Full wwPDB EM Validation Report ⓘ

Nov 19, 2022 – 03:55 pm GMT

PDB ID	:	5MYJ
EMDB ID	:	EMD-3581
Title	:	Structure of 70S ribosome from Lactococcus lactis
Authors	:	Franken, L.E.; Oostergetel, G.T.; Pijning, T.; Puri, P.; Boekema, E.J.; Poolman, B.; Guskov, A.
Deposited on	:	2017-01-26
Resolution	:	5.60 Å(reported)

This is a Full wwPDB EM 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/EMValidationReportHelp
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:

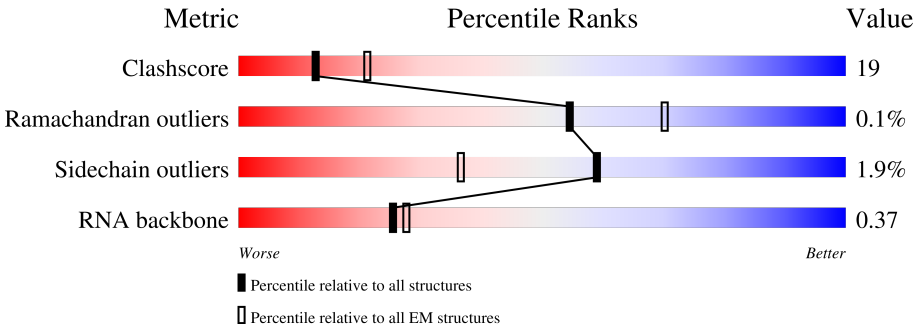
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 5.60 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)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	AA	1535	23% 46% 27% ·
2	AB	255	36% 59% 28% 12%
3	AC	217	17% 50% 47% ·
4	AD	203	9% 44% 53% ··
5	AE	168	25% 56% 36% · 7%
6	AF	97	16% 49% 51%
7	AG	155	8% 52% 45% ··

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Mol	Chain	Length	Quality of chain
8	AH	132	18% 54% 44%
9	AI	130	7% 45% 53%
10	AJ	102	16% 47% 46%
11	AK	127	11% 55% 38% 7%
12	AL	137	19% 65% 34%
13	AM	121	36% 51% 8%
14	AN	61	51% 44%
15	AO	89	56% 42%
16	AP	90	6% 56% 39%
17	AQ	86	55% 40% 5%
18	AR	81	14% 51% 33% 16%
19	AS	92	5% 48% 37% 11%
20	AT	77	64% 27% 8%
21	AU	58	47% 62% 33%
22	B0	64	8% 55% 39% 5%
23	B1	69	43% 48% 6%
24	B2	59	47% 51%
25	B3	81	15% 56% 38%
26	B4	57	60% 33% 7%
27	B5	49	61% 29% 6%
28	B6	44	41% 57%
29	B7	66	8% 56% 35% 6%
30	B8	38	50% 45% 5%
31	BA	2897	27% 47% 22%
32	BB	115	30% 43% 24%

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Mol	Chain	Length	Quality of chain
33	BD	276	5% 55% 41%
34	BE	207	57% 38%
35	BF	208	56% 41%
36	BG	180	56% 39%
37	BH	178	58% 38%
38	BM	148	49% 47%
39	BN	122	12% 66% 31%
40	BO	147	56% 43%
41	BP	137	54% 42%
42	BQ	126	56% 41%
43	BR	115	51% 44%
44	BS	114	9% 56% 41%
45	BT	119	59% 36%
46	BU	104	61% 32%
47	BV	115	41% 53%
48	BW	97	47% 43% 9%
49	BX	101	55% 43%
50	BZ	94	48% 31% 20%
51	A	185	25% 49% 35% 14%

2 Entry composition

There are 51 unique types of molecules in this entry. The entry contains 140480 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	AA	1535	32911	14689	6018	10669	1535	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	AB	224	1774	1129	311	326	8	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	AC	211	1648	1042	302	301	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	AD	200	1610	1014	298	294	4	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	AE	156	1133	711	212	209	1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	AF	97	797	507	132	156	2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AG	152	Total	C	N	O	S	0	0
			1207	748	236	217	6		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AH	130	Total	C	N	O	S	0	0
			1009	641	178	188	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AI	129	Total	C	N	O	S	0	0
			983	606	199	176	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AJ	98	Total	C	N	O	S	0	0
			794	501	145	146	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AK	118	Total	C	N	O	S	0	0
			857	530	165	160	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AL	136	Total	C	N	O	S	0	0
			1054	656	215	180	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
13	AM	111	Total	C	N	O	S	0	0
			873	535	174	162	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AN	59	Total 471	C 296	N 94	O 76	S 5	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AO	87	Total 708	C 442	N 140	O 125	S 1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
16	AP	86	Total 688	C 433	N 127	O 126	S 2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AQ	82	Total 675	C 423	N 126	O 124	S 2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	AR	68	Total 549	C 349	N 105	O 94	S 1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AS	82	Total 660	C 419	N 121	O 118	S 2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AT	71	Total 542	C 333	N 107	O 101	S 1	0	0

- Molecule 21 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	AU	56	Total	C	N	O	0	0
			440	269	95	76		

- Molecule 22 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	B0	61	Total	C	N	O	S	0	0
			477	299	91	86	1		

- Molecule 23 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	B1	67	Total	C	N	O	0	0
			533	334	95	104		

- Molecule 24 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	B2	58	Total	C	N	O	S	0	0
			424	269	77	77	1		

- Molecule 25 is a protein called 50S ribosomal protein L31 type B.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	B3	79	Total	C	N	O	S	0	0
			642	408	110	122	2		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
26	B4	53	Total	C	N	O	0	0
			437	270	92	75		

- Molecule 27 is a protein called 50S ribosomal protein L33 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	B5	47	Total	C	N	O	S	0	0
			365	225	72	64	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
28	B6	44	Total	C	N	O	S	0	0
			362	219	86	55	2		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
29	B7	64	Total	C	N	O	S	0	0
			530	327	120	80	3		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
30	B8	36	Total	C	N	O	S	0	0
			292	182	62	44	4		

- Molecule 31 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	BA	2897	Total	C	N	O	P	0	0
			62143	27749	11409	20088	2897		

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
BA	135	U	C	conflict	GB 124491690
BA	376	A	G	conflict	GB 124491690
BA	1239	A	G	conflict	GB 124491690
BA	1489	C	U	conflict	GB 124491690

- Molecule 32 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	BB	115	Total	C	N	O	P	0	0
			2455	1097	439	804	115		

- Molecule 33 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	BD	272	Total	C	N	O	S	0	0
			2041	1264	397	371	9		

- Molecule 34 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	BE	205	Total	C	N	O	S	0	0
			1522	957	282	279	4		

- Molecule 35 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms				AltConf	Trace
35	BF	206	Total	C	N	O	0	0
			1563	980	284	299		

- Molecule 36 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	BG	176	Total	C	N	O	S	0	0
			1367	867	238	256	6		

- Molecule 37 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	BH	174	Total	C	N	O	S	0	0
			1303	811	237	251	4		

- Molecule 38 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	BM	147	Total	C	N	O	S	0	0
			1127	714	203	205	5		

- Molecule 39 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	BN	121	Total	C	N	O	S	0	0
			895	563	165	166	1		

- Molecule 40 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	BO	146	Total	C	N	O	S	0	0
			1066	650	210	205	1		

- Molecule 41 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	BP	134	Total	C	N	O	S	0	0
			1061	675	206	174	6		

- Molecule 42 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	BQ	125	Total	C	N	O	S	0	0
			990	613	188	186	3		

- Molecule 43 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	BR	115	Total	C	N	O	S	0	0
			872	542	164	165	1		

- Molecule 44 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	BS	114	Total	C	N	O	S	0	0
			923	578	186	158	1		

- Molecule 45 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	BT	117	Total	C	N	O	S	0	0
			945	601	186	154	4		

- Molecule 46 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	BU	101	Total	C	N	O	0	0
			783	501	138	144		

- Molecule 47 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	BV	112	Total	C	N	O	S	0	0
			853	536	160	156	1		

- Molecule 48 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	BW	88	Total	C	N	O	S	0	0
			689	441	116	130	2		

- Molecule 49 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	BX	99	Total	C	N	O	S	0	0
			747	474	136	136	1		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	BZ	75	Total	C	N	O	S	0	0
			562	345	110	106	1		

- Molecule 51 is a protein called Ribosome hibernation promotion factor.

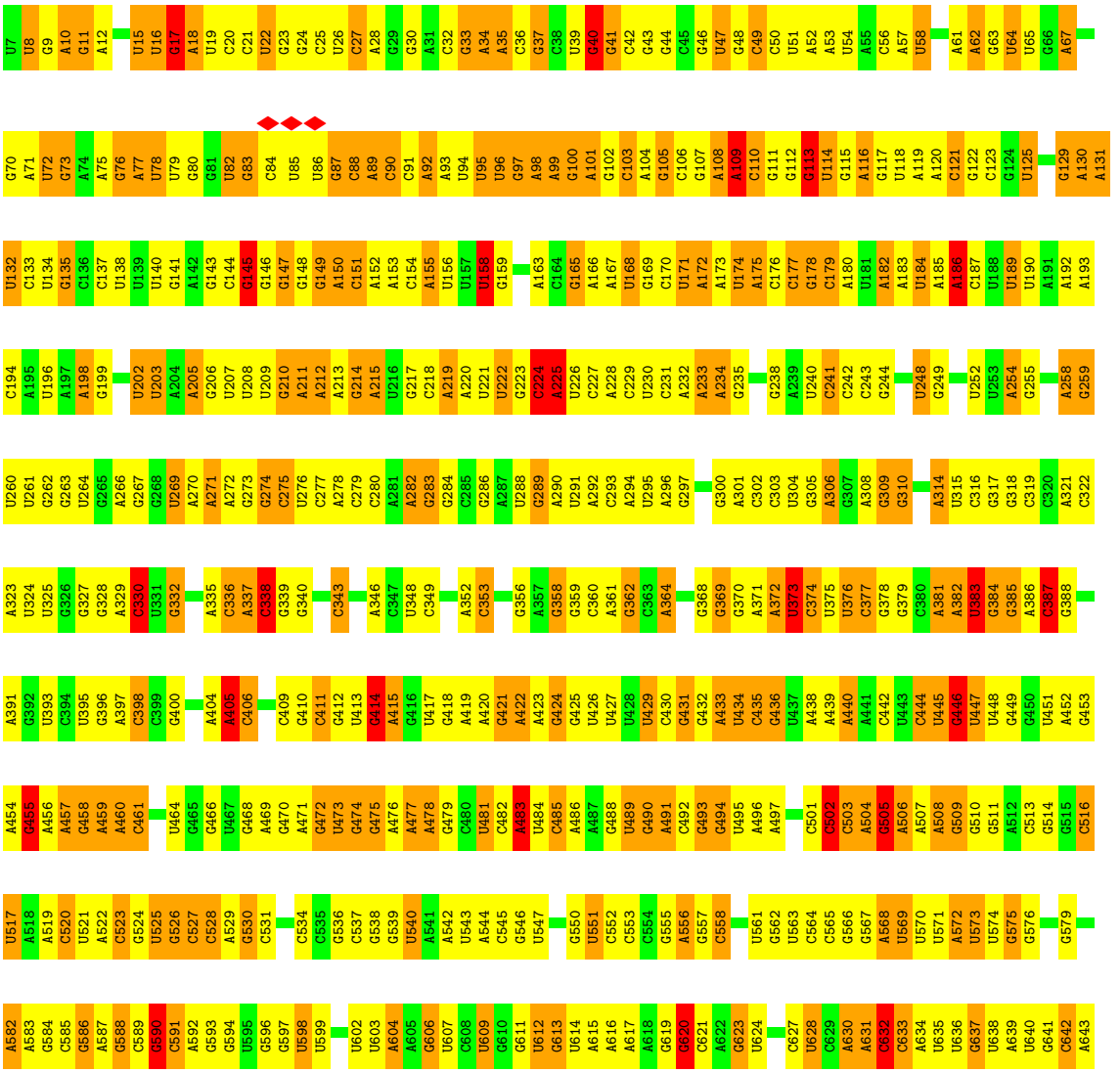
Mol	Chain	Residues	Atoms					AltConf	Trace
51	A	159	Total	C	N	O	S	0	0
			1128	698	209	218	3		

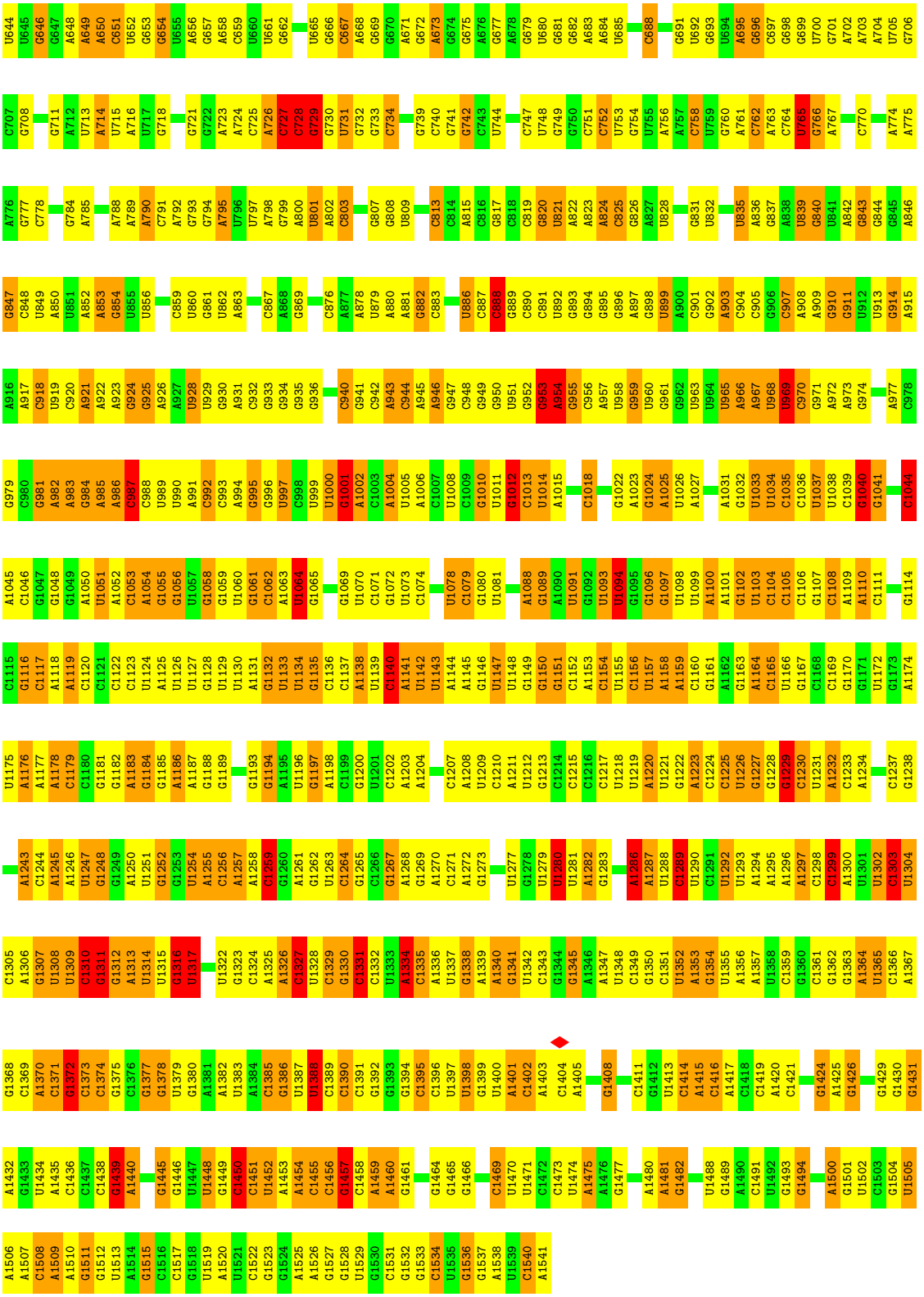
3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. 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. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

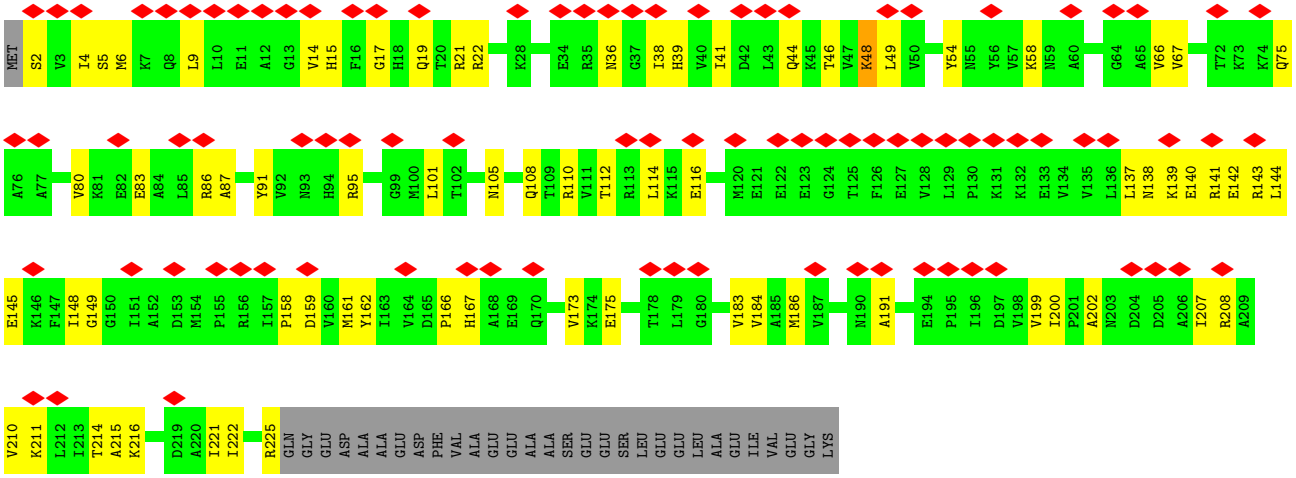
- Molecule 1: 16S ribosomal RNA

Chain AA: 23% 46% 27%



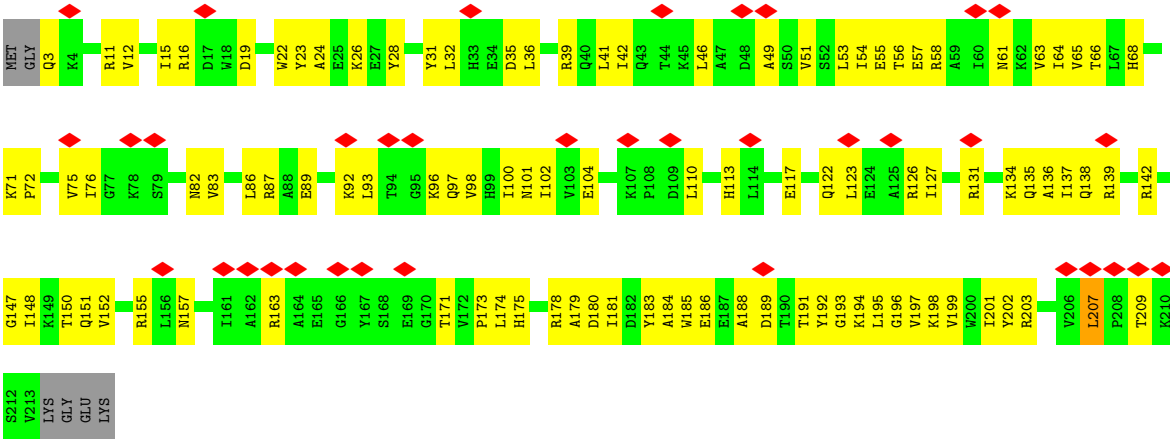


• Molecule 2: 30S ribosomal protein S2



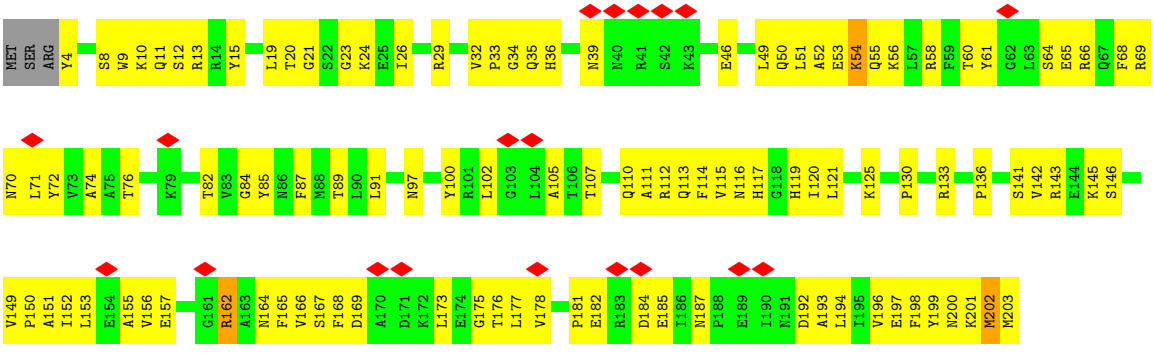
• Molecule 3: 30S ribosomal protein S3

Chain AC:



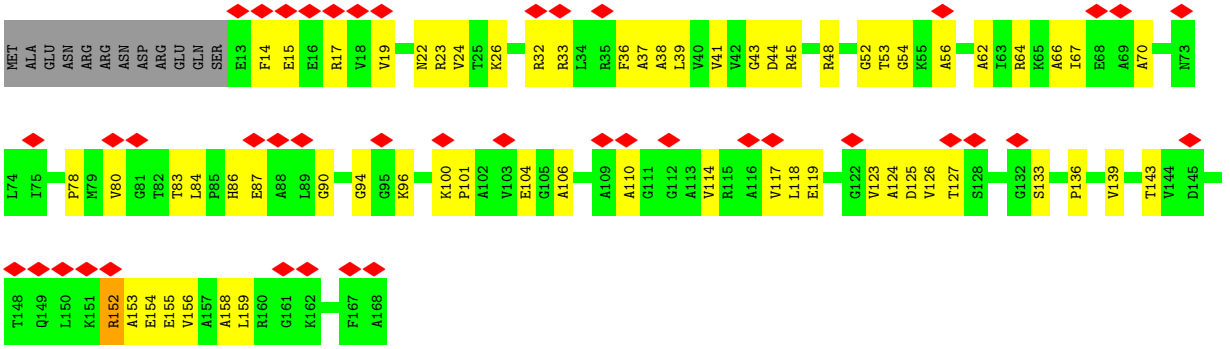
• Molecule 4: 30S ribosomal protein S4

Chain AD:

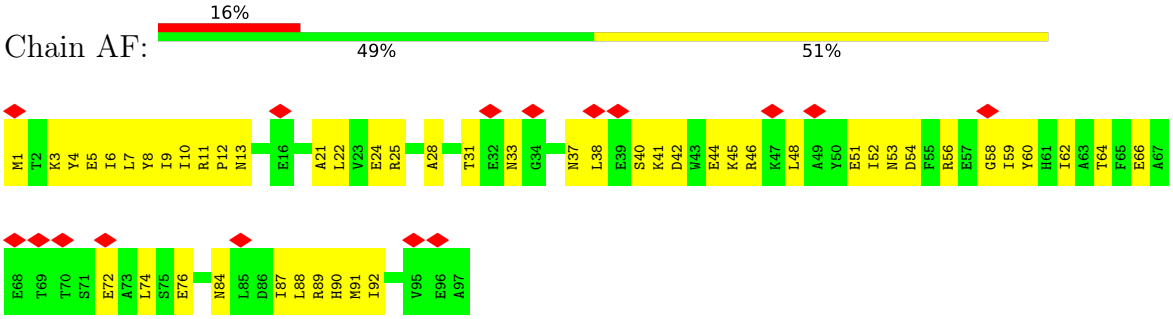


• Molecule 5: 30S ribosomal protein S5

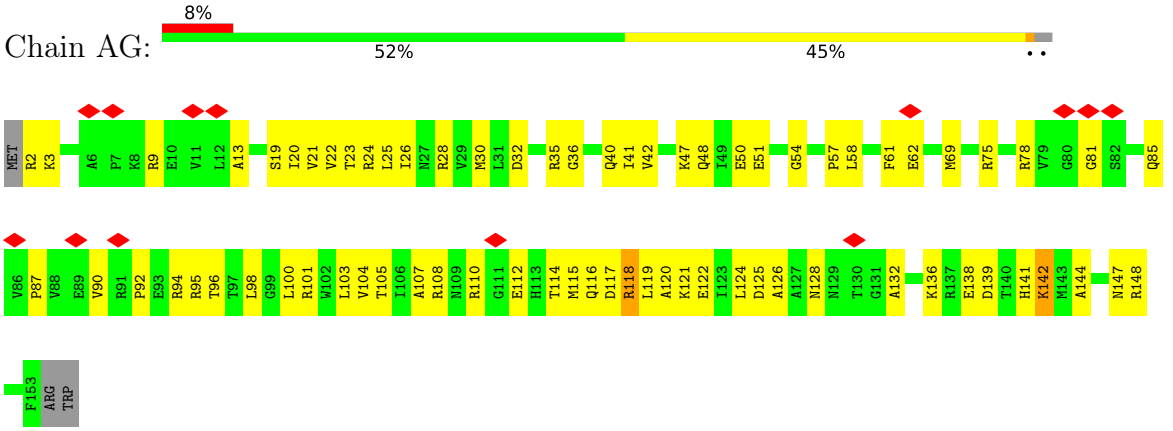
Chain AE:



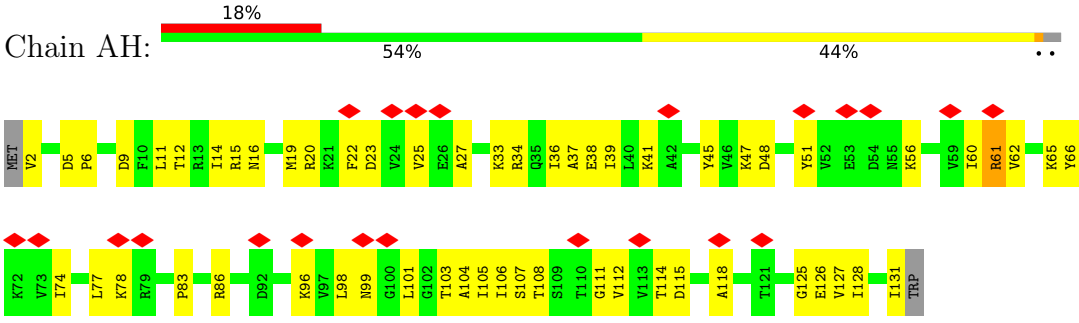
• Molecule 6: 30S ribosomal protein S6



• Molecule 7: 30S ribosomal protein S7

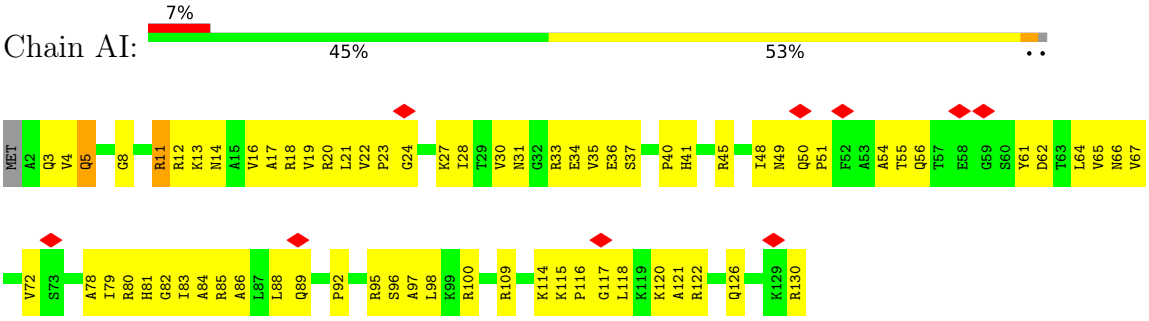


• Molecule 8: 30S ribosomal protein S8



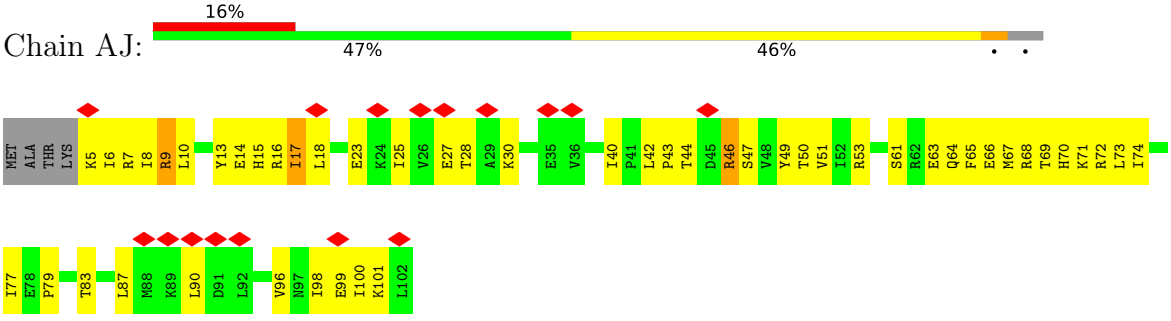
• Molecule 9: 30S ribosomal protein S9

Chain AI:



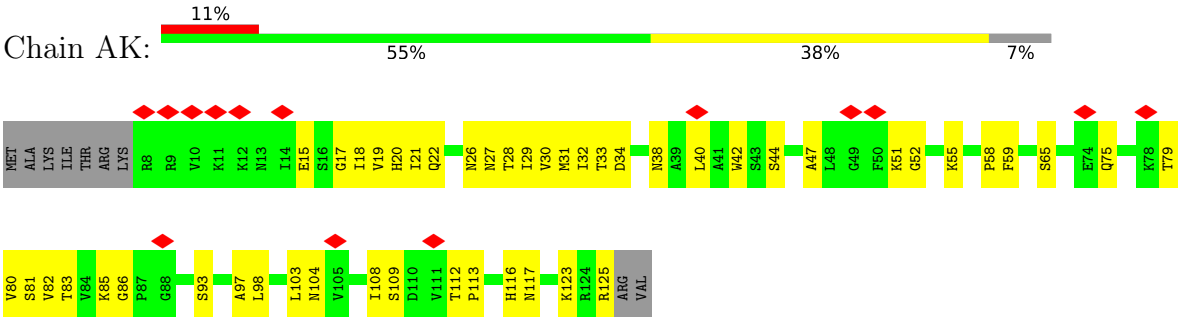
• Molecule 10: 30S ribosomal protein S10

Chain AJ:



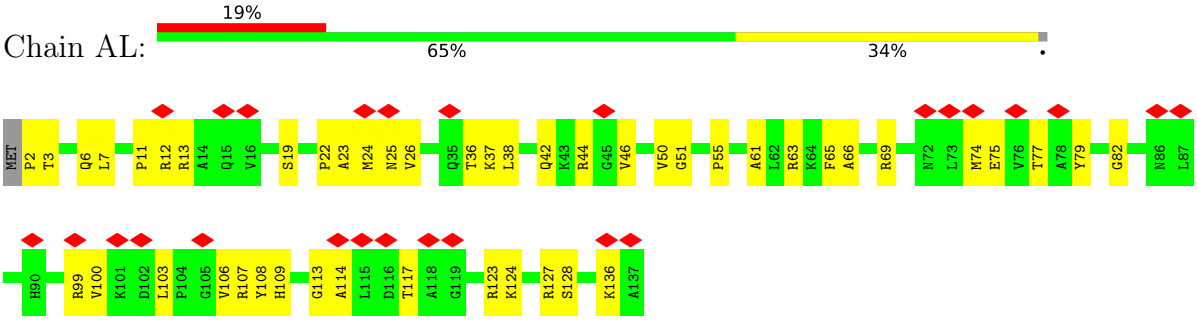
• Molecule 11: 30S ribosomal protein S11

Chain AK:



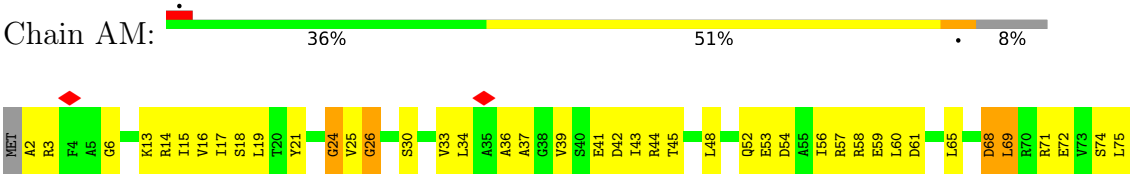
• Molecule 12: 30S ribosomal protein S12

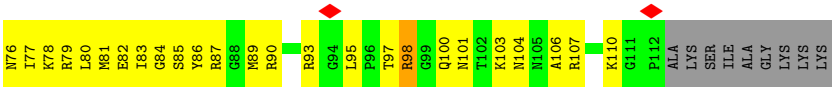
Chain AL:



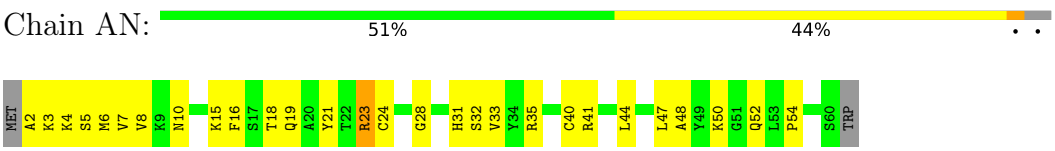
• Molecule 13: 30S ribosomal protein S13

Chain AM:



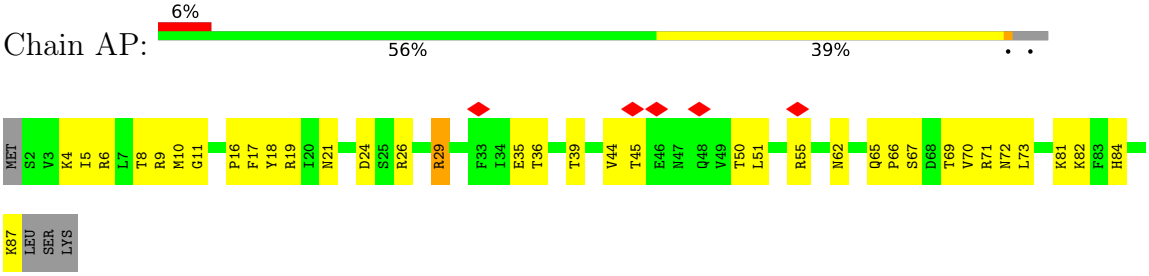


• Molecule 14: 30S ribosomal protein S14 type Z

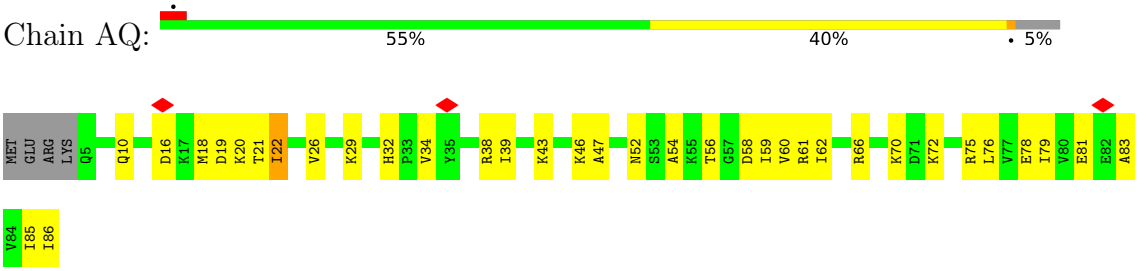


• Molecule 15: 30S ribosomal protein S15

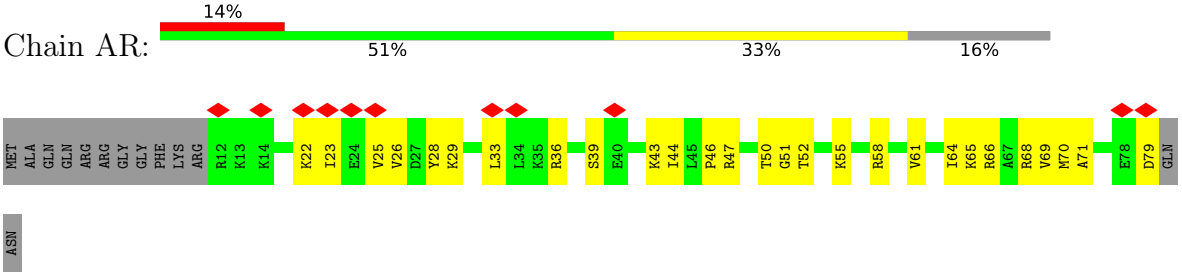
• Molecule 16: 30S ribosomal protein S16



• Molecule 17: 30S ribosomal protein S17

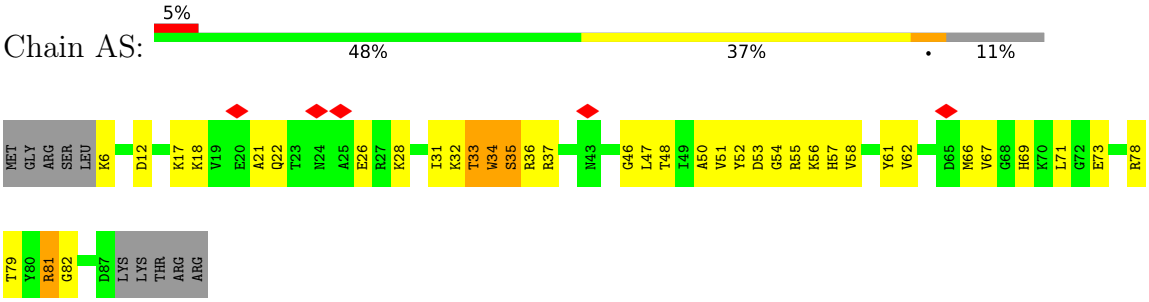


• Molecule 18: 30S ribosomal protein S18



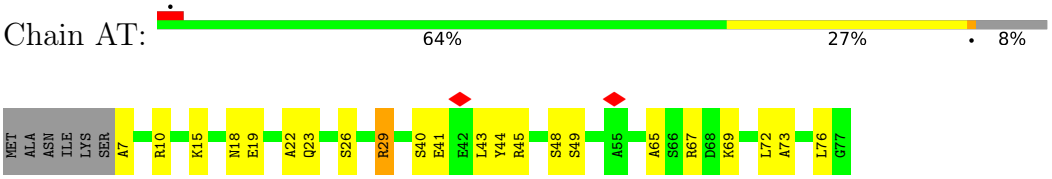
• Molecule 19: 30S ribosomal protein S19

Chain AS:



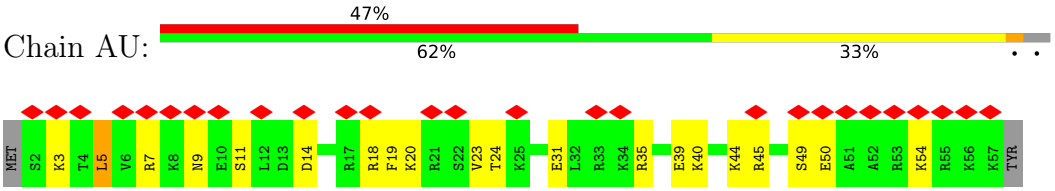
• Molecule 20: 30S ribosomal protein S20

Chain AT:



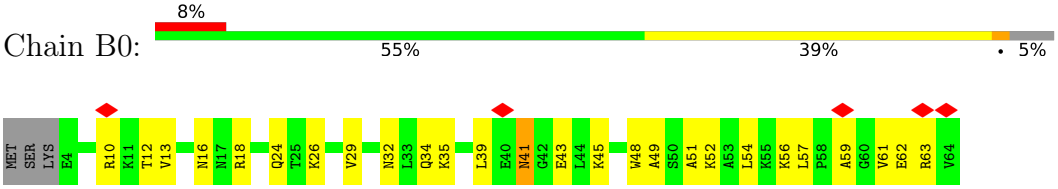
• Molecule 21: 30S ribosomal protein S21

Chain AU:



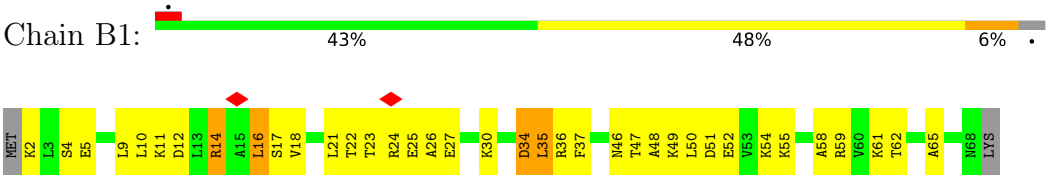
• Molecule 22: 50S ribosomal protein L28

Chain B0:



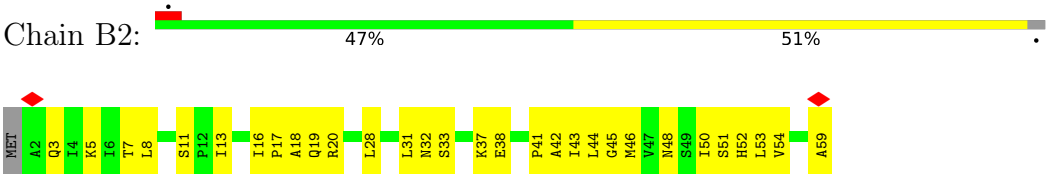
• Molecule 23: 50S ribosomal protein L29

Chain B1:



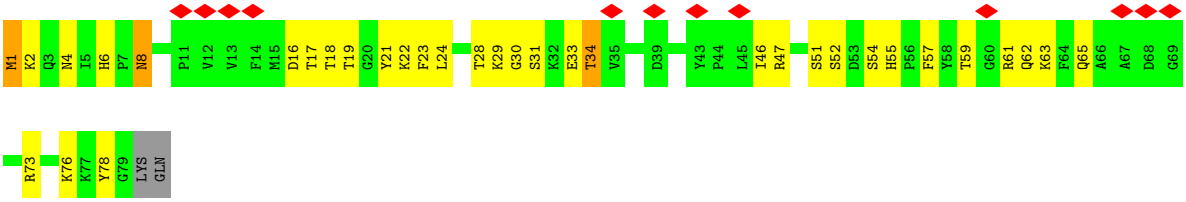
• Molecule 24: 50S ribosomal protein L30

Chain B2:

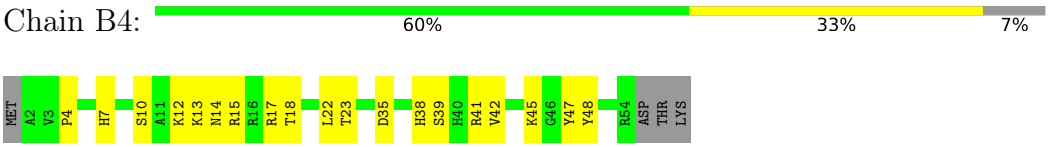


• Molecule 25: 50S ribosomal protein L31 type B

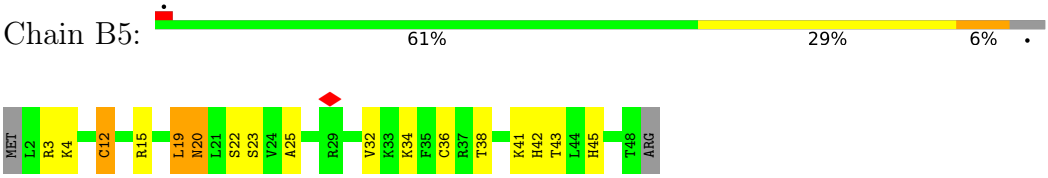
Chain B3:



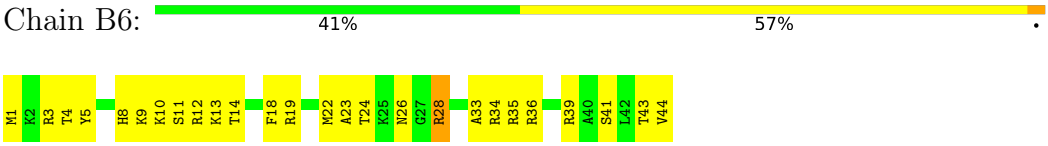
• Molecule 26: 50S ribosomal protein L32



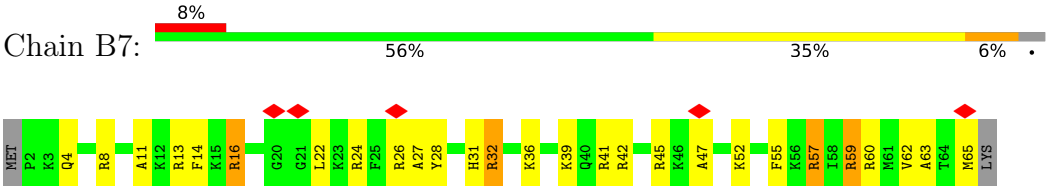
• Molecule 27: 50S ribosomal protein L33 3



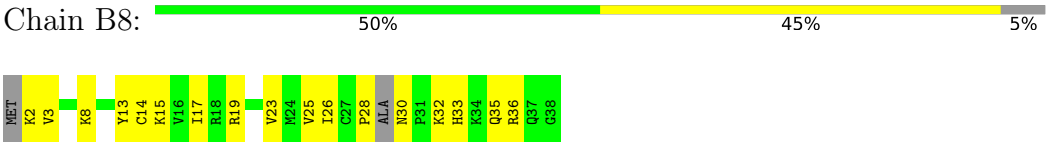
• Molecule 28: 50S ribosomal protein L34



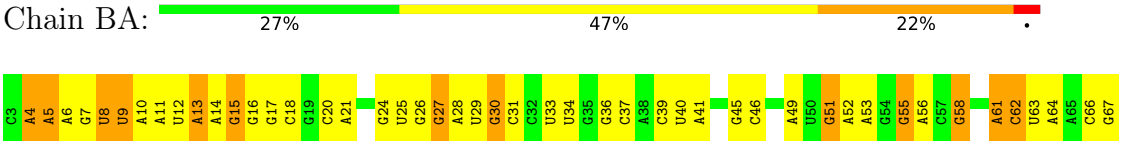
• Molecule 29: 50S ribosomal protein L35

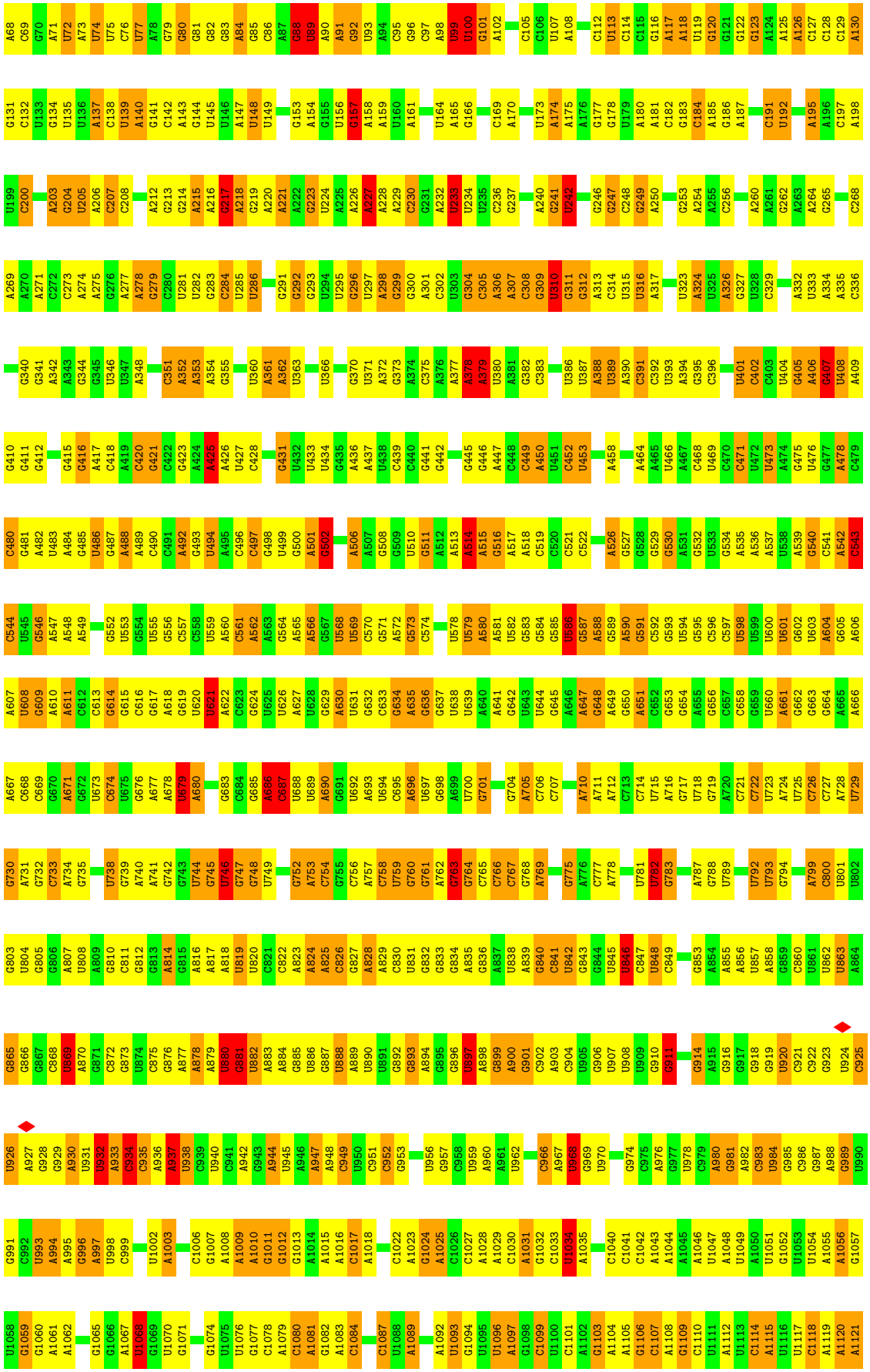


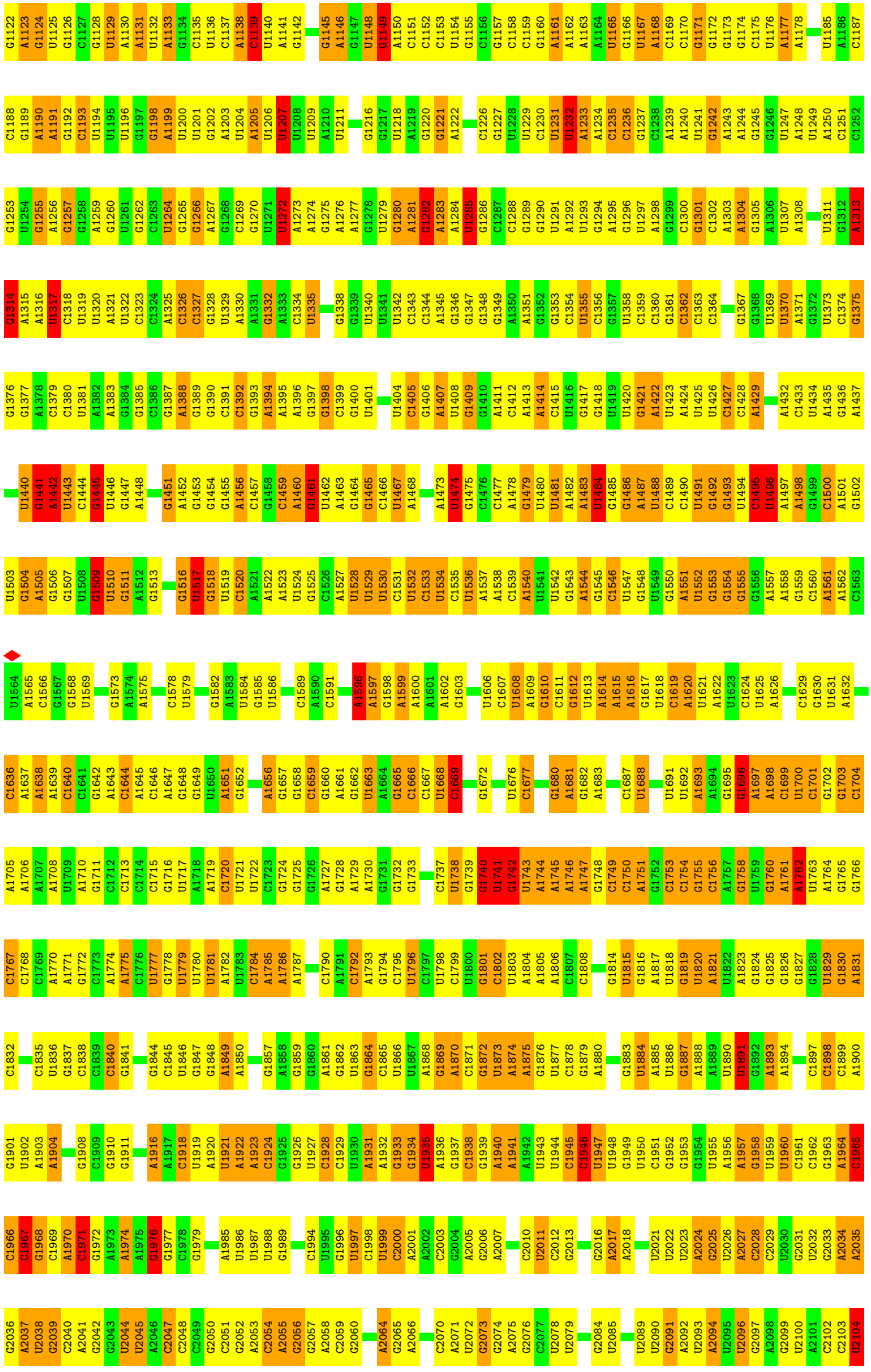
• Molecule 30: 50S ribosomal protein L36

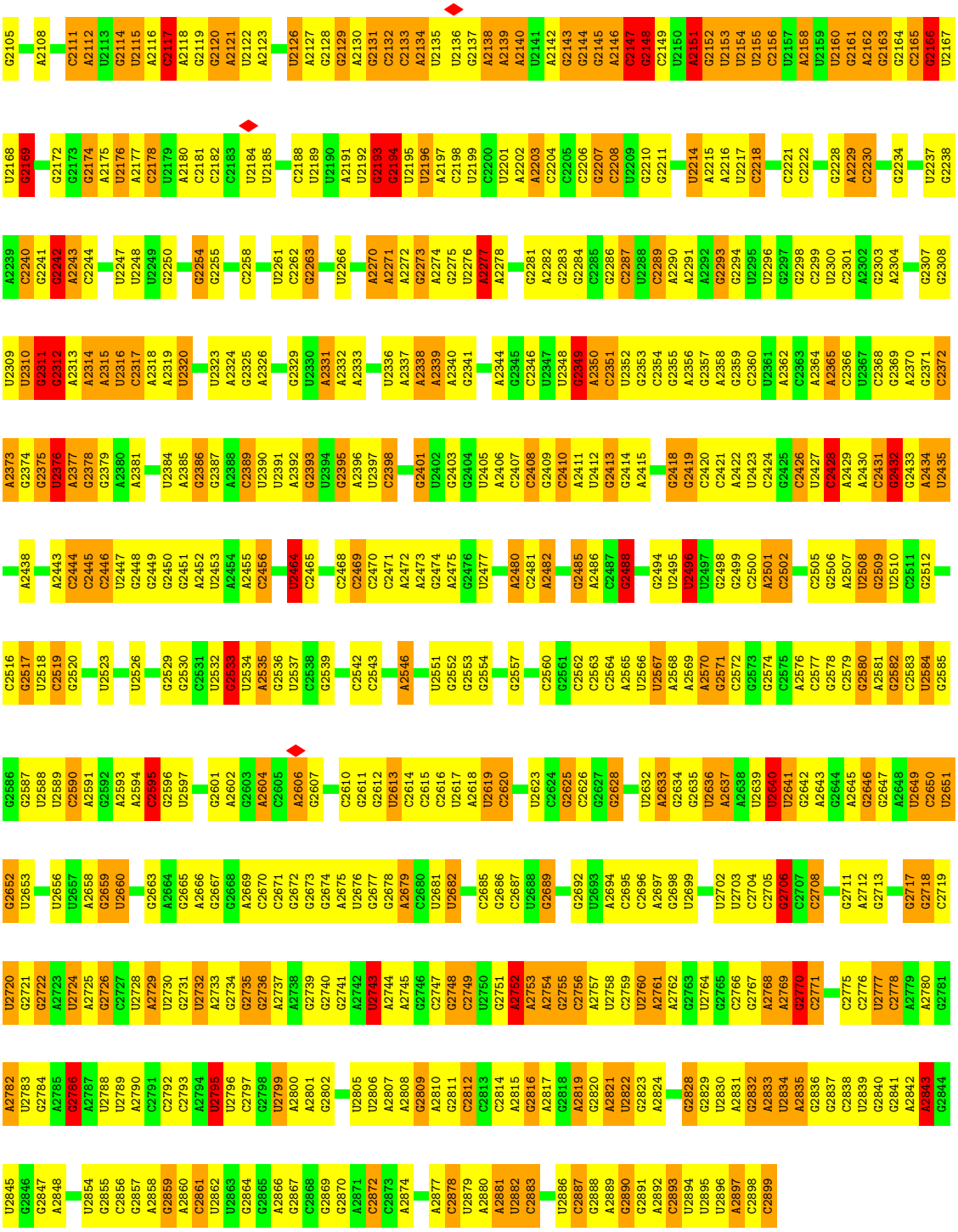


• Molecule 31: 23S ribosomal RNA



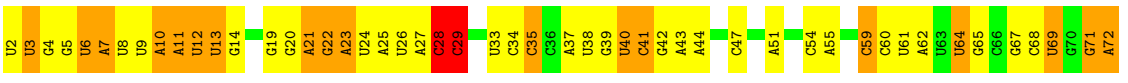


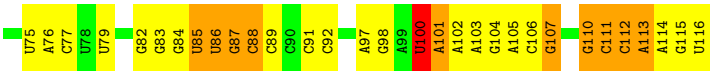




• Molecule 32: 5S ribosomal RNA

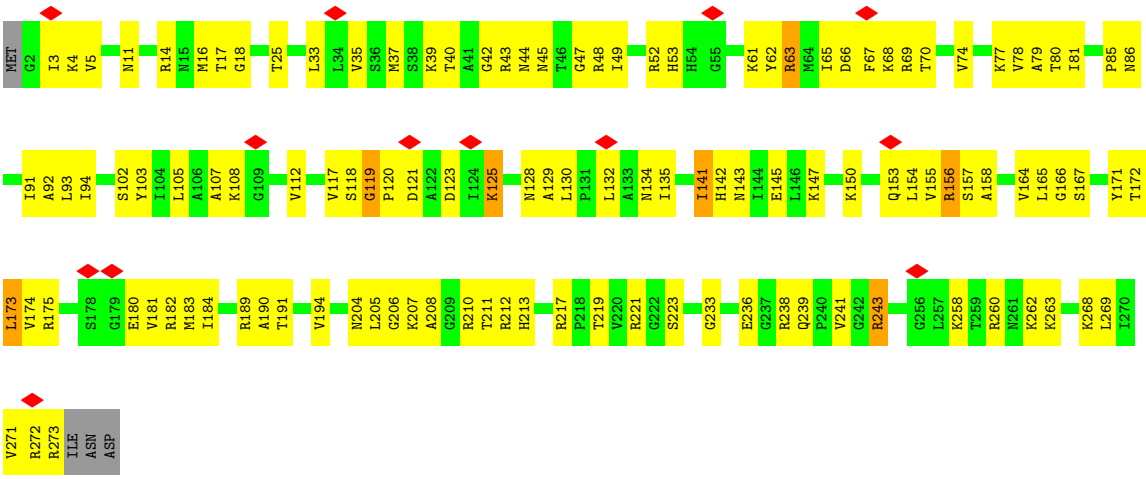
Chain BB:





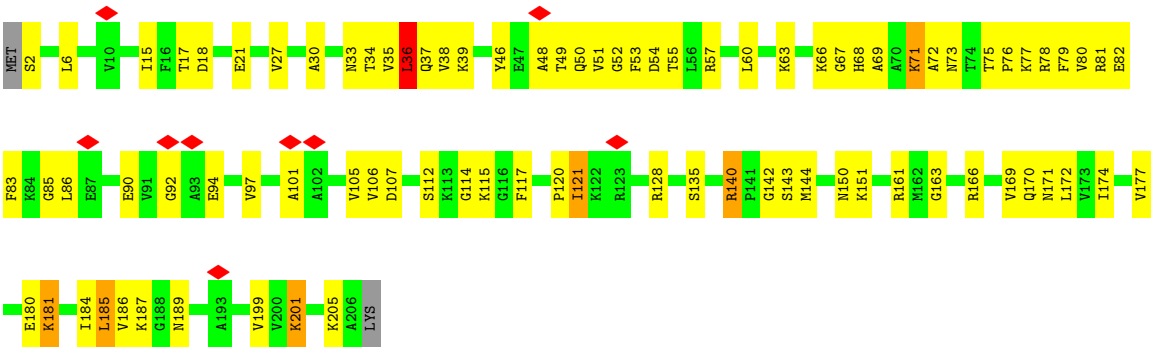
• Molecule 33: 50S ribosomal protein L2

Chain BD:



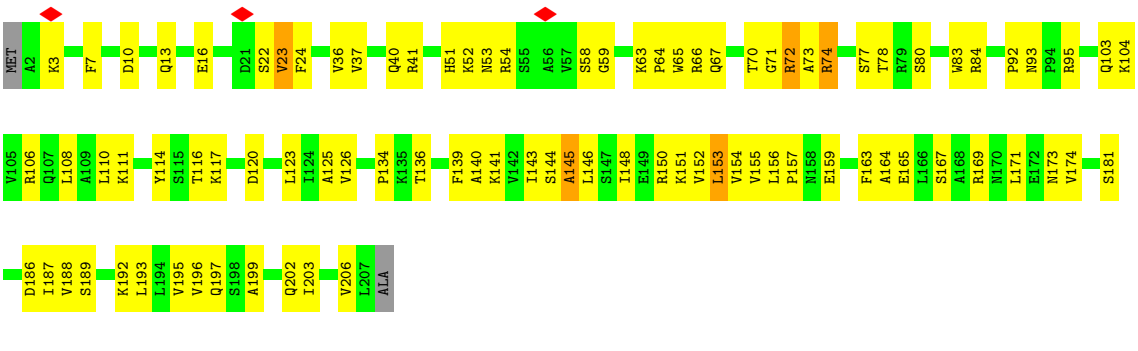
• Molecule 34: 50S ribosomal protein L3

Chain BE:



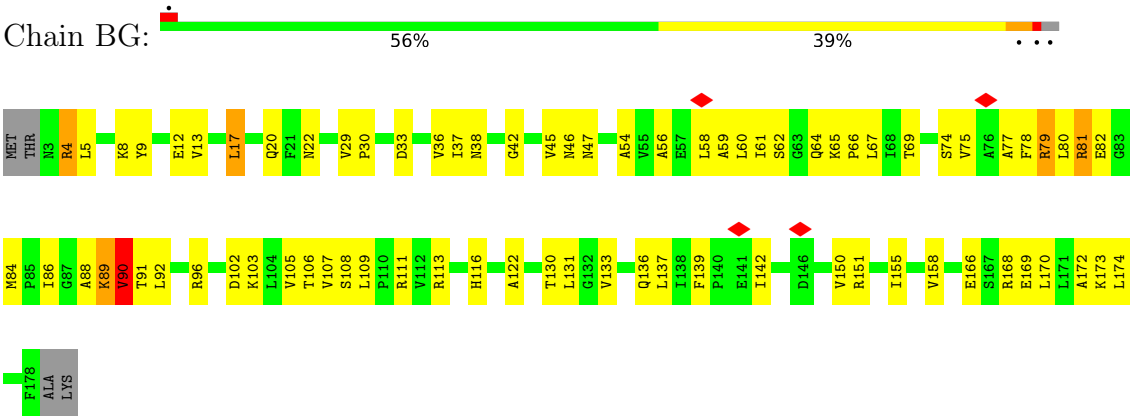
• Molecule 35: 50S ribosomal protein L4

Chain BF:



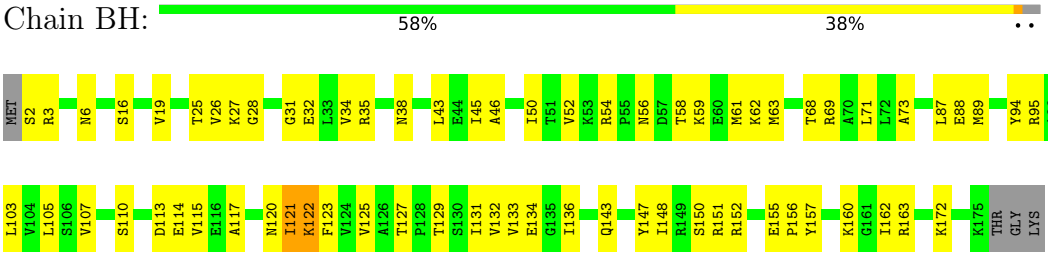
• Molecule 36: 50S ribosomal protein L5

Chain BG:



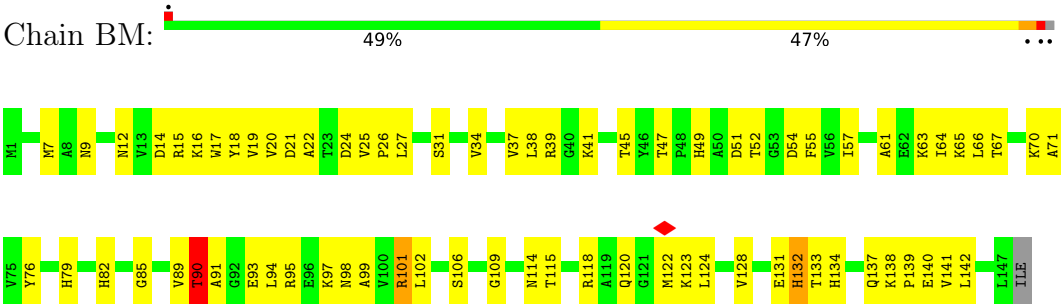
• Molecule 37: 50S ribosomal protein L6

Chain BH:



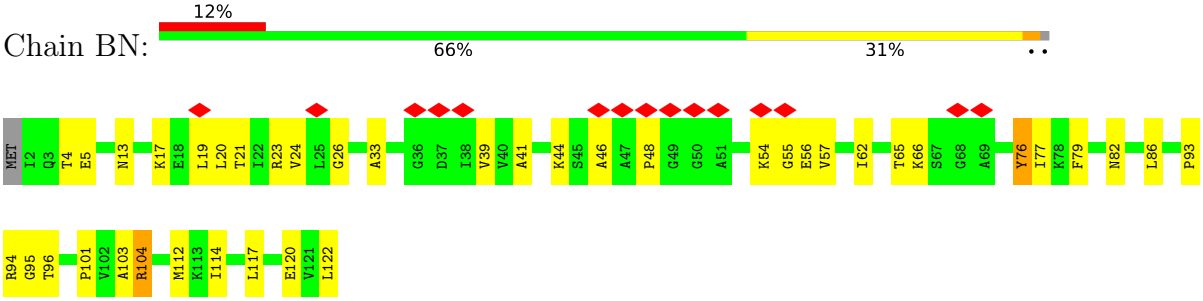
• Molecule 38: 50S ribosomal protein L13

Chain BM:



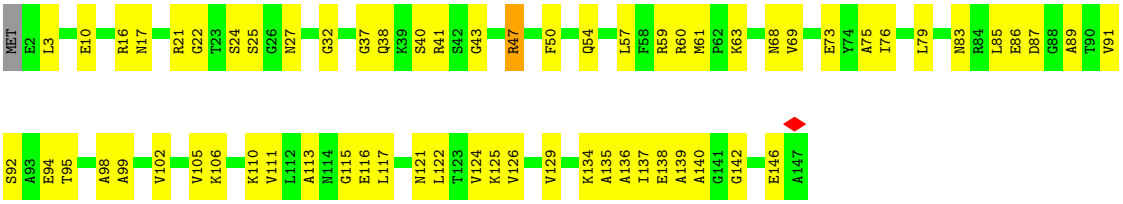
• Molecule 39: 50S ribosomal protein L14

Chain BN:



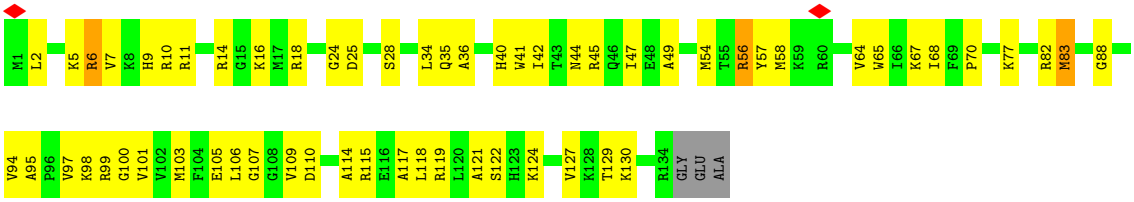
• Molecule 40: 50S ribosomal protein L15

Chain BO:



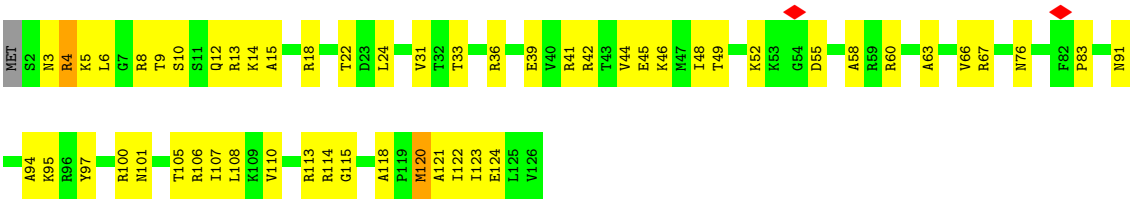
• Molecule 41: 50S ribosomal protein L16

Chain BP:



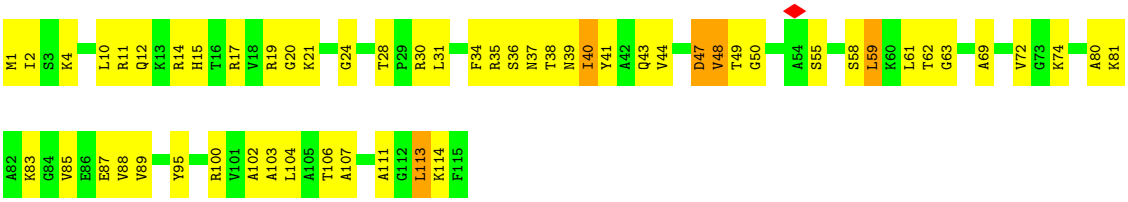
• Molecule 42: 50S ribosomal protein L17

Chain BQ:



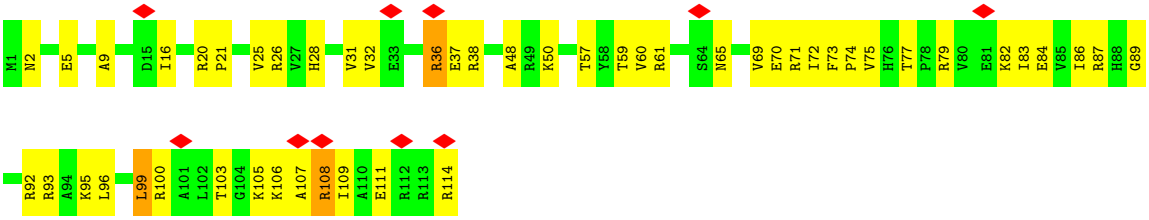
• Molecule 43: 50S ribosomal protein L18

Chain BR:



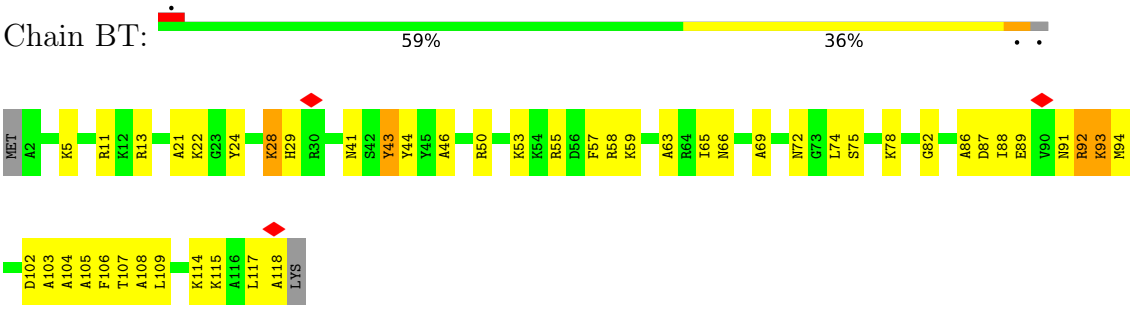
• Molecule 44: 50S ribosomal protein L19

Chain BS:



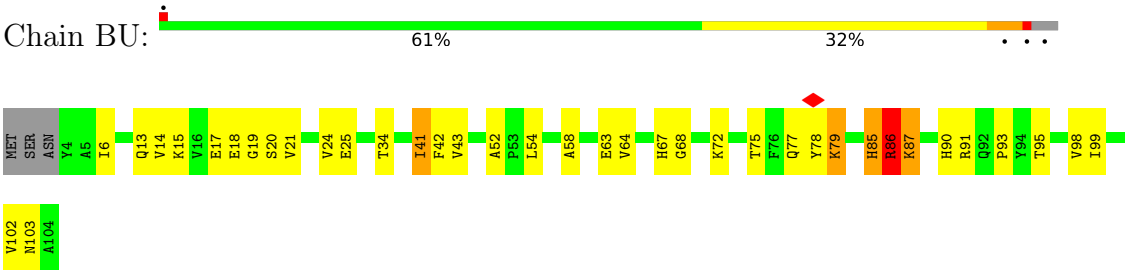
• Molecule 45: 50S ribosomal protein L20

Chain BT:



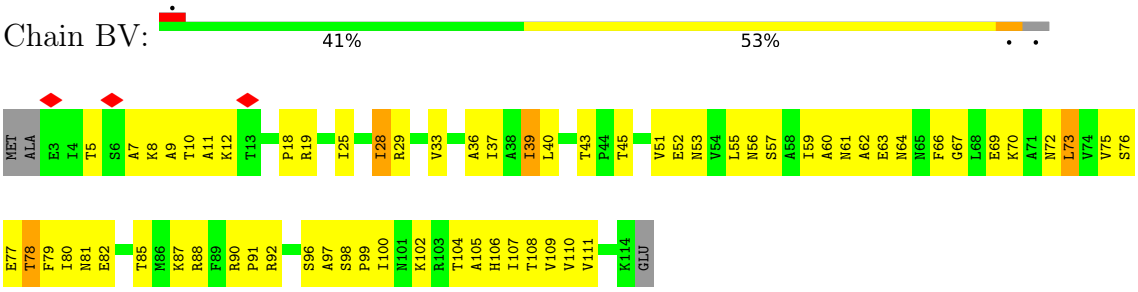
• Molecule 46: 50S ribosomal protein L21

Chain BU:



• Molecule 47: 50S ribosomal protein L22

Chain BV:

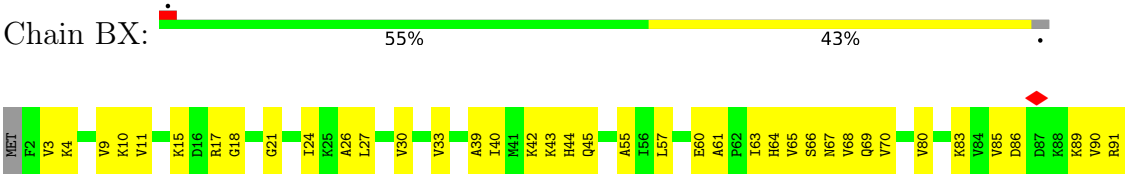


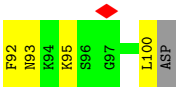
• Molecule 48: 50S ribosomal protein L23

