



Full wwPDB EM Validation Report ⓘ

Jun 17, 2026 – 07:14 pm BST

PDB ID : 7PJW / pdb_00007pjw
EMDB ID : EMD-13462
Title : Structure of the 70S-EF-G-GDP-Pi ribosome complex with tRNAs in hybrid state 2 (H2-EF-G-GDP-Pi)
Authors : Petrychenko, V.; Peng, B.Z.; Schwarzer, A.C.; Peske, F.; Rodnina, M.V.; Fischer, N.
Deposited on : 2021-08-24
Resolution : 4.00 Å (reported)
Based on initial models : 5J9Z, 5LZD, 4AQY, 6YSS

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:

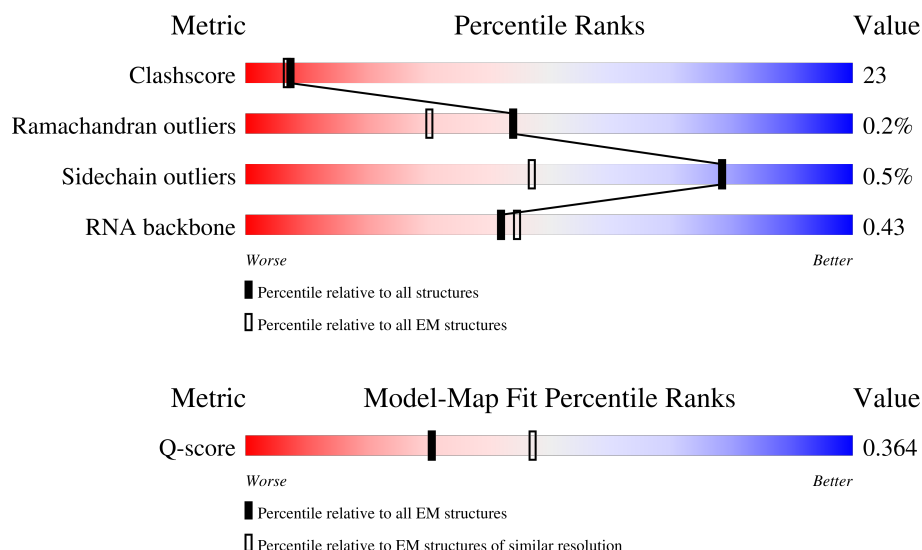
EMDB validation analysis : 0.0.1.dev132
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data 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

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

The reported resolution of this entry is 4.00 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	7587 (3.50 - 4.50)

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	0	57	77% 74% 25% .
2	1	55	73% 53% 38% 9%

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Mol	Chain	Length	Quality of chain
3	2	46	
4	3	65	
5	4	38	
6	5	165	
7	6	70	
8	A	2903	
9	B	120	
10	C	273	
11	D	209	
12	E	201	
13	F	179	
14	G	177	
15	H	149	
16	I	142	
17	J	142	
18	K	123	
19	L	144	
20	M	136	
21	N	127	
22	O	117	
23	P	115	
24	Q	118	
25	R	103	
26	S	110	
27	T	100	

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Mol	Chain	Length	Quality of chain
28	U	104	
29	V	94	
30	W	85	
31	X	78	
32	Y	63	
33	Z	59	
34	a	1542	
35	b	240	
36	c	233	
37	d	206	
38	e	167	
39	f	135	
40	g	179	
41	h	130	
42	i	130	
43	j	103	
44	k	129	
45	l	124	
46	m	118	
47	n	102	
48	o	89	
49	p	82	
50	q	84	
51	r	75	
52	s	92	

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Mol	Chain	Length	Quality of chain
53	t	87	
54	u	71	
55	v	77	
56	w	76	
57	x	704	
58	y	2	
59	z	33	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
61	PO4	x	802	-	-	X	-

2 Entry composition

There are 62 unique types of molecules in this entry. The entry contains 152719 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 L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	0	56	Total	C	N	O	S	0	0
			444	269	94	80	1		

- Molecule 2 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	1	50	Total	C	N	O	0	0
			409	263	75	71		

- Molecule 3 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	46	Total	C	N	O	S	0	0
			377	228	90	57	2		

- Molecule 4 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	3	64	Total	C	N	O	S	0	0
			504	323	105	74	2		

- Molecule 5 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	38	Total	C	N	O	S	0	0
			302	185	65	48	4		

- Molecule 6 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms				AltConf	Trace
6	5	131	Total	C	N	O	0	0
			647	385	131	131		

- Molecule 7 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	66	Total	C	N	O	S	0	0
			522	323	99	94	6		

- Molecule 8 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	A	2903	Total	C	N	O	P	0	0
			62339	27816	11471	20149	2903		

- Molecule 9 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	B	120	Total	C	N	O	P	0	0
			2570	1144	468	838	120		

- Molecule 10 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	C	271	Total	C	N	O	S	0	0
			2082	1288	423	364	7		

- Molecule 11 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	D	209	Total	C	N	O	S	0	0
			1565	979	288	294	4		

- Molecule 12 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	E	201	Total	C	N	O	S	0	0
			1552	974	283	290	5		

- Molecule 13 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	F	177	Total	C	N	O	S	0	0
			1410	899	249	256	6		

- Molecule 14 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	G	176	Total	C	N	O	S	0	0
			1323	832	243	246	2		

- Molecule 15 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	H	149	Total	C	N	O	S	0	0
			1111	699	197	214	1		

- Molecule 16 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	I	141	Total	C	N	O	S	0	0
			693	411	141	141			

- Molecule 17 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	J	142	Total	C	N	O	S	0	0
			1129	714	212	199	4		

- Molecule 18 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	K	122	Total	C	N	O	S	0	0
			938	587	180	165	6		

- Molecule 19 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	L	143	Total	C	N	O	S	0	0
			1045	649	206	189	1		

- Molecule 20 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	M	136	Total	C	N	O	S	0	0
			1074	686	205	177	6		

- Molecule 21 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	N	120	Total	C	N	O	S	0	0
			960	593	196	166	5		

- Molecule 22 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	O	116	Total	C	N	O	S	0	0
			892	552	178	162			

- Molecule 23 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	P	114	Total	C	N	O	S	0	0
			917	574	179	163	1		

- Molecule 24 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	Q	117	Total	C	N	O	S	0	0
			947	604	192	151			

- Molecule 25 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	R	103	Total	C	N	O	S	0	0
			816	516	153	145	2		

- Molecule 26 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	S	110	Total	C	N	O	S	0	0
			857	532	166	156	3		

- Molecule 27 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	T	93	Total	C	N	O	S	0	0
			738	466	139	131	2		

- Molecule 28 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	U	102	Total	C	N	O	0	0
			779	492	146	141		

- Molecule 29 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	V	94	Total	C	N	O	S	0	0
			753	479	137	134	3		

- Molecule 30 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	W	75	Total	C	N	O	S	0	0
			575	356	116	102	1		

- Molecule 31 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	X	77	Total	C	N	O	S	0	0
			625	388	129	106	2		

- Molecule 32 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 33 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Z	58	Total	C	N	O	S	0	0
			449	281	87	79	2		

- Molecule 34 is a RNA chain called 16S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	a	1540	Total	C	N	O	P	0	0
			33050	14748	6057	10705	1540		

- Molecule 35 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	b	218	Total	C	N	O	S	0	0
			1704	1081	305	311	7		

- Molecule 36 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	c	206	Total	C	N	O	S	0	0
			1624	1028	305	288	3		

- Molecule 37 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	d	205	Total	C	N	O	S	0	0
			1643	1026	315	298	4		

- Molecule 38 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	e	157	Total	C	N	O	S	0	0
			1141	709	218	208	6		

- Molecule 39 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	f	100	Total	C	N	O	S	0	0
			817	515	148	148	6		

- Molecule 40 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	g	151	Total	C	N	O	S	0	0
			1181	735	227	215	4		

- Molecule 41 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	h	129	Total	C	N	O	S	0	0
			979	616	173	184	6		

- Molecule 42 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	i	127	Total	C	N	O	S	0	0
			1022	634	206	179	3		

- Molecule 43 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	j	98	Total	C	N	O	S	0	0
			786	493	150	142	1		

- Molecule 44 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	k	116	Total	C	N	O	S	0	0
			869	535	173	158	3		

- Molecule 45 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	l	123	Total	C	N	O	S	0	0
			955	590	196	165	4		

- Molecule 46 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	m	114	Total	C	N	O	S	0	0
			883	546	178	156	3		

- Molecule 47 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	n	101	Total	C	N	O	S	0	0
			799	498	165	133	3		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
n	35	ALA	-	insertion	UNP C3SR07

- Molecule 48 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	o	88	Total	C	N	O	S	0	0
			714	439	144	130	1		

- Molecule 49 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	p	82	Total	C	N	O	S	0	0
			649	406	128	114	1		

- Molecule 50 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	q	80	Total	C	N	O	S	0	0
			648	411	121	113	3		

- Molecule 51 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	r	65	Total	C	N	O	S	0	0
			535	339	100	95	1		

- Molecule 52 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	s	82	Total	C	N	O	S	0	0
			658	421	125	110	2		

- Molecule 53 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	t	85	Total	C	N	O	S	0	0
			665	411	137	114	3		

- Molecule 54 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	u	65	Total	C	N	O	S	0	0
			506	313	105	87	1		

- Molecule 55 is a RNA chain called P-site tRNA(fMet).

Mol	Chain	Residues	Atoms						AltConf	Trace
55	v	77	Total	C	N	O	P	S	0	0
			1642	733	297	534	77	1		

- Molecule 56 is a RNA chain called P-site fMet-Phe-tRNA(Phe).

Mol	Chain	Residues	Atoms						AltConf	Trace
56	w	76	Total	C	N	O	P	S	0	0
			1631	731	291	531	76	2		

- Molecule 57 is a protein called Elongation factor G.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	x	703	Total	C	N	O	S	0	0
			5444	3429	942	1048	25		

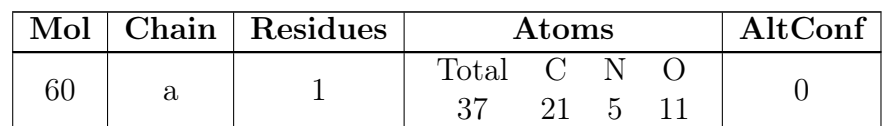
- Molecule 58 is a protein called Dipeptide (FME-PHE).

Mol	Chain	Residues	Atoms					AltConf	Trace
58	y	2	Total	C	N	O	S	0	0
			21	15	2	3	1		

- Molecule 59 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	z	11	Total	C	N	O	P	0	0
			230	103	35	81	11		

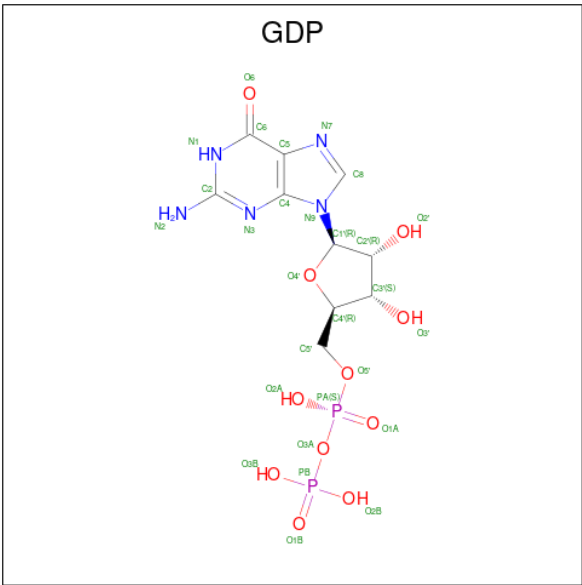
- Molecule 60 is APRAMYCIN (CCD ID: AM2) (formula: C₂₁H₄₁N₅O₁₁).



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- Diagram illustrating the Lewis structure of the phosphate ion (PO_4^{3-}). The central phosphorus atom (P) is bonded to four oxygen atoms (O). The bonds are: a double bond to the right (O1), and single bonds to the top (O3), bottom (O4), and left (O2). Each single-bonded oxygen atom carries a negative charge (O^-). The phosphorus atom has a formal charge of +1, indicated by a 'P' with a '+' sign below it. The overall charge of the ion is -3.

Mol	Chain	Residues	Atoms			AltConf
61	x	1	Total	O	P	0
			5	4	1	

- 

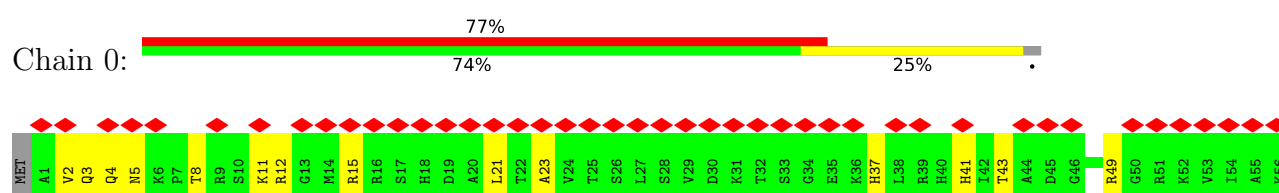


Mol	Chain	Residues	Atoms					AltConf
62	x	1	Total	C	N	O	P	0
			28	10	5	11	2	

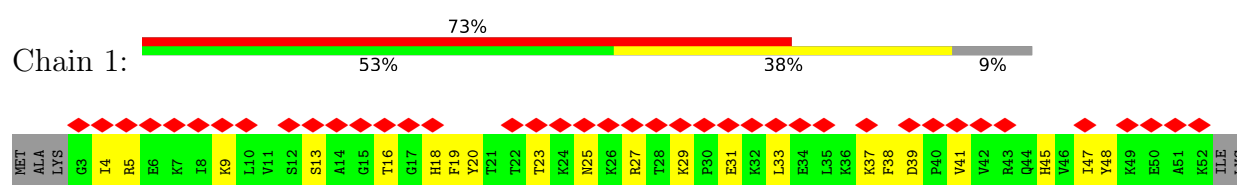
3 Residue-property plots [i](#)

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

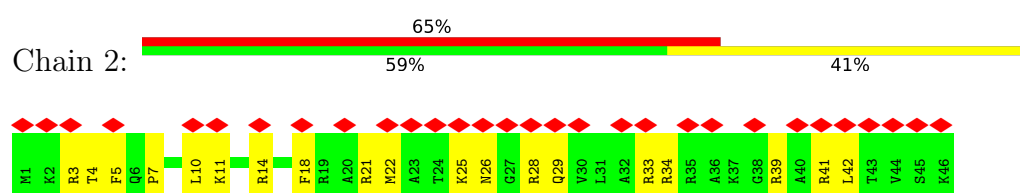
- Molecule 1: 50S ribosomal protein L32



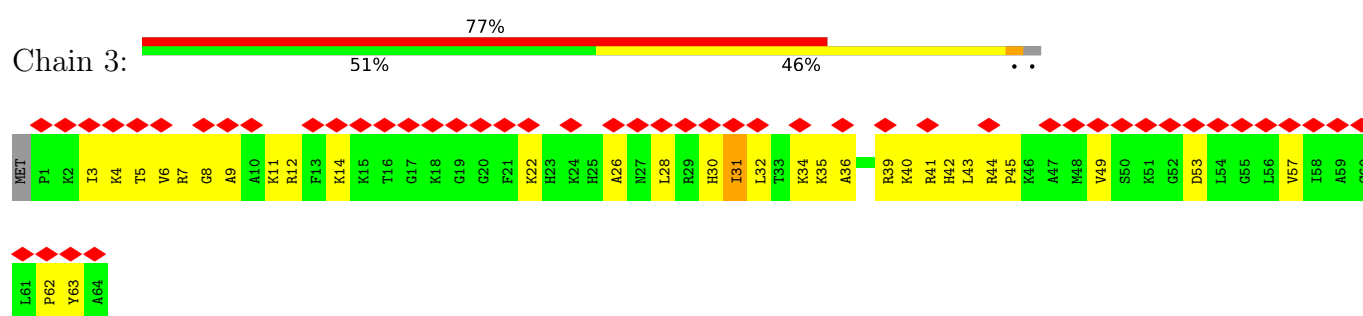
- Molecule 2: 50S ribosomal protein L33



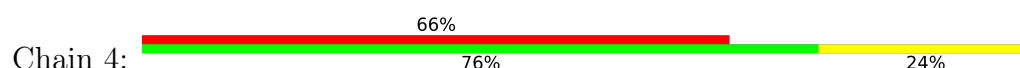
- Molecule 3: 50S ribosomal protein L34

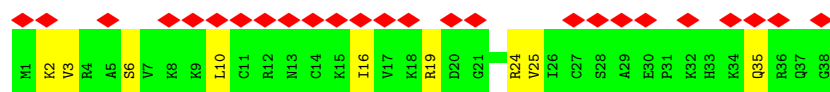


- Molecule 4: 50S ribosomal protein L35

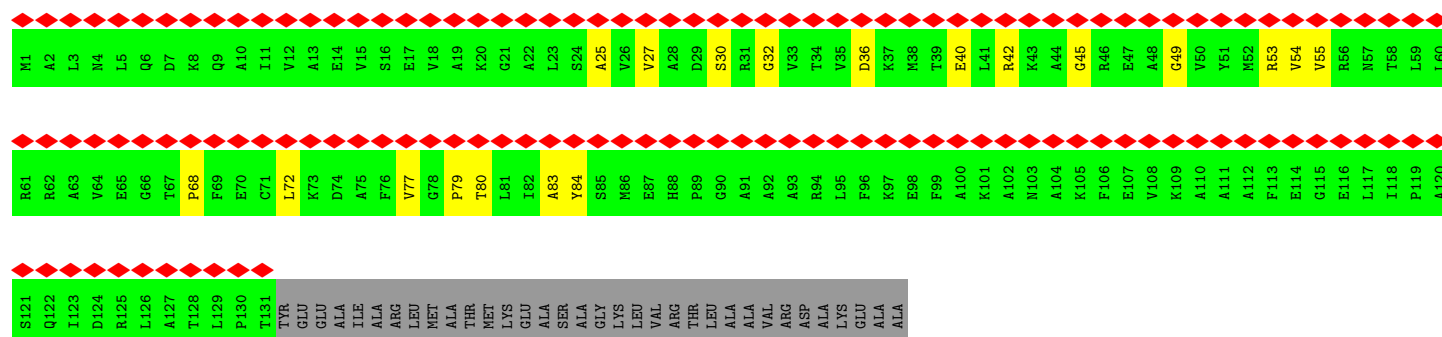
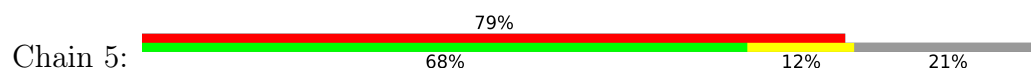


- Molecule 5: 50S ribosomal protein L36

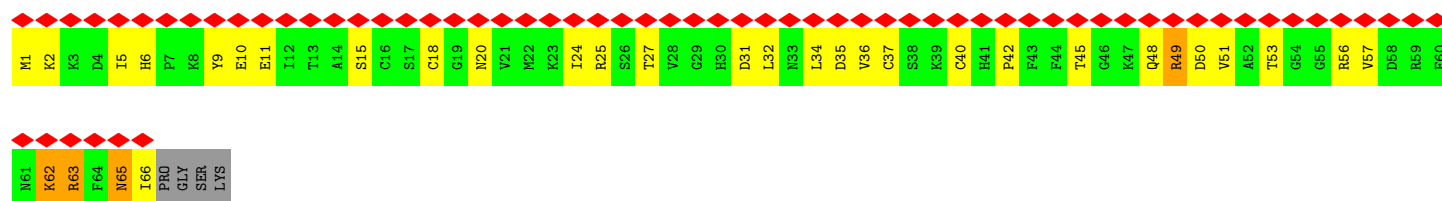




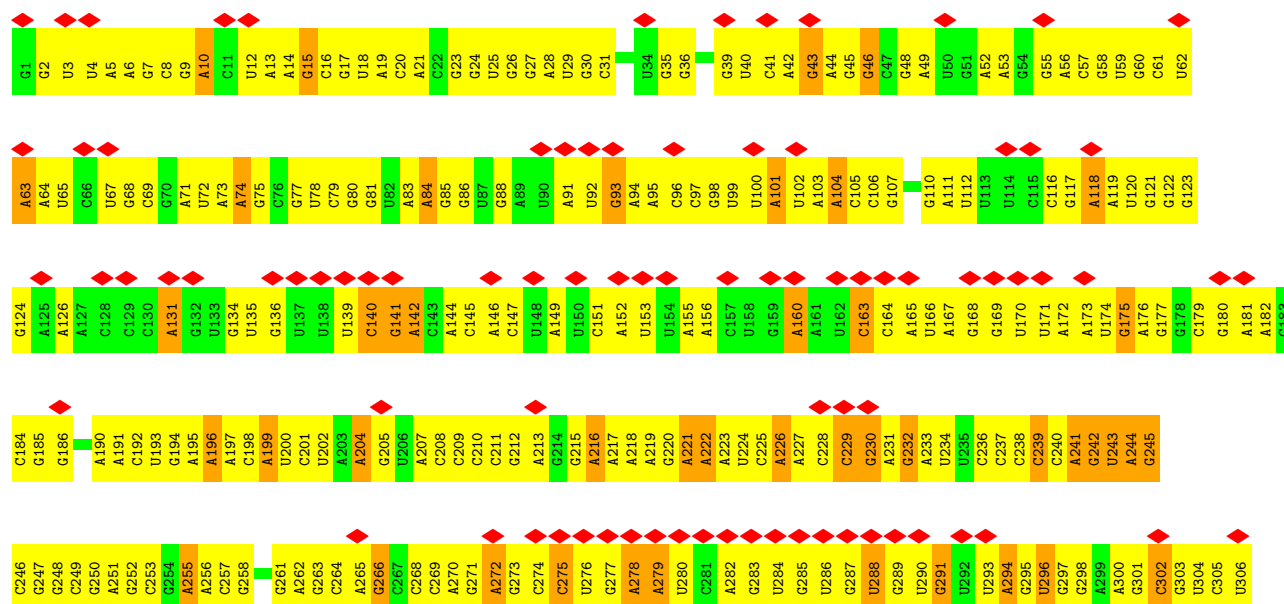
• Molecule 6: 50S ribosomal protein L10

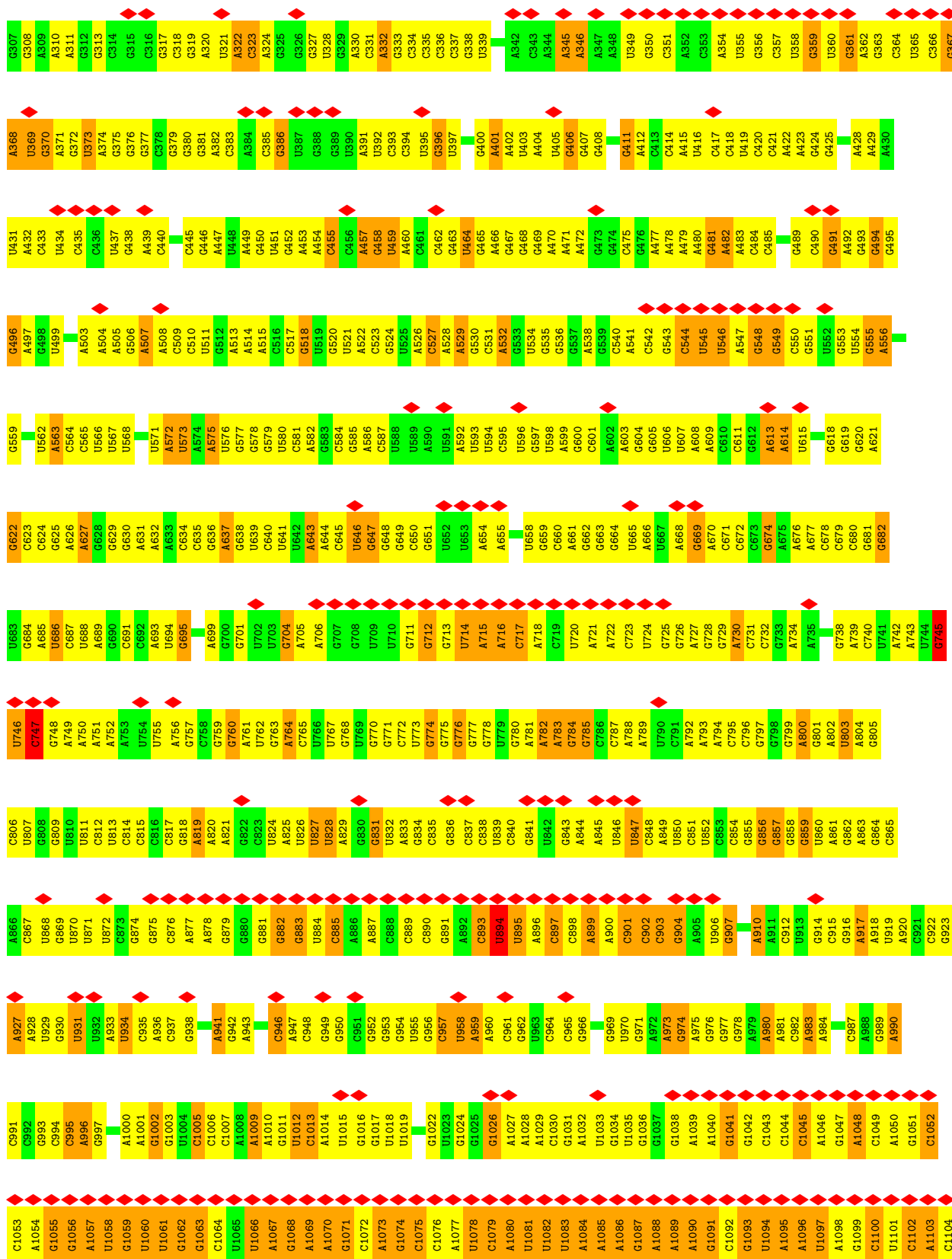


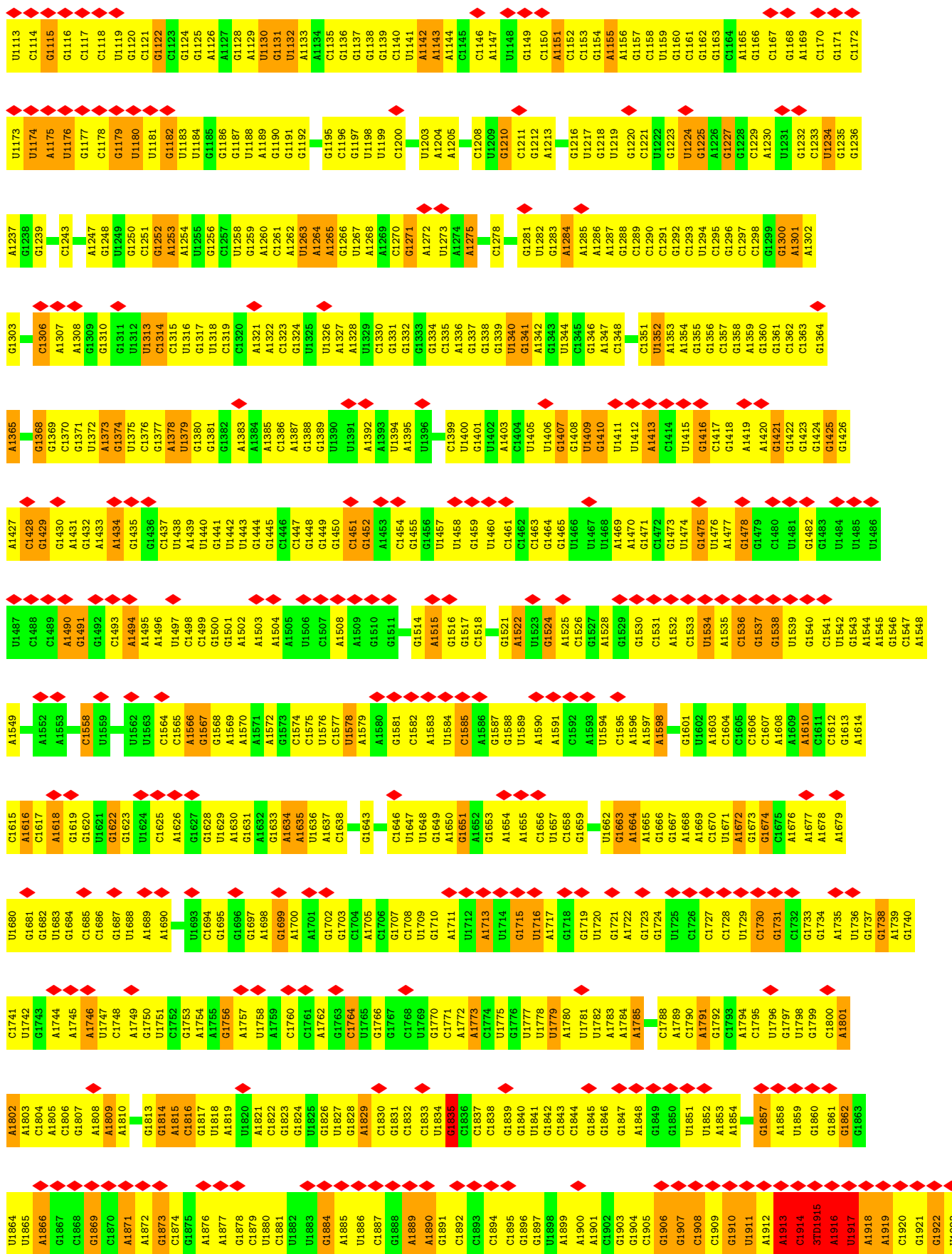
• Molecule 7: 50S ribosomal protein L31



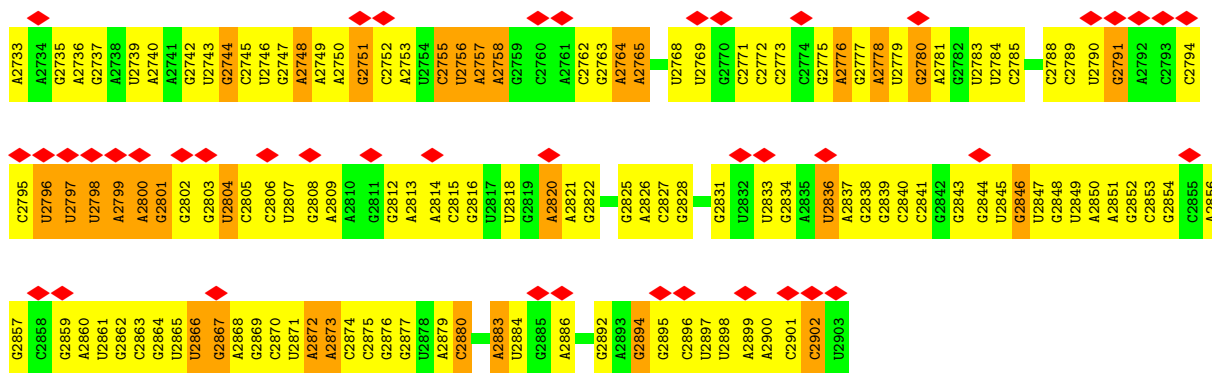
• Molecule 8: 23S ribosomal RNA



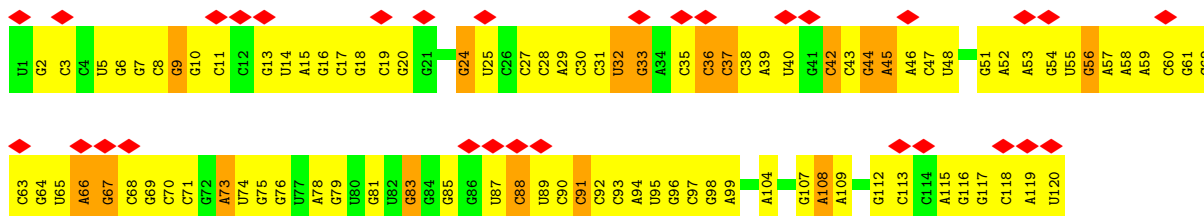




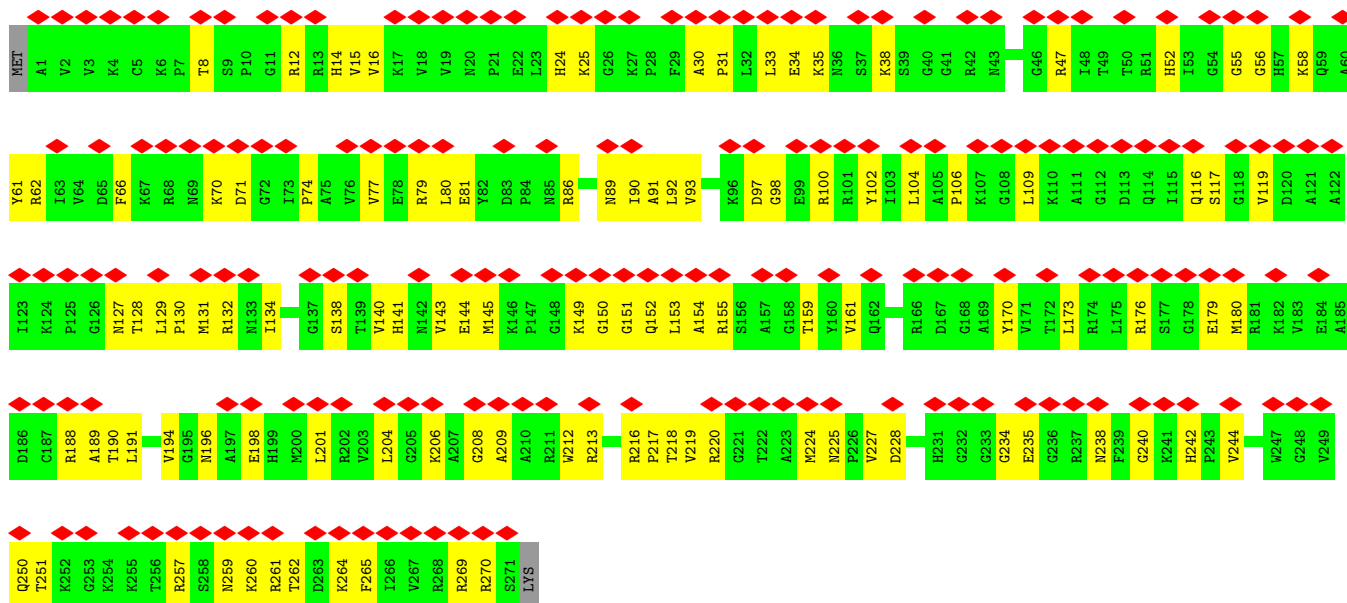
U2672	U2609	A2547	G2484	C2422	U2356	G2293	U2233	A2171	U2111	G2049	C1985
G2673	C2610	U2548	G2485	U2423	G2357	G2294	G2234	U2172	G2112	C2050	C1986
A2675	C2611	G2549	G2486	C2424	C2358	C2295	G2235	U2173	G2113	A2051	A1987
G2676	C2612	G2551	G2487	A2425	C2359	U2296	U2236	C2174	A2114	A2052	G1988
G2677	U2613	U2552	G2488	C2427	G2361	A2298	G2237	C2175	G2115	G2055	G1989
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A2679	U2615	U2554	G2490	G2429	C2363	U2300	G2239	C2177	G2117	G2057	G1929
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C2681	U2617	C2556	U2492	U2431	G2367	C2302	G2241	C2179	U2118	U1993	U1931
A2682	C2618	G2557	U2493	A2432	C2368	U2303	G2242	U2180	A2119	C1994	A1932
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G2684	U2620		G2495	A2434	G2370	U2305	U2244	U2182	G2121	C1997	C1934
G2685	G2621	U2561	G2496	A2435	G2371	U2306	U2245	A2183	U2122	A1998	A1935
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C2687	G2623	U2563	G2498	G2437	G2373	G2308	A2247	U2185	G2124	C2000	A1937
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G2689	G2625	A2665	G2500	A2439	G2375	G2309	G2249	G2187	G2126	G2002	U1939
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G2692	C2628	U2566	A2503	U2442	A2378	G2311	G2252	U2190	G2129	C2008	C1942
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U2700	A2635	G2573	G2510	U2449	C2385	A2317	G2259	U2197	A2136	G2018	U1950
G2701	G2636	G2574	C2511	A2450	A2386	G2318	C2260	U2198	G2137	A2019	U1951
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G2708	C2646	G2582	U2519	G2458	U2394	G2325	G2268	U2206	G2145	G2029	G1959
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	C2671	G2608	U2546			C2354	U2292	C2226	C2160	A1981	
						C2355		U2229	C2161	U1982	
								U2231	G2162	G1983	
								C2232	A2163	C1984	
									C2164		
									U2165		
									C2166		
									U2167		
									G2168		
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• Molecule 9: 5S ribosomal RNA

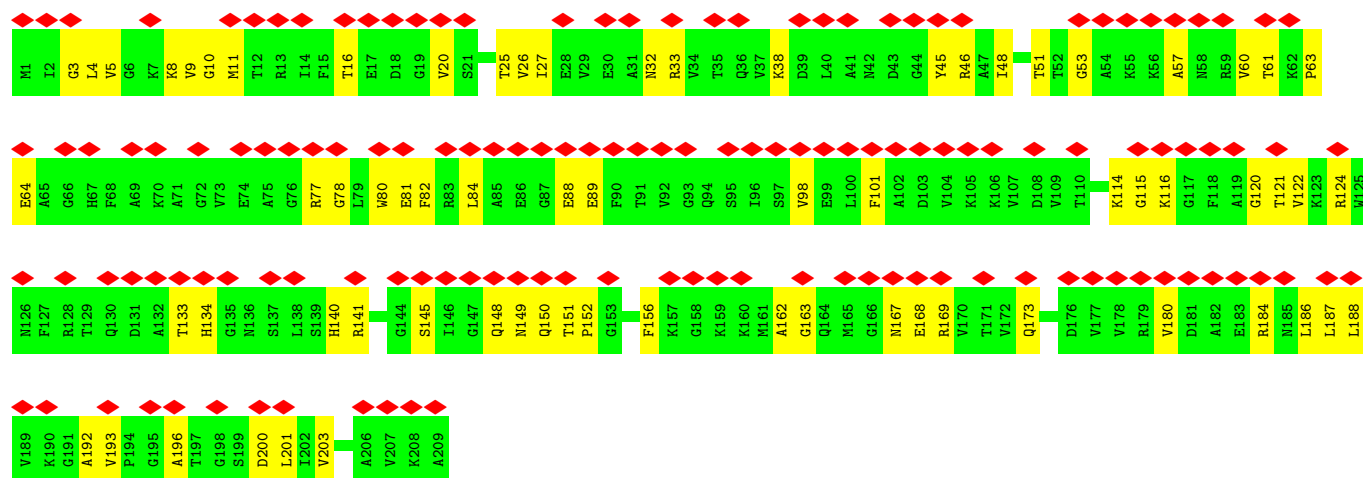


• Molecule 10: 50S ribosomal protein L2

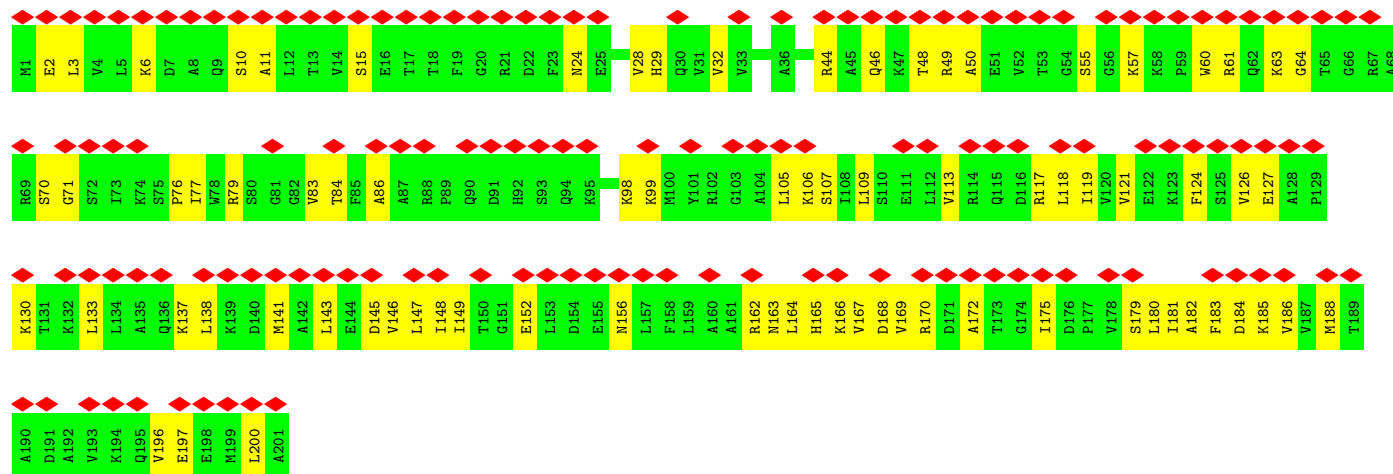


• Molecule 11: 50S ribosomal protein L3





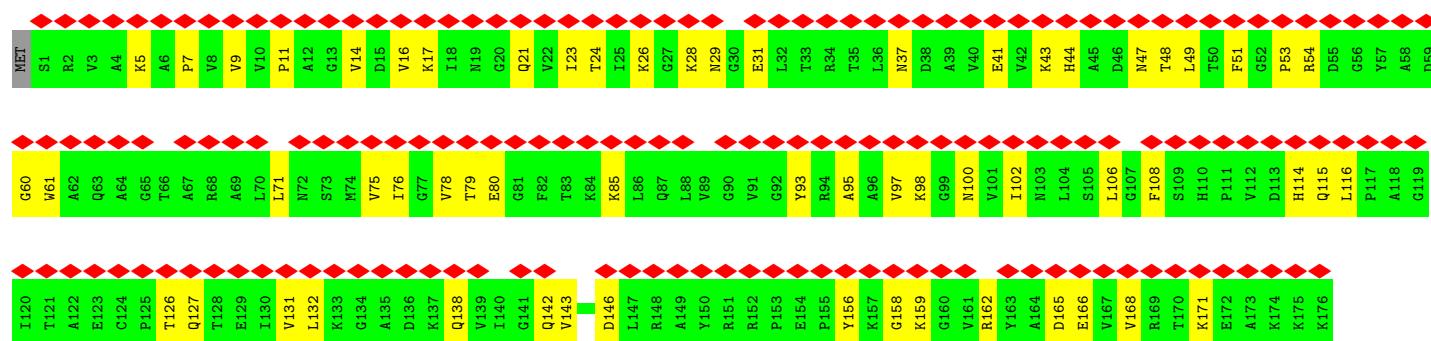
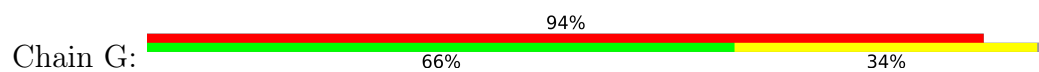
• Molecule 12: 50S ribosomal protein L4



• Molecule 13: 50S ribosomal protein L5



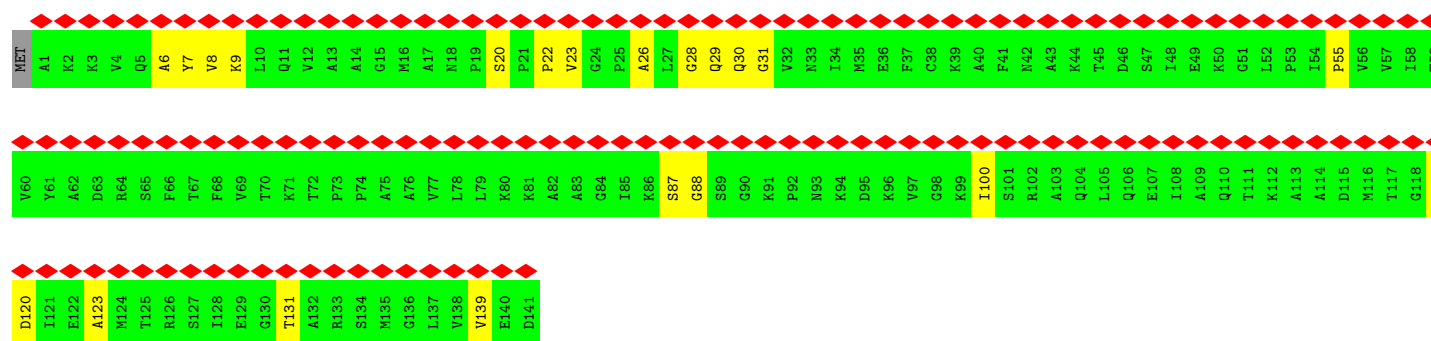
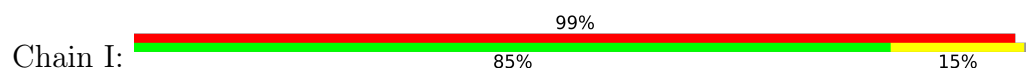
• Molecule 14: 50S ribosomal protein L6



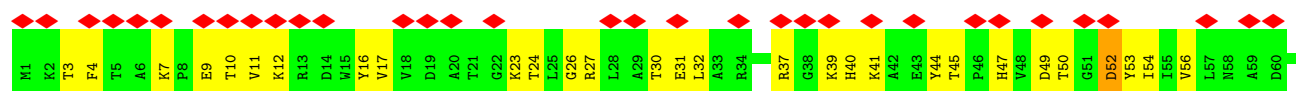
• Molecule 15: 50S ribosomal protein L9

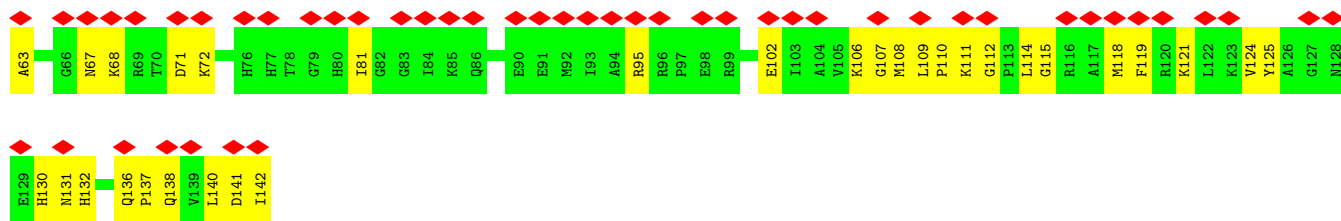


• Molecule 16: 50S ribosomal protein L11

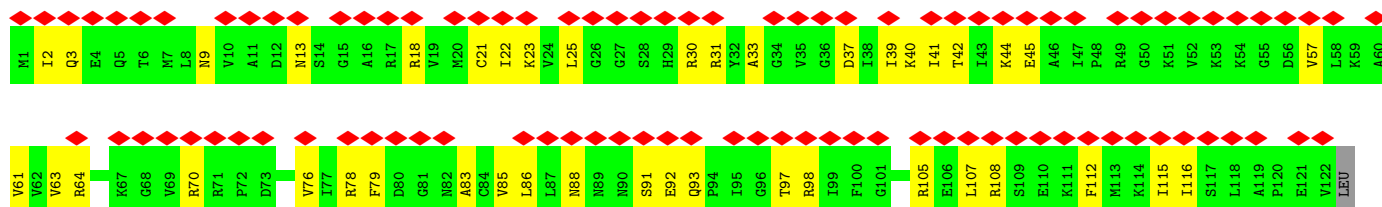
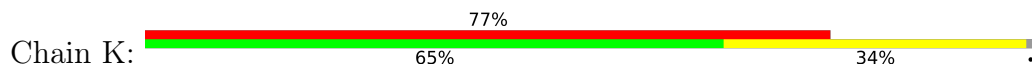


• Molecule 17: 50S ribosomal protein L13





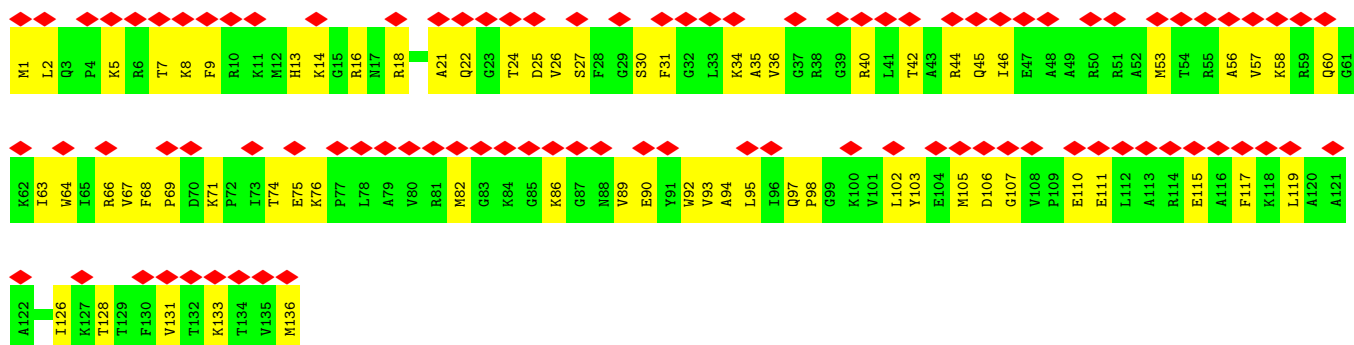
• Molecule 18: 50S ribosomal protein L14



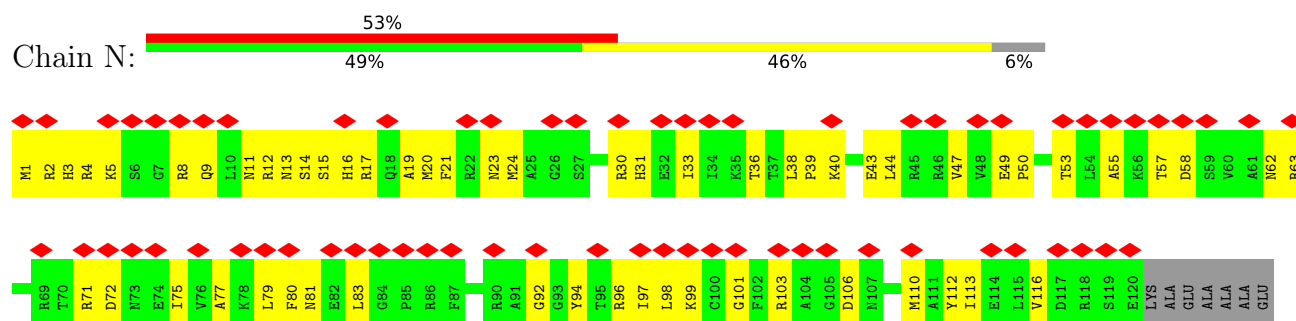
• Molecule 19: 50S ribosomal protein L15



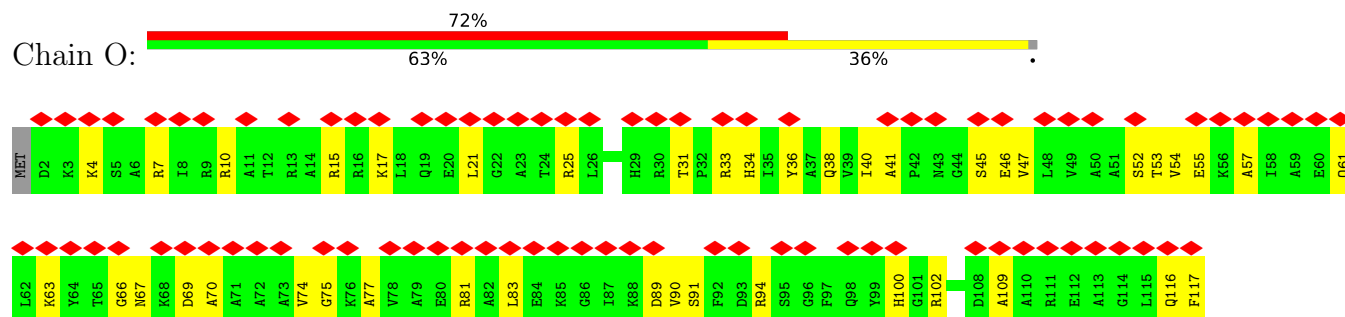
• Molecule 20: 50S ribosomal protein L16



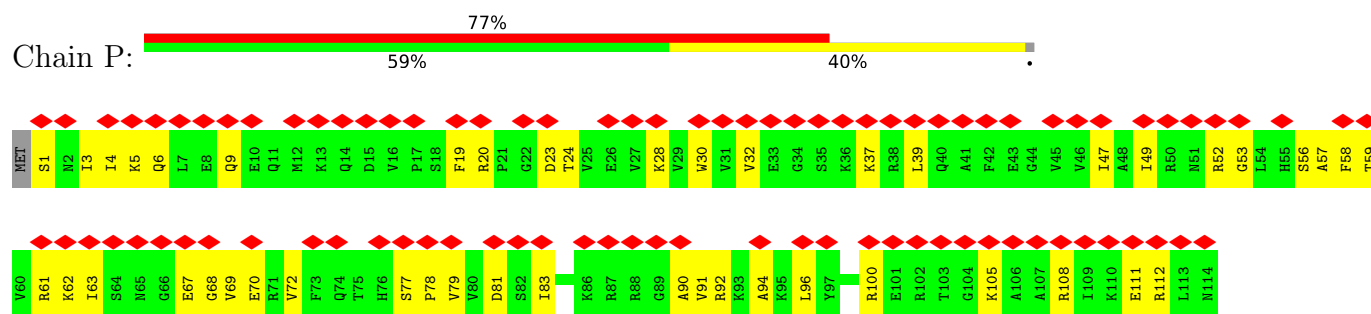
• Molecule 21: 50S ribosomal protein L17



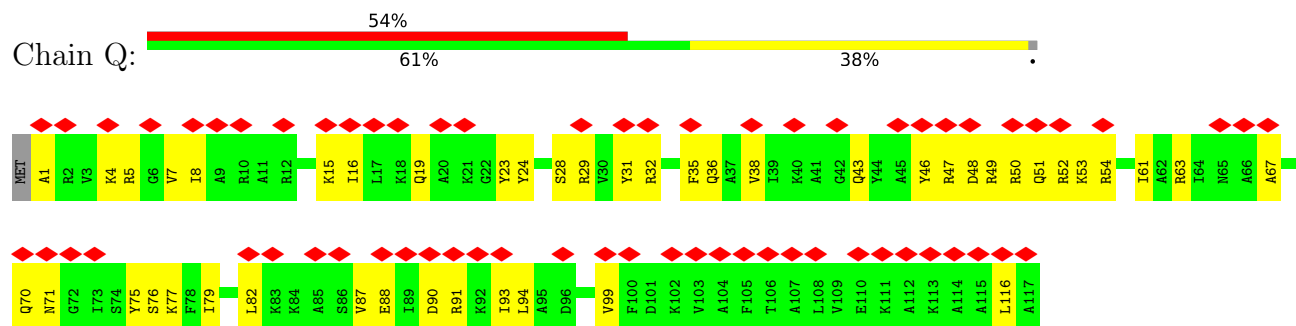
- Molecule 22: 50S ribosomal protein L18



