wwPDB EM Map/Model Validation Report (i)

Apr 10, 2016 – 02:29 PM BST

PDB ID	:	3J92
EMDB ID:	:	EMD-2832
Title	:	Structure and assembly pathway of the ribosome quality control complex
Authors	:	Shao, S.; Brown, A.; Santhanam, B.; Hegde, R.S.
Deposited on	:	2014-12-02
Resolution	:	3.60 Å(reported)
Based on PDB ID	:	4W20, 4W1Z

This is a wwPDB EM Map/Model Validation Report for a publicly released PDB/EMDB entry.
For rigid body fitted models, validation errors reported here could
stem from errors in the original structure(s) used in the fitting.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
http://wwpdb.org/validation/2016/EMValidationReportHelp

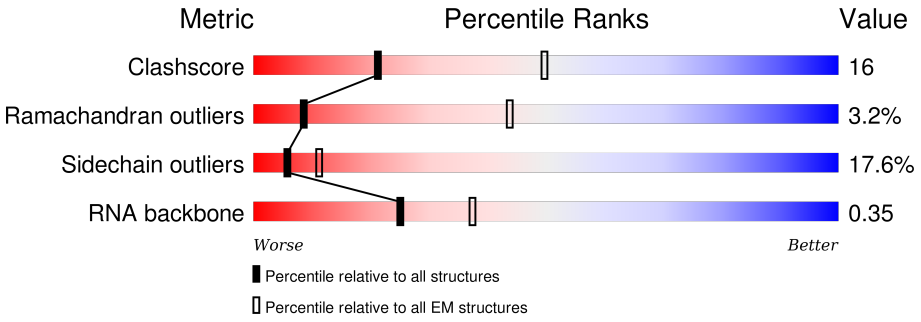
MolProbity	:	4.02b-467
Mogul	:	1.7.1 (RC1), CSD as537be (2016)
Percentile statistics	:	20151230.v01 (using entries in the PDB archive December 30th 2015)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP)	:	trunk27241

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.60 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	114402	924
Ramachandran outliers	111179	726
Sidechain outliers	111093	686
RNA backbone	3027	244

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Mol	Chain	Length	Quality of chain
1	A	257	55% 32% 8% 5%
2	B	395	71% 25% • •
3	C	368	62% 31% 6% •
4	D	297	67% 27% • •
5	E	284	50% 26% 5% • 17%
6	F	250	51% 30% 8% • 10%
7	G	266	62% 24% • • 9%
8	H	192	59% 34% 5% ••

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Mol	Chain	Length	Quality of chain
9	I	214	57% 30% 7% 5%
10	J	178	58% 33% 5%
11	L	211	61% 28% 9%
12	M	213	44% 18% 35%
13	N	204	64% 28% 8%
14	O	204	63% 30%
15	P	184	60% 21% 17%
16	Q	188	71% 24%
17	R	196	65% 20% 6% 8%
18	S	224	48% 24% 5% 22%
19	T	160	63% 31% 6%
20	U	128	45% 26% 5% 23%
21	V	140	61% 29% 6%
22	W	157	32% 6% 60%
23	X	156	54% 19% 24%
24	Y	145	72% 17% 8%
25	Z	136	65% 32%
26	a	148	81% 17%
27	b	160	38% 9% 53%
28	c	115	72% 10% 18%
29	d	125	68% 15% 14%
30	e	135	70% 24% 5%
31	f	110	77% 18%
32	g	117	76% 20%
33	h	123	83% 15%

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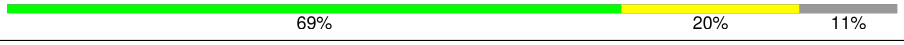
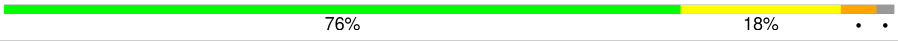
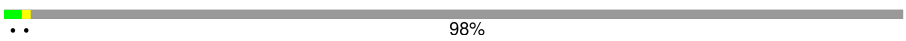
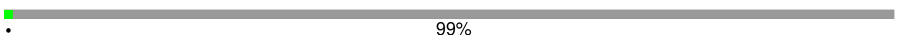
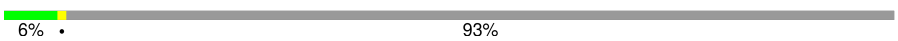
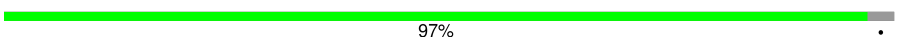
Mol	Chain	Length	Quality of chain
34	i	105	
35	j	97	
36	k	70	
37	l	51	
38	m	128	
39	o	106	
40	p	92	
41	r	137	
42	s	317	
43	t	165	
44	u	501	
44	v	501	
45	0	1766	
45	w	1766	
45	z	1766	
46	x	218	
46	y	218	
47	1	104	
48	2	77	
49	5	3664	
50	7	120	
51	8	156	

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 146386 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 protein called uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	244	Total	C	N	O	S	0	0
			1868	1171	382	309	6		

- Molecule 2 is a protein called uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	394	Total	C	N	O	S	0	0
			3147	2005	591	538	13		

- Molecule 3 is a protein called uL4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	367	Total	C	N	O	S	0	0
			2919	1836	582	486	15		

- Molecule 4 is a protein called uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	292	Total	C	N	O	S	0	0
			2384	1511	435	426	12		

- Molecule 5 is a protein called eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	236	Total	C	N	O	S	0	0
			1904	1219	364	316	5		

- Molecule 6 is a protein called eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	225	Total	C	N	O	S	0	0
			1870	1202	358	301	9		

- Molecule 7 is a protein called eL8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	241	Total	C	N	O	S	0	0
			1939	1235	372	328	4		

- Molecule 8 is a protein called uL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 9 is a protein called uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	204	Total	C	N	O	S	0	0
			1651	1048	318	271	14		

- Molecule 10 is a protein called uL5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	170	Total	C	N	O	S	0	0
			1359	856	256	241	6		

- Molecule 11 is a protein called eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	L	210	Total	C	N	O	S	0	0
			1703	1064	354	280	5		

- Molecule 12 is a protein called eL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	M	138	Total	C	N	O	S	0	0
			1131	727	216	181	7		

- Molecule 13 is a protein called eL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	N	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 14 is a protein called uL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	O	199	Total	C	N	O	S	0	0
			1638	1056	321	256	5		

- Molecule 15 is a protein called uL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 16 is a protein called eL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	187	Total	C	N	O	S	0	0
			1506	941	311	249	5		

- Molecule 17 is a protein called eL19.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	180	Total	C	N	O	S	0	0
			1508	933	328	238	9		

- Molecule 18 is a protein called eL20.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	S	175	Total	C	N	O	S	0	0
			1454	925	284	235	10		

- Molecule 19 is a protein called eL21.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	T	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 20 is a protein called eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	U	99	Total	C	N	O	S	0	0
			808	518	141	147	2		

- Molecule 21 is a protein called uL14.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	V	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 22 is a protein called eL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	W	63	Total	C	N	O	S	0	0
			528	337	103	85	3		

- Molecule 23 is a protein called uL23.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	X	119	Total	C	N	O	S	0	0
			976	624	183	168	1		

- Molecule 24 is a protein called uL24.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Y	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 25 is a protein called eL27.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Z	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 26 is a protein called uL15.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	a	147	Total	C	N	O	S	0	0
			1163	735	239	185	4		

- Molecule 27 is a protein called eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	b	75	Total	C	N	O	S	0	0
			610	378	130	99	3		

- Molecule 28 is a protein called eL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	c	94	Total	C	N	O	S	0	0
			732	465	130	131	6		

- Molecule 29 is a protein called eL31.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	d	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 30 is a protein called eL32.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	e	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 31 is a protein called eL33.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	f	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 32 is a protein called eL34.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	g	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 33 is a protein called uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	h	122	Total	C	N	O	S	0	0
			1015	642	205	167	1		

- Molecule 34 is a protein called eL36.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	i	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 35 is a protein called eL37.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	j	86	Total	C	N	O	S	0	0
			706	436	155	110	5		

- Molecule 36 is a protein called eL38.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	k	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 37 is a protein called eL39.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	l	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 38 is a protein called eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	m	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 39 is a protein called eL42.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	o	104	Total	C	N	O	S	0	0
			851	533	174	138	6		

- Molecule 40 is a protein called eL43.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	p	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 41 is a protein called eL28.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	r	125	Total	C	N	O	S	0	0
			1001	622	206	168	5		

- Molecule 42 is a protein called uL10.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	s	198	Total	C	N	O	S	0	0
			1522	968	265	280	9		

- Molecule 43 is a protein called uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	t	163	Total	C	N	O	S	0	0
			1238	773	230	230	5		

- Molecule 44 is a protein called NEMF.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	u	130	Total	C	N	O		0	0
			645	385	130	130			
44	v	136	Total	C	N	O	S	0	0
			1092	687	197	206	2		

- Molecule 45 is a protein called Listerin.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	w	15	Total	C	N	O		0	0
			110	67	23	20			
45	z	130	Total	C	N	O	S	0	0
			1057	681	180	189	7		
45	0	36	Total	C	N	O	S	0	0
			293	187	53	48	5		

- Molecule 46 is a protein called Listerin.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	x	218	Total	C	N	O	0	0
			1090	654	218	218		
46	y	211	Total	C	N	O	0	0
			1055	633	211	211		

- Molecule 47 is a protein called nascent chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	1	15	Total	C	N	O	S	0	0
			125	82	20	22	1		

- Molecule 48 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	2	75	Total	C	N	O	P	0	0
			1601	715	292	520	74		

- Molecule 49 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	5	3662	Total	C	N	O	P	0	0
			78486	34947	14363	25515	3661		

- Molecule 50 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	7	120	Total	C	N	O	P	0	0
			2558	1141	456	842	119		

- Molecule 51 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	8	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		

- Molecule 52 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
52	P	1	Total	Mg	0
			1	1	
52	g	1	Total	Mg	0
			1	1	
52	V	1	Total	Mg	0
			1	1	
52	7	5	Total	Mg	0
			5	5	
52	5	150	Total	Mg	0
			150	150	
52	8	1	Total	Mg	0
			1	1	

- Molecule 53 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
53	o	1	Total	Zn	0
			1	1	

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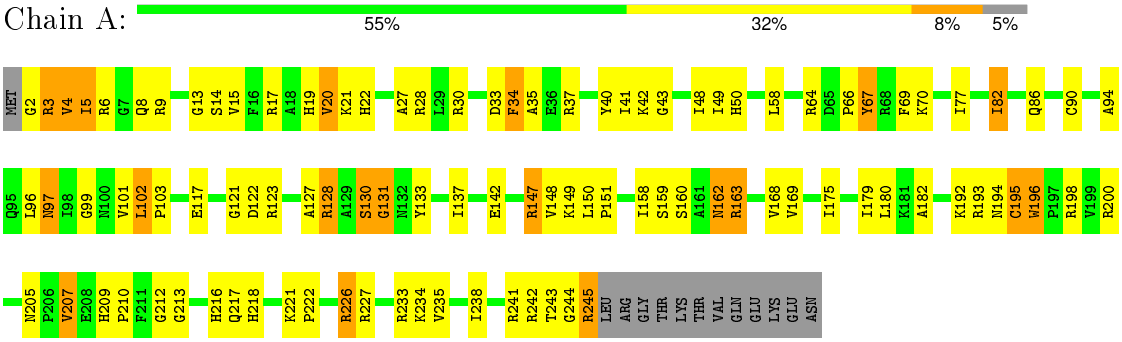
Mol	Chain	Residues	Atoms	AltConf
53	g	1	Total Zn 1 1	0
53	j	1	Total Zn 1 1	0
53	p	1	Total Zn 1 1	0
53	m	1	Total Zn 1 1	0

3 Residue-property plots (i)

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

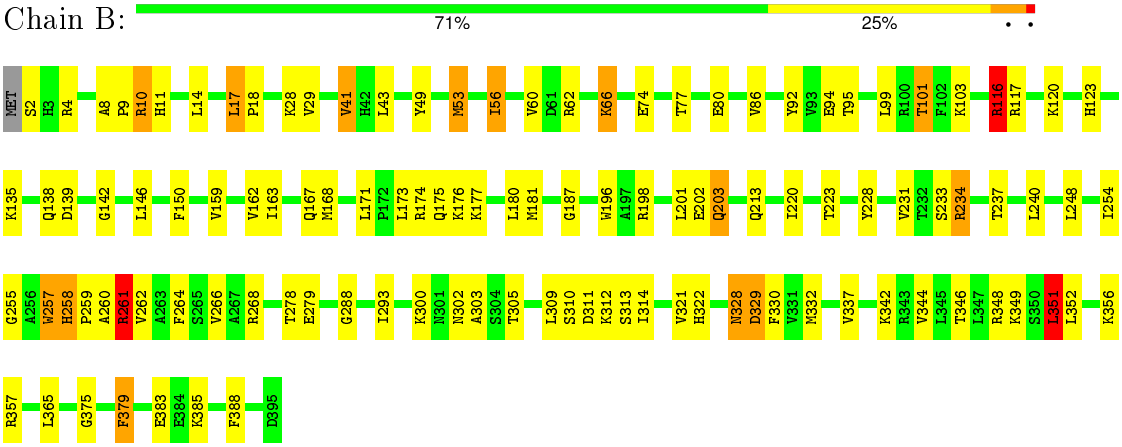
- Molecule 1: uL2

Chain A:



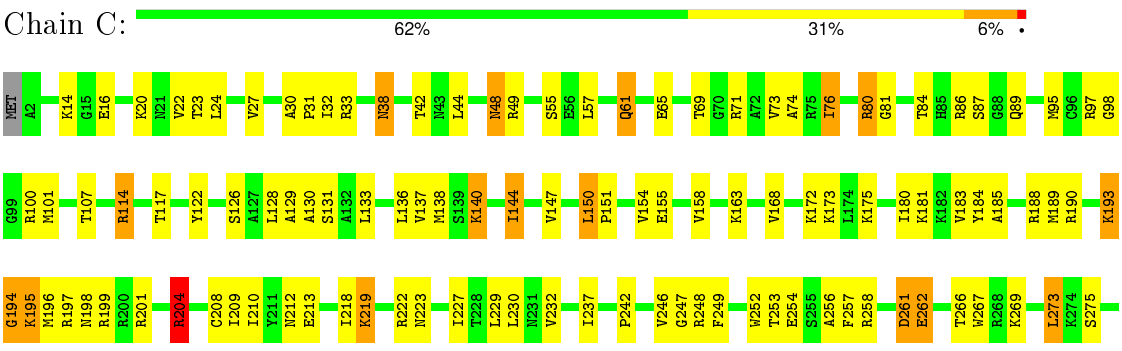
- Molecule 2: uL3

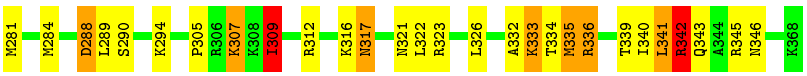
Chain B:



- Molecule 3: uL4

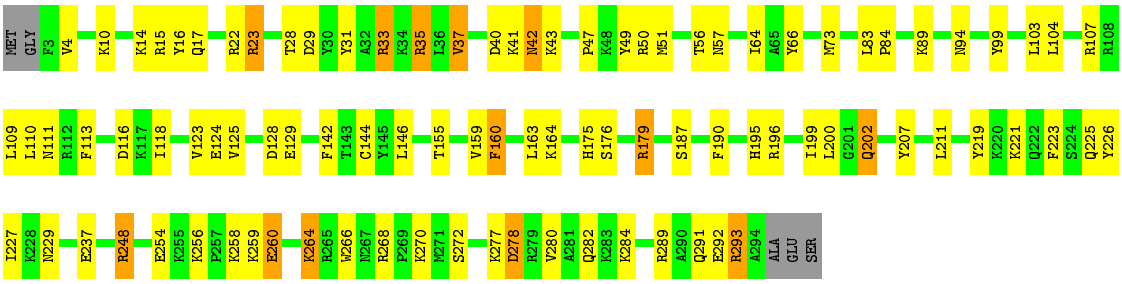
Chain C:





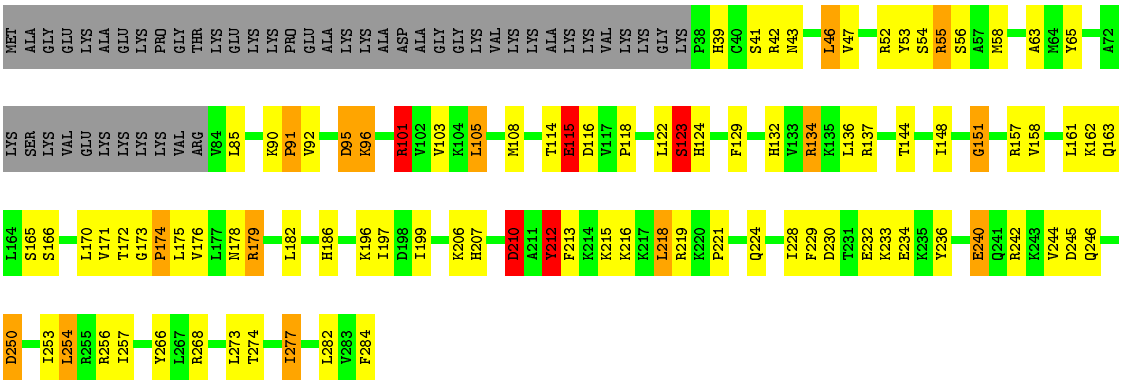
- Molecule 4: uL18

Chain D:



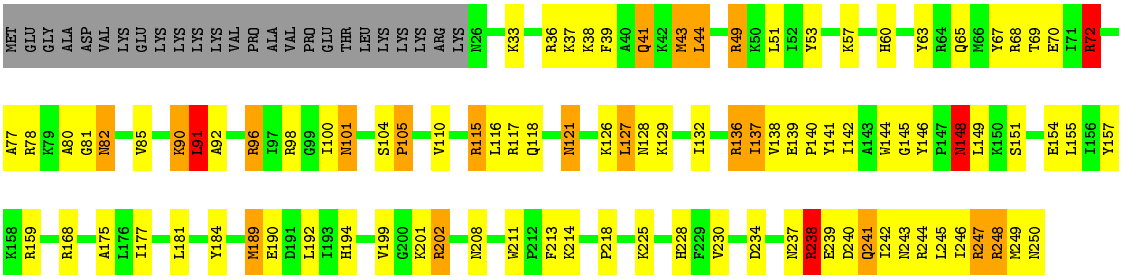
- Molecule 5: eL6

Chain E:



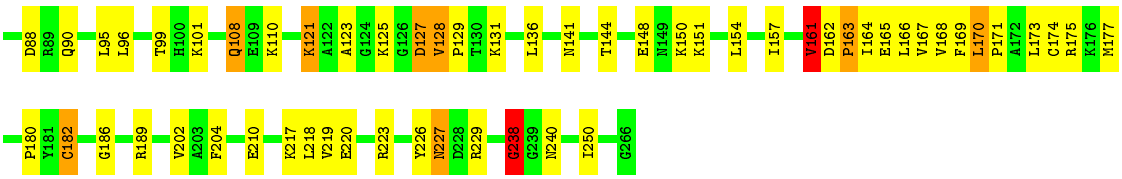
- Molecule 6: eL30

Chain F:



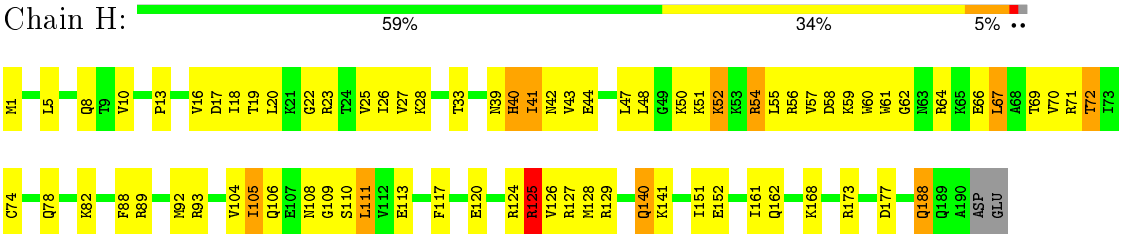
- Molecule 7: eL8

Chain G:



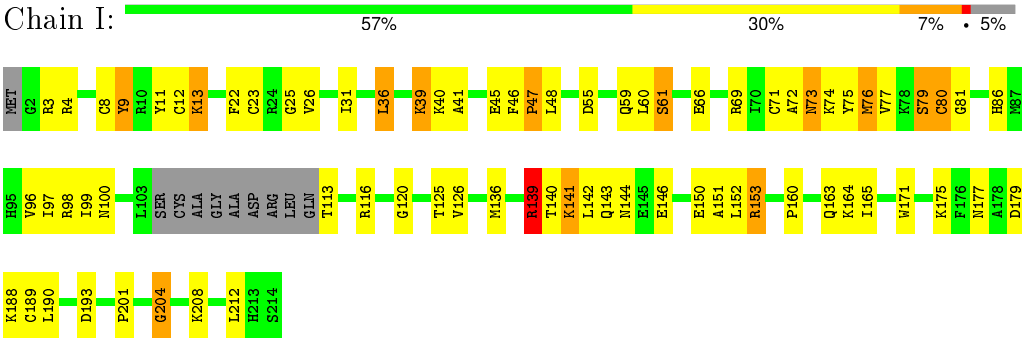
- Molecule 8: uL6

Chain H:



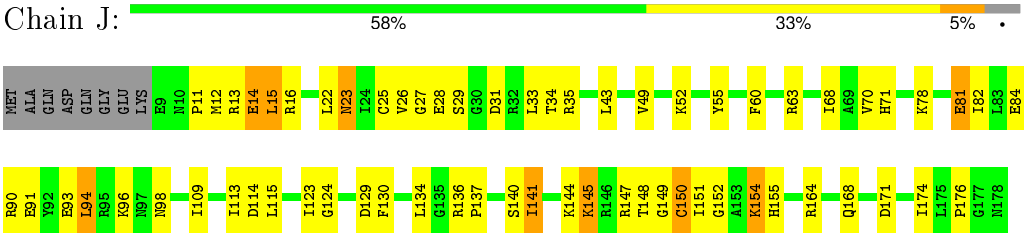
- Molecule 9: uL16

Chain I:



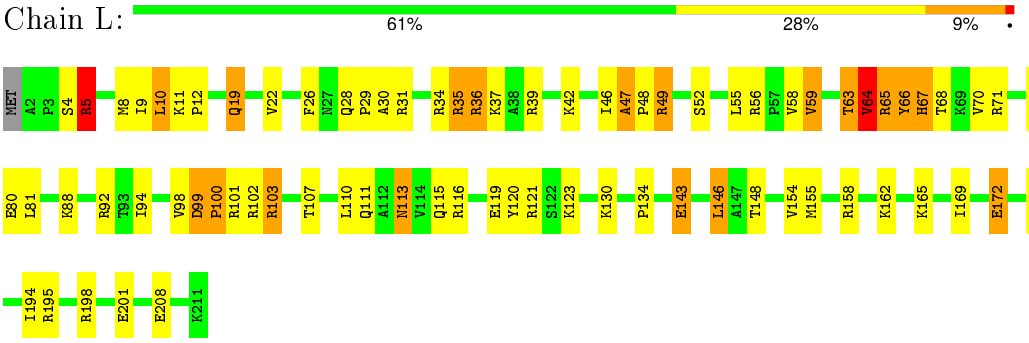
- Molecule 10: uL5

Chain J:



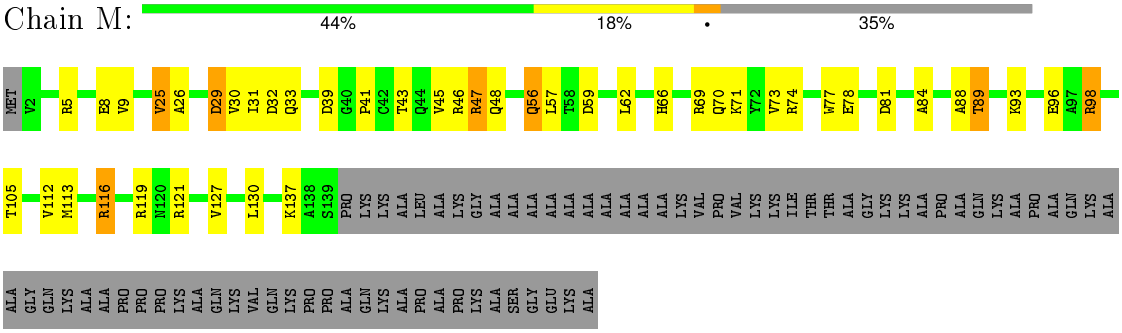
- Molecule 11: eL13

Chain L:



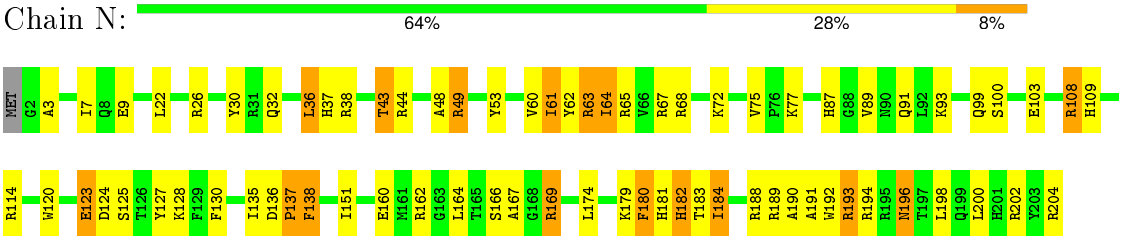
- Molecule 12: eL14

Chain M:



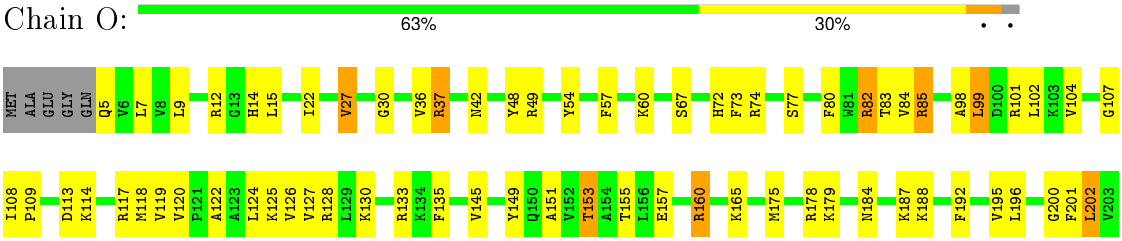
- Molecule 13: eL15

Chain N:



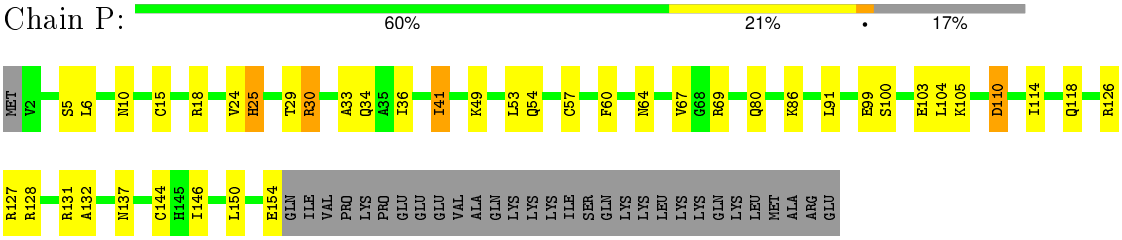
- Molecule 14: uL13

Chain O:



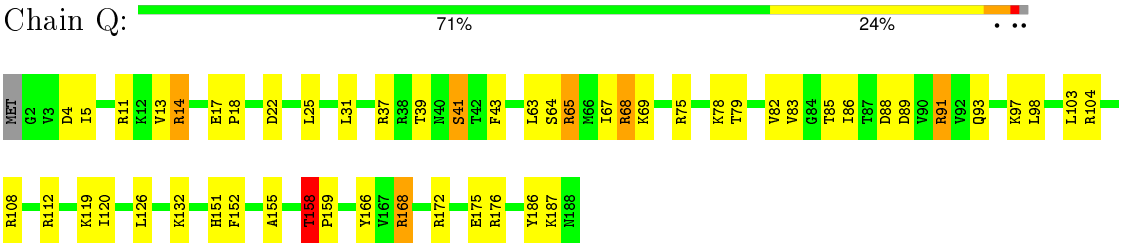
- Molecule 15: uL22

Chain P:



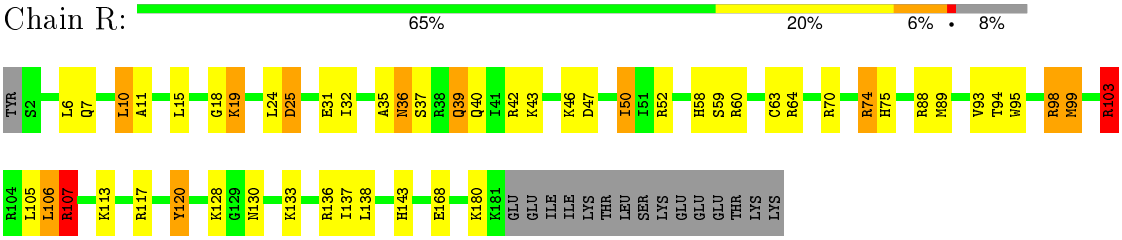
- Molecule 16: eL18

Chain Q:



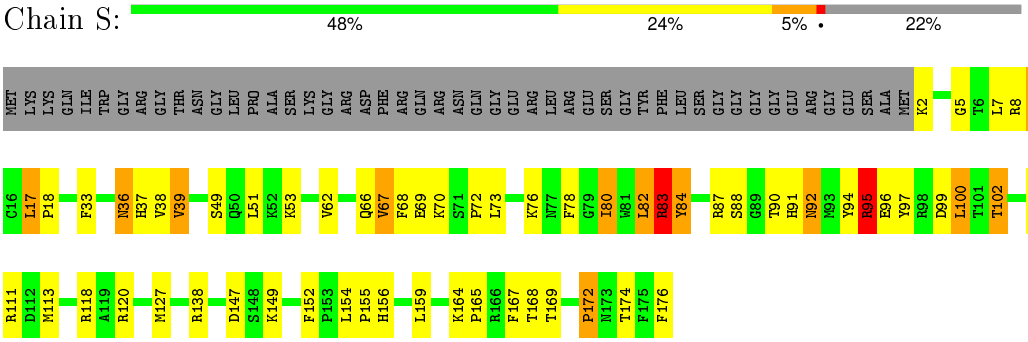
- Molecule 17: eL19

Chain R:



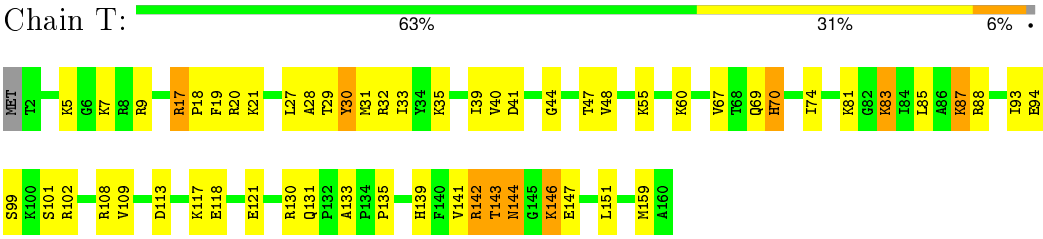
- Molecule 18: eL20

Chain S:



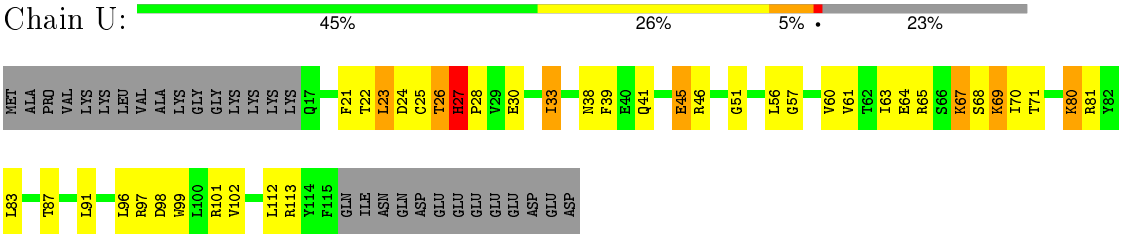
- Molecule 19: eL21

Chain T:



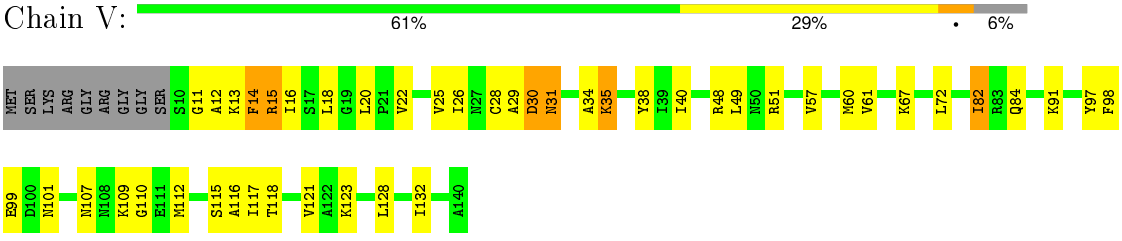
- Molecule 20: eL22

Chain U:



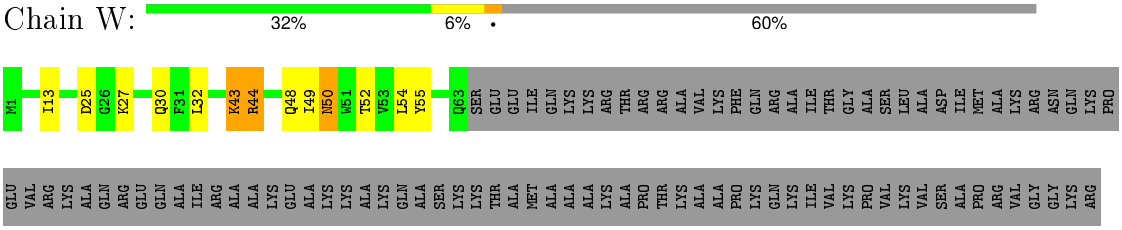
- Molecule 21: uL14

Chain V:



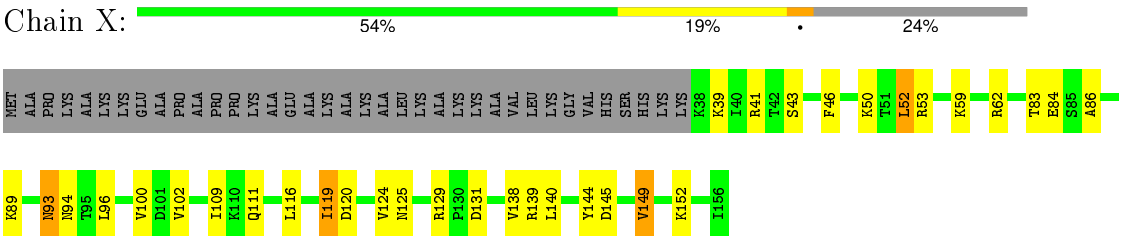
• Molecule 22: eL24

Chain W:



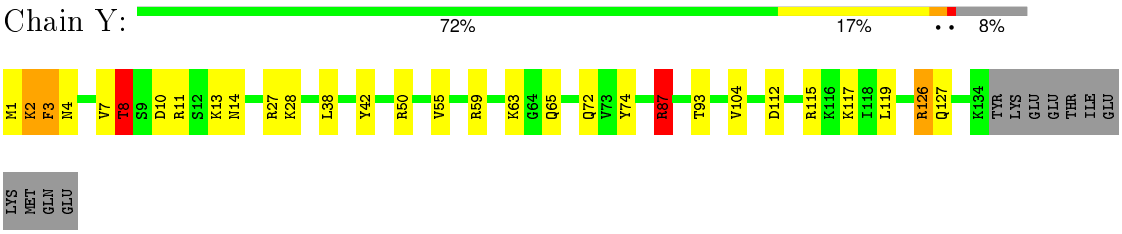
• Molecule 23: uL23

Chain X:



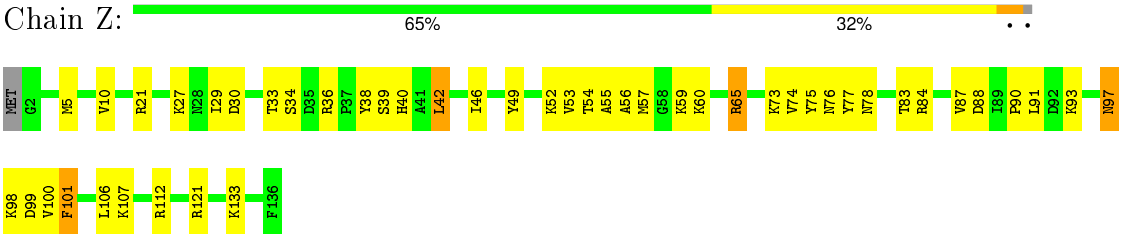
• Molecule 24: uL24

Chain Y:



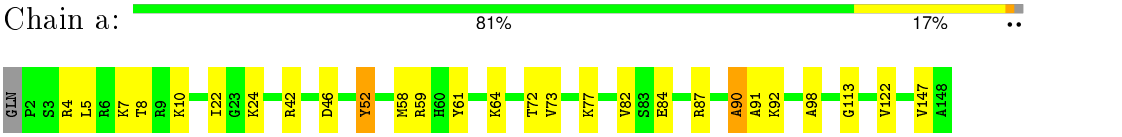
• Molecule 25: eL27

Chain Z:



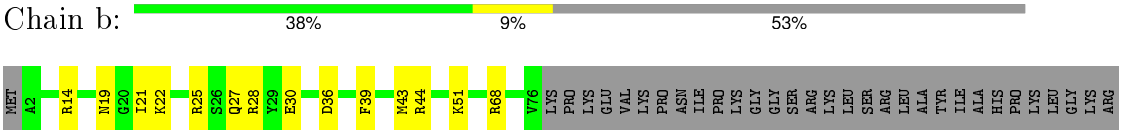
• Molecule 26: uL15

Chain a:



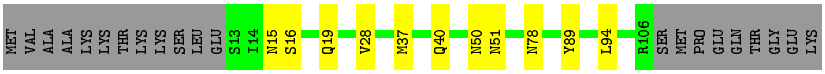
• Molecule 27: eL29

Chain b:



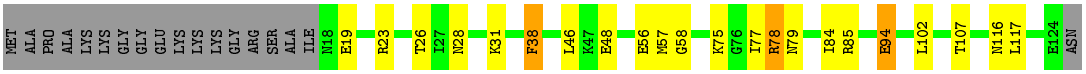
- Molecule 28: eL30

Chain c:



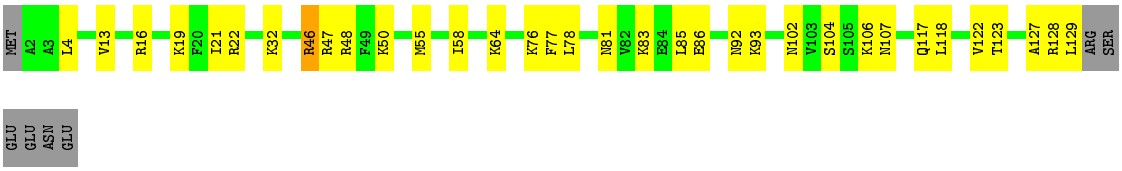
- Molecule 29: eL31

Chain d:



- Molecule 30: eL32

Chain e:

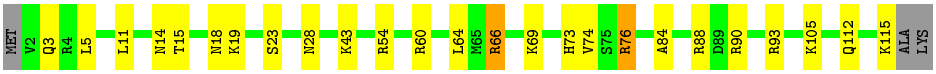


- Molecule 31: eL33

Chain f:

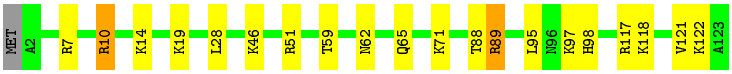
- Molecule 32: eL34

Chain g:



- Molecule 33: uL29

Chain h:



- Molecule 34: eL36

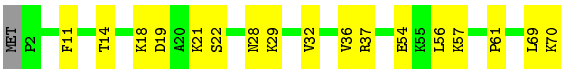
Chain i:

- Molecule 35: eL37

Chain j:

- Molecule 36: eL38

Chain k:

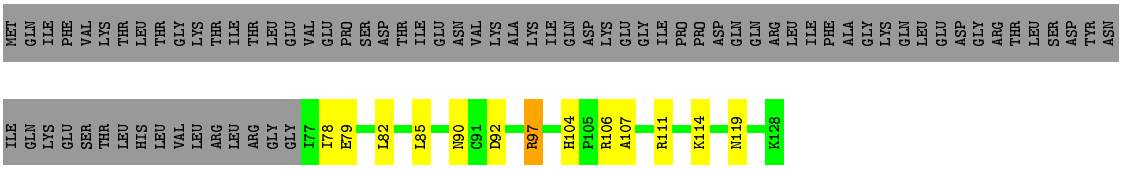


- Molecule 37: eL39

Chain l:

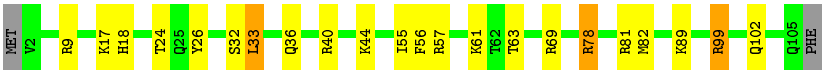
- Molecule 38: eL40

Chain m:



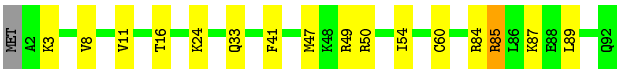
- Molecule 39: eL42

Chain o:



- Molecule 40: eL43

Chain p:

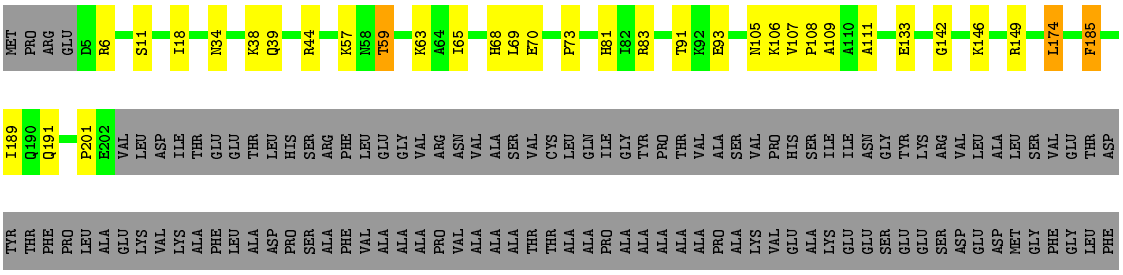


- Molecule 41: eL28

Chain r:

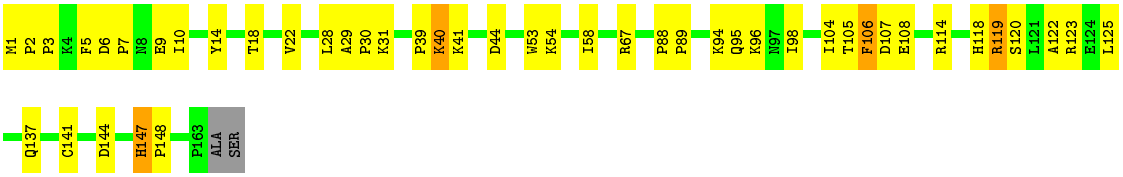
- Molecule 42: uL10

Chain s:



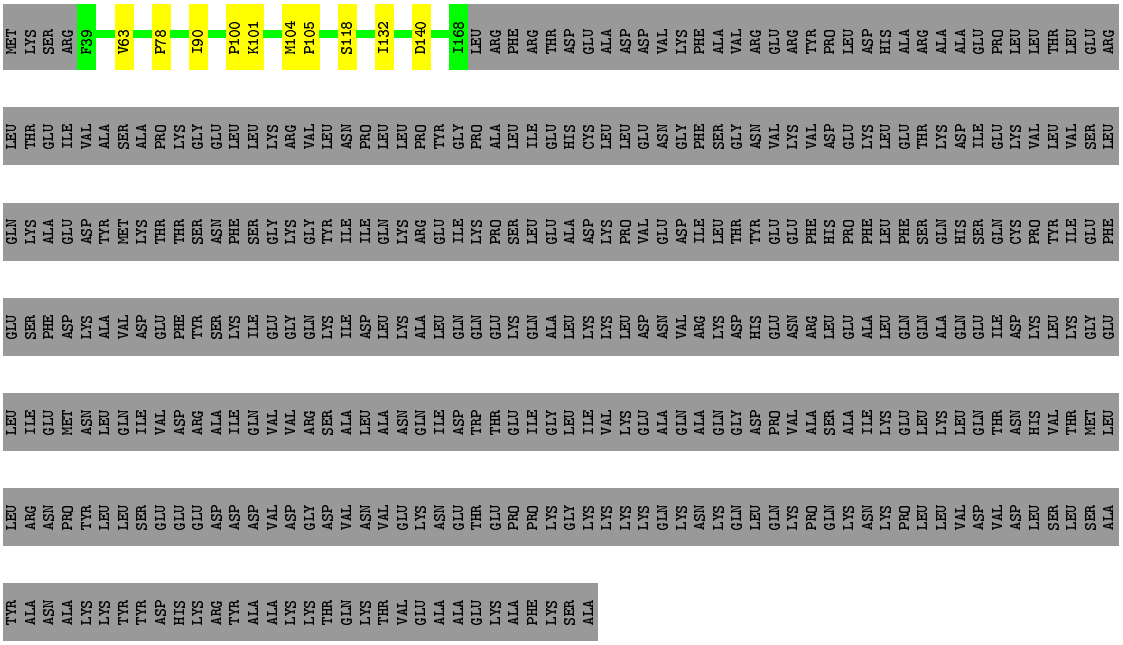
- Molecule 43: uL11

Chain t:



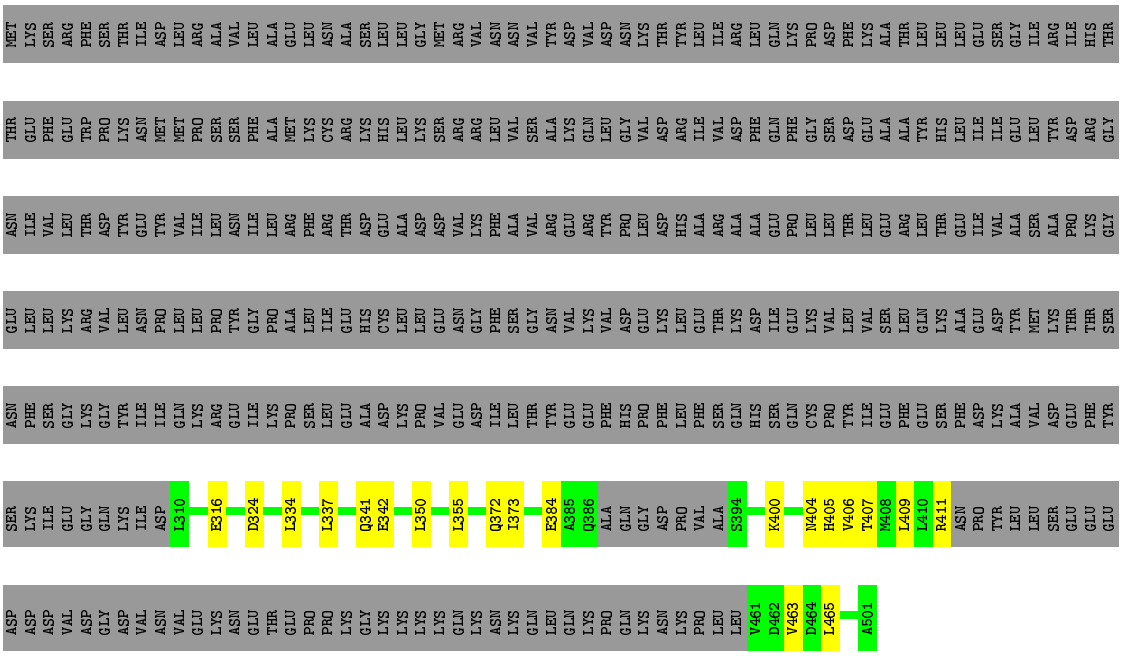
- Molecule 44: NEMF

Chain u:



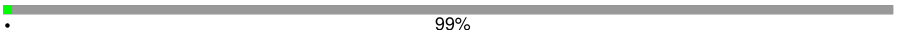
- Molecule 44: NEMF

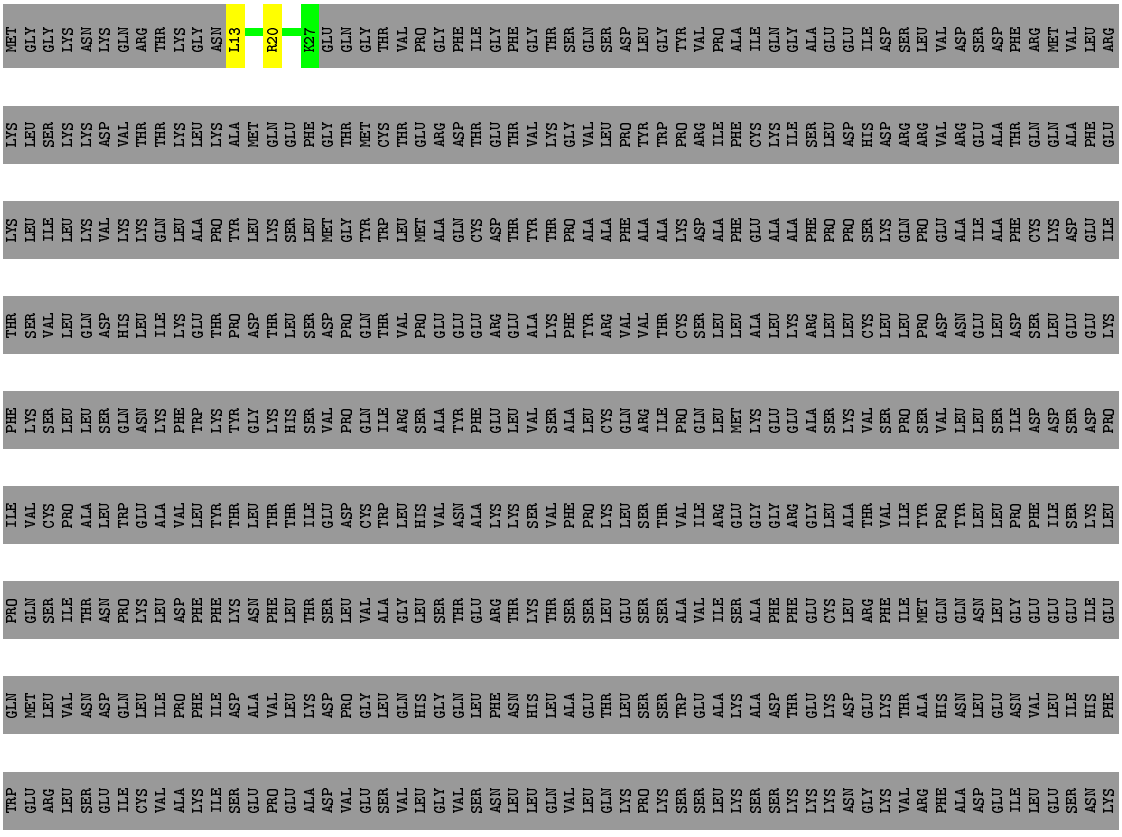
Chain v:

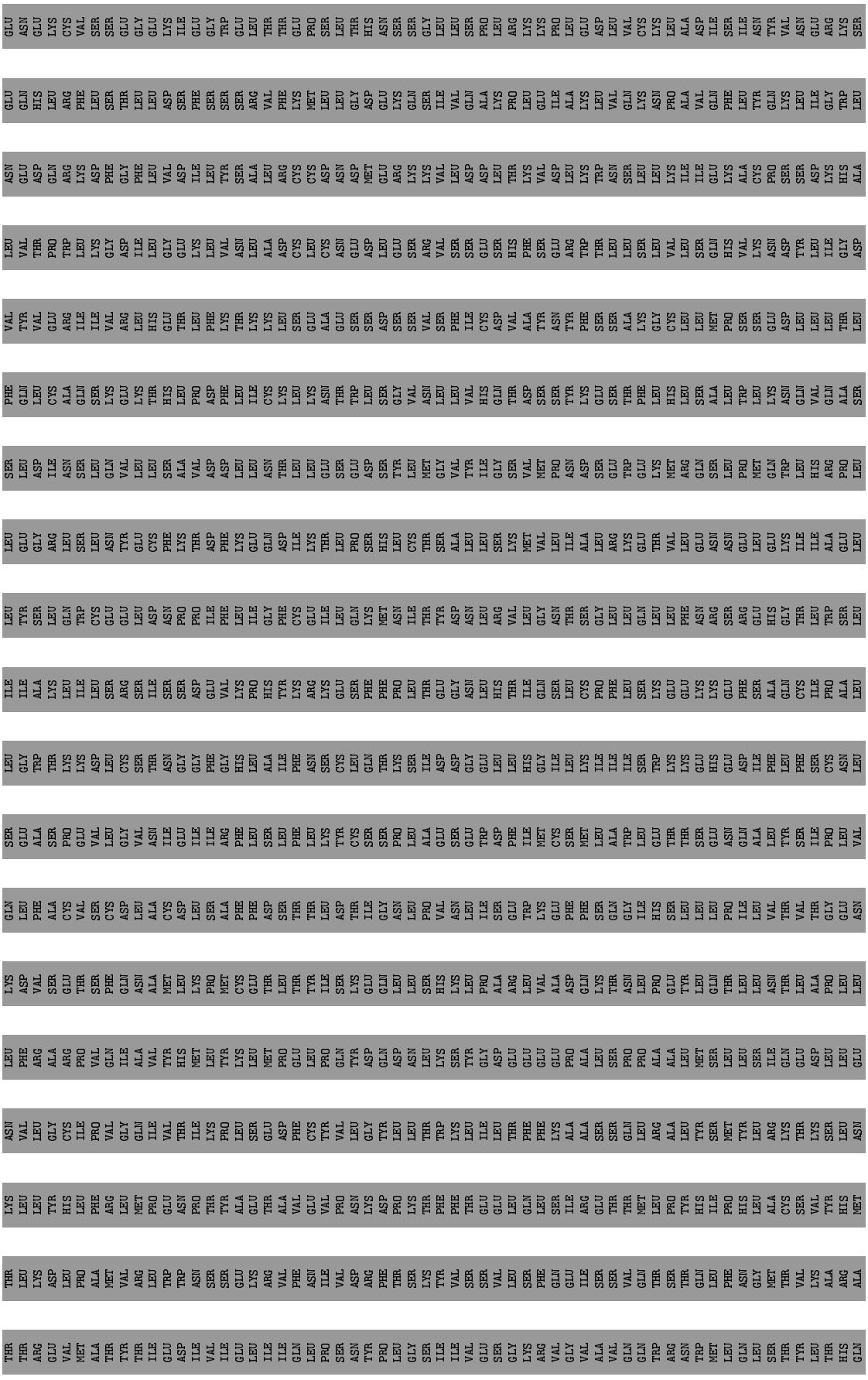


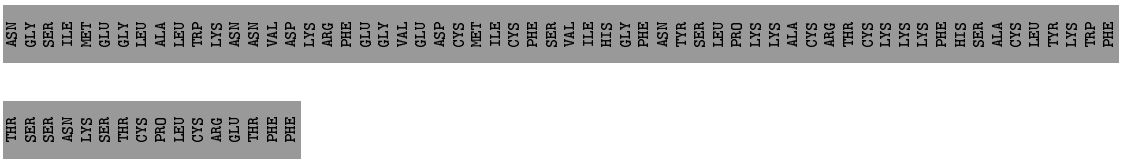
- Molecule 45: Listerin

Chain w:



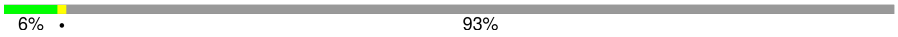


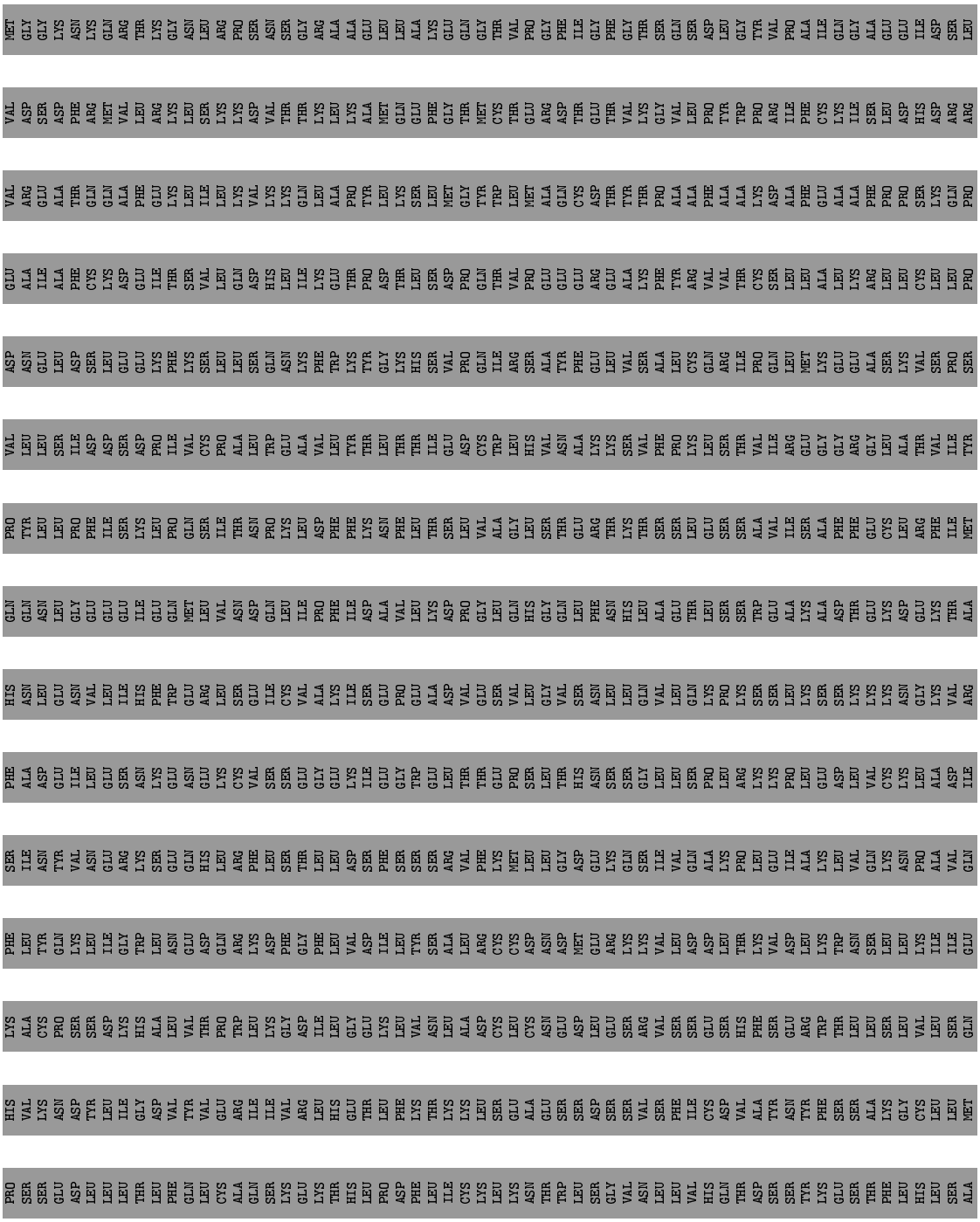


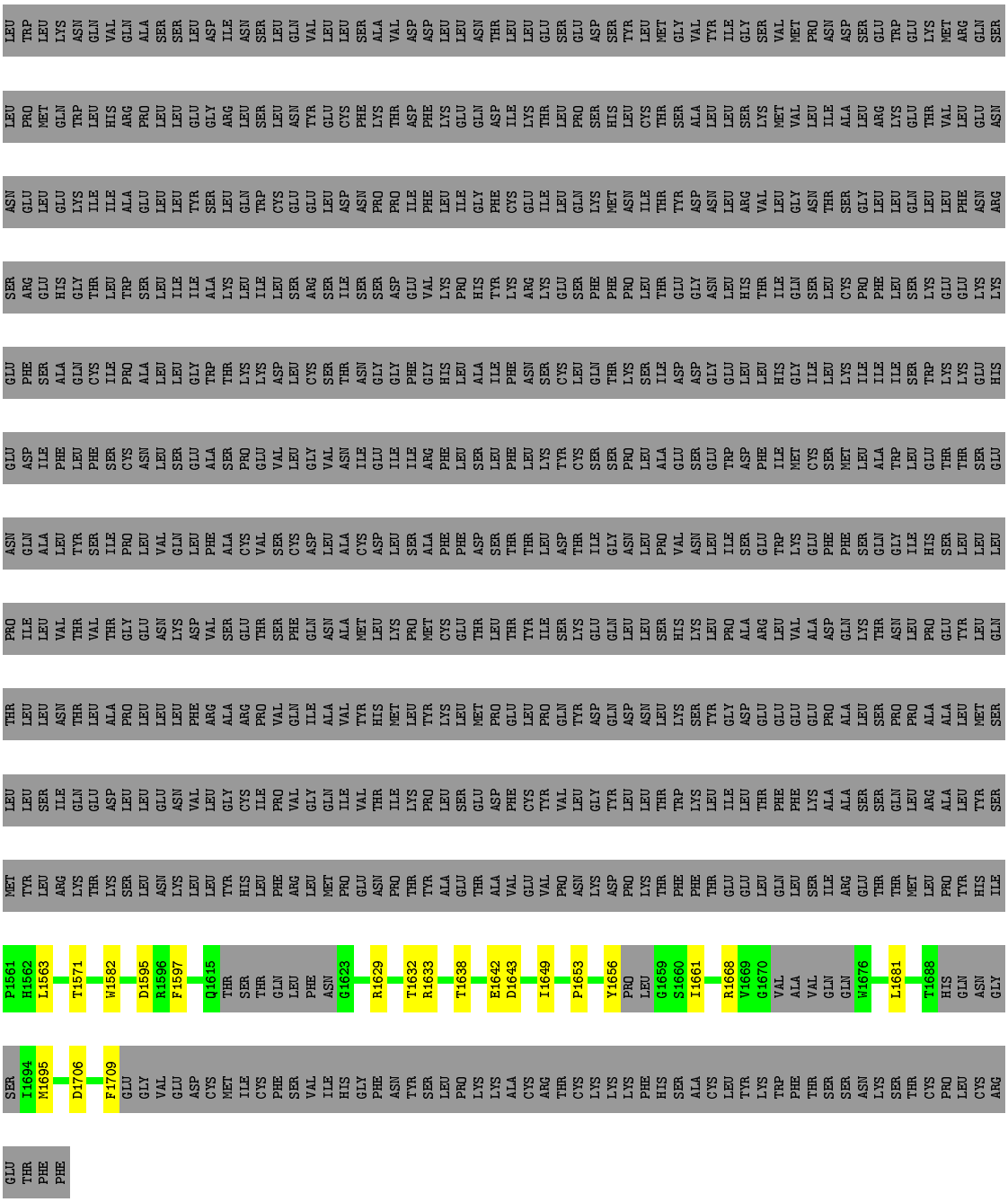


- Molecule 45: Listerin

Chain z:

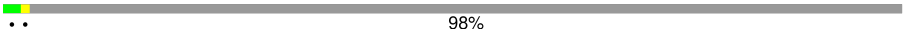


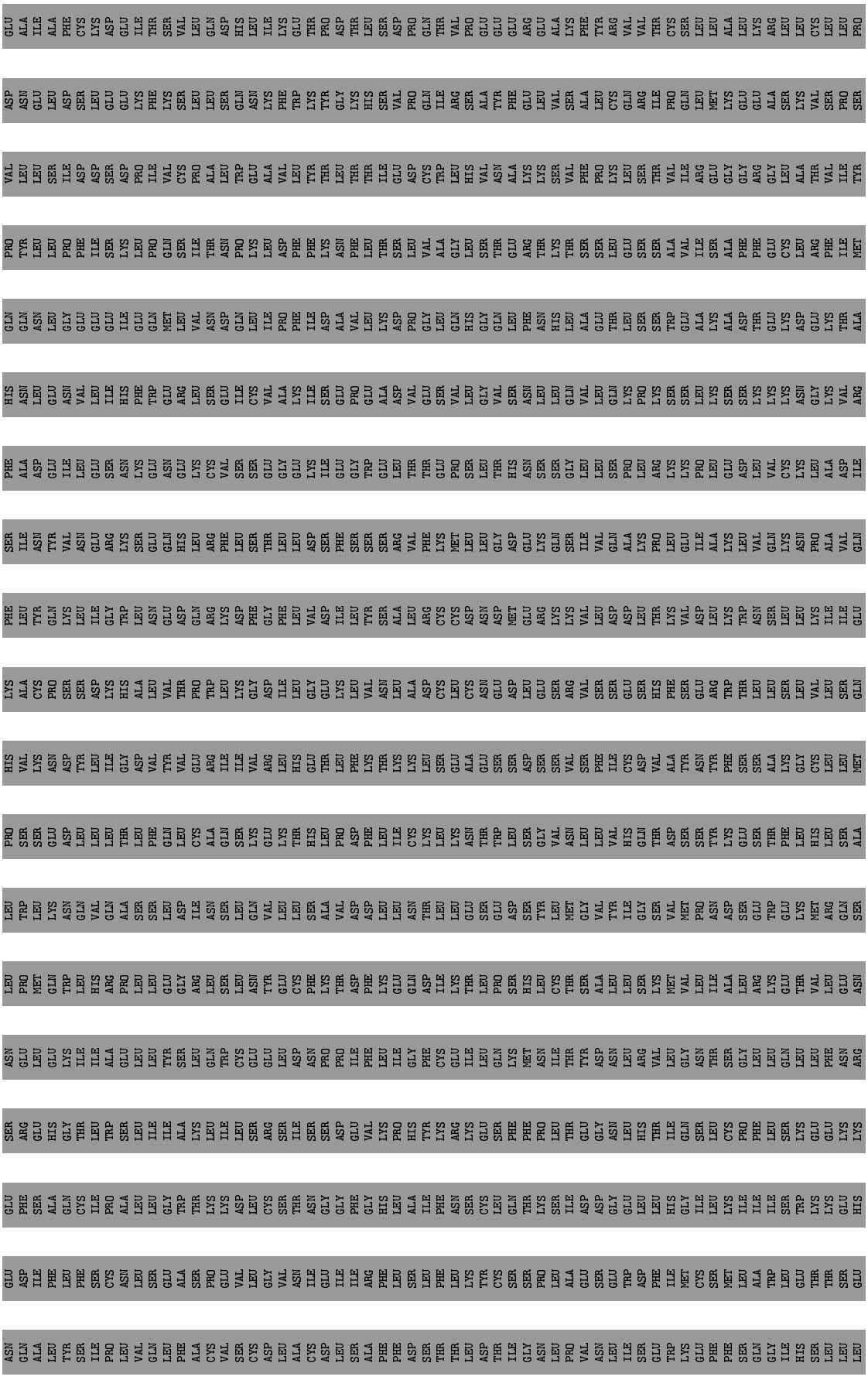


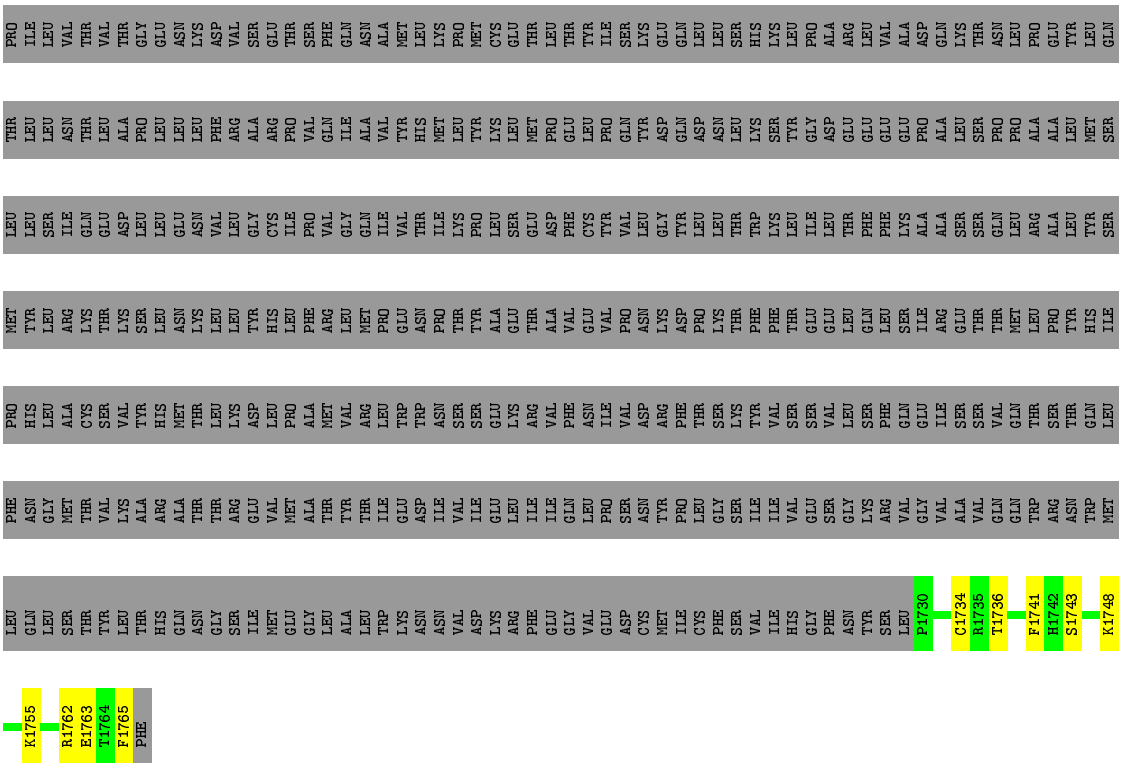


- Molecule 45: Listerin

Chain 0:

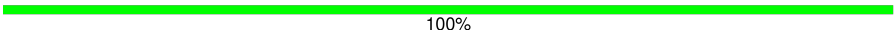



GLU ALA ILE ALA PHE CYS LYS ASP GLU ILE THR SER VAL LEU GLN ASP HIS LEU ILE LYS GLU THR PRO ASP THR LEU SER ASP PRO GLN THR VAL PRO GLU GLU GLU ARG GLU ALA LYS PHE TYR ARG VAL VAL THR CYS SER LEU LEU ALA LEU LYS ARG LEU LEU CYS LEU LEU PRO
ASP ASN GLU LEU ASP SER LEU GLU GLU LYS PHE LYS SER LEU LEU SER GLN ASN LYS PHE TRP LYS TYR THR LEU THR THR ILE GLU ASP CYS TRP LEU HIS VAL ASN ALA LYS LYS SER VAL PHE PRO LYS TYR GLY LYS HIS SER VAL PRO GLN ILE ARG SER ALA TYR PHE GLU LEU VAL SER ALA LEU CYS GLN ARG ILE PRO GLN LEU MET LYS GLU GLU ALA SER LYS VAL SER PRO SER
VAL LEU LEU SER ILE ASP ASP SER ASP PRO ILE VAL CYS PRO ALA LEU TRP GLU ALA VAL LEU TYR THR LEU THR THR ILE GLU ASP CYS TRP LEU HIS VAL ASN ALA LYS LYS SER VAL PHE PRO LYS LEU SER THR VAL ILE ARG GLU GLY GLY ARG GLY LEU ALA THR VAL ILE TYR
PRO TYR LEU LEU PRO PHE ILE SER LYS LEU PRO PRO GLN SER ILE THR ASN PRO LYS LEU ASP PHE PHE LYS ASN PHE LEU THR SER LEU LEU VAL ALA GLY LEU SER THR LYS THR SER SER LEU GLU SER SER SER ALA ALA VAL ILE SER ALA PHE PHE GLU CYS LEU ARG PHE ILE MET
GLN GLN ASN LEU GLY GLU GLU GLU ILE GLU GLN MET LEU VAL ASN ASP GLN LEU ILE PRO PHE ILE ASP ALA VAL LEU LYS ASP PRO GLY LEU GLN HIS GLY GLN LEU PHE ASN HIS LEU ALA GLU THR LEU SER SER TRP GLU ALA LYS ALA ASP THR GLU LYS ASP GLU LYS THR ALA
HIS ASN LEU GLU ASN VAL LEU ILE HIS PHE TRP GLU ARG LEU LEU SER GLU ILE CYS VAL ALA LYS ILE SER GLU PRO GLU ALA ASP VAL GLU SER VAL LEU GLY VAL SER ASN LEU LEU GLN VAL LEU GLN LYS PRO LYS SER SER LEU LYS SER SER LYS LYS LYS ASN GLY LYS VAL ARG
PHE ALA ASP GLU ILE LEU GLU SER ASN LYS SER GLU GLU ASN GLU LYS CYS VAL SER SER GLU GLU LYS ILE GLU GLY TRP GLU LEU THR THR THR GLU PRO SER LEU THR THR HIS ASN SER SER GLY LEU LEU SER PRO LEU ARG LYS LYS PRO LEU GLU ASP LEU VAL CYS LYS LEU ALA ASP ILE
SER ILE ASN TYR VAL ASN GLU ARG LYS SER GLU GLN HIS LEU ARG PHE LEU SER GLU ILE CYS VAL ALA LYS ILE SER GLU PRO GLU ALA ASP VAL VAL LEU GLN LEU GLN VAL LEU GLN LYS PRO LYS SER SER LEU LYS SER SER LYS LYS LYS ASN GLY LYS VAL ARG
PHE LEU TYR GLN LYS LEU ILE GLY TRP LEU ASN GLU ASP GLN ARG LYS ASP PHE GLY PHE LEU VAL ASP ILE LEU TYR SER ALA LEU LEU ARG CYS CYS ASP ASN ASP MET GLU ARG LYS LYS VAL LEU ASP ASP LEU THR LYS VAL LEU GLU ILE ALA LYS LEU VAL LEU TRP ASN SER LEU LEU LYS ILE ILE GLU
LYS ALA CYS PRO SER SER ASP LYS HIS ALA LEU VAL THR PRO TRP LEU LYS GLY ASP ILE LEU GLY GLU LYS LEU VAL ASN LEU ALA ASP CYS LEU CYS ASN GLU ASP SER ASP SER SER GLU SER HIS PHE SER GLU ARG TRP THR LEU GLU SER SER LEU VAL LEU LEU SER LEU VAL LEU SER
HIS VAL LYS ASN ASP TYR LEU ILE GLY ASP VAL TYR VAL GLU ARG ILE ILE VAL ARG LEU HIS GLU THR LEU PHE LYS THR LYS LEU SER GLU GLU ALA GLU SER SER ASP SER SER VAL SER PHE ILE CYS ASP VAL ALA TYR ASN TYR PHE SER SER GLU LEU LEU SER GLU VAL LEU CYS
PRO SER SER GLU ASP LEU LEU LEU THR LEU PHE GLN LEU CYS ALA GLN SER LYS GLU LYS THR HIS LEU LEU PRO ASP PHE LEU ILE CYS LYS LEU LYS ASN THR TRP LEU SER GLY VAL ASN LEU LEU VAL HIS GLN THR ASP SER SER TYR LYS GLU SER THR PHE LEU HIS LEU SER ALA
LEU TRP LEU LYS ASN GLN VAL GLN ALA SER SER LEU GLN VAL LEU LEU ASP ILE ASN SER LEU GLN VAL LEU ASP ASP LEU ASN THR LEU LEU GLU GLU SER GLU GLU ASP SER TYR LEU MET GLY VAL TYR ILE GLY SER VAL MET PRO ASN ASP SER GLU TRP GLU LYS MET ARG GLN SER
LEU PRO MET GLN TRP LEU HIS ARG PRO LEU LEU LEU GLU GLY ARG LEU SER LEU ASN TYR GLU CYS PHE LYS THR ASP PHE LYS GLU GLN ASP ILE LYS THR LEU PRO SER HIS LEU CYS THR SER ALA LEU LEU LEU SER LYS MET VAL ALA LEU ARG GLU GLU ASN
ASN GLU LEU GLU LYS ILE ILE ALA GLU LEU LEU TYR SER LEU GLN TRP CYS GLU GLU LEU ASP ASN PRO PRO ILE PHE LEU ILE GLY PHE CYS GLU GLU ILE LEU GLN LYS MET ASN ILE THR TYR ASP ASN LEU LEU ARG VAL LEU GLY ASN THR SER GLY LEU LEU GLN LEU LEU LEU PHE ASN ARG
SER ARG GLU HIS GLY THR LEU TRP SER LEU ILE ILE ILE ALA LYS LEU ILE LEU SER ARG SER ILE SER SER ASP GLU VAL LYS PRO HIS TYR LYS ARG LYS GLU SER PHE PHE PRO LEU THR GLU GLY ASN LEU HIS THR ILE GLN SER LEU CYS PRO PHE LEU SER LYS GLU GLU LYS LYS
GLU PHE SER ALA GLN CYS ILE PRO ALA LEU LEU GLY TRP THR LYS LYS ASP LEU CYS SER THR ASN GLY GLY PHE GLY HIS LEU ALA ILE PHE ASN SER CYS SER GLN THR LYS SER ILE ASP ASP GLY GLU LEU HIS THR LEU HIS GLY ILE LEU LYS ILE ILE ILE SER TRP LYS LYS GLU HIS
GLU ASP ILE PHE LEU PHE SER CYS ASN LEU ALA GLU SER ILE ILE ARG PHE LEU LYS TYR CYS SER SER PRO LEU ALA GLU SER GLU TRP ASP PHE ILE MET CYS SER MET LEU ALA TRP LEU GLU THR THR SER GLU
ASN GLN ALA LEU TYR SER ILE CYS VAL SER CYS ASP LEU ALA CYS ASP LEU SER ALA PHE PHE ASP SER THR THR LEU ASP THR ILE GLY ASN LEU PRO VAL ASN LEU ILE SER GLU TRP LYS GLU PHE PHE SER GLN LEU LEU ILE HIS SER LEU LEU LEU



- Molecule 46: Listerin

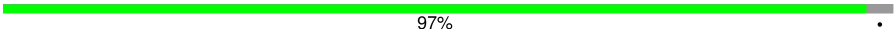
Chain x:



There are no outlier residues recorded for this chain.

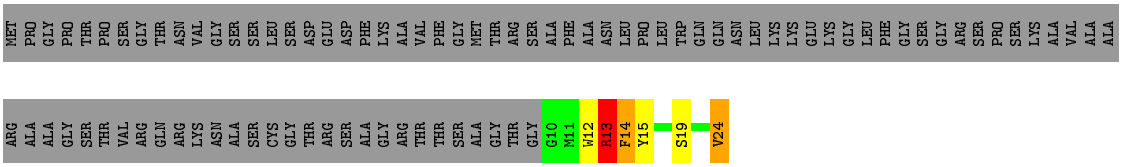
- Molecule 46: Listerin

Chain y:



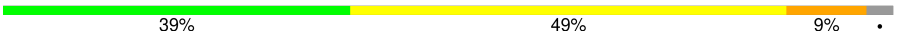
- Molecule 47: nascent chain

Chain 1:



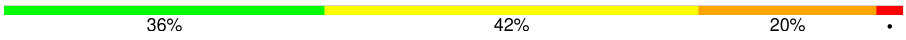
- Molecule 48: tRNA

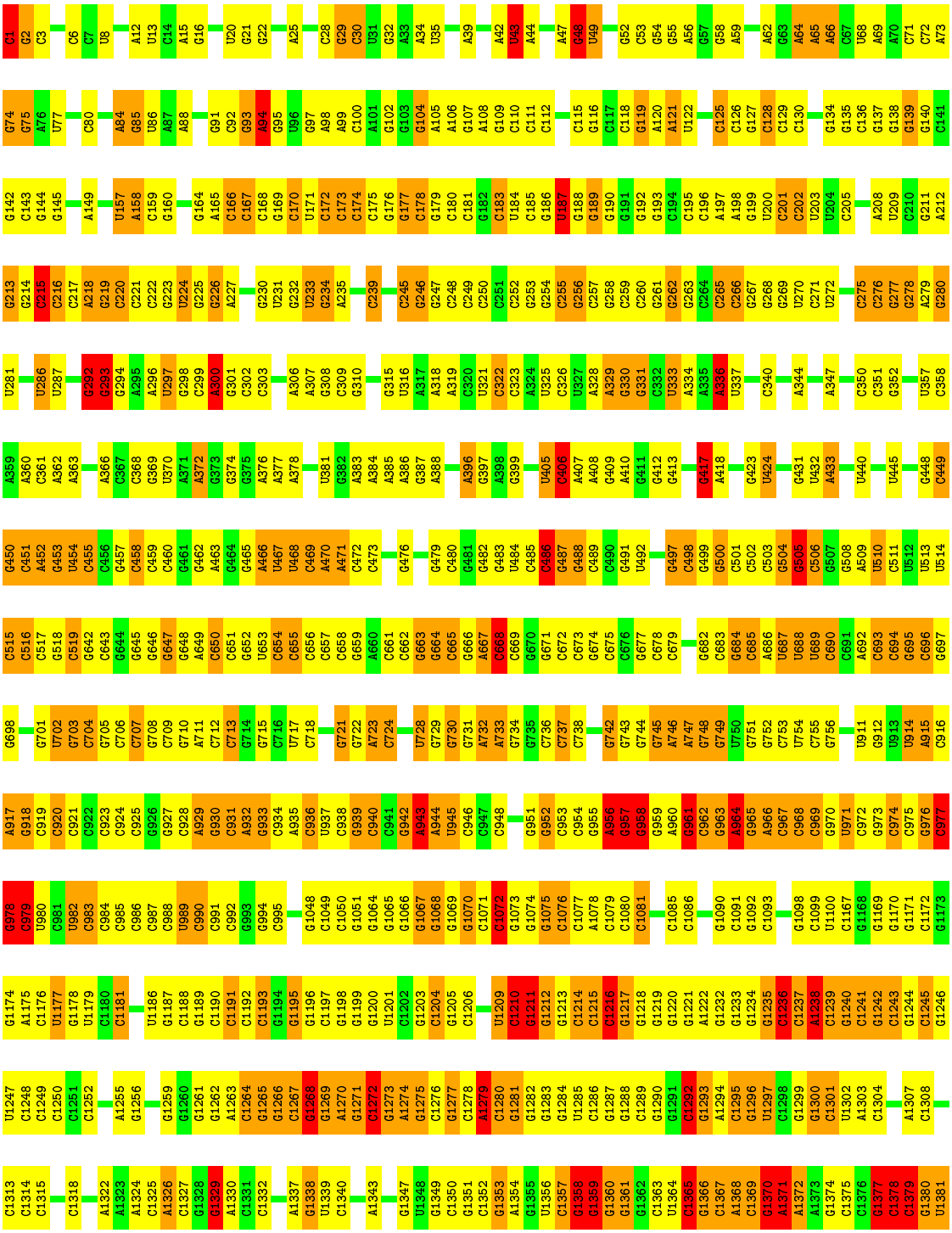
Chain 2:

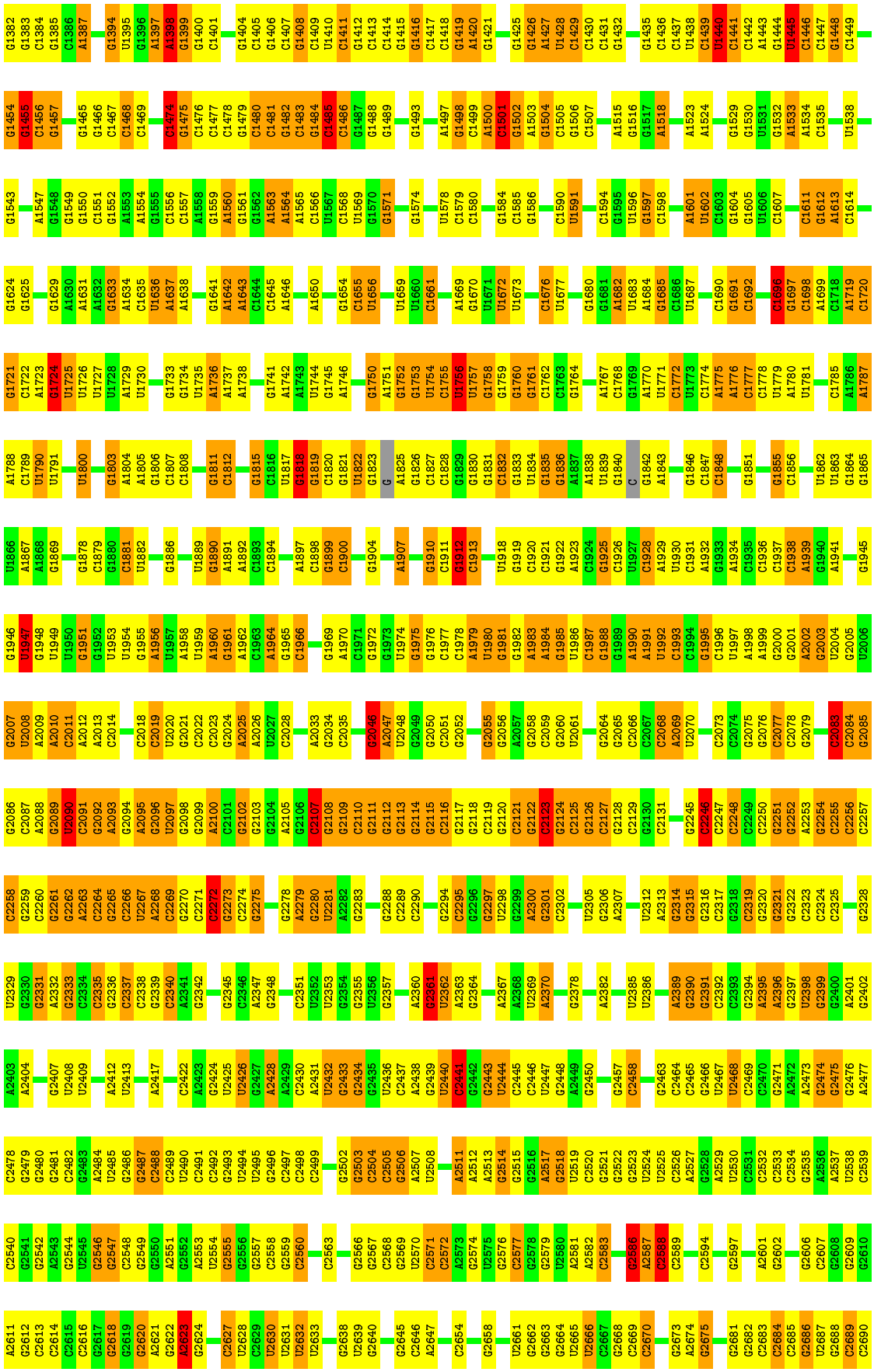


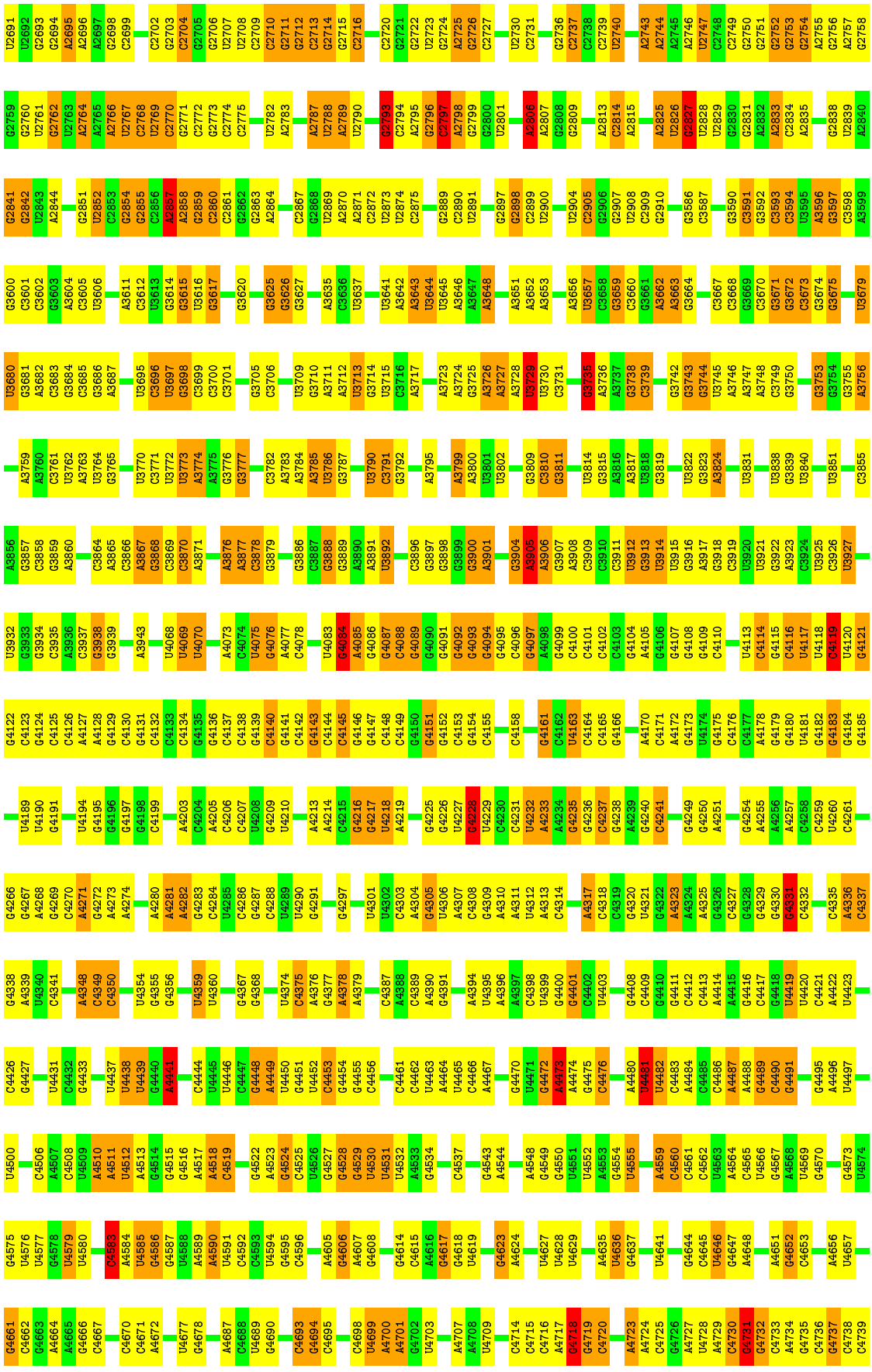
- Molecule 49: 28S rRNA

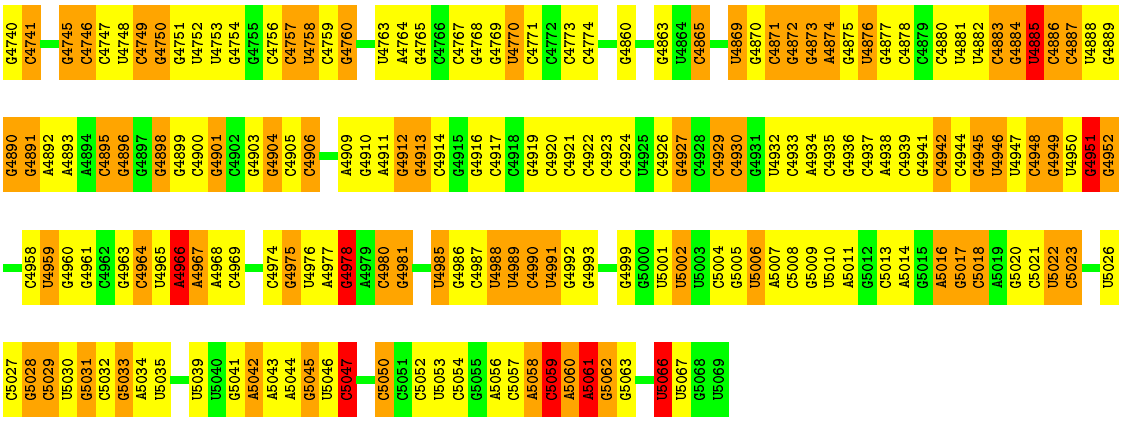
Chain 5:





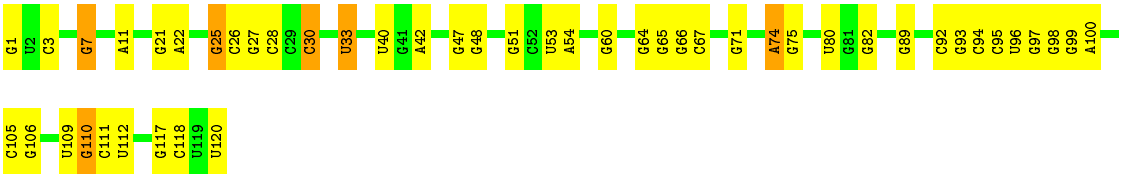






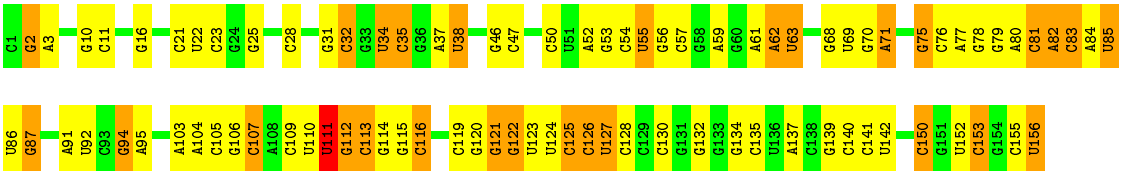
- Molecule 50: 5S rRNA

Chain 7:



- Molecule 51: 5.8S rRNA

Chain 8:



4 Experimental information (i)

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	Depositor
Number of images	63826	Depositor
Resolution determination method	FSC 0.143	Depositor
CTF correction method	Not provided	Depositor
Microscope	FEI TITAN KRIOS, FEI TITAN KRIOS	Depositor
Voltage (kV)	300, 300	Depositor
Electron dose ($e^-/Å^2$)	30, 30	Depositor
Minimum defocus (nm)	2000, 2000	Depositor
Maximum defocus (nm)	3500, 3500	Depositor
Magnification	59000, 59000	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5MU, ZN, MG

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	#$\|Z\|>2$	RMSZ	#$\|Z\|>2$
1	A	0.59	0/1906	0.90	2/2556 (0.1%)
10	J	0.47	0/1382	0.83	1/1849 (0.1%)
11	L	0.59	0/1734	0.98	2/2318 (0.1%)
12	M	0.59	0/1152	0.89	0/1539
13	N	0.62	0/1746	0.97	0/2338
14	O	0.68	0/1671	1.01	1/2234 (0.0%)
15	P	0.62	0/1268	0.89	0/1701
16	Q	0.59	0/1530	0.99	1/2041 (0.0%)
17	R	0.51	0/1524	1.02	3/2013 (0.1%)
18	S	0.62	0/1493	0.97	3/2002 (0.1%)
19	T	0.60	0/1326	0.88	1/1770 (0.1%)
2	B	0.57	0/3214	0.88	1/4308 (0.0%)
20	U	0.46	0/822	0.83	0/1103
21	V	0.59	0/993	0.86	0/1332
22	W	0.53	0/541	0.90	1/720 (0.1%)
23	X	0.50	0/993	0.85	0/1334
24	Y	0.53	0/1132	0.98	4/1504 (0.3%)
25	Z	0.51	0/1130	0.82	0/1507
26	a	0.68	0/1192	0.95	3/1591 (0.2%)
27	b	0.57	0/620	0.97	1/819 (0.1%)
28	c	0.51	0/742	0.78	0/996
29	d	0.58	0/903	1.03	3/1216 (0.2%)
3	C	0.61	0/2973	0.95	5/3990 (0.1%)
30	e	0.62	0/1071	0.97	4/1429 (0.3%)
31	f	0.68	0/895	1.00	1/1198 (0.1%)
32	g	0.51	0/916	0.96	3/1220 (0.2%)
33	h	0.51	0/1023	0.96	3/1350 (0.2%)
34	i	0.50	0/843	1.05	4/1115 (0.4%)
35	j	0.69	0/721	1.00	1/953 (0.1%)
36	k	0.41	0/575	0.83	0/761
37	l	0.57	0/454	0.98	1/599 (0.2%)
38	m	0.56	0/435	0.96	1/575 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >2	RMSZ	#|Z| >2
39	o	0.53	0/864	0.90	1/1140 (0.1%)
4	D	0.51	0/2430	0.85	3/3256 (0.1%)
40	p	0.54	0/718	0.89	1/953 (0.1%)
41	r	0.60	0/1017	0.96	0/1365
42	s	0.50	0/1546	0.77	2/2087 (0.1%)
43	t	0.52	0/1257	0.87	1/1697 (0.1%)
44	u	0.46	0/644	0.61	0/897
44	v	0.44	0/1099	0.82	1/1470 (0.1%)
45	0	0.53	0/301	0.69	0/400
45	w	0.47	0/110	0.78	0/146
45	z	0.45	0/1076	0.80	0/1451
47	1	0.59	0/129	0.83	0/173
48	2	0.26	0/1765	0.73	0/2749
49	5	0.49	11/87791 (0.0%)	0.88	177/136941 (0.1%)
5	E	0.52	0/1941	0.95	3/2601 (0.1%)
50	7	0.42	0/2858	0.72	1/4455 (0.0%)
51	8	0.45	1/3701 (0.0%)	0.77	1/5766 (0.0%)
6	F	0.66	0/1905	1.00	4/2539 (0.2%)
7	G	0.51	0/1971	0.90	2/2652 (0.1%)
8	H	0.52	0/1537	0.91	1/2066 (0.0%)
9	I	0.56	0/1690	0.89	2/2257 (0.1%)
All	All	0.52	12/155270 (0.0%)	0.88	250/229042 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
11	L	0	2
13	N	0	1
14	O	0	1
17	R	0	2
18	S	0	3
19	T	0	3
2	B	0	4
21	V	0	1
24	Y	0	1
25	Z	0	1
26	a	0	2
27	b	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
3	C	0	2
31	f	0	2
33	h	0	1
34	i	0	1
36	k	0	1
4	D	0	1
42	s	0	2
43	t	0	4
47	1	0	1
49	5	0	3
5	E	0	4
6	F	0	1
7	G	0	2
8	H	0	1
9	I	0	3
All	All	0	52

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
49	5	957	G	O3'-P	8.72	1.71	1.61
49	5	1358	G	O3'-P	7.41	1.70	1.61
49	5	956	A	O3'-P	7.15	1.69	1.61
49	5	1370	G	O3'-P	6.23	1.68	1.61
49	5	4375	C	O3'-P	-5.70	1.54	1.61
49	5	293	G	O3'-P	-5.40	1.54	1.61
49	5	2394	G	O3'-P	-5.39	1.54	1.61
49	5	2086	G	O3'-P	-5.20	1.54	1.61
49	5	4087	G	O3'-P	-5.14	1.54	1.61
51	8	150	C	O3'-P	-5.14	1.54	1.61
49	5	372	A	O3'-P	-5.12	1.55	1.61
49	5	1659	U	O3'-P	-5.10	1.55	1.61

All (250) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	5	1358	G	C4'-C3'-O3'	11.60	136.20	113.00
24	Y	87	ARG	NE-CZ-NH2	10.23	125.41	120.30
34	i	25	ARG	NE-CZ-NH1	10.20	125.40	120.30
18	S	83	ARG	NE-CZ-NH2	9.56	125.08	120.30
49	5	336	A	O4'-C1'-N9	9.31	115.65	108.20
49	5	958	G	C2'-C3'-O3'	9.21	129.76	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
22	W	44	ARG	NE-CZ-NH1	9.14	124.87	120.30
49	5	336	A	C8-N9-C1'	-8.84	111.79	127.70
49	5	1455	G	C2'-C3'-O3'	8.83	128.93	109.50
49	5	336	A	C4-N9-C1'	8.81	142.16	126.30
49	5	977	C	C2'-C3'-O3'	8.80	128.86	109.50
49	5	215	C	C2'-C3'-O3'	8.69	128.62	109.50
49	5	336	A	C1'-O4'-C4'	-8.45	103.14	109.90
49	5	125	C	C2'-C3'-O3'	8.40	127.98	109.50
49	5	2389	A	C2'-C3'-O3'	8.39	127.95	109.50
49	5	4528	G	C2'-C3'-O3'	8.35	127.87	109.50
49	5	4948	C	C2'-C3'-O3'	8.35	127.87	109.50
49	5	1474	C	C2'-C3'-O3'	8.28	127.72	109.50
49	5	1356	U	C2'-C3'-O3'	8.22	127.60	109.50
49	5	2695	A	C2'-C3'-O3'	8.15	127.43	109.50
49	5	1501	C	N1-C1'-C2'	8.13	124.57	114.00
49	5	1211	G	C2'-C3'-O3'	8.10	127.33	109.50
49	5	293	G	C2'-C3'-O3'	8.09	127.30	109.50
6	F	238	ARG	N-CA-C	-8.05	89.25	111.00
49	5	1279	A	C2'-C3'-O3'	7.91	126.89	109.50
49	5	4887	C	C2'-C3'-O3'	7.89	126.87	109.50
3	C	342	ARG	NE-CZ-NH1	7.78	124.19	120.30
29	d	38	PHE	CB-CG-CD1	7.78	126.24	120.80
32	g	66	ARG	NE-CZ-NH1	7.75	124.18	120.30
49	5	406	C	C2'-C3'-O3'	7.75	126.55	109.50
26	a	61	TYR	N-CA-C	7.74	131.89	111.00
49	5	978	G	C2'-C3'-O3'	7.73	126.51	109.50
49	5	979	C	C2'-C3'-O3'	7.67	126.37	109.50
49	5	1292	C	C2'-C3'-O3'	7.66	126.35	109.50
49	5	4885	U	C2'-C3'-O3'	7.64	126.30	109.50
6	F	91	LEU	CA-CB-CG	7.63	132.84	115.30
49	5	2272	C	C2'-C3'-O3'	7.61	126.25	109.50
49	5	1696	C	C2'-C3'-O3'	7.57	126.16	109.50
49	5	2797	C	N1-C1'-C2'	-7.57	103.67	112.00
29	d	38	PHE	CB-CG-CD2	-7.57	115.50	120.80
49	5	1329	G	C2'-C3'-O3'	7.56	126.13	109.50
49	5	1379	C	N1-C1'-C2'	7.56	123.82	114.00
33	h	89	ARG	NE-CZ-NH1	7.50	124.05	120.30
49	5	48	G	C2'-C3'-O3'	7.46	125.91	109.50
30	e	46	ARG	NE-CZ-NH1	7.45	124.03	120.30
34	i	85	ARG	NE-CZ-NH1	7.42	124.01	120.30
8	H	125	ARG	NE-CZ-NH1	7.39	124.00	120.30
49	5	728	U	C2'-C3'-O3'	7.39	125.75	109.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	5	3625	G	C2'-C3'-O3'	7.37	125.70	109.50
49	5	1359	G	C2'-C3'-O3'	7.26	125.46	109.50
49	5	2246	C	C2'-C3'-O3'	7.25	125.44	109.50
49	5	668	C	C2'-C3'-O3'	7.20	125.34	109.50
49	5	4228	G	C2'-C3'-O3'	7.18	125.29	109.50
49	5	2632	U	N1-C1'-C2'	7.16	123.31	114.00
49	5	2083	C	C4'-C3'-O3'	7.13	127.27	113.00
49	5	4951	G	C2'-C3'-O3'	7.12	125.16	109.50
39	o	78	ARG	NE-CZ-NH2	7.08	123.84	120.30
7	G	163	PRO	N-CA-C	-7.06	93.75	112.10
49	5	5061	A	C2'-C3'-O3'	7.05	125.00	109.50
29	d	78	ARG	NE-CZ-NH1	7.04	123.82	120.30
49	5	3888	G	C2'-C3'-O3'	7.00	124.89	113.70
49	5	1370	G	N9-C1'-C2'	6.99	123.09	114.00
49	5	4163	U	C4'-C3'-O3'	6.96	126.92	113.00
50	7	1	G	C5'-C4'-O4'	6.94	117.42	109.10
40	p	85	ARG	NE-CZ-NH1	6.92	123.76	120.30
49	5	293	G	C4'-C3'-O3'	-6.91	94.89	109.40
49	5	1379	C	O4'-C1'-N1	6.91	113.73	108.20
49	5	276	C	C2'-C3'-O3'	6.88	124.70	113.70
49	5	958	G	O5'-P-OP2	-6.81	99.57	105.70
2	B	261	ARG	N-CA-C	-6.77	92.73	111.00
49	5	2046	G	C2'-C3'-O3'	6.74	124.49	113.70
49	5	226	G	C2'-C3'-O3'	6.74	124.48	113.70
5	E	101	ARG	NE-CZ-NH2	6.73	123.66	120.30
49	5	505	G	C2'-C3'-O3'	6.69	124.40	113.70
26	a	113	GLY	N-CA-C	6.66	129.74	113.10
49	5	5059	C	C2'-C3'-O3'	6.64	124.33	113.70
49	5	1676	C	O5'-P-OP2	-6.63	99.73	105.70
49	5	300	A	N9-C1'-C2'	6.62	122.60	114.00
49	5	3697	U	C2'-C3'-O3'	6.60	124.26	113.70
49	5	1379	C	C1'-O4'-C4'	-6.59	104.63	109.90
49	5	2827	G	C2'-C3'-O3'	-6.58	95.03	109.50
49	5	1947	U	C4'-C3'-O3'	6.57	126.14	113.00
49	5	4473	A	N9-C1'-C2'	6.55	122.52	114.00
49	5	2857	A	N9-C1'-C2'	-6.51	104.84	112.00
49	5	1	C	C5'-C4'-O4'	6.51	116.91	109.10
49	5	4331	G	C2'-C3'-O3'	6.49	124.09	113.70
49	5	275	C	C2'-C3'-O3'	6.49	124.08	113.70
49	5	1398	A	C2'-C3'-O3'	6.47	124.06	113.70
49	5	94	A	N9-C1'-C2'	6.44	122.37	114.00
49	5	2588	C	C4'-C3'-O3'	6.39	125.79	113.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	5	43	U	O4'-C4'-C3'	-6.35	97.65	104.00
49	5	4481	U	C5'-C4'-O4'	6.33	116.69	109.10
49	5	1365	C	C4'-C3'-O3'	6.30	125.60	113.00
49	5	1371	A	O4'-C1'-C2'	-6.29	99.52	105.80
49	5	286	U	N1-C1'-C2'	6.28	122.17	114.00
49	5	3773	U	C2'-C3'-O3'	6.20	123.61	113.70
49	5	4723	A	C4-N9-C1'	6.14	137.35	126.30
49	5	4723	A	C8-N9-C1'	-6.14	116.65	127.70
18	S	87	ARG	NE-CZ-NH1	6.13	123.36	120.30
49	5	4731	G	N9-C1'-C2'	6.13	121.97	114.00
51	8	111	U	C2'-C3'-O3'	6.12	123.50	113.70
49	5	1485	C	C2'-C3'-O3'	6.10	123.46	113.70
30	e	46	ARG	NE-CZ-NH2	-6.06	117.27	120.30
49	5	1501	C	O4'-C1'-N1	6.06	113.05	108.20
49	5	4978	G	C5'-C4'-O4'	6.05	116.36	109.10
49	5	5066	U	N1-C1'-C2'	6.04	121.84	114.00
24	Y	126	ARG	NE-CZ-NH1	6.03	123.32	120.30
31	f	36	ARG	NE-CZ-NH1	6.01	123.31	120.30
49	5	1682	A	C8-N9-C1'	-6.01	116.88	127.70
49	5	1682	A	C4-N9-C1'	6.00	137.11	126.30
49	5	961	G	C2'-C3'-O3'	-5.99	96.32	109.50
34	i	25	ARG	NE-CZ-NH2	-5.99	117.31	120.30
49	5	333	U	C4'-C3'-O3'	5.94	124.88	113.00
24	Y	8	THR	N-CA-C	5.94	127.03	111.00
33	h	89	ARG	CG-CD-NE	5.92	124.23	111.80
49	5	1642	A	C2'-C3'-O3'	5.91	123.16	113.70
1	A	196	TRP	C-N-CD	5.90	140.79	128.40
49	5	1818	G	C2'-C3'-O3'	5.90	123.14	113.70
49	5	1072	C	N1-C1'-C2'	5.87	121.64	114.00
49	5	300	A	C8-N9-C1'	-5.86	117.15	127.70
49	5	30	C	O5'-P-OP2	-5.81	100.47	105.70
49	5	1440	U	C2'-C3'-O3'	5.78	122.95	113.70
49	5	1210	C	N1-C1'-C2'	5.75	121.47	114.00
18	S	95	ARG	NE-CZ-NH1	5.74	123.17	120.30
49	5	292	G	C4'-C3'-O3'	5.73	124.46	113.00
9	I	92	HIS	N-CA-C	-5.71	95.57	111.00
49	5	957	G	P-O3'-C3'	5.70	126.54	119.70
17	R	103	ARG	NE-CZ-NH1	5.68	123.14	120.30
49	5	3773	U	C4'-C3'-O3'	5.67	124.35	113.00
49	5	943	A	N9-C1'-C2'	-5.67	105.77	112.00
49	5	1724	G	N9-C1'-C2'	5.67	121.37	114.00
49	5	300	A	C4-N9-C1'	5.67	136.50	126.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
44	v	406	VAL	N-CA-C	-5.65	95.74	111.00
49	5	1236	C	C2'-C3'-O3'	5.64	122.72	113.70
49	5	1377	G	C2'-C3'-O3'	5.64	122.72	113.70
6	F	43	MET	CB-CG-SD	5.62	129.26	112.40
1	A	9	ARG	NE-CZ-NH1	5.61	123.10	120.30
49	5	2586	G	N9-C1'-C2'	5.60	121.28	114.00
49	5	486	C	C2'-C3'-O3'	5.59	122.65	113.70
49	5	1268	G	N9-C1'-C2'	5.59	121.27	114.00
49	5	1238	A	C2'-C3'-O3'	5.59	122.64	113.70
49	5	956	A	C2'-C3'-O3'	5.57	122.62	113.70
49	5	3673	C	C2'-C3'-O3'	5.57	122.62	113.70
43	t	88	PRO	C-N-CD	-5.56	108.37	120.60
49	5	4228	G	C4'-C3'-O3'	-5.55	97.75	109.40
49	5	4084	G	C2'-C3'-O3'	5.54	122.56	113.70
49	5	2623	A	C8-N9-C1'	-5.53	117.75	127.70
49	5	1359	G	N9-C1'-C2'	5.52	121.18	114.00
42	s	174	LEU	CA-CB-CG	5.52	127.99	115.30
49	5	2623	A	C4-N9-C1'	5.52	136.24	126.30
49	5	4975	G	C1'-O4'-C4'	-5.51	105.49	109.90
49	5	1533	A	C2'-C3'-O3'	5.50	122.50	113.70
17	R	107	ARG	NE-CZ-NH1	5.50	123.05	120.30
26	a	64	LYS	N-CA-C	-5.49	96.17	111.00
49	5	3735	G	C2'-C3'-O3'	5.49	122.48	113.70
49	5	3729	U	N1-C1'-C2'	5.48	121.13	114.00
49	5	964	A	C4'-C3'-O3'	5.47	123.94	113.00
27	b	14	ARG	NE-CZ-NH2	5.47	123.03	120.30
49	5	1672	U	C2-N1-C1'	5.43	124.22	117.70
49	5	2586	G	O4'-C1'-N9	5.43	112.54	108.20
49	5	5022	U	C2'-C3'-O3'	5.43	122.39	113.70
49	5	1815	G	N9-C1'-C2'	5.42	121.05	114.00
49	5	2806	A	O4'-C1'-N9	5.41	112.53	108.20
49	5	4590	A	O5'-P-OP1	-5.40	100.84	105.70
49	5	964	A	O4'-C1'-C2'	-5.39	100.41	105.80
49	5	2398	U	C2'-C3'-O3'	5.39	122.33	113.70
17	R	103	ARG	NE-CZ-NH2	-5.39	117.61	120.30
49	5	4181	U	C2'-C3'-O3'	5.37	122.29	113.70
49	5	956	A	P-O3'-C3'	5.37	126.14	119.70
49	5	187	U	C2'-C3'-O3'	5.36	122.27	113.70
49	5	1501	C	C1'-O4'-C4'	-5.36	105.61	109.90
49	5	3773	U	N1-C1'-C2'	-5.36	106.11	112.00
6	F	72	ARG	NE-CZ-NH1	5.36	122.98	120.30
37	l	8	ARG	NE-CZ-NH1	5.35	122.97	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	5	693	C	C2'-C3'-O3'	5.34	122.25	113.70
49	5	5047	C	C2'-C3'-O3'	5.34	122.24	113.70
49	5	2060	G	C2'-C3'-O3'	5.32	122.22	113.70
9	I	139	ARG	NE-CZ-NH1	5.32	122.96	120.30
5	E	212	TYR	CA-CB-CG	5.31	123.49	113.40
49	5	1427	A	C2'-C3'-O3'	5.30	122.18	113.70
49	5	1730	U	C2'-C3'-O3'	5.30	122.18	113.70
3	C	98	GLY	N-CA-C	-5.30	99.86	113.10
49	5	4281	A	C1'-O4'-C4'	-5.30	105.66	109.90
49	5	47	A	C2'-C3'-O3'	-5.29	97.87	109.50
49	5	977	C	O4'-C4'-C3'	-5.28	98.72	104.00
49	5	1272	C	O4'-C1'-N1	5.28	112.42	108.20
49	5	4623	G	O5'-P-OP2	-5.28	100.95	105.70
49	5	4623	G	O5'-P-OP1	5.27	117.02	110.70
49	5	1361	G	C2'-C3'-O3'	5.26	122.12	113.70
49	5	2441	C	O5'-P-OP1	-5.26	100.96	105.70
10	J	145	LYS	N-CA-C	5.26	125.21	111.00
11	L	36	ARG	NE-CZ-NH1	5.26	122.93	120.30
49	5	1912	G	C2'-C3'-O3'	5.26	122.11	113.70
49	5	2090	U	C5'-C4'-O4'	5.26	115.41	109.10
42	s	59	THR	N-CA-C	-5.25	96.83	111.00
49	5	1216	C	C2'-C3'-O3'	5.23	122.06	113.70
49	5	2107	C	C2'-C3'-O3'	5.22	122.06	113.70
3	C	204	ARG	NE-CZ-NH2	5.22	122.91	120.30
49	5	2332	A	C4'-C3'-O3'	-5.20	98.48	109.40
7	G	127	ASP	CB-CG-OD2	5.19	122.97	118.30
35	j	11	ARG	NE-CZ-NH1	5.19	122.89	120.30
49	5	977	C	C5'-C4'-O4'	5.18	115.32	109.10
49	5	1752	G	C1'-O4'-C4'	-5.18	105.75	109.90
49	5	2474	G	C2'-C3'-O3'	5.18	121.99	113.70
24	Y	87	ARG	NE-CZ-NH1	-5.18	117.71	120.30
49	5	684	G	C2'-C3'-O3'	5.17	121.97	113.70
49	5	43	U	C5'-C4'-O4'	5.16	115.29	109.10
49	5	4718	G	N9-C1'-C2'	-5.16	106.33	112.00
49	5	43	U	O4'-C1'-N1	5.16	112.33	108.20
14	O	120	VAL	C-N-CD	5.15	139.22	128.40
16	Q	158	THR	N-CA-C	-5.15	97.10	111.00
38	m	97	ARG	NE-CZ-NH2	5.15	122.87	120.30
49	5	466	A	C4-N9-C1'	5.14	135.56	126.30
4	D	35	ARG	NE-CZ-NH1	5.14	122.87	120.30
19	T	30	TYR	CA-CB-CG	5.13	123.15	113.40
49	5	1378	C	N1-C1'-C2'	5.12	120.66	114.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
49	5	4966	A	N9-C1'-C2'	5.11	120.65	114.00
3	C	342	ARG	CG-CD-NE	5.11	122.52	111.80
33	h	89	ARG	NE-CZ-NH2	-5.11	117.75	120.30
49	5	4119	C	C2'-C3'-O3'	5.09	121.85	113.70
11	L	78	LEU	CA-CB-CG	-5.09	103.59	115.30
49	5	417	G	O4'-C1'-N9	5.08	112.26	108.20
32	g	66	ARG	NE-CZ-NH2	-5.08	117.76	120.30
34	i	85	ARG	CG-CD-NE	5.07	122.44	111.80
49	5	4579	U	N1-C1'-C2'	5.07	120.59	114.00
30	e	55	MET	C-N-CD	5.07	139.04	128.40
49	5	3905	A	C2'-C3'-O3'	5.06	121.79	113.70
32	g	76	ARG	NE-CZ-NH1	5.05	122.83	120.30
49	5	5045	G	C2'-C3'-O3'	5.05	121.78	113.70
49	5	30	C	O5'-P-OP1	5.05	116.76	110.70
49	5	1343	A	C2'-C3'-O3'	5.05	121.78	113.70
49	5	4583	C	N1-C1'-C2'	-5.04	106.45	112.00
49	5	119	G	O4'-C4'-C3'	-5.04	98.96	104.00
49	5	1445	U	C2'-C3'-O3'	5.04	121.76	113.70
49	5	2361	G	C2'-C3'-O3'	5.04	121.76	113.70
49	5	157	U	C1'-O4'-C4'	-5.04	105.87	109.90
49	5	4473	A	C8-N9-C1'	-5.04	118.64	127.70
3	C	100	ARG	NE-CZ-NH2	-5.03	117.78	120.30
4	D	35	ARG	NE-CZ-NH2	-5.03	117.78	120.30
49	5	4317	A	C2'-C3'-O3'	5.03	121.75	113.70
49	5	2123	C	C2'-C3'-O3'	5.03	121.75	113.70
49	5	4441	A	P-O5'-C5'	-5.03	112.86	120.90
49	5	1756	U	N1-C1'-C2'	5.02	120.53	114.00
49	5	4331	G	C4'-C3'-O3'	-5.02	98.85	109.40
49	5	1501	C	O4'-C1'-C2'	-5.02	100.78	105.80
4	D	15	ARG	NE-CZ-NH2	5.01	122.81	120.30
49	5	4473	A	C4-N9-C1'	5.01	135.32	126.30
5	E	210	ASP	CB-CG-OD2	-5.01	113.79	118.30
30	e	46	ARG	CG-CD-NE	5.01	122.31	111.80
49	5	1672	U	C6-N1-C1'	-5.01	114.19	121.20

There are no chirality outliers.