Chain BW:

• Molecule 49: 50S ribosomal protein L24

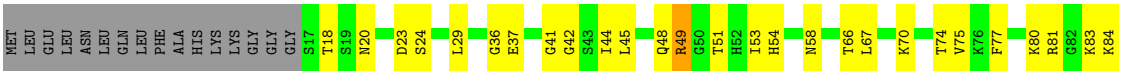
Chain BX:

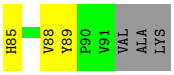




• Molecule 50: 50S ribosomal protein L27

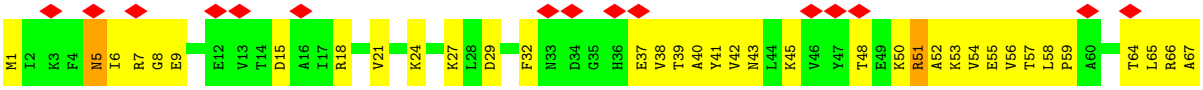
Chain BZ:

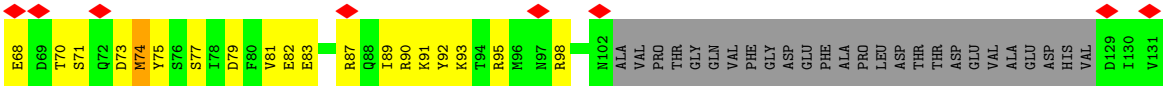


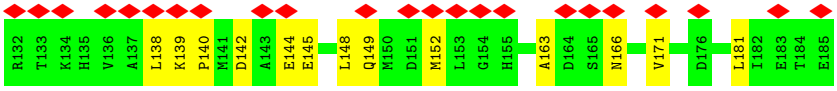


• Molecule 51: Ribosome hibernation promotion factor

Chain A:







4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	43530	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	25	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.161	Depositor
Minimum map value	-0.064	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.035	Depositor
Map size (Å)	663.0, 663.0, 663.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.105, 1.105, 1.105	Depositor

5 Model quality

5.1 Standard geometry

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	AA	0.68	0/36854	1.35	448/57482 (0.8%)
2	AB	0.32	0/1805	0.65	0/2442
3	AC	0.32	0/1674	0.62	0/2259
4	AD	0.34	0/1639	0.62	0/2205
5	AE	0.34	0/1143	0.63	0/1540
6	AF	0.40	0/809	0.77	2/1089 (0.2%)
7	AG	0.31	0/1224	0.61	0/1649
8	AH	0.35	0/1020	0.58	0/1374
9	AI	0.30	0/995	0.71	0/1334
10	AJ	0.30	0/805	0.69	2/1084 (0.2%)
11	AK	0.33	0/870	0.63	0/1175
12	AL	0.35	0/1070	0.72	0/1433
13	AM	0.38	0/880	0.80	2/1176 (0.2%)
14	AN	0.32	0/479	0.56	0/637
15	AO	0.31	0/718	0.62	0/958
16	AP	0.33	0/699	0.56	0/938
17	AQ	0.33	0/684	0.66	0/915
18	AR	0.36	0/554	0.75	0/740
19	AS	0.36	0/676	0.68	0/911
20	AT	0.32	0/545	0.59	0/723
21	AU	0.31	0/443	0.61	1/583 (0.2%)
22	B0	0.39	0/483	0.75	0/649
23	B1	0.40	0/534	0.96	2/713 (0.3%)
24	B2	0.36	0/427	0.72	0/575
25	B3	0.39	0/659	0.86	0/888
26	B4	0.44	0/447	0.66	0/599
27	B5	0.38	0/368	0.72	0/489
28	B6	0.38	0/366	0.71	0/481
29	B7	0.37	0/538	0.75	0/704
30	B8	0.37	0/297	0.64	0/396
31	BA	0.86	7/69612 (0.0%)	1.37	856/108576 (0.8%)
32	BB	0.75	1/2746 (0.0%)	1.29	22/4278 (0.5%)
33	BD	0.41	0/2071	0.80	2/2789 (0.1%)
34	BE	0.44	0/1544	0.79	2/2079 (0.1%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	BF	0.39	0/1586	0.72	1/2145 (0.0%)
36	BG	0.40	0/1385	0.84	2/1866 (0.1%)
37	BH	0.37	0/1317	0.66	0/1776
38	BM	0.40	0/1147	0.74	0/1549
39	BN	0.41	0/904	0.75	1/1215 (0.1%)
40	BO	0.39	0/1072	0.72	0/1430
41	BP	0.43	0/1084	0.64	0/1450
42	BQ	0.39	0/998	0.79	0/1338
43	BR	0.42	0/881	0.83	3/1184 (0.3%)
44	BS	0.38	0/935	0.70	1/1255 (0.1%)
45	BT	0.47	0/958	0.70	1/1273 (0.1%)
46	BU	0.46	0/796	0.82	2/1070 (0.2%)
47	BV	0.39	0/862	0.76	1/1164 (0.1%)
48	BW	0.37	0/697	0.62	0/935
49	BX	0.40	0/755	0.75	0/1013
50	BZ	0.37	0/570	0.75	1/760 (0.1%)
51	A	0.36	0/1138	0.64	0/1538
All	All	0.71	8/152763 (0.0%)	1.23	1352/228824 (0.6%)

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
2	AB	0	1
3	AC	0	1
4	AD	0	2
6	AF	0	1
9	AI	0	1
10	AJ	0	1
11	AK	0	2
13	AM	0	4
14	AN	0	2
19	AS	0	3
22	B0	0	1
23	B1	0	3
24	B2	0	2
25	B3	0	3
26	B4	0	1
27	B5	0	1
33	BD	0	4

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Mol	Chain	#Chirality outliers	#Planarity outliers
34	BE	0	4
35	BF	0	2
36	BG	0	3
37	BH	0	1
38	BM	0	4
39	BN	0	2
43	BR	0	2
44	BS	0	1
45	BT	0	1
46	BU	0	4
47	BV	0	2
48	BW	0	1
49	BX	0	1
All	All	0	61

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
31	BA	2480	A	N9-C4	-5.85	1.34	1.37
31	BA	1719	A	N9-C4	-5.55	1.34	1.37
31	BA	1089	A	N9-C4	-5.36	1.34	1.37
32	BB	21	A	N9-C4	-5.19	1.34	1.37
31	BA	542	A	N9-C4	5.19	1.41	1.37
31	BA	1498	A	N7-C5	-5.19	1.36	1.39
31	BA	2350	A	N9-C4	-5.10	1.34	1.37
31	BA	556	G	N7-C5	-5.04	1.36	1.39

All (1352) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	1503	U	N3-C2-O2	-17.92	109.66	122.20
1	AA	1310	C	C2-N1-C1'	13.33	133.47	118.80
31	BA	2117	C	N1-C2-O2	13.13	126.78	118.90
31	BA	2117	C	C2-N1-C1'	12.12	132.14	118.80
31	BA	568	U	C5-C6-N1	12.06	128.73	122.70
31	BA	1423	U	N1-C2-O2	11.92	131.14	122.80
31	BA	1503	U	N1-C2-O2	11.79	131.06	122.80
31	BA	2104	U	C2-N1-C1'	11.77	131.82	117.70
31	BA	2398	C	N1-C2-O2	11.44	125.76	118.90
31	BA	1423	U	C2-N1-C1'	11.30	131.26	117.70
31	BA	1960	U	N1-C2-O2	11.13	130.59	122.80
31	BA	1423	U	N3-C2-O2	-10.98	114.52	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	2102	C	N1-C2-O2	10.90	125.44	118.90
31	BA	2103	C	N1-C2-O2	10.55	125.23	118.90
1	AA	189	U	N1-C2-O2	10.43	130.10	122.80
31	BA	2181	C	N1-C2-O2	10.32	125.09	118.90
31	BA	2230	C	N1-C2-O2	10.32	125.09	118.90
31	BA	1960	U	N3-C2-O2	-10.25	115.03	122.20
1	AA	1310	C	C6-N1-C1'	-10.08	108.70	120.80
31	BA	2133	C	C5-C6-N1	10.05	126.03	121.00
1	AA	633	C	C5-C6-N1	10.03	126.02	121.00
1	AA	189	U	N3-C2-O2	-10.03	115.18	122.20
31	BA	2103	C	C2-N1-C1'	10.01	129.81	118.80
31	BA	1534	U	C5-C6-N1	9.94	127.67	122.70
1	AA	928	U	C2-N1-C1'	9.92	129.61	117.70
31	BA	1965	C	N1-C2-O2	9.91	124.84	118.90
31	BA	2117	C	N3-C2-O2	-9.85	115.01	121.90
23	B1	34	ASP	CB-CG-OD1	9.82	127.14	118.30
1	AA	291	U	N3-C2-O2	-9.74	115.38	122.20
31	BA	230	C	N1-C2-O2	9.63	124.68	118.90
1	AA	291	U	N1-C2-O2	9.62	129.53	122.80
31	BA	207	C	N1-C2-O2	9.60	124.66	118.90
31	BA	1068	U	C5-C4-O4	-9.58	120.15	125.90
31	BA	2613	U	N3-C2-O2	-9.57	115.50	122.20
31	BA	2398	C	N3-C2-O2	-9.56	115.20	121.90
31	BA	1997	U	C2-N1-C1'	9.51	129.12	117.70
31	BA	310	U	N3-C2-O2	-9.49	115.55	122.20
31	BA	2477	U	N1-C2-O2	9.47	129.43	122.80
1	AA	928	U	N1-C2-O2	9.42	129.40	122.80
1	AA	765	U	N1-C2-O2	9.34	129.34	122.80
31	BA	1317	U	C2-N1-C1'	9.32	128.89	117.70
31	BA	2147	C	O4'-C1'-N1	9.30	115.64	108.20
31	BA	2133	C	C6-N1-C2	-9.26	116.60	120.30
1	AA	446	G	N3-C4-N9	-9.25	120.45	126.00
1	AA	765	U	C2-N1-C1'	9.23	128.78	117.70
31	BA	1342	U	C2-N1-C1'	9.19	128.73	117.70
43	BR	59	LEU	CA-CB-CG	9.18	136.41	115.30
1	AA	1439	G	O4'-C1'-N9	9.04	115.43	108.20
31	BA	310	U	N1-C2-O2	9.03	129.12	122.80
31	BA	230	C	N3-C2-O2	-9.03	115.58	121.90
31	BA	1317	U	N3-C2-O2	-9.03	115.88	122.20
32	BB	111	C	C6-N1-C2	-9.00	116.70	120.30
1	AA	890	C	N1-C2-O2	8.99	124.30	118.90
31	BA	1965	C	N3-C2-O2	-8.96	115.63	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	444	C	N1-C2-O2	8.94	124.27	118.90
1	AA	1248	G	C6-C5-N7	-8.94	125.04	130.40
31	BA	2117	C	C6-N1-C1'	-8.87	110.16	120.80
31	BA	1536	U	C2-N1-C1'	8.85	128.32	117.70
31	BA	471	C	N1-C2-O2	8.82	124.19	118.90
1	AA	444	C	C2-N1-C1'	8.80	128.48	118.80
31	BA	2163	G	C6-C5-N7	-8.80	125.12	130.40
31	BA	1503	U	C6-N1-C2	-8.76	115.74	121.00
31	BA	2104	U	C6-N1-C1'	-8.74	108.96	121.20
31	BA	2028	C	N3-C2-O2	-8.73	115.79	121.90
31	BA	1997	U	N1-C2-O2	8.72	128.90	122.80
1	AA	447	U	C2-N1-C1'	8.70	128.13	117.70
1	AA	1374	C	C6-N1-C2	-8.65	116.84	120.30
31	BA	1445	G	C4-N9-C1'	-8.62	115.29	126.50
1	AA	1310	C	N1-C2-O2	8.61	124.07	118.90
31	BA	2477	U	N3-C2-O2	-8.61	116.17	122.20
31	BA	1960	U	C2-N1-C1'	8.59	128.01	117.70
31	BA	100	U	N1-C2-O2	8.56	128.80	122.80
1	AA	72	U	N1-C2-O2	8.55	128.78	122.80
31	BA	519	C	C5-C6-N1	8.53	125.27	121.00
31	BA	2163	G	C4-C5-N7	8.53	114.21	110.80
31	BA	544	C	N1-C2-O2	8.45	123.97	118.90
31	BA	310	U	C2-N1-C1'	8.44	127.82	117.70
1	AA	1202	C	C6-N1-C2	-8.43	116.93	120.30
31	BA	1236	C	O4'-C1'-N1	8.41	114.93	108.20
31	BA	233	U	N1-C2-O2	8.39	128.67	122.80
1	AA	1122	C	C2-N1-C1'	8.38	128.02	118.80
1	AA	481	U	N1-C2-O2	8.38	128.66	122.80
32	BB	111	C	N3-C2-O2	-8.36	116.05	121.90
31	BA	2230	C	N3-C2-O2	-8.34	116.06	121.90
1	AA	751	C	N1-C2-O2	8.33	123.90	118.90
1	AA	928	U	N3-C2-O2	-8.32	116.37	122.20
1	AA	37	G	C4-C5-N7	8.29	114.11	110.80
36	BG	17	LEU	CA-CB-CG	8.28	134.34	115.30
31	BA	846	U	C2-N1-C1'	8.27	127.63	117.70
1	AA	1374	C	C5-C6-N1	8.27	125.13	121.00
31	BA	2104	U	N1-C2-O2	8.27	128.59	122.80
31	BA	881	G	N3-C4-C5	-8.27	124.47	128.60
31	BA	2613	U	N1-C2-O2	8.26	128.58	122.80
31	BA	2102	C	N3-C2-O2	-8.25	116.13	121.90
31	BA	100	U	C2-N1-C1'	8.23	127.58	117.70
31	BA	227	A	O4'-C1'-N9	8.23	114.78	108.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	442	C	N1-C2-O2	8.22	123.83	118.90
31	BA	934	C	C5-C6-N1	8.21	125.11	121.00
1	AA	1044	C	C2-N1-C1'	8.20	127.82	118.80
31	BA	846	U	C5-C6-N1	8.20	126.80	122.70
31	BA	597	C	N1-C2-O2	8.19	123.81	118.90
31	BA	704	G	C4-N9-C1'	8.18	137.14	126.50
31	BA	2797	C	C5-C6-N1	8.18	125.09	121.00
31	BA	2103	C	C5-C6-N1	8.17	125.09	121.00
31	BA	2640	U	N1-C2-O2	8.17	128.52	122.80
1	AA	1053	C	C5-C6-N1	8.15	125.08	121.00
31	BA	2670	C	N1-C2-O2	8.15	123.79	118.90
31	BA	1924	C	N1-C2-O2	8.13	123.78	118.90
31	BA	1342	U	N1-C2-O2	8.12	128.48	122.80
1	AA	1372	G	C4-N9-C1'	8.11	137.04	126.50
1	AA	1335	C	C2-N1-C1'	8.11	127.72	118.80
31	BA	72	U	N3-C2-O2	-8.10	116.53	122.20
31	BA	2708	C	C5-C6-N1	8.10	125.05	121.00
31	BA	938	U	C2-N1-C1'	8.08	127.39	117.70
31	BA	100	U	N3-C2-O2	-8.07	116.55	122.20
31	BA	1534	U	C2-N1-C1'	8.05	127.36	117.70
31	BA	2163	G	N9-C4-C5	-8.05	102.18	105.40
31	BA	568	U	C2-N1-C1'	8.05	127.36	117.70
1	AA	551	U	C2-N1-C1'	8.04	127.35	117.70
31	BA	72	U	N1-C2-O2	8.04	128.43	122.80
31	BA	192	U	N3-C2-O2	-8.02	116.58	122.20
1	AA	37	G	C6-C5-N7	-8.00	125.60	130.40
1	AA	481	U	N3-C2-O2	-8.00	116.60	122.20
32	BB	100	U	N1-C2-O2	7.99	128.39	122.80
31	BA	2028	C	N1-C2-O2	7.98	123.69	118.90
31	BA	904	C	N1-C2-O2	7.98	123.69	118.90
1	AA	444	C	C5-C6-N1	7.97	124.99	121.00
31	BA	1965	C	C2-N1-C1'	7.97	127.57	118.80
1	AA	1202	C	C5-C6-N1	7.97	124.98	121.00
31	BA	2464	U	C2-N1-C1'	7.96	127.25	117.70
1	AA	890	C	N3-C2-O2	-7.94	116.34	121.90
31	BA	687	C	C5-C4-N4	-7.94	114.64	120.20
31	BA	2169	G	C8-N9-C4	-7.94	103.22	106.40
32	BB	77	C	C6-N1-C2	-7.93	117.13	120.30
31	BA	1542	U	N3-C2-O2	-7.93	116.65	122.20
31	BA	1945	C	C6-N1-C2	-7.91	117.13	120.30
31	BA	2724	U	N3-C2-O2	-7.90	116.67	122.20
1	AA	1257	A	C8-N9-C4	-7.90	102.64	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	2749	C	C5-C6-N1	7.90	124.95	121.00
31	BA	544	C	C2-N1-C1'	7.89	127.48	118.80
31	BA	966	C	N1-C2-O2	7.89	123.64	118.90
31	BA	2590	C	N1-C2-O2	7.85	123.61	118.90
1	AA	1457	G	C5-C6-O6	-7.85	123.89	128.60
32	BB	68	C	C6-N1-C2	-7.84	117.16	120.30
31	BA	1669	C	N1-C2-O2	7.84	123.60	118.90
31	BA	1087	C	C6-N1-C2	-7.81	117.17	120.30
31	BA	1897	C	N1-C2-O2	7.81	123.59	118.90
31	BA	800	C	N1-C2-O2	7.80	123.58	118.90
31	BA	881	G	N3-C4-N9	7.80	130.68	126.00
31	BA	1313	A	P-O3'-C3'	7.79	129.05	119.70
31	BA	1445	G	N3-C4-N9	-7.79	121.33	126.00
31	BA	12	U	C2-N1-C1'	7.72	126.96	117.70
32	BB	111	C	N1-C2-O2	7.72	123.53	118.90
1	AA	1044	C	C6-N1-C2	-7.71	117.21	120.30
31	BA	1231	U	N1-C2-O2	7.71	128.20	122.80
31	BA	846	U	C6-N1-C2	-7.71	116.37	121.00
31	BA	2103	C	C6-N1-C1'	-7.71	111.55	120.80
31	BA	2104	U	C5-C6-N1	7.69	126.55	122.70
31	BA	2640	U	N3-C2-O2	-7.69	116.82	122.20
1	AA	752	C	N3-C2-O2	-7.67	116.53	121.90
31	BA	233	U	N3-C2-O2	-7.67	116.83	122.20
31	BA	1087	C	N1-C2-O2	7.67	123.50	118.90
1	AA	1012	G	O4'-C1'-N9	7.65	114.32	108.20
31	BA	1509	G	C4-N9-C1'	-7.65	116.56	126.50
31	BA	2126	U	N3-C2-O2	-7.65	116.85	122.20
31	BA	391	C	N3-C2-O2	-7.64	116.55	121.90
31	BA	1423	U	C6-N1-C1'	-7.63	110.51	121.20
1	AA	633	C	C6-N1-C2	-7.63	117.25	120.30
31	BA	792	U	N1-C2-O2	7.63	128.14	122.80
31	BA	1193	C	C5-C6-N1	7.63	124.81	121.00
31	BA	2464	U	N1-C2-O2	7.63	128.14	122.80
31	BA	200	C	C2-N1-C1'	7.62	127.19	118.80
31	BA	597	C	C2-N1-C1'	7.62	127.19	118.80
31	BA	182	C	N1-C2-O2	7.61	123.47	118.90
31	BA	2464	U	N3-C2-O2	-7.61	116.87	122.20
31	BA	2756	C	C5-C6-N1	7.60	124.80	121.00
31	BA	72	U	C2-N1-C1'	7.59	126.81	117.70
31	BA	2706	G	C5-C6-O6	-7.59	124.05	128.60
31	BA	1198	G	N3-C4-N9	7.58	130.55	126.00
1	AA	21	C	N3-C2-O2	-7.58	116.59	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	260	U	C2-N1-C1'	7.57	126.78	117.70
1	AA	968	U	N3-C2-O2	-7.57	116.90	122.20
1	AA	1372	G	N3-C4-C5	-7.56	124.82	128.60
31	BA	2316	U	N1-C2-O2	7.56	128.09	122.80
31	BA	1503	U	C2-N1-C1'	7.56	126.77	117.70
1	AA	338	C	N1-C2-O2	7.55	123.43	118.90
31	BA	2163	G	N3-C4-N9	7.55	130.53	126.00
31	BA	2756	C	N1-C2-O2	7.54	123.42	118.90
1	AA	940	C	C2-N1-C1'	7.53	127.08	118.80
31	BA	704	G	C8-N9-C1'	-7.53	117.22	127.00
1	AA	103	C	N1-C2-O2	7.52	123.41	118.90
31	BA	1285	U	OP2-P-O3'	7.52	121.74	105.20
1	AA	383	U	N3-C2-O2	-7.51	116.94	122.20
1	AA	931	A	N7-C8-N9	7.51	117.55	113.80
31	BA	800	C	C2-N1-C1'	7.51	127.06	118.80
1	AA	1053	C	C6-N1-C2	-7.50	117.30	120.30
31	BA	938	U	N3-C2-O2	-7.49	116.95	122.20
31	BA	1749	C	N1-C2-O2	7.49	123.40	118.90
1	AA	888	C	C2-N1-C1'	7.49	127.04	118.80
1	AA	1372	G	N3-C4-N9	7.48	130.49	126.00
31	BA	207	C	N3-C2-O2	-7.47	116.67	121.90
31	BA	1945	C	C5-C6-N1	7.47	124.74	121.00
31	BA	1194	U	N1-C2-O2	7.46	128.02	122.80
32	BB	100	U	C2-N1-C1'	7.46	126.65	117.70
1	AA	260	U	N1-C2-O2	7.44	128.01	122.80
31	BA	2181	C	N3-C2-O2	-7.44	116.69	121.90
31	BA	2325	G	C2-N3-C4	7.44	115.62	111.90
31	BA	2360	C	C5-C6-N1	7.43	124.72	121.00
31	BA	192	U	N1-C2-O2	7.40	127.98	122.80
1	AA	551	U	N1-C2-O2	7.39	127.97	122.80
1	AA	1248	G	C4-N9-C1'	7.38	136.10	126.50
1	AA	1388	U	N1-C2-O2	7.38	127.97	122.80
1	AA	987	C	C5-C6-N1	7.37	124.69	121.00
31	BA	2671	C	N1-C2-O2	7.36	123.32	118.90
31	BA	2724	U	N1-C2-O2	7.36	127.95	122.80
31	BA	1946	C	N3-C4-C5	7.36	124.84	121.90
31	BA	2193	G	N3-C2-N2	7.35	125.05	119.90
31	BA	2258	C	N1-C2-O2	7.35	123.31	118.90
1	AA	1044	C	N1-C2-O2	7.34	123.30	118.90
31	BA	2258	C	N3-C2-O2	-7.33	116.77	121.90
31	BA	846	U	N3-C2-O2	-7.33	117.07	122.20
31	BA	1534	U	N1-C2-O2	7.33	127.93	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1377	G	C2-N3-C4	7.32	115.56	111.90
31	BA	1669	C	N3-C2-O2	-7.32	116.78	121.90
31	BA	1503	U	N1-C2-N3	7.31	119.29	114.90
31	BA	256	C	N1-C2-O2	7.30	123.28	118.90
31	BA	1087	C	C5-C6-N1	7.30	124.65	121.00
31	BA	597	C	N3-C2-O2	-7.28	116.80	121.90
1	AA	1279	U	C5-C6-N1	7.28	126.34	122.70
31	BA	1192	G	N3-C4-N9	7.28	130.37	126.00
31	BA	469	U	C2-N1-C1'	7.28	126.43	117.70
31	BA	378	A	C2-N3-C4	7.26	114.23	110.60
31	BA	2812	C	C6-N1-C2	-7.26	117.39	120.30
1	AA	210	G	C8-N9-C4	-7.26	103.50	106.40
31	BA	1948	U	N1-C2-O2	7.26	127.88	122.80
31	BA	1459	C	C5-C6-N1	7.26	124.63	121.00
31	BA	2569	A	C8-N9-C4	-7.26	102.90	105.80
1	AA	765	U	C6-N1-C1'	-7.26	111.04	121.20
1	AA	1248	G	C4-C5-N7	7.25	113.70	110.80
31	BA	2796	U	C5-C6-N1	7.25	126.32	122.70
31	BA	1832	C	N1-C2-O2	7.24	123.25	118.90
31	BA	2445	C	C6-N1-C2	-7.23	117.41	120.30
31	BA	2797	C	C6-N1-C2	-7.23	117.41	120.30
31	BA	938	U	N1-C2-O2	7.22	127.85	122.80
31	BA	2641	U	C5-C6-N1	7.20	126.30	122.70
31	BA	1285	U	P-O3'-C3'	7.20	128.34	119.70
31	BA	1997	U	N3-C2-O2	-7.20	117.16	122.20
1	AA	590	G	P-O3'-C3'	7.19	128.32	119.70
1	AA	1388	U	N3-C2-O2	-7.18	117.17	122.20
31	BA	2208	C	C5-C6-N1	7.18	124.59	121.00
31	BA	1741	U	O4'-C1'-N1	7.18	113.94	108.20
1	AA	110	C	N1-C2-O2	7.17	123.20	118.90
1	AA	859	C	N3-C2-O2	-7.17	116.88	121.90
31	BA	1231	U	N3-C2-O2	-7.16	117.19	122.20
1	AA	1336	A	C5-N7-C8	-7.16	100.32	103.90
1	AA	448	U	N3-C2-O2	-7.15	117.19	122.20
1	AA	1457	G	C4-C5-N7	7.15	113.66	110.80
31	BA	1317	U	N1-C2-O2	7.15	127.81	122.80
1	AA	1388	U	C2-N1-C1'	7.14	126.27	117.70
31	BA	2579	C	O5'-P-OP1	-7.14	99.28	105.70
1	AA	1286	A	C2-N3-C4	7.13	114.17	110.60
31	BA	2208	C	N1-C2-O2	7.13	123.18	118.90
32	BB	100	U	N3-C2-O2	-7.13	117.21	122.20
32	BB	68	C	C5-C6-N1	7.12	124.56	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	9	U	N3-C2-O2	-7.12	117.21	122.20
1	AA	876	C	N1-C2-O2	7.11	123.17	118.90
31	BA	1865	C	N3-C2-O2	-7.11	116.92	121.90
31	BA	1509	G	C8-N9-C1'	7.11	136.24	127.00
31	BA	9	U	N1-C2-N3	7.11	119.16	114.90
1	AA	968	U	N1-C2-O2	7.10	127.77	122.80
31	BA	1198	G	N9-C4-C5	-7.09	102.56	105.40
31	BA	2368	C	C6-N1-C2	-7.09	117.46	120.30
31	BA	2133	C	N1-C2-O2	7.09	123.15	118.90
1	AA	442	C	C2-N1-C1'	7.08	126.59	118.80
31	BA	2639	U	N3-C2-O2	-7.07	117.25	122.20
1	AA	928	U	C6-N1-C1'	-7.07	111.31	121.20
31	BA	1542	U	N1-C2-O2	7.07	127.75	122.80
1	AA	765	U	N3-C2-O2	-7.06	117.26	122.20
31	BA	1040	C	N1-C2-O2	7.06	123.13	118.90
31	BA	375	C	C2-N1-C1'	7.05	126.55	118.80
1	AA	572	A	C2-N3-C4	7.05	114.12	110.60
31	BA	792	U	N3-C2-O2	-7.04	117.27	122.20
31	BA	1536	U	N1-C2-O2	7.03	127.72	122.80
31	BA	2376	U	N3-C2-O2	-7.03	117.28	122.20
31	BA	1272	U	N3-C2-O2	-7.02	117.28	122.20
31	BA	12	U	N1-C2-O2	7.02	127.71	122.80
31	BA	1459	C	C6-N1-C2	-7.02	117.49	120.30
31	BA	1193	C	C6-N1-C2	-7.01	117.49	120.30
31	BA	2434	A	C2-N3-C4	7.01	114.11	110.60
1	AA	1018	C	C2-N1-C1'	7.00	126.50	118.80
31	BA	1536	U	C5-C6-N1	7.00	126.20	122.70
1	AA	1122	C	N1-C2-O2	7.00	123.10	118.90
31	BA	469	U	N1-C2-O2	7.00	127.70	122.80
1	AA	925	G	C5-C6-O6	6.99	132.80	128.60
31	BA	2312	G	C4-N9-C1'	6.99	135.59	126.50
31	BA	2445	C	C2-N1-C1'	6.99	126.48	118.80
31	BA	2660	U	N1-C2-O2	6.97	127.68	122.80
1	AA	612	U	C5-C6-N1	6.97	126.19	122.70
31	BA	669	C	C6-N1-C2	-6.97	117.51	120.30
31	BA	2194	G	C5-C6-O6	-6.97	124.42	128.60
31	BA	1750	C	N1-C2-O2	6.96	123.07	118.90
31	BA	1997	U	C6-N1-C1'	-6.95	111.47	121.20
1	AA	1040	G	N3-C4-C5	-6.95	125.13	128.60
31	BA	2156	C	N1-C2-O2	6.95	123.07	118.90
31	BA	2316	U	N3-C2-O2	-6.95	117.34	122.20
31	BA	869	U	N1-C2-O2	6.94	127.66	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	26	U	N1-C2-O2	6.94	127.66	122.80
31	BA	1017	C	N1-C2-O2	6.93	123.06	118.90
31	BA	62	C	C6-N1-C2	-6.93	117.53	120.30
1	AA	551	U	N3-C2-O2	-6.92	117.35	122.20
31	BA	556	G	C6-C5-N7	-6.92	126.25	130.40
1	AA	1310	C	N3-C2-O2	-6.92	117.06	121.90
31	BA	2047	C	N1-C2-O2	6.91	123.05	118.90
6	AF	54	ASP	CB-CG-OD1	6.91	124.52	118.30
31	BA	592	C	N3-C2-O2	-6.91	117.06	121.90
31	BA	2312	G	N3-C4-C5	-6.90	125.15	128.60
31	BA	519	C	C2-N1-C1'	6.89	126.38	118.80
31	BA	952	C	C2-N1-C1'	6.89	126.38	118.80
31	BA	2641	U	C2-N1-C1'	6.88	125.96	117.70
1	AA	590	G	OP2-P-O3'	6.88	120.33	105.20
31	BA	569	U	C5-C6-N1	6.88	126.14	122.70
31	BA	1891	U	N3-C2-O2	-6.88	117.39	122.20
31	BA	2706	G	N1-C6-O6	6.87	124.02	119.90
31	BA	2756	C	C6-N1-C2	-6.87	117.55	120.30
1	AA	1395	C	N1-C2-O2	6.86	123.02	118.90
1	AA	502	C	N1-C2-O2	6.86	123.02	118.90
31	BA	88	G	C4-N9-C1'	6.86	135.42	126.50
31	BA	471	C	N3-C2-O2	-6.86	117.10	121.90
32	BB	29	C	N3-C2-O2	-6.85	117.11	121.90
1	AA	1450	C	N1-C2-O2	6.84	123.00	118.90
31	BA	2389	C	C6-N1-C2	-6.84	117.56	120.30
23	B1	50	LEU	CA-CB-CG	6.83	131.02	115.30
31	BA	1492	G	N7-C8-N9	6.83	116.52	113.10
1	AA	109	A	C2-N3-C4	6.83	114.02	110.60
1	AA	105	G	C4-N9-C1'	-6.82	117.63	126.50
1	AA	1248	G	C8-N9-C1'	-6.81	118.14	127.00
31	BA	2154	U	C5-C4-O4	-6.81	121.82	125.90
1	AA	444	C	C6-N1-C1'	-6.80	112.63	120.80
31	BA	687	C	N3-C4-N4	6.80	122.76	118.00
31	BA	1343	C	C2-N1-C1'	6.80	126.29	118.80
1	AA	1001	G	N3-C4-N9	6.80	130.08	126.00
1	AA	72	U	N3-C2-O2	-6.79	117.44	122.20
31	BA	2682	U	C5-C6-N1	6.79	126.10	122.70
1	AA	1303	C	C5-C6-N1	6.79	124.39	121.00
1	AA	275	C	C2-N1-C1'	6.78	126.26	118.80
31	BA	1445	G	C8-N9-C1'	6.78	135.81	127.00
1	AA	314	A	C2-N3-C4	6.78	113.99	110.60
1	AA	1165	C	C2-N1-C1'	6.77	126.25	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1517	C	C2-N1-C1'	6.77	126.25	118.80
1	AA	22	U	N3-C2-O2	-6.77	117.46	122.20
31	BA	391	C	C6-N1-C1'	6.77	128.93	120.80
31	BA	2047	C	C2-N1-C1'	6.76	126.24	118.80
31	BA	1534	U	C6-N1-C2	-6.76	116.94	121.00
1	AA	1001	G	C4-N9-C1'	6.76	135.29	126.50
31	BA	2163	G	N3-C2-N2	6.75	124.62	119.90
31	BA	1897	C	N3-C2-O2	-6.75	117.18	121.90
31	BA	388	A	N1-C6-N6	6.74	122.65	118.60
31	BA	200	C	N1-C2-O2	6.74	122.94	118.90
31	BA	2569	A	N7-C8-N9	6.74	117.17	113.80
1	AA	1051	U	N1-C2-O2	6.74	127.52	122.80
31	BA	881	G	C4-N9-C1'	6.74	135.26	126.50
31	BA	1560	C	C5-C6-N1	6.73	124.37	121.00
31	BA	2218	C	N1-C2-O2	6.73	122.94	118.90
31	BA	2156	C	C5-C6-N1	6.73	124.36	121.00
31	BA	2389	C	N1-C2-O2	6.71	122.93	118.90
1	AA	1310	C	C6-N1-C2	-6.70	117.62	120.30
31	BA	2795	U	C2-N1-C1'	6.70	125.74	117.70
1	AA	435	C	C2-N1-C1'	-6.69	111.44	118.80
31	BA	2163	G	C4-N9-C1'	6.69	135.20	126.50
1	AA	613	G	C4-N9-C1'	6.69	135.19	126.50
31	BA	2843	A	N7-C8-N9	6.69	117.14	113.80
31	BA	393	U	N1-C2-O2	6.69	127.48	122.80
31	BA	453	U	C5-C6-N1	6.68	126.04	122.70
31	BA	1355	U	N1-C2-O2	6.68	127.48	122.80
31	BA	2310	U	OP1-P-O3'	6.68	119.89	105.20
31	BA	556	G	C4-C5-N7	6.67	113.47	110.80
32	BB	77	C	C5-C6-N1	6.66	124.33	121.00
1	AA	1457	G	N3-C4-N9	6.66	129.99	126.00
31	BA	2376	U	N1-C2-O2	6.66	127.46	122.80
31	BA	2795	U	N1-C2-O2	6.65	127.46	122.80
10	AJ	17	ILE	CG1-CB-CG2	-6.65	96.77	111.40
31	BA	1272	U	N1-C2-O2	6.65	127.46	122.80
31	BA	1342	U	C6-N1-C1'	-6.64	111.90	121.20
31	BA	1194	U	N3-C2-O2	-6.64	117.55	122.20
31	BA	1865	C	N1-C2-O2	6.64	122.88	118.90
31	BA	2795	U	N3-C2-O2	-6.64	117.55	122.20
31	BA	1832	C	C5-C6-N1	6.63	124.32	121.00
34	BE	185	LEU	CA-CB-CG	6.63	130.55	115.30
31	BA	949	C	N1-C2-O2	6.63	122.88	118.90
31	BA	2590	C	N3-C2-O2	-6.63	117.26	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	447	U	N1-C2-O2	6.63	127.44	122.80
31	BA	1342	U	N3-C2-O2	-6.62	117.56	122.20
31	BA	932	U	P-O3'-C3'	6.62	127.65	119.70
31	BA	899	G	N3-C4-N9	6.61	129.97	126.00
31	BA	402	C	C5-C6-N1	6.61	124.30	121.00
31	BA	1517	U	N1-C2-O2	6.60	127.42	122.80
31	BA	2893	C	N1-C2-O2	6.59	122.86	118.90
1	AA	210	G	N7-C8-N9	6.59	116.39	113.10
31	BA	759	U	N3-C2-O2	-6.59	117.59	122.20
31	BA	9	U	C2-N3-C4	-6.58	123.05	127.00
31	BA	1194	U	C5-C6-N1	6.58	125.99	122.70
1	AA	1372	G	C8-N9-C1'	-6.58	118.45	127.00
31	BA	2687	C	N1-C2-O2	6.58	122.85	118.90
1	AA	113	G	C8-N9-C1'	-6.58	118.45	127.00
31	BA	197	C	N1-C2-O2	6.57	122.84	118.90
31	BA	1192	G	N3-C4-C5	-6.57	125.31	128.60
1	AA	899	U	N1-C2-O2	6.57	127.40	122.80
31	BA	2408	C	C6-N1-C2	-6.57	117.67	120.30
31	BA	1343	C	C6-N1-C2	-6.57	117.67	120.30
31	BA	1109	G	N3-C4-N9	-6.56	122.06	126.00
1	AA	899	U	C2-N1-C1'	6.56	125.57	117.70
31	BA	1509	G	N3-C4-N9	-6.56	122.06	126.00
1	AA	241	C	N3-C2-O2	-6.56	117.31	121.90
31	BA	256	C	N3-C2-O2	-6.55	117.31	121.90
31	BA	2117	C	C6-N1-C2	-6.55	117.68	120.30
31	BA	88	G	C8-N9-C1'	-6.54	118.50	127.00
1	AA	105	G	N3-C4-N9	-6.54	122.08	126.00
1	AA	728	C	C2-N1-C1'	6.54	125.99	118.80
1	AA	1001	G	C8-N9-C1'	-6.54	118.50	127.00
31	BA	2242	G	N3-C4-N9	6.54	129.92	126.00
31	BA	2670	C	N3-C2-O2	-6.54	117.33	121.90
31	BA	282	U	N3-C2-O2	-6.53	117.63	122.20
31	BA	758	C	C6-N1-C2	-6.52	117.69	120.30
1	AA	1051	U	N3-C2-O2	-6.52	117.64	122.20
1	AA	1040	G	N3-C4-N9	6.52	129.91	126.00
1	AA	1395	C	C2-N1-C1'	6.51	125.96	118.80
1	AA	306	A	N1-C6-N6	-6.51	114.69	118.60
50	BZ	49	ARG	NE-CZ-NH1	6.51	123.56	120.30
1	AA	992	C	O5'-P-OP1	6.51	118.51	110.70
31	BA	1688	U	C2-N1-C1'	6.51	125.51	117.70
1	AA	1335	C	N1-C2-O2	6.50	122.80	118.90
31	BA	2346	C	C5-C6-N1	6.50	124.25	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1270	A	N7-C8-N9	6.49	117.04	113.80
31	BA	1109	G	C8-N9-C1'	6.49	135.43	127.00
31	BA	471	C	C2-N1-C1'	6.48	125.93	118.80
31	BA	1445	G	N3-C2-N2	-6.48	115.36	119.90
31	BA	1139	C	N3-C2-O2	-6.47	117.37	121.90
1	AA	1252	G	C4-N9-C1'	-6.47	118.08	126.50
31	BA	2893	C	N3-C2-O2	-6.47	117.37	121.90
31	BA	1109	G	C4-N9-C1'	-6.47	118.09	126.50
1	AA	987	C	C6-N1-C2	-6.47	117.71	120.30
1	AA	1457	G	C5-C6-N1	6.46	114.73	111.50
31	BA	1137	C	N1-C2-O2	6.46	122.78	118.90
1	AA	260	U	C5-C6-N1	6.46	125.93	122.70
1	AA	1136	C	C2-N1-C1'	6.45	125.90	118.80
1	AA	446	G	C8-N9-C1'	6.44	135.38	127.00
31	BA	966	C	N3-C2-O2	-6.44	117.39	121.90
31	BA	1669	C	C6-N1-C2	-6.44	117.72	120.30
31	BA	2029	C	C5-C6-N1	6.44	124.22	121.00
31	BA	2325	G	N3-C4-C5	-6.44	125.38	128.60
31	BA	2445	C	N3-C2-O2	-6.43	117.39	121.90
1	AA	110	C	N3-C2-O2	-6.43	117.40	121.90
1	AA	651	C	C5-C6-N1	6.43	124.22	121.00
1	AA	1135	G	C5-C6-O6	-6.43	124.74	128.60
31	BA	97	C	N3-C2-O2	-6.43	117.40	121.90
31	BA	2166	G	N3-C4-N9	6.42	129.85	126.00
1	AA	113	G	C4-N9-C1'	6.42	134.85	126.50
31	BA	2812	C	C2-N1-C1'	6.42	125.86	118.80
31	BA	2243	A	N1-C2-N3	-6.41	126.09	129.30
31	BA	1935	U	N1-C2-O2	6.41	127.28	122.80
1	AA	241	C	C6-N1-C2	-6.40	117.74	120.30
31	BA	759	U	N1-C2-O2	6.40	127.28	122.80
31	BA	2445	C	N1-C2-O2	6.40	122.74	118.90
31	BA	1138	A	C2-N3-C4	6.39	113.80	110.60
31	BA	707	C	N1-C2-O2	6.39	122.74	118.90
1	AA	113	G	N3-C4-N9	6.39	129.84	126.00
1	AA	275	C	N3-C4-N4	6.39	122.47	118.00
31	BA	1281	A	P-O3'-C3'	6.39	127.36	119.70
31	BA	1534	U	N3-C2-O2	-6.38	117.73	122.20
31	BA	1924	C	N3-C2-O2	-6.38	117.43	121.90
31	BA	2628	G	N3-C4-N9	6.38	129.83	126.00
1	AA	282	A	C8-N9-C4	6.38	108.35	105.80
31	BA	182	C	N3-C2-O2	-6.38	117.43	121.90
31	BA	1484	U	N3-C2-O2	-6.38	117.73	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	1498	A	N1-C6-N6	6.38	122.43	118.60
1	AA	813	C	C2-N1-C1'	6.37	125.81	118.80
1	AA	931	A	C6-C5-N7	-6.36	127.84	132.30
1	AA	963	U	N3-C2-O2	-6.36	117.75	122.20
31	BA	881	G	C2-N3-C4	6.36	115.08	111.90
31	BA	1492	G	C4-N9-C1'	6.36	134.76	126.50
1	AA	1044	C	C5-C6-N1	6.35	124.18	121.00
1	AA	992	C	OP1-P-OP2	-6.35	110.07	119.60
31	BA	282	U	N1-C2-O2	6.35	127.25	122.80
31	BA	62	C	C5-C6-N1	6.35	124.18	121.00
31	BA	880	U	N1-C2-O2	6.34	127.24	122.80
1	AA	260	U	N3-C2-O2	-6.34	117.76	122.20
1	AA	275	C	C5-C6-N1	6.34	124.17	121.00
31	BA	2389	C	C5-C6-N1	6.34	124.17	121.00
31	BA	2428	C	C5-C4-N4	-6.33	115.77	120.20
1	AA	876	C	N3-C2-O2	-6.33	117.47	121.90
31	BA	1441	G	N3-C4-C5	-6.32	125.44	128.60
1	AA	752	C	N1-C2-O2	6.32	122.69	118.90
31	BA	1355	U	N3-C2-O2	-6.32	117.78	122.20
1	AA	924	G	N3-C4-N9	6.31	129.79	126.00
1	AA	145	G	C4-N9-C1'	6.31	134.70	126.50
31	BA	383	C	N1-C2-O2	6.31	122.69	118.90
31	BA	2163	G	C8-N9-C1'	-6.31	118.80	127.00
31	BA	2029	C	C2-N1-C1'	6.31	125.74	118.80
31	BA	2153	U	C2-N3-C4	-6.30	123.22	127.00
1	AA	1457	G	N9-C4-C5	-6.29	102.88	105.40
31	BA	2360	C	C6-N1-C2	-6.29	117.78	120.30
31	BA	2770	G	N3-C2-N2	-6.29	115.50	119.90
1	AA	25	C	C6-N1-C2	-6.29	117.78	120.30
31	BA	722	C	N1-C2-O2	6.28	122.67	118.90
31	BA	869	U	N3-C2-O2	-6.28	117.80	122.20
1	AA	225	A	N7-C8-N9	6.28	116.94	113.80
31	BA	1445	G	C6-C5-N7	6.28	134.17	130.40
31	BA	679	U	N3-C2-O2	-6.28	117.81	122.20
31	BA	1193	C	N1-C2-O2	6.27	122.66	118.90
1	AA	275	C	C6-N1-C2	-6.27	117.79	120.30
31	BA	542	A	C2-N3-C4	6.26	113.73	110.60
1	AA	1248	G	N1-C6-O6	6.26	123.66	119.90
1	AA	859	C	C6-N1-C1'	6.26	128.31	120.80
31	BA	2169	G	N7-C8-N9	6.26	116.23	113.10
31	BA	2778	C	N1-C2-O2	6.25	122.65	118.90
31	BA	1749	C	C2-N1-C1'	6.25	125.68	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1248	G	N3-C4-N9	6.24	129.74	126.00
31	BA	2613	U	C6-N1-C2	-6.24	117.25	121.00
31	BA	679	U	C2-N1-C1'	6.24	125.19	117.70
31	BA	1624	C	C6-N1-C2	-6.24	117.80	120.30
31	BA	379	A	O4'-C1'-N9	-6.24	103.21	108.20
31	BA	1474	U	N1-C2-O2	6.24	127.16	122.80
1	AA	26	U	N3-C2-O2	-6.23	117.84	122.20
1	AA	899	U	N3-C2-O2	-6.23	117.84	122.20
31	BA	707	C	C2-N1-C1'	6.23	125.65	118.80
1	AA	1331	C	C2-N1-C1'	6.22	125.65	118.80
31	BA	616	C	C5-C6-N1	6.22	124.11	121.00
31	BA	846	U	N1-C2-O2	6.22	127.15	122.80
31	BA	224	U	N1-C2-O2	6.21	127.15	122.80
31	BA	113	U	N1-C2-O2	6.21	127.15	122.80
31	BA	608	U	N3-C2-O2	-6.21	117.85	122.20
31	BA	1486	G	C2-N3-C4	6.21	115.00	111.90
31	BA	2230	C	C2-N1-C1'	6.21	125.63	118.80
1	AA	1117	C	N3-C2-O2	-6.21	117.56	121.90
31	BA	2117	C	C5-C6-N1	6.21	124.10	121.00
31	BA	88	G	N3-C4-N9	6.20	129.72	126.00
31	BA	1948	U	N3-C2-O2	-6.20	117.86	122.20
31	BA	2477	U	C2-N1-C1'	6.20	125.14	117.70
31	BA	2651	U	N1-C2-O2	6.19	127.14	122.80
31	BA	2735	G	N1-C2-N2	-6.19	110.63	116.20
1	AA	398	C	N1-C2-O2	6.19	122.62	118.90
31	BA	1034	U	N1-C2-O2	6.19	127.14	122.80
1	AA	446	G	N9-C4-C5	6.18	107.87	105.40
1	AA	1024	G	C8-N9-C4	-6.18	103.93	106.40
1	AA	728	C	N1-C2-O2	6.18	122.61	118.90
31	BA	2786	G	C4-N9-C1'	6.18	134.53	126.50
1	AA	446	G	N3-C2-N2	-6.17	115.58	119.90
1	AA	1129	U	C5-C6-N1	6.17	125.79	122.70
1	AA	1248	G	N9-C4-C5	-6.17	102.93	105.40
1	AA	1390	C	N1-C2-O2	6.17	122.60	118.90
31	BA	1486	G	O4'-C1'-N9	6.17	113.14	108.20
1	AA	558	C	C5-C6-N1	6.17	124.08	121.00
1	AA	485	C	C5-C6-N1	6.16	124.08	121.00
31	BA	1924	C	C2-N1-C1'	6.16	125.58	118.80
1	AA	291	U	C2-N1-C1'	6.16	125.09	117.70
31	BA	1539	C	C6-N1-C2	-6.16	117.84	120.30
1	AA	1336	A	N7-C8-N9	6.15	116.88	113.80
31	BA	872	C	N1-C2-O2	6.15	122.59	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
32	BB	28	C	C6-N1-C2	-6.15	117.84	120.30
31	BA	138	C	C6-N1-C2	-6.15	117.84	120.30
31	BA	679	U	N1-C2-O2	6.15	127.11	122.80
31	BA	1869	G	C8-N9-C4	-6.15	103.94	106.40
31	BA	2165	C	N1-C2-O2	6.15	122.59	118.90
31	BA	308	C	N1-C2-O2	6.14	122.59	118.90
1	AA	925	G	N3-C4-N9	-6.14	122.31	126.00
31	BA	544	C	C5-C6-N1	6.14	124.07	121.00
31	BA	1536	U	C6-N1-C1'	-6.14	112.61	121.20
1	AA	1270	A	C5-N7-C8	-6.13	100.83	103.90
1	AA	448	U	N1-C2-O2	6.13	127.09	122.80
31	BA	1669	C	C2-N1-C1'	6.13	125.54	118.80
31	BA	2208	C	C2-N1-C1'	6.12	125.53	118.80
31	BA	1591	C	N1-C2-O2	6.12	122.57	118.90
1	AA	1054	A	N7-C8-N9	6.12	116.86	113.80
31	BA	1282	G	O4'-C1'-N9	-6.11	103.31	108.20
1	AA	446	G	N3-C4-C5	6.11	131.66	128.60
1	AA	1104	C	C2-N1-C1'	-6.11	112.08	118.80
31	BA	2349	G	O5'-P-OP2	-6.11	100.20	105.70
31	BA	2003	C	N3-C2-O2	-6.10	117.63	121.90
1	AA	125	U	N1-C2-O2	6.10	127.07	122.80
1	AA	447	U	C5-C6-N1	6.10	125.75	122.70
31	BA	800	C	C6-N1-C1'	-6.10	113.48	120.80
1	AA	951	U	C5-C6-N1	6.10	125.75	122.70
31	BA	2090	U	N3-C2-O2	-6.09	117.94	122.20
1	AA	1202	C	N1-C2-O2	6.09	122.55	118.90
1	AA	40	G	N3-C4-N9	6.08	129.65	126.00
31	BA	86	C	C5-C6-N1	6.08	124.04	121.00
1	AA	1122	C	C6-N1-C1'	-6.08	113.51	120.80
31	BA	2185	U	C5-C6-N1	6.08	125.74	122.70
31	BA	2660	U	N3-C2-O2	-6.08	117.95	122.20
31	BA	1109	G	C6-C5-N7	6.07	134.04	130.40
1	AA	751	C	C2-N1-C1'	6.07	125.48	118.80
31	BA	586	U	C2-N1-C1'	6.07	124.98	117.70
31	BA	1749	C	N3-C2-O2	-6.06	117.66	121.90
31	BA	597	C	C6-N1-C1'	-6.05	113.54	120.80
1	AA	481	U	C2-N1-C1'	6.05	124.96	117.70
31	BA	658	C	C2-N1-C1'	6.05	125.45	118.80
31	BA	1620	A	O4'-C1'-N9	6.05	113.04	108.20
1	AA	1331	C	N1-C2-O2	6.05	122.53	118.90
1	AA	435	C	C6-N1-C1'	6.04	128.05	120.80
1	AA	751	C	N3-C2-O2	-6.04	117.67	121.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1012	G	C8-N9-C1'	-6.04	119.15	127.00
1	AA	1232	A	N3-C4-N9	6.03	132.22	127.40
31	BA	2263	G	N3-C4-N9	6.03	129.62	126.00
31	BA	452	C	C5-C6-N1	6.03	124.01	121.00
32	BB	11	A	N1-C6-N6	6.03	122.22	118.60
1	AA	613	G	C8-N9-C1'	-6.02	119.17	127.00
31	BA	1529	U	C2-N1-C1'	6.02	124.93	117.70
31	BA	282	U	C2-N1-C1'	6.02	124.92	117.70
1	AA	225	A	OP1-P-O3'	6.01	118.43	105.20
31	BA	1136	U	N1-C2-O2	6.01	127.01	122.80
31	BA	2078	U	N3-C2-O2	-6.01	117.99	122.20
31	BA	18	C	N1-C2-O2	6.01	122.51	118.90
31	BA	1945	C	N1-C2-O2	6.00	122.50	118.90
31	BA	1754	C	C2-N1-C1'	6.00	125.40	118.80
31	BA	544	C	C6-N1-C2	-6.00	117.90	120.30
31	BA	2194	G	C4-C5-N7	6.00	113.20	110.80
31	BA	2650	C	C6-N1-C2	-5.99	117.90	120.30
31	BA	1695	G	N1-C6-O6	-5.99	116.31	119.90
1	AA	890	C	C2-N1-C1'	5.98	125.38	118.80
1	AA	985	A	C2-N3-C4	5.98	113.59	110.60
31	BA	2151	A	C8-N9-C4	-5.98	103.41	105.80
31	BA	2131	G	N3-C4-N9	5.98	129.59	126.00
31	BA	2176	U	OP1-P-O3'	5.98	118.35	105.20
1	AA	1182	G	C6-C5-N7	-5.98	126.81	130.40
1	AA	1303	C	C6-N1-C2	-5.97	117.91	120.30
1	AA	1456	C	C2-N1-C1'	5.97	125.37	118.80
1	AA	103	C	N3-C2-O2	-5.96	117.72	121.90
1	AA	1311	G	C6-C5-N7	-5.96	126.82	130.40
1	AA	505	G	N3-C4-C5	-5.96	125.62	128.60
1	AA	1018	C	N1-C2-O2	5.96	122.48	118.90
31	BA	2047	C	N3-C2-O2	-5.96	117.73	121.90
31	BA	2397	U	N3-C2-O2	-5.96	118.03	122.20
1	AA	446	G	C4-N9-C1'	-5.95	118.76	126.50
31	BA	970	U	N3-C2-O2	-5.95	118.03	122.20
31	BA	1484	U	N1-C2-O2	5.95	126.96	122.80
31	BA	1696	G	C8-N9-C4	-5.95	104.02	106.40
31	BA	2597	U	N3-C2-O2	-5.95	118.04	122.20
31	BA	2193	G	N1-C2-N2	-5.94	110.85	116.20
31	BA	1498	A	C5-C6-N6	-5.94	118.95	123.70
31	BA	2708	C	C2-N3-C4	5.94	122.87	119.90
1	AA	931	A	C5-N7-C8	-5.93	100.93	103.90
31	BA	191	C	N1-C2-O2	5.93	122.46	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	1640	C	C2-N1-C1'	5.93	125.32	118.80
31	BA	1946	C	C6-N1-C2	5.93	122.67	120.30
1	AA	1179	C	N1-C2-O2	5.93	122.46	118.90
31	BA	1356	C	N1-C2-O2	5.93	122.46	118.90
31	BA	2301	C	N1-C2-O2	5.93	122.45	118.90
1	AA	145	G	C8-N9-C1'	-5.92	119.30	127.00
1	AA	762	C	C2-N1-C1'	5.92	125.32	118.80
1	AA	314	A	N3-C4-N9	5.91	132.13	127.40
31	BA	89	U	N3-C2-O2	-5.91	118.06	122.20
31	BA	1343	C	C5-C6-N1	5.91	123.96	121.00
31	BA	1529	U	C5-C6-N1	5.91	125.66	122.70
13	AM	69	LEU	CA-CB-CG	5.91	128.89	115.30
1	AA	931	A	C4-N9-C1'	5.91	136.93	126.30
31	BA	378	A	C5-C6-N1	5.91	120.65	117.70
1	AA	1336	A	C4-C5-N7	5.90	113.65	110.70
31	BA	968	U	N3-C2-O2	-5.90	118.07	122.20
1	AA	1018	C	C5-C6-N1	5.90	123.95	121.00
31	BA	113	U	C5-C6-N1	5.89	125.65	122.70
31	BA	120	G	N9-C4-C5	-5.89	103.04	105.40
1	AA	1117	C	N1-C2-O2	5.89	122.44	118.90
31	BA	224	U	N3-C2-O2	-5.89	118.08	122.20
1	AA	1351	C	N3-C2-O2	-5.89	117.78	121.90
31	BA	983	C	N3-C2-O2	-5.88	117.78	121.90
31	BA	1561	A	N9-C4-C5	-5.88	103.45	105.80
31	BA	2809	G	C8-N9-C1'	-5.88	119.35	127.00
31	BA	510	U	N3-C2-O2	-5.88	118.08	122.20
31	BA	2346	C	N1-C2-O2	5.88	122.43	118.90
1	AA	1395	C	C6-N1-C2	-5.88	117.95	120.30
31	BA	1392	C	N1-C2-O2	5.88	122.43	118.90
1	AA	598	U	N3-C2-O2	-5.88	118.09	122.20
1	AA	1010	G	N3-C4-N9	5.88	129.53	126.00
31	BA	1198	G	C8-N9-C1'	-5.88	119.36	127.00
31	BA	1945	C	O5'-P-OP1	-5.88	100.41	105.70
1	AA	105	G	C8-N9-C1'	5.87	134.63	127.00
39	BN	19	LEU	CA-CB-CG	5.87	128.81	115.30
1	AA	444	C	C5-C4-N4	-5.87	116.09	120.20
1	AA	1183	A	C8-N9-C4	-5.87	103.45	105.80
31	BA	2085	U	N3-C2-O2	-5.87	118.09	122.20
1	AA	1078	U	N1-C2-O2	5.87	126.91	122.80
31	BA	1976	G	O5'-P-OP1	5.86	117.74	110.70
31	BA	2126	U	N1-C2-O2	5.86	126.90	122.80
31	BA	2317	C	C2-N1-C1'	5.86	125.25	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
32	BB	79	U	C2-N1-C1'	5.86	124.73	117.70
1	AA	37	G	N9-C4-C5	-5.86	103.06	105.40
1	AA	1256	C	C6-N1-C2	-5.86	117.95	120.30
1	AA	1280	U	O5'-P-OP1	5.86	117.73	110.70
31	BA	391	C	C2-N1-C1'	-5.85	112.36	118.80
31	BA	2786	G	C8-N9-C1'	-5.85	119.39	127.00
31	BA	725	U	N3-C2-O2	-5.85	118.11	122.20
31	BA	904	C	N3-C2-O2	-5.85	117.81	121.90
31	BA	1445	G	N3-C4-C5	5.85	131.52	128.60
31	BA	1924	C	C6-N1-C2	-5.85	117.96	120.30
1	AA	1202	C	N3-C2-O2	-5.84	117.81	121.90
31	BA	2797	C	N1-C2-O2	5.84	122.41	118.90
31	BA	2181	C	C5-C6-N1	5.84	123.92	121.00
1	AA	502	C	C5-C6-N1	5.84	123.92	121.00
31	BA	869	U	C5-C6-N1	5.84	125.62	122.70
31	BA	1198	G	C6-C5-N7	-5.84	126.90	130.40
31	BA	1207	U	N3-C2-O2	-5.84	118.11	122.20
1	AA	27	C	C5-C6-N1	5.84	123.92	121.00
32	BB	69	U	N3-C2-O2	-5.83	118.11	122.20
1	AA	447	U	C6-N1-C1'	-5.83	113.03	121.20
31	BA	1897	C	C2-N1-C1'	5.83	125.22	118.80
31	BA	2706	G	N3-C4-N9	5.83	129.50	126.00
31	BA	1327	C	C6-N1-C2	-5.83	117.97	120.30
1	AA	1225	C	C6-N1-C2	-5.83	117.97	120.30
36	BG	90	VAL	C-N-CA	5.82	136.26	121.70
31	BA	2770	G	N1-C2-N2	5.82	121.44	116.20
32	BB	29	C	N1-C2-O2	5.82	122.39	118.90
1	AA	1316	G	C4-C5-N7	5.82	113.13	110.80
31	BA	2242	G	C4-N9-C1'	5.82	134.06	126.50
1	AA	613	G	N3-C4-N9	5.81	129.49	126.00
31	BA	1193	C	C2-N1-C1'	5.81	125.19	118.80
31	BA	2778	C	N3-C2-O2	-5.81	117.84	121.90
31	BA	1960	U	C5-C6-N1	5.80	125.60	122.70
31	BA	519	C	C6-N1-C2	-5.80	117.98	120.30
31	BA	804	U	N3-C2-O2	-5.80	118.14	122.20
31	BA	1491	U	C4-C5-C6	5.80	123.18	119.70
31	BA	1495	C	C2-N1-C1'	-5.80	112.42	118.80
1	AA	1012	G	C4-N9-C1'	5.80	134.04	126.50
1	AA	1136	C	C6-N1-C2	-5.80	117.98	120.30
31	BA	1392	C	C6-N1-C2	-5.80	117.98	120.30
31	BA	2749	C	C6-N1-C2	-5.80	117.98	120.30
1	AA	224	C	C5-C6-N1	5.80	123.90	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	1442	A	C2-N3-C4	5.80	113.50	110.60
31	BA	2636	U	N3-C2-O2	-5.80	118.14	122.20
31	BA	2756	C	N3-C2-O2	-5.80	117.84	121.90
31	BA	893	G	N3-C4-N9	5.79	129.47	126.00
1	AA	37	G	N3-C4-N9	5.79	129.47	126.00
1	AA	1481	A	C8-N9-C4	-5.79	103.49	105.80
31	BA	2516	C	C6-N1-C2	-5.79	117.99	120.30
31	BA	2028	C	C6-N1-C2	-5.77	117.99	120.30
31	BA	469	U	N3-C2-O2	-5.77	118.16	122.20
31	BA	937	A	N7-C8-N9	5.77	116.69	113.80
31	BA	2879	U	C2-N1-C1'	5.77	124.62	117.70
31	BA	113	U	C2-N1-C1'	5.77	124.62	117.70
31	BA	1314	G	C8-N9-C4	-5.77	104.09	106.40
31	BA	191	C	N3-C2-O2	-5.76	117.87	121.90
31	BA	1871	C	C5-C6-N1	5.76	123.88	121.00
1	AA	1261	A	N7-C8-N9	5.76	116.68	113.80
31	BA	1078	C	C5-C6-N1	5.76	123.88	121.00
1	AA	1150	G	N3-C4-N9	5.76	129.45	126.00
35	BF	153	LEU	CA-CB-CG	5.76	128.54	115.30
43	BR	40	ILE	CG1-CB-CG2	-5.76	98.73	111.40
1	AA	1536	G	N3-C4-N9	5.75	129.45	126.00
31	BA	1560	C	C6-N1-C2	-5.75	118.00	120.30
1	AA	901	C	N1-C2-O2	5.74	122.35	118.90
1	AA	931	A	C4-C5-N7	5.74	113.57	110.70
1	AA	1334	A	C2-N3-C4	5.74	113.47	110.60
31	BA	1492	G	C8-N9-C4	-5.74	104.11	106.40
31	BA	1767	C	N1-C2-O2	5.74	122.34	118.90
31	BA	1700	U	C5-C6-N1	5.73	125.57	122.70
31	BA	157	G	O4'-C1'-N9	5.73	112.78	108.20
31	BA	620	U	N3-C2-O2	-5.73	118.19	122.20
31	BA	2156	C	C6-N1-C2	-5.73	118.01	120.30
32	BB	35	C	N3-C2-O2	-5.73	117.89	121.90
1	AA	17	G	N3-C4-N9	5.73	129.44	126.00
31	BA	2214	U	N1-C2-O2	5.73	126.81	122.80
31	BA	2879	U	N1-C2-O2	5.73	126.81	122.80
31	BA	2312	G	N3-C4-N9	5.72	129.44	126.00
31	BA	8	U	N3-C2-O2	-5.72	118.19	122.20
31	BA	494	U	N1-C2-O2	5.72	126.81	122.80
31	BA	2671	C	N3-C2-O2	-5.72	117.89	121.90
31	BA	2812	C	C5-C6-N1	5.72	123.86	121.00
1	AA	405	A	N9-C4-C5	-5.71	103.52	105.80
33	BD	119	GLY	C-N-CD	-5.71	108.04	120.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	326	A	C2-N3-C4	5.71	113.45	110.60
31	BA	543	C	C5-C6-N1	5.71	123.85	121.00
31	BA	1529	U	N1-C2-O2	5.71	126.80	122.80
31	BA	2651	U	N3-C2-O2	-5.71	118.20	122.20
31	BA	2720	U	N3-C2-O2	-5.71	118.20	122.20
1	AA	1044	C	N3-C2-O2	-5.71	117.91	121.90
46	BU	86	ARG	N-CA-C	5.70	126.40	111.00
1	AA	224	C	C6-N1-C2	-5.70	118.02	120.30
31	BA	1087	C	N3-C2-O2	-5.70	117.91	121.90
31	BA	842	U	N3-C2-O2	-5.70	118.21	122.20
1	AA	944	C	C5-C6-N1	5.70	123.85	121.00
31	BA	935	C	C6-N1-C2	-5.70	118.02	120.30
31	BA	759	U	C2-N1-C1'	5.70	124.53	117.70
31	BA	825	A	O4'-C1'-N9	5.70	112.76	108.20
31	BA	2218	C	N3-C2-O2	-5.69	117.92	121.90
31	BA	1017	C	N3-C2-O2	-5.69	117.92	121.90
31	BA	598	U	C5-C6-N1	5.69	125.55	122.70
1	AA	179	C	N3-C2-O2	-5.68	117.92	121.90
31	BA	544	C	N3-C2-O2	-5.68	117.92	121.90
31	BA	598	U	C2-N1-C1'	5.68	124.51	117.70
31	BA	2595	C	C6-N1-C2	-5.68	118.03	120.30
1	AA	1012	G	N3-C4-N9	5.68	129.41	126.00
1	AA	1473	C	N3-C2-O2	-5.68	117.93	121.90
31	BA	2432	G	N3-C4-C5	-5.68	125.76	128.60
31	BA	242	U	N1-C2-O2	5.68	126.77	122.80
1	AA	1257	A	O4'-C1'-N9	5.67	112.74	108.20
31	BA	2882	U	N1-C2-O2	5.67	126.77	122.80
31	BA	2360	C	N1-C2-O2	5.67	122.30	118.90
1	AA	1257	A	N9-C4-C5	5.67	108.07	105.80
31	BA	2146	A	C5-C6-N1	5.67	120.53	117.70
31	BA	389	U	C5-C6-N1	5.66	125.53	122.70
31	BA	983	C	N1-C2-O2	5.66	122.30	118.90
1	AA	534	C	C5-C6-N1	5.66	123.83	121.00
1	AA	1395	C	C5-C6-N1	5.66	123.83	121.00
31	BA	1317	U	C6-N1-C2	-5.66	117.61	121.00
31	BA	2154	U	N3-C4-O4	5.66	123.36	119.40
1	AA	150	A	P-O3'-C3'	5.65	126.48	119.70
31	BA	782	U	N1-C2-O2	5.65	126.76	122.80
31	BA	2616	C	N3-C2-O2	-5.65	117.94	121.90
31	BA	2191	A	N1-C6-N6	-5.65	115.21	118.60
31	BA	310	U	C5-C6-N1	5.65	125.52	122.70
31	BA	1740	G	C4-N9-C1'	5.64	133.84	126.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	1534	U	O4'-C1'-N1	5.64	112.71	108.20
31	BA	1596	A	C8-N9-C4	5.64	108.06	105.80
1	AA	1184	G	C4-C5-N7	5.64	113.06	110.80
31	BA	2163	G	N7-C8-N9	5.64	115.92	113.10
31	BA	1121	A	C2-N3-C4	5.64	113.42	110.60
31	BA	2271	A	C8-N9-C4	-5.64	103.55	105.80
1	AA	1536	G	C4-N9-C1'	5.63	133.82	126.50
31	BA	391	C	N1-C2-N3	5.63	123.14	119.20
31	BA	2613	U	C2-N1-C1'	5.63	124.46	117.70
31	BA	383	C	C5-C6-N1	5.63	123.82	121.00
31	BA	1869	G	N7-C8-N9	5.63	115.92	113.10
31	BA	2897	A	N7-C8-N9	5.63	116.62	113.80
1	AA	332	G	C8-N9-C4	-5.63	104.15	106.40
31	BA	1498	A	N9-C4-C5	-5.62	103.55	105.80
31	BA	2104	U	N3-C2-O2	-5.62	118.26	122.20
1	AA	1051	U	C2-N1-C1'	5.62	124.45	117.70
31	BA	1467	U	C5-C6-N1	5.62	125.51	122.70
31	BA	686	A	C4-N9-C1'	5.62	136.41	126.30
31	BA	1356	C	N3-C2-O2	-5.62	117.97	121.90
31	BA	2146	A	C5-C6-N6	-5.62	119.20	123.70
31	BA	2372	C	C6-N1-C2	-5.62	118.05	120.30
31	BA	1034	U	N3-C2-O2	-5.62	118.27	122.20
1	AA	137	C	C6-N1-C2	-5.61	118.06	120.30
1	AA	969	U	N1-C2-O2	5.61	126.73	122.80
31	BA	2090	U	N1-C2-O2	5.61	126.73	122.80
31	BA	2277	A	C4-N9-C1'	5.61	136.39	126.30
1	AA	620	G	C4-N9-C1'	5.60	133.78	126.50
1	AA	1286	A	N3-C4-N9	5.60	131.88	127.40
1	AA	1078	U	N3-C2-O2	-5.60	118.28	122.20
31	BA	1668	U	C5-C6-N1	5.60	125.50	122.70
31	BA	2418	G	C4-N9-C1'	-5.60	119.22	126.50
1	AA	1335	C	C6-N1-C1'	-5.59	114.09	120.80
1	AA	1335	C	C6-N1-C2	-5.59	118.06	120.30
31	BA	2777	U	N1-C2-O2	5.59	126.72	122.80
31	BA	568	U	C4-C5-C6	-5.59	116.34	119.70
31	BA	2312	G	C8-N9-C1'	-5.59	119.73	127.00
1	AA	1252	G	C8-N9-C1'	5.59	134.26	127.00
31	BA	378	A	N3-C4-N9	5.59	131.87	127.40
31	BA	510	U	N1-C2-O2	5.59	126.71	122.80
31	BA	679	U	C5-C6-N1	5.59	125.49	122.70
31	BA	1109	G	N1-C6-O6	-5.59	116.55	119.90
31	BA	2317	C	N1-C2-O2	5.59	122.25	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	651	C	C6-N1-C2	-5.58	118.07	120.30
31	BA	425	A	C4-N9-C1'	5.58	136.35	126.30
31	BA	2103	C	C2-N3-C4	5.58	122.69	119.90
1	AA	1248	G	N7-C8-N9	5.58	115.89	113.10
1	AA	688	C	C6-N1-C2	-5.58	118.07	120.30
31	BA	375	C	N1-C2-O2	5.58	122.25	118.90
1	AA	1473	C	N1-C2-O2	5.57	122.24	118.90
31	BA	2078	U	N1-C2-O2	5.57	126.70	122.80
31	BA	611	A	C8-N9-C4	5.57	108.03	105.80
31	BA	12	U	N3-C2-O2	-5.57	118.30	122.20
21	AU	5	LEU	CA-CB-CG	5.57	128.10	115.30
1	AA	764	C	N3-C2-O2	-5.57	118.00	121.90
31	BA	793	U	N3-C2-O2	-5.56	118.31	122.20
1	AA	1311	G	N7-C8-N9	5.56	115.88	113.10
31	BA	2567	U	C6-N1-C2	-5.56	117.66	121.00
1	AA	125	U	N3-C2-O2	-5.56	118.31	122.20
31	BA	2085	U	N1-C2-O2	5.56	126.69	122.80
31	BA	611	A	N9-C4-C5	-5.56	103.58	105.80
31	BA	1796	U	N3-C2-O2	-5.55	118.31	122.20
1	AA	969	U	N3-C2-O2	-5.55	118.31	122.20
31	BA	1539	C	C5-C6-N1	5.55	123.77	121.00
31	BA	1750	C	C5-C6-N1	5.55	123.78	121.00
1	AA	194	C	C2-N1-C1'	5.55	124.90	118.80
31	BA	200	C	C6-N1-C1'	-5.54	114.15	120.80
32	BB	35	C	N1-C2-O2	5.54	122.22	118.90
31	BA	2879	U	N3-C2-O2	-5.54	118.32	122.20
31	BA	829	A	C5-C6-N1	5.54	120.47	117.70
1	AA	27	C	N1-C2-O2	5.54	122.22	118.90
6	AF	38	LEU	CA-CB-CG	5.53	128.03	115.30
31	BA	401	U	C5-C6-N1	5.53	125.47	122.70
31	BA	2397	U	N1-C2-O2	5.53	126.67	122.80
31	BA	2620	C	C2-N1-C1'	5.53	124.88	118.80
1	AA	867	C	N1-C2-O2	5.53	122.22	118.90
1	AA	113	G	N9-C4-C5	-5.53	103.19	105.40
31	BA	2242	G	C8-N9-C1'	-5.53	119.81	127.00
31	BA	2752	A	O4'-C1'-N9	5.53	112.62	108.20
31	BA	1486	G	N3-C4-C5	-5.53	125.84	128.60
1	AA	505	G	C8-N9-C4	-5.52	104.19	106.40
1	AA	1398	U	C5-C6-N1	5.52	125.46	122.70
1	AA	931	A	N9-C4-C5	-5.52	103.59	105.80
31	BA	568	U	C5-C4-O4	-5.52	122.59	125.90
1	AA	953	G	N3-C4-N9	5.52	129.31	126.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	1536	U	N3-C2-O2	-5.52	118.34	122.20
31	BA	2771	C	C5-C6-N1	5.52	123.76	121.00
1	AA	113	G	C6-C5-N7	-5.51	127.09	130.40
31	BA	519	C	N1-C2-O2	5.51	122.21	118.90
1	AA	727	C	C6-N1-C2	-5.51	118.09	120.30
31	BA	674	C	C5-C6-N1	5.51	123.75	121.00
1	AA	558	C	N1-C2-O2	5.50	122.20	118.90
31	BA	1292	A	C6-N1-C2	-5.50	115.30	118.60
31	BA	1845	C	C5-C6-N1	5.50	123.75	121.00
31	BA	1317	U	C6-N1-C1'	-5.50	113.50	121.20
31	BA	2133	C	N3-C2-O2	-5.50	118.05	121.90
1	AA	944	C	C6-N1-C2	-5.50	118.10	120.30
31	BA	1486	G	N3-C4-N9	5.50	129.30	126.00
1	AA	1064	U	N1-C2-O2	5.50	126.65	122.80
1	AA	1183	A	N7-C8-N9	5.50	116.55	113.80
1	AA	1270	A	C4-C5-N7	5.49	113.45	110.70
31	BA	2706	G	C4-N9-C1'	5.49	133.64	126.50
31	BA	142	C	C6-N1-C2	-5.49	118.11	120.30
31	BA	469	U	C6-N1-C1'	-5.48	113.52	121.20
1	AA	1024	G	N7-C8-N9	5.48	115.84	113.10
1	AA	1215	C	N3-C2-O2	-5.48	118.06	121.90
31	BA	1292	A	C5-C6-N1	5.48	120.44	117.70
31	BA	2756	C	C2-N1-C1'	5.48	124.83	118.80
31	BA	514	A	OP1-P-O3'	5.48	117.25	105.20
1	AA	37	G	N7-C8-N9	5.47	115.84	113.10
31	BA	12	U	C6-N1-C1'	-5.47	113.53	121.20
31	BA	1405	C	C6-N1-C2	-5.47	118.11	120.30
1	AA	1129	U	N1-C2-O2	5.47	126.63	122.80
31	BA	2628	G	C8-N9-C1'	-5.47	119.89	127.00
31	BA	1198	G	C4-C5-N7	5.47	112.99	110.80
44	BS	99	LEU	CA-CB-CG	5.46	127.86	115.30
31	BA	1441	G	C4-N9-C1'	5.46	133.60	126.50
31	BA	1965	C	C6-N1-C2	-5.46	118.11	120.30
31	BA	2273	G	P-O3'-C3'	5.46	126.25	119.70
31	BA	2843	A	C8-N9-C4	-5.45	103.62	105.80
1	AA	1421	C	N1-C2-O2	5.45	122.17	118.90
31	BA	120	G	C4-C5-N7	5.45	112.98	110.80
31	BA	1965	C	C6-N1-C1'	-5.45	114.26	120.80
31	BA	2221	C	C6-N1-C2	-5.45	118.12	120.30
1	AA	1374	C	C2-N1-C1'	5.45	124.79	118.80
31	BA	2277	A	N3-C4-N9	5.45	131.76	127.40
31	BA	2641	U	N1-C2-O2	5.45	126.61	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	2398	C	C2-N1-C1'	5.45	124.79	118.80
1	AA	435	C	N3-C4-N4	-5.44	114.19	118.00
1	AA	728	C	N3-C2-O2	-5.44	118.09	121.90
31	BA	2181	C	C2-N1-C1'	5.44	124.79	118.80
31	BA	1938	C	C2-N1-C1'	5.44	124.78	118.80
31	BA	1699	C	N1-C2-O2	5.44	122.16	118.90
31	BA	2805	U	N3-C2-O2	-5.44	118.39	122.20
31	BA	77	U	C5-C6-N1	5.44	125.42	122.70
1	AA	411	C	C5-C6-N1	5.43	123.72	121.00
31	BA	881	G	C8-N9-C1'	-5.43	119.93	127.00
31	BA	2628	G	C4-N9-C1'	5.43	133.57	126.50
31	BA	1591	C	C5-C6-N1	5.43	123.72	121.00
1	AA	1372	G	N7-C8-N9	5.43	115.81	113.10
31	BA	849	C	N1-C2-O2	5.43	122.16	118.90
31	BA	952	C	N1-C2-O2	5.43	122.16	118.90
32	BB	79	U	N1-C2-O2	5.43	126.60	122.80
46	BU	77	GLN	C-N-CA	5.43	135.27	121.70
1	AA	1232	A	C4-N9-C1'	5.42	136.06	126.30
31	BA	849	C	O5'-P-OP2	-5.42	100.82	105.70
31	BA	2770	G	C2-N3-C4	5.42	114.61	111.90
1	AA	158	U	N3-C2-O2	-5.42	118.41	122.20
1	AA	483	A	C2-N3-C4	5.42	113.31	110.60
31	BA	2314	A	C2-N3-C4	5.42	113.31	110.60
31	BA	286	U	N1-C2-O2	5.42	126.59	122.80
1	AA	37	G	C5-N7-C8	-5.41	101.59	104.30
1	AA	483	A	C4-N9-C1'	5.41	136.04	126.30
1	AA	1122	C	C5-C6-N1	5.41	123.70	121.00
31	BA	1779	U	N3-C2-O2	-5.41	118.41	122.20
31	BA	1815	U	N3-C2-O2	-5.41	118.41	122.20
31	BA	544	C	C2-N3-C4	5.40	122.60	119.90
1	AA	387	C	N1-C2-O2	5.40	122.14	118.90
31	BA	471	C	C6-N1-C2	-5.40	118.14	120.30
31	BA	1423	U	C5-C6-N1	5.40	125.40	122.70
31	BA	2604	A	N1-C6-N6	-5.39	115.36	118.60
1	AA	1140	C	C6-N1-C2	-5.39	118.14	120.30
31	BA	2650	C	N1-C2-O2	5.39	122.13	118.90
31	BA	956	U	N3-C2-O2	-5.39	118.43	122.20
1	AA	632	C	C6-N1-C2	-5.39	118.15	120.30
47	BV	73	LEU	CA-CB-CG	5.38	127.68	115.30
31	BA	1461	G	C5-C6-O6	-5.38	125.37	128.60
31	BA	2193	G	C6-C5-N7	-5.38	127.17	130.40
1	AA	924	G	C8-N9-C1'	-5.38	120.01	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1040	G	C4-N9-C1'	5.38	133.49	126.50
1	AA	1377	G	N1-C6-O6	-5.38	116.67	119.90
31	BA	1414	A	OP1-P-O3'	5.38	117.02	105.20
31	BA	2469	C	C5-C6-N1	5.38	123.69	121.00
1	AA	1327	C	N3-C4-C5	5.37	124.05	121.90
31	BA	516	G	N9-C4-C5	-5.37	103.25	105.40
32	BB	79	U	N3-C2-O2	-5.37	118.44	122.20
1	AA	940	C	C6-N1-C1'	-5.37	114.36	120.80
31	BA	881	G	O4'-C1'-N9	5.37	112.50	108.20
31	BA	1405	C	C2-N1-C1'	5.37	124.71	118.80
31	BA	2533	G	N3-C4-N9	5.37	129.22	126.00
1	AA	514	G	C4-C5-N7	5.37	112.95	110.80
31	BA	614	G	C4-C5-N7	5.37	112.95	110.80
31	BA	1460	A	N9-C4-C5	-5.37	103.65	105.80
31	BA	2196	U	C5-C6-N1	5.37	125.38	122.70
31	BA	2769	A	O4'-C1'-N9	5.37	112.49	108.20
1	AA	505	G	C4-N9-C1'	5.36	133.47	126.50
31	BA	792	U	C2-N1-C1'	5.36	124.14	117.70
31	BA	2519	C	C5-C6-N1	5.36	123.68	121.00
1	AA	925	G	C2-N3-C4	-5.36	109.22	111.90
31	BA	2650	C	C5-C6-N1	5.36	123.68	121.00
1	AA	343	C	C6-N1-C2	-5.36	118.16	120.30
31	BA	473	U	N3-C2-O2	-5.36	118.45	122.20
31	BA	935	C	N3-C2-O2	-5.36	118.15	121.90
1	AA	442	C	C5-C6-N1	5.35	123.68	121.00
1	AA	387	C	C5-C6-N1	5.35	123.68	121.00
31	BA	556	G	N9-C4-C5	-5.35	103.26	105.40
31	BA	1135	C	C5-C6-N1	5.35	123.68	121.00
31	BA	1546	C	C6-N1-C2	-5.35	118.16	120.30
31	BA	344	G	N3-C4-N9	5.35	129.21	126.00
1	AA	1517	C	N1-C2-O2	5.35	122.11	118.90
31	BA	586	U	N1-C2-O2	5.35	126.54	122.80
31	BA	704	G	N3-C4-N9	5.35	129.21	126.00
31	BA	2620	C	N1-C2-O2	5.35	122.11	118.90
31	BA	1264	U	N3-C2-O2	-5.34	118.46	122.20
1	AA	1104	C	O4'-C1'-N1	5.34	112.47	108.20
31	BA	494	U	N3-C2-O2	-5.34	118.46	122.20
31	BA	732	G	N3-C4-N9	5.34	129.20	126.00
31	BA	2533	G	C5-C6-O6	-5.33	125.40	128.60
31	BA	2809	G	C4-N9-C1'	5.33	133.44	126.50
31	BA	499	U	C5-C4-O4	-5.33	122.70	125.90
31	BA	1232	U	C5-C6-N1	5.33	125.37	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	57	A	C4-N9-C1'	5.33	135.90	126.30
31	BA	544	C	C6-N1-C1'	-5.33	114.40	120.80
1	AA	1104	C	N3-C4-N4	-5.33	114.27	118.00
31	BA	61	A	C5-C6-N6	-5.33	119.44	123.70
31	BA	763	G	C8-N9-C1'	5.33	133.93	127.00
31	BA	2114	G	C4-N9-C1'	-5.33	119.58	126.50
31	BA	636	G	O4'-C1'-N9	5.33	112.46	108.20
31	BA	732	G	C8-N9-C1'	-5.33	120.08	127.00
31	BA	1194	U	C2-N1-C1'	5.33	124.09	117.70
31	BA	2147	C	C2-N1-C1'	-5.33	112.94	118.80
1	AA	924	G	N9-C4-C5	-5.32	103.27	105.40
31	BA	1720	C	C5-C6-N1	5.32	123.66	121.00
31	BA	1829	U	N3-C2-O2	-5.32	118.47	122.20
13	AM	41	GLU	C-N-CA	5.32	135.00	121.70
31	BA	407	G	O4'-C1'-N9	5.32	112.46	108.20
1	AA	1377	G	N3-C4-C5	-5.32	125.94	128.60
31	BA	132	C	C5-C6-N1	5.32	123.66	121.00
31	BA	192	U	C2-N1-C1'	5.32	124.08	117.70
31	BA	2706	G	C8-N9-C1'	-5.32	120.09	127.00
31	BA	557	C	N1-C2-O2	5.32	122.09	118.90
31	BA	767	C	C6-N1-C2	-5.32	118.17	120.30
1	AA	1390	C	N3-C2-O2	-5.31	118.18	121.90
31	BA	1149	G	N3-C2-N2	-5.31	116.18	119.90
31	BA	848	U	N1-C2-O2	5.31	126.52	122.80
31	BA	899	G	N3-C4-C5	-5.31	125.94	128.60
31	BA	1742	G	N3-C4-N9	5.31	129.19	126.00
31	BA	2797	C	C2-N1-C1'	5.31	124.64	118.80
1	AA	1363	G	C4-N9-C1'	5.31	133.40	126.50
1	AA	177	C	C6-N1-C2	-5.31	118.18	120.30
31	BA	2778	C	C2-N1-C1'	5.31	124.64	118.80
1	AA	276	U	C2-N1-C1'	5.30	124.07	117.70
31	BA	499	U	C4-C5-C6	-5.30	116.52	119.70
1	AA	314	A	N3-C4-C5	-5.30	123.09	126.80
31	BA	2103	C	N3-C2-O2	-5.30	118.19	121.90
31	BA	2613	U	C5-C6-N1	5.30	125.35	122.70
31	BA	393	U	N3-C2-O2	-5.30	118.49	122.20
31	BA	2176	U	C5-C6-N1	5.29	125.35	122.70
31	BA	2533	G	C4-C5-N7	5.29	112.92	110.80
31	BA	746	U	C5-C6-N1	5.29	125.35	122.70
31	BA	872	C	C5-C6-N1	5.29	123.65	121.00
31	BA	880	U	N3-C2-O2	-5.29	118.50	122.20
31	BA	1343	C	N1-C2-O2	5.29	122.08	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	1392	C	C2-N1-C1'	5.29	124.62	118.80
31	BA	2883	C	C5-C6-N1	5.29	123.65	121.00
1	AA	624	U	C5-C6-N1	5.29	125.34	122.70
31	BA	542	A	C4-N9-C1'	5.29	135.82	126.30
31	BA	2312	G	C2-N3-C4	5.28	114.54	111.90
31	BA	2580	G	C4-N9-C1'	5.28	133.37	126.50
31	BA	197	C	C2-N1-C1'	5.28	124.61	118.80
31	BA	217	G	C4-N9-C1'	5.28	133.36	126.50
31	BA	1891	U	N1-C2-O2	5.28	126.49	122.80
31	BA	1688	U	N1-C2-O2	5.28	126.49	122.80
31	BA	2496	U	N1-C2-O2	5.27	126.49	122.80
31	BA	371	U	C5-C6-N1	5.27	125.34	122.70
31	BA	1688	U	N3-C2-O2	-5.27	118.51	122.20
31	BA	1897	C	C6-N1-C2	-5.27	118.19	120.30
1	AA	1450	C	C2-N1-C1'	5.27	124.60	118.80
1	AA	1282	A	N7-C8-N9	5.27	116.43	113.80
31	BA	100	U	C6-N1-C1'	-5.27	113.83	121.20
31	BA	2898	C	C6-N1-C1'	5.27	127.12	120.80
31	BA	1967	C	C6-N1-C2	-5.26	118.19	120.30
31	BA	2204	C	N1-C2-O2	5.26	122.06	118.90
31	BA	1994	C	N1-C2-O2	5.26	122.06	118.90
31	BA	2163	G	N1-C2-N2	-5.26	111.46	116.20
1	AA	1335	C	C5-C6-N1	5.26	123.63	121.00
1	AA	1481	A	C2-N3-C4	5.26	113.23	110.60
1	AA	1286	A	C4-N9-C1'	5.26	135.77	126.30
31	BA	686	A	N7-C8-N9	5.26	116.43	113.80
31	BA	1078	C	C6-N1-C2	-5.26	118.20	120.30
31	BA	1898	C	N1-C2-O2	5.26	122.06	118.90
31	BA	2636	U	N1-C2-O2	5.26	126.48	122.80
31	BA	2720	U	N1-C2-O2	5.26	126.48	122.80
1	AA	1182	G	C4-C5-N7	5.26	112.90	110.80
32	BB	69	U	N1-C2-O2	5.26	126.48	122.80
1	AA	105	G	N3-C4-C5	5.26	131.23	128.60
1	AA	186	A	N7-C8-N9	5.26	116.43	113.80
1	AA	859	C	C2-N1-C1'	-5.26	113.02	118.80
1	AA	1142	U	OP2-P-O3'	5.26	116.76	105.20
31	BA	1272	U	C2-N1-C1'	5.26	124.01	117.70
1	AA	1094	U	N3-C2-O2	-5.25	118.52	122.20
1	AA	572	A	N3-C4-N9	5.25	131.60	127.40
1	AA	988	C	N1-C2-O2	5.25	122.05	118.90
1	AA	1027	A	N9-C4-C5	-5.25	103.70	105.80
1	AA	1334	A	C5-C6-N1	5.25	120.33	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1388	U	C5-C6-N1	5.25	125.33	122.70
31	BA	2368	C	C2-N1-C1'	5.25	124.58	118.80
31	BA	938	U	C6-N1-C1'	-5.25	113.85	121.20
1	AA	225	A	P-O3'-C3'	5.25	126.00	119.70
1	AA	551	U	C6-N1-C1'	-5.25	113.86	121.20
31	BA	2381	A	N7-C8-N9	5.24	116.42	113.80
31	BA	2584	U	N1-C2-O2	5.24	126.47	122.80
31	BA	2469	C	C6-N1-C2	-5.24	118.20	120.30
31	BA	1740	G	P-O3'-C3'	5.24	125.98	119.70
1	AA	42	C	C5-C6-N1	5.24	123.62	121.00
1	AA	1232	A	C2-N3-C4	5.24	113.22	110.60
31	BA	586	U	N3-C2-O2	-5.24	118.54	122.20
1	AA	415	A	N9-C4-C5	-5.23	103.71	105.80
31	BA	88	G	C6-C5-N7	-5.23	127.26	130.40
1	AA	368	G	N3-C4-N9	5.23	129.14	126.00
31	BA	1960	U	C6-N1-C1'	-5.23	113.87	121.20
1	AA	483	A	N3-C4-N9	5.23	131.58	127.40
1	AA	1177	A	N7-C8-N9	5.23	116.42	113.80
31	BA	502	G	N3-C4-N9	5.23	129.14	126.00
31	BA	1985	A	N3-C4-N9	5.23	131.58	127.40
31	BA	2263	G	C8-N9-C1'	-5.23	120.20	127.00
1	AA	42	C	C6-N1-C2	-5.23	118.21	120.30
31	BA	620	U	N1-C2-O2	5.22	126.46	122.80
1	AA	338	C	N3-C2-O2	-5.22	118.24	121.90
31	BA	2620	C	C5-C6-N1	5.22	123.61	121.00
1	AA	888	C	C6-N1-C2	-5.22	118.21	120.30
1	AA	940	C	N1-C2-O2	5.22	122.03	118.90
31	BA	2188	C	C6-N1-C2	-5.22	118.21	120.30
31	BA	2240	C	C6-N1-C2	-5.22	118.21	120.30
31	BA	2869	G	N3-C4-N9	-5.21	122.87	126.00
1	AA	1114	G	C4-N9-C1'	5.21	133.28	126.50
1	AA	1114	G	C8-N9-C1'	-5.21	120.22	127.00
31	BA	2230	C	C6-N1-C2	-5.21	118.22	120.30
1	AA	1184	G	C6-C5-N7	-5.21	127.27	130.40
31	BA	2786	G	N3-C4-N9	5.21	129.13	126.00
1	AA	609	U	C5-C6-N1	5.21	125.31	122.70
31	BA	1496	U	C2-N1-C1'	5.21	123.95	117.70
31	BA	543	C	C6-N1-C2	-5.21	118.22	120.30
1	AA	1374	C	C2-N3-C4	5.21	122.50	119.90
31	BA	2316	U	C2-N1-C1'	5.20	123.94	117.70
1	AA	47	U	C5-C6-N1	5.20	125.30	122.70
31	BA	1461	G	N9-C4-C5	-5.20	103.32	105.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	2163	G	C5-N7-C8	-5.20	101.70	104.30
31	BA	418	C	N1-C2-O2	5.20	122.02	118.90
31	BA	1135	C	N1-C2-O2	5.20	122.02	118.90
31	BA	2389	C	C2-N1-C1'	5.20	124.52	118.80
1	AA	1299	C	C6-N1-C1'	5.19	127.03	120.80
31	BA	2181	C	C6-N1-C2	-5.19	118.22	120.30
1	AA	225	A	C5-N7-C8	-5.19	101.30	103.90
1	AA	620	G	C8-N9-C1'	-5.19	120.25	127.00
1	AA	888	C	C6-N1-C1'	-5.19	114.57	120.80
1	AA	1054	A	C8-N9-C4	-5.19	103.72	105.80
1	AA	1106	C	C6-N1-C2	-5.19	118.22	120.30
31	BA	1003	A	N9-C4-C5	-5.19	103.72	105.80
31	BA	2660	U	C2-N1-C1'	5.19	123.93	117.70
31	BA	542	A	N3-C4-N9	5.19	131.55	127.40
31	BA	1750	C	C2-N1-C1'	5.19	124.51	118.80
1	AA	729	G	O5'-P-OP2	-5.18	101.04	105.70
1	AA	1160	C	N1-C2-O2	5.18	122.01	118.90
31	BA	2143	G	C4-C5-N7	5.18	112.87	110.80
1	AA	530	G	N9-C4-C5	-5.18	103.33	105.40
1	AA	751	C	C6-N1-C2	-5.18	118.23	120.30
1	AA	1152	C	O4'-C1'-N1	5.18	112.34	108.20
1	AA	1259	C	O4'-C1'-N1	5.18	112.34	108.20
31	BA	1292	A	C2-N3-C4	5.18	113.19	110.60
31	BA	1608	U	N3-C4-O4	-5.18	115.78	119.40
31	BA	949	C	N3-C2-O2	-5.18	118.28	121.90
1	AA	225	A	C4-C5-N7	5.17	113.29	110.70
31	BA	2100	U	N3-C2-O2	-5.17	118.58	122.20
31	BA	1920	A	N7-C8-N9	5.17	116.39	113.80
1	AA	1351	C	N3-C4-N4	-5.17	114.38	118.00
31	BA	2266	U	N3-C2-O2	-5.17	118.58	122.20
31	BA	130	A	N1-C2-N3	-5.17	126.72	129.30
31	BA	1938	C	C5-C6-N1	5.17	123.58	121.00
1	AA	138	U	N3-C2-O2	-5.16	118.59	122.20
1	AA	728	C	C6-N1-C1'	-5.16	114.60	120.80
1	AA	1450	C	C2-N3-C4	5.16	122.48	119.90
31	BA	916	G	N7-C8-N9	5.16	115.68	113.10
31	BA	2639	U	N1-C2-O2	5.16	126.41	122.80
1	AA	1286	A	O4'-C1'-N9	-5.16	104.07	108.20
31	BA	621	U	N1-C2-O2	5.16	126.41	122.80
31	BA	1040	C	N3-C2-O2	-5.16	118.29	121.90
31	BA	1192	G	C2-N3-C4	5.16	114.48	111.90
1	AA	1515	G	C8-N9-C1'	-5.16	120.30	127.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	804	U	N1-C2-O2	5.16	126.41	122.80
31	BA	1441	G	C8-N9-C4	-5.16	104.34	106.40
31	BA	1498	A	C6-C5-N7	-5.16	128.69	132.30
31	BA	2178	C	N1-C2-O2	5.15	121.99	118.90
1	AA	963	U	N1-C2-O2	5.15	126.41	122.80
31	BA	1392	C	C5-C6-N1	5.15	123.58	121.00
31	BA	1486	G	C4-N9-C1'	5.15	133.20	126.50
31	BA	1089	A	N3-C4-N9	-5.15	123.28	127.40
31	BA	1948	U	C2-N1-C1'	5.15	123.88	117.70
31	BA	2560	C	N1-C2-O2	5.15	121.99	118.90
1	AA	1289	C	C6-N1-C2	-5.15	118.24	120.30
31	BA	841	C	C5-C6-N1	5.15	123.57	121.00
31	BA	1738	U	C5-C6-N1	5.15	125.27	122.70
31	BA	2743	U	N1-C2-O2	5.15	126.40	122.80
31	BA	968	U	N1-C2-O2	5.14	126.40	122.80
31	BA	1986	U	N3-C2-O2	-5.14	118.60	122.20
31	BA	658	C	N1-C2-O2	5.14	121.99	118.90
1	AA	275	C	C2-N3-C4	5.14	122.47	119.90
31	BA	99	U	C2-N1-C1'	5.14	123.87	117.70
31	BA	1971	C	C2-N1-C1'	5.14	124.45	118.80
31	BA	2208	C	C6-N1-C2	-5.14	118.25	120.30
31	BA	2434	A	N3-C4-N9	5.13	131.51	127.40
1	AA	659	C	C5-C6-N1	5.13	123.57	121.00
1	AA	1299	C	C6-N1-C2	-5.13	118.25	120.30
31	BA	2708	C	C6-N1-C2	-5.13	118.25	120.30
31	BA	2887	C	C5-C6-N1	5.13	123.57	121.00
1	AA	145	G	C6-C5-N7	-5.13	127.32	130.40
31	BA	1985	A	C2-N3-C4	5.13	113.17	110.60
1	AA	931	A	C8-N9-C1'	-5.13	118.47	127.70
31	BA	1492	G	C6-C5-N7	-5.13	127.32	130.40
31	BA	2242	G	N3-C4-C5	-5.13	126.03	128.60
31	BA	2496	U	C2-N1-C1'	5.13	123.85	117.70
1	AA	1142	U	C5-C6-N1	5.13	125.26	122.70
31	BA	310	U	C6-N1-C1'	-5.13	114.02	121.20
31	BA	1211	U	N1-C2-O2	5.13	126.39	122.80
31	BA	1314	G	N7-C8-N9	5.13	115.66	113.10
1	AA	954	A	N1-C2-N3	-5.12	126.74	129.30
31	BA	2044	U	C2-N3-C4	-5.12	123.92	127.00
31	BA	2464	U	C6-N1-C1'	-5.12	114.03	121.20
31	BA	2666	A	C5-N7-C8	-5.12	101.34	103.90
1	AA	414	G	N3-C4-N9	5.12	129.07	126.00
1	AA	373	U	N1-C2-O2	5.12	126.38	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	754	C	N1-C2-O2	5.12	121.97	118.90
31	BA	1087	C	C2-N3-C4	5.12	122.46	119.90
1	AA	176	C	N1-C2-O2	5.12	121.97	118.90
1	AA	1053	C	N1-C2-O2	5.12	121.97	118.90
31	BA	1148	U	C6-N1-C2	-5.12	117.93	121.00
1	AA	505	G	N7-C8-N9	5.11	115.66	113.10
1	AA	633	C	C2-N1-C1'	5.11	124.43	118.80
31	BA	2102	C	C6-N1-C2	-5.11	118.25	120.30
32	BB	68	C	C2-N1-C1'	5.11	124.42	118.80
1	AA	330	C	N1-C2-O2	5.11	121.97	118.90
31	BA	897	U	N1-C2-O2	5.11	126.38	122.80
31	BA	1332	G	C4-N9-C1'	5.11	133.14	126.50
1	AA	171	U	C5-C6-N1	5.11	125.25	122.70
31	BA	555	U	N3-C2-O2	-5.10	118.63	122.20
31	BA	1625	U	N3-C2-O2	-5.10	118.63	122.20
1	AA	1248	G	C5-N7-C8	-5.10	101.75	104.30
31	BA	2344	A	N1-C2-N3	-5.10	126.75	129.30
31	BA	911	G	N3-C2-N2	-5.10	116.33	119.90
31	BA	2488	G	C4-C5-N7	5.10	112.84	110.80
1	AA	373	U	N3-C2-O2	-5.09	118.64	122.20
1	AA	609	U	N1-C2-O2	5.09	126.36	122.80
1	AA	1165	C	C6-N1-C2	-5.09	118.26	120.30
1	AA	1286	A	N3-C4-C5	-5.09	123.23	126.80
31	BA	2111	C	C5-C6-N1	5.09	123.55	121.00
1	AA	276	U	N1-C2-O2	5.09	126.36	122.80
31	BA	542	A	N3-C4-C5	-5.09	123.23	126.80
31	BA	754	C	N3-C2-O2	-5.09	118.34	121.90
31	BA	1136	U	C5-C6-N1	5.09	125.25	122.70
1	AA	1160	C	N3-C2-O2	-5.09	118.34	121.90
1	AA	405	A	N3-C4-N9	5.09	131.47	127.40
31	BA	2165	C	N3-C2-O2	-5.09	118.34	121.90
33	BD	173	LEU	CA-CB-CG	5.09	127.00	115.30
31	BA	2533	G	N9-C4-C5	-5.08	103.37	105.40
31	BA	952	C	C6-N1-C1'	-5.08	114.70	120.80
31	BA	1149	G	N1-C2-N2	5.08	120.77	116.20
31	BA	2277	A	C8-N9-C1'	-5.08	118.55	127.70
31	BA	2176	U	C2-N1-C1'	5.08	123.80	117.70
1	AA	899	U	C5-C6-N1	5.08	125.24	122.70
1	AA	752	C	C6-N1-C2	-5.08	118.27	120.30
1	AA	22	U	N1-C2-O2	5.08	126.35	122.80
1	AA	460	A	O4'-C1'-N9	5.08	112.26	108.20
1	AA	1316	G	N7-C8-N9	5.08	115.64	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
31	BA	679	U	C6-N1-C2	-5.07	117.96	121.00
31	BA	197	C	N3-C2-O2	-5.07	118.35	121.90
1	AA	154	C	C6-N1-C2	-5.07	118.27	120.30
1	AA	1229	G	N1-C6-O6	-5.07	116.86	119.90
1	AA	1302	U	N3-C2-O2	-5.07	118.66	122.20
1	AA	1317	U	N3-C2-O2	-5.07	118.65	122.20
1	AA	1534	C	N3-C2-O2	-5.07	118.35	121.90
31	BA	346	U	N3-C2-O2	-5.07	118.65	122.20
31	BA	1226	C	N1-C2-O2	5.07	121.94	118.90
1	AA	383	U	N1-C2-O2	5.06	126.34	122.80
31	BA	1084	C	N3-C2-O2	-5.06	118.36	121.90
31	BA	1078	C	C2-N1-C1'	5.06	124.37	118.80
1	AA	41	G	C6-C5-N7	-5.06	127.36	130.40
31	BA	2895	U	N3-C2-O2	-5.06	118.66	122.20
1	AA	924	G	C4-N9-C1'	5.06	133.08	126.50
1	AA	1129	U	N3-C2-O2	-5.06	118.66	122.20
31	BA	962	U	N3-C2-O2	-5.06	118.66	122.20
1	AA	190	U	C5-C6-N1	5.06	125.23	122.70
1	AA	455	G	C4-N9-C1'	5.05	133.07	126.50
1	AA	514	G	C6-C5-N7	-5.05	127.37	130.40
31	BA	278	A	O4'-C1'-N9	5.05	112.24	108.20
31	BA	1747	A	N7-C8-N9	5.05	116.33	113.80
1	AA	1270	A	N9-C4-C5	-5.05	103.78	105.80
31	BA	885	G	C4-N9-C1'	5.05	133.07	126.50
31	BA	621	U	N3-C2-O2	-5.05	118.66	122.20
34	BE	36	LEU	CA-CB-CG	5.05	126.92	115.30
31	BA	2480	A	C4-N9-C1'	-5.05	117.21	126.30
1	AA	41	G	C4-C5-N7	5.05	112.82	110.80
31	BA	1918	C	C6-N1-C2	5.05	122.32	120.30
31	BA	2580	G	C8-N9-C1'	-5.05	120.44	127.00
31	BA	1529	U	C6-N1-C2	-5.04	117.97	121.00
1	AA	1395	C	N3-C2-O2	-5.04	118.37	121.90
31	BA	1665	G	C4-N9-C1'	5.04	133.06	126.50
31	BA	86	C	C6-N1-C2	-5.04	118.28	120.30
31	BA	899	G	C4-N9-C1'	5.04	133.05	126.50
31	BA	970	U	N1-C2-O2	5.04	126.33	122.80
43	BR	113	LEU	CA-CB-CG	5.04	126.89	115.30
31	BA	966	C	C2-N1-C1'	5.04	124.34	118.80
31	BA	2434	A	C4-N9-C1'	5.04	135.37	126.30
1	AA	696	G	N7-C8-N9	5.03	115.62	113.10
1	AA	734	C	C6-N1-C2	-5.03	118.29	120.30
31	BA	99	U	C6-N1-C1'	-5.03	114.16	121.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	AA	1104	C	C6-N1-C1'	5.03	126.84	120.80
1	AA	1257	A	N1-C6-N6	-5.03	115.58	118.60
1	AA	770	C	N3-C2-O2	-5.03	118.38	121.90
31	BA	1955	U	N3-C2-O2	-5.03	118.68	122.20
31	BA	2883	C	C6-N1-C2	-5.03	118.29	120.30
31	BA	12	U	O4'-C1'-N1	5.03	112.22	108.20
31	BA	1762	A	O4'-C1'-N9	5.03	112.22	108.20
31	BA	66	C	N1-C2-O2	5.02	121.91	118.90
31	BA	2777	U	N3-C2-O2	-5.02	118.69	122.20
31	BA	555	U	N1-C2-O2	5.02	126.31	122.80
31	BA	2312	G	C8-N9-C4	-5.02	104.39	106.40
31	BA	2502	C	N3-C2-O2	-5.02	118.39	121.90
1	AA	1051	U	C5-C6-N1	5.02	125.21	122.70
31	BA	2896	U	C5-C6-N1	5.02	125.21	122.70
1	AA	1415	A	C4-N9-C1'	5.01	135.32	126.30
31	BA	389	U	C2-N3-C4	5.01	130.01	127.00
31	BA	984	U	C5-C6-N1	5.01	125.21	122.70
1	AA	189	U	C2-N1-C1'	5.01	123.72	117.70
1	AA	203	U	C5-C6-N1	5.01	125.21	122.70
31	BA	2146	A	C6-N1-C2	-5.01	115.59	118.60
1	AA	202	U	C5-C4-O4	-5.01	122.89	125.90
31	BA	1509	G	O4'-C1'-N9	5.01	112.21	108.20
1	AA	905	C	C5-C6-N1	5.01	123.50	121.00
10	AJ	87	LEU	CA-CB-CG	5.01	126.82	115.30
31	BA	296	G	N3-C4-N9	5.01	129.00	126.00
31	BA	1137	C	C5-C6-N1	5.01	123.50	121.00
31	BA	1496	U	N1-C2-O2	5.01	126.31	122.80
31	BA	2311	G	N3-C4-C5	-5.01	126.09	128.60
31	BA	2148	G	N3-C4-N9	5.01	129.00	126.00
31	BA	707	C	C6-N1-C1'	-5.01	114.79	120.80
31	BA	1704	C	C6-N1-C2	-5.00	118.30	120.30
31	BA	2131	G	C8-N9-C1'	-5.00	120.49	127.00
31	BA	2796	U	C2-N1-C1'	5.00	123.71	117.70
1	AA	1493	G	C4-C5-N7	5.00	112.80	110.80
1	AA	1536	G	C8-N9-C1'	-5.00	120.50	127.00
31	BA	2263	G	C4-N9-C1'	5.00	133.00	126.50
31	BA	2809	G	N9-C4-C5	-5.00	103.40	105.40
45	BT	43	TYR	CA-CB-CG	5.00	122.91	113.40