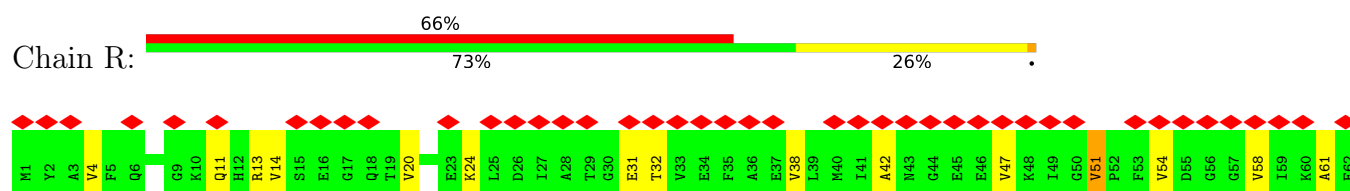
- Molecule 23: 50S ribosomal protein L19

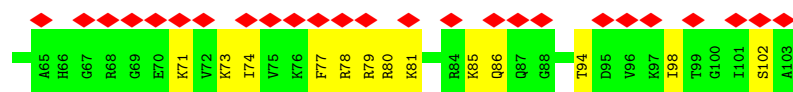


- Molecule 24: 50S ribosomal protein L20

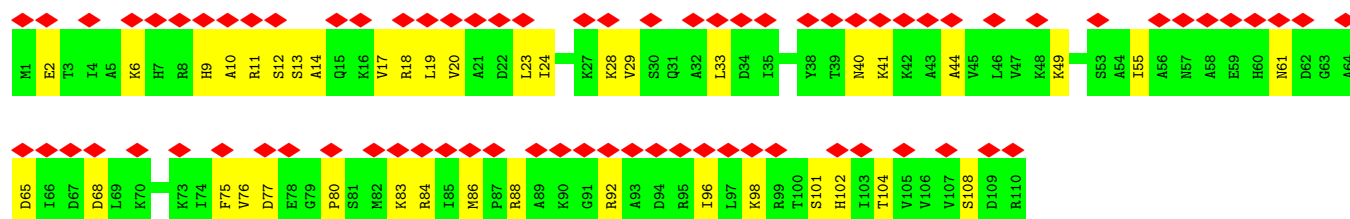


- Molecule 25: 50S ribosomal protein L21

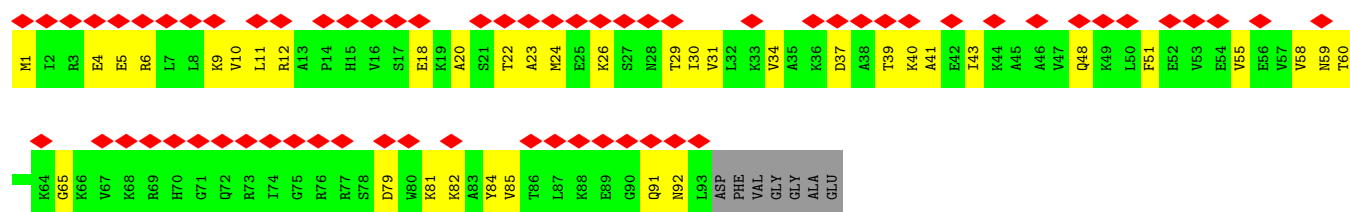




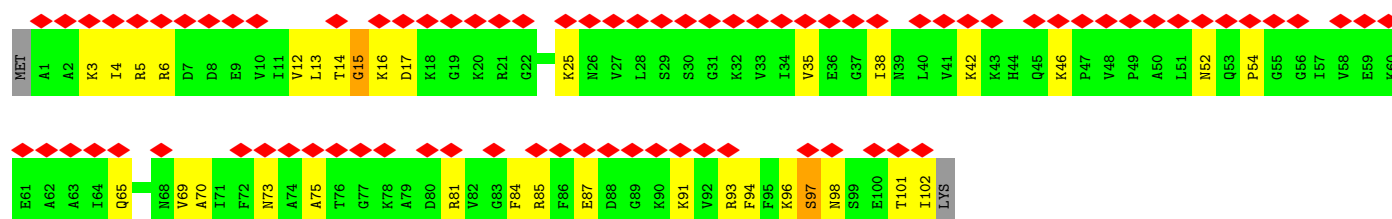
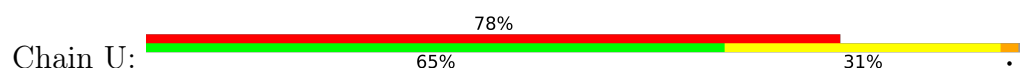
• Molecule 26: 50S ribosomal protein L22



• Molecule 27: 50S ribosomal protein L23



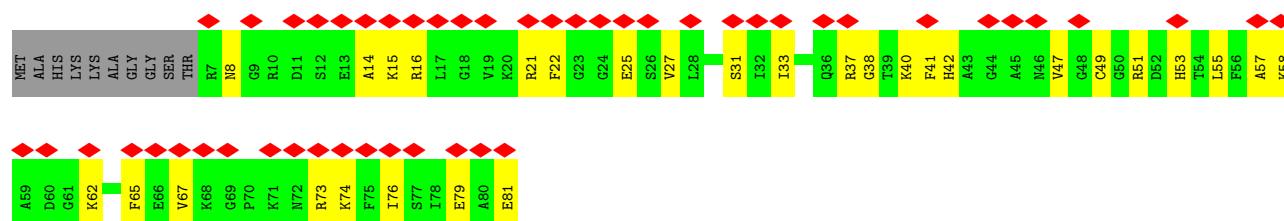
• Molecule 28: 50S ribosomal protein L24



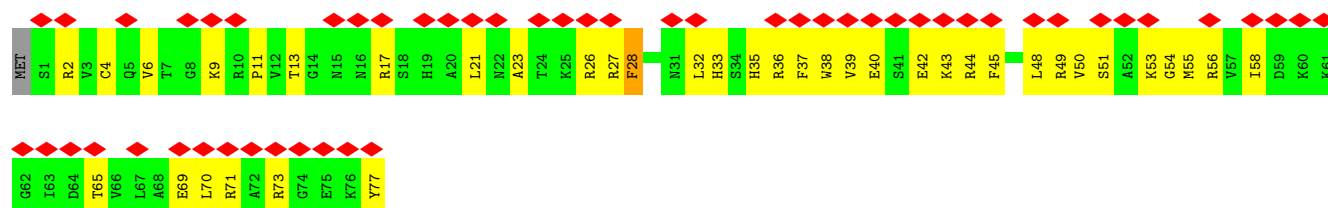
• Molecule 29: 50S ribosomal protein L25



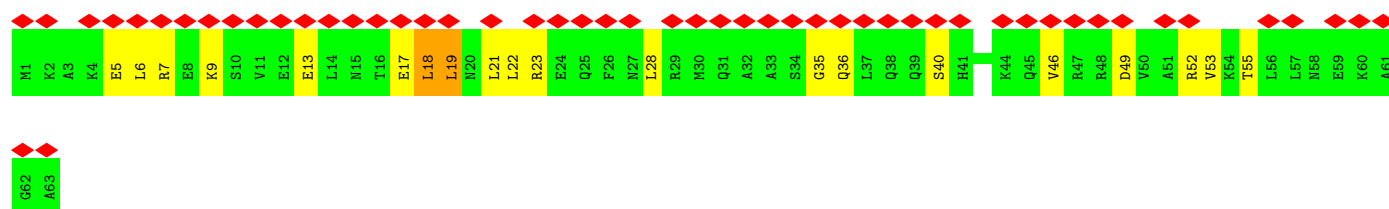
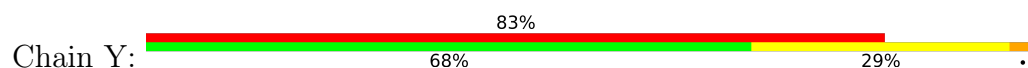
• Molecule 30: 50S ribosomal protein L27



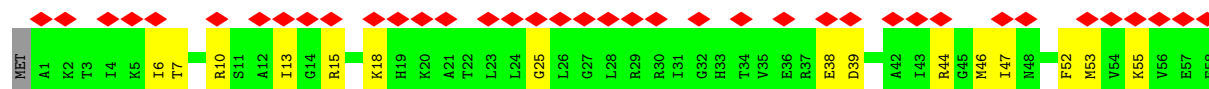
- Molecule 31: 50S ribosomal protein L28



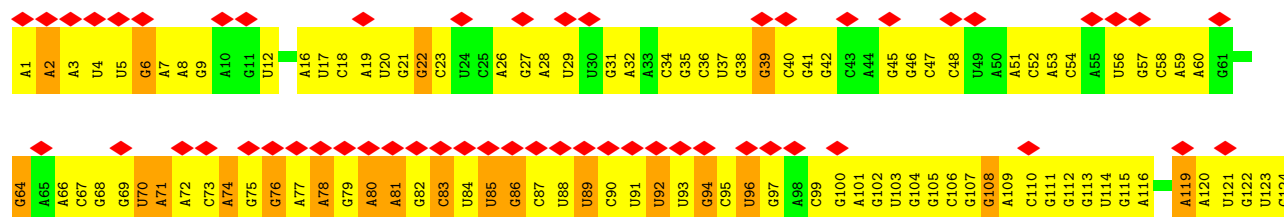
- Molecule 32: 50S ribosomal protein L29

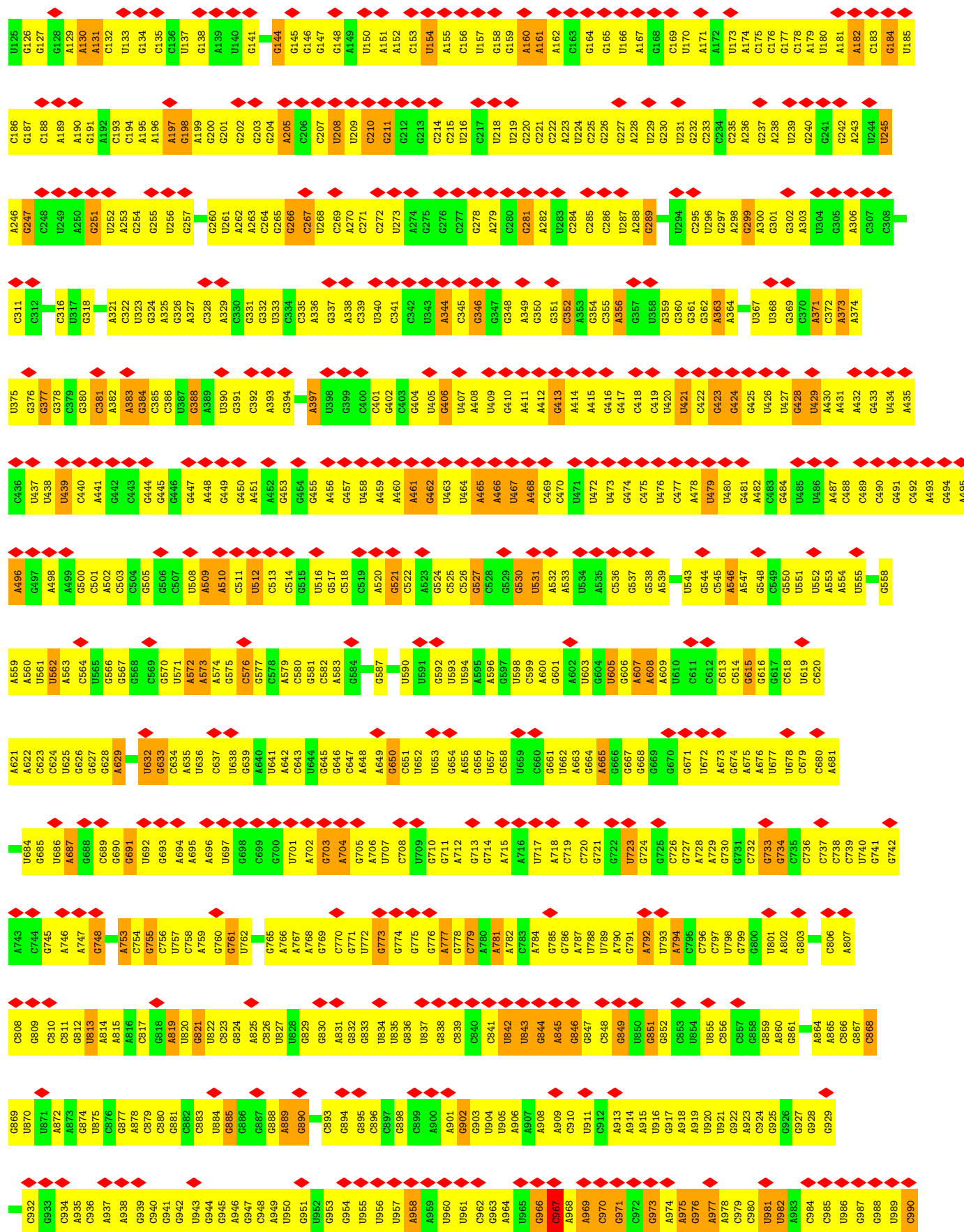


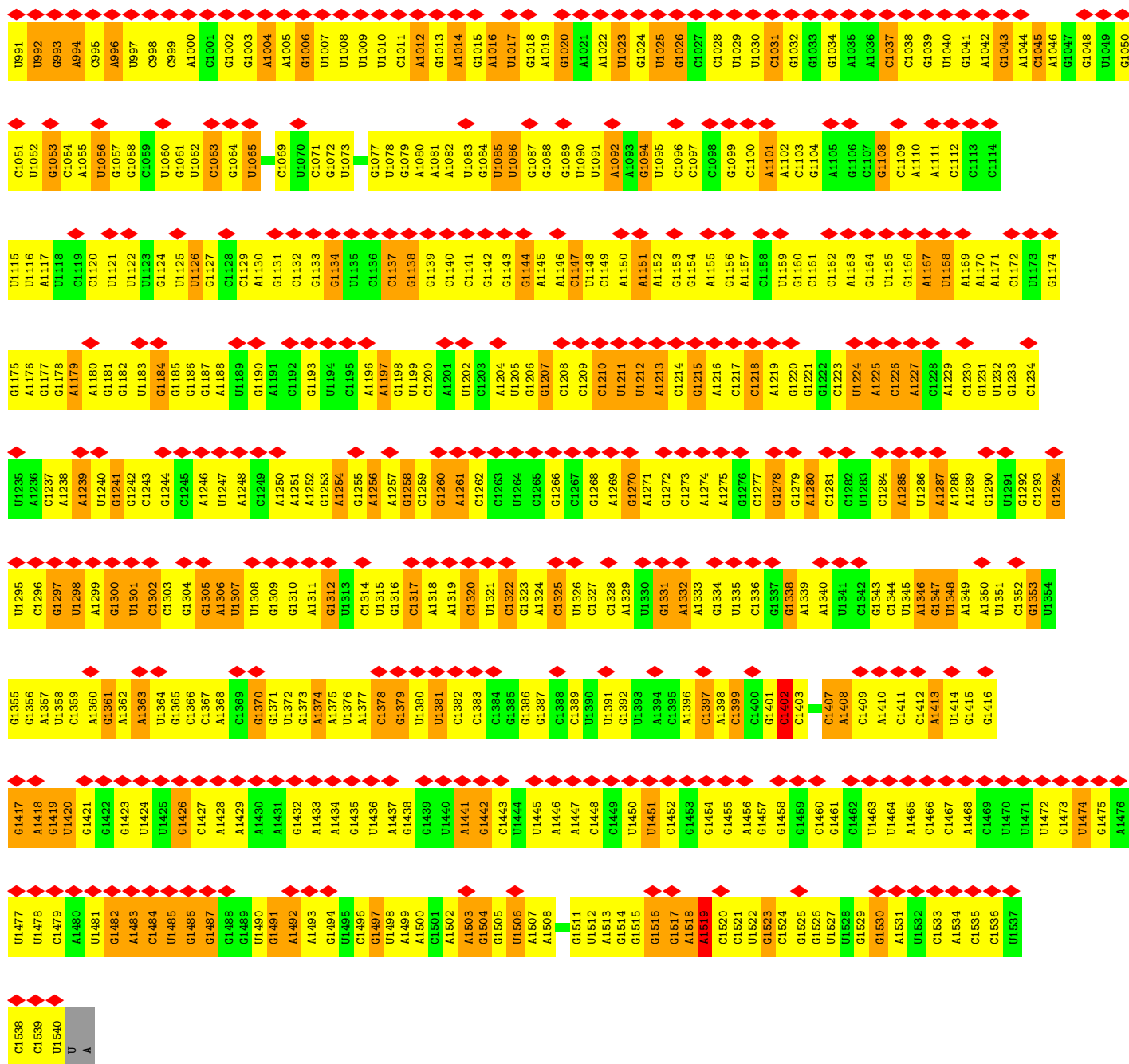
- Molecule 33: 50S ribosomal protein L30

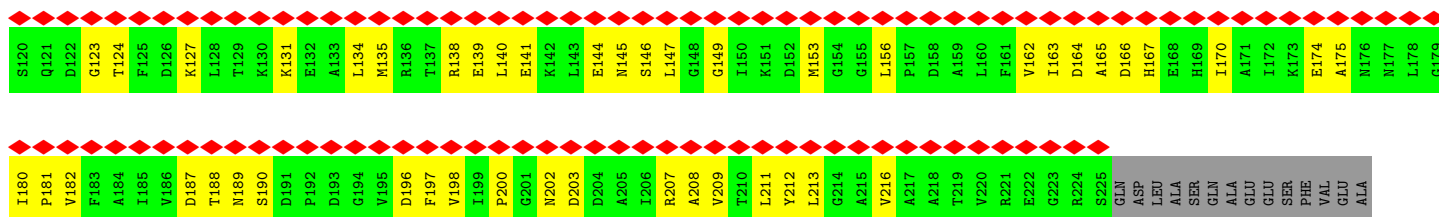


- Molecule 34: 16S ribosomal RNA

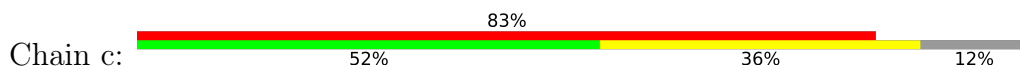








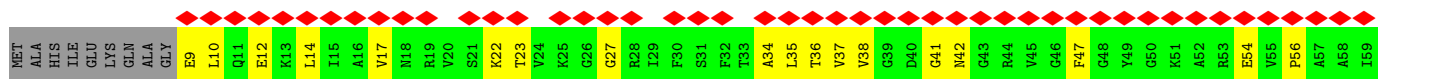
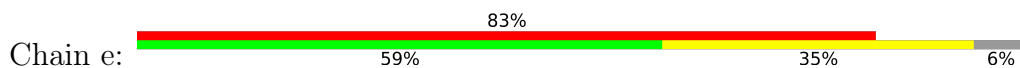
• Molecule 36: 30S ribosomal protein S3

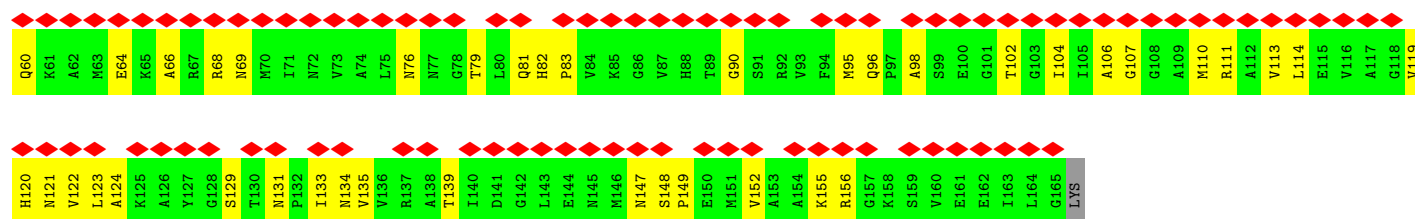


• Molecule 37: 30S ribosomal protein S4

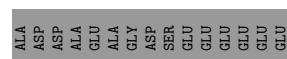
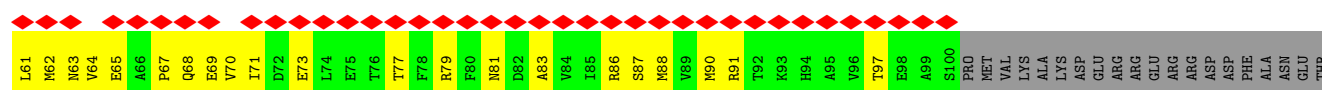


• Molecule 38: 30S ribosomal protein S5

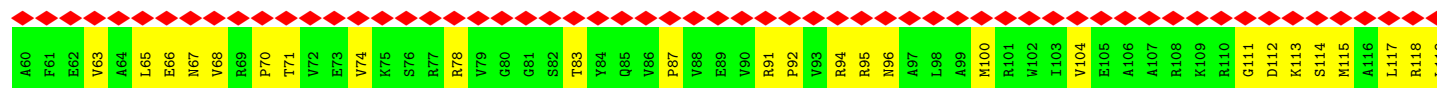
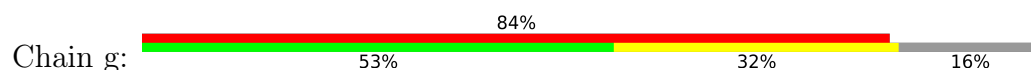




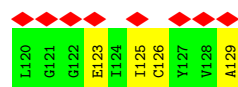
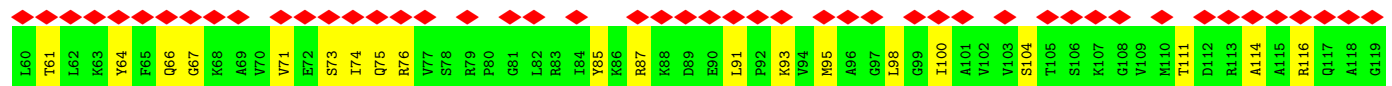
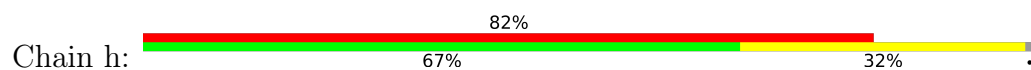
• Molecule 39: 30S ribosomal protein S6



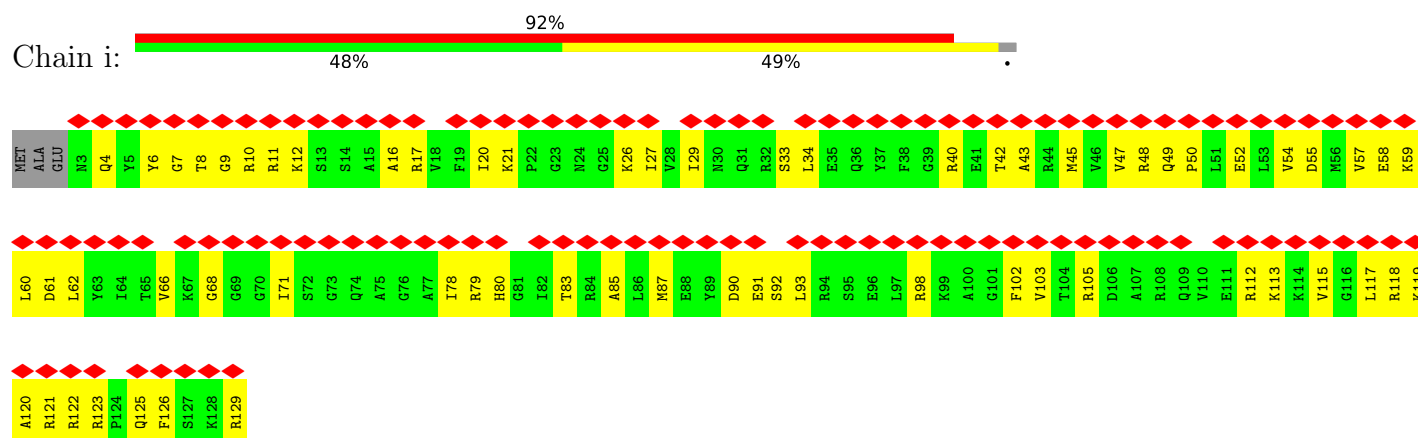
• Molecule 40: 30S ribosomal protein S7



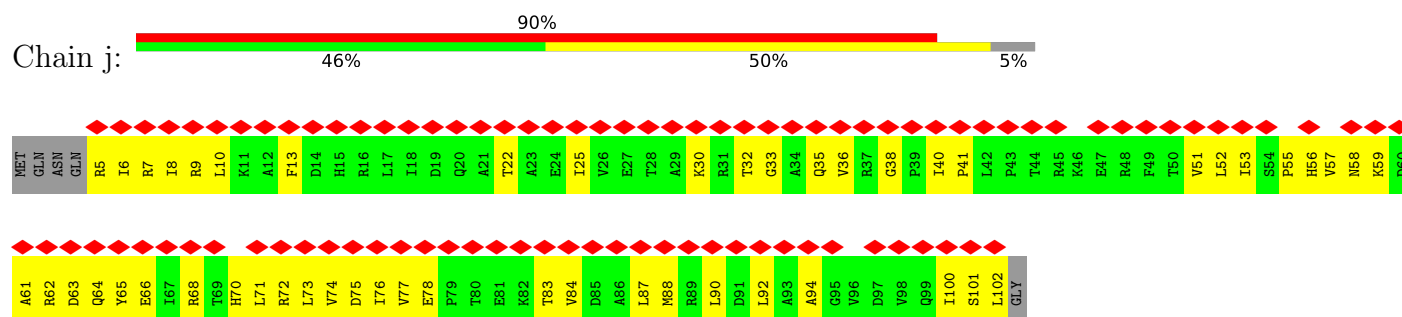
• Molecule 41: 30S ribosomal protein S8



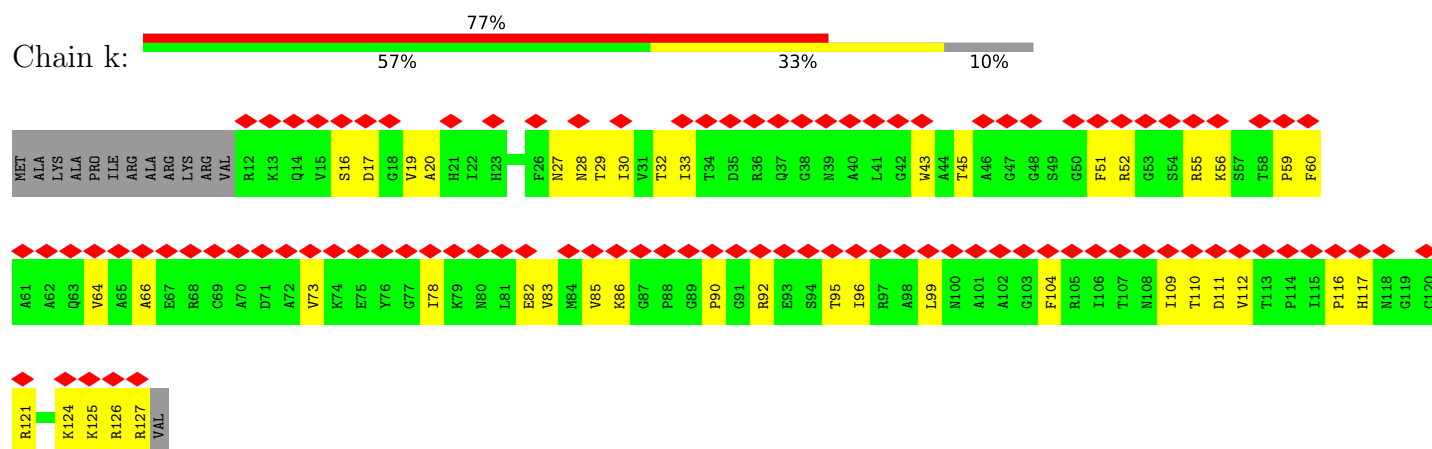
- Molecule 42: 30S ribosomal protein S9



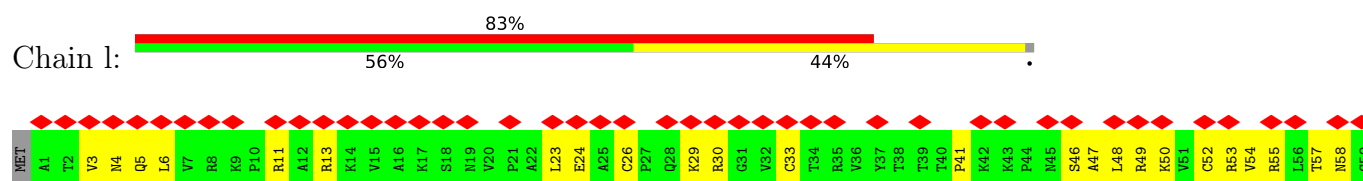
- Molecule 43: 30S ribosomal protein S10

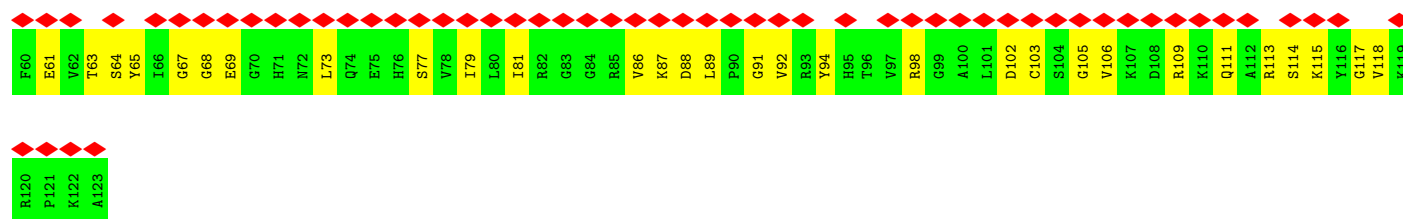


- Molecule 44: 30S ribosomal protein S11

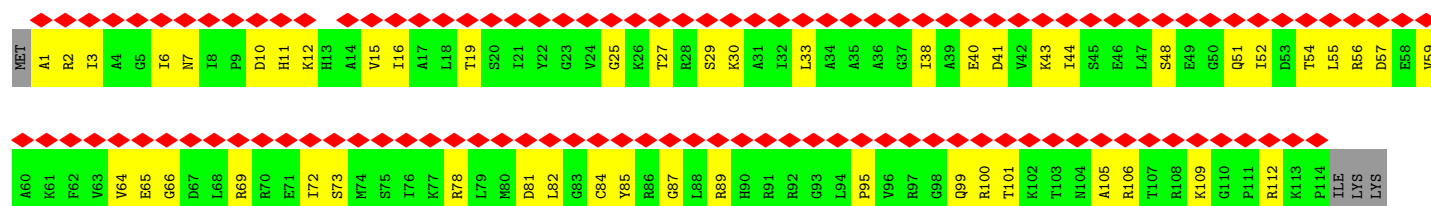


- Molecule 45: 30S ribosomal protein S12

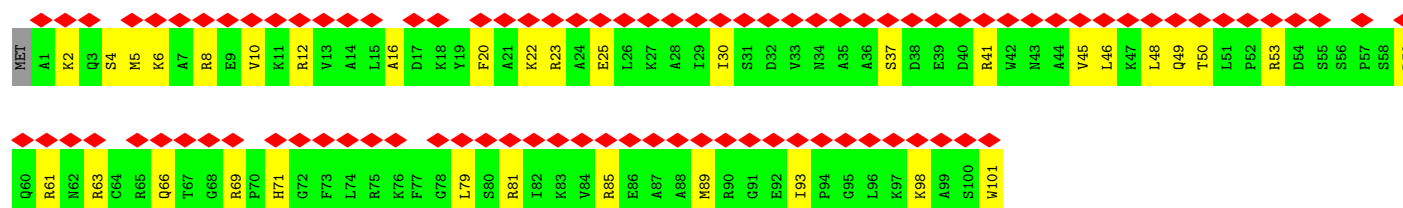




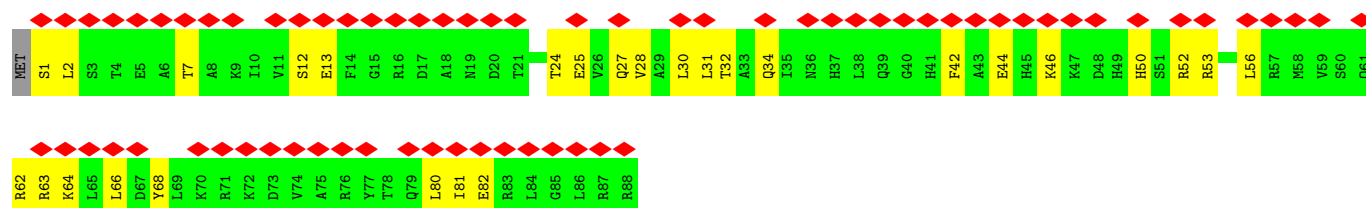
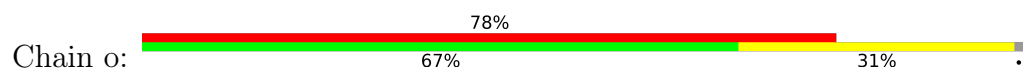
• Molecule 46: 30S ribosomal protein S13



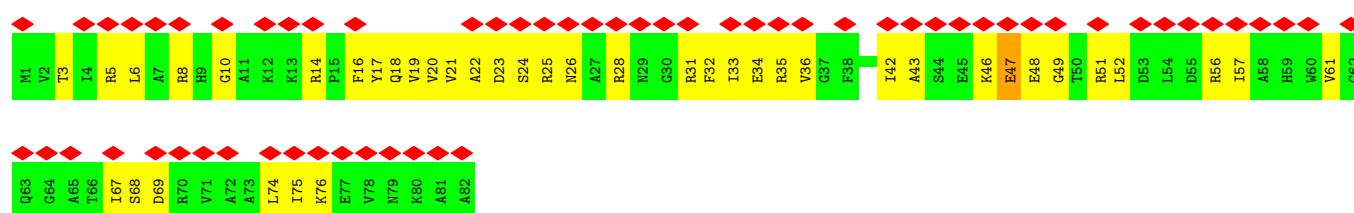
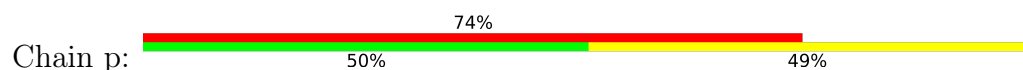
• Molecule 47: 30S ribosomal protein S14



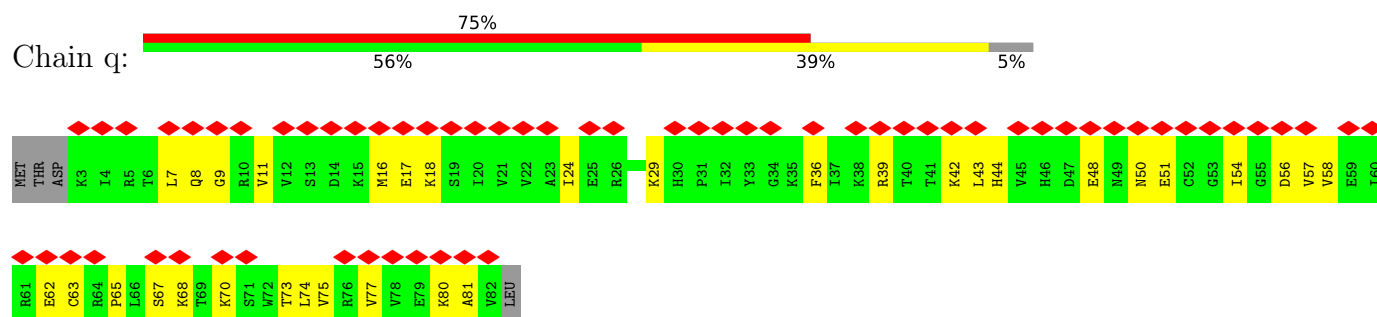
• Molecule 48: 30S ribosomal protein S15



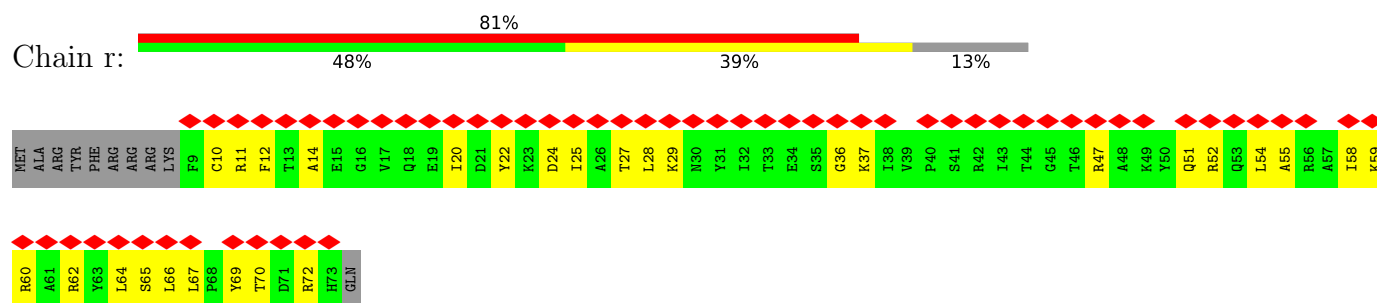
• Molecule 49: 30S ribosomal protein S16



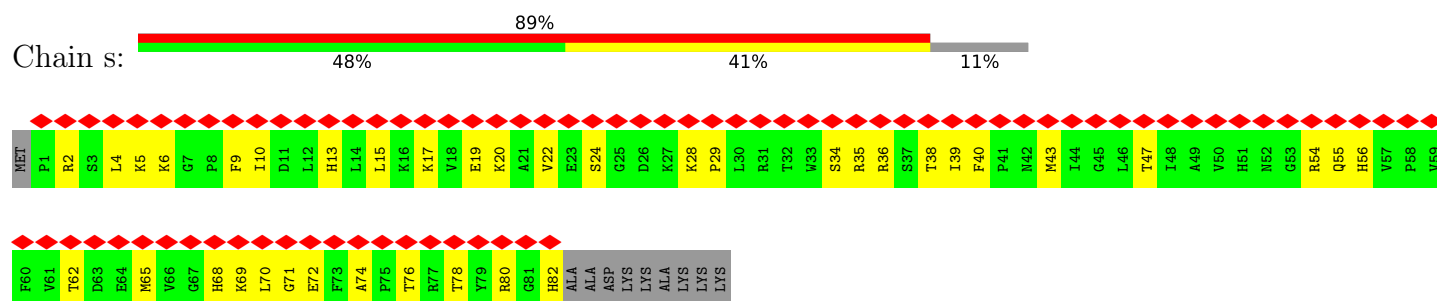
- Molecule 50: 30S ribosomal protein S17



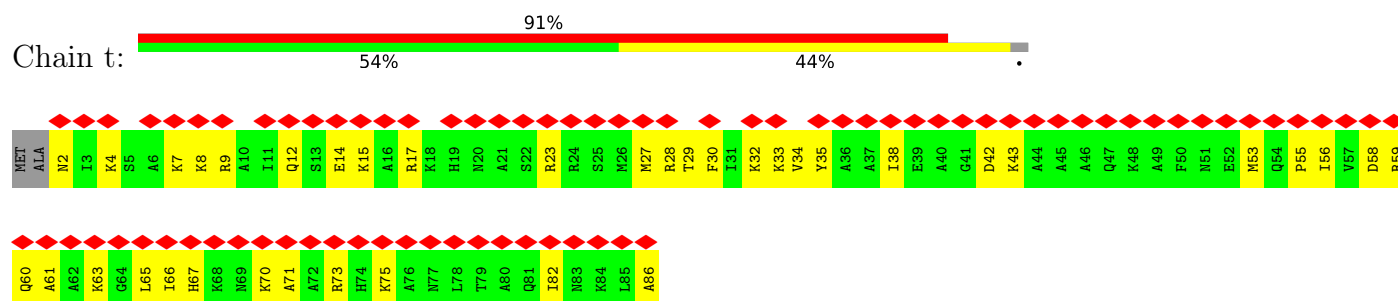
- Molecule 51: 30S ribosomal protein S18



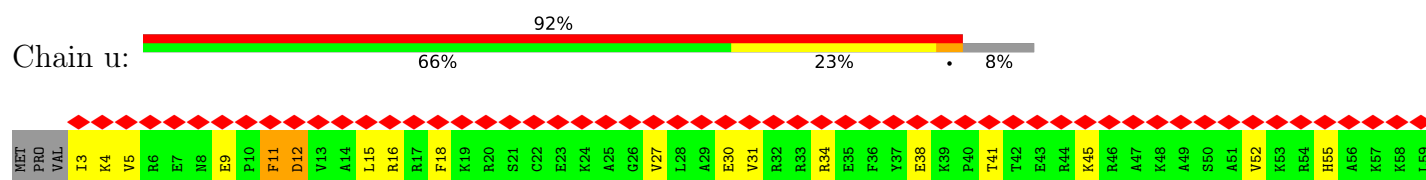
- Molecule 52: 30S ribosomal protein S19

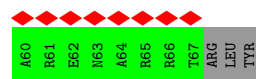


- Molecule 53: 30S ribosomal protein S20

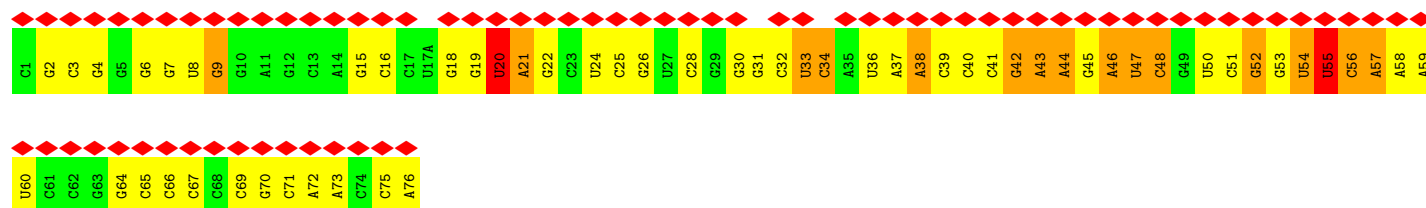


- Molecule 54: 30S ribosomal protein S21

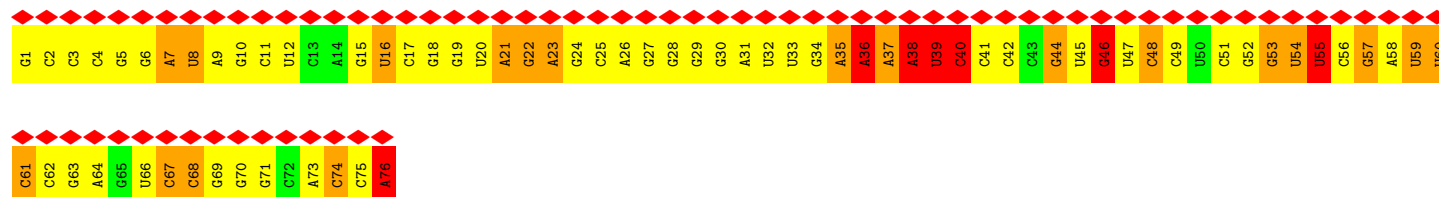
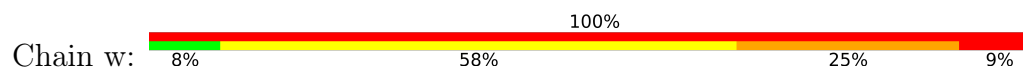




• Molecule 55: P-site tRNA(fMet)



• Molecule 56: P-site fMet-Phe-tRNA(Phe)





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	9108	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 ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1200	Depositor
Magnification	59000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	12.254	Depositor
Minimum map value	-7.636	Depositor
Average map value	0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	4	Depositor
Map size (Å)	334.08, 334.08, 334.08	wwPDB
Map dimensions	288, 288, 288	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.16, 1.16, 1.16	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: G7M, PO4, GDP, H2U, MIA, OMU, 6MZ, 5MU, OMG, 4SU, MA6, 3TD, FME, 2MG, PSU, 4OC, AM2, 5MC, 2MA, 1MG, OMC, UR3

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	0	0.38	0/450	0.56	0/599
2	1	0.29	0/416	0.43	0/554
3	2	0.41	0/380	0.63	0/498
4	3	0.52	0/513	0.73	0/676
5	4	0.34	0/303	0.57	0/397
6	5	0.21	0/646	0.57	1/898 (0.1%)
7	6	0.58	0/531	0.83	0/709
8	A	0.39	1/69266 (0.0%)	0.44	11/108055 (0.0%)
9	B	0.33	0/2873	0.39	0/4478
10	C	0.42	0/2121	0.58	0/2852
11	D	0.40	0/1586	0.56	0/2134
12	E	0.40	0/1571	0.56	0/2113
13	F	0.29	0/1434	0.54	0/1926
14	G	0.30	0/1343	0.48	0/1816
15	H	0.23	0/1122	0.61	0/1515
16	I	0.21	0/692	0.60	0/960
17	J	0.37	0/1152	0.52	0/1551
18	K	0.38	0/947	0.63	0/1268
19	L	0.39	0/1054	0.62	0/1403
20	M	0.36	0/1093	0.53	0/1460
21	N	0.42	0/973	0.62	0/1301
22	O	0.33	0/902	0.54	0/1209
23	P	0.38	0/929	0.53	0/1242
24	Q	0.46	0/960	0.58	0/1278
25	R	0.49	0/829	0.72	0/1107
26	S	0.39	0/864	0.59	0/1156
27	T	0.35	0/744	0.58	0/994
28	U	0.48	0/787	0.80	2/1051 (0.2%)
29	V	0.35	0/766	0.49	0/1025
30	W	0.40	0/582	0.53	0/769
31	X	0.43	1/635 (0.2%)	0.59	2/848 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Y	0.32	0/510	0.64	2/677 (0.3%)
33	Z	0.37	0/453	0.49	0/605
34	a	0.33	0/36725	0.41	5/57285 (0.0%)
35	b	0.27	0/1735	0.53	0/2338
36	c	0.32	1/1651 (0.1%)	0.53	2/2225 (0.1%)
37	d	0.29	0/1665	0.58	0/2227
38	e	0.31	0/1154	0.51	0/1554
39	f	0.27	0/835	0.48	0/1128
40	g	0.24	0/1195	0.49	0/1602
41	h	0.35	0/989	0.54	0/1326
42	i	0.29	0/1034	0.56	0/1375
43	j	0.29	0/796	0.60	0/1077
44	k	0.33	0/885	0.54	0/1195
45	l	0.33	0/969	0.56	0/1300
46	m	0.26	0/892	0.56	0/1193
47	n	0.26	0/811	0.46	0/1081
48	o	0.32	0/722	0.50	0/964
49	p	0.34	0/659	0.54	0/884
50	q	0.31	0/657	0.52	0/881
51	r	0.28	0/544	0.54	0/731
52	s	0.27	0/675	0.63	1/908 (0.1%)
53	t	0.28	0/671	0.45	0/888
54	u	0.27	0/512	0.66	2/683 (0.3%)
55	v	0.30	0/1745	0.41	0/2716
56	w	0.45	2/1650 (0.1%)	0.69	10/2569 (0.4%)
57	x	0.38	0/5546	0.69	5/7504 (0.1%)
58	y	0.42	0/11	3.32	1/13 (7.7%)
59	z	1.03	1/255 (0.4%)	2.01	13/394 (3.3%)
All	All	0.36	6/164410 (0.0%)	0.49	57/245165 (0.0%)

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
59	z	1	A	O3'-P	-8.58	1.48	1.61
56	w	34	G	O3'-P	-7.46	1.50	1.61
8	A	2029	G	C3'-O3'	5.26	1.50	1.42
31	X	28	PHE	C-N	-5.22	1.25	1.33
56	w	76	A	C3'-O3'	5.09	1.49	1.42
36	c	14	VAL	C-N	-5.03	1.25	1.33

All (57) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	z	3	G	C2'-C3'-O3'	-12.60	94.80	113.70
8	A	1918	A	C1'-C2'-O2'	-12.45	93.13	111.80
59	z	5	U	C1'-C2'-O2'	-11.40	91.29	108.40
58	y	102	PHE	CA-CB-CG	11.23	125.03	113.80
56	w	40	C	C2'-C3'-O3'	10.32	129.18	113.70
34	a	1493	A	C1'-C2'-O2'	-10.27	93.00	108.40
57	x	402	PRO	N-CA-C	-10.21	91.44	112.47
59	z	2	U	C2'-C3'-O3'	-9.96	98.75	113.70
59	z	4	U	C2'-C3'-O3'	-9.70	99.16	113.70
34	a	1494	G	C2'-C3'-O3'	-8.94	100.29	113.70
59	z	6	U	C4'-C3'-O3'	8.72	126.08	113.00
8	A	1914	C	C2'-C3'-O3'	8.47	126.41	113.70
56	w	76	A	C4'-C3'-O3'	-7.91	101.13	113.00
34	a	1493	A	C2'-C3'-O3'	-7.88	101.88	113.70
57	x	406	GLU	N-CA-C	7.80	119.78	111.28
56	w	34	G	C2'-C3'-O3'	-7.72	102.12	113.70
59	z	4	U	C1'-C2'-O2'	7.53	119.69	108.40
56	w	40	C	C4'-C3'-O3'	-7.04	102.44	113.00
8	A	1913	A	C4'-C3'-O3'	-6.84	99.14	109.40
59	z	3	G	C3'-C2'-O2'	-6.79	100.51	110.70
56	w	40	C	C5'-C4'-C3'	-6.77	105.84	116.00
8	A	1918	A	C3'-C2'-O2'	6.37	124.15	114.60
56	w	35	A	C4'-C3'-O3'	-6.14	103.79	113.00
56	w	36	A	C2'-C3'-O3'	-6.10	104.55	113.70
8	A	1916	A	C2'-C3'-O3'	-6.10	100.35	109.50
28	U	97	SER	CA-C-O	-6.08	114.79	121.84
28	U	15	GLY	CA-C-O	-6.03	117.21	122.16
8	A	1913	A	C3'-C2'-O2'	5.95	123.52	114.60
31	X	28	PHE	CA-C-N	-5.92	112.08	120.49
31	X	28	PHE	C-N-CA	-5.92	112.08	120.49
54	u	11	PHE	CA-C-N	5.89	132.80	121.54
54	u	11	PHE	C-N-CA	5.89	132.80	121.54
36	c	14	VAL	CA-C-N	-5.84	113.49	121.61
36	c	14	VAL	C-N-CA	-5.84	113.49	121.61
56	w	33	U	C3'-C2'-O2'	-5.84	101.94	110.70
59	z	5	U	C2'-C3'-O3'	5.79	122.38	113.70
34	a	1494	G	C1'-C2'-O2'	-5.66	99.91	108.40
8	A	894	U	C2'-C3'-O3'	5.64	117.97	109.50
57	x	407	ARG	N-CA-C	5.63	119.41	109.96
59	z	7	G	C4'-C3'-C2'	-5.62	96.98	102.60
34	a	1492	A	C2'-C3'-O3'	-5.58	105.33	113.70
56	w	34	G	C4'-C3'-O3'	-5.56	104.65	113.00
8	A	1913	A	C1'-C2'-O2'	-5.56	103.46	111.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
59	z	0	U	C3'-C2'-O2'	-5.56	102.36	110.70
32	Y	18	LEU	CA-C-N	5.53	132.11	121.54
32	Y	18	LEU	C-N-CA	5.53	132.11	121.54
59	z	7	G	C3'-C2'-C1'	-5.50	95.80	101.30
52	s	24	SER	N-CA-C	5.47	116.86	110.41
8	A	2029	G	C2'-C3'-O3'	5.43	121.85	113.70
57	x	693	VAL	N-CA-C	-5.29	107.59	112.83
59	z	2	U	O4'-C1'-C2'	-5.29	102.31	107.60
57	x	698	ILE	N-CA-C	-5.19	105.33	110.62
56	w	38	A	C4'-C3'-O3'	-5.18	105.23	113.00
59	z	-2	A	C4'-C3'-O3'	5.18	120.76	113.00
8	A	1914	C	C4'-C3'-O3'	5.05	120.58	113.00
8	A	1916	A	C3'-C2'-O2'	5.04	122.17	114.60
6	5	77	VAL	N-CA-C	-5.00	107.46	111.91

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	0	444	0	461	16	0
2	1	409	0	440	20	0
3	2	377	0	418	16	0
4	3	504	0	574	26	0
5	4	302	0	340	8	0
6	5	647	0	336	13	0
7	6	522	0	522	22	0
8	A	62339	0	31373	2530	0
9	B	2570	0	1301	107	0
10	C	2082	0	2157	111	0
11	D	1565	0	1616	69	0
12	E	1552	0	1619	71	0
13	F	1410	0	1447	67	0
14	G	1323	0	1374	41	0
15	H	1111	0	1148	48	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	I	693	0	347	22	0
17	J	1129	0	1162	54	0
18	K	938	0	1012	36	0
19	L	1045	0	1117	52	0
20	M	1074	0	1157	53	0
21	N	960	0	1000	49	0
22	O	892	0	923	42	0
23	P	917	0	965	40	0
24	Q	947	0	1022	51	0
25	R	816	0	839	26	0
26	S	857	0	922	38	0
27	T	738	0	807	28	0
28	U	779	0	834	26	0
29	V	753	0	780	37	0
30	W	575	0	592	26	0
31	X	625	0	655	37	0
32	Y	509	0	543	17	0
33	Z	449	0	491	14	0
34	a	33050	0	16655	1460	0
35	b	1704	0	1732	76	0
36	c	1624	0	1699	75	0
37	d	1643	0	1710	81	0
38	e	1141	0	1170	47	0
39	f	817	0	808	62	0
40	g	1181	0	1240	55	0
41	h	979	0	1034	37	0
42	i	1022	0	1070	59	0
43	j	786	0	828	55	0
44	k	869	0	878	42	0
45	l	955	0	1019	49	0
46	m	883	0	944	49	0
47	n	799	0	841	36	0
48	o	714	0	737	23	0
49	p	649	0	666	35	0
50	q	648	0	691	24	0
51	r	535	0	552	30	0
52	s	658	0	685	36	0
53	t	665	0	714	32	0
54	u	506	0	502	19	0
55	v	1642	0	839	67	0
56	w	1631	0	838	65	0
57	x	5444	0	5418	258	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
58	y	21	0	19	3	0
59	z	230	0	116	11	0
60	a	37	0	41	0	0
61	x	5	0	0	2	0
62	x	28	0	12	3	0
All	All	152719	0	103752	5961	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 23.