All (52) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
47	1	13	ARG	Peptide
49	5	1191	C	Sidechain
49	5	2793	G	Sidechain

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Mol	Chain	Res	Type	Group
49	5	300	A	Sidechain
1	A	131	GLY	Peptide
2	B	17	LEU	Peptide
2	B	257	TRP	Peptide
2	B	332	MET	Peptide
2	B	351	LEU	Peptide
3	C	131	SER	Peptide
3	C	339	THR	Peptide
4	D	160	PHE	Peptide
5	E	123	SER	Peptide
5	E	173	GLY	Peptide
5	E	196	LYS	Peptide
5	E	216	LYS	Peptide
6	F	148	ASN	Peptide
7	G	161	VAL	Peptide
7	G	238	GLY	Peptide
8	H	188	GLN	Peptide
9	I	143	GLN	Peptide
9	I	188	LYS	Peptide
9	I	204	GLY	Peptide
11	L	146	LEU	Peptide
11	L	66	TYR	Peptide
13	N	184	ILE	Peptide
14	O	200	GLY	Peptide
17	R	39	GLN	Peptide
17	R	93	VAL	Peptide
18	S	154	LEU	Peptide
18	S	164	LYS	Peptide
18	S	5	GLY	Peptide
19	T	135	PRO	Peptide
19	T	32	ARG	Peptide
19	T	87	LYS	Peptide
21	V	97	TYR	Peptide
24	Y	14	ASN	Peptide
25	Z	53	VAL	Peptide
26	a	46	ASP	Peptide
26	a	90	ALA	Peptide
27	b	19	ASN	Peptide
31	f	100	ARG	Peptide
31	f	106	TYR	Peptide
33	h	95	LEU	Peptide
34	i	42	ASP	Peptide

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Mol	Chain	Res	Type	Group
36	k	28	ASN	Peptide
42	s	6	ARG	Peptide
42	s	81	HIS	Peptide
43	t	147	HIS	Peptide
43	t	29	ALA	Peptide
43	t	6	ASP	Peptide
43	t	98	ILE	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	A	1868	0	1959	68	0
2	B	3147	0	3280	84	0
3	C	2919	0	3100	127	0
4	D	2384	0	2423	54	0
5	E	1904	0	2055	68	0
6	F	1870	0	1994	136	0
7	G	1939	0	2095	60	0
8	H	1518	0	1601	53	0
9	I	1651	0	1692	43	0
10	J	1359	0	1390	63	0
11	L	1703	0	1818	60	0
12	M	1131	0	1209	41	0
13	N	1701	0	1749	59	0
14	O	1638	0	1777	58	0
15	P	1242	0	1269	16	0
16	Q	1506	0	1623	26	0
17	R	1508	0	1664	22	0
18	S	1454	0	1496	55	0
19	T	1298	0	1366	54	0
20	U	808	0	831	42	0
21	V	979	0	1039	43	0
22	W	528	0	541	7	0
23	X	976	0	1053	19	0
24	Y	1115	0	1205	19	0
25	Z	1107	0	1182	26	0
26	a	1163	0	1209	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	b	610	0	650	0	0
28	c	732	0	769	0	0
29	d	888	0	930	0	0
30	e	1053	0	1147	0	0
31	f	876	0	912	0	0
32	g	906	0	1000	0	0
33	h	1015	0	1150	0	0
34	i	832	0	917	0	0
35	j	706	0	742	0	0
36	k	569	0	637	0	0
37	l	444	0	483	0	0
38	m	429	0	465	0	0
39	o	851	0	921	0	0
40	p	708	0	755	0	0
41	r	1001	0	1062	0	0
42	s	1522	0	1575	0	0
43	t	1238	0	1293	0	0
44	u	645	0	285	0	0
44	v	1092	0	1143	0	0
45	0	293	0	299	3	0
45	w	110	0	118	0	0
45	z	1057	0	1074	0	0
46	x	1090	0	248	0	0
46	y	1055	0	237	0	0
47	1	125	0	117	6	0
48	2	1601	0	818	28	0
49	5	78486	0	39661	2237	0
50	7	2558	0	1296	23	0
51	8	3314	0	1683	73	0
52	5	150	0	0	0	0
52	7	5	0	0	0	0
52	8	1	0	0	0	0
52	P	1	0	0	0	0
52	V	1	0	0	0	0
52	g	1	0	0	0	0
53	g	1	0	0	0	0
53	j	1	0	0	0	0
53	m	1	0	0	0	0
53	o	1	0	0	0	0
53	p	1	0	0	0	0
All	All	146386	0	105007	3319	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 16.

All (3319) 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)
11:L:80:GLU:OE1	11:L:102:ARG:NH1	1.63	1.31
6:F:110:VAL:HG21	6:F:137:ILE:CD1	1.58	1.30
2:B:150:PHE:CE2	2:B:198:ARG:NH1	1.99	1.30
49:5:1983:A:N1	49:5:2008:U:O4	1.65	1.27
6:F:39:PHE:CE1	49:5:2123:C:H3'	1.70	1.26
6:F:241:GLN:NE2	18:S:37:HIS:NE2	1.81	1.25
49:5:2468:U:O4	49:5:2473:A:N1	1.71	1.22
6:F:148:ASN:HB2	6:F:243:ASN:ND2	1.53	1.22
6:F:239:GLU:OE2	18:S:38:VAL:HG22	1.33	1.22
49:5:1991:A:N6	49:5:2003:G:OP1	1.73	1.22
20:U:24:ASP:OD2	20:U:69:LYS:NZ	1.70	1.21
10:J:27:GLY:HA2	10:J:68:ILE:HG23	1.20	1.19
49:5:1358:G:H2'	49:5:1359:G:O4'	1.37	1.19
20:U:24:ASP:OD2	20:U:69:LYS:CE	1.91	1.19
7:G:127:ASP:O	7:G:128:VAL:HG23	1.44	1.17
10:J:63:ARG:NH2	51:8:57:C:C5	128.84	1.16
8:H:48:LEU:HD11	8:H:54:ARG:HD3	1.28	1.15
49:5:1990:A:H2'	49:5:1991:A:H4'	1.16	1.14
6:F:127:LEU:HD12	6:F:132:ILE:HG12	1.28	1.12
20:U:24:ASP:OD2	20:U:69:LYS:HE3	1.48	1.11
7:G:165:GLU:OE1	13:N:22:LEU:HD13	1.50	1.11
5:E:161:LEU:HD21	5:E:253:ILE:HD11	1.18	1.10
49:5:1983:A:N1	49:5:2008:U:C4	2.19	1.10
4:D:23:ARG:NH2	49:5:4280:A:OP2	1.87	1.08
20:U:24:ASP:HB3	20:U:69:LYS:HG3	1.36	1.07
49:5:2367:A:N1	49:5:2788:U:O4	1.88	1.07
17:R:31:GLU:OE1	17:R:31:GLU:N	1.88	1.07
3:C:140:LYS:HD2	3:C:247:GLY:O	1.55	1.06
47:1:24:VAL:O	48:2:76:A:O2'	1.63	1.06
3:C:84:THR:HG22	49:5:366:A:N1	1.69	1.06
2:B:150:PHE:CD2	2:B:198:ARG:NH1	2.23	1.06
49:5:1358:G:C2'	49:5:1359:G:O4'	2.03	1.05
49:5:4892:A:N1	49:5:4927:G:O6	1.90	1.05
6:F:244:ARG:NH1	49:5:942:G:OP2	1.90	1.04
25:Z:100:VAL:CG1	25:Z:107:LYS:HA	1.86	1.04
2:B:300:LYS:HG3	2:B:311:ASP:HB2	1.36	1.04
20:U:26:THR:HG22	20:U:68:SER:OG	1.57	1.04
10:J:94:LEU:HD23	10:J:98:ASN:ND2	1.72	1.04