There are no chirality outliers.

All (61) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	AB	4	ILE	Peptide
3	AC	207	LEU	Peptide
4	AD	187	ASN	Peptide
4	AD	201	LYS	Peptide
6	AF	51	GLU	Peptide
9	AI	5	GLN	Peptide
10	AJ	9	ARG	Peptide
11	AK	123	LYS	Peptide
11	AK	32	ILE	Peptide
13	AM	24	GLY	Peptide
13	AM	26	GLY	Peptide
13	AM	68	ASP	Peptide
13	AM	98	ARG	Peptide
14	AN	31	HIS	Peptide
14	AN	48	ALA	Peptide
19	AS	34	TRP	Peptide
19	AS	35	SER	Peptide
19	AS	81	ARG	Mainchain
22	B0	41	ASN	Peptide
23	B1	10	LEU	Peptide
23	B1	16	LEU	Peptide
23	B1	35	LEU	Peptide
24	B2	42	ALA	Peptide
24	B2	43	ILE	Peptide
25	B3	1	MET	Peptide
25	B3	16	ASP	Peptide
25	B3	8	ASN	Peptide
26	B4	47	TYR	Peptide
27	B5	20	ASN	Peptide
33	BD	102	SER	Peptide
33	BD	141	ILE	Peptide
33	BD	155	VAL	Peptide
33	BD	25	THR	Peptide
34	BE	105	VAL	Peptide
34	BE	121	ILE	Peptide
34	BE	54	ASP	Peptide
34	BE	71	LYS	Peptide
35	BF	145	ALA	Peptide
35	BF	148	ILE	Peptide
36	BG	81	ARG	Peptide
36	BG	89	LYS	Peptide
36	BG	90	VAL	Peptide
37	BH	122	LYS	Peptide

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Mol	Chain	Res	Type	Group
38	BM	131	GLU	Peptide
38	BM	21	ASP	Peptide
38	BM	74	LYS	Peptide
38	BM	90	THR	Peptide
39	BN	76	TYR	Peptide
39	BN	77	ILE	Peptide
43	BR	47	ASP	Peptide
43	BR	50	GLY	Peptide
44	BS	21	PRO	Peptide
45	BT	92	ARG	Peptide
46	BU	41	ILE	Peptide
46	BU	79	LYS	Peptide
46	BU	85	HIS	Peptide
46	BU	87	LYS	Peptide
47	BV	28	ILE	Peptide
47	BV	78	THR	Peptide
48	BW	55	THR	Peptide
49	BX	86	ASP	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	AA	32911	0	16551	930	0
2	AB	1774	0	1820	83	0
3	AC	1648	0	1704	81	0
4	AD	1610	0	1632	100	0
5	AE	1133	0	1205	48	0
6	AF	797	0	795	35	0
7	AG	1207	0	1235	64	0
8	AH	1009	0	1068	46	0
9	AI	983	0	1025	59	0
10	AJ	794	0	841	48	0
11	AK	857	0	886	45	0
12	AL	1054	0	1141	40	0
13	AM	873	0	912	70	0
14	AN	471	0	499	25	0
15	AO	708	0	737	32	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	AP	688	0	716	34	0
17	AQ	675	0	704	28	0
18	AR	549	0	599	26	0
19	AS	660	0	658	35	0
20	AT	542	0	577	26	0
21	AU	440	0	448	14	0
22	B0	477	0	503	18	0
23	B1	533	0	572	25	0
24	B2	424	0	471	19	0
25	B3	642	0	620	31	0
26	B4	437	0	444	17	0
27	B5	365	0	389	15	0
28	B6	362	0	400	31	0
29	B7	530	0	573	28	0
30	B8	292	0	320	14	0
31	BA	62143	0	31234	1411	0
32	BB	2455	0	1236	58	0
33	BD	2041	0	2142	102	0
34	BE	1522	0	1608	69	0
35	BF	1563	0	1606	77	0
36	BG	1367	0	1417	60	0
37	BH	1303	0	1343	54	0
38	BM	1127	0	1176	50	0
39	BN	895	0	951	29	0
40	BO	1066	0	1109	58	0
41	BP	1061	0	1111	48	0
42	BQ	990	0	1037	47	0
43	BR	872	0	911	52	0
44	BS	923	0	983	41	0
45	BT	945	0	1012	40	0
46	BU	783	0	818	32	0
47	BV	853	0	915	57	0
48	BW	689	0	738	32	0
49	BX	747	0	808	32	0
50	BZ	562	0	567	29	0
51	A	1128	0	992	93	0
All	All	140480	0	93759	3990	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 19.

