



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 12, 2024 – 08:25 AM EDT

PDB ID : 6NTA
Title : Modified ASL proline bound to Thermus thermophilus 70S (cognate)
Authors : Hoffer, E.D.; Maehigashi, T.; Subaramanian, S.; Hong, S.; Dunham, C.M.
Deposited on : 2019-01-28
Resolution : 3.10 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : **FAILED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

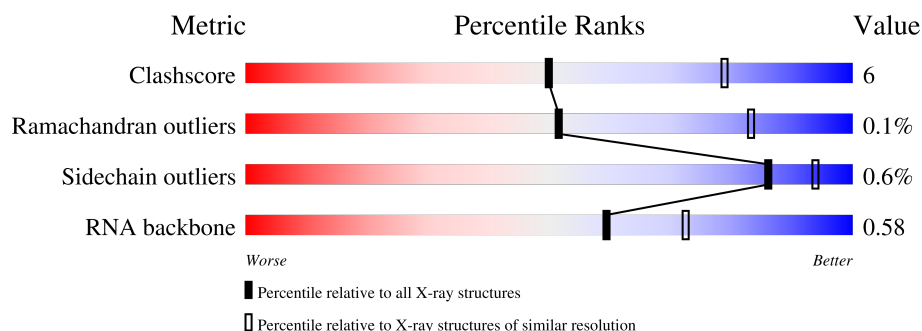
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.10 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))
Clashscore	141614	1184 (3.10-3.10)
Ramachandran outliers	138981	1141 (3.10-3.10)
Sidechain outliers	138945	1141 (3.10-3.10)
RNA backbone	3102	1116 (3.40-2.80)


























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

Note EDS failed to run properly.

Mol	Chain	Length	Quality of chain
1	QA	1521	
1	XA	1521	
2	QB	256	
2	XB	256	
3	QC	239	
3	XC	239	









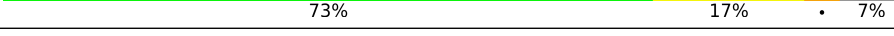

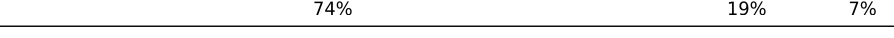
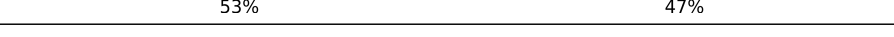

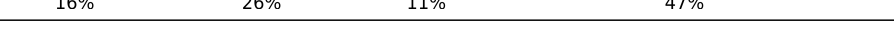


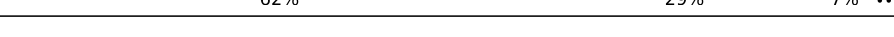

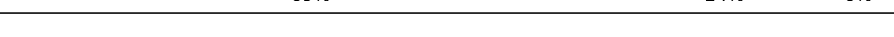






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Mol	Chain	Length	Quality of chain
4	QD	209	 72%27%.
4	XD	209	 75%23%.
5	QE	162	 77%16%7%.
5	XE	162	 81%12%7%.
6	QF	101	 77%21%.
6	XF	101	 85%15%.
7	QG	156	 76%22%..
7	XG	156	 76%23%..
8	QH	138	 80%20%.
8	XH	138	 73%26%.
9	QI	128	 64%34%..
9	XI	128	 63%32%..
10	QJ	105	 66%26%6%.
10	XJ	105	 65%24%9%.
11	QK	129	 77%16%8%.
11	XK	129	 66%24%10%.
12	QL	132	 67%26%5%.
12	XL	132	 75%16%8%.
13	QM	126	 63%27%6%5%.
13	XM	126	 63%28%6%.
14	QN	61	 79%18%..
14	XN	61	 59%36%....
15	QO	89	 85%13%.
15	XO	89	 89%9%.
16	QP	88	 73%22%5%.


























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Mol	Chain	Length	Quality of chain
16	XP	88	
17	QQ	105	
17	XQ	105	
18	QR	88	
18	XR	88	
19	QS	93	
19	XS	93	
20	QT	106	
20	XT	106	
21	QU	27	
21	XU	27	
22	QV	17	
22	XV	17	
23	QX	19	
23	XX	19	
24	RA	2915	
24	YA	2915	
25	RB	122	
25	YB	122	
26	RD	276	
26	YD	276	
27	RE	206	
27	YE	206	
28	RF	210	
28	YF	210	












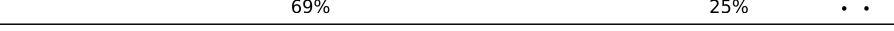







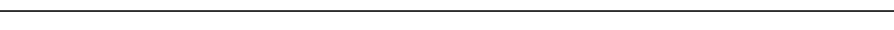

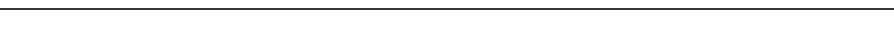
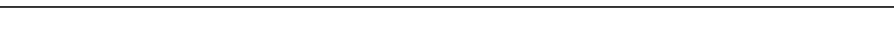


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Mol	Chain	Length	Quality of chain
29	RG	182	 66%31%..
29	YG	182	 77%20%...
30	RH	180	 75%19%..
30	YH	180	 85%11%..
31	RI	148	 78%19%..
31	YI	148	 79%15%5%.
32	RN	140	 76%22%.
32	YN	140	 78%19%..
33	RO	122	 72%27%.
33	YO	122	 82%18%
34	RP	150	 73%26%.
34	YP	150	 80%18%.
35	RQ	141	 67%30%.
35	YQ	141	 77%23%.
36	RR	118	 81%17%..
36	YR	118	 78%18%..
37	RS	112	 70%28%..
37	YS	112	 79%18%..
38	RT	146	 71%20%..6%
38	YT	146	 70%23%..6%
39	RU	118	 81%15%..
39	YU	118	 88%11%.
40	RV	101	 84%16%
40	YV	101	 89%11%
41	RW	113	 84%16%



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Mol	Chain	Length	Quality of chain
41	YW	113	 90% 10%
42	RX	96	 83% 11% . .
42	YX	96	 84% 11% .
43	RY	110	 83% 14% . .
43	YY	110	 82% 15% .
44	RZ	206	 76% 20% . .
44	YZ	206	 78% 18% . .
45	R0	85	 74% 15% 11%
45	Y0	85	 76% 12% 12%
46	R1	98	 81% 15% . .
46	Y1	98	 77% 15% . 5%
47	R2	72	 69% 25% . .
47	Y2	72	 72% 19% . 6%
48	R3	60	 70% 27% . .
48	Y3	60	 82% 17% .
49	R4	71	 70% 24% . . .
49	Y4	71	 61% 34% . .
50	R5	60	 85% 13% .
50	Y5	60	 80% 18% .
51	R6	54	 81% 17% .
51	Y6	54	 80% 19% .
52	R7	49	 92% . .
52	Y7	49	 90% 8% .
53	R8	65	 68% 29% . .
53	Y8	65	 78% 18% . .

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Mol	Chain	Length	Quality of chain	
54	R9	37		
54	Y9	37		

2 Entry composition

There are 57 unique types of molecules in this entry. The entry contains 289311 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	QA	1500	Total	C	N	O	P	0	0	0
			32247	14353	5981	10414	1499			
1	XA	1500	Total	C	N	O	P	0	0	0
			32249	14354	5984	10412	1499			

- Molecule 2 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	QB	235	Total	C	N	O	S	0	0	0
			1907	1217	342	343	5			
2	XB	236	Total	C	N	O	S	0	0	0
			1915	1223	343	344	5			

- Molecule 3 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	QC	205	Total	C	N	O	S	0	0	0
			1605	1011	313	280	1			
3	XC	205	Total	C	N	O	S	0	0	0
			1605	1011	313	280	1			

- Molecule 4 is a protein called 30S ribosomal protein S4.

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

- Molecule 5 is a protein called 30S ribosomal protein S5.

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

- Molecule 6 is a protein called 30S ribosomal protein S6.

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

- Molecule 7 is a protein called 30S ribosomal protein S7.

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

- Molecule 8 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	QH	137	Total	C	N	O	S	0	0	0
			1108	700	214	192	2			
8	XH	137	Total	C	N	O	S	0	0	0
			1108	700	214	192	2			

- Molecule 9 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	QI	127	Total	C	N	O		0	0	0
			1010	639	197	174				
9	XI	126	Total	C	N	O		0	0	0
			998	633	193	172				

- Molecule 10 is a protein called 30S ribosomal protein S10.

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

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Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	XJ	96	Total	C	N	O	S	0	0	0
			777	487	153	136	1			

- Molecule 11 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	QK	119	Total	C	N	O	S	0	0	0
			885	549	168	165	3			
11	XK	116	Total	C	N	O	S	0	0	0
			864	537	164	160	3			

- Molecule 12 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	QL	125	Total	C	N	O	S	0	0	0
			975	614	196	164	1			
12	XL	122	Total	C	N	O	S	0	0	0
			956	603	193	159	1			

- Molecule 13 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	QM	120	Total	C	N	O	S	0	0	0
			955	591	197	165	2			
13	XM	119	Total	C	N	O	S	0	0	0
			946	585	195	164	2			

- Molecule 14 is a protein called 30S ribosomal protein S14 type Z.

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

- Molecule 15 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	QO	88	Total	C	N	O	S	0	0	0
			734	459	147	126	2			
15	XO	87	Total	C	N	O	S	0	0	0
			729	457	146	124	2			

- Molecule 16 is a protein called 30S ribosomal protein S16.

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

- Molecule 17 is a protein called 30S ribosomal protein S17.

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

- Molecule 18 is a protein called 30S ribosomal protein S18.

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

- Molecule 19 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	QS	83	Total	C	N	O	S	0	0	0
			665	424	124	115	2			
19	XS	84	Total	C	N	O	S	0	0	0
			674	430	126	116	2			

- Molecule 20 is a protein called 30S ribosomal protein S20.

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

- Molecule 21 is a protein called 30S ribosomal protein Thx.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
21	QU	25	Total	C	N	O	0	0	0
			217	134	52	31			
21	XU	25	Total	C	N	O	0	0	0
			217	134	52	31			

- Molecule 22 is a RNA chain called P-site ASLPro.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
22	QV	17	Total	C	N	O	P	0	0	0
			365	163	65	120	17			
22	XV	15	Total	C	N	O	P	0	0	0
			322	144	57	106	15			

- Molecule 23 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
23	QX	10	Total	C	N	O	P	0	0	0
			217	97	43	67	10			
23	XX	12	Total	C	N	O	P	0	0	0
			262	117	53	80	12			

- Molecule 24 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
24	RA	2881	Total	C	N	O	P	0	0	0
			62051	27618	11609	19944	2880			
24	YA	2883	Total	C	N	O	P	0	0	0
			62091	27636	11613	19960	2882			

- Molecule 25 is a RNA chain called 5S rRNA.

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

- Molecule 26 is a protein called 50S ribosomal protein L2.

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

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

- Molecule 27 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
27	RE	205	Total	C	N	O	S	0	0	0
			1568	991	300	271	6			
27	YE	204	Total	C	N	O	S	0	0	0
			1563	988	299	270	6			

- Molecule 28 is a protein called 50S ribosomal protein L4.

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

- Molecule 29 is a protein called 50S ribosomal protein L5.

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

- Molecule 30 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
30	RH	174	Total	C	N	O	S	0	0	0
			1336	848	251	236	1			
30	YH	173	Total	C	N	O	S	0	0	0
			1330	845	250	234	1			

- Molecule 31 is a protein called 50S ribosomal protein L9.

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

- Molecule 32 is a protein called 50S ribosomal protein L13.

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

- Molecule 33 is a protein called 50S ribosomal protein L14.

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

- Molecule 34 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
34	RP	150	Total	C	N	O	S	0	0	0
			1145	712	232	198	3			
34	YP	147	Total	C	N	O	S	0	0	0
			1122	698	229	192	3			

- Molecule 35 is a protein called 50S ribosomal protein L16.

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

- Molecule 36 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
36	RR	117	Total	C	N	O	0	0	0
			960	599	202	159			
36	YR	117	Total	C	N	O	0	0	0
			960	599	202	159			

- Molecule 37 is a protein called 50S ribosomal protein L18.

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

- Molecule 38 is a protein called 50S ribosomal protein L19.

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

- Molecule 39 is a protein called 50S ribosomal protein L20.

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

- Molecule 40 is a protein called 50S ribosomal protein L21.

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

- Molecule 41 is a protein called 50S ribosomal protein L22.

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

- Molecule 42 is a protein called 50S ribosomal protein L23.

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

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

- Molecule 43 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
43	RY	107	Total	C	N	O	S		
			818	525	155	132	6	0	0
43	YY	107	Total	C	N	O	S		
			818	525	155	132	6	0	0

- Molecule 44 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
44	RZ	203	Total	C	N	O	S		
			1601	1020	283	295	3	0	0
44	YZ	203	Total	C	N	O	S		
			1601	1020	283	295	3	0	0

- Molecule 45 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
45	R0	76	Total	C	N	O	S		
			603	372	128	102	1	0	0
45	Y0	75	Total	C	N	O	S		
			599	370	127	101	1	0	0

- Molecule 46 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
46	R1	97	Total	C	N	O	S		
			763	481	150	131	1	0	0
46	Y1	93	Total	C	N	O	S		
			729	457	145	126	1	0	0

- Molecule 47 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
47	R2	69	Total	C	N	O	S		
			581	358	118	104	1	0	0
47	Y2	68	Total	C	N	O	S		
			575	355	117	102	1	0	0

- Molecule 48 is a protein called 50S ribosomal protein L30.

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

- Molecule 49 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
49	R4	69	Total	C	N	O	S	0	0	0
			565	356	103	101	5			
49	Y4	69	Total	C	N	O	S	0	0	0
			565	356	103	101	5			

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

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
50	R5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			
50	Y5	59	Total	C	N	O	S	0	0	0
			459	288	90	76	5			

- Molecule 51 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
51	R6	53	Total	C	N	O	S	0	0	0
			453	281	91	77	4			
51	Y6	53	Total	C	N	O	S	0	0	0
			453	281	91	77	4			

- Molecule 52 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
52	R7	47	Total	C	N	O	S	0	0	0
			409	251	102	54	2			
52	Y7	48	Total	C	N	O	S	0	0	0
			418	257	104	55	2			

- Molecule 53 is a protein called 50S ribosomal protein L35.

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

- Molecule 54 is a protein called 50S ribosomal protein L36.

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

- Molecule 55 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
55	QA	74	Total	Mg	0	0
			74	74		
55	QC	1	Total	Mg	0	0
			1	1		
55	QF	1	Total	Mg	0	0
			1	1		
55	QH	1	Total	Mg	0	0
			1	1		
55	QM	1	Total	Mg	0	0
			1	1		
55	RA	487	Total	Mg	0	0
			487	487		
55	RB	6	Total	Mg	0	0
			6	6		
55	RE	4	Total	Mg	0	0
			4	4		
55	RF	2	Total	Mg	0	0
			2	2		
55	RI	1	Total	Mg	0	0
			1	1		
55	RN	1	Total	Mg	0	0
			1	1		
55	RO	1	Total	Mg	0	0
			1	1		
55	RP	1	Total	Mg	0	0
			1	1		
55	RQ	2	Total	Mg	0	0
			2	2		

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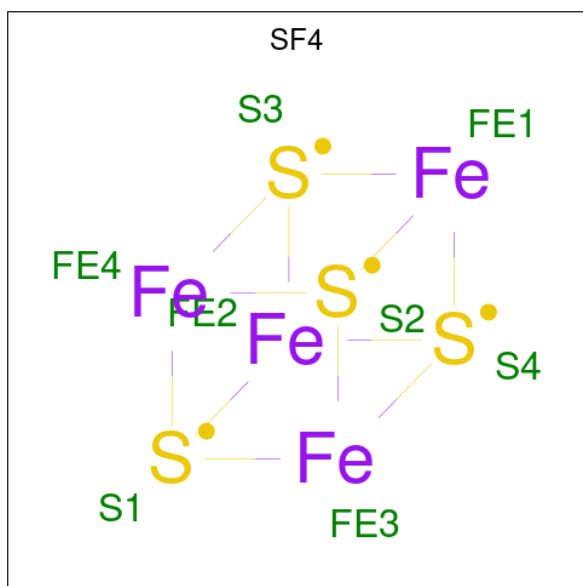
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
55	RR	2	Total 2	Mg 2	0	0
55	RT	1	Total 1	Mg 1	0	0
55	RX	1	Total 1	Mg 1	0	0
55	RY	1	Total 1	Mg 1	0	0
55	R0	1	Total 1	Mg 1	0	0
55	R1	2	Total 2	Mg 2	0	0
55	R8	1	Total 1	Mg 1	0	0
55	XA	92	Total 92	Mg 92	0	0
55	XE	1	Total 1	Mg 1	0	0
55	XK	1	Total 1	Mg 1	0	0
55	XL	2	Total 2	Mg 2	0	0
55	XM	2	Total 2	Mg 2	0	0
55	XN	1	Total 1	Mg 1	0	0
55	XQ	1	Total 1	Mg 1	0	0
55	XS	1	Total 1	Mg 1	0	0
55	YA	542	Total 542	Mg 542	0	0
55	YB	15	Total 15	Mg 15	0	0
55	YD	3	Total 3	Mg 3	0	0
55	YE	3	Total 3	Mg 3	0	0
55	YO	1	Total 1	Mg 1	0	0
55	YQ	3	Total 3	Mg 3	0	0

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Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
55	YR	2	Total	Mg	0	0
			2	2		
55	YX	2	Total	Mg	0	0
			2	2		
55	Y0	2	Total	Mg	0	0
			2	2		
55	Y1	1	Total	Mg	0	0
			1	1		
55	Y5	1	Total	Mg	0	0
			1	1		
55	Y7	1	Total	Mg	0	0
			1	1		
55	Y8	2	Total	Mg	0	0
			2	2		

- Molecule 56 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
56	QD	1	Total	Fe	S	0	0
			8	4	4		
56	XD	1	Total	Fe	S	0	0
			8	4	4		

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

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
57	QN	1	Total 1	Zn 1	0	0
57	RY	1	Total 1	Zn 1	0	0
57	R4	1	Total 1	Zn 1	0	0
57	R5	1	Total 1	Zn 1	0	0
57	R6	1	Total 1	Zn 1	0	0
57	R9	1	Total 1	Zn 1	0	0
57	XN	1	Total 1	Zn 1	0	0
57	YY	1	Total 1	Zn 1	0	0
57	Y4	1	Total 1	Zn 1	0	0
57	Y5	1	Total 1	Zn 1	0	0
57	Y6	1	Total 1	Zn 1	0	0
57	Y9	1	Total 1	Zn 1	0	0

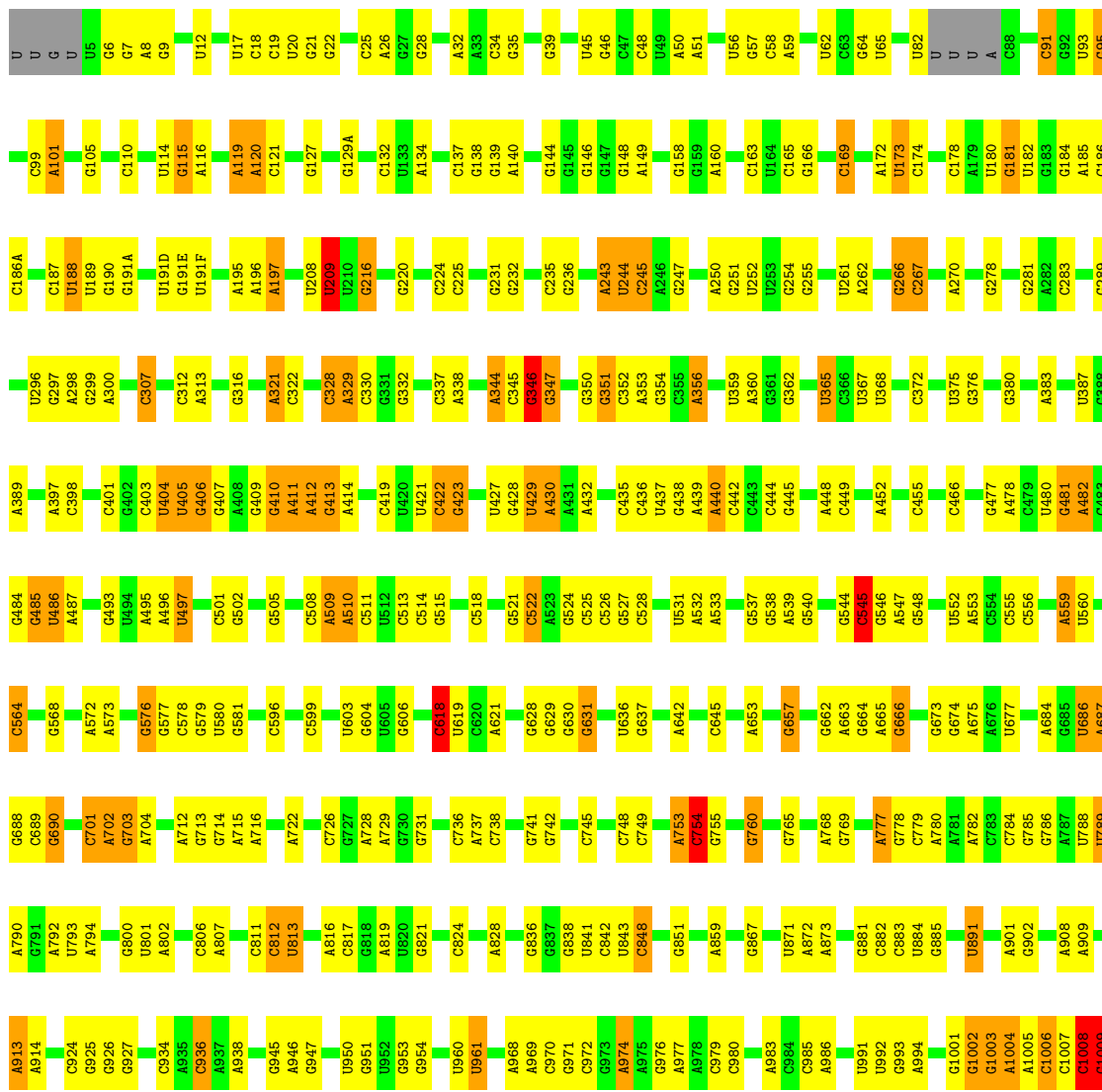
3 Residue-property plots

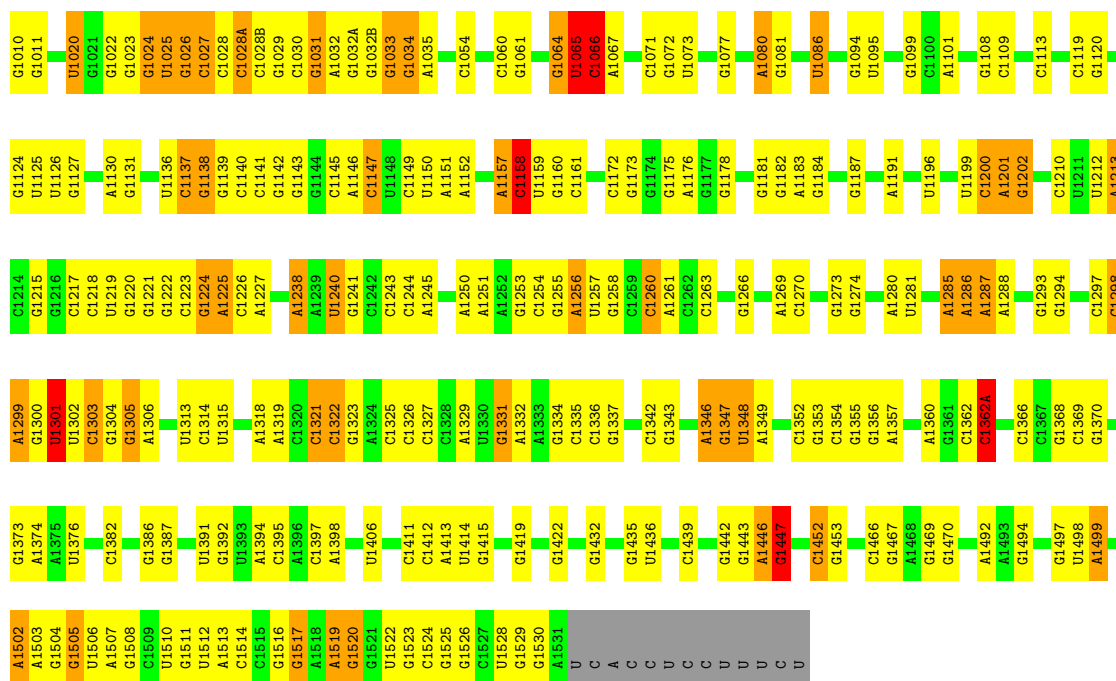
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded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

Note EDS failed to run properly.

• Molecule 1: 16S rRNA

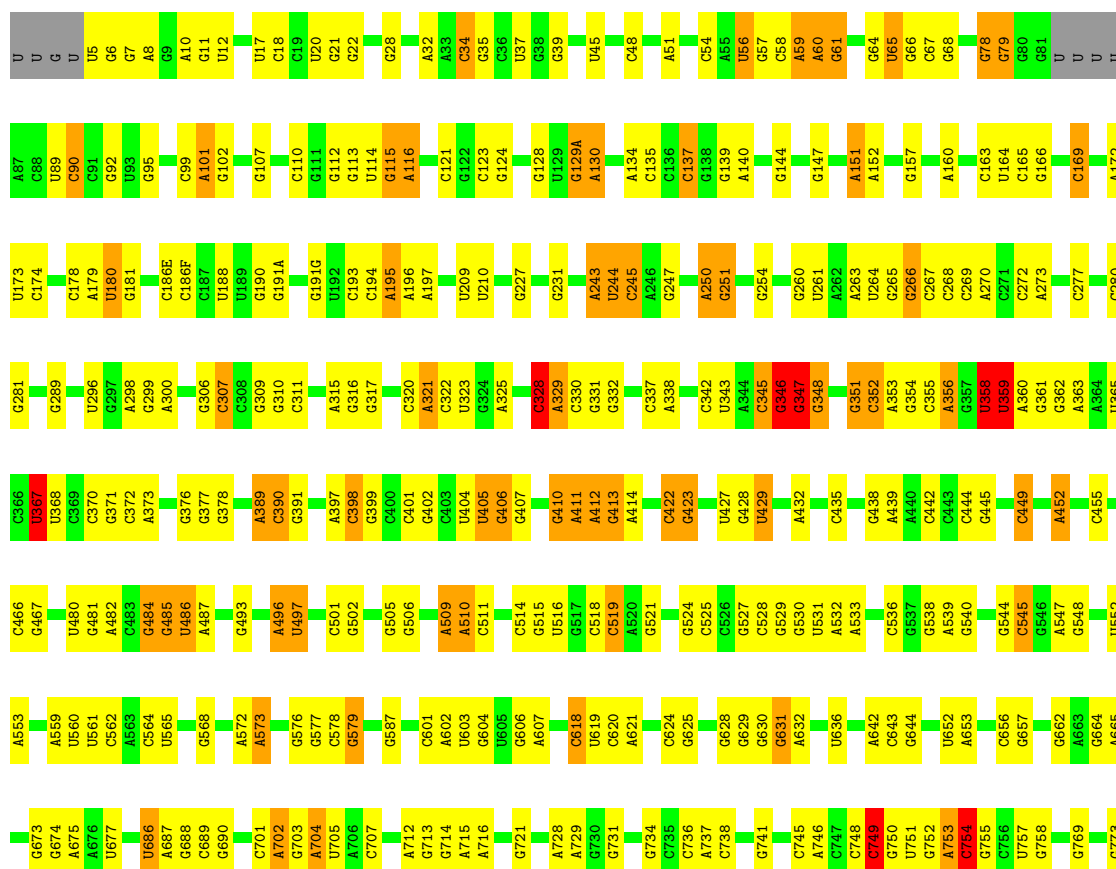
Chain QA:  56% 34% 8% ..

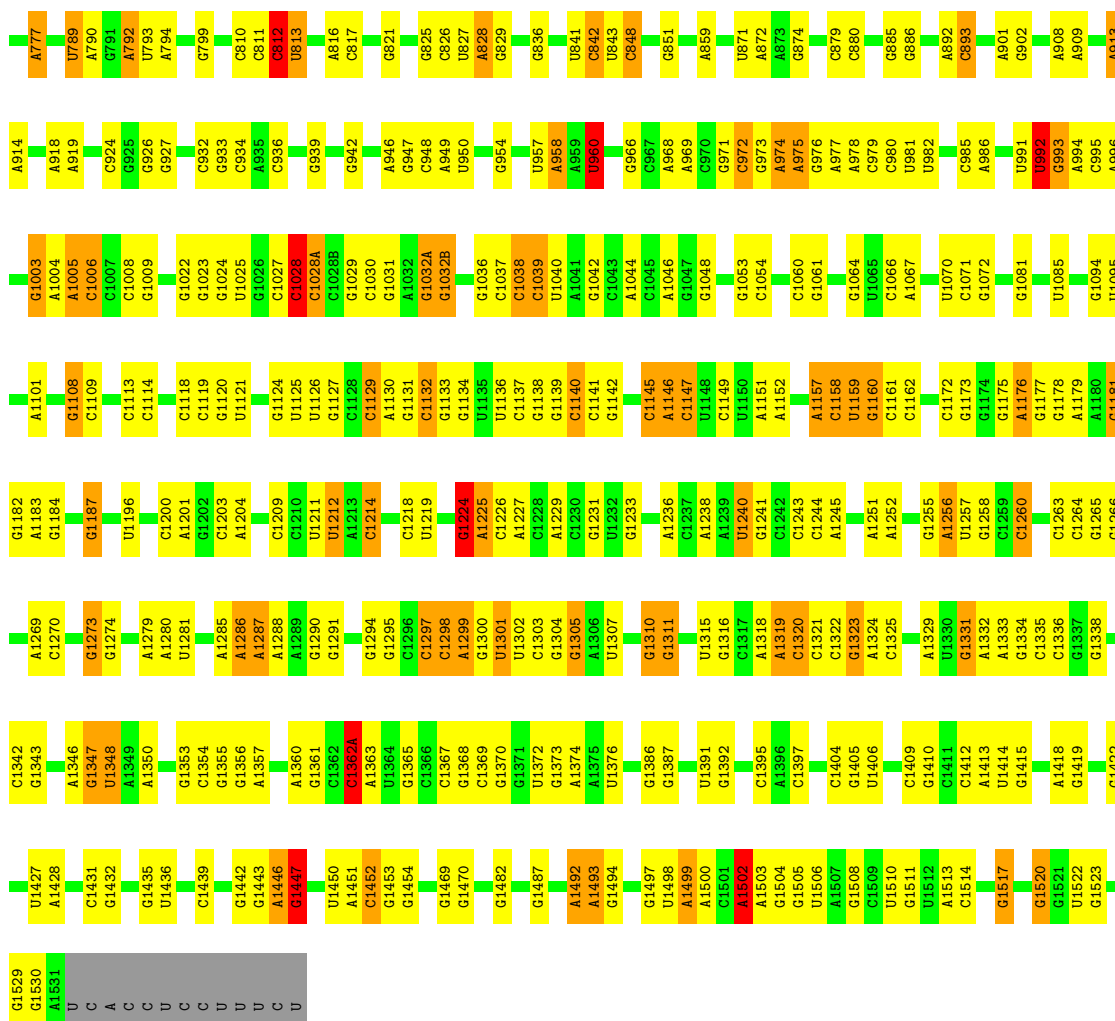




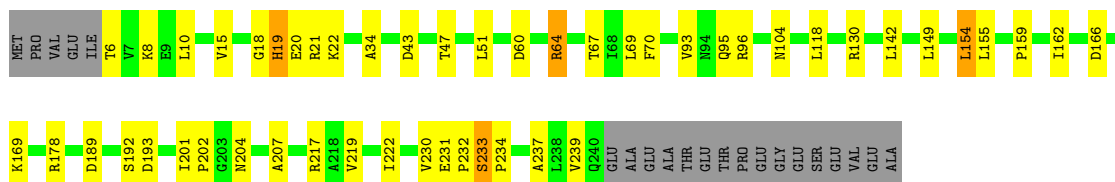
• Molecule 1: 16S rRNA

Chain XA: 55% 35% 8% ..

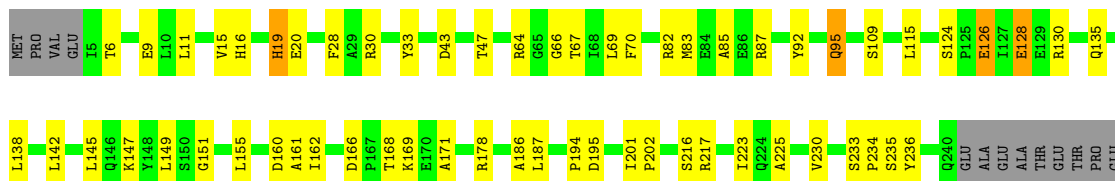




- Molecule 2: 30S ribosomal protein S2



- Molecule 2: 30S ribosomal protein S2



GLY
GLU
SER
GLU
VAL
GLU
ALA

- Molecule 3: 30S ribosomal protein S3

Chain QC:  65% 20% 14%

MET G2 G9 F10 F11 L12 W18 E19 Y23 Y24 Y25 K26 L33 R40 R54 R58 R59 A60 A61 D62 N63 V64 A65 V70 A71 K72 P73 G74 I77 G78 R79 R83 R84 G96 S112 L115 R126 I134 K135 V138 S144 G145

K150 V151 V152 V153 R164 R165 E166 E167 A168 R172 R173 V174 A180 S20 I182 Y23 A189 V198 K199 A200 Y201 T202 E206 VAL ILE GLY GLN LYS PRO LYS ALA ARG PRO GLU LEU LYS LYS ALA GLU ARG PRO ARG ARG ARG PRO VAL VAL LYS GLU

GLU

- Molecule 3: 30S ribosomal protein S3


Chain XC:  60% 23% 14%

MET G2 N3 G9 F10 R11 L12 G13 T15 R16 D17 W18 E19 S20 Y22 Y23 Y24 Y25 Q28 Y29 E35 D36 R40 E44 L47 Y48 S49 A50 A51 L52 A53 R54 E58 R59 D62 A65 K72 V75 G78 R83 R84 R85 W86 L87 R88

E89 Q104 E105 P114 A129 V130 R131 I134 V138 A149 K150 V151 I157 R164 T165 E166 R172 V173 P174 T177 G185 A189 R190 T191 G194 V195 L196 Y201 Y206 VAL ILE GLY GLN LYS PRO LYS ALA ARG PRO GLU LEU PRO ALA

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


- Molecule 4: 30S ribosomal protein S4

Chain QD:  72% 27% 1%

MET G2 P7 V8 C9 R10 L11 C12 R13 R14 K18 L19 Y20 L21 K22 R25 C26 Y27 S28 P29 K30 C31 A32 M33 R36 P39 P40 K46 R49 R57 L58 R59 E60 K61 Q62 R65 R66 I67 R73 E81 E98 S99 R100 N103 V105

F110 R115 V121 V122 R131 R134 R135 P136 R139 V140 R141 R153 M154 L155 R159 E160 L162 M161 P189 Q201 L202 E205 F206 Y207 S208 R209


- Molecule 4: 30S ribosomal protein S4

Chain XD:  75% 23% 1%

MET G2 R3 Y4 C9 R10 R13 R14 E15 I19 Y20 R25 C26 C31 A32 R33 E34 P40 R57 L58 R59 E60 Q62 K63 W88 T89 L94 G95 L96 L97 E98 S99 D102 R103 V104 V105 L108 R115 Q116 A117 V121 R122 I126 D134


R139 V140 E150 R153 N154 E156 R159 G171 P172 G183 V198 L202 E205 S208 R209

- Molecule 5: 30S ribosomal protein S5

Chain QE:  77% 16% 7%




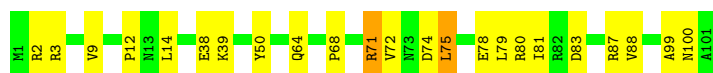
- Molecule 5: 30S ribosomal protein S5

Chain XE:  81% 12% 7%




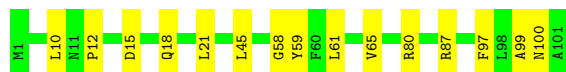
- Molecule 6: 30S ribosomal protein S6

Chain QF:  77% 21% 2%




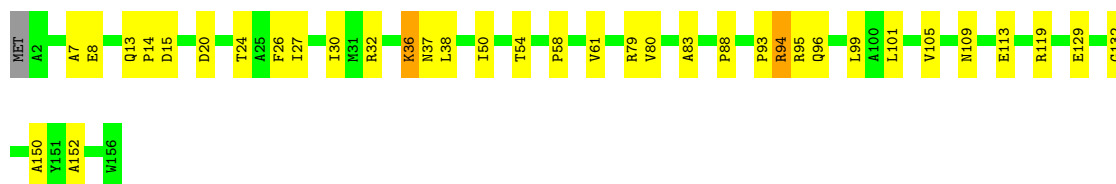
- Molecule 6: 30S ribosomal protein S6

Chain XF:  85% 15%




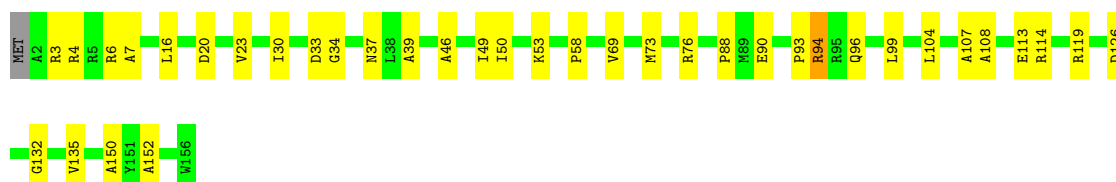
- Molecule 7: 30S ribosomal protein S7

Chain QG:  76% 22% 2%




- Molecule 7: 30S ribosomal protein S7

Chain XG:  76% 23% 1%



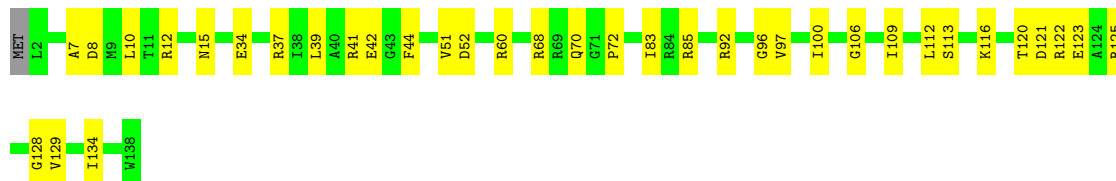
- Molecule 8: 30S ribosomal protein S8

Chain QH:  80% 20%



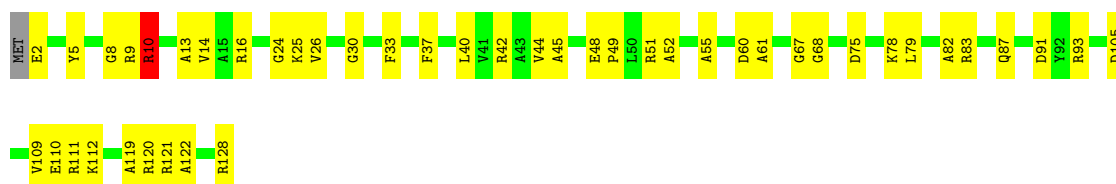
- Molecule 8: 30S ribosomal protein S8

Chain XH:  73% 26%



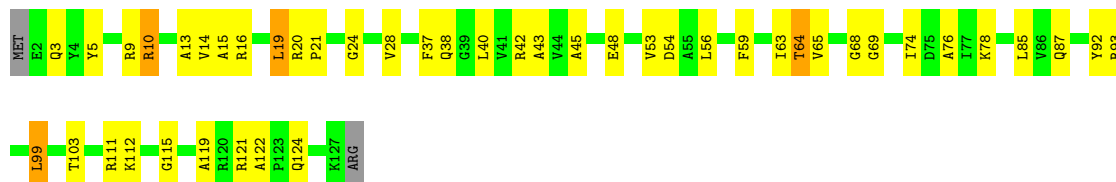
- Molecule 9: 30S ribosomal protein S9

Chain QI:  64% 34%



- Molecule 9: 30S ribosomal protein S9

Chain XI:  63% 32%



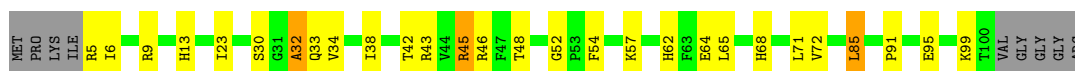
- Molecule 10: 30S ribosomal protein S10

Chain QJ:  66% 26% 6%

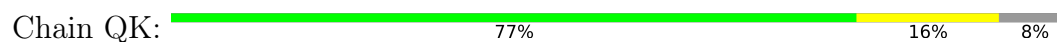


- Molecule 10: 30S ribosomal protein S10

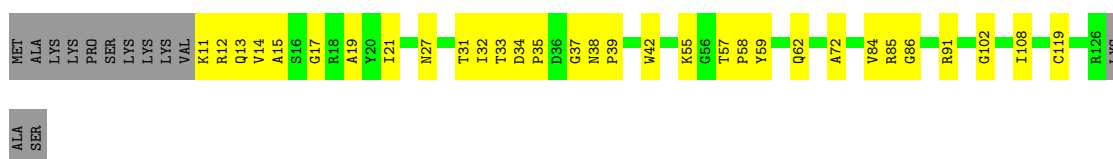
Chain XJ:  65% 24% 9%



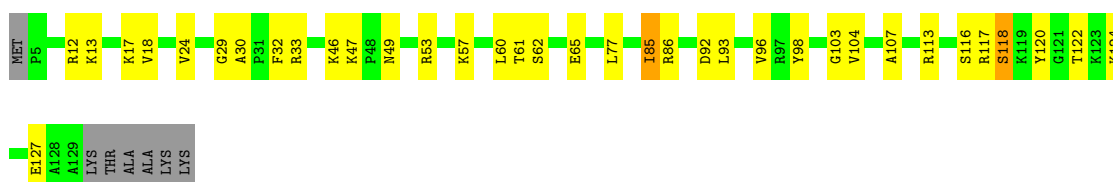
- Molecule 11: 30S ribosomal protein S11



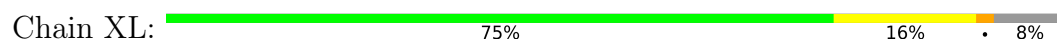
- Molecule 11: 30S ribosomal protein S11



- Molecule 12: 30S ribosomal protein S12



- Molecule 12: 30S ribosomal protein S12

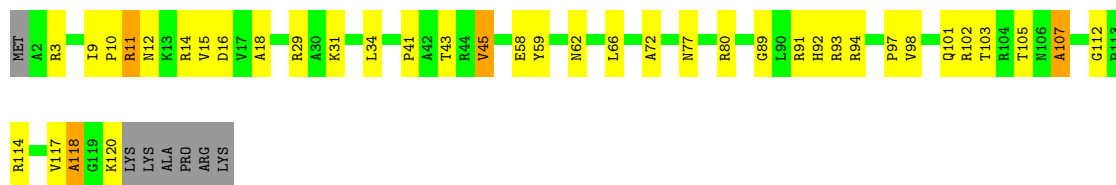


- Molecule 13: 30S ribosomal protein S13




- Molecule 13: 30S ribosomal protein S13

Chain XM:  63% 28% 6%



- Molecule 14: 30S ribosomal protein S14 type Z

Chain QN:  79% 18% 2%




- Molecule 14: 30S ribosomal protein S14 type Z

Chain XN:  59% 36% 5%




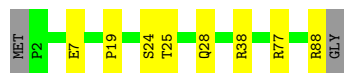
- Molecule 15: 30S ribosomal protein S15

Chain QO:  85% 13% 2%



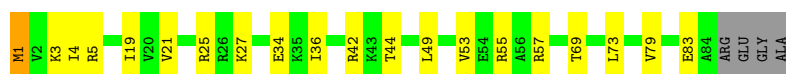
- Molecule 15: 30S ribosomal protein S15

Chain XO:  89% 9% 2%




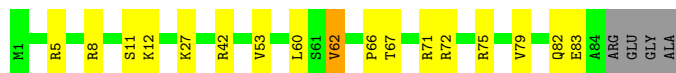
- Molecule 16: 30S ribosomal protein S16

Chain QP:  73% 22% 5%




- Molecule 16: 30S ribosomal protein S16

Chain XP:  76% 18% 6%



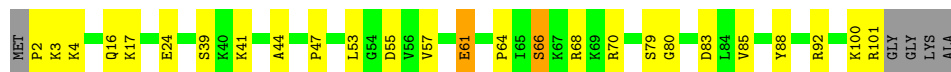
- Molecule 17: 30S ribosomal protein S17

Chain QQ:  86% 8% • 5%



- Molecule 17: 30S ribosomal protein S17

Chain XQ:  70% 23% • 5%



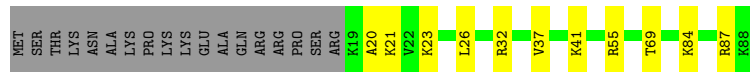
- Molecule 18: 30S ribosomal protein S18

Chain QR:  59% 19% • 20%



- Molecule 18: 30S ribosomal protein S18

Chain XR:  67% 13% 20%



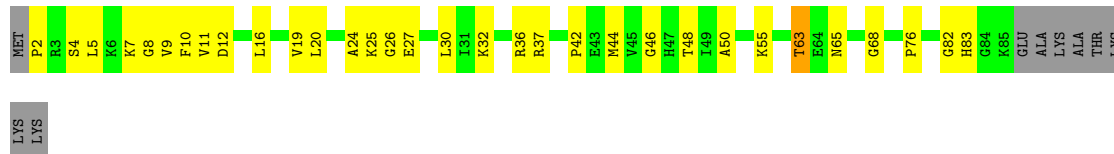
- Molecule 19: 30S ribosomal protein S19

Chain QS:  59% 26% • 11%



- Molecule 19: 30S ribosomal protein S19

Chain XS:  56% 33% • 10%



- Molecule 20: 30S ribosomal protein S20

Chain QT:  64% 25% • 7%



- Molecule 20: 30S ribosomal protein S20



- Molecule 21: 30S ribosomal protein Thx



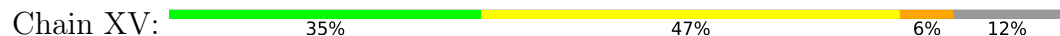
- Molecule 21: 30S ribosomal protein Thx



- Molecule 22: P-site ASLPro



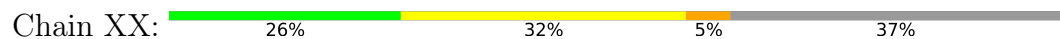
- Molecule 22: P-site ASLPro



- Molecule 23: mRNA

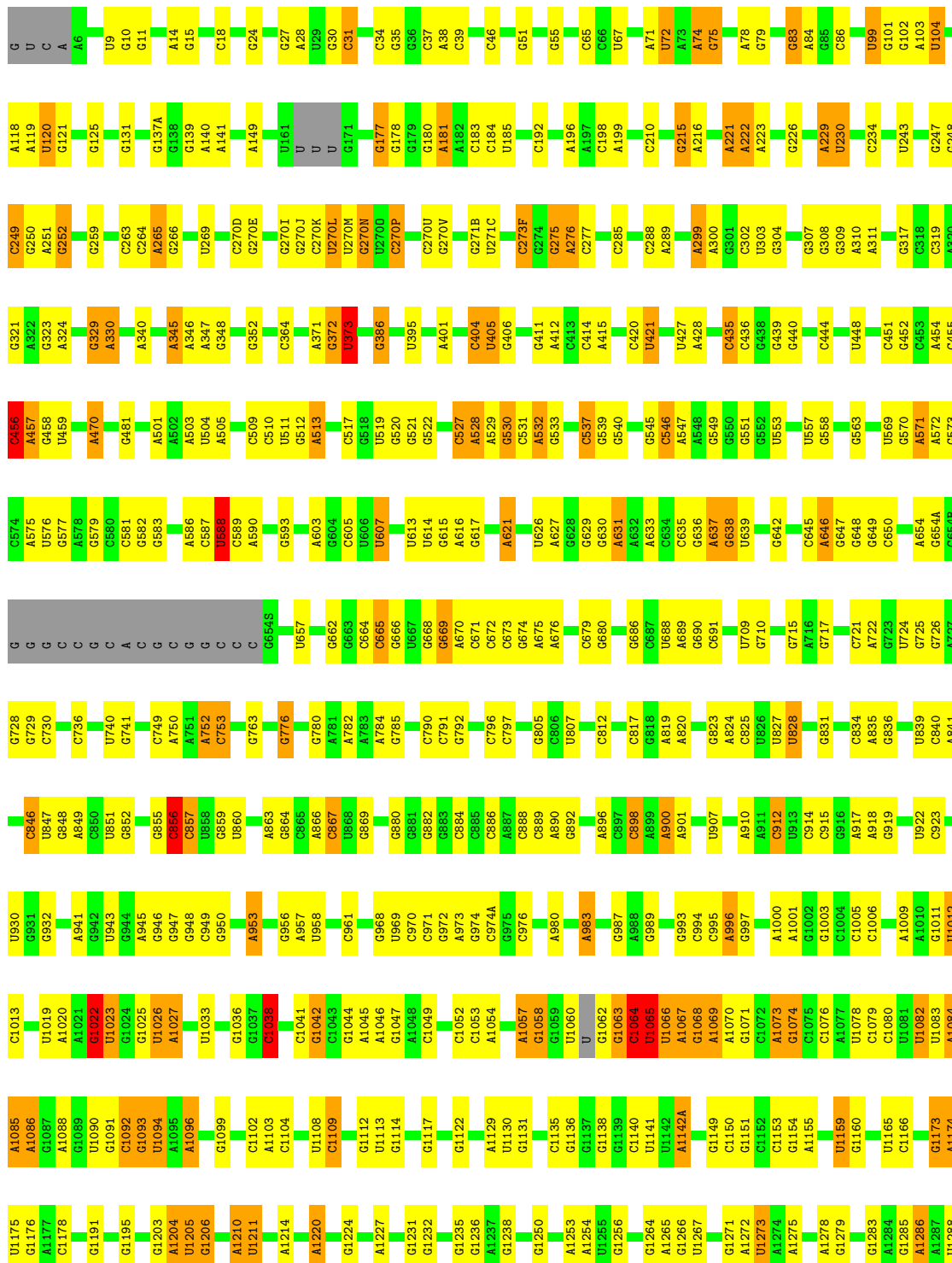


- Molecule 23: mRNA





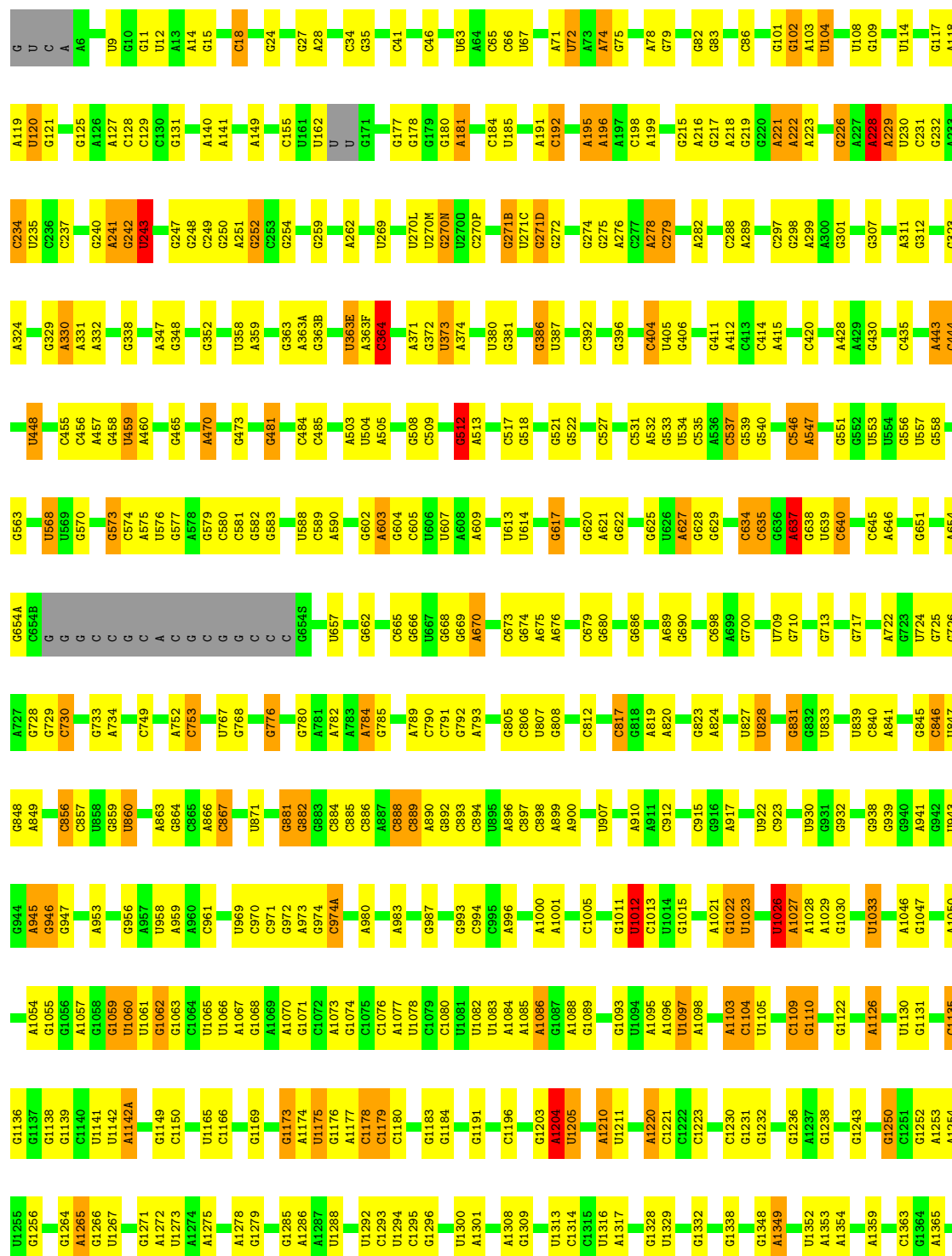
- Molecule 24: 23S rRNA



C2789	C2685	G2574	C2441	G2330	G2287	U2130	A2033	G1929	A1815	G1725	U1590	A1494	C1399	C1289
A2790	U2688	G2578	C2442	G2334	G2228	G2131	G2037	G1930	G1816	U1693	G1591	U1497	G1400	C1290
C2791	U2689	C2443	C2444	A2335	G2238	U2132	G2038	U1931	U1817	G1695	G1592		C1403	C1291
U2797	C2690	U2584	A2448	A2336	G2239	A2134	C2043	C1934	U1820	G1726	G1594	U1503	C1404	C1404
C2798	C2691	U2585	C2456	G2340	U2243	C2136	G2046	A1936	G1824	U1728	G1595	G1504	U1405	U1294
C2799	C2692	A2693	C2457	G2341	U2244	C2137	U2047	A1937	A1825	A1729	A1596	C1505	U1406	C1295
A2801	C2693	C2591	C2468	C2342	U2245	C2138	G2048	A1938	G1826	U1730	C1597	C1506	C1407	G1296
G2802	C2694	G2592	A2469	U2344	A2247	C2139	U1939	U1939	C1827	U1731	C1599	A1507		C1297
U2808	U2696	C2593	C2475	U2345	G2250	C2145	A2051	C1942	C1830	A1732	C1607	C1509	U1300	U1300
A2809	C2697	A2603	C2476	A2346	G2251	C2146	G2052	U1943	G1831	U1733	A1608	A1511	A1301	A1302
U2810	U2698	G2594	A2478	C2347	G2252	C2147	C2053	U1943	G1832		A1609	G1512	A1418	
C2816	G2817	C2350	A2479	C2350	C2258	G2149	C2056	A1952	U1833	G1743	A1610	U1514	U1420	G1309
G2817	C2818	C2351	C2480	C2351	A2266	U2150	G2057	U1955	U1834	G1752	U1520		G1421	U1312
G2819	U2702	U2611	C2481	U2344	A2267	C2151	A2060	U1956	U1835	G1753	G1521		U1313	U1313
C2703	C2703	C2612		U2345	A2268	G2152	G2061	C1957	C1836	G1756	A1616		A1427	C1314
G2707	G2708	U2615	A2488	C2364	A2269	C2156	C2062	C1958	C1837		C1617		A1428	G1315
G2709	C2816	C2617	C2494	G2365	C2275	A2158	C2063	C1961	A1847	A1762	G1622	G1525	C1429	G1316
A2712A	G2818	G2618	C2498	C2374	A2278	C2161	C2064	C1962	G1848	G1763	G1629	G1526	U1430	A1317
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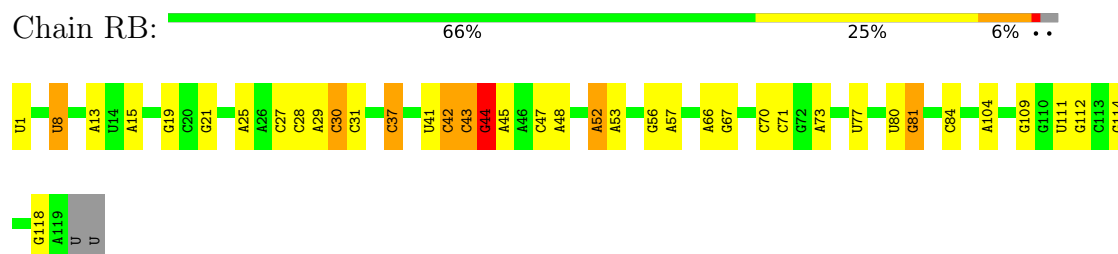


- Molecule 24: 23S rRNA

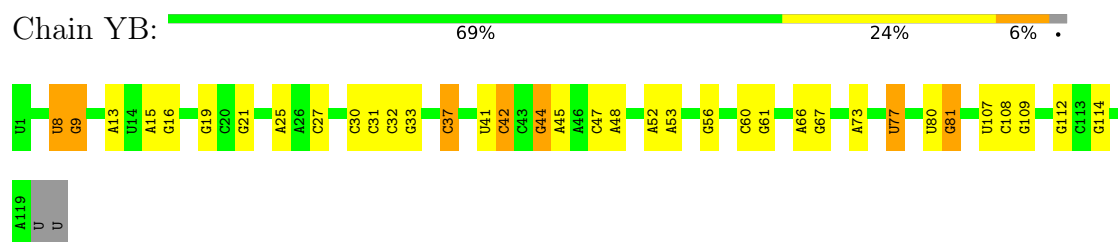


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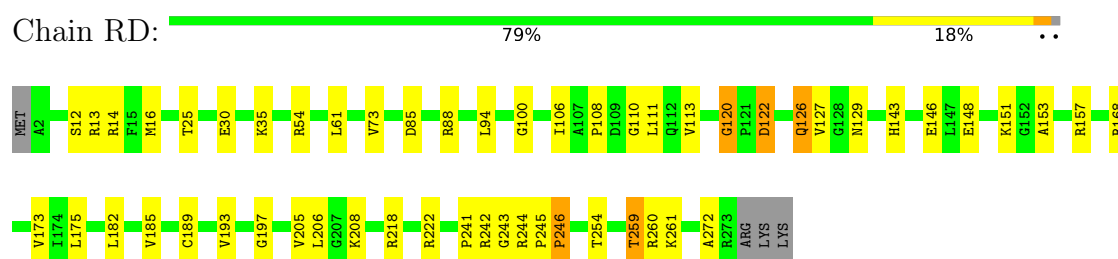
- Molecule 25: 5S rRNA



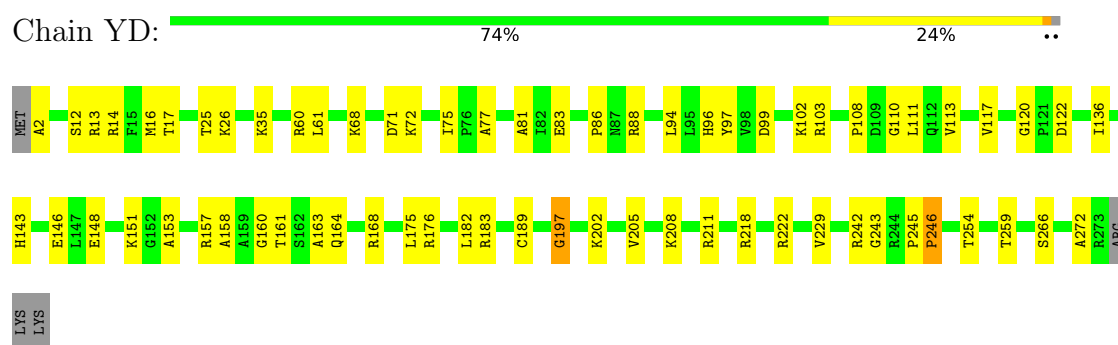
- Molecule 25: 5S rRNA



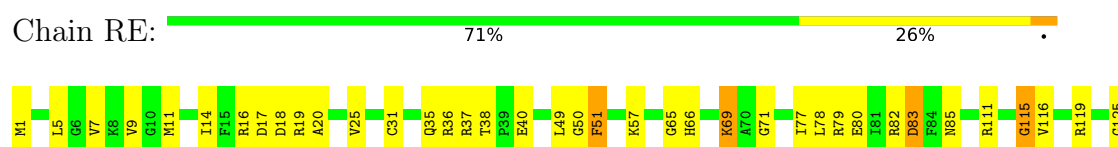
- Molecule 26: 50S ribosomal protein L2



- Molecule 26: 50S ribosomal protein L2



- Molecule 27: 50S ribosomal protein L3





- Molecule 27: 50S ribosomal protein L3

Chain YE: 83% 15%



- Molecule 28: 50S ribosomal protein L4

Chain RF: 78% 18%



- Molecule 28: 50S ribosomal protein L4

Chain YF: 76% 19%



- Molecule 29: 50S ribosomal protein L5

Chain RG: 66% 31%

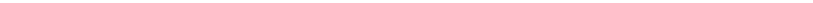


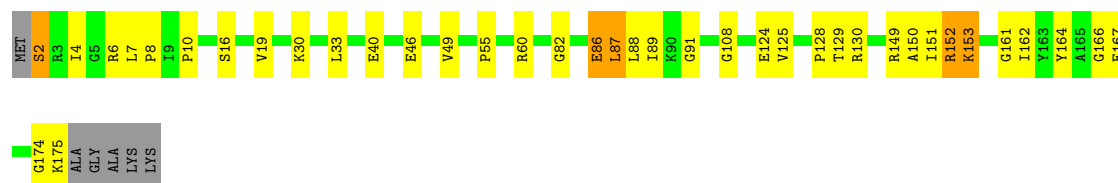
- Molecule 29: 50S ribosomal protein L5

Chain YG: 77% 20%

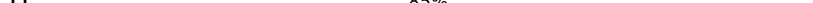


- Molecule 30: 50S ribosomal protein L6

Chain RH: 




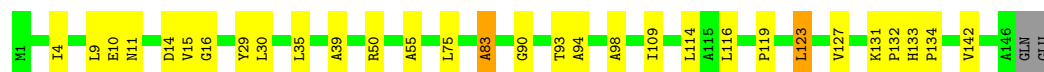
- Molecule 30: 50S ribosomal protein L6

Chain YH:  85% 11% . .




