SER:O	49:QA:35:G:H1'	2.07	0.55
42:QM:20:THR:HG21	42:QM:27:LYS:HD2	1.88	0.55
49:QA:1028(H):G:H2'	49:QA:1033:G:C8	2.42	0.55
32:XC:8:ILE:HD11	32:XC:184:TYR:HB3	1.89	0.55
42:XM:77:ASN:ND2	49:XA:1310:G:H5'	2.22	0.55
49:XA:949:A:H2'	49:XA:950:U:C6	2.42	0.55
49:XA:1320:C:O2'	49:XA:1321:C:O5'	2.24	0.55
1:RA:554:U:H2'	1:RA:556:G:C8	2.42	0.55
1:RA:1295:C:H2'	1:RA:1296:G:H8	1.71	0.55
1:RA:2306:C:H3'	1:RA:2307:G:H5''	1.88	0.55
1:RA:2584:U:H2'	1:RA:2585:U:H2'	1.89	0.55
2:RB:24:G:H1'	2:RB:27:C:N4	2.22	0.55
3:RD:108:PRO:HG2	3:RD:111:LEU:HG	1.89	0.55
11:RP:64:LYS:O	11:RP:66:GLY:N	2.36	0.55
15:RT:34:VAL:HG12	15:RT:36:GLU:HG2	1.89	0.55
1:YA:893:C:H2'	1:YA:894:C:C6	2.42	0.55
1:YA:2884:U:C2	26:Y5:51:TYR:HE1	2.24	0.55
19:YX:57:LEU:HD11	19:YX:78:LYS:HD2	1.88	0.55
45:QP:31:LYS:HG3	49:QA:607:A:C2	2.42	0.55
35:XF:69:GLU:O	35:XF:71:ARG:N	2.40	0.55
39:XJ:27:ALA:HB1	39:XJ:34:VAL:HG21	1.87	0.55
44:XO:85:LEU:HD22	44:XO:87:ILE:HG12	1.89	0.55
46:XQ:45:HIS:HB3	46:XQ:72:ARG:HA	1.89	0.55
49:XA:620:C:H3'	49:XA:621:A:H8	1.70	0.55
49:XA:954:G:H2'	49:XA:955:U:C6	2.42	0.55
49:XA:1028(A):C:O2	49:XA:1028(H):G:N2	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:QX:18:C:C4	52:QX:19:U:C4	2.94	0.55
1:RA:78:A:H2'	1:RA:79:G:H8	1.73	0.54
1:RA:783:A:H2'	1:RA:784:A:H4'	1.89	0.54
1:RA:805:G:OP2	11:RP:41:ARG:HG2	2.07	0.54
1:RA:1336:A:H2'	1:RA:1337:G:H8	1.71	0.54
1:RA:2443:C:H2'	1:RA:2444:G:C8	2.42	0.54
21:RZ:166:SER:H	21:RZ:167:PRO:HA	1.72	0.54
1:YA:76:C:H1'	24:Y2:62:THR:HG21	1.89	0.54
1:YA:475:U:H2'	1:YA:476:G:O4'	2.06	0.54
1:YA:1405:U:H2'	1:YA:1406:U:H6	1.72	0.54
1:YA:2101:G:H2'	1:YA:2102:U:C6	2.41	0.54
2:YB:48:A:H2'	2:YB:49:C:C6	2.41	0.54
2:YB:66:A:O2'	2:YB:67:G:O5'	2.23	0.54
3:YD:3:VAL:HG13	3:YD:17:THR:HG23	1.89	0.54
36:QG:74:GLU:OE1	36:QG:76:ARG:NH1	2.40	0.54
49:QA:539:A:H2'	49:QA:540:G:C8	2.42	0.54
48:XT:49:ALA:O	48:XT:51:GLU:N	2.40	0.54
48:XT:98:PRO:HB2	48:XT:104:LEU:HD21	1.88	0.54
49:XA:125:U:H2'	49:XA:126:G:C8	2.42	0.54
49:XA:824:C:H2'	49:XA:825:G:H8	1.71	0.54
1:RA:380:U:H2'	1:RA:381:G:C8	2.37	0.54
6:RG:81:LYS:O	6:RG:82:LEU:HB2	2.08	0.54
20:RY:49:VAL:O	20:RY:51:VAL:HG12	2.07	0.54
1:YA:270(V):G:H2'	1:YA:270(W):G:H8	1.72	0.54
1:YA:1142(A):A:H4'	9:YN:25:ARG:HH22	1.71	0.54
1:YA:1670:C:H2'	1:YA:1671:U:O4'	2.07	0.54
1:YA:1946:U:H2'	1:YA:1947:C:C6	2.42	0.54
37:QH:44:PHE:CE1	37:QH:80:ILE:HG13	2.41	0.54
49:QA:736:C:H2'	49:QA:737:A:C8	2.43	0.54
33:XD:10:ARG:NH2	49:XA:542:G:OP1	2.40	0.54
39:XJ:26:ALA:HB3	39:XJ:85:LEU:HD21	1.89	0.54
41:XL:61:THR:O	41:XL:61:THR:OG1	2.25	0.54
42:XM:94:ARG:NE	50:XS:81:ARG:HB3	2.22	0.54
49:XA:610:G:C2	49:XA:611:A:C8	2.95	0.54
1:RA:153:C:H2'	1:RA:154:G:C8	2.42	0.54
1:RA:638:G:H2'	1:RA:639:U:C6	2.43	0.54
1:RA:1041:C:H2'	1:RA:1042:G:H8	1.71	0.54
1:RA:1791:A:H5'	3:RD:206:LEU:HD12	1.90	0.54
1:RA:1936:A:H2	1:RA:1962:C:O2	1.90	0.54
1:RA:2025:C:H2'	1:RA:2026:C:C6	2.42	0.54
15:RT:91:ARG:HB2	15:RT:121:ILE:HG13	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:532:A:N1	1:YA:2035:G:N2	2.54	0.54
1:YA:679:C:H2'	1:YA:680:G:C8	2.42	0.54
1:YA:2537:U:H2'	1:YA:2538:C:C6	2.41	0.54
1:YA:2734:A:N6	1:YA:2770:G:O2'	2.40	0.54
6:YG:18:GLU:OE1	6:YG:22:ARG:NH1	2.40	0.54
12:YQ:85:LYS:O	12:YQ:87:LYS:N	2.39	0.54
18:YW:67:ASP:OD2	18:YW:67:ASP:N	2.40	0.54
33:QD:88:VAL:HG13	34:QE:97:GLY:N	2.22	0.54
33:XD:173:TRP:HB2	33:XD:186:LEU:HB2	1.88	0.54
49:XA:518:C:H4'	49:XA:519:C:H5''	1.89	0.54
49:XA:949:A:O2'	49:XA:1363:A:OP2	2.25	0.54
1:RA:862:G:H2'	1:RA:863:A:O4'	2.08	0.54
1:RA:1165:U:H2'	1:RA:1166:C:C6	2.42	0.54
1:RA:2846:G:H2'	1:RA:2847:U:H6	1.73	0.54
1:YA:1028:A:N3	1:YA:2486:G:O2'	2.35	0.54
1:YA:2075:U:OP2	1:YA:2238:G:O2'	2.26	0.54
15:YT:39:ARG:HG2	15:YT:40:THR:H	1.73	0.54
36:QG:73:MET:HG2	36:QG:90:GLU:HG2	1.89	0.54
37:QH:34:GLU:O	37:QH:38:ILE:HG12	2.07	0.54
37:QH:107:LEU:HD23	37:QH:107:LEU:H	1.73	0.54
49:QA:1503:A:N3	52:QX:15:A:N6	2.55	0.54
31:XB:36:ARG:C	31:XB:38:GLY:H	2.11	0.54
31:XB:68:ILE:HG23	31:XB:163:PHE:H	1.73	0.54
32:XC:54:ARG:O	32:XC:69:HIS:HB2	2.06	0.54
36:XG:74:GLU:HG2	36:XG:91:VAL:HG22	1.88	0.54
48:XT:23:ARG:HD2	49:XA:322:C:H4'	1.90	0.54
49:XA:244:U:H3	49:XA:893:C:N4	2.05	0.54
49:XA:649:G:H2'	49:XA:650:G:H8	1.73	0.54
49:XA:995:C:H2'	49:XA:996:A:C8	2.42	0.54
49:XA:1531:A:N7	49:XA:1532:U:O4	2.33	0.54
51:Y4:15:ILE:H	51:Y4:15:ILE:HD13	1.73	0.54
1:RA:1090:U:H2'	1:RA:1091:G:C8	2.42	0.54
1:YA:1568:G:OP1	3:YD:63:ARG:NH1	2.37	0.54
1:YA:2246:G:H2'	1:YA:2247:A:H8	1.72	0.54
36:QG:12:LEU:HD12	36:QG:21:VAL:HB	1.90	0.54
38:QI:26:VAL:HG22	38:QI:61:ALA:HB3	1.88	0.54
39:QJ:81:THR:O	39:QJ:85:LEU:HB2	2.08	0.54
48:QT:14:LYS:CE	49:QA:106:C:H41	2.15	0.54
33:XD:30:LYS:HA	33:XD:33:MET:O	2.07	0.54
46:XQ:83:ASP:O	46:XQ:86:GLU:HB3	2.08	0.54
49:XA:1326:C:H2'	49:XA:1327:C:H6	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:1352:C:H2'	49:XA:1353:G:C8	2.42	0.54
1:RA:130:C:O3'	1:RA:1349:A:H1'	2.07	0.54
1:RA:225:A:N6	1:RA:419:C:O2'	2.40	0.54
1:RA:2130:U:O2'	1:RA:2133:G:O2'	2.25	0.54
1:YA:414:C:H2'	1:YA:415:A:H8	1.73	0.54
1:YA:1203:G:O2'	1:YA:1242:A:N6	2.38	0.54
1:YA:2687:U:H2'	1:YA:2688:U:O4'	2.07	0.54
2:YB:48:A:OP2	14:YS:30:ARG:NH2	2.39	0.54
18:YW:71:VAL:HA	18:YW:107:LEU:HD12	1.88	0.54
20:YY:91:GLU:HG3	20:YY:92:ASN:H	1.73	0.54
25:Y3:6:VAL:HG13	25:Y3:56:VAL:HG13	1.90	0.54
31:QB:80:ILE:HD12	31:QB:235:SER:HB3	1.90	0.54
42:QM:90:LEU:O	42:QM:94:ARG:HG2	2.08	0.54
36:XG:12:LEU:HB2	36:XG:21:VAL:HB	1.90	0.54
49:XA:319:G:H2'	49:XA:320:C:C6	2.42	0.54
49:XA:929:G:H2'	49:XA:930:C:C6	2.42	0.54
52:XX:4:A:H2'	52:XX:5:A:C8	2.42	0.54
1:RA:608:A:H2'	1:RA:609:A:H8	1.73	0.54
11:RP:95:VAL:HG13	11:RP:100:LEU:HD21	1.90	0.54
12:RQ:17:LEU:HD21	12:RQ:41:TRP:CD1	2.43	0.54
12:RQ:136:ALA:HB3	21:RZ:49:ARG:HA	1.88	0.54
1:YA:813:U:H2'	1:YA:814:C:C6	2.43	0.54
1:YA:848:G:H2'	1:YA:849:A:H8	1.72	0.54
1:YA:2514:U:H2'	1:YA:2515:C:H6	1.73	0.54
34:QE:21:ALA:O	49:QA:1193:G:O2'	2.25	0.54
38:QI:10:ARG:NE	38:QI:105:ASP:OD2	2.41	0.54
49:QA:639:G:H2'	49:QA:640:A:C8	2.43	0.54
49:QA:1062:U:H2'	49:QA:1063:C:C6	2.43	0.54
39:XJ:13:HIS:HB3	39:XJ:68:HIS:NE2	2.23	0.54
47:XR:74:ARG:NH1	49:XA:719:C:N3	2.41	0.54
49:XA:323:U:H2'	49:XA:324:G:O4'	2.07	0.54
49:XA:339:C:H2'	49:XA:340:U:C6	2.42	0.54
49:XA:362:G:N2	49:XA:365:U:OP2	2.41	0.54
49:XA:575:G:O2'	49:XA:821:G:H5'	2.08	0.54
49:XA:877:C:H2'	49:XA:878:G:C8	2.41	0.54
49:XA:978:A:N6	49:XA:1318:A:N7	2.56	0.54
49:XA:1391:U:H2'	49:XA:1392:G:C8	2.42	0.54
1:RA:508:G:O2'	1:RA:509:C:OP2	2.26	0.54
1:RA:820:A:H2'	1:RA:821:A:C8	2.42	0.54
1:RA:2055:C:O2	1:RA:2572:A:N6	2.39	0.54
1:RA:2515:C:H2'	1:RA:2516:G:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:RP:18:ARG:HD2	11:RP:27:HIS:CD2	2.42	0.54
12:RQ:66:ILE:HA	12:RQ:104:PHE:HA	1.90	0.54
1:YA:824:A:H1'	1:YA:2358:G:N7	2.23	0.54
1:YA:972:G:OP2	1:YA:974:G:H2'	2.07	0.54
1:YA:1509:C:H3'	1:YA:1510:A:H5''	1.88	0.54
1:YA:2699:C:H2'	1:YA:2700:C:C6	2.43	0.54
5:YF:7:TYR:HD2	5:YF:21:ALA:HB1	1.73	0.54
5:YF:197:ASP:OD2	5:YF:197:ASP:N	2.41	0.54
38:QI:47:LEU:HG	38:QI:50:LEU:HD12	1.89	0.54
49:QA:373:A:HO2'	49:QA:451:A:H62	1.52	0.54
49:QA:946:A:H2'	49:QA:947:G:H8	1.73	0.54
31:XB:27:LYS:HG2	31:XB:195:ASP:HB2	1.89	0.54
33:XD:8:VAL:HG11	33:XD:115:ARG:HD3	1.90	0.54
36:XG:77:SER:HA	36:XG:85:TYR:O	2.08	0.54
49:XA:539:A:H2'	49:XA:540:G:H8	1.73	0.54
49:XA:757:U:H2'	49:XA:758:G:O4'	2.08	0.54
49:XA:1535:C:N4	52:XX:11:U:H1'	2.22	0.54
1:RA:991:C:OP2	1:RA:1186:G:OP2	2.26	0.54
1:RA:1187:G:H5''	17:RV:81:TYR:CE2	2.43	0.54
11:RP:14:LYS:O	11:RP:16:ARG:N	2.41	0.54
1:YA:807:U:O2'	1:YA:2060:A:N1	2.36	0.54
1:YA:1434:A:H61	1:YA:1558:A:H62	1.55	0.54
7:YH:83:TYR:CZ	7:YH:138:LYS:HD2	2.43	0.54
39:QJ:7:LYS:HE3	39:QJ:9:ARG:HG3	1.89	0.54
49:QA:1440(A):G:H5''	49:QA:1440(B):G:O4'	2.08	0.54
34:XE:83:GLU:HA	34:XE:87:SER:O	2.08	0.54
42:XM:14:ARG:HG3	42:XM:44:ARG:HH11	1.71	0.54
42:XM:52:GLU:O	42:XM:56:LEU:HB2	2.08	0.54
45:XP:35:LYS:O	45:XP:36:ILE:HG12	2.08	0.54
45:XP:69:THR:HG21	49:XA:375:U:H5''	1.90	0.54
47:XR:47:THR:HB	47:XR:85:LEU:HD23	1.90	0.54
49:XA:1427:U:H2'	49:XA:1428:A:H8	1.73	0.54
51:R4:9:LEU:O	51:R4:10:VAL:HB	2.08	0.54
52:QX:17:C:N4	52:QX:18:C:N4	2.55	0.54
1:RA:1007:C:H5''	9:RN:35:ARG:HH11	1.71	0.54
1:RA:1557:C:H2'	1:RA:1558:A:C2	2.43	0.54
1:RA:1689:A:H62	1:RA:1698:A:H2	1.56	0.54
1:RA:2329:G:H2'	1:RA:2330:G:C8	2.43	0.54
6:RG:143:GLU:HA	51:R4:28:LYS:HG2	1.90	0.54
15:RT:84:GLN:HE21	15:RT:85:LYS:HG2	1.73	0.54
19:YX:60:ARG:NH1	28:Y7:47:ARG:HH22	2.05	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:QD:42:GLN:O	33:QD:46:LYS:NZ	2.41	0.54
49:QA:1164:G:O6	49:QA:1173:G:O6	2.25	0.54
38:XI:19:LEU:HD23	38:XI:61:ALA:HB2	1.90	0.54
40:XK:25:TYR:HE1	40:XK:125:PHE:HZ	1.55	0.54
46:XQ:45:HIS:HB3	46:XQ:72:ARG:HG2	1.90	0.54
47:XR:44:LEU:HD22	47:XR:79:LEU:HD21	1.89	0.54
48:XT:50:GLU:HA	48:XT:100:ILE:HG21	1.90	0.54
49:XA:987:G:H2'	49:XA:988:G:H8	1.71	0.54
49:XA:1015:A:H2'	49:XA:1016:A:C8	2.43	0.54
52:XX:10:G:H3'	52:XX:11:U:C6	2.43	0.54
52:XX:17:C:N4	52:XX:18:C:N4	2.55	0.54
1:RA:483:A:H4'	20:RY:49:VAL:HA	1.89	0.53
1:RA:861:A:N3	2:RB:79:C:O2'	2.40	0.53
1:RA:1444(A):A:H4'	1:RA:1460:A:O2'	2.08	0.53
1:RA:1811:G:H2'	1:RA:1812:A:H8	1.72	0.53
1:RA:2241:A:H2'	1:RA:2242:G:C8	2.42	0.53
1:RA:2677:G:H2'	1:RA:2678:C:C6	2.42	0.53
1:RA:2695:C:H2'	1:RA:2696:U:C6	2.43	0.53
3:RD:145:VAL:HG11	3:RD:175:LEU:HD11	1.89	0.53
21:RZ:158:PRO:HG2	21:RZ:161:VAL:HG21	1.90	0.53
1:YA:1756:G:H4'	1:YA:1758:G:O4'	2.07	0.53
1:YA:2114:A:N6	1:YA:2119:A:N7	2.56	0.53
1:YA:2547:U:H2'	1:YA:2548:G:H8	1.73	0.53
8:YI:98:ALA:HB2	8:YI:111:PRO:HB3	1.88	0.53
11:YP:113:LYS:HG2	11:YP:115:LEU:HD23	1.90	0.53
34:QE:78:HIS:NE2	34:QE:142:LEU:HD23	2.23	0.53
49:QA:1107:C:C4	49:QA:1108:G:C8	2.96	0.53
49:QA:1391:U:H2'	49:QA:1392:G:C8	2.44	0.53
33:XD:57:ARG:HD2	33:XD:206:PHE:HB2	1.90	0.53
33:XD:140:VAL:HG11	33:XD:146:ILE:HD11	1.90	0.53
34:XE:9:LYS:HB2	34:XE:112:LEU:HD21	1.90	0.53
35:XF:97:PHE:HD2	47:XR:31:LEU:HD12	1.72	0.53
38:XI:66:ARG:HB3	38:XI:66:ARG:HH11	1.72	0.53
49:XA:1287:A:H2'	49:XA:1288:A:C8	2.42	0.53
49:XA:1412:C:H2'	49:XA:1413:A:C8	2.42	0.53
1:RA:1462:C:H2'	1:RA:1463:C:O4'	2.08	0.53
1:RA:1651:G:H2'	1:RA:1652:A:O4'	2.09	0.53
1:RA:1800:C:OP2	3:RD:183:ARG:NH1	2.41	0.53
4:RE:131:ALA:HB1	4:RE:135:HIS:HE1	1.73	0.53
8:RI:11:ASN:O	8:RI:12:LEU:HB2	2.08	0.53
17:RV:76:LYS:HB2	17:RV:81:TYR:HB3	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:RZ:5:LEU:HD21	21:RZ:44:PHE:HA	1.90	0.53
24:R2:65:ASN:HB3	24:R2:69:ARG:HH22	1.72	0.53
1:YA:1187:G:H5''	17:YV:81:TYR:CE2	2.43	0.53
1:YA:2404:C:O3'	11:YP:77:ARG:NH2	2.39	0.53
1:YA:2667:C:H1'	7:YH:109:PHE:HD2	1.73	0.53
15:YT:134:GLU:OE1	15:YT:135:ALA:N	2.41	0.53
26:Y5:4:HIS:HB3	26:Y5:5:PRO:HD3	1.90	0.53
33:QD:115:ARG:CB	49:QA:407:G:H5''	2.38	0.53
31:XB:68:ILE:HD11	31:XB:161:ALA:HB3	1.90	0.53
38:XI:126:SER:HB3	49:XA:1231:G:H4'	1.90	0.53
1:RA:729:G:O2'	1:RA:763:G:H4'	2.07	0.53
1:RA:848:G:H2'	1:RA:849:A:C8	2.44	0.53
1:RA:1677:A:H2'	1:RA:1678:G:H8	1.74	0.53
2:RB:31:C:N4	14:RS:32:LEU:HD13	2.23	0.53
4:RE:4:ILE:HD12	4:RE:28:ALA:HB1	1.89	0.53
13:RR:44:LEU:HD22	13:RR:48:VAL:HG23	1.90	0.53
15:RT:111:ARG:C	15:RT:113:LYS:H	2.11	0.53
24:R2:35:LEU:HD12	24:R2:53:LEU:HD12	1.89	0.53
28:R7:9:ARG:HH11	28:R7:48:LYS:HD2	1.74	0.53
1:YA:956:G:OP2	12:YQ:14:ARG:NH2	2.36	0.53
1:YA:1348:G:H2'	1:YA:1349:A:H5''	1.90	0.53
1:YA:2868:A:H2'	1:YA:2869:G:C8	2.43	0.53
23:Y1:58:ILE:HG12	23:Y1:87:PRO:HD3	1.89	0.53
43:QN:3:ARG:NH2	49:QA:1048:G:OP1	2.41	0.53
49:QA:829:G:H2'	49:QA:830:G:C8	2.43	0.53
32:XC:36:ASP:HA	32:XC:39:ILE:HD12	1.88	0.53
32:XC:58:GLU:HB2	32:XC:65:ALA:HB3	1.91	0.53
33:XD:161:ASN:HA	33:XD:164:ALA:HB3	1.89	0.53
34:XE:122:GLU:HB3	49:XA:9:G:OP1	2.08	0.53
38:XI:23:ASN:H	38:XI:60:ASP:HB2	1.73	0.53
45:XP:38:TYR:CZ	45:XP:50:LYS:HG3	2.43	0.53
46:XQ:31:LEU:HD11	49:XA:301:G:OP1	2.09	0.53
49:XA:1499:A:H1'	49:XA:1520:G:H5'	1.90	0.53
1:RA:139:G:N2	1:RA:141:A:C6	2.74	0.53
4:RE:116:VAL:HG23	4:RE:120:TRP:HD1	1.73	0.53
13:RR:42:LYS:HA	13:RR:45:ARG:HD2	1.90	0.53
1:YA:746:A:HO2'	1:YA:2611:U:HO2'	1.56	0.53
1:YA:809:G:H2'	1:YA:810:U:C6	2.44	0.53
1:YA:1400:G:H2'	1:YA:1401:G:H8	1.73	0.53
1:YA:2443:C:H2'	1:YA:2444:G:H8	1.73	0.53
1:YA:2461:C:H2'	1:YA:2462:U:C6	2.43	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:QL:12:ARG:NH2	49:QA:881:G:OP2	2.41	0.53
46:QQ:45:HIS:HB3	46:QQ:72:ARG:HA	1.90	0.53
49:QA:920:U:H2'	49:QA:921:U:C6	2.44	0.53
49:QA:988:G:H1'	49:QA:1014:A:H61	1.73	0.53
49:QA:1305:G:HO2'	49:QA:1306:A:H8	1.56	0.53
49:QA:1316:G:N1	49:QA:1319:A:OP2	2.39	0.53
45:XP:21:VAL:HG13	45:XP:34:GLU:HB3	1.90	0.53
47:XR:30:ASP:O	47:XR:36:ASN:ND2	2.22	0.53
49:XA:21:G:H2'	49:XA:22:G:H8	1.73	0.53
49:XA:539:A:H2'	49:XA:540:G:C8	2.44	0.53
49:XA:1059:C:H2'	49:XA:1060:C:C6	2.43	0.53
49:XA:1126:U:H3'	49:XA:1127:G:H8	1.73	0.53
49:XA:1300:G:O2'	49:XA:1301:U:O5'	2.25	0.53
1:RA:78:A:H2'	1:RA:79:G:C8	2.44	0.53
1:RA:597:U:H2'	1:RA:598:G:C8	2.44	0.53
1:RA:863:A:H2'	1:RA:864:G:C8	2.44	0.53
1:RA:1490:A:O2'	3:RD:99:ASP:OD2	2.26	0.53
1:RA:1667:G:H22	1:RA:1994:C:N4	2.07	0.53
1:RA:1802:A:H2'	1:RA:1803:A:C8	2.44	0.53
1:RA:2647:U:H2'	1:RA:2648:C:H6	1.74	0.53
1:RA:2747:G:H21	1:RA:2757:A:H62	1.55	0.53
1:RA:2808:U:C2	1:RA:2892:A:N6	2.77	0.53
1:RA:2868:A:H2'	1:RA:2869:G:C8	2.44	0.53
20:RY:76:CYS:SG	20:RY:77:PRO:HD2	2.49	0.53
1:YA:26:G:H1'	1:YA:515:A:H61	1.72	0.53
1:YA:218:A:N1	1:YA:235:U:H4'	2.24	0.53
1:YA:2864:G:OP1	15:YT:119:LYS:HD2	2.09	0.53
20:YY:29:GLU:HB3	20:YY:38:ILE:HG23	1.91	0.53
36:QG:13:GLN:HG3	36:QG:13:GLN:O	2.09	0.53
41:QL:33:ARG:HD3	41:QL:60:LEU:HD13	1.89	0.53
48:QT:30:LYS:HG2	48:QT:34:LYS:HE3	1.90	0.53
49:QA:300:A:H2'	49:QA:301:G:O4'	2.09	0.53
49:QA:730:G:C5	49:QA:731:G:H1'	2.44	0.53
33:XD:173:TRP:HD1	33:XD:186:LEU:H	1.57	0.53
40:XK:39:PRO:HD2	49:XA:684:A:H1'	1.91	0.53
1:RA:37:C:H2'	1:RA:38:A:C8	2.42	0.53
1:RA:297:C:H5''	20:RY:85:VAL:HG21	1.90	0.53
1:RA:779:U:H2'	1:RA:780:G:C8	2.44	0.53
1:RA:779:U:O2	1:RA:785:G:O6	2.26	0.53
1:RA:1076:C:H2'	1:RA:1077:A:H4'	1.89	0.53
1:RA:1264:G:H3'	1:RA:1265:A:H5''	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1670:C:H2'	1:RA:1671:U:O4'	2.08	0.53
3:RD:101:GLU:OE1	3:RD:103:ARG:NH1	2.42	0.53
13:RR:33:ARG:NH2	26:R5:55:ARG:HG2	2.24	0.53
1:YA:639:U:H2'	1:YA:640:C:H6	1.73	0.53
2:YB:57:A:H1'	6:YG:29:TRP:HB2	1.90	0.53
6:YG:81:LYS:O	6:YG:82:LEU:HB2	2.07	0.53
21:YZ:52:SER:O	21:YZ:54:HIS:N	2.42	0.53
35:QF:18:GLN:O	35:QF:22:GLU:HG2	2.09	0.53
35:QF:21:LEU:O	35:QF:25:ILE:HG12	2.09	0.53
41:XL:82:VAL:HB	41:XL:105:TYR:CD1	2.43	0.53
49:XA:254:G:H2'	49:XA:255:G:C8	2.43	0.53
49:XA:1425:U:H2'	49:XA:1426:C:C6	2.44	0.53
49:XA:1531:A:C5	49:XA:1532:U:C5	2.93	0.53
1:RA:1268:A:OP1	1:RA:2006:C:OP1	2.27	0.53
1:RA:1363:C:O2'	1:RA:1809:A:N3	2.34	0.53
1:RA:1677:A:H2'	1:RA:1678:G:C8	2.44	0.53
1:RA:2318:G:OP2	1:RA:2318:G:N2	2.29	0.53
6:RG:36:LYS:HD2	6:RG:95:ARG:HH12	1.74	0.53
1:YA:704:G:H1'	1:YA:727:A:N6	2.24	0.53
1:YA:1664:A:H61	1:YA:1996:C:H42	1.55	0.53
7:YH:26:VAL:HG13	7:YH:27:LYS:H	1.74	0.53
8:YI:5:LEU:HD11	8:YI:19:VAL:HG12	1.90	0.53
11:YP:62:LEU:HB2	29:Y8:30:ARG:NH1	2.23	0.53
12:YQ:12:GLN:HG2	12:YQ:73:PRO:HD2	1.91	0.53
31:QB:185:ILE:HA	31:QB:199:TYR:O	2.08	0.53
31:QB:235:SER:OG	31:QB:236:TYR:N	2.42	0.53
40:QK:122:LYS:HG3	49:QA:779:C:H5''	1.90	0.53
44:QO:61:GLY:O	44:QO:65:ARG:HG3	2.09	0.53
40:XK:27:ASN:ND2	49:XA:689:C:OP1	2.38	0.53
41:XL:39:VAL:HB	41:XL:55:VAL:HG11	1.91	0.53
47:XR:34:TYR:CD1	47:XR:35:ARG:HD3	2.44	0.53
49:XA:240:C:H2'	49:XA:241:C:H6	1.73	0.53
49:XA:953:G:H5''	49:XA:965:A:H2	1.74	0.53
1:RA:184:C:O2'	1:RA:217:G:N3	2.41	0.53
1:RA:443:A:H3'	5:RF:45:ARG:NH1	2.24	0.53
1:RA:808:G:H5'	1:RA:2502:G:O6	2.08	0.53
1:RA:971:C:H2'	1:RA:972:G:O4'	2.09	0.53
1:RA:1203:G:O2'	1:RA:1242:A:N6	2.41	0.53
1:RA:2394:C:N4	53:QV:78:A:H1'	2.19	0.53
1:RA:2607:G:H2'	1:RA:2608:G:C8	2.44	0.53
1:RA:2849:U:O4	15:RT:23:ARG:NH2	2.39	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:807:U:H2'	1:YA:808:G:H8	1.74	0.53
1:YA:1525:G:H2'	1:YA:1526:G:C8	2.44	0.53
2:YB:33:G:H5'	6:YG:2:PRO:HG3	1.91	0.53
11:YP:47:ASP:OD1	11:YP:50:ARG:NH2	2.42	0.53
11:YP:63:PRO:HD3	29:Y8:13:ARG:HD3	1.91	0.53
23:Y1:78:LYS:NZ	23:Y1:78:LYS:HB3	2.24	0.53
49:QA:22:G:H2'	49:QA:23:C:C6	2.44	0.53
49:QA:255:G:H2'	49:QA:256:U:C6	2.43	0.53
31:XB:70:PHE:O	31:XB:92:TYR:HB2	2.08	0.53
36:XG:26:PHE:O	36:XG:30:ILE:HG13	2.08	0.53
38:XI:2:GLU:N	38:XI:88:TYR:OH	2.41	0.53
41:XL:8:ASN:ND2	49:XA:879:C:OP1	2.42	0.53
44:XO:39:LEU:HB3	44:XO:56:LEU:HD13	1.90	0.53
48:XT:73:HIS:HB3	48:XT:74:LYS:HD3	1.91	0.53
48:XT:75:ASN:CG	49:XA:262:A:H4'	2.29	0.53
49:XA:359:U:H2'	49:XA:360:A:C8	2.43	0.53
49:XA:638:G:H2'	49:XA:639:G:C8	2.44	0.53
49:XA:1049:U:H4'	49:XA:1050:G:H5''	1.91	0.53
49:XA:1300:G:O2'	49:XA:1301:U:O4'	2.23	0.53
1:RA:1024:G:OP2	1:RA:1025:G:O2'	2.26	0.53
2:RB:18:G:H2'	2:RB:19:G:H8	1.73	0.53
4:RE:6:GLY:HA2	4:RE:51:PHE:CZ	2.43	0.53
18:RW:23:LEU:O	18:RW:27:LYS:HD2	2.08	0.53
1:YA:524:U:H2'	1:YA:525:U:C6	2.44	0.53
1:YA:1417:C:H2'	1:YA:1418:G:O4'	2.08	0.53
1:YA:1546:C:H5'	1:YA:1547:C:H5'	1.91	0.53
1:YA:2184:G:H2'	1:YA:2185:C:C6	2.44	0.53
16:YU:92:ARG:HH11	16:YU:94:ASN:HB3	1.74	0.53
34:QE:77:PRO:HD2	34:QE:142:LEU:HD22	1.91	0.53
34:QE:148:VAL:HG13	34:QE:152:ARG:HD2	1.91	0.53
48:QT:22:ARG:HD3	49:QA:324:G:OP1	2.09	0.53
49:QA:80:G:H1	49:QA:89:U:H3	1.57	0.53
49:QA:971:G:H1'	49:QA:1365:G:O2'	2.09	0.53
39:XJ:10:GLY:HA2	39:XJ:94:VAL:HG23	1.89	0.53
48:XT:102:GLY:O	49:XA:191:G:O2'	2.10	0.53
50:XS:19:VAL:HG11	50:XS:44:MET:HG2	1.91	0.53
50:QS:19:VAL:HG11	50:QS:44:MET:HG2	1.91	0.53
1:RA:30:G:H2'	1:RA:31:C:C6	2.44	0.53
1:RA:65:C:H2'	1:RA:66:C:H6	1.74	0.53
1:RA:184:C:H2'	1:RA:185:U:C6	2.43	0.53
1:RA:226:G:O2'	1:RA:228:A:N6	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:306:U:H2'	1:RA:307:G:O4'	2.08	0.53
1:RA:312:G:H4'	1:RA:331:A:C4	2.44	0.53
1:RA:724:U:H2'	1:RA:725:G:O4'	2.08	0.53
1:RA:1443:G:H2'	1:RA:1444:G:C8	2.44	0.53
1:RA:1569:A:H2'	1:RA:1570:A:C8	2.44	0.53
1:RA:2538:C:H2'	1:RA:2539:C:C6	2.44	0.53
1:RA:2615:U:H2'	1:RA:2616:C:C6	2.44	0.53
1:YA:840:C:H2'	1:YA:841:A:C8	2.44	0.53
1:YA:844:C:H2'	1:YA:845:G:O4'	2.08	0.53
1:YA:863:A:H2'	1:YA:864:G:H8	1.74	0.53
1:YA:1127:A:N6	1:YA:2488:A:N3	2.56	0.53
1:YA:1701:A:OP1	1:YA:1763:G:N1	2.35	0.53
1:YA:2776:A:H4'	1:YA:2777:G:O5'	2.09	0.53
2:YB:24:G:O6	2:YB:56:G:O2'	2.26	0.53
2:YB:44:G:H1'	2:YB:47:C:N4	2.23	0.53
9:YN:54:VAL:HB	9:YN:122:VAL:HG22	1.91	0.53
20:YY:42:VAL:HG12	20:YY:65:ALA:HB3	1.91	0.53
37:QH:8:ASP:O	37:QH:11:THR:HG22	2.09	0.53
46:QQ:68:ARG:NH1	49:QA:276:G:O2'	2.42	0.53
49:QA:1342:C:H2'	49:QA:1343:G:C8	2.44	0.53
49:QA:1412:C:H2'	49:QA:1413:A:C8	2.44	0.53
31:XB:69:LEU:HB3	31:XB:71:VAL:HG23	1.89	0.53
31:XB:94:ASN:OD1	31:XB:95:GLN:NE2	2.40	0.53
31:XB:106:LYS:H	31:XB:106:LYS:HD2	1.74	0.53
31:XB:176:GLU:OE2	49:XA:1101:A:N6	2.42	0.53
34:XE:43:LEU:HB2	34:XE:136:MET:HG3	1.91	0.53
39:XJ:39:PRO:HB2	49:XA:1151:A:H1'	1.91	0.53
49:XA:19:C:H2'	49:XA:20:U:C6	2.44	0.53
49:XA:181:G:O2'	49:XA:183:G:O6	2.15	0.53
49:XA:825:G:H2'	49:XA:826:C:H6	1.74	0.53
49:XA:1314:C:H2'	49:XA:1315:U:C6	2.44	0.53
52:QX:4:A:H2'	52:QX:5:A:H8	1.74	0.53
52:QX:12:A:H2'	52:QX:13:A:H5''	1.91	0.53
1:RA:1378:A:OP1	28:R7:10:ARG:NH2	2.42	0.52
1:RA:1518:C:H2'	1:RA:1519:G:H8	1.73	0.52
1:RA:2224:G:OP1	3:RD:268:ARG:HD3	2.10	0.52
7:RH:89:ILE:O	7:RH:89:ILE:HG12	2.08	0.52
7:RH:153:LYS:HB3	7:RH:154:PRO:HD3	1.91	0.52
8:RI:93:THR:O	8:RI:97:ILE:HG12	2.09	0.52
1:YA:270(R):G:H2'	1:YA:270(S):G:H8	1.74	0.52
1:YA:1215:G:H1	1:YA:1234:U:H3	1.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:2011:U:OP2	18:YW:16:LYS:NZ	2.39	0.52
1:YA:2070:G:H2'	1:YA:2071:A:C8	2.44	0.52
1:YA:2649:U:H2'	1:YA:2650:U:H6	1.73	0.52
6:YG:115:ARG:NH2	6:YG:137:GLU:OE1	2.42	0.52
9:YN:96:GLU:HB2	9:YN:122:VAL:HG12	1.90	0.52
12:YQ:66:ILE:HA	12:YQ:104:PHE:HA	1.90	0.52
32:QC:131:ARG:NE	32:QC:166:GLU:OE2	2.39	0.52
33:QD:52:SER:HG	33:QD:54:TYR:HD2	1.58	0.52
41:QL:31:PRO:HG2	41:QL:32:PHE:CE2	2.44	0.52
45:QP:31:LYS:HG3	49:QA:607:A:N3	2.24	0.52
45:QP:38:TYR:CE2	45:QP:50:LYS:HG3	2.44	0.52
45:QP:40:ASP:H	45:QP:48:TRP:HB2	1.74	0.52
49:QA:106:C:H2'	49:QA:107:G:C8	2.44	0.52
31:XB:167:PRO:HD3	31:XB:188:ALA:HA	1.91	0.52
31:XB:189:ASP:O	31:XB:191:ASP:N	2.42	0.52
32:XC:87:LEU:O	32:XC:91:LEU:HB2	2.09	0.52
48:XT:14:LYS:NZ	49:XA:105:G:O6	2.42	0.52
49:XA:1381:U:H2'	49:XA:1382:C:C5	2.45	0.52
1:RA:671:C:H2'	1:RA:672:C:C6	2.44	0.52
1:RA:1204:A:H1'	1:RA:1206:G:C8	2.45	0.52
1:RA:1405:U:H2'	1:RA:1406:U:H6	1.74	0.52
1:RA:1653:G:O6	13:RR:9:LYS:HB3	2.09	0.52
1:RA:2024:G:OP2	1:RA:2034:U:H5'	2.08	0.52
7:RH:90:LYS:O	7:RH:160:LYS:HA	2.09	0.52
14:RS:56:LEU:HD23	14:RS:58:LEU:HD22	1.92	0.52
16:RU:96:ALA:C	16:RU:98:LEU:H	2.13	0.52
1:YA:614:U:O4	5:YF:174:VAL:HG23	2.09	0.52
4:YE:70:ALA:O	4:YE:72:VAL:N	2.42	0.52
31:QB:139:LYS:HA	31:QB:142:LEU:HD12	1.91	0.52
35:QF:70:ASP:OD2	35:QF:71:ARG:N	2.42	0.52
37:QH:127:LEU:HB3	37:QH:129:VAL:HG22	1.90	0.52
41:QL:112:ASP:OD1	41:QL:112:ASP:N	2.42	0.52
49:QA:327:A:O2'	49:QA:328:C:O4'	2.23	0.52
31:XB:96:ARG:HH12	31:XB:147:LYS:NZ	2.07	0.52
31:XB:179:LYS:NZ	49:XA:1075:C:H5'	2.25	0.52
34:XE:44:GLY:HA3	34:XE:58:ALA:O	2.08	0.52
42:XM:95:GLY:HA2	42:XM:110:ARG:NH1	2.24	0.52
49:XA:337:C:H2'	49:XA:338:A:H8	1.73	0.52
1:RA:356:G:H2'	1:RA:357:A:C8	2.45	0.52
1:RA:965:C:H2'	1:RA:966:G:H8	1.73	0.52
1:RA:1604:C:H2'	1:RA:1605:C:H6	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2023:G:H5'	1:RA:2617:C:H4'	1.91	0.52
1:RA:2605:U:H2'	1:RA:2606:C:C6	2.45	0.52
14:RS:106:ARG:HA	14:RS:110:LEU:HD21	1.90	0.52
1:YA:443:A:H3'	5:YF:45:ARG:HH12	1.73	0.52
1:YA:1464:C:HO2'	1:YA:1528:A:H8	1.57	0.52
1:YA:2701:C:H3'	1:YA:2702:U:C5'	2.32	0.52
27:Y6:40:CYS:HB2	27:Y6:45:LYS:HD3	1.91	0.52
31:QB:235:SER:O	31:QB:237:ALA:N	2.43	0.52
37:QH:10:LEU:HD21	37:QH:85:ARG:HD2	1.91	0.52
42:QM:108:ARG:HH21	49:QA:1228:C:P	2.32	0.52
44:QO:43:LEU:O	44:QO:47:LYS:HB3	2.09	0.52
49:QA:1013:G:N2	49:QA:1015:A:H3'	2.23	0.52
49:QA:1321:C:H5''	49:QA:1322:C:H5''	1.92	0.52
36:XG:80:VAL:HG21	36:XG:85:TYR:CE2	2.44	0.52
37:XH:83:ILE:HG12	37:XH:84:ARG:N	2.23	0.52
45:XP:72:ARG:HD2	49:XA:452:A:N3	2.25	0.52
49:XA:20:U:H2'	49:XA:21:G:O4'	2.10	0.52
49:XA:987:G:HO2'	50:XS:34:TRP:HH2	1.57	0.52
49:XA:1206:G:H2'	49:XA:1207:G:H8	1.74	0.52
1:RA:240:G:O2'	1:RA:257:A:N6	2.42	0.52
1:RA:565:C:H2'	1:RA:566:U:C6	2.45	0.52
1:RA:608:A:H2'	1:RA:609:A:C8	2.44	0.52
1:RA:755:C:H2'	1:RA:756:C:C6	2.45	0.52
1:RA:851:U:H2'	1:RA:852:G:H8	1.74	0.52
1:RA:1101:U:H2'	1:RA:1102:C:C6	2.44	0.52
1:RA:2292:C:OP2	14:RS:17:ARG:NH2	2.42	0.52
2:RB:22:U:H3	2:RB:61:G:H1	1.57	0.52
12:RQ:43:THR:HA	12:RQ:94:VAL:HG12	1.92	0.52
22:R0:27:GLU:HG3	22:R0:68:GLU:HA	1.92	0.52
1:YA:39:C:H2'	1:YA:40:C:C6	2.44	0.52
1:YA:242:G:H4'	1:YA:243:U:O5'	2.09	0.52
1:YA:517:C:OP1	26:Y5:16:ARG:NH2	2.42	0.52
1:YA:990:A:C6	1:YA:1186:G:H1'	2.44	0.52
1:YA:1341:U:O2'	19:YX:55:ASN:ND2	2.43	0.52
2:YB:15:A:H5'	2:YB:16:G:C8	2.45	0.52
5:YF:103:LYS:HA	5:YF:106:ARG:HG3	1.91	0.52
8:YI:97:ILE:HD12	8:YI:140:LEU:HD11	1.91	0.52
38:QI:123:PRO:HA	49:QA:1233:G:OP1	2.08	0.52
38:QI:125:TYR:HB3	49:QA:1342:C:H4'	1.92	0.52
39:QJ:5:ARG:NH1	49:QA:1125:U:O4	2.43	0.52
41:QL:33:ARG:HG2	41:QL:60:LEU:HB3	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:147:G:H2'	49:QA:148:G:C8	2.44	0.52
49:QA:828:A:H2'	49:QA:829:G:O4'	2.09	0.52
49:QA:973:G:H3'	49:QA:974:A:H5''	1.89	0.52
49:XA:66:G:H8	49:XA:66:G:O5'	1.93	0.52
49:XA:240:C:H2'	49:XA:241:C:C6	2.44	0.52
49:XA:824:C:H2'	49:XA:825:G:C8	2.43	0.52
1:RA:297:C:H2'	1:RA:298:G:O4'	2.10	0.52
1:RA:521:G:H2'	1:RA:522:G:H8	1.73	0.52
1:YA:263:C:H2'	1:YA:264:C:O4'	2.10	0.52
1:YA:330:A:H2	1:YA:1210:A:HO2'	1.58	0.52
2:YB:28:C:H2'	2:YB:29:A:C8	2.45	0.52
2:YB:37:C:N3	2:YB:48:A:O2'	2.40	0.52
32:QC:22:TRP:CG	32:QC:59:ARG:HB2	2.45	0.52
33:QD:166:LYS:HE3	33:QD:178:VAL:HG11	1.91	0.52
34:QE:15:ARG:HG3	34:QE:28:PHE:HE2	1.74	0.52
45:QP:27:LYS:HG3	45:QP:29:ASP:O	2.08	0.52
49:QA:392:G:H2'	49:QA:393:A:C8	2.41	0.52
49:QA:834:C:H2'	49:QA:835:U:C6	2.44	0.52
49:QA:1317:C:O2	50:QS:37:ARG:NH2	2.42	0.52
31:XB:172:ILE:HA	31:XB:175:ARG:NH1	2.24	0.52
46:XQ:92:ARG:HA	46:XQ:95:TYR:HD2	1.73	0.52
49:XA:1427:U:H2'	49:XA:1428:A:C8	2.43	0.52
1:RA:69:C:H2'	1:RA:70:G:C8	2.45	0.52
1:RA:517:C:OP1	26:R5:16:ARG:NH2	2.43	0.52
1:RA:1228:G:OP2	16:RU:16:LYS:NZ	2.40	0.52
9:RN:6:PRO:HG3	9:RN:41:ASP:HB2	1.90	0.52
23:R1:53:VAL:HG22	23:R1:74:VAL:HG13	1.91	0.52
1:YA:1591:G:H2'	1:YA:1592:C:C6	2.44	0.52
1:YA:2258:C:O2'	1:YA:2427:C:OP2	2.26	0.52
1:YA:2549:G:H2'	1:YA:2550:G:H8	1.74	0.52
1:YA:2681:C:H1'	1:YA:2682:U:OP2	2.09	0.52
33:QD:63:LYS:HA	33:QD:66:ARG:HD2	1.92	0.52
33:QD:115:ARG:NE	49:QA:408:A:P	2.79	0.52
31:XB:24:TRP:HB3	31:XB:40:HIS:CE1	2.45	0.52
31:XB:80:ILE:HG23	31:XB:212:GLN:HG2	1.91	0.52
31:XB:139:LYS:HA	31:XB:142:LEU:HD12	1.91	0.52
49:XA:59:A:N6	49:XA:331:G:H1'	2.24	0.52
49:XA:113:G:H2'	49:XA:114:U:C6	2.45	0.52
49:XA:777:A:H2'	49:XA:778:G:H8	1.74	0.52
49:XA:958:A:N3	49:XA:985:C:O2'	2.41	0.52
52:XX:5:A:H2'	52:XX:6:G:C8	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:XX:6:G:H2'	52:XX:7:G:C8	2.44	0.52
1:RA:622:G:OP2	11:RP:108:LYS:NZ	2.27	0.52
1:RA:674:G:C1'	5:RF:74:ARG:HD3	2.36	0.52
1:RA:686:G:N2	1:RA:788:A:H61	2.07	0.52
1:RA:1449:A:C4	1:RA:1529:A:H2	2.27	0.52
1:RA:2255:G:H21	22:R0:9:SER:HB3	1.74	0.52
1:RA:2737:G:H2'	1:RA:2738:A:C8	2.44	0.52
4:RE:16:ARG:NH2	4:RE:171:GLU:OE2	2.43	0.52
1:YA:358:U:H2'	1:YA:359:A:H8	1.74	0.52
1:YA:1297:C:H2'	1:YA:1298:C:H6	1.75	0.52
1:YA:1550:C:H2'	1:YA:1551:C:H6	1.75	0.52
1:YA:1843:C:H2'	1:YA:1844:C:C6	2.45	0.52
1:YA:2075:U:H4'	1:YA:2596:U:O2	2.10	0.52
11:YP:52:GLU:O	11:YP:55:ARG:HG2	2.10	0.52
14:YS:83:LYS:C	14:YS:109:GLY:HA3	2.30	0.52
15:YT:112:ARG:HA	15:YT:115:ARG:HH11	1.73	0.52
16:YU:17:ILE:HG23	16:YU:39:LEU:HD12	1.91	0.52
17:YV:21:ARG:HD2	17:YV:91:TYR:CD1	2.44	0.52
18:YW:110:LYS:HG3	18:YW:111:HIS:ND1	2.25	0.52
21:YZ:80:ARG:HH21	21:YZ:82:ARG:HH12	1.56	0.52
24:Y2:35:LEU:HD12	24:Y2:53:LEU:HD12	1.90	0.52
49:QA:583:A:H2'	49:QA:584:G:O4'	2.09	0.52
49:QA:1315:U:H2'	49:QA:1316:G:O4'	2.10	0.52
32:XC:177:THR:HG22	32:XC:178:LEU:H	1.74	0.52
38:XI:120:ARG:O	49:XA:1343:G:O2'	2.22	0.52
49:XA:377:G:H2'	49:XA:378:G:H8	1.74	0.52
49:XA:1254:C:H2'	49:XA:1255:G:H8	1.75	0.52
52:QX:4:A:H2'	52:QX:5:A:C8	2.45	0.52
1:RA:30:G:H2'	1:RA:31:C:H6	1.75	0.52
1:RA:686:G:H21	1:RA:788:A:H61	1.58	0.52
13:RR:45:ARG:HA	13:RR:95:THR:HG21	1.91	0.52
1:YA:576:U:O4	1:YA:577:G:O6	2.28	0.52
1:YA:1165:U:H2'	1:YA:1166:C:H6	1.74	0.52
32:QC:136:GLN:HA	32:QC:139:GLN:HB3	1.91	0.52
37:QH:12:ARG:HD2	37:QH:26:VAL:HG23	1.92	0.52
44:QO:29:VAL:O	44:QO:63:ARG:NH1	2.43	0.52
48:QT:23:ARG:HA	48:QT:26:ASN:HB2	1.91	0.52
38:XI:48:GLU:O	38:XI:52:ALA:N	2.43	0.52
41:XL:71:PRO:HB3	41:XL:120:TYR:CE2	2.45	0.52
45:XP:53:VAL:HG12	45:XP:79:VAL:HG22	1.91	0.52
49:XA:31:G:N1	49:XA:48:C:H5''	2.25	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:392:G:O2'	49:XA:483:C:O2'	2.14	0.52
49:XA:721:G:H5'	49:XA:722:A:C8	2.45	0.52
49:XA:1237:C:O2'	49:XA:1300:G:N2	2.43	0.52
49:XA:1437:C:H2'	49:XA:1438:G:H8	1.74	0.52
1:RA:205:G:N2	1:RA:206:U:O4	2.35	0.52
1:RA:263:C:H1'	1:RA:430:G:H1'	1.92	0.52
1:RA:414:C:H2'	1:RA:415:A:H8	1.75	0.52
1:RA:1338:G:N7	19:RX:62:LYS:NZ	2.56	0.52
1:RA:1354:A:H3'	1:RA:1355:G:H8	1.74	0.52
1:RA:1709:U:H2'	1:RA:1710:C:C6	2.45	0.52
1:RA:1930:G:H2'	1:RA:1968:G:N1	2.25	0.52
1:RA:2246:G:H2'	1:RA:2247:A:H8	1.75	0.52
9:RN:35:ARG:HB2	9:RN:42:TRP:CH2	2.44	0.52
1:YA:18:C:O2'	1:YA:553:U:OP1	2.27	0.52
1:YA:216:A:H2'	1:YA:217:G:C8	2.44	0.52
1:YA:582:G:H2'	1:YA:583:G:C8	2.43	0.52
1:YA:597:U:H2'	1:YA:598:G:H8	1.73	0.52
1:YA:1607:C:N4	1:YA:1622:G:OP2	2.37	0.52
1:YA:1853:A:H2'	1:YA:1854:A:H8	1.74	0.52
2:YB:32:C:C2	2:YB:51:G:N2	2.78	0.52
2:YB:48:A:H4'	14:YS:95:HIS:HD2	1.75	0.52
13:YR:24:GLN:HE21	13:YR:44:LEU:HG	1.75	0.52
23:Y1:73:LEU:HD13	23:Y1:90:ILE:HG22	1.92	0.52
31:QB:189:ASP:O	31:QB:191:ASP:N	2.43	0.52
33:QD:101:LEU:HD21	33:QD:128:VAL:HG21	1.92	0.52
45:QP:35:LYS:O	45:QP:36:ILE:HG12	2.10	0.52
49:QA:610:G:C2	49:QA:611:A:C8	2.98	0.52
49:QA:767:A:H2'	49:QA:768:A:H8	1.75	0.52
49:QA:1039:C:H2'	49:QA:1040:U:C6	2.45	0.52
49:QA:1219:U:H2'	49:QA:1220:G:C8	2.45	0.52
49:QA:1380:U:H4'	49:QA:1381:U:H5'	1.92	0.52
31:XB:94:ASN:CG	31:XB:95:GLN:HE21	2.13	0.52
33:XD:165:MET:O	33:XD:167:GLY:N	2.42	0.52
40:XK:32:ILE:HB	40:XK:40:ILE:O	2.09	0.52
49:XA:186(G):C:H2'	49:XA:186(H):U:O4'	2.10	0.52
49:XA:613:C:H2'	49:XA:614:A:C8	2.45	0.52
1:RA:227:A:H1'	1:RA:228:A:OP2	2.10	0.52
1:RA:730:C:H2'	1:RA:731:C:H6	1.75	0.52
1:RA:2053:G:H2'	1:RA:2054:A:C8	2.45	0.52
1:RA:2528:U:OP1	30:R9:30:PRO:HG2	2.09	0.52
4:RE:10:GLY:HA3	15:RT:8:LYS:HD2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:RH:132:ARG:HH11	7:RH:132:ARG:HB2	1.74	0.52
21:RZ:104:PHE:HD2	21:RZ:117:LEU:HD21	1.75	0.52
1:YA:943:U:OP2	11:YP:36:LYS:NZ	2.28	0.52
1:YA:1265:A:H8	1:YA:1265:A:OP1	1.92	0.52
1:YA:1426:G:OP2	1:YA:1427:A:O2'	2.25	0.52
1:YA:1582:C:H2'	1:YA:1583:A:C8	2.45	0.52
1:YA:2596:U:H2'	1:YA:2597:G:O4'	2.10	0.52
1:YA:2633:G:H1'	4:YE:62:PRO:HG2	1.91	0.52
10:YO:63:VAL:HG12	10:YO:106:LEU:HD11	1.91	0.52
13:YR:107:ASP:OD1	13:YR:108:GLY:N	2.43	0.52
17:YV:34:GLU:O	17:YV:36:PRO:HD3	2.10	0.52
21:YZ:158:PRO:O	21:YZ:160:GLY:N	2.43	0.52
39:QJ:6:ILE:HG23	39:QJ:72:VAL:HB	1.91	0.52
44:QO:88:ARG:HA	44:QO:88:ARG:NE	2.25	0.52
49:QA:728:A:H2'	49:QA:729:A:H8	1.74	0.52
49:QA:1534:A:O2'	52:QX:12:A:H2	1.92	0.52
33:XD:98:GLU:O	33:XD:104:VAL:HG23	2.09	0.52
36:XG:95:ARG:O	36:XG:99:LEU:HG	2.09	0.52
38:XI:14:VAL:HG21	49:XA:1148:U:O3'	2.09	0.52
38:XI:85:LEU:HB3	38:XI:92:TYR:CD1	2.45	0.52
40:XK:71:LYS:H	40:XK:71:LYS:HD3	1.75	0.52
49:XA:974:A:H4'	49:XA:975:A:H3'	1.92	0.52
49:XA:1264:C:H2'	49:XA:1265:G:C8	2.45	0.52
1:RA:1077:A:H3'	1:RA:1078:U:O4'	2.10	0.51
1:RA:1127:A:N6	1:RA:2488:A:N3	2.58	0.51
1:RA:1598:C:H5'	19:RX:36:LYS:HB2	1.91	0.51
1:RA:1791:A:H3'	1:RA:1792:G:H8	1.75	0.51
8:RI:69:LYS:HG3	8:RI:136:VAL:HB	1.91	0.51
9:RN:7:LYS:H	9:RN:7:LYS:HD2	1.75	0.51
21:RZ:118:GLN:N	21:RZ:173:ALA:O	2.39	0.51
27:R6:7:ILE:HG13	27:R6:8:LYS:H	1.75	0.51
1:YA:262:A:N3	1:YA:430:G:O2'	2.35	0.51
1:YA:1103:A:H5'	1:YA:1104:C:C5	2.45	0.51
1:YA:1769:G:H2'	1:YA:1770:G:H8	1.76	0.51
8:YI:12:LEU:HG	8:YI:19:VAL:HG11	1.91	0.51
27:Y6:26:ASN:ND2	27:Y6:35:GLU:OE2	2.43	0.51
31:QB:85:ALA:C	31:QB:87:ARG:H	2.12	0.51
38:QI:93:ARG:HH12	38:QI:97:LYS:HB2	1.74	0.51
49:QA:745:C:H2'	49:QA:746:A:C8	2.45	0.51
49:QA:1488:G:H2'	49:QA:1489:G:C8	2.45	0.51
32:XC:180:ALA:HB1	32:XC:203:PHE:CE1	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:XG:86:GLN:O	36:XG:88:PRO:HD3	2.10	0.51
45:XP:29:ASP:O	49:XA:309:G:H5''	2.11	0.51
49:XA:1241:G:H2'	49:XA:1242:C:C6	2.45	0.51
51:Y4:37:SER:HB3	51:Y4:42:PHE:HB3	1.92	0.51
1:RA:590:A:H2'	1:RA:591:C:C6	2.45	0.51
1:RA:2537:U:H2'	1:RA:2538:C:O4'	2.10	0.51
3:RD:44:ASN:HD22	3:RD:44:ASN:N	2.07	0.51
3:RD:133:LEU:HB3	3:RD:173:VAL:HG11	1.92	0.51
29:R8:54:GLU:HG2	29:R8:57:ARG:NH2	2.25	0.51
1:YA:1333:C:H2'	1:YA:1334:G:H8	1.76	0.51
1:YA:1518:C:H2'	1:YA:1519:G:C8	2.44	0.51
1:YA:2047:U:O2'	1:YA:2823:A:N1	2.41	0.51
1:YA:2636:U:OP1	4:YE:79:ARG:HA	2.09	0.51
3:YD:43:ARG:HB3	3:YD:54:ARG:HB2	1.90	0.51
6:YG:11:TYR:HA	6:YG:15:VAL:HB	1.91	0.51
32:QC:188:LEU:HD22	32:QC:188:LEU:H	1.75	0.51
36:QG:4:ARG:HG3	49:QA:932:C:OP1	2.10	0.51
49:QA:45:U:H2'	49:QA:46:G:C8	2.45	0.51
49:QA:294:U:H2'	49:QA:295:C:C6	2.46	0.51
49:QA:1320:C:H2'	49:QA:1321:C:C5	2.44	0.51
36:XG:76:ARG:O	36:XG:86:GLN:HA	2.10	0.51
37:XH:69:ARG:HH22	37:XH:75:ARG:HB3	1.75	0.51
37:XH:115:SER:HA	49:XA:642:A:N7	2.25	0.51
49:XA:559:A:H4'	49:XA:560:U:H3'	1.92	0.51
49:XA:712:A:H2'	49:XA:713:G:C8	2.45	0.51
49:XA:781:A:OP2	49:XA:800:G:N2	2.42	0.51
49:XA:920:U:H2'	49:XA:921:U:C6	2.45	0.51
1:RA:414:C:H2'	1:RA:415:A:C8	2.45	0.51
1:RA:1518:C:H2'	1:RA:1519:G:C8	2.45	0.51
1:RA:1590:U:H2'	1:RA:1591:G:H8	1.75	0.51
1:RA:1752:C:H2'	1:RA:1753:G:C8	2.44	0.51
1:RA:2022:U:OP2	26:R5:15:ARG:NH2	2.43	0.51
1:RA:2315:G:H2'	1:RA:2316:C:C6	2.45	0.51
11:RP:26:GLY:O	11:RP:28:GLY:N	2.43	0.51
20:RY:84:ARG:O	20:RY:95:LYS:HD3	2.11	0.51
1:YA:443:A:H3'	5:YF:45:ARG:NH1	2.25	0.51
1:YA:753:C:H2'	1:YA:754:C:H6	1.75	0.51
1:YA:922:U:H2'	1:YA:923:C:C6	2.45	0.51
1:YA:1031:G:O2'	30:Y9:7:VAL:O	2.26	0.51
1:YA:1040:C:H2'	1:YA:1041:C:H6	1.75	0.51
1:YA:1107:G:H2'	1:YA:1108:U:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:1636:C:H2'	1:YA:1637:A:C8	2.45	0.51
1:YA:1638:C:O3'	1:YA:2709:G:N2	2.43	0.51
5:YF:127:GLU:OE1	5:YF:196:LEU:HB2	2.10	0.51
6:YG:135:LEU:HD23	6:YG:140:ILE:HD11	1.92	0.51
33:QD:25:ARG:O	33:QD:26:CYS:SG	2.68	0.51
34:QE:79:GLU:OE2	37:QH:105:ARG:HB2	2.10	0.51
41:QL:42:THR:HG23	41:QL:43:VAL:H	1.76	0.51
49:QA:404:U:H2'	49:QA:405:U:H6	1.74	0.51
49:QA:624:C:H2'	49:QA:625:G:H8	1.75	0.51
49:QA:1431:C:H2'	49:QA:1432:G:O4'	2.10	0.51
31:XB:102:LEU:HG	31:XB:176:GLU:HB3	1.92	0.51
33:XD:22:LYS:HD2	33:XD:25:ARG:HH21	1.76	0.51
37:XH:56:LYS:NZ	49:XA:653:A:O4'	2.33	0.51
38:XI:120:ARG:HB3	49:XA:1344:C:H4'	1.92	0.51
41:XL:28:LYS:O	41:XL:28:LYS:HD3	2.11	0.51
41:XL:109:GLY:HA3	41:XL:120:TYR:C	2.31	0.51
45:XP:14:ASN:HA	45:XP:42:ARG:NH2	2.25	0.51
49:XA:68(F):C:H2'	49:XA:68(G):G:H8	1.75	0.51
1:RA:413:C:H2'	1:RA:414:C:C6	2.45	0.51
1:RA:795:C:H2'	1:RA:796:C:C6	2.45	0.51
1:RA:1477:A:H2'	1:RA:1478:G:O4'	2.11	0.51
1:RA:2086:U:H2'	1:RA:2087:G:C8	2.45	0.51
9:RN:30:ILE:HG23	9:RN:52:VAL:HG11	1.91	0.51
19:RX:26:TYR:HB3	19:RX:92:LEU:HD12	1.93	0.51
19:RX:36:LYS:HE3	19:RX:54:VAL:O	2.11	0.51
25:R3:10:LYS:NZ	25:R3:15:TYR:HH	2.09	0.51
1:YA:37:C:H2'	1:YA:38:A:C8	2.45	0.51
1:YA:412:A:N7	1:YA:2411:A:H2	2.08	0.51
1:YA:467:G:OP1	28:Y7:33:ARG:NH1	2.42	0.51
1:YA:719:C:H2'	1:YA:720:C:C6	2.46	0.51
1:YA:1278:A:H2'	1:YA:1279:G:H8	1.76	0.51
1:YA:1726:G:H2'	1:YA:1727:U:C6	2.45	0.51
4:YE:4:ILE:HD12	4:YE:28:ALA:HB1	1.92	0.51
6:YG:142:PRO:HB2	51:Y4:31:ILE:HG21	1.93	0.51
15:YT:1:MET:O	15:YT:3:ARG:N	2.40	0.51
15:YT:111:ARG:C	15:YT:113:LYS:H	2.14	0.51
21:YZ:5:LEU:HD21	21:YZ:44:PHE:HA	1.93	0.51
33:QD:13:ARG:NH1	33:QD:36:ARG:HE	2.09	0.51
39:QJ:5:ARG:NH1	39:QJ:73:ASP:OD2	2.43	0.51
39:QJ:53:PRO:HG3	49:QA:1058:G:N2	2.25	0.51
39:QJ:99:LYS:HD3	39:QJ:100:THR:N	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:QR:26:LEU:HD11	47:QR:39:VAL:HG22	1.91	0.51
49:QA:335:C:H2'	49:QA:336:C:C6	2.45	0.51
49:QA:954:G:H21	49:QA:1227:A:H62	1.57	0.51
37:XH:129:VAL:HA	49:XA:600:C:H4'	1.93	0.51
49:XA:435:C:H2'	49:XA:436:C:H6	1.74	0.51
49:XA:954:G:H2'	49:XA:955:U:H6	1.76	0.51
1:RA:824:A:H1'	1:RA:2358:G:N7	2.26	0.51
1:RA:1364:G:N2	1:RA:1367:A:OP2	2.27	0.51
1:RA:2314:C:H2'	1:RA:2315:G:H8	1.76	0.51
1:YA:74:A:H5'	1:YA:75:G:O4'	2.11	0.51
1:YA:636:G:OP1	11:YP:132:LYS:HB2	2.11	0.51
1:YA:971:C:OP2	1:YA:974:G:N7	2.44	0.51
1:YA:1149:G:H2'	1:YA:1150:C:C6	2.45	0.51
1:YA:1356:G:H2'	1:YA:1357:U:C6	2.44	0.51
1:YA:1400:G:H2'	1:YA:1401:G:C8	2.46	0.51
4:YE:111:ARG:HA	13:YR:1:MET:HG2	1.91	0.51
8:YI:67:ARG:HH21	8:YI:68:LEU:HB2	1.76	0.51
23:Y1:8:SER:HB3	23:Y1:66:HIS:CD2	2.46	0.51
32:QC:30:ARG:O	32:QC:34:LEU:HB2	2.11	0.51
41:QL:22:SER:OG	49:QA:554:C:OP1	2.22	0.51
49:QA:147:G:H2'	49:QA:148:G:H8	1.75	0.51
49:QA:340:U:H2'	49:QA:341:C:C6	2.46	0.51
49:QA:695:A:H2'	49:QA:696:A:C8	2.45	0.51
49:QA:737:A:H2'	49:QA:738:C:C6	2.45	0.51
43:XN:32:SER:N	49:XA:976:G:OP2	2.40	0.51
46:XQ:62:SER:HA	49:XA:186(I):U:O4	2.11	0.51
48:XT:93:GLU:HA	48:XT:96:GLY:O	2.11	0.51
52:QX:5:A:H2'	52:QX:6:G:C8	2.45	0.51
52:QX:13:A:C2	52:QX:14:A:H2	2.24	0.51
1:RA:623:G:H2'	1:RA:624:C:C6	2.46	0.51
1:RA:858:U:O2	1:RA:2268:A:H2'	2.10	0.51
1:RA:1497:U:H5''	1:RA:1498:C:H5	1.75	0.51
1:RA:1527:G:H2'	1:RA:1543:A:C2	2.46	0.51
1:RA:1541:U:H2'	1:RA:1542:G:C8	2.45	0.51
1:RA:1637:A:H4'	1:RA:2711:A:O2'	2.11	0.51
1:RA:1694:C:H4'	1:RA:1695:G:O5'	2.10	0.51
6:RG:60:LEU:O	6:RG:63:ILE:HG12	2.10	0.51
7:RH:88:LEU:HD11	7:RH:165:ALA:HB2	1.91	0.51
1:YA:1477:A:H2'	1:YA:1478:G:O4'	2.11	0.51
1:YA:2566:A:H4'	1:YA:2567:G:O5'	2.11	0.51
20:YY:81:LYS:HZ3	20:YY:98:VAL:HB	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:Y6:28:ARG:HB3	27:Y6:30:THR:H	1.76	0.51
41:QL:84:LEU:HD22	41:QL:101:VAL:HG21	1.93	0.51
49:QA:708:C:H2'	49:QA:709:G:H8	1.76	0.51
49:QA:767:A:H2'	49:QA:768:A:C8	2.46	0.51
32:XC:126:ARG:O	32:XC:127:ARG:HB2	2.09	0.51
42:XM:31:LYS:HA	42:XM:34:LEU:HB2	1.92	0.51
49:XA:770:C:O2'	49:XA:899:C:N3	2.44	0.51
49:XA:848:C:H2'	49:XA:849:C:C6	2.45	0.51
49:XA:1532:U:O2	52:XX:13:A:N7	2.43	0.51
49:XA:1533:C:N4	52:XX:12:A:C2	2.79	0.51
52:XX:12:A:H2'	52:XX:13:A:H5''	1.91	0.51
1:RA:2060:A:P	5:RF:69:HIS:H	2.34	0.51
1:RA:2126:A:H2	1:RA:2162:G:H21	1.58	0.51
2:RB:32:C:C2	2:RB:51:G:N2	2.78	0.51
6:RG:143:GLU:HG2	51:R4:27:THR:HG23	1.92	0.51
12:RQ:30:GLY:N	12:RQ:105:GLU:OE2	2.44	0.51
21:RZ:97:GLU:HB3	21:RZ:125:LEU:HD11	1.93	0.51
1:YA:270(B):A:H8	1:YA:270(C):C:C6	2.29	0.51
1:YA:286:C:H2'	1:YA:287:C:C6	2.46	0.51
1:YA:664:C:H2'	1:YA:665:C:C6	2.46	0.51
1:YA:2689:U:H4'	1:YA:2690:C:O5'	2.10	0.51
34:QE:34:VAL:H	34:QE:62:ALA:HB1	1.76	0.51
38:QI:23:ASN:O	38:QI:57:GLY:HA2	2.11	0.51
42:QM:99:ARG:NE	49:QA:1308:U:OP2	2.40	0.51
44:QO:81:LEU:HD11	44:QO:85:LEU:HD12	1.93	0.51
49:QA:1118:C:H2'	49:QA:1119:C:H6	1.74	0.51
49:QA:1217:C:H2'	49:QA:1218:C:C6	2.45	0.51
33:XD:13:ARG:NH2	33:XD:32:ALA:O	2.40	0.51
37:XH:31:PHE:HZ	49:XA:643:C:H5'	1.74	0.51
39:XJ:6:ILE:HG23	39:XJ:72:VAL:HB	1.93	0.51
49:XA:986:A:H2'	49:XA:987:G:C8	2.46	0.51
49:XA:1327:C:H2'	49:XA:1328:C:C6	2.46	0.51
52:QX:6:G:H2'	52:QX:7:G:C8	2.46	0.51
1:RA:94:G:H21	24:R2:47:ASN:HD22	1.57	0.51
1:RA:597:U:H2'	1:RA:598:G:H8	1.75	0.51
1:RA:1882:C:H3'	1:RA:1883:G:H8	1.76	0.51
1:RA:2186:G:H2'	1:RA:2187:G:C8	2.46	0.51
1:RA:2846:G:H2'	1:RA:2847:U:C6	2.45	0.51
15:RT:105:LEU:HD12	15:RT:109:GLU:HB2	1.91	0.51
20:RY:97:ARG:HE	20:RY:98:VAL:HB	1.75	0.51
1:YA:679:C:H2'	1:YA:680:G:H8	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:949:C:H2'	1:YA:950:G:H8	1.74	0.51
1:YA:1398:C:OP1	19:YX:53:LYS:NZ	2.40	0.51
1:YA:1600:C:OP1	19:YX:58:HIS:NE2	2.33	0.51
1:YA:1812:A:H2'	1:YA:1813:G:H8	1.76	0.51
1:YA:2103:C:H2'	1:YA:2104:G:H8	1.75	0.51
20:YY:95:LYS:HA	20:YY:101:LYS:H	1.76	0.51
21:YZ:7:ALA:O	21:YZ:62:PRO:HD3	2.11	0.51
29:Y8:58:ILE:HD13	29:Y8:61:LEU:HD21	1.93	0.51
37:QH:53:VAL:HB	37:QH:58:TYR:CD1	2.46	0.51
40:QK:61:ALA:HB1	40:QK:94:ALA:HB2	1.93	0.51
43:QN:5:ALA:HB1	49:QA:1217:C:OP1	2.10	0.51
47:QR:44:LEU:HD23	47:QR:48:GLY:HA2	1.92	0.51
49:QA:64:G:H4'	49:QA:65:U:O5'	2.10	0.51
49:QA:66:G:H8	49:QA:66:G:O5'	1.94	0.51
49:QA:179:A:N6	49:QA:195:A:H5'	2.26	0.51
49:QA:1128:C:O2	49:QA:1144:G:N2	2.44	0.51
35:XF:12:PRO:HD3	35:XF:57:GLN:O	2.10	0.51
37:XH:107:LEU:H	37:XH:107:LEU:HD23	1.74	0.51
38:XI:118:LYS:HB2	49:XA:1349:A:OP1	2.11	0.51
1:RA:966:G:H4'	1:RA:2271:G:H22	1.74	0.51
1:RA:1139:G:O2'	1:RA:1143:A:N1	2.42	0.51
1:RA:1380:G:H2'	1:RA:1381:G:H8	1.76	0.51
1:RA:1842:G:O2'	3:RD:253:GLN:OE1	2.28	0.51
1:RA:2448:A:HO2'	1:RA:2449:U:H5	1.58	0.51
3:RD:70:TRP:CH2	3:RD:150:LYS:HA	2.45	0.51
6:RG:115:ARG:NH2	6:RG:137:GLU:OE1	2.44	0.51
13:RR:96:ARG:O	13:RR:114:VAL:HA	2.11	0.51
1:YA:608:A:H2'	1:YA:609:A:C8	2.46	0.51
1:YA:639:U:H2'	1:YA:640:C:C6	2.46	0.51
1:YA:1336:A:H2'	1:YA:1337:G:H8	1.74	0.51
1:YA:1538:G:H2'	1:YA:1539:G:H8	1.76	0.51
1:YA:2015:A:N3	26:Y5:2:ALA:N	2.59	0.51
36:QG:71:PRO:O	36:QG:96:GLN:HG2	2.11	0.51
48:QT:21:LYS:NZ	49:QA:104:G:OP2	2.44	0.51
49:QA:318:G:H2'	49:QA:319:G:H8	1.76	0.51
49:QA:720:C:H3'	49:QA:721:G:H2'	1.92	0.51
49:QA:1020:U:H2'	49:QA:1021:G:H8	1.76	0.51
49:QA:1034:G:H2'	49:QA:1035:A:C8	2.45	0.51
39:XJ:59:SER:OG	49:XA:1061:G:H5'	2.10	0.51
49:XA:1384:C:H2'	49:XA:1385:G:H8	1.76	0.51
1:RA:730:C:H2'	1:RA:731:C:C6	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1057:A:H62	1:RA:1087:G:P	2.34	0.51
1:RA:2105:C:H2'	1:RA:2106:G:C8	2.46	0.51
3:RD:35:LYS:HZ1	3:RD:104:TYR:HB2	1.76	0.51