All (5961) 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)
34:a:1054:C:OP2	34:a:1197:A:P	1.98	1.22
34:a:1417:G:N2	34:a:1483:A:C6	2.09	1.21
8:A:1915:3TD:C1'	8:A:1915:3TD:O4'	1.64	1.19
8:A:1071:G:N2	8:A:1089:A:C6	2.19	1.11
34:a:1500:A:OP1	34:a:1508:A:OP1	1.71	1.09
8:A:196:A:N6	8:A:831:G:H21	1.49	1.07
8:A:948:C:OP1	8:A:962:G:OP1	1.71	1.05
34:a:1054:C:OP2	34:a:1197:A:OP1	1.74	1.04
34:a:1417:G:C2	34:a:1483:A:N6	2.27	1.02
34:a:1500:A:OP2	34:a:1505:G:OP2	1.77	1.02
10:C:52:HIS:NE2	10:C:218:THR:HG23	1.75	1.01
34:a:979:C:OP1	34:a:981:U:O4	1.78	1.00
8:A:776:G:O6	8:A:2072:C:OP1	1.78	1.00
34:a:1417:G:HO2'	34:a:1418:A:H8	1.00	0.99
34:a:416:G:H1	34:a:427:U:H3	1.06	0.98
8:A:196:A:H61	8:A:831:G:N2	1.60	0.98
8:A:1864:U:H3	8:A:1878:G:H1	1.01	0.98
8:A:1056:G:C2	8:A:1103:A:C5	2.52	0.98
8:A:284:U:H3	8:A:356:G:H1	1.00	0.98
8:A:1352:U:H3	8:A:1378:A:H62	1.06	0.97
50:q:63:CYS:HG	50:q:73:THR:HG1	1.11	0.95
32:Y:19:LEU:HA	32:Y:22:LEU:HB2	1.50	0.94
8:A:2028:U:H3	8:A:2033:A:H62	1.09	0.94
8:A:1252:G:H22	24:Q:36:GLN:HE21	1.15	0.93
34:a:663:A:H61	34:a:742:G:H1	1.17	0.93
8:A:1071:G:N2	8:A:1089:A:N6	2.16	0.92
57:x:617:LYS:HB2	57:x:684:LEU:HB2	1.51	0.92
8:A:196:A:H61	8:A:831:G:H21	0.97	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1056:G:N2	8:A:1103:A:C4	2.37	0.92
38:e:54:GLU:HG3	38:e:56:PRO:HD2	1.50	0.91
34:a:1009:U:H3	34:a:1020:G:H1	1.15	0.91
8:A:1408:G:H1	8:A:1594:U:H3	1.16	0.90
56:w:5:G:N2	56:w:68:C:O2	2.02	0.90
8:A:1770:G:H1	8:A:1982:U:H3	1.14	0.90
34:a:1054:C:OP2	34:a:1197:A:OP2	1.90	0.90
8:A:1869:G:N2	8:A:1872:A:N7	2.19	0.89
8:A:2111:U:HO2'	8:A:2118:U:HO2'	1.14	0.88
8:A:776:G:C6	8:A:2072:C:OP1	2.26	0.88
17:J:114:LEU:HG	17:J:118:MET:HE2	1.55	0.88
19:L:20:GLY:HA2	19:L:28:GLY:HA2	1.55	0.88
8:A:285:G:H1	8:A:355:U:H3	0.93	0.88
8:A:1053:C:O2	8:A:1106:G:N2	2.06	0.88
8:A:2070:A:H2'	8:A:2071:A:H8	1.37	0.88
34:a:674:G:H2'	34:a:675:A:H8	1.37	0.87
34:a:202:G:H1	34:a:215:C:H41	1.18	0.87
8:A:457:A:N7	8:A:472:A:N6	2.24	0.86
8:A:1306:C:H2'	8:A:1307:A:H8	1.39	0.86
8:A:1053:C:N3	8:A:1106:G:N1	2.23	0.85
16:I:31:GLY:HA2	57:x:646:SER:HB3	1.58	0.85
56:w:63:G:H2'	56:w:64:A:H8	1.42	0.85
20:M:75:GLU:HB2	20:M:90:GLU:HG3	1.57	0.85
8:A:781:A:OP1	10:C:216:ARG:NH2	2.09	0.85
34:a:410:G:H21	34:a:432:A:H62	1.24	0.84
8:A:279:A:C8	8:A:361:G:N2	2.45	0.84
9:B:18:G:H1	9:B:65:U:H3	1.23	0.84
34:a:1131:G:O6	34:a:1143:G:N2	2.10	0.84
56:w:6:G:N1	56:w:67:C:N3	2.26	0.84
9:B:52:A:N7	22:O:33:ARG:NH2	2.24	0.84
8:A:1056:G:N2	8:A:1103:A:C5	2.45	0.84
52:s:40:PHE:H	52:s:43:MET:HE3	1.43	0.84
8:A:1265:A:H61	8:A:2013:A:H5''	1.42	0.83
34:a:1417:G:C2	34:a:1483:A:C6	2.65	0.83
8:A:1071:G:H21	8:A:1089:A:N6	1.73	0.83
8:A:1039:A:H61	8:A:1116:G:H1	1.24	0.83
45:l:68:GLY:HA3	45:l:106:VAL:HG11	1.58	0.83
20:M:21:ALA:HB2	20:M:97:GLN:HB2	1.59	0.83
8:A:2292:U:H2'	8:A:2293:G:H8	1.42	0.82
12:E:117:ARG:NH2	12:E:183:PHE:O	2.12	0.82
34:a:501:C:OP1	45:l:113:ARG:NH2	2.11	0.82