All (3990) 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)
1:AA:1439:G:N2	1:AA:1475:A:N7	1.81	1.28
31:BA:1487:A:C2	31:BA:2706:G:N1	2.06	1.23
2:AB:207:ILE:HD11	51:A:144:GLU:O	1.48	1.11
2:AB:207:ILE:CD1	51:A:145:GLU:HA	1.84	1.07
31:BA:2312:G:N1	31:BA:2315:A:C2	2.22	1.06
2:AB:207:ILE:HD11	51:A:145:GLU:HA	1.38	1.04
51:A:55:GLU:HA	51:A:67:ALA:O	1.58	1.04
2:AB:207:ILE:CG1	51:A:145:GLU:HA	1.89	1.02
1:AA:304:U:H3	1:AA:309:G:H1	1.08	1.02
31:BA:989:G:H1	31:BA:998:U:H3	1.03	1.02
33:BD:77:LYS:O	33:BD:94:ILE:HA	1.59	1.02
1:AA:466:G:H1	1:AA:484:U:H3	1.07	1.01
1:AA:840:G:O6	1:AA:862:U:C4	2.14	1.01
31:BA:1911:G:H1	31:BA:1927:U:H3	1.03	1.01
31:BA:604:A:N6	31:BA:2033:G:H21	1.59	1.01
6:AF:6:ILE:HA	6:AF:91:MET:O	1.59	1.00
5:AE:37:ALA:HA	5:AE:54:GLY:O	1.61	1.00
6:AF:8:TYR:HA	6:AF:89:ARG:O	1.61	1.00
31:BA:604:A:H61	31:BA:2033:G:N2	1.58	1.00
31:BA:2854:U:H3	31:BA:2859:G:H1	1.09	1.00
33:BD:172:THR:O	33:BD:183:MET:HA	1.60	1.00
31:BA:898:A:H62	31:BA:953:G:H21	1.00	1.00
1:AA:1254:U:H3	1:AA:1298:C:N4	1.60	0.99
1:AA:1457:G:H21	1:AA:1460:A:N6	1.61	0.99
2:AB:162:TYR:HA	2:AB:184:VAL:O	1.62	0.99
1:AA:330:C:N4	1:AA:337:A:H62	1.59	0.99
31:BA:1693:A:H61	31:BA:2000:C:N4	1.60	0.99
1:AA:109:A:N6	1:AA:332:G:N3	2.10	0.98
27:B5:32:VAL:O	27:B5:45:HIS:HB2	1.63	0.98
47:BV:10:THR:HA	47:BV:107:ILE:O	1.62	0.98
37:BH:102:LYS:HA	37:BH:115:VAL:O	1.63	0.98
1:AA:1452:U:H3	1:AA:1464:G:H1	1.01	0.98
3:AC:55:GLU:O	3:AC:66:THR:HB	1.63	0.98
1:AA:986:A:C2	1:AA:1323:G:N2	2.31	0.98
4:AD:167:SER:O	4:AD:175:GLY:HA2	1.61	0.98
31:BA:2808:A:H62	31:BA:2888:G:N2	1.60	0.98
31:BA:1235:C:N4	31:BA:1272:U:H3	1.61	0.97
2:AB:75:GLN:HE22	51:A:152:MET:HA	1.25	0.97
1:AA:950:G:H1	1:AA:1348:U:H3	1.04	0.97
1:AA:1127:U:H3	1:AA:1161:G:H1	1.09	0.97
4:AD:193:ALA:O	4:AD:197:GLU:HB2	1.62	0.97
2:AB:38:ILE:HD11	51:A:163:ALA:CB	1.95	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:974:G:N7	51:A:66:ARG:NH1	2.13	0.97
47:BV:8:LYS:HA	47:BV:109:VAL:O	1.64	0.96
13:AM:68:ASP:O	13:AM:72:GLU:HB2	1.64	0.96
31:BA:1487:A:H2	31:BA:2706:G:H1	1.02	0.96
31:BA:1441:G:H21	31:BA:1615:A:N6	1.63	0.96
32:BB:9:U:H3	32:BB:107:G:H1	1.03	0.96
36:BG:8:LYS:O	36:BG:12:GLU:HB2	1.66	0.96
9:AI:20:ARG:HB2	9:AI:64:LEU:O	1.65	0.95
33:BD:129:ALA:HA	33:BD:190:ALA:O	1.66	0.95
3:AC:188:ALA:O	3:AC:194:LYS:HA	1.67	0.95
1:AA:70:G:N2	1:AA:101:A:H62	1.64	0.95
1:AA:330:C:H42	1:AA:337:A:N6	1.61	0.95
31:BA:1388:A:H62	31:BA:1401:U:H3	0.97	0.95
15:AO:35:GLU:O	15:AO:39:LEU:HB2	1.67	0.95
31:BA:1507:G:H1	31:BA:1540:A:H61	1.11	0.94
44:BS:61:ARG:HA	44:BS:69:VAL:O	1.66	0.94
31:BA:2300:U:H3	31:BA:2339:A:H62	1.07	0.94
1:AA:623:G:H1	1:AA:635:U:H3	0.95	0.94
3:AC:186:GLU:O	3:AC:196:GLY:HA2	1.66	0.94
31:BA:1796:U:H3	31:BA:1827:G:H1	1.16	0.94
31:BA:2808:A:H62	31:BA:2888:G:H21	1.00	0.94
1:AA:593:G:H1	1:AA:765:U:H3	1.16	0.94
1:AA:1008:U:H3	1:AA:1048:G:H1	1.10	0.94
16:AP:8:THR:O	16:AP:18:TYR:HA	1.68	0.94
31:BA:568:U:H3	31:BA:591:G:H1	1.00	0.94
31:BA:1441:G:H21	31:BA:1615:A:H61	1.06	0.94
34:BE:49:THR:O	34:BE:82:GLU:HA	1.65	0.94
46:BU:68:GLY:O	46:BU:93:PRO:HA	1.68	0.94
47:BV:87:LYS:HA	47:BV:100:ILE:O	1.67	0.94
38:BM:79:HIS:HA	38:BM:85:GLY:O	1.67	0.93
31:BA:898:A:H62	31:BA:953:G:N2	1.65	0.93
31:BA:2656:U:H3	31:BA:2672:G:H1	1.09	0.93
1:AA:1317:U:H3	1:AA:1334:A:N6	1.68	0.92
35:BF:126:VAL:HB	35:BF:195:VAL:O	1.69	0.92
1:AA:158:U:H3	1:AA:165:G:H1	1.01	0.92
17:AQ:21:THR:HA	17:AQ:47:ALA:O	1.67	0.92
31:BA:2751:G:N3	31:BA:2761:A:N6	2.16	0.92
3:AC:57:GLU:HB2	3:AC:64:ILE:O	1.69	0.92
40:BO:134:LYS:O	40:BO:138:GLU:HB2	1.69	0.92
6:AF:7:LEU:O	6:AF:90:HIS:HA	1.70	0.92
31:BA:481:G:H21	31:BA:489:A:N6	1.67	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BS:26:ARG:O	44:BS:83:ILE:HA	1.70	0.92
1:AA:152:A:H62	1:AA:171:U:H3	0.92	0.91
1:AA:258:A:N6	1:AA:282:A:C2	2.38	0.91
7:AG:103:LEU:O	7:AG:107:ALA:HB3	1.69	0.91
33:BD:130:LEU:O	33:BD:190:ALA:HB3	1.71	0.91
31:BA:1487:A:H2	31:BA:2706:G:N1	1.56	0.91
31:BA:673:U:H3	31:BA:683:G:H1	0.98	0.90
1:AA:894:G:H1	1:AA:919:U:H3	0.97	0.90
47:BV:60:ALA:O	47:BV:64:ASN:HB2	1.70	0.90
4:AD:68:PHE:O	4:AD:72:TYR:HB2	1.72	0.90
1:AA:1439:G:N2	1:AA:1475:A:C8	2.39	0.90
31:BA:1441:G:N2	31:BA:1615:A:H61	1.69	0.90
31:BA:1558:A:H62	31:BA:1573:G:N2	1.68	0.90
31:BA:2751:G:H21	31:BA:2761:A:H62	1.17	0.90
1:AA:1317:U:H3	1:AA:1334:A:H62	0.93	0.90
1:AA:28:A:N6	1:AA:567:G:N3	2.20	0.90
31:BA:898:A:N6	31:BA:953:G:H21	1.69	0.90
31:BA:1693:A:N6	31:BA:2000:C:H42	1.70	0.90
38:BM:19:VAL:O	38:BM:141:VAL:HA	1.72	0.89
31:BA:892:G:H1	31:BA:959:U:H3	0.93	0.89
31:BA:1558:A:H62	31:BA:1573:G:H21	1.06	0.89
1:AA:418:G:H21	1:AA:440:A:H62	1.13	0.89
31:BA:632:G:H1	31:BA:692:U:H3	0.92	0.89
2:AB:207:ILE:HD11	51:A:145:GLU:CA	2.03	0.89
31:BA:1451:G:H1	31:BA:1606:U:H3	1.16	0.89
31:BA:1693:A:H61	31:BA:2000:C:H42	0.89	0.89
47:BV:7:ALA:O	47:BV:110:VAL:HA	1.73	0.89
31:BA:1916:A:N6	31:BA:1921:U:H3	1.71	0.88
2:AB:207:ILE:HD11	51:A:144:GLU:C	1.93	0.88
31:BA:1507:G:H1	31:BA:1540:A:N6	1.71	0.88
5:AE:15:GLU:HB2	5:AE:43:GLY:O	1.72	0.88
4:AD:112:ARG:O	4:AD:116:ASN:HB2	1.72	0.88
1:AA:602:U:H3	1:AA:654:G:H1	0.89	0.88
31:BA:131:G:H1	31:BA:145:U:H3	0.89	0.88
4:AD:111:ALA:O	4:AD:115:VAL:HB	1.74	0.88
4:AD:192:ASP:O	4:AD:196:VAL:HB	1.72	0.88
31:BA:1916:A:H62	31:BA:1921:U:H3	0.88	0.88
1:AA:935:G:H1	1:AA:1397:U:H3	1.22	0.87
41:BP:35:GLN:O	41:BP:129:THR:HA	1.72	0.87
22:B0:13:VAL:O	22:B0:29:VAL:HB	1.74	0.87
3:AC:53:LEU:O	3:AC:68:HIS:HB2	1.73	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1533:G:N7	21:AU:40:LYS:NZ	2.22	0.87
41:BP:34:LEU:HA	41:BP:130:LYS:O	1.73	0.87
31:BA:1388:A:N6	31:BA:1401:U:H3	1.73	0.87
31:BA:2518:U:H3	31:BA:2574:G:H1	0.87	0.87
1:AA:418:G:N2	1:AA:440:A:H62	1.72	0.87
2:AB:138:ASN:O	2:AB:142:GLU:HB2	1.74	0.86
31:BA:1076:U:H3	31:BA:1149:G:H1	1.21	0.86
2:AB:207:ILE:HG13	51:A:145:GLU:HA	1.57	0.86
4:AD:9:TRP:O	4:AD:13:ARG:HB2	1.75	0.86
31:BA:1388:A:N6	31:BA:1401:U:O2	2.08	0.86
1:AA:274:G:H1	1:AA:279:C:N4	1.73	0.86
2:AB:75:GLN:NE2	51:A:152:MET:HA	1.91	0.86
1:AA:1541:A:OP1	21:AU:54:LYS:NZ	2.09	0.86
2:AB:38:ILE:HD11	51:A:163:ALA:HB2	1.58	0.86
9:AI:96:SER:O	9:AI:100:ARG:HB2	1.75	0.86
34:BE:63:LYS:O	34:BE:67:GLY:HA3	1.74	0.86
31:BA:1558:A:N6	31:BA:1573:G:H21	1.72	0.86
1:AA:418:G:H21	1:AA:440:A:N6	1.71	0.85
1:AA:274:G:H1	1:AA:279:C:H42	1.22	0.85
1:AA:1167:G:H1	1:AA:1183:A:H61	1.21	0.85
1:AA:1167:G:H1	1:AA:1183:A:N6	1.74	0.85
37:BH:105:LEU:O	37:BH:113:ASP:HB3	1.76	0.85
2:AB:137:LEU:O	2:AB:141:ARG:HB2	1.76	0.85
36:BG:169:GLU:O	36:BG:173:LYS:HB2	1.76	0.85
8:AH:15:ARG:O	8:AH:19:MET:HB2	1.75	0.85
31:BA:242:U:N3	31:BA:254:A:C8	2.44	0.85
31:BA:727:C:OP1	33:BD:39:LYS:NZ	2.09	0.85
34:BE:27:VAL:HA	34:BE:184:ILE:O	1.77	0.85
1:AA:1445:G:H1	1:AA:1470:U:H3	0.87	0.85
36:BG:56:ALA:O	36:BG:60:LEU:HB2	1.76	0.85
1:AA:152:A:N6	1:AA:171:U:H3	1.74	0.85
33:BD:175:ARG:HA	33:BD:180:GLU:O	1.77	0.84
47:BV:62:ALA:O	47:BV:66:PHE:HB2	1.78	0.84
1:AA:330:C:H42	1:AA:337:A:H62	0.85	0.84
2:AB:75:GLN:NE2	51:A:152:MET:CB	2.40	0.84
41:BP:54:MET:O	41:BP:58:MET:HB2	1.76	0.84
3:AC:183:TYR:HA	3:AC:199:VAL:O	1.77	0.84
2:AB:75:GLN:HE22	51:A:152:MET:CA	1.89	0.84
31:BA:604:A:H61	31:BA:2033:G:H21	0.87	0.84
31:BA:2751:G:N2	31:BA:2761:A:H62	1.74	0.84
2:AB:207:ILE:CD1	51:A:144:GLU:O	2.26	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:BH:103:LEU:O	37:BH:114:GLU:HA	1.76	0.84
30:B8:3:VAL:HA	30:B8:36:ARG:O	1.78	0.83
31:BA:729:U:H3	31:BA:803:G:H1	1.24	0.83
51:A:39:THR:O	51:A:56:VAL:HA	1.78	0.83
1:AA:842:A:N1	1:AA:860:U:C4	2.46	0.83
8:AH:107:SER:O	8:AH:125:GLY:HA3	1.77	0.83
31:BA:1082:G:N2	31:BA:1146:A:H62	1.77	0.83
43:BR:30:ARG:HA	43:BR:89:VAL:O	1.78	0.83
1:AA:72:U:N3	1:AA:98:A:C6	2.47	0.83
31:BA:2148:G:N2	31:BA:2151:A:C8	2.46	0.83
31:BA:2808:A:N6	31:BA:2888:G:H21	1.77	0.83
1:AA:149:G:H1	1:AA:175:A:N6	1.77	0.82
44:BS:60:VAL:O	44:BS:70:GLU:HA	1.77	0.82
31:BA:1245:G:H1	31:BA:1264:U:H3	0.85	0.82
8:AH:16:ASN:O	8:AH:20:ARG:HB2	1.79	0.82
10:AJ:8:ILE:O	10:AJ:73:LEU:HA	1.78	0.82
1:AA:1317:U:O2	1:AA:1334:A:N6	2.12	0.82
46:BU:24:VAL:O	46:BU:95:THR:HB	1.79	0.82
43:BR:30:ARG:O	43:BR:44:VAL:HA	1.80	0.82
1:AA:427:U:H3	1:AA:432:G:H1	1.25	0.82
3:AC:152:VAL:HA	3:AC:196:GLY:O	1.80	0.82
30:B8:17:ILE:O	30:B8:23:VAL:HA	1.80	0.82
31:BA:410:G:H1	31:BA:434:U:H3	1.26	0.82
42:BQ:105:THR:HA	42:BQ:124:GLU:O	1.80	0.82
9:AI:18:ARG:O	9:AI:66:ASN:HB3	1.80	0.82
31:BA:740:A:C8	31:BA:761:G:N2	2.47	0.82
1:AA:693:G:N2	1:AA:714:A:C6	2.48	0.82
3:AC:83:VAL:O	3:AC:87:ARG:HB2	1.80	0.81
19:AS:50:ALA:HA	19:AS:58:VAL:O	1.80	0.81
47:BV:11:ALA:O	47:BV:106:HIS:HA	1.81	0.81
2:AB:75:GLN:NE2	51:A:152:MET:CA	2.43	0.81
45:BT:102:ASP:O	45:BT:106:PHE:HB3	1.80	0.81
5:AE:36:PHE:HB3	5:AE:56:ALA:O	1.81	0.81
3:AC:113:HIS:O	3:AC:117:GLU:HB2	1.78	0.81
42:BQ:110:VAL:HB	42:BQ:120:MET:O	1.80	0.80
1:AA:693:G:N2	1:AA:714:A:N6	2.29	0.80
3:AC:185:TRP:HA	3:AC:197:VAL:O	1.81	0.80
31:BA:1083:A:C8	31:BA:1145:G:N2	2.49	0.80
1:AA:70:G:C2	1:AA:101:A:N6	2.50	0.80
33:BD:174:VAL:O	33:BD:181:VAL:HA	1.80	0.80
16:AP:10:MET:O	16:AP:17:PHE:HB3	1.82	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1857:G:H1	31:BA:1891:U:H3	0.84	0.79
9:AI:22:VAL:HB	9:AI:62:ASP:O	1.81	0.79
31:BA:1485:G:N2	31:BA:2708:C:C2	2.50	0.79
47:BV:36:ALA:O	47:BV:40:LEU:HB2	1.82	0.79
31:BA:715:U:H3	31:BA:832:G:H1	0.84	0.79
36:BG:168:ARG:O	36:BG:172:ALA:HB3	1.81	0.79
48:BW:42:VAL:O	48:BW:46:PHE:HB2	1.82	0.79
31:BA:742:G:H1	31:BA:759:U:H3	1.31	0.79
1:AA:847:G:N1	1:AA:856:U:C2	2.51	0.79
1:AA:620:G:H1	1:AA:638:U:H3	0.83	0.79
1:AA:1254:U:H3	1:AA:1298:C:H42	0.83	0.79
31:BA:226:A:H61	31:BA:445:G:H21	1.31	0.78
31:BA:2349:G:O6	31:BA:2375:G:N1	2.16	0.78
1:AA:119:A:N6	1:AA:295:U:O2	2.16	0.78
45:BT:104:ALA:O	45:BT:108:ALA:HB3	1.83	0.78
31:BA:481:G:N2	31:BA:489:A:N6	2.31	0.78
34:BE:50:GLN:HA	34:BE:81:ARG:O	1.83	0.78
1:AA:840:G:N1	1:AA:862:U:C2	2.52	0.78
41:BP:115:ARG:O	41:BP:119:ARG:HB2	1.83	0.78
14:AN:3:LYS:O	14:AN:7:VAL:HB	1.84	0.78
31:BA:1235:C:H42	31:BA:1272:U:H3	1.30	0.78
2:AB:38:ILE:HD11	51:A:163:ALA:HB1	1.64	0.77
10:AJ:9:ARG:HA	10:AJ:72:ARG:O	1.84	0.77
1:AA:1457:G:N2	1:AA:1460:A:C6	2.51	0.77
51:A:54:VAL:O	51:A:68:GLU:HA	1.84	0.77
1:AA:691:G:N1	1:AA:715:U:N3	2.31	0.77
1:AA:609:U:O2	1:AA:646:G:N1	2.17	0.77
31:BA:573:G:H1	31:BA:586:U:H3	0.82	0.77
51:A:58:LEU:HB2	51:A:65:LEU:O	1.84	0.77
1:AA:72:U:C2	1:AA:98:A:C6	2.73	0.76
1:AA:254:A:H62	1:AA:289:G:H21	1.33	0.76
31:BA:1385:G:H1	31:BA:1404:U:H3	1.31	0.76
31:BA:2300:U:H3	31:BA:2339:A:N6	1.83	0.76
47:BV:51:VAL:O	47:BV:55:LEU:HB2	1.85	0.76
7:AG:132:ALA:O	7:AG:136:LYS:HB2	1.85	0.76
1:AA:847:G:C6	1:AA:856:U:N3	2.54	0.76
6:AF:5:GLU:O	6:AF:92:ILE:HA	1.86	0.76
38:BM:118:ARG:O	38:BM:122:MET:HB2	1.86	0.76
1:AA:1011:U:H3	1:AA:1046:C:N4	1.83	0.76
29:B7:45:ARG:HH21	31:BA:2422:A:H5'	1.50	0.76
31:BA:79:G:H21	31:BA:378:A:H61	1.33	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:AB:38:ILE:HG23	51:A:140:PRO:CB	2.15	0.76
31:BA:1929:C:H42	31:BA:1933:G:H22	1.34	0.76
35:BF:141:LYS:O	35:BF:145:ALA:HB2	1.86	0.76
1:AA:847:G:O6	1:AA:856:U:C4	2.39	0.75
31:BA:481:G:N2	31:BA:489:A:C6	2.54	0.75
31:BA:1864:G:H1	31:BA:1884:U:H3	1.32	0.75
1:AA:609:U:H3	1:AA:646:G:H1	1.30	0.75
35:BF:37:VAL:O	35:BF:41:ARG:HB2	1.86	0.75
1:AA:72:U:C2	1:AA:98:A:N6	2.54	0.75
7:AG:120:ALA:O	7:AG:124:LEU:HB3	1.87	0.75
34:BE:21:GLU:H	44:BS:79:ARG:HH22	1.32	0.75
31:BA:856:A:H62	31:BA:1007:G:N2	1.84	0.75
10:AJ:44:THR:HA	10:AJ:69:THR:O	1.86	0.75
29:B7:32:ARG:NH2	31:BA:2426:C:N3	2.35	0.75
38:BM:70:LYS:O	38:BM:74:LYS:HB2	1.87	0.75
35:BF:110:LEU:O	35:BF:114:TYR:HB2	1.87	0.74
2:AB:19:GLN:HG3	51:A:139:LYS:HA	1.68	0.74
1:AA:933:G:H1	1:AA:1398:U:H3	0.79	0.74
31:BA:1076:U:O2	31:BA:1149:G:N2	2.20	0.74
31:BA:2395:G:H3'	31:BA:2428:C:H42	1.51	0.74
47:BV:81:ASN:O	47:BV:105:ALA:HA	1.87	0.74
2:AB:38:ILE:HG23	51:A:140:PRO:N	2.02	0.74
10:AJ:15:HIS:H	10:AJ:70:HIS:HB2	1.52	0.74
51:A:91:LYS:O	51:A:95:ARG:NH1	2.19	0.74
33:BD:145:GLU:HG3	33:BD:154:LEU:HB2	1.70	0.74
1:AA:28:A:H62	1:AA:567:G:N2	1.86	0.73
10:AJ:47:SER:HB3	10:AJ:67:MET:O	1.88	0.73
1:AA:1012:G:N1	1:AA:1044:C:N3	2.36	0.73
1:AA:1317:U:C2	1:AA:1334:A:N6	2.56	0.73
31:BA:1487:A:N1	31:BA:2706:G:O6	2.22	0.73
41:BP:65:TRP:HB2	41:BP:105:GLU:HB2	1.69	0.73
46:BU:58:ALA:HA	46:BU:103:ASN:HB2	1.69	0.73
51:A:15:ASP:HA	51:A:18:ARG:HB2	1.69	0.73
1:AA:986:A:H2	1:AA:1323:G:H21	1.33	0.73
31:BA:775:G:N1	31:BA:792:U:O2	2.17	0.73
31:BA:1068:U:O4	31:BA:2754:A:C6	2.41	0.73
51:A:58:LEU:O	51:A:64:THR:HA	1.88	0.73
14:AN:4:LYS:O	14:AN:8:VAL:HB	1.88	0.73
2:AB:207:ILE:HG12	51:A:148:LEU:CB	2.19	0.73
31:BA:1941:A:H61	31:BA:1968:G:H21	1.36	0.73
1:AA:691:G:N1	1:AA:715:U:C2	2.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:A:77:SER:O	51:A:81:VAL:HB	1.88	0.72
31:BA:1301:G:H22	31:BA:1644:C:N4	1.86	0.72
2:AB:139:LYS:O	2:AB:143:ARG:HB2	1.90	0.72
7:AG:92:PRO:HG3	7:AG:95:ARG:HH21	1.54	0.72
20:AT:45:ARG:O	20:AT:49:SER:HB3	1.89	0.72
33:BD:80:THR:O	33:BD:92:ALA:HA	1.89	0.72
1:AA:1502:U:O3'	51:A:27:LYS:NZ	2.23	0.72
13:AM:17:ILE:O	13:AM:21:TYR:HB2	1.89	0.72
31:BA:2512:G:H1	31:BA:2584:U:H3	1.37	0.72
1:AA:693:G:H5'	11:AK:40:LEU:HG	1.70	0.72
19:AS:52:TYR:H	19:AS:71:LEU:HD21	1.54	0.72
1:AA:72:U:N3	1:AA:98:A:C5	2.58	0.71
40:BO:135:ALA:O	40:BO:139:ALA:HB3	1.90	0.71
2:AB:211:LYS:O	2:AB:215:ALA:HB2	1.89	0.71
31:BA:734:A:H62	31:BA:768:G:H21	1.38	0.71
33:BD:16:MET:SD	33:BD:210:ARG:NH1	2.63	0.71
31:BA:1479:G:H1	31:BA:1488:U:H3	1.39	0.71
1:AA:1511:G:N3	1:AA:1512:G:N1	2.39	0.71
15:AO:6:GLU:O	15:AO:10:GLU:HB2	1.91	0.71
31:BA:242:U:C2	31:BA:254:A:N7	2.59	0.71
1:AA:840:G:C6	1:AA:862:U:C4	2.78	0.71
31:BA:1082:G:H21	31:BA:1146:A:N6	1.88	0.71
35:BF:136:THR:O	35:BF:140:ALA:HB2	1.91	0.70
36:BG:131:LEU:HB3	36:BG:155:ILE:O	1.91	0.70
4:AD:8:SER:O	4:AD:12:SER:HB2	1.90	0.70
47:BV:62:ALA:O	47:BV:67:GLY:N	2.23	0.70
10:AJ:47:SER:O	10:AJ:66:GLU:HA	1.91	0.70
51:A:52:ALA:O	51:A:70:THR:HA	1.92	0.70
31:BA:310:U:N3	31:BA:313:A:C5	2.60	0.70
35:BF:152:VAL:HA	35:BF:192:LYS:O	1.91	0.70
39:BN:17:LYS:H	39:BN:46:ALA:HA	1.55	0.70
42:BQ:4:ARG:HD3	42:BQ:6:LEU:H	1.54	0.70
11:AK:79:THR:HA	11:AK:104:ASN:HB2	1.74	0.70
31:BA:911:G:H1	31:BA:940:U:H3	0.78	0.70
47:BV:76:SER:H	47:BV:111:VAL:HA	1.56	0.70
1:AA:119:A:N7	1:AA:295:U:O2	2.24	0.70
1:AA:691:G:H2'	11:AK:38:ASN:HD22	1.57	0.70
1:AA:680:U:H3	1:AA:742:G:H1	1.39	0.69
7:AG:121:LYS:O	7:AG:125:ASP:HB2	1.92	0.69
1:AA:1257:A:N7	1:AA:1294:A:N6	2.41	0.69
9:AI:80:ARG:O	9:AI:84:ALA:HB3	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1487:A:N1	31:BA:2706:G:C6	2.60	0.69
9:AI:16:VAL:O	9:AI:67:VAL:HA	1.92	0.69
1:AA:1011:U:N3	1:AA:1046:C:N4	2.41	0.69
31:BA:1399:C:H4'	33:BD:45:ASN:HD21	1.56	0.69
1:AA:693:G:C2	1:AA:714:A:N6	2.58	0.69
7:AG:26:ILE:O	7:AG:30:MET:HB3	1.92	0.69
1:AA:274:G:N1	1:AA:279:C:N4	2.40	0.69
2:AB:110:ARG:O	2:AB:114:LEU:HB2	1.92	0.69
1:AA:986:A:H2	1:AA:1323:G:N2	1.86	0.69
1:AA:1317:U:N3	1:AA:1334:A:N6	2.32	0.69
13:AM:77:ILE:O	13:AM:80:LEU:C	2.31	0.69
28:B6:34:ARG:NH1	31:BA:502:G:OP2	2.24	0.69
31:BA:1301:G:H22	31:BA:1644:C:H42	1.40	0.69
31:BA:1328:G:H22	31:BA:1669:C:H5'	1.58	0.69
31:BA:1485:G:N1	31:BA:2708:C:N3	2.40	0.69
34:BE:51:VAL:O	34:BE:80:VAL:HA	1.91	0.69
1:AA:1457:G:N2	1:AA:1460:A:C5	2.60	0.69
31:BA:1485:G:C2	31:BA:2708:C:C2	2.80	0.69
13:AM:56:ILE:HG12	13:AM:60:LEU:HB2	1.75	0.69
1:AA:1414:C:N3	1:AA:1502:U:O4	2.26	0.68
2:AB:144:LEU:O	2:AB:148:ILE:HA	1.91	0.68
31:BA:92:G:N3	31:BA:93:U:N3	2.41	0.68
31:BA:1203:A:N7	31:BA:1205:A:N6	2.42	0.68
1:AA:384:G:N1	1:AA:395:U:N3	2.40	0.68
1:AA:1491:C:HO2'	31:BA:1964:A:HO2'	1.42	0.68
31:BA:242:U:O2	31:BA:254:A:N7	2.27	0.68
31:BA:1516:G:N3	31:BA:1517:U:N3	2.38	0.68
9:AI:82:GLY:O	9:AI:86:ALA:HB2	1.93	0.68
13:AM:98:ARG:HB3	13:AM:100:GLN:HB2	1.76	0.68
31:BA:304:G:H1	31:BA:396:C:H2'	1.59	0.68
31:BA:1929:C:N4	31:BA:1933:G:H22	1.91	0.68
42:BQ:14:LYS:O	42:BQ:18:ARG:HB2	1.92	0.68
1:AA:1246:A:HO2'	1:AA:1304:U:H3	1.41	0.68
2:AB:19:GLN:CG	51:A:139:LYS:HA	2.23	0.68
1:AA:619:G:H1	1:AA:639:A:H2	1.39	0.68
40:BO:94:GLU:O	40:BO:98:ALA:HB3	1.93	0.68
1:AA:259:G:O6	1:AA:280:C:N4	2.27	0.68
1:AA:599:U:O2	1:AA:657:G:N2	2.26	0.68
1:AA:1432:A:H2	1:AA:1482:G:H1	1.41	0.68
15:AO:29:ILE:O	15:AO:33:THR:HB	1.93	0.68
31:BA:678:A:H61	31:BA:2353:G:H21	1.41	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1596:A:H1'	33:BD:213:HIS:HB3	1.76	0.68
42:BQ:113:ARG:HG2	42:BQ:115:GLY:H	1.58	0.68
31:BA:1409:G:H21	31:BA:1600:A:H2	1.41	0.68
31:BA:2312:G:H1	31:BA:2315:A:H2	1.35	0.68
49:BX:80:VAL:HA	49:BX:92:PHE:O	1.93	0.68
1:AA:1375:G:H5'	10:AJ:64:GLN:HE22	1.59	0.68
17:AQ:47:ALA:HB3	17:AQ:76:LEU:HD23	1.76	0.68
31:BA:377:A:N3	31:BA:379:A:N6	2.41	0.68
31:BA:2134:A:O2'	31:BA:2162:A:N6	2.26	0.68
33:BD:81:ILE:HA	33:BD:91:ILE:O	1.93	0.68
43:BR:35:ARG:HA	43:BR:40:ILE:HG22	1.76	0.68
11:AK:17:GLY:O	11:AK:81:SER:HB2	1.94	0.68
25:B3:21:TYR:HB3	36:BG:4:ARG:HH12	1.57	0.68
31:BA:2652:G:O6	31:BA:2676:U:C2	2.47	0.68
23:B1:24:ARG:HG3	23:B1:25:GLU:HG2	1.75	0.68
31:BA:1739:G:C6	31:BA:1751:A:N1	2.62	0.67
1:AA:1509:A:N7	1:AA:1512:G:N2	2.42	0.67
31:BA:1929:C:H42	31:BA:1933:G:N2	1.92	0.67
31:BA:2672:G:H1'	37:BH:110:SER:HB2	1.75	0.67
33:BD:120:PRO:HD3	33:BD:189:ARG:HH22	1.60	0.67
1:AA:384:G:N1	1:AA:395:U:C2	2.62	0.67
3:AC:147:GLY:O	3:AC:202:TYR:HB3	1.93	0.67
20:AT:72:LEU:O	20:AT:76:LEU:HB3	1.95	0.67
31:BA:1388:A:N6	31:BA:1401:U:C2	2.56	0.67
41:BP:110:ASP:O	41:BP:114:ALA:HB2	1.94	0.67
9:AI:50:GLN:HE22	9:AI:100:ARG:HH22	1.43	0.67
1:AA:508:A:N7	4:AD:4:TYR:N	2.43	0.67
5:AE:62:ALA:O	5:AE:66:ALA:HB2	1.95	0.67
12:AL:46:VAL:HG12	12:AL:69:ARG:HE	1.59	0.67
1:AA:28:A:H62	1:AA:567:G:H21	1.43	0.67
1:AA:899:U:O2	1:AA:915:A:N7	2.27	0.67
25:B3:1:MET:H2	32:BB:41:C:H5"	1.60	0.67
31:BA:226:A:H61	31:BA:445:G:N2	1.91	0.67
31:BA:1245:G:N2	31:BA:1264:U:O2	2.24	0.67
31:BA:1301:G:N1	31:BA:1644:C:N3	2.42	0.67
31:BA:1497:A:H2'	31:BA:1498:A:H8	1.59	0.67
43:BR:31:LEU:HA	43:BR:43:GLN:O	1.95	0.67
31:BA:1297:U:H2'	31:BA:1298:A:H8	1.59	0.67
31:BA:1729:A:H3'	31:BA:1730:A:H8	1.60	0.67
31:BA:2734:G:O2'	34:BE:170:GLN:NE2	2.28	0.67
34:BE:180:GLU:HG3	34:BE:181:LYS:HD3	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:131:G:N2	31:BA:145:U:O2	2.26	0.66
31:BA:2456:C:N3	31:BA:2508:U:O4	2.28	0.66
47:BV:90:ARG:HB3	47:BV:98:SER:O	1.94	0.66
1:AA:1432:A:N1	1:AA:1482:G:O6	2.28	0.66
1:AA:1439:G:C2	1:AA:1475:A:N7	2.62	0.66
6:AF:42:ASP:HA	6:AF:62:ILE:O	1.94	0.66
31:BA:411:G:H1	31:BA:433:U:H3	1.41	0.66
31:BA:626:U:H3	31:BA:698:G:H1	1.42	0.66
35:BF:139:PHE:O	35:BF:143:ILE:HB	1.94	0.66
31:BA:1445:G:N3	31:BA:1616:A:N1	2.44	0.66
32:BB:3:U:H1'	32:BB:24:U:H3	1.60	0.66
31:BA:1172:G:N2	38:BM:109:GLY:O	2.28	0.66
31:BA:2144:G:N2	31:BA:2155:U:O2'	2.29	0.66
35:BF:155:VAL:HB	35:BF:195:VAL:HA	1.78	0.66
45:BT:94:MET:H	46:BU:13:GLN:HE21	1.43	0.66
31:BA:2144:G:N2	31:BA:2145:G:N7	2.42	0.66
35:BF:103:GLN:HG3	35:BF:106:ARG:HH21	1.61	0.66
1:AA:258:A:N7	1:AA:282:A:N1	2.44	0.66
7:AG:116:GLN:O	7:AG:120:ALA:HB2	1.94	0.66
9:AI:81:HIS:O	9:AI:85:ARG:HB3	1.96	0.66
31:BA:1922:A:O2'	31:BA:1923:A:N7	2.29	0.66
42:BQ:24:LEU:HD11	42:BQ:44:VAL:HG11	1.77	0.66
50:BZ:36:GLY:HA2	50:BZ:75:VAL:H	1.61	0.66
1:AA:1538:A:N7	1:AA:1541:A:N6	2.44	0.66
3:AC:28:TYR:O	3:AC:32:LEU:HB2	1.96	0.66
31:BA:2519:C:H2'	31:BA:2520:G:H8	1.60	0.66
48:BW:7:ILE:HA	48:BW:29:VAL:HG12	1.76	0.66
1:AA:609:U:O2	1:AA:646:G:N2	2.28	0.66
1:AA:691:G:C6	1:AA:715:U:N3	2.63	0.66
2:AB:140:GLU:HA	2:AB:144:LEU:HD13	1.77	0.66
47:BV:88:ARG:O	47:BV:99:PRO:HA	1.96	0.66
1:AA:97:G:C8	1:AA:100:G:N1	2.64	0.66
1:AA:370:G:H5"	12:AL:44:ARG:HB3	1.77	0.66
1:AA:1311:G:O2'	1:AA:1340:A:N6	2.29	0.66
31:BA:181:A:N1	31:BA:214:G:O6	2.29	0.66
31:BA:1511:G:H1	31:BA:1532:U:H3	1.44	0.66
31:BA:2108:A:N7	31:BA:2189:U:O4	2.29	0.66
44:BS:61:ARG:HH12	44:BS:100:ARG:HA	1.59	0.66
13:AM:87:ARG:NH1	13:AM:97:THR:O	2.28	0.65
31:BA:1862:G:N1	31:BA:1886:U:N3	2.44	0.65
33:BD:205:LEU:HD12	33:BD:210:ARG:HG3	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:23:G:H21	1:AA:922:A:H62	1.44	0.65
31:BA:1516:G:H1	31:BA:1528:U:H3	1.43	0.65
34:BE:174:ILE:HG12	34:BE:186:VAL:HA	1.77	0.65
42:BQ:49:THR:HA	42:BQ:52:LYS:HD3	1.78	0.65
31:BA:2778:C:OP2	34:BE:166:ARG:NH1	2.29	0.65
42:BQ:18:ARG:HG3	42:BQ:67:ARG:HH21	1.61	0.65
46:BU:43:VAL:HG23	46:BU:52:ALA:HB2	1.78	0.65
31:BA:1082:G:N2	31:BA:1146:A:N6	2.43	0.65
36:BG:5:LEU:HA	36:BG:8:LYS:HG2	1.77	0.65
37:BH:38:ASN:H	37:BH:43:LEU:HD11	1.61	0.65
1:AA:1012:G:C6	1:AA:1044:C:O2	2.49	0.65
1:AA:1457:G:N2	1:AA:1460:A:N6	2.40	0.65
31:BA:215:A:N7	31:BA:466:U:C2	2.65	0.65
7:AG:115:MET:O	7:AG:119:LEU:HB3	1.96	0.65
12:AL:63:ARG:HD2	12:AL:103:LEU:HD21	1.79	0.65
13:AM:72:GLU:O	13:AM:76:ASN:HB2	1.97	0.65
31:BA:1027:C:H2'	31:BA:1028:A:H8	1.61	0.65
32:BB:28:C:H1'	32:BB:55:A:H61	1.61	0.65
1:AA:684:A:H5"	11:AK:113:PRO:HB2	1.78	0.65
1:AA:842:A:N6	1:AA:860:U:O4	2.29	0.65
1:AA:1365:U:O2	1:AA:1370:A:N7	2.30	0.65
31:BA:993:U:H3'	32:BB:87:G:H21	1.61	0.65
31:BA:1465:G:N1	31:BA:1586:U:C2	2.65	0.65
47:BV:90:ARG:O	47:BV:97:ALA:HA	1.96	0.65
1:AA:398:C:O2'	16:AP:9:ARG:NH1	2.30	0.65
3:AC:150:THR:HA	3:AC:198:LYS:O	1.96	0.65
1:AA:109:A:H62	1:AA:332:G:N2	1.94	0.65
3:AC:61:ASN:O	3:AC:97:GLN:NE2	2.30	0.65
23:B1:2:LYS:HG3	31:BA:98:A:H3'	1.79	0.65
8:AH:103:THR:H	8:AH:131:ILE:HG12	1.62	0.64
31:BA:2847:G:O6	44:BS:20:ARG:NH1	2.30	0.64
46:BU:75:THR:O	46:BU:87:LYS:HA	1.97	0.64
50:BZ:53:ILE:HG23	50:BZ:84:LYS:HG3	1.78	0.64
51:A:37:GLU:HB3	51:A:59:PRO:HG2	1.79	0.64
2:AB:38:ILE:CG2	51:A:140:PRO:N	2.60	0.64
2:AB:207:ILE:HG22	2:AB:208:ARG:HG3	1.78	0.64
31:BA:880:U:O2'	31:BA:884:A:N6	2.28	0.64
31:BA:1097:A:N6	31:BA:1123:A:N7	2.45	0.64
31:BA:2836:G:N3	42:BQ:41:ARG:NH2	2.46	0.64
47:BV:25:ILE:HD13	47:BV:29:ARG:HE	1.61	0.64
1:AA:840:G:C6	1:AA:862:U:N3	2.65	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:892:G:N2	31:BA:959:U:O2	2.24	0.64
31:BA:1519:U:O2	31:BA:1525:G:N2	2.31	0.64
31:BA:2237:U:H2'	31:BA:2238:G:H8	1.62	0.64
31:BA:2308:G:H22	31:BA:2316:U:H3	1.45	0.64
46:BU:21:VAL:HA	46:BU:98:VAL:HA	1.80	0.64
50:BZ:48:GLN:H	50:BZ:66:THR:HG22	1.62	0.64
28:B6:1:MET:H2	28:B6:3:ARG:HH12	1.44	0.64
31:BA:911:G:N2	31:BA:940:U:O2	2.23	0.64
11:AK:21:ILE:HG12	11:AK:30:VAL:HA	1.79	0.64
28:B6:39:ARG:NH1	28:B6:41:SER:OG	2.31	0.64
31:BA:1794:G:N2	31:BA:1829:U:O2	2.28	0.64
1:AA:113:G:H1'	1:AA:362:G:H4'	1.80	0.64
8:AH:5:ASP:O	8:AH:9:ASP:HB2	1.98	0.64
31:BA:1301:G:N2	31:BA:1644:C:H42	1.95	0.64
31:BA:1465:G:N2	31:BA:1586:U:O2	2.31	0.64
35:BF:156:LEU:HD21	35:BF:165:GLU:HG2	1.79	0.64
37:BH:25:THR:HG22	37:BH:34:VAL:HB	1.80	0.64
45:BT:72:ASN:HD21	45:BT:107:THR:HG22	1.63	0.64
1:AA:222:U:H4'	1:AA:474:G:H1	1.63	0.64
31:BA:478:A:H61	35:BF:41:ARG:HG3	1.62	0.64
33:BD:128:ASN:O	33:BD:191:THR:HA	1.98	0.64
1:AA:1117:C:OP2	1:AA:1119:A:N6	2.31	0.64
31:BA:921:C:N4	31:BA:928:G:O6	2.30	0.64
32:BB:9:U:O2	32:BB:107:G:N2	2.27	0.64
36:BG:74:SER:OG	36:BG:81:ARG:NH1	2.30	0.64
1:AA:329:A:C2	1:AA:340:G:N1	2.60	0.64
1:AA:941:G:H5"	7:AG:2:ARG:HH21	1.62	0.64
3:AC:72:PRO:HD3	3:AC:104:GLU:HB2	1.79	0.64
31:BA:2733:A:O2'	34:BE:187:LYS:NZ	2.31	0.64
31:BA:2748:G:N3	37:BH:143:GLN:NE2	2.46	0.64
45:BT:21:ALA:O	45:BT:28:LYS:NZ	2.31	0.64
1:AA:72:U:O2	1:AA:98:A:C6	2.51	0.63
1:AA:1138:A:H62	1:AA:1151:G:H21	1.46	0.63
13:AM:15:ILE:HA	13:AM:18:SER:HB2	1.80	0.63
2:AB:38:ILE:CD1	51:A:163:ALA:HB2	2.27	0.63
26:B4:39:SER:HB3	31:BA:2883:C:H42	1.64	0.63
29:B7:16:ARG:HA	29:B7:22:LEU:HA	1.80	0.63
31:BA:2790:A:H5'	34:BE:71:LYS:HB2	1.80	0.63
31:BA:2838:C:H5"	42:BQ:49:THR:HG21	1.80	0.63
1:AA:72:U:N3	1:AA:98:A:N6	2.45	0.63
1:AA:1094:U:O2	1:AA:1107:G:N2	2.31	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1348:G:H3'	31:BA:1349:G:H21	1.63	0.63
31:BA:1351:A:N1	31:BA:1362:C:O2'	2.31	0.63
31:BA:2821:A:N7	34:BE:161:ARG:NH2	2.46	0.63
1:AA:505:G:N2	1:AA:507:A:OP2	2.31	0.63
2:AB:86:ARG:HB3	2:AB:222:ILE:HD11	1.80	0.63
31:BA:215:A:N7	31:BA:466:U:O2	2.31	0.63
31:BA:856:A:N6	31:BA:1007:G:N2	2.46	0.63
31:BA:2566:U:O2	31:BA:2570:A:N7	2.32	0.63
51:A:7:ARG:HB2	51:A:40:ALA:O	1.99	0.63
1:AA:695:A:N1	1:AA:708:G:O2'	2.30	0.63
1:AA:1440:A:N6	1:AA:1474:U:O2'	2.32	0.63
4:AD:64:SER:O	4:AD:68:PHE:HB2	1.98	0.63
31:BA:1794:G:H1	31:BA:1829:U:H3	1.43	0.63
35:BF:153:LEU:HD22	35:BF:193:LEU:HD22	1.81	0.63
1:AA:23:G:N2	1:AA:922:A:H62	1.97	0.63
9:AI:34:GLU:HG2	9:AI:36:GLU:H	1.64	0.63
13:AM:56:ILE:O	13:AM:60:LEU:CB	2.46	0.63
13:AM:77:ILE:HA	13:AM:80:LEU:HB2	1.81	0.63
22:B0:16:ASN:HA	22:B0:26:LYS:HA	1.81	0.63
31:BA:1067:A:N1	31:BA:1157:G:O6	2.32	0.63
1:AA:899:U:N3	1:AA:915:A:C8	2.67	0.63
2:AB:186:MET:HA	2:AB:200:ILE:HB	1.80	0.63
31:BA:1756:C:N3	31:BA:2720:U:O2'	2.30	0.63
31:BA:2139:A:N7	31:BA:2160:U:O2	2.31	0.63
18:AR:33:LEU:O	18:AR:36:ARG:NH1	2.32	0.63
38:BM:47:THR:HG22	38:BM:49:HIS:H	1.64	0.63
39:BN:120:GLU:OE2	44:BS:65:ASN:ND2	2.31	0.63
45:BT:75:SER:H	45:BT:78:LYS:HE3	1.64	0.63
1:AA:409:C:OP1	4:AD:70:ASN:ND2	2.32	0.63
3:AC:66:THR:HA	3:AC:101:ASN:HD22	1.64	0.63
31:BA:372:A:O2'	35:BF:169:ARG:NH2	2.31	0.63
31:BA:1697:A:H61	31:BA:1705:A:H61	1.46	0.63
1:AA:58:U:H1'	1:AA:376:U:H3	1.64	0.62
1:AA:155:A:N6	1:AA:168:U:O2'	2.29	0.62
12:AL:99:ARG:NH1	12:AL:106:VAL:O	2.32	0.62
31:BA:389:U:H2'	31:BA:390:A:H8	1.64	0.62
31:BA:2151:A:H2'	31:BA:2152:G:H4'	1.80	0.62
45:BT:94:MET:HG2	46:BU:6:ILE:HG12	1.79	0.62
1:AA:121:C:N4	1:AA:244:G:OP2	2.32	0.62
1:AA:703:A:H5"	11:AK:51:LYS:HE3	1.82	0.62
1:AA:1324:C:H41	14:AN:18:THR:HG1	1.45	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:BD:78:VAL:HA	33:BD:93:LEU:O	1.99	0.62
40:BO:111:VAL:H	40:BO:129:VAL:HG22	1.64	0.62
42:BQ:12:GLN:HA	42:BQ:15:ALA:HB3	1.82	0.62
1:AA:591:C:O2	1:AA:767:A:N6	2.32	0.62
1:AA:790:A:OP1	1:AA:1528:G:N2	2.32	0.62
3:AC:136:ALA:HA	3:AC:139:ARG:HE	1.64	0.62
4:AD:182:GLU:H	4:AD:185:GLU:HB2	1.65	0.62
28:B6:9:LYS:HA	28:B6:12:ARG:HE	1.64	0.62
10:AJ:49:TYR:O	10:AJ:64:GLN:HA	1.98	0.62
31:BA:1231:U:O4	31:BA:1273:A:N6	2.30	0.62
31:BA:2012:C:H2'	31:BA:2013:G:H8	1.62	0.62
38:BM:27:LEU:O	38:BM:31:SER:HB3	1.99	0.62
49:BX:40:ILE:HA	49:BX:60:GLU:HG2	1.81	0.62
3:AC:151:GLN:HB3	3:AC:198:LYS:HB2	1.81	0.62
33:BD:123:ASP:O	33:BD:128:ASN:ND2	2.31	0.62
1:AA:198:A:N3	17:AQ:75:ARG:NH1	2.48	0.62
1:AA:960:U:H4'	1:AA:972:A:H61	1.64	0.62
1:AA:1420:A:N1	1:AA:1494:G:C6	2.67	0.62
6:AF:45:LYS:HA	6:AF:60:TYR:HB2	1.82	0.62
31:BA:411:G:N2	31:BA:433:U:O2	2.31	0.62
35:BF:199:ALA:O	35:BF:203:ILE:HB	1.99	0.62
1:AA:263:G:O6	1:AA:274:G:N2	2.32	0.62
1:AA:1307:G:OP2	1:AA:1342:U:N3	2.29	0.62
2:AB:207:ILE:CD1	51:A:145:GLU:CA	2.67	0.62
19:AS:55:ARG:HG3	19:AS:56:LYS:HG3	1.80	0.62
20:AT:72:LEU:O	20:AT:76:LEU:HA	2.00	0.62
22:B0:24:GLN:NE2	31:BA:200:C:OP1	2.33	0.62
28:B6:18:PHE:O	28:B6:22:MET:HB2	1.98	0.62
31:BA:726:C:OP1	33:BD:217:ARG:NH1	2.32	0.62
2:AB:105:ASN:HA	2:AB:108:GLN:HB2	1.82	0.62
13:AM:74:SER:O	13:AM:78:LYS:HB2	1.99	0.62
30:B8:30:ASN:HD22	30:B8:33:HIS:HE1	1.48	0.62
31:BA:624:G:N2	31:BA:700:U:O2	2.33	0.62
31:BA:2732:U:O2	34:BE:189:ASN:ND2	2.33	0.62
38:BM:9:ASN:ND2	38:BM:45:THR:O	2.32	0.62
39:BN:13:ASN:HB2	39:BN:95:GLY:HA3	1.81	0.62
47:BV:73:LEU:HD13	47:BV:111:VAL:HG21	1.81	0.62
1:AA:72:U:O4	1:AA:98:A:N7	2.33	0.62
1:AA:623:G:N2	1:AA:635:U:O2	2.26	0.62
10:AJ:10:LEU:HB2	10:AJ:72:ARG:HB3	1.81	0.62
31:BA:1550:G:N2	31:BA:1551:A:O2'	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:184:U:OP1	1:AA:187:C:N4	2.33	0.62
2:AB:207:ILE:HD11	51:A:145:GLU:N	2.14	0.62
7:AG:19:SER:HB3	7:AG:22:VAL:HG23	1.80	0.62
20:AT:18:ASN:O	20:AT:22:ALA:HB3	2.00	0.62
31:BA:617:G:H21	31:BA:1284:A:H62	1.45	0.62
31:BA:1465:G:C2	31:BA:1586:U:O2	2.52	0.62
1:AA:1255:A:OP1	9:AI:33:ARG:NH2	2.33	0.61
31:BA:1083:A:H62	31:BA:1145:G:H1'	1.64	0.61
51:A:39:THR:HB	51:A:57:THR:HG22	1.80	0.61
1:AA:362:G:N2	1:AA:396:G:O2'	2.33	0.61
2:AB:167:HIS:HB2	2:AB:191:ALA:HB2	1.82	0.61
9:AI:21:LEU:HD21	9:AI:86:ALA:HB1	1.82	0.61
31:BA:925:C:H3'	31:BA:926:U:H2'	1.82	0.61
31:BA:2743:U:O2	31:BA:2768:A:N7	2.33	0.61
32:BB:6:U:H3	32:BB:110:G:H1	1.46	0.61
33:BD:3:ILE:HD11	33:BD:17:THR:HB	1.82	0.61
1:AA:1424:G:O2'	1:AA:1489:G:N2	2.28	0.61
2:AB:83:GLU:OE2	2:AB:86:ARG:NH2	2.34	0.61
13:AM:19:LEU:HB3	13:AM:25:VAL:HG13	1.82	0.61
15:AO:40:ASN:HA	15:AO:43:ILE:HG12	1.82	0.61
19:AS:33:THR:HG23	19:AS:52:TYR:HB2	1.82	0.61
31:BA:856:A:N6	31:BA:1007:G:C2	2.68	0.61
31:BA:1510:U:O4	31:BA:1534:U:N3	2.32	0.61
31:BA:2743:U:C2	31:BA:2768:A:N7	2.68	0.61
35:BF:117:LYS:HG3	35:BF:187:ILE:HD11	1.82	0.61
37:BH:121:ILE:HB	37:BH:123:PHE:HB2	1.81	0.61
1:AA:1022:G:H21	1:AA:1025:A:H8	1.47	0.61
2:AB:6:MET:HA	2:AB:9:LEU:HB2	1.81	0.61
31:BA:723:U:H2'	31:BA:724:A:H8	1.65	0.61
31:BA:1068:U:O4	31:BA:2754:A:C5	2.54	0.61
34:BE:69:ALA:HA	34:BE:72:ALA:HB3	1.81	0.61
44:BS:5:GLU:O	44:BS:9:ALA:HB2	2.00	0.61
51:A:57:THR:HA	51:A:66:ARG:HA	1.82	0.61
1:AA:88:C:O2'	1:AA:89:A:N7	2.31	0.61
1:AA:224:C:H1'	1:AA:477:A:H61	1.65	0.61
1:AA:899:U:C2	1:AA:915:A:N7	2.69	0.61
1:AA:1259:C:OP1	1:AA:1375:G:N2	2.30	0.61
3:AC:184:ALA:O	3:AC:198:LYS:HA	2.00	0.61
31:BA:1388:A:N7	31:BA:1401:U:O4	2.34	0.61
33:BD:37:MET:SD	33:BD:37:MET:N	2.73	0.61
36:BG:4:ARG:NH2	36:BG:102:ASP:OD2	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:BS:105:LYS:O	44:BS:109:ILE:HB	2.01	0.61
1:AA:546:G:OP1	12:AL:123:ARG:NH2	2.31	0.61
1:AA:1096:G:H21	1:AA:1176:A:H2	1.48	0.61
1:AA:1420:A:N1	1:AA:1494:G:O6	2.33	0.61
5:AE:100:LYS:HB2	5:AE:127:THR:HB	1.81	0.61
31:BA:621:U:O2'	35:BF:93:ASN:ND2	2.32	0.61
31:BA:705:A:H5"	40:BO:43:GLY:HA2	1.81	0.61
36:BG:59:ALA:HB2	36:BG:66:PRO:HG3	1.83	0.61
40:BO:25:SER:OG	40:BO:27:ASN:ND2	2.33	0.61
2:AB:112:THR:O	2:AB:116:GLU:HB2	2.01	0.61
3:AC:157:ASN:H	3:AC:192:TYR:HB2	1.64	0.61
4:AD:196:VAL:HG13	4:AD:200:ASN:HD22	1.65	0.61
31:BA:341:G:N7	31:BA:362:A:N6	2.48	0.61
31:BA:651:A:H5"	35:BF:206:VAL:HG11	1.83	0.61
33:BD:63:ARG:NH2	33:BD:86:ASN:OD1	2.33	0.61
1:AA:11:G:N1	1:AA:27:C:O2	2.33	0.61
1:AA:97:G:N7	1:AA:100:G:C2	2.68	0.61
25:B3:51:SER:O	25:B3:54:SER:HB3	2.00	0.61
31:BA:226:A:N6	31:BA:445:G:H21	1.97	0.61
31:BA:1451:G:N2	31:BA:1606:U:O2	2.24	0.61
1:AA:18:A:H5"	5:AE:23:ARG:HH11	1.65	0.61
1:AA:496:A:H3'	1:AA:497:A:H8	1.64	0.61
1:AA:869:G:HO2'	1:AA:882:G:HO2'	1.48	0.61
1:AA:1185:G:N2	1:AA:1188:G:OP2	2.34	0.61
9:AI:35:VAL:HG12	9:AI:45:ARG:HH11	1.65	0.61
31:BA:568:U:O4	31:BA:591:G:O6	2.19	0.61
31:BA:2255:G:OP2	41:BP:82:ARG:NH1	2.34	0.61
32:BB:89:C:OP1	41:BP:99:ARG:NH2	2.34	0.61
1:AA:553:C:OP2	4:AD:10:LYS:NZ	2.33	0.61
8:AH:37:ALA:O	8:AH:41:LYS:HB2	2.01	0.61
31:BA:842:U:OP2	40:BO:41:ARG:NH2	2.33	0.61
31:BA:2660:U:N3	31:BA:2669:A:C8	2.62	0.61
1:AA:109:A:H62	1:AA:332:G:H21	1.49	0.60
1:AA:235:G:N2	16:AP:62:ASN:O	2.34	0.60
1:AA:382:A:N3	16:AP:9:ARG:NH2	2.49	0.60
27:B5:3:ARG:NH2	31:BA:2289:C:OP1	2.34	0.60
31:BA:410:G:N2	31:BA:434:U:O2	2.33	0.60
31:BA:1285:U:N3	35:BF:71:GLY:O	2.33	0.60
31:BA:1519:U:H3	31:BA:1525:G:H1	1.48	0.60
31:BA:1660:G:N2	31:BA:1663:U:OP2	2.34	0.60
1:AA:149:G:N1	1:AA:175:A:N6	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1158:A:H5'	10:AJ:43:PRO:HA	1.82	0.60
2:AB:38:ILE:HG21	51:A:140:PRO:O	2.01	0.60
8:AH:48:ASP:OD2	8:AH:61:ARG:NH1	2.34	0.60
10:AJ:14:GLU:HG2	10:AJ:16:ARG:H	1.67	0.60
11:AK:30:VAL:HG11	11:AK:65:SER:HA	1.82	0.60
23:B1:11:LYS:O	23:B1:14:ARG:NH2	2.34	0.60
31:BA:137:A:N3	31:BA:140:A:N6	2.49	0.60
31:BA:1956:A:H5'	39:BN:55:GLY:HA3	1.83	0.60
31:BA:2228:G:OP1	33:BD:268:LYS:NZ	2.32	0.60
31:BA:2401:G:O6	31:BA:2423:U:O2	2.19	0.60
33:BD:33:LEU:HB3	33:BD:63:ARG:HB2	1.83	0.60
44:BS:59:THR:HA	44:BS:71:ARG:O	2.01	0.60
1:AA:44:G:N3	1:AA:630:A:N6	2.49	0.60
1:AA:422:A:N6	1:AA:440:A:OP1	2.35	0.60
1:AA:758:C:O2'	15:AO:21:ASP:OD1	2.18	0.60
1:AA:1312:G:N2	1:AA:1338:G:O3'	2.34	0.60
31:BA:1221:G:H2'	31:BA:1222:A:H8	1.67	0.60
45:BT:88:ILE:HG21	46:BU:54:LEU:HD12	1.82	0.60
1:AA:1323:G:N2	1:AA:1326:A:OP2	2.30	0.60
13:AM:56:ILE:O	13:AM:60:LEU:HB3	2.02	0.60
24:B2:7:THR:H	24:B2:54:VAL:HG23	1.66	0.60
31:BA:2855:G:N2	31:BA:2858:A:OP2	2.33	0.60
43:BR:38:THR:O	43:BR:100:ARG:NH1	2.31	0.60
1:AA:166:A:H2'	1:AA:167:A:H8	1.67	0.60
4:AD:120:ILE:HG23	4:AD:142:VAL:HA	1.84	0.60
4:AD:162:ARG:NH2	4:AD:166:VAL:O	2.34	0.60
7:AG:104:VAL:O	7:AG:108:ARG:CB	2.50	0.60
31:BA:1798:U:H3	31:BA:1825:G:H1	1.50	0.60
34:BE:172:LEU:HD11	34:BE:187:LYS:H	1.67	0.60
1:AA:17:G:H1	1:AA:928:U:H3	1.50	0.60
1:AA:148:G:H21	1:AA:1454:A:H8	1.47	0.60
20:AT:72:LEU:O	20:AT:76:LEU:CA	2.50	0.60
31:BA:2391:U:O2'	50:BZ:49:ARG:NH1	2.34	0.60
32:BB:28:C:OP2	43:BR:37:ASN:ND2	2.35	0.60
1:AA:732:G:N3	18:AR:58:ARG:NH2	2.48	0.60
12:AL:113:GLY:H	12:AL:117:THR:HG21	1.67	0.60
13:AM:84:GLY:HA3	13:AM:86:TYR:H	1.65	0.60
31:BA:1939:G:H1	31:BA:1966:C:HO2'	1.49	0.60
1:AA:1040:G:N2	1:AA:1041:G:N3	2.50	0.60
8:AH:27:ALA:HB1	8:AH:33:LYS:HD3	1.84	0.60
28:B6:13:LYS:HG3	28:B6:14:THR:HG23	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:BH:150:SER:OG	37:BH:151:ARG:NH1	2.35	0.60
1:AA:1039:C:OP1	1:AA:1041:G:N2	2.34	0.60
1:AA:1445:G:N2	1:AA:1470:U:O2	2.27	0.60
11:AK:31:MET:HG2	11:AK:42:TRP:HB2	1.83	0.60
31:BA:901:G:OP2	32:BB:98:G:N2	2.34	0.60
31:BA:1448:A:OP2	31:BA:1607:C:N4	2.35	0.60
31:BA:1643:A:N6	47:BV:92:ARG:O	2.35	0.60
31:BA:2748:G:N2	31:BA:2764:U:O2	2.35	0.60
46:BU:72:LYS:HA	46:BU:90:HIS:O	2.02	0.60
1:AA:424:G:N2	1:AA:440:A:OP2	2.34	0.60
1:AA:634:A:H5"	16:AP:10:MET:HG2	1.82	0.60
1:AA:1513:U:O2	11:AK:125:ARG:NH2	2.34	0.60
7:AG:21:VAL:HA	7:AG:24:ARG:HB2	1.83	0.60
26:B4:48:TYR:HB3	42:BQ:108:LEU:HD23	1.84	0.60
31:BA:246:G:OP2	31:BA:248:C:N4	2.33	0.60
31:BA:676:G:H21	31:BA:680:A:H62	1.50	0.60
31:BA:857:U:H2'	31:BA:858:A:H8	1.67	0.60
31:BA:1916:A:N7	31:BA:1921:U:O4	2.35	0.60
32:BB:41:C:OP1	36:BG:64:GLN:NE2	2.35	0.60
43:BR:11:ARG:O	43:BR:15:HIS:HB2	2.01	0.60
44:BS:5:GLU:O	44:BS:9:ALA:CB	2.49	0.60
51:A:89:ILE:HA	51:A:92:TYR:HB3	1.84	0.60
1:AA:961:G:O6	13:AM:103:LYS:NZ	2.35	0.59
4:AD:13:ARG:NH2	4:AD:29:ARG:O	2.34	0.59
31:BA:1740:G:C2	31:BA:1750:C:C2	2.90	0.59
31:BA:1740:G:N1	31:BA:1750:C:N3	2.49	0.59
31:BA:1771:A:H2'	31:BA:1772:G:H8	1.66	0.59
31:BA:1804:A:H5"	31:BA:1816:G:H22	1.65	0.59
43:BR:74:LYS:NZ	43:BR:107:ALA:O	2.34	0.59
15:AO:35:GLU:HA	15:AO:38:HIS:HB3	1.84	0.59
31:BA:1204:U:H2'	31:BA:1207:U:H3	1.67	0.59
31:BA:2455:A:OP1	31:BA:2501:A:N6	2.35	0.59
31:BA:2806:U:H2'	31:BA:2807:A:H8	1.66	0.59
33:BD:11:ASN:HD22	33:BD:14:ARG:HH11	1.49	0.59
35:BF:157:PRO:HB2	35:BF:159:GLU:HG3	1.83	0.59
42:BQ:31:VAL:HA	42:BQ:121:ALA:O	2.01	0.59
44:BS:32:VAL:HG11	44:BS:37:GLU:H	1.66	0.59
1:AA:1167:G:C8	1:AA:1189:G:N2	2.69	0.59
29:B7:42:ARG:NH2	31:BA:2386:G:O2'	2.35	0.59
31:BA:15:G:H1	31:BA:559:U:H3	1.48	0.59
31:BA:1070:U:O2	31:BA:1155:G:C6	2.55	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:602:U:O2	1:AA:654:G:N2	2.30	0.59
49:BX:66:SER:O	49:BX:69:GLN:NE2	2.35	0.59
1:AA:329:A:N1	1:AA:340:G:O6	2.35	0.59
1:AA:698:G:OP2	11:AK:27:ASN:ND2	2.34	0.59
1:AA:933:G:O6	1:AA:1398:U:O4	2.21	0.59
7:AG:58:LEU:O	7:AG:62:GLU:HB3	2.03	0.59
31:BA:1911:G:N2	31:BA:1927:U:O2	2.30	0.59
1:AA:83:G:N3	1:AA:89:A:N6	2.51	0.59
1:AA:461:C:O2'	16:AP:72:ASN:ND2	2.35	0.59
12:AL:74:MET:SD	12:AL:107:ARG:NH1	2.76	0.59
31:BA:80:G:H2'	31:BA:81:G:H8	1.67	0.59
31:BA:2449:G:OP1	35:BF:74:ARG:NH1	2.35	0.59
31:BA:2565:A:N3	39:BN:23:ARG:NH2	2.45	0.59
33:BD:180:GLU:HA	33:BD:271:VAL:HG11	1.83	0.59
1:AA:18:A:H4'	5:AE:24:VAL:HA	1.85	0.59
1:AA:152:A:N7	1:AA:171:U:O4	2.35	0.59
1:AA:371:A:N6	12:AL:38:LEU:O	2.30	0.59
1:AA:715:U:OP1	11:AK:85:LYS:NZ	2.33	0.59
1:AA:1159:A:OP2	10:AJ:16:ARG:NH1	2.36	0.59
7:AG:90:VAL:HG21	7:AG:94:ARG:HD2	1.85	0.59
7:AG:138:GLU:HA	7:AG:141:HIS:HB2	1.85	0.59
13:AM:37:ALA:O	13:AM:52:GLN:NE2	2.36	0.59
31:BA:498:G:N2	31:BA:501:A:OP2	2.35	0.59
31:BA:1076:U:O2	31:BA:1149:G:C2	2.55	0.59
32:BB:75:U:O2	32:BB:97:A:N7	2.35	0.59
46:BU:41:ILE:HD12	46:BU:54:LEU:HA	1.85	0.59
1:AA:177:C:H2'	1:AA:178:G:H8	1.68	0.59
1:AA:445:U:N3	1:AA:504:A:C8	2.65	0.59
1:AA:630:A:H4'	4:AD:133:ARG:HH22	1.67	0.59
1:AA:1062:C:H41	51:A:51:ARG:HB3	1.66	0.59
1:AA:1259:C:OP2	10:AJ:46:ARG:NH2	2.35	0.59
3:AC:12:VAL:HA	3:AC:16:ARG:HB3	1.85	0.59
31:BA:156:U:O2	31:BA:166:G:N2	2.34	0.59
31:BA:1065:G:O6	31:BA:1160:G:N2	2.36	0.59
31:BA:2108:A:N7	31:BA:2189:U:C4	2.70	0.59
35:BF:116:THR:O	35:BF:120:ASP:HB2	2.01	0.59
36:BG:13:VAL:O	36:BG:17:LEU:N	2.30	0.59
36:BG:36:VAL:HA	36:BG:91:THR:H	1.68	0.59
1:AA:76:G:H5'	1:AA:78:U:H5"	1.85	0.59
1:AA:119:A:N7	1:AA:295:U:C2	2.70	0.59
1:AA:1001:G:O2'	1:AA:1055:G:N2	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:36:LEU:HD23	3:AC:39:ARG:HD2	1.85	0.59
5:AE:17:ARG:NH1	5:AE:119:GLU:OE1	2.35	0.59
5:AE:19:VAL:HB	5:AE:39:LEU:O	2.02	0.59
6:AF:37:ASN:HB3	6:AF:66:GLU:H	1.68	0.59
31:BA:408:U:C2	31:BA:436:A:N7	2.71	0.59
31:BA:633:C:O2'	35:BF:104:LYS:NZ	2.35	0.59
31:BA:1552:U:O2'	31:BA:1553:G:N7	2.34	0.59
1:AA:528:C:N4	1:AA:538:G:O2'	2.33	0.59
3:AC:181:ILE:HA	3:AC:201:ILE:O	2.02	0.59
22:B0:56:LYS:HD3	22:B0:59:ALA:HB2	1.85	0.59
31:BA:10:A:N6	31:BA:2632:U:OP1	2.36	0.59
31:BA:661:A:O2'	31:BA:671:A:N6	2.36	0.59
31:BA:676:G:O2'	31:BA:2353:G:O2'	2.20	0.59
31:BA:1740:G:N2	31:BA:1750:C:C2	2.71	0.59
31:BA:1929:C:N3	31:BA:1933:G:N1	2.48	0.59
31:BA:2823:G:H3'	31:BA:2824:A:H8	1.67	0.59
1:AA:505:G:H1	1:AA:507:A:H62	1.50	0.58
1:AA:835:U:O2	8:AH:20:ARG:NH2	2.35	0.58
1:AA:1385:C:OP1	7:AG:94:ARG:NH2	2.29	0.58
17:AQ:10:GLN:HG3	17:AQ:59:ILE:HG21	1.85	0.58
32:BB:13:U:OP2	32:BB:67:G:N1	2.36	0.58
33:BD:125:LYS:HD2	33:BD:128:ASN:HD21	1.67	0.58
36:BG:75:VAL:O	36:BG:79:ARG:N	2.36	0.58
1:AA:83:G:OP2	1:AA:89:A:N6	2.36	0.58
1:AA:611:G:N2	1:AA:644:U:O2'	2.35	0.58
1:AA:1355:U:H2'	1:AA:1356:A:H8	1.68	0.58
3:AC:151:GLN:O	3:AC:197:VAL:HA	2.03	0.58
30:B8:14:CYS:SG	30:B8:15:LYS:N	2.76	0.58
31:BA:614:G:O2'	45:BT:11:ARG:NH2	2.36	0.58
31:BA:888:U:H2'	31:BA:889:A:H8	1.68	0.58
31:BA:2312:G:C6	31:BA:2315:A:N1	2.71	0.58
40:BO:76:ILE:HG12	40:BO:110:LYS:HB3	1.85	0.58
1:AA:603:U:H2'	1:AA:604:A:H8	1.68	0.58
1:AA:1327:C:O2	19:AS:78:ARG:NH2	2.36	0.58
23:B1:46:ASN:O	23:B1:49:LYS:NZ	2.36	0.58
31:BA:614:G:H2'	31:BA:615:G:H8	1.68	0.58
31:BA:663:G:N3	31:BA:673:U:O2'	2.36	0.58
31:BA:1269:C:H2'	31:BA:1270:G:H8	1.68	0.58
31:BA:1756:C:O4'	44:BS:93:ARG:NH1	2.37	0.58
33:BD:74:VAL:H	33:BD:117:VAL:HG21	1.68	0.58
38:BM:18:TYR:HA	38:BM:140:GLU:O	2.03	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:10:A:N6	4:AD:202:MET:O	2.37	0.58
10:AJ:9:ARG:HB2	10:AJ:99:GLU:HB3	1.84	0.58
31:BA:2897:A:N6	31:BA:2899:C:O2	2.35	0.58
1:AA:218:C:O2'	1:AA:477:A:N7	2.33	0.58
1:AA:1032:G:N2	1:AA:1032:G:OP2	2.37	0.58
1:AA:1134:U:HO2'	1:AA:1287:A:HO2'	1.49	0.58
1:AA:1327:C:N4	19:AS:73:GLU:OE1	2.36	0.58
1:AA:1388:U:O2	7:AG:78:ARG:NH2	2.36	0.58
1:AA:1454:A:OP1	1:AA:1459:A:N6	2.36	0.58
4:AD:85:TYR:O	4:AD:89:THR:OG1	2.22	0.58
9:AI:31:ASN:ND2	9:AI:66:ASN:OD1	2.36	0.58
31:BA:1141:A:H2'	31:BA:1142:G:H8	1.69	0.58
31:BA:2172:G:N2	31:BA:2174:G:OP2	2.36	0.58
31:BA:2660:U:O2	31:BA:2669:A:N7	2.37	0.58
1:AA:574:U:H3'	1:AA:575:G:H2'	1.86	0.58
17:AQ:60:VAL:HG22	17:AQ:79:ILE:HG12	1.86	0.58
18:AR:26:VAL:HG21	18:AR:29:LYS:HB2	1.85	0.58
22:B0:12:THR:HA	22:B0:29:VAL:O	2.03	0.58
31:BA:249:G:OP1	40:BO:59:ARG:NH2	2.36	0.58
31:BA:526:A:N1	47:BV:53:ASN:ND2	2.51	0.58
31:BA:840:G:O4'	40:BO:38:GLN:NE2	2.36	0.58
31:BA:922:C:N4	31:BA:929:G:N3	2.52	0.58
31:BA:1799:C:H5"	33:BD:258:LYS:HD2	1.86	0.58
31:BA:1929:C:O2	31:BA:1933:G:O6	2.22	0.58
51:A:51:ARG:HG3	51:A:53:LYS:NZ	2.19	0.58
1:AA:798:A:N6	1:AA:1505:U:OP1	2.36	0.58
3:AC:138:GLN:O	3:AC:142:ARG:HB2	2.03	0.58
13:AM:3:ARG:NH2	13:AM:6:GLY:O	2.36	0.58
14:AN:15:LYS:HB2	14:AN:19:GLN:HG3	1.86	0.58
14:AN:47:LEU:O	14:AN:50:LYS:N	2.36	0.58
28:B6:39:ARG:HD2	28:B6:41:SER:H	1.68	0.58
31:BA:836:G:N7	35:BF:53:ASN:ND2	2.51	0.58
31:BA:1440:U:O2	31:BA:1620:A:N6	2.37	0.58
31:BA:1485:G:C2	31:BA:2708:C:O2	2.57	0.58
31:BA:2854:U:O2	31:BA:2859:G:N2	2.34	0.58
1:AA:539:G:N2	51:A:48:THR:O	2.35	0.58
1:AA:1408:G:OP2	51:A:87:ARG:NH2	2.37	0.58
28:B6:34:ARG:HD3	28:B6:39:ARG:HE	1.69	0.58
31:BA:532:G:O2'	49:BX:44:HIS:NE2	2.37	0.58
31:BA:1659:C:H3'	31:BA:1660:G:H8	1.69	0.58
31:BA:2317:C:O2'	36:BG:38:ASN:ND2	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:A:6:ILE:HA	51:A:40:ALA:HB3	1.86	0.58
1:AA:371:A:OP2	12:AL:44:ARG:NE	2.35	0.58
13:AM:58:ARG:HA	13:AM:61:ASP:HB3	1.86	0.58
31:BA:492:A:H62	31:BA:506:A:H62	1.51	0.58
31:BA:2755:G:OP1	37:BH:3:ARG:NH1	2.36	0.58
33:BD:66:ASP:N	33:BD:103:TYR:O	2.36	0.58
34:BE:2:SER:N	34:BE:85:GLY:O	2.37	0.58
38:BM:38:LEU:HD22	38:BM:124:LEU:HD21	1.86	0.58
6:AF:53:ASN:ND2	6:AF:88:LEU:O	2.37	0.58
31:BA:181:A:N1	31:BA:214:G:C6	2.72	0.58
31:BA:1361:G:N7	31:BA:1638:A:O2'	2.35	0.58
31:BA:1612:G:O2'	31:BA:1614:A:N7	2.36	0.58
45:BT:104:ALA:O	45:BT:108:ALA:CB	2.50	0.58
1:AA:986:A:N3	19:AS:36:ARG:NH2	2.49	0.57
24:B2:46:MET:O	24:B2:50:ILE:HB	2.02	0.57
31:BA:2129:G:H21	31:BA:2178:C:H41	1.52	0.57
31:BA:2201:U:O2	31:BA:2229:A:N7	2.37	0.57
36:BG:5:LEU:O	36:BG:9:TYR:CB	2.52	0.57
39:BN:21:THR:HA	39:BN:41:ALA:HA	1.86	0.57
1:AA:609:U:O2	1:AA:646:G:C2	2.57	0.57
6:AF:7:LEU:HG	6:AF:62:ILE:HG12	1.85	0.57
9:AI:19:VAL:HG22	9:AI:65:VAL:HG13	1.86	0.57
28:B6:19:ARG:HH22	31:BA:123:G:H2'	1.69	0.57
31:BA:1083:A:N7	31:BA:1145:G:C2	2.72	0.57
31:BA:2651:U:O2	31:BA:2677:G:O6	2.22	0.57
38:BM:24:ASP:O	38:BM:65:LYS:N	2.37	0.57
39:BN:96:THR:HA	39:BN:117:LEU:HD23	1.86	0.57
1:AA:959:G:O6	13:AM:104:ASN:ND2	2.37	0.57
2:AB:211:LYS:O	2:AB:215:ALA:CB	2.51	0.57
7:AG:41:ILE:HA	7:AG:116:GLN:HE21	1.68	0.57
31:BA:353:A:O2'	31:BA:372:A:N3	2.36	0.57
31:BA:742:G:N2	31:BA:759:U:O2	2.34	0.57
31:BA:756:C:H2'	31:BA:757:A:H8	1.69	0.57
31:BA:1507:G:N2	31:BA:1540:A:N1	2.51	0.57
31:BA:2535:A:N6	31:BA:2665:G:O6	2.37	0.57
35:BF:36:VAL:O	35:BF:40:GLN:HB3	2.04	0.57
40:BO:110:LYS:HG3	40:BO:129:VAL:HA	1.86	0.57
1:AA:1426:G:C6	1:AA:1488:U:O2	2.58	0.57
13:AM:71:ARG:O	13:AM:75:LEU:CB	2.53	0.57
31:BA:1096:U:H1'	31:BA:1099:C:H41	1.69	0.57
31:BA:2652:G:O6	31:BA:2676:U:O2	2.22	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2751:G:H1	31:BA:2758:U:H2'	1.70	0.57
43:BR:74:LYS:HD2	43:BR:107:ALA:HB1	1.86	0.57
47:BV:69:GLU:HB2	47:BV:72:ASN:HB2	1.86	0.57
48:BW:35:LYS:O	48:BW:39:LYS:HB2	2.04	0.57
1:AA:329:A:N1	1:AA:340:G:C6	2.73	0.57
1:AA:555:G:H4'	4:AD:66:ARG:HH21	1.69	0.57
1:AA:1155:U:H3'	1:AA:1156:C:H4'	1.86	0.57
1:AA:1452:U:O2	1:AA:1464:G:N2	2.33	0.57
4:AD:50:GLN:HG2	4:AD:194:LEU:HA	1.87	0.57
4:AD:110:GLN:HE22	4:AD:155:ALA:HB3	1.70	0.57
31:BA:841:C:H3'	40:BO:41:ARG:HH22	1.69	0.57
31:BA:2656:U:O2	31:BA:2672:G:N2	2.29	0.57
38:BM:66:LEU:HD21	38:BM:71:ALA:H	1.69	0.57
1:AA:831:G:H21	8:AH:2:VAL:HG22	1.70	0.57
1:AA:1014:U:H5'	1:AA:1033:U:H1'	1.85	0.57
6:AF:3:LYS:HD2	6:AF:64:THR:HG22	1.87	0.57
6:AF:9:ILE:HD13	6:AF:48:LEU:HD11	1.87	0.57
6:AF:84:ASN:HB3	6:AF:87:ILE:HG12	1.86	0.57
12:AL:36:THR:HG23	12:AL:37:LYS:HB2	1.87	0.57
21:AU:39:GLU:O	21:AU:44:LYS:NZ	2.36	0.57
29:B7:41:ARG:NH2	31:BA:2422:A:O3'	2.37	0.57
31:BA:488:A:N3	31:BA:492:A:O2'	2.37	0.57
31:BA:855:A:N3	31:BA:978:U:O2'	2.35	0.57
31:BA:1042:C:H3'	31:BA:1043:A:H2'	1.86	0.57
31:BA:1544:A:HO2'	31:BA:1586:U:HO2'	1.50	0.57
40:BO:57:LEU:HD23	40:BO:60:ARG:HH22	1.69	0.57
40:BO:89:ALA:HA	40:BO:121:ASN:HD22	1.70	0.57
1:AA:561:U:H2'	1:AA:562:G:H8	1.68	0.57
1:AA:1238:G:H4'	9:AI:130:ARG:HH21	1.68	0.57
2:AB:110:ARG:O	2:AB:114:LEU:CB	2.52	0.57
8:AH:106:ILE:HG12	8:AH:127:VAL:HA	1.86	0.57
16:AP:6:ARG:HH11	16:AP:29:ARG:HB3	1.69	0.57
23:B1:25:GLU:O	23:B1:30:LYS:HB2	2.04	0.57
31:BA:408:U:O2	31:BA:436:A:N7	2.38	0.57
33:BD:143:ASN:HA	33:BD:156:ARG:HB3	1.87	0.57
38:BM:26:PRO:HG3	38:BM:65:LYS:HB2	1.87	0.57
39:BN:112:MET:SD	39:BN:112:MET:N	2.77	0.57
1:AA:730:G:O5'	18:AR:47:ARG:NH2	2.37	0.57
1:AA:777:G:N2	1:AA:819:C:O2	2.38	0.57
1:AA:1448:U:O2	1:AA:1450:C:N4	2.37	0.57
2:AB:44:GLN:O	2:AB:48:LYS:NZ	2.35	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:134:LYS:O	3:AC:138:GLN:HB2	2.05	0.57
17:AQ:16:ASP:HB2	17:AQ:54:ALA:HB1	1.86	0.57
31:BA:1793:A:N6	31:BA:1830:G:O2'	2.38	0.57
31:BA:2312:G:O6	31:BA:2315:A:N1	2.37	0.57
34:BE:140:ARG:HH21	34:BE:142:GLY:H	1.52	0.57
1:AA:604:A:N1	1:AA:651:C:N4	2.52	0.57
7:AG:26:ILE:O	7:AG:30:MET:CB	2.52	0.57
28:B6:39:ARG:NH2	28:B6:44:VAL:O	2.38	0.57
31:BA:1029:A:OP1	45:BT:50:ARG:NH1	2.38	0.57
31:BA:1774:A:H2'	31:BA:1775:A:H4'	1.87	0.57
31:BA:1857:G:N2	31:BA:1891:U:O2	2.28	0.57
48:BW:42:VAL:HG13	48:BW:46:PHE:HD2	1.69	0.57
49:BX:11:VAL:O	49:BX:18:GLY:N	2.38	0.57
1:AA:527:C:N4	1:AA:538:G:OP2	2.38	0.57
1:AA:1008:U:O2	1:AA:1048:G:N2	2.36	0.57
4:AD:82:THR:HA	5:AE:106:ALA:HB2	1.86	0.57
15:AO:70:LEU:HG	15:AO:78:TYR:HB2	1.87	0.57
31:BA:323:U:H2'	31:BA:324:A:H8	1.69	0.57
31:BA:1007:G:H3'	31:BA:1008:A:H2'	1.86	0.57
31:BA:1941:A:N6	31:BA:1968:G:H21	2.02	0.57
51:A:52:ALA:HB3	51:A:71:SER:O	2.05	0.57
1:AA:832:U:O2	8:AH:2:VAL:N	2.38	0.56
1:AA:1012:G:N2	1:AA:1035:C:O2'	2.38	0.56
1:AA:1287:A:OP1	10:AJ:9:ARG:NH2	2.37	0.56
21:AU:50:GLU:O	21:AU:54:LYS:HB2	2.04	0.56
22:B0:18:ARG:NE	31:BA:416:G:OP1	2.38	0.56
31:BA:26:G:H1'	31:BA:549:A:H61	1.70	0.56
31:BA:733:C:O2'	31:BA:769:A:N6	2.30	0.56
31:BA:2529:G:H2'	31:BA:2530:G:H8	1.69	0.56
35:BF:150:ARG:HB2	35:BF:192:LYS:HE3	1.86	0.56
41:BP:57:TYR:HB3	41:BP:117:ALA:HB2	1.87	0.56
1:AA:847:G:N1	1:AA:856:U:N3	2.53	0.56
3:AC:134:LYS:O	3:AC:138:GLN:CB	2.54	0.56
8:AH:27:ALA:HB3	8:AH:60:ILE:HB	1.86	0.56
21:AU:3:LYS:HD3	21:AU:5:LEU:HD12	1.86	0.56
28:B6:34:ARG:HD3	28:B6:39:ARG:HH21	1.70	0.56
31:BA:1035:A:OP2	31:BA:1189:G:N1	2.34	0.56
31:BA:1864:G:N2	31:BA:1884:U:O2	2.38	0.56
31:BA:1999:U:H3'	31:BA:2000:C:H2'	1.86	0.56
40:BO:75:ALA:H	40:BO:106:LYS:HE3	1.69	0.56
42:BQ:22:THR:HG21	42:BQ:67:ARG:HG2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:BX:43:LYS:HB3	49:BX:57:LEU:HB2	1.86	0.56
1:AA:119:A:C5	1:AA:295:U:O2	2.59	0.56
1:AA:682:G:O6	1:AA:724:A:N1	2.38	0.56
1:AA:832:U:H1'	8:AH:2:VAL:HA	1.87	0.56
1:AA:1420:A:C2	1:AA:1494:G:N1	2.60	0.56
5:AE:155:GLU:O	5:AE:159:LEU:N	2.37	0.56
11:AK:22:GLN:O	11:AK:28:THR:HA	2.04	0.56
31:BA:84:A:N1	31:BA:98:A:O2'	2.33	0.56
31:BA:271:A:H62	31:BA:292:G:N2	2.03	0.56
31:BA:534:G:OP1	49:BX:42:LYS:NZ	2.38	0.56
31:BA:1468:A:H2	31:BA:1582:G:H21	1.51	0.56
32:BB:7:A:OP1	43:BR:19:ARG:NH1	2.38	0.56
33:BD:125:LYS:O	33:BD:128:ASN:ND2	2.37	0.56
33:BD:171:TYR:HA	33:BD:184:ILE:O	2.04	0.56
42:BQ:9:THR:O	42:BQ:12:GLN:N	2.38	0.56
46:BU:19:GLY:N	46:BU:99:ILE:O	2.34	0.56
1:AA:125:U:O4	1:AA:244:G:O6	2.24	0.56
1:AA:481:U:O2	16:AP:84:HIS:NE2	2.38	0.56
1:AA:693:G:N2	1:AA:715:U:O2	2.38	0.56
1:AA:693:G:C2	1:AA:714:A:N1	2.73	0.56
1:AA:1023:A:H1'	19:AS:34:TRP:HB3	1.87	0.56
7:AG:120:ALA:O	7:AG:124:LEU:CB	2.54	0.56
20:AT:40:SER:HB3	20:AT:43:LEU:HB2	1.86	0.56
31:BA:1505:A:H2'	31:BA:1506:G:H8	1.71	0.56
31:BA:1969:C:H3'	31:BA:1970:A:H2'	1.88	0.56
38:BM:14:ASP:O	38:BM:15:ARG:NE	2.38	0.56
38:BM:15:ARG:NH2	38:BM:51:ASP:O	2.38	0.56
38:BM:76:TYR:HB2	38:BM:89:VAL:O	2.05	0.56
4:AD:56:LYS:O	4:AD:60:THR:OG1	2.24	0.56
13:AM:65:LEU:O	13:AM:69:LEU:N	2.39	0.56
31:BA:994:A:OP1	32:BB:87:G:N2	2.38	0.56
31:BA:1338:G:O2'	31:BA:1640:C:O2'	2.22	0.56
31:BA:2595:C:H2'	31:BA:2596:G:H8	1.71	0.56
38:BM:120:GLN:HA	38:BM:123:LYS:HB2	1.88	0.56
51:A:29:ASP:HA	51:A:32:PHE:HB3	1.88	0.56
1:AA:383:U:O2'	16:AP:29:ARG:NH2	2.39	0.56
1:AA:1197:G:N3	1:AA:1198:A:N6	2.48	0.56
7:AG:98:LEU:HD22	7:AG:101:ARG:HH21	1.69	0.56
27:B5:43:THR:OG1	27:B5:45:HIS:NE2	2.37	0.56
28:B6:34:ARG:NH1	31:BA:501:A:O5'	2.39	0.56
31:BA:55:G:O2'	31:BA:126:A:N6	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:205:U:H2'	31:BA:206:A:H8	1.70	0.56
31:BA:1033:C:OP2	45:BT:92:ARG:NH1	2.39	0.56
40:BO:73:GLU:OE1	40:BO:106:LYS:NZ	2.39	0.56
42:BQ:91:ASN:HB3	42:BQ:95:LYS:HE2	1.87	0.56
1:AA:111:G:H22	1:AA:338:C:H41	1.53	0.56
1:AA:277:C:H2'	1:AA:278:A:H8	1.70	0.56
1:AA:1124:U:H2'	1:AA:1125:A:H8	1.70	0.56
10:AJ:5:LYS:N	10:AJ:77:ILE:O	2.38	0.56
31:BA:985:G:O6	31:BA:1002:U:O2	2.23	0.56
31:BA:2001:A:H5"	34:BE:128:ARG:HE	1.69	0.56
31:BA:2432:G:N3	40:BO:54:GLN:NE2	2.54	0.56
31:BA:2681:U:H3	31:BA:2734:G:H1	1.52	0.56
32:BB:29:C:O2'	32:BB:51:A:N1	2.38	0.56
43:BR:39:ASN:HD22	43:BR:58:SER:HB3	1.71	0.56
9:AI:80:ARG:O	9:AI:84:ALA:CB	2.54	0.56
31:BA:241:G:N2	31:BA:242:U:O4	2.36	0.56
31:BA:485:G:N1	31:BA:489:A:OP2	2.36	0.56
31:BA:568:U:O2	31:BA:591:G:N2	2.35	0.56
31:BA:590:A:O5'	38:BM:114:ASN:ND2	2.39	0.56
31:BA:989:G:OP1	41:BP:16:LYS:NZ	2.39	0.56
31:BA:1519:U:H5"	31:BA:1520:C:H5"	1.87	0.56
31:BA:2037:A:O2'	31:BA:2039:G:OP2	2.24	0.56
37:BH:148:ILE:HG22	37:BH:162:ILE:HG13	1.86	0.56
1:AA:70:G:N2	1:AA:101:A:N7	2.50	0.56
1:AA:107:G:H22	20:AT:10:ARG:HH21	1.54	0.56
1:AA:470:G:H21	16:AP:87:LYS:HZ3	1.54	0.56
1:AA:993:C:H2'	1:AA:994:A:H8	1.70	0.56
1:AA:1256:C:H2'	1:AA:1257:A:H8	1.71	0.56
4:AD:91:LEU:O	4:AD:97:ASN:ND2	2.38	0.56
11:AK:80:VAL:HG11	11:AK:103:LEU:HD13	1.88	0.56
19:AS:18:LYS:HA	19:AS:21:ALA:HB3	1.88	0.56
31:BA:311:G:N2	31:BA:312:G:N7	2.54	0.56
32:BB:6:U:OP1	43:BR:12:GLN:NE2	2.39	0.56
1:AA:186:A:N6	1:AA:208:U:O4	2.39	0.56
1:AA:411:C:O3'	4:AD:116:ASN:ND2	2.39	0.56
1:AA:847:G:C2	1:AA:856:U:C2	2.94	0.56
1:AA:1159:A:OP2	10:AJ:70:HIS:ND1	2.39	0.56
1:AA:1259:C:O2	1:AA:1361:C:O2'	2.24	0.56
1:AA:1311:G:N2	1:AA:1341:G:O6	2.39	0.56
2:AB:9:LEU:HD22	2:AB:14:VAL:HG21	1.87	0.56
2:AB:54:TYR:O	2:AB:58:LYS:NZ	2.35	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1242:G:N2	31:BA:1266:G:O2'	2.37	0.56
31:BA:1513:G:H1	31:BA:1530:U:H3	1.53	0.56
31:BA:2299:C:OP1	43:BR:14:ARG:NH2	2.38	0.56
41:BP:2:LEU:O	41:BP:44:ASN:ND2	2.39	0.56
48:BW:24:LYS:HG3	48:BW:81:THR:HA	1.88	0.56
1:AA:332:G:N1	1:AA:335:A:OP2	2.30	0.55
1:AA:672:G:H21	1:AA:734:C:H4'	1.71	0.55
1:AA:1420:A:H2	1:AA:1494:G:H1	1.43	0.55
3:AC:87:ARG:NH1	3:AC:98:VAL:O	2.38	0.55
25:B3:57:PHE:O	25:B3:61:ARG:NH2	2.37	0.55
35:BF:36:VAL:O	35:BF:40:GLN:CB	2.53	0.55
35:BF:37:VAL:O	35:BF:41:ARG:CB	2.53	0.55
36:BG:22:ASN:HD21	36:BG:29:VAL:HA	1.71	0.55
1:AA:1254:U:O2	1:AA:1298:C:N3	2.38	0.55
1:AA:1302:U:O2'	13:AM:44:ARG:NH2	2.39	0.55
2:AB:87:ALA:O	2:AB:225:ARG:NH1	2.36	0.55
2:AB:140:GLU:O	2:AB:144:LEU:HB2	2.06	0.55
23:B1:18:VAL:O	23:B1:22:THR:OG1	2.20	0.55
31:BA:517:A:N6	31:BA:540:G:O2'	2.39	0.55
31:BA:1904:A:H1'	31:BA:1974:A:H2'	1.88	0.55
31:BA:2474:G:H2'	31:BA:2475:A:H8	1.70	0.55
36:BG:5:LEU:O	36:BG:9:TYR:HB2	2.05	0.55
44:BS:96:LEU:HD23	44:BS:99:LEU:HD12	1.87	0.55
51:A:24:LYS:NZ	51:A:83:GLU:HG2	2.20	0.55
1:AA:1312:G:N1	1:AA:1338:G:O2'	2.37	0.55
4:AD:166:VAL:HA	4:AD:176:THR:O	2.07	0.55
15:AO:30:ALA:O	15:AO:34:TRP:HB2	2.06	0.55
31:BA:1046:A:OP2	45:BT:66:ASN:ND2	2.40	0.55
31:BA:1656:A:H2'	31:BA:1657:G:H8	1.71	0.55
50:BZ:58:ASN:HB2	50:BZ:88:VAL:HB	1.87	0.55
1:AA:791:C:H2'	1:AA:792:A:H8	1.72	0.55
1:AA:953:G:O6	1:AA:1243:A:N1	2.39	0.55
1:AA:1245:A:N6	1:AA:1310:C:O2'	2.39	0.55
1:AA:1307:G:O2'	1:AA:1310:C:N4	2.40	0.55
3:AC:58:ARG:HA	3:AC:63:VAL:HA	1.87	0.55
6:AF:33:ASN:ND2	6:AF:76:GLU:OE1	2.39	0.55
23:B1:5:GLU:O	23:B1:9:LEU:HB2	2.07	0.55
29:B7:39:LYS:NZ	31:BA:2355:G:O6	2.39	0.55
31:BA:113:U:O2'	48:BW:32:ARG:NH2	2.39	0.55
39:BN:76:TYR:HB2	44:BS:72:ILE:HB	1.88	0.55
48:BW:27:PHE:O	48:BW:78:ALA:HB3	2.06	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:445:U:C2	1:AA:504:A:N7	2.74	0.55
1:AA:778:C:O2'	1:AA:907:C:N3	2.35	0.55
1:AA:950:G:O6	1:AA:1348:U:O4	2.23	0.55
1:AA:1081:U:OP1	5:AE:64:ARG:NH1	2.36	0.55
1:AA:1414:C:N3	1:AA:1502:U:C4	2.74	0.55
2:AB:207:ILE:HG13	51:A:145:GLU:CA	2.34	0.55
28:B6:26:ASN:HD21	31:BA:717:G:H5"	1.70	0.55
31:BA:573:G:O6	31:BA:586:U:O4	2.24	0.55
31:BA:734:A:H62	31:BA:768:G:N2	2.02	0.55
31:BA:1407:A:O2'	31:BA:1409:G:OP2	2.23	0.55
31:BA:2089:U:O2	31:BA:2238:G:N2	2.35	0.55
33:BD:221:ARG:NH1	33:BD:223:SER:OG	2.39	0.55
33:BD:233:GLY:O	33:BD:239:GLN:NE2	2.40	0.55
35:BF:10:ASP:HB2	35:BF:146:LEU:HB2	1.88	0.55
36:BG:65:LYS:HD2	36:BG:66:PRO:HD2	1.88	0.55
42:BQ:14:LYS:O	42:BQ:18:ARG:CB	2.54	0.55
42:BQ:33:THR:OG1	42:BQ:36:ARG:NH1	2.39	0.55
42:BQ:42:ARG:HG2	42:BQ:46:LYS:HZ3	1.72	0.55
44:BS:89:GLY:HA2	44:BS:111:GLU:HA	1.87	0.55
1:AA:274:G:C6	1:AA:279:C:N4	2.73	0.55
13:AM:77:ILE:O	13:AM:80:LEU:O	2.24	0.55
20:AT:41:GLU:HG3	20:AT:45:ARG:HE	1.72	0.55
21:AU:7:ARG:HH21	21:AU:18:ARG:HA	1.71	0.55
31:BA:181:A:C2	31:BA:214:G:N1	2.68	0.55
31:BA:840:G:H22	31:BA:863:U:H5"	1.71	0.55
31:BA:1717:U:O2'	31:BA:1729:A:N7	2.38	0.55
31:BA:1850:A:H61	31:BA:1898:C:H1'	1.72	0.55
31:BA:1859:G:N2	31:BA:1890:U:O4	2.40	0.55
31:BA:1940:A:OP2	31:BA:1965:C:N4	2.40	0.55
31:BA:2120:G:OP1	31:BA:2120:G:N2	2.33	0.55
31:BA:2847:G:N2	31:BA:2864:G:O2'	2.39	0.55
31:BA:2854:U:O4	31:BA:2859:G:O6	2.24	0.55
31:BA:2878:C:O3'	42:BQ:100:ARG:NH1	2.39	0.55
35:BF:125:ALA:HA	35:BF:195:VAL:HB	1.89	0.55
36:BG:133:VAL:HG11	36:BG:136:GLN:HE21	1.70	0.55
51:A:24:LYS:HZ1	51:A:83:GLU:HG2	1.70	0.55
51:A:45:LYS:NZ	51:A:53:LYS:HE2	2.21	0.55
1:AA:17:G:O2'	5:AE:32:ARG:NH1	2.39	0.55
1:AA:205:A:H3'	1:AA:206:G:H21	1.72	0.55
1:AA:680:U:O4	1:AA:742:G:O6	2.25	0.55
7:AG:104:VAL:O	7:AG:108:ARG:HB2	2.07	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:AH:106:ILE:HA	8:AH:126:GLU:O	2.06	0.55
38:BM:94:LEU:HA	38:BM:97:LYS:HB3	1.89	0.55
1:AA:131:A:H8	17:AQ:66:ARG:HG2	1.72	0.55
1:AA:211:A:O2'	1:AA:229:C:N4	2.40	0.55
1:AA:254:A:N6	1:AA:286:G:HO2'	2.04	0.55
1:AA:455:G:N2	1:AA:457:A:OP2	2.39	0.55
1:AA:620:G:O6	1:AA:638:U:O4	2.24	0.55
1:AA:691:G:O6	1:AA:715:U:C4	2.60	0.55
1:AA:957:A:OP1	13:AM:100:GLN:NE2	2.40	0.55
1:AA:1118:A:N7	1:AA:1119:A:N6	2.55	0.55
1:AA:1355:U:O2	1:AA:1382:A:N6	2.40	0.55
4:AD:152:ILE:O	4:AD:157:GLU:N	2.39	0.55
10:AJ:27:GLU:HG3	10:AJ:30:LYS:HD2	1.88	0.55
20:AT:69:LYS:O	20:AT:73:ALA:HB3	2.06	0.55
27:B5:3:ARG:HG2	27:B5:23:SER:H	1.71	0.55
31:BA:513:A:N6	31:BA:534:G:O2'	2.36	0.55
31:BA:613:C:H2'	31:BA:614:G:C8	2.41	0.55
31:BA:1022:C:O2'	31:BA:1035:A:N3	2.38	0.55
31:BA:1106:G:H4'	31:BA:1124:G:H2'	1.88	0.55
31:BA:1485:G:N2	31:BA:2708:C:O2	2.40	0.55
39:BN:24:VAL:HG11	39:BN:33:ALA:HB2	1.89	0.55
1:AA:134:U:O2'	1:AA:135:G:N7	2.39	0.55
1:AA:135:G:O6	16:AP:26:ARG:NH2	2.39	0.55
1:AA:699:G:O6	11:AK:51:LYS:NZ	2.40	0.55
13:AM:53:GLU:O	13:AM:56:ILE:N	2.40	0.55
31:BA:177:G:H2'	31:BA:178:G:H8	1.72	0.55
31:BA:241:G:N2	31:BA:254:A:O5'	2.39	0.55
31:BA:856:A:O2'	31:BA:980:A:O2'	2.22	0.55
31:BA:1070:U:O2	31:BA:1155:G:O6	2.25	0.55
31:BA:1196:U:O2'	46:BU:25:GLU:OE2	2.25	0.55
41:BP:18:ARG:H	41:BP:98:LYS:HZ3	1.54	0.55
48:BW:57:SER:HA	48:BW:76:LYS:HA	1.88	0.55
1:AA:572:A:O2'	1:AA:575:G:O3'	2.25	0.55
4:AD:11:GLN:NE2	4:AD:55:GLN:O	2.39	0.55
13:AM:106:ALA:O	13:AM:110:LYS:CB	2.54	0.55
31:BA:989:G:H1'	31:BA:2277:A:H61	1.72	0.55
31:BA:1243:A:OP2	31:BA:1265:G:N2	2.39	0.55
31:BA:1468:A:N6	31:BA:1582:G:O2'	2.39	0.55
44:BS:48:ALA:HB3	44:BS:95:LYS:HG2	1.88	0.55
44:BS:57:THR:OG1	44:BS:73:PHE:O	2.25	0.55
47:BV:63:GLU:HA	47:BV:67:GLY:H	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:39:U:OP1	12:AL:136:LYS:NZ	2.38	0.54
1:AA:405:A:N7	1:AA:556:A:O2'	2.37	0.54
1:AA:1140:C:N4	1:AA:1150:G:N3	2.54	0.54
1:AA:1158:A:O2'	10:AJ:16:ARG:NH2	2.40	0.54
4:AD:164:ASN:ND2	4:AD:185:GLU:OE1	2.39	0.54
14:AN:23:ARG:HA	14:AN:33:VAL:HG11	1.88	0.54
34:BE:75:THR:O	34:BE:77:LYS:NZ	2.28	0.54
41:BP:40:HIS:H	41:BP:97:VAL:HB	1.72	0.54
41:BP:83:MET:SD	41:BP:83:MET:N	2.79	0.54
48:BW:50:VAL:HA	48:BW:82:LEU:HA	1.89	0.54
1:AA:346:A:N1	1:AA:359:G:C6	2.75	0.54
1:AA:1325:A:H1'	19:AS:37:ARG:HG2	1.89	0.54
4:AD:153:LEU:HA	4:AD:157:GLU:HB3	1.89	0.54
13:AM:17:ILE:O	13:AM:21:TYR:CB	2.55	0.54
31:BA:614:G:H2'	31:BA:615:G:C8	2.42	0.54
31:BA:1369:U:OP2	48:BW:77:LYS:NZ	2.36	0.54
34:BE:73:ASN:ND2	34:BE:90:GLU:OE2	2.41	0.54
35:BF:157:PRO:HG3	35:BF:196:VAL:HG11	1.88	0.54
48:BW:64:ARG:HA	48:BW:70:GLY:H	1.71	0.54
1:AA:271:A:H2	1:AA:272:A:H62	1.55	0.54
1:AA:433:A:H5'	4:AD:29:ARG:HE	1.71	0.54
1:AA:842:A:N1	1:AA:860:U:O4	2.41	0.54
3:AC:15:ILE:O	3:AC:209:THR:N	2.41	0.54
8:AH:45:TYR:HB3	8:AH:74:ILE:HD11	1.88	0.54
10:AJ:51:VAL:HG23	14:AN:41:ARG:HB3	1.89	0.54
11:AK:108:ILE:HB	21:AU:19:PHE:HE2	1.73	0.54
17:AQ:19:ASP:OD1	17:AQ:52:ASN:ND2	2.41	0.54
20:AT:23:GLN:O	20:AT:26:SER:OG	2.25	0.54
21:AU:20:LYS:O	21:AU:24:THR:CB	2.55	0.54
22:B0:57:LEU:HA	22:B0:61:VAL:HB	1.89	0.54
29:B7:26:ARG:HB2	29:B7:47:ALA:HB2	1.89	0.54
31:BA:313:A:H4'	31:BA:392:C:H1'	1.89	0.54
31:BA:749:U:O2'	31:BA:752:G:N7	2.40	0.54
31:BA:1908:G:O2'	31:BA:1932:A:N1	2.33	0.54
34:BE:177:VAL:HG13	34:BE:185:LEU:HG	1.90	0.54
37:BH:2:SER:OG	37:BH:62:LYS:NZ	2.38	0.54
1:AA:277:C:H2'	1:AA:278:A:C8	2.42	0.54
1:AA:1103:U:OP1	1:AA:1116:G:N1	2.37	0.54
1:AA:1374:C:H5"	9:AI:117:GLY:H	1.72	0.54
3:AC:87:ARG:HD3	3:AC:100:ILE:HB	1.89	0.54
16:AP:35:GLU:OE2	16:AP:55:ARG:NH1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:AP:39:THR:H	16:AP:50:THR:HB	1.72	0.54
20:AT:44:TYR:O	20:AT:48:SER:HB3	2.07	0.54
31:BA:489:A:OP1	31:BA:490:C:N4	2.40	0.54
31:BA:1681:A:O5'	42:BQ:4:ARG:NH1	2.38	0.54
33:BD:108:LYS:H	33:BD:194:VAL:HG13	1.71	0.54
50:BZ:48:GLN:HE22	50:BZ:53:ILE:H	1.54	0.54
1:AA:224:C:H2'	1:AA:225:A:H8	1.72	0.54
3:AC:63:VAL:HG11	3:AC:96:LYS:HD2	1.90	0.54
11:AK:52:GLY:H	11:AK:55:LYS:HG3	1.72	0.54
23:B1:23:THR:HA	23:B1:27:GLU:HB2	1.90	0.54
28:B6:28:ARG:NH2	31:BA:178:G:OP1	2.40	0.54
28:B6:43:THR:HG23	28:B6:44:VAL:HG23	1.89	0.54
31:BA:588:A:H3'	31:BA:589:G:H8	1.71	0.54
31:BA:856:A:N6	31:BA:1007:G:H21	2.06	0.54
31:BA:1445:G:H2'	31:BA:1446:U:C6	2.43	0.54
31:BA:2298:G:OP2	43:BR:17:ARG:NH2	2.40	0.54
34:BE:34:THR:OG1	34:BE:52:GLY:O	2.22	0.54
34:BE:37:GLN:HE22	34:BE:39:LYS:HB2	1.72	0.54
35:BF:151:LYS:HA	35:BF:173:ASN:HB3	1.90	0.54
41:BP:35:GLN:HE21	41:BP:100:GLY:HA2	1.71	0.54
42:BQ:107:ILE:HG12	42:BQ:123:ILE:HG22	1.88	0.54
45:BT:115:LYS:HA	45:BT:118:ALA:HB3	1.90	0.54
51:A:41:TYR:O	51:A:55:GLU:HB3	2.07	0.54
51:A:51:ARG:HG3	51:A:53:LYS:HZ1	1.72	0.54
1:AA:1322:U:O2'	1:AA:1367:A:N3	2.38	0.54
5:AE:39:LEU:HA	5:AE:52:GLY:O	2.07	0.54
23:B1:17:SER:O	23:B1:21:LEU:N	2.26	0.54
31:BA:195:A:O4'	40:BO:47:ARG:NH2	2.40	0.54
31:BA:1696:G:O2'	31:BA:1698:A:N7	2.39	0.54
31:BA:1943:U:N3	31:BA:1971:C:O2'	2.41	0.54
31:BA:2822:U:H3'	31:BA:2823:G:H21	1.73	0.54
31:BA:2880:A:OP1	42:BQ:106:ARG:NH1	2.41	0.54
1:AA:207:U:O3'	20:AT:45:ARG:NH1	2.41	0.54
1:AA:920:C:OP2	12:AL:99:ARG:NH2	2.40	0.54
4:AD:112:ARG:O	4:AD:116:ASN:CB	2.51	0.54
6:AF:41:LYS:O	6:AF:62:ILE:O	2.25	0.54
9:AI:27:LYS:NZ	9:AI:28:ILE:O	2.41	0.54
31:BA:882:U:O2'	31:BA:883:A:O4'	2.26	0.54
31:BA:908:U:OP2	41:BP:6:ARG:NH1	2.41	0.54
31:BA:1010:A:OP1	46:BU:78:TYR:OH	2.26	0.54
31:BA:2074:G:H2'	31:BA:2075:A:H8	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2147:C:O2'	31:BA:2148:G:O4'	2.26	0.54
1:AA:373:U:H2'	1:AA:374:C:H4'	1.88	0.54
1:AA:1426:G:O6	1:AA:1488:U:O2	2.26	0.54
4:AD:68:PHE:O	4:AD:72:TYR:CB	2.51	0.54
12:AL:51:GLY:N	12:AL:65:PHE:O	2.38	0.54
31:BA:590:A:H2'	31:BA:591:G:C8	2.43	0.54
31:BA:2518:U:O4	31:BA:2574:G:O6	2.24	0.54
31:BA:2610:C:H2'	31:BA:2611:G:H8	1.71	0.54
33:BD:91:ILE:HD12	33:BD:105:LEU:HA	1.90	0.54
34:BE:106:VAL:HG22	34:BE:172:LEU:HB3	1.89	0.54
35:BF:104:LYS:O	35:BF:108:LEU:HB2	2.08	0.54
42:BQ:4:ARG:HH21	42:BQ:6:LEU:H	1.54	0.54
43:BR:85:VAL:HB	43:BR:88:VAL:HG11	1.90	0.54
1:AA:17:G:O6	1:AA:928:U:O4	2.25	0.54
1:AA:510:G:O2'	1:AA:558:C:O2	2.25	0.54
1:AA:997:U:O2'	1:AA:1223:A:N1	2.35	0.54
4:AD:50:GLN:HB3	4:AD:198:PHE:HB2	1.89	0.54
31:BA:1504:G:OP2	31:BA:1543:G:N2	2.41	0.54
31:BA:2051:C:H2'	31:BA:2052:G:C8	2.43	0.54
31:BA:2300:U:O4	31:BA:2339:A:N7	2.41	0.54
31:BA:2659:G:N2	31:BA:2660:U:O4	2.35	0.54
31:BA:2743:U:N3	31:BA:2768:A:C8	2.60	0.54
32:BB:6:U:O3'	43:BR:30:ARG:NH2	2.41	0.54
32:BB:64:U:O4'	32:BB:106:C:N4	2.41	0.54
38:BM:17:TRP:HA	38:BM:55:PHE:HB2	1.89	0.54
45:BT:114:LYS:HD3	45:BT:117:LEU:HD21	1.90	0.54
1:AA:789:A:N7	1:AA:809:U:C2	2.76	0.54
1:AA:1099:U:H2'	1:AA:1100:A:H3'	1.88	0.54
1:AA:1244:C:O2'	1:AA:1307:G:N2	2.41	0.54
2:AB:161:MET:HB2	2:AB:183:VAL:HG12	1.90	0.54
3:AC:23:TYR:HB2	10:AJ:96:VAL:HA	1.91	0.54
22:B0:10:ARG:NH1	31:BA:431:G:OP1	2.41	0.54
23:B1:48:ALA:O	23:B1:52:GLU:HB2	2.07	0.54
31:BA:247:G:N3	31:BA:2435:U:O2'	2.37	0.54
31:BA:600:U:OP1	31:BA:980:A:N6	2.41	0.54
31:BA:662:G:H2'	31:BA:663:G:H8	1.73	0.54
31:BA:1311:U:O2	31:BA:1315:A:N7	2.41	0.54
35:BF:7:PHE:HD1	35:BF:13:GLN:H	1.56	0.54
39:BN:76:TYR:O	44:BS:71:ARG:NH2	2.41	0.54
1:AA:1337:U:H5'	13:AM:24:GLY:H	1.73	0.53
2:AB:207:ILE:CD1	51:A:144:GLU:C	2.70	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AD:150:PRO:HA	4:AD:153:LEU:HB2	1.89	0.53
