



Full wwPDB EM Validation Report ⓘ

Mar 24, 2026 – 06:25 PM UTC

PDB ID : 6GZX / pdb_00006gzx
EMDB ID : EMD-0104
Title : T. thermophilus hibernating 100S ribosome (ice)
Authors : Flygaard, R.K.; Jenner, L.B.
Deposited on : 2018-07-05
Resolution : 4.57 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

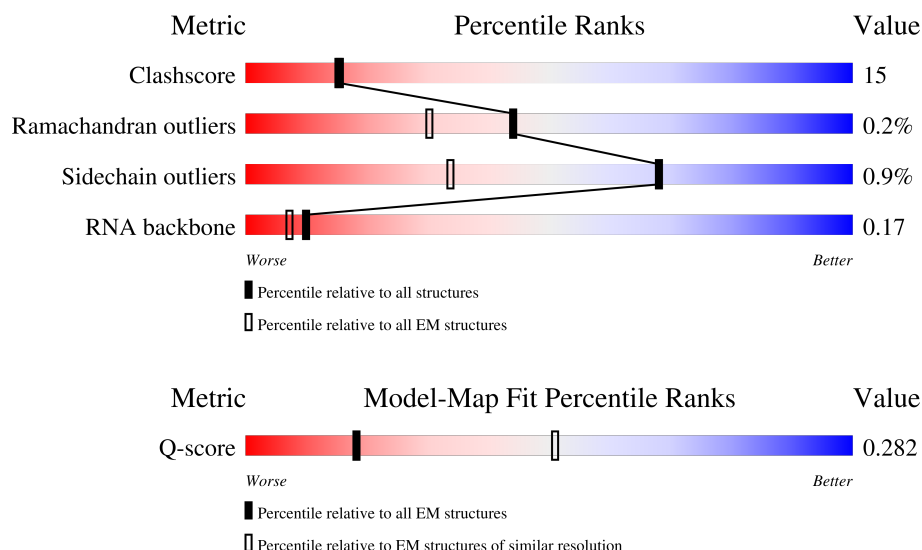
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

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 4.57 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	2418 (4.07 - 5.07)

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

Mol	Chain	Length	Quality of chain
1	C1	272	50% 63% 35%
1	C2	272	46% 64% 35%
2	D1	205	40% 61% 38%

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Mol	Chain	Length	Quality of chain
2	D2	205	
3	E1	208	
3	E2	208	
4	F1	181	
4	F2	181	
5	G1	170	
5	G2	170	
6	H1	50	
6	H2	50	
7	I1	138	
7	I2	138	
8	J1	122	
8	J2	122	
9	K1	150	
9	K2	150	
10	L1	141	
10	L2	141	
11	M1	117	
11	M2	117	
12	N1	111	
12	N2	111	
13	O1	137	
13	O2	137	
14	P1	117	
14	P2	117	

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Mol	Chain	Length	Quality of chain
15	Q1	101	50% 71% 29%
15	Q2	101	50% 65% 34%
16	R1	113	45% 68% 31%
16	R2	113	43% 62% 35%
17	S1	92	24% 73% 26%
17	S2	92	29% 62% 38%
18	T1	102	46% 65% 33%
18	T2	102	47% 67% 32%
19	U1	179	55% 68% 30%
19	U2	179	52% 72% 27%
20	V1	77	31% 57% 42%
20	V2	77	30% 69% 31%
21	W1	97	34% 51% 47%
21	W2	97	36% 66% 34%
22	X1	69	19% 59% 39%
22	X2	69	14% 67% 33%
23	Y1	59	56% 56% 44%
23	Y2	59	47% 68% 32%
24	Z1	63	17% 63% 27% 8%
24	Z2	63	21% 62% 35%
25	a1	59	29% 64% 36%
25	a2	59	32% 61% 39%
26	b1	45	9% 58% 40%
26	b2	45	13% 56% 42%
27	c1	49	35% 53% 47%

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Mol	Chain	Length	Quality of chain
27	c2	49	
28	d1	61	
28	d2	61	
29	A1	2912	
29	A2	2912	
30	B1	122	
30	B2	122	
31	e1	36	
31	e2	36	
32	B3	237	
32	B4	237	
33	C3	206	
33	C4	206	
34	D3	208	
34	D4	208	
35	E3	151	
35	E4	151	
36	F3	101	
36	F4	101	
37	G3	155	
37	G4	155	
38	H3	138	
38	H4	138	
39	I3	127	
39	I4	127	

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Mol	Chain	Length	Quality of chain
40	J3	99	
40	J4	99	
41	K3	118	
41	K4	118	
42	L3	125	
42	L4	125	
43	M3	117	
43	M4	117	
44	N3	60	
44	N4	60	
45	O3	88	
45	O4	88	
46	P3	84	
46	P4	84	
47	Q3	100	
47	Q4	100	
48	R3	62	
48	R4	62	
49	S3	78	
49	S4	78	
50	T3	99	
50	T4	99	
51	U3	25	
51	U4	25	
52	W4	57	

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Mol	Chain	Length	Quality of chain
52	X3	57	14% 61% 35%
53	A3	1506	24% 52% 25%
53	A4	1506	25% 48% 27%
54	V3	119	23% 67% 29%
54	V4	119	25% 61% 37%

2 Entry composition

There are 54 unique types of molecules in this entry. The entry contains 289188 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 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	C1	272	Total	C	N	O	S	0	0
			2116	1335	420	358	3		
1	C2	272	Total	C	N	O	S	0	0
			2116	1335	420	358	3		

- Molecule 2 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D1	205	Total	C	N	O	S	0	0
			1569	991	300	272	6		
2	D2	205	Total	C	N	O	S	0	0
			1569	991	300	272	6		

- Molecule 3 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E1	208	Total	C	N	O	S	0	0
			1628	1037	304	284	3		
3	E2	208	Total	C	N	O	S	0	0
			1628	1037	304	284	3		

- Molecule 4 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	F1	181	Total	C	N	O	S	0	0
			1474	942	268	260	4		
4	F2	181	Total	C	N	O	S	0	0
			1474	942	268	260	4		

- Molecule 5 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	G1	170	Total	C	N	O	S	0	0
			1308	829	245	233	1		
5	G2	170	Total	C	N	O	S	0	0
			1308	829	245	233	1		

- Molecule 6 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	H1	50	Total	C	N	O	S	0	0
			383	245	66	71	1		
6	H2	50	Total	C	N	O	S	0	0
			383	245	66	71	1		

- Molecule 7 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	I1	138	Total	C	N	O	S	0	0
			1105	712	206	183	4		
7	I2	138	Total	C	N	O	S	0	0
			1105	712	206	183	4		

- Molecule 8 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	J1	122	Total	C	N	O	S	0	0
			933	588	171	170	4		
8	J2	122	Total	C	N	O	S	0	0
			933	588	171	170	4		

- Molecule 9 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	K1	150	Total	C	N	O	S	0	0
			1145	712	232	198	3		
9	K2	150	Total	C	N	O	S	0	0
			1145	712	232	198	3		

- Molecule 10 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	L1	141	Total	C	N	O	S	0	0
			1122	715	212	188	7		

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Mol	Chain	Residues	Atoms					AltConf	Trace
10	L2	141	Total	C	N	O	S	0	0
			1122	715	212	188	7		

- Molecule 11 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	M1	117	Total	C	N	O		0	0
			960	599	202	159			
11	M2	117	Total	C	N	O		0	0
			960	599	202	159			

- Molecule 12 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	N1	111	Total	C	N	O		0	0
			882	556	176	150			
12	N2	111	Total	C	N	O		0	0
			882	556	176	150			

- Molecule 13 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	O1	137	Total	C	N	O	S	0	0
			1142	710	234	197	1		
13	O2	137	Total	C	N	O	S	0	0
			1142	710	234	197	1		

- Molecule 14 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	P1	117	Total	C	N	O	S	0	0
			964	610	202	151	1		
14	P2	117	Total	C	N	O	S	0	0
			964	610	202	151	1		

- Molecule 15 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	Q1	101	Total	C	N	O	S	0	0
			779	501	142	135	1		
15	Q2	101	Total	C	N	O	S	0	0
			779	501	142	135	1		

- Molecule 16 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	R1	113	Total	C	N	O	S	0	0
			900	566	177	155	2		
16	R2	113	Total	C	N	O	S	0	0
			900	566	177	155	2		

- Molecule 17 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	S1	92	Total	C	N	O		0	0
			726	471	131	124			
17	S2	92	Total	C	N	O		0	0
			726	471	131	124			

- Molecule 18 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	T1	102	Total	C	N	O	S	0	0
			786	505	150	126	5		
18	T2	102	Total	C	N	O	S	0	0
			786	505	150	126	5		

- Molecule 19 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	U1	179	Total	C	N	O	S	0	0
			1429	911	255	260	3		
19	U2	179	Total	C	N	O	S	0	0
			1429	911	255	260	3		

- Molecule 20 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	V1	77	Total	C	N	O	S	0	0
			613	379	129	104	1		
20	V2	77	Total	C	N	O	S	0	0
			613	379	129	104	1		

- Molecule 21 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	W1	97	Total	C	N	O	S	0	0
			763	481	150	131	1		
21	W2	97	Total	C	N	O	S	0	0
			763	481	150	131	1		

- Molecule 22 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	X1	69	Total	C	N	O	S	0	0
			581	358	118	104	1		
22	X2	69	Total	C	N	O	S	0	0
			581	358	118	104	1		

- Molecule 23 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	Y1	59	Total	C	N	O	0	0
			469	298	90	81		
23	Y2	59	Total	C	N	O	0	0
			469	298	90	81		

- Molecule 24 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Z1	63	Total	C	N	O	S	0	0
			516	326	93	92	5		
24	Z2	63	Total	C	N	O	S	0	0
			516	326	93	92	5		

- Molecule 25 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	a1	59	Total	C	N	O	S	0	0
			459	288	90	76	5		
25	a2	59	Total	C	N	O	S	0	0
			459	288	90	76	5		

- Molecule 26 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	b1	45	Total	C	N	O	S	0	0
			390	241	79	66	4		

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Mol	Chain	Residues	Atoms					AltConf	Trace
26	b2	45	Total	C	N	O	S	0	0
			390	241	79	66	4		

- Molecule 27 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	c1	49	Total	C	N	O	S	0	0
			430	263	108	57	2		
27	c2	49	Total	C	N	O	S	0	0
			430	263	108	57	2		

- Molecule 28 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	d1	61	Total	C	N	O	S	0	0
			489	312	99	76	2		
28	d2	61	Total	C	N	O	S	0	0
			489	312	99	76	2		

- Molecule 29 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	A1	2912	Total	C	N	O	P	0	0
			62707	27911	11722	20163	2911		
29	A2	2912	Total	C	N	O	P	0	0
			62707	27911	11722	20163	2911		

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A1	156	U	UNK	conflict	GB 55771382
A1	682	A	G	conflict	GB 55771382
A1	686	C	G	conflict	GB 55771382
A1	697	G	C	conflict	GB 55771382
A1	701	A	C	conflict	GB 55771382
A1	1106	U	G	conflict	GB 55771382
A1	1128	A	C	conflict	GB 55771382
A2	156	U	UNK	conflict	GB 55771382
A2	682	A	G	conflict	GB 55771382
A2	686	C	G	conflict	GB 55771382
A2	697	G	C	conflict	GB 55771382
A2	701	A	C	conflict	GB 55771382

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Chain	Residue	Modelled	Actual	Comment	Reference
A2	1106	U	G	conflict	GB 55771382
A2	1128	A	C	conflict	GB 55771382

- Molecule 30 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	B1	122	Total	C	N	O	P	0	0
			2617	1166	486	844	121		
30	B2	122	Total	C	N	O	P	0	0
			2617	1166	486	844	121		

- Molecule 31 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	e1	36	Total	C	N	O	S	0	0
			299	183	67	46	3		
31	e2	36	Total	C	N	O	S	0	0
			299	183	67	46	3		

- Molecule 32 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	B3	237	Total	C	N	O	S	0	0
			1925	1228	344	348	5		
32	B4	237	Total	C	N	O	S	0	0
			1925	1228	344	348	5		

- Molecule 33 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	C3	206	Total	C	N	O	S	0	0
			1613	1016	314	282	1		
33	C4	206	Total	C	N	O	S	0	0
			1613	1016	314	282	1		

- Molecule 34 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	D3	208	Total	C	N	O	S	0	0
			1703	1066	339	291	7		
34	D4	208	Total	C	N	O	S	0	0
			1703	1066	339	291	7		

- Molecule 35 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	E3	151	Total	C	N	O	S	0	0
			1156	729	218	205	4		
35	E4	151	Total	C	N	O	S	0	0
			1156	729	218	205	4		

- Molecule 36 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	F3	101	Total	C	N	O	S	0	0
			843	531	155	154	3		
36	F4	101	Total	C	N	O	S	0	0
			843	531	155	154	3		

- Molecule 37 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	G3	155	Total	C	N	O	S	0	0
			1257	781	252	218	6		
37	G4	155	Total	C	N	O	S	0	0
			1257	781	252	218	6		

- Molecule 38 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	H3	138	Total	C	N	O	S	0	0
			1116	705	215	193	3		
38	H4	138	Total	C	N	O	S	0	0
			1116	705	215	193	3		

- Molecule 39 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	I3	127	Total	C	N	O	0	0
			1010	639	197	174		
39	I4	127	Total	C	N	O	0	0
			1010	639	197	174		

- Molecule 40 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	J3	99	Total	C	N	O	S	0	0
			802	504	157	140	1		
40	J4	99	Total	C	N	O	S	0	0
			802	504	157	140	1		

- Molecule 41 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	K3	118	Total	C	N	O	S	0	0
			879	546	167	163	3		
41	K4	118	Total	C	N	O	S	0	0
			879	546	167	163	3		

- Molecule 42 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	L3	125	Total	C	N	O	S	0	0
			976	614	196	165	1		
42	L4	125	Total	C	N	O	S	0	0
			976	614	196	165	1		

- Molecule 43 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	M3	117	Total	C	N	O	S	0	0
			934	577	192	163	2		
43	M4	117	Total	C	N	O	S	0	0
			934	577	192	163	2		

- Molecule 44 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	N3	60	Total	C	N	O	S	0	0
			492	312	104	72	4		
44	N4	60	Total	C	N	O	S	0	0
			492	312	104	72	4		

- Molecule 45 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	O3	88	Total	C	N	O	S	0	0
			734	459	147	126	2		

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Mol	Chain	Residues	Atoms					AltConf	Trace
45	O4	88	Total	C	N	O	S	0	0
			734	459	147	126	2		

- Molecule 46 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	P3	84	Total	C	N	O	S	0	0
			706	446	140	119	1		
46	P4	84	Total	C	N	O	S	0	0
			706	446	140	119	1		

- Molecule 47 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Q3	100	Total	C	N	O	S	0	0
			835	534	155	144	2		
47	Q4	100	Total	C	N	O	S	0	0
			835	534	155	144	2		

- Molecule 48 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms				AltConf	Trace
48	R3	62	Total	C	N	O	0	0
			515	328	101	86		
48	R4	62	Total	C	N	O	0	0
			515	328	101	86		

- Molecule 49 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	S3	78	Total	C	N	O	S	0	0
			625	398	115	110	2		
49	S4	78	Total	C	N	O	S	0	0
			625	398	115	110	2		

- Molecule 50 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	T3	99	Total	C	N	O	S	0	0
			763	470	162	129	2		
50	T4	99	Total	C	N	O	S	0	0
			763	470	162	129	2		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
51	U3	25	Total	C	N	O	0	0
			218	134	52	32		
51	U4	25	Total	C	N	O	0	0
			218	134	52	32		

- Molecule 52 is a protein called Ribosome hibernation promoting factor.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	X3	57	Total	C	N	O	S	0	0
			476	304	85	84	3		
52	W4	57	Total	C	N	O	S	0	0
			476	304	85	84	3		

- Molecule 53 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	A3	1506	Total	C	N	O	P	0	0
			32369	14408	5997	10459	1505		
53	A4	1506	Total	C	N	O	P	0	0
			32369	14408	5997	10459	1505		

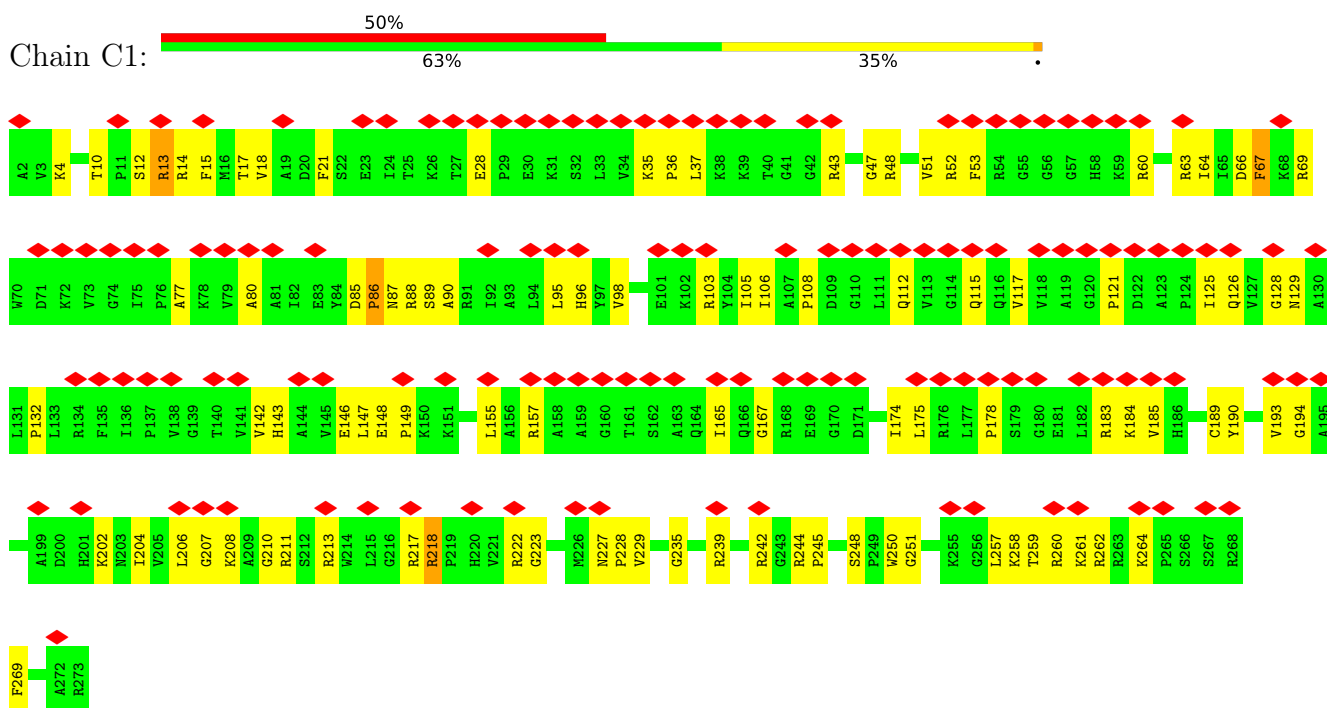
- Molecule 54 is a protein called Ribosome hibernation promoting factor.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	V3	119	Total	C	N	O	S	0	0
			963	603	179	180	1		
54	V4	119	Total	C	N	O	S	0	0
			963	603	179	180	1		

3 Residue-property plots

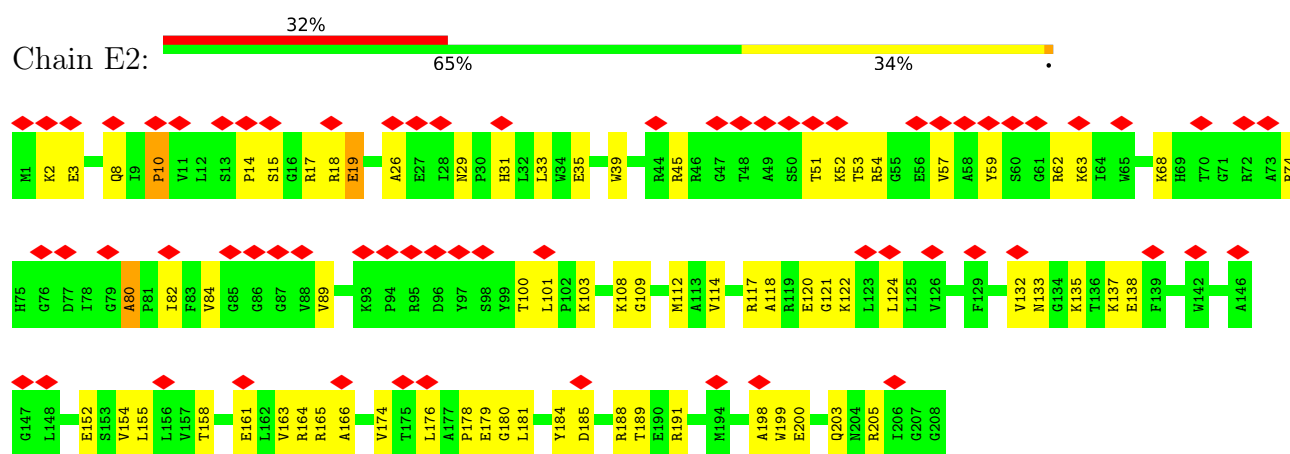
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

• Molecule 1: 50S ribosomal protein L2

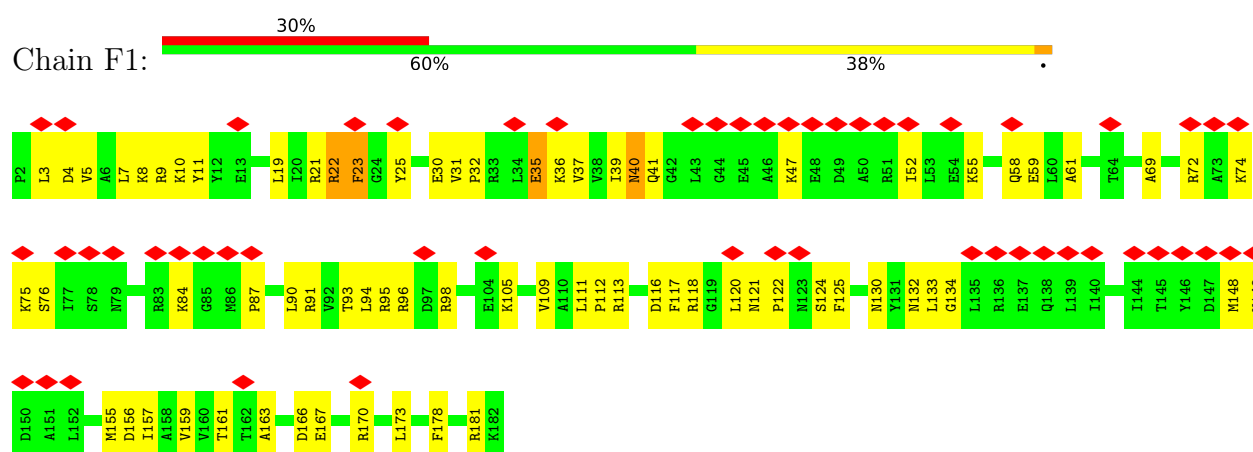


• Molecule 1: 50S ribosomal protein L2

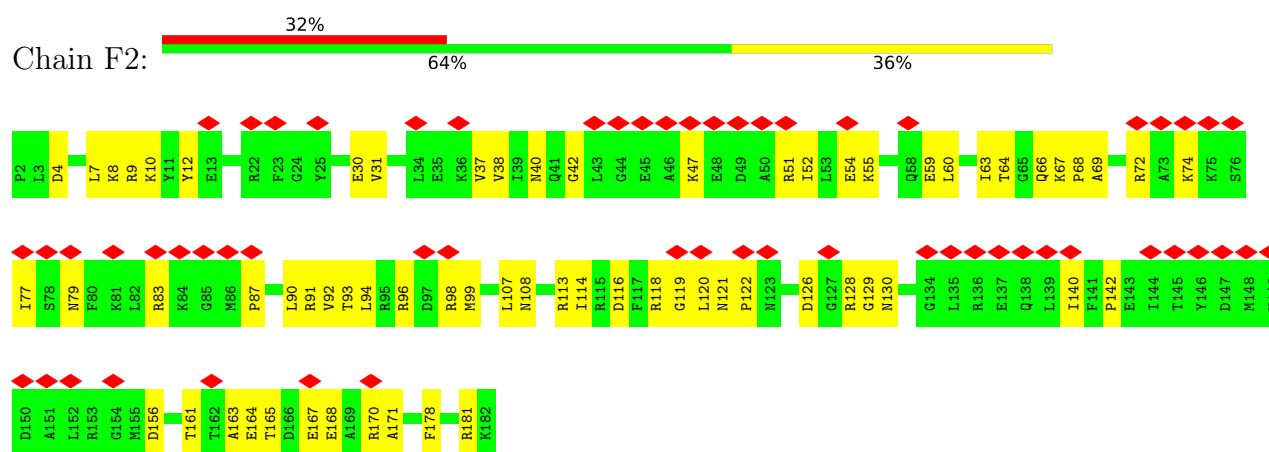




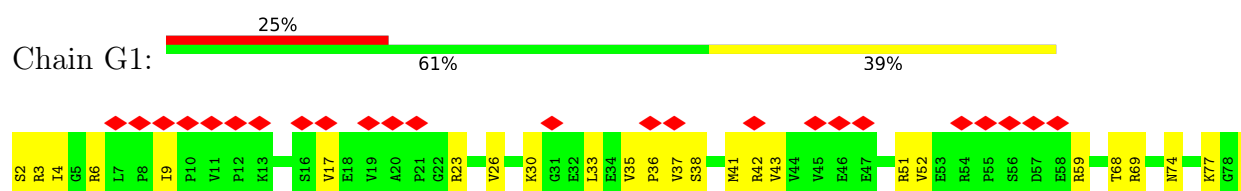
• Molecule 4: 50S ribosomal protein L5

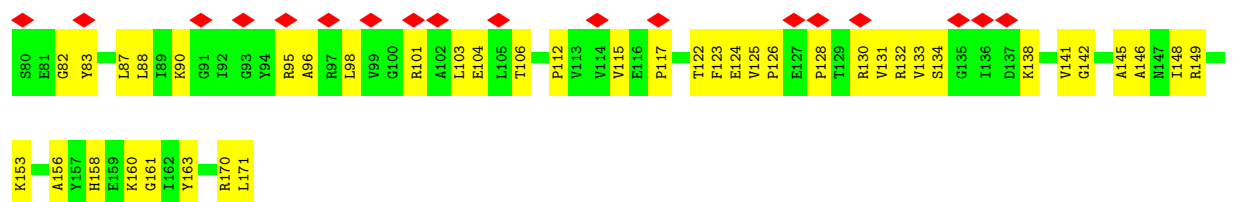


• Molecule 4: 50S ribosomal protein L5

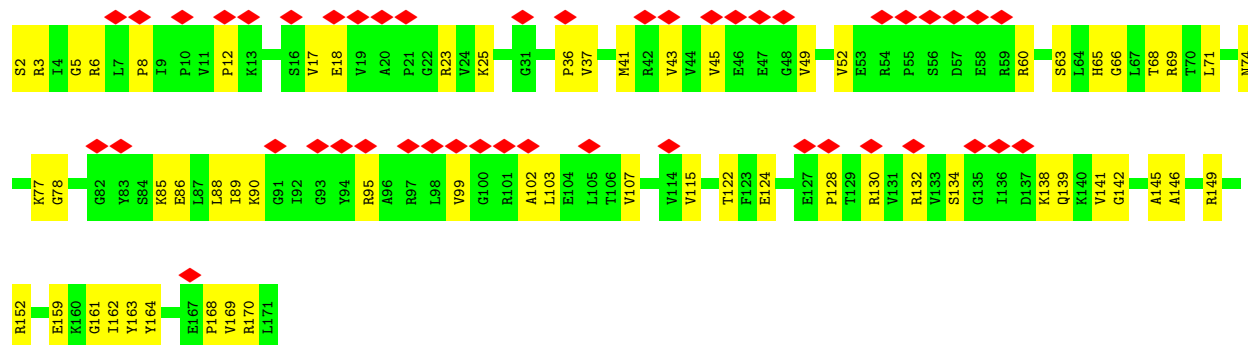


• Molecule 5: 50S ribosomal protein L6

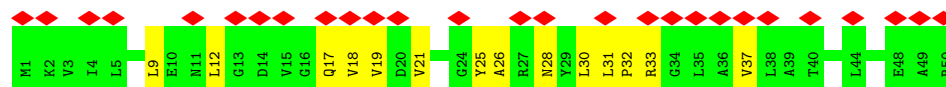




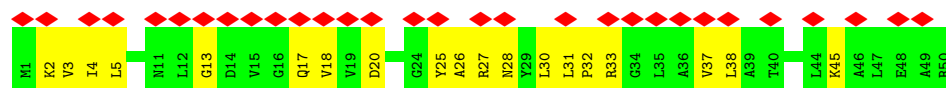
• Molecule 5: 50S ribosomal protein L6



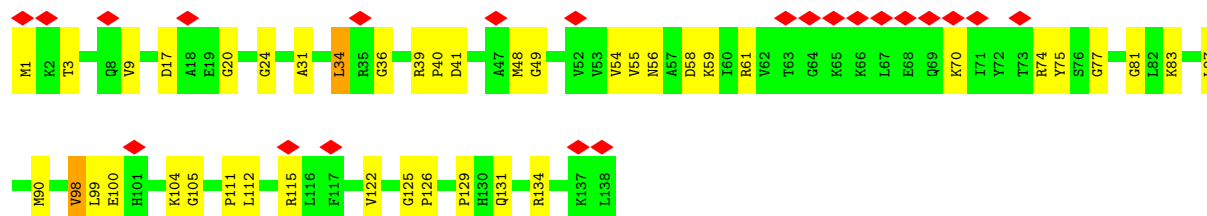
• Molecule 6: 50S ribosomal protein L9



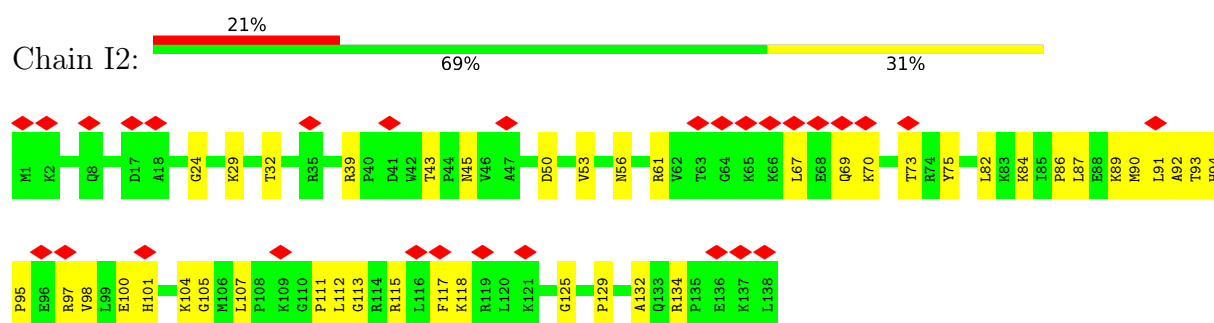
• Molecule 6: 50S ribosomal protein L9



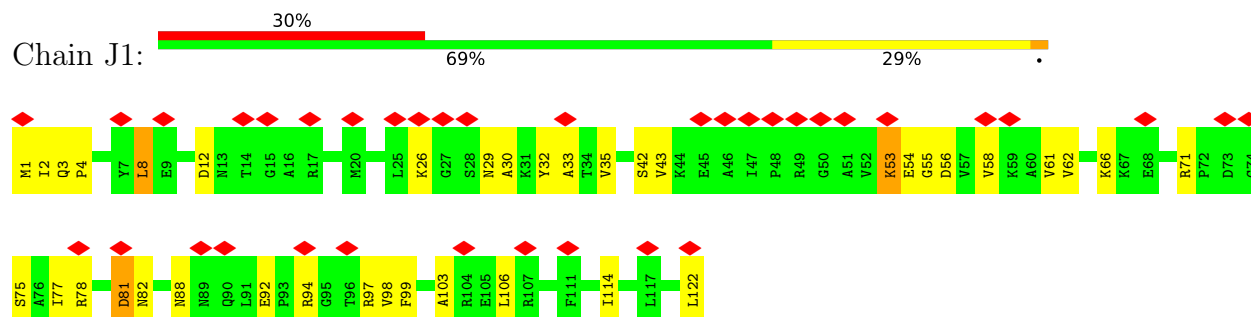
• Molecule 7: 50S ribosomal protein L13



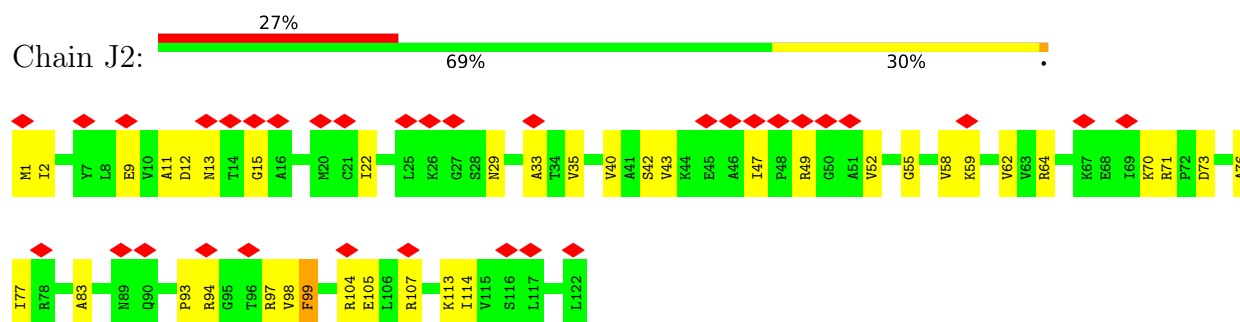
• Molecule 7: 50S ribosomal protein L13



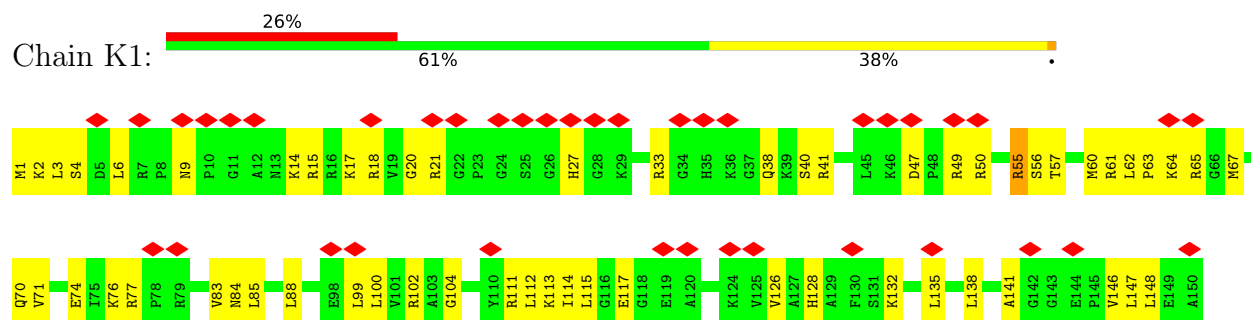
• Molecule 8: 50S ribosomal protein L14



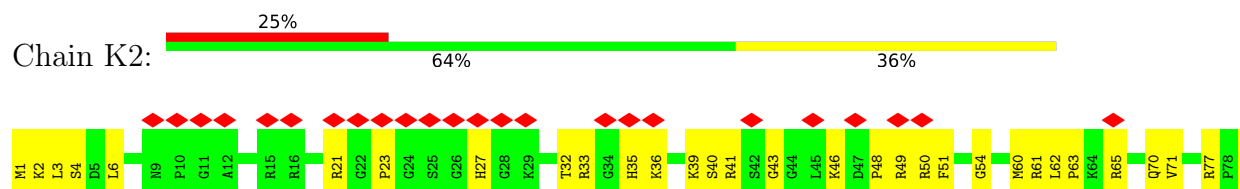
• Molecule 8: 50S ribosomal protein L14

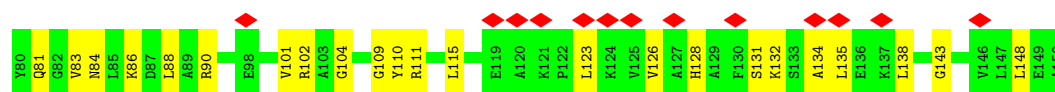


• Molecule 9: 50S ribosomal protein L15

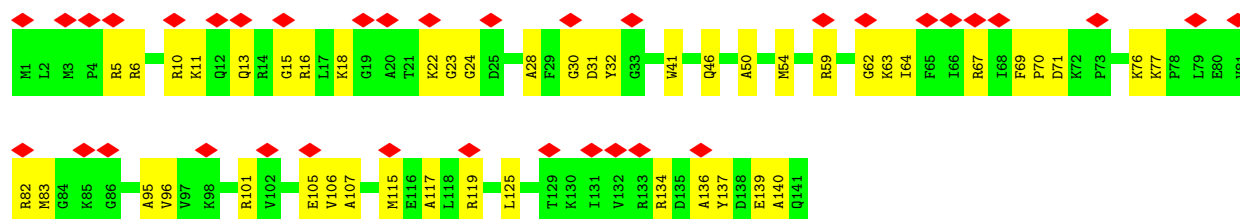


• Molecule 9: 50S ribosomal protein L15

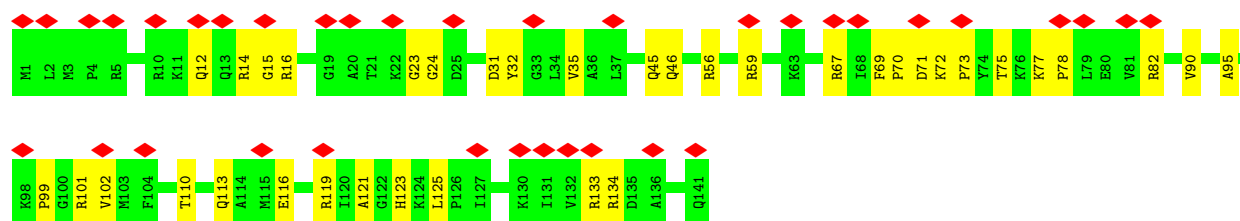
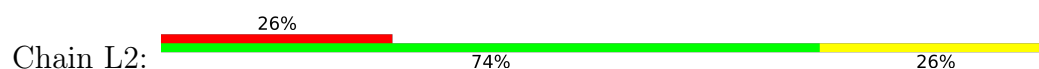




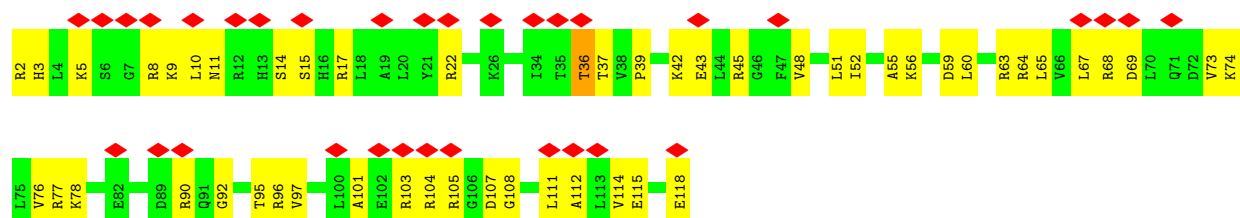
• Molecule 10: 50S ribosomal protein L16



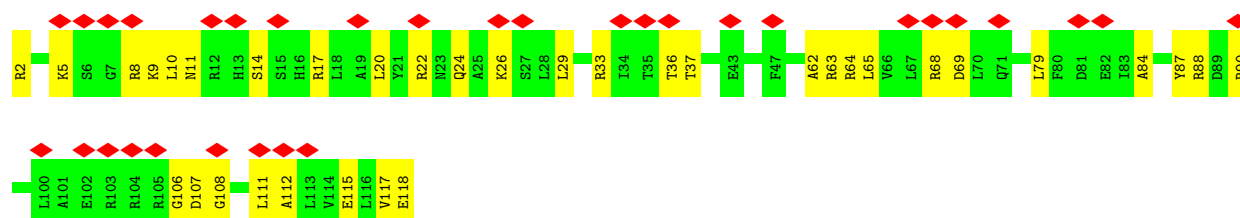
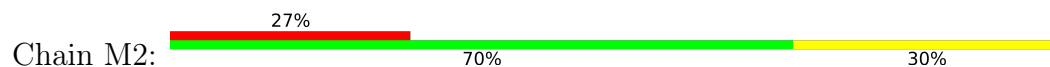
• Molecule 10: 50S ribosomal protein L16



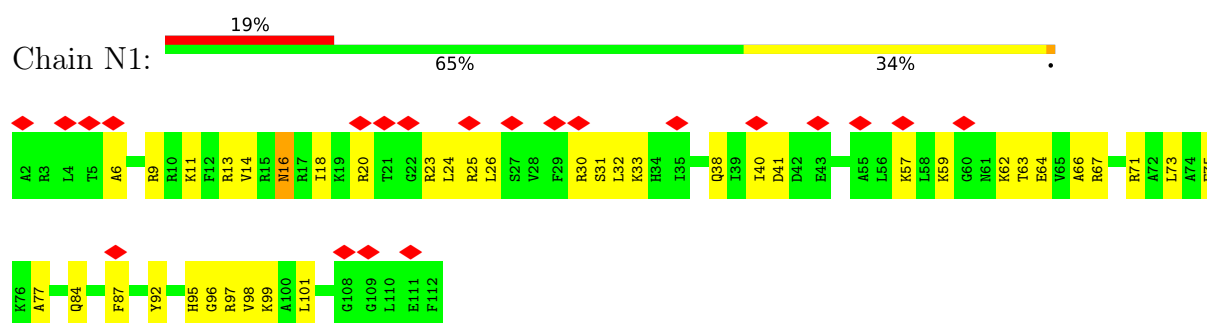
• Molecule 11: 50S ribosomal protein L17



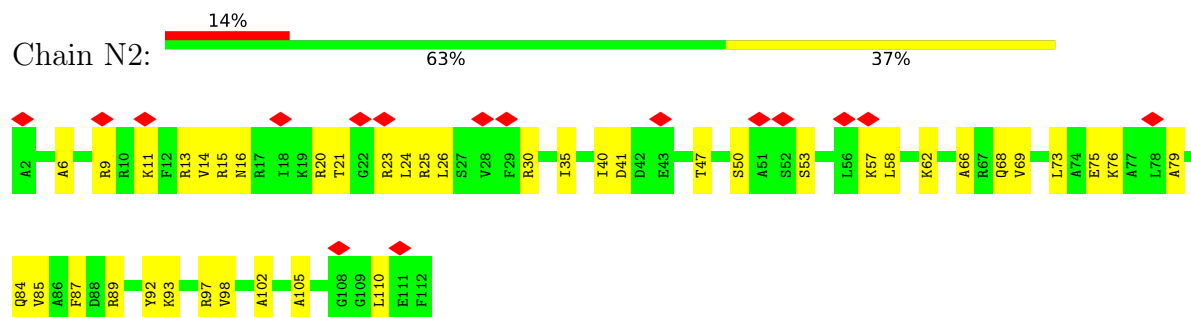
• Molecule 11: 50S ribosomal protein L17



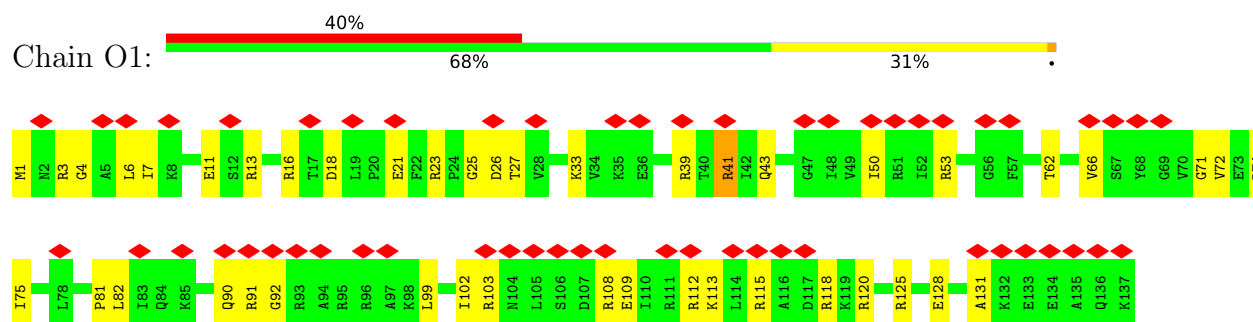
• Molecule 12: 50S ribosomal protein L18



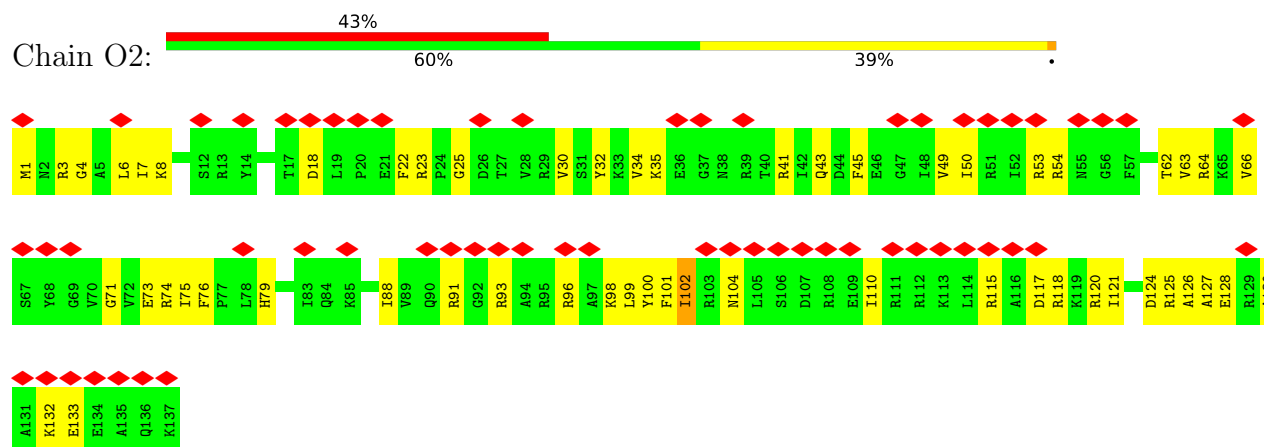
- Molecule 12: 50S ribosomal protein L18



- Molecule 13: 50S ribosomal protein L19

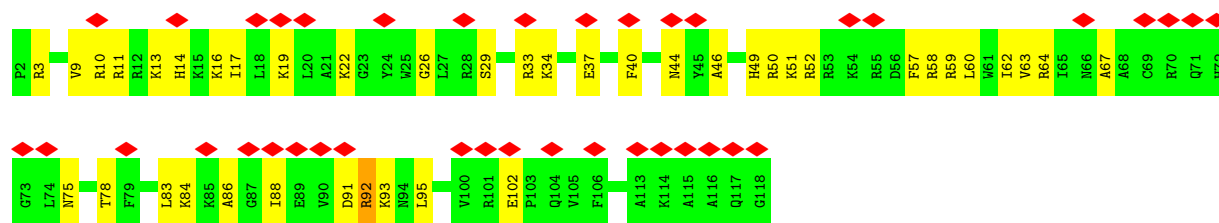


- Molecule 13: 50S ribosomal protein L19

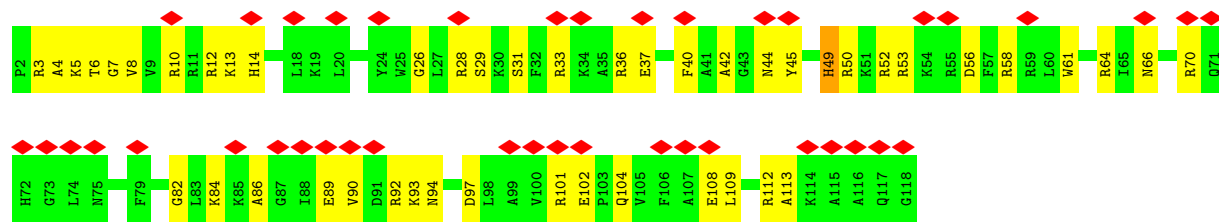


- Molecule 14: 50S ribosomal protein L20

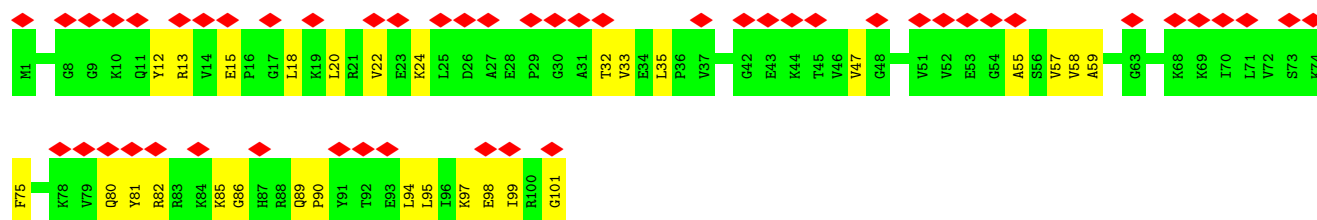
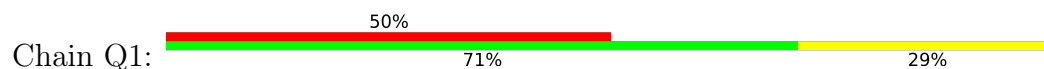




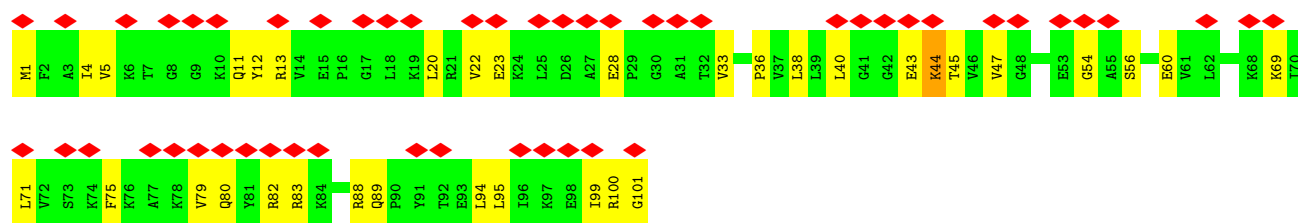
• Molecule 14: 50S ribosomal protein L20



• Molecule 15: 50S ribosomal protein L21

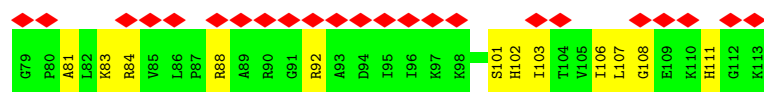


• Molecule 15: 50S ribosomal protein L21

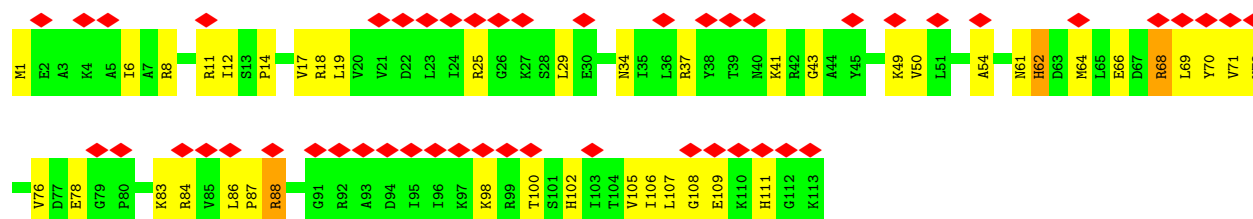


• Molecule 16: 50S ribosomal protein L22

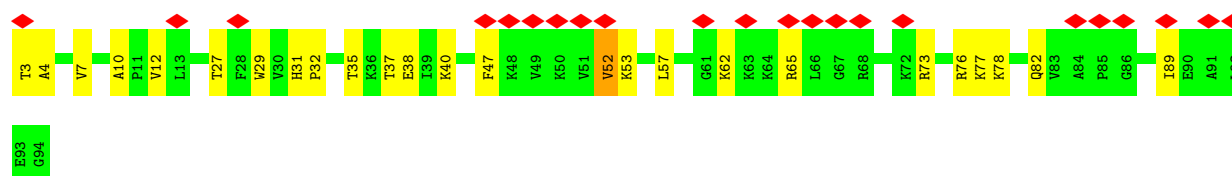
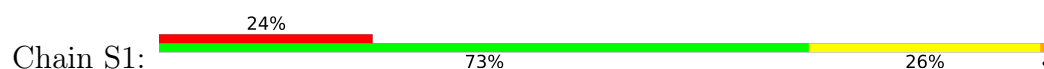




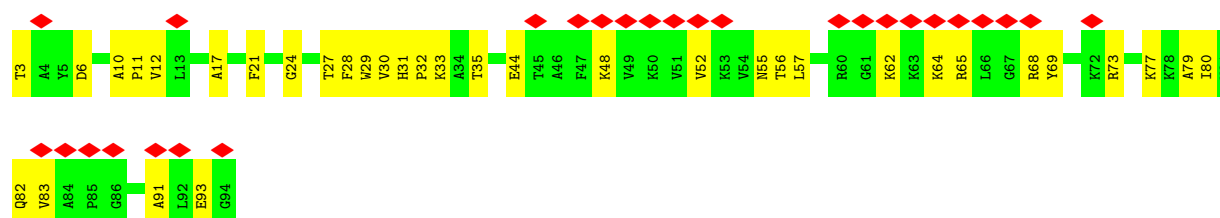
• Molecule 16: 50S ribosomal protein L22



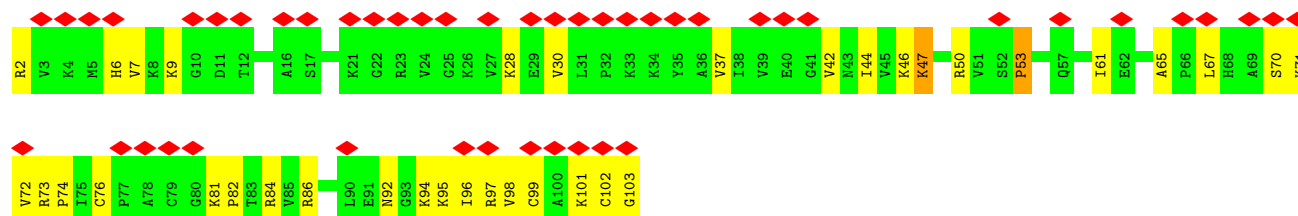
• Molecule 17: 50S ribosomal protein L23



• Molecule 17: 50S ribosomal protein L23

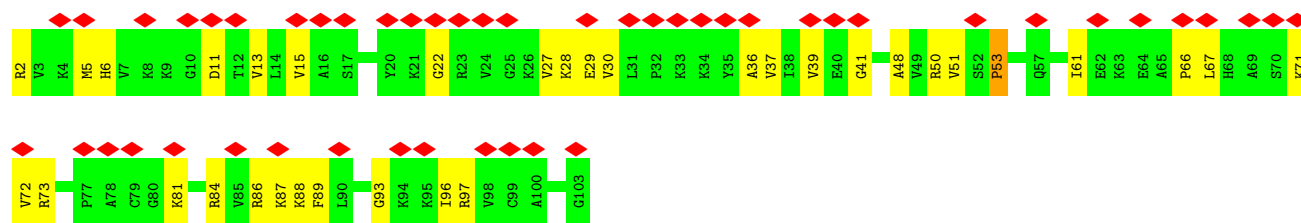


• Molecule 18: 50S ribosomal protein L24

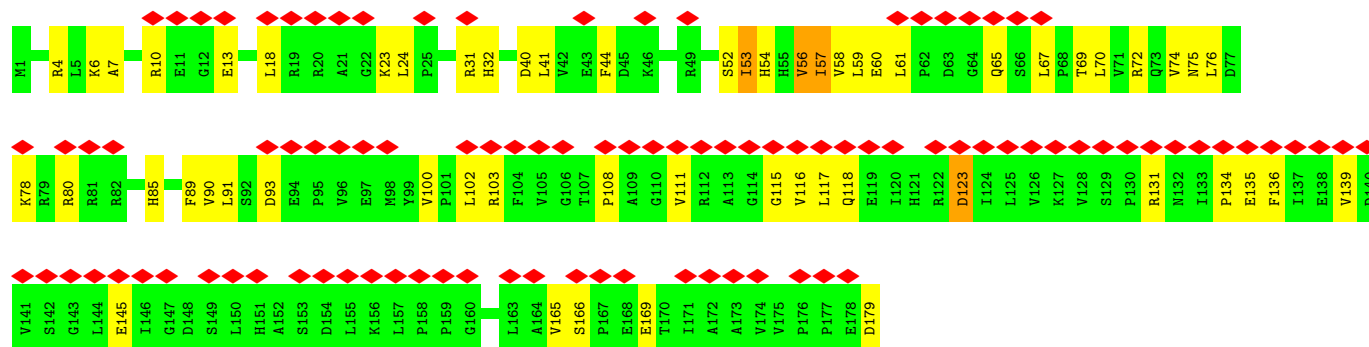


• Molecule 18: 50S ribosomal protein L24

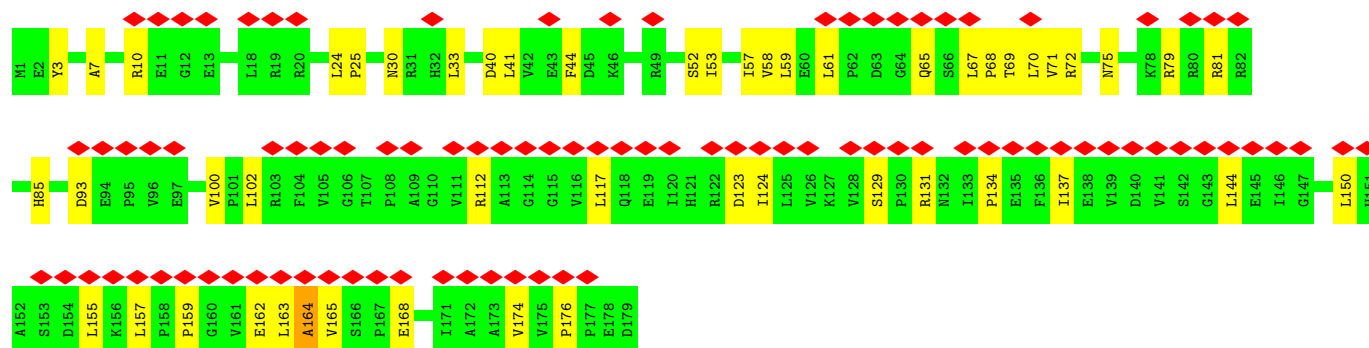
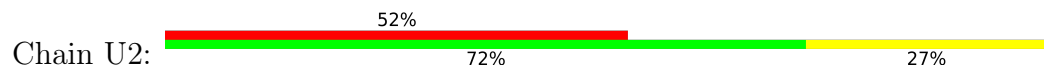




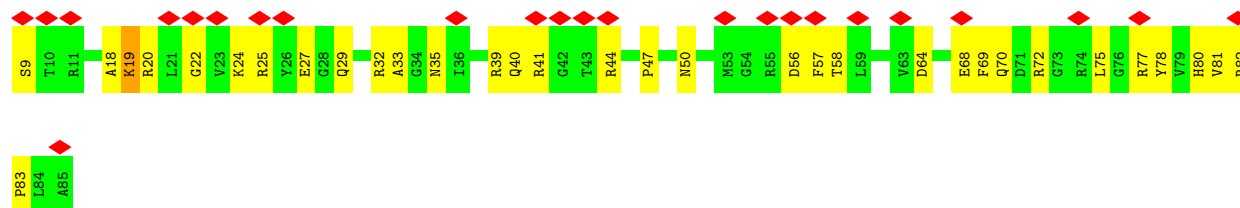
• Molecule 19: 50S ribosomal protein L25



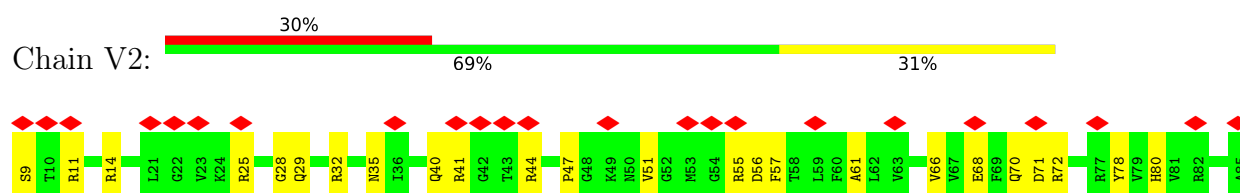
• Molecule 19: 50S ribosomal protein L25



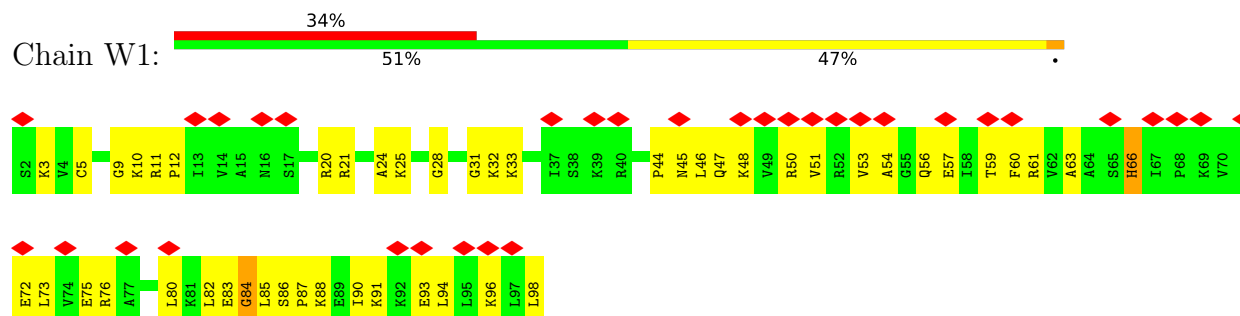
• Molecule 20: 50S ribosomal protein L27



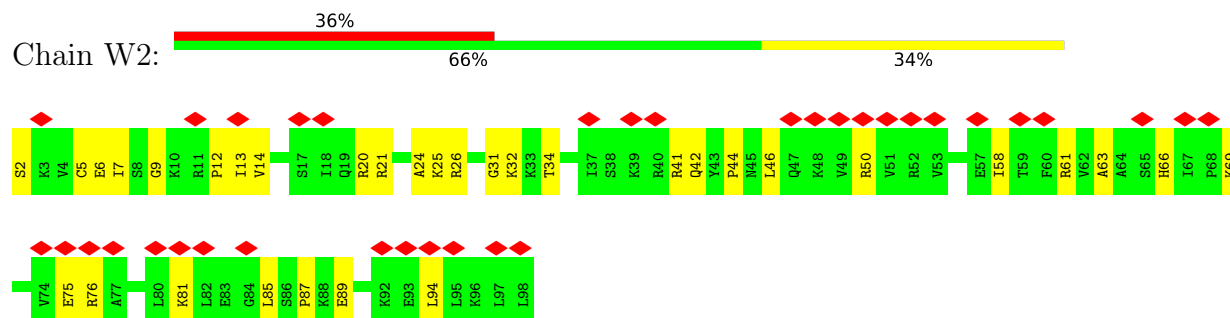
• Molecule 20: 50S ribosomal protein L27



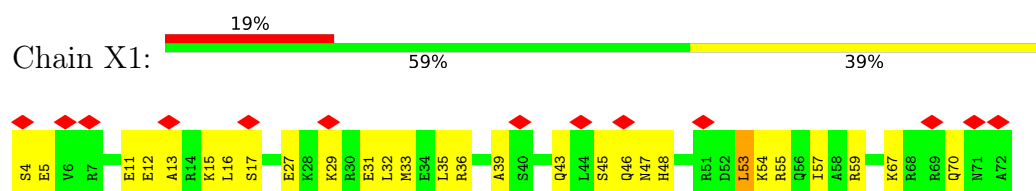
- Molecule 21: 50S ribosomal protein L28



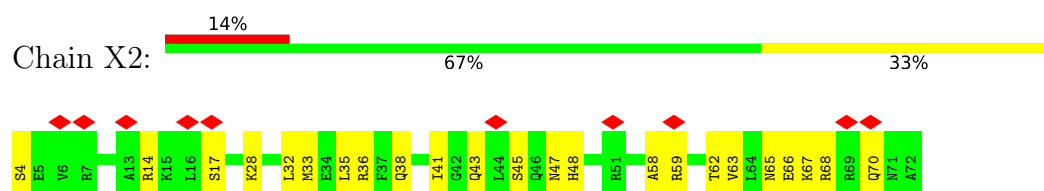
- Molecule 21: 50S ribosomal protein L28



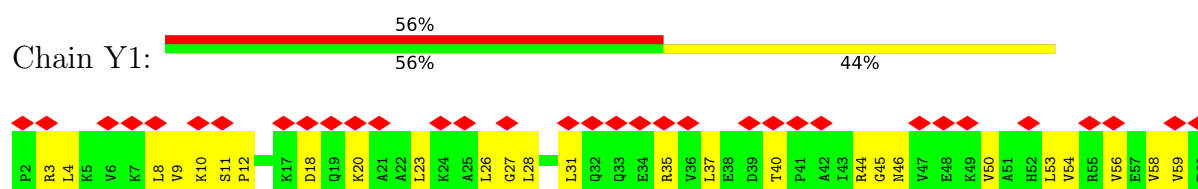
- Molecule 22: 50S ribosomal protein L29



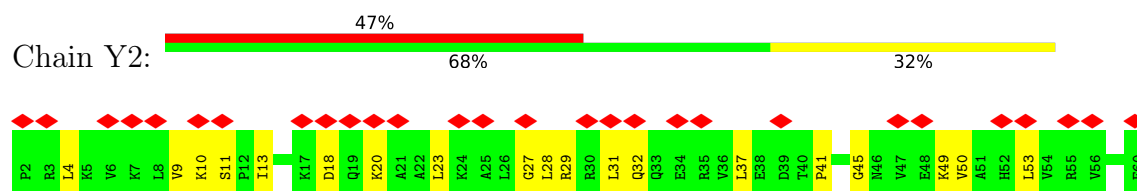
- Molecule 22: 50S ribosomal protein L29



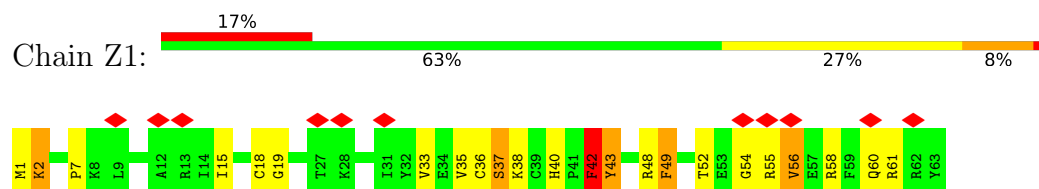
- Molecule 23: 50S ribosomal protein L30



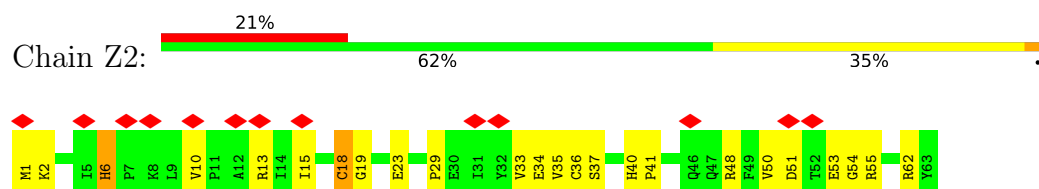
• Molecule 23: 50S ribosomal protein L30



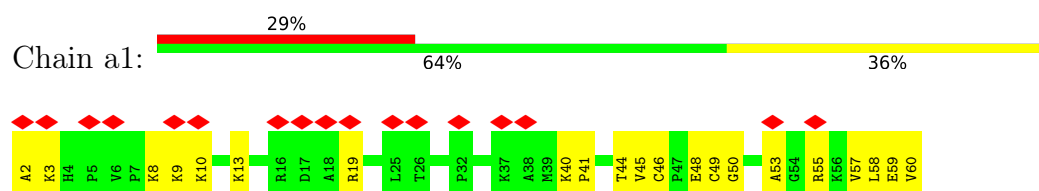
• Molecule 24: 50S ribosomal protein L31



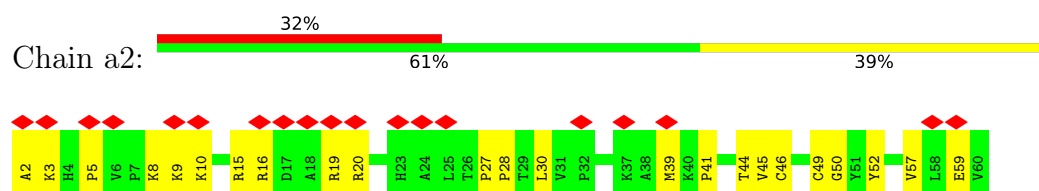
• Molecule 24: 50S ribosomal protein L31



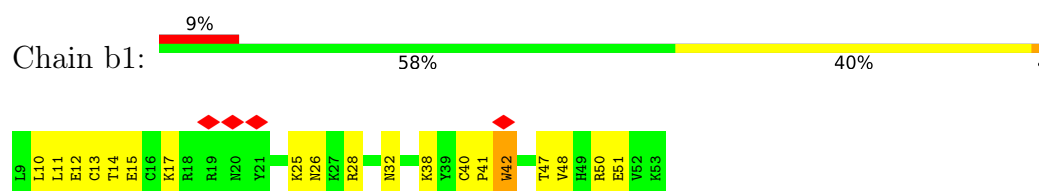
• Molecule 25: 50S ribosomal protein L32



• Molecule 25: 50S ribosomal protein L32

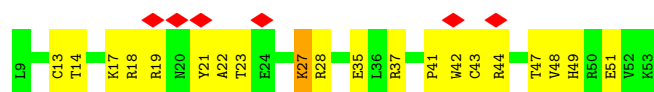


• Molecule 26: 50S ribosomal protein L33

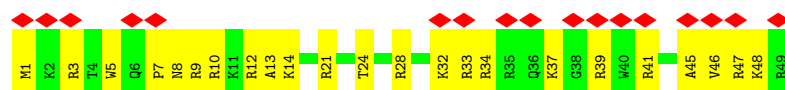


• Molecule 26: 50S ribosomal protein L33

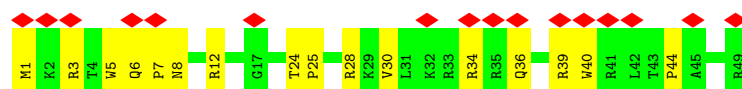




• Molecule 27: 50S ribosomal protein L34



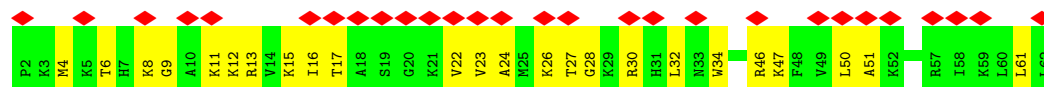
• Molecule 27: 50S ribosomal protein L34



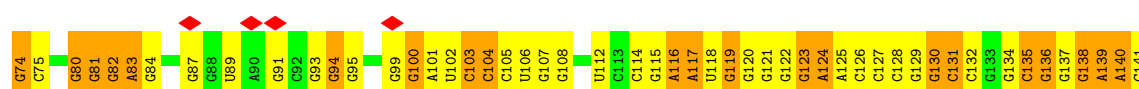
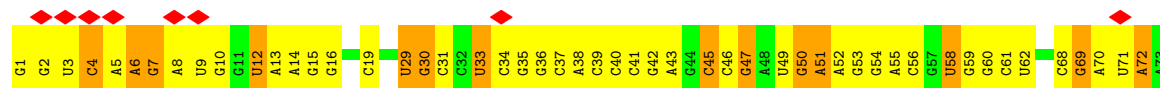
• Molecule 28: 50S ribosomal protein L35

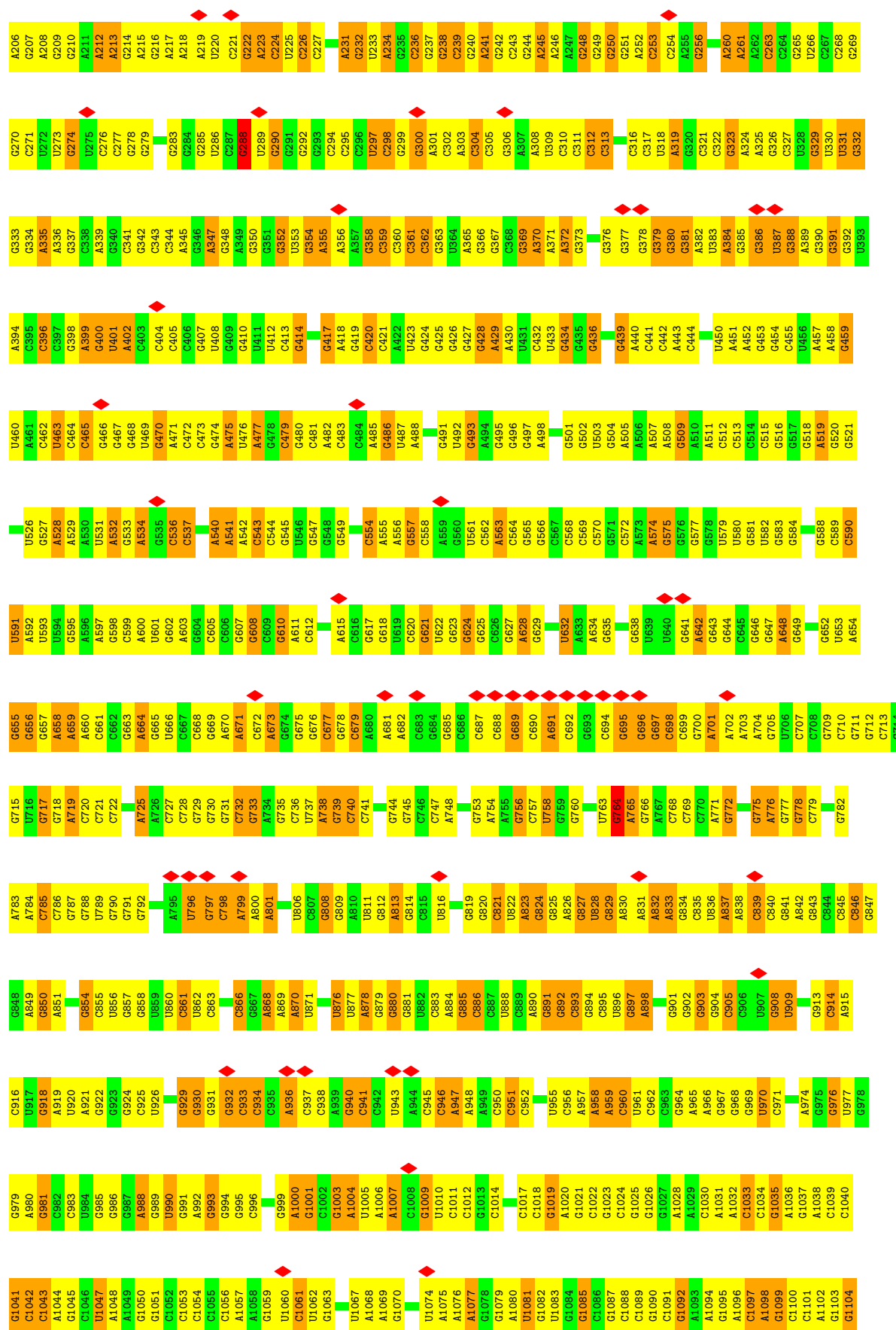


• Molecule 28: 50S ribosomal protein L35



• Molecule 29: 23S ribosomal RNA





A1900	A1901	G1902	C1905	C1906	G1907	A1908	A1909	C1910	C1911	C1912	A1913	C1916	C1919	G1920	G1921	A1924	A1925	G1928	G1929	G1930	G1931	C1935	A1936	A1937	C1938	U1941	A1942	A1943	C1944	G1945	G1946	G1947	C1948	C1949	A1952	G1953	G1954	U1955	A1956	G1959	A1960	A1961	A1962	U1963	U1964	C1965	C1966	U1967	U1968	G1969								
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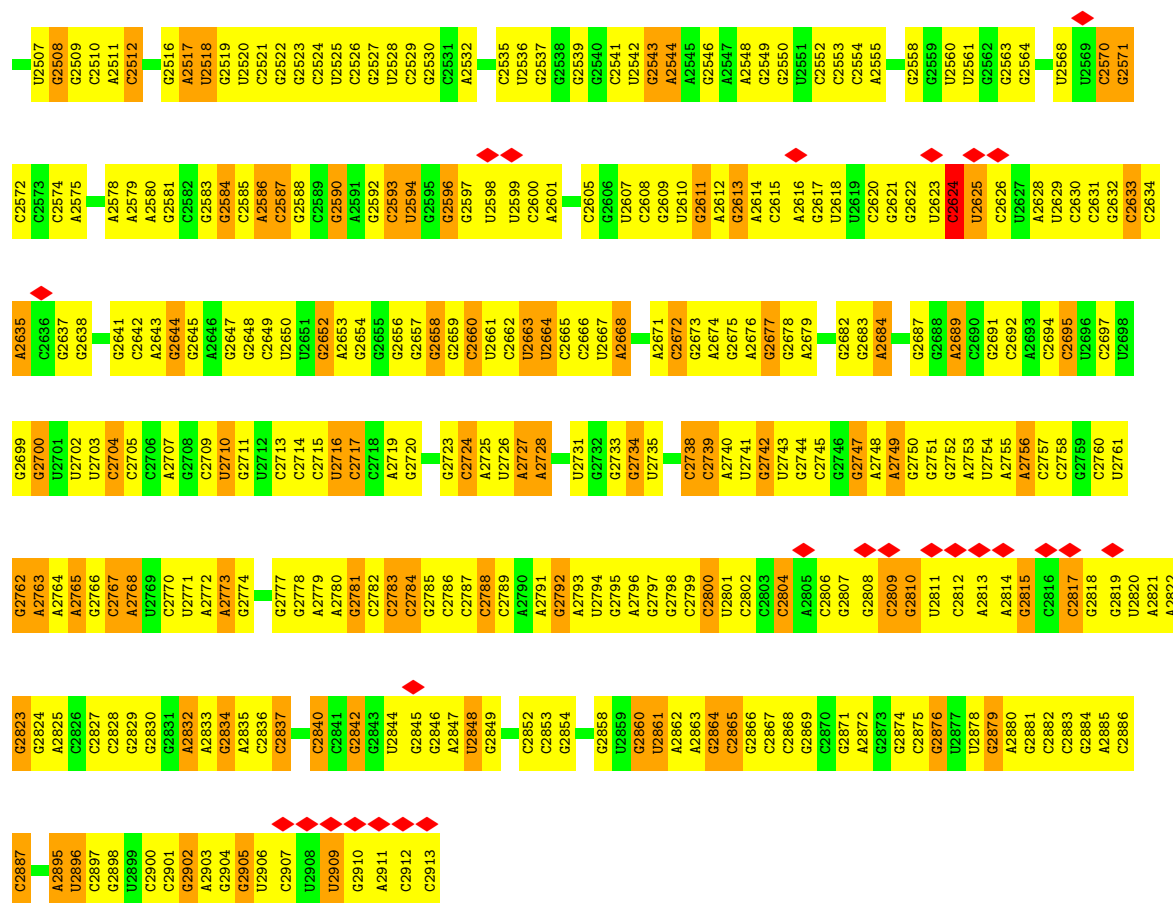
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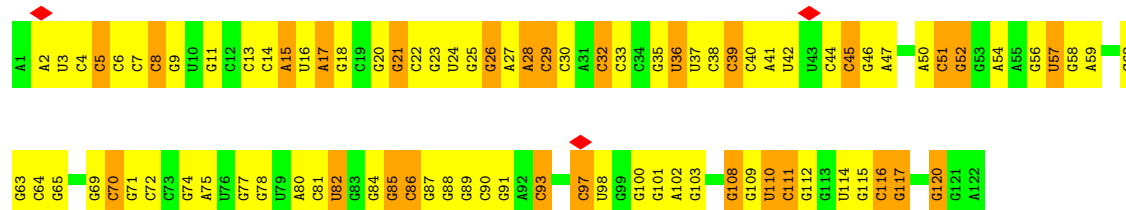




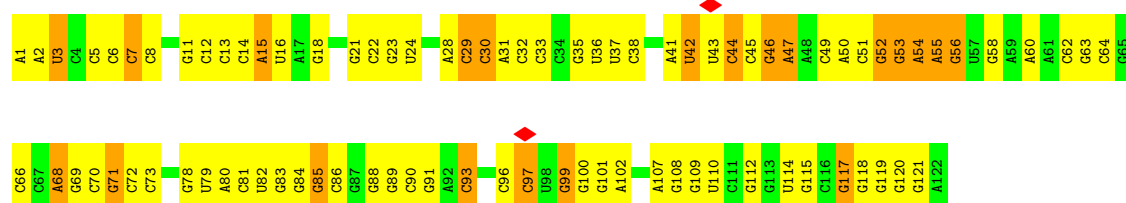
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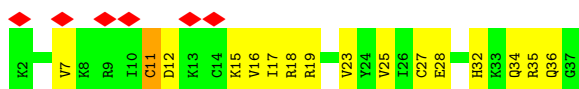
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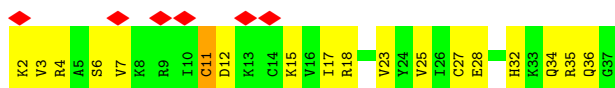
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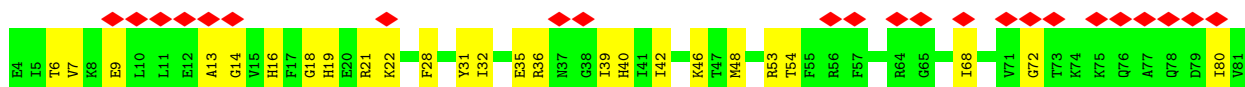
• Molecule 31: 50S ribosomal protein L36



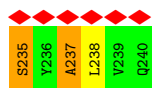
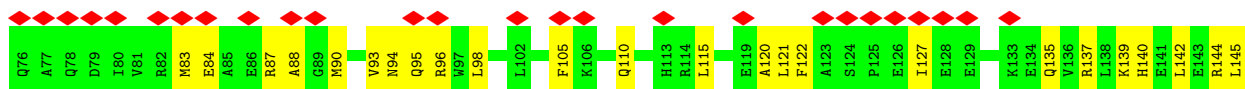
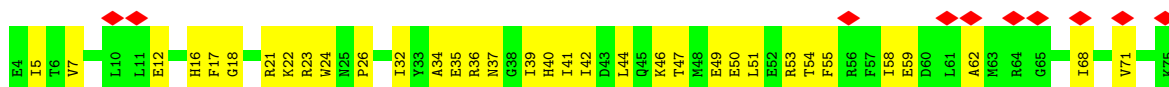
- Molecule 31: 50S ribosomal protein L36



- Molecule 32: 30S ribosomal protein S2

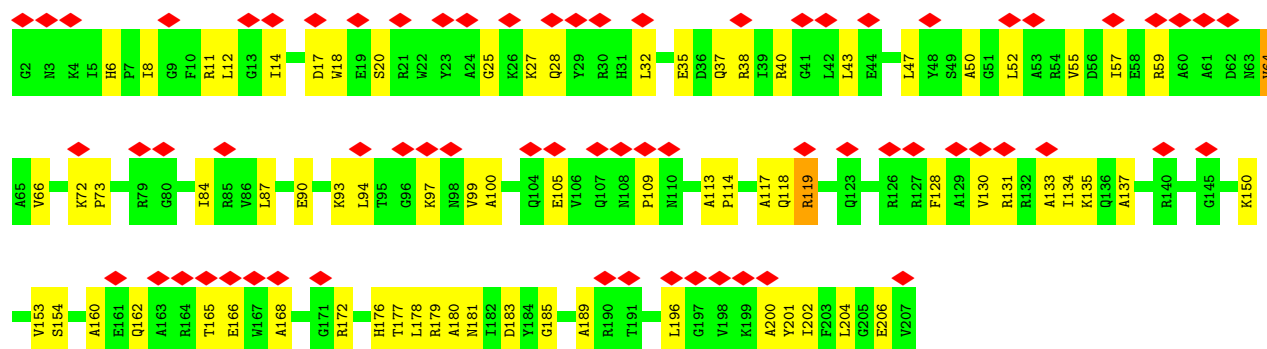


- Molecule 32: 30S ribosomal protein S2

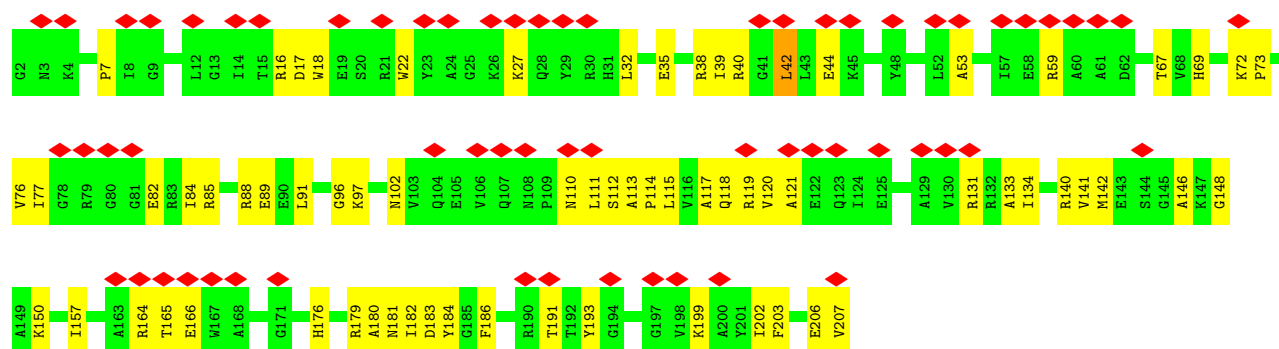


- Molecule 33: 30S ribosomal protein S3

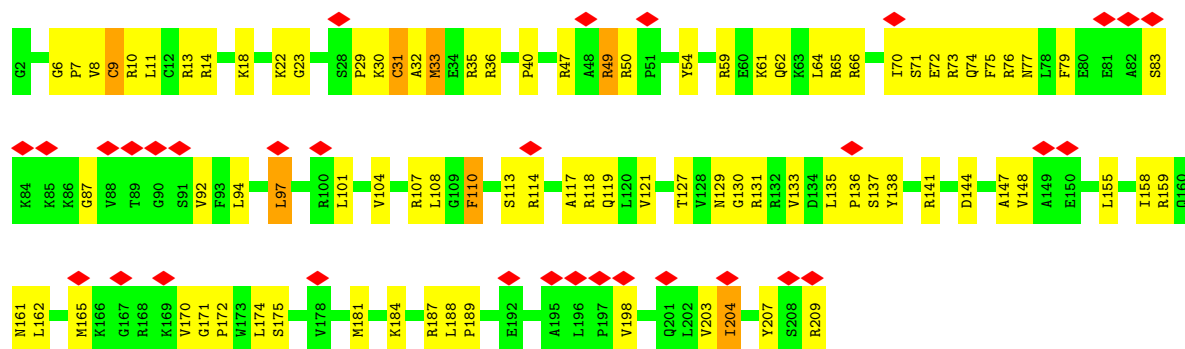




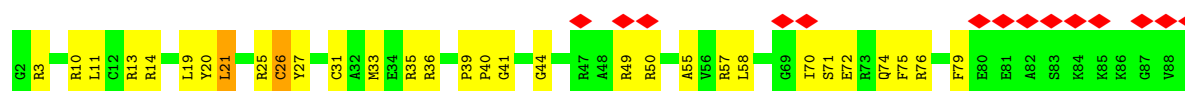
• Molecule 33: 30S ribosomal protein S3

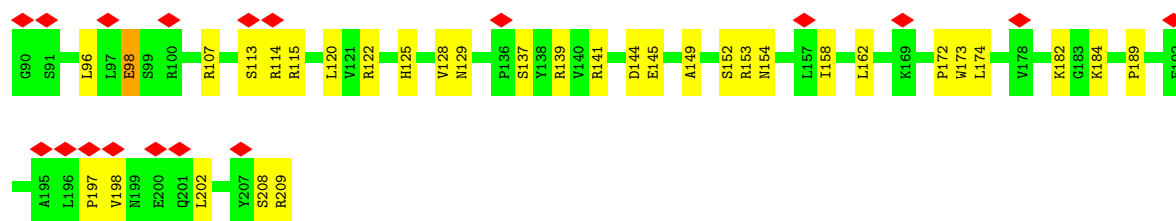


• Molecule 34: 30S ribosomal protein S4



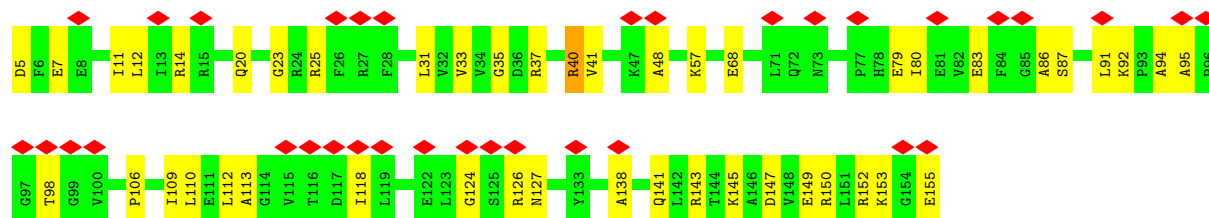
• Molecule 34: 30S ribosomal protein S4





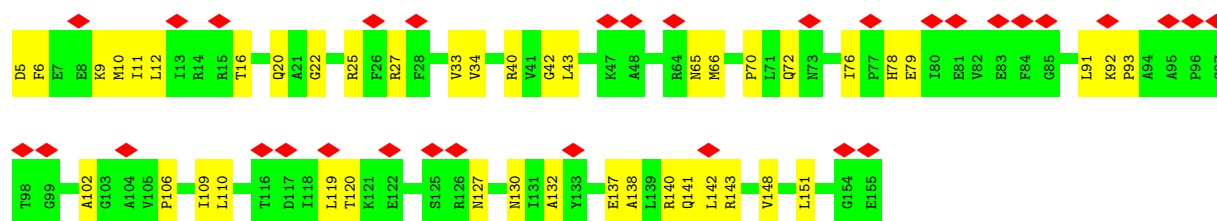
• Molecule 35: 30S ribosomal protein S5

Chain E3: 23% 70% 30%



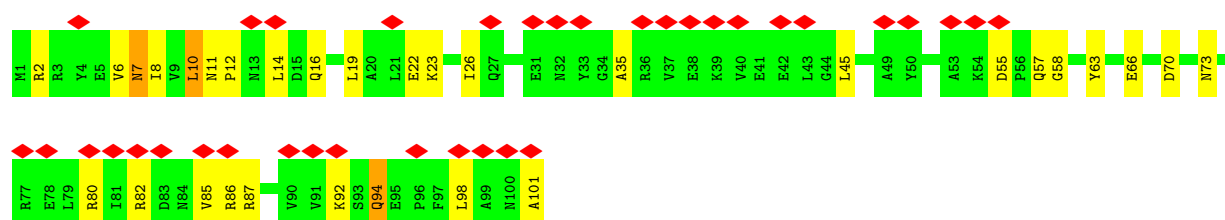
• Molecule 35: 30S ribosomal protein S5

Chain E4: 21% 72% 28%



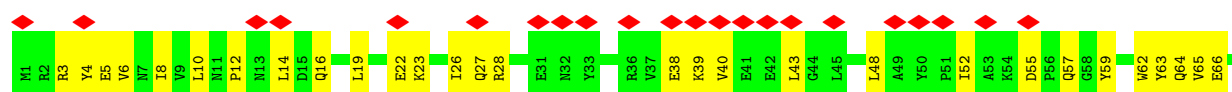
• Molecule 36: 30S ribosomal protein S6

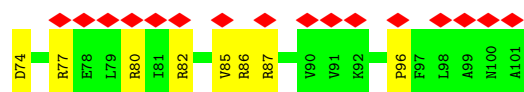
Chain F3: 36% 69% 28%



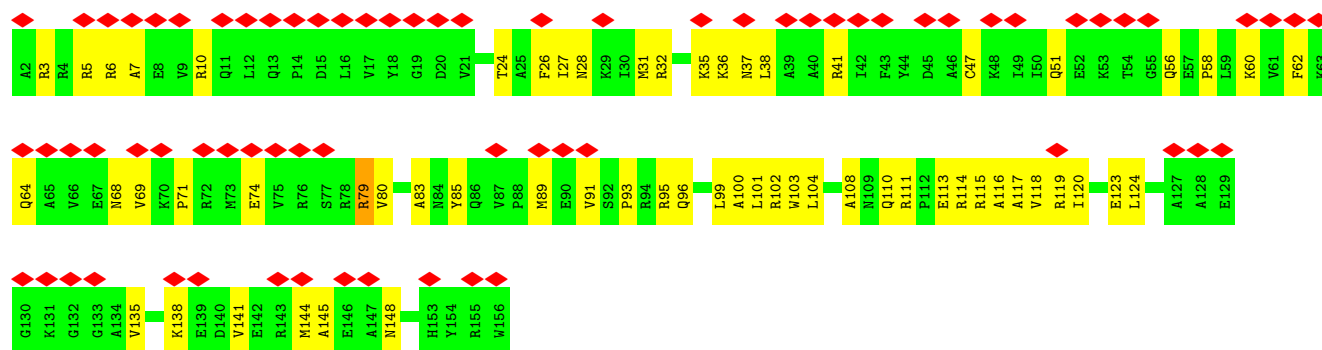
• Molecule 36: 30S ribosomal protein S6

Chain F4: 38% 63% 37%

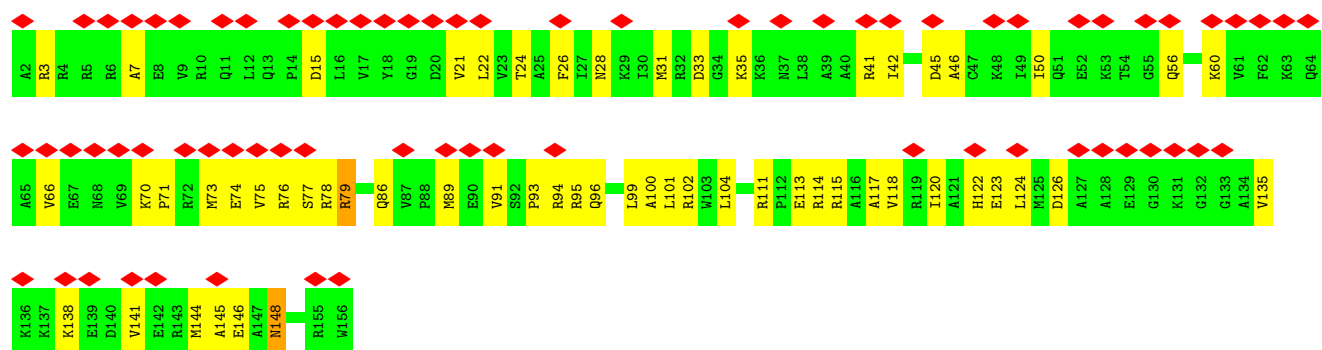




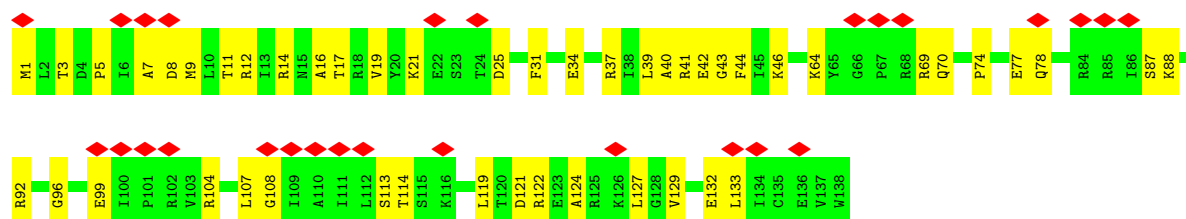
• Molecule 37: 30S ribosomal protein S7



• Molecule 37: 30S ribosomal protein S7

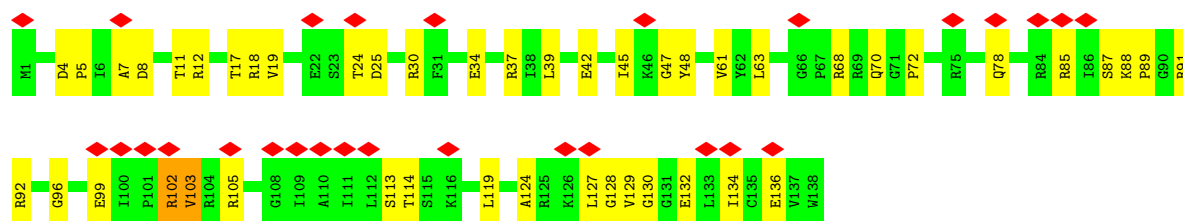


• Molecule 38: 30S ribosomal protein S8

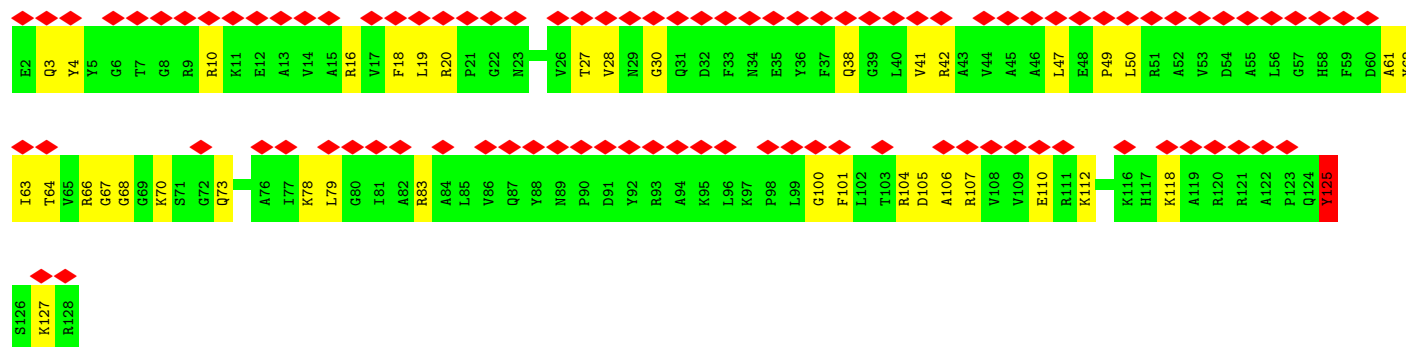
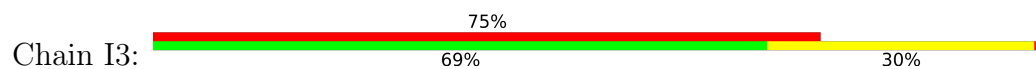


• Molecule 38: 30S ribosomal protein S8

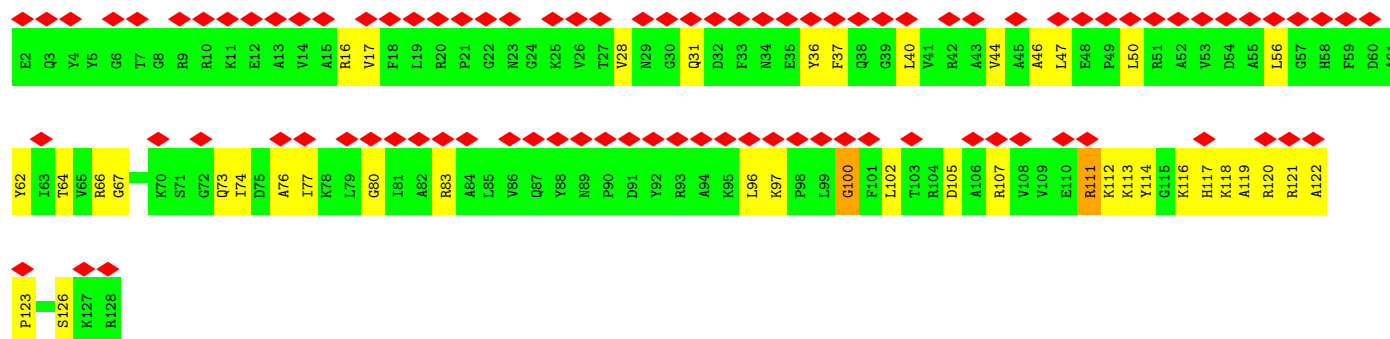
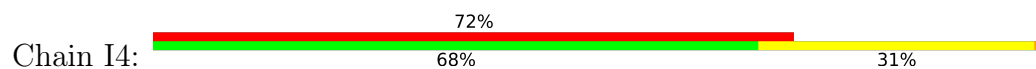