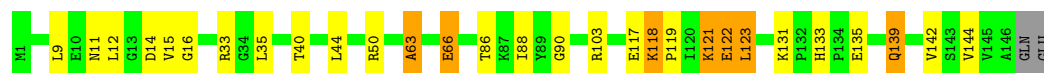
- Molecule 31: 50S ribosomal protein L9

Chain RI:  78% 19% ..




- Molecule 31: 50S ribosomal protein L9

Chain YI:  79% 15% 5%

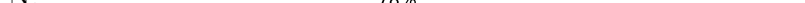


- Molecule 32: 50S ribosomal protein L13

Chain RN:  76% 22%



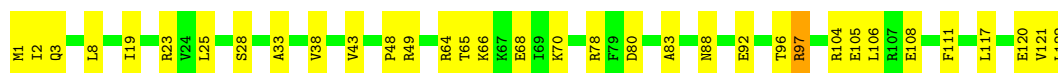
- Molecule 32: 50S ribosomal protein L13

Chain YN:  78% 19% ..

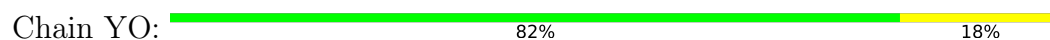


- Molecule 33: 50S ribosomal protein L14

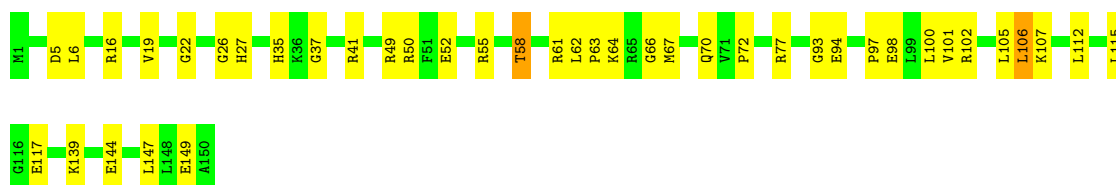
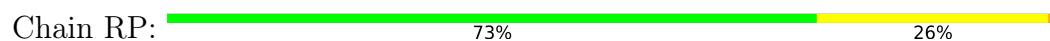
Chain RO:  72% 27%



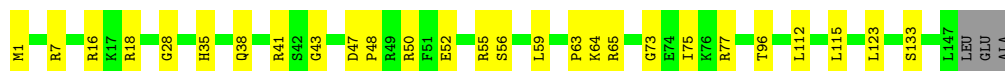
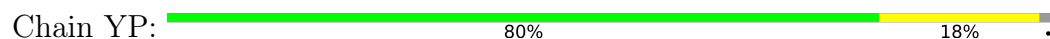
- Molecule 33: 50S ribosomal protein L14



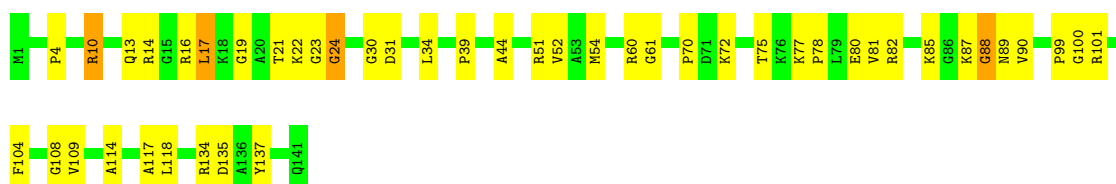
- Molecule 34: 50S ribosomal protein L15



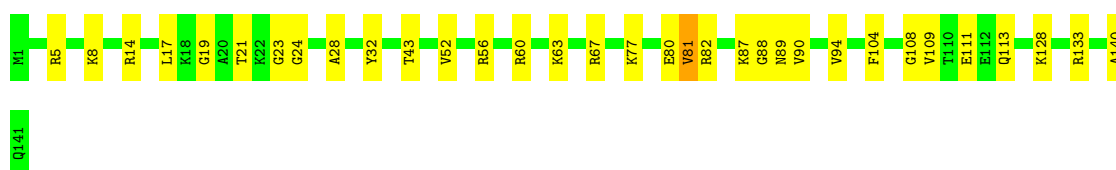
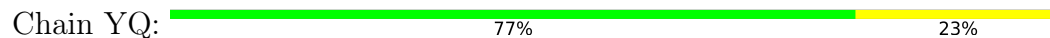
- Molecule 34: 50S ribosomal protein L15




- Molecule 35: 50S ribosomal protein L16



- Molecule 35: 50S ribosomal protein L16




- Molecule 36: 50S ribosomal protein L17

Chain RR:  81% 17% ..



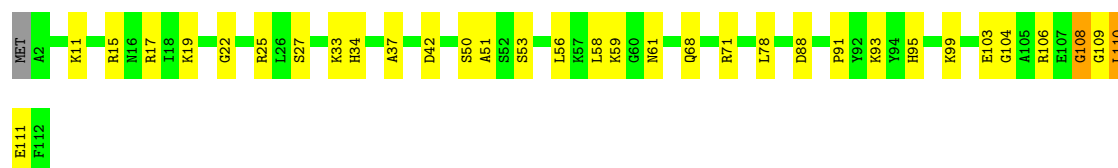
- Molecule 36: 50S ribosomal protein L17

Chain YR:  78% 18% ..




- Molecule 37: 50S ribosomal protein L18

Chain RS:  70% 28% ..



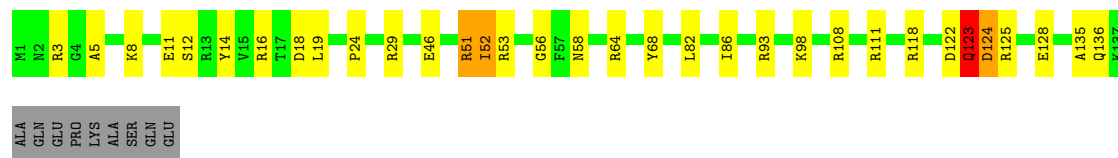
- Molecule 37: 50S ribosomal protein L18

Chain YS:  79% 18% ..



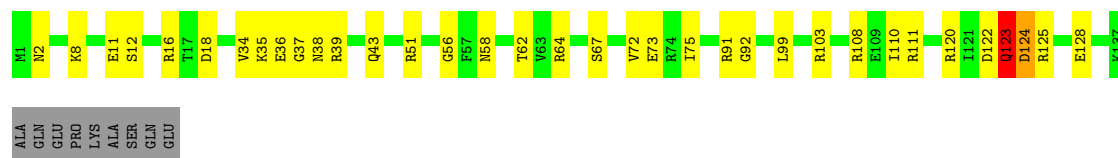
- Molecule 38: 50S ribosomal protein L19

Chain RT:  71% 20% .. 6%




- Molecule 38: 50S ribosomal protein L19

Chain YT:  70% 23% .. 6%



- Molecule 39: 50S ribosomal protein L20

Chain RU:  81% 15% ..




- Molecule 39: 50S ribosomal protein L20

Chain YU:  88% 11% .



- Molecule 40: 50S ribosomal protein L21

Chain RV:  84% 16%




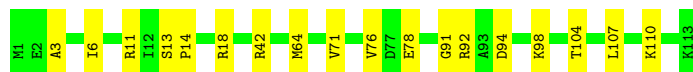
- Molecule 40: 50S ribosomal protein L21

Chain YV:  89% 11%



- Molecule 41: 50S ribosomal protein L22

Chain RW:  84% 16%




- Molecule 41: 50S ribosomal protein L22

Chain YW:  90% 10%




- Molecule 42: 50S ribosomal protein L23

Chain RX:  83% 11% ..




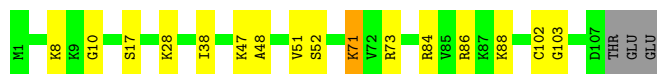
- Molecule 42: 50S ribosomal protein L23

Chain YX:  84% 11% .




- Molecule 43: 50S ribosomal protein L24

Chain RY:  83% 14% ..




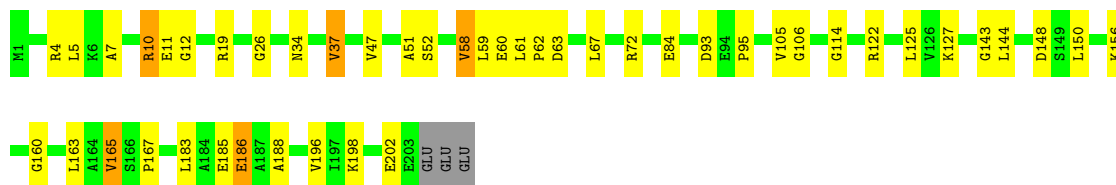
- Molecule 43: 50S ribosomal protein L24

Chain YY:  82% 15% .




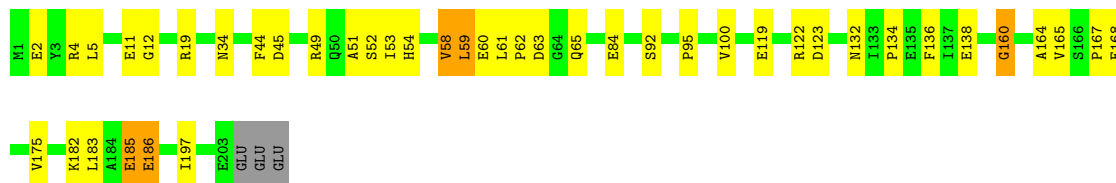
- Molecule 44: 50S ribosomal protein L25

Chain RZ:  76% 20% ..




- Molecule 44: 50S ribosomal protein L25

Chain YZ:  78% 18% ..




- Molecule 45: 50S ribosomal protein L27

Chain R0:  74% 15% 11%



- Molecule 45: 50S ribosomal protein L27

Chain Y0:  76% 12% 12%



- Molecule 46: 50S ribosomal protein L28

Chain R1: 81% 15% ..



- Molecule 46: 50S ribosomal protein L28

Chain Y1: 77% 15% • 5%



- Molecule 47: 50S ribosomal protein L29

Chain R2: 69% 25% ..



- Molecule 47: 50S ribosomal protein L29

Chain Y2: 72% 19% • 6%



- Molecule 48: 50S ribosomal protein L30

Chain R3: 70% 27% ..



- Molecule 48: 50S ribosomal protein L30

Chain Y3: 82% 17% •

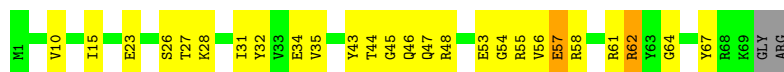


- Molecule 49: 50S ribosomal protein L31

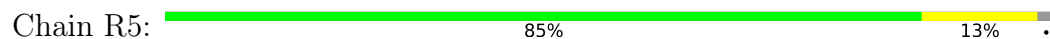
Chain R4: 70% 24% ..



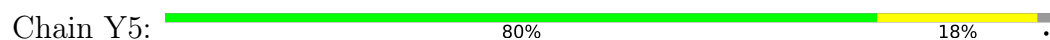
- Molecule 49: 50S ribosomal protein L31



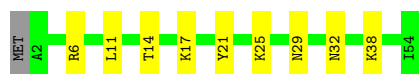
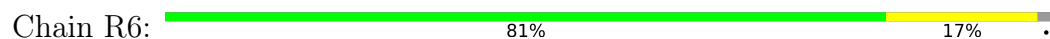
- Molecule 50: 50S ribosomal protein L32



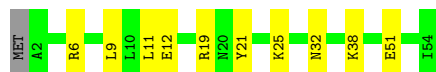
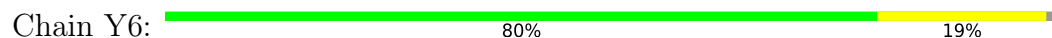
- Molecule 50: 50S ribosomal protein L32



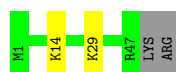
- Molecule 51: 50S ribosomal protein L33



- Molecule 51: 50S ribosomal protein L33



- Molecule 52: 50S ribosomal protein L34



- Molecule 52: 50S ribosomal protein L34





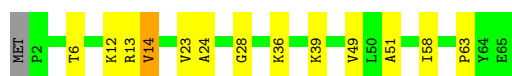
- Molecule 53: 50S ribosomal protein L35

Chain R8: 68% 29% ..



- Molecule 53: 50S ribosomal protein L35

Chain Y8: 78% 18% ..



- Molecule 54: 50S ribosomal protein L36

Chain R9: 78% 22%



- Molecule 54: 50S ribosomal protein L36

Chain Y9: 78% 22%



4 Data and refinement statistics

EDS failed to run properly - this section is therefore incomplete.

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α , β , γ	209.79Å 451.91Å 621.58Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	152.71 – 3.10	Depositor
% Data completeness (in resolution range)	98.0 (152.71-3.10)	Depositor
R_{merge}	0.36	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.00 (at 3.07Å)	Xtriage
Refinement program	PHENIX 1.14_3260	Depositor
R, R_{free}	0.244 , 0.274	Depositor
Wilson B-factor (Å ²)	62.6	Xtriage
Anisotropy	0.231	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.40$, $\langle L^2 \rangle = 0.22$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
Total number of atoms	289311	wwPDB-VP
Average B, all atoms (Å ²)	90.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.65% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 1MG, ZN, MG, SF4

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	QA	0.36	0/36098	1.03	113/56341 (0.2%)
1	XA	0.37	2/36101 (0.0%)	1.04	128/56346 (0.2%)
2	QB	0.27	0/1942	0.54	0/2619
2	XB	0.27	0/1950	0.51	0/2630
3	QC	0.27	0/1629	0.53	0/2195
3	XC	0.26	0/1629	0.57	1/2195 (0.0%)
4	QD	0.44	0/1733	0.77	2/2318 (0.1%)
4	XD	0.35	0/1733	0.78	3/2318 (0.1%)
5	QE	0.27	0/1171	0.51	0/1576
5	XE	0.28	0/1171	0.51	0/1576
6	QF	0.26	0/856	0.46	0/1154
6	XF	0.25	0/856	0.47	0/1154
7	QG	0.27	0/1276	0.51	0/1709
7	XG	0.25	0/1276	0.48	0/1709
8	QH	0.27	0/1128	0.49	0/1517
8	XH	0.27	0/1128	0.49	0/1517
9	QI	0.27	0/1029	0.58	1/1379 (0.1%)
9	XI	0.28	0/1017	0.66	2/1365 (0.1%)
10	QJ	0.27	0/814	0.56	0/1095
10	XJ	0.27	0/790	0.51	0/1063
11	QK	0.27	0/900	0.51	0/1213
11	XK	0.26	0/879	0.49	0/1187
12	QL	0.29	0/991	0.52	0/1327
12	XL	0.28	0/972	0.52	0/1301
13	QM	0.27	0/965	0.57	0/1292
13	XM	0.26	0/956	0.55	0/1281
14	QN	0.30	0/501	0.58	1/664 (0.2%)
14	XN	0.29	0/501	0.55	1/664 (0.2%)
15	QO	0.26	0/745	0.48	0/992
15	XO	0.23	0/740	0.42	0/987
16	QP	0.27	0/721	0.50	0/970
16	XP	0.26	0/721	0.46	0/970

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
17	QQ	0.26	0/847	0.49	0/1131
17	XQ	0.27	0/847	0.47	0/1131
18	QR	0.27	0/579	0.56	0/768
18	XR	0.25	0/579	0.51	0/768
19	QS	0.27	0/680	0.60	0/915
19	XS	0.25	0/689	0.54	0/926
20	QT	0.28	0/765	0.52	0/1007
20	XT	0.24	0/765	0.54	1/1007 (0.1%)
21	QU	0.26	0/221	0.52	0/288
21	XU	0.25	0/221	0.53	0/288
22	QV	0.31	0/380	1.06	2/590 (0.3%)
22	XV	0.29	0/332	1.00	0/515
23	QX	0.53	0/243	1.05	0/377
23	XX	0.58	0/294	1.15	1/457 (0.2%)
24	RA	0.43	0/69498	1.05	263/108491 (0.2%)
24	YA	0.49	0/69543	1.05	237/108563 (0.2%)
25	RB	0.37	0/2878	1.11	19/4490 (0.4%)
25	YB	0.44	0/2878	1.10	17/4490 (0.4%)
26	RD	0.31	0/2165	0.49	0/2919
26	YD	0.33	0/2165	0.50	0/2919
27	RE	0.31	0/1601	0.58	0/2160
27	YE	0.32	0/1596	0.53	0/2153
28	RF	0.30	0/1620	0.50	0/2194
28	YF	0.32	0/1620	0.48	0/2194
29	RG	0.27	0/1499	0.57	0/2016
29	YG	0.27	0/1499	0.59	2/2016 (0.1%)
30	RH	0.28	0/1362	0.56	0/1841
30	YH	0.31	0/1356	0.52	0/1833
31	RI	0.27	0/1151	0.62	0/1558
31	YI	0.27	0/1151	0.57	0/1558
32	RN	0.28	0/1131	0.50	0/1525
32	YN	0.32	0/1131	0.51	0/1525
33	RO	0.31	0/943	0.50	0/1269
33	YO	0.32	0/943	0.52	0/1269
34	RP	0.30	0/1162	0.62	0/1544
34	YP	0.31	0/1139	0.54	0/1514
35	RQ	0.29	0/1143	0.56	0/1527
35	YQ	0.32	0/1143	0.57	0/1527
36	RR	0.28	0/974	0.53	0/1302
36	YR	0.30	0/974	0.55	1/1302 (0.1%)
37	RS	0.27	0/892	0.61	1/1187 (0.1%)
37	YS	0.29	0/892	0.61	1/1187 (0.1%)
38	RT	0.27	0/1155	0.56	0/1542

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
38	YT	0.30	0/1155	0.55	1/1542 (0.1%)
39	RU	0.28	0/982	0.49	0/1306
39	YU	0.31	0/982	0.44	0/1306
40	RV	0.29	0/790	0.54	0/1057
40	YV	0.33	0/790	0.54	0/1057
41	RW	0.28	0/911	0.48	0/1220
41	YW	0.31	0/911	0.50	0/1220
42	RX	0.29	0/739	0.50	0/993
42	YX	0.31	0/739	0.52	0/993
43	RY	0.28	0/831	0.48	0/1108
43	YY	0.30	0/831	0.47	0/1108
44	RZ	0.32	0/1634	0.61	1/2216 (0.0%)
44	YZ	0.31	0/1634	0.56	0/2216
45	R0	0.29	0/611	0.49	0/814
45	Y0	0.32	0/607	0.50	0/809
46	R1	0.30	0/770	0.54	0/1022
46	Y1	0.31	0/736	0.54	0/978
47	R2	0.24	0/583	0.42	0/771
47	Y2	0.30	0/577	0.45	0/764
48	R3	0.26	0/474	0.51	0/635
48	Y3	0.27	0/474	0.52	0/635
49	R4	0.29	0/578	0.59	0/776
49	Y4	0.28	0/578	0.56	0/776
50	R5	0.30	0/473	0.48	0/639
50	Y5	0.32	0/473	0.49	0/639
51	R6	0.28	0/460	0.47	0/613
51	Y6	0.31	0/460	0.47	0/613
52	R7	0.27	0/417	0.42	0/550
52	Y7	0.30	0/426	0.45	0/561
53	R8	0.31	0/525	0.54	0/691
53	Y8	0.33	0/525	0.50	0/691
54	R9	0.27	0/310	0.44	0/407
54	Y9	0.31	0/310	0.45	0/407
All	All	0.39	2/312861 (0.0%)	0.94	799/467540 (0.2%)

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	XA	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	QB	0	17
2	XB	0	22
3	QC	0	16
3	XC	0	19
5	QE	0	5
5	XE	0	8
6	QF	0	5
7	QG	0	8
7	XG	0	8
8	QH	0	4
8	XH	0	5
9	QI	0	12
9	XI	0	11
10	QJ	0	12
10	XJ	0	9
11	QK	0	1
11	XK	0	4
12	QL	0	10
12	XL	0	10
13	QM	0	19
13	XM	0	15
14	QN	0	1
14	XN	0	7
15	QO	0	2
15	XO	0	2
16	QP	0	3
16	XP	0	4
17	QQ	0	3
17	XQ	0	4
18	QR	0	5
18	XR	0	3
19	QS	0	12
19	XS	0	21
20	QT	0	16
20	XT	0	12
21	QU	0	2
21	XU	0	2
26	RD	0	11
26	YD	0	8
27	RE	0	20
27	YE	0	7
28	RF	0	12

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Mol	Chain	#Chirality outliers	#Planarity outliers
28	YF	0	14
29	RG	0	16
29	YG	0	13
30	RH	0	24
30	YH	0	2
31	RI	0	21
31	YI	0	22
32	RN	0	12
32	YN	0	10
33	RO	0	1
33	YO	0	1
34	RP	0	25
34	YP	0	8
35	RQ	0	14
35	YQ	0	13
36	RR	0	3
36	YR	0	5
37	RS	0	13
37	YS	0	9
38	RT	0	13
38	YT	0	11
39	RU	0	7
39	YU	0	2
40	RV	0	6
40	YV	0	6
41	RW	0	4
41	YW	0	3
42	RX	0	4
42	YX	0	2
43	RY	0	4
43	YY	0	4
44	RZ	0	20
44	YZ	0	16
45	R0	0	2
45	Y0	0	2
46	R1	0	7
46	Y1	0	8
47	R2	0	8
47	Y2	0	3
48	R3	0	1
48	Y3	0	2
49	R4	0	9

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Mol	Chain	#Chirality outliers	#Planarity outliers
49	Y4	0	12
50	Y5	0	1
53	R8	0	12
53	Y8	0	1
54	R9	0	1
All	All	0	775

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	XA	358	U	O4'-C1'	-6.29	1.33	1.41
1	XA	358	U	C5'-C4'	5.05	1.57	1.51

All (799) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	XA	359	U	C2-N1-C1'	-18.46	95.55	117.70
1	XA	359	U	O5'-P-OP1	-17.99	89.11	110.70
1	XA	359	U	C6-N1-C1'	16.75	144.64	121.20
1	XA	328	C	N1-C2-O2	13.70	127.12	118.90
24	RA	1092	C	N1-C2-O2	13.63	127.08	118.90
1	XA	359	U	OP1-P-OP2	-13.04	100.04	119.60
1	QA	1158	C	N1-C2-O2	11.82	125.99	118.90
1	QA	328	C	N1-C2-O2	11.37	125.72	118.90
1	QA	1301	U	N1-C2-O2	11.34	130.74	122.80
1	XA	328	C	N3-C2-O2	-10.79	114.35	121.90
1	XA	328	C	C2-N1-C1'	10.39	130.22	118.80
1	QA	1301	U	N3-C2-O2	-10.31	114.98	122.20
24	RA	1092	C	N3-C2-O2	-10.04	114.87	121.90
1	XA	1158	C	N1-C2-O2	9.99	124.89	118.90
25	YB	31	C	N1-C2-O2	9.83	124.80	118.90
24	RA	1092	C	C2-N1-C1'	9.67	129.44	118.80
1	XA	359	U	O5'-P-OP2	9.66	122.29	110.70
24	YA	1535	U	N1-C2-O2	9.63	129.54	122.80
24	RA	856	C	C6-N1-C2	-9.63	116.45	120.30
1	QA	1066	C	N1-C2-O2	9.56	124.64	118.90
1	QA	1158	C	C2-N1-C1'	9.50	129.25	118.80
1	XA	449	C	N1-C2-O2	9.46	124.57	118.90
24	RA	1313	U	N1-C2-O2	9.29	129.30	122.80
25	RB	31	C	N1-C2-O2	9.22	124.43	118.90
1	XA	358	U	C1'-O4'-C4'	-9.22	102.53	109.90
24	YA	749	C	N1-C2-O2	9.18	124.41	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	QA	1158	C	N3-C2-O2	-9.17	115.48	121.90
24	RA	1064	C	C5-C6-N1	9.17	125.58	121.00
1	QA	328	C	N3-C2-O2	-9.14	115.50	121.90
1	XA	359	U	O4'-C1'-N1	9.09	115.47	108.20
24	YA	860	U	N3-C2-O2	-9.07	115.85	122.20
24	YA	1313	U	N1-C2-O2	9.06	129.14	122.80
1	XA	358	U	O4'-C1'-N1	-9.04	100.96	108.20
24	YA	856	C	C6-N1-C2	-9.04	116.68	120.30
24	RA	828	U	N1-C2-O2	8.88	129.01	122.80
24	YA	828	U	N1-C2-O2	8.86	129.00	122.80
24	RA	1092	C	C6-N1-C2	-8.85	116.76	120.30
24	YA	1956	U	N3-C2-O2	-8.84	116.01	122.20
24	YA	2179	C	N1-C2-O2	8.84	124.20	118.90
24	RA	1914	C	N1-C2-O2	8.81	124.19	118.90
24	RA	1092	C	C5-C6-N1	8.80	125.40	121.00
1	QA	330	C	N1-C2-O2	8.79	124.17	118.90
24	RA	1313	U	N3-C2-O2	-8.77	116.06	122.20
24	YA	1535	U	N3-C2-O2	-8.76	116.07	122.20
24	RA	1064	C	C6-N1-C2	-8.72	116.81	120.30
1	XA	979	C	N1-C2-O2	8.71	124.12	118.90
24	RA	1931	U	N3-C2-O2	-8.69	116.12	122.20
24	YA	1313	U	N3-C2-O2	-8.69	116.12	122.20
25	YB	31	C	C6-N1-C2	-8.67	116.83	120.30
24	RA	828	U	C2-N1-C1'	8.64	128.06	117.70
25	RB	31	C	C2-N1-C1'	8.62	128.28	118.80
24	YA	1914	C	N1-C2-O2	8.61	124.07	118.90
1	QA	307	C	N1-C2-O2	8.56	124.03	118.90
1	QA	328	C	C2-N1-C1'	8.55	128.20	118.80
24	RA	749	C	N1-C2-O2	8.52	124.01	118.90
24	RA	828	U	N3-C2-O2	-8.52	116.24	122.20
24	RA	1504	C	N1-C2-O2	8.51	124.01	118.90
24	YA	828	U	N3-C2-O2	-8.49	116.25	122.20
1	XA	449	C	N3-C2-O2	-8.48	115.96	121.90
1	QA	328	C	C6-N1-C2	-8.39	116.94	120.30
24	YA	120	U	N3-C2-O2	-8.39	116.33	122.20
24	YA	120	U	N1-C2-O2	8.34	128.63	122.80
1	XA	330	C	N1-C2-O2	8.33	123.90	118.90
24	RA	1038	C	N1-C2-O2	8.30	123.88	118.90
24	RA	456	C	N1-C2-O2	8.28	123.87	118.90
24	RA	856	C	C5-C6-N1	8.24	125.12	121.00
1	XA	1158	C	C2-N1-C1'	8.23	127.85	118.80
24	YA	1956	U	N1-C2-O2	8.20	128.54	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	YA	856	C	C5-C6-N1	8.19	125.10	121.00
1	QA	1301	U	C2-N1-C1'	8.15	127.49	117.70
24	RA	1931	U	N1-C2-O2	8.13	128.49	122.80
24	YA	12	U	N3-C2-O2	-8.05	116.57	122.20
1	XA	328	C	C6-N1-C2	-8.02	117.09	120.30
37	YS	110	LEU	CA-CB-CG	8.01	133.73	115.30
24	YA	12	U	N1-C2-O2	8.01	128.41	122.80
1	XA	1158	C	N3-C2-O2	-7.93	116.35	121.90
24	YA	2712	U	N3-C2-O2	-7.92	116.66	122.20
1	XA	358	U	C3'-C2'-C1'	-7.91	95.17	101.50
24	RA	613	U	N1-C2-O2	7.88	128.32	122.80
24	RA	1396	U	N1-C2-O2	7.85	128.30	122.80
1	XA	1260	C	N1-C2-O2	7.84	123.60	118.90
24	YA	893	C	N1-C2-O2	7.84	123.60	118.90
24	YA	1407	C	C6-N1-C2	-7.84	117.16	120.30
24	RA	1064	C	N1-C2-O2	7.79	123.58	118.90
25	YB	31	C	N3-C2-O2	-7.79	116.45	121.90
25	RB	31	C	C6-N1-C2	-7.76	117.20	120.30
24	YA	1314	C	C5-C6-N1	7.75	124.88	121.00
25	RB	27	C	N1-C2-O2	7.75	123.55	118.90
1	XA	358	U	P-O3'-C3'	7.71	128.95	119.70
24	YA	2712	U	C2-N1-C1'	7.70	126.94	117.70
24	YA	828	U	C2-N1-C1'	7.68	126.92	117.70
24	YA	2712	U	N1-C2-O2	7.67	128.17	122.80
1	XA	1260	C	N3-C2-O2	-7.67	116.53	121.90
1	XA	135	C	N1-C2-O2	7.63	123.48	118.90
24	RA	1956	U	N3-C2-O2	-7.60	116.88	122.20
24	RA	1774	C	C6-N1-C2	-7.60	117.26	120.30
1	QA	1066	C	N3-C2-O2	-7.57	116.60	121.90
24	RA	1407	C	C6-N1-C2	-7.56	117.28	120.30
1	QA	1066	C	C6-N1-C2	-7.54	117.28	120.30
24	YA	1314	C	C6-N1-C2	-7.54	117.28	120.30
24	RA	2394	C	N1-C2-O2	7.53	123.42	118.90
24	RA	1314	C	C5-C6-N1	7.52	124.76	121.00
24	RA	1108	U	N1-C2-O2	7.47	128.03	122.80
24	RA	1082	U	N1-C2-O2	7.45	128.01	122.80
1	XA	307	C	N1-C2-O2	7.44	123.36	118.90
1	QA	58	C	C6-N1-C2	-7.43	117.33	120.30
24	YA	867	C	N1-C2-O2	7.41	123.34	118.90
24	RA	2063	C	N1-C2-O2	7.37	123.32	118.90
1	QA	110	C	N1-C2-O2	7.37	123.32	118.90
24	RA	613	U	N3-C2-O2	-7.37	117.04	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	RA	2666	C	N1-C2-O2	7.36	123.32	118.90
24	RA	1065	U	C5-C6-N1	7.35	126.38	122.70
24	RA	1774	C	N1-C2-O2	7.34	123.31	118.90
1	QA	169	C	N1-C2-O2	7.30	123.28	118.90
24	RA	1313	U	C2-N1-C1'	7.29	126.45	117.70
24	RA	1396	U	N3-C2-O2	-7.28	117.11	122.20
24	RA	1956	U	N1-C2-O2	7.26	127.89	122.80
1	XA	135	C	C6-N1-C2	-7.26	117.40	120.30
24	RA	856	C	N1-C2-O2	7.26	123.26	118.90
1	XA	1362(A)	C	N3-C2-O2	-7.25	116.83	121.90
24	RA	2063	C	N3-C2-O2	-7.21	116.85	121.90
1	QA	328	C	C5-C6-N1	7.21	124.60	121.00
24	RA	1314	C	C6-N1-C2	-7.21	117.42	120.30
24	RA	373	U	N1-C2-O2	7.20	127.84	122.80
25	YB	31	C	C2-N1-C1'	7.17	126.69	118.80
24	YA	2779	U	N1-C2-O2	7.16	127.81	122.80
24	YA	269	U	N1-C2-O2	7.16	127.81	122.80
1	XA	358	U	OP2-P-O3'	7.15	120.94	105.20
24	RA	1640	C	N1-C2-O2	7.15	123.19	118.90
24	RA	1504	C	C6-N1-C2	-7.15	117.44	120.30
24	RA	1049	C	N1-C2-O2	7.14	123.19	118.90
24	RA	234	C	N1-C2-O2	7.14	123.18	118.90
1	XA	1158	C	C6-N1-C2	-7.14	117.44	120.30
24	YA	2584	U	C2-N1-C1'	7.13	126.26	117.70
24	YA	2179	C	N3-C2-O2	-7.12	116.92	121.90
1	XA	979	C	N3-C2-O2	-7.11	116.92	121.90
1	XA	110	C	N1-C2-O2	7.10	123.16	118.90
1	XA	754	C	C2-N1-C1'	7.10	126.61	118.80
25	RB	31	C	N3-C2-O2	-7.04	116.97	121.90
24	RA	1914	C	N3-C2-O2	-7.03	116.98	121.90
1	QA	1086	U	N1-C2-O2	7.02	127.71	122.80
24	YA	749	C	N3-C2-O2	-7.01	116.99	121.90
1	QA	1158	C	C6-N1-C2	-7.00	117.50	120.30
1	QA	1263	C	N1-C2-O2	7.00	123.10	118.90
1	XA	404	U	N3-C2-O2	-7.00	117.30	122.20
24	RA	1108	U	N3-C2-O2	-7.00	117.30	122.20
1	QA	307	C	N3-C2-O2	-6.97	117.02	121.90
1	XA	178	C	N1-C2-O2	6.95	123.07	118.90
1	QA	58	C	C5-C6-N1	6.94	124.47	121.00
24	YA	1407	C	N1-C2-O2	6.93	123.06	118.90
24	YA	1774	C	C6-N1-C2	-6.92	117.53	120.30
24	YA	1914	C	N3-C2-O2	-6.92	117.06	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	QA	1066	C	C2-N1-C1'	6.92	126.41	118.80
1	QA	346	G	N3-C4-N9	6.91	130.15	126.00
24	RA	867	C	N1-C2-O2	6.91	123.05	118.90
24	RA	1314	C	C2-N1-C1'	6.91	126.40	118.80
1	QA	1066	C	C5-C6-N1	6.91	124.45	121.00
24	YA	860	U	C2-N1-C1'	6.89	125.97	117.70
1	XA	135	C	N3-C2-O2	-6.89	117.08	121.90
1	XA	1260	C	C6-N1-C2	-6.88	117.55	120.30
25	RB	37	C	N1-C2-O2	6.88	123.03	118.90
24	YA	2779	U	N3-C2-O2	-6.87	117.39	122.20
24	YA	1417	C	C5-C6-N1	6.86	124.43	121.00
24	YA	1920	C	C5-C6-N1	6.86	124.43	121.00
24	RA	2321	G	N3-C4-C5	-6.84	125.18	128.60
1	XA	1113	C	C6-N1-C2	-6.84	117.56	120.30
24	RA	1504	C	C5-C6-N1	6.84	124.42	121.00
1	XA	404	U	N1-C2-O2	6.84	127.59	122.80
24	RA	2808	U	N1-C2-O2	6.84	127.59	122.80
24	RA	1915	U	N1-C2-O2	6.84	127.59	122.80
25	YB	31	C	C5-C6-N1	6.84	124.42	121.00
37	RS	110	LEU	CA-CB-CG	6.83	131.01	115.30
1	QA	346	G	N3-C4-C5	-6.82	125.19	128.60
24	RA	1407	C	C2-N1-C1'	6.82	126.30	118.80
24	RA	373	U	N3-C2-O2	-6.80	117.44	122.20
24	YA	269	U	N3-C2-O2	-6.79	117.44	122.20
24	YA	1915	U	N1-C2-O2	6.79	127.56	122.80
25	YB	27	C	N1-C2-O2	6.78	122.97	118.90
24	RA	120	U	N1-C2-O2	6.78	127.54	122.80
1	XA	328	C	C6-N1-C1'	-6.78	112.67	120.80
1	XA	328	C	C5-C6-N1	6.76	124.38	121.00
24	RA	2210	G	N3-C4-N9	6.76	130.06	126.00
24	RA	898	C	N1-C2-O2	6.75	122.95	118.90
1	QA	330	C	N3-C2-O2	-6.74	117.18	121.90
24	YA	1407	C	C5-C6-N1	6.74	124.37	121.00
24	YA	1411	C	C5-C6-N1	6.74	124.37	121.00
1	QA	1147	C	N1-C2-O2	6.73	122.94	118.90
24	RA	1062	G	N3-C4-N9	6.73	130.04	126.00
24	YA	2874	C	C6-N1-C2	-6.73	117.61	120.30
24	RA	2063	C	C6-N1-C2	-6.72	117.61	120.30
24	RA	2808	U	N3-C2-O2	-6.72	117.50	122.20
24	YA	613	U	C2-N1-C1'	6.72	125.76	117.70
24	YA	1514	U	N1-C2-O2	6.72	127.50	122.80
1	QA	1301	U	C5-C6-N1	6.71	126.05	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	QN	44	LEU	CA-CB-CG	6.71	130.73	115.30
24	YA	2688	U	N3-C2-O2	-6.68	117.52	122.20
24	YA	1506	C	N1-C2-O2	6.68	122.91	118.90
1	QA	1026	G	N3-C4-N9	6.64	129.99	126.00
24	YA	1535	U	C2-N1-C1'	6.64	125.67	117.70
20	XT	72	LEU	CA-CB-CG	6.64	130.57	115.30
1	QA	178	C	N3-C2-O2	-6.64	117.25	121.90
24	YA	860	U	N1-C2-O2	6.63	127.44	122.80
24	YA	2584	U	N3-C2-O2	-6.63	117.56	122.20
24	YA	2739	U	N1-C2-O2	6.62	127.43	122.80
1	XA	346	G	C4-N9-C1'	6.61	135.10	126.50
25	RB	31	C	C5-C6-N1	6.61	124.30	121.00
24	RA	749	C	N3-C2-O2	-6.59	117.29	121.90
1	XA	449	C	C6-N1-C2	-6.59	117.66	120.30
24	RA	1915	U	N3-C2-O2	-6.56	117.61	122.20
24	RA	1082	U	N3-C2-O2	-6.56	117.61	122.20
24	RA	1038	C	N3-C2-O2	-6.55	117.31	121.90
24	RA	120	U	N3-C2-O2	-6.55	117.61	122.20
25	RB	30	C	C6-N1-C2	-6.55	117.68	120.30
24	YA	1882	C	C2-N1-C1'	6.53	125.99	118.80
24	YA	2648	C	C5-C6-N1	6.52	124.26	121.00
24	RA	1407	C	C5-C6-N1	6.50	124.25	121.00
24	RA	2210	G	N3-C4-C5	-6.50	125.35	128.60
24	RA	2394	C	N3-C2-O2	-6.50	117.35	121.90
24	RA	1514	U	N1-C2-O2	6.50	127.35	122.80
24	YA	234	C	N1-C2-O2	6.50	122.80	118.90
24	RA	192	C	N1-C2-O2	6.50	122.80	118.90
24	YA	2321	G	N3-C4-C5	-6.49	125.35	128.60
24	RA	1065	U	C6-N1-C2	-6.49	117.11	121.00
1	XA	754	C	N1-C2-O2	6.49	122.79	118.90
24	RA	2847	U	N1-C2-O2	6.49	127.34	122.80
24	YA	1406	U	C5-C6-N1	6.49	125.94	122.70
1	XA	58	C	C5-C6-N1	6.48	124.24	121.00
24	RA	537	C	C5-C6-N1	6.47	124.23	121.00
1	QA	404	U	N3-C2-O2	-6.46	117.68	122.20
1	XA	1113	C	C5-C6-N1	6.46	124.23	121.00
1	XA	58	C	C6-N1-C2	-6.45	117.72	120.30
1	XA	330	C	N3-C2-O2	-6.44	117.39	121.90
24	RA	546	C	N1-C2-O2	6.43	122.76	118.90
24	RA	1052	C	C6-N1-C2	-6.43	117.73	120.30
24	RA	2648	C	C5-C6-N1	6.43	124.21	121.00
1	QA	1362(A)	C	N3-C2-O2	-6.43	117.40	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	QA	283	C	N1-C2-O2	6.42	122.75	118.90
24	RA	1504	C	N3-C2-O2	-6.41	117.41	121.90
1	QA	1161	C	N1-C2-O2	6.41	122.75	118.90
24	RA	1064	C	N3-C4-N4	6.41	122.49	118.00
24	RA	607	U	N1-C2-O2	6.40	127.28	122.80
4	XD	33	MET	N-CA-C	-6.40	93.72	111.00
24	RA	1640	C	C6-N1-C2	-6.40	117.74	120.30
1	XA	449	C	C2-N1-C1'	6.39	125.83	118.80
9	XI	56	LEU	CA-CB-CG	6.39	130.00	115.30
24	RA	1396	U	C2-N1-C1'	6.38	125.36	117.70
24	RA	749	C	C6-N1-C2	-6.38	117.75	120.30
24	RA	269	U	N3-C2-O2	-6.37	117.74	122.20
24	RA	1267	U	N3-C2-O2	-6.37	117.74	122.20
24	YA	2063	C	N1-C2-O2	6.36	122.72	118.90
24	RA	1407	C	N1-C2-O2	6.36	122.71	118.90
24	YA	1640	C	N1-C2-O2	6.36	122.71	118.90
24	YA	1920	C	C6-N1-C2	-6.36	117.76	120.30
24	RA	373	U	C5-C6-N1	6.34	125.87	122.70
24	YA	2726	U	N3-C2-O2	-6.34	117.76	122.20
1	QA	1158	C	C6-N1-C1'	-6.33	113.20	120.80
1	QA	528	C	N1-C2-O2	6.32	122.69	118.90
24	YA	1313	U	C2-N1-C1'	6.32	125.28	117.70
1	QA	1026	G	N3-C4-C5	-6.32	125.44	128.60
24	RA	2874	C	N1-C2-O2	6.31	122.69	118.90
24	RA	273(F)	C	C6-N1-C2	-6.31	117.78	120.30
24	YA	1915	U	N3-C2-O2	-6.30	117.79	122.20
1	QA	1028(B)	C	N1-C2-O2	6.30	122.68	118.90
25	YB	77	U	N1-C2-O2	6.30	127.21	122.80
24	YA	1914	C	C2-N1-C1'	6.29	125.72	118.80
1	XA	979	C	C6-N1-C2	-6.28	117.79	120.30
24	RA	2847	U	N3-C2-O2	-6.28	117.81	122.20
24	YA	2063	C	N3-C2-O2	-6.28	117.51	121.90
24	YA	1411	C	C6-N1-C2	-6.27	117.79	120.30
1	QA	404	U	N1-C2-O2	6.27	127.19	122.80
24	RA	1774	C	N3-C2-O2	-6.27	117.51	121.90
24	RA	183	C	N1-C2-O2	6.26	122.66	118.90
1	XA	1147	C	N1-C2-O2	6.26	122.66	118.90
1	QA	1158	C	C5-C6-N1	6.26	124.13	121.00
25	RB	27	C	N3-C2-O2	-6.26	117.52	121.90
24	YA	2584	U	N1-C2-O2	6.26	127.18	122.80
24	RA	1417	C	C5-C6-N1	6.25	124.13	121.00
1	QA	1109	C	N1-C2-O2	6.25	122.65	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	RA	373	U	C2-N1-C1'	6.24	125.19	117.70
24	RA	1038	C	C6-N1-C2	-6.24	117.81	120.30
24	YA	753	C	C6-N1-C2	-6.22	117.81	120.30
24	YA	1135	C	N1-C2-O2	6.22	122.63	118.90
24	RA	2688	U	N3-C2-O2	-6.21	117.85	122.20
24	YA	1406	U	C2-N1-C1'	6.20	125.14	117.70
24	RA	2666	C	N3-C2-O2	-6.20	117.56	121.90
24	RA	2683	C	N1-C2-O2	6.20	122.62	118.90
24	YA	893	C	N3-C2-O2	-6.20	117.56	121.90
1	QA	754	C	C2-N1-C1'	6.19	125.61	118.80
24	RA	1914	C	C2-N1-C1'	6.17	125.59	118.80
1	XA	1158	C	C5-C6-N1	6.17	124.08	121.00
24	YA	1407	C	C2-N1-C1'	6.17	125.59	118.80
25	YB	37	C	N1-C2-O2	6.16	122.60	118.90
1	XA	367	U	C2-N1-C1'	6.16	125.09	117.70
24	RA	1882	C	C2-N1-C1'	6.15	125.57	118.80
1	QA	1086	U	N3-C2-O2	-6.15	117.90	122.20
24	RA	1062	G	N3-C4-C5	-6.15	125.53	128.60
24	RA	192	C	N3-C2-O2	-6.14	117.60	121.90
1	QA	449	C	C2-N1-C1'	6.14	125.56	118.80
24	YA	363(E)	U	N1-C2-O2	6.14	127.10	122.80
24	YA	2179	C	C6-N1-C2	-6.14	117.84	120.30
24	RA	1774	C	C5-C6-N1	6.14	124.07	121.00
24	RA	1109	C	N1-C2-O2	6.13	122.58	118.90
24	YA	2739	U	N3-C2-O2	-6.13	117.91	122.20
24	YA	1204	A	O4'-C1'-N9	6.13	113.11	108.20
24	RA	2682	U	N3-C2-O2	-6.12	117.91	122.20
24	RA	1314	C	N1-C2-O2	6.12	122.57	118.90
1	XA	789	U	N3-C2-O2	-6.12	117.92	122.20
24	YA	817	C	C6-N1-C2	-6.11	117.86	120.30
24	YA	1781	C	N1-C2-O2	6.11	122.57	118.90
24	RA	1514	U	N3-C2-O2	-6.11	117.92	122.20
24	RA	665	C	C6-N1-C2	-6.10	117.86	120.30
24	YA	2808	U	N3-C2-O2	-6.10	117.93	122.20
1	QA	1325	C	N1-C2-O2	6.09	122.56	118.90
1	XA	307	C	N3-C2-O2	-6.09	117.64	121.90
24	YA	228	A	C2-N3-C4	6.09	113.64	110.60
24	RA	1961	C	N3-C2-O2	-6.09	117.64	121.90
24	RA	1534	G	N3-C4-N9	6.08	129.65	126.00
24	RA	1159	U	N3-C2-O2	-6.08	117.94	122.20
24	RA	1534	G	N3-C4-C5	-6.08	125.56	128.60
24	YA	856	C	N1-C2-O2	6.07	122.54	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	RA	2739	U	N1-C2-O2	6.05	127.04	122.80
24	RA	2739	U	N3-C2-O2	-6.05	117.96	122.20
24	RA	1644	C	C6-N1-C2	-6.05	117.88	120.30
24	RA	1675	C	N1-C2-O2	6.04	122.52	118.90
24	YA	1406	U	N1-C2-O2	6.04	127.03	122.80
24	YA	2394	C	N1-C2-O2	6.04	122.52	118.90
24	RA	1961	C	N1-C2-O2	6.03	122.52	118.90
24	RA	456	C	N3-C2-O2	-6.03	117.68	121.90
1	XA	812	C	P-O3'-C3'	6.03	126.93	119.70
25	RB	1	U	N1-C2-O2	6.02	127.01	122.80
25	RB	77	U	N1-C2-O2	6.02	127.01	122.80
24	YA	192	C	N1-C2-O2	6.02	122.51	118.90
25	RB	37	C	N3-C2-O2	-6.02	117.69	121.90
24	YA	537	C	C5-C6-N1	6.01	124.00	121.00
24	YA	1544	C	N1-C2-O2	6.00	122.50	118.90
24	YA	2416	C	C5-C6-N1	6.00	124.00	121.00
24	YA	2456	C	C5-C6-N1	6.00	124.00	121.00
1	QA	110	C	N3-C2-O2	-6.00	117.70	121.90
24	RA	1064	C	C2-N1-C1'	6.00	125.39	118.80
24	YA	1514	U	N3-C2-O2	-5.99	118.01	122.20
1	XA	346	G	C8-N9-C1'	-5.99	119.22	127.00
24	YA	2210	G	N3-C4-N9	5.98	129.59	126.00
24	YA	1961	C	N1-C2-O2	5.98	122.49	118.90
24	YA	613	U	N3-C2-O2	-5.98	118.02	122.20
1	QA	1147	C	N3-C2-O2	-5.97	117.72	121.90
24	RA	1675	C	C6-N1-C2	-5.97	117.91	120.30
24	RA	1882	C	C6-N1-C2	-5.96	117.91	120.30
1	XA	347	G	O4'-C1'-N9	5.96	112.97	108.20
24	RA	1267	U	N1-C2-O2	5.96	126.97	122.80
3	XC	47	LEU	CA-CB-CG	5.95	128.99	115.30
1	QA	449	C	N1-C2-O2	5.94	122.47	118.90
1	QA	749	C	N1-C2-O2	5.94	122.46	118.90
24	YA	1294	U	N3-C2-O2	-5.93	118.05	122.20
24	YA	635	C	C6-N1-C2	-5.93	117.93	120.30
24	YA	1644	C	N1-C2-O2	5.93	122.46	118.90
24	RA	234	C	N3-C2-O2	-5.92	117.75	121.90
24	RA	2161	C	N1-C2-O2	5.92	122.45	118.90
24	YA	2559	C	C6-N1-C2	-5.92	117.93	120.30
1	QA	346	G	C2-N3-C4	5.92	114.86	111.90
1	XA	1028	C	C6-N1-C2	-5.92	117.93	120.30
1	XA	1028	C	N3-C2-O2	-5.90	117.77	121.90
24	YA	2210	G	C4-N9-C1'	5.90	134.17	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	XX	16	C	N1-C2-O2	5.90	122.44	118.90
24	YA	1314	C	N1-C2-O2	5.89	122.44	118.90
24	YA	120	U	C2-N1-C1'	5.89	124.77	117.70
24	YA	1882	C	C6-N1-C2	-5.89	117.94	120.30
24	RA	537	C	C6-N1-C2	-5.88	117.95	120.30
24	RA	1406	U	N1-C2-O2	5.88	126.91	122.80
24	RA	1640	C	N3-C2-O2	-5.87	117.79	121.90
24	RA	530	G	O4'-C1'-N9	5.87	112.89	108.20
24	RA	546	C	C2-N1-C1'	5.87	125.25	118.80
24	YA	749	C	C6-N1-C2	-5.86	117.96	120.30
1	QA	178	C	N1-C2-O2	5.86	122.41	118.90
1	QA	618	C	N1-C2-O2	5.86	122.41	118.90
1	XA	1290	G	N3-C4-C5	-5.86	125.67	128.60
24	RA	1092	C	C6-N1-C1'	-5.85	113.78	120.80
24	YA	867	C	N3-C2-O2	-5.85	117.80	121.90
24	RA	749	C	C5-C6-N1	5.85	123.92	121.00
1	XA	110	C	N3-C2-O2	-5.85	117.81	121.90
24	RA	1934	C	C6-N1-C2	-5.84	117.96	120.30
1	QA	1505	G	N3-C4-N9	-5.84	122.50	126.00
24	YA	192	C	N3-C2-O2	-5.84	117.81	121.90
1	XA	186(F)	C	N3-C2-O2	-5.83	117.82	121.90
1	XA	1395	C	N1-C2-O2	5.82	122.39	118.90
24	RA	2682	U	N1-C2-O2	5.81	126.86	122.80
24	RA	1686	C	C6-N1-C2	-5.80	117.98	120.30
1	XA	1290	G	N3-C4-N9	5.80	129.48	126.00
24	YA	1506	C	C6-N1-C2	-5.79	117.98	120.30
24	RA	2584	U	C2-N1-C1'	5.78	124.64	117.70
24	YA	2688	U	C2-N1-C1'	5.78	124.64	117.70
1	QA	1028(B)	C	N3-C2-O2	-5.78	117.86	121.90
24	RA	2205	C	C6-N1-C2	-5.78	117.99	120.30
24	YA	2825	C	C6-N1-C2	-5.78	117.99	120.30
24	RA	1065	U	N3-C2-O2	-5.78	118.16	122.20
1	QA	1149	C	N1-C2-O2	5.77	122.36	118.90
24	YA	1267	U	N3-C2-O2	-5.77	118.16	122.20
1	QA	1395	C	N1-C2-O2	5.77	122.36	118.90
24	RA	1437	C	C6-N1-C2	-5.76	118.00	120.30
1	XA	528	C	N1-C2-O2	5.76	122.36	118.90
1	XA	1452	C	N1-C2-O2	5.75	122.35	118.90
24	RA	459	U	N1-C2-O2	5.75	126.83	122.80
24	RA	420	C	C6-N1-C2	-5.72	118.01	120.30
1	XA	90	C	N1-C2-O2	5.72	122.33	118.90
1	XA	789	U	C2-N1-C1'	5.72	124.57	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	RA	817	C	C6-N1-C2	-5.72	118.01	120.30
24	RA	1092	C	C2-N3-C4	5.72	122.76	119.90
24	YA	1882	C	N1-C2-O2	5.72	122.33	118.90
25	RB	44	G	C8-N9-C1'	5.71	134.43	127.00
24	YA	1961	C	N3-C2-O2	-5.71	117.90	121.90
1	XA	1028	C	N1-C2-O2	5.71	122.33	118.90
24	RA	2205	C	C5-C6-N1	5.71	123.86	121.00
1	XA	178	C	C6-N1-C2	-5.71	118.02	120.30
24	RA	273(F)	C	C5-C6-N1	5.71	123.85	121.00
24	RA	613	U	C2-N1-C1'	5.70	124.54	117.70
24	YA	1774	C	N3-C2-O2	-5.70	117.91	121.90
1	XA	754	C	N3-C2-O2	-5.69	117.92	121.90
24	YA	198	C	C5-C6-N1	5.69	123.85	121.00
24	YA	1430	C	C5-C6-N1	5.69	123.84	121.00
24	YA	1644	C	N3-C2-O2	-5.69	117.92	121.90
24	YA	2456	C	C6-N1-C2	-5.68	118.03	120.30
25	RB	77	U	N3-C2-O2	-5.68	118.22	122.20
24	RA	2043	C	C6-N1-C2	-5.68	118.03	120.30
24	RA	2065	C	C5-C6-N1	5.67	123.84	121.00
24	RA	1474	C	C5-C6-N1	5.67	123.83	121.00
24	RA	269	U	N1-C2-O2	5.67	126.77	122.80
24	YA	2616	C	C6-N1-C2	-5.67	118.03	120.30
24	RA	867	C	N3-C2-O2	-5.66	117.94	121.90
24	YA	537	C	N1-C2-O2	5.66	122.30	118.90
1	QA	1325	C	N3-C2-O2	-5.66	117.94	121.90
1	XA	346	G	N3-C4-N9	5.65	129.39	126.00
24	YA	2874	C	C5-C6-N1	5.65	123.83	121.00
24	RA	2559	C	N1-C2-O2	5.65	122.29	118.90
22	QV	39	C	N1-C2-O2	5.64	122.29	118.90
24	RA	2591	C	C6-N1-C2	-5.64	118.04	120.30
24	YA	634	C	C6-N1-C2	-5.64	118.04	120.30
1	XA	749	C	N1-C2-O2	5.64	122.28	118.90
24	YA	2065	C	C5-C6-N1	5.64	123.82	121.00
24	YA	104	U	N3-C2-O2	-5.64	118.25	122.20
4	QD	159	ARG	CA-CB-CG	5.63	125.79	113.40
1	XA	536	C	C6-N1-C2	-5.63	118.05	120.30
24	RA	1920	C	C5-C6-N1	5.63	123.81	121.00
24	RA	285	C	C5-C6-N1	5.62	123.81	121.00
25	RB	1	U	N3-C2-O2	-5.62	118.26	122.20
24	RA	898	C	N3-C2-O2	-5.62	117.96	121.90
24	YA	1267	U	N1-C2-O2	5.62	126.74	122.80
1	QA	1263	C	C2-N1-C1'	5.62	124.98	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	RB	44	G	C4-N9-C1'	-5.62	119.19	126.50
1	XA	1109	C	N1-C2-O2	5.62	122.27	118.90
1	QA	442	C	C6-N1-C2	-5.62	118.05	120.30
1	XA	1149	C	N1-C2-O2	5.61	122.27	118.90
24	RA	2683	C	N3-C2-O2	-5.61	117.97	121.90
24	YA	1774	C	N1-C2-O2	5.61	122.26	118.90
24	RA	1049	C	N3-C2-O2	-5.61	117.98	121.90
24	YA	2043	C	C5-C6-N1	5.61	123.80	121.00
1	QA	1028(A)	C	N1-C2-O2	5.60	122.26	118.90
24	YA	12	U	C2-N1-C1'	5.60	124.42	117.70
24	RA	930	U	N1-C2-O2	5.60	126.72	122.80
24	RA	2043	C	C5-C6-N1	5.60	123.80	121.00
1	XA	435	C	C5-C6-N1	5.60	123.80	121.00
1	XA	620	C	N1-C2-O2	5.60	122.26	118.90
24	YA	1882	C	C5-C6-N1	5.60	123.80	121.00
24	RA	1513	C	N1-C2-O2	5.60	122.26	118.90
24	RA	1644	C	N1-C2-O2	5.60	122.26	118.90
24	RA	669	G	N3-C4-N9	5.59	129.36	126.00
24	YA	749	C	C5-C6-N1	5.59	123.80	121.00
24	YA	1012	U	P-O3'-C3'	5.59	126.41	119.70
1	QA	1301	U	C6-N1-C2	-5.58	117.65	121.00
24	RA	537	C	N1-C2-O2	5.58	122.25	118.90
24	RA	828	U	C6-N1-C1'	-5.58	113.39	121.20
24	YA	363(E)	U	N3-C2-O2	-5.58	118.29	122.20
25	YB	37	C	N3-C2-O2	-5.58	117.99	121.90
24	YA	1686	C	N1-C2-O2	5.58	122.25	118.90
1	QA	522	C	N1-C2-O2	5.57	122.24	118.90
1	XA	54	C	N1-C2-O2	5.57	122.24	118.90
24	RA	192	C	C6-N1-C2	-5.57	118.07	120.30
24	YA	1462	C	N1-C2-O2	5.57	122.24	118.90
24	RA	1038	C	C5-C6-N1	5.56	123.78	121.00
24	RA	1504	C	C2-N1-C1'	5.56	124.92	118.80
24	RA	2174	C	C5-C6-N1	5.56	123.78	121.00
24	YA	1644	C	C6-N1-C2	-5.56	118.08	120.30
1	QA	169	C	C6-N1-C2	-5.56	118.08	120.30
24	RA	420	C	C5-C6-N1	5.56	123.78	121.00
24	RA	537	C	C2-N1-C1'	5.56	124.92	118.80
24	RA	1052	C	N1-C2-O2	5.56	122.23	118.90
24	YA	974(A)	C	N1-C2-O2	5.55	122.23	118.90
24	YA	373	U	N3-C2-O2	-5.55	118.31	122.20
24	YA	1833	U	N3-C2-O2	-5.54	118.32	122.20
1	QA	455	C	N1-C2-O2	5.54	122.22	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	YA	1398	C	N1-C2-O2	5.54	122.22	118.90
1	QA	1452	C	N1-C2-O2	5.53	122.22	118.90
24	RA	1052	C	C5-C6-N1	5.53	123.77	121.00
24	YA	18	C	C6-N1-C2	-5.53	118.09	120.30
1	XA	186(E)	C	N3-C2-O2	-5.52	118.03	121.90
1	QA	91	C	C5-C6-N1	5.52	123.76	121.00
4	XD	208	SER	N-CA-C	-5.52	96.09	111.00
24	RA	1065	U	N1-C2-O2	5.52	126.67	122.80
1	QA	328	C	P-O3'-C3'	5.52	126.32	119.70
24	YA	2889	C	N1-C2-O2	5.52	122.21	118.90
24	RA	2825	C	C6-N1-C2	-5.51	118.10	120.30
1	XA	1502	A	N7-C8-N9	5.51	116.56	113.80
24	RA	510	C	N1-C2-O2	5.51	122.21	118.90
24	YA	2043	C	C6-N1-C2	-5.51	118.10	120.30
24	RA	2096	U	N1-C2-O2	5.51	126.66	122.80
24	RA	2726	U	C2-N1-C1'	5.51	124.31	117.70
1	QA	252	U	N3-C2-O2	-5.51	118.34	122.20
24	RA	607	U	N3-C2-O2	-5.51	118.34	122.20
24	RA	1332	G	N7-C8-N9	5.51	115.85	113.10
24	YA	243	U	N1-C2-O2	5.50	126.65	122.80
24	RA	1474	C	N1-C2-O2	5.50	122.20	118.90
1	XA	37	U	N3-C2-O2	-5.50	118.35	122.20
1	QA	891	U	N3-C2-O2	-5.50	118.35	122.20
25	YB	27	C	N3-C2-O2	-5.50	118.05	121.90
1	XA	178	C	N3-C2-O2	-5.50	118.05	121.90
1	XA	442	C	C6-N1-C2	-5.49	118.10	120.30
24	RA	1398	C	N1-C2-O2	5.49	122.19	118.90
1	QA	1303	C	N1-C2-O2	5.48	122.19	118.90
25	YB	77	U	N3-C2-O2	-5.48	118.36	122.20
1	QA	330	C	C6-N1-C2	-5.47	118.11	120.30
24	RA	1332	G	C4-N9-C1'	5.47	133.61	126.50
1	QA	891	U	N1-C2-O2	5.47	126.63	122.80
24	YA	2089	U	N1-C2-O2	5.47	126.63	122.80
1	QA	980	C	N1-C2-O2	5.46	122.18	118.90
1	QA	1113	C	C6-N1-C2	-5.46	118.12	120.30
1	XA	936	C	N1-C2-O2	5.46	122.18	118.90
24	YA	114	U	C5-C6-N1	5.46	125.43	122.70
24	YA	243	U	C5-C6-N1	5.46	125.43	122.70
24	YA	846	C	P-O3'-C3'	5.46	126.25	119.70
1	QA	1109	C	N3-C2-O2	-5.45	118.08	121.90
24	YA	1686	C	C5-C6-N1	5.45	123.72	121.00
24	YA	1835	G	N3-C4-C5	-5.45	125.88	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	RA	2825	C	N1-C2-O2	5.45	122.17	118.90
24	YA	1506	C	N3-C2-O2	-5.44	118.09	121.90
24	YA	2307	G	C4-N9-C1'	5.44	133.58	126.50
24	RA	1882	C	N1-C2-O2	5.44	122.16	118.90
24	YA	1956	U	C6-N1-C2	-5.44	117.74	121.00
24	YA	1781	C	N3-C2-O2	-5.44	118.09	121.90
24	RA	2456	C	C6-N1-C2	-5.43	118.13	120.30
25	YB	44	G	C4-N9-C1'	-5.43	119.44	126.50
25	RB	81	G	C4-N9-C1'	5.43	133.56	126.50
24	YA	104	U	N1-C2-O2	5.43	126.60	122.80
1	QA	1065	U	P-O3'-C3'	5.43	126.22	119.70
24	RA	856	C	N3-C2-O2	-5.43	118.10	121.90
24	RA	2825	C	N3-C2-O2	-5.43	118.10	121.90
24	RA	2868	A	C8-N9-C4	-5.42	103.63	105.80
25	RB	31	C	C6-N1-C1'	-5.42	114.29	120.80
24	YA	2394	C	N3-C2-O2	-5.42	118.11	121.90
1	XA	328	C	P-O3'-C3'	5.42	126.20	119.70
24	RA	456	C	C5-C6-N1	5.42	123.71	121.00
24	RA	2559	C	C6-N1-C2	-5.42	118.13	120.30
24	YA	2787	C	C6-N1-C2	-5.42	118.13	120.30
24	RA	1675	C	C5-C6-N1	5.41	123.71	121.00
24	YA	2312	U	C5-C6-N1	5.41	125.41	122.70
25	YB	81	G	C4-N9-C1'	5.41	133.54	126.50
24	YA	1417	C	C6-N1-C2	-5.41	118.14	120.30
1	QA	497	U	N1-C2-O2	5.41	126.59	122.80
24	RA	1686	C	C5-C6-N1	5.41	123.70	121.00
1	XA	307	C	C6-N1-C2	-5.41	118.14	120.30
1	XA	960	U	C2-N1-C1'	5.41	124.19	117.70
24	RA	2210	G	C4-N9-C1'	5.41	133.53	126.50
1	QA	442	C	N1-C2-O2	5.40	122.14	118.90
1	XA	1161	C	N1-C2-O2	5.40	122.14	118.90
24	YA	2226	C	N1-C2-O2	5.40	122.14	118.90
24	YA	2559	C	C5-C6-N1	5.39	123.70	121.00
1	QA	1260	C	C6-N1-C2	-5.39	118.14	120.30
24	YA	1686	C	C6-N1-C2	-5.39	118.14	120.30
1	XA	960	U	N1-C2-O2	5.39	126.57	122.80
24	YA	613	U	N1-C2-O2	5.39	126.57	122.80
24	YA	1788	C	C5-C6-N1	5.39	123.69	121.00
24	YA	2506	U	C5-C6-N1	5.39	125.39	122.70
24	YA	2591	C	C5-C6-N1	5.39	123.69	121.00
24	YA	2681	C	P-O3'-C3'	5.38	126.16	119.70
24	YA	2617	C	N1-C2-O2	5.38	122.13	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	XA	545	C	C6-N1-C2	-5.38	118.15	120.30
1	QA	252	U	N1-C2-O2	5.37	126.56	122.80
24	RA	2468	G	C4-N9-C1'	5.37	133.48	126.50
24	YA	2506	U	N1-C2-O2	5.37	126.56	122.80
24	YA	512	G	C8-N9-C1'	5.37	133.98	127.00
24	RA	1082	U	C5-C6-N1	5.36	125.38	122.70
1	QA	789	U	N3-C2-O2	-5.36	118.45	122.20
24	RA	736	C	C5-C6-N1	5.36	123.68	121.00
1	XA	1362(A)	C	N1-C2-O2	5.36	122.12	118.90
24	YA	1914	C	C6-N1-C2	-5.35	118.16	120.30
24	RA	1474	C	C6-N1-C2	-5.35	118.16	120.30
24	YA	930	U	N1-C2-O2	5.34	126.54	122.80
24	YA	1629	U	N3-C2-O2	-5.34	118.46	122.20
24	RA	1065	U	O4'-C1'-N1	5.34	112.47	108.20
1	XA	358	U	C2-N1-C1'	-5.34	111.29	117.70
24	YA	1640	C	C6-N1-C2	-5.34	118.16	120.30
24	YA	2416	C	C6-N1-C2	-5.34	118.17	120.30
4	XD	89	THR	N-CA-C	5.33	125.40	111.00
24	YA	930	U	N3-C2-O2	-5.33	118.47	122.20
24	RA	1544	C	N1-C2-O2	5.33	122.10	118.90
1	XA	1224	G	N3-C4-N9	-5.33	122.80	126.00
24	RA	2321	G	C8-N9-C4	-5.33	104.27	106.40
1	QA	528	C	C6-N1-C2	-5.33	118.17	120.30
1	XA	137	C	C5-C6-N1	5.32	123.66	121.00
24	RA	2321	G	C4-N9-C1'	5.32	133.42	126.50
1	XA	893	C	C5-C6-N1	5.32	123.66	121.00
24	YA	1788	C	C6-N1-C2	-5.32	118.17	120.30
1	QA	749	C	N3-C2-O2	-5.32	118.18	121.90
24	RA	1909	C	C6-N1-C2	-5.32	118.17	120.30
1	XA	812	C	OP2-P-O3'	5.32	116.89	105.20
24	YA	1930	G	C4-N9-C1'	-5.31	119.59	126.50
24	YA	2808	U	N1-C2-O2	5.31	126.52	122.80
24	YA	2779	U	C2-N1-C1'	5.31	124.07	117.70
1	XA	1395	C	N3-C2-O2	-5.31	118.18	121.90
24	RA	1294	U	N3-C2-O2	-5.31	118.48	122.20
24	YA	420	C	C6-N1-C2	-5.31	118.18	120.30
24	YA	817	C	C5-C6-N1	5.31	123.65	121.00
24	RA	669	G	N3-C4-C5	-5.30	125.95	128.60
24	RA	456	C	C6-N1-C2	-5.30	118.18	120.30
24	YA	2096	U	N1-C2-O2	5.30	126.51	122.80
25	YB	27	C	C6-N1-C2	-5.30	118.18	120.30
24	RA	976	C	C6-N1-C2	-5.30	118.18	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	XA	497	U	N1-C2-O2	5.29	126.51	122.80
1	QA	1008	C	C5-C6-N1	5.29	123.64	121.00
24	RA	285	C	N1-C2-O2	5.29	122.07	118.90
24	YA	481	G	O4'-C1'-N9	5.29	112.43	108.20
25	YB	44	G	C8-N9-C1'	5.28	133.87	127.00
24	YA	556	G	N7-C8-N9	5.28	115.74	113.10
1	QA	405	U	N1-C2-O2	5.28	126.50	122.80
1	XA	405	U	N1-C2-O2	5.28	126.50	122.80
1	QA	1263	C	C6-N1-C2	-5.28	118.19	120.30
14	XN	44	LEU	CA-CB-CG	5.28	127.43	115.30
24	YA	753	C	C5-C6-N1	5.28	123.64	121.00
24	YA	2580	U	N1-C2-O2	5.28	126.49	122.80
24	YA	2591	C	C6-N1-C2	-5.28	118.19	120.30
24	RA	285	C	C6-N1-C2	-5.27	118.19	120.30
24	RA	1882	C	C5-C6-N1	5.27	123.64	121.00
24	RA	2226	C	N1-C2-O2	5.27	122.06	118.90
1	XA	530	G	N3-C4-N9	5.27	129.16	126.00
24	YA	2832	U	P-O3'-C3'	5.27	126.03	119.70
38	YT	99	LEU	CA-CB-CG	5.27	127.43	115.30
24	RA	721	C	N1-C2-O2	5.27	122.06	118.90
24	YA	1535	U	C5-C6-N1	5.27	125.33	122.70
24	YA	2726	U	N1-C2-O2	5.27	126.49	122.80
24	RA	1406	U	C5-C6-N1	5.27	125.33	122.70
24	RA	1022	G	P-O3'-C3'	5.26	126.02	119.70
24	RA	2321	G	N3-C4-N9	5.26	129.16	126.00
22	QV	39	C	C6-N1-C2	-5.26	118.20	120.30
1	XA	1140	C	N1-C2-O2	5.26	122.06	118.90
24	YA	2210	G	N3-C4-C5	-5.26	125.97	128.60
24	RA	1640	C	C5-C6-N1	5.25	123.63	121.00
24	RA	1675	C	N3-C2-O2	-5.25	118.22	121.90
24	YA	1105	U	N3-C2-O2	-5.25	118.53	122.20
1	QA	169	C	N3-C2-O2	-5.25	118.23	121.90
24	RA	198	C	C5-C6-N1	5.24	123.62	121.00
24	RA	1430	C	C5-C6-N1	5.24	123.62	121.00
24	RA	1660	C	C6-N1-C2	-5.24	118.20	120.30
9	XI	99	LEU	CA-CB-CG	5.24	127.35	115.30
1	QA	812	C	P-O3'-C3'	5.24	125.98	119.70
24	RA	243	U	N1-C2-O2	5.24	126.47	122.80
1	XA	1008	C	C5-C6-N1	5.23	123.62	121.00
24	YA	271(B)	G	P-O3'-C3'	5.23	125.98	119.70
24	YA	2794	C	C6-N1-C2	-5.23	118.21	120.30
24	YA	1558	A	P-O3'-C3'	5.23	125.98	119.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	RA	846	C	P-O3'-C3'	5.23	125.97	119.70
24	RA	2559	C	C5-C6-N1	5.23	123.61	121.00
24	YA	1598	C	N1-C2-O2	5.23	122.04	118.90
1	XA	34	C	C5-C6-N1	5.22	123.61	121.00
1	XA	137	C	C6-N1-C2	-5.22	118.21	120.30
24	YA	1407	C	N3-C2-O2	-5.22	118.24	121.90
1	XA	754	C	C6-N1-C1'	-5.22	114.53	120.80
24	YA	1678	G	N7-C8-N9	5.22	115.71	113.10
24	YA	2726	U	C2-N1-C1'	5.22	123.97	117.70
24	YA	2814	C	C6-N1-C2	-5.22	118.21	120.30
24	RA	459	U	N3-C2-O2	-5.22	118.55	122.20
24	RA	1992	G	P-O3'-C3'	5.22	125.97	119.70
1	XA	56	U	C2-N1-C1'	5.22	123.96	117.70
24	RA	1394	U	C6-N1-C1'	5.21	128.50	121.20
1	QA	252	U	C2-N1-C1'	5.21	123.95	117.70
24	RA	1833	U	N3-C2-O2	-5.21	118.55	122.20
24	RA	1931	U	C2-N1-C1'	5.21	123.95	117.70
1	QA	91	C	N1-C2-O2	5.21	122.03	118.90
24	YA	512	G	C4-N9-C1'	-5.20	119.73	126.50
24	RA	435	C	N1-C2-O2	5.20	122.02	118.90
24	YA	1430	C	C6-N1-C2	-5.20	118.22	120.30
24	YA	1604	C	C6-N1-C2	-5.20	118.22	120.30
24	YA	2794	C	N1-C2-O2	5.20	122.02	118.90
24	RA	1065	U	C2-N1-C1'	5.19	123.93	117.70
1	QA	346	G	C4-N9-C1'	5.19	133.25	126.50
24	YA	1779	U	C2-N1-C1'	5.19	123.93	117.70
1	XA	405	U	N3-C2-O2	-5.19	118.57	122.20
1	XA	1397	C	N1-C2-O2	5.19	122.01	118.90
1	QA	1263	C	C5-C6-N1	5.18	123.59	121.00
24	RA	270(P)	C	N1-C2-O2	5.18	122.01	118.90
24	RA	1686	C	N1-C2-O2	5.18	122.01	118.90
1	QA	1161	C	N3-C2-O2	-5.18	118.27	121.90
1	QA	209	U	N1-C2-O2	5.18	126.42	122.80
24	YA	1314	C	C2-N1-C1'	5.18	124.50	118.80
36	YR	75	LEU	CA-CB-CG	5.18	127.21	115.30
24	RA	912	C	N1-C2-O2	5.17	122.00	118.90
24	YA	2465	C	N1-C2-O2	5.17	122.00	118.90
25	YB	30	C	C6-N1-C2	-5.17	118.23	120.30
1	QA	1009	G	N3-C4-N9	5.17	129.10	126.00
24	RA	99	U	N1-C2-O2	5.17	126.42	122.80
24	RA	1406	U	C2-N1-C1'	5.17	123.90	117.70
24	RA	243	U	C5-C6-N1	5.16	125.28	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	XA	1109	C	N3-C2-O2	-5.16	118.29	121.90
1	QA	645	C	N1-C2-O2	5.16	121.99	118.90
1	QA	936	C	N1-C2-O2	5.16	121.99	118.90
24	YA	373	U	N1-C2-O2	5.16	126.41	122.80
1	XA	442	C	N1-C2-O2	5.16	121.99	118.90
24	YA	1180	C	C2-N1-C1'	5.15	124.47	118.80
1	XA	180	U	N3-C2-O2	-5.15	118.59	122.20
1	XA	705	U	N3-C2-O2	-5.14	118.60	122.20
24	YA	640	C	C5-C6-N1	5.14	123.57	121.00
24	YA	2403	C	C6-N1-C2	-5.14	118.24	120.30
29	YG	152	LEU	CA-CB-CG	5.14	127.13	115.30
24	RA	1558	A	P-O3'-C3'	5.14	125.87	119.70
24	RA	2174	C	C6-N1-C2	-5.13	118.25	120.30
24	YA	1640	C	N3-C2-O2	-5.13	118.31	121.90
24	RA	860	U	C2-N1-C1'	5.13	123.86	117.70
24	RA	1804	C	C5-C6-N1	5.13	123.56	121.00
1	XA	1109	C	C6-N1-C2	-5.13	118.25	120.30
24	YA	2465	C	C6-N1-C2	-5.13	118.25	120.30
24	RA	1679	U	N3-C2-O2	-5.13	118.61	122.20
24	YA	1629	U	C6-N1-C2	-5.13	117.92	121.00
29	YG	114	ILE	CG1-CB-CG2	-5.12	100.13	111.40
1	QA	596	C	C6-N1-C2	-5.12	118.25	120.30
24	RA	1914	C	C6-N1-C2	-5.12	118.25	120.30
1	XA	330	C	C6-N1-C2	-5.12	118.25	120.30
1	QA	690	G	C4-N9-C1'	5.12	133.15	126.50
24	RA	1082	U	C2-N1-C1'	5.12	123.84	117.70
24	RA	104	U	N3-C2-O2	-5.12	118.62	122.20
24	YA	2480	C	N3-C2-O2	-5.12	118.32	121.90
24	RA	31	C	C5-C6-N1	5.11	123.56	121.00
1	QA	169	C	C5-C6-N1	5.11	123.56	121.00
24	RA	930	U	N3-C2-O2	-5.11	118.62	122.20
1	QA	365	U	C2-N1-C1'	5.11	123.83	117.70
1	QA	754	C	C6-N1-C1'	-5.11	114.67	120.80
1	XA	932	C	C6-N1-C2	-5.11	118.26	120.30
24	RA	1505	C	C2-N1-C1'	5.11	124.42	118.80
24	RA	1505	C	N1-C2-O2	5.11	121.96	118.90
24	RA	2096	U	N3-C2-O2	-5.11	118.63	122.20
1	XA	1447	G	N3-C4-N9	5.11	129.06	126.00
1	QA	1161	C	C6-N1-C2	-5.10	118.26	120.30
24	RA	1599	C	C6-N1-C2	-5.10	118.26	120.30
1	QA	1225	A	N3-C4-N9	5.10	131.48	127.40
1	XA	1158	C	C6-N1-C1'	-5.10	114.68	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	YA	1653	G	P-O3'-C3'	5.10	125.82	119.70
24	RA	1686	C	C2-N1-C1'	5.10	124.41	118.80
44	RZ	186	GLU	N-CA-C	-5.10	97.24	111.00
1	QA	1362(A)	C	N1-C2-O2	5.09	121.96	118.90
24	YA	1026	U	P-O3'-C3'	5.09	125.81	119.70
24	YA	1679	U	N3-C2-O2	-5.09	118.63	122.20
24	RA	2066	C	N1-C2-O2	5.09	121.95	118.90
1	XA	992	U	P-O3'-C3'	5.08	125.80	119.70
24	YA	2006	C	C6-N1-C2	-5.08	118.27	120.30
1	QA	1026	G	C4-N9-C1'	5.08	133.11	126.50
24	YA	2343	C	N1-C2-O2	5.08	121.95	118.90
24	YA	508	G	N3-C4-C5	-5.08	126.06	128.60
24	YA	730	C	C6-N1-C2	-5.08	118.27	120.30
24	YA	192	C	C6-N1-C2	-5.08	118.27	120.30
1	QA	1447	G	N3-C4-N9	5.08	129.04	126.00
1	XA	789	U	N1-C2-O2	5.07	126.35	122.80
24	RA	1679	U	N1-C2-O2	5.07	126.35	122.80
24	RA	1052	C	C2-N1-C1'	5.07	124.38	118.80
24	RA	588	U	C5-C6-N1	5.07	125.23	122.70
1	XA	536	C	C5-C6-N1	5.06	123.53	121.00
1	XA	435	C	C6-N1-C2	-5.06	118.28	120.30
1	QA	328	C	C6-N1-C1'	-5.06	114.73	120.80
24	RA	2292	C	C5-C6-N1	5.05	123.53	121.00
1	XA	979	C	C5-C6-N1	5.05	123.53	121.00
9	QI	10	ARG	NE-CZ-NH1	5.05	122.83	120.30
24	YA	459	U	N1-C2-O2	5.05	126.34	122.80
24	RA	436	C	N1-C2-O2	5.05	121.93	118.90
24	RA	2211	G	N3-C4-C5	-5.05	126.08	128.60
24	YA	2889	C	C6-N1-C2	-5.05	118.28	120.30
24	YA	1080	C	N3-C2-O2	-5.05	118.37	121.90
24	YA	1683	C	C5-C6-N1	5.05	123.52	121.00
1	QA	789	U	N1-C2-O2	5.04	126.33	122.80
1	XA	1028(A)	C	C6-N1-C2	-5.04	118.28	120.30
24	YA	1786	A	N7-C8-N9	5.04	116.32	113.80
24	YA	2320	A	C2-N3-C4	5.04	113.12	110.60
1	QA	545	C	C6-N1-C2	-5.04	118.28	120.30
24	RA	1598	C	C6-N1-C2	-5.04	118.28	120.30
24	YA	1105	U	N1-C2-O2	5.04	126.33	122.80
1	XA	455	C	N1-C2-O2	5.03	121.92	118.90
24	YA	41	C	C5-C6-N1	5.03	123.52	121.00
24	YA	2210	G	C8-N9-C1'	-5.03	120.46	127.00
24	YA	2335	A	C4-N9-C1'	-5.03	117.24	126.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	YA	234	C	N3-C2-O2	-5.03	118.38	121.90
1	XA	367	U	C6-N1-C1'	-5.03	114.16	121.20
24	YA	404	C	P-O3'-C3'	5.02	125.73	119.70
24	YA	2616	C	C5-C6-N1	5.02	123.51	121.00
25	YB	81	G	C8-N9-C1'	-5.02	120.47	127.00
24	YA	364	C	N1-C2-O2	5.02	121.91	118.90
25	RB	81	G	C8-N9-C1'	-5.01	120.48	127.00
24	YA	392	C	C5-C6-N1	5.01	123.51	121.00
24	YA	512	G	O4'-C1'-N9	5.01	112.21	108.20
1	XA	749	C	C6-N1-C2	-5.01	118.30	120.30
24	RA	1406	U	N3-C2-O2	-5.01	118.69	122.20
24	RA	2211	G	N3-C4-N9	5.01	129.00	126.00
24	YA	637	A	P-O3'-C3'	5.01	125.71	119.70
24	RA	1920	C	C6-N1-C2	-5.00	118.30	120.30
1	XA	1439	C	C6-N1-C2	-5.00	118.30	120.30
4	QD	208	SER	N-CA-C	-5.00	97.50	111.00
24	YA	1776	G	N3-C4-N9	5.00	129.00	126.00