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:976:G:H2'	49:5:977:C:O4'	1.58	1.04
14:O:5:GLN:OE1	14:O:5:GLN:N	1.91	1.04
1:A:244:GLY:HA3	49:5:3746:A:H5"	1.38	1.04
6:F:144:TRP:CH2	6:F:237:ASN:ND2	2.25	1.03
49:5:2089:G:O2'	49:5:2090:U:O2	1.77	1.02
2:B:300:LYS:CG	2:B:311:ASP:HB2	1.89	1.02
1:A:90:CYS:HB3	1:A:101:VAL:HG13	1.37	1.02
2:B:300:LYS:HG2	2:B:311:ASP:HA	1.37	1.01
14:O:14:HIS:CD2	14:O:124:LEU:HD12	1.92	1.01
49:5:703:G:O6	49:5:706:C:N4	1.92	1.01
6:F:92:ALA:HB2	6:F:127:LEU:CD2	1.92	1.00
2:B:300:LYS:HG2	2:B:311:ASP:CB	1.91	1.00
2:B:173:LEU:HD11	2:B:342:LYS:HB3	1.43	1.00
49:5:1756:U:O4	49:5:1775:A:N1	1.95	1.00
6:F:127:LEU:CD1	6:F:132:ILE:HG12	1.92	0.99
49:5:1990:A:H2'	49:5:1991:A:C4'	1.92	0.99
1:A:90:CYS:CB	1:A:101:VAL:HG13	1.92	0.99
18:S:78:PHE:CE1	18:S:102:THR:HG23	1.98	0.99
49:5:1990:A:H3'	49:5:1991:A:H5"	1.45	0.98
19:T:39:ILE:HD12	19:T:102:ARG:HB2	1.45	0.98
12:M:98:ARG:HH21	12:M:98:ARG:HG2	1.27	0.98
21:V:12:ALA:HB1	49:5:4617:G:O2'	1.63	0.98
8:H:48:LEU:CD1	8:H:54:ARG:HD3	1.93	0.98
49:5:3914:U:H3	49:5:4378:A:H61	1.03	0.97
10:J:63:ARG:HH22	51:8:57:C:H5	128.59	0.97
49:5:977:C:C2	49:5:978:G:C8	2.53	0.97
6:F:148:ASN:HB2	6:F:243:ASN:HD22	1.14	0.97
2:B:300:LYS:HG2	2:B:311:ASP:CA	1.95	0.96
20:U:26:THR:HG23	20:U:68:SER:HB3	1.47	0.96
11:L:29:PRO:HB2	49:5:1371:A:H2'	1.45	0.96
16:Q:65:ARG:NH1	49:5:1502:G:OP1	1.97	0.96
49:5:1266:G:N2	49:5:2111:G:N3	2.14	0.95
49:5:1823:G:O3'	49:5:1825:A:P	2.24	0.95
5:E:101:ARG:NH1	49:5:471:A:C2	2.34	0.95
49:5:1991:A:C8	49:5:1992:U:N1	2.35	0.95
10:J:141:ILE:HG22	10:J:149:GLY:O	1.66	0.94
9:I:80:CYS:SG	9:I:81:GLY:N	2.32	0.94
21:V:31:ASN:O	21:V:31:ASN:ND2	1.99	0.94
9:I:75:TYR:O	9:I:79:SER:OG	1.85	0.94
49:5:2769:U:C2	49:5:2770:C:C5	2.55	0.94
6:F:239:GLU:OE2	18:S:38:VAL:CG2	2.15	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1991:A:N7	49:5:1992:U:C2	2.35	0.93
11:L:80:GLU:OE2	11:L:113:ASN:HB3	1.66	0.93
6:F:92:ALA:HB2	6:F:127:LEU:HD23	1.46	0.93
2:B:300:LYS:CG	2:B:311:ASP:CB	2.46	0.93
48:2:15:G:O2'	48:2:16:C:OP1	1.85	0.93
6:F:110:VAL:HG21	6:F:137:ILE:HD12	1.49	0.92
3:C:69:THR:HG21	49:5:3906:A:H2'	1.47	0.92
49:5:292:G:O2'	49:5:293:G:O5'	1.88	0.92
49:5:3662:A:H61	49:5:3680:U:H3	1.16	0.92
12:M:46:ARG:CZ	49:5:936:C:O2'	2.17	0.92
6:F:90:LYS:O	6:F:127:LEU:HB2	1.67	0.92
49:5:1991:A:C8	49:5:1992:U:C6	2.58	0.91
13:N:182:HIS:O	13:N:183:THR:OG1	1.88	0.91
19:T:17:ARG:HG2	19:T:17:ARG:HH11	1.35	0.91
9:I:25:GLY:HA2	48:2:63:G:O2'	1.70	0.91
8:H:47:LEU:HG	8:H:52:LYS:HD2	1.52	0.90
49:5:962:C:OP2	49:5:2264:C:N3	2.02	0.90
6:F:110:VAL:HG21	6:F:137:ILE:HD11	1.54	0.90
3:C:316:LYS:HE3	49:5:1283:G:OP1	1.71	0.90
9:I:76:MET:HA	9:I:76:MET:HE3	1.54	0.90
49:5:1378:C:H3'	49:5:1379:C:H5'	1.50	0.89
6:F:39:PHE:CE1	49:5:2123:C:C3'	2.55	0.89
21:V:12:ALA:HB2	49:5:4617:G:O4'	1.72	0.89
12:M:88:ALA:O	12:M:93:LYS:HE2	1.73	0.89
20:U:24:ASP:HB3	20:U:69:LYS:HA	1.52	0.89
7:G:165:GLU:OE1	13:N:22:LEU:CD1	2.20	0.89
14:O:122:ALA:O	14:O:128:ARG:HD2	1.73	0.89
7:G:127:ASP:O	7:G:128:VAL:CG2	2.20	0.89
1:A:90:CYS:HB3	1:A:101:VAL:CG1	2.02	0.89
24:Y:8:THR:HG21	24:Y:13:LYS:CB	2.03	0.89
49:5:1990:A:C2	49:5:1991:A:H1'	2.09	0.88
5:E:161:LEU:HD21	5:E:253:ILE:CD1	2.02	0.88
6:F:110:VAL:CG2	6:F:137:ILE:CD1	2.48	0.88
10:J:94:LEU:CD2	10:J:98:ASN:HD22	1.85	0.88
49:5:4094:G:H2'	49:5:4095:G:O4'	1.73	0.88
7:G:162:ASP:HB3	7:G:163:PRO:HD3	1.53	0.88
20:U:24:ASP:CB	20:U:69:LYS:HA	2.03	0.88
49:5:1990:A:C5	49:5:1991:A:N3	2.41	0.88
49:5:2669:C:O2'	49:5:2670:C:C6	2.25	0.87
49:5:2769:U:O2	49:5:2770:C:C5	2.26	0.87
49:5:2468:U:N3	49:5:2473:A:N6	2.22	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1485:C:O2'	49:5:1486:C:OP1	1.92	0.87
49:5:1635:C:H2'	49:5:1636:U:H5'	1.57	0.87
1:A:41:ILE:HG22	1:A:90:CYS:SG	2.14	0.87
49:5:504:G:N1	49:5:654:C:C2	2.43	0.87
8:H:47:LEU:CG	8:H:52:LYS:HD2	2.04	0.87
7:G:82:GLN:OE1	7:G:171:PRO:HG2	1.73	0.87
49:5:3914:U:H3	49:5:4378:A:N6	1.72	0.87
49:5:2268:A:H4'	49:5:2269:C:H5'	1.57	0.86
3:C:84:THR:CG2	49:5:366:A:N1	2.37	0.86
11:L:116:ARG:NH1	11:L:155:MET:O	2.08	0.86
49:5:2669:C:HO2'	49:5:2670:C:H6	1.20	0.86
18:S:99:ASP:OD1	18:S:100:LEU:N	2.08	0.86
49:5:688:U:H2'	49:5:689:U:O4'	1.75	0.86
7:G:164:ILE:O	7:G:168:VAL:HG23	1.76	0.86
10:J:94:LEU:CD2	10:J:98:ASN:ND2	2.37	0.86
19:T:17:ARG:HD2	19:T:47:THR:HG23	1.56	0.86
6:F:43:MET:SD	49:5:2121:C:O4'	2.33	0.86
6:F:148:ASN:CB	6:F:243:ASN:ND2	2.38	0.85
3:C:130:ALA:HB3	3:C:246:VAL:CG1	2.07	0.85
49:5:1367:C:N3	49:5:1369:C:OP2	2.09	0.85
21:V:15:ARG:NH1	21:V:15:ARG:HB2	1.91	0.85
5:E:101:ARG:NH1	49:5:471:A:N1	2.25	0.85
21:V:12:ALA:CB	49:5:4617:G:O4'	2.25	0.85
49:5:1268:G:C2	49:5:1270:A:C8	2.65	0.84
21:V:30:ASP:HA	21:V:116:ALA:O	1.77	0.84
18:S:72:PRO:O	18:S:100:LEU:HD12	1.77	0.84
2:B:173:LEU:HD11	2:B:342:LYS:CB	2.07	0.84
6:F:245:LEU:HD23	6:F:245:LEU:O	1.77	0.84
10:J:63:ARG:HH21	51:8:57:C:N4	127.63	0.84
24:Y:4:ASN:HB3	24:Y:7:VAL:HG23	1.60	0.83
12:M:48:GLN:N	12:M:48:GLN:OE1	2.11	0.83
20:U:56:LEU:HB3	20:U:61:VAL:HG22	1.59	0.83
25:Z:100:VAL:HG13	25:Z:107:LYS:HA	1.60	0.83
2:B:174:ARG:HH12	49:5:4974:C:C4'	1.92	0.83
8:H:54:ARG:HH11	8:H:54:ARG:HG3	1.40	0.83
49:5:1983:A:C2	49:5:2008:U:O4	2.30	0.83
49:5:1991:A:H3'	49:5:1992:U:C6	2.13	0.83
49:5:745:G:H2'	49:5:746:A:O4'	1.78	0.83
2:B:173:LEU:CD1	2:B:342:LYS:HD3	2.08	0.82
21:V:12:ALA:HB3	49:5:4617:G:H4'	1.59	0.82
49:5:1213:G:C6	49:5:1215:C:C2	2.67	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Z:38:TYR:CE2	25:Z:76:ASN:OD1	2.33	0.82
10:J:63:ARG:NH2	51:8:57:C:C4	128.96	0.82
49:5:977:C:C2'	49:5:978:G:H5'	2.10	0.82
24:Y:2:LYS:HE3	24:Y:7:VAL:O	1.80	0.82
6:F:127:LEU:HD12	6:F:132:ILE:CG1	2.08	0.81
49:5:1960:A:H5"	49:5:1961:G:O4'	1.79	0.81
6:F:39:PHE:CD1	49:5:2123:C:H3'	2.15	0.81
3:C:242:PRO:HG2	3:C:248:ARG:HH11	1.46	0.81
2:B:379:PHE:HD2	2:B:385:LYS:HB2	1.43	0.81
49:5:4113:U:H2'	49:5:4114:C:O4'	1.80	0.81
49:5:969:C:O2'	49:5:970:G:O4'	1.98	0.81
49:5:723:A:C2	49:5:943:A:N1	2.47	0.81
49:5:956:A:H3'	49:5:957:G:C5	2.15	0.81
5:E:199:ILE:HD11	5:E:253:ILE:HG12	1.63	0.81
49:5:2658:G:N2	49:5:2675:G:O2'	2.13	0.81
3:C:69:THR:CG2	49:5:3906:A:H2'	2.10	0.81
49:5:48:G:O2'	49:5:49:U:OP2	1.96	0.81
49:5:2367:A:N6	49:5:2788:U:H3	1.77	0.81
49:5:2089:G:O2'	49:5:2090:U:P	2.39	0.80
49:5:1890:G:H22	49:5:1938:C:H41	1.28	0.80
10:J:90:ARG:O	10:J:93:GLU:HG2	1.81	0.80
49:5:1269:G:H3'	49:5:2111:G:O6	1.81	0.80
14:O:113:ASP:OD1	14:O:114:LYS:HG3	1.81	0.80
49:5:1269:G:C8	49:5:2111:G:C6	2.69	0.80
49:5:1990:A:C3'	49:5:1991:A:H5"	2.11	0.80
20:U:26:THR:HG23	20:U:68:SER:CB	2.11	0.80
49:5:3823:G:O2'	49:5:3824:A:C8	2.35	0.80
20:U:26:THR:CG2	20:U:68:SER:CB	2.59	0.80
3:C:242:PRO:CG	3:C:248:ARG:NH1	2.45	0.80
3:C:193:LYS:HB2	3:C:193:LYS:NZ	1.97	0.80
6:F:146:TYR:CE2	6:F:239:GLU:HB2	2.17	0.80
8:H:47:LEU:CD2	8:H:52:LYS:HD2	2.11	0.80
49:5:504:G:C2	49:5:654:C:O2	2.35	0.80
49:5:1245:C:C5	49:5:1269:G:C6	2.70	0.79
49:5:102:G:HO2'	49:5:1381:U:HO2'	0.98	0.79
49:5:1270:A:H2'	49:5:1271:G:O5'	1.82	0.79
24:Y:8:THR:HG21	24:Y:13:LYS:HB2	1.65	0.79
49:5:1271:G:H3'	49:5:1272:C:H5'	1.64	0.79
6:F:241:GLN:NE2	18:S:37:HIS:CD2	2.50	0.79
6:F:128:ASN:O	6:F:132:ILE:HG13	1.82	0.79
6:F:41:GLN:CG	49:5:2095:A:N1	2.45	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1074:G:C2	49:5:1238:A:C2	2.71	0.79
6:F:110:VAL:HG21	6:F:137:ILE:HD13	1.64	0.79
49:5:1990:A:N7	49:5:1991:A:N3	2.31	0.79
5:E:246:GLN:O	5:E:250:ASP:HB3	1.83	0.79
49:5:919:C:N4	49:5:920:C:C4	2.51	0.79
10:J:87:LEU:O	10:J:91:GLU:N	2.16	0.79
49:5:1983:A:C2	49:5:2008:U:C4	2.70	0.79
3:C:193:LYS:HD2	3:C:196:MET:CE	2.13	0.79
13:N:181:HIS:CE1	49:5:99:A:H4'	2.19	0.78
49:5:2127:C:H2'	49:5:2128:G:C8	2.19	0.78
49:5:2367:A:N6	49:5:2788:U:N3	2.31	0.78
3:C:193:LYS:HD2	3:C:196:MET:SD	2.23	0.78
2:B:116:ARG:HB3	2:B:177:LYS:HG3	1.66	0.78
10:J:26:VAL:HG23	10:J:28:GLU:H	1.47	0.78
6:F:41:GLN:HG3	49:5:2095:A:N6	1.99	0.78
49:5:969:C:O2'	49:5:970:G:N3	2.17	0.78
49:5:4769:G:H2'	49:5:4770:U:O4'	1.85	0.77
10:J:141:ILE:CG2	10:J:149:GLY:O	2.31	0.77
3:C:242:PRO:CG	3:C:248:ARG:HH11	1.98	0.77
20:U:26:THR:CG2	20:U:68:SER:HB3	2.15	0.77
49:5:1378:C:H3'	49:5:1379:C:C5'	2.14	0.77
49:5:1265:G:C2'	49:5:1266:G:H5'	2.14	0.77
20:U:23:LEU:HD12	20:U:83:LEU:HD23	1.67	0.77
11:L:10:LEU:H	11:L:10:LEU:HD23	1.50	0.77
5:E:174:PRO:O	5:E:176:VAL:N	2.17	0.77
6:F:110:VAL:CG2	6:F:137:ILE:HD11	2.14	0.77
49:5:2256:C:H2'	49:5:2256:C:O2	1.82	0.77
49:5:956:A:H3'	49:5:957:G:C4	2.20	0.77
14:O:119:VAL:HG13	14:O:124:LEU:HD11	1.67	0.76
21:V:12:ALA:CB	49:5:4617:G:C4'	2.63	0.76
49:5:1990:A:C6	49:5:1991:A:N3	2.53	0.76
20:U:24:ASP:HB3	20:U:69:LYS:CG	2.15	0.76
7:G:82:GLN:OE1	7:G:171:PRO:CG	2.32	0.76
21:V:15:ARG:CZ	21:V:15:ARG:HB2	2.14	0.76
2:B:174:ARG:NH1	49:5:4974:C:H4'	1.99	0.76
10:J:63:ARG:HH21	51:8:57:C:H41	126.90	0.76
13:N:179:LYS:O	49:5:297:U:O2'	2.04	0.76
49:5:723:A:H2	49:5:943:A:N1	1.81	0.76
49:5:4579:U:H2'	49:5:4580:U:O4'	1.86	0.76
49:5:1269:G:C5	49:5:2111:G:C2	2.73	0.76
49:5:2468:U:C4	49:5:2473:A:N1	2.54	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:497:G:N2	49:5:657:C:C2	2.53	0.76
6:F:146:TYR:CD2	6:F:239:GLU:HB2	2.20	0.76
2:B:174:ARG:NH1	49:5:4974:C:C4'	2.49	0.76
49:5:4481:U:H2'	49:5:4482:U:C6	2.20	0.76
49:5:2457:G:H21	49:5:3672:G:H21	1.34	0.76
3:C:322:LEU:HB3	49:5:1281:G:C8	2.20	0.76
49:5:919:C:C4	49:5:920:C:C5	2.74	0.75
49:5:2263:A:O3'	49:5:2264:C:H6	1.69	0.75
49:5:3680:U:H2'	49:5:3680:U:O2	1.85	0.75
3:C:84:THR:HG21	49:5:366:A:H61	1.50	0.75
10:J:145:LYS:O	10:J:145:LYS:HD2	1.85	0.75
49:5:1266:G:H5"	49:5:2112:G:N3	2.02	0.75
6:F:41:GLN:HE22	49:5:2096:G:H22	1.32	0.75
49:5:5047:C:O2'	49:5:5050:C:OP2	2.04	0.75
10:J:63:ARG:HB2	10:J:63:ARG:NH1	4.19	0.75
49:5:181:C:N3	49:5:256:G:C2	2.55	0.75
18:S:80:ILE:HD12	18:S:106:VAL:HG22	1.66	0.75
11:L:49:ARG:HG2	11:L:49:ARG:HH11	1.49	0.75
6:F:241:GLN:HE22	18:S:37:HIS:CD2	2.04	0.75
49:5:4441:A:H5"	49:5:4441:A:H8	1.52	0.75
12:M:81:ASP:OD1	12:M:84:ALA:HB3	1.86	0.75
11:L:31:ARG:HG3	11:L:34:ARG:NH1	2.02	0.74
6:F:136:ARG:NH1	6:F:136:ARG:HB2	2.02	0.74
49:5:166:C:O2	49:5:167:C:C5	2.40	0.74
49:5:976:G:C2'	49:5:977:C:O4'	2.33	0.74
49:5:978:G:H2'	49:5:979:C:O4'	1.87	0.74
21:V:12:ALA:CB	49:5:4617:G:C1'	2.64	0.74
19:T:39:ILE:O	19:T:40:VAL:HG23	1.86	0.74
49:5:917:A:C2	49:5:919:C:C5	2.75	0.74
49:5:1359:G:H2'	49:5:1360:G:C8	2.22	0.74
6:F:92:ALA:CB	6:F:127:LEU:CD2	2.66	0.74
7:G:82:GLN:OE1	7:G:171:PRO:CB	2.35	0.74
2:B:139:ASP:OD1	2:B:142:GLY:N	2.19	0.74
49:5:1444:G:H2'	49:5:1445:U:C6	2.22	0.74
11:L:80:GLU:OE2	11:L:113:ASN:CB	2.34	0.74
2:B:174:ARG:HH12	49:5:4974:C:C1'	2.01	0.74
16:Q:11:ARG:NH2	49:5:1690:C:OP2	2.20	0.74
49:5:1981:G:O2'	49:5:1982:G:O4'	2.06	0.74
18:S:76:LYS:CE	18:S:100:LEU:O	2.36	0.74
49:5:222:C:H2'	49:5:223:G:O4'	1.88	0.74
10:J:144:LYS:O	10:J:148:THR:HG22	1.88	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1358:G:O2'	49:5:1359:G:O4'	2.05	0.73
21:V:12:ALA:HB1	49:5:4617:G:C2'	2.17	0.73
49:5:1437:C:O2	49:5:2098:G:N7	2.21	0.73
49:5:3593:C:H4'	49:5:3594:C:OP2	1.88	0.73
49:5:2261:G:H2'	49:5:2262:G:C8	2.23	0.73
2:B:173:LEU:HD11	2:B:342:LYS:CG	2.18	0.73
8:H:62:GLY:O	8:H:67:LEU:HD11	1.89	0.73
49:5:1999:A:O2'	49:5:2000:G:O4'	2.00	0.73
11:L:49:ARG:HD3	11:L:49:ARG:H	1.54	0.73
11:L:49:ARG:HG2	11:L:49:ARG:NH1	2.02	0.73
49:5:2288:G:N2	49:5:2290:C:C2	2.57	0.73
2:B:261:ARG:HE	49:5:3870:C:H4'	1.53	0.73
49:5:2269:C:C6	49:5:2269:C:H5"	2.24	0.72
49:5:516:C:C2	49:5:646:G:N2	2.57	0.72
49:5:3723:A:C2	49:5:3724:A:C6	2.76	0.72
2:B:150:PHE:HE2	2:B:198:ARG:HH12	1.35	0.72
49:5:1635:C:C2'	49:5:1636:U:H5'	2.20	0.72
4:D:277:LYS:O	4:D:280:VAL:HG22	1.88	0.72
49:5:106:A:H1'	49:5:336:A:C8	2.24	0.72
4:D:16:TYR:O	19:T:20:ARG:HD2	1.88	0.72
6:F:144:TRP:CZ3	6:F:237:ASN:ND2	2.57	0.72
49:5:1755:C:O2'	49:5:1756:U:OP1	2.08	0.72
49:5:504:G:C6	49:5:654:C:C2	2.76	0.72
21:V:12:ALA:HB1	49:5:4617:G:C1'	2.18	0.72
49:5:138:G:H2'	49:5:139:G:H5'	1.70	0.72
24:Y:4:ASN:HB3	24:Y:7:VAL:CG2	2.20	0.72
49:5:973:G:N2	49:5:1282:G:HO2'	1.86	0.72
6:F:129:LYS:O	6:F:129:LYS:HD2	1.89	0.72
49:5:1371:A:N6	51:8:28:C:O2'	2.23	0.72
2:B:300:LYS:CG	2:B:311:ASP:HA	2.17	0.72
47:1:12:TRP:O	47:1:14:PHE:N	2.22	0.72
19:T:17:ARG:HD2	19:T:47:THR:CG2	2.20	0.72
49:5:22:G:C2	51:8:35:C:N3	2.58	0.72
3:C:242:PRO:HG2	3:C:248:ARG:NH1	2.05	0.72
49:5:1266:G:H5"	49:5:2112:G:C2	2.25	0.71
49:5:1379:C:H4'	49:5:1380:G:C1'	2.20	0.71
49:5:986:C:C2	49:5:1068:G:N2	2.58	0.71
1:A:245:ARG:HG3	1:A:245:ARG:O	1.89	0.71
7:G:157:ILE:CG2	7:G:167:VAL:HG11	2.20	0.71
24:Y:2:LYS:HG3	24:Y:2:LYS:O	1.88	0.71
10:J:27:GLY:CA	10:J:68:ILE:HG23	2.12	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:S:78:PHE:HE1	18:S:102:THR:HG23	1.53	0.71
3:C:322:LEU:O	3:C:326:LEU:HG	1.91	0.71
49:5:1983:A:C6	49:5:2008:U:O4	2.43	0.71
3:C:140:LYS:CD	3:C:247:GLY:O	2.37	0.71
6:F:241:GLN:HE21	18:S:37:HIS:CE1	2.09	0.71
49:5:2468:U:H3	49:5:2473:A:N6	1.88	0.71
49:5:504:G:C6	49:5:654:C:N3	2.59	0.71
6:F:136:ARG:HH11	6:F:136:ARG:HG3	1.55	0.71
49:5:2858:A:O2'	49:5:2859:G:C8	2.44	0.71
49:5:3723:A:H2'	49:5:3724:A:C8	2.25	0.71
20:U:26:THR:CG2	20:U:68:SER:OG	2.38	0.71
19:T:39:ILE:HD12	19:T:102:ARG:CB	2.20	0.71
11:L:56:ARG:O	11:L:116:ARG:NH2	2.23	0.71
3:C:130:ALA:HB3	3:C:246:VAL:HG12	1.72	0.70
49:5:1213:G:C4	49:5:1215:C:H1'	2.26	0.70
2:B:173:LEU:HD12	2:B:342:LYS:HD3	1.72	0.70
49:5:2852:U:O2	49:5:2854:G:H8	1.73	0.70
2:B:14:LEU:HD23	2:B:17:LEU:HD21	1.71	0.70
49:5:1890:G:N2	49:5:1938:C:H41	1.89	0.70
49:5:499:G:C2	49:5:656:C:C2	2.79	0.70
49:5:957:G:H1'	49:5:958:G:OP2	1.92	0.70
49:5:4216:G:H2'	49:5:4217:G:H5'	1.73	0.70
11:L:47:ALA:HB3	11:L:48:PRO:CD	2.21	0.70
49:5:1771:U:H2'	49:5:1772:C:O4'	1.90	0.70
49:5:1991:A:H3'	49:5:1992:U:C5	2.26	0.70
12:M:46:ARG:NH2	49:5:936:C:O2'	2.24	0.70
6:F:41:GLN:OE1	49:5:2095:A:C2	2.45	0.70
49:5:1890:G:H22	49:5:1938:C:N4	1.90	0.70
49:5:1682:A:C2	49:5:1683:U:C2	2.79	0.70
49:5:977:C:N3	49:5:978:G:N7	2.40	0.70
49:5:2263:A:O3'	49:5:2264:C:C6	2.45	0.70
14:O:122:ALA:O	14:O:128:ARG:CD	2.38	0.70
7:G:166:LEU:HD23	13:N:7:ILE:HD11	1.74	0.70
49:5:2108:G:C6	49:5:2125:C:N4	2.59	0.70
49:5:1359:G:H2'	49:5:1360:G:O4'	1.91	0.70
18:S:78:PHE:CE1	18:S:102:THR:CG2	2.75	0.70
21:V:13:LYS:O	21:V:14:PHE:HB2	1.92	0.70
6:F:136:ARG:HH11	6:F:136:ARG:CG	2.05	0.69
49:5:106:A:H2'	49:5:107:G:O4'	1.92	0.69
49:5:1264:C:H2'	49:5:1265:G:O4'	1.92	0.69
20:U:26:THR:O	20:U:30:GLU:HG2	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:41:GLN:CD	49:5:2095:A:N1	2.45	0.69
11:L:80:GLU:OE2	11:L:113:ASN:OD1	2.10	0.69
49:5:1269:G:C6	49:5:2111:G:C2	2.81	0.69
49:5:5066:U:H2'	49:5:5067:U:C6	2.27	0.69
49:5:22:G:N2	51:8:35:C:C2	2.60	0.69
6:F:41:GLN:HA	6:F:41:GLN:NE2	2.06	0.69
19:T:87:LYS:NZ	49:5:4301:U:OP2	2.24	0.69
49:5:1268:G:C2	49:5:2111:G:N2	2.61	0.69
12:M:98:ARG:HE	49:5:4873:G:H1	1.40	0.69
11:L:29:PRO:HG2	11:L:30:ALA:H	1.56	0.69
49:5:3662:A:N6	49:5:3680:U:H3	1.90	0.69
49:5:730:G:N2	49:5:939:G:N2	2.40	0.69
49:5:484:U:C4	49:5:486:C:C5	2.80	0.69
49:5:1269:G:C6	49:5:2111:G:N2	2.61	0.69
49:5:973:G:N2	49:5:1282:G:O2'	2.25	0.69
49:5:181:C:C2	49:5:256:G:N2	2.60	0.69
4:D:17:GLN:NE2	19:T:20:ARG:O	2.25	0.69
49:5:665:C:H2'	49:5:665:C:O2	1.91	0.69
49:5:4951:G:O2'	49:5:4952:G:OP1	2.03	0.69
49:5:1380:G:O2'	49:5:1381:U:O2	2.10	0.69
25:Z:97:ASN:O	25:Z:100:VAL:HG23	1.93	0.69
16:Q:82:VAL:HG21	16:Q:86:ILE:HD11	1.74	0.69
3:C:84:THR:HG21	49:5:366:A:N6	2.07	0.69
3:C:242:PRO:HG3	3:C:248:ARG:NH1	2.07	0.69
14:O:114:LYS:O	49:5:4757:C:O2	2.11	0.69
49:5:932:A:N3	49:5:932:A:H2'	2.07	0.69
2:B:234:ARG:NH2	49:5:4566:U:O2'	2.25	0.69
49:5:2669:C:O2'	49:5:2670:C:H6	1.71	0.69
17:R:60:ARG:NH1	17:R:63:CYS:SG	2.66	0.69
4:D:282:GLN:NE2	49:5:1176:C:O2	2.23	0.69
1:A:194:ASN:O	1:A:195:CYS:HB3	1.93	0.69
10:J:94:LEU:HD21	10:J:98:ASN:HD22	1.58	0.69
14:O:14:HIS:NE2	14:O:124:LEU:HD12	2.08	0.69
4:D:282:GLN:NE2	49:5:1176:C:O2'	2.25	0.69
23:X:89:LYS:NZ	49:5:2437:C:H42	1.90	0.69
4:D:33:ARG:NH2	50:7:7:G:O3'	2.26	0.68
7:G:144:THR:CG2	7:G:169:PHE:HE1	2.06	0.68
49:5:1357:C:H4'	49:5:1358:G:OP1	1.91	0.68
49:5:4349:C:H3'	49:5:4350:C:H5'	1.75	0.68
49:5:1613:A:H3'	49:5:1614:C:H5'	1.74	0.68
2:B:258:HIS:O	2:B:260:ALA:N	2.26	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:35:ARG:HD3	10:J:123:ILE:HA	1.75	0.68
49:5:1756:U:C4	49:5:1776:A:C2	2.81	0.68
7:G:169:PHE:CZ	13:N:3:ALA:HB1	2.28	0.68
2:B:173:LEU:HD11	2:B:342:LYS:HD3	1.74	0.68
11:L:31:ARG:HG3	11:L:34:ARG:HH12	1.56	0.68
11:L:22:VAL:HG13	13:N:200:LEU:HD12	1.75	0.68
49:5:642:G:N2	49:5:643:C:C2	2.61	0.68
49:5:1271:G:N2	49:5:2122:G:OP2	2.26	0.68
6:F:148:ASN:HB2	6:F:243:ASN:HD21	1.52	0.68
3:C:307:LYS:HE3	49:5:2090:U:C2	2.27	0.68
12:M:46:ARG:CZ	49:5:936:C:C2'	2.72	0.68
49:5:3717:A:OP2	49:5:3735:G:N2	2.26	0.68
5:E:41:SER:CB	49:5:978:G:H5"	2.24	0.68
49:5:1198:G:H2'	49:5:1199:G:C8	2.29	0.68
6:F:239:GLU:HG2	6:F:240:ASP:H	1.57	0.68
49:5:138:G:C2'	49:5:139:G:H5'	2.23	0.68
49:5:1265:G:H2'	49:5:1266:G:H5'	1.76	0.68
3:C:322:LEU:O	3:C:322:LEU:HD22	1.93	0.68
49:5:4281:A:C2	49:5:4283:G:C5	2.82	0.68
7:G:127:ASP:C	7:G:128:VAL:HG23	2.14	0.68
8:H:54:ARG:NH1	8:H:54:ARG:HG3	1.99	0.68
2:B:173:LEU:HD11	2:B:342:LYS:CD	2.24	0.68
3:C:193:LYS:O	3:C:194:GLY:C	2.30	0.68
49:5:166:C:C2	49:5:167:C:H5	2.12	0.68
19:T:108:ARG:HH11	19:T:108:ARG:HG2	1.59	0.68
49:5:2632:U:H2'	49:5:2633:U:C6	2.29	0.68
49:5:4723:A:H2'	49:5:4724:A:C8	2.29	0.68
49:5:1991:A:H3'	49:5:1992:U:H6	1.57	0.68
49:5:1990:A:O2'	49:5:1991:A:OP1	2.06	0.68
49:5:102:G:O2'	49:5:1381:U:O2'	1.85	0.68
1:A:90:CYS:HB2	1:A:101:VAL:HG13	1.75	0.68
48:2:15:G:H8	48:2:15:G:H5"	1.59	0.68
49:5:1213:G:N1	49:5:1215:C:C2	2.62	0.67
49:5:2127:C:H2'	49:5:2128:G:N7	2.09	0.67
49:5:167:C:C2	49:5:269:G:N2	2.62	0.67
8:H:48:LEU:HD11	8:H:54:ARG:CD	2.17	0.67
49:5:3637:U:O4	49:5:3651:A:H2	1.76	0.67
49:5:1404:G:C2	49:5:1414:C:C2	2.82	0.67
3:C:322:LEU:HD13	3:C:322:LEU:O	1.94	0.67
11:L:47:ALA:HB3	11:L:48:PRO:HD2	1.76	0.67
49:5:2258:C:H2'	49:5:2258:C:O2	1.94	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4560:C:O2	49:5:4560:C:H2'	1.94	0.67
13:N:202:ARG:NH2	49:5:1372:A:OP1	2.27	0.67
49:5:3860:A:H61	49:5:4560:C:H5	1.41	0.67
49:5:2113:G:C8	49:5:2115:G:H1'	2.28	0.67
1:A:41:ILE:CG2	1:A:90:CYS:SG	2.83	0.67
11:L:29:PRO:CB	49:5:1371:A:H2'	2.23	0.67
3:C:130:ALA:CB	3:C:246:VAL:CG1	2.73	0.67
21:V:28:CYS:HB3	21:V:34:ALA:O	1.95	0.67
6:F:39:PHE:CD1	49:5:2123:C:C3'	2.77	0.67
19:T:55:LYS:HE3	49:5:4217:G:OP1	1.94	0.67
23:X:139:ARG:NH2	49:5:2533:C:OP1	2.28	0.67
49:5:4216:G:C2'	49:5:4217:G:H5'	2.25	0.67
51:8:55:U:O4	51:8:62:A:N1	2.28	0.66
49:5:2457:G:H21	49:5:3672:G:N2	1.91	0.66
19:T:17:ARG:HH11	19:T:17:ARG:CG	2.07	0.66
3:C:341:LEU:CD2	5:E:46:LEU:HD21	2.26	0.66
49:5:709:C:H42	49:5:1287:G:H1	1.43	0.66
49:5:4901:G:N2	49:5:4921:C:C2	2.63	0.66
49:5:1380:G:H2'	49:5:1382:G:N7	2.10	0.66
49:5:4093:G:C3'	49:5:4094:G:H5'	2.25	0.66
49:5:499:G:N2	49:5:656:C:C2	2.63	0.66
49:5:2447:U:HO2'	49:5:2448:G:C5'	2.07	0.66
6:F:146:TYR:CE2	6:F:239:GLU:CB	2.79	0.66
49:5:1991:A:C8	49:5:1992:U:C2	2.79	0.66
5:E:172:THR:OG1	5:E:182:LEU:HD23	1.96	0.66
10:J:28:GLU:O	10:J:29:SER:HB3	1.94	0.66
49:5:1937:C:OP2	49:5:1938:C:O2'	2.12	0.66
4:D:282:GLN:OE1	49:5:1177:U:H1'	1.95	0.66
10:J:63:ARG:NH2	51:8:57:C:H5	128.06	0.66
49:5:2090:U:P	49:5:2090:U:O4'	2.54	0.66
9:I:76:MET:HA	9:I:76:MET:CE	2.25	0.66
12:M:46:ARG:NE	49:5:936:C:O2'	2.28	0.66
49:5:1550:G:C2	49:5:1579:C:C2	2.84	0.66
4:D:41:LYS:CG	19:T:93:ILE:HD11	2.26	0.66
14:O:14:HIS:NE2	14:O:124:LEU:CD1	2.59	0.66
21:V:12:ALA:HB3	49:5:4617:G:C4'	2.26	0.66
12:M:70:GLN:O	12:M:73:VAL:HG12	1.96	0.66
49:5:1280:C:C2	49:5:1282:G:C5	2.84	0.66
49:5:3724:A:N6	49:5:3725:G:C6	2.64	0.66
49:5:2395:A:O2'	49:5:2806:A:H1'	1.95	0.66
1:A:241:ARG:HG3	49:5:3659:G:OP1	1.96	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1987:C:H2'	49:5:1987:C:O2	1.95	0.66
49:5:1245:C:C6	49:5:1269:G:C6	2.83	0.66
5:E:39:HIS:HE1	49:5:1069:G:O6	1.79	0.66
3:C:193:LYS:HZ2	3:C:193:LYS:HB2	1.61	0.66
49:5:1552:G:H2'	49:5:1574:G:H22	1.61	0.66
49:5:2793:G:C6	49:5:2797:C:C4	2.84	0.66
3:C:317:ASN:ND2	49:5:715:G:OP1	2.29	0.66
49:5:1975:G:O4'	49:5:1984:A:H1'	1.95	0.66
20:U:25:CYS:HB2	20:U:28:PRO:CG	2.25	0.65
8:H:47:LEU:HD23	8:H:52:LYS:HD2	1.76	0.65
10:J:14:GLU:OE1	10:J:14:GLU:HA	1.95	0.65
49:5:1430:C:C2	49:5:1455:G:C2	2.84	0.65
10:J:23:ASN:ND2	10:J:23:ASN:O	2.29	0.65
5:E:41:SER:HA	49:5:978:G:H5"	1.79	0.65
17:R:103:ARG:NH2	49:5:2668:G:OP2	2.29	0.65
49:5:92:C:OP2	49:5:4341:C:O2'	2.12	0.65
49:5:4453:C:H6	49:5:4453:C:O5'	1.78	0.65
49:5:2447:U:O2'	49:5:2448:G:C5'	2.45	0.65
49:5:4508:C:N3	49:5:4512:U:H5	1.94	0.65
10:J:63:ARG:HB2	10:J:63:ARG:HH11	4.19	0.65
20:U:26:THR:HG22	20:U:68:SER:CB	2.25	0.65
49:5:1368:A:O2'	49:5:1369:C:OP1	2.14	0.65
21:V:26:ILE:HG22	21:V:101:ASN:HB3	1.79	0.65
49:5:1245:C:C5	49:5:1269:G:O6	2.50	0.65
25:Z:100:VAL:CG1	25:Z:107:LYS:CA	2.72	0.65
11:L:29:PRO:HG2	11:L:30:ALA:N	2.10	0.65
10:J:91:GLU:O	10:J:91:GLU:HG3	1.95	0.65
49:5:2367:A:N6	49:5:2798:A:O4'	2.29	0.65
49:5:4942:C:O2	49:5:4942:C:O5'	2.15	0.65
49:5:4730:C:O5'	49:5:4731:G:N2	2.30	0.65
49:5:4966:A:C2	49:5:4967:A:C2	2.84	0.65
16:Q:22:ASP:OD1	16:Q:25:LEU:HB3	1.97	0.65
49:5:286:U:H2'	49:5:287:U:C6	2.31	0.65
13:N:30:TYR:CE1	13:N:63:ARG:HD2	2.32	0.65
49:5:167:C:C2	49:5:269:G:C2	2.86	0.64
49:5:1990:A:N6	49:5:1991:A:N3	2.44	0.64
49:5:1990:A:C6	49:5:1991:A:C4	2.85	0.64
17:R:7:GLN:HG2	17:R:32:ILE:O	1.97	0.64
12:M:70:GLN:HA	12:M:73:VAL:HG12	1.78	0.64
49:5:2693:G:C6	49:5:2694:G:N1	2.65	0.64
19:T:144:ASN:ND2	19:T:144:ASN:H	1.95	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2827:G:H2'	49:5:2827:G:N3	2.12	0.64
49:5:1756:U:O4	49:5:1776:A:N1	2.30	0.64
49:5:1937:C:H3'	49:5:1938:C:H2'	1.79	0.64
49:5:166:C:O2	49:5:166:C:H2'	1.97	0.64
49:5:2320:G:O2'	49:5:2321:G:C8	2.48	0.64
49:5:1818:G:O2'	49:5:1819:G:OP1	2.14	0.64
12:M:81:ASP:OD1	12:M:84:ALA:CB	2.44	0.64
25:Z:42:LEU:HD12	25:Z:98:LYS:HG3	1.78	0.64
49:5:199:G:C6	49:5:201:C:N4	2.66	0.64
49:5:986:C:C2	49:5:1068:G:C2	2.86	0.64
49:5:1280:C:N4	49:5:1282:G:O6	2.31	0.64
2:B:258:HIS:HB2	49:5:4518:A:OP2	1.98	0.64
7:G:96:LEU:O	7:G:99:THR:OG1	2.14	0.64
49:5:4183:G:N3	49:5:4183:G:H2'	2.12	0.64
49:5:919:C:N4	49:5:920:C:N4	2.45	0.64
49:5:1444:G:H2'	49:5:1445:U:C5	2.32	0.64
49:5:1213:G:O6	49:5:1215:C:C4	2.50	0.64
49:5:2084:C:H3'	49:5:2085:G:C5'	2.28	0.64
49:5:916:C:N3	49:5:918:G:O6	2.31	0.64
49:5:1210:C:O2'	49:5:1211:G:OP1	2.14	0.64
49:5:2108:G:C2	49:5:2125:C:N3	2.65	0.64
49:5:2773:G:N2	49:5:2774:C:C2	2.66	0.64
49:5:1755:C:H3'	49:5:1756:U:H5"	1.78	0.64
49:5:4093:G:H3'	49:5:4094:G:H5'	1.80	0.64
7:G:169:PHE:HZ	13:N:3:ALA:HB1	1.63	0.64
49:5:466:A:C2	49:5:467:U:C4	2.85	0.64
49:5:4767:C:O2'	49:5:4874:A:N6	2.31	0.64
49:5:1296:G:H1'	49:5:1297:U:OP2	1.98	0.64
49:5:1296:G:H1'	49:5:1297:U:P	2.38	0.64
49:5:1268:G:C4	49:5:2111:G:C2	2.86	0.63
49:5:1823:G:HO3'	49:5:1825:A:P	2.22	0.63
7:G:180:PRO:HA	7:G:227:ASN:HD21	1.63	0.63
10:J:78:LYS:O	10:J:82:ILE:HG13	1.98	0.63
12:M:98:ARG:HH21	12:M:98:ARG:CG	2.07	0.63
3:C:130:ALA:CB	3:C:246:VAL:HG12	2.28	0.63
2:B:142:GLY:O	2:B:146:LEU:HD23	1.98	0.63
49:5:2859:G:O2'	49:5:2860:C:O4'	2.16	0.63
20:U:25:CYS:HB2	20:U:28:PRO:HG3	1.80	0.63
49:5:2288:G:N1	49:5:2290:C:C4	2.66	0.63
49:5:515:C:C2	49:5:647:G:C2	2.87	0.63
49:5:4990:C:O3'	49:5:4991:U:H4'	1.99	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1468:C:C2	49:5:1498:G:N2	2.67	0.63
12:M:47:ARG:O	12:M:47:ARG:HG3	1.98	0.63
6:F:118:GLN:HB2	6:F:121:ASN:HD21	1.62	0.63
49:5:1269:G:O5'	49:5:2111:G:O6	2.16	0.63
20:U:24:ASP:HB3	20:U:69:LYS:CA	2.25	0.63
21:V:30:ASP:N	21:V:30:ASP:OD1	2.31	0.63
49:5:968:C:H4'	49:5:969:C:OP1	1.96	0.63
49:5:516:C:C2	49:5:646:G:C2	2.86	0.63
18:S:72:PRO:O	18:S:100:LEU:CD1	2.45	0.63
3:C:193:LYS:O	3:C:195:LYS:N	2.30	0.63
49:5:964:A:O5'	49:5:964:A:H8	1.80	0.63
49:5:2091:C:H1'	49:5:2092:G:H2'	1.81	0.63
49:5:111:C:C2	49:5:331:G:C2	2.85	0.63
49:5:450:G:O2'	49:5:452:A:H4'	1.99	0.63
6:F:81:GLY:O	6:F:82:ASN:ND2	2.31	0.63
6:F:148:ASN:CB	6:F:243:ASN:HD21	2.10	0.63
49:5:1991:A:H5'	49:5:1992:U:H5	1.64	0.63
49:5:979:C:H2'	49:5:980:U:O4'	1.97	0.63
13:N:65:ARG:NH1	49:5:2457:G:OP1	2.29	0.63
49:5:4281:A:C2	49:5:4283:G:C6	2.86	0.63
49:5:84:A:H5'	49:5:86:U:H1'	1.79	0.63
49:5:1249:C:C2	49:5:1262:G:C2	2.86	0.62
5:E:41:SER:HA	49:5:978:G:C5'	2.29	0.62
19:T:39:ILE:O	19:T:40:VAL:CG2	2.47	0.62
19:T:39:ILE:HG22	19:T:40:VAL:N	2.14	0.62
8:H:47:LEU:HD12	8:H:55:LEU:HD12	1.81	0.62
10:J:87:LEU:HA	10:J:90:ARG:HB2	1.80	0.62
6:F:41:GLN:HG2	49:5:2095:A:N1	2.14	0.62
49:5:1280:C:C4	49:5:1282:G:O6	2.52	0.62
49:5:5031:G:N2	49:5:5032:C:C2	2.67	0.62
16:Q:175:GLU:O	16:Q:176:ARG:HG2	1.99	0.62
14:O:125:LYS:NZ	14:O:135:PHE:CZ	2.67	0.62
49:5:4906:C:C2	49:5:4916:G:C2	2.87	0.62
49:5:2409:U:C5	49:5:2783:A:N1	2.67	0.62
49:5:1081:C:C2	49:5:1220:G:C2	2.87	0.62
49:5:3908:A:N1	49:5:4449:A:N7	2.47	0.62
49:5:1398:A:H1'	49:5:1399:G:C8	2.34	0.62
49:5:702:U:H2'	49:5:703:G:H4'	1.79	0.62
49:5:2769:U:O2'	49:5:2770:C:O5'	2.17	0.62
49:5:4441:A:H8	49:5:4441:A:C5'	2.12	0.62
49:5:1427:A:H3'	49:5:1428:U:H6	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:13:ARG:HH21	10:J:154:LYS:C	2.03	0.62
1:A:207:VAL:HG11	49:5:1633:G:C6	2.34	0.62
3:C:86:ARG:HA	3:C:89:GLN:HG3	1.81	0.62
49:5:1170:G:C2	49:5:1192:C:C2	2.87	0.62
49:5:3877:A:H2	49:5:4401:G:N3	1.98	0.62
1:A:244:GLY:CA	49:5:3746:A:H5"	2.23	0.62
49:5:4768:G:H3'	49:5:4769:G:C8	2.34	0.62
49:5:1280:C:O2'	49:5:1281:G:H3'	2.00	0.62
3:C:81:GLY:O	3:C:87:SER:HB2	1.99	0.62
21:V:13:LYS:HG3	21:V:128:LEU:HD22	1.82	0.62
3:C:185:ALA:HB2	49:5:218:A:N6	2.13	0.62
49:5:292:G:O2'	49:5:293:G:C5'	2.47	0.62
12:M:46:ARG:CZ	49:5:936:C:H2'	2.29	0.62
49:5:1279:A:C3'	49:5:1280:C:H5"	2.28	0.62
19:T:19:PHE:CD2	49:5:1791:U:H4'	2.33	0.62
49:5:4699:U:C4	49:5:4701:A:N6	2.68	0.62
11:L:63:THR:O	11:L:65:ARG:N	2.32	0.62
49:5:3668:C:C2	49:5:3675:G:C2	2.88	0.62
49:5:1267:C:H5"	49:5:2110:C:O2	2.00	0.62
49:5:1755:C:O2	49:5:1755:C:O2'	2.17	0.62
6:F:41:GLN:HG3	49:5:2095:A:C6	2.35	0.62
7:G:166:LEU:HD23	13:N:7:ILE:CD1	2.29	0.62
49:5:1756:U:C4	49:5:1775:A:N1	2.67	0.62
49:5:3680:U:C2'	49:5:3680:U:O2	2.48	0.62
49:5:4765:G:H22	49:5:4869:U:H3	1.48	0.62
14:O:54:TYR:OH	14:O:73:PHE:O	2.17	0.62
49:5:1245:C:C2	49:5:1246:G:N7	2.67	0.62
49:5:1370:G:O3'	49:5:1371:A:O4'	2.18	0.62
25:Z:38:TYR:CD2	25:Z:76:ASN:OD1	2.53	0.62
7:G:169:PHE:HZ	13:N:3:ALA:CB	2.13	0.62
49:5:4929:C:H5"	49:5:4929:C:H6	1.64	0.62
49:5:470:A:C5	49:5:471:A:C8	2.87	0.62
8:H:55:LEU:HG	8:H:56:ARG:N	2.15	0.61
49:5:1279:A:H2'	49:5:1280:C:C6	2.35	0.61
49:5:3723:A:C2	49:5:3724:A:C5	2.89	0.61
49:5:1669:A:H4'	49:5:1685:G:N2	2.16	0.61
2:B:379:PHE:HD2	2:B:385:LYS:CB	2.12	0.61
49:5:2858:A:HO2'	49:5:2859:G:H8	1.42	0.61
49:5:1983:A:C2	49:5:2010:A:H5"	2.35	0.61
49:5:1367:C:N3	49:5:1369:C:P	2.73	0.61
49:5:1280:C:C2	49:5:1282:G:N7	2.68	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4966:A:H2'	49:5:4967:A:O4'	1.99	0.61
2:B:80:GLU:OE2	2:B:328:ASN:ND2	2.33	0.61
49:5:32:G:H1	49:5:48:G:HO2'	1.49	0.61
6:F:49:ARG:NH1	49:5:974:C:O3'	2.33	0.61
49:5:3641:U:H5	49:5:3646:A:N7	1.99	0.61
49:5:3878:C:N4	49:5:4399:U:O2'	2.31	0.61
49:5:1272:C:O2'	49:5:1273:G:C1'	2.49	0.61
49:5:1984:A:N6	49:5:2011:C:O2'	2.34	0.61
49:5:4461:C:O2	49:5:4516:G:C2	2.53	0.61
49:5:2758:G:O2'	49:5:2764:A:N3	2.29	0.61
49:5:1270:A:C2'	49:5:1271:G:O5'	2.48	0.61
49:5:1367:C:C4	49:5:1369:C:OP2	2.53	0.61
4:D:22:ARG:NH1	4:D:28:THR:OG1	2.34	0.61
49:5:4419:U:OP1	49:5:4421:C:N4	2.33	0.61
21:V:35:LYS:HB3	21:V:67:LYS:O	2.01	0.61
49:5:2688:G:C6	49:5:2689:C:N4	2.69	0.61
49:5:1245:C:O2	49:5:1246:G:C8	2.53	0.61
3:C:193:LYS:CD	3:C:196:MET:CE	2.79	0.61
6:F:41:GLN:HG3	49:5:2095:A:H61	1.65	0.61
13:N:181:HIS:O	13:N:184:ILE:HB	2.00	0.61
49:5:1404:G:N2	49:5:1414:C:C2	2.69	0.61
3:C:181:LYS:CG	49:5:218:A:C8	2.84	0.61
49:5:650:C:H2'	49:5:651:C:C6	2.35	0.61
7:G:162:ASP:HB3	7:G:163:PRO:CD	2.29	0.61
49:5:3594:C:H2'	49:5:3594:C:O2	2.00	0.61
49:5:4283:G:N2	49:5:4284:C:C2	2.69	0.61
49:5:3739:C:H5"	49:5:3739:C:H6	1.66	0.61
13:N:124:ASP:OD1	13:N:125:SER:N	2.33	0.61
49:5:2113:G:OP1	49:5:2113:G:O4'	2.19	0.61
49:5:1067:G:H2'	49:5:1068:G:O4'	2.01	0.61
5:E:41:SER:CA	49:5:978:G:H5"	2.31	0.61
49:5:2065:G:H2'	49:5:2066:C:O4'	2.01	0.61
15:P:60:PHE:HD2	15:P:67:VAL:HG21	1.66	0.61
3:C:343:GLN:OE1	49:5:722:G:N2	2.32	0.61
6:F:239:GLU:OE2	18:S:38:VAL:HG13	2.01	0.60
7:G:128:VAL:HB	7:G:129:PRO:HD3	1.83	0.60
49:5:657:C:H2'	49:5:658:C:O4'	2.00	0.60
23:X:89:LYS:HZ1	49:5:2437:C:H42	1.47	0.60
49:5:984:C:C2	49:5:1070:G:C2	2.89	0.60
49:5:3771:C:H2'	49:5:3772:U:C6	2.36	0.60
49:5:724:C:H42	49:5:942:G:H1	1.47	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2769:U:O2	49:5:2770:C:C6	2.54	0.60
49:5:1213:G:C2	49:5:1215:C:O2	2.54	0.60
49:5:2108:G:N1	49:5:2125:C:C4	2.69	0.60
49:5:1299:G:H2'	49:5:1300:G:H5'	1.83	0.60
49:5:183:C:O2	49:5:253:G:O6	2.19	0.60
20:U:25:CYS:HB3	20:U:112:LEU:HD12	1.82	0.60
49:5:4092:G:N2	49:5:4158:C:C2	2.70	0.60
49:5:504:G:O2'	49:5:505:G:O4'	2.19	0.60
49:5:209:U:C4	49:5:233:U:C4	2.89	0.60
49:5:2089:G:O2'	49:5:2090:U:OP2	2.15	0.60
12:M:98:ARG:HG2	12:M:98:ARG:NH2	2.06	0.60
6:F:138:VAL:HG23	6:F:138:VAL:O	2.02	0.60
2:B:77:THR:HG21	2:B:337:VAL:HG22	1.83	0.60
49:5:1723:A:N1	49:5:1838:A:C2	2.69	0.60
6:F:39:PHE:CZ	49:5:2123:C:O3'	2.54	0.60
49:5:1358:G:H8	49:5:1358:G:H3'	1.65	0.60
49:5:1367:C:C2	49:5:1370:G:H2'	2.37	0.60
49:5:1277:G:N2	49:5:1278:C:C2	2.70	0.60
49:5:3912:U:H2'	49:5:3913:G:H5'	1.83	0.60
8:H:88:PHE:CE2	8:H:151:ILE:HB	2.37	0.60
11:L:99:ASP:OD1	11:L:101:ARG:N	2.35	0.60
49:5:4260:U:H2'	49:5:4261:C:C6	2.37	0.60
49:5:1271:G:H3'	49:5:1272:C:C5'	2.31	0.60
49:5:2110:C:C6	49:5:2110:C:OP1	2.54	0.60
25:Z:100:VAL:HG11	25:Z:107:LYS:HA	1.82	0.60
49:5:703:G:H3'	49:5:704:C:H5'	1.83	0.60
49:5:4579:U:H2'	49:5:4580:U:C6	2.36	0.60
49:5:2858:A:O2'	49:5:2859:G:P	2.60	0.60
49:5:2623:A:C2	49:5:2624:G:C5	2.89	0.60
49:5:1368:A:C2'	49:5:1369:C:OP1	2.50	0.60
49:5:1280:C:N3	49:5:1282:G:C6	2.69	0.60
49:5:2108:G:N2	49:5:2125:C:C2	2.69	0.60
49:5:2447:U:O2'	49:5:2448:G:H5'	2.00	0.60
14:O:125:LYS:NZ	14:O:135:PHE:CE1	2.70	0.60
16:Q:14:ARG:NH2	49:5:2083:C:OP2	2.35	0.60
3:C:194:GLY:O	3:C:197:ARG:N	2.35	0.60
51:8:126:C:O2'	51:8:127:U:C5	2.53	0.60
49:5:1271:G:H3'	49:5:1272:C:O4'	2.02	0.60
6:F:39:PHE:CE1	49:5:2123:C:O3'	2.53	0.60
19:T:48:VAL:HG21	19:T:94:GLU:HG2	1.83	0.60
49:5:2726:G:C6	49:5:2727:C:N4	2.70	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4320:G:H2'	49:5:4321:U:O4'	2.00	0.60
22:W:50:ASN:N	22:W:50:ASN:OD1	2.35	0.60
12:M:98:ARG:HD3	49:5:4873:G:O6	2.02	0.59
49:5:497:G:C2	49:5:657:C:N3	2.69	0.59
49:5:94:A:H2'	49:5:95:G:O4'	2.02	0.59
4:D:278:ASP:O	4:D:282:GLN:HG3	2.02	0.59
49:5:3739:C:C6	49:5:3739:C:C5'	2.85	0.59
8:H:72:THR:OG1	49:5:4690:G:O2'	2.20	0.59
3:C:323:ARG:NH2	49:5:1280:C:O4'	2.34	0.59
49:5:4750:G:O6	49:5:4949:G:O6	2.20	0.59
48:2:49:G:C2	48:2:66:C:C2	2.90	0.59
20:U:23:LEU:HD22	20:U:39:PHE:CE2	2.37	0.59
49:5:4723:A:C2	49:5:4724:A:C5	2.90	0.59
49:5:1171:G:C2	49:5:1191:C:C2	2.90	0.59
6:F:39:PHE:CD2	49:5:2124:G:OP1	2.55	0.59
7:G:168:VAL:O	7:G:171:PRO:HD2	2.02	0.59
13:N:179:LYS:HE2	49:5:298:G:OP1	2.02	0.59
2:B:117:ARG:NH2	2:B:177:LYS:HD3	2.17	0.59
49:5:165:A:H3'	49:5:166:C:H6	1.67	0.59
49:5:43:U:C4	49:5:44:A:H1'	2.37	0.59
49:5:2905:C:C2	49:5:3590:G:C2	2.91	0.59
23:X:50:LYS:HG3	49:5:2475:G:C6	2.37	0.59
49:5:483:G:C2	49:5:484:U:C5	2.90	0.59
49:5:1613:A:N6	49:5:3637:U:C4	2.71	0.59
49:5:2688:G:C2	49:5:2689:C:C4	2.90	0.59
49:5:1886:G:N2	49:5:1894:C:C2	2.71	0.59
49:5:4101:C:C2	49:5:4109:G:C2	2.90	0.59
49:5:1811:G:N2	49:5:1812:C:C2	2.70	0.59
49:5:2481:G:C2	49:5:2498:C:C2	2.90	0.59
49:5:1991:A:C8	49:5:1992:U:C1'	2.85	0.59
49:5:1751:A:C2	49:5:1780:A:C2	2.90	0.59
49:5:77:U:H3	49:5:336:A:H61	1.49	0.59
4:D:16:TYR:O	19:T:20:ARG:CD	2.50	0.59
49:5:2766:A:H5"	49:5:2766:A:N3	2.17	0.59
9:I:61:SER:HA	9:I:126:VAL:HG23	1.83	0.59
2:B:86:VAL:HG13	2:B:162:VAL:HG13	1.83	0.59
49:5:1267:C:H5"	49:5:2110:C:O2'	2.03	0.59
49:5:1280:C:N3	49:5:1282:G:C5	2.71	0.59
19:T:143:THR:O	19:T:143:THR:HG23	2.01	0.59
6:F:184:TYR:HB3	6:F:202:ARG:HG2	1.84	0.59
5:E:129:PHE:HA	5:E:132:HIS:CE1	2.38	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1280:C:C4	49:5:1282:G:C6	2.91	0.59
49:5:181:C:C2	49:5:256:G:C2	2.91	0.59
49:5:4920:C:H2'	49:5:4921:C:C6	2.38	0.59
5:E:254:LEU:O	5:E:254:LEU:HD23	2.02	0.59
21:V:82:ILE:HG12	21:V:121:VAL:HG13	1.83	0.59
49:5:2746:A:H2'	49:5:2747:U:O4'	2.03	0.59
49:5:1245:C:C4	49:5:1269:G:O6	2.56	0.59
6:F:92:ALA:HB2	6:F:127:LEU:HD21	1.83	0.59
49:5:1890:G:H1	49:5:1938:C:H42	1.49	0.59
49:5:2859:G:O2'	49:5:2860:C:C5'	2.51	0.59
50:7:30:C:C2	50:7:48:G:N2	2.71	0.59
49:5:987:C:H2'	49:5:988:C:O4'	2.02	0.59
49:5:4233:A:C8	49:5:4235:G:C8	2.90	0.59
49:5:4138:C:C2	49:5:4147:G:C2	2.91	0.59
49:5:2457:G:N2	49:5:2465:C:C2	2.71	0.59
49:5:199:G:C2	49:5:220:C:O2	2.55	0.59
49:5:982:U:H2'	49:5:983:C:C6	2.38	0.59
49:5:43:U:N3	49:5:44:A:H1'	2.17	0.58
49:5:43:U:O4	49:5:93:G:C6	2.55	0.58
49:5:4453:C:C2	49:5:4529:G:C2	2.91	0.58
5:E:207:HIS:HE1	5:E:245:ASP:OD2	1.86	0.58
6:F:140:PRO:HG2	6:F:141:TYR:CD1	2.37	0.58
49:5:1992:U:H5'	49:5:1993:C:OP1	2.03	0.58
49:5:1358:G:N2	49:5:1359:G:C6	2.71	0.58
24:Y:8:THR:CG2	24:Y:13:LYS:HD2	2.33	0.58
6:F:245:LEU:HD23	6:F:245:LEU:C	2.22	0.58
49:5:2457:G:N2	49:5:3672:G:H21	2.01	0.58
5:E:124:HIS:NE2	49:5:1282:G:N7	2.51	0.58
49:5:2524:U:H5"	49:5:2711:G:C2	2.38	0.58
51:8:70:G:O2'	51:8:87:G:N2	2.35	0.58
49:5:1358:G:H3'	49:5:1358:G:C8	2.38	0.58
8:H:48:LEU:HG	8:H:54:ARG:HG2	1.86	0.58
49:5:977:C:C4	49:5:978:G:N7	2.71	0.58
48:2:15:G:C8	48:2:15:G:H5"	2.38	0.58
49:5:917:A:C6	49:5:919:C:C4	2.91	0.58
49:5:2852:U:H2'	49:5:2852:U:O2	2.04	0.58
19:T:146:LYS:O	19:T:146:LYS:HD2	2.02	0.58
25:Z:101:PHE:HD1	25:Z:101:PHE:H	1.51	0.58
50:7:30:C:N3	50:7:48:G:C2	2.72	0.58
49:5:1991:A:C3'	49:5:1992:U:C6	2.85	0.58
6:F:157:TYR:CE1	6:F:189:MET:HG2	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:120:GLU:OE1	8:H:124:ARG:NH2	2.30	0.58
49:5:4510:A:O2'	49:5:4511:A:O4'	2.22	0.58
49:5:4988:U:H4'	49:5:4989:U:O2	2.03	0.58
2:B:41:VAL:HA	2:B:187:GLY:CA	2.34	0.58
24:Y:8:THR:HG21	24:Y:13:LYS:HB3	1.82	0.58
15:P:15:CYS:SG	15:P:150:LEU:HD12	2.43	0.58
49:5:2857:A:O2'	49:5:2858:A:C5'	2.52	0.58
49:5:2440:U:O2'	49:5:2441:C:OP1	2.09	0.58
14:O:37:ARG:NH2	49:5:4760:G:OP2	2.36	0.58
1:A:243:THR:O	49:5:3657:U:O2'	2.21	0.58
19:T:109:VAL:HG22	49:5:1803:G:C6	2.39	0.58
49:5:1538:U:O2'	49:5:1629:G:OP1	2.21	0.58
5:E:166:SER:CB	5:E:210:ASP:OD2	2.52	0.58
49:5:4094:G:C2'	49:5:4095:G:O4'	2.51	0.58
19:T:142:ARG:NH1	49:5:1090:G:OP1	2.35	0.58
25:Z:78:ASN:N	25:Z:78:ASN:OD1	2.36	0.58
49:5:2089:G:C6	49:5:2262:G:H2'	2.38	0.58
3:C:80:ARG:HH11	3:C:80:ARG:CG	2.15	0.58
49:5:642:G:N1	49:5:643:C:C4	2.72	0.58
16:Q:186:TYR:CD2	49:5:4307:A:H4'	2.39	0.58
14:O:124:LEU:CD2	18:S:172:PRO:HD3	2.34	0.58
5:E:129:PHE:HA	5:E:132:HIS:ND1	2.19	0.58
49:5:2391:G:N2	49:5:2392:C:C2	2.72	0.58
49:5:1990:A:N6	49:5:1991:A:C2	2.72	0.58
49:5:1990:A:C4	49:5:1991:A:H1'	2.39	0.58
49:5:1682:A:C6	49:5:1683:U:C4	2.92	0.58
49:5:301:G:C6	49:5:302:C:C4	2.92	0.58
18:S:9:GLU:HG2	18:S:33:PHE:CE1	2.39	0.57
11:L:29:PRO:HG3	49:5:1371:A:C8	2.39	0.57
49:5:44:A:N3	49:5:94:A:C2	2.72	0.57
49:5:2547:G:N2	49:5:2548:C:C2	2.71	0.57
49:5:1986:U:H2'	49:5:2007:G:O6	2.03	0.57
49:5:292:G:O2'	49:5:293:G:P	2.62	0.57
5:E:174:PRO:HG2	5:E:257:ILE:HD11	1.85	0.57
49:5:2852:U:O2	49:5:2854:G:C8	2.56	0.57
49:5:1438:U:C2	49:5:2099:G:O6	2.57	0.57
49:5:1271:G:C3'	49:5:1272:C:H5'	2.34	0.57
47:1:24:VAL:C	48:2:76:A:O2'	2.40	0.57
49:5:990:C:C4	49:5:1064:G:C2	2.92	0.57
49:5:1075:G:N2	49:5:1076:C:C2	2.72	0.57
49:5:1279:A:H3'	49:5:1280:C:C6	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:T:101:SER:HB2	49:5:1729:A:H2	1.68	0.57
49:5:3729:U:H2'	49:5:3730:U:O4'	2.05	0.57
51:8:121:G:C2	51:8:130:C:C2	2.92	0.57
49:5:1358:G:N2	49:5:1359:G:O6	2.37	0.57
19:T:47:THR:OG1	19:T:48:VAL:N	2.36	0.57
49:5:1217:G:H2'	49:5:1218:G:C8	2.39	0.57
3:C:195:LYS:NZ	51:8:21:C:OP1	2.37	0.57
5:E:132:HIS:CD2	49:5:711:A:H1'	2.40	0.57
49:5:488:G:N2	49:5:489:C:C2	2.72	0.57
49:5:1252:C:C2	49:5:1259:G:C2	2.93	0.57
6:F:148:ASN:N	6:F:243:ASN:HD21	2.01	0.57
49:5:2089:G:N3	49:5:2089:G:H2'	2.19	0.57
12:M:46:ARG:NH1	49:5:936:C:H2'	2.19	0.57
5:E:166:SER:HB2	5:E:210:ASP:OD2	2.04	0.57
6:F:41:GLN:CG	49:5:2095:A:C6	2.87	0.57
49:5:932:A:HO2'	49:5:933:G:P	2.27	0.57
49:5:1167:C:C2	49:5:1195:G:C2	2.93	0.57
49:5:4441:A:C5'	49:5:4441:A:C8	2.88	0.57
49:5:4730:C:O4'	49:5:4730:C:O2	2.23	0.57
49:5:5028:G:C6	49:5:5029:C:N4	2.72	0.57
14:O:7:LEU:HD13	14:O:9:LEU:HD21	1.85	0.57
49:5:1672:U:H2'	49:5:1673:U:C6	2.39	0.57
49:5:1367:C:N1	49:5:1370:G:H2'	2.19	0.57
49:5:2256:C:O2	49:5:2256:C:C2'	2.52	0.57
49:5:166:C:O2	49:5:167:C:C6	2.58	0.57
49:5:2623:A:C2	49:5:2633:U:N3	2.73	0.57
49:5:2688:G:N2	49:5:2689:C:C2	2.73	0.57
21:V:12:ALA:HB2	49:5:4617:G:C1'	2.33	0.57
49:5:105:A:C2	49:5:336:A:C8	2.93	0.57
14:O:192:PHE:O	14:O:195:VAL:N	2.37	0.57
7:G:50:ASP:OD1	7:G:50:ASP:C	2.43	0.57
8:H:44:GLU:HB3	8:H:58:ASP:HB2	1.87	0.57
49:5:2468:U:H2'	49:5:2506:G:O6	2.05	0.57
49:5:2367:A:N1	49:5:2788:U:C4	2.71	0.57
49:5:2258:C:C2'	49:5:2258:C:O2	2.52	0.57
14:O:48:TYR:CE2	49:5:1930:U:C2	2.92	0.57
18:S:118:ARG:NH1	49:5:2059:C:O2	2.37	0.57
49:5:1339:U:H2'	49:5:1340:C:C6	2.40	0.57
49:5:2444:U:HO2'	51:8:112:G:HO2'	1.53	0.57
7:G:53:ARG:NH2	49:5:4165:C:OP1	2.32	0.57
49:5:986:C:N3	49:5:1068:G:C2	2.73	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1823:G:C3'	49:5:1825:A:P	2.93	0.56
13:N:180:PHE:N	13:N:180:PHE:CD1	2.72	0.56
49:5:1889:U:H3'	49:5:1890:G:C8	2.39	0.56
14:O:42:ASN:ND2	14:O:125:LYS:HD3	2.20	0.56
49:5:685:C:O2	49:5:685:C:C2'	2.53	0.56
49:5:4227:U:O2'	49:5:4228:G:H5'	2.05	0.56
5:E:215:LYS:NZ	49:5:4939:C:OP2	2.37	0.56
24:Y:1:MET:O	24:Y:3:PHE:CE1	2.58	0.56
7:G:127:ASP:O	7:G:128:VAL:CB	2.52	0.56
7:G:157:ILE:HD11	7:G:170:LEU:HD22	1.87	0.56
49:5:977:C:C3'	49:5:978:G:H5'	2.33	0.56
7:G:144:THR:HG21	7:G:169:PHE:CE1	2.40	0.56
21:V:28:CYS:CB	21:V:34:ALA:O	2.52	0.56
10:J:23:ASN:HD22	10:J:129:ASP:HB3	1.71	0.56
25:Z:101:PHE:CD1	25:Z:101:PHE:N	2.72	0.56
51:8:38:U:O2	51:8:38:U:OP1	2.23	0.56
14:O:57:PHE:HZ	14:O:82:ARG:NH2	2.04	0.56
16:Q:68:ARG:CZ	49:5:1420:A:H5"	2.34	0.56
49:5:1245:C:N3	49:5:1246:G:N7	2.53	0.56
7:G:157:ILE:HG23	7:G:167:VAL:HG11	1.87	0.56
25:Z:100:VAL:HG13	25:Z:107:LYS:CA	2.33	0.56
49:5:2089:G:N3	49:5:2089:G:C2'	2.68	0.56
14:O:119:VAL:HG13	14:O:124:LEU:CD1	2.35	0.56
11:L:29:PRO:HG3	49:5:1371:A:H8	1.70	0.56
49:5:689:U:N3	49:5:690:C:C5	2.73	0.56
3:C:193:LYS:HD2	3:C:196:MET:HE1	1.87	0.56
49:5:2096:G:N3	49:5:2096:G:H3'	2.21	0.56
11:L:10:LEU:H	11:L:10:LEU:CD2	2.17	0.56
49:5:4416:G:N2	49:5:4417:C:C2	2.73	0.56
4:D:202:GLN:NE2	4:D:237:GLU:OE1	2.39	0.56
49:5:4462:C:C2	49:5:4515:G:C2	2.93	0.56
49:5:5043:A:H2'	49:5:5044:A:O4'	2.05	0.56
49:5:279:A:O2'	49:5:280:G:OP2	2.19	0.56
49:5:1899:G:N2	49:5:1900:C:C2	2.73	0.56
49:5:1956:A:C2	49:5:2028:C:C2	2.93	0.56
49:5:1269:G:C3'	49:5:2111:G:O6	2.51	0.56
49:5:1269:G:C5	49:5:2111:G:N1	2.74	0.56
49:5:497:G:C2	49:5:657:C:C2	2.93	0.56
49:5:130:C:C2	49:5:139:G:C2	2.93	0.56
49:5:1886:G:C2	49:5:1894:C:C2	2.93	0.56
18:S:95:ARG:NH2	49:5:1951:G:O2'	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:184:MET:HB3	9:I:190:LEU:HD12	1.88	0.56
4:D:291:GLN:HG3	4:D:292:GLU:N	2.19	0.56
49:5:202:C:C2	49:5:214:G:C2	2.93	0.56
5:E:95:ASP:OD1	5:E:96:LYS:N	2.38	0.56
49:5:1266:G:H22	49:5:2111:G:H21	1.52	0.56
19:T:108:ARG:HG2	19:T:108:ARG:NH1	2.20	0.56
51:8:85:U:O2'	51:8:87:G:OP1	2.23	0.56
49:5:4476:C:O4'	49:5:4476:C:O2	2.21	0.56
49:5:2011:C:H2'	49:5:2012:A:O4'	2.06	0.56
49:5:100:C:O4'	49:5:100:C:O2	2.21	0.56
49:5:1848:C:H5"	49:5:1848:C:C6	2.41	0.56
51:8:106:G:N2	51:8:107:C:C2	2.73	0.56
49:5:1270:A:C5	49:5:1271:G:H1'	2.40	0.56
49:5:1990:A:N6	49:5:1991:A:C4	2.73	0.56
49:5:654:C:H2'	49:5:654:C:O2	2.04	0.56
49:5:970:G:H2'	49:5:971:U:O4'	2.05	0.56
49:5:43:U:C4	49:5:93:G:O6	2.59	0.56
8:H:50:LYS:C	8:H:51:LYS:HG3	2.26	0.56
49:5:742:G:C2	49:5:923:C:C2	2.94	0.56
49:5:3739:C:H5"	49:5:3739:C:C6	2.40	0.56
49:5:4099:G:C6	49:5:4100:C:C4	2.93	0.56
49:5:4413:C:O4'	49:5:4413:C:O2	2.23	0.56
49:5:2555:G:O6	49:5:2572:C:N4	2.39	0.56
9:I:47:PRO:HB3	9:I:171:TRP:CE2	2.41	0.56
49:5:977:C:C2	49:5:978:G:N7	2.74	0.56
4:D:31:TYR:CZ	4:D:35:ARG:NH2	2.74	0.56
2:B:174:ARG:NH1	49:5:4974:C:C1'	2.68	0.56
49:5:1076:C:H2'	49:5:1077:C:O4'	2.06	0.56
49:5:973:G:C6	49:5:974:C:C4	2.93	0.56
7:G:144:THR:CG2	7:G:169:PHE:CE1	2.89	0.56
13:N:30:TYR:OH	13:N:43:THR:HG21	2.05	0.56
13:N:103:GLU:OE1	13:N:167:ALA:HB3	2.05	0.56
49:5:2477:A:H2'	49:5:2478:C:C6	2.40	0.56
49:5:318:A:O2'	49:5:3727:A:H1'	2.06	0.56
7:G:161:VAL:HG11	7:G:167:VAL:HG21	1.88	0.56
48:2:49:G:N2	48:2:66:C:C2	2.74	0.56
49:5:685:C:H2'	49:5:685:C:O2	2.06	0.56
49:5:259:C:H2'	49:5:260:C:O4'	2.06	0.56
49:5:2890:C:H2'	49:5:2891:U:C6	2.41	0.56
49:5:1965:G:H2'	49:5:1966:C:C6	2.40	0.55
6:F:148:ASN:CA	6:F:243:ASN:HD21	2.17	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2108:G:N2	49:5:2125:C:N3	2.53	0.55
12:M:74:ARG:CG	12:M:78:GLU:OE1	2.54	0.55
13:N:37:HIS:CD2	13:N:63:ARG:HB3	2.41	0.55
49:5:2084:C:H3'	49:5:2085:G:H5'	1.88	0.55
15:P:118:GLN:HE22	49:5:423:G:H21	1.54	0.55
49:5:1835:G:O2'	49:5:1836:G:OP2	2.15	0.55
49:5:1293:G:H8	49:5:1293:G:H5"	1.71	0.55
49:5:1961:G:O2'	49:5:2025:A:N6	2.39	0.55
49:5:165:A:H3'	49:5:166:C:C6	2.41	0.55
13:N:166:SER:HB2	49:5:331:G:OP1	2.06	0.55
49:5:4207:C:C2	49:5:4226:G:C2	2.94	0.55
4:D:264:LYS:HD2	4:D:266:TRP:CE2	2.42	0.55
8:H:89:ARG:HD3	51:8:37:A:OP2	164.66	0.55
49:5:1358:G:C8	49:5:1358:G:C3'	2.90	0.55
20:U:87:THR:HG23	20:U:102:VAL:HG21	1.89	0.55
49:5:1669:A:H4'	49:5:1685:G:H22	1.71	0.55
24:Y:3:PHE:CD1	24:Y:3:PHE:N	2.72	0.55
11:L:42:LYS:O	11:L:46:ILE:HG12	2.07	0.55
49:5:1468:C:N3	49:5:1498:G:C2	2.75	0.55
49:5:1241:C:N4	49:5:1270:A:O2'	2.39	0.55
49:5:1379:C:O3'	49:5:1380:G:O4'	2.24	0.55
5:E:43:ASN:HD21	49:5:977:C:H5"	1.71	0.55
49:5:3870:C:C2	49:5:3886:G:C2	2.94	0.55
49:5:105:A:C2	49:5:336:A:N7	2.75	0.55
23:X:125:ASN:OD1	49:5:2437:C:O3'	2.24	0.55
3:C:181:LYS:HD2	49:5:2300:A:N1	2.21	0.55
49:5:2443:G:H5"	49:5:2443:G:H8	1.72	0.55
49:5:2654:C:C2	49:5:2681:G:N2	2.75	0.55
49:5:1564:A:H2'	49:5:1565:A:C8	2.41	0.55
49:5:2468:U:O4	49:5:2473:A:C2	2.55	0.55
49:5:976:G:H2'	49:5:977:C:C1'	2.36	0.55
3:C:336:ARG:O	3:C:340:ILE:HG12	2.06	0.55
49:5:1550:G:C2	49:5:1579:C:O2	2.59	0.55
49:5:2825:A:H4'	49:5:2826:U:O5'	2.06	0.55
25:Z:74:VAL:HG23	25:Z:101:PHE:CZ	2.42	0.55
49:5:4939:C:O3'	49:5:4941:G:P	2.65	0.55
2:B:92:TYR:CE1	2:B:101:THR:HB	2.42	0.55
49:5:4737:G:H2'	49:5:4738:C:C6	2.42	0.55
49:5:1756:U:O4	49:5:1776:A:C2	2.60	0.55
49:5:2773:G:N1	49:5:2774:C:C4	2.75	0.55
17:R:120:TYR:CD1	17:R:120:TYR:C	2.80	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:61:GLN:NE2	49:5:358:C:OP1	2.39	0.55
8:H:47:LEU:HD23	8:H:52:LYS:CD	2.37	0.55
49:5:4093:G:H2'	49:5:4094:G:H5'	1.89	0.55
5:E:207:HIS:CE1	5:E:245:ASP:OD2	2.60	0.55
49:5:1672:U:O2'	49:5:4304:A:OP1	2.24	0.55
3:C:229:LEU:N	3:C:229:LEU:HD22	2.21	0.55
49:5:1187:G:HO2'	49:5:1188:C:H6	1.55	0.55
17:R:58:HIS:HA	49:5:4646:U:OP1	2.07	0.55
49:5:976:G:C6	49:5:977:C:C4	2.95	0.55
49:5:2669:C:O2'	49:5:2670:C:P	2.65	0.55
49:5:919:C:N4	49:5:920:C:C5	2.75	0.55
49:5:1279:A:H3'	49:5:1280:C:C5	2.41	0.55
4:D:17:GLN:HG3	19:T:20:ARG:O	2.06	0.55
1:A:196:TRP:HH2	49:5:1613:A:C2	2.24	0.55
49:5:209:U:N3	49:5:233:U:C4	2.74	0.55
49:5:1379:C:H1'	49:5:1380:G:C8	2.41	0.55
49:5:975:C:O3'	49:5:976:G:O4'	2.25	0.55
49:5:746:A:O2'	49:5:747:A:O5'	2.22	0.55
8:H:88:PHE:CZ	8:H:151:ILE:HB	2.42	0.55
49:5:2412:A:H2'	49:5:2413:U:C6	2.42	0.55
23:X:119:ILE:HG23	23:X:120:ASP:N	2.21	0.55
13:N:160:GLU:N	13:N:160:GLU:OE1	2.38	0.55
49:5:701:G:C6	49:5:702:U:C6	2.94	0.55
49:5:504:G:H22	49:5:654:C:H1'	1.72	0.55
7:G:169:PHE:CZ	13:N:3:ALA:CB	2.90	0.55
49:5:665:C:O2	49:5:665:C:C2'	2.55	0.55
5:E:157:ARG:O	5:E:178:ASN:ND2	2.40	0.55
49:5:245:C:O4'	49:5:245:C:O2	2.22	0.55
11:L:81:LEU:HD11	11:L:98:VAL:HG22	1.89	0.55
11:L:80:GLU:HG2	11:L:110:LEU:CD1	2.36	0.54
49:5:1270:A:C8	49:5:1271:G:C8	2.95	0.54
49:5:1990:A:C3'	49:5:1991:A:C5'	2.85	0.54
3:C:84:THR:CG2	49:5:366:A:C6	2.90	0.54
3:C:80:ARG:HG2	3:C:80:ARG:NH1	2.22	0.54
2:B:117:ARG:NH2	49:5:4985:U:OP1	2.39	0.54
49:5:166:C:O2	49:5:166:C:C2'	2.55	0.54
49:5:3594:C:O2	49:5:3594:C:C2'	2.55	0.54
6:F:129:LYS:CB	19:T:133:ALA:HB3	2.37	0.54
49:5:4901:G:C2	49:5:4921:C:N3	2.75	0.54
5:E:240:GLU:O	5:E:244:VAL:HG23	2.07	0.54
49:5:5023:C:O2	49:5:5023:C:O4'	2.24	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4134:C:C2	49:5:4151:G:N2	2.75	0.54
49:5:4136:G:C6	49:5:4137:C:C4	2.95	0.54
3:C:198:ASN:OD1	24:Y:10:ASP:HA	2.07	0.54
49:5:3670:C:O2'	49:5:3671:G:O5'	2.26	0.54
49:5:2294:G:N2	49:5:2295:C:C2	2.76	0.54
49:5:2468:U:H2'	49:5:2506:G:C6	2.42	0.54
49:5:1366:G:N7	49:5:1367:C:O3'	2.40	0.54
8:H:47:LEU:CD1	8:H:55:LEU:HD12	2.37	0.54
49:5:491:G:C2	49:5:492:U:C5	2.95	0.54
49:5:1322:A:N6	49:5:4446:U:OP1	2.40	0.54
9:I:45:GLU:O	9:I:46:PHE:CD1	2.60	0.54
49:5:1379:C:H4'	49:5:1380:G:C8	2.42	0.54
51:8:56:G:C4	51:8:62:A:C2	2.95	0.54
8:H:47:LEU:CD2	8:H:52:LYS:CD	2.85	0.54
3:C:32:ILE:HD12	3:C:130:ALA:HB2	1.89	0.54
11:L:46:ILE:O	11:L:46:ILE:HG13	2.07	0.54
21:V:57:VAL:HG23	21:V:84:GLN:HG2	1.89	0.54
49:5:4530:U:H2'	49:5:4531:U:C6	2.43	0.54
49:5:1991:A:C5	49:5:1992:U:C2	2.96	0.54
4:D:23:ARG:HD2	49:5:4280:A:N1	2.23	0.54
49:5:976:G:C4	49:5:977:C:C6	2.96	0.54
14:O:113:ASP:OD1	14:O:114:LYS:N	2.41	0.54
49:5:483:G:N1	49:5:484:U:C4	2.76	0.54
49:5:4303:C:O2	49:5:4303:C:O5'	2.25	0.54
16:Q:152:PHE:CE2	49:5:1847:C:H4'	2.42	0.54
49:5:4758:U:O4'	49:5:4758:U:O2	2.25	0.54
49:5:2248:C:H2'	49:5:2248:C:O2	2.07	0.54
45:0:1748:LYS:HD3	49:5:2707:U:C6	2.43	0.54
13:N:120:TRP:NE1	13:N:123:GLU:OE1	2.35	0.54
2:B:4:ARG:HH12	2:B:8:ALA:HB3	1.73	0.54
49:5:1991:A:C3'	49:5:1992:U:C5	2.91	0.54
49:5:2089:G:O6	49:5:2263:A:C5'	2.55	0.54
49:5:1074:G:H2'	49:5:1075:G:C1'	2.37	0.54
49:5:1613:A:N6	49:5:3637:U:N3	2.56	0.54
4:D:107:ARG:NH2	4:D:116:ASP:OD1	2.39	0.54
1:A:20:VAL:HB	49:5:3679:U:H5	1.73	0.54
14:O:14:HIS:HD2	14:O:124:LEU:HD12	1.61	0.54
49:5:1213:G:C5	49:5:1215:C:N1	2.75	0.54
3:C:305:PRO:O	49:5:2092:G:N1	2.37	0.54
49:5:1474:C:H2'	49:5:1475:G:O4'	2.08	0.54
51:8:155:C:H2'	51:8:156:U:O4'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:U:24:ASP:CB	20:U:69:LYS:HG3	2.23	0.54
49:5:976:G:C2	49:5:977:C:C2	2.95	0.54
3:C:81:GLY:O	3:C:87:SER:CB	2.56	0.54
3:C:184:TYR:HB3	49:5:218:A:N1	2.23	0.54
49:5:158:A:C5	49:5:277:G:C6	2.96	0.54
49:5:3663:A:H2'	49:5:3663:A:N3	2.22	0.54
49:5:677:G:N2	49:5:678:C:C2	2.76	0.54
49:5:2020:U:H2'	49:5:2020:U:O2	2.07	0.54
49:5:1370:G:O3'	49:5:1371:A:C4'	2.56	0.54
49:5:2586:G:C8	49:5:2770:C:H1'	2.42	0.54
49:5:1085:C:C2	49:5:1213:G:N1	2.75	0.54
49:5:2465:C:H2'	49:5:2466:G:C8	2.43	0.54
49:5:2446:C:C2	49:5:2515:G:C2	2.96	0.54
49:5:209:U:N3	49:5:233:U:C5	2.76	0.54
49:5:1846:G:H2'	49:5:1847:C:C6	2.43	0.54
49:5:671:G:N2	49:5:672:C:C2	2.76	0.54
10:J:89:VAL:HG21	10:J:115:LEU:HD23	1.88	0.54
49:5:1272:C:O2'	49:5:1273:G:O4'	2.26	0.54
11:L:28:GLN:HE22	49:5:1360:G:P	2.30	0.54
49:5:1380:G:O2'	49:5:1381:U:H5"	2.08	0.54
49:5:516:C:N3	49:5:646:G:C2	2.75	0.54
21:V:29:ALA:HB1	21:V:118:THR:HG22	1.88	0.54
11:L:26:PHE:O	11:L:29:PRO:HD2	2.08	0.54
16:Q:89:ASP:OD1	16:Q:91:ARG:NH2	2.40	0.54
49:5:917:A:C6	49:5:919:C:N4	2.76	0.54
49:5:4988:U:O2	49:5:4988:U:H2'	2.08	0.54
48:2:51:C:H2'	48:2:52:G:H5'	1.89	0.54
49:5:2557:G:C6	49:5:2558:C:C4	2.96	0.54
49:5:2297:G:N2	49:5:2338:C:C2	2.76	0.54
49:5:28:C:C2	49:5:55:G:N2	2.75	0.54
49:5:1367:C:N4	49:5:1369:C:OP2	2.41	0.53
49:5:1211:G:H2'	49:5:1212:G:C8	2.43	0.53
49:5:2674:A:H5"	49:5:2675:G:C8	2.44	0.53
11:L:47:ALA:CB	11:L:48:PRO:CD	2.85	0.53
24:Y:3:PHE:HD1	24:Y:3:PHE:N	2.06	0.53
49:5:1661:C:C2	49:5:2345:G:N1	2.76	0.53
49:5:2616:C:C2	49:5:2722:G:C2	2.96	0.53
14:O:27:VAL:O	14:O:101:ARG:NH1	2.42	0.53
3:C:334:THR:HG21	6:F:53:TYR:OH	2.08	0.53
49:5:2668:G:C2'	49:5:2669:C:H5'	2.38	0.53
49:5:2128:G:C6	49:5:2129:C:C4	2.96	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:515:C:C2	49:5:647:G:N2	2.76	0.53
49:5:5029:C:H2'	49:5:5030:U:O4'	2.07	0.53
3:C:190:ARG:HD2	3:C:199:ARG:O	2.09	0.53
14:O:196:LEU:HB3	14:O:202:LEU:HD22	1.90	0.53
49:5:976:G:C5	49:5:977:C:C5	2.97	0.53
49:5:22:G:C2	51:8:35:C:C2	2.97	0.53
49:5:300:A:C2	49:5:301:G:C5	2.96	0.53
50:7:82:G:C2	50:7:95:C:C2	2.97	0.53
49:5:2753:G:H3'	49:5:2754:G:C8	2.43	0.53
49:5:1379:C:H4'	49:5:1380:G:O4'	2.07	0.53
49:5:499:G:C2	49:5:500:G:C8	2.96	0.53
49:5:932:A:O2'	49:5:933:G:P	2.66	0.53
49:5:2622:G:C6	49:5:2623:A:N7	2.77	0.53
49:5:3761:C:O4'	49:5:3761:C:O2	2.25	0.53
25:Z:106:LEU:N	25:Z:106:LEU:HD12	2.23	0.53
49:5:4152:G:N2	49:5:4153:C:C2	2.77	0.53
49:5:713:C:H42	49:5:955:G:H1	1.56	0.53
23:X:52:LEU:HD22	23:X:53:ARG:N	2.22	0.53
25:Z:46:ILE:HD11	25:Z:49:TYR:CE2	2.43	0.53
5:E:42:ARG:HG3	49:5:979:C:OP1	2.08	0.53
5:E:122:LEU:HD13	49:5:971:U:C6	2.43	0.53
19:T:87:LYS:NZ	49:5:4301:U:P	2.81	0.53
49:5:4699:U:N3	49:5:4701:A:N6	2.56	0.53
2:B:302:ASN:HB2	2:B:313:SER:HA	1.89	0.53
48:2:2:G:N2	48:2:3:C:C2	2.76	0.53
49:5:1380:G:N2	49:5:1382:G:C4	2.77	0.53
49:5:470:A:C6	49:5:471:A:C8	2.97	0.53
49:5:1076:C:HO2'	49:5:2114:G:H1	1.55	0.53
20:U:23:LEU:HD22	20:U:39:PHE:HE2	1.73	0.53
1:A:5:ILE:HD13	1:A:8:GLN:HG3	1.91	0.53
49:5:3730:U:H2'	49:5:3731:C:O4'	2.08	0.53
14:O:27:VAL:CG1	14:O:98:ALA:HB1	2.39	0.53
49:5:1787:A:N3	49:5:4210:U:O2'	2.40	0.53
49:5:1398:A:H1'	49:5:1399:G:H8	1.73	0.53
19:T:39:ILE:C	19:T:40:VAL:HG23	2.27	0.53
49:5:4929:C:C6	49:5:4929:C:H5"	2.44	0.53
49:5:2890:C:O2'	49:5:5016:A:N6	2.40	0.53
49:5:4749:C:O2	49:5:4749:C:O4'	2.27	0.53
49:5:1412:G:N2	49:5:1413:C:C2	2.77	0.53
2:B:288:GLY:HA3	2:B:330:PHE:CE1	2.44	0.53
49:5:1248:C:N3	49:5:1249:C:C5	2.77	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1268:G:N1	49:5:2111:G:N2	2.56	0.53
49:5:1995:G:C2	49:5:1996:C:C2	2.96	0.53
49:5:1075:G:H2'	49:5:1076:C:C6	2.44	0.53
2:B:168:MET:HG2	2:B:177:LYS:O	2.09	0.53
49:5:1279:A:H2'	49:5:1280:C:C5	2.44	0.53
49:5:467:U:C4	49:5:468:U:C5	2.97	0.53
20:U:57:GLY:O	20:U:60:VAL:HG23	2.08	0.53
49:5:2907:G:H2'	49:5:2908:U:O4'	2.09	0.53
7:G:58:PRO:CD	23:X:46:PHE:HD2	2.22	0.53
25:Z:5:MET:HG2	25:Z:77:TYR:CE1	2.44	0.53
49:5:1995:G:C6	49:5:1996:C:C4	2.97	0.53
49:5:2532:C:C2	49:5:2533:C:C5	2.97	0.53
49:5:2245:G:H2'	49:5:2246:C:O4'	2.09	0.53
49:5:1377:G:C8	49:5:1378:C:H4'	2.44	0.53
49:5:977:C:H2'	49:5:978:G:H5'	1.89	0.53
49:5:688:U:C2'	49:5:689:U:O4'	2.54	0.53
3:C:346:ASN:HB2	49:5:723:A:H4'	1.90	0.53
10:J:90:ARG:HD2	10:J:93:GLU:HG3	1.91	0.53
49:5:967:C:N3	49:5:2254:G:O6	2.42	0.53
49:5:199:G:N1	49:5:220:C:C2	2.77	0.53
2:B:53:MET:HG2	2:B:77:THR:HG22	1.90	0.53
49:5:2497:C:N3	49:5:2498:C:C5	2.77	0.53
49:5:3810:C:H2'	49:5:3810:C:O2	2.09	0.53
49:5:2093:A:H5"	49:5:2093:A:N3	2.23	0.53
49:5:5057:C:H2'	49:5:5058:A:C8	2.44	0.53
9:I:98:ARG:HB3	9:I:120:GLY:HA3	1.91	0.53
10:J:15:LEU:HD23	10:J:134:LEU:HD22	1.89	0.53
2:B:163:ILE:CG2	2:B:180:LEU:HD23	2.38	0.53
49:5:1468:C:C2	49:5:1498:G:C2	2.96	0.52
49:5:1370:G:H5"	49:5:1371:A:OP1	2.09	0.52
49:5:2268:A:C4'	49:5:2269:C:H5'	2.36	0.52
3:C:38:ASN:O	3:C:42:THR:HG23	2.09	0.52
49:5:650:C:H2'	49:5:651:C:H6	1.74	0.52
6:F:138:VAL:CG2	6:F:142:ILE:HD13	2.39	0.52
49:5:1840:G:O3'	49:5:1842:G:P	2.67	0.52
49:5:662:C:H2'	49:5:663:G:H8	1.74	0.52
49:5:5006:U:C2	49:5:5042:A:C8	2.97	0.52
49:5:2517:A:N3	49:5:2539:C:O2'	2.38	0.52
49:5:1273:G:N2	49:5:2123:C:OP1	2.42	0.52
49:5:1985:G:O2'	49:5:2003:G:OP2	2.24	0.52
4:D:41:LYS:HG3	19:T:93:ILE:HD11	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:504:G:O6	49:5:654:C:C4	2.62	0.52
49:5:3823:G:O2'	49:5:3824:A:H8	1.89	0.52
49:5:2127:C:C2'	49:5:2128:G:C8	2.92	0.52
49:5:1297:U:OP2	49:5:1297:U:O4'	2.27	0.52
8:H:89:ARG:HG2	8:H:89:ARG:HH11	5.59	0.52
49:5:751:G:C2	49:5:752:G:N7	2.78	0.52
49:5:4883:C:O2'	49:5:4884:G:P	2.67	0.52
3:C:144:ILE:HD11	3:C:150:LEU:CD2	2.39	0.52
18:S:53:LYS:NZ	50:7:74:A:O2'	2.41	0.52
49:5:4093:G:C2'	49:5:4094:G:H5'	2.38	0.52
49:5:499:G:N3	49:5:499:G:H2'	2.24	0.52
49:5:4441:A:H5"	49:5:4441:A:C8	2.40	0.52
49:5:931:C:C5	49:5:932:A:N7	2.77	0.52
49:5:933:G:C2	49:5:940:C:C6	2.97	0.52
13:N:38:ARG:HG3	13:N:62:TYR:CE1	2.44	0.52
49:5:174:C:C2	49:5:263:G:C2	2.97	0.52
6:F:39:PHE:CD2	49:5:2124:G:P	3.02	0.52
49:5:1380:G:N2	49:5:1382:G:N3	2.56	0.52
49:5:723:A:H2	49:5:943:A:C2	2.28	0.52
13:N:65:ARG:HD2	13:N:127:TYR:CE1	2.44	0.52
49:5:93:G:C2	49:5:94:A:C2	2.98	0.52
49:5:2108:G:N1	49:5:2125:C:N4	2.56	0.52
8:H:69:THR:O	8:H:72:THR:N	2.43	0.52
49:5:4303:C:O2'	49:5:4304:A:H2'	2.08	0.52
49:5:3670:C:O2'	49:5:3671:G:C5'	2.57	0.52
17:R:88:ARG:O	49:5:2725:A:N6	2.43	0.52
49:5:172:C:O4'	49:5:172:C:P	2.67	0.52
1:A:48:ILE:HD11	1:A:82:ILE:HG22	1.90	0.52
49:5:3904:G:O2'	49:5:3905:A:OP1	2.21	0.52
13:N:48:ALA:HB1	13:N:53:TYR:HB2	1.91	0.52
49:5:957:G:H1'	49:5:958:G:P	2.50	0.52
20:U:23:LEU:HD23	20:U:23:LEU:O	2.09	0.52
14:O:54:TYR:CE1	14:O:145:VAL:HG11	2.44	0.52
49:5:751:G:N2	49:5:912:G:C4	2.78	0.52
8:H:8:GLN:OE1	8:H:71:ARG:HA	2.09	0.52
49:5:2275:G:H5"	49:5:2275:G:H8	1.74	0.52
7:G:108:GLN:N	7:G:108:GLN:OE1	2.41	0.52
49:5:1268:G:C2	49:5:2111:G:C2	2.97	0.52
51:8:55:U:N3	51:8:62:A:C2	2.76	0.52
49:5:1213:G:C4	49:5:1215:C:C1'	2.91	0.52
11:L:49:ARG:CG	11:L:49:ARG:HH11	2.14	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2319:C:H2'	49:5:2320:G:H5'	1.90	0.52
49:5:1886:G:C2	49:5:1894:C:N3	2.78	0.52
51:8:106:G:C2'	51:8:107:C:O5'	2.58	0.52
49:5:3762:U:H2'	49:5:3763:A:O4'	2.10	0.52
49:5:994:G:C2	49:5:1050:C:C2	2.98	0.52
7:G:34:LYS:O	49:5:4128:A:N3	2.42	0.52
49:5:4583:C:N4	49:5:4718:G:C6	2.77	0.52
49:5:736:C:H2'	49:5:737:C:O4'	2.10	0.52
11:L:29:PRO:CG	11:L:30:ALA:N	2.73	0.52
49:5:1278:C:C2	49:5:1279:A:H1'	2.45	0.52
49:5:181:C:N4	49:5:256:G:C6	2.78	0.52
49:5:166:C:O2	49:5:167:C:H5	1.86	0.52
49:5:62:A:H2	49:5:77:U:O2	1.92	0.52
7:G:144:THR:HG21	7:G:169:PHE:HE1	1.75	0.52
3:C:181:LYS:HG2	49:5:218:A:C8	2.45	0.52
1:A:82:ILE:HA	1:A:86:GLN:OE1	2.10	0.52
49:5:1806:G:N2	49:5:1807:C:C2	2.78	0.52
49:5:4913:G:O2'	49:5:4914:C:O4'	2.26	0.52
49:5:4735:G:C2	49:5:4736:C:C2	2.97	0.52
49:5:1263:A:C6	49:5:1264:C:C4	2.98	0.52
49:5:1990:A:N3	49:5:1991:A:H1'	2.24	0.52
3:C:84:THR:HG22	49:5:366:A:C2	2.43	0.52
1:A:196:TRP:CH2	49:5:1613:A:C2	2.98	0.52
49:5:1819:G:H5"	49:5:1819:G:C8	2.45	0.52
49:5:4233:A:C4	49:5:4235:G:N7	2.78	0.52
14:O:57:PHE:CZ	14:O:82:ARG:NH2	2.76	0.52
49:5:4413:C:O5'	49:5:4413:C:O2	2.27	0.52
49:5:1186:U:H2'	49:5:1187:G:O4'	2.10	0.52
49:5:1400:G:C6	49:5:1401:C:C4	2.97	0.52
49:5:4980:C:OP2	49:5:4981:G:N2	2.43	0.52
49:5:2503:G:N2	49:5:4084:G:H5'	2.24	0.52
49:5:708:G:H1	49:5:1289:C:H42	1.58	0.52
49:5:977:C:H2'	49:5:978:G:O4'	2.09	0.52
8:H:18:ILE:HD11	8:H:55:LEU:HB2	1.90	0.52
10:J:90:ARG:O	10:J:91:GLU:HG2	2.09	0.52
6:F:136:ARG:HH11	6:F:136:ARG:CB	2.23	0.52
14:O:84:VAL:HG11	14:O:102:LEU:HD22	1.92	0.52
4:D:42:ASN:OD1	19:T:69:GLN:HA	2.10	0.52
49:5:112:C:C2	49:5:330:G:C2	2.98	0.52
49:5:1611:C:H4'	49:5:1612:G:H5"	1.92	0.52
49:5:4754:G:C2	49:5:4880:C:C2	2.98	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2385:U:H2'	49:5:2386:U:C6	2.45	0.52
49:5:4077:A:C8	49:5:4078:C:C5	2.98	0.52
49:5:2484:A:H2'	49:5:2485:U:O4'	2.10	0.52
49:5:2112:G:N2	49:5:2113:G:C6	2.78	0.52
7:G:121:LYS:HE3	7:G:128:VAL:HG22	1.92	0.52
49:5:1776:A:C2	49:5:1777:C:C2	2.97	0.52
18:S:72:PRO:HD2	49:5:732:A:O2'	2.10	0.52
6:F:43:MET:SD	49:5:2121:C:C4'	2.97	0.52
6:F:247:ARG:NH2	49:5:943:A:OP1	2.42	0.52
6:F:136:ARG:CB	6:F:136:ARG:NH1	2.72	0.52
49:5:4560:C:C2'	49:5:4560:C:O2	2.57	0.52
49:5:4099:G:C2	49:5:4100:C:C2	2.98	0.52
4:D:202:GLN:HE22	4:D:237:GLU:HB2	1.74	0.52
45:0:1748:LYS:HD3	49:5:2707:U:C1'	2.40	0.52
49:5:2712:G:N2	49:5:2713:C:C2	2.78	0.52
49:5:991:C:C4	49:5:992:C:C4	2.98	0.51
49:5:2668:G:H2'	49:5:2669:C:H5'	1.92	0.51
21:V:12:ALA:HB1	49:5:4617:G:HO2'	1.74	0.51
49:5:4481:U:C2	49:5:4482:U:C5	2.98	0.51
4:D:280:VAL:O	4:D:284:LYS:HG2	2.10	0.51
49:5:967:C:N3	49:5:2254:G:C6	2.78	0.51
49:5:1189:G:C6	49:5:1190:C:C4	2.98	0.51
2:B:86:VAL:HG13	2:B:162:VAL:CG1	2.40	0.51
10:J:109:ILE:CD1	10:J:115:LEU:HD11	2.40	0.51
49:5:479:G:N2	49:5:480:C:C2	2.79	0.51
11:L:12:PRO:HG2	49:5:1515:A:H1'	1.92	0.51
1:A:130:SER:HG	49:5:3683:C:HO2'	1.58	0.51
49:5:377:A:H2'	49:5:378:A:O4'	2.09	0.51
10:J:31:ASP:O	10:J:34:THR:HG22	2.10	0.51
14:O:109:PRO:O	14:O:113:ASP:HB3	2.10	0.51
49:5:1072:C:O2	49:5:1072:C:C2'	2.58	0.51
49:5:1934:A:O2'	49:5:2059:C:OP1	2.27	0.51
49:5:2539:C:H2'	49:5:2540:C:C6	2.45	0.51
49:5:2627:C:O2	49:5:2627:C:O4'	2.28	0.51
3:C:27:VAL:HG11	3:C:128:LEU:HD12	1.92	0.51
49:5:1958:A:O2'	49:5:2025:A:N1	2.33	0.51
49:5:1266:G:O2'	49:5:1267:C:H5'	2.10	0.51
49:5:1365:C:H4'	49:5:1366:G:OP1	2.10	0.51
49:5:1075:G:C6	49:5:1076:C:N4	2.78	0.51
49:5:77:U:N3	49:5:336:A:N6	2.58	0.51
49:5:4281:A:HO2'	49:5:4282:A:H8	1.58	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4723:A:C2	49:5:4724:A:C6	2.98	0.51
14:O:12:ARG:HD3	14:O:37:ARG:NH2	2.25	0.51
7:G:136:LEU:HD22	7:G:202:VAL:HG13	1.93	0.51
49:5:4740:G:C6	49:5:4741:C:N3	2.79	0.51
49:5:1953:U:H2'	49:5:1954:U:O4'	2.10	0.51
6:F:115:ARG:HH21	6:F:208:ASN:HA	1.75	0.51
10:J:63:ARG:NH1	10:J:63:ARG:CB	4.44	0.51
49:5:2496:G:C2	49:5:2497:C:C2	2.99	0.51
51:8:83:C:H4'	51:8:85:U:O2	2.10	0.51
49:5:64:A:H4'	49:5:65:A:O5'	2.11	0.51
49:5:1314:C:C2	49:5:1315:C:C5	2.98	0.51
49:5:707:C:H42	49:5:1290:G:H1	1.59	0.51
49:5:4543:G:H2'	49:5:4544:A:C8	2.45	0.51
49:5:1265:G:C3'	49:5:1266:G:H5'	2.40	0.51
7:G:170:LEU:CD2	7:G:174:CYS:SG	2.99	0.51
16:Q:64:SER:OG	16:Q:89:ASP:OD2	2.26	0.51
49:5:744:G:H2'	49:5:745:G:H8	1.76	0.51
49:5:2905:C:C2	49:5:3590:G:N2	2.78	0.51
3:C:199:ARG:HE	49:5:2295:C:H5'	1.75	0.51
50:7:71:G:C2	50:7:105:C:C2	2.99	0.51
4:D:207:TYR:CZ	4:D:211:LEU:HD11	2.46	0.51
49:5:1272:C:H5"	49:5:2122:G:C8	2.45	0.51
49:5:977:C:N3	49:5:978:G:C8	2.79	0.51
24:Y:8:THR:CG2	24:Y:13:LYS:HB2	2.39	0.51
3:C:137:VAL:HG22	3:C:248:ARG:O	2.11	0.51
49:5:2128:G:C2	49:5:2129:C:C2	2.99	0.51
11:L:10:LEU:N	11:L:10:LEU:CD2	2.73	0.51
49:5:1278:C:C3'	49:5:1279:A:H4'	2.40	0.51
49:5:4945:G:H3'	49:5:4946:U:H5'	1.92	0.51
49:5:2612:G:C6	49:5:2613:C:C4	2.99	0.51
49:5:1726:U:H3	49:5:1836:G:H1	1.59	0.51
21:V:118:THR:O	21:V:118:THR:HG23	2.10	0.51
49:5:2505:C:O2	49:5:2505:C:O4'	2.28	0.51
49:5:2370:A:N1	49:5:2390:G:O2'	2.40	0.51
49:5:4904:G:N2	49:5:4905:C:C2	2.78	0.51
49:5:1965:G:O6	49:5:2021:G:O6	2.29	0.51
49:5:977:C:O2'	49:5:978:G:H5'	2.11	0.51
6:F:149:LEU:HD23	49:5:944:A:H5"	1.91	0.51
23:X:93:ASN:OD1	49:5:2532:C:O2'	2.29	0.51
49:5:491:G:N2	49:5:663:G:N1	2.58	0.51
49:5:1250:C:C2	49:5:1261:G:C2	2.98	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2109:G:C6	49:5:2122:G:O6	2.64	0.51
49:5:978:G:C6	49:5:979:C:C4	2.98	0.51
49:5:1213:G:C6	49:5:1215:C:N3	2.78	0.51
49:5:932:A:O2'	49:5:933:G:OP2	2.29	0.51
6:F:138:VAL:HG23	6:F:142:ILE:HD13	1.93	0.51
49:5:2496:G:C6	49:5:2497:C:C4	2.99	0.51
10:J:89:VAL:HG22	10:J:114:ASP:HB3	1.92	0.51
49:5:3782:C:C2	49:5:3811:G:N2	2.79	0.51
49:5:2013:A:H2'	49:5:2014:C:O4'	2.11	0.51
12:M:69:ARG:O	12:M:71:LYS:N	2.44	0.51
49:5:504:G:C2	49:5:654:C:C2	2.96	0.51
49:5:655:C:C2	49:5:656:C:C5	2.99	0.51
49:5:5031:G:N1	49:5:5032:C:C4	2.79	0.51
6:F:177:ILE:HD11	6:F:189:MET:SD	2.51	0.51
49:5:751:G:C2	49:5:752:G:C5	2.99	0.51
49:5:4583:C:C4	49:5:4718:G:N1	2.79	0.51
49:5:4735:G:C6	49:5:4736:C:C4	2.99	0.51
10:J:84:GLU:OE1	10:J:84:GLU:HA	2.10	0.51
49:5:1947:U:C2	49:5:4693:C:N4	2.79	0.51
6:F:151:SER:OG	6:F:246:ILE:HD13	2.11	0.51
8:H:111:LEU:HD22	8:H:127:ARG:HD2	1.93	0.51
49:5:1696:C:O2'	49:5:1697:G:H4'	2.11	0.51
49:5:1359:G:C2'	49:5:1360:G:C8	2.94	0.51
3:C:114:ARG:HB2	3:C:114:ARG:CZ	2.40	0.51
49:5:1235:G:H2'	49:5:1236:C:H5'	1.93	0.51
21:V:15:ARG:HH11	21:V:15:ARG:C	2.14	0.51
49:5:3724:A:C6	49:5:3725:G:C5	2.99	0.51
12:M:73:VAL:HG13	12:M:74:ARG:N	2.25	0.51
49:5:1848:C:H5"	49:5:1848:C:H6	1.74	0.51
49:5:2068:C:O2'	49:5:2069:A:H5"	2.11	0.51
49:5:717:U:H3	49:5:951:G:H1	1.59	0.51
49:5:1910:G:N2	49:5:1911:C:C2	2.79	0.51
49:5:383:A:O2'	49:5:384:A:H5'	2.11	0.51
11:L:28:GLN:NE2	49:5:1360:G:OP1	2.44	0.50
49:5:1757:U:C2	49:5:1758:G:C8	2.99	0.50
49:5:471:A:C5	49:5:472:C:C6	2.99	0.50
49:5:971:U:H2'	49:5:971:U:O2	2.11	0.50
49:5:2674:A:H4'	49:5:2675:G:OP2	2.10	0.50
3:C:80:ARG:CG	3:C:80:ARG:NH1	2.73	0.50
49:5:4481:U:N3	49:5:4482:U:C4	2.79	0.50
49:5:1280:C:C2'	49:5:1281:G:H3'	2.40	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4967:A:C2	49:5:4968:A:C4	2.99	0.50
49:5:4724:A:C6	49:5:4725:C:C4	2.99	0.50
13:N:108:ARG:NH2	49:5:54:G:O2'	2.44	0.50
49:5:3918:G:C6	49:5:3919:C:C4	2.99	0.50
11:L:146:LEU:HB2	11:L:148:THR:HG22	1.94	0.50
8:H:13:PRO:HG2	8:H:16:VAL:HG23	1.92	0.50
1:A:77:ILE:HD13	1:A:128:ARG:HB2	1.94	0.50
49:5:2315:G:C2	49:5:2325:C:O2	2.64	0.50
49:5:1380:G:C2	49:5:1382:G:C2	3.00	0.50
49:5:977:C:H2'	49:5:978:G:H8	1.77	0.50
49:5:1751:A:C6	49:5:1752:G:C8	3.00	0.50
49:5:4092:G:C2	49:5:4158:C:C2	2.99	0.50
49:5:4724:A:C5	49:5:4725:C:C5	3.00	0.50
1:A:33:ASP:O	1:A:34:PHE:C	2.49	0.50
49:5:742:G:N2	49:5:923:C:C2	2.79	0.50
4:D:223:PHE:HB3	4:D:226:TYR:HB2	1.91	0.50
12:M:9:VAL:HG11	12:M:66:HIS:HA	1.92	0.50
49:5:1268:G:N3	49:5:2111:G:C2	2.80	0.50
3:C:84:THR:HG21	49:5:366:A:C6	2.46	0.50
11:L:29:PRO:CG	11:L:30:ALA:H	2.22	0.50
49:5:4092:G:H3'	49:5:4093:G:H5"	1.92	0.50
49:5:1448:G:N2	49:5:1449:C:C2	2.80	0.50
49:5:3637:U:O4	49:5:3651:A:C2	2.62	0.50
49:5:3590:G:C6	49:5:3591:C:C4	3.00	0.50
49:5:2245:G:C6	49:5:2246:C:C4	2.99	0.50
49:5:1759:G:C6	49:5:1760:G:N7	2.80	0.50
49:5:325:U:H2'	49:5:326:C:C6	2.46	0.50
49:5:2736:G:N2	49:5:2737:C:C2	2.79	0.50
49:5:1174:G:N2	49:5:1175:A:N7	2.59	0.50
49:5:1246:G:H2'	49:5:1247:U:O4'	2.12	0.50
49:5:1265:G:OP1	49:5:2115:G:N1	2.45	0.50
49:5:1381:U:O2	49:5:1381:U:O4'	2.27	0.50
49:5:2090:U:O4'	49:5:2090:U:OP2	2.28	0.50
10:J:141:ILE:HG23	10:J:149:GLY:H	1.77	0.50
49:5:1177:U:H2'	49:5:1178:G:H8	1.77	0.50
49:5:3586:G:C6	49:5:3587:C:C4	2.99	0.50
20:U:41:GLN:NE2	20:U:45:GLU:OE1	2.44	0.50
6:F:101:ASN:OD1	6:F:101:ASN:N	2.44	0.50
49:5:1822:U:O2	49:5:1822:U:O4'	2.29	0.50
49:5:3715:U:O4'	49:5:3715:U:O2	2.28	0.50
49:5:2520:C:H2'	49:5:2521:G:C8	2.47	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1965:G:C6	49:5:1966:C:N4	2.80	0.50
9:I:25:GLY:HA2	48:2:63:G:HO2'	1.73	0.50
49:5:2107:C:C5	49:5:2126:G:C2	3.00	0.50
49:5:4768:G:H3'	49:5:4769:G:H8	1.76	0.50
49:5:223:G:H4'	49:5:225:G:N7	2.27	0.50
49:5:2858:A:O2'	49:5:2859:G:H8	1.86	0.50
49:5:1613:A:N6	49:5:3637:U:H3	2.10	0.50
49:5:2654:C:C2	49:5:2681:G:C2	2.99	0.50
49:5:2909:C:C2	49:5:3586:G:C2	3.00	0.50
49:5:4773:C:C2	49:5:4863:G:C2	2.99	0.50
49:5:3799:A:N3	49:5:4506:C:O2'	2.39	0.50
1:A:13:GLY:O	1:A:15:VAL:N	2.44	0.50
49:5:4606:G:H2'	49:5:4607:A:C8	2.46	0.50
49:5:1268:G:N3	49:5:2111:G:N1	2.60	0.50
20:U:25:CYS:CB	20:U:112:LEU:HD12	2.42	0.50
19:T:39:ILE:CG2	19:T:40:VAL:N	2.74	0.50
49:5:4349:C:H3'	49:5:4350:C:C5'	2.41	0.50
49:5:1215:C:N3	49:5:1216:C:C5	2.80	0.50
49:5:2409:U:H5	49:5:2783:A:N1	2.08	0.50
49:5:1299:G:C2'	49:5:1300:G:H5'	2.42	0.50
49:5:667:A:C2	49:5:668:C:C5	3.00	0.50
49:5:3896:C:O2	49:5:4564:A:N1	2.45	0.50
1:A:137:ILE:HD11	1:A:149:LYS:HB2	1.93	0.50
49:5:1987:C:C2'	49:5:1987:C:O2	2.58	0.50
49:5:1756:U:H2'	49:5:1757:U:O4'	2.12	0.50
48:2:16:C:O2'	48:2:18:G:O5'	2.28	0.50
49:5:951:G:H2'	49:5:952:G:H5'	1.93	0.50
13:N:36:LEU:HD12	13:N:64:ILE:HD12	1.94	0.50
49:5:695:G:H3'	49:5:696:C:H5'	1.94	0.50
51:8:141:C:H2'	51:8:142:U:C6	2.47	0.50
49:5:1268:G:N1	49:5:1270:A:N7	2.59	0.50
5:E:101:ARG:CZ	49:5:471:A:C2	2.93	0.50
49:5:4096:C:C5	49:5:4097:G:C8	3.00	0.50
49:5:4096:C:C4	49:5:4097:G:C8	3.00	0.50
49:5:4769:G:N2	49:5:4865:C:N3	2.58	0.50
49:5:43:U:C4	49:5:93:G:C6	3.00	0.50
49:5:4559:A:O3'	49:5:4560:C:O2	2.30	0.50
13:N:68:ARG:HG3	49:5:302:C:OP1	2.12	0.50
1:A:207:VAL:HG11	49:5:1633:G:N1	2.27	0.50
49:5:2688:G:C2	49:5:2689:C:N3	2.79	0.50
49:5:3591:C:C4	49:5:3592:G:C8	3.00	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1846:G:H2'	49:5:1847:C:H6	1.76	0.50
49:5:961:G:C2'	49:5:961:G:N3	2.74	0.50
49:5:1237:C:O4'	49:5:1237:C:O2	2.27	0.50
49:5:1426:G:O6	49:5:1457:G:H3'	2.12	0.50
5:E:134:ARG:NH1	5:E:165:SER:O	2.45	0.50
6:F:72:ARG:NH1	49:5:1209:U:O2'	2.45	0.50
13:N:190:ALA:HA	13:N:193:ARG:HE	1.76	0.50
49:5:1378:C:O2	49:5:1378:C:H2'	2.12	0.50
49:5:4093:G:H2'	49:5:4094:G:C5'	2.42	0.50
21:V:15:ARG:NH1	21:V:16:ILE:O	2.44	0.50
49:5:914:U:H2'	49:5:915:A:O4'	2.12	0.50
1:A:4:VAL:HG12	1:A:8:GLN:HB2	1.94	0.50
10:J:15:LEU:CD2	10:J:134:LEU:HD22	2.42	0.50
49:5:2730:U:H2'	49:5:2731:C:C6	2.47	0.50
8:H:23:ARG:NH2	8:H:39:ASN:HA	2.27	0.50
49:5:1066:G:C6	49:5:1067:G:C5	3.00	0.49
49:5:918:G:H2'	49:5:918:G:N3	2.27	0.49
49:5:2857:A:O2'	49:5:2858:A:H5'	2.12	0.49
49:5:300:A:H2'	49:5:301:G:C8	2.47	0.49
49:5:199:G:C6	49:5:220:C:N3	2.79	0.49
49:5:672:C:H2'	49:5:673:C:O4'	2.12	0.49
2:B:163:ILE:HG21	2:B:180:LEU:HD23	1.94	0.49
2:B:388:PHE:C	2:B:388:PHE:CD1	2.85	0.49
3:C:210:ILE:HG21	3:C:252:TRP:CZ3	2.47	0.49
49:5:4237:C:H2'	49:5:4238:G:O4'	2.12	0.49
9:I:92:HIS:HB2	9:I:94:PHE:CE2	2.47	0.49
49:5:1441:C:N4	49:5:1442:C:N4	2.60	0.49
49:5:177:G:C6	49:5:178:C:C4	3.00	0.49
14:O:14:HIS:CD2	14:O:124:LEU:CD1	2.81	0.49
49:5:2586:G:N7	49:5:2587:A:C6	2.79	0.49
49:5:744:G:H2'	49:5:745:G:C8	2.47	0.49
49:5:1238:A:O2'	49:5:1239:C:O5'	2.22	0.49
49:5:2245:G:C2	49:5:2246:C:C2	3.01	0.49
6:F:126:LYS:HG3	6:F:126:LYS:O	2.13	0.49
2:B:321:VAL:O	2:B:322:HIS:HB2	2.12	0.49
14:O:149:TYR:O	14:O:153:THR:OG1	2.30	0.49
49:5:4714:C:C5	49:5:4715:C:C5	3.00	0.49
49:5:1560:A:H2'	49:5:1561:G:O4'	2.11	0.49
49:5:1398:A:O2'	49:5:1399:G:OP2	2.14	0.49
49:5:1358:G:O6	49:5:1379:C:N3	2.45	0.49
3:C:193:LYS:HB2	3:C:193:LYS:HZ3	1.72	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4891:G:N2	49:5:4929:C:C2	2.80	0.49
9:I:9:TYR:HD2	9:I:97:ILE:HG12	1.77	0.49
9:I:4:ARG:NH2	9:I:9:TYR:OH	2.45	0.49
49:5:1400:G:C2	49:5:1401:C:C2	3.00	0.49
20:U:21:PHE:CD1	20:U:80:LYS:HG2	2.47	0.49
49:5:3900:G:H5'	49:5:3901:A:H4'	1.94	0.49
10:J:63:ARG:CZ	10:J:63:ARG:CB	3.88	0.49
8:H:48:LEU:HD12	8:H:48:LEU:C	2.33	0.49
49:5:703:G:H3'	49:5:704:C:C5'	2.42	0.49
49:5:505:G:C2	49:5:506:C:C2	3.00	0.49
2:B:379:PHE:CD2	2:B:385:LYS:CB	2.94	0.49
18:S:106:VAL:O	18:S:109:CYS:N	2.45	0.49
49:5:929:A:H3'	49:5:930:G:C5'	2.42	0.49
49:5:4453:C:C6	49:5:4453:C:C3'	2.95	0.49
50:7:93:G:C6	50:7:94:C:C4	3.00	0.49
49:5:4727:A:H2'	49:5:4728:U:O4'	2.13	0.49
49:5:5020:G:C2	49:5:5021:C:C2	3.00	0.49
49:5:4644:G:C6	49:5:4645:C:C4	3.01	0.49
10:J:26:VAL:HG23	10:J:27:GLY:N	2.27	0.49
49:5:1216:C:H2'	49:5:1217:G:O4'	2.12	0.49
3:C:242:PRO:HG3	3:C:248:ARG:HH12	1.76	0.49
19:T:19:PHE:CE2	49:5:1791:U:H4'	2.47	0.49
49:5:965:G:O2'	49:5:966:A:OP1	2.29	0.49
49:5:450:G:O6	49:5:1295:C:C4	2.66	0.49
49:5:751:G:N2	49:5:752:G:C5	2.80	0.49
49:5:3683:C:H4'	49:5:3684:G:OP2	2.12	0.49
49:5:2468:U:N3	49:5:2473:A:C6	2.81	0.49
49:5:1277:G:N1	49:5:1278:C:C4	2.81	0.49
49:5:1447:C:C2	49:5:2098:G:C2	3.01	0.49
49:5:2857:A:O2'	49:5:2858:A:O5'	2.31	0.49
49:5:4109:G:C6	49:5:4110:C:C4	3.01	0.49
49:5:4232:U:H1'	49:5:4233:A:OP2	2.12	0.49
49:5:1839:U:H3'	49:5:1840:G:H21	1.77	0.49
49:5:3726:A:H2'	49:5:3727:A:C8	2.47	0.49
49:5:2517:A:H2'	49:5:2518:G:C8	2.47	0.49
49:5:4963:G:H3'	49:5:4964:C:H5"	1.94	0.49
21:V:117:ILE:HD11	21:V:132:ILE:HG23	1.95	0.49
49:5:1990:A:H2'	49:5:1991:A:C5'	2.40	0.49
49:5:1757:U:H2'	49:5:1758:G:O4'	2.12	0.49
49:5:1213:G:C5	49:5:1215:C:C6	3.01	0.49
49:5:2126:G:H1'	49:5:2127:C:C6	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:93:G:C6	49:5:94:A:C6	3.01	0.49
1:A:19:HIS:NE2	49:5:1338:G:N2	68.49	0.49
49:5:1811:G:N1	49:5:1812:C:C4	2.81	0.49
49:5:1721:G:C6	49:5:1722:C:C4	3.01	0.49
49:5:278:G:H4'	49:5:279:A:OP2	2.13	0.49
49:5:5020:G:H2'	49:5:5021:C:O4'	2.11	0.49
49:5:1332:C:C2	49:5:2355:G:N2	2.81	0.49
9:I:73:ASN:O	9:I:77:VAL:HG23	2.13	0.49
49:5:1247:U:C4	49:5:1248:C:C5	3.01	0.49
49:5:1271:G:O6	49:5:2109:G:O6	2.29	0.49
7:G:170:LEU:O	7:G:170:LEU:HD23	2.12	0.49
49:5:978:G:C2	49:5:979:C:C2	3.01	0.49
49:5:956:A:H5"	49:5:957:G:C8	2.48	0.49
13:N:192:TRP:NE1	49:5:48:G:H5'	2.28	0.49
49:5:4473:A:N1	49:5:4474:A:C6	2.80	0.49
3:C:322:LEU:H	49:5:1281:G:H1'	1.77	0.49
49:5:1171:G:C6	49:5:1172:C:C4	3.00	0.49
49:5:4958:C:O2	49:5:4958:C:H2'	2.13	0.49
49:5:179:G:C6	49:5:180:C:C4	3.01	0.49
49:5:4269:G:H2'	49:5:4270:C:O4'	2.13	0.49
49:5:1724:G:H4'	49:5:1725:U:OP2	2.12	0.49
5:E:172:THR:HG22	5:E:174:PRO:HA	1.93	0.49
49:5:2438:A:C2	49:5:2441:C:C5	3.01	0.49
49:5:3612:C:H1'	49:5:5016:A:C8	2.48	0.49
49:5:1697:G:C4'	49:5:1698:C:OP1	2.61	0.49
49:5:3617:G:O2'	49:5:3620:G:N7	2.39	0.49
50:7:66:G:C2	50:7:67:C:C2	3.01	0.49
9:I:72:ALA:HB2	9:I:136:MET:HE1	1.94	0.49
49:5:2396:A:N6	49:5:2814:C:C2	2.81	0.49
11:L:55:LEU:HD22	11:L:120:TYR:CG	2.48	0.49
3:C:22:VAL:HG11	3:C:257:PHE:HD2	1.77	0.49
18:S:76:LYS:HE2	18:S:100:LEU:O	2.09	0.49
49:5:4919:G:C6	49:5:4920:C:C4	3.01	0.49
49:5:1427:A:H3'	49:5:1428:U:C6	2.48	0.49
49:5:4147:G:C6	49:5:4148:C:C4	3.00	0.49
49:5:1048:G:C2	49:5:1049:C:C2	3.00	0.49
49:5:4740:G:C6	49:5:4741:C:C4	3.00	0.49
49:5:2463:G:N2	49:5:2464:C:C2	2.81	0.49
49:5:1645:C:H2'	49:5:1646:A:C8	2.48	0.49
11:L:80:GLU:HG2	11:L:110:LEU:HD12	1.93	0.48
51:8:62:A:H4'	51:8:63:U:O5'	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2089:G:HO2'	49:5:2090:U:P	2.26	0.48
12:M:81:ASP:CG	12:M:84:ALA:HB3	2.34	0.48
49:5:4967:A:C2	49:5:4968:A:C5	3.01	0.48
49:5:730:G:N2	49:5:731:G:C4	2.81	0.48
49:5:963:G:H2'	49:5:963:G:N3	2.27	0.48
48:2:65:C:C2	48:2:66:C:C5	3.01	0.48
4:D:207:TYR:CE1	4:D:211:LEU:HD11	2.47	0.48
49:5:2068:C:C2'	49:5:2069:A:H5"	2.43	0.48
1:A:128:ARG:HA	1:A:169:VAL:HG21	1.94	0.48
49:5:462:G:C2	49:5:694:C:C2	3.01	0.48
3:C:342:ARG:HG3	3:C:342:ARG:HH11	1.77	0.48
51:8:46:G:N2	51:8:47:C:C2	2.81	0.48
49:5:4142:C:C4	49:5:4143:G:N1	2.80	0.48
49:5:4895:C:H1'	49:5:4896:G:C8	2.47	0.48
49:5:975:C:C3'	49:5:976:G:O4'	2.61	0.48
49:5:1278:C:H3'	49:5:1279:A:C4'	2.43	0.48
6:F:136:ARG:CG	6:F:136:ARG:NH1	2.71	0.48
49:5:4919:G:C2	49:5:4920:C:C2	3.01	0.48
6:F:82:ASN:HD21	19:T:142:ARG:HB2	1.78	0.48
49:5:209:U:C4	49:5:233:U:O4	2.66	0.48
49:5:1189:G:C2	49:5:1190:C:C2	3.01	0.48
49:5:2494:U:H2'	49:5:2495:U:O4'	2.13	0.48
49:5:4583:C:N3	49:5:4718:G:C2	2.81	0.48
3:C:210:ILE:HD12	3:C:210:ILE:N	2.28	0.48
13:N:138:PHE:CD1	13:N:138:PHE:N	2.80	0.48
49:5:1268:G:H1'	49:5:2111:G:C6	2.49	0.48
49:5:2264:C:O2'	49:5:2265:G:O5'	2.31	0.48
10:J:140:SER:O	10:J:141:ILE:C	2.51	0.48
49:5:504:G:N1	49:5:654:C:O2	2.43	0.48
49:5:919:C:C4	49:5:920:C:C4	3.00	0.48
49:5:106:A:C1'	49:5:336:A:C8	2.96	0.48
49:5:130:C:C2	49:5:139:G:N2	2.81	0.48
49:5:2395:A:O2'	49:5:2806:A:N3	2.42	0.48
49:5:2065:G:C6	49:5:2066:C:C4	3.01	0.48
49:5:3611:A:C2	49:5:5016:A:H8	2.32	0.48
49:5:5020:G:C6	49:5:5021:C:C4	3.01	0.48
50:7:66:G:C6	50:7:67:C:C4	3.01	0.48
49:5:2336:G:C6	49:5:2337:C:C4	3.01	0.48
12:M:77:TRP:CD1	12:M:77:TRP:C	2.86	0.48
6:F:168:ARG:HD2	6:F:211:TRP:CD1	2.49	0.48
49:5:1584:G:C6	49:5:1585:C:C4	3.00	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:3791:C:O2	49:5:3802:U:O4'	2.32	0.48
11:L:64:VAL:HA	11:L:67:HIS:CD2	2.48	0.48
49:5:2307:A:N3	49:5:2333:G:O2'	2.44	0.48
49:5:1266:G:H22	49:5:2111:G:N2	2.10	0.48
20:U:24:ASP:CG	20:U:69:LYS:HE3	2.28	0.48
7:G:157:ILE:HG21	7:G:167:VAL:HG11	1.92	0.48