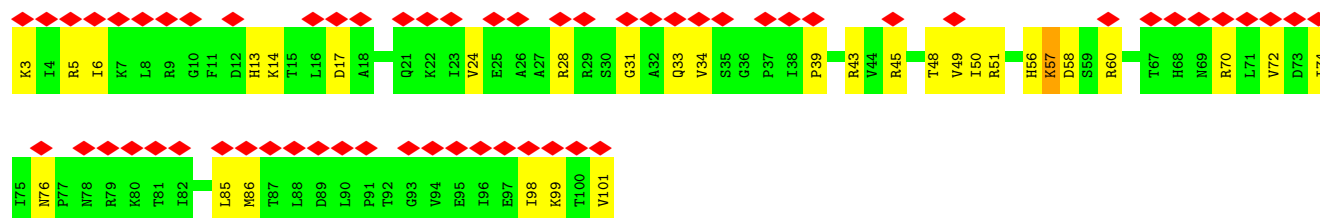
- Molecule 39: 30S ribosomal protein S9



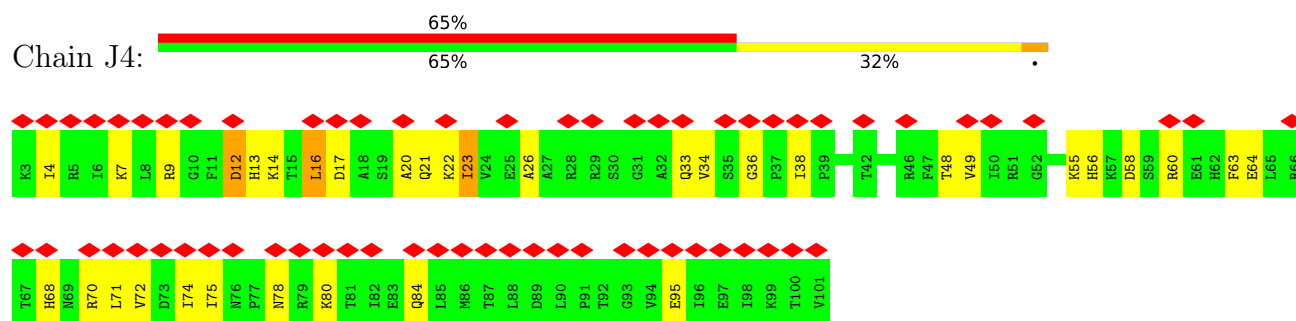
- Molecule 39: 30S ribosomal protein S9



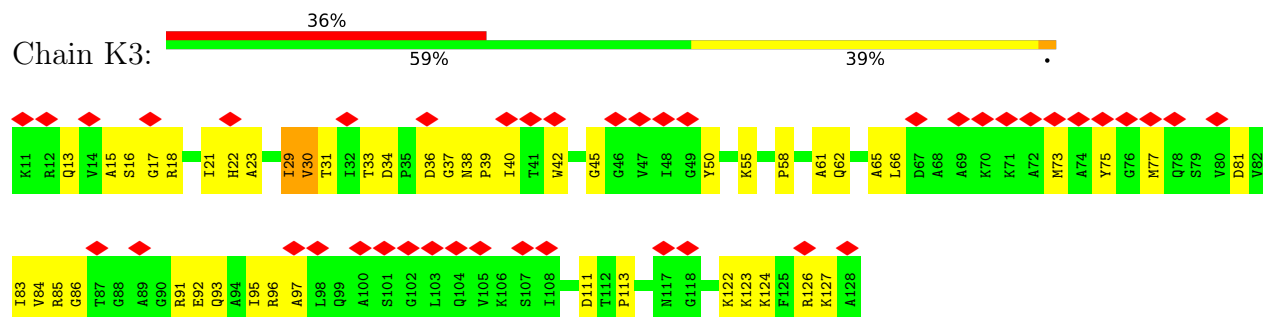
- Molecule 40: 30S ribosomal protein S10



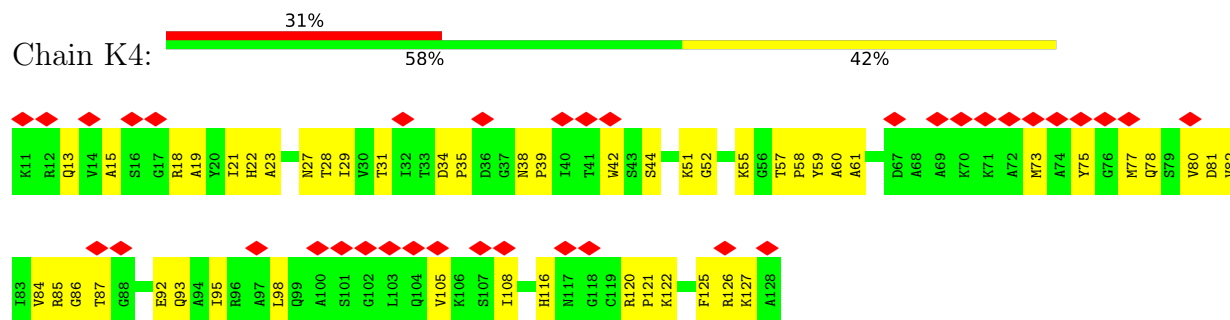
- Molecule 40: 30S ribosomal protein S10



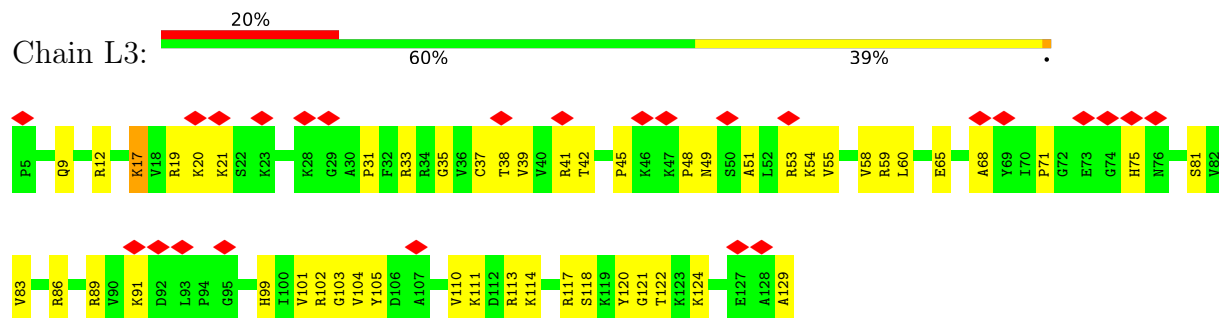
- Molecule 41: 30S ribosomal protein S11



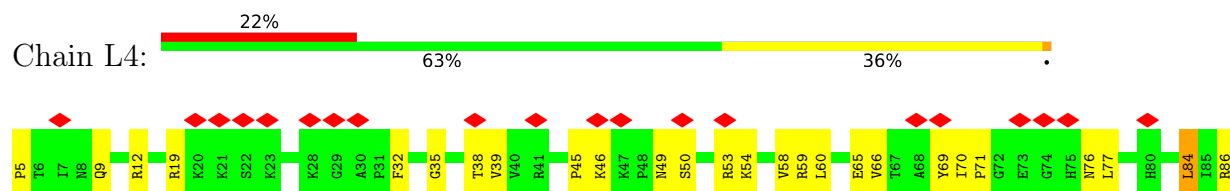
- Molecule 41: 30S ribosomal protein S11

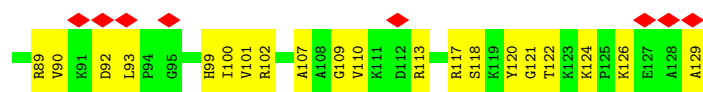


- Molecule 42: 30S ribosomal protein S12

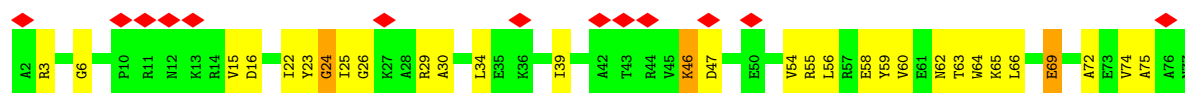


- Molecule 42: 30S ribosomal protein S12





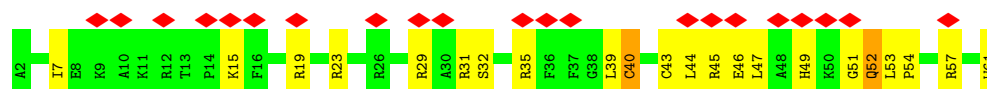
- Molecule 43: 30S ribosomal protein S13



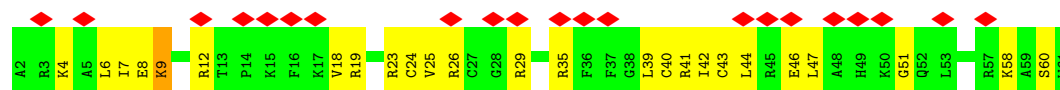
- Molecule 43: 30S ribosomal protein S13



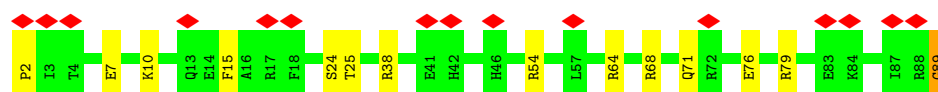
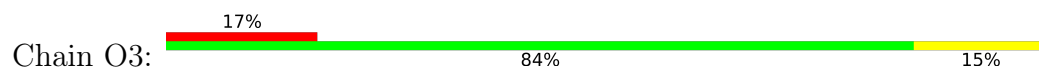
- Molecule 44: 30S ribosomal protein S14 type Z



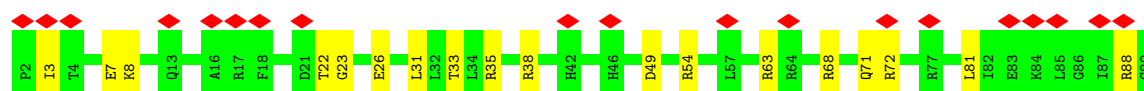
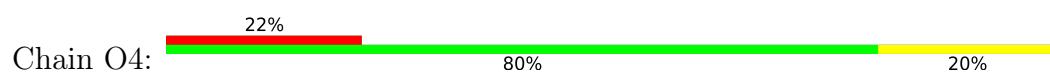
- Molecule 44: 30S ribosomal protein S14 type Z



- Molecule 45: 30S ribosomal protein S15



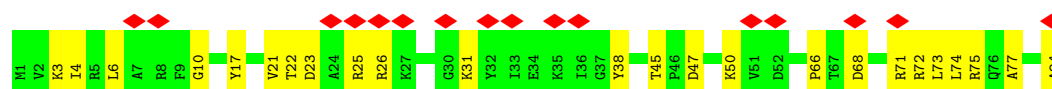
- Molecule 45: 30S ribosomal protein S15



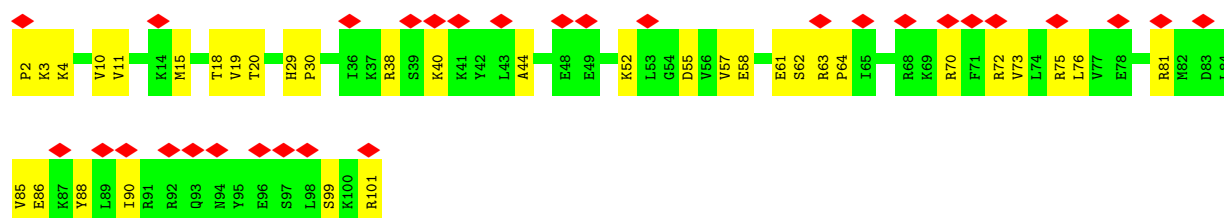
- Molecule 46: 30S ribosomal protein S16



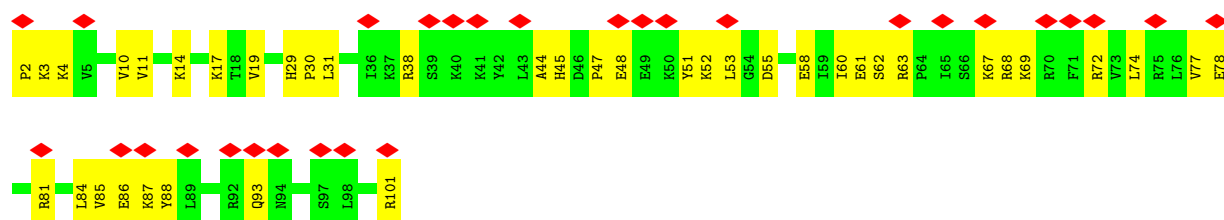
- Molecule 46: 30S ribosomal protein S16



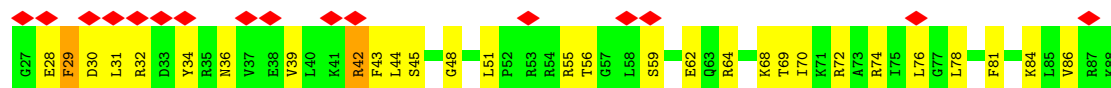
- Molecule 47: 30S ribosomal protein S17



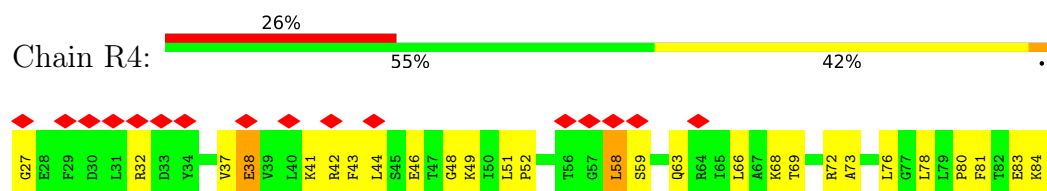
- Molecule 47: 30S ribosomal protein S17



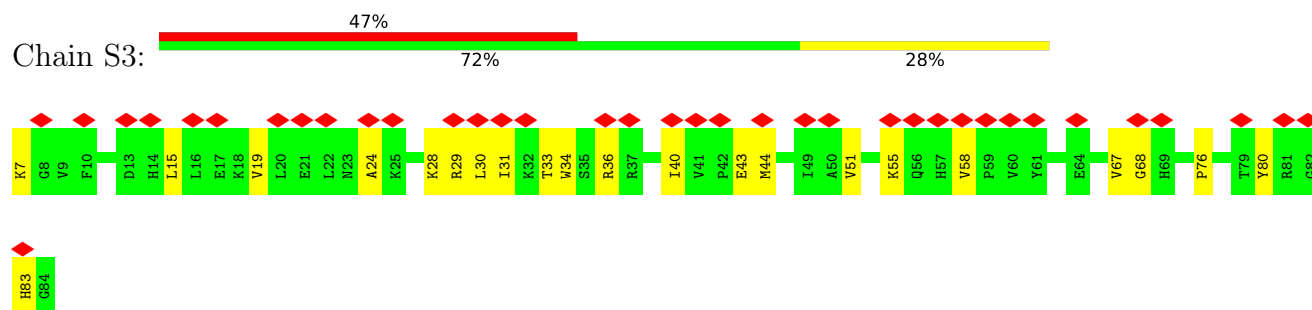
- Molecule 48: 30S ribosomal protein S18



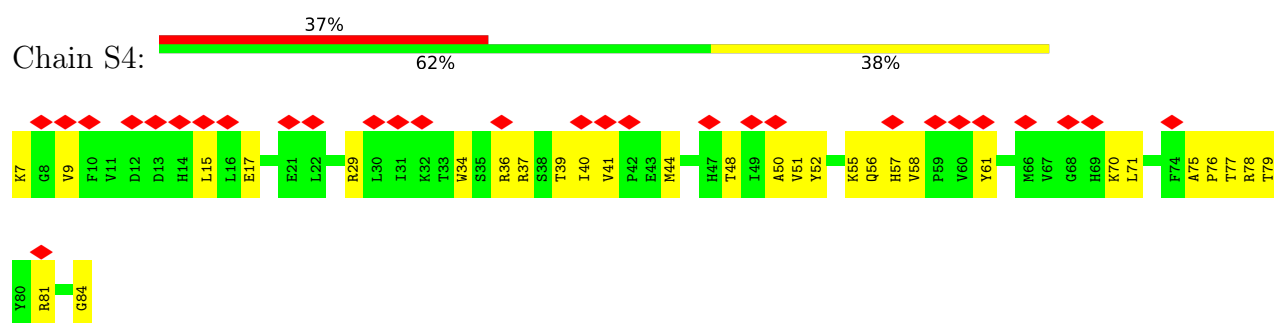
- Molecule 48: 30S ribosomal protein S18



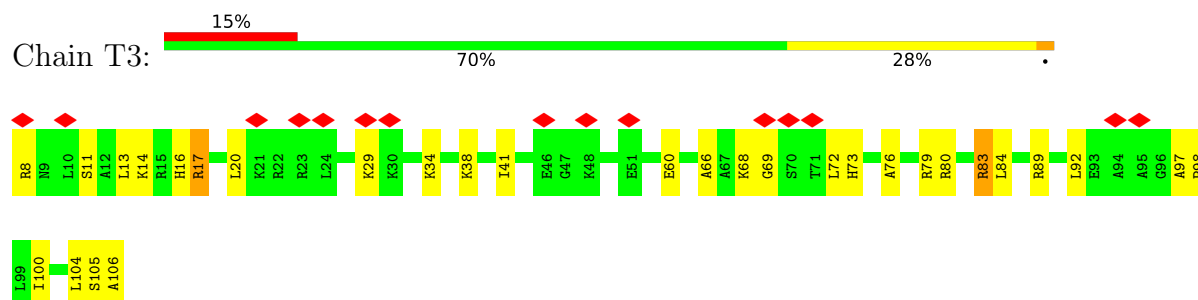
- Molecule 49: 30S ribosomal protein S19



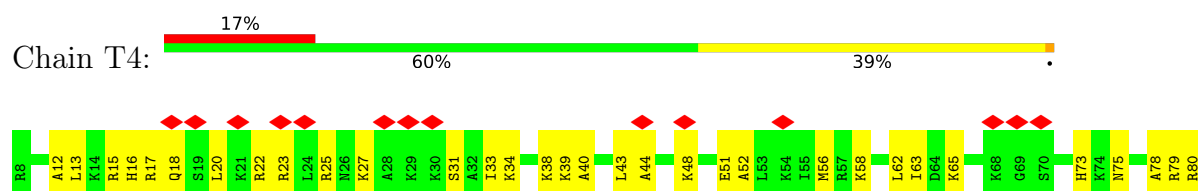
- Molecule 49: 30S ribosomal protein S19

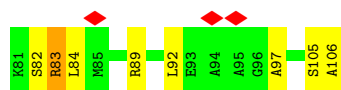


- Molecule 50: 30S ribosomal protein S20

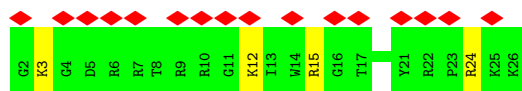
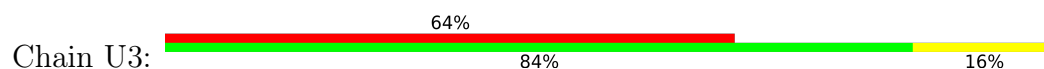


- Molecule 50: 30S ribosomal protein S20

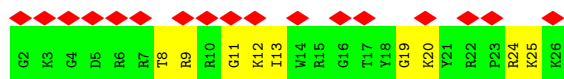




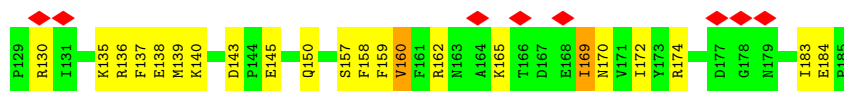
- Molecule 51: 30S ribosomal protein Thx



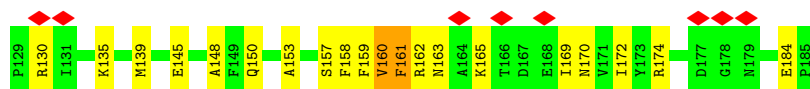
- Molecule 51: 30S ribosomal protein Thx



- Molecule 52: Ribosome hibernation promoting factor



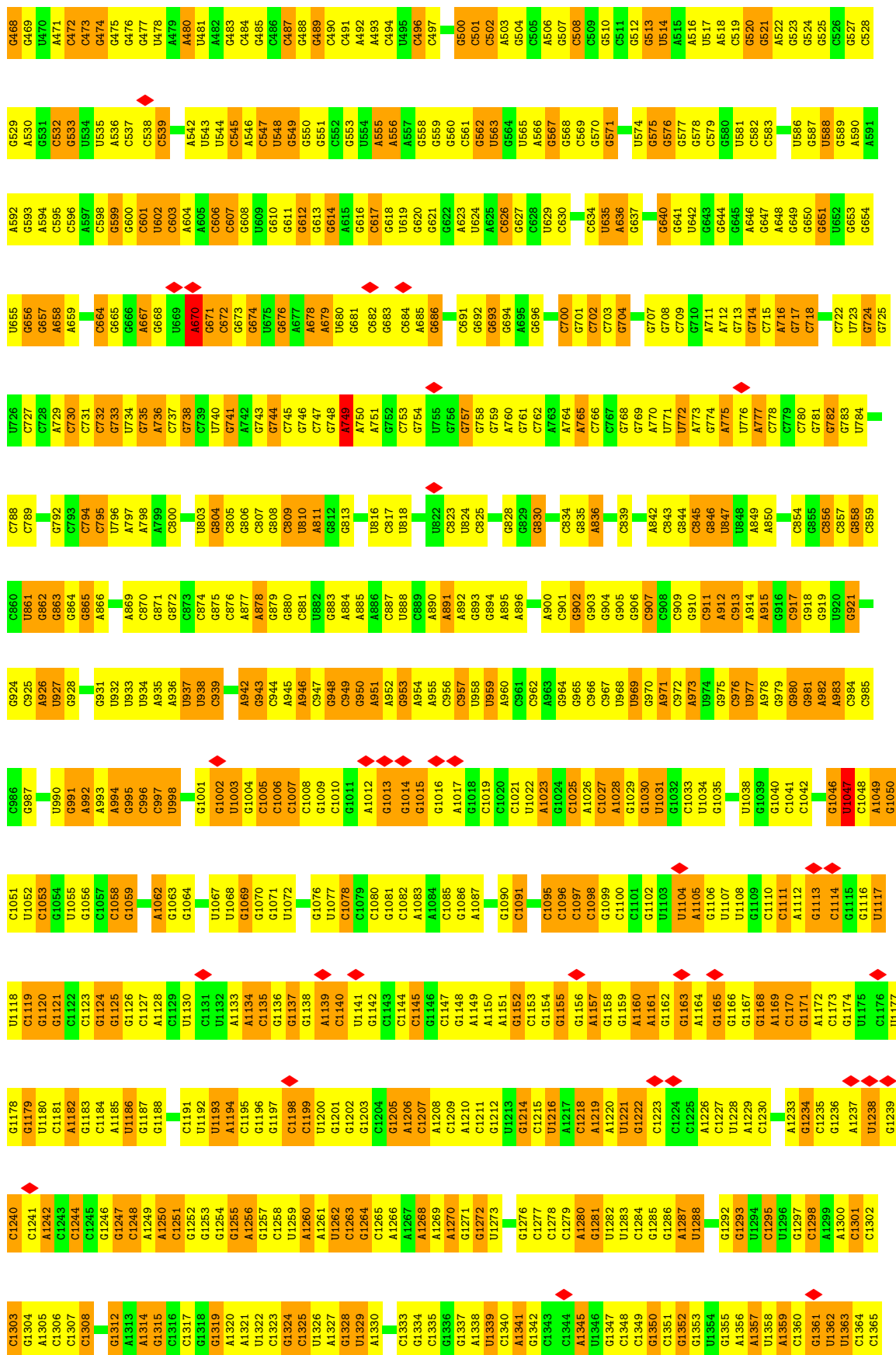
- Molecule 52: Ribosome hibernation promoting factor

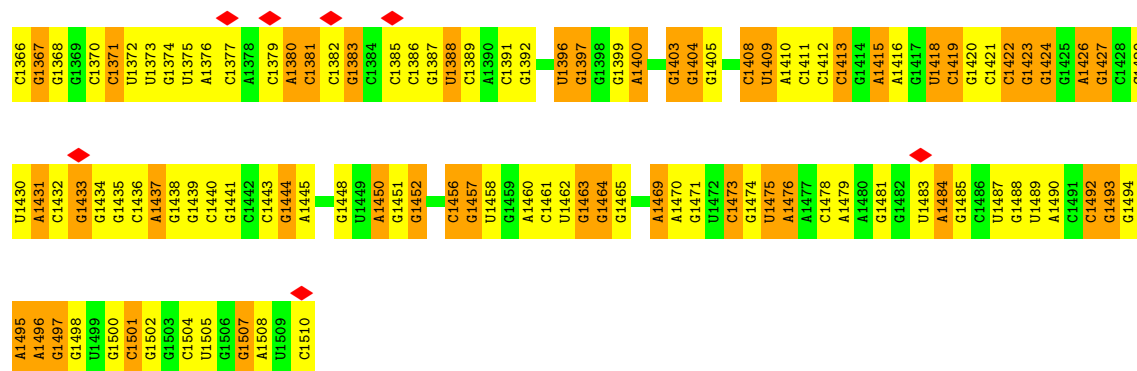


- Molecule 53: 16S ribosomal RNA

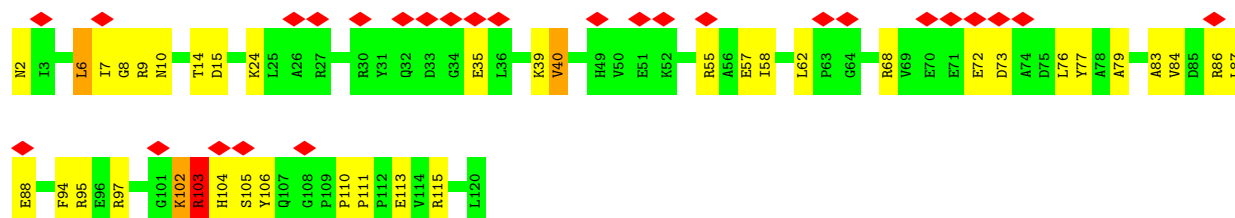




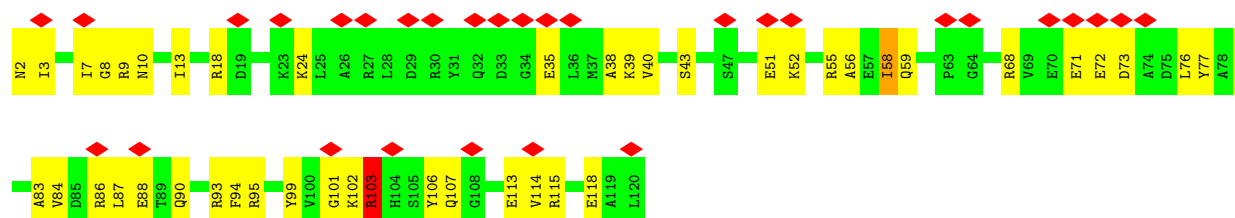




• Molecule 54: Ribosome hibernation promoting factor



• Molecule 54: Ribosome hibernation promoting factor



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	25368	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	1.06	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	11.760	Depositor
Minimum map value	-5.930	Depositor
Average map value	0.024	Depositor
Map value standard deviation	0.355	Depositor
Recommended contour level	2.3	Depositor
Map size (Å)	770.0, 770.0, 770.0	wwPDB
Map dimensions	700, 700, 700	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	C1	0.56	1/2166 (0.0%)	0.86	1/2919 (0.0%)
1	C2	0.51	0/2166	0.83	0/2919
2	D1	0.46	0/1602	0.82	0/2160
2	D2	0.46	0/1602	0.79	0/2160
3	E1	0.47	0/1663	0.81	0/2249
3	E2	0.46	0/1663	0.79	0/2249
4	F1	0.42	0/1499	0.80	0/2016
4	F2	0.42	0/1499	0.84	2/2016 (0.1%)
5	G1	0.39	0/1333	0.78	0/1802
5	G2	0.40	0/1333	0.80	0/1802
6	H1	0.41	0/387	0.84	0/523
6	H2	0.39	0/387	0.85	0/523
7	I1	0.39	0/1132	0.74	1/1525 (0.1%)
7	I2	0.41	0/1132	0.80	0/1525
8	J1	0.52	0/943	0.78	0/1269
8	J2	0.52	0/943	0.75	0/1269
9	K1	0.45	0/1162	0.89	0/1544
9	K2	0.44	0/1162	0.86	0/1544
10	L1	0.45	0/1143	0.84	0/1527
10	L2	0.45	0/1143	0.75	0/1527
11	M1	0.42	0/974	0.84	0/1302
11	M2	0.41	0/974	0.79	0/1302
12	N1	0.42	0/892	0.86	0/1187
12	N2	0.40	0/892	0.81	0/1187
13	O1	0.46	0/1156	0.80	0/1542
13	O2	0.46	0/1156	0.80	0/1542
14	P1	0.42	0/982	0.78	1/1306 (0.1%)
14	P2	0.43	0/982	0.81	1/1306 (0.1%)
15	Q1	0.39	0/790	0.82	0/1057
15	Q2	0.38	0/790	0.79	0/1057
16	R1	0.41	0/911	0.73	0/1220
16	R2	0.41	0/911	0.79	2/1220 (0.2%)
17	S1	0.44	0/740	0.80	0/993
17	S2	0.43	0/740	0.80	0/993

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
18	T1	0.36	0/799	0.81	0/1064
18	T2	0.35	0/799	0.78	1/1064 (0.1%)
19	U1	0.39	0/1461	0.79	1/1982 (0.1%)
19	U2	0.39	0/1461	0.73	0/1982
20	V1	0.45	0/621	0.81	0/827
20	V2	0.46	0/621	0.77	0/827
21	W1	0.47	0/770	0.86	1/1022 (0.1%)
21	W2	0.43	0/770	0.81	0/1022
22	X1	0.41	0/583	0.79	0/771
22	X2	0.43	0/583	0.82	0/771
23	Y1	0.40	0/474	0.79	0/635
23	Y2	0.40	0/474	0.76	0/635
24	Z1	0.43	0/528	0.94	4/709 (0.6%)
24	Z2	0.45	0/528	1.04	2/709 (0.3%)
25	a1	0.45	0/473	0.78	0/639
25	a2	0.43	0/473	0.80	0/639
26	b1	0.44	0/397	0.84	0/529
26	b2	0.47	0/397	1.04	0/529
27	c1	0.55	0/438	0.77	0/575
27	c2	0.52	0/438	0.79	0/575
28	d1	0.47	0/495	0.96	0/649
28	d2	0.54	0/495	0.93	0/649
29	A1	0.59	5/70233 (0.0%)	0.64	6/109643 (0.0%)
29	A2	0.50	0/70233	0.65	8/109643 (0.0%)
30	B1	0.41	0/2928	0.57	0/4568
30	B2	0.42	0/2928	0.59	0/4568
31	e1	0.42	0/302	0.71	0/397
31	e2	0.43	0/302	0.72	0/397
32	B3	0.43	0/1960	0.87	1/2642 (0.0%)
32	B4	0.43	0/1960	0.82	5/2642 (0.2%)
33	C3	0.43	0/1637	0.85	1/2205 (0.0%)
33	C4	0.42	0/1637	0.83	1/2205 (0.0%)
34	D3	0.44	0/1731	0.88	4/2312 (0.2%)
34	D4	0.42	0/1733	0.85	0/2318
35	E3	0.44	0/1172	0.82	0/1576
35	E4	0.43	0/1172	0.80	0/1576
36	F3	0.46	0/856	0.82	2/1154 (0.2%)
36	F4	0.48	0/856	0.79	2/1154 (0.2%)
37	G3	0.42	0/1276	0.81	0/1709
37	G4	0.41	0/1276	0.74	0/1709
38	H3	0.43	0/1136	0.77	0/1527
38	H4	0.41	0/1136	0.83	3/1527 (0.2%)
39	I3	0.43	0/1029	0.92	4/1379 (0.3%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
39	I4	0.41	0/1029	0.85	2/1379 (0.1%)
40	J3	0.40	0/815	0.78	0/1095
40	J4	0.40	0/815	0.80	0/1095
41	K3	0.45	0/894	0.76	0/1205
41	K4	0.44	0/894	0.82	0/1205
42	L3	0.45	0/992	0.85	0/1327
42	L4	0.46	0/992	0.87	0/1327
43	M3	0.38	0/944	0.87	5/1265 (0.4%)
43	M4	0.43	0/944	1.00	4/1265 (0.3%)
44	N3	0.39	0/501	0.77	0/664
44	N4	0.41	0/501	0.84	0/664
45	O3	3.69	1/745 (0.1%)	0.77	1/992 (0.1%)
45	O4	0.43	0/745	0.78	0/992
46	P3	0.40	0/722	0.82	0/970
46	P4	0.37	0/722	0.76	0/970
47	Q3	0.43	0/848	0.79	0/1131
47	Q4	0.47	0/848	0.91	1/1131 (0.1%)
48	R3	0.46	0/520	0.86	0/690
48	R4	0.46	0/520	0.85	0/690
49	S3	0.43	0/639	0.80	0/860
49	S4	0.39	0/639	0.82	0/860
50	T3	0.46	0/765	0.79	0/1007
50	T4	0.42	0/765	0.76	0/1007
51	U3	0.37	0/222	0.91	0/288
51	U4	0.40	0/222	1.07	1/288 (0.3%)
52	W4	0.45	0/487	0.89	0/650
52	X3	0.44	0/487	0.98	1/650 (0.2%)
53	A3	0.49	0/36234	0.66	8/56554 (0.0%)
53	A4	0.49	0/36234	0.67	7/56554 (0.0%)
54	V3	0.49	0/977	0.97	3/1316 (0.2%)
54	V4	0.49	0/977	0.97	0/1316
All	All	0.53	7/314160 (0.0%)	0.70	87/469344 (0.0%)

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	C1	0	6
1	C2	0	6
2	D1	0	4

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Mol	Chain	#Chirality outliers	#Planarity outliers
2	D2	0	2
3	E1	0	1
3	E2	0	2
4	F1	0	6
4	F2	0	4
5	G2	0	1
6	H1	0	1
7	I1	0	2
7	I2	0	2
8	J1	0	2
8	J2	0	2
9	K1	0	2
9	K2	0	1
11	M2	0	1
12	N1	0	2
12	N2	0	1
13	O1	0	2
13	O2	0	3
14	P1	0	1
14	P2	0	3
15	Q2	0	2
16	R1	0	1
16	R2	0	5
17	S2	0	1
18	T1	0	1
18	T2	0	1
19	U1	0	1
19	U2	0	4
20	V1	0	1
20	V2	0	1
21	W1	0	3
21	W2	0	1
22	X1	0	1
22	X2	0	2
24	Z1	0	8
24	Z2	0	1
25	a2	0	1
26	b1	0	2
26	b2	0	2
27	c1	0	1
28	d1	0	2
28	d2	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
31	e1	0	1
31	e2	0	1
32	B3	0	7
32	B4	0	6
33	C3	0	1
33	C4	0	1
34	D3	0	8
34	D4	0	5
35	E3	0	1
35	E4	0	1
36	F3	0	2
36	F4	0	1
37	G3	0	3
37	G4	0	3
38	H3	0	1
38	H4	0	4
39	I3	0	2
40	J3	0	1
40	J4	0	3
41	K3	0	2
42	L3	0	3
42	L4	0	3
43	M3	0	4
43	M4	0	2
44	N3	0	2
44	N4	0	2
45	O3	0	1
46	P3	0	2
47	Q4	0	5
48	R3	0	2
48	R4	0	3
49	S3	0	1
50	T3	0	2
50	T4	0	2
51	U3	0	1
51	U4	0	1
52	W4	0	1
54	V3	0	2
54	V4	0	1
All	All	0	194

All (7) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
45	O3	89	GLY	C-OXT	100.10	3.23	1.23
29	A1	764	G	N9-C8	39.24	2.16	1.37
29	A1	764	G	C8-N7	38.63	2.08	1.30
29	A1	764	G	N9-C4	38.17	2.14	1.38
29	A1	764	G	N7-C5	37.62	2.14	1.39
29	A1	764	G	C5-C4	31.82	2.02	1.38
1	C1	245	PRO	CA-C	9.87	1.57	1.51

All (87) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
47	Q4	31	LEU	N-CA-C	-10.07	103.14	114.62
32	B4	5	ILE	N-CA-C	-9.42	104.15	113.20
51	U4	13	ILE	N-CA-C	-9.41	103.53	111.91
33	C3	8	ILE	N-CA-C	-9.40	104.78	113.71
45	O3	89	GLY	CA-C-O	-9.02	93.94	121.00
1	C1	245	PRO	O-C-N	8.26	125.11	121.31
43	M4	15	VAL	CA-C-N	7.89	136.62	121.54
43	M4	15	VAL	C-N-CA	7.89	136.62	121.54
39	I4	100	GLY	CA-C-N	7.86	135.84	121.70
39	I4	100	GLY	C-N-CA	7.86	135.84	121.70
52	X3	183	ILE	N-CA-C	-7.22	105.31	112.17
14	P2	8	VAL	N-CA-C	-7.06	105.65	112.29
29	A2	1108	U	P-O3'-C3'	6.70	130.24	120.20
34	D3	9	CYS	CA-C-N	6.64	133.66	121.70
34	D3	9	CYS	C-N-CA	6.64	133.66	121.70
54	V3	102	LYS	O-C-N	6.38	130.39	122.86
38	H4	102	ARG	CA-C-N	6.27	133.26	121.97
38	H4	102	ARG	C-N-CA	6.27	133.26	121.97
33	C4	96	GLY	N-CA-C	6.03	119.79	112.49
24	Z2	18	CYS	CA-C-N	5.96	132.43	121.70
24	Z2	18	CYS	C-N-CA	5.96	132.43	121.70
7	I1	98	VAL	N-CA-C	-5.95	106.70	112.29
32	B4	230	VAL	CA-C-N	5.93	136.28	121.80
32	B4	230	VAL	C-N-CA	5.93	136.28	121.80
53	A3	774	G	O4'-C1'-N9	5.93	117.39	108.50
39	I3	125	TYR	CA-CB-CG	5.89	124.50	113.90
43	M3	24	GLY	N-CA-C	5.88	121.48	114.48
29	A1	1607	A	P-O3'-C3'	5.87	129.00	120.20
18	T2	51	VAL	N-CA-C	-5.87	107.09	112.96
36	F4	43	LEU	CA-C-N	5.77	132.72	121.41
36	F4	43	LEU	C-N-CA	5.77	132.72	121.41
24	Z1	42	PHE	CA-C-N	5.71	132.44	121.54

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	Z1	42	PHE	C-N-CA	5.71	132.44	121.54
39	I3	100	GLY	CA-C-N	5.66	131.88	121.70
39	I3	100	GLY	C-N-CA	5.66	131.88	121.70
53	A3	1015	G	P-O3'-C3'	5.65	128.67	120.20
43	M4	64	TRP	CA-CB-CG	5.64	124.32	113.60
39	I3	41	VAL	N-CA-C	-5.62	108.02	113.53
29	A1	288	G	P-O3'-C3'	5.57	128.55	120.20
29	A1	1743	C	P-O3'-C3'	5.51	128.46	120.20
29	A2	1607	A	P-O3'-C3'	5.45	128.38	120.20
32	B4	238	LEU	CA-CB-CG	5.42	135.28	116.30
32	B4	238	LEU	N-CA-C	-5.42	107.32	114.04
53	A4	468	G	C2'-C3'-O3'	5.41	117.61	109.50
53	A3	670	A	P-O3'-C3'	5.40	128.30	120.20
29	A2	1108	U	C2'-C3'-O3'	5.37	117.55	109.50
19	U1	115	GLY	N-CA-C	5.36	118.64	111.20
36	F3	10	LEU	CA-C-N	5.36	131.96	122.48
36	F3	10	LEU	C-N-CA	5.36	131.96	122.48
53	A3	241	A	P-O3'-C3'	5.33	128.19	120.20
53	A4	468	G	P-O3'-C3'	5.31	128.16	120.20
16	R2	66	GLU	CA-C-N	5.31	135.55	126.32
16	R2	66	GLU	C-N-CA	5.31	135.55	126.32
53	A4	108	G	P-O3'-C3'	5.25	128.08	120.20
53	A4	749	A	P-O3'-C3'	5.25	128.07	120.20
29	A2	1607	A	C2'-C3'-O3'	5.24	117.36	109.50
21	W1	73	LEU	CA-CB-CG	5.24	134.63	116.30
53	A3	1047	U	P-O3'-C3'	5.23	128.04	120.20
53	A3	670	A	C2'-C3'-O3'	5.22	117.34	109.50
29	A2	2624	C	P-O3'-C3'	5.19	127.98	120.20
29	A1	839	C	C2-N1-C1'	5.18	134.34	118.80
53	A4	239	U	P-O3'-C3'	5.18	127.97	120.20
38	H4	18	ARG	N-CA-C	-5.17	108.73	114.62
53	A3	1005	C	P-O3'-C3'	5.16	127.94	120.20
29	A2	1376	G	P-O3'-C3'	5.13	127.90	120.20
24	Z1	2	LYS	CA-C-N	5.11	133.10	122.41
24	Z1	2	LYS	C-N-CA	5.11	133.10	122.41
53	A4	1047	U	P-O3'-C3'	5.10	127.85	120.20
29	A2	2256	G	P-O3'-C3'	5.09	127.83	120.20
43	M3	23	TYR	CA-C-N	-5.08	117.39	123.08
43	M3	23	TYR	C-N-CA	-5.08	117.39	123.08
29	A1	2262	C	C2-N1-C1'	5.06	133.97	118.80
53	A4	670	A	P-O3'-C3'	5.06	127.78	120.20
32	B3	14	GLY	N-CA-C	5.05	125.16	113.18

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
54	V3	102	LYS	CA-C-N	5.05	131.18	121.54
54	V3	102	LYS	C-N-CA	5.05	131.18	121.54
53	A3	239	U	P-O3'-C3'	5.04	127.76	120.20
29	A1	1867	U	P-O3'-C3'	5.04	127.76	120.20
4	F2	120	LEU	CA-C-N	5.04	128.92	120.86
4	F2	120	LEU	C-N-CA	5.04	128.92	120.86
14	P1	92	ARG	CA-CB-CG	5.03	124.17	114.10
43	M4	66	LEU	N-CA-C	5.03	117.69	109.59
34	D3	33	MET	CA-C-N	5.03	131.14	121.54
34	D3	33	MET	C-N-CA	5.03	131.14	121.54
43	M3	62	ASN	CA-C-N	5.02	131.13	121.54
43	M3	62	ASN	C-N-CA	5.02	131.13	121.54
29	A2	1070	G	P-O3'-C3'	5.00	127.71	120.20

There are no chirality outliers.

All (194) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
32	B3	103	THR	Peptide
32	B3	21	ARG	Peptide
32	B3	231	GLU	Peptide
32	B3	237	ALA	Peptide
32	B3	48	MET	Peptide
32	B3	53	ARG	Peptide
32	B3	6	THR	Peptide
32	B4	105	PHE	Peptide
32	B4	110	GLN	Peptide
32	B4	186	ALA	Peptide
32	B4	235	SER	Peptide
32	B4	237	ALA	Peptide
32	B4	98	LEU	Peptide
1	C1	13	ARG	Peptide
1	C1	178	PRO	Peptide
1	C1	218	ARG	Peptide
1	C1	51	VAL	Peptide
1	C1	67	PHE	Peptide
1	C1	86	PRO	Peptide
1	C2	227	ASN	Peptide
1	C2	232	PRO	Peptide
1	C2	258	LYS	Peptide
1	C2	266	SER	Peptide
1	C2	28	GLU	Peptide

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Mol	Chain	Res	Type	Group
1	C2	7	LYS	Peptide
33	C3	17	ASP	Peptide
33	C4	166	GLU	Peptide
2	D1	170	LEU	Peptide
2	D1	61	ARG	Peptide
2	D1	82	ARG	Peptide
2	D1	99	GLY	Peptide
2	D2	61	ARG	Peptide
2	D2	80	GLU	Peptide
34	D3	110	PHE	Peptide
34	D3	129	ASN	Peptide
34	D3	131	ARG	Peptide
34	D3	148	VAL	Peptide
34	D3	204	ILE	Peptide
34	D3	31	CYS	Peptide
34	D3	49	ARG	Peptide
34	D3	97	LEU	Peptide
34	D4	19	LEU	Peptide
34	D4	20	TYR	Peptide
34	D4	21	LEU	Peptide
34	D4	26	CYS	Peptide
34	D4	98	GLU	Peptide
3	E1	101	LEU	Peptide
3	E2	19	GLU	Peptide
3	E2	80	ALA	Peptide
35	E3	95	ALA	Peptide
35	E4	130	ASN	Peptide
4	F1	11	TYR	Peptide
4	F1	22	ARG	Peptide
4	F1	23	PHE	Peptide
4	F1	25	TYR	Peptide
4	F1	30	GLU	Peptide
4	F1	35	GLU	Peptide
4	F2	164	GLU	Peptide
4	F2	178	PHE	Peptide
4	F2	30	GLU	Peptide
4	F2	4	ASP	Peptide
36	F3	45	LEU	Peptide
36	F3	94	GLN	Peptide
36	F4	48	LEU	Peptide
5	G2	60	ARG	Peptide
37	G3	110	GLN	Peptide

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Mol	Chain	Res	Type	Group
37	G3	5	ARG	Peptide
37	G3	79	ARG	Peptide
37	G4	120	ILE	Peptide
37	G4	148	ASN	Peptide
37	G4	79	ARG	Peptide
6	H1	21	VAL	Peptide
38	H3	31	PHE	Peptide
38	H4	102	ARG	Peptide
38	H4	48	TYR	Peptide
38	H4	63	LEU	Peptide
38	H4	72	PRO	Peptide
7	I1	34	LEU	Peptide
7	I1	41	ASP	Peptide
7	I2	50	ASP	Peptide
7	I2	61	ARG	Peptide
39	I3	101	PHE	Peptide
39	I3	125	TYR	Peptide
8	J1	81	ASP	Peptide
8	J1	99	PHE	Peptide
8	J2	105	GLU	Peptide
8	J2	99	PHE	Peptide
40	J3	57	LYS	Peptide
40	J4	12	ASP	Peptide
40	J4	16	LEU	Peptide
40	J4	23	ILE	Peptide
9	K1	55	ARG	Peptide
9	K1	67	MET	Peptide
9	K2	32	THR	Peptide
41	K3	50	TYR	Peptide
41	K3	96	ARG	Peptide
42	L3	17	LYS	Peptide
42	L3	20	LYS	Peptide
42	L3	48	PRO	Peptide
42	L4	19	ARG	Peptide
42	L4	46	LYS	Peptide
42	L4	89	ARG	Peptide
11	M2	87	TYR	Peptide
43	M3	15	VAL	Peptide
43	M3	56	LEU	Peptide
43	M3	69	GLU	Peptide
43	M3	81	LEU	Peptide
43	M4	66	LEU	Peptide

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Mol	Chain	Res	Type	Group
43	M4	82	MET	Peptide
12	N1	16	ASN	Peptide
12	N1	30	ARG	Peptide
12	N2	92	TYR	Peptide
44	N3	31	ARG	Peptide
44	N3	52	GLN	Peptide
44	N4	18	VAL	Peptide
44	N4	9	LYS	Peptide
13	O1	109	GLU	Peptide
13	O1	131	ALA	Peptide
13	O2	100	TYR	Peptide
13	O2	102	ILE	Peptide
13	O2	79	HIS	Peptide
45	O3	15	PHE	Peptide
14	P1	49	HIS	Peptide
14	P2	102	GLU	Peptide
14	P2	36	ARG	Peptide
14	P2	49	HIS	Peptide
46	P3	32	TYR	Peptide
46	P3	73	LEU	Peptide
15	Q2	44	LYS	Peptide
15	Q2	69	LYS	Peptide
47	Q4	29	HIS	Peptide
47	Q4	3	LYS	Peptide
47	Q4	30	PRO	Peptide
47	Q4	86	GLU	Peptide
47	Q4	93	GLN	Peptide
16	R1	19	LEU	Peptide
16	R2	19	LEU	Peptide
16	R2	62	HIS	Peptide
16	R2	64	MET	Peptide
16	R2	68	ARG	Peptide
16	R2	88	ARG	Peptide
48	R3	29	PHE	Peptide
48	R3	45	SER	Peptide
48	R4	38	GLU	Peptide
48	R4	43	PHE	Peptide
48	R4	81	PHE	Peptide
17	S2	6	ASP	Peptide
49	S3	19	VAL	Peptide
18	T1	94	LYS	Peptide
18	T2	88	LYS	Peptide

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Mol	Chain	Res	Type	Group
50	T3	17	ARG	Peptide
50	T3	83	ARG	Peptide
50	T4	12	ALA	Peptide
50	T4	83	ARG	Peptide
19	U1	123	ASP	Peptide
19	U2	155	LEU	Peptide
19	U2	164	ALA	Peptide
19	U2	176	PRO	Peptide
19	U2	52	SER	Peptide
51	U3	12	LYS	Peptide
51	U4	24	ARG	Peptide
20	V1	19	LYS	Peptide
20	V2	78	TYR	Peptide
54	V3	103	ARG	Peptide
54	V3	94	PHE	Peptide
54	V4	94	PHE	Peptide
21	W1	66	HIS	Peptide
21	W1	75	GLU	Peptide
21	W1	84	GLY	Peptide
21	W2	6	GLU	Peptide
52	W4	161	PHE	Peptide
22	X1	13	ALA	Peptide
22	X2	28	LYS	Peptide
22	X2	66	GLU	Peptide
24	Z1	19	GLY	Peptide
24	Z1	2	LYS	Peptide
24	Z1	33	VAL	Peptide
24	Z1	37	SER	Peptide
24	Z1	42	PHE	Peptide
24	Z1	43	TYR	Peptide
24	Z1	49	PHE	Peptide
24	Z1	56	VAL	Peptide
24	Z2	6	HIS	Peptide
25	a2	52	TYR	Peptide
26	b1	17	LYS	Peptide
26	b1	42	TRP	Peptide
26	b2	27	LYS	Peptide
26	b2	44	ARG	Peptide
27	c1	47	ARG	Peptide
28	d1	52	LYS	Peptide
28	d1	58	ILE	Peptide
28	d2	28	GLY	Peptide

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Mol	Chain	Res	Type	Group
31	e1	11	CYS	Peptide
31	e2	11	CYS	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	C1	2116	0	2195	79	0
1	C2	2116	0	2195	77	0
2	D1	1569	0	1634	55	0
2	D2	1569	0	1634	49	0
3	E1	1628	0	1680	53	0
3	E2	1628	0	1680	58	0
4	F1	1474	0	1535	49	0
4	F2	1474	0	1535	47	0
5	G1	1308	0	1382	47	0
5	G2	1308	0	1382	43	0
6	H1	383	0	410	8	0
6	H2	383	0	410	11	0
7	I1	1105	0	1180	31	0
7	I2	1105	0	1180	29	0
8	J1	933	0	996	29	0
8	J2	933	0	996	29	0
9	K1	1145	0	1228	56	0
9	K2	1145	0	1228	49	0
10	L1	1122	0	1179	41	0
10	L2	1122	0	1179	27	0
11	M1	960	0	1021	47	0
11	M2	960	0	1021	29	0
12	N1	882	0	943	27	0
12	N2	882	0	943	26	0
13	O1	1142	0	1202	34	0
13	O2	1142	0	1202	50	0
14	P1	964	0	1022	36	0
14	P2	964	0	1022	36	0
15	Q1	779	0	852	24	0
15	Q2	779	0	852	26	0
16	R1	900	0	964	27	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	R2	900	0	964	29	0
17	S1	726	0	778	17	0
17	S2	726	0	778	24	0
18	T1	786	0	878	29	0
18	T2	786	0	878	21	0
19	U1	1429	0	1454	40	0
19	U2	1429	0	1454	36	0
20	V1	613	0	633	27	0
20	V2	613	0	633	19	0
21	W1	763	0	848	32	0
21	W2	763	0	848	28	0
22	X1	581	0	629	20	0
22	X2	581	0	629	20	0
23	Y1	469	0	518	19	0
23	Y2	469	0	518	12	0
24	Z1	516	0	514	18	0
24	Z2	516	0	514	17	0
25	a1	459	0	480	20	0
25	a2	459	0	480	17	0
26	b1	390	0	404	10	0
26	b2	390	0	404	16	0
27	c1	430	0	480	22	0
27	c2	430	0	480	16	0
28	d1	489	0	560	17	0
28	d2	489	0	560	19	0
29	A1	62707	0	31614	1057	0
29	A2	62707	0	31614	1035	0
30	B1	2617	0	1328	40	0
30	B2	2617	0	1328	35	0
31	e1	299	0	326	13	0
31	e2	299	0	326	13	0
32	B3	1925	0	1975	49	0
32	B4	1925	0	1975	62	0
33	C3	1613	0	1677	48	0
33	C4	1613	0	1677	43	0
34	D3	1703	0	1765	60	0
34	D4	1703	0	1765	46	0
35	E3	1156	0	1213	36	0
35	E4	1156	0	1213	31	0
36	F3	843	0	857	25	0
36	F4	843	0	857	22	0
37	G3	1257	0	1296	49	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
37	G4	1257	0	1296	49	0
38	H3	1116	0	1177	34	0
38	H4	1116	0	1177	30	0
39	I3	1010	0	1037	30	0
39	I4	1010	0	1037	30	0
40	J3	802	0	849	22	0
40	J4	802	0	849	28	0
41	K3	879	0	899	37	0
41	K4	879	0	899	35	0
42	L3	976	0	1062	38	0
42	L4	976	0	1062	30	0
43	M3	934	0	992	29	0
43	M4	934	0	992	38	0
44	N3	492	0	533	20	0
44	N4	492	0	533	19	0
45	O3	734	0	771	19	0
45	O4	734	0	771	14	0
46	P3	706	0	725	21	0
46	P4	706	0	725	18	0
47	Q3	835	0	904	27	0
47	Q4	835	0	904	35	0
48	R3	515	0	568	29	0
48	R4	515	0	568	17	0
49	S3	625	0	636	17	0
49	S4	625	0	636	26	0
50	T3	763	0	861	26	0
50	T4	763	0	861	33	0
51	U3	218	0	234	3	0
51	U4	218	0	234	6	0
52	W4	476	0	472	28	0
52	X3	476	0	472	29	0
53	A3	32369	0	16339	629	0
53	A4	32369	0	16339	622	0
54	V3	963	0	982	36	0
54	V4	963	0	982	38	0
All	All	289188	0	197382	5661	0