17:AQ:56:THR:HB	17:AQ:85:ILE:HG12	1.89	0.53
21:AU:45:ARG:O	21:AU:49:SER:OG	2.21	0.53
24:B2:16:ILE:HG13	24:B2:18:ALA:H	1.73	0.53
25:B3:28:THR:HG23	25:B3:29:LYS:HG2	1.89	0.53
29:B7:28:TYR:HH	31:BA:2365:A:HO2'	1.56	0.53
31:BA:534:G:N1	31:BA:537:A:OP2	2.35	0.53
31:BA:1492:G:H2'	31:BA:1493:G:C5	2.44	0.53
31:BA:1636:C:N4	31:BA:1651:A:OP2	2.41	0.53
31:BA:1770:A:H2'	31:BA:1771:A:H8	1.72	0.53
31:BA:2118:A:H5"	31:BA:2121:A:H5'	1.90	0.53
35:BF:51:HIS:ND1	35:BF:92:PRO:O	2.41	0.53
1:AA:371:A:H2'	1:AA:372:A:C4	2.44	0.53
1:AA:427:U:O2	1:AA:432:G:N2	2.31	0.53
1:AA:609:U:C4	1:AA:646:G:O6	2.62	0.53
1:AA:685:U:H3	1:AA:721:G:H22	1.55	0.53
2:AB:19:GLN:HG3	51:A:139:LYS:CA	2.38	0.53
6:AF:5:GLU:HA	6:AF:64:THR:HA	1.90	0.53
10:AJ:49:TYR:HB2	10:AJ:65:PHE:HB2	1.89	0.53
18:AR:55:LYS:HG2	18:AR:58:ARG:HD2	1.90	0.53
31:BA:341:G:N3	31:BA:361:A:O2'	2.40	0.53
31:BA:1285:U:OP2	31:BA:2064:A:N6	2.41	0.53
31:BA:1781:U:H5"	31:BA:1782:A:H5'	1.90	0.53
31:BA:2135:U:O4'	31:BA:2162:A:N6	2.41	0.53
31:BA:2405:U:O2	31:BA:2419:G:O6	2.27	0.53
1:AA:524:G:N7	1:AA:546:G:N1	2.55	0.53
1:AA:1127:U:OP1	9:AI:85:ARG:NH1	2.41	0.53
1:AA:1164:A:N7	1:AA:1185:G:O2'	2.42	0.53
1:AA:1317:U:OP1	25:B3:73:ARG:NH2	2.41	0.53
17:AQ:59:ILE:HB	17:AQ:81:GLU:HB3	1.90	0.53
31:BA:13:A:O4'	31:BA:560:A:N6	2.41	0.53
31:BA:834:G:H3'	31:BA:835:A:H2'	1.90	0.53
31:BA:1554:G:H1'	31:BA:1555:G:H5'	1.91	0.53
31:BA:1862:G:H1	31:BA:1886:U:H3	1.54	0.53
31:BA:2681:U:O2	31:BA:2734:G:N2	2.36	0.53
40:BO:83:ASN:HD21	40:BO:116:GLU:H	1.54	0.53
1:AA:485:C:H2'	1:AA:486:A:H8	1.73	0.53
1:AA:1094:U:H3	1:AA:1107:G:H1	1.56	0.53
1:AA:1167:G:N2	1:AA:1183:A:N1	2.55	0.53
5:AE:104:GLU:HB2	5:AE:124:ALA:HB3	1.91	0.53
9:AI:82:GLY:O	9:AI:86:ALA:CB	2.56	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:AP:6:ARG:NH2	16:AP:24:ASP:O	2.42	0.53
29:B7:32:ARG:NH1	31:BA:2396:A:OP1	2.41	0.53
31:BA:741:A:H61	31:BA:760:G:H1'	1.73	0.53
31:BA:1739:G:N1	31:BA:1751:A:C2	2.77	0.53
31:BA:2270:A:N6	31:BA:2277:A:OP2	2.40	0.53
33:BD:17:THR:OG1	33:BD:204:ASN:N	2.41	0.53
36:BG:9:TYR:HE1	36:BG:170:LEU:HD11	1.74	0.53
1:AA:65:U:O2	1:AA:105:G:N2	2.32	0.53
1:AA:1079:C:H2'	1:AA:1080:G:H8	1.73	0.53
1:AA:1116:G:OP1	3:AC:174:LEU:N	2.42	0.53
5:AE:22:ASN:HB2	5:AE:37:ALA:HB3	1.89	0.53
11:AK:34:ASP:HB2	11:AK:38:ASN:H	1.73	0.53
11:AK:93:SER:O	11:AK:97:ALA:HB2	2.08	0.53
31:BA:13:A:H61	31:BA:559:U:H3'	1.73	0.53
31:BA:572:A:H3'	31:BA:573:G:H8	1.74	0.53
31:BA:719:G:O2'	31:BA:823:A:N6	2.38	0.53
31:BA:1071:G:O6	31:BA:1154:U:O2	2.26	0.53
31:BA:1235:C:C4	31:BA:1272:U:N3	2.72	0.53
31:BA:1247:U:O2	31:BA:1262:G:N2	2.39	0.53
31:BA:2660:U:C2	31:BA:2669:A:N7	2.77	0.53
33:BD:260:ARG:NH2	33:BD:260:ARG:O	2.42	0.53
49:BX:83:LYS:HA	49:BX:89:LYS:HA	1.89	0.53
51:A:41:TYR:HB3	51:A:55:GLU:HB3	1.90	0.53
1:AA:212:A:H1'	1:AA:214:G:H1'	1.90	0.53
1:AA:619:G:N1	1:AA:639:A:C2	2.66	0.53
1:AA:682:G:H2'	1:AA:683:A:H8	1.74	0.53
1:AA:1299:C:N3	1:AA:1300:A:N6	2.57	0.53
1:AA:1432:A:N1	1:AA:1482:G:C6	2.76	0.53
2:AB:15:HIS:HB3	2:AB:41:ILE:HB	1.90	0.53
5:AE:66:ALA:O	5:AE:70:ALA:CB	2.57	0.53
5:AE:66:ALA:O	5:AE:70:ALA:HB2	2.08	0.53
6:AF:3:LYS:HE2	6:AF:66:GLU:HG2	1.91	0.53
8:AH:12:THR:HA	8:AH:15:ARG:HE	1.74	0.53
31:BA:729:U:O4	31:BA:803:G:O6	2.27	0.53
31:BA:799:A:N3	33:BD:212:ARG:NH2	2.56	0.53
31:BA:1029:A:O2'	31:BA:1031:A:OP1	2.23	0.53
31:BA:1256:A:O3'	45:BT:13:ARG:NH1	2.41	0.53
31:BA:1387:G:N1	31:BA:1401:U:OP2	2.33	0.53
31:BA:1939:G:N1	31:BA:1966:C:O2'	2.42	0.53
31:BA:2104:U:O4	31:BA:2193:G:O6	2.26	0.53
31:BA:2320:U:OP1	43:BR:1:MET:N	2.40	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BV:8:LYS:O	47:BV:61:ASN:ND2	2.42	0.53
51:A:71:SER:OG	51:A:73:ASP:O	2.26	0.53
1:AA:346:A:N1	1:AA:359:G:O6	2.41	0.53
6:AF:28:ALA:HA	6:AF:31:THR:HG22	1.90	0.53
6:AF:72:GLU:O	6:AF:76:GLU:HB2	2.08	0.53
8:AH:34:ARG:O	8:AH:38:GLU:HB2	2.07	0.53
13:AM:71:ARG:O	13:AM:75:LEU:HB2	2.07	0.53
20:AT:18:ASN:O	20:AT:22:ALA:CB	2.56	0.53
31:BA:648:G:H3'	31:BA:649:A:H8	1.73	0.53
31:BA:724:A:N3	31:BA:814:A:O2'	2.37	0.53
31:BA:1232:U:H3	31:BA:1233:A:HO2'	1.55	0.53
31:BA:1269:C:H2'	31:BA:1270:G:C8	2.43	0.53
31:BA:2689:G:H1	31:BA:2728:U:H3	1.57	0.53
32:BB:6:U:O2	32:BB:110:G:N2	2.37	0.53
36:BG:90:VAL:HG22	36:BG:92:LEU:HB2	1.90	0.53
41:BP:42:ILE:HB	41:BP:47:ILE:HD11	1.89	0.53
1:AA:801:U:O2	1:AA:1523:G:O2'	2.27	0.53
1:AA:842:A:C6	1:AA:860:U:O4	2.62	0.53
1:AA:1167:G:N7	1:AA:1189:G:C2	2.77	0.53
21:AU:19:PHE:O	21:AU:23:VAL:CB	2.57	0.53
31:BA:1191:A:OP2	45:BT:55:ARG:NH2	2.41	0.53
31:BA:1516:G:N2	31:BA:1528:U:O2	2.41	0.53
31:BA:1934:G:N2	31:BA:1935:U:O4	2.42	0.53
31:BA:2356:A:H3'	31:BA:2357:G:H8	1.74	0.53
35:BF:163:PHE:O	35:BF:167:SER:OG	2.26	0.53
38:BM:90:THR:OG1	38:BM:91:ALA:N	2.41	0.53
41:BP:25:ASP:OD1	41:BP:25:ASP:N	2.42	0.53
45:BT:43:TYR:HA	45:BT:46:ALA:HB3	1.91	0.53
1:AA:56:C:OP1	1:AA:359:G:N2	2.41	0.53
1:AA:364:A:HO2'	1:AA:396:G:H1	1.57	0.53
1:AA:593:G:O6	1:AA:765:U:O4	2.26	0.53
1:AA:607:U:H5'	17:AQ:38:ARG:HH22	1.74	0.53
1:AA:744:U:OP1	18:AR:66:ARG:NE	2.39	0.53
1:AA:1137:C:O5'	9:AI:18:ARG:NH1	2.41	0.53
4:AD:36:HIS:HA	4:AD:39:ASN:HB2	1.90	0.53
4:AD:51:LEU:HD12	4:AD:54:LYS:HE3	1.90	0.53
6:AF:45:LYS:HG2	6:AF:60:TYR:H	1.74	0.53
7:AG:115:MET:O	7:AG:119:LEU:CB	2.56	0.53
31:BA:299:G:H2'	31:BA:300:G:H8	1.73	0.53
31:BA:1844:G:O6	31:BA:1902:U:O2	2.26	0.53
31:BA:2526:U:O2'	31:BA:2651:U:OP1	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:158:U:O4	1:AA:165:G:O6	2.27	0.53
1:AA:455:G:N1	1:AA:495:U:OP2	2.42	0.53
1:AA:609:U:N3	1:AA:646:G:N1	2.37	0.53
1:AA:652:U:H4'	8:AH:86:ARG:HH21	1.73	0.53
1:AA:691:G:O6	1:AA:715:U:O4	2.27	0.53
1:AA:702:A:H2'	1:AA:703:A:C4	2.44	0.53
1:AA:839:U:OP1	2:AB:21:ARG:NH2	2.42	0.53
1:AA:1134:U:N3	1:AA:1287:A:OP1	2.42	0.53
1:AA:1408:G:O6	1:AA:1511:G:N2	2.42	0.53
4:AD:136:PRO:HA	4:AD:177:LEU:HB3	1.89	0.53
13:AM:82:GLU:HA	13:AM:85:SER:HB2	1.89	0.53
14:AN:23:ARG:HG3	14:AN:28:GLY:HA2	1.91	0.53
19:AS:22:GLN:NE2	19:AS:26:GLU:O	2.41	0.53
31:BA:697:U:H2'	31:BA:698:G:H8	1.73	0.53
31:BA:1323:C:O2'	42:BQ:67:ARG:NH1	2.38	0.53
31:BA:1344:C:H2'	31:BA:1345:A:H8	1.74	0.53
31:BA:2096:U:N3	31:BA:2230:C:OP2	2.41	0.53
31:BA:2410:C:OP2	31:BA:2415:A:N6	2.41	0.53
35:BF:117:LYS:HB3	35:BF:123:LEU:HD23	1.91	0.53
44:BS:96:LEU:O	44:BS:99:LEU:CB	2.57	0.53
1:AA:789:A:N7	1:AA:809:U:O2	2.42	0.52
1:AA:1287:A:OP2	10:AJ:71:LYS:NZ	2.41	0.52
1:AA:1313:A:N6	1:AA:1338:G:O4'	2.42	0.52
2:AB:19:GLN:CD	51:A:138:LEU:CB	2.73	0.52
4:AD:56:LYS:O	4:AD:60:THR:CB	2.56	0.52
10:AJ:90:LEU:HD21	10:AJ:98:ILE:HG21	1.91	0.52
13:AM:56:ILE:HA	13:AM:59:GLU:HB2	1.90	0.52
13:AM:71:ARG:HA	13:AM:74:SER:HB2	1.90	0.52
20:AT:65:ALA:O	20:AT:69:LYS:HB2	2.08	0.52
23:B1:51:ASP:O	23:B1:55:LYS:HB2	2.09	0.52
31:BA:920:U:O4	31:BA:930:A:O2'	2.24	0.52
31:BA:1445:G:N2	31:BA:1616:A:C6	2.77	0.52
31:BA:2634:G:H2'	31:BA:2635:G:H8	1.74	0.52
31:BA:2837:G:N2	42:BQ:101:ASN:O	2.37	0.52
32:BB:27:A:OP2	43:BR:36:SER:OG	2.26	0.52
40:BO:73:GLU:HB2	40:BO:106:LYS:HD2	1.91	0.52
1:AA:15:U:H3	1:AA:923:A:N6	2.08	0.52
1:AA:842:A:H2'	1:AA:843:G:C8	2.45	0.52
4:AD:53:GLU:HA	4:AD:56:LYS:HG2	1.91	0.52
8:AH:108:THR:N	8:AH:111:GLY:O	2.43	0.52
24:B2:48:ASN:HA	24:B2:51:SER:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:218:A:H2'	31:BA:219:G:C4	2.43	0.52
31:BA:894:A:N1	31:BA:957:G:O6	2.43	0.52
31:BA:894:A:N1	31:BA:957:G:C6	2.77	0.52
31:BA:899:G:H3'	31:BA:900:A:H8	1.74	0.52
33:BD:5:VAL:HA	33:BD:18:GLY:H	1.74	0.52
51:A:89:ILE:HG22	51:A:93:LYS:HZ1	1.74	0.52
51:A:91:LYS:HB3	51:A:95:ARG:NH1	2.24	0.52
1:AA:76:G:H4'	1:AA:77:A:H4'	1.90	0.52
1:AA:1013:C:OP1	1:AA:1033:U:O2'	2.27	0.52
1:AA:1157:U:O2'	1:AA:1158:A:O4'	2.27	0.52
1:AA:1372:G:N2	1:AA:1373:C:O4'	2.42	0.52
1:AA:1452:U:O4	1:AA:1464:G:O6	2.28	0.52
14:AN:32:SER:HB3	14:AN:41:ARG:HD2	1.91	0.52
31:BA:92:G:H1'	31:BA:93:U:C2	2.44	0.52
31:BA:483:U:H4'	35:BF:84:ARG:HE	1.74	0.52
31:BA:572:A:H62	31:BA:587:G:H21	1.57	0.52
31:BA:2300:U:C2	31:BA:2339:A:N6	2.76	0.52
31:BA:2753:A:H2'	31:BA:2754:A:H8	1.74	0.52
31:BA:2755:G:OP1	31:BA:2755:G:N2	2.42	0.52
33:BD:164:VAL:HG13	33:BD:174:VAL:HG12	1.91	0.52
36:BG:139:PHE:HD2	36:BG:142:ILE:HB	1.75	0.52
37:BH:88:GLU:HB2	37:BH:163:ARG:HB2	1.91	0.52
45:BT:89:GLU:HG2	45:BT:91:ASN:H	1.75	0.52
1:AA:446:G:N2	1:AA:447:U:O4	2.42	0.52
1:AA:461:C:N4	1:AA:489:U:O2'	2.40	0.52
1:AA:918:C:OP1	12:AL:107:ARG:NH2	2.43	0.52
10:AJ:8:ILE:HD12	10:AJ:74:ILE:HD11	1.91	0.52
13:AM:56:ILE:O	13:AM:60:LEU:HB2	2.10	0.52
15:AO:32:LEU:HD22	15:AO:62:HIS:HD2	1.73	0.52
31:BA:85:G:OP2	49:BX:4:LYS:NZ	2.42	0.52
31:BA:500:G:H2'	31:BA:501:A:C4	2.45	0.52
31:BA:1025:A:O2'	31:BA:1027:C:OP2	2.28	0.52
31:BA:2828:G:OP1	34:BE:78:ARG:NH2	2.43	0.52
33:BD:52:ARG:HH11	33:BD:53:HIS:HB2	1.75	0.52
45:BT:102:ASP:O	45:BT:106:PHE:CB	2.53	0.52
1:AA:64:U:O2	1:AA:387:C:O2'	2.26	0.52
1:AA:118:U:H3'	1:AA:296:A:H61	1.75	0.52
1:AA:119:A:C6	1:AA:295:U:O2	2.62	0.52
1:AA:385:G:H2'	1:AA:386:A:C8	2.44	0.52
1:AA:1353:A:OP1	7:AG:9:ARG:NH2	2.35	0.52
5:AE:110:ALA:HB1	5:AE:114:VAL:HG13	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:AT:72:LEU:O	20:AT:76:LEU:CB	2.56	0.52
30:B8:15:LYS:HB3	30:B8:26:ILE:HB	1.91	0.52
31:BA:334:A:H2'	31:BA:335:A:C8	2.44	0.52
31:BA:615:G:H5'	45:BT:11:ARG:HH21	1.74	0.52
31:BA:888:U:H2'	31:BA:889:A:C8	2.44	0.52
31:BA:1427:C:O2'	48:BW:22:GLN:NE2	2.42	0.52
31:BA:1517:U:O2'	31:BA:1518:G:O4'	2.27	0.52
31:BA:2332:A:H2'	31:BA:2333:A:C8	2.45	0.52
31:BA:2752:A:N7	31:BA:2758:U:O2	2.42	0.52
43:BR:72:VAL:HB	43:BR:104:LEU:HB2	1.90	0.52
46:BU:34:THR:HA	46:BU:64:VAL:H	1.75	0.52
47:BV:18:PRO:HG3	47:BV:105:ALA:HB2	1.91	0.52
50:BZ:58:ASN:O	50:BZ:70:LYS:N	2.43	0.52
1:AA:258:A:C5	1:AA:282:A:N1	2.77	0.52
1:AA:466:G:O6	1:AA:484:U:O4	2.27	0.52
1:AA:466:G:N2	1:AA:484:U:O2	2.37	0.52
1:AA:713:U:OP2	1:AA:714:A:N6	2.41	0.52
6:AF:12:PRO:HD3	6:AF:58:GLY:HA2	1.90	0.52
6:AF:42:ASP:HA	6:AF:62:ILE:C	2.30	0.52
20:AT:69:LYS:HA	20:AT:72:LEU:HB3	1.90	0.52
31:BA:1459:C:H2'	31:BA:1460:A:C8	2.44	0.52
31:BA:1857:G:O6	31:BA:1891:U:O4	2.28	0.52
31:BA:2112:A:H4'	31:BA:2154:U:H1'	1.92	0.52
33:BD:132:LEU:HD13	33:BD:135:ILE:HB	1.92	0.52
42:BQ:36:ARG:HA	42:BQ:39:GLU:HG3	1.92	0.52
1:AA:123:C:OP1	1:AA:319:C:O2'	2.27	0.52
1:AA:263:G:H5"	17:AQ:20:LYS:HD2	1.92	0.52
1:AA:794:G:H2'	1:AA:795:A:H8	1.74	0.52
1:AA:946:A:N3	1:AA:1383:U:O2'	2.37	0.52
1:AA:1330:G:H5'	13:AM:98:ARG:HH22	1.74	0.52
1:AA:1386:G:O6	7:AG:2:ARG:N	2.42	0.52
4:AD:58:ARG:NH1	4:AD:65:GLU:OE1	2.43	0.52
10:AJ:79:PRO:O	10:AJ:83:THR:OG1	2.27	0.52
11:AK:18:ILE:O	11:AK:33:THR:CB	2.58	0.52
20:AT:45:ARG:O	20:AT:49:SER:CB	2.57	0.52
24:B2:11:SER:HB2	31:BA:1023:A:H5"	1.91	0.52
31:BA:1700:U:N3	31:BA:1703:G:OP2	2.31	0.52
31:BA:2447:U:H2'	31:BA:2448:G:C8	2.45	0.52
34:BE:55:THR:H	34:BE:77:LYS:HD2	1.75	0.52
35:BF:136:THR:O	35:BF:140:ALA:CB	2.56	0.52
36:BG:103:LYS:HA	36:BG:107:VAL:HB	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:BH:68:THR:HG22	37:BH:71:LEU:HD12	1.92	0.52
41:BP:7:VAL:HG12	41:BP:9:HIS:H	1.75	0.52
1:AA:233:A:H2'	1:AA:234:A:C8	2.45	0.52
1:AA:847:G:C6	1:AA:856:U:C4	2.96	0.52
1:AA:1060:U:O2	1:AA:1213:G:C6	2.63	0.52
1:AA:1262:G:H2'	1:AA:1286:A:H61	1.74	0.52
17:AQ:22:ILE:O	17:AQ:46:LYS:HA	2.09	0.52
19:AS:33:THR:OG1	19:AS:34:TRP:N	2.42	0.52
20:AT:69:LYS:HG3	20:AT:73:ALA:HB2	1.92	0.52
25:B3:22:LYS:HB3	25:B3:33:GLU:HB2	1.90	0.52
31:BA:1443:U:O2'	31:BA:1617:G:N2	2.43	0.52
31:BA:2585:G:N2	31:BA:2585:G:OP2	2.42	0.52
37:BH:27:LYS:HA	37:BH:31:GLY:O	2.09	0.52
42:BQ:113:ARG:HB3	42:BQ:118:ALA:HB3	1.92	0.52
44:BS:25:VAL:HA	44:BS:84:GLU:O	2.10	0.52
51:A:89:ILE:HG22	51:A:93:LYS:NZ	2.25	0.52
1:AA:379:G:O2'	1:AA:381:A:N6	2.43	0.52
1:AA:1100:A:OP2	7:AG:3:LYS:NZ	2.42	0.52
3:AC:188:ALA:HB3	3:AC:195:LEU:HB2	1.92	0.52
4:AD:61:TYR:HE2	4:AD:91:LEU:HD22	1.73	0.52
4:AD:65:GLU:HG3	4:AD:69:ARG:HH11	1.75	0.52
4:AD:120:ILE:HG12	4:AD:142:VAL:HG13	1.91	0.52
9:AI:33:ARG:NH2	9:AI:37:SER:O	2.43	0.52
12:AL:25:ASN:ND2	12:AL:42:GLN:O	2.43	0.52
19:AS:51:VAL:HB	19:AS:58:VAL:HB	1.92	0.52
31:BA:1221:G:H2'	31:BA:1222:A:C8	2.44	0.52
31:BA:1400:G:N2	31:BA:1401:U:O4	2.42	0.52
31:BA:2760:U:H1'	31:BA:2761:A:H5"	1.92	0.52
31:BA:2847:G:O3'	31:BA:2864:G:N2	2.43	0.52
33:BD:167:SER:HA	33:BD:172:THR:HA	1.91	0.52
36:BG:58:LEU:HD22	36:BG:88:ALA:HB1	1.92	0.52
41:BP:106:LEU:HD21	41:BP:118:LEU:HD11	1.91	0.52
48:BW:11:ILE:O	48:BW:26:THR:OG1	2.28	0.52
51:A:43:ASN:HB3	51:A:45:LYS:HZ2	1.73	0.52
1:AA:34:A:H2'	1:AA:35:A:C8	2.45	0.52
1:AA:170:C:H2'	1:AA:171:U:H6	1.75	0.52
1:AA:1451:C:O2'	1:AA:1465:G:N2	2.39	0.52
2:AB:110:ARG:HD3	2:AB:149:GLY:HA3	1.92	0.52
9:AI:115:LYS:HB3	9:AI:118:LEU:HD12	1.90	0.52
11:AK:83:THR:HA	11:AK:109:SER:HB3	1.91	0.52
22:B0:52:LYS:NZ	31:BA:408:U:OP1	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:738:U:O2	31:BA:763:G:O6	2.29	0.52
31:BA:1814:G:N3	33:BD:44:ASN:ND2	2.57	0.52
31:BA:2312:G:C2	31:BA:2315:A:C2	2.96	0.52
31:BA:2735:G:OP1	34:BE:171:ASN:ND2	2.43	0.52
33:BD:118:SER:OG	33:BD:129:ALA:N	2.43	0.52
35:BF:199:ALA:HA	35:BF:202:GLN:HB3	1.92	0.52
37:BH:27:LYS:NZ	37:BH:28:GLY:O	2.38	0.52
38:BM:34:VAL:HA	38:BM:37:VAL:HG22	1.92	0.52
1:AA:125:U:O2	1:AA:244:G:N2	2.40	0.51
2:AB:6:MET:SD	2:AB:46:THR:OG1	2.67	0.51
3:AC:76:ILE:HG13	3:AC:102:ILE:HG23	1.92	0.51
6:AF:44:GLU:HB3	6:AF:62:ILE:HD12	1.92	0.51
17:AQ:60:VAL:HA	17:AQ:79:ILE:HA	1.92	0.51
31:BA:2722:G:O2'	31:BA:2845:U:OP1	2.28	0.51
31:BA:2817:A:O2'	31:BA:2819:A:N7	2.37	0.51
38:BM:27:LEU:HD12	38:BM:64:ILE:HG13	1.92	0.51
50:BZ:54:HIS:O	50:BZ:85:HIS:HA	2.10	0.51
51:A:171:VAL:HA	51:A:181:LEU:HA	1.92	0.51
1:AA:384:G:H5'	16:AP:6:ARG:HD3	1.91	0.51
1:AA:418:G:N2	1:AA:439:A:OP2	2.43	0.51
1:AA:1210:C:O2'	3:AC:194:LYS:NZ	2.44	0.51
1:AA:1382:A:O2'	7:AG:28:ARG:NH2	2.42	0.51
2:AB:36:ASN:HD21	51:A:166:ASN:HA	1.75	0.51
12:AL:24:MET:SD	12:AL:36:THR:OG1	2.68	0.51
13:AM:106:ALA:O	13:AM:110:LYS:HB2	2.11	0.51
31:BA:353:A:N7	31:BA:373:G:O2'	2.37	0.51
31:BA:894:A:H5'	50:BZ:77:PHE:HE2	1.75	0.51
31:BA:1557:A:H2'	31:BA:1558:A:C8	2.45	0.51
31:BA:1742:G:O2'	31:BA:1747:A:N6	2.44	0.51
31:BA:1780:U:O2	31:BA:1787:A:N7	2.43	0.51
31:BA:2395:G:N1	31:BA:2428:C:O2'	2.42	0.51
31:BA:2659:G:N2	31:BA:2669:A:O5'	2.33	0.51
40:BO:79:LEU:HB3	40:BO:115:GLY:HA3	1.91	0.51
1:AA:472:G:H1'	1:AA:473:U:H5	1.74	0.51
17:AQ:70:LYS:O	17:AQ:72:LYS:NZ	2.43	0.51
23:B1:35:LEU:HD12	23:B1:36:ARG:H	1.73	0.51
27:B5:15:ARG:NH2	31:BA:2423:U:O2'	2.43	0.51
31:BA:218:A:HO2'	31:BA:233:U:HO2'	1.59	0.51
31:BA:234:U:O4	31:BA:262:G:N2	2.43	0.51
31:BA:511:G:O3'	31:BA:535:A:N6	2.43	0.51
31:BA:579:U:O4'	31:BA:1260:G:N2	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1504:G:O6	31:BA:1543:G:O2'	2.27	0.51
31:BA:2303:G:H2'	31:BA:2304:A:H8	1.75	0.51
34:BE:30:ALA:HB2	34:BE:184:ILE:HG13	1.92	0.51
37:BH:35:ARG:HH12	37:BH:71:LEU:HD13	1.76	0.51
37:BH:156:PRO:O	37:BH:172:LYS:N	2.43	0.51
42:BQ:45:GLU:OE2	42:BQ:105:THR:N	2.36	0.51
51:A:59:PRO:HA	51:A:64:THR:HG22	1.92	0.51
1:AA:223:G:H21	1:AA:475:G:H1	1.58	0.51
1:AA:591:C:N3	1:AA:767:A:N7	2.59	0.51
1:AA:955:G:OP1	13:AM:107:ARG:NE	2.35	0.51
3:AC:82:ASN:O	3:AC:86:LEU:CB	2.58	0.51
8:AH:39:ILE:HG21	8:AH:105:ILE:HD13	1.92	0.51
31:BA:1801:G:O4'	31:BA:1821:A:N6	2.44	0.51
31:BA:2142:A:N1	31:BA:2158:A:N6	2.58	0.51
1:AA:436:G:H3'	4:AD:8:SER:H	1.75	0.51
1:AA:1091:U:O2'	1:AA:1110:A:N7	2.42	0.51
1:AA:1380:G:OP1	7:AG:35:ARG:NH2	2.43	0.51
4:AD:197:GLU:HG2	4:AD:203:MET:HB3	1.92	0.51
9:AI:48:ILE:HG12	9:AI:79:ILE:HD13	1.92	0.51
11:AK:44:SER:OG	11:AK:47:ALA:N	2.36	0.51
14:AN:24:CYS:HB3	14:AN:40:CYS:H	1.75	0.51
28:B6:22:MET:HA	28:B6:28:ARG:HB3	1.93	0.51
31:BA:271:A:N6	31:BA:292:G:C2	2.79	0.51
31:BA:334:A:H2'	31:BA:335:A:H8	1.75	0.51
31:BA:2040:C:H2'	31:BA:2041:A:H8	1.75	0.51
31:BA:2349:G:H4'	31:BA:2350:A:H3'	1.92	0.51
31:BA:2828:G:H5'	34:BE:60:LEU:HD21	1.91	0.51
35:BF:140:ALA:O	35:BF:144:SER:OG	2.28	0.51
37:BH:87:LEU:HD21	37:BH:132:VAL:HA	1.93	0.51
38:BM:133:THR:HG23	38:BM:134:HIS:CD2	2.45	0.51
44:BS:32:VAL:HB	44:BS:38:ARG:H	1.75	0.51
47:BV:92:ARG:HB3	47:BV:97:ALA:H	1.75	0.51
49:BX:70:VAL:O	49:BX:93:ASN:ND2	2.40	0.51
1:AA:379:G:O6	1:AA:398:C:N4	2.42	0.51
1:AA:563:U:OP1	12:AL:19:SER:OG	2.28	0.51
1:AA:1297:A:H4'	7:AG:36:GLY:HA3	1.93	0.51
9:AI:95:ARG:HA	9:AI:98:LEU:HB2	1.93	0.51
15:AO:24:SER:HB3	15:AO:27:VAL:HG13	1.93	0.51
19:AS:17:LYS:O	19:AS:21:ALA:HB2	2.09	0.51
25:B3:76:LYS:HE2	25:B3:78:TYR:HB2	1.92	0.51
31:BA:219:G:H21	31:BA:464:A:H62	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:406:A:N6	31:BA:437:A:OP2	2.34	0.51
31:BA:518:A:H1'	49:BX:55:ALA:HA	1.93	0.51
31:BA:1550:G:H3'	31:BA:1551:A:H2'	1.92	0.51
32:BB:85:U:O2'	32:BB:86:U:O4'	2.29	0.51
37:BH:122:LYS:HB2	37:BH:134:GLU:HB3	1.93	0.51
45:BT:105:ALA:O	45:BT:109:LEU:HB2	2.11	0.51
1:AA:295:U:H2'	1:AA:296:A:H8	1.76	0.51
1:AA:808:G:N2	1:AA:809:U:O4	2.43	0.51
3:AC:137:ILE:HG23	3:AC:148:ILE:HG12	1.93	0.51
7:AG:87:PRO:HD3	7:AG:147:ASN:HB3	1.93	0.51
9:AI:17:ALA:HB2	9:AI:78:ALA:HB1	1.93	0.51
13:AM:3:ARG:HH11	36:BG:137:LEU:HD13	1.75	0.51
13:AM:13:LYS:HB3	13:AM:17:ILE:HG23	1.93	0.51
13:AM:33:VAL:HA	13:AM:36:ALA:HB3	1.92	0.51
19:AS:46:GLY:H	19:AS:62:VAL:HG23	1.75	0.51
23:B1:34:ASP:H	23:B1:37:PHE:HB3	1.75	0.51
31:BA:120:G:H4'	31:BA:147:A:H5'	1.92	0.51
31:BA:922:C:O2'	31:BA:923:G:O4'	2.28	0.51
31:BA:947:A:H2'	31:BA:948:A:C8	2.45	0.51
31:BA:1175:C:OP1	38:BM:70:LYS:NZ	2.44	0.51
31:BA:2024:A:O2'	31:BA:2025:G:N2	2.42	0.51
31:BA:2312:G:C6	31:BA:2315:A:C2	2.96	0.51
31:BA:2640:U:H2'	31:BA:2641:U:H6	1.76	0.51
38:BM:12:ASN:OD1	38:BM:12:ASN:N	2.43	0.51
1:AA:163:A:HO2'	1:AA:356:G:HO2'	1.49	0.51
1:AA:300:G:H3'	1:AA:301:A:H8	1.76	0.51
1:AA:609:U:O4	1:AA:646:G:O6	2.28	0.51
1:AA:896:G:H21	1:AA:917:A:H62	1.59	0.51
1:AA:983:A:N6	1:AA:1374:C:O4'	2.44	0.51
9:AI:18:ARG:O	9:AI:66:ASN:CB	2.57	0.51
23:B1:4:SER:N	31:BA:98:A:OP1	2.36	0.51
25:B3:31:SER:HB2	36:BG:103:LYS:H	1.75	0.51
31:BA:632:G:O6	31:BA:692:U:O4	2.29	0.51
34:BE:36:LEU:HA	34:BE:92:GLY:H	1.76	0.51
37:BH:95:ARG:HD2	37:BH:97:GLN:HE22	1.75	0.51
38:BM:20:VAL:HG22	38:BM:142:LEU:HB2	1.93	0.51
43:BR:103:ALA:O	43:BR:107:ALA:CB	2.59	0.51
48:BW:54:ASN:HB2	48:BW:79:ILE:HB	1.93	0.51
1:AA:12:A:HO2'	1:AA:516:C:HO2'	1.56	0.51
1:AA:254:A:N6	1:AA:286:G:O2'	2.44	0.51
1:AA:510:G:H2'	1:AA:511:G:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:950:G:N2	1:AA:1348:U:O2	2.36	0.51
1:AA:1000:U:H1'	1:AA:1004:A:H61	1.75	0.51
1:AA:1331:C:OP2	13:AM:98:ARG:NH2	2.43	0.51
1:AA:1391:C:H2'	1:AA:1392:G:H8	1.76	0.51
3:AC:89:GLU:HA	3:AC:92:LYS:HG2	1.92	0.51
10:AJ:13:TYR:HB3	14:AN:54:PRO:HG3	1.93	0.51
11:AK:18:ILE:HA	11:AK:81:SER:O	2.10	0.51
13:AM:90:ARG:HD2	13:AM:95:LEU:HD12	1.92	0.51
31:BA:783:G:H5'	47:BV:92:ARG:HH22	1.75	0.51
31:BA:857:U:H2'	31:BA:858:A:C8	2.45	0.51
31:BA:1103:G:N1	31:BA:1131:A:O3'	2.44	0.51
31:BA:1442:A:N6	31:BA:1615:A:OP2	2.43	0.51
31:BA:1656:A:H2'	31:BA:1657:G:C8	2.46	0.51
31:BA:2056:G:H2'	31:BA:2057:G:H8	1.76	0.51
34:BE:35:VAL:HA	34:BE:51:VAL:HG23	1.93	0.51
1:AA:1138:A:O2'	9:AI:5:GLN:N	2.43	0.51
1:AA:1262:G:O2'	1:AA:1264:C:OP1	2.28	0.51
19:AS:48:THR:HA	19:AS:61:TYR:HA	1.93	0.51
28:B6:33:ALA:HA	28:B6:36:ARG:HG2	1.92	0.51
31:BA:33:U:O4	31:BA:481:G:O2'	2.29	0.51
31:BA:213:G:H2'	31:BA:214:G:C8	2.46	0.51
31:BA:476:U:O2'	31:BA:647:A:N6	2.42	0.51
31:BA:605:G:N1	31:BA:2035:A:OP1	2.37	0.51
31:BA:819:U:O4	31:BA:828:A:N6	2.44	0.51
31:BA:2129:G:H22	31:BA:2176:U:H5'	1.76	0.51
31:BA:2645:A:HO2'	38:BM:82:HIS:HE2	1.53	0.51
37:BH:147:TYR:O	37:BH:151:ARG:NH1	2.41	0.51
43:BR:36:SER:HB3	43:BR:39:ASN:H	1.76	0.51
51:A:5:ASN:HB3	51:A:39:THR:HG23	1.93	0.51
1:AA:540:U:OP2	51:A:50:LYS:NZ	2.40	0.50
1:AA:620:G:N2	1:AA:638:U:O2	2.35	0.50
1:AA:730:G:O2'	1:AA:732:G:OP1	2.29	0.50
4:AD:162:ARG:HH21	4:AD:166:VAL:H	1.59	0.50
9:AI:79:ILE:O	9:AI:83:ILE:HB	2.11	0.50
30:B8:36:ARG:NH2	31:BA:2745:A:O3'	2.44	0.50
31:BA:511:G:N1	31:BA:514:A:OP2	2.44	0.50
31:BA:578:U:N3	31:BA:580:A:N7	2.59	0.50
31:BA:666:A:O2'	40:BO:68:ASN:ND2	2.42	0.50
31:BA:919:G:OP2	31:BA:930:A:N6	2.38	0.50
31:BA:1289:G:H2'	31:BA:1290:G:C8	2.46	0.50
31:BA:2038:U:HO2'	31:BA:2039:G:H8	1.59	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2051:C:H2'	31:BA:2052:G:H8	1.76	0.50
31:BA:2074:G:H2'	31:BA:2075:A:C8	2.46	0.50
32:BB:4:G:O2'	43:BR:41:TYR:OH	2.28	0.50
47:BV:78:THR:HG22	47:BV:109:VAL:HG22	1.94	0.50
1:AA:214:G:H2'	1:AA:215:A:C8	2.46	0.50
1:AA:417:U:OP1	4:AD:24:LYS:NZ	2.44	0.50
1:AA:1367:A:OP2	14:AN:35:ARG:NH1	2.44	0.50
1:AA:1445:G:O6	1:AA:1470:U:O4	2.29	0.50
8:AH:48:ASP:HB3	8:AH:62:VAL:HA	1.92	0.50
12:AL:23:ALA:HB3	12:AL:37:LYS:HD2	1.93	0.50
31:BA:53:A:H61	31:BA:116:G:H1'	1.76	0.50
31:BA:99:U:H4'	31:BA:101:G:H1'	1.93	0.50
31:BA:1076:U:H2'	31:BA:1077:G:H8	1.75	0.50
31:BA:2619:U:H2'	31:BA:2620:C:H6	1.76	0.50
33:BD:123:ASP:H	33:BD:125:LYS:HZ2	1.60	0.50
41:BP:119:ARG:O	41:BP:122:SER:OG	2.23	0.50
1:AA:70:G:N2	1:AA:101:A:N6	2.46	0.50
1:AA:158:U:O2	1:AA:165:G:N2	2.39	0.50
1:AA:308:A:H1'	1:AA:574:U:H3	1.76	0.50
1:AA:425:G:N2	1:AA:434:U:O2'	2.44	0.50
1:AA:1352:U:OP1	9:AI:122:ARG:NH2	2.45	0.50
1:AA:1414:C:C4	1:AA:1502:U:O4	2.64	0.50
10:AJ:46:ARG:HA	10:AJ:68:ARG:HA	1.94	0.50
17:AQ:60:VAL:HB	17:AQ:76:LEU:HD12	1.93	0.50
28:B6:8:HIS:HA	31:BA:1338:G:H5'	1.93	0.50
31:BA:299:G:H2'	31:BA:300:G:C8	2.46	0.50
31:BA:959:U:H2'	31:BA:960:A:H8	1.75	0.50
31:BA:2816:G:H2'	31:BA:2817:A:C8	2.46	0.50
36:BG:84:MET:SD	36:BG:84:MET:N	2.77	0.50
1:AA:151:C:N4	1:AA:171:U:OP2	2.40	0.50
1:AA:843:G:N1	1:AA:860:U:O4	2.44	0.50
1:AA:943:A:O2'	1:AA:1390:C:N3	2.38	0.50
1:AA:1012:G:H22	1:AA:1044:C:H42	1.59	0.50
8:AH:37:ALA:O	8:AH:41:LYS:CB	2.59	0.50
22:B0:41:ASN:HD22	22:B0:63:ARG:HG2	1.76	0.50
31:BA:52:A:OP2	31:BA:118:A:N6	2.44	0.50
31:BA:662:G:H2'	31:BA:663:G:C8	2.46	0.50
31:BA:2287:C:OP2	31:BA:2393:G:O2'	2.28	0.50
31:BA:2319:A:H5"	43:BR:1:MET:H1	1.76	0.50
31:BA:2421:C:H2'	31:BA:2422:A:C8	2.47	0.50
31:BA:2814:C:O2	31:BA:2881:A:O2'	2.28	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2842:A:OP2	31:BA:2843:A:N6	2.42	0.50
34:BE:112:SER:OG	34:BE:163:GLY:O	2.23	0.50
41:BP:45:ARG:O	41:BP:49:ALA:HB2	2.12	0.50
51:A:41:TYR:O	51:A:55:GLU:CB	2.59	0.50
1:AA:599:U:H3	1:AA:657:G:H1	1.60	0.50
1:AA:935:G:N2	1:AA:1397:U:O2	2.34	0.50
3:AC:155:ARG:HB3	3:AC:193:GLY:HA3	1.94	0.50
19:AS:17:LYS:O	19:AS:21:ALA:CB	2.60	0.50
23:B1:61:LYS:HA	23:B1:65:ALA:HB3	1.94	0.50
31:BA:401:U:H2'	31:BA:402:C:C6	2.47	0.50
31:BA:673:U:O2	31:BA:683:G:N2	2.31	0.50
31:BA:1436:G:H2'	31:BA:1437:A:C8	2.46	0.50
31:BA:1770:A:H2'	31:BA:1771:A:C8	2.47	0.50
32:BB:111:C:O2'	43:BR:48:VAL:O	2.28	0.50
34:BE:66:LYS:HA	34:BE:76:PRO:HG3	1.94	0.50
36:BG:136:GLN:H	36:BG:150:VAL:HG21	1.77	0.50
37:BH:150:SER:HG	37:BH:151:ARG:HH11	1.58	0.50
45:BT:87:ASP:OD1	45:BT:87:ASP:N	2.43	0.50
46:BU:18:GLU:HG3	46:BU:102:VAL:H	1.76	0.50
1:AA:820:G:OP1	1:AA:910:G:N2	2.45	0.50
9:AI:116:PRO:HG3	10:AJ:64:GLN:HG3	1.94	0.50
28:B6:18:PHE:O	28:B6:22:MET:CB	2.59	0.50
31:BA:1784:C:O2	31:BA:2612:G:O2'	2.28	0.50
31:BA:2271:A:H62	31:BA:2276:U:H3	1.60	0.50
35:BF:22:SER:O	35:BF:24:PHE:N	2.44	0.50
45:BT:92:ARG:HB3	45:BT:93:LYS:HE3	1.94	0.50
48:BW:25:TYR:HB2	48:BW:80:VAL:HB	1.94	0.50
1:AA:266:A:H2'	1:AA:267:G:C8	2.46	0.50
1:AA:1139:U:H4'	9:AI:4:VAL:HG22	1.93	0.50
3:AC:138:GLN:O	3:AC:142:ARG:CB	2.59	0.50
31:BA:159:A:N6	31:BA:164:U:O2	2.44	0.50
31:BA:221:A:O2'	31:BA:223:G:O5'	2.29	0.50
31:BA:307:A:O4'	31:BA:394:A:N6	2.45	0.50
31:BA:449:C:H2'	31:BA:450:A:C8	2.46	0.50
31:BA:2307:G:H2'	31:BA:2308:G:C8	2.47	0.50
31:BA:2732:U:H2'	31:BA:2733:A:C8	2.46	0.50
47:BV:82:GLU:HA	47:BV:104:THR:O	2.12	0.50
1:AA:71:A:H1'	1:AA:101:A:H61	1.75	0.50
1:AA:981:G:H3'	1:AA:982:A:H8	1.76	0.50
3:AC:22:TRP:HZ3	3:AC:24:ALA:HB2	1.76	0.50
4:AD:8:SER:O	4:AD:12:SER:CB	2.59	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AN:10:ASN:HD22	14:AN:23:ARG:CZ	2.25	0.50
15:AO:12:ILE:O	15:AO:16:ALA:HB2	2.11	0.50
31:BA:1243:A:OP2	31:BA:1266:G:N2	2.43	0.50
32:BB:103:A:H2'	32:BB:104:G:C8	2.47	0.50
1:AA:525:U:H2'	1:AA:526:G:C4	2.47	0.50
1:AA:987:C:N4	14:AN:18:THR:O	2.45	0.50
1:AA:1069:G:O5'	3:AC:3:GLN:NE2	2.45	0.50
1:AA:1328:U:OP1	13:AM:98:ARG:NH1	2.44	0.50
1:AA:1439:G:N2	1:AA:1475:A:OP2	2.33	0.50
4:AD:113:GLN:OE1	4:AD:117:HIS:NE2	2.45	0.50
5:AE:38:ALA:O	5:AE:53:THR:HA	2.12	0.50
7:AG:40:GLN:O	7:AG:116:GLN:NE2	2.45	0.50
10:AJ:44:THR:HG1	10:AJ:70:HIS:HD1	1.57	0.50
18:AR:47:ARG:O	18:AR:51:GLY:HA2	2.12	0.50
21:AU:7:ARG:HB2	21:AU:18:ARG:HG3	1.94	0.50
28:B6:1:MET:O	28:B6:3:ARG:NH1	2.44	0.50
31:BA:842:U:H2'	31:BA:843:G:H8	1.76	0.50
31:BA:2237:U:H2'	31:BA:2238:G:C8	2.44	0.50
31:BA:2472:A:O2'	31:BA:2486:A:N6	2.45	0.50
31:BA:2512:G:O6	31:BA:2584:U:O4	2.30	0.50
39:BN:103:ALA:HA	39:BN:122:LEU:H	1.75	0.50
40:BO:95:THR:O	40:BO:99:ALA:CB	2.60	0.50
1:AA:358:G:H2'	1:AA:359:G:C8	2.47	0.49
1:AA:568:A:H4'	1:AA:569:U:H3'	1.94	0.49
1:AA:681:G:H2'	1:AA:682:G:C8	2.47	0.49
1:AA:693:G:H22	1:AA:714:A:N6	2.09	0.49
5:AE:80:VAL:O	5:AE:83:THR:OG1	2.26	0.49
7:AG:69:MET:HE1	7:AG:92:PRO:HB3	1.94	0.49
24:B2:8:LEU:HD22	24:B2:31:LEU:HB2	1.93	0.49
31:BA:486:U:OP2	35:BF:52:LYS:NZ	2.33	0.49
31:BA:661:A:N6	31:BA:671:A:OP2	2.44	0.49
31:BA:715:U:O4	31:BA:832:G:O6	2.30	0.49
31:BA:991:G:OP2	41:BP:14:ARG:NH1	2.44	0.49
31:BA:1202:G:H2'	31:BA:1203:A:C8	2.46	0.49
36:BG:54:ALA:HB2	36:BG:151:ARG:HD2	1.94	0.49
51:A:145:GLU:O	51:A:149:GLN:N	2.45	0.49
1:AA:254:A:H62	1:AA:289:G:N2	2.06	0.49
4:AD:169:ASP:O	4:AD:173:LEU:N	2.45	0.49
18:AR:33:LEU:HD22	18:AR:36:ARG:HH22	1.77	0.49
23:B1:22:THR:O	23:B1:26:ALA:N	2.46	0.49
31:BA:1009:A:O2'	31:BA:1024:G:N1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1296:G:H1'	31:BA:1297:U:H5	1.78	0.49
31:BA:1325:A:OP1	31:BA:2713:G:O2'	2.27	0.49
31:BA:1758:G:H4'	31:BA:1760:G:H5"	1.94	0.49
31:BA:2370:A:H3'	31:BA:2371:G:H8	1.76	0.49
32:BB:20:G:H2'	32:BB:21:A:C8	2.48	0.49
35:BF:125:ALA:HB1	35:BF:197:GLN:HG2	1.93	0.49
1:AA:149:G:N2	1:AA:175:A:N1	2.59	0.49
2:AB:210:VAL:O	2:AB:214:THR:HB	2.12	0.49
8:AH:47:LYS:HE2	8:AH:65:LYS:HA	1.95	0.49
11:AK:15:GLU:HG3	11:AK:79:THR:HG22	1.94	0.49
24:B2:3:GLN:O	24:B2:59:ALA:N	2.45	0.49
29:B7:4:GLN:HG2	31:BA:624:G:H1'	1.93	0.49
31:BA:411:G:H2'	31:BA:412:G:H8	1.77	0.49
31:BA:932:U:O2'	31:BA:933:A:O4'	2.30	0.49
31:BA:2447:U:H2'	31:BA:2448:G:H8	1.76	0.49
33:BD:43:ARG:HB2	33:BD:47:GLY:HA2	1.93	0.49
34:BE:114:GLY:HA2	34:BE:163:GLY:HA3	1.94	0.49
39:BN:104:ARG:HH12	44:BS:31:VAL:HB	1.77	0.49
1:AA:847:G:O6	1:AA:856:U:O4	2.29	0.49
1:AA:1000:U:O2'	1:AA:1050:A:N6	2.44	0.49
2:AB:101:LEU:HD13	2:AB:175:GLU:HB3	1.92	0.49
8:AH:51:TYR:HB3	8:AH:60:ILE:HG12	1.94	0.49
9:AI:8:GLY:HA2	9:AI:89:GLN:HG3	1.94	0.49
22:B0:39:LEU:HD22	22:B0:62:GLU:HB2	1.95	0.49
31:BA:82:G:N1	31:BA:102:A:OP2	2.44	0.49
31:BA:726:C:H4'	33:BD:43:ARG:HH12	1.77	0.49
31:BA:740:A:N7	31:BA:761:G:C2	2.80	0.49
31:BA:1487:A:C2	31:BA:2706:G:C6	2.92	0.49
31:BA:1745:A:H2'	31:BA:1746:A:C5	2.47	0.49
31:BA:2311:G:OP1	31:BA:2311:G:N2	2.36	0.49
31:BA:2685:C:O2	31:BA:2729:A:N6	2.46	0.49
34:BE:68:HIS:O	34:BE:72:ALA:HB3	2.12	0.49
44:BS:96:LEU:O	44:BS:99:LEU:HB2	2.13	0.49
51:A:73:ASP:OD2	51:A:75:TYR:HB3	2.13	0.49
1:AA:62:A:OP1	1:AA:339:G:N1	2.46	0.49
7:AG:104:VAL:O	7:AG:108:ARG:HB3	2.12	0.49
17:AQ:29:LYS:HA	17:AQ:39:ILE:O	2.13	0.49
27:B5:42:HIS:NE2	31:BA:2376:U:O2'	2.34	0.49
31:BA:305:C:O2'	31:BA:306:A:N7	2.39	0.49
31:BA:2115:U:O2'	31:BA:2117:C:OP1	2.30	0.49
31:BA:2473:A:H5"	41:BP:56:ARG:HE	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2811:G:H2'	31:BA:2812:C:H6	1.77	0.49
34:BE:107:ASP:HA	34:BE:170:GLN:HA	1.93	0.49
1:AA:107:G:H1	20:AT:10:ARG:HH21	1.61	0.49
1:AA:224:C:H2'	1:AA:225:A:C8	2.47	0.49
1:AA:429:U:O4	3:AC:126:ARG:NH2	2.46	0.49
1:AA:1061:G:N2	1:AA:1065:G:OP2	2.45	0.49
1:AA:1098:U:O2'	1:AA:1178:A:O2'	2.26	0.49
4:AD:112:ARG:HG3	4:AD:130:PRO:HG2	1.95	0.49
8:AH:22:PHE:O	8:AH:66:TYR:OH	2.29	0.49
17:AQ:26:VAL:HB	17:AQ:43:LYS:H	1.78	0.49
23:B1:48:ALA:O	23:B1:52:GLU:CB	2.61	0.49
31:BA:165:A:H3'	31:BA:166:G:H8	1.76	0.49
31:BA:260:A:O2'	31:BA:642:G:O2'	2.29	0.49
31:BA:860:C:O2'	40:BO:54:GLN:OE1	2.29	0.49
31:BA:1034:U:O2	31:BA:1190:A:N7	2.45	0.49
31:BA:1847:G:H2'	31:BA:1848:G:C8	2.48	0.49
31:BA:2089:U:H3	31:BA:2238:G:H1	1.59	0.49
35:BF:188:VAL:HG12	40:BO:3:LEU:HB2	1.95	0.49
40:BO:135:ALA:O	40:BO:139:ALA:CB	2.58	0.49
47:BV:52:GLU:HA	47:BV:55:LEU:HB3	1.94	0.49
2:AB:36:ASN:ND2	51:A:166:ASN:HA	2.28	0.49
2:AB:80:VAL:HG12	2:AB:91:TYR:HB2	1.94	0.49
3:AC:83:VAL:O	3:AC:87:ARG:CB	2.57	0.49
7:AG:58:LEU:O	7:AG:62:GLU:CB	2.61	0.49
13:AM:16:VAL:HG23	13:AM:34:LEU:HD13	1.94	0.49
18:AR:64:ILE:O	18:AR:68:ARG:N	2.39	0.49
31:BA:906:G:N2	31:BA:945:U:O2	2.46	0.49
31:BA:1083:A:N7	31:BA:1145:G:N3	2.61	0.49
31:BA:1864:G:O6	31:BA:1884:U:O4	2.31	0.49
31:BA:2753:A:H8	37:BH:59:LYS:HD3	1.78	0.49
39:BN:24:VAL:HB	39:BN:39:VAL:HG12	1.95	0.49
40:BO:122:LEU:HA	40:BO:142:GLY:HA2	1.95	0.49
42:BQ:31:VAL:HG22	42:BQ:122:ILE:HB	1.94	0.49
49:BX:27:LEU:HD22	49:BX:30:VAL:HG23	1.94	0.49
50:BZ:51:THR:OG1	50:BZ:53:ILE:O	2.30	0.49
51:A:92:TYR:HA	51:A:95:ARG:HB2	1.94	0.49
1:AA:446:G:O2'	1:AA:502:C:N4	2.46	0.49
1:AA:567:G:OP2	1:AA:568:A:O2'	2.29	0.49
1:AA:821:U:OP1	1:AA:911:G:O2'	2.30	0.49
1:AA:1438:C:N4	1:AA:1439:G:O6	2.46	0.49
3:AC:82:ASN:O	3:AC:86:LEU:HB3	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AC:122:GLN:HG2	3:AC:127:ILE:HB	1.92	0.49
4:AD:55:GLN:OE1	4:AD:58:ARG:NH2	2.46	0.49
7:AG:122:GLU:O	7:AG:126:ALA:HB2	2.12	0.49
8:AH:14:ILE:HA	8:AH:25:VAL:HG11	1.95	0.49
29:B7:36:LYS:NZ	31:BA:2395:G:O5'	2.44	0.49
31:BA:710:A:N3	31:BA:2447:U:O2'	2.44	0.49
31:BA:1475:G:O2'	31:BA:1575:A:O2'	2.31	0.49
31:BA:1945:C:N4	31:BA:1946:C:O2	2.45	0.49
37:BH:16:SER:O	37:BH:25:THR:OG1	2.31	0.49
1:AA:219:A:O3'	1:AA:475:G:N2	2.45	0.49
1:AA:839:U:H2'	1:AA:863:A:H61	1.77	0.49
1:AA:956:C:H5'	1:AA:1313:A:H4'	1.95	0.49
1:AA:967:A:O2'	1:AA:1229:G:N2	2.46	0.49
3:AC:11:ARG:HA	3:AC:15:ILE:HB	1.94	0.49
5:AE:67:ILE:HA	5:AE:70:ALA:HB3	1.95	0.49
5:AE:117:VAL:HG21	5:AE:143:THR:HG21	1.94	0.49
7:AG:103:LEU:O	7:AG:107:ALA:CB	2.53	0.49
15:AO:29:ILE:O	15:AO:33:THR:CB	2.60	0.49
31:BA:131:G:O6	31:BA:145:U:O4	2.30	0.49
31:BA:309:G:N2	31:BA:313:A:O2'	2.46	0.49
31:BA:644:U:O2	31:BA:650:G:O6	2.31	0.49
31:BA:818:A:H8	31:BA:819:U:H4'	1.77	0.49
31:BA:1096:U:H4'	31:BA:1097:A:H5'	1.94	0.49
31:BA:2040:C:H2'	31:BA:2041:A:C8	2.47	0.49
31:BA:2293:G:H2'	31:BA:2294:G:H8	1.77	0.49
31:BA:2312:G:N1	31:BA:2315:A:N1	2.58	0.49
31:BA:2717:G:O2'	31:BA:2719:C:OP2	2.31	0.49
32:BB:64:U:OP2	32:BB:106:C:N4	2.35	0.49
36:BG:37:ILE:N	36:BG:90:VAL:O	2.42	0.49
1:AA:451:U:H2'	1:AA:452:A:C8	2.48	0.49
1:AA:468:G:H2'	1:AA:469:A:H8	1.77	0.49
1:AA:635:U:H5"	16:AP:39:THR:HG21	1.94	0.49
1:AA:1135:G:H1'	1:AA:1287:A:C4	2.48	0.49
1:AA:1446:G:N2	1:AA:1469:C:O2'	2.36	0.49
23:B1:59:ARG:HA	23:B1:62:THR:HG22	1.94	0.49
25:B3:18:THR:HG22	25:B3:19:THR:HG23	1.93	0.49
31:BA:1509:G:N2	31:BA:1510:U:O2'	2.46	0.49
31:BA:1796:U:O2	31:BA:1827:G:N2	2.31	0.49
31:BA:2652:G:C6	31:BA:2676:U:O2	2.66	0.49
32:BB:61:U:H2'	32:BB:62:A:H8	1.78	0.49
35:BF:163:PHE:N	35:BF:165:GLU:OE1	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:BG:102:ASP:HA	36:BG:105:VAL:HG22	1.95	0.49
38:BM:39:ARG:O	38:BM:52:THR:OG1	2.25	0.49
1:AA:370:G:O2'	1:AA:372:A:N6	2.44	0.48
1:AA:728:C:H5'	18:AR:44:ILE:HG21	1.95	0.48
1:AA:1500:A:H1'	51:A:79:ASP:OD2	2.11	0.48
3:AC:186:GLU:HB3	3:AC:197:VAL:HB	1.95	0.48
7:AG:48:GLN:NE2	7:AG:116:GLN:O	2.46	0.48
14:AN:40:CYS:O	14:AN:44:LEU:CB	2.61	0.48
19:AS:35:SER:HB2	19:AS:71:LEU:HB3	1.95	0.48
29:B7:13:ARG:HH22	40:BO:63:LYS:HG2	1.78	0.48
29:B7:60:ARG:HH12	29:B7:62:VAL:HG23	1.79	0.48
31:BA:626:U:H2'	31:BA:627:A:C8	2.48	0.48
31:BA:723:U:H2'	31:BA:724:A:C8	2.48	0.48
31:BA:777:C:H2'	31:BA:778:A:C8	2.48	0.48
31:BA:1739:G:C2	31:BA:1751:A:C2	3.01	0.48
31:BA:2091:G:H2'	31:BA:2092:A:H8	1.77	0.48
31:BA:2464:U:H5	31:BA:2496:U:H3	1.61	0.48
31:BA:2634:G:H2'	31:BA:2635:G:C8	2.47	0.48
36:BG:103:LYS:O	36:BG:108:SER:N	2.37	0.48
43:BR:80:ALA:HA	43:BR:83:LYS:HE2	1.95	0.48
46:BU:85:HIS:HA	46:BU:86:ARG:HD3	1.94	0.48
47:BV:43:THR:HG22	47:BV:45:THR:H	1.77	0.48
47:BV:52:GLU:O	47:BV:56:ASN:CB	2.61	0.48
51:A:45:LYS:HZ1	51:A:53:LYS:HE2	1.77	0.48
1:AA:140:U:H2'	1:AA:141:G:C8	2.47	0.48
1:AA:731:U:H3	1:AA:863:A:H4'	1.78	0.48
1:AA:1071:C:H3'	1:AA:1072:G:H2'	1.95	0.48
1:AA:1457:G:O6	1:AA:1461:G:N1	2.46	0.48
22:B0:43:GLU:HG2	22:B0:45:LYS:H	1.77	0.48
31:BA:27:G:O2'	31:BA:546:G:N2	2.46	0.48
31:BA:181:A:O2'	31:BA:468:C:O2'	2.29	0.48
31:BA:268:C:H2'	31:BA:269:A:H8	1.78	0.48
31:BA:2093:U:O2	31:BA:2234:G:O6	2.31	0.48
33:BD:271:VAL:HG13	33:BD:273:ARG:H	1.77	0.48
42:BQ:108:LEU:HB2	42:BQ:122:ILE:HG23	1.95	0.48
1:AA:340:G:OP1	20:AT:7:ALA:N	2.45	0.48
1:AA:700:U:H2'	1:AA:701:G:H3'	1.96	0.48
1:AA:984:G:N2	1:AA:1370:A:O5'	2.43	0.48
2:AB:186:MET:HB2	2:AB:202:ALA:HB3	1.96	0.48
24:B2:52:HIS:CE1	24:B2:53:LEU:HB2	2.47	0.48
30:B8:2:LYS:NZ	31:BA:2530:G:N3	2.55	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:481:G:N2	31:BA:489:A:N1	2.61	0.48
31:BA:1031:A:H2'	31:BA:1032:G:C8	2.48	0.48
31:BA:1363:C:H5"	48:BW:64:ARG:HH22	1.77	0.48
31:BA:1544:A:H3'	31:BA:1545:G:H8	1.78	0.48
31:BA:1755:G:N1	31:BA:1758:G:OP2	2.32	0.48
31:BA:1945:C:H2'	31:BA:1946:C:H4'	1.95	0.48
31:BA:2372:C:H2'	31:BA:2373:A:C8	2.48	0.48
31:BA:2472:A:HO2'	31:BA:2473:A:H8	1.61	0.48
31:BA:2518:U:H2'	31:BA:2519:C:C6	2.49	0.48
31:BA:2768:A:H3'	31:BA:2770:G:H1	1.78	0.48
31:BA:2834:U:H2'	31:BA:2835:A:C8	2.48	0.48
33:BD:35:VAL:HG11	33:BD:62:TYR:HD2	1.77	0.48
35:BF:189:SER:HA	40:BO:3:LEU:HD13	1.95	0.48
36:BG:102:ASP:OD1	36:BG:106:THR:OG1	2.30	0.48
37:BH:43:LEU:HA	37:BH:52:VAL:HG13	1.95	0.48
38:BM:19:VAL:HG23	38:BM:139:PRO:HB2	1.95	0.48
43:BR:11:ARG:O	43:BR:15:HIS:CB	2.61	0.48
45:BT:58:ARG:HH11	45:BT:92:ARG:HH22	1.61	0.48
46:BU:6:ILE:HB	46:BU:42:PHE:HB2	1.95	0.48
1:AA:182:A:N1	1:AA:209:U:H2'	2.29	0.48
1:AA:569:U:O5'	1:AA:575:G:N2	2.46	0.48
1:AA:932:C:H2'	1:AA:933:G:C8	2.48	0.48
1:AA:1354:G:O4'	9:AI:109:ARG:NH2	2.46	0.48
3:AC:49:ALA:HB1	3:AC:75:VAL:HG13	1.96	0.48
3:AC:56:THR:HG23	3:AC:65:VAL:HG22	1.95	0.48
18:AR:44:ILE:HA	18:AR:68:ARG:HH22	1.78	0.48
19:AS:28:LYS:O	19:AS:48:THR:OG1	2.30	0.48
31:BA:848:U:P	46:BU:86:ARG:HH12	2.36	0.48
31:BA:877:A:H2'	31:BA:878:A:C8	2.49	0.48
31:BA:934:C:N3	31:BA:935:C:C4	2.82	0.48
31:BA:1253:G:OP1	46:BU:91:ARG:NH2	2.47	0.48
31:BA:1825:G:H2'	31:BA:1826:G:H8	1.78	0.48
34:BE:174:ILE:HG23	34:BE:187:LYS:HB2	1.96	0.48
1:AA:110:C:H3'	1:AA:111:G:H8	1.78	0.48
1:AA:457:A:H5'	1:AA:496:A:H62	1.76	0.48
1:AA:1323:G:O6	19:AS:6:LYS:NZ	2.37	0.48
3:AC:42:ILE:HG21	3:AC:54:ILE:HG21	1.96	0.48
4:AD:194:LEU:O	4:AD:198:PHE:HB2	2.14	0.48
6:AF:10:ILE:O	6:AF:59:ILE:N	2.40	0.48
31:BA:273:C:H2'	31:BA:274:A:C8	2.48	0.48
31:BA:1232:U:H2'	31:BA:1233:A:H4'	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1820:U:H3'	33:BD:157:SER:HA	1.95	0.48
31:BA:1952:G:H2'	31:BA:1953:G:H8	1.78	0.48
31:BA:2005:A:OP1	42:BQ:5:LYS:NZ	2.47	0.48
31:BA:2006:G:H2'	31:BA:2007:A:H8	1.78	0.48
31:BA:2372:C:H2'	31:BA:2373:A:H8	1.78	0.48
37:BH:155:GLU:HB3	37:BH:157:TYR:H	1.78	0.48
40:BO:95:THR:O	40:BO:99:ALA:HB2	2.12	0.48
43:BR:12:GLN:HA	43:BR:15:HIS:HB3	1.95	0.48
1:AA:266:A:H2'	1:AA:267:G:H8	1.79	0.48
1:AA:569:U:N3	1:AA:575:G:O4'	2.47	0.48
1:AA:840:G:N1	1:AA:862:U:N3	2.61	0.48
1:AA:967:A:N6	19:AS:79:THR:O	2.46	0.48
1:AA:987:C:H5"	1:AA:1230:C:H41	1.78	0.48
1:AA:1127:U:O2	1:AA:1161:G:N2	2.34	0.48
1:AA:1167:G:O6	1:AA:1189:G:C6	2.67	0.48
2:AB:5:SER:OG	2:AB:6:MET:N	2.47	0.48
3:AC:131:ARG:O	3:AC:135:GLN:HB2	2.14	0.48
31:BA:67:G:N1	31:BA:74:U:C2	2.81	0.48
31:BA:242:U:H3	31:BA:254:A:H8	1.42	0.48
31:BA:782:U:H3	31:BA:2018:A:H2	1.61	0.48
31:BA:822:C:H3'	31:BA:826:C:H41	1.78	0.48
31:BA:1235:C:N4	31:BA:1272:U:N3	2.44	0.48
31:BA:2054:C:O2'	31:BA:2055:A:O4'	2.31	0.48
31:BA:2298:G:H5'	43:BR:14:ARG:HE	1.77	0.48
31:BA:2753:A:H2'	31:BA:2754:A:C8	2.48	0.48
32:BB:61:U:H2'	32:BB:62:A:C8	2.48	0.48
40:BO:94:GLU:O	40:BO:98:ALA:CB	2.59	0.48
40:BO:117:LEU:HD21	40:BO:136:ALA:HB1	1.95	0.48
46:BU:6:ILE:HA	46:BU:14:VAL:O	2.13	0.48
47:BV:92:ARG:HB3	47:BV:96:SER:HB2	1.96	0.48
51:A:142:ASP:HA	51:A:163:ALA:H	1.78	0.48
1:AA:80:G:O6	1:AA:92:A:O2'	2.25	0.48
1:AA:97:G:C8	1:AA:100:G:C6	3.01	0.48
1:AA:327:G:H2'	1:AA:328:G:H8	1.77	0.48
1:AA:606:G:O2'	17:AQ:38:ARG:NH2	2.40	0.48
3:AC:53:LEU:O	3:AC:68:HIS:CB	2.55	0.48
11:AK:20:HIS:O	11:AK:31:MET:HB2	2.14	0.48
12:AL:25:ASN:HA	12:AL:26:VAL:HA	1.53	0.48
13:AM:43:ILE:HD13	13:AM:48:LEU:HD23	1.95	0.48
31:BA:408:U:H2'	31:BA:409:A:H8	1.78	0.48
31:BA:511:G:O2'	31:BA:536:A:N6	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:673:U:H2'	31:BA:674:C:C6	2.48	0.48
31:BA:911:G:O6	31:BA:940:U:O4	2.32	0.48
31:BA:1274:A:H2'	31:BA:1275:G:H8	1.78	0.48
31:BA:1483:A:H2	42:BQ:60:ARG:HE	1.61	0.48
31:BA:1742:G:H5'	31:BA:1744:A:H61	1.78	0.48
31:BA:1840:C:H4'	31:BA:1841:G:H5'	1.96	0.48
36:BG:67:LEU:HG	36:BG:89:LYS:HB2	1.95	0.48
50:BZ:45:LEU:HB2	50:BZ:67:LEU:O	2.13	0.48
1:AA:33:G:N2	1:AA:49:C:OP1	2.47	0.48
1:AA:129:G:O6	1:AA:240:U:O4	2.31	0.48
1:AA:238:G:O2'	16:AP:26:ARG:NH1	2.47	0.48
1:AA:612:U:H2'	1:AA:613:G:H8	1.78	0.48
1:AA:952:G:N1	1:AA:1345:G:OP2	2.38	0.48
1:AA:1355:U:H2'	1:AA:1356:A:C8	2.47	0.48
7:AG:85:GLN:O	7:AG:147:ASN:ND2	2.47	0.48
7:AG:101:ARG:O	7:AG:105:THR:OG1	2.25	0.48
9:AI:96:SER:O	9:AI:100:ARG:CB	2.55	0.48
12:AL:50:VAL:HA	12:AL:66:ALA:HA	1.95	0.48
27:B5:12:CYS:SG	27:B5:15:ARG:N	2.86	0.48
28:B6:19:ARG:O	28:B6:23:ALA:HB2	2.14	0.48
31:BA:332:A:H1'	31:BA:351:C:H1'	1.96	0.48
31:BA:1546:C:H2'	31:BA:1547:U:C6	2.48	0.48
31:BA:1820:U:H5"	33:BD:158:ALA:H	1.78	0.48
31:BA:1873:U:OP2	31:BA:1875:A:N6	2.43	0.48
32:BB:4:G:H2'	32:BB:5:G:H8	1.78	0.48
32:BB:26:U:OP1	43:BR:58:SER:OG	2.31	0.48
35:BF:93:ASN:HD21	35:BF:95:ARG:HE	1.62	0.48
35:BF:156:LEU:O	35:BF:202:GLN:NE2	2.39	0.48
51:A:43:ASN:HB3	51:A:45:LYS:NZ	2.28	0.48
1:AA:369:G:H2'	1:AA:370:G:C8	2.49	0.48
1:AA:565:C:N4	1:AA:566:G:O6	2.47	0.48
1:AA:1197:G:H4'	3:AC:175:HIS:HE1	1.77	0.48
1:AA:1451:C:HO2'	1:AA:1465:G:H22	1.60	0.48
4:AD:21:GLY:O	4:AD:107:THR:OG1	2.28	0.48
5:AE:87:GLU:HG3	5:AE:100:LYS:HA	1.95	0.48
5:AE:136:PRO:HA	5:AE:139:VAL:HB	1.96	0.48
7:AG:50:GLU:HA	7:AG:54:GLY:HA2	1.95	0.48
31:BA:1245:G:O6	31:BA:1264:U:O4	2.30	0.48
31:BA:1643:A:OP1	31:BA:1646:C:N4	2.41	0.48
31:BA:1958:G:O2'	31:BA:1960:U:O4	2.22	0.48
31:BA:2641:U:H4'	34:BE:46:TYR:HB3	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:BR:55:SER:HB2	43:BR:61:LEU:HB3	1.95	0.48
1:AA:99:A:N7	1:AA:100:G:O2'	2.41	0.48
1:AA:445:U:H5'	4:AD:149:VAL:HG22	1.95	0.48
1:AA:510:G:H2'	1:AA:511:G:H8	1.78	0.48
31:BA:13:A:O2'	31:BA:15:G:N7	2.45	0.48
31:BA:105:C:O2'	31:BA:327:G:OP1	2.32	0.48
31:BA:181:A:H2	31:BA:214:G:H1	1.53	0.48
31:BA:279:G:O6	31:BA:284:C:O2'	2.32	0.48
31:BA:906:G:C2	31:BA:945:U:O2	2.67	0.48
31:BA:986:C:H2'	31:BA:987:G:C8	2.49	0.48
31:BA:1441:G:N2	31:BA:1615:A:N6	2.41	0.48
31:BA:1849:A:H2	31:BA:1850:A:H62	1.61	0.48
31:BA:2679:A:N6	31:BA:2736:G:C6	2.74	0.48
36:BG:105:VAL:HG11	36:BG:174:LEU:HD12	1.96	0.48
41:BP:64:VAL:HG22	41:BP:107:GLY:H	1.77	0.48
48:BW:63:LYS:O	48:BW:70:GLY:N	2.47	0.48
1:AA:1283:G:N3	1:AA:1289:C:O2'	2.40	0.47
1:AA:1419:C:H2'	1:AA:1420:A:C8	2.49	0.47
17:AQ:58:ASP:OD1	17:AQ:83:ALA:N	2.42	0.47
22:B0:51:ALA:HA	22:B0:54:LEU:HB2	1.95	0.47
25:B3:30:GLY:HA3	36:BG:103:LYS:HE3	1.96	0.47
31:BA:185:A:H2'	31:BA:186:G:C8	2.49	0.47
31:BA:273:C:H2'	31:BA:274:A:H8	1.79	0.47
31:BA:541:C:H5"	31:BA:543:C:H5'	1.95	0.47
31:BA:738:U:C2	31:BA:763:G:O6	2.67	0.47
31:BA:948:A:N6	41:BP:11:ARG:O	2.47	0.47
31:BA:1201:U:H2'	31:BA:1202:G:C8	2.48	0.47
31:BA:1289:G:H2'	31:BA:1290:G:H8	1.79	0.47
31:BA:1487:A:H2	31:BA:2706:G:C2	2.26	0.47
31:BA:2164:G:N2	31:BA:2166:G:O4'	2.47	0.47
35:BF:110:LEU:O	35:BF:114:TYR:CB	2.60	0.47
39:BN:101:PRO:HD3	44:BS:65:ASN:HB3	1.95	0.47
41:BP:121:ALA:HA	41:BP:124:LYS:HB2	1.95	0.47
1:AA:1079:C:H2'	1:AA:1080:G:C8	2.49	0.47
2:AB:114:LEU:HA	2:AB:144:LEU:HG	1.96	0.47
4:AD:54:LYS:O	4:AD:58:ARG:HB2	2.14	0.47
19:AS:35:SER:H	19:AS:71:LEU:HD22	1.79	0.47
21:AU:11:SER:H	21:AU:14:ASP:HB3	1.79	0.47
25:B3:59:THR:H	25:B3:62:GLN:N	2.12	0.47
31:BA:756:C:H2'	31:BA:757:A:C8	2.47	0.47
31:BA:914:G:N1	31:BA:937:A:OP1	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1459:C:H2'	31:BA:1460:A:H8	1.79	0.47
31:BA:1498:A:H61	31:BA:1550:G:H1'	1.79	0.47
31:BA:1815:U:H5"	33:BD:40:THR:HG21	1.97	0.47
31:BA:1931:A:H2'	31:BA:1932:A:C8	2.48	0.47
31:BA:2401:G:O6	31:BA:2423:U:C2	2.66	0.47
31:BA:2610:C:H2'	31:BA:2611:G:C8	2.49	0.47
31:BA:2720:U:H2'	31:BA:2721:G:H8	1.78	0.47
31:BA:2788:U:H2'	31:BA:2789:U:H6	1.79	0.47
31:BA:2861:C:O5'	44:BS:114:ARG:NH2	2.46	0.47
33:BD:129:ALA:CA	33:BD:190:ALA:O	2.53	0.47
34:BE:6:LEU:HD22	34:BE:33:ASN:HA	1.96	0.47
36:BG:33:ASP:HB2	36:BG:158:VAL:HG13	1.96	0.47
40:BO:126:VAL:HB	40:BO:146:GLU:HG2	1.95	0.47
47:BV:53:ASN:O	47:BV:57:SER:CB	2.62	0.47
1:AA:112:G:O2'	1:AA:362:G:O2'	2.31	0.47
1:AA:114:U:H2'	1:AA:115:G:C8	2.49	0.47
1:AA:413:U:OP1	1:AA:414:G:O2'	2.29	0.47
1:AA:1053:C:O2'	1:AA:1054:A:O4'	2.32	0.47
1:AA:1357:A:O2'	7:AG:32:ASP:OD1	2.23	0.47
1:AA:1429:G:H5'	39:BN:48:PRO:HG3	1.95	0.47
1:AA:1502:U:H5"	51:A:27:LYS:HZ1	1.79	0.47
5:AE:86:HIS:HB3	8:AH:101:LEU:HD12	1.96	0.47
7:AG:57:PRO:O	7:AG:61:PHE:HB2	2.14	0.47
16:AP:8:THR:HB	16:AP:19:ARG:HB3	1.95	0.47
16:AP:67:SER:H	16:AP:70:VAL:HB	1.79	0.47
25:B3:29:LYS:N	25:B3:33:GLU:OE2	2.47	0.47
29:B7:14:PHE:HB3	29:B7:22:LEU:HD11	1.95	0.47
31:BA:360:U:O2'	49:BX:66:SER:OG	2.23	0.47
31:BA:601:U:H2'	31:BA:602:G:C8	2.48	0.47
31:BA:711:A:HO2'	31:BA:2446:C:HO2'	1.62	0.47
33:BD:142:HIS:HB2	33:BD:156:ARG:HA	1.95	0.47
1:AA:343:C:O2'	1:AA:1440:A:N3	2.38	0.47
1:AA:632:C:H2'	1:AA:633:C:C6	2.50	0.47
1:AA:701:G:H2'	1:AA:702:A:C5	2.49	0.47
1:AA:842:A:N7	1:AA:861:G:N1	2.62	0.47
1:AA:896:G:N2	1:AA:917:A:H62	2.11	0.47
1:AA:1167:G:O6	1:AA:1189:G:O6	2.31	0.47
1:AA:1245:A:N6	1:AA:1308:U:O2'	2.43	0.47
1:AA:1311:G:N2	1:AA:1340:A:OP2	2.48	0.47
6:AF:4:TYR:CZ	6:AF:74:LEU:HD12	2.49	0.47
12:AL:36:THR:HA	12:AL:37:LYS:HA	1.65	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:58:G:OP1	48:BW:73:SER:OG	2.27	0.47
31:BA:496:C:H2'	31:BA:497:C:H6	1.79	0.47
31:BA:752:G:H3'	31:BA:753:A:H8	1.79	0.47
31:BA:793:U:H2'	31:BA:794:G:H8	1.79	0.47
31:BA:1602:A:H2'	31:BA:1603:G:H8	1.78	0.47
31:BA:2017:A:H2'	31:BA:2018:A:C8	2.49	0.47
31:BA:2310:U:H5"	31:BA:2311:G:H2'	1.96	0.47
31:BA:2472:A:H2'	31:BA:2485:G:H22	1.80	0.47
31:BA:2747:C:O5'	31:BA:2759:C:N4	2.45	0.47
31:BA:2789:U:H4'	34:BE:71:LYS:HG2	1.96	0.47
34:BE:6:LEU:HD11	34:BE:51:VAL:HG21	1.96	0.47
34:BE:117:PHE:HA	34:BE:161:ARG:HA	1.95	0.47
37:BH:160:LYS:O	37:BH:163:ARG:NH2	2.41	0.47
41:BP:70:PRO:HA	41:BP:95:ALA:HB2	1.96	0.47
45:BT:53:LYS:O	45:BT:57:PHE:HB2	2.14	0.47
45:BT:59:LYS:O	45:BT:63:ALA:CB	2.62	0.47
48:BW:31:SER:HA	48:BW:76:LYS:HE3	1.96	0.47
1:AA:72:U:O2	1:AA:98:A:N1	2.47	0.47
1:AA:1037:U:O2	1:AA:1041:G:N1	2.47	0.47
1:AA:1431:G:H2'	1:AA:1432:A:C8	2.49	0.47
5:AE:17:ARG:HB2	5:AE:41:VAL:HG23	1.97	0.47
12:AL:11:PRO:HG2	12:AL:13:ARG:HB3	1.96	0.47
21:AU:31:GLU:O	21:AU:35:ARG:HB2	2.13	0.47
25:B3:2:LYS:HD2	32:BB:40:U:H4'	1.96	0.47
26:B4:38:HIS:HB2	26:B4:41:ARG:HB2	1.96	0.47
26:B4:45:LYS:HE2	26:B4:45:LYS:HB2	1.64	0.47
30:B8:25:VAL:HG21	30:B8:35:GLN:HB3	1.97	0.47
31:BA:832:G:H2'	31:BA:833:G:C8	2.50	0.47
31:BA:841:C:H3'	40:BO:41:ARG:NH2	2.29	0.47
31:BA:1293:U:H2'	31:BA:1294:G:C4	2.50	0.47
31:BA:1497:A:H2'	31:BA:1498:A:C8	2.45	0.47
31:BA:1500:C:H2'	31:BA:1501:A:C8	2.49	0.47
31:BA:1629:C:H2'	31:BA:1630:G:H8	1.80	0.47
31:BA:1929:C:O2	31:BA:1933:G:C6	2.67	0.47
31:BA:2055:A:OP1	34:BE:140:ARG:NE	2.45	0.47
32:BB:22:G:H4'	32:BB:23:A:C4	2.48	0.47
33:BD:68:LYS:HB3	33:BD:70:THR:HG23	1.96	0.47
47:BV:59:ILE:O	47:BV:70:LYS:NZ	2.46	0.47
49:BX:43:LYS:HD2	49:BX:57:LEU:HD12	1.95	0.47
51:A:38:VAL:HG12	51:A:58:LEU:HD13	1.96	0.47
1:AA:683:A:H1'	11:AK:116:HIS:CD2	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:774:A:H3'	1:AA:775:A:H8	1.79	0.47
1:AA:925:G:H2'	1:AA:926:A:C8	2.50	0.47
1:AA:1064:U:O2'	3:AC:155:ARG:NE	2.47	0.47
1:AA:1446:G:OP2	20:AT:29:ARG:NH1	2.47	0.47
7:AG:57:PRO:O	7:AG:61:PHE:CB	2.62	0.47
9:AI:49:ASN:O	9:AI:54:ALA:N	2.48	0.47
31:BA:15:G:O6	31:BA:559:U:O4	2.33	0.47
31:BA:24:G:H1'	47:BV:81:ASN:HD22	1.80	0.47
31:BA:135:U:O2	31:BA:141:G:N2	2.48	0.47
31:BA:481:G:C2	31:BA:489:A:N6	2.83	0.47
31:BA:842:U:O2	35:BF:74:ARG:NH2	2.48	0.47
31:BA:1375:G:H2'	31:BA:1376:G:H8	1.80	0.47
31:BA:1665:G:HO2'	31:BA:1762:A:HO2'	1.58	0.47
31:BA:2336:U:OP1	50:BZ:83:LYS:NZ	2.47	0.47
43:BR:113:LEU:HD22	43:BR:114:LYS:H	1.79	0.47
1:AA:67:A:O2'	1:AA:174:U:O4	2.31	0.47
1:AA:186:A:H2'	1:AA:187:C:C6	2.50	0.47
1:AA:325:U:OP1	1:AA:361:A:N6	2.46	0.47
1:AA:353:C:OP1	44:BS:38:ARG:NE	2.48	0.47
1:AA:753:U:O2'	1:AA:844:G:N3	2.47	0.47
3:AC:189:ASP:HA	3:AC:194:LYS:HG2	1.97	0.47
4:AD:66:ARG:O	4:AD:70:ASN:ND2	2.48	0.47
5:AE:84:LEU:HB2	5:AE:101:PRO:HB3	1.97	0.47
5:AE:118:LEU:HD13	5:AE:126:VAL:HG13	1.96	0.47
5:AE:153:ALA:HA	5:AE:156:VAL:HG22	1.96	0.47
6:AF:37:ASN:HD21	6:AF:40:SER:HA	1.80	0.47
16:AP:19:ARG:HG3	16:AP:39:THR:HG22	1.96	0.47
20:AT:44:TYR:O	20:AT:48:SER:CB	2.63	0.47
25:B3:17:THR:HG21	25:B3:46:ILE:H	1.79	0.47
26:B4:14:ASN:HA	26:B4:17:ARG:HB2	1.97	0.47
31:BA:638:U:H2'	31:BA:654:G:H22	1.80	0.47
31:BA:799:A:OP2	33:BD:207:LYS:NZ	2.46	0.47
31:BA:897:U:H2'	31:BA:898:A:C8	2.50	0.47
31:BA:1199:A:H2'	31:BA:1200:U:C6	2.50	0.47
31:BA:1313:A:HO2'	31:BA:1314:G:H8	1.61	0.47
31:BA:1505:A:H2'	31:BA:1506:G:C8	2.50	0.47
31:BA:1693:A:N6	31:BA:2000:C:N4	2.42	0.47
31:BA:1814:G:H2'	31:BA:1815:U:H6	1.79	0.47
31:BA:1916:A:OP2	31:BA:1922:A:N6	2.40	0.47
31:BA:1946:C:H5'	31:BA:1947:U:H2'	1.96	0.47
31:BA:2649:U:O3'	31:BA:2736:G:O2'	2.31	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2725:A:H3'	31:BA:2726:G:H8	1.79	0.47
31:BA:2792:C:O2'	31:BA:2807:A:N3	2.38	0.47
31:BA:2832:G:O6	31:BA:2877:A:O2'	2.23	0.47
35:BF:66:ARG:HH11	35:BF:67:GLN:H	1.62	0.47
42:BQ:10:SER:HA	42:BQ:13:ARG:HE	1.79	0.47
44:BS:16:ILE:HG12	44:BS:75:VAL:HB	1.96	0.47
48:BW:61:LYS:N	48:BW:72:LYS:O	2.48	0.47
50:BZ:48:GLN:NE2	50:BZ:53:ILE:H	2.12	0.47
50:BZ:75:VAL:HG23	50:BZ:88:VAL:HG22	1.97	0.47
51:A:8:GLY:HA2	51:A:42:VAL:HG22	1.95	0.47
1:AA:130:A:H1'	1:AA:198:A:H61	1.80	0.47
1:AA:824:A:H5'	1:AA:825:C:H2'	1.96	0.47
1:AA:840:G:O6	1:AA:862:U:O4	2.29	0.47
1:AA:1402:C:H2'	1:AA:1403:A:C8	2.50	0.47
1:AA:1455:C:N4	1:AA:1459:A:N1	2.63	0.47
18:AR:46:PRO:O	18:AR:50:THR:HB	2.15	0.47
31:BA:29:U:OP1	45:BT:5:LYS:NZ	2.42	0.47
31:BA:1307:U:H2'	31:BA:1308:A:C8	2.50	0.47
31:BA:2482:A:N3	31:BA:2533:G:O2'	2.46	0.47
31:BA:2829:G:H1'	31:BA:2881:A:H2'	1.96	0.47
38:BM:90:THR:HG23	38:BM:93:GLU:HB2	1.96	0.47
42:BQ:48:ILE:HD12	42:BQ:48:ILE:HA	1.84	0.47
48:BW:11:ILE:HD11	48:BW:28:GLU:HB2	1.95	0.47
1:AA:10:A:O2'	1:AA:11:G:O4'	2.33	0.47
1:AA:602:U:O4	1:AA:654:G:O6	2.33	0.47
1:AA:682:G:H2'	1:AA:683:A:C8	2.50	0.47
1:AA:1399:G:O2'	1:AA:1509:A:OP1	2.30	0.47
4:AD:11:GLN:HA	4:AD:15:TYR:HD2	1.80	0.47
5:AE:62:ALA:O	5:AE:66:ALA:CB	2.61	0.47
9:AI:83:ILE:HA	9:AI:86:ALA:HB3	1.97	0.47
10:AJ:8:ILE:HG12	10:AJ:100:ILE:HG12	1.96	0.47
15:AO:35:GLU:HG3	15:AO:38:HIS:HB3	1.96	0.47
31:BA:99:U:OP2	31:BA:100:U:N3	2.48	0.47
31:BA:139:U:O4	31:BA:1436:G:N2	2.48	0.47
31:BA:481:G:N2	31:BA:489:A:H61	2.12	0.47
31:BA:842:U:H2'	31:BA:843:G:C8	2.50	0.47
31:BA:1295:A:N6	31:BA:2018:A:OP2	2.44	0.47
31:BA:2139:A:H3'	31:BA:2140:A:C8	2.50	0.47
31:BA:2282:A:OP2	50:BZ:20:ASN:ND2	2.43	0.47
35:BF:157:PRO:HD3	35:BF:196:VAL:HG21	1.97	0.47
46:BU:6:ILE:HD13	46:BU:42:PHE:HD2	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:457:A:O4'	1:AA:496:A:N6	2.48	0.47
1:AA:509:G:H2'	1:AA:510:G:H8	1.80	0.47
1:AA:803:C:O2'	11:AK:125:ARG:NH2	2.41	0.47
4:AD:143:ARG:O	4:AD:146:SER:OG	2.25	0.47
4:AD:182:GLU:HG3	4:AD:184:ASP:H	1.80	0.47
7:AG:22:VAL:HG13	7:AG:42:VAL:HG11	1.97	0.47
15:AO:2:ALA:HB3	15:AO:35:GLU:HG2	1.97	0.47
27:B5:36:CYS:SG	27:B5:38:THR:OG1	2.66	0.47
31:BA:1273:A:H2'	31:BA:1274:A:C8	2.50	0.47
31:BA:1613:U:OP2	31:BA:1614:A:N6	2.49	0.47
31:BA:2567:U:N3	31:BA:2570:A:OP2	2.37	0.47
38:BM:99:ALA:HA	38:BM:102:LEU:HD23	1.96	0.47
43:BR:69:ALA:HB3	43:BR:72:VAL:HG22	1.97	0.47
47:BV:90:ARG:O	47:BV:97:ALA:CA	2.62	0.47
1:AA:37:G:O2'	12:AL:128:SER:O	2.32	0.46
1:AA:97:G:N7	1:AA:100:G:N2	2.63	0.46
1:AA:172:A:H2'	1:AA:173:A:C8	2.50	0.46
1:AA:984:G:N1	1:AA:1370:A:OP2	2.35	0.46
1:AA:1001:G:H21	1:AA:1054:A:H62	1.63	0.46
1:AA:1096:G:N1	1:AA:1105:C:O2	2.48	0.46
1:AA:1141:A:N1	1:AA:1143:U:N3	2.62	0.46
1:AA:1310:C:H3'	1:AA:1311:G:C8	2.50	0.46
4:AD:49:LEU:HA	4:AD:52:ALA:HB3	1.96	0.46
4:AD:85:TYR:O	4:AD:89:THR:CB	2.63	0.46
9:AI:79:ILE:HG23	9:AI:83:ILE:HD12	1.96	0.46
13:AM:84:GLY:HA3	13:AM:86:TYR:HD1	1.80	0.46
14:AN:2:ALA:O	14:AN:6:MET:HB3	2.15	0.46
26:B4:42:VAL:HG22	26:B4:48:TYR:HB2	1.97	0.46
31:BA:478:A:N3	31:BA:1231:U:O2'	2.46	0.46
31:BA:596:C:O2'	31:BA:1283:A:N1	2.34	0.46
31:BA:1441:G:N1	31:BA:1620:A:N7	2.64	0.46
31:BA:1802:C:OP2	33:BD:182:ARG:NH2	2.48	0.46
31:BA:1864:G:N1	31:BA:1884:U:N3	2.47	0.46
31:BA:2583:C:H2'	31:BA:2584:U:H6	1.80	0.46
33:BD:206:GLY:H	33:BD:210:ARG:HH11	1.61	0.46
35:BF:53:ASN:OD1	35:BF:54:ARG:N	2.48	0.46
48:BW:47:ASP:OD2	48:BW:87:LYS:NZ	2.36	0.46
1:AA:523:C:O2'	1:AA:546:G:N1	2.36	0.46
1:AA:545:C:H2'	1:AA:546:G:C8	2.50	0.46
1:AA:667:C:H2'	1:AA:668:A:H8	1.79	0.46
1:AA:728:C:H2'	1:AA:729:G:C4	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1366:C:O2'	1:AA:1369:C:N4	2.44	0.46
4:AD:56:LYS:O	4:AD:60:THR:HB	2.14	0.46
5:AE:94:GLY:O	5:AE:133:SER:N	2.41	0.46
11:AK:17:GLY:O	11:AK:81:SER:CB	2.63	0.46
13:AM:34:LEU:O	13:AM:39:VAL:N	2.44	0.46
18:AR:26:VAL:HB	18:AR:28:TYR:H	1.80	0.46
31:BA:748:G:O2'	31:BA:753:A:N6	2.48	0.46
31:BA:1544:A:H3'	31:BA:1545:G:C8	2.50	0.46
33:BD:132:LEU:HA	33:BD:135:ILE:HB	1.96	0.46
41:BP:36:ALA:O	41:BP:100:GLY:N	2.45	0.46
41:BP:115:ARG:O	41:BP:119:ARG:CB	2.57	0.46
46:BU:24:VAL:O	46:BU:95:THR:CB	2.57	0.46
49:BX:4:LYS:NZ	49:BX:24:ILE:O	2.42	0.46
1:AA:384:G:H2'	1:AA:385:G:C8	2.50	0.46
1:AA:444:C:O2'	4:AD:151:ALA:N	2.47	0.46
1:AA:483:A:H8	16:AP:81:LYS:HZ1	1.61	0.46
1:AA:619:G:O6	1:AA:639:A:N1	2.49	0.46
1:AA:946:A:N6	1:AA:947:G:O6	2.48	0.46
1:AA:1116:G:N7	1:AA:1118:A:N6	2.64	0.46
6:AF:53:ASN:HD21	6:AF:89:ARG:HB2	1.80	0.46
31:BA:51:G:N2	31:BA:117:A:H62	2.12	0.46
31:BA:185:A:H2'	31:BA:186:G:H8	1.79	0.46
31:BA:875:C:H2'	31:BA:876:G:C8	2.51	0.46
31:BA:996:G:N2	31:BA:2034:A:OP1	2.41	0.46
31:BA:1301:G:O6	31:BA:1644:C:O2	2.34	0.46
31:BA:2488:G:H1'	41:BP:124:LYS:HE2	1.97	0.46
31:BA:2551:U:H2'	31:BA:2552:G:C8	2.49	0.46
31:BA:2748:G:N1	31:BA:2764:U:N3	2.60	0.46
1:AA:152:A:N6	1:AA:171:U:C2	2.83	0.46
1:AA:179:C:N4	1:AA:210:G:OP1	2.48	0.46
1:AA:445:U:O3'	4:AD:119:HIS:NE2	2.46	0.46
1:AA:557:G:H2'	1:AA:558:C:H6	1.78	0.46
1:AA:1391:C:H2'	1:AA:1392:G:C8	2.50	0.46
1:AA:1509:A:H62	1:AA:1512:G:H22	1.63	0.46
2:AB:46:THR:HA	2:AB:49:LEU:HB3	1.96	0.46
11:AK:22:GLN:HE22	11:AK:86:GLY:HA3	1.80	0.46
15:AO:4:SER:O	15:AO:8:LYS:HB2	2.15	0.46
16:AP:21:ASN:HA	16:AP:36:THR:HA	1.97	0.46
31:BA:449:C:H2'	31:BA:450:A:H8	1.81	0.46
31:BA:881:G:H5"	31:BA:884:A:H2	1.80	0.46
31:BA:1011:G:H5'	31:BA:1191:A:H62	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1054:U:OP1	31:BA:1070:U:O2'	2.33	0.46
31:BA:1256:A:OP1	46:BU:87:LYS:NZ	2.49	0.46
31:BA:1307:U:H2'	31:BA:1308:A:H8	1.81	0.46
31:BA:1376:G:H2'	31:BA:1377:G:H8	1.81	0.46
31:BA:1988:U:H2'	31:BA:1989:G:H8	1.80	0.46
31:BA:2070:C:H2'	31:BA:2071:A:C8	2.51	0.46
31:BA:2079:U:OP2	31:BA:2242:G:O2'	2.31	0.46
31:BA:2296:U:OP1	43:BR:21:LYS:NZ	2.36	0.46
31:BA:2829:G:OP1	34:BE:57:ARG:NH2	2.48	0.46
36:BG:58:LEU:HD21	36:BG:90:VAL:HG12	1.97	0.46
1:AA:47:U:H2'	1:AA:48:G:C8	2.50	0.46
1:AA:152:A:H3'	1:AA:153:A:H8	1.80	0.46
1:AA:545:C:H2'	1:AA:546:G:H8	1.80	0.46
1:AA:697:C:N4	1:AA:698:G:O6	2.49	0.46
1:AA:1159:A:O4'	10:AJ:72:ARG:NH2	2.49	0.46
1:AA:1416:C:H2'	1:AA:1417:A:H8	1.80	0.46
2:AB:38:ILE:HD13	51:A:140:PRO:O	2.15	0.46
3:AC:41:LEU:HD13	3:AC:93:LEU:HD13	1.98	0.46
3:AC:57:GLU:CB	3:AC:64:ILE:O	2.54	0.46
10:AJ:6:ILE:HA	10:AJ:101:LYS:O	2.15	0.46
24:B2:41:PRO:HA	24:B2:44:LEU:HD13	1.98	0.46
31:BA:316:U:O4	31:BA:388:A:N6	2.48	0.46
31:BA:420:C:O2'	31:BA:425:A:N1	2.37	0.46
31:BA:983:C:H2'	31:BA:984:U:C6	2.51	0.46
31:BA:1826:G:H2'	31:BA:1827:G:H8	1.80	0.46
31:BA:2814:C:H2'	31:BA:2815:A:H8	1.81	0.46
32:BB:47:C:OP1	43:BR:100:ARG:N	2.48	0.46
32:BB:75:U:H2'	32:BB:76:A:C8	2.51	0.46
34:BE:48:ALA:HA	34:BE:86:LEU:HD11	1.97	0.46
37:BH:89:MET:HG2	37:BH:94:TYR:HB3	1.96	0.46
45:BT:69:ALA:HB1	45:BT:74:LEU:HB2	1.98	0.46
45:BT:88:ILE:HD13	46:BU:54:LEU:HB2	1.97	0.46
48:BW:64:ARG:HA	48:BW:69:THR:HA	1.97	0.46
1:AA:43:G:H2'	1:AA:44:G:C8	2.50	0.46
1:AA:414:G:H2'	1:AA:415:A:H8	1.81	0.46
1:AA:505:G:H21	1:AA:506:A:H3'	1.81	0.46
1:AA:758:C:H4'	15:AO:21:ASP:HA	1.98	0.46
1:AA:791:C:OP1	1:AA:1522:C:O2'	2.26	0.46
13:AM:89:MET:O	13:AM:93:ARG:HB2	2.15	0.46
14:AN:2:ALA:O	14:AN:6:MET:CB	2.64	0.46
25:B3:51:SER:O	25:B3:54:SER:CB	2.62	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:986:C:H2'	31:BA:987:G:H8	1.79	0.46
31:BA:1802:C:C2	31:BA:1819:G:N2	2.83	0.46
31:BA:1951:C:H2'	31:BA:1952:G:C8	2.51	0.46
31:BA:2819:A:OP1	34:BE:114:GLY:N	2.48	0.46
32:BB:83:G:H2'	32:BB:84:G:C8	2.50	0.46
33:BD:53:HIS:CE1	33:BD:219:THR:HA	2.51	0.46
33:BD:166:GLY:O	33:BD:173:LEU:N	2.48	0.46
33:BD:241:VAL:HG22	33:BD:243:ARG:HH21	1.81	0.46
38:BM:63:LYS:HA	38:BM:95:ARG:HH11	1.80	0.46
41:BP:28:SER:OG	41:BP:105:GLU:OE2	2.34	0.46
44:BS:74:PRO:HB2	44:BS:77:THR:HG23	1.97	0.46
47:BV:52:GLU:O	47:BV:56:ASN:HB3	2.16	0.46
51:A:55:GLU:OE2	51:A:66:ARG:HB2	2.15	0.46
1:AA:1099:U:O2'	1:AA:1101:A:N7	2.36	0.46
1:AA:1193:G:H2'	1:AA:1194:G:H8	1.81	0.46
1:AA:1267:G:O2'	1:AA:1282:A:N6	2.49	0.46
6:AF:11:ARG:HD2	6:AF:13:ASN:H	1.81	0.46
7:AG:144:ALA:HA	7:AG:147:ASN:HB2	1.98	0.46
9:AI:56:GLN:HE21	9:AI:97:ALA:HB2	1.80	0.46
13:AM:83:ILE:HG13	19:AS:66:MET:HA	1.98	0.46
19:AS:26:GLU:OE2	19:AS:28:LYS:NZ	2.48	0.46
28:B6:4:THR:OG1	28:B6:5:TYR:N	2.49	0.46
31:BA:537:A:N3	31:BA:539:A:O2'	2.38	0.46
31:BA:586:U:H3'	31:BA:587:G:C8	2.51	0.46
31:BA:634:G:N2	31:BA:690:A:N3	2.53	0.46
31:BA:782:U:OP1	31:BA:2615:C:O2'	2.33	0.46
31:BA:897:U:H2'	31:BA:898:A:H8	1.81	0.46
31:BA:1140:U:H2'	31:BA:1141:A:C8	2.51	0.46
31:BA:1761:A:O2'	31:BA:1762:A:O4'	2.33	0.46
31:BA:2317:C:H2'	31:BA:2318:A:C8	2.51	0.46
31:BA:2474:G:H2'	31:BA:2475:A:C8	2.50	0.46
37:BH:102:LYS:HG2	37:BH:114:GLU:HB3	1.98	0.46
37:BH:125:VAL:HG22	37:BH:131:ILE:HD12	1.98	0.46
44:BS:60:VAL:H	44:BS:71:ARG:H	1.64	0.46
44:BS:103:THR:O	44:BS:107:ALA:HB2	2.16	0.46
45:BT:41:ASN:HA	45:BT:44:TYR:HD2	1.80	0.46
47:BV:25:ILE:HA	47:BV:28:ILE:HD12	1.98	0.46
50:BZ:18:THR:HB	50:BZ:20:ASN:HD22	1.80	0.46
1:AA:28:A:N6	1:AA:567:G:H21	2.09	0.46
1:AA:1132:G:N1	1:AA:1155:U:O4	2.49	0.46
1:AA:1264:C:N3	3:AC:26:LYS:NZ	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:1416:C:H2'	1:AA:1417:A:C8	2.50	0.46
3:AC:35:ASP:OD2	3:AC:58:ARG:NE	2.48	0.46
4:AD:181:PRO:HA	4:AD:185:GLU:HG3	1.98	0.46
10:AJ:66:GLU:OE1	10:AJ:68:ARG:NH2	2.49	0.46
13:AM:14:ARG:HE	13:AM:16:VAL:HB	1.80	0.46
30:B8:19:ARG:NH2	31:BA:2760:U:OP2	2.49	0.46
31:BA:158:A:N6	31:BA:164:U:C2	2.84	0.46
31:BA:586:U:H3'	31:BA:587:G:H8	1.80	0.46
31:BA:678:A:H4'	31:BA:679:U:C4	2.51	0.46
31:BA:2056:G:H2'	31:BA:2057:G:C8	2.51	0.46
31:BA:2743:U:H3'	31:BA:2767:G:H1	1.79	0.46
35:BF:72:ARG:H	35:BF:72:ARG:HD2	1.81	0.46
39:BN:93:PRO:HG2	39:BN:117:LEU:HD22	1.98	0.46
1:AA:481:U:H5"	1:AA:482:C:H5	1.81	0.46
1:AA:843:G:N2	1:AA:860:U:H3	2.14	0.46
1:AA:957:A:H1'	1:AA:1371:C:H42	1.81	0.46
1:AA:1070:U:OP2	3:AC:3:GLN:NE2	2.49	0.46
1:AA:1167:G:N7	1:AA:1189:G:N1	2.64	0.46
2:AB:49:LEU:HD11	2:AB:199:VAL:HB	1.98	0.46
7:AG:112:GLU:HB2	7:AG:118:ARG:HB3	1.98	0.46
13:AM:34:LEU:HD12	13:AM:39:VAL:HB	1.98	0.46
19:AS:81:ARG:HA	19:AS:82:GLY:HA3	1.66	0.46
20:AT:15:LYS:O	20:AT:19:GLU:CB	2.63	0.46
31:BA:353:A:O3'	35:BF:169:ARG:NH2	2.49	0.46
31:BA:2041:A:H2'	31:BA:2042:G:C8	2.51	0.46
31:BA:2210:G:H2'	31:BA:2211:G:H8	1.81	0.46
31:BA:2839:U:H2'	31:BA:2840:G:C8	2.51	0.46
33:BD:65:ILE:HD13	33:BD:105:LEU:HG	1.98	0.46
40:BO:57:LEU:H	40:BO:57:LEU:HG	1.56	0.46
49:BX:10:LYS:HB2	49:BX:69:GLN:HB2	1.96	0.46
51:A:45:LYS:HB2	51:A:51:ARG:HD3	1.98	0.46
1:AA:329:A:H2	1:AA:340:G:H1	1.52	0.46
1:AA:446:G:OP1	4:AD:145:LYS:NZ	2.49	0.46
1:AA:699:G:H2'	1:AA:700:U:C2	2.50	0.46
3:AC:19:ASP:O	3:AC:39:ARG:NH2	2.49	0.46
7:AG:139:ASP:O	7:AG:142:LYS:NZ	2.33	0.46
18:AR:39:SER:N	18:AR:43:LYS:O	2.35	0.46
31:BA:480:C:H2'	31:BA:481:G:C8	2.51	0.46
31:BA:991:G:OP1	41:BP:77:LYS:NZ	2.49	0.46
31:BA:1128:G:O2'	31:BA:1133:A:N6	2.39	0.46
31:BA:1436:G:H2'	31:BA:1437:A:H8	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1861:A:OP2	31:BA:1887:G:N2	2.32	0.46
31:BA:2748:G:H2'	31:BA:2749:C:C6	2.51	0.46
35:BF:3:LYS:HG2	35:BF:16:GLU:HA	1.98	0.46
35:BF:140:ALA:O	35:BF:144:SER:CB	2.64	0.46
40:BO:37:GLY:N	40:BO:40:SER:OG	2.43	0.46
1:AA:17:G:O6	1:AA:928:U:C4	2.69	0.45
1:AA:384:G:C2	1:AA:395:U:O2	2.69	0.45
1:AA:388:G:N2	1:AA:391:A:OP2	2.37	0.45
1:AA:444:C:H4'	4:AD:150:PRO:HB2	1.98	0.45
1:AA:604:A:O2'	1:AA:648:A:N6	2.49	0.45
1:AA:1012:G:OP1	1:AA:1034:U:O2'	2.34	0.45
2:AB:166:PRO:HB3	2:AB:173:VAL:HG21	1.98	0.45
9:AI:50:GLN:O	9:AI:55:THR:OG1	2.33	0.45
18:AR:25:VAL:HA	18:AR:26:VAL:HA	1.69	0.45
23:B1:47:THR:OG1	31:BA:95:C:O2	2.33	0.45
29:B7:24:ARG:HH22	29:B7:27:ALA:HB2	1.81	0.45
31:BA:183:G:O2'	31:BA:216:A:N3	2.50	0.45
31:BA:1739:G:N1	31:BA:1751:A:N1	2.64	0.45
31:BA:2692:G:N1	31:BA:2724:U:OP2	2.35	0.45
33:BD:207:LYS:O	33:BD:210:ARG:HG2	2.16	0.45
37:BH:107:VAL:HG11	37:BH:152:ARG:HH21	1.80	0.45
45:BT:82:GLY:O	45:BT:86:ALA:HB2	2.15	0.45
1:AA:248:U:H2'	1:AA:249:G:C8	2.51	0.45
1:AA:348:U:H2'	1:AA:349:C:C6	2.51	0.45
1:AA:454:A:H3'	1:AA:455:G:H8	1.81	0.45
1:AA:516:C:H2'	1:AA:517:U:H5	1.82	0.45
2:AB:137:LEU:HA	2:AB:140:GLU:HB3	1.98	0.45
4:AD:36:HIS:HD2	4:AD:39:ASN:HD22	1.64	0.45
6:AF:10:ILE:HD13	6:AF:22:LEU:HD13	1.99	0.45
6:AF:37:ASN:HB3	6:AF:66:GLU:N	2.29	0.45
6:AF:89:ARG:NH2	18:AR:69:VAL:O	2.49	0.45
8:AH:67:GLY:HA3	8:AH:71:GLU:HB3	1.98	0.45
9:AI:81:HIS:O	9:AI:85:ARG:CB	2.63	0.45
25:B3:8:ASN:ND2	36:BG:62:SER:OG	2.47	0.45
31:BA:80:G:H1'	31:BA:378:A:H62	1.81	0.45
31:BA:148:U:H2'	31:BA:149:U:C6	2.52	0.45
31:BA:300:G:H2'	31:BA:301:A:H8	1.81	0.45
31:BA:548:A:H2'	31:BA:549:A:C4	2.51	0.45
31:BA:663:G:H1'	31:BA:673:U:H1'	1.97	0.45
31:BA:981:G:O6	31:BA:1007:G:N2	2.49	0.45
31:BA:1609:A:H3'	31:BA:1610:G:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2584:U:H3'	31:BA:2585:G:C2	2.51	0.45
31:BA:2595:C:H2'	31:BA:2596:G:C8	2.50	0.45
31:BA:2807:A:OP2	31:BA:2888:G:N1	2.38	0.45
37:BH:68:THR:HA	37:BH:71:LEU:HB2	1.97	0.45
1:AA:725:C:H4'	11:AK:117:ASN:HB2	1.98	0.45
1:AA:899:U:O2	1:AA:915:A:C5	2.68	0.45
1:AA:1183:A:H3'	1:AA:1184:G:H8	1.80	0.45
2:AB:66:VAL:HB	2:AB:158:PRO:HA	1.97	0.45
2:AB:145:GLU:HA	2:AB:148:ILE:HB	1.97	0.45
5:AE:26:LYS:HB3	5:AE:33:ARG:HB3	1.97	0.45
5:AE:87:GLU:HG3	5:AE:101:PRO:HD2	1.98	0.45
10:AJ:25:ILE:O	10:AJ:28:THR:OG1	2.27	0.45
17:AQ:61:ARG:HB2	17:AQ:78:GLU:HG2	1.99	0.45
31:BA:310:U:C4	31:BA:313:A:C5	3.05	0.45
31:BA:1138:A:OP2	31:BA:1139:C:N4	2.37	0.45
31:BA:2247:U:H2'	31:BA:2248:U:C6	2.51	0.45
31:BA:2563:C:H2'	31:BA:2564:C:H6	1.82	0.45
38:BM:22:ALA:HB3	38:BM:25:VAL:HB	1.98	0.45
47:BV:37:ILE:HA	47:BV:40:LEU:HB3	1.96	0.45
49:BX:64:HIS:CD2	49:BX:66:SER:H	2.34	0.45
1:AA:254:A:N6	1:AA:289:G:H21	2.05	0.45
1:AA:293:C:H2'	1:AA:294:A:C8	2.52	0.45
1:AA:657:G:H2'	1:AA:658:A:H8	1.81	0.45
1:AA:1096:G:H2'	1:AA:1097:G:C8	2.51	0.45
1:AA:1307:G:H22	1:AA:1341:G:H2'	1.81	0.45
1:AA:1538:A:H8	1:AA:1540:C:H42	1.64	0.45
4:AD:84:GLY:HA2	4:AD:87:PHE:HD2	1.80	0.45
4:AD:152:ILE:HG23	4:AD:156:VAL:HB	1.98	0.45
7:AG:47:LYS:NZ	7:AG:51:GLU:OE2	2.41	0.45
11:AK:19:VAL:HB	11:AK:82:VAL:HA	1.99	0.45
11:AK:85:LYS:HG3	11:AK:112:THR:HA	1.99	0.45
15:AO:12:ILE:O	15:AO:16:ALA:CB	2.64	0.45
16:AP:4:LYS:HA	16:AP:65:GLN:H	1.80	0.45
16:AP:69:THR:O	16:AP:73:LEU:HB2	2.17	0.45
25:B3:23:PHE:H	25:B3:34:THR:H	1.64	0.45
31:BA:584:G:H2'	31:BA:585:G:H8	1.82	0.45
31:BA:624:G:C2	31:BA:700:U:O2	2.69	0.45
31:BA:846:U:C5	31:BA:1280:G:H5'	2.51	0.45
31:BA:1957:A:O3'	31:BA:2563:C:O2'	2.34	0.45