There are no chirality outliers.

All (775) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	QB	130	ARG	Peptide
2	QB	149	LEU	Peptide
2	QB	15	VAL	Peptide
2	QB	154	LEU	Peptide
2	QB	19	HIS	Peptide
2	QB	207	ALA	Peptide
2	QB	21	ARG	Peptide
2	QB	22	LYS	Peptide
2	QB	232	PRO	Peptide
2	QB	233	SER	Peptide
2	QB	234	PRO	Peptide
2	QB	237	ALA	Peptide
2	QB	239	VAL	Peptide
2	QB	34	ALA	Peptide
2	QB	64	ARG	Peptide
2	QB	95	GLN	Peptide
2	QB	96	ARG	Peptide
3	QC	11	ARG	Peptide
3	QC	126	ARG	Peptide
3	QC	144	SER	Peptide

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Mol	Chain	Res	Type	Group
3	QC	145	GLY	Peptide
3	QC	164	ARG	Peptide
3	QC	166	GLU	Peptide
3	QC	168	ALA	Peptide
3	QC	180	ALA	Peptide
3	QC	189	ALA	Peptide
3	QC	2	GLY	Peptide
3	QC	23	TYR	Peptide
3	QC	25	GLY	Peptide
3	QC	59	ARG	Peptide
3	QC	60	ALA	Peptide
3	QC	62	ASP	Peptide
3	QC	96	GLY	Peptide
5	QE	22	GLY	Peptide
5	QE	68	GLU	Peptide
5	QE	72	GLN	Peptide
5	QE	73	ASN	Peptide
5	QE	97	GLY	Peptide
6	QF	12	PRO	Peptide
6	QF	68	PRO	Peptide
6	QF	71	ARG	Peptide
6	QF	75	LEU	Peptide
6	QF	99	ALA	Peptide
7	QG	113	GLU	Peptide
7	QG	129	GLU	Peptide
7	QG	132	GLY	Peptide
7	QG	30	ILE	Peptide
7	QG	32	ARG	Peptide
7	QG	54	THR	Peptide
7	QG	7	ALA	Peptide
7	QG	8	GLU	Peptide
8	QH	55	GLY	Peptide
8	QH	70	GLN	Peptide
8	QH	95	VAL	Peptide
8	QH	96	GLY	Peptide
9	QI	10	ARG	Peptide
9	QI	109	VAL	Peptide
9	QI	110	GLU	Peptide
9	QI	119	ALA	Peptide
9	QI	2	GLU	Peptide
9	QI	24	GLY	Peptide
9	QI	30	GLY	Peptide

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Mol	Chain	Res	Type	Group
9	QI	42	ARG	Peptide
9	QI	52	ALA	Peptide
9	QI	55	ALA	Peptide
9	QI	83	ARG	Peptide
9	QI	91	ASP	Peptide
10	QJ	100	THR	Peptide
10	QJ	30	SER	Peptide
10	QJ	31	GLY	Peptide
10	QJ	32	ALA	Peptide
10	QJ	53	PRO	Peptide
10	QJ	65	LEU	Peptide
10	QJ	85	LEU	Peptide
10	QJ	9	ARG	Peptide
10	QJ	90	LEU	Peptide
10	QJ	91	PRO	Peptide
10	QJ	92	THR	Peptide
10	QJ	93	GLY	Peptide
11	QK	128	ALA	Peptide
12	QL	104	VAL	Peptide
12	QL	118	SER	Peptide
12	QL	120	TYR	Peptide
12	QL	127	GLU	Peptide
12	QL	17	LYS	Peptide
12	QL	18	VAL	Peptide
12	QL	29	GLY	Peptide
12	QL	30	ALA	Peptide
12	QL	47	LYS	Peptide
12	QL	85	ILE	Peptide
13	QM	10	PRO	Peptide
13	QM	101	GLN	Peptide
13	QM	105	THR	Peptide
13	QM	108	ARG	Peptide
13	QM	116	THR	Peptide
13	QM	117	VAL	Peptide
13	QM	118	ALA	Peptide
13	QM	12	ASN	Peptide
13	QM	3	ARG	Peptide
13	QM	46	LYS	Peptide
13	QM	58	GLU	Peptide
13	QM	59	TYR	Peptide
13	QM	65	LYS	Peptide
13	QM	66	LEU	Peptide

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Mol	Chain	Res	Type	Group
13	QM	8	GLU	Peptide
13	QM	82	MET	Peptide
13	QM	9	ILE	Peptide
13	QM	95	GLY	Peptide
13	QM	97	PRO	Peptide
14	QN	42	ILE	Peptide
15	QO	20	GLY	Peptide
15	QO	88	ARG	Peptide
16	QP	19	ILE	Peptide
16	QP	36	ILE	Peptide
16	QP	83	GLU	Peptide
17	QQ	66	SER	Peptide
17	QQ	67	LYS	Peptide
17	QQ	79	SER	Peptide
18	QR	19	LYS	Peptide
18	QR	31	LEU	Peptide
18	QR	55	ARG	Peptide
18	QR	82	THR	Peptide
18	QR	87	ARG	Peptide
19	QS	26	GLY	Peptide
19	QS	27	GLU	Peptide
19	QS	38	SER	Peptide
19	QS	41	VAL	Peptide
19	QS	42	PRO	Peptide
19	QS	62	ILE	Peptide
19	QS	66	MET	Peptide
19	QS	72	GLY	Peptide
19	QS	8	GLY	Peptide
19	QS	82	GLY	Peptide
19	QS	83	HIS	Peptide
19	QS	9	VAL	Peptide
20	QT	101	GLY	Peptide
20	QT	104	LEU	Peptide
20	QT	105	SER	Peptide
20	QT	11	SER	Peptide
20	QT	12	ALA	Peptide
20	QT	48	LYS	Peptide
20	QT	49	ALA	Peptide
20	QT	71	THR	Peptide
20	QT	72	LEU	Peptide
20	QT	73	HIS	Peptide
20	QT	8	ARG	Peptide

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Mol	Chain	Res	Type	Group
20	QT	94	ALA	Peptide
20	QT	95	ALA	Peptide
20	QT	96	GLY	Peptide
20	QT	97	ALA	Peptide
20	QT	98	PRO	Peptide
21	QU	23	PRO	Peptide
21	QU	24	ARG	Peptide
45	R0	42	GLY	Peptide
45	R0	43	THR	Peptide
46	R1	53	VAL	Peptide
46	R1	54	ALA	Peptide
46	R1	74	VAL	Peptide
46	R1	77	ALA	Peptide
46	R1	85	LEU	Peptide
46	R1	87	PRO	Peptide
46	R1	96	LYS	Peptide
47	R2	13	ALA	Peptide
47	R2	14	ARG	Peptide
47	R2	43	GLN	Peptide
47	R2	45	SER	Peptide
47	R2	46	GLN	Peptide
47	R2	69	ARG	Peptide
47	R2	70	GLN	Peptide
47	R2	71	ASN	Peptide
48	R3	39	ASP	Peptide
49	R4	11	PRO	Peptide
49	R4	42	PHE	Peptide
49	R4	46	GLN	Peptide
49	R4	48	ARG	Peptide
49	R4	53	GLU	Peptide
49	R4	54	GLY	Peptide
49	R4	57	GLU	Peptide
49	R4	60	GLN	Peptide
49	R4	61	ARG	Peptide
53	R8	27	THR	Peptide
53	R8	28	GLY	Peptide
53	R8	29	LYS	Peptide
53	R8	31	HIS	Peptide
53	R8	32	LEU	Peptide
53	R8	35	GLN	Peptide
53	R8	44	LYS	Peptide
53	R8	51	ALA	Peptide

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Mol	Chain	Res	Type	Group
53	R8	52	LYS	Peptide
53	R8	62	LEU	Peptide
53	R8	63	PRO	Peptide
53	R8	64	TYR	Peptide
54	R9	36	GLN	Peptide
26	RD	100	GLY	Peptide
26	RD	106	ILE	Peptide
26	RD	110	GLY	Peptide
26	RD	120	GLY	Peptide
26	RD	122	ASP	Peptide
26	RD	126	GLN	Peptide
26	RD	197	GLY	Peptide
26	RD	241	PRO	Peptide
26	RD	243	GLY	Peptide
26	RD	246	PRO	Peptide
26	RD	259	THR	Peptide
27	RE	115	GLY	Peptide
27	RE	125	GLY	Peptide
27	RE	130	GLY	Peptide
27	RE	131	ALA	Peptide
27	RE	132	HIS	Peptide
27	RE	142	GLY	Peptide
27	RE	144	ARG	Peptide
27	RE	153	GLY	Peptide
27	RE	16	ARG	Peptide
27	RE	17	ASP	Peptide
27	RE	19	ARG	Peptide
27	RE	20	ALA	Peptide
27	RE	204	ALA	Peptide
27	RE	51	PHE	Peptide
27	RE	57	LYS	Peptide
27	RE	65	GLY	Peptide
27	RE	66	HIS	Peptide
27	RE	69	LYS	Peptide
27	RE	71	GLY	Peptide
27	RE	83	ASP	Peptide
28	RF	127	GLU	Peptide
28	RF	128	ALA	Peptide
28	RF	130	ALA	Peptide
28	RF	131	GLY	Peptide
28	RF	133	ASN	Peptide
28	RF	19	GLU	Peptide

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Mol	Chain	Res	Type	Group
28	RF	196	LEU	Peptide
28	RF	198	ALA	Peptide
28	RF	25	PRO	Peptide
28	RF	47	GLY	Peptide
28	RF	66	PRO	Peptide
28	RF	7	TYR	Peptide
29	RG	114	ILE	Peptide
29	RG	128	ARG	Peptide
29	RG	135	LEU	Peptide
29	RG	136	ARG	Peptide
29	RG	144	ILE	Peptide
29	RG	150	ASP	Peptide
29	RG	181	ARG	Peptide
29	RG	36	LYS	Peptide
29	RG	4	ASP	Peptide
29	RG	51	ARG	Peptide
29	RG	52	ILE	Peptide
29	RG	53	LEU	Peptide
29	RG	82	LEU	Peptide
29	RG	83	ARG	Peptide
29	RG	85	GLY	Peptide
29	RG	95	ARG	Peptide
30	RH	10	PRO	Peptide
30	RH	108	GLY	Peptide
30	RH	124	GLU	Peptide
30	RH	125	VAL	Peptide
30	RH	128	PRO	Peptide
30	RH	129	THR	Peptide
30	RH	150	ALA	Peptide
30	RH	151	ILE	Peptide
30	RH	152	ARG	Peptide
30	RH	153	LYS	Peptide
30	RH	16	SER	Peptide
30	RH	161	GLY	Peptide
30	RH	166	GLY	Peptide
30	RH	174	GLY	Peptide
30	RH	19	VAL	Peptide
30	RH	2	SER	Peptide
30	RH	30	LYS	Peptide
30	RH	55	PRO	Peptide
30	RH	7	LEU	Peptide
30	RH	8	PRO	Peptide

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Mol	Chain	Res	Type	Group
30	RH	82	GLY	Peptide
30	RH	86	GLU	Peptide
30	RH	87	LEU	Peptide
30	RH	91	GLY	Peptide
31	RI	10	GLU	Peptide
31	RI	109	ILE	Peptide
31	RI	11	ASN	Peptide
31	RI	116	LEU	Peptide
31	RI	119	PRO	Peptide
31	RI	123	LEU	Peptide
31	RI	131	LYS	Peptide
31	RI	132	PRO	Peptide
31	RI	133	HIS	Peptide
31	RI	134	PRO	Peptide
31	RI	14	ASP	Peptide
31	RI	142	VAL	Peptide
31	RI	15	VAL	Peptide
31	RI	16	GLY	Peptide
31	RI	35	LEU	Peptide
31	RI	55	ALA	Peptide
31	RI	75	LEU	Peptide
31	RI	83	ALA	Peptide
31	RI	9	LEU	Peptide
31	RI	90	GLY	Peptide
31	RI	98	ALA	Peptide
32	RN	113	GLY	Peptide
32	RN	114	ARG	Peptide
32	RN	127	ASP	Peptide
32	RN	130	HIS	Peptide
32	RN	132	ALA	Peptide
32	RN	134	ARG	Peptide
32	RN	17	ASP	Peptide
32	RN	21	LYS	Peptide
32	RN	22	THR	Peptide
32	RN	63	THR	Peptide
32	RN	92	ALA	Peptide
32	RN	96	GLU	Peptide
33	RO	96	THR	Peptide
34	RP	102	ARG	Peptide
34	RP	106	LEU	Peptide
34	RP	107	LYS	Peptide
34	RP	115	LEU	Peptide

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Mol	Chain	Res	Type	Group
34	RP	117	GLU	Peptide
34	RP	139	LYS	Peptide
34	RP	144	GLU	Peptide
34	RP	147	LEU	Peptide
34	RP	149	GLU	Peptide
34	RP	22	GLY	Peptide
34	RP	26	GLY	Peptide
34	RP	35	HIS	Peptide
34	RP	37	GLY	Peptide
34	RP	5	ASP	Peptide
34	RP	58	THR	Peptide
34	RP	6	LEU	Peptide
34	RP	63	PRO	Peptide
34	RP	66	GLY	Peptide
34	RP	67	MET	Peptide
34	RP	70	GLN	Peptide
34	RP	72	PRO	Peptide
34	RP	93	GLY	Peptide
34	RP	94	GLU	Peptide
34	RP	97	PRO	Peptide
34	RP	98	GLU	Peptide
35	RQ	100	GLY	Peptide
35	RQ	104	PHE	Peptide
35	RQ	108	GLY	Peptide
35	RQ	17	LEU	Peptide
35	RQ	19	GLY	Peptide
35	RQ	23	GLY	Peptide
35	RQ	24	GLY	Peptide
35	RQ	4	PRO	Peptide
35	RQ	60	ARG	Peptide
35	RQ	61	GLY	Peptide
35	RQ	87	LYS	Peptide
35	RQ	88	GLY	Peptide
35	RQ	89	ASN	Peptide
35	RQ	99	PRO	Peptide
36	RR	104	ARG	Peptide
36	RR	75	LEU	Peptide
36	RR	92	GLY	Peptide
37	RS	103	GLU	Peptide
37	RS	104	GLY	Peptide
37	RS	106	ARG	Peptide
37	RS	108	GLY	Peptide

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Mol	Chain	Res	Type	Group
37	RS	109	GLY	Peptide
37	RS	110	LEU	Peptide
37	RS	111	GLU	Peptide
37	RS	22	GLY	Peptide
37	RS	42	ASP	Peptide
37	RS	56	LEU	Peptide
37	RS	58	LEU	Peptide
37	RS	59	LYS	Peptide
37	RS	61	ASN	Peptide
38	RT	11	GLU	Peptide
38	RT	111	ARG	Peptide
38	RT	12	SER	Peptide
38	RT	122	ASP	Peptide
38	RT	123	GLN	Peptide
38	RT	135	ALA	Peptide
38	RT	136	GLN	Peptide
38	RT	3	ARG	Peptide
38	RT	51	ARG	Peptide
38	RT	52	ILE	Peptide
38	RT	56	GLY	Peptide
38	RT	58	ASN	Peptide
38	RT	93	ARG	Peptide
39	RU	115	ALA	Peptide
39	RU	8	VAL	Peptide
39	RU	90	VAL	Peptide
39	RU	91	ASP	Peptide
39	RU	92	ARG	Peptide
39	RU	95	LEU	Peptide
39	RU	96	ALA	Peptide
40	RV	23	GLU	Peptide
40	RV	34	GLU	Peptide
40	RV	43	GLU	Peptide
40	RV	49	THR	Peptide
40	RV	54	GLY	Peptide
40	RV	68	LYS	Peptide
41	RW	110	LYS	Peptide
41	RW	3	ALA	Peptide
41	RW	64	MET	Peptide
41	RW	91	GLY	Peptide
42	RX	27	THR	Peptide
42	RX	67	GLY	Peptide
42	RX	78	LYS	Peptide

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Mol	Chain	Res	Type	Group
42	RX	93	GLU	Peptide
43	RY	10	GLY	Peptide
43	RY	51	VAL	Peptide
43	RY	52	SER	Peptide
43	RY	71	LYS	Peptide
44	RZ	10	ARG	Peptide
44	RZ	105	VAL	Peptide
44	RZ	106	GLY	Peptide
44	RZ	11	GLU	Peptide
44	RZ	114	GLY	Peptide
44	RZ	12	GLY	Peptide
44	RZ	125	LEU	Peptide
44	RZ	127	LYS	Peptide
44	RZ	143	GLY	Peptide
44	RZ	148	ASP	Peptide
44	RZ	160	GLY	Peptide
44	RZ	165	VAL	Peptide
44	RZ	37	VAL	Peptide
44	RZ	51	ALA	Peptide
44	RZ	52	SER	Peptide
44	RZ	58	VAL	Peptide
44	RZ	62	PRO	Peptide
44	RZ	63	ASP	Peptide
44	RZ	93	ASP	Peptide
44	RZ	95	PRO	Peptide
1	XA	358	U	Sidechain
2	XB	109	SER	Peptide
2	XB	124	SER	Peptide
2	XB	126	GLU	Peptide
2	XB	128	GLU	Peptide
2	XB	149	LEU	Peptide
2	XB	15	VAL	Peptide
2	XB	160	ASP	Peptide
2	XB	161	ALA	Peptide
2	XB	186	ALA	Peptide
2	XB	19	HIS	Peptide
2	XB	223	ILE	Peptide
2	XB	225	ALA	Peptide
2	XB	230	VAL	Peptide
2	XB	233	SER	Peptide
2	XB	234	PRO	Peptide
2	XB	235	SER	Peptide

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Mol	Chain	Res	Type	Group
2	XB	236	TYR	Peptide
2	XB	6	THR	Peptide
2	XB	64	ARG	Peptide
2	XB	66	GLY	Peptide
2	XB	9	GLU	Peptide
2	XB	95	GLN	Peptide
3	XC	11	ARG	Peptide
3	XC	129	ALA	Peptide
3	XC	13	GLY	Peptide
3	XC	14	ILE	Peptide
3	XC	166	GLU	Peptide
3	XC	189	ALA	Peptide
3	XC	2	GLY	Peptide
3	XC	23	TYR	Peptide
3	XC	25	GLY	Peptide
3	XC	3	ASN	Peptide
3	XC	35	GLU	Peptide
3	XC	49	SER	Peptide
3	XC	50	ALA	Peptide
3	XC	58	GLU	Peptide
3	XC	59	ARG	Peptide
3	XC	62	ASP	Peptide
3	XC	72	LYS	Peptide
3	XC	78	GLY	Peptide
3	XC	9	GLY	Peptide
5	XE	101	ILE	Peptide
5	XE	108	ALA	Peptide
5	XE	12	LEU	Peptide
5	XE	71	LEU	Peptide
5	XE	72	GLN	Peptide
5	XE	73	ASN	Peptide
5	XE	74	GLY	Peptide
5	XE	95	ALA	Peptide
7	XG	107	ALA	Peptide
7	XG	113	GLU	Peptide
7	XG	34	GLY	Peptide
7	XG	4	ARG	Peptide
7	XG	53	LYS	Peptide
7	XG	6	ARG	Peptide
7	XG	7	ALA	Peptide
7	XG	76	ARG	Peptide
8	XH	42	GLU	Peptide

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Mol	Chain	Res	Type	Group
8	XH	52	ASP	Peptide
8	XH	70	GLN	Peptide
8	XH	72	PRO	Peptide
8	XH	96	GLY	Peptide
9	XI	10	ARG	Peptide
9	XI	19	LEU	Peptide
9	XI	24	GLY	Peptide
9	XI	37	PHE	Peptide
9	XI	42	ARG	Peptide
9	XI	54	ASP	Peptide
9	XI	69	GLY	Peptide
9	XI	87	GLN	Peptide
9	XI	92	TYR	Peptide
9	XI	93	ARG	Peptide
9	XI	99	LEU	Peptide
10	XJ	30	SER	Peptide
10	XJ	32	ALA	Peptide
10	XJ	34	VAL	Peptide
10	XJ	43	ARG	Peptide
10	XJ	45	ARG	Peptide
10	XJ	52	GLY	Peptide
10	XJ	54	PHE	Peptide
10	XJ	85	LEU	Peptide
10	XJ	91	PRO	Peptide
11	XK	102	GLY	Peptide
11	XK	13	GLN	Peptide
11	XK	14	VAL	Peptide
11	XK	15	ALA	Peptide
12	XL	102	ARG	Peptide
12	XL	103	GLY	Peptide
12	XL	104	VAL	Peptide
12	XL	105	TYR	Peptide
12	XL	120	TYR	Peptide
12	XL	125	PRO	Peptide
12	XL	28	LYS	Peptide
12	XL	47	LYS	Peptide
12	XL	72	GLY	Peptide
12	XL	76	ASN	Peptide
13	XM	10	PRO	Peptide
13	XM	105	THR	Peptide
13	XM	107	ALA	Peptide
13	XM	11	ARG	Peptide

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Mol	Chain	Res	Type	Group
13	XM	112	GLY	Peptide
13	XM	117	VAL	Peptide
13	XM	118	ALA	Peptide
13	XM	12	ASN	Peptide
13	XM	43	THR	Peptide
13	XM	45	VAL	Peptide
13	XM	58	GLU	Peptide
13	XM	59	TYR	Peptide
13	XM	62	ASN	Peptide
13	XM	66	LEU	Peptide
13	XM	72	ALA	Peptide
14	XN	13	THR	Peptide
14	XN	16	PHE	Peptide
14	XN	19	ARG	Peptide
14	XN	20	ALA	Peptide
14	XN	42	ILE	Peptide
14	XN	44	LEU	Peptide
14	XN	8	GLU	Peptide
15	XO	19	PRO	Peptide
15	XO	77	ARG	Peptide
16	XP	12	LYS	Peptide
16	XP	62	VAL	Peptide
16	XP	82	GLN	Peptide
16	XP	83	GLU	Peptide
17	XQ	100	LYS	Peptide
17	XQ	44	ALA	Peptide
17	XQ	61	GLU	Peptide
17	XQ	66	SER	Peptide
18	XR	20	ALA	Peptide
18	XR	21	LYS	Peptide
18	XR	55	ARG	Peptide
19	XS	10	PHE	Peptide
19	XS	11	VAL	Peptide
19	XS	2	PRO	Peptide
19	XS	20	LEU	Peptide
19	XS	24	ALA	Peptide
19	XS	25	LYS	Peptide
19	XS	26	GLY	Peptide
19	XS	27	GLU	Peptide
19	XS	30	LEU	Peptide
19	XS	4	SER	Peptide
19	XS	42	PRO	Peptide

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Mol	Chain	Res	Type	Group
19	XS	46	GLY	Peptide
19	XS	48	THR	Peptide
19	XS	5	LEU	Peptide
19	XS	63	THR	Peptide
19	XS	65	ASN	Peptide
19	XS	76	PRO	Peptide
19	XS	8	GLY	Peptide
19	XS	82	GLY	Peptide
19	XS	83	HIS	Peptide
19	XS	9	VAL	Peptide
20	XT	105	SER	Peptide
20	XT	11	SER	Peptide
20	XT	12	ALA	Peptide
20	XT	48	LYS	Peptide
20	XT	69	GLY	Peptide
20	XT	72	LEU	Peptide
20	XT	73	HIS	Peptide
20	XT	8	ARG	Peptide
20	XT	94	ALA	Peptide
20	XT	96	GLY	Peptide
20	XT	97	ALA	Peptide
20	XT	98	PRO	Peptide
21	XU	2	GLY	Peptide
21	XU	21	TYR	Peptide
45	Y0	42	GLY	Peptide
45	Y0	43	THR	Peptide
46	Y1	53	VAL	Peptide
46	Y1	54	ALA	Peptide
46	Y1	74	VAL	Peptide
46	Y1	75	GLU	Peptide
46	Y1	77	ALA	Peptide
46	Y1	78	LYS	Peptide
46	Y1	85	LEU	Peptide
46	Y1	87	PRO	Peptide
47	Y2	4	SER	Peptide
47	Y2	43	GLN	Peptide
47	Y2	46	GLN	Peptide
48	Y3	2	PRO	Peptide
48	Y3	58	VAL	Peptide
49	Y4	23	GLU	Peptide
49	Y4	28	LYS	Peptide
49	Y4	43	TYR	Peptide

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Mol	Chain	Res	Type	Group
49	Y4	45	GLY	Peptide
49	Y4	46	GLN	Peptide
49	Y4	47	GLN	Peptide
49	Y4	48	ARG	Peptide
49	Y4	53	GLU	Peptide
49	Y4	54	GLY	Peptide
49	Y4	55	ARG	Peptide
49	Y4	57	GLU	Peptide
49	Y4	62	ARG	Peptide
50	Y5	5	PRO	Peptide
53	Y8	51	ALA	Peptide
26	YD	110	GLY	Peptide
26	YD	120	GLY	Peptide
26	YD	122	ASP	Peptide
26	YD	197	GLY	Peptide
26	YD	2	ALA	Peptide
26	YD	243	GLY	Peptide
26	YD	246	PRO	Peptide
26	YD	68	LYS	Peptide
27	YE	112	GLY	Peptide
27	YE	142	GLY	Peptide
27	YE	186	GLY	Peptide
27	YE	29	GLY	Peptide
27	YE	51	PHE	Peptide
27	YE	57	LYS	Peptide
27	YE	71	GLY	Peptide
28	YF	127	GLU	Peptide
28	YF	128	ALA	Peptide
28	YF	130	ALA	Peptide
28	YF	131	GLY	Peptide
28	YF	132	VAL	Peptide
28	YF	133	ASN	Peptide
28	YF	175	THR	Peptide
28	YF	196	LEU	Peptide
28	YF	198	ALA	Peptide
28	YF	206	ILE	Peptide
28	YF	22	ALA	Peptide
28	YF	25	PRO	Peptide
28	YF	47	GLY	Peptide
28	YF	66	PRO	Peptide
29	YG	127	GLY	Peptide
29	YG	135	LEU	Peptide

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Mol	Chain	Res	Type	Group
29	YG	136	ARG	Peptide
29	YG	145	THR	Peptide
29	YG	149	VAL	Peptide
29	YG	150	ASP	Peptide
29	YG	181	ARG	Peptide
29	YG	2	PRO	Peptide
29	YG	5	VAL	Peptide
29	YG	52	ILE	Peptide
29	YG	81	LYS	Peptide
29	YG	82	LEU	Peptide
29	YG	95	ARG	Peptide
30	YH	12	PRO	Peptide
30	YH	58	GLU	Peptide
31	YI	103	ARG	Peptide
31	YI	11	ASN	Peptide
31	YI	117	GLU	Peptide
31	YI	118	LYS	Peptide
31	YI	119	PRO	Peptide
31	YI	12	LEU	Peptide
31	YI	121	LYS	Peptide
31	YI	122	GLU	Peptide
31	YI	123	LEU	Peptide
31	YI	131	LYS	Peptide
31	YI	133	HIS	Peptide
31	YI	135	GLU	Peptide
31	YI	14	ASP	Peptide
31	YI	142	VAL	Peptide
31	YI	144	VAL	Peptide
31	YI	15	VAL	Peptide
31	YI	16	GLY	Peptide
31	YI	33	ARG	Peptide
31	YI	35	LEU	Peptide
31	YI	63	ALA	Peptide
31	YI	66	GLU	Peptide
31	YI	9	LEU	Peptide
32	YN	113	GLY	Peptide
32	YN	114	ARG	Peptide
32	YN	127	ASP	Peptide
32	YN	129	PRO	Peptide
32	YN	130	HIS	Peptide
32	YN	132	ALA	Peptide
32	YN	134	ARG	Peptide

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Mol	Chain	Res	Type	Group
32	YN	17	ASP	Peptide
32	YN	21	LYS	Peptide
32	YN	22	THR	Peptide
33	YO	96	THR	Peptide
34	YP	112	LEU	Peptide
34	YP	115	LEU	Peptide
34	YP	123	LEU	Peptide
34	YP	28	GLY	Peptide
34	YP	35	HIS	Peptide
34	YP	43	GLY	Peptide
34	YP	65	ARG	Peptide
34	YP	96	THR	Peptide
35	YQ	104	PHE	Peptide
35	YQ	108	GLY	Peptide
35	YQ	140	ALA	Peptide
35	YQ	17	LEU	Peptide
35	YQ	19	GLY	Peptide
35	YQ	21	THR	Peptide
35	YQ	23	GLY	Peptide
35	YQ	24	GLY	Peptide
35	YQ	60	ARG	Peptide
35	YQ	87	LYS	Peptide
35	YQ	88	GLY	Peptide
35	YQ	89	ASN	Peptide
35	YQ	90	VAL	Peptide
36	YR	104	ARG	Peptide
36	YR	3	HIS	Peptide
36	YR	73	VAL	Peptide
36	YR	75	LEU	Peptide
36	YR	92	GLY	Peptide
37	YS	105	ALA	Peptide
37	YS	106	ARG	Peptide
37	YS	109	GLY	Peptide
37	YS	110	LEU	Peptide
37	YS	111	GLU	Peptide
37	YS	2	ALA	Peptide
37	YS	5	THR	Peptide
37	YS	56	LEU	Peptide
37	YS	58	LEU	Peptide
38	YT	11	GLU	Peptide
38	YT	110	ILE	Peptide
38	YT	111	ARG	Peptide

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Mol	Chain	Res	Type	Group
38	YT	12	SER	Peptide
38	YT	122	ASP	Peptide
38	YT	123	GLN	Peptide
38	YT	36	GLU	Peptide
38	YT	38	ASN	Peptide
38	YT	56	GLY	Peptide
38	YT	58	ASN	Peptide
38	YT	91	ARG	Peptide
39	YU	115	ALA	Peptide
39	YU	117	GLN	Peptide
40	YV	41	GLY	Peptide
40	YV	42	GLY	Peptide
40	YV	43	GLU	Peptide
40	YV	44	LYS	Peptide
40	YV	49	THR	Peptide
40	YV	54	GLY	Peptide
41	YW	110	LYS	Peptide
41	YW	64	MET	Peptide
41	YW	91	GLY	Peptide
42	YX	68	ARG	Peptide
42	YX	93	GLU	Peptide
43	YY	106	LEU	Peptide
43	YY	52	SER	Peptide
43	YY	54	LYS	Peptide
43	YY	91	GLU	Peptide
44	YZ	11	GLU	Peptide
44	YZ	12	GLY	Peptide
44	YZ	160	GLY	Peptide
44	YZ	164	ALA	Peptide
44	YZ	165	VAL	Peptide
44	YZ	167	PRO	Peptide
44	YZ	168	GLU	Peptide
44	YZ	51	ALA	Peptide
44	YZ	52	SER	Peptide
44	YZ	53	ILE	Peptide
44	YZ	58	VAL	Peptide
44	YZ	59	LEU	Peptide
44	YZ	62	PRO	Peptide
44	YZ	63	ASP	Peptide
44	YZ	92	SER	Peptide
44	YZ	95	PRO	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	QA	32247	0	16277	362	0
1	XA	32249	0	16278	389	0
2	QB	1907	0	1958	22	0
2	XB	1915	0	1969	24	0
3	QC	1605	0	1668	22	0
3	XC	1605	0	1668	28	0
4	QD	1703	0	1763	47	0
4	XD	1703	0	1763	36	0
5	QE	1155	0	1213	13	0
5	XE	1155	0	1213	8	0
6	QF	843	0	857	13	0
6	XF	843	0	857	9	0
7	QG	1257	0	1296	18	0
7	XG	1257	0	1296	20	0
8	QH	1108	0	1165	15	0
8	XH	1108	0	1165	20	0
9	QI	1010	0	1037	26	0
9	XI	998	0	1024	23	0
10	QJ	801	0	849	16	0
10	XJ	777	0	816	16	0
11	QK	885	0	904	14	0
11	XK	864	0	881	20	0
12	QL	975	0	1062	21	0
12	XL	956	0	1046	11	0
13	QM	955	0	1021	18	0
13	XM	946	0	1008	22	0
14	QN	492	0	529	10	0
14	XN	492	0	529	14	0
15	QO	734	0	771	7	0
15	XO	729	0	768	5	0
16	QP	705	0	725	13	0
16	XP	705	0	725	9	0
17	QQ	834	0	904	8	0
17	XQ	834	0	904	16	0
18	QR	574	0	644	8	0
18	XR	574	0	644	7	0
19	QS	665	0	686	15	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
19	XS	674	0	699	9	0
20	QT	763	0	861	16	0
20	XT	763	0	861	10	0
21	QU	217	0	234	8	0
21	XU	217	0	234	3	0
22	QV	365	0	186	4	0
22	XV	322	0	164	6	0
23	QX	217	0	110	5	0
23	XX	262	0	132	3	0
24	RA	62051	0	31280	482	0
24	YA	62091	0	31294	478	0
25	RB	2573	0	1306	20	0
25	YB	2573	0	1306	15	0
26	RD	2115	0	2195	37	0
26	YD	2115	0	2195	42	0
27	RE	1568	0	1634	32	0
27	YE	1563	0	1629	19	0
28	RF	1585	0	1632	19	0
28	YF	1585	0	1632	20	0
29	RG	1474	0	1535	31	0
29	YG	1474	0	1535	21	0
30	RH	1336	0	1418	12	0
30	YH	1330	0	1413	11	0
31	RI	1136	0	1223	6	0
31	YI	1136	0	1223	8	0
32	RN	1104	0	1180	13	0
32	YN	1104	0	1180	12	0
33	RO	933	0	996	22	0
33	YO	933	0	996	15	0
34	RP	1145	0	1227	14	0
34	YP	1122	0	1205	17	0
35	RQ	1122	0	1178	24	0
35	YQ	1122	0	1179	20	0
36	RR	960	0	1021	11	0
36	YR	960	0	1021	17	0
37	RS	882	0	943	17	0
37	YS	882	0	943	11	0
38	RT	1141	0	1202	19	0
38	YT	1141	0	1202	18	0
39	RU	964	0	1021	14	0
39	YU	964	0	1021	10	0
40	RV	779	0	852	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
40	YV	779	0	852	3	0
41	RW	900	0	964	9	0
41	YW	900	0	964	6	0
42	RX	725	0	778	7	0
42	YX	725	0	778	6	0
43	RY	818	0	909	11	0
43	YY	818	0	909	8	0
44	RZ	1601	0	1630	22	0
44	YZ	1601	0	1630	24	0
45	R0	603	0	620	7	0
45	Y0	599	0	617	5	0
46	R1	763	0	848	9	0
46	Y1	729	0	802	7	0
47	R2	581	0	629	7	0
47	Y2	575	0	624	9	0
48	R3	469	0	518	10	0
48	Y3	469	0	518	5	0
49	R4	565	0	557	9	0
49	Y4	565	0	557	12	0
50	R5	459	0	476	7	0
50	Y5	459	0	476	8	0
51	R6	453	0	473	6	0
51	Y6	453	0	473	7	0
52	R7	409	0	454	2	0
52	Y7	418	0	467	4	0
53	R8	517	0	582	10	0
53	Y8	517	0	582	8	0
54	R9	307	0	335	4	0
54	Y9	307	0	335	6	0
55	QA	74	0	0	0	0
55	QC	1	0	0	0	0
55	QF	1	0	0	0	0
55	QH	1	0	0	0	0
55	QM	1	0	0	0	0
55	R0	1	0	0	0	0
55	R1	2	0	0	0	0
55	R8	1	0	0	0	0
55	RA	487	0	0	0	0
55	RB	6	0	0	0	0
55	RE	4	0	0	0	0
55	RF	2	0	0	0	0
55	RI	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
55	RN	1	0	0	0	0
55	RO	1	0	0	0	0
55	RP	1	0	0	0	0
55	RQ	2	0	0	0	0
55	RR	2	0	0	0	0
55	RT	1	0	0	0	0
55	RX	1	0	0	0	0
55	RY	1	0	0	0	0
55	XA	92	0	0	0	0
55	XE	1	0	0	0	0
55	XK	1	0	0	0	0
55	XL	2	0	0	0	0
55	XM	2	0	0	0	0
55	XN	1	0	0	0	0
55	XQ	1	0	0	0	0
55	XS	1	0	0	0	0
55	Y0	2	0	0	0	0
55	Y1	1	0	0	0	0
55	Y5	1	0	0	0	0
55	Y7	1	0	0	0	0
55	Y8	2	0	0	0	0
55	YA	542	0	0	0	0
55	YB	15	0	0	0	0
55	YD	3	0	0	0	0
55	YE	3	0	0	0	0
55	YO	1	0	0	0	0
55	YQ	3	0	0	0	0
55	YR	2	0	0	0	0
55	YX	2	0	0	0	0
56	QD	8	0	0	0	0
56	XD	8	0	0	0	0
57	QN	1	0	0	0	0
57	R4	1	0	0	0	0
57	R5	1	0	0	0	0
57	R6	1	0	0	0	0
57	R9	1	0	0	0	0
57	RY	1	0	0	0	0
57	XN	1	0	0	0	0
57	Y4	1	0	0	0	0
57	Y5	1	0	0	0	0
57	Y6	1	0	0	0	0
57	Y9	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
57	YY	1	0	0	0	0
All	All	289311	0	196538	2694	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 6.