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

All (5661) 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)
29:A1:764:G:C5	29:A1:764:G:C4	2.02	1.46
29:A1:764:G:C8	29:A1:764:G:N7	2.08	1.22
29:A1:764:G:C4	29:A1:764:G:N9	2.14	1.15
29:A1:764:G:C5	29:A1:764:G:N7	2.14	1.14
29:A1:764:G:C8	29:A1:764:G:N9	2.16	1.12
53:A3:676:G:N7	54:V3:103:ARG:HD2	1.70	1.05
11:M2:2:ARG:N	29:A2:2832:A:HO2'	1.62	0.97
53:A3:676:G:C8	54:V3:103:ARG:CD	2.50	0.94
22:X2:4:SER:N	29:A2:99:G:HO2'	1.67	0.93
54:V4:103:ARG:HG2	54:V4:103:ARG:HH11	1.38	0.89
53:A3:676:G:C8	54:V3:103:ARG:HD2	2.07	0.89
29:A1:271:C:HO2'	29:A1:274:G:H1	0.91	0.88
29:A1:764:G:C8	45:O3:89:GLY:OXT	2.28	0.87
53:A3:676:G:N7	54:V3:103:ARG:CD	2.38	0.86
29:A2:2276:U:H3	29:A2:2292:A:H61	1.26	0.82
29:A1:764:G:C5	45:O3:89:GLY:OXT	2.33	0.81
29:A1:764:G:C8	45:O3:89:GLY:C	2.58	0.81
29:A2:1739:A:H62	29:A2:1746:G:H21	1.27	0.81
53:A4:676:G:C6	54:V4:103:ARG:NH1	2.50	0.80
29:A1:764:G:C4	45:O3:89:GLY:OXT	2.34	0.80
12:N2:21:THR:HG1	29:A2:2392:A:HO2'	1.27	0.80
29:A2:1930:G:H1	29:A2:1948:C:H42	1.29	0.80
53:A4:676:G:C4	54:V4:103:ARG:HD2	2.17	0.80
29:A1:2276:U:H3	29:A1:2292:A:H61	1.30	0.79
29:A2:2695:C:H42	29:A2:2742:G:H1	1.30	0.77
53:A4:641:G:H1'	53:A4:733:G:H1	1.49	0.77
29:A1:764:G:C5	45:O3:89:GLY:C	2.63	0.76
53:A3:183:G:H22	53:A3:194:U:H3	1.30	0.76
29:A2:1063:G:H1	29:A2:1195:C:H42	1.33	0.76
2:D2:149:ARG:HH21	29:A2:2049:C:H5'	1.49	0.76
53:A3:108:G:H1	53:A3:307:C:H42	1.33	0.75
53:A3:872:G:H1	53:A3:881:C:H42	1.33	0.75
7:I1:39:ARG:HH22	7:I1:49:GLY:HA2	1.50	0.75
29:A2:2541:C:H42	29:A2:2550:G:H1	1.34	0.75
29:A1:1580:C:N3	29:A1:1587:G:N1	2.35	0.75
18:T1:97:ARG:HB3	18:T1:102:CYS:HB3	1.69	0.75
29:A1:764:G:N9	45:O3:89:GLY:OXT	2.19	0.75
29:A2:441:C:H42	29:A2:2424:G:H1	1.34	0.74
54:V4:103:ARG:HG2	54:V4:103:ARG:NH1	2.01	0.74
29:A1:764:G:C4	45:O3:89:GLY:C	2.66	0.74
29:A1:764:G:N7	45:O3:89:GLY:OXT	2.21	0.74
34:D3:65:ARG:HH21	34:D3:66:ARG:HH21	1.34	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K3:18:ARG:HA	41:K3:81:ASP:HB2	1.69	0.74
29:A2:2830:G:H1	29:A2:2840:C:H42	1.36	0.74
53:A4:132:G:H1'	53:A4:222:G:H1	1.53	0.74
29:A2:2354:G:H2'	29:A2:2355:G:H8	1.53	0.73
53:A4:147:C:N4	53:A4:163:C:N3	2.35	0.73
53:A4:450:C:H42	53:A4:460:G:H1	1.36	0.73
13:O2:34:VAL:HG21	13:O2:43:GLN:H	1.53	0.73
42:L3:118:SER:HB2	53:A3:533:G:H21	1.54	0.73
29:A1:1249:C:N3	29:A1:1291:G:N2	2.37	0.73
19:U2:75:ASN:HB3	19:U2:85:HIS:HB3	1.70	0.72
29:A1:2316:G:H22	29:A1:2328:C:H42	1.38	0.72
53:A3:551:G:H1	53:A3:859:C:H42	1.37	0.72
53:A3:1400:A:N6	53:A3:1460:A:N7	2.37	0.72
18:T2:11:ASP:H	18:T2:27:VAL:HG12	1.54	0.72
29:A1:902:G:H2'	29:A1:903:G:H8	1.51	0.72
39:I3:118:LYS:NZ	53:A3:1331:A:N7	2.38	0.72
46:P3:38:TYR:HB3	46:P3:50:LYS:HB3	1.72	0.72
5:G2:18:GLU:HB2	5:G2:25:LYS:HB2	1.72	0.72
29:A1:132:C:H42	29:A1:145:G:H1	1.36	0.72
29:A1:764:G:N9	45:O3:89:GLY:C	2.48	0.72
44:N3:40:CYS:H	44:N3:43:CYS:HB2	1.55	0.72
4:F1:52:ILE:HD12	4:F1:55:LYS:HD2	1.72	0.71
29:A1:1374:U:H3	29:A1:1697:C:HO2'	1.38	0.71
53:A3:184:C:H42	53:A3:193:G:H1	1.39	0.71
5:G1:74:ASN:HA	5:G1:77:LYS:HB3	1.73	0.71
2:D1:144:ARG:HG2	29:A1:2586:A:H2'	1.72	0.71
53:A3:142:G:N2	53:A3:169:C:N3	2.38	0.71
29:A1:1063:G:H1	29:A1:1195:C:H42	1.36	0.71
29:A2:866:C:H42	29:A2:1237:G:H1	1.38	0.71
41:K3:13:GLN:H	41:K3:75:TYR:HB2	1.55	0.71
29:A1:2354:G:H2'	29:A1:2355:G:H8	1.54	0.71
53:A4:1387:G:H21	53:A4:1495:A:H1'	1.54	0.71
29:A2:2468:G:H1	29:A2:2512:C:H42	1.39	0.71
53:A4:317:C:H42	53:A4:324:A:H62	1.39	0.71
1:C2:16:MET:SD	1:C2:211:ARG:NH1	2.64	0.71
35:E3:87:SER:HA	35:E3:124:GLY:HA3	1.73	0.71
33:C4:88:ARG:HG3	33:C4:89:GLU:HG3	1.72	0.71
19:U1:75:ASN:HB3	19:U1:85:HIS:HB3	1.71	0.70
29:A1:1930:G:H1	29:A1:1948:C:H42	1.39	0.70
28:d2:32:LEU:HG	28:d2:34:TRP:H	1.56	0.70
29:A2:303:A:N7	29:A2:385:G:N1	2.37	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:446:A:N7	53:A3:463:C:N4	2.38	0.70
32:B3:42:ILE:HG13	32:B3:204:ASN:HB2	1.71	0.70
47:Q3:57:VAL:HA	47:Q3:76:LEU:HA	1.74	0.70
20:V1:40:GLN:HE21	20:V1:57:PHE:HB3	1.55	0.70
36:F3:12:PRO:HB3	36:F3:57:GLN:HE21	1.54	0.70
42:L3:49:ASN:ND2	53:A3:501:C:N3	2.39	0.70
53:A4:749:A:H62	53:A4:797:A:H2	1.38	0.70
3:E1:68:LYS:NZ	29:A1:2458:G:OP2	2.24	0.70
28:d1:17:THR:H	28:d1:22:VAL:HG12	1.56	0.70
29:A1:1660:C:N4	29:A1:1667:G:O6	2.24	0.70
9:K2:23:PRO:HG2	15:Q2:80:GLN:HG3	1.74	0.70
7:I2:132:ALA:HB2	29:A2:2909:U:H1'	1.74	0.70
29:A2:875:U:H2'	29:A2:877:U:H1'	1.73	0.70
4:F1:74:LYS:HG3	4:F1:75:LYS:HG3	1.73	0.70
5:G1:88:LEU:HD12	5:G1:163:TYR:HB2	1.72	0.70
29:A2:2148:G:H22	29:A2:2199:C:H42	1.39	0.70
41:K4:121:PRO:HB3	41:K4:125:PHE:HB2	1.74	0.70
29:A1:138:G:H22	29:A1:140:A:H62	1.40	0.70
53:A4:500:G:N2	53:A4:514:U:OP1	2.25	0.70
35:E3:11:ILE:HD11	35:E3:33:VAL:HG23	1.74	0.70
53:A4:927:U:H3	53:A4:1212:G:H1	1.40	0.70
3:E2:103:LYS:HG2	29:A2:631:U:H3'	1.74	0.69
32:B3:7:VAL:HG21	32:B3:214:ILE:HD13	1.73	0.69
32:B3:187:LEU:HA	32:B3:201:ILE:HB	1.73	0.69
53:A3:670:A:H62	53:A3:686:G:H21	1.40	0.69
53:A4:1489:U:H3	53:A4:1500:G:H1	1.38	0.69
29:A1:764:G:N7	45:O3:89:GLY:C	2.51	0.69
47:Q4:63:ARG:HB2	53:A4:124:A:H62	1.58	0.69
9:K2:2:LYS:HG3	9:K2:4:SER:H	1.57	0.69
29:A2:2142:U:H3	29:A2:2184:G:HO2'	1.39	0.69
36:F3:94:GLN:OE1	48:R3:32:ARG:NH1	2.26	0.69
53:A4:913:C:N3	53:A4:1360:C:N4	2.40	0.69
29:A1:866:C:H42	29:A1:1237:G:H1	1.39	0.69
53:A4:939:C:N3	53:A4:951:A:N6	2.41	0.69
29:A1:504:G:H4'	29:A1:529:A:H61	1.55	0.69
8:J2:11:ALA:HB1	8:J2:99:PHE:H	1.57	0.69
29:A2:757:C:H42	29:A2:772:G:H1	1.41	0.69
29:A2:2169:C:H41	29:A2:2172:G:H1'	1.57	0.69
33:C3:12:LEU:O	44:N3:57:ARG:NH1	2.26	0.69
34:D4:35:ARG:NH2	53:A4:408:G:N7	2.41	0.69
53:A4:59:A:H61	53:A4:347:C:H41	1.40	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:108:G:H1	53:A4:307:C:H42	1.39	0.69
29:A2:504:G:H4'	29:A2:529:A:H61	1.56	0.69
29:A2:1408:A:H62	29:A2:1419:G:H21	1.40	0.69
34:D3:104:VAL:HA	34:D3:107:ARG:HB2	1.75	0.69
13:O2:117:ASP:HB3	13:O2:120:ARG:HG2	1.73	0.69
13:O1:23:ARG:HD2	13:O1:120:ARG:HE	1.57	0.68
29:A1:2519:G:H3'	29:A1:2590:G:H22	1.58	0.68
29:A1:2705:C:HO2'	29:A1:2883:C:HO2'	1.41	0.68
50:T3:73:HIS:HB2	50:T3:76:ALA:H	1.58	0.68
35:E4:40:ARG:HH21	35:E4:66:MET:HE3	1.57	0.68
3:E1:20:LEU:HG	3:E1:22:ALA:H	1.58	0.68
30:B1:80:A:H62	30:B1:101:G:H21	1.40	0.68
29:A2:1469:G:H2'	29:A2:1470:G:H8	1.58	0.68
30:B2:7:C:OP1	30:B2:63:G:N2	2.27	0.68
34:D3:13:ARG:NH1	53:A3:422:U:OP2	2.27	0.68
23:Y2:31:LEU:HG	23:Y2:32:GLN:HG2	1.73	0.68
53:A3:175:G:N7	53:A3:200:C:N4	2.41	0.68
53:A3:862:G:H1	53:A3:889:C:H42	1.42	0.68
21:W1:20:ARG:HD3	21:W1:32:LYS:HB3	1.74	0.68
29:A1:2605:C:H42	29:A1:2617:G:H1	1.39	0.68
4:F2:7:LEU:HD11	4:F2:107:LEU:HD11	1.76	0.68
3:E1:167:ALA:HA	3:E1:170:LEU:HD12	1.76	0.68
1:C2:85:ASP:O	1:C2:91:ARG:NH2	2.27	0.68
12:N2:11:LYS:HG2	12:N2:15:ARG:HH21	1.59	0.68
53:A4:1399:G:O2'	53:A4:1460:A:N6	2.27	0.68
29:A1:80:G:H1	29:A1:103:C:H42	1.41	0.68
10:L2:31:ASP:HA	10:L2:134:ARG:HD3	1.74	0.68
20:V2:25:ARG:HH21	20:V2:32:ARG:HH12	1.41	0.68
29:A2:1971:C:H42	29:A2:1983:G:H1	1.42	0.68
37:G4:144:MET:SD	37:G4:148:ASN:ND2	2.67	0.68
53:A4:27:G:N2	53:A4:292:G:OP1	2.27	0.68
4:F1:5:VAL:HB	4:F1:8:LYS:HB2	1.73	0.68
46:P4:10:GLY:HA2	53:A4:607:C:H5''	1.74	0.68
32:B3:144:ARG:NH2	53:A3:1080:C:OP2	2.27	0.68
4:F2:42:GLY:HA3	29:A2:2320:C:H42	1.58	0.68
4:F2:114:ILE:HG22	4:F2:116:ASP:H	1.59	0.68
53:A3:676:G:C8	54:V3:103:ARG:HD3	2.27	0.68
53:A3:1489:U:H3	53:A3:1500:G:H1	1.41	0.68
53:A4:28:G:N2	53:A4:539:C:N3	2.42	0.68
6:H2:2:LYS:HG2	6:H2:20:ASP:HB2	1.76	0.68
29:A2:1660:C:N4	29:A2:1667:G:O6	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:P3:72:ARG:HG3	46:P3:73:LEU:HG	1.75	0.68
53:A3:1381:C:O2'	53:A3:1479:A:N6	2.27	0.68
29:A2:80:G:H1	29:A2:103:C:H42	1.40	0.67
38:H3:34:GLU:HG2	38:H3:37:ARG:HD2	1.76	0.67
53:A3:123:G:H21	53:A3:190:G:H5'	1.59	0.67
53:A4:646:A:H61	53:A4:725:G:H1	1.41	0.67
19:U1:59:LEU:HB2	19:U1:67:LEU:HB3	1.74	0.67
22:X1:11:GLU:HG3	22:X1:12:GLU:HG3	1.76	0.67
8:J2:1:MET:N	29:A2:1714:A:O2'	2.27	0.67
29:A2:2605:C:H42	29:A2:2617:G:H1	1.40	0.67
53:A3:105:G:H5'	53:A3:384:A:H4'	1.76	0.67
33:C4:180:ALA:HA	33:C4:206:GLU:HB3	1.74	0.67
10:L1:31:ASP:OD1	10:L1:134:ARG:NH1	2.27	0.67
22:X1:59:ARG:HH21	29:A1:75:C:H5''	1.59	0.67
30:B1:20:G:N3	30:B1:69:G:N2	2.41	0.67
29:A2:270:G:H22	29:A2:274:G:H22	1.40	0.67
53:A3:646:A:H61	53:A3:725:G:H1	1.43	0.67
29:A1:757:C:N3	29:A1:772:G:N2	2.40	0.67
53:A3:599:G:H2'	53:A3:600:G:H8	1.60	0.67
29:A2:1469:G:H1	29:A2:1626:C:H42	1.40	0.67
26:b2:13:CYS:HA	26:b2:51:GLU:HA	1.76	0.67
53:A4:676:G:N2	54:V4:99:TYR:OH	2.28	0.67
9:K1:2:LYS:HG3	9:K1:4:SER:H	1.60	0.67
13:O2:93:ARG:HG2	13:O2:115:ARG:HE	1.59	0.67
53:A3:27:G:O6	53:A3:539:C:N4	2.27	0.67
54:V4:56:ALA:H	54:V4:71:GLU:HB3	1.59	0.67
9:K1:47:ASP:O	9:K1:49:ARG:NH1	2.28	0.67
29:A2:2468:G:N2	29:A2:2512:C:N3	2.43	0.67
32:B3:28:PHE:HB3	32:B3:190:THR:HG23	1.76	0.67
29:A2:655:G:H1	29:A2:662:C:H42	1.43	0.67
5:G2:2:SER:N	29:A2:2766:G:N7	2.43	0.67
29:A2:417:G:H2'	29:A2:418:A:H8	1.60	0.67
47:Q3:4:LYS:HE3	47:Q3:61:GLU:HB3	1.77	0.67
53:A3:75:G:N1	53:A3:77:G:N3	2.40	0.67
53:A3:445:A:N7	53:A3:465:G:N2	2.43	0.67
29:A1:1132:A:H1'	29:A1:1153:U:H4'	1.77	0.66
29:A2:478:G:N2	29:A2:482:A:OP2	2.28	0.66
53:A3:561:C:O2'	53:A3:711:A:N3	2.28	0.66
3:E1:125:LEU:HB3	3:E1:196:LEU:HA	1.76	0.66
3:E2:62:ARG:NH1	29:A2:496:G:O2'	2.28	0.66
37:G4:74:GLU:HB3	37:G4:89:MET:HB2	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:304:G:H2'	53:A4:305:G:H8	1.60	0.66
29:A1:1316:A:H62	29:A1:2036:G:H21	1.41	0.66
16:R2:72:LYS:HD2	16:R2:106:ILE:HD11	1.76	0.66
29:A2:2364:C:H42	29:A2:2381:G:H1	1.41	0.66
34:D3:73:ARG:O	34:D3:77:ASN:ND2	2.27	0.66
53:A3:964:G:N2	53:A3:1200:U:O2	2.28	0.66
29:A1:717:G:H2'	29:A1:719:A:H62	1.60	0.66
29:A1:1465:C:N4	29:A1:1634:A:N1	2.40	0.66
29:A1:2539:G:H1	29:A1:2552:C:H42	1.43	0.66
33:C3:131:ARG:HH12	33:C3:168:ALA:HB2	1.59	0.66
53:A3:253:G:H1	53:A3:263:C:H42	1.43	0.66
53:A3:836:A:OP2	53:A3:846:G:N2	2.28	0.66
53:A4:374:C:H42	53:A4:379:G:H1	1.42	0.66
53:A4:673:G:H3'	53:A4:674:G:H8	1.60	0.66
37:G3:111:ARG:NH2	37:G3:123:GLU:OE1	2.28	0.66
38:H3:39:LEU:HB3	38:H3:44:PHE:HB2	1.78	0.66
50:T4:15:ARG:HE	53:A4:101:G:H22	1.42	0.66
53:A4:1329:U:H2'	53:A4:1330:A:H8	1.60	0.66
10:L1:10:ARG:HG3	10:L1:11:LYS:HG3	1.77	0.66
29:A1:441:C:H42	29:A1:2424:G:H1	1.42	0.66
13:O2:88:ILE:HG12	13:O2:91:ARG:HE	1.59	0.66
29:A2:856:U:H2'	29:A2:857:G:H8	1.59	0.66
35:E3:86:ALA:HB2	53:A3:841:A:H5'	1.77	0.66
43:M3:16:ASP:HB2	43:M3:30:ALA:HB1	1.77	0.66
53:A4:670:A:H62	53:A4:686:G:H21	1.44	0.66
5:G2:107:VAL:O	5:G2:152:ARG:NH2	2.28	0.66
33:C3:84:ILE:HG13	33:C3:87:LEU:HD23	1.76	0.66
38:H3:12:ARG:NH1	38:H3:25:ASP:O	2.27	0.66
15:Q1:58:VAL:HB	15:Q1:98:GLU:HB2	1.78	0.66
26:b1:26:ASN:HB3	26:b1:28:ARG:HD3	1.78	0.66
29:A2:1472:G:H1	29:A2:1623:C:H42	1.42	0.66
37:G4:41:ARG:HG3	37:G4:42:ILE:HG12	1.78	0.66
53:A4:105:G:H22	53:A4:310:A:H61	1.44	0.66
29:A1:1249:C:H42	29:A1:1291:G:H1	1.42	0.66
29:A2:312:C:N4	29:A2:380:G:N3	2.36	0.66
36:F3:101:ALA:H	32:B4:237:ALA:HB3	1.59	0.66
53:A3:317:C:H42	53:A3:324:A:H62	1.43	0.66
32:B4:71:VAL:HA	32:B4:93:VAL:HB	1.77	0.66
33:C4:131:ARG:HE	33:C4:134:ILE:HD11	1.61	0.66
46:P4:75:ARG:NH2	53:A4:458:G:OP2	2.28	0.66
53:A4:370:U:H3	53:A4:384:A:H61	1.44	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:F3:55:ASP:OD2	36:F3:86:ARG:NH2	2.29	0.66
47:Q4:4:LYS:NZ	53:A4:120:G:O2'	2.29	0.66
7:I1:17:ASP:HB3	7:I1:55:VAL:HG23	1.77	0.65
29:A2:83:A:N7	29:A2:100:G:N2	2.44	0.65
9:K1:65:ARG:HG3	29:A1:658:A:H4'	1.78	0.65
10:L1:30:GLY:O	10:L1:134:ARG:NH1	2.29	0.65
20:V1:19:LYS:NZ	29:A1:2275:C:OP1	2.28	0.65
29:A1:1578:G:H1	29:A1:1589:U:H3	1.42	0.65
10:L2:110:THR:HB	10:L2:113:GLN:H	1.62	0.65
21:W2:14:VAL:HA	21:W2:41:ARG:HA	1.78	0.65
53:A3:962:C:N3	53:A3:1202:G:N1	2.44	0.65
1:C1:208:LYS:HD2	1:C1:210:GLY:H	1.61	0.65
29:A2:1891:G:H21	29:A2:1909:A:H62	1.42	0.65
29:A2:1249:C:H42	29:A2:1291:G:H1	1.43	0.65
29:A1:2740:A:O2'	29:A1:2742:G:N7	2.30	0.65
13:O2:30:VAL:HG12	13:O2:32:TYR:HB2	1.79	0.65
29:A2:2672:C:H42	29:A2:2677:G:H22	1.45	0.65
30:B2:3:U:OP1	30:B2:5:C:N4	2.30	0.65
32:B3:122:PHE:HA	32:B3:127:ILE:HG13	1.77	0.65
48:R3:72:ARG:NH2	53:A3:719:C:OP1	2.30	0.65
37:G4:76:ARG:HH22	53:A4:1360:C:H1'	1.61	0.65
53:A4:555:A:N3	53:A4:893:G:N2	2.45	0.65
29:A1:1042:C:N3	29:A1:1209:C:N4	2.45	0.65
26:b2:37:ARG:NH2	29:A2:2358:U:O2'	2.29	0.65
29:A2:734:A:N3	29:A2:736:C:N4	2.45	0.65
37:G3:115:ARG:NH2	53:A3:1222:G:N7	2.45	0.65
53:A3:912:A:HO2'	53:A3:1366:C:HO2'	1.45	0.65
35:E4:106:PRO:HA	35:E4:109:ILE:HB	1.79	0.65
40:J4:49:VAL:HG12	44:N4:41:ARG:HB2	1.79	0.65
29:A1:1048:A:OP2	29:A1:1202:G:N1	2.26	0.65
29:A1:2414:G:H1	29:A1:2430:C:H42	1.45	0.65
17:S2:65:ARG:NH2	17:S2:68:ARG:O	2.30	0.65
35:E3:149:GLU:HA	35:E3:152:ARG:HB2	1.79	0.65
49:S3:29:ARG:HG3	49:S3:30:LEU:HG	1.77	0.65
53:A3:1111:C:H4'	53:A3:1112:A:H5'	1.78	0.65
53:A4:561:C:O2'	53:A4:711:A:N3	2.28	0.65
53:A4:964:G:N2	53:A4:1200:U:O2	2.30	0.65
7:I1:129:PRO:O	7:I1:134:ARG:NH2	2.30	0.65
9:K1:104:GLY:O	29:A1:652:G:N1	2.29	0.65
19:U1:103:ARG:NH2	19:U1:135:GLU:O	2.30	0.65
23:Y1:3:ARG:H	23:Y1:59:VAL:HB	1.62	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1827:U:H3	29:A1:1858:A:H61	1.44	0.65
13:O2:64:ARG:HE	13:O2:102:ILE:HD12	1.60	0.65
29:A2:910:A:H62	29:A2:964:G:H21	1.43	0.65
53:A3:930:G:H4'	54:V3:7:ILE:HG22	1.79	0.65
53:A3:968:U:O2	53:A3:1194:A:N6	2.30	0.65
53:A3:973:A:N1	53:A3:1027:C:O2'	2.28	0.65
29:A1:666:U:N3	29:A1:676:G:O6	2.30	0.65
5:G2:85:LYS:NZ	5:G2:164:TYR:OH	2.30	0.65
36:F3:101:ALA:HB3	32:B4:237:ALA:H	1.62	0.65
44:N3:35:ARG:NH1	53:A3:1340:C:OP2	2.29	0.65
53:A3:1235:C:H2'	53:A3:1236:G:H8	1.61	0.65
33:C4:76:VAL:HG13	33:C4:77:ILE:HG12	1.78	0.65
53:A4:1139:A:H62	53:A4:1165:G:H22	1.43	0.65
4:F1:96:ARG:NH2	30:B1:36:U:OP2	2.30	0.64
29:A1:2893:C:H2'	29:A1:2894:A:H8	1.61	0.64
22:X2:33:MET:HA	22:X2:36:ARG:HB2	1.77	0.64
29:A2:259:U:H3	29:A2:398:G:H1	1.44	0.64
29:A2:1214:C:O2	29:A2:1231:G:N2	2.30	0.64
39:I3:3:GLN:HB2	39:I3:18:PHE:HB3	1.78	0.64
34:D4:25:ARG:NH2	34:D4:31:CYS:SG	2.71	0.64
47:Q4:38:ARG:NH1	53:A4:275:C:O2'	2.30	0.64
4:F1:113:ARG:HE	24:Z1:35:VAL:HB	1.63	0.64
16:R1:78:GLU:HA	16:R1:101:SER:HA	1.78	0.64
29:A1:722:C:N4	29:A1:856:U:O4	2.29	0.64
29:A1:785:C:N4	29:A1:809:G:O6	2.31	0.64
14:P2:3:ARG:NH1	14:P2:4:ALA:O	2.30	0.64
36:F4:16:GLN:HA	36:F4:19:LEU:HB2	1.80	0.64
42:L4:59:ARG:HA	42:L4:65:GLU:HA	1.80	0.64
14:P1:83:LEU:HD23	14:P1:91:ASP:HB2	1.80	0.64
29:A2:1042:C:N3	29:A2:1209:C:N4	2.45	0.64
29:A2:2188:C:H3'	29:A2:2190:G:H1	1.60	0.64
53:A3:1077:U:OP2	53:A3:1090:G:N1	2.30	0.64
32:B4:137:ARG:HA	32:B4:140:HIS:HB2	1.80	0.64
37:G4:113:GLU:HB2	37:G4:118:VAL:HG11	1.79	0.64
25:a1:3:LYS:HE3	29:A1:796:U:H3	1.61	0.64
29:A1:427:G:H3'	29:A1:428:G:H8	1.63	0.64
4:F2:59:GLU:HG3	4:F2:60:LEU:HG	1.80	0.64
36:F3:98:LEU:HD22	48:R3:31:LEU:H	1.63	0.64
53:A3:434:A:H62	53:A3:478:U:H3	1.46	0.64
44:N4:24:CYS:SG	44:N4:25:VAL:N	2.71	0.64
29:A1:2157:G:OP2	29:A1:2183:G:N2	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:C3:32:LEU:HD22	33:C3:59:ARG:HH12	1.63	0.64
32:B4:166:ASP:OD2	32:B4:169:LYS:NZ	2.30	0.64
38:H4:45:ILE:HG22	38:H4:47:GLY:H	1.62	0.64
19:U2:59:LEU:HB2	19:U2:67:LEU:HB3	1.79	0.64
29:A2:226:C:H42	29:A2:251:G:H1	1.46	0.64
35:E4:141:GLN:O	35:E4:143:ARG:NH1	2.31	0.64
43:M4:70:LEU:HD12	43:M4:74:VAL:HG21	1.79	0.64
53:A4:1138:G:N2	53:A4:1160:A:O2'	2.30	0.64
12:N1:97:ARG:NH2	30:B1:52:G:OP1	2.31	0.64
14:P1:33:ARG:NH2	29:A1:1300:G:N3	2.45	0.64
29:A1:2673:G:N2	29:A1:2676:A:OP2	2.31	0.64
1:C2:129:ASN:H	1:C2:193:VAL:HG22	1.63	0.64
29:A2:1067:U:OP1	29:A2:1168:G:N2	2.27	0.64
29:A2:2823:G:O6	29:A2:2900:C:N4	2.31	0.64
7:I2:73:THR:HG22	7:I2:84:LYS:HG2	1.78	0.64
10:L2:23:GLY:O	10:L2:101:ARG:NH1	2.31	0.64
10:L2:77:LYS:NZ	29:A2:1004:A:OP1	2.30	0.64
29:A2:1578:G:O6	29:A2:1588:G:N1	2.30	0.64
33:C4:84:ILE:O	33:C4:88:ARG:NH2	2.31	0.64
7:I1:56:ASN:H	7:I1:125:GLY:H	1.45	0.64
29:A1:7:G:H1	29:A1:2643:A:H62	1.46	0.64
29:A1:2641:G:N2	29:A1:2796:A:O2'	2.31	0.64
33:C3:179:ARG:HG3	53:A3:1094:C:H1'	1.79	0.64
53:A4:569:C:H2'	53:A4:570:G:H8	1.63	0.64
1:C1:63:ARG:HD2	1:C1:85:ASP:HB2	1.78	0.64
29:A1:2236:G:H2'	29:A1:2237:G:H8	1.61	0.64
43:M3:111:LYS:HE3	53:A3:1208:A:H5'	1.79	0.64
53:A4:1068:U:H2'	53:A4:1069:G:H8	1.63	0.64
9:K1:117:GLU:HG3	29:A1:689:G:H22	1.61	0.63
17:S1:32:PRO:HA	17:S1:77:LYS:HD3	1.80	0.63
1:C2:97:TYR:OH	1:C2:103:ARG:NH2	2.31	0.63
29:A2:24:G:N2	29:A2:544:C:N3	2.46	0.63
30:B2:79:U:H2'	30:B2:80:A:H8	1.63	0.63
41:K3:23:ALA:H	41:K3:86:GLY:HA3	1.63	0.63
53:A4:836:A:OP2	53:A4:846:G:N2	2.31	0.63
29:A1:139:A:N6	29:A1:1643:G:O2'	2.31	0.63
29:A1:417:G:H2'	29:A1:418:A:H8	1.62	0.63
29:A1:1141:G:O2'	29:A1:1147:G:N2	2.32	0.63
29:A1:2099:U:OP1	29:A1:2611:G:O2'	2.16	0.63
31:e1:27:CYS:SG	31:e1:28:GLU:N	2.71	0.63
29:A2:305:C:N3	29:A2:384:A:N6	2.46	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K4:15:ALA:HB1	41:K4:78:GLN:HG2	1.80	0.63
53:A4:748:G:N2	53:A4:796:U:OP2	2.31	0.63
53:A4:1221:U:H3'	53:A4:1222:G:H8	1.63	0.63
29:A1:696:G:N2	29:A1:697:G:N7	2.47	0.63
29:A1:782:G:N2	29:A1:783:A:N7	2.46	0.63
29:A1:1736:G:O2'	29:A1:1750:A:N6	2.31	0.63
29:A1:1942:A:O2'	29:A1:1944:C:N4	2.30	0.63
15:Q2:60:GLU:HG2	15:Q2:95:LEU:HD23	1.79	0.63
29:A2:615:A:N6	29:A2:715:G:O6	2.30	0.63
29:A2:1055:C:H42	29:A2:1183:G:H1	1.44	0.63
31:e2:15:LYS:HE2	31:e2:17:ILE:HD11	1.80	0.63
41:K3:13:GLN:HG3	41:K3:15:ALA:H	1.63	0.63
48:R3:44:LEU:HD21	48:R3:48:GLY:H	1.63	0.63
53:A3:893:G:H2'	53:A3:894:G:H8	1.62	0.63
53:A3:1358:U:H2'	53:A3:1359:A:H8	1.64	0.63
8:J1:12:ASP:HA	8:J1:98:VAL:HA	1.79	0.63
11:M1:11:ASN:OD1	29:A1:1702:G:N2	2.31	0.63
29:A1:1971:C:H42	29:A1:1983:G:H1	1.44	0.63
1:C2:206:LEU:HB2	29:A2:1824:A:H4'	1.79	0.63
29:A2:139:A:N6	29:A2:1643:G:O2'	2.31	0.63
29:A2:696:G:N1	29:A2:698:C:N3	2.45	0.63
29:A2:2106:A:H62	29:A2:2251:G:H21	1.44	0.63
38:H3:19:VAL:O	38:H3:21:LYS:NZ	2.29	0.63
14:P2:94:ASN:ND2	15:Q2:11:GLN:OE1	2.32	0.63
29:A2:131:C:H42	29:A2:145:G:H22	1.45	0.63
29:A2:2673:G:N2	29:A2:2676:A:OP2	2.31	0.63
53:A4:901:C:N4	53:A4:1374:G:O6	2.32	0.63
29:A1:824:G:N2	29:A1:842:A:O3'	2.31	0.63
29:A1:1320:A:H2'	29:A1:1321:U:H2'	1.81	0.63
16:R2:34:ASN:HA	16:R2:37:ARG:HB2	1.80	0.63
29:A2:1217:G:O6	29:A2:1228:C:N4	2.32	0.63
38:H3:17:THR:O	38:H3:78:GLN:NE2	2.31	0.63
53:A3:304:G:H2'	53:A3:305:G:H8	1.64	0.63
53:A3:1415:A:OP2	53:A3:1444:G:N2	2.30	0.63
41:K4:34:ASP:OD1	41:K4:38:ASN:N	2.32	0.63
13:O1:120:ARG:NH2	29:A1:2861:U:O4	2.32	0.63
29:A1:893:C:H42	29:A1:981:G:H1	1.46	0.63
18:T2:28:LYS:HG2	18:T2:29:GLU:HG3	1.81	0.63
29:A2:665:G:O2'	29:A2:678:G:N2	2.32	0.63
53:A3:136:G:N2	53:A3:217:U:OP1	2.31	0.63
53:A3:154:A:O2'	53:A3:339:A:N6	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:404:G:H1	53:A3:428:C:H42	1.46	0.63
33:C4:22:TRP:HB2	33:C4:59:ARG:HB2	1.81	0.63
38:H4:12:ARG:NH1	38:H4:25:ASP:O	2.32	0.63
1:C1:28:GLU:OE2	29:A1:1613:C:N4	2.32	0.63
13:O1:23:ARG:NH1	29:A1:2861:U:O4	2.31	0.63
29:A1:877:U:O2'	29:A1:880:G:N1	2.32	0.63
2:D2:205:ALA:HA	29:A2:2749:A:H61	1.64	0.63
3:E1:53:THR:OG1	29:A1:850:G:N2	2.32	0.63
7:I1:105:GLY:O	29:A1:1184:G:N2	2.31	0.63
29:A1:2848:U:O4	29:A1:2895:A:N6	2.31	0.63
29:A2:2316:G:H22	29:A2:2328:C:H42	1.45	0.63
34:D3:10:ARG:NH1	53:A3:525:G:OP2	2.32	0.63
34:D3:155:LEU:O	34:D3:159:ARG:NH1	2.32	0.63
53:A3:260:G:OP2	53:A3:262:C:N4	2.30	0.63
53:A3:792:G:N2	53:A3:793:C:O2	2.30	0.63
2:D1:149:ARG:HH21	29:A1:2049:C:H5'	1.63	0.62
29:A1:2541:C:H42	29:A1:2550:G:H1	1.45	0.62
14:P2:10:ARG:O	14:P2:14:HIS:N	2.26	0.62
29:A2:1543:A:N6	29:A2:1629:A:OP1	2.30	0.62
33:C3:37:GLN:OE1	44:N3:52:GLN:NE2	2.32	0.62
41:K4:120:ARG:HD3	53:A4:761:G:H21	1.64	0.62
2:D1:104:VAL:HG23	2:D1:198:VAL:HG22	1.82	0.62
14:P1:58:ARG:NH2	29:A1:1202:G:OP1	2.32	0.62
14:P2:92:ARG:HG3	14:P2:93:LYS:HZ1	1.64	0.62
29:A2:2341:A:H3'	29:A2:2342:A:H8	1.64	0.62
33:C3:40:ARG:NH2	33:C3:55:VAL:O	2.32	0.62
53:A3:451:C:OP2	53:A3:455:C:N4	2.32	0.62
53:A3:839:C:H42	53:A3:844:G:H1	1.46	0.62
29:A1:179:G:H21	29:A1:197:A:H62	1.46	0.62
29:A1:590:C:N4	29:A1:601:U:O4	2.32	0.62
29:A1:1245:U:O4	29:A1:1294:A:N6	2.33	0.62
21:W2:24:ALA:HB1	21:W2:26:ARG:HB3	1.80	0.62
24:Z2:34:GLU:HG3	24:Z2:35:VAL:HG23	1.81	0.62
50:T3:17:ARG:HH22	53:A3:95:G:H5''	1.65	0.62
53:A3:496:C:N4	53:A3:521:G:O6	2.31	0.62
7:I2:73:THR:HB	7:I2:82:LEU:HD11	1.80	0.62
53:A3:960:A:H61	53:A3:1203:G:H22	1.48	0.62
37:G4:94:ARG:NH2	53:A4:1360:C:OP1	2.26	0.62
42:L4:76:ASN:HB3	42:L4:107:ALA:HA	1.81	0.62
48:R4:76:LEU:HB2	48:R4:78:LEU:HG	1.81	0.62
29:A2:2099:U:OP1	29:A2:2611:G:O2'	2.17	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I4:114:TYR:HB3	40:J4:60:ARG:HD3	1.82	0.62
47:Q4:47:PRO:HB2	47:Q4:48:GLU:HG2	1.80	0.62
53:A4:1001:G:N7	53:A4:1002:G:O2'	2.32	0.62
18:T1:81:LYS:O	18:T1:97:ARG:NH1	2.33	0.62
20:V1:25:ARG:NH2	29:A1:2369:C:OP1	2.32	0.62
29:A1:2317:G:H22	29:A1:2327:C:H42	1.47	0.62
29:A2:1942:A:O2'	29:A2:1944:C:N4	2.32	0.62
29:A2:2236:G:H2'	29:A2:2237:G:H8	1.63	0.62
53:A4:1235:C:H2'	53:A4:1236:G:H8	1.65	0.62
1:C1:126:GLN:O	1:C1:129:ASN:ND2	2.33	0.62
9:K1:33:ARG:NH2	9:K1:41:ARG:O	2.33	0.62
16:R1:69:LEU:O	16:R1:111:HIS:ND1	2.32	0.62
29:A2:167:G:OP2	29:A2:167:G:N2	2.29	0.62
29:A2:2564:G:H1	29:A2:2572:C:H42	1.47	0.62
33:C3:183:ASP:HB2	33:C3:202:ILE:HB	1.80	0.62
35:E3:152:ARG:NH1	38:H3:42:GLU:OE1	2.33	0.62
53:A3:272:C:H2'	53:A3:273:G:H8	1.65	0.62
40:J4:22:LYS:HD2	40:J4:26:ALA:HB2	1.80	0.62
41:K4:13:GLN:HB3	41:K4:15:ALA:H	1.65	0.62
42:L4:5:PRO:HD2	42:L4:9:GLN:HB3	1.81	0.62
53:A4:75:G:H5''	53:A4:76:G:H4'	1.81	0.62
53:A4:496:C:N4	53:A4:521:G:O6	2.33	0.62
4:F1:116:ASP:O	4:F1:118:ARG:NH1	2.33	0.62
8:J1:1:MET:N	29:A1:1714:A:O2'	2.32	0.62
18:T1:102:CYS:SG	18:T1:103:GLY:N	2.73	0.62
21:W1:84:GLY:H	21:W1:86:SER:H	1.47	0.62
29:A1:434:G:H1	29:A1:451:A:H61	1.47	0.62
1:C2:212:SER:HA	1:C2:215:LEU:HB3	1.81	0.62
29:A2:2099:U:O2'	29:A2:2610:U:N3	2.33	0.62
31:e2:27:CYS:SG	31:e2:28:GLU:N	2.72	0.62
32:B3:162:ILE:O	32:B3:185:ILE:N	2.33	0.62
38:H3:70:GLN:HA	38:H3:74:PRO:HB3	1.82	0.62
53:A3:153:G:N2	53:A3:156:A:OP2	2.33	0.62
54:V3:76:LEU:HD23	54:V3:77:TYR:HE2	1.65	0.62
32:B4:144:ARG:NH2	53:A4:1080:C:OP2	2.32	0.62
4:F1:72:ARG:HA	4:F1:87:PRO:HA	1.81	0.62
29:A1:167:G:N2	29:A1:167:G:OP2	2.31	0.62
29:A1:1105:A:OP1	29:A1:1137:G:N2	2.33	0.62
4:F2:64:THR:HG23	4:F2:66:GLN:HB2	1.82	0.62
29:A2:391:G:H2'	29:A2:392:G:H8	1.63	0.62
53:A3:1219:A:OP2	53:A3:1281:G:N1	2.31	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:1387:G:H21	53:A3:1495:A:H1'	1.65	0.62
53:A4:553:G:O6	53:A4:842:A:N6	2.32	0.62
54:V4:24:LYS:HD3	54:V4:84:VAL:HG11	1.82	0.62
13:O1:125:ARG:NH1	13:O1:128:GLU:OE1	2.33	0.62
29:A1:370:A:O2'	29:A1:372:A:N6	2.33	0.62
2:D2:36:ARG:NH1	2:D2:37:ARG:O	2.32	0.62
13:O2:121:ILE:HA	13:O2:124:ASP:HB2	1.82	0.62
29:A2:1048:A:OP2	29:A2:1202:G:N1	2.33	0.62
29:A2:2764:A:H3'	29:A2:2765:A:H2'	1.82	0.62
39:I3:20:ARG:NH2	53:A3:1112:A:O3'	2.33	0.62
36:F4:12:PRO:HB3	36:F4:57:GLN:HE21	1.65	0.62
38:H4:17:THR:O	38:H4:78:GLN:NE2	2.33	0.62
3:E1:161:GLU:HA	3:E1:164:ARG:HB2	1.81	0.61
29:A1:1539:G:N7	29:A1:1548:G:N2	2.47	0.61
29:A1:2299:C:O2'	29:A1:2302:A:N6	2.33	0.61
30:B1:7:C:OP1	30:B1:63:G:N2	2.33	0.61
31:e1:15:LYS:HE2	31:e1:17:ILE:HD11	1.82	0.61
8:J2:104:ARG:HB2	8:J2:107:ARG:HH22	1.65	0.61
29:A2:632:U:H2'	29:A2:633:A:H8	1.64	0.61
29:A2:785:C:N4	29:A2:809:G:O6	2.33	0.61
53:A3:703:C:H3'	53:A3:704:G:H2'	1.81	0.61
32:B4:178:ARG:NH1	32:B4:196:LEU:O	2.33	0.61
41:K4:19:ALA:HB3	41:K4:80:VAL:HG13	1.82	0.61
29:A1:58:U:OP1	29:A1:72:A:N6	2.33	0.61
29:A1:924:G:N2	29:A1:951:C:O2	2.32	0.61
29:A1:1753:G:H2'	29:A1:1754:G:H8	1.65	0.61
16:R2:6:ILE:HB	29:A2:521:G:H4'	1.82	0.61
21:W2:2:SER:N	29:A2:1412:G:OP2	2.33	0.61
22:X2:70:GLN:NE2	29:A2:108:G:O2'	2.32	0.61
23:Y2:11:SER:HB2	29:A2:1036:A:H5''	1.82	0.61
31:e2:2:LYS:HG3	31:e2:3:VAL:HG23	1.81	0.61
32:B3:178:ARG:NH1	32:B3:198:ASP:OD2	2.31	0.61
37:G3:47:CYS:SG	37:G3:51:GLN:NE2	2.73	0.61
38:H3:1:MET:SD	38:H3:3:THR:OG1	2.58	0.61
26:b1:38:LYS:NZ	26:b1:40:CYS:SG	2.74	0.61
29:A1:2301:A:N1	29:A1:2360:A:N6	2.47	0.61
29:A1:2364:C:H42	29:A1:2381:G:H22	1.49	0.61
1:C2:126:GLN:O	1:C2:129:ASN:ND2	2.33	0.61
5:G2:43:VAL:HG12	5:G2:52:VAL:HG22	1.82	0.61
5:G2:86:GLU:HG2	5:G2:130:ARG:HH22	1.64	0.61
29:A2:307:A:N6	29:A2:384:A:O2'	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:1984:A:HO2'	53:A4:1461:C:HO2'	1.42	0.61
29:A2:2860:G:N2	29:A2:2881:G:O6	2.32	0.61
39:I3:67:GLY:O	39:I3:73:GLN:NE2	2.32	0.61
53:A3:132:G:OP2	53:A3:222:G:N2	2.32	0.61
53:A3:676:G:C5	54:V3:103:ARG:NE	2.68	0.61
52:W4:135:LYS:O	52:W4:162:ARG:NH2	2.33	0.61
53:A4:911:C:N4	53:A4:915:A:N1	2.48	0.61
5:G1:146:ALA:HB1	5:G1:149:ARG:HE	1.65	0.61
9:K1:84:ASN:ND2	29:A1:654:A:N7	2.47	0.61
12:N1:25:ARG:NH1	30:B1:11:G:OP1	2.33	0.61
29:A1:1539:G:N1	29:A1:1547:C:N3	2.49	0.61
1:C2:239:ARG:NE	29:A2:2605:C:OP1	2.31	0.61
29:A2:303:A:OP2	29:A2:305:C:N4	2.33	0.61
29:A2:442:C:O2'	29:A2:2423:G:N2	2.27	0.61
29:A2:2299:C:O2'	29:A2:2302:A:N6	2.33	0.61
29:A2:2652:G:N1	29:A2:2791:A:OP2	2.30	0.61
37:G3:56:GLN:HB3	37:G3:60:LYS:HD2	1.81	0.61
38:H3:46:LYS:HB2	38:H3:64:LYS:HB3	1.82	0.61
39:I3:20:ARG:NH1	53:A3:1112:A:O2'	2.32	0.61
52:X3:139:MET:N	52:X3:139:MET:SD	2.74	0.61
53:A3:913:C:N3	53:A3:1361:G:N2	2.43	0.61
37:G4:33:ASP:O	37:G4:35:LYS:NZ	2.32	0.61
53:A4:404:G:H1	53:A4:428:C:H42	1.48	0.61
53:A4:946:A:O2'	53:A4:949:C:N3	2.33	0.61
53:A4:1147:C:H42	53:A4:1152:G:H22	1.49	0.61
1:C2:132:PRO:HA	1:C2:190:TYR:HA	1.82	0.61
2:D2:37:ARG:NH1	29:A2:2799:C:O2	2.34	0.61
3:E2:18:ARG:HH11	3:E2:19:GLU:H	1.47	0.61
27:c2:3:ARG:NH2	29:A2:801:A:OP1	2.34	0.61
27:c2:6:GLN:NE2	29:A2:1660:C:O2	2.32	0.61
30:B2:73:C:H42	30:B2:108:G:H1	1.47	0.61
53:A3:54:C:N4	53:A3:348:A:OP1	2.33	0.61
53:A3:326:G:O4'	53:A3:347:C:N4	2.34	0.61
53:A3:1156:G:N1	53:A3:1157:A:N3	2.49	0.61
42:L4:38:THR:HG22	42:L4:39:VAL:HG23	1.81	0.61
47:Q4:14:LYS:NZ	53:A4:270:G:OP2	2.29	0.61
29:A1:856:U:H2'	29:A1:857:G:H8	1.66	0.61
3:E2:68:LYS:NZ	29:A2:2458:G:OP2	2.29	0.61
29:A2:624:G:O6	29:A2:707:C:N4	2.32	0.61
29:A2:839:C:OP1	29:A2:1814:C:N4	2.33	0.61
29:A2:2130:G:O6	29:A2:2207:C:N4	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2301:A:N1	29:A2:2360:A:N6	2.49	0.61
42:L3:41:ARG:NH1	42:L3:41:ARG:O	2.32	0.61
47:Q3:58:GLU:OE2	47:Q3:75:ARG:NH1	2.32	0.61
53:A4:1140:C:O2	53:A4:1163:G:N2	2.33	0.61
1:C1:227:ASN:HD21	29:A1:829:G:H1	1.48	0.61
19:U1:7:ALA:HB2	19:U1:59:LEU:HD22	1.83	0.61
22:X1:39:ALA:O	22:X1:43:GLN:NE2	2.32	0.61
15:Q2:60:GLU:HB3	15:Q2:95:LEU:HB3	1.81	0.61
29:A2:179:G:H21	29:A2:197:A:H62	1.48	0.61
29:A2:2299:C:N4	29:A2:2397:G:O6	2.34	0.61
53:A3:1387:G:N3	53:A3:1495:A:O2'	2.33	0.61
37:G4:111:ARG:NH2	37:G4:123:GLU:OE1	2.33	0.61
40:J4:9:ARG:HB2	40:J4:95:GLU:HB2	1.83	0.61
9:K1:20:GLY:O	9:K1:21:ARG:NH1	2.31	0.61
18:T1:99:CYS:SG	18:T1:101:LYS:NZ	2.74	0.61
29:A1:877:U:HO2'	29:A1:880:G:H1	1.47	0.61
11:M2:36:THR:OG1	11:M2:37:THR:N	2.32	0.61
14:P2:101:ARG:HH21	15:Q2:13:ARG:HD2	1.65	0.61
29:A2:76:C:H42	29:A2:107:G:H1	1.48	0.61
29:A2:224:C:H42	29:A2:459:G:H1	1.49	0.61
36:F4:74:ASP:HA	36:F4:77:ARG:HD3	1.81	0.61
53:A4:76:G:N2	53:A4:85:U:O4	2.34	0.61
53:A4:500:G:H1'	53:A4:513:G:H4'	1.83	0.61
53:A4:753:C:H2'	53:A4:754:G:H8	1.66	0.61
23:Y1:9:VAL:HG23	23:Y1:10:LYS:HG2	1.81	0.61
3:E2:152:GLU:OE2	3:E2:191:ARG:NH1	2.30	0.61
13:O2:4:GLY:H	29:A2:2887:C:H4'	1.65	0.61
29:A2:1110:G:H1	29:A2:1124:C:H1'	1.66	0.61
41:K3:45:GLY:HA3	41:K3:55:LYS:HE3	1.83	0.61
53:A3:72:C:N3	53:A3:73:G:N2	2.49	0.61
53:A3:327:G:H2'	53:A3:328:G:H8	1.66	0.61
53:A3:1399:G:O2'	53:A3:1460:A:N6	2.33	0.61
53:A4:154:A:O2'	53:A4:339:A:N6	2.33	0.61
53:A4:1053:C:N4	53:A4:1067:U:O4	2.34	0.61
22:X1:47:ASN:O	29:A1:93:G:N2	2.33	0.61
29:A1:1654:G:H5''	29:A1:1655:C:H5'	1.82	0.61
29:A2:665:G:N2	29:A2:680:A:N1	2.49	0.61
36:F3:86:ARG:HB2	36:F3:87:ARG:HH11	1.66	0.61
53:A3:102:A:H62	53:A3:319:G:H21	1.48	0.61
53:A3:1046:G:O6	53:A3:1174:G:N2	2.33	0.61
45:O4:23:GLY:O	53:A4:640:G:N2	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:S4:52:TYR:HA	49:S4:57:HIS:HA	1.82	0.61
53:A4:521:G:H2'	53:A4:522:A:H8	1.66	0.61
53:A4:599:G:H2'	53:A4:600:G:H8	1.65	0.61
1:C1:66:ASP:OD2	1:C1:103:ARG:NH1	2.34	0.60
1:C1:175:LEU:N	1:C1:183:ARG:O	2.34	0.60
11:M1:92:GLY:HA3	29:A1:2851:G:H21	1.65	0.60
29:A1:1047:U:O2	29:A1:1205:G:N1	2.34	0.60
29:A1:1383:U:H2'	29:A1:1384:A:H8	1.66	0.60
29:A2:747:C:OP1	29:A2:1683:A:N6	2.34	0.60
34:D3:110:PHE:HB3	34:D3:158:ILE:HD12	1.83	0.60
53:A3:770:A:N6	53:A3:776:U:OP2	2.34	0.60
53:A3:915:A:N6	53:A3:1325:C:N3	2.49	0.60
53:A3:1410:A:H61	53:A3:1450:A:H62	1.49	0.60
47:Q4:68:ARG:HH12	53:A4:271:G:H5'	1.65	0.60
4:F1:19:LEU:HD12	4:F1:31:VAL:HG13	1.83	0.60
5:G1:95:ARG:NH2	5:G1:128:PRO:O	2.26	0.60
18:T1:82:PRO:O	18:T1:84:ARG:NH1	2.34	0.60
3:E2:103:LYS:H	29:A2:631:U:H5''	1.65	0.60
20:V2:32:ARG:O	20:V2:35:ASN:ND2	2.35	0.60
29:A2:1383:U:H2'	29:A2:1384:A:H8	1.67	0.60
46:P3:5:ARG:NH1	53:A3:371:G:O2'	2.34	0.60
48:R3:29:PHE:HB3	48:R3:36:ASN:HB3	1.84	0.60
53:A3:173:A:H1'	53:A3:202:A:H62	1.66	0.60
53:A3:210:U:H5''	53:A3:211:G:H5'	1.84	0.60
44:N4:4:LYS:HB2	53:A4:1030:G:H5'	1.83	0.60
53:A4:740:U:O2'	53:A4:856:C:O2	2.20	0.60
29:A1:1329:G:H1	29:A1:1337:C:H42	1.49	0.60
2:D2:152:LYS:HG2	29:A2:2633:C:H5''	1.84	0.60
4:F2:47:LYS:HZ2	4:F2:83:ARG:HG2	1.67	0.60
16:R2:72:LYS:HB3	16:R2:106:ILE:HG13	1.83	0.60
29:A2:951:C:O2	29:A2:952:C:N4	2.35	0.60
36:F3:35:ALA:HA	36:F3:66:GLU:H	1.66	0.60
53:A3:105:G:H22	53:A3:310:A:H61	1.48	0.60
4:F1:47:LYS:NZ	29:A1:2325:A:N3	2.49	0.60
27:c1:12:ARG:NH2	29:A1:1358:G:OP1	2.35	0.60
29:A1:391:G:H2'	29:A1:392:G:H8	1.65	0.60
29:A1:2166:C:N3	29:A1:2173:G:N2	2.49	0.60
29:A1:2477:C:N3	29:A1:2501:G:N1	2.48	0.60
29:A1:2769:U:O2'	31:e1:19:ARG:NH2	2.35	0.60
1:C2:151:LYS:NZ	29:A2:1834:G:OP1	2.33	0.60
14:P2:5:LYS:NZ	29:A2:30:G:OP1	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:1835:A:OP1	29:A2:1848:A:N6	2.34	0.60
29:A2:2848:U:O4	29:A2:2895:A:N6	2.35	0.60
53:A3:753:C:H2'	53:A3:754:G:H8	1.66	0.60
37:G4:91:VAL:O	37:G4:96:GLN:NE2	2.34	0.60
53:A4:565:U:H2'	53:A4:566:A:H8	1.65	0.60
15:Q1:95:LEU:O	15:Q1:97:LYS:NZ	2.35	0.60
30:B1:25:G:H22	30:B1:62:C:H42	1.48	0.60
3:E2:120:GLU:O	3:E2:122:LYS:NZ	2.34	0.60
7:I2:105:GLY:O	29:A2:1184:G:N2	2.35	0.60
24:Z2:50:VAL:N	43:M4:65:LYS:O	2.34	0.60
53:A3:612:G:H3'	53:A3:613:G:H21	1.67	0.60
54:V3:24:LYS:HD3	54:V3:84:VAL:HG11	1.82	0.60
33:C4:186:PHE:HA	33:C4:199:LYS:HG2	1.82	0.60
36:F4:80:ARG:NH2	53:A4:655:U:OP1	2.34	0.60
37:G4:95:ARG:O	37:G4:99:LEU:N	2.34	0.60
47:Q4:101:ARG:NH1	53:A4:874:C:OP2	2.29	0.60
53:A4:9:G:H1	53:A4:25:C:H42	1.49	0.60
53:A4:545:C:H41	53:A4:861:U:H2'	1.67	0.60
53:A4:902:G:O6	53:A4:1374:G:N1	2.34	0.60
53:A4:1415:A:OP2	53:A4:1444:G:N2	2.28	0.60
1:C1:250:TRP:NE1	29:A1:1839:C:OP1	2.35	0.60
21:W1:20:ARG:NH1	21:W1:33:LYS:O	2.35	0.60
16:R2:98:LYS:NZ	29:A2:2036:G:OP1	2.34	0.60
29:A2:2771:U:O4	29:A2:2773:A:N6	2.34	0.60
35:E3:106:PRO:O	35:E3:110:LEU:N	2.31	0.60
37:G3:36:LYS:H	53:A3:1355:G:H5'	1.66	0.60
38:H3:119:LEU:HD13	38:H3:124:ALA:HB2	1.82	0.60
53:A3:1117:U:N3	53:A3:1124:G:O6	2.34	0.60
53:A4:1423:G:H4'	53:A4:1426:A:H61	1.66	0.60
17:S1:37:THR:OG1	29:A1:142:G:N2	2.35	0.60
29:A1:711:G:N2	29:A1:712:G:O6	2.34	0.60
1:C2:258:LYS:HG2	29:A2:1877:C:H5''	1.84	0.60
3:E2:108:LYS:NZ	29:A2:626:C:OP1	2.34	0.60
17:S2:31:HIS:O	17:S2:77:LYS:NZ	2.35	0.60
28:d2:26:LYS:NZ	29:A2:2375:A:OP1	2.35	0.60
41:K3:85:ARG:NH1	41:K3:111:ASP:O	2.35	0.60
34:D4:208:SER:HB2	53:A4:8:A:H8	1.67	0.60
53:A4:327:G:H2'	53:A4:328:G:H8	1.67	0.60
1:C1:206:LEU:HB2	29:A1:1824:A:H4'	1.84	0.60
29:A1:516:G:N2	29:A1:519:A:OP2	2.35	0.60
29:A1:757:C:H42	29:A1:772:G:H1	1.48	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C2:12:SER:HB2	29:A2:778:G:H22	1.66	0.60
9:K2:132:LYS:HA	9:K2:135:LEU:HB3	1.83	0.60
12:N2:16:ASN:O	12:N2:20:ARG:NH2	2.35	0.60
29:A2:1935:U:O2	29:A2:1943:A:N6	2.34	0.60
29:A2:2237:G:N2	29:A2:2240:C:N3	2.50	0.60
53:A3:929:U:O2'	53:A3:942:A:N6	2.33	0.60
42:L4:113:ARG:NH2	53:A4:520:G:OP1	2.34	0.60
53:A4:559:G:N2	53:A4:858:G:N3	2.47	0.60
53:A4:977:U:O4	53:A4:1023:A:N6	2.34	0.60
53:A4:1158:G:H22	53:A4:1161:A:H62	1.47	0.60
3:E1:158:THR:HG22	3:E1:164:ARG:HG3	1.82	0.60
4:F1:121:ASN:ND2	4:F1:181:ARG:O	2.34	0.60
10:L1:77:LYS:NZ	10:L1:82:ARG:O	2.35	0.60
27:c1:13:ALA:HB2	27:c1:48:LYS:HE2	1.84	0.60
29:A1:747:C:O2	29:A1:814:G:N2	2.35	0.60
29:A1:1050:G:N2	29:A1:1201:C:N3	2.50	0.60
29:A1:2078:A:H62	29:A1:2591:A:H61	1.48	0.60
1:C2:217:ARG:NH1	29:A2:1855:G:OP1	2.34	0.60
19:U2:168:GLU:OE2	29:A2:924:G:N2	2.33	0.60
29:A2:2117:G:H1	29:A2:2220:C:H42	1.49	0.60
29:A2:2221:U:H3	29:A2:2239:A:H62	1.49	0.60
41:K3:21:ILE:HG23	41:K3:30:VAL:HG12	1.83	0.60
42:L3:49:ASN:ND2	53:A3:512:G:O6	2.35	0.60
33:C4:16:ARG:NH2	33:C4:181:ASN:OD1	2.33	0.60
35:E4:79:GLU:OE2	38:H4:105:ARG:NH2	2.33	0.60
39:I4:31:GLN:HG3	39:I4:36:TYR:HB2	1.83	0.60
53:A4:976:C:N4	53:A4:1025:C:O2'	2.34	0.60
4:F1:120:LEU:O	4:F1:181:ARG:N	2.33	0.60
13:O1:108:ARG:HH22	53:A3:1414:G:H3'	1.66	0.60
20:V1:32:ARG:O	20:V1:35:ASN:ND2	2.34	0.60
21:W1:56:GLN:NE2	21:W1:82:LEU:O	2.35	0.60
21:W1:87:PRO:HA	21:W1:90:ILE:HB	1.83	0.60
29:A1:2135:C:N4	29:A1:2173:G:O2'	2.34	0.60
14:P2:84:LYS:HA	14:P2:89:GLU:HG2	1.84	0.60
29:A2:657:G:HO2'	29:A2:667:C:HO2'	1.48	0.60
29:A2:2659:G:N2	29:A2:2781:G:OP1	2.35	0.60
34:D4:21:LEU:O	34:D4:114:ARG:NH1	2.34	0.60
40:J4:17:ASP:OD2	53:A4:1134:A:O2'	2.20	0.60
53:A4:271:G:OP1	53:A4:271:G:N2	2.31	0.60
53:A4:953:G:N2	53:A4:1345:A:OP1	2.35	0.60
5:G1:41:MET:SD	5:G1:42:ARG:NH1	2.75	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:N1:62:LYS:HB3	12:N1:97:ARG:HH21	1.67	0.59
29:A1:2660:C:OP2	29:A1:2747:G:O2'	2.19	0.59
18:T2:67:LEU:HD21	18:T2:71:LYS:HD2	1.83	0.59
29:A2:824:G:N2	29:A2:842:A:O3'	2.35	0.59
33:C3:35:GLU:HA	33:C3:38:ARG:HB2	1.83	0.59
38:H3:12:ARG:NH2	53:A3:809:C:OP1	2.35	0.59
42:L3:45:PRO:HG2	42:L3:51:ALA:H	1.67	0.59
42:L3:59:ARG:HA	42:L3:65:GLU:HA	1.83	0.59
53:A4:891:A:H2'	53:A4:892:A:H8	1.67	0.59
1:C1:88:ARG:NH2	29:A1:1851:U:OP1	2.35	0.59
3:E2:178:PRO:HB3	3:E2:198:ALA:HB1	1.84	0.59
8:J2:2:ILE:HB	8:J2:33:ALA:HB3	1.84	0.59
11:M2:84:ALA:O	11:M2:88:ARG:NH2	2.35	0.59
17:S2:35:THR:HG22	29:A2:1647:C:H5'	1.83	0.59
29:A2:298:C:O2'	29:A2:299:G:N2	2.35	0.59
29:A2:1085:G:N1	29:A2:1166:C:O2	2.26	0.59
53:A3:1427:G:H1	53:A3:1436:C:H42	1.50	0.59
53:A3:1437:A:N6	53:A3:1438:G:N3	2.50	0.59
52:W4:139:MET:N	52:W4:139:MET:SD	2.74	0.59
53:A4:588:U:O2'	53:A4:616:G:N2	2.35	0.59
53:A4:1098:C:OP2	53:A4:1099:G:N2	2.35	0.59
53:A4:1119:C:O2'	53:A4:1120:G:N2	2.36	0.59
9:K1:76:LYS:O	9:K1:77:ARG:NE	2.35	0.59
29:A1:610:G:H1'	29:A1:1304:G:H22	1.66	0.59
29:A1:932:G:OP1	29:A1:936:A:N6	2.34	0.59
29:A1:2150:A:N7	29:A1:2185:C:N4	2.48	0.59
29:A1:2226:C:N3	29:A1:2235:G:N2	2.50	0.59
1:C2:144:ALA:HB1	1:C2:153:ALA:HB1	1.84	0.59
29:A2:340:G:OP2	29:A2:341:C:N4	2.35	0.59
29:A2:1871:C:H42	29:A2:1925:A:H62	1.49	0.59
29:A2:2865:C:N3	29:A2:2876:G:N2	2.41	0.59
52:X3:130:ARG:NH1	53:A4:1148:G:OP1	2.36	0.59
54:V3:76:LEU:HD23	54:V3:77:TYR:CE2	2.37	0.59
32:B4:16:HIS:O	32:B4:204:ASN:ND2	2.35	0.59
2:D1:149:ARG:NE	29:A1:2048:G:O3'	2.34	0.59
7:I1:1:MET:HE2	14:P1:95:LEU:HB3	1.85	0.59
16:R1:92:ARG:O	29:A1:1662:A:N6	2.35	0.59
2:D2:48:GLN:HE21	2:D2:78:LEU:HD12	1.68	0.59
29:A2:1081:U:O2'	29:A2:2765:A:N6	2.35	0.59
29:A2:1481:U:O2'	29:A2:1610:G:N2	2.36	0.59
29:A2:1746:G:H4'	29:A2:2002:A:H4'	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2274:C:H42	29:A2:2294:G:H1	1.50	0.59
32:B3:80:ILE:HG21	32:B3:234:PRO:HD3	1.85	0.59
32:B4:94:ASN:ND2	32:B4:150:SER:OG	2.35	0.59
41:K4:73:MET:HA	41:K4:77:MET:HB3	1.85	0.59
14:P1:37:GLU:HA	14:P1:40:PHE:HB2	1.84	0.59
19:U1:59:LEU:HD12	19:U1:67:LEU:HD23	1.84	0.59
29:A1:1331:G:N2	29:A1:1334:A:OP2	2.35	0.59
29:A1:1935:U:O2	29:A1:1943:A:N6	2.35	0.59
11:M2:8:ARG:O	11:M2:17:ARG:NH1	2.35	0.59
18:T2:30:VAL:HA	18:T2:37:VAL:HG12	1.85	0.59
32:B3:144:ARG:NH1	53:A3:1079:C:OP1	2.35	0.59
43:M3:3:ARG:NH1	43:M3:6:GLY:O	2.36	0.59
46:P3:25:ARG:HE	53:A3:103:C:H1'	1.65	0.59
53:A3:104:G:O6	53:A3:325:C:N4	2.35	0.59
35:E4:92:LYS:N	35:E4:119:LEU:O	2.34	0.59
42:L4:118:SER:HB2	53:A4:533:G:H21	1.68	0.59
53:A4:1046:G:N2	53:A4:1171:G:O2'	2.36	0.59
21:W1:21:ARG:NH1	29:A1:2103:U:OP1	2.34	0.59
29:A1:300:G:O2'	29:A1:387:U:N3	2.35	0.59
29:A1:931:G:H1	29:A1:941:C:H42	1.51	0.59
29:A1:1979:U:O4	29:A1:2570:C:N4	2.35	0.59
5:G2:12:PRO:HD2	5:G2:49:VAL:HG22	1.85	0.59
8:J2:40:VAL:HG22	8:J2:59:LYS:HG2	1.85	0.59
29:A2:1736:G:O2'	29:A2:1750:A:N6	2.35	0.59
29:A2:1958:C:H2'	29:A2:1959:G:H8	1.66	0.59
39:I3:70:LYS:NZ	53:A3:1270:A:N1	2.45	0.59
51:U3:24:ARG:NH1	53:A3:1250:A:OP2	2.35	0.59
53:A3:1004:G:OP1	53:A3:1013:G:N2	2.35	0.59
33:C4:157:ILE:HD11	33:C4:164:ARG:HD3	1.85	0.59
35:E4:25:ARG:NH2	53:A4:1173:C:O2'	2.35	0.59
41:K4:82:VAL:HB	41:K4:108:ILE:HA	1.83	0.59
50:T4:23:ARG:NH2	53:A4:1418:U:OP1	2.35	0.59
50:T4:73:HIS:HB3	50:T4:75:ASN:H	1.68	0.59
53:A4:589:G:N2	53:A4:614:G:OP1	2.36	0.59
53:A4:649:G:OP2	53:A4:708:G:N2	2.36	0.59
53:A4:771:U:O4	53:A4:777:A:N6	2.36	0.59
53:A4:1035:G:O2'	53:A4:1180:U:OP2	2.21	0.59
5:G1:82:GLY:HA3	5:G1:138:LYS:HD3	1.85	0.59
23:Y1:4:LEU:HD12	23:Y1:37:LEU:HB2	1.85	0.59
23:Y1:12:PRO:HB2	23:Y1:20:LYS:HE3	1.82	0.59
27:c1:14:LYS:NZ	29:A1:820:G:OP1	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1098:A:O2'	29:A1:2766:G:N7	2.35	0.59
29:A1:2046:U:O2'	29:A1:2630:C:O2'	2.20	0.59
1:C2:67:PHE:HB3	1:C2:153:ALA:HB3	1.85	0.59
1:C2:164:GLN:HB2	1:C2:176:ARG:HH21	1.67	0.59
19:U2:53:ILE:HD13	19:U2:71:VAL:HG13	1.85	0.59
29:A2:926:U:O4	29:A2:947:A:N6	2.35	0.59
29:A2:1142:U:O2'	29:A2:1145:U:OP2	2.20	0.59
29:A2:1391:G:H1	29:A2:1452:C:H42	1.49	0.59
29:A2:1482:A:N6	29:A2:1607:A:N7	2.46	0.59
30:B2:31:A:H62	30:B2:54:A:H61	1.48	0.59
41:K3:58:PRO:HB2	41:K3:93:GLN:HE21	1.66	0.59
53:A3:929:U:H3	53:A3:1210:A:H61	1.50	0.59
41:K4:18:ARG:HA	41:K4:81:ASP:HB2	1.85	0.59
53:A4:1095:C:O2'	53:A4:1169:A:N1	2.34	0.59
9:K1:60:MET:H	9:K1:61:ARG:HH21	1.50	0.59
15:Q1:15:GLU:HB2	15:Q1:18:LEU:HB2	1.85	0.59
19:U1:18:LEU:HB3	19:U1:23:LYS:HB2	1.84	0.59
53:A3:903:G:N2	53:A3:1482:G:O2'	2.36	0.59
53:A3:1155:G:H2'	53:A3:1156:G:H8	1.67	0.59
36:F4:5:GLU:HG2	36:F4:64:GLN:HG3	1.83	0.59
49:S4:81:ARG:NH1	53:A4:933:U:O2'	2.33	0.59
51:U4:8:THR:OG1	51:U4:11:GLY:N	2.35	0.59
53:A4:104:G:O6	53:A4:325:C:N4	2.36	0.59
3:E1:114:VAL:HA	3:E1:117:ARG:HB2	1.85	0.59
4:F1:112:PRO:HA	4:F1:117:PHE:H	1.67	0.59
29:A1:224:C:H42	29:A1:459:G:H1	1.51	0.59
4:F2:165:THR:HG23	4:F2:167:GLU:H	1.68	0.59
12:N2:6:ALA:HA	12:N2:9:ARG:HB3	1.84	0.59
13:O2:49:VAL:HA	13:O2:63:VAL:HA	1.85	0.59
29:A2:13:A:H4'	29:A2:14:A:H5'	1.85	0.59
29:A2:2750:G:H1	29:A2:2784:C:H42	1.49	0.59
37:G3:111:ARG:NH1	37:G3:113:GLU:OE2	2.35	0.59
53:A3:665:G:H1	53:A3:691:C:H42	1.51	0.59
54:V3:7:ILE:HD12	54:V3:9:ARG:HH12	1.68	0.59
34:D4:21:LEU:HB2	34:D4:26:CYS:HB3	1.85	0.59
46:P4:38:TYR:HB3	46:P4:50:LYS:HB2	1.85	0.59
48:R4:46:GLU:HG3	48:R4:80:PRO:HG2	1.84	0.59
53:A4:1100:C:H42	53:A4:1137:G:H22	1.50	0.59
1:C1:10:THR:OG1	1:C1:13:ARG:N	2.33	0.59
1:C1:217:ARG:HH22	29:A1:1855:G:H5'	1.68	0.59
14:P1:10:ARG:HA	14:P1:13:LYS:HB2	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1082:G:H4'	31:e1:18:ARG:HH22	1.68	0.59
29:A1:2520:U:OP2	29:A1:2590:G:N2	2.36	0.59
9:K2:60:MET:O	9:K2:61:ARG:NE	2.34	0.59
11:M2:5:LYS:NZ	29:A2:2834:G:O6	2.35	0.59
13:O2:93:ARG:NH2	29:A2:2875:C:OP1	2.36	0.59
19:U2:75:ASN:N	19:U2:85:HIS:O	2.33	0.59
24:Z2:1:MET:HE3	24:Z2:2:LYS:HE3	1.84	0.59
28:d2:46:ARG:NE	29:A2:2365:G:OP1	2.35	0.59
29:A2:827:G:O6	29:A2:835:C:N4	2.33	0.59
29:A2:897:G:N7	29:A2:976:G:N2	2.51	0.59
29:A2:2332:G:N2	29:A2:2332:G:OP2	2.36	0.59
38:H3:5:PRO:HA	38:H3:8:ASP:HB3	1.84	0.59
41:K3:34:ASP:OD1	41:K3:38:ASN:N	2.36	0.59
53:A4:184:C:N3	53:A4:193:G:N2	2.46	0.59
53:A4:1383:G:OP2	54:V4:86:ARG:NH1	2.36	0.59
53:A4:1429:C:O2'	53:A4:1431:A:N6	2.36	0.59
20:V1:22:GLY:N	20:V1:39:ARG:O	2.34	0.58
29:A1:2631:C:H2'	29:A1:2632:G:H8	1.68	0.58
29:A1:2828:C:H2'	29:A1:2829:G:H8	1.66	0.58
1:C2:38:LYS:NZ	29:A2:1618:A:O2'	2.36	0.58
29:A2:1937:A:N7	53:A4:1469:A:N6	2.50	0.58
29:A2:2869:G:N2	29:A2:2872:A:OP2	2.32	0.58
39:I3:16:ARG:N	39:I3:64:THR:O	2.36	0.58
53:A3:292:G:OP1	53:A3:540:G:N2	2.36	0.58
53:A3:304:G:H1'	53:A3:590:A:H61	1.68	0.58
53:A3:488:G:H1	53:A3:508:C:H42	1.50	0.58
38:H4:12:ARG:NH2	53:A4:809:C:OP1	2.36	0.58
9:K1:41:ARG:NH1	29:A1:856:U:OP2	2.36	0.58
29:A1:300:G:N2	29:A1:386:G:O6	2.36	0.58
29:A1:1256:G:N2	29:A1:1257:A:N7	2.44	0.58
29:A1:2695:C:H42	29:A1:2742:G:H1	1.51	0.58
17:S2:91:ALA:N	17:S2:93:GLU:OE1	2.34	0.58
20:V2:70:GLN:HE21	20:V2:72:ARG:HH21	1.50	0.58
29:A2:570:C:H42	29:A2:575:G:H1	1.50	0.58
29:A2:1089:C:H2'	29:A2:1090:G:H8	1.68	0.58
29:A2:2828:C:H2'	29:A2:2829:G:H8	1.67	0.58
48:R3:51:LEU:HD22	48:R3:55:ARG:HE	1.67	0.58
51:U3:15:ARG:NH2	53:A3:1305:A:O2'	2.36	0.58
33:C4:35:GLU:HA	33:C4:38:ARG:HB2	1.85	0.58
49:S4:56:GLN:NE2	49:S4:77:THR:O	2.36	0.58
53:A4:149:C:N4	53:A4:151:G:N7	2.51	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:T1:47:LYS:NZ	29:A1:509:G:OP2	2.36	0.58
21:W1:72:GLU:OE1	21:W1:96:LYS:NZ	2.36	0.58
29:A1:2273:G:H1'	29:A1:2441:C:H2'	1.85	0.58
2:D2:149:ARG:NE	29:A2:2048:G:O3'	2.36	0.58
12:N2:24:LEU:HD22	12:N2:41:ASP:HA	1.84	0.58
20:V2:56:ASP:OD1	20:V2:56:ASP:N	2.36	0.58
29:A2:696:G:N2	29:A2:698:C:O2	2.35	0.58
29:A2:966:A:O2'	30:B2:100:G:N2	2.36	0.58
29:A2:2481:C:OP2	31:e2:4:ARG:NH2	2.35	0.58
42:L3:86:ARG:HE	42:L3:99:HIS:HB2	1.68	0.58
47:Q3:38:ARG:HH21	47:Q3:40:LYS:HE3	1.69	0.58
53:A3:374:C:H42	53:A3:379:G:H1	1.51	0.58
37:G4:31:MET:SD	53:A4:1356:A:O2'	2.60	0.58
2:D1:117:MET:SD	2:D1:136:ARG:NH1	2.76	0.58
2:D1:173:VAL:HB	2:D1:183:LEU:HD13	1.84	0.58
5:G1:158:HIS:NE2	5:G1:160:LYS:O	2.36	0.58
29:A1:532:A:O2'	29:A1:536:C:O2'	2.22	0.58
1:C2:88:ARG:O	1:C2:91:ARG:NH2	2.37	0.58
1:C2:130:ALA:HA	1:C2:192:THR:HA	1.85	0.58
25:a2:15:ARG:NH1	29:A2:2045:C:OP1	2.36	0.58
29:A2:213:A:O2'	29:A2:436:G:N2	2.37	0.58
30:B2:32:C:H42	30:B2:56:G:H1	1.51	0.58
33:C3:64:VAL:HG23	33:C3:99:VAL:HA	1.85	0.58
33:C3:185:GLY:HA3	33:C3:200:ALA:HB3	1.85	0.58
35:E3:141:GLN:OE1	35:E3:143:ARG:NH2	2.35	0.58
48:R3:30:ASP:O	48:R3:36:ASN:ND2	2.35	0.58
53:A3:370:U:H3	53:A3:384:A:H61	1.49	0.58
33:C4:176:HIS:NE2	53:A4:1170:C:O2'	2.35	0.58
40:J4:55:LYS:HD3	53:A4:1179:G:H4'	1.84	0.58
45:O4:35:ARG:NH2	53:A4:724:G:OP1	2.35	0.58
3:E1:53:THR:HG23	3:E1:55:GLY:H	1.67	0.58
9:K1:70:GLN:NE2	29:A1:417:G:N7	2.51	0.58
19:U1:10:ARG:NH2	30:B1:78:G:OP1	2.37	0.58
21:W1:46:LEU:HB3	21:W1:61:ARG:HB3	1.84	0.58
29:A1:51:A:H2'	29:A1:52:A:H8	1.69	0.58
29:A1:570:C:H42	29:A1:575:G:H1	1.51	0.58
29:A1:1112:C:N4	29:A1:1125:A:OP2	2.37	0.58
29:A1:2133:U:O4	29:A1:2144:G:N1	2.37	0.58
4:F2:69:ALA:O	4:F2:91:ARG:N	2.37	0.58
8:J2:71:ARG:HH12	13:O2:74:ARG:HH21	1.50	0.58
10:L2:71:ASP:OD1	10:L2:71:ASP:N	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:O2:96:ARG:NH2	29:A2:1787:C:OP1	2.36	0.58
29:A2:1082:G:H4'	31:e2:18:ARG:HH22	1.67	0.58
29:A2:2151:G:N2	29:A2:2154:U:O2	2.36	0.58
53:A3:1195:C:OP2	53:A3:1197:G:N2	2.36	0.58
37:G4:3:ARG:NH2	53:A4:912:A:N1	2.51	0.58
53:A4:384:A:N6	53:A4:385:C:O2	2.36	0.58
1:C1:242:ARG:NH1	29:A1:1995:A:OP2	2.33	0.58
11:M1:52:ILE:HA	11:M1:55:ALA:HB3	1.85	0.58
12:N1:57:LYS:O	12:N1:59:LYS:NZ	2.36	0.58
29:A1:2869:G:N2	29:A1:2872:A:OP2	2.30	0.58
5:G2:6:ARG:NH1	29:A2:2763:A:O2'	2.37	0.58
5:G2:89:ILE:HG12	5:G2:162:ILE:HG13	1.86	0.58
13:O2:53:ARG:NH1	29:A2:2735:U:OP1	2.36	0.58
29:A2:516:G:N2	29:A2:519:A:OP2	2.37	0.58
29:A2:1465:C:O2	29:A2:1632:A:O2'	2.22	0.58
29:A2:2003:C:N4	29:A2:2004:G:O6	2.36	0.58
34:D3:13:ARG:HD2	34:D3:40:PRO:HG3	1.85	0.58
37:G3:95:ARG:O	37:G3:99:LEU:N	2.34	0.58
41:K3:85:ARG:HH11	41:K3:113:PRO:HD3	1.67	0.58
52:X3:169:ILE:HB	52:W4:150:GLN:HE21	1.68	0.58
54:V3:2:ASN:ND2	54:V3:35:GLU:O	2.32	0.58
47:Q4:68:ARG:HH22	53:A4:271:G:H4'	1.68	0.58
53:A4:1004:G:OP1	53:A4:1013:G:N2	2.36	0.58
54:V4:2:ASN:ND2	54:V4:35:GLU:O	2.36	0.58
17:S1:29:TRP:HZ3	17:S1:76:ARG:HB3	1.67	0.58
29:A1:227:C:O2'	29:A1:634:A:O2'	2.22	0.58
9:K2:33:ARG:NE	29:A2:612:C:N3	2.42	0.58
29:A2:1055:C:O2	29:A2:1184:G:N2	2.37	0.58
32:B3:137:ARG:NH1	53:A3:1078:C:O3'	2.36	0.58
2:D1:36:ARG:HB3	2:D1:38:THR:HG23	1.86	0.58
8:J1:81:ASP:OD1	8:J1:81:ASP:N	2.35	0.58
14:P1:26:GLY:O	14:P1:29:SER:OG	2.22	0.58
25:a1:50:GLY:HA3	25:a1:57:VAL:HG11	1.85	0.58
29:A1:728:C:N4	29:A1:729:G:O6	2.36	0.58
29:A1:1472:G:H1	29:A1:1623:C:H42	1.50	0.58
29:A2:417:G:N2	29:A2:439:G:O2'	2.37	0.58
29:A2:790:G:O6	29:A2:805:C:N4	2.37	0.58
29:A2:2305:U:H3	29:A2:2356:C:H42	1.52	0.58
29:A2:2644:G:H21	29:A2:2903:A:H1'	1.67	0.58
33:C3:11:ARG:NE	33:C3:177:THR:O	2.31	0.58
33:C3:47:LEU:HD23	33:C3:52:LEU:HD23	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G3:74:GLU:HB3	37:G3:89:MET:HB2	1.83	0.58
44:N3:61:TRP:HZ2	53:A3:1350:G:H5'	1.68	0.58
53:A3:72:C:H42	53:A3:90:G:H1'	1.69	0.58
53:A3:546:A:H61	53:A3:860:C:H42	1.50	0.58
38:H4:8:ASP:O	38:H4:12:ARG:N	2.37	0.58
41:K4:21:ILE:HB	41:K4:84:VAL:HA	1.86	0.58
49:S4:40:ILE:HB	49:S4:44:MET:HG3	1.86	0.58
53:A4:34:C:N4	53:A4:533:G:O6	2.37	0.58
2:D1:132:HIS:NE2	29:A1:2625:U:OP1	2.37	0.58
29:A1:1407:A:OP2	29:A1:1419:G:N1	2.37	0.58
29:A1:1746:G:H4'	29:A1:2002:A:H4'	1.86	0.58
13:O2:121:ILE:HG22	13:O2:125:ARG:HB2	1.86	0.58
25:a2:9:LYS:HE3	29:A2:2044:A:H62	1.69	0.58
29:A2:388:G:O6	29:A2:389:A:N6	2.36	0.58
46:P3:22:THR:OG1	46:P3:23:ASP:N	2.37	0.58
48:R3:31:LEU:HD12	48:R3:32:ARG:HG3	1.85	0.58
49:S3:7:LYS:N	53:A3:1300:A:OP2	2.37	0.58
52:X3:136:ARG:HA	52:X3:162:ARG:HH22	1.69	0.58
53:A3:905:G:O6	53:A3:1371:C:N4	2.36	0.58
32:B4:178:ARG:NH2	38:H4:70:GLN:OE1	2.37	0.58
32:B4:210:SER:HA	32:B4:213:LEU:HB3	1.86	0.58
44:N4:6:LEU:HD23	44:N4:9:LYS:HG3	1.86	0.58
45:O4:68:ARG:HA	45:O4:71:GLN:HB2	1.85	0.58
2:D1:140:SER:OG	2:D1:141:ILE:N	2.37	0.58
5:G1:17:VAL:HG22	5:G1:26:VAL:HG13	1.86	0.58
9:K1:111:ARG:HE	9:K1:128:HIS:HB3	1.69	0.58
11:M1:107:ASP:OD1	11:M1:107:ASP:N	2.35	0.58
29:A1:885:G:N7	29:A1:886:C:N4	2.51	0.58
29:A1:1125:A:H62	29:A1:1127:C:H4'	1.69	0.58
1:C2:248:SER:OG	1:C2:251:GLY:N	2.37	0.58
18:T2:84:ARG:HD2	18:T2:86:ARG:HB2	1.86	0.58
29:A2:505:A:N6	29:A2:527:G:O3'	2.37	0.58
29:A2:1579:C:N3	29:A2:1588:G:N2	2.47	0.58
34:D3:8:VAL:O	34:D3:9:CYS:N	2.37	0.58
38:H3:88:LYS:O	38:H3:92:ARG:NH2	2.36	0.58
43:M3:60:VAL:HG12	43:M3:65:LYS:HD3	1.85	0.58
53:A3:983:A:N6	53:A3:1003:U:O2	2.36	0.58
33:C4:67:THR:HA	33:C4:102:ASN:HB2	1.86	0.58
33:C4:119:ARG:NH2	33:C4:133:ALA:O	2.36	0.58
34:D4:158:ILE:O	34:D4:162:LEU:N	2.28	0.58
39:I4:47:LEU:HB3	39:I4:50:LEU:HD12	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Q4:14:LYS:HG3	53:A4:270:G:H5'	1.84	0.58
47:Q4:17:LYS:HD3	53:A4:250:G:H4'	1.84	0.58
53:A4:1410:A:H61	53:A4:1450:A:H62	1.49	0.58
1:C1:248:SER:OG	1:C1:251:GLY:N	2.37	0.57
7:I1:99:LEU:HG	7:I1:122:VAL:HG11	1.85	0.57
21:W1:5:CYS:H	21:W1:10:LYS:H	1.49	0.57
6:H2:25:TYR:HA	6:H2:28:ASN:HB2	1.85	0.57
14:P2:53:ARG:NH2	29:A2:1042:C:OP1	2.37	0.57
18:T2:39:VAL:HG23	18:T2:41:GLY:H	1.69	0.57
29:A2:298:C:N4	29:A2:300:G:O6	2.36	0.57
29:A2:2298:C:N4	29:A2:2398:G:O6	2.37	0.57
34:D3:175:SER:HB2	34:D3:184:LYS:HB2	1.86	0.57
37:G3:114:ARG:O	53:A3:1279:C:N4	2.37	0.57
41:K3:58:PRO:O	41:K3:93:GLN:NE2	2.36	0.57
42:L3:17:LYS:NZ	53:A3:546:A:OP1	2.30	0.57
45:O3:7:GLU:HA	45:O3:10:LYS:HE3	1.85	0.57
53:A4:839:C:H42	53:A4:844:G:H1	1.50	0.57
12:N1:13:ARG:NH2	29:A1:2310:U:O4	2.37	0.57
13:O1:66:VAL:HA	13:O1:71:GLY:HA3	1.85	0.57
16:R1:70:TYR:O	16:R1:108:GLY:N	2.36	0.57
20:V1:18:ALA:O	20:V1:20:ARG:NH1	2.37	0.57
29:A1:1:G:N2	29:A1:2913:C:N3	2.51	0.57
3:E2:133:ASN:N	3:E2:138:GLU:OE1	2.33	0.57
13:O2:66:VAL:HA	13:O2:71:GLY:HA3	1.86	0.57
16:R2:18:ARG:HA	16:R2:76:VAL:HG21	1.85	0.57
16:R2:69:LEU:HA	16:R2:109:GLU:HA	1.86	0.57
21:W2:21:ARG:NH2	29:A2:2104:G:OP2	2.37	0.57
29:A2:473:C:HO2'	29:A2:477:A:HO2'	1.52	0.57
29:A2:1112:C:H3'	29:A2:1118:A:H62	1.69	0.57
29:A2:2226:C:N3	29:A2:2235:G:N2	2.51	0.57
30:B2:53:G:N2	30:B2:55:A:O4'	2.37	0.57
47:Q3:4:LYS:NZ	53:A3:121:G:O2'	2.37	0.57
52:X3:150:GLN:HE21	52:W4:169:ILE:HB	1.69	0.57
53:A3:1063:G:H2'	53:A3:1064:G:H8	1.68	0.57
39:I4:16:ARG:N	39:I4:64:THR:O	2.33	0.57
40:J4:56:HIS:ND1	40:J4:58:ASP:OD2	2.37	0.57
5:G1:43:VAL:HG12	5:G1:52:VAL:HG22	1.85	0.57
23:Y1:23:LEU:HD21	23:Y1:53:LEU:HD11	1.86	0.57
29:A1:1891:G:H1'	29:A1:1907:G:H22	1.69	0.57
30:B1:32:C:O2	30:B1:56:G:N2	2.37	0.57
13:O2:101:PHE:HA	13:O2:104:ASN:HD22	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:P2:6:THR:HG23	14:P2:10:ARG:HE	1.69	0.57
21:W2:46:LEU:HB3	21:W2:61:ARG:HB3	1.86	0.57
23:Y2:49:LYS:HG3	23:Y2:50:VAL:HG13	1.85	0.57
29:A2:1223:G:N2	29:A2:1227:C:O2	2.38	0.57
29:A2:2711:G:H1	29:A2:2724:C:H42	1.51	0.57
29:A2:2760:C:N4	29:A2:2770:C:O2'	2.36	0.57
38:H3:14:ARG:NH2	53:A3:853:G:O5'	2.34	0.57
47:Q3:64:PRO:HB3	47:Q3:70:ARG:HG2	1.84	0.57
47:Q3:99:SER:OG	53:A3:274:A:N6	2.37	0.57
53:A3:1243:C:H42	53:A3:1254:G:H1	1.52	0.57
40:J4:7:LYS:HG3	40:J4:71:LEU:HB2	1.86	0.57
49:S4:48:THR:HA	49:S4:61:TYR:HB2	1.86	0.57
53:A4:123:G:H21	53:A4:190:G:H5'	1.69	0.57
5:G1:3:ARG:NH2	29:A1:1160:G:OP1	2.37	0.57
9:K1:38:GLN:NE2	29:A1:881:G:O5'	2.37	0.57
12:N1:38:GLN:NE2	30:B1:9:G:N3	2.47	0.57
14:P1:58:ARG:HB3	14:P1:93:LYS:HD2	1.85	0.57
15:Q1:80:GLN:O	15:Q1:82:ARG:NH2	2.38	0.57
29:A1:1688:U:OP1	29:A1:2723:G:N2	2.38	0.57
29:A1:2161:C:N4	29:A1:2179:G:O6	2.37	0.57
29:A1:2689:A:H61	29:A1:2747:G:H1	1.53	0.57
19:U2:7:ALA:HB2	19:U2:59:LEU:HD22	1.85	0.57
20:V2:29:GLN:NE2	29:A2:971:C:O2	2.37	0.57
29:A2:488:A:N7	29:A2:498:A:N6	2.53	0.57
29:A2:2492:A:H3'	29:A2:2493:G:H8	1.70	0.57
41:K3:84:VAL:O	41:K3:91:ARG:NH2	2.38	0.57
42:L3:21:LYS:NZ	53:A3:887:C:OP2	2.37	0.57
43:M3:108:ARG:HG3	43:M3:114:ARG:HE	1.68	0.57
53:A3:667:A:H2'	53:A3:668:G:H8	1.69	0.57
38:H4:124:ALA:O	38:H4:128:GLY:N	2.37	0.57
48:R4:48:GLY:O	53:A4:701:G:N2	2.37	0.57
53:A4:1423:G:OP1	53:A4:1424:G:N2	2.35	0.57
1:C1:80:ALA:HB2	1:C1:96:HIS:HB2	1.86	0.57
29:A1:1480:C:H42	29:A1:1610:G:H1	1.53	0.57
29:A1:2368:G:N2	29:A1:2378:C:N3	2.52	0.57
30:B1:108:G:H2'	30:B1:109:G:H8	1.70	0.57
31:e1:11:CYS:SG	31:e1:32:HIS:ND1	2.65	0.57
17:S2:44:GLU:HA	17:S2:48:LYS:HA	1.87	0.57
29:A2:832:A:H2'	29:A2:833:A:H4'	1.85	0.57
39:I3:38:GLN:O	53:A3:1271:G:N2	2.37	0.57
42:L3:12:ARG:NH2	53:A3:858:G:OP2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:T3:14:LYS:NZ	53:A3:96:C:O5'	2.37	0.57
40:J4:14:LYS:NZ	53:A4:1135:C:OP1	2.37	0.57
41:K4:95:ILE:HA	41:K4:98:LEU:HD12	1.85	0.57
46:P4:72:ARG:HG3	46:P4:73:LEU:HG	1.86	0.57
2:D1:152:LYS:HG2	29:A1:2633:C:H5''	1.86	0.57
25:a1:19:ARG:NH2	29:A1:2630:C:OP1	2.37	0.57
29:A1:1960:A:OP2	29:A1:1986:C:N4	2.38	0.57
29:A1:2725:A:H5''	29:A1:2726:U:H5'	1.85	0.57
1:C2:12:SER:OG	29:A2:1807:C:N3	2.33	0.57
10:L2:45:GLN:NE2	29:A2:2498:G:OP1	2.37	0.57
11:M2:90:ARG:NH2	11:M2:118:GLU:O	2.38	0.57
29:A2:53:G:N2	29:A2:54:G:N3	2.52	0.57
29:A2:260:A:OP2	29:A2:285:G:N2	2.30	0.57
39:I3:16:ARG:HB2	39:I3:64:THR:HB	1.86	0.57
47:Q3:72:ARG:HH12	53:A3:189:U:H1'	1.70	0.57
49:S4:51:VAL:O	49:S4:58:VAL:N	2.37	0.57
29:A1:2:G:N2	29:A1:2912:C:O2	2.38	0.57
3:E2:15:SER:O	3:E2:17:ARG:NH1	2.38	0.57
13:O2:125:ARG:NH1	13:O2:128:GLU:OE1	2.37	0.57
29:A2:488:A:N6	29:A2:498:A:N7	2.53	0.57
29:A2:1025:G:H2'	29:A2:1026:G:H8	1.70	0.57
32:B3:137:ARG:O	32:B3:141:GLU:N	2.38	0.57
33:C3:90:GLU:HA	33:C3:93:LYS:HG2	1.86	0.57
37:G3:141:VAL:O	37:G3:145:ALA:N	2.37	0.57
40:J3:48:THR:O	53:A3:952:A:N6	2.38	0.57
47:Q3:52:LYS:N	47:Q3:55:ASP:OD2	2.37	0.57
53:A3:521:G:H2'	53:A3:522:A:H8	1.69	0.57
53:A3:1110:C:N4	53:A3:1123:C:N3	2.53	0.57
53:A3:1451:G:H2'	53:A3:1452:G:H8	1.70	0.57
32:B4:7:VAL:HB	32:B4:213:LEU:HD11	1.86	0.57
33:C4:16:ARG:NH2	33:C4:183:ASP:OD1	2.38	0.57
53:A4:72:C:N3	53:A4:90:G:O2'	2.37	0.57
53:A4:900:A:N6	53:A4:1374:G:O6	2.37	0.57
3:E1:46:ARG:NH2	29:A1:469:U:O2'	2.35	0.57
11:M1:96:ARG:NH1	29:A1:2894:A:OP1	2.38	0.57
29:A1:359:C:OP1	29:A1:360:C:N4	2.37	0.57
29:A1:659:A:H2'	29:A1:660:A:H8	1.70	0.57
29:A1:1898:G:N2	29:A1:1901:A:OP2	2.36	0.57
30:B1:57:U:O2	30:B1:59:A:N6	2.37	0.57
16:R2:41:LYS:HB3	16:R2:43:GLY:H	1.70	0.57
18:T2:84:ARG:HH11	18:T2:86:ARG:HB2	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2050:C:H42	29:A2:2061:G:H1	1.52	0.57
42:L3:103:GLY:HA3	42:L3:121:GLY:HA3	1.87	0.57
43:M3:24:GLY:N	53:A3:1311:U:OP1	2.36	0.57
44:N3:29:ARG:NH2	44:N3:32:SER:O	2.34	0.57
53:A4:1352:G:H2'	53:A4:1353:G:H8	1.68	0.57
2:D1:157:ALA:O	29:A1:2634:C:O2'	2.22	0.57
4:F1:69:ALA:N	4:F1:91:ARG:O	2.38	0.57
7:I1:81:GLY:O	7:I1:83:LYS:NZ	2.38	0.57
29:A1:33:U:H1'	29:A1:501:G:H22	1.70	0.57
29:A1:312:C:N4	29:A1:380:G:O2'	2.38	0.57
29:A1:2764:A:H3'	29:A1:2765:A:H2'	1.85	0.57
1:C2:270:ILE:HG22	1:C2:272:ALA:H	1.69	0.57
3:E2:8:GLN:NE2	3:E2:121:GLY:O	2.37	0.57
5:G2:124:GLU:N	5:G2:132:ARG:O	2.38	0.57
14:P2:58:ARG:NH2	29:A2:1202:G:OP1	2.38	0.57
23:Y2:27:GLY:O	23:Y2:29:ARG:NH1	2.38	0.57
29:A2:1348:U:H4'	29:A2:1349:A:H5''	1.86	0.57
29:A2:1490:G:O6	29:A2:1598:C:N4	2.37	0.57
34:D4:141:ARG:N	34:D4:144:ASP:OD2	2.38	0.57
53:A4:942:A:N7	54:V4:9:ARG:NH1	2.52	0.57
53:A4:943:G:OP2	54:V4:68:ARG:NH2	2.38	0.57
53:A4:1156:G:N1	53:A4:1157:A:N3	2.53	0.57
3:E1:155:LEU:HB2	3:E1:189:THR:HG21	1.85	0.57
18:T1:9:LYS:HE3	18:T1:30:VAL:HG22	1.87	0.57
26:b1:47:THR:OG1	26:b1:48:VAL:N	2.38	0.57
29:A1:638:G:N2	29:A1:642:A:O2'	2.36	0.57
29:A1:1081:U:O2'	29:A1:2765:A:N6	2.38	0.57
29:A1:1540:G:H2'	29:A1:1542:A:H62	1.68	0.57
29:A1:2490:A:H4'	29:A1:2494:C:H42	1.68	0.57
2:D2:111:ARG:NH1	29:A2:2739:C:OP1	2.38	0.57
14:P2:6:THR:OG1	14:P2:10:ARG:NH2	2.38	0.57
29:A2:323:G:H1'	29:A2:366:G:H1	1.70	0.57
29:A2:2641:G:N2	29:A2:2792:G:OP2	2.38	0.57
34:D3:141:ARG:N	34:D3:144:ASP:OD2	2.38	0.57
37:G3:35:LYS:NZ	53:A3:1332:U:O2'	2.37	0.57
52:X3:145:GLU:HG3	52:W4:139:MET:HB2	1.87	0.57
53:A3:891:A:H2'	53:A3:892:A:H8	1.70	0.57
53:A3:1464:G:H2'	53:A3:1465:G:H8	1.69	0.57
37:G4:22:LEU:HD11	37:G4:66:VAL:HG11	1.87	0.57
53:A4:764:A:OP2	53:A4:783:G:N2	2.38	0.57
54:V4:76:LEU:HD23	54:V4:77:TYR:CE1	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F1:35:GLU:HB3	4:F1:36:LYS:HG2	1.85	0.56
5:G1:131:VAL:HG21	5:G1:148:ILE:HG21	1.87	0.56
22:X1:4:SER:OG	22:X1:5:GLU:N	2.37	0.56
30:B1:17:A:OP1	30:B1:71:G:N2	2.37	0.56
4:F2:128:ARG:NE	29:A2:2330:C:O2'	2.37	0.56
14:P2:45:TYR:O	14:P2:49:HIS:ND1	2.38	0.56
16:R2:68:ARG:HA	16:R2:111:HIS:HB2	1.87	0.56
29:A2:194:A:N7	29:A2:196:U:N3	2.53	0.56
29:A2:1979:U:O4	29:A2:2570:C:N4	2.38	0.56
29:A2:2660:C:OP2	29:A2:2747:G:O2'	2.20	0.56
30:B2:36:U:N3	30:B2:51:C:O2	2.31	0.56
33:C3:179:ARG:NH2	33:C3:206:GLU:OE2	2.38	0.56
53:A3:1148:G:OP1	52:W4:130:ARG:NH1	2.38	0.56
38:H4:119:LEU:HD21	38:H4:127:LEU:HD12	1.86	0.56
53:A4:601:C:H5''	53:A4:602:U:H5''	1.87	0.56
53:A4:912:A:O2'	53:A4:1366:C:O2'	2.21	0.56
53:A4:1255:G:N2	53:A4:1256:A:N7	2.49	0.56
3:E1:3:GLU:HB2	3:E1:24:LEU:HB3	1.86	0.56
10:L1:82:ARG:NH1	29:A1:2265:G:OP2	2.39	0.56
14:P1:83:LEU:HD12	14:P1:86:ALA:HB3	1.87	0.56
29:A1:12:U:H3	29:A1:2641:G:H5'	1.70	0.56
29:A1:238:G:N2	29:A1:2445:U:O2'	2.38	0.56
29:A1:332:G:N2	29:A1:335:A:OP2	2.37	0.56
29:A1:2192:G:OP2	29:A1:2195:A:N6	2.35	0.56
6:H2:27:ARG:NH2	29:A2:2116:U:OP2	2.39	0.56
28:d2:12:LYS:NZ	29:A2:239:C:O2	2.37	0.56
29:A2:1480:C:N4	29:A2:1481:U:O2	2.38	0.56
38:H3:14:ARG:NE	53:A3:852:C:O2'	2.37	0.56
34:D4:49:ARG:NH2	53:A4:489:G:OP2	2.39	0.56
3:E1:200:GLU:HA	3:E1:203:GLN:HG2	1.88	0.56
20:V1:9:SER:N	29:A1:2289:C:O2	2.38	0.56
25:a1:9:LYS:NZ	29:A1:2043:A:OP2	2.35	0.56
27:c1:21:ARG:NH2	29:A1:733:G:OP1	2.38	0.56
29:A1:504:G:N1	29:A1:507:A:OP2	2.37	0.56
29:A1:837:A:O2'	29:A1:839:C:N4	2.37	0.56
29:A1:1540:G:N3	29:A1:1542:A:N6	2.53	0.56
29:A1:1715:G:N1	29:A1:2019:U:O4	2.38	0.56
29:A1:2003:C:N4	29:A1:2004:G:O6	2.39	0.56
29:A1:2136:G:N7	29:A1:2139:G:N1	2.53	0.56
2:D2:56:PRO:HG2	2:D2:58:ARG:HG3	1.87	0.56
4:F2:126:ASP:OD1	4:F2:129:GLY:N	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:M2:36:THR:O	11:M2:112:ALA:N	2.37	0.56
13:O2:22:PHE:HE2	13:O2:49:VAL:HG11	1.70	0.56
14:P2:26:GLY:O	14:P2:29:SER:OG	2.23	0.56
19:U2:93:ASP:HB3	19:U2:131:ARG:HE	1.67	0.56
27:c2:8:ASN:ND2	29:A2:819:G:OP1	2.39	0.56
29:A2:213:A:H1'	29:A2:436:G:H21	1.70	0.56
29:A2:231:A:N6	29:A2:245:A:N7	2.53	0.56
30:B2:80:A:H62	30:B2:101:G:H21	1.52	0.56
37:G3:64:GLN:O	37:G3:68:ASN:N	2.38	0.56
53:A3:131:C:O2'	53:A3:132:G:N2	2.38	0.56
53:A3:434:A:C6	53:A3:435:A:H1'	2.40	0.56
53:A3:560:G:H4'	53:A3:799:A:H2'	1.87	0.56
34:D4:120:LEU:O	34:D4:125:HIS:ND1	2.38	0.56
37:G4:3:ARG:NH1	53:A4:910:G:N7	2.53	0.56
42:L4:71:PRO:O	42:L4:102:ARG:NH1	2.38	0.56
46:P4:4:ILE:HA	46:P4:21:VAL:HA	1.86	0.56
50:T4:89:ARG:HH12	50:T4:105:SER:H	1.53	0.56
53:A4:323:C:H4'	53:A4:324:A:H5'	1.86	0.56
9:K1:146:VAL:HG22	9:K1:147:LEU:HG	1.87	0.56
27:c1:41:ARG:HH22	27:c1:45:ALA:HB2	1.71	0.56
29:A1:632:U:O2'	29:A1:648:A:N6	2.38	0.56
29:A1:2148:G:N1	29:A1:2186:G:O2'	2.38	0.56
1:C2:175:LEU:N	1:C2:183:ARG:O	2.38	0.56
3:E2:114:VAL:HA	3:E2:117:ARG:HB2	1.87	0.56
9:K2:81:GLN:NE2	9:K2:109:GLY:O	2.37	0.56
11:M2:9:LYS:O	11:M2:17:ARG:NH2	2.39	0.56
29:A2:1738:A:OP2	29:A2:1747:A:N6	2.38	0.56
29:A2:2199:C:H2'	29:A2:2200:A:H8	1.71	0.56
40:J3:43:ARG:NH2	53:A3:1260:A:N3	2.53	0.56
53:A3:543:U:OP1	53:A3:549:G:N2	2.37	0.56
53:A4:98:G:N2	53:A4:375:G:OP1	2.38	0.56
53:A4:1367:G:H2'	53:A4:1368:G:H8	1.70	0.56
17:S1:35:THR:H	17:S1:38:GLU:HB3	1.70	0.56
28:d1:3:LYS:HE2	29:A1:617:G:H4'	1.86	0.56
29:A1:2093:G:H2'	29:A1:2094:G:H8	1.71	0.56
5:G2:23:ARG:HA	5:G2:36:PRO:HA	1.87	0.56
8:J2:93:PRO:HD3	8:J2:113:LYS:HD3	1.87	0.56
13:O2:23:ARG:NH1	29:A2:2861:U:O4	2.39	0.56
26:b2:41:PRO:HB2	26:b2:43:CYS:H	1.71	0.56
29:A2:1218:G:N7	29:A2:1223:G:N2	2.54	0.56
29:A2:2095:A:H2'	29:A2:2096:G:H8	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2753:A:N6	29:A2:2782:C:N3	2.51	0.56
53:A3:31:G:O2'	53:A3:48:C:N4	2.38	0.56
32:B4:207:ALA:HB3	32:B4:210:SER:H	1.71	0.56
43:M4:81:LEU:HD13	43:M4:88:ARG:HG3	1.87	0.56
53:A4:153:G:N2	53:A4:156:A:OP2	2.36	0.56
1:C1:146:GLU:HB2	1:C1:189:CYS:HB3	1.88	0.56
11:M1:3:HIS:O	11:M1:5:LYS:NZ	2.31	0.56
14:P1:22:LYS:NZ	29:A1:1266:G:OP2	2.33	0.56
24:Z1:60:GLN:NE2	49:S3:67:VAL:O	2.39	0.56
29:A1:268:C:H1'	29:A1:279:G:H22	1.69	0.56
29:A1:832:A:H2'	29:A1:833:A:H4'	1.88	0.56
12:N2:23:ARG:NH2	12:N2:84:GLN:OE1	2.38	0.56
13:O2:18:ASP:OD1	13:O2:18:ASP:N	2.38	0.56
29:A2:661:C:H2'	29:A2:662:C:H6	1.71	0.56
29:A2:1105:A:N6	29:A2:1136:A:O4'	2.39	0.56
29:A2:1688:U:OP1	29:A2:2723:G:N2	2.39	0.56
29:A2:2132:C:N4	29:A2:2166:C:O4'	2.37	0.56
29:A2:2150:A:OP2	29:A2:2187:C:O2'	2.24	0.56
33:C4:110:ASN:HD21	33:C4:140:ARG:HH21	1.54	0.56
40:J4:36:GLY:H	53:A4:1105:A:H4'	1.71	0.56
43:M4:74:VAL:HA	43:M4:77:ASN:HB2	1.85	0.56
43:M4:90:LEU:HD11	49:S4:76:PRO:HA	1.88	0.56
47:Q4:17:LYS:O	47:Q4:45:HIS:ND1	2.39	0.56
53:A4:703:C:H3'	53:A4:704:G:H2'	1.87	0.56
2:D1:53:PRO:HA	2:D1:74:PRO:HA	1.88	0.56
9:K1:71:VAL:HG22	29:A1:236:C:H5'	1.88	0.56
23:Y1:18:ASP:OD1	23:Y1:18:ASP:N	2.38	0.56
29:A1:326:G:H2'	29:A1:359:C:H2'	1.86	0.56
29:A1:505:A:N6	29:A1:527:G:O3'	2.39	0.56
29:A1:2305:U:H3	29:A1:2356:C:H42	1.51	0.56
4:F2:51:ARG:O	4:F2:55:LYS:N	2.39	0.56
6:H2:32:PRO:O	6:H2:33:ARG:NE	2.39	0.56
29:A2:194:A:N6	29:A2:196:U:O4	2.39	0.56
29:A2:504:G:N1	29:A2:507:A:OP2	2.38	0.56
29:A2:684:G:OP2	29:A2:686:C:N4	2.38	0.56
29:A2:846:C:H2'	29:A2:847:G:H8	1.69	0.56
29:A2:2178:G:N2	29:A2:2179:G:O6	2.38	0.56
34:D3:65:ARG:HE	34:D3:66:ARG:HE	1.53	0.56
43:M3:105:THR:OG1	53:A3:1211:C:N4	2.39	0.56
48:R3:42:ARG:HH12	48:R3:56:THR:HG21	1.71	0.56
52:X3:159:PHE:HB3	52:W4:162:ARG:HE	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:713:G:O3'	53:A3:749:A:N6	2.38	0.56
53:A3:975:G:O2'	53:A3:1026:A:N1	2.38	0.56
33:C4:179:ARG:HD2	33:C4:206:GLU:HB2	1.87	0.56
36:F4:55:ASP:O	36:F4:86:ARG:NH1	2.39	0.56
37:G4:74:GLU:OE1	37:G4:95:ARG:NH2	2.38	0.56
43:M4:24:GLY:O	43:M4:29:ARG:NH2	2.39	0.56
53:A4:835:G:N1	53:A4:847:U:OP2	2.36	0.56
53:A4:845:C:H3'	53:A4:846:G:H8	1.70	0.56
53:A4:948:G:H4'	53:A4:949:C:H5''	1.86	0.56
29:A1:260:A:OP2	29:A1:285:G:N2	2.31	0.56
29:A2:1054:C:O2	29:A2:1185:G:N2	2.38	0.56
29:A2:2131:C:O2	29:A2:2165:G:O2'	2.24	0.56
29:A2:2391:A:H2'	29:A2:2392:A:H8	1.71	0.56
37:G3:37:ASN:OD1	53:A3:1271:G:O2'	2.23	0.56
37:G3:115:ARG:O	37:G3:119:ARG:N	2.36	0.56
39:I3:4:TYR:H	39:I3:19:LEU:H	1.51	0.56
41:K3:18:ARG:NH1	41:K3:36:ASP:O	2.39	0.56
53:A3:649:G:N2	53:A3:723:U:O2	2.35	0.56
53:A3:660:U:H3	53:A3:696:G:H1	1.54	0.56
53:A4:965:G:O2'	53:A4:992:A:N6	2.37	0.56
53:A4:971:A:OP2	53:A4:1198:C:N4	2.39	0.56
4:F1:166:ASP:N	4:F1:166:ASP:OD1	2.37	0.56
8:J1:2:ILE:HB	8:J1:33:ALA:HB3	1.87	0.56
10:L1:31:ASP:HA	10:L1:134:ARG:HH11	1.71	0.56
28:d1:15:LYS:N	28:d1:23:VAL:O	2.39	0.56
28:d1:39:LYS:NZ	29:A1:2379:G:OP2	2.36	0.56
29:A1:656:G:OP1	29:A1:677:C:O2'	2.23	0.56
29:A1:1067:U:OP1	29:A1:1168:G:N2	2.33	0.56
29:A1:1738:A:OP2	29:A1:1747:A:N6	2.39	0.56
5:G2:168:PRO:HG2	5:G2:170:ARG:HH12	1.70	0.56
14:P2:52:ARG:O	14:P2:56:ASP:N	2.39	0.56
21:W2:34:THR:OG1	29:A2:190:U:O2	2.22	0.56
29:A2:2133:U:O2'	29:A2:2205:G:N1	2.39	0.56
39:I3:49:PRO:HG3	39:I3:78:LYS:HB3	1.88	0.56
53:A3:70:G:H8	53:A3:93:C:H42	1.54	0.56
54:V3:113:GLU:OE1	54:V3:115:ARG:NH2	2.38	0.56
37:G4:91:VAL:HG23	37:G4:96:GLN:HE21	1.70	0.56
39:I4:119:ALA:O	39:I4:120:ARG:NH1	2.39	0.56
41:K4:52:GLY:O	41:K4:55:LYS:NZ	2.29	0.56
42:L4:35:GLY:HA3	42:L4:60:LEU:HD23	1.86	0.56
53:A4:869:A:H62	53:A4:883:G:H21	1.54	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:V4:113:GLU:OE1	54:V4:115:ARG:NH2	2.38	0.56
12:N1:11:LYS:HA	12:N1:14:VAL:HG22	1.88	0.56
29:A1:116:A:H5'	29:A1:117:A:H8	1.70	0.56
29:A1:166:G:OP2	29:A1:167:G:N1	2.38	0.56
29:A1:2659:G:N2	29:A1:2781:G:OP1	2.39	0.56
4:F2:128:ARG:NH2	29:A2:2315:C:O2	2.39	0.56
15:Q2:88:ARG:NH2	29:A2:1271:G:OP2	2.39	0.56
29:A2:2484:G:N2	29:A2:2495:G:O2'	2.39	0.56
29:A2:2644:G:N3	29:A2:2903:A:O2'	2.38	0.56
37:G3:103:TRP:HZ3	37:G3:138:LYS:HB3	1.71	0.56
42:L3:71:PRO:O	42:L3:102:ARG:NH1	2.39	0.56
53:A3:323:C:H4'	53:A3:324:A:H5'	1.88	0.56
35:E4:20:GLN:NE2	53:A4:1052:U:OP1	2.39	0.56
49:S4:7:LYS:HB2	53:A4:1295:C:H41	1.71	0.56
53:A4:116:C:H2'	53:A4:117:G:H8	1.70	0.56
53:A4:766:C:OP1	53:A4:1492:C:O2'	2.22	0.56
8:J1:97:ARG:HH22	53:A3:333:A:H5''	1.70	0.55
9:K1:38:GLN:NE2	29:A1:880:G:O2'	2.38	0.55
29:A1:557:G:N1	29:A1:2046:U:OP1	2.36	0.55
29:A1:827:G:O6	29:A1:835:C:N4	2.36	0.55
29:A1:2517:A:O2'	29:A1:2519:G:OP2	2.24	0.55
11:M2:63:ARG:NH1	29:A2:1503:U:O2	2.39	0.55
17:S2:10:ALA:O	17:S2:29:TRP:N	2.31	0.55
29:A2:1102:A:N6	29:A2:1103:G:O6	2.39	0.55
29:A2:1339:C:H4'	29:A2:1584:A:H4'	1.88	0.55
29:A2:1467:A:H62	29:A2:1469:G:H1'	1.70	0.55
29:A2:2093:G:H2'	29:A2:2094:G:H8	1.71	0.55
53:A3:384:A:N6	53:A3:385:C:O2	2.39	0.55
53:A3:1114:C:H2'	53:A3:1115:G:H21	1.71	0.55
34:D4:137:SER:OG	53:A4:603:C:O2	2.24	0.55
53:A4:507:G:N2	53:A4:508:C:O2	2.39	0.55
1:C1:112:GLN:HB2	1:C1:115:GLN:HG2	1.88	0.55
13:O1:25:GLY:HA2	13:O1:99:LEU:HD21	1.87	0.55
14:P1:84:LYS:NZ	29:A1:1200:C:OP1	2.37	0.55
29:A1:269:G:H2'	29:A1:270:G:H8	1.71	0.55
29:A1:443:A:OP1	29:A1:1902:G:N2	2.39	0.55
29:A1:1025:G:N7	29:A1:1035:G:N2	2.54	0.55
29:A1:1104:G:N1	29:A1:1149:U:OP2	2.37	0.55
29:A1:1937:A:N7	53:A3:1469:A:N6	2.55	0.55
2:D2:111:ARG:NH2	29:A2:2694:C:OP2	2.38	0.55
14:P2:5:LYS:HG3	14:P2:7:GLY:H	1.69	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:U2:75:ASN:O	19:U2:85:HIS:N	2.37	0.55
26:b2:42:TRP:HE1	29:A2:2362:U:H4'	1.70	0.55
29:A2:427:G:H3'	29:A2:428:G:H8	1.71	0.55
29:A2:2848:U:N3	29:A2:2895:A:N1	2.54	0.55
38:H3:7:ALA:O	38:H3:11:THR:N	2.38	0.55
53:A3:766:C:OP1	53:A3:1492:C:O2'	2.23	0.55
32:B4:209:ARG:HH21	32:B4:213:LEU:HD13	1.70	0.55
37:G4:79:ARG:NH2	53:A4:913:C:O3'	2.40	0.55
43:M4:108:ARG:NH2	53:A4:1210:A:OP2	2.39	0.55
45:O4:68:ARG:O	45:O4:72:ARG:N	2.38	0.55
11:M1:36:THR:O	11:M1:112:ALA:N	2.37	0.55
20:V1:82:ARG:NH1	20:V1:83:PRO:O	2.40	0.55
29:A1:6:A:H2	29:A1:2908:U:H3	1.55	0.55
29:A1:304:C:H41	29:A1:384:A:H61	1.54	0.55
8:J2:49:ARG:NH1	53:A4:1404:G:O2'	2.37	0.55
22:X2:14:ARG:NH2	29:A2:76:C:O3'	2.38	0.55
23:Y2:20:LYS:HA	23:Y2:23:LEU:HD12	1.88	0.55
29:A2:2464:A:OP1	29:A2:2511:A:O2'	2.22	0.55
37:G3:115:ARG:H	37:G3:118:VAL:HB	1.72	0.55
39:I3:28:VAL:HG13	39:I3:63:ILE:HD13	1.87	0.55
53:A3:119:G:H1'	53:A3:231:G:H22	1.71	0.55
53:A3:1237:A:OP2	53:A3:1260:A:N6	2.40	0.55
53:A3:1482:G:H5'	53:A3:1483:U:H3'	1.87	0.55
36:F4:6:VAL:HB	36:F4:63:TYR:HB2	1.88	0.55
50:T4:18:GLN:OE1	50:T4:25:ARG:NH2	2.40	0.55
50:T4:79:ARG:O	50:T4:83:ARG:N	2.39	0.55
53:A4:641:G:N1	53:A4:732:C:OP2	2.39	0.55
53:A4:765:A:N6	53:A4:783:G:O2'	2.36	0.55
53:A4:1077:U:OP2	53:A4:1091:C:N4	2.39	0.55
1:C1:157:ARG:NH2	29:A1:1850:G:OP2	2.37	0.55
28:d1:54:GLU:HB3	28:d1:57:ARG:HH21	1.72	0.55
29:A1:2053:G:N1	29:A1:2057:A:OP2	2.38	0.55
29:A1:2139:G:O2'	29:A1:2190:G:N2	2.33	0.55
4:F2:9:ARG:HA	4:F2:12:TYR:HB2	1.87	0.55
13:O2:3:ARG:HH21	13:O2:6:LEU:HB2	1.71	0.55
19:U2:3:TYR:HB2	19:U2:57:ILE:HG12	1.87	0.55
25:a2:15:ARG:HE	25:a2:19:ARG:HH21	1.55	0.55
29:A2:595:G:N2	29:A2:2054:A:O4'	2.39	0.55
29:A2:944:A:OP2	29:A2:946:C:N4	2.39	0.55
29:A2:1931:G:H1	29:A2:1947:U:H3	1.53	0.55
29:A2:2099:U:H1'	29:A2:2611:G:H21	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2704:C:N4	29:A2:2728:A:O2'	2.39	0.55
35:E3:155:GLU:HG2	38:H3:64:LYS:HE3	1.89	0.55
45:O3:54:ARG:NH2	53:A3:563:U:OP1	2.40	0.55
50:T3:68:LYS:NZ	53:A3:201:A:O5'	2.40	0.55
34:D4:50:ARG:NH1	53:A4:493:A:OP2	2.36	0.55
37:G4:42:ILE:O	37:G4:46:ALA:N	2.32	0.55
37:G4:102:ARG:NH1	53:A4:1358:U:OP1	2.40	0.55
46:P4:84:ALA:OXT	53:A4:458:G:O2'	2.25	0.55
53:A4:294:G:N2	53:A4:548:U:O2	2.38	0.55
53:A4:905:G:O6	53:A4:1371:C:N4	2.37	0.55
54:V4:83:ALA:O	54:V4:87:LEU:N	2.40	0.55
6:H1:32:PRO:O	6:H1:33:ARG:NE	2.39	0.55
12:N1:63:THR:HG23	12:N1:64:GLU:HG2	1.86	0.55
16:R1:88:ARG:NH1	29:A1:797:G:OP2	2.38	0.55
21:W1:98:LEU:N	29:A1:261:A:OP1	2.35	0.55
29:A1:213:A:O2'	29:A1:436:G:N2	2.27	0.55
29:A1:323:G:H1'	29:A1:366:G:H1	1.72	0.55
29:A1:334:G:N2	29:A1:354:G:O3'	2.40	0.55
29:A1:791:G:H2'	29:A1:792:G:H8	1.71	0.55
29:A1:1840:G:H21	29:A1:1843:A:H62	1.53	0.55
5:G2:88:LEU:N	5:G2:163:TYR:O	2.40	0.55
9:K2:77:ARG:NH2	29:A2:2418:C:O3'	2.39	0.55
14:P2:33:ARG:NH2	29:A2:1300:G:N3	2.55	0.55
26:b2:27:LYS:NZ	29:A2:2299:C:OP2	2.39	0.55
29:A2:436:G:N2	29:A2:449:C:O2	2.34	0.55
33:C3:113:ALA:O	33:C3:117:ALA:N	2.38	0.55
47:Q3:2:PRO:HG3	53:A3:619:U:H4'	1.89	0.55
53:A3:553:G:O6	53:A3:842:A:N6	2.39	0.55
53:A3:642:U:H2'	53:A3:643:G:C8	2.42	0.55
53:A3:765:A:N6	53:A3:783:G:O2'	2.35	0.55
53:A3:1240:C:O3'	53:A3:1265:C:O2'	2.25	0.55
32:B4:59:GLU:HA	32:B4:62:ALA:HB3	1.86	0.55
47:Q4:62:SER:OG	47:Q4:72:ARG:NH2	2.39	0.55
50:T4:79:ARG:HA	50:T4:82:SER:HB3	1.89	0.55
50:T4:83:ARG:NH1	53:A4:254:G:OP2	2.39	0.55
53:A4:89:U:H5'	53:A4:90:G:H21	1.71	0.55
53:A4:119:G:N3	53:A4:231:G:N2	2.54	0.55
53:A4:399:U:O2'	53:A4:480:A:N6	2.40	0.55
53:A4:1049:A:H1'	53:A4:1050:G:C8	2.42	0.55
53:A4:1397:G:O2'	53:A4:1463:G:N2	2.35	0.55
16:R1:81:ALA:O	16:R1:83:LYS:NZ	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Z1:36:CYS:SG	24:Z1:37:SER:N	2.79	0.55
29:A1:2008:G:H2'	29:A1:2009:G:H8	1.72	0.55
1:C2:176:ARG:HA	1:C2:182:LEU:HA	1.89	0.55
3:E2:33:LEU:HG	3:E2:112:MET:HE2	1.88	0.55
21:W2:75:GLU:OE1	21:W2:76:ARG:NH1	2.39	0.55
38:H3:1:MET:HE1	53:A3:854:C:H1'	1.87	0.55
38:H3:37:ARG:O	38:H3:41:ARG:N	2.39	0.55
44:N3:46:GLU:OE2	53:A3:1041:C:O2'	2.25	0.55
53:A3:985:C:O2'	53:A3:1000:G:N2	2.40	0.55
34:D4:125:HIS:HA	34:D4:152:SER:HB3	1.87	0.55
37:G4:56:GLN:HB3	37:G4:60:LYS:HE3	1.89	0.55
51:U4:9:ARG:NH1	53:A4:1226:A:OP2	2.40	0.55
53:A4:172:C:N4	53:A4:199:C:OP1	2.40	0.55
53:A4:1058:C:N4	53:A4:1059:G:O6	2.40	0.55
53:A4:1397:G:HO2'	53:A4:1463:G:H22	1.54	0.55
1:C1:43:ARG:NH2	29:A1:740:C:O2'	2.40	0.55
10:L1:5:ARG:HE	10:L1:6:ARG:HH12	1.55	0.55
10:L1:18:LYS:NZ	29:A1:999:G:OP1	2.40	0.55
25:a1:45:VAL:HG13	25:a1:50:GLY:HA2	1.89	0.55
29:A1:290:G:O6	29:A1:396:C:N4	2.40	0.55
29:A1:628:A:H61	29:A1:653:U:H4'	1.71	0.55
29:A1:1348:U:H4'	29:A1:1349:A:H5''	1.87	0.55
29:A1:2134:G:N1	29:A1:2144:G:O4'	2.39	0.55
2:D2:136:ARG:NH2	29:A2:1705:C:OP1	2.39	0.55
5:G2:141:VAL:O	5:G2:145:ALA:N	2.37	0.55
29:A2:533:G:H4'	29:A2:534:A:H5'	1.89	0.55
33:C3:27:LYS:NZ	53:A3:1238:U:OP1	2.39	0.55
39:I3:79:LEU:O	39:I3:83:ARG:N	2.40	0.55
40:J3:51:ARG:NH1	53:A3:1170:C:OP1	2.40	0.55
53:A3:843:C:H4'	53:A3:896:A:H5'	1.89	0.55
53:A3:1066:G:H3'	53:A3:1067:U:H2'	1.87	0.55
53:A3:1352:G:H2'	53:A3:1353:G:H8	1.71	0.55
37:G4:73:MET:HB2	37:G4:141:VAL:HG22	1.89	0.55
47:Q4:68:ARG:NH1	53:A4:248:U:O2'	2.40	0.55
14:P1:92:ARG:HG2	29:A1:1045:G:H5''	1.89	0.55
15:Q1:89:GLN:NE2	29:A1:1041:G:N3	2.54	0.55
29:A1:40:C:H1'	29:A1:468:G:H22	1.70	0.55
29:A1:298:C:N4	29:A1:388:G:N7	2.55	0.55
29:A1:756:G:O6	29:A1:772:G:N1	2.40	0.55
29:A1:1062:U:H2'	29:A1:1063:G:H8	1.72	0.55
29:A1:1089:C:N4	29:A1:1090:G:O6	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1138:U:N3	29:A1:1139:G:O6	2.40	0.55
29:A1:1809:G:O6	29:A1:1820:A:N6	2.40	0.55
29:A1:2004:G:N2	29:A1:2006:C:N3	2.54	0.55
30:B1:39:C:N4	30:B1:51:C:O2'	2.40	0.55
1:C2:250:TRP:NE1	29:A2:1839:C:OP1	2.39	0.55
4:F2:68:PRO:HB3	4:F2:92:VAL:HB	1.89	0.55
11:M2:33:ARG:HA	11:M2:115:GLU:HG2	1.89	0.55
11:M2:64:ARG:NH2	29:A2:2864:G:OP1	2.40	0.55
14:P2:50:ARG:HA	14:P2:53:ARG:HG3	1.89	0.55
29:A2:493:G:N2	29:A2:732:C:O2'	2.40	0.55
29:A2:800:A:N7	29:A2:838:A:N6	2.55	0.55
29:A2:2254:C:H2'	29:A2:2255:A:H8	1.72	0.55
34:D3:119:GLN:HE22	53:A3:479:A:H61	1.55	0.55
35:E3:80:ILE:HD13	35:E3:138:ALA:HB1	1.89	0.55
36:F3:11:ASN:HB3	36:F3:14:LEU:HG	1.89	0.55
48:R3:31:LEU:O	48:R3:69:THR:OG1	2.23	0.55
53:A3:970:G:N2	53:A3:1024:G:O6	2.40	0.55
36:F4:27:GLN:O	36:F4:28:ARG:NH1	2.36	0.55
1:C1:183:ARG:HH11	1:C1:185:VAL:HG22	1.72	0.55
7:I1:36:GLY:HA3	7:I1:49:GLY:HA3	1.88	0.55
29:A1:1061:C:H42	29:A1:1197:G:H1	1.55	0.55
1:C2:5:LYS:HZ1	1:C2:17:THR:HG23	1.72	0.55
3:E2:181:LEU:HB2	3:E2:205:ARG:HH11	1.72	0.55
14:P2:37:GLU:HA	14:P2:40:PHE:HB2	1.88	0.55
16:R2:34:ASN:HD22	16:R2:37:ARG:HD2	1.72	0.55
17:S2:11:PRO:HA	17:S2:28:PHE:HA	1.89	0.55
42:L3:117:ARG:HA	42:L3:120:TYR:HB2	1.87	0.55
53:A3:1202:G:OP1	53:A3:1301:C:N4	2.39	0.55
53:A3:1244:C:N3	53:A3:1254:G:N2	2.55	0.55
36:F4:23:LYS:HA	36:F4:26:ILE:HD12	1.87	0.55
47:Q4:72:ARG:HH12	53:A4:189:U:H1'	1.71	0.55
51:U4:20:LYS:HG2	53:A4:1308:C:H5'	1.88	0.55
52:W4:165:LYS:NZ	52:W4:184:GLU:OE1	2.38	0.55
4:F1:93:THR:HB	30:B1:45:C:H1'	1.89	0.55
10:L1:6:ARG:NH2	29:A1:919:A:OP1	2.40	0.55
11:M1:22:ARG:NE	11:M1:69:ASP:O	2.34	0.55
20:V1:50:ASN:ND2	20:V1:81:VAL:O	2.40	0.55
29:A1:654:A:OP2	29:A1:697:G:O2'	2.25	0.55
1:C2:143:HIS:N	1:C2:192:THR:O	2.31	0.55
5:G2:95:ARG:NH2	5:G2:128:PRO:O	2.39	0.55
29:A2:542:A:H2	29:A2:1309:C:H1'	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D3:114:ARG:HG2	34:D3:118:ARG:HH22	1.71	0.55
41:K3:13:GLN:NE2	41:K3:16:SER:O	2.39	0.55
48:R3:51:LEU:HD13	48:R3:55:ARG:HG2	1.88	0.55
53:A3:1046:G:N2	53:A3:1172:A:OP2	2.40	0.55
53:A3:1115:G:N2	53:A3:1115:G:OP2	2.40	0.55
34:D4:57:ARG:HE	34:D4:202:LEU:HD22	1.72	0.55
45:O4:7:GLU:OE1	45:O4:8:LYS:NZ	2.34	0.55
50:T4:80:ARG:NH2	53:A4:255:G:OP1	2.36	0.55
53:A4:617:C:H2'	53:A4:618:G:H8	1.71	0.55
53:A4:844:G:N2	53:A4:845:C:N3	2.55	0.55
4:F1:76:SER:HB2	4:F1:84:LYS:HB2	1.90	0.54
14:P1:9:VAL:HG12	14:P1:13:LYS:HE2	1.89	0.54
14:P1:88:ILE:HD11	15:Q1:47:VAL:HA	1.89	0.54
16:R1:92:ARG:NH2	29:A1:2039:A:OP1	2.40	0.54
19:U1:123:ASP:N	19:U1:123:ASP:OD1	2.39	0.54
25:a1:40:LYS:NZ	25:a1:44:THR:O	2.37	0.54
28:d1:14:VAL:HA	28:d1:24:ALA:HB2	1.88	0.54
29:A1:313:C:H42	29:A1:376:G:H2'	1.72	0.54
29:A1:1825:G:N2	29:A1:1862:A:OP1	2.40	0.54
29:A1:2309:C:H2'	29:A1:2310:U:H6	1.72	0.54
29:A1:2819:G:H22	29:A1:2904:G:H1	1.53	0.54
8:J2:43:VAL:O	8:J2:55:GLY:N	2.37	0.54
29:A2:1355:A:O2'	29:A2:1427:A:N7	2.40	0.54
29:A2:1480:C:H42	29:A2:1610:G:H1	1.53	0.54
29:A2:1530:U:H3	29:A2:1561:C:H42	1.55	0.54
29:A2:1575:G:H21	29:A2:1594:A:H62	1.55	0.54
37:G3:79:ARG:HB2	53:A3:1363:U:H3	1.71	0.54
53:A3:366:G:H22	53:A3:385:C:H42	1.55	0.54
53:A3:1219:A:H2'	53:A3:1220:A:H8	1.72	0.54
37:G4:146:GLU:O	41:K4:59:TYR:OH	2.20	0.54
39:I4:116:LYS:HD2	39:I4:121:ARG:HB3	1.89	0.54
43:M4:73:GLU:O	43:M4:77:ASN:N	2.40	0.54
48:R4:46:GLU:HB2	48:R4:85:LEU:HD13	1.87	0.54
53:A4:931:G:OP1	54:V4:8:GLY:N	2.40	0.54
10:L1:32:TYR:O	10:L1:106:VAL:N	2.38	0.54
23:Y1:45:GLY:HA3	29:A1:901:G:H5'	1.90	0.54
29:A1:744:G:H2'	29:A1:745:G:H8	1.73	0.54
29:A1:870:A:H2'	29:A1:993:G:C8	2.42	0.54
29:A1:1576:A:OP2	29:A1:1591:A:N6	2.30	0.54
29:A1:2049:C:H2'	29:A1:2050:C:H6	1.72	0.54
29:A1:2164:C:H2'	29:A1:2166:C:H41	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:G2:168:PRO:O	5:G2:170:ARG:NH1	2.40	0.54
15:Q2:4:ILE:HB	15:Q2:40:LEU:H	1.72	0.54
19:U2:70:LEU:O	19:U2:72:ARG:NH1	2.40	0.54
29:A2:510:A:N1	29:A2:533:G:O2'	2.33	0.54
29:A2:877:U:O2'	29:A2:880:G:N1	2.40	0.54
29:A2:2418:C:N4	29:A2:2428:G:O6	2.41	0.54
29:A2:2419:G:O3'	29:A2:2425:A:N6	2.40	0.54
36:F3:94:GLN:HB3	48:R3:32:ARG:HH11	1.71	0.54
53:A3:626:C:H2'	53:A3:627:G:H8	1.72	0.54
53:A3:869:A:H62	53:A3:883:G:H21	1.55	0.54
50:T4:39:LYS:NZ	53:A4:1433:G:O2'	2.39	0.54
8:J1:3:GLN:NE2	8:J1:4:PRO:O	2.40	0.54
11:M1:59:ASP:O	11:M1:63:ARG:N	2.39	0.54
13:O1:53:ARG:NH2	29:A1:2735:U:OP1	2.40	0.54
14:P1:3:ARG:NH2	29:A1:610:G:OP2	2.40	0.54
16:R1:7:ALA:HB3	16:R1:103:ILE:HB	1.88	0.54
29:A1:493:G:N2	29:A1:732:C:O2'	2.41	0.54
29:A1:820:G:O2'	29:A1:1403:G:O2'	2.26	0.54
29:A1:1319:G:N2	29:A1:1665:C:O4'	2.41	0.54
3:E2:100:THR:OG1	29:A2:708:C:OP1	2.25	0.54
4:F2:52:ILE:HA	4:F2:55:LYS:HB2	1.88	0.54
8:J2:76:ALA:HB3	13:O2:75:ILE:HB	1.90	0.54
9:K2:126:VAL:HA	9:K2:148:LEU:HD12	1.89	0.54
21:W2:25:LYS:HB3	21:W2:31:GLY:HA2	1.90	0.54
29:A2:589:C:N4	29:A2:598:G:OP1	2.35	0.54
29:A2:728:C:N3	29:A2:848:G:N2	2.55	0.54
32:B3:178:ARG:NH2	38:H3:70:GLN:O	2.40	0.54
35:E3:11:ILE:HG22	35:E3:12:LEU:HB2	1.90	0.54
39:I3:105:ASP:N	39:I3:105:ASP:OD1	2.39	0.54
48:R3:28:GLU:H	32:B4:235:SER:HG	1.48	0.54
44:N4:47:LEU:O	44:N4:51:GLY:N	2.40	0.54
2:D1:159:HIS:ND1	29:A1:2635:A:O3'	2.39	0.54
3:E1:149:ASP:N	3:E1:152:GLU:OE2	2.40	0.54
4:F1:167:GLU:HA	4:F1:170:ARG:HB3	1.88	0.54
15:Q1:55:ALA:HA	15:Q1:101:GLY:HA2	1.88	0.54
29:A1:473:C:O2'	29:A1:477:A:O2'	2.24	0.54
29:A1:1119:G:H8	29:A1:1145:U:H5''	1.73	0.54
29:A1:1574:G:O6	29:A1:1595:C:N4	2.40	0.54
29:A1:2129:C:N3	29:A1:2208:G:N1	2.55	0.54
9:K2:35:HIS:NE2	29:A2:592:A:OP2	2.41	0.54
9:K2:61:ARG:H	28:d2:13:ARG:NE	2.05	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L2:67:ARG:NH2	29:A2:955:U:OP1	2.32	0.54
18:T2:84:ARG:NH2	18:T2:93:GLY:O	2.40	0.54
29:A2:155:C:H42	29:A2:161:G:H1	1.55	0.54
29:A2:1880:A:N6	29:A2:1914:A:OP2	2.35	0.54
32:B3:18:GLY:H	32:B3:42:ILE:H	1.54	0.54
50:T3:79:ARG:NH1	53:A3:259:U:OP2	2.40	0.54
53:A3:357:G:N2	53:A3:360:U:OP2	2.39	0.54
53:A3:1058:C:N4	53:A3:1059:G:N7	2.55	0.54
37:G4:78:ARG:NH1	53:A4:1361:G:O6	2.39	0.54
46:P4:6:LEU:HD12	46:P4:17:TYR:HB3	1.89	0.54
53:A4:65:U:H5'	53:A4:376:C:H41	1.73	0.54
53:A4:1223:C:O2'	53:A4:1285:G:OP1	2.25	0.54
4:F1:3:LEU:HB3	4:F1:8:LYS:HE2	1.89	0.54
5:G1:4:ILE:HD13	5:G1:6:ARG:HB2	1.89	0.54
10:L1:13:GLN:HB2	29:A1:1001:G:H5'	1.90	0.54
11:M1:74:LYS:O	11:M1:78:LYS:NZ	2.41	0.54
25:a1:57:VAL:HG12	25:a1:59:GLU:H	1.72	0.54
1:C2:131:LEU:O	1:C2:191:ALA:N	2.41	0.54
18:T2:87:LYS:NZ	18:T2:89:PHE:O	2.35	0.54
29:A2:2149:G:N2	29:A2:2187:C:OP1	2.40	0.54
36:F3:16:GLN:HA	36:F3:19:LEU:HB2	1.88	0.54
36:F3:73:ASN:ND2	53:A3:720:A:O2'	2.40	0.54
38:H3:104:ARG:HB2	38:H3:108:GLY:HA3	1.90	0.54
40:J3:56:HIS:ND1	40:J3:58:ASP:OD2	2.31	0.54
41:K3:33:THR:HA	41:K3:40:ILE:H	1.72	0.54
53:A3:206:G:O2'	53:A3:207:C:O4'	2.26	0.54
33:C4:118:GLN:HA	33:C4:121:ALA:HB3	1.89	0.54
37:G4:79:ARG:NE	53:A4:913:C:O2'	2.40	0.54
38:H4:39:LEU:HA	38:H4:42:GLU:HB2	1.88	0.54
40:J4:60:ARG:NH1	53:A4:1349:C:OP1	2.40	0.54
50:T4:13:LEU:HA	50:T4:16:HIS:HB3	1.89	0.54
50:T4:92:LEU:HD22	50:T4:97:ALA:HB3	1.89	0.54
53:A4:272:C:H2'	53:A4:273:G:H8	1.72	0.54
3:E1:123:LEU:HD12	3:E1:194:MET:HG3	1.87	0.54
5:G1:6:ARG:O	5:G1:69:ARG:NH2	2.40	0.54
5:G1:23:ARG:HG3	5:G1:36:PRO:HG3	1.90	0.54
5:G1:125:VAL:HG21	5:G1:130:ARG:HD3	1.89	0.54
11:M1:36:THR:OG1	11:M1:37:THR:N	2.38	0.54
22:X1:27:GLU:O	22:X1:31:GLU:N	2.41	0.54
29:A1:924:G:H1	29:A1:950:C:H42	1.54	0.54
29:A1:1142:U:OP1	29:A1:1143:A:N6	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E2:54:ARG:NH2	29:A2:722:C:OP1	2.37	0.54
4:F2:116:ASP:O	4:F2:118:ARG:NH1	2.40	0.54
16:R2:11:ARG:HA	16:R2:100:THR:HG22	1.89	0.54
34:D3:161:ASN:O	34:D3:165:MET:N	2.39	0.54
44:N3:7:ILE:HA	44:N3:23:ARG:HD2	1.88	0.54
52:X3:160:VAL:N	52:W4:160:VAL:O	2.40	0.54
53:A3:122:U:O2	53:A3:228:C:N4	2.41	0.54
49:S4:84:GLY:N	53:A4:932:U:O2'	2.41	0.54
53:A4:71:C:N4	53:A4:92:U:O2'	2.35	0.54
53:A4:912:A:HO2'	53:A4:1366:C:HO2'	1.52	0.54
53:A4:931:G:O3'	54:V4:18:ARG:NH1	2.40	0.54
11:M1:104:ARG:HG3	11:M1:111:LEU:HD11	1.89	0.54
29:A1:1025:G:H2'	29:A1:1026:G:C8	2.42	0.54
29:A1:2333:G:H4'	29:A1:2334:A:H5'	1.90	0.54
29:A1:2875:C:N4	29:A1:2876:G:O6	2.41	0.54
36:F3:94:GLN:HG3	48:R3:32:ARG:HB3	1.90	0.54
37:G3:79:ARG:HB3	53:A3:1364:C:C2	2.43	0.54
53:A3:413:C:O2	53:A3:421:G:N2	2.41	0.54
53:A3:962:C:O2	53:A3:1202:G:N2	2.41	0.54
45:O4:33:THR:OG1	45:O4:63:ARG:NH1	2.40	0.54
1:C1:21:PHE:HZ	29:A1:1614:C:H2'	1.72	0.54
1:C1:239:ARG:NE	29:A1:1996:A:OP1	2.37	0.54
19:U1:40:ASP:O	19:U1:44:PHE:N	2.40	0.54
25:a1:48:GLU:HG2	25:a1:58:LEU:HD12	1.90	0.54
29:A1:185:A:H3'	29:A1:186:A:H4'	1.89	0.54
29:A1:334:G:H22	29:A1:355:A:H5'	1.73	0.54
29:A1:400:G:N2	29:A1:429:A:OP2	2.41	0.54
29:A1:2299:C:N4	29:A1:2397:G:O6	2.41	0.54
5:G2:74:ASN:O	5:G2:78:GLY:N	2.41	0.54
9:K2:33:ARG:NH2	29:A2:720:C:O4'	2.38	0.54
34:D3:204:ILE:HA	34:D3:207:TYR:HD2	1.71	0.54
40:J3:17:ASP:OD1	40:J3:70:ARG:NH2	2.41	0.54
53:A3:45:U:H2'	53:A3:46:G:H8	1.73	0.54
53:A3:965:G:O4'	53:A3:992:A:N6	2.41	0.54
38:H4:7:ALA:O	38:H4:11:THR:N	2.40	0.54
53:A4:20:U:O2'	53:A4:556:A:N6	2.41	0.54
53:A4:195:G:N2	53:A4:196:U:O4	2.40	0.54
5:G1:96:ALA:HB3	5:G1:104:GLU:HB3	1.88	0.54
9:K1:9:ASN:ND2	29:A1:624:G:OP1	2.41	0.54
18:T1:96:ILE:H	18:T1:101:LYS:HB2	1.73	0.54
19:U1:108:PRO:HB3	19:U1:117:LEU:HD13	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:c1:32:LYS:NZ	29:A1:170:G:OP2	2.41	0.54
28:d1:8:LYS:HG3	29:A1:236:C:H41	1.73	0.54
29:A1:212:A:H62	29:A1:222:G:H21	1.56	0.54
29:A1:300:G:O5'	29:A1:388:G:N2	2.41	0.54
29:A1:2711:G:H22	29:A1:2724:C:H42	1.54	0.54
10:L2:99:PRO:O	19:U2:79:ARG:NH1	2.41	0.54
24:Z2:13:ARG:NH1	24:Z2:23:GLU:OE2	2.41	0.54
29:A2:322:C:H3'	29:A2:323:G:H8	1.72	0.54
29:A2:753:G:O2'	29:A2:775:G:N2	2.36	0.54
34:D3:137:SER:OG	53:A3:603:C:O2	2.24	0.54
46:P3:83:GLU:HB2	53:A3:457:A:H1'	1.90	0.54
48:R3:84:LYS:HB3	48:R3:86:VAL:HG13	1.90	0.54
49:S3:15:LEU:HD11	49:S3:33:THR:HA	1.89	0.54
53:A3:1270:A:H5''	53:A3:1271:G:H8	1.72	0.54
53:A4:1450:A:N6	53:A4:1451:G:O6	2.41	0.54
2:D1:76:ARG:HH21	2:D1:79:ARG:HG3	1.73	0.54
4:F1:132:ASN:ND2	29:A1:2317:G:O2'	2.39	0.54
4:F1:133:LEU:N	4:F1:157:ILE:O	2.42	0.54
21:W1:25:LYS:HB3	21:W1:31:GLY:HA2	1.90	0.54
27:c1:39:ARG:HA	29:A1:486:G:H3'	1.90	0.54
29:A1:354:G:N2	29:A1:528:A:OP1	2.40	0.54
29:A1:450:U:O2'	29:A1:451:A:N7	2.37	0.54
29:A1:623:G:H2'	29:A1:624:G:H8	1.72	0.54
29:A1:2665:C:H42	29:A1:2683:G:H1	1.55	0.54
1:C2:61:LEU:O	1:C2:63:ARG:NH1	2.32	0.54
2:D2:59:VAL:HG12	2:D2:61:ARG:H	1.73	0.54
5:G2:146:ALA:HB1	5:G2:149:ARG:HH21	1.73	0.54
6:H2:5:LEU:HD12	6:H2:17:GLN:HB2	1.90	0.54
9:K2:36:LYS:HB2	29:A2:989:G:H5'	1.89	0.54
9:K2:40:SER:OG	9:K2:41:ARG:NH2	2.37	0.54
38:H3:39:LEU:HA	38:H3:42:GLU:HB2	1.90	0.54
46:P3:25:ARG:O	53:A3:103:C:O2'	2.26	0.54
38:H4:34:GLU:O	38:H4:37:ARG:NE	2.33	0.54
43:M4:108:ARG:HB3	43:M4:113:PRO:HA	1.90	0.54
45:O4:49:ASP:OD2	53:A4:651:G:N2	2.41	0.54
53:A4:921:G:N3	53:A4:1319:G:N2	2.56	0.54
53:A4:1475:U:O2	53:A4:1476:A:N6	2.38	0.54
8:J1:97:ARG:NH2	53:A3:333:A:O3'	2.42	0.53
21:W1:12:PRO:HG3	21:W1:44:PRO:HD2	1.89	0.53
28:d1:15:LYS:HB2	28:d1:23:VAL:HG23	1.88	0.53
29:A1:1466:G:O2'	29:A1:1629:A:N6	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:2023:C:H2'	29:A1:2024:G:H8	1.72	0.53
29:A1:2274:C:H42	29:A1:2294:G:H1	1.56	0.53
4:F2:108:ASN:HB3	24:Z2:37:SER:HB2	1.90	0.53
7:I2:56:ASN:H	7:I2:125:GLY:H	1.56	0.53
13:O2:32:TYR:HD2	13:O2:34:VAL:HG22	1.71	0.53
20:V2:11:ARG:NH2	29:A2:2270:G:O3'	2.41	0.53
21:W2:25:LYS:HE2	21:W2:31:GLY:HA3	1.88	0.53
29:A2:557:G:O2'	29:A2:559:A:N6	2.42	0.53
29:A2:679:C:O2'	29:A2:697:G:OP2	2.26	0.53
29:A2:854:G:H22	29:A2:877:U:H5''	1.73	0.53
29:A2:1061:C:H42	29:A2:1197:G:H1	1.56	0.53
29:A2:1733:C:H42	29:A2:1753:G:H1	1.56	0.53
29:A2:1889:G:O6	29:A2:1910:C:N4	2.40	0.53
29:A2:2207:C:N4	29:A2:2208:G:O6	2.41	0.53
37:G3:58:PRO:O	37:G3:62:PHE:N	2.40	0.53
52:X3:136:ARG:HD2	52:X3:162:ARG:HH22	1.73	0.53
37:G4:7:ALA:HB3	53:A4:1359:A:H62	1.73	0.53
37:G4:75:VAL:HG23	37:G4:141:VAL:HG23	1.90	0.53
39:I4:117:HIS:HB2	39:I4:121:ARG:HE	1.74	0.53
48:R4:69:THR:O	48:R4:73:ALA:N	2.39	0.53
53:A4:811:A:H62	53:A4:835:G:H21	1.56	0.53
3:E1:53:THR:OG1	3:E1:54:ARG:N	2.41	0.53
4:F1:7:LEU:HD23	4:F1:10:LYS:HD3	1.90	0.53
4:F1:61:ALA:HB1	24:Z1:7:PRO:HG3	1.90	0.53
7:I1:59:LYS:O	7:I1:61:ARG:NH1	2.41	0.53
17:S1:10:ALA:O	17:S1:29:TRP:N	2.37	0.53
29:A1:1355:A:OP2	29:A1:1654:G:N2	2.35	0.53
29:A1:2298:C:N4	29:A1:2398:G:O6	2.41	0.53
3:E2:2:LYS:HE2	3:E2:26:ALA:HA	1.90	0.53
7:I2:75:TYR:HD1	7:I2:82:LEU:HD13	1.73	0.53
10:L2:15:GLY:N	29:A2:1001:G:OP1	2.40	0.53
14:P2:10:ARG:HA	14:P2:13:LYS:HB2	1.90	0.53
14:P2:61:TRP:HD1	14:P2:64:ARG:HG3	1.72	0.53
29:A2:290:G:H2'	29:A2:291:G:C8	2.43	0.53
29:A2:2280:A:N6	29:A2:2287:A:OP2	2.41	0.53
33:C3:11:ARG:HG3	33:C3:178:LEU:HA	1.89	0.53
50:T3:60:GLU:OE1	53:A3:198:U:O2'	2.25	0.53
53:A3:67:C:O2'	53:A3:165:A:N3	2.41	0.53
53:A3:943:G:OP2	54:V3:68:ARG:NH2	2.42	0.53
33:C4:148:GLY:H	33:C4:203:PHE:HB3	1.72	0.53
34:D4:71:SER:OG	34:D4:74:GLN:N	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:N4:4:LYS:HA	44:N4:7:ILE:HG12	1.90	0.53
53:A4:37:U:H2'	53:A4:38:G:C8	2.44	0.53
54:V4:58:ILE:HD13	54:V4:87:LEU:HD13	1.90	0.53
5:G1:170:ARG:NH1	5:G1:171:LEU:OXT	2.41	0.53
9:K1:117:GLU:HB2	29:A1:664:A:H5''	1.90	0.53
12:N1:6:ALA:HA	12:N1:9:ARG:HG2	1.89	0.53
18:T1:96:ILE:H	18:T1:101:LYS:HE2	1.72	0.53
22:X1:15:LYS:HD2	22:X1:67:LYS:HE2	1.89	0.53
31:e1:25:VAL:HG21	31:e1:34:GLN:HE21	1.72	0.53
29:A2:21:A:N6	29:A2:546:U:O4	2.37	0.53
29:A2:2631:C:H2'	29:A2:2632:G:H8	1.73	0.53
53:A3:146:A:N7	53:A3:147:C:N4	2.54	0.53
53:A3:521:G:H2'	53:A3:522:A:C8	2.44	0.53
53:A3:556:A:H2'	53:A3:557:A:C4	2.42	0.53
43:M4:53:VAL:HG12	43:M4:54:VAL:HG13	1.91	0.53
53:A4:19:C:O2'	53:A4:555:A:N6	2.37	0.53
2:D1:119:ARG:HG2	2:D1:120:TRP:CD1	2.44	0.53
5:G1:2:SER:N	29:A1:1097:C:N3	2.56	0.53
9:K1:112:LEU:H	9:K1:128:HIS:HB2	1.73	0.53
29:A1:2665:C:H42	29:A1:2683:G:H22	1.54	0.53
3:E2:89:VAL:HG21	29:A2:611:A:H5'	1.91	0.53
7:I2:97:ARG:NH1	29:A2:2795:G:O6	2.41	0.53
13:O2:53:ARG:HH21	13:O2:98:LYS:HZ1	1.54	0.53
24:Z2:51:ASP:N	43:M4:65:LYS:O	2.28	0.53
29:A2:1963:U:OP1	29:A2:2618:U:O2'	2.27	0.53
45:O3:64:ARG:HH22	53:A3:565:U:H5''	1.72	0.53
53:A3:34:C:N4	53:A3:533:G:O6	2.41	0.53
53:A3:969:U:H4'	53:A3:972:C:H41	1.72	0.53
32:B4:163:PHE:HA	32:B4:185:ILE:HB	1.88	0.53
33:C4:114:PRO:HA	33:C4:117:ALA:HB3	1.90	0.53
42:L4:32:PHE:HB3	42:L4:84:LEU:HD21	1.91	0.53
53:A4:411:G:N1	53:A4:421:G:O6	2.41	0.53
53:A4:769:G:H2'	53:A4:770:A:H8	1.74	0.53
53:A4:1229:A:H62	53:A4:1268:A:H61	1.56	0.53
8:J1:43:VAL:HG12	8:J1:54:GLU:HG2	1.91	0.53
29:A1:30:G:O6	29:A1:537:C:N4	2.40	0.53
29:A1:878:A:N6	29:A1:2261:A:O2'	2.35	0.53
29:A1:2263:U:N3	29:A1:2267:G:OP2	2.41	0.53
10:L2:46:GLN:HG2	29:A2:2498:G:H4'	1.90	0.53
11:M2:14:SER:HA	11:M2:17:ARG:HG2	1.90	0.53
22:X2:17:SER:O	22:X2:67:LYS:NZ	2.33	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I3:30:GLY:H	39:I3:62:TYR:HE1	1.56	0.53
41:K3:21:ILE:HB	41:K3:84:VAL:HA	1.90	0.53
36:F4:23:LYS:NZ	36:F4:63:TYR:OH	2.35	0.53
42:L4:117:ARG:O	42:L4:121:GLY:N	2.40	0.53
1:C1:12:SER:OG	29:A1:778:G:N3	2.36	0.53
2:D1:63:LEU:O	29:A1:2801:U:O2'	2.27	0.53
4:F1:4:ASP:OD1	4:F1:9:ARG:NH2	2.41	0.53
25:a1:13:LYS:NZ	29:A1:543:C:OP2	2.36	0.53
29:A1:232:G:O2'	29:A1:244:G:O6	2.23	0.53
29:A1:2236:G:H2'	29:A1:2237:G:C8	2.42	0.53
29:A1:2803:C:O3'	29:A1:2821:A:O2'	2.25	0.53
1:C2:242:ARG:NH1	29:A2:1995:A:OP2	2.37	0.53
6:H2:13:GLY:HA3	6:H2:17:GLN:HG3	1.89	0.53
29:A2:658:A:N1	29:A2:2430:C:O2'	2.32	0.53
29:A2:682:A:H5''	29:A2:699:C:H41	1.74	0.53
29:A2:1442:U:H4'	29:A2:1651:A:H4'	1.91	0.53
45:O3:2:PRO:O	45:O3:38:ARG:NH2	2.42	0.53
53:A3:650:G:H2'	53:A3:651:G:C8	2.44	0.53
41:K4:57:THR:OG1	41:K4:60:ALA:N	2.41	0.53
53:A4:32:A:OP2	53:A4:393:C:O2'	2.27	0.53
53:A4:521:G:H2'	53:A4:522:A:C8	2.43	0.53
19:U1:75:ASN:N	19:U1:85:HIS:O	2.41	0.53
29:A1:2185:C:O2'	29:A1:2197:A:N6	2.42	0.53
21:W2:41:ARG:NH1	29:A2:1413:A:OP1	2.32	0.53
22:X2:65:ASN:HA	22:X2:68:ARG:HB2	1.90	0.53
23:Y2:4:LEU:HB2	23:Y2:37:LEU:HB2	1.90	0.53
35:E3:57:LYS:NZ	53:A3:1055:U:OP1	2.41	0.53
44:N3:47:LEU:O	44:N3:51:GLY:N	2.35	0.53
53:A3:982:A:N3	53:A3:1019:C:N4	2.56	0.53
39:I4:66:ARG:NE	53:A4:1130:U:O2'	2.42	0.53
47:Q4:11:VAL:HA	47:Q4:85:VAL:HG13	1.91	0.53
53:A4:576:G:N7	53:A4:577:G:N2	2.43	0.53
15:Q1:32:THR:OG1	15:Q1:59:ALA:O	2.26	0.53
21:W1:53:VAL:HG21	21:W1:60:PHE:HE2	1.72	0.53
21:W1:54:ALA:HB1	21:W1:80:LEU:HB3	1.89	0.53
29:A1:933:C:HO2'	29:A1:940:G:H1	1.55	0.53
29:A1:2728:A:O2'	29:A1:2730:C:OP2	2.24	0.53
1:C2:72:LYS:NZ	1:C2:101:GLU:OE2	2.42	0.53
2:D2:52:LEU:O	2:D2:76:ARG:NH2	2.42	0.53
4:F2:98:ARG:HD2	24:Z2:2:LYS:HZ2	1.72	0.53
9:K2:71:VAL:O	29:A2:235:G:O2'	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L2:12:GLN:HG2	10:L2:73:PRO:HG2	1.90	0.53
22:X2:48:HIS:CE1	29:A2:94:G:HO2'	2.27	0.53
24:Z2:37:SER:HA	24:Z2:40:HIS:HB2	1.90	0.53
29:A2:626:C:H2'	29:A2:627:G:H8	1.73	0.53
29:A2:799:A:H4'	29:A2:1663:C:H42	1.74	0.53
29:A2:1575:G:H5''	29:A2:1576:A:H5'	1.90	0.53
53:A3:548:U:H5''	53:A3:549:G:H3'	1.90	0.53
54:V3:83:ALA:O	54:V3:87:LEU:N	2.41	0.53
54:V3:102:LYS:NZ	54:V3:105:SER:OG	2.37	0.53
34:D4:3:ARG:HH12	53:A4:400:U:H5	1.57	0.53
48:R4:59:SER:O	48:R4:63:GLN:N	2.41	0.53
53:A4:1153:C:N4	53:A4:1154:G:O6	2.42	0.53
2:D1:8:LYS:O	2:D1:193:GLY:N	2.42	0.53
4:F1:59:GLU:HB2	4:F1:148:MET:HB2	1.89	0.53
23:Y1:53:LEU:HG	23:Y1:54:VAL:HG23	1.89	0.53
29:A1:231:A:N6	29:A1:245:A:N7	2.56	0.53
29:A1:904:G:H22	29:A1:970:U:H3	1.56	0.53
29:A1:1469:G:H1	29:A1:1626:C:H42	1.57	0.53
29:A1:2525:U:H3	29:A1:2592:G:H1	1.57	0.53
2:D2:119:ARG:NH2	29:A2:2635:A:OP1	2.41	0.53
9:K2:46:LYS:HE2	29:A2:185:A:H5''	1.91	0.53
29:A2:1435:C:H2'	29:A2:1436:G:H8	1.73	0.53
29:A2:2046:U:O2'	29:A2:2630:C:O2'	2.27	0.53
29:A2:2824:G:N2	29:A2:2901:C:O2	2.42	0.53
34:D3:35:ARG:NH2	53:A3:408:G:N7	2.55	0.53
37:G3:104:LEU:O	37:G3:108:ALA:N	2.42	0.53
38:H3:39:LEU:O	38:H3:43:GLY:N	2.42	0.53
53:A3:112:A:N6	53:A3:283:A:O2'	2.42	0.53
53:A3:444:G:O6	53:A3:467:C:N4	2.37	0.53
32:B4:34:ALA:HB3	32:B4:36:ARG:HE	1.73	0.53
37:G4:114:ARG:NH1	53:A4:1220:A:OP2	2.42	0.53