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:3:7:ARG:NH2	8:A:245:G:N7	2.27	0.82
8:A:1564:C:OP2	10:C:25:LYS:NZ	2.12	0.82
34:a:932:C:H5'	40:g:3:ARG:HB2	1.61	0.82
57:x:86:ILE:HD12	57:x:105:LEU:HD21	1.62	0.82
7:6:62:LYS:HB3	7:6:63:ARG:NH2	1.94	0.82
34:a:146:G:N2	34:a:177:G:N7	2.28	0.82
34:a:1445:U:O2	34:a:1457:G:N2	2.12	0.82
52:s:62:THR:H	52:s:65:MET:HE3	1.44	0.82
14:G:41:GLU:HA	14:G:54:ARG:HH21	1.45	0.82
34:a:628:G:H2'	34:a:629:A:C8	2.15	0.82
57:x:626:ASN:HD22	57:x:673:THR:HA	1.45	0.82
37:d:12:ARG:HH21	37:d:37:PRO:HA	1.44	0.82
10:C:52:HIS:CE1	10:C:218:THR:HG23	2.15	0.82
34:a:1417:G:N2	34:a:1483:A:N6	2.26	0.82
8:A:511:U:H4'	8:A:1235:G:H4'	1.63	0.81
34:a:1307:U:O4	34:a:1331:G:N2	2.13	0.81
8:A:145:C:H2'	8:A:146:A:H8	1.44	0.81
8:A:240:C:O2	8:A:257:C:N4	2.13	0.81
8:A:277:G:O2'	8:A:361:G:O6	1.98	0.81
8:A:322:A:OP2	12:E:163:ASN:ND2	2.13	0.81
8:A:863:A:H2'	8:A:864:G:H8	1.46	0.81
8:A:1203:U:O2'	19:L:4:ASN:ND2	2.13	0.81
34:a:427:U:OP1	37:d:12:ARG:NH2	2.13	0.81
34:a:993:G:O2'	34:a:994:A:N7	2.12	0.81
34:a:1126:U:O4	43:j:9:ARG:NH1	2.14	0.81
55:v:71:C:H2'	55:v:72:A:C8	2.15	0.81
34:a:85:U:H5'	34:a:86:G:H5'	1.61	0.81
34:a:112:G:H21	34:a:354:G:H5'	1.44	0.81
8:A:447:A:OP1	24:Q:4:LYS:NZ	2.13	0.81
8:A:1827:U:OP2	10:C:220:ARG:NH1	2.14	0.81
8:A:2821:A:O3'	11:D:167:ASN:ND2	2.14	0.81
18:K:42:THR:HG22	18:K:57:VAL:HG22	1.62	0.81
34:a:116:A:OP2	34:a:289:G:OP2	1.99	0.81
28:U:85:ARG:NH2	28:U:87:GLU:OE1	2.13	0.81
34:a:406:G:N7	34:a:495:A:O2'	2.13	0.81
34:a:673:A:O3'	39:f:86:ARG:NH2	2.13	0.81
7:6:42:PRO:O	7:6:45:THR:O	1.98	0.80
8:A:1910:G:O6	8:A:1920:C:N4	2.13	0.80
8:A:856:G:H21	30:W:22:PHE:HD2	1.27	0.80
8:A:1848:A:N6	8:A:1894:C:O2	2.13	0.80
8:A:2090:A:N6	8:A:2230:G:O6	2.14	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:w:39:PSU:H4'	56:w:39:PSU:OP1	1.78	0.80
57:x:519:ILE:HB	57:x:575:ILE:HD11	1.61	0.80
8:A:2070:A:H2'	8:A:2071:A:C8	2.15	0.80
34:a:20:U:O2'	34:a:573:A:N6	2.13	0.80
8:A:2137:U:N3	8:A:2155:U:O2	2.15	0.80
42:i:11:ARG:HH11	42:i:12:LYS:HB2	1.47	0.80
56:w:40:C:H6	56:w:40:C:H5''	1.47	0.80
13:F:34:THR:HG22	13:F:89:THR:HG22	1.64	0.79
34:a:410:G:N2	34:a:432:A:H62	1.80	0.79
8:A:279:A:N7	8:A:361:G:N2	2.30	0.79
37:d:18:LEU:HD23	37:d:63:ILE:HG13	1.63	0.79
8:A:1068:G:N2	16:I:22:PRO:O	2.14	0.79
34:a:779:C:O2'	44:k:121:ARG:NH2	2.15	0.79
34:a:1396:A:OP1	34:a:1397:C:N4	2.14	0.79
8:A:1771:C:H2'	8:A:1772:A:H8	1.46	0.79
34:a:251:G:N2	34:a:254:G:N7	2.29	0.79
34:a:552:U:H2'	34:a:553:A:H8	1.45	0.79
8:A:521:U:H2'	8:A:522:A:H8	1.47	0.79
34:a:1414:U:H2'	34:a:1415:G:H8	1.48	0.79
8:A:2131:U:O2	8:A:2158:A:N6	2.16	0.79
34:a:107:G:OP1	34:a:325:A:N6	2.16	0.79
56:w:6:G:O6	56:w:67:C:N4	2.15	0.79
8:A:2250:G:O2'	8:A:2496:C:OP1	2.01	0.79
8:A:776:G:N1	8:A:2072:C:OP1	2.15	0.79
8:A:1095:A:N6	57:x:628:GLY:O	2.16	0.79
37:d:94:GLU:HA	37:d:99:ASN:HD22	1.48	0.79
57:x:640:MET:HB2	57:x:656:GLU:HB2	1.65	0.79
8:A:1039:A:N6	8:A:1116:G:H1	1.81	0.78
10:C:257:ARG:NH2	10:C:262:THR:OG1	2.17	0.78
13:F:118:ALA:HB1	13:F:166:ARG:HE	1.48	0.78
34:a:982:U:OP2	47:n:63:ARG:NH2	2.15	0.78
8:A:948:C:H2'	8:A:949:G:H8	1.49	0.78
15:H:47:PHE:HA	15:H:51:ARG:HG2	1.64	0.78
8:A:285:G:N2	8:A:355:U:O2	2.15	0.78
8:A:581:C:H2'	8:A:582:A:H8	1.49	0.78
45:l:11:ARG:O	45:l:13:ARG:NH1	2.17	0.78
8:A:1365:A:OP1	31:X:27:ARG:NH2	2.16	0.77
43:j:56:HIS:HD2	43:j:57:VAL:HG22	1.49	0.77
8:A:2246:G:H2'	8:A:2247:A:H8	1.45	0.77
34:a:1065:U:H5''	34:a:1190:G:H22	1.48	0.77
43:j:36:VAL:HG22	43:j:38:GLY:H	1.49	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:242:G:N2	8:A:255:A:OP2	2.16	0.77
57:x:8:ARG:NH2	57:x:79:GLU:OE1	2.16	0.77
57:x:93:ASP:HB3	57:x:464:HIS:HB2	1.64	0.77
8:A:1323:C:OP1	26:S:98:LYS:NZ	2.16	0.77
8:A:2123:G:N3	8:A:2176:A:N6	2.31	0.77
34:a:673:A:H2'	34:a:674:G:C8	2.19	0.77
39:f:90:MET:SD	51:r:60:ARG:NH1	2.57	0.77
57:x:13:GLY:H	57:x:108:ALA:HA	1.48	0.77
8:A:1996:C:OP1	18:K:31:ARG:NH1	2.18	0.77
34:a:1088:G:N2	34:a:1167:A:H61	1.81	0.77
34:a:263:A:OP1	53:t:73:ARG:NH1	2.18	0.77
34:a:674:G:H2'	34:a:675:A:C8	2.19	0.77
34:a:690:G:O6	44:k:52:ARG:NH2	2.18	0.77
36:c:18:ASN:O	36:c:39:ARG:NH2	2.17	0.77
36:c:149:LYS:HD3	36:c:168:ARG:HD3	1.67	0.77
8:A:1783:A:OP1	8:A:1784:A:OP2	2.03	0.77
34:a:1417:G:N2	34:a:1483:A:C5	2.52	0.77
2:1:27:ARG:NH2	55:v:66:C:OP1	2.18	0.77
8:A:970:U:H2'	8:A:971:G:H8	1.50	0.76
34:a:416:G:H2'	34:a:417:G:H8	1.49	0.76
34:a:1004:A:N1	34:a:1025:U:O2'	2.19	0.76
8:A:2075:U:H1'	8:A:2597:G:H21	1.48	0.76
34:a:1349:A:OP2	42:i:119:LYS:NZ	2.17	0.76
8:A:282:A:H2'	8:A:283:G:H8	1.50	0.76
8:A:636:G:N1	19:L:76:GLU:OE1	2.18	0.76
34:a:157:U:H3	34:a:164:G:H1	1.33	0.76
34:a:672:U:H5'	39:f:79:ARG:HH12	1.50	0.76
57:x:351:SER:OG	57:x:397:CYS:SG	2.43	0.76
8:A:450:G:N1	8:A:454:A:OP2	2.18	0.76
32:Y:9:LYS:HB3	32:Y:13:GLU:HG3	1.67	0.76
8:A:464:U:H1'	8:A:686:U:H5	1.49	0.76
2:1:20:TYR:HH	8:A:2347:C:HO2'	1.32	0.76
8:A:2111:U:H1'	8:A:2118:U:H1'	1.66	0.76
46:m:106:ARG:HD2	46:m:112:ARG:HE	1.49	0.76
8:A:1248:G:OP1	12:E:44:ARG:NH2	2.19	0.76
8:A:2328:A:H2'	8:A:2329:U:C6	2.21	0.76
56:w:68:C:H2'	56:w:69:G:C8	2.20	0.76
8:A:1950:G:N2	8:A:1957:C:O2	2.18	0.76
47:n:12:ARG:HH21	47:n:59:ARG:HH21	1.32	0.76
56:w:40:C:H5''	56:w:40:C:C6	2.21	0.76
8:A:302:C:H2'	8:A:303:G:H8	1.49	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:297:G:N2	34:a:300:A:OP2	2.18	0.75
34:a:691:G:O6	44:k:56:LYS:NZ	2.19	0.75
40:g:26:VAL:HG22	40:g:42:VAL:HG11	1.69	0.75
8:A:1852:U:O2	8:A:1889:A:N6	2.19	0.75
7:6:42:PRO:O	7:6:45:THR:C	2.28	0.75
8:A:1019:U:OP1	8:A:1035:U:O2'	2.04	0.75
41:h:27:PRO:O	41:h:32:LYS:NZ	2.18	0.75
34:a:1412:C:H2'	34:a:1413:A:C8	2.21	0.75
34:a:1417:G:O2'	34:a:1418:A:H5'	1.87	0.75
8:A:1314:C:OP1	8:A:1315:C:OP2	2.05	0.75
8:A:1597:A:H5''	8:A:1598:A:H5'	1.68	0.75
8:A:2258:C:O2'	8:A:2427:C:OP2	2.04	0.75
57:x:29:ILE:HD11	57:x:277:MET:HE1	1.68	0.75
57:x:493:ILE:HA	57:x:609:PRO:HA	1.69	0.75
8:A:284:U:O2	8:A:356:G:N2	2.17	0.74
8:A:1590:A:H2'	8:A:1591:A:C8	2.21	0.74
10:C:70:LYS:NZ	10:C:97:ASP:OD2	2.19	0.74
34:a:1144:G:H21	34:a:1146:A:H62	1.34	0.74
7:6:62:LYS:CB	7:6:63:ARG:NH2	2.50	0.74
8:A:1080:A:N6	8:A:1088:A:O4'	2.19	0.74
8:A:2474:U:H5''	8:A:2475:C:H5	1.52	0.74
34:a:1298:U:O2	34:a:1299:A:N6	2.20	0.74
8:A:1474:U:H3	8:A:1517:G:H1	1.32	0.74
8:A:1476:U:OP2	8:A:1514:G:N1	2.18	0.74
34:a:954:G:N2	34:a:1227:A:N1	2.34	0.74
57:x:392:THR:HG21	57:x:442:PRO:HG3	1.68	0.74
34:a:18:C:OP1	38:e:131:ASN:ND2	2.20	0.74
34:a:1261:A:N6	34:a:1274:A:O2'	2.19	0.74
35:b:13:VAL:HA	35:b:207:ARG:HD2	1.69	0.74
38:e:64:GLU:O	38:e:68:ARG:NH1	2.21	0.74
42:i:55:ASP:HB3	42:i:59:LYS:HG3	1.69	0.74
34:a:1312:G:H5'	52:s:4:LEU:HD11	1.69	0.74
57:x:187:MET:SD	57:x:218:HIS:ND1	2.60	0.74
8:A:465:G:H21	8:A:684:G:H1'	1.52	0.74
21:N:58:ASP:OD1	21:N:63:ARG:NH2	2.21	0.74
34:a:1426:G:H1	34:a:1474:U:H3	1.33	0.74
34:a:335:C:O2'	34:a:1433:A:N3	2.21	0.74
34:a:521:G:N7	45:l:49:ARG:NH1	2.35	0.74
3:2:25:LYS:NZ	8:A:210:C:OP1	2.21	0.74
31:X:40:GLU:HG2	31:X:43:LYS:HE2	1.68	0.74
34:a:1088:G:H21	34:a:1167:A:H61	1.34	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:990:A:N1	25:R:78:ARG:NH1	2.36	0.74
8:A:2899:A:H5'	17:J:136:GLN:HE21	1.52	0.74
14:G:79:THR:HG23	14:G:80:GLU:HG2	1.70	0.73
30:W:33:ILE:HD11	30:W:57:ALA:HB2	1.70	0.73
8:A:1114:C:H2'	8:A:1115:G:C8	2.23	0.73
8:A:2215:C:H2'	8:A:2216:G:H8	1.52	0.73
8:A:2246:G:H2'	8:A:2247:A:C8	2.23	0.73
34:a:1445:U:H3	34:a:1457:G:H1	1.36	0.73
3:2:34:ARG:NH2	3:2:41:ARG:O	2.20	0.73
8:A:714:U:O2'	8:A:716:A:N7	2.19	0.73
34:a:701:U:O2	34:a:703:G:N2	2.21	0.73
40:g:29:LEU:HD11	40:g:119:LEU:HD21	1.71	0.73
52:s:28:LYS:HD2	52:s:29:PRO:HD2	1.69	0.73
34:a:253:A:OP1	50:q:68:LYS:NZ	2.18	0.73
34:a:201:G:H2'	34:a:202:G:H8	1.53	0.73
34:a:664:G:H22	34:a:741:G:H22	1.36	0.73
8:A:1080:A:O2'	8:A:1082:U:O4	2.07	0.73
34:a:718:A:O2'	54:u:34:ARG:NH1	2.22	0.73
34:a:1356:G:H2'	34:a:1357:A:C8	2.23	0.73
34:a:1377:A:OP1	40:g:91:ARG:NH2	2.21	0.73
57:x:424:LYS:HA	57:x:427:GLN:HE21	1.51	0.73
34:a:1500:A:H5''	34:a:1508:A:H5''	1.70	0.73
8:A:1044:C:O2'	8:A:1111:A:N1	2.21	0.73
8:A:1352:U:H3	8:A:1378:A:N6	1.83	0.73
32:Y:19:LEU:HG	32:Y:23:ARG:HH12	1.53	0.73
34:a:671:G:O3'	39:f:79:ARG:NH2	2.21	0.73
8:A:1019:U:H3	8:A:1142:A:H62	1.34	0.72
34:a:438:U:H3	34:a:496:A:H62	1.35	0.72
8:A:990:A:OP2	8:A:991:C:OP2	2.07	0.72
34:a:1088:G:H21	34:a:1167:A:N6	1.88	0.72
43:j:35:GLN:NE2	43:j:78:GLU:O	2.22	0.72
8:A:2142:A:N6	8:A:2150:C:O2	2.22	0.72
34:a:130:A:N6	34:a:233:C:O2	2.22	0.72
34:a:405:U:OP2	37:d:2:ARG:NH1	2.23	0.72
34:a:1149:C:H2'	34:a:1150:A:H8	1.54	0.72
36:c:19:SER:OG	36:c:39:ARG:NH2	2.19	0.72
8:A:1724:G:O6	8:A:1737:G:N2	2.16	0.72
8:A:2202:U:H3	8:A:2221:G:H1	1.37	0.72
8:A:746:PSU:O2'	8:A:2611:C:O2'	2.05	0.72
8:A:2117:A:N1	8:A:2170:A:N6	2.38	0.72
34:a:380:G:N2	34:a:383:A:OP2	2.19	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:324:A:OP2	8:A:1205:A:N6	2.21	0.72
34:a:269:C:H2'	34:a:270:A:H8	1.55	0.72
5:4:2:LYS:NZ	8:A:2478:A:OP2	2.23	0.72
34:a:1255:G:N2	34:a:1259:C:O2	2.22	0.72
41:h:42:GLU:HG3	41:h:100:ILE:HG21	1.71	0.72
34:a:980:C:OP2	34:a:981:U:O4	2.08	0.72
34:a:837:U:O2	34:a:849:G:O6	2.07	0.72
8:A:1670:C:H2'	8:A:1671:U:O4'	1.90	0.72
9:B:13:G:N2	9:B:69:G:O2'	2.23	0.72
8:A:1306:C:H2'	8:A:1307:A:C8	2.25	0.71
8:A:1428:C:N4	8:A:1570:A:OP2	2.22	0.71
8:A:1779:U:O2	8:A:1783:A:N6	2.22	0.71
15:H:62:LEU:HG	15:H:66:ASN:HD21	1.54	0.71
17:J:12:LYS:O	17:J:41:LYS:NZ	2.22	0.71
44:k:116:PRO:HG2	54:u:34:ARG:HH21	1.55	0.71
8:A:1192:G:OP2	19:L:17:LYS:NZ	2.22	0.71
8:A:1734:G:H2'	8:A:1735:A:H8	1.54	0.71
8:A:2591:C:H2'	8:A:2592:G:H8	1.54	0.71
10:C:260:LYS:O	10:C:264:LYS:NZ	2.24	0.71
13:F:43:ILE:HG21	13:F:78:ILE:HG22	1.72	0.71
4:3:63:TYR:OH	8:A:592:A:O2'	2.07	0.71
8:A:1614:A:N6	26:S:92:ARG:O	2.18	0.71
34:a:416:G:N2	34:a:427:U:O2	2.19	0.71
7:6:18:CYS:HB2	7:6:40:CYS:HB3	1.71	0.71
23:P:59:THR:HG22	23:P:72:VAL:HG22	1.72	0.71
57:x:11:ASN:OD1	57:x:84:ASN:ND2	2.20	0.71
8:A:1418:G:N1	8:A:1579:A:OP2	2.24	0.71
15:H:68:ARG:NH1	15:H:70:GLU:OE2	2.22	0.71
56:w:26:A:H61	56:w:44:G:H1	1.38	0.71
8:A:2548:U:O2	18:K:23:LYS:NZ	2.23	0.71
8:A:2865:U:OP2	8:A:2866:U:O2'	2.09	0.71
49:p:57:ILE:HD13	49:p:75:ILE:HD11	1.72	0.71
5:4:24:ARG:NH1	8:A:2742:G:OP2	2.24	0.71
6:5:27:VAL:H	6:5:83:ALA:H	1.39	0.71
8:A:1093:G:O2'	8:A:1094:U:OP1	2.06	0.71
15:H:101:ASP:OD1	15:H:102:ALA:N	2.24	0.71
34:a:1522:U:H2'	34:a:1523:G:H8	1.56	0.71
8:A:1050:A:H2'	8:A:1051:G:H8	1.55	0.71
34:a:1006:G:O6	34:a:1022:A:N1	2.23	0.71
8:A:1604:C:O2'	8:A:1610:A:N1	2.23	0.71
37:d:94:GLU:OE2	37:d:103:ARG:NH2	2.22	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:x:583:HIS:HB3	57:x:585:VAL:HG22	1.72	0.71
8:A:1801:A:N6	8:A:2201:G:O2'	2.22	0.71
8:A:2109:U:O2	8:A:2181:U:N3	2.24	0.71
8:A:2292:U:H2'	8:A:2293:G:C8	2.25	0.71
34:a:147:G:H2'	34:a:148:G:C8	2.25	0.71
34:a:776:G:N2	34:a:802:A:OP2	2.23	0.71
57:x:53:GLU:HA	57:x:56:GLN:HB2	1.71	0.71
56:w:63:G:H2'	56:w:64:A:C8	2.25	0.70
8:A:1590:A:H2'	8:A:1591:A:H8	1.54	0.70
10:C:38:LYS:NZ	10:C:55:GLY:O	2.23	0.70
15:H:90:LEU:O	15:H:123:ARG:NH1	2.23	0.70
46:m:52:ILE:HA	46:m:55:LEU:HD12	1.71	0.70
49:p:5:ARG:HH12	49:p:22:ALA:HB3	1.55	0.70
8:A:20:C:H2'	8:A:21:A:H8	1.56	0.70
8:A:685:A:O2'	8:A:773:U:O4	2.05	0.70
8:A:1056:G:N3	8:A:1103:A:C6	2.59	0.70
23:P:111:GLU:OE1	34:a:1441:A:N6	2.24	0.70
34:a:1232:U:H5''	42:i:125:GLN:HB3	1.71	0.70
34:a:1310:G:OP1	46:m:78:ARG:NH2	2.24	0.70
55:v:69:C:H2'	55:v:70:G:H8	1.57	0.70
8:A:527:C:N4	8:A:2043:C:OP2	2.24	0.70
8:A:547:A:H4'	8:A:548:G:C5	2.26	0.70
8:A:747:5MC:O2	8:A:2014:A:O2'	2.10	0.70
34:a:8:A:N6	37:d:201:GLU:O	2.25	0.70
46:m:59:VAL:HG13	46:m:64:VAL:HG11	1.73	0.70
8:A:181:A:H2'	8:A:182:A:C8	2.26	0.70
8:A:1052:C:N4	8:A:1107:G:O6	2.24	0.70
26:S:86:MET:HB2	26:S:96:ILE:HD11	1.74	0.70
34:a:56:U:O2'	57:x:361:ARG:NH1	2.24	0.70
34:a:235:C:H2'	34:a:236:A:C8	2.27	0.70
8:A:489:G:N7	26:S:49:LYS:NZ	2.40	0.70
8:A:863:A:H2'	8:A:864:G:C8	2.26	0.70
8:A:1196:C:H2'	8:A:1197:G:H8	1.56	0.70
8:A:2844:G:N2	8:A:2874:C:N3	2.39	0.70
34:a:1078:U:O2	38:e:134:ASN:ND2	2.22	0.70
35:b:87:ASP:O	35:b:88:GLN:NE2	2.25	0.70
8:A:993:G:OP2	24:Q:50:ARG:NH2	2.25	0.70
8:A:2100:G:N1	8:A:2189:U:O2	2.20	0.70
8:A:2103:C:N4	8:A:2185:U:O4	2.24	0.70
8:A:2312:U:OP1	13:F:70:ARG:N	2.22	0.70
31:X:48:LEU:HB3	31:X:50:VAL:HG13	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1152:A:OP1	43:j:70:HIS:ND1	2.25	0.70
53:t:55:PRO:HB2	53:t:59:ARG:HH22	1.57	0.70
8:A:2134:A:H2'	8:A:2135:A:O4'	1.92	0.70
8:A:2576:G:OP1	8:A:2577:A:OP1	2.10	0.70
34:a:938:A:N3	34:a:1376:U:O2'	2.25	0.70
39:f:29:ILE:HG22	39:f:34:GLY:HA3	1.73	0.70
8:A:743:A:O2'	8:A:1659:G:OP1	2.09	0.70
34:a:1316:G:N1	34:a:1319:A:OP2	2.23	0.70
50:q:63:CYS:SG	50:q:73:THR:OG1	2.38	0.70
57:x:28:ARG:NH1	57:x:40:GLY:O	2.25	0.70
8:A:581:C:H2'	8:A:582:A:C8	2.26	0.70
8:A:618:G:OP2	12:E:98:LYS:NZ	2.25	0.70
8:A:1071:G:N2	8:A:1089:A:N1	2.40	0.70
12:E:146:VAL:HG12	12:E:185:LYS:HB2	1.73	0.70
34:a:618:C:O2	34:a:622:A:N6	2.25	0.70
34:a:673:A:H2'	34:a:674:G:H8	1.56	0.70
8:A:2863:C:H2'	8:A:2864:G:H8	1.57	0.69
10:C:179:GLU:HB3	10:C:270:ARG:HB3	1.72	0.69
34:a:1391:U:H2'	34:a:1392:G:H8	1.55	0.69
39:f:5:GLU:HA	39:f:63:ASN:HA	1.74	0.69
42:i:122:ARG:NH2	42:i:125:GLN:OE1	2.25	0.69
46:m:105:ALA:O	46:m:109:LYS:HB2	1.91	0.69
8:A:1779:U:N3	8:A:1783:A:N7	2.40	0.69
8:A:2659:G:N2	8:A:2662:A:OP2	2.22	0.69
34:a:261:U:OP2	53:t:73:ARG:NH2	2.24	0.69
34:a:842:U:H4'	34:a:846:G:N1	2.06	0.69
8:A:217:A:N6	8:A:431:U:O2	2.25	0.69
8:A:2215:C:H2'	8:A:2216:G:C8	2.27	0.69
8:A:2822:G:O6	21:N:2:ARG:NH1	2.23	0.69
10:C:140:VAL:HG11	10:C:189:ALA:HB1	1.73	0.69
34:a:235:C:H2'	34:a:236:A:H8	1.56	0.69
34:a:765:G:N1	34:a:812:G:O2'	2.19	0.69
34:a:1156:G:N2	34:a:1179:A:C2	2.61	0.69
8:A:1666:G:N1	8:A:1995:U:O4	2.26	0.69
17:J:11:VAL:HG11	17:J:50:THR:HA	1.74	0.69
36:c:59:PRO:HB3	43:j:94:ALA:HA	1.73	0.69
8:A:2313:C:H2'	8:A:2314:A:H8	1.56	0.69
34:a:979:C:P	34:a:981:U:O4	2.51	0.69
8:A:1853:A:H2'	8:A:1854:A:C8	2.27	0.69
8:A:2192:U:H2'	8:A:2193:G:H8	1.57	0.69
17:J:56:VAL:HB	17:J:124:VAL:HG23	1.73	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:79:G:C2	34:a:90:C:C2	2.80	0.69
8:A:730:A:OP1	8:A:1775:U:O2'	2.08	0.69
8:A:1056:G:C2	8:A:1103:A:N7	2.60	0.69
8:A:1143:A:N7	17:J:27:ARG:NH1	2.41	0.69
8:A:2820:A:OP2	21:N:2:ARG:NH1	2.24	0.69
19:L:85:VAL:HG11	19:L:90:VAL:HG22	1.73	0.69
39:f:10:VAL:HG21	39:f:18:VAL:HG21	1.75	0.69
47:n:41:ARG:NH2	52:s:5:LYS:O	2.26	0.69
1:0:5:ASN:HD22	8:A:2022:U:H3	1.40	0.69
8:A:975:A:H1'	8:A:990:A:C6	2.28	0.69
8:A:1084:A:O2'	8:A:1105:U:O2	2.11	0.69
8:A:2547:A:H2'	8:A:2548:U:C6	2.28	0.69
18:K:64:ARG:NE	23:P:67:GLU:OE1	2.26	0.69
20:M:69:PRO:HA	20:M:94:ALA:HB2	1.75	0.69
34:a:526:C:OP2	45:l:87:LYS:NZ	2.17	0.69
34:a:663:A:N6	34:a:742:G:H1	1.89	0.69
34:a:1077:G:N2	34:a:1080:A:OP2	2.22	0.69
44:k:110:THR:HG22	54:u:4:LYS:HA	1.75	0.69
45:l:55:ARG:NH2	45:l:61:GLU:OE2	2.25	0.69
34:a:464:U:N3	34:a:467:U:OP2	2.26	0.69
34:a:1226:C:O2'	46:m:109:LYS:NZ	2.21	0.69
53:t:43:LYS:NZ	53:t:82:ILE:O	2.26	0.69
8:A:224:U:O4	8:A:419:U:O2'	2.11	0.69
8:A:471:A:OP1	12:E:79:ARG:NH2	2.26	0.69
8:A:2028:U:O4	8:A:2033:A:N7	2.26	0.69
24:Q:49:ARG:O	24:Q:53:LYS:NZ	2.26	0.69
43:j:40:ILE:HB	43:j:73:LEU:HB3	1.75	0.69
44:k:124:LYS:HG3	44:k:125:LYS:H	1.57	0.69
15:H:84:ALA:HB2	15:H:90:LEU:HD23	1.74	0.68
34:a:881:G:OP2	45:l:5:GLN:NE2	2.26	0.68
34:a:999:C:N3	34:a:1042:A:N6	2.41	0.68
8:A:514:A:H2'	8:A:515:A:C8	2.28	0.68
8:A:956:G:H4'	20:M:82:MET:HE1	1.75	0.68
8:A:1633:G:N7	8:A:1635:A:N6	2.40	0.68
1:0:12:ARG:NH2	8:A:517:C:OP1	2.27	0.68
2:1:5:ARG:NH1	8:A:2285:C:OP2	2.25	0.68
8:A:1335:C:H2'	8:A:1336:A:H8	1.58	0.68
8:A:2718:G:O2'	8:A:2847:U:OP1	2.11	0.68
34:a:995:C:H42	34:a:1046:A:H1'	1.58	0.68
8:A:84:A:H62	8:A:101:A:H2	1.41	0.68
8:A:1798:U:H5''	10:C:257:ARG:HB2	1.73	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:F:111:ARG:NH2	13:F:133:GLU:OE2	2.26	0.68
34:a:1054:C:P	34:a:1197:A:OP1	2.51	0.68
35:b:17:HIS:ND1	35:b:187:ASP:OD2	2.26	0.68
8:A:134:G:H2'	8:A:135:U:C6	2.29	0.68
8:A:2320:U:O2'	8:A:2322:A:N6	2.26	0.68
8:A:2595:G:O6	10:C:238:ASN:ND2	2.27	0.68
34:a:78:A:H2'	34:a:79:G:C8	2.29	0.68
34:a:1026:G:N7	34:a:1028:C:N4	2.41	0.68
8:A:191:A:H2'	8:A:192:C:C6	2.28	0.68
8:A:1130:U:H3	11:D:152:PRO:HA	1.57	0.68
8:A:1926:U:O2'	8:A:1927:A:OP1	2.11	0.68
34:a:126:G:OP1	34:a:605:U:O2'	2.12	0.68
34:a:1241:G:H2'	34:a:1242:G:H8	1.59	0.68
57:x:33:THR:HG22	57:x:71:TRP:HB2	1.74	0.68
8:A:1653:G:OP1	8:A:2822:G:N1	2.26	0.68
34:a:363:A:N6	45:l:26:CYS:SG	2.66	0.68
49:p:18:GLN:OE1	49:p:35:ARG:NH1	2.27	0.68
8:A:1359:A:OP1	8:A:1360:G:OP2	2.12	0.68
8:A:1842:G:H2'	8:A:1843:C:H6	1.58	0.68
34:a:82:G:N2	34:a:89:U:OP2	2.26	0.68
9:B:8:C:O3'	22:O:25:ARG:NH1	2.27	0.68
34:a:1179:A:OP2	42:i:98:ARG:NH1	2.27	0.68
38:e:156:ARG:NH1	41:h:42:GLU:OE1	2.27	0.68
8:A:627:A:OP1	19:L:78:ARG:NH1	2.21	0.68
8:A:2562:U:H4'	18:K:25:LEU:HD22	1.73	0.68
8:A:2812:G:H2'	8:A:2813:A:H8	1.59	0.68
31:X:39:VAL:O	31:X:43:LYS:N	2.26	0.68
8:A:86:G:O2'	8:A:104:A:O2'	2.08	0.67
8:A:1780:A:OP1	8:A:1782:U:OP1	2.12	0.67
8:A:1818:U:O2'	10:C:152:GLN:O	2.12	0.67
34:a:415:A:N6	34:a:428:G:O6	2.24	0.67
56:w:41:C:H2'	56:w:42:C:C6	2.29	0.67
8:A:803:U:H2'	8:A:804:A:H8	1.59	0.67
8:A:2329:U:H2'	8:A:2330:G:H8	1.59	0.67
34:a:957:U:H4'	52:s:78:THR:HG23	1.74	0.67
34:a:1055:A:N3	36:c:155:ARG:NH1	2.42	0.67
56:w:60:U:OP2	56:w:61:C:N4	2.28	0.67
57:x:311:SER:HB3	57:x:314:GLU:HB2	1.76	0.67
8:A:877:A:O2'	8:A:900:A:N6	2.27	0.67
8:A:1270:C:H5''	8:A:1271:G:H5'	1.75	0.67
8:A:1952:A:OP1	18:K:44:LYS:NZ	2.24	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:231:U:H2'	34:a:232:G:H8	1.58	0.67
37:d:12:ARG:HG3	37:d:33:ILE:HA	1.77	0.67
42:i:4:GLN:HE21	42:i:21:LYS:HD3	1.58	0.67
8:A:514:A:H2'	8:A:515:A:H8	1.59	0.67
8:A:868:U:O2	20:M:8:LYS:NZ	2.28	0.67
8:A:1063:G:N2	16:I:131:THR:O	2.23	0.67
8:A:1764:C:N3	8:A:1989:G:N2	2.42	0.67
25:R:24:LYS:HA	25:R:94:THR:HG23	1.76	0.67
34:a:908:A:H2'	34:a:909:A:H8	1.58	0.67
34:a:1305:G:N2	34:a:1332:A:N7	2.39	0.67
8:A:197:A:OP1	8:A:198:C:OP2	2.13	0.67
8:A:364:C:H2'	8:A:365:U:C6	2.30	0.67
22:O:89:ASP:HA	22:O:116:GLN:HB2	1.75	0.67
4:3:3:ILE:HB	4:3:63:TYR:HE1	1.60	0.67
8:A:216:A:H2'	8:A:217:A:H8	1.59	0.67
8:A:337:C:OP2	28:U:3:LYS:NZ	2.27	0.67
8:A:1060:U:O2'	8:A:1062:G:OP2	2.13	0.67
8:A:1131:G:N2	8:A:1132:U:O4	2.24	0.67
9:B:51:G:OP2	22:O:67:ASN:ND2	2.26	0.67
34:a:38:G:H22	34:a:397:A:H5'	1.58	0.67
34:a:1007:U:H2'	34:a:1008:U:H6	1.60	0.67
41:h:4:ASP:OD2	41:h:76:ARG:NE	2.23	0.67
44:k:19:VAL:HG22	44:k:82:GLU:HB2	1.77	0.67
8:A:459:U:O4	8:A:470:A:N7	2.28	0.67
8:A:1425:G:H2'	8:A:1426:G:C8	2.30	0.67
8:A:1666:G:N3	18:K:3:GLN:NE2	2.43	0.67
8:A:2127:G:N2	8:A:2129:C:H1'	2.10	0.67
8:A:2584:U:H3'	8:A:2585:U:H5''	1.75	0.67
8:A:2615:U:H2'	8:A:2616:C:H6	1.60	0.67
8:A:2685:G:H2'	8:A:2686:G:H8	1.58	0.67
10:C:159:THR:HG22	10:C:176:ARG:HG2	1.75	0.67
11:D:38:LYS:NZ	11:D:81:GLU:OE1	2.27	0.67
21:N:57:THR:OG1	21:N:62:ASN:OD1	2.13	0.67
29:V:26:PHE:CE1	29:V:47:VAL:HG11	2.29	0.67
34:a:426:U:OP1	37:d:35:GLN:NE2	2.28	0.67
47:n:37:SER:HA	47:n:41:ARG:HD3	1.77	0.67
57:x:8:ARG:NH1	57:x:80:PRO:O	2.26	0.67
8:A:1846:G:OP1	34:a:702:A:N6	2.27	0.67
8:A:1992:G:N2	8:A:1996:C:O2	2.27	0.67
9:B:57:A:OP2	9:B:58:A:OP2	2.12	0.67
34:a:151:A:H62	34:a:170:U:H3	1.42	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:898:G:N2	34:a:901:A:OP2	2.28	0.67
4:3:8:GLY:O	4:3:12:ARG:NH2	2.28	0.67
8:A:365:U:H2'	8:A:366:C:C6	2.29	0.67
11:D:116:LYS:HB3	21:N:1:MET:HE1	1.77	0.67
19:L:29:LYS:O	19:L:30:THR:OG1	2.13	0.67
20:M:42:THR:HG22	20:M:93:VAL:HG12	1.76	0.67
34:a:1238:A:H5'	34:a:1336:C:H41	1.59	0.67
44:k:30:ILE:HG12	44:k:45:THR:HG22	1.77	0.67
21:N:44:LEU:HD23	21:N:113:ILE:HD13	1.76	0.66
25:R:42:ALA:HA	25:R:47:VAL:HG23	1.77	0.66
8:A:181:A:H2'	8:A:182:A:H8	1.60	0.66
8:A:2175:C:H2'	8:A:2176:A:H8	1.58	0.66
8:A:2865:U:H3'	8:A:2866:U:H2'	1.77	0.66
34:a:1007:U:H2'	34:a:1008:U:C6	2.30	0.66
34:a:1243:C:H2'	34:a:1244:G:C8	2.30	0.66
51:r:70:THR:OG1	51:r:72:ARG:NH2	2.27	0.66
57:x:136:ARG:HG3	57:x:261:ILE:HD12	1.78	0.66
8:A:627:A:O2'	19:L:76:GLU:OE2	2.13	0.66
13:F:25:MET:O	13:F:29:ARG:NH1	2.27	0.66
27:T:58:VAL:HG13	27:T:85:VAL:HG22	1.75	0.66
34:a:581:G:N1	34:a:759:A:OP2	2.22	0.66
4:3:62:PRO:HG2	4:3:63:TYR:HD1	1.60	0.66
8:A:1771:C:H2'	8:A:1772:A:C8	2.29	0.66
8:A:2837:A:H2'	8:A:2838:G:H8	1.60	0.66
34:a:104:G:H2'	34:a:105:G:H8	1.60	0.66
34:a:493:A:H2'	34:a:494:G:C8	2.30	0.66
34:a:995:C:N3	34:a:1046:A:O2'	2.28	0.66
34:a:1130:A:N6	34:a:1144:G:N3	2.42	0.66
8:A:635:C:OP2	19:L:109:LYS:NZ	2.19	0.66
8:A:1187:G:N2	8:A:1188:U:O4	2.28	0.66
9:B:93:C:H2'	9:B:94:A:H8	1.61	0.66
3:2:39:ARG:NH2	8:A:468:G:N7	2.44	0.66
8:A:1909:C:N3	8:A:1922:G:N1	2.43	0.66
8:A:2102:G:O6	8:A:2188:U:N3	2.28	0.66
10:C:106:PRO:HG2	10:C:109:LEU:HB2	1.76	0.66
17:J:32:LEU:HD23	17:J:142:ILE:HD11	1.77	0.66
37:d:58:GLN:OE1	37:d:61:ARG:NH1	2.28	0.66
13:F:92:GLY:H	13:F:95:MET:HE2	1.59	0.66
34:a:2:A:H1'	34:a:613:C:O2'	1.95	0.66
34:a:546:A:OP1	37:d:69:ARG:N	2.27	0.66
57:x:227:GLU:HA	57:x:233:MET:HE2	1.76	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:672:C:C2	8:A:809:G:N2	2.64	0.66
8:A:1779:U:H5''	8:A:1780:A:H5''	1.76	0.66
8:A:2078:C:N4	8:A:2238:G:O6	2.15	0.66
34:a:1321:U:H3'	34:a:1322:C:H2'	1.78	0.66
56:w:9:A:H62	56:w:23:A:H62	1.43	0.66
8:A:2586:U:H2'	8:A:2587:A:C8	2.31	0.66
12:E:164:LEU:HB2	12:E:167:VAL:HG12	1.77	0.66
34:a:209:U:N3	34:a:211:G:N7	2.44	0.66
34:a:714:G:H2'	34:a:715:A:C8	2.30	0.66
34:a:1125:U:O3'	43:j:7:ARG:NH2	2.29	0.66
45:l:3:VAL:HA	45:l:6:LEU:HD12	1.77	0.66
57:x:252:ARG:NH2	57:x:285:LEU:O	2.29	0.66
8:A:601:C:O2'	12:E:99:LYS:NZ	2.29	0.66
8:A:1668:A:N3	8:A:1670:C:N4	2.43	0.66
8:A:2620:C:O2'	11:D:162:ALA:O	2.11	0.66
34:a:28:A:O2'	34:a:296:U:OP1	2.14	0.66
34:a:1418:A:H2'	34:a:1419:G:C8	2.30	0.66
37:d:61:ARG:HH21	37:d:67:LEU:HA	1.61	0.66
37:d:67:LEU:O	37:d:71:PHE:HB2	1.95	0.66
57:x:99:GLU:OE2	57:x:132:TYR:OH	2.09	0.66
57:x:642:LYS:HB2	57:x:654:HIS:HB2	1.78	0.66
8:A:767:U:H2'	8:A:768:G:H8	1.60	0.65
8:A:1796:U:H2'	8:A:1797:G:H8	1.61	0.65
8:A:2866:U:H4'	8:A:2867:G:H4'	1.78	0.65
19:L:108:ALA:HB3	19:L:125:LEU:HG	1.76	0.65
25:R:58:VAL:HB	25:R:102:SER:HB2	1.77	0.65
57:x:336:ARG:HH22	57:x:379:GLY:HA2	1.61	0.65
8:A:18:U:P	24:Q:29:ARG:HH22	2.18	0.65
8:A:1152:C:H2'	8:A:1153:C:H6	1.60	0.65
8:A:2167:U:N3	8:A:2170:A:OP2	2.19	0.65
41:h:66:GLN:HG2	41:h:67:GLY:H	1.62	0.65
42:i:10:ARG:H	42:i:80:HIS:HD1	1.43	0.65
8:A:1016:G:O6	8:A:1147:A:N6	2.29	0.65
8:A:1682:G:OP2	8:A:1699:G:N2	2.29	0.65
8:A:1734:G:H2'	8:A:1735:A:C8	2.31	0.65
8:A:1960:A:O2'	34:a:1483:A:O2'	2.15	0.65
8:A:1980:G:O2'	8:A:1982:U:OP2	2.14	0.65
8:A:2720:U:H5''	23:P:52:ARG:NH2	2.11	0.65
18:K:21:CYS:HA	18:K:41:ILE:HG22	1.78	0.65
34:a:1144:G:N2	34:a:1146:A:H62	1.94	0.65
53:t:35:TYR:HA	53:t:38:ILE:HD12	1.77	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:w:6:G:N2	56:w:67:C:O2	2.20	0.65
56:w:70:G:H2'	56:w:71:G:C8	2.31	0.65
8:A:2357:G:N2	8:A:2360:G:OP2	2.23	0.65
10:C:259:ASN:C	10:C:261:ARG:H	2.05	0.65
34:a:710:G:H2'	34:a:711:G:H8	1.60	0.65
35:b:14:HIS:HB2	35:b:202:ASN:HB2	1.79	0.65
8:A:1268:A:OP1	8:A:2006:C:OP1	2.15	0.65
8:A:1353:A:OP2	8:A:1377:G:N1	2.23	0.65
12:E:175:ILE:HD12	12:E:180:LEU:HD11	1.78	0.65
31:X:6:VAL:HG11	31:X:58:ILE:HD11	1.77	0.65
34:a:352:C:N3	34:a:356:A:N6	2.45	0.65
34:a:1523:G:OP1	44:k:124:LYS:NZ	2.25	0.65
40:g:149:ALA:HA	44:k:60:PHE:HB3	1.77	0.65
7:6:1:MET:HB2	9:B:43:C:H5''	1.78	0.65
8:A:2540:C:O2'	8:A:2740:A:N3	2.29	0.65
34:a:973:G:OP1	43:j:59:LYS:NZ	2.23	0.65
49:p:21:VAL:HG23	49:p:33:ILE:HG13	1.78	0.65
8:A:793:A:OP2	8:A:2071:A:O2'	2.15	0.65
8:A:2428:G:OP1	8:A:2429:G:OP1	2.15	0.65
21:N:19:ALA:O	21:N:23:ASN:ND2	2.30	0.65
8:A:106:C:HO2'	8:A:294:A:HO2'	1.45	0.65
8:A:457:A:H2	8:A:458:G:H21	1.45	0.65
8:A:2299:U:O4	8:A:2318:G:N2	2.29	0.65
10:C:97:ASP:OD1	10:C:98:GLY:N	2.29	0.65
3:2:3:ARG:NH2	8:A:752:A:OP1	2.29	0.65
8:A:81:G:O2'	8:A:295:G:O2'	2.02	0.65
8:A:106:C:O2'	8:A:294:A:O2'	2.13	0.65
8:A:1057:A:O2'	8:A:1058:U:O5'	2.12	0.65
8:A:1172:C:O2	8:A:1177:G:N2	2.30	0.65
8:A:1548:A:H2'	8:A:1549:A:C8	2.32	0.65
34:a:150:U:H2'	34:a:151:A:H8	1.61	0.65
34:a:154:U:H2'	34:a:155:A:H8	1.62	0.65
34:a:636:U:H2'	34:a:637:C:C6	2.32	0.65
34:a:1095:U:OP1	34:a:1108:G:N2	2.26	0.65
34:a:1343:G:H4'	42:i:123:ARG:HB2	1.78	0.65
42:i:112:ARG:NH2	43:j:64:GLN:OE1	2.30	0.65
8:A:1108:U:OP2	8:A:1109:C:N4	2.30	0.65
8:A:2036:C:H2'	8:A:2037:A:H8	1.62	0.65
8:A:2627:G:O2'	8:A:2781:A:N1	2.30	0.65
12:E:147:LEU:HD12	12:E:183:PHE:HD2	1.61	0.65
18:K:18:ARG:NH1	18:K:45:GLU:OE1	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:13:ILE:HG22	36:c:14:VAL:HG13	1.78	0.65
8:A:2036:C:H2'	8:A:2037:A:C8	2.32	0.64
8:A:2514:U:H2'	8:A:2515:C:C6	2.31	0.64
42:i:83:THR:O	42:i:87:MET:HG2	1.97	0.64
57:x:336:ARG:NH1	57:x:337:VAL:O	2.30	0.64
8:A:2368:C:H2'	8:A:2369:A:H8	1.61	0.64
22:O:53:THR:HG21	22:O:70:ALA:HB1	1.78	0.64
34:a:19:A:H2'	34:a:20:U:C6	2.32	0.64
34:a:359:G:H2'	34:a:360:G:C8	2.33	0.64
30:W:67:VAL:HG12	30:W:74:LYS:HG2	1.79	0.64
34:a:1481:U:H2'	34:a:1482:G:N3	2.13	0.64
8:A:776:G:N2	8:A:2241:A:OP1	2.30	0.64
15:H:96:THR:HG22	15:H:115:VAL:HG11	1.79	0.64
29:V:86:LEU:HD13	29:V:89:ILE:HD11	1.78	0.64
37:d:106:PHE:CE1	37:d:144:ILE:HG13	2.33	0.64
39:f:7:VAL:HG11	51:r:64:LEU:HD11	1.77	0.64
42:i:98:ARG:HD2	42:i:103:VAL:HG21	1.78	0.64
8:A:1444:G:H2'	8:A:1445:G:H8	1.62	0.64
8:A:2522:U:O2'	8:A:2647:U:OP1	2.10	0.64
9:B:112:G:N2	22:O:45:SER:O	2.25	0.64
34:a:38:G:N2	34:a:397:A:H5'	2.12	0.64
34:a:738:C:OP1	39:f:4:TYR:OH	2.15	0.64
34:a:875:U:O2'	41:h:14:ARG:NH1	2.29	0.64
42:i:115:VAL:HG21	43:j:62:ARG:HB2	1.79	0.64
8:A:302:C:H2'	8:A:303:G:C8	2.30	0.64
8:A:1261:C:OP2	26:S:83:LYS:NZ	2.22	0.64
8:A:1582:C:O2'	8:A:1585:C:N3	2.27	0.64
8:A:2332:C:OP1	30:W:73:ARG:NH1	2.24	0.64
43:j:51:VAL:HB	47:n:81:ARG:HB2	1.79	0.64
43:j:90:LEU:HD22	43:j:92:LEU:HD11	1.80	0.64
47:n:5:MET:SD	47:n:63:ARG:NH2	2.69	0.64
57:x:2:ARG:HG3	57:x:377:ARG:HD2	1.79	0.64
8:A:145:C:H2'	8:A:146:A:C8	2.30	0.64
8:A:535:G:C6	8:A:559:G:O6	2.51	0.64
8:A:1196:C:H2'	8:A:1197:G:C8	2.33	0.64
8:A:2701:U:H3'	8:A:2702:G:H5''	1.80	0.64
27:T:34:VAL:HG21	27:T:43:ILE:HD11	1.79	0.64
34:a:492:C:N3	34:a:493:A:N6	2.46	0.64
34:a:1262:C:N4	34:a:1273:C:N3	2.45	0.64
57:x:397:CYS:SG	57:x:402:PRO:HD2	2.38	0.64
8:A:2898:U:O2'	17:J:136:GLN:NE2	2.31	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:C:180:MET:HE1	34:a:680:C:H4'	1.80	0.64
34:a:1058:G:OP1	36:c:198:LYS:NZ	2.19	0.64
8:A:48:G:N2	8:A:177:G:H21	1.95	0.64
8:A:272:A:H2'	8:A:273:G:H8	1.61	0.64
8:A:1048:A:H2'	8:A:1049:C:H6	1.63	0.64
8:A:1565:C:H1'	8:A:1566:A:H8	1.62	0.64
8:A:2061:G:H5''	8:A:2503:2MA:HM22	1.78	0.64
31:X:32:LEU:O	31:X:33:HIS:ND1	2.31	0.64
34:a:182:A:N6	34:a:194:C:O2	2.30	0.64
34:a:256:U:OP1	50:q:18:LYS:NZ	2.31	0.64
8:A:954:G:OP2	20:M:16:ARG:NH1	2.30	0.64
8:A:1096:A:C6	16:I:28:GLY:HA3	2.32	0.64
8:A:1658:C:OP1	11:D:140:HIS:NE2	2.31	0.64
8:A:1715:G:N2	8:A:1744:A:OP2	2.31	0.64
8:A:1941:C:N4	8:A:1965:C:O4'	2.31	0.64
8:A:2439:A:N6	8:A:2585:U:O2'	2.31	0.64
13:F:147:ARG:HG3	13:F:148:VAL:H	1.62	0.64
34:a:198:G:H2'	34:a:199:A:H8	1.63	0.64
34:a:865:A:H2'	34:a:866:C:C6	2.33	0.64
34:a:1375:A:H5''	40:g:24:LYS:HD2	1.80	0.64
34:a:1524:C:H2'	34:a:1525:G:C8	2.33	0.64
35:b:55:GLU:HA	35:b:58:LYS:HD2	1.79	0.64
41:h:17:GLN:HE21	41:h:71:VAL:HG23	1.61	0.64
8:A:272:A:H2'	8:A:273:G:C8	2.33	0.63
8:A:541:A:N6	8:A:553:G:O6	2.30	0.63
8:A:639:U:H2'	8:A:640:C:C6	2.33	0.63
34:a:958:A:C2	52:s:54:ARG:HG3	2.33	0.63
36:c:81:GLU:O	36:c:85:LYS:HG2	1.98	0.63
45:l:67:GLY:O	45:l:98:ARG:NH1	2.32	0.63
8:A:2298:A:O3'	13:F:71:LYS:NZ	2.31	0.63
49:p:47:GLU:OE1	49:p:51:ARG:NH1	2.31	0.63
52:s:17:LYS:HA	52:s:20:LYS:HD2	1.79	0.63
8:A:2328:A:H2'	8:A:2329:U:H6	1.63	0.63
8:A:2812:G:H2'	8:A:2813:A:C8	2.33	0.63
11:D:88:GLU:N	11:D:88:GLU:OE1	2.32	0.63
12:E:168:ASP:OD2	12:E:170:ARG:NH1	2.29	0.63
18:K:92:GLU:HG3	18:K:93:GLN:H	1.64	0.63
19:L:80:SER:HB3	19:L:114:GLY:HA3	1.81	0.63
34:a:950:U:H2'	34:a:951:G:C8	2.34	0.63
35:b:45:THR:HG22	35:b:200:PRO:HB2	1.79	0.63
36:c:130:ARG:NH1	36:c:165:GLU:OE2	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:x:17:HIS:O	57:x:22:LYS:NZ	2.31	0.63
8:A:867:C:N4	8:A:912:C:O2	2.30	0.63
8:A:947:A:H2'	8:A:948:C:C6	2.33	0.63
8:A:1361:G:HO2'	8:A:2215:C:HO2'	1.46	0.63
8:A:2128:G:C2	8:A:2129:C:H4'	2.33	0.63
8:A:2333:A:H5'	8:A:2335:A:H1'	1.80	0.63
8:A:2626:C:H2'	8:A:2627:G:C8	2.33	0.63
34:a:692:U:OP2	44:k:27:ASN:ND2	2.31	0.63
34:a:1012:A:C6	34:a:1018:G:N1	2.67	0.63
34:a:1519:MA6:H8	34:a:1520:C:O4'	1.98	0.63
57:x:545:PRO:HB2	57:x:548:TYR:CD1	2.34	0.63
8:A:1013:C:H2'	8:A:1014:A:H8	1.62	0.63
8:A:1335:C:H2'	8:A:1336:A:C8	2.33	0.63
8:A:1490:A:C8	10:C:97:ASP:HB3	2.34	0.63
8:A:1818:U:OP2	10:C:155:ARG:NH2	2.31	0.63
10:C:74:PRO:HA	10:C:116:GLN:HB3	1.80	0.63
34:a:181:A:H61	34:a:194:C:H3'	1.63	0.63
34:a:1209:C:H2'	34:a:1210:C:C6	2.34	0.63
34:a:1414:U:H2'	34:a:1415:G:C8	2.32	0.63
8:A:1688:U:O2'	8:A:1700:A:N7	2.31	0.63
8:A:2745:C:H2'	8:A:2746:U:C6	2.34	0.63
14:G:48:THR:HG22	14:G:49:LEU:H	1.62	0.63
34:a:720:C:O2	51:r:59:LYS:NZ	2.22	0.63
36:c:72:PRO:HA	36:c:75:VAL:HG12	1.81	0.63
39:f:36:ILE:HG23	39:f:64:VAL:HG22	1.80	0.63
1:0:2:VAL:HG21	8:A:2016:U:H1'	1.81	0.63
8:A:60:G:N2	8:A:88:G:N7	2.45	0.63
8:A:1125:G:OP2	8:A:1126:A:O2'	2.17	0.63
8:A:1165:A:H2'	8:A:1166:G:H8	1.63	0.63
8:A:1788:C:H2'	8:A:1789:A:H8	1.63	0.63
8:A:1830:C:H2'	8:A:1831:G:H8	1.62	0.63
8:A:2130:U:O4'	8:A:2159:G:N2	2.32	0.63
34:a:1512:U:H2'	34:a:1513:A:H8	1.63	0.63
39:f:38:ARG:HB2	39:f:63:ASN:H	1.63	0.63
40:g:74:VAL:HA	40:g:87:PRO:HA	1.80	0.63
46:m:52:ILE:HG22	46:m:56:ARG:HD2	1.80	0.63
8:A:415:A:H2'	8:A:416:U:C6	2.33	0.63
8:A:660:C:O2'	19:L:13:LYS:NZ	2.32	0.63
8:A:1052:C:N3	8:A:1107:G:N1	2.46	0.63
8:A:1754:A:N1	8:A:2716:C:O2'	2.30	0.63
8:A:2153:C:H2'	8:A:2154:A:H8	1.62	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2192:U:H2'	8:A:2193:G:C8	2.33	0.63
34:a:230:G:O2'	49:p:25:ARG:NH1	2.32	0.63
34:a:427:U:P	37:d:12:ARG:HH22	2.21	0.63
56:w:59:U:O2'	56:w:60:U:O5'	2.16	0.63
8:A:221:A:H61	8:A:428:A:H62	1.47	0.63
8:A:226:A:O2'	8:A:230:G:N2	2.31	0.63
8:A:2684:U:O4'	18:K:70:ARG:NH1	2.30	0.63
8:A:2864:G:C2	8:A:2865:U:C4	2.87	0.63
9:B:69:G:O6	9:B:107:G:N2	2.30	0.63
21:N:24:MET:HE1	21:N:40:LYS:HB3	1.81	0.63
25:R:14:VAL:HG12	25:R:20:VAL:HG21	1.80	0.63
34:a:377:G:H2'	34:a:378:G:H8	1.64	0.63
34:a:1175:G:H2'	34:a:1176:A:H8	1.62	0.63
39:f:30:THR:HA	39:f:34:GLY:H	1.61	0.63
8:A:592:A:H2'	8:A:593:U:C6	2.34	0.62
8:A:833:A:H2'	8:A:834:G:C8	2.34	0.62
8:A:1056:G:N3	8:A:1087:G:N2	2.47	0.62
8:A:1364:G:OP1	31:X:49:ARG:NH2	2.28	0.62
8:A:2081:U:H2'	8:A:2082:A:H8	1.64	0.62
8:A:2591:C:H2'	8:A:2592:G:C8	2.34	0.62
23:P:30:TRP:NE1	23:P:81:ASP:OD1	2.32	0.62
34:a:71:A:H61	34:a:99:C:H1'	1.63	0.62
35:b:69:VAL:HB	35:b:162:VAL:HG12	1.80	0.62
8:A:848:C:H2'	8:A:849:A:H8	1.65	0.62
8:A:1709:U:H2'	8:A:1710:G:H8	1.63	0.62
8:A:2622:U:O2'	8:A:2825:G:N7	2.31	0.62
20:M:36:VAL:HG22	29:V:82:TYR:HB2	1.81	0.62
31:X:4:CYS:SG	31:X:51:SER:N	2.71	0.62
34:a:39:G:N3	34:a:404:G:N2	2.46	0.62
34:a:79:G:C6	34:a:90:C:C4	2.88	0.62
34:a:373:A:H1'	34:a:481:G:C8	2.34	0.62
34:a:918:A:H2'	34:a:919:A:C8	2.34	0.62
35:b:96:LEU:HB2	35:b:99:MET:HE3	1.80	0.62
36:c:86:LEU:HA	36:c:89:VAL:HG12	1.82	0.62
40:g:42:VAL:O	40:g:46:LEU:HG	1.99	0.62
8:A:2845:U:O4	8:A:2871:U:N3	2.23	0.62
34:a:971:G:OP2	34:a:1231:G:N2	2.31	0.62
49:p:14:ARG:HG3	49:p:42:ILE:HD11	1.81	0.62
8:A:2118:U:O2	8:A:2145:C:N4	2.32	0.62
8:A:2194:U:H2'	8:A:2195:U:H6	1.63	0.62
8:A:2844:G:N2	8:A:2874:C:C2	2.68	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:E:148:ILE:HB	12:E:169:VAL:HG12	1.81	0.62
28:U:85:ARG:HH11	28:U:94:PHE:HB2	1.64	0.62
34:a:335:C:H2'	34:a:336:A:H8	1.64	0.62
34:a:405:U:O4	37:d:1:ALA:N	2.31	0.62
34:a:974:A:H5'	47:n:71:HIS:HB3	1.81	0.62
34:a:999:C:H2'	34:a:1000:A:C8	2.34	0.62
45:l:41:PRO:HG2	45:l:46:SER:H	1.64	0.62
8:A:931:U:O4	8:A:1166:G:N2	2.29	0.62
8:A:1429:G:H2'	8:A:1430:G:H8	1.65	0.62
8:A:1653:G:O6	21:N:11:ASN:ND2	2.32	0.62
8:A:1657:U:H2'	8:A:1658:C:H6	1.65	0.62
34:a:153:C:N3	34:a:169:C:N4	2.47	0.62
34:a:391:G:O3'	49:p:8:ARG:NH2	2.33	0.62
34:a:765:G:N2	34:a:813:U:OP2	2.23	0.62
41:h:73:SER:HB2	41:h:129:ALA:HB3	1.80	0.62
1:0:3:GLN:NE2	8:A:2016:U:O2	2.32	0.62
4:3:34:LYS:NZ	8:A:2390:U:OP2	2.17	0.62
8:A:1857:G:N2	8:A:1884:G:H2'	2.15	0.62
10:C:143:VAL:HB	10:C:153:LEU:HB2	1.81	0.62
26:S:29:VAL:HB	26:S:55:ILE:HD11	1.82	0.62
34:a:861:G:O2'	34:a:874:G:O2'	2.17	0.62
57:x:168:LEU:HD13	57:x:262:LEU:HB3	1.81	0.62
8:A:40:U:H2'	8:A:41:C:C6	2.35	0.62
8:A:2233:U:H2'	8:A:2234:G:C8	2.34	0.62
8:A:2245:U:O2'	8:A:2436:G:OP2	2.16	0.62
8:A:2875:C:O3'	23:P:1:SER:OG	2.13	0.62
10:C:144:GLU:HG2	10:C:151:GLY:N	2.15	0.62
29:V:2:PHE:HE2	29:V:56:PHE:HB2	1.65	0.62
34:a:18:C:H1'	34:a:1079:G:H21	1.65	0.62
34:a:713:G:H2'	34:a:714:G:C8	2.34	0.62
34:a:770:C:H2'	34:a:771:G:H8	1.63	0.62
8:A:691:C:OP1	10:C:216:ARG:NH1	2.32	0.62
8:A:1341:G:OP2	8:A:1394:U:O2'	2.15	0.62
8:A:2313:C:H2'	8:A:2314:A:C8	2.35	0.62
8:A:2542:A:H61	8:A:2567:G:N2	1.97	0.62
10:C:144:GLU:OE1	10:C:150:GLY:N	2.29	0.62
19:L:91:ASP:OD2	19:L:123:ARG:NH1	2.32	0.62
31:X:17:ARG:HD2	31:X:21:LEU:HD13	1.81	0.62
34:a:146:G:N1	34:a:177:G:O6	2.32	0.62
34:a:687:A:H62	34:a:703:G:H21	1.48	0.62
34:a:1048:G:N2	34:a:1214:C:O2	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:d:10:LEU:HD13	37:d:62:ARG:HG2	1.82	0.62
42:i:57:VAL:HG23	42:i:58:GLU:H	1.65	0.62
57:x:375:GLU:OE2	57:x:377:ARG:NH1	2.33	0.62
8:A:282:A:H2'	8:A:283:G:C8	2.32	0.62
8:A:1443:U:H2'	8:A:1444:G:H8	1.64	0.62
8:A:1656:C:H2'	8:A:1657:U:H6	1.65	0.62
34:a:570:G:H2'	34:a:571:U:C6	2.34	0.62
34:a:1125:U:H2'	34:a:1126:U:H2'	1.79	0.62
46:m:85:TYR:N	52:s:72:GLU:O	2.32	0.62
8:A:332:A:O2'	8:A:334:C:OP2	2.15	0.62
8:A:463:G:N2	8:A:466:A:OP2	2.29	0.62
8:A:2114:A:N6	8:A:2117:A:N7	2.39	0.62
11:D:61:THR:OG1	11:D:64:GLU:OE1	2.18	0.62
19:L:96:LYS:HG3	19:L:101:ILE:HD11	1.81	0.62
27:T:24:MET:HE1	27:T:30:ILE:HG22	1.81	0.62
34:a:587:G:N2	34:a:753:A:O2'	2.33	0.62
34:a:961:U:O4	34:a:974:A:N6	2.22	0.62
34:a:1484:C:C3'	34:a:1485:U:H4'	2.30	0.62
52:s:78:THR:OG1	52:s:80:ARG:NH2	2.33	0.62
8:A:298:G:O2'	8:A:322:A:N1	2.32	0.61
27:T:40:LYS:HE2	27:T:60:THR:HG22	1.82	0.61
34:a:410:G:H21	34:a:432:A:N6	1.95	0.61
37:d:115:GLN:HE21	37:d:119:HIS:CE1	2.18	0.61
38:e:9:GLU:HG3	38:e:10:LEU:HD12	1.82	0.61
51:r:22:TYR:HE2	51:r:64:LEU:HD12	1.65	0.61
3:2:29:GLN:O	3:2:33:ARG:NH2	2.33	0.61
8:A:1061:U:O2'	16:I:9:LYS:O	2.17	0.61
8:A:2576:G:O2'	8:A:2579:C:OP2	2.11	0.61
11:D:186:LEU:HD21	23:P:3:ILE:HG21	1.82	0.61
23:P:63:ILE:HA	23:P:68:GLY:HA2	1.82	0.61
34:a:1005:A:N6	34:a:1026:G:OP1	2.33	0.61
8:A:665:U:H2'	8:A:666:A:H8	1.65	0.61
8:A:2633:G:H1'	11:D:63:PRO:HG2	1.80	0.61
8:A:2898:U:H2'	8:A:2899:A:C8	2.35	0.61
21:N:72:ASP:OD1	21:N:75:ILE:N	2.29	0.61
40:g:15:PRO:HA	42:i:45:MET:HE2	1.82	0.61
8:A:2532:G:H2'	8:A:2533:U:C6	2.35	0.61
21:N:20:MET:HA	21:N:23:ASN:HD22	1.64	0.61
34:a:54:C:OP1	34:a:351:G:N2	2.33	0.61
34:a:1109:C:P	36:c:175:HIS:HD1	2.23	0.61
34:a:1331:G:H4'	34:a:1332:A:O5'	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1224:U:O2'	8:A:1225:G:O5'	2.18	0.61