31:BA:2196:U:H2'	31:BA:2197:A:C8	2.52	0.45
31:BA:2553:G:H2'	31:BA:2554:G:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2702:U:H2'	31:BA:2703:U:C6	2.51	0.45
35:BF:70:THR:O	35:BF:72:ARG:NH1	2.47	0.45
37:BH:45:ILE:HA	37:BH:50:ILE:HG13	1.99	0.45
38:BM:132:HIS:ND1	38:BM:133:THR:O	2.49	0.45
40:BO:102:VAL:HG23	40:BO:105:VAL:HG12	1.97	0.45
41:BP:65:TRP:N	41:BP:105:GLU:O	2.45	0.45
43:BR:81:LYS:NZ	43:BR:111:ALA:O	2.40	0.45
1:AA:609:U:C2	1:AA:646:G:N1	2.61	0.45
1:AA:1302:U:H2'	1:AA:1303:C:C6	2.52	0.45
4:AD:13:ARG:HE	4:AD:26:ILE:HD13	1.80	0.45
7:AG:114:THR:O	7:AG:118:ARG:NE	2.42	0.45
13:AM:68:ASP:O	13:AM:72:GLU:CB	2.50	0.45
29:B7:60:ARG:HG3	29:B7:63:ALA:HB2	1.98	0.45
31:BA:621:U:HO2'	35:BF:93:ASN:HD21	1.64	0.45
31:BA:676:G:N1	31:BA:679:U:OP1	2.42	0.45
31:BA:999:C:O2'	31:BA:2277:A:N3	2.50	0.45
31:BA:1775:A:N6	31:BA:1831:A:N3	2.65	0.45
31:BA:2409:G:N1	31:BA:2415:A:OP2	2.50	0.45
38:BM:39:ARG:HE	38:BM:41:LYS:HE2	1.82	0.45
40:BO:85:LEU:HD23	40:BO:85:LEU:HA	1.83	0.45
51:A:87:ARG:HA	51:A:90:ARG:HD2	1.98	0.45
1:AA:147:G:H2'	1:AA:148:G:C8	2.52	0.45
1:AA:327:G:H2'	1:AA:328:G:C8	2.51	0.45
1:AA:573:U:O4	12:AL:12:ARG:NH2	2.49	0.45
1:AA:1302:U:O3'	13:AM:44:ARG:NE	2.50	0.45
1:AA:1370:A:H1'	1:AA:1373:C:H42	1.82	0.45
1:AA:1504:G:H1'	1:AA:1525:A:H2	1.82	0.45
4:AD:64:SER:O	4:AD:68:PHE:CB	2.63	0.45
5:AE:104:GLU:HA	5:AE:125:ASP:HB2	1.98	0.45
6:AF:46:ARG:NH2	18:AR:29:LYS:O	2.50	0.45
8:AH:11:LEU:HD23	8:AH:14:ILE:HD12	1.99	0.45
10:AJ:17:ILE:HG22	10:AJ:18:LEU:H	1.81	0.45
10:AJ:47:SER:HB3	10:AJ:67:MET:HB2	1.98	0.45
15:AO:88:ARG:NH1	31:BA:749:U:OP2	2.50	0.45
23:B1:54:LYS:O	23:B1:58:ALA:HB2	2.17	0.45
24:B2:8:LEU:N	24:B2:32:ASN:OD1	2.44	0.45
31:BA:624:G:N1	31:BA:700:U:N3	2.64	0.45
31:BA:875:C:H2'	31:BA:876:G:H8	1.80	0.45
31:BA:1080:C:OP1	31:BA:1081:A:O2'	2.29	0.45
31:BA:1167:U:O2'	31:BA:1168:A:O4'	2.33	0.45
31:BA:1220:G:H5"	40:BO:32:GLY:HA2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1478:A:H2'	31:BA:1479:G:H8	1.82	0.45
31:BA:2369:G:HO2'	31:BA:2370:A:H8	1.64	0.45
31:BA:2371:G:H2'	31:BA:2372:C:H6	1.82	0.45
31:BA:2659:G:N1	31:BA:2669:A:OP2	2.42	0.45
31:BA:2725:A:O2'	31:BA:2872:C:OP1	2.34	0.45
34:BE:63:LYS:O	34:BE:67:GLY:CA	2.58	0.45
34:BE:120:PRO:HG2	34:BE:121:ILE:HD12	1.99	0.45
42:BQ:55:ASP:HB3	42:BQ:58:ALA:HB3	1.98	0.45
1:AA:30:G:O2'	1:AA:304:U:OP1	2.35	0.45
1:AA:52:A:N6	1:AA:369:G:O5'	2.49	0.45
1:AA:308:A:C5	1:AA:309:G:H1'	2.52	0.45
10:AJ:67:MET:HB3	14:AN:54:PRO:HG2	1.99	0.45
13:AM:82:GLU:HG2	13:AM:85:SER:HB2	1.98	0.45
31:BA:216:A:H3'	31:BA:217:G:H8	1.81	0.45
31:BA:323:U:H2'	31:BA:324:A:C8	2.51	0.45
31:BA:764:G:H22	31:BA:799:A:H62	1.64	0.45
31:BA:1082:G:N2	31:BA:1146:A:C5	2.81	0.45
31:BA:1747:A:H2'	31:BA:1748:G:O4'	2.16	0.45
37:BH:38:ASN:HB2	37:BH:43:LEU:HD21	1.99	0.45
45:BT:103:ALA:O	45:BT:107:THR:OG1	2.19	0.45
47:BV:79:PHE:O	47:BV:108:THR:OG1	2.32	0.45
1:AA:471:A:H2	1:AA:479:G:H22	1.65	0.45
1:AA:1054:A:H3'	1:AA:1055:G:C8	2.52	0.45
1:AA:1282:A:H3'	1:AA:1283:G:H8	1.80	0.45
3:AC:180:ASP:HA	3:AC:207:LEU:HD22	1.98	0.45
4:AD:165:PHE:O	4:AD:178:VAL:N	2.42	0.45
5:AE:154:GLU:O	5:AE:158:ALA:HB3	2.17	0.45
6:AF:41:LYS:C	6:AF:62:ILE:O	2.55	0.45
7:AG:148:ARG:HD3	11:AK:59:PHE:HB2	1.99	0.45
11:AK:18:ILE:O	11:AK:33:THR:HB	2.17	0.45
15:AO:6:GLU:O	15:AO:10:GLU:CB	2.63	0.45
24:B2:37:LYS:HG3	24:B2:38:GLU:HG2	1.99	0.45
25:B3:47:ARG:HD3	36:BG:111:ARG:HH12	1.82	0.45
26:B4:22:LEU:HD22	26:B4:23:THR:H	1.82	0.45
31:BA:778:A:O2'	31:BA:1688:U:OP1	2.34	0.45
31:BA:1071:G:C6	31:BA:1154:U:O2	2.69	0.45
31:BA:1275:G:H2'	31:BA:1276:A:C8	2.51	0.45
31:BA:1485:G:N1	31:BA:2708:C:C2	2.85	0.45
31:BA:1740:G:N1	31:BA:1750:C:C2	2.85	0.45
31:BA:2104:U:C5	31:BA:2193:G:N1	2.84	0.45
40:BO:75:ALA:HB2	40:BO:106:LYS:H	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:BP:77:LYS:HZ2	41:BP:88:GLY:H	1.64	0.45
44:BS:32:VAL:HG21	44:BS:36:ARG:H	1.81	0.45
1:AA:87:G:O2'	1:AA:88:C:O4'	2.34	0.45
1:AA:187:C:N3	1:AA:207:U:C4	2.85	0.45
1:AA:377:C:H2'	1:AA:378:G:C8	2.52	0.45
1:AA:384:G:C6	1:AA:395:U:N3	2.82	0.45
1:AA:410:G:H2'	1:AA:411:C:C6	2.51	0.45
1:AA:586:G:H2'	1:AA:587:A:H8	1.82	0.45
1:AA:727:C:H2'	18:AR:44:ILE:HG22	1.99	0.45
1:AA:1002:A:C6	1:AA:1223:A:H4'	2.52	0.45
4:AD:46:GLU:OE2	5:AE:17:ARG:NH2	2.47	0.45
5:AE:118:LEU:HB2	5:AE:123:VAL:HB	1.99	0.45
8:AH:104:ALA:HB3	8:AH:115:ASP:HB3	1.99	0.45
9:AI:3:GLN:HE22	9:AI:22:VAL:HG13	1.82	0.45
13:AM:80:LEU:HD21	25:B3:73:ARG:HG3	1.98	0.45
13:AM:106:ALA:O	13:AM:110:LYS:HB3	2.17	0.45
14:AN:40:CYS:O	14:AN:44:LEU:HB3	2.17	0.45
31:BA:1516:G:N1	31:BA:1527:A:C6	2.85	0.45
31:BA:1609:A:H3'	31:BA:1610:G:H8	1.82	0.45
31:BA:1936:A:H3'	31:BA:1937:G:H8	1.82	0.45
31:BA:1951:C:H2'	31:BA:1952:G:H8	1.82	0.45
31:BA:2254:G:O2'	31:BA:2500:C:OP1	2.33	0.45
31:BA:2318:A:H2'	31:BA:2319:A:C8	2.52	0.45
31:BA:2378:G:H3'	31:BA:2379:G:H8	1.82	0.45
31:BA:2565:A:H5"	39:BN:57:VAL:HG21	1.99	0.45
31:BA:2637:A:H5"	31:BA:2810:A:H5'	1.99	0.45
31:BA:2642:G:N1	31:BA:2780:A:OP2	2.46	0.45
33:BD:48:ARG:HG3	33:BD:49:ILE:H	1.82	0.45
33:BD:182:ARG:HG3	33:BD:269:LEU:HB3	1.97	0.45
43:BR:34:PHE:HD2	43:BR:40:ILE:HA	1.81	0.45
43:BR:35:ARG:N	43:BR:95:TYR:OH	2.49	0.45
49:BX:91:ARG:HH21	49:BX:100:LEU:HD11	1.81	0.45
1:AA:241:C:H2'	1:AA:242:C:C6	2.51	0.45
1:AA:370:G:H4'	12:AL:26:VAL:HB	1.99	0.45
1:AA:431:G:H3'	1:AA:432:G:H8	1.82	0.45
1:AA:604:A:OP2	1:AA:649:A:N6	2.50	0.45
1:AA:613:G:H21	1:AA:642:C:H2'	1.82	0.45
1:AA:630:A:H8	1:AA:631:A:C8	2.35	0.45
1:AA:765:U:H3'	1:AA:766:G:C8	2.52	0.45
8:AH:96:LYS:HD3	8:AH:99:ASN:HA	1.99	0.45
9:AI:40:PRO:HA	9:AI:41:HIS:HA	1.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:AJ:42:LEU:HD11	10:AJ:73:LEU:HD12	1.98	0.45
12:AL:22:PRO:O	12:AL:108:TYR:OH	2.33	0.45
13:AM:53:GLU:HA	13:AM:56:ILE:HG22	1.98	0.45
26:B4:12:LYS:HD3	26:B4:15:ARG:HD2	1.99	0.45
31:BA:107:U:H2'	31:BA:108:A:C8	2.51	0.45
31:BA:698:G:OP1	40:BO:17:ASN:N	2.50	0.45
31:BA:1345:A:H2'	31:BA:1346:G:C8	2.52	0.45
31:BA:1743:U:H2'	31:BA:1746:A:C8	2.51	0.45
31:BA:1803:U:H1'	31:BA:2207:G:C8	2.52	0.45
36:BG:108:SER:OG	36:BG:109:LEU:N	2.48	0.45
37:BH:26:VAL:O	37:BH:32:GLU:HA	2.17	0.45
38:BM:66:LEU:HG	38:BM:70:LYS:HB3	1.98	0.45
47:BV:29:ARG:NH1	47:BV:78:THR:O	2.48	0.45
48:BW:23:LYS:HE2	48:BW:88:THR:HB	1.98	0.45
50:BZ:83:LYS:HB3	50:BZ:85:HIS:HE2	1.81	0.45
1:AA:503:C:N4	1:AA:506:A:H62	2.14	0.44
1:AA:555:G:OP1	4:AD:65:GLU:N	2.49	0.44
1:AA:594:G:O2'	1:AA:887:C:OP1	2.35	0.44
1:AA:673:A:H1'	1:AA:740:C:H2'	2.00	0.44
1:AA:1354:G:N2	1:AA:1355:U:O4	2.41	0.44
1:AA:1445:G:H2'	1:AA:1446:G:C8	2.52	0.44
3:AC:58:ARG:HH11	3:AC:63:VAL:HB	1.82	0.44
5:AE:26:LYS:HG2	5:AE:33:ARG:HD3	1.98	0.44
11:AK:18:ILE:O	11:AK:33:THR:OG1	2.34	0.44
13:AM:54:ASP:OD1	13:AM:57:ARG:NH1	2.49	0.44
31:BA:487:G:N2	31:BA:492:A:O2'	2.50	0.44
31:BA:697:U:OP1	40:BO:16:ARG:NE	2.44	0.44
31:BA:777:C:H2'	31:BA:778:A:H8	1.83	0.44
31:BA:1318:C:H2'	31:BA:1319:U:H6	1.82	0.44
31:BA:1474:U:H3	31:BA:1493:G:N2	2.15	0.44
31:BA:1568:G:H2'	31:BA:1569:U:C6	2.52	0.44
31:BA:2315:A:C6	36:BG:42:GLY:HA3	2.52	0.44
31:BA:2320:U:H5"	43:BR:2:ILE:HD11	2.00	0.44
31:BA:2689:G:OP2	44:BS:50:LYS:NZ	2.44	0.44
41:BP:45:ARG:O	41:BP:49:ALA:CB	2.65	0.44
1:AA:699:G:OP2	11:AK:26:ASN:ND2	2.48	0.44
1:AA:1037:U:H3	1:AA:1039:C:H1'	1.83	0.44
1:AA:1226:U:H2'	1:AA:1227:G:C8	2.53	0.44
4:AD:32:VAL:HA	4:AD:33:PRO:HD3	1.83	0.44
7:AG:28:ARG:HG3	7:AG:100:LEU:HB3	2.00	0.44
12:AL:75:GLU:HB2	12:AL:77:THR:HG22	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:76:C:H2'	31:BA:77:U:H6	1.81	0.44
31:BA:212:A:H2'	31:BA:213:G:C8	2.52	0.44
31:BA:696:A:H2'	31:BA:697:U:C6	2.52	0.44
31:BA:761:G:OP1	31:BA:1461:G:O2'	2.34	0.44
31:BA:1370:U:OP1	31:BA:1631:U:O2'	2.30	0.44
31:BA:1961:C:H2'	31:BA:1962:C:H6	1.82	0.44
31:BA:2044:U:C2	31:BA:2045:U:N3	2.84	0.44
31:BA:2401:G:C6	31:BA:2423:U:O2	2.69	0.44
31:BA:2418:G:H2'	31:BA:2419:G:H8	1.81	0.44
31:BA:2696:C:H2'	31:BA:2697:A:H8	1.81	0.44
35:BF:154:VAL:HG21	35:BF:174:VAL:HG13	1.99	0.44
39:BN:4:THR:OG1	39:BN:5:GLU:OE1	2.28	0.44
42:BQ:41:ARG:HH11	42:BQ:105:THR:HG22	1.81	0.44
46:BU:17:GLU:HB3	46:BU:20:SER:HB2	1.98	0.44
47:BV:33:VAL:HG21	47:BV:59:ILE:HD11	1.99	0.44
49:BX:3:VAL:HG11	49:BX:89:LYS:HE2	1.99	0.44
1:AA:43:G:H2'	1:AA:44:G:H8	1.82	0.44
1:AA:447:U:H5'	4:AD:117:HIS:HA	1.99	0.44
1:AA:493:G:H4'	1:AA:494:G:H5'	1.99	0.44
1:AA:675:G:OP1	1:AA:740:C:O2'	2.29	0.44
1:AA:1295:A:N6	1:AA:1378:G:O2'	2.43	0.44
1:AA:1368:G:O6	14:AN:21:TYR:OH	2.29	0.44
3:AC:11:ARG:HH21	3:AC:179:ALA:H	1.65	0.44
4:AD:121:LEU:O	4:AD:141:SER:OG	2.32	0.44
5:AE:84:LEU:HD11	5:AE:126:VAL:HG12	2.00	0.44
7:AG:110:ARG:HB2	7:AG:118:ARG:HB2	1.99	0.44
8:AH:33:LYS:HA	8:AH:36:ILE:HD12	2.00	0.44
18:AR:61:VAL:HA	18:AR:64:ILE:HB	1.98	0.44
31:BA:1462:U:H2'	31:BA:1463:A:H8	1.82	0.44
31:BA:1496:U:H2'	31:BA:1497:A:C4	2.52	0.44
31:BA:1741:U:H3	31:BA:1748:G:H1	1.65	0.44
31:BA:1940:A:N6	31:BA:1967:C:N4	2.64	0.44
31:BA:2861:C:H2'	31:BA:2862:U:C6	2.52	0.44
33:BD:119:GLY:N	33:BD:121:ASP:OD1	2.50	0.44
37:BH:69:ARG:O	37:BH:73:ALA:HB2	2.18	0.44
45:BT:102:ASP:HB3	45:BT:105:ALA:HB3	1.99	0.44
1:AA:36:C:H2'	1:AA:37:G:C8	2.52	0.44
1:AA:40:G:O2'	1:AA:405:A:N6	2.50	0.44
18:AR:79:ASP:HB3	21:AU:18:ARG:HH12	1.83	0.44
23:B1:12:ASP:OD1	23:B1:24:ARG:NH1	2.51	0.44
23:B1:17:SER:OG	23:B1:18:VAL:N	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:295:U:H1'	31:BA:299:G:H1'	1.99	0.44
31:BA:686:A:H5"	31:BA:687:C:H5	1.83	0.44
31:BA:853:G:N1	31:BA:1218:U:OP2	2.50	0.44
31:BA:1242:G:O2'	31:BA:1266:G:N1	2.38	0.44
31:BA:1815:U:O2'	33:BD:42:GLY:O	2.35	0.44
31:BA:1825:G:H2'	31:BA:1826:G:C8	2.52	0.44
31:BA:1988:U:H2'	31:BA:1989:G:C8	2.53	0.44
31:BA:2582:G:N7	34:BE:143:SER:OG	2.50	0.44
40:BO:136:ALA:O	40:BO:140:ALA:CB	2.66	0.44
1:AA:17:G:O4'	1:AA:1403:A:O2'	2.30	0.44
1:AA:528:C:H2'	1:AA:529:A:C8	2.52	0.44
1:AA:1108:C:OP2	2:AB:95:ARG:NH2	2.40	0.44
1:AA:1132:G:N7	1:AA:1154:C:N4	2.65	0.44
1:AA:1254:U:C2	1:AA:1298:C:N3	2.85	0.44
2:AB:17:GLY:HA3	2:AB:39:HIS:HB2	1.99	0.44
5:AE:154:GLU:O	5:AE:158:ALA:CB	2.65	0.44
7:AG:21:VAL:O	7:AG:25:LEU:HB2	2.17	0.44
16:AP:44:VAL:HA	16:AP:45:THR:HA	1.73	0.44
26:B4:17:ARG:HH12	47:BV:19:ARG:HE	1.64	0.44
31:BA:236:C:H2'	31:BA:237:G:H8	1.82	0.44
31:BA:274:A:H2'	31:BA:275:A:H8	1.83	0.44
31:BA:664:G:N2	31:BA:667:A:OP2	2.44	0.44
31:BA:1275:G:H2'	31:BA:1276:A:H8	1.83	0.44
31:BA:1619:C:H2'	31:BA:1620:A:H8	1.83	0.44
31:BA:1802:C:C6	31:BA:1804:A:H1'	2.52	0.44
31:BA:1934:G:H4'	31:BA:1935:U:H5'	1.99	0.44
31:BA:1943:U:H3	31:BA:1971:C:HO2'	1.62	0.44
31:BA:2318:A:H2'	31:BA:2319:A:H8	1.82	0.44
31:BA:2699:U:O2	31:BA:2718:G:O6	2.35	0.44
31:BA:2854:U:C4	31:BA:2859:G:O6	2.71	0.44
1:AA:67:A:N3	1:AA:215:A:O2'	2.48	0.44
1:AA:73:G:N2	1:AA:98:A:OP1	2.50	0.44
1:AA:502:C:N3	1:AA:503:C:N4	2.65	0.44
1:AA:792:A:H2'	1:AA:793:G:H8	1.83	0.44
1:AA:1163:G:H21	1:AA:1186:A:H61	1.66	0.44
1:AA:1470:U:OP2	44:BS:108:ARG:NE	2.50	0.44
4:AD:20:THR:HB	4:AD:100:TYR:HE2	1.83	0.44
4:AD:105:ALA:HA	4:AD:156:VAL:HG22	2.00	0.44
5:AE:22:ASN:N	5:AE:37:ALA:O	2.45	0.44
8:AH:67:GLY:N	8:AH:71:GLU:O	2.51	0.44
29:B7:11:ALA:HB1	29:B7:65:MET:HG2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:B7:32:ARG:HB3	31:BA:2426:C:N4	2.33	0.44
31:BA:10:A:H2'	31:BA:11:A:C4	2.52	0.44
31:BA:624:G:N1	31:BA:700:U:C2	2.82	0.44
31:BA:626:U:H2'	31:BA:627:A:H8	1.81	0.44
31:BA:1899:C:H2'	31:BA:1900:A:C8	2.53	0.44
31:BA:2154:U:H3'	31:BA:2155:U:H4'	1.98	0.44
31:BA:2633:A:O2'	31:BA:2892:A:N7	2.39	0.44
31:BA:2681:U:H2'	31:BA:2682:U:C6	2.53	0.44
31:BA:2704:C:H2'	31:BA:2705:C:H6	1.83	0.44
38:BM:19:VAL:HA	38:BM:57:ILE:HB	2.00	0.44
42:BQ:41:ARG:HB2	42:BQ:107:ILE:HD11	2.00	0.44
43:BR:87:GLU:HG2	43:BR:114:LYS:HE3	2.00	0.44
47:BV:9:ALA:O	47:BV:108:THR:HA	2.18	0.44
1:AA:146:G:H2'	1:AA:147:G:C8	2.53	0.44
1:AA:557:G:H2'	1:AA:558:C:C6	2.52	0.44
1:AA:589:C:O2'	1:AA:590:G:O5'	2.33	0.44
1:AA:853:A:O2'	1:AA:854:G:O4'	2.36	0.44
1:AA:1259:C:H1'	1:AA:1292:U:C4	2.52	0.44
1:AA:1262:G:O2'	1:AA:1265:G:N3	2.49	0.44
1:AA:1309:U:H3'	1:AA:1310:C:H4'	2.00	0.44
1:AA:1519:U:H2'	1:AA:1520:A:C8	2.52	0.44
1:AA:1532:G:H2'	1:AA:1533:G:C8	2.53	0.44
2:AB:67:VAL:HG21	2:AB:221:ILE:HD13	1.99	0.44
15:AO:76:GLN:HA	15:AO:79:ARG:HB3	1.99	0.44
26:B4:15:ARG:HH21	31:BA:16:G:H1'	1.82	0.44
29:B7:57:ARG:H	29:B7:57:ARG:HD2	1.82	0.44
31:BA:20:C:H2'	31:BA:21:A:H8	1.83	0.44
31:BA:30:G:H2'	31:BA:31:C:C6	2.53	0.44
31:BA:449:C:H1'	31:BA:1866:U:H1'	1.99	0.44
31:BA:766:C:H2'	31:BA:767:C:H6	1.82	0.44
31:BA:1846:U:H2'	31:BA:1847:G:C8	2.52	0.44
31:BA:2132:C:H2'	31:BA:2133:C:C6	2.53	0.44
33:BD:120:PRO:HB2	33:BD:134:ASN:HD22	1.83	0.44
33:BD:132:LEU:HD11	33:BD:164:VAL:HG21	1.99	0.44
36:BG:69:THR:HG23	36:BG:89:LYS:HG3	2.00	0.44
43:BR:102:ALA:O	43:BR:106:THR:OG1	2.25	0.44
1:AA:115:G:H4'	1:AA:116:A:H5'	2.00	0.44
1:AA:999:U:O2	1:AA:1220:A:C6	2.71	0.44
1:AA:1163:G:N2	1:AA:1186:A:H61	2.16	0.44
1:AA:1212:U:H2'	1:AA:1213:G:H8	1.83	0.44
4:AD:107:THR:HG23	4:AD:110:GLN:H	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:AG:108:ARG:NH1	7:AG:115:MET:SD	2.89	0.44
9:AI:12:ARG:HG2	9:AI:13:LYS:HB2	1.98	0.44
13:AM:42:ASP:HA	13:AM:43:ILE:HA	1.46	0.44
25:B3:17:THR:HG21	25:B3:46:ILE:N	2.33	0.44
25:B3:52:SER:HB3	36:BG:106:THR:HA	1.99	0.44
31:BA:16:G:H2'	31:BA:17:G:H8	1.82	0.44
31:BA:174:A:O2'	31:BA:175:A:O5'	2.36	0.44
31:BA:274:A:H2'	31:BA:275:A:C8	2.53	0.44
31:BA:596:C:N4	31:BA:605:G:OP1	2.50	0.44
31:BA:1249:U:O2	31:BA:1260:G:O6	2.35	0.44
31:BA:1667:C:H2'	31:BA:1668:U:C6	2.53	0.44
31:BA:1934:G:H22	31:BA:1972:G:H2'	1.81	0.44
31:BA:2144:G:N1	31:BA:2154:U:O4	2.51	0.44
31:BA:2154:U:H5	31:BA:2155:U:H1'	1.83	0.44
31:BA:2529:G:H2'	31:BA:2530:G:C8	2.51	0.44
31:BA:2751:G:H21	31:BA:2761:A:N6	1.99	0.44
33:BD:107:ALA:HB1	33:BD:194:VAL:HG13	2.00	0.44
33:BD:208:ALA:O	33:BD:211:THR:OG1	2.25	0.44
35:BF:186:ASP:O	35:BF:189:SER:OG	2.35	0.44
41:BP:42:ILE:H	41:BP:42:ILE:HG13	1.46	0.44
46:BU:34:THR:HB	46:BU:63:GLU:HA	1.98	0.44
49:BX:39:ALA:HB1	49:BX:61:ALA:HB3	2.00	0.44
50:BZ:74:THR:N	50:BZ:89:TYR:O	2.51	0.44
1:AA:149:G:C6	1:AA:175:A:N6	2.84	0.44
1:AA:284:G:O2'	17:AQ:46:LYS:NZ	2.51	0.44
1:AA:526:G:N2	1:AA:538:G:O3'	2.50	0.44
1:AA:789:A:OP1	1:AA:1529:U:O2'	2.35	0.44
1:AA:986:A:N6	1:AA:1325:A:N7	2.65	0.44
1:AA:1093:U:H5'	1:AA:1102:G:C4	2.52	0.44
2:AB:83:GLU:O	2:AB:87:ALA:CB	2.66	0.44
3:AC:3:GLN:HE22	10:AJ:53:ARG:HH22	1.65	0.44
8:AH:83:PRO:HA	8:AH:86:ARG:HH12	1.83	0.44
16:AP:11:GLY:HA3	16:AP:16:PRO:HA	1.98	0.44
31:BA:1093:U:O2'	31:BA:1114:C:N4	2.50	0.44
31:BA:1335:U:O2	31:BA:1652:G:N1	2.51	0.44
31:BA:1428:C:H2'	31:BA:1429:A:C8	2.53	0.44
31:BA:1523:A:N3	31:BA:1607:C:O2'	2.40	0.44
31:BA:1598:G:H5"	33:BD:61:LYS:H	1.83	0.44
31:BA:1825:G:OP2	33:BD:52:ARG:NH2	2.45	0.44
31:BA:1847:G:H2'	31:BA:1848:G:H8	1.83	0.44
31:BA:2206:C:H2'	31:BA:2208:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:BB:110:G:H21	43:BR:48:VAL:HG13	1.82	0.44
33:BD:44:ASN:OD1	33:BD:45:ASN:N	2.49	0.44
37:BH:3:ARG:HA	37:BH:6:ASN:HD21	1.82	0.44
45:BT:22:LYS:HZ3	45:BT:29:HIS:HB2	1.83	0.44
46:BU:6:ILE:HG13	46:BU:15:LYS:HA	2.00	0.44
48:BW:52:SER:H	48:BW:81:THR:HG1	1.66	0.44
1:AA:258:A:N7	1:AA:282:A:C6	2.86	0.43
1:AA:382:A:HO2'	16:AP:18:TYR:HH	1.57	0.43
1:AA:593:G:H2'	1:AA:594:G:H8	1.83	0.43
1:AA:943:A:H2'	1:AA:944:C:H6	1.81	0.43
1:AA:995:G:H2'	1:AA:996:G:C8	2.53	0.43
1:AA:1012:G:C2	1:AA:1044:C:N3	2.86	0.43
11:AK:20:HIS:HA	11:AK:83:THR:HG23	2.00	0.43
11:AK:40:LEU:HB2	11:AK:75:GLN:NE2	2.33	0.43
11:AK:58:PRO:HB2	11:AK:93:SER:HB2	1.99	0.43
13:AM:26:GLY:O	13:AM:30:SER:N	2.33	0.43
15:AO:5:LYS:HA	15:AO:8:LYS:HB3	2.00	0.43
25:B3:4:ASN:O	25:B3:6:HIS:ND1	2.52	0.43
25:B3:55:HIS:CE1	36:BG:116:HIS:H	2.36	0.43
31:BA:1487:A:C2	31:BA:2706:G:C2	2.99	0.43
31:BA:1544:A:O2'	31:BA:1586:U:O2'	2.22	0.43
31:BA:1657:G:H2'	31:BA:1658:G:C8	2.53	0.43
31:BA:1805:A:H3'	31:BA:1806:A:H8	1.83	0.43
31:BA:2168:U:OP2	31:BA:2169:G:N1	2.50	0.43
32:BB:91:C:H2'	32:BB:92:C:H6	1.82	0.43
43:BR:19:ARG:HH22	43:BR:30:ARG:HH21	1.65	0.43
47:BV:75:VAL:HA	47:BV:111:VAL:HG12	1.99	0.43
51:A:21:VAL:HG13	51:A:82:GLU:OE2	2.18	0.43
1:AA:145:G:OP1	1:AA:211:A:N6	2.50	0.43
1:AA:419:A:N6	1:AA:436:G:O5'	2.51	0.43
1:AA:469:A:H2'	1:AA:470:G:H8	1.82	0.43
1:AA:699:G:N2	1:AA:704:A:OP2	2.51	0.43
1:AA:958:U:O2	1:AA:1238:G:N2	2.52	0.43
1:AA:1169:C:H2'	1:AA:1170:G:C8	2.54	0.43
1:AA:1445:G:H2'	1:AA:1446:G:H8	1.82	0.43
19:AS:32:LYS:HA	19:AS:57:HIS:CD2	2.53	0.43
26:B4:38:HIS:HB2	26:B4:41:ARG:HD2	1.99	0.43
31:BA:352:A:O2'	35:BF:136:THR:N	2.48	0.43
31:BA:514:A:H1'	31:BA:515:A:H5"	1.99	0.43
31:BA:605:G:O2'	31:BA:607:A:OP1	2.37	0.43
31:BA:1051:U:H2'	31:BA:1052:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1118:C:H1'	31:BA:1120:A:H8	1.81	0.43
31:BA:1173:G:O2'	38:BM:106:SER:O	2.36	0.43
31:BA:1363:C:H2'	31:BA:1364:C:C6	2.53	0.43
31:BA:1393:G:N2	31:BA:1396:A:OP2	2.35	0.43
31:BA:1394:A:H3'	31:BA:1395:A:H8	1.83	0.43
31:BA:1869:G:H2'	31:BA:1870:A:C8	2.53	0.43
31:BA:2104:U:C4	31:BA:2193:G:C6	3.06	0.43
31:BA:2412:U:H2'	31:BA:2413:G:C8	2.53	0.43
31:BA:2820:G:H5'	34:BE:161:ARG:HD3	2.00	0.43
32:BB:19:G:H2'	32:BB:20:G:C8	2.53	0.43
39:BN:86:LEU:HB3	39:BN:94:ARG:HG3	1.99	0.43
42:BQ:3:ASN:OD1	42:BQ:42:ARG:NH1	2.51	0.43
44:BS:86:ILE:HG22	44:BS:87:ARG:HG2	2.00	0.43
44:BS:96:LEU:O	44:BS:99:LEU:HB3	2.18	0.43
47:BV:90:ARG:HD2	47:BV:91:PRO:HD2	1.99	0.43
49:BX:39:ALA:HB2	49:BX:63:ILE:HD11	1.99	0.43
51:A:73:ASP:OD1	51:A:74:MET:N	2.51	0.43
1:AA:96:U:H5"	1:AA:97:G:H4'	2.00	0.43
1:AA:404:A:O2'	1:AA:406:C:OP1	2.26	0.43
1:AA:725:C:H4'	11:AK:117:ASN:HD22	1.82	0.43
1:AA:819:C:O2'	1:AA:909:A:N1	2.42	0.43
1:AA:1327:C:H2'	1:AA:1328:U:C6	2.54	0.43
1:AA:1502:U:H5"	51:A:27:LYS:NZ	2.34	0.43
9:AI:51:PRO:HG2	9:AI:79:ILE:HG22	2.01	0.43
13:AM:71:ARG:O	13:AM:75:LEU:HB3	2.17	0.43
15:AO:11:ILE:HG12	15:AO:30:ALA:HB1	2.00	0.43
27:B5:3:ARG:HA	27:B5:23:SER:HB2	1.99	0.43
28:B6:10:LYS:HD3	28:B6:13:LYS:HZ1	1.82	0.43
29:B7:41:ARG:NE	31:BA:2423:U:OP1	2.51	0.43
31:BA:606:A:H61	31:BA:2037:A:H4'	1.83	0.43
31:BA:678:A:H2'	31:BA:680:A:C8	2.54	0.43
31:BA:832:G:H2'	31:BA:833:G:H8	1.83	0.43
31:BA:1874:A:C5	31:BA:1875:A:H1'	2.53	0.43
31:BA:1940:A:H4'	31:BA:1941:A:H5"	1.99	0.43
31:BA:2593:A:H2'	31:BA:2594:A:H8	1.84	0.43
31:BA:2678:G:O2'	39:BN:26:GLY:O	2.33	0.43
33:BD:93:LEU:HD22	33:BD:94:ILE:H	1.82	0.43
34:BE:35:VAL:HB	34:BE:94:GLU:HB2	1.99	0.43
36:BG:75:VAL:HG12	36:BG:77:ALA:H	1.83	0.43
38:BM:14:ASP:OD2	38:BM:16:LYS:NZ	2.52	0.43
44:BS:28:HIS:CG	44:BS:82:LYS:HB3	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:BV:53:ASN:O	47:BV:57:SER:HB2	2.19	0.43
1:AA:309:G:H4'	12:AL:12:ARG:HH12	1.84	0.43
1:AA:451:U:H2'	1:AA:452:A:H8	1.84	0.43
1:AA:599:U:O2	1:AA:657:G:C2	2.71	0.43
1:AA:1365:U:H5"	14:AN:33:VAL:H	1.83	0.43
6:AF:21:ALA:HA	6:AF:24:GLU:HG2	2.00	0.43
8:AH:105:ILE:HG23	8:AH:128:ILE:HB	1.99	0.43
13:AM:54:ASP:HA	13:AM:57:ARG:HD3	2.00	0.43
19:AS:50:ALA:HB1	19:AS:57:HIS:HB3	1.99	0.43
22:B0:32:ASN:HB2	22:B0:51:ALA:H	1.84	0.43
25:B3:2:LYS:HG3	32:BB:41:C:P	2.58	0.43
28:B6:9:LYS:N	31:BA:1338:G:OP1	2.52	0.43
31:BA:157:G:N1	31:BA:164:U:OP2	2.51	0.43
31:BA:427:U:H2'	31:BA:428:C:H6	1.82	0.43
31:BA:645:G:H1'	31:BA:649:A:H62	1.83	0.43
31:BA:744:U:H2'	31:BA:745:G:C8	2.53	0.43
31:BA:1328:G:N1	31:BA:1669:C:OP2	2.44	0.43
31:BA:1474:U:H3	31:BA:1493:G:H22	1.66	0.43
31:BA:1801:G:H3'	33:BD:182:ARG:HH21	1.83	0.43
31:BA:1945:C:N4	31:BA:1969:C:N3	2.56	0.43
31:BA:2373:A:H2'	31:BA:2374:G:C8	2.54	0.43
31:BA:2833:A:OP2	34:BE:57:ARG:NH1	2.52	0.43
35:BF:134:PRO:HA	35:BF:163:PHE:HB3	2.00	0.43
39:BN:54:LYS:N	39:BN:56:GLU:OE2	2.51	0.43
41:BP:42:ILE:HD11	41:BP:95:ALA:HB3	2.00	0.43
1:AA:258:A:C6	1:AA:282:A:C2	3.06	0.43
1:AA:272:A:H3'	1:AA:273:G:H8	1.84	0.43
1:AA:472:G:O2'	1:AA:476:A:OP1	2.26	0.43
1:AA:525:U:H2'	1:AA:526:G:C5	2.53	0.43
1:AA:593:G:H2'	1:AA:594:G:C8	2.53	0.43
9:AI:19:VAL:HG13	9:AI:65:VAL:HG22	2.00	0.43
13:AM:43:ILE:HG21	13:AM:48:LEU:HA	1.99	0.43
30:B8:32:LYS:HE2	31:BA:2532:U:H5"	2.00	0.43
31:BA:433:U:H2'	31:BA:434:U:C6	2.54	0.43
31:BA:865:G:H1	31:BA:2450:G:H4'	1.84	0.43
31:BA:908:U:OP1	41:BP:5:LYS:NZ	2.41	0.43
31:BA:1715:C:H3'	31:BA:1716:G:H8	1.84	0.43
31:BA:2091:G:H2'	31:BA:2092:A:C8	2.52	0.43
31:BA:2316:U:H4'	36:BG:86:ILE:HG21	2.01	0.43
31:BA:2517:G:H2'	31:BA:2518:U:C6	2.52	0.43
34:BE:30:ALA:HB1	34:BE:97:VAL:HG21	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:BO:91:VAL:HB	40:BO:124:VAL:HG13	2.00	0.43
40:BO:137:ILE:HG22	40:BO:142:GLY:HA3	2.01	0.43
1:AA:263:G:H2'	1:AA:264:U:C6	2.54	0.43
10:AJ:15:HIS:NE2	10:AJ:23:GLU:OE2	2.51	0.43
15:AO:79:ARG:HD3	17:AQ:86:ILE:HG22	1.99	0.43
31:BA:730:G:H2'	31:BA:731:A:C8	2.53	0.43
31:BA:1152:C:H2'	31:BA:1153:C:C6	2.54	0.43
31:BA:1344:C:H2'	31:BA:1345:A:C8	2.53	0.43
31:BA:1739:G:O2'	31:BA:2856:C:N3	2.41	0.43
31:BA:1792:C:H3'	31:BA:1830:G:H22	1.84	0.43
31:BA:1794:G:C2	31:BA:1829:U:O2	2.72	0.43
31:BA:1872:G:H2'	31:BA:1873:U:C2	2.53	0.43
31:BA:1911:G:O6	31:BA:1927:U:O4	2.37	0.43
31:BA:2041:A:H2'	31:BA:2042:G:H8	1.83	0.43
31:BA:2057:G:H4'	34:BE:150:ASN:HD22	1.83	0.43
31:BA:2587:G:O2'	31:BA:2606:A:N6	2.52	0.43
33:BD:69:ARG:HH21	33:BD:191:THR:HG22	1.84	0.43
34:BE:38:VAL:HG13	34:BE:86:LEU:HD22	2.01	0.43
1:AA:264:U:O4	1:AA:274:G:N2	2.51	0.43
1:AA:588:G:H4'	15:AO:54:ARG:HH21	1.84	0.43
1:AA:691:G:N3	11:AK:38:ASN:ND2	2.67	0.43
1:AA:1037:U:H1'	1:AA:1041:G:H1	1.83	0.43
1:AA:1056:G:H2'	1:AA:1058:G:C8	2.53	0.43
1:AA:1133:U:H5	10:AJ:40:ILE:HD13	1.82	0.43
1:AA:1255:A:H2	1:AA:1296:A:H62	1.66	0.43
3:AC:32:LEU:HD21	14:AN:52:GLN:HB2	2.00	0.43
13:AM:25:VAL:HG22	13:AM:30:SER:HB2	1.99	0.43
31:BA:341:G:H21	31:BA:361:A:H1'	1.83	0.43
31:BA:361:A:H61	49:BX:15:LYS:HE3	1.82	0.43
31:BA:561:C:O2	31:BA:562:A:N6	2.51	0.43
31:BA:603:U:O2'	31:BA:605:G:OP2	2.30	0.43
31:BA:607:A:H2'	31:BA:608:U:H6	1.83	0.43
31:BA:764:G:C6	33:BD:207:LYS:HA	2.53	0.43
31:BA:889:A:H2'	31:BA:890:U:C6	2.54	0.43
31:BA:1012:G:H2'	31:BA:1013:G:H8	1.82	0.43
31:BA:1244:A:H4'	31:BA:1269:C:H4'	2.00	0.43
31:BA:1247:U:H2'	31:BA:1248:A:C8	2.53	0.43
31:BA:1255:G:H2'	31:BA:1256:A:C8	2.54	0.43
31:BA:1300:C:O2'	31:BA:1677:C:OP1	2.33	0.43
31:BA:1325:A:H2'	31:BA:1326:C:C6	2.54	0.43
31:BA:1602:A:H2'	31:BA:1603:G:C8	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1884:U:H2'	31:BA:1885:A:C8	2.53	0.43
31:BA:2027:A:H2'	31:BA:2028:C:H6	1.84	0.43
32:BB:13:U:OP1	32:BB:105:A:O2'	2.35	0.43
33:BD:4:LYS:HG3	33:BD:18:GLY:HA3	1.99	0.43
35:BF:63:LYS:HA	35:BF:64:PRO:HD3	1.82	0.43
44:BS:60:VAL:HB	44:BS:71:ARG:HB3	1.99	0.43
51:A:50:LYS:HB2	51:A:51:ARG:NH1	2.33	0.43
1:AA:261:U:H2'	1:AA:262:G:H8	1.83	0.43
1:AA:513:C:O2'	1:AA:520:C:OP2	2.31	0.43
1:AA:920:C:H2'	1:AA:921:A:C8	2.54	0.43
1:AA:954:A:H2'	1:AA:955:G:C8	2.54	0.43
1:AA:954:A:O5'	13:AM:107:ARG:NH2	2.51	0.43
1:AA:1456:C:H5"	1:AA:1458:C:H41	1.82	0.43
8:AH:115:ASP:OD1	8:AH:115:ASP:N	2.45	0.43
10:AJ:53:ARG:HE	10:AJ:61:SER:HB3	1.83	0.43
19:AS:51:VAL:HG13	19:AS:71:LEU:HG	2.00	0.43
22:B0:34:GLN:O	22:B0:49:ALA:N	2.51	0.43
24:B2:16:ILE:HD12	24:B2:17:PRO:HD2	1.99	0.43
27:B5:19:LEU:HD23	27:B5:20:ASN:H	1.83	0.43
27:B5:22:SER:HB3	27:B5:25:ALA:HB3	2.01	0.43
28:B6:24:THR:HG23	28:B6:26:ASN:HB3	1.99	0.43
31:BA:715:U:H2'	31:BA:716:A:C8	2.54	0.43
31:BA:730:G:H2'	31:BA:731:A:H8	1.82	0.43
31:BA:863:U:H4'	31:BA:866:G:C6	2.54	0.43
31:BA:959:U:H2'	31:BA:960:A:C8	2.52	0.43
31:BA:1301:G:C6	31:BA:1644:C:O2	2.72	0.43
31:BA:1457:C:N4	31:BA:1600:A:OP2	2.35	0.43
31:BA:1934:G:N2	31:BA:1972:G:H2'	2.33	0.43
32:BB:100:U:H3'	32:BB:101:A:H8	1.84	0.43
48:BW:28:GLU:OE2	48:BW:76:LYS:N	2.51	0.43
1:AA:19:U:H2'	1:AA:20:C:C6	2.53	0.43
1:AA:221:U:H2'	1:AA:474:G:C4	2.54	0.43
1:AA:632:C:H2'	1:AA:633:C:H6	1.84	0.43
1:AA:728:C:H3'	1:AA:729:G:H2'	2.01	0.43
1:AA:840:G:O6	1:AA:862:U:C5	2.67	0.43
1:AA:1008:U:O4	1:AA:1048:G:O6	2.37	0.43
1:AA:1123:C:H2'	1:AA:1124:U:C6	2.54	0.43
1:AA:1212:U:O2'	3:AC:191:THR:O	2.35	0.43
1:AA:1228:G:H3'	1:AA:1329:C:N4	2.34	0.43
3:AC:28:TYR:O	3:AC:32:LEU:CB	2.66	0.43
5:AE:90:GLY:O	5:AE:96:LYS:HA	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AL:55:PRO:HG2	12:AL:61:ALA:HB3	2.00	0.43
15:AO:63:ARG:HA	15:AO:66:LEU:HB3	2.01	0.43
29:B7:31:HIS:CE1	31:BA:2398:C:H41	2.37	0.43
30:B8:8:LYS:NZ	31:BA:2471:C:OP1	2.41	0.43
31:BA:88:G:H3'	31:BA:89:U:H6	1.84	0.43
31:BA:880:U:O2	31:BA:969:G:C6	2.72	0.43
31:BA:991:G:N2	31:BA:995:A:OP2	2.45	0.43
31:BA:1149:G:H2'	31:BA:1150:A:H8	1.83	0.43
31:BA:1158:C:H2'	31:BA:1159:C:C6	2.54	0.43
31:BA:1297:U:H2'	31:BA:1298:A:C8	2.46	0.43
31:BA:1771:A:H2'	31:BA:1772:G:C8	2.48	0.43
31:BA:1961:C:H2'	31:BA:1962:C:C6	2.54	0.43
31:BA:2201:U:C2	31:BA:2229:A:N7	2.87	0.43
31:BA:2370:A:H4'	50:BZ:70:LYS:HG2	2.01	0.43
31:BA:2594:A:H2'	31:BA:2595:C:C6	2.54	0.43
35:BF:3:LYS:HA	35:BF:16:GLU:HA	2.01	0.43
37:BH:123:PHE:HE2	37:BH:125:VAL:HG23	1.83	0.43
40:BO:24:SER:OG	40:BO:25:SER:N	2.51	0.43
40:BO:124:VAL:HG12	40:BO:126:VAL:HG22	2.01	0.43
1:AA:509:G:H2'	1:AA:510:G:C8	2.53	0.43
1:AA:527:C:H5	1:AA:538:G:H3'	1.84	0.43
1:AA:531:C:OP1	12:AL:82:GLY:N	2.52	0.43
1:AA:842:A:N6	1:AA:860:U:C4	2.85	0.43
1:AA:913:U:H3'	1:AA:914:G:H8	1.84	0.43
1:AA:1002:A:N1	14:AN:5:SER:OG	2.47	0.43
10:AJ:47:SER:CB	10:AJ:67:MET:O	2.63	0.43
19:AS:18:LYS:HG3	19:AS:31:ILE:HD12	2.00	0.43
20:AT:15:LYS:O	20:AT:19:GLU:HB2	2.18	0.43
31:BA:408:U:H2'	31:BA:409:A:C8	2.54	0.43
31:BA:824:A:N6	31:BA:1643:A:OP2	2.35	0.43
31:BA:1011:G:H2'	31:BA:1012:G:H8	1.84	0.43
31:BA:1680:G:H3'	31:BA:1681:A:H8	1.83	0.43
31:BA:1755:G:OP1	44:BS:92:ARG:NE	2.35	0.43
31:BA:1803:U:O4	31:BA:2206:C:O2'	2.26	0.43
31:BA:2601:G:H4'	33:BD:243:ARG:HH11	1.84	0.43
31:BA:2776:C:OP1	34:BE:201:LYS:NZ	2.51	0.43
31:BA:2839:U:H2'	31:BA:2840:G:H8	1.84	0.43
32:BB:71:G:C2	32:BB:72:A:H1'	2.54	0.43
36:BG:58:LEU:HA	36:BG:61:ILE:HG22	2.01	0.43
51:A:98:ARG:HD3	51:A:98:ARG:HA	1.84	0.43
1:AA:16:U:O2'	5:AE:23:ARG:NH1	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:485:C:H2'	1:AA:486:A:C8	2.53	0.42
1:AA:842:A:C6	1:AA:860:U:C4	3.07	0.42
1:AA:969:U:H2'	1:AA:970:C:C6	2.54	0.42
1:AA:1012:G:C6	1:AA:1044:C:C2	3.07	0.42
1:AA:1457:G:H22	1:AA:1459:A:H4'	1.84	0.42
10:AJ:44:THR:HG23	10:AJ:69:THR:H	1.84	0.42
13:AM:65:LEU:H	13:AM:68:ASP:HB2	1.84	0.42
18:AR:22:LYS:HA	18:AR:23:ILE:HA	1.75	0.42
26:B4:4:PRO:HA	31:BA:2619:U:C2	2.54	0.42
31:BA:76:C:H2'	31:BA:77:U:C6	2.54	0.42
31:BA:630:A:H4'	40:BO:10:GLU:HG2	2.01	0.42
31:BA:1477:C:N3	31:BA:1492:G:N2	2.67	0.42
31:BA:1529:U:H5'	33:BD:77:LYS:HE2	2.00	0.42
31:BA:1578:C:H2'	31:BA:1579:U:H6	1.84	0.42
31:BA:1612:G:H1'	31:BA:1613:U:H5"	2.01	0.42
31:BA:1835:C:H2'	31:BA:1836:U:C6	2.54	0.42
31:BA:1862:G:N2	31:BA:1886:U:O2	2.52	0.42
31:BA:2338:A:C6	43:BR:20:GLY:HA3	2.54	0.42
31:BA:2619:U:H2'	31:BA:2620:C:C6	2.53	0.42
32:BB:86:U:H1'	32:BB:88:C:C2	2.55	0.42
32:BB:112:C:H2'	32:BB:113:A:C8	2.54	0.42
33:BD:165:LEU:HD22	33:BD:173:LEU:HD12	2.00	0.42
33:BD:210:ARG:HA	33:BD:213:HIS:CD2	2.54	0.42
34:BE:53:PHE:N	34:BE:79:PHE:O	2.52	0.42
35:BF:64:PRO:HB2	35:BF:65:TRP:CE3	2.54	0.42
37:BH:127:THR:HG23	37:BH:129:THR:H	1.83	0.42
38:BM:66:LEU:HG	38:BM:70:LYS:HE2	2.00	0.42
48:BW:31:SER:O	48:BW:76:LYS:NZ	2.43	0.42
51:A:7:ARG:HB3	51:A:9:GLU:OE2	2.19	0.42
1:AA:506:A:H2'	1:AA:507:A:H8	1.82	0.42
1:AA:958:U:OP1	13:AM:101:ASN:ND2	2.48	0.42
1:AA:1364:A:O2'	14:AN:41:ARG:NH2	2.52	0.42
1:AA:1400:U:H2'	1:AA:1402:C:H5	1.84	0.42
4:AD:11:GLN:OE1	4:AD:60:THR:OG1	2.37	0.42
4:AD:76:THR:HG23	4:AD:87:PHE:HZ	1.84	0.42
11:AK:40:LEU:HB2	11:AK:75:GLN:HE21	1.83	0.42
23:B1:51:ASP:O	23:B1:55:LYS:CB	2.66	0.42
24:B2:13:ILE:HA	24:B2:20:ARG:NH2	2.35	0.42
24:B2:16:ILE:HG23	24:B2:19:GLN:N	2.35	0.42
25:B3:29:LYS:HB3	36:BG:142:ILE:HG13	2.01	0.42
31:BA:25:U:H2'	31:BA:26:G:C4	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:685:G:N2	31:BA:686:A:N7	2.67	0.42
31:BA:807:A:H2'	31:BA:808:U:C6	2.54	0.42
31:BA:1285:U:H5"	35:BF:73:ALA:HB2	2.00	0.42
31:BA:1701:C:H2'	31:BA:1702:G:C8	2.54	0.42
31:BA:1952:G:H2'	31:BA:1953:G:C8	2.54	0.42
31:BA:2319:A:H4'	43:BR:1:MET:HB3	2.00	0.42
31:BA:2523:U:H5'	31:BA:2546:A:H61	1.84	0.42
33:BD:145:GLU:HG2	33:BD:153:GLN:H	1.83	0.42
37:BH:123:PHE:HE1	37:BH:133:VAL:HG22	1.84	0.42
42:BQ:18:ARG:HH12	42:BQ:67:ARG:HB3	1.83	0.42
49:BX:9:VAL:H	49:BX:21:GLY:H	1.66	0.42
1:AA:523:C:HO2'	1:AA:546:G:H1	1.59	0.42
1:AA:761:A:OP1	15:AO:69:TYR:OH	2.28	0.42
1:AA:1257:A:H4'	9:AI:14:ASN:HB3	1.99	0.42
4:AD:71:LEU:HA	4:AD:74:ALA:HB3	2.00	0.42
8:AH:6:PRO:HA	8:AH:9:ASP:HB3	2.01	0.42
31:BA:40:U:H2'	31:BA:41:A:H8	1.84	0.42
31:BA:1059:G:H3'	31:BA:1060:G:H2'	2.01	0.42
31:BA:1097:A:N7	31:BA:1099:C:N4	2.68	0.42
31:BA:1149:G:H2'	31:BA:1150:A:C8	2.54	0.42
31:BA:1316:A:O2'	31:BA:1317:U:O2	2.30	0.42
31:BA:2111:C:H2'	31:BA:2112:A:C8	2.54	0.42
31:BA:2356:A:OP2	31:BA:2369:G:N2	2.51	0.42
31:BA:2593:A:H2'	31:BA:2594:A:C8	2.55	0.42
31:BA:2625:G:H2'	31:BA:2626:C:C6	2.54	0.42
31:BA:2641:U:H3'	31:BA:2642:G:C8	2.53	0.42
31:BA:2752:A:OP2	31:BA:2757:A:N6	2.51	0.42
32:BB:27:A:P	43:BR:36:SER:HG	2.41	0.42
37:BH:105:LEU:O	37:BH:113:ASP:CB	2.58	0.42
42:BQ:33:THR:HA	42:BQ:120:MET:HA	2.01	0.42
45:BT:65:ILE:HD12	45:BT:65:ILE:HA	1.83	0.42
49:BX:65:VAL:HA	49:BX:68:VAL:HG22	2.00	0.42
1:AA:192:A:H2	1:AA:193:A:H62	1.67	0.42
1:AA:426:U:O2'	4:AD:35:GLN:NE2	2.53	0.42
1:AA:505:G:N2	1:AA:507:A:N7	2.59	0.42
1:AA:648:A:H2'	1:AA:650:A:H62	1.84	0.42
1:AA:652:U:H2'	1:AA:653:G:H8	1.84	0.42
1:AA:1470:U:H2'	1:AA:1471:U:C6	2.55	0.42
9:AI:114:LYS:HZ1	9:AI:120:LYS:HD2	1.84	0.42
11:AK:22:GLN:HB3	11:AK:29:ILE:HG13	2.00	0.42
15:AO:4:SER:O	15:AO:8:LYS:CB	2.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:B3:1:MET:SD	36:BG:96:ARG:NH2	2.91	0.42
26:B4:13:LYS:NZ	31:BA:1293:U:OP1	2.39	0.42
26:B4:15:ARG:HA	26:B4:18:THR:HG23	2.01	0.42
31:BA:39:C:H2'	31:BA:40:U:H6	1.84	0.42
31:BA:84:A:H3'	49:BX:4:LYS:HB2	2.01	0.42
31:BA:156:U:O2	31:BA:166:G:C2	2.72	0.42
31:BA:169:C:H2'	31:BA:170:A:C8	2.55	0.42
31:BA:445:G:H5"	31:BA:446:G:H5"	2.00	0.42
31:BA:1294:G:H2'	31:BA:1295:A:C8	2.55	0.42
31:BA:1461:G:H2'	31:BA:1462:U:H6	1.84	0.42
31:BA:1516:G:C6	31:BA:1527:A:N6	2.87	0.42
31:BA:2571:G:H2'	31:BA:2572:C:C6	2.55	0.42
33:BD:49:ILE:HD13	33:BD:49:ILE:HA	1.86	0.42
35:BF:77:SER:OG	35:BF:80:SER:N	2.48	0.42
45:BT:55:ARG:HA	45:BT:58:ARG:HG2	2.01	0.42
47:BV:25:ILE:H	47:BV:25:ILE:HG13	1.66	0.42
1:AA:90:C:H2'	1:AA:91:C:C6	2.55	0.42
1:AA:248:U:H2'	1:AA:249:G:H8	1.84	0.42
1:AA:258:A:C6	1:AA:282:A:N1	2.88	0.42
1:AA:506:A:H2'	1:AA:507:A:C8	2.53	0.42
1:AA:591:C:O3'	15:AO:64:ARG:NH1	2.52	0.42
1:AA:699:G:N7	11:AK:55:LYS:NZ	2.68	0.42
1:AA:843:G:H2'	1:AA:844:G:H8	1.84	0.42
1:AA:965:U:H5'	19:AS:81:ARG:HD2	2.02	0.42
1:AA:1227:G:H5'	19:AS:36:ARG:HB2	2.02	0.42
1:AA:1314:U:H2'	1:AA:1315:U:O4'	2.19	0.42
1:AA:1317:U:O4	1:AA:1334:A:N7	2.53	0.42
1:AA:1353:A:H2'	7:AG:9:ARG:HH21	1.84	0.42
1:AA:1379:U:H5"	9:AI:72:VAL:H	1.84	0.42
15:AO:29:ILE:HG13	15:AO:66:LEU:HD11	2.01	0.42
17:AQ:32:HIS:CE1	17:AQ:34:VAL:HB	2.54	0.42
18:AR:47:ARG:O	18:AR:51:GLY:CA	2.68	0.42
24:B2:8:LEU:HD13	24:B2:31:LEU:HA	2.01	0.42
28:B6:26:ASN:ND2	31:BA:717:G:H5"	2.34	0.42
31:BA:36:G:H2'	31:BA:37:C:H6	1.85	0.42
31:BA:306:A:O2'	31:BA:394:A:N6	2.52	0.42
31:BA:336:C:OP2	49:BX:17:ARG:NH1	2.51	0.42
31:BA:579:U:OP1	31:BA:1249:U:O2'	2.36	0.42
31:BA:619:G:OP1	40:BO:21:ARG:NH2	2.52	0.42
31:BA:1478:A:H2'	31:BA:1479:G:C8	2.54	0.42
31:BA:1927:U:H2'	31:BA:1928:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2076:G:H1'	31:BA:2444:C:H42	1.84	0.42
31:BA:2093:U:H2'	31:BA:2094:A:C8	2.55	0.42
31:BA:2351:C:H2'	31:BA:2352:U:C6	2.53	0.42
31:BA:2446:C:H2'	31:BA:2447:U:C6	2.54	0.42
31:BA:2887:C:H2'	31:BA:2888:G:O4'	2.19	0.42
32:BB:6:U:H2'	32:BB:7:A:C8	2.54	0.42
39:BN:65:THR:HA	39:BN:82:ASN:HD22	1.85	0.42
41:BP:36:ALA:HB3	41:BP:101:VAL:HB	2.02	0.42
47:BV:8:LYS:HB2	47:BV:110:VAL:HG22	2.00	0.42
1:AA:173:A:H2'	1:AA:175:A:H8	1.85	0.42
1:AA:269:U:OP1	20:AT:67:ARG:NH1	2.52	0.42
1:AA:732:G:H2'	1:AA:733:G:H8	1.85	0.42
1:AA:1024:G:N3	1:AA:1225:C:O2'	2.49	0.42
1:AA:1531:C:N4	1:AA:1532:G:O6	2.53	0.42
4:AD:19:LEU:HB2	4:AD:60:THR:HG21	2.02	0.42
5:AE:44:ASP:OD1	5:AE:44:ASP:N	2.43	0.42
7:AG:13:ALA:HA	7:AG:20:ILE:HA	2.01	0.42
24:B2:45:GLY:HA3	31:BA:889:A:H5'	2.01	0.42
27:B5:34:LYS:HZ1	31:BA:2351:C:H4'	1.83	0.42
31:BA:292:G:H2'	31:BA:293:G:C4	2.53	0.42
31:BA:300:G:H2'	31:BA:301:A:C8	2.54	0.42
31:BA:529:G:H2'	31:BA:530:G:H8	1.84	0.42
31:BA:714:C:H2'	31:BA:715:U:C6	2.55	0.42
31:BA:944:A:O5'	41:BP:24:GLY:N	2.53	0.42
31:BA:1454:G:H2'	31:BA:1455:G:C8	2.54	0.42
31:BA:1465:G:N1	31:BA:1586:U:N3	2.67	0.42
31:BA:1862:G:O6	31:BA:1886:U:O4	2.37	0.42
31:BA:1976:G:OP2	33:BD:238:ARG:NE	2.52	0.42
31:BA:2128:G:C6	31:BA:2129:G:H1'	2.53	0.42
31:BA:2210:G:H2'	31:BA:2211:G:C8	2.54	0.42
31:BA:2349:G:O6	31:BA:2375:G:C2	2.71	0.42
31:BA:2376:U:H2'	31:BA:2377:A:C8	2.54	0.42
31:BA:2480:A:O2'	31:BA:2481:C:O4'	2.31	0.42
31:BA:2640:U:H2'	31:BA:2641:U:C6	2.54	0.42
31:BA:2886:U:H2'	31:BA:2887:C:C6	2.55	0.42
33:BD:69:ARG:HE	33:BD:129:ALA:HB2	1.85	0.42
40:BO:47:ARG:HD3	40:BO:50:PHE:CD1	2.55	0.42
40:BO:92:SER:HB3	40:BO:125:LYS:HB3	2.02	0.42
40:BO:137:ILE:HA	40:BO:140:ALA:HB3	2.02	0.42
47:BV:80:ILE:HG23	47:BV:107:ILE:HG13	2.02	0.42
1:AA:242:C:H2'	1:AA:243:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:953:G:C6	1:AA:1243:A:N1	2.88	0.42
1:AA:1247:U:H3'	1:AA:1248:G:C8	2.54	0.42
12:AL:100:VAL:HG23	12:AL:109:HIS:CE1	2.55	0.42
13:AM:43:ILE:HB	13:AM:45:THR:HB	2.02	0.42
26:B4:7:HIS:HE1	31:BA:611:A:H1'	1.84	0.42
26:B4:10:SER:HA	26:B4:13:LYS:HE2	2.02	0.42
31:BA:351:C:H2'	31:BA:352:A:C8	2.55	0.42
31:BA:1363:C:O3'	48:BW:64:ARG:NH2	2.53	0.42
31:BA:2144:G:N3	31:BA:2156:C:N4	2.68	0.42
31:BA:2755:G:H3'	31:BA:2756:C:H6	1.84	0.42
31:BA:2795:U:H5	31:BA:2890:G:H2'	1.84	0.42
32:BB:82:G:H2'	32:BB:83:G:H8	1.85	0.42
33:BD:79:ALA:HA	33:BD:112:VAL:HG23	2.01	0.42
34:BE:107:ASP:C	34:BE:169:VAL:O	2.58	0.42
38:BM:54:ASP:O	38:BM:120:GLN:NE2	2.53	0.42
41:BP:41:TRP:HB3	41:BP:94:VAL:HG11	2.01	0.42
48:BW:13:THR:H	48:BW:16:SER:HB3	1.83	0.42
1:AA:177:C:H2'	1:AA:178:G:C8	2.52	0.42
1:AA:187:C:N3	1:AA:207:U:O4	2.53	0.42
1:AA:262:G:H5'	17:AQ:72:LYS:HD3	2.01	0.42
1:AA:304:U:O2'	1:AA:565:C:O2	2.32	0.42
1:AA:316:C:H2'	1:AA:317:G:H8	1.84	0.42
1:AA:321:A:H2'	1:AA:322:C:C6	2.54	0.42
1:AA:650:A:H2'	1:AA:651:C:C6	2.55	0.42
1:AA:1011:U:C2	1:AA:1046:C:N3	2.88	0.42
1:AA:1051:U:H3'	1:AA:1052:A:H8	1.85	0.42
1:AA:1088:A:H5"	1:AA:1089:G:C8	2.55	0.42
1:AA:1134:U:H3	1:AA:1286:A:H4'	1.85	0.42
1:AA:1401:A:C6	1:AA:1508:C:H4'	2.55	0.42
6:AF:52:ILE:HB	18:AR:71:ALA:HB2	2.01	0.42
10:AJ:50:THR:HA	10:AJ:63:GLU:O	2.20	0.42
17:AQ:62:ILE:HA	17:AQ:76:LEU:HD22	2.01	0.42
26:B4:35:ASP:HB2	26:B4:45:LYS:HZ2	1.84	0.42
31:BA:158:A:H2'	31:BA:159:A:C8	2.55	0.42
31:BA:310:U:O4	31:BA:313:A:N6	2.53	0.42
31:BA:316:U:H1'	31:BA:390:A:H1'	2.02	0.42
31:BA:760:G:H2'	31:BA:761:G:C4	2.55	0.42
31:BA:764:G:O2'	31:BA:1777:U:O2'	2.31	0.42
31:BA:1031:A:H2'	31:BA:1032:G:H8	1.84	0.42
31:BA:1304:A:O4'	42:BQ:8:ARG:NH2	2.53	0.42
31:BA:1320:U:H2'	31:BA:1321:A:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:1687:C:H2'	31:BA:1688:U:H6	1.85	0.42
31:BA:1737:C:H2'	31:BA:1738:U:H6	1.85	0.42
31:BA:1804:A:N6	31:BA:1824:G:O2'	2.46	0.42
31:BA:2307:G:H2'	31:BA:2308:G:H8	1.85	0.42
31:BA:2711:G:H2'	31:BA:2712:A:H8	1.85	0.42
31:BA:2789:U:H2'	31:BA:2790:A:C8	2.54	0.42
32:BB:83:G:H2'	32:BB:84:G:H8	1.84	0.42
32:BB:103:A:H2'	32:BB:104:G:H8	1.83	0.42
33:BD:44:ASN:H	33:BD:47:GLY:HA2	1.84	0.42
35:BF:10:ASP:N	35:BF:10:ASP:OD1	2.52	0.42
37:BH:120:ASN:HD22	37:BH:136:ILE:HD12	1.84	0.42
39:BN:33:ALA:HB1	39:BN:62:ILE:HD13	2.01	0.42
42:BQ:76:ASN:ND2	42:BQ:83:PRO:O	2.52	0.42
1:AA:64:U:H5"	1:AA:393:U:H1'	2.02	0.42
1:AA:473:U:O2	1:AA:478:A:N6	2.53	0.42
1:AA:1184:G:H3'	1:AA:1185:G:H8	1.85	0.42
1:AA:1243:A:H4'	1:AA:1311:G:H4'	2.02	0.42
8:AH:11:LEU:HD22	8:AH:77:LEU:HD11	2.01	0.42
12:AL:63:ARG:HB3	12:AL:79:TYR:HE1	1.85	0.42
29:B7:13:ARG:HD3	40:BO:61:MET:HB2	2.00	0.42
31:BA:246:G:H4'	31:BA:421:G:C4	2.55	0.42
31:BA:609:G:H2'	31:BA:610:A:C8	2.55	0.42
31:BA:645:G:N1	31:BA:648:G:OP1	2.53	0.42
31:BA:673:U:H2'	31:BA:674:C:H6	1.85	0.42
31:BA:697:U:H2'	31:BA:698:G:C8	2.53	0.42
31:BA:960:A:O2'	50:BZ:37:GLU:OE2	2.23	0.42
31:BA:1165:U:H3	34:BE:151:LYS:HE2	1.85	0.42
31:BA:1347:G:H2'	31:BA:1348:G:H8	1.85	0.42
31:BA:1383:A:H62	31:BA:1406:G:N2	2.17	0.42
31:BA:1785:A:HO2'	31:BA:2611:G:HO2'	1.63	0.42
31:BA:1802:C:O2	31:BA:1819:G:N2	2.53	0.42
31:BA:2208:C:O3'	33:BD:150:LYS:NZ	2.42	0.42
31:BA:2509:G:N1	31:BA:2580:G:N7	2.68	0.42
32:BB:2:U:H2'	32:BB:3:U:O4'	2.19	0.42
32:BB:27:A:P	43:BR:37:ASN:H	2.43	0.42
36:BG:29:VAL:HG12	36:BG:30:PRO:HD2	2.02	0.42
36:BG:122:ALA:HB1	36:BG:130:THR:H	1.83	0.42
39:BN:76:TYR:HD1	39:BN:76:TYR:HA	1.69	0.42
41:BP:106:LEU:HD23	41:BP:109:VAL:HG11	2.01	0.42
47:BV:85:THR:HA	47:BV:102:LYS:O	2.20	0.42
1:AA:22:U:O2'	1:AA:582:A:N6	2.43	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:635:U:H5'	16:AP:17:PHE:CE2	2.55	0.42
1:AA:1108:C:H5	2:AB:95:ARG:HH22	1.68	0.42
1:AA:1145:A:H2'	1:AA:1147:U:C6	2.55	0.42
2:AB:114:LEU:HD11	2:AB:148:ILE:HD12	2.01	0.42
3:AC:123:LEU:HD13	3:AC:195:LEU:HD13	2.01	0.42
4:AD:54:LYS:O	4:AD:58:ARG:CB	2.68	0.42
11:AK:82:VAL:HB	11:AK:108:ILE:HA	2.01	0.42
12:AL:114:ALA:H	12:AL:117:THR:HB	1.84	0.42
25:B3:24:LEU:O	25:B3:34:THR:OG1	2.38	0.42
31:BA:128:C:H2'	31:BA:129:C:C6	2.55	0.42
31:BA:407:G:N2	31:BA:408:U:O4	2.53	0.42
31:BA:570:C:H2'	31:BA:571:G:O4'	2.20	0.42
31:BA:666:A:H2'	31:BA:667:A:C8	2.55	0.42
31:BA:991:G:O6	31:BA:993:U:O2'	2.38	0.42
31:BA:1227:G:H5'	31:BA:1257:G:H4'	2.02	0.42
31:BA:1455:G:H2'	31:BA:1456:A:H8	1.84	0.42
31:BA:2537:U:OP1	31:BA:2669:A:O2'	2.37	0.42
31:BA:2663:G:N2	31:BA:2667:G:O6	2.53	0.42
31:BA:2753:A:C8	37:BH:59:LYS:HD3	2.54	0.42
31:BA:2780:A:C2	31:BA:2786:G:H1'	2.55	0.42
31:BA:2892:A:H2'	31:BA:2893:C:H6	1.85	0.42
35:BF:123:LEU:HA	35:BF:193:LEU:O	2.20	0.42
41:BP:18:ARG:H	41:BP:98:LYS:NZ	2.17	0.42
45:BT:44:TYR:CZ	46:BU:79:LYS:HG2	2.55	0.42
51:A:87:ARG:NH1	51:A:91:LYS:NZ	2.68	0.42
1:AA:458:G:H2'	1:AA:459:A:H4'	2.02	0.41
1:AA:680:U:C4	1:AA:742:G:O6	2.73	0.41
1:AA:1374:C:O2'	10:AJ:64:GLN:NE2	2.53	0.41
2:AB:66:VAL:O	2:AB:159:ASP:N	2.40	0.41
5:AE:14:PHE:HE1	5:AE:48:ARG:HH12	1.67	0.41
7:AG:23:THR:HA	7:AG:26:ILE:HD12	2.02	0.41
7:AG:101:ARG:HA	7:AG:104:VAL:HG12	2.01	0.41
27:B5:32:VAL:HG12	27:B5:34:LYS:HG2	2.02	0.41
28:B6:34:ARG:HH21	28:B6:39:ARG:NE	2.17	0.41
29:B7:42:ARG:HD2	31:BA:2386:G:H21	1.85	0.41
31:BA:5:A:H2'	31:BA:6:A:C8	2.55	0.41
31:BA:671:A:OP1	40:BO:113:ALA:N	2.39	0.41
31:BA:818:A:H2'	31:BA:819:U:H4'	2.02	0.41
31:BA:934:C:C4	31:BA:935:C:N4	2.87	0.41
31:BA:1202:G:H2'	31:BA:1203:A:H8	1.85	0.41
31:BA:1367:G:H5'	48:BW:13:THR:HG22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2193:G:H2'	31:BA:2194:G:C8	2.55	0.41
31:BA:2198:C:H2'	31:BA:2199:U:H6	1.85	0.41
31:BA:2542:C:H2'	31:BA:2543:C:H6	1.85	0.41
33:BD:182:ARG:HH11	33:BD:269:LEU:HD22	1.85	0.41
41:BP:40:HIS:HD2	41:BP:127:VAL:HG12	1.84	0.41
47:BV:62:ALA:O	47:BV:66:PHE:CB	2.59	0.41
49:BX:85:VAL:HB	49:BX:90:VAL:HG21	2.02	0.41
1:AA:109:A:N6	1:AA:332:G:H21	2.14	0.41
1:AA:412:G:N3	1:AA:413:U:N3	2.67	0.41
1:AA:503:C:H42	1:AA:506:A:H62	1.68	0.41
1:AA:592:A:H3'	1:AA:593:G:H8	1.84	0.41
1:AA:1100:A:H2'	1:AA:1101:A:C8	2.55	0.41
1:AA:1120:C:O2'	3:AC:178:ARG:NE	2.35	0.41
1:AA:1349:C:H2'	1:AA:1350:G:C8	2.55	0.41
2:AB:38:ILE:HG23	51:A:140:PRO:CA	2.49	0.41
8:AH:5:ASP:O	8:AH:9:ASP:CB	2.67	0.41
17:AQ:61:ARG:N	17:AQ:78:GLU:O	2.48	0.41
22:B0:10:ARG:HD2	31:BA:431:G:H5'	2.02	0.41
31:BA:68:A:H2'	31:BA:69:C:C6	2.55	0.41
31:BA:91:A:H3'	31:BA:92:G:H2'	2.01	0.41
31:BA:621:U:H2'	31:BA:622:A:H8	1.86	0.41
31:BA:863:U:H4'	31:BA:866:G:N1	2.35	0.41
31:BA:934:C:N4	31:BA:935:C:N4	2.68	0.41
31:BA:1477:C:H2'	31:BA:1478:A:C8	2.56	0.41
31:BA:2127:A:H2'	31:BA:2128:G:C8	2.55	0.41
31:BA:2208:C:H4'	33:BD:147:LYS:HD3	2.01	0.41
31:BA:2583:C:O2'	34:BE:135:SER:OG	2.28	0.41
31:BA:2695:C:H2'	31:BA:2696:C:C6	2.55	0.41
31:BA:2735:G:O2'	34:BE:205:LYS:NZ	2.53	0.41
31:BA:2743:U:H2'	31:BA:2744:A:H8	1.85	0.41
35:BF:78:THR:HA	35:BF:83:TRP:CG	2.55	0.41
37:BH:19:VAL:HG23	37:BH:45:ILE:HB	2.02	0.41
37:BH:155:GLU:HG3	37:BH:160:LYS:HB2	2.02	0.41
43:BR:47:ASP:O	43:BR:49:THR:N	2.52	0.41
1:AA:145:G:H3'	1:AA:146:G:H8	1.86	0.41
1:AA:304:U:H2'	1:AA:305:G:C8	2.55	0.41
1:AA:383:U:O2	16:AP:29:ARG:NH2	2.35	0.41
1:AA:481:U:H2'	16:AP:84:HIS:HE2	1.84	0.41
1:AA:561:U:H2'	1:AA:562:G:C8	2.51	0.41
2:AB:2:SER:HB2	2:AB:58:LYS:HZ1	1.85	0.41
19:AS:12:ASP:OD1	19:AS:12:ASP:N	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:AS:53:ASP:OD1	19:AS:54:GLY:N	2.52	0.41
25:B3:63:LYS:HD3	25:B3:63:LYS:HA	1.88	0.41
27:B5:4:LYS:HD3	27:B5:4:LYS:HA	1.89	0.41
31:BA:227:A:N3	31:BA:229:A:H5"	2.34	0.41
31:BA:989:G:O6	31:BA:998:U:O4	2.39	0.41
31:BA:1107:C:H3'	31:BA:1129:U:H5	1.84	0.41
31:BA:1345:A:H2'	31:BA:1346:G:H8	1.85	0.41
31:BA:1511:G:N1	31:BA:1533:C:O2	2.53	0.41
31:BA:2148:G:C2	31:BA:2151:A:N7	2.87	0.41
31:BA:2410:C:C2	40:BO:69:VAL:HG21	2.55	0.41
32:BB:40:U:OP1	36:BG:65:LYS:NZ	2.36	0.41
36:BG:75:VAL:HB	36:BG:78:PHE:HB2	2.02	0.41
44:BS:2:ASN:O	44:BS:5:GLU:HG2	2.20	0.41
49:BX:26:ALA:HA	49:BX:33:VAL:HG13	2.03	0.41
1:AA:364:A:O2'	1:AA:396:G:N1	2.49	0.41
1:AA:490:G:H21	1:AA:491:A:N6	2.18	0.41
1:AA:564:C:H2'	1:AA:565:C:C6	2.56	0.41
1:AA:792:A:H2'	1:AA:793:G:C8	2.56	0.41
1:AA:882:G:H2'	1:AA:883:C:C6	2.55	0.41
1:AA:929:U:H5'	1:AA:1089:G:H4'	2.01	0.41
1:AA:1256:C:O2	1:AA:1295:A:N6	2.54	0.41
1:AA:1337:U:O4	1:AA:1338:G:N1	2.53	0.41
3:AC:171:THR:HG22	3:AC:173:PRO:HD3	2.02	0.41
9:AI:95:ARG:HG2	9:AI:98:LEU:HD12	2.03	0.41
31:BA:387:U:H2'	31:BA:388:A:C5	2.55	0.41
31:BA:746:U:H2'	31:BA:747:G:C8	2.54	0.41
31:BA:831:U:H2'	31:BA:832:G:C8	2.55	0.41
31:BA:1229:U:H2'	31:BA:1230:C:C6	2.55	0.41
31:BA:1295:A:H61	31:BA:2017:A:H3'	1.85	0.41
31:BA:2073:G:H2'	31:BA:2074:G:H8	1.86	0.41
31:BA:2672:G:H2'	31:BA:2673:G:H8	1.85	0.41
34:BE:15:ILE:HD12	34:BE:15:ILE:HA	1.95	0.41
37:BH:52:VAL:H	37:BH:69:ARG:NH1	2.18	0.41
38:BM:115:THR:HA	38:BM:118:ARG:HG2	2.03	0.41
39:BN:4:THR:HG21	39:BN:23:ARG:HA	2.02	0.41
39:BN:20:LEU:HD22	39:BN:44:LYS:HZ1	1.85	0.41
47:BV:36:ALA:O	47:BV:40:LEU:CB	2.60	0.41
1:AA:421:G:O2'	1:AA:434:U:OP2	2.30	0.41
1:AA:433:A:O2'	4:AD:34:GLY:N	2.39	0.41
1:AA:491:A:H2'	1:AA:492:C:C6	2.56	0.41
1:AA:531:C:H41	12:AL:63:ARG:NH2	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:943:A:H2'	1:AA:944:C:C6	2.56	0.41
1:AA:1132:G:O6	1:AA:1154:C:N4	2.54	0.41
1:AA:1156:C:OP1	9:AI:11:ARG:NH1	2.54	0.41
1:AA:1451:C:HO2'	1:AA:1466:G:H1	1.66	0.41
4:AD:19:LEU:O	4:AD:23:GLY:N	2.51	0.41
4:AD:102:LEU:HD22	4:AD:168:PHE:HD1	1.85	0.41
8:AH:107:SER:HA	8:AH:112:VAL:HA	2.02	0.41
18:AR:47:ARG:HA	18:AR:52:THR:HG23	2.03	0.41
23:B1:16:LEU:HB2	23:B1:21:LEU:HD22	2.01	0.41
28:B6:34:ARG:HH21	28:B6:39:ARG:HE	1.69	0.41
28:B6:35:ARG:NH2	31:BA:53:A:N3	2.67	0.41
31:BA:51:G:H21	31:BA:117:A:H62	1.68	0.41
31:BA:309:G:H1'	31:BA:310:U:H2'	2.02	0.41
31:BA:452:C:H2'	31:BA:453:U:C6	2.54	0.41
31:BA:613:C:H2'	31:BA:614:G:H8	1.84	0.41
31:BA:740:A:N7	31:BA:761:G:N3	2.68	0.41
31:BA:830:C:H2'	31:BA:831:U:C6	2.56	0.41
31:BA:831:U:H2'	31:BA:832:G:H8	1.85	0.41
31:BA:1081:A:H3'	31:BA:1082:G:H8	1.84	0.41
31:BA:1380:C:H2'	31:BA:1381:U:C6	2.55	0.41
31:BA:1466:C:H2'	31:BA:1467:U:C6	2.55	0.41
31:BA:1551:A:N3	31:BA:1553:G:N1	2.68	0.41
31:BA:1597:A:H2'	33:BD:85:PRO:HG3	2.01	0.41
31:BA:1793:A:OP2	31:BA:1830:G:N2	2.53	0.41
31:BA:2240:C:H2'	31:BA:2241:G:O4'	2.20	0.41
31:BA:2384:U:H2'	31:BA:2385:A:C8	2.55	0.41
31:BA:2672:G:H2'	31:BA:2673:G:C8	2.55	0.41
34:BE:68:HIS:O	34:BE:72:ALA:CB	2.68	0.41
35:BF:111:LYS:HA	35:BF:114:TYR:HB3	2.03	0.41
35:BF:164:ALA:N	35:BF:165:GLU:OE1	2.54	0.41
37:BH:58:THR:O	37:BH:61:MET:N	2.51	0.41
48:BW:8:ARG:N	48:BW:28:GLU:O	2.42	0.41
1:AA:78:U:O2'	1:AA:82:U:N3	2.49	0.41
1:AA:657:G:H2'	1:AA:658:A:C8	2.56	0.41
1:AA:703:A:O2'	1:AA:704:A:O4'	2.35	0.41
1:AA:726:A:H3'	1:AA:728:C:H42	1.85	0.41
1:AA:797:U:O2'	1:AA:799:G:N7	2.46	0.41
1:AA:888:C:H5"	12:AL:3:THR:HG21	2.03	0.41
7:AG:125:ASP:OD1	7:AG:128:ASN:ND2	2.41	0.41
8:AH:105:ILE:O	8:AH:128:ILE:HB	2.21	0.41
12:AL:2:PRO:HB3	12:AL:7:LEU:HD21	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:AO:11:ILE:O	15:AO:15:TYR:HB2	2.20	0.41
15:AO:44:LYS:HA	15:AO:47:LYS:HE2	2.03	0.41
16:AP:82:LYS:HE3	16:AP:82:LYS:HB3	1.79	0.41
28:B6:10:LYS:HA	28:B6:13:LYS:HE3	2.02	0.41
31:BA:4:A:H2'	31:BA:5:A:C8	2.56	0.41
31:BA:203:A:H1'	31:BA:204:G:H4'	2.03	0.41
31:BA:386:U:H2'	31:BA:387:U:C6	2.55	0.41
31:BA:526:A:H3'	31:BA:527:G:H8	1.85	0.41
31:BA:566:A:N6	31:BA:2024:A:N3	2.68	0.41
31:BA:694:U:H2'	31:BA:695:C:C6	2.56	0.41
31:BA:717:G:H2'	31:BA:718:U:C6	2.55	0.41
31:BA:1358:U:OP2	31:BA:1359:C:N4	2.34	0.41
31:BA:1745:A:H2'	31:BA:1746:A:C4	2.56	0.41
31:BA:1893:A:H3'	31:BA:1894:A:H8	1.85	0.41
31:BA:2203:A:N1	31:BA:2230:C:N4	2.68	0.41
31:BA:2332:A:H2'	31:BA:2333:A:H8	1.83	0.41
31:BA:2753:A:H5'	31:BA:2754:A:H2'	2.01	0.41
31:BA:2821:A:OP1	34:BE:161:ARG:NE	2.47	0.41
35:BF:136:THR:HB	35:BF:171:LEU:HD11	2.02	0.41
36:BG:46:ASN:OD1	36:BG:47:ASN:N	2.47	0.41
38:BM:70:LYS:O	38:BM:74:LYS:CB	2.63	0.41
43:BR:62:THR:OG1	43:BR:63:GLY:O	2.31	0.41
46:BU:67:HIS:HA	46:BU:95:THR:HA	2.02	0.41
1:AA:125:U:C4	1:AA:244:G:O6	2.73	0.41
1:AA:553:C:H5"	4:AD:54:LYS:HZ1	1.84	0.41
1:AA:628:U:O2'	4:AD:125:LYS:NZ	2.44	0.41
1:AA:673:A:O5'	1:AA:741:G:N2	2.53	0.41
1:AA:1065:G:H1'	3:AC:194:LYS:HD2	2.02	0.41
1:AA:1185:G:O2'	1:AA:1187:A:N7	2.37	0.41
1:AA:1435:A:H2'	1:AA:1436:C:C6	2.55	0.41
3:AC:31:TYR:HB3	3:AC:58:ARG:HE	1.86	0.41
24:B2:3:GLN:HE22	24:B2:38:GLU:N	2.18	0.41
24:B2:5:LYS:HB3	24:B2:59:ALA:HB2	2.02	0.41
29:B7:13:ARG:NH2	40:BO:63:LYS:HG2	2.34	0.41
30:B8:13:TYR:HE2	30:B8:28:PRO:HG2	1.85	0.41
31:BA:518:A:O2'	49:BX:45:GLN:O	2.25	0.41
31:BA:1056:A:H61	31:BA:1177:A:H61	1.67	0.41
31:BA:1094:G:O4'	31:BA:1115:A:N6	2.45	0.41
31:BA:1484:U:H6	42:BQ:60:ARG:HH22	1.67	0.41
31:BA:1495:C:O2'	31:BA:1496:U:O2	2.34	0.41
31:BA:1940:A:H62	31:BA:1967:C:N4	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:2314:A:H2'	31:BA:2315:A:H4'	2.02	0.41
36:BG:20:GLN:HE21	36:BG:166:GLU:HB2	1.85	0.41
38:BM:24:ASP:HA	38:BM:63:LYS:HB2	2.01	0.41
1:AA:23:G:H2'	1:AA:24:G:C8	2.56	0.41
1:AA:65:U:H3	1:AA:105:G:H1	1.68	0.41
1:AA:283:G:O2'	17:AQ:18:MET:SD	2.78	0.41
1:AA:791:C:H2'	1:AA:792:A:C8	2.53	0.41
1:AA:847:G:C2	1:AA:856:U:O2	2.74	0.41
1:AA:903:A:H2'	1:AA:904:C:C6	2.55	0.41
1:AA:1227:G:H2'	1:AA:1228:G:H8	1.86	0.41
7:AG:92:PRO:O	7:AG:96:THR:OG1	2.28	0.41
9:AI:30:VAL:HG22	9:AI:65:VAL:HB	2.02	0.41
12:AL:123:ARG:H	12:AL:127:ARG:HA	1.85	0.41
13:AM:68:ASP:OD2	25:B3:65:GLN:NE2	2.54	0.41
19:AS:47:LEU:O	19:AS:61:TYR:HA	2.21	0.41
22:B0:56:LYS:HG3	31:BA:407:G:H2'	2.03	0.41
31:BA:169:C:H2'	31:BA:170:A:H8	1.84	0.41
31:BA:416:G:H2'	31:BA:417:A:H8	1.85	0.41
31:BA:1152:C:H2'	31:BA:1153:C:H6	1.85	0.41
31:BA:1160:G:H3'	31:BA:1161:A:H2'	2.03	0.41
31:BA:1171:G:H2'	31:BA:1172:G:C8	2.56	0.41
31:BA:1187:C:H2'	31:BA:1188:C:H6	1.86	0.41
31:BA:1346:G:H2'	31:BA:1347:G:H8	1.85	0.41
31:BA:1445:G:H1'	31:BA:1616:A:N1	2.35	0.41
31:BA:1462:U:H2'	31:BA:1463:A:C8	2.56	0.41
31:BA:1781:U:O5'	31:BA:1786:A:N6	2.49	0.41
31:BA:2517:G:H2'	31:BA:2518:U:H6	1.86	0.41
31:BA:2562:C:H2'	31:BA:2563:C:H6	1.85	0.41
31:BA:2799:U:H1'	31:BA:2801:A:H62	1.86	0.41
32:BB:12:U:H1'	32:BB:104:G:H21	1.86	0.41
32:BB:27:A:H3'	43:BR:37:ASN:HD21	1.86	0.41
34:BE:2:SER:HB2	34:BE:101:ALA:HB3	2.03	0.41
34:BE:18:ASP:N	34:BE:18:ASP:OD1	2.52	0.41
37:BH:46:ALA:HB3	37:BH:50:ILE:HA	2.03	0.41
41:BP:67:LYS:N	41:BP:103:MET:O	2.53	0.41
42:BQ:94:ALA:HA	42:BQ:97:TYR:HB2	2.02	0.41
43:BR:24:GLY:O	43:BR:28:THR:OG1	2.37	0.41
1:AA:62:A:H62	1:AA:108:A:H4'	1.85	0.41
1:AA:152:A:N6	1:AA:171:U:N3	2.46	0.41
1:AA:293:C:H2'	1:AA:294:A:H8	1.85	0.41
1:AA:445:U:H1'	4:AD:114:PHE:HE1	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:547:U:O4	12:AL:124:LYS:NZ	2.44	0.41
1:AA:598:U:H1'	8:AH:56:LYS:HB3	2.02	0.41
1:AA:619:G:C6	1:AA:639:A:N1	2.89	0.41
1:AA:728:C:H1'	18:AR:65:LYS:HE2	2.02	0.41
1:AA:752:C:O2'	1:AA:860:U:O2	2.29	0.41
1:AA:886:U:H2'	1:AA:887:C:H6	1.85	0.41
1:AA:1244:C:H5"	1:AA:1245:A:C8	2.56	0.41
1:AA:1255:A:H2'	1:AA:1256:C:C6	2.55	0.41
1:AA:1280:U:C2	1:AA:1281:U:H1'	2.56	0.41
1:AA:1398:U:H2'	1:AA:1399:G:C8	2.56	0.41
3:AC:46:LEU:HD12	3:AC:51:VAL:HG22	2.02	0.41
3:AC:146:LYS:N	3:AC:202:TYR:O	2.54	0.41
3:AC:185:TRP:CA	3:AC:197:VAL:O	2.60	0.41
5:AE:78:PRO:HB3	5:AE:152:ARG:HH11	1.85	0.41
7:AG:116:GLN:O	7:AG:120:ALA:CB	2.65	0.41
8:AH:114:THR:O	8:AH:118:ALA:CB	2.69	0.41
13:AM:81:MET:HG2	31:BA:925:C:N4	2.36	0.41
15:AO:24:SER:O	15:AO:28:GLN:HG2	2.20	0.41
29:B7:59:ARG:HA	29:B7:60:ARG:HA	1.64	0.41
31:BA:184:C:H2'	31:BA:185:A:H8	1.86	0.41
31:BA:693:A:H2'	31:BA:694:U:C6	2.56	0.41
31:BA:838:U:H2'	31:BA:839:A:C8	2.55	0.41
31:BA:1012:G:H2'	31:BA:1013:G:C8	2.56	0.41
31:BA:1322:U:H2'	31:BA:1323:C:C6	2.56	0.41
31:BA:1326:C:H2'	31:BA:1327:C:C6	2.56	0.41
31:BA:1397:G:H3'	31:BA:1398:G:H8	1.85	0.41
31:BA:1417:G:H2'	31:BA:1418:G:C8	2.56	0.41
31:BA:1522:A:H2'	31:BA:1523:A:C8	2.55	0.41
31:BA:1661:A:H3'	31:BA:1662:G:H8	1.86	0.41
31:BA:2005:A:H2'	31:BA:2006:G:H8	1.86	0.41
31:BA:2138:A:H5'	31:BA:2160:U:C4	2.55	0.41
31:BA:2161:G:H5'	31:BA:2162:A:H5'	2.03	0.41
31:BA:2262:C:O2'	31:BA:2431:C:OP2	2.31	0.41
31:BA:2275:G:H2'	31:BA:2276:U:C2	2.56	0.41
31:BA:2300:U:N3	31:BA:2339:A:N6	2.50	0.41
31:BA:2303:G:H2'	31:BA:2304:A:C8	2.53	0.41
31:BA:2331:A:H2'	31:BA:2332:A:C8	2.56	0.41
31:BA:2356:A:N1	50:BZ:42:GLY:HA3	2.36	0.41
31:BA:2357:G:O2'	50:BZ:41:GLY:O	2.35	0.41
31:BA:2465:C:H1'	31:BA:2496:U:N3	2.36	0.41
32:BB:44:A:H5"	43:BR:4:LYS:HD2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:BD:141:ILE:HG21	33:BD:190:ALA:HB1	2.02	0.41
33:BD:262:LYS:HG3	33:BD:263:LYS:HD3	2.03	0.41
34:BE:83:PHE:HZ	34:BE:199:VAL:HB	1.85	0.41
36:BG:105:VAL:HG23	36:BG:106:THR:HG23	2.02	0.41
37:BH:117:ALA:HB3	37:BH:121:ILE:HG23	2.03	0.41
38:BM:98:ASN:O	38:BM:101:ARG:NH1	2.54	0.41
40:BO:86:GLU:HA	40:BO:87:ASP:HA	1.74	0.41
41:BP:2:LEU:HG	41:BP:44:ASN:HD21	1.85	0.41
47:BV:39:ILE:O	47:BV:43:THR:OG1	2.23	0.41
49:BX:63:ILE:HD13	49:BX:63:ILE:HG21	1.87	0.41
50:BZ:29:LEU:HD13	50:BZ:29:LEU:HA	1.97	0.41
50:BZ:80:LYS:HB2	50:BZ:85:HIS:CD2	2.56	0.41
1:AA:317:G:H2'	1:AA:318:G:H8	1.85	0.41
1:AA:330:C:P	1:AA:336:C:H42	2.44	0.41
1:AA:1134:U:N3	1:AA:1286:A:H4'	2.36	0.41
3:AC:110:LEU:HD13	3:AC:203:ARG:HD2	2.02	0.41
4:AD:54:LYS:HD3	4:AD:199:TYR:OH	2.20	0.41
12:AL:63:ARG:HB3	12:AL:79:TYR:CE1	2.56	0.41
14:AN:15:LYS:HB3	14:AN:16:PHE:CD2	2.56	0.41
16:AP:5:ILE:HB	16:AP:66:PRO:HA	2.03	0.41
22:B0:35:LYS:HA	22:B0:48:TRP:HA	2.03	0.41
31:BA:296:G:N3	31:BA:298:A:H1'	2.36	0.41
31:BA:353:A:C4	31:BA:373:G:H4'	2.56	0.41
31:BA:726:C:H2'	31:BA:727:C:C6	2.56	0.41
31:BA:729:U:C4	31:BA:803:G:O6	2.74	0.41
31:BA:822:C:H5"	31:BA:823:A:H5"	2.02	0.41
31:BA:1288:C:H2'	31:BA:1289:G:C8	2.56	0.41
31:BA:1666:C:H2'	31:BA:1667:C:C6	2.55	0.41
31:BA:1793:A:H5'	33:BD:211:THR:HG21	2.03	0.41
31:BA:2359:G:H1'	50:BZ:44:ILE:HG13	2.02	0.41
31:BA:2468:C:H2'	31:BA:2469:C:H6	1.86	0.41
31:BA:2472:A:H3'	31:BA:2480:A:C2	2.56	0.41
31:BA:2604:A:H62	33:BD:236:GLU:HG3	1.86	0.41
31:BA:2642:G:H1'	31:BA:2782:A:N6	2.37	0.41
35:BF:23:VAL:H	35:BF:23:VAL:HG23	1.55	0.41
45:BT:24:TYR:N	45:BT:28:LYS:HE2	2.36	0.41
47:BV:77:GLU:HG2	47:BV:110:VAL:HB	2.03	0.41
50:BZ:74:THR:O	50:BZ:89:TYR:N	2.54	0.41
1:AA:8:U:H1'	1:AA:306:A:C4	2.56	0.40
1:AA:106:C:O2'	1:AA:387:C:OP1	2.35	0.40
1:AA:668:A:H2'	1:AA:669:G:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:729:G:H5'	1:AA:730:G:C8	2.57	0.40
1:AA:1133:U:H5"	10:AJ:7:ARG:CZ	2.51	0.40
3:AC:147:GLY:O	3:AC:202:TYR:CB	2.64	0.40
7:AG:132:ALA:O	7:AG:136:LYS:CB	2.64	0.40
13:AM:2:ALA:O	25:B3:54:SER:OG	2.39	0.40
20:AT:69:LYS:O	20:AT:73:ALA:CB	2.69	0.40
31:BA:271:A:N6	31:BA:292:G:N2	2.69	0.40
31:BA:637:G:N3	31:BA:692:U:O2'	2.54	0.40
31:BA:788:G:H2'	31:BA:789:U:C6	2.56	0.40
31:BA:846:U:O5'	40:BO:22:GLY:N	2.54	0.40
31:BA:1006:C:OP1	31:BA:1009:A:O2'	2.31	0.40
31:BA:1074:G:N1	31:BA:1152:C:N3	2.69	0.40
31:BA:1131:A:O2'	31:BA:1133:A:O4'	2.35	0.40
31:BA:1290:G:H2'	31:BA:1291:U:C6	2.56	0.40
31:BA:1411:A:O2'	31:BA:1603:G:N3	2.52	0.40
31:BA:1433:C:H2'	31:BA:1434:U:H6	1.85	0.40
31:BA:1599:A:H2'	31:BA:1600:A:C8	2.57	0.40
31:BA:2011:U:H5'	31:BA:2822:U:H1'	2.03	0.40
31:BA:2148:G:O2'	31:BA:2151:A:N6	2.54	0.40
34:BE:17:THR:OG1	34:BE:18:ASP:OD1	2.34	0.40
35:BF:58:SER:OG	35:BF:59:GLY:N	2.54	0.40
36:BG:107:VAL:HG13	36:BG:111:ARG:HH11	1.85	0.40
38:BM:137:GLN:H	38:BM:137:GLN:HG3	1.70	0.40
47:BV:70:LYS:HA	47:BV:73:LEU:HD23	2.02	0.40
1:AA:691:G:H22	1:AA:715:U:H2'	1.86	0.40
1:AA:1024:G:H2'	1:AA:1025:A:O4'	2.21	0.40
1:AA:1315:U:H2'	1:AA:1316:G:C8	2.56	0.40
6:AF:6:ILE:HD11	6:AF:92:ILE:HD12	2.03	0.40
23:B1:46:ASN:OD1	31:BA:95:C:O2'	2.26	0.40
27:B5:19:LEU:HD21	31:BA:2350:A:H2	1.86	0.40
31:BA:340:G:H2'	31:BA:341:G:C8	2.56	0.40
31:BA:388:A:H2'	31:BA:389:U:O4'	2.21	0.40
31:BA:635:A:N6	31:BA:690:A:O4'	2.55	0.40
31:BA:1176:U:H2'	38:BM:67:THR:HB	2.03	0.40
31:BA:1326:C:H2'	31:BA:1327:C:H6	1.87	0.40
31:BA:2775:C:H2'	31:BA:2776:C:H6	1.85	0.40
37:BH:56:ASN:HB3	37:BH:61:MET:HG3	2.03	0.40
44:BS:57:THR:HG21	44:BS:75:VAL:H	1.86	0.40
47:BV:12:LYS:HD3	47:BV:106:HIS:CD2	2.56	0.40
48:BW:57:SER:OG	48:BW:58:VAL:N	2.55	0.40
1:AA:316:C:H2'	1:AA:317:G:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:AA:569:U:H5”	1:AA:570:U:H3’	2.02	0.40
1:AA:995:G:H2’	1:AA:996:G:H8	1.85	0.40
1:AA:1389:C:H2’	1:AA:1390:C:H6	1.86	0.40
4:AD:8:SER:HB2	4:AD:11:GLN:HB2	2.03	0.40
7:AG:78:ARG:HD2	7:AG:81:GLY:HA2	2.03	0.40
19:AS:67:VAL:O	19:AS:69:HIS:N	2.48	0.40
28:B6:8:HIS:H	28:B6:11:SER:HB3	1.86	0.40
31:BA:241:G:H1	31:BA:253:G:H3’	1.86	0.40
31:BA:405:G:OP2	31:BA:458:A:N6	2.54	0.40
31:BA:604:A:H3’	31:BA:605:G:H8	1.85	0.40
31:BA:648:G:H22	35:BF:181:SER:HA	1.87	0.40
31:BA:727:C:H2’	31:BA:728:A:C8	2.57	0.40
31:BA:848:U:O3’	31:BA:1255:G:O2’	2.40	0.40
31:BA:997:A:H2’	31:BA:998:U:H6	1.87	0.40
31:BA:1253:G:N2	31:BA:1256:A:OP2	2.39	0.40
31:BA:1421:G:H2’	31:BA:1422:A:C8	2.56	0.40
31:BA:1435:A:H2’	31:BA:1436:G:C8	2.57	0.40
31:BA:1606:U:H2’	31:BA:1607:C:C6	2.56	0.40
31:BA:1720:C:H2’	31:BA:1721:U:O4’	2.21	0.40
31:BA:1753:C:O3’	31:BA:2859:G:O2’	2.39	0.40
31:BA:2127:A:H2’	31:BA:2128:G:H8	1.86	0.40
31:BA:2565:A:H2	39:BN:23:ARG:HH12	1.69	0.40
31:BA:2857:G:H2’	31:BA:2858:A:C8	2.57	0.40
32:BB:10:A:N6	50:BZ:81:ARG:HD2	2.35	0.40
33:BD:67:PHE:HD1	33:BD:156:ARG:HH12	1.69	0.40
37:BH:2:SER:OG	37:BH:3:ARG:N	2.54	0.40
37:BH:54:ARG:NH2	37:BH:62:LYS:HE3	2.36	0.40
39:BN:93:PRO:HB3	39:BN:114:ILE:HG12	2.02	0.40
41:BP:68:ILE:H	41:BP:68:ILE:HG13	1.71	0.40
42:BQ:63:ALA:HA	42:BQ:66:VAL:HG22	2.02	0.40
45:BT:59:LYS:O	45:BT:63:ALA:HB2	2.22	0.40
49:BX:11:VAL:HG13	49:BX:67:ASN:HB3	2.04	0.40
49:BX:64:HIS:HD2	49:BX:66:SER:H	1.70	0.40
50:BZ:67:LEU:HA	50:BZ:67:LEU:HD23	1.85	0.40
1:AA:382:A:OP2	1:AA:461:C:N4	2.55	0.40
1:AA:527:C:H2’	1:AA:539:G:C4	2.56	0.40
1:AA:636:U:H2’	1:AA:637:G:C8	2.56	0.40
1:AA:1238:G:OP1	9:AI:126:GLN:NE2	2.54	0.40
2:AB:210:VAL:O	2:AB:214:THR:CB	2.69	0.40
8:AH:23:ASP:OD1	8:AH:23:ASP:N	2.50	0.40
9:AI:36:GLU:HG3	9:AI:45:ARG:HD3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:AI:88:LEU:HD12	9:AI:92:PRO:HA	2.02	0.40
9:AI:118:LEU:HB3	9:AI:121:ALA:HA	2.03	0.40
16:AP:51:LEU:HD21	16:AP:73:LEU:HD21	2.02	0.40
18:AR:66:ARG:O	18:AR:70:MET:HG2	2.21	0.40
29:B7:8:ARG:NH2	31:BA:253:G:H1	2.19	0.40
30:B8:15:LYS:HD2	30:B8:26:ILE:HD13	2.02	0.40
30:B8:30:ASN:HB2	30:B8:33:HIS:CE1	2.56	0.40
31:BA:521:C:H2'	31:BA:522:C:H6	1.86	0.40
31:BA:868:C:H2'	31:BA:869:U:C6	2.56	0.40
31:BA:967:A:O2'	31:BA:968:U:O4'	2.32	0.40
31:BA:1071:G:C5	31:BA:1155:G:C6	3.10	0.40
31:BA:1282:G:HO2'	31:BA:1283:A:H8	1.65	0.40
31:BA:1315:A:H5"	42:BQ:114:ARG:HD3	2.03	0.40
31:BA:1732:G:H2'	31:BA:1733:G:C8	2.56	0.40
31:BA:2408:C:N4	31:BA:2418:G:O6	2.54	0.40
31:BA:2646:G:H5'	38:BM:82:HIS:CG	2.57	0.40
31:BA:2674:G:H2'	31:BA:2675:A:C8	2.56	0.40
31:BA:2752:A:O2'	37:BH:63:MET:HB3	2.21	0.40
31:BA:2834:U:H2'	31:BA:2835:A:H8	1.86	0.40
36:BG:45:VAL:HG22	36:BG:80:LEU:HD23	2.04	0.40
38:BM:61:ALA:HB3	38:BM:128:VAL:HA	2.04	0.40
43:BR:10:LEU:HD23	43:BR:10:LEU:HA	1.94	0.40
46:BU:42:PHE:HD1	46:BU:42:PHE:HA	1.68	0.40
46:BU:79:LYS:HA	46:BU:79:LYS:HD2	1.79	0.40
1:AA:77:A:N6	1:AA:95:U:OP1	2.55	0.40
1:AA:132:U:H2'	1:AA:133:C:C6	2.56	0.40
1:AA:309:G:H2'	1:AA:310:G:C8	2.56	0.40
1:AA:414:G:O2'	4:AD:113:GLN:NE2	2.55	0.40
1:AA:888:C:H3'	12:AL:6:GLN:NE2	2.37	0.40
1:AA:932:C:H2'	1:AA:933:G:H8	1.85	0.40
1:AA:966:A:O2'	1:AA:994:A:O4'	2.30	0.40
5:AE:86:HIS:CD2	8:AH:98:LEU:HD22	2.56	0.40
7:AG:114:THR:OG1	7:AG:117:ASP:N	2.54	0.40
9:AI:23:PRO:HA	9:AI:61:TYR:HD1	1.86	0.40
9:AI:24:GLY:H	9:AI:61:TYR:HA	1.87	0.40
24:B2:28:LEU:O	24:B2:33:SER:OG	2.32	0.40
29:B7:4:GLN:NE2	31:BA:701:G:O2'	2.50	0.40
29:B7:24:ARG:NH2	31:BA:2364:A:O3'	2.55	0.40
31:BA:16:G:H2'	31:BA:17:G:C8	2.55	0.40
31:BA:449:C:H5'	31:BA:1883:G:H1'	2.03	0.40
31:BA:641:A:H62	31:BA:653:G:N2	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:BA:645:G:N2	31:BA:649:A:OP2	2.52	0.40
31:BA:734:A:H2'	31:BA:735:G:O4'	2.22	0.40
31:BA:1068:U:C4	31:BA:2754:A:C6	3.07	0.40
31:BA:1359:C:H2'	31:BA:1360:C:C6	2.56	0.40
31:BA:1481:U:O2'	31:BA:2706:G:O6	2.28	0.40
31:BA:1900:A:H2'	31:BA:1901:G:C8	2.57	0.40
31:BA:1962:C:H2'	31:BA:1963:G:H8	1.87	0.40
31:BA:2751:G:H2'	31:BA:2761:A:H61	1.85	0.40
31:BA:2777:U:H2'	31:BA:2778:C:H6	1.87	0.40
32:BB:59:C:H2'	32:BB:60:C:C6	2.56	0.40
47:BV:53:ASN:O	47:BV:57:SER:OG	2.33	0.40
50:BZ:23:ASP:OD1	50:BZ:24:SER:N	2.54	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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	AB	222/255 (87%)	194 (87%)	28 (13%)	0	100	100
3	AC	209/217 (96%)	177 (85%)	32 (15%)	0	100	100
4	AD	198/203 (98%)	163 (82%)	34 (17%)	1 (0%)	29	69
5	AE	154/168 (92%)	138 (90%)	16 (10%)	0	100	100
6	AF	95/97 (98%)	73 (77%)	22 (23%)	0	100	100
7	AG	150/155 (97%)	136 (91%)	14 (9%)	0	100	100
8	AH	128/132 (97%)	110 (86%)	18 (14%)	0	100	100
9	AI	127/130 (98%)	104 (82%)	23 (18%)	0	100	100
10	AJ	96/102 (94%)	82 (85%)	14 (15%)	0	100	100
11	AK	116/127 (91%)	102 (88%)	14 (12%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
12	AL	134/137 (98%)	110 (82%)	24 (18%)	0	100	100
13	AM	109/121 (90%)	82 (75%)	27 (25%)	0	100	100
14	AN	57/61 (93%)	44 (77%)	13 (23%)	0	100	100
15	AO	85/89 (96%)	72 (85%)	13 (15%)	0	100	100
16	AP	84/90 (93%)	74 (88%)	10 (12%)	0	100	100
17	AQ	80/86 (93%)	65 (81%)	15 (19%)	0	100	100
18	AR	66/81 (82%)	53 (80%)	13 (20%)	0	100	100
19	AS	80/92 (87%)	61 (76%)	19 (24%)	0	100	100
20	AT	69/77 (90%)	57 (83%)	12 (17%)	0	100	100
21	AU	54/58 (93%)	46 (85%)	8 (15%)	0	100	100
22	B0	59/64 (92%)	45 (76%)	14 (24%)	0	100	100
23	B1	65/69 (94%)	51 (78%)	14 (22%)	0	100	100
24	B2	56/59 (95%)	45 (80%)	11 (20%)	0	100	100
25	B3	77/81 (95%)	52 (68%)	25 (32%)	0	100	100
26	B4	51/57 (90%)	43 (84%)	8 (16%)	0	100	100
27	B5	45/49 (92%)	32 (71%)	12 (27%)	1 (2%)	6	35
28	B6	42/44 (96%)	35 (83%)	7 (17%)	0	100	100
29	B7	62/66 (94%)	51 (82%)	11 (18%)	0	100	100
30	B8	34/38 (90%)	32 (94%)	2 (6%)	0	100	100
33	BD	270/276 (98%)	193 (72%)	77 (28%)	0	100	100
34	BE	203/207 (98%)	164 (81%)	39 (19%)	0	100	100
35	BF	204/208 (98%)	157 (77%)	46 (22%)	1 (0%)	29	69
36	BG	174/180 (97%)	137 (79%)	36 (21%)	1 (1%)	25	65
37	BH	172/178 (97%)	144 (84%)	28 (16%)	0	100	100
38	BM	145/148 (98%)	119 (82%)	25 (17%)	1 (1%)	22	62
39	BN	119/122 (98%)	99 (83%)	20 (17%)	0	100	100
40	BO	144/147 (98%)	117 (81%)	27 (19%)	0	100	100
41	BP	132/137 (96%)	120 (91%)	12 (9%)	0	100	100
42	BQ	123/126 (98%)	109 (89%)	14 (11%)	0	100	100
43	BR	113/115 (98%)	90 (80%)	22 (20%)	1 (1%)	17	56
44	BS	112/114 (98%)	95 (85%)	17 (15%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
45	BT	115/119 (97%)	103 (90%)	12 (10%)	0	100	100
46	BU	99/104 (95%)	67 (68%)	32 (32%)	0	100	100
47	BV	110/115 (96%)	99 (90%)	11 (10%)	0	100	100
48	BW	86/97 (89%)	78 (91%)	8 (9%)	0	100	100
49	BX	97/101 (96%)	73 (75%)	24 (25%)	0	100	100
50	BZ	73/94 (78%)	64 (88%)	9 (12%)	0	100	100
51	A	155/185 (84%)	130 (84%)	25 (16%)	0	100	100
All	All	5450/5778 (94%)	4487 (82%)	957 (18%)	6 (0%)	54	85