2:D1:49:LEU:HD12	2:D1:81:ILE:HG13	1.91	0.53
4:F1:69:ALA:O	4:F1:91:ARG:N	2.42	0.53
14:P1:52:ARG:NH2	29:A1:1024:C:O2'	2.42	0.53
15:Q1:57:VAL:HG12	15:Q1:99:ILE:HG23	1.91	0.53
18:T1:30:VAL:HA	18:T1:37:VAL:HG12	1.90	0.53
20:V1:70:GLN:H	20:V1:80:HIS:CE1	2.27	0.53
26:b1:14:THR:O	26:b1:50:ARG:N	2.36	0.53
29:A1:595:G:OP1	29:A1:1019:G:O2'	2.24	0.53
5:G2:124:GLU:HB2	5:G2:132:ARG:HB2	1.89	0.53
10:L2:75:THR:HG22	10:L2:90:VAL:HA	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:O2:64:ARG:HA	13:O2:73:GLU:HA	1.91	0.53
16:R2:18:ARG:NH1	16:R2:76:VAL:O	2.37	0.53
27:c2:25:PRO:HA	27:c2:28:ARG:HG2	1.91	0.53
29:A2:176:G:H2'	29:A2:177:G:H8	1.74	0.53
29:A2:249:G:HO2'	29:A2:648:A:HO2'	1.56	0.53
29:A2:686:C:N4	29:A2:693:G:O2'	2.42	0.53
29:A2:989:G:N7	29:A2:990:U:N3	2.50	0.53
29:A2:1316:A:H62	29:A2:2036:G:H21	1.57	0.53
29:A2:1435:C:H2'	29:A2:1436:G:C8	2.44	0.53
33:C3:150:LYS:HB3	33:C3:201:TYR:HB2	1.91	0.53
37:G3:115:ARG:NH1	53:A3:1220:A:O3'	2.42	0.53
53:A3:297:G:N2	53:A3:539:C:O2'	2.39	0.53
53:A3:365:C:H42	53:A3:386:G:H1	1.57	0.53
53:A3:728:C:OP1	53:A3:828:G:O2'	2.25	0.53
53:A3:749:A:O2'	53:A3:751:A:N7	2.35	0.53
54:V3:113:GLU:HB3	54:V3:115:ARG:NE	2.24	0.53
43:M4:91:ARG:HB3	43:M4:96:LEU:HB2	1.91	0.53
47:Q4:10:VAL:HB	47:Q4:53:LEU:HA	1.91	0.53
53:A4:269:A:O3'	53:A4:271:G:N2	2.40	0.53
7:I1:3:THR:OG1	29:A1:1043:C:O2	2.26	0.52
9:K1:138:LEU:HA	9:K1:141:ALA:HB3	1.90	0.52
11:M1:10:LEU:N	29:A1:1702:G:O6	2.42	0.52
11:M1:42:LYS:NZ	29:A1:2829:G:OP1	2.41	0.52
11:M1:45:ARG:O	29:A1:2850:G:O2'	2.28	0.52
29:A1:53:G:N2	29:A1:54:G:N3	2.56	0.52
29:A1:1051:G:O6	29:A1:1200:C:N4	2.42	0.52
30:B1:116:C:N4	30:B1:117:G:O6	2.42	0.52
1:C2:261:LYS:HB2	1:C2:264:LYS:HD2	1.91	0.52
2:D2:35:GLN:HB2	2:D2:48:GLN:HB3	1.90	0.52
9:K2:27:HIS:ND1	29:A2:1236:A:OP1	2.41	0.52
11:M2:62:ALA:HA	11:M2:65:LEU:HD12	1.90	0.52
13:O2:1:MET:HG3	29:A2:2887:C:H5''	1.90	0.52
25:a2:30:LEU:HB3	25:a2:39:MET:HB3	1.92	0.52
29:A2:1128:A:N6	29:A2:1135:G:OP1	2.42	0.52
29:A2:2367:G:H1	29:A2:2378:C:H42	1.55	0.52
29:A2:2383:A:H2'	29:A2:2384:G:C8	2.44	0.52
30:B2:85:G:N2	30:B2:97:C:O2'	2.42	0.52
32:B3:19:HIS:HB3	32:B3:40:HIS:HB2	1.91	0.52
53:A3:1033:C:H42	53:A3:1188:G:H1	1.57	0.52
42:L4:126:LYS:HB3	42:L4:129:ALA:HB3	1.90	0.52
53:A4:692:G:C2	53:A4:693:G:H1'	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:K1:117:GLU:O	29:A1:689:G:N2	2.43	0.52
11:M1:14:SER:OG	11:M1:15:SER:N	2.40	0.52
12:N1:96:GLY:HA2	30:B1:39:C:H1'	1.91	0.52
20:V1:39:ARG:NH1	29:A1:2369:C:O2	2.43	0.52
29:A1:115:G:OP2	29:A1:117:A:O2'	2.27	0.52
29:A1:509:G:O2'	29:A1:534:A:N6	2.42	0.52
29:A1:621:G:N2	29:A1:711:G:N3	2.57	0.52
29:A1:966:A:N3	30:B1:82:U:O2'	2.42	0.52
29:A1:2162:C:H41	29:A1:2173:G:H1	1.58	0.52
29:A1:2613:G:H2'	29:A1:2614:A:C8	2.44	0.52
29:A1:2813:A:O2'	29:A1:2906:U:O2	2.26	0.52
2:D2:164:ARG:HH21	29:A2:2788:C:H5''	1.73	0.52
3:E2:184:TYR:HH	29:A2:1249:C:HO2'	1.57	0.52
14:P2:44:ASN:ND2	15:Q2:75:PHE:O	2.43	0.52
19:U2:24:LEU:HB2	19:U2:41:LEU:HB2	1.92	0.52
27:c2:34:ARG:HD2	29:A2:494:A:H5''	1.91	0.52
29:A2:50:G:H21	29:A2:116:A:H62	1.57	0.52
29:A2:1508:G:O2'	29:A2:1510:G:O4'	2.22	0.52
29:A2:2144:G:O6	29:A2:2146:U:N3	2.41	0.52
29:A2:2647:G:O6	29:A2:2800:C:N4	2.42	0.52
29:A2:2665:C:N4	29:A2:2684:A:N1	2.56	0.52
46:P3:10:GLY:HA2	53:A3:607:C:H5''	1.91	0.52
53:A3:978:A:H1'	53:A3:1023:A:H2	1.73	0.52
53:A3:1450:A:N6	53:A3:1451:G:O6	2.41	0.52
32:B4:68:ILE:N	32:B4:90:MET:SD	2.79	0.52
1:C1:223:GLY:N	29:A1:1859:G:OP1	2.41	0.52
2:D1:12:THR:OG1	2:D1:13:ARG:N	2.42	0.52
17:S1:47:PHE:HB3	17:S1:89:ILE:HG21	1.91	0.52
26:b1:13:CYS:HA	26:b1:51:GLU:HA	1.91	0.52
29:A1:198:C:H2'	29:A1:199:C:H6	1.75	0.52
29:A1:624:G:O6	29:A1:707:C:N4	2.42	0.52
29:A1:854:G:N2	29:A1:878:A:OP1	2.42	0.52
2:D2:205:ALA:O	29:A2:2750:G:N2	2.43	0.52
29:A2:119:G:O6	29:A2:128:C:N4	2.42	0.52
29:A2:263:C:O2	29:A2:293:G:O2'	2.26	0.52
29:A2:1532:G:H2'	29:A2:1533:G:H8	1.74	0.52
29:A2:2524:C:N3	29:A2:2592:G:N2	2.54	0.52
29:A2:2665:C:H42	29:A2:2683:G:H22	1.55	0.52
35:E3:14:ARG:NH2	53:A3:1062:A:OP1	2.42	0.52
41:K3:21:ILE:O	41:K3:85:ARG:N	2.43	0.52
53:A3:287:G:N7	53:A3:304:G:N1	2.57	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:930:G:O2'	54:V3:6:LEU:O	2.25	0.52
54:V3:55:ARG:HG2	54:V3:72:GLU:HG3	1.91	0.52
32:B4:22:LYS:NZ	32:B4:35:GLU:OE2	2.33	0.52
44:N4:39:LEU:HB2	44:N4:44:LEU:HB2	1.92	0.52
47:Q4:61:GLU:OE2	53:A4:121:G:O2'	2.26	0.52
50:T4:38:LYS:NZ	53:A4:1421:C:OP1	2.34	0.52
22:X1:33:MET:HA	22:X1:36:ARG:HB2	1.91	0.52
29:A1:417:G:N2	29:A1:439:G:O2'	2.42	0.52
29:A1:798:C:H2'	29:A1:799:A:C8	2.43	0.52
29:A1:2279:U:H3'	29:A1:2280:A:H2'	1.91	0.52
29:A1:2671:A:N1	29:A1:2678:G:N2	2.56	0.52
1:C2:68:LYS:NZ	29:A2:2228:C:O2'	2.36	0.52
1:C2:182:LEU:H	1:C2:272:ALA:HB3	1.75	0.52
29:A2:595:G:OP1	29:A2:1019:G:O2'	2.25	0.52
35:E3:20:GLN:HB2	35:E3:25:ARG:HD3	1.92	0.52
39:I3:112:LYS:NZ	53:A3:1351:C:OP2	2.30	0.52
35:E4:9:LYS:NZ	35:E4:10:MET:O	2.31	0.52
41:K4:22:HIS:HB3	41:K4:29:ILE:HG23	1.92	0.52
44:N4:46:GLU:OE2	53:A4:1041:C:O2'	2.25	0.52
53:A4:973:A:N1	53:A4:1027:C:O2'	2.43	0.52
53:A4:1070:G:H2'	53:A4:1071:G:H8	1.74	0.52
1:C1:218:ARG:NH2	29:A1:739:G:O3'	2.42	0.52
4:F1:166:ASP:O	4:F1:170:ARG:N	2.39	0.52
25:a1:2:ALA:N	29:A1:2625:U:O2	2.42	0.52
29:A1:2095:A:H2'	29:A1:2096:G:H8	1.74	0.52
29:A1:2553:C:O2'	29:A1:2756:A:O2'	2.25	0.52
30:B1:38:C:N4	30:B1:51:C:O2'	2.42	0.52
3:E2:179:GLU:HA	3:E2:205:ARG:HH22	1.74	0.52
4:F2:51:ARG:HA	4:F2:54:GLU:HG2	1.92	0.52
6:H2:4:ILE:HG22	6:H2:18:VAL:HG22	1.91	0.52
18:T2:2:ARG:NH2	29:A2:104:C:O2'	2.42	0.52
29:A2:274:G:N1	29:A2:276:C:O2	2.42	0.52
29:A2:598:G:O2'	29:A2:600:A:OP1	2.28	0.52
40:J3:57:LYS:HD3	53:A3:949:C:H4'	1.91	0.52
53:A3:418:G:OP2	53:A3:418:G:N2	2.41	0.52
53:A3:452:C:H42	53:A3:458:G:H1	1.57	0.52
53:A3:667:A:H2'	53:A3:668:G:C8	2.45	0.52
53:A3:1383:G:O6	53:A3:1481:G:N2	2.43	0.52
32:B4:115:LEU:HD13	32:B4:145:LEU:HD22	1.91	0.52
36:F4:52:ILE:HB	36:F4:86:ARG:HH12	1.74	0.52
53:A4:75:G:N1	53:A4:77:G:N3	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:112:A:N6	53:A4:283:A:O2'	2.43	0.52
53:A4:1117:U:O2'	53:A4:1119:C:OP1	2.27	0.52
54:V4:76:LEU:HD23	54:V4:77:TYR:HE1	1.74	0.52
9:K1:18:ARG:NH2	29:A1:1239:G:OP2	2.34	0.52
19:U1:24:LEU:HB2	19:U1:41:LEU:HB2	1.91	0.52
29:A1:152:G:O6	29:A1:164:C:N4	2.43	0.52
29:A1:333:G:H2'	29:A1:334:G:H8	1.74	0.52
29:A1:2694:C:N3	29:A1:2695:C:N4	2.58	0.52
9:K2:33:ARG:NH1	9:K2:39:LYS:O	2.40	0.52
29:A2:55:A:N6	29:A2:112:U:O4	2.42	0.52
29:A2:930:G:O6	29:A2:931:G:N2	2.42	0.52
42:L3:101:VAL:HG23	42:L3:104:VAL:HG21	1.90	0.52
43:M3:55:ARG:O	43:M3:59:TYR:N	2.41	0.52
50:T3:83:ARG:NH1	53:A3:254:G:OP2	2.42	0.52
53:A3:1457:G:N7	53:A3:1458:U:N3	2.57	0.52
34:D4:137:SER:O	53:A4:603:C:O2'	2.25	0.52
36:F4:14:LEU:HD13	36:F4:19:LEU:HD21	1.90	0.52
50:T4:80:ARG:O	50:T4:84:LEU:N	2.42	0.52
53:A4:68:G:H1'	53:A4:145:A:H61	1.74	0.52
53:A4:185:C:O2'	53:A4:192:G:N2	2.41	0.52
4:F1:95:ARG:HG3	4:F1:96:ARG:H	1.74	0.52
9:K1:3:LEU:HA	9:K1:6:LEU:HB2	1.92	0.52
18:T1:50:ARG:HB2	18:T1:53:PRO:HG3	1.91	0.52
29:A1:1482:A:N6	29:A1:1483:G:O6	2.43	0.52
29:A1:2305:U:H2'	29:A1:2306:C:H6	1.75	0.52
6:H2:26:ALA:HA	6:H2:30:LEU:HD12	1.91	0.52
7:I2:53:VAL:HG11	7:I2:134:ARG:HE	1.74	0.52
16:R2:70:TYR:O	16:R2:108:GLY:N	2.39	0.52
29:A2:1256:G:N2	29:A2:1257:A:N7	2.52	0.52
29:A2:1318:C:O2'	29:A2:1373:G:N7	2.33	0.52
29:A2:1443:A:O2'	29:A2:1445:U:OP2	2.27	0.52
29:A2:2711:G:H22	29:A2:2724:C:H42	1.57	0.52
29:A2:2767:C:H3'	29:A2:2768:A:H8	1.74	0.52
45:O3:68:ARG:HA	45:O3:71:GLN:HB2	1.92	0.52
48:R3:76:LEU:HB2	48:R3:78:LEU:HG	1.92	0.52
53:A3:741:G:OP1	53:A3:804:G:N2	2.43	0.52
53:A3:931:G:OP1	54:V3:8:GLY:N	2.42	0.52
53:A3:939:C:N4	53:A3:951:A:N7	2.57	0.52
53:A3:1432:C:O2	53:A3:1433:G:N2	2.43	0.52
49:S4:36:ARG:NH1	53:A4:1301:C:N3	2.57	0.52
53:A4:532:C:H2'	53:A4:533:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:1464:G:H2'	53:A4:1465:G:H8	1.73	0.52
10:L1:76:LYS:NZ	29:A1:2473:A:O2'	2.39	0.52
10:L1:136:ALA:O	10:L1:140:ALA:N	2.38	0.52
29:A1:1575:G:O2'	29:A1:1593:A:N6	2.29	0.52
13:O2:121:ILE:O	13:O2:125:ARG:N	2.43	0.52
15:Q2:80:GLN:O	15:Q2:82:ARG:NH2	2.42	0.52
29:A2:189:A:N6	29:A2:2447:A:N7	2.57	0.52
29:A2:1220:G:N2	29:A2:1222:U:O2	2.42	0.52
35:E3:11:ILE:HD13	35:E3:31:LEU:HG	1.92	0.52
42:L3:55:VAL:HG13	42:L3:68:ALA:H	1.75	0.52
43:M3:54:VAL:O	43:M3:58:GLU:N	2.43	0.52
53:A3:31:G:H21	53:A3:46:G:H5'	1.75	0.52
53:A3:1005:C:O2'	53:A3:1007:C:OP2	2.25	0.52
53:A3:1489:U:H2'	53:A3:1490:A:H8	1.75	0.52
35:E4:9:LYS:HB3	35:E4:33:VAL:HB	1.91	0.52
53:A4:1205:G:O2'	53:A4:1303:C:OP1	2.26	0.52
2:D1:17:ASP:O	2:D1:19:ARG:NH1	2.42	0.52
7:I1:70:LYS:HG3	7:I1:87:LEU:HD22	1.90	0.52
22:X1:55:ARG:NH1	29:A1:74:G:O3'	2.43	0.52
29:A1:427:G:H3'	29:A1:428:G:C8	2.44	0.52
29:A1:1255:C:O2	29:A1:1287:G:N2	2.43	0.52
29:A1:2613:G:H2'	29:A1:2614:A:H8	1.75	0.52
4:F2:77:ILE:HD12	4:F2:79:ASN:H	1.74	0.52
29:A2:290:G:H1	29:A2:396:C:H42	1.57	0.52
29:A2:750:G:O6	29:A2:780:C:N4	2.43	0.52
29:A2:905:C:N4	29:A2:968:G:O6	2.43	0.52
29:A2:1989:C:H3'	29:A2:1990:A:H2'	1.91	0.52
29:A2:2154:U:O5'	29:A2:2183:G:N1	2.43	0.52
29:A2:2174:U:OP2	29:A2:2176:G:N1	2.32	0.52
29:A2:2303:G:H1'	29:A2:2397:G:H21	1.75	0.52
37:G3:113:GLU:HB2	37:G3:119:ARG:HA	1.92	0.52
38:H3:113:SER:N	38:H3:132:GLU:O	2.42	0.52
52:X3:143:ASP:O	52:W4:163:ASN:ND2	2.42	0.52
53:A3:1424:G:N1	53:A3:1426:A:N7	2.58	0.52
54:V3:6:LEU:HB3	54:V3:40:VAL:HG22	1.91	0.52
34:D4:36:ARG:NH2	53:A4:421:G:OP2	2.43	0.52
37:G4:28:ASN:ND2	53:A4:1356:A:O3'	2.42	0.52
47:Q4:19:VAL:HG23	47:Q4:44:ALA:HB3	1.92	0.52
53:A4:925:C:N4	53:A4:1214:G:O6	2.42	0.52
53:A4:1246:G:N1	53:A4:1251:C:O2	2.42	0.52
53:A4:1437:A:N6	53:A4:1438:G:N3	2.58	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C1:239:ARG:N	29:A1:2605:C:OP2	2.33	0.52
8:J1:88:ASN:OD1	8:J1:92:GLU:N	2.41	0.52
13:O1:113:LYS:NZ	29:A1:1787:C:O3'	2.39	0.52
29:A1:2024:G:OP1	29:A1:2737:G:N2	2.43	0.52
30:B1:20:G:H22	30:B1:111:C:H42	1.58	0.52
1:C2:112:GLN:OE1	1:C2:115:GLN:NE2	2.43	0.52
4:F2:63:ILE:HG13	4:F2:64:THR:HG22	1.92	0.52
29:A2:558:C:N4	29:A2:2059:G:O6	2.43	0.52
29:A2:1084:G:H2'	29:A2:1085:G:H8	1.75	0.52
29:A2:1245:U:O4	29:A2:1294:A:N6	2.42	0.52
29:A2:2752:G:N2	29:A2:2783:C:N3	2.58	0.52
37:G3:3:ARG:NH2	53:A3:910:G:O6	2.43	0.52
41:K3:73:MET:HG2	41:K3:77:MET:HB3	1.91	0.52
53:A3:1076:G:N2	53:A3:1088:G:O6	2.42	0.52
53:A3:1110:C:H41	53:A3:1122:C:H41	1.57	0.52
53:A3:1144:C:N4	53:A3:1155:G:N7	2.57	0.52
39:I4:37:PHE:HB3	39:I4:40:LEU:HB3	1.92	0.52
44:N4:8:GLU:O	44:N4:12:ARG:NH1	2.39	0.52
54:V4:86:ARG:HG2	54:V4:90:GLN:HG2	1.92	0.52
5:G1:3:ARG:HE	29:A1:1160:G:H4'	1.74	0.51
9:K1:57:THR:O	9:K1:61:ARG:NH2	2.39	0.51
29:A1:335:A:O2'	29:A1:337:G:N7	2.43	0.51
29:A1:753:G:N2	29:A1:776:A:N7	2.58	0.51
29:A1:1398:C:H42	29:A1:1429:G:H1	1.58	0.51
29:A1:2235:G:H2'	29:A1:2236:G:C8	2.45	0.51
29:A1:2521:C:H5''	29:A1:2587:C:H41	1.75	0.51
5:G2:41:MET:HE2	5:G2:65:HIS:HB2	1.92	0.51
9:K2:83:VAL:O	9:K2:115:LEU:N	2.43	0.51
29:A2:33:U:O4	29:A2:474:G:O2'	2.19	0.51
29:A2:333:G:H2'	29:A2:334:G:H8	1.76	0.51
29:A2:370:A:O2'	29:A2:372:A:N6	2.40	0.51
29:A2:712:G:N2	29:A2:986:G:O2'	2.43	0.51
29:A2:2053:G:N1	29:A2:2057:A:OP2	2.41	0.51
29:A2:2309:C:H2'	29:A2:2310:U:H6	1.74	0.51
41:K3:22:HIS:HB3	41:K3:29:ILE:HG23	1.92	0.51
53:A3:435:A:H5''	53:A3:436:C:H5	1.74	0.51
53:A3:906:G:H2'	53:A3:907:C:H6	1.74	0.51
32:B4:120:ALA:H	32:B4:121:LEU:HD12	1.75	0.51
36:F4:52:ILE:HG21	36:F4:87:ARG:HH22	1.75	0.51
42:L4:9:GLN:HG3	42:L4:12:ARG:HH21	1.76	0.51
43:M4:79:LYS:HA	43:M4:82:MET:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:P4:22:THR:OG1	46:P4:23:ASP:N	2.42	0.51
53:A4:906:G:H2'	53:A4:907:C:H6	1.75	0.51
2:D1:164:ARG:NH2	29:A1:2789:C:OP2	2.43	0.51
3:E1:52:LYS:HE3	29:A1:479:C:H5''	1.91	0.51
12:N1:31:SER:OG	30:B1:30:C:OP1	2.27	0.51
14:P1:83:LEU:HD11	14:P1:88:ILE:HB	1.93	0.51
21:W1:11:ARG:NH2	29:A1:177:G:O3'	2.43	0.51
21:W1:87:PRO:O	21:W1:91:LYS:N	2.43	0.51
15:Q2:1:MET:HA	15:Q2:99:ILE:HG13	1.91	0.51
17:S2:27:THR:HG22	17:S2:80:ILE:HG12	1.92	0.51
25:a2:46:CYS:HB2	25:a2:49:CYS:HB2	1.92	0.51
28:d2:15:LYS:NZ	28:d2:16:ILE:O	2.38	0.51
29:A2:829:G:H21	29:A2:832:A:H62	1.56	0.51
33:C3:181:ASN:HB3	33:C3:204:LEU:HB2	1.93	0.51
39:I3:10:ARG:HB2	39:I3:104:ARG:HG2	1.91	0.51
40:J3:13:HIS:O	40:J3:17:ASP:N	2.42	0.51
41:K3:13:GLN:NE2	41:K3:77:MET:SD	2.82	0.51
53:A3:664:C:H3'	53:A3:665:G:H8	1.75	0.51
3:E1:107:LYS:NZ	3:E1:208:GLY:O	2.42	0.51
10:L1:115:MET:O	10:L1:119:ARG:N	2.44	0.51
11:M1:103:ARG:NH2	16:R1:39:THR:O	2.44	0.51
25:a1:9:LYS:NZ	29:A1:2041:U:O3'	2.43	0.51
29:A1:1877:C:H42	29:A1:1920:G:H1	1.58	0.51
29:A1:2186:G:H5'	29:A1:2197:A:N7	2.26	0.51
29:A1:2690:C:N4	29:A1:2691:G:O6	2.43	0.51
1:C2:227:ASN:ND2	29:A2:832:A:O5'	2.39	0.51
3:E2:155:LEU:HA	3:E2:174:VAL:HB	1.91	0.51
8:J2:2:ILE:HG13	8:J2:62:VAL:HG21	1.91	0.51
9:K2:63:PRO:O	28:d2:30:ARG:NH2	2.43	0.51
11:M2:108:GLY:HA3	29:A2:2033:G:H1'	1.90	0.51
14:P2:6:THR:OG1	29:A2:609:C:OP2	2.27	0.51
20:V2:9:SER:O	29:A2:2271:U:O2'	2.28	0.51
26:b2:37:ARG:HG3	26:b2:49:HIS:HE1	1.74	0.51
29:A2:883:C:H2'	29:A2:884:A:H8	1.74	0.51
29:A2:1549:C:N3	29:A2:1550:C:N4	2.59	0.51
29:A2:2613:G:H2'	29:A2:2614:A:H8	1.75	0.51
39:I3:110:GLU:OE2	53:A3:1166:G:O2'	2.27	0.51
46:P3:8:ARG:HH22	53:A3:386:G:H5''	1.75	0.51
53:A3:676:G:C5	54:V3:103:ARG:CZ	2.94	0.51
53:A4:443:C:N4	53:A4:444:G:N3	2.59	0.51
53:A4:939:C:O2'	53:A4:1182:A:N6	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:1078:C:O2	53:A4:1151:A:O2'	2.26	0.51
53:A4:1287:A:H61	53:A4:1312:G:H1'	1.75	0.51
2:D1:176:ILE:HB	2:D1:181:LEU:HB2	1.93	0.51
7:I1:54:VAL:HB	7:I1:122:VAL:HA	1.92	0.51
13:O1:41:ARG:HE	13:O1:43:GLN:HE21	1.59	0.51
29:A1:473:C:N4	29:A1:474:G:O6	2.44	0.51
29:A1:1529:G:O2'	29:A1:1608:G:N7	2.39	0.51
29:A1:2771:U:H3'	31:e1:19:ARG:HB2	1.91	0.51
1:C2:38:LYS:HD2	29:A2:1619:A:H4'	1.92	0.51
5:G2:90:LYS:HB2	5:G2:161:GLY:H	1.75	0.51
11:M2:107:ASP:N	29:A2:1335:A:N7	2.51	0.51
17:S2:24:GLY:O	17:S2:83:VAL:N	2.44	0.51
20:V2:68:GLU:N	20:V2:80:HIS:O	2.36	0.51
29:A2:40:C:H1'	29:A2:468:G:H22	1.75	0.51
29:A2:217:A:H61	29:A2:438:G:H21	1.58	0.51
29:A2:354:G:N2	29:A2:528:A:OP1	2.44	0.51
29:A2:2563:G:H2'	29:A2:2564:G:H8	1.76	0.51
29:A2:2613:G:H2'	29:A2:2614:A:C8	2.45	0.51
52:X3:160:VAL:HG21	52:X3:174:ARG:HB3	1.92	0.51
53:A3:141:G:N2	53:A3:170:C:O2	2.43	0.51
53:A3:1059:G:N1	53:A3:1062:A:OP2	2.36	0.51
41:K4:51:LYS:O	41:K4:55:LYS:NZ	2.40	0.51
50:T4:65:LYS:NZ	53:A4:172:C:OP1	2.41	0.51
52:W4:157:SER:OG	52:W4:158:PHE:N	2.43	0.51
2:D1:37:ARG:NH1	29:A1:2800:C:O2	2.41	0.51
2:D1:41:LYS:NZ	29:A1:2800:C:OP1	2.33	0.51
4:F1:40:ASN:ND2	4:F1:90:LEU:O	2.42	0.51
5:G1:171:LEU:HD11	29:A1:2545:A:H5''	1.93	0.51
9:K1:113:LYS:NZ	29:A1:663:G:OP2	2.43	0.51
14:P1:11:ARG:HA	14:P1:14:HIS:HD2	1.75	0.51
16:R1:18:ARG:HH22	16:R1:78:GLU:HG3	1.76	0.51
25:a1:41:PRO:O	25:a1:44:THR:OG1	2.27	0.51
29:A1:223:A:H62	29:A1:457:A:H62	1.58	0.51
29:A1:993:G:H2'	29:A1:994:G:C8	2.46	0.51
29:A1:1972:G:H2'	29:A1:1973:G:H8	1.75	0.51
14:P2:109:LEU:O	14:P2:113:ALA:N	2.42	0.51
22:X2:43:GLN:NE2	22:X2:47:ASN:OD1	2.43	0.51
23:Y2:41:PRO:O	23:Y2:45:GLY:N	2.43	0.51
27:c2:24:THR:O	27:c2:28:ARG:N	2.44	0.51
29:A2:232:G:O2'	29:A2:244:G:O6	2.26	0.51
29:A2:627:G:N2	29:A2:704:A:N7	2.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2124:G:N1	29:A2:2125:G:O6	2.43	0.51
31:e2:7:VAL:HG22	31:e2:36:GLN:HG3	1.92	0.51
32:B3:54:THR:OG1	32:B3:200:ILE:O	2.28	0.51
47:Q3:70:ARG:NH1	53:A3:230:C:OP1	2.44	0.51
53:A3:532:C:H2'	53:A3:533:G:C8	2.45	0.51
38:H4:89:PRO:HA	38:H4:92:ARG:HH12	1.76	0.51
53:A4:513:G:N2	54:V4:51:GLU:OE2	2.42	0.51
53:A4:818:U:H3	53:A4:828:G:H1	1.58	0.51
53:A4:1423:G:O2'	53:A4:1437:A:N1	2.34	0.51
3:E1:80:ALA:HB3	3:E1:83:PHE:H	1.75	0.51
29:A1:56:C:H42	29:A1:69:G:H1	1.58	0.51
29:A1:739:G:N2	29:A1:828:U:O3'	2.43	0.51
27:c2:12:ARG:HH22	27:c2:44:PRO:HB2	1.74	0.51
29:A2:1255:C:O2	29:A2:1287:G:N2	2.44	0.51
29:A2:1466:G:N1	29:A2:1628:A:OP2	2.25	0.51
29:A2:1616:A:H1'	29:A2:1617:G:C6	2.46	0.51
37:G3:96:GLN:HA	37:G3:99:LEU:HB2	1.92	0.51
53:A3:1030:G:N2	53:A3:1192:U:O2	2.35	0.51
53:A4:51:A:C5	53:A4:109:A:H1'	2.46	0.51
53:A4:345:G:O2'	53:A4:346:G:O4'	2.28	0.51
53:A4:865:G:H5''	53:A4:866:A:H2'	1.92	0.51
53:A4:1139:A:H62	53:A4:1165:G:N2	2.09	0.51
1:C1:85:ASP:CG	1:C1:87:ASN:H	2.18	0.51
26:b1:15:GLU:HG3	26:b1:41:PRO:HB3	1.93	0.51
29:A1:913:G:H2'	29:A1:914:C:H6	1.76	0.51
29:A1:1465:C:H41	29:A1:1632:A:H1'	1.76	0.51
29:A1:2668:A:H62	29:A1:2680:C:H41	1.59	0.51
4:F2:7:LEU:HA	4:F2:10:LYS:HB2	1.92	0.51
4:F2:40:ASN:H	4:F2:156:ASP:HB3	1.75	0.51
4:F2:52:ILE:HG13	4:F2:55:LYS:HE3	1.92	0.51
4:F2:72:ARG:HA	4:F2:87:PRO:HA	1.92	0.51
12:N2:25:ARG:HD2	12:N2:40:ILE:HD13	1.92	0.51
19:U2:58:VAL:HA	19:U2:68:PRO:HA	1.93	0.51
27:c2:5:TRP:HD1	29:A2:1660:C:H4'	1.75	0.51
29:A2:223:A:H62	29:A2:457:A:H62	1.59	0.51
29:A2:2061:G:H2'	29:A2:2062:G:H8	1.75	0.51
30:B2:46:G:O3'	30:B2:49:C:N4	2.44	0.51
35:E3:40:ARG:HB3	35:E3:68:GLU:HG2	1.93	0.51
39:I3:66:ARG:NH1	53:A3:1130:U:O2'	2.44	0.51
40:J3:5:ARG:HB2	40:J3:99:LYS:HB2	1.91	0.51
47:Q3:3:LYS:HD2	47:Q3:4:LYS:HZ3	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:291:U:H2'	53:A3:292:G:C8	2.46	0.51
36:F4:3:ARG:HH11	36:F4:66:GLU:HB2	1.76	0.51
37:G4:96:GLN:O	37:G4:100:ALA:N	2.44	0.51
50:T4:31:SER:HA	50:T4:34:LYS:HB2	1.92	0.51
53:A4:31:G:H21	53:A4:46:G:H5'	1.72	0.51
53:A4:422:U:H2'	53:A4:423:G:C8	2.45	0.51
53:A4:667:A:H2'	53:A4:668:G:C8	2.45	0.51
53:A4:751:A:H1'	53:A4:1489:U:H1'	1.92	0.51
53:A4:893:G:H2'	53:A4:894:G:H8	1.76	0.51
3:E1:8:GLN:NE2	3:E1:121:GLY:O	2.44	0.51
7:I1:131:GLN:OE1	29:A1:6:A:O2'	2.28	0.51
12:N1:33:LYS:HB2	12:N1:62:LYS:HE2	1.92	0.51
21:W1:56:GLN:HE22	21:W1:83:GLU:HG2	1.75	0.51
30:B1:13:C:H5''	30:B1:14:C:H5	1.76	0.51
8:J2:29:ASN:ND2	29:A2:2561:U:O2'	2.43	0.51
9:K2:134:ALA:O	9:K2:138:LEU:N	2.43	0.51
19:U2:30:ASN:ND2	30:B2:107:A:O2'	2.44	0.51
29:A2:212:A:H62	29:A2:222:G:H21	1.58	0.51
29:A2:2228:C:H41	29:A2:2233:G:H1	1.59	0.51
29:A2:2431:C:H2'	29:A2:2432:A:C8	2.46	0.51
43:M3:103:THR:HG22	43:M3:107:ALA:HB3	1.93	0.51
44:N3:53:LEU:HD12	44:N3:54:PRO:HD2	1.92	0.51
35:E4:91:LEU:HA	35:E4:120:THR:HB	1.92	0.51
41:K4:126:ARG:NH2	53:A4:1501:C:OP1	2.43	0.51
53:A4:19:C:N3	53:A4:894:G:N1	2.59	0.51
53:A4:51:A:N1	53:A4:309:C:O2'	2.44	0.51
53:A4:641:G:H2'	53:A4:642:U:C2	2.46	0.51
3:E1:197:ASP:O	3:E1:201:VAL:N	2.32	0.51
4:F1:121:ASN:HD22	4:F1:122:PRO:HD2	1.76	0.51
8:J1:26:LYS:HB3	8:J1:30:ALA:HB2	1.93	0.51
8:J1:77:ILE:HB	13:O1:74:ARG:HG3	1.92	0.51
14:P1:46:ALA:O	14:P1:50:ARG:N	2.41	0.51
22:X1:46:GLN:O	22:X1:48:HIS:ND1	2.39	0.51
29:A1:1239:G:H2'	29:A1:1240:G:C8	2.46	0.51
29:A1:1485:C:N4	29:A1:1604:G:O6	2.44	0.51
29:A1:2078:A:H5''	29:A1:2079:C:H5''	1.93	0.51
7:I2:43:THR:HG22	7:I2:45:ASN:H	1.74	0.51
8:J2:77:ILE:HG13	13:O2:74:ARG:HG2	1.93	0.51
20:V2:40:GLN:HE21	20:V2:57:PHE:HB3	1.75	0.51
29:A2:438:G:H1	29:A2:445:C:H42	1.58	0.51
29:A2:597:A:H61	29:A2:2053:G:H21	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:C3:153:VAL:HB	33:C3:166:GLU:HB2	1.92	0.51
33:C3:154:SER:HA	33:C3:165:THR:HG23	1.91	0.51
33:C4:40:ARG:O	33:C4:44:GLU:N	2.44	0.51
35:E4:6:PHE:HE1	35:E4:40:ARG:HG3	1.75	0.51
47:Q4:17:LYS:HE3	47:Q4:45:HIS:HE1	1.76	0.51
53:A4:659:A:N6	53:A4:696:G:O6	2.44	0.51
3:E1:38:ARG:NH2	3:E1:99:TYR:OH	2.43	0.51
3:E1:44:ARG:HH12	29:A1:470:G:H3'	1.76	0.51
29:A1:753:G:N2	29:A1:775:G:O2'	2.42	0.51
29:A1:1471:G:H1	29:A1:1624:C:H41	1.59	0.51
12:N2:105:ALA:HB1	12:N2:110:LEU:HD11	1.93	0.51
19:U2:40:ASP:O	19:U2:44:PHE:N	2.43	0.51
29:A2:2131:C:O2'	29:A2:2132:C:O2	2.25	0.51
34:D3:36:ARG:NH2	53:A3:421:G:OP2	2.40	0.51
36:F3:23:LYS:HA	36:F3:26:ILE:HD12	1.92	0.51
53:A3:147:C:H1'	53:A3:148:C:H5'	1.93	0.51
53:A3:459:G:H2'	53:A3:460:G:H8	1.76	0.51
47:Q4:81:ARG:NH2	53:A4:629:U:O2'	2.40	0.51
53:A4:64:G:O2'	53:A4:66:G:OP1	2.29	0.51
53:A4:937:U:O2	53:A4:1203:G:O2'	2.23	0.51
53:A4:1489:U:H2'	53:A4:1490:A:H8	1.76	0.51
1:C1:258:LYS:HG2	29:A1:1877:C:H5''	1.92	0.50
10:L1:24:GLY:H	10:L1:101:ARG:HD2	1.76	0.50
20:V1:72:ARG:NH1	20:V1:78:TYR:OH	2.44	0.50
29:A1:1291:G:N1	29:A1:1292:G:O6	2.44	0.50
29:A1:1344:G:OP1	29:A1:2723:G:O2'	2.25	0.50
2:D2:144:ARG:HG2	29:A2:2586:A:H2'	1.93	0.50
5:G2:124:GLU:OE2	5:G2:134:SER:OG	2.26	0.50
7:I2:70:LYS:HB3	7:I2:87:LEU:HB2	1.93	0.50
29:A2:1301:A:H3'	29:A2:1302:A:H8	1.75	0.50
29:A2:1878:G:H2'	29:A2:1879:G:H8	1.76	0.50
29:A2:2236:G:H2'	29:A2:2237:G:C8	2.45	0.50
29:A2:2269:G:H3'	29:A2:2270:G:H8	1.75	0.50
29:A2:2530:G:H22	29:A2:2583:G:H1'	1.75	0.50
32:B3:142:LEU:HA	32:B3:145:LEU:HD12	1.92	0.50
33:C3:114:PRO:HA	33:C3:117:ALA:HB3	1.93	0.50
35:E3:126:ARG:HH12	53:A3:9:G:H3'	1.75	0.50
37:G3:93:PRO:HA	37:G3:96:GLN:HB2	1.92	0.50
53:A3:201:A:H2'	53:A3:217:U:H2'	1.93	0.50
53:A3:925:C:N3	53:A3:1214:G:N1	2.59	0.50
40:J4:4:ILE:HB	40:J4:78:ASN:HD22	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J4:48:THR:OG1	53:A4:952:A:N6	2.44	0.50
53:A4:372:G:N1	53:A4:382:U:O2	2.44	0.50
53:A4:465:G:O2'	53:A4:467:C:N4	2.44	0.50
53:A4:1473:C:N4	53:A4:1474:G:O6	2.44	0.50
1:C1:228:PRO:HB3	1:C1:235:GLY:HA3	1.94	0.50
16:R1:72:LYS:HB3	16:R1:106:ILE:HG13	1.92	0.50
18:T1:67:LEU:HD21	18:T1:71:LYS:HE3	1.91	0.50
29:A1:398:G:O2'	29:A1:453:G:OP1	2.29	0.50
29:A1:1025:G:H2'	29:A1:1026:G:H8	1.76	0.50
29:A1:1138:U:O4	29:A1:1140:C:N4	2.44	0.50
1:C2:184:LYS:HB2	1:C2:269:PHE:HB3	1.93	0.50
9:K2:41:ARG:NH1	29:A2:856:U:OP2	2.34	0.50
19:U2:59:LEU:HD12	19:U2:67:LEU:HD23	1.92	0.50
29:A2:9:U:N3	29:A2:10:G:N3	2.60	0.50
29:A2:582:U:H2'	29:A2:583:G:C8	2.46	0.50
29:A2:2317:G:H22	29:A2:2327:C:H42	1.58	0.50
32:B3:137:ARG:HA	32:B3:140:HIS:HB2	1.94	0.50
32:B3:162:ILE:HG12	32:B3:184:VAL:HG22	1.93	0.50
39:I3:66:ARG:NH1	53:A3:1131:C:O5'	2.43	0.50
43:M3:87:TYR:CZ	49:S3:76:PRO:HA	2.47	0.50
53:A3:991:G:N2	53:A3:994:A:O4'	2.44	0.50
33:C4:7:PRO:HG2	33:C4:184:TYR:HB2	1.94	0.50
37:G4:135:VAL:HA	37:G4:138:LYS:HB3	1.93	0.50
41:K4:31:THR:HA	41:K4:42:TRP:HA	1.93	0.50
53:A4:871:G:H2'	53:A4:872:G:H8	1.76	0.50
1:C1:227:ASN:ND2	29:A1:829:G:H1	2.09	0.50
29:A1:1392:G:N2	29:A1:1451:C:O2	2.43	0.50
29:A1:1606:C:H5''	29:A1:1607:A:H2'	1.92	0.50
31:e1:7:VAL:HG22	31:e1:36:GLN:HG3	1.93	0.50
7:I2:89:LYS:HA	7:I2:92:ALA:HB3	1.93	0.50
9:K2:79:ARG:HH21	9:K2:110:TYR:HD2	1.58	0.50
13:O2:62:THR:HG22	13:O2:75:ILE:HG23	1.93	0.50
29:A2:729:G:H2'	29:A2:730:G:C8	2.47	0.50
29:A2:1972:G:H2'	29:A2:1973:G:H8	1.75	0.50
29:A2:2160:C:OP2	29:A2:2176:G:N2	2.44	0.50
40:J3:24:VAL:HG12	40:J3:34:VAL:HG22	1.93	0.50
46:P3:25:ARG:NH1	53:A3:100:G:O2'	2.45	0.50
43:M4:24:GLY:HA3	43:M4:70:LEU:HD21	1.93	0.50
45:O4:54:ARG:NH2	53:A4:563:U:OP1	2.44	0.50
51:U4:25:LYS:NZ	53:A4:1244:C:OP2	2.43	0.50
52:W4:139:MET:HE2	52:W4:162:ARG:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:238:A:H61	53:A4:277:A:H62	1.58	0.50
53:A4:446:A:N6	53:A4:464:U:O2	2.45	0.50
53:A4:709:C:O2	53:A4:714:G:N1	2.42	0.50
53:A4:1114:C:H42	53:A4:1125:G:H1	1.58	0.50
2:D1:110:GLY:HA3	29:A1:2833:A:H5''	1.92	0.50
3:E1:81:PRO:HG2	29:A1:722:C:H5'	1.93	0.50
19:U1:100:VAL:HG21	19:U1:134:PRO:HD2	1.93	0.50
20:V1:40:GLN:O	20:V1:41:ARG:NH1	2.43	0.50
29:A1:1316:A:H62	29:A1:2036:G:N2	2.10	0.50
2:D2:154:LYS:NZ	29:A2:2526:C:O2'	2.37	0.50
14:P2:82:GLY:O	14:P2:86:ALA:N	2.43	0.50
16:R2:1:MET:HG2	16:R2:62:HIS:HB3	1.92	0.50
16:R2:83:LYS:O	16:R2:84:ARG:NH1	2.44	0.50
24:Z2:1:MET:HG3	24:Z2:2:LYS:HG2	1.94	0.50
29:A2:58:U:OP1	29:A2:72:A:N6	2.32	0.50
29:A2:629:G:O2'	29:A2:705:G:N2	2.41	0.50
29:A2:1237:G:H2'	29:A2:1238:G:H8	1.76	0.50
29:A2:1465:C:H3'	29:A2:1466:G:H8	1.76	0.50
29:A2:1489:G:H2'	29:A2:1490:G:H8	1.76	0.50
29:A2:2167:C:H2'	29:A2:2168:U:H4'	1.92	0.50
29:A2:2383:A:H2'	29:A2:2384:G:H8	1.76	0.50
34:D3:31:CYS:SG	34:D3:32:ALA:N	2.75	0.50
37:G3:135:VAL:HA	37:G3:138:LYS:HE3	1.93	0.50
47:Q3:101:ARG:NH1	53:A3:874:C:OP2	2.43	0.50
53:A3:487:C:O2'	53:A3:493:A:N7	2.38	0.50
53:A3:817:C:O2'	53:A3:818:U:O4'	2.27	0.50
50:T4:44:ALA:HB2	50:T4:52:ALA:HB2	1.93	0.50
50:T4:48:LYS:HB2	50:T4:51:GLU:HG3	1.93	0.50
9:K1:65:ARG:NH1	28:d1:13:ARG:O	2.33	0.50
12:N1:66:ALA:HB1	12:N1:101:LEU:HB2	1.92	0.50
13:O1:3:ARG:HH21	13:O1:6:LEU:HB2	1.76	0.50
19:U1:57:ILE:O	19:U1:69:THR:N	2.45	0.50
29:A1:933:C:O2'	29:A1:940:G:N1	2.44	0.50
29:A1:1877:C:H2'	29:A1:1878:G:H8	1.76	0.50
2:D2:170:LEU:HD12	2:D2:185:LYS:HB3	1.94	0.50
4:F2:128:ARG:HD2	29:A2:2329:G:H21	1.76	0.50
17:S2:55:ASN:HB2	17:S2:80:ILE:HB	1.93	0.50
29:A2:665:G:H1'	29:A2:679:C:H42	1.74	0.50
29:A2:2370:C:H42	29:A2:2376:G:H1	1.59	0.50
34:D3:101:LEU:HD22	34:D3:138:TYR:HB3	1.94	0.50
42:L3:9:GLN:HB3	53:A3:857:C:H5''	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:X3:139:MET:HE2	52:X3:162:ARG:HB2	1.94	0.50
53:A3:1116:G:OP1	53:A3:1124:G:N1	2.45	0.50
33:C4:179:ARG:NH1	33:C4:207:VAL:O	2.44	0.50
35:E4:25:ARG:NH1	53:A4:1052:U:OP1	2.44	0.50
49:S4:15:LEU:HG	49:S4:34:TRP:H	1.77	0.50
53:A4:809:C:O2'	53:A4:810:U:O2	2.30	0.50
53:A4:1229:A:N6	53:A4:1271:G:O6	2.32	0.50
9:K1:132:LYS:HD2	9:K1:135:LEU:HD12	1.92	0.50
10:L1:63:LYS:HG3	10:L1:107:ALA:HB3	1.92	0.50
29:A1:2465:A:OP1	29:A1:2511:A:N6	2.38	0.50
1:C2:112:GLN:HB2	1:C2:115:GLN:HG3	1.92	0.50
1:C2:174:ILE:HG12	1:C2:184:LYS:HG2	1.93	0.50
11:M2:29:LEU:HD13	11:M2:79:LEU:HD21	1.92	0.50
14:P2:3:ARG:NH2	29:A2:610:G:OP2	2.45	0.50
25:a2:3:LYS:HB3	25:a2:5:PRO:HD2	1.93	0.50
29:A2:46:C:N4	29:A2:47:G:O6	2.45	0.50
29:A2:846:C:H2'	29:A2:847:G:C8	2.45	0.50
29:A2:2822:A:H62	29:A2:2902:G:H21	1.59	0.50
46:P3:20:VAL:HG12	46:P3:35:LYS:HA	1.93	0.50
53:A3:916:G:O2'	53:A3:1357:A:O2'	2.24	0.50
34:D4:35:ARG:NE	53:A4:408:G:O6	2.44	0.50
38:H4:113:SER:N	38:H4:132:GLU:O	2.44	0.50
43:M4:102:ARG:NE	53:A4:928:G:OP2	2.43	0.50
53:A4:451:C:O2'	53:A4:459:G:N2	2.39	0.50
53:A4:983:A:N1	53:A4:1001:G:N2	2.60	0.50
53:A4:1063:G:H2'	53:A4:1064:G:H8	1.77	0.50
53:A4:1258:C:O2'	53:A4:1260:A:N7	2.37	0.50
1:C1:35:LYS:HG3	1:C1:64:ILE:HD12	1.94	0.50
16:R1:11:ARG:NH2	29:A1:1370:A:OP2	2.45	0.50
30:B1:102:A:H2'	30:B1:103:G:C8	2.47	0.50
17:S2:30:VAL:HG21	17:S2:79:ALA:HB3	1.94	0.50
21:W2:69:LYS:NZ	29:A2:400:G:O4'	2.44	0.50
29:A2:332:G:N2	29:A2:335:A:OP2	2.45	0.50
29:A2:1355:A:OP2	29:A2:1654:G:N2	2.43	0.50
29:A2:2762:G:N1	29:A2:2771:U:OP1	2.39	0.50
37:G3:96:GLN:O	37:G3:100:ALA:N	2.45	0.50
38:H3:114:THR:HB	38:H3:129:VAL:HG22	1.94	0.50
52:X3:162:ARG:HE	52:W4:159:PHE:HB3	1.76	0.50
53:A3:1236:G:N1	53:A3:1260:A:N7	2.59	0.50
32:B4:44:LEU:O	32:B4:47:THR:OG1	2.29	0.50
39:I4:118:LYS:HB2	39:I4:121:ARG:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K4:13:GLN:HG2	41:K4:75:TYR:HB2	1.93	0.50
42:L4:9:GLN:HG3	42:L4:12:ARG:HE	1.77	0.50
48:R4:37:VAL:HG23	48:R4:38:GLU:HG2	1.92	0.50
53:A4:450:C:OP2	53:A4:451:C:N4	2.40	0.50
1:C1:36:PRO:HB3	1:C1:63:ARG:HA	1.94	0.50
1:C1:257:LEU:H	29:A1:1877:C:H5'	1.76	0.50
15:Q1:33:VAL:N	15:Q1:59:ALA:O	2.39	0.50
23:Y1:20:LYS:HA	23:Y1:23:LEU:HD12	1.94	0.50
29:A1:665:G:O2'	29:A1:678:G:N2	2.30	0.50
2:D2:12:THR:OG1	2:D2:13:ARG:N	2.45	0.50
19:U2:102:LEU:HD21	19:U2:137:ILE:HG22	1.94	0.50
21:W2:58:ILE:HG21	21:W2:87:PRO:HA	1.94	0.50
29:A2:50:G:O2'	29:A2:117:A:N1	2.40	0.50
29:A2:184:G:OP1	29:A2:852:U:O2'	2.30	0.50
29:A2:473:C:N4	29:A2:474:G:O6	2.44	0.50
29:A2:638:G:N2	29:A2:642:A:O2'	2.44	0.50
29:A2:1331:G:O2'	29:A2:1333:G:O6	2.28	0.50
29:A2:2810:G:N2	29:A2:2905:G:OP1	2.45	0.50
30:B2:29:C:OP1	30:B2:119:G:O2'	2.30	0.50
44:N3:19:ARG:HA	53:A3:957:C:H1'	1.93	0.50
48:R3:39:VAL:HG22	48:R3:43:PHE:HE2	1.76	0.50
53:A3:1381:C:O2	53:A3:1479:A:N6	2.45	0.50
38:H4:96:GLY:HA3	38:H4:99:GLU:HB2	1.93	0.50
53:A4:37:U:H2'	53:A4:38:G:H8	1.77	0.50
53:A4:45:U:H2'	53:A4:46:G:H8	1.76	0.50
53:A4:578:G:O2'	53:A4:624:U:O4	2.29	0.50
53:A4:843:C:H4'	53:A4:896:A:H5'	1.93	0.50
53:A4:1328:G:H22	53:A4:1355:G:H2'	1.76	0.50
1:C1:207:GLY:N	29:A1:1824:A:O2'	2.45	0.50
5:G1:103:LEU:HD12	5:G1:115:VAL:HG21	1.94	0.50
10:L1:83:MET:O	29:A1:2264:G:N2	2.45	0.50
21:W1:76:ARG:HG2	21:W1:93:GLU:HB3	1.93	0.50
29:A1:151:C:H2'	29:A1:152:G:C8	2.47	0.50
29:A1:1765:G:N2	29:A1:1776:C:N3	2.60	0.50
29:A1:2652:G:O2'	29:A1:2790:A:N1	2.40	0.50
3:E2:53:THR:OG1	3:E2:54:ARG:N	2.45	0.50
3:E2:199:TRP:O	3:E2:203:GLN:N	2.43	0.50
7:I2:69:GLN:HA	7:I2:86:PRO:HA	1.94	0.50
7:I2:118:LYS:HE3	29:A2:2795:G:H5'	1.94	0.50
15:Q2:56:SER:O	15:Q2:100:ARG:NH2	2.45	0.50
16:R2:25:ARG:NH2	29:A2:547:G:OP1	2.45	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:U2:57:ILE:N	19:U2:69:THR:O	2.42	0.50
29:A2:744:G:H2'	29:A2:745:G:H8	1.76	0.50
29:A2:2716:U:H1'	29:A2:2717:C:H5	1.75	0.50
37:G3:69:VAL:HA	37:G3:138:LYS:HE2	1.93	0.50
37:G3:144:MET:O	37:G3:148:ASN:ND2	2.45	0.50
45:O3:24:SER:OG	45:O3:25:THR:N	2.37	0.50
53:A3:560:G:OP2	53:A3:799:A:N6	2.45	0.50
53:A3:598:C:O2	53:A3:608:G:N1	2.42	0.50
53:A3:676:G:N7	54:V3:103:ARG:NE	2.60	0.50
53:A3:692:G:C2	53:A3:693:G:H1'	2.47	0.50
53:A3:769:G:N2	53:A3:770:A:N3	2.60	0.50
53:A3:788:C:O2'	53:A3:789:C:O4'	2.28	0.50
53:A3:865:G:H2'	53:A3:886:A:H61	1.77	0.50
53:A3:1010:C:H2'	53:A3:1011:G:H8	1.77	0.50
33:C4:111:LEU:HD21	33:C4:146:ALA:H	1.76	0.50
34:D4:39:PRO:HB2	34:D4:44:GLY:HA3	1.92	0.50
48:R4:69:THR:HA	48:R4:72:ARG:HE	1.77	0.50
53:A4:390:C:H2'	53:A4:391:G:H8	1.77	0.50
53:A4:626:C:H2'	53:A4:627:G:H8	1.76	0.50
53:A4:895:A:H3'	53:A4:896:A:H8	1.77	0.50
53:A4:1027:C:H2'	53:A4:1028:A:C8	2.47	0.50
1:C1:89:SER:OG	1:C1:90:ALA:N	2.45	0.49
16:R1:71:VAL:HA	16:R1:107:LEU:HA	1.94	0.49
19:U1:56:VAL:HG23	19:U1:70:LEU:HG	1.95	0.49
27:c1:3:ARG:NH2	29:A1:801:A:OP1	2.33	0.49
29:A1:519:A:H3'	29:A1:520:G:H8	1.76	0.49
29:A1:1635:A:H62	29:A1:1637:C:H42	1.58	0.49
29:A1:2134:G:N1	29:A1:2144:G:N3	2.56	0.49
1:C2:94:LEU:HA	1:C2:104:TYR:HA	1.92	0.49
1:C2:255:LYS:NZ	29:A2:1925:A:N3	2.60	0.49
3:E2:165:ARG:NH2	29:A2:346:G:N3	2.59	0.49
4:F2:67:LYS:H	24:Z2:6:HIS:CE1	2.30	0.49
13:O2:63:VAL:N	13:O2:74:ARG:O	2.44	0.49
29:A2:398:G:O2'	29:A2:453:G:OP1	2.28	0.49
29:A2:628:A:O4'	29:A2:704:A:N6	2.44	0.49
29:A2:1185:G:O6	29:A2:1186:G:N2	2.45	0.49
53:A3:562:G:O2'	53:A3:563:U:O4'	2.30	0.49
53:A3:969:U:O2	53:A3:973:A:N6	2.43	0.49
37:G4:46:ALA:O	37:G4:50:ILE:N	2.36	0.49
42:L4:113:ARG:NH1	42:L4:120:TYR:OH	2.45	0.49
47:Q4:11:VAL:HG11	47:Q4:88:TYR:HD2	1.76	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:R4:41:LYS:HD2	48:R4:44:LEU:HD12	1.94	0.49
48:R4:58:LEU:HD11	48:R4:66:LEU:HD22	1.93	0.49
53:A4:971:A:N6	53:A4:1028:A:N3	2.60	0.49
29:A1:50:G:H21	29:A1:116:A:H62	1.59	0.49
29:A1:1418:C:N4	29:A1:1419:G:O6	2.45	0.49
29:A1:1930:G:OP2	29:A1:1953:G:O2'	2.25	0.49
29:A1:2235:G:H2'	29:A1:2236:G:H8	1.76	0.49
4:F2:37:VAL:HB	4:F2:94:LEU:HB2	1.94	0.49
15:Q2:5:VAL:HG12	15:Q2:38:LEU:HD22	1.94	0.49
21:W2:14:VAL:HG22	21:W2:41:ARG:HG2	1.95	0.49
29:A2:51:A:H2'	29:A2:52:A:H8	1.76	0.49
29:A2:695:G:H3'	29:A2:696:G:C8	2.47	0.49
29:A2:1709:C:H2'	29:A2:1710:G:H8	1.77	0.49
29:A2:1972:G:H2'	29:A2:1973:G:C8	2.48	0.49
34:D3:76:ARG:HA	34:D3:79:PHE:HB3	1.93	0.49
39:I3:107:ARG:NH2	53:A3:1328:G:OP2	2.45	0.49
46:P3:25:ARG:NH2	53:A3:101:G:OP1	2.42	0.49
47:Q3:81:ARG:NH2	53:A3:629:U:O2'	2.45	0.49
49:S3:24:ALA:O	49:S3:28:LYS:NZ	2.44	0.49
53:A3:138:G:C8	53:A3:202:A:H2'	2.47	0.49
53:A3:598:C:H2'	53:A3:599:G:C8	2.46	0.49
53:A3:673:G:H3'	53:A3:674:G:C8	2.46	0.49
53:A3:1173:C:N4	53:A3:1174:G:N3	2.60	0.49
53:A3:1487:U:H2'	53:A3:1488:G:H8	1.77	0.49
37:G4:114:ARG:NH2	53:A4:1280:A:N1	2.60	0.49
46:P4:73:LEU:O	46:P4:77:ALA:N	2.40	0.49
53:A4:270:G:O2'	53:A4:272:C:OP2	2.30	0.49
53:A4:671:G:H2'	53:A4:672:C:H6	1.76	0.49
53:A4:772:U:O2'	53:A4:775:A:N6	2.45	0.49
53:A4:938:U:OP2	53:A4:1203:G:N2	2.45	0.49
53:A4:1156:G:C2	53:A4:1157:A:H1'	2.47	0.49
53:A4:1219:A:N1	53:A4:1222:G:N2	2.51	0.49
53:A4:1408:C:N4	53:A4:1409:U:O4	2.46	0.49
53:A4:1451:G:H2'	53:A4:1452:G:H8	1.76	0.49
5:G1:122:THR:O	5:G1:134:SER:N	2.44	0.49
5:G1:142:GLY:O	5:G1:146:ALA:N	2.45	0.49
7:I1:31:ALA:HA	7:I1:34:LEU:HB3	1.94	0.49
10:L1:10:ARG:HH21	10:L1:11:LYS:HZ2	1.60	0.49
17:S1:65:ARG:NH2	29:A1:1383:U:OP2	2.36	0.49
22:X1:35:LEU:O	22:X1:45:SER:OG	2.29	0.49
29:A1:383:U:H3'	29:A1:384:A:H8	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1490:G:H2'	29:A1:1491:G:C8	2.47	0.49
29:A1:2658:G:H2'	29:A1:2659:G:C8	2.47	0.49
29:A1:2777:G:H3'	29:A1:2778:G:H8	1.78	0.49
4:F2:96:ARG:H	4:F2:99:MET:HE2	1.77	0.49
9:K2:65:ARG:NH1	28:d2:12:LYS:O	2.44	0.49
11:M2:36:THR:HG23	11:M2:112:ALA:HB3	1.95	0.49
21:W2:5:CYS:H	21:W2:9:GLY:HA2	1.77	0.49
28:d2:8:LYS:HA	28:d2:11:LYS:HE2	1.94	0.49
29:A2:1110:G:H2'	29:A2:1111:G:H8	1.76	0.49
29:A2:1528:G:H1	29:A2:1562:U:H3	1.59	0.49
29:A2:2047:G:H2'	29:A2:2048:G:H8	1.77	0.49
29:A2:2235:G:H2'	29:A2:2236:G:C8	2.48	0.49
29:A2:2700:G:H1	29:A2:2738:C:H42	1.60	0.49
33:C3:72:LYS:HD3	33:C3:109:PRO:HD3	1.95	0.49
37:G3:91:VAL:HG23	37:G3:96:GLN:HE21	1.76	0.49
52:X3:137:PHE:HB3	52:X3:139:MET:HE1	1.94	0.49
53:A3:493:A:H4'	53:A3:526:C:H4'	1.92	0.49
53:A3:1074:A:N1	53:A3:1092:A:O2'	2.45	0.49
40:J4:7:LYS:HA	40:J4:71:LEU:HD13	1.93	0.49
46:P4:4:ILE:HG12	46:P4:21:VAL:HB	1.93	0.49
53:A4:261:G:H5'	53:A4:264:C:H41	1.77	0.49
53:A4:862:G:H2'	53:A4:863:G:H8	1.78	0.49
2:D1:48:GLN:HB3	2:D1:78:LEU:HD22	1.93	0.49
8:J1:43:VAL:HB	8:J1:54:GLU:HA	1.94	0.49
9:K1:126:VAL:HG22	9:K1:148:LEU:HD21	1.95	0.49
29:A1:261:A:N6	29:A1:292:G:O2'	2.45	0.49
29:A1:542:A:H2	29:A1:1309:C:H1'	1.77	0.49
29:A1:697:G:N7	29:A1:698:C:O2'	2.39	0.49
29:A1:1489:G:H2'	29:A1:1490:G:C8	2.47	0.49
9:K2:48:PRO:HG2	9:K2:49:ARG:HG3	1.93	0.49
12:N2:35:ILE:HD11	12:N2:97:ARG:HD2	1.93	0.49
13:O2:54:ARG:N	29:A2:2858:G:OP1	2.46	0.49
17:S2:64:LYS:HG2	17:S2:73:ARG:HD3	1.94	0.49
18:T2:73:ARG:HH12	29:A2:360:C:H5'	1.76	0.49
29:A2:498:A:H2'	29:A2:499:A:C8	2.47	0.49
29:A2:1947:U:H2'	29:A2:1948:C:H6	1.77	0.49
32:B3:212:GLN:HE21	32:B3:234:PRO:HD2	1.77	0.49
33:C3:11:ARG:HH21	33:C3:177:THR:H	1.58	0.49
53:A3:149:C:N4	53:A3:160:G:O6	2.45	0.49
42:L4:117:ARG:HA	42:L4:120:TYR:HB2	1.95	0.49
47:Q4:17:LYS:O	47:Q4:69:LYS:NZ	2.40	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:R4:49:LYS:NZ	54:V4:118:GLU:O	2.36	0.49
53:A4:449:C:H2'	53:A4:450:C:H6	1.78	0.49
53:A4:900:A:O2'	53:A4:1381:C:OP2	2.31	0.49
53:A4:901:C:H2'	53:A4:902:G:C8	2.47	0.49
3:E1:135:LYS:HG3	3:E1:137:LYS:H	1.77	0.49
9:K1:64:LYS:HA	28:d1:25:MET:HE2	1.94	0.49
11:M1:90:ARG:NH1	11:M1:118:GLU:O	2.44	0.49
29:A1:1117:A:H2	29:A1:1119:G:H5'	1.78	0.49
1:C2:35:LYS:HE3	1:C2:103:ARG:HA	1.94	0.49
1:C2:175:LEU:HD12	1:C2:185:VAL:HG21	1.94	0.49
9:K2:84:ASN:ND2	29:A2:654:A:N7	2.60	0.49
10:L2:24:GLY:HA2	10:L2:102:VAL:HG23	1.95	0.49
10:L2:70:PRO:HA	10:L2:95:ALA:HB2	1.94	0.49
13:O2:118:ARG:NH2	29:A2:2875:C:O2'	2.46	0.49
17:S2:65:ARG:NE	17:S2:69:TYR:O	2.42	0.49
26:b2:14:THR:HG22	26:b2:21:TYR:HA	1.95	0.49
27:c2:34:ARG:HH21	27:c2:39:ARG:HB2	1.77	0.49
29:A2:260:A:N6	29:A2:261:A:N3	2.61	0.49
29:A2:736:C:O2'	29:A2:1813:A:N1	2.37	0.49
29:A2:1006:A:N3	29:A2:2471:U:O2'	2.38	0.49
29:A2:1227:C:N3	29:A2:1228:C:N4	2.61	0.49
29:A2:1956:A:H62	29:A2:1992:G:H21	1.59	0.49
29:A2:1976:A:N6	29:A2:1977:A:N1	2.60	0.49
29:A2:2055:A:N1	29:A2:2469:G:N2	2.58	0.49
29:A2:2658:G:H2'	29:A2:2659:G:C8	2.48	0.49
33:C3:14:ILE:HD13	33:C3:179:ARG:HG2	1.95	0.49
33:C3:66:VAL:N	33:C3:100:ALA:O	2.42	0.49
33:C3:128:PHE:HD2	33:C3:133:ALA:HB2	1.76	0.49
53:A3:452:C:N4	53:A3:459:G:O6	2.46	0.49
53:A3:756:G:H1	53:A3:789:C:N4	2.10	0.49
53:A3:864:G:H1	53:A3:888:U:H3	1.61	0.49
45:O4:63:ARG:HH12	45:O4:88:ARG:HE	1.60	0.49
53:A4:436:C:O2	53:A4:477:G:N2	2.46	0.49
3:E1:75:HIS:CE1	29:A1:1305:C:H5'	2.48	0.49
29:A1:787:G:N3	29:A1:808:G:N1	2.61	0.49
29:A1:1079:G:N2	29:A1:1172:C:O2	2.46	0.49
29:A1:1931:G:H1	29:A1:1947:U:H3	1.59	0.49
2:D2:119:ARG:HG2	2:D2:120:TRP:CD1	2.47	0.49
3:E2:178:PRO:O	3:E2:205:ARG:NH1	2.45	0.49
11:M2:33:ARG:NH1	29:A2:1328:G:OP2	2.45	0.49
29:A2:2530:G:N1	29:A2:2583:G:N3	2.60	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:P3:27:LYS:HB2	46:P3:28:ARG:HH11	1.78	0.49
53:A3:9:G:H22	53:A3:25:C:H2'	1.78	0.49
53:A3:565:U:H2'	53:A3:566:A:C8	2.47	0.49
53:A3:577:G:N3	53:A3:578:G:N2	2.61	0.49
34:D4:55:ALA:HA	34:D4:58:LEU:HB3	1.93	0.49
41:K4:58:PRO:HA	41:K4:61:ALA:HB3	1.94	0.49
49:S4:29:ARG:HE	49:S4:50:ALA:HB2	1.76	0.49
50:T4:13:LEU:O	50:T4:17:ARG:N	2.35	0.49
50:T4:33:ILE:HG21	50:T4:63:ILE:HD11	1.94	0.49
53:A4:667:A:H2'	53:A4:668:G:H8	1.78	0.49
53:A4:701:G:OP2	53:A4:702:C:N4	2.46	0.49
27:c1:5:TRP:HD1	29:A1:1660:C:H4'	1.78	0.49
28:d1:10:ALA:HB1	28:d1:60:LEU:HG	1.95	0.49
29:A1:690:C:N4	29:A1:695:G:O4'	2.46	0.49
29:A1:824:G:C2	29:A1:843:G:H8	2.30	0.49
29:A1:1120:C:O2'	29:A1:1140:C:OP2	2.26	0.49
29:A1:1526:A:H3'	29:A1:1558:A:H61	1.77	0.49
29:A1:1710:G:N2	29:A1:2702:U:OP1	2.45	0.49
29:A1:1772:A:H3'	29:A1:1773:G:H8	1.78	0.49
29:A1:2132:C:O2	29:A1:2206:G:N2	2.37	0.49
4:F2:93:THR:N	30:B2:44:C:O2'	2.46	0.49
33:C3:172:ARG:HA	53:A3:1088:G:H5''	1.93	0.49
34:D3:87:GLY:HA3	34:D3:92:VAL:HG21	1.95	0.49
53:A3:116:C:H2'	53:A3:117:G:H8	1.77	0.49
53:A3:304:G:H2'	53:A3:305:G:C8	2.47	0.49
53:A3:376:C:H2'	53:A3:377:A:H8	1.78	0.49
53:A3:818:U:H3	53:A3:828:G:H1	1.60	0.49
54:V3:10:ASN:N	54:V3:10:ASN:OD1	2.45	0.49
33:C4:16:ARG:NH1	33:C4:182:ILE:O	2.36	0.49
38:H4:24:THR:HG22	38:H4:61:VAL:HB	1.94	0.49
39:I4:116:LYS:NZ	39:I4:121:ARG:O	2.37	0.49
40:J4:34:VAL:HG12	40:J4:74:ILE:HA	1.95	0.49
53:A4:272:C:H2'	53:A4:273:G:C8	2.46	0.49
53:A4:562:G:O2'	53:A4:563:U:O4'	2.31	0.49
1:C1:4:LYS:HE2	1:C1:18:VAL:HG11	1.94	0.49
1:C1:37:LEU:HD22	1:C1:64:ILE:HD11	1.94	0.49
5:G1:90:LYS:N	5:G1:161:GLY:O	2.46	0.49
11:M1:48:VAL:HG13	11:M1:51:LEU:HD12	1.95	0.49
12:N1:73:LEU:O	12:N1:77:ALA:N	2.43	0.49
29:A1:729:G:H2'	29:A1:730:G:C8	2.48	0.49
29:A1:1656:A:O2'	29:A1:1658:A:OP1	2.30	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:2090:C:H2'	29:A1:2091:G:C8	2.48	0.49
7:I2:113:GLY:O	7:I2:117:PHE:N	2.37	0.49
21:W2:50:ARG:N	29:A2:2224:C:OP1	2.46	0.49
25:a2:50:GLY:N	25:a2:59:GLU:OE1	2.45	0.49
29:A2:936:A:O2'	29:A2:938:C:OP1	2.27	0.49
29:A2:1226:C:H2'	29:A2:1227:C:H4'	1.94	0.49
29:A2:1599:C:OP1	29:A2:1767:U:O2'	2.31	0.49
41:K3:21:ILE:HG12	41:K3:30:VAL:HB	1.94	0.49
50:T3:79:ARG:O	50:T3:83:ARG:N	2.34	0.49
53:A3:90:G:OP2	53:A3:90:G:N2	2.42	0.49
32:B4:40:HIS:CG	32:B4:190:THR:HG21	2.48	0.49
34:D4:197:PRO:HG2	34:D4:198:VAL:HG23	1.94	0.49
49:S4:34:TRP:O	53:A4:1200:U:O2'	2.31	0.49
53:A4:582:C:H2'	53:A4:583:C:C6	2.47	0.49
54:V4:7:ILE:HD12	54:V4:9:ARG:HH12	1.78	0.49
1:C1:157:ARG:HB2	29:A1:1851:U:H5''	1.95	0.49
4:F1:124:SER:HA	29:A1:2317:G:H4'	1.93	0.49
5:G1:138:LYS:HA	5:G1:141:VAL:HB	1.95	0.49
7:I1:74:ARG:HB3	7:I1:83:LYS:HB2	1.94	0.49
7:I1:74:ARG:HH11	7:I1:75:TYR:H	1.59	0.49
12:N1:71:ARG:O	12:N1:75:GLU:N	2.36	0.49
16:R1:25:ARG:NH1	16:R1:74:ALA:O	2.45	0.49
17:S1:3:THR:OG1	17:S1:4:ALA:N	2.46	0.49
29:A1:526:U:H2'	29:A1:527:G:C8	2.48	0.49
29:A1:654:A:N6	29:A1:664:A:OP2	2.37	0.49
29:A1:1405:U:H3'	29:A1:1406:G:H8	1.78	0.49
29:A1:2600:C:H2'	29:A1:2601:A:H8	1.77	0.49
30:B1:82:U:O2	30:B1:100:G:N1	2.46	0.49
3:E2:117:ARG:HH22	9:K2:1:MET:H3	1.61	0.49
29:A2:2480:C:OP1	31:e2:6:SER:N	2.46	0.49
29:A2:2525:U:H3	29:A2:2592:G:H1	1.61	0.49
29:A2:2755:A:N6	29:A2:2779:A:O4'	2.46	0.49
34:D3:133:VAL:HG12	34:D3:135:LEU:H	1.78	0.49
42:L3:37:CYS:N	42:L3:81:SER:OG	2.45	0.49
53:A3:98:G:N2	53:A3:375:G:OP1	2.43	0.49
53:A3:279:G:H2'	53:A3:280:G:H8	1.77	0.49
53:A3:711:A:H2'	53:A3:712:A:C8	2.48	0.49
53:A3:794:C:O2'	53:A3:877:A:N6	2.43	0.49
32:B4:215:LEU:HA	32:B4:218:ALA:HB3	1.93	0.49
33:C4:113:ALA:N	33:C4:202:ILE:HD11	2.27	0.49
53:A4:1059:G:N1	53:A4:1062:A:OP2	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E1:117:ARG:NH2	9:K1:1:MET:O	2.46	0.49
10:L1:15:GLY:N	29:A1:1001:G:OP1	2.45	0.49
29:A1:140:A:OP2	29:A1:141:C:N4	2.40	0.49
29:A1:1198:C:N4	29:A1:1199:G:O6	2.46	0.49
29:A1:1989:C:H3'	29:A1:1990:A:H2'	1.94	0.49
1:C2:10:THR:HG22	1:C2:12:SER:H	1.78	0.49
26:b2:47:THR:OG1	26:b2:48:VAL:N	2.40	0.49
28:d2:4:MET:H	28:d2:61:LEU:HD11	1.77	0.49
29:A2:554:C:N4	29:A2:2067:C:OP1	2.45	0.49
29:A2:1352:C:H2'	29:A2:1353:C:H6	1.78	0.49
29:A2:1656:A:O2'	29:A2:1658:A:OP1	2.30	0.49
29:A2:2131:C:OP2	29:A2:2203:C:N4	2.44	0.49
29:A2:2231:A:H1'	29:A2:2233:G:C4	2.47	0.49
29:A2:2287:A:H2'	29:A2:2288:A:C8	2.48	0.49
29:A2:2322:G:N7	29:A2:2323:A:N6	2.61	0.49
33:C3:73:PRO:HD2	33:C3:105:GLU:HG2	1.95	0.49
43:M3:25:ILE:HG12	43:M3:64:TRP:HB2	1.95	0.49
48:R3:74:ARG:NH1	53:A3:701:G:O6	2.46	0.49
53:A3:136:G:H21	53:A3:216:C:H2'	1.78	0.49
53:A3:280:G:H2'	53:A3:281:G:H8	1.77	0.49
53:A3:582:C:H2'	53:A3:583:C:C6	2.48	0.49
53:A3:862:G:H2'	53:A3:863:G:H8	1.78	0.49
53:A3:1135:C:H2'	53:A3:1136:G:C8	2.48	0.49
46:P4:4:ILE:HD12	46:P4:66:PRO:HB3	1.95	0.49
50:T4:106:ALA:O	53:A4:182:C:O2'	2.30	0.49
53:A4:700:C:H5'	53:A4:716:A:H3'	1.93	0.49
53:A4:1240:C:O3'	53:A4:1265:C:O2'	2.31	0.49
6:H1:12:LEU:HB3	6:H1:19:VAL:HG21	1.95	0.48
7:I1:112:LEU:HA	7:I1:115:ARG:HB2	1.95	0.48
13:O1:27:THR:HB	13:O1:90:GLN:HB2	1.95	0.48
29:A1:1631:C:O2'	29:A1:1634:A:N6	2.43	0.48
29:A1:2848:U:O4	29:A1:2894:A:N6	2.37	0.48
5:G2:3:ARG:NE	29:A2:1160:G:O3'	2.45	0.48
8:J2:13:ASN:HB2	8:J2:97:ARG:HB3	1.94	0.48
9:K2:54:GLY:O	29:A2:875:U:O2'	2.31	0.48
12:N2:30:ARG:HE	12:N2:35:ILE:HD12	1.78	0.48
14:P2:112:ARG:HE	15:Q2:47:VAL:HG21	1.77	0.48
29:A2:671:A:N7	29:A2:673:A:N6	2.51	0.48
29:A2:1539:G:H2'	29:A2:1547:C:H42	1.77	0.48
29:A2:1849:G:H5'	29:A2:1850:G:H5'	1.95	0.48
31:e2:11:CYS:SG	31:e2:32:HIS:ND1	2.70	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:C3:28:GLN:HG3	33:C3:32:LEU:HG	1.95	0.48
53:A3:1230:C:O2	53:A3:1268:A:N6	2.46	0.48
38:H4:85:ARG:NE	38:H4:87:SER:O	2.39	0.48
44:N4:6:LEU:HD22	44:N4:23:ARG:HH22	1.78	0.48
54:V4:52:LYS:HG2	54:V4:72:GLU:HG2	1.95	0.48
29:A1:381:G:OP2	29:A1:381:G:N2	2.36	0.48
29:A1:748:A:OP2	29:A1:783:A:N6	2.46	0.48
29:A1:1239:G:H2'	29:A1:1240:G:H8	1.77	0.48
29:A1:2303:G:H1'	29:A1:2397:G:H21	1.78	0.48
2:D2:4:ILE:HG21	2:D2:28:ALA:HB1	1.95	0.48
3:E2:3:GLU:HB2	3:E2:18:ARG:HH12	1.78	0.48
4:F2:114:ILE:HG21	4:F2:119:GLY:H	1.78	0.48
7:I2:111:PRO:O	7:I2:115:ARG:N	2.39	0.48
9:K2:104:GLY:O	29:A2:652:G:N1	2.33	0.48
17:S2:17:ALA:O	17:S2:21:PHE:N	2.46	0.48
21:W2:41:ARG:NH2	29:A2:1413:A:O5'	2.43	0.48
26:b2:14:THR:HA	26:b2:22:ALA:H	1.77	0.48
29:A2:58:U:H4'	29:A2:72:A:N7	2.28	0.48
29:A2:227:C:HO2'	29:A2:634:A:HO2'	1.57	0.48
29:A2:1064:G:H1	29:A2:1194:C:H42	1.61	0.48
29:A2:2235:G:H2'	29:A2:2236:G:H8	1.78	0.48
35:E3:80:ILE:HD12	35:E3:91:LEU:HB2	1.95	0.48
52:X3:136:ARG:NH1	52:W4:148:ALA:O	2.46	0.48
53:A3:589:G:N1	53:A3:614:G:OP1	2.47	0.48
35:E4:43:LEU:HD21	35:E4:132:ALA:HB1	1.95	0.48
39:I4:17:VAL:HG21	39:I4:80:GLY:HA3	1.95	0.48
39:I4:111:ARG:NH1	39:I4:112:LYS:O	2.45	0.48
42:L4:53:ARG:HD2	42:L4:93:LEU:HD21	1.94	0.48
43:M4:105:THR:HA	53:A4:1211:C:H42	1.78	0.48
44:N4:19:ARG:HA	53:A4:956:C:H42	1.78	0.48
49:S4:41:VAL:HG22	49:S4:44:MET:HE2	1.95	0.48
53:A4:135:A:N7	53:A4:136:G:N2	2.50	0.48
53:A4:711:A:H2'	53:A4:712:A:C8	2.48	0.48
53:A4:875:G:N2	53:A4:878:A:OP2	2.46	0.48
53:A4:1280:A:H1'	53:A4:1282:U:H5'	1.95	0.48
53:A4:1403:G:N2	53:A4:1458:U:O2	2.46	0.48
10:L1:134:ARG:HH21	10:L1:139:GLU:HG2	1.78	0.48
21:W1:10:LYS:HB3	29:A1:424:G:H5''	1.94	0.48
28:d1:54:GLU:HG2	29:A1:883:C:H5'	1.95	0.48
29:A1:423:U:O2'	29:A1:424:G:N7	2.39	0.48
29:A1:634:A:H62	29:A1:646:G:H21	1.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1972:G:H2'	29:A1:1973:G:C8	2.48	0.48
29:A1:2529:C:O2	29:A1:2583:G:N2	2.38	0.48
29:A1:2634:C:H2'	29:A1:2635:A:C8	2.48	0.48
29:A1:2637:G:H2'	29:A1:2638:G:H8	1.79	0.48
30:B1:5:C:N4	30:B1:120:G:O6	2.46	0.48
2:D2:114:ALA:N	2:D2:158:GLY:O	2.35	0.48
3:E2:52:LYS:HE2	29:A2:479:C:H5''	1.95	0.48
4:F2:8:LYS:O	4:F2:12:TYR:N	2.46	0.48
5:G2:71:LEU:HD12	5:G2:74:ASN:HD22	1.76	0.48
17:S2:31:HIS:CD2	17:S2:33:LYS:H	2.32	0.48
22:X2:35:LEU:HD23	22:X2:38:GLN:HE21	1.77	0.48
29:A2:210:G:H21	29:A2:224:C:H1'	1.78	0.48
29:A2:334:G:N2	29:A2:355:A:O5'	2.47	0.48
29:A2:427:G:H3'	29:A2:428:G:C8	2.48	0.48
29:A2:1025:G:H2'	29:A2:1026:G:C8	2.46	0.48
29:A2:1040:C:N3	29:A2:1211:G:N1	2.61	0.48
29:A2:1680:A:H62	29:A2:1684:G:H1	1.60	0.48
34:D3:104:VAL:O	34:D3:108:LEU:N	2.36	0.48
40:J3:6:ILE:HB	40:J3:72:VAL:HB	1.94	0.48
53:A3:316:A:H3'	53:A3:323:C:H41	1.78	0.48
34:D4:145:GLU:HA	34:D4:184:LYS:HD3	1.95	0.48
37:G4:15:ASP:HA	39:I4:44:VAL:HG21	1.95	0.48
38:H4:130:GLY:HA3	53:A4:582:C:H4'	1.95	0.48
40:J4:12:ASP:O	40:J4:68:HIS:ND1	2.46	0.48
44:N4:29:ARG:HH21	44:N4:42:ILE:HD13	1.78	0.48
52:W4:159:PHE:HB2	52:W4:174:ARG:HH22	1.76	0.48
53:A4:279:G:H2'	53:A4:280:G:H8	1.77	0.48
53:A4:565:U:H2'	53:A4:566:A:C8	2.46	0.48
4:F1:161:THR:HG22	4:F1:163:ALA:H	1.77	0.48
8:J1:103:ALA:HB3	8:J1:106:LEU:HD21	1.95	0.48
10:L1:63:LYS:NZ	10:L1:64:ILE:O	2.46	0.48
16:R1:72:LYS:N	16:R1:106:ILE:O	2.46	0.48
19:U1:100:VAL:HG11	19:U1:134:PRO:HG2	1.94	0.48
20:V1:24:LYS:O	20:V1:25:ARG:NH1	2.45	0.48
29:A1:45:C:O2'	29:A1:46:C:O4'	2.25	0.48
29:A1:1391:G:H1	29:A1:1452:C:H42	1.61	0.48
29:A1:1971:C:H2'	29:A1:1972:G:H8	1.78	0.48
1:C2:218:ARG:NH1	29:A2:740:C:OP1	2.46	0.48
3:E2:109:GLY:HA2	3:E2:112:MET:HB2	1.95	0.48
8:J2:73:ASP:OD2	8:J2:104:ARG:NH2	2.46	0.48
12:N2:40:ILE:HG13	12:N2:47:THR:HG23	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:O2:62:THR:HA	13:O2:75:ILE:HA	1.95	0.48
16:R2:61:ASN:OD1	29:A2:522:G:N2	2.35	0.48
21:W2:7:ILE:HG13	21:W2:66:HIS:CG	2.49	0.48
29:A2:1121:A:OP1	29:A2:1141:G:N2	2.46	0.48
29:A2:1435:C:N3	29:A2:1449:G:N2	2.59	0.48
29:A2:2023:C:H2'	29:A2:2024:G:H8	1.78	0.48
37:G3:102:ARG:NH2	53:A3:1358:U:OP1	2.46	0.48
48:R3:59:SER:HB2	48:R3:62:GLU:H	1.78	0.48
50:T3:8:ARG:O	50:T3:11:SER:OG	2.30	0.48
53:A3:676:G:C6	54:V3:103:ARG:CZ	2.96	0.48
53:A3:1148:G:H5''	52:W4:130:ARG:HH12	1.77	0.48
54:V3:73:ASP:HB3	54:V3:79:ALA:HB2	1.94	0.48
38:H4:68:ARG:O	38:H4:70:GLN:NE2	2.46	0.48
40:J4:64:GLU:OE2	44:N4:60:SER:OG	2.31	0.48
43:M4:13:LYS:NZ	43:M4:21:TYR:OH	2.46	0.48
54:V4:3:ILE:HD13	54:V4:38:ALA:HB3	1.95	0.48
1:C1:132:PRO:HA	1:C1:190:TYR:HA	1.94	0.48
4:F1:105:LYS:O	4:F1:109:VAL:N	2.41	0.48
6:H1:26:ALA:HA	6:H1:30:LEU:HD12	1.95	0.48
9:K1:88:LEU:HD11	9:K1:100:LEU:HD11	1.94	0.48
15:Q1:75:PHE:HD1	15:Q1:81:TYR:HB3	1.77	0.48
19:U1:102:LEU:HD13	19:U1:139:VAL:HG21	1.96	0.48
29:A1:377:G:OP2	29:A1:379:G:N2	2.46	0.48
29:A1:467:G:H2'	29:A1:468:G:H8	1.77	0.48
29:A1:1443:A:C6	29:A1:1446:C:H1'	2.48	0.48
29:A1:1787:C:N4	29:A1:2708:G:O2'	2.41	0.48
29:A1:2071:U:H2'	29:A1:2072:G:H8	1.78	0.48
29:A1:2306:C:N4	29:A1:2355:G:O6	2.47	0.48
3:E2:18:ARG:NH1	3:E2:19:GLU:O	2.46	0.48
7:I2:29:LYS:O	7:I2:32:THR:OG1	2.29	0.48
16:R2:12:ILE:HG23	16:R2:17:VAL:HG11	1.96	0.48
16:R2:29:LEU:HB2	16:R2:70:TYR:HA	1.95	0.48
19:U2:61:LEU:HB2	19:U2:65:GLN:HB2	1.96	0.48
29:A2:172:A:N3	29:A2:462:C:O2'	2.47	0.48
29:A2:193:C:N4	29:A2:194:A:H62	2.11	0.48
29:A2:967:G:OP1	30:B2:99:G:N1	2.47	0.48
29:A2:1344:G:OP1	29:A2:2723:G:O2'	2.23	0.48
29:A2:1765:G:H2'	29:A2:1766:G:C8	2.47	0.48
29:A2:2659:G:H22	29:A2:2782:C:P	2.36	0.48
34:D3:170:VAL:HG21	34:D3:174:LEU:HD12	1.94	0.48
32:B4:21:ARG:O	32:B4:23:ARG:NH1	2.39	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B4:71:VAL:HG13	32:B4:93:VAL:HG11	1.95	0.48
53:A4:60:A:N6	53:A4:103:C:N3	2.60	0.48
53:A4:410:A:N6	53:A4:423:G:O6	2.43	0.48
8:J1:29:ASN:OD1	8:J1:29:ASN:N	2.47	0.48
22:X1:67:LYS:HA	22:X1:70:GLN:HB2	1.96	0.48
29:A1:297:U:H3	29:A1:390:G:H1	1.61	0.48
29:A1:846:C:H2'	29:A1:847:G:H8	1.79	0.48
29:A1:2470:C:N4	29:A1:2509:G:H1	2.11	0.48
29:A1:2608:C:N4	29:A1:2609:G:O6	2.46	0.48
29:A1:2665:C:N4	29:A1:2684:A:N1	2.60	0.48
4:F2:113:ARG:HH21	24:Z2:35:VAL:HB	1.78	0.48
12:N2:58:LEU:HD13	12:N2:68:GLN:HE22	1.79	0.48
21:W2:12:PRO:HG3	21:W2:44:PRO:HD2	1.95	0.48
23:Y2:23:LEU:HB3	23:Y2:28:LEU:HB2	1.96	0.48
29:A2:166:G:OP2	29:A2:167:G:N1	2.44	0.48
29:A2:876:U:O2	29:A2:2260:G:O2'	2.31	0.48
29:A2:2148:G:N2	29:A2:2199:C:H42	2.10	0.48
29:A2:2287:A:H2'	29:A2:2288:A:H8	1.79	0.48
32:B3:237:ALA:O	48:R4:27:GLY:N	2.46	0.48
37:G3:10:ARG:HG3	53:A3:1327:A:H2'	1.96	0.48
43:M3:29:ARG:NH1	43:M3:63:THR:O	2.41	0.48
48:R3:69:THR:HA	48:R3:72:ARG:HB2	1.95	0.48
53:A3:640:G:N1	53:A3:733:G:O6	2.47	0.48
53:A3:1156:G:C2	53:A3:1157:A:H1'	2.48	0.48
53:A3:1367:G:H2'	53:A3:1368:G:H8	1.79	0.48
33:C4:72:LYS:HD2	33:C4:73:PRO:HD2	1.95	0.48
53:A4:1139:A:O2'	53:A4:1162:G:N2	2.34	0.48
1:C1:43:ARG:HH12	29:A1:741:C:P	2.37	0.48
9:K1:99:LEU:HD12	9:K1:102:ARG:HD2	1.95	0.48
13:O1:21:GLU:O	13:O1:91:ARG:NH1	2.46	0.48
20:V1:68:GLU:HB2	20:V1:80:HIS:HB2	1.96	0.48
29:A1:442:C:H2'	29:A1:443:A:H8	1.79	0.48
29:A1:1469:G:H2'	29:A1:1470:G:H8	1.79	0.48
29:A1:1759:C:H2'	29:A1:1760:C:H6	1.77	0.48
29:A1:1794:C:N3	29:A1:1795:A:N6	2.62	0.48
29:A1:2484:G:O6	29:A1:2495:G:N2	2.46	0.48
3:E2:114:VAL:O	3:E2:118:ALA:N	2.47	0.48
19:U2:61:LEU:HD12	19:U2:65:GLN:HG3	1.95	0.48
20:V2:44:ARG:NH2	29:A2:907:U:O5'	2.46	0.48
29:A2:620:C:H2'	29:A2:621:G:C8	2.48	0.48
29:A2:1759:C:H2'	29:A2:1760:C:H6	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:B2:45:C:H2'	30:B2:47:A:C8	2.49	0.48
38:H3:121:ASP:OD1	38:H3:122:ARG:N	2.46	0.48
42:L3:21:LYS:NZ	53:A3:886:A:OP1	2.34	0.48
52:X3:160:VAL:HG11	52:X3:174:ARG:HD2	1.96	0.48
53:A3:119:G:H2'	53:A3:120:G:H8	1.78	0.48
53:A3:901:C:H2'	53:A3:902:G:C8	2.48	0.48
53:A3:981:G:C6	53:A3:1021:C:H1'	2.48	0.48
34:D4:27:TYR:N	34:D4:33:MET:SD	2.86	0.48
40:J4:17:ASP:HA	40:J4:21:GLN:HE21	1.79	0.48
43:M4:33:ALA:HB3	43:M4:60:VAL:HG22	1.95	0.48
53:A4:34:C:H2'	53:A4:35:G:H8	1.78	0.48
53:A4:1058:C:H42	53:A4:1063:G:H1	1.62	0.48
53:A4:1280:A:O2'	53:A4:1282:U:OP1	2.30	0.48
11:M1:77:ARG:NE	29:A1:1503:U:OP2	2.46	0.48
22:X1:32:LEU:HD13	22:X1:53:LEU:HD12	1.95	0.48
27:c1:8:ASN:ND2	29:A1:819:G:OP1	2.45	0.48
29:A1:690:C:N4	29:A1:695:G:O5'	2.46	0.48
29:A1:892:G:N2	29:A1:983:C:O2	2.46	0.48
29:A1:1540:G:H8	29:A1:1547:C:C4	2.32	0.48
17:S2:62:LYS:O	17:S2:73:ARG:NE	2.43	0.48
20:V2:47:PRO:HA	20:V2:51:VAL:HG11	1.96	0.48
25:a2:41:PRO:O	25:a2:44:THR:OG1	2.29	0.48
29:A2:993:G:H2'	29:A2:994:G:C8	2.49	0.48
29:A2:1334:A:O2'	29:A2:1336:U:OP2	2.29	0.48
29:A2:1346:C:H42	29:A2:1691:G:H1	1.61	0.48
29:A2:1405:U:H3'	29:A2:1406:G:H8	1.78	0.48
29:A2:1440:A:N6	29:A2:1441:A:N1	2.62	0.48
29:A2:1466:G:H2'	29:A2:1628:A:H62	1.79	0.48
29:A2:2871:G:H2'	29:A2:2872:A:C8	2.49	0.48
40:J3:74:ILE:HD13	40:J3:85:LEU:HD13	1.95	0.48
49:S3:43:GLU:HB2	49:S3:44:MET:HG3	1.95	0.48
53:A3:390:C:H2'	53:A3:391:G:H8	1.79	0.48
53:A4:957:C:N4	53:A4:1341:A:N7	2.44	0.48
54:V4:73:ASP:HB3	54:V4:79:ALA:HB2	1.95	0.48
1:C1:213:ARG:HH11	29:A1:813:A:H1'	1.78	0.48
2:D1:164:ARG:HE	29:A1:2788:C:H5'	1.79	0.48
11:M1:103:ARG:HH21	16:R1:40:ASN:HA	1.78	0.48
15:Q1:12:TYR:HE2	15:Q1:22:VAL:HG23	1.78	0.48
18:T1:50:ARG:HH21	18:T1:53:PRO:HA	1.79	0.48
23:Y1:12:PRO:O	23:Y1:20:LYS:NZ	2.34	0.48
29:A1:783:A:H2'	29:A1:784:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1470:G:H1	29:A1:1625:U:H3	1.61	0.48
29:A1:2317:G:H2'	29:A1:2318:G:C8	2.49	0.48
29:A1:2888:G:H2'	29:A1:2889:G:H8	1.78	0.48
6:H2:31:LEU:HD21	6:H2:37:VAL:HG12	1.96	0.48
8:J2:9:GLU:H	8:J2:83:ALA:HA	1.78	0.48
10:L2:24:GLY:HA2	10:L2:102:VAL:H	1.79	0.48
18:T2:81:LYS:HD3	18:T2:96:ILE:HD12	1.96	0.48
28:d2:17:THR:HG21	28:d2:23:VAL:H	1.78	0.48
29:A2:771:A:H3'	29:A2:772:G:H8	1.79	0.48
29:A2:902:G:H2'	29:A2:903:G:H8	1.78	0.48
29:A2:969:G:O2'	29:A2:2283:A:N1	2.44	0.48
34:D3:8:VAL:N	53:A3:425:A:OP1	2.36	0.48
45:O3:76:GLU:OE1	45:O3:79:ARG:NE	2.33	0.48
53:A3:182:C:H2'	53:A3:183:G:H8	1.78	0.48
49:S4:17:GLU:HB2	53:A4:992:A:OP2	2.14	0.48
53:A4:357:G:N2	53:A4:360:U:OP2	2.37	0.48
4:F1:32:PRO:HB3	4:F1:163:ALA:HB2	1.96	0.48
14:P1:59:ARG:HG2	14:P1:62:ILE:HD12	1.95	0.48
16:R1:6:ILE:H	29:A1:521:G:H4'	1.79	0.48
20:V1:56:ASP:OD1	20:V1:58:THR:OG1	2.30	0.48
29:A1:404:C:H42	29:A1:426:G:H1	1.61	0.48
29:A1:598:G:N2	29:A1:2055:A:OP2	2.41	0.48
29:A1:1877:C:H2'	29:A1:1878:G:C8	2.49	0.48
29:A1:2019:U:H3'	29:A1:2020:C:H2'	1.96	0.48
29:A1:2099:U:H1'	29:A1:2611:G:H21	1.79	0.48
29:A1:2237:G:H22	29:A1:2240:C:H42	1.62	0.48
29:A1:2659:G:H22	29:A1:2782:C:P	2.37	0.48
29:A1:2806:C:H42	29:A1:2818:G:H1	1.62	0.48
1:C2:30:GLU:OE2	1:C2:31:LYS:NZ	2.46	0.48
1:C2:143:HIS:O	1:C2:192:THR:N	2.46	0.48
2:D2:101:ARG:HH21	2:D2:169:ASN:HB3	1.78	0.48
4:F2:113:ARG:HD2	4:F2:140:ILE:HA	1.96	0.48
9:K2:50:ARG:NH2	29:A2:241:A:O3'	2.47	0.48
13:O2:50:ILE:HG23	13:O2:99:LEU:HB2	1.95	0.48
29:A2:370:A:O2'	29:A2:373:G:O6	2.30	0.48
29:A2:1098:A:O2'	29:A2:2766:G:N7	2.45	0.48
29:A2:2019:U:H3'	29:A2:2020:C:H2'	1.95	0.48
29:A2:2369:C:N3	29:A2:2370:C:N4	2.62	0.48
31:e2:12:ASP:N	31:e2:12:ASP:OD1	2.45	0.48
37:G3:31:MET:SD	53:A3:1356:A:O2'	2.67	0.48
53:A3:483:G:N7	53:A3:529:G:N2	2.61	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:589:G:H21	53:A3:615:A:H62	1.62	0.48
53:A3:900:A:O2'	53:A3:1381:C:OP2	2.31	0.48
53:A3:962:C:N4	53:A3:1202:G:O6	2.47	0.48
53:A3:1117:U:O2'	53:A3:1119:C:OP1	2.31	0.48
53:A3:1424:G:H22	53:A3:1426:A:N6	2.11	0.48
32:B4:50:GLU:HA	32:B4:53:ARG:HB2	1.96	0.48
39:I4:105:ASP:OD1	39:I4:105:ASP:N	2.46	0.48
40:J4:13:HIS:HB3	40:J4:68:HIS:CD2	2.49	0.48
43:M4:110:ARG:NH1	53:A4:1288:U:O2	2.47	0.48
53:A4:734:U:O2'	53:A4:735:G:O4'	2.32	0.48
53:A4:965:G:H1'	53:A4:992:A:H61	1.79	0.48
3:E1:10:PRO:HA	3:E1:124:LEU:HD22	1.96	0.47
7:I1:24:GLY:HA3	29:A1:1187:C:H5'	1.96	0.47
15:Q1:20:LEU:N	15:Q1:94:LEU:O	2.47	0.47
21:W1:28:GLY:O	29:A1:2410:G:O2'	2.27	0.47
23:Y1:27:GLY:HA3	23:Y1:35:ARG:HG2	1.95	0.47
26:b1:11:LEU:HG	26:b1:32:ASN:HD21	1.79	0.47
29:A1:467:G:H2'	29:A1:468:G:C8	2.49	0.47
29:A1:883:C:H2'	29:A1:884:A:C8	2.49	0.47
29:A1:1898:G:C2	29:A1:1900:A:H5''	2.49	0.47
29:A1:2276:U:O4	29:A1:2293:G:N1	2.47	0.47
29:A1:2470:C:H42	29:A1:2509:G:H1	1.60	0.47
29:A1:2711:G:H1	29:A1:2724:C:H42	1.61	0.47
11:M2:36:THR:HG1	11:M2:37:THR:N	2.12	0.47
15:Q2:20:LEU:HB3	15:Q2:94:LEU:HB2	1.95	0.47
18:T2:13:VAL:HG21	18:T2:72:VAL:HA	1.95	0.47
19:U2:10:ARG:NH2	30:B2:78:G:OP1	2.43	0.47
24:Z2:36:CYS:HB2	24:Z2:40:HIS:CD2	2.49	0.47
25:a2:8:LYS:H	29:A2:2629:U:H3	1.61	0.47
29:A2:98:U:H4'	29:A2:100:G:C8	2.49	0.47
29:A2:1502:A:H62	29:A2:2717:C:H41	1.61	0.47
32:B3:177:ALA:HB1	32:B3:182:ILE:HB	1.95	0.47
48:R3:68:LYS:O	48:R3:72:ARG:NH1	2.38	0.47
53:A3:1131:C:O2	53:A3:1261:A:N6	2.47	0.47
53:A4:76:G:H1	53:A4:83:A:H5''	1.79	0.47
53:A4:771:U:O2'	54:V4:103:ARG:NH2	2.47	0.47
53:A4:910:G:N2	53:A4:1366:C:O2	2.44	0.47
53:A4:1096:C:N4	53:A4:1097:C:O2	2.47	0.47
53:A4:1456:C:N4	53:A4:1457:G:O6	2.47	0.47
3:E1:3:GLU:HA	3:E1:24:LEU:HD22	1.95	0.47
3:E1:20:LEU:HD11	3:E1:206:ILE:HG21	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:J1:66:LYS:HB2	8:J1:82:ASN:HD21	1.79	0.47
9:K1:40:SER:OG	9:K1:41:ARG:NH2	2.42	0.47
9:K1:115:LEU:HD22	29:A1:663:G:H3'	1.96	0.47
13:O1:11:GLU:OE1	13:O1:13:ARG:NE	2.32	0.47
13:O1:26:ASP:OD1	13:O1:92:GLY:N	2.42	0.47
29:A1:6:A:H2'	29:A1:7:G:H8	1.79	0.47
29:A1:356:A:H61	29:A1:1256:G:H2'	1.79	0.47
29:A1:2419:G:O3'	29:A1:2425:A:N6	2.48	0.47
29:A1:2588:G:H2'	29:A1:2589:C:C2	2.49	0.47
3:E2:10:PRO:HD3	3:E2:14:PRO:HB3	1.95	0.47
24:Z2:18:CYS:H	24:Z2:19:GLY:HA2	1.80	0.47
24:Z2:48:ARG:HA	43:M4:65:LYS:HA	1.96	0.47
29:A2:137:G:H3'	29:A2:138:G:C8	2.49	0.47
29:A2:1273:G:O2'	29:A2:1274:A:O4'	2.32	0.47
29:A2:1380:G:N7	29:A2:1657:A:O2'	2.46	0.47
34:D3:7:PRO:HG2	34:D3:10:ARG:HG2	1.95	0.47
34:D3:137:SER:O	53:A3:603:C:O2'	2.26	0.47
35:E3:149:GLU:HB3	35:E3:153:LYS:HD3	1.96	0.47
53:A3:123:G:O6	53:A3:187:C:O2'	2.32	0.47
50:T4:78:ALA:O	50:T4:82:SER:N	2.44	0.47
53:A4:62:U:OP1	53:A4:380:C:O2'	2.28	0.47
53:A4:575:G:O6	53:A4:630:C:N4	2.47	0.47
53:A4:1262:U:H5''	53:A4:1263:C:H5	1.79	0.47
54:V4:40:VAL:HG12	54:V4:58:ILE:HG22	1.95	0.47
29:A1:249:G:H2'	29:A1:250:G:H8	1.79	0.47
29:A1:929:G:N1	29:A1:930:G:N7	2.61	0.47
29:A1:1119:G:H5''	29:A1:1145:U:H5'	1.96	0.47
15:Q2:36:PRO:O	15:Q2:56:SER:OG	2.32	0.47
29:A2:116:A:H5'	29:A2:117:A:H8	1.79	0.47
29:A2:463:U:O2'	29:A2:466:G:O6	2.32	0.47
29:A2:1028:A:C6	29:A2:1183:G:H5'	2.50	0.47
29:A2:1764:G:H3'	29:A2:1765:G:H8	1.79	0.47
30:B2:15:A:N7	30:B2:71:G:O2'	2.45	0.47
32:B3:9:GLU:HA	32:B3:213:LEU:HD21	1.96	0.47
42:L3:124:LYS:NZ	53:A3:483:G:OP1	2.47	0.47
44:N3:19:ARG:NH1	53:A3:1199:C:OP1	2.46	0.47
53:A3:41:G:H2'	53:A3:42:G:H8	1.79	0.47
32:B4:95:GLN:OE1	32:B4:96:ARG:NH1	2.47	0.47
42:L4:70:ILE:HG12	42:L4:100:ILE:HD12	1.96	0.47
49:S4:37:ARG:NE	53:A4:1201:G:OP1	2.43	0.47
53:A4:41:G:H2'	53:A4:42:G:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:91:G:H8	53:A4:92:U:H4'	1.79	0.47
53:A4:903:G:H1'	54:V4:101:GLY:H	1.79	0.47
53:A4:928:G:N3	53:A4:947:C:O2'	2.33	0.47
53:A4:979:G:N2	53:A4:1023:A:OP2	2.38	0.47
53:A4:1201:G:H2'	53:A4:1202:G:H8	1.79	0.47
53:A4:1228:U:O4	53:A4:1272:G:O2'	2.28	0.47
53:A4:1500:G:H2'	53:A4:1501:C:C6	2.49	0.47
2:D1:24:THR:HB	2:D1:184:VAL:HG23	1.96	0.47
5:G1:123:PHE:HA	5:G1:133:VAL:HA	1.96	0.47
10:L1:59:ARG:NH1	29:A1:2484:G:OP1	2.40	0.47
13:O1:4:GLY:HA3	29:A1:2887:C:H4'	1.97	0.47
13:O1:112:ARG:HD3	13:O1:113:LYS:HG3	1.96	0.47
19:U1:165:VAL:HB	19:U1:169:GLU:HB3	1.95	0.47
29:A1:210:G:H21	29:A1:224:C:H1'	1.78	0.47
29:A1:540:A:H2'	29:A1:541:A:H8	1.79	0.47
29:A1:2157:G:H4'	29:A1:2182:A:C6	2.49	0.47
3:E2:135:LYS:HG3	3:E2:137:LYS:H	1.79	0.47
4:F2:96:ARG:HH11	30:B2:46:G:H5''	1.79	0.47
29:A2:1062:U:H2'	29:A2:1063:G:H8	1.79	0.47
29:A2:1434:C:O2'	29:A2:1518:A:O2'	2.29	0.47
29:A2:1559:A:H3'	29:A2:1560:G:C8	2.49	0.47
32:B3:22:LYS:NZ	32:B3:35:GLU:OE2	2.31	0.47
34:D3:64:LEU:HB2	34:D3:198:VAL:HG11	1.97	0.47
53:A3:616:G:H2'	53:A3:617:C:C6	2.49	0.47
53:A3:1013:G:OP2	53:A3:1014:G:N2	2.48	0.47
53:A3:1423:G:N3	53:A3:1438:G:N2	2.62	0.47
32:B4:209:ARG:HE	32:B4:213:LEU:HB2	1.80	0.47
35:E4:5:ASP:OD1	35:E4:5:ASP:N	2.47	0.47
37:G4:77:SER:HA	37:G4:86:GLN:HA	1.96	0.47
42:L4:77:LEU:HG	42:L4:107:ALA:HB2	1.96	0.47
43:M4:73:GLU:HA	43:M4:76:ALA:HB3	1.97	0.47
50:T4:52:ALA:O	50:T4:56:MET:N	2.43	0.47
53:A4:586:U:H2'	53:A4:618:G:H22	1.78	0.47
54:V4:39:LYS:O	54:V4:59:GLN:N	2.47	0.47
54:V4:39:LYS:O	54:V4:59:GLN:NE2	2.48	0.47
4:F1:125:PHE:HA	4:F1:130:ASN:HB3	1.96	0.47
9:K1:15:ARG:HB2	9:K1:17:LYS:HG2	1.97	0.47
9:K1:62:LEU:HD22	28:d1:28:GLY:HA2	1.96	0.47
15:Q1:35:LEU:HB2	15:Q1:57:VAL:HB	1.96	0.47
15:Q1:86:GLY:N	29:A1:1273:G:OP1	2.47	0.47
20:V1:27:GLU:OE2	20:V1:69:PHE:N	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:V1:29:GLN:NE2	29:A1:971:C:O2	2.47	0.47
29:A1:2099:U:O2'	29:A1:2610:U:O2	2.27	0.47
29:A1:2231:A:H1'	29:A1:2233:G:C4	2.50	0.47
29:A1:2475:C:H42	29:A1:2503:G:H1	1.61	0.47
29:A1:2813:A:H5'	29:A1:2905:G:H4'	1.97	0.47
4:F2:113:ARG:HB2	4:F2:140:ILE:HG22	1.97	0.47
19:U2:129:SER:OG	19:U2:162:GLU:OE2	2.26	0.47
22:X2:59:ARG:HE	29:A2:76:C:P	2.36	0.47
29:A2:217:A:H61	29:A2:438:G:N2	2.13	0.47
29:A2:787:G:N3	29:A2:808:G:N1	2.62	0.47
29:A2:2637:G:H2'	29:A2:2638:G:H8	1.79	0.47
33:C3:40:ARG:HG2	33:C3:43:LEU:HD12	1.95	0.47
48:R3:81:PHE:HZ	53:A3:657:G:H21	1.63	0.47
49:S3:34:TRP:O	53:A3:1200:U:O2'	2.31	0.47
52:X3:139:MET:HB2	52:W4:145:GLU:HG3	1.96	0.47
52:X3:150:GLN:HG2	52:W4:170:ASN:H	1.78	0.47
53:A3:41:G:H2'	53:A3:42:G:C8	2.49	0.47
53:A3:511:C:N4	53:A3:512:G:O6	2.47	0.47
53:A3:1428:C:O2	53:A3:1435:G:N2	2.45	0.47
33:C4:191:THR:OG1	33:C4:193:TYR:O	2.33	0.47
34:D4:149:ALA:N	34:D4:152:SER:OG	2.43	0.47
37:G4:96:GLN:HA	37:G4:99:LEU:HB2	1.96	0.47
38:H4:114:THR:HG21	38:H4:119:LEU:HD12	1.95	0.47
48:R4:76:LEU:HD12	48:R4:78:LEU:HD11	1.96	0.47
53:A4:67:C:H2'	53:A4:68:G:C8	2.50	0.47
53:A4:402:G:H2'	53:A4:403:A:C8	2.50	0.47
53:A4:612:G:H3'	53:A4:613:G:H21	1.80	0.47
53:A4:1005:C:O2'	53:A4:1007:C:OP2	2.27	0.47
53:A4:1194:A:H2'	53:A4:1196:G:C8	2.50	0.47
11:M1:96:ARG:HB3	29:A1:2893:C:H4'	1.97	0.47
13:O1:18:ASP:N	13:O1:18:ASP:OD1	2.47	0.47
19:U1:6:LYS:HA	19:U1:60:GLU:HB3	1.95	0.47
29:A1:135:C:N4	29:A1:136:G:O6	2.48	0.47
29:A1:595:G:H2'	29:A1:2054:A:N7	2.30	0.47
29:A1:946:C:C4	29:A1:947:A:H1'	2.50	0.47
31:e1:12:ASP:OD1	31:e1:12:ASP:N	2.45	0.47
19:U2:134:PRO:HG3	19:U2:137:ILE:HD13	1.97	0.47
22:X2:59:ARG:NE	29:A2:76:C:OP1	2.38	0.47
29:A2:1216:G:O6	29:A2:1227:C:N4	2.47	0.47
29:A2:1328:G:O6	29:A2:1338:C:N4	2.43	0.47
29:A2:1343:C:H42	29:A2:1694:G:H1	1.62	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2553:C:HO2'	29:A2:2756:A:HO2'	1.63	0.47
53:A3:201:A:H5'	53:A3:202:A:H5''	1.96	0.47
46:P4:25:ARG:HH11	53:A4:103:C:H1'	1.78	0.47
53:A4:435:A:N6	53:A4:477:G:N3	2.61	0.47
53:A4:1153:C:H2'	53:A4:1154:G:H8	1.78	0.47
53:A4:1162:G:O2'	53:A4:1163:G:O4'	2.32	0.47
53:A4:1219:A:N7	53:A4:1280:A:N6	2.63	0.47
53:A4:1412:C:N3	53:A4:1413:C:N4	2.63	0.47
2:D1:35:GLN:HE21	2:D1:37:ARG:HG3	1.80	0.47
2:D1:144:ARG:NH1	29:A1:2586:A:O2'	2.47	0.47
10:L1:54:MET:HG2	10:L1:117:ALA:HB1	1.97	0.47
10:L1:70:PRO:HA	10:L1:95:ALA:HB2	1.95	0.47
10:L1:71:ASP:N	10:L1:71:ASP:OD1	2.46	0.47
11:M1:101:ALA:HB2	25:a1:44:THR:HB	1.97	0.47
16:R1:2:GLU:OE2	16:R1:72:LYS:NZ	2.41	0.47
16:R1:13:SER:HB2	16:R1:16:LYS:HB2	1.97	0.47
23:Y1:40:THR:O	23:Y1:44:ARG:NH2	2.45	0.47
29:A1:442:C:H2'	29:A1:443:A:C8	2.49	0.47
29:A1:916:C:H42	29:A1:960:C:H1'	1.79	0.47
29:A1:1465:C:O2'	29:A1:1466:G:O4'	2.33	0.47
29:A1:2669:G:N2	29:A1:2679:A:OP2	2.48	0.47
29:A1:2719:A:H3'	29:A1:2720:G:C8	2.50	0.47
29:A1:2762:G:N2	29:A1:2763:A:N7	2.62	0.47
3:E2:29:ASN:HB3	3:E2:31:HIS:H	1.80	0.47
6:H2:3:VAL:HG11	6:H2:38:LEU:HD22	1.97	0.47
7:I2:67:LEU:HD11	29:A2:1070:G:H5'	1.96	0.47
26:b2:27:LYS:O	26:b2:28:ARG:NH1	2.39	0.47
27:c2:40:TRP:N	29:A2:487:U:OP2	2.42	0.47
29:A2:144:C:H2'	29:A2:145:G:C8	2.50	0.47
29:A2:761:G:N2	29:A2:769:C:N3	2.62	0.47
29:A2:1220:G:N2	29:A2:1222:U:O2'	2.47	0.47
29:A2:1318:C:O2'	29:A2:1697:C:OP2	2.33	0.47
29:A2:2050:C:N4	29:A2:2061:G:H1	2.13	0.47
29:A2:2387:G:O6	29:A2:2394:C:N4	2.47	0.47
29:A2:2663:U:O2	29:A2:2664:U:N3	2.47	0.47
29:A2:2694:C:N3	29:A2:2695:C:N4	2.63	0.47
34:D3:159:ARG:HA	34:D3:162:LEU:HG	1.96	0.47
35:E3:83:GLU:OE2	35:E3:87:SER:N	2.44	0.47
35:E3:145:LYS:HG2	38:H3:107:LEU:HD11	1.95	0.47
37:G3:111:ARG:HB3	37:G3:113:GLU:HG3	1.96	0.47
43:M3:75:ALA:HA	43:M3:78:ILE:HD12	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:N3:7:ILE:HG22	44:N3:23:ARG:HH11	1.79	0.47
47:Q3:2:PRO:O	53:A3:120:G:O2'	2.29	0.47
47:Q3:38:ARG:NH1	53:A3:275:C:O2	2.47	0.47
53:A3:121:G:H1	53:A3:228:C:N4	2.13	0.47
53:A3:946:A:O2'	53:A3:949:C:O2	2.25	0.47
53:A3:1006:C:H2'	53:A3:1007:C:H4'	1.95	0.47
53:A3:1141:U:H4'	53:A3:1142:G:C8	2.50	0.47
32:B4:84:GLU:OE2	32:B4:212:GLN:NE2	2.47	0.47
35:E4:137:GLU:HA	35:E4:140:ARG:HB2	1.96	0.47
36:F4:10:LEU:HG	36:F4:59:TYR:HB2	1.97	0.47
39:I4:113:LYS:HB2	39:I4:116:LYS:HB2	1.96	0.47
43:M4:77:ASN:O	43:M4:80:ARG:NE	2.48	0.47
44:N4:39:LEU:HD12	44:N4:44:LEU:HA	1.97	0.47
47:Q4:2:PRO:O	47:Q4:4:LYS:NZ	2.40	0.47
49:S4:56:GLN:HE22	49:S4:78:ARG:HA	1.79	0.47
53:A4:545:C:H4'	53:A4:546:A:H5'	1.95	0.47
53:A4:649:G:H2'	53:A4:650:G:C8	2.50	0.47
53:A4:969:U:H1'	53:A4:972:C:H42	1.79	0.47
1:C1:48:ARG:NH2	29:A1:823:A:OP1	2.38	0.47
1:C1:261:LYS:HB2	1:C1:264:LYS:HD3	1.97	0.47
2:D1:4:ILE:HD11	2:D1:182:LEU:HD22	1.96	0.47
3:E1:62:ARG:HH12	29:A1:845:C:H5''	1.79	0.47
4:F1:98:ARG:HH22	24:Z1:1:MET:HB2	1.80	0.47
9:K1:33:ARG:NH1	29:A1:720:C:O4'	2.47	0.47
9:K1:74:GLU:HB3	29:A1:234:A:H4'	1.97	0.47
11:M1:5:LYS:HB3	11:M1:8:ARG:HH12	1.79	0.47
24:Z1:55:ARG:NE	24:Z1:61:ARG:HH21	2.12	0.47
27:c1:1:MET:HE1	29:A1:801:A:H5''	1.97	0.47
27:c1:24:THR:O	27:c1:28:ARG:N	2.47	0.47
29:A1:256:G:H1	29:A1:455:C:H42	1.62	0.47
29:A1:988:A:N3	29:A1:1237:G:O2'	2.48	0.47
29:A1:2207:C:OP2	29:A1:2209:C:N4	2.44	0.47
2:D2:18:ASP:O	2:D2:19:ARG:NH1	2.41	0.47
3:E2:51:THR:HG21	29:A2:478:G:H5''	1.97	0.47
5:G2:142:GLY:HA2	5:G2:145:ALA:HB3	1.95	0.47
29:A2:140:A:H5''	29:A2:141:C:H5	1.79	0.47
29:A2:515:C:H42	29:A2:520:G:H1	1.63	0.47
29:A2:1383:U:H2'	29:A2:1384:A:C8	2.49	0.47
32:B3:102:LEU:HD12	32:B3:173:ALA:HB1	1.97	0.47
53:A3:566:A:H62	53:A3:741:G:H21	1.63	0.47
40:J4:80:LYS:HG2	40:J4:84:GLN:HG2	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Q4:67:LYS:NZ	53:A4:262:C:OP1	2.46	0.47
47:Q4:101:ARG:NE	53:A4:874:C:OP1	2.46	0.47
52:W4:160:VAL:HG11	52:W4:174:ARG:HD2	1.97	0.47
53:A4:473:C:H2'	53:A4:474:G:H8	1.79	0.47
53:A4:909:C:H2'	53:A4:910:G:C8	2.50	0.47
53:A4:1166:G:H2'	53:A4:1167:G:H8	1.79	0.47
1:C1:143:HIS:ND1	1:C1:194:GLY:O	2.32	0.47
14:P1:57:PHE:HA	14:P1:60:LEU:HD23	1.96	0.47
19:U1:70:LEU:O	19:U1:72:ARG:NH1	2.48	0.47
29:A1:191:C:O2	29:A1:414:G:N2	2.48	0.47
29:A1:1864:G:H1	29:A1:1998:C:H42	1.63	0.47
29:A1:1996:A:H2'	29:A1:1997:G:C8	2.50	0.47
29:A1:2810:G:O4'	29:A1:2815:G:N2	2.43	0.47
1:C2:182:LEU:HD22	1:C2:271:ILE:HD11	1.97	0.47
12:N2:50:SER:O	30:B2:117:G:O2'	2.27	0.47
15:Q2:54:GLY:HA3	15:Q2:101:GLY:HA2	1.97	0.47
21:W2:81:LYS:H	21:W2:81:LYS:HD2	1.80	0.47
29:A2:105:C:O2'	29:A2:318:U:O2	2.20	0.47
29:A2:480:G:N2	29:A2:481:C:O2	2.48	0.47
29:A2:2486:G:N2	29:A2:2543:G:N7	2.50	0.47
29:A2:2563:G:H2'	29:A2:2564:G:C8	2.50	0.47
29:A2:2895:A:H5'	29:A2:2896:U:H5'	1.96	0.47
31:e2:25:VAL:HG21	31:e2:34:GLN:HE21	1.78	0.47
32:B3:132:LYS:HZ1	53:A3:1140:C:H6	1.63	0.47
34:D3:11:LEU:N	53:A3:526:C:OP1	2.48	0.47
36:F3:70:ASP:OD1	36:F3:70:ASP:N	2.41	0.47
38:H3:87:SER:OG	38:H3:133:LEU:O	2.33	0.47
43:M3:83:ASP:N	43:M3:83:ASP:OD1	2.48	0.47
53:A3:106:G:O6	53:A3:308:A:N6	2.42	0.47
53:A3:656:G:N1	53:A3:718:C:N3	2.63	0.47
53:A3:929:U:H4'	53:A3:941:A:H61	1.79	0.47
38:H4:4:ASP:OD2	53:A4:854:C:O2'	2.32	0.47
49:S4:40:ILE:HA	49:S4:44:MET:HE3	1.97	0.47
53:A4:598:C:H2'	53:A4:599:G:C8	2.50	0.47
53:A4:921:G:H1'	53:A4:1319:G:H22	1.80	0.47
53:A4:987:G:N2	53:A4:998:U:O2'	2.35	0.47
53:A4:1137:G:H2'	53:A4:1138:G:H8	1.79	0.47
5:G1:37:VAL:HB	5:G1:68:THR:HG22	1.97	0.47
8:J1:71:ARG:HB2	8:J1:75:SER:HB2	1.97	0.47
9:K1:111:ARG:HB2	9:K1:128:HIS:CG	2.50	0.47
29:A1:1715:G:N2	29:A1:1718:A:N7	2.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:2834:G:O2'	29:A1:2837:C:N4	2.47	0.47
9:K2:111:ARG:HG3	9:K2:128:HIS:CD2	2.50	0.47
11:M2:63:ARG:HD3	29:A2:1503:U:C2	2.50	0.47
13:O2:132:LYS:HG3	13:O2:133:GLU:HG3	1.97	0.47
18:T2:73:ARG:NE	18:T2:81:LYS:O	2.47	0.47
29:A2:1434:C:N3	29:A2:1435:C:N4	2.63	0.47
29:A2:2695:C:O2'	29:A2:2739:C:N4	2.48	0.47
32:B3:31:TYR:HD1	32:B3:46:LYS:HD2	1.80	0.47
53:A3:510:G:O2'	53:A3:518:A:N1	2.39	0.47
53:A3:808:G:N7	53:A3:853:G:N1	2.63	0.47
53:A3:1408:C:N4	53:A3:1409:U:O4	2.48	0.47
53:A4:134:A:H3'	53:A4:135:A:H8	1.80	0.47
53:A4:206:G:O2'	53:A4:207:C:O4'	2.33	0.47
53:A4:712:A:H2'	53:A4:713:G:C8	2.50	0.47
53:A4:1404:G:H1'	53:A4:1457:G:H22	1.79	0.47
3:E1:52:LYS:NZ	29:A1:479:C:O3'	2.45	0.46
5:G1:153:LYS:HE2	5:G1:156:ALA:HB2	1.97	0.46
9:K1:64:LYS:HB3	9:K1:65:ARG:HD3	1.96	0.46
12:N1:23:ARG:NH1	12:N1:84:GLN:HB3	2.31	0.46
14:P1:51:LYS:HD3	29:A1:1204:A:C8	2.49	0.46
19:U1:116:VAL:HG11	19:U1:118:GLN:HE21	1.79	0.46
27:c1:12:ARG:HH11	27:c1:46:VAL:HB	1.81	0.46
29:A1:870:A:H2'	29:A1:993:G:H8	1.80	0.46
29:A1:2167:C:H2'	29:A1:2168:U:H4'	1.97	0.46
1:C2:74:GLY:HA2	1:C2:119:ALA:HB3	1.96	0.46
2:D2:101:ARG:HB3	2:D2:169:ASN:HA	1.96	0.46
2:D2:159:HIS:N	29:A2:2635:A:O2'	2.49	0.46
7:I2:86:PRO:O	7:I2:90:MET:N	2.46	0.46
12:N2:66:ALA:HA	12:N2:69:VAL:HG12	1.96	0.46
29:A2:877:U:HO2'	29:A2:880:G:H1	1.57	0.46
29:A2:1096:A:OP2	29:A2:1158:G:N2	2.48	0.46
29:A2:1864:G:H1	29:A2:1998:C:H42	1.63	0.46
29:A2:2295:C:H2'	29:A2:2296:G:C8	2.50	0.46
29:A2:2762:G:N2	29:A2:2763:A:N7	2.63	0.46
32:B3:121:LEU:HD13	32:B3:126:GLU:HG3	1.96	0.46
42:L3:113:ARG:NH2	53:A3:520:G:OP1	2.48	0.46
48:R3:29:PHE:HD2	48:R3:39:VAL:HB	1.80	0.46
53:A3:459:G:H2'	53:A3:460:G:C8	2.50	0.46
53:A3:1080:C:H4'	53:A3:1149:A:H2	1.79	0.46
32:B4:122:PHE:HD1	32:B4:127:ILE:HG21	1.80	0.46
35:E4:70:PRO:O	35:E4:72:GLN:NE2	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:I4:97:LYS:HG2	39:I4:102:LEU:HD11	1.97	0.46
50:T4:17:ARG:HA	50:T4:20:LEU:HD12	1.98	0.46
53:A4:1328:G:N2	53:A4:1329:U:O4	2.37	0.46
53:A4:1440:C:N4	53:A4:1441:G:O6	2.48	0.46
3:E1:107:LYS:HA	3:E1:110:LEU:HD12	1.97	0.46
5:G1:9:ILE:HG13	5:G1:51:ARG:HE	1.80	0.46
19:U1:53:ILE:H	19:U1:53:ILE:HG13	1.51	0.46
29:A1:1398:C:H2'	29:A1:1399:C:H6	1.80	0.46
29:A1:1609:G:H3'	29:A1:1610:G:H8	1.80	0.46
29:A1:2295:C:H2'	29:A1:2296:G:C8	2.51	0.46
3:E2:176:LEU:HD11	3:E2:181:LEU:HA	1.97	0.46
4:F2:40:ASN:ND2	4:F2:90:LEU:O	2.46	0.46
14:P2:58:ARG:HA	14:P2:93:LYS:HD3	1.98	0.46
29:A2:306:G:H1'	29:A2:384:A:N1	2.30	0.46
29:A2:728:C:N4	29:A2:729:G:O6	2.49	0.46
29:A2:1465:C:H3'	29:A2:1466:G:C8	2.51	0.46
29:A2:1576:A:OP1	29:A2:1591:A:N6	2.43	0.46
35:E3:23:GLY:O	35:E3:25:ARG:NH1	2.44	0.46
38:H3:96:GLY:H	38:H3:99:GLU:HB2	1.80	0.46
47:Q3:18:THR:HB	53:A3:270:G:H1	1.80	0.46
53:A3:626:C:H2'	53:A3:627:G:C8	2.50	0.46
53:A3:1110:C:H1'	53:A3:1126:G:H1	1.78	0.46
35:E4:22:GLY:O	53:A4:1380:A:N6	2.37	0.46
42:L4:58:VAL:N	42:L4:66:VAL:O	2.41	0.46
45:O4:23:GLY:HA3	53:A4:733:G:C8	2.50	0.46
53:A4:226:G:H2'	53:A4:227:G:C8	2.49	0.46
53:A4:891:A:H2'	53:A4:892:A:C8	2.47	0.46
53:A4:1012:A:O2'	53:A4:1014:G:O6	2.25	0.46
53:A4:1184:C:H2'	53:A4:1185:A:C8	2.51	0.46
1:C1:174:ILE:HG12	1:C1:184:LYS:HG2	1.98	0.46
4:F1:37:VAL:HB	4:F1:94:LEU:HB2	1.96	0.46
9:K1:62:LEU:HD12	9:K1:63:PRO:HD2	1.97	0.46
11:M1:107:ASP:HB3	29:A1:1335:A:C6	2.50	0.46
14:P1:10:ARG:NH1	29:A1:1299:C:OP2	2.48	0.46
20:V1:58:THR:OG1	29:A1:2378:C:O2'	2.33	0.46
26:b1:42:TRP:HE1	29:A1:2363:G:P	2.39	0.46
29:A1:1109:U:O2'	29:A1:1118:A:N3	2.46	0.46
30:B1:102:A:H2'	30:B1:103:G:H8	1.80	0.46
1:C2:39:LYS:HB2	1:C2:62:TYR:HB2	1.96	0.46
1:C2:207:GLY:N	29:A2:1824:A:O2'	2.32	0.46
3:E2:161:GLU:HG2	3:E2:164:ARG:HD3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:G2:103:LEU:HD13	5:G2:115:VAL:HG11	1.97	0.46
20:V2:40:GLN:O	20:V2:41:ARG:NH1	2.45	0.46
21:W2:13:ILE:O	21:W2:42:GLN:N	2.48	0.46
29:A2:81:G:H22	29:A2:101:A:P	2.39	0.46
29:A2:1391:G:N2	29:A2:1452:C:N3	2.52	0.46
29:A2:1972:G:H21	53:A4:1400:A:H2	1.63	0.46
41:K3:92:GLU:HG2	41:K3:95:ILE:HD12	1.97	0.46
42:L3:42:THR:HG23	42:L3:53:ARG:H	1.80	0.46
53:A3:446:A:H2'	53:A3:447:A:H8	1.80	0.46
53:A3:939:C:H2'	53:A3:940:G:C8	2.49	0.46
53:A3:1077:U:P	53:A3:1090:G:H1	2.38	0.46
39:I4:112:LYS:HB2	53:A4:1350:G:H5''	1.97	0.46
53:A4:280:G:H2'	53:A4:281:G:H8	1.81	0.46
53:A4:1247:G:H5''	53:A4:1248:C:H5''	1.98	0.46
1:C1:52:ARG:HB2	1:C1:53:PHE:CD2	2.50	0.46
8:J1:78:ARG:HH12	13:O1:103:ARG:HH22	1.63	0.46
11:M1:51:LEU:O	11:M1:55:ALA:N	2.48	0.46
14:P1:34:LYS:HZ1	29:A1:1300:G:H22	1.62	0.46
20:V1:56:ASP:OD1	29:A1:2378:C:O2'	2.24	0.46
25:a1:55:ARG:HA	25:a1:60:VAL:HG11	1.98	0.46
29:A1:51:A:H2'	29:A1:52:A:C8	2.49	0.46
29:A1:920:U:O2'	29:A1:921:A:O4'	2.31	0.46
29:A1:1383:U:H2'	29:A1:1384:A:C8	2.48	0.46
29:A1:1577:A:H3'	29:A1:1578:G:C8	2.50	0.46
29:A1:1956:A:N3	29:A1:1993:A:N6	2.64	0.46
29:A1:2332:G:OP2	29:A1:2332:G:N2	2.49	0.46
29:A1:2647:G:H1	29:A1:2800:C:H42	1.64	0.46
2:D2:192:ASN:OD1	13:O2:1:MET:N	2.33	0.46
3:E2:200:GLU:HA	3:E2:203:GLN:HB2	1.97	0.46
8:J2:1:MET:HG2	29:A2:1714:A:H1'	1.96	0.46
20:V2:71:ASP:O	20:V2:72:ARG:NE	2.48	0.46
29:A2:695:G:H3'	29:A2:696:G:H8	1.80	0.46
29:A2:1822:A:H2'	29:A2:1823:C:C2	2.50	0.46
29:A2:2621:G:H2'	29:A2:2622:G:H8	1.81	0.46
29:A2:2710:U:H2'	29:A2:2711:G:C8	2.50	0.46
29:A2:2767:C:H3'	29:A2:2768:A:C8	2.50	0.46
34:D3:83:SER:OG	53:A3:6:G:OP1	2.34	0.46
41:K3:127:LYS:HG2	54:V3:106:TYR:CD1	2.51	0.46
46:P3:74:LEU:HA	46:P3:77:ALA:HB3	1.97	0.46
47:Q3:62:SER:HB2	53:A3:189:U:C4	2.50	0.46
53:A3:583:C:H2'	53:A3:584:C:H6	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:983:A:H3'	53:A3:984:C:H6	1.80	0.46
53:A3:1151:A:N6	53:A3:1152:G:N3	2.64	0.46
32:B4:34:ALA:H	32:B4:41:ILE:HB	1.80	0.46
36:F4:38:GLU:HB3	36:F4:39:LYS:HD2	1.96	0.46
42:L4:58:VAL:O	42:L4:66:VAL:N	2.29	0.46
50:T4:27:LYS:O	50:T4:31:SER:N	2.40	0.46
53:A4:1487:U:H2'	53:A4:1488:G:H8	1.79	0.46
6:H1:31:LEU:HD21	6:H1:37:VAL:HG12	1.98	0.46
7:I1:20:GLY:H	7:I1:61:ARG:NH1	2.14	0.46
29:A1:399:A:N1	29:A1:401:U:N3	2.63	0.46
29:A1:820:G:N2	29:A1:821:C:O2	2.48	0.46
29:A1:2480:C:H2'	29:A1:2481:C:C6	2.50	0.46
29:A1:2726:U:H2'	29:A1:2727:A:C8	2.51	0.46
29:A1:2757:C:OP1	31:e1:35:ARG:NH2	2.48	0.46
29:A1:2868:C:O2	29:A1:2874:G:N2	2.48	0.46
5:G2:8:PRO:O	5:G2:69:ARG:NH1	2.49	0.46
15:Q2:5:VAL:HG22	15:Q2:12:TYR:H	1.81	0.46
15:Q2:71:LEU:HD21	15:Q2:83:ARG:HD3	1.97	0.46
29:A2:137:G:H3'	29:A2:138:G:H8	1.80	0.46
29:A2:610:G:O6	29:A2:1299:C:O2'	2.28	0.46
29:A2:789:U:H2'	29:A2:790:G:H8	1.80	0.46
29:A2:2537:G:H1	29:A2:2554:C:H42	1.64	0.46
29:A2:2665:C:H42	29:A2:2683:G:H1	1.62	0.46
29:A2:2671:A:H62	29:A2:2678:G:H21	1.62	0.46
35:E3:41:VAL:HB	35:E3:113:ALA:HA	1.96	0.46
35:E3:94:ALA:HB3	35:E3:98:THR:HG21	1.97	0.46
39:I3:42:ARG:NH2	53:A3:1355:G:OP2	2.49	0.46
47:Q3:11:VAL:HG11	47:Q3:88:TYR:HD2	1.81	0.46
53:A3:51:A:C8	53:A3:109:A:H1'	2.49	0.46
53:A3:649:G:H1	53:A3:723:U:H3	1.64	0.46
53:A3:1195:C:H5''	53:A3:1197:G:H22	1.81	0.46
36:F4:40:VAL:HG23	36:F4:62:TRP:H	1.80	0.46
48:R4:68:LYS:O	48:R4:72:ARG:NE	2.49	0.46
53:A4:83:A:O2'	53:A4:85:U:OP1	2.34	0.46
53:A4:194:U:H2'	53:A4:195:G:C8	2.50	0.46
53:A4:816:U:H3	53:A4:830:G:H1	1.63	0.46
53:A4:1339:U:H3'	53:A4:1340:C:C6	2.51	0.46
54:V4:10:ASN:OD1	54:V4:10:ASN:N	2.47	0.46
1:C1:259:THR:OG1	29:A1:1830:C:O3'	2.34	0.46
21:W1:63:ALA:HB3	21:W1:66:HIS:CE1	2.50	0.46
29:A1:601:U:H2'	29:A1:602:G:H8	1.79	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:628:A:H5''	29:A1:704:A:H61	1.80	0.46
29:A1:1050:G:H1	29:A1:1201:C:H42	1.64	0.46
29:A1:1091:C:H2'	29:A1:1092:G:C8	2.50	0.46
29:A1:2047:G:H2'	29:A1:2048:G:H8	1.81	0.46
29:A1:2871:G:H2'	29:A1:2872:A:C8	2.51	0.46
1:C2:133:LEU:HD12	1:C2:189:CYS:HB2	1.98	0.46
29:A2:202:G:H2'	29:A2:203:A:C8	2.50	0.46
29:A2:904:G:H22	29:A2:970:U:H3	1.64	0.46
29:A2:1230:G:H2'	29:A2:1231:G:H8	1.79	0.46
29:A2:1766:G:H1	29:A2:1774:C:H42	1.62	0.46
29:A2:1996:A:H2'	29:A2:1997:G:C8	2.51	0.46
29:A2:2212:C:H3'	29:A2:2213:U:H4'	1.98	0.46
29:A2:2523:G:H2'	29:A2:2524:C:H6	1.80	0.46
29:A2:2719:A:H3'	29:A2:2720:G:C8	2.51	0.46
34:D3:49:ARG:HA	34:D3:50:ARG:HD3	1.98	0.46
38:H3:5:PRO:O	38:H3:9:MET:N	2.43	0.46
33:C4:110:ASN:ND2	33:C4:140:ARG:HH21	2.13	0.46
40:J4:22:LYS:O	40:J4:26:ALA:N	2.46	0.46
53:A4:950:G:H3'	53:A4:951:A:H2'	1.97	0.46
53:A4:1366:C:N4	53:A4:1367:G:O6	2.48	0.46
11:M1:65:LEU:HA	11:M1:68:ARG:HG3	1.97	0.46
12:N1:92:TYR:HB3	12:N1:98:VAL:HG11	1.97	0.46
17:S1:62:LYS:H	17:S1:73:ARG:HD2	1.80	0.46
29:A1:46:C:N4	29:A1:47:G:O6	2.48	0.46
29:A1:237:G:H4'	29:A1:414:G:C4	2.50	0.46
29:A1:1575:G:HO2'	29:A1:1593:A:H62	1.58	0.46
29:A1:1748:G:O2'	29:A1:1749:A:O3'	2.34	0.46
2:D2:61:ARG:NH1	29:A2:2822:A:O3'	2.49	0.46
7:I2:100:GLU:O	7:I2:104:LYS:N	2.49	0.46
11:M2:10:LEU:N	29:A2:1702:G:O6	2.49	0.46
20:V2:14:ARG:HH21	29:A2:2275:C:H42	1.64	0.46
29:A2:830:A:C6	29:A2:1810:U:H1'	2.50	0.46
30:B2:1:A:H2'	30:B2:2:A:C8	2.51	0.46
30:B2:108:G:H2'	30:B2:109:G:H8	1.80	0.46
43:M3:34:LEU:HD22	43:M3:39:ILE:HB	1.97	0.46
50:T3:34:LYS:NZ	53:A3:1420:G:OP1	2.44	0.46
50:T3:66:ALA:C	50:T3:69:GLY:H	2.22	0.46
53:A3:1155:G:H2'	53:A3:1156:G:C8	2.50	0.46
53:A3:1483:U:H5''	54:V3:105:SER:HB3	1.98	0.46
32:B4:18:GLY:HA2	32:B4:40:HIS:HB2	1.97	0.46
36:F4:52:ILE:O	36:F4:86:ARG:NH2	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K4:44:SER:O	41:K4:44:SER:OG	2.33	0.46
43:M4:86:CYS:SG	43:M4:87:TYR:N	2.89	0.46
44:N4:40:CYS:H	44:N4:43:CYS:HB3	1.80	0.46
47:Q4:84:LEU:HD23	47:Q4:87:LYS:HG3	1.97	0.46
53:A4:313:G:H1	53:A4:331:C:H42	1.62	0.46
53:A4:1438:G:H2'	53:A4:1439:G:C8	2.51	0.46
12:N1:16:ASN:C	12:N1:18:ILE:H	2.24	0.46
18:T1:6:HIS:CE1	29:A1:361:C:H4'	2.51	0.46
23:Y1:4:LEU:HA	23:Y1:58:VAL:HG13	1.97	0.46
27:c1:9:ARG:HG3	29:A1:1357:G:H5'	1.97	0.46
29:A1:13:A:H2	29:A1:14:A:H62	1.64	0.46
29:A1:771:A:H3'	29:A1:772:G:H8	1.81	0.46
29:A1:1929:C:H2'	29:A1:1954:G:C5	2.51	0.46
29:A1:2663:U:O2	29:A1:2664:U:N3	2.49	0.46
29:A1:2716:U:H1'	29:A1:2717:C:H5	1.80	0.46
2:D2:62:PRO:HB2	2:D2:64:LYS:HE2	1.97	0.46
5:G2:122:THR:OG1	5:G2:134:SER:O	2.33	0.46
9:K2:123:LEU:O	9:K2:143:GLY:N	2.49	0.46
10:L2:32:TYR:HE1	10:L2:133:ARG:HG2	1.81	0.46
24:Z2:53:GLU:HA	24:Z2:54:GLY:HA2	1.77	0.46
29:A2:711:G:N2	29:A2:712:G:O6	2.49	0.46
29:A2:782:G:N2	29:A2:783:A:N7	2.64	0.46
29:A2:824:G:C2	29:A2:843:G:H8	2.32	0.46
29:A2:1945:G:H2'	29:A2:1946:G:C8	2.50	0.46
29:A2:2367:G:H2'	29:A2:2368:G:C8	2.51	0.46
47:Q3:19:VAL:HG23	47:Q3:44:ALA:HB3	1.98	0.46
53:A3:34:C:H2'	53:A3:35:G:H8	1.81	0.46
53:A3:589:G:H1	53:A3:614:G:H5''	1.81	0.46
53:A3:678:A:N6	53:A3:679:A:N1	2.64	0.46
53:A3:712:A:H2'	53:A3:713:G:C8	2.51	0.46
53:A3:895:A:H3'	53:A3:896:A:H8	1.80	0.46
53:A3:1005:C:H1'	53:A3:1006:C:H5'	1.97	0.46
53:A3:1194:A:O2'	53:A3:1197:G:N2	2.48	0.46
53:A3:1285:G:O6	53:A3:1286:G:N2	2.49	0.46
32:B4:137:ARG:NH2	53:A4:1151:A:O3'	2.49	0.46
32:B4:211:ILE:O	32:B4:215:LEU:N	2.34	0.46
35:E4:11:ILE:HG22	35:E4:12:LEU:HB2	1.98	0.46
39:I4:126:SER:OG	53:A4:947:C:N4	2.49	0.46
49:S4:71:LEU:O	49:S4:75:ALA:N	2.42	0.46
52:W4:160:VAL:HG21	52:W4:174:ARG:HB3	1.98	0.46
53:A4:67:C:H2'	53:A4:68:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D1:37:ARG:HH11	29:A1:2800:C:H1'	1.81	0.46
2:D1:119:ARG:NH1	2:D1:156:MET:H	2.14	0.46
3:E1:54:ARG:HH22	29:A1:722:C:H5''	1.80	0.46
6:H1:25:TYR:HA	6:H1:28:ASN:HB2	1.98	0.46
10:L1:76:LYS:HG3	29:A1:1004:A:H5'	1.97	0.46
11:M1:52:ILE:O	11:M1:56:LYS:N	2.47	0.46
17:S1:12:VAL:HG21	17:S1:27:THR:HG22	1.98	0.46
24:Z1:48:ARG:HB2	43:M3:65:LYS:HE3	1.98	0.46
29:A1:620:C:H2'	29:A1:621:G:C8	2.51	0.46
29:A1:1928:G:H1'	29:A1:1952:A:H2	1.81	0.46
29:A1:2160:C:O5'	29:A1:2176:G:N2	2.37	0.46
29:A1:2607:U:H2'	29:A1:2608:C:C6	2.51	0.46
11:M2:8:ARG:NE	29:A2:1702:G:OP1	2.49	0.46
12:N2:26:LEU:HD23	12:N2:87:PHE:HD1	1.81	0.46
25:a2:27:PRO:HA	25:a2:28:PRO:HD3	1.84	0.46
28:d2:6:THR:O	28:d2:11:LYS:NZ	2.45	0.46
29:A2:178:G:H1	29:A2:198:C:H42	1.63	0.46
29:A2:498:A:H2'	29:A2:499:A:H8	1.81	0.46
29:A2:1753:G:H2'	29:A2:1754:G:H8	1.81	0.46
33:C3:176:HIS:NE2	53:A3:1170:C:O2'	2.28	0.46
34:D3:70:ILE:HD11	34:D3:75:PHE:HD1	1.80	0.46
34:D3:187:ARG:H	34:D3:187:ARG:HD3	1.80	0.46
41:K3:55:LYS:NZ	53:A3:673:G:OP2	2.49	0.46
43:M3:74:VAL:O	43:M3:78:ILE:N	2.48	0.46
49:S3:83:HIS:HE2	53:A3:934:U:P	2.38	0.46
50:T3:13:LEU:C	50:T3:16:HIS:H	2.23	0.46
53:A3:202:A:H4'	53:A3:217:U:C4	2.50	0.46
53:A3:279:G:H2'	53:A3:280:G:C8	2.51	0.46
53:A3:543:U:H5'	53:A3:544:U:H3'	1.98	0.46
53:A3:1427:G:H1	53:A3:1436:C:N4	2.14	0.46
33:C4:141:VAL:HG12	33:C4:142:MET:H	1.81	0.46
50:T4:89:ARG:NH2	50:T4:105:SER:O	2.48	0.46
53:A4:434:A:C6	53:A4:435:A:H1'	2.51	0.46
1:C1:206:LEU:HD12	29:A1:1824:A:H5'	1.98	0.46
2:D1:11:MET:SD	2:D1:24:THR:OG1	2.66	0.46
29:A1:239:C:O2'	29:A1:2408:C:O3'	2.29	0.46
29:A1:475:A:O2'	29:A1:501:G:N7	2.37	0.46
29:A1:643:G:H2'	29:A1:644:G:C8	2.51	0.46
29:A1:1271:G:N1	29:A1:1274:A:OP2	2.49	0.46
29:A1:1877:C:N4	29:A1:1920:G:H1	2.13	0.46
29:A1:2574:C:H2'	29:A1:2575:A:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D2:108:SER:HB3	2:D2:163:GLU:HG2	1.96	0.46
5:G2:90:LYS:N	5:G2:161:GLY:O	2.45	0.46
9:K2:21:ARG:HH21	29:A2:1297:U:H3	1.63	0.46
9:K2:86:LYS:HD2	29:A2:697:G:H21	1.80	0.46
13:O2:1:MET:H2	29:A2:2832:A:H62	1.63	0.46
23:Y2:13:ILE:HG13	29:A2:1037:G:C8	2.51	0.46
23:Y2:18:ASP:OD1	23:Y2:18:ASP:N	2.41	0.46
29:A2:526:U:H2'	29:A2:527:G:C8	2.51	0.46
29:A2:1110:G:N1	29:A2:1124:C:O2	2.49	0.46
29:A2:1242:G:H21	29:A2:1274:A:H2	1.63	0.46
29:A2:1272:C:N3	29:A2:1273:G:N2	2.64	0.46
29:A2:1715:G:N1	29:A2:2019:U:O4	2.49	0.46
29:A2:2057:A:O2'	29:A2:2059:G:OP2	2.29	0.46
29:A2:2465:A:OP1	29:A2:2511:A:N6	2.38	0.46
29:A2:2596:G:H2'	29:A2:2597:G:H8	1.81	0.46
32:B3:155:LEU:HB3	32:B3:157:ARG:HG2	1.98	0.46
34:D3:181:MET:N	34:D3:181:MET:SD	2.89	0.46
49:S3:36:ARG:NH1	49:S3:76:PRO:O	2.48	0.46
52:X3:157:SER:OG	52:X3:158:PHE:N	2.49	0.46
53:A3:612:G:O2'	53:A3:614:G:O6	2.28	0.46
47:Q4:2:PRO:N	53:A4:120:G:HO2'	2.14	0.46
3:E1:114:VAL:O	3:E1:118:ALA:N	2.43	0.45
5:G1:3:ARG:NE	29:A1:1160:G:H4'	2.31	0.45
5:G1:38:SER:HB2	5:G1:41:MET:HB2	1.98	0.45
11:M1:39:PRO:HA	11:M1:42:LYS:HB2	1.97	0.45
29:A1:116:A:H5'	29:A1:117:A:C8	2.50	0.45
29:A1:331:U:H1'	29:A1:337:G:H22	1.81	0.45
29:A1:856:U:H2'	29:A1:857:G:C8	2.50	0.45
29:A1:990:U:N3	29:A1:991:G:N7	2.64	0.45
29:A1:1077:A:H61	29:A1:1173:G:H2'	1.81	0.45
29:A1:1090:G:N2	29:A1:1161:U:O2'	2.49	0.45
29:A1:1103:G:H1	29:A1:1151:A:H61	1.64	0.45
29:A1:1272:C:N3	29:A1:1273:G:N2	2.64	0.45
29:A1:1483:G:H1	29:A1:1606:C:H42	1.64	0.45
29:A1:2037:A:H2'	29:A1:2038:A:C8	2.51	0.45
18:T2:50:ARG:HB2	18:T2:53:PRO:HD3	1.98	0.45
20:V2:28:GLY:HA2	20:V2:66:VAL:HG13	1.98	0.45
27:c2:7:PRO:HB2	29:A2:1357:G:H4'	1.97	0.45
29:A2:1390:A:N6	29:A2:1393:C:N3	2.64	0.45
29:A2:2090:C:H2'	29:A2:2091:G:C8	2.51	0.45
29:A2:2221:U:O2	29:A2:2222:A:O2'	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:B3:187:LEU:HD22	32:B3:205:ASP:HB3	1.98	0.45
46:P3:19:ILE:HB	46:P3:36:ILE:HB	1.98	0.45
46:P3:73:LEU:HD23	46:P3:76:GLN:HB2	1.98	0.45
53:A3:1293:G:N1	53:A3:1306:C:O2	2.49	0.45
32:B4:96:ARG:HD3	53:A4:1082:C:H41	1.81	0.45
41:K4:21:ILE:O	41:K4:85:ARG:N	2.38	0.45
42:L4:53:ARG:NH2	42:L4:92:ASP:OD2	2.49	0.45
53:A4:1242:A:O2'	53:A4:1264:G:OP1	2.32	0.45
1:C1:67:PHE:HZ	1:C1:106:ILE:HD13	1.80	0.45
8:J1:35:VAL:HG12	8:J1:62:VAL:HG12	1.98	0.45
15:Q1:32:THR:OG1	15:Q1:33:VAL:N	2.48	0.45
18:T1:73:ARG:NH1	29:A1:361:C:OP2	2.49	0.45
23:Y1:26:LEU:HD11	23:Y1:46:ASN:HD22	1.81	0.45
24:Z1:48:ARG:NE	43:M3:69:GLU:OE1	2.41	0.45
24:Z1:48:ARG:H	24:Z1:48:ARG:HD2	1.81	0.45
24:Z1:55:ARG:HE	24:Z1:61:ARG:HH21	1.64	0.45
29:A1:237:G:H4'	29:A1:414:G:C5	2.51	0.45
29:A1:932:G:H21	29:A1:933:C:H5''	1.80	0.45
29:A1:934:C:N4	29:A1:938:C:OP2	2.49	0.45
29:A1:1098:A:H2'	29:A1:1099:G:C8	2.50	0.45
29:A1:2345:G:H2'	29:A1:2346:U:H6	1.82	0.45
29:A1:2490:A:H4'	29:A1:2494:C:N4	2.31	0.45
29:A1:2534:C:H2'	29:A1:2535:C:H6	1.82	0.45
22:X2:58:ALA:O	22:X2:62:THR:N	2.47	0.45
25:a2:57:VAL:HG12	25:a2:59:GLU:H	1.81	0.45
26:b2:17:LYS:H	26:b2:19:ARG:HH11	1.65	0.45
29:A2:228:C:O2'	29:A2:633:A:N3	2.38	0.45
29:A2:756:G:O6	29:A2:772:G:N1	2.49	0.45
29:A2:1443:A:C6	29:A2:1446:C:H1'	2.51	0.45
34:D3:117:ALA:O	34:D3:121:VAL:N	2.43	0.45
53:A3:691:C:H2'	53:A3:692:G:C8	2.52	0.45
53:A3:1123:C:N4	53:A3:1126:G:O6	2.49	0.45
53:A3:1293:G:O6	53:A3:1307:C:N4	2.49	0.45
53:A3:1421:C:H2'	53:A3:1422:C:C6	2.50	0.45
32:B4:162:ILE:O	32:B4:185:ILE:N	2.50	0.45
33:C4:131:ARG:HA	33:C4:134:ILE:HG12	1.98	0.45
34:D4:209:ARG:HG3	53:A4:27:G:H1'	1.97	0.45
39:I4:28:VAL:HG12	39:I4:62:TYR:HA	1.98	0.45
40:J4:63:PHE:HE1	44:N4:58:LYS:HG2	1.81	0.45
45:O4:26:GLU:HG2	45:O4:81:LEU:HD21	1.98	0.45
53:A4:980:G:H1'	53:A4:1021:C:H42	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:1111:C:O2	53:A4:1113:G:N1	2.49	0.45
11:M1:14:SER:O	11:M1:17:ARG:NH1	2.49	0.45
15:Q1:95:LEU:HB3	15:Q1:97:LYS:HZ1	1.82	0.45
16:R1:83:LYS:O	16:R1:84:ARG:NH1	2.49	0.45
18:T1:46:LYS:HD3	18:T1:61:ILE:HD11	1.98	0.45
29:A1:402:A:N6	29:A1:428:G:O2'	2.50	0.45
29:A1:846:C:H2'	29:A1:847:G:C8	2.51	0.45
29:A1:868:A:H2'	29:A1:869:A:H8	1.82	0.45
29:A1:1723:G:N2	29:A1:1727:G:H22	2.14	0.45
29:A1:1945:G:H2'	29:A1:1946:G:C8	2.51	0.45
7:I2:86:PRO:HD2	7:I2:89:LYS:HB2	1.98	0.45
8:J2:22:ILE:HG23	29:A2:1976:A:H2	1.80	0.45
10:L2:116:GLU:OE2	10:L2:119:ARG:NH1	2.45	0.45
12:N2:14:VAL:HG23	12:N2:15:ARG:HG2	1.97	0.45
13:O2:127:ALA:HA	13:O2:130:ALA:HB3	1.98	0.45
16:R2:49:LYS:NZ	29:A2:517:G:OP1	2.49	0.45
19:U2:157:LEU:HD12	19:U2:159:PRO:HG2	1.98	0.45
29:A2:883:C:H2'	29:A2:884:A:C8	2.50	0.45
29:A2:1300:G:O2'	29:A2:1301:A:O4'	2.35	0.45
29:A2:1710:G:N2	29:A2:2702:U:OP1	2.45	0.45
29:A2:2453:A:O2'	29:A2:2614:A:OP1	2.31	0.45
30:B2:52:G:N1	30:B2:53:G:O6	2.49	0.45
35:E3:79:GLU:HG2	35:E3:92:LYS:HA	1.98	0.45
41:K3:123:LYS:HE3	41:K3:126:ARG:HH21	1.80	0.45
53:A3:452:C:O2	53:A3:457:A:N6	2.49	0.45
33:C4:35:GLU:HB2	33:C4:39:ILE:HG12	1.99	0.45
34:D4:35:ARG:NH1	53:A4:407:A:OP2	2.38	0.45
38:H4:5:PRO:HA	38:H4:8:ASP:HB3	1.99	0.45
38:H4:30:ARG:NH1	53:A4:574:U:OP1	2.38	0.45
39:I4:76:ALA:O	39:I4:80:GLY:N	2.50	0.45
42:L4:109:GLY:HA3	42:L4:122:THR:H	1.81	0.45
48:R4:83:GLU:HG3	48:R4:84:LYS:H	1.82	0.45
53:A4:691:C:H2'	53:A4:692:G:C8	2.51	0.45
53:A4:967:C:OP2	53:A4:1197:G:N2	2.50	0.45
53:A4:987:G:H22	53:A4:998:U:HO2'	1.62	0.45
1:C1:17:THR:H	1:C1:211:ARG:HH12	1.63	0.45
5:G1:3:ARG:CZ	29:A1:1159:A:H5''	2.46	0.45
8:J1:8:LEU:HD13	8:J1:8:LEU:HA	1.78	0.45
14:P1:44:ASN:ND2	15:Q1:75:PHE:O	2.48	0.45
17:S1:62:LYS:NZ	29:A1:1385:G:N7	2.48	0.45
23:Y1:11:SER:HB2	29:A1:1036:A:H5''	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:417:G:H5'	29:A1:2427:G:H5'	1.97	0.45
29:A1:1516:C:O2	29:A1:1574:G:N2	2.50	0.45
29:A1:2078:A:H62	29:A1:2591:A:N6	2.14	0.45
29:A1:2164:C:O2'	29:A1:2165:G:N7	2.46	0.45
29:A1:2168:U:O2'	29:A1:2172:G:N2	2.49	0.45
1:C2:5:LYS:HD3	1:C2:5:LYS:HA	1.67	0.45
1:C2:108:PRO:HB3	1:C2:196:VAL:HA	1.97	0.45
8:J2:73:ASP:OD1	8:J2:73:ASP:N	2.48	0.45
13:O2:98:LYS:NZ	29:A2:2734:G:OP1	2.45	0.45
19:U2:100:VAL:H	19:U2:124:ILE:HG22	1.79	0.45
29:A2:203:A:H2'	29:A2:204:G:C8	2.52	0.45
29:A2:825:G:N2	29:A2:842:A:O2'	2.49	0.45
29:A2:1930:G:OP2	29:A2:1953:G:O2'	2.28	0.45
29:A2:1971:C:H2'	29:A2:1972:G:H8	1.80	0.45
30:B2:68:A:H61	30:B2:110:U:H2'	1.82	0.45
32:B3:132:LYS:HD2	53:A3:1142:G:H5'	1.98	0.45
35:E3:106:PRO:HA	35:E3:109:ILE:HB	1.98	0.45
40:J3:13:HIS:CE1	40:J3:14:LYS:HG2	2.52	0.45
52:X3:137:PHE:CD2	52:W4:160:VAL:HG23	2.52	0.45
53:A3:366:G:H22	53:A3:385:C:N4	2.14	0.45
53:A3:748:G:N2	53:A3:795:C:O2'	2.50	0.45
34:D4:173:TRP:CD1	34:D4:174:LEU:HG	2.52	0.45
53:A4:487:C:O2	53:A4:525:G:N2	2.50	0.45
53:A4:571:G:N1	53:A4:736:A:N7	2.64	0.45
53:A4:587:G:O4'	53:A4:618:G:N2	2.49	0.45
1:C1:77:ALA:HB3	1:C1:117:VAL:HB	1.97	0.45
2:D1:51:PHE:H	2:D1:76:ARG:HB3	1.80	0.45
8:J1:61:VAL:HG21	8:J1:114:ILE:HD13	1.99	0.45
11:M1:42:LYS:HA	11:M1:45:ARG:HE	1.82	0.45
11:M1:60:LEU:HD11	29:A1:1504:G:H5''	1.99	0.45
12:N1:40:ILE:HG21	30:B1:11:G:H5'	1.98	0.45
18:T1:76:CYS:HB2	18:T1:98:VAL:HG21	1.99	0.45
22:X1:17:SER:O	22:X1:67:LYS:NZ	2.49	0.45
24:Z1:56:VAL:HG13	24:Z1:58:ARG:HH12	1.82	0.45
29:A1:655:G:N2	29:A1:663:G:N3	2.64	0.45
29:A1:790:G:H2'	29:A1:791:G:H8	1.81	0.45
29:A1:876:U:H4'	29:A1:877:U:C2	2.51	0.45
29:A1:1336:U:O3'	29:A1:1696:G:N2	2.46	0.45
29:A1:1661:G:H2'	29:A1:1665:C:H42	1.81	0.45
29:A1:2573:C:H2'	29:A1:2574:C:H6	1.81	0.45
29:A1:2771:U:OP2	31:e1:19:ARG:NH2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C2:93:ALA:O	1:C2:105:ILE:N	2.41	0.45
18:T2:15:VAL:O	18:T2:22:GLY:N	2.46	0.45
22:X2:38:GLN:HB2	22:X2:41:ILE:HG12	1.99	0.45
27:c2:30:VAL:HG13	29:A2:494:A:H4'	1.98	0.45
29:A2:556:A:H1'	29:A2:557:G:C5	2.52	0.45
29:A2:1133:A:N3	29:A2:1134:A:N6	2.64	0.45
37:G3:32:ARG:NH2	53:A3:1221:U:O4	2.50	0.45
41:K3:21:ILE:N	41:K3:83:ILE:O	2.43	0.45
48:R3:64:ARG:HH22	53:A3:818:U:H5'	1.81	0.45
53:A3:891:A:H2'	53:A3:892:A:C8	2.51	0.45
53:A3:1022:U:P	53:A3:1023:A:H62	2.39	0.45
53:A3:1211:C:H2'	53:A3:1212:G:C8	2.52	0.45
32:B4:216:SER:OG	32:B4:217:ARG:N	2.50	0.45
47:Q4:77:VAL:HG12	47:Q4:78:GLU:HG3	1.99	0.45
53:A4:217:U:OP1	53:A4:218:U:N3	2.49	0.45
53:A4:294:G:H2'	53:A4:295:A:H8	1.80	0.45
53:A4:917:C:OP1	53:A4:1357:A:O2'	2.34	0.45
53:A4:1493:G:H1	53:A4:1496:A:P	2.39	0.45
2:D1:66:HIS:HA	2:D1:67:PHE:HA	1.55	0.45
2:D1:119:ARG:NH1	2:D1:156:MET:O	2.50	0.45
3:E1:17:ARG:O	3:E1:18:ARG:NH1	2.44	0.45
3:E1:157:VAL:HG22	3:E1:176:LEU:HB3	1.99	0.45
3:E1:158:THR:HG21	3:E1:163:VAL:HB	1.99	0.45