5:E:56:SER:CB	49:5:1236:C:H2'	2.44	0.48
49:5:4096:C:N4	49:5:4097:G:C5	2.81	0.48
49:5:917:A:H4'	49:5:918:G:OP1	2.13	0.48
7:G:180:PRO:HA	7:G:227:ASN:ND2	2.27	0.48
6:F:82:ASN:ND2	19:T:142:ARG:HB2	2.29	0.48
9:I:9:TYR:HD2	9:I:97:ILE:CG1	2.27	0.48
49:5:2612:G:C2	49:5:2613:C:C2	3.02	0.48
10:J:81:GLU:OE1	10:J:85:LYS:NZ	2.43	0.48
49:5:158:A:C4	49:5:277:G:C6	3.01	0.48
49:5:4084:G:O3'	49:5:4085:A:H4'	2.13	0.48
49:5:66:A:O2'	49:5:326:C:O2	2.29	0.48
49:5:127:G:N2	49:5:128:C:C2	2.81	0.48
51:8:53:G:C6	51:8:54:C:C4	3.02	0.48
49:5:2594:C:O2	49:5:2752:G:C2	2.66	0.48
49:5:5008:C:H2'	49:5:5009:G:O4'	2.14	0.48
49:5:990:C:C4	49:5:991:C:C5	3.01	0.48
49:5:1755:C:O2'	49:5:1756:U:O4'	2.32	0.48
49:5:3771:C:O2	49:5:3771:C:O4'	2.31	0.48
49:5:1048:G:C6	49:5:1049:C:C4	3.01	0.48
49:5:4740:G:C2	49:5:4741:C:C2	3.02	0.48
9:I:193:ASP:OD1	49:5:1750:G:N2	2.46	0.48
49:5:4747:C:H2'	49:5:4748:U:C6	2.48	0.48
9:I:22:PHE:CZ	49:5:1788:A:H2'	2.49	0.48
49:5:3597:G:C2	49:5:3598:C:C2	3.02	0.48
49:5:1367:C:H1'	49:5:1370:G:C8	2.49	0.48
49:5:469:C:C2	49:5:470:A:C8	3.02	0.48
49:5:1238:A:H2'	49:5:1239:C:C6	2.48	0.48
49:5:497:G:H3'	49:5:498:C:H5"	1.95	0.48
49:5:2363:A:C2	49:5:3860:A:C4	3.02	0.48
49:5:964:A:O5'	49:5:964:A:C8	2.65	0.48
49:5:3763:A:H2'	49:5:3764:U:O4'	2.13	0.48
48:2:10:G:N3	48:2:10:G:H2'	2.29	0.48
49:5:1867:A:N3	49:5:4403:U:O2'	2.40	0.48
49:5:2522:G:H2'	49:5:2523:G:O4'	2.13	0.48
48:2:30:G:N2	48:2:41:C:C2	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4102:C:C2	49:5:4108:G:C2	3.02	0.48
11:L:59:VAL:HG22	49:5:74:G:OP1	2.13	0.48
49:5:2021:G:C6	49:5:2022:C:C4	3.02	0.48
49:5:2089:G:N1	49:5:2262:G:H2'	2.28	0.48
21:V:15:ARG:NH1	21:V:15:ARG:CB	2.72	0.48
49:5:1443:A:H2'	49:5:1444:G:O4'	2.14	0.48
49:5:4942:C:H4'	49:5:4944:C:OP2	2.13	0.48
49:5:84:A:H5'	49:5:86:U:C1'	2.42	0.48
1:A:30:ARG:NH1	1:A:33:ASP:OD1	2.47	0.48
49:5:2477:A:C2	49:5:2478:C:C4	3.01	0.48
49:5:187:U:H3'	49:5:245:C:O2	2.14	0.48
49:5:2557:G:C2	49:5:2558:C:C2	3.02	0.48
49:5:462:G:N2	49:5:694:C:C2	2.81	0.48
6:F:238:ARG:O	6:F:238:ARG:HG2	2.13	0.48
7:G:95:LEU:HA	7:G:218:LEU:HD11	1.95	0.48
1:A:97:ASN:OD1	1:A:97:ASN:N	2.45	0.48
4:D:64:ILE:HD12	4:D:109:LEU:HD22	1.96	0.48
49:5:168:C:C2	49:5:268:G:N2	2.82	0.48
16:Q:151:HIS:CD2	16:Q:166:TYR:CE1	3.01	0.48
49:5:1098:G:C2	49:5:1099:C:C2	3.01	0.48
3:C:80:ARG:HB2	3:C:80:ARG:HH11	1.78	0.48
49:5:4472:G:H2'	49:5:4473:A:H5"	1.96	0.48
18:S:82:LEU:HD21	18:S:109:CYS:SG	2.54	0.48
6:F:136:ARG:CZ	6:F:136:ARG:HB2	2.44	0.48
6:F:184:TYR:HB3	6:F:202:ARG:CG	2.42	0.48
49:5:2710:C:H3'	49:5:2711:G:C5'	2.43	0.48
49:5:196:C:C2	49:5:246:G:N2	2.82	0.48
49:5:4136:G:C2	49:5:4137:C:C2	3.02	0.48
16:Q:158:THR:HG22	16:Q:159:PRO:HD2	1.96	0.48
14:O:118:MET:HE2	18:S:169:THR:HA	1.96	0.48
11:L:103:ARG:NH2	49:5:75:G:O6	2.47	0.48
49:5:2861:C:O2	49:5:3626:G:H4'	2.13	0.48
49:5:1264:C:C2	49:5:1265:G:C8	3.02	0.48
49:5:2123:C:O2'	49:5:2124:G:OP2	2.18	0.48
10:J:93:GLU:HG3	10:J:93:GLU:O	2.12	0.48
6:F:41:GLN:CD	49:5:2095:A:C2	2.87	0.48
49:5:2693:G:O6	49:5:2694:G:C2	2.67	0.48
49:5:467:U:N3	49:5:468:U:C5	2.81	0.48
7:G:63:LEU:HD23	7:G:63:LEU:C	2.33	0.48
8:H:16:VAL:HG12	8:H:17:ASP:N	2.29	0.48
3:C:183:VAL:HG22	3:C:204:ARG:HB2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:145:GLY:HA3	6:F:242:ILE:HB	1.96	0.48
10:J:60:PHE:HB3	49:5:4257:A:C2	2.49	0.48
23:X:83:THR:HG22	23:X:84:GLU:N	2.29	0.48
49:5:2424:G:H2'	49:5:2426:U:C5	2.48	0.48
49:5:705:G:N2	49:5:706:C:C2	2.82	0.48
49:5:4579:U:C2'	49:5:4580:U:O4'	2.61	0.48
49:5:1448:G:C2	49:5:1449:C:C2	3.01	0.48
49:5:486:C:C2	49:5:487:G:C8	3.01	0.48
49:5:2478:C:N4	49:5:2479:G:O6	2.46	0.48
3:C:48:ASN:O	3:C:48:ASN:ND2	2.44	0.48
9:I:36:LEU:HD21	9:I:69:ARG:HD2	1.96	0.48
49:5:1557:C:C2	49:5:1571:G:C2	3.02	0.48
49:5:1983:A:C2	49:5:2008:U:C5	3.01	0.47
7:G:161:VAL:HG11	7:G:167:VAL:CG2	2.44	0.47
49:5:1075:G:C2	49:5:1076:C:C2	3.01	0.47
6:F:82:ASN:ND2	19:T:142:ARG:CB	2.77	0.47
5:E:114:THR:O	5:E:115:GLU:HB2	2.14	0.47
49:5:3586:G:C2	49:5:3587:C:C2	3.02	0.47
49:5:994:G:C6	49:5:995:C:C4	3.02	0.47
11:L:19:GLN:OE1	49:5:1518:A:N6	2.47	0.47
49:5:4272:G:N7	49:5:4336:A:N1	2.62	0.47
6:F:239:GLU:OE2	18:S:38:VAL:CG1	2.62	0.47
49:5:2089:G:O6	49:5:2263:A:H5"	2.14	0.47
9:I:76:MET:CE	9:I:76:MET:CA	2.88	0.47
2:B:379:PHE:CE2	2:B:385:LYS:HG3	2.49	0.47
2:B:41:VAL:HA	2:B:187:GLY:HA3	1.94	0.47
49:5:258:G:C6	49:5:259:C:C4	3.02	0.47
49:5:1322:A:C8	49:5:1326:A:C6	3.02	0.47
14:O:130:LYS:HD3	49:5:2055:G:C1'	2.44	0.47
49:5:255:C:O2	49:5:255:C:H2'	2.13	0.47
5:E:63:ALA:HA	5:E:65:TYR:CE1	2.49	0.47
49:5:2581:A:H2'	49:5:2582:A:C8	2.49	0.47
49:5:1245:C:C6	49:5:1269:G:O6	2.67	0.47
49:5:702:U:C2'	49:5:703:G:H4'	2.42	0.47
49:5:1367:C:H3'	49:5:1368:A:H5"	1.97	0.47
49:5:4093:G:C3'	49:5:4094:G:C5'	2.91	0.47
51:8:34:U:HO2'	51:8:35:C:C5'	2.27	0.47
49:5:916:C:N4	49:5:917:A:C5	2.83	0.47
21:V:13:LYS:HG3	21:V:128:LEU:CD2	2.43	0.47
49:5:1196:G:C2	49:5:1197:C:C2	3.01	0.47
12:M:74:ARG:HG2	12:M:78:GLU:OE1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1090:G:C2	49:5:1091:C:C2	3.02	0.47
49:5:4652:G:N2	49:5:4653:C:C2	2.82	0.47
49:5:508:G:C2	49:5:510:U:C5	3.02	0.47
51:8:78:G:H2'	51:8:79:G:O4'	2.14	0.47
8:H:126:VAL:HG11	8:H:161:ILE:HG22	1.96	0.47
2:B:29:VAL:HG13	2:B:348:ARG:HD3	1.96	0.47
11:L:80:GLU:OE2	11:L:113:ASN:CG	2.52	0.47
2:B:379:PHE:HE2	2:B:385:LYS:HG3	1.80	0.47
49:5:181:C:C4	49:5:256:G:N1	2.82	0.47
49:5:1404:G:C6	49:5:1405:C:C4	3.02	0.47
49:5:1070:G:C6	49:5:1071:C:C4	3.03	0.47
8:H:50:LYS:O	8:H:51:LYS:HG3	2.14	0.47
49:5:4913:G:HO2'	49:5:4914:C:C1'	2.26	0.47
49:5:3685:C:H2'	49:5:3686:G:O4'	2.15	0.47
49:5:179:G:C2	49:5:180:C:C2	3.01	0.47
49:5:1754:U:O4'	49:5:1754:U:O2	2.32	0.47
50:7:117:G:C2	50:7:118:C:C2	3.03	0.47
51:8:115:G:N2	51:8:116:C:C2	2.82	0.47
47:1:13:ARG:O	47:1:15:TYR:N	2.48	0.47
25:Z:54:THR:O	25:Z:56:ALA:N	2.48	0.47
49:5:1214:C:H4'	49:5:1215:C:O5'	2.14	0.47
49:5:4916:G:C6	49:5:4917:C:C4	3.03	0.47
3:C:181:LYS:HG3	49:5:218:A:C8	2.49	0.47
51:8:121:G:C5	51:8:122:G:C8	3.03	0.47
49:5:2444:U:O2'	51:8:112:G:O2'	2.23	0.47
49:5:127:G:C6	49:5:128:C:C4	3.03	0.47
18:S:84:TYR:HD1	18:S:84:TYR:C	2.17	0.47
49:5:265:C:H4'	49:5:266:C:OP1	2.14	0.47
11:L:4:SER:O	11:L:5:ARG:HG3	2.13	0.47
49:5:1092:G:C6	49:5:1093:C:C4	3.02	0.47
49:5:3705:G:C6	49:5:3706:C:C4	3.02	0.47
49:5:1359:G:C5	49:5:1360:G:C5	3.03	0.47
5:E:43:ASN:ND2	49:5:977:C:H5"	2.29	0.47
9:I:75:TYR:CE2	9:I:150:GLU:HG2	2.49	0.47
9:I:25:GLY:CA	48:2:63:G:O2'	2.54	0.47
49:5:1214:C:N3	49:5:2116:C:N3	2.63	0.47
49:5:1177:U:H2'	49:5:1178:G:C8	2.49	0.47
49:5:1196:G:C6	49:5:1197:C:C4	3.02	0.47
49:5:199:G:C4	49:5:201:C:C5	3.03	0.47
49:5:994:G:C2	49:5:995:C:C2	3.03	0.47
49:5:2698:G:C6	49:5:2699:C:C4	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1484:G:N3	49:5:1484:G:H2'	2.30	0.47
49:5:1826:G:C6	49:5:1827:C:C4	3.02	0.47
22:W:44:ARG:CG	22:W:44:ARG:HH11	2.27	0.47
49:5:1878:G:N2	49:5:1879:C:C2	2.83	0.47
49:5:1249:C:N3	49:5:1250:C:C5	2.83	0.47
49:5:1086:C:O2	49:5:1212:G:C2	2.68	0.47
49:5:1210:C:O2	49:5:1210:C:C2'	2.63	0.47
2:B:117:ARG:HA	2:B:177:LYS:HE2	1.97	0.47
3:C:323:ARG:HB2	49:5:1281:G:O2'	2.15	0.47
49:5:43:U:C5	49:5:44:A:C4	3.03	0.47
19:T:108:ARG:HD2	19:T:130:ARG:CD	2.45	0.47
12:M:41:PRO:HG3	12:M:73:VAL:HG13	1.96	0.47
49:5:966:A:N6	49:5:2252:G:C8	2.83	0.47
49:5:5030:U:C2	49:5:5031:G:C8	3.02	0.47
49:5:3738:G:C5	49:5:3739:C:C5	3.02	0.47
49:5:4100:C:N3	49:5:4101:C:C5	2.82	0.47
49:5:2481:G:C6	49:5:2482:C:C4	3.03	0.47
6:F:140:PRO:HG2	6:F:141:TYR:HD1	1.78	0.47
49:5:2099:G:N2	49:5:2100:A:C8	2.83	0.47
3:C:199:ARG:HE	49:5:2295:C:C5'	2.28	0.47
49:5:369:G:N2	49:5:372:A:OP2	2.39	0.47
19:T:70:HIS:ND1	19:T:70:HIS:N	2.63	0.47
49:5:2432:U:H2'	49:5:2433:G:O4'	2.15	0.47
49:5:1881:C:H5"	49:5:2281:U:H1'	1.97	0.47
49:5:4250:G:C2	49:5:4259:C:C2	3.03	0.47
2:B:56:ILE:CG1	2:B:365:LEU:HD22	2.44	0.47
1:A:242:ARG:HD2	1:A:242:ARG:C	2.35	0.47
49:5:4587:G:C2	49:5:4716:C:C2	3.03	0.47
5:E:53:TYR:O	5:E:54:SER:CB	2.63	0.47
49:5:4524:G:N2	49:5:4525:C:C2	2.83	0.47
49:5:1268:G:N1	49:5:1270:A:C5	2.82	0.47
49:5:977:C:C6	49:5:977:C:OP2	2.68	0.47
49:5:746:A:C2	49:5:915:A:C2	3.03	0.47
49:5:2128:G:H2'	49:5:2129:C:O4'	2.15	0.47
49:5:483:G:C2	49:5:484:U:C4	3.02	0.47
49:5:1090:G:C6	49:5:1091:C:C4	3.02	0.47
49:5:1840:G:C3'	49:5:1842:G:P	3.03	0.47
50:7:25:G:C6	50:7:26:C:C4	3.02	0.47
49:5:4389:C:H2'	49:5:4390:A:C8	2.50	0.47
4:D:195:HIS:CE1	4:D:199:ILE:HD11	2.50	0.47
49:5:2559:G:C6	49:5:2560:C:C4	3.03	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4486:C:H2'	49:5:4487:A:O4'	2.15	0.47
49:5:1213:G:C6	49:5:1215:C:C4	3.03	0.47
49:5:932:A:N3	49:5:932:A:C2'	2.77	0.47
49:5:2320:G:O2'	49:5:2321:G:P	2.73	0.47
49:5:3908:A:C2	49:5:4449:A:N7	2.83	0.47
49:5:4416:G:N1	49:5:4417:C:C4	2.83	0.47
49:5:1475:G:H2'	49:5:1476:C:C6	2.50	0.47
49:5:174:C:C2	49:5:263:G:N2	2.83	0.47
49:5:1761:G:C6	49:5:1762:C:C4	3.03	0.47
49:5:4651:A:H2'	49:5:4652:G:O4'	2.15	0.47
49:5:4898:G:C2	49:5:4923:C:C2	3.03	0.47
49:5:3937:C:H2'	49:5:3938:G:N2	2.30	0.47
49:5:2279:A:C2	49:5:2280:G:C4	3.02	0.47
49:5:4069:U:H2'	49:5:4070:U:C6	2.50	0.47
15:P:29:THR:HG21	15:P:146:ILE:HD11	1.97	0.47
49:5:4489:G:C6	49:5:4490:C:C4	3.02	0.47
6:F:78:ARG:O	6:F:80:ALA:O	2.33	0.47
49:5:1243:C:O2	49:5:1269:G:N3	2.48	0.47
49:5:1776:A:C6	49:5:1777:C:C4	3.02	0.47
49:5:1367:C:N4	49:5:1371:A:OP2	2.48	0.47
49:5:98:A:H1'	49:5:292:G:N7	2.29	0.47
49:5:748:G:O6	49:5:918:G:H1'	2.15	0.47
25:Z:36:ARG:HG2	25:Z:38:TYR:CZ	2.50	0.47
13:N:192:TRP:CE2	13:N:196:ASN:ND2	2.83	0.47
49:5:1178:G:N7	49:5:1179:U:C5	2.83	0.47
49:5:300:A:C2	49:5:301:G:C6	3.03	0.47
51:8:127:U:C4	51:8:128:C:C5	3.02	0.47
49:5:2613:C:N4	49:5:2614:C:N4	2.63	0.47
51:8:83:C:OP2	51:8:85:U:O2	2.33	0.47
49:5:196:C:C2	49:5:246:G:C2	3.03	0.47
49:5:2570:U:N3	49:5:2571:C:C5	2.83	0.47
49:5:1440:U:H2'	49:5:1440:U:O2	2.14	0.47
49:5:4119:C:O4'	49:5:4119:C:O2	2.32	0.47
49:5:3755:G:H3'	49:5:3756:A:H5"	1.97	0.47
4:D:103:LEU:HD11	4:D:248:ARG:NH1	2.30	0.47
12:M:25:VAL:HG23	12:M:45:VAL:HG21	1.96	0.47
49:5:2588:C:OP1	49:5:2767:U:O2'	2.33	0.47
49:5:1359:G:C5	49:5:1360:G:C6	3.03	0.46
18:S:9:GLU:CG	18:S:33:PHE:CE1	2.98	0.46
8:H:18:ILE:HG22	8:H:27:VAL:HG22	1.98	0.46
49:5:939:G:N3	49:5:939:G:H2'	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:967:C:O2	49:5:2254:G:N1	2.48	0.46
24:Y:1:MET:O	24:Y:3:PHE:HE1	1.97	0.46
49:5:1563:A:H2'	49:5:1564:A:C8	2.50	0.46
13:N:36:LEU:HD22	13:N:109:HIS:CD2	2.50	0.46
49:5:177:G:C2	49:5:178:C:C2	3.03	0.46
49:5:1800:U:C6	49:5:1800:U:H5"	2.50	0.46
49:5:2702:C:O2	49:5:2715:G:C2	2.69	0.46
49:5:4414:A:C2	49:5:4427:G:C2	3.03	0.46
49:5:1964:A:C2	49:5:4694:G:C4	3.03	0.46
49:5:1358:G:C6	49:5:1379:C:N3	2.83	0.46
51:8:111:U:O2'	51:8:112:G:OP2	2.25	0.46
49:5:4583:C:C2	49:5:4718:G:N2	2.83	0.46
49:5:4269:G:C6	49:5:4270:C:C4	3.03	0.46
49:5:4876:U:O4'	49:5:4876:U:O2	2.34	0.46
4:D:113:PHE:HE2	4:D:142:PHE:CD2	2.33	0.46
49:5:2574:G:O6	49:5:2762:G:O6	2.33	0.46
9:I:153:ARG:HA	9:I:165:ILE:HD11	1.98	0.46
49:5:4719:G:O5'	49:5:4719:G:H8	1.98	0.46
16:Q:89:ASP:HA	49:5:1502:G:O6	2.15	0.46
8:H:55:LEU:HG	8:H:56:ARG:H	1.80	0.46
3:C:223:ASN:HB3	49:5:223:G:H21	1.80	0.46
49:5:2097:U:O4'	49:5:2097:U:O2	2.33	0.46
49:5:2793:G:C5	49:5:2797:C:N4	2.84	0.46
49:5:4759:C:H2'	49:5:4760:G:O4'	2.15	0.46
49:5:423:G:H2'	49:5:424:U:O4'	2.15	0.46
49:5:1292:C:H3'	49:5:1293:G:H5"	1.97	0.46
49:5:1326:A:H2'	49:5:1327:C:C6	2.50	0.46
10:J:89:VAL:CG2	10:J:115:LEU:HD23	2.44	0.46
49:5:1584:G:C2	49:5:1585:C:C2	3.03	0.46
17:R:95:TRP:CZ2	17:R:99:MET:CE	2.99	0.46
3:C:253:THR:O	3:C:256:ALA:N	2.47	0.46
49:5:1246:G:C6	49:5:1247:U:C4	3.04	0.46
8:H:10:VAL:O	8:H:54:ARG:HB2	2.15	0.46
7:G:164:ILE:HG13	7:G:168:VAL:CG2	2.45	0.46
49:5:1370:G:H4'	49:5:1371:A:H4'	1.96	0.46
9:I:75:TYR:HE2	9:I:150:GLU:HB3	1.81	0.46
13:N:67:ARG:NH1	49:5:2458:C:OP1	2.48	0.46
49:5:973:G:H1	49:5:1282:G:H1'	1.79	0.46
49:5:4946:U:H2'	49:5:4946:U:O2	2.16	0.46
6:F:129:LYS:HB2	19:T:133:ALA:HB3	1.98	0.46
8:H:151:ILE:HG23	8:H:152:GLU:N	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:12:MET:HE2	10:J:137:PRO:HB2	1.98	0.46
3:C:48:ASN:HD22	3:C:48:ASN:C	2.16	0.46
49:5:4587:G:N2	49:5:4716:C:C2	2.83	0.46
49:5:2618:G:N2	49:5:2720:C:C2	2.84	0.46
18:S:176:PHE:CE2	49:5:4871:C:C6	3.04	0.46
18:S:36:ASN:ND2	18:S:39:VAL:HG13	2.31	0.46
23:X:100:VAL:HG11	23:X:109:ILE:HD11	1.97	0.46
49:5:370:U:C6	49:5:1637:A:C2	3.03	0.46
11:L:66:TYR:O	11:L:68:THR:N	2.49	0.46
20:U:24:ASP:CB	20:U:69:LYS:CA	2.86	0.46
10:J:26:VAL:CG2	10:J:27:GLY:N	2.79	0.46
49:5:1380:G:O2'	49:5:1381:U:C5'	2.63	0.46
49:5:1064:G:C2	49:5:1065:G:C4	3.04	0.46
9:I:76:MET:HA	9:I:79:SER:OG	2.15	0.46
49:5:1086:C:C2	49:5:1212:G:C2	3.03	0.46
49:5:930:G:N3	49:5:931:C:H6	2.12	0.46
49:5:715:G:H1	49:5:953:C:H42	1.62	0.46
49:5:4916:G:C2	49:5:4917:C:C2	3.03	0.46
49:5:219:G:OP1	49:5:219:G:H4'	2.16	0.46
49:5:4737:G:C6	49:5:4738:C:N4	2.83	0.46
2:B:268:ARG:NH1	49:5:4565:C:O2	2.49	0.46
14:O:85:ARG:HG3	14:O:99:LEU:HD11	1.97	0.46
49:5:1744:U:H2'	49:5:1745:G:O4'	2.16	0.46
6:F:218:PRO:HA	6:F:249:MET:HG2	1.98	0.46
49:5:1271:G:H5"	49:5:1272:C:O4'	2.15	0.46
49:5:2109:G:O6	49:5:2122:G:O6	2.33	0.46
49:5:976:G:O4'	49:5:976:G:P	2.73	0.46
14:O:124:LEU:CD2	18:S:172:PRO:CD	2.93	0.46
49:5:723:A:N1	49:5:943:A:N1	2.64	0.46
6:F:247:ARG:HD3	6:F:247:ARG:HA	1.70	0.46
49:5:1072:C:O2	49:5:1072:C:H2'	2.15	0.46
49:5:1280:C:C2	49:5:1282:G:C8	3.04	0.46
49:5:515:C:H2'	49:5:515:C:O2	2.15	0.46
49:5:1818:G:H2'	49:5:1819:G:H5'	1.98	0.46
49:5:2481:G:N2	49:5:2498:C:C2	2.84	0.46
49:5:172:C:C2	49:5:173:C:C6	3.03	0.46
49:5:737:C:H2'	49:5:738:C:O4'	2.16	0.46
49:5:2682:G:N2	49:5:2683:C:C2	2.84	0.46
49:5:396:A:C2	49:5:397:G:C4	3.03	0.46
49:5:1301:C:O4'	49:5:1301:C:O2	2.31	0.46
49:5:3713:U:O4'	49:5:3713:U:O2	2.33	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:159:ARG:NH2	6:F:250:ASN:OXT	2.47	0.46
17:R:6:LEU:HD22	17:R:10:LEU:HD22	1.98	0.46
15:P:49:LYS:O	15:P:53:LEU:HG	2.15	0.46
49:5:4140:C:C5	49:5:4141:G:C8	3.04	0.46
15:P:131:ARG:HD3	15:P:137:ASN:ND2	2.30	0.46
49:5:322:C:O2	49:5:4356:G:C2	2.68	0.46
3:C:266:THR:HG22	3:C:269:LYS:HB3	1.96	0.46
51:8:55:U:C4	51:8:62:A:N1	2.84	0.46
49:5:1890:G:N2	49:5:1938:C:N4	2.58	0.46
49:5:656:C:N3	49:5:657:C:C5	2.83	0.46
49:5:1448:G:C6	49:5:1449:C:C4	3.03	0.46
49:5:4283:G:N1	49:5:4284:C:C4	2.83	0.46
49:5:3876:A:HO2'	49:5:3877:A:P	2.39	0.46
49:5:987:C:H2'	49:5:988:C:C6	2.50	0.46
49:5:4462:C:C2	49:5:4515:G:N2	2.84	0.46
1:A:21:LYS:HG2	1:A:22:HIS:CE1	2.50	0.46
49:5:4737:G:C2	49:5:4738:C:C2	3.04	0.46
1:A:137:ILE:HD12	1:A:147:ARG:HG2	1.97	0.46
49:5:3597:G:C6	49:5:3598:C:C4	3.04	0.46
49:5:4489:G:C2	49:5:4490:C:C2	3.03	0.46
49:5:2428:A:C4	49:5:2789:A:C2	3.04	0.46
6:F:225:LYS:HE3	49:5:1907:A:H4'	1.98	0.46
49:5:2567:G:C6	49:5:2568:C:C4	3.04	0.46
12:M:29:ASP:C	12:M:29:ASP:OD1	2.53	0.46
51:8:134:G:C6	51:8:135:C:C4	3.03	0.46
2:B:254:ILE:HG23	2:B:266:VAL:HG11	1.96	0.46
16:Q:104:ARG:NH2	49:5:1353:G:N7	2.63	0.46
7:G:164:ILE:HG21	13:N:22:LEU:HD21	1.98	0.46
5:E:199:ILE:CD1	5:E:253:ILE:HG12	2.38	0.46
49:5:190:G:C2	49:5:252:C:C2	3.04	0.46
49:5:3590:G:N1	49:5:3591:C:C2	2.84	0.46
49:5:488:G:N1	49:5:489:C:C4	2.84	0.46
49:5:28:C:C2	49:5:55:G:C2	3.04	0.46
51:8:94:G:H5'	51:8:94:G:C8	2.51	0.46
49:5:4139:G:C6	49:5:4140:C:C4	3.03	0.46
49:5:2046:G:H1'	49:5:2047:A:C8	2.51	0.46
9:I:179:ASP:OD1	9:I:180:GLU:N	2.49	0.46
49:5:1483:C:O4'	49:5:1483:C:O2	2.34	0.46
49:5:307:A:N3	49:5:310:G:O2'	2.39	0.46
45:0:1736:THR:HG22	45:0:1763:GLU:HG3	1.96	0.46
49:5:4595:G:C6	49:5:4596:C:C4	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:518:G:C6	49:5:519:C:C4	3.04	0.46
49:5:1078:A:H2'	49:5:1079:C:H5	1.81	0.46
16:Q:67:ILE:CD1	16:Q:98:LEU:HD11	2.45	0.46
49:5:4661:G:H8	49:5:4661:G:H5"	1.80	0.46
49:5:2018:C:H2'	49:5:2019:C:O4'	2.16	0.46
17:R:103:ARG:NH2	17:R:106:LEU:HD21	9.78	0.46
49:5:167:C:C4	49:5:269:G:N1	2.84	0.46
21:V:34:ALA:HB2	21:V:72:LEU:CD1	2.45	0.46
49:5:709:C:N4	49:5:1287:G:H1	2.09	0.46
50:7:30:C:C2	50:7:48:G:C2	3.04	0.46
49:5:3729:U:H2'	49:5:3730:U:C6	2.50	0.46
14:O:27:VAL:HG12	14:O:98:ALA:HB1	1.97	0.46
7:G:58:PRO:HD3	23:X:46:PHE:HD2	1.81	0.46
49:5:4495:G:N2	49:5:4506:C:C2	2.84	0.46
49:5:2567:G:C2	49:5:2568:C:C2	3.03	0.46
49:5:4586:G:H5"	49:5:4586:G:H8	1.81	0.46
4:D:155:THR:HA	4:D:179:ARG:O	2.16	0.46
7:G:41:ILE:N	49:5:4116:C:OP2	2.48	0.46
49:5:3600:G:C2	49:5:3601:C:C2	3.04	0.46
6:F:105:PRO:HB3	49:5:1724:G:C2	2.51	0.46
49:5:2263:A:N7	49:5:2266:C:N4	2.60	0.46
49:5:1756:U:H3	49:5:1775:A:H2	1.64	0.46
49:5:505:G:C6	49:5:506:C:C4	3.03	0.46
18:S:76:LYS:NZ	18:S:100:LEU:O	2.48	0.46
49:5:2108:G:C2	49:5:2125:C:C4	3.04	0.46
49:5:1179:U:C4	49:5:1181:C:OP2	2.69	0.46
49:5:4109:G:C2	49:5:4110:C:C2	3.04	0.46
49:5:277:G:O2'	49:5:278:G:P	2.73	0.46
11:L:9:ILE:HA	11:L:9:ILE:HD12	1.61	0.46
49:5:2889:G:H21	49:5:5034:A:H8	1.64	0.46
49:5:2557:G:C2	49:5:2571:C:C2	3.03	0.46
49:5:2503:G:H1'	49:5:4084:G:C2	2.50	0.46
13:N:136:ASP:C	13:N:138:PHE:H	2.20	0.46
49:5:254:G:C2	49:5:255:C:C2	3.04	0.46
49:5:2684:C:H2'	49:5:2685:C:O4'	2.16	0.46
18:S:84:TYR:C	18:S:84:TYR:CD1	2.89	0.46
49:5:4745:G:H2'	49:5:4746:C:C6	2.51	0.46
15:P:25:HIS:CD2	49:5:2361:G:C6	3.04	0.46
49:5:4309:G:H2'	49:5:4310:A:O4'	2.16	0.46
49:5:517:C:C2	49:5:645:G:C2	3.04	0.46
49:5:1203:G:C6	49:5:1204:C:C4	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:3790:U:N3	49:5:3792:G:O4'	2.49	0.46
49:5:1245:C:O2	49:5:2111:G:O2'	2.27	0.45
6:F:39:PHE:CZ	49:5:2123:C:OP2	2.70	0.45
49:5:449:C:H3'	49:5:450:G:H5"	1.98	0.45
49:5:5031:G:H5"	49:5:5031:G:H8	1.80	0.45
51:8:125:C:O3'	51:8:126:C:H3'	2.15	0.45
49:5:258:G:C2	49:5:259:C:C2	3.04	0.45
49:5:4735:G:N2	49:5:4736:C:C2	2.85	0.45
49:5:2068:C:O2'	49:5:2069:A:OP1	2.28	0.45
12:M:112:VAL:HG11	14:O:201:PHE:CZ	2.51	0.45
49:5:2439:G:H2'	49:5:2439:G:N3	2.30	0.45
48:2:22:G:N2	48:2:23:C:C2	2.84	0.45
17:R:35:ALA:O	17:R:36:ASN:OD1	2.34	0.45
49:5:1263:A:C5	49:5:1264:C:C5	3.05	0.45
49:5:292:G:O2'	49:5:293:G:H8	1.99	0.45
17:R:63:CYS:SG	49:5:2809:G:H5"	2.56	0.45
49:5:1085:C:O2'	49:5:1086:C:H5'	2.16	0.45
6:F:44:LEU:CD1	49:5:2096:G:N1	2.79	0.45
49:5:2126:G:O3'	49:5:2127:C:O4'	2.34	0.45
49:5:2254:G:O2'	49:5:2255:C:H4'	2.16	0.45
49:5:3876:A:O2'	49:5:3877:A:P	2.74	0.45
3:C:181:LYS:HG2	49:5:218:A:N7	2.32	0.45
49:5:2889:G:C2	49:5:2890:C:C2	3.04	0.45
49:5:5017:G:C6	49:5:5018:C:C4	3.04	0.45
3:C:190:ARG:HG3	3:C:190:ARG:HH11	1.81	0.45
49:5:662:C:H2'	49:5:663:G:C8	2.50	0.45
49:5:4077:A:N7	49:5:4078:C:C5	2.85	0.45
49:5:3684:G:C6	49:5:3685:C:N4	2.85	0.45
49:5:4237:C:H4'	49:5:4327:C:O2	2.17	0.45
49:5:2751:G:H2'	49:5:2752:G:H5"	1.99	0.45
16:Q:155:ALA:O	16:Q:158:THR:OG1	2.25	0.45
23:X:83:THR:HG21	49:5:2434:G:O3'	2.17	0.45
50:7:117:G:C6	50:7:118:C:C4	3.04	0.45
49:5:1800:U:H6	49:5:1800:U:H5"	1.81	0.45
49:5:476:G:N2	49:5:679:C:C2	2.84	0.45
49:5:1:C:H4'	49:5:2:G:O5'	2.15	0.45
1:A:117:GLU:OE1	1:A:121:GLY:N	2.49	0.45
49:5:1241:C:C2'	49:5:1242:G:OP1	2.64	0.45
49:5:724:C:N4	49:5:942:G:H1	2.14	0.45
4:D:22:ARG:HG3	4:D:22:ARG:HH11	1.81	0.45
49:5:690:C:H5"	49:5:690:C:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:P:114:ILE:HA	15:P:150:LEU:HD23	1.97	0.45
14:O:114:LYS:HG2	49:5:4757:C:N3	2.31	0.45
6:F:44:LEU:O	6:F:44:LEU:HD23	2.16	0.45
49:5:1072:C:H1'	49:5:1073:G:C8	2.52	0.45
10:J:23:ASN:HB2	10:J:71:HIS:HB3	1.98	0.45
25:Z:49:TYR:CE2	25:Z:133:LYS:HA	2.51	0.45
49:5:1099:C:H2'	49:5:1100:U:O4'	2.17	0.45
5:E:116:ASP:N	5:E:116:ASP:OD1	2.50	0.45
49:5:1205:G:C6	49:5:1206:C:C4	3.04	0.45
49:5:2267:U:O4'	49:5:2267:U:O2	2.32	0.45
49:5:2898:G:C2	49:5:2899:C:C2	3.04	0.45
14:O:126:VAL:HG13	14:O:127:VAL:N	2.29	0.45
51:8:76:C:H2'	51:8:77:A:O4'	2.16	0.45
49:5:1987:C:N3	49:5:1988:G:C8	2.85	0.45
49:5:1755:C:C3'	49:5:1756:U:H5"	2.46	0.45
49:5:181:C:C4	49:5:256:G:C2	3.04	0.45
19:T:87:LYS:HZ3	49:5:4301:U:P	2.40	0.45
49:5:482:G:H2'	49:5:483:G:C8	2.51	0.45
49:5:4461:C:N3	49:5:4516:G:C6	2.85	0.45
49:5:3738:G:C5	49:5:3739:C:C6	3.04	0.45
49:5:722:G:N3	49:5:722:G:H2'	2.31	0.45
9:I:59:GLN:HB3	9:I:126:VAL:HG22	1.98	0.45
49:5:2391:G:N1	49:5:2392:C:C4	2.84	0.45
49:5:2546:G:H4'	49:5:2547:G:OP1	2.17	0.45
49:5:2889:G:C6	49:5:2890:C:C4	3.03	0.45
49:5:4735:G:C4	49:5:4736:C:C6	3.05	0.45
19:T:147:GLU:HG3	19:T:147:GLU:O	2.15	0.45
9:I:3:ARG:NH2	49:5:4431:U:OP2	2.49	0.45
16:Q:17:GLU:HB2	16:Q:18:PRO:HD2	1.99	0.45
49:5:4089:G:C2	49:5:4161:G:C2	3.04	0.45
49:5:1735:U:H2'	49:5:1736:A:H5'	1.98	0.45
1:A:133:TYR:CD2	1:A:168:VAL:HG12	2.51	0.45
49:5:1598:C:C6	49:5:2798:A:N7	2.85	0.45
49:5:990:C:N3	49:5:991:C:C5	2.85	0.45
49:5:469:C:H2'	49:5:470:A:O4'	2.16	0.45
3:C:69:THR:HG21	49:5:3906:A:C2'	2.34	0.45
14:O:122:ALA:O	14:O:128:ARG:CG	2.64	0.45
49:5:688:U:C2	49:5:689:U:C6	3.05	0.45
5:E:197:ILE:HD12	5:E:257:ILE:HG23	1.98	0.45
49:5:1278:C:H3'	49:5:1279:A:H4'	1.98	0.45
49:5:43:U:C4	49:5:93:G:N1	2.84	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4699:U:H1'	49:5:4700:A:H5"	1.97	0.45
49:5:4142:C:C2	49:5:4143:G:C2	3.04	0.45
51:8:53:G:C2	51:8:54:C:C2	3.04	0.45
48:2:30:G:C2	48:2:41:C:C2	3.04	0.45
11:L:71:ARG:NH2	49:5:74:G:O3'	2.50	0.45
49:5:4271:A:H3'	49:5:4272:G:H21	1.81	0.45
16:Q:85:THR:HG22	16:Q:104:ARG:HB2	1.98	0.45
6:F:139:GLU:OE2	6:F:228:HIS:CD2	2.70	0.45
3:C:309:ILE:N	3:C:309:ILE:HD13	2.32	0.45
49:5:1590:C:H3'	49:5:1591:U:H4'	1.99	0.45
11:L:58:VAL:HG13	11:L:70:VAL:CG1	2.47	0.45
49:5:2542:G:N2	49:5:2775:C:C2	2.85	0.45
49:5:1964:A:N3	49:5:1964:A:H2'	2.32	0.45
49:5:1268:G:N2	49:5:1270:A:N9	2.64	0.45
49:5:977:C:O2	49:5:978:G:C8	2.68	0.45
49:5:1756:U:O4	49:5:1775:A:C6	2.68	0.45
49:5:1076:C:C4	49:5:1077:C:C5	3.05	0.45
49:5:1075:G:C4	49:5:1076:C:C5	3.05	0.45
5:E:246:GLN:O	5:E:250:ASP:N	2.41	0.45
18:S:80:ILE:CD1	18:S:106:VAL:HG22	2.41	0.45
49:5:1443:A:C4	49:5:2102:G:C2	3.05	0.45
49:5:450:G:C6	49:5:1295:C:N3	2.84	0.45
49:5:4235:G:N3	49:5:4235:G:H2'	2.31	0.45
19:T:83:LYS:CE	49:5:1978:C:OP1	108.41	0.45
49:5:2654:C:N3	49:5:2681:G:C2	2.85	0.45
49:5:175:C:H2'	49:5:176:G:C8	2.51	0.45
49:5:2740:U:O2	49:5:2740:U:H5'	2.16	0.45
49:5:2768:C:O4'	49:5:2768:C:O2	2.35	0.45
11:L:79:GLU:HA	11:L:79:GLU:OE1	2.16	0.45
49:5:4231:C:C2	49:5:4331:G:N2	2.84	0.45
49:5:4986:G:C6	49:5:4987:C:C4	3.05	0.45
4:D:146:LEU:HD11	4:D:159:VAL:CG1	2.46	0.45
49:5:1395:U:O2	49:5:1469:C:H4'	2.15	0.45
49:5:1358:G:OP1	49:5:1506:G:H4'	2.17	0.45
49:5:2859:G:O2'	49:5:2860:C:O5'	2.35	0.45
49:5:484:U:C4	49:5:486:C:C4	3.04	0.45
49:5:1550:G:C6	49:5:1551:C:C4	3.05	0.45
8:H:69:THR:O	8:H:70:VAL:C	2.55	0.45
49:5:1720:C:H2'	49:5:1721:G:O4'	2.16	0.45
49:5:2787:A:H2	49:5:2801:U:H3	1.64	0.45
17:R:98:ARG:NH2	17:R:107:ARG:NH1	16.66	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:3656:A:O4'	49:5:3747:A:C2	2.70	0.45
49:5:1416:G:C6	49:5:1417:C:C4	3.05	0.45
6:F:36:ARG:HG2	6:F:77:ALA:HB1	60.55	0.45
25:Z:10:VAL:HG22	25:Z:87:VAL:HG23	1.99	0.45
51:8:91:A:H2'	51:8:92:U:O4'	2.17	0.45
49:5:1379:C:H4'	49:5:1380:G:N9	2.31	0.45
49:5:504:G:O6	49:5:654:C:N3	2.49	0.45
49:5:1075:G:C6	49:5:1076:C:C4	3.04	0.45
23:X:125:ASN:OD1	49:5:2438:A:H5'	2.17	0.45
49:5:5028:G:C2	49:5:5029:C:C2	3.04	0.45
3:C:185:ALA:HB2	49:5:218:A:H62	1.80	0.45
49:5:3641:U:C5	49:5:3646:A:N7	2.82	0.45
49:5:4989:U:O4	49:5:5060:A:N1	2.50	0.45
49:5:1721:G:C2	49:5:1722:C:C2	3.05	0.45
49:5:3644:U:H2'	49:5:3645:U:H5'	1.97	0.45
18:S:168:THR:OG1	18:S:169:THR:N	2.50	0.45
49:5:2685:C:H2'	49:5:2686:G:O4'	2.17	0.45
49:5:1092:G:C2	49:5:1093:C:C2	3.05	0.45
49:5:2046:G:O2'	49:5:2047:A:OP2	2.35	0.45
14:O:72:HIS:N	49:5:4586:G:OP1	2.47	0.45
48:2:22:G:C6	48:2:23:C:C4	3.05	0.45
49:5:463:A:N1	49:5:692:A:C2	2.85	0.45
49:5:1979:A:H3'	49:5:1980:U:C5'	2.47	0.45
2:B:220:ILE:HG12	2:B:278:THR:HG23	1.98	0.45
49:5:674:G:C6	49:5:675:C:C4	3.05	0.45
49:5:193:G:C2	49:5:249:C:C2	3.05	0.45
49:5:2397:G:C8	49:5:2399:G:C8	3.04	0.45
49:5:1267:C:H1'	49:5:1268:G:N7	2.31	0.45
49:5:1066:G:H2'	49:5:1067:G:O4'	2.17	0.45
49:5:1234:G:H2'	49:5:1235:G:C8	2.52	0.45
49:5:1752:G:H2'	49:5:1753:G:O4'	2.17	0.45
13:N:183:THR:HG22	13:N:188:ARG:N	2.32	0.45
49:5:1938:C:C4'	49:5:1939:A:O5'	2.65	0.45
49:5:4482:U:N3	49:5:4483:C:C5	2.85	0.45
49:5:482:G:H2'	49:5:483:G:C1'	2.47	0.45
49:5:4919:G:N2	49:5:4920:C:C2	2.85	0.45
49:5:2395:A:O2'	49:5:2806:A:C1'	2.62	0.45
49:5:4699:U:H4'	49:5:4700:A:OP1	2.16	0.45
1:A:4:VAL:HG12	1:A:8:GLN:CB	2.47	0.45
4:D:56:THR:HG21	50:7:26:C:OP1	2.16	0.45
49:5:1846:G:C2	49:5:1847:C:C2	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2297:G:C2	49:5:2338:C:C2	3.05	0.45
3:C:138:MET:HG2	3:C:144:ILE:HG22	1.98	0.45
8:H:111:LEU:HD12	8:H:113:GLU:OE1	2.17	0.45
2:B:66:LYS:HB2	21:V:11:GLY:HA3	1.99	0.45
49:5:1503:A:H4'	49:5:1504:G:H5'	1.98	0.45
49:5:433:A:C2	49:5:3867:A:H4'	2.52	0.45
3:C:168:VAL:HG12	3:C:172:LYS:CE	2.47	0.45
49:5:4093:G:C6	49:5:4094:G:N7	2.85	0.45
2:B:379:PHE:CD2	2:B:385:LYS:HB2	2.35	0.45
3:C:326:LEU:HD11	3:C:333:LYS:HG2	1.98	0.45
3:C:209:ILE:HB	3:C:229:LEU:HD13	1.98	0.45
3:C:150:LEU:HB3	3:C:151:PRO:HD3	1.99	0.45
8:H:113:GLU:OE1	8:H:125:ARG:HB3	2.17	0.45
49:5:1098:G:C6	49:5:1099:C:C4	3.04	0.45
49:5:4986:G:C2	49:5:4987:C:C2	3.05	0.45
22:W:30:GLN:N	22:W:30:GLN:CD	2.70	0.45
49:5:1374:G:C2	49:5:1375:C:C2	3.05	0.45
49:5:1266:G:H5"	49:5:2112:G:N2	2.32	0.44
49:5:1990:A:N1	49:5:1991:A:H1'	2.28	0.44
49:5:977:C:N3	49:5:978:G:C5	2.85	0.44
9:I:75:TYR:HD2	9:I:151:ALA:HA	1.81	0.44
49:5:917:A:N1	49:5:919:C:C4	2.85	0.44
49:5:4635:A:C2	49:5:4664:A:C5	3.05	0.44
49:5:1351:G:H2'	49:5:1352:C:O4'	2.17	0.44
49:5:973:G:O6	49:5:1282:G:N3	2.50	0.44
49:5:973:G:C6	49:5:974:C:C5	3.05	0.44
3:C:341:LEU:HD21	5:E:46:LEU:HD21	1.96	0.44
49:5:4942:C:O3'	49:5:4944:C:P	2.75	0.44
10:J:43:LEU:HD11	10:J:82:ILE:HG23	1.98	0.44
49:5:3670:C:O2'	49:5:3671:G:C8	2.58	0.44
7:G:182:CYS:HA	7:G:226:TYR:CE2	2.52	0.44
49:5:2430:C:O2'	49:5:2431:A:H5'	2.18	0.44
5:E:274:THR:HG22	5:E:277:ILE:HG21	1.98	0.44
49:5:4666:G:C2	49:5:4667:C:C2	3.05	0.44
49:5:1912:G:N2	49:5:1913:C:C2	2.85	0.44
1:A:40:TYR:CE1	49:5:4117:U:N3	2.84	0.44
18:S:17:LEU:HB2	18:S:18:PRO:HD2	1.98	0.44
49:5:1991:A:C2'	49:5:1992:U:C6	3.00	0.44
20:U:24:ASP:HB3	20:U:69:LYS:CB	2.46	0.44
2:B:300:LYS:HG2	2:B:311:ASP:HB3	1.93	0.44
48:2:15:G:HO2'	48:2:16:C:P	2.31	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1890:G:H1	49:5:1938:C:N4	2.15	0.44
49:5:2102:G:N1	49:5:2103:G:C5	2.86	0.44
7:G:144:THR:HG22	7:G:169:PHE:HE1	1.81	0.44
49:5:4920:C:H2'	49:5:4921:C:H6	1.80	0.44
49:5:1171:G:C2	49:5:1172:C:C2	3.06	0.44
14:O:57:PHE:O	14:O:57:PHE:CD1	2.70	0.44
49:5:1400:G:H2'	49:5:1401:C:O4'	2.17	0.44
17:R:24:LEU:O	17:R:25:ASP:C	2.55	0.44
49:5:1205:G:C2	49:5:1206:C:C2	3.05	0.44
49:5:2898:G:C6	49:5:2899:C:C4	3.04	0.44
4:D:10:LYS:O	4:D:14:LYS:HG3	2.18	0.44
49:5:1263:A:H2'	49:5:1264:C:O4'	2.16	0.44
49:5:1270:A:C6	49:5:1271:G:H1'	2.52	0.44
49:5:470:A:C5	49:5:471:A:N7	2.86	0.44
49:5:292:G:O2'	49:5:293:G:C8	2.65	0.44
49:5:652:G:H2'	49:5:653:U:O4'	2.17	0.44
49:5:1214:C:H4'	49:5:1215:C:H4'	2.00	0.44
49:5:1891:A:O2'	49:5:1892:A:O4'	2.35	0.44
49:5:709:C:H2'	49:5:710:G:O4'	2.17	0.44
49:5:963:G:C2'	49:5:963:G:N3	2.81	0.44
49:5:466:A:H2'	49:5:467:U:C6	2.52	0.44
1:A:69:PHE:CD1	11:L:65:ARG:HD3	106.32	0.44
49:5:488:G:C6	49:5:489:C:C4	3.05	0.44
14:O:7:LEU:HA	14:O:7:LEU:HD23	1.76	0.44
49:5:245:C:O2'	49:5:246:G:O5'	2.30	0.44
49:5:491:G:N2	49:5:492:U:C4	2.85	0.44
49:5:4739:C:H2'	49:5:4740:G:O4'	2.17	0.44
18:S:83:ARG:HH21	18:S:83:ARG:CG	2.30	0.44
15:P:34:GLN:HE21	15:P:34:GLN:HA	1.82	0.44
3:C:219:LYS:HG3	49:5:224:U:O2	2.17	0.44
49:5:4075:U:O2'	49:5:4076:G:H2'	2.16	0.44
49:5:1387:A:C4	49:5:1397:A:N6	2.85	0.44
49:5:1982:G:O2'	49:5:2010:A:H5'	2.16	0.44
3:C:84:THR:HG21	49:5:366:A:N1	2.28	0.44
49:5:919:C:C5	49:5:920:C:C5	3.05	0.44
12:M:70:GLN:CA	12:M:73:VAL:HG12	2.47	0.44
13:N:166:SER:HB2	49:5:331:G:P	2.58	0.44
6:F:141:TYR:CD1	6:F:141:TYR:N	2.85	0.44
24:Y:1:MET:O	24:Y:3:PHE:CD1	2.71	0.44
48:2:51:C:H2'	48:2:52:G:C5'	2.48	0.44
49:5:694:C:H2'	49:5:695:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:127:G:C2	49:5:128:C:C2	3.05	0.44
23:X:96:LEU:HG	23:X:140:LEU:HD11	1.98	0.44
49:5:1325:C:O2	49:5:1325:C:O5'	2.36	0.44
21:V:38:TYR:CD2	21:V:38:TYR:O	2.70	0.44
49:5:1789:C:C2'	49:5:1790:U:O5'	2.65	0.44
51:8:119:C:C2	51:8:132:G:N2	2.86	0.44
19:T:18:PRO:HG2	19:T:21:LYS:HB2	1.99	0.44
49:5:2316:G:N2	49:5:2317:C:C2	2.86	0.44
49:5:1468:C:H2'	49:5:1469:C:C6	2.53	0.44
49:5:1358:G:N3	49:5:1359:G:N7	2.66	0.44
49:5:1359:G:H3'	49:5:1360:G:H8	1.82	0.44
5:E:161:LEU:CD2	5:E:253:ILE:HD11	2.13	0.44
2:B:310:SER:OG	2:B:311:ASP:N	2.50	0.44
14:O:124:LEU:HD21	18:S:172:PRO:HD3	1.99	0.44
8:H:52:LYS:HD3	8:H:52:LYS:HA	1.70	0.44
20:U:56:LEU:HD22	20:U:61:VAL:CG2	2.47	0.44
49:5:2447:U:O2'	49:5:2448:G:O5'	2.32	0.44
49:5:1170:G:N2	49:5:1192:C:C2	2.85	0.44
14:O:160:ARG:NH2	49:5:4759:C:OP1	2.51	0.44
49:5:1438:U:O2	49:5:2099:G:C6	2.70	0.44
18:S:95:ARG:NH1	18:S:97:TYR:OH	2.51	0.44
49:5:219:G:H5"	49:5:219:G:C4	2.53	0.44
17:R:74:ARG:NH2	49:5:2891:U:OP2	2.51	0.44
48:2:2:G:C2	48:2:3:C:C2	3.06	0.44
49:5:753:C:C2	49:5:754:U:C6	3.05	0.44
49:5:4912:G:O5'	49:5:4913:G:OP2	2.35	0.44
49:5:2712:G:N1	49:5:2713:C:C4	2.85	0.44
1:A:27:ALA:C	1:A:28:ARG:HG3	2.37	0.44
49:5:2609:G:C2	49:5:2731:C:O2	2.70	0.44
25:Z:73:LYS:HG2	25:Z:75:TYR:CZ	2.52	0.44
49:5:4524:G:OP2	49:5:4524:G:H4'	2.18	0.44
49:5:1203:G:C2	49:5:1204:C:C2	3.05	0.44
51:8:119:C:C2	51:8:132:G:C2	3.05	0.44
4:D:163:LEU:HD21	4:D:175:HIS:HB3	2.00	0.44
49:5:2272:C:H2'	49:5:2273:G:O5'	2.17	0.44
49:5:4890:G:C2	49:5:4930:C:C2	3.05	0.44
17:R:143:HIS:CE1	49:5:3596:A:O3'	2.71	0.44
4:D:219:TYR:CE2	4:D:227:ILE:HD11	2.52	0.44
49:5:1246:G:C5	49:5:1247:U:C5	3.06	0.44
49:5:1066:G:C4	49:5:1067:G:C8	3.06	0.44
49:5:4473:A:C2	49:5:4474:A:C5	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:60:HIS:CE1	49:5:944:A:H2'	2.53	0.44
49:5:642:G:C2	49:5:643:C:C4	3.06	0.44
49:5:2446:C:H2'	49:5:2447:U:C6	2.53	0.44
49:5:4735:G:C5	49:5:4736:C:C5	3.05	0.44
49:5:4977:A:C2	49:5:4978:G:C4	3.06	0.44
49:5:2715:G:C6	49:5:2716:C:C4	3.06	0.44
49:5:1735:U:C2'	49:5:1736:A:H5'	2.47	0.44
49:5:1416:G:C2	49:5:1417:C:C2	3.06	0.44
49:5:2870:A:C2	49:5:2871:A:C4	3.06	0.44
51:8:10:G:C6	51:8:11:C:C4	3.04	0.44
6:F:155:LEU:HB3	6:F:213:PHE:CE2	2.53	0.44
49:5:5061:A:C4'	49:5:5062:G:H5"	2.48	0.44
49:5:3743:G:H2'	49:5:3744:G:H5'	1.99	0.44
49:5:1266:G:C5'	49:5:2112:G:C2	2.99	0.44
20:U:69:LYS:HB2	20:U:69:LYS:HZ2	1.83	0.44
49:5:1358:G:C8	49:5:1359:G:OP2	2.71	0.44
5:E:124:HIS:NE2	49:5:1282:G:C8	2.86	0.44
7:G:166:LEU:O	7:G:169:PHE:CE2	2.70	0.44
8:H:93:ARG:HE	8:H:140:GLN:NE2	2.16	0.44
1:A:8:GLN:OE1	49:5:3668:C:OP1	2.35	0.44
49:5:1723:A:N1	49:5:1838:A:N1	2.66	0.44
49:5:3911:C:C2'	49:5:3912:U:O5'	2.66	0.44
19:T:101:SER:HB2	49:5:1729:A:C2	2.50	0.44
49:5:4904:G:C2	49:5:4905:C:C2	3.06	0.44
49:5:1760:G:C5	49:5:1761:G:C8	3.06	0.44
6:F:238:ARG:HG2	6:F:238:ARG:H	1.68	0.44
49:5:3705:G:C2	49:5:3706:C:C2	3.06	0.44
49:5:3600:G:C6	49:5:3601:C:C4	3.06	0.44
6:F:139:GLU:OE1	50:7:96:U:O2'	2.19	0.44
2:B:2:SER:N	49:5:4517:A:OP2	2.50	0.44
49:5:2706:G:O2'	49:5:2709:C:N4	2.51	0.44
49:5:2743:A:H2'	49:5:2744:A:C8	2.53	0.44
49:5:1532:G:C2	49:5:1643:A:C2	3.05	0.44
49:5:1831:G:C6	49:5:1832:C:C4	3.06	0.44
49:5:1397:A:O2'	49:5:1398:A:C5'	2.65	0.44
49:5:1724:G:C4'	49:5:1725:U:OP2	2.65	0.44
49:5:1990:A:C4	49:5:1991:A:C1'	3.01	0.44
8:H:48:LEU:HD12	8:H:54:ARG:HD3	1.93	0.44
47:1:24:VAL:C	48:2:76:A:HO2'	2.11	0.44
49:5:1367:C:N3	49:5:1370:G:H3'	2.32	0.44
11:L:78:LEU:HD11	11:L:100:PRO:CB	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:88:ALA:O	12:M:89:THR:C	2.56	0.44
49:5:1211:G:H2'	49:5:1212:G:H8	1.81	0.44
49:5:1938:C:H4'	49:5:1939:A:O5'	2.18	0.44
49:5:497:G:N1	49:5:657:C:C4	2.86	0.44
49:5:658:C:C2	49:5:659:G:C8	3.06	0.44
49:5:4967:A:N1	49:5:4968:A:C5	2.86	0.44
49:5:2623:A:H5"	49:5:2623:A:H8	1.83	0.44
49:5:4723:A:C2	49:5:4724:A:C4	3.06	0.44
49:5:1404:G:C2	49:5:1405:C:C2	3.06	0.44
49:5:2757:A:H2'	49:5:2758:G:C8	2.52	0.44
15:P:30:ARG:HD3	15:P:30:ARG:C	2.38	0.44
49:5:2481:G:C2	49:5:2482:C:C2	3.05	0.44
49:5:3782:C:N3	49:5:3811:G:C2	2.86	0.44
50:7:92:C:H2'	50:7:93:G:H8	1.81	0.44
49:5:2582:A:C2	49:5:2682:G:O4'	2.70	0.44
49:5:1092:G:H2'	49:5:1093:C:O4'	2.17	0.44
49:5:4898:G:N2	49:5:4923:C:C2	2.85	0.44
49:5:34:A:C2'	49:5:35:U:O5'	2.65	0.44
2:B:49:TYR:CD1	2:B:171:LEU:HD11	2.53	0.44
20:U:102:VAL:HG22	20:U:112:LEU:CD2	2.48	0.44
49:5:1995:G:C5	49:5:1996:C:C4	3.05	0.44
49:5:2457:G:C2	49:5:2458:C:C2	3.05	0.44
49:5:93:G:C6	49:5:94:A:N1	2.86	0.44
49:5:4968:A:C6	49:5:4969:C:C4	3.06	0.44
49:5:1428:U:H3'	49:5:1429:C:C5	2.52	0.44
49:5:1428:U:H2'	49:5:1429:C:C5	2.52	0.44
1:A:2:GLY:N	49:5:4185:G:OP1	2.51	0.44
49:5:4891:G:C2	49:5:4929:C:C2	3.06	0.44
49:5:1070:G:C2	49:5:1071:C:C2	3.06	0.44
49:5:2099:G:H2'	49:5:2100:A:O4'	2.18	0.44
12:M:116:ARG:CB	14:O:196:LEU:HD21	2.48	0.44
49:5:4583:C:C4	49:5:4718:G:C6	3.06	0.44
10:J:12:MET:HE2	10:J:137:PRO:CB	2.48	0.44
49:5:4308:C:H2'	49:5:4309:G:O4'	2.18	0.44
49:5:2:G:C2	49:5:3:C:C2	3.05	0.44
49:5:3742:G:C2	49:5:3743:G:C8	3.06	0.44
49:5:1946:G:O2'	49:5:1948:G:OP1	2.21	0.44
24:Y:42:TYR:CD1	24:Y:119:LEU:HD23	2.52	0.44
5:E:58:MET:HE3	5:E:58:MET:HA	2.00	0.43
49:5:4453:C:C2'	49:5:4454:G:O5'	2.66	0.43
51:8:106:G:N1	51:8:107:C:C4	2.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2597:G:C2	49:5:2749:C:O2	2.71	0.43
49:5:671:G:C6	49:5:672:C:C4	3.06	0.43
49:5:1412:G:C6	49:5:1413:C:C4	3.06	0.43
49:5:4644:G:C2	49:5:4645:C:C2	3.06	0.43
49:5:2683:C:H2'	49:5:2684:C:C6	2.52	0.43
49:5:2698:G:C2	49:5:2699:C:C2	3.06	0.43
4:D:49:TYR:CD2	4:D:142:PHE:CZ	3.06	0.43
49:5:4139:G:C2	49:5:4140:C:C2	3.06	0.43
49:5:307:A:C5	49:5:308:G:C6	3.05	0.43
48:2:22:G:C2	48:2:23:C:C2	3.06	0.43
49:5:2328:G:C6	49:5:2329:U:C4	3.06	0.43
2:B:202:GLU:O	2:B:203:GLN:NE2	2.49	0.43
6:F:91:LEU:HB2	6:F:199:VAL:CG2	2.47	0.43
49:5:417:G:N2	51:8:16:G:C4	2.86	0.43
1:A:159:SER:O	1:A:160:SER:C	2.57	0.43
49:5:1601:A:H2'	49:5:3643:A:C8	2.53	0.43
49:5:2831:G:C2	49:5:3855:C:C2	3.06	0.43
49:5:261:G:C6	49:5:262:G:C5	3.06	0.43
49:5:1737:A:H2'	49:5:1738:A:O4'	2.18	0.43
18:S:15:ARG:NH2	19:T:141:VAL:HG22	2.33	0.43
3:C:114:ARG:CZ	49:5:1358:G:O5'	2.66	0.43
49:5:936:C:O2	49:5:936:C:O4'	2.32	0.43
24:Y:8:THR:HG21	24:Y:13:LYS:HD2	2.01	0.43
14:O:108:ILE:HD11	14:O:113:ASP:HA	2.00	0.43
49:5:2102:G:C2	49:5:2103:G:C5	3.06	0.43
49:5:646:G:H2'	49:5:647:G:O4'	2.17	0.43
22:W:50:ASN:HA	22:W:55:TYR:CD2	2.53	0.43
49:5:4207:C:C2	49:5:4226:G:N2	2.86	0.43
49:5:2616:C:C2	49:5:2722:G:N2	2.86	0.43
49:5:753:C:N3	49:5:754:U:C5	2.86	0.43
49:5:1484:G:N3	49:5:1484:G:C2'	2.81	0.43
49:5:4308:C:O2'	49:5:4338:G:H4'	2.18	0.43
23:X:140:LEU:HD13	23:X:149:VAL:HG11	2.00	0.43
15:P:10:ASN:N	15:P:10:ASN:OD1	2.51	0.43
14:O:107:GLY:HA2	14:O:157:GLU:OE1	2.17	0.43
49:5:85:G:O2'	49:5:97:G:O6	2.28	0.43
2:B:10:ARG:HD3	2:B:11:HIS:N	2.34	0.43
8:H:5:LEU:HB2	8:H:60:TRP:CZ3	2.53	0.43
49:5:1466:G:N2	49:5:1467:C:C2	2.86	0.43
13:N:191:ALA:HA	13:N:194:ARG:NH1	2.33	0.43
49:5:1983:A:C2	49:5:2010:A:C5'	3.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1245:C:C2	49:5:1246:G:C8	3.07	0.43
6:F:39:PHE:CD1	49:5:2123:C:O3'	2.71	0.43
49:5:1378:C:P	49:5:1379:C:H2'	2.59	0.43
49:5:1358:G:N1	49:5:1379:C:O2	2.52	0.43
6:F:244:ARG:HH11	49:5:942:G:P	2.41	0.43
24:Y:8:THR:HG23	24:Y:13:LYS:HD2	2.00	0.43
3:C:193:LYS:CD	3:C:196:MET:HE1	2.47	0.43
49:5:2107:C:O2	49:5:2107:C:O2'	2.35	0.43
2:B:146:LEU:HD22	2:B:146:LEU:N	2.33	0.43
49:5:4731:G:H4'	49:5:4732:G:H5'	2.00	0.43
1:A:30:ARG:O	1:A:163:ARG:NH2	2.51	0.43
49:5:2736:G:C2'	49:5:2737:C:H5'	2.48	0.43
9:I:60:LEU:HD22	9:I:160:PRO:HD2	1.99	0.43
49:5:1881:C:O4'	49:5:2281:U:C6	2.71	0.43
15:P:131:ARG:CD	15:P:137:ASN:ND2	2.81	0.43
49:5:4661:G:C6	49:5:4662:C:C4	3.06	0.43
49:5:1374:G:C6	49:5:1375:C:C4	3.07	0.43
49:5:2703:G:H1'	49:5:2714:G:N2	2.33	0.43
49:5:2620:G:C6	49:5:2621:A:C5	3.06	0.43
49:5:2487:G:C2'	49:5:2488:C:OP1	2.66	0.43
49:5:2306:G:N2	49:5:2331:G:O2'	2.52	0.43
49:5:2021:G:C2	49:5:2022:C:C2	3.07	0.43
49:5:1264:C:C4	49:5:1265:G:N7	2.86	0.43
49:5:1269:G:C4	49:5:2111:G:N1	2.86	0.43
49:5:2468:U:C4	49:5:2473:A:N6	2.84	0.43
49:5:1506:G:H2'	49:5:1507:C:O4'	2.19	0.43
4:D:29:ASP:HA	49:5:4280:A:N1	2.33	0.43
6:F:144:TRP:CZ2	6:F:237:ASN:ND2	2.55	0.43
2:B:173:LEU:CD1	2:B:342:LYS:CG	2.93	0.43
49:5:1485:C:HO2'	49:5:1486:C:P	2.28	0.43
49:5:22:G:N1	51:8:35:C:C4	2.86	0.43
12:M:31:ILE:HD11	18:S:100:LEU:HD21	2.00	0.43
49:5:270:U:N3	49:5:271:C:C5	2.86	0.43
19:T:19:PHE:O	19:T:20:ARG:HB2	2.17	0.43
49:5:1404:G:C2	49:5:1414:C:N3	2.85	0.43
49:5:2446:C:C2	49:5:2515:G:N2	2.87	0.43
49:5:964:A:C5'	49:5:964:A:C8	3.01	0.43
19:T:144:ASN:N	19:T:144:ASN:ND2	2.60	0.43
49:5:1296:G:C1'	49:5:1297:U:P	3.06	0.43
49:5:5028:G:N2	49:5:5029:C:C2	2.87	0.43
49:5:2688:G:N1	49:5:2689:C:C4	2.87	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1293:G:C5'	49:5:1293:G:H8	2.29	0.43
49:5:1412:G:C2	49:5:1413:C:C2	3.07	0.43
11:L:35:ARG:HB3	11:L:39:ARG:NH2	2.34	0.43
17:R:99:MET:CE	17:R:128:LYS:HA	2.48	0.43
49:5:4666:G:C6	49:5:4667:C:C4	3.06	0.43
49:5:1808:C:C2	49:5:1831:G:C2	3.07	0.43
49:5:1408:G:O2'	49:5:1411:C:N4	2.51	0.43
13:N:135:ILE:HD12	13:N:151:ILE:HD13	2.00	0.43
49:5:1549:G:N2	49:5:1580:C:C2	2.86	0.43
6:F:96:ARG:HB2	6:F:116:LEU:HB3	2.01	0.43
49:5:1925:G:C6	49:5:1926:C:C4	3.05	0.43
2:B:375:GLY:HA3	49:5:5002:U:H4'	2.01	0.43
49:5:4189:U:H2'	49:5:4190:U:O4'	2.18	0.43
49:5:1397:A:H2	49:5:1498:G:N3	2.16	0.43
49:5:1248:C:C2	49:5:1249:C:C5	3.06	0.43
13:N:180:PHE:O	13:N:182:HIS:CD2	2.70	0.43
8:H:47:LEU:HG	8:H:52:LYS:CD	2.36	0.43
4:D:35:ARG:HB2	49:5:4325:A:C2	2.53	0.43
49:5:747:A:O2'	49:5:748:G:H5'	2.18	0.43
3:C:248:ARG:HG3	3:C:249:PHE:N	2.34	0.43
49:5:3823:G:O2'	49:5:3824:A:N7	2.52	0.43
49:5:1682:A:N1	49:5:1683:U:C2	2.86	0.43
1:A:196:TRP:HZ2	49:5:3652:A:H4'	1.84	0.43
49:5:468:U:O4	49:5:687:U:O4	2.36	0.43
49:5:2547:G:N1	49:5:2548:C:C4	2.87	0.43
1:A:103:PRO:HA	1:A:163:ARG:HA	1.99	0.43
49:5:5016:A:H2'	49:5:5017:G:O4'	2.18	0.43
10:J:109:ILE:HD13	10:J:115:LEU:HD11	2.00	0.43
49:5:2909:C:O2	49:5:3586:G:C2	2.71	0.43
4:D:42:ASN:OD1	4:D:42:ASN:N	2.43	0.43
49:5:2385:U:H2'	49:5:2386:U:H6	1.83	0.43
17:R:18:GLY:O	17:R:19:LYS:HB3	2.18	0.43
49:5:5009:G:H2'	49:5:5010:U:O4'	2.18	0.43
49:5:2559:G:C2	49:5:2560:C:C2	3.06	0.43
4:D:113:PHE:HE2	4:D:142:PHE:CE2	2.37	0.43
49:5:1549:G:C2	49:5:1580:C:C2	3.06	0.43
15:P:132:ALA:HB1	49:5:1597:G:C8	2.53	0.43
5:E:179:ARG:NE	49:5:4937:C:OP1	2.49	0.43
49:5:2576:G:N2	49:5:2577:C:C2	2.86	0.43
49:5:1066:G:C5	49:5:1067:G:N7	2.86	0.43
49:5:1444:G:C2'	49:5:1445:U:C6	2.97	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:302:C:N4	49:5:303:C:N4	2.66	0.43
49:5:2614:C:O2	49:5:2726:G:C2	2.72	0.43
49:5:2058:G:C6	49:5:2059:C:C4	3.07	0.43
49:5:672:C:C4	49:5:673:C:C5	3.07	0.43
49:5:173:C:N3	49:5:174:C:C5	2.87	0.43
13:N:48:ALA:HB1	13:N:53:TYR:CB	2.48	0.43
4:D:40:ASP:HB2	4:D:43:LYS:HG2	2.01	0.43
4:D:207:TYR:CE1	4:D:211:LEU:CD1	3.02	0.43
49:5:4495:G:C2	49:5:4506:C:C2	3.07	0.43
49:5:518:G:C2	49:5:519:C:C2	3.07	0.43
1:A:40:TYR:CE1	49:5:4117:U:C4	3.07	0.43
49:5:5001:U:C2'	49:5:5002:U:O5'	2.66	0.43
49:5:149:A:H5'	49:5:149:A:H8	1.83	0.43
16:Q:43:PHE:C	16:Q:43:PHE:CD1	2.91	0.43
21:V:48:ARG:NH2	21:V:49:LEU:HB3	2.33	0.43
8:H:64:ARG:NH1	49:5:1949:U:OP1	2.44	0.43
49:5:3934:G:C6	49:5:3935:C:C4	3.06	0.43
49:5:2270:G:C6	49:5:2271:C:C4	3.07	0.43
6:F:117:ARG:NH1	16:Q:4:ASP:O	2.41	0.43
1:A:216:HIS:O	1:A:217:GLN:C	2.56	0.43
25:Z:30:ASP:HA	25:Z:39:SER:HB2	2.01	0.43
6:F:243:ASN:N	6:F:243:ASN:OD1	2.51	0.43
49:5:978:G:OP2	49:5:979:C:OP2	2.36	0.43
49:5:986:C:C4	49:5:1068:G:N1	2.87	0.43
49:5:1552:G:H2'	49:5:1574:G:N2	2.30	0.43
49:5:1552:G:O2'	49:5:1574:G:N2	2.52	0.43
49:5:1049:C:N3	49:5:1050:C:C5	2.86	0.43
49:5:1557:C:C2	49:5:1571:G:N2	2.87	0.43
49:5:254:G:C6	49:5:255:C:C4	3.06	0.43
49:5:1607:C:O2	49:5:1607:C:H2'	2.19	0.43
3:C:213:GLU:OE1	3:C:213:GLU:N	2.51	0.43
49:5:1864:G:H5'	49:5:1865:G:OP2	2.19	0.43
49:5:1904:G:C2	49:5:2073:C:C2	3.07	0.43
22:W:49:ILE:HG22	22:W:52:THR:HG23	2.01	0.43
1:A:150:LEU:HB3	1:A:151:PRO:HD2	1.99	0.43
49:5:3857:G:C6	49:5:3858:C:C4	3.06	0.43
49:5:1431:C:C2	49:5:1454:G:C2	3.06	0.43
49:5:4240:G:C6	49:5:4241:C:C4	3.06	0.43
3:C:208:CYS:SG	3:C:230:LEU:HD12	2.58	0.43
49:5:1245:C:C6	49:5:1269:G:C5	3.06	0.43
49:5:1990:A:C6	49:5:1991:A:H1'	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:167:VAL:O	7:G:171:PRO:HD3	2.19	0.43
49:5:2664:G:H2'	49:5:2665:U:O4'	2.18	0.43
49:5:2265:G:H1'	49:5:2266:C:OP1	2.19	0.43
5:E:122:LEU:HD13	49:5:971:U:N1	2.34	0.43
10:J:22:LEU:HD21	10:J:130:PHE:CE2	2.54	0.43
5:E:46:LEU:HD12	5:E:47:VAL:HG23	2.01	0.43
49:5:4461:C:C2	49:5:4516:G:C2	3.07	0.43
49:5:2736:G:O2'	49:5:2737:C:H5'	2.19	0.43
49:5:2463:G:C2	49:5:2464:C:C2	3.06	0.43
11:L:103:ARG:NH2	49:5:75:G:C6	2.87	0.43
49:5:307:A:H3'	49:5:308:G:N2	2.33	0.43
49:5:1904:G:N2	49:5:2073:C:C2	2.87	0.43
14:O:77:SER:HB2	14:O:104:VAL:HG12	1.99	0.43
49:5:192:G:C2	49:5:250:C:C2	3.06	0.43
49:5:2841:G:H3'	49:5:2842:G:H5"	2.00	0.43
18:S:51:LEU:HD12	19:T:151:LEU:HB3	2.01	0.43
51:8:139:G:C6	51:8:140:C:C4	3.07	0.43
25:Z:29:ILE:HG21	25:Z:40:HIS:CE1	2.53	0.43
15:P:33:ALA:O	15:P:36:ILE:HG22	2.19	0.43
49:5:1398:A:OP1	49:5:1398:A:H2'	2.19	0.43
49:5:1991:A:H62	49:5:2002:A:H3'	1.83	0.43
7:G:170:LEU:HD23	7:G:174:CYS:SG	2.59	0.43
49:5:4095:G:N2	49:5:4096:C:N4	2.66	0.43
49:5:22:G:C2	51:8:35:C:C4	3.06	0.43
49:5:956:A:H4'	49:5:957:G:OP2	2.19	0.43
49:5:2457:G:N2	49:5:3672:G:N2	2.61	0.43
49:5:167:C:N3	49:5:269:G:C2	2.86	0.43
49:5:1447:C:H2'	49:5:1448:G:C8	2.54	0.43
49:5:3870:C:C2	49:5:3886:G:N2	2.86	0.43
2:B:261:ARG:HD3	2:B:261:ARG:N	2.34	0.43
5:E:90:LYS:N	5:E:91:PRO:HD3	2.34	0.43
49:5:199:G:C2	49:5:201:C:C2	3.07	0.43
49:5:4147:G:C2	49:5:4148:C:C2	3.06	0.43
49:5:2525:U:P	49:5:2711:G:H1	2.42	0.43
49:5:4646:U:H5"	49:5:4646:U:H6	1.83	0.43
49:5:2294:G:N1	49:5:2295:C:C4	2.86	0.43
14:O:196:LEU:CB	14:O:202:LEU:HD22	2.49	0.43
49:5:754:U:N3	49:5:755:C:C5	2.87	0.43
49:5:4978:G:O2'	49:5:4981:G:N1	2.49	0.43
49:5:479:G:N1	49:5:480:C:C4	2.87	0.43
21:V:38:TYR:CE2	21:V:40:ILE:HG22	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:5061:A:O4'	49:5:5062:G:H5"	2.19	0.43
49:5:1925:G:C2	49:5:1926:C:C2	3.07	0.43
13:N:49:ARG:CZ	13:N:49:ARG:HB3	2.49	0.43
20:U:70:ILE:HG22	20:U:71:THR:N	2.34	0.43
20:U:51:GLY:N	49:5:2631:U:O4	2.51	0.43
49:5:247:G:C2	49:5:248:C:C2	3.06	0.43
49:5:3698:G:N2	49:5:3699:C:C2	2.87	0.43
49:5:2492:C:H2'	49:5:2493:G:O4'	2.19	0.43
2:B:43:LEU:HD13	2:B:196:TRP:HH2	1.83	0.43
49:5:1262:G:N1	49:5:1263:A:C5	2.86	0.43
49:5:989:U:H2'	49:5:990:C:C5	2.54	0.43
5:E:43:ASN:HD21	49:5:977:C:C5'	2.32	0.43
49:5:2586:G:C8	49:5:2587:A:C5	3.07	0.43
49:5:746:A:N1	49:5:916:C:OP2	2.52	0.43
49:5:1074:G:N2	49:5:1238:A:C2	2.86	0.43
49:5:4473:A:C2	49:5:4482:U:N3	2.85	0.43
18:S:106:VAL:O	18:S:109:CYS:HB3	2.18	0.43
49:5:1448:G:C6	49:5:1449:C:N4	2.87	0.43
49:5:2623:A:H5"	49:5:2623:A:C8	2.53	0.43
49:5:3590:G:C2	49:5:3591:C:C2	3.07	0.43
50:7:47:G:H2'	50:7:48:G:O4'	2.18	0.43
49:5:4989:U:O2	49:5:4989:U:O4'	2.37	0.43
1:A:33:ASP:O	1:A:35:ALA:N	2.52	0.43
49:5:1806:G:N1	49:5:1807:C:C4	2.87	0.43
1:A:27:ALA:O	1:A:128:ARG:NH2	2.48	0.43
49:5:1761:G:C2	49:5:1762:C:C2	3.06	0.43
2:B:348:ARG:NE	2:B:351:LEU:HD23	2.33	0.43
4:D:199:ILE:HG22	4:D:200:LEU:HD23	2.01	0.43
18:S:36:ASN:HD21	18:S:39:VAL:HG13	1.83	0.43
49:5:2576:G:C6	49:5:2577:C:C4	3.07	0.43
3:C:262:GLU:HB3	3:C:273:LEU:HD22	2.01	0.43
49:5:1439:C:O2	49:5:1439:C:O4'	2.36	0.43
4:D:176:SER:HB3	49:5:4323:A:H4'	2.01	0.43
13:N:91:GLN:O	13:N:93:LYS:NZ	2.50	0.43
49:5:4618:G:C2	49:5:4619:U:C6	3.07	0.43
49:5:2034:G:C6	49:5:2035:C:C4	3.06	0.43
49:5:1725:U:H5"	49:5:1725:U:C6	2.53	0.42
6:F:110:VAL:CG2	6:F:137:ILE:HD12	2.34	0.42
3:C:114:ARG:NH2	49:5:1358:G:O5'	2.51	0.42
49:5:978:G:O3'	49:5:978:G:O5'	2.37	0.42
17:R:11:ALA:HB1	17:R:50:ILE:HD13	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:122:LEU:O	5:E:123:SER:CB	2.67	0.42
49:5:5032:C:N4	49:5:5033:G:C6	2.87	0.42
9:I:4:ARG:NH2	49:5:1481:C:N3	105.25	0.42
49:5:4399:U:H2'	49:5:4400:G:O4'	2.18	0.42
49:5:189:G:C2	49:5:190:G:C5	3.07	0.42
51:8:112:G:N2	51:8:113:C:C2	2.87	0.42
49:5:1899:G:N1	49:5:1900:C:C4	2.87	0.42
49:5:2275:G:H5"	49:5:2275:G:C8	2.53	0.42
1:A:131:GLY:HA3	49:5:3683:C:C4	2.54	0.42
2:B:254:ILE:HG22	2:B:255:GLY:N	2.34	0.42
49:5:2270:G:C2	49:5:2271:C:C2	3.07	0.42
49:5:1302:U:C2	49:5:1303:A:C8	3.07	0.42
49:5:4154:G:C2	49:5:4155:C:C2	3.07	0.42
3:C:332:ALA:HA	3:C:335:MET:HB2	2.01	0.42
49:5:4172:A:C2	49:5:4173:G:C5	3.07	0.42
6:F:39:PHE:CG	49:5:2124:G:P	3.12	0.42
51:8:56:G:C2	51:8:57:C:C2	3.07	0.42
6:F:127:LEU:HD13	6:F:127:LEU:HA	1.75	0.42
49:5:298:G:C2	49:5:299:C:C2	3.07	0.42
49:5:4095:G:N2	49:5:4096:C:C4	2.87	0.42
49:5:504:G:C2	49:5:505:G:C5	3.07	0.42
3:C:32:ILE:HD13	3:C:129:ALA:HB3	2.02	0.42
49:5:917:A:C5	49:5:919:C:N4	2.87	0.42
49:5:1075:G:C2	49:5:1076:C:C4	3.07	0.42
3:C:323:ARG:NH2	49:5:1280:C:C1'	2.83	0.42
12:M:70:GLN:HA	12:M:73:VAL:CG1	2.47	0.42
2:B:176:LYS:HB3	49:5:4990:C:N4	2.35	0.42
49:5:4260:U:H2'	49:5:4261:C:H6	1.82	0.42
49:5:4939:C:H2'	49:5:4939:C:O2	2.19	0.42
4:D:57:ASN:HB2	50:7:27:G:OP2	2.19	0.42
49:5:752:G:C5	49:5:753:C:C5	3.08	0.42
49:5:4904:G:C6	49:5:4905:C:C4	3.07	0.42
18:S:96:GLU:OE2	18:S:138:ARG:N	2.52	0.42
1:A:234:LYS:HG2	1:A:238:ILE:HD12	2.01	0.42
49:5:4311:A:O2'	49:5:4312:U:H5'	2.19	0.42
3:C:180:ILE:HD11	3:C:227:ILE:HD11	2.00	0.42
9:I:11:TYR:O	9:I:13:LYS:N	2.53	0.42
49:5:1965:G:C2	49:5:1966:C:C2	3.07	0.42
49:5:1066:G:N1	49:5:1067:G:C5	2.87	0.42
48:2:15:G:H2'	48:2:59:A:N1	2.34	0.42
8:H:47:LEU:HD23	8:H:52:LYS:CE	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:269:G:C6	49:5:270:U:C5	3.07	0.42
49:5:1448:G:C2	49:5:2097:U:C4	3.07	0.42
49:5:4966:A:C2	49:5:5067:U:N3	2.86	0.42
3:C:317:ASN:H	3:C:317:ASN:HD22	1.66	0.42
49:5:488:G:C2	49:5:489:C:C6	3.07	0.42
50:7:27:G:C2	50:7:28:C:C2	3.07	0.42
49:5:3611:A:C2	49:5:5016:A:C8	3.07	0.42
49:5:661:C:C4	49:5:662:C:C5	3.08	0.42
8:H:109:GLY:O	8:H:111:LEU:N	2.53	0.42
3:C:74:ALA:HB1	3:C:76:ILE:HD11	2.00	0.42
50:7:93:G:C2	50:7:94:C:C2	3.07	0.42
49:5:4142:C:C4	49:5:4143:G:C6	3.06	0.42
2:B:56:ILE:HG22	2:B:74:GLU:HB3	2.00	0.42
49:5:4423:U:O2	49:5:4423:U:O5'	2.37	0.42
49:5:2833:A:H5"	49:5:2833:A:H8	1.85	0.42
49:5:1862:U:H2'	49:5:1863:U:C6	2.54	0.42
49:5:721:G:C2	49:5:948:C:C2	3.07	0.42
49:5:1604:G:H2'	49:5:1605:G:C8	2.54	0.42
12:M:26:ALA:N	12:M:39:ASP:O	2.52	0.42
19:T:27:LEU:O	19:T:28:ALA:C	2.57	0.42
49:5:2122:G:O2'	49:5:2123:C:P	2.77	0.42
7:G:83:PHE:CE1	7:G:171:PRO:HG2	2.55	0.42
5:E:55:ARG:HH11	49:5:976:G:H5'	1.85	0.42
9:I:76:MET:O	9:I:79:SER:OG	2.38	0.42
3:C:33:ARG:NH1	49:5:1351:G:OP1	2.53	0.42
3:C:80:ARG:HG2	3:C:80:ARG:HH11	1.82	0.42
49:5:93:G:N1	49:5:94:A:C2	2.86	0.42
5:E:91:PRO:HB3	5:E:103:VAL:O	2.19	0.42
49:5:4178:A:H2'	49:5:4179:G:C8	2.54	0.42
49:5:4281:A:N1	49:5:4283:G:C4	2.87	0.42
19:T:108:ARG:HD2	19:T:130:ARG:HD2	2.01	0.42
49:5:3921:U:OP2	49:5:4183:G:O2'	2.37	0.42
49:5:2478:C:H2'	49:5:2479:G:C8	2.55	0.42
49:5:196:C:N3	49:5:246:G:C2	2.87	0.42
49:5:1846:G:C6	49:5:1847:C:C4	3.08	0.42
49:5:2597:G:C2	49:5:2749:C:C2	3.08	0.42
9:I:73:ASN:ND2	9:I:73:ASN:C	2.72	0.42
47:1:15:TYR:CE2	49:5:4555:U:C2	3.08	0.42
49:5:2898:G:C2	49:5:3602:C:C2	3.08	0.42
49:5:4076:G:OP1	49:5:4076:G:H8	2.01	0.42
1:A:209:HIS:CE1	1:A:235:VAL:HG11	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:33:LEU:O	10:J:33:LEU:HD23	2.19	0.42
49:5:405:U:H5"	49:5:406:C:OP2	2.20	0.42
49:5:230:G:H2'	49:5:231:U:O4'	2.19	0.42
49:5:3648:A:H1'	49:5:3785:A:N6	2.35	0.42
49:5:454:U:H4'	49:5:455:C:C5'	2.49	0.42
49:5:1240:G:N7	49:5:1271:G:H4'	2.35	0.42
49:5:1265:G:O2'	49:5:2112:G:H3'	2.18	0.42
49:5:1506:G:C6	49:5:1507:C:C4	3.07	0.42
2:B:173:LEU:CD1	2:B:342:LYS:CD	2.84	0.42
13:N:179:LYS:HB2	13:N:180:PHE:CD1	2.54	0.42
49:5:4283:G:C2	49:5:4284:C:C2	3.08	0.42
49:5:2693:G:C6	49:5:2694:G:C6	3.07	0.42
49:5:1818:G:HO2'	49:5:1819:G:P	2.37	0.42
49:5:259:C:C4	49:5:260:C:C5	3.06	0.42
10:J:15:LEU:HD21	10:J:134:LEU:HD13	2.01	0.42
49:5:4735:G:C6	49:5:4736:C:C5	3.08	0.42
49:5:1954:U:H2'	49:5:1955:G:O4'	2.19	0.42
49:5:4336:A:C5'	49:5:4337:C:O5'	2.68	0.42
9:I:152:LEU:HB3	9:I:165:ILE:HG12	2.01	0.42
49:5:192:G:N2	49:5:250:C:C2	2.87	0.42
13:N:60:VAL:HG12	13:N:61:ILE:N	2.34	0.42
6:F:85:VAL:HG22	18:S:62:VAL:HA	2.01	0.42
49:5:1380:G:O2'	49:5:1381:U:O5'	2.37	0.42
49:5:2090:U:O4	49:5:2263:A:N1	2.52	0.42
49:5:2770:C:C4	49:5:2771:G:N7	2.88	0.42
49:5:1213:G:C2	49:5:1215:C:C2	3.07	0.42
6:F:60:HIS:HA	49:5:944:A:N7	2.34	0.42
49:5:4453:C:H2'	49:5:4454:G:O5'	2.20	0.42
49:5:1819:G:H2'	49:5:1819:G:N3	2.35	0.42
7:G:180:PRO:CA	7:G:227:ASN:HD21	2.30	0.42
49:5:1427:A:OP2	49:5:1428:U:C4	2.72	0.42
21:V:35:LYS:CB	21:V:67:LYS:O	2.66	0.42
49:5:4303:C:H2'	49:5:4305:G:C8	2.55	0.42
49:5:923:C:H2'	49:5:924:C:O4'	2.19	0.42
49:5:1412:G:N1	49:5:1413:C:C4	2.87	0.42
49:5:4083:U:H2'	49:5:4084:G:H3'	2.00	0.42
49:5:4438:U:C2'	49:5:4439:U:O5'	2.67	0.42
49:5:3891:A:H2'	49:5:3892:U:O4'	2.19	0.42
49:5:4287:G:H2'	49:5:4288:C:C6	2.54	0.42
6:F:110:VAL:CG2	49:5:1725:U:O2'	2.67	0.42
51:8:56:G:C6	51:8:57:C:C4	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4635:A:H3'	49:5:4636:U:H4'	2.01	0.42
49:5:1085:C:O2	49:5:1213:G:C2	2.73	0.42
49:5:931:C:C6	49:5:932:A:N7	2.87	0.42
49:5:931:C:O2	49:5:931:C:H3'	2.20	0.42
13:N:200:LEU:HD22	13:N:204:ARG:CZ	2.49	0.42
49:5:4283:G:C6	49:5:4284:C:C4	3.08	0.42
49:5:4283:G:C6	49:5:4284:C:N4	2.87	0.42
12:M:73:VAL:CG1	12:M:74:ARG:N	2.82	0.42
5:E:151:GLY:HA2	49:5:4942:C:H5"	2.01	0.42
49:5:984:C:C2	49:5:1070:G:N2	2.88	0.42
49:5:677:G:C6	49:5:678:C:N4	2.88	0.42
49:5:1400:G:C2	49:5:1418:C:C2	3.08	0.42
4:D:207:TYR:CE1	50:7:33:U:C6	3.08	0.42
49:5:1910:G:N1	49:5:1911:C:C4	2.88	0.42
11:L:39:ARG:NH1	49:5:1363:C:OP2	2.53	0.42
49:5:4121:G:H5'	49:5:4121:G:C8	2.54	0.42
49:5:1456:C:H5"	49:5:1456:C:H6	1.83	0.42
49:5:2050:G:C6	49:5:2051:C:C4	3.08	0.42
49:5:3700:C:O2'	49:5:3774:A:N3	2.43	0.42
49:5:1275:G:C2	49:5:1276:C:C2	3.07	0.42
49:5:4455:G:C6	49:5:4456:C:C4	3.07	0.42
49:5:1398:A:H61	49:5:1419:G:C2'	2.33	0.42
49:5:1964:A:C5	49:5:1965:G:C8	3.08	0.42
49:5:1964:A:N1	49:5:4694:G:C5	2.88	0.42
13:N:22:LEU:HA	13:N:22:LEU:HD23	1.96	0.42
3:C:307:LYS:NZ	49:5:2087:C:H4'	2.34	0.42
49:5:4872:G:O2'	49:5:4873:G:OP1	2.37	0.42
49:5:747:A:C2	49:5:918:G:O6	2.72	0.42
49:5:2855:G:H1'	49:5:2857:A:N6	2.34	0.42
49:5:1177:U:C2	49:5:1178:G:N7	2.88	0.42
23:X:86:ALA:O	23:X:89:LYS:HB3	2.20	0.42
12:M:47:ARG:O	18:S:73:LEU:HD22	2.19	0.42
49:5:208:A:H3'	49:5:209:U:H5"	2.00	0.42
51:8:71:A:C6	51:8:83:C:H1'	2.54	0.42
49:5:5059:C:H2'	49:5:5060:A:O4'	2.20	0.42
1:A:42:LYS:HG2	1:A:43:GLY:N	2.35	0.42
49:5:708:G:H1	49:5:1289:C:N4	2.17	0.42
12:M:56:GLN:HB2	49:5:4871:C:N3	2.35	0.42
51:8:75:G:N2	51:8:76:C:C2	2.88	0.42
49:5:2873:U:H2'	49:5:2875:C:C5	2.55	0.42
18:S:111:ARG:HD3	49:5:2061:U:O2	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4199:C:C6	49:5:4199:C:O5'	2.73	0.42
13:N:114:ARG:HD2	13:N:137:PRO:HG3	2.01	0.42
49:5:4131:G:C6	49:5:4132:C:C4	3.08	0.42
49:5:4885:U:H2'	49:5:4886:C:O4'	2.20	0.42
49:5:2579:G:C2	49:5:2583:C:C2	3.08	0.42
23:X:124:VAL:HG22	23:X:138:VAL:HG22	2.01	0.42
1:A:117:GLU:HB2	1:A:162:ASN:HB2	2.01	0.42
49:5:1249:C:C4	49:5:1250:C:C5	3.08	0.42
49:5:2264:C:O2'	49:5:2265:G:P	2.78	0.42
49:5:1774:C:C2	49:5:1775:A:C8	3.07	0.42
49:5:747:A:C2	49:5:749:G:H1'	2.55	0.42
49:5:1210:C:H2'	49:5:1210:C:O2	2.19	0.42
49:5:497:G:H4'	49:5:498:C:OP2	2.19	0.42
49:5:1447:C:O2	49:5:2098:G:C2	2.73	0.42
49:5:730:G:C2	49:5:939:G:N2	2.87	0.42
49:5:5028:G:C2	49:5:5029:C:N3	2.88	0.42
14:O:15:LEU:HA	14:O:42:ASN:O	2.20	0.42
49:5:677:G:C2	49:5:678:C:C2	3.07	0.42
49:5:2503:G:H3'	49:5:2504:C:C4'	2.50	0.42
49:5:3918:G:N1	49:5:3919:C:C2	2.88	0.42
49:5:2519:U:H1'	49:5:2520:C:C6	2.55	0.42
14:O:80:PHE:O	14:O:83:THR:HG22	2.20	0.42
51:8:10:G:C2	51:8:11:C:C2	3.08	0.42
6:F:213:PHE:N	6:F:213:PHE:CD1	2.88	0.42
49:5:1275:G:C6	49:5:1276:C:C4	3.08	0.42
10:J:25:CYS:SG	10:J:25:CYS:O	2.78	0.42
49:5:1602:U:H2'	49:5:1602:U:O2	2.20	0.42
49:5:4129:G:C2	49:5:4130:C:C2	3.07	0.42
1:A:179:ILE:HD11	49:5:2739:C:C4	2.55	0.42
9:I:140:THR:OG1	9:I:141:LYS:N	2.50	0.42
49:5:351:C:C2	51:8:25:G:N2	2.88	0.42
11:L:8:MET:CE	16:Q:168:ARG:HA	2.50	0.42
49:5:4627:U:O2	49:5:4627:U:H2'	2.18	0.42
6:F:63:TYR:OH	6:F:194:HIS:HA	2.20	0.42
49:5:368:C:C2	49:5:374:G:C2	3.08	0.42
49:5:1394:G:H2'	49:5:1395:U:C6	2.55	0.42
49:5:1419:G:H4'	49:5:1420:A:OP1	2.19	0.42
49:5:1991:A:C5	49:5:1992:U:N3	2.88	0.42
49:5:1380:G:C2	49:5:1382:G:C4	3.08	0.42
49:5:1383:G:C6	49:5:1384:C:C4	3.08	0.42
8:H:54:ARG:HH11	8:H:54:ARG:CG	2.14	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1775:A:H2'	49:5:1776:A:O4'	2.20	0.42
12:M:98:ARG:NH2	12:M:98:ARG:CG	2.72	0.42
49:5:22:G:C6	51:8:35:C:N4	2.88	0.42
49:5:2872:C:O2'	49:5:3824:A:H5'	2.20	0.42
49:5:4473:A:C2	49:5:4474:A:C4	3.08	0.42
13:N:30:TYR:CZ	13:N:63:ARG:HD2	2.54	0.42
49:5:450:G:C6	49:5:1295:C:C4	3.08	0.42
49:5:190:G:C2	49:5:252:C:O2	2.73	0.42
51:8:106:G:H2'	51:8:107:C:O5'	2.20	0.42
5:E:157:ARG:CD	5:E:266:TYR:CZ	3.03	0.42
49:5:4717:A:H2'	49:5:4718:G:O4'	2.20	0.42
49:5:664:G:N2	49:5:667:A:N1	2.68	0.42
49:5:3642:A:OP1	49:5:3644:U:OP1	2.37	0.42
49:5:2396:A:N6	49:5:2814:C:N3	2.68	0.42
49:5:230:G:C2	49:5:239:C:C2	3.07	0.42
49:5:121:A:N3	49:5:121:A:H2'	2.34	0.42
49:5:4698:C:O2	49:5:4698:C:H2'	2.20	0.42
49:5:4408:G:C2	49:5:4409:C:C2	3.08	0.42
49:5:4411:G:C6	49:5:4412:C:C4	3.07	0.42
18:S:49:SER:O	50:7:75:G:H5"	2.20	0.42
49:5:2645:G:C6	49:5:2646:C:C4	3.08	0.42
49:5:4175:G:C6	49:5:4176:C:C4	3.08	0.42
6:F:137:ILE:HG12	6:F:137:ILE:O	2.20	0.41
49:5:1247:U:C2	49:5:1248:C:C6	3.07	0.41
49:5:2769:U:OP1	49:5:2770:C:OP1	2.38	0.41
13:N:180:PHE:O	13:N:182:HIS:N	2.47	0.41
49:5:689:U:C2	49:5:690:C:C6	3.08	0.41
49:5:747:A:C2	49:5:918:G:C6	3.08	0.41
49:5:1212:G:C2	49:5:1213:G:C5	3.08	0.41
15:P:41:ILE:HD12	15:P:150:LEU:HD13	2.01	0.41
49:5:2457:G:C6	49:5:2458:C:C4	3.08	0.41
49:5:4966:A:H2'	49:5:4967:A:C8	2.55	0.41
5:E:91:PRO:HA	5:E:105:LEU:HD22	2.02	0.41
1:A:182:ALA:HB3	49:5:1613:A:C5	2.55	0.41
49:5:4518:A:H4'	49:5:4519:C:H5'	2.02	0.41
49:5:3611:A:H2	49:5:5016:A:C8	2.37	0.41
49:5:2297:G:C2	49:5:2338:C:N3	2.88	0.41
49:5:112:C:O2	49:5:330:G:C2	2.73	0.41
10:J:12:MET:HE2	10:J:12:MET:HB2	1.83	0.41
22:W:44:ARG:HD3	49:5:3615:G:H1'	2.01	0.41
17:R:107:ARG:HH11	17:R:107:ARG:HB3	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1912:G:C6	49:5:1913:C:N4	2.88	0.41
49:5:4411:G:N2	49:5:4412:C:C2	2.88	0.41
48:2:56:C:H2'	48:2:56:C:O2	2.20	0.41
9:I:31:ILE:HG23	9:I:31:ILE:O	2.21	0.41
5:E:170:LEU:HD11	5:E:213:PHE:CZ	2.55	0.41
50:7:110:G:C2	50:7:111:C:C2	3.08	0.41
49:5:169:G:C2	49:5:170:C:C2	3.07	0.41
49:5:29:G:C6	49:5:30:C:C4	3.07	0.41
6:F:67:TYR:CZ	49:5:945:U:C5	3.08	0.41
49:5:1169:G:C2	49:5:1193:C:O2	2.73	0.41
6:F:90:LYS:O	6:F:127:LEU:N	2.50	0.41
5:E:39:HIS:CE1	49:5:1068:G:O6	2.72	0.41
49:5:977:C:H2'	49:5:978:G:C8	2.54	0.41
49:5:1970:A:H4'	49:5:2000:G:C8	2.55	0.41
49:5:1485:C:C4	49:5:4349:C:C2	3.07	0.41
49:5:4348:A:C6	49:5:4350:C:C4	3.08	0.41
4:D:56:THR:HG22	4:D:57:ASN:N	2.35	0.41
11:L:81:LEU:HA	11:L:81:LEU:HD23	1.74	0.41
48:2:2:G:C6	48:2:3:C:C4	3.07	0.41
49:5:2712:G:C6	49:5:2713:C:C4	3.08	0.41
49:5:2736:G:N1	49:5:2737:C:C4	2.88	0.41
49:5:2428:A:C5	49:5:2789:A:C2	3.07	0.41
49:5:1855:G:C6	49:5:1856:C:C4	3.08	0.41
49:5:2723:U:H2'	49:5:2724:G:C8	2.55	0.41
9:I:39:LYS:O	9:I:41:ALA:N	2.53	0.41
49:5:1655:C:C2'	49:5:1656:U:H5"	2.49	0.41
49:5:52:G:C6	49:5:53:C:C4	3.09	0.41
6:F:39:PHE:CE2	49:5:2123:C:O3'	2.74	0.41
49:5:1075:G:H2'	49:5:1076:C:H6	1.84	0.41
5:E:246:GLN:NE2	5:E:246:GLN:HA	2.35	0.41
49:5:499:G:C2	49:5:656:C:N3	2.88	0.41
49:5:139:G:H2'	49:5:140:G:O4'	2.20	0.41
49:5:2693:G:C6	49:5:2694:G:C2	3.07	0.41
49:5:199:G:C2	49:5:201:C:N3	2.88	0.41
49:5:451:C:N4	49:5:1295:C:H2'	2.35	0.41
49:5:2099:G:C2	49:5:2100:A:C8	3.08	0.41
49:5:1806:G:C2	49:5:1807:C:C2	3.07	0.41
7:G:136:LEU:HD21	7:G:204:PHE:CE1	2.55	0.41
49:5:4068:U:C2	49:5:4069:U:H1'	2.54	0.41
49:5:2715:G:C2	49:5:2716:C:C2	3.07	0.41
51:8:134:G:C2	51:8:135:C:C2	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4408:G:C6	49:5:4409:C:C4	3.08	0.41
49:5:2339:G:C6	49:5:2340:C:C4	3.08	0.41
49:5:3786:U:H6	49:5:3786:U:H5'	1.86	0.41
13:N:99:GLN:HG3	13:N:130:PHE:CD1	2.55	0.41
49:5:1499:C:C2'	49:5:1500:A:O5'	2.69	0.41
49:5:457:G:C2	49:5:458:C:C6	3.09	0.41
49:5:1983:A:N7	49:5:1987:C:H5'	2.35	0.41
49:5:1360:G:C6	49:5:1361:G:C5	3.08	0.41
5:E:39:HIS:O	49:5:979:C:H5"	2.20	0.41
49:5:654:C:C2'	49:5:654:C:O2	2.68	0.41
18:S:82:LEU:CD1	18:S:113:MET:HE2	2.50	0.41
49:5:2288:G:C2	49:5:2290:C:C4	3.08	0.41
49:5:953:C:H2'	49:5:954:C:C6	2.56	0.41
49:5:1167:C:O2	49:5:1195:G:C2	2.74	0.41
3:C:218:ILE:HG22	3:C:229:LEU:HG	2.02	0.41
2:B:8:ALA:HB1	2:B:9:PRO:HD2	2.02	0.41
49:5:2569:G:H2'	49:5:2570:U:O4'	2.20	0.41
49:5:961:G:N3	49:5:961:G:H2'	2.35	0.41
49:5:4958:C:H2'	49:5:4959:U:OP1	2.20	0.41
49:5:4745:G:N2	49:5:4746:C:N4	2.68	0.41
49:5:5061:A:O2'	49:5:5062:G:OP2	2.36	0.41
49:5:80:C:C2	49:5:104:G:N2	2.88	0.41
49:5:2323:C:H2'	49:5:2324:C:O4'	2.20	0.41
51:8:2:G:H2'	51:8:2:G:N3	2.36	0.41
3:C:154:VAL:HG11	3:C:158:VAL:HG21	2.02	0.41
1:A:49:ILE:HG23	1:A:50:HIS:N	2.36	0.41
11:L:113:ASN:HD22	11:L:113:ASN:HA	1.70	0.41
6:F:146:TYR:CE2	6:F:239:GLU:HB3	2.54	0.41
20:U:27:HIS:N	20:U:28:PRO:HD2	2.35	0.41
49:5:2367:A:C8	49:5:2798:A:C5	3.08	0.41
49:5:4480:A:C6	49:5:4481:U:C6	3.08	0.41
49:5:2436:U:H4'	49:5:2437:C:OP2	2.20	0.41
49:5:1427:A:O5'	49:5:1428:U:C5	2.73	0.41
49:5:1190:C:N3	49:5:1191:C:C5	2.89	0.41
49:5:2335:C:O2'	49:5:2336:G:H5'	2.20	0.41
6:F:218:PRO:HB2	6:F:248:ARG:HD3	2.01	0.41
49:5:4595:G:C2	49:5:4596:C:C2	3.08	0.41
49:5:1079:C:C4	49:5:1080:C:C5	3.08	0.41
49:5:674:G:C2	49:5:675:C:C2	3.07	0.41
24:Y:87:ARG:HG3	24:Y:87:ARG:HH21	1.86	0.41
49:5:1274:A:O4'	49:5:1274:A:OP1	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:8:68:G:H2'	51:8:69:U:O4'	2.21	0.41
1:A:198:ARG:NH2	49:5:3687:A:OP2	2.53	0.41
14:O:151:ALA:O	14:O:155:THR:HG23	2.21	0.41
49:5:2468:U:C4	49:5:2473:A:C6	3.08	0.41
49:5:1506:G:C2	49:5:1507:C:C2	3.09	0.41
5:E:58:MET:HG2	49:5:977:C:O5'	2.20	0.41
49:5:1556:C:O2'	49:5:2669:C:OP1	2.34	0.41
12:M:46:ARG:NH2	49:5:936:C:C2'	2.83	0.41
49:5:917:A:N1	49:5:919:C:C5	2.89	0.41
19:T:20:ARG:HG3	19:T:20:ARG:HH11	1.85	0.41
49:5:3717:A:H1'	49:5:4178:A:O2'	2.20	0.41
49:5:4453:C:C6	49:5:4453:C:H3'	2.56	0.41
49:5:2639:U:H2'	49:5:2694:G:N1	2.35	0.41
3:C:86:ARG:HD3	49:5:376:A:OP1	2.20	0.41
49:5:1293:G:C8	49:5:1293:G:C5'	3.04	0.41
49:5:4883:C:HO2'	49:5:4884:G:P	2.42	0.41
49:5:2712:G:C2	49:5:2713:C:C2	3.09	0.41
49:5:2:G:C6	49:5:3:C:C4	3.08	0.41
49:5:4627:U:C2	49:5:4628:U:C6	3.08	0.41
49:5:2076:G:C6	49:5:2077:C:C4	3.09	0.41
20:U:33:ILE:HD12	20:U:96:LEU:HD22	2.01	0.41
16:Q:68:ARG:NH2	49:5:1501:C:C6	2.89	0.41
49:5:1725:U:H2'	49:5:1725:U:O2	2.21	0.41
7:G:167:VAL:O	7:G:167:VAL:HG12	2.21	0.41
49:5:2586:G:N7	49:5:2587:A:N1	2.68	0.41
49:5:2851:G:C4	49:5:2852:U:C6	3.08	0.41
49:5:2851:G:C5	49:5:2852:U:C5	3.09	0.41
7:G:141:ASN:OD1	13:N:3:ALA:HB3	2.20	0.41
49:5:2630:U:O2'	49:5:2632:U:H4'	2.21	0.41
49:5:1296:G:N2	49:5:1297:U:C2	2.89	0.41
49:5:2065:G:C2	49:5:2066:C:C2	3.08	0.41
49:5:1719:A:O2'	49:5:1720:C:C6	2.73	0.41
49:5:2391:G:C2	49:5:2392:C:C2	3.08	0.41
49:5:1446:C:N3	49:5:2099:G:N2	2.69	0.41
49:5:2479:G:N1	49:5:2480:G:C5	2.89	0.41
49:5:258:G:N2	49:5:259:C:C2	2.89	0.41
49:5:3782:C:C2	49:5:3811:G:C2	3.09	0.41
21:V:112:MET:HE1	21:V:117:ILE:HG12	2.03	0.41
49:5:4585:U:C3'	49:5:4586:G:H5"	2.50	0.41
18:S:92:ASN:OD1	18:S:92:ASN:N	2.53	0.41
48:2:50:U:O2	48:2:50:U:H2'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:3800:A:C2	49:5:4496:A:O4'	2.74	0.41
49:5:1691:G:C6	49:5:1692:C:C4	3.08	0.41
7:G:81:ASN:OD1	7:G:238:GLY:N	2.54	0.41
49:5:3777:G:N2	49:5:3815:G:H2'	2.36	0.41
21:V:98:PHE:O	21:V:99:GLU:HB3	2.21	0.41
25:Z:52:LYS:O	25:Z:65:ARG:NH2	2.46	0.41
51:8:63:U:O2	51:8:63:U:H2'	2.20	0.41
4:D:33:ARG:HH11	4:D:37:VAL:HG11	1.86	0.41
49:5:985:C:C2	49:5:1069:G:C2	3.08	0.41
49:5:2769:U:C2	49:5:2770:C:C4	3.09	0.41
49:5:744:G:C2	49:5:921:C:C2	3.09	0.41
2:B:117:ARG:CZ	2:B:177:LYS:HD3	2.51	0.41
49:5:2466:G:H8	49:5:2466:G:O5'	2.04	0.41
49:5:2857:A:H2'	49:5:2858:A:C8	2.55	0.41
49:5:963:G:O2'	49:5:964:A:C8	2.71	0.41
21:V:20:LEU:HD13	21:V:26:ILE:HG21	2.03	0.41
49:5:4689:U:O4	49:5:4699:U:H5	2.03	0.41
49:5:252:C:H2'	49:5:253:G:O4'	2.21	0.41
3:C:61:GLN:HB2	3:C:61:GLN:HE21	1.58	0.41
49:5:479:G:C6	49:5:480:C:C4	3.09	0.41
49:5:2463:G:C6	49:5:2464:C:N4	2.89	0.41
49:5:4129:G:C6	49:5:4130:C:C4	3.08	0.41
51:8:31:G:C6	51:8:32:C:C4	3.09	0.41
51:8:31:G:C2	51:8:32:C:C2	3.08	0.41
1:A:222:PRO:HA	49:5:3749:C:O4'	2.21	0.41
49:5:4145:C:C2	49:5:4146:G:C8	3.09	0.41
51:8:152:U:H2'	51:8:153:C:O4'	2.21	0.41
49:5:1384:C:O2	49:5:1505:C:H4'	2.20	0.41
49:5:975:C:H3'	49:5:976:G:O4'	2.21	0.41
49:5:2669:C:O2'	49:5:2670:C:O5'	2.38	0.41
1:A:41:ILE:HA	1:A:41:ILE:HD12	1.92	0.41
18:S:106:VAL:O	18:S:107:THR:C	2.59	0.41
49:5:3593:C:C4'	49:5:3594:C:OP2	2.64	0.41
3:C:30:ALA:HB1	3:C:31:PRO:HD2	2.02	0.41
49:5:931:C:O2'	49:5:932:A:P	2.79	0.41
49:5:2623:A:C2	49:5:2624:G:C6	3.09	0.41
3:C:340:ILE:HG21	5:E:46:LEU:HD11	2.02	0.41
49:5:1984:A:N7	49:5:2011:C:H4'	2.35	0.41
49:5:2827:G:C2'	49:5:2827:G:N3	2.82	0.41
49:5:448:G:C3'	49:5:449:C:H4'	2.51	0.41
9:I:9:TYR:CD2	9:I:97:ILE:HG13	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:9:TYR:N	9:I:9:TYR:CD1	2.89	0.41
49:5:2546:G:O2'	49:5:2547:G:H5'	2.20	0.41
49:5:1986:U:O2	49:5:2007:G:C6	2.73	0.41
49:5:2480:G:C2	49:5:2499:C:C2	3.09	0.41
16:Q:152:PHE:N	16:Q:152:PHE:CD1	2.89	0.41
10:J:89:VAL:HG21	10:J:115:LEU:CD2	2.51	0.41
49:5:752:G:C5	49:5:753:C:C6	3.09	0.41
49:5:1806:G:C6	49:5:1807:C:C4	3.09	0.41
49:5:4543:G:H8	49:5:4543:G:O5'	2.04	0.41
49:5:3918:G:C2	49:5:3919:C:C2	3.09	0.41
13:N:190:ALA:HA	13:N:193:ARG:NE	2.35	0.41
25:Z:73:LYS:NZ	49:5:2581:A:OP1	2.53	0.41
2:B:29:VAL:HG23	2:B:346:THR:HG21	2.02	0.41
2:B:56:ILE:HG12	2:B:365:LEU:HD22	2.03	0.41
49:5:4470:G:N2	49:5:4486:C:C2	2.89	0.41
4:D:123:VAL:HA	4:D:248:ARG:HH21	1.86	0.41
19:T:41:ASP:OD1	19:T:97:LYS:HB2	2.19	0.41
49:5:4594:U:C2	49:5:4595:G:C8	3.08	0.41
49:5:517:C:C2	49:5:645:G:N2	2.89	0.41
17:R:98:ARG:HD3	49:5:2251:G:H22	176.29	0.41
49:5:463:A:N1	49:5:692:A:N1	2.69	0.41
49:5:3867:A:C6	49:5:3868:G:C6	3.09	0.41
6:F:155:LEU:HB3	6:F:213:PHE:HE2	1.86	0.41
49:5:2703:G:C2	49:5:2704:C:C2	3.09	0.41
49:5:2576:G:C2	49:5:2577:C:C2	3.09	0.41
2:B:43:LEU:HD13	2:B:196:TRP:CH2	2.56	0.41
1:A:209:HIS:CG	1:A:210:PRO:HD2	2.56	0.41
4:D:83:LEU:N	4:D:84:PRO:HD2	2.36	0.41
49:5:115:C:O4'	49:5:115:C:O2	2.35	0.41
15:P:110:ASP:N	15:P:110:ASP:OD1	2.45	0.41
3:C:261:ASP:OD1	3:C:261:ASP:C	2.59	0.41
2:B:303:ALA:HB3	2:B:312:LYS:HB2	2.02	0.41
49:5:1329:G:C2	49:5:3865:A:H1'	2.55	0.41
49:5:211:G:H5'	49:5:234:G:O2'	2.20	0.41
13:N:164:LEU:O	13:N:169:ARG:NH2	2.54	0.41
6:F:105:PRO:HB3	49:5:1724:G:N3	2.36	0.41
10:J:31:ASP:OD1	10:J:35:ARG:NH2	2.54	0.41
49:5:2586:G:N7	49:5:2587:A:C2	2.89	0.41
10:J:70:VAL:HG11	51:8:35:C:H5'	135.11	0.41
49:5:918:G:N3	49:5:918:G:C2'	2.83	0.41
49:5:4474:A:C8	49:5:4476:C:C2	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1197:C:H2'	49:5:1198:G:O4'	2.21	0.41
49:5:2826:U:H4'	49:5:2827:G:H5'	2.02	0.41
14:O:42:ASN:HD21	14:O:125:LYS:HB2	1.86	0.41
49:5:4448:G:O2'	49:5:4449:A:OP2	2.35	0.41
1:A:3:ARG:HB2	1:A:207:VAL:HG23	2.03	0.41
51:8:112:G:C6	51:8:113:C:C4	3.09	0.41
49:5:215:C:C5	49:5:219:G:C8	3.09	0.41
14:O:27:VAL:HG13	14:O:98:ALA:O	2.21	0.41
49:5:172:C:O4'	49:5:172:C:OP2	2.39	0.41
49:5:4735:G:H2'	49:5:4736:C:O4'	2.21	0.41
49:5:1910:G:C6	49:5:1911:C:N4	2.89	0.41
49:5:2814:C:O2'	49:5:2814:C:O2	2.30	0.41
7:G:182:CYS:HA	7:G:226:TYR:CD2	2.56	0.41
49:5:1169:G:C2	49:5:1193:C:C2	3.09	0.41
49:5:2690:C:C2	49:5:2691:U:C6	3.09	0.41
49:5:2796:G:O5'	49:5:2796:G:H2'	2.21	0.41
49:5:3927:U:H2'	49:5:3927:U:O2	2.21	0.41
49:5:2314:G:H2'	49:5:2314:G:N3	2.36	0.41
22:W:13:ILE:HD11	22:W:32:LEU:N	2.36	0.41
49:5:328:A:C6	49:5:329:A:C6	3.08	0.41
8:H:41:ILE:CG2	8:H:43:VAL:HG22	2.51	0.41
49:5:1247:U:N3	49:5:1248:C:C5	2.89	0.40
49:5:1249:C:C2	49:5:1262:G:N2	2.90	0.40
49:5:1262:G:C2	49:5:1263:A:C8	3.08	0.40
11:L:37:LYS:NZ	49:5:1366:G:OP2	2.52	0.40
21:V:15:ARG:HH11	21:V:15:ARG:HB2	1.82	0.40
49:5:1074:G:N2	49:5:1075:G:C2	2.88	0.40
49:5:2532:C:H2'	49:5:2532:C:O2	2.21	0.40
3:C:341:LEU:HD22	5:E:46:LEU:HD21	2.01	0.40
49:5:199:G:C2	49:5:220:C:C2	3.09	0.40
3:C:89:GLN:HA	49:5:2353:U:OP1	2.21	0.40
49:5:3912:U:C2'	49:5:3913:G:H5'	2.50	0.40
49:5:2612:G:H2'	49:5:2613:C:O4'	2.21	0.40
23:X:119:ILE:HA	23:X:144:TYR:CE2	2.56	0.40
49:5:713:C:N4	49:5:955:G:H1	2.19	0.40
49:5:176:G:H2'	49:5:177:G:O4'	2.21	0.40
3:C:22:VAL:HG11	3:C:257:PHE:CD2	2.55	0.40
49:5:2336:G:C2	49:5:2337:C:C2	3.09	0.40
49:5:168:C:C2	49:5:268:G:C2	3.09	0.40
49:5:2682:G:C2	49:5:2683:C:C2	3.10	0.40
49:5:4154:G:C6	49:5:4155:C:C4	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:457:G:C2	49:5:458:C:C5	3.09	0.40
49:5:4899:G:C2	49:5:4922:C:O2	2.74	0.40
49:5:1307:A:H2'	49:5:1308:C:O4'	2.21	0.40
3:C:288:ASP:C	3:C:288:ASP:OD1	2.60	0.40
49:5:4591:U:H2'	49:5:4592:C:C6	2.56	0.40
9:I:86:HIS:HB3	9:I:139:ARG:CG	2.51	0.40
49:5:1349:G:C6	49:5:1350:C:C4	3.09	0.40
49:5:3695:U:H2'	49:5:3696:C:O4'	2.21	0.40
49:5:3909:C:O2	49:5:4396:A:N1	2.54	0.40
49:5:2301:G:N2	49:5:2302:C:C2	2.90	0.40
49:5:1398:A:H61	49:5:1419:G:H2'	1.86	0.40
49:5:1269:G:N7	49:5:2111:G:C6	2.88	0.40
49:5:2089:G:O2'	49:5:2090:U:OP1	2.40	0.40
49:5:1215:C:N3	49:5:1216:C:C6	2.89	0.40
49:5:269:G:H2'	49:5:269:G:N3	2.35	0.40
49:5:4217:G:H2'	49:5:4218:U:O4'	2.21	0.40
49:5:1771:U:N3	49:5:1772:C:C5	2.89	0.40
49:5:448:G:H3'	49:5:449:C:H4'	2.02	0.40
49:5:451:C:C4	49:5:1295:C:H2'	2.56	0.40
49:5:2495:U:N3	49:5:2496:G:N7	2.69	0.40
49:5:3726:A:N6	49:5:4359:U:O2'	2.54	0.40
49:5:4152:G:C2	49:5:4153:C:C2	3.10	0.40
49:5:4735:G:N1	49:5:4736:C:C4	2.90	0.40
49:5:2520:C:H2'	49:5:2521:G:H8	1.84	0.40
49:5:1440:U:H2'	49:5:1441:C:C6	2.56	0.40
1:A:66:PRO:O	1:A:67:TYR:CG	2.75	0.40
49:5:2750:G:H2'	49:5:2751:G:O4'	2.21	0.40
49:5:4490:C:C2	49:5:4491:G:C8	3.09	0.40
49:5:2618:G:C2	49:5:2720:C:C2	3.10	0.40
49:5:1482:G:HO2'	49:5:1483:C:P	2.43	0.40
49:5:1479:G:O2'	49:5:1480:C:H5'	2.20	0.40
49:5:212:A:H2'	49:5:213:G:C8	2.56	0.40
49:5:453:G:N3	49:5:453:G:H2'	2.35	0.40
49:5:2534:C:H2'	49:5:2535:G:O4'	2.20	0.40
21:V:107:ASN:O	21:V:110:GLY:N	2.55	0.40
9:I:26:VAL:HG21	9:I:96:VAL:HG21	2.04	0.40
49:5:2606:G:C2	49:5:2607:C:C2	3.10	0.40
49:5:1266:G:C2'	49:5:1267:C:O5'	2.70	0.40
49:5:1359:G:C6	49:5:1360:G:C6	3.09	0.40
49:5:1382:G:C2	49:5:1383:G:C5	3.09	0.40
49:5:1065:G:C6	49:5:1066:G:C6	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:1234:G:C2	49:5:1235:G:C4	3.09	0.40
10:J:141:ILE:HG23	10:J:149:GLY:N	2.37	0.40
49:5:292:G:O2'	49:5:293:G:H5'	2.21	0.40
49:5:4350:C:H2'	49:5:4350:C:O2	2.21	0.40
6:F:57:LYS:O	6:F:60:HIS:HB3	2.22	0.40
20:U:81:ARG:NH2	49:5:2622:G:O6	2.55	0.40
49:5:199:G:C2	49:5:201:C:C4	3.09	0.40
49:5:2547:G:H2'	49:5:2547:G:N3	2.36	0.40
49:5:214:G:C6	49:5:215:C:C4	3.09	0.40
2:B:92:TYR:HB2	2:B:159:VAL:HB	2.03	0.40
49:5:4209:G:H2'	49:5:4210:U:O4'	2.21	0.40
49:5:2908:U:N3	49:5:2909:C:C5	2.89	0.40
49:5:2463:G:C6	49:5:2464:C:C4	3.09	0.40
49:5:4719:G:O2'	49:5:4720:C:O5'	2.36	0.40
17:R:6:LEU:HD13	17:R:10:LEU:HD23	2.03	0.40
12:M:29:ASP:OD1	12:M:30:VAL:N	2.55	0.40
49:5:2542:G:C2	49:5:2775:C:C2	3.09	0.40
13:N:49:ARG:CZ	13:N:49:ARG:CB	2.99	0.40
49:5:169:G:C6	49:5:170:C:C4	3.10	0.40
1:A:49:ILE:HG22	1:A:58:LEU:HB2	2.03	0.40
49:5:2362:U:O2	49:5:2362:U:H2'	2.22	0.40
16:Q:41:SER:HB3	16:Q:132:LYS:HB3	2.03	0.40
3:C:133:LEU:HD22	3:C:136:LEU:HD12	2.04	0.40
49:5:3864:C:O2'	49:5:3866:C:OP2	2.36	0.40
1:A:37:ARG:NH1	49:5:4088:C:OP1	2.55	0.40
14:O:133:ARG:NH1	49:5:1928:C:C4	2.89	0.40
18:S:66:GLN:HG2	18:S:67:VAL:N	2.36	0.40
1:A:94:ALA:HB3	1:A:102:LEU:HD22	2.03	0.40
49:5:1250:C:C2	49:5:1261:G:N2	2.89	0.40
4:D:23:ARG:O	4:D:23:ARG:NE	2.54	0.40
21:V:12:ALA:HB1	49:5:4617:G:H1'	2.02	0.40
49:5:746:A:H4'	49:5:747:A:OP1	2.21	0.40
49:5:1085:C:H2'	49:5:1086:C:O4'	2.21	0.40
49:5:1279:A:C2	49:5:1280:C:N3	2.90	0.40
49:5:106:A:H1'	49:5:336:A:N7	2.36	0.40
49:5:4966:A:C2'	49:5:4967:A:O4'	2.67	0.40
49:5:4566:U:H2'	49:5:4567:G:O4'	2.21	0.40
49:5:965:G:N3	49:5:965:G:H2'	2.35	0.40
8:H:88:PHE:HE2	8:H:151:ILE:HD12	1.86	0.40
14:O:7:LEU:CD1	18:S:167:PHE:CE2	3.04	0.40
25:Z:106:LEU:HD12	25:Z:106:LEU:H	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:2315:G:C2	49:5:2325:C:C2	3.09	0.40
51:8:46:G:N1	51:8:47:C:C4	2.90	0.40
49:5:2594:C:C2	49:5:2752:G:C2	3.09	0.40
49:5:1826:G:C2	49:5:1827:C:C2	3.08	0.40
3:C:253:THR:O	3:C:254:GLU:C	2.59	0.40
3:C:219:LYS:CG	49:5:224:U:O2	2.70	0.40
49:5:5001:U:H2'	49:5:5002:U:O5'	2.22	0.40
8:H:61:TRP:HZ2	18:S:152:PHE:CD2	2.39	0.40
49:5:4131:G:C2	49:5:4132:C:C2	3.09	0.40
49:5:351:C:C2	51:8:25:G:C2	3.10	0.40
20:U:91:LEU:HD23	20:U:96:LEU:HD12	2.03	0.40
3:C:133:LEU:HD12	3:C:133:LEU:N	2.36	0.40
49:5:4561:C:C2	49:5:4562:C:C5	3.09	0.40
49:5:216:C:P	49:5:216:C:O4'	2.80	0.40
4:D:99:TYR:CD1	4:D:99:TYR:C	2.94	0.40
51:8:81:C:H2'	51:8:82:A:O3'	2.20	0.40
49:5:733:A:C8	49:5:734:G:C8	3.09	0.40
49:5:459:C:H2'	49:5:460:C:O4'	2.21	0.40
49:5:2511:A:C8	49:5:2514:G:C6	3.10	0.40
5:E:39:HIS:CE1	49:5:1069:G:O6	2.66	0.40
49:5:2666:U:C2	49:5:2669:C:C4	3.10	0.40
49:5:2089:G:O2'	49:5:2090:U:C2	2.67	0.40
49:5:2771:G:C5	49:5:2772:C:C5	3.09	0.40
49:5:4158:C:H2'	49:5:4158:C:O2	2.20	0.40
49:5:1485:C:N4	49:5:4349:C:C2	2.90	0.40
49:5:167:C:N1	49:5:269:G:N2	2.70	0.40
49:5:3723:A:N1	49:5:3724:A:C6	2.90	0.40
49:5:3753:G:H1	49:5:3771:C:H5	1.70	0.40
19:T:83:LYS:HG3	19:T:85:LEU:HD21	2.03	0.40
49:5:1840:G:H3'	49:5:1842:G:P	2.61	0.40
1:A:82:ILE:HD11	1:A:99:GLY:HA3	2.02	0.40
49:5:2316:G:C2	49:5:2317:C:C2	3.10	0.40
49:5:2273:G:C2	49:5:2274:C:C2	3.09	0.40
49:5:4890:G:C2	49:5:4930:C:O2	2.74	0.40
49:5:2703:G:C6	49:5:2704:C:C4	3.09	0.40
49:5:2486:G:H2'	49:5:2487:G:O4'	2.22	0.40
49:5:2270:G:H2'	49:5:2271:C:O4'	2.21	0.40
49:5:247:G:C6	49:5:248:C:C4	3.09	0.40
5:E:212:TYR:C	5:E:212:TYR:CD1	2.94	0.40
16:Q:83:VAL:O	16:Q:83:VAL:HG12	2.22	0.40
49:5:1200:G:C6	49:5:1201:U:C4	3.09	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:5:4614:G:C2	49:5:4615:C:C2	3.10	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
1	A	242/257 (94%)	203 (84%)	28 (12%)	11 (4%)	3 31
2	B	392/395 (99%)	342 (87%)	44 (11%)	6 (2%)	13 57
3	C	365/368 (99%)	315 (86%)	43 (12%)	7 (2%)	10 53
4	D	290/297 (98%)	266 (92%)	18 (6%)	6 (2%)	9 52
5	E	232/284 (82%)	176 (76%)	39 (17%)	17 (7%)	1 18
6	F	223/250 (89%)	203 (91%)	16 (7%)	4 (2%)	11 54
7	G	239/266 (90%)	196 (82%)	36 (15%)	7 (3%)	6 44
8	H	188/192 (98%)	164 (87%)	17 (9%)	7 (4%)	4 38
9	I	200/214 (94%)	171 (86%)	22 (11%)	7 (4%)	4 40
10	J	168/178 (94%)	143 (85%)	17 (10%)	8 (5%)	3 30
11	L	208/211 (99%)	174 (84%)	22 (11%)	12 (6%)	2 25
12	M	136/213 (64%)	118 (87%)	16 (12%)	2 (2%)	13 57
13	N	201/204 (98%)	172 (86%)	28 (14%)	1 (0%)	34 77
14	O	197/204 (97%)	173 (88%)	23 (12%)	1 (0%)	34 77
15	P	151/184 (82%)	133 (88%)	17 (11%)	1 (1%)	26 72
16	Q	185/188 (98%)	161 (87%)	22 (12%)	2 (1%)	17 64
17	R	178/196 (91%)	160 (90%)	14 (8%)	4 (2%)	8 51
18	S	173/224 (77%)	153 (88%)	16 (9%)	4 (2%)	8 50
19	T	157/160 (98%)	136 (87%)	19 (12%)	2 (1%)	15 60