6:RG:106:LEU:HD12	6:RG:110:ALA:HB3	1.92	0.51
27:R6:15:GLU:CD	27:R6:41:PRO:HB3	2.30	0.51
1:YA:2547:U:H2'	1:YA:2548:G:C8	2.46	0.51
10:YO:13:ASN:ND2	10:YO:96:THR:O	2.44	0.51
31:QB:15:VAL:HG23	31:QB:16:HIS:CE1	2.46	0.51
42:QM:83:ASP:OD2	42:QM:84:ILE:N	2.44	0.51
48:QT:105:SER:OG	49:QA:186(A):C:N3	2.39	0.51
49:QA:284:G:H2'	49:QA:285:G:H8	1.75	0.51
49:QA:794:A:H2'	49:QA:795:C:C6	2.46	0.51
49:QA:1268:A:N3	49:QA:1326:C:O2'	2.42	0.51
43:XA:4:LYS:HB2	49:XA:1047:G:O3'	2.10	0.51
49:XA:114:U:H2'	49:XA:115:G:C8	2.46	0.51
49:XA:1317:C:H2'	49:XA:1318:A:O4'	2.10	0.51
49:XA:1421:G:H2'	49:XA:1422:G:O4'	2.11	0.51
49:XA:1504:G:H4'	49:XA:1505:G:O5'	2.09	0.51
49:XA:1510:U:H2'	49:XA:1511:G:H8	1.73	0.51
1:RA:394:A:H2'	1:RA:395:U:O4'	2.11	0.50
1:RA:1549:C:O2'	1:RA:1733:G:N2	2.41	0.50
3:RD:3:VAL:HG13	3:RD:17:THR:HG23	1.93	0.50
12:RQ:109:VAL:HG12	12:RQ:114:ALA:HB2	1.93	0.50
25:R3:10:LYS:HZ1	25:R3:15:TYR:HH	1.56	0.50
1:YA:680:G:H2'	1:YA:681:G:H8	1.76	0.50
1:YA:1040:C:H2'	1:YA:1041:C:C6	2.46	0.50
1:YA:1430:C:H2'	1:YA:1431:U:H6	1.76	0.50
2:YB:40:U:O2'	2:YB:45:A:N6	2.41	0.50
3:YD:28:GLU:CD	3:YD:28:GLU:H	2.14	0.50
3:YD:35:LYS:HG2	3:YD:64:ILE:N	2.26	0.50
3:YD:70:TRP:CH2	3:YD:150:LYS:HA	2.46	0.50
26:Y5:3:LYS:HA	26:Y5:3:LYS:HE3	1.92	0.50
26:Y5:56:LYS:HD3	26:Y5:58:LEU:HD23	1.93	0.50
49:QA:269:C:H2'	49:QA:270:A:H8	1.76	0.50
49:QA:444:C:H2'	49:QA:445:G:H8	1.76	0.50
49:QA:1081:G:H2'	49:QA:1082:G:C8	2.46	0.50
33:XD:101:LEU:HA	33:XD:104:VAL:HB	1.92	0.50
36:XG:4:ARG:HB2	49:XA:932:C:H5''	1.91	0.50
49:XA:36:C:O2'	49:XA:501:C:OP1	2.29	0.50
49:XA:224:C:H2'	49:XA:225:C:C6	2.46	0.50
49:XA:555:C:H2'	49:XA:556:C:C6	2.46	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:1253:G:H2'	49:XA:1254:C:C6	2.47	0.50
52:QX:11:U:C2	52:QX:12:A:N7	2.79	0.50
1:RA:184:C:H2'	1:RA:185:U:H6	1.77	0.50
1:RA:270(W):G:C6	1:RA:270(X):G:C6	3.00	0.50
1:RA:820:A:H4'	1:RA:836:G:N2	2.26	0.50
1:RA:1000:A:H2'	1:RA:1001:A:C8	2.47	0.50
1:RA:1604:C:H2'	1:RA:1605:C:C6	2.46	0.50
1:RA:1771:C:H2'	1:RA:1772:G:H8	1.77	0.50
1:RA:1843:C:H2'	1:RA:1844:C:C6	2.46	0.50
1:RA:2169:A:H61	53:QV:19:G:N2	2.00	0.50
1:RA:2366:A:H2'	1:RA:2367:G:O4'	2.12	0.50
2:RB:104:A:H2'	2:RB:105:G:O4'	2.11	0.50
6:RG:66:GLN:NE2	6:RG:93:THR:O	2.39	0.50
1:YA:270:A:OP2	1:YA:270(Y):G:N1	2.44	0.50
1:YA:270(F):U:H3	1:YA:270(T):G:H1	1.58	0.50
1:YA:459:U:H2'	1:YA:460:A:H8	1.75	0.50
1:YA:1140:C:OP2	9:YN:66:LYS:NZ	2.25	0.50
1:YA:1709:U:H2'	1:YA:1710:C:C6	2.46	0.50
1:YA:2845:G:H2'	1:YA:2846:G:C8	2.46	0.50
2:YB:65:C:H41	2:YB:108:C:H2'	1.75	0.50
31:QB:25:ASN:HB2	31:QB:191:ASP:O	2.11	0.50
38:QI:48:GLU:HG3	38:QI:101:PHE:CZ	2.47	0.50
40:QK:29:ILE:HA	40:QK:44:SER:HA	1.92	0.50
43:QN:35:ARG:H	49:QA:1358:U:H5''	1.76	0.50
49:QA:728:A:H2'	49:QA:729:A:C8	2.45	0.50
49:QA:1205:U:H2'	49:QA:1206:G:H8	1.76	0.50
49:QA:1437:C:H2'	49:QA:1438:G:H8	1.75	0.50
33:XD:22:LYS:HD2	33:XD:25:ARG:NH2	2.26	0.50
37:XH:17:THR:HG21	37:XH:80:ILE:HB	1.92	0.50
41:XL:113:ARG:HG2	41:XL:120:TYR:HB2	1.92	0.50
49:XA:262:A:H2'	49:XA:263:A:C8	2.45	0.50
49:XA:900:A:H2'	49:XA:901:A:C8	2.45	0.50
49:XA:926:G:N2	52:XX:18:C:OP2	2.45	0.50
8:RI:88:ILE:HG12	8:RI:122:GLU:N	2.27	0.50
11:RP:147:LEU:O	11:RP:148:LEU:HB2	2.12	0.50
1:YA:137(A):G:H2'	1:YA:139:G:N7	2.26	0.50
1:YA:171:G:H2'	1:YA:172:C:H6	1.75	0.50
1:YA:1130:U:N3	1:YA:2025:C:H5''	2.26	0.50
1:YA:1844:C:H2'	1:YA:1845:G:O4'	2.10	0.50
1:YA:2734:A:H3'	1:YA:2735:G:H8	1.77	0.50
6:YG:5:VAL:HG11	6:YG:100:TRP:HB3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:YP:64:LYS:C	11:YP:66:GLY:N	2.65	0.50
21:YZ:52:SER:C	21:YZ:54:HIS:H	2.15	0.50
24:Y2:50:ILE:HD12	24:Y2:51:ARG:H	1.76	0.50
31:QB:55:PHE:CD1	31:QB:221:LEU:HG	2.46	0.50
39:QJ:53:PRO:O	39:QJ:55:LYS:N	2.44	0.50
39:QJ:57:LYS:NZ	49:QA:972:C:OP2	2.40	0.50
49:QA:407:G:H2'	49:QA:408:A:C8	2.46	0.50
49:QA:1120:G:H2'	49:QA:1121:U:C6	2.46	0.50
35:XF:40:VAL:HG23	35:XF:63:TYR:HE1	1.76	0.50
36:XG:116:ALA:O	36:XG:120:ILE:HG12	2.11	0.50
41:XL:43:VAL:HG12	41:XL:44:THR:H	1.76	0.50
49:XA:707:C:H2'	49:XA:708:C:C6	2.46	0.50
49:XA:762:C:H2'	49:XA:763:G:C8	2.46	0.50
49:XA:1326:C:H2'	49:XA:1327:C:C6	2.45	0.50
50:XS:36:ARG:HH12	50:XS:77:THR:HB	1.77	0.50
52:QX:3:C:H2'	52:QX:4:A:C8	2.45	0.50
1:RA:520:G:H2'	1:RA:521:G:H8	1.77	0.50
1:RA:749:C:H5'	1:RA:1271:G:H1'	1.93	0.50
1:RA:949:C:H2'	1:RA:950:G:H8	1.77	0.50
1:RA:1760:A:H2'	1:RA:1761:C:C6	2.45	0.50
1:RA:1853:A:H2'	1:RA:1854:A:H8	1.76	0.50
1:RA:2144:U:N3	1:RA:2146:C:O2	2.44	0.50
1:RA:2702:U:O2'	1:RA:2703:C:O5'	2.29	0.50
1:RA:2776:A:H4'	1:RA:2777:G:O5'	2.12	0.50
4:RE:116:VAL:HG11	4:RE:138:PRO:HB3	1.94	0.50
18:RW:67:ASP:OD2	18:RW:67:ASP:N	2.35	0.50
29:R8:51:ALA:O	29:R8:52:LYS:CB	2.59	0.50
1:YA:1093:G:H4'	7:YH:170:ARG:NH2	2.27	0.50
1:YA:1321:A:C4	1:YA:1322:A:C8	2.99	0.50
1:YA:1478:G:H2'	1:YA:1479:G:C8	2.46	0.50
1:YA:1918:A:O2'	1:YA:1920:C:N4	2.45	0.50
4:YE:117:MET:HA	4:YE:122:PHE:N	2.26	0.50
15:YT:77:PRO:HB2	15:YT:80:SER:HB2	1.93	0.50
16:YU:61:TRP:O	16:YU:65:ILE:HG13	2.12	0.50
31:QB:70:PHE:HB2	31:QB:92:TYR:HB2	1.92	0.50
31:QB:155:LEU:HD11	31:QB:159:PRO:HD3	1.93	0.50
43:QN:43:CYS:HA	43:QN:46:GLU:HG2	1.93	0.50
48:QT:63:ILE:HG23	48:QT:77:ALA:HB1	1.93	0.50
49:QA:123:C:OP1	49:QA:311:C:O2'	2.28	0.50
49:QA:444:C:H2'	49:QA:445:G:C8	2.47	0.50
49:QA:559:A:H4'	49:QA:560:U:H3'	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1481:U:H2'	49:QA:1482:G:C8	2.47	0.50
32:XC:68:VAL:HG12	32:XC:70:VAL:HG22	1.92	0.50
35:XF:60:PHE:HZ	47:XR:78:LEU:HD21	1.77	0.50
49:XA:337:C:H2'	49:XA:338:A:C8	2.47	0.50
49:XA:992:U:H3	49:XA:1044:A:N6	2.05	0.50
49:XA:1096:C:O2	49:XA:1170:A:O2'	2.29	0.50
49:XA:1469:G:H2'	49:XA:1470:G:C8	2.47	0.50
52:XX:11:U:C2	52:XX:12:A:N7	2.79	0.50
52:XX:13:A:C2	52:XX:14:A:H2	2.24	0.50
1:RA:49:A:H61	1:RA:177:G:H2'	1.76	0.50
1:RA:479:A:O2'	1:RA:481:G:H5'	2.12	0.50
1:RA:1262:A:OP1	18:RW:99:ARG:NH1	2.32	0.50
1:RA:1314:C:OP1	1:RA:1315:C:OP2	2.28	0.50
5:RF:103:LYS:HA	5:RF:106:ARG:HG3	1.92	0.50
12:RQ:30:GLY:HA2	12:RQ:107:ALA:HB2	1.92	0.50
12:RQ:139:GLU:OE1	12:RQ:139:GLU:N	2.39	0.50
1:YA:573:G:N1	1:YA:2031:A:OP2	2.41	0.50
1:YA:1687:G:N2	1:YA:1702:G:O6	2.45	0.50
1:YA:1689:A:H62	1:YA:1698:A:H2	1.59	0.50
1:YA:2487:G:H2'	1:YA:2488:A:H8	1.76	0.50
1:YA:2533:A:H2'	1:YA:2534:A:O4'	2.10	0.50
32:QC:35:GLU:O	32:QC:39:ILE:HG13	2.11	0.50
33:QD:25:ARG:HG3	49:QA:410:G:OP2	2.12	0.50
33:QD:59:ARG:NH1	33:QD:66:ARG:HH12	2.07	0.50
35:QF:26:ILE:O	35:QF:30:LEU:HG	2.11	0.50
49:QA:707:C:H2'	49:QA:708:C:H6	1.75	0.50
49:QA:831:U:O2'	49:QA:1539:C:OP2	2.25	0.50
49:QA:954:G:H2'	49:QA:955:U:H6	1.76	0.50
49:QA:1347:G:H1'	49:QA:1348:U:H5	1.77	0.50
31:XB:96:ARG:H	31:XB:96:ARG:NE	2.09	0.50
41:XL:89:ARG:HG2	41:XL:95:GLY:O	2.12	0.50
45:XP:23:ASP:OD2	49:XA:229:U:H4'	2.12	0.50
49:XA:438:G:O2'	49:XA:494:U:O4	2.29	0.50
49:XA:626:U:H2'	49:XA:627:G:C8	2.47	0.50
49:XA:1148:U:H2'	49:XA:1149:C:O4'	2.12	0.50
49:XA:1175:G:H2'	49:XA:1176:A:C8	2.47	0.50
49:XA:1466:C:H2'	49:XA:1467:G:O4'	2.12	0.50
1:RA:29:U:H2'	1:RA:30:G:C8	2.46	0.50
1:RA:185:U:C2	1:RA:212:G:N2	2.80	0.50
1:RA:302:C:H2'	1:RA:303:U:C6	2.46	0.50
1:RA:388:G:H5'	23:R1:25:LYS:HB2	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1638:C:O3'	1:RA:2709:G:N2	2.45	0.50
1:RA:1678:G:H2'	1:RA:1679:U:H6	1.76	0.50
1:RA:1935:G:H1'	1:RA:1964:G:N2	2.27	0.50
1:RA:2600:A:H2'	1:RA:2601:C:C6	2.47	0.50
4:RE:111:ARG:HG3	4:RE:160:TYR:CD1	2.47	0.50
4:RE:181:LEU:HG	15:RT:11:GLU:OE2	2.11	0.50
8:RI:21:VAL:HG21	8:RI:25:TYR:HD1	1.76	0.50
1:YA:34:C:H41	1:YA:447:A:N6	2.08	0.50
1:YA:270(R):G:H2'	1:YA:270(S):G:C8	2.47	0.50
1:YA:590:A:H2'	1:YA:591:C:C6	2.47	0.50
1:YA:691:C:H2'	1:YA:692:C:C6	2.42	0.50
1:YA:1375:C:H2'	1:YA:1376:C:H6	1.77	0.50
1:YA:1659:U:O2'	1:YA:2712(A):A:N1	2.34	0.50
1:YA:2410:G:C2	1:YA:2411:A:H1'	2.47	0.50
1:YA:2488:A:H2'	1:YA:2489:G:C8	2.46	0.50
10:YO:49:ARG:NH2	49:XA:1423:G:OP1	2.45	0.50
24:Y2:65:ASN:HB3	24:Y2:69:ARG:NH2	2.26	0.50
32:QC:109:PRO:O	32:QC:111:LEU:N	2.37	0.50
49:QA:922:G:O2'	49:QA:1398:A:N1	2.38	0.50
49:QA:1135:U:HO2'	49:QA:1138:G:H1	1.60	0.50
49:QA:1516:G:N1	49:QA:1519:A:OP2	2.44	0.50
32:XC:65:ALA:HA	32:XC:100:ALA:HB3	1.93	0.50
33:XD:94:LEU:HD12	33:XD:191:ARG:HB2	1.92	0.50
49:XA:1179:A:H2'	49:XA:1180:A:O4'	2.11	0.50
49:XA:1315:U:H2'	49:XA:1316:G:O4'	2.11	0.50
49:XA:1535:C:N4	52:XX:10:G:H21	2.07	0.50
1:RA:39:C:H2'	1:RA:40:C:C6	2.47	0.50
1:RA:1205:U:C2	5:RF:171:PRO:HB3	2.46	0.50
1:RA:2141:G:OP1	40:QK:13:GLN:NE2	2.43	0.50
1:RA:2845:G:H2'	1:RA:2846:G:H8	1.77	0.50
2:RB:111:U:H2'	2:RB:112:G:H8	1.77	0.50
27:R6:28:ARG:HG3	27:R6:31:PRO:HD2	1.94	0.50
1:YA:48:G:H1	1:YA:177:G:P	2.35	0.50
1:YA:634:C:H2'	1:YA:635:C:C6	2.46	0.50
1:YA:807:U:OP2	11:YP:41:ARG:NH1	2.44	0.50
1:YA:1429:G:H2'	1:YA:1430:C:C6	2.47	0.50
1:YA:2508:G:H1	1:YA:2580:U:H3	1.60	0.50
1:YA:2779:U:O2	1:YA:2779:U:O4'	2.26	0.50
11:YP:64:LYS:CB	29:Y8:25:MET:HG3	2.42	0.50
14:YS:107:GLU:N	14:YS:110:LEU:HD11	2.26	0.50
18:YW:111:HIS:CD2	18:YW:112:GLY:H	2.30	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:QE:10:MET:N	34:QE:10:MET:SD	2.85	0.50
35:QF:80:ARG:NH2	35:QF:88:VAL:O	2.44	0.50
41:QL:33:ARG:HG2	41:QL:61:THR:H	1.75	0.50
42:QM:87:TYR:O	42:QM:91:ARG:HG3	2.11	0.50
49:QA:284:G:H2'	49:QA:285:G:C8	2.47	0.50
49:QA:1512:U:H2'	49:QA:1513:A:H8	1.76	0.50
34:XE:50:GLU:HB3	34:XE:53:LEU:HG	1.94	0.50
37:XH:97:VAL:HG13	37:XH:98:LYS:H	1.76	0.50
46:XQ:66:SER:HB3	46:XQ:69:LYS:HB3	1.93	0.50
48:XT:78:ALA:HB1	49:XA:186:C:H5'	1.92	0.50
49:XA:825:G:H2'	49:XA:826:C:C6	2.47	0.50
49:XA:1264:C:H2'	49:XA:1265:G:H8	1.77	0.50
49:XA:1356:G:H2'	49:XA:1357:A:C8	2.46	0.50
1:RA:1152:C:H2'	1:RA:1153:C:H6	1.76	0.50
1:RA:2168:G:N2	1:RA:2170:A:N7	2.59	0.50
1:RA:2267:A:H3'	1:RA:2267:A:N3	2.26	0.50
1:RA:2836:U:H2'	1:RA:2837:G:C8	2.47	0.50
13:RR:2:ARG:HG2	13:RR:5:LYS:NZ	2.26	0.50
21:RZ:30:ASN:ND2	21:RZ:90:VAL:HB	2.26	0.50
21:RZ:58:VAL:O	21:RZ:60:GLU:N	2.42	0.50
25:R3:11:SER:OG	25:R3:13:ILE:HG12	2.12	0.50
29:R8:29:LYS:HB2	29:R8:44:LYS:HG2	1.93	0.50
1:YA:797:C:H2'	1:YA:798:G:C8	2.47	0.50
1:YA:987:G:H2'	1:YA:988:A:O4'	2.11	0.50
1:YA:1651:G:N7	13:YR:11:ASN:ND2	2.55	0.50
20:YY:49:VAL:O	20:YY:51:VAL:N	2.45	0.50
21:YZ:89:PHE:CE1	21:YZ:96:VAL:HG21	2.43	0.50
41:QL:69:TYR:O	41:QL:100:ILE:HG13	2.12	0.50
44:QO:36:ILE:HD12	44:QO:63:ARG:NH2	2.26	0.50
49:QA:1126:U:H3'	49:QA:1127:G:C8	2.42	0.50
49:QA:1288:A:H2'	49:QA:1289:A:C8	2.47	0.50
33:XD:24:GLU:HG2	33:XD:112:VAL:HG11	1.93	0.50
34:XE:11:ILE:O	34:XE:12:LEU:HD13	2.11	0.50
41:XL:82:VAL:HG12	41:XL:84:LEU:HD12	1.93	0.50
47:XR:38:GLU:HA	47:XR:41:LYS:HB3	1.93	0.50
49:XA:384:G:H2'	49:XA:385:C:C6	2.47	0.50
49:XA:1175:G:H2'	49:XA:1176:A:H8	1.76	0.50
1:RA:1016:G:H2'	1:RA:1017:G:O4'	2.11	0.50
1:RA:2547:U:O2	10:RO:23:ARG:NH2	2.45	0.50
1:RA:2735:G:H2'	1:RA:2736:G:H8	1.77	0.50
2:RB:48:A:H4'	14:RS:95:HIS:HD2	1.75	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:RD:35:LYS:HG2	3:RD:64:ILE:H	1.76	0.50
4:RE:117:MET:HA	4:RE:122:PHE:N	2.27	0.50
8:RI:12:LEU:HG	8:RI:19:VAL:HG11	1.94	0.50
1:YA:161:U:H3'	1:YA:162:U:C5'	2.42	0.50
1:YA:1629:U:H2'	1:YA:1630:G:C8	2.47	0.50
1:YA:2393:A:H4'	11:YP:61:ARG:O	2.10	0.50
1:YA:2438:U:O3'	1:YA:2439:A:H3'	2.11	0.50
1:YA:2795:G:H3'	1:YA:2797:U:C5'	2.42	0.50
27:Y6:40:CYS:HA	27:Y6:46:HIS:H	1.76	0.50
30:Y9:16:VAL:HG22	30:Y9:25:VAL:HG22	1.94	0.50
32:QC:47:LEU:O	32:QC:49:SER:N	2.33	0.50
33:QD:36:ARG:HD3	49:QA:413:G:C6	2.47	0.50
33:QD:174:LEU:HD21	33:QD:185:PHE:CD1	2.46	0.50
34:QE:119:LEU:HD21	49:QA:6:G:C6	2.47	0.50
46:QQ:44:ALA:HB1	46:QQ:73:VAL:CG2	2.41	0.50
49:QA:246:A:N1	49:QA:278:G:O2'	2.37	0.50
49:QA:299:G:H2'	49:QA:300:A:C8	2.47	0.50
31:XB:96:ARG:HD3	49:XA:1099:G:P	2.51	0.50
33:XD:116:GLN:HG3	49:XA:407:G:O2'	2.11	0.50
34:XE:21:ALA:O	49:XA:1193:G:O2'	2.29	0.50
34:XE:78:HIS:NE2	34:XE:142:LEU:HD23	2.27	0.50
35:XF:97:PHE:O	47:XR:30:ASP:HA	2.12	0.50
38:XI:119:ALA:HB3	49:XA:1348:U:H5''	1.93	0.50
49:XA:68(O):A:C5	49:XA:68(P):C:H1'	2.46	0.50
49:XA:380:G:N2	49:XA:383:A:OP2	2.45	0.50
49:XA:1531:A:C8	49:XA:1532:U:H5	2.30	0.50
1:RA:29:U:H2'	1:RA:30:G:H8	1.77	0.49
1:RA:69:C:O2'	1:RA:73:A:O2'	2.21	0.49
1:RA:252:G:OP2	11:RP:50:ARG:NH1	2.45	0.49
1:RA:270(V):G:H2'	1:RA:270(W):G:H8	1.76	0.49
1:RA:711:G:H2'	1:RA:712:G:H8	1.76	0.49
1:RA:1116:C:H2'	1:RA:1117:G:C8	2.47	0.49
1:RA:1539:G:H2'	1:RA:1540:G:C8	2.46	0.49
1:RA:1851:U:O2'	53:QV:73:C:O2'	2.18	0.49
2:RB:44:G:H1'	2:RB:47:C:N4	2.26	0.49
3:RD:201:HIS:O	3:RD:204:ILE:HG12	2.12	0.49
8:RI:49:ALA:O	8:RI:52:ARG:HG2	2.11	0.49
12:RQ:135:ASP:OD1	12:RQ:135:ASP:N	2.45	0.49
16:RU:97:ASP:OD1	16:RU:101:ARG:NH1	2.45	0.49
1:YA:186:G:H2'	1:YA:187:G:H8	1.75	0.49
1:YA:949:C:H2'	1:YA:950:G:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:YE:35:GLN:HB3	4:YE:48:GLN:HB2	1.94	0.49
4:YE:170:LEU:HD21	4:YE:187:ALA:HB3	1.93	0.49
8:YI:88:ILE:HG12	8:YI:122:GLU:N	2.27	0.49
18:YW:45:TYR:CZ	18:YW:49:LYS:HD2	2.46	0.49
18:YW:51:LEU:HD23	18:YW:105:VAL:HG11	1.93	0.49
20:YY:84:ARG:O	20:YY:95:LYS:HD3	2.12	0.49
33:QD:14:ARG:HA	33:QD:39:PRO:HA	1.93	0.49
38:QI:23:ASN:HB3	38:QI:25:LYS:HG2	1.92	0.49
38:QI:71:SER:HB3	49:QA:1372:U:H5''	1.94	0.49
46:QQ:63:ARG:NH2	49:QA:130:A:H5'	2.26	0.49
47:QR:23:LYS:HB2	47:QR:56:THR:O	2.12	0.49
49:QA:384:G:H2'	49:QA:385:C:C6	2.47	0.49
31:XB:109:SER:O	31:XB:113:HIS:ND1	2.43	0.49
41:XL:8:ASN:ND2	49:XA:585:G:O2'	2.40	0.49
46:XQ:87:LYS:O	46:XQ:91:ARG:HG3	2.12	0.49
49:XA:653:A:HO2'	49:XA:654:G:H8	1.60	0.49
49:XA:677:U:O2	49:XA:777:A:O2'	2.29	0.49
1:RA:716:A:O2'	44:QO:44:LYS:HD3	2.12	0.49
1:RA:776:G:N7	1:RA:793:A:O2'	2.44	0.49
1:RA:1181:C:H2'	1:RA:1182:A:C8	2.47	0.49
1:RA:1830:C:H2'	1:RA:1831:G:H8	1.76	0.49
1:RA:2070:G:H2'	1:RA:2071:A:C8	2.47	0.49
1:RA:2623:G:H2'	1:RA:2624:G:H8	1.77	0.49
3:RD:65:ILE:HD11	3:RD:67:PHE:CE1	2.47	0.49
7:RH:153:LYS:HB3	7:RH:154:PRO:CD	2.41	0.49
10:RO:4:PRO:O	10:RO:5:GLN:HB2	2.12	0.49
21:RZ:82:ARG:HG3	21:RZ:83:PRO:HD2	1.94	0.49
1:YA:689:A:H2'	1:YA:690:G:H8	1.75	0.49
1:YA:1805:U:O2	3:YD:50:THR:HB	2.12	0.49
5:YF:185:ASP:HA	5:YF:188:ARG:HD3	1.93	0.49
11:YP:65:ARG:HE	29:Y8:15:LYS:HB2	1.77	0.49
47:QR:75:ILE:HD11	49:QA:734:G:H22	1.77	0.49
49:QA:1386:G:H2'	49:QA:1387:G:H8	1.77	0.49
39:XJ:6:ILE:HB	39:XJ:98:ILE:HG12	1.93	0.49
48:XT:49:ALA:O	48:XT:52:ALA:N	2.45	0.49
49:XA:254:G:H2'	49:XA:255:G:H8	1.77	0.49
49:XA:928:G:H2'	49:XA:929:G:H8	1.77	0.49
53:XV:38:1MG:H4'	53:XV:38:1MG:OP1	2.12	0.49
1:RA:84:A:O5'	20:RY:8:LYS:HD3	2.12	0.49
1:RA:458:G:O2'	1:RA:469:G:O6	2.18	0.49
1:RA:1275:A:N1	1:RA:1295:C:O2'	2.35	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1321:A:C4	1:RA:1322:A:C8	3.00	0.49
1:RA:1798:U:H5'	3:RD:259:THR:HG22	1.93	0.49
1:RA:2073:C:H5'	3:RD:229:VAL:HG13	1.94	0.49
1:RA:2850:A:O4'	1:RA:2868:A:H2	1.95	0.49
4:RE:35:GLN:HG2	4:RE:37:ARG:HE	1.76	0.49
13:RR:103:ARG:NH1	13:RR:108:GLY:O	2.45	0.49
1:YA:20:C:H2'	1:YA:21:A:H8	1.77	0.49
32:QC:24:ALA:HB1	32:QC:32:LEU:HD12	1.94	0.49
33:QD:43:HIS:H	33:QD:43:HIS:CD2	2.30	0.49
39:QJ:47:PHE:HE1	49:QA:1357:A:H4'	1.77	0.49
40:QK:123:LYS:NZ	49:QA:796:C:OP2	2.26	0.49
42:QM:65:LYS:HD2	42:QM:69:GLU:HG2	1.94	0.49
42:QM:95:GLY:O	42:QM:111:LYS:HD3	2.12	0.49
43:QN:17:LYS:HD2	49:QA:1316:G:H5''	1.93	0.49
49:QA:186(O):G:H2'	49:QA:186(P):U:C6	2.47	0.49
49:QA:370:C:H2'	49:QA:371:G:C8	2.46	0.49
49:QA:748:C:H1'	49:QA:749:C:OP2	2.12	0.49
31:XB:84:GLU:OE2	31:XB:234:PRO:HG3	2.12	0.49
31:XB:94:ASN:H	31:XB:94:ASN:HD22	1.59	0.49
37:XH:51:VAL:N	37:XH:58:TYR:O	2.45	0.49
45:XP:38:TYR:CD2	49:XA:626:U:H5''	2.47	0.49
49:XA:186(N):U:H2'	49:XA:186(O):G:C8	2.48	0.49
49:XA:552:U:H2'	49:XA:553:A:C8	2.47	0.49
49:XA:1376:U:H2'	49:XA:1377:A:C8	2.47	0.49
49:XA:1528:U:O2'	49:XA:1530:G:H5'	2.12	0.49
1:RA:671:C:H2'	1:RA:672:C:H6	1.76	0.49
1:RA:1400:G:H2'	1:RA:1401:G:H8	1.78	0.49
1:RA:1907:G:H2'	1:RA:1908:C:C6	2.47	0.49
1:RA:2142:C:H5''	40:QK:11:LYS:HA	1.95	0.49
1:RA:2422:A:C5'	53:QV:78:A:H61	2.26	0.49
1:RA:2750:A:N7	7:RH:59:ARG:NH2	2.59	0.49
5:RF:182:ASN:O	5:RF:186:ILE:HG12	2.12	0.49
9:RN:13:TRP:O	9:RN:135:PRO:HD2	2.12	0.49
21:RZ:150:LEU:HD23	21:RZ:171:ILE:HG13	1.94	0.49
1:YA:1007:C:H5''	9:YN:35:ARG:NH1	2.27	0.49
1:YA:2068:U:N3	1:YA:2430:A:H2	2.09	0.49
1:YA:2805:G:H2'	1:YA:2807:G:C8	2.47	0.49
2:YB:15:A:H1'	2:YB:109:G:C8	2.47	0.49
3:YD:175:LEU:HD12	3:YD:185:VAL:HG21	1.94	0.49
5:YF:45:ARG:HG2	5:YF:97:TYR:CD2	2.48	0.49
20:YY:51:VAL:HG13	20:YY:52:SER:H	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:QC:8:ILE:HD11	32:QC:184:TYR:HB3	1.93	0.49
32:QC:71:ALA:O	32:QC:105:GLU:HG3	2.12	0.49
42:QM:16:ASP:OD2	42:QM:16:ASP:N	2.44	0.49
49:QA:33:A:H2'	49:QA:34:C:H6	1.77	0.49
49:QA:920:U:H2'	49:QA:921:U:H6	1.75	0.49
49:QA:1339:A:C2	53:QV:32:G:N9	2.78	0.49
31:XB:40:HIS:CG	31:XB:190:THR:HG21	2.48	0.49
38:XI:50:LEU:HB3	38:XI:56:LEU:HB3	1.95	0.49
41:XL:6:THR:HG21	49:XA:880:C:H5	1.77	0.49
41:XL:73:GLU:HA	49:XA:521:G:OP1	2.11	0.49
48:XT:51:GLU:O	48:XT:55:ILE:HG12	2.12	0.49
49:XA:995:C:H2'	49:XA:996:A:H8	1.77	0.49
49:XA:1324:A:H2'	49:XA:1325:C:O4'	2.11	0.49
52:XX:3:C:H2'	52:XX:4:A:C8	2.46	0.49
53:QV:19:G:H5'	53:QV:20:G:H21	1.76	0.49
1:RA:49:A:N7	1:RA:120:U:H5	2.11	0.49
1:RA:600:G:H2'	1:RA:601:C:C6	2.48	0.49
1:RA:1843:C:H2'	1:RA:1844:C:H6	1.76	0.49
1:RA:1846:G:H5'	1:RA:1847:A:OP2	2.12	0.49
1:RA:2277:G:OP2	22:R0:10:THR:HG21	2.13	0.49
1:RA:2372:G:H2'	1:RA:2373:G:C8	2.46	0.49
1:RA:2580:U:H3'	1:RA:2581:G:C2	2.48	0.49
9:RN:108:PRO:O	9:RN:113:GLY:HA3	2.13	0.49
18:RW:86:LEU:HD22	18:RW:96:ILE:HD11	1.94	0.49
1:YA:547:A:H2'	1:YA:548:A:C8	2.48	0.49
1:YA:755:C:H2'	1:YA:756:C:C6	2.48	0.49
1:YA:1151:G:H4'	16:YU:81:HIS:CD2	2.48	0.49
1:YA:1165:U:H3	1:YA:1184:G:H1	1.60	0.49
1:YA:1907:G:H2'	1:YA:1908:C:C6	2.47	0.49
1:YA:2081:C:H2'	1:YA:2082:A:C8	2.46	0.49
1:YA:2513:G:N2	4:YE:143:ASN:HD21	2.11	0.49
8:YI:11:ASN:O	8:YI:12:LEU:HB2	2.12	0.49
9:YN:65:LYS:O	9:YN:69:GLN:HG2	2.13	0.49
12:YQ:89:ASN:O	12:YQ:91:GLU:N	2.46	0.49
13:YR:117:VAL:HG22	13:YR:118:GLU:H	1.78	0.49
21:YZ:128:VAL:HG21	21:YZ:161:VAL:HG22	1.94	0.49
32:QC:148:GLY:HA3	32:QC:172:ARG:O	2.13	0.49
49:QA:434:U:H2'	49:QA:435:C:C6	2.47	0.49
31:XB:156:LYS:N	31:XB:156:LYS:HD2	2.27	0.49
32:XC:54:ARG:HB3	32:XC:69:HIS:CG	2.47	0.49
32:XC:176:HIS:CD2	49:XA:1109:C:OP2	2.64	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:XD:9:CYS:O	33:XD:12:CYS:HB2	2.12	0.49
39:XJ:24:VAL:HG21	39:XJ:37:PRO:HD3	1.93	0.49
39:XJ:53:PRO:HG3	49:XA:1058:G:N2	2.27	0.49
46:XQ:21:VAL:O	46:XQ:41:LYS:HA	2.11	0.49
49:XA:197:A:C6	49:XA:221:C:H4'	2.47	0.49
49:XA:621:A:H2'	49:XA:622:A:C8	2.48	0.49
49:XA:955:U:H2'	49:XA:956:U:O4'	2.13	0.49
1:RA:678:C:H2'	1:RA:679:C:C6	2.47	0.49
1:RA:2014:A:HO2'	26:R5:2:ALA:N	2.11	0.49
4:RE:46:ALA:HB1	4:RE:80:GLU:HB2	1.95	0.49
7:RH:155:SER:OG	7:RH:156:ALA:N	2.45	0.49
16:RU:105:VAL:HG22	17:RV:44:LYS:HD2	1.93	0.49
1:YA:84:A:C2	1:YA:103:A:C5	3.00	0.49
1:YA:1138:G:H21	9:YN:106:MET:HE3	1.78	0.49
1:YA:1408:C:H2'	1:YA:1409:C:H6	1.76	0.49
1:YA:2336:A:H61	22:Y0:43:THR:HG21	1.77	0.49
27:Y6:13:CYS:O	27:Y6:21:TYR:HA	2.12	0.49
31:QB:20:GLU:HB2	31:QB:190:THR:HB	1.93	0.49
33:QD:72:GLU:O	33:QD:76:ARG:HB2	2.13	0.49
42:QM:75:ALA:O	42:QM:79:LYS:HG3	2.12	0.49
45:QP:75:ARG:HG3	45:QP:80:PHE:CD1	2.48	0.49
46:QQ:25:ARG:CZ	49:QA:237:C:H5''	2.42	0.49
48:QT:20:LEU:O	48:QT:24:LEU:HG	2.13	0.49
49:QA:328:C:H4'	49:QA:329:A:O5'	2.12	0.49
31:XB:42:ILE:O	31:XB:44:LEU:HD12	2.12	0.49
31:XB:158:LEU:HD23	31:XB:158:LEU:H	1.77	0.49
33:XD:30:LYS:HD2	33:XD:35:ARG:HE	1.77	0.49
41:XL:33:ARG:H	41:XL:85:ILE:HB	1.76	0.49
41:XL:90:VAL:HG22	41:XL:96:VAL:HG11	1.95	0.49
42:XM:102:ARG:NH2	49:XA:951:G:N7	2.60	0.49
45:XP:39:TYR:OH	45:XP:72:ARG:NH1	2.46	0.49
47:XR:71:LYS:O	47:XR:75:ILE:HG12	2.11	0.49
47:XR:74:ARG:HG2	47:XR:79:LEU:HD22	1.94	0.49
49:XA:394:G:H2'	49:XA:395:C:O4'	2.13	0.49
49:XA:554:C:H2'	49:XA:555:C:C6	2.47	0.49
1:RA:580:C:H2'	1:RA:581:C:C6	2.48	0.49
1:RA:1429:G:H2'	1:RA:1430:C:C6	2.47	0.49
1:RA:1702:G:P	1:RA:1765:C:O2'	2.70	0.49
1:RA:2212:A:H1'	1:RA:2215:G:C5	2.47	0.49
1:RA:2394:C:N4	53:QV:78:A:O2'	2.46	0.49
9:RN:40:PRO:HB3	16:RU:68:ALA:HB2	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:177:G:H3'	1:YA:178:G:H8	1.76	0.49
1:YA:444:C:H4'	5:YF:49:ALA:HB2	1.95	0.49
1:YA:1317:A:H2'	1:YA:1318:C:C6	2.48	0.49
1:YA:1939:U:OP1	1:YA:2604:U:O2'	2.31	0.49
1:YA:1947:C:O2'	49:XA:1483:A:O2'	2.24	0.49
1:YA:2853:C:H2'	1:YA:2854:G:H8	1.78	0.49
7:YH:121:ILE:HG12	7:YH:140:LYS:HD2	1.94	0.49
8:YI:3:VAL:HG12	8:YI:38:LEU:HA	1.94	0.49
11:YP:147:LEU:O	11:YP:148:LEU:HB2	2.11	0.49
21:YZ:5:LEU:HD11	21:YZ:39:VAL:HB	1.93	0.49
31:QB:8:LYS:H	31:QB:8:LYS:HD3	1.77	0.49
32:QC:12:LEU:HD12	43:QN:58:LYS:H	1.77	0.49
38:QI:120:ARG:O	49:QA:1343:G:O2'	2.29	0.49
49:QA:195:A:N6	49:QA:196:A:N1	2.61	0.49
49:QA:1128:C:H1'	49:QA:1146:A:N6	2.27	0.49
33:XD:15:GLU:HA	33:XD:59:ARG:NH2	2.27	0.49
37:XH:81:HIS:ND1	37:XH:138:TRP:OXT	2.42	0.49
37:XH:88:LYS:C	37:XH:90:GLY:H	2.16	0.49
43:YN:3:ARG:HB3	49:XA:1048:G:H5''	1.95	0.49
49:XA:67:C:O2'	49:XA:171:A:N3	2.33	0.49
49:XA:104:G:H2'	49:XA:105:G:H8	1.77	0.49
49:XA:166:G:H2'	49:XA:167:G:C8	2.46	0.49
49:XA:1000:A:H2'	49:XA:1001:G:C8	2.47	0.49
49:XA:1271:G:H5'	49:XA:1314:C:H5'	1.95	0.49
49:XA:1320:C:H2'	49:XA:1321:C:C6	2.48	0.49
53:QV:15:G:H3'	53:QV:16:C:H5'	1.94	0.49
1:RA:946:G:H2'	1:RA:947:G:H8	1.78	0.49
1:RA:1341:U:OP1	1:RA:1397:U:N3	2.36	0.49
1:RA:1632:A:H2'	1:RA:1633:G:C8	2.48	0.49
1:RA:2293:C:H2'	1:RA:2294:C:H6	1.78	0.49
14:RS:65:VAL:O	14:RS:69:VAL:HG12	2.13	0.49
1:YA:704:G:H1'	1:YA:727:A:H61	1.78	0.49
1:YA:820:A:H2'	1:YA:821:A:C8	2.47	0.49
1:YA:1604:C:H2'	1:YA:1605:C:H6	1.78	0.49
1:YA:1693:U:O2'	3:YD:14:ARG:NH2	2.44	0.49
1:YA:2008:C:H2'	1:YA:2009:G:H8	1.77	0.49
1:YA:2689:U:H5'	1:YA:2713:A:H2	1.77	0.49
7:YH:125:VAL:HG22	7:YH:131:VAL:HG13	1.94	0.49
20:YY:51:VAL:O	20:YY:56:PRO:HA	2.13	0.49
21:YZ:30:ASN:HA	21:YZ:89:PHE:HE2	1.78	0.49
31:QB:32:ILE:HD11	31:QB:42:ILE:HD13	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:QD:55:ALA:O	33:QD:59:ARG:HG2	2.13	0.49
33:QD:171:GLY:HA2	33:QD:194:LEU:HD11	1.94	0.49
36:QG:26:PHE:CE2	36:QG:30:ILE:HD11	2.48	0.49
41:QL:44:THR:HG22	41:QL:50:SER:HA	1.95	0.49
49:QA:479:C:H2'	49:QA:480:U:O4'	2.13	0.49
49:QA:745:C:H2'	49:QA:746:A:H8	1.77	0.49
49:QA:998:G:H2'	49:QA:998(A):C:C6	2.47	0.49
49:QA:1118:C:H2'	49:QA:1119:C:C6	2.47	0.49
49:QA:1488:G:H2'	49:QA:1489:G:H8	1.77	0.49
31:XB:40:HIS:CD2	31:XB:190:THR:HG21	2.47	0.49
39:XJ:3:LYS:N	39:XJ:75:ILE:O	2.46	0.49
45:XP:13:HIS:O	45:XP:42:ARG:NH2	2.44	0.49
49:XA:1327:C:H2'	49:XA:1328:C:H6	1.78	0.49
49:XA:1512:U:H2'	49:XA:1513:A:H8	1.77	0.49
50:QS:36:ARG:HH12	50:QS:77:THR:HB	1.75	0.49
50:QS:38:SER:O	50:QS:71:LEU:HB2	2.12	0.49
1:RA:241:A:N1	1:RA:255:A:H5''	2.28	0.49
1:RA:513:A:H2	1:RA:582:G:H4'	1.78	0.49
1:RA:584:C:H2'	1:RA:585:G:O4'	2.13	0.49
1:RA:678:C:H2'	1:RA:679:C:H6	1.78	0.49
1:RA:795:C:H2'	1:RA:796:C:H6	1.78	0.49
1:RA:1108:U:H2'	1:RA:1109:C:C6	2.48	0.49
1:RA:1923:U:H2'	1:RA:1924:C:C6	2.48	0.49
2:RB:31:C:H4'	6:RG:29:TRP:HH2	1.78	0.49
8:RI:133:HIS:HB2	8:RI:134:PRO:CD	2.42	0.49
1:YA:37:C:H2'	1:YA:38:A:H8	1.76	0.49
1:YA:607:U:H3	1:YA:621:A:H2	1.61	0.49
1:YA:797:C:H2'	1:YA:798:G:H8	1.78	0.49
1:YA:1930:G:H2'	1:YA:1968:G:H1	1.78	0.49
1:YA:2033:A:O2'	1:YA:2035:G:OP2	2.24	0.49
1:YA:2212:A:H1'	1:YA:2215:G:C4	2.48	0.49
32:QC:25:GLY:O	32:QC:29:TYR:HB2	2.13	0.49
35:QF:77:ARG:HH12	49:QA:671:G:H4'	1.76	0.49
35:QF:99:ALA:O	35:QF:100:ASN:ND2	2.36	0.49
38:QI:18:PHE:HB2	38:QI:62:TYR:O	2.12	0.49
46:QQ:27:PHE:O	46:QQ:36:ILE:HG12	2.13	0.49
46:QQ:29:HIS:CG	46:QQ:32:TYR:HB2	2.47	0.49
49:QA:813:U:H2'	49:QA:814:A:H8	1.78	0.49
49:QA:1203:C:H2'	49:QA:1204:A:H8	1.77	0.49
34:XE:100:VAL:HG23	34:XE:107:ARG:HG3	1.94	0.49
35:XF:53:ALA:O	35:XF:54:LYS:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:XF:95:GLU:O	47:XR:32:ARG:NH1	2.43	0.49
40:XK:79:SER:HA	40:XK:104:GLN:HB3	1.95	0.49
41:XL:42:THR:HA	41:XL:52:LEU:HA	1.93	0.49
43:XN:3:ARG:HH21	49:XA:1048:G:P	2.36	0.49
49:XA:269:C:H2'	49:XA:270:A:C8	2.48	0.49
49:XA:606:G:O5'	49:XA:607:A:H5'	2.13	0.49
49:XA:976:G:N2	49:XA:1362:C:H2'	2.28	0.49
49:XA:999:U:O4	49:XA:1000:A:N6	2.45	0.49
1:RA:510:C:H2'	1:RA:511:U:O4'	2.13	0.49
1:RA:679:C:H2'	1:RA:680:G:C8	2.47	0.49
1:RA:1538:G:H2'	1:RA:1539:G:H8	1.76	0.49
1:RA:1579:A:H2'	1:RA:1580:A:C8	2.47	0.49
1:RA:1811:G:H2'	1:RA:1812:A:C8	2.47	0.49
1:RA:2816:C:O3'	13:RR:99:LYS:NZ	2.45	0.49
1:RA:2841:C:H2'	1:RA:2842:G:H8	1.78	0.49
1:RA:2845:G:H2'	1:RA:2846:G:C8	2.47	0.49
6:RG:143:GLU:HB3	51:R4:28:LYS:HE2	1.94	0.49
6:RG:173:LEU:HD22	6:RG:178:PHE:CE1	2.48	0.49
8:RI:27:ARG:HB2	23:R1:71:TYR:CZ	2.47	0.49
8:RI:29:TYR:HD2	8:RI:30:LEU:HD23	1.78	0.49
23:R1:53:VAL:HB	23:R1:58:ILE:HD12	1.95	0.49
1:YA:665:C:H2'	1:YA:666:G:C8	2.47	0.49
1:YA:1535:U:N3	1:YA:1537:C:H1'	2.28	0.49
1:YA:2112:G:C6	53:XV:19:G:C2	3.00	0.49
1:YA:2241:A:H2'	1:YA:2242:G:C8	2.47	0.49
1:YA:2372:G:H2'	1:YA:2373:G:H8	1.78	0.49
11:YP:15:ARG:O	11:YP:17:LYS:HG3	2.13	0.49
21:YZ:8:TYR:HB2	21:YZ:38:TYR:CE2	2.48	0.49
41:QL:100:ILE:HG22	41:QL:102:ARG:H	1.77	0.49
44:QO:48:LYS:HB2	49:QA:668:G:H4'	1.95	0.49
49:QA:556:C:H2'	49:QA:557:G:C8	2.48	0.49
49:QA:662:G:H2'	49:QA:663:A:H8	1.78	0.49
49:QA:954:G:H2'	49:QA:955:U:C6	2.48	0.49
49:QA:1236:A:H2'	49:QA:1237:C:C6	2.47	0.49
49:QA:1473:A:H2'	49:QA:1474:G:C8	2.47	0.49
32:XC:117:ALA:HB2	32:XC:200:ALA:HB2	1.95	0.49
35:XF:94:GLN:OE1	47:XR:72:ARG:NH2	2.46	0.49
46:XQ:25:ARG:CZ	49:XA:237:C:H5''	2.43	0.49
47:XR:70:ILE:O	47:XR:74:ARG:HG3	2.12	0.49
49:XA:404:U:H2'	49:XA:405:U:H6	1.78	0.49
49:XA:794:A:H4'	49:XA:1521:G:O2'	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:1107:C:C4	49:XA:1108:G:C8	3.00	0.49
49:XA:1116:C:H2'	49:XA:1117:G:H5''	1.95	0.49
49:XA:1374:A:H2'	49:XA:1375:A:O4'	2.13	0.49
49:XA:1518:A:H2'	49:XA:1519:A:C8	2.48	0.49
1:RA:412:A:N7	1:RA:2411:A:H2	2.11	0.48
1:RA:465:G:H2'	1:RA:466:A:C8	2.47	0.48
1:RA:661:C:H2'	1:RA:662:G:C8	2.47	0.48
1:RA:813:U:H2'	1:RA:814:C:C6	2.48	0.48
1:RA:818:G:N1	1:RA:1188:U:OP2	2.31	0.48
1:RA:1408:C:H2'	1:RA:1409:C:H6	1.77	0.48
1:RA:1532:C:H2'	1:RA:1533:C:O4'	2.13	0.48
1:RA:1675:C:H2'	1:RA:1676:A:O4'	2.13	0.48
1:RA:2292:C:H2'	1:RA:2293:C:C6	2.48	0.48
1:RA:2533:A:OP1	1:RA:2665:A:O2'	2.24	0.48
1:RA:2870:C:H2'	1:RA:2871:C:O4'	2.13	0.48
4:RE:119:ARG:HG2	4:RE:160:TYR:HB2	1.95	0.48
6:RG:51:ARG:O	6:RG:53:LEU:N	2.43	0.48
8:RI:5:LEU:HD13	8:RI:17:GLN:HB3	1.95	0.48
19:RX:39:ILE:O	19:RX:43:VAL:HG12	2.12	0.48
1:YA:715:G:H5''	44:XO:89:GLY:OXT	2.12	0.48
1:YA:1268:A:OP1	1:YA:2006:C:OP1	2.31	0.48
1:YA:1952:A:C5	10:YO:22:ILE:HD12	2.48	0.48
1:YA:2439:A:O2'	1:YA:2600:A:OP1	2.26	0.48
1:YA:2537:U:H2'	1:YA:2538:C:H6	1.78	0.48
3:YD:226:MET:HB3	3:YD:230:ASP:OD2	2.13	0.48
31:QB:92:TYR:CD2	31:QB:151:GLY:HA3	2.47	0.48
33:QD:33:MET:HG3	33:QD:37:PRO:HB3	1.94	0.48
36:QG:69:VAL:HG12	36:QG:71:PRO:HD3	1.95	0.48
37:QH:94:TYR:CG	49:QA:598:U:H4'	2.47	0.48
44:QO:87:ILE:O	44:QO:88:ARG:HB2	2.12	0.48
46:QQ:38:ARG:HG2	49:QA:280:C:C2	2.48	0.48
49:QA:515:G:H2'	49:QA:516:U:O4'	2.13	0.48
49:QA:574:A:N3	49:QA:883:C:H1'	2.28	0.48
49:QA:952:U:H5'	49:QA:972:C:N4	2.27	0.48
49:QA:1374:A:H2'	49:QA:1375:A:O4'	2.13	0.48
49:QA:1532:U:HO2'	49:QA:1533:C:P	2.36	0.48
39:XJ:4:ILE:HB	39:XJ:74:ILE:HG22	1.94	0.48
49:XA:1081:G:H2'	49:XA:1082:G:H8	1.76	0.48
1:RA:1297:C:H2'	1:RA:1298:C:H6	1.76	0.48
1:RA:1923:U:H2'	1:RA:1924:C:H6	1.78	0.48
1:RA:2030:A:H4'	1:RA:2031:A:H8	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:RO:87:ILE:HD12	10:RO:91:LEU:HD12	1.95	0.48
1:YA:777:A:H2'	1:YA:778:G:H8	1.78	0.48
1:YA:827:U:H2'	1:YA:2068:U:C2	2.48	0.48
1:YA:1022:G:H22	1:YA:1142(A):A:H2	1.61	0.48
1:YA:1246:A:OP1	11:YP:15:ARG:NH2	2.46	0.48
1:YA:1448:G:H5'	1:YA:1449:A:OP1	2.13	0.48
1:YA:1680:U:H2'	1:YA:1681:G:O4'	2.13	0.48
1:YA:1935:G:H1'	1:YA:1964:G:N2	2.28	0.48
1:YA:2415:G:H4'	11:YP:67:MET:N	2.28	0.48
1:YA:2440:C:H5''	1:YA:2587:A:H4'	1.93	0.48
1:YA:2443:C:H2'	1:YA:2444:G:C8	2.49	0.48
1:YA:2648:C:H2'	1:YA:2649:U:C6	2.48	0.48
3:YD:12:SER:O	3:YD:16:MET:HB2	2.13	0.48
4:YE:67:PHE:O	4:YE:69:LYS:N	2.39	0.48
11:YP:64:LYS:HB3	29:Y8:25:MET:HG3	1.95	0.48
16:YU:91:ASP:O	16:YU:95:LEU:N	2.37	0.48
32:QC:69:HIS:HA	32:QC:104:GLN:O	2.12	0.48
38:QI:16:ARG:HH12	49:QA:1128:C:H4'	1.78	0.48
41:QL:86:ARG:H	41:QL:98:TYR:HA	1.77	0.48
46:QQ:43:LEU:HD12	46:QQ:69:LYS:HA	1.93	0.48
48:QT:18:GLN:HA	48:QT:21:LYS:HE3	1.95	0.48
49:QA:689:C:H2'	49:QA:690:G:O4'	2.12	0.48
49:XA:536:C:H2'	49:XA:537:G:H8	1.77	0.48
49:XA:762:C:H2'	49:XA:763:G:H8	1.78	0.48
49:XA:1254:C:H2'	49:XA:1255:G:C8	2.48	0.48
52:XX:2:G:H2'	52:XX:3:C:C6	2.49	0.48
1:RA:216:A:H2'	1:RA:217:G:C8	2.48	0.48
1:RA:579:G:O2'	1:RA:2019:A:OP1	2.23	0.48
1:RA:1028:A:N6	1:RA:1125:G:H2'	2.29	0.48
1:RA:1030:G:C6	1:RA:1125:G:N2	2.82	0.48
1:RA:1658:C:H2'	1:RA:1659:U:H6	1.78	0.48
1:RA:2342:C:O2'	1:RA:2374:C:H5''	2.12	0.48
7:RH:27:LYS:HA	7:RH:32:GLU:HA	1.95	0.48
12:RQ:32:TYR:CE1	12:RQ:133:ARG:HG3	2.48	0.48
1:YA:273:G:C2	1:YA:273(A):G:C8	3.01	0.48
1:YA:280:C:H2'	1:YA:281:G:O4'	2.13	0.48
1:YA:286:C:H2'	1:YA:287:C:H6	1.77	0.48
1:YA:504:U:H5'	1:YA:506:G:OP2	2.14	0.48
1:YA:958:U:OP2	12:YQ:14:ARG:NH1	2.46	0.48
1:YA:1204:A:H2	1:YA:1241:A:N1	2.12	0.48
1:YA:2133:G:H1'	1:YA:2158:A:N6	2.28	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:YG:44:GLY:O	6:YG:47:LYS:HB2	2.14	0.48
9:YN:35:ARG:HG3	9:YN:37:LYS:HG3	1.94	0.48
10:YO:2:ILE:HD12	10:YO:6:THR:HG21	1.95	0.48
22:Y0:23:VAL:HG22	22:Y0:38:VAL:HG22	1.95	0.48
27:Y6:15:GLU:CD	27:Y6:41:PRO:HB3	2.33	0.48
31:QB:187:LEU:HD23	31:QB:188:ALA:H	1.78	0.48
38:QI:97:LYS:HB3	38:QI:98:PRO:HD3	1.95	0.48
41:QL:61:THR:CB	49:QA:362:G:H5'	2.43	0.48
42:QM:95:GLY:HA2	42:QM:110:ARG:HH12	1.78	0.48
43:QN:24:CYS:SG	43:QN:27:CYS:HB3	2.53	0.48
49:QA:398:C:H2'	49:QA:399:G:C8	2.49	0.48
49:QA:892:A:H2'	49:QA:893:C:H6	1.78	0.48
49:QA:1142:G:H3'	49:QA:1143:G:C8	2.48	0.48
31:XB:131:PRO:O	31:XB:135:GLN:HG3	2.13	0.48
34:XE:19:MET:SD	34:XE:24:ARG:HB3	2.54	0.48
36:XG:75:VAL:HA	36:XG:87:VAL:O	2.14	0.48
46:XQ:67:LYS:HB2	49:XA:254:G:OP2	2.13	0.48
47:XR:50:ILE:HG13	49:XA:719:C:O2	2.12	0.48
49:XA:777:A:H2'	49:XA:778:G:C8	2.48	0.48
49:XA:1083:U:H3'	49:XA:1084:G:C8	2.48	0.48
49:XA:1381:U:H2'	49:XA:1382:C:C6	2.49	0.48
52:QX:2:G:H2'	52:QX:3:C:C6	2.49	0.48
1:RA:189:G:H2'	1:RA:205:G:N2	2.28	0.48
1:RA:334:C:OP1	1:RA:335:C:N4	2.45	0.48
1:RA:2033:A:O2'	1:RA:2035:G:OP2	2.27	0.48
1:RA:2594:C:H2'	1:RA:2595:G:C8	2.49	0.48
2:RB:31:C:H41	14:RS:32:LEU:HD13	1.78	0.48
5:RF:24:LEU:HB3	5:RF:115:ALA:HB2	1.95	0.48
15:RT:60:THR:HG22	15:RT:77:PRO:HA	1.94	0.48
1:YA:30:G:H2'	1:YA:31:C:H6	1.78	0.48
1:YA:59:U:H3	1:YA:68:G:H1	1.61	0.48
1:YA:661:C:H2'	1:YA:662:G:C8	2.48	0.48
1:YA:1259:G:H2'	1:YA:1260:G:C8	2.47	0.48
1:YA:1262:A:C6	1:YA:1263:U:C4	3.01	0.48
1:YA:1999:C:H2'	1:YA:2000:G:O4'	2.13	0.48
1:YA:2600:A:H2'	1:YA:2601:C:C6	2.47	0.48
4:YE:35:GLN:HG2	4:YE:37:ARG:HE	1.78	0.48
33:QD:162:LEU:HD22	33:QD:178:VAL:HG13	1.96	0.48
39:QJ:10:GLY:HA3	39:QJ:16:LEU:HG	1.95	0.48
49:QA:309:G:H2'	49:QA:310:G:H8	1.79	0.48
49:QA:688:G:O2'	49:QA:704:A:N1	2.39	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1250:A:H2	49:QA:1370:G:H1'	1.79	0.48
32:XC:172:ARG:HB3	49:XA:1106:G:H4'	1.94	0.48
49:XA:1288:A:H2'	49:XA:1289:A:C8	2.48	0.48
49:XA:1370:G:H2'	49:XA:1371:G:H8	1.78	0.48
49:XA:1536:C:H2'	49:XA:1537:U:C6	2.48	0.48
52:QX:13:A:N1	52:QX:14:A:N1	2.61	0.48
1:RA:83:G:HO2'	1:RA:84:A:H8	1.55	0.48
1:RA:520:G:H2'	1:RA:521:G:C8	2.48	0.48
1:RA:1045:A:O2'	1:RA:1046:A:OP2	2.30	0.48
1:RA:1072:C:N4	1:RA:1098:A:OP2	2.43	0.48
1:RA:1844:C:H2'	1:RA:1845:G:H8	1.79	0.48
1:RA:2024:G:H2'	1:RA:2025:C:C6	2.49	0.48
2:RB:31:C:H4'	6:RG:29:TRP:CH2	2.47	0.48
5:RF:184:TYR:O	5:RF:188:ARG:HG3	2.14	0.48
5:RF:197:ASP:OD2	5:RF:197:ASP:N	2.45	0.48
8:RI:9:LEU:O	8:RI:10:GLU:HG3	2.14	0.48
22:R0:50:ASN:HB3	22:R0:63:VAL:HG22	1.95	0.48
1:YA:256:A:H2'	1:YA:257:A:H8	1.77	0.48
1:YA:700:G:O2'	1:YA:1632:A:N3	2.44	0.48
1:YA:729:G:O2'	1:YA:763:G:H4'	2.13	0.48
1:YA:841:A:H2'	1:YA:842:G:H8	1.78	0.48
1:YA:978:G:O4'	1:YA:1001:A:H2	1.97	0.48
1:YA:2047:U:H2'	1:YA:2048:G:C8	2.48	0.48
11:YP:64:LYS:O	11:YP:66:GLY:N	2.45	0.48
34:QE:89:ILE:HD12	34:QE:122:GLU:HB2	1.95	0.48
47:QR:44:LEU:CD1	47:QR:50:ILE:HG12	2.44	0.48
49:QA:373:A:H61	49:QA:391:G:H1'	1.77	0.48
49:QA:512:U:H2'	49:QA:513:C:C6	2.48	0.48
49:QA:945:G:C2	49:QA:946:A:C8	3.02	0.48
49:QA:978:A:O2'	49:QA:1322:C:N3	2.37	0.48
33:XD:157:LEU:HA	33:XD:160:GLN:HB3	1.95	0.48
34:XE:93:PRO:HA	34:XE:118:ILE:HD12	1.94	0.48
35:XF:22:GLU:OE2	35:XF:82:ARG:HD3	2.14	0.48
44:XO:18:PHE:CE1	44:XO:21:ASP:HB3	2.49	0.48
44:XO:75:PRO:HA	44:XO:78:TYR:HD2	1.79	0.48
45:XP:25:ARG:HH21	49:XA:230:G:H4'	1.79	0.48
49:XA:595:G:N3	49:XA:596:C:N4	2.57	0.48
49:XA:998(A):C:H42	49:XA:1042:G:H1	1.61	0.48
53:XV:60:A:H4'	53:XV:61:A:OP1	2.13	0.48
1:RA:341:G:H2'	1:RA:342:G:O4'	2.13	0.48
1:RA:827:U:H1'	1:RA:2246:G:O2'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2292:C:H2'	1:RA:2293:C:H6	1.78	0.48
1:RA:2839:G:H5'	13:RR:46:GLY:HA2	1.95	0.48
6:RG:61:ALA:CB	51:R4:7:PRO:HG3	2.36	0.48
7:RH:72:ILE:O	7:RH:76:VAL:HG23	2.13	0.48
14:RS:15:ARG:NH1	14:RS:25:ARG:HH21	2.10	0.48
17:RV:58:VAL:HB	17:RV:98:GLU:HB2	1.96	0.48
23:R1:64:ALA:HA	23:R1:67:ILE:HG13	1.96	0.48
1:YA:141:A:C8	1:YA:1408:C:H1'	2.49	0.48
1:YA:307:G:H21	1:YA:330:A:H62	1.60	0.48
1:YA:380:U:H2'	1:YA:381:G:C8	2.48	0.48
1:YA:840:C:H2'	1:YA:841:A:H8	1.78	0.48
1:YA:1923:U:H2'	1:YA:1924:C:C6	2.48	0.48
1:YA:2124:G:H2'	1:YA:2125:G:O4'	2.14	0.48
1:YA:2698:U:H2'	1:YA:2699:C:H6	1.78	0.48
3:YD:35:LYS:NZ	3:YD:64:ILE:O	2.40	0.48
7:YH:113:VAL:HG11	7:YH:151:ILE:HD12	1.95	0.48
9:YN:34:LEU:HD21	9:YN:120:LEU:HB2	1.95	0.48
31:QB:71:VAL:HA	31:QB:93:VAL:O	2.13	0.48
32:QC:30:ARG:NH2	32:QC:31:HIS:HE1	2.12	0.48
49:QA:762:C:H2'	49:QA:763:G:H8	1.78	0.48
49:QA:932:C:H2'	49:QA:933:G:C8	2.49	0.48
49:QA:1009:G:N2	49:QA:1020:U:O2	2.30	0.48
49:QA:1533:C:H3'	49:QA:1534:A:O4'	2.13	0.48
32:XC:35:GLU:O	32:XC:39:ILE:HG13	2.13	0.48
36:XG:29:LYS:NZ	49:XA:1375:A:H4'	2.27	0.48
36:XG:30:ILE:HD13	36:XG:43:PHE:HB2	1.94	0.48
37:XH:97:VAL:HG13	37:XH:98:LYS:HD3	1.96	0.48
38:XI:85:LEU:HB3	38:XI:92:TYR:HD1	1.79	0.48
41:XL:53:ARG:N	41:XL:53:ARG:HD2	2.29	0.48
46:XQ:68:ARG:HA	46:XQ:70:ARG:HH12	1.79	0.48
47:XR:64:ARG:HH22	49:XA:835:U:H5''	1.78	0.48
49:XA:828:A:H2'	49:XA:829:G:O4'	2.13	0.48
49:XA:1203:C:H2'	49:XA:1204:A:C8	2.48	0.48
49:XA:1512:U:H2'	49:XA:1513:A:C8	2.48	0.48
49:XA:1532:U:H1'	52:XX:13:A:H61	1.77	0.48
1:RA:50:U:H3'	1:RA:51:G:H5'	1.94	0.48
1:RA:399:G:H2'	1:RA:400:G:O4'	2.14	0.48
1:RA:576:U:H5''	1:RA:2503:A:OP1	2.13	0.48
1:RA:659:C:H2'	1:RA:660:G:C8	2.47	0.48
1:RA:1448:G:H5'	1:RA:1449:A:OP1	2.13	0.48
1:RA:2647:U:H2'	1:RA:2648:C:C6	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2867:G:OP2	15:RT:119:LYS:NZ	2.33	0.48
7:RH:86:GLU:HG3	7:RH:165:ALA:N	2.29	0.48
13:RR:33:ARG:HD3	13:RR:113:LEU:HG	1.94	0.48
15:RT:29:ARG:NH1	15:RT:46:GLU:OE1	2.45	0.48
21:RZ:80:ARG:HH21	21:RZ:82:ARG:NH1	2.12	0.48
1:YA:278:A:O2'	1:YA:279:C:O5'	2.25	0.48
1:YA:1427:A:H4'	1:YA:1428:C:O5'	2.13	0.48
1:YA:2028:U:H2'	1:YA:2029:G:C8	2.48	0.48
4:YE:131:ALA:HB1	4:YE:135:HIS:HE1	1.79	0.48
5:YF:188:ARG:HG2	11:YP:3:LEU:HD11	1.94	0.48
16:YU:104:GLN:HB2	17:YV:44:LYS:HD3	1.96	0.48
42:QM:3:ARG:O	42:QM:57:ARG:NH2	2.46	0.48
42:QM:87:TYR:CE2	42:QM:91:ARG:HD2	2.48	0.48
46:QQ:13:ASP:HA	46:QQ:19:VAL:HG12	1.96	0.48
49:QA:50:A:H1'	49:QA:52:G:C8	2.49	0.48
49:QA:563:A:H2'	49:QA:567:G:C8	2.49	0.48
32:XC:19:GLU:HG2	32:XC:54:ARG:HG3	1.94	0.48
32:XC:70:VAL:HG12	32:XC:71:ALA:H	1.78	0.48
37:XH:10:LEU:HB3	37:XH:83:ILE:CD1	2.38	0.48
45:XP:69:THR:HB	49:XA:375:U:OP1	2.13	0.48
49:XA:186:C:H2'	49:XA:186(A):C:C6	2.49	0.48
49:XA:444:C:H2'	49:XA:445:G:C8	2.49	0.48
49:XA:680:C:H2'	49:XA:681:C:C6	2.48	0.48
1:RA:205:G:HO2'	1:RA:206:U:P	2.34	0.48
1:RA:820:A:H2'	1:RA:821:A:H8	1.79	0.48
1:RA:1062:G:H2'	1:RA:1063:G:C8	2.49	0.48
1:RA:1385:G:O2'	1:RA:1396:U:O2	2.31	0.48
1:RA:1668:A:N3	1:RA:1670:C:C4	2.82	0.48
1:RA:2258:C:O2'	1:RA:2427:C:OP2	2.31	0.48
1:RA:2316:C:H1'	6:RG:128:ARG:NH2	2.29	0.48
1:RA:2588:G:O6	1:RA:2607:G:C6	2.66	0.48
1:RA:2808:U:O4	1:RA:2892:A:N7	2.47	0.48
5:RF:143:ALA:HB1	5:RF:148:LEU:HB2	1.96	0.48
15:RT:3:ARG:HG3	15:RT:7:ILE:HG12	1.95	0.48
21:RZ:111:VAL:HG13	21:RZ:112:ARG:H	1.79	0.48
1:YA:50:U:H3'	1:YA:51:G:H5'	1.94	0.48
1:YA:946:G:H2'	1:YA:947:G:H8	1.79	0.48
1:YA:1301:A:C2	1:YA:1303:G:C6	3.01	0.48
1:YA:1842:G:O2'	3:YD:253:GLN:OE1	2.32	0.48
1:YA:1869:G:H5'	1:YA:1870:C:OP2	2.14	0.48
1:YA:1899:G:H21	1:YA:1902:C:H41	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:2292:C:OP2	14:YS:17:ARG:NH2	2.42	0.48
6:YG:114:ILE:HB	6:YG:117:PHE:HB2	1.96	0.48
11:YP:26:GLY:O	11:YP:28:GLY:N	2.46	0.48
33:QD:43:HIS:HA	33:QD:46:LYS:NZ	2.29	0.48
41:QL:69:TYR:CG	41:QL:70:ILE:N	2.81	0.48
48:QT:102:GLY:C	48:QT:104:LEU:H	2.17	0.48
49:QA:336:C:H2'	49:QA:337:C:C6	2.49	0.48
49:QA:777:A:H2'	49:QA:778:G:H8	1.79	0.48
32:XC:41:GLY:O	32:XC:44:GLU:HG2	2.14	0.48
37:XH:14:ARG:NH1	37:XH:82:HIS:HE1	2.12	0.48
41:XL:127:GLU:O	41:XL:129:ALA:N	2.43	0.48
47:XR:58:LEU:O	47:XR:63:GLN:HB2	2.13	0.48
49:XA:102:G:H2'	49:XA:103:C:C6	2.48	0.48
49:XA:315:A:H4'	49:XA:317:G:OP2	2.13	0.48
49:XA:536:C:H2'	49:XA:537:G:C8	2.48	0.48
49:XA:570:G:H2'	49:XA:571:U:C6	2.49	0.48
53:QV:60:A:H4'	53:QV:61:A:OP1	2.13	0.48
1:RA:65:C:H1'	1:RA:456:C:H42	1.78	0.48
1:RA:251:A:C5	1:RA:252:G:H1'	2.49	0.48
1:RA:532:A:H4'	1:RA:533:G:C8	2.48	0.48
1:RA:570:G:H2'	1:RA:2030:A:C6	2.48	0.48
1:RA:639:U:H2'	1:RA:640:C:C6	2.49	0.48
1:RA:813:U:H2'	1:RA:814:C:H6	1.78	0.48
1:RA:864:G:H21	1:RA:866:A:N6	2.11	0.48
1:RA:2174:C:H2'	1:RA:2175:C:C6	2.49	0.48
1:RA:2409:G:H2'	1:RA:2410:G:O4'	2.13	0.48
1:RA:2784:C:H2'	1:RA:2785:C:C6	2.48	0.48
1:RA:2790:A:H2'	1:RA:2791:C:H5''	1.96	0.48
1:YA:2567:G:H2'	1:YA:2568:C:C6	2.48	0.48
1:YA:2824:C:H2'	1:YA:2825:C:O4'	2.13	0.48
2:YB:16:G:N2	2:YB:69:G:H1'	2.29	0.48
9:YN:38:HIS:O	16:YU:67:ALA:HB1	2.13	0.48
21:YZ:82:ARG:HG3	21:YZ:83:PRO:HD2	1.96	0.48
22:Y0:18:ALA:O	22:Y0:20:ARG:NH1	2.46	0.48
42:QM:102:ARG:HD2	49:QA:950:U:OP2	2.12	0.48
45:QP:2:VAL:HG23	45:QP:22:THR:O	2.13	0.48
49:QA:1518:A:H2'	49:QA:1519:A:C8	2.49	0.48
39:XJ:45:ARG:HG3	39:XJ:47:PHE:CE1	2.49	0.48
42:XM:102:ARG:HB2	49:XA:950:U:OP2	2.14	0.48
44:XO:43:LEU:O	44:XO:47:LYS:HB3	2.14	0.48
45:XP:39:TYR:OH	45:XP:41:PRO:HB3	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:297:G:H4'	49:XA:557:G:H4'	1.96	0.48
49:XA:407:G:H2'	49:XA:408:A:H8	1.78	0.48
49:XA:541:G:H2'	49:XA:542:G:C8	2.49	0.48
49:XA:1126:U:H1'	49:XA:1280:A:C5	2.49	0.48
49:XA:1169:A:H2'	49:XA:1170:A:C8	2.48	0.48
1:RA:92:G:H2'	1:RA:93:C:C6	2.48	0.48
1:RA:195:A:H2'	1:RA:198:C:H41	1.78	0.48
1:RA:2038:G:H2'	1:RA:2039:C:C6	2.49	0.48
1:RA:2745:C:H2'	1:RA:2746:U:C6	2.49	0.48
5:RF:157:VAL:O	5:RF:194:MET:HA	2.14	0.48
26:R5:4:HIS:HB3	26:R5:5:PRO:CD	2.44	0.48
27:R6:44:ARG:O	27:R6:45:LYS:HB2	2.14	0.48
1:YA:1412:A:H2'	1:YA:1413:G:H8	1.78	0.48
1:YA:1771:C:H2'	1:YA:1772:G:C8	2.49	0.48
1:YA:2105:C:H2'	1:YA:2106:G:C8	2.49	0.48
8:YI:62:LYS:HE3	8:YI:134:PRO:HG2	1.95	0.48
8:YI:133:HIS:HB2	8:YI:134:PRO:CD	2.44	0.48
10:YO:71:ARG:HH21	10:YO:77:ILE:HG21	1.79	0.48
11:YP:126:VAL:HG12	11:YP:147:LEU:CD2	2.44	0.48
26:Y5:46:CYS:O	26:Y5:48:GLU:N	2.45	0.48
33:QD:123:HIS:CG	49:QA:438:G:H4'	2.49	0.48
41:QL:58:VAL:CG1	41:QL:60:LEU:HD23	2.43	0.48
43:QN:29:ARG:HG2	43:QN:31:ARG:H	1.78	0.48
47:QR:30:ASP:OD2	47:QR:33:ASP:HB2	2.14	0.48
49:QA:41:G:H2'	49:QA:42:G:C8	2.43	0.48
49:QA:729:A:H2'	49:QA:730:G:C8	2.49	0.48
49:QA:967:C:H3'	49:QA:968:A:H2'	1.96	0.48
49:QA:1386:G:H2'	49:QA:1387:G:C8	2.49	0.48
36:XG:115:ARG:HB2	36:XG:118:VAL:HG23	1.95	0.48
39:XJ:13:HIS:HA	39:XJ:16:LEU:HB3	1.96	0.48
40:XK:41:THR:HG22	40:XK:71:LYS:HB2	1.96	0.48
46:XQ:57:VAL:HG12	46:XQ:76:LEU:HG	1.94	0.48
49:XA:993:G:H2'	49:XA:995:C:H41	1.78	0.48
51:Y4:42:PHE:O	51:Y4:44:THR:N	2.47	0.48