18:T1:81:LYS:HB3	18:T1:84:ARG:HH12	1.82	0.45
22:X1:29:LYS:HE3	22:X1:57:ILE:HD13	1.99	0.45
29:A1:130:G:H2'	29:A1:131:C:C6	2.51	0.45
29:A1:730:G:H2'	29:A1:731:G:C8	2.52	0.45
29:A1:956:C:H2'	29:A1:957:A:C8	2.51	0.45
29:A1:1475:A:OP2	29:A1:1608:G:N2	2.50	0.45
29:A1:2458:G:H2'	29:A1:2459:G:C8	2.52	0.45
1:C2:14:ARG:NH1	29:A2:1742:U:O2'	2.48	0.45
1:C2:53:PHE:HA	1:C2:218:ARG:HB2	1.98	0.45
7:I2:112:LEU:HA	7:I2:115:ARG:HB2	1.97	0.45
19:U2:164:ALA:H	19:U2:165:VAL:HG13	1.82	0.45
29:A2:147:U:H2'	29:A2:148:C:H6	1.81	0.45
29:A2:830:A:N7	29:A2:1810:U:O2'	2.47	0.45
29:A2:1343:C:H2'	29:A2:1344:G:C8	2.52	0.45
29:A2:2311:C:H2'	29:A2:2312:A:C8	2.52	0.45
29:A2:2607:U:H2'	29:A2:2608:C:C6	2.51	0.45
29:A2:2834:G:O2'	29:A2:2837:C:N4	2.49	0.45
37:G3:71:PRO:HB3	37:G3:138:LYS:HB2	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:J3:39:PRO:HB3	53:A3:1133:A:N9	2.32	0.45
42:L3:129:ALA:O	53:A3:481:U:O2'	2.31	0.45
43:M3:59:TYR:HB3	43:M3:64:TRP:CZ2	2.51	0.45
53:A3:190:G:N2	53:A3:259:U:OP1	2.47	0.45
53:A3:370:U:H2'	53:A3:371:G:H8	1.81	0.45
53:A3:452:C:N4	53:A3:458:G:H1	2.14	0.45
33:C4:67:THR:HG23	33:C4:102:ASN:HD22	1.80	0.45
37:G4:104:LEU:HD13	37:G4:124:LEU:HD11	1.99	0.45
47:Q4:58:GLU:HB2	47:Q4:74:LEU:HB3	1.98	0.45
53:A4:712:A:H2'	53:A4:713:G:H8	1.80	0.45
1:C1:184:LYS:H	1:C1:269:PHE:HB3	1.82	0.45
1:C1:202:LYS:HD2	29:A1:1853:U:C2	2.51	0.45
1:C1:260:ARG:HB2	1:C1:264:LYS:HZ3	1.82	0.45
9:K1:56:SER:OG	29:A1:2442:G:N3	2.38	0.45
10:L1:22:LYS:NZ	29:A1:957:A:OP2	2.48	0.45
13:O1:4:GLY:N	29:A1:2887:C:O3'	2.49	0.45
29:A1:321:C:H2'	29:A1:322:C:H6	1.81	0.45
29:A1:2303:G:O2'	29:A1:2397:G:N3	2.48	0.45
29:A1:2442:G:H4'	29:A1:2443:G:C4	2.51	0.45
4:F2:121:ASN:HA	4:F2:181:ARG:HG2	1.98	0.45
9:K2:33:ARG:HD2	29:A2:612:C:H42	1.82	0.45
9:K2:61:ARG:O	29:A2:2407:A:O2'	2.28	0.45
16:R2:88:ARG:NH2	29:A2:797:G:OP1	2.50	0.45
24:Z2:50:VAL:O	43:M4:64:TRP:NE1	2.50	0.45
29:A2:739:G:N2	29:A2:828:U:O3'	2.46	0.45
29:A2:870:A:H2'	29:A2:993:G:C8	2.52	0.45
29:A2:1827:U:H3	29:A2:1858:A:H61	1.63	0.45
32:B3:36:ARG:NH1	32:B3:39:ILE:HB	2.32	0.45
40:J3:45:ARG:HH22	53:A3:1236:G:P	2.40	0.45
40:J3:49:VAL:HG23	44:N3:45:ARG:HD2	1.98	0.45
42:L3:86:ARG:N	42:L3:99:HIS:O	2.48	0.45
47:Q3:63:ARG:HG3	53:A3:124:A:H62	1.81	0.45
53:A3:657:G:H2'	53:A3:658:A:C8	2.51	0.45
53:A3:734:U:H3	53:A3:737:C:H41	1.65	0.45
53:A3:901:C:O2'	53:A3:1381:C:O2'	2.30	0.45
53:A3:1345:A:H1'	53:A3:1347:G:C5	2.52	0.45
33:C4:32:LEU:O	33:C4:59:ARG:NH1	2.46	0.45
34:D4:139:ARG:HB3	34:D4:141:ARG:HH21	1.82	0.45
36:F4:96:PRO:HB3	48:R4:32:ARG:HH22	1.81	0.45
43:M4:10:PRO:HG3	43:M4:15:VAL:HG22	1.99	0.45
46:P4:26:ARG:HG3	46:P4:31:LYS:HB2	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:981:G:H5''	53:A4:982:A:H4'	1.99	0.45
2:D1:120:TRP:CD1	2:D1:155:LYS:HG2	2.52	0.45
7:I1:40:PRO:HB2	14:P1:64:ARG:HE	1.81	0.45
9:K1:38:GLN:HB3	29:A1:854:G:H4'	1.98	0.45
29:A1:181:A:H2'	29:A1:182:C:C6	2.52	0.45
29:A1:602:G:H2'	29:A1:603:A:C8	2.52	0.45
29:A1:1947:U:H2'	29:A1:1948:C:H6	1.81	0.45
29:A1:2122:U:C2	29:A1:2123:U:H1'	2.52	0.45
1:C2:17:THR:HG21	1:C2:204:ILE:HA	1.99	0.45
28:d2:46:ARG:NH2	29:A2:675:G:O2'	2.50	0.45
29:A2:2406:A:H2'	29:A2:2407:A:C4	2.52	0.45
35:E3:7:GLU:HG2	35:E3:35:GLY:O	2.17	0.45
50:T3:66:ALA:HB1	50:T3:72:LEU:HD12	1.98	0.45
53:A3:587:G:N2	53:A3:617:C:O2	2.50	0.45
53:A3:594:A:N6	53:A3:612:G:H1	2.14	0.45
32:B4:135:GLN:HG2	32:B4:139:LYS:HE3	1.98	0.45
53:A4:459:G:H2'	53:A4:460:G:H8	1.81	0.45
53:A4:548:U:H3'	53:A4:549:G:H8	1.81	0.45
1:C1:48:ARG:HH21	29:A1:823:A:P	2.39	0.45
7:I1:112:LEU:HD22	29:A1:582:U:H4'	1.99	0.45
12:N1:95:HIS:HA	12:N1:99:LYS:HE3	1.99	0.45
29:A1:83:A:N6	29:A1:100:G:N3	2.64	0.45
29:A1:172:A:N3	29:A1:462:C:O2'	2.50	0.45
29:A1:198:C:H2'	29:A1:199:C:C6	2.52	0.45
29:A1:1763:G:H2'	29:A1:1764:G:H8	1.82	0.45
29:A1:2318:G:H1	29:A1:2326:U:H3	1.65	0.45
29:A1:2526:C:N3	29:A1:2588:G:N1	2.65	0.45
31:e1:18:ARG:HA	31:e1:23:VAL:HA	1.99	0.45
2:D2:8:LYS:HD3	2:D2:192:ASN:HA	1.98	0.45
16:R2:50:VAL:HG11	16:R2:105:VAL:HB	1.99	0.45
20:V2:25:ARG:NH2	29:A2:2369:C:OP1	2.40	0.45
29:A2:902:G:H2'	29:A2:903:G:C8	2.52	0.45
29:A2:2143:A:C2	29:A2:2145:G:H5'	2.51	0.45
29:A2:2263:U:C4	29:A2:2266:G:H5'	2.52	0.45
53:A3:27:G:C2	53:A3:28:G:H1'	2.51	0.45
53:A3:112:A:O2'	53:A3:235:C:N4	2.50	0.45
53:A3:1047:U:H5''	53:A3:1171:G:H22	1.82	0.45
36:F4:22:GLU:HA	36:F4:82:ARG:HH22	1.82	0.45
39:I4:46:ALA:HB2	39:I4:74:ILE:HD12	1.98	0.45
43:M4:2:ALA:HA	43:M4:53:VAL:HG13	1.99	0.45
43:M4:66:LEU:HD12	43:M4:69:GLU:HG2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:664:C:H3'	53:A4:665:G:H8	1.81	0.45
53:A4:1004:G:O6	53:A4:1015:G:N2	2.50	0.45
54:V4:113:GLU:HB3	54:V4:115:ARG:NE	2.32	0.45
1:C1:86:PRO:HG3	29:A1:1616:A:C8	2.52	0.45
1:C1:128:GLY:H	1:C1:193:VAL:HB	1.82	0.45
2:D1:39:PRO:HG3	2:D1:45:THR:HG23	1.98	0.45
11:M1:3:HIS:H	11:M1:5:LYS:NZ	2.15	0.45
19:U1:59:LEU:H	19:U1:67:LEU:H	1.65	0.45
29:A1:1484:G:O6	29:A1:1605:C:N4	2.50	0.45
29:A1:2674:A:H3'	29:A1:2675:G:H8	1.81	0.45
2:D2:47:VAL:HG13	2:D2:81:ILE:H	1.81	0.45
9:K2:46:LYS:HD2	9:K2:51:PHE:CG	2.52	0.45
10:L2:123:HIS:ND1	29:A2:2480:C:O2'	2.50	0.45
18:T2:48:ALA:HB2	18:T2:61:ILE:HG12	1.99	0.45
29:A2:473:C:H2'	29:A2:474:G:C8	2.52	0.45
29:A2:632:U:H2'	29:A2:633:A:C8	2.48	0.45
29:A2:1331:G:N2	29:A2:1334:A:OP2	2.39	0.45
29:A2:2025:A:H2'	29:A2:2026:G:C8	2.52	0.45
29:A2:2817:C:N4	29:A2:2818:G:O6	2.50	0.45
31:e2:18:ARG:HA	31:e2:23:VAL:HA	1.99	0.45
34:D3:62:GLN:NE2	53:A3:527:G:OP1	2.50	0.45
42:L3:38:THR:HG22	42:L3:39:VAL:HG23	1.98	0.45
47:Q3:11:VAL:HA	47:Q3:85:VAL:HG13	1.98	0.45
53:A3:145:A:H3'	53:A3:146:A:H8	1.82	0.45
53:A3:473:C:H2'	53:A3:474:G:H8	1.81	0.45
35:E4:34:VAL:O	35:E4:42:GLY:N	2.42	0.45
40:J4:23:ILE:HB	40:J4:72:VAL:HB	1.98	0.45
43:M4:37:THR:HB	43:M4:39:ILE:HD12	1.98	0.45
46:P4:74:LEU:HA	46:P4:77:ALA:HB3	1.99	0.45
53:A4:413:C:O2	53:A4:421:G:N2	2.35	0.45
53:A4:805:C:H2'	53:A4:806:G:H8	1.81	0.45
53:A4:871:G:H2'	53:A4:872:G:C8	2.51	0.45
53:A4:1314:A:H3'	53:A4:1315:G:H8	1.83	0.45
4:F1:19:LEU:HB2	4:F1:31:VAL:HG22	2.00	0.44
9:K1:17:LYS:NZ	29:A1:711:G:OP1	2.47	0.44
10:L1:62:GLY:N	19:U1:179:ASP:OD1	2.50	0.44
10:L1:134:ARG:NH2	10:L1:139:GLU:HG2	2.31	0.44
14:P1:14:HIS:NE2	29:A1:608:G:OP2	2.47	0.44
16:R1:29:LEU:HB2	16:R1:70:TYR:HA	1.99	0.44
18:T1:7:VAL:HG21	18:T1:72:VAL:HG23	1.99	0.44
27:c1:5:TRP:O	29:A1:1660:C:O2'	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:441:C:N4	29:A1:2424:G:H1	2.13	0.44
29:A1:1676:G:N2	29:A1:2713:C:OP1	2.50	0.44
29:A1:2240:C:H2'	29:A1:2241:A:C8	2.52	0.44
29:A1:2276:U:H3	29:A1:2292:A:N6	2.09	0.44
29:A1:2640:C:H2'	29:A1:2641:G:C8	2.52	0.44
5:G2:5:GLY:O	5:G2:69:ARG:NH2	2.50	0.44
5:G2:43:VAL:HA	5:G2:52:VAL:HA	2.00	0.44
10:L2:82:ARG:NH1	29:A2:2265:G:OP2	2.51	0.44
16:R2:54:ALA:HB1	16:R2:107:LEU:HD11	1.99	0.44
29:A2:1748:G:O2'	29:A2:1749:A:O3'	2.33	0.44
29:A2:2047:G:H2'	29:A2:2048:G:C8	2.52	0.44
29:A2:2298:C:O2	29:A2:2339:G:N1	2.50	0.44
29:A2:2317:G:H2'	29:A2:2318:G:C8	2.52	0.44
29:A2:2529:C:O2'	29:A2:2530:G:O4'	2.24	0.44
33:C3:134:ILE:HG13	33:C3:135:LYS:HD2	1.97	0.44
34:D3:36:ARG:HE	53:A3:421:G:P	2.40	0.44
40:J3:60:ARG:NH1	53:A3:1348:C:O3'	2.51	0.44
50:T3:73:HIS:H	50:T3:76:ALA:HB3	1.80	0.44
52:X3:135:LYS:O	52:X3:162:ARG:NH2	2.49	0.44
53:A3:743:G:H3'	53:A3:744:G:H8	1.83	0.44
54:V3:110:PRO:O	54:V3:113:GLU:HG2	2.16	0.44
32:B4:83:MET:O	32:B4:87:ARG:NH1	2.50	0.44
35:E4:72:GLN:HG2	35:E4:76:ILE:HG22	1.99	0.44
37:G4:73:MET:HE2	37:G4:145:ALA:HA	1.99	0.44
37:G4:76:ARG:NH2	53:A4:1360:C:O2	2.50	0.44
42:L4:45:PRO:HG2	42:L4:50:SER:HA	1.99	0.44
43:M4:90:LEU:HD21	49:S4:76:PRO:HB3	1.99	0.44
53:A4:100:G:O6	53:A4:101:G:N2	2.45	0.44
53:A4:102:A:N7	53:A4:321:G:H2'	2.32	0.44
53:A4:877:A:H2'	53:A4:878:A:C8	2.52	0.44
53:A4:1386:C:H1'	53:A4:1476:A:N1	2.32	0.44
9:K1:132:LYS:HA	9:K1:135:LEU:HD12	1.99	0.44
15:Q1:35:LEU:N	15:Q1:57:VAL:O	2.44	0.44
29:A1:116:A:O2'	29:A1:168:G:OP1	2.30	0.44
29:A1:589:C:N3	29:A1:590:C:N4	2.65	0.44
29:A1:2497:C:H2'	29:A1:2498:G:H8	1.82	0.44
30:B1:86:C:H2'	30:B1:87:G:C8	2.53	0.44
7:I2:91:LEU:HA	7:I2:95:PRO:HB3	1.99	0.44
7:I2:129:PRO:O	7:I2:134:ARG:NH2	2.40	0.44
9:K2:71:VAL:HG13	29:A2:236:C:H5'	1.99	0.44
13:O2:30:VAL:HB	13:O2:45:PHE:H	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:P2:66:ASN:O	14:P2:70:ARG:NH1	2.51	0.44
29:A2:437:C:H2'	29:A2:438:G:C8	2.51	0.44
29:A2:617:G:N3	29:A2:715:G:N2	2.47	0.44
29:A2:632:U:N3	29:A2:648:A:N1	2.55	0.44
29:A2:1147:G:H5''	29:A2:1148:C:C4	2.52	0.44
33:C3:12:LEU:HB3	33:C3:18:TRP:CH2	2.52	0.44
35:E3:150:ARG:HD2	35:E3:150:ARG:HA	1.74	0.44
36:F3:22:GLU:OE2	36:F3:82:ARG:NE	2.46	0.44
50:T3:38:LYS:HA	50:T3:41:ILE:HG12	1.99	0.44
53:A3:446:A:H62	53:A3:464:U:H3	1.64	0.44
53:A3:751:A:H1'	53:A3:1489:U:H1'	1.97	0.44
53:A3:816:U:H3	53:A3:830:G:H1	1.64	0.44
53:A3:1423:G:H5'	53:A3:1424:G:H5'	1.98	0.44
34:D4:31:CYS:HA	34:D4:35:ARG:HD2	1.98	0.44
37:G4:115:ARG:HG3	37:G4:117:ALA:H	1.83	0.44
41:K4:82:VAL:HG21	41:K4:105:VAL:HG12	1.99	0.44
44:N4:19:ARG:HG3	53:A4:1298:C:H41	1.83	0.44
45:O4:3:ILE:HG22	45:O4:38:ARG:HE	1.81	0.44
47:Q4:52:LYS:N	47:Q4:55:ASP:OD2	2.42	0.44
50:T4:63:ILE:HD13	50:T4:63:ILE:HA	1.88	0.44
53:A4:279:G:H2'	53:A4:280:G:C8	2.52	0.44
53:A4:816:U:H2'	53:A4:817:C:H6	1.82	0.44
53:A4:960:A:O2'	53:A4:1031:U:O2'	2.20	0.44
1:C1:121:PRO:HB3	1:C1:132:PRO:HG2	1.99	0.44
1:C1:147:LEU:HB2	1:C1:155:LEU:HD11	1.99	0.44
3:E1:73:ALA:HA	29:A1:1303:U:C4	2.52	0.44
8:J1:43:VAL:O	8:J1:55:GLY:N	2.50	0.44
11:M1:64:ARG:HA	11:M1:67:LEU:HB3	1.99	0.44
12:N1:66:ALA:HB1	12:N1:101:LEU:HD13	1.98	0.44
15:Q1:20:LEU:HB3	15:Q1:94:LEU:HB2	2.00	0.44
24:Z1:54:GLY:O	43:M3:80:ARG:NH1	2.50	0.44
27:c1:33:ARG:NH2	29:A1:199:C:OP1	2.34	0.44
29:A1:12:U:C4	29:A1:2640:C:H4'	2.52	0.44
29:A1:344:C:H2'	29:A1:345:A:C8	2.52	0.44
29:A1:881:G:P	29:A1:991:G:H1	2.40	0.44
29:A1:1009:G:O2'	29:A1:2511:A:OP1	2.28	0.44
29:A1:1408:A:H62	29:A1:1419:G:H21	1.66	0.44
29:A1:1514:G:O2'	29:A1:1593:A:N6	2.50	0.44
29:A1:2313:G:H22	29:A1:2332:G:H8	1.65	0.44
21:W2:85:LEU:HD22	21:W2:89:GLU:HB2	1.99	0.44
29:A2:458:A:H2'	29:A2:459:G:C4	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:522:G:H2'	29:A2:523:G:C8	2.52	0.44
29:A2:1399:C:O2'	29:A2:1620:A:N3	2.48	0.44
29:A2:2117:G:H2'	29:A2:2118:G:C8	2.52	0.44
29:A2:2552:C:H2'	29:A2:2553:C:C6	2.52	0.44
29:A2:2804:C:H1'	29:A2:2903:A:H2	1.81	0.44
51:U3:3:LYS:NZ	53:A3:1334:G:OP1	2.43	0.44
53:A3:1029:G:N2	53:A3:1196:G:OP1	2.50	0.44
32:B4:12:GLU:HB3	32:B4:17:PHE:H	1.81	0.44
53:A4:352:G:H5'	53:A4:362:U:H2'	1.98	0.44
1:C1:47:GLY:HA3	29:A1:822:U:H5'	1.99	0.44
1:C1:106:ILE:HG23	1:C1:108:PRO:HD3	1.99	0.44
3:E1:161:GLU:O	3:E1:165:ARG:N	2.51	0.44
3:E1:197:ASP:HA	3:E1:200:GLU:HB2	2.00	0.44
18:T1:44:ILE:HG12	18:T1:65:ALA:HB2	1.98	0.44
8:J2:12:ASP:HB3	8:J2:98:VAL:HG12	1.99	0.44
16:R2:14:PRO:HB2	16:R2:18:ARG:HH21	1.83	0.44
17:S2:56:THR:HA	17:S2:79:ALA:HA	1.99	0.44
29:A2:5:A:H3'	29:A2:6:A:C8	2.52	0.44
29:A2:37:C:O2'	29:A2:479:C:OP1	2.35	0.44
29:A2:375:U:H3'	29:A2:376:G:C8	2.52	0.44
29:A2:600:A:OP2	29:A2:2079:C:N4	2.49	0.44
35:E3:40:ARG:HA	35:E3:68:GLU:HA	2.00	0.44
35:E3:147:ASP:HA	35:E3:150:ARG:HB3	2.00	0.44
50:T3:80:ARG:O	50:T3:84:LEU:N	2.50	0.44
53:A3:748:G:N2	53:A3:796:U:OP1	2.50	0.44
53:A3:1300:A:O2'	53:A3:1304:G:N7	2.38	0.44
32:B4:22:LYS:HA	32:B4:24:TRP:CD1	2.52	0.44
42:L4:32:PHE:CG	42:L4:84:LEU:HD11	2.52	0.44
53:A4:102:A:H62	53:A4:319:G:H21	1.65	0.44
53:A4:414:C:O2	53:A4:421:G:N2	2.50	0.44
53:A4:1497:G:H2'	53:A4:1498:G:C8	2.53	0.44
2:D1:130:GLY:HA3	29:A1:2594:U:H4'	1.99	0.44
5:G1:59:ARG:NH2	29:A1:2764:A:N3	2.65	0.44
7:I1:24:GLY:N	29:A1:1187:C:OP1	2.50	0.44
10:L1:125:LEU:HA	10:L1:125:LEU:HD23	1.83	0.44
18:T1:42:VAL:HG13	18:T1:65:ALA:HB3	1.99	0.44
19:U1:111:VAL:HG21	19:U1:145:GLU:HA	2.00	0.44
25:a1:46:CYS:HB2	25:a1:49:CYS:H	1.83	0.44
29:A1:2128:G:N7	29:A1:2210:G:N2	2.66	0.44
29:A1:2822:A:C6	29:A1:2823:G:H1'	2.53	0.44
29:A1:2831:G:H3'	29:A1:2833:A:H62	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:2852:C:H2'	29:A1:2853:C:H6	1.81	0.44
1:C2:88:ARG:HH12	1:C2:106:ILE:HD12	1.83	0.44
1:C2:239:ARG:N	29:A2:2605:C:OP2	2.29	0.44
3:E2:154:VAL:HA	3:E2:191:ARG:HB2	1.99	0.44
5:G2:65:HIS:CE1	5:G2:69:ARG:HD3	2.53	0.44
19:U2:70:LEU:HG	19:U2:72:ARG:HH12	1.82	0.44
19:U2:123:ASP:OD1	19:U2:123:ASP:N	2.48	0.44
21:W2:50:ARG:HD2	29:A2:2223:A:H5''	1.99	0.44
29:A2:206:A:H3'	29:A2:207:G:H8	1.83	0.44
29:A2:217:A:H1'	29:A2:218:A:C5	2.53	0.44
29:A2:1537:U:N3	29:A2:1545:U:OP1	2.50	0.44
29:A2:2384:G:H2'	29:A2:2385:G:C8	2.52	0.44
29:A2:2608:C:N4	29:A2:2609:G:O6	2.51	0.44
33:C3:57:ILE:HG12	33:C3:66:VAL:HG13	2.00	0.44
33:C3:59:ARG:HD3	33:C3:97:LYS:NZ	2.33	0.44
36:F3:10:LEU:HB2	36:F3:58:GLY:HA2	1.98	0.44
37:G3:31:MET:O	37:G3:32:ARG:NH1	2.44	0.44
50:T3:92:LEU:HB3	50:T3:97:ALA:HB3	1.99	0.44
53:A3:87:C:H2'	53:A3:88:G:C8	2.53	0.44
53:A3:131:C:H5''	53:A3:132:G:H5'	1.98	0.44
53:A3:887:C:H2'	53:A3:888:U:O4'	2.17	0.44
53:A3:1199:C:H2'	53:A3:1200:U:C2	2.53	0.44
54:V3:57:GLU:HG3	54:V3:68:ARG:HD2	1.99	0.44
37:G4:46:ALA:HB1	37:G4:50:ILE:HD12	1.99	0.44
39:I4:50:LEU:HD13	39:I4:56:LEU:HD11	1.99	0.44
53:A4:502:C:H6	53:A4:512:G:H21	1.66	0.44
53:A4:757:G:H3'	53:A4:758:G:H8	1.83	0.44
53:A4:865:G:H3'	53:A4:866:A:C8	2.52	0.44
53:A4:991:G:N2	53:A4:994:A:H8	2.15	0.44
53:A4:1215:C:N4	53:A4:1216:U:O2	2.50	0.44
3:E1:154:VAL:O	3:E1:174:VAL:N	2.43	0.44
10:L1:23:GLY:O	10:L1:101:ARG:NH1	2.40	0.44
14:P1:10:ARG:NH2	29:A1:1299:C:O2'	2.51	0.44
14:P1:19:LYS:HA	14:P1:22:LYS:HG3	1.99	0.44
18:T1:9:LYS:HE2	18:T1:30:VAL:H	1.83	0.44
21:W1:5:CYS:N	21:W1:9:GLY:HA2	2.33	0.44
23:Y1:8:LEU:HA	23:Y1:54:VAL:HG22	2.00	0.44
23:Y1:8:LEU:HD22	23:Y1:28:LEU:HD13	1.98	0.44
29:A1:319:A:H62	29:A1:369:G:H21	1.66	0.44
29:A1:691:A:N7	29:A1:694:C:N4	2.66	0.44
29:A1:2541:C:N4	29:A1:2550:G:H1	2.12	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:203:A:H2'	29:A2:204:G:H8	1.81	0.44
29:A2:250:G:H2'	29:A2:251:G:C8	2.53	0.44
29:A2:874:C:H42	29:A2:881:G:H1	1.65	0.44
29:A2:908:G:H22	29:A2:964:G:H2'	1.81	0.44
29:A2:1489:G:H2'	29:A2:1490:G:C8	2.52	0.44
29:A2:2527:G:H2'	29:A2:2528:U:C6	2.53	0.44
29:A2:2829:G:H21	29:A2:2848:U:H1'	1.83	0.44
30:B2:32:C:O2'	30:B2:60:A:N1	2.45	0.44
30:B2:86:C:N3	30:B2:96:C:N4	2.66	0.44
32:B3:68:ILE:HG23	32:B3:162:ILE:HA	2.00	0.44
39:I3:68:GLY:HA3	39:I3:73:GLN:HE21	1.82	0.44
43:M3:69:GLU:HA	43:M3:72:ALA:HB3	1.98	0.44
50:T3:89:ARG:HH22	50:T3:105:SER:H	1.64	0.44
53:A3:182:C:H2'	53:A3:183:G:C8	2.52	0.44
32:B4:24:TRP:HZ3	32:B4:26:PRO:HB3	1.83	0.44
32:B4:55:PHE:HA	32:B4:58:ILE:HG12	1.98	0.44
43:M4:88:ARG:HD3	43:M4:98:VAL:HG11	1.99	0.44
45:O4:35:ARG:HD2	45:O4:38:ARG:HG3	2.00	0.44
53:A4:734:U:O2'	53:A4:735:G:O5'	2.34	0.44
53:A4:748:G:N2	53:A4:795:C:O2'	2.51	0.44
53:A4:1145:C:H42	53:A4:1153:C:H42	1.65	0.44
5:G1:98:LEU:HD11	5:G1:124:GLU:HA	2.00	0.44
19:U1:61:LEU:HD12	19:U1:65:GLN:HG3	1.99	0.44
19:U1:67:LEU:HD21	19:U1:90:VAL:HG22	2.00	0.44
23:Y1:50:VAL:HB	23:Y1:53:LEU:HD22	1.99	0.44
27:c1:12:ARG:NH1	27:c1:45:ALA:O	2.50	0.44
29:A1:253:C:O2'	29:A1:459:G:N3	2.44	0.44
29:A1:463:U:O2'	29:A1:465:C:N4	2.50	0.44
29:A1:790:G:H2'	29:A1:791:G:C8	2.53	0.44
29:A1:1445:U:H5''	29:A1:1446:C:H5	1.83	0.44
29:A1:2106:A:H62	29:A1:2251:G:H21	1.66	0.44
3:E2:161:GLU:HA	3:E2:164:ARG:HB2	2.00	0.44
4:F2:122:PRO:HG3	4:F2:170:ARG:HH12	1.83	0.44
11:M2:65:LEU:HA	11:M2:68:ARG:HG3	2.00	0.44
12:N2:89:ARG:NH1	29:A2:2307:C:OP1	2.51	0.44
14:P2:12:ARG:NH2	29:A2:1263:G:OP2	2.50	0.44
15:Q2:83:ARG:NH1	29:A2:1273:G:O3'	2.50	0.44
29:A2:1077:A:H61	29:A2:1173:G:H2'	1.81	0.44
29:A2:1576:A:P	29:A2:1591:A:H61	2.40	0.44
29:A2:1756:G:N7	29:A2:1789:G:N2	2.66	0.44
29:A2:2118:G:H2'	29:A2:2119:C:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2650:U:H1'	29:A2:2798:G:H22	1.82	0.44
32:B3:13:ALA:HB3	32:B3:209:ARG:HH22	1.83	0.44
32:B3:16:HIS:ND1	32:B3:210:SER:OG	2.36	0.44
34:D3:23:GLY:HA2	34:D3:113:SER:HB3	1.99	0.44
38:H3:16:ALA:HA	38:H3:19:VAL:HG22	1.98	0.44
53:A3:545:C:H41	53:A3:861:U:H2'	1.83	0.44
53:A3:577:G:N2	53:A3:628:C:H42	2.16	0.44
53:A3:596:C:H2'	53:A3:597:A:H8	1.83	0.44
32:B4:156:LYS:HA	32:B4:156:LYS:HD3	1.88	0.44
52:W4:170:ASN:HB3	52:W4:172:ILE:HD12	1.98	0.44
53:A4:294:G:H2'	53:A4:295:A:C8	2.53	0.44
53:A4:567:G:O6	53:A4:741:G:N2	2.51	0.44
53:A4:1028:A:H61	53:A4:1193:U:H5	1.64	0.44
53:A4:1104:U:H3	53:A4:1133:A:N6	2.15	0.44
2:D1:115:GLY:O	2:D1:119:ARG:N	2.50	0.44
3:E1:52:LYS:HB2	3:E1:87:GLY:HA2	2.00	0.44
10:L1:28:ALA:H	10:L1:105:GLU:CD	2.25	0.44
13:O1:16:ARG:NH2	13:O1:18:ASP:OD2	2.51	0.44
27:c1:10:ARG:HG2	29:A1:123:G:N1	2.33	0.44
29:A1:601:U:H2'	29:A1:602:G:C8	2.52	0.44
29:A1:946:C:N3	29:A1:947:A:H1'	2.33	0.44
29:A1:1025:G:H22	29:A1:1034:C:H42	1.64	0.44
29:A1:1451:C:H5''	29:A1:1520:A:H4'	1.98	0.44
29:A1:1527:G:OP2	29:A1:1558:A:N6	2.51	0.44
29:A1:1891:G:H21	29:A1:1909:A:H62	1.65	0.44
3:E2:155:LEU:HB2	3:E2:189:THR:HG21	1.99	0.44
5:G2:77:LYS:HE3	5:G2:138:LYS:HD2	1.99	0.44
9:K2:70:GLN:NE2	29:A2:417:G:N7	2.66	0.44
19:U2:163:LEU:HB3	19:U2:165:VAL:HG22	1.99	0.44
29:A2:274:G:C2	29:A2:276:C:H1'	2.52	0.44
29:A2:1079:G:O2'	31:e2:7:VAL:O	2.30	0.44
29:A2:1956:A:H62	29:A2:1992:G:N2	2.16	0.44
29:A2:1982:C:H2'	29:A2:1983:G:C8	2.53	0.44
29:A2:2521:C:H5''	29:A2:2587:C:H41	1.83	0.44
29:A2:2621:G:H2'	29:A2:2622:G:C8	2.53	0.44
29:A2:2726:U:H2'	29:A2:2727:A:C8	2.52	0.44
34:D3:188:LEU:HA	34:D3:189:PRO:HD3	1.83	0.44
36:F3:8:ILE:HG23	36:F3:85:VAL:HG13	1.99	0.44
47:Q3:57:VAL:HG21	47:Q3:73:VAL:HG13	1.99	0.44
53:A3:701:G:OP2	53:A3:702:C:N4	2.51	0.44
53:A3:941:A:N6	53:A3:942:A:H62	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:D4:10:ARG:NH1	53:A4:525:G:OP1	2.50	0.44
53:A4:400:U:OP1	53:A4:401:G:O2'	2.30	0.44
53:A4:743:G:H2'	53:A4:744:G:H8	1.82	0.44
53:A4:956:C:N4	53:A4:957:C:O2	2.51	0.44
1:C1:98:VAL:HA	29:A1:1549:C:H4'	2.00	0.44
1:C1:244:ARG:NH1	29:A1:2253:G:OP2	2.41	0.44
2:D1:55:ASN:HD22	2:D1:56:PRO:HD2	1.83	0.44
12:N1:26:LEU:HD23	12:N1:87:PHE:HD1	1.82	0.44
17:S1:65:ARG:NH2	29:A1:1382:G:OP2	2.50	0.44
21:W1:91:LYS:HD2	21:W1:94:LEU:HD12	1.99	0.44
28:d1:29:LYS:HE3	28:d1:29:LYS:HB2	1.83	0.44
29:A1:768:C:H2'	29:A1:769:C:H6	1.82	0.44
29:A1:1479:U:O2	29:A1:1612:G:N2	2.50	0.44
29:A1:1597:C:N3	29:A1:1598:C:N4	2.65	0.44
30:B1:7:C:H5'	30:B1:63:G:H21	1.83	0.44
7:I2:24:GLY:HA3	29:A2:1187:C:H5'	1.98	0.44
7:I2:90:MET:HE3	7:I2:98:VAL:HG12	1.99	0.44
29:A2:748:A:H62	29:A2:782:G:H21	1.65	0.44
29:A2:1261:A:H61	29:A2:1283:G:H1'	1.83	0.44
29:A2:1389:U:HO2'	29:A2:1445:U:HO2'	1.64	0.44
29:A2:1742:U:H5''	29:A2:1743:C:H5	1.83	0.44
29:A2:2269:G:H3'	29:A2:2270:G:C8	2.52	0.44
34:D3:22:LYS:NZ	53:A3:425:A:OP2	2.50	0.44
34:D3:159:ARG:HG2	34:D3:162:LEU:HD21	2.00	0.44
39:I3:127:LYS:H	39:I3:127:LYS:HD2	1.83	0.44
41:K3:66:LEU:HB2	41:K3:97:ALA:HB1	2.00	0.44
46:P3:25:ARG:HH22	53:A3:101:G:P	2.41	0.44
50:T3:17:ARG:HG2	50:T3:20:LEU:HD12	2.00	0.44
50:T3:38:LYS:HA	50:T3:38:LYS:HD3	1.80	0.44
53:A3:606:C:H2'	53:A3:607:C:H6	1.83	0.44
53:A3:660:U:H3	53:A3:696:G:H22	1.65	0.44
53:A3:812:G:H2'	53:A3:813:G:H8	1.83	0.44
53:A3:1415:A:H2'	53:A3:1416:A:C8	2.53	0.44
32:B4:17:PHE:HA	32:B4:42:ILE:HG12	1.99	0.44
34:D4:41:GLY:N	53:A4:422:U:OP1	2.49	0.44
34:D4:153:ARG:HH12	34:D4:182:LYS:NZ	2.16	0.44
37:G4:122:HIS:O	37:G4:126:ASP:N	2.51	0.44
44:N4:35:ARG:NH2	53:A4:1339:U:OP2	2.51	0.44
46:P4:68:ASP:O	46:P4:71:ARG:NE	2.49	0.44
53:A4:1324:G:N7	53:A4:1325:C:N4	2.66	0.44
54:V4:43:SER:O	54:V4:55:ARG:N	2.45	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:K1:88:LEU:HD21	9:K1:100:LEU:HD21	1.98	0.43
28:d1:54:GLU:HA	28:d1:57:ARG:HE	1.83	0.43
29:A1:1095:G:H2'	29:A1:1158:G:N3	2.33	0.43
29:A1:1096:A:OP1	29:A1:1157:C:N4	2.36	0.43
29:A1:2032:C:H2'	29:A1:2033:G:C8	2.53	0.43
29:A1:2329:G:H2'	29:A1:2330:C:C6	2.53	0.43
29:A1:2451:U:O2'	29:A1:2452:U:O4'	2.32	0.43
29:A1:2528:U:H2'	29:A1:2529:C:C6	2.53	0.43
4:F2:113:ARG:HH12	4:F2:142:PRO:HD3	1.83	0.43
9:K2:131:SER:O	9:K2:135:LEU:N	2.42	0.43
13:O2:1:MET:N	29:A2:2832:A:N7	2.66	0.43
29:A2:181:A:H2'	29:A2:182:C:C6	2.52	0.43
29:A2:2122:U:O2	29:A2:2216:G:N1	2.51	0.43
29:A2:2852:C:H2'	29:A2:2853:C:H6	1.83	0.43
53:A3:756:G:H1	53:A3:789:C:H42	1.65	0.43
38:H4:91:ARG:NH2	53:A4:547:C:O2'	2.50	0.43
40:J4:70:ARG:NH2	53:A4:1133:A:N3	2.59	0.43
46:P4:25:ARG:NH2	53:A4:100:G:O2'	2.51	0.43
49:S4:15:LEU:HD23	49:S4:34:TRP:HB2	2.00	0.43
49:S4:37:ARG:NH2	53:A4:1201:G:OP2	2.51	0.43
50:T4:75:ASN:ND2	53:A4:257:A:O2'	2.51	0.43
53:A4:22:G:H2'	53:A4:23:C:H6	1.83	0.43
53:A4:870:C:N4	53:A4:871:G:O6	2.51	0.43
5:G1:141:VAL:O	5:G1:145:ALA:N	2.41	0.43
12:N1:64:GLU:OE1	12:N1:67:ARG:NE	2.41	0.43
18:T1:2:ARG:NH2	29:A1:104:C:O2'	2.50	0.43
19:U1:52:SER:HG	19:U1:54:HIS:HD1	1.65	0.43
25:a1:8:LYS:NZ	29:A1:2079:C:OP1	2.50	0.43
29:A1:119:G:O6	29:A1:128:C:N4	2.51	0.43
29:A1:243:C:H2'	29:A1:244:G:C8	2.54	0.43
29:A1:250:G:H2'	29:A1:251:G:C8	2.53	0.43
29:A1:263:C:N4	29:A1:283:G:O6	2.51	0.43
29:A1:554:C:N4	29:A1:2794:U:OP2	2.51	0.43
29:A1:1320:A:C8	29:A1:1321:U:H3'	2.53	0.43
29:A1:1920:G:H2'	29:A1:1921:G:H8	1.83	0.43
29:A1:2067:C:H2'	29:A1:2068:C:C6	2.53	0.43
29:A1:2413:G:H2'	29:A1:2414:G:C8	2.53	0.43
29:A1:2662:C:H2'	29:A1:2663:U:H6	1.83	0.43
10:L2:35:VAL:HG11	19:U2:81:ARG:HH12	1.82	0.43
11:M2:22:ARG:HG2	11:M2:69:ASP:O	2.17	0.43
29:A2:1142:U:O3'	29:A2:1146:A:N6	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:1585:C:H2'	29:A2:1586:G:C8	2.53	0.43
29:A2:1732:C:H2'	29:A2:1733:C:H6	1.82	0.43
29:A2:2061:G:H2'	29:A2:2062:G:C8	2.53	0.43
35:E3:35:GLY:HA2	35:E3:41:VAL:HA	2.00	0.43
35:E3:48:ALA:HB2	35:E3:57:LYS:HD2	1.99	0.43
36:F3:101:ALA:HB2	48:R3:28:GLU:HG3	2.00	0.43
41:K3:17:GLY:O	41:K3:81:ASP:N	2.40	0.43
45:O3:64:ARG:NH1	53:A3:564:G:O3'	2.51	0.43
49:S3:36:ARG:HE	53:A3:1201:G:HO2'	1.59	0.43
52:X3:160:VAL:O	52:W4:160:VAL:N	2.45	0.43
53:A3:1006:C:C4	53:A3:1007:C:H1'	2.53	0.43
53:A3:1489:U:H2'	53:A3:1490:A:C8	2.52	0.43
38:H4:85:ARG:NH2	38:H4:87:SER:HB3	2.33	0.43
53:A4:1003:U:O2'	53:A4:1004:G:O4'	2.33	0.43
53:A4:1166:G:H2'	53:A4:1167:G:C8	2.53	0.43
2:D1:14:ILE:HG12	2:D1:23:VAL:HG22	1.99	0.43
10:L1:46:GLN:O	10:L1:50:ALA:N	2.47	0.43
20:V1:41:ARG:O	29:A1:2344:G:N2	2.38	0.43
27:c1:34:ARG:NH2	27:c1:39:ARG:HD2	2.33	0.43
29:A1:908:G:H1'	29:A1:909:U:H5	1.83	0.43
29:A1:1035:G:O6	29:A1:1036:A:N6	2.51	0.43
29:A1:1180:A:H2'	29:A1:1181:U:C6	2.53	0.43
29:A1:1631:C:H4'	29:A1:1634:A:N7	2.33	0.43
3:E2:80:ALA:O	3:E2:82:ILE:N	2.49	0.43
8:J2:42:SER:HA	8:J2:58:VAL:HG22	1.99	0.43
25:a2:3:LYS:HD3	29:A2:2039:A:H2	1.83	0.43
29:A2:601:U:H2'	29:A2:602:G:C8	2.53	0.43
29:A2:1021:G:N2	29:A2:1233:G:H1'	2.33	0.43
29:A2:1064:G:H1	29:A2:1194:C:N4	2.16	0.43
29:A2:1891:G:O2'	29:A2:1892:A:O4'	2.36	0.43
29:A2:1893:G:C2	29:A2:1894:G:H1'	2.54	0.43
29:A2:2117:G:O2'	29:A2:2222:A:N1	2.51	0.43
29:A2:2211:G:N2	29:A2:2212:C:O2	2.51	0.43
29:A2:2865:C:N4	29:A2:2876:G:H1	2.16	0.43
30:B2:46:G:H1'	30:B2:49:C:H42	1.83	0.43
34:D3:127:THR:HB	34:D3:147:ALA:HB3	2.01	0.43
36:F3:94:GLN:HB3	48:R3:32:ARG:HD3	1.99	0.43
37:G3:3:ARG:NH2	53:A3:910:G:N7	2.66	0.43
40:J3:28:ARG:HH12	40:J3:33:GLN:HE21	1.65	0.43
52:X3:138:GLU:HG2	52:X3:140:LYS:HD3	2.01	0.43
53:A3:533:G:H2'	53:A3:534:U:H6	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G4:79:ARG:HB3	53:A4:1364:C:C2	2.53	0.43
39:I4:83:ARG:NH2	39:I4:102:LEU:HA	2.33	0.43
40:J4:16:LEU:HD22	40:J4:20:ALA:HB2	1.99	0.43
53:A4:29:G:H2'	53:A4:30:U:H6	1.83	0.43
53:A4:248:U:H2'	53:A4:249:G:C8	2.54	0.43
53:A4:804:G:H2'	53:A4:805:C:C6	2.53	0.43
53:A4:995:G:C5	53:A4:996:C:H1'	2.54	0.43
11:M1:95:THR:OG1	11:M1:115:GLU:O	2.29	0.43
27:c1:34:ARG:O	27:c1:37:LYS:N	2.45	0.43
29:A1:325:A:O2'	29:A1:343:C:O2'	2.29	0.43
29:A1:669:G:O2'	29:A1:673:A:N6	2.32	0.43
29:A1:2032:C:H2'	29:A1:2033:G:H8	1.83	0.43
29:A1:2081:A:H2'	29:A1:2082:A:C4	2.53	0.43
29:A1:2369:C:H2'	29:A1:2370:C:H6	1.83	0.43
29:A1:2648:G:H1	29:A1:2799:C:H42	1.66	0.43
1:C2:89:SER:O	1:C2:91:ARG:NH1	2.52	0.43
4:F2:168:GLU:HA	4:F2:171:ALA:HB3	2.01	0.43
9:K2:101:VAL:HG13	9:K2:102:ARG:HG2	2.00	0.43
11:M2:11:ASN:HD21	29:A2:1701:A:H61	1.65	0.43
19:U2:112:ARG:HB3	19:U2:174:VAL:HG11	1.99	0.43
19:U2:117:LEU:HA	19:U2:174:VAL:HG22	2.01	0.43
29:A2:147:U:H2'	29:A2:148:C:C6	2.53	0.43
29:A2:633:A:H2'	29:A2:634:A:C8	2.53	0.43
29:A2:737:U:H2'	29:A2:738:A:C8	2.54	0.43
29:A2:1180:A:H2'	29:A2:1181:U:C6	2.54	0.43
29:A2:1699:G:H2'	29:A2:1700:G:H8	1.84	0.43
29:A2:1979:U:H3	29:A2:2571:G:N2	2.16	0.43
29:A2:2368:G:N2	29:A2:2369:C:O2	2.51	0.43
39:I3:47:LEU:HA	39:I3:50:LEU:HD12	2.01	0.43
41:K3:124:LYS:HA	41:K3:127:LYS:NZ	2.34	0.43
42:L3:33:ARG:HB2	42:L3:60:LEU:HD22	1.99	0.43
42:L3:83:VAL:HA	42:L3:105:TYR:HD2	1.83	0.43
46:P3:4:ILE:HB	46:P3:66:PRO:HA	1.99	0.43
53:A3:51:A:N1	53:A3:309:C:O2'	2.43	0.43
53:A3:286:C:N4	53:A3:304:G:O6	2.52	0.43
53:A3:475:G:H2'	53:A3:476:G:H8	1.83	0.43
53:A3:552:C:O2'	53:A3:557:A:N7	2.47	0.43
53:A3:1047:U:H5''	53:A3:1171:G:H1	1.83	0.43
37:G4:93:PRO:HA	37:G4:96:GLN:HB2	1.99	0.43
41:K4:87:THR:HG22	54:V4:114:VAL:HB	2.00	0.43
43:M4:46:LYS:HE3	43:M4:46:LYS:HB3	1.88	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:P4:3:LYS:NZ	46:P4:66:PRO:O	2.41	0.43
53:A4:74:C:N3	53:A4:85:U:N3	2.45	0.43
53:A4:119:G:H1'	53:A4:231:G:H22	1.83	0.43
53:A4:1005:C:H1'	53:A4:1006:C:H5'	2.00	0.43
53:A4:1117:U:H3	53:A4:1124:G:H1	1.67	0.43
53:A4:1197:G:O2'	53:A4:1199:C:OP2	2.34	0.43
11:M1:73:VAL:HA	11:M1:76:VAL:HG12	2.01	0.43
15:Q1:85:LYS:HB3	29:A1:1272:C:H4'	1.99	0.43
16:R1:84:ARG:HH21	29:A1:1371:U:P	2.41	0.43
25:a1:8:LYS:N	29:A1:2629:U:O2	2.43	0.43
28:d1:28:GLY:O	28:d1:44:LYS:NZ	2.36	0.43
29:A1:271:C:O2'	29:A1:274:G:N1	2.24	0.43
29:A1:362:C:H2'	29:A1:363:G:H8	1.84	0.43
29:A1:627:G:N1	29:A1:704:A:OP2	2.39	0.43
29:A1:679:C:O2'	29:A1:697:G:OP2	2.28	0.43
29:A1:829:G:H21	29:A1:832:A:H62	1.66	0.43
29:A1:1000:A:O2'	29:A1:2280:A:OP1	2.34	0.43
29:A1:2715:C:O2	29:A1:2721:G:N2	2.52	0.43
29:A1:2900:C:H2'	29:A1:2901:C:H6	1.83	0.43
1:C2:175:LEU:O	1:C2:183:ARG:N	2.47	0.43
2:D2:101:ARG:NH2	2:D2:169:ASN:HB3	2.34	0.43
3:E2:180:GLY:HA2	29:A2:642:A:C4	2.53	0.43
9:K2:62:LEU:HB3	28:d2:27:THR:HA	1.99	0.43
11:M2:37:THR:HA	11:M2:111:LEU:HA	2.00	0.43
16:R2:71:VAL:HA	16:R2:107:LEU:HA	2.01	0.43
25:a2:10:LYS:HD3	29:A2:2043:A:H5''	2.00	0.43
29:A2:679:C:H1'	29:A2:697:G:H5'	2.00	0.43
29:A2:1319:G:N2	29:A2:1665:C:O4'	2.47	0.43
29:A2:1475:A:H1'	29:A2:1476:C:C4	2.54	0.43
29:A2:1872:G:H1'	29:A2:1951:A:C8	2.53	0.43
29:A2:1877:C:H2'	29:A2:1878:G:C8	2.53	0.43
29:A2:2544:A:O2'	29:A2:2546:G:OP2	2.29	0.43
29:A2:2711:G:H1	29:A2:2724:C:N4	2.17	0.43
37:G3:104:LEU:HD22	37:G3:124:LEU:HD11	2.01	0.43
42:L3:35:GLY:HA3	42:L3:60:LEU:HD23	2.00	0.43
53:A3:266:C:H2'	53:A3:267:C:C6	2.54	0.43
53:A3:711:A:H2'	53:A3:712:A:H8	1.83	0.43
53:A3:749:A:O2'	53:A3:750:A:N7	2.51	0.43
53:A3:979:G:C5	53:A3:980:G:H1'	2.53	0.43
33:C4:59:ARG:HE	33:C4:97:LYS:NZ	2.16	0.43
35:E4:91:LEU:HD13	35:E4:120:THR:HB	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K4:58:PRO:HB3	41:K4:93:GLN:HE21	1.83	0.43
53:A4:997:C:H2'	53:A4:998:U:O4'	2.19	0.43
53:A4:1095:C:N4	53:A4:1097:C:N3	2.66	0.43
2:D1:47:VAL:HG13	2:D1:81:ILE:H	1.83	0.43
4:F1:159:VAL:HG21	4:F1:173:LEU:HD11	1.99	0.43
5:G1:59:ARG:NH1	29:A1:1083:U:OP2	2.52	0.43
20:V1:44:ARG:HB2	20:V1:77:ARG:HH21	1.83	0.43
22:X1:36:ARG:HA	22:X1:39:ALA:HB2	2.00	0.43
29:A1:1062:U:H3	29:A1:1196:A:H61	1.66	0.43
29:A1:1132:A:O2'	29:A1:1133:A:O5'	2.35	0.43
29:A1:1346:C:N3	29:A1:1692:G:N2	2.66	0.43
29:A1:1733:C:H42	29:A1:1753:G:H1	1.67	0.43
29:A1:2221:U:H1'	29:A1:2222:A:C8	2.53	0.43
29:A1:2303:G:O3'	29:A1:2397:G:O2'	2.36	0.43
29:A1:2389:G:N1	29:A1:2391:A:H3'	2.34	0.43
2:D2:66:HIS:HA	2:D2:67:PHE:HA	1.63	0.43
3:E2:18:ARG:HD2	3:E2:18:ARG:HA	1.81	0.43
13:O2:63:VAL:HB	13:O2:76:PHE:HE2	1.84	0.43
14:P2:28:ARG:HA	14:P2:31:SER:HB2	2.00	0.43
15:Q2:20:LEU:O	15:Q2:94:LEU:N	2.44	0.43
19:U2:144:LEU:HD13	19:U2:150:LEU:HD11	2.00	0.43
28:d2:9:GLY:HA2	28:d2:12:LYS:HB3	2.00	0.43
29:A2:36:G:OP1	29:A2:479:C:N4	2.42	0.43
29:A2:253:C:O2'	29:A2:459:G:N3	2.39	0.43
29:A2:1804:C:H1'	29:A2:1819:A:C8	2.53	0.43
47:Q3:15:MET:HB2	53:A3:270:G:N1	2.33	0.43
53:A3:30:U:N3	53:A3:32:A:N7	2.67	0.43
53:A3:112:A:OP2	53:A3:283:A:N6	2.48	0.43
53:A3:601:C:N4	53:A3:604:A:OP2	2.50	0.43
34:D4:11:LEU:HA	34:D4:14:ARG:HB3	2.00	0.43
35:E4:102:ALA:HB1	35:E4:106:PRO:HB2	2.00	0.43
50:T4:13:LEU:C	50:T4:16:HIS:H	2.27	0.43
53:A4:606:C:H2'	53:A4:607:C:H6	1.83	0.43
2:D1:9:VAL:HG11	13:O1:7:ILE:HD13	2.00	0.43
20:V1:68:GLU:N	20:V1:80:HIS:O	2.34	0.43
29:A1:199:C:H2'	29:A1:200:C:C6	2.54	0.43
29:A1:638:G:N2	29:A1:643:G:N7	2.66	0.43
29:A1:736:C:O2'	29:A1:1813:A:N1	2.44	0.43
29:A1:2123:U:H2'	29:A1:2124:G:C8	2.53	0.43
29:A1:2485:C:H41	29:A1:2490:A:H5''	1.84	0.43
30:B1:85:G:N2	30:B1:97:C:O2'	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:K2:43:GLY:N	29:A2:720:C:OP1	2.52	0.43
17:S2:52:VAL:HB	17:S2:82:GLN:HB3	2.00	0.43
21:W2:20:ARG:NH1	21:W2:32:LYS:HB3	2.33	0.43
28:d2:50:LEU:HA	28:d2:51:ALA:HA	1.76	0.43
29:A2:237:G:H4'	29:A2:414:G:C4	2.54	0.43
29:A2:412:U:H2'	29:A2:413:C:H6	1.82	0.43
29:A2:654:A:O4'	29:A2:664:A:N6	2.52	0.43
29:A2:730:G:H2'	29:A2:731:G:C8	2.54	0.43
29:A2:829:G:H21	29:A2:832:A:N6	2.16	0.43
29:A2:1092:G:H21	29:A2:1093:A:H61	1.66	0.43
29:A2:1243:C:H1'	29:A2:1274:A:C4	2.54	0.43
29:A2:1632:A:O2'	29:A2:1634:A:N1	2.52	0.43
33:C3:119:ARG:CZ	33:C3:137:ALA:HB2	2.48	0.43
40:J3:50:ILE:HG23	40:J3:60:ARG:HG2	1.99	0.43
52:X3:139:MET:HE3	52:W4:161:PHE:HD2	1.84	0.43
52:X3:170:ASN:HB3	52:X3:172:ILE:HD12	2.01	0.43
53:A3:502:C:H6	53:A3:512:G:H21	1.66	0.43
53:A3:825:C:H2'	53:A3:826:C:C6	2.54	0.43
53:A3:1453:G:N2	53:A3:1454:C:N3	2.66	0.43
54:V3:77:TYR:N	54:V3:77:TYR:HD2	2.17	0.43
34:D4:122:ARG:HH22	53:A4:434:A:H1'	1.83	0.43
36:F4:4:TYR:N	36:F4:65:VAL:O	2.40	0.43
41:K4:122:LYS:HD2	53:A4:762:C:H5''	2.00	0.43
53:A4:1352:G:H2'	53:A4:1353:G:C8	2.51	0.43
14:P1:75:ASN:O	14:P1:78:THR:OG1	2.29	0.43
29:A1:2:G:O6	29:A1:4:C:N4	2.52	0.43
29:A1:473:C:H2'	29:A1:474:G:C8	2.54	0.43
29:A1:1765:G:H1	29:A1:1775:C:N4	2.16	0.43
29:A1:2412:U:H2'	29:A1:2413:G:C8	2.54	0.43
29:A1:2608:C:H2'	29:A1:2609:G:C8	2.54	0.43
2:D2:97:LYS:HE2	2:D2:97:LYS:HB2	1.82	0.43
2:D2:103:ASP:N	2:D2:199:ARG:O	2.52	0.43
5:G2:122:THR:O	5:G2:134:SER:N	2.51	0.43
8:J2:15:GLY:HA2	8:J2:47:ILE:HB	2.01	0.43
11:M2:37:THR:HG22	11:M2:111:LEU:HD23	2.01	0.43
29:A2:355:A:H2	29:A2:1257:A:H2'	1.84	0.43
29:A2:1207:U:H2'	29:A2:1208:G:H8	1.84	0.43
29:A2:1832:G:N2	29:A2:1852:A:OP2	2.52	0.43
29:A2:2023:C:H2'	29:A2:2024:G:C8	2.54	0.43
29:A2:2071:U:H2'	29:A2:2072:G:H8	1.83	0.43
29:A2:2103:U:H5'	29:A2:2447:A:H2	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G3:7:ALA:HB3	53:A3:1359:A:C6	2.54	0.43
37:G3:80:VAL:HG21	54:V3:97:ARG:HH22	1.84	0.43
41:K3:34:ASP:OD1	41:K3:37:GLY:N	2.50	0.43
43:M3:26:GLY:HA3	53:A3:1310:A:H5'	1.99	0.43
53:A3:717:G:N7	53:A3:718:C:N4	2.67	0.43
53:A3:1173:C:C4	53:A3:1174:G:H1'	2.54	0.43
32:B4:90:MET:HE3	32:B4:222:ILE:HD13	1.99	0.43
32:B4:187:LEU:HA	32:B4:201:ILE:HB	2.01	0.43
35:E4:27:ARG:HH12	53:A4:1063:G:H3'	1.83	0.43
41:K4:127:LYS:HE3	54:V4:106:TYR:CD2	2.53	0.43
53:A4:865:G:H3'	53:A4:866:A:H8	1.83	0.43
2:D1:111:ARG:NH2	29:A1:2739:C:OP2	2.51	0.43
8:J1:42:SER:HA	8:J1:58:VAL:HG22	2.01	0.43
24:Z1:18:CYS:SG	24:Z1:36:CYS:HB2	2.59	0.43
24:Z1:58:ARG:HE	49:S3:68:GLY:C	2.27	0.43
25:a1:19:ARG:NH1	29:A1:2070:G:OP1	2.52	0.43
27:c1:5:TRP:CD1	29:A1:1660:C:H4'	2.54	0.43
29:A1:37:C:O2'	29:A1:479:C:OP1	2.36	0.43
29:A1:783:A:H2'	29:A1:784:A:H8	1.84	0.43
29:A1:1632:A:OP1	29:A1:1633:C:N4	2.51	0.43
29:A1:1858:A:H2'	29:A1:1859:G:C8	2.53	0.43
29:A1:2133:U:N3	29:A1:2204:U:O4	2.51	0.43
29:A1:2644:G:N2	29:A1:2903:A:N3	2.67	0.43
29:A1:2662:C:H2'	29:A1:2663:U:C6	2.54	0.43
2:D2:101:ARG:HE	2:D2:169:ASN:HD22	1.66	0.43
2:D2:145:LYS:HZ3	29:A2:2078:A:P	2.42	0.43
3:E2:62:ARG:O	3:E2:63:LYS:NZ	2.39	0.43
10:L2:12:GLN:HG3	10:L2:72:LYS:HD2	2.01	0.43
12:N2:75:GLU:O	12:N2:79:ALA:N	2.51	0.43
21:W2:5:CYS:HA	21:W2:46:LEU:HD21	2.00	0.43
27:c2:36:GLN:NE2	29:A2:171:A:O5'	2.49	0.43
29:A2:913:G:H2'	29:A2:914:C:H6	1.83	0.43
29:A2:1797:G:H2'	29:A2:1798:C:C6	2.54	0.43
29:A2:2466:C:N4	29:A2:2518:U:O4	2.51	0.43
43:M3:46:LYS:HE3	43:M3:46:LYS:HB3	1.76	0.43
48:R3:70:ILE:HG22	48:R3:74:ARG:HH21	1.83	0.43
53:A3:835:G:N1	53:A3:847:U:OP2	2.51	0.43
53:A3:838:G:N2	53:A3:849:A:H62	2.16	0.43
54:V3:77:TYR:N	54:V3:77:TYR:CD2	2.86	0.43
32:B4:88:ALA:HB2	32:B4:223:ILE:HG12	2.00	0.43
32:B4:167:PRO:HB3	32:B4:174:VAL:HG21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:C4:53:ALA:HB3	33:C4:69:HIS:HB2	2.01	0.43
41:K4:23:ALA:HB3	41:K4:86:GLY:HA3	2.01	0.43
44:N4:4:LYS:HB3	44:N4:4:LYS:HE2	1.81	0.43
53:A4:537:C:H42	53:A4:538:C:H41	1.67	0.43
53:A4:1362:U:H1'	53:A4:1363:U:H5	1.83	0.43
3:E1:54:ARG:HH12	29:A1:722:C:H5''	1.84	0.43
3:E1:144:LYS:HB2	3:E1:144:LYS:HE2	1.83	0.43
4:F1:40:ASN:O	4:F1:156:ASP:N	2.52	0.43
9:K1:50:ARG:HG2	29:A1:241:A:H4'	2.01	0.43
15:Q1:59:ALA:HA	15:Q1:97:LYS:HB2	2.01	0.43
16:R1:47:VAL:O	16:R1:51:LEU:N	2.46	0.43
18:T1:95:LYS:HB2	18:T1:102:CYS:HB2	2.00	0.43
29:A1:890:A:H2'	29:A1:891:G:H8	1.83	0.43
29:A1:1799:U:H2'	29:A1:1800:C:H6	1.84	0.43
29:A1:2140:G:O4'	29:A1:2189:G:N1	2.49	0.43
29:A1:2160:C:O4'	29:A1:2176:G:N2	2.52	0.43
29:A1:2530:G:N1	29:A1:2583:G:N3	2.67	0.43
29:A1:2648:G:N2	29:A1:2800:C:N3	2.66	0.43
1:C2:85:ASP:CG	1:C2:88:ARG:H	2.25	0.43
2:D2:141:ILE:HG22	2:D2:154:LYS:HE2	2.00	0.43
5:G2:89:ILE:HA	5:G2:162:ILE:HA	2.00	0.43
8:J2:35:VAL:HG12	8:J2:62:VAL:HG12	2.01	0.43
8:J2:70:LYS:NZ	29:A2:2697:C:O2	2.39	0.43
22:X2:32:LEU:O	22:X2:36:ARG:N	2.51	0.43
28:d2:17:THR:HB	28:d2:22:VAL:HG12	2.01	0.43
29:A2:199:C:H2'	29:A2:200:C:C6	2.53	0.43
29:A2:268:C:H2'	29:A2:269:G:C8	2.54	0.43
29:A2:403:C:H2'	29:A2:404:C:H6	1.83	0.43
29:A2:527:G:N1	29:A2:530:A:OP2	2.32	0.43
29:A2:918:G:H2'	29:A2:919:A:C8	2.54	0.43
29:A2:1062:U:H3	29:A2:1196:A:H61	1.66	0.43
29:A2:1799:U:H2'	29:A2:1800:C:H6	1.83	0.43
29:A2:1928:G:H1'	29:A2:1952:A:H2	1.84	0.43
29:A2:2339:G:O6	29:A2:2340:C:N4	2.52	0.43
29:A2:2605:C:N4	29:A2:2617:G:H1	2.13	0.43
32:B3:106:LYS:HA	32:B3:109:SER:HB2	2.00	0.43
33:C3:6:HIS:HB2	44:N3:49:HIS:CG	2.53	0.43
50:T3:80:ARG:NH2	53:A3:256:U:OP2	2.52	0.43
53:A3:90:G:H21	53:A3:90:G:P	2.42	0.43
53:A3:1278:C:H5'	53:A3:1280:A:H62	1.84	0.43
32:B4:54:THR:HG21	32:B4:201:ILE:HD11	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:G4:26:PHE:HB2	37:G4:101:LEU:HD22	2.00	0.43
37:G4:115:ARG:HB3	37:G4:118:VAL:HG23	2.01	0.43
40:J4:33:GLN:O	40:J4:75:ILE:N	2.52	0.43
41:K4:13:GLN:HG3	41:K4:77:MET:N	2.34	0.43
53:A4:366:G:H22	53:A4:385:C:N4	2.16	0.43
53:A4:635:U:O2	53:A4:636:A:N6	2.51	0.43
53:A4:835:G:H3'	53:A4:846:G:H1	1.83	0.43
53:A4:1269:A:N6	53:A4:1333:C:O2'	2.51	0.43
53:A4:1507:G:H2'	53:A4:1508:A:C8	2.54	0.43
4:F1:19:LEU:O	4:F1:23:PHE:N	2.40	0.42
6:H1:9:LEU:HB2	6:H1:12:LEU:HB2	1.99	0.42
8:J1:42:SER:OG	8:J1:56:ASP:N	2.52	0.42
29:A1:554:C:N4	29:A1:2067:C:OP1	2.52	0.42
29:A1:1104:G:H21	29:A1:1149:U:H6	1.67	0.42
3:E2:57:VAL:HG13	3:E2:59:TYR:HB2	2.01	0.42
4:F2:38:VAL:HG11	29:A2:2328:C:H5'	2.01	0.42
4:F2:47:LYS:HZ3	4:F2:83:ARG:H	1.65	0.42
16:R2:61:ASN:HD21	29:A2:523:G:H21	1.66	0.42
18:T2:84:ARG:HE	18:T2:97:ARG:HD2	1.84	0.42
20:V2:68:GLU:HB2	20:V2:80:HIS:HB2	1.99	0.42
27:c2:5:TRP:CD1	29:A2:1660:C:H4'	2.53	0.42
29:A2:603:A:OP1	29:A2:1303:U:O2'	2.28	0.42
29:A2:1286:G:N2	29:A2:1287:G:N3	2.67	0.42
33:C3:20:SER:OG	44:N3:52:GLN:OE1	2.28	0.42
34:D3:136:PRO:HG2	53:A3:398:C:H5''	2.01	0.42
35:E3:118:ILE:HD12	35:E3:118:ILE:HA	1.82	0.42
38:H3:69:ARG:NH1	38:H3:77:GLU:OE1	2.40	0.42
42:L3:114:LYS:NZ	53:A3:523:G:OP2	2.43	0.42
49:S3:31:ILE:HD13	49:S3:44:MET:HE2	2.01	0.42
53:A3:17:U:H2'	53:A3:18:C:H6	1.84	0.42
53:A3:740:U:O2'	53:A3:856:C:O2	2.21	0.42
32:B4:37:ASN:HB2	32:B4:39:ILE:HG12	2.01	0.42
33:C4:42:LEU:HD12	33:C4:91:LEU:HD13	2.01	0.42
33:C4:115:LEU:HD23	33:C4:115:LEU:HA	1.87	0.42
39:I4:113:LYS:HG2	39:I4:119:ALA:HA	2.01	0.42
53:A4:459:G:H2'	53:A4:460:G:C8	2.54	0.42
53:A4:626:C:N4	53:A4:627:G:O6	2.51	0.42
53:A4:956:C:C4	53:A4:957:C:H1'	2.54	0.42
53:A4:1367:G:H2'	53:A4:1368:G:C8	2.52	0.42
3:E1:54:ARG:NH1	29:A1:722:C:OP1	2.52	0.42
4:F1:21:ARG:HD2	4:F1:22:ARG:HG3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:K1:135:LEU:HD23	9:K1:135:LEU:HA	1.91	0.42
10:L1:63:LYS:HE3	19:U1:116:VAL:HG11	1.99	0.42
13:O1:16:ARG:HD2	13:O1:81:PRO:HB3	2.00	0.42
17:S1:57:LEU:N	17:S1:78:LYS:O	2.51	0.42
29:A1:161:G:H2'	29:A1:162:C:H4'	2.01	0.42
29:A1:458:A:H2'	29:A1:459:G:C4	2.54	0.42
29:A1:605:C:N4	29:A1:1309:C:H42	2.16	0.42
29:A1:720:C:H2'	29:A1:721:C:H6	1.84	0.42
29:A1:1889:G:H3'	29:A1:1890:G:C8	2.54	0.42
29:A1:2073:G:H2'	29:A1:2074:C:C6	2.54	0.42
29:A1:2141:A:H8	29:A1:2142:U:H5''	1.84	0.42
29:A1:2552:C:H2'	29:A1:2553:C:C6	2.54	0.42
1:C2:52:ARG:HH22	29:A2:829:G:H5''	1.83	0.42
1:C2:222:ARG:NH1	29:A2:1860:C:H5''	2.34	0.42
9:K2:48:PRO:HD3	29:A2:715:G:H5'	1.99	0.42
9:K2:60:MET:HA	28:d2:13:ARG:HE	1.85	0.42
10:L2:56:ARG:NH2	10:L2:59:ARG:O	2.52	0.42
12:N2:85:VAL:HG22	12:N2:110:LEU:HD13	2.01	0.42
12:N2:93:LYS:HE2	12:N2:93:LYS:HB2	1.87	0.42
14:P2:64:ARG:HA	14:P2:64:ARG:HD3	1.87	0.42
18:T2:13:VAL:HG21	18:T2:72:VAL:HG12	2.00	0.42
21:W2:12:PRO:HB3	21:W2:42:GLN:O	2.20	0.42
29:A2:1105:A:H62	29:A2:1136:A:H5''	1.83	0.42
29:A2:1454:U:H2'	29:A2:1455:C:C2	2.54	0.42
29:A2:1540:G:N7	29:A2:1547:C:H5'	2.34	0.42
29:A2:1577:A:H3'	29:A2:1578:G:C8	2.54	0.42
29:A2:2662:C:H2'	29:A2:2663:U:H6	1.83	0.42
53:A3:137:A:H1'	53:A3:216:C:H1'	2.01	0.42
53:A3:664:C:H3'	53:A3:665:G:C8	2.54	0.42
34:D4:113:SER:OG	34:D4:114:ARG:N	2.52	0.42
37:G4:111:ARG:HA	37:G4:111:ARG:HD3	1.80	0.42
38:H4:88:LYS:O	38:H4:92:ARG:NH1	2.52	0.42
41:K4:27:ASN:OD1	41:K4:28:THR:N	2.52	0.42
49:S4:55:LYS:H	49:S4:56:GLN:HG2	1.84	0.42
53:A4:11:G:H2'	53:A4:12:U:C6	2.54	0.42
53:A4:1235:C:H2'	53:A4:1236:G:C8	2.50	0.42
3:E1:109:GLY:O	3:E1:113:ALA:N	2.52	0.42
9:K1:27:HIS:NE2	29:A1:1237:G:O6	2.35	0.42
10:L1:67:ARG:HH21	29:A1:955:U:H5'	1.84	0.42
17:S1:7:VAL:HA	17:S1:31:HIS:CE1	2.55	0.42
29:A1:410:G:H1	29:A1:420:C:H42	1.66	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:2535:C:H1'	29:A1:2578:A:H2	1.84	0.42
7:I2:101:HIS:HA	7:I2:104:LYS:HB2	2.02	0.42
25:a2:8:LYS:N	29:A2:2629:U:O2	2.52	0.42
27:c2:34:ARG:HH21	27:c2:39:ARG:HD3	1.84	0.42
28:d2:24:ALA:HA	28:d2:47:LYS:HD3	2.00	0.42
29:A2:121:G:H3'	29:A2:122:G:H8	1.82	0.42
29:A2:634:A:H62	29:A2:646:G:H21	1.67	0.42
29:A2:1632:A:OP1	29:A2:1633:C:N4	2.52	0.42
29:A2:2085:G:H5''	29:A2:2517:A:C6	2.54	0.42
29:A2:2166:C:N3	29:A2:2173:G:N2	2.68	0.42
29:A2:2535:C:H2'	29:A2:2536:U:C6	2.54	0.42
37:G3:116:ALA:N	53:A3:1221:U:OP2	2.52	0.42
42:L3:83:VAL:HA	42:L3:105:TYR:CD2	2.54	0.42
53:A3:205:G:H2'	53:A3:206:G:C4	2.54	0.42
53:A3:1507:G:H2'	53:A3:1508:A:C8	2.54	0.42
34:D4:70:ILE:HD11	34:D4:75:PHE:HD1	1.84	0.42
34:D4:115:ARG:NH2	53:A4:401:G:O3'	2.52	0.42
42:L4:69:TYR:HB3	42:L4:99:HIS:HD2	1.84	0.42
53:A4:110:G:C2	53:A4:111:U:H1'	2.54	0.42
53:A4:266:C:H2'	53:A4:267:C:C6	2.54	0.42
53:A4:805:C:H2'	53:A4:806:G:C8	2.54	0.42
53:A4:938:U:H3'	53:A4:939:C:H6	1.84	0.42
53:A4:959:U:H1'	53:A4:960:A:C6	2.53	0.42
53:A4:1351:C:H2'	53:A4:1352:G:C8	2.55	0.42
53:A4:1387:G:H2'	53:A4:1388:U:C6	2.55	0.42
54:V4:55:ARG:HG2	54:V4:72:GLU:HG3	2.02	0.42
1:C1:14:ARG:HG3	1:C1:15:PHE:CD2	2.54	0.42
11:M1:108:GLY:HA3	29:A1:2033:G:H1'	2.01	0.42
21:W1:50:ARG:NH1	21:W1:57:GLU:OE1	2.52	0.42
29:A1:1343:C:H2'	29:A1:1344:G:C8	2.55	0.42
29:A1:1832:G:H8	29:A1:1832:G:H2'	1.74	0.42
30:B1:8:C:H5'	30:B1:30:C:H5'	2.01	0.42
5:G2:99:VAL:HB	5:G2:102:ALA:HB3	2.00	0.42
8:J2:9:GLU:OE1	8:J2:64:ARG:NH2	2.52	0.42
10:L2:16:ARG:HE	30:B2:93:C:P	2.42	0.42
13:O2:35:LYS:HD3	13:O2:35:LYS:HA	1.74	0.42
29:A2:789:U:H2'	29:A2:790:G:C8	2.54	0.42
29:A2:995:G:N1	29:A2:1017:C:O2	2.52	0.42
29:A2:1406:G:H3'	29:A2:1419:G:H1	1.84	0.42
29:A2:1412:G:N2	29:A2:1415:A:OP2	2.47	0.42
29:A2:1464:G:N2	29:A2:1631:C:O2'	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:1765:G:H2'	29:A2:1766:G:H8	1.84	0.42
29:A2:2008:G:H2'	29:A2:2009:G:H8	1.84	0.42
29:A2:2316:G:H1	29:A2:2328:C:H42	1.67	0.42
29:A2:2351:G:H2'	29:A2:2352:G:H8	1.82	0.42
30:B2:88:G:H2'	30:B2:89:G:H8	1.84	0.42
37:G3:83:ALA:HB3	37:G3:85:TYR:CZ	2.53	0.42
42:L3:89:ARG:NE	42:L3:91:LYS:HE2	2.35	0.42
43:M3:22:ILE:HG21	43:M3:66:LEU:HB2	2.02	0.42
53:A3:712:A:H2'	53:A3:713:G:H8	1.84	0.42
53:A3:1022:U:OP1	53:A3:1023:A:N6	2.43	0.42
53:A3:1157:A:H3'	53:A3:1158:G:C8	2.54	0.42
53:A3:1383:G:OP1	54:V3:86:ARG:NH1	2.52	0.42
33:C4:113:ALA:O	33:C4:117:ALA:N	2.53	0.42
51:U4:12:LYS:NZ	53:A4:1307:C:OP1	2.53	0.42
53:A4:441:G:N2	53:A4:472:C:N3	2.67	0.42
53:A4:877:A:H2'	53:A4:878:A:H8	1.84	0.42
53:A4:1250:A:H5''	53:A4:1251:C:H4'	2.01	0.42
53:A4:1396:U:H2'	53:A4:1397:G:C8	2.54	0.42
10:L1:69:PHE:HA	10:L1:70:PRO:HD3	1.92	0.42
15:Q1:24:LYS:HD2	15:Q1:90:PRO:HB2	2.02	0.42
29:A1:2526:C:O2	29:A1:2588:G:N2	2.52	0.42
1:C2:72:LYS:HE2	1:C2:103:ARG:NH2	2.34	0.42
5:G2:37:VAL:HG23	5:G2:68:THR:HG21	2.01	0.42
7:I2:93:THR:HG22	7:I2:94:HIS:CD2	2.55	0.42
11:M2:20:LEU:O	11:M2:24:GLN:N	2.38	0.42
12:N2:9:ARG:HG3	12:N2:13:ARG:HH12	1.85	0.42
16:R2:86:LEU:HD12	16:R2:87:PRO:HD2	2.01	0.42
22:X2:32:LEU:HG	22:X2:36:ARG:HG3	2.01	0.42
23:Y2:9:VAL:HG23	23:Y2:10:LYS:HG2	2.02	0.42
29:A2:79:G:H2'	29:A2:80:G:C8	2.54	0.42
29:A2:345:A:H4'	29:A2:347:A:C8	2.54	0.42
29:A2:1979:U:H3'	29:A2:1980:U:C5	2.55	0.42
29:A2:2073:G:H2'	29:A2:2074:C:C6	2.53	0.42
29:A2:2806:C:N4	29:A2:2807:G:O6	2.53	0.42
38:H3:37:ARG:HA	38:H3:40:ALA:HB3	2.00	0.42
42:L3:117:ARG:O	42:L3:121:GLY:N	2.51	0.42
44:N3:39:LEU:HB2	44:N3:44:LEU:HB2	2.02	0.42
53:A3:13:U:H5'	53:A3:14:U:C5	2.54	0.42
53:A3:172:C:N4	53:A3:199:C:OP1	2.52	0.42
53:A3:769:G:H21	53:A3:770:A:H1'	1.85	0.42
53:A3:774:G:H8	53:A3:774:G:H2'	1.63	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:816:U:H2'	53:A3:817:C:C6	2.54	0.42
53:A3:1028:A:H62	53:A3:1192:U:H3	1.66	0.42
53:A3:1289:U:N3	53:A3:1290:G:N7	2.67	0.42
53:A4:21:G:N1	53:A4:22:G:O6	2.52	0.42
53:A4:427:A:H2'	53:A4:428:C:C6	2.54	0.42
53:A4:1236:G:H1	53:A4:1263:C:H42	1.67	0.42
5:G1:33:LEU:HD23	5:G1:33:LEU:HA	1.87	0.42
7:I1:111:PRO:O	7:I1:115:ARG:N	2.51	0.42
14:P1:16:LYS:HG3	14:P1:17:ILE:HG13	2.01	0.42
29:A1:162:C:H2'	29:A1:163:G:H8	1.85	0.42
29:A1:424:G:H2'	29:A1:425:G:C8	2.55	0.42
29:A1:828:U:H2'	29:A1:829:G:O4'	2.20	0.42
29:A1:1670:G:C2	29:A1:1671:G:H1'	2.55	0.42
29:A1:1835:A:N6	29:A1:1836:A:N1	2.68	0.42
29:A1:1920:G:H2'	29:A1:1921:G:C8	2.54	0.42
29:A1:2061:G:H2'	29:A1:2062:G:H8	1.85	0.42
29:A1:2527:G:H2'	29:A1:2528:U:C6	2.54	0.42
4:F2:163:ALA:HB1	4:F2:168:GLU:HB3	2.02	0.42
10:L2:121:ALA:O	10:L2:125:LEU:N	2.52	0.42
29:A2:181:A:H2'	29:A2:182:C:H6	1.85	0.42
29:A2:198:C:H2'	29:A2:199:C:H6	1.84	0.42
29:A2:720:C:H2'	29:A2:721:C:H6	1.84	0.42
29:A2:1086:C:H2'	29:A2:1087:G:H8	1.84	0.42
29:A2:1656:A:H62	29:A2:1669:U:H3	1.67	0.42
29:A2:1730:G:N2	29:A2:1796:G:OP2	2.52	0.42
29:A2:1979:U:H3'	29:A2:1980:U:H5	1.85	0.42
29:A2:2155:G:N2	29:A2:2182:A:O2'	2.53	0.42
29:A2:2389:G:N2	29:A2:2391:A:H3'	2.35	0.42
33:C3:180:ALA:HB2	33:C3:206:GLU:HB3	2.01	0.42
50:T3:98:PRO:HB2	50:T3:100:ILE:HG13	2.01	0.42
50:T3:104:LEU:HD23	50:T3:104:LEU:HA	1.88	0.42
50:T3:106:ALA:O	53:A3:182:C:O2'	2.37	0.42
53:A3:596:C:H2'	53:A3:597:A:C8	2.54	0.42
32:B4:68:ILE:HG23	32:B4:162:ILE:HA	2.00	0.42
33:C4:17:ASP:HB3	33:C4:18:TRP:CE3	2.54	0.42
35:E4:16:THR:OG1	35:E4:27:ARG:O	2.34	0.42
53:A4:112:A:O2'	53:A4:235:C:N4	2.52	0.42
53:A4:865:G:H22	53:A4:887:C:H42	1.66	0.42
53:A4:906:G:O6	53:A4:1370:C:N4	2.53	0.42
53:A4:1167:G:H2'	53:A4:1168:G:C8	2.55	0.42
53:A4:1422:C:H2'	53:A4:1423:G:H5'	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:1484:A:H5''	54:V4:107:GLN:HE22	1.84	0.42
53:A4:1489:U:H2'	53:A4:1490:A:C8	2.53	0.42
1:C1:213:ARG:NH1	29:A1:813:A:O3'	2.53	0.42
2:D1:101:ARG:HD2	2:D1:169:ASN:HD22	1.84	0.42
3:E1:5:ALA:HB2	3:E1:19:GLU:HG3	2.01	0.42
6:H1:28:ASN:HB3	29:A1:2222:A:H2	1.84	0.42
11:M1:2:ARG:HG2	11:M1:3:HIS:ND1	2.35	0.42
11:M1:14:SER:O	11:M1:17:ARG:HG3	2.20	0.42
22:X1:54:LYS:HG2	22:X1:57:ILE:HD12	2.01	0.42
29:A1:491:G:N2	29:A1:493:G:O5'	2.53	0.42
29:A1:1003:G:N2	29:A1:1007:A:OP2	2.52	0.42
29:A1:1336:U:H1'	29:A1:1696:G:H21	1.84	0.42
29:A1:1717:A:H4'	29:A1:1718:A:H5'	2.00	0.42
29:A1:1815:C:N3	29:A1:2601:A:N6	2.68	0.42
29:A1:1982:C:H2'	29:A1:1983:G:C8	2.54	0.42
29:A1:2455:C:H2'	29:A1:2456:C:C6	2.54	0.42
29:A1:2535:C:H2'	29:A1:2536:U:C6	2.54	0.42
29:A1:2650:U:H1'	29:A1:2798:G:H22	1.84	0.42
30:B1:26:G:H21	30:B1:28:A:N6	2.17	0.42
21:W2:63:ALA:HB3	21:W2:66:HIS:HE1	1.84	0.42
29:A2:400:G:O2'	29:A2:428:G:N1	2.43	0.42
29:A2:740:C:H2'	29:A2:741:C:C6	2.54	0.42
29:A2:833:A:O2'	29:A2:834:G:O4'	2.38	0.42
29:A2:856:U:H1'	29:A2:2459:G:H5'	2.01	0.42
29:A2:1959:G:H3'	29:A2:1986:C:H42	1.85	0.42
29:A2:2099:U:HO2'	29:A2:2610:U:H3	1.57	0.42
29:A2:2689:A:H61	29:A2:2747:G:H1	1.67	0.42
34:D3:59:ARG:HD3	34:D3:62:GLN:HG3	2.01	0.42
35:E3:127:ASN:ND2	53:A3:18:C:O3'	2.52	0.42
37:G3:38:LEU:HG	37:G3:41:ARG:HH21	1.84	0.42
42:L3:111:LYS:H	42:L3:111:LYS:HD2	1.85	0.42
47:Q3:10:VAL:HG13	47:Q3:20:THR:H	1.84	0.42
52:X3:135:LYS:HB3	52:W4:174:ARG:CZ	2.49	0.42
53:A3:270:G:O2'	53:A3:272:C:OP2	2.36	0.42
53:A3:601:C:H5''	53:A3:602:U:H5''	2.01	0.42
53:A3:1490:A:H2'	53:A3:1491:C:C6	2.55	0.42
35:E4:65:ASN:OD1	35:E4:140:ARG:NH2	2.50	0.42
38:H4:19:VAL:HG21	53:A4:810:U:H4'	2.00	0.42
42:L4:54:LYS:HB3	42:L4:70:ILE:HD12	2.01	0.42
53:A4:1106:G:N7	53:A4:1121:G:N2	2.61	0.42
1:C1:142:VAL:HA	1:C1:194:GLY:H	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F1:39:ILE:HD11	4:F1:94:LEU:HD11	2.02	0.42
9:K1:61:ARG:HA	28:d1:27:THR:HG22	2.01	0.42
12:N1:20:ARG:NH2	20:V1:47:PRO:O	2.53	0.42
13:O1:118:ARG:HD3	29:A1:2875:C:H4'	2.01	0.42
19:U1:134:PRO:HB2	19:U1:136:PHE:H	1.84	0.42
26:b1:10:LEU:HD22	26:b1:25:LYS:HD2	2.00	0.42
29:A1:294:C:N4	29:A1:295:C:H41	2.17	0.42
29:A1:664:A:N6	29:A1:679:C:H5'	2.35	0.42
29:A1:1116:G:O2'	29:A1:1121:A:N6	2.41	0.42
29:A1:1744:G:C5	29:A1:1745:G:H1'	2.54	0.42
29:A1:1764:G:H2'	29:A1:1765:G:H5'	2.01	0.42
29:A1:2700:G:N2	29:A1:2701:U:O2	2.53	0.42
30:B1:20:G:H2'	30:B1:21:G:C8	2.55	0.42
3:E2:154:VAL:O	3:E2:174:VAL:N	2.40	0.42
3:E2:185:ASP:HA	3:E2:188:ARG:HG3	2.01	0.42
8:J2:52:VAL:HG12	8:J2:94:ARG:HH11	1.85	0.42
15:Q2:43:GLU:HG2	15:Q2:44:LYS:H	1.85	0.42
21:W2:20:ARG:HH22	29:A2:415:U:P	2.43	0.42
26:b2:14:THR:O	26:b2:49:HIS:HB2	2.20	0.42
29:A2:1385:G:H2'	29:A2:1386:G:C8	2.55	0.42
29:A2:1527:G:H2'	29:A2:1528:G:H8	1.84	0.42
29:A2:2472:G:N7	29:A2:2504:G:N1	2.67	0.42
33:C3:176:HIS:C	53:A3:1094:C:H42	2.27	0.42
36:F3:6:VAL:HB	36:F3:63:TYR:HB2	2.02	0.42
43:M3:104:ARG:HH12	53:A3:1207:C:H6	1.68	0.42
52:X3:159:PHE:HB3	52:W4:162:ARG:NE	2.34	0.42
52:X3:165:LYS:NZ	52:X3:184:GLU:O	2.41	0.42
53:A3:370:U:H2'	53:A3:371:G:C8	2.55	0.42
53:A3:1063:G:H2'	53:A3:1064:G:C8	2.53	0.42
32:B4:18:GLY:HA3	32:B4:39:ILE:HD12	2.01	0.42
47:Q4:38:ARG:NH1	53:A4:276:G:OP1	2.44	0.42
47:Q4:51:TYR:HD1	47:Q4:55:ASP:HB3	1.85	0.42
53:A4:656:G:N1	53:A4:718:C:N3	2.67	0.42
53:A4:884:A:H2'	53:A4:885:A:C8	2.55	0.42
53:A4:925:C:O2	53:A4:1215:C:N4	2.44	0.42
53:A4:1419:C:N4	53:A4:1420:G:O6	2.53	0.42
2:D1:30:PRO:HG3	2:D1:93:VAL:HG13	2.01	0.42
8:J1:2:ILE:HG13	8:J1:62:VAL:HG21	2.02	0.42
17:S1:53:LYS:NZ	29:A1:1391:G:OP1	2.36	0.42
19:U1:61:LEU:HD11	19:U1:67:LEU:HD22	2.01	0.42
19:U1:89:PHE:HD2	19:U1:91:LEU:HD23	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Z1:40:HIS:HB2	24:Z1:42:PHE:HD2	1.85	0.42
29:A1:29:U:H2'	29:A1:30:G:C8	2.55	0.42
29:A1:993:G:C6	29:A1:994:G:C6	3.08	0.42
29:A1:1858:A:H2'	29:A1:1859:G:H8	1.85	0.42
29:A1:1919:C:H2'	29:A1:1920:G:C8	2.54	0.42
29:A1:1979:U:H3	29:A1:2571:G:N2	2.17	0.42
29:A1:2640:C:H2'	29:A1:2641:G:H8	1.85	0.42
30:B1:88:G:H2'	30:B1:89:G:H8	1.85	0.42
1:C2:31:LYS:NZ	1:C2:104:TYR:OH	2.32	0.42
2:D2:112:GLY:N	29:A2:2834:G:OP1	2.53	0.42
29:A2:270:G:H1	29:A2:274:G:H1	1.68	0.42
29:A2:908:G:H1'	29:A2:909:U:H5	1.85	0.42
29:A2:1527:G:H2'	29:A2:1528:G:C8	2.55	0.42
29:A2:1835:A:N6	29:A2:1836:A:N1	2.68	0.42
29:A2:2608:C:H2'	29:A2:2609:G:C8	2.55	0.42
33:C3:47:LEU:HD12	33:C3:50:ALA:HB3	2.01	0.42
44:N3:47:LEU:HD23	44:N3:47:LEU:HA	1.89	0.42
48:R3:42:ARG:NH1	48:R3:42:ARG:O	2.53	0.42
53:A3:575:G:N1	53:A3:631:A:N1	2.68	0.42
37:G4:21:VAL:HA	37:G4:24:THR:HB	2.02	0.42
51:U4:12:LYS:HE3	51:U4:19:GLY:HA3	2.01	0.42
53:A4:68:G:O2'	53:A4:146:A:N1	2.46	0.42
53:A4:176:U:H3'	53:A4:177:G:H8	1.85	0.42
53:A4:947:C:H5'	53:A4:949:C:C2	2.54	0.42
53:A4:1202:G:H2'	53:A4:1203:G:H8	1.85	0.42
53:A4:1255:G:O2'	53:A4:1256:A:O4'	2.33	0.42
1:C1:69:ARG:NH1	1:C1:105:ILE:HD12	2.35	0.42
5:G1:3:ARG:NE	29:A1:1159:A:H5''	2.34	0.42
5:G1:153:LYS:HB2	5:G1:156:ALA:HB2	2.01	0.42
8:J1:1:MET:HG3	8:J1:32:TYR:CD1	2.55	0.42
13:O1:1:MET:N	29:A1:2888:G:OP2	2.49	0.42
18:T1:84:ARG:O	18:T1:92:ASN:ND2	2.38	0.42
21:W1:50:ARG:N	29:A1:2224:C:OP1	2.51	0.42
29:A1:304:C:H41	29:A1:384:A:N6	2.16	0.42
29:A1:370:A:HO2'	29:A1:372:A:H62	1.64	0.42
29:A1:1047:U:N3	29:A1:1205:G:O6	2.49	0.42
29:A1:1106:U:OP2	29:A1:1137:G:N1	2.49	0.42
29:A1:1407:A:H2	29:A1:1421:A:C6	2.38	0.42
29:A1:2151:G:O6	29:A1:2155:G:N2	2.52	0.42
29:A1:2210:G:O6	29:A1:2211:G:N2	2.53	0.42
29:A1:2546:G:H2'	29:A1:2547:A:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:2564:G:H2'	29:A1:2565:C:C6	2.55	0.42
7:I2:24:GLY:N	29:A2:1187:C:OP1	2.53	0.42
11:M2:106:GLY:HA3	29:A2:1335:A:H62	1.84	0.42
12:N2:53:SER:O	12:N2:57:LYS:N	2.44	0.42
17:S2:3:THR:HG23	17:S2:31:HIS:CD2	2.55	0.42
26:b2:23:THR:H	26:b2:42:TRP:HH2	1.68	0.42
29:A2:207:G:H2'	29:A2:208:A:C8	2.55	0.42
29:A2:841:G:H21	29:A2:2096:G:H1'	1.85	0.42
29:A2:935:C:N4	29:A2:939:A:OP2	2.36	0.42
29:A2:1958:C:H2'	29:A2:1959:G:C8	2.51	0.42
29:A2:2546:G:N2	29:A2:2677:G:O2'	2.52	0.42
39:I3:42:ARG:NH2	53:A3:1354:U:OP1	2.43	0.42
41:K3:122:LYS:NZ	53:A3:781:G:OP1	2.42	0.42
53:A3:226:G:H2'	53:A3:227:G:C8	2.55	0.42
53:A3:1495:A:H2'	53:A3:1496:A:C4	2.54	0.42
32:B4:223:ILE:HG21	32:B4:231:GLU:HG3	2.02	0.42
35:E4:93:PRO:O	38:H4:105:ARG:NH2	2.41	0.42
39:I4:107:ARG:HA	53:A4:1328:G:H5'	2.01	0.42
50:T4:62:LEU:HA	50:T4:65:LYS:HG2	2.02	0.42
1:C1:262:ARG:NH2	29:A1:2109:C:O3'	2.53	0.41
5:G1:83:TYR:HB3	5:G1:132:ARG:HG3	2.02	0.41
5:G1:106:THR:HG23	5:G1:112:PRO:HG3	2.02	0.41
19:U1:10:ARG:HG3	19:U1:13:GLU:HB2	2.01	0.41
29:A1:1106:U:H6	29:A1:1106:U:H2'	1.65	0.41
29:A1:1334:A:O2'	29:A1:1336:U:OP2	2.38	0.41
29:A1:1797:G:H2'	29:A1:1798:C:C6	2.55	0.41
29:A1:2274:C:N4	29:A1:2294:G:H1	2.16	0.41
29:A1:2539:G:H2'	29:A1:2540:G:C8	2.54	0.41
1:C2:71:ASP:N	1:C2:71:ASP:OD1	2.53	0.41
5:G2:63:SER:C	5:G2:66:GLY:H	2.28	0.41
12:N2:98:VAL:O	12:N2:102:ALA:N	2.44	0.41
17:S2:12:VAL:HG23	17:S2:29:TRP:CE2	2.55	0.41
26:b2:35:GLU:H	26:b2:51:GLU:CD	2.27	0.41
26:b2:37:ARG:HG3	26:b2:49:HIS:CE1	2.54	0.41
29:A2:322:C:H3'	29:A2:323:G:C8	2.52	0.41
29:A2:376:G:O2'	29:A2:379:G:O6	2.32	0.41
29:A2:519:A:H3'	29:A2:520:G:H8	1.85	0.41
29:A2:970:U:O4	29:A2:971:C:N4	2.53	0.41
29:A2:1480:C:N4	29:A2:1610:G:H1	2.18	0.41
29:A2:1528:G:O2'	29:A2:1608:G:N2	2.44	0.41
29:A2:2117:G:H1'	29:A2:2239:A:C6	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:2381:G:N2	29:A2:2382:C:N3	2.68	0.41
29:A2:2388:C:H2'	29:A2:2389:G:C8	2.54	0.41
29:A2:2865:C:H2'	29:A2:2866:G:H8	1.84	0.41
30:B2:72:C:N4	30:B2:73:C:N3	2.68	0.41
34:D3:6:GLY:HA3	34:D3:7:PRO:HD3	1.76	0.41
36:F3:80:ARG:HH12	53:A3:655:U:H4'	1.85	0.41
40:J3:86:MET:HE2	40:J3:98:ILE:HB	2.02	0.41
41:K3:31:THR:HA	41:K3:42:TRP:HA	2.01	0.41
43:M3:47:ASP:N	43:M3:47:ASP:OD1	2.53	0.41
49:S3:40:ILE:HD11	49:S3:68:GLY:H	1.85	0.41
53:A3:926:A:H2'	53:A3:927:U:C6	2.55	0.41
53:A3:1403:G:N2	53:A3:1458:U:O2	2.53	0.41
32:B4:51:LEU:HD23	32:B4:51:LEU:HA	1.89	0.41
35:E4:148:VAL:HA	35:E4:151:LEU:HB2	2.02	0.41
43:M4:70:LEU:HB3	43:M4:71:ARG:HH11	1.83	0.41
43:M4:109:THR:OG1	53:A4:925:C:OP1	2.35	0.41
53:A4:653:G:H2'	53:A4:654:G:C8	2.55	0.41
53:A4:766:C:N4	53:A4:782:G:H22	2.18	0.41
53:A4:816:U:H2'	53:A4:817:C:C6	2.55	0.41
53:A4:1268:A:H2'	53:A4:1269:A:C8	2.54	0.41
2:D1:5:LEU:HB3	2:D1:195:LEU:HD11	2.01	0.41
3:E1:169:ASN:ND2	29:A1:345:A:O2'	2.41	0.41
4:F1:111:LEU:HD11	4:F1:178:PHE:CD1	2.55	0.41
5:G1:158:HIS:CE1	5:G1:160:LYS:HB2	2.56	0.41
7:I1:90:MET:HE3	7:I1:98:VAL:HG12	2.02	0.41
8:J1:1:MET:HG3	8:J1:32:TYR:HD1	1.86	0.41
8:J1:53:LYS:HB3	8:J1:53:LYS:HE3	1.81	0.41
9:K1:83:VAL:HG13	9:K1:114:ILE:HA	2.02	0.41
10:L1:137:TYR:HE1	19:U1:74:VAL:HG11	1.85	0.41
12:N1:32:LEU:HA	12:N1:32:LEU:HD23	1.84	0.41
18:T1:74:PRO:HB2	18:T1:96:ILE:HD11	2.02	0.41
19:U1:31:ARG:HG2	19:U1:32:HIS:CD2	2.55	0.41
21:W1:24:ALA:HA	21:W1:32:LYS:HG3	2.02	0.41
22:X1:48:HIS:ND1	29:A1:94:G:O2'	2.52	0.41
29:A1:345:A:H4'	29:A1:347:A:N7	2.36	0.41
29:A1:737:U:H2'	29:A1:738:A:C8	2.55	0.41
29:A1:1081:U:H5'	31:e1:16:VAL:HB	2.02	0.41
3:E2:135:LYS:N	3:E2:166:ALA:HB2	2.35	0.41
4:F2:130:ASN:HD21	4:F2:161:THR:H	1.68	0.41
5:G2:17:VAL:HG21	5:G2:45:VAL:HG11	2.02	0.41
6:H2:45:LYS:HB2	29:A2:275:U:H3	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:P2:52:ARG:HD3	14:P2:52:ARG:HA	1.87	0.41
15:Q2:40:LEU:HD21	15:Q2:45:THR:HG23	2.02	0.41
15:Q2:89:GLN:HE22	29:A2:1210:G:N2	2.18	0.41
21:W2:94:LEU:HD22	29:A2:279:G:H4'	2.01	0.41
22:X2:38:GLN:HA	22:X2:41:ILE:HG23	2.01	0.41
29:A2:621:G:N2	29:A2:711:G:N3	2.68	0.41
29:A2:681:A:C5	29:A2:704:A:H5'	2.55	0.41
29:A2:1499:G:N1	29:A2:1511:C:O2	2.45	0.41
29:A2:2105:C:H2'	29:A2:2106:A:C8	2.56	0.41
29:A2:2105:C:H2'	29:A2:2106:A:H8	1.85	0.41
29:A2:2507:U:H2'	29:A2:2508:G:C8	2.55	0.41
29:A2:2541:C:N4	29:A2:2550:G:H1	2.11	0.41
29:A2:2624:C:H4'	29:A2:2625:U:H5'	2.02	0.41
29:A2:2662:C:H2'	29:A2:2663:U:C6	2.55	0.41
34:D3:30:LYS:HA	34:D3:33:MET:H	1.86	0.41
53:A3:671:G:H2'	53:A3:672:C:H6	1.85	0.41
34:D4:128:VAL:HG12	34:D4:129:ASN:H	1.84	0.41
40:J4:14:LYS:HA	40:J4:14:LYS:HD3	1.78	0.41
45:O4:31:LEU:HD23	45:O4:31:LEU:HA	1.92	0.41
50:T4:40:ALA:HA	50:T4:43:LEU:HD12	2.02	0.41
53:A4:448:C:N4	53:A4:463:C:N3	2.68	0.41
53:A4:637:G:H21	53:A4:738:G:H5'	1.84	0.41
53:A4:642:U:H3	53:A4:730:C:H42	1.68	0.41
53:A4:711:A:H2'	53:A4:712:A:H8	1.84	0.41
53:A4:1185:A:N6	53:A4:1186:U:O4	2.54	0.41
53:A4:1247:G:C2	53:A4:1249:A:H5''	2.54	0.41
1:C1:17:THR:HG21	1:C1:204:ILE:HA	2.01	0.41
2:D1:145:LYS:HZ3	29:A1:2078:A:P	2.44	0.41
3:E1:117:ARG:HH12	9:K1:1:MET:N	2.18	0.41
3:E1:153:SER:HB3	3:E1:190:GLU:H	1.85	0.41
13:O1:82:LEU:HD12	13:O1:82:LEU:HA	1.85	0.41
14:P1:83:LEU:HA	14:P1:86:ALA:HB3	2.01	0.41
29:A1:81:G:N2	29:A1:101:A:OP2	2.54	0.41
29:A1:226:C:H42	29:A1:251:G:H1	1.68	0.41
29:A1:269:G:H2'	29:A1:270:G:C8	2.52	0.41
29:A1:288:G:N7	29:A1:450:U:H2'	2.35	0.41
29:A1:861:C:O2'	29:A1:1274:A:O2'	2.28	0.41
29:A1:898:A:H62	29:A1:976:G:H21	1.68	0.41
29:A1:1331:G:O2'	29:A1:1333:G:O6	2.38	0.41
29:A1:1389:U:OP2	29:A1:1442:U:O2'	2.34	0.41
29:A1:1406:G:H22	29:A1:1419:G:H2'	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1867:U:H4'	29:A1:1868:G:H5'	2.03	0.41
29:A1:2381:G:N2	29:A1:2382:C:N3	2.67	0.41
29:A1:2386:G:H2'	29:A1:2387:G:C8	2.55	0.41
29:A1:2637:G:H2'	29:A1:2638:G:C8	2.55	0.41
3:E2:158:THR:HG21	3:E2:163:VAL:HG12	2.02	0.41
13:O2:50:ILE:HA	13:O2:99:LEU:HD12	2.02	0.41
14:P2:92:ARG:NH2	29:A2:1046:C:OP2	2.53	0.41
17:S2:62:LYS:HB3	17:S2:73:ARG:NH2	2.35	0.41
18:T2:5:MET:HG3	18:T2:6:HIS:H	1.85	0.41
20:V2:35:ASN:H	20:V2:61:ALA:HB3	1.85	0.41
29:A2:168:G:N1	29:A2:169:G:O6	2.54	0.41
29:A2:273:U:O2'	29:A2:274:G:N7	2.48	0.41
29:A2:605:C:N4	29:A2:1309:C:H42	2.18	0.41
29:A2:655:G:H2'	29:A2:656:G:O4'	2.20	0.41
29:A2:1250:G:N3	29:A2:1291:G:N2	2.68	0.41
32:B3:115:LEU:HD13	32:B3:145:LEU:HD22	2.02	0.41
34:D3:14:ARG:HD3	34:D3:47:ARG:HH12	1.84	0.41
34:D3:54:TYR:HE2	53:A3:492:A:H1'	1.84	0.41
34:D3:171:GLY:HA2	34:D3:172:PRO:HD3	1.79	0.41
35:E3:37:ARG:HG2	35:E3:112:LEU:HA	2.03	0.41
37:G3:26:PHE:HE1	37:G3:104:LEU:HB2	1.85	0.41
39:I3:27:THR:OG1	39:I3:61:ALA:O	2.34	0.41
39:I3:106:ALA:O	39:I3:107:ARG:NE	2.52	0.41
49:S3:51:VAL:N	49:S3:58:VAL:O	2.39	0.41
36:F4:8:ILE:HG23	36:F4:85:VAL:HG13	2.01	0.41
43:M4:102:ARG:CZ	53:A4:927:U:H5''	2.50	0.41
47:Q4:60:ILE:HD12	47:Q4:60:ILE:HA	1.97	0.41
53:A4:45:U:H2'	53:A4:46:G:C8	2.54	0.41
53:A4:152:G:H22	53:A4:156:A:N6	2.18	0.41
53:A4:1206:A:H4'	53:A4:1207:C:H5'	2.02	0.41
53:A4:1234:G:N1	53:A4:1235:C:N3	2.67	0.41
1:C1:129:ASN:H	1:C1:193:VAL:HB	1.85	0.41
1:C1:175:LEU:O	1:C1:183:ARG:N	2.49	0.41
4:F1:58:GLN:HB2	4:F1:148:MET:HG3	2.02	0.41
10:L1:41:TRP:HD1	10:L1:96:VAL:HG13	1.85	0.41
16:R1:28:SER:OG	16:R1:29:LEU:N	2.53	0.41
18:T1:70:SER:OG	29:A1:352:G:N2	2.54	0.41
29:A1:2364:C:H3'	29:A1:2365:G:H8	1.85	0.41
29:A1:2810:G:H4'	29:A1:2813:A:N6	2.36	0.41
30:B1:27:A:C6	30:B1:28:A:H1'	2.55	0.41
1:C2:227:ASN:ND2	29:A2:832:A:H3'	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:G2:142:GLY:O	5:G2:146:ALA:N	2.53	0.41
9:K2:88:LEU:O	9:K2:90:ARG:N	2.51	0.41
15:Q2:28:GLU:HB2	15:Q2:33:VAL:HG12	2.01	0.41
17:S2:57:LEU:HD13	29:A2:1388:U:H2'	2.03	0.41
22:X2:59:ARG:O	22:X2:63:VAL:N	2.41	0.41
29:A2:288:G:N7	29:A2:450:U:H2'	2.35	0.41
29:A2:478:G:H22	29:A2:481:C:H3'	1.84	0.41
29:A2:485:A:H8	29:A2:487:U:H3	1.69	0.41
29:A2:643:G:H2'	29:A2:644:G:C8	2.55	0.41
29:A2:890:A:H2'	29:A2:891:G:C8	2.55	0.41
29:A2:2273:G:H1'	29:A2:2441:C:H2'	2.02	0.41
29:A2:2574:C:H2'	29:A2:2575:A:C8	2.54	0.41
29:A2:2590:G:O2'	29:A2:2593:C:OP2	2.38	0.41
29:A2:2809:C:N4	29:A2:2815:G:H1	2.18	0.41
29:A2:2822:A:H62	29:A2:2902:G:N2	2.18	0.41
29:A2:2842:G:O2'	29:A2:2848:U:O2	2.36	0.41
30:B2:1:A:N7	30:B2:5:C:N4	2.61	0.41
32:B3:28:PHE:CZ	32:B3:31:TYR:HB2	2.55	0.41
32:B3:137:ARG:HD3	32:B3:140:HIS:HB2	2.01	0.41
34:D3:71:SER:OG	34:D3:74:GLN:N	2.53	0.41
34:D3:107:ARG:HD3	34:D3:107:ARG:HA	1.80	0.41
53:A3:151:G:H1	53:A3:158:U:H2'	1.85	0.41
53:A3:710:G:OP1	53:A3:725:G:N2	2.47	0.41
53:A3:721:C:H2'	53:A3:722:C:C2	2.55	0.41
53:A3:930:G:H2'	53:A3:931:G:C8	2.55	0.41
32:B4:22:LYS:HA	32:B4:24:TRP:HD1	1.85	0.41
35:E4:127:ASN:ND2	53:A4:19:C:OP1	2.53	0.41
38:H4:103:VAL:HG21	38:H4:136:GLU:HB2	2.02	0.41
46:P4:45:THR:OG1	46:P4:47:ASP:O	2.35	0.41
47:Q4:14:LYS:HD2	47:Q4:14:LYS:HA	1.82	0.41
49:S4:56:GLN:NE2	49:S4:78:ARG:HA	2.36	0.41
53:A4:287:G:N7	53:A4:304:G:N1	2.69	0.41
53:A4:501:C:H2'	53:A4:513:G:H21	1.86	0.41
53:A4:601:C:N4	53:A4:604:A:OP2	2.44	0.41
53:A4:947:C:H2'	53:A4:1212:G:H1'	2.02	0.41
53:A4:1497:G:H2'	53:A4:1498:G:H8	1.85	0.41
1:C1:132:PRO:HG3	1:C1:190:TYR:CE1	2.56	0.41
3:E1:77:ASP:N	3:E1:77:ASP:OD1	2.53	0.41
5:G1:30:LYS:HB2	5:G1:79:VAL:HA	2.01	0.41
9:K1:14:LYS:NZ	29:A1:1241:A:OP2	2.54	0.41
10:L1:10:ARG:HE	10:L1:11:LYS:NZ	2.18	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L1:16:ARG:HE	30:B1:93:C:P	2.43	0.41
16:R1:15:ARG:NH2	29:A1:1314:G:O4'	2.54	0.41
17:S1:52:VAL:HG12	17:S1:82:GLN:O	2.21	0.41
24:Z1:49:PHE:H	43:M3:65:LYS:HE3	1.86	0.41
29:A1:329:G:H2'	29:A1:330:U:C6	2.55	0.41
29:A1:424:G:H2'	29:A1:425:G:H8	1.86	0.41
29:A1:682:A:C2	29:A1:701:A:H5''	2.55	0.41
29:A1:1680:A:H62	29:A1:1732:C:H4'	1.84	0.41
30:B1:70:C:H41	30:B1:110:U:H3	1.69	0.41
2:D2:104:VAL:HG22	2:D2:198:VAL:HG13	2.01	0.41
5:G2:159:GLU:HG2	5:G2:169:VAL:HG22	2.03	0.41
9:K2:3:LEU:HA	9:K2:6:LEU:HB2	2.02	0.41
9:K2:79:ARG:HE	9:K2:109:GLY:HA2	1.85	0.41
12:N2:13:ARG:NH2	29:A2:2310:U:O4	2.54	0.41
13:O2:7:ILE:HG23	13:O2:8:LYS:HG2	2.03	0.41
14:P2:104:GLN:HB2	14:P2:108:GLU:HG3	2.02	0.41
29:A2:190:U:O4	29:A2:414:G:N2	2.53	0.41
29:A2:902:G:H1	29:A2:972:C:H42	1.66	0.41
29:A2:998:C:H2'	29:A2:999:G:H8	1.86	0.41
29:A2:1416:G:H2'	29:A2:1417:G:C8	2.54	0.41
29:A2:1567:G:H2'	29:A2:1568:U:C6	2.56	0.41
29:A2:1723:G:H21	29:A2:1726:A:H61	1.68	0.41
29:A2:2076:G:H2'	29:A2:2077:G:H8	1.84	0.41
31:e2:23:VAL:O	31:e2:35:ARG:HG3	2.20	0.41
33:C3:25:GLY:HA3	33:C3:28:GLN:HB3	2.02	0.41
35:E3:5:ASP:N	35:E3:5:ASP:OD1	2.54	0.41
35:E3:91:LEU:HD12	35:E3:118:ILE:HG12	2.01	0.41
36:F3:10:LEU:HB3	36:F3:11:ASN:H	1.68	0.41
40:J3:39:PRO:HD3	53:A3:1133:A:C6	2.56	0.41
41:K3:62:GLN:HE21	41:K3:66:LEU:HD22	1.85	0.41
49:S3:55:LYS:NZ	53:A3:935:A:O4'	2.42	0.41
53:A3:105:G:H22	53:A3:310:A:N6	2.17	0.41
53:A3:877:A:H2'	53:A3:878:A:C8	2.55	0.41
53:A3:1037:A:H62	53:A3:1181:C:H42	1.68	0.41
32:B4:223:ILE:HD13	32:B4:231:GLU:HG3	2.03	0.41
39:I4:96:LEU:HG	39:I4:100:GLY:HA2	2.03	0.41
43:M4:99:ARG:HH11	43:M4:99:ARG:HD2	1.75	0.41
53:A4:311:G:N7	53:A4:346:G:N1	2.69	0.41
53:A4:555:A:H1'	53:A4:893:G:H21	1.86	0.41
53:A4:1260:A:O2'	53:A4:1262:U:O5'	2.39	0.41
2:D1:7:VAL:HG23	2:D1:27:LEU:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D1:64:LYS:HE2	2:D1:64:LYS:HB2	1.89	0.41
11:M1:9:LYS:NZ	29:A1:1702:G:N7	2.65	0.41
20:V1:33:ALA:N	20:V1:64:ASP:OD1	2.54	0.41
22:X1:59:ARG:NE	29:A1:75:C:O3'	2.54	0.41
26:b1:12:GLU:HB3	26:b1:13:CYS:H	1.69	0.41
29:A1:202:G:H2'	29:A1:203:A:C8	2.56	0.41
29:A1:297:U:H2'	29:A1:298:C:C6	2.55	0.41
29:A1:1085:G:N1	29:A1:1166:C:O2	2.32	0.41
1:C2:95:LEU:HD22	1:C2:117:VAL:HG21	2.02	0.41
4:F2:47:LYS:NZ	4:F2:83:ARG:HG2	2.34	0.41
13:O2:23:ARG:HD2	29:A2:2879:G:O6	2.19	0.41
13:O2:126:ALA:O	13:O2:130:ALA:N	2.37	0.41
14:P2:42:ALA:HA	14:P2:45:TYR:HD2	1.85	0.41
14:P2:97:ASP:OD1	14:P2:101:ARG:NH1	2.41	0.41
16:R2:8:ARG:HG2	16:R2:102:HIS:HD2	1.85	0.41
17:S2:31:HIS:HA	17:S2:32:PRO:HD3	1.73	0.41
25:a2:16:ARG:HD3	25:a2:20:ARG:CZ	2.51	0.41
29:A2:11:G:C5	29:A2:12:U:H1'	2.56	0.41
29:A2:116:A:H5'	29:A2:117:A:C8	2.55	0.41
29:A2:267:C:H42	29:A2:279:G:H1	1.68	0.41
29:A2:409:G:H1	29:A2:421:C:H42	1.67	0.41
29:A2:420:C:N4	29:A2:421:C:N3	2.68	0.41
29:A2:440:A:C6	29:A2:2426:A:H1'	2.56	0.41
29:A2:527:G:N2	29:A2:529:A:H3'	2.35	0.41
29:A2:1020:A:O4'	29:A2:1235:U:N3	2.53	0.41
29:A2:1092:G:N2	29:A2:1093:A:H61	2.18	0.41
29:A2:1628:A:H2'	29:A2:1629:A:C6	2.55	0.41
29:A2:2364:C:H2'	29:A2:2365:G:O4'	2.20	0.41
29:A2:2875:C:N4	29:A2:2876:G:O6	2.53	0.41
46:P3:3:LYS:NZ	46:P3:66:PRO:O	2.42	0.41
50:T3:14:LYS:HZ2	53:A3:96:C:P	2.43	0.41
53:A3:32:A:H3'	53:A3:33:A:H8	1.86	0.41
53:A3:287:G:H5''	53:A3:288:G:C8	2.55	0.41
53:A3:376:C:H2'	53:A3:377:A:C8	2.54	0.41
53:A3:1157:A:H3'	53:A3:1158:G:H8	1.85	0.41
53:A3:1158:G:H1	53:A3:1161:A:N6	2.19	0.41
54:V3:14:THR:OG1	54:V3:15:ASP:N	2.52	0.41
54:V3:40:VAL:HA	54:V3:58:ILE:HG22	2.03	0.41
35:E4:138:ALA:O	35:E4:142:LEU:N	2.53	0.41
42:L4:86:ARG:HD3	42:L4:101:VAL:HG22	2.02	0.41
53:A4:501:C:H1'	53:A4:502:C:H5''	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:769:G:H2'	53:A4:770:A:C8	2.55	0.41
53:A4:794:C:O2'	53:A4:877:A:N6	2.49	0.41
53:A4:817:C:H2'	53:A4:818:U:C6	2.54	0.41
4:F1:133:LEU:HA	4:F1:134:GLY:HA3	1.68	0.41
12:N1:59:LYS:HA	12:N1:59:LYS:HD3	1.83	0.41
13:O1:50:ILE:HB	13:O1:62:THR:HG23	2.03	0.41
29:A1:124:A:O2'	29:A1:125:A:O4'	2.32	0.41
29:A1:854:G:H22	29:A1:877:U:H5''	1.85	0.41
29:A1:908:G:H22	29:A1:964:G:H2'	1.84	0.41
29:A1:918:G:H2'	29:A1:919:A:C8	2.55	0.41
29:A1:1147:G:H5''	29:A1:1148:C:C2	2.56	0.41
29:A1:1236:A:H3'	29:A1:1237:G:H8	1.86	0.41
29:A1:1336:U:O2'	29:A1:1375:C:N4	2.46	0.41
29:A1:1608:G:N2	29:A1:1608:G:OP1	2.46	0.41
29:A1:1709:C:H2'	29:A1:1710:G:H8	1.85	0.41
29:A1:2185:C:H4'	29:A1:2197:A:C5	2.56	0.41
29:A1:2357:C:O2'	29:A1:2387:G:O2'	2.38	0.41
29:A1:2573:C:H2'	29:A1:2574:C:C6	2.55	0.41
1:C2:70:TRP:HZ2	29:A2:2228:C:H1'	1.84	0.41
1:C2:148:GLU:HB2	1:C2:151:LYS:HD2	2.02	0.41
1:C2:260:ARG:HG2	1:C2:264:LYS:HD3	2.01	0.41
1:C2:264:LYS:O	1:C2:267:SER:OG	2.33	0.41
2:D2:2:LYS:HD3	2:D2:96:PHE:CE1	2.55	0.41
2:D2:130:GLY:HA3	29:A2:2594:U:H4'	2.03	0.41
13:O2:25:GLY:HA2	13:O2:99:LEU:HD11	2.03	0.41
29:A2:289:U:C4	29:A2:291:G:H5'	2.56	0.41
29:A2:1453:U:H2'	29:A2:1454:U:H6	1.86	0.41
29:A2:1982:C:H2'	29:A2:1983:G:H8	1.86	0.41
29:A2:2149:G:N2	29:A2:2197:A:OP2	2.53	0.41
29:A2:2276:U:O4	29:A2:2293:G:N1	2.54	0.41
29:A2:2306:C:N4	29:A2:2355:G:O6	2.53	0.41
29:A2:2390:A:H2'	29:A2:2391:A:C4	2.56	0.41
29:A2:2480:C:H2'	29:A2:2481:C:C6	2.56	0.41
29:A2:2699:G:H2'	29:A2:2700:G:C8	2.55	0.41
37:G3:26:PHE:HB2	37:G3:101:LEU:HD22	2.02	0.41
38:H3:127:LEU:HD23	38:H3:127:LEU:HA	1.96	0.41
41:K3:15:ALA:HA	41:K3:77:MET:HA	2.03	0.41
41:K3:58:PRO:HA	41:K3:61:ALA:HB3	2.02	0.41
43:M3:108:ARG:HG3	43:M3:114:ARG:NE	2.36	0.41
46:P3:27:LYS:HB2	46:P3:28:ARG:NH1	2.35	0.41
53:A3:316:A:H4'	53:A3:1418:U:H4'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A3:413:C:H2'	53:A3:414:C:C5	2.56	0.41
33:C4:82:GLU:HG2	33:C4:85:ARG:HD2	2.03	0.41
33:C4:164:ARG:HB3	33:C4:165:THR:H	1.75	0.41
37:G4:42:ILE:HA	37:G4:45:ASP:HB2	2.02	0.41
41:K4:18:ARG:HG3	41:K4:35:PRO:HA	2.01	0.41
41:K4:92:GLU:HG2	41:K4:95:ILE:HD12	2.03	0.41
53:A4:51:A:C4	53:A4:109:A:H1'	2.56	0.41
8:J1:58:VAL:HG12	8:J1:94:ARG:HH22	1.85	0.41
13:O1:39:ARG:HE	13:O1:41:ARG:NH2	2.19	0.41
13:O1:62:THR:HB	13:O1:75:ILE:HG23	2.03	0.41
13:O1:115:ARG:NH2	29:A1:1785:C:OP1	2.54	0.41
19:U1:52:SER:OG	19:U1:54:HIS:ND1	2.50	0.41
27:c1:7:PRO:HB2	29:A1:1357:G:H4'	2.01	0.41
29:A1:50:G:O2'	29:A1:117:A:N1	2.43	0.41
29:A1:147:U:H2'	29:A1:148:C:C6	2.56	0.41
29:A1:574:A:C4	29:A1:575:G:H1'	2.55	0.41
29:A1:883:C:H2'	29:A1:884:A:H8	1.85	0.41
29:A1:2087:C:H2'	29:A1:2088:C:H6	1.86	0.41
29:A1:2472:G:O2'	29:A1:2503:G:O6	2.34	0.41
30:B1:27:A:H3'	30:B1:28:A:H8	1.86	0.41
3:E2:117:ARG:HH12	9:K2:1:MET:N	2.19	0.41
3:E2:124:LEU:HD12	3:E2:124:LEU:HA	1.90	0.41
16:R2:78:GLU:OE1	29:A2:24:G:N2	2.52	0.41
19:U2:25:PRO:HB2	19:U2:85:HIS:CD2	2.56	0.41
29:A2:424:G:H2'	29:A2:425:G:C8	2.56	0.41
29:A2:595:G:H2'	29:A2:2054:A:N7	2.35	0.41
29:A2:1465:C:H41	29:A2:1630:G:H2'	1.85	0.41
29:A2:1753:G:H2'	29:A2:1754:G:C8	2.56	0.41
29:A2:2133:U:OP2	29:A2:2142:U:O2'	2.30	0.41
29:A2:2455:C:H2'	29:A2:2456:C:C6	2.55	0.41
29:A2:2601:A:H62	29:A2:2622:G:H21	1.68	0.41
29:A2:2667:U:H2'	29:A2:2668:A:C8	2.56	0.41
32:B3:72:GLY:H	32:B3:94:ASN:ND2	2.19	0.41
34:D3:135:LEU:HA	34:D3:136:PRO:HD3	1.87	0.41
36:F3:7:ASN:N	48:R3:34:TYR:OH	2.53	0.41
45:O3:64:ARG:NH2	53:A3:565:U:OP1	2.53	0.41
53:A3:216:C:H5''	53:A3:217:U:C6	2.56	0.41
53:A3:377:A:H2'	53:A3:378:A:H8	1.86	0.41
53:A3:926:A:O2'	53:A3:948:G:O6	2.32	0.41
53:A3:938:U:H2'	53:A3:939:C:C5	2.55	0.41
53:A3:1269:A:H61	53:A3:1353:G:H1'	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:K4:38:ASN:HA	41:K4:39:PRO:HD3	1.88	0.41
41:K4:116:HIS:NE2	53:A4:658:A:O2'	2.51	0.41
4:F1:7:LEU:HA	4:F1:10:LYS:HB3	2.03	0.41
4:F1:41:GLN:HB2	4:F1:155:MET:HG3	2.03	0.41
5:G1:87:LEU:HD12	5:G1:131:VAL:HB	2.03	0.41
7:I1:39:ARG:N	14:P1:67:ALA:HB1	2.35	0.41
7:I1:100:GLU:O	7:I1:104:LYS:N	2.54	0.41
9:K1:55:ARG:NH1	29:A1:2372:G:H22	2.19	0.41
9:K1:85:LEU:H	9:K1:85:LEU:HG	1.71	0.41
11:M1:90:ARG:HH12	11:M1:118:GLU:C	2.28	0.41
14:P1:63:VAL:HG22	14:P1:67:ALA:HB2	2.02	0.41
14:P1:102:GLU:OE2	15:Q1:13:ARG:NH2	2.51	0.41
21:W1:45:ASN:OD1	21:W1:47:GLN:NE2	2.39	0.41
21:W1:85:LEU:HD23	21:W1:85:LEU:HA	1.87	0.41
24:Z1:18:CYS:SG	24:Z1:38:LYS:HG2	2.61	0.41
25:a1:10:LYS:HE3	25:a1:10:LYS:HB2	1.84	0.41
29:A1:181:A:H2'	29:A1:182:C:H6	1.86	0.41
29:A1:268:C:H2'	29:A1:269:G:C8	2.56	0.41
29:A1:401:U:O2	29:A1:429:A:N6	2.54	0.41
29:A1:763:U:C2	29:A1:765:A:H5''	2.56	0.41
29:A1:995:G:H21	29:A1:1033:C:P	2.44	0.41
29:A1:1823:C:H2'	29:A1:1824:A:C5	2.55	0.41
29:A1:1975:U:N3	29:A1:1978:G:OP2	2.54	0.41
29:A1:2093:G:H2'	29:A1:2094:G:C8	2.55	0.41
29:A1:2247:U:H2'	29:A1:2248:G:H8	1.86	0.41
29:A1:2351:G:H2'	29:A1:2352:G:H8	1.85	0.41
29:A1:2491:C:H5''	29:A1:2492:A:H5''	2.03	0.41
29:A1:2542:U:H2'	29:A1:2544:A:C8	2.56	0.41
29:A1:2817:C:N4	29:A1:2818:G:O6	2.54	0.41
30:B1:28:A:OP2	30:B1:29:C:N4	2.34	0.41
2:D2:141:ILE:HA	2:D2:154:LYS:HE2	2.03	0.41
3:E2:39:TRP:CE2	3:E2:101:LEU:HD22	2.56	0.41
3:E2:63:LYS:HA	3:E2:63:LYS:HD3	1.77	0.41
8:J2:71:ARG:HD2	8:J2:104:ARG:HE	1.86	0.41
8:J2:114:ILE:HD13	8:J2:114:ILE:HA	1.90	0.41
9:K2:4:SER:HA	29:A2:1291:G:H1'	2.03	0.41
10:L2:77:LYS:HA	10:L2:78:PRO:HD3	1.80	0.41
23:Y2:23:LEU:HD21	23:Y2:53:LEU:HD11	2.02	0.41
29:A2:269:G:H2'	29:A2:270:G:H8	1.85	0.41
29:A2:290:G:H2'	29:A2:291:G:H8	1.83	0.41
29:A2:398:G:H3'	29:A2:452:A:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A2:477:A:H2'	29:A2:478:G:C8	2.56	0.41
29:A2:503:U:O2'	29:A2:536:C:O2'	2.30	0.41
29:A2:681:A:N6	29:A2:700:G:OP1	2.54	0.41
29:A2:706:U:H2'	29:A2:707:C:C6	2.56	0.41
29:A2:2191:U:H2'	29:A2:2192:G:H4'	2.02	0.41
29:A2:2284:G:H2'	29:A2:2285:G:O4'	2.21	0.41
29:A2:2442:G:H1'	29:A2:2443:G:C6	2.55	0.41
29:A2:2584:G:H2'	29:A2:2585:C:C6	2.56	0.41
29:A2:2749:A:H3'	29:A2:2750:G:H8	1.86	0.41
29:A2:2785:G:N7	29:A2:2786:C:N4	2.69	0.41
32:B3:211:ILE:HD13	32:B3:211:ILE:HG21	1.91	0.41
34:D3:18:LYS:HG2	34:D3:29:PRO:HA	2.03	0.41
34:D3:94:LEU:HA	34:D3:97:LEU:HD12	2.03	0.41
40:J3:31:GLY:O	40:J3:76:ASN:ND2	2.54	0.41
42:L3:19:ARG:HD3	42:L3:19:ARG:HA	1.89	0.41
42:L3:110:VAL:N	42:L3:122:THR:OG1	2.50	0.41
46:P3:1:MET:N	53:A3:129:C:O2	2.37	0.41
47:Q3:29:HIS:HA	47:Q3:30:PRO:HD3	1.88	0.41
49:S3:80:TYR:OH	49:S3:83:HIS:O	2.29	0.41
52:X3:150:GLN:HG2	52:W4:170:ASN:N	2.35	0.41
53:A3:106:G:H2'	53:A3:107:U:C6	2.56	0.41
53:A3:229:C:H2'	53:A3:230:C:C4	2.56	0.41
53:A3:569:C:H2'	53:A3:570:G:C8	2.55	0.41
53:A3:749:A:H1'	53:A3:750:A:C8	2.56	0.41
53:A3:877:A:H2'	53:A3:878:A:H8	1.86	0.41
53:A3:1049:A:H1'	53:A3:1050:G:C8	2.56	0.41
53:A3:1197:G:O6	53:A3:1199:C:N4	2.54	0.41
53:A3:1293:G:N1	53:A3:1307:C:N3	2.69	0.41
53:A3:1440:C:N4	53:A3:1441:G:O6	2.53	0.41
53:A3:1490:A:H2'	53:A3:1491:C:H6	1.86	0.41
32:B4:71:VAL:HG22	32:B4:93:VAL:HG21	2.03	0.41
33:C4:112:SER:HB3	33:C4:115:LEU:HD12	2.03	0.41
34:D4:72:GLU:H	53:A4:529:G:P	2.43	0.41
34:D4:96:LEU:HD13	34:D4:139:ARG:NH2	2.36	0.41
35:E4:106:PRO:HB3	35:E4:110:LEU:HG	2.02	0.41
37:G4:70:LYS:HA	37:G4:71:PRO:HD3	1.88	0.41
39:I4:67:GLY:O	39:I4:73:GLN:NE2	2.54	0.41
39:I4:77:ILE:C	39:I4:80:GLY:H	2.29	0.41
39:I4:122:ALA:HA	39:I4:123:PRO:HD3	1.84	0.41
42:L4:110:VAL:N	42:L4:122:THR:OG1	2.53	0.41
50:T4:58:LYS:HE3	50:T4:62:LEU:HD11	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:135:A:H4'	53:A4:176:U:H1'	2.02	0.41
53:A4:453:G:N2	53:A4:456:G:N7	2.69	0.41
53:A4:902:G:H1	53:A4:1374:G:N2	2.19	0.41
53:A4:1006:C:H2'	53:A4:1007:C:H4'	2.02	0.41
53:A4:1219:A:O4'	53:A4:1282:U:N3	2.54	0.41
53:A4:1427:G:N1	53:A4:1437:A:H1'	2.36	0.41
53:A4:1473:C:H2'	53:A4:1474:G:C8	2.56	0.41
1:C1:213:ARG:NH2	29:A1:814:G:OP1	2.54	0.41
10:L1:46:GLN:HG2	29:A1:2498:G:H4'	2.03	0.41
11:M1:107:ASP:HA	29:A1:2033:G:H21	1.85	0.41
13:O1:33:LYS:HB2	13:O1:82:LEU:C	2.46	0.41
16:R1:8:ARG:HG2	16:R1:102:HIS:CG	2.56	0.41
20:V1:72:ARG:HH21	20:V1:75:LEU:HB3	1.85	0.41
24:Z1:52:THR:O	24:Z1:54:GLY:N	2.53	0.41
29:A1:249:G:H2'	29:A1:250:G:C8	2.56	0.41
29:A1:543:C:H2'	29:A1:544:C:C6	2.56	0.41
29:A1:893:C:H3'	29:A1:894:G:C8	2.56	0.41
29:A1:1261:A:H61	29:A1:1283:G:H1'	1.86	0.41
29:A1:1343:C:H42	29:A1:1694:G:H22	1.68	0.41
29:A1:1765:G:H2'	29:A1:1766:G:C8	2.55	0.41
29:A1:1766:G:H1	29:A1:1774:C:H42	1.69	0.41
29:A1:2389:G:H1	29:A1:2391:A:H3'	1.86	0.41
1:C2:142:VAL:HG12	1:C2:193:VAL:HA	2.02	0.41
2:D2:24:THR:HG21	2:D2:188:VAL:HG21	2.03	0.41
7:I2:132:ALA:N	29:A2:2909:U:O2	2.54	0.41
13:O2:96:ARG:HD3	13:O2:96:ARG:HA	1.91	0.41
18:T2:36:ALA:HB1	18:T2:66:PRO:HB2	2.03	0.41
19:U2:129:SER:H	19:U2:157:LEU:HD11	1.86	0.41
22:X2:43:GLN:NE2	22:X2:45:SER:HB2	2.36	0.41
27:c2:1:MET:N	29:A2:1667:G:H21	2.19	0.41
29:A2:155:C:N4	29:A2:161:G:H1	2.17	0.41
29:A2:596:A:H5'	29:A2:1022:C:N4	2.36	0.41
29:A2:1919:C:H2'	29:A2:1920:G:C8	2.56	0.41
29:A2:1947:U:H2'	29:A2:1948:C:C6	2.55	0.41
29:A2:2427:G:H2'	29:A2:2428:G:H8	1.86	0.41
30:B2:62:C:H2'	30:B2:63:G:C8	2.56	0.41
32:B3:200:ILE:HG22	32:B3:202:PRO:HD3	2.03	0.41
32:B3:224:GLN:NE2	32:B3:229:VAL:HA	2.36	0.41
33:C3:189:ALA:HB3	33:C3:196:LEU:HB2	2.01	0.41
34:D3:209:ARG:HD3	53:A3:26:A:H1'	2.03	0.41
41:K3:65:ALA:HB3	41:K3:97:ALA:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:L3:59:ARG:NE	42:L3:65:GLU:HB2	2.35	0.41
53:A3:105:G:H1	53:A3:310:A:H61	1.69	0.41
53:A3:288:G:N2	53:A3:300:G:O4'	2.54	0.41
53:A3:1120:G:N2	53:A3:1122:C:H42	2.19	0.41
53:A3:1392:G:H2'	53:A3:1393:C:C6	2.56	0.41
53:A3:1422:C:H42	53:A3:1438:G:H22	1.67	0.41
49:S4:39:THR:HG23	49:S4:70:LYS:HG2	2.03	0.41
53:A4:1145:C:O4'	53:A4:1155:G:N2	2.54	0.41
53:A4:1250:A:N1	53:A4:1293:G:O2'	2.38	0.41
53:A4:1493:G:N2	53:A4:1496:A:OP2	2.39	0.41
11:M1:8:ARG:N	11:M1:43:GLU:OE2	2.54	0.40
11:M1:97:VAL:HA	11:M1:114:VAL:HG23	2.04	0.40
19:U1:4:ARG:HA	19:U1:58:VAL:HG22	2.03	0.40
19:U1:78:LYS:H	19:U1:80:ARG:NH2	2.19	0.40
20:V1:27:GLU:OE1	29:A1:905:C:O2'	2.34	0.40
21:W1:48:LYS:HG2	21:W1:61:ARG:HG2	2.03	0.40
22:X1:48:HIS:CG	29:A1:94:G:HO2'	2.39	0.40
29:A1:250:G:H2'	29:A1:251:G:H8	1.86	0.40
29:A1:712:G:N2	29:A1:986:G:O2'	2.54	0.40
29:A1:1352:C:H42	29:A1:1672:G:H1	1.68	0.40
29:A1:1403:G:H1	29:A1:1424:C:H42	1.68	0.40
29:A1:1824:A:H62	29:A1:1861:G:H21	1.69	0.40
29:A1:2022:G:H2'	29:A1:2023:C:O4'	2.20	0.40
29:A1:2584:G:H2'	29:A1:2585:C:C6	2.56	0.40
1:C2:133:LEU:N	1:C2:189:CYS:O	2.52	0.40
10:L2:14:ARG:HD3	10:L2:14:ARG:HA	1.88	0.40
10:L2:69:PHE:CZ	29:A2:920:U:H4'	2.55	0.40
12:N2:73:LEU:HD12	12:N2:76:LYS:HB2	2.03	0.40
29:A2:739:G:H1	29:A2:822:U:H3	1.68	0.40
29:A2:1394:G:N3	29:A2:1649:G:N2	2.70	0.40
29:A2:2049:C:H2'	29:A2:2050:C:H6	1.86	0.40
30:B2:29:C:H2'	30:B2:30:C:C6	2.56	0.40
32:B3:87:ARG:NH2	32:B3:232:PRO:O	2.52	0.40
37:G3:117:ALA:HA	37:G3:120:ILE:HB	2.03	0.40
40:J3:3:LYS:N	40:J3:101:VAL:OXT	2.54	0.40
50:T3:29:LYS:HA	50:T3:29:LYS:HD3	1.89	0.40
53:A3:168:C:H2'	53:A3:169:C:C6	2.56	0.40
53:A3:202:A:H4'	53:A3:217:U:N3	2.36	0.40
53:A3:430:C:N4	53:A3:431:C:N3	2.69	0.40
53:A3:855:G:O6	53:A3:856:C:N4	2.55	0.40
34:D4:13:ARG:HE	34:D4:40:PRO:HA	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:H4:85:ARG:HH12	38:H4:134:ILE:HG22	1.86	0.40
49:S4:55:LYS:NZ	49:S4:79:THR:OG1	2.54	0.40
53:A4:71:C:N4	53:A4:91:G:N7	2.68	0.40
53:A4:607:C:H2'	53:A4:608:G:C8	2.57	0.40
53:A4:925:C:H3'	53:A4:926:A:C8	2.56	0.40
53:A4:1047:U:O4'	53:A4:1171:G:N1	2.55	0.40
53:A4:1139:A:HO2'	53:A4:1162:G:H21	1.61	0.40
53:A4:1229:A:N6	53:A4:1270:A:N1	2.69	0.40
1:C1:95:LEU:HD12	1:C1:105:ILE:HG13	2.03	0.40
1:C1:165:ILE:HG22	1:C1:167:GLY:H	1.86	0.40
2:D1:55:ASN:HB3	2:D1:57:LYS:HG2	2.02	0.40
5:G1:98:LEU:H	5:G1:126:PRO:HB3	1.86	0.40
6:H1:17:GLN:HB3	6:H1:18:VAL:H	1.66	0.40
7:I1:34:LEU:HD12	7:I1:34:LEU:HA	1.92	0.40
7:I1:58:ASP:OD1	7:I1:58:ASP:N	2.51	0.40
11:M1:105:ARG:HH21	16:R1:42:ARG:HG3	1.86	0.40
13:O1:62:THR:HG1	13:O1:74:ARG:C	2.30	0.40
14:P1:59:ARG:HA	14:P1:62:ILE:HG13	2.03	0.40
19:U1:166:SER:HB2	19:U1:169:GLU:HB2	2.03	0.40
23:Y1:9:VAL:C	23:Y1:31:LEU:HD11	2.46	0.40
29:A1:6:A:H2'	29:A1:7:G:C8	2.56	0.40
29:A1:358:G:N2	29:A1:359:C:O2	2.54	0.40
29:A1:562:C:H2'	29:A1:563:A:C8	2.56	0.40
29:A1:590:C:O2'	29:A1:591:U:O5'	2.33	0.40
29:A1:671:A:C2	29:A1:2383:A:H1'	2.56	0.40
29:A1:897:G:N7	29:A1:976:G:N2	2.69	0.40
29:A1:1105:A:H5''	29:A1:1134:A:C8	2.56	0.40
29:A1:1286:G:N2	29:A1:1287:G:N3	2.68	0.40
29:A1:1699:G:H2'	29:A1:1700:G:H8	1.85	0.40
29:A1:1805:G:H1	29:A1:2003:C:H42	1.69	0.40
29:A1:1956:A:H62	29:A1:1992:G:H21	1.69	0.40
29:A1:2286:U:O2'	29:A1:2287:A:O4'	2.40	0.40
29:A1:2303:G:H1'	29:A1:2397:G:N2	2.36	0.40
29:A1:2314:G:N2	29:A1:2331:C:O2'	2.52	0.40
29:A1:2633:C:H2'	29:A1:2634:C:C6	2.56	0.40
2:D2:50:GLY:HA2	2:D2:78:LEU:HD22	2.02	0.40
3:E2:31:HIS:NE2	3:E2:35:GLU:OE2	2.52	0.40
3:E2:45:ARG:NH2	29:A2:472:C:OP1	2.55	0.40
3:E2:132:VAL:N	3:E2:138:GLU:OE1	2.55	0.40
5:G2:23:ARG:HG2	5:G2:36:PRO:HB3	2.03	0.40
17:S2:3:THR:HG23	17:S2:31:HIS:CG	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:X2:48:HIS:CG	29:A2:94:G:HO2'	2.37	0.40
29:A2:540:A:H2'	29:A2:541:A:H8	1.86	0.40
29:A2:2337:G:H2'	29:A2:2338:C:C6	2.56	0.40
29:A2:2691:G:H2'	29:A2:2692:C:C6	2.56	0.40
32:B3:93:VAL:HG12	32:B3:95:GLN:H	1.87	0.40
33:C3:160:ALA:O	33:C3:162:GLN:NE2	2.54	0.40
34:D3:61:LYS:HE2	34:D3:65:ARG:NH2	2.36	0.40
36:F3:2:ARG:NH1	36:F3:92:LYS:HE3	2.35	0.40
39:I3:4:TYR:HB2	39:I3:19:LEU:H	1.86	0.40
39:I3:125:TYR:HB2	53:A3:1323:C:O3'	2.20	0.40
41:K3:33:THR:HA	41:K3:39:PRO:HA	2.03	0.40
47:Q3:86:GLU:O	47:Q3:90:ILE:HG12	2.22	0.40
53:A3:65:U:OP1	53:A3:376:C:N4	2.55	0.40
53:A3:92:U:H2'	53:A3:93:C:H6	1.86	0.40
53:A3:266:C:H2'	53:A3:267:C:H6	1.86	0.40
53:A3:372:G:H1	53:A3:381:C:H42	1.69	0.40
53:A3:838:G:H1	53:A3:846:G:H1'	1.86	0.40
53:A3:865:G:H3'	53:A3:866:A:C8	2.57	0.40
53:A3:924:G:N2	53:A3:1216:U:O2	2.54	0.40
53:A3:1269:A:O2'	53:A3:1270:A:O5'	2.31	0.40
32:B4:46:LYS:HA	32:B4:49:GLU:HB2	2.04	0.40
32:B4:142:LEU:HA	32:B4:145:LEU:HD12	2.03	0.40
40:J4:38:ILE:HD11	53:A4:1106:G:H4'	2.02	0.40
43:M4:102:ARG:NH2	53:A4:927:U:H5''	2.36	0.40
53:A4:134:A:N6	53:A4:218:U:O4	2.42	0.40
53:A4:746:G:H2'	53:A4:747:C:C6	2.56	0.40
53:A4:903:G:O6	54:V4:93:ARG:NH1	2.54	0.40
53:A4:1139:A:C8	53:A4:1161:A:H1'	2.55	0.40
1:C1:60:ARG:NH1	1:C1:86:PRO:O	2.54	0.40
1:C1:222:ARG:HG2	29:A1:1822:A:P	2.61	0.40
4:F1:40:ASN:HD22	4:F1:41:GLN:H	1.68	0.40
7:I1:9:VAL:HA	7:I1:48:MET:HE2	2.04	0.40
8:J1:122:LEU:HD12	13:O1:72:VAL:HG21	2.03	0.40
11:M1:118:GLU:HG3	25:a1:53:ALA:HB1	2.03	0.40
12:N1:24:LEU:HD12	12:N1:41:ASP:HA	2.04	0.40
21:W1:51:VAL:HG22	21:W1:59:THR:HG22	2.03	0.40
29:A1:958:A:H2'	29:A1:959:A:C8	2.56	0.40
29:A1:995:G:N1	29:A1:1017:C:O2	2.55	0.40
29:A1:1363:C:N4	29:A1:1385:G:H1	2.19	0.40
29:A1:1547:C:H2'	29:A1:1548:G:C8	2.56	0.40
29:A1:1691:G:H2'	29:A1:1692:G:O4'	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:1982:C:H2'	29:A1:1983:G:H8	1.86	0.40
29:A1:2224:C:H2'	29:A1:2225:C:C6	2.57	0.40
29:A1:2822:A:C5	29:A1:2823:G:H1'	2.56	0.40
29:A1:2906:U:H5	29:A1:2907:C:H41	1.68	0.40
8:J2:71:ARG:HH21	8:J2:76:ALA:H	1.68	0.40
12:N2:87:PHE:CE2	12:N2:89:ARG:HA	2.57	0.40
15:Q2:22:VAL:HG22	15:Q2:23:GLU:H	1.86	0.40
20:V2:55:ARG:HD3	29:A2:2378:C:H5''	2.03	0.40
25:a2:2:ALA:HA	29:A2:796:U:H3	1.87	0.40
29:A2:156:U:H2'	29:A2:157:U:H5	1.87	0.40
29:A2:249:G:O2'	29:A2:648:A:O2'	2.30	0.40
29:A2:465:C:H2'	29:A2:466:G:O4'	2.22	0.40
29:A2:875:U:O2	29:A2:881:G:N2	2.54	0.40
29:A2:1063:G:N2	29:A2:1195:C:N3	2.48	0.40
29:A2:1301:A:H3'	29:A2:1302:A:C8	2.54	0.40
29:A2:1809:G:O6	29:A2:1820:A:N6	2.55	0.40
29:A2:2219:C:H2'	29:A2:2220:C:C6	2.56	0.40
29:A2:2451:U:O2'	29:A2:2452:U:O4'	2.31	0.40
32:B3:31:TYR:HB3	32:B3:46:LYS:HB3	2.03	0.40
32:B3:162:ILE:HG23	32:B3:184:VAL:HG22	2.03	0.40
33:C3:114:PRO:O	33:C3:118:GLN:N	2.55	0.40
37:G3:28:ASN:O	53:A3:1356:A:O2'	2.39	0.40
42:L3:54:LYS:HD2	42:L3:75:HIS:CD2	2.56	0.40
53:A3:805:C:H2'	53:A3:806:G:C8	2.57	0.40
35:E4:78:HIS:HB3	35:E4:142:LEU:HD11	2.04	0.40
42:L4:90:VAL:HG23	42:L4:99:HIS:NE2	2.37	0.40
42:L4:124:LYS:O	42:L4:126:LYS:NZ	2.47	0.40
43:M4:56:LEU:HA	43:M4:56:LEU:HD23	1.87	0.40
52:W4:150:GLN:HE22	52:W4:153:ALA:HB3	1.87	0.40
53:A4:366:G:H22	53:A4:385:C:H42	1.69	0.40
53:A4:500:G:N2	53:A4:516:A:OP1	2.47	0.40
53:A4:598:C:O2	53:A4:608:G:N1	2.43	0.40
53:A4:678:A:N6	53:A4:679:A:N1	2.69	0.40
53:A4:1201:G:H2'	53:A4:1202:G:C8	2.56	0.40
53:A4:1226:A:H3'	53:A4:1227:C:C6	2.57	0.40
1:C1:148:GLU:HA	1:C1:149:PRO:HD3	1.78	0.40
1:C1:242:ARG:NH2	29:A1:1859:G:O2'	2.53	0.40
3:E1:180:GLY:HA2	29:A1:642:A:C4	2.57	0.40
5:G1:101:ARG:HD2	5:G1:117:PRO:HD2	2.03	0.40
11:M1:22:ARG:HH12	29:A1:2723:G:H5'	1.87	0.40
21:W1:3:LYS:HD2	21:W1:3:LYS:HA	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:W1:85:LEU:HD22	21:W1:88:LYS:HE3	2.03	0.40
29:A1:81:G:H2'	29:A1:82:G:C4	2.55	0.40
29:A1:310:C:H42	29:A1:381:G:H22	1.69	0.40
29:A1:757:C:H2'	29:A1:758:U:C6	2.56	0.40
29:A1:890:A:H2'	29:A1:891:G:C8	2.56	0.40
29:A1:1830:C:O2	29:A1:1856:G:N2	2.55	0.40
29:A1:1969:G:H2'	29:A1:1970:U:C6	2.56	0.40
29:A1:2293:G:H2'	29:A1:2294:G:H8	1.85	0.40
29:A1:2810:G:N2	29:A1:2905:G:O5'	2.55	0.40
30:B1:15:A:N6	30:B1:71:G:O2'	2.55	0.40
19:U2:30:ASN:H	19:U2:33:LEU:HB3	1.86	0.40
25:a2:8:LYS:HG2	29:A2:2078:A:C2	2.57	0.40
29:A2:150:C:N4	29:A2:165:G:O6	2.54	0.40
29:A2:349:A:H62	29:A2:363:G:H21	1.70	0.40
29:A2:956:C:H2'	29:A2:957:A:C8	2.56	0.40
44:N3:40:CYS:SG	44:N3:43:CYS:N	2.84	0.40
53:A3:8:A:O2'	53:A3:9:G:O5'	2.37	0.40
53:A3:10:A:N6	53:A3:24:U:H3	2.20	0.40
53:A3:588:U:H3	53:A3:617:C:H42	1.68	0.40
53:A3:947:C:H2'	53:A3:1212:G:H1'	2.03	0.40
53:A3:975:G:N2	53:A3:976:C:H41	2.19	0.40
53:A3:1247:G:H5''	53:A3:1248:C:H5''	2.03	0.40
53:A3:1422:C:H42	53:A3:1438:G:N2	2.20	0.40
33:C4:27:LYS:NZ	53:A4:1238:U:OP1	2.46	0.40
34:D4:76:ARG:HA	34:D4:79:PHE:HB3	2.03	0.40
34:D4:172:PRO:HG2	34:D4:189:PRO:HB3	2.02	0.40
41:K4:42:TRP:HZ3	41:K4:44:SER:HB3	1.86	0.40
50:T4:22:ARG:HG2	50:T4:25:ARG:HE	1.85	0.40
53:A4:548:U:H5''	53:A4:549:G:H3'	2.03	0.40
53:A4:566:A:H62	53:A4:741:G:H21	1.67	0.40
53:A4:657:G:H2'	53:A4:658:A:C8	2.55	0.40
53:A4:665:G:H1	53:A4:691:C:H42	1.69	0.40
53:A4:1117:U:O2	53:A4:1120:G:N2	2.46	0.40
2:D1:61:ARG:HH22	29:A1:2822:A:P	2.44	0.40
2:D1:106:GLY:HA3	2:D1:189:PRO:HB2	2.04	0.40
5:G1:142:GLY:HA2	5:G1:145:ALA:HB3	2.04	0.40
7:I1:56:ASN:HD21	7:I1:126:PRO:HG3	1.87	0.40
17:S1:40:LYS:HE3	17:S1:40:LYS:HB3	1.87	0.40
18:T1:84:ARG:H	18:T1:95:LYS:HE2	1.85	0.40
18:T1:86:ARG:NH1	29:A1:323:G:OP2	2.54	0.40
19:U1:93:ASP:HA	19:U1:131:ARG:HG2	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:A1:159:U:OP1	29:A1:161:G:N1	2.53	0.40
29:A1:226:C:H2'	29:A1:227:C:H6	1.85	0.40
29:A1:248:G:H2'	29:A1:249:G:C8	2.57	0.40
29:A1:313:C:N3	29:A1:379:G:N1	2.69	0.40
29:A1:725:A:H2	29:A1:851:A:H61	1.70	0.40
29:A1:753:G:O2'	29:A1:775:G:N2	2.48	0.40
29:A1:1490:G:H2'	29:A1:1491:G:H8	1.85	0.40
2:D2:157:ALA:O	29:A2:2634:C:O2'	2.29	0.40
4:F2:74:LYS:HB3	4:F2:74:LYS:HE2	1.88	0.40
5:G2:139:GLN:OE1	29:A2:2774:G:N2	2.52	0.40
13:O2:64:ARG:HH22	13:O2:110:ILE:HG13	1.86	0.40
15:Q2:83:ARG:NH2	29:A2:1274:A:OP1	2.47	0.40
22:X2:43:GLN:HE22	22:X2:45:SER:HB2	1.87	0.40
24:Z2:55:ARG:HD2	24:Z2:62:ARG:HH22	1.87	0.40
26:b2:18:ARG:HB2	26:b2:43:CYS:SG	2.61	0.40
29:A2:271:C:N4	29:A2:273:U:O2	2.54	0.40
29:A2:730:G:H2'	29:A2:731:G:H8	1.87	0.40
29:A2:747:C:H5'	29:A2:1683:A:H62	1.86	0.40
29:A2:1117:A:H5''	29:A2:1122:G:N7	2.36	0.40
30:B2:42:U:N3	30:B2:45:C:O5'	2.54	0.40
32:B3:68:ILE:HB	32:B3:90:MET:SD	2.61	0.40
32:B3:177:ALA:HA	32:B3:182:ILE:HD12	2.04	0.40
33:C3:130:VAL:HG13	33:C3:153:VAL:HG21	2.03	0.40
34:D3:72:GLU:H	53:A3:529:G:P	2.45	0.40
37:G3:24:THR:HA	37:G3:27:ILE:HB	2.02	0.40
42:L3:58:VAL:C	42:L3:65:GLU:HG3	2.46	0.40
42:L3:117:ARG:HH12	53:A3:36:C:H4'	1.87	0.40
44:N3:15:LYS:NZ	53:A3:993:A:OP1	2.55	0.40
53:A3:314:G:H2'	53:A3:315:C:C6	2.56	0.40
53:A3:676:G:H3'	53:A3:677:A:C8	2.57	0.40
53:A3:691:C:H2'	53:A3:692:G:H8	1.85	0.40
53:A3:869:A:H2'	53:A3:870:C:C6	2.56	0.40
53:A3:1041:C:H42	53:A3:1179:G:H22	1.70	0.40
53:A3:1049:A:H8	53:A3:1090:G:H21	1.69	0.40
53:A3:1493:G:N1	53:A3:1496:A:OP2	2.36	0.40
34:D4:98:GLU:OE2	34:D4:107:ARG:NE	2.55	0.40
34:D4:153:ARG:HH12	34:D4:182:LYS:HZ1	1.69	0.40
34:D4:154:ASN:OD1	34:D4:154:ASN:N	2.52	0.40
43:M4:79:LYS:O	43:M4:83:ASP:N	2.55	0.40
47:Q4:53:LEU:HD12	47:Q4:53:LEU:H	1.85	0.40
48:R4:51:LEU:HA	48:R4:52:PRO:HD3	1.94	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:A4:656:G:H21	53:A4:717:G:H2'	1.86	0.40
53:A4:1218:C:O2'	53:A4:1281:G:N2	2.46	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	C1	270/272 (99%)	208 (77%)	62 (23%)	0	100	100
1	C2	270/272 (99%)	214 (79%)	56 (21%)	0	100	100
2	D1	203/205 (99%)	159 (78%)	44 (22%)	0	100	100
2	D2	203/205 (99%)	153 (75%)	48 (24%)	2 (1%)	12	47
3	E1	206/208 (99%)	157 (76%)	48 (23%)	1 (0%)	24	63
3	E2	206/208 (99%)	148 (72%)	57 (28%)	1 (0%)	24	63
4	F1	179/181 (99%)	141 (79%)	38 (21%)	0	100	100
4	F2	179/181 (99%)	139 (78%)	40 (22%)	0	100	100
5	G1	168/170 (99%)	126 (75%)	42 (25%)	0	100	100
5	G2	168/170 (99%)	130 (77%)	38 (23%)	0	100	100
6	H1	48/50 (96%)	37 (77%)	11 (23%)	0	100	100
6	H2	48/50 (96%)	36 (75%)	12 (25%)	0	100	100
7	I1	136/138 (99%)	113 (83%)	22 (16%)	1 (1%)	18	55
7	I2	136/138 (99%)	112 (82%)	24 (18%)	0	100	100
8	J1	120/122 (98%)	98 (82%)	22 (18%)	0	100	100
8	J2	120/122 (98%)	93 (78%)	27 (22%)	0	100	100
9	K1	148/150 (99%)	119 (80%)	29 (20%)	0	100	100
9	K2	148/150 (99%)	106 (72%)	42 (28%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
10	L1	139/141 (99%)	107 (77%)	32 (23%)	0	100	100
10	L2	139/141 (99%)	104 (75%)	35 (25%)	0	100	100
11	M1	115/117 (98%)	100 (87%)	15 (13%)	0	100	100
11	M2	115/117 (98%)	100 (87%)	15 (13%)	0	100	100
12	N1	109/111 (98%)	87 (80%)	22 (20%)	0	100	100
12	N2	109/111 (98%)	86 (79%)	23 (21%)	0	100	100
13	O1	135/137 (98%)	105 (78%)	30 (22%)	0	100	100
13	O2	135/137 (98%)	96 (71%)	39 (29%)	0	100	100
14	P1	115/117 (98%)	96 (84%)	19 (16%)	0	100	100
14	P2	115/117 (98%)	102 (89%)	13 (11%)	0	100	100
15	Q1	99/101 (98%)	79 (80%)	20 (20%)	0	100	100
15	Q2	99/101 (98%)	72 (73%)	27 (27%)	0	100	100
16	R1	111/113 (98%)	96 (86%)	15 (14%)	0	100	100
16	R2	111/113 (98%)	91 (82%)	20 (18%)	0	100	100
17	S1	90/92 (98%)	73 (81%)	17 (19%)	0	100	100
17	S2	90/92 (98%)	74 (82%)	16 (18%)	0	100	100
18	T1	100/102 (98%)	76 (76%)	23 (23%)	1 (1%)	12	47
18	T2	100/102 (98%)	80 (80%)	19 (19%)	1 (1%)	12	47
19	U1	177/179 (99%)	140 (79%)	37 (21%)	0	100	100
19	U2	177/179 (99%)	141 (80%)	36 (20%)	0	100	100
20	V1	75/77 (97%)	63 (84%)	12 (16%)	0	100	100
20	V2	75/77 (97%)	61 (81%)	14 (19%)	0	100	100
21	W1	95/97 (98%)	73 (77%)	22 (23%)	0	100	100
21	W2	95/97 (98%)	69 (73%)	26 (27%)	0	100	100
22	X1	67/69 (97%)	53 (79%)	14 (21%)	0	100	100
22	X2	67/69 (97%)	55 (82%)	12 (18%)	0	100	100
23	Y1	57/59 (97%)	46 (81%)	11 (19%)	0	100	100
23	Y2	57/59 (97%)	50 (88%)	7 (12%)	0	100	100
24	Z1	61/63 (97%)	31 (51%)	28 (46%)	2 (3%)	3	21
24	Z2	61/63 (97%)	36 (59%)	23 (38%)	2 (3%)	3	21
25	a1	57/59 (97%)	45 (79%)	12 (21%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
25	a2	57/59 (97%)	46 (81%)	11 (19%)	0	100	100
26	b1	43/45 (96%)	30 (70%)	13 (30%)	0	100	100
26	b2	43/45 (96%)	29 (67%)	14 (33%)	0	100	100
27	c1	47/49 (96%)	39 (83%)	8 (17%)	0	100	100
27	c2	47/49 (96%)	38 (81%)	9 (19%)	0	100	100
28	d1	59/61 (97%)	38 (64%)	21 (36%)	0	100	100
28	d2	59/61 (97%)	41 (70%)	18 (30%)	0	100	100
31	e1	34/36 (94%)	27 (79%)	7 (21%)	0	100	100
31	e2	34/36 (94%)	28 (82%)	6 (18%)	0	100	100
32	B3	235/237 (99%)	170 (72%)	65 (28%)	0	100	100
32	B4	235/237 (99%)	186 (79%)	49 (21%)	0	100	100
33	C3	204/206 (99%)	158 (78%)	46 (22%)	0	100	100
33	C4	204/206 (99%)	153 (75%)	51 (25%)	0	100	100
34	D3	202/208 (97%)	171 (85%)	30 (15%)	1 (0%)	24	63
34	D4	206/208 (99%)	156 (76%)	50 (24%)	0	100	100
35	E3	149/151 (99%)	117 (78%)	32 (22%)	0	100	100
35	E4	149/151 (99%)	122 (82%)	27 (18%)	0	100	100
36	F3	99/101 (98%)	82 (83%)	17 (17%)	0	100	100
36	F4	99/101 (98%)	84 (85%)	15 (15%)	0	100	100
37	G3	153/155 (99%)	125 (82%)	28 (18%)	0	100	100
37	G4	153/155 (99%)	130 (85%)	23 (15%)	0	100	100
38	H3	136/138 (99%)	115 (85%)	21 (15%)	0	100	100
38	H4	136/138 (99%)	110 (81%)	25 (18%)	1 (1%)	18	55
39	I3	125/127 (98%)	96 (77%)	29 (23%)	0	100	100
39	I4	125/127 (98%)	101 (81%)	24 (19%)	0	100	100
40	J3	97/99 (98%)	74 (76%)	23 (24%)	0	100	100
40	J4	97/99 (98%)	79 (81%)	18 (19%)	0	100	100
41	K3	116/118 (98%)	90 (78%)	26 (22%)	0	100	100
41	K4	116/118 (98%)	88 (76%)	28 (24%)	0	100	100
42	L3	123/125 (98%)	93 (76%)	29 (24%)	1 (1%)	16	53
42	L4	123/125 (98%)	96 (78%)	26 (21%)	1 (1%)	16	53