13:F:45:ASP:OD1	13:F:48:LEU:N	2.33	0.61
19:L:55:MET:O	19:L:60:ARG:NH1	2.33	0.61
34:a:1277:C:H2'	34:a:1279:G:H21	1.65	0.61
34:a:1391:U:H2'	34:a:1392:G:C8	2.35	0.61
36:c:110:LEU:HD23	36:c:143:LEU:HD23	1.81	0.61
57:x:256:LEU:HD23	57:x:286:PRO:HG3	1.83	0.61
8:A:1074:G:H5'	8:A:1075:C:C5	2.36	0.61
8:A:1470:A:H2'	8:A:1471:G:O4'	2.00	0.61
8:A:1909:C:N4	8:A:1922:G:O6	2.33	0.61
8:A:2071:A:H2'	8:A:2072:C:C6	2.36	0.61
8:A:2515:C:H2'	8:A:2516:A:H8	1.65	0.61
8:A:2698:U:H2'	8:A:2699:C:C6	2.35	0.61
21:N:9:GLN:O	21:N:17:ARG:NH2	2.33	0.61
34:a:821:G:H2'	34:a:822:U:C6	2.35	0.61
34:a:1012:A:C6	34:a:1018:G:C6	2.89	0.61
57:x:423:THR:HG23	57:x:425:ALA:H	1.64	0.61
8:A:564:C:O2	8:A:578:G:N2	2.32	0.61
11:D:5:VAL:HG11	11:D:80:TRP:CZ3	2.36	0.61
14:G:158:GLY:HA2	14:G:168:VAL:HG21	1.81	0.61
15:H:51:ARG:HB2	15:H:55:GLU:HG3	1.82	0.61
42:i:11:ARG:NH1	42:i:12:LYS:HB2	2.13	0.61
3:2:18:PHE:CZ	3:2:22:MET:HG3	2.36	0.61
8:A:160:A:N6	8:A:167:A:H1'	2.14	0.61
8:A:837:C:O2	8:A:942:G:N2	2.33	0.61
8:A:1114:C:H2'	8:A:1115:G:H8	1.66	0.61
8:A:1437:C:HO2'	8:A:1516:G:HO2'	1.48	0.61
32:Y:35:GLY:O	32:Y:36:GLN:NE2	2.33	0.61
34:a:459:A:H2'	34:a:460:A:C8	2.36	0.61
34:a:880:C:H3'	45:l:5:GLN:HE21	1.65	0.61
40:g:67:ASN:OD1	40:g:129:ASN:ND2	2.31	0.61
40:g:68:VAL:HG11	40:g:133:ALA:HB1	1.81	0.61
43:j:63:ASP:OD2	47:n:85:ARG:NE	2.33	0.61
47:n:2:LYS:O	47:n:5:MET:N	2.34	0.61
8:A:2291:U:H2'	8:A:2292:U:C6	2.35	0.61
8:A:2345:G:O2'	8:A:2381:A:N3	2.34	0.61
29:V:4:ILE:HG21	29:V:42:LEU:HD23	1.83	0.61
34:a:71:A:N6	34:a:99:C:O2	2.34	0.61
34:a:201:G:H2'	34:a:202:G:C8	2.35	0.61
34:a:1179:A:H2'	34:a:1180:A:C8	2.36	0.61
34:a:1464:U:H2'	34:a:1465:A:C8	2.36	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:445:C:OP1	24:Q:1:ALA:N	2.24	0.61
8:A:1068:G:O6	8:A:1070:A:N6	2.34	0.61
8:A:1352:U:O4	8:A:1378:A:N7	2.34	0.61
8:A:2074:U:H2'	8:A:2075:U:C6	2.36	0.61
24:Q:76:SER:OG	24:Q:77:LYS:N	2.33	0.61
28:U:15:GLY:C	28:U:17:ASP:H	2.09	0.61
34:a:1086:U:H2'	34:a:1087:G:H8	1.66	0.61
34:a:1240:U:P	40:g:115:MET:HB2	2.40	0.61
34:a:1272:G:H2'	34:a:1273:C:C6	2.36	0.61
38:e:79:THR:OG1	38:e:121:ASN:O	2.13	0.61
45:l:48:LEU:O	45:l:50:LYS:NZ	2.32	0.61
56:w:36:A:H62	56:w:37:MIA:H122	1.66	0.61
57:x:674:LYS:HD2	57:x:676:ARG:HH21	1.65	0.61
4:3:26:ALA:HB2	19:L:62:PRO:HD3	1.83	0.60
4:3:39:ARG:NH1	8:A:2362:C:OP1	2.24	0.60
8:A:459:U:H3	8:A:470:A:H62	1.48	0.60
8:A:717:C:H3'	8:A:718:A:H8	1.66	0.60
8:A:1082:U:H3'	8:A:1086:A:N6	2.15	0.60
8:A:1361:G:O2'	8:A:2215:C:O2'	2.18	0.60
8:A:1807:G:HO2'	8:A:1809:A:H62	1.49	0.60
9:B:45:A:H5'	13:F:91:ARG:HD3	1.82	0.60
34:a:344:A:H5''	34:a:345:C:H5	1.66	0.60
34:a:1485:U:C2	34:a:1486:G:N7	2.69	0.60
37:d:8:LEU:HD21	37:d:27:ILE:HD11	1.83	0.60
57:x:183:ASP:OD1	57:x:184:LEU:N	2.34	0.60
8:A:1051:G:O6	8:A:1108:U:O2	2.18	0.60
8:A:1283:G:H22	8:A:1286:A:P	2.24	0.60
8:A:1906:G:O6	8:A:1924:C:N4	2.34	0.60
8:A:2649:C:H2'	8:A:2650:U:H6	1.66	0.60
28:U:12:VAL:HG21	28:U:38:ILE:HG21	1.83	0.60
34:a:745:G:H2'	34:a:746:A:H8	1.65	0.60
34:a:1320:C:C2	52:s:71:GLY:HA3	2.36	0.60
34:a:1402:4OC:H2'	34:a:1403:C:O4'	2.01	0.60
34:a:1432:G:H2'	34:a:1433:A:OP2	2.01	0.60
40:g:134:VAL:HG23	40:g:137:ARG:HE	1.66	0.60
1:0:15:ARG:HA	8:A:2046:G:H5'	1.83	0.60
8:A:216:A:H2'	8:A:217:A:C8	2.37	0.60
8:A:956:G:H5''	20:M:76:LYS:HG3	1.83	0.60
8:A:1168:G:H2'	8:A:1169:A:C8	2.37	0.60
8:A:1679:A:H2'	8:A:1680:U:H6	1.66	0.60
8:A:2649:C:H2'	8:A:2650:U:C6	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:95:C:O2'	34:a:96:U:OP1	2.18	0.60
34:a:920:U:H2'	34:a:921:U:H6	1.66	0.60
34:a:1111:A:N6	36:c:175:HIS:O	2.34	0.60
34:a:1254:A:H2'	34:a:1255:G:H8	1.66	0.60
34:a:1356:G:H2'	34:a:1357:A:H8	1.66	0.60
56:w:41:C:H2'	56:w:42:C:H6	1.66	0.60
57:x:18:ILE:HD11	57:x:91:HIS:HA	1.84	0.60
8:A:241:A:N6	8:A:256:A:OP2	2.31	0.60
8:A:298:G:N1	8:A:339:U:OP2	2.25	0.60
8:A:1788:C:H2'	8:A:1789:A:C8	2.36	0.60
8:A:2505:G:H4'	58:y:101:FME:SD	2.41	0.60
11:D:184:ARG:NH2	23:P:6:GLN:HG3	2.15	0.60
34:a:154:U:H2'	34:a:155:A:C8	2.36	0.60
34:a:728:A:H2'	34:a:729:A:C8	2.36	0.60
34:a:977:A:O2'	34:a:979:C:OP2	2.20	0.60
34:a:1014:A:H4'	52:s:13:HIS:CE1	2.37	0.60
34:a:1347:G:H4'	34:a:1348:U:O5'	2.02	0.60
35:b:165:ALA:HB3	35:b:190:SER:HB3	1.82	0.60
57:x:193:ASN:HB2	57:x:200:THR:HG22	1.82	0.60
8:A:52:A:H2'	8:A:53:A:C8	2.36	0.60
8:A:196:A:N6	8:A:831:G:N2	2.29	0.60
8:A:634:C:H2'	8:A:635:C:H6	1.67	0.60
8:A:910:A:N3	8:A:2264:C:O2'	2.30	0.60
8:A:1314:C:N3	8:A:1339:G:N2	2.50	0.60
8:A:2543:G:H2'	8:A:2544:G:H8	1.66	0.60
14:G:85:LYS:HD3	14:G:131:VAL:HG22	1.82	0.60
18:K:13:ASN:OD1	18:K:97:THR:N	2.34	0.60
34:a:104:G:OP1	53:t:15:LYS:NZ	2.34	0.60
34:a:195:A:H2'	34:a:196:A:C8	2.37	0.60
34:a:316:C:OP2	34:a:351:G:O2'	2.16	0.60
36:c:188:ALA:HB3	36:c:195:ILE:HB	1.83	0.60
42:i:26:LYS:N	42:i:61:ASP:OD1	2.33	0.60
57:x:493:ILE:HB	57:x:523:PRO:HB3	1.82	0.60
8:A:813:U:H2'	8:A:814:C:H6	1.66	0.60
8:A:1061:U:H5'	8:A:1062:G:H5'	1.83	0.60
8:A:2674:G:H2'	8:A:2675:A:C8	2.37	0.60
9:B:48:U:H4'	22:O:100:HIS:CD2	2.36	0.60
34:a:1150:A:C2	43:j:41:PRO:HG2	2.36	0.60
34:a:1401:G:O6	34:a:1504:G:N2	2.34	0.60
34:a:1481:U:H2'	34:a:1482:G:C4	2.36	0.60
37:d:104:MET:HG2	37:d:170:LEU:HD13	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1474:U:H2'	34:a:1475:G:H8	1.66	0.60
35:b:166:ASP:HB3	35:b:190:SER:HA	1.84	0.60
8:A:296:U:H2'	8:A:297:G:H8	1.66	0.60
8:A:629:G:OP1	8:A:650:C:O2'	2.19	0.60
8:A:828:U:H4'	8:A:831:G:N1	2.16	0.60
8:A:1313:U:O2'	8:A:1332:G:O4'	2.20	0.60
8:A:2776:A:C6	8:A:2778:A:C6	2.90	0.60
10:C:77:VAL:HG22	10:C:93:VAL:HG12	1.84	0.60
17:J:4:PHE:CG	24:Q:99:VAL:HG11	2.37	0.60
34:a:710:G:H2'	34:a:711:G:C8	2.36	0.60
34:a:741:G:OP1	48:o:1:SER:N	2.32	0.60
34:a:746:A:H2'	34:a:747:A:C8	2.36	0.60
36:c:111:ASP:HB3	36:c:114:LEU:HB2	1.84	0.60
42:i:50:PRO:O	42:i:54:VAL:HG22	2.01	0.60
50:q:29:LYS:HG3	50:q:36:PHE:CE1	2.36	0.60
57:x:617:LYS:N	57:x:682:GLU:O	2.35	0.60
8:A:239:C:O2'	8:A:622:G:O2'	2.19	0.60
8:A:755:U:H2'	8:A:756:A:C8	2.37	0.60
8:A:1252:G:N2	24:Q:32:ARG:O	2.35	0.60
8:A:1789:A:OP1	10:C:220:ARG:NE	2.23	0.60
23:P:20:ARG:N	23:P:23:ASP:OD2	2.26	0.60
34:a:413:G:N2	34:a:428:G:O3'	2.34	0.60
34:a:627:G:H2'	34:a:628:G:H8	1.66	0.60
34:a:1090:U:H2'	34:a:1091:U:C6	2.37	0.60
34:a:1280:A:OP1	43:j:9:ARG:NH2	2.35	0.60
50:q:11:VAL:HG23	50:q:54:ILE:HA	1.84	0.60
8:A:2756:U:H1'	8:A:2757:A:H5''	1.84	0.60
9:B:18:G:O6	9:B:65:U:O4	2.19	0.60
21:N:12:ARG:HE	21:N:16:HIS:CE1	2.20	0.60
30:W:14:ALA:O	30:W:16:ARG:NH1	2.34	0.60
46:m:65:GLU:O	46:m:69:ARG:HB2	2.02	0.60
50:q:58:VAL:HG12	50:q:77:VAL:HG12	1.84	0.60
8:A:63:A:N6	8:A:91:A:N1	2.49	0.59
8:A:1081:U:C2	16:I:123:ALA:HB1	2.37	0.59
15:H:38:PRO:O	15:H:43:ASN:ND2	2.34	0.59
29:V:26:PHE:HE2	29:V:89:ILE:HG13	1.65	0.59
57:x:61:THR:N	61:x:802:PO4:O4	2.33	0.59
8:A:592:A:H2'	8:A:593:U:H6	1.67	0.59
8:A:745:1MG:N2	8:A:750:A:N1	2.50	0.59
8:A:1061:U:H2'	8:A:1068:G:H1'	1.84	0.59
8:A:1667:G:N2	8:A:1994:C:H42	2.00	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1709:U:O2'	8:A:2859:G:N3	2.35	0.59
8:A:2172:U:H4'	8:A:2174:C:H41	1.67	0.59
8:A:2305:U:H2'	8:A:2306:C:C6	2.37	0.59
15:H:53:GLU:HG2	15:H:57:LYS:HE3	1.83	0.59
34:a:201:G:H1	34:a:216:U:H3	1.47	0.59
34:a:955:U:H2'	34:a:956:U:C6	2.37	0.59
34:a:1009:U:O4	34:a:1020:G:O6	2.20	0.59
36:c:71:ARG:HB3	36:c:74:ILE:HD13	1.85	0.59
57:x:491:GLU:HB2	57:x:570:VAL:HG22	1.82	0.59
8:A:13:A:O2'	8:A:15:G:N7	2.28	0.59
8:A:995:C:O2	17:J:3:THR:OG1	2.19	0.59
8:A:1039:A:N1	8:A:1116:G:N2	2.44	0.59
8:A:1266:G:O2'	8:A:2012:G:O6	2.20	0.59
8:A:2039:U:H2'	8:A:2040:G:C8	2.38	0.59
9:B:39:A:N1	9:B:44:G:C2	2.70	0.59
12:E:15:SER:N	12:E:197:GLU:OE2	2.29	0.59
34:a:424:G:H2'	34:a:425:G:H8	1.67	0.59
34:a:884:U:H4'	34:a:885:G:C5'	2.32	0.59
34:a:1003:G:H2'	34:a:1004:A:H5''	1.84	0.59
52:s:2:ARG:HE	52:s:6:LYS:HD3	1.67	0.59
8:A:368:A:H2'	8:A:369:U:O4'	2.02	0.59
8:A:859:G:O2'	8:A:860:U:OP2	2.19	0.59
8:A:1067:A:H61	57:x:640:MET:HA	1.67	0.59
8:A:2130:U:H2'	8:A:2131:U:C6	2.37	0.59
8:A:2356:U:H4'	30:W:16:ARG:HG3	1.83	0.59
8:A:2588:G:O6	8:A:2607:G:N1	2.36	0.59
8:A:2857:G:N2	8:A:2860:A:OP2	2.27	0.59
13:F:21:TYR:HE2	13:F:28:PRO:HD3	1.67	0.59
34:a:1171:A:H2'	34:a:1172:C:C6	2.37	0.59
37:d:63:ILE:HG23	37:d:110:ARG:HH22	1.67	0.59
8:A:230:G:O6	8:A:231:A:N6	2.36	0.59
8:A:2366:A:H4'	30:W:58:LYS:HE3	1.84	0.59
8:A:2468:A:O2'	8:A:2469:A:O5'	2.15	0.59
8:A:2728:U:H2'	8:A:2729:G:C8	2.38	0.59
8:A:2822:G:OP2	11:D:115:GLY:O	2.21	0.59
22:O:55:GLU:OE1	22:O:81:ARG:NH1	2.36	0.59
28:U:35:VAL:HG23	28:U:38:ILE:HB	1.85	0.59
34:a:1163:A:H2'	34:a:1164:G:C8	2.37	0.59
48:o:28:VAL:HG13	48:o:62:ARG:HG3	1.84	0.59
49:p:61:VAL:HG11	49:p:67:ILE:HD11	1.84	0.59
50:q:51:GLU:O	50:q:80:LYS:NZ	2.35	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:974:G:O2'	8:A:989:G:N2	2.36	0.59
8:A:1182:G:H2'	8:A:1183:U:O4'	2.03	0.59
8:A:2595:G:N2	8:A:2598:A:OP2	2.36	0.59
34:a:222:C:H2'	34:a:223:A:H8	1.67	0.59
34:a:1028:C:O2	34:a:1034:G:N2	2.36	0.59
34:a:1069:C:N4	34:a:1094:G:O6	2.35	0.59
34:a:1239:A:N7	34:a:1298:U:N3	2.51	0.59
34:a:1323:G:H2'	34:a:1324:A:H8	1.66	0.59
46:m:6:ILE:HG22	46:m:7:ASN:H	1.67	0.59
57:x:341:VAL:HG13	57:x:377:ARG:HG2	1.83	0.59
8:A:373:U:H3	8:A:401:A:H62	1.51	0.59
8:A:1168:G:H2'	8:A:1169:A:H8	1.68	0.59
8:A:1490:A:O2'	8:A:1491:G:OP1	2.19	0.59
8:A:1501:G:OP1	10:C:100:ARG:NH2	2.36	0.59
8:A:1911:PSU:O4	8:A:1920:C:N4	2.35	0.59
8:A:2071:A:H2'	8:A:2072:C:H6	1.68	0.59
8:A:2688:G:N1	8:A:2720:U:OP2	2.28	0.59
8:A:2768:U:O2'	17:J:95:ARG:NH2	2.36	0.59
27:T:23:ALA:HB1	27:T:29:THR:HB	1.84	0.59
34:a:642:A:H2'	34:a:643:C:H6	1.68	0.59
34:a:838:G:C5	34:a:849:G:C6	2.90	0.59
34:a:1060:U:H2'	34:a:1061:G:H8	1.67	0.59
34:a:1220:G:H2'	34:a:1221:G:H8	1.67	0.59
8:A:208:C:H2'	8:A:209:C:H6	1.67	0.59
8:A:828:U:O2'	8:A:829:A:O4'	2.21	0.59
8:A:1190:G:H2'	8:A:1191:G:H8	1.68	0.59
8:A:2229:U:H2'	8:A:2230:G:H8	1.67	0.59
9:B:37:C:O2	22:O:100:HIS:NE2	2.28	0.59
11:D:168:GLU:HG3	11:D:169:ARG:H	1.67	0.59
34:a:91:U:H2'	34:a:92:U:C6	2.38	0.59
34:a:727:G:N2	34:a:730:G:OP2	2.24	0.59
34:a:1065:U:H5''	34:a:1190:G:N2	2.16	0.59
34:a:1112:C:O2	36:c:178:ARG:N	2.36	0.59
34:a:1323:G:H2'	34:a:1324:A:C8	2.38	0.59
36:c:19:SER:HG	36:c:39:ARG:HH21	1.49	0.59
45:l:109:ARG:HB3	45:l:118:VAL:HG21	1.85	0.59
57:x:114:ALA:HA	57:x:153:VAL:HG21	1.84	0.59
8:A:1745:A:H2'	8:A:1746:A:C8	2.38	0.59
8:A:2375:G:N2	8:A:2377:A:H3'	2.17	0.59
31:X:71:ARG:NH2	31:X:77:TYR:OH	2.29	0.59
34:a:1500:A:OP2	34:a:1505:G:P	2.60	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1512:U:H2'	34:a:1513:A:C8	2.36	0.59
36:c:32:LEU:HD21	47:n:93:ILE:HG12	1.83	0.59
36:c:46:LEU:HB3	36:c:49:ALA:HB3	1.83	0.59
8:A:320:A:O2'	12:E:163:ASN:ND2	2.36	0.59
8:A:355:U:H2'	8:A:356:G:C8	2.38	0.59
8:A:634:C:H2'	8:A:635:C:C6	2.38	0.59
8:A:820:A:C2	8:A:943:A:H4'	2.38	0.59
8:A:1365:A:OP1	31:X:2:ARG:NH1	2.35	0.59
8:A:1842:G:H2'	8:A:1843:C:C6	2.37	0.59
8:A:1878:G:H2'	8:A:1879:C:C6	2.37	0.59
8:A:2153:C:H2'	8:A:2154:A:C8	2.37	0.59
8:A:2464:G:H2'	8:A:2465:C:H6	1.68	0.59
8:A:2588:G:C6	8:A:2607:G:C2	2.91	0.59
12:E:60:TRP:CZ2	12:E:70:SER:HB3	2.38	0.59
20:M:111:GLU:O	20:M:115:GLU:HG2	2.03	0.59
34:a:34:C:H2'	34:a:35:G:H8	1.68	0.59
34:a:377:G:H2'	34:a:378:G:C8	2.38	0.59
34:a:620:C:C2	37:d:131:ILE:HG21	2.38	0.59
8:A:814:C:OP1	25:R:86:GLN:N	2.35	0.58
8:A:1178:C:H4'	8:A:1179:G:C4	2.37	0.58
8:A:1341:G:H21	27:T:59:ASN:HD22	1.50	0.58
8:A:2134:A:H5'	8:A:2156:G:N2	2.18	0.58
10:C:145:MET:HE3	10:C:153:LEU:HD21	1.85	0.58
34:a:1163:A:H2'	34:a:1164:G:H8	1.68	0.58
34:a:1180:A:OP1	42:i:98:ARG:NH2	2.36	0.58
35:b:33:ALA:HB2	35:b:38:HIS:HA	1.84	0.58
8:A:355:U:H2'	8:A:356:G:H8	1.68	0.58
8:A:849:A:H2'	8:A:850:U:H6	1.68	0.58
8:A:1681:G:O2'	8:A:1762:A:N3	2.36	0.58
8:A:2202:U:O2'	8:A:2204:G:OP1	2.18	0.58
15:H:58:LEU:HA	15:H:61:VAL:HG12	1.84	0.58
22:O:66:GLY:O	22:O:102:ARG:NH2	2.35	0.58
30:W:42:HIS:CD2	30:W:73:ARG:HD3	2.38	0.58
34:a:254:G:H2'	34:a:255:G:H8	1.68	0.58
34:a:561:U:H4'	34:a:563:A:H62	1.67	0.58
34:a:1121:U:H2'	34:a:1122:U:H6	1.67	0.58
34:a:1314:C:H2'	34:a:1315:U:C6	2.38	0.58
34:a:1441:A:H2'	34:a:1442:G:H5'	1.85	0.58
8:A:234:U:O4	8:A:263:G:N2	2.35	0.58
8:A:1198:U:H2'	8:A:1199:U:H6	1.67	0.58
8:A:1443:U:H2'	8:A:1444:G:C8	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1745:A:H2'	8:A:1746:A:H8	1.67	0.58
20:M:136:MET:C	29:V:79:ARG:HH22	2.10	0.58
22:O:38:GLN:HB2	22:O:47:VAL:HG11	1.83	0.58
33:Z:10:ARG:NH2	33:Z:52:PHE:O	2.36	0.58
33:Z:39:ASP:OD1	33:Z:44:ARG:NE	2.36	0.58
34:a:269:C:H2'	34:a:270:A:C8	2.37	0.58
34:a:884:U:H4'	34:a:885:G:H5''	1.85	0.58
34:a:1414:U:O2	34:a:1487:G:N2	2.36	0.58
37:d:39:GLN:HE21	37:d:40:HIS:CE1	2.20	0.58
39:f:42:TRP:HB2	39:f:59:TYR:HB2	1.85	0.58
40:g:111:GLY:HA2	40:g:118:ARG:HD3	1.85	0.58
8:A:279:A:N7	8:A:361:G:C2	2.71	0.58
8:A:1386:C:H2'	8:A:1387:A:H8	1.68	0.58
8:A:1689:A:H61	8:A:1697:G:H2'	1.68	0.58
8:A:1770:G:O6	8:A:1982:U:O4	2.21	0.58
15:H:65:ALA:HA	15:H:68:ARG:HB2	1.85	0.58
17:J:26:GLY:O	17:J:30:THR:HG23	2.03	0.58
17:J:40:HIS:O	24:Q:70:GLN:NE2	2.23	0.58
17:J:49:ASP:HB2	17:J:114:LEU:HD11	1.86	0.58
34:a:620:C:C4	37:d:131:ILE:HG13	2.37	0.58
34:a:864:A:H2'	34:a:865:A:C8	2.38	0.58
35:b:55:GLU:HG2	35:b:197:PHE:CZ	2.39	0.58
40:g:145:GLU:HA	40:g:148:LYS:HB2	1.84	0.58
46:m:95:PRO:HB3	46:m:99:GLN:HE21	1.69	0.58
55:v:19:G:H5'	55:v:60:U:O4	2.03	0.58
57:x:491:GLU:CD	57:x:565:LEU:HB3	2.27	0.58
8:A:2117:A:N6	8:A:2166:U:O2	2.37	0.58
8:A:2626:C:H2'	8:A:2627:G:H8	1.66	0.58
19:L:79:LEU:HA	19:L:82:LEU:HD12	1.86	0.58
26:S:12:SER:OG	26:S:13:SER:N	2.36	0.58
27:T:20:ALA:HA	27:T:31:VAL:HG21	1.86	0.58
34:a:77:A:H2'	34:a:78:A:C8	2.39	0.58
34:a:958:A:N6	52:s:76:THR:O	2.30	0.58
34:a:1317:C:H3'	34:a:1318:A:H8	1.68	0.58
34:a:1447:A:OP1	34:a:1448:C:N4	2.30	0.58
35:b:56:LEU:HD11	35:b:66:ILE:HD12	1.85	0.58
37:d:123:MET:HG3	37:d:145:ARG:HB2	1.85	0.58
55:v:41:C:O2'	55:v:42:G:H5'	2.03	0.58
8:A:265:A:O2'	8:A:428:A:N6	2.30	0.58
8:A:428:A:H2'	8:A:429:A:C8	2.39	0.58
8:A:1713:A:N6	8:A:1746:A:N1	2.50	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2838:G:C4	8:A:2839:G:C8	2.91	0.58
34:a:450:G:N7	34:a:481:G:N1	2.51	0.58
34:a:472:U:H2'	34:a:473:U:C6	2.38	0.58
34:a:1037:C:H2'	34:a:1038:C:H6	1.68	0.58
35:b:61:SER:O	35:b:63:LYS:NZ	2.33	0.58
57:x:297:ILE:HG23	57:x:305:PRO:HG2	1.85	0.58
8:A:77:G:O2'	32:Y:7:ARG:NH1	2.36	0.58
8:A:349:U:H2'	8:A:350:G:C8	2.38	0.58
8:A:1748:C:H2'	8:A:1749:A:H8	1.67	0.58
8:A:1839:G:C5	8:A:1840:G:C8	2.92	0.58
26:S:6:LYS:HG2	26:S:104:THR:HG22	1.86	0.58
26:S:17:VAL:HG12	26:S:76:VAL:HG21	1.84	0.58
30:W:21:ARG:HD2	30:W:25:GLU:HG2	1.85	0.58
34:a:587:G:N1	34:a:754:C:OP2	2.24	0.58
34:a:619:U:N3	37:d:130:ASN:OD1	2.23	0.58
2:1:5:ARG:NH2	2:1:23:THR:O	2.37	0.58
8:A:1198:U:H2'	8:A:1199:U:C6	2.39	0.58
8:A:1360:G:O6	8:A:1371:G:N2	2.35	0.58
9:B:52:A:O2'	9:B:53:A:H8	1.87	0.58
27:T:6:ARG:NH2	27:T:37:ASP:OD2	2.37	0.58
34:a:978:A:C8	34:a:979:C:H5	2.21	0.58
34:a:1305:G:H4'	34:a:1306:A:H5'	1.84	0.58
6:5:30:SER:HA	8:A:1054:A:H4'	1.86	0.58
8:A:1157:G:OP1	8:A:1158:C:OP2	2.21	0.58
8:A:1539:U:H2'	8:A:1540:G:H8	1.69	0.58
8:A:1807:G:O2'	8:A:1809:A:N6	2.31	0.58
11:D:8:LYS:HB2	11:D:201:LEU:HD11	1.86	0.58
14:G:23:ILE:HD13	14:G:71:LEU:HD11	1.86	0.58
22:O:7:ARG:HA	22:O:10:ARG:HE	1.69	0.58
34:a:1037:C:H2'	34:a:1038:C:C6	2.38	0.58
8:A:288:U:H2'	8:A:289:G:C8	2.39	0.58
8:A:555:G:O2'	8:A:556:A:O5'	2.22	0.58
8:A:599:A:C6	8:A:659:G:C6	2.92	0.58
8:A:1178:C:HO2'	8:A:1179:G:N2	2.02	0.58
8:A:2680:U:H1'	11:D:192:ALA:HB1	1.86	0.58
15:H:53:GLU:O	15:H:57:LYS:HG2	2.04	0.58
18:K:98:ARG:NH1	34:a:337:G:OP2	2.36	0.58
34:a:160:A:H2	34:a:344:A:H1'	1.69	0.58
34:a:703:G:O2'	34:a:704:A:OP2	2.20	0.58
34:a:1015:G:H2'	34:a:1016:A:O4'	2.04	0.58
36:c:86:LEU:HD11	36:c:100:ILE:HG21	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:n:46:LEU:O	47:n:50:THR:HG23	2.04	0.58
8:A:39:G:H2'	8:A:40:U:C6	2.39	0.57
8:A:781:A:C8	10:C:217:PRO:HG2	2.39	0.57
8:A:1050:A:H2'	8:A:1051:G:C8	2.37	0.57
8:A:2273:A:H2'	8:A:2274:A:C8	2.39	0.57
13:F:37:MET:HE2	13:F:56:LEU:HG	1.86	0.57
15:H:32:PRO:HA	31:X:38:TRP:CD1	2.39	0.57
18:K:108:ARG:HG2	18:K:116:ILE:HG12	1.86	0.57
34:a:642:A:H2'	34:a:643:C:C6	2.38	0.57
34:a:950:U:H2'	34:a:951:G:H8	1.69	0.57
34:a:1006:G:N1	34:a:1023:U:H1'	2.19	0.57
34:a:1484:C:H3'	34:a:1485:U:H4'	1.85	0.57
38:e:98:ALA:HB1	38:e:102:THR:HG21	1.86	0.57
39:f:46:GLN:HA	39:f:56:LYS:HA	1.84	0.57
48:o:32:THR:OG1	48:o:62:ARG:NH1	2.31	0.57
53:t:43:LYS:HE2	53:t:86:ALA:HB2	1.85	0.57
57:x:138:ALA:HB3	57:x:263:VAL:HG12	1.86	0.57
1:0:4:GLN:O	8:A:2017:U:H4'	2.04	0.57
8:A:564:C:H2'	8:A:565:C:H6	1.69	0.57
8:A:1581:G:H2'	8:A:1582:C:C6	2.39	0.57
8:A:2840:C:H2'	8:A:2841:C:C6	2.39	0.57
20:M:27:SER:OG	20:M:66:ARG:NH1	2.37	0.57
34:a:215:C:H1'	34:a:465:A:N6	2.18	0.57
34:a:625:U:H2'	34:a:626:G:C8	2.38	0.57
54:u:5:VAL:HG21	54:u:18:PHE:HB2	1.84	0.57
57:x:71:TRP:CD1	57:x:278:LEU:HB3	2.39	0.57
57:x:421:PRO:HD2	57:x:427:GLN:HE22	1.69	0.57
8:A:190:A:H5''	8:A:204:A:H61	1.69	0.57
8:A:216:A:N7	8:A:432:A:C6	2.72	0.57
8:A:1532:A:H2'	8:A:1533:C:C6	2.39	0.57
8:A:1709:U:O2	8:A:2859:G:N2	2.37	0.57
8:A:1779:U:H5	8:A:1784:A:N7	2.03	0.57
9:B:40:U:O2	9:B:45:A:N6	2.34	0.57
10:C:66:PHE:HB3	10:C:150:GLY:O	2.04	0.57
12:E:143:LEU:HD13	12:E:146:VAL:HG11	1.85	0.57
16:I:120:ASP:H	16:I:123:ALA:HB3	1.69	0.57
18:K:70:ARG:HG2	18:K:76:VAL:HG22	1.86	0.57
34:a:8:A:N3	38:e:107:GLY:HA2	2.19	0.57
34:a:123:U:H2'	34:a:124:C:C6	2.39	0.57
34:a:405:U:OP1	34:a:406:G:O2'	2.22	0.57
57:x:232:LEU:HD12	57:x:242:LEU:HD13	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:x:642:LYS:HG2	57:x:656:GLU:OE1	2.03	0.57
57:x:687:ASP:OD1	57:x:688:GLU:N	2.37	0.57
59:z:0:U:OP1	59:z:0:U:H4'	2.00	0.57
8:A:85:G:C4	8:A:98:G:N2	2.73	0.57
8:A:275:C:O2'	8:A:362:A:N6	2.37	0.57
8:A:1440:U:H2'	8:A:1441:G:C8	2.38	0.57
8:A:1839:G:N7	8:A:1927:A:C2	2.72	0.57
9:B:91:C:OP2	20:M:18:ARG:NH1	2.28	0.57
12:E:61:ARG:NE	12:E:63:LYS:O	2.38	0.57
31:X:36:ARG:HB3	31:X:45:PHE:HD2	1.69	0.57
34:a:979:C:OP1	34:a:1223:C:N4	2.36	0.57
34:a:1157:A:N7	34:a:1180:A:N6	2.52	0.57
46:m:48:SER:HB3	46:m:51:GLN:OE1	2.04	0.57
48:o:2:LEU:HD22	48:o:34:GLN:HB2	1.84	0.57
52:s:19:GLU:HA	52:s:22:VAL:HG12	1.86	0.57
53:t:34:VAL:HG21	53:t:53:MET:HG2	1.85	0.57
57:x:193:ASN:HD22	57:x:200:THR:HG21	1.68	0.57
57:x:673:THR:HG21	57:x:677:ALA:HB2	1.86	0.57
8:A:231:A:H2'	8:A:232:G:O4'	2.04	0.57
8:A:545:U:H3'	8:A:546:U:C6	2.39	0.57
8:A:878:A:H3'	8:A:879:G:H8	1.69	0.57
8:A:1857:G:H22	8:A:1884:G:H2'	1.66	0.57
8:A:2329:U:H2'	8:A:2330:G:C8	2.39	0.57
8:A:2543:G:H2'	8:A:2544:G:C8	2.40	0.57
8:A:2723:C:OP1	11:D:114:LYS:NZ	2.37	0.57
8:A:2807:U:O2	8:A:2892:G:N1	2.37	0.57
12:E:61:ARG:NH1	12:E:64:GLY:HA3	2.20	0.57
17:J:125:TYR:OH	17:J:132:HIS:NE2	2.32	0.57
34:a:78:A:H2'	34:a:79:G:H8	1.68	0.57
34:a:1418:A:N6	34:a:1482:G:H1'	2.19	0.57
55:v:21:A:H2'	55:v:22:G:H8	1.69	0.57
57:x:172:ILE:HD11	57:x:182:VAL:HB	1.86	0.57
8:A:139:U:C2	27:T:1:MET:HE1	2.39	0.57
8:A:644:A:N1	8:A:2369:A:H1'	2.19	0.57
8:A:1005:C:H1'	8:A:1012:U:H3	1.70	0.57
8:A:1096:A:N1	16:I:28:GLY:HA3	2.18	0.57
8:A:1463:C:H2'	8:A:1464:G:C8	2.40	0.57
8:A:2144:G:N2	8:A:2148:G:O6	2.35	0.57
8:A:2851:A:H2'	8:A:2852:G:O4'	2.04	0.57
9:B:28:C:H2'	9:B:29:A:C8	2.38	0.57
13:F:42:ALA:HB2	13:F:49:LEU:HB2	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:Q:23:TYR:HB2	24:Q:28:SER:HB3	1.85	0.57
34:a:416:G:H2'	34:a:417:G:C8	2.35	0.57
34:a:1218:C:H2'	34:a:1219:A:C8	2.39	0.57
39:f:64:VAL:HG12	39:f:65:GLU:H	1.69	0.57
52:s:55:GLN:HG3	52:s:56:HIS:H	1.70	0.57
8:A:818:G:N1	8:A:1188:U:OP2	2.26	0.57
8:A:1028:A:H2'	8:A:1029:A:C8	2.39	0.57
8:A:1252:G:N2	24:Q:36:GLN:HE21	1.95	0.57
8:A:1409:U:H2'	8:A:1410:G:C8	2.39	0.57
8:A:1671:U:O2'	8:A:1673:G:N7	2.35	0.57
8:A:2022:U:HO2'	8:A:2616:C:HO2'	1.37	0.57
8:A:2314:A:OP1	13:F:87:LYS:NZ	2.38	0.57
8:A:2403:C:H2'	8:A:2404:U:H6	1.70	0.57
8:A:2508:G:H1	8:A:2580:PSU:HN3	1.52	0.57
8:A:2639:A:N6	8:A:2775:G:O2'	2.37	0.57
8:A:2859:G:H2'	8:A:2860:A:C8	2.38	0.57
34:a:41:G:H2'	34:a:42:G:H8	1.68	0.57
34:a:67:C:H2'	34:a:68:G:C8	2.40	0.57
34:a:1071:C:H2'	34:a:1072:G:H8	1.69	0.57
49:p:6:LEU:HB3	49:p:17:TYR:HB3	1.86	0.57
49:p:52:LEU:HD21	49:p:74:LEU:HB3	1.86	0.57
57:x:126:TRP:CD1	57:x:130:ASN:HD21	2.23	0.57
8:A:1528:A:N6	8:A:1543:G:O2'	2.38	0.57
8:A:2287:A:N7	8:A:2289:G:C8	2.73	0.57
8:A:2532:G:H2'	8:A:2533:U:H6	1.70	0.57
10:C:128:THR:HB	10:C:190:THR:HG23	1.87	0.57
12:E:127:GLU:O	12:E:156:ASN:ND2	2.38	0.57
13:F:32:LYS:HG2	13:F:156:THR:OG1	2.05	0.57
34:a:1024:G:O2'	34:a:1025:U:OP1	2.23	0.57
34:a:1092:A:H5'	40:g:3:ARG:HD2	1.87	0.57
34:a:1180:A:P	42:i:98:ARG:HH22	2.28	0.57
34:a:1321:U:OP2	34:a:1322:C:O2'	2.16	0.57
37:d:113:ALA:O	37:d:117:VAL:HG23	2.05	0.57
43:j:30:LYS:N	43:j:33:GLY:O	2.32	0.57
8:A:271:G:C6	8:A:367:G:N1	2.73	0.57
8:A:813:U:O2'	8:A:1225:G:O2'	2.21	0.57
8:A:849:A:H2'	8:A:850:U:C6	2.39	0.57
8:A:1426:G:N2	8:A:1572:A:N7	2.53	0.57
8:A:2100:G:H2'	8:A:2101:A:C8	2.39	0.57
8:A:2127:G:H21	8:A:2129:C:H1'	1.70	0.57
8:A:2319:G:O2'	8:A:2320:U:O5'	2.18	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2458:G:N2	8:A:2494:G:O6	2.38	0.57
8:A:2816:G:O3'	21:N:99:LYS:NZ	2.33	0.57
10:C:92:LEU:HD21	10:C:100:ARG:HD3	1.87	0.57
10:C:141:HIS:CD2	10:C:194:VAL:HG22	2.40	0.57
11:D:4:LEU:HD12	11:D:32:ASN:OD1	2.05	0.57
21:N:38:LEU:HB3	21:N:39:PRO:HD3	1.86	0.57
34:a:56:U:H2'	34:a:57:G:H8	1.69	0.57
34:a:332:G:OP2	53:t:2:ASN:ND2	2.38	0.57
34:a:632:U:H5''	34:a:633:G:H8	1.68	0.57
34:a:979:C:OP2	34:a:981:U:N3	2.38	0.57
34:a:1116:U:O2	34:a:1184:G:O6	2.22	0.57
43:j:65:TYR:OH	47:n:85:ARG:HG3	2.05	0.57
52:s:68:HIS:HB3	52:s:72:GLU:HG3	1.86	0.57
8:A:5:A:H2'	8:A:6:A:H8	1.69	0.57
8:A:1846:G:N2	8:A:1895:C:C2	2.73	0.57
8:A:2183:A:H2'	8:A:2184:A:C8	2.40	0.57
8:A:2316:G:H2'	8:A:2317:A:H8	1.69	0.57
10:C:141:HIS:ND1	10:C:190:THR:O	2.38	0.57
20:M:34:LYS:HE3	20:M:131:VAL:HG11	1.85	0.57
34:a:34:C:H2'	34:a:35:G:C8	2.40	0.57
34:a:60:A:H3'	53:t:4:LYS:HE3	1.85	0.57
34:a:202:G:H22	34:a:215:C:H5	1.53	0.57
34:a:707:U:H2'	34:a:708:C:C6	2.40	0.57
34:a:1375:A:H2'	34:a:1376:U:O4'	2.04	0.57
39:f:49:TYR:OH	39:f:86:ARG:NH1	2.34	0.57
8:A:1036:G:C6	8:A:1120:G:C6	2.93	0.56
8:A:1841:U:C2	8:A:1842:G:C8	2.93	0.56
8:A:1975:G:H2'	8:A:1976:U:O4'	2.04	0.56
8:A:2048:G:C6	8:A:2621:G:N1	2.73	0.56
8:A:2097:A:H2'	8:A:2098:U:C6	2.39	0.56
8:A:2468:A:O2'	8:A:2469:A:H8	1.87	0.56
8:A:2745:C:H2'	8:A:2746:U:H6	1.69	0.56
11:D:57:ALA:HA	11:D:60:VAL:HG12	1.86	0.56
14:G:76:ILE:HA	14:G:79:THR:HG22	1.85	0.56
34:a:997:U:H2'	34:a:998:C:H6	1.70	0.56
34:a:1124:G:N2	34:a:1125:U:O4	2.22	0.56
34:a:1251:A:H2'	34:a:1252:A:C8	2.39	0.56
34:a:1293:C:N4	34:a:1294:G:O6	2.38	0.56
34:a:1416:G:O6	34:a:1483:A:N6	2.33	0.56
34:a:1432:G:C2'	34:a:1433:A:OP2	2.52	0.56
8:A:415:A:H2'	8:A:416:U:H6	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1088:A:H5'	8:A:1089:A:OP1	2.05	0.56
8:A:1178:C:H2'	8:A:1180:U:C6	2.40	0.56
8:A:1315:C:C2	8:A:1338:G:N2	2.73	0.56
8:A:1587:G:H2'	8:A:1588:G:C8	2.39	0.56
8:A:1796:U:H2'	8:A:1797:G:C8	2.39	0.56
8:A:2813:A:H2'	8:A:2814:A:H8	1.70	0.56
24:Q:49:ARG:NH2	25:R:73:LYS:O	2.38	0.56
34:a:266:G:O6	34:a:271:C:N4	2.36	0.56
34:a:580:C:H2'	34:a:581:G:O4'	2.06	0.56
34:a:695:A:H61	34:a:797:C:H1'	1.70	0.56
34:a:999:C:H2'	34:a:1000:A:H8	1.69	0.56
34:a:1151:A:HO2'	34:a:1152:A:H8	1.52	0.56
34:a:1436:U:H2'	34:a:1437:A:C8	2.40	0.56
39:f:69:GLU:O	39:f:73:GLU:HG2	2.04	0.56
43:j:53:ILE:HD11	43:j:61:ALA:HB1	1.88	0.56
49:p:46:LYS:O	49:p:48:GLU:N	2.38	0.56
55:v:28:C:N3	55:v:43:A:C2	2.73	0.56
57:x:112:TYR:CE2	57:x:118:VAL:HG12	2.39	0.56
8:A:419:U:H2'	8:A:420:C:C6	2.40	0.56
8:A:705:A:H2'	8:A:706:A:H8	1.70	0.56
8:A:948:C:H2'	8:A:949:G:C8	2.35	0.56
8:A:1082:U:H4'	8:A:1083:U:OP2	2.04	0.56
8:A:1476:U:H3	8:A:1515:A:H62	1.51	0.56
8:A:1541:C:H2'	8:A:1542:U:C6	2.40	0.56
8:A:1747:U:H2'	8:A:1748:C:C6	2.41	0.56
8:A:1906:G:C8	8:A:1929:G:C8	2.93	0.56
8:A:2152:G:H3'	8:A:2153:C:C5	2.40	0.56
8:A:2836:U:H2'	8:A:2837:A:C8	2.41	0.56
9:B:28:C:H2'	9:B:29:A:H8	1.70	0.56
9:B:32:U:C2	9:B:33:G:C8	2.93	0.56
17:J:37:ARG:HA	17:J:118:MET:SD	2.45	0.56
24:Q:93:ILE:HG21	25:R:4:VAL:HG11	1.88	0.56
34:a:265:G:N2	34:a:267:C:H5'	2.20	0.56
34:a:268:U:H2'	34:a:269:C:C6	2.40	0.56
34:a:472:U:H2'	34:a:473:U:H6	1.70	0.56
34:a:512:U:H2'	34:a:513:C:C6	2.40	0.56
34:a:1003:G:O3'	34:a:1024:G:N2	2.37	0.56
34:a:1043:G:H2'	34:a:1044:A:C8	2.40	0.56
34:a:1416:G:N1	34:a:1483:A:N1	2.54	0.56
35:b:146:SER:OG	35:b:147:LEU:HD12	2.05	0.56
40:g:39:GLU:OE2	42:i:42:THR:OG1	2.23	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:j:56:HIS:CD2	43:j:57:VAL:HG22	2.38	0.56
46:m:78:ARG:O	46:m:82:LEU:HB2	2.05	0.56
47:n:6:LYS:O	47:n:10:VAL:HG23	2.05	0.56
56:w:37:MIA:HN6	56:w:38:A:N6	2.02	0.56
57:x:685:LYS:NZ	57:x:687:ASP:OD2	2.38	0.56
8:A:607:U:N3	8:A:608:A:N7	2.54	0.56
8:A:1074:G:H5'	8:A:1075:C:H5	1.71	0.56
8:A:1880:U:H2'	8:A:1881:C:H6	1.71	0.56
8:A:2221:G:H2'	8:A:2222:C:C6	2.40	0.56
8:A:2625:G:H2'	8:A:2626:C:C6	2.41	0.56
9:B:30:C:H1'	9:B:57:A:H61	1.71	0.56
33:Z:38:GLU:OE1	33:Z:38:GLU:N	2.36	0.56
51:r:20:ILE:HD13	51:r:54:LEU:HA	1.88	0.56
56:w:9:A:H62	56:w:23:A:N6	2.04	0.56
56:w:70:G:H2'	56:w:71:G:H8	1.71	0.56
8:A:481:G:H1'	8:A:506:G:H21	1.69	0.56
8:A:532:A:N1	8:A:2020:A:H1'	2.19	0.56
8:A:833:A:H2'	8:A:834:G:H8	1.69	0.56
8:A:1199:U:H2'	8:A:1200:C:C6	2.41	0.56
8:A:1326:U:H2'	8:A:1327:A:C8	2.40	0.56
8:A:1936:A:H2	8:A:1943:U:N3	2.03	0.56
8:A:2073:C:C2	8:A:2437:G:N2	2.74	0.56
8:A:2720:U:H2'	8:A:2721:A:H8	1.69	0.56
9:B:16:G:N2	9:B:69:G:H1'	2.20	0.56
11:D:25:THR:HG21	11:D:193:VAL:HG22	1.87	0.56
32:Y:49:ASP:OD1	32:Y:52:ARG:NH2	2.39	0.56
34:a:39:G:C4	34:a:404:G:N2	2.74	0.56
34:a:86:G:O2'	34:a:88:U:OP2	2.16	0.56
34:a:512:U:H2'	34:a:513:C:H6	1.71	0.56
34:a:974:A:O4'	47:n:71:HIS:ND1	2.35	0.56
34:a:1246:A:N6	34:a:1292:G:O6	2.38	0.56
46:m:72:ILE:HG13	46:m:73:SER:N	2.20	0.56
46:m:84:CYS:SG	46:m:87:GLY:N	2.77	0.56
53:t:67:HIS:O	53:t:70:LYS:N	2.39	0.56
8:A:593:U:H2'	8:A:594:U:C6	2.40	0.56
8:A:1053:C:N4	8:A:1106:G:O6	2.29	0.56
13:F:90:LEU:C	13:F:95:MET:HB2	2.30	0.56
26:S:40:ASN:O	26:S:41:LYS:HG2	2.05	0.56
29:V:72:VAL:HG12	29:V:93:ARG:HA	1.88	0.56
34:a:77:A:C6	34:a:78:A:N6	2.74	0.56
34:a:324:G:H22	34:a:327:A:H5'	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:728:A:OP1	48:o:53:ARG:NH1	2.37	0.56
34:a:1116:U:H2'	34:a:1117:A:C8	2.41	0.56
34:a:1355:G:H2'	34:a:1356:G:H8	1.71	0.56
44:k:60:PHE:O	44:k:64:VAL:HG23	2.05	0.56
8:A:416:U:H2'	8:A:417:C:C6	2.41	0.56
8:A:564:C:H2'	8:A:565:C:C6	2.40	0.56
8:A:685:A:C8	8:A:773:U:C4	2.94	0.56
8:A:2138:G:O6	8:A:2154:A:O2'	2.23	0.56
8:A:2380:C:H2'	8:A:2381:A:C8	2.41	0.56
11:D:133:THR:HG22	11:D:134:HIS:H	1.71	0.56
13:F:7:TYR:HB2	13:F:172:PHE:CE1	2.40	0.56
34:a:1381:U:O2'	34:a:1382:C:O4'	2.19	0.56
36:c:117:ASP:HA	36:c:120:THR:HG22	1.87	0.56
38:e:14:LEU:HA	38:e:36:THR:HG22	1.87	0.56
38:e:35:LEU:HD22	38:e:133:ILE:HG22	1.86	0.56
45:l:114:SER:OG	45:l:115:LYS:N	2.38	0.56
8:A:68:G:N2	8:A:74:A:OP2	2.38	0.56
8:A:173:A:H2'	8:A:174:U:H6	1.71	0.56
8:A:640:C:H2'	8:A:641:U:C6	2.40	0.56
8:A:1548:A:H2'	8:A:1549:A:H8	1.69	0.56
8:A:1637:A:H5'	8:A:1760:C:O2'	2.06	0.56
8:A:1750:G:H2'	8:A:1751:U:C6	2.41	0.56
8:A:2028:U:H3	8:A:2033:A:N6	1.92	0.56
8:A:2564:A:OP1	8:A:2648:G:O2'	2.20	0.56
9:B:29:A:H2'	9:B:30:C:H6	1.71	0.56
9:B:40:U:N3	9:B:44:G:OP2	2.38	0.56
29:V:88:HIS:ND1	29:V:90:ASP:OD1	2.39	0.56
34:a:12:U:H4'	34:a:526:C:H4'	1.88	0.56
34:a:41:G:H2'	34:a:42:G:C8	2.40	0.56
34:a:680:C:H2'	34:a:681:A:C8	2.41	0.56
34:a:1319:A:C8	34:a:1323:G:C6	2.93	0.56
47:n:46:LEU:O	47:n:49:GLN:HG2	2.06	0.56
8:A:438:G:H2'	8:A:439:A:C8	2.41	0.56
8:A:739:A:H1'	8:A:740:C:H5	1.71	0.56
12:E:172:ALA:HB1	12:E:196:VAL:HG23	1.88	0.56
17:J:140:LEU:HD11	17:J:142:ILE:HG23	1.87	0.56
18:K:78:ARG:HH21	23:P:100:ARG:NH1	2.02	0.56
34:a:94:G:N2	34:a:97:G:N7	2.45	0.56
34:a:114:U:H2'	34:a:115:G:C8	2.41	0.56
34:a:147:G:H2'	34:a:148:G:H8	1.71	0.56
34:a:193:C:H2'	34:a:194:C:H6	1.71	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:458:U:H2'	34:a:459:A:C8	2.41	0.56
34:a:546:A:HO2'	34:a:548:G:HO2'	1.54	0.56
34:a:977:A:H2'	34:a:978:A:H5''	1.88	0.56
34:a:1040:U:H2'	34:a:1041:G:C8	2.41	0.56
34:a:1419:G:H2'	34:a:1420:U:O4'	2.06	0.56
57:x:115:VAL:HG11	57:x:145:ARG:HH22	1.71	0.56
57:x:490:ARG:CZ	57:x:571:VAL:HG11	2.36	0.56
8:A:547:A:H4'	8:A:548:G:C4	2.40	0.56
8:A:803:U:H2'	8:A:804:A:C8	2.41	0.56
8:A:813:U:H2'	8:A:814:C:C6	2.41	0.56
8:A:2561:U:O3'	18:K:40:LYS:NZ	2.30	0.56
8:A:2827:C:H2'	8:A:2828:G:H8	1.70	0.56
34:a:69:G:H2'	34:a:70:U:C6	2.41	0.56
57:x:172:ILE:O	57:x:178:PHE:HA	2.06	0.56
8:A:171:U:H2'	8:A:172:A:H8	1.70	0.55
8:A:759:G:C2	8:A:760:G:C5	2.94	0.55
8:A:1167:C:H2'	8:A:1168:G:H8	1.71	0.55
8:A:2443:C:H2'	8:A:2444:G:H8	1.70	0.55
8:A:2670:A:H2'	8:A:2671:G:C8	2.41	0.55
8:A:2804:U:H2'	8:A:2805:C:C6	2.42	0.55
10:C:262:THR:O	10:C:265:PHE:N	2.39	0.55
21:N:55:ALA:HA	21:N:80:PHE:CE1	2.41	0.55
34:a:530:G:O6	59:z:6:U:H1'	2.06	0.55
34:a:947:G:H2'	34:a:948:C:C6	2.40	0.55
34:a:963:G:C2	34:a:964:A:C8	2.95	0.55
34:a:1524:C:H2'	34:a:1525:G:H8	1.70	0.55
36:c:107:LYS:HD2	36:c:143:LEU:HD21	1.88	0.55
55:v:36:U:H2'	55:v:37:A:H8	1.72	0.55
57:x:26:THR:HG23	57:x:85:ILE:HD12	1.88	0.55
57:x:252:ARG:O	57:x:256:LEU:HG	2.06	0.55
8:A:787:C:OP1	8:A:1780:A:N6	2.39	0.55
8:A:860:U:OP2	8:A:916:G:N1	2.35	0.55
8:A:1071:G:C2	8:A:1089:A:N6	2.73	0.55
8:A:1140:C:OP2	17:J:68:LYS:NZ	2.30	0.55
8:A:1444:G:H2'	8:A:1445:G:C8	2.41	0.55
8:A:1853:A:N7	8:A:1889:A:N6	2.54	0.55
8:A:2314:A:H2'	8:A:2315:G:H8	1.72	0.55
15:H:78:VAL:HB	15:H:144:VAL:HA	1.88	0.55
28:U:6:ARG:NH2	28:U:25:LYS:O	2.39	0.55
34:a:600:A:OP2	41:h:87:ARG:NH1	2.39	0.55
34:a:939:G:P	40:g:94:ARG:HH22	2.28	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:d:10:LEU:HD22	37:d:62:ARG:NE	2.21	0.55
37:d:115:GLN:NE2	37:d:119:HIS:NE2	2.55	0.55
43:j:59:LYS:HE2	43:j:62:ARG:HH21	1.70	0.55
55:v:42:G:O2'	55:v:43:A:H8	1.88	0.55
57:x:182:VAL:HG21	57:x:206:ILE:HD12	1.87	0.55
8:A:155:A:H2'	8:A:156:A:C8	2.42	0.55
8:A:828:U:H4'	8:A:831:G:C6	2.41	0.55
8:A:1061:U:N3	8:A:1068:G:OP1	2.39	0.55
8:A:1196:C:C2	8:A:1197:G:C8	2.95	0.55
8:A:2105:U:H2'	8:A:2106:U:C6	2.42	0.55
9:B:31:C:H1'	9:B:54:G:H1	1.71	0.55
11:D:11:MET:HG2	11:D:25:THR:HG22	1.88	0.55
34:a:908:A:H2'	34:a:909:A:C8	2.40	0.55
39:f:11:HIS:CD2	39:f:54:LEU:HD11	2.42	0.55
57:x:538:ASP:CG	57:x:576:ARG:HE	2.14	0.55
8:A:308:G:N2	8:A:477:A:N7	2.54	0.55
8:A:1687:G:N2	8:A:1702:G:C6	2.75	0.55
8:A:2685:G:H2'	8:A:2686:G:C8	2.40	0.55
10:C:52:HIS:NE2	10:C:218:THR:CG2	2.61	0.55
13:F:7:TYR:HB2	13:F:172:PHE:HE1	1.71	0.55
13:F:90:LEU:HB3	13:F:95:MET:HA	1.88	0.55
15:H:97:ARG:HH11	15:H:112:LYS:HE3	1.72	0.55
20:M:63:ILE:HG12	20:M:105:MET:HG2	1.88	0.55
34:a:77:A:O2'	34:a:78:A:OP1	2.23	0.55
34:a:1333:A:H2'	34:a:1334:G:O4'	2.07	0.55
44:k:73:VAL:HG12	44:k:78:ILE:HD11	1.89	0.55
48:o:28:VAL:HG11	48:o:66:LEU:HD21	1.87	0.55
50:q:56:ASP:OD1	50:q:81:ALA:N	2.29	0.55
56:w:26:A:N6	56:w:44:G:H1	2.05	0.55
57:x:191:ASN:ND2	57:x:204:GLU:OE2	2.39	0.55
57:x:298:LEU:H	57:x:305:PRO:HB2	1.72	0.55
57:x:667:THR:OG1	57:x:668:GLN:OE1	2.24	0.55
4:3:28:LEU:HD11	4:3:40:LYS:HA	1.88	0.55
8:A:411:G:OP2	8:A:2406:A:O2'	2.20	0.55
8:A:414:C:H2'	8:A:415:A:H8	1.70	0.55
8:A:994:C:O2'	8:A:996:A:OP1	2.17	0.55
8:A:2584:U:H3'	8:A:2585:U:C5'	2.37	0.55
34:a:490:C:H2'	34:a:491:G:H8	1.72	0.55
34:a:1156:G:H21	34:a:1180:A:H2	1.55	0.55
37:d:161:ALA:HA	37:d:164:ARG:HH22	1.72	0.55
45:l:26:CYS:SG	45:l:29:LYS:NZ	2.79	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:x:638:ARG:HG3	57:x:658:PRO:HG2	1.87	0.55
8:A:74:A:N3	8:A:74:A:H5''	2.22	0.55
8:A:495:G:N3	26:S:61:ASN:ND2	2.54	0.55
8:A:843:G:H2'	8:A:844:A:C8	2.41	0.55
8:A:845:A:O2'	8:A:847:U:OP1	2.15	0.55
8:A:1097:U:O2'	16:I:7:TYR:N	2.40	0.55
8:A:1831:G:C4	8:A:1975:G:N2	2.75	0.55
8:A:1847:G:H21	8:A:1848:A:H62	1.55	0.55
8:A:2252:G:H1	56:w:74:C:H42	1.55	0.55
8:A:2731:G:O2'	8:A:2732:G:H5'	2.07	0.55
12:E:48:THR:HG23	12:E:86:ALA:HB3	1.89	0.55
24:Q:67:ALA:O	24:Q:71:ASN:ND2	2.39	0.55
31:X:26:ARG:HD3	31:X:28:PHE:HE1	1.70	0.55
34:a:21:G:H2'	34:a:22:G:C8	2.41	0.55
34:a:359:G:H2'	34:a:360:G:H8	1.71	0.55
35:b:10:LYS:HG3	35:b:211:LEU:HD11	1.86	0.55
37:d:98:ASP:CG	37:d:114:ARG:HG3	2.32	0.55
57:x:30:LEU:HD11	57:x:67:THR:HG21	1.89	0.55
57:x:491:GLU:O	57:x:492:THR:OG1	2.24	0.55
8:A:544:C:H2'	8:A:545:U:C6	2.42	0.55
8:A:639:U:H2'	8:A:640:C:H6	1.72	0.55
8:A:1188:U:H2'	8:A:1189:A:H8	1.72	0.55
8:A:1387:A:C6	8:A:1401:G:N1	2.75	0.55
8:A:2221:G:H2'	8:A:2222:C:H6	1.72	0.55
8:A:2788:C:H2'	8:A:2789:C:H6	1.72	0.55
11:D:151:THR:HB	11:D:152:PRO:HD3	1.88	0.55
29:V:76:ASP:O	29:V:90:ASP:N	2.39	0.55
34:a:160:A:H61	34:a:345:C:H5'	1.71	0.55
34:a:538:G:H2'	34:a:539:A:H8	1.70	0.55
34:a:627:G:OP1	49:p:51:ARG:NH2	2.40	0.55
34:a:1017:U:H2'	34:a:1018:G:H8	1.71	0.55
34:a:1017:U:H2'	34:a:1018:G:C8	2.42	0.55
34:a:1026:G:H1	34:a:1029:U:H3	1.54	0.55
34:a:1156:G:N2	34:a:1179:A:N1	2.54	0.55
57:x:492:THR:OG1	57:x:571:VAL:O	2.21	0.55
8:A:1011:G:C6	8:A:1151:A:C6	2.95	0.55
8:A:1117:C:H2'	8:A:1118:C:C6	2.42	0.55
8:A:1197:G:H2'	8:A:1198:U:H6	1.71	0.55
8:A:1251:C:H6	24:Q:5:ARG:HH22	1.55	0.55
8:A:1283:G:N2	8:A:1285:A:H3'	2.21	0.55
8:A:2706:A:H4'	8:A:2851:A:H5''	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2895:G:H2'	8:A:2896:C:H6	1.71	0.55
10:C:70:LYS:O	10:C:117:SER:OG	2.24	0.55
29:V:6:ALA:HB2	29:V:42:LEU:HG	1.88	0.55
34:a:176:C:H2'	34:a:177:G:N3	2.21	0.55
34:a:1212:U:H4'	34:a:1213:A:C8	2.42	0.55
34:a:1250:A:H2	34:a:1370:G:H1'	1.71	0.55
34:a:1474:U:H2'	34:a:1475:G:C8	2.41	0.55
36:c:134:LYS:HA	36:c:137:VAL:HG12	1.89	0.55
7:6:24:ILE:HD12	13:F:100:GLU:HG2	1.89	0.55
8:A:669:G:C2	8:A:801:G:C6	2.94	0.55
8:A:730:A:OP2	8:A:761:A:OP1	2.25	0.55
8:A:893:C:H2'	8:A:894:U:C6	2.42	0.55
8:A:1161:C:H2'	8:A:1162:G:H8	1.72	0.55
8:A:1440:U:H2'	8:A:1441:G:H8	1.70	0.55
8:A:1841:U:N3	8:A:1842:G:N7	2.54	0.55
8:A:2659:G:N1	8:A:2663:G:O6	2.40	0.55
8:A:2728:U:H2'	8:A:2729:G:H8	1.72	0.55
34:a:478:A:H2'	34:a:479:U:O4'	2.07	0.55
34:a:686:U:O2	34:a:704:A:N6	2.40	0.55
34:a:687:A:N6	34:a:703:G:N3	2.55	0.55
34:a:1064:G:O6	34:a:1193:G:N1	2.40	0.55
34:a:1506:U:O2'	34:a:1507:A:H5'	2.07	0.55
40:g:68:VAL:HA	40:g:137:ARG:HD3	1.88	0.55
57:x:243:THR:H	57:x:246:GLU:CD	2.12	0.55
57:x:626:ASN:ND2	57:x:673:THR:HA	2.19	0.55
8:A:124:G:N2	8:A:126:A:H4'	2.22	0.55
8:A:994:C:OP2	24:Q:53:LYS:NZ	2.30	0.55
8:A:2113:U:O4	8:A:2169:A:N6	2.40	0.55
9:B:32:U:H2'	9:B:33:G:H8	1.72	0.55
34:a:254:G:H2'	34:a:255:G:C8	2.41	0.55
34:a:625:U:H4'	49:p:16:PHE:CZ	2.41	0.55
34:a:680:C:H2'	34:a:681:A:H8	1.71	0.55
34:a:939:G:OP1	40:g:94:ARG:NH2	2.30	0.55
34:a:1028:C:H2'	34:a:1034:G:H21	1.72	0.55
34:a:1300:G:O2'	34:a:1301:U:O5'	2.25	0.55
56:w:15:G:N2	56:w:21:A:N3	2.55	0.55
57:x:252:ARG:NH1	57:x:290:ASP:OD2	2.40	0.55
57:x:350:ASN:N	57:x:355:ALA:O	2.38	0.55
8:A:860:U:C2	8:A:861:A:C8	2.95	0.54
8:A:1005:C:C2	8:A:1006:C:C5	2.96	0.54
8:A:1218:G:N1	8:A:1232:G:N7	2.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1835:2MG:H5'	8:A:1835:2MG:H8	1.71	0.54
8:A:2162:G:N2	8:A:2163:A:H1'	2.21	0.54
8:A:2657:A:O2'	14:G:159:LYS:NZ	2.20	0.54
25:R:61:ALA:HB2	25:R:98:ILE:HD13	1.88	0.54