All (2694) 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)
35:RQ:51:ARG:NH2	44:RZ:186:GLU:OE1	1.59	1.34
24:RA:2135:A:N6	24:RA:2156:G:H21	1.54	1.05
47:Y2:65:ASN:O	47:Y2:69:ARG:HG3	1.55	1.05
35:YQ:52:VAL:HG13	44:YZ:183:LEU:CD1	1.88	1.03
24:RA:2135:A:H62	24:RA:2156:G:N2	1.57	1.02
1:QA:410:G:H21	1:QA:432:A:H62	1.07	1.01
1:XA:438:G:H21	1:XA:496:A:H62	1.00	1.00
1:XA:1357:A:H61	1:XA:1365:G:H1	1.12	0.96
1:QA:1009:G:H1	1:QA:1020:U:H3	1.13	0.95
35:YQ:52:VAL:HG13	44:YZ:183:LEU:HD11	1.48	0.94
24:YA:1359:A:N6	24:YA:1372:U:H3	1.64	0.93
35:RQ:52:VAL:HG13	44:RZ:183:LEU:HD22	1.50	0.92
1:XA:452:A:N6	1:XA:480:U:H3	1.68	0.90
24:YA:2099:U:H3	24:YA:2190:G:H1	1.08	0.90
1:XA:992:U:H3	1:XA:1044:A:H62	1.17	0.89
24:RA:2245:U:H5'	24:RA:2246:G:H5'	1.55	0.89
1:XA:452:A:H62	1:XA:480:U:H3	0.89	0.87
1:XA:950:U:H3	1:XA:1231:G:H1	1.23	0.86
1:XA:438:G:N2	1:XA:496:A:H62	1.73	0.86
1:XA:358:U:H3'	1:XA:359:U:C6	2.10	0.86
1:XA:438:G:H21	1:XA:496:A:N6	1.75	0.85
24:RA:2808:U:C2	24:RA:2892:A:N6	2.45	0.84
35:YQ:52:VAL:HG13	44:YZ:183:LEU:HD13	1.60	0.82
1:XA:359:U:H2'	1:XA:360:A:H8	1.46	0.81
24:YA:2089:U:H3	24:YA:2230:G:H1	1.29	0.80
24:YA:1607:C:N4	24:YA:1622:G:OP2	2.16	0.79
1:XA:152:A:H62	1:XA:169:C:N4	1.80	0.79
24:RA:530:G:O2'	24:RA:532:A:N7	2.17	0.78
4:QD:18:LYS:NZ	4:QD:31:CYS:SG	2.55	0.77
50:Y5:59:GLU:N	50:Y5:59:GLU:OE1	2.16	0.77
6:QF:72:VAL:O	6:QF:75:LEU:HB3	1.82	0.77
24:YA:2096:U:H3	24:YA:2193:G:H1	1.32	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:1359:A:H62	24:YA:1372:U:H3	0.80	0.76
1:QA:686:U:H1'	11:QK:42:TRP:HE1	1.50	0.76
24:YA:839:U:H3	24:YA:939:G:H1	1.33	0.75
1:XA:686:U:H1'	11:XK:42:TRP:HE1	1.51	0.75
24:RA:139:G:N2	24:RA:141:A:C6	2.55	0.74
24:RA:1264:G:OP1	50:R5:19:ARG:NH2	2.20	0.74
1:QA:410:G:N2	1:QA:432:A:H62	1.82	0.74
1:XA:789:U:H5'	23:XX:14:A:H2	1.53	0.74
24:RA:139:G:N2	24:RA:141:A:N6	2.37	0.72
24:RA:676:A:H8	24:RA:2069:G:H21	1.36	0.72
1:QA:1086:U:H3	1:QA:1099:G:H22	1.38	0.72
1:XA:359:U:H2'	1:XA:360:A:C8	2.24	0.72
24:YA:676:A:H8	24:YA:2069:G:H21	1.38	0.72
24:RA:137(A):G:O6	24:RA:139:G:O2'	2.08	0.71
1:XA:1357:A:N6	1:XA:1365:G:H1	1.85	0.71
1:XA:1305:G:N2	1:XA:1332:A:OP2	2.23	0.71
1:QA:1023:G:H3'	1:QA:1024:G:H5''	1.73	0.71
1:XA:152:A:N6	1:XA:169:C:H42	1.89	0.71
35:YQ:52:VAL:CG1	44:YZ:183:LEU:CD1	2.69	0.70
24:YA:993:G:OP1	39:YU:50:ARG:NH2	2.24	0.70
1:QA:1066:C:H42	1:QA:1191:A:N6	1.88	0.70
24:RA:1038:C:H42	24:RA:1117:G:H1	1.38	0.70
24:RA:141:A:H8	24:RA:1595:G:H21	1.38	0.70
24:YA:1055:G:H1	24:YA:1104:C:H42	1.39	0.70
6:QF:75:LEU:O	6:QF:78:GLU:HB3	1.91	0.70
35:RQ:51:ARG:CZ	44:RZ:186:GLU:OE1	2.39	0.70
1:XA:1266:G:N2	1:XA:1269:A:OP2	2.24	0.69
24:RA:27:G:N2	24:RA:513:A:OP2	2.25	0.69
4:XD:10:ARG:HG3	4:XD:40:PRO:HG3	1.74	0.69
24:YA:1165:U:H3	24:YA:1184:G:H1	1.39	0.69
4:QD:57:ARG:NH2	4:QD:205:GLU:OE2	2.25	0.69
1:XA:358:U:H3'	1:XA:359:U:H6	1.54	0.69
1:XA:410:G:H3'	4:XD:25:ARG:HH12	1.59	0.68
35:YQ:52:VAL:CG1	44:YZ:183:LEU:HD13	2.23	0.68
1:XA:439:A:OP2	1:XA:493:G:N1	2.22	0.68
24:RA:1607:C:N4	24:RA:1622:G:OP2	2.26	0.68
24:RA:994:C:OP1	39:RU:53:ARG:NH2	2.26	0.68
24:RA:259:G:HO2'	24:RA:621:A:HO2'	1.42	0.68
1:XA:954:G:H21	1:XA:1227:A:H62	1.41	0.68
24:YA:1728:G:H8	24:YA:1732:A:H62	1.41	0.68
1:XA:827:U:O2	1:XA:874:G:N2	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:2052:G:H4'	27:RE:143:ASN:H	1.59	0.67
1:XA:674:G:H2'	1:XA:675:A:H8	1.60	0.67
1:QA:687:A:N6	1:QA:703:G:N2	2.42	0.67
24:RA:1359:A:H62	24:RA:1372:U:H3	1.40	0.67
1:QA:1005:A:OP2	1:QA:1006:C:N4	2.28	0.67
24:RA:307:G:H22	24:RA:310:A:P	2.17	0.67
24:YA:1509:C:H3'	24:YA:1510:A:H5''	1.77	0.67
29:YG:161:THR:HG22	29:YG:163:ALA:H	1.60	0.67
1:XA:1316:G:N2	1:XA:1319:A:OP2	2.26	0.67
13:QM:3:ARG:HE	13:QM:9:ILE:HG21	1.58	0.67
4:XD:105:VAL:HG11	4:XD:126:ILE:HD13	1.76	0.67
24:YA:2304:G:H22	24:YA:2312:U:H3	1.42	0.67
4:QD:31:CYS:O	4:QD:33:MET:N	2.27	0.67
24:RA:1485:G:H1	24:RA:1504:C:H42	1.43	0.66
24:YA:2030:A:H4'	24:YA:2031:A:H8	1.61	0.66
1:QA:1304:G:OP1	21:QU:2:GLY:N	2.29	0.66
1:QA:1306:A:N6	1:QA:1331:G:O2'	2.29	0.66
1:XA:811:C:O2'	1:XA:901:A:N1	2.28	0.66
3:QC:182:ILE:HA	3:QC:202:ILE:O	1.95	0.66
25:RB:80:U:H2'	25:RB:81:G:H21	1.60	0.66
29:RG:41:GLN:HG3	29:RG:60:LEU:HD11	1.78	0.66
1:XA:618:C:H5'	1:XA:619:U:H5''	1.76	0.66
24:RA:300:A:OP1	43:RY:86:ARG:NH2	2.29	0.66
9:XI:112:LYS:HA	9:XI:119:ALA:HB2	1.78	0.66
1:QA:662:G:O2'	1:QA:836:G:OP1	2.14	0.66
24:YA:2010:G:H5''	41:YW:42:ARG:HB2	1.76	0.66
1:XA:664:G:H22	1:XA:741:G:H1	1.43	0.66
1:QA:789:U:H5'	23:QX:14:A:C2	2.31	0.66
1:QA:1066:C:N4	1:QA:1191:A:N6	2.43	0.65
1:QA:1254:C:OP2	10:QJ:43:ARG:NH2	2.30	0.65
24:RA:572:A:H61	24:RA:2029:G:H21	1.44	0.65
24:YA:2355:C:H1'	45:Y0:39:ARG:HH21	1.61	0.65
24:RA:1102:C:H2'	24:RA:1103:A:H8	1.61	0.65
29:RG:47:LYS:HD2	29:RG:81:LYS:HB2	1.78	0.65
24:YA:1557:C:OP2	24:YA:1558:A:O2'	2.14	0.65
1:XA:544:G:OP1	4:XD:59:ARG:NH2	2.29	0.65
2:XB:69:LEU:HB3	2:XB:162:ILE:HG22	1.78	0.65
1:XA:1251:A:N3	1:XA:1369:C:O2'	2.29	0.65
1:QA:410:G:H21	1:QA:432:A:N6	1.88	0.65
1:QA:316:G:OP2	1:QA:351:G:O2'	2.15	0.64
24:RA:571:A:H5'	24:RA:2030:A:H62	1.60	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:XP:53:VAL:HG13	16:XP:79:VAL:HG12	1.79	0.64
44:YZ:4:ARG:NH1	44:YZ:60:GLU:OE2	2.30	0.64
24:RA:2788:C:O2'	24:RA:2809:A:N3	2.29	0.64
24:YA:1568:G:H5''	26:YD:61:LEU:HD23	1.79	0.64
24:RA:2808:U:N3	24:RA:2892:A:N6	2.45	0.64
54:R9:27:CYS:SG	54:R9:28:GLU:N	2.70	0.64
4:QD:32:ALA:O	4:QD:36:ARG:N	2.31	0.64
24:RA:993:G:OP1	39:RU:50:ARG:NH2	2.30	0.64
1:XA:971:G:H5''	1:XA:972:C:H5''	1.79	0.64
25:YB:8:U:H3	25:YB:112:G:H1	1.43	0.64
24:YA:574:C:N3	27:YE:145:LYS:NZ	2.43	0.64
25:RB:42:C:H5''	29:RG:69:ALA:HB2	1.79	0.64
35:RQ:52:VAL:HG13	44:RZ:183:LEU:CD2	2.25	0.64
24:YA:67:U:H3	24:YA:74:A:H2	1.45	0.64
24:RA:65:C:O2'	24:RA:456:C:N3	2.30	0.64
4:XD:4:TYR:OH	4:XD:10:ARG:NH2	2.31	0.64
1:QA:1119:C:OP2	9:QI:9:ARG:NH2	2.32	0.63
1:QA:410:G:OP2	4:QD:25:ARG:HD2	1.98	0.63
1:QA:673:G:H2'	1:QA:674:G:C8	2.33	0.63
24:RA:2502:G:H5''	24:RA:2503:A:H5''	1.80	0.63
27:RE:78:LEU:HG	27:RE:79:ARG:HG2	1.81	0.63
24:YA:994:C:OP1	39:YU:53:ARG:NH2	2.31	0.63
24:YA:2245:U:H5'	24:YA:2246:G:H5'	1.80	0.63
30:YH:3:ARG:HH21	30:YH:5:GLY:H	1.44	0.63
9:QI:10:ARG:O	9:QI:13:ALA:HB3	1.99	0.63
13:XM:77:ASN:HA	13:XM:80:ARG:HD2	1.81	0.63
14:QN:27:CYS:SG	14:QN:28:GLY:N	2.71	0.63
24:RA:1510:A:O2'	24:RA:1512:G:N7	2.31	0.63
1:QA:1077:G:N2	1:QA:1080:A:OP2	2.32	0.63
1:XA:266:G:H5'	1:XA:268:C:H41	1.64	0.63
1:XA:1360:A:OP2	14:YN:35:ARG:NH2	2.32	0.63
13:XM:15:VAL:HB	13:XM:45:VAL:HB	1.80	0.63
39:YU:50:ARG:O	39:YU:54:LYS:NZ	2.32	0.62
1:QA:1349:A:H62	1:QA:1373:G:H21	1.47	0.62
24:RA:11:G:H22	24:RA:2627:G:H5''	1.63	0.62
1:XA:358:U:O2	1:XA:358:U:H2'	1.99	0.62
5:QE:12:LEU:HB3	5:QE:31:LEU:HB3	1.80	0.62
24:RA:2438:U:O3'	24:RA:2439:A:H3'	2.00	0.62
1:QA:261:U:OP2	20:QT:79:ARG:NH2	2.33	0.62
24:RA:1041:C:H42	24:RA:1114:G:H1	1.46	0.62
30:RH:152:ARG:HG2	30:RH:153:LYS:HD2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:1094:U:OP1	24:RA:1096:A:N6	2.33	0.62
1:XA:152:A:N6	1:XA:169:C:N4	2.44	0.62
1:XA:662:G:O2'	1:XA:836:G:OP1	2.17	0.62
1:XA:346:G:H1'	1:XA:347:G:H5'	1.82	0.62
1:XA:401:C:O2'	1:XA:621:A:N3	2.32	0.62
24:YA:458:G:N2	24:YA:470:A:OP2	2.33	0.62
44:YZ:61:LEU:HB2	44:YZ:65:GLN:HB2	1.81	0.62
25:RB:8:U:H3	25:RB:112:G:H1	1.47	0.62
1:XA:358:U:C6	1:XA:358:U:C5'	2.82	0.62
24:YA:2052:G:H4'	27:YE:143:ASN:H	1.63	0.62
1:XA:1298:C:OP2	7:XG:114:ARG:NH1	2.32	0.62
24:RA:307:G:N2	24:RA:309:G:H3'	2.14	0.61
24:YA:551:G:H5'	24:YA:1220:A:H1'	1.81	0.61
24:RA:65:C:H1'	24:RA:456:C:H42	1.65	0.61
1:QA:1373:G:H5'	7:QG:36:LYS:HG2	1.81	0.61
1:XA:1347:G:N7	9:XI:10:ARG:NH2	2.48	0.61
25:YB:33:G:H5'	29:YG:2:PRO:HG3	1.82	0.61
24:RA:1980:G:O2'	24:RA:1982:C:OP2	2.17	0.61
1:XA:1347:G:N2	1:XA:1374:A:OP2	2.33	0.61
19:XS:19:VAL:HG21	19:XS:44:MET:HG2	1.82	0.61
24:YA:1980:G:O2'	24:YA:1982:C:OP2	2.17	0.61
24:YA:2140:C:H2'	24:YA:2141:G:H8	1.64	0.61
24:YA:2680:C:H5'	27:YE:189:PRO:HA	1.83	0.61
1:QA:1066:C:N4	1:QA:1191:A:H62	1.98	0.61
24:RA:86:C:H4'	24:RA:104:U:H1'	1.83	0.61
24:YA:1939:U:OP1	24:YA:2604:U:O2'	2.16	0.61
44:YZ:100:VAL:HG21	44:YZ:134:PRO:HG2	1.82	0.61
1:QA:664:G:H22	1:QA:741:G:H1	1.47	0.61
1:QA:1119:C:H2'	1:QA:1120:G:H8	1.65	0.61
34:RP:49:ARG:HH11	53:R8:58:ILE:HG22	1.66	0.61
46:R1:83:GLU:HG2	46:R1:85:LEU:H	1.65	0.61
3:XC:20:SER:HB2	3:XC:40:ARG:HH22	1.64	0.61
24:YA:1800:C:OP2	26:YD:183:ARG:NH1	2.29	0.61
1:QA:1200:C:O2'	1:QA:1201:A:OP2	2.17	0.61
1:QA:1347:G:N2	1:QA:1374:A:OP2	2.30	0.61
24:RA:1939:U:OP1	24:RA:2604:U:O2'	2.18	0.61
45:R0:32:ARG:H	45:R0:35:ASN:ND2	1.98	0.61
49:R4:16:CYS:SG	49:R4:17:GLY:N	2.73	0.61
11:XK:17:GLY:HA2	11:XK:35:PRO:HD3	1.83	0.61
24:YA:1266:G:O5'	41:YW:15:ARG:NH2	2.33	0.61
54:Y9:27:CYS:SG	54:Y9:28:GLU:N	2.74	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:XA:152:A:H62	1:XA:169:C:H42	1.42	0.61
24:YA:1359:A:N7	24:YA:1372:U:O4	2.33	0.61
4:QD:20:TYR:OH	6:XF:15:ASP:HA	2.00	0.61
20:QT:44:ALA:HB2	20:QT:88:VAL:HG23	1.82	0.61
1:XA:359:U:H3'	1:XA:359:U:OP2	2.01	0.61
3:XC:24:ALA:HB1	3:XC:28:GLN:HG3	1.82	0.61
4:XD:121:VAL:HG22	4:XD:126:ILE:HD12	1.82	0.61
24:YA:833:U:O2	34:YP:55:ARG:NH2	2.34	0.61
46:Y1:83:GLU:HG2	46:Y1:85:LEU:H	1.64	0.61
1:QA:954:G:H21	1:QA:1227:A:H62	1.48	0.60
24:RA:958:U:OP2	35:RQ:14:ARG:NH1	2.34	0.60
24:RA:1678:G:N2	24:RA:1990:C:O2	2.34	0.60
6:XF:99:ALA:HB1	18:XR:23:LYS:HE3	1.82	0.60
1:QA:278:G:OP2	17:QQ:92:ARG:NH2	2.34	0.60
24:RA:270(N):G:N3	31:RI:50:ARG:NH1	2.49	0.60
1:XA:1129:C:O2	1:XA:1132:C:N4	2.34	0.60
9:QI:128:ARG:NH2	22:QV:33:U:OP2	2.33	0.60
29:RG:37:VAL:HB	29:RG:94:LEU:HB2	1.82	0.60
1:XA:745:C:H2'	1:XA:746:A:H8	1.66	0.60
1:XA:12:U:H3	1:XA:22:G:H1	1.48	0.60
1:XA:407:G:H5''	4:XD:115:ARG:HB3	1.83	0.60
1:XA:745:C:OP1	1:XA:851:G:O2'	2.19	0.60
9:XI:9:ARG:HG2	9:XI:14:VAL:HG12	1.82	0.60
47:Y2:69:ARG:NH1	47:Y2:69:ARG:HB2	2.16	0.60
24:RA:2584:U:H2'	24:RA:2585:U:H2'	1.84	0.60
28:RF:143:ALA:HB1	28:RF:148:LEU:HB2	1.83	0.60
1:QA:1326:C:OP1	21:QU:12:LYS:NZ	2.35	0.60
24:RA:1026:U:H4'	24:RA:1027:A:OP1	2.01	0.60
1:XA:1321:C:H5''	1:XA:1322:C:H2'	1.83	0.60
25:YB:80:U:H2'	25:YB:81:G:H21	1.66	0.60
26:YD:13:ARG:NH1	26:YD:16:MET:SD	2.75	0.60
49:Y4:56:VAL:HB	49:Y4:58:ARG:HG3	1.84	0.60
1:QA:674:G:H2'	1:QA:675:A:H8	1.66	0.60
35:RQ:88:GLY:HA2	35:RQ:90:VAL:HG23	1.83	0.60
44:RZ:10:ARG:HH22	44:RZ:26:GLY:H	1.48	0.60
17:XQ:66:SER:O	17:XQ:70:ARG:NH1	2.34	0.60
24:YA:180:G:N2	24:YA:215:G:O6	2.35	0.60
30:YH:47:GLU:HG3	30:YH:47:GLU:O	2.02	0.60
29:RG:18:GLU:HG3	29:RG:22:ARG:HH12	1.66	0.60
1:XA:978:A:OP2	1:XA:1362(A):C:N4	2.35	0.60
1:XA:1356:G:H2'	1:XA:1357:A:C8	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:630:G:OP1	53:R8:46:ARG:NH1	2.35	0.60
1:XA:34:C:H2'	1:XA:35:G:H8	1.67	0.60
24:RA:1066:U:O2'	24:RA:1068:G:OP2	2.15	0.59
24:RA:1155:A:H5''	39:RU:55:ARG:HD3	1.84	0.59
24:RA:856:C:O2'	24:RA:857:C:OP1	2.19	0.59
27:RE:5:LEU:HG	27:RE:49:LEU:HD23	1.84	0.59
1:XA:1157:A:N7	1:XA:1178:G:N2	2.50	0.59
19:XS:68:GLY:H	49:Y4:61:ARG:HH11	1.49	0.59
24:YA:2046:G:H5'	50:Y5:19:ARG:HG3	1.82	0.59
24:YA:2646:C:OP2	24:YA:2732:G:O2'	2.20	0.59
24:RA:956:G:OP2	35:RQ:14:ARG:NH2	2.33	0.59
12:XL:114:LYS:O	12:XL:117:ARG:NH1	2.36	0.59
1:QA:1151:A:O2'	10:QJ:70:ARG:NH2	2.36	0.59
1:QA:1343:G:H4'	9:QI:122:ALA:HB3	1.85	0.59
1:XA:689:C:H3'	1:XA:690:G:H21	1.67	0.59
1:XA:995:C:H2'	1:XA:996:A:H8	1.68	0.59
27:YE:10:GLY:HA3	38:YT:8:LYS:HD3	1.83	0.59
24:RA:517:C:OP1	50:R5:16:ARG:NH2	2.35	0.59
25:RB:44:G:H1'	25:RB:47:C:H42	1.68	0.59
3:XC:58:GLU:HB2	3:XC:65:ALA:HB3	1.83	0.59
24:YA:270(N):G:N3	31:YI:50:ARG:NH1	2.48	0.59
30:YH:164:TYR:HB2	30:YH:167:GLU:HB2	1.84	0.59
24:RA:24:G:O2'	41:RW:78:GLU:O	2.21	0.59
39:RU:95:LEU:HD13	40:RV:4:ILE:HD12	1.83	0.59
3:XC:17:ASP:O	3:XC:54:ARG:NH2	2.36	0.59
24:RA:2701:C:H3'	24:RA:2702:U:H5''	1.84	0.59
1:XA:452:A:N7	1:XA:480:U:O4	2.36	0.59
17:QQ:66:SER:O	17:QQ:70:ARG:NH1	2.35	0.59
24:RA:125:G:OP1	52:R7:14:LYS:NZ	2.34	0.59
24:RA:918:A:N3	25:RB:80:U:O2'	2.32	0.59
26:RD:13:ARG:NH1	26:RD:16:MET:SD	2.76	0.59
1:XA:1446:A:O2'	1:XA:1447:G:O5'	2.21	0.59
1:QA:262:A:H5'	20:QT:74:LYS:HG3	1.84	0.59
1:QA:689:C:H3'	1:QA:690:G:H21	1.68	0.59
29:RG:29:TRP:O	29:RG:33:ARG:NH1	2.36	0.59
50:R5:16:ARG:NH1	50:R5:17:ASP:OD1	2.36	0.59
1:XA:1422:G:H5''	33:YO:48:PRO:HB3	1.85	0.59
28:RF:198:ALA:HA	28:RF:201:VAL:HG22	1.83	0.58
1:QA:59:A:H5''	1:QA:387:U:H5''	1.85	0.58
1:QA:266:G:O2'	1:QA:267:C:OP2	2.16	0.58
1:QA:437:U:H3	1:QA:495:A:H62	1.49	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:789:U:H5'	23:QX:14:A:H2	1.68	0.58
14:QN:39:LEU:HB2	14:QN:44:LEU:HD23	1.83	0.58
24:RA:1779:U:OP2	24:RA:1784:A:N6	2.27	0.58
1:XA:516:U:O2'	1:XA:519:C:N3	2.36	0.58
1:XA:790:A:OP1	22:XV:38:A:O2'	2.21	0.58
24:YA:1817:G:OP1	26:YD:88:ARG:NH2	2.36	0.58
1:QA:278:G:N7	17:QQ:92:ARG:NH1	2.51	0.58
1:QA:578:C:O2'	1:QA:728:A:N3	2.30	0.58
1:QA:1251:A:N3	1:QA:1369:C:O2'	2.35	0.58
24:RA:2285:C:OP2	51:R6:6:ARG:NH1	2.36	0.58
34:RP:58:THR:O	34:RP:61:ARG:NH2	2.36	0.58
1:XA:261:U:OP2	20:XT:79:ARG:NH2	2.37	0.58
1:XA:1432:G:OP1	38:YT:108:ARG:N	2.36	0.58
4:QD:81:GLU:OE2	4:QD:139:ARG:NH1	2.37	0.58
24:RA:1693:U:O2'	26:RD:14:ARG:NH2	2.36	0.58
1:XA:22:G:H4'	1:XA:885:G:C8	2.38	0.58
1:XA:28:G:O2'	1:XA:296:U:OP1	2.21	0.58
1:XA:64:G:H5''	1:XA:65:U:H5'	1.86	0.58
24:YA:1652:A:OP1	36:YR:8:ARG:NH1	2.31	0.58
24:YA:2115:G:N2	24:YA:2164:C:OP2	2.36	0.58
1:XA:673:G:H2'	1:XA:674:G:C8	2.38	0.58
1:XA:769:G:H4'	1:XA:1513:A:H4'	1.86	0.58
9:XI:13:ALA:HB2	9:XI:68:GLY:HA3	1.85	0.58
24:YA:958:U:OP2	35:YQ:14:ARG:NH1	2.37	0.58
4:QD:153:ARG:NH1	4:QD:181:MET:HB2	2.17	0.58
24:RA:299:A:H5'	43:RY:86:ARG:HH21	1.69	0.58
1:XA:624:C:H2'	1:XA:625:G:H8	1.69	0.58
1:QA:1329:A:N7	21:QU:7:ARG:NH2	2.44	0.58
24:RA:74:A:H4'	24:RA:75:G:O5'	2.03	0.58
24:RA:2285:C:OP1	51:R6:29:ASN:ND2	2.36	0.58
24:RA:2784:C:O2'	27:RE:37:ARG:NH1	2.36	0.58
30:RH:164:TYR:HB2	30:RH:167:GLU:HB2	1.85	0.58
1:XA:1243:C:OP2	21:XU:10:ARG:NH2	2.35	0.58
24:RA:288:C:H2'	24:RA:289:A:H8	1.68	0.58
24:RA:589:C:H2'	24:RA:590:A:C8	2.39	0.58
24:RA:2421:G:N7	53:R8:31:HIS:HE1	2.02	0.58
24:RA:2680:C:H5'	27:RE:189:PRO:HA	1.86	0.58
25:RB:37:C:O2	37:RS:95:HIS:NE2	2.36	0.58
1:XA:714:G:H2'	1:XA:715:A:C8	2.39	0.58
1:QA:687:A:N6	1:QA:703:G:C2	2.71	0.58
24:RA:569:U:O2'	24:RA:983:A:N1	2.35	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:581:C:H2'	24:YA:582:G:H8	1.69	0.58
24:YA:2365:G:N7	53:Y8:39:LYS:NZ	2.52	0.58
4:XD:105:VAL:HG23	4:XD:117:ALA:HB1	1.86	0.57
5:XE:105:VAL:HG21	5:XE:128:PRO:HB3	1.85	0.57
29:YG:38:VAL:HG22	29:YG:93:THR:HG23	1.85	0.57
7:QG:58:PRO:HA	7:QG:61:VAL:HG12	1.85	0.57
36:RR:86:ARG:NH2	36:RR:118:GLU:OXT	2.36	0.57
1:XA:358:U:C6	1:XA:358:U:H5''	2.39	0.57
46:Y1:51:VAL:HG11	46:Y1:74:VAL:HG21	1.86	0.57
43:RY:47:LYS:NZ	43:RY:48:ALA:O	2.38	0.57
1:XA:578:C:O2'	1:XA:728:A:N3	2.32	0.57
24:YA:2836:U:H2'	24:YA:2837:G:C8	2.39	0.57
1:QA:1305:G:N2	1:QA:1332:A:OP2	2.37	0.57
4:QD:100:ARG:NH2	4:QD:136:PRO:O	2.38	0.57
1:XA:1414:U:H2'	1:XA:1415:G:H8	1.69	0.57
54:Y9:25:VAL:HB	54:Y9:34:GLN:HB2	1.87	0.57
24:RA:527:C:N4	24:RA:2779:U:OP2	2.35	0.57
1:XA:1095:U:OP2	1:XA:1108:G:N1	2.36	0.57
24:YA:517:C:OP1	50:Y5:16:ARG:NH2	2.36	0.57
43:YY:47:LYS:NZ	43:YY:48:ALA:O	2.36	0.57
1:QA:501:C:H2'	1:QA:502:G:H8	1.69	0.57
1:QA:1071:C:H2'	1:QA:1072:G:H8	1.70	0.57
11:QK:86:GLY:O	11:QK:91:ARG:NH1	2.38	0.57
24:RA:2660:A:N7	30:RH:175:LYS:NZ	2.52	0.57
18:XR:32:ARG:HA	18:XR:69:THR:HG21	1.85	0.57
19:XS:16:LEU:HD21	49:Y4:67:TYR:HB2	1.86	0.57
24:YA:2328:A:H2'	24:YA:2329:G:C8	2.40	0.57
29:YG:37:VAL:HG22	29:YG:159:VAL:HG12	1.86	0.57
9:QI:26:VAL:HG22	9:QI:61:ALA:HB3	1.86	0.57
20:QT:85:MET:HA	20:QT:88:VAL:HG12	1.87	0.57
7:XG:30:ILE:HG23	7:XG:39:ALA:HB1	1.87	0.57
10:XJ:32:ALA:HB1	10:XJ:33:GLN:HG3	1.86	0.57
24:YA:28:A:N6	24:YA:512:G:O2'	2.38	0.57
24:YA:2405:G:H5'	34:YP:75:ILE:HD13	1.86	0.57
33:YO:64:ARG:HB2	33:YO:83:ALA:HB3	1.86	0.57
24:RA:252:G:OP2	34:RP:50:ARG:NH1	2.38	0.57
12:XL:39:VAL:HB	12:XL:57:LYS:HB2	1.87	0.57
24:RA:1859:A:N6	24:RA:1883:G:O2'	2.38	0.57
41:RW:92:ARG:NH1	41:RW:94:ASP:OD1	2.37	0.57
1:QA:45:U:OP1	1:QA:307:C:O2'	2.19	0.57
1:QA:1080:A:H5'	5:QE:16:THR:HG21	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:QT:51:GLU:HA	20:QT:54:LYS:HG2	1.85	0.57
24:RA:1952:A:N3	24:RA:2560:C:O2'	2.29	0.57
39:RU:50:ARG:O	39:RU:54:LYS:NZ	2.36	0.57
8:XH:7:ALA:HB2	8:XH:85:ARG:HD3	1.85	0.57
1:QA:882:C:OP2	12:QL:13:LYS:NZ	2.38	0.56
2:QB:60:ASP:O	2:QB:64:ARG:NH1	2.38	0.56
9:QI:9:ARG:HG2	9:QI:14:VAL:HG12	1.87	0.56
24:RA:99:U:O4	43:RY:8:LYS:NZ	2.38	0.56
24:RA:299:A:N3	24:RA:319:C:O2'	2.36	0.56
1:XA:358:U:O2	1:XA:358:U:C2'	2.53	0.56
1:XA:1522:U:H2'	1:XA:1523:G:H8	1.70	0.56
24:YA:2688:U:OP1	24:YA:2713:A:N6	2.38	0.56
53:Y8:6:THR:HG22	53:Y8:63:PRO:HD2	1.87	0.56
1:QA:346:G:H1'	1:QA:347:G:H5'	1.87	0.56
1:QA:1222:G:OP1	19:QS:78:ARG:NH1	2.39	0.56
54:R9:25:VAL:HB	54:R9:34:GLN:HB2	1.87	0.56
14:XN:26:ARG:NH1	14:XN:43:CYS:SG	2.78	0.56
24:YA:987:G:O2'	24:YA:1000:A:N3	2.36	0.56
1:QA:838:G:H1	1:QA:848:C:H42	1.54	0.56
1:QA:953:G:N7	13:QM:104:ARG:NH2	2.53	0.56
1:QA:1243:C:OP2	21:QU:10:ARG:NH2	2.38	0.56
24:RA:1435:G:N2	24:RA:1477:A:O2'	2.37	0.56
24:RA:1798:U:O2'	24:RA:1802:A:N3	2.36	0.56
24:RA:2010:G:H5''	41:RW:42:ARG:HB2	1.86	0.56
1:XA:1502:A:H2	1:XA:1505:G:H1	1.53	0.56
2:XB:67:THR:HG21	2:XB:155:LEU:HG	1.87	0.56
24:YA:18:C:O2'	24:YA:553:U:OP1	2.21	0.56
24:YA:589:C:H2'	24:YA:590:A:H8	1.71	0.56
1:QA:1227:A:OP1	19:QS:80:TYR:OH	2.23	0.56
24:RA:2441:C:OP2	24:RA:2586:C:O2'	2.23	0.56
9:XI:15:ALA:HA	9:XI:65:VAL:HG22	1.86	0.56
24:YA:1434:A:H61	24:YA:1558:A:H62	1.51	0.56
1:QA:687:A:C6	1:QA:703:G:N2	2.73	0.56
1:QA:1347:G:O2'	1:QA:1348:U:OP2	2.22	0.56
1:XA:45:U:OP1	1:XA:307:C:O2'	2.19	0.56
2:XB:83:MET:O	2:XB:87:ARG:N	2.38	0.56
32:YN:6:PRO:HG3	32:YN:41:ASP:HB2	1.86	0.56
3:QC:58:GLU:HB3	3:QC:65:ALA:HB3	1.88	0.56
26:RD:153:ALA:O	26:RD:157:ARG:NH1	2.38	0.56
1:XA:553:A:H5''	12:XL:24:VAL:HG21	1.88	0.56
1:XA:1494:G:HO2'	24:YA:1912:A:HO2'	1.48	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:1689:A:H62	24:YA:1698:A:H2	1.52	0.56
30:YH:101:ARG:NH1	30:YH:121:ILE:O	2.38	0.56
47:Y2:28:LYS:HD2	47:Y2:53:LEU:HD11	1.87	0.56
49:Y4:34:GLU:HG2	49:Y4:35:VAL:HG22	1.87	0.56
1:QA:1414:U:H2'	1:QA:1415:G:H8	1.70	0.56
11:QK:79:SER:HB2	11:QK:106:LYS:HD2	1.88	0.56
3:XC:18:TRP:HB3	3:XC:20:SER:H	1.71	0.56
24:YA:1479:G:N7	24:YA:1510:A:N6	2.54	0.56
32:YN:96:GLU:HB2	32:YN:122:VAL:HG12	1.88	0.56
33:YO:107:ARG:HD3	33:YO:115:VAL:HG21	1.87	0.56
27:RE:7:VAL:HG13	27:RE:51:PHE:HE2	1.70	0.56
1:XA:356:A:O2'	1:XA:367:U:O2'	2.19	0.56
1:XA:993:G:H2'	1:XA:995:C:H41	1.69	0.56
24:YA:617:G:OP1	28:YF:40:GLN:NE2	2.38	0.56
27:YE:36:ARG:HG2	27:YE:47:VAL:HG12	1.88	0.56
1:QA:501:C:OP1	12:QL:117:ARG:NH2	2.39	0.56
1:QA:1141:C:H2'	1:QA:1142:G:H8	1.70	0.56
24:RA:2126:A:H4'	24:RA:2127:G:O5'	2.06	0.56
24:RA:2848:G:O2'	24:RA:2867:G:N2	2.36	0.56
49:R4:51:ASP:HB2	49:R4:53:GLU:HB2	1.88	0.56
25:YB:37:C:O2	37:YS:95:HIS:NE2	2.39	0.56
8:QH:29:SER:HB3	8:QH:32:LYS:HG3	1.88	0.56
14:QN:44:LEU:HA	14:QN:47:LEU:HB2	1.88	0.56
24:RA:265:A:N6	24:RA:427:U:O2'	2.39	0.56
3:XC:131:ARG:NH1	3:XC:166:GLU:OE1	2.39	0.56
24:YA:1645:G:H5''	24:YA:1646:C:H5'	1.88	0.56
1:QA:1422:G:O3'	33:RO:49:ARG:NH1	2.40	0.55
38:RT:124:ASP:O	38:RT:128:GLU:N	2.39	0.55
1:XA:1060:C:H2'	1:XA:1061:G:H8	1.71	0.55
1:XA:1499:A:H1'	1:XA:1520:G:H5'	1.88	0.55
1:QA:677:U:O2	1:QA:777:A:O2'	2.23	0.55
24:RA:1942:C:OP2	24:RA:1943:U:O2'	2.18	0.55
29:RG:11:TYR:OH	29:RG:16:ARG:NH1	2.38	0.55
14:XN:44:LEU:HA	14:XN:47:LEU:HB2	1.87	0.55
1:QA:544:G:OP1	4:QD:59:ARG:NH2	2.38	0.55
8:QH:106:GLY:O	8:QH:122:ARG:NH2	2.38	0.55
47:R2:18:PRO:HA	47:R2:21:LEU:HB2	1.88	0.55
1:XA:789:U:H5'	23:XX:14:A:C2	2.38	0.55
24:YA:2199:A:N1	24:YA:2226:C:N4	2.49	0.55
1:QA:1321:C:O2	19:QS:36:ARG:NH2	2.39	0.55
2:QB:69:LEU:HB3	2:QB:162:ILE:HG22	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:1309:G:HO2'	24:RA:1611:C:HO2'	1.53	0.55
29:RG:7:LEU:HA	29:RG:10:LYS:HB3	1.89	0.55
49:R4:61:ARG:HH11	49:R4:62:ARG:HA	1.71	0.55
10:XJ:5:ARG:N	10:XJ:99:LYS:O	2.39	0.55
24:YA:1332:G:N2	24:YA:1609:A:HO2'	2.05	0.55
4:QD:62:GLN:HE22	4:QD:65:ARG:HH21	1.54	0.55
24:RA:2636:U:OP1	27:RE:80:GLU:N	2.37	0.55
24:YA:414:C:O2	24:YA:1864:U:O2'	2.23	0.55
24:YA:1243:G:O2'	34:YP:7:ARG:NH2	2.39	0.55
28:YF:132:VAL:HG13	28:YF:133:ASN:HB2	1.88	0.55
1:QA:119:A:H4'	1:QA:120:A:O5'	2.06	0.55
1:QA:714:G:H2'	1:QA:715:A:C8	2.42	0.55
1:QA:1522:U:H2'	1:QA:1523:G:H8	1.71	0.55
10:QJ:3:LYS:N	10:QJ:74:ILE:O	2.39	0.55
10:QJ:78:ASN:HB3	10:QJ:81:THR:HG23	1.88	0.55
24:RA:642:G:H21	24:RA:646:A:H2	1.55	0.55
24:RA:1341:U:OP2	24:RA:1394:U:O2'	2.21	0.55
48:R3:51:ALA:HA	48:R3:54:VAL:HG12	1.89	0.55
1:XA:347:G:O2'	1:XA:348:G:H5''	2.07	0.55
24:YA:867:C:N3	24:YA:912:C:O2'	2.39	0.55
26:YD:146:GLU:HB2	26:YD:189:CYS:HB3	1.88	0.55
1:QA:579:G:H5'	1:QA:728:A:H1'	1.87	0.55
1:QA:1127:G:N2	1:QA:1145:C:O2	2.37	0.55
2:QB:231:GLU:HG3	2:QB:233:SER:H	1.71	0.55
7:QG:150:ALA:HB1	11:QK:57:THR:HG21	1.87	0.55
24:RA:2751:G:N7	30:RH:2:SER:N	2.54	0.55
29:RG:62:LEU:HG	29:RG:143:GLU:HB3	1.88	0.55
29:RG:113:ARG:O	29:RG:115:ARG:NH2	2.39	0.55
1:XA:1119:C:H2'	1:XA:1120:G:H8	1.71	0.55
24:YA:637:A:OP1	34:YP:133:SER:OG	2.20	0.55
24:YA:1598:C:H5'	42:YX:36:LYS:HB2	1.88	0.55
1:QA:356:A:N3	1:QA:368:U:O2'	2.35	0.55
1:QA:816:A:OP1	1:QA:1526:G:O2'	2.23	0.55
24:RA:2306:C:N4	29:RG:42:GLY:O	2.40	0.55
54:R9:2:LYS:NZ	54:R9:31:LYS:O	2.39	0.55
1:XA:707:C:OP1	11:XK:85:ARG:NH1	2.40	0.55
24:YA:1779:U:OP2	24:YA:1784:A:N6	2.25	0.55
24:YA:2347:C:OP1	51:Y6:38:LYS:NZ	2.35	0.55
26:YD:136:ILE:O	26:YD:168:ARG:NH2	2.40	0.55
38:YT:51:ARG:HH21	38:YT:62:THR:HG21	1.72	0.55
48:Y3:18:ASP:OD1	48:Y3:18:ASP:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:121:G:H4'	24:RA:149:A:H5'	1.89	0.55
24:RA:372:G:N2	24:RA:401:A:OP2	2.38	0.55
24:RA:2469:A:N1	24:RA:2481:G:O2'	2.38	0.55
39:RU:97:ASP:OD2	39:RU:101:ARG:NH1	2.40	0.55
45:R0:27:GLU:HG3	45:R0:68:GLU:HA	1.87	0.55
9:XI:16:ARG:HB2	9:XI:64:THR:HG23	1.89	0.55
9:XI:40:LEU:HB2	9:XI:43:ALA:HB2	1.89	0.55
24:YA:2655:G:N2	24:YA:2665:A:OP2	2.40	0.55
1:QA:514:C:H2'	1:QA:515:G:H8	1.71	0.55
1:QA:1446:A:O2'	1:QA:1447:G:O5'	2.24	0.55
4:QD:105:VAL:HG13	4:QD:110:PHE:HB2	1.89	0.55
1:XA:359:U:C6	1:XA:359:U:OP2	2.60	0.55
2:XB:128:GLU:OE2	2:XB:135:GLN:NE2	2.39	0.55
9:XI:121:ARG:NH1	9:XI:122:ALA:O	2.40	0.55
28:YF:185:ASP:OD1	28:YF:188:ARG:NH1	2.40	0.55
48:Y3:51:ALA:HA	48:Y3:54:VAL:HG12	1.89	0.55
1:QA:405:U:O4	4:QD:2:GLY:N	2.40	0.54
1:QA:410:G:H4'	1:QA:411:A:OP1	2.07	0.54
1:QA:954:G:O6	13:QM:104:ARG:NH1	2.40	0.54
1:QA:1060:C:H2'	1:QA:1061:G:H8	1.72	0.54
1:QA:1502:A:H2	1:QA:1505:G:H22	1.55	0.54
3:QC:9:GLY:HA2	3:QC:12:LEU:HG	1.89	0.54
24:RA:221:A:H4'	24:RA:222:A:O5'	2.06	0.54
1:XA:606:G:H22	1:XA:631:G:H5''	1.72	0.54
24:YA:27:G:HO2'	24:YA:28:A:H8	1.55	0.54
24:YA:2402:C:H1'	24:YA:2403:C:H5	1.71	0.54
41:YW:111:HIS:HD2	41:YW:113:LYS:H	1.55	0.54
1:QA:427:U:OP1	4:QD:13:ARG:NH1	2.32	0.54
1:QA:439:A:OP2	1:QA:493:G:N1	2.41	0.54
1:QA:768:A:N3	1:QA:1512:U:O2'	2.39	0.54
1:QA:1432:G:OP1	38:RT:108:ARG:N	2.36	0.54
24:RA:855:G:H1	24:RA:922:U:H3	1.54	0.54
24:RA:1348:G:H2'	24:RA:1349:A:H5''	1.90	0.54
24:RA:2659:G:N2	24:RA:2662:A:OP2	2.40	0.54
34:RP:62:LEU:HD12	53:R8:30:ARG:HE	1.71	0.54
1:XA:538:G:H5''	12:XL:114:LYS:HB2	1.89	0.54
1:XA:1036:G:N7	1:XA:1037:C:N4	2.55	0.54
1:XA:1203:C:H2'	1:XA:1204:A:H8	1.71	0.54
24:YA:1859:A:N6	24:YA:1883:G:O2'	2.40	0.54
24:YA:2022:U:O2'	24:YA:2617:C:H5'	2.07	0.54
24:YA:2134:A:OP2	24:YA:2157:G:N2	2.30	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:QD:14:ARG:HD2	4:QD:39:PRO:HB3	1.89	0.54
1:XA:933:G:O6	7:XG:3:ARG:NH2	2.40	0.54
1:XA:1338:G:N3	22:XV:41:A:O2'	2.37	0.54
11:XK:33:THR:HA	11:XK:39:PRO:HA	1.88	0.54
14:YN:3:ARG:HE	14:YN:4:LYS:HE2	1.73	0.54
24:YA:2107:C:O2	24:YA:2182:G:N2	2.40	0.54
24:YA:2392:A:H2	24:YA:2424:C:H42	1.55	0.54
26:YD:108:PRO:HD2	26:YD:111:LEU:HD22	1.89	0.54
24:RA:18:C:O2'	24:RA:553:U:OP1	2.25	0.54
38:RT:16:ARG:HH21	38:RT:19:LEU:HD21	1.72	0.54
8:XH:97:VAL:HG21	8:XH:128:GLY:HA2	1.89	0.54
24:YA:728:G:H4'	26:YD:13:ARG:HE	1.72	0.54
24:YA:2753:A:O2'	54:Y9:15:LYS:NZ	2.41	0.54
30:YH:20:ALA:HB3	30:YH:23:ARG:HG2	1.90	0.54
36:YR:86:ARG:NH2	36:YR:118:GLU:OXT	2.39	0.54
1:QA:501:C:H2'	1:QA:502:G:C8	2.43	0.54
24:RA:630:G:N2	24:RA:633:A:OP2	2.36	0.54
26:RD:182:LEU:H	26:RD:272:ALA:HB3	1.72	0.54
32:RN:58:ASP:N	32:RN:58:ASP:OD1	2.37	0.54
1:XA:22:G:O2'	1:XA:913:A:N1	2.36	0.54
1:XA:1450:U:O2'	1:XA:1451:A:N7	2.34	0.54
1:XA:1510:U:H2'	1:XA:1511:G:C8	2.42	0.54
13:XM:34:LEU:HD13	13:XM:41:PRO:HG3	1.88	0.54
24:YA:1030:G:OP2	35:YQ:128:LYS:NZ	2.39	0.54
24:YA:2547:U:O2	33:YO:23:ARG:NH2	2.40	0.54
9:QL:121:ARG:NH1	9:QL:122:ALA:O	2.41	0.54
13:QM:13:LYS:HA	13:QM:44:ARG:HB3	1.89	0.54
27:RE:128:SER:OG	27:RE:129:HIS:N	2.41	0.54
1:XA:107:G:N7	20:XT:15:ARG:NH2	2.55	0.54
1:XA:924:C:O2'	1:XA:1502:A:N6	2.41	0.54
35:YQ:43:THR:HG22	35:YQ:94:VAL:HG12	1.89	0.54
33:RO:80:ASP:OD2	38:RT:64:ARG:NH2	2.40	0.54
1:XA:123:C:OP1	1:XA:311:C:O2'	2.23	0.54
1:XA:715:A:H2'	1:XA:716:A:C8	2.43	0.54
34:YP:52:GLU:OE1	34:YP:55:ARG:NH1	2.41	0.54
44:YZ:54:HIS:NE2	44:YZ:123:ASP:OD2	2.41	0.54
1:XA:78:G:O2'	1:XA:79:G:OP1	2.21	0.54
1:XA:545:C:OP1	4:XD:61:LYS:NZ	2.39	0.54
24:YA:259:G:H21	24:YA:621:A:H8	1.55	0.54
24:YA:2183:C:H2'	24:YA:2184:G:H8	1.72	0.54
24:RA:1011:G:OP1	39:RU:66:ASN:ND2	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:RZ:4:ARG:HA	44:RZ:59:LEU:H	1.73	0.54
49:R4:14:ILE:HB	49:R4:22:ILE:HB	1.90	0.54
1:XA:1325:C:H4'	21:XU:17:THR:HG21	1.89	0.54
24:YA:2335:A:O2'	24:YA:2336:A:H2'	2.08	0.54
33:YO:80:ASP:OD2	38:YT:64:ARG:NH2	2.41	0.54
33:YO:104:ARG:HH21	38:YT:34:VAL:HG11	1.73	0.54
36:YR:38:VAL:HG22	36:YR:112:ALA:HB2	1.90	0.54
1:QA:254:G:O2'	17:QQ:16:GLN:O	2.24	0.54
13:QM:47:ASP:N	13:QM:47:ASP:OD1	2.40	0.54
1:XA:942:G:N2	9:XI:124:GLN:OE1	2.41	0.54
2:XB:19:HIS:HB3	2:XB:20:GLU:HG2	1.90	0.54
4:QD:19:LEU:HD22	4:QD:67:ILE:HG12	1.89	0.53
33:RO:68:GLU:OE2	33:RO:78:ARG:NH1	2.39	0.53
1:XA:825:G:O2'	8:XH:12:ARG:NH2	2.41	0.53
1:XA:992:U:O4	1:XA:1044:A:N7	2.41	0.53
3:XC:78:GLY:HA3	3:XC:83:ARG:H	1.73	0.53
16:XP:5:ARG:NH2	16:XP:27:LYS:O	2.41	0.53
24:YA:1454:U:O2'	24:YA:1455:G:N7	2.39	0.53
24:YA:2112:G:N7	24:YA:2169:A:N6	2.56	0.53
12:QL:113:ARG:HH21	12:QL:116:SER:HB2	1.73	0.53
24:RA:1508:A:O2'	24:RA:1509:C:O4'	2.26	0.53
24:RA:2853:C:H2'	24:RA:2854:G:H8	1.74	0.53
26:RD:30:GLU:HG3	26:RD:94:LEU:HD21	1.91	0.53
24:YA:249:C:O2	53:Y8:12:LYS:NZ	2.36	0.53
24:YA:581:C:H2'	24:YA:582:G:C8	2.43	0.53
24:YA:700:G:O2'	24:YA:1632:A:N3	2.39	0.53
24:YA:2836:U:H2'	24:YA:2837:G:H8	1.72	0.53
47:Y2:23:LYS:NZ	47:Y2:27:GLU:OE2	2.41	0.53
1:QA:359:U:H2'	1:QA:360:A:H8	1.73	0.53
24:RA:1297:C:O2'	24:RA:1302:A:N1	2.35	0.53
1:XA:950:U:OP2	13:XM:102:ARG:HD3	2.08	0.53
1:XA:1310:G:O2'	1:XA:1311:G:OP1	2.25	0.53
3:XC:20:SER:OG	3:XC:22:TRP:NE1	2.41	0.53
24:YA:1417:C:H2'	24:YA:1418:G:O4'	2.08	0.53
32:YN:86:PRO:HD2	32:YN:89:LYS:HE2	1.91	0.53
1:QA:380:G:N2	1:QA:383:A:OP2	2.38	0.53
47:R2:22:GLU:OE2	47:R2:68:ARG:NH2	2.41	0.53
13:XM:93:ARG:HB3	13:XM:94:ARG:HD2	1.88	0.53
24:YA:414:C:H2'	24:YA:415:A:C8	2.44	0.53
24:YA:2845:G:H2'	24:YA:2846:G:C8	2.44	0.53
26:YD:12:SER:HB3	26:YD:208:LYS:HB3	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:YQ:8:LYS:HA	44:YZ:197:ILE:HB	1.90	0.53
1:QA:1356:G:H2'	1:QA:1357:A:C8	2.43	0.53
18:QR:37:VAL:O	18:QR:40:LEU:N	2.42	0.53
26:RD:126:GLN:O	26:RD:129:ASN:ND2	2.40	0.53
33:RO:2:ILE:HB	33:RO:33:ALA:HB3	1.89	0.53
35:RQ:75:THR:HG21	35:RQ:85:LYS:HE3	1.90	0.53
1:XA:152:A:N6	1:XA:169:C:C4	2.77	0.53
24:YA:2064:C:H2'	24:YA:2065:C:C6	2.44	0.53
1:QA:769:G:H4'	1:QA:1513:A:H4'	1.90	0.53
1:QA:811:C:O2'	1:QA:901:A:N1	2.40	0.53
2:QB:18:GLY:O	2:QB:204:ASN:ND2	2.41	0.53
19:QS:72:GLY:HA2	19:QS:75:ALA:H	1.73	0.53
24:RA:1882:C:H3'	24:RA:1883:G:H8	1.73	0.53
1:XA:713:G:H2'	1:XA:714:G:C8	2.42	0.53
1:XA:753:A:H4'	1:XA:754:C:O5'	2.09	0.53
1:XA:1071:C:H5''	5:XE:49:PRO:HG2	1.91	0.53
8:XH:120:THR:H	8:XH:123:GLU:HB2	1.73	0.53
24:YA:2347:C:O2'	51:Y6:21:TYR:OH	2.26	0.53
1:QA:1327:C:H5''	21:QU:20:LYS:HE2	1.91	0.53
10:QJ:81:THR:HA	10:QJ:84:GLN:HE21	1.74	0.53
24:RA:1812:A:H2'	24:RA:1813:G:H8	1.74	0.53
27:RE:36:ARG:NH1	27:RE:85:ASN:OD1	2.42	0.53
1:XA:514:C:H2'	1:XA:515:G:H8	1.73	0.53
1:XA:529:G:O6	12:XL:49:ASN:ND2	2.41	0.53
9:XI:21:PRO:HA	9:XI:59:PHE:HA	1.91	0.53
24:YA:2404:C:O3'	34:YP:77:ARG:NH2	2.41	0.53
27:YE:105:THR:OG1	27:YE:199:ARG:NH2	2.42	0.53
1:QA:765:G:N2	1:QA:813:U:OP2	2.38	0.53
3:QC:9:GLY:HA3	14:QN:49:HIS:HA	1.91	0.53
27:RE:116:VAL:HG12	27:RE:157:ALA:HB2	1.90	0.53
1:XA:975:A:H61	10:XJ:48:THR:HG1	1.56	0.53
1:XA:1356:G:H2'	1:XA:1357:A:H8	1.74	0.53
2:XB:92:TYR:H	2:XB:151:GLY:HA3	1.72	0.53
24:YA:1816:G:O6	26:YD:35:LYS:NZ	2.41	0.53
1:QA:559:A:H4'	1:QA:560:U:H3'	1.90	0.53
1:QA:1322:C:OP2	19:QS:78:ARG:NH2	2.40	0.53
1:QA:1386:G:H2'	1:QA:1387:G:H8	1.73	0.53
6:QF:79:LEU:HB3	6:QF:88:VAL:HG21	1.91	0.53
14:QN:45:ARG:O	14:QN:49:HIS:ND1	2.38	0.53
16:QP:53:VAL:HG13	16:QP:79:VAL:HG22	1.91	0.53
28:RF:116:ASP:OD1	28:RF:119:ARG:NH2	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:XA:643:C:H2'	1:XA:644:G:H8	1.74	0.53
1:XA:1315:U:O2'	1:XA:1360:A:N3	2.35	0.53
1:XA:1318:A:H1'	19:XS:37:ARG:HH21	1.73	0.53
20:XT:62:LEU:HA	20:XT:65:LYS:HB2	1.91	0.53
24:YA:1427:A:H4'	24:YA:1428:C:O5'	2.09	0.53
1:QA:8:A:N6	4:QD:205:GLU:O	2.42	0.53
24:RA:177:G:H3'	24:RA:178:G:H8	1.73	0.53
24:RA:1817:G:OP1	26:RD:88:ARG:NH2	2.40	0.53
39:RU:90:VAL:HG22	40:RV:38:LEU:HB3	1.90	0.53
4:XD:88:VAL:HG12	5:XE:97:GLY:HA3	1.91	0.53
24:YA:1173:G:N2	24:YA:1175:U:O4	2.40	0.53
24:YA:2364:C:OP1	45:Y0:55:ARG:NH1	2.42	0.53
29:YG:59:GLU:OE1	29:YG:153:ARG:NH2	2.42	0.53
1:QA:788:U:O2'	23:QX:14:A:N3	2.41	0.52
24:RA:67:U:H3	24:RA:74:A:H2	1.57	0.52
24:RA:1899:G:O2'	24:RA:1900:A:H5''	2.08	0.52
35:RQ:30:GLY:O	35:RQ:134:ARG:NH1	2.42	0.52
1:XA:8:A:N6	4:XD:205:GLU:O	2.42	0.52
1:XA:1350:A:O2'	7:XG:33:ASP:OD1	2.26	0.52
24:YA:698:C:O2'	24:YA:734:A:N6	2.41	0.52
3:QC:153:VAL:HG22	3:QC:198:VAL:HG22	1.92	0.52
24:RA:987:G:O2'	24:RA:1000:A:N3	2.39	0.52
24:RA:997:G:OP1	39:RU:93:LYS:HE2	2.09	0.52
24:RA:2258:C:O2'	24:RA:2427:C:OP2	2.25	0.52
33:RO:19:ILE:HG22	33:RO:43:VAL:HA	1.90	0.52
1:XA:243:A:H4'	1:XA:244:U:O5'	2.09	0.52
1:XA:260:G:OP1	20:XT:80:ARG:NH1	2.38	0.52
1:XA:972:C:H4'	10:XJ:57:LYS:HB2	1.91	0.52
1:XA:1067:A:N1	1:XA:1108:G:O2'	2.35	0.52
27:YE:6:GLY:HA2	27:YE:28:ALA:HA	1.90	0.52
38:YT:16:ARG:NH2	38:YT:18:ASP:OD2	2.42	0.52
44:YZ:182:LYS:O	44:YZ:186:GLU:OE1	2.28	0.52
2:QB:8:LYS:HG3	2:QB:10:LEU:H	1.74	0.52
8:QH:48:TYR:HA	8:QH:60:ARG:O	2.09	0.52
24:RA:2135:A:H62	24:RA:2156:G:H21	0.72	0.52
24:RA:2646:C:OP2	24:RA:2732:G:O2'	2.24	0.52
30:RH:89:ILE:HG22	30:RH:162:ILE:HG23	1.91	0.52
1:XA:1209:C:O2'	1:XA:1214:C:N4	2.39	0.52
1:XA:1211:U:H5'	1:XA:1212:U:H5'	1.90	0.52
3:XC:25:GLY:O	3:XC:29:TYR:N	2.42	0.52
24:YA:577:G:O2'	24:YA:1254:A:OP1	2.26	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:YW:78:GLU:OE2	41:YW:99:ARG:NH1	2.40	0.52
24:RA:302:C:OP2	43:RY:73:ARG:NH1	2.40	0.52
1:XA:1354:C:H2'	1:XA:1355:G:H8	1.74	0.52
2:XB:30:ARG:NH2	2:XB:195:ASP:OD2	2.42	0.52
24:YA:363(A):A:H2'	24:YA:363(B):G:H8	1.74	0.52
40:YV:23:GLU:OE2	40:YV:89:GLN:NE2	2.38	0.52
44:YZ:182:LYS:O	44:YZ:185:GLU:HG3	2.09	0.52
49:Y4:62:ARG:HH21	49:Y4:64:GLY:H	1.56	0.52
24:RA:1338:G:N7	42:RX:62:LYS:NZ	2.50	0.52
24:RA:2037:G:H2'	24:RA:2038:G:C8	2.45	0.52
24:RA:2102:U:H3	24:RA:2187:G:H1	1.57	0.52
25:RB:104:A:OP1	44:RZ:72:ARG:NH1	2.41	0.52
29:RG:59:GLU:OE1	29:RG:153:ARG:NH1	2.39	0.52
1:XA:79:G:H1	1:XA:90:C:H42	1.58	0.52
1:XA:179:A:H61	1:XA:195:A:H8	1.58	0.52
1:XA:957:U:H3	1:XA:960:U:H5''	1.73	0.52
1:XA:1412:C:H2'	1:XA:1413:A:C8	2.45	0.52
4:QD:98:GLU:HA	4:QD:103:ASN:HD22	1.74	0.52
26:RD:108:PRO:HD2	26:RD:111:LEU:HD22	1.90	0.52
33:RO:104:ARG:NH1	33:RO:121:VAL:O	2.43	0.52
44:RZ:144:LEU:HD21	44:RZ:150:LEU:HD13	1.91	0.52
46:R1:96:LYS:HB3	46:R1:97:LEU:HD12	1.91	0.52
1:XA:410:G:H21	1:XA:432:A:H62	1.56	0.52
1:XA:992:U:O2'	1:XA:993:G:OP2	2.22	0.52
12:XL:71:PRO:O	12:XL:102:ARG:NH1	2.41	0.52
24:YA:65:C:O2'	24:YA:456:C:O2	2.27	0.52
24:YA:1286:A:H1'	24:YA:1288:U:OP2	2.10	0.52
24:YA:2723:C:OP1	36:YR:3:HIS:ND1	2.38	0.52
1:QA:1199:U:O2'	1:QA:1202:G:OP1	2.24	0.52
19:QS:19:VAL:HG21	19:QS:44:MET:HG2	1.92	0.52
24:RA:581:C:H2'	24:RA:582:G:H8	1.73	0.52
24:RA:1296:G:OP1	24:RA:2709:G:O2'	2.19	0.52
24:RA:1542:G:O6	24:RA:1543:A:N6	2.43	0.52
24:RA:1678:G:H21	24:RA:1990:C:H1'	1.74	0.52
24:RA:2618:G:H21	27:RE:150:VAL:HG21	1.73	0.52
1:XA:250:A:H4'	1:XA:251:G:O5'	2.10	0.52
1:XA:1286:A:H5''	21:XU:26:LYS:HD2	1.92	0.52
14:YN:6:LEU:O	14:YN:21:TYR:OH	2.28	0.52
24:YA:602:G:O2'	24:YA:604:G:O2'	2.24	0.52
50:Y5:16:ARG:NH1	50:Y5:17:ASP:OD1	2.42	0.52
1:QA:411:A:P	4:QD:30:LYS:HZ1	2.33	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:715:A:H2'	1:QA:716:A:C8	2.45	0.52
1:QA:1412:C:H2'	1:QA:1413:A:C8	2.45	0.52
4:QD:57:ARG:HB3	4:QD:206:PHE:HB2	1.92	0.52
8:QH:121:ASP:N	8:QH:121:ASP:OD1	2.42	0.52
24:RA:307:G:N1	24:RA:310:A:OP2	2.43	0.52
24:RA:1667:G:O2'	24:RA:1991:U:O4	2.26	0.52
26:RD:85:ASP:OD2	26:RD:88:ARG:NH1	2.38	0.52
26:RD:146:GLU:HB2	26:RD:189:CYS:HB3	1.91	0.52
44:RZ:10:ARG:NH2	44:RZ:37:VAL:O	2.43	0.52
1:XA:701:C:OP1	1:XA:702:A:O2'	2.21	0.52
1:XA:880:C:OP1	12:XL:8:ASN:ND2	2.42	0.52
24:YA:1930:G:N2	24:YA:1969:A:OP2	2.36	0.52
1:QA:62:U:H3	1:QA:105:G:H1	1.58	0.52
1:QA:945:G:N2	1:QA:1334:G:O2'	2.42	0.52
1:QA:1137:C:O2	1:QA:1138:G:N2	2.43	0.52
2:QB:193:ASP:OD1	2:QB:193:ASP:N	2.43	0.52
24:RA:229:A:H4'	24:RA:230:U:O5'	2.09	0.52
24:RA:848:G:H2'	24:RA:849:A:C8	2.45	0.52
48:R3:11:SER:HB2	48:R3:31:LEU:HD11	1.92	0.52
1:XA:269:C:H2'	1:XA:270:A:C8	2.45	0.52
1:XA:789:U:H1'	1:XA:792:A:H2	1.75	0.52
5:XE:137:GLU:OE1	5:XE:140:ARG:NH1	2.43	0.52
24:YA:820:A:N3	24:YA:943:U:O2'	2.38	0.52
24:YA:2788:C:O2'	24:YA:2809:A:N3	2.36	0.52
17:QQ:83:ASP:N	17:QQ:83:ASP:OD1	2.40	0.52
24:RA:867:C:N3	24:RA:912:C:O2'	2.42	0.52
30:RH:40:GLU:OE2	30:RH:60:ARG:NH1	2.43	0.52
32:RN:16:ILE:HG22	32:RN:18:ALA:HB2	1.92	0.52
1:XA:948:C:H2'	1:XA:949:A:H8	1.75	0.52
24:YA:237:C:O2	24:YA:609:A:O2'	2.28	0.52
24:YA:1693:U:O2'	26:YD:14:ARG:NH2	2.43	0.52
24:YA:2150:U:H2'	24:YA:2151:G:H8	1.74	0.52
1:QA:243:A:H4'	1:QA:244:U:O5'	2.09	0.51
24:RA:2379:G:O2'	37:RS:17:ARG:NH2	2.41	0.51
1:XA:17:U:H2'	1:XA:18:C:C6	2.45	0.51
24:YA:589:C:H2'	24:YA:590:A:C8	2.45	0.51
26:YD:164:GLN:OE1	26:YD:176:ARG:NH2	2.43	0.51
2:QB:19:HIS:HB3	2:QB:20:GLU:HG2	1.93	0.51
2:QB:51:LEU:HD23	2:QB:201:ILE:HD12	1.91	0.51
12:QL:49:ASN:ND2	12:QL:92:ASP:OD2	2.43	0.51
24:RA:589:C:H2'	24:RA:590:A:H8	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:820:A:N3	24:RA:943:U:O2'	2.39	0.51
29:RG:72:ARG:HE	29:RG:85:GLY:HA2	1.75	0.51
35:RQ:135:ASP:HB3	35:RQ:137:TYR:H	1.75	0.51
38:RT:51:ARG:HG3	38:RT:98:LYS:HE3	1.92	0.51
43:RY:102:CYS:SG	43:RY:103:GLY:N	2.83	0.51
1:XA:99:C:H2'	1:XA:101:A:C8	2.45	0.51
1:XA:842:C:O2'	1:XA:848:C:N4	2.42	0.51
3:XC:114:PRO:HG3	3:XC:185:GLY:HA3	1.90	0.51
3:XC:138:VAL:HG13	3:XC:149:ALA:HB3	1.92	0.51
13:XM:93:ARG:NH2	24:YA:888:C:OP1	2.43	0.51
24:YA:71:A:H5''	24:YA:72:U:H3'	1.92	0.51
1:QA:713:G:H2'	1:QA:714:G:C8	2.46	0.51
2:QB:6:THR:O	2:QB:217:ARG:NH1	2.43	0.51
3:QC:78:GLY:HA3	3:QC:83:ARG:HB2	1.92	0.51
16:QP:34:GLU:OE2	16:QP:55:ARG:NH2	2.38	0.51
24:RA:551:G:H5'	24:RA:1220:A:H1'	1.91	0.51
36:RR:88:ARG:NH2	36:RR:89:ASP:OD1	2.44	0.51
1:XA:736:C:H2'	1:XA:737:A:H8	1.75	0.51
1:QA:546:G:H4'	1:QA:548:G:H4'	1.92	0.51
4:QD:13:ARG:NH2	4:QD:40:PRO:HA	2.25	0.51
6:QF:100:ASN:ND2	18:QR:23:LYS:O	2.34	0.51
24:RA:582:G:H2'	24:RA:583:G:H8	1.75	0.51
27:RE:115:GLY:O	27:RE:119:ARG:N	2.39	0.51
33:RO:25:LEU:HB2	33:RO:38:VAL:HG13	1.93	0.51
1:XA:689:C:OP1	11:XK:27:ASN:ND2	2.44	0.51
1:XA:1179:A:H4'	9:XI:103:THR:HA	1.92	0.51
53:Y8:28:GLY:O	53:Y8:36:LYS:NZ	2.37	0.51
10:QJ:9:ARG:HB2	10:QJ:95:GLU:HB3	1.92	0.51
24:RA:1826:G:H4'	26:RD:242:ARG:HE	1.75	0.51
24:RA:2022:U:O2'	24:RA:2617:C:H5'	2.10	0.51
46:R1:18:ILE:HG12	46:R1:37:ILE:HG12	1.92	0.51
48:R3:18:ASP:OD1	48:R3:18:ASP:N	2.44	0.51
8:XH:41:ARG:NH2	8:XH:123:GLU:OE2	2.43	0.51
38:YT:124:ASP:O	38:YT:128:GLU:N	2.40	0.51
1:QA:742:G:OP2	15:QO:35:ARG:NH2	2.39	0.51
22:QV:30:C:H2'	22:QV:31:G:H8	1.76	0.51
22:QV:36:G:H1	23:QX:16:C:H42	1.58	0.51
28:RF:60:SER:OG	28:RF:61:GLY:N	2.42	0.51
8:XH:34:GLU:OE1	8:XH:37:ARG:NH2	2.43	0.51
24:YA:219:G:N3	24:YA:234:C:O2'	2.40	0.51
24:YA:252:G:OP2	34:YP:50:ARG:NH2	2.30	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:2788:C:OP1	27:YE:61:ARG:NH2	2.44	0.51
1:QA:1151:A:H2'	1:QA:1152:A:C8	2.46	0.51
8:QH:54:ASP:O	8:QH:56:LYS:NZ	2.42	0.51
18:QR:74:ARG:HH11	18:QR:81:PHE:HA	1.76	0.51
24:RA:372:G:O2'	24:RA:373:U:O5'	2.29	0.51
25:RB:44:G:O2'	25:RB:47:C:N4	2.43	0.51
3:XC:86:VAL:HA	3:XC:89:GLU:HG3	1.93	0.51
13:XM:80:ARG:HH12	49:Y4:56:VAL:HG11	1.76	0.51
15:XO:7:GLU:OE2	15:XO:38:ARG:NH2	2.44	0.51
17:XQ:83:ASP:N	17:XQ:83:ASP:OD1	2.43	0.51
24:YA:1203:G:H3'	24:YA:1204:A:H5''	1.92	0.51
24:YA:2306:C:H3'	24:YA:2307:G:H5''	1.93	0.51
24:YA:2851:A:O2'	36:YR:64:ARG:NH2	2.43	0.51
54:Y9:2:LYS:NZ	54:Y9:31:LYS:O	2.43	0.51
4:QD:8:VAL:HG11	4:QD:21:LEU:HB2	1.93	0.51
24:RA:275:G:H3'	24:RA:276:A:H5''	1.93	0.51
24:RA:581:C:H2'	24:RA:582:G:C8	2.46	0.51
24:RA:780:G:OP1	26:RD:218:ARG:NH2	2.43	0.51
24:RA:2572:A:H5''	24:RA:2574:G:H4'	1.92	0.51
51:R6:14:THR:O	51:R6:17:LYS:NZ	2.42	0.51
2:XB:87:ARG:NH2	2:XB:216:SER:O	2.43	0.51
3:XC:164:ARG:NH1	3:XC:166:GLU:OE2	2.44	0.51
15:XO:88:ARG:NH1	24:YA:713:G:OP2	2.40	0.51
16:XP:67:THR:O	16:XP:71:ARG:N	2.41	0.51
24:YA:2151:G:H2'	24:YA:2152:G:H8	1.76	0.51
28:YF:117:ARG:NH2	34:YP:1:MET:O	2.44	0.51
35:YQ:77:LYS:NZ	35:YQ:80:GLU:OE2	2.43	0.51
24:RA:345:A:H2'	24:RA:347:A:H62	1.75	0.51
24:RA:1731:G:H2'	24:RA:1732:A:H8	1.76	0.51
24:RA:1849:G:H2'	24:RA:1850:G:H8	1.75	0.51
24:RA:2521:C:O2'	24:RA:2564:A:N3	2.42	0.51
26:RD:12:SER:HB3	26:RD:208:LYS:HB3	1.93	0.51
1:XA:112:G:H4'	1:XA:389:A:H4'	1.92	0.51
1:XA:812:C:H1'	1:XA:813:U:OP2	2.10	0.51
1:XA:1159:U:O2'	1:XA:1160:G:N7	2.41	0.51
1:XA:1493:A:C2	23:XX:19:G:N2	2.79	0.51
8:XH:10:LEU:HD22	8:XH:83:ILE:HD11	1.92	0.51
24:YA:1695:G:N7	26:YD:14:ARG:NH2	2.59	0.51
30:YH:101:ARG:HB3	30:YH:117:PRO:HG2	1.92	0.51
32:YN:58:ASP:OD1	32:YN:58:ASP:N	2.44	0.51
4:QD:20:TYR:HA	4:QD:26:CYS:SG	2.51	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:728:G:H4'	26:RD:13:ARG:HE	1.76	0.51
24:RA:1478:G:H2'	24:RA:1479:G:H8	1.76	0.51
42:RX:49:VAL:HG21	42:RX:89:ILE:HG12	1.91	0.51
6:QF:71:ARG:O	6:QF:74:ASP:HB2	2.10	0.50
1:XA:1071:C:H2'	1:XA:1072:G:H8	1.75	0.50
1:XA:1447:G:H4'	38:YT:125:ARG:HH22	1.75	0.50
24:YA:1316:U:H2'	24:YA:1317:A:H8	1.75	0.50
24:YA:2246:G:H2'	24:YA:2247:A:C8	2.46	0.50
45:Y0:68:GLU:HG3	45:Y0:80:HIS:HB2	1.94	0.50
24:RA:2118:U:O2	24:RA:2148:G:O2'	2.25	0.50
24:RA:2841:C:H2'	24:RA:2842:G:H8	1.76	0.50
1:XA:322:C:OP2	1:XA:328:C:N4	2.43	0.50
1:XA:352:C:O2	1:XA:355:C:N4	2.44	0.50
3:XC:150:LYS:HB3	3:XC:201:TYR:HB2	1.92	0.50
24:YA:414:C:H2'	24:YA:415:A:H8	1.76	0.50
24:YA:1316:U:H2'	24:YA:1317:A:C8	2.46	0.50
28:YF:63:LYS:NZ	28:YF:75:HIS:O	2.38	0.50
1:QA:689:C:OP1	11:QK:27:ASN:ND2	2.44	0.50
1:QA:1256:A:OP2	3:QC:26:LYS:NZ	2.34	0.50
9:QI:45:ALA:HA	9:QI:48:GLU:HG2	1.94	0.50
24:RA:2680:C:OP2	27:RE:111:ARG:NH2	2.37	0.50
43:RY:17:SER:OG	43:RY:71:LYS:NZ	2.43	0.50
2:XB:11:LEU:O	2:XB:16:HIS:ND1	2.43	0.50
24:YA:127:A:H5''	24:YA:128:C:C6	2.46	0.50
24:YA:2185:C:H2'	24:YA:2186:G:H8	1.75	0.50
24:YA:2287:A:H62	24:YA:2344:U:H3	1.58	0.50
1:QA:243:A:H4'	1:QA:244:U:H3'	1.94	0.50
1:QA:1342:C:H2'	1:QA:1343:G:C8	2.47	0.50
24:RA:321:G:O2'	24:RA:340:A:N3	2.42	0.50
24:RA:2853:C:H2'	24:RA:2854:G:C8	2.46	0.50
13:XM:97:PRO:HG3	13:XM:107:ALA:HB1	1.93	0.50
24:YA:956:G:OP2	35:YQ:14:ARG:NH2	2.44	0.50
26:YD:160:GLY:H	26:YD:197:GLY:H	1.60	0.50
29:YG:11:TYR:HA	29:YG:15:VAL:HB	1.93	0.50
1:QA:22:G:H4'	1:QA:885:G:C8	2.47	0.50
1:QA:376:G:H5''	16:QP:5:ARG:HB2	1.93	0.50
1:QA:1147:C:O2	9:QI:16:ARG:NH2	2.44	0.50
12:QL:33:ARG:NH2	12:QL:61:THR:OG1	2.42	0.50
24:RA:83:G:O2'	24:RA:102:G:N2	2.42	0.50
1:XA:414:A:OP2	1:XA:428:G:N2	2.40	0.50
24:YA:312:G:H5'	24:YA:331:A:O2'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:1535:U:H2'	24:YA:1536:A:C8	2.46	0.50
1:QA:191(D):U:H2'	1:QA:191(E):G:H8	1.77	0.50
1:QA:1210:C:O2'	1:QA:1213:A:O2'	2.28	0.50
4:QD:162:LEU:HD13	4:QD:181:MET:HG2	1.93	0.50
5:QE:100:VAL:O	5:QE:107:ARG:NH2	2.39	0.50
7:QG:80:VAL:O	7:QG:83:ALA:HB3	2.12	0.50
24:RA:2836:U:H2'	24:RA:2837:G:C8	2.46	0.50
30:RH:88:LEU:HA	30:RH:130:ARG:HA	1.93	0.50
33:RO:23:ARG:NH2	33:RO:28:SER:O	2.45	0.50
1:XA:180:U:H2'	1:XA:181:G:C8	2.47	0.50
1:XA:1229:A:OP2	13:XM:114:ARG:NH1	2.44	0.50
1:XA:1264:C:H2'	1:XA:1265:G:H8	1.77	0.50
7:XG:69:VAL:HG22	7:XG:135:VAL:HG22	1.92	0.50
8:XH:109:ILE:HD11	8:XH:120:THR:HB	1.94	0.50
24:YA:1204:A:O2'	24:YA:1205:U:O5'	2.26	0.50
24:YA:2154:G:H2'	24:YA:2155:G:H8	1.76	0.50
24:YA:2521:C:O2'	24:YA:2564:A:N3	2.40	0.50
1:QA:738:C:OP1	6:QF:2:ARG:NH1	2.45	0.50
24:RA:71:A:H5''	24:RA:72:U:H3'	1.94	0.50
25:RB:114:G:O2'	37:RS:50:SER:OG	2.28	0.50
1:XA:1342:C:H2'	1:XA:1343:G:C8	2.47	0.50
10:XJ:45:ARG:HH21	14:XN:36:PHE:HB2	1.77	0.50
24:YA:629:G:N3	24:YA:639:U:O2'	2.44	0.50
24:YA:2037:G:H2'	24:YA:2038:G:C8	2.47	0.50
24:YA:2125:G:O2'	24:YA:2173:A:N6	2.45	0.50
36:YR:12:ARG:O	36:YR:17:ARG:NH2	2.44	0.50
36:YR:19:ALA:O	36:YR:23:ASN:ND2	2.45	0.50
1:QA:1368:G:H5''	9:QI:112:LYS:HB3	1.93	0.50
24:RA:2051:A:H5'	24:RA:2578:G:O4'	2.12	0.50
25:RB:52:A:H2	25:RB:53:A:H62	1.58	0.50
27:RE:9:VAL:HB	27:RE:25:VAL:HG23	1.93	0.50
29:RG:52:ILE:HD13	29:RG:153:ARG:HH21	1.76	0.50
31:RI:94:ALA:HB1	31:RI:114:LEU:HD13	1.94	0.50
44:RZ:163:LEU:HD13	44:RZ:167:PRO:HD3	1.93	0.50
1:XA:129(A):G:N2	1:XA:188:U:O2'	2.44	0.50
2:XB:166:ASP:HB3	2:XB:169:LYS:HG2	1.94	0.50
24:YA:1097:U:H3'	24:YA:1098:A:H8	1.77	0.50
24:YA:1353:A:H2'	24:YA:1354:A:C8	2.47	0.50
24:YA:2061:G:H2'	24:YA:2501:C:O2'	2.11	0.50
24:YA:2298:A:H62	24:YA:2318:G:H8	1.60	0.50
43:YY:31:LEU:HB2	43:YY:36:ALA:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:132:C:O3'	20:QT:74:LYS:NZ	2.44	0.50
24:RA:2023:G:H5'	24:RA:2617:C:H4'	1.94	0.50
27:RE:176:ILE:HB	27:RE:181:LEU:HB2	1.93	0.50
29:RG:63:ILE:HG22	29:RG:143:GLU:HB2	1.92	0.50
29:RG:125:PHE:HD2	29:RG:166:ASP:HB2	1.77	0.50
44:RZ:165:VAL:HG23	44:RZ:167:PRO:HA	1.93	0.50
1:XA:484:G:H4'	1:XA:485:G:O5'	2.12	0.50
24:YA:1012:U:OP1	39:YU:75:ASN:ND2	2.45	0.50
24:YA:1109:C:O2'	24:YA:1110:G:OP1	2.25	0.50
24:YA:1818:U:H2'	26:YD:157:ARG:HG2	1.93	0.50
1:QA:1221:G:OP1	1:QA:1321:C:N4	2.45	0.49
1:QA:1315:U:O2'	1:QA:1360:A:N3	2.43	0.49
24:RA:1316:U:H2'	24:RA:1317:A:H8	1.77	0.49
24:RA:2246:G:H2'	24:RA:2247:A:H8	1.77	0.49
24:RA:2392:A:H2	24:RA:2424:C:H42	1.60	0.49
28:RF:157:VAL:HB	28:RF:194:MET:HB3	1.94	0.49
32:RN:47:ALA:O	32:RN:119:ARG:NH1	2.40	0.49
49:R4:14:ILE:HA	49:R4:31:ILE:HB	1.94	0.49
11:XK:34:ASP:OD1	11:XK:38:ASN:N	2.39	0.49
24:YA:1033:U:OP1	54:Y9:9:ARG:NH1	2.43	0.49
24:YA:1654:A:O2'	27:YE:113:PHE:O	2.25	0.49
25:YB:107:U:H2'	25:YB:108:C:H5''	1.94	0.49
4:QD:28:SER:C	4:QD:30:LYS:H	2.15	0.49
24:RA:307:G:H21	24:RA:330:A:H62	1.59	0.49
25:RB:52:A:H62	37:RS:33:LYS:HD3	1.78	0.49
32:RN:97:ARG:HA	32:RN:100:GLU:HB2	1.93	0.49
44:RZ:5:LEU:H	44:RZ:59:LEU:HA	1.77	0.49
1:XA:1492:A:H1'	1:XA:1493:A:H8	1.76	0.49
38:YT:92:GLY:O	38:YT:120:ARG:NH2	2.45	0.49
51:Y6:25:LYS:NZ	51:Y6:32:ASN:O	2.44	0.49
1:QA:362:G:N2	1:QA:365:U:OP2	2.45	0.49
8:QH:12:ARG:HD2	8:QH:26:VAL:HG12	1.94	0.49
12:QL:24:VAL:HG13	12:QL:98:TYR:HE1	1.76	0.49
24:RA:458:G:N2	24:RA:470:A:OP2	2.34	0.49
24:RA:1057:A:O2'	24:RA:1058:G:OP1	2.26	0.49
24:RA:1668:A:H5'	24:RA:1669:A:C5	2.47	0.49
1:XA:56:U:H2'	1:XA:57:G:H8	1.76	0.49
1:XA:272:C:H2'	1:XA:273:A:H8	1.78	0.49
1:XA:736:C:H2'	1:XA:737:A:C8	2.48	0.49
4:XD:104:VAL:HG21	4:XD:140:VAL:HG21	1.93	0.49
24:YA:2133:G:O2'	24:YA:2158:A:N1	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:2364:C:H2'	24:YA:2365:G:O4'	2.12	0.49
30:YH:49:VAL:O	30:YH:49:VAL:HG12	2.11	0.49
36:YR:75:LEU:HA	36:YR:78:LYS:HB3	1.93	0.49
1:QA:34:C:H2'	1:QA:35:G:H8	1.76	0.49
1:QA:407:G:H5''	4:QD:115:ARG:HB3	1.94	0.49
24:RA:572:A:N6	24:RA:2029:G:H21	2.10	0.49
24:RA:807:U:O2'	24:RA:2060:A:N1	2.46	0.49
4:XD:156:GLU:HA	4:XD:159:ARG:HG2	1.93	0.49
24:YA:1028:A:H2'	24:YA:1029:A:C8	2.47	0.49
36:YR:67:LEU:HD13	36:YR:76:VAL:HG21	1.94	0.49
44:YZ:5:LEU:HD11	44:YZ:44:PHE:HA	1.95	0.49
1:QA:56:U:H2'	1:QA:57:G:H8	1.78	0.49
1:QA:448:A:OP2	1:QA:485:G:N2	2.36	0.49
1:QA:1346:A:H5''	9:QI:120:ARG:HH12	1.76	0.49
1:QA:1376:U:OP1	7:QG:94:ARG:NH1	2.45	0.49
24:RA:1652:A:OP1	36:RR:8:ARG:NH1	2.42	0.49
24:RA:1824:G:N3	26:RD:254:THR:OG1	2.46	0.49
24:RA:2328:A:H2'	24:RA:2329:G:C8	2.47	0.49
1:XA:908:A:H2'	1:XA:909:A:H8	1.78	0.49
1:XA:966:G:C2	22:XV:34:C:H5'	2.47	0.49
1:XA:1376:U:OP1	7:XG:94:ARG:NH1	2.45	0.49
24:YA:301:G:OP2	43:YY:84:ARG:NH2	2.45	0.49
24:YA:2473:U:OP1	24:YA:2529:G:N2	2.45	0.49
29:YG:66:GLN:NE2	29:YG:93:THR:O	2.45	0.49
1:QA:99:C:H2'	1:QA:101:A:C8	2.48	0.49
1:QA:186:C:O2'	20:QT:85:MET:SD	2.66	0.49
1:QA:1266:G:N2	1:QA:1269:A:OP2	2.39	0.49
13:QM:49:THR:HG22	13:QM:51:ALA:H	1.77	0.49
24:RA:1141:U:H1'	24:RA:1142(A):A:C6	2.47	0.49
35:RQ:31:ASP:OD1	44:RZ:122:ARG:NH2	2.46	0.49
1:XA:946:A:H2'	1:XA:947:G:C8	2.47	0.49
1:XA:1418:A:N6	1:XA:1482:G:O2'	2.45	0.49
7:XG:88:PRO:HG2	7:XG:152:ALA:HB2	1.95	0.49
10:XJ:46:ARG:HE	10:XJ:64:GLU:HB3	1.77	0.49
7:QG:88:PRO:HG2	7:QG:152:ALA:HB2	1.94	0.49
12:QL:57:LYS:HE2	12:QL:65:GLU:HG2	1.95	0.49
20:QT:46:GLU:OE1	20:QT:48:LYS:NZ	2.45	0.49
24:RA:1022:G:N2	24:RA:1023:U:O4	2.42	0.49
24:RA:1026:U:H1'	24:RA:1027:A:H5''	1.94	0.49
28:RF:133:ASN:H	28:RF:162:LEU:HD13	1.78	0.49
24:YA:793:A:OP2	24:YA:2071:A:O2'	2.29	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:2748:A:H5'	30:YH:4:ILE:HD12	1.94	0.49
1:QA:481:G:O2'	1:QA:482:A:O5'	2.31	0.49
7:QG:15:ASP:H	7:QG:20:ASP:H	1.61	0.49
7:QG:79:ARG:HA	7:QG:83:ALA:O	2.13	0.49
33:RO:106:LEU:HB3	33:RO:111:PHE:HB2	1.95	0.49
1:XA:410:G:H4'	1:XA:411:A:OP1	2.13	0.49
1:XA:628:G:H2'	1:XA:629:G:C8	2.47	0.49
2:XB:138:LEU:O	2:XB:142:LEU:N	2.45	0.49
24:YA:807:U:O2'	24:YA:2060:A:N1	2.45	0.49
24:YA:1338:G:N7	42:YX:62:LYS:NZ	2.47	0.49
24:YA:2246:G:H2'	24:YA:2247:A:H8	1.77	0.49
26:YD:17:THR:O	26:YD:211:ARG:NH1	2.41	0.49
1:QA:300:A:O2'	1:QA:564:C:N3	2.39	0.49
1:QA:684:A:O2'	11:QK:39:PRO:O	2.31	0.49
1:QA:1510:U:H2'	1:QA:1511:G:H8	1.78	0.49
2:QB:192:SER:OG	2:QB:193:ASP:N	2.44	0.49
9:QI:44:VAL:O	9:QI:51:ARG:NH2	2.46	0.49
10:QJ:4:ILE:HG12	10:QJ:100:THR:HG22	1.95	0.49
11:QK:22:HIS:HB3	11:QK:29:ILE:HG13	1.94	0.49
24:RA:84:A:OP2	43:RY:8:LYS:NZ	2.41	0.49
24:RA:1827:C:OP2	26:RD:222:ARG:NH1	2.45	0.49
24:RA:2364:C:H2'	24:RA:2365:G:O4'	2.13	0.49
24:RA:2404:C:O3'	34:RP:77:ARG:NH2	2.45	0.49
29:RG:161:THR:HG22	29:RG:163:ALA:H	1.77	0.49
1:XA:321:A:N6	1:XA:329:A:OP2	2.43	0.49
1:XA:539:A:H2'	1:XA:540:G:C8	2.48	0.49
1:XA:714:G:N2	11:XK:119:CYS:SG	2.85	0.49
1:XA:1187:G:H4'	9:XI:111:ARG:HH21	1.76	0.49
24:YA:338:G:OP1	43:YY:4:LYS:NZ	2.45	0.49
24:YA:605:C:O2	24:YA:657:U:O2'	2.31	0.49
24:YA:780:G:OP1	26:YD:218:ARG:NH2	2.37	0.49
24:YA:1022:G:N2	24:YA:1023:U:O4	2.45	0.49
26:YD:148:GLU:HB2	26:YD:151:LYS:HD2	1.95	0.49
1:QA:745:C:OP1	1:QA:851:G:O2'	2.31	0.49
1:QA:1253:G:H3'	10:QJ:43:ARG:HH21	1.77	0.49
25:RB:52:A:HO2'	25:RB:53:A:H8	1.59	0.49
24:YA:807:U:H2'	24:YA:808:G:H8	1.78	0.49
24:YA:2712:U:O2'	24:YA:2712(A):A:OP1	2.31	0.49
26:YD:77:ALA:HB3	26:YD:117:VAL:HG13	1.95	0.49
36:YR:104:ARG:HG3	36:YR:107:ASP:HB3	1.95	0.49
1:QA:736:C:H2'	1:QA:737:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:1009:G:N2	1:QA:1020:U:O2	2.39	0.48
1:QA:1157:A:OP1	1:QA:1158:C:N4	2.45	0.48
1:QA:1225:A:OP1	13:QM:103:THR:N	2.34	0.48
4:QD:98:GLU:HG2	4:QD:189:PRO:HG3	1.94	0.48
19:QS:36:ARG:NH2	19:QS:75:ALA:O	2.43	0.48
27:RE:31:CYS:HB3	27:RE:49:LEU:HG	1.95	0.48
54:R9:12:ASP:OD1	54:R9:12:ASP:N	2.46	0.48
1:XA:677:U:O2	1:XA:777:A:O2'	2.27	0.48
9:XI:43:ALA:HA	9:XI:74:ILE:HD13	1.94	0.48
10:XJ:48:THR:HG22	10:XJ:62:HIS:HB3	1.95	0.48
13:XM:89:GLY:HA2	13:XM:92:HIS:HB2	1.95	0.48
24:YA:1250:G:N7	34:YP:18:ARG:NH2	2.60	0.48
25:YB:9:G:OP1	37:YS:15:ARG:NH1	2.46	0.48
1:QA:1032(B):G:O6	1:QA:1034:G:N2	2.46	0.48
51:R6:11:LEU:HB2	51:R6:21:TYR:HB2	1.95	0.48
1:XA:227:G:N2	16:XP:62:VAL:O	2.43	0.48
1:XA:946:A:H2'	1:XA:947:G:H8	1.77	0.48
1:XA:992:U:H3	1:XA:1044:A:N6	1.98	0.48
2:XB:178:ARG:HH22	8:XH:68:ARG:HH22	1.61	0.48
3:XC:50:ALA:HB2	3:XC:75:VAL:HG21	1.94	0.48
4:XD:63:LYS:HD2	4:XD:198:VAL:HG12	1.95	0.48
4:XD:96:LEU:HD22	4:XD:139:ARG:HD2	1.95	0.48
24:YA:1598:C:O3'	42:YX:35:THR:OG1	2.31	0.48
24:YA:1649:G:O2'	36:YR:107:ASP:OD1	2.14	0.48
29:YG:29:TRP:O	29:YG:33:ARG:NH1	2.46	0.48
44:YZ:119:GLU:OE2	44:YZ:122:ARG:NH1	2.47	0.48
1:QA:401:C:O2'	1:QA:621:A:N3	2.38	0.48
5:QE:5:ASP:N	5:QE:5:ASP:OD1	2.46	0.48
9:QI:5:TYR:O	9:QI:87:GLN:NE2	2.46	0.48
24:RA:309:G:N3	24:RA:329:G:O2'	2.44	0.48
24:RA:2517:C:N3	24:RA:2542:A:N6	2.61	0.48
49:R4:51:ASP:OD1	49:R4:51:ASP:N	2.44	0.48
1:XA:973:G:H3'	1:XA:974:A:H5''	1.94	0.48
17:XQ:79:SER:OG	17:XQ:80:GLY:N	2.45	0.48
24:YA:882:G:H22	24:YA:894:C:H42	1.62	0.48
24:YA:2099:U:O4	24:YA:2190:G:O6	2.31	0.48
47:Y2:18:PRO:HA	47:Y2:21:LEU:HB2	1.95	0.48
1:QA:970:C:N4	9:QI:128:ARG:O	2.40	0.48
3:QC:134:ILE:HG23	3:QC:151:VAL:HB	1.96	0.48
9:QI:49:PRO:HG3	9:QI:82:ALA:HB2	1.95	0.48
24:RA:1695:G:N7	26:RD:14:ARG:NH2	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:2199:A:OP1	46:R1:50:ARG:NH2	2.46	0.48
24:RA:2392:A:OP2	24:RA:2422:A:N6	2.46	0.48
28:RF:167:ALA:HB1	28:RF:173:VAL:HG11	1.95	0.48
1:XA:1355:G:H2'	1:XA:1356:G:H8	1.77	0.48
5:XE:110:LEU:HD13	5:XE:118:ILE:HD13	1.96	0.48
9:XI:28:VAL:HA	9:XI:63:ILE:HB	1.95	0.48
10:XJ:6:ILE:HG23	10:XJ:72:VAL:HB	1.95	0.48
24:YA:1496:A:H8	24:YA:1577:C:HO2'	1.59	0.48
45:Y0:27:GLU:HG3	45:Y0:68:GLU:HA	1.94	0.48
48:Y3:48:GLU:HA	48:Y3:51:ALA:HB2	1.95	0.48
53:Y8:14:VAL:HG23	53:Y8:24:ALA:HB2	1.94	0.48
1:QA:509:A:H4'	1:QA:510:A:OP1	2.14	0.48
1:QA:1022:G:H2'	1:QA:1023:G:H8	1.78	0.48
7:QG:105:VAL:O	7:QG:109:ASN:ND2	2.44	0.48
24:RA:1019:U:H3	24:RA:1142(A):A:H62	1.61	0.48
24:RA:2574:G:N2	27:RE:142:GLY:O	2.45	0.48
24:RA:2845:G:H2'	24:RA:2846:G:H8	1.78	0.48
33:RO:64:ARG:HB2	33:RO:83:ALA:HB3	1.96	0.48
48:R3:2:PRO:HD2	48:R3:39:ASP:HB3	1.94	0.48
24:YA:1728:G:N1	24:YA:1730:U:OP2	2.47	0.48
24:YA:2116:G:N1	24:YA:2165:G:O6	2.46	0.48
1:QA:514:C:H2'	1:QA:515:G:C8	2.48	0.48
1:QA:778:G:O2'	11:QK:120:ARG:O	2.31	0.48
1:QA:946:A:H2'	1:QA:947:G:H8	1.79	0.48
19:QS:21:GLU:O	19:QS:25:LYS:HB2	2.14	0.48
24:RA:2515:C:H2'	24:RA:2516:G:H8	1.78	0.48
32:RN:6:PRO:HG3	32:RN:41:ASP:HB2	1.94	0.48
44:RZ:185:GLU:HA	44:RZ:188:ALA:HB3	1.96	0.48
1:XA:376:G:H5''	16:XP:5:ARG:HB2	1.94	0.48
1:XA:993:G:O2'	1:XA:994:A:N7	2.44	0.48
1:XA:1233:G:O2'	1:XA:1365:G:OP1	2.28	0.48
1:XA:1240:U:OP1	7:XG:119:ARG:NH2	2.47	0.48
19:XS:32:LYS:HA	19:XS:50:ALA:HB3	1.95	0.48
24:YA:807:U:OP2	34:YP:41:ARG:NH2	2.47	0.48
24:YA:823:G:H2'	24:YA:824:A:C8	2.49	0.48
24:YA:1826:G:H4'	26:YD:242:ARG:HE	1.78	0.48
24:YA:1869:G:H5'	24:YA:1870:C:OP2	2.13	0.48
26:YD:71:ASP:HB2	26:YD:103:ARG:HH12	1.78	0.48
32:YN:16:ILE:HG21	32:YN:26:LEU:HD11	1.96	0.48
1:QA:21:G:H2'	1:QA:22:G:C8	2.49	0.48
1:QA:411:A:H62	1:QA:413:G:H21	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:QO:26:GLU:OE2	15:QO:77:ARG:NH1	2.42	0.48
24:RA:222:A:H3'	24:RA:421:U:H5'	1.96	0.48
24:RA:1864:U:OP1	24:RA:2410:G:O2'	2.32	0.48
1:XA:1114:C:H1'	14:XN:60:SER:HB2	1.95	0.48
1:XA:1391:U:H2'	1:XA:1392:G:C8	2.48	0.48
24:YA:455:C:N3	24:YA:473:G:H5'	2.29	0.48
24:YA:674:G:H1'	28:YF:74:ARG:HD3	1.95	0.48
46:Y1:87:PRO:HA	46:Y1:90:ILE:HG22	1.96	0.48
9:QI:33:PHE:O	9:QI:37:PHE:N	2.41	0.48
10:QJ:40:LEU:HB2	10:QJ:69:ASN:HB2	1.95	0.48
24:RA:307:G:N2	24:RA:310:A:OP2	2.46	0.48
24:RA:637:A:H4'	24:RA:638:G:O5'	2.13	0.48
24:RA:2291:U:O2'	24:RA:2374:C:O2	2.31	0.48
34:RP:52:GLU:OE2	34:RP:58:THR:OG1	2.31	0.48
37:RS:37:ALA:HB3	37:RS:51:ALA:HB3	1.95	0.48
1:XA:309:G:H2'	1:XA:310:G:H8	1.79	0.48
1:XA:1172:C:H2'	1:XA:1173:G:H8	1.79	0.48
1:XA:1305:G:O2'	1:XA:1332:A:N6	2.46	0.48
2:XB:126:GLU:OE2	2:XB:130:ARG:NH1	2.47	0.48
24:YA:1792:G:H5'	26:YD:205:VAL:HG13	1.95	0.48
1:QA:606:G:H22	1:QA:631:G:H5'	1.79	0.48
24:RA:971:C:H2'	24:RA:972:G:O4'	2.14	0.48
24:RA:1639:U:H2'	24:RA:1640:C:H5''	1.95	0.48
37:RS:95:HIS:HA	37:RS:99:LYS:HE3	1.96	0.48
1:XA:689:C:OP2	11:XK:55:LYS:NZ	2.45	0.48
1:XA:1151:A:H2'	1:XA:1152:A:C8	2.49	0.48
1:XA:1307:U:O4	1:XA:1331:G:N2	2.46	0.48
33:YO:8:LEU:HB2	33:YO:19:ILE:HG13	1.96	0.48
35:YQ:81:VAL:O	35:YQ:82:ARG:NE	2.41	0.48
37:YS:10:ARG:NH1	37:YS:91:PRO:O	2.47	0.48
1:QA:1321:C:H5''	1:QA:1322:C:H5''	1.96	0.48
24:RA:1069:A:H2'	24:RA:1073:A:H62	1.78	0.48
27:RE:50:GLY:HA2	27:RE:77:ILE:HA	1.95	0.48
32:RN:30:ILE:HG23	32:RN:52:VAL:HG11	1.95	0.48
40:RV:30:GLY:H	40:RV:61:VAL:HG13	1.78	0.48
7:XG:73:MET:HA	7:XG:90:GLU:HA	1.96	0.48
24:YA:2008:C:H2'	24:YA:2009:G:H8	1.79	0.48
26:YD:153:ALA:O	26:YD:157:ARG:NH1	2.47	0.48
1:QA:93:U:H2'	1:QA:95:G:H8	1.78	0.47
1:QA:1285:A:H1'	1:QA:1286:A:OP2	2.14	0.47
24:RA:2693:A:H2'	24:RA:2694:G:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:RG:170:ARG:HH12	29:RG:174:GLU:HB2	1.79	0.47
38:RT:124:ASP:OD2	38:RT:124:ASP:N	2.46	0.47
1:XA:1264:C:H2'	1:XA:1265:G:C8	2.48	0.47
1:XA:1469:G:H2'	1:XA:1470:G:H8	1.78	0.47
24:YA:240:G:OP2	24:YA:241:A:O2'	2.26	0.47
25:YB:42:C:H5''	29:YG:69:ALA:HB2	1.96	0.47
26:YD:81:ALA:HB3	26:YD:94:LEU:HB3	1.96	0.47
1:QA:375:U:OP1	16:QP:69:THR:OG1	2.23	0.47
6:QF:50:TYR:OH	18:QR:75:ILE:O	2.33	0.47
24:RA:10:G:N2	24:RA:2802:G:OP1	2.43	0.47
24:RA:1073:A:HO2'	24:RA:1074:G:C5'	2.27	0.47
24:RA:1666:G:N3	33:RO:3:GLN:NE2	2.62	0.47
24:RA:2228:G:OP1	26:RD:261:LYS:NZ	2.44	0.47
24:RA:2696:U:H2'	24:RA:2697:G:C8	2.49	0.47
32:RN:39:ARG:NH1	32:RN:41:ASP:OD2	2.46	0.47
37:RS:15:ARG:HD2	37:RS:25:ARG:HH11	1.78	0.47
1:XA:56:U:H2'	1:XA:57:G:C8	2.49	0.47
1:XA:316:G:OP2	1:XA:351:G:O2'	2.19	0.47
11:XK:86:GLY:O	11:XK:91:ARG:NH1	2.46	0.47
24:YA:1264:G:OP1	50:Y5:19:ARG:NH2	2.30	0.47
24:YA:2392:A:OP2	24:YA:2422:A:N6	2.42	0.47
24:YA:2478:A:H5'	54:Y9:31:LYS:HE2	1.95	0.47
28:YF:178:PRO:HB3	28:YF:198:ALA:HB1	1.96	0.47
37:YS:77:ALA:HB1	37:YS:82:ILE:HB	1.96	0.47
49:Y4:26:SER:OG	49:Y4:27:THR:N	2.45	0.47
1:QA:806:C:H2'	1:QA:807:A:H8	1.79	0.47
1:QA:1175:G:H2'	1:QA:1176:A:H8	1.79	0.47
1:QA:1391:U:H2'	1:QA:1392:G:C8	2.50	0.47
2:QB:67:THR:HG23	2:QB:159:PRO:HA	1.96	0.47
13:QM:15:VAL:HA	13:QM:18:ALA:HB3	1.95	0.47
19:QS:3:ARG:NH1	19:QS:8:GLY:O	2.46	0.47
20:QT:89:ARG:NH1	20:QT:105:SER:O	2.47	0.47
24:RA:1665:A:H1'	33:RO:1:MET:HG2	1.96	0.47
29:RG:65:GLY:HA2	49:R4:7:PRO:HG2	1.96	0.47
41:RW:18:ARG:HD2	41:RW:76:VAL:HB	1.97	0.47
3:XC:189:ALA:HB3	3:XC:196:LEU:HB2	1.95	0.47
6:XF:97:PHE:HB2	18:XR:32:ARG:HE	1.78	0.47
10:XJ:23:ILE:HD12	10:XJ:85:LEU:HD11	1.96	0.47
24:YA:229:A:OP1	24:YA:229:A:H4'	2.13	0.47
24:YA:627:A:H4'	24:YA:628:G:H5'	1.95	0.47
24:YA:1405:U:H2'	24:YA:1406:U:H6	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:2441:C:OP2	24:YA:2586:C:O2'	2.31	0.47
50:Y5:45:VAL:HG13	50:Y5:52:TYR:HB2	1.97	0.47
1:QA:1499:A:H1'	1:QA:1520:G:H5'	1.95	0.47
3:QC:172:ARG:HG2	3:QC:174:PRO:HD3	1.96	0.47
24:RA:728:G:H5''	26:RD:13:ARG:HH21	1.78	0.47
24:RA:900:A:H3'	24:RA:901:A:H8	1.78	0.47
27:RE:201:THR:HG22	27:RE:203:LYS:H	1.79	0.47
37:RS:15:ARG:NE	37:RS:88:ASP:OD1	2.47	0.47
1:XA:243:A:H4'	1:XA:244:U:H3'	1.95	0.47
1:XA:359:U:H6	1:XA:359:U:OP2	1.97	0.47
24:YA:582:G:H2'	24:YA:583:G:C8	2.49	0.47
24:YA:2468:G:O2'	24:YA:2481:G:N2	2.47	0.47
34:YP:59:LEU:HD12	53:Y8:58:ILE:HG12	1.95	0.47
35:YQ:63:LYS:HD2	44:YZ:175:VAL:HG21	1.95	0.47
51:Y6:12:GLU:OE2	51:Y6:19:ARG:NH1	2.47	0.47
24:RA:270(U):C:H2'	24:RA:270(V):G:H8	1.78	0.47
27:RE:38:THR:OG1	27:RE:40:GLU:OE1	2.32	0.47
37:RS:11:LYS:HG3	37:RS:91:PRO:HD3	1.96	0.47
45:R0:32:ARG:H	45:R0:35:ASN:HD21	1.61	0.47
1:XA:501:C:H2'	1:XA:502:G:H8	1.79	0.47
18:XR:37:VAL:O	18:XR:41:LYS:N	2.45	0.47
24:YA:262:A:N3	24:YA:430:G:O2'	2.36	0.47
33:YO:19:ILE:HG22	33:YO:43:VAL:HA	1.95	0.47
33:YO:106:LEU:HB3	33:YO:111:PHE:HB2	1.96	0.47
1:QA:1004:A:H2	1:QA:1025:U:H1'	1.80	0.47
4:QD:122:ARG:NH1	4:QD:134:ASP:O	2.44	0.47
30:RH:87:LEU:HD22	30:RH:162:ILE:HG22	1.95	0.47
1:XA:21:G:H2'	1:XA:22:G:C8	2.49	0.47
1:XA:427:U:OP1	4:XD:13:ARG:NH1	2.47	0.47
1:XA:1316:G:H4'	14:YN:18:VAL:HG11	1.96	0.47
13:XM:31:LYS:HA	13:XM:34:LEU:HD12	1.97	0.47
24:YA:576:U:H2'	24:YA:577:G:C8	2.50	0.47
24:YA:2151:G:H2'	24:YA:2152:G:C8	2.50	0.47
50:Y5:41:PRO:O	50:Y5:44:THR:OG1	2.32	0.47
1:QA:429:U:OP2	4:QD:36:ARG:NH2	2.48	0.47
1:QA:642:A:N3	8:QH:113:SER:OG	2.42	0.47
1:QA:712:A:H2'	1:QA:713:G:C8	2.50	0.47
1:QA:1349:A:H62	1:QA:1373:G:N2	2.12	0.47
4:QD:19:LEU:HD22	4:QD:67:ILE:CG1	2.44	0.47
12:QL:93:LEU:HD23	12:QL:96:VAL:HG21	1.97	0.47
13:QM:102:ARG:HH21	13:QM:105:THR:HG23	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:QP:5:ARG:NH2	16:QP:27:LYS:O	2.47	0.47
24:RA:2327:A:H2'	24:RA:2328:A:C8	2.48	0.47
32:RN:41:ASP:OD1	32:RN:41:ASP:N	2.41	0.47
45:R0:70:GLN:OE1	45:R0:80:HIS:NE2	2.47	0.47
1:XA:587:G:N2	1:XA:754:C:OP2	2.47	0.47
2:XB:95:GLN:HG3	2:XB:147:LYS:HG2	1.97	0.47
4:XD:57:ARG:NH2	4:XD:205:GLU:OE2	2.38	0.47
24:YA:603:A:N1	24:YA:625:G:O2'	2.41	0.47
24:YA:848:G:H2'	24:YA:849:A:C8	2.49	0.47
24:YA:1352:U:O2'	24:YA:1570:A:N3	2.36	0.47
24:YA:2352:A:N6	24:YA:2365:G:O2'	2.48	0.47
25:YB:52:A:HO2'	25:YB:53:A:H8	1.62	0.47
25:YB:77:U:OP1	44:YZ:19:ARG:NH2	2.47	0.47
26:YD:75:ILE:HG21	26:YD:99:ASP:HB2	1.97	0.47
26:YD:266:SER:O	26:YD:266:SER:OG	2.33	0.47
1:QA:429:U:H5'	4:QD:9:CYS:HB2	1.97	0.47
1:QA:552:U:H2'	1:QA:553:A:H8	1.80	0.47
1:QA:599:C:O2'	8:QH:129:VAL:O	2.25	0.47
1:QA:782:A:H62	1:QA:800:G:H21	1.63	0.47
1:QA:938:A:N3	1:QA:1376:U:O2'	2.45	0.47
24:RA:30:G:O2'	24:RA:1214:A:N3	2.41	0.47
24:RA:582:G:H2'	24:RA:583:G:C8	2.50	0.47
24:RA:1073:A:O2'	24:RA:1074:G:O5'	2.26	0.47
24:RA:1417:C:H2'	24:RA:1418:G:O4'	2.15	0.47
24:RA:1681:G:HO2'	24:RA:1762:A:HO2'	1.62	0.47
28:RF:13:SER:OG	28:RF:15:SER:OG	2.32	0.47
35:RQ:54:MET:HG2	35:RQ:117:ALA:HB1	1.97	0.47
40:RV:72:VAL:HG13	40:RV:85:LYS:HB3	1.97	0.47
3:XC:104:GLN:NE2	3:XC:105:GLU:O	2.46	0.47
3:XC:157:ILE:HD12	3:XC:164:ARG:HB2	1.97	0.47
4:XD:57:ARG:HG3	4:XD:202:LEU:HB3	1.96	0.47
8:XH:121:ASP:OD1	8:XH:121:ASP:N	2.45	0.47
17:XQ:55:ASP:HA	17:XQ:79:SER:HA	1.96	0.47
20:XT:70:SER:HA	20:XT:73:HIS:HD2	1.79	0.47
24:YA:1664:A:H61	24:YA:1996:C:H42	1.63	0.47
24:YA:1882:C:H3'	24:YA:1883:G:H8	1.80	0.47
24:YA:2001:A:H2'	24:YA:2002:G:C8	2.50	0.47
24:YA:2181:G:H2'	24:YA:2182:G:C8	2.49	0.47
30:YH:124:GLU:HB2	30:YH:132:ARG:HB3	1.96	0.47
37:YS:56:LEU:HD12	37:YS:58:LEU:HD22	1.97	0.47
46:Y1:18:ILE:HG12	46:Y1:37:ILE:HG12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:1065:U:O2'	1:QA:1066:C:OP2	2.27	0.47
1:QA:1142:G:H3'	1:QA:1143:G:H8	1.80	0.47
16:QP:1:MET:SD	16:QP:3:LYS:NZ	2.76	0.47
24:RA:30:G:H2'	24:RA:31:C:C6	2.50	0.47
24:RA:511:U:H4'	24:RA:1235:G:H4'	1.97	0.47
24:RA:1462:C:H4'	24:RA:2703:C:H5'	1.96	0.47
24:RA:1645:G:H5''	24:RA:1646:C:H5'	1.97	0.47
24:RA:2012:G:OP1	41:RW:11:ARG:NH2	2.48	0.47
34:RP:106:LEU:HD21	34:RP:112:LEU:HD13	1.96	0.47
1:XA:444:C:H2'	1:XA:445:G:H8	1.80	0.47
1:XA:486:U:H2'	1:XA:487:A:H8	1.79	0.47
1:XA:958:A:N3	1:XA:985:C:O2'	2.45	0.47
1:XA:1224:G:O2'	1:XA:1322:C:OP2	2.32	0.47
1:XA:1342:C:H2'	1:XA:1343:G:H8	1.80	0.47
17:XQ:53:LEU:HD23	17:XQ:85:VAL:HG11	1.97	0.47
24:YA:247:G:H4'	24:YA:386:G:C5	2.50	0.47
24:YA:679:C:H2'	24:YA:680:G:C8	2.50	0.47
24:YA:2162:G:H4'	24:YA:2173:A:OP2	2.14	0.47
24:YA:2791:C:H5	24:YA:2893:G:H3'	1.79	0.47
26:YD:26:LYS:NZ	26:YD:83:GLU:OE2	2.40	0.47
28:YF:195:ASP:OD1	28:YF:195:ASP:N	2.40	0.47
1:QA:1348:U:H4'	9:QI:120:ARG:HD2	1.96	0.47
3:QC:19:GLU:O	3:QC:40:ARG:NH2	2.48	0.47
24:RA:414:C:H2'	24:RA:415:A:H8	1.80	0.47
24:RA:572:A:H61	24:RA:2029:G:N2	2.11	0.47
24:RA:1012:U:OP1	39:RU:75:ASN:ND2	2.47	0.47
24:RA:1149:G:H2'	24:RA:1150:C:C6	2.50	0.47
24:RA:2364:C:OP1	45:R0:55:ARG:NH1	2.46	0.47
24:RA:2689:U:H4'	24:RA:2690:C:O5'	2.14	0.47
34:RP:101:VAL:HB	34:RP:106:LEU:HB2	1.96	0.47
1:XA:398:C:H2'	1:XA:399:G:H8	1.80	0.47
2:XB:187:LEU:HA	2:XB:201:ILE:HB	1.97	0.47
4:XD:61:LYS:NZ	4:XD:62:GLN:OE1	2.35	0.47
24:YA:831:G:O2'	34:YP:38:GLN:NE2	2.48	0.47
24:YA:1359:A:N6	24:YA:1372:U:N3	2.40	0.47
24:YA:1830:C:H2'	24:YA:1831:G:H8	1.79	0.47
24:YA:2529:G:H5''	24:YA:2530:A:H5''	1.96	0.47
27:YE:47:VAL:HG11	27:YE:86:PRO:HD2	1.96	0.47
51:Y6:9:LEU:HD13	51:Y6:51:GLU:HB2	1.97	0.47
1:QA:701:C:OP1	1:QA:702:A:O2'	2.23	0.46
1:QA:881:G:OP2	12:QL:12:ARG:NH2	2.46	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:1042:G:O6	24:RA:1113:U:O2	2.34	0.46
1:XA:359:U:H3'	1:XA:359:U:P	2.55	0.46
1:XA:1022:G:H2'	1:XA:1023:G:C8	2.50	0.46
3:XC:85:ARG:HD2	3:XC:85:ARG:HA	1.75	0.46
24:YA:776:G:N7	24:YA:793:A:O2'	2.41	0.46
24:YA:1086:A:O2'	24:YA:1103:A:N6	2.48	0.46
36:YR:56:LYS:NZ	36:YR:90:ARG:O	2.48	0.46
1:QA:422:C:O2'	1:QA:423:G:N2	2.48	0.46
7:QG:93:PRO:HA	7:QG:96:GLN:HB2	1.96	0.46
9:QI:10:ARG:HE	9:QI:75:ASP:HB3	1.80	0.46
17:QQ:66:SER:OG	17:QQ:67:LYS:O	2.26	0.46
24:RA:1224:G:N2	24:RA:1227:A:OP2	2.37	0.46
24:RA:2421:G:N7	53:R8:31:HIS:CE1	2.82	0.46
26:RD:73:VAL:HG13	26:RD:120:GLY:HA2	1.97	0.46
1:XA:406:G:O3'	4:XD:3:ARG:NH1	2.43	0.46
1:XA:757:U:H2'	1:XA:758:G:O4'	2.14	0.46
6:XF:10:LEU:HD13	6:XF:61:LEU:HD13	1.97	0.46
11:XK:11:LYS:HD2	11:XK:12:ARG:HB2	1.98	0.46
24:YA:307:G:H21	24:YA:330:A:H62	1.64	0.46
24:YA:922:U:H2'	24:YA:923:C:C6	2.50	0.46
24:YA:1183:G:O3'	48:Y3:29:ARG:NH1	2.40	0.46
24:YA:1952:A:N3	24:YA:2560:C:O2'	2.39	0.46
24:YA:2776:A:H4'	24:YA:2777:G:O5'	2.15	0.46
1:QA:1318:A:H1'	19:QS:37:ARG:HE	1.81	0.46
5:QE:33:VAL:HG13	5:QE:112:LEU:HD12	1.97	0.46
19:QS:32:LYS:HA	19:QS:50:ALA:HB3	1.97	0.46
24:RA:139:G:C2	24:RA:141:A:N6	2.84	0.46
24:RA:579:G:O2'	24:RA:2019:A:OP1	2.32	0.46
24:RA:840:C:H2'	24:RA:841:A:H8	1.80	0.46
33:RO:105:GLU:HA	33:RO:108:GLU:HG3	1.97	0.46
36:RR:54:LEU:HB3	36:RR:62:ALA:HB1	1.98	0.46
1:XA:34:C:H2'	1:XA:35:G:C8	2.49	0.46
6:XF:45:LEU:HD12	6:XF:59:TYR:HD1	1.80	0.46
24:YA:297:C:OP1	43:YY:87:LYS:NZ	2.45	0.46
24:YA:381:G:OP1	46:Y1:16:ASN:ND2	2.42	0.46
24:YA:2117:A:N7	24:YA:2172:U:N3	2.62	0.46
24:YA:2610:C:H4'	24:YA:2611:U:OP2	2.14	0.46
25:YB:114:G:O2'	37:YS:50:SER:OG	2.31	0.46
1:QA:359:U:H2'	1:QA:360:A:C8	2.50	0.46
1:QA:628:G:H2'	1:QA:629:G:C8	2.50	0.46
5:QE:105:VAL:HG21	5:QE:128:PRO:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:QF:71:ARG:O	6:QF:75:LEU:N	2.48	0.46
7:QG:24:THR:HA	7:QG:27:ILE:HG22	1.96	0.46
24:RA:139:G:H22	24:RA:1596:A:H4'	1.81	0.46
24:RA:303:U:H2'	24:RA:304:G:H8	1.80	0.46
38:RT:24:PRO:HD3	38:RT:52:ILE:HD12	1.97	0.46
1:XA:264:U:O2'	17:XQ:64:PRO:O	2.31	0.46
1:XA:538:G:H2'	1:XA:539:A:H8	1.79	0.46
3:XC:9:GLY:HA2	3:XC:12:LEU:HG	1.97	0.46
4:XD:102:ASP:N	4:XD:102:ASP:OD1	2.48	0.46
24:YA:226:G:O2'	24:YA:228:A:N6	2.48	0.46
24:YA:242:G:H1'	24:YA:243:U:OP2	2.15	0.46
24:YA:527:C:N4	24:YA:2779:U:OP2	2.41	0.46
24:YA:2064:C:H2'	24:YA:2065:C:H6	1.81	0.46
24:YA:2305:A:N6	29:YG:154:GLY:O	2.48	0.46
24:YA:2314:C:H2'	24:YA:2315:G:H8	1.81	0.46
27:YE:8:LYS:NZ	27:YE:188:VAL:O	2.42	0.46