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
20	U	97/128 (76%)	84 (87%)	9 (9%)	4 (4%)	3 34
21	V	129/140 (92%)	112 (87%)	16 (12%)	1 (1%)	24 69
22	W	61/157 (39%)	55 (90%)	5 (8%)	1 (2%)	12 56
23	X	117/156 (75%)	105 (90%)	11 (9%)	1 (1%)	21 67
24	Y	132/145 (91%)	121 (92%)	9 (7%)	2 (2%)	13 57
25	Z	133/136 (98%)	115 (86%)	13 (10%)	5 (4%)	4 37
26	a	145/148 (98%)	118 (81%)	20 (14%)	7 (5%)	3 30
27	b	73/160 (46%)	68 (93%)	4 (6%)	1 (1%)	14 59
28	c	92/115 (80%)	86 (94%)	5 (5%)	1 (1%)	17 64
29	d	105/125 (84%)	93 (89%)	9 (9%)	3 (3%)	6 44
30	e	126/135 (93%)	113 (90%)	11 (9%)	2 (2%)	12 56
31	f	107/110 (97%)	93 (87%)	10 (9%)	4 (4%)	4 38
32	g	112/117 (96%)	98 (88%)	12 (11%)	2 (2%)	11 54
33	h	120/123 (98%)	103 (86%)	16 (13%)	1 (1%)	24 69
34	i	100/105 (95%)	92 (92%)	5 (5%)	3 (3%)	5 44
35	j	84/97 (87%)	70 (83%)	12 (14%)	2 (2%)	7 49
36	k	67/70 (96%)	56 (84%)	8 (12%)	3 (4%)	3 31
37	l	48/51 (94%)	38 (79%)	8 (17%)	2 (4%)	3 33
38	m	50/128 (39%)	45 (90%)	3 (6%)	2 (4%)	4 35
39	o	102/106 (96%)	88 (86%)	11 (11%)	3 (3%)	6 44
40	p	89/92 (97%)	74 (83%)	13 (15%)	2 (2%)	8 51
41	r	123/137 (90%)	102 (83%)	18 (15%)	3 (2%)	7 49
42	s	196/317 (62%)	159 (81%)	22 (11%)	15 (8%)	1 16
43	t	161/165 (98%)	93 (58%)	39 (24%)	29 (18%)	0 3
44	u	128/501 (26%)	88 (69%)	30 (23%)	10 (8%)	1 16
44	v	130/501 (26%)	125 (96%)	3 (2%)	2 (2%)	13 57
45	0	34/1766 (2%)	29 (85%)	3 (9%)	2 (6%)	2 24
45	w	13/1766 (1%)	13 (100%)	0	0	100 100
45	z	120/1766 (7%)	106 (88%)	10 (8%)	4 (3%)	5 41
47	1	13/104 (12%)	9 (69%)	1 (8%)	3 (23%)	0 1
All	All	7132/14052 (51%)	6110 (86%)	793 (11%)	229 (3%)	8 42