1:RA:173:G:H2'	1:RA:174:C:C6	2.49	0.47
1:RA:518:G:H2'	1:RA:519:U:C6	2.49	0.47
1:RA:587:C:N3	11:RP:33:ARG:NH1	2.61	0.47
1:RA:1430:C:H2'	1:RA:1431:U:H6	1.77	0.47
1:RA:1651:G:N7	13:RR:11:ASN:ND2	2.61	0.47
8:RI:110:ASP:N	8:RI:130:TYR:OH	2.45	0.47
15:RT:28:VAL:HG23	15:RT:88:ILE:HA	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:R9:8:LYS:O	30:R9:34:GLN:NE2	2.46	0.47
1:YA:319:C:H2'	1:YA:320:A:C8	2.48	0.47
1:YA:465:G:H21	1:YA:684:G:H1'	1.79	0.47
1:YA:1416:G:H2'	1:YA:1417:C:H6	1.78	0.47
1:YA:1444(A):A:O2'	1:YA:1460:A:N3	2.46	0.47
1:YA:1467:C:C5	1:YA:1546:C:H2'	2.49	0.47
1:YA:2648:C:H2'	1:YA:2649:U:H6	1.79	0.47
1:YA:2685:G:OP1	15:YT:51:ARG:NH2	2.47	0.47
1:YA:2841:C:H2'	1:YA:2842:G:H8	1.79	0.47
32:QC:22:TRP:HB3	32:QC:59:ARG:N	2.28	0.47
32:QC:31:HIS:HA	32:QC:34:LEU:HB2	1.95	0.47
34:QE:110:LEU:HD22	34:QE:115:VAL:HG21	1.96	0.47
36:QG:95:ARG:HE	36:QG:99:LEU:HD23	1.79	0.47
39:QJ:43:ARG:HH12	49:QA:1279:A:H61	1.62	0.47
46:QQ:19:VAL:HG23	46:QQ:44:ALA:HB3	1.95	0.47
49:QA:235:C:H2'	49:QA:236:G:C8	2.49	0.47
37:XH:10:LEU:HD22	37:XH:83:ILE:HG13	1.96	0.47
37:XH:36:LEU:HA	37:XH:39:LEU:HB2	1.96	0.47
37:XH:49:GLU:O	37:XH:59:LEU:HG	2.14	0.47
39:XJ:53:PRO:O	43:XN:41:ARG:NH2	2.38	0.47
44:XO:28:GLN:O	44:XO:32:LEU:HG	2.14	0.47
46:XQ:29:HIS:CE1	46:XQ:32:TYR:HB2	2.49	0.47
48:XT:74:LYS:NZ	48:XT:75:ASN:OD1	2.44	0.47
49:XA:270:A:H2'	49:XA:271:C:C6	2.49	0.47
49:XA:1065:U:C5	49:XA:1190:G:H1'	2.48	0.47
49:XA:1216:G:H2'	49:XA:1217:C:C6	2.49	0.47
53:QV:38:1MG:H4'	53:QV:38:1MG:OP1	2.13	0.47
1:RA:1024:G:OP2	1:RA:1025:G:C2'	2.62	0.47
1:RA:1132:A:H2'	1:RA:1133:U:C6	2.50	0.47
1:RA:1427:A:H4'	1:RA:1428:C:O5'	2.13	0.47
1:RA:1952:A:C5	10:RO:22:ILE:HD12	2.49	0.47
1:RA:2627:G:H2'	1:RA:2628:C:C6	2.49	0.47
1:YA:608:A:H2'	1:YA:609:A:H8	1.79	0.47
1:YA:1278:A:H4'	13:YR:34:ILE:HD12	1.95	0.47
1:YA:1899:G:N2	1:YA:1902:C:H41	2.10	0.47
1:YA:2186:G:H2'	1:YA:2187:G:H8	1.78	0.47
1:YA:2643:G:H2'	1:YA:2644:G:C8	2.49	0.47
7:YH:106:THR:HG22	7:YH:112:PRO:HB3	1.97	0.47
21:YZ:181:GLU:HG3	21:YZ:183:LEU:HG	1.97	0.47
31:QB:24:TRP:HA	31:QB:190:THR:HG22	1.95	0.47
31:QB:205:ASP:OD1	31:QB:205:ASP:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:QE:92:LYS:HG3	34:QE:93:PRO:HD2	1.97	0.47
37:QH:34:GLU:O	37:QH:37:ARG:HB3	2.13	0.47
38:QI:86:VAL:HG22	38:QI:93:ARG:HB3	1.96	0.47
40:QK:112:THR:H	47:QR:84:LYS:HE3	1.80	0.47
49:QA:62:U:H2'	49:QA:63:C:C6	2.48	0.47
49:QA:114:U:H2'	49:QA:115:G:C8	2.49	0.47
49:QA:474:G:H2'	49:QA:475:G:H8	1.79	0.47
49:QA:513:C:H2'	49:QA:514:C:C6	2.49	0.47
49:QA:609:A:C4	49:QA:610:G:C8	3.02	0.47
32:XC:59:ARG:HH11	32:XC:64:VAL:HG22	1.79	0.47
35:XF:70:ASP:HA	49:XA:738:C:H4'	1.96	0.47
37:XH:38:ILE:HG21	37:XH:111:ILE:HG21	1.96	0.47
40:XK:29:ILE:HA	40:XK:44:SER:HA	1.96	0.47
43:XN:58:LYS:O	43:XN:60:SER:N	2.47	0.47
45:XP:5:ARG:HB2	49:XA:376:G:H5''	1.96	0.47
45:XP:8:ARG:NH2	45:XP:11:SER:O	2.41	0.47
45:XP:40:ASP:H	45:XP:48:TRP:HB2	1.79	0.47
46:XQ:29:HIS:HB3	46:XQ:33:GLY:N	2.29	0.47
49:XA:445:G:H2'	49:XA:446:G:C8	2.49	0.47
49:XA:458(A):G:O6	49:XA:458(C):G:H5''	2.14	0.47
1:RA:845:G:H8	1:RA:845:G:OP2	1.97	0.47
1:RA:1389:G:H2'	1:RA:1390:U:C6	2.49	0.47
1:RA:1538:G:H2'	1:RA:1539:G:C8	2.50	0.47
1:RA:1676:A:H2'	1:RA:1677:A:O4'	2.15	0.47
1:RA:2293:C:H2'	1:RA:2294:C:C6	2.49	0.47
1:RA:2331:G:O2'	22:R0:43:THR:HG22	2.14	0.47
1:RA:2660:A:H2'	1:RA:2661:G:C8	2.49	0.47
11:RP:10:PRO:O	11:RP:12:ALA:N	2.47	0.47
12:RQ:31:ASP:O	12:RQ:134:ARG:HB2	2.15	0.47
24:R2:65:ASN:HB3	24:R2:69:ARG:NH2	2.29	0.47
26:R5:3:LYS:HA	26:R5:3:LYS:NZ	2.29	0.47
27:R6:13:CYS:HB2	27:R6:22:ALA:HB3	1.97	0.47
1:YA:184:C:H2'	1:YA:185:U:C6	2.48	0.47
1:YA:566:U:OP1	11:YP:29:LYS:NZ	2.37	0.47
1:YA:1054:A:H2'	1:YA:1055:G:C8	2.49	0.47
1:YA:1335:U:OP2	19:YX:65:ARG:NH2	2.47	0.47
1:YA:1614:A:H61	18:YW:88:ARG:H	1.62	0.47
1:YA:2073:C:H5'	3:YD:229:VAL:HG13	1.96	0.47
1:YA:2698:U:H2'	1:YA:2699:C:C6	2.49	0.47
1:YA:2702:U:O2'	1:YA:2703:C:O5'	2.30	0.47
4:YE:179:GLU:HB3	4:YE:181:LEU:HD23	1.94	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:YF:101:LEU:O	5:YF:106:ARG:NH1	2.40	0.47
5:YF:125:LEU:HA	5:YF:194:MET:O	2.15	0.47
6:YG:179:PRO:HG3	51:Y4:38:LYS:NZ	2.29	0.47
11:YP:95:VAL:HG13	11:YP:100:LEU:HD21	1.95	0.47
12:YQ:35:VAL:HG13	12:YQ:130:LYS:HB3	1.95	0.47
21:YZ:72:ARG:NH2	21:YZ:97:GLU:O	2.33	0.47
26:Y5:46:CYS:HB2	26:Y5:50:GLY:HA3	1.97	0.47
32:QC:39:ILE:O	32:QC:43:LEU:HG	2.14	0.47
35:QF:60:PHE:CZ	47:QR:78:LEU:HD21	2.49	0.47
48:QT:75:ASN:HB2	49:QA:262:A:H4'	1.96	0.47
49:QA:232:G:H21	49:QA:263:A:H2	1.61	0.47
49:QA:765:G:N1	49:QA:812:C:O2'	2.42	0.47
49:QA:1513:A:H2'	49:QA:1514:C:C6	2.50	0.47
37:XH:52:ASP:HA	37:XH:56:LYS:O	2.14	0.47
40:XK:52:GLY:O	40:XK:55:LYS:HB3	2.13	0.47
41:XL:69:TYR:CG	41:XL:70:ILE:N	2.82	0.47
44:XO:49:ASP:HA	49:XA:667:G:O2'	2.14	0.47
48:XT:72:LEU:HB3	48:XT:76:ALA:HB3	1.97	0.47
1:RA:195:A:H2'	1:RA:198:C:N4	2.29	0.47
1:RA:524:U:H2'	1:RA:525:U:C6	2.48	0.47
1:RA:639:U:H2'	1:RA:640:C:H6	1.78	0.47
1:RA:854:G:H2'	1:RA:855:G:H8	1.79	0.47
1:RA:2341:G:H2'	1:RA:2342:C:C6	2.49	0.47
1:RA:2643:G:H2'	1:RA:2644:G:O4'	2.14	0.47
2:RB:77:U:P	21:RZ:19:ARG:HH22	2.37	0.47
7:RH:41:MET:HE1	7:RH:64:LEU:HB3	1.96	0.47
26:R5:16:ARG:NH1	26:R5:17:ASP:OD1	2.47	0.47
1:YA:137(A):G:C6	1:YA:139:G:O2'	2.55	0.47
1:YA:303:U:H2'	1:YA:304:G:C8	2.48	0.47
1:YA:479:A:HO2'	1:YA:481:G:H8	1.59	0.47
1:YA:977:G:C6	1:YA:987:G:C6	3.02	0.47
1:YA:1085:A:H2'	1:YA:1086:A:C4	2.49	0.47
1:YA:1375:C:H2'	1:YA:1376:C:C6	2.48	0.47
1:YA:1964:G:O6	1:YA:1967:C:N4	2.47	0.47
5:YF:9:ILE:HG23	5:YF:20:LEU:O	2.15	0.47
6:YG:109:VAL:HG13	51:Y4:33:VAL:HG11	1.95	0.47
8:YI:110:ASP:N	8:YI:130:TYR:OH	2.46	0.47
12:YQ:54:MET:HB3	12:YQ:64:ILE:HD13	1.95	0.47
13:YR:20:LEU:HD21	13:YR:40:LYS:HD3	1.96	0.47
19:YX:61:GLY:N	19:YX:75:ASP:OD2	2.38	0.47
33:QD:119:GLN:NE2	49:QA:437:U:O2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:QE:121:LYS:HG3	34:QE:122:GLU:H	1.79	0.47
37:QH:71:GLY:C	37:QH:73:ASP:H	2.18	0.47
40:QK:91:ARG:O	40:QK:95:ILE:HG13	2.15	0.47
41:QL:52:LEU:H	41:QL:53:ARG:HD2	1.80	0.47
41:QL:61:THR:HB	49:QA:362:G:H5''	1.96	0.47
49:QA:13:U:O2'	49:QA:14:U:H5'	2.14	0.47
49:QA:405:U:H3'	49:QA:406:G:H5'	1.96	0.47
49:QA:721:G:H5'	49:QA:722:A:C8	2.49	0.47
49:QA:1014:A:H2'	49:QA:1015:A:C8	2.50	0.47
46:XQ:23:VAL:O	46:XQ:39:SER:HA	2.14	0.47
49:XA:658:G:H2'	49:XA:659:U:C6	2.49	0.47
49:XA:1437:C:H2'	49:XA:1438:G:C8	2.50	0.47
51:R4:24:THR:O	51:R4:25:TYR:HD1	1.98	0.47
1:RA:357:A:H2'	1:RA:358:U:C6	2.49	0.47
1:RA:1028:A:H61	1:RA:1125:G:H2'	1.79	0.47
1:RA:2037:G:H2'	1:RA:2038:G:H8	1.79	0.47
1:RA:2521:C:C2	1:RA:2545:G:N2	2.83	0.47
1:RA:2626:C:H2'	1:RA:2627:G:H8	1.78	0.47
3:RD:108:PRO:HB3	3:RD:143:HIS:CE1	2.49	0.47
4:RE:49:LEU:HD12	4:RE:49:LEU:HA	1.73	0.47
4:RE:119:ARG:HB3	4:RE:120:TRP:CD1	2.49	0.47
5:RF:28:ILE:HG22	5:RF:112:MET:HB3	1.96	0.47
16:RU:8:VAL:HG23	16:RU:11:ARG:HH21	1.79	0.47
17:RV:7:THR:HG23	17:RV:22:VAL:HG11	1.96	0.47
1:YA:172:C:H2'	1:YA:173:G:H8	1.78	0.47
1:YA:184:C:O2'	1:YA:217:G:N3	2.43	0.47
1:YA:399:G:H2'	1:YA:400:G:O4'	2.13	0.47
1:YA:499:U:H2'	1:YA:500:G:O4'	2.14	0.47
8:YI:68:LEU:HA	8:YI:71:ILE:HG22	1.96	0.47
27:Y6:27:LYS:NZ	27:Y6:27:LYS:HB2	2.29	0.47
34:QE:149:GLU:O	34:QE:153:LYS:HB2	2.15	0.47
37:QH:30:ARG:NE	49:QA:591:U:OP2	2.48	0.47
49:QA:618:C:H5'	49:QA:619:U:H5''	1.96	0.47
33:XD:36:ARG:HB3	33:XD:38:TYR:CE2	2.49	0.47
33:XD:57:ARG:HG3	33:XD:202:LEU:HB3	1.97	0.47
33:XD:94:LEU:HD23	33:XD:97:LEU:HD12	1.96	0.47
34:XE:121:LYS:HG3	34:XE:122:GLU:H	1.80	0.47
49:XA:435:C:H2'	49:XA:436:C:C6	2.48	0.47
49:XA:1387:G:H2'	49:XA:1388:C:C6	2.49	0.47
1:RA:249:C:O5'	1:RA:2394:C:O2'	2.32	0.47
1:RA:878:A:H3'	1:RA:879:G:H8	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1077:A:N1	1:RA:1088:A:H2'	2.29	0.47
1:RA:1161:C:H2'	1:RA:1162:G:C8	2.49	0.47
1:RA:1274:A:N3	1:RA:1297:C:H1'	2.30	0.47
1:RA:1782:C:H1'	1:RA:2609:U:H5''	1.97	0.47
1:RA:1817:G:OP1	3:RD:62:TYR:HE2	1.97	0.47
1:RA:1909:C:H6	1:RA:1909:C:O5'	1.98	0.47
1:RA:2047:U:H2'	1:RA:2048:G:H8	1.79	0.47
1:RA:2053:G:OP1	4:RE:144:ARG:HG2	2.15	0.47
1:RA:2470:G:OP1	12:RQ:56:ARG:NH1	2.47	0.47
3:RD:35:LYS:NZ	3:RD:64:ILE:O	2.44	0.47
4:RE:74:PRO:HG2	4:RE:77:ILE:HG23	1.95	0.47
13:RR:28:LEU:HD12	13:RR:48:VAL:HG11	1.95	0.47
15:RT:19:LEU:HD22	15:RT:86:ILE:HG22	1.96	0.47
1:YA:376:C:H2'	1:YA:377:C:C6	2.49	0.47
1:YA:596:G:H2'	1:YA:597:U:C6	2.50	0.47
1:YA:1821:A:H2'	1:YA:1822:G:O4'	2.15	0.47
1:YA:1964:G:N1	1:YA:1967:C:C4	2.82	0.47
6:YG:27:ASN:HB3	6:YG:30:GLU:HG3	1.95	0.47
6:YG:77:ILE:HD13	6:YG:82:LEU:HD12	1.96	0.47
9:YN:96:GLU:HG2	9:YN:97:ARG:N	2.29	0.47
31:QB:97:TRP:CZ3	31:QB:172:ILE:HG13	2.50	0.47
39:QJ:47:PHE:CE1	49:QA:1357:A:H4'	2.50	0.47
49:QA:186:C:H2'	49:QA:186(A):C:C6	2.50	0.47
49:QA:777:A:H2'	49:QA:778:G:C8	2.50	0.47
49:QA:1076:C:N4	49:QA:1077:G:O6	2.47	0.47
49:QA:1250:A:N3	49:QA:1370:G:O2'	2.40	0.47
39:XJ:34:VAL:HG22	39:XJ:74:ILE:HG13	1.97	0.47
39:XJ:50:ILE:HA	39:XJ:60:ARG:HG2	1.97	0.47
48:XT:63:ILE:HG23	48:XT:77:ALA:HB1	1.95	0.47
49:XA:609:A:C5	49:XA:610:G:C8	3.03	0.47
49:XA:981:U:H2'	49:XA:982:U:C5	2.50	0.47
49:XA:1287:A:H2'	49:XA:1288:A:H8	1.79	0.47
51:R4:15:ILE:HB	51:R4:32:TYR:HB2	1.97	0.47
1:RA:147:U:H2'	1:RA:148:C:C6	2.50	0.47
1:RA:245:G:O2'	1:RA:384:U:O2	2.30	0.47
1:RA:258:G:H2'	1:RA:259:G:C8	2.50	0.47
1:RA:385:C:O2'	1:RA:388:G:N2	2.48	0.47
1:RA:547:A:H2'	1:RA:548:A:C8	2.50	0.47
1:RA:638:G:H2'	1:RA:639:U:H6	1.80	0.47
1:RA:974:G:C6	1:RA:989:G:C4	3.02	0.47
1:RA:1192:G:OP2	11:RP:18:ARG:NH1	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1330:C:H2'	1:RA:1331:A:C8	2.50	0.47
1:RA:1341:U:OP2	1:RA:1394:U:O2'	2.28	0.47
1:RA:1375:C:H2'	1:RA:1376:C:C6	2.48	0.47
1:RA:1701:A:O5'	1:RA:1701:A:H8	1.96	0.47
1:RA:1805:U:O2	3:RD:50:THR:HB	2.15	0.47
1:RA:1889:A:O2'	1:RA:2087:G:H5'	2.15	0.47
1:RA:2081:C:H2'	1:RA:2082:A:H8	1.79	0.47
1:RA:2471:C:H3'	1:RA:2472:G:H8	1.80	0.47
1:RA:2636:U:H2'	1:RA:2637:U:C6	2.50	0.47
1:RA:2748:A:N7	1:RA:2754:U:O4	2.48	0.47
1:RA:2795:G:H3'	1:RA:2797:U:C5'	2.45	0.47
2:RB:13:A:N1	2:RB:69:G:O2'	2.38	0.47
3:RD:12:SER:HB2	3:RD:208:LYS:HB3	1.96	0.47
4:RE:37:ARG:NE	4:RE:37:ARG:HA	2.30	0.47
4:RE:55:ASN:HD22	4:RE:58:ARG:HB2	1.80	0.47
5:RF:127:GLU:O	5:RF:129:PHE:N	2.47	0.47
11:RP:84:ASN:HB3	11:RP:86:LYS:HG2	1.96	0.47
21:RZ:23:LYS:HB3	21:RZ:38:TYR:CD1	2.49	0.47
21:RZ:110:GLY:HA2	21:RZ:111:VAL:O	2.14	0.47
25:R3:4:LEU:O	25:R3:36:VAL:HA	2.15	0.47
27:R6:14:THR:O	27:R6:49:HIS:HA	2.15	0.47
27:R6:47:THR:HG22	27:R6:48:VAL:HG12	1.97	0.47
28:R7:8:ASN:HB3	28:R7:11:LYS:HB3	1.96	0.47
1:YA:228:A:N3	1:YA:228:A:H3'	2.29	0.47
1:YA:376:C:H2'	1:YA:377:C:H6	1.79	0.47
1:YA:574:C:N4	1:YA:2033:A:H4'	2.30	0.47
1:YA:907:U:HO2'	12:YQ:101:ARG:HH22	1.60	0.47
1:YA:1186:G:H2'	1:YA:1187:G:O4'	2.15	0.47
1:YA:1278:A:H2'	1:YA:1279:G:C8	2.49	0.47
1:YA:1537:C:H2'	1:YA:1538:G:C8	2.50	0.47
1:YA:1550:C:H2'	1:YA:1551:C:C6	2.49	0.47
1:YA:1614:A:N6	18:YW:88:ARG:H	2.13	0.47
1:YA:1792:G:O2'	1:YA:1830:C:OP1	2.32	0.47
1:YA:2294:C:H2'	1:YA:2295:C:H6	1.79	0.47
1:YA:2306:C:H2'	1:YA:2307:G:H21	1.79	0.47
1:YA:2336:A:H61	22:Y0:43:THR:CG2	2.28	0.47
1:YA:2363:C:H2'	1:YA:2364:C:C6	2.49	0.47
1:YA:2376:A:H2'	1:YA:2377:A:O4'	2.15	0.47
1:YA:2455:G:H2'	1:YA:2456:C:C6	2.49	0.47
1:YA:2540:C:O2'	1:YA:2740:A:N3	2.42	0.47
1:YA:2712:U:H1'	1:YA:2712(A):A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:YB:25:A:C4	2:YB:26:A:C8	3.02	0.47
4:YE:111:ARG:HA	13:YR:1:MET:CG	2.44	0.47
5:YF:28:ILE:HG22	5:YF:112:MET:HB3	1.95	0.47
6:YG:22:ARG:HH22	6:YG:175:LEU:HD21	1.79	0.47
6:YG:136:ARG:O	6:YG:154:GLY:HA2	2.15	0.47
7:YH:149:ARG:NH1	7:YH:167:GLU:OE1	2.48	0.47
10:YO:68:GLU:H	10:YO:68:GLU:CD	2.17	0.47
11:YP:14:LYS:O	11:YP:16:ARG:N	2.48	0.47
17:YV:44:LYS:O	17:YV:46:VAL:HG12	2.15	0.47
21:YZ:30:ASN:OD1	21:YZ:33:LEU:N	2.47	0.47
31:QB:9:GLU:OE1	31:QB:9:GLU:N	2.47	0.47
32:QC:12:LEU:HD22	32:QC:18:TRP:HE1	1.79	0.47
36:QG:104:LEU:HD22	36:QG:134:ALA:HB3	1.96	0.47
36:QG:153:HIS:ND1	36:QG:153:HIS:O	2.48	0.47
37:QH:116:LYS:HE2	37:QH:129:VAL:HG11	1.97	0.47
41:QL:38:THR:HG23	41:QL:39:VAL:HG23	1.96	0.47
41:QL:60:LEU:HD12	41:QL:62:SER:OG	2.15	0.47
41:QL:69:TYR:CE1	41:QL:70:ILE:HG12	2.50	0.47
41:QL:93:LEU:HD12	41:QL:96:VAL:HG13	1.95	0.47
47:QR:59:SER:OG	47:QR:60:ALA:N	2.46	0.47
49:QA:260:G:H2'	49:QA:261:U:C6	2.50	0.47
49:QA:512:U:H2'	49:QA:513:C:H6	1.80	0.47
49:QA:756:C:H2'	49:QA:757:U:C6	2.50	0.47
49:QA:857:C:H2'	49:QA:858:G:O4'	2.15	0.47
49:QA:883:C:N4	49:QA:884:U:O4	2.48	0.47
49:QA:938:A:N3	49:QA:1376:U:O2'	2.47	0.47
32:XC:59:ARG:CD	32:XC:64:VAL:HG22	2.44	0.47
33:XD:13:ARG:NH2	33:XD:35:ARG:HB2	2.30	0.47
37:XH:38:ILE:HG12	37:XH:41:ARG:NH1	2.29	0.47
39:XJ:78:ASN:N	39:XJ:78:ASN:OD1	2.48	0.47
41:XL:57:LYS:HE3	41:XL:65:GLU:HB3	1.97	0.47
44:XO:69:TYR:OH	49:XA:753:A:OP1	2.26	0.47
45:XP:81:ARG:HG3	49:XA:474:G:H5'	1.95	0.47
46:XQ:38:ARG:HG2	49:XA:280:C:C2	2.50	0.47
46:XQ:61:GLU:HA	46:XQ:71:PHE:HD1	1.78	0.47
46:XQ:95:TYR:HB3	49:XA:278:G:C2	2.49	0.47
49:XA:32:A:H2'	49:XA:33:A:C8	2.49	0.47
49:XA:62:U:H2'	49:XA:63:C:C6	2.50	0.47
49:XA:160:A:H2'	49:XA:161:A:O4'	2.14	0.47
49:XA:294:U:H2'	49:XA:295:C:C6	2.50	0.47
49:XA:581:G:N2	49:XA:759:A:OP2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:585:G:H2'	49:XA:586:C:C6	2.50	0.47
49:XA:603:U:H2'	49:XA:604:G:C8	2.49	0.47
49:XA:767:A:H2'	49:XA:768:A:H8	1.80	0.47
49:XA:770:C:H2'	49:XA:771:G:H8	1.80	0.47
49:XA:908:A:H2'	49:XA:909:A:C8	2.50	0.47
49:XA:1038:C:H2'	49:XA:1039:C:C6	2.49	0.47
49:XA:1105:A:H2'	49:XA:1106:G:H8	1.80	0.47
51:R4:12:ALA:HA	51:R4:30:GLU:HA	1.97	0.47
53:XV:15:G:H22	53:XV:62:U:H1'	1.80	0.47
52:QX:10:G:H3'	52:QX:11:U:C5	2.50	0.47
53:QV:15:G:H22	53:QV:62:U:H1'	1.80	0.47
1:RA:679:C:H2'	1:RA:680:G:H8	1.79	0.47
1:RA:2290:G:H2'	1:RA:2291:U:C6	2.50	0.47
1:RA:2680:C:OP2	4:RE:111:ARG:NH2	2.47	0.47
1:RA:2697:G:H2'	1:RA:2698:U:C6	2.49	0.47
7:RH:153:LYS:HG2	7:RH:162:ILE:HG13	1.97	0.47
8:RI:68:LEU:HA	8:RI:71:ILE:HG22	1.97	0.47
15:RT:33:LYS:HD2	15:RT:82:LEU:HA	1.96	0.47
16:RU:90:VAL:HG11	17:RV:40:LEU:HD12	1.97	0.47
1:YA:30:G:H2'	1:YA:31:C:C6	2.49	0.47
1:YA:363(A):A:H2'	1:YA:363(B):G:C8	2.49	0.47
1:YA:443:A:H1'	1:YA:1201:C:O4'	2.14	0.47
1:YA:443:A:N7	5:YF:45:ARG:HD2	2.29	0.47
1:YA:534:U:H2'	1:YA:535:C:C6	2.50	0.47
1:YA:573:G:O2'	1:YA:574:C:H3'	2.13	0.47
1:YA:1155:A:OP1	16:YU:55:ARG:HD2	2.15	0.47
1:YA:1649:G:N2	13:YR:107:ASP:O	2.47	0.47
1:YA:2266:A:H4'	1:YA:2267:A:N3	2.30	0.47
7:YH:137:ASP:OD1	7:YH:138:LYS:N	2.42	0.47
8:YI:33:ARG:HB3	8:YI:35:LEU:HG	1.96	0.47
31:QB:115:LEU:HD12	31:QB:115:LEU:HA	1.77	0.47
35:QF:52:ILE:HG13	35:QF:87:ARG:CZ	2.45	0.47
37:QH:95:VAL:HB	37:QH:133:LEU:HG	1.96	0.47
39:QJ:52:GLY:HA2	49:QA:1059:C:O2'	2.14	0.47
40:QK:51:LYS:HA	40:QK:55:LYS:HB2	1.96	0.47
40:QK:69:ALA:O	40:QK:73:MET:HG2	2.15	0.47
45:QP:29:ASP:O	49:QA:309:G:H5''	2.15	0.47
49:QA:952:U:H4'	49:QA:964:A:N1	2.29	0.47
49:QA:1115:C:H2'	49:QA:1116:C:O4'	2.14	0.47
49:QA:1139:G:H21	49:QA:1141:C:N4	2.13	0.47
33:XD:169:LYS:HE2	33:XD:169:LYS:HB2	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:XE:150:ARG:HA	34:XE:150:ARG:HE	1.79	0.47
36:XG:15:ASP:HB3	36:XG:19:GLY:H	1.80	0.47
36:XG:50:ILE:O	36:XG:54:THR:HG22	2.14	0.47
40:XK:26:ASN:HD22	49:XA:691:G:P	2.38	0.47
42:XM:45:VAL:HA	42:XM:48:LEU:HG	1.96	0.47
46:XQ:92:ARG:HD2	46:XQ:95:TYR:CD2	2.49	0.47
49:XA:1058:G:H2'	49:XA:1059:C:O4'	2.14	0.47
49:XA:1059:C:H2'	49:XA:1060:C:H6	1.80	0.47
50:QS:6:LYS:H	50:QS:6:LYS:CD	2.26	0.47
1:RA:267:C:H2'	1:RA:268:C:C6	2.50	0.47
1:RA:1005:C:O2'	9:RN:28:THR:HG21	2.15	0.47
1:RA:1165:U:H2'	1:RA:1166:C:H6	1.80	0.47
1:RA:1309:G:H4'	28:R7:7:PRO:HB2	1.95	0.47
1:RA:2052:G:C6	1:RA:2053:G:C5	3.02	0.47
1:RA:2111:C:OP2	1:RA:2145:C:N4	2.48	0.47
1:RA:2243:U:H2'	1:RA:2244:U:C6	2.50	0.47
1:RA:2280:G:O6	22:R0:14:ARG:HD2	2.15	0.47
1:RA:2285:C:H41	27:R6:27:LYS:HE2	1.80	0.47
1:RA:2336:A:H61	22:R0:43:THR:HG21	1.80	0.47
1:RA:2370:G:H21	27:R6:45:LYS:HE2	1.80	0.47
1:RA:2418:A:OP2	29:R8:29:LYS:HE2	2.14	0.47
1:RA:2698:U:H2'	1:RA:2699:C:H6	1.77	0.47
4:RE:36:ARG:NH1	4:RE:85:ASN:OD1	2.41	0.47
1:YA:128:C:H4'	28:Y7:49:ARG:HH12	1.79	0.47
1:YA:475:U:H4'	1:YA:510:C:H5'	1.97	0.47
1:YA:1889:A:H2'	1:YA:1890:A:C8	2.50	0.47
1:YA:1912:A:HO2'	49:XA:1494:G:HO2'	1.51	0.47
1:YA:2439:A:H5'	1:YA:2439:A:H8	1.80	0.47
1:YA:2543:G:H5'	1:YA:2767:C:OP1	2.14	0.47
1:YA:2626:C:H2'	1:YA:2627:G:H8	1.78	0.47
8:YI:99:GLU:HG2	8:YI:103:ARG:HH21	1.80	0.47
15:YT:58:ASN:C	15:YT:58:ASN:HD22	2.17	0.47
18:YW:33:ARG:NH2	18:YW:52:GLU:OE1	2.45	0.47
23:Y1:76:ARG:H	23:Y1:76:ARG:HD2	1.79	0.47
31:QB:204:ASN:OD1	31:QB:207:ALA:N	2.48	0.47
33:QD:30:LYS:HD3	33:QD:35:ARG:CZ	2.44	0.47
35:QF:89:MET:SD	47:QR:75:ILE:HG21	2.55	0.47
41:QL:26:ALA:HB1	41:QL:30:ALA:HB3	1.96	0.47
49:QA:266:G:H22	49:QA:271:C:N4	2.12	0.47
49:QA:293:G:C6	49:QA:305:G:C6	3.03	0.47
49:QA:611:A:C5	49:QA:612:C:C5	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:926:G:C6	52:QX:19:U:C4	3.02	0.47
49:QA:1203:C:H2'	49:QA:1204:A:C8	2.50	0.47
49:QA:1437:C:H2'	49:QA:1438:G:C8	2.50	0.47
32:XC:153:VAL:HG12	32:XC:198:VAL:HG13	1.96	0.47
38:XI:121:ARG:HA	38:XI:121:ARG:HD3	1.45	0.47
45:XP:31:LYS:HG3	49:XA:607:A:N3	2.30	0.47
46:XQ:3:LYS:HE2	49:XA:128:G:O2'	2.15	0.47
46:XQ:45:HIS:CD2	46:XQ:72:ARG:HD2	2.50	0.47
49:XA:41:G:H2'	49:XA:42:G:H8	1.79	0.47
49:XA:271:C:H2'	49:XA:272:C:C6	2.50	0.47
49:XA:581:G:C8	49:XA:581:G:OP2	2.68	0.47
49:XA:908:A:H2'	49:XA:909:A:H8	1.80	0.47
49:XA:1301:U:H2'	49:XA:1301:U:O2	2.15	0.47
49:XA:1318:A:H4'	50:XS:10:PHE:CE1	2.50	0.47
51:Y4:39:CYS:SG	51:Y4:41:PRO:HD2	2.55	0.47
1:RA:1400:G:H2'	1:RA:1401:G:C8	2.49	0.47
1:RA:1472:A:H2'	1:RA:1473:G:O4'	2.15	0.47
1:RA:2438:U:O3'	1:RA:2439:A:H3'	2.15	0.47
1:RA:2596:U:H2'	1:RA:2597:G:O4'	2.15	0.47
1:YA:279:C:H2'	1:YA:280:C:H6	1.80	0.47
1:YA:398:G:H2'	1:YA:399:G:H8	1.79	0.47
1:YA:995:C:O2	9:YN:3:THR:OG1	2.29	0.47
1:YA:996:A:H4'	16:YU:92:ARG:HE	1.80	0.47
1:YA:1773:A:C8	1:YA:1829:A:C8	3.02	0.47
1:YA:1946:U:H2'	1:YA:1947:C:H6	1.79	0.47
2:YB:50:G:H5''	14:YS:61:ASN:HD21	1.80	0.47
17:YV:44:LYS:O	17:YV:46:VAL:N	2.47	0.47
32:QC:22:TRP:CD2	32:QC:59:ARG:HB2	2.50	0.47
41:QL:17:LYS:HE2	41:QL:17:LYS:HB3	1.33	0.47
41:QL:45:PRO:HG3	41:QL:92:ASP:OD2	2.15	0.47
42:QM:65:LYS:HD2	42:QM:69:GLU:CG	2.45	0.47
49:QA:452:A:C4	49:QA:453:A:C8	3.03	0.47
49:QA:1258:G:H2'	49:QA:1259:C:C6	2.49	0.47
33:XD:25:ARG:N	49:XA:409:G:OP1	2.28	0.47
33:XD:118:ARG:HH11	49:XA:404:U:P	2.37	0.47
39:XJ:90:LEU:HD12	39:XJ:90:LEU:HA	1.84	0.47
49:XA:1389:C:H2'	49:XA:1390:U:O4'	2.15	0.47
51:Y4:22:ILE:HG22	51:Y4:23:GLU:H	1.80	0.47
1:RA:220:G:N2	1:RA:427:U:H2'	2.30	0.46
1:RA:271(B):G:H2'	1:RA:421:U:OP2	2.15	0.46
1:RA:777:A:N7	1:RA:793:A:H2	2.13	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:784:A:O2'	1:RA:785:G:H5''	2.15	0.46
1:RA:851:U:H2'	1:RA:852:G:C8	2.50	0.46
1:RA:1444:G:H2'	1:RA:1445:C:C5	2.49	0.46
1:RA:1636:C:C2	1:RA:1637:A:N7	2.82	0.46
1:RA:1799:G:H4'	1:RA:1800:C:O5'	2.15	0.46
1:RA:2150:U:H2'	1:RA:2151:G:C8	2.50	0.46
2:RB:39:A:H61	51:R4:2:LYS:HG3	1.81	0.46
1:YA:320:A:H4'	1:YA:322:A:C8	2.50	0.46
1:YA:503:A:H4'	1:YA:504:U:C5'	2.45	0.46
1:YA:784:A:O2'	1:YA:785:G:H5''	2.15	0.46
1:YA:821:A:H5''	1:YA:822:U:O5'	2.15	0.46
1:YA:1000:A:H2'	1:YA:1001:A:H8	1.79	0.46
1:YA:2488:A:H2'	1:YA:2489:G:H8	1.80	0.46
3:YD:30:GLU:HG3	3:YD:63:ARG:NH2	2.30	0.46
5:YF:64:ILE:HD12	5:YF:64:ILE:HA	1.85	0.46
6:YG:124:SER:HB2	6:YG:131:TYR:CE1	2.50	0.46
11:YP:65:ARG:NE	29:Y8:15:LYS:HB2	2.31	0.46
15:YT:54:ARG:HA	15:YT:59:THR:HG23	1.97	0.46
19:YX:53:LYS:HB3	19:YX:82:GLN:HB3	1.97	0.46
21:YZ:80:ARG:HH21	21:YZ:82:ARG:NH2	2.12	0.46
31:QB:92:TYR:CE1	31:QB:94:ASN:HB3	2.50	0.46
31:QB:230:VAL:HG12	31:QB:231:GLU:HG2	1.96	0.46
32:QC:180:ALA:HB1	32:QC:203:PHE:CE1	2.49	0.46
40:QK:42:TRP:CZ2	49:QA:687:A:H5'	2.50	0.46
49:QA:232:G:H2'	49:QA:233:C:C6	2.49	0.46
49:QA:942:G:H22	49:QA:1341:U:H3	1.63	0.46
49:QA:1145:C:H4'	49:QA:1146:A:C8	2.49	0.46
49:QA:1466:C:H2'	49:QA:1467:G:O4'	2.15	0.46
41:XL:113:ARG:NH1	49:XA:537:G:H5''	2.30	0.46
48:XT:12:ALA:HB1	49:XA:332:G:H4'	1.97	0.46
48:XT:38:LYS:O	48:XT:41:ILE:HG12	2.15	0.46
48:XT:65:LYS:HA	48:XT:65:LYS:HD3	1.68	0.46
49:XA:716:A:H2'	49:XA:717:C:C6	2.50	0.46
49:XA:986:A:O2'	50:XS:55:LYS:O	2.30	0.46
49:XA:1098:C:HO2'	49:XA:1167:A:H2	1.62	0.46
49:XA:1198:G:H2'	49:XA:1199:U:C6	2.50	0.46
49:XA:1533:C:C4	49:XA:1534:A:H1'	2.51	0.46
53:XV:17:C:H3'	53:XV:17:C:H6	1.80	0.46
1:RA:112:U:H2'	1:RA:113:G:O4'	2.15	0.46
1:RA:704:G:H1'	1:RA:727:A:N6	2.30	0.46
1:RA:1508:A:O2'	1:RA:1509:C:O4'	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1698:A:H4'	1:RA:1699:G:O5'	2.15	0.46
1:RA:1927:A:H2'	1:RA:1928:A:C8	2.50	0.46
1:RA:1934:C:H2'	1:RA:1935:G:O4'	2.15	0.46
1:RA:2024:G:H2'	1:RA:2025:C:H6	1.78	0.46
1:RA:2064:C:H2'	1:RA:2065:C:H6	1.80	0.46
1:RA:2308:G:H22	1:RA:2311:A:H2	1.62	0.46
1:RA:2444:G:OP2	5:RF:68:LYS:HE3	2.15	0.46
1:RA:2692:C:H2'	1:RA:2693:A:H8	1.80	0.46
3:RD:43:ARG:NH1	3:RD:44:ASN:OD1	2.48	0.46
6:RG:36:LYS:HD2	6:RG:95:ARG:NH1	2.29	0.46
9:RN:89:LYS:O	9:RN:93:THR:HG22	2.15	0.46
1:YA:299:A:OP2	1:YA:299:A:H8	1.99	0.46
1:YA:307:G:N1	1:YA:310:A:OP2	2.44	0.46
1:YA:806:C:O2	1:YA:2444:G:O2'	2.33	0.46
1:YA:1800:C:OP2	3:YD:183:ARG:NH1	2.47	0.46
2:YB:60:C:H2'	2:YB:61:G:H8	1.80	0.46
17:YV:61:VAL:HA	17:YV:94:LEU:HD23	1.96	0.46
39:QJ:41:PRO:HG3	49:QA:1150:U:H4'	1.97	0.46
41:QL:73:GLU:O	41:QL:110:VAL:HG21	2.15	0.46
49:QA:107:G:H3'	49:QA:108:G:H21	1.80	0.46
49:QA:1244:C:H2'	49:QA:1245:A:H8	1.80	0.46
33:XD:61:LYS:HE3	33:XD:61:LYS:HB3	1.77	0.46
42:XM:108:ARG:HH11	42:XM:114:ARG:HG2	1.80	0.46
45:XP:18:ARG:HA	45:XP:38:TYR:HA	1.97	0.46
45:XP:31:LYS:HG2	45:XP:32:TYR:N	2.18	0.46
46:XQ:68:ARG:HA	46:XQ:70:ARG:NH1	2.30	0.46
48:XT:25:ARG:O	48:XT:29:LYS:HE2	2.16	0.46
49:XA:545:C:H2'	49:XA:546:G:H8	1.81	0.46
49:XA:687:A:C2	49:XA:704:A:C5	3.03	0.46
49:XA:1273:G:C5	49:XA:1274:G:H1'	2.50	0.46
51:Y4:39:CYS:O	51:Y4:40:HIS:HB2	2.15	0.46
1:RA:127:A:H5''	1:RA:128:C:O4'	2.16	0.46
1:RA:310:A:O2'	1:RA:311:A:OP2	2.26	0.46
1:RA:2064:C:H2'	1:RA:2065:C:C6	2.50	0.46
1:RA:2124:G:H2'	1:RA:2125:G:O4'	2.15	0.46
1:RA:2286:A:H4'	1:RA:2287:A:O4'	2.15	0.46
1:RA:2445:G:OP1	5:RF:74:ARG:NH2	2.48	0.46
1:RA:2758:A:C4	7:RH:67:LEU:HD21	2.50	0.46
2:RB:42:C:O4'	6:RG:69:ALA:HB2	2.16	0.46
5:RF:184:TYR:CE2	5:RF:188:ARG:HD2	2.49	0.46
9:RN:13:TRP:HB2	9:RN:133:GLN:HG3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:RU:83:LEU:HD12	16:RU:113:ALA:HB2	1.96	0.46
21:RZ:74:VAL:HG13	21:RZ:86:VAL:HG22	1.96	0.46
1:YA:627:A:N6	11:YP:116:GLY:HA2	2.30	0.46
1:YA:892:G:H2'	1:YA:893:C:C6	2.51	0.46
1:YA:1242:A:C8	1:YA:1243:G:C8	3.03	0.46
1:YA:1676:A:H2'	1:YA:1677:A:O4'	2.16	0.46
2:YB:92:G:H2'	2:YB:93:C:H6	1.80	0.46
4:YE:21:VAL:HB	4:YE:22:PRO:HB3	1.97	0.46
7:YH:23:ARG:HD2	7:YH:34:GLU:OE2	2.15	0.46
31:QB:78:GLN:NE2	31:QB:94:ASN:OD1	2.48	0.46
31:QB:81:VAL:HG12	31:QB:215:LEU:HD13	1.97	0.46
43:QN:4:LYS:HG2	49:QA:994:A:H2	1.81	0.46
49:QA:1312:G:H2'	49:QA:1313:U:C6	2.50	0.46
49:QA:1313:U:N3	49:QA:1325:C:O2	2.49	0.46
41:XL:87:GLY:HA2	41:XL:98:TYR:H	1.81	0.46
49:XA:491:G:H2'	49:XA:492:G:H8	1.79	0.46
49:XA:1145:C:H5'	49:XA:1146:A:H5'	1.98	0.46
49:XA:1233:G:H2'	49:XA:1234:C:C6	2.50	0.46
49:XA:1348:U:H2'	49:XA:1349:A:C8	2.46	0.46
49:XA:1355:G:H2'	49:XA:1356:G:C8	2.50	0.46
50:QS:51:VAL:HG21	50:QS:71:LEU:HD21	1.96	0.46
1:RA:654(A):G:H3'	1:RA:654(A):G:OP2	2.14	0.46
1:RA:2006:C:O2'	1:RA:2823:A:N3	2.49	0.46
2:RB:72:G:O2'	2:RB:104:A:N6	2.49	0.46
12:RQ:32:TYR:HD1	12:RQ:133:ARG:HA	1.80	0.46
27:R6:13:CYS:O	27:R6:21:TYR:HA	2.15	0.46
1:YA:250:G:H2'	1:YA:251:A:C8	2.50	0.46
1:YA:265:A:N6	1:YA:428:A:C8	2.84	0.46
1:YA:839:U:H2'	1:YA:840:C:C6	2.50	0.46
1:YA:1079:C:H2'	1:YA:1080:C:C6	2.50	0.46
1:YA:1374:G:H2'	1:YA:1375:C:H6	1.80	0.46
1:YA:1628:G:H2'	1:YA:1629:U:C6	2.50	0.46
1:YA:1851:U:H2'	1:YA:1852:C:O4'	2.15	0.46
1:YA:2476:A:H2'	1:YA:2477:C:C6	2.51	0.46
1:YA:2827:C:H2'	1:YA:2828:C:C6	2.51	0.46
3:YD:43:ARG:CB	3:YD:54:ARG:HB2	2.45	0.46
4:YE:31:CYS:HB3	4:YE:49:LEU:HG	1.96	0.46
10:YO:53:LYS:HD2	10:YO:56:ASP:OD1	2.15	0.46
18:YW:14:PRO:O	18:YW:17:VAL:N	2.47	0.46
19:YX:27:THR:HB	19:YX:80:ILE:HB	1.96	0.46
27:Y6:13:CYS:HB2	27:Y6:22:ALA:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:QJ:57:LYS:NZ	49:QA:1366:C:H4'	2.30	0.46
40:QK:51:LYS:HB3	40:QK:51:LYS:HE2	1.79	0.46
46:QQ:81:ARG:HB3	46:QQ:82:MET:H	1.33	0.46
49:QA:60:A:H62	49:QA:110:C:N4	2.13	0.46
49:QA:345:C:H4'	49:QA:346:G:C4	2.51	0.46
49:QA:939:G:N3	49:QA:1375:A:H2	2.13	0.46
49:QA:975:A:H2	49:QA:1357:A:HO2'	1.63	0.46
31:XB:21:ARG:HA	31:XB:38:GLY:O	2.15	0.46
31:XB:34:ALA:HA	31:XB:36:ARG:NH2	2.31	0.46
32:XC:152:ILE:HG22	32:XC:167:TRP:HB2	1.97	0.46
34:XE:122:GLU:HG2	34:XE:123:LEU:N	2.29	0.46
36:XG:69:VAL:HG21	36:XG:104:LEU:HD21	1.98	0.46
37:XH:101:PRO:O	37:XH:125:ARG:NH2	2.48	0.46
42:XM:87:TYR:HA	42:XM:90:LEU:HD12	1.97	0.46
49:XA:687:A:N6	49:XA:701:C:O4'	2.49	0.46
49:XA:1355:G:H2'	49:XA:1356:G:H8	1.81	0.46
52:XX:18:C:C4	52:XX:19:U:O4	2.69	0.46
1:RA:389:G:N1	11:RP:70:GLN:HB3	2.31	0.46
1:RA:609(A):G:H2'	1:RA:610:C:C6	2.51	0.46
1:RA:1191:G:H2'	1:RA:1192:G:O4'	2.16	0.46
1:RA:1850:G:H2'	1:RA:1851:U:C6	2.51	0.46
1:RA:2102:U:H2'	1:RA:2103:C:C6	2.51	0.46
1:RA:2344:U:OP1	27:R6:38:LYS:HD3	2.15	0.46
9:RN:134:ARG:N	9:RN:135:PRO:HD3	2.31	0.46
27:R6:41:PRO:HD2	27:R6:46:HIS:H	1.81	0.46
1:YA:880:G:C2	1:YA:881:G:C8	3.04	0.46
1:YA:1772:G:N2	1:YA:1774:C:H5'	2.30	0.46
1:YA:1823:G:P	3:YD:54:ARG:HH21	2.37	0.46
1:YA:2271:G:OP1	22:Y0:18:ALA:HB1	2.15	0.46
6:YG:113:ARG:HE	51:Y4:34:GLU:CG	2.29	0.46
21:YZ:54:HIS:CG	21:YZ:101:PRO:HG3	2.50	0.46
21:YZ:140:ASP:OD2	21:YZ:140:ASP:N	2.39	0.46
33:QD:41:GLY:O	49:QA:426:G:H4'	2.16	0.46
38:QI:73:GLN:O	38:QI:77:ILE:HG13	2.16	0.46
38:QI:124:GLN:O	49:QA:1232:U:H5''	2.15	0.46
40:QK:21:ILE:HB	40:QK:84:VAL:HA	1.96	0.46
40:QK:99:GLN:HG2	40:QK:105:VAL:HG21	1.97	0.46
45:QP:67:THR:O	45:QP:71:ARG:HB2	2.15	0.46
48:QT:22:ARG:O	48:QT:26:ASN:HB2	2.14	0.46
49:QA:224:C:H2'	49:QA:225:C:C6	2.51	0.46
49:QA:325:A:H8	49:QA:325:A:OP1	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:358:U:H2'	49:QA:359:U:C6	2.51	0.46
49:QA:687:A:H1'	49:QA:688:G:OP2	2.14	0.46
49:QA:962:C:H1'	49:QA:1201:A:N6	2.31	0.46
49:QA:1353:G:C2	49:QA:1370:G:C2	3.04	0.46
37:XH:6:ILE:H	37:XH:6:ILE:HD12	1.80	0.46
37:XH:31:PHE:CE2	49:XA:643:C:H5'	2.50	0.46
38:XI:121:ARG:HG2	49:XA:1350:A:P	2.55	0.46
39:XJ:54:PHE:O	39:XJ:56:HIS:N	2.47	0.46
40:XK:30:VAL:HG22	40:XK:43:SER:O	2.15	0.46
48:XT:15:ARG:HG3	49:XA:108:G:C6	2.51	0.46
48:XT:84:LEU:HG	48:XT:85:MET:N	2.29	0.46
49:XA:645:C:H2'	49:XA:646:U:C6	2.50	0.46
49:XA:1052:U:O4	49:XA:1200:C:H2'	2.15	0.46
52:XX:13:A:N1	52:XX:14:A:N1	2.61	0.46
53:QV:62:U:H5''	53:QV:63:C:H5	1.81	0.46
1:RA:249:C:O2	29:R8:12:LYS:NZ	2.39	0.46
1:RA:527:C:H2'	1:RA:2779:U:C5	2.50	0.46
1:RA:590:A:OP1	5:RF:95:ARG:NH1	2.48	0.46
1:RA:921:G:H4'	1:RA:2269:A:C5	2.50	0.46
1:RA:1050:A:H2'	1:RA:1051:G:O4'	2.16	0.46
1:RA:1173:G:H4'	1:RA:1174:A:N7	2.30	0.46
1:RA:1301:A:H2	1:RA:1626:G:N3	2.13	0.46
1:RA:1333:C:H2'	1:RA:1334:G:H8	1.81	0.46
1:RA:1631:A:C4	1:RA:1632:A:C8	3.04	0.46
3:RD:94:LEU:HD23	3:RD:104:TYR:CE1	2.51	0.46
7:RH:18:GLU:HB2	7:RH:25:LYS:HB2	1.98	0.46
15:RT:118:ARG:HH21	15:RT:121:ILE:HG21	1.80	0.46
15:RT:119:LYS:O	15:RT:123:GLN:HG3	2.14	0.46
21:RZ:111:VAL:O	21:RZ:113:ALA:N	2.48	0.46
1:YA:270(I):G:H21	23:Y1:78:LYS:NZ	2.13	0.46
1:YA:336:C:O2'	20:YY:35:TYR:OH	2.31	0.46
1:YA:439:G:H2'	1:YA:440:G:C8	2.51	0.46
1:YA:1290:C:H2'	1:YA:1291:C:H6	1.79	0.46
1:YA:1476:C:H2'	1:YA:1477:A:H8	1.81	0.46
1:YA:1508:A:O2'	1:YA:1509:C:O4'	2.31	0.46
1:YA:1510:A:H2'	1:YA:1510:A:N3	2.31	0.46
1:YA:1913:A:C8	49:XA:1494:G:H1'	2.51	0.46
1:YA:2729:G:H2'	1:YA:2730:C:C6	2.51	0.46
1:YA:2892:A:H2'	1:YA:2893:G:O4'	2.16	0.46
2:YB:94:C:H2'	2:YB:95:U:H6	1.80	0.46
3:YD:105:ILE:HD12	3:YD:105:ILE:HA	1.76	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:YR:28:LEU:HD12	13:YR:48:VAL:HG21	1.98	0.46
31:QB:47:THR:O	31:QB:51:LEU:HG	2.15	0.46
37:QH:89:PRO:HG2	49:QA:878:G:H5'	1.98	0.46
38:QI:118:LYS:HB3	49:QA:1349:A:OP1	2.16	0.46
39:QJ:55:LYS:HG2	49:QA:973:G:H1'	1.98	0.46
31:XB:96:ARG:HH22	31:XB:147:LYS:HE2	1.80	0.46
35:XF:97:PHE:CD2	47:XR:31:LEU:HD12	2.49	0.46
37:XH:31:PHE:O	37:XH:35:ILE:HG12	2.15	0.46
38:XI:107:ARG:HA	49:XA:1347:G:C5'	2.26	0.46
46:XQ:92:ARG:HD2	46:XQ:95:TYR:HD2	1.81	0.46
49:XA:183:G:H2'	49:XA:184:G:H8	1.80	0.46
49:XA:437:U:H2'	49:XA:438:G:O4'	2.15	0.46
49:XA:711:G:H2'	49:XA:712:A:C8	2.51	0.46
49:XA:940:C:H2'	49:XA:941:G:C8	2.51	0.46
49:XA:1206:G:C4	49:XA:1207:G:C8	3.04	0.46
1:RA:140:A:H8	1:RA:1408:C:O2'	1.99	0.46
1:RA:935:C:H2'	1:RA:936:C:C6	2.50	0.46
1:RA:1204:A:H1'	1:RA:1206:G:C5	2.51	0.46
1:RA:1244:G:H4'	11:RP:7:ARG:HB2	1.98	0.46
1:RA:2087:G:O6	1:RA:2233:U:C4	2.69	0.46
1:RA:2850:A:H2'	1:RA:2851:A:H8	1.79	0.46
3:RD:105:ILE:HD12	3:RD:105:ILE:HA	1.69	0.46
4:RE:144:ARG:HB3	4:RE:145:LYS:H	1.55	0.46
1:YA:996:A:C6	1:YA:1160:G:C6	3.03	0.46
1:YA:1190:G:H2'	1:YA:1191:G:C8	2.51	0.46
1:YA:1658:C:C2	1:YA:1659:U:C5	3.04	0.46
1:YA:2612:C:C4	1:YA:2613:U:H5	2.33	0.46
27:Y6:41:PRO:HG2	27:Y6:45:LYS:N	2.27	0.46
32:QC:84:ILE:HG12	32:QC:101:LEU:HD22	1.97	0.46
38:QI:4:TYR:HB2	38:QI:19:LEU:O	2.16	0.46
39:QJ:8:LEU:HD22	39:QJ:16:LEU:HD21	1.98	0.46
49:QA:243:A:N6	49:QA:281:G:H1'	2.29	0.46
49:QA:318:G:H2'	49:QA:319:G:C8	2.51	0.46
49:QA:781:A:C8	49:QA:782:A:C8	3.04	0.46
49:QA:976:G:H5'	49:QA:1358:U:O2	2.15	0.46
33:XD:207:TYR:HD2	33:XD:207:TYR:HA	1.63	0.46
35:XF:29:ALA:HB1	35:XF:75:LEU:HD11	1.97	0.46
46:XQ:92:ARG:O	46:XQ:95:TYR:HB2	2.15	0.46
51:Y4:16:CYS:SG	51:Y4:36:CYS:HB3	2.56	0.46
52:QX:7:G:H2'	52:QX:8:A:C8	2.51	0.46
1:RA:254:G:O2'	1:RA:384:U:H5'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:503:A:H4'	1:RA:504:U:C5'	2.45	0.46
1:RA:1309:G:HO2'	1:RA:1611:C:HO2'	1.61	0.46
1:RA:1605:C:H2'	1:RA:1606:G:O4'	2.15	0.46
1:RA:1827:C:OP2	3:RD:222:ARG:HD2	2.16	0.46
1:RA:1918:A:HO2'	1:RA:1920:C:N4	2.13	0.46
1:RA:2689:U:H4'	1:RA:2690:C:O5'	2.14	0.46
1:RA:2782:G:H2'	1:RA:2783:G:O4'	2.16	0.46
2:RB:94:C:H2'	2:RB:95:U:C6	2.51	0.46
3:RD:35:LYS:NZ	3:RD:104:TYR:HB2	2.31	0.46
23:R1:8:SER:HB3	23:R1:66:HIS:CD2	2.50	0.46
28:R7:5:TRP:NE1	28:R7:7:PRO:HG3	2.30	0.46
1:YA:192:C:H3'	1:YA:193:U:H6	1.80	0.46
1:YA:713:G:H2'	1:YA:714:U:C6	2.51	0.46
1:YA:863:A:H2'	1:YA:864:G:C8	2.50	0.46
1:YA:1425:G:H2'	1:YA:1426:G:C8	2.51	0.46
1:YA:1825:A:H2'	1:YA:1826:G:H8	1.80	0.46
1:YA:2065:C:H2'	1:YA:2066:C:H6	1.80	0.46
1:YA:2314:C:H2'	1:YA:2315:G:H8	1.81	0.46
1:YA:2588:G:C6	1:YA:2607:G:C2	3.04	0.46
2:YB:15:A:H1'	2:YB:109:G:C5	2.51	0.46
2:YB:50:G:H5''	14:YS:61:ASN:ND2	2.30	0.46
9:YN:12:ARG:NH1	9:YN:50:ASP:OD2	2.49	0.46
11:YP:97:PRO:HD3	11:YP:126:VAL:O	2.15	0.46
12:YQ:66:ILE:HG13	12:YQ:67:ARG:N	2.30	0.46
13:YR:104:ARG:HD3	13:YR:111:LEU:HD21	1.98	0.46
17:YV:25:LEU:H	17:YV:92:THR:HG21	1.81	0.46
31:QB:167:PRO:HG2	31:QB:192:SER:HB3	1.98	0.46
31:QB:189:ASP:N	31:QB:205:ASP:OD2	2.49	0.46
39:QJ:51:ARG:HG2	39:QJ:59:SER:HB3	1.98	0.46
41:QL:71:PRO:HB3	41:QL:120:TYR:CE2	2.51	0.46
41:QL:86:ARG:O	49:QA:552:U:O2'	2.31	0.46
45:QP:15:PRO:HD2	45:QP:42:ARG:CZ	2.46	0.46
47:QR:60:ALA:HB2	49:QA:834:C:H5''	1.97	0.46
49:QA:60:A:N6	49:QA:110:C:N4	2.63	0.46
49:QA:137:C:H2'	49:QA:138:G:C8	2.49	0.46
49:QA:385:C:H2'	49:QA:386:C:H6	1.80	0.46
49:QA:570:G:H2'	49:QA:571:U:C6	2.51	0.46
49:QA:955:U:H2'	49:QA:956:U:O4'	2.16	0.46
49:QA:1063:C:H3'	49:QA:1064:G:H8	1.81	0.46
49:QA:1072:G:H2'	49:QA:1073:U:C6	2.51	0.46
49:QA:1105:A:H2'	49:QA:1106:G:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1281:U:H5''	49:QA:1282:C:H5	1.80	0.46
31:XB:212:GLN:HE22	31:XB:216:SER:HB2	1.81	0.46
33:XD:98:GLU:HA	33:XD:103:ASN:HD21	1.80	0.46
41:XL:58:VAL:HG22	41:XL:85:ILE:HD11	1.98	0.46
41:XL:83:VAL:HB	41:XL:100:ILE:HG23	1.98	0.46
46:XQ:21:VAL:HG11	46:XQ:59:ILE:HD11	1.97	0.46
49:XA:266:G:H5'	49:XA:268:C:H41	1.79	0.46
49:XA:925:G:O2'	49:XA:927:G:OP1	2.21	0.46
49:XA:1126:U:H3'	49:XA:1127:G:C8	2.51	0.46
1:RA:220:G:H1	1:RA:427:U:H3'	1.81	0.46
1:RA:270(W):G:H2'	1:RA:270(X):G:C8	2.51	0.46
1:RA:639:U:C2	1:RA:640:C:C5	3.03	0.46
1:RA:864:G:H1'	1:RA:914:C:N4	2.30	0.46
1:RA:1252:G:C2	16:RU:33:ARG:HB3	2.51	0.46
1:RA:1671:U:N3	1:RA:1674:G:OP2	2.47	0.46
1:RA:2364:C:H2'	1:RA:2365:G:O4'	2.16	0.46
1:RA:2455:G:H2'	1:RA:2456:C:C6	2.50	0.46
1:RA:2495:G:H5''	12:RQ:81:VAL:HG13	1.98	0.46
2:RB:24:G:O6	2:RB:56:G:O2'	2.31	0.46
5:RF:32:LEU:O	5:RF:36:VAL:HG23	2.16	0.46
11:RP:14:LYS:O	11:RP:14:LYS:HD3	2.16	0.46
21:RZ:115:GLY:HA2	21:RZ:175:VAL:O	2.16	0.46
1:YA:1657:C:C2	1:YA:1658:C:C5	3.04	0.46
1:YA:1837:C:OP1	49:XA:784:C:H4'	2.15	0.46
1:YA:1843:C:H2'	1:YA:1844:C:H6	1.80	0.46
1:YA:2212:A:H1'	1:YA:2215:G:C5	2.50	0.46
3:YD:35:LYS:NZ	3:YD:104:TYR:HB2	2.30	0.46
3:YD:85:ASP:HB2	3:YD:92:ILE:HD13	1.96	0.46
10:YO:63:VAL:HG23	10:YO:64:ARG:HG3	1.97	0.46
15:YT:60:THR:HG22	15:YT:77:PRO:HA	1.98	0.46
31:QB:60:ASP:O	31:QB:63:MET:HG2	2.16	0.46
31:QB:144:ARG:NH2	49:QA:1098:C:OP2	2.48	0.46
32:QC:139:GLN:O	32:QC:143:GLU:HB2	2.16	0.46
35:QF:5:GLU:HB3	35:QF:62:TRP:HZ2	1.81	0.46
39:QJ:57:LYS:HA	39:QJ:57:LYS:HD2	1.61	0.46
42:QM:104:ARG:NH2	49:QA:954:G:O6	2.45	0.46
47:QR:50:ILE:N	49:QA:719:C:O2	2.49	0.46
47:QR:76:LEU:HD23	47:QR:76:LEU:HA	1.81	0.46
49:QA:381:C:H2'	49:QA:382:A:O4'	2.16	0.46
49:QA:903:G:H2'	49:QA:904:C:H6	1.81	0.46
49:QA:1314:C:OP2	50:QS:6:LYS:HB3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1538:C:H6	49:QA:1538:C:H2'	1.58	0.46
35:XF:28:ARG:O	35:XF:32:ASN:N	2.44	0.46
36:XG:28:ASN:O	36:XG:31:MET:HB3	2.16	0.46
36:XG:50:ILE:HD11	36:XG:125:MET:HG3	1.98	0.46
39:XJ:8:LEU:HD22	39:XJ:16:LEU:HD21	1.98	0.46
47:XR:75:ILE:HG13	49:XA:735:C:H1'	1.98	0.46
49:XA:613:C:H2'	49:XA:614:A:H8	1.79	0.46
50:QS:12:ASP:HB2	50:QS:38:SER:HB3	1.98	0.46
52:QX:8:A:H2'	52:QX:9:G:H8	1.81	0.46
52:QX:18:C:C4	52:QX:19:U:O4	2.69	0.46
1:RA:409:C:H2'	1:RA:410:G:C8	2.51	0.46
1:RA:445:C:H2'	1:RA:446:G:O4'	2.16	0.46
1:RA:1197:G:C2	1:RA:1198:U:C5	3.04	0.46
1:RA:1284:A:H2'	1:RA:1285:G:O4'	2.16	0.46
1:RA:1433:U:H2'	1:RA:1434:A:H8	1.81	0.46
1:RA:2681:C:OP1	4:RE:109:LYS:NZ	2.48	0.46
4:RE:48:GLN:OE1	4:RE:64:LYS:NZ	2.49	0.46
1:YA:184:C:H2'	1:YA:185:U:H6	1.81	0.46
1:YA:196:A:C2	11:YP:51:PHE:HZ	2.33	0.46
1:YA:270(F):U:H2'	1:YA:270(G):C:C6	2.50	0.46
1:YA:1667:G:OP2	1:YA:1667:G:H8	1.99	0.46
1:YA:1796:U:C2	1:YA:1797:C:C5	3.04	0.46
1:YA:2321:G:H5''	1:YA:2322:A:OP2	2.15	0.46
1:YA:2455:G:H2'	1:YA:2456:C:H6	1.81	0.46
4:YE:55:ASN:HD22	4:YE:59:VAL:HG22	1.80	0.46
5:YF:181:LEU:O	5:YF:205:ARG:NH2	2.48	0.46
6:YG:67:LYS:HE2	51:Y4:6:HIS:CE1	2.51	0.46
11:YP:37:GLY:O	11:YP:41:ARG:HG2	2.16	0.46
26:Y5:58:LEU:HD22	26:Y5:60:VAL:HB	1.97	0.46
33:QD:67:ILE:HG23	33:QD:68:TYR:HD1	1.80	0.46
33:QD:100:ARG:HE	33:QD:102:ASP:CG	2.18	0.46
33:QD:162:LEU:HD11	33:QD:181:MET:HG2	1.98	0.46
33:QD:205:GLU:HG2	34:QE:100:VAL:O	2.16	0.46
38:QI:17:VAL:HG13	38:QI:63:ILE:HD12	1.97	0.46
46:QQ:43:LEU:CD1	46:QQ:69:LYS:HA	2.46	0.46
49:QA:868:C:H2'	49:QA:869:G:O4'	2.16	0.46
49:QA:951:G:N3	49:QA:970:C:O2'	2.45	0.46
49:QA:1410:G:H2'	49:QA:1411:C:H6	1.81	0.46
49:QA:1415:G:C6	49:QA:1486:G:C6	3.04	0.46
31:XB:69:LEU:H	31:XB:162:ILE:HA	1.81	0.46
32:XC:109:PRO:C	32:XC:111:LEU:H	2.20	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:XH:113:SER:OG	49:XA:642:A:H1'	2.16	0.46
42:XM:13:LYS:H	42:XM:45:VAL:HG12	1.80	0.46
42:XM:56:LEU:O	42:XM:60:VAL:HG23	2.16	0.46
43:XN:41:ARG:HG3	43:XN:42:ILE:N	2.30	0.46
45:XP:81:ARG:HA	49:XA:458(E):A:O3'	2.16	0.46
46:XQ:82:MET:O	46:XQ:84:LEU:N	2.48	0.46
49:XA:50:A:H1'	49:XA:52:G:C8	2.50	0.46
49:XA:59:A:H2	49:XA:330:C:H42	1.63	0.46
49:XA:176:C:H2'	49:XA:177:C:C6	2.51	0.46
49:XA:372:C:N4	49:XA:389:A:N6	2.38	0.46
49:XA:610:G:N3	49:XA:611:A:C8	2.84	0.46
49:XA:1007:C:H2'	49:XA:1008:C:C6	2.51	0.46
53:XV:62:U:H5''	53:XV:63:C:H5	1.80	0.46
1:RA:375:C:H2'	1:RA:376:C:H6	1.82	0.45
1:RA:755:C:H2'	1:RA:756:C:H6	1.81	0.45
1:RA:947:G:H2'	1:RA:948:G:H8	1.81	0.45
1:RA:1273:U:H5''	1:RA:1646:C:N4	2.31	0.45
7:RH:87:LEU:HA	7:RH:163:TYR:O	2.16	0.45
12:RQ:32:TYR:CD1	12:RQ:133:ARG:HA	2.51	0.45
17:RV:34:GLU:O	17:RV:36:PRO:HD3	2.16	0.45
19:RX:40:LYS:HG3	19:RX:51:VAL:HB	1.98	0.45
27:R6:18:ARG:HB2	27:R6:44:ARG:HH12	1.81	0.45
1:YA:141:A:H8	1:YA:1408:C:H1'	1.81	0.45
1:YA:1541:U:H2'	1:YA:1542:G:O4'	2.15	0.45
1:YA:2494:G:C2	1:YA:2495:G:C8	3.04	0.45
1:YA:2846:G:H2'	1:YA:2847:U:C6	2.50	0.45
2:YB:42:C:O2	6:YG:93:THR:N	2.31	0.45
8:YI:79:ILE:HB	8:YI:142:VAL:HA	1.98	0.45
16:YU:90:VAL:HG22	17:YV:39:LEU:HB3	1.97	0.45
17:YV:72:VAL:HG13	17:YV:85:LYS:HB3	1.98	0.45
34:QE:51:VAL:HB	34:QE:52:PRO:HD3	1.98	0.45
37:QH:10:LEU:HA	37:QH:13:ILE:HD13	1.98	0.45
46:QQ:9:VAL:HG21	46:QQ:84:LEU:HD13	1.98	0.45
46:QQ:67:LYS:O	46:QQ:68:ARG:HB3	2.16	0.45
49:QA:555:C:H2'	49:QA:556:C:C6	2.51	0.45
49:QA:729:A:H2'	49:QA:730:G:H8	1.81	0.45
49:QA:1504:G:H4'	49:QA:1505:G:O5'	2.15	0.45
32:XC:178:LEU:HG	49:XA:1112:C:N3	2.31	0.45
36:XG:26:PHE:CE2	36:XG:30:ILE:HD11	2.51	0.45
38:XI:111:ARG:HG2	38:XI:112:LYS:N	2.30	0.45
40:XK:99:GLN:HG2	40:XK:105:VAL:HG21	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:YN:9:LYS:HD3	49:XA:981:U:OP1	2.16	0.45
46:XQ:21:VAL:CG2	46:XQ:44:ALA:HB2	2.46	0.45
48:XT:60:GLU:HG2	49:XA:193:C:H1'	1.98	0.45
49:XA:216:G:H2'	49:XA:217:C:C6	2.50	0.45
49:XA:360:A:H2'	49:XA:361:G:H8	1.81	0.45
1:RA:267:C:H2'	1:RA:268:C:H6	1.80	0.45
1:RA:485:C:H2'	1:RA:486:C:C6	2.52	0.45
1:RA:674:G:H2'	1:RA:804:A:H61	1.82	0.45
1:RA:1270:C:H5''	1:RA:1271:G:H5'	1.98	0.45
1:RA:1412:A:H2'	1:RA:1413:G:C8	2.51	0.45
1:RA:1800:C:H5'	3:RD:147:LEU:CD2	2.46	0.45
1:RA:2065:C:H2'	1:RA:2066:C:H6	1.80	0.45
12:RQ:65:PHE:O	12:RQ:67:ARG:N	2.49	0.45
20:RY:75:ILE:HG12	20:RY:76:CYS:N	2.31	0.45
21:RZ:76:LEU:HD23	21:RZ:76:LEU:H	1.80	0.45
24:R2:44:LEU:HD23	24:R2:44:LEU:HA	1.83	0.45
1:YA:222:A:H61	1:YA:232:G:H1'	1.81	0.45
1:YA:279:C:H2'	1:YA:280:C:C6	2.51	0.45
1:YA:436:C:H2'	1:YA:438:G:C8	2.51	0.45
1:YA:498:G:H1'	20:YY:47:LYS:HZ3	1.81	0.45
1:YA:594:U:H2'	1:YA:595:C:C6	2.52	0.45
1:YA:642:G:H21	1:YA:646:A:H2	1.63	0.45
1:YA:1799:G:H4'	1:YA:1800:C:O5'	2.16	0.45
1:YA:1858:G:H2'	1:YA:1883:G:H22	1.81	0.45
1:YA:1893:C:O2'	53:XV:72:C:H4'	2.17	0.45
1:YA:2674:G:H2'	1:YA:2675:A:C8	2.50	0.45
1:YA:2743:C:OP2	1:YA:2755:C:N4	2.48	0.45
2:YB:17:C:H2'	2:YB:18:G:O4'	2.16	0.45
3:YD:201:HIS:O	3:YD:204:ILE:HG12	2.15	0.45
4:YE:63:LEU:HD12	4:YE:64:LYS:N	2.31	0.45
17:YV:64:HIS:ND1	17:YV:92:THR:HG22	2.30	0.45
29:Y8:64:TYR:HB3	29:Y8:65:GLU:H	1.61	0.45
31:QB:32:ILE:HG23	31:QB:41:ILE:O	2.16	0.45
31:QB:189:ASP:HB3	31:QB:205:ASP:H	1.82	0.45
33:QD:115:ARG:NH2	49:QA:407:G:H3'	2.31	0.45
41:QL:32:PHE:O	41:QL:84:LEU:HG	2.16	0.45
41:QL:54:LYS:O	41:QL:55:VAL:HG13	2.16	0.45
41:QL:102:ARG:HA	41:QL:107:ALA:HB3	1.97	0.45
49:QA:153:C:H2'	49:QA:154:C:H6	1.81	0.45
49:QA:296:U:O2'	49:QA:556:C:O2	2.34	0.45
49:QA:488:C:H2'	49:QA:489:C:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:766:A:C2	49:QA:767:A:H1'	2.51	0.45
49:QA:1049:U:H4'	49:QA:1050:G:H5''	1.97	0.45
49:QA:1117:G:H5'	49:QA:1117:G:H8	1.81	0.45
31:XB:8:LYS:O	31:XB:12:GLU:HB2	2.16	0.45
31:XB:19:HIS:HB2	31:XB:204:ASN:HD22	1.80	0.45
31:XB:233:SER:N	31:XB:234:PRO:CD	2.80	0.45
34:XE:77:PRO:HD2	34:XE:142:LEU:HD22	1.98	0.45
38:XI:7:THR:O	38:XI:83:ARG:HD2	2.17	0.45
40:XK:65:ALA:HB3	40:XK:97:ALA:HB3	1.97	0.45
49:XA:1206:G:H2'	49:XA:1207:G:C8	2.51	0.45
50:QS:78:ARG:O	50:QS:81:ARG:NH1	2.50	0.45
52:XX:7:G:H2'	52:XX:8:A:C8	2.51	0.45
1:RA:288:C:H2'	1:RA:289:A:H8	1.82	0.45
1:RA:2168:G:H2'	1:RA:2168:G:N3	2.31	0.45
1:RA:2291:U:H2'	1:RA:2292:C:H6	1.79	0.45
1:RA:2636:U:OP1	4:RE:79:ARG:HA	2.16	0.45
5:RF:185:ASP:HA	5:RF:188:ARG:HD3	1.98	0.45
6:RG:10:LYS:O	6:RG:14:GLU:HB3	2.15	0.45
6:RG:53:LEU:HD21	6:RG:70:VAL:HG11	1.98	0.45
6:RG:82:LEU:HD21	6:RG:88:ILE:HG13	1.98	0.45
11:RP:97:PRO:HD3	11:RP:126:VAL:O	2.16	0.45