8:QH:17:THR:O	8:QH:78:GLN:NE2	2.40	0.46
24:RA:414:C:H2'	24:RA:415:A:C8	2.51	0.46
24:RA:807:U:OP2	34:RP:41:ARG:NH1	2.48	0.46
24:RA:2365:G:O6	53:R8:43:GLN:NE2	2.48	0.46
25:RB:84:C:OP1	48:R3:15:TYR:OH	2.31	0.46
27:RE:14:ILE:HG23	38:RT:14:TYR:HE2	1.81	0.46
1:XA:157:G:H1	1:XA:164:U:H3	1.62	0.46
1:XA:509:A:H4'	1:XA:510:A:OP1	2.15	0.46
3:XC:29:TYR:OH	14:XN:54:PRO:O	2.33	0.46
8:XH:112:LEU:HA	8:XH:134:ILE:HG12	1.98	0.46
24:YA:1385:G:O2'	24:YA:1396:U:O2	2.29	0.46
24:YA:1416:G:H2'	24:YA:1417:C:C6	2.50	0.46
24:YA:1812:A:H2'	24:YA:1813:G:H8	1.80	0.46
28:YF:116:ASP:OD1	28:YF:119:ARG:NH2	2.49	0.46
1:QA:403:C:H2'	1:QA:404:U:H6	1.81	0.46
1:QA:1329:A:H5''	13:QM:26:GLY:H	1.81	0.46
12:QL:32:PHE:HA	12:QL:85:ILE:O	2.15	0.46
24:RA:37:C:H2'	24:RA:38:A:H8	1.81	0.46
24:RA:776:G:N1	24:RA:2072:G:OP1	2.39	0.46
31:RI:93:THR:OG1	31:RI:94:ALA:N	2.48	0.46
35:RQ:10:ARG:HD2	44:RZ:196:VAL:HG21	1.97	0.46
1:XA:749:C:H2'	1:XA:750:G:H8	1.80	0.46
8:XH:116:LYS:HD2	8:XH:129:VAL:HG11	1.97	0.46
24:YA:249:C:O2'	34:YP:64:LYS:NZ	2.48	0.46
24:YA:347:A:H2'	24:YA:348:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:806:C:O2	24:YA:2444:G:O2'	2.32	0.46
24:YA:888:C:H3'	24:YA:889:C:H4'	1.96	0.46
24:YA:2776:A:OP1	24:YA:2776:A:H3'	2.15	0.46
46:Y1:52:ARG:HD2	46:Y1:57:GLU:HB2	1.98	0.46
1:QA:165:C:H2'	1:QA:166:G:H8	1.80	0.46
4:QD:10:ARG:HB2	4:QD:40:PRO:HG3	1.97	0.46
24:RA:451:C:H4'	28:RF:52:LYS:HE2	1.97	0.46
24:RA:2021:C:OP1	50:R5:12:SER:OG	2.22	0.46
1:XA:323:U:OP1	20:XT:26:ASN:ND2	2.48	0.46
1:XA:1003:G:N2	1:XA:1038:C:N3	2.64	0.46
24:YA:278:A:H2'	24:YA:279:C:C6	2.51	0.46
1:QA:235:C:H2'	1:QA:236:G:H8	1.81	0.46
1:QA:419:C:OP1	1:QA:513:C:O2'	2.33	0.46
1:QA:924:C:H2'	1:QA:925:G:H8	1.81	0.46
13:QM:15:VAL:HG13	13:QM:45:VAL:HB	1.98	0.46
24:RA:10:G:HO2'	24:RA:2801:A:HO2'	1.63	0.46
24:RA:1790:C:H5''	24:RA:1791:A:OP1	2.16	0.46
48:R3:6:VAL:HG12	48:R3:56:VAL:HG12	1.97	0.46
1:XA:1320:C:H42	19:XS:36:ARG:HB2	1.81	0.46
2:XB:33:TYR:HB2	2:XB:43:ASP:HB2	1.96	0.46
24:YA:1405:U:H2'	24:YA:1406:U:C6	2.51	0.46
24:YA:1470:G:N2	24:YA:1522:G:OP2	2.47	0.46
24:YA:1678:G:N2	24:YA:1989:G:H22	2.13	0.46
24:YA:1783:A:H5'	24:YA:2608:G:H4'	1.98	0.46
1:QA:139:G:H2'	1:QA:140:A:H8	1.80	0.46
1:QA:555:C:H2'	1:QA:556:C:C6	2.51	0.46
1:QA:908:A:H2'	1:QA:909:A:H8	1.80	0.46
1:QA:946:A:H2'	1:QA:947:G:C8	2.50	0.46
1:QA:985:C:H2'	1:QA:986:A:H8	1.81	0.46
1:QA:1513:A:H2'	1:QA:1514:C:C6	2.51	0.46
3:QC:77:ILE:HD12	3:QC:84:ILE:HG21	1.98	0.46
15:QO:67:LEU:HB3	15:QO:78:TYR:HE1	1.80	0.46
24:RA:631:A:OP2	53:R8:46:ARG:NH2	2.49	0.46
24:RA:1629:U:H2'	24:RA:1630:G:C8	2.51	0.46
29:RG:135:LEU:HB2	29:RG:155:MET:HG2	1.98	0.46
35:RQ:24:GLY:H	35:RQ:101:ARG:HD2	1.80	0.46
47:R2:4:SER:OG	47:R2:5:GLU:N	2.48	0.46
1:XA:1005:A:H3'	1:XA:1006:C:H6	1.81	0.46
7:XG:20:ASP:HB3	7:XG:23:VAL:HG12	1.97	0.46
7:XG:150:ALA:HB1	11:XK:57:THR:HG21	1.98	0.46
24:YA:484:C:H2'	24:YA:485:C:H6	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:2131:G:H4'	24:YA:2132:U:H4'	1.97	0.46
2:QB:166:ASP:HB3	2:QB:169:LYS:HB3	1.98	0.46
23:QX:18:G:HO2'	23:QX:19:G:P	2.39	0.46
24:RA:1067:A:H4'	24:RA:1068:G:OP2	2.15	0.46
24:RA:1416:G:H2'	24:RA:1417:C:C6	2.51	0.46
24:RA:1592:C:H2'	24:RA:1593:G:H8	1.81	0.46
24:RA:1728:G:H8	24:RA:1732:A:H62	1.62	0.46
25:RB:43:C:O2	29:RG:93:THR:OG1	2.33	0.46
35:RQ:44:ALA:HB2	35:RQ:70:PRO:HG3	1.98	0.46
42:RX:5:TYR:O	47:R2:36:ARG:NH2	2.49	0.46
1:XA:619:U:N3	4:XD:134:ASP:OD1	2.47	0.46
1:XA:971:G:N2	1:XA:1363:A:OP2	2.47	0.46
24:YA:117:G:OP2	24:YA:119:A:O2'	2.26	0.46
24:YA:668:G:H2'	24:YA:670:A:H62	1.81	0.46
24:YA:1651:G:N7	36:YR:11:ASN:ND2	2.64	0.46
33:YO:104:ARG:NH2	38:YT:43:GLN:OE1	2.40	0.46
1:QA:254:G:H2'	1:QA:255:G:H8	1.80	0.45
1:QA:477:G:H2'	1:QA:478:A:H8	1.81	0.45
6:QF:39:LYS:HB2	6:QF:64:GLN:HB3	1.98	0.45
24:RA:2779:U:O2'	24:RA:2781:A:N7	2.46	0.45
41:RW:71:VAL:HA	41:RW:107:LEU:HD23	1.98	0.45
1:XA:501:C:H2'	1:XA:502:G:C8	2.51	0.45
8:XH:100:ILE:O	8:XH:125:ARG:NH2	2.49	0.45
15:XO:88:ARG:HH12	24:YA:713:G:P	2.38	0.45
24:YA:2867:G:O2'	24:YA:2868:A:P	2.74	0.45
1:QA:1010:G:H2'	1:QA:1011:G:H8	1.79	0.45
1:QA:1510:U:H2'	1:QA:1511:G:C8	2.50	0.45
6:QF:9:VAL:HB	6:QF:87:ARG:HB2	1.98	0.45
24:RA:38:A:H2'	24:RA:39:C:C6	2.51	0.45
24:RA:347:A:H2'	24:RA:348:G:H8	1.80	0.45
24:RA:1427:A:H4'	24:RA:1428:C:O5'	2.13	0.45
24:RA:1503:U:H2'	24:RA:1504:C:H6	1.82	0.45
24:RA:2619:C:OP1	27:RE:152:LYS:HE2	2.16	0.45
24:RA:2630:G:H2'	24:RA:2631:G:H8	1.82	0.45
25:RB:28:C:H2'	25:RB:29:A:C8	2.52	0.45
1:XA:390:C:H2'	1:XA:391:G:C8	2.52	0.45
3:XC:134:ILE:HG23	3:XC:151:VAL:HB	1.99	0.45
24:YA:620:G:H4'	24:YA:621:A:H5''	1.98	0.45
24:YA:1059:G:OP2	24:YA:1060:U:H5''	2.15	0.45
24:YA:1638:C:O2	24:YA:2698:U:O2'	2.32	0.45
31:YI:90:GLY:O	31:YI:121:LYS:NZ	2.44	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:YY:14:LEU:HB2	43:YY:75:ILE:HD11	1.98	0.45
47:Y2:64:LEU:O	47:Y2:68:ARG:HD2	2.15	0.45
47:Y2:69:ARG:CB	47:Y2:69:ARG:HH11	2.27	0.45
1:QA:196:A:OP1	20:QT:68:LYS:NZ	2.47	0.45
1:QA:1261:A:H62	1:QA:1274:G:H21	1.64	0.45
3:QC:112:SER:HB3	3:QC:115:LEU:HD12	1.97	0.45
24:RA:247:G:H4'	24:RA:386:G:C5	2.51	0.45
24:RA:839:U:H1'	24:RA:1191:G:H1'	1.98	0.45
24:RA:1340:U:OP2	42:RX:78:LYS:NZ	2.49	0.45
24:RA:1812:A:H2'	24:RA:1813:G:C8	2.51	0.45
37:RS:15:ARG:HG3	37:RS:19:LYS:HE2	1.97	0.45
1:XA:59:A:H3'	1:XA:331:G:H22	1.82	0.45
1:XA:181:G:N2	1:XA:195:A:N1	2.64	0.45
13:XM:3:ARG:HA	13:XM:9:ILE:HG21	1.97	0.45
24:YA:1637:A:H4'	24:YA:2711:A:O2'	2.16	0.45
24:YA:2006:C:O2'	24:YA:2823:A:N3	2.47	0.45
28:YF:12:LEU:HB3	28:YF:126:VAL:HG12	1.97	0.45
1:QA:191(D):U:H2'	1:QA:191(E):G:C8	2.51	0.45
24:RA:593:G:H4'	53:R8:61:LEU:HD13	1.98	0.45
24:RA:679:C:H2'	24:RA:680:G:C8	2.51	0.45
24:RA:1173:G:H4'	24:RA:1174:A:N7	2.30	0.45
24:RA:2572:A:H2'	27:RE:144:ARG:HD3	1.99	0.45
29:RG:68:PRO:HG2	29:RG:90:LEU:HD23	1.98	0.45
1:XA:115:G:H4'	1:XA:116:A:O5'	2.16	0.45
1:XA:277:C:OP2	17:XQ:41:LYS:NZ	2.48	0.45
1:XA:745:C:H2'	1:XA:746:A:C8	2.49	0.45
1:XA:1431:C:H2'	1:XA:1432:G:O4'	2.16	0.45
24:YA:251:A:C5	24:YA:252:G:H1'	2.51	0.45
24:YA:1021:A:H3'	24:YA:1022:G:H5''	1.99	0.45
37:YS:18:ILE:HG13	37:YS:88:ASP:HA	1.97	0.45
49:Y4:57:GLU:HG3	49:Y4:61:ARG:HE	1.81	0.45
1:QA:1064:G:H1'	1:QA:1066:C:C6	2.51	0.45
1:QA:1218:C:H2'	1:QA:1219:U:C6	2.52	0.45
2:QB:230:VAL:HG12	2:QB:231:GLU:H	1.81	0.45
12:QL:60:LEU:HD12	12:QL:62:SER:H	1.82	0.45
24:RA:270(I):G:H2'	24:RA:270(J):G:C8	2.52	0.45
24:RA:1266:G:O2'	24:RA:2012:G:O6	2.24	0.45
24:RA:2564:A:C8	24:RA:2648:C:H5'	2.52	0.45
1:XA:1307:U:H5''	13:XM:101:GLN:HE21	1.80	0.45
1:XA:1355:G:H2'	1:XA:1356:G:C8	2.52	0.45
1:XA:1500:A:H5''	1:XA:1508:G:H5''	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:XH:8:ASP:OD2	8:XH:12:ARG:NH2	2.50	0.45
10:XJ:9:ARG:HB2	10:XJ:95:GLU:HB3	1.99	0.45
24:YA:767:U:H2'	24:YA:768:G:H8	1.82	0.45
24:YA:839:U:H1'	24:YA:1191:G:H1'	1.98	0.45
24:YA:1800:C:O2	24:YA:1817:G:O6	2.35	0.45
24:YA:1888:G:OP2	24:YA:1888:G:N2	2.44	0.45
24:YA:2511:U:O2'	27:YE:138:PRO:O	2.27	0.45
12:QL:53:ARG:HH12	12:QL:92:ASP:HB2	1.82	0.45
21:QU:15:ARG:HB3	21:QU:17:THR:HG23	1.99	0.45
24:RA:181:A:H1'	24:RA:435:C:H5'	1.98	0.45
24:RA:1509:C:H3'	24:RA:1510:A:H5''	1.98	0.45
24:RA:2729:G:H1'	27:RE:187:ALA:HB2	1.98	0.45
35:RQ:13:GLN:O	35:RQ:72:LYS:NZ	2.44	0.45
1:XA:1287:A:H2'	1:XA:1288:A:C8	2.52	0.45
1:XA:1443:G:H5'	1:XA:1446:A:OP2	2.17	0.45
2:XB:168:THR:HA	2:XB:171:ALA:HB2	1.97	0.45
24:YA:141:A:H8	24:YA:1408:C:H1'	1.82	0.45
24:YA:2590:A:H2'	24:YA:2591:C:H6	1.82	0.45
39:YU:52:ARG:HH11	39:YU:55:ARG:HH21	1.65	0.45
1:QA:603:U:H2'	1:QA:604:G:H8	1.81	0.45
1:QA:618:C:H5'	1:QA:619:U:H5''	1.99	0.45
24:RA:139:G:N3	24:RA:141:A:N1	2.65	0.45
24:RA:662:G:H5''	34:RP:16:ARG:HG2	1.99	0.45
24:RA:2250:G:C4	35:RQ:82:ARG:HG3	2.52	0.45
24:RA:2832:U:HO2'	24:RA:2833:G:P	2.39	0.45
36:RR:38:VAL:HG22	36:RR:112:ALA:HB2	1.98	0.45
3:XC:191:THR:OG1	3:XC:194:GLY:O	2.32	0.45
6:XF:100:ASN:ND2	18:XR:26:LEU:O	2.49	0.45
24:YA:24:G:O2'	41:YW:78:GLU:O	2.32	0.45
24:YA:1231:G:H2'	24:YA:1232:G:H8	1.81	0.45
24:YA:2286:A:H4'	24:YA:2287:A:O4'	2.17	0.45
27:YE:34:VAL:HG12	27:YE:72:VAL:HG21	1.99	0.45
28:YF:143:ALA:HB1	28:YF:148:LEU:HB2	1.97	0.45
29:YG:39:ILE:HB	29:YG:92:VAL:HG12	1.99	0.45
29:YG:150:ASP:OD1	29:YG:150:ASP:N	2.48	0.45
43:YY:30:VAL:HG22	43:YY:37:VAL:HG12	1.98	0.45
44:YZ:2:GLU:OE2	44:YZ:4:ARG:NE	2.44	0.45
1:QA:28:G:O2'	1:QA:296:U:OP1	2.26	0.45
1:QA:950:U:H2'	1:QA:951:G:C8	2.52	0.45
1:QA:1073:U:O2	2:QB:104:ASN:ND2	2.46	0.45
1:QA:1352:C:OP1	21:QU:3:LYS:NZ	2.37	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:1151:G:O2'	39:RU:77:SER:O	2.32	0.45
24:RA:1815:A:OP2	26:RD:54:ARG:NH2	2.49	0.45
24:RA:1991:U:H2'	24:RA:1992:G:H5''	1.98	0.45
1:XA:603:U:H2'	1:XA:604:G:C8	2.51	0.45
1:XA:1225:A:H5''	1:XA:1226:C:OP2	2.17	0.45
5:XE:94:ALA:HB1	5:XE:98:THR:HG21	1.99	0.45
8:XH:39:LEU:O	8:XH:44:PHE:N	2.49	0.45
20:XT:48:LYS:HD2	20:XT:48:LYS:HA	1.76	0.45
24:YA:221:A:H4'	24:YA:222:A:O5'	2.16	0.45
24:YA:250:G:OP2	53:Y8:13:ARG:NH2	2.49	0.45
24:YA:1348:G:H2'	24:YA:1349:A:H5''	1.97	0.45
24:YA:1412:A:H2'	24:YA:1413:G:C8	2.52	0.45
1:QA:56:U:H2'	1:QA:57:G:C8	2.51	0.45
1:QA:376:G:O3'	16:QP:5:ARG:NH1	2.49	0.45
1:QA:552:U:O2'	12:QL:86:ARG:O	2.34	0.45
1:QA:806:C:H2'	1:QA:807:A:C8	2.51	0.45
1:QA:1172:C:H2'	1:QA:1173:G:H8	1.82	0.45
4:QD:60:GLU:HG2	4:QD:202:LEU:HB2	1.99	0.45
7:QG:37:ASN:HD21	9:QI:40:LEU:HD23	1.81	0.45
24:RA:823:G:H2'	24:RA:824:A:H8	1.82	0.45
24:RA:2114:A:H5''	24:RA:2117:A:H5'	1.98	0.45
29:RG:84:LYS:HB2	29:RG:84:LYS:HE2	1.80	0.45
38:RT:123:GLN:O	38:RT:125:ARG:N	2.50	0.45
1:XA:7:G:O2'	5:XE:120:THR:O	2.35	0.45
1:XA:826:C:O2	8:XH:15:ASN:ND2	2.50	0.45
1:XA:1119:C:H2'	1:XA:1120:G:C8	2.52	0.45
8:XH:51:VAL:HG21	8:XH:60:ARG:HG3	1.99	0.45
11:XK:19:ALA:HA	11:XK:32:ILE:HA	1.99	0.45
11:XK:32:ILE:HD13	11:XK:72:ALA:HB2	1.98	0.45
14:XN:41:ARG:HG3	14:XN:42:ILE:HG13	1.99	0.45
24:YA:582:G:H2'	24:YA:583:G:H8	1.82	0.45
52:Y7:10:ARG:HE	52:Y7:14:LYS:HD2	1.82	0.45
1:QA:184:G:H2'	1:QA:185:A:H8	1.81	0.45
2:QB:43:ASP:O	2:QB:47:THR:OG1	2.29	0.45
4:QD:14:ARG:HD2	4:QD:40:PRO:HD2	1.98	0.45
5:QE:51:VAL:HG23	5:QE:52:PRO:HD3	1.98	0.45
10:QJ:99:LYS:HD3	10:QJ:99:LYS:HA	1.71	0.45
24:RA:263:C:H2'	24:RA:264:C:O4'	2.17	0.45
24:RA:665:C:H2'	24:RA:666:G:H8	1.82	0.45
24:RA:1769:G:O2'	24:RA:1958:C:OP1	2.29	0.45
33:RO:88:ASN:HD21	33:RO:92:GLU:HB2	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:RR:3:HIS:O	36:RR:5:LYS:N	2.49	0.45
1:XA:60:A:H4'	1:XA:61:G:O5'	2.17	0.45
4:XD:150:GLU:HA	4:XD:153:ARG:HE	1.82	0.45
17:XQ:4:LYS:H	17:XQ:61:GLU:HB3	1.82	0.45
17:XQ:88:TYR:OH	17:XQ:92:ARG:NH1	2.50	0.45
24:YA:1969:A:O2'	24:YA:1972:A:N3	2.42	0.45
27:YE:34:VAL:HG21	27:YE:78:LEU:HD11	1.98	0.45
1:QA:538:G:H2'	1:QA:539:A:H8	1.82	0.44
8:QH:4:ASP:OD2	8:QH:7:ALA:N	2.45	0.44
10:QJ:65:LEU:HD13	14:QN:56:VAL:HG22	2.00	0.44
24:RA:688:U:H2'	24:RA:689:A:H8	1.82	0.44
24:RA:968:G:OP1	48:R3:17:LYS:NZ	2.48	0.44
24:RA:2246:G:H2'	24:RA:2247:A:C8	2.51	0.44
24:RA:2591:C:H2'	24:RA:2592:G:H8	1.82	0.44
24:YA:1858:G:O2'	24:YA:1884:A:N6	2.49	0.44
24:YA:2574:G:N2	27:YE:142:GLY:O	2.44	0.44
24:YA:2693:A:H2'	24:YA:2694:G:H8	1.82	0.44
42:YX:10:ALA:HB3	42:YX:29:TRP:HB2	2.00	0.44
1:QA:486:U:H2'	1:QA:487:A:C8	2.52	0.44
24:RA:259:G:H21	24:RA:621:A:H8	1.64	0.44
24:RA:709:U:H2'	24:RA:710:G:C8	2.52	0.44
24:RA:825:C:O2	34:RP:55:ARG:NH2	2.50	0.44
24:RA:2638:G:OP1	27:RE:82:ARG:NH2	2.50	0.44
33:RO:65:THR:OG1	33:RO:66:LYS:N	2.51	0.44
4:XD:31:CYS:HB3	4:XD:34:GLU:HB2	1.99	0.44
11:XK:108:ILE:O	18:XR:87:ARG:N	2.43	0.44
26:YD:259:THR:OG1	26:YD:259:THR:O	2.35	0.44
35:YQ:111:GLU:OE1	35:YQ:133:ARG:NH2	2.50	0.44
1:QA:7:G:H2'	5:QE:119:LEU:HD22	1.98	0.44
1:QA:412:A:H4'	1:QA:413:G:O5'	2.17	0.44
1:QA:436:C:H2'	1:QA:437:U:C6	2.53	0.44
3:QC:150:LYS:HB3	3:QC:201:TYR:HB2	1.99	0.44
20:QT:10:LEU:HD23	20:QT:12:ALA:H	1.83	0.44
37:RS:34:HIS:ND1	37:RS:53:SER:OG	2.39	0.44
37:RS:93:LYS:HE2	37:RS:93:LYS:HB3	1.80	0.44
38:RT:19:LEU:HD22	38:RT:86:ILE:HG22	1.99	0.44
1:XA:1286:A:H2'	1:XA:1287:A:H4'	1.98	0.44
24:YA:380:U:H2'	24:YA:381:G:H8	1.81	0.44
24:YA:573:G:N1	24:YA:2031:A:OP2	2.37	0.44
24:YA:665:C:H2'	24:YA:666:G:H8	1.83	0.44
24:YA:1021:A:OP2	32:YN:65:LYS:NZ	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:2515:C:H2'	24:YA:2516:G:H8	1.81	0.44
33:YO:120:GLU:OE1	38:YT:67:SER:OG	2.35	0.44
49:Y4:44:THR:OG1	49:Y4:44:THR:O	2.34	0.44
1:QA:410:G:O3'	4:QD:30:LYS:HE3	2.17	0.44
1:QA:444:C:H2'	1:QA:445:G:H8	1.83	0.44
1:QA:603:U:H2'	1:QA:604:G:C8	2.52	0.44
1:QA:619:U:N3	4:QD:134:ASP:OD1	2.44	0.44
2:QB:154:LEU:HB3	2:QB:155:LEU:HD23	2.00	0.44
11:QK:111:ASP:HB2	18:QR:84:LYS:HD3	2.00	0.44
24:RA:690:G:H2'	24:RA:691:C:C6	2.53	0.44
24:RA:1568:G:H5''	26:RD:61:LEU:HD13	1.98	0.44
24:RA:2627:G:N2	24:RA:2777:G:OP2	2.47	0.44
24:RA:2685:G:P	38:RT:51:ARG:HH22	2.40	0.44
1:XA:885:G:H2'	1:XA:886:G:H8	1.82	0.44
4:XD:171:GLY:HA2	4:XD:172:PRO:HD3	1.87	0.44
24:YA:330:A:H2	24:YA:1210:A:O2'	2.01	0.44
24:YA:890:A:H2'	24:YA:892:G:H8	1.82	0.44
24:YA:1824:G:N3	26:YD:254:THR:OG1	2.50	0.44
24:YA:2876:G:H5'	38:YT:2:ASN:HB3	1.99	0.44
25:YB:44:G:H1'	25:YB:47:C:H42	1.81	0.44
28:YF:32:LEU:HD11	28:YF:105:VAL:HG13	2.00	0.44
28:YF:117:ARG:HH21	28:YF:187:VAL:HA	1.82	0.44
38:YT:62:THR:HG22	38:YT:75:ILE:HG23	1.99	0.44
47:Y2:67:LYS:O	47:Y2:71:ASN:N	2.51	0.44
1:QA:299:G:H2'	1:QA:300:A:C8	2.52	0.44
1:QA:312:C:H2'	1:QA:313:A:C8	2.53	0.44
1:QA:1287:A:H2	1:QA:1353:G:H1'	1.82	0.44
1:QA:1355:G:H2'	1:QA:1356:G:C8	2.53	0.44
1:QA:1469:G:H2'	1:QA:1470:G:H8	1.82	0.44
9:QI:75:ASP:HA	9:QI:78:LYS:HE3	1.98	0.44
24:RA:752:A:H4'	24:RA:753:C:H5'	1.99	0.44
24:RA:890:A:H2'	24:RA:892:G:H8	1.81	0.44
24:RA:1752:C:H2'	24:RA:1753:G:C8	2.53	0.44
24:RA:1802:A:H2'	24:RA:1803:A:C8	2.52	0.44
27:RE:185:LYS:HD2	27:RE:185:LYS:HA	1.82	0.44
44:RZ:198:LYS:HD2	44:RZ:202:GLU:HB3	1.99	0.44
9:XI:53:VAL:HG11	9:XI:85:LEU:HD21	1.99	0.44
24:YA:2845:G:H2'	24:YA:2846:G:H8	1.82	0.44
1:QA:636:U:H2'	1:QA:637:G:H8	1.82	0.44
1:QA:1060:C:H2'	1:QA:1061:G:C8	2.53	0.44
1:QA:1313:U:H2'	1:QA:1314:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:270(D):C:H2'	24:RA:270(E):G:C8	2.52	0.44
24:RA:1231:G:H2'	24:RA:1232:G:H8	1.82	0.44
24:RA:1816:G:O6	26:RD:35:LYS:NZ	2.51	0.44
27:RE:35:GLN:HG2	27:RE:37:ARG:HE	1.83	0.44
38:RT:29:ARG:HB2	38:RT:46:GLU:HG3	2.00	0.44
1:XA:10:A:H2'	1:XA:11:G:H8	1.83	0.44
1:XA:444:C:H2'	1:XA:445:G:C8	2.53	0.44
1:XA:946:A:O2'	1:XA:1333:A:N3	2.45	0.44
1:XA:1037:C:H2'	1:XA:1038:C:C5	2.53	0.44
1:XA:1145:C:H4'	1:XA:1146:A:H8	1.82	0.44
1:XA:1273:G:H3'	1:XA:1274:G:H8	1.83	0.44
9:XI:3:GLN:HB3	9:XI:20:ARG:HB2	2.00	0.44
24:YA:620:G:H4'	24:YA:621:A:C5'	2.46	0.44
24:YA:1426:G:OP2	24:YA:1427:A:O2'	2.28	0.44
25:YB:48:A:H4'	37:YS:95:HIS:HD2	1.83	0.44
1:QA:913:A:OP1	12:QL:46:LYS:NZ	2.51	0.44
1:QA:1025:U:O2'	1:QA:1026:G:O4'	2.36	0.44
10:QJ:21:GLN:HA	10:QJ:24:VAL:HG12	2.00	0.44
19:QS:9:VAL:HG22	19:QS:10:PHE:HB2	2.00	0.44
24:RA:570:G:H2'	24:RA:2030:A:C5	2.53	0.44
24:RA:949:C:H2'	24:RA:950:G:H8	1.83	0.44
24:RA:1292:U:H2'	24:RA:1293:C:C6	2.53	0.44
24:RA:1503:U:H2'	24:RA:1504:C:C6	2.53	0.44
24:RA:2068:U:H3	24:RA:2430:A:H2	1.65	0.44
24:RA:2126:A:H1'	24:RA:2127:G:OP2	2.18	0.44
24:RA:2126:A:N6	24:RA:2163:C:O2'	2.39	0.44
1:XA:1151:A:H2'	1:XA:1152:A:H8	1.83	0.44
4:XD:122:ARG:HD2	4:XD:122:ARG:HA	1.85	0.44
8:XH:106:GLY:O	8:XH:122:ARG:NH2	2.50	0.44
22:XV:35:G:H2'	22:XV:36:G:H8	1.83	0.44
24:YA:141:A:C8	24:YA:1408:C:H1'	2.53	0.44
24:YA:1138:G:H21	32:YN:106:MET:HE3	1.83	0.44
24:YA:1430:C:H2'	24:YA:1431:U:C6	2.52	0.44
24:YA:1503:U:H2'	24:YA:1504:C:C6	2.52	0.44
24:YA:2327:A:H2'	24:YA:2328:A:C8	2.53	0.44
24:YA:2839:G:H21	36:YR:92:GLY:HA3	1.82	0.44
2:QB:219:VAL:HA	2:QB:222:ILE:HD12	1.99	0.44
13:QM:79:LYS:HA	13:QM:82:MET:HB2	2.00	0.44
18:QR:26:LEU:HD11	18:QR:39:VAL:HG13	1.99	0.44
24:RA:1833:U:O2'	24:RA:1969:A:N1	2.44	0.44
24:RA:2102:U:O2	24:RA:2187:G:N2	2.43	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:RT:16:ARG:NH2	38:RT:18:ASP:OD2	2.51	0.44
1:XA:908:A:H2'	1:XA:909:A:C8	2.52	0.44
3:XC:172:ARG:HG2	3:XC:174:PRO:HD3	1.99	0.44
24:YA:184:C:H1'	24:YA:217:G:H1'	2.00	0.44
24:YA:568:U:OP1	24:YA:945:A:N6	2.40	0.44
24:YA:588:U:H2'	24:YA:589:C:C6	2.53	0.44
24:YA:1141:U:H1'	24:YA:1142(A):A:C6	2.53	0.44
24:YA:2074:U:H2'	24:YA:2075:U:C6	2.53	0.44
24:YA:2438:U:O2'	24:YA:2440:C:OP1	2.25	0.44
26:YD:182:LEU:H	26:YD:272:ALA:HB3	1.82	0.44
31:YI:118:LYS:HD2	31:YI:118:LYS:HA	1.76	0.44
36:YR:10:LEU:O	36:YR:12:ARG:NH1	2.49	0.44
40:YV:98:GLU:HB3	40:YV:100:ARG:HG3	2.00	0.44
1:QA:127:G:O2'	17:QQ:2:PRO:O	2.36	0.44
1:QA:486:U:H2'	1:QA:487:A:H8	1.83	0.44
1:QA:539:A:H2'	1:QA:540:G:C8	2.53	0.44
1:QA:883:C:O2'	1:QA:884:U:H5'	2.18	0.44
1:QA:1031:G:H2'	1:QA:1032:A:H8	1.83	0.44
1:QA:1287:A:H2'	1:QA:1288:A:C8	2.53	0.44
1:QA:1314:C:H2'	1:QA:1315:U:C6	2.53	0.44
9:QI:13:ALA:HB2	9:QI:68:GLY:HA3	1.99	0.44
11:QK:123:LYS:HA	11:QK:123:LYS:HD2	1.88	0.44
20:QT:68:LYS:O	20:QT:73:HIS:NE2	2.51	0.44
24:RA:303:U:H2'	24:RA:304:G:C8	2.53	0.44
24:RA:577:G:O2'	24:RA:1254:A:OP1	2.35	0.44
24:RA:586:A:H5'	28:RF:89:VAL:HG21	2.00	0.44
24:RA:796:C:H2'	24:RA:797:C:C6	2.53	0.44
24:RA:2547:U:O2	33:RO:23:ARG:NH2	2.50	0.44
24:RA:2839:G:H5'	36:RR:46:GLY:HA2	1.99	0.44
27:RE:119:ARG:HD2	27:RE:160:TYR:HB2	2.00	0.44
1:XA:254:G:O2'	17:XQ:16:GLN:O	2.35	0.44
1:XA:579:G:H5'	1:XA:728:A:H1'	2.00	0.44
1:XA:939:G:H21	1:XA:1374:A:H61	1.65	0.44
1:XA:1178:G:N1	1:XA:1181:G:N7	2.62	0.44
7:XG:93:PRO:HA	7:XG:96:GLN:HB2	1.99	0.44
20:XT:68:LYS:O	20:XT:73:HIS:NE2	2.50	0.44
24:YA:971:C:H2'	24:YA:972:G:O4'	2.17	0.44
24:YA:2809:A:H2'	24:YA:2810:A:C8	2.53	0.44
24:YA:2846:G:H2'	24:YA:2847:U:C6	2.53	0.44
26:YD:108:PRO:HB3	26:YD:143:HIS:CE1	2.53	0.44
51:Y6:11:LEU:HB2	51:Y6:21:TYR:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:1022:G:H2'	1:QA:1023:G:C8	2.52	0.43
1:QA:1362:C:HO2'	1:QA:1362(A):C:H6	1.66	0.43
4:QD:201:GLN:NE2	5:QE:117:ASP:OD1	2.47	0.43
5:QE:98:THR:HB	5:QE:117:ASP:HB3	2.00	0.43
24:RA:439:G:H2'	24:RA:440:G:C8	2.53	0.43
24:RA:922:U:H2'	24:RA:923:C:C6	2.53	0.43
26:RD:148:GLU:HB2	26:RD:151:LYS:HD2	2.00	0.43
27:RE:1:MET:N	27:RE:83:ASP:O	2.43	0.43
44:RZ:61:LEU:HD22	44:RZ:67:LEU:HD13	2.00	0.43
1:XA:64:G:N2	1:XA:68:G:O6	2.51	0.43
1:XA:1427:U:H2'	1:XA:1428:A:C8	2.53	0.43
3:XC:44:GLU:HB3	3:XC:52:LEU:HD21	2.00	0.43
24:YA:86:C:H4'	24:YA:104:U:H1'	1.99	0.43
24:YA:363(F):A:H1'	24:YA:364:C:H5	1.83	0.43
24:YA:1359:A:N6	24:YA:1372:U:C2	2.85	0.43
24:YA:2680:C:H1'	27:YE:187:ALA:HB1	2.00	0.43
24:YA:2690:C:OP2	36:YR:17:ARG:NH1	2.51	0.43
29:YG:82:LEU:HD21	29:YG:88:ILE:HG21	2.00	0.43
32:YN:63:THR:OG1	32:YN:64:GLY:N	2.50	0.43
1:QA:714:G:N2	11:QK:119:CYS:SG	2.90	0.43
2:QB:47:THR:HA	2:QB:202:PRO:HG2	2.00	0.43
15:QO:8:LYS:HG3	15:QO:31:LEU:HD11	2.00	0.43
15:QO:53:HIS:NE2	24:RA:715:G:O6	2.43	0.43
16:QP:49:LEU:HD11	16:QP:73:LEU:HG	1.99	0.43
24:RA:184:C:H2'	24:RA:185:U:C6	2.52	0.43
24:RA:679:C:H2'	24:RA:680:G:H8	1.83	0.43
24:RA:947:G:H2'	24:RA:948:G:H8	1.82	0.43
24:RA:2074:U:H2'	24:RA:2075:U:C6	2.53	0.43
33:RO:97:ARG:H	33:RO:117:LEU:HD22	1.83	0.43
38:RT:18:ASP:OD1	38:RT:18:ASP:N	2.50	0.43
1:XA:485:G:O2'	1:XA:486:U:O5'	2.34	0.43
1:XA:652:U:O4	1:XA:752:G:O2'	2.28	0.43
1:XA:828:A:H2'	1:XA:829:G:O4'	2.18	0.43
1:XA:1141:C:H2'	1:XA:1142:G:H8	1.82	0.43
2:XB:82:ARG:NH1	2:XB:92:TYR:OH	2.51	0.43
3:XC:16:ARG:HA	3:XC:16:ARG:HD2	1.84	0.43
24:YA:243:U:OP2	24:YA:254:G:N1	2.48	0.43
24:YA:282:A:N7	24:YA:358:U:O2	2.52	0.43
24:YA:513:A:H2	24:YA:582:G:H4'	1.82	0.43
24:YA:807:U:H2'	24:YA:808:G:C8	2.53	0.43
24:YA:845:G:H8	24:YA:845:G:OP2	2.02	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:1448:G:H5'	24:YA:1449:A:OP1	2.19	0.43
24:YA:1827:C:OP2	26:YD:222:ARG:NH1	2.52	0.43
24:YA:1872:A:H5'	24:YA:1878:G:OP2	2.18	0.43
35:YQ:32:TYR:CE1	35:YQ:133:ARG:HG3	2.54	0.43
1:QA:224:C:H2'	1:QA:225:C:H6	1.84	0.43
1:QA:657:G:H4'	15:QO:28:GLN:HG2	2.01	0.43
1:QA:867:G:O2'	1:QA:873:A:N1	2.38	0.43
1:QA:1224:G:O2'	1:QA:1322:C:OP2	2.25	0.43
1:QA:1507:A:H2'	1:QA:1508:G:C8	2.53	0.43
3:QC:74:GLY:HA2	3:QC:77:ILE:HG22	1.99	0.43
24:RA:1027:A:C2	24:RA:2488:A:H5'	2.53	0.43
24:RA:1818:U:H2'	26:RD:157:ARG:HG2	2.00	0.43
24:RA:1869:G:H5'	24:RA:1870:C:OP2	2.19	0.43
24:RA:1918:A:O2'	24:RA:1920:C:N4	2.51	0.43
24:RA:2314:C:H2'	24:RA:2315:G:C8	2.53	0.43
27:RE:18:ASP:HB3	38:RT:82:LEU:HD11	2.00	0.43
31:RI:83:ALA:HB1	31:RI:123:LEU:HD11	2.00	0.43
44:RZ:4:ARG:HG2	44:RZ:58:VAL:HB	2.00	0.43
1:XA:358:U:O5'	1:XA:358:U:H6	2.01	0.43
1:XA:757:U:O2'	1:XA:879:C:O2	2.36	0.43
1:XA:1244:C:H2'	1:XA:1245:A:H8	1.83	0.43
4:XD:20:TYR:HD1	4:XD:26:CYS:HB3	1.83	0.43
24:YA:709:U:H2'	24:YA:710:G:C8	2.52	0.43
24:YA:1021:A:H8	24:YA:1022:G:H5''	1.83	0.43
24:YA:2470:G:OP1	35:YQ:56:ARG:NH2	2.45	0.43
29:YG:142:PRO:HB2	49:Y4:31:ILE:HG21	2.00	0.43
1:QA:662:G:H2'	1:QA:663:A:C8	2.52	0.43
1:QA:1175:G:H2'	1:QA:1176:A:C8	2.53	0.43
8:QH:113:SER:O	8:QH:131:GLY:HA3	2.18	0.43
24:RA:616:A:C4	28:RF:180:GLY:HA3	2.53	0.43
24:RA:2647:U:H2'	24:RA:2648:C:C6	2.54	0.43
24:RA:2680:C:O2'	27:RE:11:MET:SD	2.76	0.43
27:RE:69:LYS:HA	27:RE:69:LYS:HD3	1.86	0.43
46:R1:69:LYS:HE3	46:R1:69:LYS:HB3	1.73	0.43
1:XA:130:A:N3	1:XA:263:A:O2'	2.48	0.43
1:XA:728:A:H2'	1:XA:729:A:C8	2.52	0.43
1:XA:1218:C:H2'	1:XA:1219:U:C6	2.54	0.43
1:XA:1367:C:OP1	9:XI:115:GLY:N	2.49	0.43
6:XF:18:GLN:HA	6:XF:21:LEU:HD12	2.00	0.43
24:YA:195:A:H5''	24:YA:196:A:O5'	2.18	0.43
24:YA:278:A:H2'	24:YA:279:C:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:459:U:H2'	24:YA:460:A:H8	1.83	0.43
24:YA:823:G:H2'	24:YA:824:A:H8	1.84	0.43
24:YA:1062:G:H2'	24:YA:1063:G:C8	2.53	0.43
24:YA:1278:A:H2'	24:YA:1279:G:H8	1.83	0.43
24:YA:1791:A:H3'	24:YA:1792:G:H8	1.82	0.43
24:YA:2266:A:H4'	24:YA:2267:A:N3	2.34	0.43
24:YA:2406:U:N3	34:YP:73:GLY:O	2.43	0.43
24:YA:2591:C:H2'	24:YA:2592:G:H8	1.83	0.43
33:YO:122:LEU:HD13	38:YT:72:VAL:HG11	2.00	0.43
1:QA:350:G:O2'	1:QA:351:G:H5'	2.19	0.43
1:QA:522:C:H41	12:QL:53:ARG:NH2	2.17	0.43
1:QA:736:C:H2'	1:QA:737:A:H8	1.81	0.43
1:QA:974:A:H1'	14:QN:31:ARG:HH21	1.84	0.43
1:QA:1219:U:H2'	1:QA:1220:G:C8	2.54	0.43
1:QA:1293:G:H2'	1:QA:1294:G:H8	1.84	0.43
1:QA:1466:C:H2'	1:QA:1467:G:O4'	2.19	0.43
24:RA:1771:C:H2'	24:RA:1772:G:C8	2.53	0.43
33:RO:120:GLU:HG2	33:RO:122:LEU:HG	2.00	0.43
39:RU:34:LYS:O	39:RU:38:THR:OG1	2.33	0.43
41:RW:6:ILE:HG12	41:RW:104:THR:HG23	2.00	0.43
50:R5:41:PRO:O	50:R5:44:THR:OG1	2.34	0.43
1:XA:377:G:H2'	1:XA:378:G:C8	2.54	0.43
1:XA:1022:G:H2'	1:XA:1023:G:H8	1.83	0.43
11:XK:31:THR:HA	11:XK:42:TRP:HA	2.01	0.43
24:YA:443:A:H5''	24:YA:444:C:OP1	2.18	0.43
24:YA:1292:U:H2'	24:YA:1293:C:C6	2.54	0.43
24:YA:2648:C:H2'	24:YA:2649:U:C6	2.53	0.43
30:YH:11:VAL:HA	30:YH:12:PRO:HD3	1.84	0.43
39:YU:34:LYS:O	39:YU:38:THR:OG1	2.28	0.43
43:YY:39:VAL:HB	43:YY:42:VAL:HB	1.99	0.43
1:QA:1033:G:H2'	1:QA:1034:G:H4'	2.00	0.43
1:QA:1298:C:H4'	1:QA:1299:A:C8	2.53	0.43
2:QB:118:LEU:HB3	2:QB:142:LEU:HD12	1.99	0.43
13:QM:14:ARG:HG2	13:QM:44:ARG:HD3	2.00	0.43
16:QP:42:ARG:HB2	16:QP:44:THR:HG23	2.00	0.43
24:RA:576:U:H2'	24:RA:577:G:C8	2.54	0.43
24:RA:1289:C:H2'	24:RA:1290:C:H6	1.84	0.43
28:RF:23:ASP:OD1	28:RF:23:ASP:N	2.47	0.43
29:RG:107:LEU:HD23	29:RG:111:LEU:HD12	2.01	0.43
30:RH:149:ARG:NH2	30:RH:167:GLU:OE2	2.42	0.43
36:RR:104:ARG:HG3	36:RR:107:ASP:HB3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:R6:25:LYS:NZ	51:R6:32:ASN:O	2.51	0.43
1:XA:328:C:H1'	1:XA:329:A:OP2	2.18	0.43
1:XA:642:A:N3	8:XH:113:SER:OG	2.43	0.43
2:XB:47:THR:HG23	2:XB:202:PRO:HG2	2.01	0.43
4:XD:102:ASP:HA	4:XD:105:VAL:HG22	2.01	0.43
7:XG:46:ALA:HA	7:XG:49:ILE:HD12	2.01	0.43
9:XI:15:ALA:HB2	9:XI:76:ALA:HB1	2.00	0.43
24:YA:729:G:C5	26:YD:208:LYS:HB2	2.54	0.43
24:YA:2291:U:O2'	24:YA:2374:C:O2	2.37	0.43
24:YA:2774:C:H2'	24:YA:2775:A:O4'	2.18	0.43
44:YZ:132:ASN:ND2	44:YZ:160:GLY:HA3	2.34	0.43
1:QA:539:A:H2'	1:QA:540:G:H8	1.84	0.43
1:QA:580:U:H2'	1:QA:581:G:O4'	2.18	0.43
1:QA:1443:G:H5'	1:QA:1446:A:OP2	2.18	0.43
1:QA:1516:G:N1	1:QA:1519:A:OP2	2.49	0.43
3:QC:79:ARG:HA	3:QC:79:ARG:HD3	1.85	0.43
4:QD:8:VAL:CG1	4:QD:21:LEU:HB2	2.49	0.43
24:RA:996:A:OP2	39:RU:92:ARG:NH1	2.49	0.43
24:RA:1539:G:H2'	24:RA:1540:G:H8	1.84	0.43
24:RA:2836:U:H2'	24:RA:2837:G:H8	1.81	0.43
25:RB:28:C:H2'	25:RB:29:A:H8	1.83	0.43
32:RN:133:GLN:HG2	32:RN:135:PRO:HD3	2.00	0.43
44:RZ:7:ALA:HB2	44:RZ:59:LEU:HB3	1.99	0.43
1:XA:422:C:HO2'	1:XA:423:G:N2	2.16	0.43
1:XA:1354:C:H2'	1:XA:1355:G:C8	2.52	0.43
1:XA:1469:G:H2'	1:XA:1470:G:C8	2.54	0.43
13:XM:118:ALA:HB1	22:XV:28:U:H4'	1.99	0.43
24:YA:733:G:N2	24:YA:734:A:N7	2.65	0.43
24:YA:1295:C:H2'	24:YA:1296:G:H8	1.84	0.43
24:YA:2059:A:H5'	24:YA:2060:A:OP2	2.18	0.43
24:YA:2096:U:O4	24:YA:2193:G:O6	2.36	0.43
24:YA:2102:U:H2'	24:YA:2103:C:C6	2.54	0.43
25:YB:60:C:H2'	25:YB:61:G:H8	1.82	0.43
29:YG:77:ILE:HG22	29:YG:80:PHE:H	1.83	0.43
37:YS:27:SER:HA	37:YS:88:ASP:HB3	2.01	0.43
39:YU:52:ARG:NH1	39:YU:55:ARG:HH21	2.16	0.43
41:YW:11:ARG:HH21	41:YW:98:LYS:HD3	1.82	0.43
1:QA:677:U:H3	1:QA:713:G:H22	1.66	0.43
1:QA:824:C:HO2'	8:QH:2:LEU:N	2.17	0.43
1:QA:1524:C:H2'	1:QA:1525:G:C8	2.54	0.43
10:QJ:80:LYS:HA	10:QJ:83:GLU:HG3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:QL:32:PHE:HD1	12:QL:86:ARG:HA	1.84	0.43
24:RA:250:G:H2'	24:RA:251:A:C8	2.54	0.43
24:RA:664:C:H2'	24:RA:665:C:H6	1.84	0.43
24:RA:671:C:H2'	24:RA:672:C:C6	2.54	0.43
24:RA:995:C:O2	32:RN:3:THR:OG1	2.37	0.43
24:RA:1204:A:O2'	24:RA:1205:U:O5'	2.36	0.43
24:RA:2150:U:H2'	24:RA:2151:G:H8	1.82	0.43
1:XA:412:A:H4'	1:XA:413:G:O5'	2.17	0.43
1:XA:1048:G:OP2	14:XN:3:ARG:NH2	2.52	0.43
1:XA:1147:C:HO2'	9:XI:5:TYR:HH	1.59	0.43
1:XA:1294:G:H2'	1:XA:1295:G:C8	2.54	0.43
1:XA:1323:G:H2'	1:XA:1324:A:C8	2.53	0.43
15:XO:24:SER:OG	15:XO:25:THR:N	2.52	0.43
24:YA:78:A:H2'	24:YA:79:G:H8	1.84	0.43
24:YA:871:U:OP1	35:YQ:5:ARG:HG2	2.19	0.43
24:YA:2328:A:H2'	24:YA:2329:G:H8	1.81	0.43
24:YA:2832:U:H4'	24:YA:2833:G:H5''	2.00	0.43
45:Y0:10:THR:HG22	45:Y0:12:ASN:H	1.84	0.43
1:QA:979:C:OP1	1:QA:1223:C:N4	2.51	0.43
1:QA:985:C:H2'	1:QA:986:A:C8	2.54	0.43
7:QG:95:ARG:HH11	7:QG:99:LEU:HD11	1.84	0.43
11:QK:34:ASP:OD1	11:QK:38:ASN:N	2.47	0.43
24:RA:37:C:H2'	24:RA:38:A:C8	2.53	0.43
24:RA:184:C:H2'	24:RA:185:U:H6	1.84	0.43
24:RA:519:U:H2'	24:RA:520:G:C8	2.54	0.43
24:RA:740:U:H2'	24:RA:741:G:C8	2.54	0.43
24:RA:840:C:H2'	24:RA:841:A:C8	2.54	0.43
24:RA:1316:U:H2'	24:RA:1317:A:C8	2.53	0.43
24:RA:2047:U:H2'	24:RA:2048:G:H8	1.84	0.43
24:RA:2443:C:H2'	24:RA:2444:G:C8	2.54	0.43
43:RY:88:LYS:HA	43:RY:88:LYS:HD2	1.79	0.43
16:XP:8:ARG:NH2	16:XP:11:SER:O	2.51	0.43
16:XP:72:ARG:HA	16:XP:75:ARG:HB3	2.01	0.43
24:YA:679:C:H2'	24:YA:680:G:H8	1.84	0.43
24:YA:1265:A:H8	24:YA:1265:A:OP1	2.01	0.43
24:YA:2311:A:H1'	29:YG:82:LEU:HD11	2.00	0.43
29:YG:81:LYS:HB3	29:YG:82:LEU:H	1.66	0.43
32:YN:97:ARG:HA	32:YN:100:GLU:HB2	2.00	0.43
1:QA:297:G:N2	1:QA:300:A:OP2	2.50	0.43
1:QA:344:A:H5''	1:QA:345:C:H5	1.83	0.43
1:QA:674:G:H2'	1:QA:675:A:C8	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:1071:C:H2'	1:QA:1072:G:C8	2.53	0.43
1:QA:1366:C:O2'	10:QJ:60:ARG:NH2	2.52	0.43
16:QP:4:ILE:HG12	16:QP:21:VAL:HG12	1.99	0.43
24:RA:1005:C:H2'	24:RA:1006:C:C6	2.54	0.43
24:RA:1057:A:HO2'	24:RA:1058:G:P	2.39	0.43
24:RA:1153:C:H2'	24:RA:1154:G:O4'	2.19	0.43
24:RA:1598:C:O3'	42:RX:35:THR:OG1	2.33	0.43
28:RF:57:VAL:HG21	28:RF:87:GLY:HA2	2.01	0.43
29:RG:109:VAL:HG13	49:R4:33:VAL:HG21	1.99	0.43
48:R3:7:LYS:HB2	48:R3:34:GLU:HG3	2.00	0.43
1:XA:1175:G:H2'	1:XA:1176:A:C8	2.54	0.43
4:XD:99:SER:O	4:XD:140:VAL:HG22	2.19	0.43
4:XD:154:ASN:OD1	4:XD:154:ASN:N	2.52	0.43
10:XJ:45:ARG:HB3	10:XJ:65:LEU:HB3	2.00	0.43
14:YN:48:ALA:HB2	14:YN:53:LEU:HD23	2.01	0.43
14:YN:58:LYS:HD2	14:YN:58:LYS:HA	1.80	0.43
24:YA:83:G:H1	24:YA:102:G:HO2'	1.66	0.43
24:YA:546:C:OP1	24:YA:547:A:N6	2.52	0.43
24:YA:673:C:H5''	28:YF:81:PRO:HD2	2.01	0.43
24:YA:1204:A:HO2'	24:YA:1205:U:P	2.41	0.43
24:YA:1438:U:H2'	24:YA:1439:A:H8	1.84	0.43
35:YQ:109:VAL:HG13	35:YQ:113:GLN:HB3	2.01	0.43
1:QA:209:U:H1'	1:QA:216:G:C6	2.54	0.42
1:QA:266:G:HO2'	1:QA:267:C:P	2.37	0.42
2:QB:189:ASP:N	2:QB:189:ASP:OD1	2.52	0.42
3:QC:135:LYS:HA	3:QC:138:VAL:HG22	2.00	0.42
5:QE:42:GLY:HA3	5:QE:66:MET:HG2	2.01	0.42
12:QL:103:GLY:N	12:QL:107:ALA:O	2.45	0.42
19:QS:50:ALA:HA	19:QS:58:VAL:O	2.19	0.42
24:RA:1426:G:OP2	24:RA:1427:A:O2'	2.30	0.42
24:RA:1539:G:H2'	24:RA:1540:G:C8	2.54	0.42
24:RA:1794:U:H2'	24:RA:1795:C:H6	1.84	0.42
24:RA:2130:U:O2'	24:RA:2133:G:O2'	2.31	0.42
24:RA:2282:G:H4'	24:RA:2389:G:O2'	2.19	0.42
1:XA:603:U:H2'	1:XA:604:G:H8	1.84	0.42
1:XA:1299:A:C8	1:XA:1301:U:H1'	2.54	0.42
4:XD:94:LEU:O	4:XD:98:GLU:N	2.52	0.42
7:XG:150:ALA:HA	11:XK:59:TYR:HB3	2.01	0.42
11:XK:21:ILE:HB	11:XK:84:VAL:HG12	2.01	0.42
18:XR:84:LYS:HB2	18:XR:84:LYS:HE3	1.85	0.42
24:YA:271(D):G:H2'	24:YA:272:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:639:U:H2'	24:YA:640:C:H6	1.84	0.42
24:YA:1449:A:O2'	24:YA:1530:G:N2	2.51	0.42
24:YA:1657:C:H2'	24:YA:1658:C:C6	2.54	0.42
24:YA:1939:U:H3'	24:YA:1940:U:H5'	2.01	0.42
27:YE:56:PRO:O	27:YE:64:LYS:NZ	2.40	0.42
31:YI:139:GLN:HE21	31:YI:139:GLN:HB3	1.62	0.42
44:YZ:4:ARG:HG2	44:YZ:58:VAL:HB	2.00	0.42
1:QA:35:G:O2'	12:QL:118:SER:O	2.33	0.42
1:QA:1172:C:H2'	1:QA:1173:G:C8	2.54	0.42
1:QA:1225:A:H5''	1:QA:1226:C:OP2	2.20	0.42
1:QA:1250:A:H2	1:QA:1370:G:H1'	1.83	0.42
12:QL:117:ARG:HB2	12:QL:122:THR:HB	2.00	0.42
24:RA:820:A:H4'	24:RA:836:G:N2	2.34	0.42
24:RA:2693:A:H2'	24:RA:2694:G:C8	2.54	0.42
29:RG:44:GLY:O	29:RG:47:LYS:NZ	2.44	0.42
40:RV:35:LEU:HA	40:RV:36:PRO:HD3	1.85	0.42
1:XA:422:C:O2'	1:XA:423:G:N2	2.53	0.42
1:XA:1244:C:H2'	1:XA:1245:A:C8	2.53	0.42
1:XA:1404:C:H2'	1:XA:1405:G:C8	2.54	0.42
11:XK:34:ASP:OD1	11:XK:37:GLY:N	2.52	0.42
20:XT:85:MET:HA	20:XT:88:VAL:HG22	2.00	0.42
24:YA:2241:A:H2'	24:YA:2242:G:C8	2.54	0.42
24:YA:2712:U:OP1	24:YA:2714:G:H4'	2.19	0.42
28:YF:7:TYR:N	28:YF:8:GLN:OE1	2.52	0.42
35:YQ:52:VAL:CG1	44:YZ:183:LEU:HD11	2.36	0.42
13:QM:40:ASN:OD1	13:QM:43:THR:N	2.53	0.42
24:RA:1063:G:OP1	24:RA:1065:U:O2'	2.36	0.42
24:RA:1791:A:H4'	26:RD:206:LEU:HB2	2.00	0.42
24:RA:1992:G:N2	24:RA:1996:C:O2'	2.52	0.42
24:RA:2103:C:N4	24:RA:2187:G:O6	2.53	0.42
1:XA:345:C:OP2	38:YT:39:ARG:NH2	2.52	0.42
1:XA:362:G:N2	1:XA:365:U:OP2	2.51	0.42
1:XA:1172:C:H2'	1:XA:1173:G:C8	2.54	0.42
1:XA:1368:G:H5''	9:XI:112:LYS:HB3	2.00	0.42
24:YA:82:G:N1	24:YA:103:A:OP2	2.44	0.42
24:YA:1612:C:O2'	52:Y7:5:TRP:O	2.31	0.42
26:YD:245:PRO:HA	26:YD:246:PRO:HD3	1.81	0.42
27:YE:36:ARG:NH1	27:YE:85:ASN:OD1	2.53	0.42
31:YI:63:ALA:HA	31:YI:66:GLU:HG2	2.01	0.42
32:YN:128:HIS:ND1	32:YN:129:PRO:O	2.52	0.42
33:YO:2:ILE:HB	33:YO:33:ALA:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:YX:29:TRP:HZ3	42:YX:59:VAL:HG11	1.83	0.42
46:Y1:5:CYS:HB3	46:Y1:10:LYS:H	1.85	0.42
1:QA:452:A:H62	1:QA:480:U:H3	1.68	0.42
1:QA:1301:U:O2	1:QA:1301:U:H2'	2.19	0.42
2:QB:70:PHE:O	2:QB:93:VAL:N	2.42	0.42
8:QH:105:ARG:HD3	8:QH:105:ARG:HA	1.93	0.42
20:QT:20:LEU:HA	20:QT:23:ARG:HG2	2.01	0.42
24:RA:210:C:OP2	52:R7:29:LYS:NZ	2.52	0.42
24:RA:1651:G:H5'	36:RR:39:PRO:HG2	2.01	0.42
28:RF:137:LYS:HA	28:RF:137:LYS:HD3	1.73	0.42
35:RQ:77:LYS:NZ	35:RQ:80:GLU:OE2	2.45	0.42
44:RZ:4:ARG:HB3	44:RZ:60:GLU:HB2	2.01	0.42
44:RZ:5:LEU:HD21	44:RZ:47:VAL:HG11	2.01	0.42
47:R2:14:ARG:H	47:R2:14:ARG:HG3	1.70	0.42
1:XA:320:C:H2'	1:XA:321:A:C8	2.54	0.42
1:XA:360:A:H2'	1:XA:361:G:C8	2.54	0.42
1:XA:538:G:H2'	1:XA:539:A:C8	2.54	0.42
1:XA:712:A:H2'	1:XA:713:G:C8	2.55	0.42
1:XA:918:A:H2'	1:XA:919:A:C8	2.54	0.42
1:XA:985:C:H2'	1:XA:986:A:C8	2.54	0.42
1:XA:1120:G:H2'	1:XA:1121:U:C6	2.54	0.42
24:YA:288:C:H2'	24:YA:289:A:H8	1.85	0.42
24:YA:465:G:OP1	52:Y7:12:ARG:NH2	2.44	0.42
24:YA:1820:U:O2	26:YD:202:LYS:N	2.52	0.42
24:YA:2154:G:H2'	24:YA:2155:G:C8	2.55	0.42
24:YA:2505:G:HO2'	24:YA:2506:U:H6	1.65	0.42
34:YP:47:ASP:HA	34:YP:48:PRO:HD3	1.91	0.42
48:Y3:12:PRO:HB2	48:Y3:20:LYS:HG2	2.00	0.42
1:QA:231:G:H2'	1:QA:232:G:H8	1.84	0.42
1:QA:440:A:H62	1:QA:493:G:H21	1.67	0.42
1:QA:784:C:H4'	24:RA:1837:C:OP1	2.19	0.42
5:QE:139:LEU:HA	5:QE:142:LEU:HD12	2.00	0.42
24:RA:1138:G:H21	32:RN:106:MET:HG2	1.84	0.42
24:RA:1273:U:H4'	24:RA:1275:A:OP1	2.19	0.42
24:RA:1394:U:O2	42:RX:16:LYS:NZ	2.42	0.42
24:RA:1570:A:H2'	24:RA:1571:A:C8	2.54	0.42
24:RA:2291:U:H2'	24:RA:2292:C:C6	2.54	0.42
24:RA:2630:G:H2'	24:RA:2631:G:C8	2.54	0.42
1:XA:165:C:H2'	1:XA:166:G:C8	2.55	0.42
1:XA:1236:A:H4'	1:XA:1304:G:H4'	2.02	0.42
3:XC:174:PRO:O	3:XC:177:THR:OG1	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:YA:271(D):G:H2'	24:YA:272:G:H8	1.84	0.42
24:YA:579:G:H2'	24:YA:580:C:C6	2.55	0.42
24:YA:1657:C:H2'	24:YA:1658:C:H6	1.85	0.42
24:YA:2503:A:O2'	24:YA:2505:G:OP2	2.31	0.42
25:YB:42:C:O2	29:YG:93:THR:N	2.45	0.42
28:YF:60:SER:OG	28:YF:61:GLY:N	2.53	0.42
38:YT:35:LYS:HG3	38:YT:37:GLY:H	1.85	0.42
44:YZ:5:LEU:H	44:YZ:59:LEU:HA	1.84	0.42
1:QA:45:U:H2'	1:QA:46:G:C8	2.54	0.42
3:QC:33:LEU:HD21	14:QN:39:LEU:HD11	2.01	0.42
6:QF:3:ARG:NH1	6:QF:38:GLU:OE2	2.53	0.42
20:QT:68:LYS:HB3	20:QT:68:LYS:HE2	1.84	0.42
21:QU:26:LYS:HD3	21:QU:26:LYS:HA	1.81	0.42
24:RA:729:G:O2'	24:RA:763:G:H4'	2.19	0.42
24:RA:1210:A:H4'	24:RA:1211:U:O5'	2.20	0.42
24:RA:1286:A:O2'	24:RA:1288:U:OP2	2.29	0.42
24:RA:1536:A:OP2	24:RA:1537:C:N4	2.53	0.42
24:RA:2064:C:H2'	24:RA:2065:C:C6	2.54	0.42
24:RA:2816:C:O2	24:RA:2883:A:O2'	2.34	0.42
24:RA:2841:C:H2'	24:RA:2842:G:C8	2.54	0.42
26:RD:242:ARG:O	26:RD:244:ARG:HG2	2.20	0.42
29:RG:170:ARG:NH1	29:RG:170:ARG:O	2.51	0.42
34:RP:19:VAL:HG12	34:RP:27:HIS:HB3	2.02	0.42
35:RQ:21:THR:HB	35:RQ:22:LYS:H	1.64	0.42
40:RV:60:GLU:OE2	40:RV:97:LYS:NZ	2.46	0.42
1:XA:244:U:H4'	1:XA:245:C:O5'	2.20	0.42
1:XA:277:C:H5''	17:XQ:68:ARG:HH21	1.85	0.42
1:XA:553:A:O2'	12:XL:29:GLY:O	2.37	0.42
1:XA:1329:A:H4'	13:XM:29:ARG:HH21	1.84	0.42
9:XI:48:GLU:HB2	9:XI:78:LYS:HE3	2.00	0.42
11:XK:38:ASN:HA	11:XK:39:PRO:HD3	1.88	0.42
24:YA:1308:A:H3'	24:YA:1309:G:H8	1.83	0.42
24:YA:1363:C:O2'	24:YA:1809:A:N3	2.49	0.42
24:YA:1429:G:H2'	24:YA:1430:C:C6	2.55	0.42
24:YA:1464:C:HO2'	24:YA:1528:A:H8	1.64	0.42
24:YA:1538:G:H2'	24:YA:1539:G:H8	1.85	0.42
24:YA:1972:A:H2'	24:YA:1973:G:H8	1.84	0.42
24:YA:2086:U:H2'	24:YA:2087:G:C8	2.55	0.42
24:YA:2429:G:N7	34:YP:56:SER:OG	2.51	0.42
24:YA:2591:C:H2'	24:YA:2592:G:C8	2.55	0.42
29:YG:73:ALA:HB2	29:YG:82:LEU:HD22	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:YI:88:ILE:HG12	31:YI:122:GLU:H	1.84	0.42
36:YR:54:LEU:HB3	36:YR:62:ALA:HB1	2.01	0.42
39:YU:92:ARG:HA	39:YU:95:LEU:HB2	2.01	0.42
1:QA:524:G:H2'	1:QA:525:C:C6	2.55	0.42
1:QA:728:A:H2'	1:QA:729:A:C8	2.54	0.42
1:QA:1250:A:OP1	9:QI:67:GLY:N	2.51	0.42
5:QE:80:ILE:HD12	5:QE:80:ILE:HA	1.94	0.42
8:QH:69:ARG:HG3	8:QH:76:PRO:HA	2.01	0.42
24:RA:452:G:O2'	24:RA:457:A:N1	2.43	0.42
24:RA:519:U:H2'	24:RA:520:G:H8	1.85	0.42
24:RA:750:A:OP1	24:RA:1615:C:N4	2.51	0.42
24:RA:863:A:H2'	24:RA:864:G:C8	2.55	0.42
24:RA:1278:A:H2'	24:RA:1279:G:C8	2.55	0.42
24:RA:1830:C:H2'	24:RA:1831:G:H8	1.85	0.42
24:RA:2529:G:H5''	24:RA:2530:A:H5''	2.01	0.42
24:RA:2591:C:H2'	24:RA:2592:G:C8	2.54	0.42
26:RD:108:PRO:HB3	26:RD:143:HIS:CE1	2.54	0.42
47:R2:20:GLU:HA	47:R2:23:LYS:HD3	2.00	0.42
1:XA:377:G:H2'	1:XA:378:G:H8	1.84	0.42
1:XA:587:G:OP1	8:XH:92:ARG:NH2	2.52	0.42
1:XA:1513:A:H2'	1:XA:1514:C:C6	2.55	0.42
2:XB:115:LEU:HD13	2:XB:145:LEU:HB3	2.00	0.42
12:XL:70:ILE:HG12	12:XL:77:LEU:HD12	2.01	0.42
19:XS:7:LYS:HD2	19:XS:7:LYS:HA	1.78	0.42
24:YA:129:C:OP1	24:YA:1599:C:O2'	2.38	0.42
24:YA:241:A:H5'	24:YA:243:U:O4'	2.19	0.42
24:YA:969:U:H2'	24:YA:970:C:C6	2.54	0.42
24:YA:1628:G:H2'	24:YA:1629:U:C6	2.55	0.42
24:YA:2315:G:OP1	29:YG:36:LYS:NZ	2.50	0.42
27:YE:36:ARG:NH2	27:YE:88:GLY:O	2.53	0.42
37:YS:4:LEU:O	37:YS:9:ARG:NH2	2.53	0.42
49:Y4:15:ILE:HB	49:Y4:32:TYR:HD1	1.85	0.42
1:QA:19:C:H2'	1:QA:20:U:C6	2.55	0.42
1:QA:422:C:HO2'	1:QA:423:G:N2	2.18	0.42
1:QA:537:G:H2'	1:QA:538:G:C8	2.54	0.42
1:QA:1240:U:OP1	7:QG:119:ARG:NH2	2.52	0.42
1:QA:1406:U:O2	1:QA:1517:G:N2	2.51	0.42
1:QA:1422:G:H5''	33:RO:48:PRO:HB3	2.02	0.42
24:RA:249:C:P	24:RA:2394:C:HO2'	2.42	0.42
24:RA:1295:C:H2'	24:RA:1296:G:H8	1.84	0.42
24:RA:1454:U:OP1	36:RR:77:ARG:NH1	2.41	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:2059:A:H5'	24:RA:2060:A:OP2	2.20	0.42
45:R0:18:ALA:O	45:R0:20:ARG:NH1	2.48	0.42
46:R1:51:VAL:HG11	46:R1:74:VAL:HG21	2.02	0.42
53:R8:14:VAL:HG13	53:R8:22:VAL:HG13	2.02	0.42
1:XA:505:G:H2'	1:XA:506:G:H8	1.85	0.42
1:XA:656:C:O2	15:XO:28:GLN:NE2	2.53	0.42
1:XA:1225:A:OP1	13:XM:103:THR:N	2.47	0.42
1:XA:1291:G:OP1	7:XG:37:ASN:ND2	2.53	0.42
1:XA:1295:G:O2'	13:XM:14:ARG:NH1	2.52	0.42
1:XA:1386:G:H2'	1:XA:1387:G:H8	1.84	0.42
5:XE:91:LEU:HD12	5:XE:118:ILE:HD11	2.02	0.42
24:YA:675:A:N3	24:YA:2443:C:O2'	2.51	0.42
24:YA:881:G:H3'	24:YA:882:G:C8	2.55	0.42
24:YA:1165:U:H2'	24:YA:1166:C:C6	2.55	0.42
24:YA:1593:G:H2'	24:YA:1594:G:C8	2.55	0.42
24:YA:1629:U:H2'	24:YA:1630:G:C8	2.55	0.42
24:YA:2168:G:N2	24:YA:2170:A:N7	2.68	0.42
24:YA:2693:A:H2'	24:YA:2694:G:C8	2.55	0.42
28:YF:77:ASP:OD1	28:YF:77:ASP:N	2.51	0.42
1:QA:25:C:H2'	1:QA:26:A:C8	2.55	0.42
1:QA:406:G:H2'	1:QA:407:G:H8	1.84	0.42
1:QA:538:G:H2'	1:QA:539:A:C8	2.54	0.42
1:QA:753:A:H4'	1:QA:754:C:O5'	2.20	0.42
1:QA:801:U:H2'	1:QA:802:A:H8	1.85	0.42
1:QA:1003:G:N2	1:QA:1004:A:O2'	2.53	0.42
1:QA:1007:C:H2'	1:QA:1008:C:C6	2.54	0.42
1:QA:1370:G:OP1	9:QI:111:ARG:NH1	2.52	0.42
2:QB:178:ARG:HA	2:QB:178:ARG:HD3	1.77	0.42
3:QC:23:TYR:HD1	10:QJ:95:GLU:HB2	1.85	0.42
7:QG:50:ILE:HG21	7:QG:61:VAL:HG11	2.01	0.42
24:RA:270(K):C:H2'	24:RA:270(L):U:H5''	2.02	0.42
24:RA:629:G:N3	24:RA:639:U:O2'	2.49	0.42
24:RA:1849:G:H2'	24:RA:1850:G:C8	2.54	0.42
24:RA:2329:G:H2'	24:RA:2330:G:C8	2.54	0.42
24:RA:2683:C:OP1	38:RT:53:ARG:NH2	2.49	0.42
26:RD:245:PRO:HA	26:RD:246:PRO:HD3	1.80	0.42
51:R6:38:LYS:HE3	51:R6:38:LYS:HB3	1.87	0.42
1:XA:673:G:O3'	6:XF:87:ARG:NH2	2.52	0.42
1:XA:1346:A:O3'	1:XA:1347:G:H4'	2.20	0.42
1:XA:1427:U:H2'	1:XA:1428:A:H8	1.85	0.42
7:XG:99:LEU:HD23	7:XG:99:LEU:HA	1.93	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:XL:105:TYR:HD1	12:XL:105:TYR:HA	1.77	0.42
24:YA:278:A:O2'	24:YA:279:C:OP1	2.35	0.42
24:YA:1178:C:O2'	24:YA:1179:C:OP1	2.35	0.42
24:YA:1510:A:O2'	24:YA:1512:G:N7	2.53	0.42
24:YA:1790:C:H5''	24:YA:1791:A:OP1	2.19	0.42
24:YA:1802:A:H2'	24:YA:1803:A:C8	2.54	0.42
24:YA:2853:C:H2'	24:YA:2854:G:H8	1.84	0.42
28:YF:167:ALA:HB1	28:YF:173:VAL:HG11	2.02	0.42
38:YT:123:GLN:O	38:YT:125:ARG:N	2.53	0.42
53:Y8:23:VAL:HG12	53:Y8:49:VAL:HG22	2.01	0.42
1:QA:186(A):C:O2	20:QT:105:SER:OG	2.36	0.42
1:QA:187:C:H2'	1:QA:188:U:H4'	2.02	0.42
1:QA:1244:C:H2'	1:QA:1245:A:C8	2.55	0.42
7:QG:26:PHE:HD2	7:QG:101:LEU:HD22	1.84	0.42
24:RA:527:C:H4'	24:RA:528:A:O4'	2.20	0.42
24:RA:919:G:N2	24:RA:2269:A:OP2	2.50	0.42
24:RA:2212:A:H1'	24:RA:2215:G:C4	2.55	0.42
24:RA:2692:C:H2'	24:RA:2693:A:H8	1.85	0.42
25:RB:30:C:H1'	25:RB:57:A:H61	1.82	0.42
1:XA:601:C:H2'	1:XA:602:A:C8	2.55	0.42
2:XB:28:PHE:HD1	2:XB:194:PRO:HD3	1.84	0.42
9:XI:19:LEU:HD22	9:XI:59:PHE:HB3	2.02	0.42
13:XM:14:ARG:NH2	13:XM:16:ASP:OD2	2.46	0.42
24:YA:662:G:H5''	34:YP:16:ARG:HG2	2.02	0.42
24:YA:1149:G:H2'	24:YA:1150:C:C6	2.55	0.42
24:YA:1285:G:N2	24:YA:1328:G:H5''	2.34	0.42
24:YA:1812:A:H2'	24:YA:1813:G:C8	2.55	0.42
31:YI:86:THR:H	31:YI:123:LEU:HD12	1.84	0.42
1:QA:224:C:H2'	1:QA:225:C:C6	2.55	0.41
1:QA:409:G:H5'	4:QD:25:ARG:HB2	2.01	0.41
1:QA:1254:C:H2'	1:QA:1255:G:C8	2.55	0.41
1:QA:1512:U:H2'	1:QA:1513:A:C8	2.55	0.41
13:QM:80:ARG:HH12	13:QM:84:ILE:HD13	1.85	0.41
17:QQ:41:LYS:NZ	17:QQ:88:TYR:OH	2.42	0.41
24:RA:520:G:H2'	24:RA:521:G:H8	1.84	0.41
24:RA:823:G:H2'	24:RA:824:A:C8	2.54	0.41
24:RA:970:C:H2'	24:RA:971:C:C6	2.55	0.41
24:RA:1557:C:OP2	24:RA:1558:A:O2'	2.32	0.41
24:RA:1792:G:H5'	26:RD:205:VAL:HG13	2.02	0.41
24:RA:2086:U:H2'	24:RA:2087:G:C8	2.55	0.41
24:RA:2867:G:O2'	24:RA:2868:A:H8	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:RG:143:GLU:OE2	49:R4:26:SER:OG	2.37	0.41
37:RS:27:SER:HA	37:RS:88:ASP:HB3	2.02	0.41
1:XA:128:G:O2'	17:XQ:3:LYS:NZ	2.47	0.41
1:XA:1070:U:H2'	1:XA:1071:C:C6	2.55	0.41
7:XG:16:LEU:HD11	9:XI:45:ALA:HB2	2.01	0.41
10:XJ:38:ILE:HB	10:XJ:71:LEU:HB3	2.02	0.41
13:XM:91:ARG:HD2	13:XM:98:VAL:HA	2.00	0.41
24:YA:108:U:H2'	24:YA:109:G:C8	2.55	0.41
24:YA:191:A:H2'	24:YA:192:C:H6	1.85	0.41
24:YA:1408:C:H2'	24:YA:1409:C:C6	2.55	0.41
24:YA:1905:C:H3'	24:YA:1930:G:C8	2.55	0.41
24:YA:2291:U:H2'	24:YA:2292:C:C6	2.55	0.41
26:YD:25:THR:HG21	26:YD:113:VAL:HG11	2.02	0.41
1:QA:337:C:H2'	1:QA:338:A:C8	2.55	0.41
1:QA:779:C:H2'	1:QA:780:A:O4'	2.21	0.41
1:QA:936:C:O2	1:QA:1382:C:N4	2.46	0.41
24:RA:180:G:N2	24:RA:215:G:O6	2.53	0.41
24:RA:288:C:H2'	24:RA:289:A:C8	2.51	0.41
24:RA:521:G:H2'	24:RA:522:G:H8	1.85	0.41
24:RA:1854:A:H62	24:RA:1888:G:H8	1.66	0.41
24:RA:2028:U:H2'	24:RA:2029:G:C8	2.55	0.41
24:RA:2749:A:H5''	30:RH:4:ILE:HD11	2.01	0.41
29:RG:99:MET:HB3	29:RG:99:MET:HE2	1.92	0.41
29:RG:130:ASN:OD1	29:RG:161:THR:N	2.51	0.41
35:RQ:81:VAL:O	35:RQ:82:ARG:NE	2.44	0.41
37:RS:78:LEU:HD21	37:RS:108:GLY:HA3	2.02	0.41
1:XA:123:C:H2'	1:XA:124:G:H8	1.84	0.41
1:XA:345:C:H4'	1:XA:346:G:O5'	2.20	0.41
1:XA:401:C:H2'	1:XA:402:G:H8	1.85	0.41
1:XA:410:G:H2'	1:XA:429:U:C5	2.55	0.41
1:XA:1032(A):G:H2'	1:XA:1032(B):G:C8	2.55	0.41
24:YA:259:G:O2'	24:YA:621:A:O2'	2.11	0.41
24:YA:448:U:C4	24:YA:583:G:H1'	2.55	0.41
24:YA:570:G:H2'	24:YA:2030:A:C5	2.55	0.41
24:YA:784:A:C5	26:YD:229:VAL:HG21	2.56	0.41
24:YA:2615:U:H2'	24:YA:2616:C:H6	1.84	0.41
1:QA:429:U:H5'	4:QD:9:CYS:CB	2.50	0.41
4:QD:26:CYS:HA	4:QD:31:CYS:HB2	2.03	0.41
24:RA:605:C:O2	24:RA:657:U:O2'	2.39	0.41
24:RA:953:A:OP2	35:RQ:16:ARG:HD3	2.20	0.41
24:RA:1064:C:H3'	24:RA:1065:U:C5'	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:1086:A:OP1	24:RA:1104:C:O2'	2.32	0.41
24:RA:1283:G:O2'	24:RA:1285:G:N7	2.46	0.41
24:RA:1590:U:H2'	24:RA:1591:G:C8	2.55	0.41
24:RA:1794:U:H2'	24:RA:1795:C:C6	2.55	0.41
24:RA:2308:G:H22	24:RA:2311:A:H2	1.68	0.41
1:XA:410:G:OP2	4:XD:25:ARG:CG	2.68	0.41
16:XP:60:LEU:HD21	16:XP:66:PRO:HD3	2.03	0.41
24:YA:2030:A:H4'	24:YA:2031:A:C8	2.49	0.41
32:YN:40:PRO:HB3	39:YU:68:ALA:HB2	2.02	0.41
1:QA:576:G:N2	1:QA:760:G:OP2	2.53	0.41
1:QA:947:G:O3'	13:QM:109:THR:OG1	2.37	0.41
1:QA:1443:G:N2	24:RA:2864:G:OP1	2.44	0.41
3:QC:63:ASN:N	3:QC:63:ASN:ND2	2.69	0.41
4:QD:121:VAL:O	4:QD:134:ASP:HA	2.20	0.41
9:QI:8:GLY:HA2	9:QI:79:LEU:HD23	2.01	0.41
24:RA:27:G:O2'	24:RA:28:A:OP2	2.36	0.41
24:RA:1799:G:OP1	26:RD:260:ARG:HD3	2.20	0.41
24:RA:1800:C:H42	24:RA:1817:G:N2	2.18	0.41
24:RA:2046:G:H5'	50:R5:19:ARG:HG3	2.02	0.41
24:RA:2503:A:O2'	24:RA:2505:G:OP2	2.30	0.41
24:RA:2696:U:H2'	24:RA:2697:G:H8	1.84	0.41
31:RI:4:ILE:HG13	31:RI:39:ALA:HB2	2.02	0.41
39:RU:17:ILE:HG13	39:RU:32:PHE:HE1	1.85	0.41
1:XA:737:A:H2'	1:XA:738:C:C6	2.55	0.41
1:XA:1256:A:OP2	1:XA:1279:A:N6	2.54	0.41
19:XS:55:LYS:HB3	19:XS:55:LYS:HE2	1.79	0.41
24:YA:121:G:H4'	24:YA:149:A:H5'	2.01	0.41
24:YA:218:A:C2	24:YA:235:U:H4'	2.55	0.41
24:YA:840:C:H2'	24:YA:841:A:H8	1.86	0.41
24:YA:946:G:H2'	24:YA:947:G:H8	1.85	0.41
24:YA:1571:A:H2'	24:YA:1572:A:C8	2.54	0.41
24:YA:1796:U:H2'	24:YA:1797:C:C6	2.56	0.41
24:YA:1796:U:H2'	24:YA:1797:C:H6	1.85	0.41
24:YA:2258:C:O2'	24:YA:2427:C:OP2	2.32	0.41
24:YA:2285:C:H5	51:Y6:6:ARG:HH12	1.68	0.41
26:YD:163:ALA:HB1	26:YD:175:LEU:HD22	2.03	0.41
47:Y2:69:ARG:HB2	47:Y2:69:ARG:HH11	1.81	0.41
1:QA:545:C:OP2	4:QD:65:ARG:NH2	2.53	0.41
1:QA:1219:U:H2'	1:QA:1220:G:H8	1.86	0.41
1:QA:1240:U:O2'	7:QG:38:LEU:HD22	2.21	0.41
24:RA:321:G:OP2	28:RF:135:LYS:HD3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:557:U:H2'	24:RA:558:G:H8	1.85	0.41
24:RA:668:G:H2'	24:RA:670:A:H62	1.84	0.41
24:RA:857:C:OP1	45:R0:69:PHE:HD2	2.03	0.41
24:RA:1791:A:H3'	24:RA:1792:G:H8	1.85	0.41
24:RA:2266:A:H4'	24:RA:2267:A:N3	2.35	0.41
29:RG:102:PHE:O	29:RG:106:LEU:N	2.51	0.41
42:RX:31:HIS:HA	42:RX:32:PRO:HD3	1.94	0.41
1:XA:113:G:H2'	1:XA:114:U:C6	2.56	0.41
1:XA:398:C:H2'	1:XA:399:G:C8	2.54	0.41
1:XA:552:U:H2'	1:XA:553:A:H8	1.84	0.41
1:XA:636:U:H5'	17:XQ:2:PRO:HG3	2.02	0.41
1:XA:1005:A:H3'	1:XA:1006:C:C6	2.55	0.41
1:XA:1038:C:H2'	1:XA:1039:C:C6	2.55	0.41
1:XA:1346:A:H1'	1:XA:1348:U:C2	2.55	0.41
6:XF:12:PRO:HD3	6:XF:58:GLY:HA2	2.02	0.41
13:XM:11:ARG:HA	13:XM:11:ARG:HD2	1.86	0.41
24:YA:863:A:H2'	24:YA:864:G:H8	1.84	0.41
24:YA:1028:A:OP2	24:YA:1126:A:N6	2.46	0.41
30:YH:107:VAL:HG11	30:YH:162:ILE:HD11	2.01	0.41
35:YQ:28:ALA:HB3	35:YQ:67:ARG:HH12	1.85	0.41
1:QA:134:A:H61	16:QP:25:ARG:NH1	2.19	0.41
1:QA:244:U:H4'	1:QA:245:C:O5'	2.21	0.41
1:QA:430:A:OP1	4:QD:9:CYS:HB2	2.21	0.41
1:QA:537:G:H2'	1:QA:538:G:H8	1.86	0.41
1:QA:1002:G:H2'	1:QA:1003:G:H8	1.85	0.41
1:QA:1027:C:O2	1:QA:1034:G:N2	2.53	0.41
6:QF:83:ASP:OD2	6:QF:83:ASP:N	2.49	0.41
10:QJ:49:VAL:HG23	14:QN:41:ARG:HB2	2.03	0.41
11:QK:42:TRP:HZ3	11:QK:44:SER:HB3	1.85	0.41
15:QO:70:LEU:HG	15:QO:78:TYR:HB2	2.02	0.41
24:RA:1203:G:O6	24:RA:1204:A:N6	2.54	0.41
24:RA:2870:C:H2'	24:RA:2871:C:O4'	2.21	0.41
26:RD:25:THR:HG21	26:RD:113:VAL:HG21	2.03	0.41
28:RF:154:VAL:HG22	28:RF:191:ARG:HB3	2.03	0.41
30:RH:4:ILE:HG12	30:RH:6:ARG:HG2	2.03	0.41
33:RO:8:LEU:HB2	33:RO:19:ILE:HG13	2.01	0.41
35:RQ:34:LEU:HB2	35:RQ:118:LEU:HD22	2.03	0.41
37:RS:68:GLN:HA	37:RS:71:ARG:HB2	2.03	0.41
47:R2:38:GLN:HG2	47:R2:44:LEU:HD12	2.01	0.41
1:XA:7:G:H5'	1:XA:298:A:O4'	2.20	0.41
1:XA:413:G:H8	1:XA:413:G:OP2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:XA:1028:C:H2'	1:XA:1028(A):C:C6	2.56	0.41
4:XD:108:LEU:HD21	4:XD:183:GLY:HA3	2.03	0.41
7:XG:50:ILE:HB	7:XG:58:PRO:HB3	2.03	0.41
24:YA:1220:A:H5'	24:YA:1221:C:OP2	2.21	0.41
24:YA:1223:C:OP2	40:YV:88:ARG:NH1	2.53	0.41
24:YA:2402:C:O2'	24:YA:2403:C:O5'	2.37	0.41
24:YA:2567:G:H2'	24:YA:2568:C:C6	2.56	0.41
24:YA:2648:C:H2'	24:YA:2649:U:H6	1.86	0.41
24:YA:2692:C:H2'	24:YA:2693:A:H8	1.86	0.41
1:QA:180:U:H2'	1:QA:181:G:O4'	2.20	0.41
1:QA:337:C:H2'	1:QA:338:A:H8	1.86	0.41
1:QA:448:A:H62	1:QA:486:U:H3	1.68	0.41
4:QD:46:LYS:HD2	4:QD:46:LYS:HA	1.64	0.41
18:QR:30:ASP:HB3	18:QR:33:ASP:HB2	2.03	0.41
20:QT:29:LYS:O	20:QT:33:ILE:HG12	2.20	0.41
24:RA:177:G:H5'	24:RA:178:G:C8	2.56	0.41
24:RA:372:G:O2'	24:RA:373:U:P	2.77	0.41
24:RA:1093:G:N2	24:RA:1099:G:O6	2.53	0.41
24:RA:1399:C:H2'	24:RA:1400:G:H8	1.85	0.41
24:RA:2148:G:H2'	24:RA:2149:G:H8	1.85	0.41
25:RB:111:U:H2'	25:RB:112:G:H8	1.84	0.41
26:RD:168:ARG:HG2	26:RD:173:VAL:HG12	2.02	0.41
31:RI:29:TYR:HD2	31:RI:30:LEU:HD23	1.85	0.41
33:RO:70:LYS:HE3	33:RO:70:LYS:HB3	1.89	0.41
34:RP:100:LEU:HB3	34:RP:105:LEU:HB2	2.03	0.41
1:XA:17:U:H2'	1:XA:18:C:H6	1.84	0.41
1:XA:356:A:N3	1:XA:368:U:O2'	2.33	0.41
1:XA:449:C:H5	16:XP:42:ARG:HH21	1.69	0.41
1:XA:728:A:H2'	1:XA:729:A:H8	1.84	0.41
1:XA:1310:G:H2'	1:XA:1311:G:H8	1.86	0.41
24:YA:1028:A:H2'	24:YA:1029:A:H8	1.85	0.41
24:YA:2273:A:H2'	24:YA:2274:A:C8	2.56	0.41
24:YA:2314:C:H2'	24:YA:2315:G:C8	2.55	0.41
24:YA:2590:A:H2'	24:YA:2591:C:C6	2.56	0.41
24:YA:2630:G:H2'	24:YA:2631:G:H8	1.85	0.41
44:YZ:19:ARG:NH1	44:YZ:84:GLU:O	2.54	0.41
1:QA:636:U:H2'	1:QA:637:G:C8	2.55	0.41
1:QA:961:U:H3	1:QA:1201:A:H61	1.67	0.41
1:QA:1298:C:H4'	1:QA:1299:A:C4	2.56	0.41
22:QV:35:G:H2'	22:QV:36:G:H8	1.84	0.41
24:RA:674:G:H1'	28:RF:74:ARG:HD3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:1073:A:H4'	24:RA:1074:G:OP1	2.20	0.41
24:RA:1542:G:H5''	24:RA:1543:A:OP2	2.20	0.41
24:RA:1636:C:H2'	24:RA:1637:A:C8	2.55	0.41
34:RP:64:LYS:HB2	53:R8:25:MET:HG3	2.02	0.41
35:RQ:17:LEU:HD13	35:RQ:39:PRO:HB2	2.03	0.41
1:XA:102:G:O2'	1:XA:151:A:N3	2.48	0.41
1:XA:405:U:O4	4:XD:2:GLY:N	2.54	0.41
1:XA:514:C:H2'	1:XA:515:G:C8	2.55	0.41
1:XA:1406:U:O2	1:XA:1517:G:N2	2.52	0.41
4:XD:15:GLU:OE2	4:XD:59:ARG:NH1	2.53	0.41
10:XJ:42:THR:HG22	10:XJ:68:HIS:HA	2.03	0.41
12:XL:56:ALA:HB2	12:XL:70:ILE:HD11	2.03	0.41
24:YA:184:C:H2'	24:YA:185:U:C6	2.56	0.41
24:YA:358:U:H2'	24:YA:359:A:C8	2.56	0.41
24:YA:534:U:H2'	24:YA:535:C:C6	2.56	0.41
24:YA:634:C:H2'	24:YA:635:C:C6	2.55	0.41
24:YA:817:C:O2'	24:YA:839:U:OP1	2.27	0.41
24:YA:1474:C:H2'	24:YA:1475:G:H8	1.85	0.41
24:YA:1841:U:H2'	24:YA:1842:G:H8	1.85	0.41
24:YA:2282:G:H4'	24:YA:2389:G:O2'	2.21	0.41
38:YT:73:GLU:OE2	38:YT:103:ARG:NE	2.51	0.41
49:Y4:10:VAL:N	49:Y4:26:SER:O	2.44	0.41
50:Y5:36:CYS:HB3	50:Y5:49:CYS:HB3	2.03	0.41
1:QA:137:C:H2'	1:QA:138:G:H8	1.86	0.41
1:QA:437:U:H2'	1:QA:438:G:O4'	2.21	0.41
1:QA:1010:G:H2'	1:QA:1011:G:C8	2.55	0.41
1:QA:1244:C:H2'	1:QA:1245:A:H8	1.85	0.41
1:QA:1314:C:H2'	1:QA:1315:U:H6	1.85	0.41
1:QA:1443:G:C6	38:RT:118:ARG:HB3	2.56	0.41
3:QC:70:VAL:HG12	3:QC:72:LYS:H	1.85	0.41
7:QG:13:GLN:HA	7:QG:14:PRO:HD3	1.89	0.41
13:QM:60:VAL:HA	13:QM:63:THR:HG22	2.03	0.41
13:QM:97:PRO:HB2	13:QM:101:GLN:HG3	2.03	0.41
19:QS:6:LYS:HE2	19:QS:6:LYS:HB2	1.76	0.41
19:QS:22:LEU:O	19:QS:26:GLY:N	2.54	0.41
24:RA:30:G:H2'	24:RA:31:C:H6	1.86	0.41
24:RA:78:A:H2'	24:RA:79:G:H8	1.86	0.41
24:RA:300:A:OP2	43:RY:84:ARG:NH1	2.40	0.41
24:RA:404:C:H1'	24:RA:405:U:OP2	2.21	0.41
24:RA:675:A:N3	24:RA:2443:C:O2'	2.47	0.41
24:RA:851:U:H2'	24:RA:852:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:RA:949:C:H2'	24:RA:950:G:C8	2.56	0.41
24:RA:1073:A:H2'	24:RA:1074:G:H8	1.86	0.41
24:RA:1113:U:H2'	24:RA:1114:G:C8	2.55	0.41
24:RA:1159:U:H2'	24:RA:1160:G:H8	1.86	0.41
24:RA:1353:A:H2'	24:RA:1354:A:C8	2.55	0.41
24:RA:1525:G:H2'	24:RA:1526:G:C8	2.56	0.41
24:RA:1796:U:H2'	24:RA:1797:C:C6	2.56	0.41
24:RA:1936:A:OP2	24:RA:1962:C:N4	2.50	0.41
24:RA:2105:C:H2'	24:RA:2106:G:H8	1.85	0.41
24:RA:2329:G:H2'	24:RA:2330:G:H8	1.85	0.41
24:RA:2340:G:H2'	24:RA:2341:G:H8	1.86	0.41
24:RA:2648:C:H2'	24:RA:2649:U:H6	1.86	0.41
25:RB:48:A:H4'	37:RS:95:HIS:HD2	1.86	0.41
28:RF:122:LYS:HB3	28:RF:191:ARG:HA	2.03	0.41
37:RS:33:LYS:HA	37:RS:33:LYS:HD2	1.80	0.41
41:RW:13:SER:HA	41:RW:14:PRO:HD3	1.89	0.41
46:R1:52:ARG:HD2	46:R1:57:GLU:HB2	2.03	0.41
1:XA:505:G:H2'	1:XA:506:G:C8	2.55	0.41
1:XA:751:U:H2'	1:XA:752:G:O4'	2.21	0.41
1:XA:892:A:H2'	1:XA:893:C:C6	2.56	0.41
1:XA:1297:C:H1'	1:XA:1298:C:OP2	2.21	0.41
1:XA:1323:G:H1'	1:XA:1361:G:H21	1.86	0.41
1:XA:1372:U:H2'	1:XA:1373:G:O4'	2.20	0.41
3:XC:83:ARG:HE	3:XC:87:LEU:HD21	1.86	0.41
7:XG:104:LEU:O	7:XG:108:ALA:N	2.38	0.41
10:XJ:13:HIS:HB3	10:XJ:68:HIS:CE1	2.56	0.41
11:XK:58:PRO:O	11:XK:62:GLN:N	2.44	0.41
13:XM:15:VAL:HA	13:XM:18:ALA:HB3	2.03	0.41
17:XQ:17:LYS:HD2	17:XQ:47:PRO:HA	2.03	0.41
19:XS:12:ASP:OD1	19:XS:37:ARG:NH1	2.54	0.41
24:YA:347:A:H2'	24:YA:348:G:H8	1.86	0.41
24:YA:521:G:H2'	24:YA:522:G:H8	1.85	0.41
24:YA:557:U:H2'	24:YA:558:G:H8	1.86	0.41
24:YA:1000:A:H2'	24:YA:1001:A:C8	2.56	0.41
24:YA:1026:U:H1'	24:YA:1027:A:O5'	2.21	0.41
24:YA:1210:A:H5'	24:YA:1210:A:H8	1.86	0.41
24:YA:1378:A:H5''	52:Y7:10:ARG:HH12	1.86	0.41
24:YA:1451:C:O3'	24:YA:1457:A:N6	2.54	0.41
24:YA:1794:U:H2'	24:YA:1795:C:H6	1.85	0.41
24:YA:1889:A:N3	24:YA:2086:U:O2'	2.54	0.41
24:YA:2689:U:OP2	24:YA:2872:G:N2	2.48	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:YD:158:ALA:O	26:YD:161:THR:OG1	2.33	0.41
31:YI:40:THR:O	31:YI:44:LEU:N	2.49	0.41
32:YN:10:GLU:HA	32:YN:11:PRO:HD3	1.87	0.41
33:YO:88:ASN:OD1	33:YO:91:LEU:N	2.54	0.41
39:YU:50:ARG:HG2	39:YU:53:ARG:HH22	1.85	0.41
1:QA:45:U:H5''	1:QA:307:C:H1'	2.03	0.41
1:QA:132:C:H4'	1:QA:262:A:H1'	2.02	0.41
1:QA:173:U:H5''	1:QA:197:A:O4'	2.21	0.41
1:QA:191(E):G:H2'	1:QA:191(F):U:H6	1.85	0.41
1:QA:1217:C:H5''	14:QN:9:LYS:HD3	2.03	0.41
1:QA:1287:A:H2'	1:QA:1288:A:H8	1.86	0.41
1:QA:1411:C:H2'	1:QA:1412:C:C6	2.56	0.41
8:QH:7:ALA:HB2	8:QH:85:ARG:HD3	2.03	0.41
9:QI:10:ARG:HH12	9:QI:105:ASP:H	1.69	0.41
12:QL:117:ARG:NH2	12:QL:124:LYS:HD3	2.36	0.41
24:RA:648:G:H2'	24:RA:649:G:H8	1.86	0.41
24:RA:690:G:H2'	24:RA:691:C:H6	1.86	0.41
24:RA:1278:A:H2'	24:RA:1279:G:H8	1.85	0.41
24:RA:1323:U:OP1	41:RW:98:LYS:NZ	2.40	0.41
26:RD:127:VAL:HA	26:RD:193:VAL:HG23	2.02	0.41
26:RD:259:THR:O	26:RD:259:THR:OG1	2.32	0.41
32:RN:10:GLU:HA	32:RN:11:PRO:HD3	1.93	0.41
43:RY:28:LYS:N	43:RY:38:ILE:O	2.53	0.41
48:R3:40:THR:HG22	48:R3:42:ALA:H	1.86	0.41
1:XA:20:U:O2'	1:XA:573:A:N6	2.53	0.41
1:XA:328:C:H4'	1:XA:329:A:O5'	2.21	0.41
1:XA:1203:C:H2'	1:XA:1204:A:C8	2.53	0.41
2:XB:30:ARG:HH21	2:XB:194:PRO:HG2	1.85	0.41
2:XB:216:SER:OG	2:XB:217:ARG:N	2.55	0.41
24:YA:78:A:H2'	24:YA:79:G:C8	2.55	0.41
24:YA:177:G:H3'	24:YA:178:G:H8	1.86	0.41
24:YA:373:U:H2'	24:YA:374:A:H8	1.85	0.41
24:YA:1664:A:H61	24:YA:1996:C:N4	2.18	0.41
24:YA:2186:G:H2'	24:YA:2187:G:C8	2.56	0.41
24:YA:2262:U:OP1	24:YA:2387:U:O2'	2.28	0.41
26:YD:72:LYS:HG3	26:YD:97:TYR:HE2	1.86	0.41
26:YD:96:HIS:CE1	26:YD:102:LYS:HE2	2.56	0.41
1:QA:321:A:N6	1:QA:329:A:OP2	2.53	0.40
1:QA:909:A:N3	1:QA:1413:A:O2'	2.47	0.40
1:QA:1238:A:H62	1:QA:1301:U:H3	1.68	0.40
4:QD:11:LEU:HD22	4:QD:66:ARG:CZ	2.50	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:QP:21:VAL:HG23	16:QP:34:GLU:H	1.86	0.40
18:QR:53:ARG:HH21	18:QR:59:SER:HA	1.85	0.40
24:RA:635:C:H2'	24:RA:636:G:O4'	2.22	0.40
24:RA:2215:G:H2'	24:RA:2216:G:H8	1.85	0.40
24:RA:2698:U:H2'	24:RA:2699:C:C6	2.56	0.40
24:RA:2700:C:O2'	24:RA:2701:C:H5'	2.21	0.40
1:XA:134:A:H1'	1:XA:325:A:C5	2.57	0.40
1:XA:191(G):G:C4	20:XT:105:SER:HB3	2.55	0.40
1:XA:193:C:H2'	1:XA:194:C:C6	2.56	0.40
1:XA:280:C:N3	17:XQ:39:SER:OG	2.42	0.40
1:XA:315:A:H5''	1:XA:317:G:OP2	2.20	0.40
1:XA:370:C:H2'	1:XA:371:G:C8	2.56	0.40
1:XA:748:C:H1'	1:XA:749:C:H5	1.86	0.40
1:XA:1255:G:OP1	10:XJ:45:ARG:NH1	2.49	0.40
1:XA:1310:G:H2'	1:XA:1311:G:C8	2.56	0.40
1:XA:1435:G:H2'	1:XA:1436:U:C6	2.56	0.40
2:XB:70:PHE:HD2	2:XB:85:ALA:HB2	1.86	0.40
24:YA:65:C:H2'	24:YA:66:C:H6	1.87	0.40
24:YA:297:C:H2'	24:YA:298:G:O4'	2.21	0.40
24:YA:724:U:H2'	24:YA:725:G:O4'	2.21	0.40
24:YA:1438:U:H2'	24:YA:1439:A:C8	2.55	0.40
24:YA:1605:C:H2'	24:YA:1606:G:O4'	2.21	0.40
24:YA:2445:G:P	28:YF:74:ARG:HH22	2.44	0.40
24:YA:2626:C:H2'	24:YA:2627:G:H8	1.86	0.40
24:YA:2630:G:H2'	24:YA:2631:G:C8	2.56	0.40
24:YA:2735:G:H2'	24:YA:2736:G:H8	1.86	0.40
28:YF:41:LEU:HD22	28:YF:44:ARG:HH21	1.86	0.40
44:YZ:45:ASP:OD1	44:YZ:49:ARG:NE	2.54	0.40
1:QA:148:G:H2'	1:QA:149:A:C8	2.56	0.40
1:QA:321:A:H2'	1:QA:322:C:C6	2.56	0.40
1:QA:1261:A:H62	1:QA:1274:G:N2	2.20	0.40
1:QA:1354:C:H2'	1:QA:1355:G:H8	1.86	0.40
6:QF:78:GLU:O	6:QF:81:ILE:HB	2.22	0.40
11:QK:62:GLN:OE1	11:QK:93:GLN:NE2	2.54	0.40
12:QL:77:LEU:HD21	12:QL:107:ALA:HB2	2.03	0.40
16:QP:57:ARG:HG2	16:QP:79:VAL:HG13	2.04	0.40
24:RA:673:C:OP1	28:RF:54:ARG:NH1	2.51	0.40
24:RA:834:C:H2'	24:RA:835:A:H8	1.86	0.40
24:RA:1429:G:H2'	24:RA:1430:C:C6	2.56	0.40
24:RA:1441:G:H2'	24:RA:1442:G:H8	1.85	0.40
33:RO:120:GLU:HB2	38:RT:68:TYR:HE2	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:RQ:109:VAL:HG12	35:RQ:114:ALA:HB2	2.03	0.40
38:RT:5:ALA:HA	38:RT:8:LYS:HE3	2.03	0.40
1:XA:67:C:H2'	1:XA:68:G:C8	2.56	0.40
1:XA:139:G:H2'	1:XA:140:A:H8	1.85	0.40
1:XA:265:G:H2'	1:XA:266:G:H5''	2.03	0.40
1:XA:1229:A:O2'	22:XV:30:C:OP1	2.39	0.40
1:XA:1251:A:H2'	1:XA:1252:A:C8	2.56	0.40
7:XG:126:ASP:O	7:XG:132:GLY:N	2.54	0.40
14:XN:2:ALA:HB1	14:XN:6:LEU:HD13	2.03	0.40
24:YA:181:A:H1'	24:YA:435:C:H5'	2.02	0.40
24:YA:709:U:H2'	24:YA:710:G:H8	1.86	0.40
24:YA:946:G:H2'	24:YA:947:G:C8	2.57	0.40
24:YA:1230:C:H2'	24:YA:1231:G:H8	1.86	0.40
24:YA:1853:A:N3	24:YA:2233:U:O2'	2.43	0.40
25:YB:44:G:H1'	25:YB:47:C:N4	2.36	0.40
26:YD:60:ARG:HG2	26:YD:86:PRO:HB2	2.03	0.40
33:YO:34:THR:OG1	33:YO:35:VAL:N	2.54	0.40
37:YS:74:ALA:HB3	37:YS:107:GLU:HB3	2.03	0.40
42:YX:32:PRO:HA	42:YX:77:LYS:HB2	2.03	0.40
1:QA:666:G:H5'	1:QA:726:C:H1'	2.04	0.40
1:QA:1150:U:H2'	1:QA:1151:A:C8	2.56	0.40
3:QC:18:TRP:O	3:QC:54:ARG:NH2	2.45	0.40
3:QC:199:LYS:HE3	3:QC:199:LYS:HB2	1.92	0.40
9:QI:25:LYS:N	9:QI:60:ASP:OD1	2.48	0.40
24:RA:969:U:H2'	24:RA:970:C:C6	2.56	0.40
24:RA:2287:A:N6	24:RA:2344:U:H3	2.19	0.40
24:RA:2318:G:OP2	24:RA:2318:G:N2	2.54	0.40
24:RA:2701:C:H3'	24:RA:2702:U:C5'	2.49	0.40
26:RD:175:LEU:HD12	26:RD:185:VAL:HG21	2.02	0.40
30:RH:46:GLU:HB2	30:RH:49:VAL:HG23	2.03	0.40
32:RN:34:LEU:HD23	32:RN:34:LEU:HA	1.91	0.40
46:R1:23:LYS:HE3	46:R1:23:LYS:HB2	1.82	0.40
48:R3:12:PRO:HB2	48:R3:20:LYS:HG2	2.03	0.40
1:XA:114:U:H2'	1:XA:115:G:C8	2.57	0.40
1:XA:975:A:N6	10:XJ:48:THR:OG1	2.42	0.40
1:XA:1409:C:H2'	1:XA:1410:G:H8	1.87	0.40
13:XM:120:LYS:HD2	13:XM:120:LYS:HA	1.88	0.40
17:XQ:24:GLU:HG2	17:XQ:39:SER:HB3	2.04	0.40
24:YA:639:U:H2'	24:YA:640:C:C6	2.56	0.40
24:YA:1027:A:C2	24:YA:2488:A:H5'	2.56	0.40
44:YZ:136:PHE:HE2	44:YZ:138:GLU:HG3	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:QA:17:U:H2'	1:QA:18:C:C6	2.57	0.40
1:QA:114:U:H2'	1:QA:115:G:C8	2.57	0.40
1:QA:768:A:H5'	1:QA:1524:C:H1'	2.03	0.40
1:QA:1273:G:H3'	1:QA:1274:G:H8	1.86	0.40
4:QD:19:LEU:HB3	4:QD:21:LEU:HD21	2.04	0.40
24:RA:724:U:H2'	24:RA:725:G:O4'	2.21	0.40
24:RA:1000:A:H2'	24:RA:1001:A:C8	2.57	0.40
24:RA:1204:A:H1'	24:RA:1206:G:C5	2.57	0.40
24:RA:2637:U:H2'	24:RA:2638:G:O4'	2.22	0.40
36:RR:28:LEU:HD23	36:RR:48:VAL:HG11	2.02	0.40
50:R5:36:CYS:HB3	50:R5:49:CYS:HB3	2.03	0.40
1:XA:429:U:H5'	4:XD:9:CYS:HB2	2.04	0.40
1:XA:704:A:OP2	1:XA:704:A:H8	2.05	0.40
24:YA:1278:A:H2'	24:YA:1279:G:C8	2.56	0.40
1:QA:12:U:H4'	1:QA:526:C:H4'	2.04	0.40
1:QA:1355:G:H2'	1:QA:1356:G:H8	1.85	0.40
1:QA:1435:G:H2'	1:QA:1436:U:C6	2.57	0.40
24:RA:270(D):C:H2'	24:RA:270(E):G:H8	1.85	0.40
24:RA:588:U:O5'	24:RA:588:U:H6	2.04	0.40
24:RA:729:G:C5	26:RD:208:LYS:HB2	2.57	0.40
24:RA:1084:A:H8	24:RA:1085:A:H4'	1.86	0.40
24:RA:1165:U:H2'	24:RA:1166:C:C6	2.57	0.40
24:RA:1558:A:H1'	24:RA:1559:G:OP2	2.21	0.40
25:RB:70:C:H2'	25:RB:71:C:H6	1.87	0.40
44:RZ:19:ARG:NH1	44:RZ:84:GLU:O	2.55	0.40
46:R1:82:LEU:HD23	46:R1:82:LEU:HA	1.98	0.40
1:XA:10:A:H2'	1:XA:11:G:C8	2.57	0.40
1:XA:299:G:H2'	1:XA:300:A:C8	2.57	0.40
1:XA:337:C:H2'	1:XA:338:A:H8	1.86	0.40
1:XA:524:G:H2'	1:XA:525:C:C6	2.57	0.40
1:XA:1118:C:H2'	1:XA:1119:C:C6	2.56	0.40
1:XA:1133:G:H2'	1:XA:1134:G:C8	2.57	0.40
24:YA:689:A:H2'	24:YA:690:G:C8	2.57	0.40
24:YA:898:C:H3'	24:YA:899:A:H8	1.86	0.40
24:YA:1756:G:H4'	24:YA:1758:G:O4'	2.21	0.40
24:YA:2133:G:H1'	24:YA:2158:A:H61	1.86	0.40
24:YA:2681:C:H1'	24:YA:2682:U:OP2	2.22	0.40
29:YG:111:LEU:HD13	29:YG:120:LEU:HD11	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	
2	QB	233/256 (91%)	211 (91%)	22 (9%)	0	100	100
2	XB	234/256 (91%)	213 (91%)	21 (9%)	0	100	100
3	QC	203/239 (85%)	185 (91%)	18 (9%)	0	100	100
3	XC	203/239 (85%)	191 (94%)	12 (6%)	0	100	100
4	QD	206/209 (99%)	185 (90%)	18 (9%)	3 (2%)	10	39
4	XD	206/209 (99%)	189 (92%)	15 (7%)	2 (1%)	15	49
5	QE	149/162 (92%)	140 (94%)	9 (6%)	0	100	100
5	XE	149/162 (92%)	139 (93%)	10 (7%)	0	100	100
6	QF	99/101 (98%)	97 (98%)	2 (2%)	0	100	100
6	XF	99/101 (98%)	98 (99%)	1 (1%)	0	100	100
7	QG	153/156 (98%)	148 (97%)	5 (3%)	0	100	100
7	XG	153/156 (98%)	148 (97%)	5 (3%)	0	100	100
8	QH	135/138 (98%)	131 (97%)	4 (3%)	0	100	100
8	XH	135/138 (98%)	130 (96%)	5 (4%)	0	100	100
9	QI	125/128 (98%)	117 (94%)	8 (6%)	0	100	100
9	XI	124/128 (97%)	112 (90%)	12 (10%)	0	100	100
10	QJ	97/105 (92%)	91 (94%)	6 (6%)	0	100	100
10	XJ	94/105 (90%)	90 (96%)	4 (4%)	0	100	100
11	QK	117/129 (91%)	110 (94%)	7 (6%)	0	100	100
11	XK	114/129 (88%)	109 (96%)	5 (4%)	0	100	100
12	QL	123/132 (93%)	113 (92%)	10 (8%)	0	100	100
12	XL	120/132 (91%)	107 (89%)	13 (11%)	0	100	100
13	QM	118/126 (94%)	105 (89%)	12 (10%)	1 (1%)	19	54
13	XM	117/126 (93%)	103 (88%)	14 (12%)	0	100	100
14	QN	58/61 (95%)	52 (90%)	6 (10%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	XN	58/61 (95%)	51 (88%)	7 (12%)	0	100	100
15	QO	86/89 (97%)	82 (95%)	4 (5%)	0	100	100
15	XO	85/89 (96%)	85 (100%)	0	0	100	100
16	QP	82/88 (93%)	78 (95%)	4 (5%)	0	100	100
16	XP	82/88 (93%)	78 (95%)	4 (5%)	0	100	100
17	QQ	98/105 (93%)	96 (98%)	2 (2%)	0	100	100
17	XQ	98/105 (93%)	92 (94%)	6 (6%)	0	100	100
18	QR	68/88 (77%)	65 (96%)	3 (4%)	0	100	100
18	XR	68/88 (77%)	65 (96%)	3 (4%)	0	100	100
19	QS	81/93 (87%)	72 (89%)	9 (11%)	0	100	100
19	XS	82/93 (88%)	71 (87%)	11 (13%)	0	100	100
20	QT	97/106 (92%)	92 (95%)	5 (5%)	0	100	100
20	XT	97/106 (92%)	89 (92%)	8 (8%)	0	100	100
21	QU	23/27 (85%)	23 (100%)	0	0	100	100
21	XU	23/27 (85%)	23 (100%)	0	0	100	100
26	RD	270/276 (98%)	258 (96%)	12 (4%)	0	100	100
26	YD	270/276 (98%)	257 (95%)	13 (5%)	0	100	100
27	RE	203/206 (98%)	171 (84%)	32 (16%)	0	100	100
27	YE	202/206 (98%)	193 (96%)	9 (4%)	0	100	100
28	RF	200/210 (95%)	189 (94%)	11 (6%)	0	100	100
28	YF	200/210 (95%)	189 (94%)	11 (6%)	0	100	100
29	RG	179/182 (98%)	158 (88%)	21 (12%)	0	100	100
29	YG	179/182 (98%)	161 (90%)	17 (10%)	1 (1%)	25	59
30	RH	172/180 (96%)	153 (89%)	18 (10%)	1 (1%)	25	59
30	YH	171/180 (95%)	163 (95%)	8 (5%)	0	100	100
31	RI	144/148 (97%)	125 (87%)	19 (13%)	0	100	100
31	YI	144/148 (97%)	129 (90%)	15 (10%)	0	100	100
32	RN	136/140 (97%)	124 (91%)	12 (9%)	0	100	100
32	YN	136/140 (97%)	125 (92%)	11 (8%)	0	100	100
33	RO	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
33	YO	120/122 (98%)	115 (96%)	5 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
34	RP	148/150 (99%)	133 (90%)	15 (10%)	0	100	100
34	YP	145/150 (97%)	137 (94%)	7 (5%)	1 (1%)	22	57
35	RQ	139/141 (99%)	122 (88%)	16 (12%)	1 (1%)	22	57
35	YQ	139/141 (99%)	120 (86%)	19 (14%)	0	100	100
36	RR	115/118 (98%)	108 (94%)	7 (6%)	0	100	100
36	YR	115/118 (98%)	110 (96%)	5 (4%)	0	100	100
37	RS	109/112 (97%)	95 (87%)	14 (13%)	0	100	100
37	YS	109/112 (97%)	95 (87%)	14 (13%)	0	100	100
38	RT	135/146 (92%)	123 (91%)	10 (7%)	2 (2%)	10	39
38	YT	135/146 (92%)	118 (87%)	15 (11%)	2 (2%)	10	39
39	RU	115/118 (98%)	108 (94%)	6 (5%)	1 (1%)	17	52
39	YU	115/118 (98%)	112 (97%)	3 (3%)	0	100	100
40	RV	99/101 (98%)	97 (98%)	2 (2%)	0	100	100
40	YV	99/101 (98%)	94 (95%)	5 (5%)	0	100	100
41	RW	111/113 (98%)	107 (96%)	4 (4%)	0	100	100
41	YW	111/113 (98%)	105 (95%)	6 (5%)	0	100	100
42	RX	90/96 (94%)	88 (98%)	2 (2%)	0	100	100
42	YX	90/96 (94%)	86 (96%)	4 (4%)	0	100	100
43	RY	105/110 (96%)	98 (93%)	7 (7%)	0	100	100
43	YY	105/110 (96%)	101 (96%)	4 (4%)	0	100	100
44	RZ	201/206 (98%)	182 (90%)	19 (10%)	0	100	100
44	YZ	201/206 (98%)	181 (90%)	20 (10%)	0	100	100
45	R0	74/85 (87%)	73 (99%)	1 (1%)	0	100	100
45	Y0	73/85 (86%)	71 (97%)	2 (3%)	0	100	100
46	R1	95/98 (97%)	84 (88%)	11 (12%)	0	100	100
46	Y1	91/98 (93%)	83 (91%)	8 (9%)	0	100	100
47	R2	67/72 (93%)	66 (98%)	1 (2%)	0	100	100
47	Y2	66/72 (92%)	63 (96%)	2 (3%)	1 (2%)	10	39
48	R3	57/60 (95%)	53 (93%)	4 (7%)	0	100	100
48	Y3	57/60 (95%)	55 (96%)	2 (4%)	0	100	100
49	R4	67/71 (94%)	57 (85%)	10 (15%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
49	Y4	67/71 (94%)	54 (81%)	13 (19%)	0	100	100
50	R5	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
50	Y5	57/60 (95%)	56 (98%)	1 (2%)	0	100	100
51	R6	51/54 (94%)	51 (100%)	0	0	100	100
51	Y6	51/54 (94%)	51 (100%)	0	0	100	100
52	R7	45/49 (92%)	45 (100%)	0	0	100	100
52	Y7	46/49 (94%)	46 (100%)	0	0	100	100
53	R8	62/65 (95%)	49 (79%)	13 (21%)	0	100	100
53	Y8	62/65 (95%)	62 (100%)	0	0	100	100
54	R9	35/37 (95%)	35 (100%)	0	0	100	100
54	Y9	35/37 (95%)	35 (100%)	0	0	100	100
All	All	11484/12128 (95%)	10666 (93%)	802 (7%)	16 (0%)	51	83