39:f:51:ILE:O	39:f:54:LEU:HB2	2.07	0.54
39:f:88:MET:HE3	39:f:90:MET:HE2	1.89	0.54
57:x:350:ASN:ND2	57:x:390:VAL:HG22	2.23	0.54
3:2:11:LYS:NZ	8:A:770:G:OP2	2.33	0.54
8:A:924:G:H2'	8:A:925:A:H8	1.72	0.54
8:A:929:U:H1'	33:Z:25:GLY:O	2.07	0.54
8:A:971:G:O2'	8:A:983:A:N3	2.38	0.54
8:A:971:G:OP1	8:A:974:G:O2'	2.23	0.54
8:A:1075:C:H2'	8:A:1076:C:C6	2.43	0.54
8:A:1336:A:H2'	8:A:1337:G:H8	1.71	0.54
8:A:1959:G:O2'	34:a:1418:A:N3	2.40	0.54
8:A:2379:G:H4'	22:O:21:LEU:HD11	1.90	0.54
9:B:51:G:H2'	9:B:52:A:C8	2.43	0.54
9:B:73:A:C8	9:B:104:A:C6	2.95	0.54
10:C:204:LEU:O	10:C:206:LYS:N	2.36	0.54
34:a:176:C:H2'	34:a:177:G:C2	2.42	0.54
34:a:447:G:N2	34:a:487:A:N7	2.55	0.54
34:a:520:A:OP2	45:l:47:ALA:HB1	2.07	0.54
46:m:54:THR:HA	46:m:57:ASP:OD1	2.07	0.54
8:A:664:G:H2'	8:A:665:U:C6	2.42	0.54
8:A:934:U:H2'	8:A:935:C:C6	2.41	0.54
8:A:2542:A:H61	8:A:2567:G:H22	1.53	0.54
8:A:2682:A:H61	8:A:2728:U:H1'	1.72	0.54
14:G:132:LEU:HD13	14:G:143:VAL:HG13	1.89	0.54
21:N:30:ARG:HE	21:N:75:ILE:HD11	1.71	0.54
34:a:637:C:H2'	34:a:638:U:C6	2.42	0.54
53:t:8:LYS:HG2	53:t:12:GLN:HE21	1.72	0.54
57:x:332:LEU:HD11	57:x:370:ARG:HD3	1.90	0.54
57:x:349:LEU:HD12	57:x:355:ALA:O	2.07	0.54
8:A:5:A:H2'	8:A:6:A:C8	2.42	0.54
8:A:291:G:C6	8:A:350:G:C6	2.95	0.54
8:A:324:A:N6	8:A:339:U:O4'	2.40	0.54
8:A:335:C:H2'	8:A:336:C:H6	1.72	0.54
8:A:1809:A:O2'	8:A:1810:A:O4'	2.15	0.54
8:A:2158:A:O2'	8:A:2159:G:O5'	2.22	0.54
8:A:2220:U:OP1	15:H:112:LYS:NZ	2.40	0.54
8:A:2677:G:H2'	8:A:2678:C:C6	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:51:G:OP1	22:O:63:LYS:NZ	2.40	0.54
9:B:63:C:H2'	9:B:64:G:C8	2.42	0.54
23:P:53:GLY:O	23:P:56:SER:OG	2.19	0.54
34:a:1101:A:C8	35:b:170:ILE:HD12	2.43	0.54
57:x:68:THR:HG21	57:x:82:ARG:HH21	1.70	0.54
7:6:62:LYS:HB2	7:6:63:ARG:NH2	2.22	0.54
8:A:28:A:C2	8:A:513:A:C8	2.95	0.54
8:A:221:A:H61	8:A:428:A:N6	2.05	0.54
8:A:356:G:H2'	8:A:357:C:C6	2.43	0.54
8:A:1178:C:O2'	8:A:1179:G:N2	2.41	0.54
8:A:2318:G:O2'	8:A:2321:U:O4	2.21	0.54
9:B:2:G:H2'	9:B:3:C:H6	1.73	0.54
9:B:63:C:H2'	9:B:64:G:H8	1.71	0.54
11:D:120:GLY:O	11:D:124:ARG:HB2	2.08	0.54
12:E:143:LEU:HD13	12:E:146:VAL:HG21	1.90	0.54
21:N:8:ARG:H	21:N:43:GLU:CD	2.14	0.54
34:a:202:G:H2'	34:a:203:G:H8	1.72	0.54
34:a:675:A:H2'	34:a:676:A:H8	1.72	0.54
34:a:955:U:O2	52:s:82:HIS:NE2	2.39	0.54
34:a:1101:A:H8	35:b:170:ILE:HD12	1.73	0.54
38:e:152:VAL:HG23	38:e:155:LYS:HE2	1.90	0.54
44:k:27:ASN:O	44:k:56:LYS:HE3	2.08	0.54
46:m:25:GLY:O	46:m:29:SER:HB3	2.07	0.54
8:A:84:A:H5''	28:U:5:ARG:HG2	1.90	0.54
8:A:366:C:H2'	8:A:367:G:C8	2.43	0.54
8:A:819:A:N6	8:A:1189:A:C4	2.76	0.54
8:A:831:G:O2'	19:L:38:GLN:HB2	2.08	0.54
8:A:1437:C:H2'	8:A:1438:U:H6	1.73	0.54
8:A:2099:U:H2'	8:A:2100:G:H8	1.71	0.54
8:A:2788:C:H2'	8:A:2789:C:C6	2.42	0.54
34:a:202:G:H1	34:a:215:C:N4	1.97	0.54
34:a:940:C:H2'	34:a:941:G:C8	2.42	0.54
34:a:1137:C:H4'	34:a:1138:G:C2	2.43	0.54
35:b:8:MET:O	35:b:9:LEU:HD23	2.07	0.54
57:x:297:ILE:HB	57:x:404:ILE:HB	1.89	0.54
57:x:454:GLN:HE22	57:x:486:GLN:H	1.56	0.54
8:A:7:G:H2'	8:A:8:C:C6	2.42	0.54
8:A:20:C:H2'	8:A:21:A:C8	2.40	0.54
8:A:705:A:H2'	8:A:706:A:C8	2.43	0.54
8:A:2175:C:H2'	8:A:2176:A:C8	2.40	0.54
10:C:144:GLU:HA	10:C:151:GLY:HA2	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:M:57:VAL:HG11	20:M:105:MET:HE1	1.90	0.54
21:N:24:MET:HG2	21:N:44:LEU:HD13	1.90	0.54
26:S:10:ALA:N	26:S:101:SER:O	2.29	0.54
28:U:73:ASN:C	28:U:75:ALA:H	2.15	0.54
29:V:26:PHE:CE1	29:V:42:LEU:HB2	2.43	0.54
33:Z:39:ASP:OD2	33:Z:44:ARG:NH1	2.41	0.54
34:a:67:C:H2'	34:a:68:G:H8	1.72	0.54
34:a:625:U:H2'	34:a:626:G:H8	1.72	0.54
34:a:1396:A:H5''	34:a:1397:C:C5	2.43	0.54
37:d:44:LYS:O	37:d:46:ARG:NH2	2.40	0.54
55:v:69:C:H2'	55:v:70:G:C8	2.39	0.54
5:4:19:ARG:NH2	8:A:2755:C:OP1	2.41	0.54
8:A:606:U:O2	8:A:622:G:O6	2.25	0.54
8:A:2149:U:O2'	8:A:2150:C:OP1	2.26	0.54
8:A:2389:G:H5''	8:A:2390:U:O4'	2.07	0.54
8:A:2846:G:OP1	23:P:52:ARG:NH1	2.34	0.54
22:O:53:THR:HG23	22:O:74:VAL:HG23	1.88	0.54
25:R:31:GLU:OE1	25:R:31:GLU:N	2.40	0.54
34:a:847:G:H2'	34:a:848:C:C6	2.42	0.54
34:a:986:U:H2'	34:a:987:G:C8	2.43	0.54
34:a:991:U:O2'	34:a:992:U:O5'	2.21	0.54
34:a:1121:U:H2'	34:a:1122:U:C6	2.43	0.54
34:a:1250:A:C2	34:a:1370:G:H1'	2.42	0.54
34:a:1407:5MC:H2'	34:a:1408:A:H8	1.73	0.54
35:b:29:PHE:HE2	35:b:198:VAL:HG11	1.73	0.54
35:b:93:HIS:ND1	35:b:145:ASN:O	2.41	0.54
41:h:10:LEU:HD22	41:h:74:ILE:HD11	1.90	0.54
57:x:336:ARG:NH2	57:x:379:GLY:HA2	2.23	0.54
57:x:350:ASN:ND2	57:x:353:LYS:HB2	2.22	0.54
8:A:10:A:N6	8:A:2800:A:N1	2.55	0.54
8:A:195:A:H3'	8:A:196:A:H4'	1.89	0.54
8:A:210:C:H2'	8:A:211:C:C6	2.42	0.54
8:A:1190:G:OP1	19:L:32:GLY:N	2.28	0.54
8:A:1411:U:H2'	8:A:1412:U:C6	2.43	0.54
8:A:1741:C:H2'	8:A:1742:U:C6	2.43	0.54
8:A:1801:A:H5''	8:A:2203:U:H2'	1.90	0.54
8:A:1814:G:C8	8:A:1815:A:C8	2.96	0.54
8:A:2232:C:P	31:X:26:ARG:HH12	2.29	0.54
8:A:2339:C:H2'	8:A:2340:A:C8	2.43	0.54
8:A:2375:G:N2	8:A:2378:A:OP2	2.20	0.54
8:A:2404:U:H2'	8:A:2405:G:O4'	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1053:G:N1	34:a:1058:G:O6	2.40	0.54
34:a:1077:G:O2'	34:a:1079:G:O6	2.25	0.54
34:a:1436:U:H2'	34:a:1437:A:H8	1.73	0.54
38:e:114:LEU:HD13	38:e:122:VAL:HG11	1.89	0.54
8:A:155:A:H2'	8:A:156:A:H8	1.73	0.54
8:A:164:C:H3'	8:A:165:A:H8	1.72	0.54
8:A:305:C:H2'	8:A:306:U:C6	2.43	0.54
8:A:1096:A:N6	57:x:627:THR:OG1	2.41	0.54
8:A:1794:A:N6	8:A:1826:G:O6	2.41	0.54
34:a:1157:A:N3	34:a:1181:G:C2	2.76	0.54
34:a:1355:G:H2'	34:a:1356:G:C8	2.43	0.54
35:b:99:MET:HA	35:b:106:VAL:HG21	1.90	0.54
38:e:79:THR:HB	38:e:121:ASN:HB2	1.90	0.54
57:x:73:GLY:HA3	57:x:282:ILE:HG21	1.90	0.54
57:x:106:ASP:HB3	57:x:291:VAL:HG21	1.89	0.54
57:x:308:ARG:CZ	57:x:402:PRO:HB3	2.38	0.54
57:x:674:LYS:HD2	57:x:676:ARG:NH2	2.23	0.54
59:z:1:A:H2'	59:z:2:U:O5'	2.08	0.54
8:A:1080:A:H61	8:A:1088:A:C4'	2.21	0.53
8:A:1427:A:H4'	8:A:1428:C:O4'	2.08	0.53
8:A:1570:A:H5'	10:C:35:LYS:HB2	1.90	0.53
8:A:2086:U:H2'	8:A:2087:G:H8	1.74	0.53
8:A:2102:G:N1	8:A:2188:U:O2	2.40	0.53
8:A:2505:G:O2'	8:A:2506:U:O5'	2.25	0.53
8:A:2837:A:H2'	8:A:2838:G:C8	2.41	0.53
9:B:66:A:H61	9:B:107:G:H2'	1.72	0.53
10:C:131:MET:HE1	10:C:173:LEU:HD11	1.89	0.53
13:F:33:ILE:HG12	13:F:155:ILE:HG12	1.91	0.53
13:F:118:ALA:O	13:F:166:ARG:NH2	2.35	0.53
34:a:592:G:C6	34:a:593:U:C4	2.96	0.53
34:a:718:A:H4'	54:u:34:ARG:HH12	1.73	0.53
34:a:948:C:H2'	34:a:949:A:H8	1.73	0.53
34:a:1052:U:O2'	34:a:1055:A:OP2	2.23	0.53
57:x:196:ASP:H	57:x:271:ASN:HD22	1.55	0.53
8:A:117:G:OP2	8:A:119:A:O2'	2.17	0.53
8:A:319:G:C6	8:A:333:G:C2	2.95	0.53
8:A:439:A:H2'	8:A:440:C:C6	2.43	0.53
8:A:1494:A:H3'	8:A:1495:A:H8	1.73	0.53
8:A:1925:C:N4	8:A:1929:G:H22	2.06	0.53
8:A:2863:C:H2'	8:A:2864:G:C8	2.40	0.53
15:H:25:TYR:O	15:H:30:LEU:HG	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:P:30:TRP:CG	23:P:37:LYS:HE2	2.43	0.53
29:V:35:GLU:OE1	29:V:35:GLU:N	2.40	0.53
34:a:530:G:HO2'	34:a:531:U:P	2.31	0.53
34:a:634:C:H2'	34:a:635:A:H8	1.72	0.53
34:a:835:U:N3	34:a:852:G:O6	2.40	0.53
34:a:859:G:H2'	34:a:860:A:C8	2.44	0.53
34:a:1502:A:N7	34:a:1505:G:N2	2.56	0.53
45:l:33:CYS:H	45:l:54:VAL:HG12	1.73	0.53
8:A:635:C:OP2	19:L:126:ARG:NH1	2.31	0.53
8:A:1026:G:H2'	8:A:1027:A:C8	2.43	0.53
8:A:1234:U:H2'	8:A:1235:G:C8	2.44	0.53
8:A:1288:G:OP1	8:A:1289:C:N4	2.32	0.53
8:A:1386:C:H2'	8:A:1387:A:C8	2.42	0.53
8:A:1779:U:C2	8:A:1783:A:N7	2.77	0.53
8:A:1818:U:C2	10:C:152:GLN:HB3	2.44	0.53
8:A:2109:U:H2'	8:A:2110:G:C4	2.44	0.53
8:A:2291:U:OP1	8:A:2380:C:O2'	2.25	0.53
9:B:2:G:H2'	9:B:3:C:C6	2.43	0.53
34:a:946:A:H2'	34:a:947:G:C8	2.44	0.53
34:a:1012:A:N1	34:a:1018:G:C6	2.76	0.53
34:a:1237:C:H3'	34:a:1238:A:H5'	1.90	0.53
35:b:18:GLN:HA	35:b:37:VAL:HA	1.90	0.53
35:b:70:GLY:HA3	35:b:163:ILE:HD12	1.90	0.53
42:i:16:ALA:HA	42:i:66:VAL:HG12	1.89	0.53
55:v:44:A:P	55:v:44:A:O4'	2.66	0.53
57:x:325:THR:N	57:x:440:GLU:OE1	2.41	0.53
8:A:783:A:H1'	8:A:1779:U:H1'	1.91	0.53
8:A:1000:A:H2'	8:A:1001:A:C8	2.43	0.53
8:A:1416:G:H2'	8:A:1417:C:H6	1.73	0.53
8:A:1630:A:H61	8:A:1637:A:N6	2.06	0.53
8:A:1709:U:H2'	8:A:1710:G:C8	2.43	0.53
8:A:2443:C:OP1	12:E:63:LYS:HD3	2.08	0.53
11:D:11:MET:HE3	11:D:25:THR:HG23	1.89	0.53
27:T:48:GLN:HE21	27:T:55:VAL:H	1.55	0.53
34:a:424:G:H2'	34:a:425:G:C8	2.42	0.53
34:a:440:C:C2	34:a:441:A:C8	2.96	0.53
34:a:987:G:H2'	34:a:988:G:H8	1.74	0.53
34:a:1124:G:O6	34:a:1150:A:N6	2.41	0.53
34:a:1251:A:H2'	34:a:1252:A:H8	1.72	0.53
35:b:114:LYS:O	35:b:117:GLU:HG2	2.08	0.53
8:A:201:C:O2	8:A:251:A:H2	1.92	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:414:C:O2	8:A:1864:U:O2'	2.24	0.53
8:A:1012:U:O4	17:J:30:THR:OG1	2.23	0.53
8:A:1264:A:H5''	8:A:1265:A:H5''	1.90	0.53
8:A:1474:U:O4	8:A:1517:G:O6	2.27	0.53
8:A:1684:G:O6	8:A:1705:A:N6	2.42	0.53
8:A:1773:A:N7	8:A:1829:A:H1'	2.22	0.53
8:A:2074:U:H2'	8:A:2075:U:H6	1.72	0.53
18:K:21:CYS:SG	18:K:39:ILE:HD12	2.49	0.53
22:O:61:GLN:OE1	22:O:61:GLN:N	2.42	0.53
33:Z:38:GLU:H	33:Z:38:GLU:CD	2.16	0.53
34:a:21:G:N1	34:a:22:G:O6	2.41	0.53
34:a:583:A:N6	34:a:758:C:O2	2.41	0.53
34:a:1115:U:OP1	43:j:68:ARG:NH1	2.32	0.53
34:a:1455:G:H2'	34:a:1456:A:C8	2.42	0.53
36:c:187:GLU:OE1	36:c:187:GLU:N	2.36	0.53
38:e:110:MET:HE3	38:e:135:VAL:HG13	1.90	0.53
39:f:25:TYR:O	39:f:29:ILE:HG13	2.08	0.53
40:g:70:PRO:O	40:g:95:ARG:NH1	2.42	0.53
57:x:612:LEU:HD23	57:x:686:TYR:C	2.33	0.53
8:A:26:G:H1'	8:A:515:A:H61	1.74	0.53
8:A:492:A:H2'	8:A:493:G:O4'	2.08	0.53
8:A:1405:U:H2'	8:A:1406:U:C6	2.44	0.53
8:A:1744:A:H3'	8:A:1745:A:H8	1.73	0.53
8:A:2144:G:O2'	8:A:2147:A:N6	2.42	0.53
8:A:2331:G:O2'	8:A:2336:A:N1	2.37	0.53
13:F:13:LYS:O	13:F:17:THR:HG23	2.09	0.53
17:J:109:LEU:O	17:J:111:LYS:NZ	2.40	0.53
20:M:7:THR:HG21	20:M:92:TRP:CH2	2.43	0.53
20:M:35:ALA:HB2	20:M:102:LEU:HD11	1.91	0.53
34:a:420:U:H2'	34:a:422:C:C4	2.43	0.53
34:a:464:U:H2'	34:a:465:A:H2'	1.89	0.53
34:a:796:C:H2'	34:a:797:C:H6	1.74	0.53
34:a:861:G:O6	34:a:869:G:N2	2.42	0.53
38:e:79:THR:HA	38:e:119:VAL:HG13	1.90	0.53
8:A:586:A:H4'	12:E:84:THR:HG21	1.90	0.53
8:A:834:G:C6	8:A:835:C:C4	2.96	0.53
8:A:994:C:OP1	24:Q:52:ARG:NH2	2.41	0.53
8:A:1057:A:N1	8:A:1082:U:N3	2.57	0.53
8:A:1684:G:H2'	8:A:1685:C:H6	1.74	0.53
8:A:1715:G:O2'	8:A:1716:U:H6	1.92	0.53
8:A:2089:C:N4	8:A:2090:A:H62	2.07	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:116:G:H4'	22:O:54:VAL:HG12	1.91	0.53
13:F:30:VAL:HG22	13:F:157:THR:HG22	1.90	0.53
15:H:83:LYS:HD2	15:H:91:PHE:HB2	1.91	0.53
16:I:26:ALA:HA	57:x:631:ILE:HG21	1.91	0.53
34:a:39:G:C2	34:a:404:G:C2	2.96	0.53
34:a:285:C:H2'	34:a:286:C:H6	1.73	0.53
37:d:73:ASN:O	37:d:77:GLU:HG2	2.09	0.53
42:i:40:ARG:HD2	42:i:71:ILE:HD12	1.91	0.53
45:l:30:ARG:HE	45:l:57:THR:HG21	1.74	0.53
55:v:25:C:H2'	55:v:26:G:H8	1.74	0.53
56:w:4:C:H2'	56:w:5:G:C8	2.43	0.53
57:x:118:VAL:HG21	57:x:160:ARG:HD2	1.91	0.53
57:x:318:ALA:HB2	57:x:337:VAL:HA	1.90	0.53
8:A:1062:G:H4'	8:A:1063:G:OP1	2.07	0.53
8:A:1403:A:HO2'	8:A:1471:G:HO2'	1.57	0.53
8:A:2142:A:H3'	8:A:2143:C:C6	2.44	0.53
8:A:2247:A:H2'	8:A:2248:C:H6	1.74	0.53
9:B:27:C:OP1	22:O:34:HIS:NE2	2.42	0.53
10:C:81:GLU:OE1	10:C:102:TYR:OH	2.16	0.53
12:E:147:LEU:HD11	12:E:179:SER:HB3	1.91	0.53
26:S:14:ALA:HB1	26:S:18:ARG:HH12	1.73	0.53
34:a:76:G:O6	34:a:93:U:O2	2.27	0.53
34:a:949:A:N6	34:a:1233:G:C6	2.77	0.53
34:a:1417:G:H5'	34:a:1418:A:OP1	2.08	0.53
36:c:137:VAL:HG23	36:c:148:ILE:HG23	1.90	0.53
38:e:12:GLU:N	38:e:12:GLU:OE2	2.41	0.53
57:x:243:THR:N	57:x:246:GLU:OE2	2.32	0.53
3:2:10:LEU:HD11	3:2:14:ARG:CZ	2.38	0.53
8:A:599:A:N6	8:A:659:G:O6	2.42	0.53
8:A:720:U:H2'	8:A:721:A:C8	2.43	0.53
8:A:1779:U:H2'	8:A:1783:A:H62	1.74	0.53
8:A:2261:C:OP1	30:W:15:LYS:NZ	2.32	0.53
8:A:2464:G:H2'	8:A:2465:C:C6	2.44	0.53
8:A:2507:C:C2	8:A:2583:G:N2	2.76	0.53
8:A:2686:G:H2'	8:A:2687:U:C6	2.44	0.53
8:A:2745:C:O2	14:G:138:GLN:NE2	2.42	0.53
14:G:44:HIS:CE1	14:G:47:ASN:HA	2.44	0.53
22:O:31:THR:O	22:O:102:ARG:NH1	2.37	0.53
34:a:127:G:N2	50:q:62:GLU:OE2	2.41	0.53
34:a:355:C:C4	34:a:356:A:N7	2.77	0.53
34:a:792:A:O2'	34:a:794:A:N7	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:1:25:ASN:HD22	8:A:2285:C:P	2.32	0.53
8:A:190:A:C6	8:A:191:A:C6	2.97	0.53
8:A:1282:U:H3	8:A:1286:A:H62	1.56	0.53
8:A:1664:A:H61	8:A:1996:C:N4	2.07	0.53
8:A:2139:U:C5	8:A:2140:G:N7	2.77	0.53
8:A:2346:A:H4'	8:A:2347:C:OP2	2.08	0.53
12:E:130:LYS:HB2	12:E:133:LEU:HG	1.90	0.53
15:H:47:PHE:HA	15:H:51:ARG:CG	2.38	0.53
34:a:79:G:C2	34:a:90:C:N3	2.77	0.53
34:a:323:U:H2'	34:a:324:G:O4'	2.08	0.53
34:a:598:U:H2'	34:a:599:C:H6	1.74	0.53
34:a:920:U:H2'	34:a:921:U:C6	2.44	0.53
34:a:974:A:OP1	47:n:69:ARG:NH2	2.42	0.53
34:a:1198:G:H2'	34:a:1199:U:C6	2.43	0.53
34:a:1458:G:OP1	53:t:29:THR:OG1	2.22	0.53
54:u:12:ASP:HA	54:u:15:LEU:HB3	1.90	0.53
55:v:2:G:C6	55:v:72:A:N1	2.77	0.53
57:x:133:LYS:HG2	57:x:258:ASN:HD22	1.74	0.53
57:x:351:SER:HB3	57:x:403:ILE:HG23	1.91	0.53
8:A:165:A:H2'	8:A:166:U:C6	2.44	0.52
8:A:835:C:H2'	8:A:836:G:H8	1.73	0.52
8:A:1159:U:H2'	8:A:1160:G:H8	1.73	0.52
8:A:1363:C:O2'	8:A:1809:A:H1'	2.08	0.52
8:A:2086:U:H2'	8:A:2087:G:C8	2.44	0.52
8:A:2277:G:H3'	30:W:8:ASN:ND2	2.24	0.52
8:A:2693:G:H2'	8:A:2694:G:H8	1.75	0.52
8:A:2895:G:H2'	8:A:2896:C:C6	2.43	0.52
13:F:36:ASN:OD1	13:F:37:MET:N	2.42	0.52
15:H:82:SER:OG	15:H:83:LYS:N	2.42	0.52
26:S:9:HIS:H	26:S:102:HIS:HD1	1.57	0.52
34:a:35:G:H2'	34:a:36:C:C6	2.45	0.52
34:a:337:G:H2'	34:a:338:A:H8	1.74	0.52
34:a:575:G:O2'	34:a:821:G:OP2	2.23	0.52
34:a:607:A:H2'	34:a:608:A:C8	2.45	0.52
36:c:110:LEU:HD11	36:c:145:ALA:HB2	1.91	0.52
38:e:66:ALA:O	38:e:69:ASN:N	2.38	0.52
42:i:79:ARG:HD2	42:i:102:PHE:CD1	2.44	0.52
6:5:54:VAL:O	6:5:83:ALA:HA	2.09	0.52
8:A:191:A:C2	8:A:192:C:C4	2.98	0.52
8:A:412:A:N7	8:A:2412:A:H1'	2.25	0.52
8:A:1176:U:H2'	8:A:1177:G:C8	2.44	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1326:U:H5'	8:A:2011:U:H1'	1.90	0.52
8:A:1469:A:H2'	8:A:1470:A:C8	2.44	0.52
8:A:1871:A:H3'	8:A:1872:A:C8	2.45	0.52
8:A:2474:U:O2	8:A:2474:U:H2'	2.09	0.52
8:A:2880:C:H1'	21:N:92:GLY:O	2.09	0.52
9:B:93:C:H2'	9:B:94:A:C8	2.43	0.52
18:K:13:ASN:CG	18:K:97:THR:H	2.17	0.52
24:Q:88:GLU:O	25:R:11:GLN:NE2	2.39	0.52
34:a:86:G:H22	34:a:90:C:H41	1.56	0.52
34:a:890:G:O2'	34:a:906:A:N6	2.42	0.52
34:a:1039:G:H2'	34:a:1040:U:C6	2.45	0.52
34:a:1132:C:H2'	34:a:1133:G:H8	1.73	0.52
34:a:1290:G:OP1	40:g:34:LYS:NZ	2.34	0.52
34:a:1457:G:H2'	34:a:1458:G:H8	1.74	0.52
37:d:3:TYR:CZ	37:d:10:LEU:HD11	2.45	0.52
43:j:52:LEU:O	47:n:81:ARG:NH1	2.38	0.52
49:p:26:ASN:ND2	49:p:31:ARG:HB3	2.23	0.52
56:w:36:A:N6	56:w:37:MIA:H122	2.24	0.52
57:x:614:PRO:HB2	57:x:659:LEU:HB3	1.92	0.52
8:A:1190:G:H5''	19:L:32:GLY:HA2	1.90	0.52
8:A:1336:A:H2'	8:A:1337:G:C8	2.44	0.52
8:A:1920:C:H4'	34:a:1517:G:N1	2.25	0.52
8:A:2127:G:O2'	8:A:2128:G:N7	2.38	0.52
11:D:4:LEU:HD23	11:D:101:PHE:CZ	2.44	0.52
19:L:75:ALA:O	19:L:108:ALA:HA	2.10	0.52
34:a:19:A:H2'	34:a:20:U:H6	1.74	0.52
34:a:210:C:O2'	34:a:211:G:N2	2.43	0.52
34:a:508:U:O2	34:a:510:A:N6	2.43	0.52
34:a:946:A:H2'	34:a:947:G:H8	1.73	0.52
34:a:1220:G:H2'	34:a:1221:G:C8	2.44	0.52
35:b:175:ALA:HB1	35:b:180:ILE:HB	1.91	0.52
41:h:85:TYR:CE1	41:h:123:GLU:HB2	2.44	0.52
45:l:24:GLU:OE2	45:l:58:ASN:ND2	2.42	0.52
55:v:19:G:OP1	55:v:60:U:N3	2.42	0.52
8:A:780:G:N1	10:C:228:ASP:OD1	2.36	0.52
8:A:1197:G:H2'	8:A:1198:U:C6	2.44	0.52
8:A:1447:C:H2'	8:A:1448:G:C8	2.44	0.52
8:A:1817:G:OP1	10:C:86:ARG:NH2	2.43	0.52
8:A:2405:G:N2	8:A:2411:A:N7	2.58	0.52
14:G:53:PRO:HB3	14:G:60:GLY:C	2.35	0.52
29:V:80:HIS:HB2	29:V:85:LYS:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:437:U:O2'	34:a:438:U:H5'	2.09	0.52
34:a:651:C:H2'	34:a:652:U:C6	2.45	0.52
34:a:1343:G:H2'	34:a:1344:C:C6	2.44	0.52
35:b:93:HIS:NE2	35:b:145:ASN:OD1	2.42	0.52
49:p:43:ALA:HB1	49:p:46:LYS:HB2	1.90	0.52
49:p:52:LEU:HD12	49:p:57:ILE:HD11	1.90	0.52
8:A:1060:U:H4'	8:A:1062:G:O4'	2.09	0.52
8:A:1547:C:H2'	8:A:1548:A:C8	2.45	0.52
8:A:1567:G:O2'	10:C:62:ARG:NH2	2.43	0.52
8:A:2144:G:H2'	8:A:2146:C:H1'	1.91	0.52
8:A:2458:G:N3	8:A:2490:G:N2	2.57	0.52
8:A:2513:A:C5	8:A:2574:G:N1	2.78	0.52
8:A:2813:A:C4	8:A:2814:A:C8	2.98	0.52
9:B:9:G:C6	9:B:112:G:C6	2.96	0.52
34:a:740:U:H2'	34:a:741:G:H8	1.74	0.52
34:a:782:A:C6	34:a:801:U:C2	2.97	0.52
34:a:821:G:H2'	34:a:822:U:H6	1.75	0.52
36:c:11:LEU:HD13	36:c:17:TRP:CD1	2.45	0.52
36:c:120:THR:OG1	36:c:187:GLU:O	2.15	0.52
39:f:7:VAL:HB	39:f:61:LEU:HD13	1.90	0.52
43:j:35:GLN:HG3	43:j:78:GLU:HB2	1.90	0.52
53:t:61:ALA:HB2	53:t:71:ALA:HB2	1.91	0.52
8:A:48:G:H21	8:A:177:G:H21	1.55	0.52
8:A:881:G:H1	8:A:895:U:H3	1.58	0.52
8:A:1016:G:C6	8:A:1147:A:C6	2.97	0.52
8:A:1619:G:C2	8:A:1620:G:C8	2.98	0.52
8:A:1844:C:C2	8:A:1897:G:N2	2.77	0.52
8:A:1919:A:O2'	34:a:1517:G:N3	2.37	0.52
8:A:2072:C:H2'	8:A:2073:C:C6	2.44	0.52
8:A:2136:G:H1	8:A:2155:U:H2'	1.74	0.52
8:A:2655:G:H4'	8:A:2656:U:O5'	2.10	0.52
8:A:2751:G:OP1	8:A:2751:G:N2	2.43	0.52
8:A:2795:C:H2'	8:A:2796:U:O4'	2.10	0.52
34:a:228:A:H2'	34:a:229:U:H6	1.74	0.52
34:a:270:A:H2'	34:a:271:C:H6	1.73	0.52
34:a:363:A:H2'	34:a:364:A:O4'	2.10	0.52
34:a:757:U:OP1	34:a:822:U:O2'	2.28	0.52
34:a:1413:A:H2'	34:a:1414:U:H6	1.74	0.52
35:b:65:LYS:HD3	35:b:153:MET:SD	2.49	0.52
41:h:91:LEU:O	41:h:116:ARG:NH2	2.41	0.52
48:o:25:GLU:HG3	48:o:80:LEU:HD13	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:v:2:G:C2	55:v:72:A:C2	2.97	0.52
8:A:139:U:OP2	8:A:140:C:N4	2.43	0.52
8:A:191:A:H2'	8:A:192:C:H6	1.74	0.52
8:A:296:U:H2'	8:A:297:G:C8	2.43	0.52
8:A:762:U:N3	8:A:1431:A:OP1	2.31	0.52
8:A:875:G:N1	8:A:902:C:N3	2.50	0.52
8:A:1010:A:H1'	8:A:1153:C:H1'	1.91	0.52
8:A:1082:U:H3'	8:A:1086:A:H62	1.74	0.52
8:A:1687:G:N2	8:A:1702:G:O6	2.42	0.52
8:A:1720:U:H3'	8:A:1721:G:H8	1.74	0.52
8:A:1802:A:H2'	8:A:1803:A:C8	2.44	0.52
8:A:1848:A:H61	8:A:1894:C:H1'	1.75	0.52
8:A:2368:C:H2'	8:A:2369:A:C8	2.43	0.52
8:A:2542:A:N6	8:A:2567:G:H22	2.07	0.52
10:C:12:ARG:HD2	10:C:15:VAL:HG11	1.92	0.52
20:M:106:ASP:OD1	20:M:107:GLY:N	2.43	0.52
24:Q:23:TYR:O	24:Q:28:SER:OG	2.19	0.52
34:a:5:U:H4'	34:a:6:G:C8	2.44	0.52
34:a:188:C:H2'	34:a:189:A:O4'	2.09	0.52
34:a:368:U:O4	57:x:361:ARG:NH1	2.43	0.52
34:a:867:G:H2'	34:a:868:C:C6	2.44	0.52
34:a:1244:G:C6	34:a:1294:G:N1	2.77	0.52
34:a:1418:A:H61	34:a:1482:G:H1'	1.74	0.52
39:f:68:GLN:H	39:f:68:GLN:CD	2.17	0.52
44:k:33:ILE:HG21	44:k:78:ILE:HD13	1.91	0.52
51:r:70:THR:HG23	51:r:72:ARG:H	1.75	0.52
56:w:66:U:C2	56:w:67:C:H1'	2.45	0.52
57:x:302:LYS:HB2	57:x:305:PRO:HG3	1.91	0.52
57:x:497:VAL:HA	57:x:521:MET:O	2.10	0.52
57:x:642:LYS:CB	57:x:654:HIS:HB2	2.40	0.52
8:A:179:C:H2'	8:A:180:G:H8	1.74	0.52
8:A:374:A:C4	8:A:401:A:N6	2.77	0.52
8:A:407:G:H2'	8:A:408:G:H8	1.75	0.52
8:A:550:C:H2'	8:A:551:G:C8	2.45	0.52
8:A:1365:A:P	31:X:27:ARG:HH22	2.32	0.52
8:A:1662:U:O2'	8:A:2687:U:OP1	2.26	0.52
8:A:2161:C:H5	8:A:2163:A:C8	2.28	0.52
8:A:2172:U:H4'	8:A:2174:C:N4	2.24	0.52
8:A:2437:G:H2'	8:A:2438:U:O4'	2.09	0.52
9:B:28:C:OP1	22:O:31:THR:HG21	2.10	0.52
34:a:390:U:O3'	49:p:28:ARG:NH1	2.30	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:500:G:H2'	34:a:501:C:C6	2.44	0.52
34:a:1010:U:H2'	34:a:1011:C:H6	1.75	0.52
34:a:1133:G:H2'	34:a:1134:G:O4'	2.10	0.52
34:a:1375:A:O5'	34:a:1375:A:H8	1.92	0.52
35:b:119:GLN:HA	35:b:123:GLY:HA3	1.92	0.52
40:g:14:ASP:OD1	40:g:15:PRO:HD2	2.10	0.52
8:A:584:C:N4	8:A:585:G:O6	2.42	0.52
8:A:1080:A:N6	8:A:1088:A:O5'	2.43	0.52
8:A:1412:U:H2'	8:A:1413:A:C8	2.44	0.52
8:A:1434:A:H2'	8:A:1435:G:C8	2.44	0.52
8:A:1727:C:H2'	8:A:1728:C:C6	2.45	0.52
8:A:1805:A:H2'	8:A:1806:C:C6	2.45	0.52
8:A:1814:G:H3'	8:A:1815:A:H8	1.74	0.52
8:A:1879:C:H2'	8:A:1880:U:O4'	2.10	0.52
8:A:2154:A:H2'	8:A:2155:U:C4	2.44	0.52
8:A:2287:A:O2'	8:A:2288:A:O5'	2.24	0.52
18:K:63:VAL:HG23	18:K:64:ARG:HG3	1.92	0.52
34:a:56:U:H2'	34:a:57:G:C8	2.44	0.52
34:a:272:C:H2'	34:a:273:U:C6	2.45	0.52
34:a:1270:G:H2'	34:a:1271:A:H8	1.74	0.52
55:v:54:5MU:H2'	55:v:55:PSU:C6	2.45	0.52
55:v:66:C:H2'	55:v:67:C:C6	2.45	0.52
2:1:33:LEU:HD11	8:A:2286:G:C2	2.44	0.52
8:A:219:A:H2'	8:A:220:G:O4'	2.10	0.52
8:A:542:C:H2'	8:A:543:G:H8	1.75	0.52
8:A:678:C:H2'	8:A:679:C:H6	1.74	0.52
8:A:1026:G:H2'	8:A:1027:A:H8	1.75	0.52
8:A:1353:A:H2'	8:A:1354:A:C8	2.45	0.52
8:A:1587:G:H2'	8:A:1588:G:H8	1.75	0.52
8:A:1630:A:N6	8:A:1637:A:N6	2.58	0.52
8:A:2314:A:H2'	8:A:2315:G:C8	2.45	0.52
8:A:2452:C:H1'	58:y:101:FME:HG3	1.92	0.52
15:H:51:ARG:O	15:H:55:GLU:HB2	2.10	0.52
31:X:42:GLU:OE1	31:X:44:ARG:NE	2.34	0.52
34:a:75:G:C5	34:a:76:G:C8	2.98	0.52
34:a:270:A:H2'	34:a:271:C:C6	2.45	0.52
34:a:554:A:H2'	34:a:555:U:C6	2.44	0.52
34:a:740:U:H2'	34:a:741:G:C8	2.45	0.52
34:a:929:G:N1	34:a:1389:C:N3	2.58	0.52
34:a:1073:U:O2	35:b:102:ASN:ND2	2.43	0.52
34:a:1477:U:H2'	34:a:1478:U:C6	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:b:98:GLY:N	35:b:174:GLU:OE2	2.30	0.52
4:3:32:LEU:HD22	4:3:40:LYS:HD3	1.93	0.51
8:A:168:G:O2'	8:A:2209:G:O2'	2.24	0.51
8:A:322:A:OP1	12:E:162:ARG:NH1	2.42	0.51
8:A:1036:G:C5	8:A:1120:G:C6	2.98	0.51
8:A:1264:A:N6	8:A:2014:A:OP2	2.42	0.51
8:A:1822:C:H2'	8:A:1823:G:H8	1.75	0.51
8:A:2330:G:C6	8:A:2386:A:N1	2.78	0.51
8:A:2549:G:C2	8:A:2550:G:N7	2.78	0.51
17:J:4:PHE:O	24:Q:63:ARG:NH1	2.34	0.51
17:J:49:ASP:OD1	17:J:121:LYS:NZ	2.43	0.51
28:U:13:LEU:HD11	28:U:70:ALA:HB2	1.91	0.51
34:a:463:U:O2	34:a:469:C:N4	2.31	0.51
34:a:466:A:H8	34:a:468:A:N7	2.08	0.51
34:a:1154:G:C2	34:a:1155:A:C8	2.98	0.51
34:a:1309:G:C6	34:a:1329:A:N1	2.77	0.51
42:i:113:LYS:HE2	42:i:118:ARG:O	2.10	0.51
55:v:31:G:C2	55:v:40:C:C2	2.98	0.51
8:A:1152:C:H2'	8:A:1153:C:C6	2.42	0.51
8:A:1408:G:N2	8:A:1594:U:O2	2.34	0.51
8:A:1682:G:P	8:A:1699:G:H22	2.33	0.51
8:A:1788:C:C2	8:A:1789:A:C8	2.98	0.51
8:A:2646:C:OP2	8:A:2732:G:O2'	2.28	0.51
8:A:2674:G:H2'	8:A:2675:A:H8	1.75	0.51
34:a:35:G:H2'	34:a:36:C:H6	1.75	0.51
34:a:228:A:H2'	34:a:229:U:C6	2.45	0.51
34:a:627:G:H2'	34:a:628:G:C8	2.44	0.51
34:a:1415:G:H2'	34:a:1416:G:C8	2.45	0.51
34:a:1485:U:H2'	34:a:1486:G:H8	1.75	0.51
52:s:35:ARG:HH21	52:s:74:ALA:HB3	1.74	0.51
8:A:52:A:OP2	8:A:117:G:N1	2.33	0.51
8:A:55:G:H2'	8:A:56:A:C8	2.46	0.51
8:A:541:A:C6	8:A:553:G:C6	2.99	0.51
8:A:671:C:H2'	8:A:672:C:C6	2.44	0.51
8:A:857:G:H5''	30:W:65:PHE:CD2	2.45	0.51
8:A:874:G:C6	8:A:904:G:C6	2.98	0.51
8:A:1797:G:C6	8:A:1798:U:C4	2.99	0.51
8:A:1949:G:H2'	8:A:1950:G:C8	2.45	0.51
8:A:2590:A:H2'	8:A:2591:C:C6	2.46	0.51
10:C:244:VAL:HG12	10:C:250:GLN:HA	1.92	0.51
17:J:32:LEU:HD22	17:J:54:ILE:HG21	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:R:4:VAL:HG22	25:R:13:ARG:HG3	1.92	0.51
29:V:11:GLU:OE1	29:V:11:GLU:N	2.43	0.51
34:a:696:A:H2'	34:a:697:U:H6	1.75	0.51
34:a:1044:A:C5	34:a:1045:C:H1'	2.45	0.51
34:a:1131:G:H2'	34:a:1132:C:C6	2.45	0.51
34:a:1300:G:C6	34:a:1334:G:C5	2.98	0.51
35:b:98:GLY:O	35:b:102:ASN:HB3	2.09	0.51
37:d:8:LEU:HD13	37:d:31:CYS:HB3	1.91	0.51
46:m:65:GLU:HG3	46:m:66:GLY:N	2.24	0.51
53:t:14:GLU:OE2	53:t:17:ARG:NE	2.42	0.51
56:w:7:A:O2'	56:w:49:C:O4'	2.24	0.51
8:A:40:U:H2'	8:A:41:C:H6	1.73	0.51
8:A:196:A:N1	8:A:831:G:N2	2.58	0.51
8:A:396:G:C6	8:A:397:U:C4	2.98	0.51
8:A:528:A:C2	8:A:2042:A:H2'	2.45	0.51
8:A:1141:U:H4'	8:A:1142:A:O4'	2.11	0.51
8:A:1568:G:OP1	10:C:62:ARG:NH1	2.27	0.51
8:A:1684:G:H2'	8:A:1685:C:C6	2.45	0.51
8:A:2469:A:N6	8:A:2481:G:O2'	2.40	0.51
8:A:2857:G:N2	8:A:2859:G:H3'	2.26	0.51
11:D:9:VAL:HB	11:D:26:VAL:HG23	1.92	0.51
14:G:7:PRO:HB2	14:G:48:THR:HG21	1.93	0.51
29:V:35:GLU:CD	29:V:35:GLU:H	2.17	0.51
32:Y:6:LEU:HD22	32:Y:53:VAL:HG22	1.92	0.51
34:a:598:U:H2'	34:a:599:C:C6	2.45	0.51
34:a:1132:C:H2'	34:a:1133:G:C8	2.45	0.51
34:a:1297:G:N2	40:g:113:LYS:O	2.43	0.51
40:g:92:PRO:HA	40:g:95:ARG:HD2	1.91	0.51
55:v:22:G:OP2	55:v:46:A:N6	2.43	0.51
55:v:25:C:C2	55:v:26:G:C8	2.99	0.51
4:3:41:ARG:HA	4:3:44:ARG:HH12	1.76	0.51
5:4:16:ILE:HD13	5:4:25:VAL:HG22	1.91	0.51
8:A:192:C:O2'	8:A:802:A:N3	2.44	0.51
8:A:566:U:O2'	8:A:809:G:OP2	2.22	0.51
8:A:600:G:N2	8:A:605:G:O3'	2.43	0.51
8:A:784:G:C5	8:A:792:A:C8	2.99	0.51
8:A:1034:G:C5	8:A:1122:G:C2	2.99	0.51
8:A:1679:A:H2'	8:A:1680:U:C6	2.46	0.51
8:A:2451:A:H1'	56:w:76:A:H2'	1.92	0.51
8:A:2710:C:OP1	21:N:15:SER:OG	2.26	0.51
10:C:225:ASN:HB2	10:C:228:ASP:OD2	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:X:54:GLY:O	31:X:58:ILE:HG13	2.10	0.51
34:a:174:A:OP1	34:a:175:C:OP2	2.28	0.51
34:a:381:C:H2'	34:a:382:A:O4'	2.11	0.51
34:a:687:A:H62	34:a:703:G:N2	2.09	0.51
34:a:836:G:C6	34:a:851:G:C5	2.98	0.51
34:a:925:G:O2'	34:a:927:G:O5'	2.23	0.51
34:a:951:G:OP2	46:m:100:ARG:NH1	2.43	0.51
34:a:1211:U:H5'	34:a:1212:U:OP1	2.10	0.51
34:a:1367:C:OP2	42:i:113:LYS:NZ	2.33	0.51
35:b:40:ILE:HD11	35:b:200:PRO:HB3	1.93	0.51
37:d:8:LEU:HA	37:d:11:SER:OG	2.09	0.51
43:j:63:ASP:OD2	43:j:65:TYR:OH	2.15	0.51
57:x:521:MET:HE1	57:x:600:PHE:HA	1.93	0.51
8:A:79:C:O2'	8:A:346:A:O2'	2.27	0.51
8:A:373:U:O2	8:A:401:A:N6	2.44	0.51
8:A:414:C:H2'	8:A:415:A:C8	2.46	0.51
8:A:455:C:N3	8:A:472:A:H2'	2.25	0.51
8:A:580:U:H2'	8:A:581:C:C6	2.46	0.51
8:A:749:A:O2'	8:A:1618:6MZ:OP2	2.29	0.51
8:A:825:A:H2'	8:A:826:U:C6	2.46	0.51
8:A:1322:A:O2'	26:S:84:ARG:NH1	2.38	0.51
8:A:1805:A:C6	8:A:1813:G:C6	2.99	0.51
8:A:2111:U:C2	8:A:2147:A:H2	2.28	0.51
8:A:2455:G:H2'	8:A:2456:C:H6	1.76	0.51
8:A:2668:G:H2'	8:A:2669:G:H8	1.75	0.51
12:E:113:VAL:HG22	12:E:118:LEU:HD23	1.93	0.51
13:F:130:GLY:HA2	13:F:152:ASP:HA	1.93	0.51
34:a:129:A:O2'	34:a:130:A:H5''	2.11	0.51
34:a:254:G:P	50:q:67:SER:HG	2.32	0.51
34:a:867:G:H2'	34:a:868:C:H6	1.75	0.51
34:a:1039:G:H2'	34:a:1040:U:H6	1.74	0.51
34:a:1464:U:H2'	34:a:1465:A:H8	1.74	0.51
34:a:1523:G:OP2	44:k:127:ARG:NH2	2.44	0.51
40:g:20:GLU:OE1	40:g:20:GLU:N	2.33	0.51
57:x:302:LYS:HD3	57:x:305:PRO:HB3	1.93	0.51
57:x:635:SER:HA	57:x:639:GLY:HA3	1.92	0.51
8:A:217:A:H2'	8:A:218:A:C8	2.45	0.51
8:A:538:A:H5''	17:J:7:LYS:HE3	1.91	0.51
8:A:715:A:O2'	8:A:716:A:OP1	2.25	0.51
8:A:910:A:C6	20:M:13:HIS:CE1	2.99	0.51
8:A:2172:U:O2'	8:A:2174:C:OP2	2.25	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2586:U:H2'	8:A:2587:A:H8	1.74	0.51
9:B:116:G:H2'	9:B:117:G:H8	1.76	0.51
13:F:32:LYS:HD3	13:F:91:ARG:HH12	1.76	0.51
23:P:24:THR:O	23:P:24:THR:OG1	2.29	0.51
30:W:79:GLU:O	30:W:81:GLU:N	2.43	0.51
34:a:363:A:C6	45:l:26:CYS:HB3	2.45	0.51
34:a:674:G:C2	34:a:675:A:C5	2.99	0.51
38:e:41:GLY:O	38:e:42:ASN:ND2	2.43	0.51
43:j:52:LEU:HD11	43:j:59:LYS:HD2	1.93	0.51
56:w:22:G:N7	56:w:46:G7M:N1	2.49	0.51
56:w:59:U:H4'	56:w:60:U:OP1	2.09	0.51
4:3:42:HIS:O	4:3:45:PRO:HD2	2.10	0.51
8:A:2:G:O6	8:A:2902:C:N4	2.42	0.51
8:A:457:A:H61	8:A:470:A:H5''	1.76	0.51
8:A:585:G:H2'	8:A:1251:C:H42	1.76	0.51
8:A:1090:A:O2'	8:A:1091:G:OP1	2.26	0.51
8:A:1171:G:H1	8:A:1177:G:H22	1.59	0.51
8:A:2455:G:H2'	8:A:2456:C:C6	2.45	0.51
10:C:90:ILE:HD12	10:C:102:TYR:CG	2.45	0.51
13:F:122:ASP:OD1	13:F:125:GLY:N	2.37	0.51
17:J:9:GLU:OE1	17:J:9:GLU:N	2.43	0.51
34:a:407:U:H2'	34:a:408:A:H8	1.76	0.51
34:a:562:U:H5''	34:a:563:A:C5	2.45	0.51
34:a:1011:C:N4	34:a:1012:A:H62	2.09	0.51
34:a:1465:A:H2'	34:a:1466:C:C6	2.46	0.51
38:e:155:LYS:HG3	38:e:156:ARG:H	1.76	0.51
39:f:9:MET:HG2	39:f:59:TYR:CD1	2.46	0.51
51:r:36:GLY:O	51:r:62:ARG:NH2	2.41	0.51
57:x:277:MET:O	57:x:281:VAL:HG23	2.10	0.51
8:A:536:G:H21	17:J:47:HIS:CG	2.29	0.51
8:A:878:A:H3'	8:A:879:G:C8	2.45	0.51
8:A:1038:G:N1	8:A:1118:C:N3	2.59	0.51
8:A:1199:U:H2'	8:A:1200:C:H6	1.76	0.51
8:A:2676:C:O2	8:A:2732:G:N2	2.29	0.51
8:A:2762:C:H2'	8:A:2763:G:O4'	2.10	0.51
9:B:61:G:H2'	9:B:62:C:C6	2.46	0.51
9:B:98:G:O2'	9:B:99:A:O4'	2.27	0.51
10:C:119:VAL:HB	15:H:91:PHE:HB3	1.91	0.51
29:V:28:ALA:O	29:V:40:ILE:N	2.37	0.51
34:a:299:G:H2'	34:a:300:A:C8	2.45	0.51
34:a:375:U:O2	49:p:28:ARG:NH2	2.38	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:668:G:N1	34:a:739:C:N3	2.59	0.51
34:a:911:U:OP1	45:l:91:GLY:HA2	2.11	0.51
35:b:46:VAL:HG23	35:b:47:PRO:HD3	1.93	0.51
35:b:166:ASP:OD1	35:b:167:HIS:N	2.44	0.51
39:f:73:GLU:O	39:f:77:THR:HG23	2.11	0.51
42:i:117:LEU:HG	42:i:123:ARG:HD2	1.93	0.51
43:j:56:HIS:CD2	43:j:57:VAL:H	2.28	0.51
55:v:51:C:H2'	55:v:52:G:O4'	2.11	0.51
57:x:126:TRP:HZ2	57:x:163:ALA:HB2	1.74	0.51
57:x:414:VAL:HG22	57:x:460:MET:HA	1.93	0.51
57:x:419:VAL:HG12	57:x:482:VAL:HG12	1.92	0.51
8:A:160:A:N3	8:A:2208:C:O2'	2.39	0.51
8:A:163:C:H2'	8:A:164:C:H6	1.76	0.51
8:A:381:G:C2	8:A:394:C:C2	2.99	0.51
8:A:491:G:C5	8:A:492:A:C5	2.99	0.51
8:A:922:C:H2'	8:A:923:G:C8	2.46	0.51
8:A:1056:G:N2	8:A:1103:A:C8	2.79	0.51
8:A:1085:A:H4'	8:A:1103:A:C2	2.46	0.51
8:A:1635:A:H2'	8:A:1636:U:O4'	2.11	0.51
8:A:1656:C:H2'	8:A:1657:U:C6	2.45	0.51
8:A:1925:C:H2'	8:A:1926:U:H3'	1.93	0.51
8:A:1989:G:H2'	8:A:1990:C:O4'	2.10	0.51
8:A:2194:U:H2'	8:A:2195:U:C6	2.45	0.51
8:A:2372:U:H2'	8:A:2373:G:C8	2.46	0.51
8:A:2453:A:H2'	8:A:2454:G:H8	1.75	0.51
17:J:125:TYR:HH	17:J:132:HIS:CD2	2.28	0.51
32:Y:18:LEU:O	32:Y:19:LEU:HB3	2.11	0.51
34:a:187:G:N2	34:a:189:A:H5''	2.26	0.51
34:a:453:G:C6	34:a:480:U:C4	2.99	0.51
34:a:623:C:H2'	34:a:624:C:H6	1.75	0.51
34:a:674:G:H21	44:k:117:HIS:CD2	2.29	0.51
34:a:1004:A:N7	34:a:1024:G:O2'	2.39	0.51
37:d:12:ARG:HG2	37:d:35:GLN:O	2.11	0.51
56:w:1:G:H2'	56:w:2:C:C6	2.45	0.51
57:x:549:ILE:H	57:x:549:ILE:HD12	1.76	0.51
8:A:662:G:H5''	19:L:16:GLY:HA2	1.92	0.50
8:A:877:A:H1'	8:A:900:A:H62	1.76	0.50
8:A:2032:G:N2	11:D:151:THR:OG1	2.44	0.50
8:A:2104:C:H2'	8:A:2105:U:C6	2.45	0.50
8:A:2231:U:OP1	31:X:26:ARG:NH2	2.44	0.50
8:A:2552:OMU:H2'	8:A:2554:U:OP2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:31:C:H1'	9:B:54:G:N1	2.26	0.50
34:a:116:A:OP2	34:a:289:G:P	2.69	0.50
34:a:238:A:H2'	34:a:239:U:O4'	2.11	0.50
34:a:373:A:H1'	34:a:481:G:H8	1.76	0.50
34:a:1016:A:H3'	34:a:1017:U:O4'	2.10	0.50
41:h:104:SER:HB2	41:h:125:ILE:HD11	1.93	0.50
44:k:85:VAL:HG21	44:k:92:ARG:HB2	1.93	0.50
56:w:69:G:H2'	56:w:70:G:H8	1.76	0.50
8:A:208:C:H2'	8:A:209:C:C6	2.46	0.50
8:A:523:C:H2'	8:A:524:G:C8	2.45	0.50
8:A:623:C:H2'	8:A:624:C:C6	2.46	0.50
8:A:626:A:H2'	19:L:78:ARG:NH2	2.25	0.50
8:A:1093:G:H2'	8:A:1093:G:N3	2.26	0.50
8:A:1124:G:H2'	8:A:1125:G:O4'	2.11	0.50
8:A:1545:A:H2'	8:A:1546:G:O4'	2.12	0.50
8:A:1936:A:P	8:A:1961:C:H41	2.34	0.50
8:A:2229:U:H2'	8:A:2230:G:C8	2.46	0.50
18:K:30:ARG:NH2	18:K:37:ASP:OD2	2.45	0.50
34:a:997:U:H2'	34:a:998:C:C6	2.46	0.50
57:x:315:PRO:HB3	57:x:400:ASP:OD2	2.11	0.50
8:A:192:C:H2'	8:A:193:U:O4'	2.12	0.50
8:A:400:G:O6	31:X:56:ARG:NH2	2.45	0.50
8:A:543:G:C6	8:A:544:C:N4	2.79	0.50
8:A:686:U:H2'	8:A:788:A:N1	2.26	0.50
8:A:850:U:O2	33:Z:46:MET:HE2	2.12	0.50
8:A:922:C:H2'	8:A:923:G:H8	1.76	0.50
8:A:1297:C:H2'	8:A:1298:C:H6	1.76	0.50
8:A:1565:C:C4	8:A:1567:G:C5	2.99	0.50
8:A:1770:G:C6	8:A:1983:G:C6	2.99	0.50
8:A:1910:G:C8	8:A:1921:G:C2	2.99	0.50
8:A:2129:C:O2	8:A:2129:C:H2'	2.10	0.50
8:A:2183:A:H2'	8:A:2184:A:H8	1.76	0.50
8:A:2293:G:C4	8:A:2294:G:C8	2.99	0.50
8:A:2399:G:C6	8:A:2418:A:C6	3.00	0.50
8:A:2485:G:H5''	20:M:45:GLN:HE21	1.76	0.50
8:A:2557:G:H2'	8:A:2558:C:C6	2.45	0.50
10:C:140:VAL:HG22	10:C:191:LEU:HD23	1.93	0.50
10:C:242:HIS:O	10:C:244:VAL:HG13	2.10	0.50
18:K:85:VAL:HG21	18:K:115:ILE:HD13	1.94	0.50
30:W:38:GLY:O	30:W:40:LYS:N	2.44	0.50
34:a:784:A:C6	34:a:799:G:N1	2.79	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1095:U:P	34:a:1108:G:H1	2.35	0.50
34:a:1210:C:H2'	34:a:1211:U:O4'	2.11	0.50
34:a:1254:A:H2'	34:a:1255:G:C8	2.45	0.50
38:e:155:LYS:HG3	38:e:156:ARG:N	2.26	0.50
39:f:7:VAL:HA	39:f:60:VAL:O	2.12	0.50
57:x:2:ARG:NH2	57:x:312:ASP:OD1	2.44	0.50
57:x:15:SER:OG	57:x:88:THR:OG1	2.16	0.50
57:x:589:GLU:HA	57:x:592:PHE:HD2	1.76	0.50
3:2:26:ASN:CG	8:A:682:G:H5'	2.36	0.50
8:A:78:U:H2'	8:A:79:C:C6	2.46	0.50
8:A:171:U:H2'	8:A:172:A:C8	2.47	0.50
8:A:275:C:H2'	8:A:278:A:H2	1.76	0.50
8:A:973:A:C8	8:A:1188:U:C2	2.99	0.50
8:A:1079:C:H2'	8:A:1081:U:OP1	2.12	0.50
8:A:2331:G:C2	8:A:2385:C:N3	2.79	0.50
8:A:2648:G:C4	8:A:2673:G:C2	3.00	0.50
29:V:75:GLN:HB2	29:V:92:VAL:HG22	1.94	0.50
34:a:27:G:H2'	34:a:28:A:C8	2.46	0.50
34:a:279:A:H5''	34:a:281:G:O4'	2.11	0.50
34:a:718:A:C8	44:k:117:HIS:CG	2.99	0.50
34:a:1055:A:N7	34:a:1200:C:N4	2.59	0.50
34:a:1223:C:OP1	34:a:1224:U:H5''	2.12	0.50
34:a:1521:C:H2'	34:a:1522:U:C6	2.46	0.50
34:a:1526:G:H2'	34:a:1527:U:C6	2.47	0.50
39:f:14:GLN:OE1	39:f:14:GLN:N	2.44	0.50
42:i:33:SER:OG	42:i:34:LEU:N	2.43	0.50
43:j:10:LEU:HB2	43:j:72:ARG:HB2	1.92	0.50
53:t:65:LEU:HD23	53:t:66:ILE:HG23	1.93	0.50
55:v:56:C:H2'	55:v:57:A:H8	1.76	0.50
7:6:11:GLU:HA	7:6:25:ARG:HG2	1.94	0.50
8:A:67:U:C2	8:A:68:G:C8	3.00	0.50
8:A:419:U:H2'	8:A:420:C:H6	1.76	0.50
8:A:1086:A:H4'	8:A:1087:G:C5	2.46	0.50
8:A:1190:G:H2'	8:A:1191:G:C8	2.46	0.50
8:A:1324:G:N3	8:A:1328:A:N6	2.60	0.50
8:A:2280:G:C2	8:A:2281:A:C8	3.00	0.50
8:A:2521:C:N3	8:A:2545:G:N1	2.59	0.50
13:F:12:VAL:HG22	13:F:16:MET:SD	2.51	0.50
24:Q:93:ILE:HD12	25:R:13:ARG:HB2	1.93	0.50
34:a:949:A:H2'	34:a:950:U:C6	2.47	0.50
34:a:1004:A:N6	34:a:1025:U:H4'	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:e:152:VAL:HA	38:e:155:LYS:HG2	1.93	0.50
45:l:81:ILE:HG23	45:l:94:TYR:HB3	1.93	0.50
56:w:61:C:O2	56:w:61:C:H2'	2.11	0.50
57:x:31:PHE:HD1	57:x:32:TYR:CD1	2.30	0.50
8:A:18:U:O2'	8:A:554:U:OP1	2.27	0.50
8:A:217:A:C6	8:A:218:A:C6	2.99	0.50
8:A:563:A:N6	8:A:2018:G:C5	2.80	0.50
8:A:679:C:H2'	8:A:680:C:H6	1.75	0.50
8:A:679:C:H2'	8:A:680:C:C6	2.47	0.50
8:A:820:A:H2'	8:A:821:A:O4'	2.11	0.50
8:A:996:A:O2'	24:Q:90:ASP:OD2	2.27	0.50
8:A:1544:A:H2'	8:A:1545:A:C8	2.47	0.50
8:A:1629:U:O4	8:A:1630:A:N6	2.45	0.50
8:A:2331:G:N2	8:A:2385:C:N3	2.60	0.50
8:A:2815:C:H2'	8:A:2816:G:C8	2.47	0.50
10:C:77:VAL:HG21	10:C:109:LEU:HD21	1.93	0.50
10:C:154:ALA:HB2	10:C:161:VAL:HG23	1.93	0.50
23:P:1:SER:O	23:P:5:LYS:HG2	2.11	0.50
34:a:17:U:H2'	34:a:18:C:C6	2.46	0.50
34:a:338:A:H2'	34:a:339:C:H6	1.77	0.50
34:a:969:A:H2'	34:a:970:C:O4'	2.11	0.50
34:a:1053:G:H4'	34:a:1054:C:H5''	1.93	0.50
34:a:1082:A:OP2	38:e:22:LYS:NZ	2.44	0.50
34:a:1149:C:H2'	34:a:1150:A:C8	2.43	0.50
34:a:1415:G:H2'	34:a:1416:G:H8	1.77	0.50
35:b:124:THR:HG23	35:b:127:LYS:HE2	1.91	0.50
50:q:44:HIS:HB3	50:q:70:LYS:HG2	1.93	0.50
57:x:193:ASN:HB2	57:x:200:THR:CG2	2.40	0.50
57:x:349:LEU:HA	57:x:356:ARG:HA	1.93	0.50
8:A:517:C:O2'	26:S:18:ARG:NH2	2.44	0.50
8:A:755:U:H2'	8:A:756:A:H8	1.75	0.50
8:A:799:G:C6	8:A:800:A:C6	2.99	0.50
8:A:919:U:H2'	8:A:920:A:O4'	2.12	0.50
8:A:1054:A:H2'	8:A:1055:G:C8	2.46	0.50
8:A:1534:U:O2	8:A:1538:G:N2	2.44	0.50
8:A:1954:G:O2'	8:A:1956:U:O4	2.15	0.50
8:A:2079:U:C2	8:A:2080:A:C8	3.00	0.50
8:A:2721:A:H1'	8:A:2873:A:H8	1.77	0.50
8:A:2836:U:H2'	8:A:2837:A:H8	1.76	0.50
15:H:81:ALA:HA	15:H:146:VAL:HG23	1.93	0.50
16:I:6:ALA:O	16:I:8:VAL:N	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:J:110:PRO:HG2	17:J:118:MET:HE1	1.94	0.50
22:O:57:ALA:O	22:O:61:GLN:NE2	2.38	0.50
34:a:81:A:H62	34:a:89:U:H4'	1.77	0.50
34:a:581:G:N2	34:a:582:C:H41	2.09	0.50
34:a:1206:G:C4	34:a:1207:2MG:C8	3.00	0.50
34:a:1246:A:C6	34:a:1292:G:C6	2.99	0.50
34:a:1308:U:H2'	34:a:1309:G:C8	2.47	0.50
34:a:1361:G:H2'	34:a:1362:A:C8	2.47	0.50
37:d:149:LYS:C	37:d:150:LYS:HG2	2.37	0.50
40:g:78:ARG:HB3	40:g:83:THR:HA	1.94	0.50
45:l:49:ARG:HG3	45:l:89:LEU:HD21	1.93	0.50
51:r:28:LEU:HD13	51:r:58:ILE:HD13	1.92	0.50