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
38	BM	132	HIS
4	AD	202	MET
27	B5	12	CYS
35	BF	23	VAL
36	BG	82	GLU
43	BR	48	VAL

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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	AB	190/213 (89%)	187 (98%)	3 (2%)	62	79
3	AC	168/172 (98%)	166 (99%)	2 (1%)	71	84
4	AD	172/175 (98%)	170 (99%)	2 (1%)	71	84
5	AE	115/126 (91%)	113 (98%)	2 (2%)	60	78
6	AF	84/84 (100%)	81 (96%)	3 (4%)	35	59
7	AG	125/128 (98%)	122 (98%)	3 (2%)	49	69
8	AH	111/113 (98%)	109 (98%)	2 (2%)	59	77
9	AI	99/100 (99%)	98 (99%)	1 (1%)	76	86

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	AJ	89/92 (97%)	88 (99%)	1 (1%)	73 84
11	AK	89/97 (92%)	88 (99%)	1 (1%)	73 84
12	AL	113/114 (99%)	113 (100%)	0	100 100
13	AM	93/100 (93%)	92 (99%)	1 (1%)	73 84
14	AN	50/53 (94%)	49 (98%)	1 (2%)	55 73
15	AO	74/76 (97%)	74 (100%)	0	100 100
16	AP	77/81 (95%)	75 (97%)	2 (3%)	46 67
17	AQ	76/80 (95%)	75 (99%)	1 (1%)	69 82
18	AR	59/69 (86%)	59 (100%)	0	100 100
19	AS	70/79 (89%)	69 (99%)	1 (1%)	67 80
20	AT	53/58 (91%)	52 (98%)	1 (2%)	57 75
21	AU	42/53 (79%)	41 (98%)	1 (2%)	49 69
22	B0	52/56 (93%)	52 (100%)	0	100 100
23	B1	58/60 (97%)	57 (98%)	1 (2%)	60 78
24	B2	48/49 (98%)	48 (100%)	0	100 100
25	B3	69/71 (97%)	68 (99%)	1 (1%)	67 80
26	B4	46/50 (92%)	46 (100%)	0	100 100
27	B5	41/43 (95%)	39 (95%)	2 (5%)	25 51
28	B6	37/37 (100%)	36 (97%)	1 (3%)	44 65
29	B7	54/56 (96%)	48 (89%)	6 (11%)	6 24
30	B8	34/35 (97%)	34 (100%)	0	100 100
33	BD	219/223 (98%)	214 (98%)	5 (2%)	50 70
34	BE	162/164 (99%)	156 (96%)	6 (4%)	34 58
35	BF	170/171 (99%)	168 (99%)	2 (1%)	71 84
36	BG	150/154 (97%)	147 (98%)	3 (2%)	55 73
37	BH	140/147 (95%)	139 (99%)	1 (1%)	84 90
38	BM	122/123 (99%)	118 (97%)	4 (3%)	38 61
39	BN	93/95 (98%)	90 (97%)	3 (3%)	39 61
40	BO	107/109 (98%)	106 (99%)	1 (1%)	78 88
41	BP	106/107 (99%)	102 (96%)	4 (4%)	33 57
42	BQ	104/105 (99%)	102 (98%)	2 (2%)	57 75

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
43	BR	90/90 (100%)	89 (99%)	1 (1%)	73 84
44	BS	98/98 (100%)	95 (97%)	3 (3%)	40 62
45	BT	90/92 (98%)	88 (98%)	2 (2%)	52 71
46	BU	85/88 (97%)	84 (99%)	1 (1%)	71 84
47	BV	92/94 (98%)	90 (98%)	2 (2%)	52 71
48	BW	77/84 (92%)	77 (100%)	0	100 100
49	BX	83/85 (98%)	82 (99%)	1 (1%)	71 84
50	BZ	59/73 (81%)	59 (100%)	0	100 100
51	A	93/163 (57%)	89 (96%)	4 (4%)	29 54
All	All	4528/4785 (95%)	4444 (98%)	84 (2%)	59 75

All (84) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	AB	22	ARG
2	AB	48	LYS
2	AB	216	LYS
3	AC	71	LYS
3	AC	163	ARG
4	AD	54	LYS
4	AD	162	ARG
5	AE	45	ARG
5	AE	152	ARG
6	AF	1	MET
6	AF	25	ARG
6	AF	56	ARG
7	AG	75	ARG
7	AG	118	ARG
7	AG	142	LYS
8	AH	61	ARG
8	AH	78	LYS
9	AI	11	ARG
10	AJ	46	ARG
11	AK	98	LEU
13	AM	79	ARG
14	AN	23	ARG
16	AP	29	ARG
16	AP	71	ARG
17	AQ	22	ILE

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Mol	Chain	Res	Type
19	AS	33	THR
20	AT	29	ARG
21	AU	9	ASN
23	B1	14	ARG
25	B3	34	THR
27	B5	19	LEU
27	B5	41	LYS
28	B6	28	ARG
29	B7	16	ARG
29	B7	32	ARG
29	B7	52	LYS
29	B7	55	PHE
29	B7	57	ARG
29	B7	59	ARG
33	BD	63	ARG
33	BD	125	LYS
33	BD	156	ARG
33	BD	243	ARG
33	BD	272	ARG
34	BE	36	LEU
34	BE	115	LYS
34	BE	140	ARG
34	BE	144	MET
34	BE	181	LYS
34	BE	201	LYS
35	BF	72	ARG
35	BF	74	ARG
36	BG	4	ARG
36	BG	79	ARG
36	BG	113	ARG
37	BH	121	ILE
38	BM	7	MET
38	BM	90	THR
38	BM	101	ARG
38	BM	138	LYS
39	BN	66	LYS
39	BN	79	PHE
39	BN	104	ARG
40	BO	47	ARG
41	BP	6	ARG
41	BP	10	ARG
41	BP	56	ARG

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Mol	Chain	Res	Type
41	BP	83	MET
42	BQ	4	ARG
42	BQ	120	MET
43	BR	59	LEU
44	BS	36	ARG
44	BS	106	LYS
44	BS	108	ARG
45	BT	28	LYS
45	BT	93	LYS
46	BU	86	ARG
47	BV	5	THR
47	BV	39	ILE
49	BX	95	LYS
51	A	1	MET
51	A	5	ASN
51	A	51	ARG
51	A	74	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (81) such sidechains are listed below:

Mol	Chain	Res	Type
2	AB	36	ASN
2	AB	59	ASN
2	AB	75	GLN
2	AB	94	HIS
2	AB	105	ASN
2	AB	138	ASN
3	AC	3	GLN
3	AC	101	ASN
4	AD	35	GLN
4	AD	36	HIS
4	AD	39	ASN
4	AD	70	ASN
4	AD	200	ASN
5	AE	86	HIS
6	AF	53	ASN
7	AG	67	ASN
7	AG	116	GLN
9	AI	14	ASN
9	AI	50	GLN
9	AI	56	GLN
10	AJ	64	GLN