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
43	M3	115/117 (98%)	85 (74%)	30 (26%)	0	100	100
43	M4	115/117 (98%)	91 (79%)	24 (21%)	0	100	100
44	N3	58/60 (97%)	46 (79%)	12 (21%)	0	100	100
44	N4	58/60 (97%)	45 (78%)	13 (22%)	0	100	100
45	O3	86/88 (98%)	67 (78%)	19 (22%)	0	100	100
45	O4	86/88 (98%)	71 (83%)	15 (17%)	0	100	100
46	P3	82/84 (98%)	64 (78%)	18 (22%)	0	100	100
46	P4	82/84 (98%)	68 (83%)	14 (17%)	0	100	100
47	Q3	98/100 (98%)	80 (82%)	18 (18%)	0	100	100
47	Q4	98/100 (98%)	74 (76%)	24 (24%)	0	100	100
48	R3	60/62 (97%)	45 (75%)	15 (25%)	0	100	100
48	R4	60/62 (97%)	47 (78%)	13 (22%)	0	100	100
49	S3	76/78 (97%)	53 (70%)	23 (30%)	0	100	100
49	S4	76/78 (97%)	59 (78%)	17 (22%)	0	100	100
50	T3	97/99 (98%)	83 (86%)	14 (14%)	0	100	100
50	T4	97/99 (98%)	83 (86%)	14 (14%)	0	100	100
51	U3	23/25 (92%)	15 (65%)	8 (35%)	0	100	100
51	U4	23/25 (92%)	16 (70%)	7 (30%)	0	100	100
52	W4	55/57 (96%)	39 (71%)	16 (29%)	0	100	100
52	X3	55/57 (96%)	39 (71%)	16 (29%)	0	100	100
54	V3	117/119 (98%)	89 (76%)	26 (22%)	2 (2%)	7	35
54	V4	117/119 (98%)	89 (76%)	26 (22%)	2 (2%)	7	35
All	All	11542/11750 (98%)	9036 (78%)	2487 (22%)	19 (0%)	44	77