All (229) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	34	PHE
1	A	195	CYS
2	B	18	PRO
3	C	273	LEU
5	E	91	PRO
5	E	92	VAL
5	E	123	SER
5	E	174	PRO
5	E	175	LEU
5	E	221	PRO
7	G	128	VAL
7	G	161	VAL
8	H	40	HIS
8	H	105	ILE
8	H	110	SER
9	I	12	CYS
9	I	99	ILE
9	I	204	GLY
10	J	155	HIS
11	L	64	VAL
11	L	67	HIS
11	L	134	PRO
18	S	88	SER
18	S	165	PRO
23	X	131	ASP
25	Z	33	THR
25	Z	34	SER
25	Z	84	ARG
26	a	52	TYR
26	a	92	LYS
28	c	19	GLN
29	d	94	GLU
30	e	92	ASN
31	f	80	ASN
31	f	107	PRO
32	g	69	LYS
32	g	84	ALA
35	j	36	LYS
36	k	61	PRO
39	o	32	SER
41	r	107	ARG
42	s	69	LEU

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Mol	Chain	Res	Type
42	s	111	ALA
42	s	201	PRO
43	t	5	PHE
43	t	9	GLU
43	t	30	PRO
43	t	31	LYS
43	t	39	PRO
43	t	53	TRP
43	t	89	PRO
43	t	106	PHE
43	t	147	HIS
43	t	148	PRO
44	u	78	PRO
44	u	90	ILE
44	u	100	PRO
44	u	101	LYS
44	u	105	PRO
44	u	132	ILE
44	v	404	ASN
45	z	1638	THR
45	z	1643	ASP
45	0	1743	SER
45	0	1762	ARG
47	1	13	ARG
47	1	14	PHE
1	A	20	VAL
3	C	16	GLU
3	C	73	VAL
3	C	194	GLY
3	C	195	LYS
3	C	275	SER
4	D	125	VAL
4	D	129	GLU
4	D	187	SER
5	E	95	ASP
5	E	118	PRO
5	E	151	GLY
5	E	234	GLU
6	F	148	ASN
7	G	45	ILE
9	I	187	LYS
10	J	124	GLY

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Mol	Chain	Res	Type
10	J	152	GLY
11	L	47	ALA
11	L	143	GLU
12	M	89	THR
16	Q	14	ARG
17	R	19	LYS
17	R	130	ASN
19	T	44	GLY
20	U	97	ARG
20	U	98	ASP
26	a	4	ARG
29	d	58	GLY
29	d	116	ASN
31	f	79	GLY
33	h	10	ARG
34	i	9	VAL
36	k	22	SER
41	r	67	ARG
41	r	86	ALA
42	s	63	LYS
42	s	105	ASN
42	s	108	PRO
42	s	109	ALA
43	t	2	PRO
43	t	10	ILE
43	t	40	LYS
43	t	58	ILE
43	t	118	HIS
43	t	122	ALA
43	t	144	ASP
44	u	63	VAL
44	u	118	SER
45	z	1653	PRO
1	A	14	SER
1	A	67	TYR
1	A	130	SER
1	A	226	ARG
2	B	257	TRP
2	B	329	ASP
4	D	260	GLU
4	D	293	ARG
5	E	85	LEU

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Mol	Chain	Res	Type
5	E	96	LYS
5	E	232	GLU
8	H	104	VAL
9	I	47	PRO
9	I	177	ASN
10	J	11	PRO
10	J	141	ILE
11	L	5	ARG
11	L	52	SER
11	L	176	PHE
17	R	36	ASN
20	U	67	LYS
22	W	43	LYS
24	Y	93	THR
35	j	21	ARG
37	l	49	LEU
38	m	107	ALA
40	p	41	PHE
42	s	34	ASN
42	s	57	LYS
42	s	93	GLU
42	s	185	PHE
43	t	54	LYS
43	t	119	ARG
1	A	127	ALA
1	A	180	LEU
2	B	123	HIS
3	C	309	ILE
5	E	115	GLU
5	E	218	LEU
5	E	224	GLN
5	E	229	PHE
7	G	125	LYS
8	H	22	GLY
8	H	108	ASN
8	H	140	GLN
10	J	150	CYS
11	L	172	GLU
16	Q	41	SER
18	S	155	PRO
24	Y	63	LYS
25	Z	55	ALA

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Mol	Chain	Res	Type
26	a	91	ALA
30	e	127	ALA
34	i	3	LEU
34	i	11	LEU
37	l	47	THR
39	o	99	ARG
40	p	8	VAL
42	s	73	PRO
42	s	142	GLY
43	t	7	PRO
43	t	18	THR
43	t	28	LEU
43	t	105	THR
43	t	125	LEU
44	u	104	MET
44	u	140	ASP
45	z	1642	GLU
47	1	19	SER
2	B	116	ARG
6	F	105	PRO
6	F	175	ALA
7	G	123	ALA
9	I	201	PRO
11	L	63	THR
15	P	6	LEU
17	R	25	ASP
25	Z	90	PRO
26	a	90	ALA
26	a	98	ALA
42	s	106	LYS
43	t	137	GLN
44	v	400	LYS
2	B	259	PRO
11	L	169	ILE
12	M	25	VAL
19	T	74	ILE
36	k	32	VAL
39	o	33	LEU
42	s	70	GLU
43	t	67	ARG
43	t	94	LYS
43	t	120	SER

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Mol	Chain	Res	Type
1	A	212	GLY
1	A	213	GLY
7	G	186	GLY
11	L	100	PRO
13	N	137	PRO
26	a	22	ILE
31	f	64	PRO
4	D	47	PRO
10	J	174	ILE
20	U	27	HIS
6	F	230	VAL
7	G	238	GLY
14	O	30	GLY
21	V	22	VAL
10	J	176	PRO
27	b	21	ILE
43	t	3	PRO
18	S	172	PRO
38	m	78	ILE

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
1	A	187/199 (94%)	155 (83%)	32 (17%)	2 18
2	B	335/336 (100%)	285 (85%)	50 (15%)	4 25
3	C	305/306 (100%)	243 (80%)	62 (20%)	1 11
4	D	247/250 (99%)	207 (84%)	40 (16%)	3 20
5	E	209/246 (85%)	172 (82%)	37 (18%)	2 16
6	F	194/217 (89%)	156 (80%)	38 (20%)	1 12
7	G	208/226 (92%)	170 (82%)	38 (18%)	2 14
8	H	169/171 (99%)	135 (80%)	34 (20%)	1 11
9	I	174/181 (96%)	137 (79%)	37 (21%)	1 10

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	J	143/149 (96%)	124 (87%)	19 (13%)	5 30
11	L	176/177 (99%)	137 (78%)	39 (22%)	1 8
12	M	116/160 (72%)	95 (82%)	21 (18%)	2 15
13	N	171/172 (99%)	142 (83%)	29 (17%)	2 18
14	O	171/174 (98%)	149 (87%)	22 (13%)	5 31
15	P	134/163 (82%)	110 (82%)	24 (18%)	2 15
16	Q	163/164 (99%)	137 (84%)	26 (16%)	3 21
17	R	159/175 (91%)	126 (79%)	33 (21%)	1 10
18	S	156/192 (81%)	125 (80%)	31 (20%)	1 11
19	T	139/140 (99%)	111 (80%)	28 (20%)	1 11
20	U	89/114 (78%)	72 (81%)	17 (19%)	2 12
21	V	101/107 (94%)	86 (85%)	15 (15%)	4 25
22	W	55/126 (44%)	49 (89%)	6 (11%)	8 39
23	X	107/133 (80%)	91 (85%)	16 (15%)	3 25
24	Y	124/135 (92%)	104 (84%)	20 (16%)	3 21
25	Z	117/118 (99%)	101 (86%)	16 (14%)	4 28
26	a	119/120 (99%)	102 (86%)	17 (14%)	4 27
27	b	63/123 (51%)	52 (82%)	11 (18%)	2 16
28	c	79/97 (81%)	69 (87%)	10 (13%)	5 31
29	d	98/110 (89%)	78 (80%)	20 (20%)	1 11
30	e	114/121 (94%)	83 (73%)	31 (27%)	0 4
31	f	88/89 (99%)	67 (76%)	21 (24%)	1 6
32	g	98/100 (98%)	75 (76%)	23 (24%)	1 7
33	h	109/110 (99%)	90 (83%)	19 (17%)	2 17
34	i	86/89 (97%)	73 (85%)	13 (15%)	3 24
35	j	73/80 (91%)	57 (78%)	16 (22%)	1 9
36	k	64/65 (98%)	51 (80%)	13 (20%)	1 11
37	l	47/48 (98%)	37 (79%)	10 (21%)	1 10
38	m	48/116 (41%)	37 (77%)	11 (23%)	1 8
39	o	92/94 (98%)	71 (77%)	21 (23%)	1 8
40	p	74/75 (99%)	60 (81%)	14 (19%)	2 13

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
41	r	109/121 (90%)	88 (81%)	21 (19%)	2 12
42	s	166/258 (64%)	148 (89%)	18 (11%)	8 40
43	t	136/137 (99%)	120 (88%)	16 (12%)	6 34
44	v	116/445 (26%)	99 (85%)	17 (15%)	4 25
45	0	34/1611 (2%)	30 (88%)	4 (12%)	6 34
45	w	11/1611 (1%)	9 (82%)	2 (18%)	2 14
45	z	119/1611 (7%)	103 (87%)	16 (13%)	5 29
47	1	13/79 (16%)	11 (85%)	2 (15%)	3 23
All	All	6105/11841 (52%)	5029 (82%)	1076 (18%)	6 16

All (1076) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3	ARG
1	A	4	VAL
1	A	5	ILE
1	A	6	ARG
1	A	17	ARG
1	A	64	ARG
1	A	70	LYS
1	A	82	ILE
1	A	96	LEU
1	A	97	ASN
1	A	102	LEU
1	A	122	ASP
1	A	123	ARG
1	A	128	ARG
1	A	142	GLU
1	A	147	ARG
1	A	148	VAL
1	A	158	ILE
1	A	162	ASN
1	A	163	ARG
1	A	175	ILE
1	A	192	LYS
1	A	193	ARG
1	A	200	ARG
1	A	205	ASN
1	A	207	VAL

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Mol	Chain	Res	Type
1	A	218	HIS
1	A	221	LYS
1	A	226	ARG
1	A	227	ARG
1	A	233	ARG
1	A	245	ARG
2	B	10	ARG
2	B	28	LYS
2	B	41	VAL
2	B	53	MET
2	B	56	ILE
2	B	60	VAL
2	B	62	ARG
2	B	66	LYS
2	B	94	GLU
2	B	95	THR
2	B	99	LEU
2	B	101	THR
2	B	103	LYS
2	B	116	ARG
2	B	120	LYS
2	B	135	LYS
2	B	138	GLN
2	B	167	GLN
2	B	175	GLN
2	B	181	MET
2	B	201	LEU
2	B	203	GLN
2	B	213	GLN
2	B	223	THR
2	B	228	TYR
2	B	231	VAL
2	B	233	SER
2	B	234	ARG
2	B	237	THR
2	B	240	LEU
2	B	248	LEU
2	B	258	HIS
2	B	261	ARG
2	B	262	VAL
2	B	264	PHE
2	B	279	GLU

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Mol	Chain	Res	Type
2	B	293	ILE
2	B	305	THR
2	B	309	LEU
2	B	314	ILE
2	B	328	ASN
2	B	329	ASP
2	B	344	VAL
2	B	349	LYS
2	B	351	LEU
2	B	352	LEU
2	B	356	LYS
2	B	357	ARG
2	B	379	PHE
2	B	383	GLU
3	C	14	LYS
3	C	20	LYS
3	C	23	THR
3	C	24	LEU
3	C	38	ASN
3	C	44	LEU
3	C	48	ASN
3	C	49	ARG
3	C	55	SER
3	C	57	LEU
3	C	61	GLN
3	C	65	GLU
3	C	71	ARG
3	C	76	ILE
3	C	80	ARG
3	C	95	MET
3	C	97	ARG
3	C	101	MET
3	C	107	THR
3	C	114	ARG
3	C	117	THR
3	C	122	TYR
3	C	126	SER
3	C	140	LYS
3	C	144	ILE
3	C	147	VAL
3	C	150	LEU
3	C	155	GLU

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Mol	Chain	Res	Type
3	C	163	LYS
3	C	173	LYS
3	C	175	LYS
3	C	188	ARG
3	C	189	MET
3	C	193	LYS
3	C	201	ARG
3	C	204	ARG
3	C	212	ASN
3	C	219	LYS
3	C	222	ARG
3	C	232	VAL
3	C	237	ILE
3	C	258	ARG
3	C	261	ASP
3	C	262	GLU
3	C	267	TRP
3	C	281	MET
3	C	284	MET
3	C	288	ASP
3	C	289	LEU
3	C	290	SER
3	C	294	LYS
3	C	307	LYS
3	C	309	ILE
3	C	312	ARG
3	C	317	ASN
3	C	321	ASN
3	C	333	LYS
3	C	335	MET
3	C	336	ARG
3	C	341	LEU
3	C	342	ARG
3	C	345	ARG
4	D	4	VAL
4	D	23	ARG
4	D	33	ARG
4	D	37	VAL
4	D	42	ASN
4	D	50	ARG
4	D	51	MET
4	D	66	TYR

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Mol	Chain	Res	Type
4	D	73	MET
4	D	89	LYS
4	D	94	ASN
4	D	104	LEU
4	D	110	LEU
4	D	111	ASN
4	D	118	ILE
4	D	124	GLU
4	D	128	ASP
4	D	144	CYS
4	D	160	PHE
4	D	164	LYS
4	D	179	ARG
4	D	190	PHE
4	D	196	ARG
4	D	202	GLN
4	D	221	LYS
4	D	225	GLN
4	D	229	ASN
4	D	248	ARG
4	D	254	GLU
4	D	256	LYS
4	D	258	LYS
4	D	259	LYS
4	D	260	GLU
4	D	264	LYS
4	D	268	ARG
4	D	270	LYS
4	D	272	SER
4	D	278	ASP
4	D	289	ARG
4	D	293	ARG
5	E	46	LEU
5	E	52	ARG
5	E	55	ARG
5	E	101	ARG
5	E	105	LEU
5	E	108	MET
5	E	115	GLU
5	E	134	ARG
5	E	136	LEU
5	E	137	ARG

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Mol	Chain	Res	Type
5	E	144	THR
5	E	148	ILE
5	E	158	VAL
5	E	162	LYS
5	E	163	GLN
5	E	171	VAL
5	E	179	ARG
5	E	186	HIS
5	E	206	LYS
5	E	210	ASP
5	E	212	TYR
5	E	218	LEU
5	E	219	ARG
5	E	228	ILE
5	E	230	ASP
5	E	233	LYS
5	E	236	TYR
5	E	240	GLU
5	E	242	ARG
5	E	250	ASP
5	E	254	LEU
5	E	256	ARG
5	E	268	ARG
5	E	273	LEU
5	E	277	ILE
5	E	282	LEU
5	E	284	PHE
6	F	33	LYS
6	F	37	LYS
6	F	38	LYS
6	F	41	GLN
6	F	44	LEU
6	F	49	ARG
6	F	51	LEU
6	F	65	GLN
6	F	68	ARG
6	F	69	THR
6	F	70	GLU
6	F	72	ARG
6	F	82	ASN
6	F	90	LYS
6	F	91	LEU

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Mol	Chain	Res	Type
6	F	96	ARG
6	F	98	ARG
6	F	100	ILE
6	F	101	ASN
6	F	104	SER
6	F	115	ARG
6	F	121	ASN
6	F	127	LEU
6	F	136	ARG
6	F	137	ILE
6	F	154	GLU
6	F	181	LEU
6	F	189	MET
6	F	190	GLU
6	F	192	LEU
6	F	201	LYS
6	F	202	ARG
6	F	214	LYS
6	F	234	ASP
6	F	238	ARG
6	F	241	GLN
6	F	247	ARG
6	F	248	ARG
7	G	28	VAL
7	G	29	ASN
7	G	31	LEU
7	G	46	GLN
7	G	50	ASP
7	G	59	ARG
7	G	62	ARG
7	G	67	ARG
7	G	71	TYR
7	G	73	ARG
7	G	76	VAL
7	G	81	ASN
7	G	88	ASP
7	G	90	GLN
7	G	101	LYS
7	G	108	GLN
7	G	110	LYS
7	G	121	LYS
7	G	131	LYS

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Mol	Chain	Res	Type
7	G	148	GLU
7	G	150	LYS
7	G	151	LYS
7	G	154	LEU
7	G	170	LEU
7	G	173	LEU
7	G	175	ARG
7	G	177	MET
7	G	182	CYS
7	G	189	ARG
7	G	210	GLU
7	G	217	LYS
7	G	219	VAL
7	G	220	GLU
7	G	223	ARG
7	G	227	ASN
7	G	229	ARG
7	G	240	ASN
7	G	250	ILE
8	H	1	MET
8	H	19	THR
8	H	20	LEU
8	H	25	VAL
8	H	26	ILE
8	H	28	LYS
8	H	33	THR
8	H	40	HIS
8	H	41	ILE
8	H	42	ASN
8	H	52	LYS
8	H	54	ARG
8	H	57	VAL
8	H	59	LYS
8	H	66	GLU
8	H	67	LEU
8	H	72	THR
8	H	74	CYS
8	H	78	GLN
8	H	82	LYS
8	H	92	MET
8	H	105	ILE
8	H	106	GLN

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Mol	Chain	Res	Type
8	H	111	LEU
8	H	117	PHE
8	H	125	ARG
8	H	128	MET
8	H	129	ARG
8	H	141	LYS
8	H	162	GLN
8	H	168	LYS
8	H	173	ARG
8	H	177	ASP
8	H	188	GLN
9	I	8	CYS
9	I	9	TYR
9	I	13	LYS
9	I	23	CYS
9	I	36	LEU
9	I	39	LYS
9	I	40	LYS
9	I	48	LEU
9	I	55	ASP
9	I	61	SER
9	I	66	GLU
9	I	71	CYS
9	I	73	ASN
9	I	74	LYS
9	I	76	MET
9	I	79	SER
9	I	80	CYS
9	I	88	ARG
9	I	92	HIS
9	I	100	ASN
9	I	113	THR
9	I	116	ARG
9	I	125	THR
9	I	139	ARG
9	I	141	LYS
9	I	142	LEU
9	I	144	ASN
9	I	146	GLU
9	I	153	ARG
9	I	163	GLN
9	I	164	LYS

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Mol	Chain	Res	Type
9	I	175	LYS
9	I	180	GLU
9	I	187	LYS
9	I	189	CYS
9	I	208	LYS
9	I	212	LEU
10	J	14	GLU
10	J	15	LEU
10	J	16	ARG
10	J	23	ASN
10	J	49	VAL
10	J	52	LYS
10	J	55	TYR
10	J	81	GLU
10	J	94	LEU
10	J	96	LYS
10	J	113	ILE
10	J	136	ARG
10	J	147	ARG
10	J	150	CYS
10	J	151	ILE
10	J	154	LYS
10	J	164	ARG
10	J	168	GLN
10	J	171	ASP
11	L	5	ARG
11	L	10	LEU
11	L	11	LYS
11	L	19	GLN
11	L	35	ARG
11	L	36	ARG
11	L	49	ARG
11	L	59	VAL
11	L	64	VAL
11	L	65	ARG
11	L	74	ARG
11	L	77	SER
11	L	79	GLU
11	L	88	LYS
11	L	92	ARG
11	L	94	ILE
11	L	99	ASP

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Mol	Chain	Res	Type
11	L	103	ARG
11	L	107	THR
11	L	111	GLN
11	L	113	ASN
11	L	115	GLN
11	L	119	GLU
11	L	121	ARG
11	L	123	LYS
11	L	130	LYS
11	L	143	GLU
11	L	154	VAL
11	L	158	ARG
11	L	162	LYS
11	L	165	LYS
11	L	172	GLU
11	L	186	ARG
11	L	190	ARG
11	L	194	ILE
11	L	195	ARG
11	L	198	ARG
11	L	201	GLU
11	L	208	GLU
12	M	5	ARG
12	M	8	GLU
12	M	29	ASP
12	M	32	ASP
12	M	33	GLN
12	M	43	THR
12	M	47	ARG
12	M	56	GLN
12	M	57	LEU
12	M	59	ASP
12	M	62	LEU
12	M	96	GLU
12	M	98	ARG
12	M	105	THR
12	M	113	MET
12	M	116	ARG
12	M	119	ARG
12	M	121	ARG
12	M	127	VAL
12	M	130	LEU