14:RS:43:GLU:HG2	22:R0:49:LYS:HE2	1.99	0.45
21:RZ:108:PRO:HA	21:RZ:142:SER:HA	1.98	0.45
1:YA:471:A:H2'	1:YA:472:A:O4'	2.16	0.45
1:YA:657:U:H2'	1:YA:658:C:H6	1.79	0.45
1:YA:862:G:H2'	1:YA:863:A:O4'	2.15	0.45
1:YA:924:C:H2'	1:YA:925:C:C6	2.52	0.45
1:YA:1497:U:H5''	1:YA:1498:C:C5	2.51	0.45
1:YA:1798:U:H5'	3:YD:259:THR:HG22	1.97	0.45
1:YA:2022:U:OP2	26:Y5:15:ARG:NH2	2.49	0.45
1:YA:2469:A:H2	1:YA:2481:G:N3	2.14	0.45
1:YA:2562:U:H1'	10:YO:23:ARG:HD3	1.98	0.45
6:YG:115:ARG:O	6:YG:117:PHE:N	2.49	0.45
19:YX:39:ILE:O	19:YX:43:VAL:HG12	2.16	0.45
35:QF:16:GLN:H	35:QF:16:GLN:HG2	1.42	0.45
40:QK:120:ARG:HG3	40:QK:126:ARG:NH1	2.32	0.45
49:QA:9:G:H2'	49:QA:10:A:C8	2.52	0.45
34:XE:9:LYS:HD2	34:XE:112:LEU:HD22	1.97	0.45
36:XG:78:ARG:HD3	36:XG:85:TYR:CD1	2.52	0.45
39:XJ:51:ARG:HG2	39:XJ:61:GLU:HG3	1.98	0.45
41:XL:93:LEU:HB2	41:XL:96:VAL:HG22	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:XT:74:LYS:HG2	48:XT:75:ASN:H	1.82	0.45
49:XA:225:C:H2'	49:XA:226:G:C8	2.52	0.45
49:XA:580:U:H3'	49:XA:581:G:C8	2.51	0.45
49:XA:1019:C:H2'	49:XA:1020:U:O4'	2.16	0.45
52:XX:8:A:H2'	52:XX:9:G:H8	1.81	0.45
52:XX:11:U:H3	52:XX:12:A:N6	2.13	0.45
52:XX:17:C:C2	52:XX:18:C:C5	3.05	0.45
52:QX:11:U:H3	52:QX:12:A:N6	2.13	0.45
52:QX:17:C:C2	52:QX:18:C:C5	3.05	0.45
1:RA:152:G:H2'	1:RA:153:C:C6	2.51	0.45
1:RA:205:G:O2'	1:RA:206:U:OP2	2.23	0.45
1:RA:1161:C:H2'	1:RA:1162:G:H8	1.82	0.45
1:RA:1499:C:H2'	1:RA:1500:G:H8	1.82	0.45
1:RA:2051:A:H5'	1:RA:2578:G:O4'	2.15	0.45
1:RA:2115:G:H2'	1:RA:2115:G:N3	2.32	0.45
7:RH:85:LYS:HD2	7:RH:85:LYS:HA	1.81	0.45
8:RI:33:ARG:HB3	8:RI:35:LEU:HD23	1.99	0.45
8:RI:144:VAL:HG22	8:RI:145:VAL:H	1.81	0.45
12:RQ:68:ILE:HD13	12:RQ:103:MET:HG2	1.98	0.45
27:R6:34:LEU:H	27:R6:34:LEU:HD13	1.81	0.45
1:YA:19:C:H2'	1:YA:20:C:C6	2.52	0.45
1:YA:330:A:H2	1:YA:1210:A:O2'	1.99	0.45
1:YA:398:G:H2'	1:YA:399:G:C8	2.51	0.45
1:YA:654(A):G:H2'	1:YA:654(B):C:C6	2.51	0.45
1:YA:818:G:N1	1:YA:1188:U:OP2	2.40	0.45
1:YA:828:U:H4'	1:YA:831:G:C6	2.51	0.45
1:YA:928:G:H2'	1:YA:929:G:O4'	2.16	0.45
1:YA:2292:C:H2'	1:YA:2293:C:C6	2.51	0.45
1:YA:2557:G:H2'	1:YA:2558:C:C6	2.51	0.45
8:YI:29:TYR:HD2	8:YI:30:LEU:HD23	1.80	0.45
14:YS:83:LYS:HG2	14:YS:109:GLY:N	2.31	0.45
16:YU:106:PHE:O	16:YU:110:VAL:HG23	2.17	0.45
21:YZ:106:GLY:O	21:YZ:141:VAL:HG13	2.17	0.45
37:QH:115:SER:HA	49:QA:642:A:N7	2.32	0.45
40:QK:22:HIS:HE1	40:QK:24:SER:HB2	1.81	0.45
41:QL:5:PRO:O	41:QL:9:GLN:HB2	2.16	0.45
41:QL:9:GLN:HG2	41:QL:12:ARG:HH21	1.82	0.45
42:QM:109:THR:OG1	49:QA:947:G:O3'	2.35	0.45
44:QO:36:ILE:HG12	44:QO:56:LEU:HD11	1.99	0.45
46:QQ:60:ILE:HG21	46:QQ:74:LEU:HD23	1.98	0.45
49:QA:99:C:H2'	49:QA:101:A:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:829:G:H2'	49:QA:830:G:H8	1.82	0.45
49:QA:1237:C:O2'	49:QA:1300:G:N2	2.50	0.45
38:XI:102:LEU:O	49:XA:1179:A:H4'	2.16	0.45
44:XO:23:GLY:C	44:XO:28:GLN:HE21	2.19	0.45
49:XA:68(F):C:H2'	49:XA:68(G):G:C8	2.51	0.45
49:XA:524:G:H2'	49:XA:525:C:C6	2.51	0.45
49:XA:1304:G:N2	49:XA:1333:A:H62	2.12	0.45
50:XS:32:LYS:HA	50:XS:50:ALA:HB3	1.98	0.45
50:QS:49:ILE:HB	50:QS:51:VAL:HG22	1.99	0.45
1:RA:443:A:H1'	1:RA:1201:C:O4'	2.17	0.45
1:RA:690:G:H2'	1:RA:691:C:C6	2.51	0.45
1:RA:987:G:H2'	1:RA:988:A:O4'	2.17	0.45
1:RA:1853:A:H2'	1:RA:1854:A:C8	2.51	0.45
1:RA:2163:C:N4	1:RA:2164:C:H41	2.14	0.45
1:RA:2269:A:C4	1:RA:2270:G:C8	3.04	0.45
2:RB:3:C:H2'	2:RB:4:C:C6	2.51	0.45
10:RO:63:VAL:HG23	10:RO:64:ARG:HG3	1.98	0.45
11:RP:36:LYS:HD2	11:RP:37:GLY:H	1.81	0.45
11:RP:124:LYS:HA	11:RP:143:GLY:O	2.17	0.45
17:RV:99:ILE:O	17:RV:101:GLY:N	2.50	0.45
30:R9:3:VAL:HA	30:R9:35:ARG:O	2.17	0.45
1:YA:226:G:H2'	1:YA:227:A:C8	2.52	0.45
1:YA:841:A:H2'	1:YA:842:G:C8	2.51	0.45
1:YA:1679:U:C4	1:YA:1680:U:C4	3.05	0.45
1:YA:2748:A:C2	1:YA:2757:A:C4	3.05	0.45
4:YE:36:ARG:HH21	4:YE:88:GLY:HA2	1.82	0.45
7:YH:8:PRO:HG2	7:YH:69:ARG:HE	1.81	0.45
12:YQ:63:LYS:HD2	21:YZ:175:VAL:HG21	1.97	0.45
14:YS:83:LYS:NZ	14:YS:109:GLY:HA2	2.31	0.45
19:YX:24:GLY:O	19:YX:83:VAL:N	2.46	0.45
23:Y1:53:VAL:HB	23:Y1:58:ILE:HD13	1.97	0.45
24:Y2:47:ASN:OD1	24:Y2:47:ASN:N	2.48	0.45
31:QB:211:ILE:HG13	31:QB:212:GLN:N	2.31	0.45
38:QI:56:LEU:HD23	38:QI:56:LEU:H	1.81	0.45
38:QI:116:LYS:HE2	38:QI:122:ALA:HB2	1.99	0.45
43:QN:24:CYS:HB2	43:QN:40:CYS:H	1.82	0.45
49:QA:599:C:H2'	49:QA:600:C:H6	1.81	0.45
49:QA:1027:C:H2'	49:QA:1028:C:C6	2.52	0.45
49:QA:1133:G:H2'	49:QA:1134:G:H8	1.81	0.45
42:XM:87:TYR:CE2	42:XM:91:ARG:HD2	2.52	0.45
42:XM:96:LEU:HD11	50:XS:82:GLY:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:YN:19:ARG:HH21	49:XA:1317:C:N4	2.14	0.45
44:XO:35:ARG:O	44:XO:38:ARG:HB3	2.15	0.45
47:XR:48:GLY:O	47:XR:74:ARG:NH2	2.50	0.45
49:XA:676:A:H2'	49:XA:677:U:H6	1.81	0.45
49:XA:676:A:H2'	49:XA:677:U:C6	2.52	0.45
49:XA:689:C:H2'	49:XA:690:G:O4'	2.17	0.45
49:XA:806:C:H2'	49:XA:807:A:H8	1.81	0.45
49:XA:1384:C:H2'	49:XA:1385:G:C8	2.52	0.45
53:QV:67:U:H2'	53:QV:68:A:H8	1.82	0.45
1:RA:270(F):U:H2'	1:RA:270(G):C:H6	1.80	0.45
1:RA:642:G:H21	1:RA:646:A:H2	1.64	0.45
1:RA:1449:A:C4	1:RA:1529:A:C2	3.04	0.45
1:RA:1653:G:H4'	1:RA:1654:A:O5'	2.17	0.45
1:RA:2021:C:OP1	26:R5:12:SER:OG	2.26	0.45
1:RA:2028:U:H2'	1:RA:2029:G:C8	2.51	0.45
1:RA:2247:A:H2'	1:RA:2248:C:C6	2.51	0.45
1:RA:2547:U:H2'	1:RA:2548:G:H8	1.80	0.45
4:RE:179:GLU:OE2	15:RT:3:ARG:NH2	2.49	0.45
6:RG:44:GLY:O	6:RG:47:LYS:HB2	2.16	0.45
26:R5:40:LYS:CG	26:R5:47:PRO:HD2	2.46	0.45
1:YA:394:A:H2'	1:YA:395:U:O4'	2.16	0.45
1:YA:631:A:H61	1:YA:2402:C:H41	1.63	0.45
1:YA:1688:U:H5'	1:YA:1689:A:OP1	2.16	0.45
1:YA:1791:A:H61	1:YA:1828:G:HO2'	1.59	0.45
1:YA:1794:U:H2'	1:YA:1795:C:H6	1.81	0.45
1:YA:2029:G:N1	1:YA:2033:A:OP2	2.26	0.45
1:YA:2293:C:OP1	14:YS:89:ARG:NH1	2.48	0.45
1:YA:2690:C:OP2	13:YR:14:SER:HB3	2.17	0.45
11:YP:50:ARG:HE	29:Y8:7:HIS:CD2	2.35	0.45
21:YZ:54:HIS:CD2	21:YZ:101:PRO:HG3	2.52	0.45
21:YZ:80:ARG:NH2	21:YZ:82:ARG:HH12	2.15	0.45
31:QB:82:ARG:HB2	31:QB:92:TYR:CZ	2.52	0.45
31:QB:102:LEU:O	31:QB:103:THR:HG23	2.16	0.45
33:QD:57:ARG:HB3	33:QD:206:PHE:CB	2.45	0.45
38:QI:97:LYS:HA	38:QI:97:LYS:HD2	1.86	0.45
41:QL:35:GLY:HA2	41:QL:58:VAL:HG13	1.98	0.45
46:QQ:63:ARG:HB3	46:QQ:63:ARG:HH11	1.81	0.45
49:QA:19:C:H2'	49:QA:20:U:H6	1.80	0.45
49:QA:418:C:H2'	49:QA:419:C:C6	2.52	0.45
49:QA:977:A:N6	49:QA:1224:G:OP1	2.49	0.45
49:QA:1016:A:H2'	49:QA:1017:G:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1220:G:H1'	50:QS:54:GLY:HA2	1.98	0.45
49:QA:1288:A:N3	49:QA:1352:C:O2'	2.49	0.45
34:XE:92:LYS:HE3	37:XH:105:ARG:HD3	1.99	0.45
40:XK:21:ILE:HD12	40:XK:84:VAL:HG12	1.99	0.45
40:XK:122:LYS:CG	49:XA:779:C:H5''	2.46	0.45
41:XL:9:GLN:NE2	49:XA:880:C:H3'	2.32	0.45
42:XM:94:ARG:HH21	50:XS:81:ARG:HG3	1.80	0.45
43:XN:4:LYS:O	43:XN:7:ILE:HG12	2.16	0.45
49:XA:33:A:H2'	49:XA:34:C:H6	1.79	0.45
49:XA:45:U:C2	49:XA:46:G:N7	2.85	0.45
49:XA:131:C:H2'	49:XA:132:C:H6	1.80	0.45
49:XA:299:G:H2'	49:XA:300:A:C8	2.51	0.45
49:XA:313:A:H2'	49:XA:314:C:C6	2.52	0.45
49:XA:557:G:H2'	49:XA:558:G:C8	2.52	0.45
49:XA:707:C:H2'	49:XA:708:C:H6	1.82	0.45
49:XA:756:C:H2'	49:XA:757:U:C6	2.52	0.45
49:XA:927:G:C6	49:XA:1391:U:C2	3.05	0.45
49:XA:1020:U:H2'	49:XA:1021:G:C8	2.48	0.45
49:XA:1409:C:H2'	49:XA:1410:G:H8	1.80	0.45
49:XA:1431:C:H2'	49:XA:1432:G:O4'	2.17	0.45
52:XX:10:G:H3'	52:XX:11:U:C5	2.52	0.45
53:XV:67:U:H2'	53:XV:68:A:H8	1.82	0.45
52:QX:16:C:C2	52:QX:17:C:C5	3.05	0.45
1:RA:407:G:H2'	1:RA:408:G:C8	2.52	0.45
1:RA:433:C:H2'	1:RA:434:U:C6	2.52	0.45
1:RA:1607:C:N4	1:RA:1621:U:H3'	2.32	0.45
1:RA:2536:G:H2'	1:RA:2537:U:C6	2.52	0.45
6:RG:103:LEU:HD23	6:RG:103:LEU:HA	1.84	0.45
17:RV:21:ARG:HD2	17:RV:91:TYR:CD1	2.51	0.45
1:YA:637:A:OP2	11:YP:115:LEU:HB2	2.16	0.45
1:YA:820:A:H2'	1:YA:821:A:H8	1.82	0.45
1:YA:1657:C:H2'	1:YA:1658:C:H6	1.82	0.45
1:YA:1812:A:H2'	1:YA:1813:G:C8	2.51	0.45
1:YA:2014:A:H2'	1:YA:2015:A:C8	2.51	0.45
1:YA:2471:C:H3'	1:YA:2472:G:H8	1.82	0.45
4:YE:57:LYS:HD2	4:YE:57:LYS:HA	1.81	0.45
6:YG:34:LEU:HD12	6:YG:100:TRP:CH2	2.52	0.45
8:YI:1:MET:HG3	8:YI:23:PRO:HB3	1.99	0.45
12:YQ:58:PHE:CD1	12:YQ:61:GLY:HA3	2.52	0.45
14:YS:48:LEU:HD23	14:YS:82:ILE:HD11	1.99	0.45
15:YT:108:ARG:HD3	49:XA:1432:G:OP2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:YZ:166:SER:HB2	21:YZ:167:PRO:C	2.37	0.45
32:QC:28:GLN:HA	32:QC:31:HIS:NE2	2.32	0.45
34:QE:78:HIS:CB	37:QH:104:ARG:HB3	2.46	0.45
42:QM:47:ASP:N	42:QM:47:ASP:OD1	2.49	0.45
44:QO:43:LEU:HD22	44:QO:47:LYS:CB	2.46	0.45
45:QP:32:TYR:OH	49:QA:608:A:H4'	2.17	0.45
46:QQ:70:ARG:HH21	49:QA:234:C:H5''	1.81	0.45
49:QA:360:A:H2'	49:QA:361:G:C8	2.52	0.45
49:QA:864:A:O2'	49:QA:1078:U:O4	2.20	0.45
49:QA:998:G:H2'	49:QA:998(A):C:H6	1.82	0.45
49:QA:1197:G:H3'	49:QA:1197:G:OP2	2.17	0.45
33:XD:18:LYS:HE3	33:XD:31:CYS:SG	2.57	0.45
34:XE:27:ARG:HE	34:XE:49:PRO:HG3	1.82	0.45
36:XG:9:VAL:O	36:XG:10:ARG:HB2	2.17	0.45
49:XA:65:U:H2'	49:XA:381:C:H5	1.81	0.45
49:XA:104:G:H4'	49:XA:174:C:H4'	1.98	0.45
49:XA:149:A:H2'	49:XA:150:C:C6	2.51	0.45
49:XA:399:G:H2'	49:XA:400:C:C6	2.52	0.45
49:XA:633:G:H2'	49:XA:634:C:O4'	2.16	0.45
49:XA:854:G:C6	49:XA:855:G:N7	2.85	0.45
49:XA:1486:G:H2'	49:XA:1487:G:O4'	2.17	0.45
53:XV:19:G:H4'	53:XV:59:G:N2	2.31	0.45
1:RA:854:G:H2'	1:RA:855:G:C8	2.51	0.45
1:RA:1313:U:OP2	1:RA:1314:C:N4	2.40	0.45
1:RA:1817:G:OP1	3:RD:62:TYR:CE2	2.69	0.45
1:RA:2053:G:H2'	1:RA:2054:A:H8	1.81	0.45
1:RA:2592:G:H2'	1:RA:2593:U:C6	2.52	0.45
2:RB:18:G:H2'	2:RB:19:G:C8	2.52	0.45
3:RD:44:ASN:HB3	3:RD:49:ILE:HA	1.98	0.45
6:RG:53:LEU:O	6:RG:57:ALA:HB2	2.17	0.45
30:R9:27:CYS:SG	30:R9:28:GLU:N	2.90	0.45
1:YA:71:A:OP2	1:YA:112:U:O2'	2.29	0.45
1:YA:231:C:H3'	1:YA:232:G:C8	2.52	0.45
1:YA:448:U:C4	1:YA:583:G:H1'	2.52	0.45
1:YA:1637:A:H4'	1:YA:2711:A:O2'	2.17	0.45
1:YA:1795:C:H2'	1:YA:1796:U:C6	2.52	0.45
1:YA:2277:G:H5''	12:YQ:85:LYS:HD2	1.98	0.45
1:YA:2685:G:P	15:YT:51:ARG:HH22	2.39	0.45
8:YI:144:VAL:HG22	8:YI:145:VAL:H	1.81	0.45
23:Y1:2:SER:HB2	23:Y1:4:VAL:HG12	1.99	0.45
31:QB:7:VAL:HG11	31:QB:217:ARG:NH1	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:QB:27:LYS:HD3	31:QB:193:ASP:OD1	2.16	0.45
31:QB:74:LYS:H	31:QB:74:LYS:HG2	1.60	0.45
32:QC:177:THR:HG22	32:QC:178:LEU:H	1.80	0.45
34:QE:135:THR:O	34:QE:139:LEU:HG	2.17	0.45
40:QK:33:THR:HG22	40:QK:39:PRO:CA	2.42	0.45
40:QK:51:LYS:CA	40:QK:55:LYS:HB2	2.47	0.45
42:QM:14:ARG:NH1	49:QA:1295:G:HO2'	2.14	0.45
44:QO:33:THR:OG1	44:QO:63:ARG:NH1	2.49	0.45
49:QA:226:G:C2	49:QA:227:G:C8	3.05	0.45
49:QA:848:C:H2'	49:QA:849:C:H6	1.81	0.45
49:QA:1410:G:H2'	49:QA:1411:C:C6	2.51	0.45
49:QA:1512:U:H2'	49:QA:1513:A:C8	2.52	0.45
49:QA:1513:A:H2'	49:QA:1514:C:H6	1.82	0.45
31:XB:118:LEU:HB3	31:XB:142:LEU:HD21	1.98	0.45
31:XB:205:ASP:N	31:XB:205:ASP:OD1	2.49	0.45
37:XH:29:SER:HA	49:XA:590:C:OP1	2.17	0.45
46:XQ:67:LYS:H	46:XQ:67:LYS:HG3	1.55	0.45
49:XA:186(C):G:H1	49:XA:186(N):U:H3	1.65	0.45
49:XA:643:C:H2'	49:XA:644:G:H8	1.82	0.45
49:XA:1336:C:H1'	49:XA:1337:G:C2	2.52	0.45
49:XA:1505:G:H4'	49:XA:1506:U:H5''	1.99	0.45
52:XX:17:C:C2	53:XV:37:G:N2	2.84	0.45
53:XV:16:C:N4	53:XV:17:C:H41	2.14	0.45
1:RA:668:G:C2	1:RA:670:A:C6	3.04	0.45
1:RA:727:A:OP1	1:RA:1431:U:O2'	2.30	0.45
1:RA:1384:A:N3	1:RA:1405:U:H1'	2.31	0.45
1:RA:1557:C:OP2	1:RA:1558:A:O2'	2.35	0.45
1:RA:1825:A:H2'	1:RA:1826:G:C8	2.51	0.45
1:RA:2605:U:H2'	1:RA:2606:C:H6	1.82	0.45
1:RA:2627:G:O2'	1:RA:2781:A:N1	2.44	0.45
1:RA:2646:C:H2'	1:RA:2647:U:O4'	2.17	0.45
1:RA:2690:C:OP2	13:RR:14:SER:HB3	2.17	0.45
1:RA:2850:A:H2'	1:RA:2851:A:C8	2.51	0.45
4:RE:9:VAL:HG11	15:RT:7:ILE:CG2	2.46	0.45
1:YA:528:A:C2	1:YA:2042:A:H2'	2.52	0.45
1:YA:814:C:H41	11:YP:25:SER:HA	1.81	0.45
1:YA:858:U:O2	1:YA:2268:A:H2'	2.16	0.45
1:YA:2266:A:H4'	1:YA:2267:A:C2	2.52	0.45
1:YA:2657:A:H1'	1:YA:2665:A:N6	2.32	0.45
2:YB:93:C:C2	2:YB:94:C:C5	3.05	0.45
5:YF:24:LEU:HD23	5:YF:115:ALA:HA	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:YG:112:PRO:HB3	51:Y4:37:SER:CB	2.42	0.45
14:YS:10:ARG:O	14:YS:12:PHE:N	2.46	0.45
21:YZ:56:VAL:HG21	21:YZ:133:ILE:HD13	1.99	0.45
27:Y6:28:ARG:HD2	27:Y6:28:ARG:HA	1.78	0.45
32:QC:77:ILE:HG12	32:QC:84:ILE:HB	1.99	0.45
34:QE:25:ARG:HH12	49:QA:1070:U:H4'	1.81	0.45
44:QO:36:ILE:HD12	44:QO:63:ARG:HH22	1.82	0.45
46:QQ:43:LEU:HB2	46:QQ:70:ARG:O	2.16	0.45
49:QA:218:C:H4'	49:QA:458(C):G:H1	1.82	0.45
49:QA:237:C:H2'	49:QA:238:G:H8	1.81	0.45
49:QA:673:G:C6	49:QA:734:G:C6	3.04	0.45
49:QA:985:C:H2'	49:QA:986:A:C8	2.52	0.45
49:QA:1347:G:N2	49:QA:1348:U:O4	2.50	0.45
35:XF:99:ALA:O	35:XF:100:ASN:ND2	2.37	0.45
48:XT:43:LEU:HA	48:XT:46:GLU:HB3	1.97	0.45
49:XA:232:G:H2'	49:XA:233:C:C6	2.51	0.45
49:XA:294:U:H2'	49:XA:295:C:H6	1.81	0.45
49:XA:586:C:O2'	49:XA:878:G:H4'	2.17	0.45
49:XA:626:U:H2'	49:XA:627:G:H8	1.81	0.45
49:XA:977:A:O2'	49:XA:981:U:N3	2.18	0.45
49:XA:1476:G:H2'	49:XA:1477:C:C6	2.51	0.45
49:XA:1481:U:H2'	49:XA:1482:G:C8	2.52	0.45
51:Y4:2:LYS:HD2	51:Y4:2:LYS:HA	1.72	0.45
1:RA:476:G:N2	1:RA:479:A:OP2	2.50	0.45
1:RA:1196:C:C2	1:RA:1197:G:C8	3.05	0.45
1:RA:1990:C:H2'	1:RA:1991:U:C6	2.52	0.45
1:RA:2712:U:H1'	1:RA:2712(A):A:C8	2.52	0.45
3:RD:26:LYS:H	3:RD:26:LYS:HD2	1.82	0.45
7:RH:103:LEU:HG	7:RH:105:LEU:HD12	1.99	0.45
9:RN:114:ARG:O	9:RN:115:ARG:HB3	2.17	0.45
10:RO:78:ARG:HH21	15:RT:103:ARG:NH2	2.15	0.45
12:RQ:104:PHE:HE1	12:RQ:125:LEU:HD11	1.82	0.45
16:RU:83:LEU:HG	16:RU:88:ILE:HB	1.98	0.45
1:YA:94:G:H2'	1:YA:95:G:O4'	2.16	0.45
1:YA:436:C:H2'	1:YA:438:G:H8	1.82	0.45
1:YA:581:C:OP1	16:YU:33:ARG:HG3	2.17	0.45
1:YA:974:G:N2	1:YA:989:G:C4	2.85	0.45
1:YA:1174:A:H2'	1:YA:1174:A:N3	2.32	0.45
1:YA:1556:C:H2'	1:YA:1557:C:C6	2.52	0.45
1:YA:1871:A:H2'	1:YA:1872:A:C8	2.52	0.45
1:YA:2070:G:H2'	1:YA:2071:A:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:2610:C:H4'	1:YA:2611:U:OP2	2.16	0.45
5:YF:176:LEU:HD21	5:YF:181:LEU:HA	1.97	0.45
9:YN:17:ASP:O	9:YN:56:ASN:HB2	2.17	0.45
21:YZ:124:ILE:HG22	21:YZ:126:VAL:HG13	1.98	0.45
27:Y6:25:LYS:HE2	27:Y6:27:LYS:HE3	1.97	0.45
27:Y6:34:LEU:HD13	27:Y6:34:LEU:H	1.82	0.45
28:Y7:5:TRP:NE1	28:Y7:7:PRO:HG3	2.32	0.45
35:QF:6:VAL:HG22	35:QF:90:VAL:HG13	1.99	0.45
41:QL:93:LEU:O	41:QL:96:VAL:N	2.50	0.45
45:QP:14:ASN:HA	45:QP:42:ARG:HH22	1.82	0.45
49:QA:958:A:N3	49:QA:985:C:O2'	2.49	0.45
49:QA:1120:G:H2'	49:QA:1121:U:H6	1.82	0.45
49:QA:1244:C:H2'	49:QA:1245:A:C8	2.52	0.45
49:QA:1301:U:O2	49:QA:1301:U:H2'	2.16	0.45
31:XB:204:ASN:OD1	31:XB:206:ASP:N	2.49	0.45
32:XC:20:SER:HB2	32:XC:22:TRP:HE1	1.80	0.45
32:XC:104:GLN:HG2	32:XC:105:GLU:N	2.25	0.45
33:XD:65:ARG:HB3	33:XD:75:PHE:CE2	2.52	0.45
37:XH:10:LEU:O	37:XH:13:ILE:HB	2.17	0.45
45:XP:11:SER:HB3	49:XA:43:C:H4'	1.98	0.45
48:XT:26:ASN:ND2	49:XA:323:U:OP1	2.48	0.45
49:XA:788:U:H2'	49:XA:789:U:O4'	2.17	0.45
49:XA:951:G:H2'	49:XA:952:U:C6	2.51	0.45
49:XA:1223:C:P	49:XA:1224:G:H2'	2.57	0.45
49:XA:1532:U:O2'	49:XA:1534:A:C2	2.64	0.45
49:XA:1539:C:H2'	49:XA:1540:U:C6	2.52	0.45
1:RA:389:G:H1	11:RP:70:GLN:HB3	1.82	0.44
1:RA:519:U:H2'	1:RA:520:G:C8	2.52	0.44
1:RA:1127:A:N7	1:RA:2488:A:O2'	2.48	0.44
1:RA:1178:C:O2'	1:RA:1179:C:OP1	2.31	0.44
1:RA:1728:G:H5''	1:RA:1728:G:N3	2.32	0.44
4:RE:21:VAL:HB	4:RE:22:PRO:HB3	1.99	0.44
7:RH:4:ILE:HG13	7:RH:6:ARG:NE	2.32	0.44
1:YA:583:G:OP2	16:YU:10:ARG:HD2	2.17	0.44
1:YA:697:C:H2'	1:YA:698:C:C6	2.52	0.44
1:YA:1385:G:C4	1:YA:1386:C:C5	3.05	0.44
1:YA:1545:A:H2'	1:YA:1545(A):A:C8	2.52	0.44
1:YA:1825:A:H2'	1:YA:1826:G:C8	2.52	0.44
1:YA:1952:A:C6	10:YO:22:ILE:HD12	2.52	0.44
1:YA:1999:C:H5''	1:YA:2723:C:O2'	2.16	0.44
1:YA:2629:A:O2'	1:YA:2630:G:H5''	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:YE:116:VAL:HG11	4:YE:138:PRO:HB3	1.99	0.44
8:YI:124:GLY:H	8:YI:142:VAL:HG23	1.81	0.44
11:YP:92:GLU:HA	11:YP:123:LEU:HD23	2.00	0.44
12:YQ:109:VAL:HG13	12:YQ:113:GLN:HB3	1.99	0.44
19:YX:15:GLU:CD	19:YX:15:GLU:H	2.20	0.44
22:Y0:50:ASN:HB3	22:Y0:63:VAL:HG22	1.98	0.44
33:QD:53:ASP:OD2	33:QD:57:ARG:NH2	2.50	0.44
33:QD:162:LEU:HD13	33:QD:178:VAL:HG13	2.00	0.44
35:QF:70:ASP:O	35:QF:73:ASN:ND2	2.46	0.44
43:QN:24:CYS:HA	43:QN:38:GLY:O	2.17	0.44
49:QA:1222:G:H5''	50:QS:78:ARG:NH1	2.31	0.44
49:QA:1522:U:H2'	49:QA:1523:G:C8	2.47	0.44
31:XB:136:VAL:HG13	31:XB:140:HIS:CE1	2.51	0.44
32:XC:23:TYR:CD2	39:XJ:95:GLU:HB2	2.52	0.44
34:XE:77:PRO:HG3	34:XE:144:THR:HG22	1.99	0.44
37:XH:26:VAL:CG1	37:XH:59:LEU:HB3	2.46	0.44
38:XI:28:VAL:HB	38:XI:36:TYR:HD1	1.82	0.44
41:XL:90:VAL:HG22	41:XL:96:VAL:HG21	1.98	0.44
46:XQ:92:ARG:HA	46:XQ:95:TYR:CD2	2.52	0.44
49:XA:424:G:H2'	49:XA:425:G:H8	1.81	0.44
49:XA:559:A:H4'	49:XA:560:U:H5''	2.00	0.44
49:XA:1532:U:C2'	49:XA:1534:A:C2	2.99	0.44
1:RA:102:G:H4'	1:RA:103:A:O5'	2.17	0.44
1:RA:236:C:H2'	1:RA:237:C:H6	1.82	0.44
1:RA:487:C:H2'	1:RA:488:G:O4'	2.18	0.44
1:RA:582:G:H2'	1:RA:583:G:H8	1.82	0.44
1:RA:1153:C:H2'	1:RA:1154:G:O4'	2.18	0.44
1:RA:2394:C:N4	53:QV:78:A:HO2'	2.14	0.44
2:RB:28:C:OP1	14:RS:31:SER:OG	2.22	0.44
11:RP:9:ASN:HB2	11:RP:10:PRO:HD2	1.99	0.44
17:RV:28:GLU:HB2	17:RV:31:ALA:HB2	1.98	0.44
27:R6:11:LEU:HD13	27:R6:11:LEU:HA	1.75	0.44
1:YA:287:C:H2'	1:YA:288:C:C6	2.52	0.44
1:YA:1083:U:O2'	1:YA:1085:A:H3'	2.17	0.44
1:YA:1710:C:H2'	1:YA:1711:C:H6	1.82	0.44
1:YA:1907:G:H2'	1:YA:1908:C:H6	1.82	0.44
1:YA:2375:G:N2	1:YA:2377:A:H3'	2.32	0.44
3:YD:232:PRO:HB3	3:YD:244:ARG:NH1	2.32	0.44
5:YF:184:TYR:O	5:YF:188:ARG:HG3	2.17	0.44
6:YG:98:ARG:HH12	51:Y4:1:MET:HB3	1.82	0.44
7:YH:12:PRO:HD3	7:YH:48:GLY:O	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:YP:21:ARG:HA	11:YP:21:ARG:HE	1.82	0.44
11:YP:36:LYS:HG3	11:YP:37:GLY:H	1.82	0.44
15:YT:51:ARG:HG2	15:YT:98:LYS:HG3	1.99	0.44
16:YU:49:HIS:HA	16:YU:52:ARG:HB3	1.98	0.44
32:QC:59:ARG:HD2	32:QC:63:ASN:O	2.16	0.44
32:QC:189:ALA:HB3	32:QC:196:LEU:HB2	1.98	0.44
33:QD:19:LEU:O	33:QD:21:LEU:N	2.49	0.44
33:QD:93:PHE:O	33:QD:97:LEU:HB2	2.17	0.44
38:QI:15:ALA:HA	38:QI:65:VAL:HA	1.99	0.44
40:QK:41:THR:HG22	40:QK:71:LYS:HB2	1.99	0.44
43:QN:34:TYR:HA	49:QA:1358:U:H5'	1.99	0.44
49:QA:315:A:H4'	49:QA:317:G:OP2	2.17	0.44
49:QA:335:C:H2'	49:QA:336:C:H6	1.82	0.44
49:QA:1238:A:H2	49:QA:1241:G:N3	2.15	0.44
49:QA:1267:C:O2	49:QA:1327:C:H4'	2.18	0.44
49:QA:1387:G:H2'	49:QA:1388:C:C6	2.53	0.44
49:QA:1427:U:H2'	49:QA:1428:A:C8	2.52	0.44
32:XC:52:LEU:C	32:XC:115:LEU:HD11	2.37	0.44
33:XD:5:ILE:HG12	49:XA:407:G:OP1	2.18	0.44
37:XH:17:THR:HB	37:XH:78:GLN:HG2	1.98	0.44
38:XI:120:ARG:HG2	49:XA:1348:U:H4'	1.99	0.44
40:XK:55:LYS:NZ	49:XA:690:G:O6	2.51	0.44
44:XO:43:LEU:HD22	44:XO:47:LYS:HB2	1.99	0.44
48:XT:22:ARG:HD3	49:XA:324:G:OP1	2.18	0.44
49:XA:170:U:H2'	49:XA:171:A:H8	1.82	0.44
49:XA:662:G:H2'	49:XA:663:A:H8	1.80	0.44
49:XA:1039:C:H2'	49:XA:1040:U:H6	1.80	0.44
1:RA:539:G:OP1	9:RN:5:VAL:HG11	2.17	0.44
1:RA:1423:G:OP1	1:RA:1492:G:O2'	2.34	0.44
1:RA:2514:U:H2'	1:RA:2515:C:C6	2.52	0.44
1:RA:2528:U:H2'	1:RA:2530:A:O5'	2.18	0.44
4:RE:128:SER:OG	4:RE:129:HIS:N	2.48	0.44
26:R5:13:LYS:HG2	26:R5:16:ARG:NH2	2.33	0.44
26:R5:46:CYS:O	26:R5:48:GLU:N	2.49	0.44
1:YA:529:A:H2'	1:YA:529:A:N3	2.32	0.44
1:YA:674:G:C1'	5:YF:74:ARG:HD3	2.46	0.44
1:YA:878:A:C6	1:YA:900:A:C8	3.06	0.44
1:YA:987:G:O2'	1:YA:1000:A:N3	2.42	0.44
1:YA:1263:U:H2'	1:YA:1264:G:C8	2.52	0.44
1:YA:1363:C:O2'	1:YA:1809:A:N3	2.38	0.44
1:YA:1588:C:H2'	1:YA:1589:C:H6	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:1694:C:H4'	1:YA:1695:G:O5'	2.17	0.44
1:YA:1800:C:OP2	3:YD:147:LEU:HD21	2.17	0.44
1:YA:2023:G:H5'	1:YA:2617:C:H4'	2.00	0.44
1:YA:2437:U:H2'	1:YA:2438:U:C6	2.51	0.44
1:YA:2492:U:H2'	1:YA:2493:U:C6	2.52	0.44
1:YA:2696:U:H2'	1:YA:2697:G:H8	1.81	0.44
5:YF:9:ILE:HD11	5:YF:125:LEU:HG	2.00	0.44
6:YG:67:LYS:O	6:YG:67:LYS:HD2	2.17	0.44
10:YO:4:PRO:O	10:YO:5:GLN:HB2	2.18	0.44
27:Y6:44:ARG:O	27:Y6:45:LYS:HB2	2.17	0.44
30:Y9:14:CYS:SG	30:Y9:27:CYS:HB2	2.57	0.44
31:QB:184:VAL:HB	31:QB:197:VAL:HG13	1.98	0.44
32:QC:172:ARG:HB3	49:QA:1106:G:H4'	1.98	0.44
33:QD:84:LYS:HG2	49:QA:613:C:OP1	2.17	0.44
33:QD:118:ARG:NH1	49:QA:403:C:OP1	2.40	0.44
37:QH:56:LYS:HD3	37:QH:57:PRO:HD2	1.99	0.44
41:QL:90:VAL:O	41:QL:92:ASP:N	2.44	0.44
49:QA:680:C:H2'	49:QA:681:C:C6	2.52	0.44
49:QA:1134:G:C2	49:QA:1141:C:C2	3.06	0.44
31:XB:152:PHE:CZ	31:XB:155:LEU:HB3	2.53	0.44
32:XC:23:TYR:HA	39:XJ:11:PHE:CE1	2.53	0.44
33:XD:30:LYS:HD2	33:XD:35:ARG:NH2	2.29	0.44
35:XF:8:ILE:HG12	35:XF:88:VAL:HG22	1.99	0.44
36:XG:47:CYS:O	36:XG:51:GLN:HG2	2.16	0.44
36:XG:78:ARG:HD3	36:XG:85:TYR:HD1	1.81	0.44
39:XJ:79:ARG:O	39:XJ:83:GLU:HG3	2.18	0.44
40:XK:50:TYR:HB3	40:XK:55:LYS:HA	1.99	0.44
42:XM:36:LYS:HD3	42:XM:36:LYS:HA	1.75	0.44
45:XP:4:ILE:HG12	45:XP:21:VAL:HG23	1.98	0.44
49:XA:612:C:H2'	49:XA:613:C:C6	2.52	0.44
52:XX:16:C:C2	52:XX:17:C:C5	3.05	0.44
1:RA:71:A:H5''	1:RA:72:U:H3'	1.99	0.44
1:RA:184:C:C2	1:RA:213:A:H2	2.35	0.44
1:RA:301:G:C6	1:RA:317:G:C6	3.05	0.44
1:RA:485:C:H2'	1:RA:486:C:H6	1.82	0.44
1:RA:752:A:H3'	28:R7:1:MET:SD	2.57	0.44
1:RA:833:U:H2'	1:RA:834:C:C6	2.52	0.44
1:RA:1295:C:C2	1:RA:1296:G:C8	3.06	0.44
1:RA:1375:C:H2'	1:RA:1376:C:H6	1.82	0.44
1:RA:1526:G:H2'	1:RA:1527:G:O4'	2.17	0.44
1:RA:2422:A:O4'	53:QV:78:A:N1	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2538:C:H2'	1:RA:2539:C:C5	2.52	0.44
2:RB:27:C:H4'	14:RS:54:LEU:HD11	1.99	0.44
2:RB:28:C:H2'	2:RB:29:A:C8	2.53	0.44
5:RF:101:LEU:O	5:RF:106:ARG:NH1	2.50	0.44
26:R5:4:HIS:CB	26:R5:5:PRO:HD3	2.47	0.44
1:YA:565:C:H2'	1:YA:566:U:C6	2.52	0.44
1:YA:1055:G:N3	1:YA:1085:A:C2	2.84	0.44
1:YA:1389:G:H2'	1:YA:1390:U:C6	2.52	0.44
1:YA:1889:A:O2'	1:YA:2087:G:H5'	2.17	0.44
1:YA:2128:C:H2'	1:YA:2129:C:H6	1.82	0.44
3:YD:182:LEU:H	3:YD:272:ALA:HB3	1.82	0.44
5:YF:28:ILE:H	5:YF:28:ILE:HG13	1.64	0.44
6:YG:38:VAL:HG22	6:YG:93:THR:HG23	1.99	0.44
23:Y1:83:GLU:OE1	23:Y1:85:LEU:HB2	2.18	0.44
24:Y2:8:LYS:HB2	24:Y2:8:LYS:HE3	1.78	0.44
26:Y5:41:PRO:O	26:Y5:44:THR:OG1	2.36	0.44
30:Y9:2:LYS:HA	30:Y9:2:LYS:HD2	1.82	0.44
32:QC:6:HIS:HB3	32:QC:9:GLY:H	1.81	0.44
46:QQ:16:GLN:H	46:QQ:16:GLN:HG2	1.51	0.44
48:QT:31:SER:OG	49:QA:1440(N):C:OP1	2.33	0.44
49:QA:794:A:H4'	49:QA:1521:G:O2'	2.18	0.44
49:QA:955:U:H1'	49:QA:1227:A:N6	2.32	0.44
31:XB:145:LEU:O	31:XB:149:LEU:HB2	2.17	0.44
33:XD:72:GLU:HA	33:XD:75:PHE:HB3	2.00	0.44
38:XI:9:ARG:HA	38:XI:13:ALA:O	2.17	0.44
41:XL:52:LEU:H	41:XL:53:ARG:HD2	1.82	0.44
44:XO:39:LEU:CB	44:XO:56:LEU:HD13	2.47	0.44
46:XQ:6:LEU:HD23	46:XQ:6:LEU:HA	1.82	0.44
49:XA:405:U:H3'	49:XA:406:G:H5'	1.99	0.44
49:XA:851:G:H2'	49:XA:852:G:C8	2.53	0.44
49:XA:1493:A:N3	49:XA:1493:A:H2'	2.32	0.44
50:QS:11:VAL:HG13	50:QS:12:ASP:H	1.83	0.44
53:XV:1:C:H2'	53:XV:2:G:C8	2.53	0.44
53:XV:17:C:H5''	53:XV:17:C:C6	2.52	0.44
1:RA:189:G:O2'	1:RA:207:A:N6	2.51	0.44
1:RA:644:A:C2	1:RA:2369:A:H1'	2.53	0.44
1:RA:1152:C:H2'	1:RA:1153:C:C6	2.52	0.44
1:RA:1313:U:C2	1:RA:1610:A:H2	2.35	0.44
1:RA:1433:U:H2'	1:RA:1434:A:C8	2.52	0.44
1:RA:1590:U:H2'	1:RA:1591:G:C8	2.52	0.44
1:RA:2071:A:H2'	1:RA:2072:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2246:G:H2'	1:RA:2247:A:C8	2.52	0.44
1:RA:2412:A:H2'	1:RA:2413:G:O4'	2.18	0.44
6:RG:105:LYS:NZ	6:RG:109:VAL:HG21	2.32	0.44
6:RG:113:ARG:HD2	51:R4:33:VAL:HG21	1.99	0.44
9:RN:47:ALA:HB2	9:RN:112:LEU:HD11	1.98	0.44
15:RT:16:ARG:HE	15:RT:19:LEU:HD21	1.83	0.44
17:RV:3:ALA:HA	17:RV:40:LEU:O	2.18	0.44
21:RZ:5:LEU:HB3	21:RZ:6:LYS:H	1.49	0.44
1:YA:39:C:H2'	1:YA:40:C:H6	1.82	0.44
1:YA:256:A:H2'	1:YA:257:A:C8	2.52	0.44
1:YA:416:C:H2'	1:YA:417:C:C6	2.53	0.44
1:YA:532:A:H4'	1:YA:533:G:H8	1.81	0.44
1:YA:570:G:H2'	1:YA:2030:A:C6	2.53	0.44
1:YA:605:C:O2	1:YA:657:U:O2'	2.36	0.44
1:YA:654:A:H3'	1:YA:654:A:N3	2.33	0.44
1:YA:658:C:H2'	1:YA:659:C:C6	2.52	0.44
1:YA:1045:A:O2'	1:YA:1046:A:OP2	2.27	0.44
1:YA:1109:C:H2'	1:YA:1110:G:O4'	2.18	0.44
1:YA:1438:U:H2'	1:YA:1439:A:H8	1.82	0.44
1:YA:1490:A:O2'	3:YD:99:ASP:OD2	2.35	0.44
4:YE:111:ARG:HD2	4:YE:160:TYR:CD1	2.52	0.44
7:YH:124:GLU:HB3	7:YH:132:ARG:HG3	2.00	0.44
14:YS:34:HIS:CE1	14:YS:54:LEU:HD23	2.53	0.44
15:YT:16:ARG:NH2	15:YT:83:ILE:O	2.51	0.44
15:YT:45:PHE:CE1	15:YT:65:LYS:HE3	2.53	0.44
20:YY:96:ILE:HG13	20:YY:98:VAL:HG12	1.95	0.44
36:QG:5:ARG:NH2	49:QA:1091:U:OP1	2.49	0.44
37:QH:6:ILE:H	37:QH:6:ILE:HD12	1.81	0.44
38:QI:99:LEU:HB3	38:QI:101:PHE:CE1	2.53	0.44
41:QL:83:VAL:HB	41:QL:100:ILE:HG12	2.00	0.44
41:QL:114:LYS:O	41:QL:115:LYS:HD2	2.18	0.44
45:QP:33:ILE:HD11	49:QA:230:G:OP1	2.18	0.44
46:QQ:60:ILE:O	46:QQ:72:ARG:N	2.50	0.44
49:QA:553:A:H2'	49:QA:554:C:C6	2.52	0.44
49:QA:631:G:H2'	49:QA:632:A:C8	2.53	0.44
49:QA:754:C:H5'	49:QA:755:G:C8	2.53	0.44
49:QA:825:G:H2'	49:QA:826:C:H6	1.82	0.44
49:QA:1020:U:H2'	49:QA:1021:G:C8	2.53	0.44
49:QA:1236:A:H2'	49:QA:1237:C:H6	1.83	0.44
37:XH:17:THR:HA	37:XH:78:GLN:NE2	2.32	0.44
40:XK:96:ARG:O	40:XK:100:ALA:N	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:XM:13:LYS:HD2	42:XM:18:ALA:HB2	2.00	0.44
49:XA:799:G:H2'	49:XA:800:G:O4'	2.18	0.44
50:XS:20:LEU:HD23	50:XS:20:LEU:HA	1.88	0.44
1:RA:19:C:H2'	1:RA:20:C:C6	2.53	0.44
1:RA:604:G:C6	1:RA:625:G:C2	3.05	0.44
1:RA:662:G:H2'	1:RA:663:G:H8	1.82	0.44
1:RA:753:C:O5'	1:RA:753:C:H6	1.99	0.44
1:RA:787:U:H5''	1:RA:788:A:H5'	1.99	0.44
1:RA:817:C:H2'	1:RA:818:G:O4'	2.18	0.44
1:RA:965:C:H2'	1:RA:966:G:C8	2.53	0.44
1:RA:1837:C:C2	1:RA:1904:G:N2	2.86	0.44
1:RA:1907:G:O6	1:RA:1924:C:N4	2.51	0.44
1:RA:2416:C:H2'	1:RA:2417:C:C6	2.53	0.44
8:RI:8:PRO:HG3	8:RI:14:ASP:HB2	1.99	0.44
15:RT:123:GLN:O	15:RT:125:ARG:N	2.51	0.44
19:RX:25:LYS:HA	19:RX:81:VAL:O	2.17	0.44
24:R2:50:ILE:HD12	24:R2:51:ARG:H	1.83	0.44
1:YA:137(A):G:H1'	19:YX:41:ASN:ND2	2.32	0.44
1:YA:653:A:O2'	1:YA:654:A:OP2	2.28	0.44
1:YA:662:G:C2	1:YA:663:G:C5	3.06	0.44
1:YA:1841:U:H2'	1:YA:1842:G:H8	1.83	0.44
1:YA:2017:U:O2	26:Y5:10:LYS:HB2	2.17	0.44
1:YA:2712:U:H5''	1:YA:2714:G:H4'	1.99	0.44
3:YD:39:LYS:HB2	3:YD:62:TYR:HB2	2.00	0.44
14:YS:106:ARG:HH11	14:YS:106:ARG:HB2	1.83	0.44
21:YZ:45:ASP:OD1	21:YZ:49:ARG:NE	2.51	0.44
31:QB:174:VAL:HG11	31:QB:196:LEU:HD13	2.00	0.44
32:QC:12:LEU:HB2	43:QN:57:ARG:NH2	2.31	0.44
32:QC:148:GLY:O	32:QC:203:PHE:HB3	2.18	0.44
35:QF:82:ARG:HA	35:QF:82:ARG:CZ	2.48	0.44
41:QL:85:ILE:HG23	41:QL:98:TYR:HB3	2.00	0.44
49:QA:339:C:H2'	49:QA:340:U:C6	2.52	0.44
49:QA:709:G:H2'	49:QA:710:G:H8	1.80	0.44
49:QA:855:G:N2	49:QA:1539:C:OP1	2.51	0.44
49:QA:1476:G:H2'	49:QA:1477:C:C6	2.52	0.44
49:QA:1537:U:C2	52:QX:9:G:N2	2.86	0.44
40:XK:50:TYR:HD2	40:XK:50:TYR:HA	1.70	0.44
49:XA:1120:G:H2'	49:XA:1121:U:C6	2.52	0.44
50:XS:49:ILE:HB	50:XS:51:VAL:HG22	1.98	0.44
1:RA:270(J):G:H2'	1:RA:270(K):C:O4'	2.17	0.44
1:RA:330:A:H2	1:RA:1210:A:HO2'	1.64	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1301:A:O2'	1:RA:1302:A:H3'	2.17	0.44
1:RA:1709:U:H2'	1:RA:1710:C:H6	1.83	0.44
1:RA:2378:A:C5	1:RA:2379:G:H1'	2.52	0.44
1:RA:2488:A:H2'	1:RA:2489:G:C8	2.52	0.44
1:RA:2837:G:H21	13:RR:45:ARG:HH21	1.65	0.44
3:RD:35:LYS:HG2	3:RD:64:ILE:N	2.33	0.44
4:RE:51:PHE:CD1	4:RE:52:LEU:HG	2.53	0.44
6:RG:70:VAL:HA	6:RG:89:GLY:O	2.18	0.44
6:RG:83:ARG:H	6:RG:86:MET:HG3	1.83	0.44
7:RH:26:VAL:HG13	7:RH:27:LYS:H	1.83	0.44
19:RX:59:VAL:HG21	19:RX:78:LYS:HE3	1.99	0.44
20:RY:42:VAL:O	20:RY:65:ALA:N	2.46	0.44
24:R2:23:LYS:HE2	24:R2:23:LYS:HB3	1.85	0.44
1:YA:29:U:H2'	1:YA:30:G:H8	1.82	0.44
1:YA:503:A:H4'	1:YA:504:U:H5''	2.00	0.44
1:YA:628:G:H2'	1:YA:629:G:H8	1.82	0.44
1:YA:854:G:H2'	1:YA:855:G:H8	1.83	0.44
1:YA:856:C:H2'	1:YA:857:C:C6	2.52	0.44
1:YA:879:G:C4	1:YA:880:G:C8	3.06	0.44
1:YA:1841:U:C2	1:YA:1842:G:C8	3.06	0.44
1:YA:2150:U:H2'	1:YA:2151:G:C8	2.53	0.44
1:YA:2718:G:O2'	1:YA:2847:U:OP1	2.33	0.44
4:YE:37:ARG:HD3	4:YE:42:ASP:CG	2.37	0.44
6:YG:10:LYS:HD3	6:YG:15:VAL:HG23	1.99	0.44
33:QD:13:ARG:HB2	33:QD:38:TYR:H	1.83	0.44
38:QI:32:ASP:HB3	38:QI:35:GLU:HB2	2.00	0.44
39:QJ:51:ARG:HB2	49:QA:1060:C:OP1	2.17	0.44
39:QJ:55:LYS:HZ3	49:QA:1199:U:HO2'	1.59	0.44
49:QA:22:G:H2'	49:QA:23:C:H6	1.82	0.44
49:QA:166:G:H2'	49:QA:167:G:H8	1.82	0.44
49:QA:218:C:H2'	49:QA:219:C:C6	2.52	0.44
31:XB:114:ARG:HA	31:XB:114:ARG:HD2	1.90	0.44
33:XD:13:ARG:HG3	33:XD:33:MET:HE2	2.00	0.44
37:XH:96:GLY:O	37:XH:100:ILE:HG13	2.16	0.44
47:XR:61:LYS:HB2	49:XA:835:U:OP1	2.17	0.44
49:XA:130:A:H1'	49:XA:263:A:O2'	2.18	0.44
49:XA:767:A:H2'	49:XA:768:A:C8	2.51	0.44
49:XA:902:G:H2'	49:XA:903:G:H8	1.83	0.44
49:XA:1314:C:OP2	50:XS:6:LYS:HD2	2.18	0.44
49:XA:1409:C:H2'	49:XA:1410:G:C8	2.53	0.44
49:XA:1463:C:H2'	49:XA:1464:G:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:XS:33:THR:HG23	50:XS:51:VAL:HA	2.00	0.44
1:RA:65:C:H2'	1:RA:66:C:C6	2.50	0.44
1:RA:307:G:N2	1:RA:310:A:OP2	2.51	0.44
1:RA:375:C:H2'	1:RA:376:C:C6	2.53	0.44
1:RA:415:A:H2'	1:RA:416:C:C6	2.53	0.44
1:RA:1248:G:C8	16:RU:3:ARG:HB2	2.53	0.44
1:RA:1542:G:C6	1:RA:1543:A:C6	3.06	0.44
1:RA:1841:U:H2'	1:RA:1842:G:H8	1.82	0.44
1:RA:2017:U:O2	26:R5:10:LYS:HB2	2.18	0.44
1:RA:2053:G:O6	1:RA:2614:A:H2	2.00	0.44
1:RA:2405:G:H1'	1:RA:2412:A:H61	1.82	0.44
2:RB:55:U:H4'	6:RG:28:VAL:HG22	2.00	0.44
3:RD:8:PRO:HB3	3:RD:14:ARG:CB	2.48	0.44
3:RD:145:VAL:HG13	3:RD:191:ALA:HB2	2.00	0.44
5:RF:9:ILE:HG23	5:RF:20:LEU:O	2.17	0.44
1:YA:143:C:H2'	1:YA:144:C:H6	1.83	0.44
1:YA:1179:C:H2'	1:YA:1180:C:O4'	2.18	0.44
1:YA:1292:U:H2'	1:YA:1293:C:H6	1.82	0.44
1:YA:1827:C:OP2	3:YD:222:ARG:HD2	2.17	0.44
1:YA:2022:U:O2'	1:YA:2617:C:H5'	2.18	0.44
1:YA:2547:U:O2	10:YO:23:ARG:NH2	2.50	0.44
4:YE:128:SER:OG	4:YE:129:HIS:N	2.50	0.44
7:YH:7:LEU:N	7:YH:8:PRO:CD	2.81	0.44
7:YH:40:GLU:OE1	7:YH:61:HIS:NE2	2.48	0.44
9:YN:134:ARG:N	9:YN:135:PRO:HD3	2.33	0.44
15:YT:20:PRO:HD2	15:YT:86:ILE:HG23	2.00	0.44
26:Y5:51:TYR:HD1	26:Y5:51:TYR:HA	1.72	0.44
31:QB:48:MET:HA	31:QB:51:LEU:HB2	1.99	0.44
33:QD:121:VAL:O	33:QD:134:ASP:HA	2.17	0.44
40:QK:120:ARG:HG3	40:QK:126:ARG:CZ	2.48	0.44
42:QM:15:VAL:O	42:QM:19:LEU:HD22	2.18	0.44
49:QA:669:U:H2'	49:QA:670:G:C8	2.53	0.44
49:QA:1251:A:H2'	49:QA:1252:A:C8	2.53	0.44
31:XB:80:ILE:CG2	31:XB:212:GLN:HG2	2.46	0.44
32:XC:22:TRP:HB2	32:XC:59:ARG:O	2.17	0.44
33:XD:33:MET:O	33:XD:35:ARG:N	2.49	0.44
34:XE:121:LYS:HG3	34:XE:122:GLU:N	2.33	0.44
38:XI:42:ARG:O	38:XI:46:ALA:N	2.49	0.44
38:XI:66:ARG:HB3	38:XI:66:ARG:NH1	2.32	0.44
43:XN:45:ARG:O	43:XN:49:HIS:HB2	2.17	0.44
49:XA:344:A:OP2	49:XA:345:C:N4	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:514:C:H2'	49:XA:515:G:H8	1.83	0.44
49:XA:522:C:H2'	49:XA:523:A:O4'	2.17	0.44
49:XA:624:C:H2'	49:XA:625:G:H8	1.83	0.44
49:XA:723:U:O5'	49:XA:723:U:H6	2.01	0.44
49:XA:1000:A:H2'	49:XA:1001:G:H8	1.83	0.44
49:XA:1535:C:H42	52:XX:10:G:N2	2.12	0.44
1:RA:303:U:H2'	1:RA:304:G:H8	1.83	0.44
1:RA:468:G:H5''	5:RF:60:SER:HB2	2.00	0.44
1:RA:664:C:H2'	1:RA:665:C:C6	2.52	0.44
1:RA:686:G:H8	28:R7:6:GLN:O	2.01	0.44
1:RA:794:G:H2'	1:RA:795:C:C6	2.53	0.44
1:RA:957:A:C6	1:RA:2459:A:C8	3.06	0.44
1:RA:992:C:H2'	1:RA:993:G:H8	1.83	0.44
1:RA:1035:U:H2'	1:RA:1036:G:C8	2.52	0.44
1:RA:1151:G:H4'	16:RU:81:HIS:CG	2.53	0.44
1:RA:1528:A:OP2	1:RA:1543:A:N1	2.51	0.44
1:RA:1869:G:H5'	1:RA:1870:C:OP2	2.18	0.44
24:R2:70:GLN:O	24:R2:71:ASN:HB2	2.18	0.44
1:YA:17:G:H2'	1:YA:18:C:C6	2.53	0.44
1:YA:327:G:H2'	1:YA:328:U:C6	2.53	0.44
1:YA:734:A:C4	1:YA:735:A:C8	3.06	0.44
1:YA:835:A:C4	1:YA:836:G:C8	3.06	0.44
1:YA:854:G:H2'	1:YA:855:G:C8	2.53	0.44
1:YA:1835:G:C4	1:YA:1931:U:N3	2.86	0.44
1:YA:2692:C:H2'	1:YA:2693:A:H8	1.83	0.44
7:YH:89:ILE:HD13	7:YH:89:ILE:H	1.82	0.44
7:YH:153:LYS:HB3	7:YH:162:ILE:H	1.83	0.44
11:YP:101:VAL:HG23	11:YP:106:LEU:HB3	1.99	0.44
31:QB:85:ALA:O	31:QB:87:ARG:N	2.38	0.44
32:QC:6:HIS:CE1	32:QC:184:TYR:HE2	2.36	0.44
32:QC:150:LYS:HB2	32:QC:173:VAL:HG11	2.00	0.44
39:QJ:19:SER:O	39:QJ:23:ILE:HG13	2.18	0.44
40:QK:52:GLY:O	40:QK:55:LYS:HB3	2.17	0.44
41:QL:65:GLU:O	41:QL:66:VAL:HG22	2.18	0.44
44:QO:36:ILE:HG12	44:QO:56:LEU:CD1	2.47	0.44
32:XC:42:LEU:O	32:XC:46:GLU:HB2	2.18	0.44
32:XC:47:LEU:HD23	32:XC:76:VAL:HB	1.99	0.44
36:XG:29:LYS:HZ1	49:XA:1375:A:H4'	1.82	0.44
42:XM:12:ASN:O	42:XM:12:ASN:ND2	2.49	0.44
49:XA:228:A:H2'	49:XA:229:U:C6	2.53	0.44
49:XA:1157:A:H2'	49:XA:1181:G:N2	2.28	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:R4:9:LEU:CA	51:R4:27:THR:HA	2.46	0.44
53:QV:31:C:H3'	53:QV:32:G:H8	1.82	0.44
1:RA:519:U:H2'	1:RA:520:G:H8	1.82	0.43
1:RA:1286:A:O2'	1:RA:1288:U:OP2	2.30	0.43
1:RA:1313:U:H3'	1:RA:1314:C:H5'	1.99	0.43
1:RA:1550:C:H2'	1:RA:1551:C:H6	1.83	0.43
1:RA:1668:A:O2'	1:RA:1674:G:N7	2.47	0.43
1:RA:2039:C:H2'	1:RA:2040:C:C6	2.53	0.43
1:RA:2151:G:H2'	1:RA:2152:G:C8	2.44	0.43
1:RA:2513:G:H2'	1:RA:2514:U:C6	2.53	0.43
1:RA:2821:A:H2'	1:RA:2822:G:C8	2.53	0.43
11:RP:21:ARG:HB3	11:RP:22:GLY:H	1.70	0.43
14:RS:64:GLU:O	14:RS:68:GLN:HG3	2.18	0.43
14:RS:93:LYS:HB2	14:RS:93:LYS:HE3	1.73	0.43
1:YA:1035:U:H3	1:YA:1120:G:H1	1.66	0.43
1:YA:1317:A:H2'	1:YA:1318:C:H6	1.83	0.43
1:YA:1678:G:H21	1:YA:1989:G:N2	2.11	0.43
1:YA:2127:G:H3'	1:YA:2128:C:H5''	1.99	0.43
1:YA:2243:U:H2'	1:YA:2244:U:C6	2.53	0.43
9:YN:108:PRO:O	9:YN:113:GLY:HA3	2.16	0.43
10:YO:86:ILE:HG22	10:YO:94:ARG:HD3	1.99	0.43
29:Y8:25:MET:O	29:Y8:47:LYS:NZ	2.50	0.43
31:QB:163:PHE:HA	31:QB:185:ILE:O	2.18	0.43
32:QC:12:LEU:HD13	43:QN:56:VAL:O	2.17	0.43
34:QE:96:PRO:HA	34:QE:117:ASP:CG	2.38	0.43
35:QF:46:ARG:HD3	35:QF:47:ARG:H	1.83	0.43
35:QF:46:ARG:HD3	35:QF:47:ARG:N	2.32	0.43
39:QJ:32:ALA:HB3	39:QJ:75:ILE:HD11	2.00	0.43
41:QL:54:LYS:HB3	41:QL:55:VAL:H	1.73	0.43
47:QR:83:GLU:N	47:QR:83:GLU:OE2	2.51	0.43
48:QT:102:GLY:O	49:QA:191:G:O2'	2.18	0.43
49:QA:337:C:H2'	49:QA:338:A:C8	2.53	0.43
49:QA:359:U:C2	49:QA:360:A:N7	2.86	0.43
32:XC:197:GLY:HA3	49:XA:1057:G:O3'	2.17	0.43
35:XF:10:LEU:HG	35:XF:85:VAL:HA	2.00	0.43
36:XG:3:ARG:HB3	49:XA:932:C:P	2.58	0.43
36:XG:35:LYS:NZ	49:XA:1289:A:O2'	2.32	0.43
38:XI:28:VAL:HG22	38:XI:63:ILE:HG13	1.99	0.43
38:XI:45:ALA:O	38:XI:48:GLU:HB2	2.18	0.43
40:XK:19:ALA:HA	40:XK:32:ILE:HA	2.00	0.43
45:XP:5:ARG:HH22	45:XP:26:ARG:C	2.22	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:XR:30:ASP:HB3	47:XR:33:ASP:HB2	1.99	0.43
49:XA:65:U:H2'	49:XA:381:C:C5	2.53	0.43
49:XA:160:A:N1	49:XA:343:U:H1'	2.33	0.43
49:XA:289:G:H2'	49:XA:290:C:C6	2.52	0.43
49:XA:325:A:H8	49:XA:325:A:OP1	2.01	0.43
49:XA:341:C:H2'	49:XA:342:C:H6	1.82	0.43
49:XA:349:A:H2'	49:XA:350:G:C8	2.53	0.43
49:XA:360:A:H2'	49:XA:361:G:C8	2.52	0.43
49:XA:750:G:H2'	49:XA:751:U:C6	2.54	0.43
49:XA:1118:C:H1'	49:XA:1179:A:C5	2.53	0.43
49:XA:1372:U:H2'	49:XA:1373:G:O4'	2.17	0.43
51:Y4:38:LYS:C	51:Y4:40:HIS:H	2.18	0.43
53:XV:15:G:H2'	53:XV:15:G:N3	2.31	0.43
1:RA:77:C:H5''	24:R2:10:LEU:HD11	2.00	0.43
1:RA:475:U:H2'	1:RA:476:G:O4'	2.18	0.43
1:RA:1153:C:H5'	16:RU:76:TYR:HE2	1.83	0.43
1:RA:1754:C:P	15:RT:96:ARG:HE	2.40	0.43
1:RA:1800:C:H5'	3:RD:147:LEU:HD22	2.00	0.43
1:RA:2048:G:H2'	1:RA:2049:G:O4'	2.18	0.43
1:RA:2096:U:H2'	1:RA:2097:C:C6	2.53	0.43
5:RF:178:PRO:HB3	5:RF:198:ALA:CB	2.48	0.43
1:YA:212:G:H2'	1:YA:213:A:C8	2.52	0.43
1:YA:690:G:H2'	1:YA:691:C:H6	1.82	0.43
1:YA:1020:A:N1	1:YA:1141:U:H2'	2.33	0.43
1:YA:1190:G:H5'	11:YP:32:THR:HA	1.99	0.43
1:YA:1264:G:H3'	1:YA:1265:A:H5''	2.00	0.43
1:YA:1568:G:P	3:YD:63:ARG:HH22	2.41	0.43
1:YA:2289:G:H2'	1:YA:2290:G:H8	1.83	0.43
1:YA:2734:A:H5'	1:YA:2735:G:OP2	2.18	0.43
2:YB:30:C:OP2	14:YS:32:LEU:HD11	2.19	0.43
11:YP:126:VAL:HG12	11:YP:147:LEU:HD21	2.00	0.43
27:Y6:11:LEU:HD13	27:Y6:11:LEU:HA	1.73	0.43
35:QF:77:ARG:NH1	49:QA:671:G:H4'	2.33	0.43
37:QH:94:TYR:CD1	49:QA:598:U:H4'	2.53	0.43
38:QI:7:THR:O	38:QI:80:GLY:HA2	2.18	0.43
41:QL:59:ARG:CZ	41:QL:59:ARG:HB2	2.48	0.43
41:QL:82:VAL:HB	41:QL:105:TYR:CD1	2.53	0.43
46:QQ:6:LEU:HD23	46:QQ:6:LEU:HA	1.89	0.43
46:QQ:20:THR:HG22	46:QQ:43:LEU:HD22	1.99	0.43
46:QQ:79:SER:OG	46:QQ:80:GLY:N	2.51	0.43
49:QA:380:G:N2	49:QA:383:A:OP2	2.47	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:491:G:H2'	49:QA:492:G:H8	1.83	0.43
49:QA:651:C:H2'	49:QA:652:U:C6	2.53	0.43
49:QA:1004:A:H62	49:QA:1026:G:H8	1.63	0.43
49:QA:1281:U:H5'	49:QA:1282:C:OP2	2.18	0.43
31:XB:71:VAL:HB	31:XB:164:VAL:CG2	2.44	0.43
35:XF:11:ASN:ND2	35:XF:55:ASP:OD2	2.46	0.43
37:XH:46:LYS:HB3	37:XH:62:TYR:HB3	2.00	0.43
37:XH:87:SER:HB2	37:XH:133:LEU:O	2.19	0.43
37:XH:102:ARG:HE	37:XH:102:ARG:HB2	1.71	0.43
42:XM:108:ARG:NH1	42:XM:114:ARG:HG2	2.33	0.43
49:XA:1172:C:H2'	49:XA:1173:G:H8	1.81	0.43
49:XA:1440(J):C:O2'	49:XA:1440(K):G:H5''	2.19	0.43
53:QV:36:G:N2	53:QV:37:G:H1'	2.32	0.43
1:RA:27:G:H1'	1:RA:513:A:H62	1.84	0.43
1:RA:376:C:H2'	1:RA:377:C:C6	2.53	0.43
1:RA:657:U:H2'	1:RA:658:C:C6	2.53	0.43
1:RA:1297:C:OP1	1:RA:2710:C:H4'	2.18	0.43
1:RA:2674:G:H2'	1:RA:2675:A:C8	2.52	0.43
21:RZ:94:GLU:HB2	21:RZ:130:PRO:HD2	1.98	0.43
29:R8:54:GLU:HG2	29:R8:57:ARG:HH21	1.84	0.43
1:YA:185:U:H2'	1:YA:186:G:C8	2.53	0.43
1:YA:270(V):G:H2'	1:YA:270(W):G:C8	2.51	0.43
1:YA:284:U:H2'	1:YA:285:C:C6	2.53	0.43
1:YA:557:U:H2'	1:YA:558:G:C8	2.53	0.43
1:YA:748:G:C8	18:YW:89:ALA:HB1	2.52	0.43
1:YA:771:G:OP1	28:Y7:10:ARG:NH1	2.50	0.43
1:YA:946:G:H2'	1:YA:947:G:C8	2.53	0.43
1:YA:1289:C:H2'	1:YA:1290:C:C6	2.53	0.43
1:YA:1421:G:C2	1:YA:1422:G:N7	2.87	0.43
1:YA:1494:A:H2'	1:YA:1495:A:C8	2.53	0.43
1:YA:2290:G:H2'	1:YA:2291:U:C6	2.53	0.43
1:YA:2646:C:H2'	1:YA:2647:U:O4'	2.18	0.43
4:YE:201:THR:HG22	4:YE:203:LYS:N	2.28	0.43
5:YF:156:LEU:HD21	5:YF:163:VAL:HG12	1.99	0.43
7:YH:12:PRO:HG3	7:YH:48:GLY:HA2	2.00	0.43
8:YI:69:LYS:HG3	8:YI:136:VAL:HB	1.99	0.43
9:YN:29:LYS:H	9:YN:29:LYS:HG2	1.44	0.43
9:YN:34:LEU:O	9:YN:49:GLY:HA3	2.18	0.43
9:YN:114:ARG:O	9:YN:115:ARG:HB3	2.18	0.43
12:YQ:135:ASP:N	12:YQ:135:ASP:OD1	2.51	0.43
18:YW:14:PRO:O	18:YW:18:ARG:HD2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:QF:44:GLY:HA2	35:QF:59:TYR:CE1	2.53	0.43
37:QH:98:LYS:H	37:QH:98:LYS:HD3	1.82	0.43
40:QK:21:ILE:HD12	40:QK:84:VAL:HG22	1.99	0.43
41:QL:52:LEU:HD12	41:QL:54:LYS:NZ	2.33	0.43
48:QT:13:LEU:O	48:QT:17:ARG:HG3	2.19	0.43
49:QA:1148:U:H2'	49:QA:1149:C:O4'	2.18	0.43
31:XB:92:TYR:H	31:XB:151:GLY:HA3	1.83	0.43
32:XC:22:TRP:CG	32:XC:59:ARG:HB2	2.53	0.43
34:XE:28:PHE:CG	34:XE:51:VAL:HG22	2.54	0.43
41:XL:102:ARG:HG2	41:XL:109:GLY:CA	2.44	0.43
41:XL:124:LYS:HE2	49:XA:500:G:H5'	2.00	0.43
42:XM:106:ASN:ND2	49:XA:948:C:H3'	2.33	0.43
48:XT:61:SER:O	48:XT:65:LYS:HG2	2.19	0.43
48:XT:65:LYS:HE2	48:XT:68:LYS:HZ1	1.82	0.43
49:XA:59:A:H61	49:XA:331:G:H1'	1.82	0.43
49:XA:612:C:H2'	49:XA:613:C:H6	1.82	0.43
49:XA:838(A):U:H2'	49:XA:838(A):U:O2	2.18	0.43
49:XA:982:U:H5'	49:XA:983:A:C8	2.53	0.43
49:XA:1314:C:H2'	49:XA:1315:U:H6	1.83	0.43
49:XA:1504:G:OP1	49:XA:1507:A:O2'	2.29	0.43
49:XA:1533:C:C6	49:XA:1534:A:C4	3.06	0.43
1:RA:222:A:H3'	1:RA:421:U:H5''	1.99	0.43
1:RA:312:G:H5'	1:RA:331:A:O2'	2.18	0.43
1:RA:856:C:HO2'	1:RA:857:C:P	2.40	0.43
1:RA:1186:G:H2'	1:RA:1187:G:O4'	2.19	0.43
1:RA:1380:G:H1'	1:RA:1569:A:H61	1.83	0.43
1:RA:1534:G:N3	1:RA:1534:G:H2'	2.33	0.43
1:RA:1654:A:P	13:RR:2:ARG:HD2	2.59	0.43
3:RD:35:LYS:HD2	3:RD:104:TYR:CD1	2.53	0.43
7:RH:107:VAL:HB	7:RH:153:LYS:HE3	2.01	0.43
19:RX:25:LYS:HD3	19:RX:80:ILE:HD11	2.00	0.43
1:YA:185:U:H2'	1:YA:186:G:H8	1.82	0.43
1:YA:232:G:H8	1:YA:232:G:OP2	2.02	0.43
1:YA:574:C:C4	1:YA:2033:A:H4'	2.53	0.43
1:YA:577:G:H2'	1:YA:578:A:C8	2.54	0.43
1:YA:834:C:H2'	1:YA:835:A:H8	1.84	0.43
1:YA:1652:A:OP1	13:YR:8:ARG:NH1	2.48	0.43
1:YA:1927:A:H2'	1:YA:1928:A:C8	2.54	0.43
1:YA:2384:G:OP2	22:Y0:55:ARG:NH2	2.45	0.43
5:YF:64:ILE:HG23	5:YF:65:TRP:CD1	2.52	0.43
7:YH:86:GLU:O	7:YH:87:LEU:HB2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:YI:67:ARG:NH2	8:YI:68:LEU:HB2	2.33	0.43
20:YY:46:LYS:HB2	20:YY:61:ILE:HG22	1.99	0.43
35:QF:47:ARG:HA	35:QF:56:PRO:O	2.18	0.43
38:QI:111:ARG:NH1	49:QA:1187:G:H4'	2.28	0.43
41:QL:45:PRO:HD2	41:QL:49:ASN:CB	2.48	0.43
48:QT:81:LYS:HE2	48:QT:81:LYS:HB3	1.80	0.43
49:QA:1058:G:H2'	49:QA:1059:C:O4'	2.18	0.43
49:QA:1356:G:H2'	49:QA:1357:A:C8	2.53	0.43
31:XB:182:ILE:HD13	31:XB:182:ILE:HA	1.86	0.43
37:XH:75:ARG:HA	37:XH:75:ARG:NH1	2.33	0.43