55:v:58:A:O2'	55:v:60:U:OP2	2.19	0.50
56:w:2:C:H2'	56:w:3:C:C6	2.46	0.50
57:x:31:PHE:HD1	57:x:32:TYR:HD1	1.59	0.50
57:x:112:TYR:HE2	57:x:118:VAL:HG12	1.77	0.50
57:x:568:TYR:CE2	57:x:697:VAL:HG21	2.47	0.50
8:A:29:U:H2'	8:A:30:G:C8	2.46	0.50
8:A:859:G:N2	8:A:917:A:OP2	2.36	0.50
8:A:1063:G:O2'	16:I:87:SER:O	2.22	0.50
8:A:1263:U:O2'	8:A:1264:A:O5'	2.26	0.50
8:A:1385:A:H1'	8:A:1386:C:C6	2.47	0.50
8:A:1782:U:O2	8:A:2608:G:O2'	2.25	0.50
8:A:1858:A:N6	8:A:1884:G:O2'	2.40	0.50
8:A:2443:C:H2'	8:A:2444:G:C8	2.47	0.50
8:A:2599:G:N7	10:C:234:GLY:HA2	2.27	0.50
8:A:2815:C:H2'	8:A:2816:G:H8	1.76	0.50
8:A:2831:G:N2	8:A:2884:U:OP2	2.45	0.50
9:B:11:C:HO2'	9:B:15:A:N6	2.09	0.50
9:B:31:C:O2'	9:B:32:U:H5'	2.12	0.50
9:B:36:C:O2'	9:B:37:C:OP1	2.23	0.50
10:C:104:LEU:HD11	10:C:155:ARG:HG2	1.93	0.50
24:Q:7:VAL:HG23	24:Q:8:ILE:H	1.77	0.50
30:W:25:GLU:O	30:W:62:LYS:HA	2.12	0.50
34:a:45:G:H2'	34:a:46:G:C8	2.47	0.50
34:a:190:A:H2'	34:a:191:G:O4'	2.12	0.50
34:a:337:G:C2	34:a:338:A:C5	2.99	0.50
34:a:747:A:H2'	34:a:748:G:O4'	2.12	0.50
37:d:162:GLU:OE1	37:d:162:GLU:N	2.45	0.50
46:m:51:GLN:O	46:m:55:LEU:HG	2.11	0.50
50:q:9:GLY:O	50:q:57:VAL:HA	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:x:24:THR:HG23	62:x:801:GDP:O1A	2.11	0.50
8:A:45:G:H5'	8:A:46:G:H5'	1.94	0.50
8:A:121:G:H2'	8:A:122:G:C8	2.47	0.50
8:A:335:C:H2'	8:A:336:C:C6	2.46	0.50
8:A:604:G:C6	8:A:625:G:N1	2.80	0.50
8:A:624:C:N4	8:A:625:G:O6	2.45	0.50
8:A:1252:G:H22	24:Q:36:GLN:NE2	1.97	0.50
8:A:1922:G:H2'	8:A:1923:U:O4'	2.12	0.50
8:A:2233:U:H2'	8:A:2234:G:H8	1.76	0.50
8:A:2243:U:H2'	8:A:2244:U:H6	1.77	0.50
8:A:2671:G:H2'	8:A:2672:U:O4'	2.12	0.50
8:A:2698:U:H2'	8:A:2699:C:H6	1.74	0.50
8:A:2840:C:H2'	8:A:2841:C:H6	1.77	0.50
9:B:45:A:C4	9:B:46:A:C8	3.00	0.50
9:B:57:A:H2'	9:B:58:A:C8	2.46	0.50
12:E:10:SER:OG	12:E:11:ALA:N	2.45	0.50
24:Q:82:LEU:HG	24:Q:87:VAL:HB	1.93	0.50
24:Q:90:ASP:N	25:R:11:GLN:OE1	2.45	0.50
26:S:20:VAL:HG11	26:S:44:ALA:HA	1.93	0.50
29:V:26:PHE:CE2	29:V:89:ILE:HG13	2.46	0.50
34:a:79:G:O2'	34:a:80:A:H2'	2.11	0.50
34:a:144:G:H3'	34:a:145:G:H8	1.77	0.50
34:a:222:C:H2'	34:a:223:A:C8	2.45	0.50
34:a:393:A:C2	34:a:394:G:C8	2.99	0.50
34:a:1023:U:H2'	34:a:1024:G:O4'	2.12	0.50
34:a:1465:A:H2'	34:a:1466:C:H6	1.77	0.50
38:e:120:HIS:O	38:e:121:ASN:ND2	2.44	0.50
40:g:71:THR:HG22	40:g:95:ARG:HH22	1.77	0.50
57:x:616:MET:SD	57:x:659:LEU:HB2	2.52	0.50
2:1:13:SER:OG	2:1:47:ILE:O	2.21	0.49
8:A:172:A:H2'	8:A:173:A:H8	1.77	0.49
8:A:947:A:H2'	8:A:948:C:H6	1.75	0.49
8:A:1083:U:O2'	8:A:1085:A:OP2	2.21	0.49
8:A:1297:C:H2'	8:A:1298:C:C6	2.47	0.49
8:A:2179:C:H4'	8:A:2180:U:OP1	2.12	0.49
8:A:2415:G:H2'	8:A:2416:C:C6	2.47	0.49
9:B:44:G:N2	9:B:48:U:C2	2.80	0.49
9:B:74:U:O2	29:V:29:ILE:HD13	2.12	0.49
26:S:75:PHE:O	26:S:104:THR:OG1	2.28	0.49
28:U:84:PHE:CE1	28:U:93:ARG:HG2	2.47	0.49
29:V:77:VAL:HG23	29:V:89:ILE:HG12	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:537:G:H2'	34:a:538:G:H8	1.77	0.49
34:a:1171:A:H2'	34:a:1172:C:H6	1.76	0.49
34:a:1176:A:H2'	34:a:1177:G:C8	2.47	0.49
34:a:1454:G:H8	34:a:1454:G:OP2	1.95	0.49
34:a:1515:G:H2'	34:a:1516:2MG:C8	2.47	0.49
40:g:43:TYR:HD1	40:g:46:LEU:HD12	1.76	0.49
4:3:5:THR:HG23	4:3:62:PRO:HD2	1.94	0.49
4:3:53:ASP:O	4:3:57:VAL:HG23	2.11	0.49
8:A:36:G:N1	8:A:445:C:C4	2.80	0.49
8:A:43:G:C2	8:A:437:U:C2	2.99	0.49
8:A:687:C:O5'	8:A:687:C:H6	1.95	0.49
8:A:748:G:C5	8:A:750:A:C5	3.00	0.49
8:A:833:A:C2	8:A:834:G:C5	2.99	0.49
8:A:861:A:H61	8:A:916:G:H1'	1.76	0.49
8:A:1434:A:N1	8:A:1558:C:N4	2.60	0.49
8:A:1463:C:H2'	8:A:1464:G:H8	1.77	0.49
8:A:1539:U:H2'	8:A:1540:G:C8	2.47	0.49
8:A:1792:G:O2'	8:A:1830:C:OP1	2.30	0.49
8:A:1831:G:C6	8:A:1975:G:N1	2.80	0.49
8:A:2293:G:H2'	8:A:2294:G:H8	1.77	0.49
8:A:2380:C:H2'	8:A:2381:A:H8	1.78	0.49
8:A:2521:C:C2	8:A:2545:G:N2	2.80	0.49
8:A:2692:G:C6	8:A:2718:G:N1	2.80	0.49
9:B:7:G:H1'	22:O:38:GLN:HE22	1.76	0.49
10:C:204:LEU:HD22	10:C:209:ALA:O	2.13	0.49
20:M:136:MET:OXT	29:V:79:ARG:NH2	2.40	0.49
30:W:22:PHE:CD1	30:W:22:PHE:N	2.79	0.49
34:a:148:G:H22	34:a:174:A:H2	1.59	0.49
34:a:592:G:H2'	34:a:593:U:C6	2.47	0.49
34:a:1130:A:C5	34:a:1146:A:C6	3.00	0.49
34:a:1381:U:H2'	34:a:1382:C:C6	2.47	0.49
35:b:82:ALA:O	35:b:85:SER:OG	2.24	0.49
51:r:10:CYS:SG	51:r:47:ARG:N	2.86	0.49
52:s:17:LYS:HA	52:s:20:LYS:CD	2.41	0.49
55:v:54:5MU:H2'	55:v:55:PSU:C5	2.47	0.49
1:0:41:HIS:HD2	21:N:101:GLY:N	2.09	0.49
7:6:10:GLU:OE1	7:6:10:GLU:N	2.36	0.49
8:A:116:C:O2'	8:A:126:A:H1'	2.11	0.49
8:A:380:G:OP1	31:X:17:ARG:HB2	2.12	0.49
8:A:1130:U:N3	11:D:152:PRO:HA	2.26	0.49
8:A:1317:G:H2'	8:A:1318:U:O4'	2.11	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1385:A:C6	8:A:1403:A:C6	3.00	0.49
8:A:1437:C:O2'	8:A:1516:G:O2'	2.21	0.49
8:A:1542:U:H2'	8:A:1543:G:O4'	2.12	0.49
8:A:1865:U:O2	8:A:1877:A:N6	2.45	0.49
8:A:2223:G:OP1	10:C:170:TYR:OH	2.25	0.49
26:S:2:GLU:HG2	26:S:108:SER:HB2	1.94	0.49
34:a:27:G:H2'	34:a:28:A:H8	1.77	0.49
34:a:75:G:C2	34:a:96:U:C2	3.01	0.49
34:a:113:G:H2'	34:a:114:U:C6	2.47	0.49
34:a:193:C:H2'	34:a:194:C:C6	2.46	0.49
34:a:466:A:H2'	34:a:468:A:C8	2.46	0.49
34:a:632:U:H5''	34:a:633:G:C8	2.47	0.49
34:a:636:U:H2'	34:a:637:C:H6	1.76	0.49
34:a:1042:A:C2'	34:a:1043:G:H5'	2.42	0.49
34:a:1186:G:N2	47:n:101:TRP:OXT	2.41	0.49
34:a:1217:C:OP2	47:n:8:ARG:NH2	2.30	0.49
36:c:10:ARG:NH2	36:c:176:THR:O	2.37	0.49
43:j:52:LEU:HD11	43:j:59:LYS:HA	1.94	0.49
49:p:8:ARG:HD3	49:p:17:TYR:CE1	2.47	0.49
56:w:37:MIA:H112	56:w:38:A:C8	2.47	0.49
2:l:37:LYS:HB2	2:l:48:TYR:CD2	2.47	0.49
8:A:357:C:H2'	8:A:358:U:C6	2.48	0.49
8:A:619:G:OP2	8:A:620:G:N2	2.45	0.49
8:A:784:G:C2	10:C:227:VAL:HG11	2.47	0.49
8:A:820:A:H4'	8:A:836:G:H22	1.78	0.49
8:A:1374:G:H2'	8:A:1375:U:O4'	2.12	0.49
8:A:1419:A:O2'	8:A:1421:G:N7	2.39	0.49
8:A:1426:G:C8	8:A:1427:A:C8	3.01	0.49
8:A:1892:C:O2'	55:v:71:C:H5''	2.12	0.49
8:A:1949:G:C2	8:A:1958:C:C2	3.01	0.49
8:A:1987:A:H2'	8:A:1988:G:H8	1.77	0.49
8:A:2075:U:H1'	8:A:2597:G:N2	2.24	0.49
8:A:2403:C:H2'	8:A:2404:U:C6	2.47	0.49
8:A:2564:A:C2	8:A:2647:U:H4'	2.47	0.49
8:A:2699:C:H2'	8:A:2700:A:C8	2.47	0.49
9:B:79:G:N7	29:V:14:LYS:NZ	2.60	0.49
13:F:11:VAL:HG13	13:F:171:ALA:HB1	1.93	0.49
34:a:45:G:H2'	34:a:46:G:H8	1.77	0.49
34:a:79:G:N2	34:a:90:C:O2	2.46	0.49
34:a:105:G:H2'	34:a:106:C:C6	2.47	0.49
34:a:833:G:C6	34:a:834:U:C4	3.00	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:14:VAL:HG23	36:c:15:LYS:HG2	1.93	0.49
36:c:149:LYS:HE3	36:c:200:TRP:CZ3	2.47	0.49
37:d:48:SER:OG	37:d:49:ASP:N	2.43	0.49
37:d:94:GLU:HA	37:d:99:ASN:ND2	2.21	0.49
55:v:36:U:H2'	55:v:37:A:C8	2.46	0.49
56:w:51:C:H2'	56:w:52:G:C8	2.47	0.49
56:w:55:PSU:HN3	56:w:57:G:H5''	1.77	0.49
57:x:391:THR:OG1	57:x:392:THR:N	2.46	0.49
8:A:173:A:H2'	8:A:174:U:C6	2.47	0.49
8:A:270:A:H1'	8:A:370:G:N2	2.27	0.49
8:A:428:A:C6	8:A:429:A:C6	3.00	0.49
8:A:553:G:C6	8:A:554:U:C4	3.00	0.49
8:A:934:U:H2'	8:A:935:C:H6	1.76	0.49
8:A:1062:G:C5	8:A:1088:A:C8	3.01	0.49
8:A:1232:G:C5	8:A:1233:C:C5	3.01	0.49
8:A:1352:U:O2	8:A:1378:A:N6	2.46	0.49
8:A:2657:A:HO2'	14:G:159:LYS:HZ2	1.49	0.49
8:A:2816:G:N2	8:A:2883:A:N3	2.61	0.49
13:F:111:ARG:NH1	46:m:81:ASP:OD2	2.46	0.49
15:H:99:ILE:O	15:H:103:VAL:HG22	2.12	0.49
20:M:60:GLN:N	20:M:60:GLN:OE1	2.46	0.49
23:P:58:PHE:CZ	23:P:83:ILE:HD11	2.48	0.49
34:a:260:G:H2'	34:a:261:U:C6	2.48	0.49
34:a:1061:G:H2'	34:a:1062:U:O4'	2.12	0.49
34:a:1268:G:H1'	34:a:1326:U:O2'	2.13	0.49
38:e:76:ASN:HB2	38:e:81:GLN:CD	2.37	0.49
45:l:52:CYS:O	45:l:64:SER:N	2.45	0.49
49:p:68:SER:OG	49:p:69:ASP:N	2.45	0.49
56:w:69:G:H2'	56:w:70:G:C8	2.47	0.49
57:x:333:THR:HB	57:x:387:LEU:HD21	1.93	0.49
5:4:3:VAL:HG12	5:4:3:VAL:O	2.12	0.49
8:A:363:G:H2'	8:A:364:C:C6	2.48	0.49
8:A:871:U:OP1	20:M:5:LYS:HG2	2.13	0.49
8:A:1298:C:C2	8:A:1643:G:N2	2.81	0.49
8:A:2347:C:N3	8:A:2371:G:N2	2.61	0.49
8:A:2748:A:C2	8:A:2757:A:C4	3.01	0.49
26:S:77:ASP:OD1	26:S:102:HIS:HB2	2.13	0.49
34:a:131:A:H2'	34:a:132:C:H6	1.78	0.49
34:a:344:A:H3'	34:a:345:C:H6	1.78	0.49
34:a:352:C:O2'	34:a:354:G:OP1	2.24	0.49
34:a:778:G:C6	34:a:779:C:C4	3.01	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1129:C:H4'	42:i:17:ARG:HH22	1.76	0.49
34:a:1415:G:C2	34:a:1416:G:C5	3.00	0.49
39:f:36:ILE:HG13	39:f:64:VAL:HG13	1.94	0.49
42:i:20:ILE:HB	42:i:60:LEU:HD12	1.94	0.49
42:i:48:ARG:HG2	42:i:52:GLU:HB3	1.94	0.49
53:t:56:ILE:O	53:t:60:GLN:HG2	2.13	0.49
56:w:73:A:H4'	56:w:74:C:OP2	2.12	0.49
57:x:16:ALA:C	57:x:22:LYS:HZ2	2.20	0.49
57:x:216:GLU:OE2	57:x:220:ASN:ND2	2.46	0.49
2:1:38:PHE:HE2	8:A:2371:G:H1'	1.77	0.49
8:A:121:G:H2'	8:A:122:G:H8	1.76	0.49
8:A:225:C:H2'	8:A:226:A:O4'	2.12	0.49
8:A:595:C:H2'	8:A:596:U:H6	1.78	0.49
8:A:1494:A:H3'	8:A:1495:A:C8	2.48	0.49
8:A:1689:A:H2'	8:A:1690:A:C8	2.47	0.49
8:A:1946:U:H2'	8:A:1947:C:C6	2.47	0.49
8:A:2295:C:H2'	8:A:2296:U:C6	2.47	0.49
8:A:2633:G:H2'	8:A:2634:A:O4'	2.13	0.49
8:A:2683:C:C2'	8:A:2684:U:H5'	2.43	0.49
8:A:2848:G:H2'	8:A:2867:G:N2	2.28	0.49
9:B:32:U:H2'	9:B:33:G:C8	2.47	0.49
11:D:187:LEU:HD21	11:D:203:VAL:HG11	1.93	0.49
34:a:945:G:C6	34:a:946:A:N7	2.80	0.49
34:a:1086:U:O4	34:a:1099:G:N1	2.41	0.49
55:v:33:U:O2'	55:v:34:C:O5'	2.30	0.49
57:x:614:PRO:O	57:x:615:ILE:HD13	2.13	0.49
1:0:37:HIS:CD2	1:0:43:THR:HG22	2.48	0.49
6:5:80:THR:HA	8:A:1107:G:H4'	1.94	0.49
8:A:24:G:H1'	26:S:77:ASP:HB2	1.95	0.49
8:A:287:G:C6	8:A:354:A:C6	3.01	0.49
8:A:481:G:H1'	8:A:506:G:N2	2.27	0.49
8:A:481:G:O2'	8:A:482:A:OP2	2.24	0.49
8:A:1096:A:O2'	16:I:8:VAL:HA	2.13	0.49
8:A:1981:A:H5''	8:A:1982:U:OP2	2.12	0.49
8:A:2061:G:P	12:E:63:LYS:HZ1	2.36	0.49
8:A:2235:G:C5	8:A:2236:U:C4	3.01	0.49
8:A:2373:G:H2'	8:A:2374:C:C6	2.47	0.49
8:A:2749:A:C8	8:A:2750:A:C8	3.01	0.49
8:A:2897:U:H2'	8:A:2898:U:C6	2.48	0.49
8:A:2901:C:N4	8:A:2902:C:H41	2.10	0.49
15:H:104:THR:OG1	15:H:105:ALA:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:S:65:ASP:OD1	26:S:68:ASP:N	2.35	0.49
34:a:79:G:N2	34:a:90:C:C2	2.81	0.49
34:a:104:G:H2'	34:a:105:G:C8	2.45	0.49
34:a:286:C:H2'	34:a:287:U:H6	1.78	0.49
34:a:501:C:H2'	34:a:502:A:C8	2.47	0.49
34:a:524:G:C2	34:a:525:C:C4	3.00	0.49
34:a:1006:G:H1	34:a:1022:A:H2	1.61	0.49
34:a:1209:C:H2'	34:a:1210:C:C5	2.48	0.49
34:a:1310:G:O6	34:a:1328:C:N4	2.45	0.49
34:a:1478:U:H2'	34:a:1479:C:C6	2.48	0.49
34:a:1518:MA6:H8	34:a:1518:MA6:H3'	1.94	0.49
37:d:49:ASP:O	37:d:53:GLN:HG3	2.13	0.49
37:d:68:GLU:OE1	37:d:203:TYR:OH	2.25	0.49
40:g:68:VAL:O	40:g:68:VAL:HG12	2.12	0.49
50:q:16:MET:HE1	50:q:44:HIS:HD2	1.77	0.49
57:x:565:LEU:HD21	57:x:611:LEU:HD13	1.94	0.49
6:5:36:ASP:O	6:5:40:GLU:CB	2.60	0.49
8:A:381:G:N1	8:A:394:C:N3	2.61	0.49
8:A:465:G:N2	8:A:684:G:H1'	2.26	0.49
8:A:745:1MG:H5''	8:A:746:PSU:OP2	2.13	0.49
8:A:1547:C:H2'	8:A:1548:A:H8	1.78	0.49
8:A:1851:U:O2'	55:v:71:C:O2	2.25	0.49
8:A:2036:C:N4	8:A:2037:A:H62	2.10	0.49
8:A:2090:A:C6	8:A:2091:C:N4	2.81	0.49
8:A:2682:A:H2'	8:A:2683:C:H6	1.78	0.49
8:A:2844:G:H2'	8:A:2845:U:O4'	2.13	0.49
8:A:2864:G:N1	8:A:2865:U:O4	2.45	0.49
9:B:83:G:C6	9:B:94:A:C6	3.01	0.49
14:G:26:LYS:HD2	14:G:31:GLU:HB3	1.95	0.49
20:M:31:PHE:CE1	20:M:110:GLU:HA	2.47	0.49
23:P:61:ARG:NH2	23:P:70:GLU:OE2	2.46	0.49
32:Y:21:LEU:HD22	32:Y:46:VAL:HG23	1.95	0.49
33:Z:6:ILE:HD13	33:Z:47:ILE:HD11	1.95	0.49
34:a:324:G:N2	34:a:327:A:H5'	2.28	0.49
34:a:418:C:H2'	34:a:419:C:C6	2.48	0.49
34:a:575:G:H4'	34:a:576:C:O5'	2.13	0.49
34:a:766:A:OP2	34:a:812:G:N2	2.46	0.49
34:a:1054:C:H42	59:z:7:G:H1	1.58	0.49
34:a:1148:U:H2'	34:a:1149:C:O4'	2.13	0.49
37:d:162:GLU:C	37:d:164:ARG:H	2.19	0.49
39:f:49:TYR:CE1	51:r:65:SER:HA	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:h:28:SER:HB3	41:h:58:LEU:H	1.78	0.49
8:A:374:A:C4	8:A:401:A:C6	3.01	0.49
8:A:477:A:H8	8:A:477:A:OP1	1.95	0.49
8:A:576:U:H2'	8:A:577:G:C8	2.48	0.49
8:A:1009:A:OP2	8:A:1010:A:OP2	2.31	0.49
8:A:1252:G:H21	24:Q:32:ARG:HG2	1.77	0.49
8:A:1385:A:C6	8:A:1403:A:C5	3.01	0.49
8:A:2262:U:H2'	8:A:2263:C:H6	1.78	0.49
8:A:2540:C:C2	8:A:2541:A:C8	3.01	0.49
8:A:2850:A:C6	8:A:2851:A:C6	3.01	0.49
19:L:109:LYS:HZ3	19:L:126:ARG:HH11	1.59	0.49
26:S:28:LYS:H	26:S:28:LYS:HD3	1.77	0.49
34:a:200:G:H2'	34:a:201:G:H8	1.78	0.49
34:a:501:C:H2'	34:a:502:A:H8	1.77	0.49
34:a:738:C:OP1	39:f:91:ARG:NH1	2.46	0.49
34:a:1096:C:H2'	34:a:1097:C:H6	1.77	0.49
34:a:1115:U:H2'	34:a:1116:U:C6	2.47	0.49
34:a:1151:A:O2'	34:a:1152:A:H8	1.95	0.49
34:a:1226:C:OP2	46:m:101:THR:OG1	2.20	0.49
44:k:124:LYS:HG3	44:k:125:LYS:N	2.27	0.49
57:x:318:ALA:CB	57:x:337:VAL:HA	2.43	0.49
4:3:35:LYS:HG2	4:3:39:ARG:NH2	2.28	0.48
8:A:30:G:H2'	8:A:31:C:H6	1.77	0.48
8:A:638:G:C5	8:A:651:G:C2	3.01	0.48
8:A:639:U:C2	8:A:640:C:C5	3.01	0.48
8:A:778:G:H5'	10:C:47:ARG:NH1	2.28	0.48
8:A:978:G:HO2'	8:A:1002:G:HO2'	1.56	0.48
8:A:980:A:H1'	8:A:2037:A:O2'	2.13	0.48
8:A:987:C:O2'	8:A:1000:A:N3	2.38	0.48
8:A:1290:C:H2'	8:A:1291:C:C6	2.48	0.48
8:A:1536:C:H4'	8:A:1537:G:C8	2.48	0.48
8:A:2144:G:H1'	8:A:2148:G:H22	1.78	0.48
8:A:2869:G:C6	8:A:2870:C:C4	3.01	0.48
9:B:59:A:H2'	9:B:60:C:O4'	2.13	0.48
10:C:89:ASN:HD21	10:C:196:ASN:HD22	1.61	0.48
13:F:11:VAL:HG13	13:F:171:ALA:CB	2.44	0.48
34:a:187:G:C2	34:a:191:G:O6	2.66	0.48
34:a:384:G:H2'	34:a:385:C:C6	2.49	0.48
34:a:407:U:H2'	34:a:408:A:C8	2.48	0.48
34:a:509:A:OP2	34:a:509:A:O3'	2.30	0.48
34:a:560:A:N6	34:a:566:G:H5'	2.27	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:893:C:H2'	34:a:894:G:C8	2.48	0.48
34:a:1006:G:C2	34:a:1007:U:C2	3.01	0.48
34:a:1072:G:H2'	34:a:1073:U:C6	2.48	0.48
34:a:1253:G:O2'	34:a:1254:A:H5'	2.12	0.48
34:a:1288:A:H2'	34:a:1289:A:H8	1.78	0.48
42:i:57:VAL:HG23	42:i:58:GLU:N	2.27	0.48
51:r:10:CYS:C	51:r:12:PHE:H	2.21	0.48
52:s:13:HIS:HE1	52:s:34:SER:OG	1.95	0.48
1:0:21:LEU:HD11	26:S:41:LYS:HE3	1.96	0.48
8:A:58:G:N3	8:A:73:A:H2	2.10	0.48
8:A:167:A:H2'	8:A:168:G:O4'	2.13	0.48
8:A:481:G:HO2'	8:A:482:A:P	2.34	0.48
8:A:595:C:H2'	8:A:596:U:C6	2.48	0.48
8:A:647:G:N2	8:A:2350:C:O2'	2.46	0.48
8:A:1017:G:N1	8:A:1146:C:N3	2.62	0.48
8:A:1278:C:OP1	21:N:36:THR:OG1	2.16	0.48
8:A:1346:G:N1	8:A:1601:G:C6	2.81	0.48
8:A:1656:C:C2	8:A:1657:U:C5	3.01	0.48
8:A:1682:G:H2'	8:A:1683:U:C6	2.48	0.48
8:A:1857:G:N2	8:A:1885:A:OP2	2.47	0.48
8:A:2035:G:H5''	8:A:2036:C:H5	1.77	0.48
8:A:2250:G:H21	8:A:2250:G:P	2.36	0.48
8:A:2539:C:C4	8:A:2540:C:C5	3.01	0.48
8:A:2650:U:C2	8:A:2671:G:N2	2.81	0.48
8:A:2772:C:H5'	11:D:173:GLN:NE2	2.28	0.48
9:B:57:A:H2'	9:B:58:A:H8	1.77	0.48
9:B:81:G:O6	9:B:95:U:O2	2.30	0.48
11:D:16:THR:O	23:P:78:PRO:HG2	2.13	0.48
15:H:117:LEU:HD13	15:H:121:VAL:HA	1.95	0.48
24:Q:47:ARG:HH11	24:Q:48:ASP:CG	2.21	0.48
34:a:68:G:H5'	34:a:171:A:O2'	2.13	0.48
34:a:173:U:C2	34:a:197:A:C6	3.02	0.48
34:a:333:U:P	53:t:2:ASN:HD21	2.36	0.48
34:a:943:U:H2'	34:a:944:G:C8	2.48	0.48
34:a:1009:U:O2	34:a:1020:G:N2	2.42	0.48
34:a:1418:A:H3'	34:a:1419:G:H5''	1.95	0.48
34:a:1523:G:H2'	34:a:1523:G:N3	2.28	0.48
55:v:31:G:N1	55:v:40:C:N3	2.61	0.48
56:w:68:C:H2'	56:w:69:G:H8	1.75	0.48
57:x:539:ILE:HG12	57:x:577:LEU:HG	1.94	0.48
7:6:35:ASP:OD1	7:6:36:VAL:N	2.44	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:179:C:H2'	8:A:180:G:C8	2.48	0.48
8:A:265:A:C4	8:A:428:A:C6	3.00	0.48
8:A:627:A:C6	8:A:637:A:C8	3.01	0.48
8:A:1019:U:H3	8:A:1142:A:N6	2.08	0.48
8:A:1452:G:N2	8:A:1457:U:C2	2.81	0.48
8:A:1853:A:N3	8:A:2233:U:O2'	2.46	0.48
8:A:2100:G:C6	8:A:2190:G:C6	3.02	0.48
8:A:2345:G:C4	8:A:2381:A:C2	3.02	0.48
34:a:210:C:O2'	34:a:211:G:H5''	2.13	0.48
34:a:444:G:H2'	34:a:445:G:C8	2.48	0.48
34:a:726:C:N4	34:a:727:G:O6	2.47	0.48
34:a:812:G:OP1	34:a:903:G:H1'	2.14	0.48
34:a:945:G:C2	34:a:946:A:C8	3.00	0.48
34:a:1411:C:H2'	34:a:1412:C:H6	1.78	0.48
34:a:1433:A:N7	34:a:1468:A:N6	2.61	0.48
34:a:1520:C:H2'	34:a:1521:C:H6	1.77	0.48
41:h:28:SER:OG	41:h:56:PRO:HB2	2.13	0.48
57:x:32:TYR:CD2	57:x:275:GLN:HG3	2.48	0.48
57:x:348:VAL:HG21	57:x:396:LEU:HB3	1.95	0.48
8:A:337:C:P	28:U:3:LYS:HZ2	2.36	0.48
8:A:367:G:N1	8:A:368:A:N1	2.61	0.48
8:A:682:G:N2	8:A:796:C:C2	2.81	0.48
8:A:919:U:C2	8:A:920:A:C8	3.01	0.48
8:A:984:A:H2'	8:A:984:A:N3	2.29	0.48
8:A:1013:C:H2'	8:A:1014:A:C8	2.46	0.48
8:A:1064:C:N4	8:A:1068:G:OP2	2.45	0.48
8:A:1653:G:P	8:A:2822:G:H22	2.37	0.48
8:A:1816:C:H41	10:C:34:GLU:CD	2.21	0.48
8:A:1964:G:C2	8:A:1967:C:C5	3.02	0.48
8:A:2552:OMU:HM23	8:A:2552:OMU:H1'	1.62	0.48
10:C:144:GLU:OE2	10:C:188:ARG:HB3	2.13	0.48
15:H:132:PHE:HB2	15:H:140:ALA:HB3	1.95	0.48
20:M:71:LYS:HB3	20:M:93:VAL:O	2.13	0.48
22:O:77:ALA:O	22:O:81:ARG:HG3	2.13	0.48
23:P:70:GLU:OE1	23:P:100:ARG:NH1	2.43	0.48
24:Q:43:GLN:OE1	25:R:77:PHE:HB3	2.12	0.48
34:a:114:U:H2'	34:a:115:G:H8	1.77	0.48
34:a:130:A:H1'	34:a:264:C:O4'	2.13	0.48
34:a:521:G:OP1	45:l:69:GLU:HA	2.13	0.48
34:a:824:G:H2'	34:a:825:A:H8	1.78	0.48
34:a:842:U:O2'	34:a:845:A:OP1	2.23	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1520:C:C2	34:a:1521:C:C5	3.00	0.48
36:c:50:SER:O	36:c:114:LEU:HD21	2.14	0.48
37:d:84:ASN:OD1	37:d:87:GLU:N	2.25	0.48
42:i:20:ILE:HG22	42:i:62:LEU:HD22	1.96	0.48
53:t:59:ARG:O	53:t:63:LYS:HG2	2.13	0.48
8:A:629:G:H4'	8:A:650:C:O2	2.13	0.48
8:A:662:G:H2'	8:A:663:G:H8	1.78	0.48
8:A:834:G:C2	8:A:835:C:C2	3.02	0.48
8:A:1208:C:C2	8:A:1239:G:C2	3.02	0.48
8:A:1540:G:C6	8:A:1541:C:C4	3.02	0.48
8:A:1589:U:H2'	8:A:1590:A:C8	2.48	0.48
8:A:2049:G:C6	8:A:2050:C:N4	2.81	0.48
8:A:2282:G:O2'	8:A:2425:A:N6	2.45	0.48
8:A:2413:G:C2	8:A:2414:G:C4	3.02	0.48
8:A:2638:G:H1'	8:A:2778:A:H61	1.77	0.48
12:E:145:ASP:HB2	12:E:166:LYS:HE3	1.94	0.48
34:a:52:C:H2'	34:a:53:A:C8	2.48	0.48
34:a:123:U:OP1	34:a:311:C:O2'	2.28	0.48
34:a:204:G:C6	34:a:205:A:C8	3.02	0.48
34:a:448:A:H3'	34:a:449:G:H8	1.78	0.48
34:a:550:G:H2'	34:a:551:U:C6	2.48	0.48
34:a:618:C:N4	34:a:621:A:OP2	2.47	0.48
34:a:655:A:H4'	34:a:755:G:H4'	1.96	0.48
34:a:953:G:C4	34:a:954:G:C8	3.02	0.48
34:a:1051:C:H2'	34:a:1052:U:C6	2.49	0.48
34:a:1147:C:H2'	34:a:1148:U:C6	2.49	0.48
34:a:1460:C:H2'	34:a:1461:G:C8	2.48	0.48
34:a:1500:A:OP1	34:a:1505:G:OP1	2.32	0.48
34:a:1520:C:H2'	34:a:1521:C:C6	2.48	0.48
34:a:1530:G:O6	54:u:45:LYS:NZ	2.33	0.48
35:b:156:LEU:H	35:b:156:LEU:HD12	1.77	0.48
37:d:106:PHE:HA	37:d:154:VAL:HG23	1.94	0.48
57:x:376:VAL:HG11	57:x:382:ALA:HB2	1.96	0.48
4:3:35:LYS:HE3	4:3:39:ARG:NH1	2.28	0.48
8:A:236:C:C2	8:A:237:C:C5	3.01	0.48
8:A:369:U:H5''	8:A:370:G:OP1	2.13	0.48
8:A:402:A:H2'	8:A:403:U:O4'	2.13	0.48
8:A:579:G:C5	8:A:1262:A:N6	2.82	0.48
8:A:608:A:H2'	8:A:609:A:C8	2.49	0.48
8:A:623:C:H2'	8:A:624:C:H6	1.78	0.48
8:A:1061:U:H3'	8:A:1062:G:C5'	2.42	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1086:A:H3'	8:A:1086:A:N3	2.29	0.48
8:A:1721:G:N1	8:A:1738:G:N7	2.61	0.48
8:A:1900:A:H1'	8:A:1970:A:H2'	1.95	0.48
8:A:2079:U:N3	8:A:2080:A:N7	2.62	0.48
8:A:2346:A:H5'	8:A:2383:G:H1'	1.95	0.48
8:A:2784:U:H2'	8:A:2785:C:C6	2.48	0.48
8:A:2839:G:C6	8:A:2840:C:C4	3.02	0.48
8:A:2840:C:C2	8:A:2841:C:C5	3.02	0.48
27:T:6:ARG:HH21	27:T:37:ASP:HB2	1.79	0.48
34:a:496:A:N3	34:a:496:A:H2'	2.27	0.48
34:a:1261:A:H5'	34:a:1261:A:N3	2.29	0.48
34:a:1455:G:H2'	34:a:1456:A:H8	1.78	0.48
35:b:19:THR:O	35:b:21:TYR:N	2.47	0.48
35:b:187:ASP:OD1	35:b:188:THR:N	2.45	0.48
55:v:52:G:H2'	55:v:53:G:C8	2.49	0.48
57:x:375:GLU:N	57:x:375:GLU:OE1	2.47	0.48
8:A:250:G:H2'	8:A:251:A:O4'	2.13	0.48
8:A:300:A:H2'	8:A:334:C:H1'	1.94	0.48
8:A:416:U:H2'	8:A:417:C:H6	1.78	0.48
8:A:563:A:C6	8:A:2018:G:C4	3.02	0.48
8:A:587:C:O2	19:L:19:LEU:HD22	2.13	0.48
8:A:1027:A:C2	8:A:2488:G:H5'	2.48	0.48
8:A:1174:U:H2'	8:A:1175:A:C2	2.49	0.48
8:A:2289:G:N2	8:A:2346:A:OP1	2.43	0.48
8:A:2460:U:C2	8:A:2461:A:C8	3.02	0.48
8:A:2473:U:C4	8:A:2474:U:H5	2.32	0.48
8:A:2848:G:H1'	8:A:2868:A:H61	1.78	0.48
11:D:180:VAL:HG23	11:D:180:VAL:O	2.14	0.48
15:H:101:ASP:HB2	15:H:106:ALA:C	2.39	0.48
23:P:62:LYS:O	23:P:69:VAL:N	2.32	0.48
30:W:62:LYS:HB2	30:W:79:GLU:OE1	2.14	0.48
34:a:36:C:H2'	34:a:37:U:O4'	2.13	0.48
34:a:158:G:C6	34:a:159:G:C5	3.02	0.48
34:a:278:G:OP2	50:q:42:LYS:NZ	2.32	0.48
34:a:287:U:H2'	34:a:288:A:C8	2.49	0.48
34:a:544:G:OP1	37:d:58:GLN:NE2	2.44	0.48
34:a:736:C:H2'	34:a:737:C:H6	1.78	0.48
34:a:1057:G:C5	34:a:1204:A:N1	2.82	0.48
34:a:1250:A:OP1	42:i:68:GLY:N	2.29	0.48
34:a:1327:C:H2'	34:a:1328:C:C6	2.48	0.48
34:a:1373:G:O6	42:i:12:LYS:NZ	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1517:G:C6	34:a:1518:MA6:N1	2.82	0.48
35:b:42:LEU:O	35:b:46:VAL:HG22	2.13	0.48
36:c:185:THR:OG1	36:c:197:VAL:O	2.17	0.48
41:h:46:GLU:HG3	41:h:47:ASP:H	1.78	0.48
56:w:21:A:N7	56:w:48:C:N4	2.61	0.48
57:x:422:LYS:HB3	57:x:479:GLU:OE2	2.14	0.48
57:x:434:LEU:HD22	57:x:446:VAL:HB	1.95	0.48
3:2:4:THR:O	8:A:686:U:O2'	2.31	0.48
6:5:32:GLY:O	8:A:1055:G:H5'	2.13	0.48
8:A:460:A:N6	8:A:469:G:H1'	2.29	0.48
8:A:607:U:O2	8:A:608:A:C8	2.65	0.48
8:A:821:A:C8	8:A:946:C:C6	3.02	0.48
8:A:841:G:C6	8:A:938:G:N1	2.81	0.48
8:A:1068:G:N1	16:I:23:VAL:O	2.46	0.48
8:A:1314:C:C2	8:A:1339:G:N2	2.81	0.48
8:A:1499:C:C2	8:A:1500:G:C8	3.02	0.48
8:A:1748:C:H2'	8:A:1749:A:C8	2.48	0.48
8:A:2310:C:H2'	13:F:76:PHE:CE2	2.49	0.48
11:D:200:ASP:O	11:D:201:LEU:HD23	2.14	0.48
34:a:409:U:O2	34:a:434:U:N3	2.46	0.48
34:a:421:U:H5'	34:a:422:C:C5	2.48	0.48
34:a:1004:A:OP1	34:a:1004:A:H3'	2.14	0.48
34:a:1216:A:H5''	47:n:4:SER:HB2	1.96	0.48
34:a:1306:A:H2'	34:a:1307:U:C6	2.48	0.48
34:a:1353:G:C2	34:a:1370:G:C2	3.01	0.48
45:l:73:LEU:HD11	45:l:103:CYS:SG	2.53	0.48
56:w:5:G:C2	56:w:6:G:C5	3.01	0.48
8:A:29:U:H2'	8:A:30:G:H8	1.79	0.48
8:A:190:A:H5''	8:A:204:A:N6	2.27	0.48
8:A:464:U:C4	8:A:788:A:C5	3.02	0.48
8:A:671:C:H2'	8:A:672:C:H6	1.79	0.48
8:A:918:A:H5''	9:B:97:C:O2'	2.13	0.48
8:A:1437:C:H2'	8:A:1438:U:C6	2.49	0.48
10:C:161:VAL:HG11	10:C:173:LEU:HD13	1.96	0.48
20:M:5:LYS:HE2	56:w:53:G:OP1	2.13	0.48
20:M:71:LYS:HE3	20:M:95:LEU:HD11	1.96	0.48
34:a:390:U:O2'	49:p:28:ARG:NH2	2.42	0.48
34:a:530:G:O2'	34:a:531:U:OP2	2.23	0.48
34:a:791:G:N2	34:a:1497:G:H4'	2.28	0.48
34:a:797:C:H2'	34:a:798:U:C6	2.49	0.48
34:a:1077:G:N1	34:a:1081:A:C6	2.81	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1224:U:N3	34:a:1322:C:H5'	2.29	0.48
34:a:1530:G:C2	34:a:1531:A:N6	2.82	0.48
35:b:141:GLU:O	35:b:145:ASN:HB2	2.14	0.48
36:c:65:VAL:HB	36:c:100:ILE:HD13	1.96	0.48
37:d:11:SER:HA	37:d:18:LEU:HD13	1.96	0.48
39:f:9:MET:HE3	39:f:86:ARG:HB2	1.96	0.48
48:o:12:SER:OG	48:o:13:GLU:N	2.47	0.48
57:x:6:ILE:HG12	57:x:289:VAL:HG23	1.95	0.48
3:2:21:ARG:NH1	8:A:465:G:O3'	2.47	0.48
8:A:121:G:C2	8:A:122:G:C5	3.02	0.48
8:A:252:G:C6	8:A:253:C:C4	3.01	0.48
8:A:801:G:H3'	8:A:802:A:H5''	1.94	0.48
8:A:1469:A:H2'	8:A:1470:A:H8	1.79	0.48
8:A:1857:G:H2'	8:A:1884:G:N2	2.28	0.48
8:A:1934:C:C2	8:A:1935:G:C8	3.02	0.48
8:A:1952:A:C2	18:K:22:ILE:HD12	2.49	0.48
8:A:2349:G:C6	8:A:2369:A:C6	3.02	0.48
8:A:2699:C:H2'	8:A:2700:A:H8	1.79	0.48
34:a:408:A:C6	34:a:435:A:N1	2.82	0.48
34:a:755:G:OP2	48:o:64:LYS:NZ	2.32	0.48
34:a:1234:C:H1'	34:a:1364:U:O2	2.14	0.48
34:a:1314:C:H2'	34:a:1315:U:H6	1.77	0.48
34:a:1350:A:C6	34:a:1351:U:C4	3.02	0.48
42:i:54:VAL:HG23	42:i:55:ASP:H	1.79	0.48
57:x:513:GLN:HB2	57:x:587:SER:HA	1.96	0.48
7:6:49:ARG:HB3	7:6:50:ASP:H	1.57	0.47
8:A:45:G:H5'	8:A:46:G:OP1	2.13	0.47
8:A:185:G:H2'	8:A:186:G:O4'	2.14	0.47
8:A:629:G:H5''	8:A:650:C:O2'	2.13	0.47
8:A:851:C:H2'	8:A:852:U:C6	2.48	0.47
8:A:936:A:H2'	8:A:937:C:C6	2.49	0.47
8:A:952:G:C6	8:A:966:G:C6	3.02	0.47
8:A:958:U:H5''	20:M:14:LYS:HD3	1.96	0.47
8:A:1009:A:H1'	8:A:1153:C:O2'	2.13	0.47
8:A:1183:U:H2'	8:A:1184:U:C6	2.49	0.47
8:A:1672:A:C2	8:A:2582:G:H5'	2.50	0.47
8:A:1766:G:C6	8:A:1987:A:C6	3.02	0.47
8:A:1802:A:C2	8:A:1803:A:C5	3.02	0.47
8:A:2290:G:H2'	8:A:2291:U:C6	2.49	0.47
8:A:2523:G:C2	8:A:2524:G:C8	3.02	0.47
8:A:2617:U:C2	8:A:2618:G:C8	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:C:204:LEU:CD2	10:C:213:ARG:HE	2.26	0.47
20:M:74:THR:HG22	20:M:89:VAL:HA	1.96	0.47
34:a:123:U:H2'	34:a:124:C:H6	1.78	0.47
34:a:221:C:H2'	34:a:222:C:H6	1.79	0.47
34:a:407:U:H5''	37:d:111:ALA:HB1	1.96	0.47
34:a:460:A:C6	34:a:461:A:C6	3.02	0.47
34:a:460:A:H2'	34:a:461:A:C8	2.49	0.47
34:a:510:A:N3	34:a:543:U:H1'	2.28	0.47
34:a:646:G:C6	34:a:647:C:C4	3.02	0.47
34:a:784:A:C6	34:a:785:G:C5	3.02	0.47
34:a:1096:C:H2'	34:a:1097:C:C6	2.49	0.47
34:a:1308:U:H2'	34:a:1309:G:H8	1.79	0.47
34:a:1411:C:H2'	34:a:1412:C:C6	2.49	0.47
34:a:1507:A:H2'	34:a:1508:A:C8	2.49	0.47
36:c:133:MET:HE2	36:c:167:TYR:CD2	2.49	0.47
37:d:49:ASP:O	37:d:52:VAL:HG22	2.14	0.47
45:l:65:TYR:HE1	45:l:67:GLY:HA2	1.79	0.47
55:v:15:G:N2	55:v:48:C:N3	2.56	0.47
55:v:56:C:H2'	55:v:57:A:C8	2.49	0.47
57:x:322:LYS:HB3	57:x:334:PHE:HB2	1.96	0.47
2:1:9:LYS:HG3	2:1:19:PHE:CD2	2.49	0.47
8:A:85:G:C6	8:A:98:G:N1	2.82	0.47
8:A:94:A:H2'	8:A:95:A:C8	2.48	0.47
8:A:301:G:O2'	8:A:302:C:H5''	2.14	0.47
8:A:379:G:N1	8:A:396:G:C6	2.82	0.47
8:A:1264:A:O3'	8:A:2615:U:H5'	2.14	0.47
8:A:1264:A:OP2	8:A:1265:A:H2'	2.14	0.47
8:A:1783:A:C2	8:A:2587:A:C4	3.02	0.47
8:A:1843:C:H2'	8:A:1844:C:C6	2.49	0.47
8:A:1843:C:H2'	8:A:1844:C:H6	1.78	0.47
8:A:2700:A:C2	8:A:2708:G:C2	3.03	0.47
12:E:61:ARG:HH11	12:E:64:GLY:HA3	1.77	0.47
17:J:24:THR:HA	17:J:63:ALA:O	2.13	0.47
17:J:31:GLU:HB3	17:J:142:ILE:HD12	1.96	0.47
17:J:130:HIS:CE1	17:J:137:PRO:HG3	2.49	0.47
20:M:126:ILE:O	20:M:128:THR:HG23	2.14	0.47
21:N:92:GLY:HA2	21:N:94:TYR:CZ	2.49	0.47
27:T:22:THR:O	27:T:26:LYS:HG2	2.14	0.47
28:U:96:LYS:O	28:U:97:SER:C	2.57	0.47
34:a:285:C:H2'	34:a:286:C:C6	2.49	0.47
34:a:513:C:H2'	34:a:514:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1148:U:OP1	42:i:8:THR:OG1	2.31	0.47
34:a:1204:A:H2'	34:a:1205:U:O4'	2.14	0.47
34:a:1417:G:C2	34:a:1482:G:N1	2.82	0.47
34:a:1445:U:O2	34:a:1457:G:N1	2.46	0.47
34:a:1478:U:H2'	34:a:1479:C:H6	1.79	0.47
35:b:35:ASN:O	35:b:37:VAL:HG22	2.14	0.47
37:d:90:LEU:HD23	37:d:90:LEU:HA	1.71	0.47
41:h:111:THR:HG23	41:h:114:ALA:H	1.79	0.47
44:k:43:TRP:CZ3	44:k:45:THR:HG23	2.48	0.47
47:n:12:ARG:HH21	47:n:59:ARG:NH2	2.04	0.47
55:v:2:G:N1	55:v:72:A:N1	2.62	0.47
8:A:420:C:H2'	8:A:421:C:C6	2.49	0.47
8:A:694:U:OP1	10:C:58:LYS:NZ	2.46	0.47
8:A:856:G:H2'	8:A:857:G:C8	2.50	0.47
8:A:858:G:N3	8:A:2268:A:H2'	2.30	0.47
8:A:1082:U:O5'	8:A:1082:U:H6	1.97	0.47
8:A:1176:U:H2'	8:A:1177:G:O4'	2.14	0.47
8:A:1208:C:C2	8:A:1239:G:N2	2.82	0.47
8:A:1370:C:H2'	8:A:1371:G:C8	2.49	0.47
8:A:1399:C:H2'	8:A:1400:U:C6	2.50	0.47
8:A:1515:A:C8	8:A:1516:G:C8	3.01	0.47
8:A:1805:A:H2'	8:A:1806:C:H6	1.79	0.47
8:A:1891:G:H2'	8:A:1892:C:H6	1.79	0.47
8:A:1983:G:C6	8:A:1984:G:N7	2.82	0.47
8:A:2080:A:C6	8:A:2081:U:C4	3.02	0.47
8:A:2080:A:H2'	8:A:2081:U:C6	2.50	0.47
8:A:2134:A:C6	8:A:2135:A:C4	3.02	0.47
8:A:2269:G:C2	8:A:2270:A:C8	3.01	0.47
8:A:2737:G:C2	8:A:2768:U:C2	3.02	0.47
8:A:2780:G:N2	17:J:102:GLU:OE2	2.47	0.47
8:A:2847:U:H2'	8:A:2848:G:O4'	2.14	0.47
11:D:51:THR:OG1	11:D:78:GLY:O	2.23	0.47
15:H:40:THR:HG22	15:H:42:LYS:H	1.79	0.47
16:I:30:GLN:O	57:x:644:GLN:NE2	2.46	0.47
20:M:30:SER:O	20:M:30:SER:OG	2.30	0.47
20:M:98:PRO:HB3	29:V:82:TYR:CD2	2.50	0.47
29:V:17:SER:OG	29:V:27:PRO:HG3	2.14	0.47
34:a:19:A:N1	34:a:917:G:C6	2.82	0.47
34:a:455:G:C2	34:a:478:A:C2	3.02	0.47
34:a:1166:G:O2'	34:a:1170:A:N6	2.47	0.47
34:a:1271:A:H2'	34:a:1272:G:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1321:U:O2'	34:a:1322:C:OP1	2.23	0.47
34:a:1402:4OC:HM23	34:a:1402:4OC:H1'	1.61	0.47
34:a:1412:C:H2'	34:a:1413:A:N7	2.29	0.47
34:a:1477:U:H2'	34:a:1478:U:H6	1.79	0.47
36:c:39:ARG:NH2	36:c:54:ILE:O	2.48	0.47
39:f:21:MET:HB3	39:f:25:TYR:CZ	2.50	0.47
55:v:52:G:H2'	55:v:53:G:H8	1.79	0.47
4:3:12:ARG:HH12	8:A:250:G:P	2.36	0.47
8:A:16:C:H2'	8:A:17:G:C8	2.50	0.47
8:A:332:A:C5	8:A:335:C:C4	3.03	0.47
8:A:545:U:O2'	8:A:546:U:OP1	2.30	0.47
8:A:598:U:H2'	8:A:599:A:C8	2.49	0.47
8:A:729:G:O2'	8:A:763:G:H4'	2.14	0.47
8:A:1686:C:N3	8:A:1703:G:N1	2.63	0.47
8:A:2179:C:C2	8:A:2180:U:C4	3.02	0.47
8:A:2257:U:H2'	8:A:2258:C:C6	2.50	0.47
8:A:2298:A:N1	8:A:2321:U:C4	2.82	0.47
8:A:2311:A:O2'	8:A:2312:U:O4'	2.31	0.47
12:E:149:ILE:HD12	12:E:188:MET:HG2	1.96	0.47
14:G:17:LYS:HB3	14:G:24:THR:HG23	1.94	0.47
24:Q:61:ILE:HG23	24:Q:75:TYR:CE2	2.49	0.47
26:S:14:ALA:HB1	26:S:18:ARG:NH1	2.30	0.47
34:a:322:C:N3	34:a:332:G:N2	2.62	0.47
34:a:592:G:C6	34:a:648:A:C6	3.02	0.47
34:a:1011:C:N4	34:a:1012:A:N6	2.63	0.47
34:a:1317:C:O2	52:s:36:ARG:NH1	2.47	0.47
36:c:126:ARG:NH2	36:c:191:THR:OG1	2.47	0.47
43:j:7:ARG:O	43:j:101:SER:OG	2.18	0.47
47:n:66:GLN:NE2	47:n:79:LEU:HD11	2.29	0.47
51:r:62:ARG:HB3	51:r:69:TYR:CE1	2.49	0.47
57:x:115:VAL:HG21	57:x:145:ARG:HH22	1.80	0.47
57:x:487:VAL:HG21	57:x:489:TYR:CZ	2.49	0.47
8:A:42:A:C6	8:A:43:G:N7	2.82	0.47
8:A:186:G:N2	8:A:211:C:C2	2.82	0.47
8:A:335:C:H5''	28:U:81:ARG:HD3	1.96	0.47
8:A:534:U:C2	8:A:535:G:N7	2.82	0.47
8:A:771:G:H2'	8:A:772:C:H6	1.78	0.47
8:A:782:A:N7	10:C:219:VAL:HG21	2.29	0.47
8:A:840:C:H2'	8:A:841:G:H8	1.78	0.47
8:A:975:A:H5'	8:A:976:G:OP2	2.15	0.47
8:A:1087:G:H5''	8:A:1088:A:OP2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1195:G:C2	8:A:1196:C:C5	3.02	0.47
8:A:1490:A:H8	10:C:97:ASP:HB3	1.76	0.47
8:A:1723:G:H2'	8:A:1724:G:O4'	2.14	0.47
8:A:2152:G:N3	8:A:2152:G:H2'	2.30	0.47
9:B:42:C:O2	13:F:89:THR:OG1	2.29	0.47
9:B:113:C:H1'	22:O:46:GLU:HA	1.97	0.47
13:F:9:ASP:HB2	13:F:10:GLU:OE1	2.14	0.47
26:S:24:ILE:HG13	26:S:24:ILE:O	2.15	0.47
31:X:2:ARG:O	31:X:11:PRO:HD3	2.14	0.47
34:a:522:C:H41	45:l:49:ARG:NH2	2.12	0.47
34:a:600:A:C6	34:a:639:G:C6	3.03	0.47
34:a:773:G:O6	34:a:807:A:N6	2.47	0.47
34:a:827:U:H2'	34:a:870:U:O4	2.14	0.47
34:a:1063:C:C4	34:a:1064:G:C5	3.02	0.47
34:a:1271:A:C2	34:a:1272:G:C5	3.02	0.47
34:a:1343:G:H2'	34:a:1344:C:H6	1.80	0.47
36:c:90:VAL:HG11	36:c:100:ILE:HD11	1.97	0.47
54:u:27:VAL:O	54:u:31:VAL:HG23	2.14	0.47
56:w:26:A:H2'	56:w:27:G:O4'	2.14	0.47
57:x:434:LEU:HD13	57:x:446:VAL:HG23	1.95	0.47
6:5:25:ALA:O	6:5:84:TYR:HA	2.14	0.47
8:A:163:C:H2'	8:A:164:C:C6	2.50	0.47
8:A:555:G:O2'	8:A:556:A:H8	1.97	0.47
8:A:1178:C:H4'	8:A:1179:G:C2	2.50	0.47
8:A:1451:C:H4'	8:A:1452:G:O5'	2.15	0.47
8:A:1657:U:H2'	8:A:1658:C:C6	2.47	0.47
8:A:2507:C:O2	8:A:2553:G:N2	2.47	0.47
12:E:138:LEU:HD21	12:E:148:ILE:HD11	1.97	0.47
20:M:64:TRP:CH2	20:M:106:ASP:HB2	2.49	0.47
23:P:30:TRP:CE3	23:P:37:LYS:HG2	2.50	0.47
34:a:56:U:O4	34:a:352:C:N4	2.48	0.47
34:a:202:G:H2'	34:a:203:G:C8	2.50	0.47
34:a:773:G:C6	34:a:807:A:N6	2.82	0.47
34:a:806:C:H2'	34:a:807:A:H8	1.80	0.47
34:a:976:G:H5'	47:n:61:ARG:HH22	1.80	0.47
34:a:1199:U:O2'	34:a:1202:U:OP1	2.30	0.47
57:x:418:ALA:HB2	57:x:456:ILE:HG22	1.97	0.47
2:1:5:ARG:HG3	8:A:2284:A:P	2.55	0.47
2:1:18:HIS:HE1	2:1:20:TYR:CE1	2.33	0.47
8:A:110:G:C2	8:A:111:A:N7	2.82	0.47
8:A:222:A:N6	8:A:232:G:N3	2.58	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:226:A:C6	8:A:227:A:C6	3.03	0.47
8:A:273:G:H2'	8:A:274:C:H6	1.80	0.47
8:A:433:C:O2'	8:A:434:U:H5'	2.14	0.47
8:A:528:A:C8	8:A:528:A:H3'	2.50	0.47
8:A:528:A:H3'	8:A:528:A:H8	1.79	0.47
8:A:553:G:H2'	8:A:554:U:C6	2.49	0.47
8:A:607:U:H5	8:A:620:G:C4	2.33	0.47
8:A:817:C:O2'	8:A:839:U:H5''	2.14	0.47
8:A:854:C:H2'	8:A:855:G:C8	2.50	0.47
8:A:882:G:H2'	8:A:883:G:H5'	1.97	0.47
8:A:1022:G:C5	8:A:1140:C:C4	3.02	0.47
8:A:1168:G:C6	8:A:1182:G:C6	3.02	0.47
8:A:1173:U:O2'	8:A:1174:U:O4'	2.32	0.47
8:A:1283:G:N2	8:A:1286:A:OP2	2.41	0.47
8:A:1416:G:H2'	8:A:1417:C:C6	2.49	0.47
8:A:1596:A:H2'	8:A:1597:A:C8	2.50	0.47
8:A:1681:G:H21	8:A:1762:A:H3'	1.80	0.47
8:A:1684:G:C6	8:A:1705:A:C6	3.03	0.47
8:A:1753:G:OP1	23:P:92:ARG:HD3	2.14	0.47
8:A:1999:C:H2'	8:A:2000:C:H6	1.79	0.47
8:A:2014:A:H2'	8:A:2015:A:C8	2.50	0.47
8:A:2259:U:C2	8:A:2260:C:C6	3.02	0.47
8:A:2600:A:N7	10:C:235:GLU:HG3	2.29	0.47
8:A:2662:A:H8	8:A:2663:G:C8	2.32	0.47
8:A:2745:C:C4	8:A:2746:U:C4	3.03	0.47
8:A:2899:A:H2'	8:A:2900:A:C8	2.49	0.47
9:B:52:A:H62	22:O:33:ARG:HE	1.63	0.47
11:D:184:ARG:CZ	23:P:6:GLN:HG3	2.44	0.47
18:K:61:VAL:HG21	18:K:112:PHE:CE2	2.49	0.47
26:S:10:ALA:HB3	26:S:101:SER:HB2	1.96	0.47
27:T:5:GLU:O	27:T:9:LYS:HG3	2.15	0.47
29:V:17:SER:O	29:V:21:ARG:HD3	2.14	0.47
32:Y:49:ASP:O	32:Y:53:VAL:HG23	2.15	0.47
34:a:189:A:H2'	34:a:190:A:C8	2.49	0.47
34:a:246:A:C2	34:a:282:A:C5	3.03	0.47
34:a:264:C:H2'	34:a:265:G:O4'	2.15	0.47
34:a:335:C:H1'	34:a:1433:A:H2	1.79	0.47
34:a:410:G:N3	34:a:432:A:N6	2.62	0.47
34:a:412:A:H62	34:a:431:A:H61	1.63	0.47
34:a:428:G:C8	34:a:430:A:C4	3.03	0.47
34:a:622:A:C8	34:a:623:C:C6	3.02	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:786:G:C5	34:a:787:A:C8	3.03	0.47
34:a:823:C:H2'	34:a:824:G:C8	2.50	0.47
34:a:903:G:C6	34:a:904:U:C4	3.02	0.47
34:a:1010:U:H2'	34:a:1011:C:C6	2.49	0.47
34:a:1012:A:N6	34:a:1018:G:O6	2.47	0.47
34:a:1131:G:H2'	34:a:1132:C:H6	1.80	0.47
34:a:1157:A:H61	34:a:1178:G:H1'	1.80	0.47
34:a:1210:C:O2	34:a:1214:C:O2'	2.32	0.47
34:a:1221:G:H5''	34:a:1321:U:H3	1.79	0.47
34:a:1270:G:H2'	34:a:1271:A:C8	2.49	0.47
34:a:1271:A:H2'	34:a:1272:G:H8	1.80	0.47
34:a:1318:A:H1'	52:s:36:ARG:NH1	2.29	0.47
34:a:1418:A:OP2	34:a:1419:G:H8	1.98	0.47
35:b:22:TRP:CZ3	35:b:24:PRO:HA	2.50	0.47
39:f:4:TYR:CD2	39:f:71:ILE:HG13	2.50	0.47
39:f:49:TYR:OH	51:r:62:ARG:O	2.28	0.47
39:f:97:THR:O	39:f:97:THR:OG1	2.31	0.47
41:h:21:LYS:O	41:h:64:TYR:OH	2.21	0.47
43:j:6:ILE:O	43:j:76:ILE:N	2.48	0.47
44:k:78:ILE:HB	44:k:104:PHE:CE1	2.50	0.47
46:m:1:ALA:C	46:m:2:ARG:HD2	2.39	0.47
53:t:23:ARG:HA	53:t:23:ARG:HD3	1.78	0.47
55:v:9:G:N1	55:v:46:A:C6	2.83	0.47
57:x:622:THR:O	57:x:651:VAL:HG22	2.14	0.47
7:6:34:LEU:HD23	7:6:37:CYS:HB3	1.97	0.47
8:A:30:G:H2'	8:A:31:C:C6	2.50	0.47
8:A:48:G:N2	8:A:177:G:OP2	2.36	0.47
8:A:237:C:H2'	8:A:238:C:H6	1.78	0.47
8:A:273:G:H2'	8:A:274:C:C6	2.50	0.47
8:A:902:C:H2'	8:A:903:C:C6	2.50	0.47
8:A:1095:A:H3'	8:A:1095:A:N3	2.30	0.47
8:A:1727:C:C2	8:A:1734:G:C2	3.03	0.47
8:A:1853:A:H2'	8:A:1854:A:H8	1.80	0.47
8:A:1906:G:C5	8:A:1929:G:C5	3.02	0.47
8:A:2103:C:N3	8:A:2187:U:N3	2.63	0.47
8:A:2505:G:HO2'	8:A:2506:U:P	2.36	0.47
10:C:56:GLY:HA2	10:C:212:TRP:HA	1.96	0.47
11:D:10:GLY:HA3	23:P:4:ILE:HD11	1.95	0.47
12:E:145:ASP:HB3	12:E:184:ASP:OD2	2.14	0.47
19:L:93:ASN:HA	19:L:96:LYS:HB2	1.96	0.47
28:U:93:ARG:HH11	28:U:102:ILE:HG21	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:180:U:H2'	34:a:181:A:C8	2.50	0.47
34:a:199:A:H2'	34:a:200:G:H8	1.80	0.47
34:a:340:U:C2	34:a:350:G:N2	2.82	0.47
34:a:422:C:O2	34:a:423:G:N2	2.48	0.47
34:a:455:G:H2'	34:a:456:A:C8	2.50	0.47
34:a:594:U:O2	34:a:646:G:N1	2.48	0.47
34:a:655:A:H2'	34:a:656:G:H8	1.79	0.47
34:a:686:U:O2'	34:a:687:A:O5'	2.33	0.47
34:a:741:G:P	48:o:1:SER:H3	2.37	0.47
34:a:770:C:H2'	34:a:771:G:C8	2.45	0.47
34:a:1014:A:C2	34:a:1219:A:H1'	2.50	0.47
34:a:1056:U:N3	34:a:1205:U:O2	2.37	0.47
34:a:1157:A:C5	34:a:1180:A:N6	2.83	0.47
34:a:1320:C:C5	52:s:36:ARG:HA	2.49	0.47
34:a:1372:U:H2'	34:a:1373:G:O4'	2.15	0.47
36:c:152:VAL:HG22	36:c:197:VAL:HG23	1.97	0.47
41:h:46:GLU:CG	41:h:47:ASP:H	2.28	0.47
52:s:10:ILE:HG21	52:s:15:LEU:HD12	1.96	0.47
57:x:74:MET:HG3	57:x:79:GLU:HB2	1.95	0.47
8:A:268:C:C2	8:A:425:G:C2	3.03	0.47
8:A:304:U:O2	8:A:313:G:O6	2.33	0.47
8:A:463:G:C2	8:A:467:G:C6	3.02	0.47
8:A:838:C:C2	8:A:941:A:C6	3.03	0.47
8:A:1059:G:N9	8:A:1060:U:H5	2.13	0.47
8:A:1296:G:OP1	8:A:2709:G:O2'	2.26	0.47
8:A:1307:A:C6	8:A:1622:G:N1	2.82	0.47