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	QD	155	LEU
38	RT	124	ASP
4	XD	155	LEU
4	XD	171	GLY
34	YP	63	PRO
38	YT	124	ASP
4	QD	32	ALA
38	YT	123	GLN
47	Y2	70	GLN
38	RT	123	GLN
29	YG	81	LYS
30	RH	86	GLU
39	RU	93	LYS
13	QM	15	VAL
35	RQ	78	PRO
4	QD	7	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	QB	203/220 (92%)	203 (100%)	0	100	100
2	XB	204/220 (93%)	204 (100%)	0	100	100
3	QC	159/188 (85%)	158 (99%)	1 (1%)	86	94
3	XC	159/188 (85%)	157 (99%)	2 (1%)	69	87
4	QD	180/181 (99%)	174 (97%)	6 (3%)	38	69
4	XD	180/181 (99%)	178 (99%)	2 (1%)	73	89
5	QE	116/123 (94%)	113 (97%)	3 (3%)	46	74
5	XE	116/123 (94%)	116 (100%)	0	100	100
6	QF	90/90 (100%)	88 (98%)	2 (2%)	52	78
6	XF	90/90 (100%)	88 (98%)	2 (2%)	52	78
7	QG	126/127 (99%)	124 (98%)	2 (2%)	62	84
7	XG	126/127 (99%)	125 (99%)	1 (1%)	81	92
8	QH	118/119 (99%)	118 (100%)	0	100	100
8	XH	118/119 (99%)	118 (100%)	0	100	100
9	QI	98/99 (99%)	97 (99%)	1 (1%)	76	90
9	XI	97/99 (98%)	95 (98%)	2 (2%)	53	79
10	QJ	89/92 (97%)	89 (100%)	0	100	100
10	XJ	86/92 (94%)	86 (100%)	0	100	100
11	QK	90/99 (91%)	90 (100%)	0	100	100
11	XK	88/99 (89%)	88 (100%)	0	100	100
12	QL	104/109 (95%)	104 (100%)	0	100	100
12	XL	103/109 (94%)	102 (99%)	1 (1%)	76	90
13	QM	96/101 (95%)	95 (99%)	1 (1%)	76	90
13	XM	95/101 (94%)	95 (100%)	0	100	100
14	QN	49/50 (98%)	49 (100%)	0	100	100
14	XN	49/50 (98%)	49 (100%)	0	100	100
15	QO	79/80 (99%)	79 (100%)	0	100	100
15	XO	79/80 (99%)	79 (100%)	0	100	100
16	QP	72/74 (97%)	71 (99%)	1 (1%)	67	86
16	XP	72/74 (97%)	72 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	QQ	95/97 (98%)	95 (100%)	0	100	100
17	XQ	95/97 (98%)	93 (98%)	2 (2%)	53	79
18	QR	61/77 (79%)	60 (98%)	1 (2%)	62	84
18	XR	61/77 (79%)	61 (100%)	0	100	100
19	QS	72/80 (90%)	72 (100%)	0	100	100
19	XS	73/80 (91%)	72 (99%)	1 (1%)	67	86
20	QT	76/82 (93%)	76 (100%)	0	100	100
20	XT	76/82 (93%)	76 (100%)	0	100	100
21	QU	20/22 (91%)	20 (100%)	0	100	100
21	XU	20/22 (91%)	20 (100%)	0	100	100
26	RD	214/218 (98%)	213 (100%)	1 (0%)	88	94
26	YD	214/218 (98%)	214 (100%)	0	100	100
27	RE	165/166 (99%)	165 (100%)	0	100	100
27	YE	165/166 (99%)	164 (99%)	1 (1%)	86	94
28	RF	161/166 (97%)	161 (100%)	0	100	100
28	YF	161/166 (97%)	161 (100%)	0	100	100
29	RG	155/156 (99%)	155 (100%)	0	100	100
29	YG	155/156 (99%)	154 (99%)	1 (1%)	86	94
30	RH	145/148 (98%)	144 (99%)	1 (1%)	84	93
30	YH	144/148 (97%)	143 (99%)	1 (1%)	84	93
31	RI	122/124 (98%)	121 (99%)	1 (1%)	81	92
31	YI	122/124 (98%)	121 (99%)	1 (1%)	81	92
32	RN	117/119 (98%)	117 (100%)	0	100	100
32	YN	117/119 (98%)	116 (99%)	1 (1%)	78	91
33	RO	100/100 (100%)	99 (99%)	1 (1%)	76	90
33	YO	100/100 (100%)	100 (100%)	0	100	100
34	RP	116/116 (100%)	116 (100%)	0	100	100
34	YP	114/116 (98%)	114 (100%)	0	100	100
35	RQ	111/111 (100%)	110 (99%)	1 (1%)	78	91
35	YQ	111/111 (100%)	110 (99%)	1 (1%)	78	91
36	RR	100/101 (99%)	99 (99%)	1 (1%)	76	90