42:XM:87:TYR:HE2	42:XM:91:ARG:HD2	1.81	0.43
44:XO:56:LEU:O	44:XO:60:VAL:HG23	2.18	0.43
49:XA:427:U:OP2	49:XA:428:G:O2'	2.25	0.43
49:XA:491:G:H2'	49:XA:492:G:C8	2.54	0.43
49:XA:647:C:H2'	49:XA:648:A:C8	2.54	0.43
49:XA:813:U:H2'	49:XA:814:A:H8	1.83	0.43
49:XA:865:A:H2'	49:XA:866:C:C6	2.54	0.43
49:XA:1158:C:C2	49:XA:1160:G:C8	3.06	0.43
49:XA:1166:G:N2	49:XA:1169:A:H3'	2.34	0.43
49:XA:1172:C:H2'	49:XA:1173:G:C8	2.54	0.43
53:XV:36:G:N2	53:XV:37:G:H1'	2.32	0.43
1:RA:529:A:H2'	1:RA:529:A:N3	2.33	0.43
1:RA:1283:G:H1'	1:RA:1329:U:O2	2.18	0.43
1:RA:1680:U:H2'	1:RA:1681:G:O4'	2.17	0.43
1:RA:2567:G:H2'	1:RA:2568:C:C6	2.53	0.43
1:RA:2677:G:H2'	1:RA:2678:C:H6	1.83	0.43
1:RA:2746:U:H5''	7:RH:138:LYS:HE2	2.00	0.43
4:RE:201:THR:HG22	4:RE:203:LYS:N	2.32	0.43
5:RF:28:ILE:H	5:RF:28:ILE:HG13	1.68	0.43
11:RP:88:LEU:HD12	11:RP:95:VAL:HG11	2.01	0.43
12:RQ:81:VAL:HG23	22:R0:7:LEU:CD1	2.48	0.43
1:YA:16:G:H2'	1:YA:17:G:H8	1.82	0.43
1:YA:605:C:H1'	1:YA:657:U:O2'	2.19	0.43
1:YA:1077:A:H5'	1:YA:1078:U:H5''	1.99	0.43
1:YA:1198:U:H2'	1:YA:1199:U:H6	1.82	0.43
1:YA:1210:A:H5'	1:YA:1212:G:O4'	2.19	0.43
1:YA:1374:G:H2'	1:YA:1375:C:C6	2.53	0.43
1:YA:1428:C:N4	1:YA:1569:A:H3'	2.33	0.43
1:YA:1709:U:H1'	1:YA:2860:A:N3	2.33	0.43
1:YA:2316:C:H2'	1:YA:2317:C:C6	2.53	0.43
1:YA:2650:U:H2'	1:YA:2651:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:YB:39:A:O2'	2:YB:46:A:N1	2.43	0.43
3:YD:145:VAL:HG11	3:YD:175:LEU:HD11	1.99	0.43
4:YE:92:THR:HB	4:YE:93:VAL:H	1.61	0.43
8:YI:2:LYS:H	8:YI:2:LYS:HG2	1.49	0.43
15:YT:91:ARG:HB2	15:YT:121:ILE:HG13	2.00	0.43
21:YZ:70:LEU:HG	21:YZ:91:LEU:HD21	2.00	0.43
31:QB:48:MET:HA	31:QB:51:LEU:HD12	2.00	0.43
31:QB:164:VAL:CG2	31:QB:170:GLU:HB3	2.49	0.43
32:QC:59:ARG:NH1	32:QC:97:LYS:HD3	2.33	0.43
34:QE:92:LYS:HG2	34:QE:119:LEU:HD23	2.01	0.43
36:QG:71:PRO:HA	36:QG:138:LYS:HE3	2.00	0.43
38:QI:107:ARG:HE	38:QI:107:ARG:HB3	1.60	0.43
39:QJ:13:HIS:HB3	39:QJ:68:HIS:CE1	2.54	0.43
40:QK:122:LYS:CG	49:QA:779:C:H5''	2.48	0.43
41:QL:58:VAL:CG2	41:QL:85:ILE:HD11	2.48	0.43
41:QL:87:GLY:N	41:QL:98:TYR:HA	2.32	0.43
42:QM:20:THR:C	42:QM:22:ILE:H	2.21	0.43
49:QA:109:A:C6	49:QA:326:G:C6	3.07	0.43
49:QA:323:U:H2'	49:QA:324:G:O4'	2.18	0.43
49:QA:600:C:H2'	49:QA:601:C:H6	1.83	0.43
49:QA:684:A:H2'	49:QA:685:G:C8	2.53	0.43
49:QA:1486:G:H2'	49:QA:1487:G:C8	2.54	0.43
35:XF:21:LEU:O	35:XF:25:ILE:HG12	2.19	0.43
36:XG:20:ASP:HB2	36:XG:23:VAL:HG23	2.00	0.43
36:XG:32:ARG:HG3	49:XA:1240:U:C2	2.53	0.43
37:XH:69:ARG:O	37:XH:74:PRO:HA	2.18	0.43
41:XL:101:VAL:HB	41:XL:104:VAL:HG13	2.00	0.43
42:XM:13:LYS:HG2	42:XM:14:ARG:N	2.33	0.43
49:XA:720:C:H2'	49:XA:721:G:C8	2.53	0.43
50:XS:53:ASN:C	50:XS:55:LYS:H	2.21	0.43
1:RA:225:A:O2'	1:RA:257:A:H4'	2.19	0.43
1:RA:250:G:H2'	1:RA:251:A:C8	2.54	0.43
1:RA:611:C:H2'	1:RA:612:G:H8	1.83	0.43
1:RA:747:U:O2	1:RA:2014:A:H1'	2.18	0.43
1:RA:1565:C:O3'	1:RA:1566:A:H8	2.02	0.43
6:RG:99:MET:HG3	6:RG:100:TRP:N	2.34	0.43
7:RH:86:GLU:O	7:RH:87:LEU:HB2	2.19	0.43
14:RS:83:LYS:C	14:RS:109:GLY:HA3	2.39	0.43
22:R0:18:ALA:O	22:R0:20:ARG:NH1	2.51	0.43
1:YA:139:G:N2	1:YA:1596:A:H4'	2.32	0.43
1:YA:143:C:H2'	1:YA:144:C:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:953:A:C2	1:YA:954:G:C8	3.06	0.43
1:YA:1542:G:H5'	1:YA:1543:A:OP2	2.18	0.43
1:YA:1628:G:H2'	1:YA:1629:U:H6	1.84	0.43
1:YA:1709:U:H2'	1:YA:1710:C:H6	1.81	0.43
1:YA:2086:U:H2'	1:YA:2087:G:H8	1.82	0.43
1:YA:2257:U:H2'	1:YA:2258:C:C6	2.53	0.43
2:YB:66:A:HO2'	2:YB:67:G:P	2.40	0.43
5:YF:32:LEU:O	5:YF:36:VAL:HG23	2.19	0.43
8:YI:115:ALA:HB3	8:YI:128:LEU:HD12	2.01	0.43
11:YP:9:ASN:HB2	11:YP:10:PRO:HD2	2.01	0.43
15:YT:45:PHE:CZ	15:YT:74:ARG:HB2	2.53	0.43
26:Y5:56:LYS:H	26:Y5:56:LYS:CD	2.29	0.43
32:QC:119:ARG:O	32:QC:123:GLN:HG3	2.19	0.43
33:QD:25:ARG:N	49:QA:409:G:OP1	2.32	0.43
34:QE:79:GLU:HG2	37:QH:104:ARG:CA	2.41	0.43
34:QE:145:LYS:O	34:QE:149:GLU:HG2	2.19	0.43
36:QG:113:GLU:CB	36:QG:119:ARG:HG2	2.29	0.43
39:QJ:64:GLU:HG2	43:QN:59:ALA:HB2	2.01	0.43
40:QK:12:ARG:HH22	40:QK:38:ASN:HD22	1.65	0.43
40:QK:124:LYS:HE3	49:QA:797:C:OP1	2.17	0.43
41:QL:70:ILE:HD12	41:QL:102:ARG:CZ	2.48	0.43
49:QA:1040:U:H2'	49:QA:1041:A:C8	2.53	0.43
49:QA:1312:G:H2'	49:QA:1313:U:H6	1.83	0.43
31:XB:54:THR:O	31:XB:58:ILE:HG12	2.18	0.43
32:XC:109:PRO:O	32:XC:111:LEU:N	2.45	0.43
36:XG:4:ARG:HD3	36:XG:4:ARG:HA	1.50	0.43
39:XJ:55:LYS:HG2	49:XA:973:G:H1'	2.00	0.43
41:XL:32:PHE:CZ	49:XA:33:A:N3	2.87	0.43
46:XQ:18:THR:OG1	46:XQ:69:LYS:HD2	2.18	0.43
48:XT:20:LEU:O	48:XT:24:LEU:HG	2.18	0.43
49:XA:370:C:H2'	49:XA:371:G:C8	2.54	0.43
49:XA:1262:C:H2'	49:XA:1263:C:C6	2.53	0.43
1:RA:265:A:N6	1:RA:428:A:N7	2.67	0.43
1:RA:594:U:H2'	1:RA:595:C:C6	2.54	0.43
1:RA:612:G:O2'	1:RA:616:A:N6	2.44	0.43
1:RA:1279:G:H2'	1:RA:1280:G:C8	2.54	0.43
1:RA:1475:G:H2'	1:RA:1476:C:C6	2.53	0.43
1:RA:1891:G:H2'	1:RA:1892:C:H6	1.84	0.43
1:RA:2454:G:C4	1:RA:2455:G:C8	3.06	0.43
1:RA:2556:C:H2'	1:RA:2557:G:O4'	2.19	0.43
3:RD:182:LEU:N	3:RD:272:ALA:HB3	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:RS:27:SER:HA	14:RS:88:ASP:HB2	2.01	0.43
1:YA:324:A:H2'	1:YA:325:G:O4'	2.19	0.43
1:YA:401:A:H2'	1:YA:402:A:C8	2.53	0.43
1:YA:528:A:N1	1:YA:2042:A:H2'	2.33	0.43
1:YA:787:U:H5''	1:YA:788:A:H5'	2.00	0.43
1:YA:1230:C:H2'	1:YA:1231:G:H8	1.82	0.43
1:YA:1381:G:C4	1:YA:1382:G:C8	3.06	0.43
1:YA:1604:C:O2'	1:YA:1610:A:N6	2.52	0.43
1:YA:2064:C:H2'	1:YA:2065:C:H6	1.83	0.43
6:YG:97:ASP:O	6:YG:101:ILE:HG23	2.19	0.43
6:YG:113:ARG:HE	51:Y4:34:GLU:HG2	1.82	0.43
10:YO:22:ILE:HG12	10:YO:41:ALA:HA	2.01	0.43
31:QB:156:LYS:HD2	31:QB:156:LYS:N	2.34	0.43
39:QJ:40:LEU:HB3	39:QJ:69:ASN:HB2	1.99	0.43
40:QK:32:ILE:O	40:QK:40:ILE:HG12	2.18	0.43
48:QT:84:LEU:O	48:QT:88:VAL:HG23	2.19	0.43
49:QA:104:G:H2'	49:QA:105:G:H8	1.83	0.43
49:QA:317:G:OP1	49:QA:353:A:N6	2.51	0.43
49:QA:552:U:C2	49:QA:553:A:C8	3.07	0.43
49:QA:714:G:H2'	49:QA:715:A:H8	1.83	0.43
49:QA:968:A:C8	49:QA:1062:U:H4'	2.52	0.43
49:QA:1428:A:H2'	49:QA:1429:C:C6	2.53	0.43
33:XD:198:VAL:HG12	33:XD:199:ASN:O	2.19	0.43
34:XE:6:PHE:HB3	34:XE:7:GLU:H	1.69	0.43
38:XI:124:GLN:HG3	49:XA:1342:C:O2'	2.19	0.43
43:YN:40:CYS:SG	43:YN:41:ARG:N	2.92	0.43
44:XO:33:THR:HG21	44:XO:85:LEU:HG	2.01	0.43
49:XA:106:C:H2'	49:XA:107:G:H8	1.84	0.43
49:XA:328:C:H1'	49:XA:329:A:OP2	2.19	0.43
49:XA:647:C:H2'	49:XA:648:A:H8	1.83	0.43
49:XA:680:C:H2'	49:XA:681:C:H6	1.82	0.43
49:XA:918:A:H2'	49:XA:919:A:C8	2.54	0.43
49:XA:918:A:H2'	49:XA:919:A:O4'	2.18	0.43
49:XA:956:U:H2'	49:XA:957:U:C6	2.54	0.43
49:XA:1115:C:H2'	49:XA:1116:C:O4'	2.18	0.43
50:XS:29:ARG:HE	50:XS:48:THR:HG21	1.82	0.43
51:R4:9:LEU:C	51:R4:27:THR:HA	2.39	0.43
50:QS:53:ASN:C	50:QS:55:LYS:H	2.22	0.43
1:RA:685:A:C4	1:RA:689:A:N6	2.86	0.43
1:RA:878:A:H3'	1:RA:879:G:C8	2.54	0.43
1:RA:1012:U:H5	9:RN:29:LYS:HZ3	1.65	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1667:G:H22	1:RA:1994:C:H42	1.67	0.43
1:RA:1678:G:C4	1:RA:1679:U:C5	3.06	0.43
1:RA:2184:G:H2'	1:RA:2185:C:C6	2.54	0.43
1:RA:2293:C:H5''	14:RS:89:ARG:NH1	2.26	0.43
1:RA:2507:C:C2	1:RA:2583:G:C2	3.06	0.43
1:RA:2579:C:H4'	4:RE:134:ILE:HG12	2.01	0.43
1:RA:2688:U:OP1	1:RA:2713:A:N6	2.52	0.43
1:RA:2734:A:H3'	1:RA:2735:G:H8	1.84	0.43
1:RA:2866:U:H4'	1:RA:2867:G:H4'	2.01	0.43
4:RE:57:LYS:HD2	4:RE:57:LYS:HA	1.85	0.43
7:RH:105:LEU:HD22	7:RH:113:VAL:HB	2.00	0.43
21:RZ:76:LEU:HA	21:RZ:83:PRO:HA	2.00	0.43
23:R1:76:ARG:H	23:R1:76:ARG:HD2	1.84	0.43
1:YA:71:A:H62	1:YA:114:U:H1'	1.83	0.43
1:YA:379:G:C6	1:YA:396:G:C6	3.07	0.43
1:YA:730:C:H2'	1:YA:731:C:H6	1.83	0.43
1:YA:994:C:OP1	16:YU:53:ARG:NH2	2.51	0.43
1:YA:1419:A:C8	1:YA:1579:A:N6	2.87	0.43
1:YA:1510:A:OP1	1:YA:1511:A:H8	2.01	0.43
1:YA:1588:C:H2'	1:YA:1589:C:C6	2.54	0.43
1:YA:1625:C:H2'	1:YA:1626:G:O4'	2.19	0.43
1:YA:1771:C:O2'	1:YA:1786:A:O4'	2.29	0.43
1:YA:1816:G:H8	3:YD:62:TYR:CZ	2.37	0.43
1:YA:2315:G:H2'	1:YA:2316:C:C6	2.54	0.43
1:YA:2323:G:H8	1:YA:2323:G:O5'	2.01	0.43
1:YA:2331:G:O2'	22:Y0:43:THR:HG22	2.19	0.43
1:YA:2816:C:O2	1:YA:2883:A:O2'	2.36	0.43
3:YD:121:PRO:HB3	3:YD:135:PHE:CE1	2.54	0.43
3:YD:150:LYS:HA	3:YD:150:LYS:HD3	1.79	0.43
4:YE:117:MET:HA	4:YE:122:PHE:H	1.84	0.43
10:YO:8:LEU:HB2	10:YO:19:ILE:HG12	2.01	0.43
10:YO:120:GLU:OE1	15:YT:67:SER:OG	2.36	0.43
13:YR:10:LEU:O	13:YR:12:ARG:HG3	2.18	0.43
16:YU:43:GLY:HA3	17:YV:73:SER:OG	2.18	0.43
27:Y6:38:LYS:HE2	27:Y6:46:HIS:HD2	1.83	0.43
33:QD:140:VAL:HG13	33:QD:144:ASP:OD2	2.18	0.43
33:QD:190:ASP:H	33:QD:193:ASP:HB2	1.84	0.43
40:QK:26:ASN:HD22	49:QA:691:G:P	2.42	0.43
41:QL:31:PRO:HG2	41:QL:32:PHE:CD2	2.54	0.43
41:QL:49:ASN:HD21	49:QA:528:C:N4	2.17	0.43
42:QM:56:LEU:O	42:QM:60:VAL:HG23	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:QP:32:TYR:HB2	45:QP:34:GLU:O	2.19	0.43
46:QQ:27:PHE:O	46:QQ:36:ILE:N	2.51	0.43
47:QR:19:LYS:HB3	47:QR:20:ALA:H	1.68	0.43
47:QR:40:LEU:HD12	47:QR:70:ILE:HG12	2.00	0.43
49:QA:24:U:H2'	49:QA:25:C:C6	2.54	0.43
49:QA:586:C:O2'	49:QA:878:G:H4'	2.18	0.43
49:QA:1181:G:O6	49:QA:1182:G:N2	2.51	0.43
32:XC:62:ASP:O	32:XC:98:ASN:HB3	2.18	0.43
34:XE:33:VAL:HG12	34:XE:112:LEU:HG	2.00	0.43
36:XG:113:GLU:HB2	36:XG:119:ARG:HG2	2.00	0.43
42:XM:87:TYR:OH	50:XS:78:ARG:HG3	2.19	0.43
48:XT:14:LYS:HA	48:XT:17:ARG:HH21	1.84	0.43
49:XA:538:G:H2'	49:XA:539:A:C8	2.51	0.43
49:XA:939:G:H2'	49:XA:940:C:C6	2.54	0.43
49:XA:1236:A:H2'	49:XA:1237:C:C6	2.54	0.43
1:RA:150:C:H2'	1:RA:151:C:H6	1.84	0.43
1:RA:703:U:C4	1:RA:704:G:C2	3.07	0.43
1:RA:1159:U:H2'	1:RA:1160:G:H8	1.84	0.43
1:RA:1827:C:OP2	3:RD:222:ARG:NH1	2.45	0.43
1:RA:1984:G:H2'	1:RA:1985:G:H8	1.83	0.43
1:RA:2292:C:P	14:RS:17:ARG:HH22	2.41	0.43
1:RA:2462:U:H2'	1:RA:2463:C:C6	2.54	0.43
2:RB:38:C:H2'	2:RB:39:A:H8	1.83	0.43
9:RN:34:LEU:O	9:RN:49:GLY:HA3	2.18	0.43
15:RT:16:ARG:HD3	15:RT:19:LEU:HD11	1.99	0.43
27:R6:52:VAL:HG22	27:R6:53:LYS:HG3	2.01	0.43
1:YA:197:A:H2	1:YA:2434:A:H62	1.66	0.43
1:YA:236:C:H2'	1:YA:237:C:H6	1.82	0.43
1:YA:300:A:H2'	1:YA:334:C:O2'	2.19	0.43
1:YA:529:A:H8	1:YA:530:G:C5	2.37	0.43
1:YA:834:C:C2	1:YA:835:A:C8	3.06	0.43
1:YA:1124:C:H2'	1:YA:1125:G:O4'	2.19	0.43
1:YA:1182:A:H2'	1:YA:1183:G:H8	1.83	0.43
1:YA:1198:U:H2'	1:YA:1199:U:C6	2.54	0.43
1:YA:1356:G:H2'	1:YA:1357:U:H6	1.83	0.43
1:YA:1445:C:H2'	1:YA:1446:C:H6	1.83	0.43
1:YA:1651:G:H2'	1:YA:1652:A:O4'	2.19	0.43
1:YA:2001:A:H2'	1:YA:2002:G:O4'	2.19	0.43
1:YA:2305:A:H2'	1:YA:2306:C:C6	2.54	0.43
1:YA:2505:G:H2'	1:YA:2576:G:N1	2.34	0.43
1:YA:2630:G:H2'	1:YA:2631:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:YB:24:G:H1'	2:YB:27:C:H41	1.82	0.43
17:YV:15:GLU:HG3	17:YV:16:PRO:HD2	2.01	0.43
22:Y0:11:ARG:O	22:Y0:14:ARG:NH2	2.51	0.43
31:QB:19:HIS:CG	31:QB:20:GLU:N	2.85	0.43
31:QB:135:GLN:O	31:QB:139:LYS:HG3	2.19	0.43
33:QD:13:ARG:NH2	33:QD:36:ARG:HG3	2.33	0.43
33:QD:25:ARG:HB2	49:QA:409:G:O5'	2.19	0.43
33:QD:173:TRP:CZ3	33:QD:189:PRO:HG3	2.54	0.43
36:QG:94:ARG:HG3	36:QG:95:ARG:H	1.83	0.43
37:QH:78:GLN:HG3	37:QH:80:ILE:N	2.34	0.43
38:QI:17:VAL:HG21	38:QI:80:GLY:HA3	2.00	0.43
40:QK:17:GLY:O	40:QK:80:VAL:HA	2.19	0.43
41:QL:35:GLY:HA3	41:QL:83:VAL:HG22	2.00	0.43
41:QL:116:SER:HB2	41:QL:120:TYR:CD1	2.54	0.43
44:QO:63:ARG:O	44:QO:67:LEU:HG	2.19	0.43
48:QT:53:LEU:HB3	48:QT:57:ARG:NH1	2.34	0.43
49:QA:564:C:N4	49:QA:565:U:O4	2.52	0.43
49:QA:939:G:H2'	49:QA:940:C:C6	2.54	0.43
49:QA:1481:U:H2'	49:QA:1482:G:H8	1.83	0.43
32:XC:186:PHE:CE2	32:XC:188:LEU:HD12	2.53	0.43
35:XF:8:ILE:HB	35:XF:61:LEU:HD12	2.00	0.43
36:XG:111:ARG:HH11	36:XG:122:HIS:HB3	1.83	0.43
37:XH:8:ASP:OD1	49:XA:825:G:H1'	2.19	0.43
38:XI:17:VAL:HG13	38:XI:63:ILE:HD12	2.01	0.43
40:XK:30:VAL:O	40:XK:42:TRP:HA	2.18	0.43
41:XL:42:THR:HG1	41:XL:43:VAL:H	1.62	0.43
41:XL:105:TYR:CD1	41:XL:105:TYR:N	2.86	0.43
41:XL:108:ALA:C	41:XL:121:GLY:HA3	2.39	0.43
43:XN:43:CYS:HA	43:XN:46:GLU:HG2	2.01	0.43
49:XA:576:G:N2	49:XA:760:G:OP2	2.50	0.43
49:XA:599:C:H2'	49:XA:600:C:H6	1.81	0.43
49:XA:781:A:OP2	49:XA:800:G:N1	2.50	0.43
49:XA:954:G:H21	49:XA:1227:A:H62	1.65	0.43
49:XA:1281:U:H5''	49:XA:1282:C:H5	1.84	0.43
50:QS:32:LYS:HA	50:QS:50:ALA:HB3	1.99	0.43
50:QS:76:PRO:C	50:QS:78:ARG:H	2.21	0.43
52:XX:18:C:N4	52:XX:19:U:O4	2.52	0.43
53:XV:51:G:H1	53:XV:67:U:H3	1.67	0.43
1:RA:26:G:H1'	1:RA:515:A:H61	1.83	0.43
1:RA:139:G:N2	1:RA:141:A:N1	2.64	0.43
1:RA:409:C:H2'	1:RA:410:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:592:G:H21	29:R8:4:MET:HE1	1.83	0.43
1:RA:1124:C:H2'	1:RA:1125:G:O4'	2.19	0.43
1:RA:2105:C:H2'	1:RA:2106:G:H8	1.83	0.43
1:RA:2563:U:H1'	1:RA:2566:A:N6	2.33	0.43
1:RA:2867:G:O2'	1:RA:2868:A:O5'	2.33	0.43
3:RD:44:ASN:CB	3:RD:49:ILE:HA	2.49	0.43
5:RF:11:VAL:HG12	5:RF:12:LEU:H	1.83	0.43
9:RN:30:ILE:HG22	9:RN:34:LEU:HD22	2.01	0.43
16:RU:106:PHE:O	16:RU:110:VAL:HG23	2.19	0.43
20:RY:97:ARG:HH21	20:RY:98:VAL:HB	1.84	0.43
21:RZ:28:MET:HE1	21:RZ:67:LEU:HD12	2.01	0.43
1:YA:48:G:N1	1:YA:177:G:OP2	2.52	0.43
1:YA:640:C:H2'	1:YA:641:C:H6	1.83	0.43
1:YA:723:G:H2'	1:YA:724:U:C6	2.54	0.43
1:YA:2291:U:OP1	1:YA:2380:C:O2'	2.36	0.43
1:YA:2625:G:H2'	1:YA:2626:C:C6	2.53	0.43
1:YA:2840:C:H2'	1:YA:2841:C:H6	1.84	0.43
4:YE:23:VAL:HA	4:YE:184:VAL:O	2.18	0.43
6:YG:7:LEU:HD12	6:YG:104:GLU:HA	1.99	0.43
6:YG:47:LYS:HB2	6:YG:47:LYS:HE3	1.64	0.43
15:YT:6:LEU:HD12	15:YT:6:LEU:HA	1.75	0.43
21:YZ:152:ALA:HB2	21:YZ:168:GLU:HA	2.01	0.43
29:Y8:53:PRO:HA	29:Y8:56:GLU:HB2	1.99	0.43
31:QB:85:ALA:C	31:QB:87:ARG:N	2.72	0.43
31:QB:96:ARG:H	31:QB:96:ARG:NE	2.17	0.43
31:QB:180:LEU:HD23	31:QB:180:LEU:HA	1.73	0.43
34:QE:144:THR:H	34:QE:147:ASP:HB2	1.83	0.43
40:QK:79:SER:HB3	40:QK:106:LYS:HE2	2.01	0.43
41:QL:32:PHE:CZ	49:QA:33:A:N3	2.87	0.43
41:QL:36:VAL:H	41:QL:58:VAL:HA	1.84	0.43
49:QA:691:G:O2'	49:QA:797:C:H4'	2.19	0.43
49:QA:815:A:O4'	49:QA:817:C:N4	2.51	0.43
49:QA:1440(C):G:H2'	49:QA:1440(D):A:C2	2.53	0.43
35:XF:10:LEU:HB3	35:XF:11:ASN:H	1.65	0.43
35:XF:43:LEU:N	35:XF:60:PHE:O	2.50	0.43
36:XG:28:ASN:HB3	49:XA:1374:A:C4'	2.37	0.43
36:XG:107:ALA:O	36:XG:111:ARG:HG3	2.19	0.43
42:XM:22:ILE:HG22	42:XM:23:TYR:O	2.19	0.43
42:XM:105:THR:HG21	49:XA:951:G:O6	2.19	0.43
43:XN:56:VAL:O	43:XN:57:ARG:HB2	2.18	0.43
48:XT:57:ARG:NH1	48:XT:102:GLY:HA3	2.32	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:26:A:N7	49:XA:557:G:N2	2.67	0.43
49:XA:170:U:H2'	49:XA:171:A:C8	2.54	0.43
49:XA:505:G:P	49:XA:535:A:H5'	2.59	0.43
49:XA:966:G:H5'	49:XA:967:C:OP1	2.18	0.43
49:XA:1410:G:H2'	49:XA:1411:C:C6	2.54	0.43
50:XS:76:PRO:C	50:XS:78:ARG:H	2.21	0.43
1:RA:139:G:N3	1:RA:141:A:N1	2.67	0.42
1:RA:484:C:H2'	1:RA:485:C:C6	2.54	0.42
1:RA:1341:U:O2'	19:RX:55:ASN:ND2	2.52	0.42
1:RA:1668:A:N3	1:RA:1670:C:N4	2.67	0.42
1:RA:1726:G:H2'	1:RA:1727:U:C6	2.54	0.42
1:RA:2010:G:H2'	1:RA:2011:U:C6	2.53	0.42
1:RA:2248:C:H2'	1:RA:2249:U:O4'	2.19	0.42
1:RA:2544:G:H2'	1:RA:2545:G:C8	2.54	0.42
1:RA:2610:C:H4'	1:RA:2611:U:OP2	2.19	0.42
2:RB:21:G:C6	2:RB:63:G:C6	3.07	0.42
11:RP:49:ARG:HD2	29:R8:58:ILE:HG22	2.01	0.42
20:RY:88:LYS:HA	20:RY:88:LYS:NZ	2.33	0.42
22:R0:36:ILE:HG12	22:R0:37:LEU:N	2.34	0.42
1:YA:305:U:H2'	1:YA:306:U:C6	2.53	0.42
1:YA:336:C:HO2'	20:YY:35:TYR:HH	1.64	0.42
1:YA:604:G:C6	1:YA:625:G:C2	3.07	0.42
1:YA:1294:U:C4	1:YA:1295:C:C5	3.07	0.42
1:YA:1380:G:H2'	1:YA:1381:G:H8	1.83	0.42
1:YA:2749:A:OP1	7:YH:4:ILE:HG22	2.19	0.42
3:YD:25:THR:HG22	3:YD:82:ILE:H	1.82	0.42
6:YG:22:ARG:NH2	6:YG:175:LEU:HD21	2.34	0.42
11:YP:57:THR:C	11:YP:59:LEU:H	2.22	0.42
21:YZ:91:LEU:HG	21:YZ:130:PRO:HB3	2.00	0.42
32:QC:61:ALA:C	32:QC:63:ASN:H	2.23	0.42
32:QC:117:ALA:HB2	32:QC:200:ALA:HB2	2.00	0.42
35:QF:60:PHE:HZ	47:QR:78:LEU:HD21	1.84	0.42
35:QF:87:ARG:NH1	49:QA:673:G:H5''	2.34	0.42
37:QH:95:VAL:HG21	37:QH:133:LEU:HD11	2.00	0.42
38:QI:68:GLY:N	49:QA:1250:A:H4'	2.34	0.42
39:QJ:53:PRO:HG3	49:QA:1058:G:H22	1.83	0.42
44:QO:35:ARG:HG2	44:QO:36:ILE:HG13	2.01	0.42
45:QP:11:SER:H	45:QP:14:ASN:HB3	1.83	0.42
45:QP:27:LYS:H	45:QP:27:LYS:HG2	1.60	0.42
47:QR:39:VAL:O	47:QR:43:PHE:HD1	2.01	0.42
48:QT:16:HIS:O	48:QT:20:LEU:HG	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:360:A:C6	49:QA:361:G:C6	3.07	0.42
49:QA:592:G:C2	49:QA:593:G:C8	3.07	0.42
49:QA:647:C:H2'	49:QA:648:A:C8	2.54	0.42
49:QA:836:G:H2'	49:QA:837:G:C8	2.54	0.42
49:QA:1273:G:C5	49:QA:1274:G:H1'	2.54	0.42
36:XG:78:ARG:HG2	36:XG:79:ARG:N	2.34	0.42
37:XH:32:LYS:HE3	37:XH:32:LYS:HB2	1.83	0.42
39:XJ:51:ARG:HD2	39:XJ:59:SER:HB3	2.01	0.42
40:XK:67:ASP:O	40:XK:71:LYS:HD3	2.19	0.42
42:XM:48:LEU:HD23	42:XM:48:LEU:HA	1.81	0.42
42:XM:65:LYS:HG3	42:XM:70:LEU:HG	1.99	0.42
42:XM:96:LEU:HB3	42:XM:97:PRO:HD2	2.00	0.42
43:XN:24:CYS:HB2	43:XN:28:GLY:N	2.30	0.42
46:XQ:62:SER:OG	46:XQ:72:ARG:NE	2.52	0.42
47:XR:30:ASP:OD2	47:XR:33:ASP:HB2	2.19	0.42
48:XT:59:ALA:O	48:XT:63:ILE:N	2.51	0.42
49:XA:974:A:H8	49:XA:974:A:OP1	2.01	0.42
49:XA:1160:G:C6	49:XA:1161:C:C4	3.07	0.42
49:XA:1176:A:H2'	49:XA:1177:G:C8	2.53	0.42
49:XA:1241:G:H2'	49:XA:1242:C:H6	1.83	0.42
49:XA:1531:A:N7	49:XA:1532:U:C4	2.80	0.42
50:XS:12:ASP:HB2	50:XS:38:SER:HB3	2.01	0.42
50:QS:29:ARG:HE	50:QS:48:THR:HG21	1.84	0.42
52:QX:18:C:N4	52:QX:19:U:O4	2.52	0.42
1:RA:563:G:C6	1:RA:2018:G:C5	3.07	0.42
1:RA:1019:U:OP1	1:RA:1035:U:O2'	2.24	0.42
1:RA:1891:G:H2'	1:RA:1892:C:C6	2.54	0.42
1:RA:2256:G:H2'	1:RA:2257:U:C6	2.53	0.42
1:RA:2493:U:H2'	1:RA:2494:G:O4'	2.19	0.42
2:RB:33:G:C2	2:RB:50:G:C2	3.07	0.42
3:RD:142:VAL:HG23	3:RD:193:VAL:HA	2.00	0.42
4:RE:35:GLN:HB3	4:RE:48:GLN:HB2	2.00	0.42
6:RG:4:ASP:OD1	6:RG:9:ARG:NH1	2.52	0.42
11:RP:82:GLY:HA2	11:RP:113:LYS:O	2.18	0.42
12:RQ:136:ALA:CB	21:RZ:49:ARG:HA	2.49	0.42
13:RR:97:VAL:HA	13:RR:113:LEU:O	2.20	0.42
16:RU:69:CYS:HB3	16:RU:106:PHE:HZ	1.84	0.42
16:RU:104:GLN:HB2	17:RV:44:LYS:HD3	2.01	0.42
1:YA:270(T):G:OP1	23:Y1:97:LEU:HD13	2.19	0.42
1:YA:373:U:H2'	1:YA:374:A:H8	1.84	0.42
1:YA:2386:C:H4'	22:Y0:56:ASP:HA	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:2683:C:H4'	4:YE:13:ARG:NH2	2.34	0.42
1:YA:2745:C:H2'	1:YA:2746:U:C6	2.54	0.42
1:YA:2843:G:H2'	1:YA:2844:G:H8	1.85	0.42
5:YF:47:GLY:HA3	5:YF:95:ARG:O	2.19	0.42
11:YP:66:GLY:O	11:YP:67:MET:HB3	2.19	0.42
13:YR:67:LEU:HD13	13:YR:76:VAL:HG21	2.01	0.42
23:Y1:86:SER:N	23:Y1:87:PRO:HD2	2.34	0.42
37:QH:29:SER:OG	37:QH:32:LYS:HE2	2.19	0.42
37:QH:97:VAL:HG13	37:QH:98:LYS:HD3	1.99	0.42
39:QJ:24:VAL:HG21	39:QJ:37:PRO:HD3	2.01	0.42
49:QA:139:G:N2	49:QA:224:C:O2	2.52	0.42
49:QA:505:G:H2'	49:QA:506:G:H8	1.84	0.42
49:QA:634:C:H2'	49:QA:635:G:H8	1.83	0.42
49:QA:1131:G:H2'	49:QA:1132:C:H6	1.85	0.42
49:QA:1326:C:H2'	49:QA:1327:C:C6	2.54	0.42
49:QA:1516:G:H2'	49:QA:1518:A:OP2	2.19	0.42
31:XB:97:TRP:CH2	31:XB:176:GLU:HG3	2.54	0.42
33:XD:170:VAL:HB	33:XD:174:LEU:HB2	2.00	0.42
35:XF:15:ASP:O	35:XF:18:GLN:HB2	2.19	0.42
36:XG:50:ILE:HG22	36:XG:51:GLN:OE1	2.19	0.42
37:XH:9:MET:SD	37:XH:32:LYS:HG3	2.59	0.42
38:XI:77:ILE:O	38:XI:81:ILE:HG13	2.18	0.42
38:XI:111:ARG:NH1	49:XA:1187:G:H4'	2.34	0.42
40:XK:62:GLN:OE1	40:XK:97:ALA:HB2	2.19	0.42
46:XQ:79:SER:OG	46:XQ:80:GLY:N	2.52	0.42
49:XA:377:G:H2'	49:XA:378:G:C8	2.54	0.42
49:XA:402:G:H2'	49:XA:403:C:O4'	2.19	0.42
49:XA:541:G:H2'	49:XA:542:G:H8	1.84	0.42
49:XA:890:G:N2	49:XA:907:A:OP2	2.51	0.42
49:XA:1137:C:HO2'	49:XA:1138:G:N2	2.14	0.42
49:XA:1188:A:H2'	49:XA:1189:C:O4'	2.19	0.42
51:Y4:18:CYS:HA	51:Y4:19:GLY:HA2	1.52	0.42
1:RA:391:G:H2'	1:RA:392:C:C6	2.54	0.42
1:RA:503:A:H4'	1:RA:504:U:H5''	2.00	0.42
1:RA:508:G:HO2'	1:RA:509:C:P	2.40	0.42
1:RA:1270:C:H5''	1:RA:1271:G:C5'	2.49	0.42
1:RA:1695:G:H1'	3:RD:8:PRO:O	2.19	0.42
1:RA:1772:G:N2	1:RA:1774:C:H5'	2.35	0.42
1:RA:1841:U:C2	1:RA:1842:G:C8	3.07	0.42
1:RA:2031:A:C6	1:RA:2498:C:H1'	2.54	0.42
1:RA:2119:A:C2	1:RA:2171:A:H1'	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2187:G:H2'	1:RA:2188:C:C6	2.54	0.42
1:RA:2228:G:C6	1:RA:2229:C:C4	3.07	0.42
1:RA:2359:C:H2'	1:RA:2360:A:O4'	2.19	0.42
1:RA:2599:G:N7	3:RD:237:GLU:HB2	2.35	0.42
1:RA:2818:G:H2'	1:RA:2819:G:C8	2.54	0.42
4:RE:134:ILE:HA	4:RE:137:HIS:CD2	2.54	0.42
6:RG:60:LEU:HD22	6:RG:68:PRO:HB3	2.00	0.42
7:RH:24:VAL:HG23	7:RH:35:VAL:HB	2.00	0.42
8:RI:97:ILE:HG12	8:RI:97:ILE:H	1.62	0.42
9:RN:28:THR:HA	9:RN:106:MET:HE2	2.00	0.42
10:RO:26:LYS:HB2	10:RO:30:ALA:HB2	2.01	0.42
17:RV:64:HIS:CG	17:RV:92:THR:HG22	2.53	0.42
1:YA:302:C:H2'	1:YA:303:U:C6	2.55	0.42
1:YA:832:G:H2'	1:YA:833:U:C6	2.55	0.42
1:YA:1202:C:H2'	1:YA:1203:G:O4'	2.19	0.42
1:YA:1547:C:H2'	1:YA:1548:C:H6	1.83	0.42
1:YA:1651:G:H4'	13:YR:39:PRO:HG2	2.00	0.42
1:YA:2074:U:O2'	1:YA:2597:G:O2'	2.24	0.42
1:YA:2292:C:H2'	1:YA:2293:C:H6	1.83	0.42
1:YA:2553:G:N2	1:YA:2583:G:H1'	2.35	0.42
3:YD:8:PRO:HB3	3:YD:14:ARG:CB	2.49	0.42
5:YF:106:ARG:H	5:YF:106:ARG:HG2	1.48	0.42
13:YR:1:MET:H3	13:YR:1:MET:CE	2.33	0.42
22:Y0:53:MET:HA	22:Y0:58:THR:O	2.19	0.42
32:QC:36:ASP:OD2	32:QC:57:ILE:HD13	2.20	0.42
32:QC:176:HIS:HB3	49:QA:1111:A:N6	2.26	0.42
33:QD:54:TYR:CD2	33:QD:55:ALA:N	2.87	0.42
34:QE:57:LYS:HE2	34:QE:57:LYS:HB3	1.80	0.42
36:QG:75:VAL:HA	36:QG:87:VAL:O	2.19	0.42
39:QJ:3:LYS:HG3	39:QJ:4:ILE:HD12	2.01	0.42
39:QJ:10:GLY:HA2	39:QJ:94:VAL:HG13	2.00	0.42
40:QK:21:ILE:O	40:QK:85:ARG:N	2.52	0.42
41:QL:110:VAL:HG23	41:QL:113:ARG:HH11	1.83	0.42
44:QO:82:ILE:HG13	44:QO:87:ILE:CG1	2.47	0.42
47:QR:74:ARG:HA	47:QR:79:LEU:HB3	2.00	0.42
47:QR:74:ARG:HD3	47:QR:81:PHE:HE2	1.84	0.42
49:QA:254:G:H2'	49:QA:255:G:H8	1.84	0.42
49:QA:738:C:H2'	49:QA:739:C:H6	1.83	0.42
49:QA:771:G:H2'	49:QA:772:U:C6	2.55	0.42
49:QA:782:A:H62	49:QA:800:G:H21	1.67	0.42
49:QA:892:A:H2'	49:QA:893:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1061:G:C6	49:QA:1197:G:C6	3.07	0.42
49:QA:1440(J):C:O2'	49:QA:1440(K):G:H5''	2.19	0.42
32:XC:29:TYR:HB3	43:XN:37:PHE:HE2	1.84	0.42
35:XF:14:LEU:HD21	35:XF:19:LEU:HB2	2.01	0.42
35:XF:82:ARG:CZ	35:XF:82:ARG:HA	2.49	0.42
36:XG:69:VAL:HG13	36:XG:138:LYS:HB2	2.02	0.42
38:XI:47:LEU:O	38:XI:51:ARG:N	2.47	0.42
41:XL:71:PRO:HD3	41:XL:100:ILE:O	2.18	0.42
42:XM:81:LEU:O	42:XM:89:GLY:HA3	2.20	0.42
43:XN:41:ARG:HG3	43:XN:42:ILE:HG12	2.02	0.42
49:XA:105:G:H2'	49:XA:106:C:H6	1.84	0.42
49:XA:921:U:H2'	49:XA:922:G:O4'	2.19	0.42
49:XA:984:C:H2'	49:XA:985:C:C6	2.54	0.42
49:XA:1238:A:H2	49:XA:1241:G:N3	2.17	0.42
49:XA:1410:G:H2'	49:XA:1411:C:H6	1.84	0.42
1:RA:121:G:C2	1:RA:131:G:C4	3.07	0.42
1:RA:320:A:H4'	1:RA:322:A:N7	2.35	0.42
1:RA:634:C:H2'	1:RA:635:C:C6	2.55	0.42
1:RA:708:C:H2'	1:RA:709:U:C6	2.54	0.42
1:RA:953:A:C2	1:RA:954:G:C8	3.08	0.42
1:RA:1268:A:H2'	1:RA:1269:A:O4'	2.19	0.42
1:RA:1341:U:O4'	19:RX:57:LEU:HD23	2.20	0.42
1:RA:2319:G:O6	14:RS:4:LEU:HB2	2.20	0.42
6:RG:107:LEU:HD11	6:RG:178:PHE:CE1	2.55	0.42
12:RQ:104:PHE:CE1	12:RQ:125:LEU:HD11	2.54	0.42
23:R1:89:GLU:HA	23:R1:93:GLU:HB2	2.01	0.42
26:R5:40:LYS:NZ	26:R5:46:CYS:HB3	2.34	0.42
1:YA:556:G:H2'	1:YA:557:U:C6	2.55	0.42
1:YA:742:G:H2'	1:YA:743:G:H8	1.84	0.42
1:YA:839:U:H2'	1:YA:840:C:H6	1.85	0.42
1:YA:1964:G:C6	1:YA:1967:C:C4	3.06	0.42
1:YA:2418:A:H2'	1:YA:2419:U:C6	2.54	0.42
1:YA:2695:C:H2'	1:YA:2696:U:C6	2.54	0.42
5:YF:63:LYS:HE3	5:YF:65:TRP:O	2.19	0.42
6:YG:117:PHE:HD2	51:Y4:42:PHE:HZ	1.65	0.42
15:YT:50:ILE:HG13	15:YT:99:LEU:HD12	2.00	0.42
23:Y1:64:ALA:HA	23:Y1:67:ILE:HG13	2.02	0.42
24:Y2:50:ILE:H	24:Y2:50:ILE:HG13	1.50	0.42
31:QB:152:PHE:CE1	31:QB:155:LEU:HB3	2.55	0.42
33:QD:83:SER:HA	33:QD:89:THR:HG22	2.01	0.42
39:QJ:79:ARG:O	39:QJ:83:GLU:HG2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:QK:42:TRP:NE1	49:QA:686:U:H4'	2.35	0.42
49:QA:131:C:H2'	49:QA:132:C:C6	2.54	0.42
49:QA:926:G:O6	52:QX:19:U:C6	2.73	0.42
49:QA:1157:A:N1	49:QA:1180:A:H2'	2.35	0.42
31:XB:208:ILE:H	31:XB:208:ILE:HD12	1.84	0.42
33:XD:162:LEU:O	33:XD:165:MET:HB3	2.19	0.42
39:XJ:63:PHE:CE1	43:YN:58:LYS:HA	2.55	0.42
41:XL:53:ARG:HG3	41:XL:69:TYR:CE1	2.54	0.42
41:XL:117:ARG:H	41:XL:117:ARG:HG3	1.65	0.42
44:XO:21:ASP:OD1	44:XO:21:ASP:N	2.45	0.42
44:XO:60:VAL:O	44:XO:64:ARG:HG3	2.19	0.42
46:XQ:64:PRO:O	49:XA:264:U:O2'	2.22	0.42
47:XR:61:LYS:N	49:XA:835:U:OP1	2.51	0.42
48:XT:65:LYS:HE2	48:XT:68:LYS:HZ2	1.84	0.42
49:XA:123:C:OP1	49:XA:311:C:O2'	2.36	0.42
49:XA:193:C:H2'	49:XA:194:C:C6	2.54	0.42
49:XA:318:G:H2'	49:XA:319:G:H8	1.84	0.42
49:XA:434:U:O5'	49:XA:434:U:H6	2.02	0.42
50:XS:11:VAL:HG13	50:XS:12:ASP:H	1.84	0.42
53:QV:1:C:H2'	53:QV:2:G:C8	2.54	0.42
1:RA:217:G:C4	1:RA:218:A:C8	3.07	0.42
1:RA:521:G:H2'	1:RA:522:G:C8	2.53	0.42
1:RA:883:G:H2'	1:RA:884:C:C6	2.55	0.42
1:RA:995:C:O2	9:RN:3:THR:OG1	2.25	0.42
1:RA:1114:G:H2'	1:RA:1115:G:C8	2.54	0.42
1:RA:1159:U:C2	1:RA:1160:G:C8	3.07	0.42
1:RA:1509:C:H3'	1:RA:1510:A:H5''	2.00	0.42
1:RA:1777:U:H2'	1:RA:1778:U:H6	1.84	0.42
1:RA:1930:G:N2	1:RA:1968:G:H2'	2.35	0.42
1:RA:2056:G:H2'	1:RA:2056:G:N3	2.34	0.42
1:RA:2373:G:H2'	1:RA:2374:C:C6	2.55	0.42
1:RA:2674:G:H2'	1:RA:2675:A:H8	1.85	0.42
1:RA:2696:U:H2'	1:RA:2697:G:C8	2.54	0.42
3:RD:31:LYS:HG3	3:RD:32:SER:O	2.19	0.42
6:RG:60:LEU:HD21	6:RG:92:VAL:HG11	2.01	0.42
6:RG:120:LEU:HB3	6:RG:131:TYR:OH	2.20	0.42
11:RP:3:LEU:HD23	11:RP:3:LEU:HA	1.89	0.42
12:RQ:66:ILE:HG13	12:RQ:67:ARG:N	2.35	0.42
18:RW:51:LEU:HD23	18:RW:51:LEU:HA	1.91	0.42
20:RY:26:LYS:HE3	20:RY:26:LYS:HB2	1.90	0.42
29:R8:52:LYS:N	29:R8:53:PRO:HD2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:639:U:C2	1:YA:640:C:C5	3.08	0.42
1:YA:662:G:H2'	1:YA:663:G:H8	1.84	0.42
1:YA:669:G:H2'	1:YA:669:G:N3	2.34	0.42
1:YA:719:C:H2'	1:YA:720:C:H6	1.83	0.42
1:YA:747:U:OP2	26:Y5:3:LYS:HD2	2.19	0.42
1:YA:1094:U:O2	1:YA:1096:A:H5'	2.20	0.42
1:YA:1532:C:H2'	1:YA:1533:C:O4'	2.20	0.42
1:YA:1983:C:H4'	1:YA:2606:C:H4'	2.01	0.42
1:YA:2215:G:H2'	1:YA:2216:G:H8	1.84	0.42
1:YA:2409:G:H2'	1:YA:2410:G:O4'	2.19	0.42
7:YH:52:VAL:HG12	7:YH:65:HIS:CD2	2.55	0.42
7:YH:154:PRO:HD3	7:YH:162:ILE:N	2.31	0.42
11:YP:29:LYS:HB3	11:YP:30:THR:H	1.70	0.42
21:YZ:182:LYS:HE3	21:YZ:182:LYS:HB2	1.71	0.42
31:QB:34:ALA:HA	31:QB:36:ARG:CZ	2.49	0.42
33:QD:9:CYS:SG	33:QD:21:LEU:HB2	2.60	0.42
36:QG:97:GLN:HG2	36:QG:98:SER:N	2.32	0.42
37:QH:102:ARG:H	37:QH:102:ARG:CZ	2.32	0.42
38:QI:24:GLY:HA2	38:QI:59:PHE:O	2.19	0.42
38:QI:128:ARG:HH21	49:QA:1231:G:P	2.40	0.42
44:QO:28:GLN:O	44:QO:32:LEU:HG	2.19	0.42
48:QT:99:LEU:HB3	48:QT:100:ILE:H	1.66	0.42
49:QA:171:A:H2'	49:QA:172:A:C8	2.55	0.42
49:QA:745:C:H1'	49:QA:836:G:O2'	2.19	0.42
49:QA:908:A:H2'	49:QA:909:A:C8	2.55	0.42
31:XB:118:LEU:HD13	31:XB:142:LEU:HD23	2.01	0.42
31:XB:210:SER:O	31:XB:214:ILE:HG12	2.19	0.42
33:XD:30:LYS:CD	33:XD:35:ARG:HH21	2.29	0.42
35:XF:11:ASN:HB2	35:XF:86:ARG:NH1	2.35	0.42
35:XF:48:LEU:HD12	35:XF:55:ASP:O	2.19	0.42
38:XI:112:LYS:HG3	38:XI:117:HIS:O	2.19	0.42
39:XJ:88:LEU:O	39:XJ:89:ASP:HB2	2.18	0.42
49:XA:444:C:H2'	49:XA:445:G:H8	1.84	0.42
51:R4:14:ILE:HB	51:R4:22:ILE:HB	2.01	0.42
1:RA:259:G:N2	1:RA:621:A:H8	2.09	0.42
1:RA:329:G:P	1:RA:329:G:H8	2.42	0.42
1:RA:571:A:C5'	1:RA:2030:A:H62	2.32	0.42
1:RA:864:G:H21	1:RA:866:A:H61	1.67	0.42
1:RA:942:G:O2'	1:RA:1189:A:N3	2.44	0.42
1:RA:1222:C:H2'	1:RA:1223:C:C6	2.55	0.42
1:RA:1411:C:N4	1:RA:1591:G:H1	2.15	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1462:C:H4'	1:RA:2703:C:O4'	2.19	0.42
1:RA:1734:C:H2'	1:RA:1735:C:C6	2.55	0.42
1:RA:1829:A:H3'	1:RA:1830:C:H6	1.84	0.42
1:RA:2304:G:H22	1:RA:2312:U:H3	1.66	0.42
1:RA:2745:C:H2'	1:RA:2746:U:H6	1.83	0.42
5:RF:181:LEU:HD22	5:RF:181:LEU:HA	1.80	0.42
6:RG:37:VAL:HG22	6:RG:159:VAL:HA	2.00	0.42
6:RG:143:GLU:HG3	51:R4:28:LYS:HB2	2.02	0.42
20:RY:21:LYS:HG3	20:RY:22:GLY:N	2.34	0.42
20:RY:76:CYS:HB2	20:RY:101:LYS:HG3	2.00	0.42
21:RZ:103:ARG:HD3	21:RZ:136:PHE:CD1	2.54	0.42
26:R5:56:LYS:H	26:R5:56:LYS:CD	2.30	0.42
28:R7:26:GLY:O	28:R7:30:VAL:HG23	2.20	0.42
1:YA:27:G:O2'	1:YA:28:A:H8	2.03	0.42
1:YA:883:G:H2'	1:YA:884:C:C6	2.54	0.42
1:YA:902:C:H2'	1:YA:903:C:C6	2.54	0.42
1:YA:978:G:H2'	1:YA:979:G:O4'	2.20	0.42
1:YA:1197:G:C2	1:YA:1198:U:C5	3.08	0.42
1:YA:1265:A:H3'	26:Y5:19:ARG:NH1	2.34	0.42
1:YA:1435:G:H2'	1:YA:1436:G:C8	2.55	0.42
1:YA:1791:A:H3'	1:YA:1792:G:H8	1.83	0.42
1:YA:2210:G:H2'	1:YA:2210:G:N3	2.35	0.42
1:YA:2280:G:O6	22:Y0:14:ARG:HD2	2.19	0.42
1:YA:2311:A:H8	6:YG:88:ILE:HD11	1.85	0.42
1:YA:2448:A:HO2'	1:YA:2449:U:H5	1.65	0.42
1:YA:2528:U:H2'	1:YA:2530:A:O5'	2.20	0.42
16:YU:92:ARG:C	16:YU:94:ASN:H	2.23	0.42
18:YW:88:ARG:HB3	18:YW:92:ARG:HB2	2.01	0.42
21:YZ:163:LEU:HD22	21:YZ:167:PRO:HG3	2.02	0.42
31:QB:70:PHE:CE2	31:QB:90:MET:HB2	2.55	0.42
31:QB:80:ILE:O	31:QB:84:GLU:HG2	2.19	0.42
32:QC:118:GLN:O	32:QC:122:GLU:HG2	2.19	0.42
33:QD:177:ASP:HB2	33:QD:182:LYS:HB3	2.00	0.42
41:QL:90:VAL:H	41:QL:96:VAL:HG21	1.84	0.42
48:QT:80:ARG:NH2	49:QA:260:G:OP1	2.52	0.42
49:QA:482:A:H2'	49:QA:483:C:O4'	2.20	0.42
49:QA:750:G:H2'	49:QA:751:U:C6	2.55	0.42
49:QA:1156:G:H1'	49:QA:1179:A:N6	2.33	0.42
49:QA:1330:U:O5'	49:QA:1330:U:H6	2.02	0.42
32:XC:180:ALA:HB1	32:XC:203:PHE:HE1	1.84	0.42
32:XC:182:ILE:HG12	32:XC:203:PHE:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:XD:14:ARG:NE	33:XD:40:PRO:HD2	2.35	0.42
35:XF:6:VAL:HG22	35:XF:90:VAL:HG13	2.00	0.42
37:XH:56:LYS:O	37:XH:58:TYR:N	2.53	0.42
49:XA:1116:C:C2'	49:XA:1117:G:H5''	2.49	0.42
49:XA:1244:C:H2'	49:XA:1245:A:C8	2.54	0.42
49:XA:1261:A:H4'	49:XA:1284:C:OP1	2.20	0.42
49:XA:1304:G:H21	49:XA:1333:A:N6	2.14	0.42
1:RA:153:C:H2'	1:RA:154:G:H8	1.83	0.42
1:RA:356:G:H2'	1:RA:357:A:H8	1.84	0.42
1:RA:1173:G:H4'	1:RA:1174:A:C8	2.54	0.42
1:RA:2296:U:OP2	14:RS:9:ARG:NH1	2.45	0.42
1:RA:2627:G:N2	1:RA:2777:G:OP1	2.52	0.42
4:RE:78:LEU:HD23	4:RE:195:LEU:HD22	2.01	0.42
6:RG:22:ARG:HH21	6:RG:171:ALA:HB1	1.84	0.42
14:RS:42:ASP:C	14:RS:44:LYS:H	2.23	0.42
1:YA:686:G:H8	28:Y7:6:GLN:O	2.02	0.42
1:YA:705:A:C2	1:YA:727:A:H1'	2.54	0.42
1:YA:956:G:P	12:YQ:14:ARG:HH21	2.41	0.42
1:YA:1655:A:H2'	1:YA:1656:C:O4'	2.20	0.42
1:YA:2630:G:H2'	1:YA:2631:G:H8	1.85	0.42
3:YD:25:THR:HG23	3:YD:27:THR:HB	2.01	0.42
3:YD:30:GLU:HG3	3:YD:63:ARG:CZ	2.50	0.42
6:YG:56:ALA:HB2	6:YG:153:ARG:NE	2.35	0.42
10:YO:96:THR:O	10:YO:97:ARG:HB3	2.19	0.42
12:YQ:2:LEU:HD23	12:YQ:2:LEU:H	1.85	0.42
14:YS:42:ASP:C	14:YS:44:LYS:H	2.23	0.42
21:YZ:7:ALA:O	21:YZ:61:LEU:HA	2.20	0.42
21:YZ:96:VAL:O	21:YZ:127:LYS:HA	2.19	0.42
31:QB:136:VAL:O	31:QB:140:HIS:ND1	2.53	0.42
33:QD:122:ARG:HA	33:QD:122:ARG:HD2	1.74	0.42
33:QD:182:LYS:HE3	33:QD:182:LYS:HB2	1.85	0.42
34:QE:92:LYS:O	34:QE:119:LEU:HB2	2.19	0.42
36:QG:86:GLN:O	36:QG:88:PRO:HD3	2.19	0.42
37:QH:63:LEU:H	37:QH:63:LEU:HD22	1.84	0.42
45:QP:8:ARG:HB2	45:QP:17:TYR:CE2	2.54	0.42
49:QA:825:G:H2'	49:QA:826:C:C6	2.54	0.42
49:QA:1538:C:H4'	49:QA:1539:C:OP1	2.20	0.42
31:XB:185:ILE:HD12	31:XB:199:TYR:HB2	2.01	0.42
34:XE:19:MET:SD	49:XA:15:G:H1'	2.59	0.42
34:XE:142:LEU:C	34:XE:143:ARG:HE	2.22	0.42
35:XF:60:PHE:CZ	47:XR:78:LEU:HD21	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:XG:57:GLU:O	36:XG:61:VAL:HG23	2.20	0.42
42:XM:91:ARG:NH1	42:XM:100:GLY:HA2	2.35	0.42
44:XO:63:ARG:O	44:XO:67:LEU:HG	2.20	0.42
49:XA:222:U:H2'	49:XA:223:U:C6	2.55	0.42
49:XA:431:A:C4	49:XA:432:A:C8	3.07	0.42
49:XA:433:C:H2'	49:XA:434:U:C6	2.54	0.42
49:XA:618:C:H5'	49:XA:619:U:H5''	2.02	0.42
49:XA:848:C:H2'	49:XA:849:C:H6	1.84	0.42
49:XA:1034:G:H2'	49:XA:1035:A:C8	2.54	0.42
49:XA:1306:A:OP2	49:XA:1331:G:N2	2.53	0.42
49:XA:1513:A:H2'	49:XA:1514:C:C6	2.55	0.42
1:RA:226:G:O6	1:RA:410:G:H1'	2.20	0.42
1:RA:228:A:H3'	1:RA:228:A:N3	2.34	0.42
1:RA:1220:A:H5'	1:RA:1221:C:OP2	2.20	0.42
1:RA:1266:G:O5'	18:RW:15:ARG:NH2	2.52	0.42
1:RA:1777:U:H2'	1:RA:1778:U:C6	2.55	0.42
1:RA:2014:A:H2'	1:RA:2015:A:C8	2.54	0.42
1:RA:2692:C:H2'	1:RA:2693:A:C8	2.54	0.42
2:RB:9:G:C6	2:RB:112:G:C6	3.08	0.42
6:RG:62:LEU:O	51:R4:27:THR:HG21	2.19	0.42
12:RQ:81:VAL:HG23	22:R0:7:LEU:HD13	2.01	0.42
1:YA:28:A:N6	1:YA:512:G:H1'	2.35	0.42
1:YA:173:G:H2'	1:YA:174:C:C6	2.55	0.42
1:YA:390:A:O3'	1:YA:391:G:H8	2.02	0.42
1:YA:1214:A:H2'	1:YA:1215:G:O4'	2.20	0.42
1:YA:1535:U:C2	1:YA:1537:C:H1'	2.55	0.42
1:YA:2259:G:C8	1:YA:2427:C:C4	3.07	0.42
1:YA:2359:C:H2'	1:YA:2360:A:O4'	2.20	0.42
1:YA:2394:C:N3	53:XV:78:A:O2'	2.42	0.42
1:YA:2525:G:H2'	1:YA:2526:G:C8	2.50	0.42
1:YA:2735:G:H2'	1:YA:2736:G:H8	1.85	0.42
1:YA:2840:C:H2'	1:YA:2841:C:C6	2.55	0.42
6:YG:7:LEU:HD11	6:YG:107:LEU:HD12	2.02	0.42
7:YH:6:ARG:HA	7:YH:66:GLY:HA2	2.01	0.42
11:YP:106:LEU:O	11:YP:107:LYS:HB2	2.20	0.42
12:YQ:20:ALA:HB3	21:YZ:79:ARG:CZ	2.50	0.42
15:YT:19:LEU:HD22	15:YT:86:ILE:HG22	2.02	0.42
33:QD:72:GLU:H	33:QD:72:GLU:HG3	1.57	0.42
40:QK:29:ILE:HA	40:QK:43:SER:O	2.19	0.42
41:QL:92:ASP:HB2	41:QL:93:LEU:H	1.64	0.42
49:QA:35:G:H2'	49:QA:36:C:H6	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:160:A:H2'	49:QA:161:A:O4'	2.19	0.42
49:QA:779:C:H2'	49:QA:780:A:O4'	2.20	0.42
49:QA:885:G:H2'	49:QA:886:G:H8	1.84	0.42
31:XB:202:PRO:HB2	31:XB:203:GLY:H	1.71	0.42
33:XD:30:LYS:HB2	33:XD:35:ARG:NE	2.35	0.42
36:XG:65:ALA:O	36:XG:69:VAL:HG23	2.20	0.42
41:XL:95:GLY:C	41:XL:97:ARG:N	2.70	0.42
42:XM:14:ARG:N	42:XM:44:ARG:HD2	2.35	0.42
49:XA:41:G:H2'	49:XA:42:G:C8	2.55	0.42
49:XA:328:C:H4'	49:XA:329:A:O5'	2.20	0.42
49:XA:339:C:H2'	49:XA:340:U:H6	1.82	0.42
49:XA:649:G:H2'	49:XA:650:G:C8	2.55	0.42
49:XA:711:G:H2'	49:XA:712:A:H8	1.85	0.42
49:XA:834:C:H2'	49:XA:835:U:C6	2.54	0.42
49:XA:957:U:H5'	50:XS:80:TYR:HB2	2.01	0.42
49:XA:1440(F):C:H2'	49:XA:1440(G):C:C6	2.55	0.42
52:QX:11:U:O5'	52:QX:11:U:H6	2.03	0.42
1:RA:39:C:H2'	1:RA:40:C:H6	1.83	0.42
1:RA:111:A:H2'	1:RA:112:U:C6	2.54	0.42
1:RA:172:C:H2'	1:RA:173:G:C8	2.55	0.42
1:RA:265:A:C8	1:RA:428:A:N6	2.88	0.42
1:RA:271:G:H2'	1:RA:272:G:O4'	2.20	0.42
1:RA:411:G:N2	11:RP:71:VAL:HG21	2.35	0.42
1:RA:598:G:C6	1:RA:660:G:C6	3.08	0.42
1:RA:1198:U:C2	1:RA:1199:U:C5	3.08	0.42
1:RA:1310:G:OP2	28:R7:9:ARG:NE	2.49	0.42
1:RA:1416:G:H2'	1:RA:1417:C:H6	1.81	0.42
1:RA:1547:C:H2'	1:RA:1548:C:H6	1.85	0.42
1:RA:1701:A:H4'	1:RA:1766:U:H5'	2.01	0.42
1:RA:1977:A:H2'	1:RA:1978:A:O4'	2.19	0.42
1:RA:2053:G:C2	1:RA:2617:C:C2	3.08	0.42
1:RA:2152:G:H2'	1:RA:2153:G:H8	1.84	0.42
1:RA:2422:A:C4	53:QV:78:A:C5	3.08	0.42
1:RA:2514:U:H2'	1:RA:2515:C:H6	1.85	0.42
1:RA:2623:G:H2'	1:RA:2624:G:C8	2.53	0.42
1:RA:2744:G:H21	7:RH:143:GLN:NE2	2.17	0.42
1:RA:2820:A:O5'	13:RR:4:LEU:HD23	2.20	0.42
5:RF:116:ASP:OD2	11:RP:1:MET:N	2.53	0.42
15:RT:105:LEU:O	15:RT:107:ASP:N	2.53	0.42
1:YA:965:C:O5'	1:YA:2273:A:H1'	2.19	0.42
1:YA:969:U:H2'	1:YA:970:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:1520:U:H2'	1:YA:1521:G:O4'	2.20	0.42
1:YA:1790:C:H5''	1:YA:1791:A:OP1	2.19	0.42
1:YA:2018:G:H2'	1:YA:2019:A:C8	2.55	0.42
1:YA:2032:G:H1'	4:YE:145:LYS:HD3	2.02	0.42
1:YA:2453:A:O2'	1:YA:2572:A:H1'	2.20	0.42
1:YA:2544:G:H1'	1:YA:2646:C:H4'	2.01	0.42
1:YA:2789:C:H1'	1:YA:2892:A:H2	1.85	0.42
9:YN:46:VAL:HG13	9:YN:48:MET:HG3	2.00	0.42
11:YP:100:LEU:HB3	11:YP:105:LEU:O	2.20	0.42
12:YQ:59:ARG:H	12:YQ:59:ARG:HD3	1.85	0.42
21:YZ:28:MET:O	21:YZ:34:ASN:HA	2.20	0.42
37:QH:135:CYS:SG	37:QH:136:GLU:N	2.92	0.42
38:QI:97:LYS:HE3	49:QA:1178:G:C8	2.54	0.42
41:QL:86:ARG:HG2	49:QA:552:U:H4'	2.01	0.42
41:QL:124:LYS:HD2	41:QL:124:LYS:HA	1.85	0.42
41:QL:127:GLU:O	41:QL:129:ALA:N	2.50	0.42
49:QA:407:G:H2'	49:QA:408:A:H8	1.84	0.42
49:QA:947:G:H2'	49:QA:948:C:C6	2.55	0.42
49:QA:1346:A:O3'	49:QA:1347:G:H4'	2.19	0.42
31:XB:180:LEU:O	31:XB:182:ILE:HG12	2.19	0.42
32:XC:14:ILE:HA	39:XJ:14:LYS:HZ3	1.85	0.42
32:XC:134:ILE:HD11	32:XC:151:VAL:HG12	2.02	0.42
33:XD:72:GLU:OE1	49:XA:545:C:H5''	2.20	0.42
38:XI:56:LEU:HD23	38:XI:56:LEU:H	1.84	0.42
41:XL:26:ALA:HB1	41:XL:30:ALA:HB3	2.02	0.42
49:XA:174:C:H2'	49:XA:175:C:C6	2.55	0.42
49:XA:341:C:H2'	49:XA:342:C:C6	2.55	0.42
49:XA:513:C:H2'	49:XA:514:C:C6	2.54	0.42
49:XA:581:G:P	49:XA:581:G:H8	2.42	0.42
49:XA:750:G:H2'	49:XA:751:U:H6	1.85	0.42
49:XA:787:A:H2'	49:XA:788:U:C6	2.55	0.42
49:XA:1196:U:OP1	49:XA:1400:C:N4	2.53	0.42
49:XA:1327:C:C2	49:XA:1328:C:C5	3.08	0.42
1:RA:582:G:H2'	1:RA:583:G:C8	2.55	0.42
1:RA:923:C:H2'	1:RA:924:C:H6	1.84	0.42
1:RA:959:A:H2'	1:RA:960:A:C8	2.54	0.42
1:RA:1062:G:C8	1:RA:1088:A:C8	3.07	0.42
1:RA:1325:G:OP2	1:RA:1616:A:H2'	2.20	0.42
1:RA:1835:G:H2'	1:RA:1836:C:C6	2.55	0.42
1:RA:2230:G:C6	1:RA:2231:C:C4	3.07	0.42
1:RA:2419:U:H2'	1:RA:2420:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:RB:33:G:C5'	6:RG:2:PRO:HG3	2.45	0.42
7:RH:3:ARG:NE	7:RH:3:ARG:HA	2.35	0.42
7:RH:125:VAL:HA	7:RH:126:PRO:HA	1.90	0.42
17:RV:22:VAL:HG12	17:RV:23:GLU:H	1.84	0.42
24:R2:10:LEU:O	24:R2:14:ARG:HG3	2.20	0.42
1:YA:108:U:H2'	1:YA:109:G:H8	1.85	0.42
1:YA:111:A:H4'	24:Y2:69:ARG:NH2	2.35	0.42
1:YA:463:G:C5	1:YA:465:G:OP2	2.73	0.42
1:YA:508:G:O2'	1:YA:509:C:OP2	2.37	0.42
1:YA:563:G:C6	1:YA:2018:G:C5	3.08	0.42
1:YA:609(A):G:H2'	1:YA:610:C:C6	2.55	0.42
1:YA:661:C:H2'	1:YA:662:G:H8	1.84	0.42
1:YA:923:C:H2'	1:YA:924:C:H6	1.85	0.42
1:YA:1085:A:O2'	1:YA:1086:A:P	2.77	0.42
1:YA:1093:G:OP1	7:YH:170:ARG:HD2	2.20	0.42
1:YA:1268:A:H2'	1:YA:1269:A:O4'	2.20	0.42
1:YA:1309:G:OP1	28:Y7:9:ARG:HD3	2.19	0.42
1:YA:1309:G:HO2'	1:YA:1611:C:HO2'	1.63	0.42
1:YA:1399:C:H2'	1:YA:1400:G:C8	2.54	0.42
1:YA:1839:G:C8	1:YA:1927:A:H1'	2.55	0.42
1:YA:2436:G:C6	1:YA:2437:U:C4	3.08	0.42
1:YA:2836:U:H2'	1:YA:2837:G:H8	1.84	0.42
8:YI:57:ARG:HA	8:YI:60:GLU:HB3	2.01	0.42
26:Y5:58:LEU:HB2	26:Y5:60:VAL:H	1.85	0.42
31:QB:36:ARG:C	31:QB:38:GLY:H	2.22	0.42
32:QC:108:ASN:HB3	32:QC:111:LEU:HD23	2.02	0.42
33:QD:60:GLU:HA	33:QD:63:LYS:HD2	2.02	0.42
33:QD:105:VAL:HA	33:QD:108:LEU:HB3	2.02	0.42
34:QE:91:LEU:HD13	34:QE:120:THR:HB	2.02	0.42
37:QH:122:ARG:O	37:QH:125:ARG:HB3	2.20	0.42
41:QL:119:LYS:HG3	41:QL:120:TYR:CD2	2.54	0.42
42:QM:16:ASP:OD1	42:QM:41:PRO:HB3	2.20	0.42
48:QT:34:LYS:O	48:QT:37:SER:OG	2.27	0.42
49:QA:35:G:H2'	49:QA:36:C:C6	2.55	0.42
49:QA:514:C:H2'	49:QA:515:G:H8	1.85	0.42
49:QA:610:G:C6	49:QA:611:A:N7	2.88	0.42
49:QA:612:C:C2	49:QA:613:C:C5	3.08	0.42
49:QA:1512:U:H3	49:QA:1523:G:H1	1.68	0.42
31:XB:104:ASN:ND2	49:XA:1074:G:O4'	2.53	0.42
32:XC:67:THR:HG22	32:XC:104:GLN:HB2	2.01	0.42
32:XC:206:GLU:C	32:XC:208:ILE:H	2.23	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:XF:70:ASP:O	35:XF:73:ASN:ND2	2.52	0.42
47:XR:83:GLU:OE1	47:XR:83:GLU:N	2.52	0.42
49:XA:68(P):C:H2'	49:XA:68(Q):U:C6	2.55	0.42
49:XA:105:G:H2'	49:XA:106:C:C6	2.55	0.42
49:XA:171:A:H2'	49:XA:172:A:C8	2.55	0.42
49:XA:768:A:H4'	49:XA:1523:G:H21	1.85	0.42
49:XA:1007:C:N3	49:XA:1023:G:N2	2.67	0.42
49:XA:1324:A:H5''	49:XA:1362(A):C:H5'	2.01	0.42
50:QS:33:THR:HG23	50:QS:51:VAL:HG13	2.01	0.42
1:RA:329:G:H8	1:RA:329:G:OP1	2.03	0.41
1:RA:557:U:H2'	1:RA:558:G:C8	2.55	0.41
1:RA:1042:G:H2'	1:RA:1043:C:C6	2.54	0.41
1:RA:1141:U:H1'	1:RA:1142(A):A:C5	2.55	0.41
1:RA:1174:A:H2'	1:RA:1174:A:N3	2.35	0.41
1:RA:1251:C:H6	16:RU:10:ARG:HH21	1.65	0.41
1:RA:1332:G:H8	1:RA:1332:G:H2'	1.72	0.41
1:RA:1530:G:O6	1:RA:1542:G:C2	2.73	0.41
1:RA:2232:U:P	23:R1:40:ARG:HH12	2.43	0.41
1:RA:2267:A:H5''	1:RA:2268:A:H5'	2.02	0.41
1:RA:2512:C:H2'	1:RA:2513:G:O4'	2.18	0.41
1:RA:2583:G:H2'	1:RA:2584:U:O4'	2.20	0.41
2:RB:32:C:C4	2:RB:33:G:N7	2.88	0.41
2:RB:74:U:C4	2:RB:75:G:C5	3.08	0.41
4:RE:63:LEU:HD13	4:RE:65:GLY:H	1.84	0.41
8:RI:5:LEU:H	8:RI:5:LEU:HD12	1.85	0.41
12:RQ:32:TYR:HE1	12:RQ:133:ARG:HG3	1.84	0.41
14:RS:49:VAL:HG22	14:RS:80:LEU:HD12	2.02	0.41
29:R8:49:VAL:CG2	29:R8:53:PRO:HB3	2.48	0.41
1:YA:26:G:H8	1:YA:26:G:O5'	2.03	0.41
1:YA:577:G:O2'	1:YA:1254:A:OP1	2.38	0.41
1:YA:717:G:H2'	1:YA:718:A:O4'	2.20	0.41
1:YA:1656:C:H2'	1:YA:1657:C:H6	1.85	0.41
1:YA:1809:A:H2'	1:YA:1810:A:C8	2.55	0.41
1:YA:2122:U:H2'	1:YA:2123:G:H8	1.85	0.41
1:YA:2154:G:H2'	1:YA:2155:G:H8	1.85	0.41
1:YA:2610:C:H4'	1:YA:2611:U:H5'	2.02	0.41
1:YA:2795:G:H3'	1:YA:2797:U:H5''	2.02	0.41
2:YB:29:A:H2'	2:YB:30:C:H6	1.85	0.41
7:YH:4:ILE:HG13	7:YH:6:ARG:NE	2.34	0.41
7:YH:46:GLU:OE2	7:YH:51:ARG:HD2	2.20	0.41
16:YU:96:ALA:C	16:YU:98:LEU:H	2.22	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Y2:5:GLU:CD	24:Y2:5:GLU:H	2.24	0.41