All (19) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
54	V3	103	ARG
54	V3	104	HIS
38	H4	103	VAL
3	E1	10	PRO
24	Z1	43	TYR
2	D2	122	PHE
3	E2	10	PRO

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Mol	Chain	Res	Type
54	V4	103	ARG
18	T1	53	PRO
42	L3	31	PRO
54	V4	102	LYS
2	D2	62	PRO
42	L4	49	ASN
24	Z1	42	PHE
24	Z2	41	PRO
7	I1	77	GLY
18	T2	53	PRO
24	Z2	29	PRO
34	D3	130	GLY

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	C1	214/214 (100%)	212 (99%)	2 (1%)	70	76
1	C2	214/214 (100%)	212 (99%)	2 (1%)	70	76
2	D1	165/165 (100%)	164 (99%)	1 (1%)	78	80
2	D2	165/165 (100%)	165 (100%)	0	100	100
3	E1	165/165 (100%)	164 (99%)	1 (1%)	78	80
3	E2	165/165 (100%)	163 (99%)	2 (1%)	63	73
4	F1	155/155 (100%)	153 (99%)	2 (1%)	61	72
4	F2	155/155 (100%)	154 (99%)	1 (1%)	78	80
5	G1	142/142 (100%)	141 (99%)	1 (1%)	76	79
5	G2	142/142 (100%)	142 (100%)	0	100	100
6	H1	41/41 (100%)	41 (100%)	0	100	100
6	H2	41/41 (100%)	41 (100%)	0	100	100
7	I1	117/117 (100%)	117 (100%)	0	100	100
7	I2	117/117 (100%)	115 (98%)	2 (2%)	53	67

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	J1	100/100 (100%)	98 (98%)	2 (2%)	48	65
8	J2	100/100 (100%)	100 (100%)	0	100	100
9	K1	116/116 (100%)	116 (100%)	0	100	100
9	K2	116/116 (100%)	116 (100%)	0	100	100
10	L1	111/111 (100%)	111 (100%)	0	100	100
10	L2	111/111 (100%)	111 (100%)	0	100	100
11	M1	100/100 (100%)	99 (99%)	1 (1%)	68	76
11	M2	100/100 (100%)	98 (98%)	2 (2%)	48	65
12	N1	87/87 (100%)	87 (100%)	0	100	100
12	N2	87/87 (100%)	86 (99%)	1 (1%)	65	74
13	O1	120/120 (100%)	118 (98%)	2 (2%)	53	67
13	O2	120/120 (100%)	119 (99%)	1 (1%)	73	77
14	P1	93/93 (100%)	93 (100%)	0	100	100
14	P2	93/93 (100%)	92 (99%)	1 (1%)	65	74
15	Q1	82/82 (100%)	82 (100%)	0	100	100
15	Q2	82/82 (100%)	81 (99%)	1 (1%)	63	73
16	R1	92/92 (100%)	91 (99%)	1 (1%)	65	74
16	R2	92/92 (100%)	92 (100%)	0	100	100
17	S1	74/74 (100%)	73 (99%)	1 (1%)	59	71
17	S2	74/74 (100%)	74 (100%)	0	100	100
18	T1	85/85 (100%)	83 (98%)	2 (2%)	43	63
18	T2	85/85 (100%)	85 (100%)	0	100	100
19	U1	158/158 (100%)	154 (98%)	4 (2%)	42	62
19	U2	158/158 (100%)	158 (100%)	0	100	100
20	V1	62/62 (100%)	62 (100%)	0	100	100
20	V2	62/62 (100%)	62 (100%)	0	100	100
21	W1	82/82 (100%)	82 (100%)	0	100	100
21	W2	82/82 (100%)	82 (100%)	0	100	100
22	X1	64/64 (100%)	62 (97%)	2 (3%)	35	56
22	X2	64/64 (100%)	64 (100%)	0	100	100
23	Y1	51/51 (100%)	50 (98%)	1 (2%)	48	65

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
23	Y2	51/51 (100%)	51 (100%)	0	100	100
24	Z1	57/57 (100%)	56 (98%)	1 (2%)	51	66
24	Z2	57/57 (100%)	54 (95%)	3 (5%)	20	42
25	a1	51/51 (100%)	51 (100%)	0	100	100
25	a2	51/51 (100%)	50 (98%)	1 (2%)	48	65
26	b1	44/44 (100%)	44 (100%)	0	100	100
26	b2	44/44 (100%)	44 (100%)	0	100	100
27	c1	42/42 (100%)	42 (100%)	0	100	100
27	c2	42/42 (100%)	42 (100%)	0	100	100
28	d1	51/51 (100%)	51 (100%)	0	100	100
28	d2	51/51 (100%)	51 (100%)	0	100	100
31	e1	33/33 (100%)	33 (100%)	0	100	100
31	e2	33/33 (100%)	33 (100%)	0	100	100
32	B3	205/205 (100%)	203 (99%)	2 (1%)	68	76
32	B4	205/205 (100%)	204 (100%)	1 (0%)	81	81
33	C3	160/160 (100%)	157 (98%)	3 (2%)	50	66
33	C4	160/160 (100%)	157 (98%)	3 (2%)	50	66
34	D3	180/180 (100%)	179 (99%)	1 (1%)	78	80
34	D4	180/180 (100%)	180 (100%)	0	100	100
35	E3	116/116 (100%)	115 (99%)	1 (1%)	70	76
35	E4	116/116 (100%)	116 (100%)	0	100	100
36	F3	90/90 (100%)	89 (99%)	1 (1%)	65	74
36	F4	90/90 (100%)	90 (100%)	0	100	100
37	G3	126/126 (100%)	125 (99%)	1 (1%)	73	77
37	G4	126/126 (100%)	126 (100%)	0	100	100
38	H3	119/119 (100%)	119 (100%)	0	100	100
38	H4	119/119 (100%)	118 (99%)	1 (1%)	73	77
39	I3	98/98 (100%)	98 (100%)	0	100	100
39	I4	98/98 (100%)	97 (99%)	1 (1%)	68	76
40	J3	89/89 (100%)	89 (100%)	0	100	100
40	J4	89/89 (100%)	89 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
41	K3	89/89 (100%)	87 (98%)	2 (2%)	45	64
41	K4	89/89 (100%)	89 (100%)	0	100	100
42	L3	104/104 (100%)	104 (100%)	0	100	100
42	L4	104/104 (100%)	103 (99%)	1 (1%)	68	76
43	M3	94/94 (100%)	92 (98%)	2 (2%)	47	65
43	M4	94/94 (100%)	92 (98%)	2 (2%)	47	65
44	N3	49/49 (100%)	48 (98%)	1 (2%)	48	65
44	N4	49/49 (100%)	48 (98%)	1 (2%)	48	65
45	O3	79/79 (100%)	79 (100%)	0	100	100
45	O4	79/79 (100%)	78 (99%)	1 (1%)	61	72
46	P3	72/72 (100%)	71 (99%)	1 (1%)	59	71
46	P4	72/72 (100%)	72 (100%)	0	100	100
47	Q3	95/95 (100%)	95 (100%)	0	100	100
47	Q4	95/95 (100%)	95 (100%)	0	100	100
48	R3	55/55 (100%)	54 (98%)	1 (2%)	51	66
48	R4	55/55 (100%)	53 (96%)	2 (4%)	31	52
49	S3	67/67 (100%)	67 (100%)	0	100	100
49	S4	67/67 (100%)	66 (98%)	1 (2%)	57	70
50	T3	76/76 (100%)	76 (100%)	0	100	100
50	T4	76/76 (100%)	76 (100%)	0	100	100
51	U3	20/20 (100%)	20 (100%)	0	100	100
51	U4	20/20 (100%)	20 (100%)	0	100	100
52	W4	50/50 (100%)	49 (98%)	1 (2%)	48	65
52	X3	50/50 (100%)	48 (96%)	2 (4%)	28	49
54	V3	101/101 (100%)	93 (92%)	8 (8%)	11	32
54	V4	101/101 (100%)	96 (95%)	5 (5%)	22	43
All	All	9776/9776 (100%)	9689 (99%)	87 (1%)	68	76

All (87) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C1	125	ILE
1	C1	229	VAL

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Mol	Chain	Res	Type
2	D1	25	VAL
3	E1	74	ARG
4	F1	40	ASN
4	F1	149	VAL
5	G1	35	VAL
8	J1	8	LEU
8	J1	53	LYS
11	M1	36	THR
13	O1	41	ARG
13	O1	102	ILE
16	R1	39	THR
17	S1	52	VAL
18	T1	28	LYS
18	T1	47	LYS
19	U1	53	ILE
19	U1	56	VAL
19	U1	57	ILE
19	U1	76	LEU
22	X1	16	LEU
22	X1	53	LEU
23	Y1	56	VAL
24	Z1	15	ILE
1	C2	78	LYS
1	C2	244	ARG
3	E2	74	ARG
3	E2	84	VAL
4	F2	31	VAL
7	I2	39	ARG
7	I2	107	LEU
11	M2	26	LYS
11	M2	117	VAL
12	N2	62	LYS
13	O2	41	ARG
14	P2	90	VAL
15	Q2	79	VAL
24	Z2	10	VAL
24	Z2	15	ILE
24	Z2	33	VAL
25	a2	45	VAL
32	B3	32	ILE
32	B3	162	ILE
33	C3	64	VAL

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Mol	Chain	Res	Type
33	C3	94	LEU
33	C3	119	ARG
34	D3	203	VAL
35	E3	40	ARG
36	F3	7	ASN
37	G3	6	ARG
41	K3	29	ILE
41	K3	30	VAL
43	M3	46	LYS
43	M3	105	THR
44	N3	40	CYS
46	P3	21	VAL
48	R3	42	ARG
52	X3	160	VAL
52	X3	169	ILE
54	V3	6	LEU
54	V3	39	LYS
54	V3	40	VAL
54	V3	62	LEU
54	V3	88	GLU
54	V3	95	ARG
54	V3	103	ARG
54	V3	111	PRO
32	B4	32	ILE
33	C4	42	LEU
33	C4	120	VAL
33	C4	150	LYS
38	H4	129	VAL
39	I4	111	ARG
42	L4	84	LEU
43	M4	46	LYS
43	M4	115	LYS
44	N4	26	ARG
45	O4	22	THR
48	R4	42	ARG
48	R4	58	LEU
49	S4	9	VAL
52	W4	160	VAL
54	V4	13	ILE
54	V4	58	ILE
54	V4	88	GLU
54	V4	95	ARG

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Mol	Chain	Res	Type
54	V4	103	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (166) such sidechains are listed below:

Mol	Chain	Res	Type
1	C1	166	GLN
1	C1	186	HIS
1	C1	198	ASN
1	C1	201	HIS
2	D1	35	GLN
2	D1	55	ASN
2	D1	135	HIS
2	D1	169	ASN
3	E1	29	ASN
3	E1	67	GLN
3	E1	75	HIS
3	E1	133	ASN
3	E1	160	ASN
3	E1	203	GLN
4	F1	121	ASN
4	F1	130	ASN
6	H1	43	ASN
8	J1	3	GLN
9	K1	38	GLN
9	K1	128	HIS
10	L1	46	GLN
10	L1	113	GLN
10	L1	141	GLN
11	M1	31	HIS
11	M1	71	GLN
12	N1	34	HIS
12	N1	84	GLN
13	O1	2	ASN
13	O1	43	GLN
13	O1	123	GLN
14	P1	66	ASN
14	P1	72	HIS
14	P1	117	GLN
15	Q1	80	GLN
16	R1	61	ASN
18	T1	6	HIS
19	U1	34	ASN

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Mol	Chain	Res	Type
19	U1	85	HIS
20	V1	40	GLN
21	W1	56	GLN
21	W1	66	HIS
22	X1	46	GLN
22	X1	71	ASN
23	Y1	46	ASN
24	Z1	47	GLN
24	Z1	60	GLN
25	a1	22	HIS
26	b1	20	ASN
26	b1	26	ASN
27	c1	6	GLN
27	c1	36	GLN
28	d1	35	GLN
31	e1	34	GLN
31	e1	36	GLN
1	C2	115	GLN
1	C2	126	GLN
1	C2	129	ASN
2	D2	48	GLN
2	D2	121	ASN
2	D2	135	HIS
2	D2	137	HIS
2	D2	169	ASN
3	E2	29	ASN
3	E2	75	HIS
3	E2	204	ASN
4	F2	58	GLN
5	G2	74	ASN
5	G2	147	ASN
6	H2	11	ASN
7	I2	56	ASN
8	J2	29	ASN
9	K2	70	GLN
10	L2	46	GLN
11	M2	3	HIS
11	M2	11	ASN
11	M2	91	GLN
12	N2	34	HIS
12	N2	68	GLN
13	O2	43	GLN

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Mol	Chain	Res	Type
13	O2	104	ASN
14	P2	72	HIS
14	P2	94	ASN
15	Q2	89	GLN
17	S2	31	HIS
17	S2	55	ASN
19	U2	30	ASN
19	U2	54	HIS
19	U2	73	GLN
19	U2	75	ASN
20	V2	40	GLN
20	V2	70	GLN
22	X2	43	GLN
22	X2	47	ASN
22	X2	70	GLN
24	Z2	6	HIS
25	a2	23	HIS
26	b2	49	HIS
31	e2	34	GLN
31	e2	36	GLN
32	B3	94	ASN
32	B3	146	GLN
32	B3	240	GLN
33	C3	31	HIS
34	D3	43	HIS
34	D3	62	GLN
34	D3	77	ASN
34	D3	119	GLN
34	D3	123	HIS
34	D3	199	ASN
35	E3	20	GLN
35	E3	38	GLN
35	E3	72	GLN
35	E3	130	ASN
36	F3	7	ASN
36	F3	11	ASN
36	F3	57	GLN
36	F3	73	ASN
37	G3	51	GLN
37	G3	96	GLN
37	G3	148	ASN
39	I3	31	GLN

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Mol	Chain	Res	Type
40	J3	33	GLN
41	K3	13	GLN
41	K3	22	HIS
41	K3	26	ASN
41	K3	78	GLN
41	K3	93	GLN
41	K3	116	HIS
43	M3	101	GLN
43	M3	106	ASN
45	O3	62	GLN
47	Q3	94	ASN
50	T3	73	HIS
50	T3	90	GLN
52	X3	150	GLN
54	V3	59	GLN
32	B4	25	ASN
32	B4	94	ASN
33	C4	102	ASN
33	C4	104	GLN
34	D4	123	HIS
34	D4	161	ASN
35	E4	20	GLN
36	F4	57	GLN
36	F4	84	ASN
37	G4	68	ASN
37	G4	110	GLN
39	I4	3	GLN
39	I4	73	GLN
39	I4	87	GLN
39	I4	89	ASN
39	I4	117	HIS
40	J4	21	GLN
40	J4	78	ASN
41	K4	78	GLN
41	K4	93	GLN
42	L4	75	HIS
42	L4	76	ASN
43	M4	92	HIS
44	N4	52	GLN
46	P4	13	HIS
47	Q4	93	GLN
49	S4	56	GLN

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Mol	Chain	Res	Type
50	T4	75	ASN
52	W4	150	GLN
54	V4	107	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
29	A1	2911/2912 (99%)	1510 (51%)	28 (0%)
29	A2	2911/2912 (99%)	1484 (50%)	30 (1%)
30	B1	121/122 (99%)	62 (51%)	0
30	B2	121/122 (99%)	58 (47%)	1 (0%)
53	A3	1505/1506 (99%)	789 (52%)	26 (1%)
53	A4	1505/1506 (99%)	795 (52%)	16 (1%)
All	All	9074/9080 (99%)	4698 (51%)	101 (1%)

All (4698) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
29	A1	3	U
29	A1	4	C
29	A1	5	A
29	A1	6	A
29	A1	7	G
29	A1	8	A
29	A1	9	U
29	A1	10	G
29	A1	12	U
29	A1	15	G
29	A1	16	G
29	A1	19	C
29	A1	29	U
29	A1	30	G
29	A1	31	C
29	A1	33	U
29	A1	34	C
29	A1	35	G
29	A1	36	G
29	A1	38	A
29	A1	39	C
29	A1	41	C
29	A1	42	G

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Mol	Chain	Res	Type
29	A1	43	A
29	A1	45	C
29	A1	47	G
29	A1	49	U
29	A1	50	G
29	A1	51	A
29	A1	55	A
29	A1	58	U
29	A1	59	G
29	A1	60	G
29	A1	61	C
29	A1	62	U
29	A1	68	C
29	A1	69	G
29	A1	70	A
29	A1	71	U
29	A1	72	A
29	A1	74	G
29	A1	80	G
29	A1	81	G
29	A1	82	G
29	A1	83	A
29	A1	84	G
29	A1	87	G
29	A1	89	U
29	A1	91	G
29	A1	94	G
29	A1	95	G
29	A1	99	G
29	A1	100	G
29	A1	102	U
29	A1	103	C
29	A1	104	C
29	A1	105	C
29	A1	106	U
29	A1	107	G
29	A1	108	G
29	A1	112	U
29	A1	114	C
29	A1	116	A
29	A1	117	A
29	A1	118	U

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Mol	Chain	Res	Type
29	A1	119	G
29	A1	120	G
29	A1	121	G
29	A1	122	G
29	A1	123	G
29	A1	124	A
29	A1	126	C
29	A1	127	C
29	A1	129	G
29	A1	130	G
29	A1	131	C
29	A1	134	G
29	A1	135	C
29	A1	136	G
29	A1	137	G
29	A1	138	G
29	A1	139	A
29	A1	140	A
29	A1	142	G
29	A1	143	C
29	A1	145	G
29	A1	149	A
29	A1	152	G
29	A1	155	C
29	A1	157	U
29	A1	159	U
29	A1	160	U
29	A1	161	G
29	A1	162	C
29	A1	164	C
29	A1	165	G
29	A1	168	G
29	A1	171	A
29	A1	172	A
29	A1	178	G
29	A1	183	U
29	A1	185	A
29	A1	186	A
29	A1	187	A
29	A1	189	A
29	A1	190	U
29	A1	191	C

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Mol	Chain	Res	Type
29	A1	192	U
29	A1	194	A
29	A1	195	G
29	A1	205	G
29	A1	206	A
29	A1	207	G
29	A1	208	A
29	A1	209	G
29	A1	212	A
29	A1	213	A
29	A1	214	G
29	A1	215	A
29	A1	216	G
29	A1	217	A
29	A1	218	A
29	A1	219	A
29	A1	220	U
29	A1	221	C
29	A1	222	G
29	A1	223	A
29	A1	224	C
29	A1	225	U
29	A1	226	C
29	A1	231	A
29	A1	232	G
29	A1	233	U
29	A1	234	A
29	A1	236	C
29	A1	238	G
29	A1	239	C
29	A1	240	G
29	A1	241	A
29	A1	242	G
29	A1	245	A
29	A1	246	A
29	A1	248	G
29	A1	250	G
29	A1	252	A
29	A1	253	C
29	A1	254	C
29	A1	256	G
29	A1	260	A

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Mol	Chain	Res	Type
29	A1	261	A
29	A1	263	C
29	A1	265	G
29	A1	266	U
29	A1	273	U
29	A1	274	G
29	A1	276	C
29	A1	277	C
29	A1	278	G
29	A1	286	U
29	A1	289	U
29	A1	290	G
29	A1	297	U
29	A1	298	C
29	A1	299	G
29	A1	300	G
29	A1	301	A
29	A1	302	C
29	A1	303	A
29	A1	304	C
29	A1	305	C
29	A1	306	G
29	A1	308	A
29	A1	309	U
29	A1	311	C
29	A1	312	C
29	A1	313	C
29	A1	316	C
29	A1	317	C
29	A1	318	U
29	A1	319	A
29	A1	323	G
29	A1	324	A
29	A1	327	C
29	A1	329	G
29	A1	331	U
29	A1	332	G
29	A1	335	A
29	A1	336	A
29	A1	339	A
29	A1	341	C
29	A1	342	G

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Mol	Chain	Res	Type
29	A1	347	A
29	A1	348	G
29	A1	350	G
29	A1	352	G
29	A1	353	U
29	A1	354	G
29	A1	355	A
29	A1	358	G
29	A1	359	C
29	A1	361	C
29	A1	362	C
29	A1	365	A
29	A1	367	G
29	A1	369	G
29	A1	370	A
29	A1	371	A
29	A1	372	A
29	A1	373	G
29	A1	378	G
29	A1	379	G
29	A1	380	G
29	A1	381	G
29	A1	382	A
29	A1	384	A
29	A1	386	G
29	A1	387	U
29	A1	388	G
29	A1	389	A
29	A1	391	G
29	A1	394	A
29	A1	396	C
29	A1	399	A
29	A1	400	G
29	A1	401	U
29	A1	402	A
29	A1	405	C
29	A1	407	G
29	A1	408	U
29	A1	412	U
29	A1	413	C
29	A1	414	G
29	A1	417	G

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Mol	Chain	Res	Type
29	A1	419	G
29	A1	420	C
29	A1	421	C
29	A1	428	G
29	A1	429	A
29	A1	430	A
29	A1	432	C
29	A1	433	U
29	A1	434	G
29	A1	436	G
29	A1	439	G
29	A1	440	A
29	A1	444	C
29	A1	452	A
29	A1	454	G
29	A1	459	G
29	A1	460	U
29	A1	463	U
29	A1	464	C
29	A1	465	C
29	A1	466	G
29	A1	470	G
29	A1	471	A
29	A1	472	C
29	A1	475	A
29	A1	476	U
29	A1	477	A
29	A1	479	C
29	A1	480	G
29	A1	481	C
29	A1	482	A
29	A1	483	C
29	A1	485	A
29	A1	486	G
29	A1	487	U
29	A1	488	A
29	A1	492	U
29	A1	493	G
29	A1	495	G
29	A1	496	G
29	A1	497	G
29	A1	498	A

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Mol	Chain	Res	Type
29	A1	502	G
29	A1	503	U
29	A1	508	A
29	A1	509	G
29	A1	511	A
29	A1	512	C
29	A1	513	C
29	A1	515	C
29	A1	518	G
29	A1	519	A
29	A1	528	A
29	A1	531	U
29	A1	532	A
29	A1	533	G
29	A1	534	A
29	A1	536	C
29	A1	537	C
29	A1	540	A
29	A1	541	A
29	A1	543	C
29	A1	545	G
29	A1	547	G
29	A1	549	G
29	A1	554	C
29	A1	555	A
29	A1	556	A
29	A1	557	G
29	A1	558	C
29	A1	561	U
29	A1	563	A
29	A1	564	C
29	A1	565	G
29	A1	566	G
29	A1	568	C
29	A1	569	C
29	A1	572	C
29	A1	574	A
29	A1	575	G
29	A1	577	G
29	A1	579	U
29	A1	580	U
29	A1	581	G

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Mol	Chain	Res	Type
29	A1	583	G
29	A1	584	G
29	A1	588	G
29	A1	590	C
29	A1	591	U
29	A1	592	A
29	A1	593	U
29	A1	597	A
29	A1	599	C
29	A1	600	A
29	A1	607	G
29	A1	608	G
29	A1	610	G
29	A1	611	A
29	A1	612	C
29	A1	615	A
29	A1	618	G
29	A1	621	G
29	A1	622	U
29	A1	624	G
29	A1	625	G
29	A1	628	A
29	A1	629	G
29	A1	632	U
29	A1	635	G
29	A1	641	G
29	A1	642	A
29	A1	647	G
29	A1	648	A
29	A1	649	G
29	A1	655	G
29	A1	656	G
29	A1	657	G
29	A1	658	A
29	A1	659	A
29	A1	661	C
29	A1	664	A
29	A1	668	C
29	A1	670	A
29	A1	671	A
29	A1	672	C
29	A1	673	A

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Mol	Chain	Res	Type
29	A1	675	G
29	A1	677	C
29	A1	679	C
29	A1	681	A
29	A1	685	G
29	A1	687	C
29	A1	688	C
29	A1	689	G
29	A1	691	A
29	A1	692	C
29	A1	695	G
29	A1	696	G
29	A1	697	G
29	A1	698	C
29	A1	699	C
29	A1	700	G
29	A1	701	A
29	A1	702	A
29	A1	703	A
29	A1	705	G
29	A1	709	G
29	A1	710	C
29	A1	713	C
29	A1	715	G
29	A1	717	G
29	A1	718	G
29	A1	719	A
29	A1	725	A
29	A1	727	C
29	A1	732	C
29	A1	733	G
29	A1	735	G
29	A1	738	A
29	A1	739	G
29	A1	740	C
29	A1	754	A
29	A1	756	G
29	A1	758	U
29	A1	760	G
29	A1	764	G
29	A1	765	A
29	A1	766	G

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Mol	Chain	Res	Type
29	A1	772	G
29	A1	775	G
29	A1	776	A
29	A1	777	G
29	A1	778	G
29	A1	779	C
29	A1	785	C
29	A1	786	C
29	A1	788	G
29	A1	789	U
29	A1	796	U
29	A1	797	G
29	A1	798	C
29	A1	799	A
29	A1	800	A
29	A1	801	A
29	A1	806	U
29	A1	808	G
29	A1	811	U
29	A1	812	G
29	A1	813	A
29	A1	816	U
29	A1	821	C
29	A1	823	A
29	A1	824	G
29	A1	825	G
29	A1	826	A
29	A1	827	G
29	A1	828	U
29	A1	829	G
29	A1	830	A
29	A1	831	A
29	A1	832	A
29	A1	833	A
29	A1	834	G
29	A1	836	U
29	A1	837	A
29	A1	838	A
29	A1	840	C
29	A1	841	G
29	A1	846	C
29	A1	849	A

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Mol	Chain	Res	Type
29	A1	850	G
29	A1	854	G
29	A1	855	C
29	A1	858	G
29	A1	860	U
29	A1	861	C
29	A1	862	U
29	A1	863	C
29	A1	866	C
29	A1	868	A
29	A1	870	A
29	A1	871	U
29	A1	876	U
29	A1	878	A
29	A1	879	G
29	A1	880	G
29	A1	885	G
29	A1	886	C
29	A1	888	U
29	A1	891	G
29	A1	892	G
29	A1	893	C
29	A1	895	C
29	A1	896	U
29	A1	897	G
29	A1	898	A
29	A1	903	G
29	A1	905	C
29	A1	908	G
29	A1	909	U
29	A1	914	C
29	A1	915	A
29	A1	918	G
29	A1	922	G
29	A1	925	C
29	A1	926	U
29	A1	929	G
29	A1	930	G
29	A1	932	G
29	A1	933	C
29	A1	934	C
29	A1	936	A

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Mol	Chain	Res	Type
29	A1	937	C
29	A1	940	G
29	A1	941	C
29	A1	943	U
29	A1	945	C
29	A1	946	C
29	A1	947	A
29	A1	948	A
29	A1	951	C
29	A1	952	C
29	A1	958	A
29	A1	959	A
29	A1	960	C
29	A1	961	U
29	A1	962	C
29	A1	965	A
29	A1	967	G
29	A1	968	G
29	A1	969	G
29	A1	970	U
29	A1	974	A
29	A1	976	G
29	A1	977	U
29	A1	979	G
29	A1	980	A
29	A1	981	G
29	A1	985	G
29	A1	988	A
29	A1	989	G
29	A1	990	U
29	A1	992	A
29	A1	993	G
29	A1	996	C
29	A1	1000	A
29	A1	1001	G
29	A1	1003	G
29	A1	1004	A
29	A1	1005	U
29	A1	1006	A
29	A1	1007	A
29	A1	1009	G
29	A1	1010	U

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Mol	Chain	Res	Type
29	A1	1011	C
29	A1	1012	C
29	A1	1014	C
29	A1	1018	C
29	A1	1019	G
29	A1	1020	A
29	A1	1021	G
29	A1	1022	C
29	A1	1023	G
29	A1	1028	A
29	A1	1030	C
29	A1	1031	A
29	A1	1032	A
29	A1	1033	C
29	A1	1035	G
29	A1	1037	G
29	A1	1038	A
29	A1	1039	C
29	A1	1040	C
29	A1	1041	G
29	A1	1042	C
29	A1	1043	C
29	A1	1044	A
29	A1	1047	U
29	A1	1053	C
29	A1	1054	C
29	A1	1056	C
29	A1	1057	A
29	A1	1059	G
29	A1	1060	U
29	A1	1061	C
29	A1	1068	A
29	A1	1069	A
29	A1	1070	G
29	A1	1074	U
29	A1	1075	A
29	A1	1076	A
29	A1	1077	A
29	A1	1080	A
29	A1	1081	U
29	A1	1085	G
29	A1	1087	G

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Mol	Chain	Res	Type
29	A1	1088	C
29	A1	1092	G
29	A1	1094	A
29	A1	1097	C
29	A1	1098	A
29	A1	1099	G
29	A1	1100	C
29	A1	1101	C
29	A1	1102	A
29	A1	1104	G
29	A1	1105	A
29	A1	1106	U
29	A1	1107	G
29	A1	1108	U
29	A1	1109	U
29	A1	1110	G
29	A1	1111	G
29	A1	1112	C
29	A1	1115	A
29	A1	1116	G
29	A1	1117	A
29	A1	1118	A
29	A1	1119	G
29	A1	1120	C
29	A1	1121	A
29	A1	1122	G
29	A1	1123	C
29	A1	1124	C
29	A1	1125	A
29	A1	1126	U
29	A1	1127	C
29	A1	1128	A
29	A1	1130	U
29	A1	1131	U
29	A1	1132	A
29	A1	1134	A
29	A1	1135	G
29	A1	1136	A
29	A1	1137	G
29	A1	1139	G
29	A1	1141	G
29	A1	1142	U

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Mol	Chain	Res	Type
29	A1	1143	A
29	A1	1144	A
29	A1	1145	U
29	A1	1146	A
29	A1	1148	C
29	A1	1151	A
29	A1	1152	C
29	A1	1154	G
29	A1	1155	G
29	A1	1158	G
29	A1	1159	A
29	A1	1160	G
29	A1	1161	U
29	A1	1162	G
29	A1	1165	G
29	A1	1166	C
29	A1	1167	C
29	A1	1171	C
29	A1	1172	C
29	A1	1174	A
29	A1	1175	A
29	A1	1177	A
29	A1	1178	U
29	A1	1179	G
29	A1	1180	A
29	A1	1182	C
29	A1	1183	G
29	A1	1186	G
29	A1	1187	C
29	A1	1189	U
29	A1	1190	A
29	A1	1191	A
29	A1	1193	C
29	A1	1196	A
29	A1	1200	C
29	A1	1201	C
29	A1	1203	A
29	A1	1206	C
29	A1	1209	C
29	A1	1215	U
29	A1	1216	G
29	A1	1219	G

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Mol	Chain	Res	Type
29	A1	1221	A
29	A1	1222	U
29	A1	1223	G
29	A1	1224	A
29	A1	1226	C
29	A1	1228	C
29	A1	1229	A
29	A1	1230	G
29	A1	1232	C
29	A1	1233	G
29	A1	1235	U
29	A1	1238	G
29	A1	1239	G
29	A1	1241	A
29	A1	1245	U
29	A1	1246	U
29	A1	1248	C
29	A1	1251	A
29	A1	1253	G
29	A1	1254	C
29	A1	1255	C
29	A1	1256	G
29	A1	1257	A
29	A1	1258	U
29	A1	1259	G
29	A1	1260	A
29	A1	1265	C
29	A1	1266	G
29	A1	1267	A
29	A1	1271	G
29	A1	1272	C
29	A1	1273	G
29	A1	1275	G
29	A1	1278	C
29	A1	1279	G
29	A1	1281	C
29	A1	1284	G
29	A1	1285	A
29	A1	1286	G
29	A1	1287	G
29	A1	1288	U
29	A1	1289	A

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Mol	Chain	Res	Type
29	A1	1290	A
29	A1	1291	G
29	A1	1293	G
29	A1	1294	A
29	A1	1295	A
29	A1	1297	U
29	A1	1299	C
29	A1	1300	G
29	A1	1301	A
29	A1	1302	A
29	A1	1303	U
29	A1	1304	G
29	A1	1305	C
29	A1	1306	C
29	A1	1308	G
29	A1	1309	C
29	A1	1310	A
29	A1	1313	A
29	A1	1314	G
29	A1	1315	U
29	A1	1319	G
29	A1	1320	A
29	A1	1321	U
29	A1	1322	A
29	A1	1323	A
29	A1	1324	A
29	A1	1328	G
29	A1	1329	G
29	A1	1330	U
29	A1	1331	G
29	A1	1335	A
29	A1	1340	U
29	A1	1343	C
29	A1	1344	G
29	A1	1348	U
29	A1	1349	A
29	A1	1351	G
29	A1	1352	C
29	A1	1358	G
29	A1	1361	U
29	A1	1365	A
29	A1	1367	G

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Mol	Chain	Res	Type
29	A1	1369	A
29	A1	1370	A
29	A1	1373	G
29	A1	1377	U
29	A1	1378	C
29	A1	1379	A
29	A1	1380	G
29	A1	1381	C
29	A1	1389	U
29	A1	1390	A
29	A1	1398	C
29	A1	1401	A
29	A1	1402	A
29	A1	1403	G
29	A1	1404	G
29	A1	1405	U
29	A1	1406	G
29	A1	1407	A
29	A1	1408	A
29	A1	1411	C
29	A1	1413	A
29	A1	1414	A
29	A1	1416	G
29	A1	1417	G
29	A1	1420	U
29	A1	1421	A
29	A1	1422	G
29	A1	1423	C
29	A1	1426	A
29	A1	1432	A
29	A1	1433	G
29	A1	1434	C
29	A1	1436	G
29	A1	1438	U
29	A1	1440	A
29	A1	1442	U
29	A1	1443	A
29	A1	1445	U
29	A1	1446	C
29	A1	1448	G
29	A1	1450	C
29	A1	1452	C

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Mol	Chain	Res	Type
29	A1	1455	C
29	A1	1459	C
29	A1	1461	G
29	A1	1464	G
29	A1	1465	C
29	A1	1467	A
29	A1	1469	G
29	A1	1470	G
29	A1	1471	G
29	A1	1472	G
29	A1	1473	G
29	A1	1475	A
29	A1	1476	C
29	A1	1477	G
29	A1	1478	C
29	A1	1479	U
29	A1	1480	C
29	A1	1481	U
29	A1	1483	G
29	A1	1485	C
29	A1	1492	G
29	A1	1493	A
29	A1	1494	C
29	A1	1498	A
29	A1	1499	G
29	A1	1500	C
29	A1	1501	C
29	A1	1502	A
29	A1	1503	U
29	A1	1504	G
29	A1	1505	G
29	A1	1508	G
29	A1	1509	A
29	A1	1510	G
29	A1	1512	C
29	A1	1515	G
29	A1	1516	C
29	A1	1518	A
29	A1	1520	A
29	A1	1521	A
29	A1	1522	G
29	A1	1523	C

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Mol	Chain	Res	Type
29	A1	1525	C
29	A1	1526	A
29	A1	1531	G
29	A1	1533	G
29	A1	1535	G
29	A1	1536	G
29	A1	1538	A
29	A1	1540	G
29	A1	1541	C
29	A1	1542	A
29	A1	1543	A
29	A1	1544	A
29	A1	1545	U
29	A1	1546	C
29	A1	1547	C
29	A1	1548	G
29	A1	1552	C
29	A1	1553	C
29	A1	1556	A
29	A1	1557	C
29	A1	1558	A
29	A1	1559	A
29	A1	1562	U
29	A1	1565	G
29	A1	1569	G
29	A1	1570	G
29	A1	1571	U
29	A1	1573	G
29	A1	1574	G
29	A1	1577	A
29	A1	1578	G
29	A1	1579	C
29	A1	1580	C
29	A1	1581	C
29	A1	1582	G
29	A1	1585	C
29	A1	1587	G
29	A1	1588	G
29	A1	1589	U
29	A1	1591	A
29	A1	1592	C
29	A1	1593	A

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Mol	Chain	Res	Type
29	A1	1595	C
29	A1	1598	C
29	A1	1603	A
29	A1	1604	G
29	A1	1607	A
29	A1	1608	G
29	A1	1609	G
29	A1	1610	G
29	A1	1615	A
29	A1	1618	A
29	A1	1619	A
29	A1	1621	A
29	A1	1623	C
29	A1	1625	U
29	A1	1628	A
29	A1	1629	A
29	A1	1630	G
29	A1	1631	C
29	A1	1632	A
29	A1	1633	C
29	A1	1634	A
29	A1	1635	A
29	A1	1636	C
29	A1	1637	C
29	A1	1638	U
29	A1	1639	G
29	A1	1642	G
29	A1	1643	G
29	A1	1644	A
29	A1	1646	C
29	A1	1649	G
29	A1	1651	A
29	A1	1652	C
29	A1	1655	C
29	A1	1656	A
29	A1	1658	A
29	A1	1660	C
29	A1	1662	A
29	A1	1663	C
29	A1	1664	A
29	A1	1665	C
29	A1	1666	A

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Mol	Chain	Res	Type
29	A1	1667	G
29	A1	1668	G
29	A1	1670	G
29	A1	1672	G
29	A1	1674	G
29	A1	1675	G
29	A1	1680	A
29	A1	1682	G
29	A1	1683	A
29	A1	1684	G
29	A1	1685	C
29	A1	1687	C
29	A1	1688	U
29	A1	1690	A
29	A1	1695	C
29	A1	1696	G
29	A1	1697	C
29	A1	1702	G
29	A1	1703	A
29	A1	1716	G
29	A1	1717	A
29	A1	1718	A
29	A1	1720	U
29	A1	1723	G
29	A1	1724	C
29	A1	1725	A
29	A1	1726	A
29	A1	1728	U
29	A1	1730	G
29	A1	1731	G
29	A1	1735	C
29	A1	1737	U
29	A1	1738	A
29	A1	1740	C
29	A1	1741	U
29	A1	1743	C
29	A1	1744	G
29	A1	1747	A
29	A1	1749	A
29	A1	1750	A
29	A1	1752	G
29	A1	1756	G

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Mol	Chain	Res	Type
29	A1	1757	C
29	A1	1761	C
29	A1	1765	G
29	A1	1766	G
29	A1	1768	G
29	A1	1769	A
29	A1	1770	U
29	A1	1771	G
29	A1	1772	A
29	A1	1774	C
29	A1	1778	G
29	A1	1784	C
29	A1	1786	G
29	A1	1787	C
29	A1	1789	G
29	A1	1790	U
29	A1	1791	G
29	A1	1792	A
29	A1	1795	A
29	A1	1796	G
29	A1	1797	G
29	A1	1801	U
29	A1	1803	G
29	A1	1804	C
29	A1	1806	A
29	A1	1809	G
29	A1	1810	U
29	A1	1811	U
29	A1	1812	U
29	A1	1814	C
29	A1	1816	A
29	A1	1817	A
29	A1	1819	A
29	A1	1820	A
29	A1	1823	C
29	A1	1824	A
29	A1	1825	G
29	A1	1828	C
29	A1	1830	C
29	A1	1833	C
29	A1	1834	G
29	A1	1835	A

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Mol	Chain	Res	Type
29	A1	1836	A
29	A1	1837	C
29	A1	1839	C
29	A1	1840	G
29	A1	1842	A
29	A1	1844	G
29	A1	1848	A
29	A1	1850	G
29	A1	1852	A
29	A1	1853	U
29	A1	1854	A
29	A1	1855	G
29	A1	1859	G
29	A1	1862	A
29	A1	1864	G
29	A1	1865	C
29	A1	1868	G
29	A1	1869	C
29	A1	1870	C
29	A1	1871	C
29	A1	1873	G
29	A1	1880	A
29	A1	1884	U
29	A1	1886	A
29	A1	1890	G
29	A1	1891	G
29	A1	1892	A
29	A1	1894	G
29	A1	1900	A
29	A1	1902	G
29	A1	1905	C
29	A1	1907	G
29	A1	1908	A
29	A1	1911	C
29	A1	1912	G
29	A1	1913	A
29	A1	1916	C
29	A1	1924	A
29	A1	1925	A
29	A1	1930	G
29	A1	1935	U
29	A1	1937	A

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Mol	Chain	Res	Type
29	A1	1938	C
29	A1	1941	U
29	A1	1943	A
29	A1	1944	C
29	A1	1945	G
29	A1	1949	C
29	A1	1953	G
29	A1	1954	G
29	A1	1955	U
29	A1	1959	G
29	A1	1960	A
29	A1	1961	A
29	A1	1962	A
29	A1	1963	U
29	A1	1964	U
29	A1	1965	C
29	A1	1966	C
29	A1	1968	U
29	A1	1978	G
29	A1	1979	U
29	A1	1981	C
29	A1	1987	U
29	A1	1988	G
29	A1	1989	C
29	A1	1990	A
29	A1	1991	C
29	A1	1993	A
29	A1	1994	A
29	A1	1995	A
29	A1	1996	A
29	A1	1997	G
29	A1	2000	U
29	A1	2003	C
29	A1	2006	C
29	A1	2007	C
29	A1	2013	G
29	A1	2014	C
29	A1	2015	U
29	A1	2016	G
29	A1	2017	U
29	A1	2018	C
29	A1	2019	U

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Mol	Chain	Res	Type
29	A1	2020	C
29	A1	2021	G
29	A1	2023	C
29	A1	2025	A
29	A1	2026	G
29	A1	2030	C
29	A1	2031	C
29	A1	2032	C
29	A1	2038	A
29	A1	2039	A
29	A1	2040	U
29	A1	2044	A
29	A1	2047	G
29	A1	2053	G
29	A1	2055	A
29	A1	2056	G
29	A1	2057	A
29	A1	2058	U
29	A1	2060	C
29	A1	2064	C
29	A1	2067	C
29	A1	2068	C
29	A1	2070	G
29	A1	2071	U
29	A1	2075	A
29	A1	2080	G
29	A1	2081	A
29	A1	2082	A
29	A1	2084	A
29	A1	2085	G
29	A1	2093	G
29	A1	2095	A
29	A1	2099	U
29	A1	2100	U
29	A1	2101	A
29	A1	2110	U
29	A1	2111	G
29	A1	2113	U
29	A1	2116	U
29	A1	2118	G
29	A1	2123	U
29	A1	2124	G

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Mol	Chain	Res	Type
29	A1	2125	G
29	A1	2127	C
29	A1	2128	G
29	A1	2129	C
29	A1	2131	C
29	A1	2132	C
29	A1	2133	U
29	A1	2135	C
29	A1	2136	G
29	A1	2138	A
29	A1	2139	G
29	A1	2140	G
29	A1	2141	A
29	A1	2142	U
29	A1	2143	A
29	A1	2146	U
29	A1	2147	G
29	A1	2148	G
29	A1	2149	G
29	A1	2150	A
29	A1	2151	G
29	A1	2154	U
29	A1	2155	G
29	A1	2158	A
29	A1	2159	A
29	A1	2160	C
29	A1	2161	C
29	A1	2162	C
29	A1	2164	C
29	A1	2165	G
29	A1	2168	U
29	A1	2170	C
29	A1	2172	G
29	A1	2173	G
29	A1	2174	U
29	A1	2175	G
29	A1	2176	G
29	A1	2178	G
29	A1	2181	G
29	A1	2183	G
29	A1	2184	G
29	A1	2185	C

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Mol	Chain	Res	Type
29	A1	2187	C
29	A1	2188	C
29	A1	2190	G
29	A1	2191	U
29	A1	2192	G
29	A1	2193	A
29	A1	2195	A
29	A1	2196	U
29	A1	2200	A
29	A1	2204	U
29	A1	2205	G
29	A1	2206	G
29	A1	2207	C
29	A1	2208	G
29	A1	2209	C
29	A1	2211	G
29	A1	2212	C
29	A1	2213	U
29	A1	2214	G
29	A1	2221	U
29	A1	2222	A
29	A1	2223	A
29	A1	2228	C
29	A1	2229	G
29	A1	2231	A
29	A1	2232	U
29	A1	2233	G
29	A1	2235	G
29	A1	2238	G
29	A1	2239	A
29	A1	2240	C
29	A1	2243	C
29	A1	2247	U
29	A1	2251	G
29	A1	2252	G
29	A1	2253	G
29	A1	2257	U
29	A1	2260	G
29	A1	2263	U
29	A1	2265	G
29	A1	2266	G
29	A1	2267	G

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Mol	Chain	Res	Type
29	A1	2273	G
29	A1	2275	C
29	A1	2276	U
29	A1	2280	A
29	A1	2281	A
29	A1	2282	A
29	A1	2283	A
29	A1	2284	G
29	A1	2285	G
29	A1	2286	U
29	A1	2289	C
29	A1	2290	G
29	A1	2292	A
29	A1	2293	G
29	A1	2294	G
29	A1	2296	G
29	A1	2297	C
29	A1	2298	C
29	A1	2299	C
29	A1	2301	A
29	A1	2302	A
29	A1	2303	G
29	A1	2304	G
29	A1	2309	C
29	A1	2311	C
29	A1	2312	A
29	A1	2314	G
29	A1	2315	C
29	A1	2319	A
29	A1	2321	G
29	A1	2322	G
29	A1	2323	A
29	A1	2324	A
29	A1	2325	A
29	A1	2326	U
29	A1	2327	C
29	A1	2328	C
29	A1	2329	G
29	A1	2331	C
29	A1	2333	G
29	A1	2334	A
29	A1	2335	G

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Mol	Chain	Res	Type
29	A1	2337	G
29	A1	2339	G
29	A1	2340	C
29	A1	2342	A
29	A1	2343	G
29	A1	2348	G
29	A1	2349	A
29	A1	2350	A
29	A1	2352	G
29	A1	2353	G
29	A1	2356	C
29	A1	2359	G
29	A1	2360	A
29	A1	2361	C
29	A1	2363	G
29	A1	2368	G
29	A1	2369	C
29	A1	2372	G
29	A1	2375	A
29	A1	2376	G
29	A1	2379	G
29	A1	2380	A
29	A1	2386	G
29	A1	2389	G
29	A1	2392	A
29	A1	2393	G
29	A1	2394	C
29	A1	2396	G
29	A1	2397	G
29	A1	2399	C
29	A1	2402	A
29	A1	2404	U
29	A1	2405	G
29	A1	2406	A
29	A1	2408	C
29	A1	2409	C
29	A1	2410	G
29	A1	2411	G
29	A1	2416	C
29	A1	2417	C
29	A1	2419	G
29	A1	2420	U

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Mol	Chain	Res	Type
29	A1	2421	G
29	A1	2424	G
29	A1	2426	A
29	A1	2431	C
29	A1	2432	A
29	A1	2434	C
29	A1	2436	A
29	A1	2437	U
29	A1	2441	C
29	A1	2442	G
29	A1	2443	G
29	A1	2444	A
29	A1	2445	U
29	A1	2447	A
29	A1	2451	U
29	A1	2453	A
29	A1	2454	C
29	A1	2455	C
29	A1	2457	C
29	A1	2460	G
29	A1	2461	G
29	A1	2462	A
29	A1	2463	U
29	A1	2465	A
29	A1	2466	C
29	A1	2469	G
29	A1	2470	C
29	A1	2473	A
29	A1	2477	C
29	A1	2478	C
29	A1	2480	C
29	A1	2482	G
29	A1	2483	A
29	A1	2486	G
29	A1	2487	U
29	A1	2488	C
29	A1	2492	A
29	A1	2495	G
29	A1	2499	G
29	A1	2500	G
29	A1	2501	G
29	A1	2504	G

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Mol	Chain	Res	Type
29	A1	2508	G
29	A1	2509	G
29	A1	2510	C
29	A1	2511	A
29	A1	2512	C
29	A1	2516	G
29	A1	2517	A
29	A1	2519	G
29	A1	2520	U
29	A1	2522	G
29	A1	2530	G
29	A1	2532	A
29	A1	2544	A
29	A1	2545	A
29	A1	2548	A
29	A1	2549	G
29	A1	2555	A
29	A1	2558	G
29	A1	2560	U
29	A1	2563	G
29	A1	2568	U
29	A1	2570	C
29	A1	2571	G
29	A1	2578	A
29	A1	2579	A
29	A1	2580	A
29	A1	2581	G
29	A1	2584	G
29	A1	2586	A
29	A1	2587	C
29	A1	2588	G
29	A1	2589	C
29	A1	2591	A
29	A1	2592	G
29	A1	2593	C
29	A1	2594	U
29	A1	2595	G
29	A1	2596	G
29	A1	2599	U
29	A1	2600	C
29	A1	2601	A
29	A1	2602	G

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Mol	Chain	Res	Type
29	A1	2611	G
29	A1	2612	A
29	A1	2613	G
29	A1	2615	C
29	A1	2616	A
29	A1	2623	U
29	A1	2624	C
29	A1	2625	U
29	A1	2626	C
29	A1	2628	A
29	A1	2630	C
29	A1	2633	C
29	A1	2635	A
29	A1	2636	C
29	A1	2637	G
29	A1	2640	C
29	A1	2643	A
29	A1	2644	G
29	A1	2646	A
29	A1	2647	G
29	A1	2648	G
29	A1	2649	C
29	A1	2650	U
29	A1	2652	G
29	A1	2654	G
29	A1	2655	G
29	A1	2657	G
29	A1	2658	G
29	A1	2660	C
29	A1	2661	U
29	A1	2663	U
29	A1	2664	U
29	A1	2666	C
29	A1	2668	A
29	A1	2674	A
29	A1	2679	A
29	A1	2684	A
29	A1	2689	A
29	A1	2700	G
29	A1	2701	U
29	A1	2703	U
29	A1	2707	A

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Mol	Chain	Res	Type
29	A1	2709	C
29	A1	2710	U
29	A1	2714	C
29	A1	2717	C
29	A1	2724	C
29	A1	2725	A
29	A1	2726	U
29	A1	2727	A
29	A1	2728	A
29	A1	2729	G
29	A1	2731	U
29	A1	2733	G
29	A1	2734	G
29	A1	2736	A
29	A1	2739	C
29	A1	2743	U
29	A1	2744	G
29	A1	2745	C
29	A1	2747	G
29	A1	2748	A
29	A1	2750	G
29	A1	2752	G
29	A1	2753	A
29	A1	2755	A
29	A1	2756	A
29	A1	2757	C
29	A1	2758	C
29	A1	2759	G
29	A1	2760	C
29	A1	2761	U
29	A1	2762	G
29	A1	2765	A
29	A1	2767	C
29	A1	2768	A
29	A1	2770	C
29	A1	2772	A
29	A1	2773	A
29	A1	2776	G
29	A1	2780	A
29	A1	2781	G
29	A1	2785	G
29	A1	2789	C

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Mol	Chain	Res	Type
29	A1	2792	G
29	A1	2793	A
29	A1	2794	U
29	A1	2796	A
29	A1	2800	C
29	A1	2802	C
29	A1	2804	C
29	A1	2806	C
29	A1	2808	G
29	A1	2809	C
29	A1	2810	G
29	A1	2811	U
29	A1	2815	G
29	A1	2819	G
29	A1	2820	U
29	A1	2822	A
29	A1	2823	G
29	A1	2825	A
29	A1	2826	C
29	A1	2827	C
29	A1	2832	A
29	A1	2834	G
29	A1	2836	C
29	A1	2837	C
29	A1	2840	C
29	A1	2842	G
29	A1	2844	U
29	A1	2845	G
29	A1	2846	G
29	A1	2847	A
29	A1	2848	U
29	A1	2849	G
29	A1	2860	G
29	A1	2861	U
29	A1	2863	A
29	A1	2867	C
29	A1	2868	C
29	A1	2874	G
29	A1	2878	U
29	A1	2879	G
29	A1	2880	A
29	A1	2882	C

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Mol	Chain	Res	Type
29	A1	2883	C
29	A1	2884	G
29	A1	2885	A
29	A1	2886	C
29	A1	2888	G
29	A1	2893	C
29	A1	2896	U
29	A1	2897	C
29	A1	2898	G
29	A1	2900	C
29	A1	2902	G
29	A1	2906	U
29	A1	2907	C
29	A1	2908	U
29	A1	2909	U
29	A1	2910	G
29	A1	2912	C
30	B1	2	A
30	B1	3	U
30	B1	4	C
30	B1	5	C
30	B1	6	C
30	B1	8	C
30	B1	15	A
30	B1	16	U
30	B1	17	A
30	B1	18	G
30	B1	21	G
30	B1	22	C
30	B1	23	G
30	B1	24	U
30	B1	26	G
30	B1	28	A
30	B1	29	C
30	B1	32	C
30	B1	33	C
30	B1	35	G
30	B1	36	U
30	B1	37	U
30	B1	39	C
30	B1	40	C
30	B1	41	A

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Mol	Chain	Res	Type
30	B1	42	U
30	B1	44	C
30	B1	45	C
30	B1	46	G
30	B1	47	A
30	B1	50	A
30	B1	51	C
30	B1	52	G
30	B1	54	A
30	B1	57	U
30	B1	58	G
30	B1	64	C
30	B1	65	G
30	B1	70	C
30	B1	72	C
30	B1	74	G
30	B1	75	A
30	B1	77	G
30	B1	81	C
30	B1	82	U
30	B1	84	G
30	B1	85	G
30	B1	86	C
30	B1	90	C
30	B1	91	G
30	B1	93	C
30	B1	97	C
30	B1	98	U
30	B1	108	G
30	B1	110	U
30	B1	111	C
30	B1	112	G
30	B1	114	U
30	B1	115	G
30	B1	116	C
30	B1	117	G
30	B1	120	G
29	A2	2	G
29	A2	3	U
29	A2	4	C
29	A2	5	A
29	A2	6	A

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Mol	Chain	Res	Type
29	A2	8	A
29	A2	9	U
29	A2	10	G
29	A2	12	U
29	A2	14	A
29	A2	15	G
29	A2	16	G
29	A2	19	C
29	A2	20	C
29	A2	30	G
29	A2	31	C
29	A2	33	U
29	A2	34	C
29	A2	35	G
29	A2	36	G
29	A2	43	A
29	A2	45	C
29	A2	47	G
29	A2	49	U
29	A2	50	G
29	A2	51	A
29	A2	54	G
29	A2	55	A
29	A2	58	U
29	A2	59	G
29	A2	60	G
29	A2	61	C
29	A2	62	U
29	A2	63	A
29	A2	67	G
29	A2	68	C
29	A2	69	G
29	A2	70	A
29	A2	71	U
29	A2	72	A
29	A2	73	A
29	A2	74	G
29	A2	77	A
29	A2	80	G
29	A2	82	G
29	A2	83	A
29	A2	84	G

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Mol	Chain	Res	Type
29	A2	87	G
29	A2	89	U
29	A2	91	G
29	A2	94	G
29	A2	98	U
29	A2	99	G
29	A2	100	G
29	A2	101	A
29	A2	102	U
29	A2	104	C
29	A2	105	C
29	A2	106	U
29	A2	113	C
29	A2	116	A
29	A2	117	A
29	A2	118	U
29	A2	119	G
29	A2	120	G
29	A2	121	G
29	A2	124	A
29	A2	125	A
29	A2	126	C
29	A2	127	C
29	A2	129	G
29	A2	130	G
29	A2	131	C
29	A2	135	C
29	A2	136	G
29	A2	137	G
29	A2	140	A
29	A2	141	C
29	A2	149	A
29	A2	151	C
29	A2	152	G
29	A2	155	C
29	A2	157	U
29	A2	158	U
29	A2	160	U
29	A2	161	G
29	A2	162	C
29	A2	165	G
29	A2	168	G

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Mol	Chain	Res	Type
29	A2	169	G
29	A2	171	A
29	A2	172	A
29	A2	178	G
29	A2	183	U
29	A2	186	A
29	A2	187	A
29	A2	189	A
29	A2	190	U
29	A2	191	C
29	A2	192	U
29	A2	193	C
29	A2	194	A
29	A2	195	G
29	A2	196	U
29	A2	197	A
29	A2	205	G
29	A2	206	A
29	A2	207	G
29	A2	208	A
29	A2	209	G
29	A2	212	A
29	A2	213	A
29	A2	214	G
29	A2	215	A
29	A2	217	A
29	A2	218	A
29	A2	219	A
29	A2	220	U
29	A2	221	C
29	A2	222	G
29	A2	223	A
29	A2	224	C
29	A2	225	U
29	A2	226	C
29	A2	231	A
29	A2	232	G
29	A2	233	U
29	A2	234	A
29	A2	236	C
29	A2	238	G
29	A2	239	C

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Mol	Chain	Res	Type
29	A2	241	A
29	A2	242	G
29	A2	243	C
29	A2	245	A
29	A2	246	A
29	A2	248	G
29	A2	253	C
29	A2	254	C
29	A2	255	A
29	A2	256	G
29	A2	260	A
29	A2	261	A
29	A2	263	C
29	A2	265	G
29	A2	266	U
29	A2	269	G
29	A2	271	C
29	A2	272	U
29	A2	273	U
29	A2	274	G
29	A2	276	C
29	A2	278	G
29	A2	279	G
29	A2	286	U
29	A2	287	C
29	A2	289	U
29	A2	290	G
29	A2	292	G
29	A2	293	G
29	A2	294	C
29	A2	295	C
29	A2	297	U
29	A2	298	C
29	A2	299	G
29	A2	300	G
29	A2	301	A
29	A2	303	A
29	A2	304	C
29	A2	307	A
29	A2	309	U
29	A2	310	C
29	A2	311	C

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Mol	Chain	Res	Type
29	A2	312	C
29	A2	313	C
29	A2	314	A
29	A2	315	G
29	A2	317	C
29	A2	319	A
29	A2	322	C
29	A2	323	G
29	A2	324	A
29	A2	331	U
29	A2	332	G
29	A2	335	A
29	A2	336	A
29	A2	337	G
29	A2	338	C
29	A2	341	C
29	A2	342	G
29	A2	347	A
29	A2	348	G
29	A2	350	G
29	A2	352	G
29	A2	353	U
29	A2	354	G
29	A2	355	A
29	A2	356	A
29	A2	357	A
29	A2	358	G
29	A2	359	C
29	A2	360	C
29	A2	363	G
29	A2	365	A
29	A2	367	G
29	A2	370	A
29	A2	371	A
29	A2	372	A
29	A2	376	G
29	A2	378	G
29	A2	379	G
29	A2	382	A
29	A2	383	U
29	A2	384	A
29	A2	386	G

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Mol	Chain	Res	Type
29	A2	388	G
29	A2	389	A
29	A2	391	G
29	A2	394	A
29	A2	395	C
29	A2	397	C
29	A2	398	G
29	A2	399	A
29	A2	400	G
29	A2	402	A
29	A2	403	C
29	A2	408	U
29	A2	414	G
29	A2	416	G
29	A2	417	G
29	A2	419	G
29	A2	420	C
29	A2	421	C
29	A2	423	U
29	A2	428	G
29	A2	430	A
29	A2	433	U
29	A2	435	G
29	A2	436	G
29	A2	437	C
29	A2	439	G
29	A2	440	A
29	A2	441	C
29	A2	442	C
29	A2	444	C
29	A2	445	C
29	A2	449	C
29	A2	451	A
29	A2	452	A
29	A2	454	G
29	A2	459	G
29	A2	460	U
29	A2	463	U
29	A2	467	G
29	A2	470	G
29	A2	471	A
29	A2	472	C

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Mol	Chain	Res	Type
29	A2	475	A
29	A2	476	U
29	A2	477	A
29	A2	479	C
29	A2	480	G
29	A2	481	C
29	A2	482	A
29	A2	483	C
29	A2	485	A
29	A2	486	G
29	A2	487	U
29	A2	488	A
29	A2	492	U
29	A2	493	G
29	A2	495	G
29	A2	496	G
29	A2	497	G
29	A2	499	A
29	A2	500	A
29	A2	501	G
29	A2	503	U
29	A2	508	A
29	A2	509	G
29	A2	512	C
29	A2	513	C
29	A2	515	C
29	A2	519	A
29	A2	522	G
29	A2	531	U
29	A2	533	G
29	A2	535	G
29	A2	536	C
29	A2	537	C
29	A2	540	A
29	A2	541	A
29	A2	542	A
29	A2	543	C
29	A2	544	C
29	A2	545	G
29	A2	548	G
29	A2	554	C
29	A2	555	A

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Mol	Chain	Res	Type
29	A2	556	A
29	A2	557	G
29	A2	558	C
29	A2	559	A
29	A2	560	G
29	A2	561	U
29	A2	564	C
29	A2	565	G
29	A2	566	G
29	A2	568	C
29	A2	569	C
29	A2	574	A
29	A2	575	G
29	A2	577	G
29	A2	581	G
29	A2	586	G
29	A2	588	G
29	A2	591	U
29	A2	592	A
29	A2	593	U
29	A2	596	A
29	A2	597	A
29	A2	598	G
29	A2	600	A
29	A2	607	G
29	A2	612	C
29	A2	615	A
29	A2	621	G
29	A2	622	U
29	A2	624	G
29	A2	628	A
29	A2	630	C
29	A2	632	U
29	A2	633	A
29	A2	635	G
29	A2	640	U
29	A2	641	G
29	A2	642	A
29	A2	647	G
29	A2	648	A
29	A2	649	G
29	A2	652	G

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Mol	Chain	Res	Type
29	A2	654	A
29	A2	658	A
29	A2	660	A
29	A2	661	C
29	A2	664	A
29	A2	670	A
29	A2	671	A
29	A2	672	C
29	A2	677	C
29	A2	680	A
29	A2	681	A
29	A2	682	A
29	A2	685	G
29	A2	686	C
29	A2	687	C
29	A2	688	C
29	A2	690	C
29	A2	692	C
29	A2	694	C
29	A2	695	G
29	A2	696	G
29	A2	699	C
29	A2	700	G
29	A2	701	A
29	A2	702	A
29	A2	703	A
29	A2	704	A
29	A2	705	G
29	A2	708	C
29	A2	709	G
29	A2	710	C
29	A2	713	C
29	A2	715	G
29	A2	716	U
29	A2	717	G
29	A2	718	G
29	A2	719	A
29	A2	721	C
29	A2	724	A
29	A2	726	A
29	A2	732	C
29	A2	733	G

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Mol	Chain	Res	Type
29	A2	735	G
29	A2	738	A
29	A2	739	G
29	A2	742	C
29	A2	747	C
29	A2	748	A
29	A2	754	A
29	A2	756	G
29	A2	760	G
29	A2	762	G
29	A2	764	G
29	A2	766	G
29	A2	769	C
29	A2	772	G
29	A2	775	G
29	A2	776	A
29	A2	777	G
29	A2	778	G
29	A2	779	C
29	A2	785	C
29	A2	786	C
29	A2	788	G
29	A2	789	U
29	A2	797	G
29	A2	798	C
29	A2	799	A
29	A2	800	A
29	A2	801	A
29	A2	805	C
29	A2	806	U
29	A2	808	G
29	A2	810	A
29	A2	811	U
29	A2	812	G
29	A2	813	A
29	A2	816	U
29	A2	820	G
29	A2	821	C
29	A2	823	A
29	A2	825	G
29	A2	828	U
29	A2	829	G