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Mol	Chain	Res	Type
12	M	137	LYS
13	N	9	GLU
13	N	26	ARG
13	N	32	GLN
13	N	36	LEU
13	N	43	THR
13	N	44	ARG
13	N	49	ARG
13	N	61	ILE
13	N	63	ARG
13	N	64	ILE
13	N	72	LYS
13	N	75	VAL
13	N	77	LYS
13	N	87	HIS
13	N	89	VAL
13	N	100	SER
13	N	108	ARG
13	N	123	GLU
13	N	128	LYS
13	N	138	PHE
13	N	162	ARG
13	N	169	ARG
13	N	174	LEU
13	N	180	PHE
13	N	182	HIS
13	N	189	ARG
13	N	193	ARG
13	N	196	ASN
13	N	198	LEU
14	O	22	ILE
14	O	27	VAL
14	O	36	VAL
14	O	37	ARG
14	O	49	ARG
14	O	60	LYS
14	O	67	SER
14	O	74	ARG
14	O	82	ARG
14	O	85	ARG
14	O	99	LEU
14	O	117	ARG

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Mol	Chain	Res	Type
14	O	153	THR
14	O	160	ARG
14	O	165	LYS
14	O	175	MET
14	O	178	ARG
14	O	179	LYS
14	O	184	ASN
14	O	187	LYS
14	O	188	LYS
14	O	202	LEU
15	P	5	SER
15	P	18	ARG
15	P	24	VAL
15	P	25	HIS
15	P	30	ARG
15	P	41	ILE
15	P	54	GLN
15	P	57	CYS
15	P	64	ASN
15	P	69	ARG
15	P	80	GLN
15	P	86	LYS
15	P	91	LEU
15	P	99	GLU
15	P	100	SER
15	P	103	GLU
15	P	104	LEU
15	P	105	LYS
15	P	110	ASP
15	P	126	ARG
15	P	127	ARG
15	P	128	ARG
15	P	144	CYS
15	P	154	GLU
16	Q	5	ILE
16	Q	13	VAL
16	Q	31	LEU
16	Q	37	ARG
16	Q	39	THR
16	Q	63	LEU
16	Q	65	ARG
16	Q	68	ARG

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Mol	Chain	Res	Type
16	Q	69	LYS
16	Q	75	ARG
16	Q	78	LYS
16	Q	79	THR
16	Q	88	ASP
16	Q	91	ARG
16	Q	93	GLN
16	Q	97	LYS
16	Q	103	LEU
16	Q	108	ARG
16	Q	112	ARG
16	Q	119	LYS
16	Q	120	ILE
16	Q	126	LEU
16	Q	158	THR
16	Q	168	ARG
16	Q	172	ARG
16	Q	187	LYS
17	R	10	LEU
17	R	15	LEU
17	R	37	SER
17	R	39	GLN
17	R	40	GLN
17	R	42	ARG
17	R	43	LYS
17	R	46	LYS
17	R	47	ASP
17	R	50	ILE
17	R	52	ARG
17	R	59	SER
17	R	64	ARG
17	R	70	ARG
17	R	74	ARG
17	R	75	HIS
17	R	89	MET
17	R	94	THR
17	R	98	ARG
17	R	99	MET
17	R	103	ARG
17	R	105	LEU
17	R	106	LEU
17	R	107	ARG

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Mol	Chain	Res	Type
17	R	113	LYS
17	R	117	ARG
17	R	120	TYR
17	R	133	LYS
17	R	136	ARG
17	R	137	ILE
17	R	138	LEU
17	R	168	GLU
17	R	180	LYS
18	S	2	LYS
18	S	7	LEU
18	S	8	ARG
18	S	9	GLU
18	S	13	VAL
18	S	17	LEU
18	S	36	ASN
18	S	39	VAL
18	S	67	VAL
18	S	68	PHE
18	S	69	GLU
18	S	70	LYS
18	S	80	ILE
18	S	82	LEU
18	S	83	ARG
18	S	84	TYR
18	S	90	THR
18	S	91	HIS
18	S	92	ASN
18	S	94	TYR
18	S	95	ARG
18	S	100	LEU
18	S	102	THR
18	S	108	GLN
18	S	120	ARG
18	S	127	MET
18	S	147	ASP
18	S	149	LYS
18	S	156	HIS
18	S	159	LEU
18	S	174	THR
19	T	5	LYS
19	T	7	LYS

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Mol	Chain	Res	Type
19	T	9	ARG
19	T	17	ARG
19	T	29	THR
19	T	30	TYR
19	T	31	MET
19	T	33	ILE
19	T	35	LYS
19	T	60	LYS
19	T	67	VAL
19	T	70	HIS
19	T	81	LYS
19	T	83	LYS
19	T	88	ARG
19	T	96	ILE
19	T	99	SER
19	T	113	ASP
19	T	117	LYS
19	T	118	GLU
19	T	121	GLU
19	T	131	GLN
19	T	139	HIS
19	T	142	ARG
19	T	143	THR
19	T	144	ASN
19	T	146	LYS
19	T	159	MET
20	U	22	THR
20	U	23	LEU
20	U	26	THR
20	U	27	HIS
20	U	33	ILE
20	U	38	ASN
20	U	45	GLU
20	U	46	ARG
20	U	63	ILE
20	U	64	GLU
20	U	65	ARG
20	U	67	LYS
20	U	69	LYS
20	U	80	LYS
20	U	99	TRP
20	U	101	ARG

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Mol	Chain	Res	Type
20	U	113	ARG
21	V	14	PHE
21	V	15	ARG
21	V	18	LEU
21	V	25	VAL
21	V	30	ASP
21	V	31	ASN
21	V	35	LYS
21	V	51	ARG
21	V	60	MET
21	V	61	VAL
21	V	82	ILE
21	V	91	LYS
21	V	109	LYS
21	V	115	SER
21	V	123	LYS
22	W	25	ASP
22	W	27	LYS
22	W	43	LYS
22	W	48	GLN
22	W	50	ASN
22	W	54	LEU
23	X	39	LYS
23	X	41	ARG
23	X	43	SER
23	X	52	LEU
23	X	59	LYS
23	X	62	ARG
23	X	93	ASN
23	X	94	ASN
23	X	102	VAL
23	X	111	GLN
23	X	116	LEU
23	X	119	ILE
23	X	129	ARG
23	X	145	ASP
23	X	149	VAL
23	X	152	LYS
24	Y	2	LYS
24	Y	3	PHE
24	Y	8	THR
24	Y	11	ARG

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Mol	Chain	Res	Type
24	Y	27	ARG
24	Y	28	LYS
24	Y	38	LEU
24	Y	50	ARG
24	Y	55	VAL
24	Y	59	ARG
24	Y	65	GLN
24	Y	72	GLN
24	Y	74	TYR
24	Y	87	ARG
24	Y	104	VAL
24	Y	112	ASP
24	Y	115	ARG
24	Y	117	LYS
24	Y	126	ARG
24	Y	127	GLN
25	Z	21	ARG
25	Z	27	LYS
25	Z	42	LEU
25	Z	57	MET
25	Z	59	LYS
25	Z	60	LYS
25	Z	65	ARG
25	Z	83	THR
25	Z	88	ASP
25	Z	91	LEU
25	Z	93	LYS
25	Z	97	ASN
25	Z	99	ASP
25	Z	101	PHE
25	Z	112	ARG
25	Z	121	ARG
26	a	5	LEU
26	a	7	LYS
26	a	8	THR
26	a	10	LYS
26	a	24	LYS
26	a	42	ARG
26	a	52	TYR
26	a	58	MET
26	a	59	ARG
26	a	72	THR

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Mol	Chain	Res	Type
26	a	73	VAL
26	a	77	LYS
26	a	82	VAL
26	a	84	GLU
26	a	87	ARG
26	a	122	VAL
26	a	147	VAL
27	b	22	LYS
27	b	25	ARG
27	b	27	GLN
27	b	28	ARG
27	b	30	GLU
27	b	36	ASP
27	b	39	PHE
27	b	43	MET
27	b	44	ARG
27	b	51	LYS
27	b	68	ARG
28	c	15	ASN
28	c	16	SER
28	c	28	VAL
28	c	37	MET
28	c	40	GLN
28	c	50	ASN
28	c	51	ASN
28	c	78	ASN
28	c	89	TYR
28	c	94	LEU
29	d	19	GLU
29	d	23	ARG
29	d	26	THR
29	d	28	ASN
29	d	31	LYS
29	d	38	PHE
29	d	46	LEU
29	d	48	GLU
29	d	56	GLU
29	d	57	MET
29	d	75	LYS
29	d	77	ILE
29	d	78	ARG
29	d	79	ASN

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Mol	Chain	Res	Type
29	d	84	ILE
29	d	85	ARG
29	d	94	GLU
29	d	102	LEU
29	d	107	THR
29	d	117	LEU
30	e	4	LEU
30	e	13	VAL
30	e	16	ARG
30	e	19	LYS
30	e	21	ILE
30	e	22	ARG
30	e	32	LYS
30	e	46	ARG
30	e	47	ARG
30	e	48	ARG
30	e	50	LYS
30	e	58	ILE
30	e	64	LYS
30	e	76	LYS
30	e	77	PHE
30	e	78	LEU
30	e	81	ASN
30	e	83	LYS
30	e	85	LEU
30	e	86	GLU
30	e	93	LYS
30	e	102	ASN
30	e	104	SER
30	e	106	LYS
30	e	107	ASN
30	e	117	GLN
30	e	118	LEU
30	e	122	VAL
30	e	123	THR
30	e	128	ARG
30	e	129	LEU
31	f	7	SER
31	f	14	TYR
31	f	16	ARG
31	f	19	ARG
31	f	21	GLN

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Mol	Chain	Res	Type
31	f	29	LYS
31	f	36	ARG
31	f	38	GLU
31	f	40	GLU
31	f	46	ARG
31	f	52	LYS
31	f	60	PRO
31	f	63	LYS
31	f	64	PRO
31	f	69	VAL
31	f	84	VAL
31	f	100	ARG
31	f	101	ILE
31	f	103	VAL
31	f	106	TYR
31	f	110	ILE
32	g	3	GLN
32	g	5	LEU
32	g	11	LEU
32	g	14	ASN
32	g	15	THR
32	g	18	ASN
32	g	19	LYS
32	g	23	SER
32	g	28	ASN
32	g	43	LYS
32	g	54	ARG
32	g	60	ARG
32	g	64	LEU
32	g	66	ARG
32	g	73	HIS
32	g	74	VAL
32	g	76	ARG
32	g	88	ARG
32	g	90	ARG
32	g	93	ARG
32	g	105	LYS
32	g	112	GLN
32	g	115	LYS
33	h	7	ARG
33	h	10	ARG
33	h	14	LYS

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Mol	Chain	Res	Type
33	h	19	LYS
33	h	28	LEU
33	h	46	LYS
33	h	51	ARG
33	h	59	THR
33	h	62	ASN
33	h	65	GLN
33	h	71	LYS
33	h	88	THR
33	h	89	ARG
33	h	97	LYS
33	h	98	HIS
33	h	117	ARG
33	h	118	LYS
33	h	121	VAL
33	h	122	LYS
34	i	4	ARG
34	i	18	THR
34	i	25	ARG
34	i	29	ARG
34	i	34	THR
34	i	36	HIS
34	i	53	TYR
34	i	66	ASP
34	i	84	LYS
34	i	85	ARG
34	i	86	LYS
34	i	87	ARG
34	i	103	LYS
35	j	3	LYS
35	j	10	LYS
35	j	15	THR
35	j	20	ARG
35	j	25	LYS
35	j	29	LEU
35	j	33	THR
35	j	46	LYS
35	j	55	ARG
35	j	61	THR
35	j	63	ARG
35	j	68	LYS
35	j	72	ARG

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Mol	Chain	Res	Type
35	j	79	ARG
35	j	83	THR
35	j	87	LYS
36	k	11	PHE
36	k	14	THR
36	k	18	LYS
36	k	19	ASP
36	k	21	LYS
36	k	29	LYS
36	k	36	VAL
36	k	37	ARG
36	k	54	GLU
36	k	56	LEU
36	k	57	LYS
36	k	69	LEU
36	k	70	LYS
37	l	4	HIS
37	l	8	ARG
37	l	16	LYS
37	l	17	GLN
37	l	20	ASN
37	l	21	ARG
37	l	33	ASN
37	l	36	ARG
37	l	46	ARG
37	l	47	THR
38	m	79	GLU
38	m	82	LEU
38	m	85	LEU
38	m	90	ASN
38	m	92	ASP
38	m	97	ARG
38	m	104	HIS
38	m	106	ARG
38	m	111	ARG
38	m	114	LYS
38	m	119	ASN
39	o	9	ARG
39	o	17	LYS
39	o	18	HIS
39	o	24	THR
39	o	26	TYR

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Mol	Chain	Res	Type
39	o	33	LEU
39	o	36	GLN
39	o	40	ARG
39	o	44	LYS
39	o	55	ILE
39	o	56	PHE
39	o	57	ARG
39	o	61	LYS
39	o	63	THR
39	o	69	ARG
39	o	78	ARG
39	o	81	ARG
39	o	82	MET
39	o	89	LYS
39	o	99	ARG
39	o	102	GLN
40	p	3	LYS
40	p	11	VAL
40	p	16	THR
40	p	24	LYS
40	p	33	GLN
40	p	47	MET
40	p	49	ARG
40	p	50	ARG
40	p	54	ILE
40	p	60	CYS
40	p	84	ARG
40	p	85	ARG
40	p	87	LYS
40	p	89	LEU
41	r	6	GLN
41	r	8	MET
41	r	12	ASN
41	r	13	CYS
41	r	14	SER
41	r	17	LEU
41	r	21	ASN
41	r	24	THR
41	r	26	SER
41	r	28	GLU
41	r	32	LEU
41	r	35	ARG

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Mol	Chain	Res	Type
41	r	39	ARG
41	r	60	VAL
41	r	67	ARG
41	r	70	GLN
41	r	83	ASN
41	r	90	LEU
41	r	105	ASP
41	r	108	MET
41	r	118	LEU
42	s	11	SER
42	s	18	ILE
42	s	38	LYS
42	s	39	GLN
42	s	44	ARG
42	s	59	THR
42	s	65	ILE
42	s	68	HIS
42	s	83	ARG
42	s	91	THR
42	s	107	VAL
42	s	133	GLU
42	s	146	LYS
42	s	149	ARG
42	s	174	LEU
42	s	185	PHE
42	s	189	ILE
42	s	191	GLN
43	t	1	MET
43	t	14	TYR
43	t	22	VAL
43	t	40	LYS
43	t	41	LYS
43	t	44	ASP
43	t	95	GLN
43	t	96	LYS
43	t	104	ILE
43	t	106	PHE
43	t	107	ASP
43	t	108	GLU
43	t	114	ARG
43	t	119	ARG
43	t	123	ARG

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Mol	Chain	Res	Type
43	t	141	CYS
44	v	316	GLU
44	v	324	ASP
44	v	334	LEU
44	v	337	LEU
44	v	341	GLN
44	v	342	GLU
44	v	350	LEU
44	v	355	LEU
44	v	372	GLN
44	v	373	ILE
44	v	384	GLU
44	v	405	HIS
44	v	407	THR
44	v	409	LEU
44	v	411	ARG
44	v	463	VAL
44	v	465	LEU
45	w	13	LEU
45	w	20	ARG
45	z	1563	LEU
45	z	1571	THR
45	z	1582	TRP
45	z	1595	ASP
45	z	1597	PHE
45	z	1629	ARG
45	z	1632	THR
45	z	1633	ARG
45	z	1649	ILE
45	z	1656	TYR
45	z	1661	ILE
45	z	1668	ARG
45	z	1681	LEU
45	z	1695	MET
45	z	1706	ASP
45	z	1709	PHE
45	0	1734	CYS
45	0	1741	PHE
45	0	1755	LYS
45	0	1765	PHE
47	1	13	ARG
47	1	24	VAL

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (64) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	8	GLN
1	A	205	ASN
2	B	25	HIS
2	B	138	GLN
2	B	289	GLN
2	B	301	ASN
2	B	376	HIS
3	C	61	GLN
3	C	317	ASN
4	D	81	HIS
4	D	282	GLN
5	E	39	HIS
5	E	43	ASN
5	E	207	HIS
5	E	246	GLN
6	F	41	GLN
6	F	82	ASN
6	F	174	ASN
6	F	241	GLN
6	F	243	ASN
9	I	73	ASN
10	J	23	ASN
10	J	98	ASN
11	L	28	GLN
12	M	56	GLN
12	M	83	ASN
13	N	32	GLN
13	N	181	HIS
13	N	182	HIS
14	O	5	GLN
14	O	42	ASN
14	O	72	HIS
14	O	96	GLN
14	O	199	HIS
15	P	34	GLN
15	P	40	HIS
15	P	64	ASN
15	P	80	GLN
16	Q	44	ASN
16	Q	188	ASN
18	S	36	ASN

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Mol	Chain	Res	Type
19	T	98	HIS
19	T	144	ASN
20	U	95	ASN
23	X	105	ASN
25	Z	97	ASN
27	b	11	ASN
27	b	12	GLN
28	c	40	GLN
28	c	51	ASN
28	c	78	ASN
29	d	34	HIS
29	d	100	ASN
31	f	20	ASN
31	f	56	ASN
31	f	99	HIS
32	g	28	ASN
33	h	96	ASN
35	j	16	HIS
39	o	90	HIS
41	r	6	GLN
41	r	12	ASN
41	r	31	ASN
44	v	372	GLN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
48	2	73/77 (94%)	31 (42%)	2 (2%)
49	5	3646/3664 (99%)	1364 (37%)	373 (10%)
50	7	119/120 (99%)	27 (22%)	1 (0%)
51	8	155/156 (99%)	50 (32%)	9 (5%)
All	All	3993/4017 (99%)	1472 (36%)	385 (9%)

All (1472) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
48	2	3	C
48	2	5	G
48	2	7	G
48	2	11	A
48	2	13	C

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Mol	Chain	Res	Type
48	2	16	C
48	2	19	G
48	2	20	U
48	2	21	A
48	2	26	G
48	2	33	U
48	2	35	A
48	2	38	A
48	2	39	C
48	2	42	G
48	2	43	A
48	2	44	A
48	2	45	G
48	2	46	G
48	2	47	U
48	2	48	C
48	2	49	G
48	2	51	C
48	2	53	G
48	2	57	A
48	2	58	A
48	2	60	U
48	2	63	G
48	2	67	C
48	2	72	A
48	2	76	A
49	5	2	G
49	5	6	C
49	5	8	U
49	5	12	A
49	5	13	U
49	5	15	A
49	5	16	G
49	5	20	U
49	5	21	G
49	5	25	A
49	5	29	G
49	5	39	A
49	5	43	U
49	5	48	G
49	5	49	U
49	5	56	A

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Mol	Chain	Res	Type
49	5	58	G
49	5	59	A
49	5	64	A
49	5	65	A
49	5	66	A
49	5	68	U
49	5	69	A
49	5	71	C
49	5	73	A
49	5	74	G
49	5	75	G
49	5	84	A
49	5	85	G
49	5	88	A
49	5	91	G
49	5	93	G
49	5	94	A
49	5	104	G
49	5	108	A
49	5	109	G
49	5	110	C
49	5	116	G
49	5	118	C
49	5	119	G
49	5	120	A
49	5	121	A
49	5	122	U
49	5	126	C
49	5	128	C
49	5	129	C
49	5	134	G
49	5	135	G
49	5	136	C
49	5	137	G
49	5	139	G
49	5	142	G
49	5	143	C
49	5	144	G
49	5	145	G
49	5	157	U
49	5	158	A
49	5	159	C

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Mol	Chain	Res	Type
49	5	160	G
49	5	164	G
49	5	166	C
49	5	167	C
49	5	171	U
49	5	172	C
49	5	173	C
49	5	174	C
49	5	177	G
49	5	178	C
49	5	183	C
49	5	184	U
49	5	185	C
49	5	186	G
49	5	187	U
49	5	188	G
49	5	189	G
49	5	195	C
49	5	197	A
49	5	198	A
49	5	200	U
49	5	201	C
49	5	202	C
49	5	203	U
49	5	205	C
49	5	213	G
49	5	216	C
49	5	217	C
49	5	218	A
49	5	219	G
49	5	220	C
49	5	221	C
49	5	224	U
49	5	226	G
49	5	227	A
49	5	232	G
49	5	233	U
49	5	234	G
49	5	235	A
49	5	239	C
49	5	245	C
49	5	246	G

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Mol	Chain	Res	Type
49	5	255	C
49	5	257	C
49	5	262	G
49	5	265	C
49	5	266	C
49	5	267	G
49	5	272	U
49	5	275	C
49	5	276	C
49	5	277	G
49	5	278	G
49	5	280	G
49	5	281	U
49	5	292	G
49	5	293	G
49	5	294	G
49	5	296	A
49	5	297	U
49	5	300	A
49	5	306	A
49	5	309	C
49	5	315	G
49	5	316	U
49	5	319	A
49	5	321	U
49	5	322	C
49	5	323	C
49	5	329	A
49	5	330	G
49	5	331	G
49	5	334	A
49	5	336	A
49	5	337	U
49	5	340	C
49	5	344	A
49	5	347	A
49	5	350	C
49	5	357	U
49	5	360	A
49	5	361	C
49	5	362	A
49	5	363	A

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Mol	Chain	Res	Type
49	5	381	U
49	5	386	A
49	5	387	G
49	5	388	A
49	5	396	A
49	5	399	G
49	5	405	U
49	5	406	C
49	5	407	A
49	5	408	A
49	5	409	G
49	5	410	A
49	5	412	G
49	5	413	G
49	5	417	G
49	5	418	A
49	5	424	U
49	5	431	G
49	5	432	U
49	5	433	A
49	5	440	U
49	5	445	U
49	5	449	C
49	5	450	G
49	5	451	C
49	5	452	A
49	5	453	G
49	5	454	U
49	5	455	C
49	5	458	C
49	5	465	G
49	5	467	U
49	5	468	U
49	5	469	C
49	5	470	A
49	5	471	A
49	5	473	C
49	5	485	C
49	5	486	C
49	5	487	G
49	5	488	G
49	5	498	C

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Mol	Chain	Res	Type
49	5	500	G
49	5	501	C
49	5	502	C
49	5	503	C
49	5	504	G
49	5	506	C
49	5	509	A
49	5	510	U
49	5	511	C
49	5	513	U
49	5	514	U
49	5	515	C
49	5	516	C
49	5	519	C
49	5	647	G
49	5	648	G
49	5	649	A
49	5	650	C
49	5	654	C
49	5	663	G
49	5	664	G
49	5	665	C
49	5	666	G
49	5	667	A
49	5	668	C
49	5	669	C
49	5	682	G
49	5	683	C
49	5	684	G
49	5	685	C
49	5	686	A
49	5	687	U
49	5	688	U
49	5	689	U
49	5	690	C
49	5	694	C
49	5	695	G
49	5	696	C
49	5	697	G
49	5	698	G
49	5	702	U
49	5	703	G

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Mol	Chain	Res	Type
49	5	704	C
49	5	707	C
49	5	712	C
49	5	718	C
49	5	721	G
49	5	723	A
49	5	724	C
49	5	728	U
49	5	729	G
49	5	730	G
49	5	732	A
49	5	737	C
49	5	742	G
49	5	743	G
49	5	745	G
49	5	746	A
49	5	747	A
49	5	748	G
49	5	749	G
49	5	756	G
49	5	911	U
49	5	914	U
49	5	915	A
49	5	917	A
49	5	918	G
49	5	920	C
49	5	925	C
49	5	927	G
49	5	928	C
49	5	929	A
49	5	930	G
49	5	931	C
49	5	932	A
49	5	933	G
49	5	934	C
49	5	935	A
49	5	936	C
49	5	937	U
49	5	938	C
49	5	939	G
49	5	940	C
49	5	942	G

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Mol	Chain	Res	Type
49	5	943	A
49	5	944	A
49	5	945	U
49	5	946	C
49	5	952	G
49	5	956	A
49	5	957	G
49	5	958	G
49	5	959	G
49	5	960	A
49	5	961	G
49	5	962	C
49	5	963	G
49	5	964	A
49	5	965	G
49	5	966	A
49	5	967	C
49	5	968	C
49	5	969	C
49	5	971	U
49	5	972	C
49	5	974	C
49	5	976	G
49	5	977	C
49	5	978	G
49	5	979	C
49	5	982	U
49	5	983	C
49	5	989	U
49	5	990	C
49	5	1051	G
49	5	1070	G
49	5	1072	C
49	5	1075	G
49	5	1076	C
49	5	1081	C
49	5	1177	U
49	5	1181	C
49	5	1193	C
49	5	1195	G
49	5	1204	C
49	5	1209	U

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Mol	Chain	Res	Type
49	5	1210	C
49	5	1211	G
49	5	1212	G
49	5	1214	C
49	5	1215	C
49	5	1219	G
49	5	1221	G
49	5	1222	A
49	5	1233	G
49	5	1235	G
49	5	1236	C
49	5	1237	C
49	5	1238	A
49	5	1239	C
49	5	1240	G
49	5	1242	G
49	5	1243	C
49	5	1244	G
49	5	1245	C
49	5	1255	A
49	5	1256	G
49	5	1265	G
49	5	1266	G
49	5	1267	C
49	5	1268	G
49	5	1269	G
49	5	1270	A
49	5	1271	G
49	5	1272	C
49	5	1273	G
49	5	1274	A
49	5	1275	G
49	5	1277	G
49	5	1279	A
49	5	1280	C
49	5	1281	G
49	5	1284	G
49	5	1285	U
49	5	1286	C
49	5	1288	G
49	5	1292	C
49	5	1293	G

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Mol	Chain	Res	Type
49	5	1294	A
49	5	1295	C
49	5	1296	G
49	5	1297	U
49	5	1300	G
49	5	1301	C
49	5	1304	C
49	5	1313	C
49	5	1318	C
49	5	1326	A
49	5	1329	G
49	5	1330	A
49	5	1337	A
49	5	1338	G
49	5	1347	G
49	5	1353	G
49	5	1354	A
49	5	1357	C
49	5	1358	G
49	5	1359	G
49	5	1360	G
49	5	1364	U
49	5	1365	C
49	5	1366	G
49	5	1367	C
49	5	1369	C
49	5	1370	G
49	5	1371	A
49	5	1372	A
49	5	1377	G
49	5	1378	C
49	5	1379	C
49	5	1380	G
49	5	1381	U
49	5	1385	G
49	5	1387	A
49	5	1394	G
49	5	1397	A
49	5	1398	A
49	5	1399	G
49	5	1406	G
49	5	1407	C

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Mol	Chain	Res	Type
49	5	1408	G
49	5	1409	C
49	5	1410	U
49	5	1411	C
49	5	1415	G
49	5	1416	G
49	5	1420	A
49	5	1421	G
49	5	1425	G
49	5	1426	G
49	5	1428	U
49	5	1429	C
49	5	1432	G
49	5	1435	G
49	5	1436	C
49	5	1439	C
49	5	1440	U
49	5	1441	C
49	5	1445	U
49	5	1446	C
49	5	1448	G
49	5	1454	G
49	5	1455	G
49	5	1456	C
49	5	1457	G
49	5	1465	G
49	5	1468	C
49	5	1474	C
49	5	1475	G
49	5	1477	C
49	5	1478	C
49	5	1480	C
49	5	1482	G
49	5	1483	C
49	5	1484	G
49	5	1485	C
49	5	1486	C
49	5	1489	G
49	5	1493	G
49	5	1497	A
49	5	1498	G
49	5	1500	A

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Mol	Chain	Res	Type
49	5	1501	C
49	5	1502	G
49	5	1504	G
49	5	1516	G
49	5	1518	A
49	5	1523	A
49	5	1524	A
49	5	1529	G
49	5	1530	G
49	5	1534	A
49	5	1535	C
49	5	1543	G
49	5	1547	A
49	5	1554	A
49	5	1559	G
49	5	1560	A
49	5	1563	A
49	5	1564	A
49	5	1566	C
49	5	1568	C
49	5	1569	U
49	5	1571	G
49	5	1578	U
49	5	1586	G
49	5	1591	U
49	5	1594	C
49	5	1596	U
49	5	1601	A
49	5	1602	U
49	5	1611	C
49	5	1612	G
49	5	1613	A
49	5	1624	G
49	5	1625	G
49	5	1631	A
49	5	1633	G
49	5	1634	A
49	5	1636	U
49	5	1637	A
49	5	1638	A
49	5	1641	G
49	5	1642	A

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Mol	Chain	Res	Type
49	5	1643	A
49	5	1650	A
49	5	1654	G
49	5	1655	C
49	5	1656	U
49	5	1661	C
49	5	1670	G
49	5	1676	C
49	5	1677	U
49	5	1680	G
49	5	1684	A
49	5	1685	G
49	5	1687	U
49	5	1691	G
49	5	1692	C
49	5	1696	C
49	5	1697	G
49	5	1698	C
49	5	1699	A
49	5	1719	A
49	5	1720	C
49	5	1721	G
49	5	1724	G
49	5	1725	U
49	5	1727	U
49	5	1733	G
49	5	1734	G
49	5	1736	A
49	5	1742	A
49	5	1746	A
49	5	1750	G
49	5	1753	G
49	5	1754	U
49	5	1755	C
49	5	1756	U
49	5	1757	U
49	5	1758	G
49	5	1760	G
49	5	1761	G
49	5	1764	G
49	5	1767	A
49	5	1768	C

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Mol	Chain	Res	Type
49	5	1770	A
49	5	1772	C
49	5	1775	A
49	5	1776	A
49	5	1777	C
49	5	1778	C
49	5	1779	U
49	5	1781	U
49	5	1785	C
49	5	1787	A
49	5	1790	U
49	5	1800	U
49	5	1803	G
49	5	1804	A
49	5	1805	A
49	5	1811	G
49	5	1812	C
49	5	1815	G
49	5	1817	U
49	5	1819	G
49	5	1820	C
49	5	1821	G
49	5	1822	U
49	5	1828	C
49	5	1830	G
49	5	1832	C
49	5	1833	G
49	5	1834	U
49	5	1835	G
49	5	1836	G
49	5	1843	A
49	5	1848	C
49	5	1851	G
49	5	1855	G
49	5	1869	G
49	5	1881	C
49	5	1882	U
49	5	1890	G
49	5	1897	A
49	5	1899	G
49	5	1900	C
49	5	1907	A

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Mol	Chain	Res	Type
49	5	1910	G
49	5	1912	G
49	5	1913	C
49	5	1918	U
49	5	1919	G
49	5	1920	C
49	5	1921	C
49	5	1922	G
49	5	1923	A
49	5	1925	G
49	5	1929	A
49	5	1931	C
49	5	1932	A
49	5	1936	C
49	5	1938	C
49	5	1939	A
49	5	1941	A
49	5	1945	G
49	5	1947	U
49	5	1951	G
49	5	1956	A
49	5	1959	U
49	5	1961	G
49	5	1962	A
49	5	1964	A
49	5	1966	C
49	5	1969	G
49	5	1972	G
49	5	1975	G
49	5	1976	G
49	5	1977	C
49	5	1979	A
49	5	1980	U
49	5	1981	G
49	5	1983	A
49	5	1984	A
49	5	1985	G
49	5	1987	C
49	5	1988	G
49	5	1991	A
49	5	1992	U
49	5	1993	C

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Mol	Chain	Res	Type
49	5	1995	G
49	5	1997	U
49	5	1998	A
49	5	2001	G
49	5	2002	A
49	5	2003	G
49	5	2004	U
49	5	2005	G
49	5	2007	G
49	5	2008	U
49	5	2009	A
49	5	2010	A
49	5	2011	C
49	5	2019	C
49	5	2023	C
49	5	2024	G
49	5	2025	A
49	5	2026	A
49	5	2033	A
49	5	2046	G
49	5	2047	A
49	5	2048	U
49	5	2052	G
49	5	2055	G
49	5	2056	G
49	5	2064	G
49	5	2069	A
49	5	2070	U
49	5	2077	C
49	5	2078	C
49	5	2079	G
49	5	2084	C
49	5	2085	G
49	5	2088	A
49	5	2089	G
49	5	2090	U
49	5	2091	C
49	5	2092	G
49	5	2093	A
49	5	2094	G
49	5	2095	A
49	5	2096	G

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Mol	Chain	Res	Type
49	5	2097	U
49	5	2100	A
49	5	2102	G
49	5	2105	A
49	5	2107	C
49	5	2108	G
49	5	2109	G
49	5	2110	C
49	5	2111	G
49	5	2112	G
49	5	2113	G
49	5	2114	G
49	5	2115	G
49	5	2116	C
49	5	2117	G
49	5	2118	G
49	5	2119	C
49	5	2120	G
49	5	2121	C
49	5	2122	G
49	5	2123	C
49	5	2124	G
49	5	2125	C
49	5	2126	G
49	5	2127	C
49	5	2131	C
49	5	2247	C
49	5	2248	C
49	5	2250	C
49	5	2251	G
49	5	2252	G
49	5	2253	A
49	5	2254	G
49	5	2255	C
49	5	2256	C
49	5	2257	C
49	5	2258	C
49	5	2259	G
49	5	2260	C
49	5	2261	G
49	5	2263	A
49	5	2264	C

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Mol	Chain	Res	Type
49	5	2265	G
49	5	2266	C
49	5	2267	U
49	5	2268	A
49	5	2269	C
49	5	2273	G
49	5	2275	G
49	5	2279	A
49	5	2281	U
49	5	2283	G
49	5	2289	C
49	5	2295	C
49	5	2297	G
49	5	2298	U
49	5	2300	A
49	5	2301	G
49	5	2312	U
49	5	2313	A
49	5	2314	G
49	5	2315	G
49	5	2319	C
49	5	2321	G
49	5	2322	G
49	5	2331	G
49	5	2333	G
49	5	2335	C
49	5	2337	C
49	5	2340	C
49	5	2342	G
49	5	2348	G
49	5	2351	C
49	5	2357	G
49	5	2360	A
49	5	2362	U
49	5	2364	G
49	5	2369	U
49	5	2370	A
49	5	2378	G
49	5	2382	A
49	5	2389	A
49	5	2390	G
49	5	2391	G

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Mol	Chain	Res	Type
49	5	2395	A
49	5	2396	A
49	5	2398	U
49	5	2399	G
49	5	2401	A
49	5	2402	G
49	5	2404	A
49	5	2408	U
49	5	2417	A
49	5	2422	C
49	5	2425	U
49	5	2426	U
49	5	2428	A
49	5	2432	U
49	5	2433	G
49	5	2434	G
49	5	2440	U
49	5	2441	C
49	5	2443	G
49	5	2444	U
49	5	2445	C
49	5	2450	G
49	5	2458	C
49	5	2467	U
49	5	2469	C
49	5	2471	G
49	5	2474	G
49	5	2475	G
49	5	2476	G
49	5	2488	C
49	5	2489	C
49	5	2490	U
49	5	2491	C
49	5	2503	G
49	5	2504	C
49	5	2505	C
49	5	2506	G
49	5	2507	A
49	5	2508	U
49	5	2511	A
49	5	2512	A
49	5	2513	A

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Mol	Chain	Res	Type
49	5	2514	G
49	5	2517	A
49	5	2518	G
49	5	2526	C
49	5	2527	A
49	5	2529	A
49	5	2530	U
49	5	2537	A
49	5	2538	U
49	5	2544	G
49	5	2546	G
49	5	2547	G
49	5	2549	G
49	5	2551	A
49	5	2553	A
49	5	2554	U
49	5	2555	G
49	5	2560	C
49	5	2563	C
49	5	2566	G
49	5	2571	C
49	5	2572	C
49	5	2577	C
49	5	2583	C
49	5	2586	G
49	5	2587	A
49	5	2588	C
49	5	2589	C
49	5	2601	A
49	5	2602	G
49	5	2611	A
49	5	2618	G
49	5	2620	G
49	5	2623	A
49	5	2627	C
49	5	2628	U
49	5	2630	U
49	5	2638	G
49	5	2640	G
49	5	2647	A
49	5	2661	U
49	5	2662	G

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Mol	Chain	Res	Type
49	5	2663	G
49	5	2666	U
49	5	2670	C
49	5	2673	G
49	5	2675	G
49	5	2684	C
49	5	2686	G
49	5	2687	U
49	5	2689	C
49	5	2695	A
49	5	2696	A
49	5	2704	C
49	5	2708	U
49	5	2710	C
49	5	2711	G
49	5	2712	G
49	5	2713	C
49	5	2714	G
49	5	2716	C
49	5	2725	A
49	5	2726	G
49	5	2737	C
49	5	2740	U
49	5	2743	A
49	5	2744	A
49	5	2747	U
49	5	2752	G
49	5	2753	G
49	5	2754	G
49	5	2755	A
49	5	2756	G
49	5	2760	G
49	5	2761	U
49	5	2762	G
49	5	2764	A
49	5	2766	A
49	5	2767	U
49	5	2768	C
49	5	2769	U
49	5	2770	C
49	5	2787	A
49	5	2788	U

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Mol	Chain	Res	Type
49	5	2789	A
49	5	2790	U
49	5	2793	G
49	5	2794	C
49	5	2796	G
49	5	2797	C
49	5	2798	A
49	5	2799	G
49	5	2806	A
49	5	2807	A
49	5	2813	A
49	5	2814	C
49	5	2815	A
49	5	2825	A
49	5	2826	U
49	5	2827	G
49	5	2828	U
49	5	2829	U
49	5	2833	A
49	5	2834	C
49	5	2835	A
49	5	2838	G
49	5	2839	U
49	5	2841	G
49	5	2842	G
49	5	2844	A
49	5	2852	U
49	5	2854	G
49	5	2855	G
49	5	2858	A
49	5	2859	G
49	5	2860	C
49	5	2863	G
49	5	2864	A
49	5	2867	C
49	5	2869	U
49	5	2874	U
49	5	2897	G
49	5	2898	G
49	5	2900	U
49	5	2904	U
49	5	2905	C

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Mol	Chain	Res	Type
49	5	2910	G
49	5	3591	C
49	5	3594	C
49	5	3596	A
49	5	3597	G
49	5	3604	A
49	5	3605	C
49	5	3606	U
49	5	3614	G
49	5	3615	G
49	5	3616	U
49	5	3617	G
49	5	3625	G
49	5	3626	G
49	5	3627	G
49	5	3635	A
49	5	3643	A
49	5	3644	U
49	5	3648	A
49	5	3653	A
49	5	3657	U
49	5	3659	G
49	5	3660	C
49	5	3662	A
49	5	3663	A
49	5	3664	G
49	5	3667	C
49	5	3671	G
49	5	3672	G
49	5	3673	C
49	5	3674	G
49	5	3675	G
49	5	3679	U
49	5	3680	U
49	5	3681	G
49	5	3682	A
49	5	3696	C
49	5	3698	G
49	5	3701	C
49	5	3709	U
49	5	3710	G
49	5	3711	A

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Mol	Chain	Res	Type
49	5	3712	A
49	5	3713	U
49	5	3714	G
49	5	3726	A
49	5	3727	A
49	5	3728	A
49	5	3729	U
49	5	3736	A
49	5	3738	G
49	5	3739	C
49	5	3743	G
49	5	3744	G
49	5	3745	U
49	5	3748	A
49	5	3750	G
49	5	3753	G
49	5	3756	A
49	5	3759	A
49	5	3765	G
49	5	3770	U
49	5	3773	U
49	5	3774	A
49	5	3776	G
49	5	3777	G
49	5	3784	A
49	5	3785	A
49	5	3786	U
49	5	3787	G
49	5	3791	C
49	5	3795	A
49	5	3799	A
49	5	3810	C
49	5	3811	G
49	5	3814	U
49	5	3817	A
49	5	3819	G
49	5	3822	U
49	5	3824	A
49	5	3831	U
49	5	3838	U
49	5	3839	G
49	5	3840	U

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Mol	Chain	Res	Type
49	5	3851	U
49	5	3859	G
49	5	3867	A
49	5	3868	G
49	5	3869	C
49	5	3870	C
49	5	3871	A
49	5	3876	A
49	5	3877	A
49	5	3878	C
49	5	3879	G
49	5	3889	G
49	5	3892	U
49	5	3897	G
49	5	3898	G
49	5	3900	G
49	5	3901	A
49	5	3905	A
49	5	3906	A
49	5	3907	G
49	5	3912	U
49	5	3913	G
49	5	3914	U
49	5	3915	U
49	5	3916	G
49	5	3917	A
49	5	3923	A
49	5	3925	U
49	5	3926	C
49	5	3927	U
49	5	3932	U
49	5	3938	G
49	5	3939	G
49	5	3943	A
49	5	4069	U
49	5	4070	U
49	5	4073	A
49	5	4076	G
49	5	4084	G
49	5	4085	A
49	5	4086	G
49	5	4087	G

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Mol	Chain	Res	Type
49	5	4088	C
49	5	4089	G
49	5	4091	G
49	5	4092	G
49	5	4093	G
49	5	4094	G
49	5	4097	G
49	5	4104	G
49	5	4105	A
49	5	4107	G
49	5	4114	C
49	5	4115	G
49	5	4116	C
49	5	4117	U
49	5	4118	U
49	5	4119	C
49	5	4120	U
49	5	4121	G
49	5	4122	G
49	5	4123	C
49	5	4125	C
49	5	4126	C
49	5	4127	A
49	5	4140	C
49	5	4143	G
49	5	4144	C
49	5	4145	C
49	5	4149	C
49	5	4151	G
49	5	4161	G
49	5	4164	C
49	5	4166	G
49	5	4171	C
49	5	4180	G
49	5	4182	G
49	5	4183	G
49	5	4184	G
49	5	4191	G
49	5	4195	G
49	5	4197	G
49	5	4203	A
49	5	4205	A

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Mol	Chain	Res	Type
49	5	4206	C
49	5	4213	A
49	5	4214	A
49	5	4216	G
49	5	4217	G
49	5	4218	U
49	5	4219	A
49	5	4225	G
49	5	4228	G
49	5	4229	U
49	5	4232	U
49	5	4233	A
49	5	4235	G
49	5	4236	G
49	5	4237	C
49	5	4241	C
49	5	4249	G
49	5	4251	A
49	5	4254	G
49	5	4255	A
49	5	4267	G
49	5	4268	A
49	5	4271	A
49	5	4273	A
49	5	4274	A
49	5	4282	A
49	5	4286	C
49	5	4290	U
49	5	4291	G
49	5	4297	G
49	5	4305	G
49	5	4306	U
49	5	4313	A
49	5	4314	C
49	5	4317	A
49	5	4318	C
49	5	4323	A
49	5	4329	G
49	5	4330	G
49	5	4332	C
49	5	4335	C
49	5	4336	A

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Mol	Chain	Res	Type
49	5	4337	C
49	5	4339	A
49	5	4349	C
49	5	4350	C
49	5	4354	U
49	5	4355	G
49	5	4359	U
49	5	4360	U
49	5	4367	G
49	5	4368	G
49	5	4374	U
49	5	4375	C
49	5	4376	A
49	5	4377	G
49	5	4378	A
49	5	4379	A
49	5	4387	C
49	5	4391	G
49	5	4394	A
49	5	4395	U
49	5	4398	C
49	5	4401	G
49	5	4419	U
49	5	4420	U
49	5	4422	A
49	5	4426	C
49	5	4433	G
49	5	4437	U
49	5	4438	U
49	5	4439	U
49	5	4441	A
49	5	4444	C
49	5	4448	G
49	5	4449	A
49	5	4450	U
49	5	4451	G
49	5	4452	U
49	5	4453	C
49	5	4464	A
49	5	4465	U
49	5	4466	C
49	5	4467	A

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Mol	Chain	Res	Type
49	5	4472	G
49	5	4473	A
49	5	4475	G
49	5	4476	C
49	5	4481	U
49	5	4482	U
49	5	4484	A
49	5	4487	A
49	5	4488	A
49	5	4489	G
49	5	4490	C
49	5	4491	G
49	5	4497	U
49	5	4500	U
49	5	4511	A
49	5	4512	U
49	5	4513	A
49	5	4518	A
49	5	4519	C
49	5	4522	G
49	5	4523	A
49	5	4524	G
49	5	4528	G
49	5	4529	G
49	5	4530	U
49	5	4531	U
49	5	4532	U
49	5	4534	G
49	5	4537	C
49	5	4548	A
49	5	4549	G
49	5	4550	G
49	5	4552	U
49	5	4554	G
49	5	4555	U
49	5	4559	A
49	5	4560	C
49	5	4569	U
49	5	4570	G
49	5	4573	G
49	5	4575	G
49	5	4576	U

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Mol	Chain	Res	Type
49	5	4577	U
49	5	4584	A
49	5	4585	U
49	5	4586	G
49	5	4589	A
49	5	4590	A
49	5	4605	A
49	5	4606	G
49	5	4608	G
49	5	4617	G
49	5	4623	G
49	5	4624	A
49	5	4629	U
49	5	4636	U
49	5	4637	G
49	5	4641	U
49	5	4646	U
49	5	4647	G
49	5	4648	A
49	5	4652	G
49	5	4656	A
49	5	4657	U
49	5	4661	G
49	5	4670	C
49	5	4671	C
49	5	4672	A
49	5	4677	U
49	5	4678	G
49	5	4687	A
49	5	4693	C
49	5	4694	G
49	5	4695	C
49	5	4700	A
49	5	4701	A
49	5	4703	U
49	5	4707	A
49	5	4709	U
49	5	4719	G
49	5	4720	C
49	5	4729	A
49	5	4730	C
49	5	4731	G

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Mol	Chain	Res	Type
49	5	4732	G
49	5	4733	C
49	5	4734	A
49	5	4737	G
49	5	4741	C
49	5	4745	G
49	5	4746	C
49	5	4749	C
49	5	4750	G
49	5	4751	G
49	5	4752	U
49	5	4753	U
49	5	4756	C
49	5	4757	C
49	5	4758	U
49	5	4760	G
49	5	4763	U
49	5	4764	A
49	5	4770	U
49	5	4771	C
49	5	4774	C
49	5	4860	G
49	5	4865	C
49	5	4869	U
49	5	4871	C
49	5	4872	G
49	5	4873	G
49	5	4874	A
49	5	4875	G
49	5	4876	U
49	5	4877	G
49	5	4878	C
49	5	4881	U
49	5	4882	U
49	5	4883	C
49	5	4884	G
49	5	4885	U
49	5	4886	C
49	5	4888	U
49	5	4889	G
49	5	4890	G
49	5	4891	G

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Mol	Chain	Res	Type
49	5	4893	A
49	5	4895	C
49	5	4896	G
49	5	4898	G
49	5	4900	C
49	5	4901	G
49	5	4903	G
49	5	4904	G
49	5	4906	C
49	5	4910	G
49	5	4911	A
49	5	4912	G
49	5	4913	G
49	5	4924	C
49	5	4926	C
49	5	4927	G
49	5	4929	C
49	5	4930	C
49	5	4932	U
49	5	4933	C
49	5	4934	A
49	5	4935	C
49	5	4936	G
49	5	4938	A
49	5	4942	C
49	5	4945	G
49	5	4946	U
49	5	4947	U
49	5	4948	C
49	5	4949	G
49	5	4950	U
49	5	4951	G
49	5	4952	G
49	5	4959	U
49	5	4960	G
49	5	4961	G
49	5	4964	C
49	5	4965	U
49	5	4966	A
49	5	4967	A
49	5	4975	G
49	5	4976	U

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Mol	Chain	Res	Type
49	5	4980	C
49	5	4981	G
49	5	4985	U
49	5	4988	U
49	5	4989	U
49	5	4990	C
49	5	4991	U
49	5	4992	G
49	5	4993	G
49	5	4999	G
49	5	5002	U
49	5	5004	C
49	5	5005	G
49	5	5006	U
49	5	5007	A
49	5	5011	A
49	5	5013	C
49	5	5014	A
49	5	5016	A
49	5	5017	G
49	5	5018	C
49	5	5023	C
49	5	5026	U
49	5	5027	C
49	5	5028	G
49	5	5029	C
49	5	5031	G
49	5	5033	G
49	5	5035	U
49	5	5039	U
49	5	5041	G
49	5	5042	A
49	5	5045	G
49	5	5046	U
49	5	5047	C
49	5	5050	C
49	5	5052	C
49	5	5053	U
49	5	5054	C
49	5	5056	A
49	5	5058	A
49	5	5060	A

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Mol	Chain	Res	Type
49	5	5061	A
49	5	5062	G
49	5	5063	G
49	5	5066	U
50	7	3	C
50	7	7	G
50	7	11	A
50	7	21	G
50	7	22	A
50	7	25	G
50	7	30	C
50	7	33	U
50	7	40	U
50	7	42	A
50	7	51	G
50	7	53	U
50	7	54	A
50	7	60	G
50	7	64	G
50	7	65	G
50	7	74	A
50	7	80	U
50	7	89	G
50	7	97	G
50	7	98	G
50	7	99	G
50	7	100	A
50	7	106	G
50	7	110	G
50	7	112	U
50	7	120	U
51	8	2	G
51	8	3	A
51	8	22	U
51	8	23	C
51	8	32	C
51	8	34	U
51	8	35	C
51	8	38	U
51	8	50	C
51	8	52	A
51	8	55	U

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Mol	Chain	Res	Type
51	8	59	A
51	8	61	A
51	8	62	A
51	8	63	U
51	8	71	A
51	8	75	G
51	8	80	A
51	8	81	C
51	8	82	A
51	8	83	C
51	8	84	A
51	8	85	U
51	8	86	U
51	8	87	G
51	8	94	G
51	8	95	A
51	8	103	A
51	8	104	A
51	8	105	C
51	8	107	C
51	8	109	C
51	8	110	U
51	8	111	U
51	8	112	G
51	8	113	C
51	8	114	G
51	8	116	C
51	8	120	G
51	8	121	G
51	8	122	G
51	8	123	U
51	8	124	U
51	8	125	C
51	8	126	C
51	8	127	U
51	8	137	A
51	8	150	C
51	8	153	C
51	8	156	U

All (385) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
48	2	15	G
48	2	60	U
49	5	1	C
49	5	12	A
49	5	20	U
49	5	42	A
49	5	43	U
49	5	48	G
49	5	58	G
49	5	64	A
49	5	65	A
49	5	72	C
49	5	84	A
49	5	119	G
49	5	120	A
49	5	125	C
49	5	134	G
49	5	136	C
49	5	143	C
49	5	159	C
49	5	170	C
49	5	183	C
49	5	186	G
49	5	187	U
49	5	215	C
49	5	216	C
49	5	218	A
49	5	219	G
49	5	224	U
49	5	226	G
49	5	234	G
49	5	245	C
49	5	256	G
49	5	265	C
49	5	266	C
49	5	275	C
49	5	296	A
49	5	315	G
49	5	316	U
49	5	333	U
49	5	352	G
49	5	361	C
49	5	385	A

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Mol	Chain	Res	Type
49	5	387	G
49	5	406	C
49	5	409	G
49	5	417	G
49	5	451	C
49	5	454	U
49	5	485	C
49	5	486	C
49	5	497	G
49	5	505	G
49	5	514	U
49	5	648	G
49	5	655	C
49	5	664	G
49	5	668	C
49	5	684	G
49	5	693	C
49	5	713	C
49	5	728	U
49	5	729	G
49	5	733	A
49	5	746	A
49	5	917	A
49	5	927	G
49	5	928	C
49	5	930	G
49	5	931	C
49	5	932	A
49	5	935	A
49	5	936	C
49	5	943	A
49	5	956	A
49	5	957	G
49	5	958	G
49	5	961	G
49	5	965	G
49	5	968	C
49	5	977	C
49	5	978	G
49	5	979	C
49	5	989	U
49	5	1067	G

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Mol	Chain	Res	Type
49	5	1068	G
49	5	1070	G
49	5	1076	C
49	5	1210	C
49	5	1211	G
49	5	1214	C
49	5	1216	C
49	5	1217	G
49	5	1232	G
49	5	1236	C
49	5	1238	A
49	5	1239	C
49	5	1241	C
49	5	1243	C
49	5	1264	C
49	5	1266	G
49	5	1279	A
49	5	1280	C
49	5	1292	C
49	5	1293	G
49	5	1296	G
49	5	1313	C
49	5	1324	A
49	5	1329	G
49	5	1354	A
49	5	1357	C
49	5	1358	G
49	5	1359	G
49	5	1365	C
49	5	1368	A
49	5	1370	G
49	5	1371	A
49	5	1379	C
49	5	1380	G
49	5	1387	A
49	5	1397	A
49	5	1398	A
49	5	1407	C
49	5	1409	C
49	5	1410	U
49	5	1419	G
49	5	1420	A

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Mol	Chain	Res	Type
49	5	1435	G
49	5	1440	U
49	5	1445	U
49	5	1455	G
49	5	1474	C
49	5	1477	C
49	5	1480	C
49	5	1481	C
49	5	1482	G
49	5	1485	C
49	5	1488	G
49	5	1500	A
49	5	1502	G
49	5	1523	A
49	5	1533	A
49	5	1596	U
49	5	1597	G
49	5	1601	A
49	5	1611	C
49	5	1633	G
49	5	1642	A
49	5	1650	A
49	5	1654	G
49	5	1696	C
49	5	1697	G
49	5	1724	G
49	5	1733	G
49	5	1741	G
49	5	1756	U
49	5	1775	A
49	5	1804	A
49	5	1815	G
49	5	1818	G
49	5	1819	G
49	5	1835	G
49	5	1898	C
49	5	1919	G
49	5	1920	C
49	5	1921	C
49	5	1928	C
49	5	1938	C
49	5	1960	A

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Mol	Chain	Res	Type
49	5	1974	U
49	5	1975	G
49	5	1980	U
49	5	1983	A
49	5	1990	A
49	5	2002	A
49	5	2009	A
49	5	2025	A
49	5	2046	G
49	5	2068	C
49	5	2075	G
49	5	2083	C
49	5	2084	C
49	5	2089	G
49	5	2093	A
49	5	2096	G
49	5	2107	C
49	5	2111	G
49	5	2114	G
49	5	2116	C
49	5	2119	C
49	5	2122	G
49	5	2123	C
49	5	2126	G
49	5	2246	C
49	5	2251	G
49	5	2256	C
49	5	2257	C
49	5	2260	C
49	5	2262	G
49	5	2264	C
49	5	2265	G
49	5	2266	C
49	5	2267	U
49	5	2268	A
49	5	2269	C
49	5	2272	C
49	5	2278	G
49	5	2280	G
49	5	2289	C
49	5	2300	A
49	5	2305	U

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Mol	Chain	Res	Type
49	5	2313	A
49	5	2331	G
49	5	2347	A
49	5	2348	G
49	5	2361	G
49	5	2389	A
49	5	2396	A
49	5	2398	U
49	5	2407	G
49	5	2443	G
49	5	2467	U
49	5	2468	U
49	5	2474	G
49	5	2475	G
49	5	2487	G
49	5	2490	U
49	5	2502	G
49	5	2506	G
49	5	2511	A
49	5	2512	A
49	5	2513	A
49	5	2517	A
49	5	2529	A
49	5	2546	G
49	5	2553	A
49	5	2554	U
49	5	2587	A
49	5	2588	C
49	5	2618	G
49	5	2661	U
49	5	2666	U
49	5	2673	G
49	5	2695	A
49	5	2711	G
49	5	2752	G
49	5	2754	G
49	5	2760	G
49	5	2761	U
49	5	2768	C
49	5	2769	U
49	5	2782	U
49	5	2788	U

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Mol	Chain	Res	Type
49	5	2795	A
49	5	2796	G
49	5	2806	A
49	5	2825	A
49	5	2826	U
49	5	2827	G
49	5	2833	A
49	5	2857	A
49	5	2859	G
49	5	3593	C
49	5	3615	G
49	5	3625	G
49	5	3662	A
49	5	3663	A
49	5	3672	G
49	5	3673	C
49	5	3679	U
49	5	3697	U
49	5	3712	A
49	5	3726	A
49	5	3735	G
49	5	3773	U
49	5	3776	G
49	5	3783	A
49	5	3784	A
49	5	3786	U
49	5	3790	U
49	5	3791	C
49	5	3809	G
49	5	3811	G
49	5	3839	G
49	5	3876	A
49	5	3878	C
49	5	3888	G
49	5	3904	G
49	5	3905	A
49	5	3922	G
49	5	3938	G
49	5	4069	U
49	5	4075	U
49	5	4084	G
49	5	4086	G

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Mol	Chain	Res	Type
49	5	4115	G
49	5	4117	U
49	5	4119	C
49	5	4120	U
49	5	4121	G
49	5	4124	G
49	5	4144	C
49	5	4163	U
49	5	4170	A
49	5	4183	G
49	5	4194	U
49	5	4195	G
49	5	4232	U
49	5	4254	G
49	5	4266	G
49	5	4291	G
49	5	4331	G
49	5	4348	A
49	5	4349	C
49	5	4375	C
49	5	4378	A
49	5	4379	A
49	5	4395	U
49	5	4448	G
49	5	4449	A
49	5	4453	C
49	5	4463	U
49	5	4475	G
49	5	4481	U
49	5	4488	A
49	5	4510	A
49	5	4512	U
49	5	4518	A
49	5	4519	C
49	5	4522	G
49	5	4527	G
49	5	4528	G
49	5	4548	A
49	5	4583	C
49	5	4589	A
49	5	4656	A
49	5	4670	C

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Mol	Chain	Res	Type
49	5	4693	C
49	5	4699	U
49	5	4718	G
49	5	4719	G
49	5	4730	C
49	5	4752	U
49	5	4756	C
49	5	4770	U
49	5	4870	G
49	5	4872	G
49	5	4874	A
49	5	4885	U
49	5	4887	C
49	5	4888	U
49	5	4889	G
49	5	4900	C
49	5	4909	A
49	5	4910	G
49	5	4912	G
49	5	4926	C
49	5	4935	C
49	5	4945	G
49	5	4948	C
49	5	4950	U
49	5	4951	G
49	5	4965	U
49	5	4978	G
49	5	4990	C
49	5	4991	U
49	5	5005	G
49	5	5016	A
49	5	5022	U
49	5	5026	U
49	5	5027	C
49	5	5041	G
49	5	5059	C
49	5	5060	A
49	5	5061	A
50	7	109	U
51	8	2	G
51	8	38	U
51	8	62	A

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Mol	Chain	Res	Type
51	8	94	G
51	8	104	A
51	8	110	U
51	8	111	U
51	8	124	U
51	8	125	C

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

1 non-standard protein/DNA/RNA residue is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
48	5MU	2	54	48	13,22,23	0.81	1 (7%)	16,32,35	3.01	3 (18%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
48	5MU	2	54	48	-	0/3/25/26	0/2/2/2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
48	2	54	5MU	O4'-C1'	2.05	1.44	1.41

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
48	2	54	5MU	C5-C4-N3	-8.02	118.62	125.35
48	2	54	5MU	O4'-C1'-N1	2.21	112.31	108.10
48	2	54	5MU	C4-N3-C2	8.07	121.89	115.16

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates (i)

There are no carbohydrates in this entry.

5.6 Ligand geometry (i)

Of 164 ligands modelled in this entry, 164 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.