32:QC:179:ARG:HB2	32:QC:206:GLU:OE2	2.19	0.41
34:QE:98:THR:HG23	49:QA:6:G:H22	1.85	0.41
37:QH:94:TYR:CD2	49:QA:598:U:H4'	2.55	0.41
39:QJ:51:ARG:CG	39:QJ:59:SER:HB3	2.50	0.41
44:QO:5:LYS:H	44:QO:5:LYS:HG2	1.61	0.41
47:QR:44:LEU:HD11	47:QR:50:ILE:HG12	2.01	0.41
49:QA:96:G:H2'	49:QA:97:U:C6	2.55	0.41
49:QA:328:C:H1'	49:QA:329:A:OP2	2.20	0.41
49:QA:559:A:H4'	49:QA:560:U:H5''	2.02	0.41
49:QA:600:C:H2'	49:QA:601:C:C6	2.55	0.41
49:QA:612:C:H2'	49:QA:613:C:C6	2.55	0.41
49:QA:1390:U:H2'	49:QA:1391:U:C6	2.55	0.41
34:XE:133:TYR:HE1	49:XA:1078:U:H4'	1.85	0.41
35:XF:60:PHE:CE2	47:XR:78:LEU:HD11	2.55	0.41
40:XK:47:VAL:HA	49:XA:688:G:C5'	2.50	0.41
41:XL:24:VAL:C	41:XL:26:ALA:H	2.23	0.41
46:XQ:40:LYS:HG2	46:XQ:42:TYR:CE2	2.54	0.41
47:XR:26:LEU:HD23	47:XR:26:LEU:HA	1.86	0.41
49:XA:570:G:H5'	49:XA:820:U:O4'	2.20	0.41
49:XA:986:A:H1'	50:XS:55:LYS:HA	2.01	0.41
49:XA:1496:C:H2'	49:XA:1497:G:C8	2.55	0.41
1:RA:570:G:H2'	1:RA:2030:A:C5	2.55	0.41
1:RA:828:U:H4'	1:RA:831:G:N1	2.35	0.41
1:RA:878:A:C6	1:RA:900:A:C8	3.08	0.41
1:RA:898:C:H2'	1:RA:899:A:O4'	2.20	0.41
1:RA:1525:G:H2'	1:RA:1526:G:C8	2.55	0.41
1:RA:2233:U:H2'	1:RA:2234:G:H8	1.82	0.41
1:RA:2315:G:H2'	1:RA:2316:C:H6	1.85	0.41
1:RA:2618:G:H21	4:RE:150:VAL:HG21	1.84	0.41
3:RD:10:THR:OG1	3:RD:11:PRO:O	2.38	0.41
4:RE:73:GLU:HG3	4:RE:74:PRO:HD2	2.02	0.41
5:RF:29:ASN:HB3	5:RF:32:LEU:HD23	2.01	0.41
5:RF:102:PRO:HB2	5:RF:105:VAL:HG23	2.01	0.41
6:RG:142:PRO:CB	51:R4:31:ILE:HG21	2.49	0.41
7:RH:127:GLU:HB3	7:RH:128:PRO:HD2	2.02	0.41
9:RN:10:GLU:HA	9:RN:11:PRO:HD3	1.90	0.41
20:RY:64:GLU:H	20:RY:64:GLU:HG2	1.58	0.41
27:R6:8:LYS:HE3	27:R6:8:LYS:HB3	1.86	0.41
27:R6:40:CYS:HB3	27:R6:46:HIS:ND1	2.35	0.41
1:YA:340:A:H2'	1:YA:341:G:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:563:G:C4	1:YA:564:C:C5	3.08	0.41
1:YA:860:U:C2	1:YA:2268:A:O4'	2.73	0.41
1:YA:952:G:C6	1:YA:966:G:C6	3.08	0.41
1:YA:1034:G:H2'	1:YA:1035:U:C6	2.55	0.41
1:YA:1102:C:H2'	1:YA:1103:A:H5''	2.02	0.41
1:YA:1651:G:N2	1:YA:2007:C:C2	2.87	0.41
1:YA:1837:C:C2	1:YA:1904:G:C2	3.09	0.41
1:YA:2085:C:H2'	1:YA:2086:U:O4'	2.20	0.41
1:YA:2250:G:C8	1:YA:2496:C:H5''	2.54	0.41
1:YA:2514:U:H3	1:YA:2570:G:H1	1.66	0.41
1:YA:2593:U:H2'	1:YA:2594:C:C6	2.55	0.41
6:YG:129:GLY:O	6:YG:161:THR:HB	2.19	0.41
13:YR:55:ALA:HB2	13:YR:79:LEU:HD13	2.02	0.41
35:QF:35:ALA:HB1	35:QF:65:VAL:CG2	2.50	0.41
40:QK:118:GLY:HA2	49:QA:716:A:N3	2.35	0.41
41:QL:24:VAL:HG11	49:QA:553:A:H5''	2.02	0.41
41:QL:91:LYS:HB2	49:QA:523:A:H2	1.85	0.41
43:QN:18:VAL:HG12	49:QA:1360:A:C4	2.55	0.41
43:QN:31:ARG:NE	43:QN:31:ARG:HA	2.34	0.41
47:QR:70:ILE:O	47:QR:74:ARG:HG3	2.21	0.41
49:QA:60:A:N6	49:QA:110:C:C4	2.89	0.41
49:QA:316:G:OP2	49:QA:351:G:O2'	2.36	0.41
49:QA:665:A:N3	49:QA:732:C:H2'	2.34	0.41
49:QA:670:G:H2'	49:QA:671:G:O4'	2.20	0.41
49:QA:976:G:N1	49:QA:1362(A):C:OP2	2.53	0.41
31:XB:189:ASP:N	31:XB:205:ASP:OD2	2.53	0.41
32:XC:32:LEU:O	32:XC:36:ASP:HB3	2.20	0.41
34:XE:75:THR:OG1	34:XE:76:ILE:N	2.53	0.41
37:XH:22:GLU:HG2	37:XH:23:SER:N	2.34	0.41
38:XI:36:TYR:HE2	38:XI:70:LYS:HZ2	1.68	0.41
41:XL:54:LYS:HD3	41:XL:70:ILE:HD13	2.01	0.41
41:XL:76:ASN:HD21	41:XL:107:ALA:H	1.66	0.41
43:XN:12:ARG:HH12	49:XA:994:A:H4'	1.84	0.41
45:XP:68:ASP:HA	45:XP:71:ARG:HD2	2.02	0.41
49:XA:7:G:H5'	49:XA:298:A:H5'	2.02	0.41
49:XA:601:C:H2'	49:XA:602:A:C8	2.55	0.41
49:XA:743:U:H2'	49:XA:744:C:C6	2.55	0.41
53:XV:24:C:H2'	53:XV:25:G:C8	2.54	0.41
53:QV:24:C:H2'	53:QV:25:G:C8	2.55	0.41
1:RA:23:G:H21	18:RW:77:ASP:CG	2.24	0.41
1:RA:66:C:C2	1:RA:89:G:N2	2.88	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:144:C:H2'	1:RA:145:G:H8	1.85	0.41
1:RA:271(B):G:H1'	1:RA:271(C):U:OP2	2.20	0.41
1:RA:376:C:H2'	1:RA:377:C:H6	1.86	0.41
1:RA:712:G:H2'	1:RA:713:G:H8	1.85	0.41
1:RA:817:C:O2'	1:RA:839:U:H5''	2.21	0.41
1:RA:857:C:H2'	1:RA:858:U:C6	2.56	0.41
1:RA:1019:U:O2'	1:RA:1021:A:H2	2.03	0.41
1:RA:1364:G:C8	23:R1:2:SER:N	2.87	0.41
1:RA:1462:C:C2'	1:RA:1463:C:H5'	2.50	0.41
1:RA:1462:C:O2'	1:RA:1463:C:H5'	2.20	0.41
1:RA:1794:U:H2'	1:RA:1795:C:H6	1.85	0.41
2:RB:15:A:H1'	2:RB:109:G:C8	2.55	0.41
3:RD:44:ASN:HB2	3:RD:48:ARG:O	2.19	0.41
9:RN:96:GLU:HB2	9:RN:122:VAL:HG12	2.03	0.41
16:RU:69:CYS:HB3	16:RU:106:PHE:CZ	2.55	0.41
1:YA:29:U:H2'	1:YA:30:G:C8	2.56	0.41
1:YA:218:A:C2	1:YA:235:U:H4'	2.55	0.41
1:YA:237:C:O2	1:YA:609:A:O2'	2.39	0.41
1:YA:271:G:H2'	1:YA:272:G:C8	2.56	0.41
1:YA:445:C:H2'	1:YA:446:G:O4'	2.19	0.41
1:YA:572:A:H2'	1:YA:573:G:O4'	2.19	0.41
1:YA:923:C:H2'	1:YA:924:C:C6	2.55	0.41
1:YA:972:G:H2'	1:YA:973:A:C8	2.56	0.41
1:YA:1839:G:C2	1:YA:1840:G:C8	3.08	0.41
1:YA:1842:G:HO2'	1:YA:1843:C:H5'	1.84	0.41
1:YA:2302:G:H21	6:YG:126:ASP:HB2	1.85	0.41
1:YA:2319:G:O6	14:YS:4:LEU:HB2	2.19	0.41
1:YA:2505:G:H2'	1:YA:2576:G:C6	2.56	0.41
1:YA:2512:C:O2'	4:YE:154:LYS:HE2	2.20	0.41
1:YA:2877:G:H2'	1:YA:2878:U:C6	2.55	0.41
2:YB:29:A:H2'	2:YB:30:C:C6	2.55	0.41
3:YD:43:ARG:HD2	3:YD:44:ASN:OD1	2.20	0.41
12:YQ:25:ASP:HA	12:YQ:100:GLY:O	2.20	0.41
15:YT:107:ASP:OD2	15:YT:108:ARG:N	2.54	0.41
18:YW:29:LEU:HD22	18:YW:69:LEU:CD1	2.49	0.41
18:YW:46:PHE:O	18:YW:50:VAL:HG23	2.21	0.41
20:YY:64:GLU:H	20:YY:64:GLU:HG2	1.55	0.41
34:QE:110:LEU:HD13	34:QE:118:ILE:HG21	2.02	0.41
34:QE:121:LYS:HG3	34:QE:122:GLU:N	2.35	0.41
35:QF:96:PRO:HA	47:QR:32:ARG:HB2	2.01	0.41
36:QG:68:ASN:O	36:QG:135:VAL:HG13	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:QL:76:ASN:OD1	41:QL:107:ALA:N	2.32	0.41
49:QA:437:U:H2'	49:QA:438:G:O4'	2.20	0.41
49:QA:1040:U:H2'	49:QA:1041:A:H8	1.86	0.41
49:QA:1350:A:H2'	49:QA:1351:U:O4'	2.20	0.41
49:QA:1495:U:C2	49:QA:1496:C:C5	3.08	0.41
31:XB:74:LYS:H	31:XB:74:LYS:HG2	1.64	0.41
31:XB:222:ILE:HG13	31:XB:223:ILE:N	2.35	0.41
33:XD:134:ASP:HB2	33:XD:135:LEU:H	1.49	0.41
35:XF:11:ASN:ND2	35:XF:12:PRO:HD2	2.35	0.41
39:XJ:64:GLU:HG3	43:XN:59:ALA:HB2	2.02	0.41
41:XL:32:PHE:HZ	49:XA:33:A:N3	2.18	0.41
41:XL:113:ARG:NH2	41:XL:116:SER:OG	2.53	0.41
43:XN:19:ARG:NH2	49:XA:979:C:O2	2.53	0.41
49:XA:19:C:H2'	49:XA:20:U:H6	1.85	0.41
49:XA:584:G:H2'	49:XA:585:G:C8	2.55	0.41
49:XA:644:G:H2'	49:XA:645:C:O4'	2.20	0.41
49:XA:879:C:H2'	49:XA:880:C:C6	2.55	0.41
1:RA:463:G:C5	1:RA:465:G:OP2	2.74	0.41
1:RA:816:C:H2'	1:RA:817:C:H6	1.85	0.41
1:RA:942:G:H1'	1:RA:1189:A:C2	2.55	0.41
1:RA:1551:C:H2'	1:RA:1552:G:O4'	2.19	0.41
1:RA:1711:C:H2'	1:RA:1712:C:H6	1.85	0.41
1:RA:2001:A:H2'	1:RA:2002:G:O4'	2.20	0.41
1:RA:2006:C:H2'	1:RA:2007:C:C6	2.55	0.41
1:RA:2043:C:C2	1:RA:2044:C:C5	3.08	0.41
1:RA:2314:C:H2'	1:RA:2315:G:C8	2.54	0.41
1:RA:2460:U:C4	1:RA:2461:C:C5	3.08	0.41
1:RA:2557:G:H2'	1:RA:2558:C:C6	2.56	0.41
1:RA:2720:U:C2	1:RA:2721:A:C8	3.08	0.41
1:RA:2783:G:H2'	1:RA:2784:C:C6	2.56	0.41
2:RB:12:C:O2'	22:R0:74:ARG:HG3	2.20	0.41
3:RD:25:THR:O	3:RD:27:THR:HG22	2.20	0.41
3:RD:61:LEU:HD12	3:RD:61:LEU:HA	1.87	0.41
4:RE:117:MET:HA	4:RE:122:PHE:H	1.85	0.41
6:RG:82:LEU:HA	6:RG:86:MET:SD	2.60	0.41
7:RH:139:GLN:O	7:RH:143:GLN:HB2	2.21	0.41
8:RI:21:VAL:HG22	8:RI:22:LYS:H	1.85	0.41
11:RP:96:THR:HG22	11:RP:126:VAL:CG2	2.51	0.41
14:RS:12:PHE:HD2	14:RS:12:PHE:HA	1.68	0.41
1:YA:27:G:N2	1:YA:512:G:O2'	2.53	0.41
1:YA:373:U:C2	1:YA:374:A:C8	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:637:A:H4'	1:YA:638:G:O5'	2.20	0.41
1:YA:902:C:H2'	1:YA:903:C:H6	1.84	0.41
1:YA:1085:A:O2'	1:YA:1086:A:O5'	2.38	0.41
1:YA:1220:A:H5'	1:YA:1221:C:OP2	2.21	0.41
1:YA:1295:C:H2'	1:YA:1296:G:H8	1.85	0.41
1:YA:1710:C:H2'	1:YA:1711:C:C6	2.55	0.41
1:YA:1819:A:H4'	1:YA:1820:U:O5'	2.19	0.41
1:YA:2331:G:O2'	1:YA:2336:A:N1	2.37	0.41
1:YA:2391:G:C6	1:YA:2427:C:H1'	2.55	0.41
1:YA:2804:C:H2'	1:YA:2805:G:C8	2.56	0.41
2:YB:3:C:H2'	2:YB:4:C:C6	2.55	0.41
2:YB:40:U:H2'	2:YB:43:C:H5	1.84	0.41
3:YD:206:LEU:HD23	3:YD:206:LEU:HA	1.76	0.41
8:YI:131:LYS:HB3	8:YI:132:PRO:HA	2.01	0.41
15:YT:90:GLN:OE1	15:YT:121:ILE:HD11	2.20	0.41
19:YX:55:ASN:HB2	19:YX:80:ILE:HG23	2.01	0.41
20:YY:37:VAL:HG21	20:YY:72:VAL:HG21	2.02	0.41
31:QB:27:LYS:HB2	31:QB:194:PRO:HD2	2.03	0.41
33:QD:7:PRO:HA	49:QA:430:A:O5'	2.20	0.41
33:QD:33:MET:C	33:QD:35:ARG:N	2.74	0.41
33:QD:153:ARG:HA	33:QD:181:MET:SD	2.61	0.41
35:QF:48:LEU:HD12	35:QF:55:ASP:O	2.20	0.41
39:QJ:40:LEU:HD21	49:QA:1280:A:H5''	2.02	0.41
41:QL:70:ILE:HD12	41:QL:102:ARG:NH2	2.36	0.41
43:QN:33:VAL:HG22	43:QN:40:CYS:HA	2.02	0.41
46:QQ:27:PHE:CE2	46:QQ:30:PRO:HD3	2.45	0.41
46:QQ:98:LEU:HD22	49:QA:760:G:O2'	2.20	0.41
49:QA:1216:G:H2'	49:QA:1217:C:C6	2.55	0.41
33:XD:125:HIS:CE1	33:XD:151:LYS:HE3	2.56	0.41
40:XK:97:ALA:HA	40:XK:100:ALA:HB3	2.02	0.41
49:XA:646:U:H2'	49:XA:647:C:C6	2.55	0.41
49:XA:730:G:O2'	49:XA:766:A:O4'	2.33	0.41
50:QS:11:VAL:HG22	50:QS:12:ASP:H	1.85	0.41
52:XX:11:U:H2'	52:XX:12:A:C8	2.55	0.41
53:XV:15:G:N2	53:XV:62:U:H1'	2.35	0.41
53:QV:15:G:H2'	53:QV:15:G:N3	2.35	0.41
1:RA:195:A:O5'	1:RA:196:A:H4'	2.20	0.41
1:RA:303:U:C2	1:RA:304:G:C8	3.09	0.41
1:RA:442:G:N2	5:RF:48:THR:OG1	2.53	0.41
1:RA:585:G:H21	1:RA:1254:A:H62	1.68	0.41
1:RA:1412:A:H2'	1:RA:1413:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1506:C:H3'	1:RA:1507:A:H5''	2.02	0.41
1:RA:1510:A:N3	1:RA:1510:A:H2'	2.35	0.41
1:RA:1527:G:H5''	1:RA:1528:A:OP1	2.21	0.41
1:RA:2734:A:H5'	1:RA:2735:G:OP2	2.20	0.41
1:RA:2854:G:H2'	1:RA:2855:C:C6	2.55	0.41
1:RA:2867:G:HO2'	1:RA:2868:A:H8	1.68	0.41
2:RB:45:A:C4	2:RB:46:A:C8	3.08	0.41
8:RI:120:ILE:HD11	8:RI:126:TYR:CZ	2.56	0.41
10:RO:7:TYR:CE1	10:RO:20:MET:HB2	2.56	0.41
14:RS:69:VAL:HG13	14:RS:101:LEU:HD22	2.02	0.41
15:RT:26:ASP:HB2	15:RT:90:GLN:O	2.20	0.41
27:R6:28:ARG:HB3	27:R6:30:THR:H	1.84	0.41
1:YA:27:G:N2	1:YA:512:G:HO2'	2.19	0.41
1:YA:78:A:H2'	1:YA:79:G:H8	1.85	0.41
1:YA:358:U:H2'	1:YA:359:A:C8	2.54	0.41
1:YA:580:C:H2'	1:YA:581:C:H6	1.83	0.41
1:YA:656:G:H2'	1:YA:657:U:O4'	2.20	0.41
1:YA:1035:U:H2'	1:YA:1036:G:C8	2.55	0.41
1:YA:1039:G:C6	1:YA:1117:G:C6	3.08	0.41
1:YA:1156:A:O4'	16:YU:51:LYS:NZ	2.54	0.41
1:YA:1384:A:N3	1:YA:1405:U:H1'	2.35	0.41
1:YA:1885:A:H3'	1:YA:1886:C:H6	1.84	0.41
1:YA:2128:C:H2'	1:YA:2129:C:C6	2.55	0.41
1:YA:2692:C:H2'	1:YA:2693:A:C8	2.56	0.41
1:YA:2847:U:OP1	15:YT:98:LYS:HD3	2.20	0.41
4:YE:49:LEU:HD12	4:YE:49:LEU:HA	1.84	0.41
8:YI:82:ARG:HH22	49:QA:56:U:H4'	1.85	0.41
8:YI:130:TYR:N	8:YI:136:VAL:O	2.52	0.41
9:YN:35:ARG:HB2	9:YN:42:TRP:CH2	2.55	0.41
11:YP:135:LEU:HD23	11:YP:135:LEU:HA	1.83	0.41
15:YT:105:LEU:O	15:YT:107:ASP:N	2.53	0.41
31:QB:167:PRO:HD3	31:QB:188:ALA:HA	2.03	0.41
33:QD:25:ARG:CZ	49:QA:429:U:H2'	2.50	0.41
33:QD:52:SER:O	33:QD:55:ALA:N	2.52	0.41
35:QF:8:ILE:HG23	35:QF:88:VAL:HG22	2.03	0.41
45:QP:38:TYR:CZ	45:QP:50:LYS:HG3	2.56	0.41
45:QP:82:GLN:HE21	45:QP:82:GLN:HB3	1.66	0.41
49:QA:321:A:H61	49:QA:332:G:H1	1.68	0.41
49:QA:659:U:C2	49:QA:660:G:C8	3.09	0.41
49:QA:1278:U:H5''	49:QA:1279:A:O4'	2.20	0.41
49:QA:1314:C:C2	49:QA:1315:U:C5	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:QA:1314:C:H5''	50:QS:6:LYS:NZ	2.35	0.41
31:XB:19:HIS:HB2	31:XB:204:ASN:ND2	2.35	0.41
31:XB:89:GLY:O	31:XB:154:LEU:HD11	2.20	0.41
31:XB:100:GLY:O	31:XB:104:ASN:HB2	2.20	0.41
49:XA:340:U:H2'	49:XA:341:C:C6	2.55	0.41
49:XA:1180:A:H5''	49:XA:1181:G:OP1	2.19	0.41
50:XS:33:THR:HG23	50:XS:51:VAL:HG13	2.03	0.41
50:QS:76:PRO:O	50:QS:78:ARG:N	2.51	0.41
53:QV:14:A:C2	53:QV:15:G:H1'	2.56	0.41
53:QV:51:G:H1	53:QV:67:U:H3	1.67	0.41
1:RA:384:U:H2'	1:RA:385:C:C6	2.56	0.41
1:RA:1189:A:C6	1:RA:1190:G:H1'	2.56	0.41
1:RA:1351:C:H2'	1:RA:1352:U:C6	2.56	0.41
1:RA:1360:A:H2'	1:RA:1361:G:O4'	2.20	0.41
1:RA:1878:G:H2'	1:RA:1879:C:C6	2.55	0.41
1:RA:2075:U:OP2	1:RA:2238:G:O2'	2.16	0.41
1:RA:2620:C:C4	1:RA:2621:A:N7	2.88	0.41
2:RB:28:C:H2'	2:RB:29:A:H8	1.84	0.41
4:RE:63:LEU:HD12	4:RE:64:LYS:N	2.35	0.41
6:RG:6:ALA:HB3	6:RG:104:GLU:OE2	2.21	0.41
7:RH:10:PRO:HD2	7:RH:50:VAL:HG13	2.03	0.41
11:RP:20:GLY:HA2	11:RP:27:HIS:O	2.20	0.41
12:RQ:2:LEU:H	12:RQ:2:LEU:HD23	1.86	0.41
13:RR:2:ARG:HG2	13:RR:5:LYS:HZ2	1.85	0.41
1:YA:103:A:OP2	1:YA:103:A:H8	2.03	0.41
1:YA:127:A:H5''	1:YA:128:C:O4'	2.20	0.41
1:YA:468:G:H5''	5:YF:60:SER:HB2	2.01	0.41
1:YA:570:G:H2'	1:YA:2030:A:C5	2.55	0.41
1:YA:677:A:C6	1:YA:802:A:C6	3.09	0.41
1:YA:778:G:H5'	3:YD:48:ARG:NH1	2.35	0.41
1:YA:852:G:H2'	1:YA:853:G:C8	2.55	0.41
1:YA:1034:G:C5	1:YA:1122:G:C2	3.08	0.41
1:YA:1638:C:H2'	1:YA:1639:U:O4'	2.20	0.41
1:YA:1690:A:H2'	1:YA:1691:C:O4'	2.20	0.41
1:YA:1906:G:H8	1:YA:1929:G:O2'	2.03	0.41
1:YA:2229:C:H2'	1:YA:2230:G:C8	2.52	0.41
1:YA:2636:U:H2'	1:YA:2637:U:C6	2.55	0.41
1:YA:2677:G:H2'	1:YA:2678:C:H6	1.84	0.41
4:YE:117:MET:HB2	4:YE:122:PHE:O	2.20	0.41
5:YF:127:GLU:O	5:YF:129:PHE:N	2.52	0.41
14:YS:39:ILE:HD12	14:YS:85:VAL:HG11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:Y0:36:ILE:HD11	22:Y0:39:ARG:HG2	2.02	0.41
23:Y1:92:LYS:HD3	23:Y1:92:LYS:HA	1.93	0.41
34:QE:102:ALA:HB2	34:QE:120:THR:CG2	2.49	0.41
41:QL:58:VAL:HG21	41:QL:66:VAL:HG22	2.02	0.41
45:QP:11:SER:HB3	49:QA:43:C:H4'	2.03	0.41
45:QP:59:TRP:CE3	45:QP:62:VAL:HG21	2.56	0.41
46:QQ:89:LEU:HD22	46:QQ:89:LEU:HA	1.87	0.41
48:QT:43:LEU:HB3	48:QT:52:ALA:HB2	2.03	0.41
49:QA:436:C:H2'	49:QA:437:U:C6	2.56	0.41
49:QA:488:C:H2'	49:QA:489:C:C6	2.55	0.41
49:QA:680:C:H2'	49:QA:681:C:H6	1.86	0.41
49:QA:723:U:H5''	49:QA:724:G:OP2	2.20	0.41
49:QA:908:A:H2'	49:QA:909:A:H8	1.85	0.41
49:QA:1357:A:H61	49:QA:1363:A:H2	1.67	0.41
33:XD:23:GLY:HA3	33:XD:113:SER:HB3	2.03	0.41
34:XE:57:LYS:HB3	34:XE:57:LYS:HE2	1.90	0.41
34:XE:79:GLU:OE2	37:XH:105:ARG:HB2	2.20	0.41
35:XF:97:PHE:N	47:XR:30:ASP:OD1	2.53	0.41
36:XG:77:SER:O	36:XG:156:TRP:HB3	2.21	0.41
37:XH:4:ASP:OD2	49:XA:877:C:H4'	2.21	0.41
38:XI:50:LEU:HD23	38:XI:50:LEU:HA	1.85	0.41
40:XK:33:THR:HG21	49:XA:707:C:O2'	2.21	0.41
41:XL:65:GLU:O	41:XL:66:VAL:HG22	2.21	0.41
46:XQ:81:ARG:O	46:XQ:82:MET:HB2	2.20	0.41
47:XR:58:LEU:HD22	47:XR:58:LEU:H	1.86	0.41
48:XT:43:LEU:CD2	48:XT:51:GLU:HB3	2.51	0.41
49:XA:37:U:HO2'	49:XA:500:G:HO2'	1.60	0.41
49:XA:181:G:N2	49:XA:182:U:O4	2.52	0.41
49:XA:257:G:H2'	49:XA:258:G:O4'	2.20	0.41
49:XA:601:C:H2'	49:XA:602:A:H8	1.85	0.41
49:XA:611:A:C6	49:XA:612:C:C5	3.08	0.41
49:XA:832:C:H2'	49:XA:833:U:O4'	2.20	0.41
49:XA:1531:A:N7	49:XA:1532:U:C5	2.89	0.41
50:QS:20:LEU:HD23	50:QS:20:LEU:HA	1.87	0.41
1:RA:717:G:H2'	1:RA:718:A:O4'	2.20	0.41
1:RA:742:G:O2'	1:RA:1676:A:H4'	2.20	0.41
1:RA:792:G:O2'	1:RA:2440:C:N3	2.50	0.41
1:RA:928:G:H2'	1:RA:929:G:O4'	2.21	0.41
1:RA:1091:G:H2'	1:RA:1092:C:C6	2.56	0.41
1:RA:1323:U:O4	1:RA:1324:G:O6	2.39	0.41
1:RA:1354:A:H3'	1:RA:1355:G:C8	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:1556:C:H2'	1:RA:1557:C:C6	2.56	0.41
1:RA:1819:A:H4'	1:RA:1820:U:O5'	2.20	0.41
1:RA:2148:G:H2'	1:RA:2149:G:C8	2.56	0.41
1:RA:2564:A:C2	1:RA:2647:U:H4'	2.55	0.41
1:RA:2751:G:N7	7:RH:2:SER:HB3	2.36	0.41
2:RB:87:G:N2	2:RB:89:G:H3'	2.34	0.41
5:RF:148:LEU:HD11	5:RF:193:VAL:HG21	2.01	0.41
6:RG:59:GLU:O	6:RG:62:LEU:HG	2.21	0.41
8:RI:51:ILE:O	8:RI:55:ALA:N	2.54	0.41
8:RI:57:ARG:HD3	8:RI:61:ARG:HH11	1.86	0.41
10:RO:68:GLU:HA	10:RO:78:ARG:HB3	2.02	0.41
17:RV:44:LYS:O	17:RV:46:VAL:HG12	2.20	0.41
1:YA:92:G:H2'	1:YA:93:C:C6	2.56	0.41
1:YA:353:G:H2'	1:YA:354:G:H8	1.86	0.41
1:YA:444:C:H2'	1:YA:445:C:C6	2.56	0.41
1:YA:508:G:HO2'	1:YA:509:C:P	2.43	0.41
1:YA:971:C:H2'	1:YA:972:G:O4'	2.20	0.41
1:YA:2163:C:N4	1:YA:2164:C:H41	2.18	0.41
1:YA:2314:C:H2'	1:YA:2315:G:C8	2.55	0.41
5:YF:198:ALA:HA	5:YF:201:VAL:HG12	2.02	0.41
7:YH:89:ILE:HG22	7:YH:162:ILE:HG23	2.01	0.41
19:YX:27:THR:HA	19:YX:80:ILE:HA	2.03	0.41
24:Y2:23:LYS:HE2	24:Y2:23:LYS:HB3	1.91	0.41
31:QB:97:TRP:CZ2	31:QB:176:GLU:HG3	2.55	0.41
34:QE:140:ARG:O	34:QE:143:ARG:NH2	2.53	0.41
37:QH:39:LEU:HB3	37:QH:45:ILE:HG12	2.03	0.41
38:QI:116:LYS:HB3	38:QI:121:ARG:O	2.21	0.41
38:QI:128:ARG:NH1	53:QV:32:G:H4'	2.36	0.41
40:QK:23:ALA:HA	40:QK:28:THR:HG23	2.01	0.41
41:QL:65:GLU:HG3	41:QL:66:VAL:H	1.86	0.41
49:QA:269:C:H2'	49:QA:270:A:C8	2.55	0.41
49:QA:549:C:C4	49:QA:550:G:N7	2.89	0.41
49:QA:1415:G:C2	49:QA:1416:G:C8	3.09	0.41
49:QA:1534:A:H2'	49:QA:1535:C:C5	2.56	0.41
37:XH:37:ARG:HB3	37:XH:37:ARG:HH11	1.85	0.41
40:XK:29:ILE:HA	40:XK:43:SER:O	2.20	0.41
41:XL:5:PRO:O	41:XL:9:GLN:HB2	2.20	0.41
41:XL:73:GLU:H	49:XA:521:G:H5'	1.85	0.41
46:XQ:8:GLY:HA3	46:XQ:59:ILE:HD13	2.02	0.41
46:XQ:46:ASP:OD2	46:XQ:50:LYS:HG2	2.21	0.41
49:XA:480:U:H5''	49:XA:481:G:OP1	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:771:G:O4'	49:XA:771:G:O5'	2.37	0.41
49:XA:1288:A:H2'	49:XA:1289:A:H8	1.86	0.41
49:XA:1304:G:N2	49:XA:1334:G:C6	2.88	0.41
1:RA:194:G:H2'	1:RA:195:A:O4'	2.20	0.41
1:RA:585:G:C5	1:RA:1251:C:C5	3.09	0.41
1:RA:586:A:N1	1:RA:809:G:O2'	2.40	0.41
1:RA:968:G:OP1	25:R3:17:LYS:NZ	2.51	0.41
1:RA:1178:C:O2'	1:RA:1179:C:P	2.79	0.41
1:RA:1203:G:H3'	1:RA:1204:A:H5''	2.03	0.41
1:RA:2292:C:OP1	1:RA:2378:A:N6	2.49	0.41
1:RA:2460:U:N3	1:RA:2461:C:C5	2.88	0.41
1:RA:2558:C:H2'	1:RA:2559:C:O4'	2.19	0.41
5:RF:127:GLU:C	5:RF:129:PHE:H	2.24	0.41
6:RG:37:VAL:O	6:RG:94:LEU:HG	2.21	0.41
7:RH:8:PRO:HG2	7:RH:69:ARG:NE	2.33	0.41
8:RI:57:ARG:O	8:RI:61:ARG:HG2	2.20	0.41
9:RN:110:GLY:O	9:RN:114:ARG:HG3	2.20	0.41
11:RP:139:LYS:HD3	11:RP:144:GLU:OE2	2.21	0.41
18:RW:73:ALA:HB3	18:RW:106:ILE:HG23	2.02	0.41
1:YA:66:C:C2	1:YA:89:G:C2	3.09	0.41
1:YA:222:A:N6	1:YA:232:G:H1'	2.36	0.41
1:YA:563:G:H2'	1:YA:564:C:H6	1.86	0.41
1:YA:856:C:HO2'	1:YA:857:C:P	2.42	0.41
1:YA:2114:A:N6	1:YA:2119:A:H62	2.19	0.41
1:YA:2406:U:N3	11:YP:72:PRO:HB2	2.35	0.41
1:YA:2455:G:C4	1:YA:2456:C:C5	3.08	0.41
1:YA:2580:U:H3'	1:YA:2581:G:C2	2.55	0.41
1:YA:2703:C:H2'	1:YA:2704:C:H6	1.86	0.41
3:YD:123:ALA:HA	3:YD:124:PRO:HD2	1.98	0.41
5:YF:53:THR:O	5:YF:57:VAL:HG23	2.20	0.41
6:YG:125:PHE:HB3	6:YG:166:ASP:HB2	2.03	0.41
6:YG:146:TYR:O	6:YG:149:VAL:HG22	2.21	0.41
7:YH:98:LEU:HD22	7:YH:125:VAL:HB	2.03	0.41
14:YS:5:THR:OG1	14:YS:8:GLU:HG3	2.21	0.41
17:YV:83:ARG:HA	17:YV:83:ARG:HD3	1.87	0.41
18:YW:14:PRO:C	18:YW:18:ARG:HD2	2.41	0.41
21:YZ:89:PHE:HE1	21:YZ:96:VAL:CG2	2.31	0.41
29:Y8:23:VAL:HG11	29:Y8:46:ARG:HD3	2.03	0.41
31:QB:28:PHE:O	31:QB:32:ILE:HG12	2.21	0.41
35:QF:69:GLU:C	35:QF:72:VAL:HG12	2.41	0.41
38:QI:102:LEU:HD23	38:QI:102:LEU:HA	1.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:QJ:32:ALA:HB3	39:QJ:75:ILE:CD1	2.51	0.41
49:QA:254:G:H2'	49:QA:255:G:C8	2.55	0.41
49:QA:629:G:H3'	49:QA:630:G:H8	1.85	0.41
49:QA:976:G:H22	49:QA:1362(A):C:P	2.42	0.41
49:QA:1070:U:H2'	49:QA:1071:C:C6	2.55	0.41
49:QA:1387:G:H2'	49:QA:1388:C:H6	1.85	0.41
34:XE:149:GLU:O	34:XE:153:LYS:N	2.53	0.41
41:XL:32:PHE:O	41:XL:84:LEU:HG	2.21	0.41
42:XM:54:VAL:O	42:XM:57:ARG:HG2	2.21	0.41
46:XQ:34:LYS:NZ	49:XA:586:C:H5'	2.36	0.41
47:XR:59:SER:N	47:XR:62:GLU:OE1	2.52	0.41
49:XA:15:G:C4	49:XA:16:A:C8	3.08	0.41
49:XA:68(B):G:N2	49:XA:68(Y):C:H1'	2.35	0.41
49:XA:298:A:H2'	49:XA:299:G:C8	2.55	0.41
49:XA:857:C:H2'	49:XA:858:G:O4'	2.20	0.41
49:XA:953:G:H2'	49:XA:954:G:O4'	2.21	0.41
49:XA:1231:G:H2'	49:XA:1232:U:C6	2.56	0.41
49:XA:1423:G:H2'	49:XA:1424:C:C6	2.56	0.41
51:R4:9:LEU:HD22	51:R4:27:THR:HB	2.03	0.41
51:Y4:34:GLU:HG3	51:Y4:35:VAL:H	1.85	0.41
1:RA:407:G:H2'	1:RA:408:G:H8	1.84	0.41
1:RA:444:C:H4'	5:RF:49:ALA:HB2	2.02	0.41
1:RA:484:C:H2'	1:RA:485:C:H6	1.86	0.41
1:RA:534:U:H2'	1:RA:535:C:C6	2.56	0.41
1:RA:554:U:H2'	1:RA:556:G:N7	2.36	0.41
1:RA:580:C:H2'	1:RA:581:C:H6	1.85	0.41
1:RA:807:U:H2'	1:RA:808:G:H8	1.86	0.41
1:RA:967:C:H2'	1:RA:968:G:C8	2.56	0.41
1:RA:1027:A:H2	1:RA:2487:G:HO2'	1.69	0.41
1:RA:1317:A:H2'	1:RA:1318:C:H6	1.86	0.41
1:RA:1424:G:H2'	1:RA:1425:G:O4'	2.21	0.41
1:RA:1844:C:H2'	1:RA:1845:G:C8	2.56	0.41
1:RA:2148:G:H2'	1:RA:2149:G:H8	1.85	0.41
1:RA:2245:U:O2'	1:RA:2435:A:H5'	2.21	0.41
1:RA:2317:C:H2'	1:RA:2318:G:O4'	2.21	0.41
1:RA:2512:C:O2'	4:RE:154:LYS:HE2	2.20	0.41
1:RA:2588:G:H2'	1:RA:2589:A:C8	2.56	0.41
1:RA:2737:G:H2'	1:RA:2738:A:H8	1.86	0.41
2:RB:79:C:H2'	2:RB:80:U:O4'	2.20	0.41
5:RF:75:HIS:HD2	5:RF:82:ILE:HD11	1.85	0.41
6:RG:105:LYS:HE3	6:RG:142:PRO:HG3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:RH:84:SER:HB2	7:RH:132:ARG:NH1	2.36	0.41
9:RN:134:ARG:O	9:RN:136:GLU:N	2.54	0.41
11:RP:63:PRO:HA	29:R8:13:ARG:HB3	2.02	0.41
12:RQ:108:GLY:HA3	21:RZ:116:VAL:HG11	2.03	0.41
16:RU:90:VAL:HG12	16:RU:91:ASP:H	1.86	0.41
23:R1:78:LYS:HE2	23:R1:78:LYS:HB3	1.69	0.41
25:R3:31:LEU:HD23	25:R3:31:LEU:HA	1.90	0.41
1:YA:141(A):C:H2'	1:YA:142:G:O4'	2.20	0.41
1:YA:488:G:C6	1:YA:491:G:OP1	2.74	0.41
1:YA:508:G:O2'	1:YA:509:C:P	2.79	0.41
1:YA:673:C:OP1	5:YF:54:ARG:NH1	2.45	0.41
1:YA:684:G:H2'	1:YA:774:A:H61	1.86	0.41
1:YA:687:C:H2'	1:YA:688:U:O4'	2.21	0.41
1:YA:740:U:H2'	1:YA:741:G:C8	2.55	0.41
1:YA:801:G:N3	5:YF:54:ARG:HD3	2.36	0.41
1:YA:971:C:O2'	1:YA:983:A:N3	2.51	0.41
1:YA:1007:C:H5''	9:YN:35:ARG:HH11	1.86	0.41
1:YA:1054:A:C6	1:YA:1106:G:C6	3.08	0.41
1:YA:1188:U:H4'	17:YV:79:VAL:HG22	2.03	0.41
1:YA:1289:C:H2'	1:YA:1290:C:H6	1.86	0.41
1:YA:1462:C:H2'	1:YA:1463:C:H6	1.85	0.41
1:YA:1501:C:H2'	1:YA:1502:C:C6	2.55	0.41
1:YA:1528:A:H2'	1:YA:1529:A:O4'	2.21	0.41
1:YA:1656:C:C2	1:YA:1657:C:C5	3.08	0.41
1:YA:1666:G:HO2'	10:YO:6:THR:HG1	1.60	0.41
1:YA:1678:G:H2'	1:YA:1679:U:C6	2.54	0.41
1:YA:1964:G:C6	1:YA:1967:C:N4	2.89	0.41
1:YA:2140:C:H2'	1:YA:2141:G:H8	1.85	0.41
1:YA:2361:A:O5'	29:Y8:27:THR:OG1	2.39	0.41
1:YA:2444:G:OP2	5:YF:68:LYS:HE3	2.19	0.41
1:YA:2561:A:H2'	1:YA:2562:U:O4'	2.20	0.41
1:YA:2841:C:C2	1:YA:2842:G:C8	3.09	0.41
2:YB:15:A:H5'	2:YB:16:G:H8	1.86	0.41
3:YD:94:LEU:HD23	3:YD:104:TYR:CD1	2.56	0.41
5:YF:140:LEU:HD12	5:YF:140:LEU:HA	1.91	0.41
6:YG:86:MET:HA	6:YG:87:PRO:HD2	1.98	0.41
11:YP:84:ASN:CG	11:YP:116:GLY:HA3	2.41	0.41
11:YP:87:ASP:HB3	11:YP:105:LEU:HD21	2.03	0.41
11:YP:88:LEU:HB2	11:YP:91:PHE:HE2	1.85	0.41
16:YU:102:GLU:OE1	17:YV:13:ARG:NH2	2.54	0.41
20:YY:95:LYS:HB2	20:YY:99:CYS:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:Y5:41:PRO:HA	26:Y5:42:PRO:HD3	1.93	0.41
31:QB:70:PHE:HB3	31:QB:81:VAL:HB	2.03	0.41
31:QB:75:LYS:O	31:QB:78:GLN:HB3	2.20	0.41
32:QC:159:GLY:O	32:QC:161:GLU:N	2.54	0.41
34:QE:15:ARG:HG3	34:QE:28:PHE:CE2	2.54	0.41
34:QE:106:PRO:O	34:QE:110:LEU:HG	2.21	0.41
36:QG:30:ILE:O	36:QG:32:ARG:HG2	2.20	0.41
36:QG:34:GLY:O	36:QG:36:LYS:N	2.53	0.41
37:QH:46:LYS:HB3	37:QH:62:TYR:CB	2.51	0.41
38:QI:16:ARG:HB3	38:QI:64:THR:HB	2.02	0.41
38:QI:121:ARG:HA	38:QI:121:ARG:HD3	1.73	0.41
39:QJ:6:ILE:HB	39:QJ:98:ILE:HG12	2.02	0.41
39:QJ:70:ARG:HH12	49:QA:1151:A:HO2'	1.66	0.41
41:QL:31:PRO:HB3	49:QA:553:A:O4'	2.21	0.41
41:QL:53:ARG:HD2	41:QL:53:ARG:N	2.36	0.41
41:QL:110:VAL:HG12	41:QL:111:LYS:H	1.85	0.41
41:QL:111:LYS:HB3	41:QL:112:ASP:H	1.54	0.41
44:QO:36:ILE:HG21	44:QO:60:VAL:HG22	2.03	0.41
44:QO:66:LEU:HD12	49:QA:754:C:O2'	2.20	0.41
45:QP:42:ARG:O	49:QA:449:C:O2'	2.39	0.41
47:QR:75:ILE:HD11	49:QA:734:G:N2	2.36	0.41
48:QT:70:SER:HB3	49:QA:324:G:O5'	2.20	0.41
49:QA:250:A:H4'	49:QA:251:G:O5'	2.21	0.41
49:QA:321:A:H4'	49:QA:1436:U:O4'	2.21	0.41
49:QA:430:A:C2	49:QA:431:A:H1'	2.56	0.41
49:QA:698:G:H2'	49:QA:699:C:C6	2.55	0.41
49:QA:831:U:H2'	49:QA:832:C:C6	2.56	0.41
49:QA:974:A:H8	49:QA:974:A:OP1	2.04	0.41
49:QA:982:U:H5'	49:QA:983:A:C8	2.56	0.41
49:QA:1233:G:H2'	49:QA:1234:C:C6	2.56	0.41
49:QA:1308:U:H2'	49:QA:1309:G:C8	2.55	0.41
49:QA:1321:C:H3'	49:QA:1322:C:H5''	2.02	0.41
49:QA:1327:C:H2'	49:QA:1328:C:H6	1.85	0.41
31:XB:91:PRO:HB3	31:XB:152:PHE:CA	2.44	0.41
33:XD:76:ARG:NH1	33:XD:76:ARG:HB2	2.35	0.41
33:XD:199:ASN:OD1	33:XD:202:LEU:HG	2.20	0.41
34:XE:47:LYS:HD2	34:XE:47:LYS:O	2.21	0.41
34:XE:101:ILE:O	34:XE:120:THR:HG23	2.21	0.41
35:XF:89:MET:HB2	47:XR:76:LEU:HD21	2.03	0.41
37:XH:91:ARG:NH2	46:XQ:32:TYR:HA	2.34	0.41
42:XM:104:ARG:NH2	49:XA:954:G:O6	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:XP:5:ARG:NH2	45:XP:26:ARG:O	2.53	0.41
45:XP:38:TYR:CZ	49:XA:626:U:H4'	2.56	0.41
49:XA:23:C:H2'	49:XA:24:U:H6	1.84	0.41
49:XA:27:G:H2'	49:XA:28:G:H8	1.86	0.41
49:XA:159:G:O2'	49:XA:161:A:N7	2.38	0.41
49:XA:246:A:N1	49:XA:278:G:O2'	2.47	0.41
49:XA:307:C:H2'	49:XA:308:C:H5'	2.03	0.41
49:XA:406:G:C2	49:XA:407:G:N7	2.88	0.41
49:XA:551:U:H2'	49:XA:552:U:C6	2.56	0.41
49:XA:557:G:C6	49:XA:558:G:C6	3.09	0.41
49:XA:736:C:H2'	49:XA:737:A:H8	1.85	0.41
49:XA:851:G:H2'	49:XA:852:G:H8	1.86	0.41
49:XA:934:C:N4	49:XA:1345:U:C4	2.89	0.41
49:XA:1027:C:H2'	49:XA:1028:C:C6	2.55	0.41
49:XA:1125:U:O5'	49:XA:1125:U:H6	2.04	0.41
49:XA:1281:U:H5'	49:XA:1282:C:OP2	2.21	0.41
49:XA:1440(J):C:O2'	49:XA:1440(K):G:N2	2.54	0.41
49:XA:1511:G:H2'	49:XA:1512:U:O4'	2.20	0.41
49:XA:1512:U:C2	49:XA:1513:A:N7	2.89	0.41
53:XV:38:1MG:C8	53:XV:38:1MG:H5'	2.56	0.41
1:RA:195:A:OP1	11:RP:46:LYS:HD3	2.21	0.41
1:RA:318:C:H2'	1:RA:319:C:H6	1.86	0.41
1:RA:320:A:H4'	1:RA:322:A:C8	2.56	0.41
1:RA:443:A:N7	5:RF:45:ARG:HD2	2.36	0.41
1:RA:640:C:H2'	1:RA:641:C:H6	1.83	0.41
1:RA:733:G:H3'	1:RA:761:A:H61	1.86	0.41
1:RA:826:U:H2'	1:RA:828:U:O4'	2.21	0.41
1:RA:947:G:N3	1:RA:984:A:H2	2.19	0.41
1:RA:960:A:H5''	1:RA:961:C:OP1	2.21	0.41
1:RA:1027:A:C2	1:RA:2488:A:H5'	2.55	0.41
1:RA:1287:A:N7	13:RR:107:ASP:HB2	2.36	0.41
1:RA:1448:G:H2'	1:RA:1449:A:C8	2.56	0.41
1:RA:1817:G:OP1	3:RD:88:ARG:NH2	2.38	0.41
1:RA:1908:C:H2'	1:RA:1909:C:C6	2.56	0.41
1:RA:2715:C:H2'	1:RA:2716:U:O4'	2.21	0.41
1:RA:2747:G:H5''	7:RH:70:THR:CG2	2.51	0.41
4:RE:17:ASP:O	4:RE:19:ARG:N	2.46	0.41
4:RE:35:GLN:HE21	4:RE:37:ARG:CZ	2.34	0.41
6:RG:67:LYS:HZ2	51:R4:5:ILE:HD12	1.86	0.41
7:RH:124:GLU:HB3	7:RH:132:ARG:CG	2.51	0.41
11:RP:21:ARG:HA	11:RP:21:ARG:HE	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:RR:54:LEU:HD12	13:RR:54:LEU:HA	1.92	0.41
18:RW:25:ARG:NH2	18:RW:74:ALA:O	2.44	0.41
21:RZ:141:VAL:HA	21:RZ:144:LEU:HD23	2.02	0.41
1:YA:210:C:H4'	1:YA:1367:A:H1'	2.02	0.41
1:YA:347:A:H2'	1:YA:348:G:H8	1.85	0.41
1:YA:1048:A:OP2	1:YA:1110:G:N2	2.54	0.41
1:YA:2359:C:H2'	1:YA:2360:A:C8	2.56	0.41
1:YA:2564:A:H2'	1:YA:2565:A:C8	2.56	0.41
1:YA:2619:C:H4'	4:YE:151:TYR:O	2.21	0.41
1:YA:2823:A:OP1	4:YE:113:PHE:HB2	2.19	0.41
7:YH:6:ARG:NH2	7:YH:54:ARG:HH22	2.19	0.41
7:YH:98:LEU:HA	7:YH:103:LEU:HA	2.04	0.41
8:YI:112:LYS:H	8:YI:112:LYS:HG2	1.51	0.41
9:YN:43:THR:HB	9:YN:46:VAL:HG12	2.02	0.41
15:YT:51:ARG:CG	15:YT:98:LYS:HG3	2.51	0.41
31:QB:152:PHE:HE1	31:QB:155:LEU:HB3	1.85	0.41
33:QD:14:ARG:NH2	49:QA:542:G:O3'	2.53	0.41
33:QD:104:VAL:HG11	33:QD:185:PHE:HE1	1.86	0.41
36:QG:107:ALA:O	36:QG:111:ARG:HG3	2.21	0.41
41:QL:103:GLY:HA2	41:QL:108:ALA:HA	2.03	0.41
44:QO:51:HIS:ND1	44:QO:51:HIS:N	2.68	0.41
49:QA:113:G:O2'	49:QA:354:G:H5'	2.20	0.41
49:QA:255:G:H2'	49:QA:256:U:H6	1.86	0.41
49:QA:402:G:H2'	49:QA:403:C:O4'	2.21	0.41
49:QA:435:C:H2'	49:QA:436:C:C6	2.56	0.41
49:QA:474:G:H2'	49:QA:475:G:C8	2.56	0.41
49:QA:606:G:O5'	49:QA:607:A:H5'	2.20	0.41
49:QA:768:A:OP1	49:QA:804:U:H4'	2.21	0.41
49:QA:851:G:H2'	49:QA:852:G:C8	2.56	0.41
49:QA:881:G:H2'	49:QA:882:C:O4'	2.21	0.41
49:QA:978:A:C4	49:QA:1319:A:C2	3.09	0.41
49:QA:1339:A:H2	53:QV:32:G:N9	2.15	0.41
33:XD:9:CYS:CB	33:XD:12:CYS:SG	3.07	0.41
36:XG:31:MET:HA	36:XG:39:ALA:HB2	2.03	0.41
40:XK:57:THR:HG23	40:XK:60:ALA:HB2	2.01	0.41
48:XT:61:SER:HA	49:XA:193:C:O2'	2.21	0.41
49:XA:332:G:H2'	49:XA:333:G:C8	2.56	0.41
49:XA:514:C:H2'	49:XA:515:G:C8	2.56	0.41
49:XA:563:A:H2'	49:XA:567:G:C8	2.56	0.41
49:XA:1038:C:H2'	49:XA:1039:C:H6	1.86	0.41
49:XA:1516:G:H2'	49:XA:1518:A:OP2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:27:G:O2'	1:RA:28:A:O5'	2.37	0.40
1:RA:27:G:H2'	1:RA:512:G:N2	2.36	0.40
1:RA:270(U):C:H2'	1:RA:270(V):G:H8	1.86	0.40
1:RA:526:A:OP1	1:RA:527:C:OP1	2.39	0.40
1:RA:579:G:H5''	1:RA:2018:G:H5''	2.03	0.40
1:RA:1273:U:O2'	1:RA:1274:A:H5''	2.21	0.40
1:RA:1357:U:H2'	1:RA:1358:G:O4'	2.21	0.40
1:RA:1399:C:H2'	1:RA:1400:G:H8	1.85	0.40
1:RA:1575:C:H2'	1:RA:1576:U:C6	2.56	0.40
1:RA:1878:G:H2'	1:RA:1879:C:H6	1.87	0.40
1:RA:2063:C:C4	1:RA:2064:C:C5	3.09	0.40
1:RA:2588:G:C6	1:RA:2589:A:C6	3.10	0.40
1:RA:2636:U:H2'	1:RA:2637:U:H6	1.86	0.40
3:RD:12:SER:O	3:RD:16:MET:HB2	2.20	0.40
8:RI:112:LYS:H	8:RI:112:LYS:HG2	1.59	0.40
10:RO:47:ILE:HG13	10:RO:48:PRO:HD2	2.03	0.40
11:RP:62:LEU:CD2	29:R8:25:MET:HB2	2.51	0.40
12:RQ:89:ASN:O	12:RQ:91:GLU:N	2.54	0.40
20:RY:95:LYS:CB	20:RY:100:ALA:HA	2.50	0.40
27:R6:45:LYS:HD3	27:R6:45:LYS:HA	1.77	0.40
1:YA:301:G:C6	1:YA:317:G:C6	3.08	0.40
1:YA:404:C:H1'	1:YA:405:U:OP2	2.21	0.40
1:YA:542:C:N3	1:YA:552:G:N1	2.69	0.40
1:YA:671:C:H2'	1:YA:672:C:C6	2.56	0.40
1:YA:1056:G:O2'	1:YA:1086:A:H1'	2.22	0.40
1:YA:1653:G:H4'	1:YA:1654:A:O5'	2.20	0.40
1:YA:2311:A:C8	6:YG:88:ILE:HD11	2.56	0.40
1:YA:2416:C:H5''	11:YP:64:LYS:HE3	2.02	0.40
1:YA:2445:G:OP1	5:YF:74:ARG:NH2	2.52	0.40
1:YA:2499:C:H2'	1:YA:2500:U:O4'	2.21	0.40
1:YA:2667:C:O2	7:YH:110:SER:OG	2.35	0.40
1:YA:2697:G:H2'	1:YA:2698:U:O4'	2.21	0.40
1:YA:2712:U:OP1	1:YA:2714:G:H4'	2.21	0.40
1:YA:2777:G:OP2	1:YA:2781:A:O2'	2.25	0.40
2:YB:3:C:H2'	2:YB:4:C:H6	1.85	0.40
2:YB:52:A:H62	14:YS:33:LYS:HG3	1.86	0.40
2:YB:60:C:H2'	2:YB:61:G:C8	2.55	0.40
6:YG:60:LEU:O	6:YG:64:THR:HG22	2.20	0.40
11:YP:121:LYS:HE2	11:YP:121:LYS:HB2	1.85	0.40
14:YS:108:GLY:O	14:YS:110:LEU:N	2.54	0.40
22:Y0:19:LYS:HD3	22:Y0:19:LYS:HA	1.80	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:Y1:70:VAL:O	23:Y1:74:VAL:HG23	2.20	0.40
23:Y1:85:LEU:HD13	23:Y1:85:LEU:HA	1.96	0.40
25:Y3:8:LEU:HD13	25:Y3:31:LEU:HD23	2.02	0.40
29:Y8:58:ILE:HA	29:Y8:61:LEU:HD21	2.02	0.40
35:QF:2:ARG:HD3	35:QF:92:LYS:HE2	2.04	0.40
45:QP:15:PRO:HD2	45:QP:42:ARG:NH1	2.35	0.40
45:QP:55:ARG:HE	45:QP:59:TRP:HE1	1.69	0.40
45:QP:81:ARG:HA	49:QA:458(E):A:O3'	2.21	0.40
49:QA:59:A:H1'	49:QA:354:G:N2	2.35	0.40
49:QA:514:C:H2'	49:QA:515:G:C8	2.56	0.40
49:QA:1423:G:H2'	49:QA:1424:C:C6	2.56	0.40
49:QA:1496:C:H2'	49:QA:1497:G:O4'	2.21	0.40
32:XC:31:HIS:CD2	32:XC:31:HIS:N	2.89	0.40
36:XG:50:ILE:HD12	36:XG:121:ALA:HA	2.03	0.40
43:YN:39:LEU:HD22	43:YN:43:CYS:SG	2.61	0.40
44:XO:54:ARG:O	44:XO:58:MET:HG2	2.21	0.40
45:XP:38:TYR:CE2	49:XA:626:U:H5''	2.56	0.40
46:XQ:29:HIS:CD2	46:XQ:32:TYR:HB2	2.56	0.40
47:XR:33:ASP:O	47:XR:36:ASN:ND2	2.54	0.40
48:XT:88:VAL:O	48:XT:92:LEU:HG	2.21	0.40
49:XA:36:C:H2'	49:XA:37:U:O4'	2.20	0.40
49:XA:251:G:N2	49:XA:253:U:O4	2.54	0.40
49:XA:924:C:H2'	49:XA:925:G:C8	2.56	0.40
49:XA:1003:G:H2'	49:XA:1004:A:H4'	2.02	0.40
53:QV:15:G:N2	53:QV:62:U:H1'	2.35	0.40
1:RA:585:G:C8	1:RA:1251:C:N4	2.89	0.40
1:RA:704:G:H1'	1:RA:727:A:H62	1.87	0.40
1:RA:1194:A:H2'	1:RA:1195:G:O4'	2.20	0.40
1:RA:1264:G:H2'	1:RA:2014:A:N6	2.36	0.40
1:RA:1565:C:H5''	3:RD:18:VAL:HG11	2.02	0.40
1:RA:1994:C:P	4:RE:127:ASP:HB2	2.62	0.40
1:RA:2286:A:H2'	27:R6:31:PRO:HG2	2.03	0.40
1:RA:2455:G:C4	1:RA:2456:C:C5	3.09	0.40
1:RA:2779:U:H6	1:RA:2779:U:H2'	1.28	0.40
3:RD:232:PRO:HB3	3:RD:244:ARG:NH1	2.36	0.40
5:RF:45:ARG:HG2	5:RF:97:TYR:CD2	2.56	0.40
8:RI:52:ARG:O	8:RI:56:LYS:N	2.43	0.40
15:RT:34:VAL:CG1	15:RT:36:GLU:HG2	2.50	0.40
15:RT:50:ILE:HG22	15:RT:62:THR:OG1	2.21	0.40
20:RY:38:ILE:HG22	20:RY:66:PRO:HA	2.02	0.40
1:YA:822:U:H2'	1:YA:823:G:H8	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:828:U:H4'	1:YA:831:G:N1	2.36	0.40
1:YA:903:C:H2'	1:YA:904:C:C6	2.56	0.40
1:YA:1027:A:C2	1:YA:2488:A:H5'	2.56	0.40
1:YA:1445:C:H2'	1:YA:1446:C:C6	2.56	0.40
1:YA:2091:U:H3	1:YA:2228:G:H1	1.69	0.40
4:YE:37:ARG:NE	4:YE:37:ARG:HA	2.36	0.40
9:YN:25:ARG:O	9:YN:29:LYS:HE2	2.21	0.40
15:YT:53:ARG:NH1	15:YT:60:THR:OG1	2.40	0.40
21:YZ:108:PRO:HB2	21:YZ:111:VAL:HG23	2.04	0.40
31:QB:11:LEU:HB3	31:QB:213:LEU:HD11	2.02	0.40
34:QE:61:TYR:HH	49:QA:1074:G:P	2.44	0.40
38:QI:8:GLY:O	38:QI:76:ALA:HB1	2.21	0.40
44:QO:82:ILE:CD1	44:QO:88:ARG:HG2	2.48	0.40
48:QT:49:ALA:O	48:QT:51:GLU:N	2.54	0.40
49:QA:669:U:H2'	49:QA:670:G:H8	1.86	0.40
49:QA:1063:C:H3'	49:QA:1064:G:C8	2.57	0.40
31:XB:152:PHE:CD1	31:XB:152:PHE:C	2.95	0.40
32:XC:83:ARG:O	32:XC:87:LEU:HD23	2.20	0.40
32:XC:88:ARG:HG2	32:XC:99:VAL:HG21	2.03	0.40
32:XC:139:GLN:O	32:XC:143:GLU:HB2	2.21	0.40
34:XE:10:MET:O	34:XE:11:ILE:HB	2.21	0.40
34:XE:102:ALA:HB3	34:XE:106:PRO:HB2	2.03	0.40
36:XG:124:LEU:HD23	36:XG:124:LEU:HA	1.92	0.40
38:XI:28:VAL:HB	38:XI:36:TYR:CD1	2.56	0.40
42:XM:58:GLU:O	42:XM:62:ASN:HB2	2.21	0.40
44:XO:60:VAL:HG13	44:XO:63:ARG:NH2	2.29	0.40
46:XQ:67:LYS:C	46:XQ:69:LYS:H	2.24	0.40
49:XA:64:G:H4'	49:XA:65:U:O5'	2.21	0.40
49:XA:718:G:OP2	49:XA:720:C:N4	2.51	0.40
49:XA:789:U:O2	49:XA:792:A:H8	2.04	0.40
49:XA:849:C:H2'	49:XA:850:U:O4'	2.22	0.40
49:XA:1236:A:H4'	49:XA:1304:G:H4'	2.03	0.40
49:XA:1324:A:C5'	49:XA:1362(A):C:H5'	2.51	0.40
53:QV:49:U:H4'	53:QV:50:C:H5''	2.04	0.40
1:RA:587:C:H42	11:RP:33:ARG:HD2	1.86	0.40
1:RA:638:G:C5	1:RA:651:G:C2	3.08	0.40
1:RA:816:C:H2'	1:RA:817:C:C6	2.56	0.40
1:RA:822:U:H2'	1:RA:823:G:H8	1.86	0.40
1:RA:1068:G:O2'	1:RA:1069:A:H5'	2.21	0.40
1:RA:1317:A:H2'	1:RA:1318:C:C6	2.55	0.40
1:RA:1794:U:H2'	1:RA:1795:C:C6	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:RA:2459:A:C5	1:RA:2460:U:C5	3.09	0.40
1:RA:2812:G:H2'	1:RA:2813:A:H8	1.86	0.40
1:RA:2882:A:OP1	13:RR:96:ARG:NH1	2.47	0.40
2:RB:73:A:C4	2:RB:74:U:C6	3.09	0.40
9:RN:42:TRP:O	16:RU:64:ARG:NH2	2.55	0.40
11:RP:65:ARG:O	11:RP:68:GLN:NE2	2.54	0.40
19:RX:83:VAL:CG1	19:RX:87:GLN:HB2	2.51	0.40
1:YA:24:G:C5	1:YA:25:U:C4	3.09	0.40
1:YA:147:U:H2'	1:YA:148:C:C6	2.57	0.40
1:YA:605:C:OP1	5:YF:104:LYS:NZ	2.54	0.40
1:YA:816:C:H2'	1:YA:817:C:C6	2.56	0.40
1:YA:846:C:H1'	1:YA:847:U:OP2	2.21	0.40
1:YA:1294:U:O2	13:YR:23:ASN:ND2	2.54	0.40
1:YA:1774:C:O2	1:YA:1774:C:H2'	2.20	0.40
1:YA:1790:C:H2'	1:YA:1791:A:C5	2.56	0.40
1:YA:1830:C:H2'	1:YA:1831:G:C8	2.49	0.40
1:YA:2077:A:C5	1:YA:2435:A:C5	3.10	0.40
1:YA:2487:G:H2'	1:YA:2488:A:C8	2.56	0.40
1:YA:2839:G:H5'	13:YR:46:GLY:HA2	2.03	0.40
3:YD:12:SER:HB2	3:YD:208:LYS:HB3	2.04	0.40
4:YE:4:ILE:HG22	4:YE:198:VAL:HB	2.03	0.40
6:YG:29:TRP:O	6:YG:33:ARG:NH1	2.53	0.40
8:YI:77:LEU:HD11	8:YI:140:LEU:HD12	2.03	0.40
11:YP:66:GLY:HA2	11:YP:68:GLN:OE1	2.20	0.40
12:YQ:104:PHE:CE1	12:YQ:125:LEU:HD11	2.49	0.40
15:YT:24:PRO:O	15:YT:94:ALA:HB2	2.22	0.40
16:YU:65:ILE:HG12	16:YU:96:ALA:CB	2.51	0.40
20:YY:95:LYS:HB2	20:YY:95:LYS:HE3	1.75	0.40
23:Y1:95:LEU:HD23	23:Y1:95:LEU:HA	1.86	0.40
27:Y6:47:THR:HG22	27:Y6:48:VAL:HG12	2.04	0.40
31:QB:164:VAL:HG21	31:QB:170:GLU:HB3	2.03	0.40
33:QD:94:LEU:HD21	33:QD:200:GLU:HB2	2.02	0.40
34:QE:69:VAL:HG11	34:QE:139:LEU:HD22	2.04	0.40
46:QQ:66:SER:HB3	46:QQ:69:LYS:CB	2.49	0.40
47:QR:33:ASP:HB3	47:QR:36:ASN:OD1	2.21	0.40
49:QA:1338:G:H1'	53:QV:43:A:O2'	2.21	0.40
40:XK:51:LYS:HB3	40:XK:51:LYS:HE2	1.86	0.40
41:XL:54:LYS:HB3	41:XL:55:VAL:H	1.81	0.40
41:XL:80:HIS:HB2	41:XL:81:SER:H	1.52	0.40
49:XA:186(C):G:N2	49:XA:186(N):U:O2	2.44	0.40
49:XA:608:A:C4	49:XA:609:A:C8	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:XA:790:A:C6	49:XA:791:G:C6	3.10	0.40
49:XA:817:C:C2	49:XA:819:A:H5'	2.56	0.40
49:XA:920:U:H2'	49:XA:921:U:H6	1.84	0.40
49:XA:1286:A:H2'	49:XA:1287:A:H4'	2.03	0.40
1:RA:150:C:H2'	1:RA:151:C:C6	2.56	0.40
1:RA:330:A:H2	1:RA:1210:A:O2'	2.04	0.40
1:RA:559:G:H22	16:RU:49:HIS:CE1	2.40	0.40
1:RA:702:G:C2	1:RA:731:C:C2	3.10	0.40
1:RA:1496:A:H2'	1:RA:1498:C:C4	2.57	0.40
1:RA:1520:U:H2'	1:RA:1521:G:O4'	2.22	0.40
1:RA:1820:U:H5''	1:RA:1821:A:C8	2.57	0.40
1:RA:2198:A:C2	8:RI:29:TYR:HB2	2.55	0.40
1:RA:2278:A:OP2	22:R0:12:ASN:ND2	2.43	0.40
1:RA:2463:C:H2'	1:RA:2464:C:C6	2.57	0.40
1:RA:2533:A:H2'	1:RA:2534:A:O4'	2.21	0.40
1:RA:2547:U:H2'	1:RA:2548:G:C8	2.56	0.40
1:RA:2696:U:H2'	1:RA:2697:G:H8	1.86	0.40
2:RB:42:C:O2'	6:RG:67:LYS:O	2.22	0.40
3:RD:85:ASP:OD2	3:RD:88:ARG:HD2	2.22	0.40
4:RE:7:VAL:O	4:RE:26:ILE:HG13	2.21	0.40
6:RG:47:LYS:HB2	6:RG:47:LYS:HE3	1.82	0.40
8:RI:76:THR:OG1	8:RI:139:GLN:OE1	2.39	0.40
9:RN:58:ASP:HB3	9:RN:95:PRO:HB3	2.02	0.40
11:RP:62:LEU:HD21	29:R8:25:MET:HB2	2.03	0.40
11:RP:113:LYS:HG2	11:RP:115:LEU:HD23	2.03	0.40
21:RZ:69:THR:HG22	21:RZ:90:VAL:HA	2.03	0.40
23:R1:58:ILE:HG23	23:R1:87:PRO:HG3	2.02	0.40
30:R9:2:LYS:HA	30:R9:2:LYS:HD2	1.85	0.40
1:YA:229:A:OP1	1:YA:229:A:H4'	2.20	0.40
1:YA:325:G:H2'	1:YA:326:G:H8	1.87	0.40
1:YA:465:G:N2	1:YA:684:G:H1'	2.35	0.40
1:YA:816:C:H2'	1:YA:817:C:H6	1.86	0.40
1:YA:954:G:H5''	12:YQ:13:GLN:HB3	2.03	0.40
1:YA:1039:G:H2'	1:YA:1040:C:H6	1.87	0.40
3:YD:133:LEU:HD23	3:YD:133:LEU:HA	1.93	0.40
7:YH:89:ILE:HG22	7:YH:162:ILE:HG12	2.02	0.40
9:YN:96:GLU:HG2	9:YN:97:ARG:H	1.86	0.40
14:YS:10:ARG:HH21	14:YS:91:PRO:HB2	1.86	0.40
16:YU:92:ARG:HH21	17:YV:10:LYS:CG	2.35	0.40
31:QB:94:ASN:ND2	31:QB:95:GLN:HG2	2.37	0.40
33:QD:129:ASN:N	33:QD:145:GLU:O	2.32	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:QE:90:VAL:O	34:QE:91:LEU:HD22	2.21	0.40
38:QI:23:ASN:H	38:QI:60:ASP:CG	2.25	0.40
40:QK:58:PRO:HA	40:QK:90:GLY:HA3	2.02	0.40
45:QP:42:ARG:NE	45:QP:44:THR:HG23	2.36	0.40
49:QA:114:U:H2'	49:QA:115:G:H8	1.87	0.40
49:QA:982:U:H4'	49:QA:983:A:O5'	2.21	0.40
32:XC:55:VAL:HG23	32:XC:57:ILE:HG13	2.03	0.40
34:XE:69:VAL:O	34:XE:71:LEU:HD12	2.21	0.40
36:XG:88:PRO:HD2	36:XG:151:TYR:C	2.42	0.40
37:XH:30:ARG:CD	49:XA:590:C:H5''	2.52	0.40
44:XO:22:THR:HB	49:XA:658:G:H1'	2.04	0.40
49:XA:144:G:C6	49:XA:179:A:C6	3.10	0.40
49:XA:401:C:H2'	49:XA:402:G:C8	2.56	0.40
49:XA:665:A:N3	49:XA:733:A:H5'	2.35	0.40
49:XA:1108:G:C5	49:XA:1109:C:C5	3.09	0.40
49:XA:1480:G:H2'	49:XA:1481:U:O4'	2.22	0.40
49:XA:1532:U:H2'	49:XA:1534:A:H2	1.83	0.40
1:RA:588:U:H1'	5:RF:90:PHE:HB3	2.04	0.40
1:RA:675:A:C8	1:RA:804:A:C6	3.09	0.40
1:RA:736:C:H2'	1:RA:737:C:C6	2.57	0.40
1:RA:1258:C:H2'	1:RA:1259:G:C8	2.56	0.40
1:RA:1688:U:H5'	1:RA:1689:A:OP1	2.22	0.40
1:RA:2134:A:N3	1:RA:2159:G:H1'	2.37	0.40
1:RA:2180:U:H2'	1:RA:2181:G:C8	2.57	0.40
1:RA:2506:U:O2	1:RA:2506:U:H2'	2.21	0.40
1:RA:2522:U:H1'	1:RA:2647:U:H5''	2.04	0.40
1:RA:2688:U:H1'	1:RA:2721:A:H61	1.87	0.40
6:RG:82:LEU:HA	6:RG:82:LEU:HD23	1.94	0.40
10:RO:68:GLU:HB3	10:RO:78:ARG:HB3	2.03	0.40
11:RP:66:GLY:O	11:RP:67:MET:HG2	2.21	0.40
21:RZ:87:ASP:OD2	21:RZ:87:ASP:N	2.54	0.40
26:R5:41:PRO:HA	26:R5:42:PRO:HD3	1.99	0.40
29:R8:26:LYS:HE2	29:R8:47:LYS:HG2	2.03	0.40
1:YA:71:A:N6	1:YA:114:U:H1'	2.36	0.40
1:YA:150:C:H2'	1:YA:151:C:H6	1.85	0.40
1:YA:730:C:H2'	1:YA:731:C:C6	2.56	0.40
1:YA:979:G:H2'	1:YA:982:C:N4	2.36	0.40
1:YA:996:A:H4'	16:YU:92:ARG:CD	2.51	0.40
1:YA:1059:G:H3'	1:YA:1060:U:C5'	2.51	0.40
1:YA:1798:U:H2'	1:YA:1819:A:H61	1.85	0.40
1:YA:2331:G:N2	1:YA:2385:C:C4	2.90	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:YA:2345:G:N3	1:YA:2381:C:H2'	2.36	0.40
1:YA:2525:G:C2	1:YA:2526:G:C5	3.10	0.40
1:YA:2663:G:H3'	1:YA:2664:G:H8	1.87	0.40
1:YA:2758:A:C6	7:YH:67:LEU:HD11	2.57	0.40
8:YI:23:PRO:O	8:YI:27:ARG:HG2	2.21	0.40
9:YN:35:ARG:HB2	9:YN:42:TRP:CZ3	2.57	0.40
14:YS:11:LYS:HG3	14:YS:91:PRO:HD3	2.03	0.40
15:YT:105:LEU:HD12	15:YT:109:GLU:HB2	2.03	0.40
22:Y0:27:GLU:HG3	22:Y0:68:GLU:HA	2.03	0.40
31:QB:23:ARG:O	31:QB:191:ASP:HA	2.22	0.40
40:QK:120:ARG:HB3	49:QA:778:G:H21	1.87	0.40
41:QL:53:ARG:HG3	41:QL:69:TYR:CE1	2.55	0.40
48:QT:71:THR:HG22	48:QT:72:LEU:H	1.87	0.40
49:QA:62:U:H2'	49:QA:63:C:H6	1.86	0.40
49:QA:176:C:H2'	49:QA:177:C:C6	2.57	0.40
49:QA:373:A:HO2'	49:QA:451:A:N6	2.15	0.40
49:QA:1075:C:H4'	49:QA:1101:A:N6	2.37	0.40
49:QA:1428:A:H2'	49:QA:1429:C:H6	1.86	0.40
34:XE:78:HIS:CG	34:XE:79:GLU:H	2.40	0.40
37:XH:14:ARG:NH1	49:XA:875:C:O3'	2.54	0.40
38:XI:17:VAL:HG22	38:XI:63:ILE:HG23	2.03	0.40
38:XI:128:ARG:HD2	53:XV:32:G:H5'	2.03	0.40
41:XL:100:ILE:HG22	41:XL:102:ARG:N	2.34	0.40
41:XL:103:GLY:HA2	41:XL:108:ALA:HA	2.04	0.40
46:XQ:27:PHE:O	46:XQ:36:ILE:N	2.54	0.40
49:XA:250:A:H4'	49:XA:251:G:O5'	2.22	0.40
49:XA:604:G:C6	49:XA:635:G:C6	3.10	0.40
49:XA:659:U:H2'	49:XA:660:G:C8	2.56	0.40
49:XA:743:U:H2'	49:XA:744:C:H6	1.86	0.40
49:XA:953:G:C6	49:XA:1229:A:C6	3.10	0.40
49:XA:1178:G:N2	49:XA:1181:G:N7	2.70	0.40
49:XA:1522:U:H2'	49:XA:1523:G:H8	1.86	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