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Mol	Chain	Res	Type
29	A2	830	A
29	A2	831	A
29	A2	833	A
29	A2	834	G
29	A2	837	A
29	A2	838	A
29	A2	839	C
29	A2	840	C
29	A2	841	G
29	A2	842	A
29	A2	843	G
29	A2	846	C
29	A2	849	A
29	A2	850	G
29	A2	851	A
29	A2	852	U
29	A2	853	A
29	A2	854	G
29	A2	855	C
29	A2	858	G
29	A2	861	C
29	A2	868	A
29	A2	870	A
29	A2	871	U
29	A2	876	U
29	A2	878	A
29	A2	880	G
29	A2	886	C
29	A2	891	G
29	A2	894	G
29	A2	895	C
29	A2	897	G
29	A2	902	G
29	A2	903	G
29	A2	904	G
29	A2	905	C
29	A2	906	C
29	A2	907	U
29	A2	908	G
29	A2	909	U
29	A2	917	U
29	A2	920	U

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Mol	Chain	Res	Type
29	A2	923	G
29	A2	925	C
29	A2	926	U
29	A2	927	A
29	A2	929	G
29	A2	931	G
29	A2	932	G
29	A2	933	C
29	A2	934	C
29	A2	936	A
29	A2	937	C
29	A2	938	C
29	A2	939	A
29	A2	940	G
29	A2	942	C
29	A2	943	U
29	A2	944	A
29	A2	945	C
29	A2	946	C
29	A2	947	A
29	A2	951	C
29	A2	952	C
29	A2	955	U
29	A2	958	A
29	A2	960	C
29	A2	961	U
29	A2	962	C
29	A2	963	C
29	A2	965	A
29	A2	966	A
29	A2	967	G
29	A2	968	G
29	A2	969	G
29	A2	970	U
29	A2	974	A
29	A2	977	U
29	A2	979	G
29	A2	981	G
29	A2	982	C
29	A2	985	G
29	A2	988	A
29	A2	989	G

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Mol	Chain	Res	Type
29	A2	990	U
29	A2	991	G
29	A2	992	A
29	A2	993	G
29	A2	996	C
29	A2	1000	A
29	A2	1001	G
29	A2	1003	G
29	A2	1005	U
29	A2	1006	A
29	A2	1008	C
29	A2	1009	G
29	A2	1011	C
29	A2	1018	C
29	A2	1021	G
29	A2	1022	C
29	A2	1028	A
29	A2	1030	C
29	A2	1031	A
29	A2	1032	A
29	A2	1033	C
29	A2	1035	G
29	A2	1036	A
29	A2	1037	G
29	A2	1038	A
29	A2	1039	C
29	A2	1040	C
29	A2	1041	G
29	A2	1043	C
29	A2	1044	A
29	A2	1045	G
29	A2	1047	U
29	A2	1053	C
29	A2	1057	A
29	A2	1059	G
29	A2	1060	U
29	A2	1061	C
29	A2	1065	G
29	A2	1068	A
29	A2	1069	A
29	A2	1070	G
29	A2	1071	U

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Mol	Chain	Res	Type
29	A2	1074	U
29	A2	1075	A
29	A2	1077	A
29	A2	1080	A
29	A2	1081	U
29	A2	1088	C
29	A2	1092	G
29	A2	1093	A
29	A2	1095	G
29	A2	1096	A
29	A2	1097	C
29	A2	1098	A
29	A2	1099	G
29	A2	1102	A
29	A2	1103	G
29	A2	1104	G
29	A2	1105	A
29	A2	1107	G
29	A2	1109	U
29	A2	1110	G
29	A2	1114	U
29	A2	1115	A
29	A2	1116	G
29	A2	1117	A
29	A2	1119	G
29	A2	1121	A
29	A2	1123	C
29	A2	1124	C
29	A2	1125	A
29	A2	1126	U
29	A2	1130	U
29	A2	1132	A
29	A2	1135	G
29	A2	1136	A
29	A2	1137	G
29	A2	1138	U
29	A2	1139	G
29	A2	1140	C
29	A2	1142	U
29	A2	1144	A
29	A2	1145	U
29	A2	1146	A

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Mol	Chain	Res	Type
29	A2	1148	C
29	A2	1151	A
29	A2	1152	C
29	A2	1153	U
29	A2	1157	C
29	A2	1158	G
29	A2	1159	A
29	A2	1161	U
29	A2	1162	G
29	A2	1165	G
29	A2	1166	C
29	A2	1167	C
29	A2	1171	C
29	A2	1172	C
29	A2	1174	A
29	A2	1175	A
29	A2	1177	A
29	A2	1178	U
29	A2	1180	A
29	A2	1181	U
29	A2	1186	G
29	A2	1188	U
29	A2	1190	A
29	A2	1191	A
29	A2	1193	C
29	A2	1196	A
29	A2	1199	G
29	A2	1203	A
29	A2	1206	C
29	A2	1209	C
29	A2	1214	C
29	A2	1215	U
29	A2	1216	G
29	A2	1219	G
29	A2	1220	G
29	A2	1221	A
29	A2	1222	U
29	A2	1223	G
29	A2	1224	A
29	A2	1225	C
29	A2	1226	C
29	A2	1227	C

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Mol	Chain	Res	Type
29	A2	1228	C
29	A2	1230	G
29	A2	1232	C
29	A2	1233	G
29	A2	1235	U
29	A2	1237	G
29	A2	1241	A
29	A2	1247	C
29	A2	1248	C
29	A2	1251	A
29	A2	1253	G
29	A2	1254	C
29	A2	1255	C
29	A2	1257	A
29	A2	1258	U
29	A2	1259	G
29	A2	1260	A
29	A2	1261	A
29	A2	1265	C
29	A2	1266	G
29	A2	1267	A
29	A2	1271	G
29	A2	1272	C
29	A2	1277	G
29	A2	1278	C
29	A2	1279	G
29	A2	1281	C
29	A2	1284	G
29	A2	1285	A
29	A2	1286	G
29	A2	1287	G
29	A2	1288	U
29	A2	1289	A
29	A2	1291	G
29	A2	1292	G
29	A2	1294	A
29	A2	1295	A
29	A2	1296	G
29	A2	1299	C
29	A2	1300	G
29	A2	1301	A
29	A2	1303	U

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Mol	Chain	Res	Type
29	A2	1304	G
29	A2	1306	C
29	A2	1309	C
29	A2	1310	A
29	A2	1313	A
29	A2	1314	G
29	A2	1315	U
29	A2	1319	G
29	A2	1320	A
29	A2	1322	A
29	A2	1323	A
29	A2	1324	A
29	A2	1327	G
29	A2	1329	G
29	A2	1330	U
29	A2	1331	G
29	A2	1332	A
29	A2	1333	G
29	A2	1335	A
29	A2	1340	U
29	A2	1343	C
29	A2	1344	G
29	A2	1348	U
29	A2	1349	A
29	A2	1351	G
29	A2	1352	C
29	A2	1356	A
29	A2	1357	G
29	A2	1360	U
29	A2	1361	U
29	A2	1362	C
29	A2	1364	U
29	A2	1365	A
29	A2	1367	G
29	A2	1369	A
29	A2	1377	U
29	A2	1378	C
29	A2	1379	A
29	A2	1380	G
29	A2	1381	C
29	A2	1389	U
29	A2	1390	A

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Mol	Chain	Res	Type
29	A2	1396	G
29	A2	1397	A
29	A2	1402	A
29	A2	1403	G
29	A2	1404	G
29	A2	1405	U
29	A2	1406	G
29	A2	1407	A
29	A2	1408	A
29	A2	1411	C
29	A2	1413	A
29	A2	1414	A
29	A2	1416	G
29	A2	1417	G
29	A2	1418	C
29	A2	1421	A
29	A2	1422	G
29	A2	1423	C
29	A2	1426	A
29	A2	1428	G
29	A2	1431	C
29	A2	1432	A
29	A2	1433	G
29	A2	1434	C
29	A2	1435	C
29	A2	1436	G
29	A2	1440	A
29	A2	1441	A
29	A2	1442	U
29	A2	1445	U
29	A2	1446	C
29	A2	1448	G
29	A2	1450	C
29	A2	1458	G
29	A2	1459	C
29	A2	1461	G
29	A2	1464	G
29	A2	1468	U
29	A2	1469	G
29	A2	1471	G
29	A2	1473	G
29	A2	1475	A

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Mol	Chain	Res	Type
29	A2	1476	C
29	A2	1477	G
29	A2	1478	C
29	A2	1479	U
29	A2	1480	C
29	A2	1484	G
29	A2	1485	C
29	A2	1492	G
29	A2	1493	A
29	A2	1498	A
29	A2	1499	G
29	A2	1502	A
29	A2	1503	U
29	A2	1504	G
29	A2	1505	G
29	A2	1507	C
29	A2	1509	A
29	A2	1510	G
29	A2	1516	C
29	A2	1518	A
29	A2	1520	A
29	A2	1521	A
29	A2	1522	G
29	A2	1526	A
29	A2	1531	G
29	A2	1533	G
29	A2	1538	A
29	A2	1539	G
29	A2	1540	G
29	A2	1541	C
29	A2	1542	A
29	A2	1543	A
29	A2	1545	U
29	A2	1546	C
29	A2	1547	C
29	A2	1548	G
29	A2	1550	C
29	A2	1552	C
29	A2	1554	C
29	A2	1556	A
29	A2	1557	C
29	A2	1558	A

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Mol	Chain	Res	Type
29	A2	1559	A
29	A2	1560	G
29	A2	1561	C
29	A2	1562	U
29	A2	1565	G
29	A2	1569	G
29	A2	1570	G
29	A2	1571	U
29	A2	1572	G
29	A2	1577	A
29	A2	1578	G
29	A2	1581	C
29	A2	1582	G
29	A2	1584	A
29	A2	1585	C
29	A2	1586	G
29	A2	1591	A
29	A2	1592	C
29	A2	1593	A
29	A2	1595	C
29	A2	1596	C
29	A2	1597	C
29	A2	1598	C
29	A2	1602	A
29	A2	1603	A
29	A2	1604	G
29	A2	1605	C
29	A2	1607	A
29	A2	1608	G
29	A2	1609	G
29	A2	1612	G
29	A2	1615	A
29	A2	1616	A
29	A2	1618	A
29	A2	1619	A
29	A2	1621	A
29	A2	1625	U
29	A2	1629	A
29	A2	1630	G
29	A2	1631	C
29	A2	1632	A
29	A2	1633	C

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Mol	Chain	Res	Type
29	A2	1634	A
29	A2	1635	A
29	A2	1636	C
29	A2	1637	C
29	A2	1639	G
29	A2	1644	A
29	A2	1646	C
29	A2	1647	C
29	A2	1650	U
29	A2	1651	A
29	A2	1652	C
29	A2	1655	C
29	A2	1656	A
29	A2	1658	A
29	A2	1660	C
29	A2	1662	A
29	A2	1663	C
29	A2	1666	A
29	A2	1667	G
29	A2	1668	G
29	A2	1670	G
29	A2	1671	G
29	A2	1672	G
29	A2	1673	C
29	A2	1675	G
29	A2	1680	A
29	A2	1681	A
29	A2	1682	G
29	A2	1683	A
29	A2	1684	G
29	A2	1685	C
29	A2	1688	U
29	A2	1691	G
29	A2	1692	G
29	A2	1693	C
29	A2	1695	C
29	A2	1697	C
29	A2	1703	A
29	A2	1715	G
29	A2	1716	G
29	A2	1717	A
29	A2	1718	A

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Mol	Chain	Res	Type
29	A2	1721	C
29	A2	1723	G
29	A2	1724	C
29	A2	1726	A
29	A2	1731	G
29	A2	1735	C
29	A2	1737	U
29	A2	1738	A
29	A2	1740	C
29	A2	1741	U
29	A2	1743	C
29	A2	1744	G
29	A2	1747	A
29	A2	1749	A
29	A2	1750	A
29	A2	1752	G
29	A2	1757	C
29	A2	1758	U
29	A2	1759	C
29	A2	1761	C
29	A2	1765	G
29	A2	1768	G
29	A2	1770	U
29	A2	1771	G
29	A2	1773	G
29	A2	1775	C
29	A2	1777	C
29	A2	1778	G
29	A2	1783	G
29	A2	1784	C
29	A2	1786	G
29	A2	1789	G
29	A2	1791	G
29	A2	1792	A
29	A2	1795	A
29	A2	1796	G
29	A2	1797	G
29	A2	1801	U
29	A2	1803	G
29	A2	1804	C
29	A2	1806	A
29	A2	1807	C

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Mol	Chain	Res	Type
29	A2	1808	U
29	A2	1809	G
29	A2	1810	U
29	A2	1811	U
29	A2	1812	U
29	A2	1813	A
29	A2	1814	C
29	A2	1815	C
29	A2	1816	A
29	A2	1817	A
29	A2	1819	A
29	A2	1820	A
29	A2	1823	C
29	A2	1824	A
29	A2	1825	G
29	A2	1828	C
29	A2	1829	U
29	A2	1833	C
29	A2	1834	G
29	A2	1835	A
29	A2	1836	A
29	A2	1837	C
29	A2	1839	C
29	A2	1840	G
29	A2	1842	A
29	A2	1844	G
29	A2	1848	A
29	A2	1850	G
29	A2	1851	U
29	A2	1853	U
29	A2	1854	A
29	A2	1859	G
29	A2	1860	C
29	A2	1861	G
29	A2	1864	G
29	A2	1867	U
29	A2	1868	G
29	A2	1869	C
29	A2	1871	C
29	A2	1872	G
29	A2	1873	G
29	A2	1877	C

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Mol	Chain	Res	Type
29	A2	1880	A
29	A2	1881	A
29	A2	1884	U
29	A2	1886	A
29	A2	1887	A
29	A2	1889	G
29	A2	1890	G
29	A2	1894	G
29	A2	1895	G
29	A2	1897	U
29	A2	1898	G
29	A2	1899	C
29	A2	1900	A
29	A2	1901	A
29	A2	1902	G
29	A2	1904	C
29	A2	1905	C
29	A2	1907	G
29	A2	1910	C
29	A2	1912	G
29	A2	1924	A
29	A2	1925	A
29	A2	1927	G
29	A2	1930	G
29	A2	1932	C
29	A2	1935	U
29	A2	1937	A
29	A2	1938	C
29	A2	1941	U
29	A2	1943	A
29	A2	1945	G
29	A2	1949	C
29	A2	1953	G
29	A2	1954	G
29	A2	1958	C
29	A2	1961	A
29	A2	1962	A
29	A2	1964	U
29	A2	1965	C
29	A2	1966	C
29	A2	1968	U
29	A2	1977	A

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Mol	Chain	Res	Type
29	A2	1978	G
29	A2	1979	U
29	A2	1980	U
29	A2	1981	C
29	A2	1987	U
29	A2	1988	G
29	A2	1989	C
29	A2	1990	A
29	A2	1991	C
29	A2	1993	A
29	A2	1994	A
29	A2	1995	A
29	A2	1996	A
29	A2	2000	U
29	A2	2003	C
29	A2	2006	C
29	A2	2007	C
29	A2	2013	G
29	A2	2015	U
29	A2	2016	G
29	A2	2017	U
29	A2	2018	C
29	A2	2019	U
29	A2	2020	C
29	A2	2021	G
29	A2	2023	C
29	A2	2027	G
29	A2	2030	C
29	A2	2039	A
29	A2	2040	U
29	A2	2043	A
29	A2	2044	A
29	A2	2045	C
29	A2	2054	A
29	A2	2055	A
29	A2	2056	G
29	A2	2057	A
29	A2	2058	U
29	A2	2059	G
29	A2	2060	C
29	A2	2062	G
29	A2	2063	C

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Mol	Chain	Res	Type
29	A2	2064	C
29	A2	2067	C
29	A2	2068	C
29	A2	2069	C
29	A2	2075	A
29	A2	2079	C
29	A2	2080	G
29	A2	2081	A
29	A2	2084	A
29	A2	2085	G
29	A2	2086	A
29	A2	2093	G
29	A2	2095	A
29	A2	2099	U
29	A2	2100	U
29	A2	2101	A
29	A2	2103	U
29	A2	2104	G
29	A2	2109	C
29	A2	2110	U
29	A2	2111	G
29	A2	2113	U
29	A2	2123	U
29	A2	2124	G
29	A2	2126	U
29	A2	2127	C
29	A2	2128	G
29	A2	2129	C
29	A2	2131	C
29	A2	2132	C
29	A2	2133	U
29	A2	2134	G
29	A2	2136	G
29	A2	2137	U
29	A2	2138	A
29	A2	2139	G
29	A2	2140	G
29	A2	2142	U
29	A2	2146	U
29	A2	2147	G
29	A2	2148	G
29	A2	2150	A

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Mol	Chain	Res	Type
29	A2	2152	C
29	A2	2153	C
29	A2	2155	G
29	A2	2157	G
29	A2	2158	A
29	A2	2160	C
29	A2	2161	C
29	A2	2162	C
29	A2	2163	C
29	A2	2164	C
29	A2	2165	G
29	A2	2166	C
29	A2	2167	C
29	A2	2168	U
29	A2	2170	C
29	A2	2172	G
29	A2	2175	G
29	A2	2176	G
29	A2	2177	G
29	A2	2178	G
29	A2	2179	G
29	A2	2180	G
29	A2	2181	G
29	A2	2183	G
29	A2	2184	G
29	A2	2185	C
29	A2	2186	G
29	A2	2187	C
29	A2	2188	C
29	A2	2189	G
29	A2	2190	G
29	A2	2191	U
29	A2	2192	G
29	A2	2193	A
29	A2	2194	A
29	A2	2195	A
29	A2	2198	C
29	A2	2199	C
29	A2	2201	C
29	A2	2202	C
29	A2	2203	C
29	A2	2204	U

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Mol	Chain	Res	Type
29	A2	2206	G
29	A2	2209	C
29	A2	2211	G
29	A2	2213	U
29	A2	2214	G
29	A2	2215	G
29	A2	2221	U
29	A2	2222	A
29	A2	2224	C
29	A2	2228	C
29	A2	2229	G
29	A2	2230	G
29	A2	2231	A
29	A2	2232	U
29	A2	2233	G
29	A2	2235	G
29	A2	2238	G
29	A2	2239	A
29	A2	2243	C
29	A2	2247	U
29	A2	2251	G
29	A2	2252	G
29	A2	2253	G
29	A2	2254	C
29	A2	2257	U
29	A2	2259	U
29	A2	2260	G
29	A2	2261	A
29	A2	2263	U
29	A2	2264	G
29	A2	2265	G
29	A2	2266	G
29	A2	2267	G
29	A2	2269	G
29	A2	2273	G
29	A2	2276	U
29	A2	2282	A
29	A2	2283	A
29	A2	2284	G
29	A2	2286	U
29	A2	2287	A
29	A2	2289	C

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Mol	Chain	Res	Type
29	A2	2290	G
29	A2	2296	G
29	A2	2297	C
29	A2	2298	C
29	A2	2301	A
29	A2	2302	A
29	A2	2303	G
29	A2	2304	G
29	A2	2307	C
29	A2	2308	C
29	A2	2311	C
29	A2	2312	A
29	A2	2314	G
29	A2	2315	C
29	A2	2317	G
29	A2	2319	A
29	A2	2321	G
29	A2	2322	G
29	A2	2323	A
29	A2	2324	A
29	A2	2325	A
29	A2	2326	U
29	A2	2327	C
29	A2	2334	A
29	A2	2335	G
29	A2	2339	G
29	A2	2340	C
29	A2	2342	A
29	A2	2343	G
29	A2	2345	G
29	A2	2350	A
29	A2	2352	G
29	A2	2356	C
29	A2	2359	G
29	A2	2360	A
29	A2	2361	C
29	A2	2362	U
29	A2	2363	G
29	A2	2364	C
29	A2	2369	C
29	A2	2375	A
29	A2	2380	A

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Mol	Chain	Res	Type
29	A2	2386	G
29	A2	2393	G
29	A2	2395	C
29	A2	2396	G
29	A2	2397	G
29	A2	2399	C
29	A2	2402	A
29	A2	2403	G
29	A2	2404	U
29	A2	2405	G
29	A2	2406	A
29	A2	2408	C
29	A2	2409	C
29	A2	2413	G
29	A2	2415	U
29	A2	2416	C
29	A2	2417	C
29	A2	2420	U
29	A2	2426	A
29	A2	2430	C
29	A2	2431	C
29	A2	2434	C
29	A2	2436	A
29	A2	2437	U
29	A2	2439	A
29	A2	2440	A
29	A2	2441	C
29	A2	2442	G
29	A2	2443	G
29	A2	2444	A
29	A2	2445	U
29	A2	2446	A
29	A2	2451	U
29	A2	2453	A
29	A2	2454	C
29	A2	2455	C
29	A2	2457	C
29	A2	2460	G
29	A2	2462	A
29	A2	2463	U
29	A2	2465	A
29	A2	2466	C

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Mol	Chain	Res	Type
29	A2	2469	G
29	A2	2477	C
29	A2	2478	C
29	A2	2482	G
29	A2	2483	A
29	A2	2486	G
29	A2	2488	C
29	A2	2490	A
29	A2	2491	C
29	A2	2492	A
29	A2	2495	G
29	A2	2496	G
29	A2	2498	G
29	A2	2499	G
29	A2	2500	G
29	A2	2504	G
29	A2	2508	G
29	A2	2509	G
29	A2	2510	C
29	A2	2512	C
29	A2	2516	G
29	A2	2517	A
29	A2	2518	U
29	A2	2519	G
29	A2	2520	U
29	A2	2522	G
29	A2	2532	A
29	A2	2539	G
29	A2	2542	U
29	A2	2543	G
29	A2	2544	A
29	A2	2548	A
29	A2	2549	G
29	A2	2555	A
29	A2	2558	G
29	A2	2560	U
29	A2	2568	U
29	A2	2570	C
29	A2	2571	G
29	A2	2578	A
29	A2	2579	A
29	A2	2580	A

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Mol	Chain	Res	Type
29	A2	2581	G
29	A2	2584	G
29	A2	2586	A
29	A2	2587	C
29	A2	2588	G
29	A2	2590	G
29	A2	2593	C
29	A2	2594	U
29	A2	2596	G
29	A2	2598	U
29	A2	2599	U
29	A2	2600	C
29	A2	2611	G
29	A2	2612	A
29	A2	2613	G
29	A2	2615	C
29	A2	2616	A
29	A2	2620	C
29	A2	2623	U
29	A2	2624	C
29	A2	2625	U
29	A2	2626	C
29	A2	2628	A
29	A2	2633	C
29	A2	2635	A
29	A2	2642	C
29	A2	2643	A
29	A2	2644	G
29	A2	2645	G
29	A2	2648	G
29	A2	2649	C
29	A2	2652	G
29	A2	2653	A
29	A2	2654	G
29	A2	2656	G
29	A2	2657	G
29	A2	2658	G
29	A2	2660	C
29	A2	2661	U
29	A2	2663	U
29	A2	2664	U
29	A2	2666	C

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Mol	Chain	Res	Type
29	A2	2668	A
29	A2	2672	C
29	A2	2674	A
29	A2	2675	G
29	A2	2677	G
29	A2	2679	A
29	A2	2682	G
29	A2	2684	A
29	A2	2687	G
29	A2	2689	A
29	A2	2695	C
29	A2	2700	G
29	A2	2703	U
29	A2	2704	C
29	A2	2705	C
29	A2	2707	A
29	A2	2709	C
29	A2	2710	U
29	A2	2713	C
29	A2	2714	C
29	A2	2715	C
29	A2	2716	U
29	A2	2717	C
29	A2	2724	C
29	A2	2725	A
29	A2	2727	A
29	A2	2728	A
29	A2	2731	U
29	A2	2733	G
29	A2	2734	G
29	A2	2738	C
29	A2	2739	C
29	A2	2740	A
29	A2	2741	U
29	A2	2742	G
29	A2	2743	U
29	A2	2744	G
29	A2	2745	C
29	A2	2747	G
29	A2	2748	A
29	A2	2749	A
29	A2	2751	G

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Mol	Chain	Res	Type
29	A2	2754	U
29	A2	2756	A
29	A2	2757	C
29	A2	2758	C
29	A2	2761	U
29	A2	2762	G
29	A2	2763	A
29	A2	2765	A
29	A2	2767	C
29	A2	2768	A
29	A2	2772	A
29	A2	2773	A
29	A2	2777	G
29	A2	2778	G
29	A2	2780	A
29	A2	2781	G
29	A2	2783	C
29	A2	2784	C
29	A2	2787	C
29	A2	2788	C
29	A2	2789	C
29	A2	2792	G
29	A2	2793	A
29	A2	2794	U
29	A2	2796	A
29	A2	2797	G
29	A2	2800	C
29	A2	2801	U
29	A2	2802	C
29	A2	2804	C
29	A2	2808	G
29	A2	2809	C
29	A2	2810	G
29	A2	2811	U
29	A2	2812	C
29	A2	2813	A
29	A2	2814	A
29	A2	2815	G
29	A2	2817	C
29	A2	2819	G
29	A2	2820	U
29	A2	2821	A

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Mol	Chain	Res	Type
29	A2	2823	G
29	A2	2825	A
29	A2	2827	C
29	A2	2832	A
29	A2	2833	A
29	A2	2834	G
29	A2	2835	A
29	A2	2836	C
29	A2	2837	C
29	A2	2840	C
29	A2	2842	G
29	A2	2844	U
29	A2	2845	G
29	A2	2846	G
29	A2	2847	A
29	A2	2848	U
29	A2	2849	G
29	A2	2854	G
29	A2	2860	G
29	A2	2861	U
29	A2	2862	A
29	A2	2863	A
29	A2	2864	G
29	A2	2865	C
29	A2	2867	C
29	A2	2868	C
29	A2	2874	G
29	A2	2876	G
29	A2	2878	U
29	A2	2879	G
29	A2	2880	A
29	A2	2882	C
29	A2	2883	C
29	A2	2884	G
29	A2	2885	A
29	A2	2886	C
29	A2	2887	C
29	A2	2895	A
29	A2	2896	U
29	A2	2897	C
29	A2	2898	G
29	A2	2902	G

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Mol	Chain	Res	Type
29	A2	2904	G
29	A2	2905	G
29	A2	2906	U
29	A2	2907	C
29	A2	2909	U
29	A2	2910	G
29	A2	2911	A
29	A2	2912	C
29	A2	2913	C
30	B2	3	U
30	B2	6	C
30	B2	7	C
30	B2	8	C
30	B2	11	G
30	B2	12	C
30	B2	13	C
30	B2	14	C
30	B2	15	A
30	B2	16	U
30	B2	18	G
30	B2	21	G
30	B2	22	C
30	B2	23	G
30	B2	24	U
30	B2	28	A
30	B2	29	C
30	B2	30	C
30	B2	33	C
30	B2	35	G
30	B2	37	U
30	B2	38	C
30	B2	41	A
30	B2	42	U
30	B2	43	U
30	B2	44	C
30	B2	46	G
30	B2	47	A
30	B2	50	A
30	B2	52	G
30	B2	53	G
30	B2	54	A
30	B2	55	A

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Mol	Chain	Res	Type
30	B2	56	G
30	B2	58	G
30	B2	64	C
30	B2	66	C
30	B2	68	A
30	B2	69	G
30	B2	71	G
30	B2	81	C
30	B2	82	U
30	B2	83	G
30	B2	84	G
30	B2	85	G
30	B2	90	C
30	B2	91	G
30	B2	93	C
30	B2	97	C
30	B2	99	G
30	B2	102	A
30	B2	112	G
30	B2	114	U
30	B2	115	G
30	B2	117	G
30	B2	118	G
30	B2	120	G
30	B2	121	G
53	A3	7	G
53	A3	8	A
53	A3	9	G
53	A3	10	A
53	A3	13	U
53	A3	14	U
53	A3	15	G
53	A3	16	A
53	A3	21	G
53	A3	24	U
53	A3	27	G
53	A3	28	G
53	A3	29	G
53	A3	31	G
53	A3	32	A
53	A3	34	C
53	A3	39	G

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Mol	Chain	Res	Type
53	A3	45	U
53	A3	46	G
53	A3	47	C
53	A3	51	A
53	A3	52	G
53	A3	54	C
53	A3	55	A
53	A3	58	C
53	A3	59	A
53	A3	61	G
53	A3	62	U
53	A3	65	U
53	A3	66	G
53	A3	69	G
53	A3	70	G
53	A3	73	G
53	A3	74	C
53	A3	75	G
53	A3	76	G
53	A3	77	G
53	A3	78	G
53	A3	79	U
53	A3	80	U
53	A3	81	U
53	A3	82	U
53	A3	83	A
53	A3	84	C
53	A3	85	U
53	A3	86	C
53	A3	87	C
53	A3	89	U
53	A3	90	G
53	A3	91	G
53	A3	92	U
53	A3	94	A
53	A3	100	G
53	A3	101	G
53	A3	102	A
53	A3	103	C
53	A3	105	G
53	A3	107	U
53	A3	108	G

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Mol	Chain	Res	Type
53	A3	113	A
53	A3	114	C
53	A3	115	G
53	A3	121	G
53	A3	122	U
53	A3	123	G
53	A3	125	C
53	A3	128	A
53	A3	129	C
53	A3	130	C
53	A3	132	G
53	A3	133	G
53	A3	134	A
53	A3	135	A
53	A3	136	G
53	A3	138	G
53	A3	139	G
53	A3	140	G
53	A3	143	A
53	A3	145	A
53	A3	146	A
53	A3	147	C
53	A3	148	C
53	A3	149	C
53	A3	151	G
53	A3	161	G
53	A3	162	G
53	A3	163	C
53	A3	164	U
53	A3	165	A
53	A3	166	A
53	A3	168	C
53	A3	169	C
53	A3	173	A
53	A3	174	U
53	A3	177	G
53	A3	178	G
53	A3	179	A
53	A3	181	C
53	A3	185	C
53	A3	186	C
53	A3	187	C

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Mol	Chain	Res	Type
53	A3	188	U
53	A3	189	U
53	A3	190	G
53	A3	191	G
53	A3	197	G
53	A3	201	A
53	A3	202	A
53	A3	203	A
53	A3	204	G
53	A3	206	G
53	A3	208	U
53	A3	209	U
53	A3	210	U
53	A3	211	G
53	A3	212	C
53	A3	213	C
53	A3	217	U
53	A3	218	U
53	A3	219	C
53	A3	220	C
53	A3	221	G
53	A3	226	G
53	A3	229	C
53	A3	230	C
53	A3	232	C
53	A3	233	G
53	A3	234	U
53	A3	235	C
53	A3	238	A
53	A3	239	U
53	A3	240	C
53	A3	241	A
53	A3	242	G
53	A3	243	C
53	A3	246	G
53	A3	248	U
53	A3	254	G
53	A3	257	A
53	A3	261	G
53	A3	263	C
53	A3	268	A
53	A3	269	A

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Mol	Chain	Res	Type
53	A3	270	G
53	A3	271	G
53	A3	272	C
53	A3	273	G
53	A3	274	A
53	A3	276	G
53	A3	278	C
53	A3	284	G
53	A3	286	C
53	A3	288	G
53	A3	290	C
53	A3	291	U
53	A3	293	A
53	A3	296	G
53	A3	298	A
53	A3	299	U
53	A3	300	G
53	A3	301	G
53	A3	302	C
53	A3	303	C
53	A3	310	A
53	A3	311	G
53	A3	312	G
53	A3	318	U
53	A3	319	G
53	A3	322	A
53	A3	323	C
53	A3	325	C
53	A3	327	G
53	A3	329	C
53	A3	331	C
53	A3	334	C
53	A3	337	C
53	A3	339	A
53	A3	340	C
53	A3	341	G
53	A3	342	G
53	A3	343	G
53	A3	345	G
53	A3	346	G
53	A3	347	C
53	A3	348	A

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Mol	Chain	Res	Type
53	A3	349	G
53	A3	358	A
53	A3	361	C
53	A3	362	U
53	A3	363	U
53	A3	375	G
53	A3	376	C
53	A3	379	G
53	A3	380	C
53	A3	381	C
53	A3	383	G
53	A3	385	C
53	A3	388	A
53	A3	392	A
53	A3	394	G
53	A3	395	C
53	A3	396	C
53	A3	397	G
53	A3	400	U
53	A3	401	G
53	A3	402	G
53	A3	403	A
53	A3	404	G
53	A3	406	A
53	A3	407	A
53	A3	408	G
53	A3	409	A
53	A3	410	A
53	A3	413	C
53	A3	414	C
53	A3	416	U
53	A3	417	C
53	A3	418	G
53	A3	419	G
53	A3	422	U
53	A3	424	U
53	A3	426	A
53	A3	427	A
53	A3	431	C
53	A3	432	U
53	A3	433	G
53	A3	434	A

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Mol	Chain	Res	Type
53	A3	435	A
53	A3	436	C
53	A3	437	C
53	A3	438	C
53	A3	439	G
53	A3	440	G
53	A3	449	C
53	A3	452	C
53	A3	454	A
53	A3	455	C
53	A3	456	G
53	A3	461	G
53	A3	462	A
53	A3	467	C
53	A3	468	G
53	A3	469	G
53	A3	470	U
53	A3	471	A
53	A3	472	C
53	A3	473	C
53	A3	474	G
53	A3	475	G
53	A3	478	U
53	A3	480	A
53	A3	481	U
53	A3	483	G
53	A3	488	G
53	A3	489	G
53	A3	490	C
53	A3	491	C
53	A3	492	A
53	A3	493	A
53	A3	494	C
53	A3	496	C
53	A3	497	C
53	A3	500	G
53	A3	501	C
53	A3	502	C
53	A3	503	A
53	A3	504	G
53	A3	506	A
53	A3	508	C

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Mol	Chain	Res	Type
53	A3	509	C
53	A3	510	G
53	A3	513	G
53	A3	514	U
53	A3	515	A
53	A3	516	A
53	A3	517	U
53	A3	519	C
53	A3	520	G
53	A3	523	G
53	A3	527	G
53	A3	528	C
53	A3	530	A
53	A3	532	C
53	A3	533	G
53	A3	538	C
53	A3	539	C
53	A3	542	A
53	A3	543	U
53	A3	544	U
53	A3	545	C
53	A3	546	A
53	A3	548	U
53	A3	549	G
53	A3	550	G
53	A3	555	A
53	A3	556	A
53	A3	558	G
53	A3	559	G
53	A3	560	G
53	A3	562	G
53	A3	563	U
53	A3	564	G
53	A3	567	G
53	A3	571	G
53	A3	574	U
53	A3	575	G
53	A3	577	G
53	A3	578	G
53	A3	579	C
53	A3	587	G
53	A3	588	U

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Mol	Chain	Res	Type
53	A3	589	G
53	A3	590	A
53	A3	592	A
53	A3	593	G
53	A3	594	A
53	A3	599	G
53	A3	601	C
53	A3	602	U
53	A3	603	C
53	A3	605	A
53	A3	606	C
53	A3	607	C
53	A3	610	G
53	A3	614	G
53	A3	618	G
53	A3	620	G
53	A3	621	G
53	A3	625	A
53	A3	630	C
53	A3	631	A
53	A3	634	C
53	A3	636	A
53	A3	644	G
53	A3	647	G
53	A3	648	A
53	A3	649	G
53	A3	651	G
53	A3	656	G
53	A3	657	G
53	A3	658	A
53	A3	662	C
53	A3	664	C
53	A3	667	A
53	A3	669	U
53	A3	670	A
53	A3	671	G
53	A3	674	G
53	A3	676	G
53	A3	677	A
53	A3	678	A
53	A3	679	A
53	A3	680	U

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Mol	Chain	Res	Type
53	A3	681	G
53	A3	682	C
53	A3	685	A
53	A3	686	G
53	A3	687	A
53	A3	693	G
53	A3	694	G
53	A3	695	A
53	A3	696	G
53	A3	701	G
53	A3	704	G
53	A3	707	G
53	A3	714	G
53	A3	715	C
53	A3	716	A
53	A3	718	C
53	A3	720	A
53	A3	721	C
53	A3	722	C
53	A3	724	G
53	A3	727	C
53	A3	729	A
53	A3	732	C
53	A3	733	G
53	A3	734	U
53	A3	735	G
53	A3	736	A
53	A3	737	C
53	A3	738	G
53	A3	741	G
53	A3	743	G
53	A3	745	C
53	A3	748	G
53	A3	749	A
53	A3	750	A
53	A3	751	A
53	A3	752	G
53	A3	759	G
53	A3	760	A
53	A3	765	A
53	A3	767	C
53	A3	768	G

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Mol	Chain	Res	Type
53	A3	772	U
53	A3	773	A
53	A3	775	A
53	A3	776	U
53	A3	777	A
53	A3	778	C
53	A3	782	G
53	A3	784	U
53	A3	786	G
53	A3	788	C
53	A3	789	C
53	A3	790	A
53	A3	792	G
53	A3	794	C
53	A3	795	C
53	A3	796	U
53	A3	798	A
53	A3	799	A
53	A3	800	C
53	A3	801	G
53	A3	803	U
53	A3	804	G
53	A3	807	C
53	A3	808	G
53	A3	810	U
53	A3	811	A
53	A3	823	C
53	A3	825	C
53	A3	826	C
53	A3	830	G
53	A3	834	C
53	A3	836	A
53	A3	842	A
53	A3	845	C
53	A3	846	G
53	A3	847	U
53	A3	849	A
53	A3	850	A
53	A3	851	G
53	A3	856	C
53	A3	857	C
53	A3	859	C

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Mol	Chain	Res	Type
53	A3	861	U
53	A3	862	G
53	A3	864	G
53	A3	865	G
53	A3	866	A
53	A3	871	G
53	A3	873	C
53	A3	875	G
53	A3	876	C
53	A3	878	A
53	A3	879	G
53	A3	880	G
53	A3	881	C
53	A3	884	A
53	A3	888	U
53	A3	889	C
53	A3	890	A
53	A3	891	A
53	A3	894	G
53	A3	901	C
53	A3	903	G
53	A3	904	G
53	A3	908	C
53	A3	911	C
53	A3	913	C
53	A3	915	A
53	A3	917	C
53	A3	919	G
53	A3	920	U
53	A3	921	G
53	A3	924	G
53	A3	929	U
53	A3	933	U
53	A3	935	A
53	A3	936	A
53	A3	937	U
53	A3	938	U
53	A3	943	G
53	A3	946	A
53	A3	948	G
53	A3	951	A
53	A3	952	A

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Mol	Chain	Res	Type
53	A3	954	A
53	A3	955	A
53	A3	956	C
53	A3	962	C
53	A3	963	A
53	A3	969	U
53	A3	970	G
53	A3	971	A
53	A3	973	A
53	A3	975	G
53	A3	976	C
53	A3	977	U
53	A3	978	A
53	A3	980	G
53	A3	981	G
53	A3	982	A
53	A3	983	A
53	A3	984	C
53	A3	985	C
53	A3	988	G
53	A3	989	G
53	A3	990	U
53	A3	992	A
53	A3	994	A
53	A3	995	G
53	A3	997	C
53	A3	998	U
53	A3	1000	G
53	A3	1002	G
53	A3	1003	U
53	A3	1006	C
53	A3	1007	C
53	A3	1008	C
53	A3	1009	G
53	A3	1010	C
53	A3	1011	G
53	A3	1013	G
53	A3	1015	G
53	A3	1016	G
53	A3	1017	A
53	A3	1018	G
53	A3	1020	C

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Mol	Chain	Res	Type
53	A3	1022	U
53	A3	1023	A
53	A3	1027	C
53	A3	1031	U
53	A3	1036	C
53	A3	1037	A
53	A3	1038	U
53	A3	1040	G
53	A3	1042	C
53	A3	1043	G
53	A3	1046	G
53	A3	1047	U
53	A3	1048	C
53	A3	1051	C
53	A3	1052	U
53	A3	1056	G
53	A3	1057	C
53	A3	1059	G
53	A3	1061	G
53	A3	1062	A
53	A3	1063	G
53	A3	1064	G
53	A3	1067	U
53	A3	1068	U
53	A3	1071	G
53	A3	1072	U
53	A3	1076	G
53	A3	1077	U
53	A3	1078	C
53	A3	1081	G
53	A3	1082	C
53	A3	1083	A
53	A3	1086	G
53	A3	1091	C
53	A3	1092	A
53	A3	1093	A
53	A3	1095	C
53	A3	1097	C
53	A3	1100	C
53	A3	1101	C
53	A3	1105	A
53	A3	1107	U

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Mol	Chain	Res	Type
53	A3	1108	U
53	A3	1109	G
53	A3	1111	C
53	A3	1112	A
53	A3	1113	G
53	A3	1114	C
53	A3	1116	G
53	A3	1117	U
53	A3	1118	U
53	A3	1119	C
53	A3	1120	G
53	A3	1121	G
53	A3	1123	C
53	A3	1124	G
53	A3	1125	G
53	A3	1127	C
53	A3	1128	A
53	A3	1132	U
53	A3	1133	A
53	A3	1134	A
53	A3	1136	G
53	A3	1139	A
53	A3	1140	C
53	A3	1141	U
53	A3	1142	G
53	A3	1144	C
53	A3	1145	C
53	A3	1150	A
53	A3	1152	G
53	A3	1154	G
53	A3	1155	G
53	A3	1157	A
53	A3	1159	G
53	A3	1160	A
53	A3	1162	G
53	A3	1163	G
53	A3	1164	A
53	A3	1165	G
53	A3	1166	G
53	A3	1167	G
53	A3	1169	A
53	A3	1170	C

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Mol	Chain	Res	Type
53	A3	1171	G
53	A3	1172	A
53	A3	1177	U
53	A3	1179	G
53	A3	1182	A
53	A3	1183	G
53	A3	1184	C
53	A3	1186	U
53	A3	1187	G
53	A3	1188	G
53	A3	1191	C
53	A3	1192	U
53	A3	1193	U
53	A3	1194	A
53	A3	1196	G
53	A3	1197	G
53	A3	1199	C
53	A3	1200	U
53	A3	1201	G
53	A3	1202	G
53	A3	1205	G
53	A3	1206	A
53	A3	1207	C
53	A3	1208	A
53	A3	1209	C
53	A3	1210	A
53	A3	1211	C
53	A3	1212	G
53	A3	1214	G
53	A3	1216	U
53	A3	1218	C
53	A3	1219	A
53	A3	1220	A
53	A3	1221	U
53	A3	1222	G
53	A3	1225	C
53	A3	1227	C
53	A3	1229	A
53	A3	1230	C
53	A3	1231	A
53	A3	1233	A
53	A3	1234	G

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Mol	Chain	Res	Type
53	A3	1235	C
53	A3	1237	A
53	A3	1238	U
53	A3	1239	G
53	A3	1241	C
53	A3	1244	C
53	A3	1246	G
53	A3	1247	G
53	A3	1248	C
53	A3	1250	A
53	A3	1251	C
53	A3	1253	G
53	A3	1257	G
53	A3	1258	C
53	A3	1259	U
53	A3	1260	A
53	A3	1261	A
53	A3	1263	C
53	A3	1264	G
53	A3	1266	A
53	A3	1268	A
53	A3	1269	A
53	A3	1270	A
53	A3	1271	G
53	A3	1273	U
53	A3	1274	G
53	A3	1275	G
53	A3	1278	C
53	A3	1279	C
53	A3	1281	G
53	A3	1282	U
53	A3	1283	U
53	A3	1286	G
53	A3	1289	U
53	A3	1292	G
53	A3	1293	G
53	A3	1296	U
53	A3	1297	G
53	A3	1298	C
53	A3	1300	A
53	A3	1301	C
53	A3	1303	C

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Mol	Chain	Res	Type
53	A3	1304	G
53	A3	1306	C
53	A3	1308	C
53	A3	1311	U
53	A3	1312	G
53	A3	1315	G
53	A3	1317	C
53	A3	1318	G
53	A3	1319	G
53	A3	1322	U
53	A3	1326	U
53	A3	1327	A
53	A3	1328	G
53	A3	1331	A
53	A3	1335	C
53	A3	1336	G
53	A3	1337	G
53	A3	1338	A
53	A3	1341	A
53	A3	1342	G
53	A3	1344	C
53	A3	1345	A
53	A3	1346	U
53	A3	1347	G
53	A3	1348	C
53	A3	1350	G
53	A3	1352	G
53	A3	1358	U
53	A3	1360	C
53	A3	1362	U
53	A3	1365	C
53	A3	1367	G
53	A3	1371	C
53	A3	1372	U
53	A3	1373	U
53	A3	1375	U
53	A3	1376	A
53	A3	1377	C
53	A3	1380	A
53	A3	1381	C
53	A3	1383	G
53	A3	1386	C

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Mol	Chain	Res	Type
53	A3	1387	G
53	A3	1389	C
53	A3	1391	C
53	A3	1396	U
53	A3	1397	G
53	A3	1400	A
53	A3	1401	G
53	A3	1403	G
53	A3	1404	G
53	A3	1405	G
53	A3	1409	U
53	A3	1411	C
53	A3	1414	G
53	A3	1415	A
53	A3	1417	G
53	A3	1419	C
53	A3	1422	C
53	A3	1423	G
53	A3	1425	G
53	A3	1431	A
53	A3	1432	C
53	A3	1433	G
53	A3	1434	G
53	A3	1435	G
53	A3	1437	A
53	A3	1438	G
53	A3	1443	C
53	A3	1445	A
53	A3	1448	G
53	A3	1450	A
53	A3	1452	G
53	A3	1456	C
53	A3	1457	G
53	A3	1462	U
53	A3	1463	G
53	A3	1466	G
53	A3	1469	A
53	A3	1470	A
53	A3	1471	G
53	A3	1475	U
53	A3	1476	A
53	A3	1478	C

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Mol	Chain	Res	Type
53	A3	1479	A
53	A3	1481	G
53	A3	1482	G
53	A3	1483	U
53	A3	1484	A
53	A3	1485	G
53	A3	1492	C
53	A3	1493	G
53	A3	1494	G
53	A3	1495	A
53	A3	1496	A
53	A3	1499	U
53	A3	1502	G
53	A3	1505	U
53	A3	1507	G
53	A3	1510	C
53	A4	6	G
53	A4	7	G
53	A4	8	A
53	A4	9	G
53	A4	11	G
53	A4	13	U
53	A4	15	G
53	A4	16	A
53	A4	19	C
53	A4	21	G
53	A4	22	G
53	A4	24	U
53	A4	27	G
53	A4	28	G
53	A4	29	G
53	A4	31	G
53	A4	32	A
53	A4	34	C
53	A4	39	G
53	A4	45	U
53	A4	46	G
53	A4	47	C
53	A4	48	C
53	A4	49	U
53	A4	50	A
53	A4	51	A

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Mol	Chain	Res	Type
53	A4	54	C
53	A4	55	A
53	A4	60	A
53	A4	61	G
53	A4	62	U
53	A4	64	G
53	A4	65	U
53	A4	66	G
53	A4	68	G
53	A4	69	G
53	A4	70	G
53	A4	72	C
53	A4	73	G
53	A4	75	G
53	A4	76	G
53	A4	77	G
53	A4	78	G
53	A4	79	U
53	A4	80	U
53	A4	81	U
53	A4	83	A
53	A4	84	C
53	A4	86	C
53	A4	87	C
53	A4	89	U
53	A4	90	G
53	A4	92	U
53	A4	93	C
53	A4	94	A
53	A4	101	G
53	A4	105	G
53	A4	107	U
53	A4	108	G
53	A4	109	A
53	A4	110	G
53	A4	113	A
53	A4	114	C
53	A4	115	G
53	A4	121	G
53	A4	123	G
53	A4	124	A
53	A4	126	C

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Mol	Chain	Res	Type
53	A4	129	C
53	A4	131	C
53	A4	132	G
53	A4	133	G
53	A4	139	G
53	A4	140	G
53	A4	143	A
53	A4	145	A
53	A4	146	A
53	A4	147	C
53	A4	148	C
53	A4	149	C
53	A4	150	G
53	A4	151	G
53	A4	154	A
53	A4	163	C
53	A4	164	U
53	A4	165	A
53	A4	166	A
53	A4	167	U
53	A4	168	C
53	A4	171	C
53	A4	172	C
53	A4	175	G
53	A4	177	G
53	A4	179	A
53	A4	180	C
53	A4	181	C
53	A4	186	C
53	A4	187	C
53	A4	188	U
53	A4	189	U
53	A4	191	G
53	A4	192	G
53	A4	196	U
53	A4	200	C
53	A4	201	A
53	A4	202	A
53	A4	203	A
53	A4	204	G
53	A4	205	G
53	A4	206	G

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Mol	Chain	Res	Type
53	A4	208	U
53	A4	209	U
53	A4	210	U
53	A4	211	G
53	A4	212	C
53	A4	213	C
53	A4	217	U
53	A4	218	U
53	A4	219	C
53	A4	221	G
53	A4	222	G
53	A4	223	A
53	A4	226	G
53	A4	227	G
53	A4	229	C
53	A4	230	C
53	A4	232	C
53	A4	233	G
53	A4	234	U
53	A4	235	C
53	A4	238	A
53	A4	239	U
53	A4	240	C
53	A4	242	G
53	A4	243	C
53	A4	246	G
53	A4	248	U
53	A4	249	G
53	A4	262	C
53	A4	263	C
53	A4	268	A
53	A4	269	A
53	A4	270	G
53	A4	271	G
53	A4	273	G
53	A4	275	C
53	A4	276	G
53	A4	278	C
53	A4	284	G
53	A4	286	C
53	A4	288	G
53	A4	293	A

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Mol	Chain	Res	Type
53	A4	294	G
53	A4	296	G
53	A4	298	A
53	A4	301	G
53	A4	303	C
53	A4	305	G
53	A4	311	G
53	A4	312	G
53	A4	318	U
53	A4	319	G
53	A4	322	A
53	A4	323	C
53	A4	325	C
53	A4	327	G
53	A4	329	C
53	A4	333	A
53	A4	339	A
53	A4	340	C
53	A4	341	G
53	A4	342	G
53	A4	343	G
53	A4	345	G
53	A4	346	G
53	A4	347	C
53	A4	349	G
53	A4	350	C
53	A4	351	A
53	A4	359	A
53	A4	361	C
53	A4	362	U
53	A4	366	G
53	A4	375	G
53	A4	377	A
53	A4	379	G
53	A4	380	C
53	A4	383	G
53	A4	384	A
53	A4	385	C
53	A4	387	G
53	A4	392	A
53	A4	393	C
53	A4	394	G

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Mol	Chain	Res	Type
53	A4	395	C
53	A4	396	C
53	A4	397	G
53	A4	401	G
53	A4	403	A
53	A4	406	A
53	A4	407	A
53	A4	408	G
53	A4	409	A
53	A4	413	C
53	A4	416	U
53	A4	417	C
53	A4	418	G
53	A4	419	G
53	A4	423	G
53	A4	424	U
53	A4	426	A
53	A4	427	A
53	A4	430	C
53	A4	432	U
53	A4	433	G
53	A4	434	A
53	A4	435	A
53	A4	436	C
53	A4	438	C
53	A4	439	G
53	A4	440	G
53	A4	444	G
53	A4	446	A
53	A4	448	C
53	A4	449	C
53	A4	451	C
53	A4	452	C
53	A4	454	A
53	A4	456	G
53	A4	458	G
53	A4	466	A
53	A4	468	G
53	A4	469	G
53	A4	471	A
53	A4	472	C
53	A4	473	C

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Mol	Chain	Res	Type
53	A4	474	G
53	A4	475	G
53	A4	476	G
53	A4	478	U
53	A4	480	A
53	A4	481	U
53	A4	483	G
53	A4	484	C
53	A4	485	G
53	A4	487	C
53	A4	488	G
53	A4	489	G
53	A4	490	C
53	A4	491	C
53	A4	492	A
53	A4	494	C
53	A4	496	C
53	A4	497	C
53	A4	500	G
53	A4	501	C
53	A4	502	C
53	A4	503	A
53	A4	504	G
53	A4	506	A
53	A4	508	C
53	A4	510	G
53	A4	513	G
53	A4	514	U
53	A4	517	U
53	A4	518	A
53	A4	519	C
53	A4	520	G
53	A4	521	G
53	A4	523	G
53	A4	524	G
53	A4	527	G
53	A4	528	C
53	A4	530	A
53	A4	532	C
53	A4	533	G
53	A4	535	U
53	A4	536	A

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Mol	Chain	Res	Type
53	A4	539	C
53	A4	542	A
53	A4	543	U
53	A4	544	U
53	A4	545	C
53	A4	547	C
53	A4	548	U
53	A4	549	G
53	A4	550	G
53	A4	551	G
53	A4	555	A
53	A4	556	A
53	A4	558	G
53	A4	560	G
53	A4	562	G
53	A4	563	U
53	A4	567	G
53	A4	568	G
53	A4	571	G
53	A4	575	G
53	A4	576	G
53	A4	579	C
53	A4	581	U
53	A4	588	U
53	A4	590	A
53	A4	592	A
53	A4	593	G
53	A4	594	A
53	A4	595	C
53	A4	596	C
53	A4	599	G
53	A4	601	C
53	A4	602	U
53	A4	603	C
53	A4	606	C
53	A4	607	C
53	A4	610	G
53	A4	611	G
53	A4	612	G
53	A4	614	G
53	A4	617	C
53	A4	619	U

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Mol	Chain	Res	Type
53	A4	620	G
53	A4	621	G
53	A4	623	A
53	A4	626	C
53	A4	634	C
53	A4	635	U
53	A4	636	A
53	A4	640	G
53	A4	644	G
53	A4	647	G
53	A4	648	A
53	A4	651	G
53	A4	656	G
53	A4	657	G
53	A4	658	A
53	A4	664	C
53	A4	667	A
53	A4	670	A
53	A4	671	G
53	A4	672	C
53	A4	674	G
53	A4	676	G
53	A4	678	A
53	A4	679	A
53	A4	680	U
53	A4	681	G
53	A4	682	C
53	A4	683	G
53	A4	684	C
53	A4	685	A
53	A4	686	G
53	A4	693	G
53	A4	694	G
53	A4	700	C
53	A4	702	C
53	A4	704	G
53	A4	707	G
53	A4	714	G
53	A4	715	C
53	A4	716	A
53	A4	717	G
53	A4	718	C

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Mol	Chain	Res	Type
53	A4	722	C
53	A4	723	U
53	A4	724	G
53	A4	727	C
53	A4	729	A
53	A4	730	C
53	A4	731	C
53	A4	732	C
53	A4	733	G
53	A4	735	G
53	A4	736	A
53	A4	737	C
53	A4	738	G
53	A4	741	G
53	A4	745	C
53	A4	749	A
53	A4	750	A
53	A4	757	G
53	A4	759	G
53	A4	760	A
53	A4	765	A
53	A4	768	G
53	A4	772	U
53	A4	773	A
53	A4	774	G
53	A4	775	A
53	A4	776	U
53	A4	777	A
53	A4	778	C
53	A4	780	C
53	A4	781	G
53	A4	782	G
53	A4	784	U
53	A4	788	C
53	A4	789	C
53	A4	792	G
53	A4	794	C
53	A4	795	C
53	A4	798	A
53	A4	800	C
53	A4	803	U
53	A4	804	G

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Mol	Chain	Res	Type
53	A4	807	C
53	A4	808	G
53	A4	809	C
53	A4	810	U
53	A4	811	A
53	A4	813	G
53	A4	823	C
53	A4	824	U
53	A4	825	C
53	A4	830	G
53	A4	834	C
53	A4	836	A
53	A4	845	C
53	A4	846	G
53	A4	847	U
53	A4	849	A
53	A4	850	A
53	A4	856	C
53	A4	857	C
53	A4	858	G
53	A4	859	C
53	A4	861	U
53	A4	862	G
53	A4	863	G
53	A4	864	G
53	A4	865	G
53	A4	876	C
53	A4	878	A
53	A4	879	G
53	A4	880	G
53	A4	881	C
53	A4	888	U
53	A4	890	A
53	A4	891	A
53	A4	902	G
53	A4	904	G
53	A4	907	C
53	A4	911	C
53	A4	912	A
53	A4	914	A
53	A4	915	A
53	A4	917	C

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Mol	Chain	Res	Type
53	A4	918	G
53	A4	919	G
53	A4	921	G
53	A4	924	G
53	A4	926	A
53	A4	927	U
53	A4	934	U
53	A4	935	A
53	A4	936	A
53	A4	937	U
53	A4	938	U
53	A4	939	C
53	A4	942	A
53	A4	943	G
53	A4	944	C
53	A4	945	A
53	A4	946	A
53	A4	948	G
53	A4	949	C
53	A4	950	G
53	A4	951	A
53	A4	953	G
53	A4	954	A
53	A4	955	A
53	A4	957	C
53	A4	958	U
53	A4	959	U
53	A4	962	C
53	A4	966	C
53	A4	968	U
53	A4	969	U
53	A4	970	G
53	A4	971	A
53	A4	973	A
53	A4	975	G
53	A4	976	C
53	A4	977	U
53	A4	978	A
53	A4	980	G
53	A4	981	G
53	A4	982	A
53	A4	983	A

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Mol	Chain	Res	Type
53	A4	984	C
53	A4	985	C
53	A4	990	U
53	A4	991	G
53	A4	992	A
53	A4	993	A
53	A4	994	A
53	A4	995	G
53	A4	996	C
53	A4	997	C
53	A4	998	U
53	A4	1002	G
53	A4	1003	U
53	A4	1006	C
53	A4	1007	C
53	A4	1008	C
53	A4	1009	G
53	A4	1010	C
53	A4	1013	G
53	A4	1014	G
53	A4	1015	G
53	A4	1016	G
53	A4	1017	A
53	A4	1019	C
53	A4	1022	U
53	A4	1023	A
53	A4	1025	C
53	A4	1026	A
53	A4	1027	C
53	A4	1028	A
53	A4	1029	G
53	A4	1030	G
53	A4	1031	U
53	A4	1033	C
53	A4	1034	U
53	A4	1038	U
53	A4	1040	G
53	A4	1042	C
53	A4	1046	G
53	A4	1047	U
53	A4	1048	C
53	A4	1049	A

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Mol	Chain	Res	Type
53	A4	1050	G
53	A4	1051	C
53	A4	1053	C
53	A4	1055	U
53	A4	1056	G
53	A4	1058	C
53	A4	1059	G
53	A4	1062	A
53	A4	1069	G
53	A4	1072	U
53	A4	1076	G
53	A4	1078	C
53	A4	1081	G
53	A4	1083	A
53	A4	1085	C
53	A4	1086	G
53	A4	1087	A
53	A4	1090	G
53	A4	1091	C
53	A4	1095	C
53	A4	1096	C
53	A4	1097	C
53	A4	1098	C
53	A4	1102	G
53	A4	1104	U
53	A4	1105	A
53	A4	1107	U
53	A4	1108	U
53	A4	1110	C
53	A4	1111	C
53	A4	1112	A
53	A4	1113	G
53	A4	1114	C
53	A4	1116	G
53	A4	1117	U
53	A4	1118	U
53	A4	1119	C
53	A4	1120	G
53	A4	1121	G
53	A4	1123	C
53	A4	1124	G
53	A4	1125	G

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Mol	Chain	Res	Type
53	A4	1126	G
53	A4	1127	C
53	A4	1128	A
53	A4	1134	A
53	A4	1135	C
53	A4	1136	G
53	A4	1137	G
53	A4	1139	A
53	A4	1140	C
53	A4	1141	U
53	A4	1142	G
53	A4	1144	C
53	A4	1145	C
53	A4	1149	A
53	A4	1150	A
53	A4	1152	G
53	A4	1155	G
53	A4	1157	A
53	A4	1159	G
53	A4	1160	A
53	A4	1161	A
53	A4	1163	G
53	A4	1164	A
53	A4	1165	G
53	A4	1168	G
53	A4	1169	A
53	A4	1170	C
53	A4	1171	G
53	A4	1172	A
53	A4	1174	G
53	A4	1177	U
53	A4	1178	G
53	A4	1179	G
53	A4	1181	C
53	A4	1182	A
53	A4	1183	G
53	A4	1186	U
53	A4	1187	G
53	A4	1188	G
53	A4	1191	C
53	A4	1192	U
53	A4	1193	U

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Mol	Chain	Res	Type
53	A4	1194	A
53	A4	1195	C
53	A4	1198	C
53	A4	1199	C
53	A4	1205	G
53	A4	1206	A
53	A4	1207	C
53	A4	1208	A
53	A4	1209	C
53	A4	1214	G
53	A4	1216	U
53	A4	1218	C
53	A4	1219	A
53	A4	1221	U
53	A4	1222	G
53	A4	1230	C
53	A4	1233	A
53	A4	1234	G
53	A4	1237	A
53	A4	1238	U
53	A4	1239	G
53	A4	1240	C
53	A4	1241	C
53	A4	1242	A
53	A4	1244	C
53	A4	1247	G
53	A4	1248	C
53	A4	1250	A
53	A4	1251	C
53	A4	1252	G
53	A4	1253	G
53	A4	1254	G
53	A4	1255	G
53	A4	1256	A
53	A4	1257	G
53	A4	1259	U
53	A4	1260	A
53	A4	1261	A
53	A4	1262	U
53	A4	1263	C
53	A4	1264	G
53	A4	1266	A

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Mol	Chain	Res	Type
53	A4	1268	A
53	A4	1270	A
53	A4	1272	G
53	A4	1273	U
53	A4	1276	G
53	A4	1277	C
53	A4	1278	C
53	A4	1279	C
53	A4	1280	A
53	A4	1281	G
53	A4	1283	U
53	A4	1284	C
53	A4	1286	G
53	A4	1287	A
53	A4	1288	U
53	A4	1292	G
53	A4	1293	G
53	A4	1295	C
53	A4	1297	G
53	A4	1298	C
53	A4	1300	A
53	A4	1301	C
53	A4	1302	C
53	A4	1303	C
53	A4	1304	G
53	A4	1306	C
53	A4	1308	C
53	A4	1312	G
53	A4	1314	A
53	A4	1315	G
53	A4	1317	C
53	A4	1319	G
53	A4	1320	A
53	A4	1321	A
53	A4	1322	U
53	A4	1323	C
53	A4	1324	G
53	A4	1325	C
53	A4	1326	U
53	A4	1327	A
53	A4	1328	G
53	A4	1329	U

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Mol	Chain	Res	Type
53	A4	1334	G
53	A4	1335	C
53	A4	1337	G
53	A4	1338	A
53	A4	1339	U
53	A4	1341	A
53	A4	1342	G
53	A4	1345	A
53	A4	1347	G
53	A4	1348	C
53	A4	1350	G
53	A4	1352	G
53	A4	1357	A
53	A4	1359	A
53	A4	1361	G
53	A4	1362	U
53	A4	1363	U
53	A4	1365	C
53	A4	1367	G
53	A4	1371	C
53	A4	1372	U
53	A4	1373	U
53	A4	1375	U
53	A4	1376	A
53	A4	1377	C
53	A4	1379	C
53	A4	1380	A
53	A4	1381	C
53	A4	1382	C
53	A4	1383	G
53	A4	1385	C
53	A4	1388	U
53	A4	1389	C
53	A4	1391	C
53	A4	1392	G
53	A4	1396	U
53	A4	1397	G
53	A4	1400	A
53	A4	1403	G
53	A4	1404	G
53	A4	1405	G
53	A4	1408	C

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Mol	Chain	Res	Type
53	A4	1409	U
53	A4	1411	C
53	A4	1413	C
53	A4	1415	A
53	A4	1416	A
53	A4	1418	U
53	A4	1419	C
53	A4	1422	C
53	A4	1423	G
53	A4	1424	G
53	A4	1426	A
53	A4	1427	G
53	A4	1430	U
53	A4	1431	A
53	A4	1432	C
53	A4	1433	G
53	A4	1434	G
53	A4	1435	G
53	A4	1436	C
53	A4	1437	A
53	A4	1443	C
53	A4	1444	G
53	A4	1445	A
53	A4	1448	G
53	A4	1450	A
53	A4	1452	G
53	A4	1456	C
53	A4	1457	G
53	A4	1462	U
53	A4	1463	G
53	A4	1464	G
53	A4	1469	A
53	A4	1470	A
53	A4	1471	G
53	A4	1473	C
53	A4	1475	U
53	A4	1476	A
53	A4	1478	C
53	A4	1479	A
53	A4	1481	G
53	A4	1483	U
53	A4	1484	A

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Mol	Chain	Res	Type
53	A4	1485	G
53	A4	1492	C
53	A4	1493	G
53	A4	1494	G
53	A4	1495	A
53	A4	1496	A
53	A4	1497	G
53	A4	1501	C
53	A4	1502	G
53	A4	1504	C
53	A4	1505	U
53	A4	1507	G
53	A4	1510	C

All (101) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
29	A1	68	C
29	A1	219	A
29	A1	288	G
29	A1	335	A
29	A1	385	G
29	A1	432	C
29	A1	951	C
29	A1	1202	G
29	A1	1225	C
29	A1	1285	A
29	A1	1302	A
29	A1	1499	G
29	A1	1607	A
29	A1	1743	C
29	A1	1832	G
29	A1	1852	A
29	A1	1861	G
29	A1	1867	U
29	A1	1890	G
29	A1	1891	G
29	A1	2038	A
29	A1	2256	G
29	A1	2453	A
29	A1	2517	A
29	A1	2580	A

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Mol	Chain	Res	Type
29	A1	2595	G
29	A1	2771	U
29	A1	2792	G
29	A2	186	A
29	A2	288	G
29	A2	511	A
29	A2	556	A
29	A2	591	U
29	A2	841	G
29	A2	879	G
29	A2	1070	G
29	A2	1108	U
29	A2	1202	G
29	A2	1285	A
29	A2	1376	G
29	A2	1607	A
29	A2	1702	G
29	A2	1743	C
29	A2	1814	C
29	A2	1832	G
29	A2	1852	A
29	A2	2038	A
29	A2	2182	A
29	A2	2256	G
29	A2	2363	G
29	A2	2437	U
29	A2	2439	A
29	A2	2453	A
29	A2	2516	G
29	A2	2543	G
29	A2	2580	A
29	A2	2624	C
29	A2	2792	G
30	B2	70	C
53	A3	133	G
53	A3	148	C
53	A3	205	G
53	A3	239	U
53	A3	241	A
53	A3	242	G
53	A3	382	U
53	A3	407	A

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Mol	Chain	Res	Type
53	A3	468	G
53	A3	469	G
53	A3	488	G
53	A3	536	A
53	A3	670	A
53	A3	749	A
53	A3	890	A
53	A3	1005	C
53	A3	1015	G
53	A3	1035	G
53	A3	1047	U
53	A3	1067	U
53	A3	1233	A
53	A3	1272	G
53	A3	1317	C
53	A3	1413	C
53	A3	1433	G
53	A3	1491	C
53	A4	108	G
53	A4	205	G
53	A4	239	U
53	A4	407	A
53	A4	468	G
53	A4	670	A
53	A4	744	G
53	A4	749	A
53	A4	890	A
53	A4	913	C
53	A4	1005	C
53	A4	1022	U
53	A4	1047	U
53	A4	1049	A
53	A4	1305	A
53	A4	1430	U

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
34	D3	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	D3	10:ARG	C	11:LEU	N	4.44
1	D3	8:VAL	C	9:CYS	N	3.57

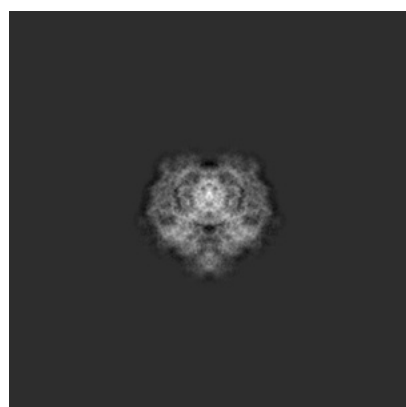
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-0104. These allow visual inspection of the internal detail of the map and identification of artifacts.

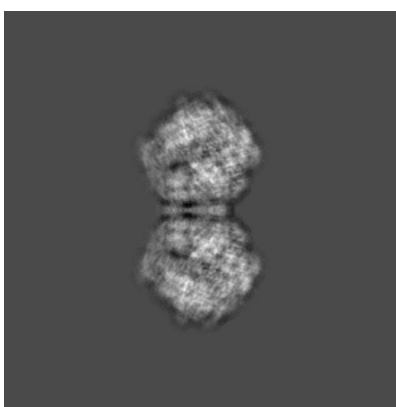
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

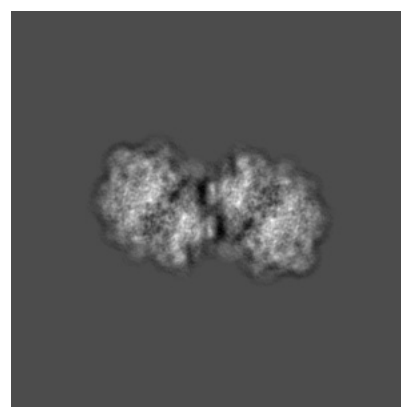
6.1.1 Primary map



X



Y

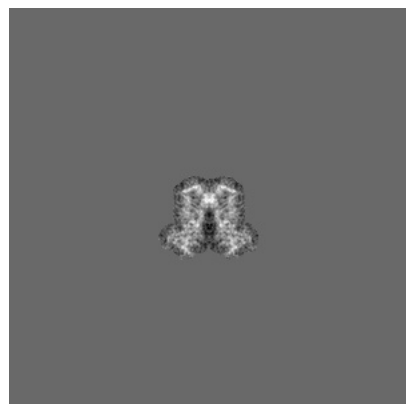


Z

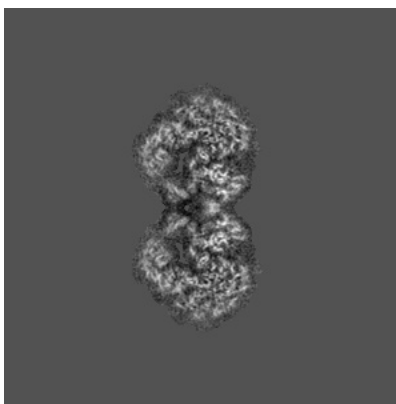
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

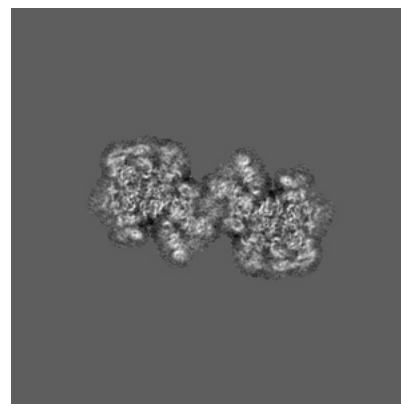
6.2.1 Primary map



X Index: 350



Y Index: 350

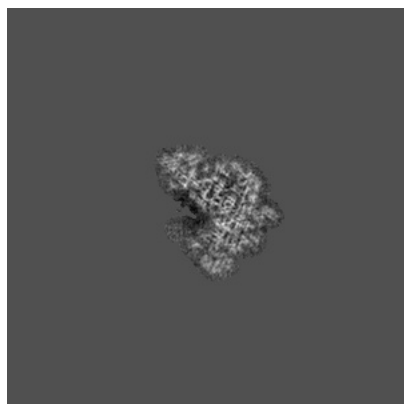


Z Index: 350

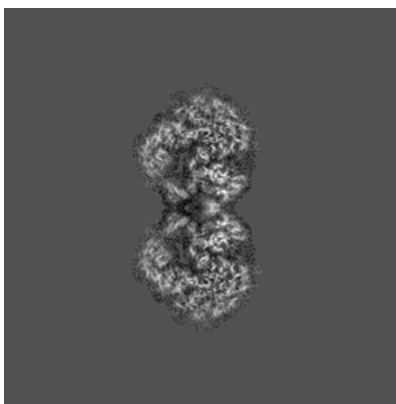
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

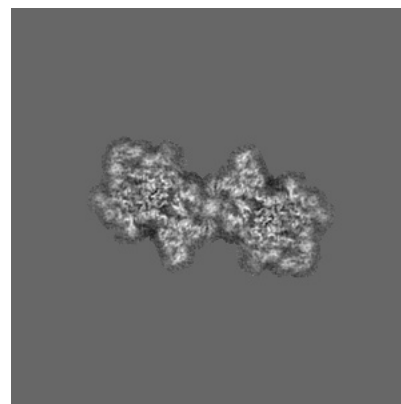
6.3.1 Primary map



X Index: 242



Y Index: 350

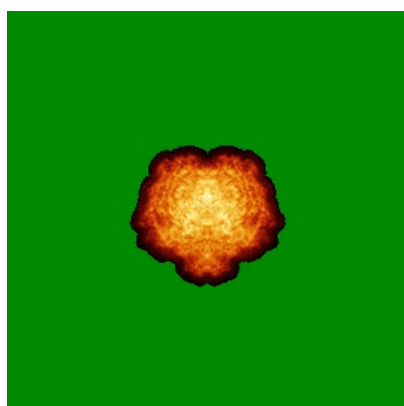


Z Index: 362

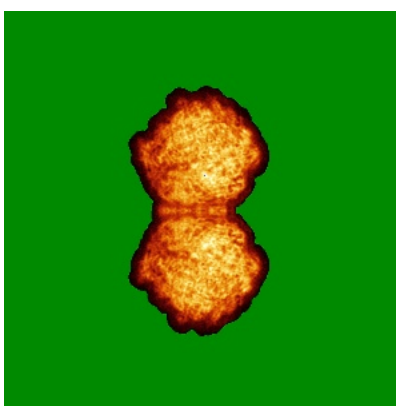
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

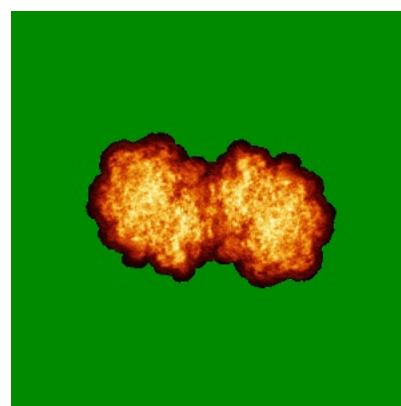
6.4.1 Primary map



X



Y

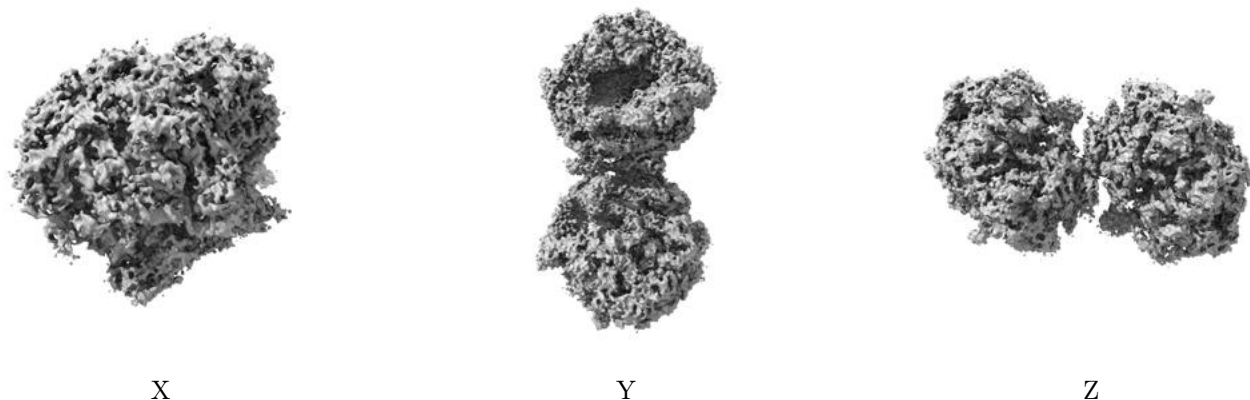


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 2.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

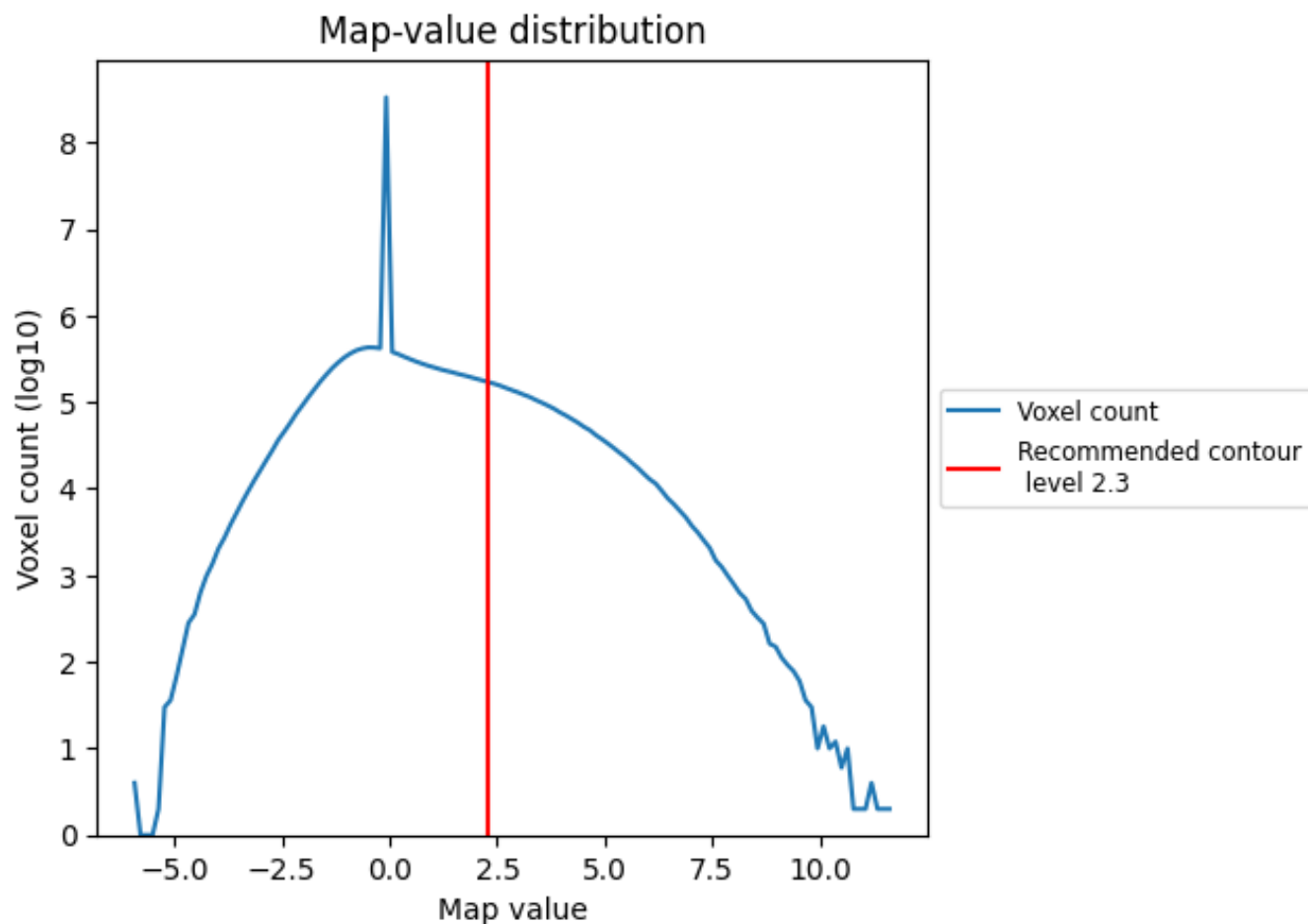
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

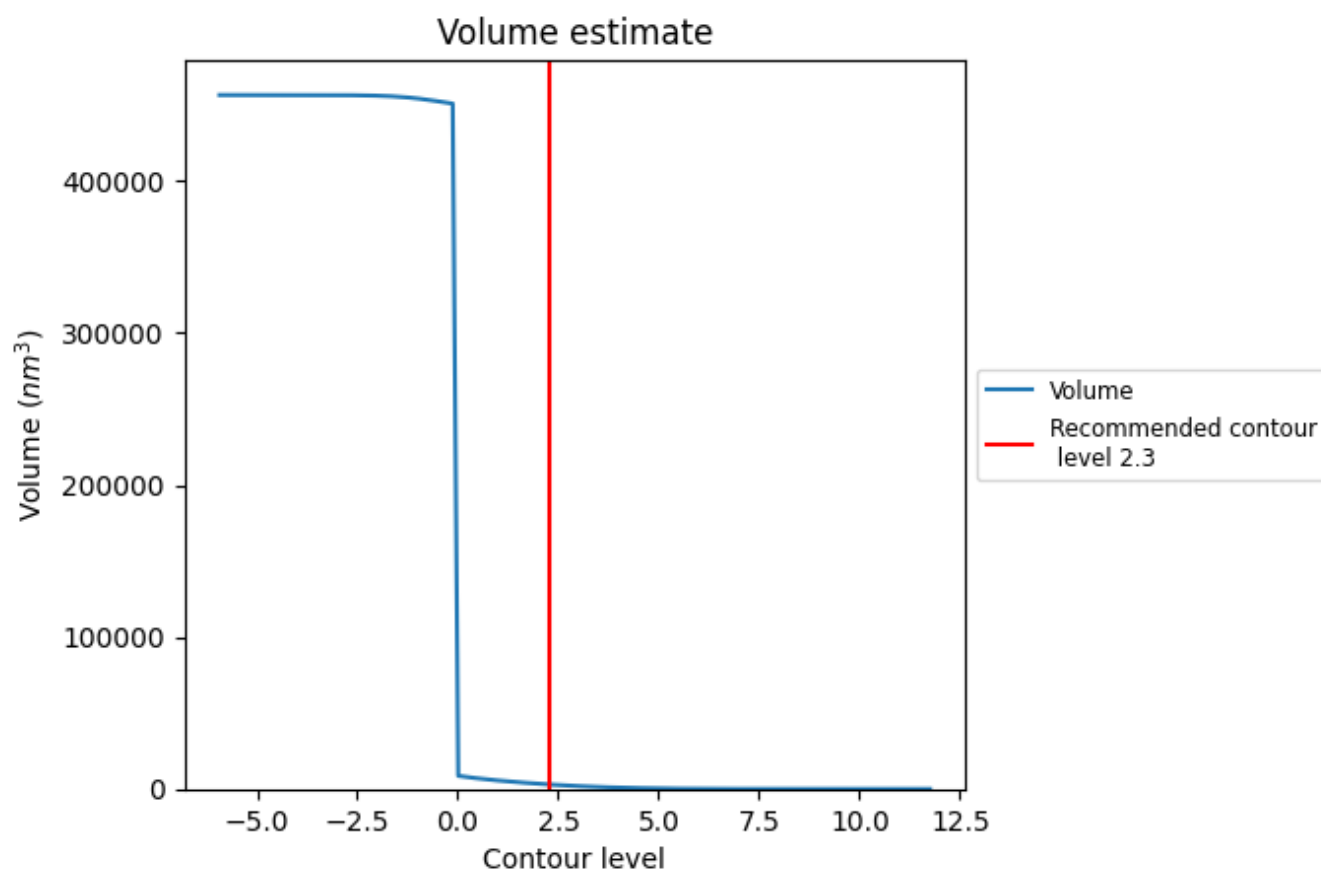
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

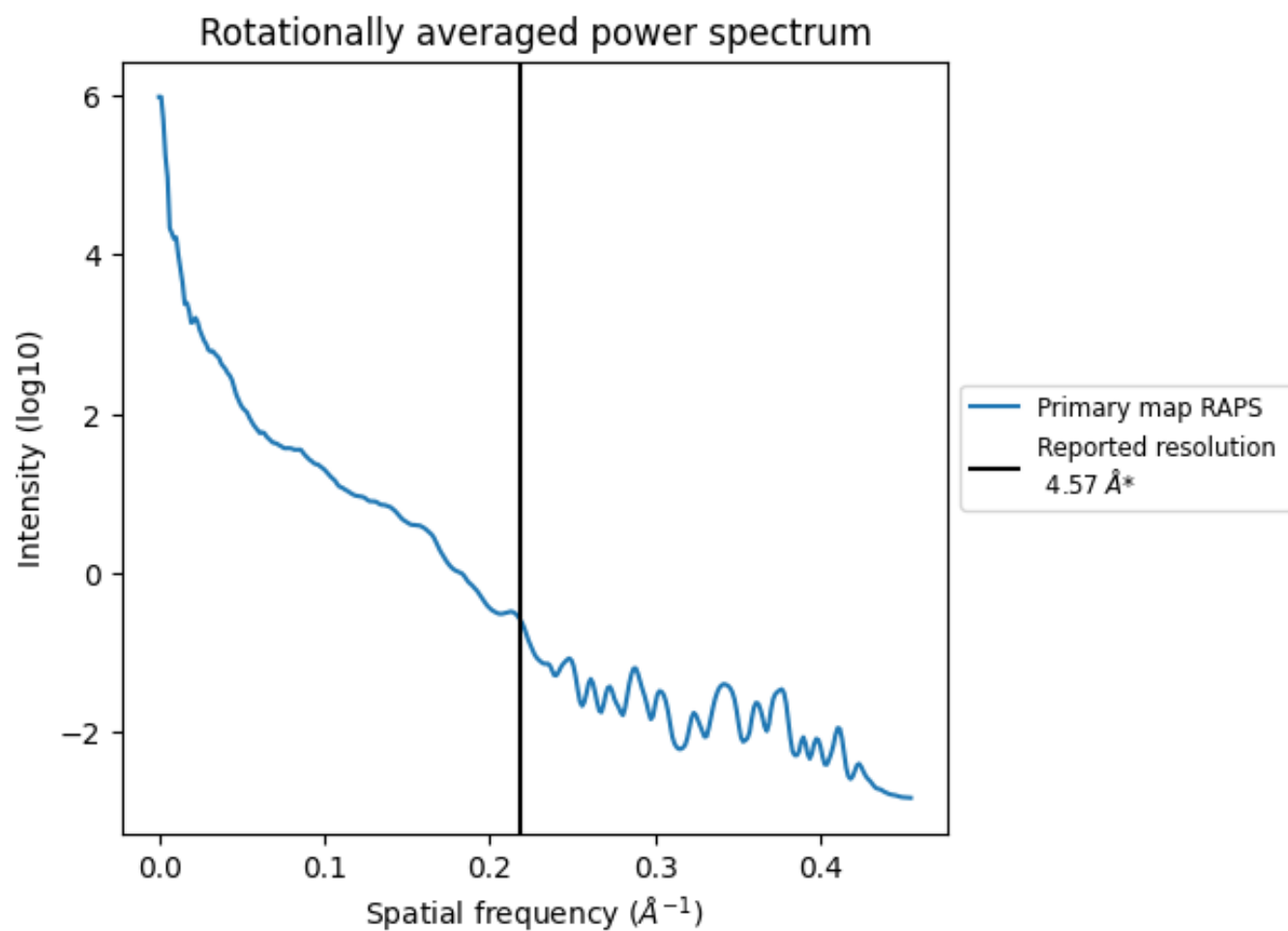
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2918 nm^3 ; this corresponds to an approximate mass of 2636 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ



*Reported resolution corresponds to spatial frequency of 0.219 Å⁻¹

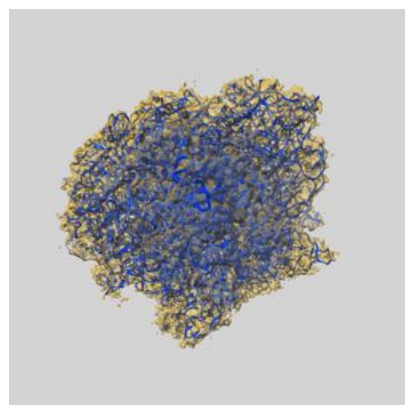
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

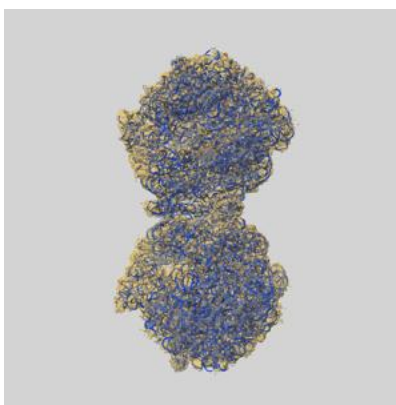
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-0104 and PDB model 6GZX. Per-residue inclusion information can be found in section 3 on page 19.

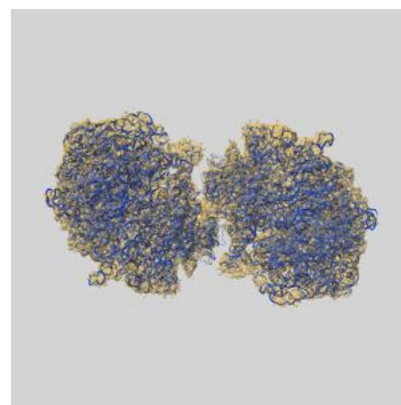
9.1 Map-model overlay [i](#)



X



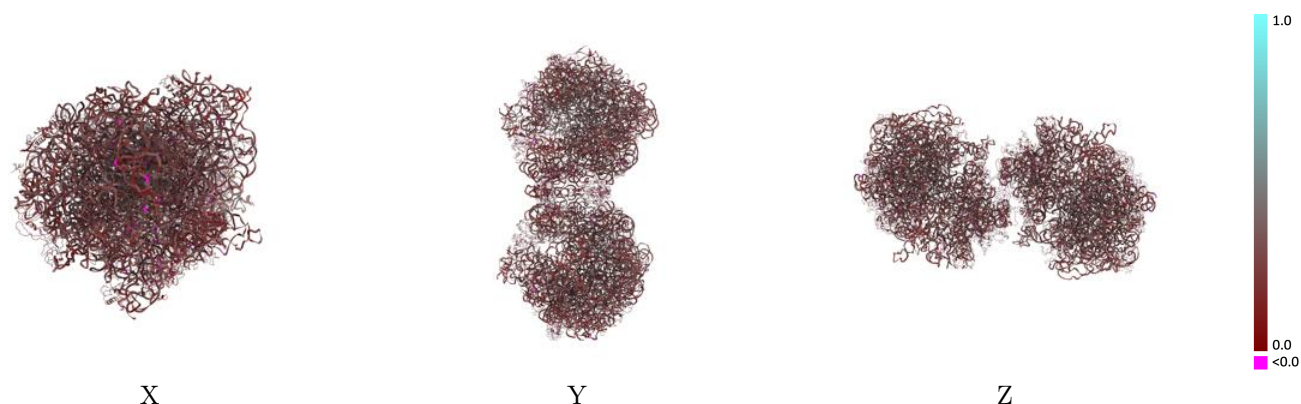
Y



Z

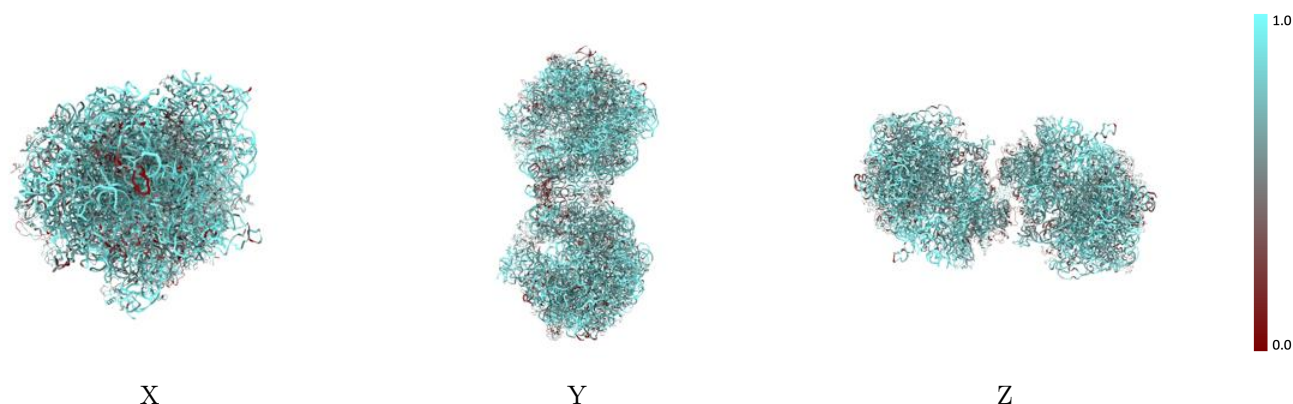
The images above show the 3D surface view of the map at the recommended contour level 2.3 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



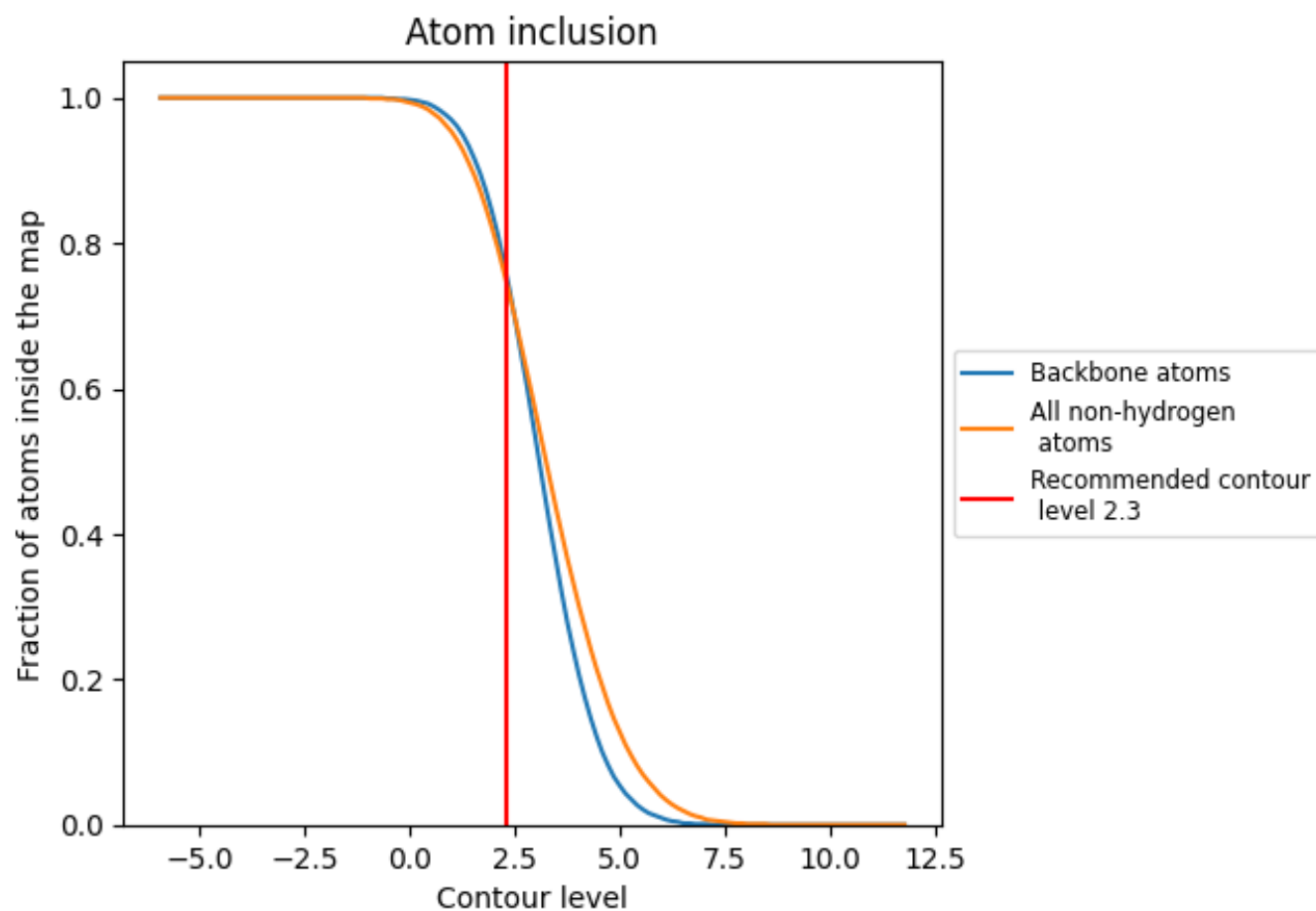
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (2.3).

9.4 Atom inclusion [i](#)



At the recommended contour level, 76% of all backbone atoms, 75% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (2.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7460	 0.2820
A1	 0.8230	 0.2990
A2	 0.8250	 0.2990
A3	 0.8550	 0.2850
A4	 0.8540	 0.2860
B1	 0.8790	 0.2750
B2	 0.8750	 0.2760
B3	 0.5860	 0.2420
B4	 0.5830	 0.2420
C1	 0.4360	 0.2870
C2	 0.4380	 0.2860
C3	 0.5890	 0.2660
C4	 0.5830	 0.2630
D1	 0.5050	 0.2730
D2	 0.5040	 0.2750
D3	 0.6900	 0.2630
D4	 0.7070	 0.2690
E1	 0.5560	 0.2520
E2	 0.5580	 0.2580
E3	 0.6330	 0.2680
E4	 0.6500	 0.2620
F1	 0.5790	 0.2320
F2	 0.5890	 0.2290
F3	 0.5300	 0.2490
F4	 0.5210	 0.2570
G1	 0.6190	 0.2530
G2	 0.5910	 0.2480
G3	 0.4570	 0.2270
G4	 0.4590	 0.2270
H1	 0.3490	 0.2650
H2	 0.3650	 0.2590
H3	 0.6330	 0.2460
H4	 0.6290	 0.2450
I1	 0.6230	 0.2690
I2	 0.6200	 0.2780



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Chain	Atom inclusion	Q-score
I3	 0.2530	 0.2330
I4	 0.2600	 0.2390
J1	 0.5510	 0.2980
J2	 0.5530	 0.2920
J3	 0.3690	 0.2480
J4	 0.3620	 0.2500
K1	 0.6190	 0.2640
K2	 0.6280	 0.2620
K3	 0.5670	 0.2410
K4	 0.5800	 0.2380
L1	 0.5800	 0.2770
L2	 0.5530	 0.2670
L3	 0.6270	 0.2870
L4	 0.6240	 0.2910
M1	 0.5900	 0.2560
M2	 0.5960	 0.2510
M3	 0.5770	 0.2410
M4	 0.5750	 0.2180
N1	 0.7050	 0.2510
N2	 0.7210	 0.2280
N3	 0.5550	 0.2620
N4	 0.5370	 0.2520
O1	 0.4980	 0.2610
O2	 0.5050	 0.2590
O3	 0.6410	 0.2460
O4	 0.6310	 0.2580
P1	 0.5440	 0.2360
P2	 0.5370	 0.2490
P3	 0.6170	 0.2640
P4	 0.6310	 0.2500
Q1	 0.4030	 0.2710
Q2	 0.3920	 0.2880
Q3	 0.5430	 0.2730
Q4	 0.5300	 0.2810
R1	 0.4910	 0.2620
R2	 0.4970	 0.2530
R3	 0.5910	 0.2450
R4	 0.5970	 0.2440
S1	 0.5540	 0.2700
S2	 0.5440	 0.2660
S3	 0.4440	 0.2380
S4	 0.5020	 0.2200

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Chain	Atom inclusion	Q-score
T1	 0.4300	 0.2670
T2	 0.4430	 0.2660
T3	 0.6560	 0.2670
T4	 0.6600	 0.2630
U1	 0.4160	 0.2300
U2	 0.4210	 0.2370
U3	 0.3580	 0.2330
U4	 0.3780	 0.2370
V1	 0.5680	 0.2580
V2	 0.5570	 0.2580
V3	 0.5830	 0.2360
V4	 0.5870	 0.2420
W1	 0.5360	 0.2550
W2	 0.5180	 0.2580
W4	 0.8070	 0.2120
X1	 0.6380	 0.2670
X2	 0.6680	 0.2580
X3	 0.7990	 0.2120
Y1	 0.3930	 0.2650
Y2	 0.3930	 0.2680
Z1	 0.6860	 0.2450
Z2	 0.6940	 0.2510
a1	 0.5710	 0.2730
a2	 0.5610	 0.2640
b1	 0.7730	 0.2610
b2	 0.7790	 0.2590
c1	 0.5400	 0.2870
c2	 0.5480	 0.2890
d1	 0.4640	 0.2500
d2	 0.4640	 0.2400
e1	 0.6400	 0.2860
e2	 0.6360	 0.2770