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	YR	100/101 (99%)	100 (100%)	0	100	100
37	RS	87/88 (99%)	87 (100%)	0	100	100
37	YS	87/88 (99%)	87 (100%)	0	100	100
38	RT	120/127 (94%)	120 (100%)	0	100	100
38	YT	120/127 (94%)	120 (100%)	0	100	100
39	RU	93/94 (99%)	92 (99%)	1 (1%)	73	89
39	YU	93/94 (99%)	93 (100%)	0	100	100
40	RV	82/82 (100%)	82 (100%)	0	100	100
40	YV	82/82 (100%)	82 (100%)	0	100	100
41	RW	92/92 (100%)	92 (100%)	0	100	100
41	YW	92/92 (100%)	92 (100%)	0	100	100
42	RX	74/78 (95%)	74 (100%)	0	100	100
42	YX	74/78 (95%)	73 (99%)	1 (1%)	67	86
43	RY	88/91 (97%)	88 (100%)	0	100	100
43	YY	88/91 (97%)	88 (100%)	0	100	100
44	RZ	174/179 (97%)	172 (99%)	2 (1%)	73	89
44	YZ	174/179 (97%)	171 (98%)	3 (2%)	60	83
45	R0	61/67 (91%)	60 (98%)	1 (2%)	62	84
45	Y0	61/67 (91%)	60 (98%)	1 (2%)	62	84
46	R1	82/83 (99%)	82 (100%)	0	100	100
46	Y1	78/83 (94%)	78 (100%)	0	100	100
47	R2	64/67 (96%)	64 (100%)	0	100	100
47	Y2	64/67 (96%)	62 (97%)	2 (3%)	40	70
48	R3	51/52 (98%)	51 (100%)	0	100	100
48	Y3	51/52 (98%)	50 (98%)	1 (2%)	55	80
49	R4	62/63 (98%)	61 (98%)	1 (2%)	62	84
49	Y4	62/63 (98%)	62 (100%)	0	100	100
50	R5	51/52 (98%)	51 (100%)	0	100	100
50	Y5	51/52 (98%)	51 (100%)	0	100	100
51	R6	51/52 (98%)	51 (100%)	0	100	100
51	Y6	51/52 (98%)	51 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
52	R7	40/42 (95%)	40 (100%)	0	100	100
52	Y7	41/42 (98%)	41 (100%)	0	100	100
53	R8	54/55 (98%)	54 (100%)	0	100	100
53	Y8	54/55 (98%)	53 (98%)	1 (2%)	57	81
54	R9	34/34 (100%)	34 (100%)	0	100	100
54	Y9	34/34 (100%)	34 (100%)	0	100	100
All	All	9706/10066 (96%)	9649 (99%)	57 (1%)	86	94