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

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

of similar resolution.

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	RD	270/276 (98%)	235 (87%)	28 (10%)	7 (3%)	5	35
3	YD	270/276 (98%)	234 (87%)	30 (11%)	6 (2%)	6	38
4	RE	203/206 (98%)	158 (78%)	29 (14%)	16 (8%)	1	15
4	YE	203/206 (98%)	154 (76%)	33 (16%)	16 (8%)	1	15
5	RF	200/210 (95%)	173 (86%)	21 (10%)	6 (3%)	4	33
5	YF	200/210 (95%)	177 (88%)	18 (9%)	5 (2%)	5	36
6	RG	179/182 (98%)	149 (83%)	20 (11%)	10 (6%)	2	21
6	YG	179/182 (98%)	151 (84%)	18 (10%)	10 (6%)	2	21
7	RH	168/180 (93%)	129 (77%)	22 (13%)	17 (10%)	0	10
7	YH	168/180 (93%)	126 (75%)	25 (15%)	17 (10%)	0	10
8	RI	144/148 (97%)	109 (76%)	25 (17%)	10 (7%)	1	17
8	YI	144/148 (97%)	108 (75%)	28 (19%)	8 (6%)	2	21
9	RN	136/140 (97%)	113 (83%)	15 (11%)	8 (6%)	1	20
9	YN	136/140 (97%)	114 (84%)	13 (10%)	9 (7%)	1	19
10	RO	120/122 (98%)	115 (96%)	4 (3%)	1 (1%)	19	57
10	YO	120/122 (98%)	115 (96%)	4 (3%)	1 (1%)	19	57
11	RP	148/150 (99%)	105 (71%)	32 (22%)	11 (7%)	1	16
11	YP	148/150 (99%)	106 (72%)	32 (22%)	10 (7%)	1	18
12	RQ	139/141 (99%)	104 (75%)	21 (15%)	14 (10%)	0	10
12	YQ	139/141 (99%)	105 (76%)	17 (12%)	17 (12%)	0	6
13	RR	116/118 (98%)	107 (92%)	7 (6%)	2 (2%)	9	43
13	YR	116/118 (98%)	104 (90%)	9 (8%)	3 (3%)	5	35
14	RS	109/112 (97%)	81 (74%)	19 (17%)	9 (8%)	1	14
14	YS	109/112 (97%)	83 (76%)	17 (16%)	9 (8%)	1	14
15	RT	135/146 (92%)	109 (81%)	19 (14%)	7 (5%)	2	23
15	YT	135/146 (92%)	110 (82%)	19 (14%)	6 (4%)	2	25
16	RU	115/118 (98%)	108 (94%)	5 (4%)	2 (2%)	9	43
16	YU	115/118 (98%)	108 (94%)	5 (4%)	2 (2%)	9	43
17	RV	99/101 (98%)	82 (83%)	11 (11%)	6 (6%)	1	20

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
17	YV	99/101 (98%)	84 (85%)	9 (9%)	6 (6%)	1	20
18	RW	111/113 (98%)	105 (95%)	4 (4%)	2 (2%)	8	42
18	YW	111/113 (98%)	105 (95%)	4 (4%)	2 (2%)	8	42
19	RX	90/96 (94%)	87 (97%)	3 (3%)	0	100	100
19	YX	90/96 (94%)	86 (96%)	4 (4%)	0	100	100
20	RY	100/110 (91%)	73 (73%)	16 (16%)	11 (11%)	0	8
20	YY	100/110 (91%)	73 (73%)	17 (17%)	10 (10%)	0	10
21	RZ	181/206 (88%)	133 (74%)	29 (16%)	19 (10%)	0	9
21	YZ	181/206 (88%)	139 (77%)	26 (14%)	16 (9%)	1	13
22	R0	80/85 (94%)	74 (92%)	6 (8%)	0	100	100
22	Y0	80/85 (94%)	75 (94%)	5 (6%)	0	100	100
23	R1	95/98 (97%)	75 (79%)	15 (16%)	5 (5%)	2	22
23	Y1	95/98 (97%)	75 (79%)	15 (16%)	5 (5%)	2	22
24	R2	67/72 (93%)	58 (87%)	4 (6%)	5 (8%)	1	16
24	Y2	67/72 (93%)	58 (87%)	4 (6%)	5 (8%)	1	16
25	R3	57/60 (95%)	52 (91%)	4 (7%)	1 (2%)	8	42
25	Y3	57/60 (95%)	54 (95%)	2 (4%)	1 (2%)	8	42
26	R5	57/60 (95%)	48 (84%)	8 (14%)	1 (2%)	8	42
26	Y5	57/60 (95%)	48 (84%)	7 (12%)	2 (4%)	3	30
27	R6	47/54 (87%)	21 (45%)	18 (38%)	8 (17%)	0	3
27	Y6	47/54 (87%)	24 (51%)	17 (36%)	6 (13%)	0	5
28	R7	47/49 (96%)	45 (96%)	1 (2%)	1 (2%)	7	39
28	Y7	47/49 (96%)	45 (96%)	1 (2%)	1 (2%)	7	39
29	R8	62/65 (95%)	53 (86%)	5 (8%)	4 (6%)	1	19
29	Y8	62/65 (95%)	51 (82%)	8 (13%)	3 (5%)	2	24
30	R9	35/37 (95%)	33 (94%)	2 (6%)	0	100	100
30	Y9	35/37 (95%)	33 (94%)	2 (6%)	0	100	100
31	QB	233/256 (91%)	181 (78%)	38 (16%)	14 (6%)	1	20
31	XB	233/256 (91%)	190 (82%)	31 (13%)	12 (5%)	2	23
32	QC	205/239 (86%)	152 (74%)	33 (16%)	20 (10%)	0	10
32	XC	205/239 (86%)	157 (77%)	34 (17%)	14 (7%)	1	18

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
33	QD	206/209 (99%)	153 (74%)	40 (19%)	13 (6%)	1	19
33	XD	206/209 (99%)	149 (72%)	41 (20%)	16 (8%)	1	15
34	QE	149/162 (92%)	128 (86%)	17 (11%)	4 (3%)	5	35
34	XE	149/162 (92%)	123 (83%)	18 (12%)	8 (5%)	2	22
35	QF	99/101 (98%)	80 (81%)	15 (15%)	4 (4%)	3	27
35	XF	99/101 (98%)	77 (78%)	17 (17%)	5 (5%)	2	23
36	QG	153/156 (98%)	127 (83%)	22 (14%)	4 (3%)	5	35
36	XG	153/156 (98%)	127 (83%)	18 (12%)	8 (5%)	2	23
37	QH	136/138 (99%)	105 (77%)	25 (18%)	6 (4%)	2	25
37	XH	136/138 (99%)	106 (78%)	24 (18%)	6 (4%)	2	25
38	QI	125/128 (98%)	106 (85%)	16 (13%)	3 (2%)	6	37
38	XI	125/128 (98%)	102 (82%)	19 (15%)	4 (3%)	4	32
39	QJ	97/105 (92%)	77 (79%)	15 (16%)	5 (5%)	2	23
39	XJ	97/105 (92%)	77 (79%)	16 (16%)	4 (4%)	3	27
40	QK	117/129 (91%)	86 (74%)	22 (19%)	9 (8%)	1	16
40	XK	117/129 (91%)	84 (72%)	23 (20%)	10 (8%)	1	13
41	QL	123/132 (93%)	44 (36%)	47 (38%)	32 (26%)	0	1
41	XL	123/132 (93%)	47 (38%)	44 (36%)	32 (26%)	0	1
42	QM	112/126 (89%)	95 (85%)	11 (10%)	6 (5%)	2	22
42	XM	112/126 (89%)	96 (86%)	10 (9%)	6 (5%)	2	22
43	QN	58/61 (95%)	44 (76%)	11 (19%)	3 (5%)	2	23
43	XN	58/61 (95%)	40 (69%)	12 (21%)	6 (10%)	0	9
44	QO	86/89 (97%)	74 (86%)	9 (10%)	3 (4%)	3	30
44	XO	86/89 (97%)	72 (84%)	13 (15%)	1 (1%)	13	49
45	QP	82/88 (93%)	62 (76%)	13 (16%)	7 (8%)	1	13
45	XP	82/88 (93%)	62 (76%)	14 (17%)	6 (7%)	1	16
46	QQ	98/105 (93%)	80 (82%)	17 (17%)	1 (1%)	15	52
46	XQ	98/105 (93%)	82 (84%)	13 (13%)	3 (3%)	4	32
47	QR	68/88 (77%)	52 (76%)	11 (16%)	5 (7%)	1	16
47	XR	68/88 (77%)	54 (79%)	11 (16%)	3 (4%)	2	25
48	QT	97/106 (92%)	81 (84%)	13 (13%)	3 (3%)	4	32

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
48	XT	97/106 (92%)	83 (86%)	12 (12%)	2 (2%)	7	39
50	QS	77/93 (83%)	43 (56%)	25 (32%)	9 (12%)	0	6
50	XS	77/93 (83%)	43 (56%)	25 (32%)	9 (12%)	0	6
51	R4	32/71 (45%)	16 (50%)	13 (41%)	3 (9%)	0	12
51	Y4	44/71 (62%)	22 (50%)	11 (25%)	11 (25%)	0	1
All	All	11338/12074 (94%)	9058 (80%)	1601 (14%)	679 (6%)	1	20

All (679) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	RD	26	LYS
3	RD	122	ASP
3	RD	242	ARG
4	RE	22	PRO
4	RE	53	PRO
4	RE	63	LEU
4	RE	66	HIS
4	RE	71	GLY
4	RE	92	THR
5	RF	134	GLY
7	RH	12	PRO
7	RH	126	PRO
7	RH	127	GLU
7	RH	153	LYS
7	RH	154	PRO
7	RH	168	PRO
7	RH	169	VAL
8	RI	115	ALA
9	RN	9	VAL
9	RN	22	THR
9	RN	96	GLU
9	RN	131	GLN
11	RP	6	LEU
11	RP	10	PRO
11	RP	15	ARG
11	RP	65	ARG
11	RP	95	VAL
11	RP	148	LEU
12	RQ	22	LYS
12	RQ	90	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
13	RR	4	LEU
14	RS	57	LYS
14	RS	88	ASP
15	RT	124	ASP
17	RV	50	PRO
17	RV	100	ARG
20	RY	50	ARG
20	RY	57	GLN
20	RY	77	PRO
20	RY	78	ALA
21	RZ	13	GLU
21	RZ	53	ILE
21	RZ	151	HIS
21	RZ	152	ALA
23	R1	30	VAL
23	R1	91	LYS
23	R1	95	LEU
24	R2	43	GLN
24	R2	47	ASN
24	R2	48	HIS
24	R2	70	GLN
24	R2	71	ASN
26	R5	4	HIS
27	R6	7	ILE
27	R6	15	GLU
29	R8	52	LYS
29	R8	62	LEU
3	YD	122	ASP
3	YD	242	ARG
4	YE	19	ARG
4	YE	22	PRO
4	YE	63	LEU
4	YE	66	HIS
4	YE	71	GLY
6	YG	4	ASP
6	YG	96	ARG
7	YH	12	PRO
7	YH	86	GLU
7	YH	126	PRO
7	YH	127	GLU
7	YH	153	LYS
7	YH	155	SER

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
7	YH	168	PRO
7	YH	169	VAL
8	YI	133	HIS
8	YI	145	VAL
9	YN	96	GLU
9	YN	131	GLN
11	YP	6	LEU
11	YP	10	PRO
11	YP	15	ARG
11	YP	95	VAL
11	YP	106	LEU
11	YP	148	LEU
12	YQ	79	LEU
12	YQ	86	GLY
12	YQ	90	VAL
13	YR	3	HIS
13	YR	4	LEU
15	YT	124	ASP
16	YU	90	VAL
17	YV	45	THR
17	YV	48	GLY
17	YV	50	PRO
20	YY	57	GLN
20	YY	77	PRO
20	YY	78	ALA
21	YZ	53	ILE
21	YZ	146	ILE
21	YZ	152	ALA
23	Y1	30	VAL
23	Y1	95	LEU
24	Y2	43	GLN
24	Y2	47	ASN
24	Y2	48	HIS
24	Y2	70	GLN
26	Y5	4	HIS
27	Y6	7	ILE
27	Y6	15	GLU
29	Y8	52	LYS
29	Y8	62	LEU
31	QB	86	GLU
31	QB	190	THR
31	QB	229	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
32	QC	5	ILE
32	QC	12	LEU
32	QC	130	VAL
32	QC	160	ALA
32	QC	161	GLU
32	QC	207	VAL
33	QD	166	LYS
33	QD	187	ARG
34	QE	78	HIS
35	QF	69	GLU
35	QF	70	ASP
35	QF	100	ASN
36	QG	35	LYS
39	QJ	54	PHE
39	QJ	55	LYS
39	QJ	75	ILE
40	QK	42	TRP
40	QK	88	GLY
40	QK	109	VAL
41	QL	15	ARG
41	QL	17	LYS
41	QL	39	VAL
41	QL	43	VAL
41	QL	50	SER
41	QL	55	VAL
41	QL	66	VAL
41	QL	71	PRO
41	QL	94	PRO
41	QL	97	ARG
41	QL	104	VAL
41	QL	123	LYS
41	QL	126	LYS
45	QP	11	SER
45	QP	35	LYS
45	QP	36	ILE
46	QQ	28	PRO
47	QR	37	VAL
47	QR	55	ARG
47	QR	60	ALA
48	QT	50	GLU
48	QT	74	LYS
31	XB	190	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	XB	236	TYR
32	XC	12	LEU
32	XC	49	SER
32	XC	130	VAL
32	XC	207	VAL
33	XD	20	TYR
33	XD	28	SER
33	XD	135	LEU
33	XD	166	LYS
33	XD	173	TRP
33	XD	175	SER
33	XD	187	ARG
34	XE	27	ARG
34	XE	78	HIS
34	XE	115	VAL
35	XF	69	GLU
35	XF	70	ASP
35	XF	100	ASN
36	XG	114	ARG
38	XI	117	HIS
38	XI	118	LYS
39	XJ	55	LYS
40	XK	42	TRP
40	XK	109	VAL
41	XL	7	ILE
41	XL	17	LYS
41	XL	22	SER
41	XL	39	VAL
41	XL	43	VAL
41	XL	46	LYS
41	XL	56	ALA
41	XL	66	VAL
41	XL	94	PRO
41	XL	96	VAL
41	XL	104	VAL
41	XL	123	LYS
42	XM	21	TYR
43	XN	51	GLY
43	XN	57	ARG
45	XP	11	SER
45	XP	25	ARG
45	XP	36	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
46	XQ	83	ASP
47	XR	87	ARG
48	XT	50	GLU
48	XT	100	ILE
50	XS	5	LEU
50	XS	27	GLU
51	R4	10	VAL
50	QS	5	LEU
50	QS	27	GLU
51	Y4	40	HIS
3	RD	238	GLY
4	RE	68	ALA
4	RE	93	VAL
5	RF	69	HIS
5	RF	73	ALA
5	RF	132	VAL
6	RG	5	VAL
6	RG	96	ARG
7	RH	86	GLU
7	RH	128	PRO
7	RH	155	SER
8	RI	10	GLU
8	RI	133	HIS
8	RI	145	VAL
9	RN	36	GLY
10	RO	5	GLN
11	RP	11	GLY
11	RP	29	LYS
11	RP	106	LEU
11	RP	141	ALA
12	RQ	18	LYS
12	RQ	27	VAL
12	RQ	78	PRO
12	RQ	86	GLY
12	RQ	133	ARG
12	RQ	139	GLU
14	RS	12	PHE
14	RS	89	ARG
14	RS	107	GLU
15	RT	2	ASN
15	RT	3	ARG
15	RT	37	GLY

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
17	RV	48	GLY
17	RV	49	THR
17	RV	79	VAL
20	RY	3	VAL
20	RY	58	GLY
21	RZ	6	LYS
21	RZ	92	SER
21	RZ	111	VAL
21	RZ	112	ARG
21	RZ	177	PRO
28	R7	48	LYS
3	YD	26	LYS
3	YD	238	GLY
4	YE	50	GLY
4	YE	53	PRO
5	YF	73	ALA
5	YF	134	GLY
7	YH	3	ARG
7	YH	27	LYS
7	YH	87	LEU
7	YH	128	PRO
8	YI	12	LEU
9	YN	9	VAL
9	YN	22	THR
9	YN	23	LEU
9	YN	36	GLY
10	YO	5	GLN
11	YP	65	ARG
11	YP	141	ALA
12	YQ	6	ARG
12	YQ	18	LYS
12	YQ	22	LYS
12	YQ	133	ARG
14	YS	12	PHE
14	YS	57	LYS
14	YS	82	ILE
14	YS	88	ASP
14	YS	107	GLU
14	YS	109	GLY
15	YT	37	GLY
15	YT	97	ALA
15	YT	123	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
17	YV	49	THR
17	YV	79	VAL
17	YV	100	ARG
18	YW	111	HIS
20	YY	50	ARG
20	YY	58	GLY
21	YZ	6	LYS
23	Y1	91	LYS
24	Y2	71	ASN
25	Y3	3	ARG
29	Y8	30	ARG
31	QB	103	THR
31	QB	153	ARG
31	QB	165	VAL
31	QB	236	TYR
32	QC	49	SER
32	QC	102	ASN
33	QD	172	PRO
34	QE	77	PRO
37	QH	74	PRO
37	QH	97	VAL
37	QH	107	LEU
38	QI	106	ALA
40	QK	36	ASP
40	QK	111	ASP
41	QL	19	ARG
41	QL	22	SER
41	QL	56	ALA
41	QL	58	VAL
41	QL	60	LEU
41	QL	96	VAL
41	QL	122	THR
42	QM	101	GLN
43	QN	27	CYS
44	QO	88	ARG
45	QP	83	GLU
47	QR	87	ARG
48	QT	100	ILE
31	XB	17	PHE
31	XB	202	PRO
32	XC	102	ASN
32	XC	103	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
32	XC	127	ARG
33	XD	134	ASP
33	XD	172	PRO
34	XE	12	LEU
34	XE	77	PRO
34	XE	79	GLU
37	XH	107	LEU
38	XI	35	GLU
39	XJ	32	ALA
39	XJ	75	ILE
40	XK	35	PRO
40	XK	88	GLY
40	XK	111	ASP
41	XL	19	ARG
41	XL	47	LYS
41	XL	51	ALA
41	XL	55	VAL
41	XL	58	VAL
41	XL	73	GLU
41	XL	97	ARG
42	XM	10	PRO
42	XM	11	ARG
42	XM	12	ASN
42	XM	101	GLN
43	XN	15	LYS
43	XN	59	ALA
45	XP	35	LYS
46	XQ	28	PRO
47	XR	37	VAL
47	XR	59	SER
51	R4	33	VAL
51	Y4	22	ILE
51	Y4	24	THR
51	Y4	43	TYR
3	RD	123	ALA
4	RE	90	THR
4	RE	204	ALA
6	RG	116	ASP
7	RH	8	PRO
7	RH	87	LEU
8	RI	11	ASN
9	RN	23	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
12	RQ	6	ARG
13	RR	3	HIS
14	RS	4	LEU
15	RT	97	ALA
16	RU	91	ASP
17	RV	45	THR
20	RY	63	LYS
21	RZ	7	ALA
21	RZ	108	PRO
21	RZ	116	VAL
27	R6	33	LYS
27	R6	49	HIS
29	R8	34	TRP
3	YD	123	ALA
4	YE	68	ALA
4	YE	90	THR
4	YE	92	THR
5	YF	132	VAL
5	YF	198	ALA
6	YG	5	VAL
6	YG	14	GLU
6	YG	36	LYS
7	YH	154	PRO
8	YI	10	GLU
8	YI	11	ASN
12	YQ	11	LYS
12	YQ	25	ASP
12	YQ	104	PHE
14	YS	4	LEU
15	YT	2	ASN
16	YU	91	ASP
20	YY	3	VAL
20	YY	39	VAL
21	YZ	7	ALA
21	YZ	13	GLU
21	YZ	92	SER
21	YZ	159	PRO
21	YZ	166	SER
23	Y1	84	GLY
27	Y6	19	ARG
27	Y6	33	LYS
27	Y6	49	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
28	Y7	48	LYS
31	QB	17	PHE
31	QB	35	GLU
32	QC	10	PHE
32	QC	47	LEU
32	QC	81	GLY
32	QC	109	PRO
32	QC	110	ASN
33	QD	4	TYR
33	QD	5	ILE
33	QD	20	TYR
33	QD	173	TRP
34	QE	27	ARG
34	QE	79	GLU
36	QG	10	ARG
38	QI	39	GLY
39	QJ	32	ALA
40	QK	35	PRO
41	QL	7	ILE
41	QL	46	LYS
41	QL	47	LYS
41	QL	51	ALA
41	QL	107	ALA
41	QL	115	LYS
42	QM	10	PRO
42	QM	39	ILE
43	QN	14	PRO
47	QR	59	SER
31	XB	153	ARG
31	XB	230	VAL
32	XC	5	ILE
32	XC	181	ASN
33	XD	4	TYR
33	XD	34	GLU
33	XD	189	PRO
34	XE	11	ILE
35	XF	54	LYS
36	XG	6	ARG
36	XG	33	ASP
36	XG	69	VAL
37	XH	103	VAL
38	XI	24	GLY

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
39	XJ	53	PRO
40	XK	15	ALA
41	XL	42	THR
41	XL	112	ASP
41	XL	125	PRO
45	XP	66	PRO
50	XS	11	VAL
50	XS	48	THR
51	R4	11	PRO
50	QS	11	VAL
50	QS	48	THR
51	Y4	14	ILE
51	Y4	18	CYS
51	Y4	23	GLU
51	Y4	30	GLU
51	Y4	34	GLU
3	RD	3	VAL
5	RF	198	ALA
6	RG	4	ASP
6	RG	14	GLU
6	RG	82	LEU
6	RG	86	MET
7	RH	27	LYS
7	RH	83	TYR
7	RH	137	ASP
8	RI	118	LYS
12	RQ	11	LYS
12	RQ	19	GLY
12	RQ	104	PHE
14	RS	82	ILE
15	RT	112	ARG
20	RY	39	VAL
20	RY	53	PRO
20	RY	99	CYS
21	RZ	121	HIS
21	RZ	166	SER
21	RZ	179	ASP
21	RZ	181	GLU
27	R6	19	ARG
27	R6	45	LYS
3	YD	3	VAL
4	YE	204	ALA

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
6	YG	86	MET
6	YG	116	ASP
7	YH	8	PRO
7	YH	83	TYR
7	YH	137	ASP
9	YN	7	LYS
9	YN	95	PRO
11	YP	29	LYS
11	YP	107	LYS
12	YQ	27	VAL
12	YQ	105	GLU
12	YQ	139	GLU
18	YW	65	LEU
20	YY	53	PRO
20	YY	63	LYS
20	YY	99	CYS
31	QB	76	GLN
31	QB	87	ARG
31	QB	130	ARG
31	QB	230	VAL
32	QC	108	ASN
32	QC	181	ASN
33	QD	28	SER
33	QD	34	GLU
36	QG	114	ARG
37	QH	103	VAL
38	QI	119	ALA
40	QK	113	PRO
41	QL	112	ASP
44	QO	47	LYS
31	XB	35	GLU
31	XB	165	VAL
32	XC	10	PHE
32	XC	109	PRO
32	XC	110	ASN
33	XD	5	ILE
40	XK	36	ASP
40	XK	45	GLY
41	XL	107	ALA
41	XL	116	SER
42	XM	39	ILE
43	XN	13	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
43	XN	56	VAL
44	XO	16	ALA
45	XP	83	GLU
50	XS	45	VAL
50	XS	46	GLY
50	XS	66	MET
50	XS	80	TYR
50	QS	45	VAL
50	QS	46	GLY
50	QS	66	MET
50	QS	68	GLY
50	QS	80	TYR
51	Y4	9	LEU
4	RE	50	GLY
4	RE	72	VAL
4	RE	79	ARG
4	RE	82	ARG
4	RE	86	PRO
6	RG	36	LYS
6	RG	52	ILE
6	RG	117	PHE
7	RH	138	LYS
8	RI	12	LEU
8	RI	117	GLU
9	RN	95	PRO
11	RP	107	LYS
12	RQ	105	GLU
14	RS	109	GLY
15	RT	86	ILE
16	RU	90	VAL
18	RW	65	LEU
18	RW	111	HIS
21	RZ	51	ALA
21	RZ	61	LEU
21	RZ	62	PRO
29	R8	31	HIS
4	YE	82	ARG
4	YE	86	PRO
6	YG	52	ILE
6	YG	82	LEU
6	YG	117	PHE
8	YI	118	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
9	YN	135	PRO
12	YQ	60	ARG
15	YT	86	ILE
21	YZ	61	LEU
21	YZ	62	PRO
27	Y6	45	LYS
32	QC	112	SER
33	QD	29	PRO
33	QD	134	ASP
37	QH	89	PRO
41	QL	13	LYS
41	QL	111	LYS
42	QM	12	ASN
43	QN	13	THR
33	XD	196	LEU
33	XD	198	VAL
35	XF	93	SER
36	XG	10	ARG
36	XG	71	PRO
36	XG	72	ARG
37	XH	27	PRO
37	XH	89	PRO
41	XL	50	SER
41	XL	60	LEU
46	XQ	12	SER
50	XS	68	GLY
3	RD	32	SER
8	RI	18	VAL
8	RI	122	GLU
14	RS	61	ASN
23	R1	84	GLY
27	R6	21	TYR
27	R6	35	GLU
4	YE	72	VAL
4	YE	79	ARG
8	YI	18	VAL
8	YI	117	GLU
12	YQ	78	PRO
13	YR	2	ARG
14	YS	89	ARG
14	YS	94	TYR
21	YZ	51	ALA

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
21	YZ	59	LEU
21	YZ	168	GLU
21	YZ	177	PRO
32	QC	192	THR
35	QF	12	PRO
36	QG	69	VAL
40	QK	102	GLY
41	QL	14	GLY
42	QM	11	ARG
33	XD	47	ARG
36	XG	34	GLY
41	XL	53	ARG
41	XL	115	LYS
9	RN	135	PRO
12	RQ	81	VAL
32	QC	70	VAL
39	QJ	53	PRO
41	QL	48	PRO
41	QL	110	VAL
51	Y4	5	ILE
5	RF	89	VAL
4	YE	7	VAL
12	YQ	81	VAL
21	YZ	160	GLY
23	Y1	74	VAL
32	QC	148	GLY
44	QO	87	ILE
34	XE	67	VAL
37	XH	73	ASP
40	XK	113	PRO
23	R1	74	VAL
12	YQ	19	GLY
32	QC	6	HIS
33	QD	133	VAL
33	QD	189	PRO
31	XB	164	VAL
31	XB	229	VAL
31	XB	233	SER
32	XC	70	VAL
32	XC	158	GLY
4	RE	21	VAL
5	YF	89	VAL

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Mol	Chain	Res	Type
7	YH	92	ILE
37	QH	90	GLY
42	QM	4	ILE
45	QP	15	PRO
45	QP	66	PRO
37	XH	74	PRO
40	XK	37	GLY
41	XL	18	VAL
7	RH	92	ILE
20	RY	41	GLY
25	R3	27	GLY
26	Y5	47	PRO
31	QB	164	VAL
40	QK	37	GLY
45	QP	63	GLY
31	XB	130	ARG
41	XL	35	GLY
41	XL	40	VAL
41	XL	45	PRO

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	RD	214/218 (98%)	184 (86%)	30 (14%)	3	21
3	YD	214/218 (98%)	187 (87%)	27 (13%)	4	23
4	RE	165/166 (99%)	137 (83%)	28 (17%)	2	14
4	YE	165/166 (99%)	142 (86%)	23 (14%)	3	21
5	RF	161/166 (97%)	147 (91%)	14 (9%)	10	37
5	YF	161/166 (97%)	145 (90%)	16 (10%)	8	31
6	RG	155/156 (99%)	141 (91%)	14 (9%)	9	36
6	YG	155/156 (99%)	135 (87%)	20 (13%)	4	23
7	RH	142/148 (96%)	126 (89%)	16 (11%)	6	27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	YH	142/148 (96%)	123 (87%)	19 (13%)	4	22
8	RI	122/124 (98%)	99 (81%)	23 (19%)	1	10
8	YI	122/124 (98%)	102 (84%)	20 (16%)	2	15
9	RN	117/119 (98%)	102 (87%)	15 (13%)	4	23
9	YN	117/119 (98%)	103 (88%)	14 (12%)	5	25
10	RO	100/100 (100%)	92 (92%)	8 (8%)	12	41
10	YO	100/100 (100%)	91 (91%)	9 (9%)	9	36
11	RP	116/116 (100%)	88 (76%)	28 (24%)	0	5
11	YP	116/116 (100%)	92 (79%)	24 (21%)	1	7
12	RQ	111/111 (100%)	97 (87%)	14 (13%)	4	23
12	YQ	111/111 (100%)	98 (88%)	13 (12%)	5	26
13	RR	101/101 (100%)	89 (88%)	12 (12%)	5	25
13	YR	101/101 (100%)	90 (89%)	11 (11%)	6	28
14	RS	87/88 (99%)	72 (83%)	15 (17%)	2	14
14	YS	87/88 (99%)	75 (86%)	12 (14%)	3	21
15	RT	120/127 (94%)	107 (89%)	13 (11%)	6	29
15	YT	120/127 (94%)	102 (85%)	18 (15%)	3	18
16	RU	93/94 (99%)	82 (88%)	11 (12%)	5	25
16	YU	93/94 (99%)	84 (90%)	9 (10%)	8	32
17	RV	82/82 (100%)	70 (85%)	12 (15%)	3	19
17	YV	82/82 (100%)	69 (84%)	13 (16%)	2	17
18	RW	92/92 (100%)	78 (85%)	14 (15%)	3	17
18	YW	92/92 (100%)	79 (86%)	13 (14%)	3	21
19	RX	74/78 (95%)	64 (86%)	10 (14%)	4	22
19	YX	74/78 (95%)	63 (85%)	11 (15%)	3	18
20	RY	85/91 (93%)	66 (78%)	19 (22%)	1	6
20	YY	85/91 (93%)	70 (82%)	15 (18%)	2	13
21	RZ	162/179 (90%)	140 (86%)	22 (14%)	3	22
21	YZ	162/179 (90%)	139 (86%)	23 (14%)	3	20
22	R0	65/67 (97%)	60 (92%)	5 (8%)	13	42
22	Y0	65/67 (97%)	63 (97%)	2 (3%)	40	64

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
23	R1	82/83 (99%)	77 (94%)	5 (6%)	18	48
23	Y1	82/83 (99%)	75 (92%)	7 (8%)	10	39
24	R2	64/67 (96%)	58 (91%)	6 (9%)	8	33
24	Y2	64/67 (96%)	52 (81%)	12 (19%)	1	11
25	R3	51/52 (98%)	46 (90%)	5 (10%)	8	31
25	Y3	51/52 (98%)	48 (94%)	3 (6%)	19	49
26	R5	51/52 (98%)	40 (78%)	11 (22%)	1	7
26	Y5	51/52 (98%)	39 (76%)	12 (24%)	1	5
27	R6	48/52 (92%)	38 (79%)	10 (21%)	1	7
27	Y6	48/52 (92%)	38 (79%)	10 (21%)	1	7
28	R7	42/42 (100%)	38 (90%)	4 (10%)	8	33
28	Y7	42/42 (100%)	38 (90%)	4 (10%)	8	33
29	R8	54/55 (98%)	45 (83%)	9 (17%)	2	15
29	Y8	54/55 (98%)	42 (78%)	12 (22%)	1	6
30	R9	34/34 (100%)	32 (94%)	2 (6%)	19	49
30	Y9	34/34 (100%)	32 (94%)	2 (6%)	19	49
31	QB	203/220 (92%)	170 (84%)	33 (16%)	2	16
31	XB	203/220 (92%)	169 (83%)	34 (17%)	2	15
32	QC	161/188 (86%)	141 (88%)	20 (12%)	4	24
32	XC	161/188 (86%)	136 (84%)	25 (16%)	2	17
33	QD	180/181 (99%)	154 (86%)	26 (14%)	3	20
33	XD	180/181 (99%)	155 (86%)	25 (14%)	3	21
34	QE	116/123 (94%)	100 (86%)	16 (14%)	3	21
34	XE	116/123 (94%)	98 (84%)	18 (16%)	2	17
35	QF	90/90 (100%)	73 (81%)	17 (19%)	1	10
35	XF	90/90 (100%)	75 (83%)	15 (17%)	2	15
36	QG	126/127 (99%)	111 (88%)	15 (12%)	5	25
36	XG	126/127 (99%)	115 (91%)	11 (9%)	10	37
37	QH	119/119 (100%)	101 (85%)	18 (15%)	3	18
37	XH	119/119 (100%)	102 (86%)	17 (14%)	3	20
38	QI	98/99 (99%)	89 (91%)	9 (9%)	9	34

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
38	XI	98/99 (99%)	83 (85%)	15 (15%)	2	17
39	QJ	89/92 (97%)	74 (83%)	15 (17%)	2	14
39	XJ	89/92 (97%)	72 (81%)	17 (19%)	1	10
40	QK	90/99 (91%)	83 (92%)	7 (8%)	12	41
40	XK	90/99 (91%)	80 (89%)	10 (11%)	6	27
41	QL	104/109 (95%)	83 (80%)	21 (20%)	1	8
41	XL	104/109 (95%)	85 (82%)	19 (18%)	1	11
42	QM	92/101 (91%)	80 (87%)	12 (13%)	4	23
42	XM	92/101 (91%)	75 (82%)	17 (18%)	1	11
43	QN	49/50 (98%)	42 (86%)	7 (14%)	3	20
43	XN	49/50 (98%)	36 (74%)	13 (26%)	0	4
44	QO	79/80 (99%)	60 (76%)	19 (24%)	0	5
44	XO	79/80 (99%)	71 (90%)	8 (10%)	7	30
45	QP	72/74 (97%)	71 (99%)	1 (1%)	67	81
45	XP	72/74 (97%)	65 (90%)	7 (10%)	8	32
46	QQ	95/97 (98%)	86 (90%)	9 (10%)	8	33
46	XQ	95/97 (98%)	84 (88%)	11 (12%)	5	26
47	QR	61/77 (79%)	49 (80%)	12 (20%)	1	9
47	XR	61/77 (79%)	55 (90%)	6 (10%)	8	31
48	QT	76/82 (93%)	63 (83%)	13 (17%)	2	14
48	XT	76/82 (93%)	60 (79%)	16 (21%)	1	7
50	QS	69/80 (86%)	55 (80%)	14 (20%)	1	8
50	XS	69/80 (86%)	55 (80%)	14 (20%)	1	8
51	R4	30/63 (48%)	20 (67%)	10 (33%)	0	1
51	Y4	41/63 (65%)	32 (78%)	9 (22%)	1	6
All	All	9589/10022 (96%)	8239 (86%)	1350 (14%)	3	21