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Mol	Chain	Res	Type
11	AK	36	HIS
11	AK	117	ASN
12	AL	29	ASN
13	AM	104	ASN
14	AN	10	ASN
15	AO	37	ASN
15	AO	42	HIS
15	AO	53	GLN
16	AP	72	ASN
19	AS	22	GLN
21	AU	9	ASN
23	B1	64	GLN
24	B2	3	GLN
24	B2	48	ASN
25	B3	4	ASN
25	B3	65	GLN
26	B4	40	HIS
29	B7	4	GLN
29	B7	31	HIS
30	B8	30	ASN
33	BD	11	ASN
33	BD	45	ASN
33	BD	128	ASN
33	BD	134	ASN
33	BD	213	HIS
34	BE	33	ASN
34	BE	150	ASN
34	BE	164	ASN
34	BE	170	GLN
35	BF	197	GLN
36	BG	38	ASN
37	BH	112	GLN
38	BM	98	ASN
38	BM	120	GLN
39	BN	3	GLN
39	BN	82	ASN
40	BO	27	ASN
40	BO	38	GLN
40	BO	78	ASN
40	BO	121	ASN
41	BP	35	GLN
41	BP	40	HIS

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Mol	Chain	Res	Type
41	BP	44	ASN
41	BP	63	GLN
41	BP	123	HIS
43	BR	37	ASN
43	BR	68	GLN
44	BS	2	ASN
45	BT	72	ASN
46	BU	13	GLN
46	BU	67	HIS
46	BU	83	HIS
46	BU	85	HIS
48	BW	22	GLN
49	BX	64	HIS
50	BZ	20	ASN
50	BZ	48	GLN
50	BZ	54	HIS
51	A	5	ASN
51	A	10	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	AA	1534/1535 (99%)	663 (43%)	8 (0%)
31	BA	2896/2897 (99%)	1094 (37%)	20 (0%)
32	BB	114/115 (99%)	45 (39%)	0
All	All	4544/4547 (99%)	1802 (39%)	28 (0%)

All (1802) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	AA	8	U
1	AA	9	G
1	AA	10	A
1	AA	11	G
1	AA	15	U
1	AA	16	U
1	AA	17	G
1	AA	18	A
1	AA	32	C
1	AA	33	G
1	AA	34	A

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Mol	Chain	Res	Type
1	AA	35	A
1	AA	40	G
1	AA	41	G
1	AA	46	G
1	AA	49	C
1	AA	50	C
1	AA	51	U
1	AA	53	A
1	AA	54	U
1	AA	58	U
1	AA	61	A
1	AA	62	A
1	AA	63	G
1	AA	64	U
1	AA	67	A
1	AA	73	G
1	AA	75	A
1	AA	76	G
1	AA	77	A
1	AA	78	U
1	AA	79	U
1	AA	82	U
1	AA	83	G
1	AA	84	C
1	AA	85	U
1	AA	86	U
1	AA	87	G
1	AA	88	C
1	AA	89	A
1	AA	90	C
1	AA	92	A
1	AA	93	A
1	AA	94	U
1	AA	95	U
1	AA	96	U
1	AA	97	G
1	AA	98	A
1	AA	99	A
1	AA	100	G
1	AA	101	A
1	AA	102	G
1	AA	103	C

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Mol	Chain	Res	Type
1	AA	104	A
1	AA	108	A
1	AA	109	A
1	AA	113	G
1	AA	114	U
1	AA	116	A
1	AA	117	G
1	AA	120	A
1	AA	121	C
1	AA	122	G
1	AA	129	G
1	AA	130	A
1	AA	131	A
1	AA	132	U
1	AA	135	G
1	AA	143	G
1	AA	144	C
1	AA	145	G
1	AA	147	G
1	AA	149	G
1	AA	150	A
1	AA	151	C
1	AA	155	A
1	AA	156	U
1	AA	158	U
1	AA	159	G
1	AA	165	G
1	AA	168	U
1	AA	169	G
1	AA	172	A
1	AA	174	U
1	AA	175	A
1	AA	178	G
1	AA	180	A
1	AA	182	A
1	AA	183	A
1	AA	184	U
1	AA	185	A
1	AA	186	A
1	AA	189	U
1	AA	196	U
1	AA	198	A

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Mol	Chain	Res	Type
1	AA	199	G
1	AA	202	U
1	AA	203	U
1	AA	205	A
1	AA	211	A
1	AA	212	A
1	AA	213	A
1	AA	214	G
1	AA	215	A
1	AA	217	G
1	AA	219	A
1	AA	220	A
1	AA	222	U
1	AA	224	C
1	AA	225	A
1	AA	226	U
1	AA	227	C
1	AA	228	A
1	AA	230	U
1	AA	231	C
1	AA	232	A
1	AA	233	A
1	AA	234	A
1	AA	248	U
1	AA	252	U
1	AA	254	A
1	AA	255	G
1	AA	258	A
1	AA	259	G
1	AA	269	U
1	AA	270	A
1	AA	271	A
1	AA	274	G
1	AA	275	C
1	AA	283	G
1	AA	288	U
1	AA	289	G
1	AA	290	A
1	AA	292	A
1	AA	297	G
1	AA	302	C
1	AA	303	C

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Mol	Chain	Res	Type
1	AA	309	G
1	AA	310	G
1	AA	314	A
1	AA	315	U
1	AA	323	A
1	AA	324	U
1	AA	330	C
1	AA	336	C
1	AA	337	A
1	AA	338	C
1	AA	352	A
1	AA	353	C
1	AA	358	G
1	AA	360	C
1	AA	362	G
1	AA	364	A
1	AA	369	G
1	AA	372	A
1	AA	373	U
1	AA	374	C
1	AA	375	U
1	AA	376	U
1	AA	377	C
1	AA	381	A
1	AA	382	A
1	AA	383	U
1	AA	384	G
1	AA	385	G
1	AA	387	C
1	AA	397	A
1	AA	400	G
1	AA	405	A
1	AA	406	C
1	AA	414	G
1	AA	420	A
1	AA	421	G
1	AA	422	A
1	AA	423	A
1	AA	424	G
1	AA	429	U
1	AA	430	C
1	AA	431	G

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Mol	Chain	Res	Type
1	AA	433	A
1	AA	434	U
1	AA	435	C
1	AA	436	G
1	AA	438	A
1	AA	440	A
1	AA	445	U
1	AA	446	G
1	AA	449	G
1	AA	453	G
1	AA	455	G
1	AA	456	A
1	AA	457	A
1	AA	458	G
1	AA	459	A
1	AA	460	A
1	AA	461	C
1	AA	464	U
1	AA	472	G
1	AA	473	U
1	AA	474	G
1	AA	475	G
1	AA	477	A
1	AA	478	A
1	AA	483	A
1	AA	488	G
1	AA	489	U
1	AA	490	G
1	AA	491	A
1	AA	493	G
1	AA	494	G
1	AA	501	C
1	AA	502	C
1	AA	503	C
1	AA	504	A
1	AA	505	G
1	AA	506	A
1	AA	508	A
1	AA	509	G
1	AA	516	C
1	AA	517	U
1	AA	519	A

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Mol	Chain	Res	Type
1	AA	520	C
1	AA	521	U
1	AA	522	A
1	AA	523	C
1	AA	525	U
1	AA	526	G
1	AA	527	C
1	AA	528	C
1	AA	530	G
1	AA	536	G
1	AA	537	C
1	AA	540	U
1	AA	542	A
1	AA	543	U
1	AA	544	A
1	AA	550	G
1	AA	551	U
1	AA	552	C
1	AA	556	A
1	AA	568	A
1	AA	569	U
1	AA	571	U
1	AA	573	U
1	AA	575	G
1	AA	576	G
1	AA	579	G
1	AA	582	A
1	AA	583	A
1	AA	584	G
1	AA	585	C
1	AA	586	G
1	AA	588	G
1	AA	590	G
1	AA	591	C
1	AA	596	G
1	AA	597	G
1	AA	604	A
1	AA	606	G
1	AA	614	U
1	AA	615	A
1	AA	616	A
1	AA	617	A

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Mol	Chain	Res	Type
1	AA	620	G
1	AA	621	C
1	AA	623	G
1	AA	627	C
1	AA	628	U
1	AA	630	A
1	AA	631	A
1	AA	632	C
1	AA	637	G
1	AA	640	U
1	AA	641	G
1	AA	642	C
1	AA	643	A
1	AA	646	G
1	AA	649	A
1	AA	650	A
1	AA	654	G
1	AA	656	A
1	AA	661	U
1	AA	662	G
1	AA	665	U
1	AA	666	G
1	AA	667	C
1	AA	671	A
1	AA	673	A
1	AA	677	G
1	AA	679	G
1	AA	688	C
1	AA	692	U
1	AA	695	A
1	AA	696	G
1	AA	705	U
1	AA	706	G
1	AA	711	G
1	AA	714	A
1	AA	716	A
1	AA	718	G
1	AA	723	A
1	AA	726	A
1	AA	727	C
1	AA	728	C
1	AA	729	G

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Mol	Chain	Res	Type
1	AA	731	U
1	AA	739	G
1	AA	742	G
1	AA	747	C
1	AA	748	U
1	AA	749	G
1	AA	754	G
1	AA	756	A
1	AA	758	C
1	AA	760	G
1	AA	762	C
1	AA	763	A
1	AA	765	U
1	AA	766	G
1	AA	784	G
1	AA	785	A
1	AA	788	A
1	AA	790	A
1	AA	795	A
1	AA	800	A
1	AA	801	U
1	AA	802	A
1	AA	803	C
1	AA	807	G
1	AA	813	C
1	AA	815	A
1	AA	817	G
1	AA	820	G
1	AA	821	U
1	AA	822	A
1	AA	823	A
1	AA	824	A
1	AA	825	C
1	AA	826	G
1	AA	828	U
1	AA	835	U
1	AA	836	A
1	AA	837	G
1	AA	839	U
1	AA	840	G
1	AA	843	G
1	AA	846	A

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Mol	Chain	Res	Type
1	AA	847	G
1	AA	848	C
1	AA	849	U
1	AA	850	A
1	AA	852	A
1	AA	853	A
1	AA	854	G
1	AA	878	A
1	AA	879	U
1	AA	880	A
1	AA	881	A
1	AA	882	G
1	AA	886	U
1	AA	888	C
1	AA	889	G
1	AA	891	C
1	AA	892	U
1	AA	893	G
1	AA	895	G
1	AA	897	A
1	AA	898	G
1	AA	902	G
1	AA	903	A
1	AA	907	C
1	AA	908	A
1	AA	910	G
1	AA	911	G
1	AA	914	G
1	AA	918	C
1	AA	921	A
1	AA	924	G
1	AA	930	G
1	AA	934	G
1	AA	936	G
1	AA	940	C
1	AA	942	C
1	AA	943	A
1	AA	945	A
1	AA	946	A
1	AA	948	C
1	AA	949	G
1	AA	953	G

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Mol	Chain	Res	Type
1	AA	954	A
1	AA	955	G
1	AA	959	G
1	AA	965	U
1	AA	966	A
1	AA	967	A
1	AA	968	U
1	AA	969	U
1	AA	970	C
1	AA	971	G
1	AA	973	A
1	AA	977	A
1	AA	979	G
1	AA	981	G
1	AA	982	A
1	AA	983	A
1	AA	984	G
1	AA	985	A
1	AA	986	A
1	AA	987	C
1	AA	989	U
1	AA	990	U
1	AA	991	A
1	AA	992	C
1	AA	995	G
1	AA	997	U
1	AA	1000	U
1	AA	1001	G
1	AA	1002	A
1	AA	1004	A
1	AA	1005	U
1	AA	1006	A
1	AA	1010	G
1	AA	1012	G
1	AA	1013	C
1	AA	1014	U
1	AA	1015	A
1	AA	1018	C
1	AA	1025	A
1	AA	1026	U
1	AA	1031	A
1	AA	1033	U

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Mol	Chain	Res	Type
1	AA	1034	U
1	AA	1035	C
1	AA	1036	C
1	AA	1037	U
1	AA	1038	U
1	AA	1040	G
1	AA	1041	G
1	AA	1044	C
1	AA	1045	A
1	AA	1055	G
1	AA	1056	G
1	AA	1058	G
1	AA	1059	G
1	AA	1061	G
1	AA	1062	C
1	AA	1063	A
1	AA	1064	U
1	AA	1073	U
1	AA	1074	C
1	AA	1078	U
1	AA	1079	C
1	AA	1088	A
1	AA	1089	G
1	AA	1091	U
1	AA	1093	U
1	AA	1094	U
1	AA	1096	G
1	AA	1097	G
1	AA	1100	A
1	AA	1102	G
1	AA	1103	U
1	AA	1104	C
1	AA	1105	C
1	AA	1108	C
1	AA	1109	A
1	AA	1110	A
1	AA	1111	C
1	AA	1116	G
1	AA	1119	A
1	AA	1126	U
1	AA	1128	G
1	AA	1130	U

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Mol	Chain	Res	Type
1	AA	1131	A
1	AA	1132	G
1	AA	1133	U
1	AA	1134	U
1	AA	1138	A
1	AA	1140	C
1	AA	1141	A
1	AA	1142	U
1	AA	1143	U
1	AA	1144	A
1	AA	1146	G
1	AA	1147	U
1	AA	1148	U
1	AA	1149	G
1	AA	1151	G
1	AA	1153	A
1	AA	1154	C
1	AA	1156	C
1	AA	1157	U
1	AA	1158	A
1	AA	1159	A
1	AA	1164	A
1	AA	1165	C
1	AA	1166	U
1	AA	1172	U
1	AA	1174	A
1	AA	1175	U
1	AA	1176	A
1	AA	1178	A
1	AA	1179	C
1	AA	1181	G
1	AA	1186	A
1	AA	1194	G
1	AA	1196	U
1	AA	1197	G
1	AA	1200	G
1	AA	1203	A
1	AA	1204	A
1	AA	1207	C
1	AA	1208	A
1	AA	1209	U
1	AA	1211	A

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Mol	Chain	Res	Type
1	AA	1217	C
1	AA	1218	U
1	AA	1219	U
1	AA	1220	A
1	AA	1221	U
1	AA	1222	G
1	AA	1223	A
1	AA	1224	C
1	AA	1226	U
1	AA	1227	G
1	AA	1229	G
1	AA	1230	C
1	AA	1231	U
1	AA	1232	A
1	AA	1233	C
1	AA	1234	A
1	AA	1237	C
1	AA	1243	A
1	AA	1245	A
1	AA	1247	U
1	AA	1250	A
1	AA	1251	U
1	AA	1252	G
1	AA	1254	U
1	AA	1255	A
1	AA	1258	A
1	AA	1259	C
1	AA	1263	U
1	AA	1264	C
1	AA	1267	G
1	AA	1268	A
1	AA	1269	G
1	AA	1271	C
1	AA	1272	A
1	AA	1273	G
1	AA	1277	U
1	AA	1280	U
1	AA	1286	A
1	AA	1287	A
1	AA	1288	U
1	AA	1289	C
1	AA	1290	U

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Mol	Chain	Res	Type
1	AA	1292	U
1	AA	1293	U
1	AA	1297	A
1	AA	1299	C
1	AA	1303	C
1	AA	1304	U
1	AA	1305	C
1	AA	1306	A
1	AA	1307	G
1	AA	1308	U
1	AA	1309	U
1	AA	1310	C
1	AA	1311	G
1	AA	1312	G
1	AA	1313	A
1	AA	1314	U
1	AA	1316	G
1	AA	1317	U
1	AA	1326	A
1	AA	1327	C
1	AA	1329	C
1	AA	1330	G
1	AA	1331	C
1	AA	1332	C
1	AA	1334	A
1	AA	1335	C
1	AA	1338	G
1	AA	1339	A
1	AA	1340	A
1	AA	1341	G
1	AA	1343	C
1	AA	1345	G
1	AA	1347	A
1	AA	1352	U
1	AA	1353	A
1	AA	1354	G
1	AA	1359	C
1	AA	1362	G
1	AA	1364	A
1	AA	1365	U
1	AA	1370	A
1	AA	1371	C

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Mol	Chain	Res	Type
1	AA	1372	G
1	AA	1373	C
1	AA	1377	G
1	AA	1378	G
1	AA	1385	C
1	AA	1386	G
1	AA	1387	U
1	AA	1388	U
1	AA	1394	G
1	AA	1395	C
1	AA	1396	C
1	AA	1401	A
1	AA	1402	C
1	AA	1404	C
1	AA	1405	A
1	AA	1408	G
1	AA	1411	C
1	AA	1413	U
1	AA	1414	C
1	AA	1415	A
1	AA	1416	C
1	AA	1424	G
1	AA	1425	A
1	AA	1426	G
1	AA	1430	G
1	AA	1431	G
1	AA	1434	U
1	AA	1439	G
1	AA	1440	A
1	AA	1445	G
1	AA	1448	U
1	AA	1449	G
1	AA	1450	C
1	AA	1451	C
1	AA	1452	U
1	AA	1453	A
1	AA	1454	A
1	AA	1455	C
1	AA	1457	G
1	AA	1459	A
1	AA	1460	A
1	AA	1469	C

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Mol	Chain	Res	Type
1	AA	1475	A
1	AA	1477	G
1	AA	1480	A
1	AA	1481	A
1	AA	1482	G
1	AA	1494	G
1	AA	1500	A
1	AA	1501	G
1	AA	1505	U
1	AA	1506	A
1	AA	1507	A
1	AA	1508	C
1	AA	1509	A
1	AA	1510	A
1	AA	1511	G
1	AA	1515	G
1	AA	1526	A
1	AA	1527	G
1	AA	1534	C
1	AA	1536	G
1	AA	1537	G
1	AA	1540	C
31	BA	4	A
31	BA	5	A
31	BA	7	G
31	BA	9	U
31	BA	13	A
31	BA	14	A
31	BA	15	G
31	BA	27	G
31	BA	28	A
31	BA	30	G
31	BA	34	U
31	BA	45	G
31	BA	46	C
31	BA	49	A
31	BA	51	G
31	BA	55	G
31	BA	56	A
31	BA	58	G
31	BA	61	A
31	BA	62	C

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Mol	Chain	Res	Type
31	BA	63	U
31	BA	64	A
31	BA	71	A
31	BA	72	U
31	BA	73	A
31	BA	74	U
31	BA	75	U
31	BA	80	G
31	BA	83	G
31	BA	84	A
31	BA	88	G
31	BA	89	U
31	BA	90	A
31	BA	91	A
31	BA	92	G
31	BA	96	G
31	BA	99	U
31	BA	100	U
31	BA	101	G
31	BA	112	C
31	BA	114	C
31	BA	117	A
31	BA	118	A
31	BA	119	U
31	BA	122	G
31	BA	123	G
31	BA	125	A
31	BA	126	A
31	BA	127	C
31	BA	130	A
31	BA	134	G
31	BA	137	A
31	BA	139	U
31	BA	140	A
31	BA	143	A
31	BA	144	G
31	BA	148	U
31	BA	153	G
31	BA	154	A
31	BA	157	G
31	BA	161	A
31	BA	173	U

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Mol	Chain	Res	Type
31	BA	174	A
31	BA	180	A
31	BA	184	C
31	BA	187	A
31	BA	191	C
31	BA	192	U
31	BA	195	A
31	BA	198	A
31	BA	203	A
31	BA	204	G
31	BA	205	U
31	BA	207	C
31	BA	208	C
31	BA	215	A
31	BA	217	G
31	BA	218	A
31	BA	220	A
31	BA	221	A
31	BA	223	G
31	BA	227	A
31	BA	228	A
31	BA	230	C
31	BA	232	A
31	BA	233	U
31	BA	240	A
31	BA	241	G
31	BA	242	U
31	BA	247	G
31	BA	249	G
31	BA	250	A
31	BA	264	A
31	BA	265	G
31	BA	277	A
31	BA	278	A
31	BA	279	G
31	BA	281	U
31	BA	283	G
31	BA	284	C
31	BA	285	U
31	BA	286	U
31	BA	291	G
31	BA	292	G

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Mol	Chain	Res	Type
31	BA	297	U
31	BA	298	A
31	BA	299	G
31	BA	302	C
31	BA	304	G
31	BA	305	C
31	BA	306	A
31	BA	307	A
31	BA	308	C
31	BA	309	G
31	BA	310	U
31	BA	311	G
31	BA	312	G
31	BA	314	C
31	BA	315	U
31	BA	316	U
31	BA	317	A
31	BA	324	A
31	BA	326	A
31	BA	329	C
31	BA	333	U
31	BA	342	A
31	BA	348	A
31	BA	351	C
31	BA	352	A
31	BA	353	A
31	BA	354	A
31	BA	355	G
31	BA	361	A
31	BA	362	A
31	BA	363	U
31	BA	366	U
31	BA	370	G
31	BA	378	A
31	BA	379	A
31	BA	380	U
31	BA	382	G
31	BA	391	C
31	BA	395	G
31	BA	404	U
31	BA	405	G
31	BA	406	A

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Mol	Chain	Res	Type
31	BA	407	G
31	BA	408	U
31	BA	415	G
31	BA	416	G
31	BA	420	C
31	BA	421	G
31	BA	423	G
31	BA	425	A
31	BA	426	A
31	BA	431	G
31	BA	439	C
31	BA	441	G
31	BA	442	G
31	BA	447	A
31	BA	449	C
31	BA	450	A
31	BA	471	C
31	BA	473	U
31	BA	475	G
31	BA	478	A
31	BA	480	C
31	BA	482	A
31	BA	484	A
31	BA	486	U
31	BA	488	A
31	BA	492	A
31	BA	493	G
31	BA	494	U
31	BA	497	C
31	BA	501	A
31	BA	502	G
31	BA	506	A
31	BA	508	G
31	BA	511	G
31	BA	514	A
31	BA	515	A
31	BA	516	G
31	BA	526	A
31	BA	530	G
31	BA	540	G
31	BA	542	A
31	BA	543	C

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Mol	Chain	Res	Type
31	BA	544	C
31	BA	546	G
31	BA	547	A
31	BA	552	G
31	BA	553	U
31	BA	561	C
31	BA	562	A
31	BA	564	G
31	BA	565	A
31	BA	566	A
31	BA	569	U
31	BA	573	G
31	BA	574	C
31	BA	579	U
31	BA	580	A
31	BA	581	A
31	BA	582	U
31	BA	583	G
31	BA	586	U
31	BA	587	G
31	BA	588	A
31	BA	590	A
31	BA	591	G
31	BA	593	G
31	BA	594	U
31	BA	595	G
31	BA	598	U
31	BA	601	U
31	BA	604	A
31	BA	609	G
31	BA	618	A
31	BA	621	U
31	BA	629	G
31	BA	630	A
31	BA	631	U
31	BA	634	G
31	BA	635	A
31	BA	636	G
31	BA	639	U
31	BA	647	A
31	BA	648	G
31	BA	651	A

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Mol	Chain	Res	Type
31	BA	656	G
31	BA	660	U
31	BA	661	A
31	BA	668	C
31	BA	671	A
31	BA	677	A
31	BA	679	U
31	BA	680	A
31	BA	686	A
31	BA	687	C
31	BA	688	U
31	BA	689	U
31	BA	690	A
31	BA	696	A
31	BA	701	G
31	BA	705	A
31	BA	706	C
31	BA	710	A
31	BA	712	A
31	BA	721	C
31	BA	722	C
31	BA	726	C
31	BA	729	U
31	BA	730	G
31	BA	733	C
31	BA	738	U
31	BA	739	G
31	BA	744	U
31	BA	745	G
31	BA	746	U
31	BA	747	G
31	BA	748	G
31	BA	752	G
31	BA	753	A
31	BA	754	C
31	BA	758	C
31	BA	760	G
31	BA	761	G
31	BA	762	A
31	BA	763	G
31	BA	764	G
31	BA	765	C

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Mol	Chain	Res	Type
31	BA	766	C
31	BA	769	A
31	BA	775	G
31	BA	781	U
31	BA	782	U
31	BA	783	G
31	BA	787	A
31	BA	799	A
31	BA	800	C
31	BA	801	U
31	BA	805	G
31	BA	810	G
31	BA	811	C
31	BA	812	G
31	BA	814	A
31	BA	816	A
31	BA	817	A
31	BA	819	U
31	BA	820	U
31	BA	824	A
31	BA	825	A
31	BA	826	C
31	BA	827	G
31	BA	828	A
31	BA	840	G
31	BA	845	U
31	BA	846	U
31	BA	847	C
31	BA	862	U
31	BA	863	U
31	BA	865	G
31	BA	869	U
31	BA	870	A
31	BA	873	G
31	BA	878	A
31	BA	879	A
31	BA	880	U
31	BA	881	G
31	BA	882	U
31	BA	886	U
31	BA	887	G
31	BA	888	U

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Mol	Chain	Res	Type
31	BA	893	G
31	BA	896	G
31	BA	897	U
31	BA	900	A
31	BA	901	G
31	BA	902	C
31	BA	903	A
31	BA	907	U
31	BA	910	G
31	BA	911	G
31	BA	914	G
31	BA	918	G
31	BA	920	U
31	BA	924	U
31	BA	925	C
31	BA	926	U
31	BA	927	A
31	BA	930	A
31	BA	931	U
31	BA	932	U
31	BA	933	A
31	BA	934	C
31	BA	936	A
31	BA	937	A
31	BA	938	U
31	BA	942	A
31	BA	944	A
31	BA	947	A
31	BA	949	C
31	BA	951	C
31	BA	952	C
31	BA	966	C
31	BA	968	U
31	BA	974	G
31	BA	976	A
31	BA	980	A
31	BA	981	G
31	BA	982	A
31	BA	988	A
31	BA	989	G
31	BA	993	U
31	BA	994	A

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Mol	Chain	Res	Type
31	BA	996	G
31	BA	997	A
31	BA	1003	A
31	BA	1009	A
31	BA	1010	A
31	BA	1011	G
31	BA	1012	G
31	BA	1015	A
31	BA	1016	A
31	BA	1017	C
31	BA	1018	A
31	BA	1024	G
31	BA	1025	A
31	BA	1030	C
31	BA	1031	A
31	BA	1034	U
31	BA	1041	C
31	BA	1044	A
31	BA	1047	U
31	BA	1048	A
31	BA	1049	U
31	BA	1055	A
31	BA	1056	A
31	BA	1057	G
31	BA	1059	G
31	BA	1061	A
31	BA	1062	A
31	BA	1068	U
31	BA	1079	A
31	BA	1080	C
31	BA	1081	A
31	BA	1084	C
31	BA	1087	C
31	BA	1089	A
31	BA	1092	A
31	BA	1093	U
31	BA	1096	U
31	BA	1097	A
31	BA	1099	C
31	BA	1101	C
31	BA	1103	G
31	BA	1104	A

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Mol	Chain	Res	Type
31	BA	1105	A
31	BA	1106	G
31	BA	1107	C
31	BA	1108	A
31	BA	1109	G
31	BA	1110	C
31	BA	1112	A
31	BA	1114	C
31	BA	1115	A
31	BA	1117	U
31	BA	1118	C
31	BA	1119	A
31	BA	1120	A
31	BA	1121	A
31	BA	1122	G
31	BA	1123	A
31	BA	1124	G
31	BA	1125	U
31	BA	1126	G
31	BA	1129	U
31	BA	1130	A
31	BA	1131	A
31	BA	1132	U
31	BA	1133	A
31	BA	1139	C
31	BA	1145	G
31	BA	1146	A
31	BA	1148	U
31	BA	1149	G
31	BA	1151	C
31	BA	1161	A
31	BA	1162	A
31	BA	1163	A
31	BA	1165	U
31	BA	1166	G
31	BA	1167	U
31	BA	1168	A
31	BA	1169	C
31	BA	1170	C
31	BA	1171	G
31	BA	1174	G
31	BA	1177	A

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Mol	Chain	Res	Type
31	BA	1178	A
31	BA	1185	U
31	BA	1190	A
31	BA	1191	A
31	BA	1193	C
31	BA	1198	G
31	BA	1199	A
31	BA	1205	A
31	BA	1206	U
31	BA	1207	U
31	BA	1209	U
31	BA	1216	G
31	BA	1221	G
31	BA	1232	U
31	BA	1233	A
31	BA	1234	A
31	BA	1235	C
31	BA	1236	C
31	BA	1237	G
31	BA	1239	A
31	BA	1240	A
31	BA	1241	U
31	BA	1242	G
31	BA	1250	A
31	BA	1251	C
31	BA	1255	G
31	BA	1257	G
31	BA	1259	A
31	BA	1266	G
31	BA	1267	A
31	BA	1272	U
31	BA	1277	A
31	BA	1279	U
31	BA	1280	G
31	BA	1281	A
31	BA	1282	G
31	BA	1283	A
31	BA	1285	U
31	BA	1286	G
31	BA	1301	G
31	BA	1302	C
31	BA	1303	A

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Mol	Chain	Res	Type
31	BA	1304	A
31	BA	1305	G
31	BA	1313	A
31	BA	1314	G
31	BA	1317	U
31	BA	1326	C
31	BA	1329	U
31	BA	1330	A
31	BA	1332	G
31	BA	1334	C
31	BA	1335	U
31	BA	1340	U
31	BA	1354	C
31	BA	1355	U
31	BA	1362	C
31	BA	1370	U
31	BA	1371	A
31	BA	1373	U
31	BA	1374	C
31	BA	1375	G
31	BA	1379	C
31	BA	1388	A
31	BA	1389	G
31	BA	1390	G
31	BA	1391	C
31	BA	1392	C
31	BA	1394	A
31	BA	1398	G
31	BA	1405	C
31	BA	1407	A
31	BA	1408	U
31	BA	1409	G
31	BA	1412	C
31	BA	1413	A
31	BA	1414	A
31	BA	1415	C
31	BA	1420	U
31	BA	1421	G
31	BA	1422	A
31	BA	1424	A
31	BA	1425	U
31	BA	1426	U

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Mol	Chain	Res	Type
31	BA	1427	C
31	BA	1429	A
31	BA	1432	A
31	BA	1440	U
31	BA	1441	G
31	BA	1442	A
31	BA	1443	U
31	BA	1444	C
31	BA	1445	G
31	BA	1447	G
31	BA	1451	G
31	BA	1452	A
31	BA	1453	G
31	BA	1456	A
31	BA	1461	G
31	BA	1464	G
31	BA	1465	G
31	BA	1473	A
31	BA	1474	U
31	BA	1479	G
31	BA	1480	U
31	BA	1481	U
31	BA	1482	A
31	BA	1483	A
31	BA	1484	U
31	BA	1486	G
31	BA	1487	A
31	BA	1488	U
31	BA	1489	C
31	BA	1490	C
31	BA	1491	U
31	BA	1493	G
31	BA	1494	U
31	BA	1495	C
31	BA	1496	U
31	BA	1500	C
31	BA	1502	G
31	BA	1504	G
31	BA	1505	A
31	BA	1509	G
31	BA	1510	U
31	BA	1511	G

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Mol	Chain	Res	Type
31	BA	1516	G
31	BA	1517	U
31	BA	1518	G
31	BA	1520	C
31	BA	1524	U
31	BA	1528	U
31	BA	1530	U
31	BA	1531	C
31	BA	1532	U
31	BA	1533	C
31	BA	1535	C
31	BA	1536	U
31	BA	1537	A
31	BA	1538	A
31	BA	1540	A
31	BA	1544	A
31	BA	1548	G
31	BA	1551	A
31	BA	1552	U
31	BA	1553	G
31	BA	1554	G
31	BA	1555	G
31	BA	1559	G
31	BA	1561	A
31	BA	1562	A
31	BA	1565	A
31	BA	1566	C
31	BA	1584	U
31	BA	1585	G
31	BA	1589	C
31	BA	1596	A
31	BA	1597	A
31	BA	1599	A
31	BA	1608	U
31	BA	1610	G
31	BA	1611	C
31	BA	1612	G
31	BA	1614	A
31	BA	1615	A
31	BA	1616	A
31	BA	1618	U
31	BA	1619	C

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Mol	Chain	Res	Type
31	BA	1621	U
31	BA	1622	A
31	BA	1626	A
31	BA	1632	A
31	BA	1636	C
31	BA	1637	A
31	BA	1638	A
31	BA	1639	A
31	BA	1642	G
31	BA	1644	C
31	BA	1645	A
31	BA	1647	A
31	BA	1648	G
31	BA	1649	G
31	BA	1651	A
31	BA	1656	A
31	BA	1659	C
31	BA	1663	U
31	BA	1666	C
31	BA	1669	C
31	BA	1672	G
31	BA	1676	U
31	BA	1677	C
31	BA	1680	G
31	BA	1681	A
31	BA	1682	G
31	BA	1683	A
31	BA	1691	U
31	BA	1692	U
31	BA	1693	A
31	BA	1696	G
31	BA	1697	A
31	BA	1698	A
31	BA	1699	C
31	BA	1701	C
31	BA	1703	G
31	BA	1704	C
31	BA	1706	A
31	BA	1708	A
31	BA	1710	A
31	BA	1711	G
31	BA	1713	C

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Mol	Chain	Res	Type
31	BA	1722	U
31	BA	1724	G
31	BA	1725	G
31	BA	1727	A
31	BA	1728	G
31	BA	1740	G
31	BA	1741	U
31	BA	1742	G
31	BA	1743	U
31	BA	1744	A
31	BA	1745	A
31	BA	1746	A
31	BA	1749	C
31	BA	1751	A
31	BA	1753	C
31	BA	1754	C
31	BA	1755	G
31	BA	1756	C
31	BA	1758	G
31	BA	1760	G
31	BA	1761	A
31	BA	1762	A
31	BA	1763	U
31	BA	1764	A
31	BA	1765	G
31	BA	1766	G
31	BA	1767	C
31	BA	1768	C
31	BA	1775	A
31	BA	1777	U
31	BA	1778	G
31	BA	1779	U
31	BA	1781	U
31	BA	1784	C
31	BA	1785	A
31	BA	1786	A
31	BA	1790	C
31	BA	1792	C
31	BA	1795	C
31	BA	1801	G
31	BA	1802	C
31	BA	1808	C

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Mol	Chain	Res	Type
31	BA	1817	A
31	BA	1818	U
31	BA	1819	G
31	BA	1820	U
31	BA	1821	A
31	BA	1823	A
31	BA	1830	G
31	BA	1831	A
31	BA	1837	G
31	BA	1838	C
31	BA	1840	C
31	BA	1849	A
31	BA	1863	U
31	BA	1864	G
31	BA	1868	A
31	BA	1870	A
31	BA	1872	G
31	BA	1873	U
31	BA	1874	A
31	BA	1875	A
31	BA	1876	G
31	BA	1877	U
31	BA	1878	C
31	BA	1879	G
31	BA	1880	A
31	BA	1884	U
31	BA	1887	G
31	BA	1888	A
31	BA	1891	U
31	BA	1893	A
31	BA	1903	A
31	BA	1904	A
31	BA	1910	G
31	BA	1916	A
31	BA	1918	C
31	BA	1919	U
31	BA	1921	U
31	BA	1922	A
31	BA	1923	A
31	BA	1924	C
31	BA	1926	G
31	BA	1928	C

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Mol	Chain	Res	Type
31	BA	1931	A
31	BA	1933	G
31	BA	1934	G
31	BA	1935	U
31	BA	1938	C
31	BA	1940	A
31	BA	1941	A
31	BA	1944	U
31	BA	1946	C
31	BA	1947	U
31	BA	1949	G
31	BA	1950	U
31	BA	1957	A
31	BA	1958	G
31	BA	1959	U
31	BA	1964	A
31	BA	1965	C
31	BA	1966	C
31	BA	1967	C
31	BA	1968	G
31	BA	1970	A
31	BA	1971	C
31	BA	1974	A
31	BA	1976	G
31	BA	1977	G
31	BA	1979	G
31	BA	1987	U
31	BA	1996	G
31	BA	1997	U
31	BA	1998	C
31	BA	1999	U
31	BA	2000	C
31	BA	2010	C
31	BA	2011	U
31	BA	2016	G
31	BA	2017	A
31	BA	2021	U
31	BA	2022	U
31	BA	2023	U
31	BA	2024	A
31	BA	2025	G
31	BA	2026	U

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Mol	Chain	Res	Type
31	BA	2027	A
31	BA	2031	G
31	BA	2032	U
31	BA	2034	A
31	BA	2035	A
31	BA	2036	G
31	BA	2037	A
31	BA	2038	U
31	BA	2039	G
31	BA	2045	U
31	BA	2047	C
31	BA	2048	C
31	BA	2050	G
31	BA	2053	A
31	BA	2054	C
31	BA	2055	A
31	BA	2056	G
31	BA	2058	A
31	BA	2059	C
31	BA	2060	G
31	BA	2064	A
31	BA	2065	G
31	BA	2066	A
31	BA	2072	U
31	BA	2073	G
31	BA	2084	G
31	BA	2091	G
31	BA	2094	A
31	BA	2096	U
31	BA	2097	G
31	BA	2099	G
31	BA	2104	U
31	BA	2105	G
31	BA	2112	A
31	BA	2114	G
31	BA	2115	U
31	BA	2116	A
31	BA	2117	C
31	BA	2119	G
31	BA	2120	G
31	BA	2121	A
31	BA	2122	U

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Mol	Chain	Res	Type
31	BA	2123	A
31	BA	2126	U
31	BA	2129	G
31	BA	2130	A
31	BA	2131	G
31	BA	2132	C
31	BA	2134	A
31	BA	2136	U
31	BA	2137	G
31	BA	2138	A
31	BA	2139	A
31	BA	2140	A
31	BA	2143	G
31	BA	2144	G
31	BA	2145	G
31	BA	2146	A
31	BA	2147	C
31	BA	2148	G
31	BA	2149	C
31	BA	2151	A
31	BA	2152	G
31	BA	2153	U
31	BA	2155	U
31	BA	2158	A
31	BA	2160	U
31	BA	2161	G
31	BA	2162	A
31	BA	2163	G
31	BA	2165	C
31	BA	2166	G
31	BA	2167	U
31	BA	2169	G
31	BA	2174	G
31	BA	2175	A
31	BA	2177	A
31	BA	2180	A
31	BA	2182	C
31	BA	2184	U
31	BA	2192	U
31	BA	2193	G
31	BA	2194	G
31	BA	2195	U

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Mol	Chain	Res	Type
31	BA	2202	A
31	BA	2203	A
31	BA	2207	G
31	BA	2214	U
31	BA	2215	A
31	BA	2216	A
31	BA	2217	U
31	BA	2218	C
31	BA	2222	C
31	BA	2229	A
31	BA	2242	G
31	BA	2243	A
31	BA	2244	C
31	BA	2250	G
31	BA	2254	G
31	BA	2261	U
31	BA	2263	G
31	BA	2270	A
31	BA	2272	A
31	BA	2273	G
31	BA	2274	A
31	BA	2277	A
31	BA	2278	A
31	BA	2281	G
31	BA	2283	G
31	BA	2284	G
31	BA	2286	G
31	BA	2287	C
31	BA	2289	C
31	BA	2290	A
31	BA	2291	A
31	BA	2293	G
31	BA	2309	U
31	BA	2311	G
31	BA	2312	G
31	BA	2313	A
31	BA	2315	A
31	BA	2320	U
31	BA	2323	U
31	BA	2324	A
31	BA	2326	A
31	BA	2329	G

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Mol	Chain	Res	Type
31	BA	2331	A
31	BA	2337	A
31	BA	2338	A
31	BA	2339	A
31	BA	2340	A
31	BA	2341	G
31	BA	2348	U
31	BA	2349	G
31	BA	2351	C
31	BA	2354	C
31	BA	2358	A
31	BA	2362	A
31	BA	2365	A
31	BA	2366	C
31	BA	2373	A
31	BA	2375	G
31	BA	2376	U
31	BA	2377	A
31	BA	2378	G
31	BA	2386	G
31	BA	2387	G
31	BA	2389	C
31	BA	2390	U
31	BA	2392	A
31	BA	2393	G
31	BA	2395	G
31	BA	2401	G
31	BA	2403	G
31	BA	2406	A
31	BA	2407	C
31	BA	2410	C
31	BA	2411	A
31	BA	2413	G
31	BA	2414	G
31	BA	2419	G
31	BA	2420	C
31	BA	2424	C
31	BA	2426	C
31	BA	2427	U
31	BA	2428	C
31	BA	2429	A
31	BA	2430	A

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Mol	Chain	Res	Type
31	BA	2431	C
31	BA	2432	G
31	BA	2433	G
31	BA	2434	A
31	BA	2435	U
31	BA	2438	A
31	BA	2443	A
31	BA	2444	C
31	BA	2445	C
31	BA	2446	C
31	BA	2451	G
31	BA	2452	A
31	BA	2453	U
31	BA	2456	C
31	BA	2464	U
31	BA	2470	C
31	BA	2482	A
31	BA	2485	G
31	BA	2488	G
31	BA	2494	G
31	BA	2495	U
31	BA	2496	U
31	BA	2498	G
31	BA	2499	G
31	BA	2501	A
31	BA	2502	C
31	BA	2505	C
31	BA	2506	G
31	BA	2507	A
31	BA	2508	U
31	BA	2509	G
31	BA	2510	U
31	BA	2517	G
31	BA	2533	G
31	BA	2534	U
31	BA	2535	A
31	BA	2536	G
31	BA	2539	G
31	BA	2546	A
31	BA	2557	G
31	BA	2568	A
31	BA	2570	A

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Mol	Chain	Res	Type
31	BA	2571	G
31	BA	2576	A
31	BA	2577	C
31	BA	2578	G
31	BA	2581	A
31	BA	2582	G
31	BA	2588	U
31	BA	2589	U
31	BA	2590	C
31	BA	2591	A
31	BA	2595	C
31	BA	2602	A
31	BA	2606	A
31	BA	2607	G
31	BA	2613	U
31	BA	2614	C
31	BA	2617	U
31	BA	2618	A
31	BA	2619	U
31	BA	2623	U
31	BA	2625	G
31	BA	2628	G
31	BA	2633	A
31	BA	2636	U
31	BA	2637	A
31	BA	2640	U
31	BA	2643	A
31	BA	2646	G
31	BA	2647	G
31	BA	2649	U
31	BA	2650	C
31	BA	2652	G
31	BA	2653	U
31	BA	2658	A
31	BA	2659	G
31	BA	2679	A
31	BA	2686	G
31	BA	2689	G
31	BA	2694	A
31	BA	2698	G
31	BA	2706	G
31	BA	2717	G

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Mol	Chain	Res	Type
31	BA	2718	G
31	BA	2722	G
31	BA	2726	G
31	BA	2729	A
31	BA	2730	U
31	BA	2731	G
31	BA	2732	U
31	BA	2736	G
31	BA	2737	A
31	BA	2739	G
31	BA	2740	G
31	BA	2741	G
31	BA	2743	U
31	BA	2748	G
31	BA	2752	A
31	BA	2753	A
31	BA	2754	A
31	BA	2755	G
31	BA	2760	U
31	BA	2761	A
31	BA	2762	A
31	BA	2766	C
31	BA	2768	A
31	BA	2769	A
31	BA	2770	G
31	BA	2771	C
31	BA	2782	A
31	BA	2783	U
31	BA	2784	G
31	BA	2786	G
31	BA	2793	C
31	BA	2795	U
31	BA	2799	U
31	BA	2800	A
31	BA	2802	G
31	BA	2809	G
31	BA	2816	G
31	BA	2819	A
31	BA	2821	A
31	BA	2822	U
31	BA	2828	G
31	BA	2830	U

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Mol	Chain	Res	Type
31	BA	2831	A
31	BA	2832	G
31	BA	2833	A
31	BA	2834	U
31	BA	2835	A
31	BA	2841	G
31	BA	2843	A
31	BA	2848	A
31	BA	2859	G
31	BA	2860	A
31	BA	2861	C
31	BA	2866	A
31	BA	2867	G
31	BA	2870	G
31	BA	2872	C
31	BA	2874	A
31	BA	2878	C
31	BA	2881	A
31	BA	2882	U
31	BA	2889	A
31	BA	2890	G
31	BA	2891	G
31	BA	2894	U
31	BA	2899	C
32	BB	3	U
32	BB	6	U
32	BB	7	A
32	BB	8	U
32	BB	10	A
32	BB	11	A
32	BB	12	U
32	BB	13	U
32	BB	14	G
32	BB	22	G
32	BB	23	A
32	BB	25	A
32	BB	28	C
32	BB	29	C
32	BB	33	U
32	BB	34	C
32	BB	35	C
32	BB	37	A

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Mol	Chain	Res	Type
32	BB	38	U
32	BB	39	G
32	BB	40	U
32	BB	41	C
32	BB	42	G
32	BB	43	A
32	BB	54	C
32	BB	59	C
32	BB	64	U
32	BB	65	G
32	BB	69	U
32	BB	71	G
32	BB	72	A
32	BB	85	U
32	BB	86	U
32	BB	87	G
32	BB	88	C
32	BB	100	U
32	BB	101	A
32	BB	102	A
32	BB	107	G
32	BB	110	G
32	BB	112	C
32	BB	113	A
32	BB	114	A
32	BB	115	G
32	BB	116	U

All (28) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	AA	100	G
1	AA	150	A
1	AA	590	G
1	AA	695	A
1	AA	1142	U
1	AA	1146	G
1	AA	1352	U
1	AA	1414	C
31	BA	8	U
31	BA	514	A
31	BA	762	A

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Mol	Chain	Res	Type
31	BA	880	U
31	BA	932	U
31	BA	980	A
31	BA	1281	A
31	BA	1285	U
31	BA	1313	A
31	BA	1317	U
31	BA	1353	G
31	BA	1414	A
31	BA	1740	G
31	BA	1743	U
31	BA	1923	A
31	BA	2054	C
31	BA	2065	G
31	BA	2273	G
31	BA	2444	C
31	BA	2760	U

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

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

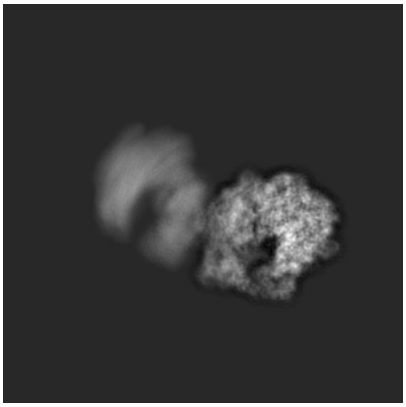
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-3581. These allow visual inspection of the internal detail of the map and identification of artifacts.

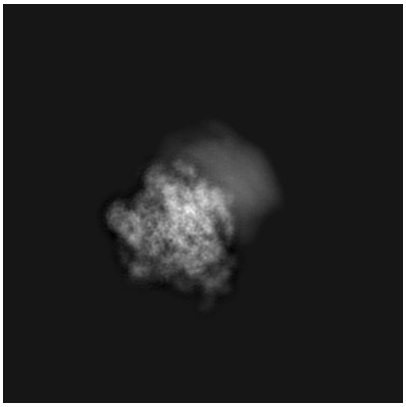
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

6.1.1 Primary map



X



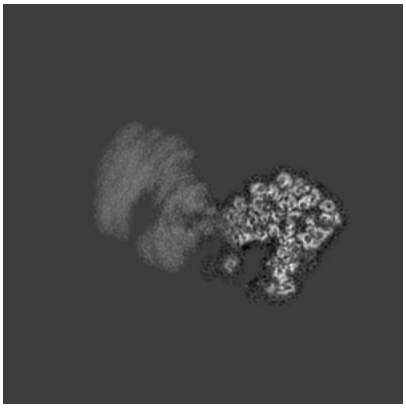
Y

Z

The images above show the map projected in three orthogonal directions.

6.2 Central slices

6.2.1 Primary map



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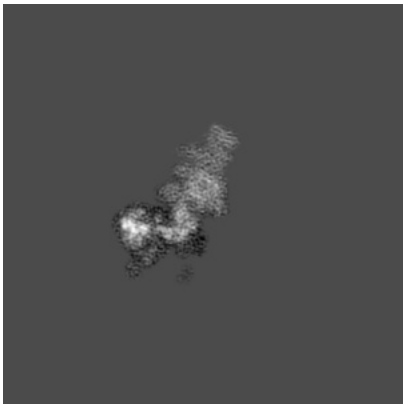
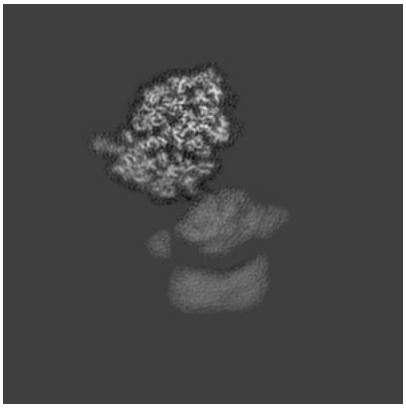


Y Index: 300

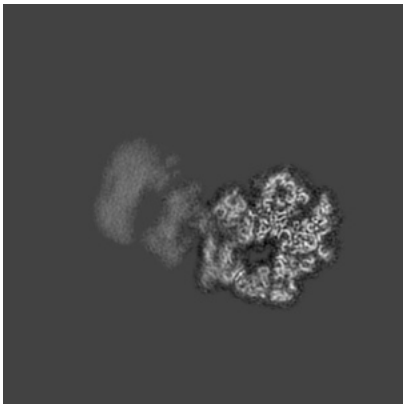


Z Index: 300

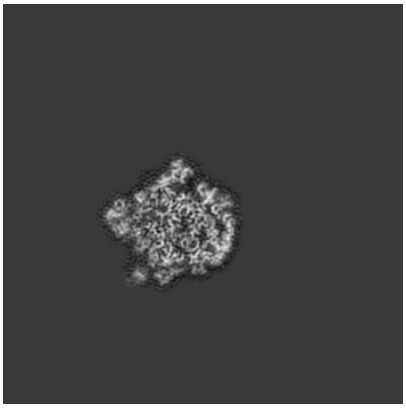
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

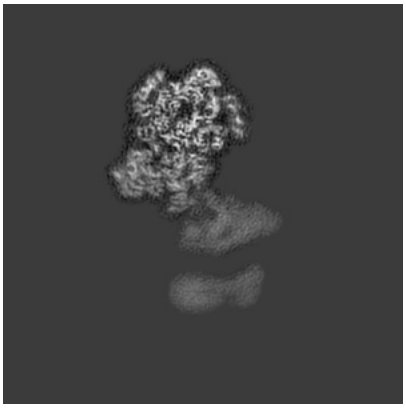
6.3.1 Primary map



X Index: 278



Y Index: 428



Z Index: 277

The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X

Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.035. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

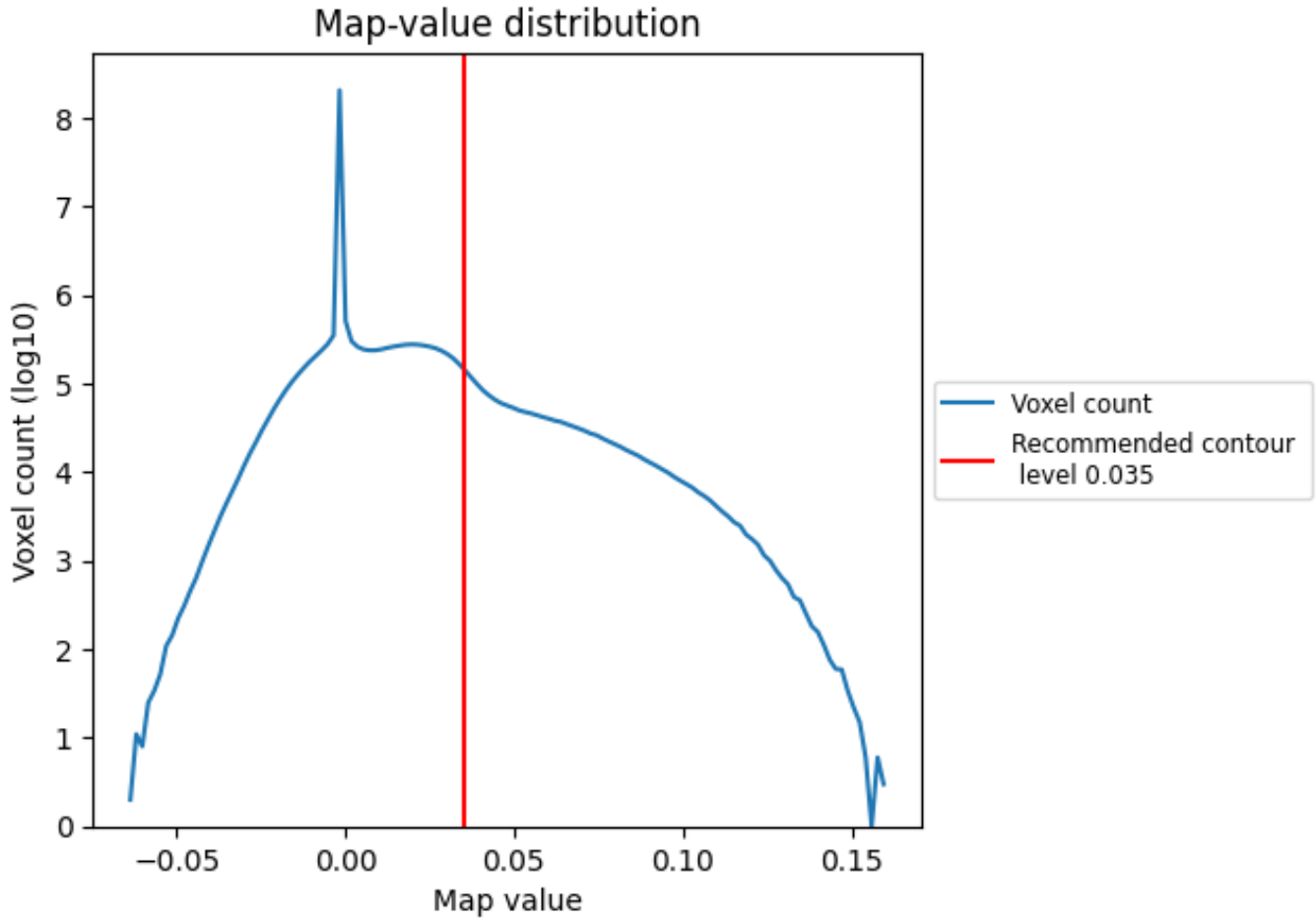
6.5 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

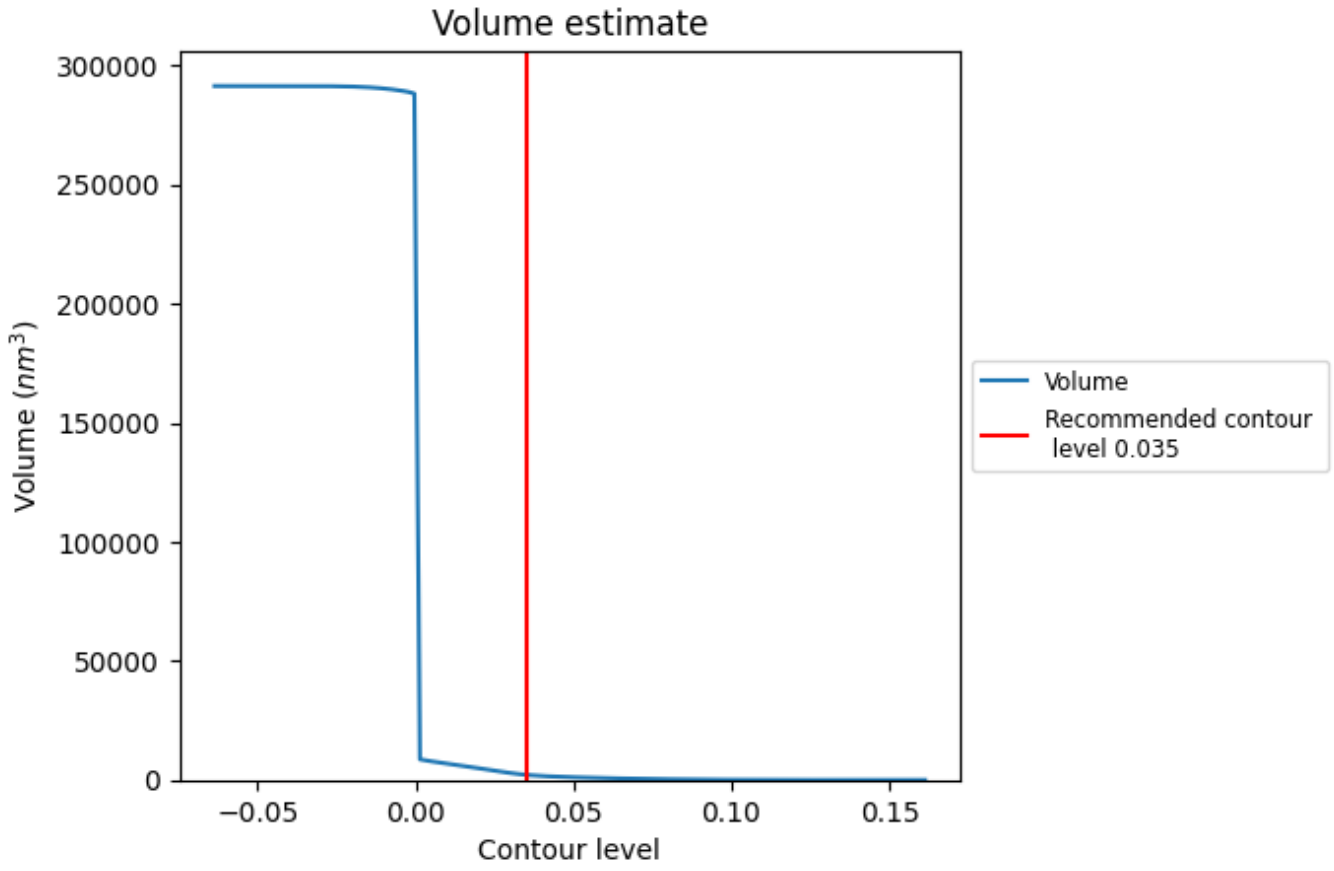
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

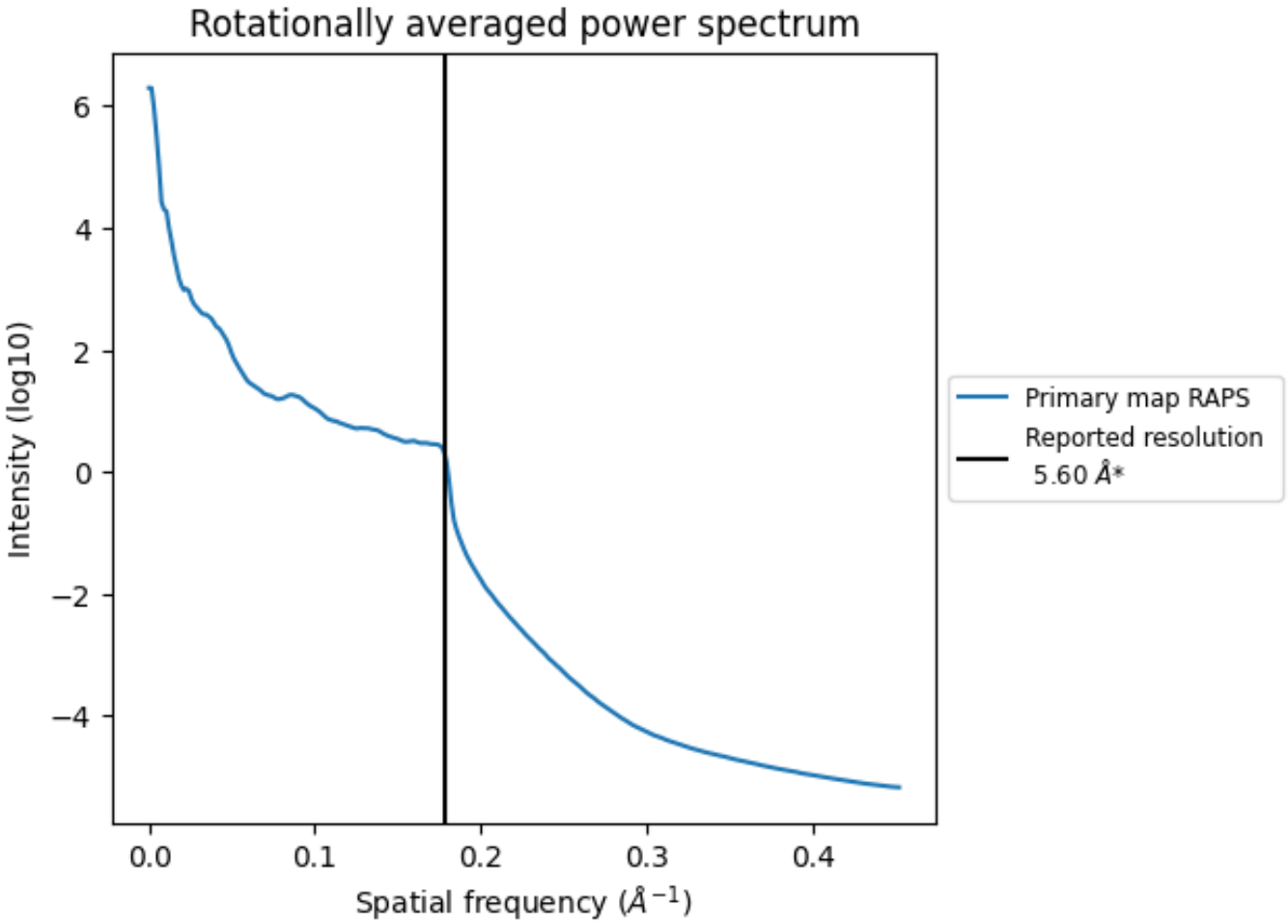
7.2 Volume estimate



The volume at the recommended contour level is 2160 nm^3; this corresponds to an approximate mass of 1951 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

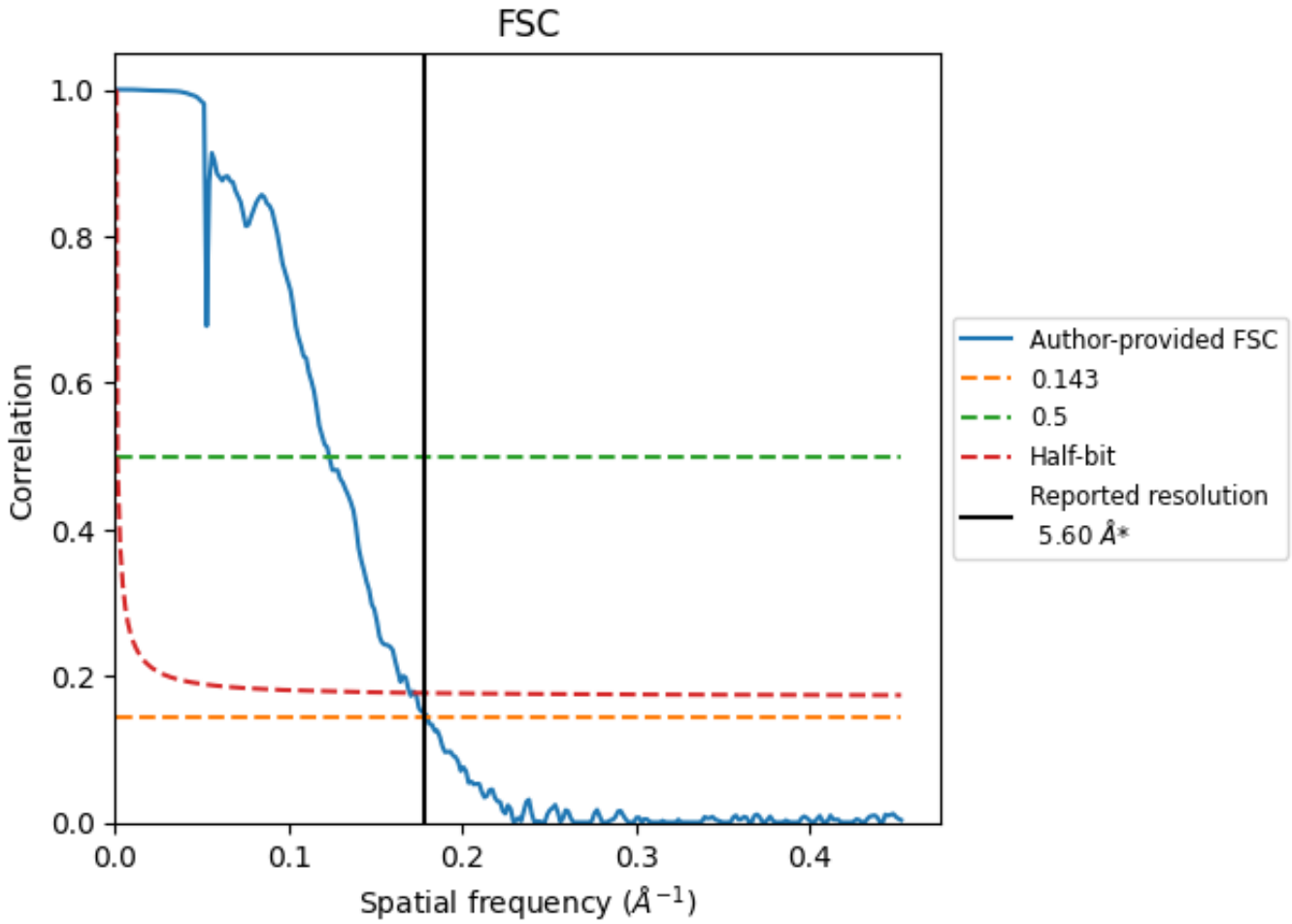


*Reported resolution corresponds to spatial frequency of 0.179 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.179 Å^{-1}

8.2 Resolution estimates (i)

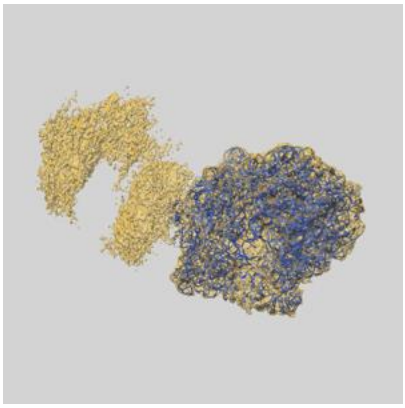
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	5.60	-	-
Author-provided FSC curve	5.56	8.11	5.89
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

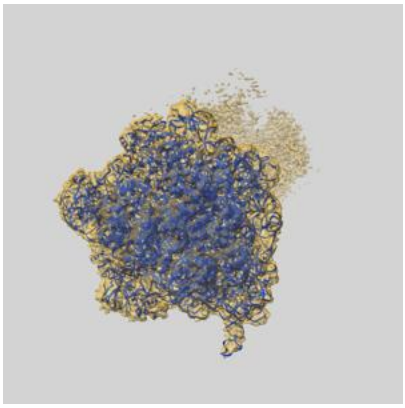
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-3581 and PDB model 5MYJ. Per-residue inclusion information can be found in section 3 on page 13.

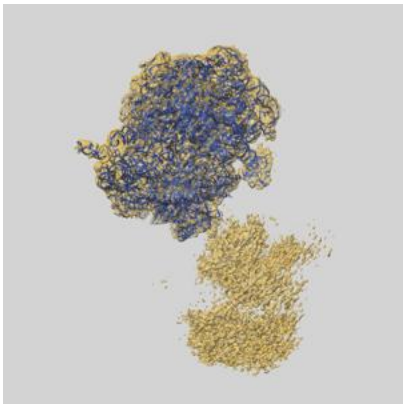
9.1 Map-model overlay



X



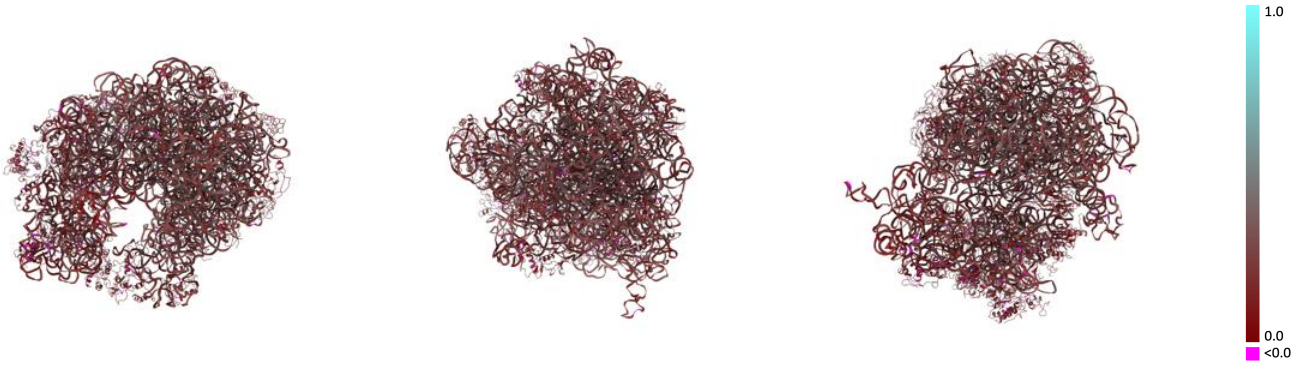
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.035 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

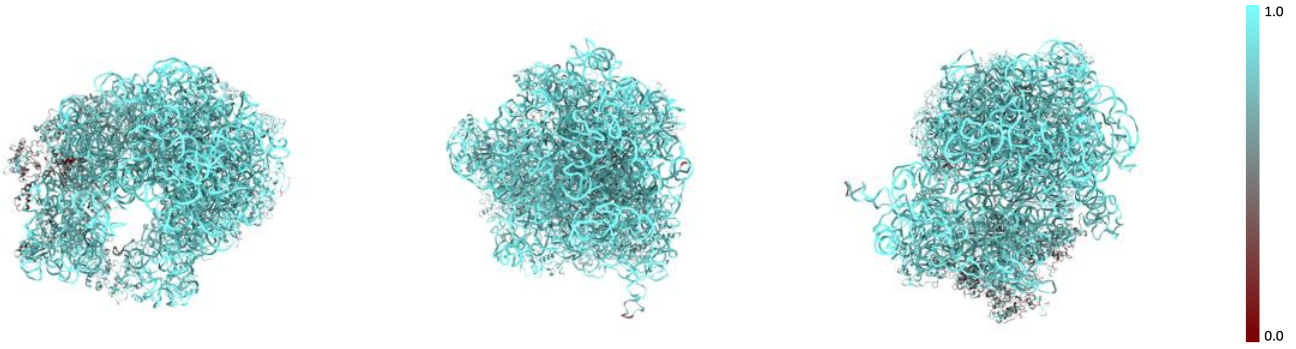
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

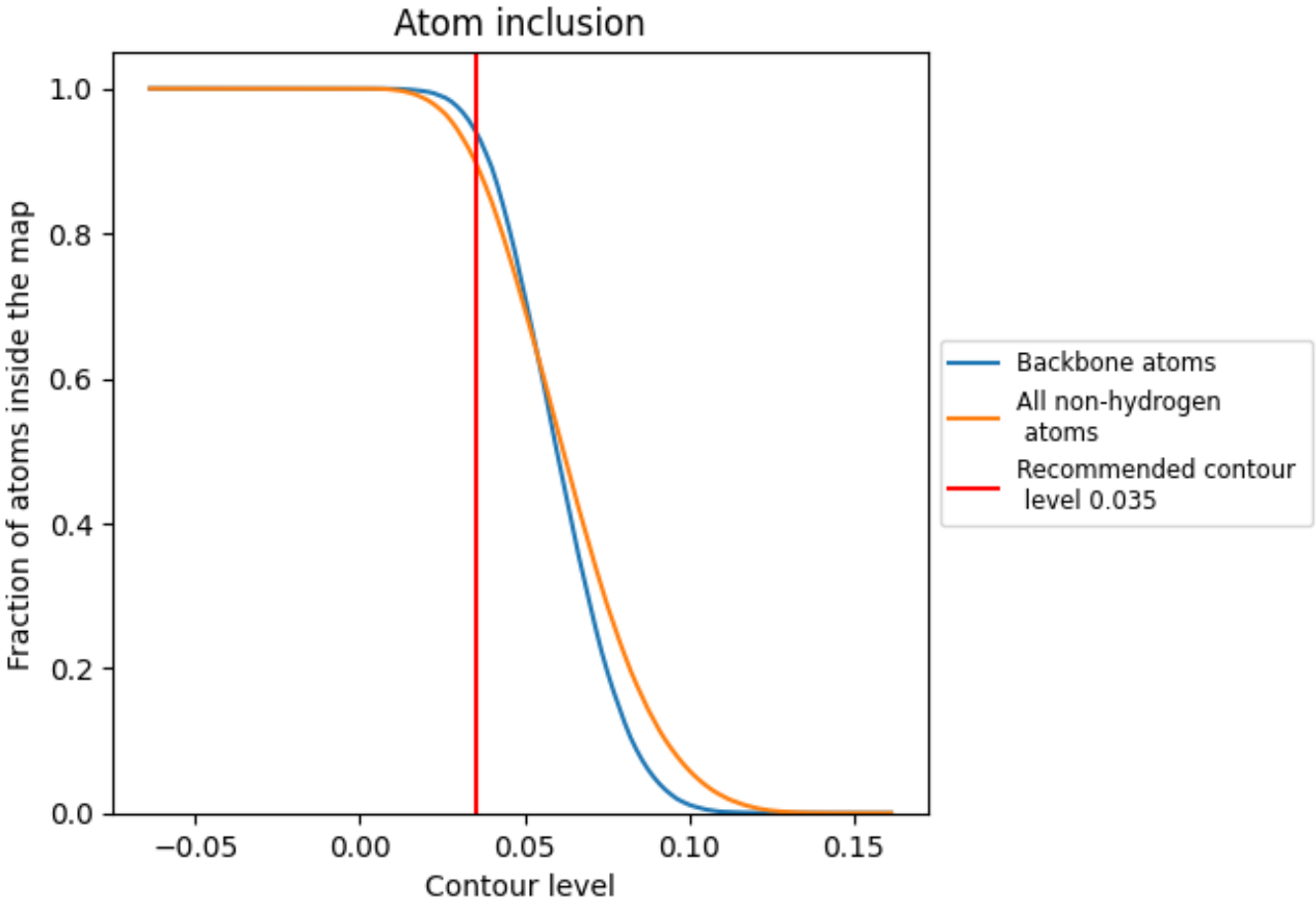
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.035).

9.4 Atom inclusion (i)



At the recommended contour level, 94% of all backbone atoms, 90% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.035) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8996	0.2480
A	0.5444	0.2100
AA	0.9501	0.2270
AB	0.4756	0.2060
AC	0.6563	0.1880
AD	0.7401	0.1680
AE	0.5600	0.2170
AF	0.6500	0.2120
AG	0.7112	0.2150
AH	0.6336	0.1770
AI	0.7758	0.1630
AJ	0.7063	0.1710
AK	0.6971	0.2320
AL	0.6412	0.2190
AM	0.8014	0.2000
AN	0.8502	0.1690
AO	0.7645	0.2070
AP	0.7779	0.1640
AQ	0.7169	0.2110
AR	0.6259	0.2300
AS	0.8075	0.1760
AT	0.7940	0.1940
AU	0.3919	0.2390
B0	0.7495	0.2530
B1	0.8069	0.2010
B2	0.8167	0.2620
B3	0.7755	0.2060
B4	0.8417	0.2820
B5	0.7949	0.2340
B6	0.8387	0.2630
B7	0.7941	0.2500
B8	0.8932	0.2530
BA	0.9725	0.2760
BB	0.9898	0.2650
BD	0.7658	0.2590

Continued on next page...

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Chain	Atom inclusion	Q-score
BE	0.8260	0.2460
BF	0.8279	0.2400
BG	0.8214	0.2190
BH	0.8583	0.2290
BM	0.8108	0.2500
BN	0.6976	0.2490
BO	0.8348	0.2450
BP	0.8353	0.2580
BQ	0.8015	0.2240
BR	0.9001	0.2090
BS	0.7348	0.2520
BT	0.7978	0.1910
BU	0.8232	0.2520
BV	0.7844	0.2540
BW	0.8233	0.2550
BX	0.8527	0.2200
BZ	0.8561	0.2660