All (57) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	QC	63	ASN
4	QD	22	LYS
4	QD	31	CYS
4	QD	49	ARG
4	QD	73	ARG
4	QD	131	ARG
4	QD	141	ARG
5	QE	24	ARG
5	QE	51	VAL
5	QE	63	ARG
6	QF	14	LEU
6	QF	80	ARG
7	QG	36	LYS
7	QG	94	ARG
9	QI	93	ARG
13	QM	77	ASN
16	QP	1	MET
18	QR	19	LYS
26	RD	122	ASP
30	RH	33	LEU
31	RI	127	VAL
33	RO	97	ARG
35	RQ	10	ARG
36	RR	2	ARG
39	RU	94	ASN
44	RZ	34	ASN
44	RZ	156	LYS
45	R0	14	ARG
49	R4	61	ARG

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Mol	Chain	Res	Type
3	XC	36	ASP
3	XC	88	ARG
4	XD	19	LEU
4	XD	33	MET
6	XF	65	VAL
6	XF	80	ARG
7	XG	94	ARG
9	XI	38	GLN
9	XI	64	THR
12	XL	20	LYS
17	XQ	57	VAL
17	XQ	101	ARG
19	XS	63	THR
27	YE	75	VAL
29	YG	112	PRO
30	YH	51	ARG
31	YI	139	GLN
32	YN	96	GLU
35	YQ	81	VAL
42	YX	66	LEU
44	YZ	34	ASN
44	YZ	185	GLU
44	YZ	186	GLU
45	Y0	14	ARG
47	Y2	69	ARG
47	Y2	71	ASN
48	Y3	30	ARG
53	Y8	14	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
5	QE	127	ASN
9	QI	73	GLN
10	QJ	84	GLN
29	RG	132	ASN
35	RQ	123	HIS
39	RU	94	ASN
53	R8	31	HIS
7	XG	28	ASN
16	XP	14	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	QA	1498/1521 (98%)	276 (18%)	34 (2%)
1	XA	1499/1521 (98%)	278 (18%)	35 (2%)
22	QV	16/17 (94%)	1 (6%)	0
22	XV	14/17 (82%)	2 (14%)	0
23	QX	9/19 (47%)	4 (44%)	1 (11%)
23	XX	11/19 (57%)	5 (45%)	0
24	RA	2877/2915 (98%)	547 (19%)	37 (1%)
24	YA	2880/2915 (98%)	529 (18%)	41 (1%)
25	RB	119/122 (97%)	17 (14%)	1 (0%)
25	YB	119/122 (97%)	16 (13%)	1 (0%)
All	All	9042/9188 (98%)	1675 (18%)	150 (1%)

All (1675) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	QA	6	G
1	QA	9	G
1	QA	32	A
1	QA	39	G
1	QA	48	C
1	QA	50	A
1	QA	51	A
1	QA	64	G
1	QA	65	U
1	QA	82	U
1	QA	91	C
1	QA	95	G
1	QA	101	A
1	QA	116	A
1	QA	120	A
1	QA	121	C
1	QA	129(A)	G
1	QA	144	G
1	QA	146	G
1	QA	158	G
1	QA	160	A
1	QA	163	C
1	QA	169	C
1	QA	172	A
1	QA	173	U
1	QA	174	C

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Mol	Chain	Res	Type
1	QA	182	U
1	QA	188	U
1	QA	189	U
1	QA	190	G
1	QA	191(A)	G
1	QA	195	A
1	QA	197	A
1	QA	208	U
1	QA	209	U
1	QA	216	G
1	QA	220	G
1	QA	244	U
1	QA	245	C
1	QA	247	G
1	QA	250	A
1	QA	251	G
1	QA	267	C
1	QA	270	A
1	QA	281	G
1	QA	289	G
1	QA	298	A
1	QA	321	A
1	QA	328	C
1	QA	329	A
1	QA	332	G
1	QA	344	A
1	QA	346	G
1	QA	347	G
1	QA	351	G
1	QA	352	C
1	QA	353	A
1	QA	354	G
1	QA	356	A
1	QA	367	U
1	QA	372	C
1	QA	389	A
1	QA	397	A
1	QA	398	C
1	QA	406	G
1	QA	411	A
1	QA	412	A
1	QA	413	G

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Mol	Chain	Res	Type
1	QA	414	A
1	QA	421	U
1	QA	422	C
1	QA	423	G
1	QA	428	G
1	QA	429	U
1	QA	430	A
1	QA	435	C
1	QA	440	A
1	QA	466	C
1	QA	482	A
1	QA	485	G
1	QA	486	U
1	QA	496	A
1	QA	497	U
1	QA	505	G
1	QA	508	C
1	QA	509	A
1	QA	510	A
1	QA	511	C
1	QA	518	C
1	QA	521	G
1	QA	527	G
1	QA	531	U
1	QA	532	A
1	QA	533	A
1	QA	545	C
1	QA	547	A
1	QA	559	A
1	QA	564	C
1	QA	568	G
1	QA	572	A
1	QA	573	A
1	QA	576	G
1	QA	577	G
1	QA	618	C
1	QA	630	G
1	QA	631	G
1	QA	653	A
1	QA	657	G
1	QA	665	A
1	QA	666	G

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Mol	Chain	Res	Type
1	QA	686	U
1	QA	688	G
1	QA	701	C
1	QA	702	A
1	QA	703	G
1	QA	704	A
1	QA	722	A
1	QA	731	G
1	QA	748	C
1	QA	754	C
1	QA	755	G
1	QA	760	G
1	QA	777	A
1	QA	785	G
1	QA	786	G
1	QA	790	A
1	QA	792	A
1	QA	793	U
1	QA	794	A
1	QA	813	U
1	QA	817	C
1	QA	819	A
1	QA	821	G
1	QA	828	A
1	QA	841	U
1	QA	842	C
1	QA	843	U
1	QA	848	C
1	QA	859	A
1	QA	871	U
1	QA	872	A
1	QA	891	U
1	QA	902	G
1	QA	914	A
1	QA	926	G
1	QA	927	G
1	QA	934	C
1	QA	960	U
1	QA	961	U
1	QA	968	A
1	QA	969	A
1	QA	971	G

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Mol	Chain	Res	Type
1	QA	972	C
1	QA	974	A
1	QA	976	G
1	QA	977	A
1	QA	983	A
1	QA	991	U
1	QA	992	U
1	QA	993	G
1	QA	994	A
1	QA	1001	G
1	QA	1002	G
1	QA	1003	G
1	QA	1004	A
1	QA	1006	C
1	QA	1008	C
1	QA	1009	G
1	QA	1020	U
1	QA	1024	G
1	QA	1025	U
1	QA	1027	C
1	QA	1028	C
1	QA	1028(A)	C
1	QA	1029	G
1	QA	1030	C
1	QA	1031	G
1	QA	1032(A)	G
1	QA	1033	G
1	QA	1034	G
1	QA	1035	A
1	QA	1054	C
1	QA	1064	G
1	QA	1065	U
1	QA	1066	C
1	QA	1067	A
1	QA	1080	A
1	QA	1081	G
1	QA	1094	G
1	QA	1095	U
1	QA	1101	A
1	QA	1108	G
1	QA	1124	G
1	QA	1125	U

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Mol	Chain	Res	Type
1	QA	1126	U
1	QA	1130	A
1	QA	1131	G
1	QA	1136	U
1	QA	1137	C
1	QA	1138	G
1	QA	1139	G
1	QA	1140	C
1	QA	1146	A
1	QA	1157	A
1	QA	1158	C
1	QA	1159	U
1	QA	1160	G
1	QA	1178	G
1	QA	1181	G
1	QA	1182	G
1	QA	1183	A
1	QA	1184	G
1	QA	1187	G
1	QA	1196	U
1	QA	1201	A
1	QA	1202	G
1	QA	1212	U
1	QA	1213	A
1	QA	1215	G
1	QA	1224	G
1	QA	1238	A
1	QA	1240	U
1	QA	1241	G
1	QA	1256	A
1	QA	1257	U
1	QA	1258	G
1	QA	1260	C
1	QA	1270	C
1	QA	1280	A
1	QA	1281	U
1	QA	1285	A
1	QA	1286	A
1	QA	1287	A
1	QA	1297	C
1	QA	1298	C
1	QA	1299	A

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Mol	Chain	Res	Type
1	QA	1300	G
1	QA	1301	U
1	QA	1302	U
1	QA	1303	C
1	QA	1305	G
1	QA	1319	A
1	QA	1321	C
1	QA	1322	C
1	QA	1323	G
1	QA	1331	G
1	QA	1335	C
1	QA	1336	C
1	QA	1337	G
1	QA	1346	A
1	QA	1347	G
1	QA	1348	U
1	QA	1362(A)	C
1	QA	1394	A
1	QA	1397	C
1	QA	1398	A
1	QA	1419	G
1	QA	1439	C
1	QA	1442	G
1	QA	1446	A
1	QA	1447	G
1	QA	1452	C
1	QA	1453	G
1	QA	1492	A
1	QA	1494	G
1	QA	1497	G
1	QA	1499	A
1	QA	1502	A
1	QA	1503	A
1	QA	1504	G
1	QA	1506	U
1	QA	1517	G
1	QA	1519	A
1	QA	1520	G
1	QA	1529	G
1	QA	1530	G
22	QV	43	G
23	QX	11	U

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Mol	Chain	Res	Type
23	QX	12	A
23	QX	13	A
23	QX	19	G
24	RA	9	U
24	RA	14	A
24	RA	15	G
24	RA	34	C
24	RA	35	G
24	RA	46	C
24	RA	51	G
24	RA	55	G
24	RA	72	U
24	RA	74	A
24	RA	75	G
24	RA	83	G
24	RA	101	G
24	RA	103	A
24	RA	118	A
24	RA	119	A
24	RA	120	U
24	RA	131	G
24	RA	140	A
24	RA	177	G
24	RA	181	A
24	RA	196	A
24	RA	199	A
24	RA	215	G
24	RA	216	A
24	RA	221	A
24	RA	222	A
24	RA	223	A
24	RA	226	G
24	RA	229	A
24	RA	230	U
24	RA	248	G
24	RA	249	C
24	RA	252	G
24	RA	265	A
24	RA	266	G
24	RA	270(L)	U
24	RA	270(M)	U
24	RA	270(N)	G

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Mol	Chain	Res	Type
24	RA	270(P)	C
24	RA	271(C)	U
24	RA	273(F)	C
24	RA	275	G
24	RA	276	A
24	RA	277	C
24	RA	299	A
24	RA	308	G
24	RA	311	A
24	RA	317	G
24	RA	323	G
24	RA	324	A
24	RA	329	G
24	RA	330	A
24	RA	346	A
24	RA	352	G
24	RA	364	C
24	RA	371	A
24	RA	372	G
24	RA	373	U
24	RA	386	G
24	RA	395	U
24	RA	405	U
24	RA	406	G
24	RA	411	G
24	RA	412	A
24	RA	421	U
24	RA	428	A
24	RA	444	C
24	RA	448	U
24	RA	454	A
24	RA	455	C
24	RA	456	C
24	RA	457	A
24	RA	470	A
24	RA	481	G
24	RA	501	A
24	RA	504	U
24	RA	505	A
24	RA	509	C
24	RA	513	A
24	RA	527	C

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Mol	Chain	Res	Type
24	RA	528	A
24	RA	529	A
24	RA	531	C
24	RA	532	A
24	RA	533	G
24	RA	537	C
24	RA	539	G
24	RA	540	G
24	RA	545	G
24	RA	546	C
24	RA	547	A
24	RA	549	G
24	RA	563	G
24	RA	571	A
24	RA	573	G
24	RA	575	A
24	RA	588	U
24	RA	603	A
24	RA	607	U
24	RA	614	U
24	RA	615	G
24	RA	617	G
24	RA	621	A
24	RA	626	U
24	RA	627	A
24	RA	631	A
24	RA	637	A
24	RA	638	G
24	RA	645	C
24	RA	646	A
24	RA	647	G
24	RA	650	C
24	RA	654	A
24	RA	654(A)	G
24	RA	669	G
24	RA	686	G
24	RA	717	G
24	RA	722	A
24	RA	726	G
24	RA	730	C
24	RA	753	C
24	RA	776	G

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Mol	Chain	Res	Type
24	RA	782	A
24	RA	784	A
24	RA	785	G
24	RA	790	C
24	RA	791	C
24	RA	792	G
24	RA	805	G
24	RA	812	C
24	RA	819	A
24	RA	827	U
24	RA	828	U
24	RA	831	G
24	RA	847	U
24	RA	856	C
24	RA	857	C
24	RA	859	G
24	RA	866	A
24	RA	869	G
24	RA	880	G
24	RA	882	G
24	RA	884	C
24	RA	886	C
24	RA	888	C
24	RA	889	C
24	RA	896	A
24	RA	898	C
24	RA	900	A
24	RA	907	U
24	RA	910	A
24	RA	914	C
24	RA	915	C
24	RA	917	A
24	RA	932	G
24	RA	941	A
24	RA	945	A
24	RA	946	G
24	RA	953	A
24	RA	957	A
24	RA	961	C
24	RA	973	A
24	RA	974	G
24	RA	974(A)	C

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Mol	Chain	Res	Type
24	RA	980	A
24	RA	983	A
24	RA	989	G
24	RA	996	A
24	RA	1003	G
24	RA	1009	A
24	RA	1012	U
24	RA	1013	C
24	RA	1020	A
24	RA	1023	U
24	RA	1025	G
24	RA	1026	U
24	RA	1027	A
24	RA	1033	U
24	RA	1036	G
24	RA	1038	C
24	RA	1042	G
24	RA	1044	G
24	RA	1045	A
24	RA	1046	A
24	RA	1047	G
24	RA	1054	A
24	RA	1058	G
24	RA	1060	U
24	RA	1063	G
24	RA	1064	C
24	RA	1065	U
24	RA	1066	U
24	RA	1067	A
24	RA	1068	G
24	RA	1069	A
24	RA	1070	A
24	RA	1071	G
24	RA	1073	A
24	RA	1074	G
24	RA	1076	C
24	RA	1078	U
24	RA	1079	C
24	RA	1080	C
24	RA	1082	U
24	RA	1083	U
24	RA	1084	A

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Mol	Chain	Res	Type
24	RA	1085	A
24	RA	1086	A
24	RA	1088	A
24	RA	1090	U
24	RA	1091	G
24	RA	1092	C
24	RA	1093	G
24	RA	1094	U
24	RA	1096	A
24	RA	1109	C
24	RA	1112	G
24	RA	1122	G
24	RA	1129	A
24	RA	1130	U
24	RA	1131	G
24	RA	1135	C
24	RA	1136	G
24	RA	1140	C
24	RA	1142(A)	A
24	RA	1173	G
24	RA	1174	A
24	RA	1175	U
24	RA	1176	G
24	RA	1178	C
24	RA	1195	G
24	RA	1204	A
24	RA	1205	U
24	RA	1206	G
24	RA	1210	A
24	RA	1211	U
24	RA	1220	A
24	RA	1236	G
24	RA	1238	G
24	RA	1250	G
24	RA	1253	A
24	RA	1256	G
24	RA	1265	A
24	RA	1271	G
24	RA	1272	A
24	RA	1273	U
24	RA	1286	A
24	RA	1300	U

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Mol	Chain	Res	Type
24	RA	1301	A
24	RA	1312	U
24	RA	1313	U
24	RA	1314	C
24	RA	1329	U
24	RA	1349	A
24	RA	1352	U
24	RA	1365	A
24	RA	1370	C
24	RA	1378	A
24	RA	1379	A
24	RA	1384	A
24	RA	1385	G
24	RA	1395	A
24	RA	1403	C
24	RA	1404	C
24	RA	1406	U
24	RA	1407	C
24	RA	1411	C
24	RA	1416	G
24	RA	1419	A
24	RA	1420	U
24	RA	1421	G
24	RA	1428	C
24	RA	1444(A)	A
24	RA	1445	C
24	RA	1449	A
24	RA	1449(A)	G
24	RA	1455	G
24	RA	1460	A
24	RA	1461	G
24	RA	1471	A
24	RA	1480	G
24	RA	1482	U
24	RA	1483	G
24	RA	1487	G
24	RA	1493	C
24	RA	1494	A
24	RA	1497	U
24	RA	1504	C
24	RA	1506	C
24	RA	1507	A

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Mol	Chain	Res	Type
24	RA	1508	A
24	RA	1510	A
24	RA	1511	A
24	RA	1513	C
24	RA	1514	U
24	RA	1520	U
24	RA	1522	G
24	RA	1528	A
24	RA	1535	U
24	RA	1536	A
24	RA	1537	C
24	RA	1538	G
24	RA	1543	A
24	RA	1545	A
24	RA	1547	C
24	RA	1558	A
24	RA	1559	G
24	RA	1566	A
24	RA	1569	A
24	RA	1578	U
24	RA	1580	A
24	RA	1583	A
24	RA	1586	A
24	RA	1598	C
24	RA	1607	C
24	RA	1608	A
24	RA	1609	A
24	RA	1616	A
24	RA	1617	C
24	RA	1640	C
24	RA	1648	C
24	RA	1654	A
24	RA	1667	G
24	RA	1668	A
24	RA	1674	G
24	RA	1675	C
24	RA	1725	G
24	RA	1728	G
24	RA	1729	A
24	RA	1730	U
24	RA	1731	G
24	RA	1733	G

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Mol	Chain	Res	Type
24	RA	1743	G
24	RA	1756	G
24	RA	1762	A
24	RA	1763	G
24	RA	1764	G
24	RA	1769	G
24	RA	1773	A
24	RA	1780	A
24	RA	1781	C
24	RA	1782	C
24	RA	1787	A
24	RA	1791	A
24	RA	1799	G
24	RA	1800	C
24	RA	1801	G
24	RA	1815	A
24	RA	1816	G
24	RA	1820	U
24	RA	1835	G
24	RA	1847	A
24	RA	1848	A
24	RA	1858	G
24	RA	1869	G
24	RA	1870	C
24	RA	1872	A
24	RA	1878	G
24	RA	1882	C
24	RA	1888	G
24	RA	1889	A
24	RA	1899	G
24	RA	1903	G
24	RA	1906	G
24	RA	1913	A
24	RA	1914	C
24	RA	1929	G
24	RA	1930	G
24	RA	1936	A
24	RA	1937	A
24	RA	1939	U
24	RA	1955	U
24	RA	1963	U
24	RA	1966	A

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Mol	Chain	Res	Type
24	RA	1967	C
24	RA	1969	A
24	RA	1970	A
24	RA	1971	A
24	RA	1972	A
24	RA	1982	C
24	RA	1991	U
24	RA	1992	G
24	RA	1993	U
24	RA	1996	C
24	RA	2023	G
24	RA	2031	A
24	RA	2032	G
24	RA	2033	A
24	RA	2043	C
24	RA	2055	C
24	RA	2056	G
24	RA	2059	A
24	RA	2060	A
24	RA	2061	G
24	RA	2062	A
24	RA	2069	G
24	RA	2093	G
24	RA	2111	C
24	RA	2113	U
24	RA	2114	A
24	RA	2115	G
24	RA	2116	G
24	RA	2117	A
24	RA	2118	U
24	RA	2126	A
24	RA	2127	G
24	RA	2128	C
24	RA	2132	U
24	RA	2133	G
24	RA	2135	A
24	RA	2136	C
24	RA	2137	C
24	RA	2139	C
24	RA	2145	C
24	RA	2146	C
24	RA	2147	G

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Mol	Chain	Res	Type
24	RA	2148	G
24	RA	2158	A
24	RA	2164	C
24	RA	2166	G
24	RA	2167	U
24	RA	2168	G
24	RA	2169	A
24	RA	2173	A
24	RA	2182	G
24	RA	2189	U
24	RA	2190	G
24	RA	2192	G
24	RA	2194	G
24	RA	2198	A
24	RA	2210	G
24	RA	2211	G
24	RA	2212	A
24	RA	2215	G
24	RA	2225	A
24	RA	2238	G
24	RA	2239	G
24	RA	2243	U
24	RA	2275	C
24	RA	2278	A
24	RA	2280	G
24	RA	2283	C
24	RA	2287	A
24	RA	2288	A
24	RA	2302	G
24	RA	2307	G
24	RA	2308	G
24	RA	2309	A
24	RA	2311	A
24	RA	2319	G
24	RA	2320	A
24	RA	2325	G
24	RA	2334	G
24	RA	2336	A
24	RA	2342	C
24	RA	2345	G
24	RA	2346	A
24	RA	2347	C

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Mol	Chain	Res	Type
24	RA	2350	C
24	RA	2354	G
24	RA	2383	G
24	RA	2385	C
24	RA	2402	C
24	RA	2403	C
24	RA	2406	U
24	RA	2425	A
24	RA	2429	G
24	RA	2430	A
24	RA	2435	A
24	RA	2439	A
24	RA	2440	C
24	RA	2441	C
24	RA	2448	A
24	RA	2469	A
24	RA	2475	C
24	RA	2478	A
24	RA	2480	C
24	RA	2494	G
24	RA	2498	C
24	RA	2502	G
24	RA	2504	U
24	RA	2505	G
24	RA	2518	A
24	RA	2519	U
24	RA	2529	G
24	RA	2542	A
24	RA	2543	G
24	RA	2554	U
24	RA	2564	A
24	RA	2566	A
24	RA	2567	G
24	RA	2569	G
24	RA	2572	A
24	RA	2578	G
24	RA	2602	A
24	RA	2609	U
24	RA	2611	U
24	RA	2612	C
24	RA	2615	U
24	RA	2623	G

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Mol	Chain	Res	Type
24	RA	2629	A
24	RA	2636	U
24	RA	2646	C
24	RA	2655	G
24	RA	2665	A
24	RA	2673	G
24	RA	2689	U
24	RA	2690	C
24	RA	2691	C
24	RA	2702	U
24	RA	2703	C
24	RA	2707	G
24	RA	2712(A)	A
24	RA	2713	A
24	RA	2714	G
24	RA	2726	U
24	RA	2733	A
24	RA	2744	G
24	RA	2748	A
24	RA	2758	A
24	RA	2761	G
24	RA	2762	G
24	RA	2764	A
24	RA	2765	A
24	RA	2778	A
24	RA	2779	U
24	RA	2780	G
24	RA	2789	C
24	RA	2790	A
24	RA	2791	C
24	RA	2797	U
24	RA	2798	C
24	RA	2799	A
24	RA	2818	G
24	RA	2820	A
24	RA	2821	A
24	RA	2833	G
24	RA	2834	G
24	RA	2867	G
24	RA	2872	G
24	RA	2879	C
24	RA	2880	C

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Mol	Chain	Res	Type
24	RA	2892	A
24	RA	2894	G
24	RA	2895	U
24	RA	2897	U
25	RB	8	U
25	RB	13	A
25	RB	15	A
25	RB	19	G
25	RB	21	G
25	RB	25	A
25	RB	41	U
25	RB	42	C
25	RB	43	C
25	RB	44	G
25	RB	45	A
25	RB	52	A
25	RB	56	G
25	RB	67	G
25	RB	73	A
25	RB	109	G
25	RB	118	G
1	XA	6	G
1	XA	32	A
1	XA	39	G
1	XA	48	C
1	XA	51	A
1	XA	59	A
1	XA	61	G
1	XA	65	U
1	XA	66	G
1	XA	78	G
1	XA	79	G
1	XA	89	U
1	XA	92	G
1	XA	95	G
1	XA	101	A
1	XA	116	A
1	XA	121	C
1	XA	129(A)	G
1	XA	130	A
1	XA	137	C
1	XA	144	G

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Mol	Chain	Res	Type
1	XA	147	G
1	XA	151	A
1	XA	160	A
1	XA	163	C
1	XA	169	C
1	XA	172	A
1	XA	173	U
1	XA	174	C
1	XA	190	G
1	XA	191(A)	G
1	XA	195	A
1	XA	196	A
1	XA	197	A
1	XA	209	U
1	XA	210	U
1	XA	231	G
1	XA	244	U
1	XA	245	C
1	XA	247	G
1	XA	251	G
1	XA	267	C
1	XA	281	G
1	XA	289	G
1	XA	306	G
1	XA	321	A
1	XA	328	C
1	XA	329	A
1	XA	332	G
1	XA	342	C
1	XA	343	U
1	XA	346	G
1	XA	347	G
1	XA	348	G
1	XA	351	G
1	XA	352	C
1	XA	353	A
1	XA	354	G
1	XA	356	A
1	XA	358	U
1	XA	359	U
1	XA	363	A
1	XA	367	U

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Mol	Chain	Res	Type
1	XA	372	C
1	XA	373	A
1	XA	389	A
1	XA	390	C
1	XA	397	A
1	XA	398	C
1	XA	406	G
1	XA	411	A
1	XA	412	A
1	XA	413	G
1	XA	422	C
1	XA	423	G
1	XA	429	U
1	XA	452	A
1	XA	466	C
1	XA	467	G
1	XA	482	A
1	XA	485	G
1	XA	486	U
1	XA	496	A
1	XA	497	U
1	XA	509	A
1	XA	510	A
1	XA	511	C
1	XA	518	C
1	XA	519	C
1	XA	521	G
1	XA	527	G
1	XA	531	U
1	XA	532	A
1	XA	533	A
1	XA	547	A
1	XA	548	G
1	XA	559	A
1	XA	561	U
1	XA	562	C
1	XA	564	C
1	XA	565	U
1	XA	568	G
1	XA	572	A
1	XA	573	A
1	XA	576	G

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Mol	Chain	Res	Type
1	XA	577	G
1	XA	579	G
1	XA	607	A
1	XA	618	C
1	XA	630	G
1	XA	631	G
1	XA	632	A
1	XA	653	A
1	XA	657	G
1	XA	665	A
1	XA	686	U
1	XA	688	G
1	XA	702	A
1	XA	703	G
1	XA	704	A
1	XA	721	G
1	XA	731	G
1	XA	734	G
1	XA	749	C
1	XA	754	C
1	XA	755	G
1	XA	773	G
1	XA	777	A
1	XA	792	A
1	XA	793	U
1	XA	794	A
1	XA	799	G
1	XA	810	C
1	XA	813	U
1	XA	816	A
1	XA	817	C
1	XA	821	G
1	XA	828	A
1	XA	841	U
1	XA	842	C
1	XA	843	U
1	XA	848	C
1	XA	859	A
1	XA	871	U
1	XA	872	A
1	XA	902	G
1	XA	914	A

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Mol	Chain	Res	Type
1	XA	926	G
1	XA	927	G
1	XA	934	C
1	XA	958	A
1	XA	960	U
1	XA	968	A
1	XA	969	A
1	XA	972	C
1	XA	974	A
1	XA	975	A
1	XA	976	G
1	XA	977	A
1	XA	981	U
1	XA	982	U
1	XA	991	U
1	XA	992	U
1	XA	993	G
1	XA	1003	G
1	XA	1004	A
1	XA	1005	A
1	XA	1006	C
1	XA	1009	G
1	XA	1024	G
1	XA	1025	U
1	XA	1028	C
1	XA	1029	G
1	XA	1031	G
1	XA	1032(A)	G
1	XA	1032(B)	G
1	XA	1038	C
1	XA	1039	C
1	XA	1040	U
1	XA	1042	G
1	XA	1046	A
1	XA	1053	G
1	XA	1054	C
1	XA	1064	G
1	XA	1066	C
1	XA	1081	G
1	XA	1085	U
1	XA	1094	G
1	XA	1101	A

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Mol	Chain	Res	Type
1	XA	1108	G
1	XA	1124	G
1	XA	1125	U
1	XA	1126	U
1	XA	1127	G
1	XA	1129	C
1	XA	1130	A
1	XA	1131	G
1	XA	1132	C
1	XA	1136	U
1	XA	1137	C
1	XA	1138	G
1	XA	1139	G
1	XA	1140	C
1	XA	1145	C
1	XA	1146	A
1	XA	1157	A
1	XA	1158	C
1	XA	1159	U
1	XA	1160	G
1	XA	1162	C
1	XA	1176	A
1	XA	1177	G
1	XA	1181	G
1	XA	1182	G
1	XA	1183	A
1	XA	1184	G
1	XA	1187	G
1	XA	1196	U
1	XA	1200	C
1	XA	1201	A
1	XA	1212	U
1	XA	1214	C
1	XA	1224	G
1	XA	1225	A
1	XA	1238	A
1	XA	1240	U
1	XA	1241	G
1	XA	1256	A
1	XA	1257	U
1	XA	1258	G
1	XA	1260	C

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Mol	Chain	Res	Type
1	XA	1263	C
1	XA	1270	C
1	XA	1273	G
1	XA	1280	A
1	XA	1281	U
1	XA	1286	A
1	XA	1287	A
1	XA	1298	C
1	XA	1299	A
1	XA	1300	G
1	XA	1301	U
1	XA	1302	U
1	XA	1303	C
1	XA	1305	G
1	XA	1311	G
1	XA	1319	A
1	XA	1320	C
1	XA	1323	G
1	XA	1331	G
1	XA	1334	G
1	XA	1335	C
1	XA	1336	C
1	XA	1347	G
1	XA	1348	U
1	XA	1353	G
1	XA	1362(A)	C
1	XA	1370	G
1	XA	1419	G
1	XA	1442	G
1	XA	1446	A
1	XA	1447	G
1	XA	1452	C
1	XA	1453	G
1	XA	1454	G
1	XA	1487	G
1	XA	1492	A
1	XA	1493	A
1	XA	1497	G
1	XA	1499	A
1	XA	1502	A
1	XA	1503	A
1	XA	1504	G

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Mol	Chain	Res	Type
1	XA	1506	U
1	XA	1517	G
1	XA	1520	G
1	XA	1529	G
1	XA	1530	G
22	XV	34	C
22	XV	42	A
23	XX	10	G
23	XX	11	U
23	XX	12	A
23	XX	13	A
23	XX	19	G
24	YA	9	U
24	YA	11	G
24	YA	14	A
24	YA	15	G
24	YA	34	C
24	YA	35	G
24	YA	46	C
24	YA	63	U
24	YA	72	U
24	YA	74	A
24	YA	75	G
24	YA	101	G
24	YA	102	G
24	YA	118	A
24	YA	120	U
24	YA	125	G
24	YA	131	G
24	YA	140	A
24	YA	155	C
24	YA	162	U
24	YA	181	A
24	YA	196	A
24	YA	199	A
24	YA	216	A
24	YA	222	A
24	YA	223	A
24	YA	226	G
24	YA	228	A
24	YA	229	A
24	YA	230	U

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Mol	Chain	Res	Type
24	YA	231	C
24	YA	232	G
24	YA	242	G
24	YA	243	U
24	YA	248	G
24	YA	252	G
24	YA	270(L)	U
24	YA	270(M)	U
24	YA	270(N)	G
24	YA	270(P)	C
24	YA	271(B)	G
24	YA	271(C)	U
24	YA	271(D)	G
24	YA	274	G
24	YA	275	G
24	YA	276	A
24	YA	278	A
24	YA	279	C
24	YA	299	A
24	YA	311	A
24	YA	323	G
24	YA	324	A
24	YA	329	G
24	YA	330	A
24	YA	332	A
24	YA	352	G
24	YA	363	G
24	YA	363(E)	U
24	YA	364	C
24	YA	371	A
24	YA	372	G
24	YA	386	G
24	YA	387	U
24	YA	396	G
24	YA	404	C
24	YA	405	U
24	YA	406	G
24	YA	411	G
24	YA	412	A
24	YA	428	A
24	YA	443	A
24	YA	444	C

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Mol	Chain	Res	Type
24	YA	448	U
24	YA	457	A
24	YA	470	A
24	YA	481	G
24	YA	504	U
24	YA	505	A
24	YA	509	C
24	YA	512	G
24	YA	518	G
24	YA	531	C
24	YA	532	A
24	YA	533	G
24	YA	537	C
24	YA	539	G
24	YA	540	G
24	YA	546	C
24	YA	547	A
24	YA	563	G
24	YA	568	U
24	YA	573	G
24	YA	575	A
24	YA	603	A
24	YA	607	U
24	YA	614	U
24	YA	617	G
24	YA	622	G
24	YA	627	A
24	YA	637	A
24	YA	638	G
24	YA	645	C
24	YA	646	A
24	YA	651	G
24	YA	654	A
24	YA	654(A)	G
24	YA	669	G
24	YA	670	A
24	YA	686	G
24	YA	717	G
24	YA	722	A
24	YA	726	G
24	YA	730	C
24	YA	753	C

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Mol	Chain	Res	Type
24	YA	776	G
24	YA	782	A
24	YA	784	A
24	YA	785	G
24	YA	789	A
24	YA	790	C
24	YA	791	C
24	YA	792	G
24	YA	805	G
24	YA	812	C
24	YA	819	A
24	YA	827	U
24	YA	828	U
24	YA	831	G
24	YA	847	U
24	YA	856	C
24	YA	857	C
24	YA	860	U
24	YA	866	A
24	YA	881	G
24	YA	882	G
24	YA	884	C
24	YA	885	C
24	YA	886	C
24	YA	888	C
24	YA	889	C
24	YA	896	A
24	YA	897	C
24	YA	900	A
24	YA	907	U
24	YA	910	A
24	YA	915	C
24	YA	917	A
24	YA	932	G
24	YA	938	G
24	YA	941	A
24	YA	945	A
24	YA	946	G
24	YA	953	A
24	YA	959	A
24	YA	961	C
24	YA	973	A

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Mol	Chain	Res	Type
24	YA	974	G
24	YA	974(A)	C
24	YA	980	A
24	YA	983	A
24	YA	996	A
24	YA	1005	C
24	YA	1011	G
24	YA	1012	U
24	YA	1013	C
24	YA	1015	G
24	YA	1022	G
24	YA	1023	U
24	YA	1026	U
24	YA	1027	A
24	YA	1033	U
24	YA	1046	A
24	YA	1047	G
24	YA	1050	A
24	YA	1054	A
24	YA	1057	A
24	YA	1059	G
24	YA	1060	U
24	YA	1061	U
24	YA	1062	G
24	YA	1065	U
24	YA	1066	U
24	YA	1067	A
24	YA	1068	G
24	YA	1070	A
24	YA	1071	G
24	YA	1073	A
24	YA	1074	G
24	YA	1076	C
24	YA	1077	A
24	YA	1078	U
24	YA	1082	U
24	YA	1083	U
24	YA	1084	A
24	YA	1085	A
24	YA	1086	A
24	YA	1088	A
24	YA	1089	G

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Mol	Chain	Res	Type
24	YA	1093	G
24	YA	1095	A
24	YA	1096	A
24	YA	1097	U
24	YA	1103	A
24	YA	1104	C
24	YA	1110	G
24	YA	1122	G
24	YA	1126	A
24	YA	1130	U
24	YA	1131	G
24	YA	1135	C
24	YA	1136	G
24	YA	1139	G
24	YA	1142	U
24	YA	1142(A)	A
24	YA	1169	G
24	YA	1173	G
24	YA	1174	A
24	YA	1175	U
24	YA	1176	G
24	YA	1177	A
24	YA	1179	C
24	YA	1196	C
24	YA	1204	A
24	YA	1205	U
24	YA	1211	U
24	YA	1220	A
24	YA	1236	G
24	YA	1238	G
24	YA	1250	G
24	YA	1252	G
24	YA	1253	A
24	YA	1256	G
24	YA	1265	A
24	YA	1271	G
24	YA	1272	A
24	YA	1273	U
24	YA	1275	A
24	YA	1300	U
24	YA	1301	A
24	YA	1329	U

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Mol	Chain	Res	Type
24	YA	1349	A
24	YA	1365	A
24	YA	1368	G
24	YA	1370	C
24	YA	1378	A
24	YA	1379	A
24	YA	1384	A
24	YA	1385	G
24	YA	1390	U
24	YA	1392	A
24	YA	1395	A
24	YA	1406	U
24	YA	1407	C
24	YA	1408	C
24	YA	1411	C
24	YA	1416	G
24	YA	1419	A
24	YA	1420	U
24	YA	1421	G
24	YA	1428	C
24	YA	1444(A)	A
24	YA	1445	C
24	YA	1449	A
24	YA	1449(A)	G
24	YA	1455	G
24	YA	1459	G
24	YA	1460	A
24	YA	1461	G
24	YA	1467	C
24	YA	1471	A
24	YA	1478	G
24	YA	1482	U
24	YA	1483	G
24	YA	1484	G
24	YA	1487	G
24	YA	1493	C
24	YA	1496	A
24	YA	1497	U
24	YA	1507	A
24	YA	1509	C
24	YA	1510	A
24	YA	1511	A

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Mol	Chain	Res	Type
24	YA	1522	G
24	YA	1534	G
24	YA	1535	U
24	YA	1536	A
24	YA	1537	C
24	YA	1538	G
24	YA	1540	G
24	YA	1543	A
24	YA	1544	C
24	YA	1545	A
24	YA	1558	A
24	YA	1559	G
24	YA	1560	G
24	YA	1566	A
24	YA	1569	A
24	YA	1578	U
24	YA	1585	C
24	YA	1586	A
24	YA	1598	C
24	YA	1607	C
24	YA	1608	A
24	YA	1609	A
24	YA	1610	A
24	YA	1617	C
24	YA	1633	G
24	YA	1640	C
24	YA	1648	C
24	YA	1654	A
24	YA	1674	G
24	YA	1695	G
24	YA	1698	A
24	YA	1725	G
24	YA	1728	G
24	YA	1729	A
24	YA	1731	G
24	YA	1732	A
24	YA	1733	G
24	YA	1743	G
24	YA	1754	C
24	YA	1756	G
24	YA	1762	A
24	YA	1763	G

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Mol	Chain	Res	Type
24	YA	1764	G
24	YA	1769	G
24	YA	1773	A
24	YA	1780	A
24	YA	1782	C
24	YA	1786	A
24	YA	1787	A
24	YA	1791	A
24	YA	1799	G
24	YA	1800	C
24	YA	1801	G
24	YA	1816	G
24	YA	1829	A
24	YA	1835	G
24	YA	1847	A
24	YA	1858	G
24	YA	1869	G
24	YA	1870	C
24	YA	1872	A
24	YA	1878	G
24	YA	1882	C
24	YA	1884	A
24	YA	1889	A
24	YA	1903	G
24	YA	1906	G
24	YA	1913	A
24	YA	1914	C
24	YA	1919	A
24	YA	1929	G
24	YA	1930	G
24	YA	1936	A
24	YA	1937	A
24	YA	1939	U
24	YA	1940	U
24	YA	1955	U
24	YA	1956	U
24	YA	1963	U
24	YA	1967	C
24	YA	1969	A
24	YA	1970	A
24	YA	1971	A
24	YA	1972	A

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Mol	Chain	Res	Type
24	YA	1982	C
24	YA	1991	U
24	YA	1992	G
24	YA	1993	U
24	YA	2020	A
24	YA	2021	C
24	YA	2023	G
24	YA	2031	A
24	YA	2033	A
24	YA	2043	C
24	YA	2052	G
24	YA	2055	C
24	YA	2056	G
24	YA	2059	A
24	YA	2060	A
24	YA	2061	G
24	YA	2062	A
24	YA	2069	G
24	YA	2093	G
24	YA	2096	U
24	YA	2099	U
24	YA	2100	G
24	YA	2111	C
24	YA	2114	A
24	YA	2115	G
24	YA	2116	G
24	YA	2118	U
24	YA	2120	G
24	YA	2126	A
24	YA	2127	G
24	YA	2131	G
24	YA	2132	U
24	YA	2133	G
24	YA	2136	C
24	YA	2137	C
24	YA	2145	C
24	YA	2147	G
24	YA	2152	G
24	YA	2156	G
24	YA	2157	G
24	YA	2158	A
24	YA	2161	C

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Mol	Chain	Res	Type
24	YA	2166	G
24	YA	2168	G
24	YA	2169	A
24	YA	2173	A
24	YA	2180	U
24	YA	2189	U
24	YA	2190	G
24	YA	2191	G
24	YA	2192	G
24	YA	2198	A
24	YA	2210	G
24	YA	2211	G
24	YA	2212	A
24	YA	2215	G
24	YA	2225	A
24	YA	2238	G
24	YA	2239	G
24	YA	2243	U
24	YA	2246	G
24	YA	2275	C
24	YA	2278	A
24	YA	2283	C
24	YA	2287	A
24	YA	2288	A
24	YA	2305	A
24	YA	2307	G
24	YA	2308	G
24	YA	2309	A
24	YA	2311	A
24	YA	2320	A
24	YA	2325	G
24	YA	2334	G
24	YA	2335	A
24	YA	2346	A
24	YA	2347	C
24	YA	2350	C
24	YA	2358	G
24	YA	2383	G
24	YA	2385	C
24	YA	2403	C
24	YA	2406	U
24	YA	2410	G

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Mol	Chain	Res	Type
24	YA	2423	U
24	YA	2425	A
24	YA	2428	G
24	YA	2429	G
24	YA	2430	A
24	YA	2435	A
24	YA	2439	A
24	YA	2441	C
24	YA	2448	A
24	YA	2450	A
24	YA	2465	C
24	YA	2469	A
24	YA	2494	G
24	YA	2498	C
24	YA	2502	G
24	YA	2505	G
24	YA	2518	A
24	YA	2529	G
24	YA	2554	U
24	YA	2558	C
24	YA	2564	A
24	YA	2566	A
24	YA	2567	G
24	YA	2573	C
24	YA	2586	C
24	YA	2602	A
24	YA	2609	U
24	YA	2611	U
24	YA	2612	C
24	YA	2615	U
24	YA	2629	A
24	YA	2654	A
24	YA	2655	G
24	YA	2665	A
24	YA	2673	G
24	YA	2682	U
24	YA	2689	U
24	YA	2691	C
24	YA	2702	U
24	YA	2707	G
24	YA	2712	U
24	YA	2712(A)	A

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Mol	Chain	Res	Type
24	YA	2713	A
24	YA	2714	G
24	YA	2726	U
24	YA	2733	A
24	YA	2734	A
24	YA	2739	U
24	YA	2744	G
24	YA	2758	A
24	YA	2761	G
24	YA	2764	A
24	YA	2765	A
24	YA	2766	G
24	YA	2769	C
24	YA	2777	G
24	YA	2778	A
24	YA	2779	U
24	YA	2789	C
24	YA	2790	A
24	YA	2791	C
24	YA	2797	U
24	YA	2818	G
24	YA	2820	A
24	YA	2821	A
24	YA	2833	G
24	YA	2834	G
24	YA	2835	A
24	YA	2844	G
24	YA	2846	G
24	YA	2847	U
24	YA	2867	G
24	YA	2868	A
24	YA	2872	G
24	YA	2873	A
24	YA	2880	C
24	YA	2891	G
24	YA	2892	A
24	YA	2893	G
25	YB	8	U
25	YB	9	G
25	YB	13	A
25	YB	15	A
25	YB	16	G

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Mol	Chain	Res	Type
25	YB	19	G
25	YB	21	G
25	YB	25	A
25	YB	32	C
25	YB	41	U
25	YB	42	C
25	YB	45	A
25	YB	56	G
25	YB	67	G
25	YB	73	A
25	YB	109	G

All (150) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	QA	64	G
1	QA	115	G
1	QA	119	A
1	QA	181	G
1	QA	243	A
1	QA	244	U
1	QA	250	A
1	QA	266	G
1	QA	328	C
1	QA	410	G
1	QA	412	A
1	QA	429	U
1	QA	481	G
1	QA	484	G
1	QA	485	G
1	QA	509	A
1	QA	687	A
1	QA	703	G
1	QA	753	A
1	QA	792	A
1	QA	812	C
1	QA	913	A
1	QA	960	U
1	QA	992	U
1	QA	1065	U
1	QA	1200	C
1	QA	1285	A

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Mol	Chain	Res	Type
1	QA	1297	C
1	QA	1336	C
1	QA	1346	A
1	QA	1347	G
1	QA	1446	A
1	QA	1498	U
1	QA	1528	U
23	QX	18	G
24	RA	74	A
24	RA	221	A
24	RA	222	A
24	RA	229	A
24	RA	271(B)	G
24	RA	345	A
24	RA	372	G
24	RA	404	C
24	RA	503	A
24	RA	512	G
24	RA	587	C
24	RA	637	A
24	RA	752	A
24	RA	846	C
24	RA	856	C
24	RA	1022	G
24	RA	1026	U
24	RA	1053	C
24	RA	1057	A
24	RA	1065	U
24	RA	1067	A
24	RA	1073	A
24	RA	1204	A
24	RA	1210	A
24	RA	1312	U
24	RA	1427	A
24	RA	1558	A
24	RA	1653	G
24	RA	1819	A
24	RA	1992	G
24	RA	2060	A
24	RA	2126	A
24	RA	2439	A
24	RA	2566	A

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Mol	Chain	Res	Type
24	RA	2610	C
24	RA	2689	U
24	RA	2832	U
25	RB	66	A
1	XA	5	U
1	XA	60	A
1	XA	78	G
1	XA	115	G
1	XA	243	A
1	XA	244	U
1	XA	250	A
1	XA	266	G
1	XA	328	C
1	XA	345	C
1	XA	358	U
1	XA	410	G
1	XA	412	A
1	XA	481	G
1	XA	484	G
1	XA	485	G
1	XA	509	A
1	XA	560	U
1	XA	687	A
1	XA	703	G
1	XA	753	A
1	XA	812	C
1	XA	913	A
1	XA	980	C
1	XA	991	U
1	XA	992	U
1	XA	1027	C
1	XA	1030	C
1	XA	1126	U
1	XA	1200	C
1	XA	1285	A
1	XA	1297	C
1	XA	1310	G
1	XA	1446	A
1	XA	1498	U
24	YA	195	A
24	YA	221	A
24	YA	229	A

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Mol	Chain	Res	Type
24	YA	241	A
24	YA	242	G
24	YA	271(B)	G
24	YA	278	A
24	YA	404	C
24	YA	503	A
24	YA	637	A
24	YA	752	A
24	YA	827	U
24	YA	846	C
24	YA	856	C
24	YA	859	G
24	YA	1012	U
24	YA	1022	G
24	YA	1026	U
24	YA	1085	A
24	YA	1109	C
24	YA	1178	C
24	YA	1204	A
24	YA	1210	A
24	YA	1427	A
24	YA	1460	A
24	YA	1508	A
24	YA	1558	A
24	YA	1653	G
24	YA	1694	C
24	YA	1799	G
24	YA	1913	A
24	YA	1955	U
24	YA	1992	G
24	YA	2402	C
24	YA	2566	A
24	YA	2610	C
24	YA	2681	C
24	YA	2712	U
24	YA	2776	A
24	YA	2832	U
24	YA	2867	G
25	YB	66	A

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

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	$\# Z > 2$
22	1MG	XV	37	22	18,26,27	0.75	0	19,39,42	0.98	2 (10%)
22	1MG	QV	37	22	18,26,27	0.74	0	19,39,42	1.00	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
22	1MG	XV	37	22	-	0/3/25/26	0/3/3/3
22	1MG	QV	37	22	-	0/3/25/26	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(°)
22	XV	37	1MG	C5-C6-N1	2.31	117.37	113.90
22	QV	37	1MG	C5-C6-N1	2.29	117.34	113.90
22	XV	37	1MG	C8-N7-C5	2.24	107.25	102.99
22	QV	37	1MG	C8-N7-C5	2.22	107.22	102.99

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 1285 ligands modelled in this entry, 1283 are monoatomic - leaving 2 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
56	SF4	QD	301	4	0,12,12	-	-	-		
56	SF4	XD	301	4	0,12,12	-	-	-		

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
56	SF4	QD	301	4	-	-	0/6/5/5
56	SF4	XD	301	4	-	-	0/6/5/5

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 ⓘ

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

EDS failed to run properly - this section is therefore empty.

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

EDS failed to run properly - this section is therefore empty.

6.3 Carbohydrates

EDS failed to run properly - this section is therefore empty.

6.4 Ligands

EDS failed to run properly - this section is therefore empty.

6.5 Other polymers

EDS failed to run properly - this section is therefore empty.