All (1350) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	RD	5	LYS
3	RD	10	THR
3	RD	17	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	RD	25	THR
3	RD	44	ASN
3	RD	49	ILE
3	RD	61	LEU
3	RD	65	ILE
3	RD	73	VAL
3	RD	87	ASN
3	RD	88	ARG
3	RD	95	LEU
3	RD	103	ARG
3	RD	106	ILE
3	RD	111	LEU
3	RD	122	ASP
3	RD	147	LEU
3	RD	166	GLN
3	RD	173	VAL
3	RD	192	THR
3	RD	211	ARG
3	RD	221	VAL
3	RD	229	VAL
3	RD	237	GLU
3	RD	242	ARG
3	RD	257	LEU
3	RD	259	THR
3	RD	261	LYS
3	RD	271	ILE
3	RD	273	ARG
4	RE	2	LYS
4	RE	4	ILE
4	RE	13	ARG
4	RE	16	ARG
4	RE	26	ILE
4	RE	34	VAL
4	RE	38	THR
4	RE	41	LYS
4	RE	42	ASP
4	RE	77	ILE
4	RE	79	ARG
4	RE	80	GLU
4	RE	82	ARG
4	RE	92	THR
4	RE	101	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	RE	113	PHE
4	RE	116	VAL
4	RE	119	ARG
4	RE	127	ASP
4	RE	144	ARG
4	RE	146	THR
4	RE	175	VAL
4	RE	179	GLU
4	RE	181	LEU
4	RE	197	ILE
4	RE	200	GLU
4	RE	202	LYS
4	RE	203	LYS
5	RF	9	ILE
5	RF	32	LEU
5	RF	33	LEU
5	RF	45	ARG
5	RF	65	TRP
5	RF	68	LYS
5	RF	78	ILE
5	RF	84	VAL
5	RF	104	LYS
5	RF	117	ARG
5	RF	174	VAL
5	RF	181	LEU
5	RF	194	MET
5	RF	197	ASP
6	RG	20	ILE
6	RG	34	LEU
6	RG	43	LEU
6	RG	45	GLU
6	RG	54	GLU
6	RG	62	LEU
6	RG	63	ILE
6	RG	88	ILE
6	RG	94	LEU
6	RG	116	ASP
6	RG	118	ARG
6	RG	147	ASP
6	RG	159	VAL
6	RG	174	GLU
7	RH	3	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
7	RH	4	ILE
7	RH	7	LEU
7	RH	27	LYS
7	RH	43	VAL
7	RH	44	VAL
7	RH	51	ARG
7	RH	59	ARG
7	RH	77	LYS
7	RH	88	LEU
7	RH	89	ILE
7	RH	105	LEU
7	RH	132	ARG
7	RH	153	LYS
7	RH	158	HIS
7	RH	169	VAL
8	RI	1	MET
8	RI	2	LYS
8	RI	9	LEU
8	RI	10	GLU
8	RI	17	GLN
8	RI	27	ARG
8	RI	31	LEU
8	RI	33	ARG
8	RI	38	LEU
8	RI	56	LYS
8	RI	57	ARG
8	RI	70	GLU
8	RI	81	VAL
8	RI	86	THR
8	RI	92	VAL
8	RI	101	LEU
8	RI	113	ARG
8	RI	129	THR
8	RI	130	TYR
8	RI	131	LYS
8	RI	135	GLU
8	RI	142	VAL
8	RI	145	VAL
9	RN	2	LYS
9	RN	7	LYS
9	RN	12	ARG
9	RN	32	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
9	RN	34	LEU
9	RN	48	MET
9	RN	60	ILE
9	RN	61	ARG
9	RN	62	VAL
9	RN	87	LEU
9	RN	90	MET
9	RN	98	VAL
9	RN	120	LEU
9	RN	127	ASP
9	RN	136	GLU
10	RO	9	GLU
10	RO	19	ILE
10	RO	24	VAL
10	RO	31	LYS
10	RO	49	ARG
10	RO	53	LYS
10	RO	63	VAL
10	RO	91	LEU
11	RP	5	ASP
11	RP	6	LEU
11	RP	9	ASN
11	RP	14	LYS
11	RP	16	ARG
11	RP	19	VAL
11	RP	21	ARG
11	RP	27	HIS
11	RP	29	LYS
11	RP	30	THR
11	RP	36	LYS
11	RP	45	LEU
11	RP	49	ARG
11	RP	50	ARG
11	RP	62	LEU
11	RP	70	GLN
11	RP	71	VAL
11	RP	75	ILE
11	RP	88	LEU
11	RP	91	PHE
11	RP	100	LEU
11	RP	105	LEU
11	RP	107	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
11	RP	112	LEU
11	RP	123	LEU
11	RP	138	LEU
11	RP	144	GLU
11	RP	146	VAL
12	RQ	17	LEU
12	RQ	26	TYR
12	RQ	27	VAL
12	RQ	45	GLN
12	RQ	54	MET
12	RQ	60	ARG
12	RQ	72	LYS
12	RQ	79	LEU
12	RQ	81	VAL
12	RQ	82	ARG
12	RQ	83	MET
12	RQ	112	GLU
12	RQ	135	ASP
12	RQ	139	GLU
13	RR	1	MET
13	RR	9	LYS
13	RR	18	LEU
13	RR	28	LEU
13	RR	29	LEU
13	RR	44	LEU
13	RR	63	ARG
13	RR	79	LEU
13	RR	91	GLN
13	RR	100	LEU
13	RR	104	ARG
13	RR	105	ARG
14	RS	4	LEU
14	RS	12	PHE
14	RS	20	ARG
14	RS	25	ARG
14	RS	27	SER
14	RS	39	ILE
14	RS	44	LYS
14	RS	50	SER
14	RS	54	LEU
14	RS	56	LEU
14	RS	58	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
14	RS	59	LYS
14	RS	101	LEU
14	RS	103	GLU
14	RS	106	ARG
15	RT	18	ASP
15	RT	27	THR
15	RT	41	ARG
15	RT	50	ILE
15	RT	62	THR
15	RT	65	LYS
15	RT	74	ARG
15	RT	87	ASP
15	RT	88	ILE
15	RT	89	VAL
15	RT	99	LEU
15	RT	107	ASP
15	RT	112	ARG
16	RU	52	ARG
16	RU	59	ARG
16	RU	74	LEU
16	RU	90	VAL
16	RU	92	ARG
16	RU	98	LEU
16	RU	104	GLN
16	RU	108	GLU
16	RU	111	GLU
16	RU	114	LYS
16	RU	117	GLN
17	RV	19	LYS
17	RV	35	LEU
17	RV	37	VAL
17	RV	45	THR
17	RV	47	VAL
17	RV	57	VAL
17	RV	61	VAL
17	RV	64	HIS
17	RV	74	LYS
17	RV	78	LYS
17	RV	79	VAL
17	RV	99	ILE
18	RW	11	ARG
18	RW	16	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
18	RW	19	LEU
18	RW	20	VAL
18	RW	27	LYS
18	RW	30	GLU
18	RW	40	ASN
18	RW	51	LEU
18	RW	63	ASP
18	RW	67	ASP
18	RW	76	VAL
18	RW	100	THR
18	RW	106	ILE
18	RW	107	LEU
19	RX	6	ASP
19	RX	12	VAL
19	RX	23	GLU
19	RX	27	THR
19	RX	35	THR
19	RX	49	VAL
19	RX	65	ARG
19	RX	70	LEU
19	RX	80	ILE
19	RX	81	VAL
20	RY	2	ARG
20	RY	14	LEU
20	RY	27	VAL
20	RY	34	LYS
20	RY	37	VAL
20	RY	38	ILE
20	RY	43	ASN
20	RY	51	VAL
20	RY	57	GLN
20	RY	61	ILE
20	RY	67	LEU
20	RY	75	ILE
20	RY	76	CYS
20	RY	87	LYS
20	RY	89	PHE
20	RY	90	LEU
20	RY	95	LYS
20	RY	97	ARG
20	RY	102	CYS
21	RZ	2	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
21	RZ	5	LEU
21	RZ	19	ARG
21	RZ	20	ARG
21	RZ	60	GLU
21	RZ	70	LEU
21	RZ	71	VAL
21	RZ	81	ARG
21	RZ	92	SER
21	RZ	93	ASP
21	RZ	94	GLU
21	RZ	112	ARG
21	RZ	117	LEU
21	RZ	131	ARG
21	RZ	145	GLU
21	RZ	150	LEU
21	RZ	163	LEU
21	RZ	168	GLU
21	RZ	170	THR
21	RZ	174	VAL
21	RZ	182	LYS
21	RZ	183	LEU
22	R0	5	LYS
22	R0	7	LEU
22	R0	36	ILE
22	R0	66	VAL
22	R0	74	ARG
23	R1	51	VAL
23	R1	78	LYS
23	R1	80	LEU
23	R1	91	LYS
23	R1	92	LYS
24	R2	5	GLU
24	R2	17	SER
24	R2	24	LEU
24	R2	32	LEU
24	R2	50	ILE
24	R2	65	ASN
25	R3	6	VAL
25	R3	8	LEU
25	R3	32	GLN
25	R3	40	THR
25	R3	56	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
26	R5	4	HIS
26	R5	6	VAL
26	R5	29	THR
26	R5	36	CYS
26	R5	40	LYS
26	R5	44	THR
26	R5	51	TYR
26	R5	52	TYR
26	R5	56	LYS
26	R5	58	LEU
26	R5	60	VAL
27	R6	6	ARG
27	R6	8	LYS
27	R6	19	ARG
27	R6	23	THR
27	R6	27	LYS
27	R6	30	THR
27	R6	33	LYS
27	R6	34	LEU
27	R6	37	ARG
27	R6	44	ARG
28	R7	1	MET
28	R7	14	LYS
28	R7	43	THR
28	R7	46	VAL
29	R8	14	VAL
29	R8	15	LYS
29	R8	34	TRP
29	R8	35	GLN
29	R8	44	LYS
29	R8	47	LYS
29	R8	52	LYS
29	R8	64	TYR
29	R8	65	GLU
30	R9	1	MET
30	R9	33	LYS
3	YD	17	THR
3	YD	26	LYS
3	YD	38	LYS
3	YD	44	ASN
3	YD	49	ILE
3	YD	61	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	YD	65	ILE
3	YD	73	VAL
3	YD	88	ARG
3	YD	95	LEU
3	YD	103	ARG
3	YD	105	ILE
3	YD	106	ILE
3	YD	111	LEU
3	YD	112	GLN
3	YD	141	VAL
3	YD	192	THR
3	YD	202	LYS
3	YD	211	ARG
3	YD	221	VAL
3	YD	229	VAL
3	YD	230	ASP
3	YD	237	GLU
3	YD	242	ARG
3	YD	257	LEU
3	YD	259	THR
3	YD	273	ARG
4	YE	4	ILE
4	YE	13	ARG
4	YE	16	ARG
4	YE	26	ILE
4	YE	41	LYS
4	YE	42	ASP
4	YE	77	ILE
4	YE	79	ARG
4	YE	82	ARG
4	YE	92	THR
4	YE	101	ARG
4	YE	113	PHE
4	YE	116	VAL
4	YE	117	MET
4	YE	119	ARG
4	YE	127	ASP
4	YE	144	ARG
4	YE	146	THR
4	YE	175	VAL
4	YE	197	ILE
4	YE	200	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	YE	202	LYS
4	YE	203	LYS
5	YF	9	ILE
5	YF	32	LEU
5	YF	33	LEU
5	YF	45	ARG
5	YF	65	TRP
5	YF	78	ILE
5	YF	84	VAL
5	YF	105	VAL
5	YF	106	ARG
5	YF	107	LYS
5	YF	117	ARG
5	YF	161	GLU
5	YF	170	LEU
5	YF	174	VAL
5	YF	181	LEU
5	YF	197	ASP
6	YG	7	LEU
6	YG	22	ARG
6	YG	31	VAL
6	YG	33	ARG
6	YG	34	LEU
6	YG	43	LEU
6	YG	58	GLN
6	YG	63	ILE
6	YG	66	GLN
6	YG	67	LYS
6	YG	80	PHE
6	YG	84	LYS
6	YG	88	ILE
6	YG	94	LEU
6	YG	115	ARG
6	YG	116	ASP
6	YG	118	ARG
6	YG	145	THR
6	YG	147	ASP
6	YG	167	GLU
7	YH	3	ARG
7	YH	4	ILE
7	YH	9	ILE
7	YH	27	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
7	YH	32	GLU
7	YH	59	ARG
7	YH	88	LEU
7	YH	89	ILE
7	YH	103	LEU
7	YH	105	LEU
7	YH	122	THR
7	YH	129	THR
7	YH	132	ARG
7	YH	139	GLN
7	YH	143	GLN
7	YH	152	ARG
7	YH	153	LYS
7	YH	158	HIS
7	YH	169	VAL
8	YI	1	MET
8	YI	2	LYS
8	YI	10	GLU
8	YI	17	GLN
8	YI	27	ARG
8	YI	33	ARG
8	YI	35	LEU
8	YI	38	LEU
8	YI	56	LYS
8	YI	70	GLU
8	YI	81	VAL
8	YI	86	THR
8	YI	92	VAL
8	YI	101	LEU
8	YI	113	ARG
8	YI	130	TYR
8	YI	131	LYS
8	YI	135	GLU
8	YI	136	VAL
8	YI	142	VAL
9	YN	2	LYS
9	YN	5	VAL
9	YN	32	THR
9	YN	34	LEU
9	YN	43	THR
9	YN	48	MET
9	YN	60	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
9	YN	61	ARG
9	YN	62	VAL
9	YN	67	LEU
9	YN	87	LEU
9	YN	90	MET
9	YN	120	LEU
9	YN	136	GLU
10	YO	9	GLU
10	YO	19	ILE
10	YO	24	VAL
10	YO	31	LYS
10	YO	47	ILE
10	YO	49	ARG
10	YO	53	LYS
10	YO	68	GLU
10	YO	91	LEU
11	YP	6	LEU
11	YP	9	ASN
11	YP	14	LYS
11	YP	16	ARG
11	YP	19	VAL
11	YP	21	ARG
11	YP	29	LYS
11	YP	45	LEU
11	YP	49	ARG
11	YP	50	ARG
11	YP	56	SER
11	YP	61	ARG
11	YP	71	VAL
11	YP	75	ILE
11	YP	88	LEU
11	YP	91	PHE
11	YP	101	VAL
11	YP	112	LEU
11	YP	115	LEU
11	YP	123	LEU
11	YP	135	LEU
11	YP	144	GLU
11	YP	146	VAL
11	YP	149	GLU
12	YQ	5	ARG
12	YQ	25	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
12	YQ	45	GLN
12	YQ	55	VAL
12	YQ	59	ARG
12	YQ	79	LEU
12	YQ	81	VAL
12	YQ	82	ARG
12	YQ	83	MET
12	YQ	103	MET
12	YQ	112	GLU
12	YQ	135	ASP
12	YQ	139	GLU
13	YR	1	MET
13	YR	18	LEU
13	YR	28	LEU
13	YR	29	LEU
13	YR	37	THR
13	YR	44	LEU
13	YR	65	LEU
13	YR	79	LEU
13	YR	100	LEU
13	YR	104	ARG
13	YR	105	ARG
14	YS	12	PHE
14	YS	14	VAL
14	YS	20	ARG
14	YS	27	SER
14	YS	44	LYS
14	YS	54	LEU
14	YS	56	LEU
14	YS	57	LYS
14	YS	58	LEU
14	YS	78	LEU
14	YS	103	GLU
14	YS	106	ARG
15	YT	27	THR
15	YT	28	VAL
15	YT	41	ARG
15	YT	42	ILE
15	YT	58	ASN
15	YT	65	LYS
15	YT	66	VAL
15	YT	74	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
15	YT	87	ASP
15	YT	88	ILE
15	YT	89	VAL
15	YT	99	LEU
15	YT	107	ASP
15	YT	112	ARG
15	YT	115	ARG
15	YT	125	ARG
15	YT	128	GLU
15	YT	134	GLU
16	YU	5	LYS
16	YU	74	LEU
16	YU	90	VAL
16	YU	91	ASP
16	YU	92	ARG
16	YU	98	LEU
16	YU	104	GLN
16	YU	111	GLU
16	YU	114	LYS
17	YV	7	THR
17	YV	10	LYS
17	YV	19	LYS
17	YV	35	LEU
17	YV	37	VAL
17	YV	39	LEU
17	YV	45	THR
17	YV	47	VAL
17	YV	61	VAL
17	YV	66	ARG
17	YV	72	VAL
17	YV	79	VAL
17	YV	99	ILE
18	YW	11	ARG
18	YW	16	LYS
18	YW	23	LEU
18	YW	40	ASN
18	YW	51	LEU
18	YW	67	ASP
18	YW	68	ARG
18	YW	69	LEU
18	YW	76	VAL
18	YW	88	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
18	YW	100	THR
18	YW	106	ILE
18	YW	107	LEU
19	YX	6	ASP
19	YX	12	VAL
19	YX	27	THR
19	YX	43	VAL
19	YX	49	VAL
19	YX	59	VAL
19	YX	65	ARG
19	YX	66	LEU
19	YX	70	LEU
19	YX	80	ILE
19	YX	88	LYS
20	YY	14	LEU
20	YY	26	LYS
20	YY	27	VAL
20	YY	38	ILE
20	YY	57	GLN
20	YY	61	ILE
20	YY	64	GLU
20	YY	67	LEU
20	YY	71	LYS
20	YY	76	CYS
20	YY	87	LYS
20	YY	89	PHE
20	YY	90	LEU
20	YY	95	LYS
20	YY	97	ARG
21	YZ	2	GLU
21	YZ	5	LEU
21	YZ	19	ARG
21	YZ	20	ARG
21	YZ	31	ARG
21	YZ	71	VAL
21	YZ	76	LEU
21	YZ	81	ARG
21	YZ	93	ASP
21	YZ	94	GLU
21	YZ	133	ILE
21	YZ	137	ILE
21	YZ	139	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
21	YZ	140	ASP
21	YZ	141	VAL
21	YZ	144	LEU
21	YZ	150	LEU
21	YZ	151	HIS
21	YZ	153	SER
21	YZ	156	LYS
21	YZ	166	SER
21	YZ	178	GLU
21	YZ	182	LYS
22	Y0	36	ILE
22	Y0	74	ARG
23	Y1	30	VAL
23	Y1	51	VAL
23	Y1	56	GLN
23	Y1	78	LYS
23	Y1	80	LEU
23	Y1	91	LYS
23	Y1	92	LYS
24	Y2	5	GLU
24	Y2	23	LYS
24	Y2	24	LEU
24	Y2	27	GLU
24	Y2	32	LEU
24	Y2	41	ILE
24	Y2	47	ASN
24	Y2	50	ILE
24	Y2	52	ASP
24	Y2	53	LEU
24	Y2	64	LEU
24	Y2	65	ASN
25	Y3	6	VAL
25	Y3	8	LEU
25	Y3	30	ARG
26	Y5	3	LYS
26	Y5	4	HIS
26	Y5	6	VAL
26	Y5	29	THR
26	Y5	35	GLU
26	Y5	36	CYS
26	Y5	40	LYS
26	Y5	48	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
26	Y5	51	TYR
26	Y5	52	TYR
26	Y5	56	LYS
26	Y5	58	LEU
27	Y6	6	ARG
27	Y6	8	LYS
27	Y6	11	LEU
27	Y6	19	ARG
27	Y6	23	THR
27	Y6	30	THR
27	Y6	33	LYS
27	Y6	34	LEU
27	Y6	37	ARG
27	Y6	44	ARG
28	Y7	1	MET
28	Y7	4	THR
28	Y7	9	ARG
28	Y7	14	LYS
29	Y8	14	VAL
29	Y8	15	LYS
29	Y8	30	ARG
29	Y8	34	TRP
29	Y8	35	GLN
29	Y8	43	GLN
29	Y8	44	LYS
29	Y8	47	LYS
29	Y8	52	LYS
29	Y8	56	GLU
29	Y8	64	TYR
29	Y8	65	GLU
30	Y9	1	MET
30	Y9	17	ILE
31	QB	8	LYS
31	QB	9	GLU
31	QB	15	VAL
31	QB	17	PHE
31	QB	28	PHE
31	QB	33	TYR
31	QB	36	ARG
31	QB	37	ASN
31	QB	64	ARG
31	QB	67	THR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
31	QB	75	LYS
31	QB	94	ASN
31	QB	96	ARG
31	QB	101	MET
31	QB	103	THR
31	QB	113	HIS
31	QB	129	GLU
31	QB	146	GLN
31	QB	158	LEU
31	QB	162	ILE
31	QB	165	VAL
31	QB	166	ASP
31	QB	168	THR
31	QB	172	ILE
31	QB	191	ASP
31	QB	195	ASP
31	QB	196	LEU
31	QB	200	ILE
31	QB	205	ASP
31	QB	221	LEU
31	QB	222	ILE
31	QB	230	VAL
31	QB	239	VAL
32	QC	8	ILE
32	QC	26	LYS
32	QC	29	TYR
32	QC	31	HIS
32	QC	34	LEU
32	QC	46	GLU
32	QC	55	VAL
32	QC	70	VAL
32	QC	90	GLU
32	QC	107	GLN
32	QC	124	ILE
32	QC	125	GLU
32	QC	128	PHE
32	QC	134	ILE
32	QC	139	GLN
32	QC	156	ARG
32	QC	167	TRP
32	QC	173	VAL
32	QC	188	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
32	QC	204	LEU
33	QD	10	ARG
33	QD	31	CYS
33	QD	33	MET
33	QD	36	ARG
33	QD	42	GLN
33	QD	43	HIS
33	QD	53	ASP
33	QD	54	TYR
33	QD	56	VAL
33	QD	60	GLU
33	QD	61	LYS
33	QD	67	ILE
33	QD	72	GLU
33	QD	76	ARG
33	QD	86	LYS
33	QD	97	LEU
33	QD	127	THR
33	QD	138	TYR
33	QD	156	GLU
33	QD	157	LEU
33	QD	187	ARG
33	QD	190	ASP
33	QD	196	LEU
33	QD	200	GLU
33	QD	206	PHE
33	QD	207	TYR
34	QE	12	LEU
34	QE	19	MET
34	QE	24	ARG
34	QE	37	ARG
34	QE	41	VAL
34	QE	47	LYS
34	QE	60	TYR
34	QE	61	TYR
34	QE	64	ARG
34	QE	78	HIS
34	QE	80	ILE
34	QE	91	LEU
34	QE	119	LEU
34	QE	120	THR
34	QE	137	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
34	QE	150	ARG
35	QF	10	LEU
35	QF	16	GLN
35	QF	22	GLU
35	QF	31	GLU
35	QF	40	VAL
35	QF	45	LEU
35	QF	46	ARG
35	QF	50	TYR
35	QF	52	ILE
35	QF	55	ASP
35	QF	61	LEU
35	QF	74	ASP
35	QF	77	ARG
35	QF	82	ARG
35	QF	89	MET
35	QF	91	VAL
35	QF	100	ASN
36	QG	5	ARG
36	QG	13	GLN
36	QG	20	ASP
36	QG	31	MET
36	QG	35	LYS
36	QG	36	LYS
36	QG	79	ARG
36	QG	91	VAL
36	QG	97	GLN
36	QG	104	LEU
36	QG	119	ARG
36	QG	122	HIS
36	QG	136	LYS
36	QG	149	ARG
36	QG	153	HIS
37	QH	18	ARG
37	QH	26	VAL
37	QH	30	ARG
37	QH	31	PHE
37	QH	38	ILE
37	QH	39	LEU
37	QH	63	LEU
37	QH	82	HIS
37	QH	83	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
37	QH	95	VAL
37	QH	98	LYS
37	QH	102	ARG
37	QH	107	LEU
37	QH	111	ILE
37	QH	112	LEU
37	QH	114	THR
37	QH	120	THR
37	QH	138	TRP
38	QI	4	TYR
38	QI	10	ARG
38	QI	38	GLN
38	QI	79	LEU
38	QI	93	ARG
38	QI	95	LYS
38	QI	104	ARG
38	QI	118	LYS
38	QI	127	LYS
39	QJ	6	ILE
39	QJ	8	LEU
39	QJ	13	HIS
39	QJ	14	LYS
39	QJ	22	LYS
39	QJ	33	GLN
39	QJ	40	LEU
39	QJ	55	LYS
39	QJ	57	LYS
39	QJ	58	ASP
39	QJ	70	ARG
39	QJ	74	ILE
39	QJ	79	ARG
39	QJ	81	THR
39	QJ	96	ILE
40	QK	40	ILE
40	QK	44	SER
40	QK	50	TYR
40	QK	57	THR
40	QK	62	GLN
40	QK	70	LYS
40	QK	124	LYS
41	QL	17	LYS
41	QL	18	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
41	QL	20	LYS
41	QL	33	ARG
41	QL	37	CYS
41	QL	42	THR
41	QL	52	LEU
41	QL	53	ARG
41	QL	54	LYS
41	QL	55	VAL
41	QL	59	ARG
41	QL	66	VAL
41	QL	76	ASN
41	QL	77	LEU
41	QL	79	GLU
41	QL	80	HIS
41	QL	93	LEU
41	QL	102	ARG
41	QL	111	LYS
41	QL	114	LYS
41	QL	115	LYS
42	QM	3	ARG
42	QM	12	ASN
42	QM	19	LEU
42	QM	21	TYR
42	QM	34	LEU
42	QM	47	ASP
42	QM	48	LEU
42	QM	56	LEU
42	QM	62	ASN
42	QM	81	LEU
42	QM	99	ARG
42	QM	108	ARG
43	QN	22	THR
43	QN	25	VAL
43	QN	29	ARG
43	QN	35	ARG
43	QN	53	LEU
43	QN	57	ARG
43	QN	61	TRP
44	QO	6	GLU
44	QO	17	ARG
44	QO	25	THR
44	QO	26	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
44	QO	27	VAL
44	QO	31	LEU
44	QO	35	ARG
44	QO	37	ASN
44	QO	39	LEU
44	QO	46	HIS
44	QO	47	LYS
44	QO	51	HIS
44	QO	58	MET
44	QO	63	ARG
44	QO	64	ARG
44	QO	66	LEU
44	QO	71	GLN
44	QO	83	GLU
44	QO	87	ILE
45	QP	29	ASP
46	QQ	37	LYS
46	QQ	52	LYS
46	QQ	55	ASP
46	QQ	63	ARG
46	QQ	74	LEU
46	QQ	78	GLU
46	QQ	81	ARG
46	QQ	89	LEU
46	QQ	101	ARG
47	QR	19	LYS
47	QR	23	LYS
47	QR	26	LEU
47	QR	34	TYR
47	QR	38	GLU
47	QR	40	LEU
47	QR	44	LEU
47	QR	61	LYS
47	QR	75	ILE
47	QR	81	PHE
47	QR	85	LEU
47	QR	86	VAL
48	QT	10	LEU
48	QT	13	LEU
48	QT	23	ARG
48	QT	26	ASN
48	QT	38	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
48	QT	42	GLN
48	QT	57	ARG
48	QT	62	LEU
48	QT	71	THR
48	QT	73	HIS
48	QT	74	LYS
48	QT	84	LEU
48	QT	85	MET
31	XB	11	LEU
31	XB	15	VAL
31	XB	16	HIS
31	XB	17	PHE
31	XB	19	HIS
31	XB	28	PHE
31	XB	33	TYR
31	XB	36	ARG
31	XB	67	THR
31	XB	86	GLU
31	XB	94	ASN
31	XB	96	ARG
31	XB	102	LEU
31	XB	105	PHE
31	XB	121	LEU
31	XB	133	LYS
31	XB	141	GLU
31	XB	149	LEU
31	XB	150	SER
31	XB	152	PHE
31	XB	162	ILE
31	XB	165	VAL
31	XB	168	THR
31	XB	172	ILE
31	XB	184	VAL
31	XB	187	LEU
31	XB	196	LEU
31	XB	200	ILE
31	XB	205	ASP
31	XB	209	ARG
31	XB	215	LEU
31	XB	222	ILE
31	XB	238	LEU
31	XB	241	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
32	XC	3	ASN
32	XC	19	GLU
32	XC	26	LYS
32	XC	29	TYR
32	XC	31	HIS
32	XC	32	LEU
32	XC	36	ASP
32	XC	56	ASP
32	XC	70	VAL
32	XC	76	VAL
32	XC	91	LEU
32	XC	94	LEU
32	XC	103	VAL
32	XC	115	LEU
32	XC	124	ILE
32	XC	128	PHE
32	XC	136	GLN
32	XC	152	ILE
32	XC	162	GLN
32	XC	167	TRP
32	XC	173	VAL
32	XC	175	LEU
32	XC	176	HIS
32	XC	188	LEU
32	XC	193	TYR
33	XD	31	CYS
33	XD	33	MET
33	XD	43	HIS
33	XD	49	ARG
33	XD	54	TYR
33	XD	61	LYS
33	XD	67	ILE
33	XD	72	GLU
33	XD	76	ARG
33	XD	78	LEU
33	XD	86	LYS
33	XD	105	VAL
33	XD	107	ARG
33	XD	127	THR
33	XD	129	ASN
33	XD	134	ASP
33	XD	140	VAL

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
33	XD	150	GLU
33	XD	165	MET
33	XD	178	VAL
33	XD	181	MET
33	XD	190	ASP
33	XD	196	LEU
33	XD	203	VAL
33	XD	207	TYR
34	XE	10	MET
34	XE	12	LEU
34	XE	13	ILE
34	XE	20	GLN
34	XE	36	ASP
34	XE	37	ARG
34	XE	41	VAL
34	XE	47	LYS
34	XE	60	TYR
34	XE	61	TYR
34	XE	64	ARG
34	XE	68	GLU
34	XE	78	HIS
34	XE	80	ILE
34	XE	91	LEU
34	XE	119	LEU
34	XE	120	THR
34	XE	137	GLU
35	XF	7	ASN
35	XF	11	ASN
35	XF	13	ASN
35	XF	14	LEU
35	XF	15	ASP
35	XF	21	LEU
35	XF	38	GLU
35	XF	40	VAL
35	XF	46	ARG
35	XF	50	TYR
35	XF	52	ILE
35	XF	61	LEU
35	XF	82	ARG
35	XF	91	VAL
35	XF	100	ASN
36	XG	4	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
36	XG	13	GLN
36	XG	31	MET
36	XG	36	LYS
36	XG	50	ILE
36	XG	79	ARG
36	XG	91	VAL
36	XG	122	HIS
36	XG	139	GLU
36	XG	140	ASP
36	XG	149	ARG
37	XH	11	THR
37	XH	18	ARG
37	XH	26	VAL
37	XH	30	ARG
37	XH	31	PHE
37	XH	37	ARG
37	XH	44	PHE
37	XH	51	VAL
37	XH	63	LEU
37	XH	83	ILE
37	XH	85	ARG
37	XH	98	LYS
37	XH	102	ARG
37	XH	107	LEU
37	XH	111	ILE
37	XH	112	LEU
37	XH	138	TRP
38	XI	3	GLN
38	XI	4	TYR
38	XI	10	ARG
38	XI	25	LYS
38	XI	35	GLU
38	XI	36	TYR
38	XI	38	GLN
38	XI	42	ARG
38	XI	66	ARG
38	XI	79	LEU
38	XI	88	TYR
38	XI	93	ARG
38	XI	95	LYS
38	XI	107	ARG
38	XI	121	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
39	XJ	6	ILE
39	XJ	8	LEU
39	XJ	17	ASP
39	XJ	22	LYS
39	XJ	25	GLU
39	XJ	33	GLN
39	XJ	40	LEU
39	XJ	50	ILE
39	XJ	57	LYS
39	XJ	62	HIS
39	XJ	70	ARG
39	XJ	73	ASP
39	XJ	78	ASN
39	XJ	79	ARG
39	XJ	81	THR
39	XJ	96	ILE
39	XJ	99	LYS
40	XK	18	ARG
40	XK	29	ILE
40	XK	40	ILE
40	XK	41	THR
40	XK	50	TYR
40	XK	57	THR
40	XK	71	LYS
40	XK	81	ASP
40	XK	84	VAL
40	XK	127	LYS
41	XL	16	GLU
41	XL	18	VAL
41	XL	20	LYS
41	XL	37	CYS
41	XL	42	THR
41	XL	52	LEU
41	XL	53	ARG
41	XL	54	LYS
41	XL	55	VAL
41	XL	59	ARG
41	XL	61	THR
41	XL	66	VAL
41	XL	75	HIS
41	XL	77	LEU
41	XL	80	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
41	XL	102	ARG
41	XL	105	TYR
41	XL	106	ASP
41	XL	112	ASP
42	XM	9	ILE
42	XM	12	ASN
42	XM	19	LEU
42	XM	21	TYR
42	XM	37	THR
42	XM	46	LYS
42	XM	48	LEU
42	XM	49	THR
42	XM	50	GLU
42	XM	56	LEU
42	XM	69	GLU
42	XM	81	LEU
42	XM	84	ILE
42	XM	99	ARG
42	XM	105	THR
42	XM	108	ARG
42	XM	111	LYS
43	XN	21	TYR
43	XN	22	THR
43	XN	25	VAL
43	XN	26	ARG
43	XN	35	ARG
43	XN	40	CYS
43	XN	44	LEU
43	XN	47	LEU
43	XN	49	HIS
43	XN	53	LEU
43	XN	56	VAL
43	XN	57	ARG
43	XN	61	TRP
44	XO	17	ARG
44	XO	25	THR
44	XO	26	GLU
44	XO	27	VAL
44	XO	31	LEU
44	XO	47	LYS
44	XO	63	ARG
44	XO	78	TYR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
45	XP	2	VAL
45	XP	16	HIS
45	XP	21	VAL
45	XP	45	THR
45	XP	49	LEU
45	XP	61	SER
45	XP	73	LEU
46	XQ	31	LEU
46	XQ	37	LYS
46	XQ	46	ASP
46	XQ	52	LYS
46	XQ	63	ARG
46	XQ	74	LEU
46	XQ	78	GLU
46	XQ	81	ARG
46	XQ	84	LEU
46	XQ	89	LEU
46	XQ	98	LEU
47	XR	19	LYS
47	XR	35	ARG
47	XR	38	GLU
47	XR	40	LEU
47	XR	44	LEU
47	XR	81	PHE
48	XT	10	LEU
48	XT	13	LEU
48	XT	36	LEU
48	XT	41	ILE
48	XT	50	GLU
48	XT	53	LEU
48	XT	56	MET
48	XT	57	ARG
48	XT	63	ILE
48	XT	71	THR
48	XT	73	HIS
48	XT	74	LYS
48	XT	75	ASN
48	XT	84	LEU
48	XT	86	ARG
48	XT	93	GLU
50	XS	5	LEU
50	XS	6	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
50	XS	16	LEU
50	XS	22	LEU
50	XS	23	ASN
50	XS	33	THR
50	XS	38	SER
50	XS	41	VAL
50	XS	43	GLU
50	XS	51	VAL
50	XS	57	HIS
50	XS	62	ILE
50	XS	66	MET
50	XS	77	THR
51	R4	5	ILE
51	R4	6	HIS
51	R4	9	LEU
51	R4	10	VAL
51	R4	20	ASN
51	R4	25	TYR
51	R4	26	SER
51	R4	27	THR
51	R4	28	LYS
51	R4	33	VAL
50	QS	5	LEU
50	QS	6	LYS
50	QS	16	LEU
50	QS	22	LEU
50	QS	23	ASN
50	QS	33	THR
50	QS	38	SER
50	QS	41	VAL
50	QS	43	GLU
50	QS	51	VAL
50	QS	57	HIS
50	QS	62	ILE
50	QS	66	MET
50	QS	77	THR
51	Y4	6	HIS
51	Y4	10	VAL
51	Y4	15	ILE
51	Y4	22	ILE
51	Y4	27	THR
51	Y4	34	GLU

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Mol	Chain	Res	Type
51	Y4	38	LYS
51	Y4	42	PHE
51	Y4	43	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (18) such sidechains are listed below:

Mol	Chain	Res	Type
3	RD	227	ASN
7	RH	143	GLN
7	RH	147	ASN
15	RT	84	GLN
3	YD	96	HIS
4	YE	35	GLN
7	YH	147	ASN
13	YR	24	GLN
15	YT	58	ASN
31	QB	16	HIS
41	QL	49	ASN
44	QO	28	GLN
31	XB	40	HIS
31	XB	212	GLN
32	XC	104	GLN
35	XF	13	ASN
42	XM	92	HIS
46	XQ	16	GLN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	RA	2878/2915 (98%)	573 (19%)	52 (1%)
1	YA	2880/2915 (98%)	590 (20%)	55 (1%)
2	RB	119/122 (97%)	19 (15%)	2 (1%)
2	YB	119/122 (97%)	20 (16%)	2 (1%)
49	QA	1509/1521 (99%)	296 (19%)	15 (0%)
49	XA	1514/1521 (99%)	288 (19%)	19 (1%)
52	QX	18/19 (94%)	7 (38%)	1 (5%)
52	XX	18/19 (94%)	7 (38%)	1 (5%)
53	QV	77/78 (98%)	27 (35%)	4 (5%)
53	XV	77/78 (98%)	26 (33%)	5 (6%)
All	All	9209/9310 (98%)	1853 (20%)	156 (1%)

All (1853) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	RA	9	U
1	RA	15	G
1	RA	28	A
1	RA	34	C
1	RA	35	G
1	RA	46	C
1	RA	51	G
1	RA	55	G
1	RA	61	G
1	RA	63	U
1	RA	72	U
1	RA	74	A
1	RA	75	G
1	RA	83	G
1	RA	84	A
1	RA	96	G
1	RA	99	U
1	RA	101	G
1	RA	102	G
1	RA	103	A
1	RA	118	A
1	RA	120	U
1	RA	125	G
1	RA	131	G
1	RA	138	G
1	RA	177	G
1	RA	181	A
1	RA	196	A
1	RA	199	A
1	RA	204	A
1	RA	215	G
1	RA	216	A
1	RA	221	A
1	RA	222	A
1	RA	223	A
1	RA	224	G
1	RA	228	A
1	RA	229	A
1	RA	230	U
1	RA	232	G
1	RA	241	A
1	RA	242	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	243	U
1	RA	248	G
1	RA	249	C
1	RA	252	G
1	RA	265	A
1	RA	266	G
1	RA	267	C
1	RA	269	U
1	RA	270(L)	U
1	RA	270(M)	U
1	RA	270(N)	G
1	RA	270(P)	C
1	RA	271(C)	U
1	RA	271	G
1	RA	273(F)	C
1	RA	275	G
1	RA	276	A
1	RA	277	C
1	RA	278	A
1	RA	279	C
1	RA	280	C
1	RA	299	A
1	RA	300	A
1	RA	311	A
1	RA	323	G
1	RA	324	A
1	RA	329	G
1	RA	330	A
1	RA	342	G
1	RA	345	A
1	RA	346	A
1	RA	352	G
1	RA	362	U
1	RA	364	C
1	RA	371	A
1	RA	372	G
1	RA	373	U
1	RA	384	U
1	RA	386	G
1	RA	387	U
1	RA	394	A
1	RA	395	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	405	U
1	RA	411	G
1	RA	412	A
1	RA	428	A
1	RA	442	G
1	RA	444	C
1	RA	448	U
1	RA	454	A
1	RA	456	C
1	RA	457	A
1	RA	470	A
1	RA	480	A
1	RA	481	G
1	RA	494	G
1	RA	496	G
1	RA	504	U
1	RA	505	A
1	RA	509	C
1	RA	512	G
1	RA	513	A
1	RA	527	C
1	RA	529	A
1	RA	531	C
1	RA	532	A
1	RA	533	G
1	RA	537	C
1	RA	539	G
1	RA	540	G
1	RA	546	C
1	RA	547	A
1	RA	563	G
1	RA	573	G
1	RA	575	A
1	RA	580	C
1	RA	583	G
1	RA	603	A
1	RA	607	U
1	RA	614	U
1	RA	615	G
1	RA	617	G
1	RA	618	G
1	RA	621	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	627	A
1	RA	628	G
1	RA	637	A
1	RA	638	G
1	RA	645	C
1	RA	646	A
1	RA	647	G
1	RA	651	G
1	RA	652	C
1	RA	654	A
1	RA	654(A)	G
1	RA	668	G
1	RA	669	G
1	RA	670	A
1	RA	675	A
1	RA	686	G
1	RA	704	G
1	RA	705	A
1	RA	717	G
1	RA	722	A
1	RA	726	G
1	RA	730	C
1	RA	753	C
1	RA	765	G
1	RA	775	G
1	RA	776	G
1	RA	782	A
1	RA	784	A
1	RA	785	G
1	RA	793	A
1	RA	805	G
1	RA	812	C
1	RA	819	A
1	RA	827	U
1	RA	828	U
1	RA	831	G
1	RA	833	U
1	RA	834	C
1	RA	847	U
1	RA	856	C
1	RA	857	C
1	RA	859	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	860	U
1	RA	866	A
1	RA	871	U
1	RA	878	A
1	RA	890	A
1	RA	896	A
1	RA	897	C
1	RA	901	A
1	RA	907	U
1	RA	910	A
1	RA	915	C
1	RA	917	A
1	RA	918	A
1	RA	932	G
1	RA	941	A
1	RA	945	A
1	RA	946	G
1	RA	959	A
1	RA	961	C
1	RA	973	A
1	RA	974	G
1	RA	974(A)	C
1	RA	975	G
1	RA	980	A
1	RA	983	A
1	RA	996	A
1	RA	1003	G
1	RA	1005	C
1	RA	1009	A
1	RA	1011	G
1	RA	1012	U
1	RA	1013	C
1	RA	1015	G
1	RA	1020	A
1	RA	1022	G
1	RA	1023	U
1	RA	1025	G
1	RA	1026	U
1	RA	1027	A
1	RA	1033	U
1	RA	1044	G
1	RA	1045	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	1046	A
1	RA	1050	A
1	RA	1070	A
1	RA	1072	C
1	RA	1073	A
1	RA	1075	C
1	RA	1079	C
1	RA	1088	A
1	RA	1090	U
1	RA	1105	U
1	RA	1110	G
1	RA	1111	A
1	RA	1112	G
1	RA	1122	G
1	RA	1131	G
1	RA	1135	C
1	RA	1136	G
1	RA	1140	C
1	RA	1142	U
1	RA	1142(A)	A
1	RA	1170	G
1	RA	1173	G
1	RA	1174	A
1	RA	1175	U
1	RA	1176	G
1	RA	1179	C
1	RA	1180	C
1	RA	1195	G
1	RA	1197	G
1	RA	1204	A
1	RA	1205	U
1	RA	1206	G
1	RA	1210	A
1	RA	1211	U
1	RA	1220	A
1	RA	1236	G
1	RA	1238	G
1	RA	1250	G
1	RA	1252	G
1	RA	1253	A
1	RA	1256	G
1	RA	1265	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	1271	G
1	RA	1272	A
1	RA	1273	U
1	RA	1300	U
1	RA	1301	A
1	RA	1304	C
1	RA	1313	U
1	RA	1314	C
1	RA	1329	U
1	RA	1349	A
1	RA	1365	A
1	RA	1368	G
1	RA	1370	C
1	RA	1378	A
1	RA	1379	A
1	RA	1384	A
1	RA	1385	G
1	RA	1386	C
1	RA	1392	A
1	RA	1406	U
1	RA	1407	C
1	RA	1411	C
1	RA	1415	U
1	RA	1416	G
1	RA	1417	C
1	RA	1419	A
1	RA	1420	U
1	RA	1421	G
1	RA	1427	A
1	RA	1428	C
1	RA	1444(A)	A
1	RA	1445	C
1	RA	1449	A
1	RA	1449(A)	G
1	RA	1455	G
1	RA	1458	C
1	RA	1460	A
1	RA	1461	G
1	RA	1467	C
1	RA	1471	A
1	RA	1482	U
1	RA	1483	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	1485	G
1	RA	1493	C
1	RA	1495	A
1	RA	1497	U
1	RA	1506	C
1	RA	1507	A
1	RA	1508	A
1	RA	1510	A
1	RA	1514	U
1	RA	1519	G
1	RA	1521	G
1	RA	1522	G
1	RA	1525	G
1	RA	1534	G
1	RA	1535	U
1	RA	1536	A
1	RA	1537	C
1	RA	1543	A
1	RA	1544	C
1	RA	1545	A
1	RA	1558	A
1	RA	1559	G
1	RA	1560	G
1	RA	1566	A
1	RA	1569	A
1	RA	1578	U
1	RA	1579	A
1	RA	1585	C
1	RA	1586	A
1	RA	1598	C
1	RA	1599	C
1	RA	1608	A
1	RA	1609	A
1	RA	1610	A
1	RA	1616	A
1	RA	1617	C
1	RA	1618	A
1	RA	1640	C
1	RA	1648	C
1	RA	1654	A
1	RA	1667	G
1	RA	1668	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	1674	G
1	RA	1675	C
1	RA	1678	G
1	RA	1686	C
1	RA	1695	G
1	RA	1699	G
1	RA	1700	A
1	RA	1725	G
1	RA	1728	G
1	RA	1729	A
1	RA	1731	G
1	RA	1733	G
1	RA	1734	C
1	RA	1742	C
1	RA	1743	G
1	RA	1750	G
1	RA	1756	G
1	RA	1762	A
1	RA	1763	G
1	RA	1764	G
1	RA	1773	A
1	RA	1780	A
1	RA	1784	A
1	RA	1787	A
1	RA	1791	A
1	RA	1799	G
1	RA	1800	C
1	RA	1816	G
1	RA	1820	U
1	RA	1829	A
1	RA	1835	G
1	RA	1847	A
1	RA	1848	A
1	RA	1849	G
1	RA	1858	G
1	RA	1869	G
1	RA	1872	A
1	RA	1878	G
1	RA	1882	C
1	RA	1884	A
1	RA	1888	G
1	RA	1889	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	1905	C
1	RA	1906	G
1	RA	1913	A
1	RA	1914	C
1	RA	1929	G
1	RA	1930	G
1	RA	1931	U
1	RA	1936	A
1	RA	1938	A
1	RA	1939	U
1	RA	1955	U
1	RA	1963	U
1	RA	1967	C
1	RA	1969	A
1	RA	1970	A
1	RA	1971	A
1	RA	1972	A
1	RA	1981	A
1	RA	1982	C
1	RA	1991	U
1	RA	1993	U
1	RA	2021	C
1	RA	2023	G
1	RA	2031	A
1	RA	2032	G
1	RA	2033	A
1	RA	2039	C
1	RA	2043	C
1	RA	2052	G
1	RA	2055	C
1	RA	2056	G
1	RA	2059	A
1	RA	2060	A
1	RA	2061	G
1	RA	2062	A
1	RA	2069	G
1	RA	2071	A
1	RA	2092	U
1	RA	2094	G
1	RA	2095	C
1	RA	2099	U
1	RA	2111	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	2112	G
1	RA	2113	U
1	RA	2114	A
1	RA	2115	G
1	RA	2116	G
1	RA	2119	A
1	RA	2120	G
1	RA	2126	A
1	RA	2127	G
1	RA	2128	C
1	RA	2131	G
1	RA	2132	U
1	RA	2133	G
1	RA	2136	C
1	RA	2145	C
1	RA	2146	C
1	RA	2148	G
1	RA	2158	A
1	RA	2166	G
1	RA	2168	G
1	RA	2173	A
1	RA	2176	A
1	RA	2190	G
1	RA	2197	U
1	RA	2199	A
1	RA	2210	G
1	RA	2211	G
1	RA	2212	A
1	RA	2215	G
1	RA	2225	A
1	RA	2238	G
1	RA	2243	U
1	RA	2246	G
1	RA	2275	C
1	RA	2280	G
1	RA	2283	C
1	RA	2287	A
1	RA	2307	G
1	RA	2308	G
1	RA	2311	A
1	RA	2319	G
1	RA	2320	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	2325	G
1	RA	2327	A
1	RA	2334	G
1	RA	2336	A
1	RA	2342	C
1	RA	2345	G
1	RA	2346	A
1	RA	2347	C
1	RA	2350	C
1	RA	2354	G
1	RA	2383	G
1	RA	2385	C
1	RA	2392	A
1	RA	2402	C
1	RA	2403	C
1	RA	2406	U
1	RA	2422	A
1	RA	2423	U
1	RA	2425	A
1	RA	2429	G
1	RA	2430	A
1	RA	2435	A
1	RA	2439	A
1	RA	2440	C
1	RA	2441	C
1	RA	2446	G
1	RA	2448	A
1	RA	2465	C
1	RA	2469	A
1	RA	2470	G
1	RA	2471	C
1	RA	2475	C
1	RA	2476	A
1	RA	2478	A
1	RA	2482	G
1	RA	2494	G
1	RA	2499	C
1	RA	2502	G
1	RA	2504	U
1	RA	2505	G
1	RA	2518	A
1	RA	2529	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	2542	A
1	RA	2543	G
1	RA	2554	U
1	RA	2558	C
1	RA	2562	U
1	RA	2567	G
1	RA	2569	G
1	RA	2572	A
1	RA	2585	U
1	RA	2602	A
1	RA	2609	U
1	RA	2611	U
1	RA	2612	C
1	RA	2614	A
1	RA	2621	A
1	RA	2629	A
1	RA	2641	G
1	RA	2655	G
1	RA	2665	A
1	RA	2673	G
1	RA	2689	U
1	RA	2690	C
1	RA	2691	C
1	RA	2702	U
1	RA	2703	C
1	RA	2707	G
1	RA	2712	U
1	RA	2712(A)	A
1	RA	2713	A
1	RA	2714	G
1	RA	2726	U
1	RA	2730	C
1	RA	2733	A
1	RA	2739	U
1	RA	2744	G
1	RA	2748	A
1	RA	2750	A
1	RA	2752	C
1	RA	2758	A
1	RA	2761	G
1	RA	2765	A
1	RA	2770	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	2777	G
1	RA	2778	A
1	RA	2779	U
1	RA	2780	G
1	RA	2789	C
1	RA	2790	A
1	RA	2791	C
1	RA	2793	G
1	RA	2797	U
1	RA	2807	G
1	RA	2808	U
1	RA	2818	G
1	RA	2820	A
1	RA	2821	A
1	RA	2833	G
1	RA	2834	G
1	RA	2846	G
1	RA	2847	U
1	RA	2849	U
1	RA	2867	G
1	RA	2868	A
1	RA	2872	G
1	RA	2879	C
1	RA	2880	C
1	RA	2891	G
1	RA	2892	A
1	RA	2894	G
2	RB	8	U
2	RB	9	G
2	RB	13	A
2	RB	15	A
2	RB	16	G
2	RB	22	U
2	RB	25	A
2	RB	32	C
2	RB	42	C
2	RB	43	C
2	RB	45	A
2	RB	52	A
2	RB	53	A
2	RB	56	G
2	RB	67	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	RB	73	A
2	RB	81	G
2	RB	101	A
2	RB	109	G
1	YA	9	U
1	YA	15	G
1	YA	28	A
1	YA	34	C
1	YA	35	G
1	YA	46	C
1	YA	51	G
1	YA	55	G
1	YA	61	G
1	YA	63	U
1	YA	72	U
1	YA	74	A
1	YA	75	G
1	YA	83	G
1	YA	84	A
1	YA	96	G
1	YA	101	G
1	YA	102	G
1	YA	103	A
1	YA	118	A
1	YA	120	U
1	YA	125	G
1	YA	131	G
1	YA	138	G
1	YA	161	U
1	YA	162	U
1	YA	181	A
1	YA	196	A
1	YA	199	A
1	YA	215	G
1	YA	216	A
1	YA	221	A
1	YA	222	A
1	YA	223	A
1	YA	224	G
1	YA	228	A
1	YA	229	A
1	YA	230	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	232	G
1	YA	241	A
1	YA	242	G
1	YA	243	U
1	YA	248	G
1	YA	249	C
1	YA	252	G
1	YA	265	A
1	YA	266	G
1	YA	269	U
1	YA	270(L)	U
1	YA	270(M)	U
1	YA	270(N)	G
1	YA	270(P)	C
1	YA	271(A)	C
1	YA	271(C)	U
1	YA	271	G
1	YA	273(F)	C
1	YA	274	G
1	YA	275	G
1	YA	276	A
1	YA	277	C
1	YA	278	A
1	YA	279	C
1	YA	299	A
1	YA	300	A
1	YA	311	A
1	YA	323	G
1	YA	324	A
1	YA	329	G
1	YA	330	A
1	YA	332	A
1	YA	342	G
1	YA	345	A
1	YA	346	A
1	YA	352	G
1	YA	362	U
1	YA	364	C
1	YA	371	A
1	YA	372	G
1	YA	373	U
1	YA	384	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	386	G
1	YA	387	U
1	YA	394	A
1	YA	395	U
1	YA	405	U
1	YA	411	G
1	YA	412	A
1	YA	428	A
1	YA	442	G
1	YA	444	C
1	YA	448	U
1	YA	454	A
1	YA	456	C
1	YA	457	A
1	YA	470	A
1	YA	480	A
1	YA	481	G
1	YA	494	G
1	YA	496	G
1	YA	504	U
1	YA	505	A
1	YA	509	C
1	YA	512	G
1	YA	527	C
1	YA	531	C
1	YA	532	A
1	YA	533	G
1	YA	537	C
1	YA	539	G
1	YA	540	G
1	YA	546	C
1	YA	547	A
1	YA	563	G
1	YA	573	G
1	YA	575	A
1	YA	580	C
1	YA	583	G
1	YA	603	A
1	YA	607	U
1	YA	614	U
1	YA	615	G
1	YA	617	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	618	G
1	YA	621	A
1	YA	627	A
1	YA	628	G
1	YA	637	A
1	YA	638	G
1	YA	645	C
1	YA	646	A
1	YA	647	G
1	YA	651	G
1	YA	654	A
1	YA	654(A)	G
1	YA	654(B)	C
1	YA	668	G
1	YA	669	G
1	YA	670	A
1	YA	675	A
1	YA	686	G
1	YA	704	G
1	YA	717	G
1	YA	722	A
1	YA	726	G
1	YA	730	C
1	YA	753	C
1	YA	764	A
1	YA	765	G
1	YA	775	G
1	YA	782	A
1	YA	784	A
1	YA	785	G
1	YA	790	C
1	YA	793	A
1	YA	805	G
1	YA	812	C
1	YA	819	A
1	YA	827	U
1	YA	828	U
1	YA	831	G
1	YA	834	C
1	YA	847	U
1	YA	856	C
1	YA	857	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	859	G
1	YA	860	U
1	YA	866	A
1	YA	878	A
1	YA	890	A
1	YA	896	A
1	YA	897	C
1	YA	901	A
1	YA	907	U
1	YA	910	A
1	YA	915	C
1	YA	917	A
1	YA	918	A
1	YA	932	G
1	YA	941	A
1	YA	945	A
1	YA	946	G
1	YA	959	A
1	YA	961	C
1	YA	973	A
1	YA	974	G
1	YA	974(A)	C
1	YA	975	G
1	YA	980	A
1	YA	983	A
1	YA	996	A
1	YA	1003	G
1	YA	1005	C
1	YA	1011	G
1	YA	1012	U
1	YA	1013	C
1	YA	1015	G
1	YA	1020	A
1	YA	1022	G
1	YA	1023	U
1	YA	1025	G
1	YA	1026	U
1	YA	1027	A
1	YA	1033	U
1	YA	1045	A
1	YA	1046	A
1	YA	1050	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	1053	C
1	YA	1054	A
1	YA	1059	G
1	YA	1060	U
1	YA	1061	U
1	YA	1065	U
1	YA	1066	U
1	YA	1067	A
1	YA	1068	G
1	YA	1070	A
1	YA	1071	G
1	YA	1076	C
1	YA	1077	A
1	YA	1078	U
1	YA	1082	U
1	YA	1083	U
1	YA	1084	A
1	YA	1085	A
1	YA	1086	A
1	YA	1088	A
1	YA	1089	G
1	YA	1093	G
1	YA	1095	A
1	YA	1096	A
1	YA	1097	U
1	YA	1103	A
1	YA	1104	C
1	YA	1105	U
1	YA	1110	G
1	YA	1111	A
1	YA	1112	G
1	YA	1122	G
1	YA	1131	G
1	YA	1135	C
1	YA	1136	G
1	YA	1140	C
1	YA	1142	U
1	YA	1142(A)	A
1	YA	1170	G
1	YA	1173	G
1	YA	1174	A
1	YA	1175	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	1176	G
1	YA	1179	C
1	YA	1180	C
1	YA	1195	G
1	YA	1197	G
1	YA	1204	A
1	YA	1205	U
1	YA	1206	G
1	YA	1210	A
1	YA	1211	U
1	YA	1220	A
1	YA	1236	G
1	YA	1238	G
1	YA	1250	G
1	YA	1252	G
1	YA	1253	A
1	YA	1256	G
1	YA	1265	A
1	YA	1271	G
1	YA	1272	A
1	YA	1273	U
1	YA	1300	U
1	YA	1301	A
1	YA	1329	U
1	YA	1349	A
1	YA	1365	A
1	YA	1368	G
1	YA	1370	C
1	YA	1378	A
1	YA	1379	A
1	YA	1384	A
1	YA	1385	G
1	YA	1386	C
1	YA	1392	A
1	YA	1406	U
1	YA	1407	C
1	YA	1411	C
1	YA	1415	U
1	YA	1416	G
1	YA	1417	C
1	YA	1419	A
1	YA	1420	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	1421	G
1	YA	1427	A
1	YA	1428	C
1	YA	1444(A)	A
1	YA	1445	C
1	YA	1449	A
1	YA	1449(A)	G
1	YA	1455	G
1	YA	1458	C
1	YA	1460	A
1	YA	1461	G
1	YA	1467	C
1	YA	1471	A
1	YA	1482	U
1	YA	1483	G
1	YA	1485	G
1	YA	1493	C
1	YA	1495	A
1	YA	1497	U
1	YA	1504	C
1	YA	1506	C
1	YA	1507	A
1	YA	1508	A
1	YA	1510	A
1	YA	1514	U
1	YA	1519	G
1	YA	1521	G
1	YA	1522	G
1	YA	1525	G
1	YA	1533	C
1	YA	1534	G
1	YA	1535	U
1	YA	1536	A
1	YA	1537	C
1	YA	1543	A
1	YA	1544	C
1	YA	1545	A
1	YA	1558	A
1	YA	1559	G
1	YA	1560	G
1	YA	1566	A
1	YA	1569	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	1578	U
1	YA	1579	A
1	YA	1585	C
1	YA	1586	A
1	YA	1598	C
1	YA	1599	C
1	YA	1608	A
1	YA	1609	A
1	YA	1610	A
1	YA	1616	A
1	YA	1617	C
1	YA	1618	A
1	YA	1640	C
1	YA	1648	C
1	YA	1654	A
1	YA	1667	G
1	YA	1668	A
1	YA	1674	G
1	YA	1675	C
1	YA	1678	G
1	YA	1686	C
1	YA	1695	G
1	YA	1699	G
1	YA	1700	A
1	YA	1725	G
1	YA	1728	G
1	YA	1729	A
1	YA	1731	G
1	YA	1732	A
1	YA	1733	G
1	YA	1734	C
1	YA	1742	C
1	YA	1743	G
1	YA	1750	G
1	YA	1753	G
1	YA	1756	G
1	YA	1762	A
1	YA	1763	G
1	YA	1764	G
1	YA	1773	A
1	YA	1780	A
1	YA	1784	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	1787	A
1	YA	1791	A
1	YA	1799	G
1	YA	1800	C
1	YA	1801	G
1	YA	1816	G
1	YA	1820	U
1	YA	1829	A
1	YA	1835	G
1	YA	1847	A
1	YA	1848	A
1	YA	1849	G
1	YA	1858	G
1	YA	1869	G
1	YA	1872	A
1	YA	1878	G
1	YA	1882	C
1	YA	1884	A
1	YA	1888	G
1	YA	1889	A
1	YA	1905	C
1	YA	1906	G
1	YA	1913	A
1	YA	1914	C
1	YA	1929	G
1	YA	1930	G
1	YA	1931	U
1	YA	1936	A
1	YA	1938	A
1	YA	1939	U
1	YA	1955	U
1	YA	1963	U
1	YA	1967	C
1	YA	1969	A
1	YA	1970	A
1	YA	1971	A
1	YA	1972	A
1	YA	1981	A
1	YA	1982	C
1	YA	1991	U
1	YA	1993	U
1	YA	2021	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	2023	G
1	YA	2031	A
1	YA	2033	A
1	YA	2039	C
1	YA	2043	C
1	YA	2052	G
1	YA	2055	C
1	YA	2056	G
1	YA	2059	A
1	YA	2060	A
1	YA	2061	G
1	YA	2062	A
1	YA	2069	G
1	YA	2071	A
1	YA	2092	U
1	YA	2094	G
1	YA	2095	C
1	YA	2099	U
1	YA	2111	C
1	YA	2112	G
1	YA	2113	U
1	YA	2114	A
1	YA	2115	G
1	YA	2116	G
1	YA	2119	A
1	YA	2120	G
1	YA	2126	A
1	YA	2127	G
1	YA	2128	C
1	YA	2131	G
1	YA	2132	U
1	YA	2133	G
1	YA	2136	C
1	YA	2146	C
1	YA	2148	G
1	YA	2158	A
1	YA	2166	G
1	YA	2168	G
1	YA	2173	A
1	YA	2176	A
1	YA	2190	G
1	YA	2197	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	2199	A
1	YA	2210	G
1	YA	2211	G
1	YA	2212	A
1	YA	2215	G
1	YA	2225	A
1	YA	2238	G
1	YA	2243	U
1	YA	2246	G
1	YA	2275	C
1	YA	2278	A
1	YA	2280	G
1	YA	2283	C
1	YA	2287	A
1	YA	2307	G
1	YA	2308	G
1	YA	2311	A
1	YA	2319	G
1	YA	2320	A
1	YA	2325	G
1	YA	2327	A
1	YA	2334	G
1	YA	2336	A
1	YA	2345	G
1	YA	2346	A
1	YA	2347	C
1	YA	2350	C
1	YA	2354	G
1	YA	2383	G
1	YA	2385	C
1	YA	2392	A
1	YA	2402	C
1	YA	2403	C
1	YA	2406	U
1	YA	2422	A
1	YA	2423	U
1	YA	2425	A
1	YA	2429	G
1	YA	2430	A
1	YA	2435	A
1	YA	2439	A
1	YA	2440	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	2441	C
1	YA	2446	G
1	YA	2448	A
1	YA	2465	C
1	YA	2469	A
1	YA	2470	G
1	YA	2471	C
1	YA	2475	C
1	YA	2476	A
1	YA	2478	A
1	YA	2481	G
1	YA	2482	G
1	YA	2494	G
1	YA	2498	C
1	YA	2499	C
1	YA	2502	G
1	YA	2504	U
1	YA	2505	G
1	YA	2518	A
1	YA	2529	G
1	YA	2542	A
1	YA	2543	G
1	YA	2554	U
1	YA	2558	C
1	YA	2562	U
1	YA	2567	G
1	YA	2569	G
1	YA	2572	A
1	YA	2582	G
1	YA	2585	U
1	YA	2602	A
1	YA	2609	U
1	YA	2611	U
1	YA	2612	C
1	YA	2621	A
1	YA	2629	A
1	YA	2641	G
1	YA	2655	G
1	YA	2665	A
1	YA	2673	G
1	YA	2682	U
1	YA	2689	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	2690	C
1	YA	2691	C
1	YA	2702	U
1	YA	2703	C
1	YA	2707	G
1	YA	2712	U
1	YA	2712(A)	A
1	YA	2713	A
1	YA	2714	G
1	YA	2726	U
1	YA	2730	C
1	YA	2733	A
1	YA	2739	U
1	YA	2744	G
1	YA	2748	A
1	YA	2750	A
1	YA	2752	C
1	YA	2758	A
1	YA	2761	G
1	YA	2765	A
1	YA	2766	G
1	YA	2770	G
1	YA	2777	G
1	YA	2778	A
1	YA	2779	U
1	YA	2780	G
1	YA	2789	C
1	YA	2790	A
1	YA	2791	C
1	YA	2793	G
1	YA	2797	U
1	YA	2807	G
1	YA	2808	U
1	YA	2818	G
1	YA	2820	A
1	YA	2821	A
1	YA	2833	G
1	YA	2834	G
1	YA	2846	G
1	YA	2847	U
1	YA	2867	G
1	YA	2868	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	2872	G
1	YA	2879	C
1	YA	2880	C
1	YA	2891	G
1	YA	2892	A
1	YA	2894	G
2	YB	8	U
2	YB	9	G
2	YB	13	A
2	YB	15	A
2	YB	16	G
2	YB	22	U
2	YB	25	A
2	YB	32	C
2	YB	41	U
2	YB	42	C
2	YB	43	C
2	YB	45	A
2	YB	52	A
2	YB	56	G
2	YB	67	G
2	YB	73	A
2	YB	81	G
2	YB	101	A
2	YB	108	C
2	YB	109	G
49	QA	6	G
49	QA	7	G
49	QA	9	G
49	QA	31	G
49	QA	32	A
49	QA	39	G
49	QA	47	C
49	QA	48	C
49	QA	51	A
49	QA	64	G
49	QA	65	U
49	QA	66	G
49	QA	68	G
49	QA	69	G
49	QA	75	C
49	QA	78	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	80	G
49	QA	81	G
49	QA	82	U
49	QA	89	U
49	QA	90	C
49	QA	91	C
49	QA	95	G
49	QA	97	U
49	QA	101	A
49	QA	121	C
49	QA	129(A)	G
49	QA	131	C
49	QA	134	A
49	QA	163	C
49	QA	182	U
49	QA	186(I)	U
49	QA	186(K)	G
49	QA	195	A
49	QA	197	A
49	QA	199	G
49	QA	201(C)	U
49	QA	216	G
49	QA	219	C
49	QA	247	G
49	QA	251	G
49	QA	254	G
49	QA	262	A
49	QA	267	C
49	QA	280	C
49	QA	281	G
49	QA	289	G
49	QA	306	G
49	QA	328	C
49	QA	329	A
49	QA	332	G
49	QA	345	C
49	QA	346	G
49	QA	347	G
49	QA	352	C
49	QA	353	A
49	QA	354	G
49	QA	367	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	372	C
49	QA	373	A
49	QA	397	A
49	QA	398	C
49	QA	408	A
49	QA	412	A
49	QA	413	G
49	QA	414	A
49	QA	422	C
49	QA	424	G
49	QA	429	U
49	QA	430	A
49	QA	440	A
49	QA	443	C
49	QA	452	A
49	QA	453	A
49	QA	458(B)	A
49	QA	481	G
49	QA	484	G
49	QA	485	G
49	QA	497	A
49	QA	498	U
49	QA	505	G
49	QA	508	C
49	QA	509	A
49	QA	510	A
49	QA	511	C
49	QA	518	C
49	QA	519	C
49	QA	524	G
49	QA	531	U
49	QA	532	A
49	QA	533	A
49	QA	536	C
49	QA	547	A
49	QA	559	A
49	QA	562	C
49	QA	565	U
49	QA	568	G
49	QA	572	A
49	QA	573	A
49	QA	575	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	576	G
49	QA	577	G
49	QA	585	G
49	QA	590	C
49	QA	596	C
49	QA	607	A
49	QA	616	G
49	QA	653	A
49	QA	661	G
49	QA	665	A
49	QA	671	G
49	QA	688	G
49	QA	695	A
49	QA	705	U
49	QA	717	C
49	QA	721	G
49	QA	723	U
49	QA	733	A
49	QA	749	C
49	QA	754	C
49	QA	755	G
49	QA	760	G
49	QA	793	U
49	QA	794	A
49	QA	816	A
49	QA	817	C
49	QA	819	A
49	QA	821	G
49	QA	828	A
49	QA	838(A)	U
49	QA	838(B)	C
49	QA	838(C)	U
49	QA	848	C
49	QA	853	G
49	QA	859	A
49	QA	867	G
49	QA	872	A
49	QA	876	G
49	QA	889	A
49	QA	890	G
49	QA	896	C
49	QA	911	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	914	A
49	QA	923	A
49	QA	927	G
49	QA	934	C
49	QA	935	A
49	QA	960	U
49	QA	961	U
49	QA	966	G
49	QA	967	C
49	QA	968	A
49	QA	969	A
49	QA	971	G
49	QA	974	A
49	QA	976	G
49	QA	977	A
49	QA	978	A
49	QA	981	U
49	QA	983	A
49	QA	992	U
49	QA	993	G
49	QA	994	A
49	QA	1002	G
49	QA	1004	A
49	QA	1012	U
49	QA	1015	A
49	QA	1024	G
49	QA	1025	U
49	QA	1026	G
49	QA	1028(B)	C
49	QA	1028(C)	G
49	QA	1036	G
49	QA	1046	A
49	QA	1050	G
49	QA	1054	C
49	QA	1064	G
49	QA	1065	U
49	QA	1066	C
49	QA	1078	U
49	QA	1081	G
49	QA	1094	G
49	QA	1095	U
49	QA	1101	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	1108	G
49	QA	1109	C
49	QA	1117	G
49	QA	1125	U
49	QA	1126	U
49	QA	1130	A
49	QA	1131	G
49	QA	1136	U
49	QA	1137	C
49	QA	1138	G
49	QA	1139	G
49	QA	1140	C
49	QA	1146	A
49	QA	1157	A
49	QA	1158	C
49	QA	1159	U
49	QA	1178	G
49	QA	1181	G
49	QA	1182	G
49	QA	1183	A
49	QA	1186	G
49	QA	1190	G
49	QA	1196	U
49	QA	1197	G
49	QA	1200	C
49	QA	1201	A
49	QA	1202	G
49	QA	1212	U
49	QA	1213	A
49	QA	1222	G
49	QA	1225	A
49	QA	1229	A
49	QA	1238	A
49	QA	1240	U
49	QA	1241	G
49	QA	1256	A
49	QA	1257	U
49	QA	1258	G
49	QA	1269	A
49	QA	1273	G
49	QA	1274	G
49	QA	1280	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	1281	U
49	QA	1282	C
49	QA	1285	A
49	QA	1286	A
49	QA	1287	A
49	QA	1298	C
49	QA	1300	G
49	QA	1301	U
49	QA	1303	C
49	QA	1305	G
49	QA	1314	C
49	QA	1317	C
49	QA	1320	C
49	QA	1321	C
49	QA	1322	C
49	QA	1323	G
49	QA	1330	U
49	QA	1331	G
49	QA	1335	C
49	QA	1336	C
49	QA	1346	A
49	QA	1347	G
49	QA	1353	G
49	QA	1355	G
49	QA	1359	C
49	QA	1362(A)	C
49	QA	1363	A
49	QA	1364	U
49	QA	1365	G
49	QA	1370	G
49	QA	1379	G
49	QA	1381	U
49	QA	1382	C
49	QA	1394	A
49	QA	1397	C
49	QA	1413	A
49	QA	1419	G
49	QA	1422	G
49	QA	1440(B)	G
49	QA	1440(C)	G
49	QA	1440(D)	A
49	QA	1440(I)	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	1440(J)	C
49	QA	1440(K)	G
49	QA	1475	G
49	QA	1487	G
49	QA	1492	A
49	QA	1494	G
49	QA	1497	G
49	QA	1499	A
49	QA	1502	A
49	QA	1503	A
49	QA	1504	G
49	QA	1505	G
49	QA	1506	U
49	QA	1507	A
49	QA	1517	G
49	QA	1520	G
49	QA	1525	G
49	QA	1528	U
49	QA	1529	G
49	QA	1530	G
49	QA	1532	U
49	QA	1533	C
49	QA	1534	A
49	QA	1535	C
49	QA	1538	C
49	QA	1539	C
49	QA	1541	U
49	QA	1542	U
49	XA	6	G
49	XA	9	G
49	XA	31	G
49	XA	32	A
49	XA	39	G
49	XA	47	C
49	XA	48	C
49	XA	51	A
49	XA	64	G
49	XA	65	U
49	XA	66	G
49	XA	68	G
49	XA	68(A)	G
49	XA	68(D)	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	XA	68(H)	G
49	XA	68(L)	U
49	XA	68(M)	U
49	XA	68(P)	C
49	XA	68(Q)	U
49	XA	68(R)	C
49	XA	68(V)	G
49	XA	68(X)	U
49	XA	101	A
49	XA	109	A
49	XA	116	A
49	XA	121	C
49	XA	129(A)	G
49	XA	131	C
49	XA	134	A
49	XA	163	C
49	XA	182	U
49	XA	186(I)	U
49	XA	186(K)	G
49	XA	195	A
49	XA	197	A
49	XA	199	G
49	XA	201(C)	U
49	XA	216	G
49	XA	219	C
49	XA	241	C
49	XA	247	G
49	XA	251	G
49	XA	254	G
49	XA	262	A
49	XA	267	C
49	XA	280	C
49	XA	281	G
49	XA	289	G
49	XA	306	G
49	XA	321	A
49	XA	328	C
49	XA	329	A
49	XA	332	G
49	XA	345	C
49	XA	346	G
49	XA	347	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	XA	352	C
49	XA	353	A
49	XA	354	G
49	XA	367	U
49	XA	372	C
49	XA	373	A
49	XA	375	U
49	XA	397	A
49	XA	398	C
49	XA	408	A
49	XA	412	A
49	XA	413	G
49	XA	414	A
49	XA	422	C
49	XA	424	G
49	XA	429	U
49	XA	430	A
49	XA	440	A
49	XA	443	C
49	XA	452	A
49	XA	453	A
49	XA	458(B)	A
49	XA	481	G
49	XA	484	G
49	XA	485	G
49	XA	497	A
49	XA	498	U
49	XA	505	G
49	XA	508	C
49	XA	509	A
49	XA	510	A
49	XA	511	C
49	XA	518	C
49	XA	519	C
49	XA	524	G
49	XA	532	A
49	XA	533	A
49	XA	536	C
49	XA	547	A
49	XA	559	A
49	XA	562	C
49	XA	565	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	XA	568	G
49	XA	572	A
49	XA	573	A
49	XA	575	G
49	XA	576	G
49	XA	577	G
49	XA	585	G
49	XA	590	C
49	XA	596	C
49	XA	607	A
49	XA	616	G
49	XA	653	A
49	XA	661	G
49	XA	665	A
49	XA	671	G
49	XA	695	A
49	XA	705	U
49	XA	721	G
49	XA	723	U
49	XA	733	A
49	XA	749	C
49	XA	754	C
49	XA	755	G
49	XA	760	G
49	XA	771	G
49	XA	777	A
49	XA	781	A
49	XA	793	U
49	XA	794	A
49	XA	816	A
49	XA	817	C
49	XA	819	A
49	XA	821	G
49	XA	828	A
49	XA	838(A)	U
49	XA	838(B)	C
49	XA	838(C)	U
49	XA	848	C
49	XA	853	G
49	XA	859	A
49	XA	867	G
49	XA	870	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	XA	872	A
49	XA	876	G
49	XA	889	A
49	XA	890	G
49	XA	896	C
49	XA	911	U
49	XA	914	A
49	XA	923	A
49	XA	926	G
49	XA	927	G
49	XA	934	C
49	XA	935	A
49	XA	960	U
49	XA	961	U
49	XA	966	G
49	XA	967	C
49	XA	968	A
49	XA	969	A
49	XA	971	G
49	XA	974	A
49	XA	976	G
49	XA	977	A
49	XA	978	A
49	XA	981	U
49	XA	983	A
49	XA	992	U
49	XA	993	G
49	XA	994	A
49	XA	1002	G
49	XA	1004	A
49	XA	1012	U
49	XA	1024	G
49	XA	1025	U
49	XA	1028(B)	C
49	XA	1028(C)	G
49	XA	1036	G
49	XA	1046	A
49	XA	1050	G
49	XA	1054	C
49	XA	1064	G
49	XA	1065	U
49	XA	1066	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	XA	1078	U
49	XA	1081	G
49	XA	1094	G
49	XA	1095	U
49	XA	1101	A
49	XA	1108	G
49	XA	1117	G
49	XA	1125	U
49	XA	1126	U
49	XA	1130	A
49	XA	1131	G
49	XA	1136	U
49	XA	1137	C
49	XA	1138	G
49	XA	1139	G
49	XA	1140	C
49	XA	1146	A
49	XA	1157	A
49	XA	1158	C
49	XA	1159	U
49	XA	1178	G
49	XA	1181	G
49	XA	1183	A
49	XA	1186	G
49	XA	1196	U
49	XA	1197	G
49	XA	1200	C
49	XA	1201	A
49	XA	1202	G
49	XA	1212	U
49	XA	1213	A
49	XA	1222	G
49	XA	1225	A
49	XA	1226	C
49	XA	1229	A
49	XA	1238	A
49	XA	1240	U
49	XA	1241	G
49	XA	1256	A
49	XA	1257	U
49	XA	1258	G
49	XA	1273	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	XA	1274	G
49	XA	1280	A
49	XA	1281	U
49	XA	1282	C
49	XA	1285	A
49	XA	1286	A
49	XA	1287	A
49	XA	1298	C
49	XA	1300	G
49	XA	1301	U
49	XA	1303	C
49	XA	1305	G
49	XA	1314	C
49	XA	1317	C
49	XA	1320	C
49	XA	1321	C
49	XA	1322	C
49	XA	1323	G
49	XA	1331	G
49	XA	1335	C
49	XA	1336	C
49	XA	1347	G
49	XA	1355	G
49	XA	1359	C
49	XA	1363	A
49	XA	1364	U
49	XA	1365	G
49	XA	1370	G
49	XA	1374	A
49	XA	1379	G
49	XA	1381	U
49	XA	1394	A
49	XA	1397	C
49	XA	1413	A
49	XA	1419	G
49	XA	1422	G
49	XA	1440(B)	G
49	XA	1440(C)	G
49	XA	1440(D)	A
49	XA	1440(I)	A
49	XA	1440(J)	C
49	XA	1440(K)	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	XA	1487	G
49	XA	1492	A
49	XA	1494	G
49	XA	1497	G
49	XA	1503	A
49	XA	1504	G
49	XA	1505	G
49	XA	1506	U
49	XA	1507	A
49	XA	1517	G
49	XA	1520	G
49	XA	1525	G
49	XA	1528	U
49	XA	1529	G
49	XA	1530	G
49	XA	1532	U
49	XA	1533	C
49	XA	1534	A
49	XA	1538	C
49	XA	1539	C
49	XA	1541	U
49	XA	1542	U
52	XX	10	G
52	XX	12	A
52	XX	13	A
52	XX	15	A
52	XX	16	C
52	XX	17	C
52	XX	18	C
53	XV	8	U
53	XV	10	G
53	XV	11	C
53	XV	15	G
53	XV	16	C
53	XV	18	U
53	XV	19	G
53	XV	20	G
53	XV	22	A
53	XV	31	C
53	XV	32	G
53	XV	35	C
53	XV	38	1MG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
53	XV	39	G
53	XV	42	G
53	XV	44	A
53	XV	45	G
53	XV	46	G
53	XV	49	U
53	XV	50	C
53	XV	51	G
53	XV	60	A
53	XV	61	A
53	XV	63	C
53	XV	75	A
53	XV	76	C
52	QX	10	G
52	QX	12	A
52	QX	13	A
52	QX	15	A
52	QX	16	C
52	QX	17	C
52	QX	18	C
53	QV	8	U
53	QV	10	G
53	QV	11	C
53	QV	15	G
53	QV	16	C
53	QV	18	U
53	QV	19	G
53	QV	20	G
53	QV	22	A
53	QV	31	C
53	QV	32	G
53	QV	35	C
53	QV	38	1MG
53	QV	39	G
53	QV	42	G
53	QV	44	A
53	QV	45	G
53	QV	46	G
53	QV	49	U
53	QV	50	C
53	QV	51	G
53	QV	60	A

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Mol	Chain	Res	Type
53	QV	61	A
53	QV	63	C
53	QV	75	A
53	QV	76	C
53	QV	78	A

All (156) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	RA	27	G
1	RA	74	A
1	RA	83	G
1	RA	99	U
1	RA	102	G
1	RA	195	A
1	RA	221	A
1	RA	222	A
1	RA	227	A
1	RA	229	A
1	RA	242	G
1	RA	271(B)	G
1	RA	271(C)	U
1	RA	345	A
1	RA	372	G
1	RA	404	C
1	RA	503	A
1	RA	508	G
1	RA	512	G
1	RA	637	A
1	RA	704	G
1	RA	752	A
1	RA	774	A
1	RA	846	C
1	RA	856	C
1	RA	877	U
1	RA	974(A)	C
1	RA	1022	G
1	RA	1026	U
1	RA	1045	A
1	RA	1130	U
1	RA	1178	C
1	RA	1312	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	RA	1427	A
1	RA	1558	A
1	RA	1653	G
1	RA	1694	C
1	RA	1799	G
1	RA	1819	A
1	RA	1913	A
1	RA	1930	G
1	RA	1992	G
1	RA	2060	A
1	RA	2126	A
1	RA	2439	A
1	RA	2566	A
1	RA	2610	C
1	RA	2689	U
1	RA	2712	U
1	RA	2776	A
1	RA	2832	U
1	RA	2867	G
2	RB	66	A
2	RB	108	C
1	YA	27	G
1	YA	83	G
1	YA	99	U
1	YA	102	G
1	YA	195	A
1	YA	221	A
1	YA	229	A
1	YA	242	G
1	YA	271(B)	G
1	YA	278	A
1	YA	345	A
1	YA	372	G
1	YA	404	C
1	YA	503	A
1	YA	508	G
1	YA	637	A
1	YA	653	A
1	YA	704	G
1	YA	752	A
1	YA	774	A
1	YA	846	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	YA	856	C
1	YA	859	G
1	YA	877	U
1	YA	974(A)	C
1	YA	1022	G
1	YA	1026	U
1	YA	1045	A
1	YA	1085	A
1	YA	1130	U
1	YA	1178	C
1	YA	1427	A
1	YA	1543	A
1	YA	1558	A
1	YA	1653	G
1	YA	1694	C
1	YA	1698	A
1	YA	1799	G
1	YA	1819	A
1	YA	1847	A
1	YA	1930	G
1	YA	1992	G
1	YA	2126	A
1	YA	2439	A
1	YA	2481	G
1	YA	2542	A
1	YA	2566	A
1	YA	2610	C
1	YA	2681	C
1	YA	2689	U
1	YA	2712	U
1	YA	2776	A
1	YA	2779	U
1	YA	2832	U
1	YA	2867	G
2	YB	66	A
2	YB	108	C
49	QA	64	G
49	QA	266	G
49	QA	328	C
49	QA	687	A
49	QA	748	C
49	QA	992	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
49	QA	1182	G
49	QA	1285	A
49	QA	1300	G
49	QA	1322	C
49	QA	1364	U
49	QA	1381	U
49	QA	1504	G
49	QA	1537	U
49	QA	1538	C
49	XA	64	G
49	XA	115	G
49	XA	266	G
49	XA	328	C
49	XA	748	C
49	XA	992	U
49	XA	1064	G
49	XA	1182	G
49	XA	1196	U
49	XA	1200	C
49	XA	1225	A
49	XA	1285	A
49	XA	1300	G
49	XA	1320	C
49	XA	1322	C
49	XA	1346	A
49	XA	1364	U
49	XA	1504	G
49	XA	1537	U
52	XX	15	A
53	XV	10	G
53	XV	18	U
53	XV	38	1MG
53	XV	60	A
53	XV	75	A
52	QX	15	A
53	QV	10	G
53	QV	38	1MG
53	QV	60	A
53	QV	75	A

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

2 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
53	1MG	XV	38	53	18,26,27	0.66	0	19,39,42	1.18	2 (10%)
53	1MG	QV	38	53	18,26,27	0.66	0	19,39,42	1.18	2 (10%)

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
53	1MG	XV	38	53	-	3/3/25/26	0/3/3/3
53	1MG	QV	38	53	-	3/3/25/26	0/3/3/3

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
53	XV	38	1MG	C5-C6-N1	2.75	118.03	113.90
53	QV	38	1MG	C5-C6-N1	2.74	118.02	113.90
53	XV	38	1MG	C8-N7-C5	2.29	107.35	102.99
53	QV	38	1MG	C8-N7-C5	2.26	107.30	102.99

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
53	XV	38	1MG	C4'-C5'-O5'-P
53	XV	38	1MG	O4'-C4'-C5'-O5'
53	QV	38	1MG	C4'-C5'-O5'-P
53	QV	38	1MG	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
53	XV	38	1MG	C3'-C4'-C5'-O5'
53	QV	38	1MG	C3'-C4'-C5'-O5'

There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
53	XV	38	1MG	2	0
53	QV	38	1MG	1	0

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 1319 ligands modelled in this entry, 1319 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	RA	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	RA	1052:C	O3'	1053:C	P	3.18

## 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.

### 6.5 Other polymers [i](#)

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