8:A:1948:G:C6	8:A:1959:G:C6	3.03	0.47
8:A:1983:G:C2	8:A:1984:G:C8	3.03	0.47
8:A:2122:U:H2'	8:A:2123:G:O4'	2.15	0.47
8:A:2297:A:H8	8:A:2297:A:OP2	1.98	0.47
9:B:29:A:H1'	9:B:59:A:C2	2.50	0.47
10:C:30:ALA:O	10:C:33:LEU:HG	2.15	0.47
12:E:137:LYS:HE3	12:E:137:LYS:HB2	1.72	0.47
13:F:115:GLY:HA3	13:F:177:ARG:HB2	1.96	0.47
13:F:152:ASP:OD1	13:F:152:ASP:N	2.46	0.47
19:L:101:ILE:HG13	19:L:102:GLY:N	2.29	0.47
30:W:21:ARG:HB3	30:W:25:GLU:HG2	1.97	0.47
31:X:70:LEU:HD12	31:X:73:ARG:NH1	2.30	0.47
34:a:385:C:H2'	34:a:386:C:C6	2.49	0.47
34:a:1303:C:N4	34:a:1304:G:C6	2.83	0.47
34:a:1318:A:O2'	52:s:36:ARG:HD2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1349:A:H1'	34:a:1374:A:H61	1.79	0.47
34:a:1484:C:C6	34:a:1485:U:H1'	2.49	0.47
35:b:212:TYR:O	35:b:216:VAL:HG12	2.15	0.47
53:t:14:GLU:CD	53:t:17:ARG:HE	2.23	0.47
57:x:267:SER:O	57:x:267:SER:OG	2.29	0.47
57:x:447:TRP:HB3	57:x:456:ILE:HG13	1.97	0.47
8:A:121:G:C2	8:A:131:A:C4	3.03	0.47
8:A:261:G:C2	8:A:262:A:C5	3.03	0.47
8:A:974:G:C2	8:A:1186:G:C2	3.03	0.47
8:A:1056:G:C2	8:A:1103:A:C6	2.95	0.47
8:A:1069:A:H2'	8:A:1073:A:N7	2.30	0.47
8:A:1233:C:C2	8:A:1234:U:C5	3.02	0.47
8:A:1327:A:H2'	8:A:1328:A:O4'	2.15	0.47
8:A:1380:G:C2	8:A:1381:G:C8	3.03	0.47
8:A:2083:G:H2'	8:A:2084:C:C6	2.50	0.47
8:A:2103:C:O2	8:A:2103:C:H2'	2.14	0.47
8:A:2251:OMG:H1'	8:A:2251:OMG:HM23	1.53	0.47
9:B:5:U:H2'	9:B:6:G:H8	1.80	0.47
9:B:38:C:N3	9:B:39:A:N6	2.62	0.47
9:B:78:A:H1'	9:B:99:A:N6	2.29	0.47
11:D:115:GLY:O	21:N:3:HIS:CE1	2.68	0.47
17:J:17:VAL:HG23	17:J:137:PRO:HB2	1.97	0.47
20:M:40:ARG:HG2	20:M:95:LEU:HD23	1.96	0.47
23:P:90:ALA:HB2	23:P:112:ARG:HA	1.96	0.47
34:a:100:G:C4	34:a:101:A:C8	3.02	0.47
34:a:108:G:OP2	34:a:326:G:N1	2.30	0.47
34:a:231:U:H2'	34:a:232:G:C8	2.46	0.47
34:a:429:U:H3'	37:d:8:LEU:HD12	1.96	0.47
34:a:693:G:P	44:k:126:ARG:HH12	2.37	0.47
34:a:895:G:C6	34:a:896:C:C4	3.03	0.47
34:a:904:U:H2'	34:a:905:U:H6	1.79	0.47
34:a:1086:U:H3	34:a:1099:G:H22	1.61	0.47
34:a:1273:C:H2'	34:a:1274:A:O4'	2.14	0.47
37:d:33:ILE:O	37:d:34:GLU:HG3	2.14	0.47
37:d:169:TRP:CE3	37:d:185:PRO:HB3	2.49	0.47
8:A:10:A:N1	8:A:2800:A:C4	2.83	0.46
8:A:520:G:H2'	8:A:521:U:C6	2.49	0.46
8:A:621:A:C5	8:A:622:G:H1'	2.49	0.46
8:A:713:G:N2	8:A:718:A:N7	2.63	0.46
8:A:777:G:H2'	8:A:778:G:H8	1.80	0.46
8:A:1068:G:N7	8:A:1069:A:H1'	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1830:C:H2'	8:A:1831:G:C8	2.48	0.46
8:A:1857:G:C6	8:A:1884:G:C6	3.03	0.46
8:A:1864:U:O2	8:A:1878:G:N2	2.49	0.46
8:A:2128:G:N2	8:A:2129:C:H4'	2.30	0.46
8:A:2521:C:C4	8:A:2522:U:C4	3.03	0.46
8:A:2656:U:OP2	8:A:2664:G:N1	2.45	0.46
8:A:2743:U:OP2	8:A:2755:C:N4	2.48	0.46
9:B:42:C:C5	13:F:65:LEU:HD22	2.50	0.46
14:G:100:ASN:HD21	14:G:115:GLN:NE2	2.12	0.46
27:T:82:LYS:HD2	27:T:84:TYR:CZ	2.50	0.46
34:a:444:G:C6	34:a:491:G:C6	3.03	0.46
34:a:508:U:H1'	34:a:509:A:N7	2.30	0.46
34:a:1043:G:O2'	34:a:1044:A:O5'	2.33	0.46
34:a:1277:C:O2'	34:a:1279:G:N3	2.34	0.46
34:a:1485:U:N3	34:a:1486:G:N7	2.64	0.46
34:a:1515:G:H2'	34:a:1516:2MG:H8	1.81	0.46
38:e:156:ARG:HD2	41:h:44:PHE:CZ	2.50	0.46
41:h:85:TYR:CD1	41:h:123:GLU:HB2	2.50	0.46
46:m:15:VAL:O	46:m:19:THR:HG23	2.15	0.46
47:n:98:LYS:HB3	47:n:98:LYS:HE3	1.79	0.46
55:v:43:A:O2'	55:v:44:A:OP2	2.31	0.46
57:x:126:TRP:CZ2	57:x:163:ALA:HB2	2.50	0.46
8:A:247:G:N2	8:A:251:A:OP2	2.48	0.46
8:A:277:G:H4'	8:A:278:A:C8	2.50	0.46
8:A:563:A:O5'	25:R:79:ARG:NH2	2.47	0.46
8:A:742:A:H2'	8:A:743:A:H8	1.80	0.46
8:A:1056:G:N1	8:A:1103:A:N7	2.63	0.46
8:A:1061:U:C2	8:A:1068:G:H1'	2.50	0.46
8:A:1190:G:C2	8:A:1191:G:C5	3.03	0.46
8:A:1747:U:H2'	8:A:1748:C:H6	1.81	0.46
8:A:1785:A:H2	8:A:2588:G:N3	2.13	0.46
8:A:1955:U:H5	8:A:2557:G:N2	2.13	0.46
8:A:2110:G:C6	8:A:2120:G:N7	2.83	0.46
8:A:2247:A:H2'	8:A:2248:C:C6	2.50	0.46
8:A:2250:G:OP1	8:A:2275:C:O2'	2.26	0.46
8:A:2516:A:O2'	8:A:2517:C:H5'	2.13	0.46
8:A:2691:C:H2'	8:A:2692:G:H8	1.81	0.46
11:D:115:GLY:O	21:N:3:HIS:HE1	1.98	0.46
14:G:156:TYR:CE1	14:G:171:LYS:HE3	2.50	0.46
28:U:25:LYS:HE3	28:U:25:LYS:HB3	1.72	0.46
34:a:153:C:C2	34:a:169:C:N4	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:182:A:O2'	34:a:184:G:N7	2.41	0.46
34:a:444:G:H2'	34:a:445:G:H8	1.80	0.46
34:a:684:U:H2'	34:a:685:G:O4'	2.15	0.46
34:a:1266:G:N2	34:a:1269:A:OP2	2.45	0.46
34:a:1399:C:N3	34:a:1502:A:N1	2.63	0.46
40:g:113:LYS:HB2	40:g:117:LEU:HD12	1.97	0.46
43:j:73:LEU:HD21	43:j:75:ASP:HB2	1.97	0.46
44:k:112:VAL:O	44:k:112:VAL:HG12	2.16	0.46
53:t:58:ASP:OD1	53:t:75:LYS:NZ	2.43	0.46
53:t:66:ILE:HD12	53:t:70:LYS:HG2	1.97	0.46
57:x:16:ALA:HB2	57:x:111:VAL:HB	1.97	0.46
8:A:198:C:O2'	8:A:199:A:O5'	2.31	0.46
8:A:272:A:C6	8:A:273:G:C6	3.03	0.46
8:A:280:U:O4	8:A:360:U:N3	2.47	0.46
8:A:742:A:H2'	8:A:743:A:C8	2.50	0.46
8:A:764:A:OP1	10:C:212:TRP:HZ3	1.99	0.46
8:A:802:A:C2	8:A:803:U:C2	3.04	0.46
8:A:825:A:H2'	8:A:826:U:H6	1.81	0.46
8:A:1120:G:H2'	8:A:1121:C:O4'	2.15	0.46
8:A:2087:G:H2'	8:A:2088:A:H8	1.80	0.46
8:A:2090:A:C6	8:A:2230:G:C6	3.03	0.46
8:A:2705:A:O2'	8:A:2852:G:OP1	2.23	0.46
11:D:46:ARG:NH2	11:D:89:GLU:OE2	2.48	0.46
17:J:107:GLY:O	17:J:111:LYS:NZ	2.44	0.46
31:X:17:ARG:HD2	31:X:21:LEU:CD1	2.44	0.46
33:Z:7:THR:O	33:Z:55:LYS:N	2.49	0.46
34:a:256:U:C2	34:a:257:G:C8	3.04	0.46
34:a:859:G:H2'	34:a:860:A:H8	1.78	0.46
34:a:980:C:O2'	34:a:981:U:OP1	2.31	0.46
34:a:1309:G:C6	34:a:1329:A:C6	3.04	0.46
34:a:1371:G:OP1	42:i:12:LYS:HG2	2.16	0.46
36:c:85:LYS:HD3	36:c:88:LYS:HE3	1.97	0.46
38:e:56:PRO:O	38:e:60:GLN:HG2	2.16	0.46
39:f:10:VAL:HG22	39:f:58:HIS:O	2.15	0.46
41:h:66:GLN:HG2	41:h:67:GLY:N	2.28	0.46
43:j:8:ILE:HG12	43:j:100:ILE:HA	1.96	0.46
43:j:22:THR:O	43:j:25:ILE:HG22	2.15	0.46
44:k:92:ARG:HH21	54:u:18:PHE:HZ	1.62	0.46
57:x:86:ILE:HG22	57:x:88:THR:HG22	1.97	0.46
59:z:1:A:C2'	59:z:2:U:O5'	2.64	0.46
8:A:327:G:H2'	8:A:328:U:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:877:A:C6	8:A:899:A:C5	3.03	0.46
8:A:1663:G:O6	8:A:1998:A:N6	2.49	0.46
8:A:1727:C:N3	8:A:1734:G:N1	2.64	0.46
8:A:1823:G:C2	8:A:1824:G:C4	3.03	0.46
8:A:1823:G:C6	8:A:1824:G:C5	3.04	0.46
8:A:1904:G:C2	8:A:1905:C:C2	3.04	0.46
8:A:1947:C:H2'	8:A:1948:G:H8	1.81	0.46
8:A:2081:U:H2'	8:A:2082:A:C8	2.47	0.46
8:A:2152:G:H3'	8:A:2153:C:C6	2.50	0.46
8:A:2331:G:N2	8:A:2385:C:C2	2.83	0.46
8:A:2536:G:H2'	8:A:2537:U:C6	2.51	0.46
9:B:7:G:O2'	22:O:38:GLN:NE2	2.48	0.46
11:D:48:ILE:HD11	11:D:82:PHE:HD2	1.79	0.46
17:J:67:ASN:HB3	17:J:71:ASP:OD2	2.15	0.46
20:M:64:TRP:HH2	20:M:106:ASP:HB2	1.81	0.46
22:O:75:GLY:HA3	22:O:109:ALA:HB3	1.96	0.46
28:U:52:ASN:C	28:U:54:PRO:HD3	2.40	0.46
34:a:158:G:C6	34:a:164:G:C5	3.04	0.46
34:a:199:A:H2'	34:a:200:G:C8	2.50	0.46
34:a:786:G:H2'	34:a:787:A:O4'	2.16	0.46
34:a:838:G:H2'	34:a:839:C:O4'	2.16	0.46
34:a:1151:A:O2'	34:a:1152:A:H5''	2.15	0.46
34:a:1513:A:H2'	34:a:1514:G:C8	2.51	0.46
37:d:64:TYR:CD2	37:d:93:LEU:HD13	2.51	0.46
40:g:49:LEU:HD22	40:g:123:LEU:HB3	1.97	0.46
40:g:55:LYS:HE2	40:g:63:VAL:HG21	1.96	0.46
41:h:21:LYS:N	41:h:64:TYR:OH	2.49	0.46
43:j:84:VAL:O	43:j:88:MET:HG2	2.15	0.46
45:l:86:VAL:HG12	45:l:88:ASP:OD1	2.15	0.46
51:r:24:ASP:HB3	51:r:27:THR:HB	1.98	0.46
57:x:341:VAL:HG22	57:x:377:ARG:HG2	1.98	0.46
8:A:25:U:C4	8:A:26:G:C6	3.03	0.46
8:A:630:G:N2	8:A:632:A:H3'	2.30	0.46
8:A:751:A:C6	8:A:789:A:C5	3.04	0.46
8:A:1149:G:H2'	8:A:1150:C:C6	2.50	0.46
8:A:1306:C:C2	8:A:1623:G:C2	3.04	0.46
8:A:1716:U:H2'	8:A:1717:A:H8	1.80	0.46
8:A:1844:C:C2	8:A:1897:G:C2	3.04	0.46
8:A:2198:A:C4	15:H:29:PHE:HB2	2.50	0.46
8:A:2235:G:H2'	8:A:2236:U:C6	2.50	0.46
8:A:2310:C:H2'	13:F:76:PHE:HE2	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2414:G:C2	8:A:2415:G:C8	3.03	0.46
12:E:46:GLN:HB2	12:E:86:ALA:HB1	1.97	0.46
16:I:29:GLN:HA	57:x:651:VAL:HG11	1.98	0.46
18:K:88:ASN:HB3	18:K:91:SER:O	2.14	0.46
21:N:97:ILE:O	21:N:98:LEU:HD23	2.16	0.46
28:U:12:VAL:HG11	28:U:17:ASP:HB2	1.98	0.46
30:W:47:VAL:HG21	30:W:76:ILE:HG22	1.96	0.46
34:a:73:C:H2'	34:a:74:A:O4'	2.15	0.46
34:a:1007:U:C2	34:a:1008:U:C5	3.03	0.46
34:a:1216:A:H2'	34:a:1217:C:C6	2.50	0.46
34:a:1445:U:O2	34:a:1457:G:C2	2.68	0.46
39:f:64:VAL:HG12	39:f:65:GLU:N	2.30	0.46
42:i:113:LYS:HA	42:i:120:ALA:HB2	1.98	0.46
56:w:48:C:N4	56:w:59:U:H3	2.13	0.46
57:x:169:GLN:HE22	57:x:276:ALA:HB1	1.80	0.46
8:A:319:G:H1	8:A:323:C:H5	1.63	0.46
8:A:373:U:H2'	8:A:374:A:H8	1.81	0.46
8:A:629:G:N3	8:A:639:U:O2'	2.48	0.46
8:A:1017:G:O2'	8:A:1018:U:H5'	2.16	0.46
8:A:1666:G:H1'	18:K:3:GLN:HE21	1.81	0.46
8:A:2123:G:H1'	8:A:2176:A:H61	1.81	0.46
8:A:2204:G:H2'	8:A:2205:A:H8	1.80	0.46
8:A:2638:G:H1'	8:A:2778:A:N6	2.31	0.46
10:C:144:GLU:OE1	10:C:149:LYS:N	2.49	0.46
17:J:106:LYS:HE3	17:J:119:PHE:CE2	2.51	0.46
34:a:401:C:O2'	34:a:621:A:N3	2.45	0.46
34:a:613:C:H2'	34:a:614:C:C6	2.51	0.46
34:a:737:C:C2	34:a:738:C:C5	3.04	0.46
34:a:784:A:C6	34:a:799:G:C6	3.04	0.46
34:a:1054:C:OP1	34:a:1198:G:OP2	2.34	0.46
34:a:1413:A:N1	34:a:1487:G:O6	2.49	0.46
34:a:1433:A:N7	34:a:1468:A:C6	2.84	0.46
35:b:163:ILE:HG22	35:b:203:ASP:HB2	1.97	0.46
43:j:5:ARG:O	43:j:102:LEU:HD22	2.16	0.46
47:n:22:LYS:O	47:n:25:GLU:HG3	2.14	0.46
52:s:36:ARG:O	52:s:69:LYS:NZ	2.22	0.46
56:w:5:G:H2'	56:w:6:G:C8	2.51	0.46
57:x:366:HIS:O	57:x:368:ASN:N	2.43	0.46
1:0:49:ARG:NH1	8:A:2884:U:O4'	2.48	0.46
8:A:523:C:H2'	8:A:524:G:H8	1.81	0.46
8:A:543:G:C6	8:A:551:G:N1	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:648:G:C2	8:A:649:G:C5	3.04	0.46
8:A:801:G:C8	12:E:50:ALA:HB2	2.51	0.46
8:A:900:A:N3	8:A:901:C:H1'	2.30	0.46
8:A:959:A:C6	8:A:960:A:C6	3.04	0.46
8:A:959:A:H2'	8:A:960:A:C8	2.50	0.46
8:A:1016:G:C6	8:A:1147:A:N1	2.84	0.46
8:A:1107:G:H2'	8:A:1108:U:O4'	2.16	0.46
8:A:1203:U:H1'	19:L:4:ASN:HB3	1.97	0.46
8:A:1406:U:H2'	8:A:1407:G:C8	2.51	0.46
8:A:1429:G:N3	8:A:1430:G:C8	2.83	0.46
8:A:1845:G:C6	8:A:1896:G:C6	3.04	0.46
8:A:1847:G:O2'	8:A:1848:A:H8	1.99	0.46
8:A:1873:G:H2'	8:A:1874:C:C6	2.51	0.46
8:A:2043:C:C2	8:A:2044:C:C5	3.04	0.46
8:A:2489:U:C4	8:A:2490:G:C6	3.04	0.46
8:A:2854:G:N1	8:A:2864:G:C6	2.83	0.46
12:E:83:VAL:HB	12:E:86:ALA:HB2	1.98	0.46
17:J:53:TYR:HD1	17:J:121:LYS:HB3	1.81	0.46
19:L:28:GLY:H	19:L:31:GLY:HA2	1.81	0.46
22:O:53:THR:HG23	22:O:74:VAL:CG2	2.45	0.46
34:a:2:A:O2'	34:a:613:C:H4'	2.16	0.46
34:a:113:G:H1'	34:a:354:G:H5''	1.98	0.46
34:a:151:A:N7	34:a:170:U:O4	2.48	0.46
34:a:1219:A:H2'	34:a:1220:G:H8	1.81	0.46
35:b:75:ALA:HB2	35:b:209:VAL:HG11	1.97	0.46
37:d:69:ARG:O	37:d:70:GLN:HB3	2.15	0.46
38:e:152:VAL:HG11	41:h:98:LEU:HD22	1.98	0.46
40:g:65:LEU:HD23	40:g:96:ASN:HD22	1.81	0.46
43:j:66:GLU:HG3	43:j:68:ARG:HG3	1.97	0.46
44:k:66:ALA:HB2	44:k:95:THR:HG23	1.96	0.46
51:r:22:TYR:HA	51:r:28:LEU:HD11	1.98	0.46
56:w:11:C:H2'	56:w:12:U:C6	2.50	0.46
56:w:51:C:H2'	56:w:52:G:H8	1.80	0.46
57:x:647:GLU:HG2	57:x:648:VAL:N	2.31	0.46
1:O:41:HIS:HD2	21:N:101:GLY:H	1.64	0.46
8:A:19:A:H2'	8:A:20:C:C6	2.50	0.46
8:A:78:U:H2'	8:A:79:C:H6	1.81	0.46
8:A:83:A:OP1	28:U:91:LYS:NZ	2.33	0.46
8:A:320:A:H5''	8:A:321:U:OP1	2.16	0.46
8:A:452:G:C2	8:A:453:A:C5	3.04	0.46
8:A:606:U:H4'	8:A:658:U:H4'	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:668:A:C5	8:A:670:A:N7	2.83	0.46
8:A:875:G:N1	8:A:903:C:N3	2.64	0.46
8:A:1056:G:C4	8:A:1103:A:N6	2.83	0.46
8:A:1095:A:C2	8:A:1096:A:H8	2.33	0.46
8:A:1107:G:C2	8:A:1108:U:H1'	2.51	0.46
8:A:1251:C:O2'	8:A:1252:G:H5''	2.16	0.46
8:A:1425:G:H22	8:A:1574:C:N4	2.14	0.46
8:A:1544:A:H2'	8:A:1545:A:H8	1.80	0.46
8:A:1710:G:C6	8:A:1749:A:C6	3.04	0.46
8:A:2097:A:H2'	8:A:2098:U:H6	1.81	0.46
8:A:2299:U:C4	8:A:2318:G:N2	2.84	0.46
8:A:2722:G:H4'	21:N:4:ARG:HB2	1.98	0.46
12:E:182:ALA:HB2	19:L:3:LEU:HD22	1.97	0.46
18:K:41:ILE:HD11	18:K:86:LEU:CD2	2.46	0.46
19:L:132:ARG:HE	19:L:142:ILE:HD12	1.80	0.46
34:a:152:A:H62	34:a:169:C:N4	2.14	0.46
34:a:378:G:N1	34:a:386:C:N3	2.63	0.46
34:a:476:U:H2'	34:a:477:C:C6	2.51	0.46
34:a:652:U:O2	34:a:753:A:N6	2.49	0.46
34:a:675:A:H2'	34:a:676:A:C8	2.51	0.46
34:a:777:A:C4	34:a:778:G:C8	3.04	0.46
34:a:1379:G:C2	34:a:1380:U:C4	3.04	0.46
41:h:95:MET:SD	41:h:129:ALA:HB1	2.55	0.46
49:p:20:VAL:HA	49:p:35:ARG:HA	1.96	0.46
53:t:9:ARG:HA	53:t:9:ARG:HD2	1.71	0.46
57:x:317:SER:HB3	57:x:339:SER:OG	2.16	0.46
8:A:8:C:H2'	8:A:9:G:O4'	2.16	0.46
8:A:68:G:C5	8:A:69:C:C4	3.03	0.46
8:A:199:A:N7	8:A:2434:A:N6	2.64	0.46
8:A:301:G:C6	8:A:317:G:C6	3.03	0.46
8:A:331:C:H41	8:A:1210:G:N2	2.14	0.46
8:A:521:U:H2'	8:A:522:A:C8	2.38	0.46
8:A:540:C:H2'	8:A:541:A:H8	1.81	0.46
8:A:980:A:N1	8:A:1136:G:H4'	2.31	0.46
8:A:1093:G:HO2'	8:A:1094:U:P	2.33	0.46
8:A:1168:G:C2	8:A:1169:A:C5	3.04	0.46
8:A:1232:G:C6	8:A:1233:C:C4	3.04	0.46
8:A:1326:U:H2'	8:A:1327:A:H8	1.80	0.46
8:A:1416:G:O2'	8:A:1417:C:O5'	2.31	0.46
8:A:1430:G:C2	8:A:1431:A:C4	3.04	0.46
8:A:1501:G:H2'	8:A:1502:A:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1565:C:C2	8:A:1567:G:C8	3.04	0.46
8:A:2106:U:H2'	8:A:2107:G:C8	2.51	0.46
8:A:2111:U:H4'	8:A:2111:U:OP1	2.15	0.46
8:A:2136:G:N2	8:A:2155:U:O2'	2.37	0.46
8:A:2191:A:H2'	8:A:2192:U:C6	2.51	0.46
8:A:2384:U:OP2	30:W:51:ARG:NH2	2.39	0.46
8:A:2572:A:OP2	11:D:149:ASN:HB3	2.16	0.46
8:A:2743:U:H2'	8:A:2744:G:O4'	2.16	0.46
8:A:2805:C:H2'	8:A:2806:C:C6	2.50	0.46
9:B:18:G:H2'	9:B:19:C:C6	2.51	0.46
18:K:105:ARG:NH1	23:P:32:VAL:O	2.49	0.46
34:a:137:U:H3	34:a:226:G:H1	1.64	0.46
34:a:649:A:H2'	34:a:650:G:O4'	2.16	0.46
34:a:1029:U:O2'	34:a:1031:C:O3'	2.33	0.46
34:a:1042:A:H2'	34:a:1043:G:H5'	1.97	0.46
34:a:1060:U:H4'	43:j:53:ILE:HG13	1.97	0.46
34:a:1246:A:H2'	34:a:1247:U:C6	2.51	0.46
34:a:1310:G:H2'	34:a:1311:A:O4'	2.16	0.46
34:a:1327:C:H2'	34:a:1328:C:H6	1.80	0.46
34:a:1351:U:O4'	40:g:32:ASP:HB3	2.14	0.46
35:b:80:LYS:HE3	35:b:80:LYS:HB3	1.63	0.46
37:d:125:ASN:HA	37:d:141:VAL:HG13	1.97	0.46
57:x:350:ASN:HB2	57:x:357:GLU:HG2	1.98	0.46
57:x:518:VAL:HB	57:x:579:PHE:H	1.81	0.46
57:x:544:ILE:HG22	57:x:592:PHE:CE1	2.50	0.46
8:A:92:U:C2	8:A:93:G:C8	3.04	0.46
8:A:240:C:H3'	8:A:241:A:H2'	1.98	0.46
8:A:1186:G:C6	8:A:1187:G:C5	3.04	0.46
8:A:1582:C:H2'	8:A:1583:A:O4'	2.14	0.46
8:A:1964:G:O2'	8:A:1967:C:OP2	2.28	0.46
8:A:2013:A:C6	8:A:2014:A:C5	3.04	0.46
8:A:2119:A:H2	8:A:2166:U:H3	1.64	0.46
8:A:2318:G:O5'	8:A:2318:G:H8	1.99	0.46
8:A:2439:A:O2'	8:A:2600:A:OP1	2.17	0.46
8:A:2467:C:N3	8:A:2484:G:N1	2.64	0.46
8:A:2478:A:C8	8:A:2529:G:N7	2.84	0.46
8:A:2623:G:H2'	8:A:2624:G:H8	1.81	0.46
31:X:9:LYS:HE3	31:X:53:LYS:HB3	1.97	0.46
34:a:460:A:C6	34:a:461:A:N6	2.84	0.46
34:a:490:C:H2'	34:a:491:G:C8	2.51	0.46
34:a:570:G:H5'	34:a:820:U:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:623:C:H2'	34:a:624:C:C6	2.50	0.46
34:a:1088:G:N2	34:a:1167:A:N1	2.58	0.46
34:a:1288:A:C4	34:a:1289:A:C8	3.04	0.46
35:b:35:ASN:OD1	35:b:35:ASN:N	2.48	0.46
55:v:48:C:C4	55:v:59:A:C8	3.04	0.46
57:x:348:VAL:HG13	57:x:357:GLU:HB2	1.98	0.46
4:3:49:VAL:HG11	4:3:57:VAL:HG21	1.97	0.45
5:4:2:LYS:O	5:4:35:GLN:HA	2.16	0.45
8:A:359:G:H2'	8:A:359:G:N3	2.31	0.45
8:A:494:G:HO2'	26:S:6:LYS:H	1.64	0.45
8:A:581:C:C2	8:A:582:A:N7	2.84	0.45
8:A:1301:A:C4	8:A:1303:G:N7	2.84	0.45
8:A:1421:G:N2	8:A:1578:U:O2	2.48	0.45
8:A:1577:C:H2'	8:A:1578:U:C6	2.51	0.45
8:A:1949:G:N1	8:A:1958:C:N3	2.64	0.45
8:A:2102:G:N1	8:A:2103:C:H1'	2.31	0.45
9:B:19:C:H2'	9:B:20:G:C8	2.51	0.45
10:C:14:HIS:O	10:C:16:VAL:HG23	2.14	0.45
10:C:204:LEU:HD21	10:C:213:ARG:HE	1.80	0.45
11:D:121:THR:O	11:D:124:ARG:N	2.48	0.45
12:E:143:LEU:HD22	12:E:146:VAL:HG11	1.97	0.45
15:H:43:ASN:O	15:H:51:ARG:NH1	2.49	0.45
34:a:318:G:C6	34:a:336:A:C6	3.04	0.45
34:a:608:A:C4	34:a:609:A:C8	3.04	0.45
34:a:872:A:C8	34:a:874:G:C8	3.04	0.45
34:a:940:C:H2'	34:a:941:G:H8	1.81	0.45
36:c:45:GLU:HG3	36:c:46:LEU:HD23	1.97	0.45
37:d:93:LEU:HD23	37:d:93:LEU:HA	1.70	0.45
42:i:66:VAL:HG11	42:i:78:ILE:CG1	2.46	0.45
45:l:63:THR:OG1	45:l:92:VAL:HA	2.15	0.45
54:u:52:VAL:O	54:u:55:HIS:HB3	2.16	0.45
57:x:376:VAL:HG11	57:x:382:ALA:CB	2.46	0.45
4:3:11:LYS:NZ	8:A:249:C:O2	2.45	0.45
8:A:7:G:H2'	8:A:8:C:H6	1.81	0.45
8:A:68:G:H2'	8:A:69:C:O4'	2.16	0.45
8:A:452:G:H2'	8:A:453:A:H8	1.80	0.45
8:A:674:G:OP1	12:E:71:GLY:HA3	2.16	0.45
8:A:676:A:C8	8:A:677:A:C8	3.04	0.45
8:A:814:C:H2'	8:A:815:C:C6	2.51	0.45
8:A:832:U:H2'	8:A:833:A:H8	1.81	0.45
8:A:1946:U:H2'	8:A:1947:C:H6	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1948:G:C2'	34:a:1419:G:H22	2.29	0.45
8:A:2103:C:N4	8:A:2186:G:N7	2.56	0.45
8:A:2627:G:C2	8:A:2777:G:C2	3.04	0.45
8:A:2648:G:H2'	8:A:2649:C:H6	1.81	0.45
10:C:116:GLN:H	10:C:127:ASN:ND2	2.15	0.45
13:F:3:LEU:HD23	13:F:3:LEU:HA	1.81	0.45
26:S:19:LEU:HD12	26:S:19:LEU:HA	1.71	0.45
34:a:600:A:H2'	34:a:601:G:C8	2.51	0.45
34:a:745:G:H2'	34:a:746:A:C8	2.47	0.45
34:a:1043:G:H2'	34:a:1044:A:H8	1.79	0.45
34:a:1131:G:P	42:i:4:GLN:HE22	2.38	0.45
34:a:1213:A:C4	34:a:1215:G:C8	3.05	0.45
40:g:57:GLU:OE2	40:g:57:GLU:N	2.46	0.45
40:g:114:SER:C	40:g:118:ARG:HE	2.23	0.45
53:t:28:ARG:O	53:t:32:LYS:HG2	2.16	0.45
54:u:16:ARG:HA	54:u:16:ARG:HD2	1.80	0.45
3:2:22:MET:SD	3:2:28:ARG:HG2	2.56	0.45
8:A:251:A:N7	8:A:252:G:C4	2.84	0.45
8:A:1015:U:H2'	8:A:1016:G:C8	2.51	0.45
8:A:1254:A:N1	12:E:77:ILE:HD11	2.30	0.45
8:A:1880:U:H2'	8:A:1881:C:C6	2.49	0.45
8:A:2064:C:H2'	8:A:2065:C:C6	2.52	0.45
8:A:2075:U:H2'	8:A:2076:U:H5''	1.98	0.45
8:A:2157:G:C8	8:A:2158:A:C6	3.04	0.45
8:A:2456:C:N4	8:A:2457:PSU:O2	2.49	0.45
8:A:2535:G:C2	8:A:2536:G:C8	3.04	0.45
8:A:2706:A:H2'	8:A:2707:U:O4'	2.17	0.45
8:A:2798:U:H5''	8:A:2799:A:OP1	2.16	0.45
9:B:42:C:H2'	9:B:43:C:C6	2.50	0.45
14:G:75:VAL:HA	14:G:78:VAL:HG22	1.97	0.45
15:H:135:HIS:HB3	15:H:138:VAL:HG23	1.98	0.45
21:N:49:GLU:HB2	21:N:50:PRO:HD3	1.99	0.45
28:U:15:GLY:C	28:U:17:ASP:N	2.71	0.45
34:a:110:C:H2'	34:a:111:G:O4'	2.15	0.45
34:a:181:A:N1	34:a:194:C:C2	2.84	0.45
34:a:338:A:H2'	34:a:339:C:C6	2.51	0.45
34:a:592:G:O6	34:a:648:A:N6	2.50	0.45
34:a:775:G:H2'	34:a:776:G:O4'	2.16	0.45
34:a:781:A:N6	34:a:802:A:H1'	2.32	0.45
34:a:958:A:H1'	34:a:985:C:O2'	2.16	0.45
34:a:967:5MC:H4'	42:i:126:PHE:HE1	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1101:A:N7	35:b:170:ILE:HG23	2.31	0.45
34:a:1317:C:O5'	47:n:23:ARG:NH2	2.49	0.45
34:a:1318:A:H4'	52:s:9:PHE:CD2	2.51	0.45
34:a:1345:U:OP1	42:i:121:ARG:NH1	2.50	0.45
35:b:138:ARG:HA	35:b:141:GLU:CD	2.41	0.45
35:b:180:ILE:O	35:b:182:VAL:HG23	2.17	0.45
40:g:114:SER:HB3	40:g:117:LEU:HG	1.98	0.45
45:l:105:GLY:HA3	45:l:117:GLY:O	2.16	0.45
49:p:22:ALA:HB2	49:p:32:PHE:HB3	1.98	0.45
55:v:31:G:H2'	55:v:32:C:O4'	2.15	0.45
55:v:70:G:C6	55:v:71:C:N4	2.84	0.45
57:x:122:SER:HA	57:x:125:VAL:HG22	1.97	0.45
57:x:563:GLY:HA3	57:x:568:TYR:O	2.15	0.45
2:1:16:THR:HG21	2:1:41:VAL:HB	1.97	0.45
8:A:711:G:O2'	8:A:712:G:H5'	2.16	0.45
8:A:1056:G:N2	8:A:1103:A:N9	2.63	0.45
8:A:1099:G:H2'	8:A:1100:C:O4'	2.15	0.45
8:A:1521:G:OP2	8:A:1522:A:O2'	2.34	0.45
8:A:1794:A:C6	8:A:1826:G:C6	3.04	0.45
8:A:1841:U:H2'	8:A:1842:G:H8	1.81	0.45
8:A:1936:A:H2	8:A:1943:U:H3	1.63	0.45
8:A:2108:A:H2	8:A:2182:U:H3	1.63	0.45
8:A:2657:A:C4	8:A:2665:A:C6	3.05	0.45
8:A:2813:A:H2'	8:A:2814:A:C8	2.49	0.45
10:C:30:ALA:HB3	10:C:31:PRO:HD3	1.98	0.45
19:L:19:LEU:HD23	19:L:31:GLY:O	2.17	0.45
29:V:35:GLU:OE2	29:V:93:ARG:HD2	2.16	0.45
34:a:119:A:H4'	34:a:120:A:C8	2.50	0.45
34:a:888:G:C5	34:a:889:A:N7	2.85	0.45
34:a:1057:G:H2'	34:a:1058:G:O4'	2.16	0.45
34:a:1073:U:O4	34:a:1084:G:N2	2.49	0.45
34:a:1147:C:H4'	42:i:6:TYR:CZ	2.51	0.45
34:a:1346:A:C8	34:a:1348:U:N3	2.84	0.45
35:b:19:THR:O	35:b:22:TRP:HD1	1.99	0.45
37:d:26:ALA:HB3	37:d:29:THR:HG22	1.99	0.45
38:e:90:GLY:O	38:e:129:SER:OG	2.32	0.45
38:e:96:GLN:HB3	38:e:123:LEU:HB2	1.99	0.45
40:g:112:ASP:OD1	40:g:113:LYS:N	2.42	0.45
41:h:17:GLN:NE2	41:h:71:VAL:H	2.14	0.45
43:j:32:THR:HG23	43:j:83:THR:HG22	1.97	0.45
57:x:221:LEU:HD11	57:x:251:LEU:HD11	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:77:G:C6	8:A:110:G:C6	3.05	0.45
8:A:483:A:H5''	28:U:46:LYS:HD2	1.99	0.45
8:A:981:A:OP2	8:A:982:C:N4	2.50	0.45
8:A:1170:C:C4	8:A:1171:G:C5	3.04	0.45
8:A:1835:2MG:H5'	8:A:1835:2MG:C8	2.51	0.45
8:A:2143:C:H2'	8:A:2144:G:O4'	2.17	0.45
8:A:2399:G:O6	8:A:2418:A:N6	2.50	0.45
8:A:2419:U:H2'	8:A:2420:C:C6	2.52	0.45
11:D:11:MET:HB3	11:D:11:MET:HE2	1.78	0.45
13:F:122:ASP:CG	13:F:126:ASN:H	2.25	0.45
27:T:11:LEU:HD23	27:T:34:VAL:HG12	1.98	0.45
33:Z:7:THR:OG1	33:Z:55:LYS:HB3	2.15	0.45
34:a:76:G:C6	34:a:95:C:N4	2.84	0.45
34:a:113:G:H2'	34:a:114:U:H6	1.80	0.45
34:a:737:C:H2'	34:a:738:C:H6	1.81	0.45
34:a:1149:C:OP1	42:i:10:ARG:NE	2.48	0.45
34:a:1329:A:H5''	46:m:25:GLY:H	1.82	0.45
34:a:1413:A:H8	34:a:1413:A:O5'	1.99	0.45
34:a:1415:G:C4	34:a:1486:G:N1	2.85	0.45
35:b:18:GLN:HB3	35:b:37:VAL:HG12	1.97	0.45
42:i:129:ARG:NH1	55:v:32:C:OP2	2.49	0.45
44:k:43:TRP:HZ3	44:k:45:THR:HG23	1.82	0.45
45:l:41:PRO:HG2	45:l:46:SER:N	2.30	0.45
49:p:5:ARG:NH1	49:p:22:ALA:HB3	2.29	0.45
8:A:24:G:H2'	8:A:25:U:C6	2.51	0.45
8:A:216:A:C4	8:A:217:A:C8	3.04	0.45
8:A:269:C:H2'	8:A:270:A:C8	2.52	0.45
8:A:608:A:H2'	8:A:609:A:H8	1.82	0.45
8:A:1310:G:N2	8:A:1313:U:C4	2.84	0.45
8:A:1421:G:C2	8:A:1422:G:C8	3.05	0.45
8:A:1421:G:H1	8:A:1578:U:H3	1.65	0.45
8:A:1538:G:H2'	8:A:1539:U:C6	2.51	0.45
8:A:1565:C:O2'	8:A:1566:A:H5''	2.17	0.45
8:A:1662:U:H2'	8:A:1663:G:C8	2.52	0.45
8:A:2127:G:N2	8:A:2129:C:O2'	2.50	0.45
8:A:2144:G:N3	8:A:2146:C:O2'	2.46	0.45
8:A:2194:U:C2	8:A:2195:U:C5	3.04	0.45
8:A:2291:U:O2'	8:A:2374:C:O2	2.33	0.45
8:A:2531:A:C2	8:A:2532:G:C8	3.05	0.45
8:A:2547:A:O2'	8:A:2548:U:H5'	2.17	0.45
8:A:2617:U:C4	8:A:2618:G:N7	2.84	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2723:C:H2'	8:A:2724:U:O4'	2.17	0.45
8:A:2725:A:N7	8:A:2727:A:C5	2.85	0.45
8:A:2797:U:H5''	8:A:2798:U:OP2	2.16	0.45
8:A:2825:G:H3'	8:A:2826:A:H8	1.82	0.45
9:B:31:C:O2	9:B:53:A:N6	2.49	0.45
10:C:129:LEU:HG	10:C:134:ILE:HG13	1.99	0.45
34:a:76:G:O6	34:a:77:A:N6	2.49	0.45
34:a:284:C:C2	34:a:285:C:C5	3.05	0.45
34:a:425:G:C6	34:a:426:U:C4	3.05	0.45
34:a:820:U:H4'	34:a:821:G:OP2	2.16	0.45
34:a:957:U:HO2'	34:a:958:A:H8	1.64	0.45
34:a:1211:U:O2'	34:a:1213:A:N1	2.50	0.45
34:a:1253:G:C2	34:a:1254:A:C5	3.04	0.45
34:a:1483:A:C6	34:a:1484:C:N3	2.85	0.45
37:d:11:SER:HB3	37:d:20:LEU:HD13	1.99	0.45
38:e:82:HIS:ND1	38:e:83:PRO:O	2.46	0.45
39:f:21:MET:HG2	39:f:24:ARG:HH21	1.82	0.45
41:h:93:LYS:HG3	41:h:116:ARG:NH2	2.31	0.45
49:p:21:VAL:HG22	49:p:34:GLU:O	2.16	0.45
52:s:15:LEU:HD23	52:s:19:GLU:HG3	1.99	0.45
55:v:66:C:H2'	55:v:67:C:H6	1.81	0.45
56:w:56:C:H2'	56:w:57:G:C8	2.51	0.45
57:x:32:TYR:HD2	57:x:275:GLN:HG3	1.81	0.45
1:0:37:HIS:HB3	1:0:43:THR:HG22	1.97	0.45
4:3:14:LYS:HB2	4:3:22:LYS:HE2	1.98	0.45
8:A:190:A:N6	8:A:207:A:C4	2.85	0.45
8:A:379:G:H21	31:X:28:PHE:HE2	1.65	0.45
8:A:579:G:C6	8:A:1262:A:N6	2.85	0.45
8:A:643:A:N1	8:A:2369:A:O2'	2.47	0.45
8:A:794:A:H2'	8:A:795:C:C6	2.52	0.45
8:A:871:U:H2'	8:A:872:U:C6	2.51	0.45
8:A:1667:G:N2	8:A:1994:C:N4	2.65	0.45
8:A:1677:A:C4	8:A:1678:A:C8	3.05	0.45
8:A:1834:U:H5''	8:A:1835:2MG:H5''	1.99	0.45
8:A:1839:G:O2'	8:A:1927:A:OP1	2.22	0.45
8:A:2013:A:H2	26:S:88:ARG:HH12	1.63	0.45
8:A:2075:U:HO2'	8:A:2596:U:H3	1.64	0.45
8:A:2230:G:H2'	8:A:2231:U:H6	1.82	0.45
8:A:2242:G:H2'	8:A:2243:U:O4'	2.16	0.45
8:A:2543:G:C6	8:A:2765:A:N7	2.85	0.45
8:A:2589:A:N1	8:A:2606:C:N4	2.65	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:B:5:U:H2'	9:B:6:G:C8	2.52	0.45
9:B:115:A:H2'	9:B:116:G:C8	2.51	0.45
11:D:26:VAL:HG12	11:D:188:LEU:HD21	1.98	0.45
12:E:130:LYS:HA	12:E:130:LYS:HD3	1.80	0.45
29:V:2:PHE:HD2	29:V:56:PHE:HD1	1.65	0.45
29:V:10:LYS:HD3	29:V:10:LYS:HA	1.77	0.45
33:Z:10:ARG:HB2	33:Z:53:MET:HB2	1.99	0.45
34:a:672:U:P	39:f:79:ARG:HH22	2.40	0.45
34:a:689:C:O2'	34:a:705:G:O2'	2.24	0.45
34:a:721:G:C2	34:a:733:G:C6	3.04	0.45
34:a:728:A:H2'	34:a:729:A:H8	1.77	0.45
34:a:812:G:OP1	34:a:902:G:N2	2.45	0.45
34:a:830:G:H2'	34:a:831:A:H8	1.81	0.45
34:a:943:U:H2'	34:a:944:G:H8	1.82	0.45
34:a:1103:C:P	35:b:94:ARG:HH22	2.40	0.45
34:a:1124:G:O2'	34:a:1127:G:O6	2.35	0.45
34:a:1319:A:C8	34:a:1323:G:C5	3.05	0.45
34:a:1412:C:H5''	45:l:53:ARG:CZ	2.47	0.45
35:b:90:PHE:O	35:b:149:GLY:HA3	2.17	0.45
51:r:25:ILE:H	51:r:25:ILE:HD12	1.82	0.45
55:v:37:A:H2'	55:v:38:A:H8	1.81	0.45
56:w:30:G:H2'	56:w:31:A:H8	1.81	0.45
57:x:640:MET:O	57:x:656:GLU:N	2.30	0.45
4:3:4:LYS:HZ2	8:A:253:C:P	2.39	0.45
5:4:6:SER:O	5:4:6:SER:OG	2.29	0.45
8:A:107:G:O3'	8:A:293:U:O2'	2.31	0.45
8:A:118:A:OP2	8:A:119:A:H5''	2.16	0.45
8:A:221:A:C4	8:A:266:G:N7	2.85	0.45
8:A:247:G:N2	8:A:250:G:H3'	2.32	0.45
8:A:319:G:H1	8:A:323:C:H41	1.63	0.45
8:A:370:G:H2'	8:A:423:A:N7	2.32	0.45
8:A:638:G:C6	8:A:651:G:N1	2.84	0.45
8:A:835:C:C2	8:A:836:G:C8	3.05	0.45
8:A:1286:A:H1'	8:A:1288:G:OP2	2.17	0.45
8:A:1300:G:C2	8:A:1626:A:C6	3.05	0.45
8:A:1438:U:C2	8:A:1439:A:C8	3.05	0.45
8:A:1535:A:N6	8:A:1538:G:N3	2.65	0.45
8:A:1589:U:H2'	8:A:1590:A:H8	1.82	0.45
8:A:1858:A:C6	8:A:1885:A:C8	3.05	0.45
8:A:2092:U:H5'	8:A:2225:A:H2	1.81	0.45
8:A:2283:C:C5	8:A:2389:G:C4	3.05	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2316:G:H4'	13:F:124:ARG:NH1	2.32	0.45
8:A:2618:G:C6	8:A:2619:C:C4	3.05	0.45
8:A:2791:G:N1	8:A:2806:C:C2	2.85	0.45
11:D:84:LEU:HD22	11:D:88:GLU:HG2	1.98	0.45
12:E:24:ASN:N	12:E:107:SER:OG	2.31	0.45
13:F:161:SER:OG	13:F:162:ASP:N	2.50	0.45
14:G:126:THR:HG22	14:G:127:GLN:H	1.81	0.45
27:T:12:ARG:HD2	27:T:12:ARG:HA	1.79	0.45
31:X:36:ARG:HB3	31:X:45:PHE:CD2	2.50	0.45
32:Y:9:LYS:HB3	32:Y:13:GLU:CG	2.43	0.45
34:a:161:A:N6	34:a:346:G:C6	2.85	0.45
34:a:340:U:H2'	34:a:341:C:C6	2.51	0.45
34:a:369:G:N2	34:a:393:A:H1'	2.32	0.45
34:a:552:U:H2'	34:a:553:A:C8	2.36	0.45
34:a:696:A:H2'	34:a:697:U:C6	2.52	0.45
34:a:717:U:C2	34:a:734:G:C8	3.05	0.45
34:a:1124:G:O2'	34:a:1145:A:N6	2.50	0.45
34:a:1348:U:H2'	34:a:1349:A:H8	1.82	0.45
55:v:22:G:N7	55:v:46:A:N1	2.64	0.45
55:v:53:G:C6	55:v:54:5MU:C4	3.05	0.45
57:x:9:TYR:CE2	57:x:82:ARG:HG2	2.52	0.45
57:x:665:TYR:CE2	57:x:669:LEU:HD12	2.52	0.45
7:6:2:LYS:HB2	9:B:43:C:OP1	2.16	0.45
8:A:229:C:N4	8:A:230:G:N3	2.65	0.45
8:A:550:C:H2'	8:A:551:G:H8	1.82	0.45
8:A:728:G:C2	8:A:730:A:C4	3.04	0.45
8:A:1216:G:H2'	8:A:1217:U:C6	2.52	0.45
8:A:1432:G:H2'	8:A:1433:A:C8	2.52	0.45
8:A:1735:A:C6	8:A:1736:U:C4	3.05	0.45
8:A:1804:C:N4	8:A:1814:G:N2	2.65	0.45
8:A:2485:G:OP1	20:M:45:GLN:NE2	2.50	0.45
8:A:2519:U:C2	8:A:2542:A:C6	3.04	0.45
12:E:130:LYS:CB	12:E:133:LEU:HG	2.47	0.45
12:E:148:ILE:O	12:E:169:VAL:HA	2.17	0.45
24:Q:16:ILE:HG23	24:Q:38:VAL:HG11	1.98	0.45
34:a:219:U:C2	34:a:220:G:C8	3.04	0.45
34:a:350:G:O2'	34:a:351:G:H5'	2.16	0.45
34:a:361:G:H2'	34:a:362:G:O4'	2.17	0.45
34:a:953:G:C6	34:a:1229:A:C6	3.05	0.45
34:a:1184:G:C5	34:a:1185:G:C8	3.05	0.45
34:a:1356:G:C2	34:a:1357:A:C5	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:15:LYS:HD3	36:c:180:ASP:OD1	2.17	0.45
40:g:22:LEU:O	40:g:26:VAL:HG23	2.17	0.45
42:i:9:GLY:HA2	42:i:80:HIS:ND1	2.32	0.45
43:j:71:LEU:O	43:j:72:ARG:HD3	2.16	0.45
44:k:28:ASN:OD1	44:k:29:THR:N	2.49	0.45
44:k:51:PHE:CE2	44:k:64:VAL:HG21	2.52	0.45
48:o:44:GLU:O	48:o:46:LYS:N	2.50	0.45
54:u:11:PHE:O	54:u:12:ASP:HB2	2.17	0.45
6:5:79:PRO:O	8:A:1107:G:H4'	2.17	0.45
8:A:26:G:H1'	8:A:515:A:N6	2.32	0.45
8:A:86:G:N2	8:A:97:C:C2	2.85	0.45
8:A:181:A:C2	8:A:182:A:C5	3.05	0.45
8:A:795:C:H2'	8:A:796:C:C6	2.52	0.45
8:A:1292:G:H2'	8:A:1293:C:H6	1.82	0.45
8:A:1441:G:O2'	8:A:1628:G:H5''	2.17	0.45
8:A:1474:U:H5'	8:A:1475:G:OP2	2.17	0.45
8:A:1746:A:H2'	8:A:1747:U:C6	2.52	0.45
8:A:1779:U:H5''	8:A:1780:A:C5'	2.46	0.45
8:A:1926:U:HO2'	8:A:1927:A:P	2.36	0.45
8:A:2096:C:H2'	8:A:2097:A:C8	2.52	0.45
8:A:2123:G:OP2	8:A:2123:G:H8	2.00	0.45
8:A:2230:G:H2'	8:A:2231:U:C6	2.51	0.45
8:A:2513:A:C6	8:A:2574:G:C6	3.05	0.45
8:A:2575:C:H5''	8:A:2576:G:OP2	2.17	0.45
8:A:2702:G:C2	8:A:2703:C:C2	3.05	0.45
8:A:2756:U:H4'	8:A:2757:A:OP1	2.16	0.45
8:A:2801:G:C6	8:A:2802:G:C5	3.05	0.45
8:A:2839:G:C4	8:A:2840:C:C5	3.05	0.45
13:F:45:ASP:HB3	13:F:48:LEU:HB2	1.98	0.45
14:G:16:VAL:HG21	14:G:44:HIS:NE2	2.32	0.45
22:O:4:LYS:HE3	22:O:4:LYS:HB2	1.75	0.45
23:P:30:TRP:CD2	23:P:37:LYS:HE2	2.51	0.45
34:a:410:G:H1'	34:a:433:G:N2	2.32	0.45
34:a:430:A:C4	34:a:431:A:C8	3.05	0.45
34:a:695:A:H2'	34:a:696:A:O4'	2.17	0.45
34:a:910:C:H2'	34:a:911:U:C6	2.52	0.45
34:a:936:C:C4	34:a:937:A:N7	2.85	0.45
34:a:977:A:OP1	47:n:61:ARG:NH2	2.50	0.45
34:a:977:A:H4'	34:a:981:U:O2	2.16	0.45
34:a:1012:A:N6	34:a:1018:G:C6	2.85	0.45
34:a:1496:C:H2'	34:a:1497:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:f:4:TYR:HA	39:f:90:MET:O	2.17	0.45
45:l:29:LYS:HE2	45:l:58:ASN:HD22	1.82	0.45
45:l:52:CYS:SG	45:l:53:ARG:N	2.90	0.45
55:v:42:G:HO2'	55:v:43:A:H8	1.65	0.45
56:w:15:G:H2'	56:w:16:U:C2	2.52	0.45
56:w:39:PSU:H3'	56:w:40:C:H5''	1.98	0.45
57:x:424:LYS:HB3	57:x:424:LYS:HE2	1.57	0.45
57:x:493:ILE:HB	57:x:523:PRO:CB	2.47	0.45
57:x:570:VAL:HG12	57:x:573:MET:HB2	1.99	0.45
59:z:2:U:H2'	59:z:3:G:O4'	2.16	0.45
2:1:16:THR:OG1	2:1:39:ASP:OD2	2.30	0.44
8:A:59:U:O2'	8:A:60:G:H5'	2.17	0.44
8:A:383:C:N4	8:A:386:G:OP2	2.50	0.44
8:A:406:G:H2'	8:A:407:G:H8	1.82	0.44
8:A:738:G:N1	8:A:759:G:C6	2.85	0.44
8:A:996:A:N6	8:A:1160:G:C6	2.84	0.44
8:A:1069:A:H2	8:A:1095:A:H1'	1.82	0.44
8:A:2106:U:H2'	8:A:2107:G:N7	2.31	0.44
8:A:2354:C:H2'	8:A:2355:G:H8	1.82	0.44
8:A:2393:U:H2'	8:A:2394:C:O4'	2.17	0.44
8:A:2446:G:H4'	8:A:2448:A:N7	2.33	0.44
8:A:2546:U:H5''	8:A:2547:A:OP1	2.17	0.44
8:A:2570:G:H2'	8:A:2571:U:O4'	2.18	0.44
8:A:2694:G:H2'	8:A:2695:U:C6	2.52	0.44
8:A:2843:G:C2	8:A:2875:C:C2	3.05	0.44
15:H:8:LYS:HG3	15:H:13:GLY:O	2.18	0.44
20:M:53:MET:HE2	20:M:117:PHE:CD1	2.52	0.44
21:N:8:ARG:N	21:N:43:GLU:OE1	2.46	0.44
21:N:31:HIS:C	21:N:33:ILE:H	2.25	0.44
34:a:103:U:H5'	34:a:151:A:O2'	2.16	0.44
34:a:132:C:C4	34:a:133:U:C4	3.05	0.44
34:a:174:A:C6	34:a:175:C:C4	3.05	0.44
34:a:409:U:OP1	37:d:22:SER:HB3	2.17	0.44
34:a:705:G:C5	34:a:706:A:N7	2.85	0.44
34:a:837:U:C2	34:a:849:G:O6	2.70	0.44
34:a:1057:G:C6	34:a:1204:A:C6	3.06	0.44
34:a:1156:G:N2	34:a:1180:A:H2	2.15	0.44
34:a:1300:G:O2'	34:a:1301:U:P	2.75	0.44
34:a:1519:MA6:H8	34:a:1519:MA6:H3'	1.97	0.44
36:c:133:MET:HE2	36:c:167:TYR:HD2	1.81	0.44
37:d:169:TRP:CD2	37:d:185:PRO:HB3	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:f:29:ILE:HG21	39:f:64:VAL:HG11	1.99	0.44
53:t:27:MET:SD	53:t:65:LEU:HD22	2.58	0.44
54:u:9:GLU:OE1	54:u:9:GLU:N	2.43	0.44
55:v:3:C:N4	55:v:4:G:O6	2.50	0.44
55:v:52:G:C2	55:v:53:G:C5	3.05	0.44
56:w:66:U:O2	56:w:67:C:H1'	2.16	0.44
57:x:252:ARG:HG3	57:x:284:TYR:O	2.17	0.44
57:x:316:PHE:HA	57:x:340:GLY:HA3	1.99	0.44
57:x:529:ASN:HD22	57:x:534:GLU:HB2	1.81	0.44
8:A:226:A:N6	8:A:418:C:O2	2.50	0.44
8:A:563:A:C6	8:A:2018:G:C5	3.06	0.44
8:A:920:A:OP1	33:Z:18:LYS:NZ	2.35	0.44
8:A:973:A:OP2	25:R:81:LYS:NZ	2.34	0.44
8:A:1059:G:H5'	8:A:1060:U:C6	2.52	0.44
8:A:1267:U:C4	8:A:2012:G:N2	2.86	0.44
8:A:1424:G:C6	8:A:1425:G:C2	3.06	0.44
8:A:1616:A:H4'	8:A:1617:C:OP2	2.17	0.44
8:A:1638:C:H1'	8:A:2698:U:O2'	2.17	0.44
8:A:2089:C:H5'	8:A:2090:A:OP2	2.17	0.44
8:A:2636:C:HO2'	11:D:45:TYR:HH	1.55	0.44
8:A:2648:G:H2'	8:A:2649:C:C6	2.52	0.44
8:A:2740:A:C6	8:A:2764:A:C5	3.05	0.44
10:C:250:GLN:NE2	10:C:251:THR:O	2.50	0.44
12:E:145:ASP:HA	12:E:166:LYS:O	2.17	0.44
13:F:113:PHE:HZ	13:F:175:PRO:HG2	1.82	0.44
34:a:29:U:O2'	34:a:295:C:H4'	2.18	0.44
34:a:437:U:O2'	37:d:119:HIS:ND1	2.47	0.44
34:a:502:A:H2'	34:a:503:C:C6	2.52	0.44
34:a:607:A:H2'	34:a:608:A:H8	1.82	0.44
34:a:664:G:P	51:r:52:ARG:HH21	2.39	0.44
34:a:786:G:N1	34:a:797:C:C4	2.86	0.44
34:a:975:A:N1	34:a:1366:C:O2'	2.41	0.44
34:a:985:C:H2'	34:a:986:U:C6	2.51	0.44
34:a:1011:C:H2'	34:a:1012:A:C8	2.51	0.44
34:a:1363:A:H2'	34:a:1365:G:N7	2.31	0.44
52:s:17:LYS:O	52:s:20:LYS:HB2	2.16	0.44
55:v:69:C:C2	55:v:70:G:N7	2.85	0.44
8:A:14:A:N6	8:A:526:A:C2	2.86	0.44
8:A:116:C:H2'	8:A:117:G:O4'	2.17	0.44
8:A:467:G:C4	8:A:468:G:C8	3.05	0.44
8:A:597:G:C6	8:A:661:A:N1	2.85	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:638:G:C5	8:A:651:G:N2	2.86	0.44
8:A:669:G:C2	8:A:801:G:O6	2.71	0.44
8:A:688:U:H2'	8:A:689:A:H8	1.83	0.44
8:A:701:G:N2	8:A:732:C:C2	2.86	0.44
8:A:712:G:H2'	8:A:713:G:O4'	2.18	0.44
8:A:727:A:C6	8:A:728:G:C6	3.05	0.44
8:A:906:U:H2'	8:A:907:G:O4'	2.18	0.44
8:A:1042:G:H2'	8:A:1043:C:H6	1.81	0.44
8:A:1102:C:H5'	8:A:1103:A:C8	2.52	0.44
8:A:1205:A:C5	12:E:165:HIS:HB2	2.52	0.44
8:A:1223:G:N1	8:A:1227:G:C6	2.86	0.44
8:A:1363:C:H2'	8:A:1364:G:C8	2.52	0.44
8:A:1831:G:C6	8:A:1832:C:N4	2.86	0.44
8:A:2073:C:O2'	8:A:2074:U:H5'	2.18	0.44
8:A:2327:A:H2'	8:A:2328:A:C8	2.53	0.44
8:A:2466:C:N3	8:A:2485:G:C2	2.85	0.44
8:A:2692:G:C6	8:A:2718:G:C6	3.06	0.44
12:E:3:LEU:HD23	12:E:3:LEU:HA	1.85	0.44
23:P:19:PHE:HE1	23:P:49:ILE:HD13	1.82	0.44
23:P:91:VAL:HG11	23:P:96:LEU:HD11	1.99	0.44
26:S:9:HIS:H	26:S:102:HIS:CE1	2.34	0.44
27:T:30:ILE:HG13	27:T:30:ILE:O	2.17	0.44
34:a:464:U:H3	34:a:467:U:P	2.40	0.44
34:a:536:C:H2'	34:a:537:G:H8	1.81	0.44
34:a:809:G:C6	34:a:810:C:C4	3.05	0.44
34:a:1120:C:C2	34:a:1121:U:C5	3.06	0.44
34:a:1365:G:C6	34:a:1366:C:C4	3.05	0.44
44:k:16:SER:OG	44:k:17:ASP:OD2	2.32	0.44
46:m:89:ARG:NH2	46:m:95:PRO:O	2.48	0.44
49:p:23:ASP:OD1	49:p:24:SER:N	2.51	0.44
57:x:297:ILE:HA	57:x:305:PRO:HG2	1.99	0.44
57:x:452:SER:OG	57:x:453:ASN:N	2.50	0.44
7:6:5:ILE:HG13	7:6:6:HIS:ND1	2.32	0.44
8:A:173:A:C4	8:A:174:U:C5	3.05	0.44
8:A:242:G:O2'	8:A:243:U:P	2.74	0.44
8:A:1080:A:H8	8:A:1080:A:OP1	1.99	0.44
8:A:1364:G:P	31:X:49:ARG:HH12	2.40	0.44
8:A:1659:G:C4	8:A:2002:G:N2	2.85	0.44
8:A:1666:G:C6	8:A:1995:U:O4	2.70	0.44
8:A:2091:C:H4'	31:X:55:MET:HE1	2.00	0.44
8:A:2176:A:H2'	8:A:2177:C:O4'	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2333:A:C8	8:A:2335:A:C4	3.05	0.44
8:A:2615:U:H2'	8:A:2616:C:C6	2.46	0.44
8:A:2714:G:C6	8:A:2715:C:C4	3.05	0.44
8:A:2724:U:O2'	8:A:2725:A:H5'	2.17	0.44
8:A:2856:A:C6	8:A:2862:G:C6	3.05	0.44
10:C:71:ASP:OD1	10:C:117:SER:OG	2.30	0.44
10:C:104:LEU:HA	10:C:104:LEU:HD23	1.62	0.44
10:C:259:ASN:C	10:C:261:ARG:N	2.70	0.44
11:D:148:GLN:OE1	11:D:152:PRO:HG2	2.18	0.44
17:J:68:LYS:HB2	17:J:68:LYS:HE3	1.80	0.44
24:Q:77:LYS:O	24:Q:116:LEU:HD11	2.17	0.44
27:T:82:LYS:HE3	27:T:82:LYS:HB2	1.78	0.44
34:a:64:G:C2	34:a:67:C:N4	2.86	0.44
34:a:181:A:N1	34:a:194:C:H2'	2.33	0.44
34:a:287:U:H2'	34:a:288:A:H8	1.82	0.44
34:a:344:A:H3'	34:a:345:C:C6	2.52	0.44
34:a:543:U:H2'	34:a:544:G:H8	1.82	0.44
34:a:615:G:C4	34:a:616:G:C8	3.04	0.44
34:a:830:G:H2'	34:a:831:A:C8	2.52	0.44
34:a:1147:C:H4'	42:i:6:TYR:CE2	2.53	0.44
34:a:1229:A:H2'	34:a:1230:C:C6	2.51	0.44
34:a:1338:G:H2'	34:a:1339:A:C8	2.52	0.44
34:a:1374:A:H2'	34:a:1375:A:C8	2.53	0.44
36:c:72:PRO:HG3	36:c:104:GLU:CD	2.43	0.44
41:h:75:GLN:O	41:h:126:CYS:HB2	2.17	0.44
46:m:15:VAL:HG22	46:m:33:LEU:HD12	2.00	0.44
53:t:70:LYS:HA	53:t:73:ARG:NH1	2.33	0.44
57:x:251:LEU:HD23	57:x:251:LEU:HA	1.84	0.44
57:x:278:LEU:HA	57:x:278:LEU:HD23	1.71	0.44
57:x:626:ASN:O	57:x:630:VAL:HG12	2.18	0.44
3:2:34:ARG:NH2	3:2:42:LEU:O	2.50	0.44
8:A:190:A:N7	8:A:207:A:C6	2.85	0.44
8:A:475:C:H4'	8:A:510:C:H5'	1.99	0.44
8:A:541:A:C6	8:A:542:C:C4	3.06	0.44
8:A:727:A:H2'	8:A:728:G:O4'	2.18	0.44
8:A:727:A:H2	10:C:8:THR:HB	1.81	0.44
8:A:759:G:N1	8:A:760:G:C6	2.85	0.44
8:A:784:G:H5'	8:A:785:G:OP1	2.17	0.44
8:A:1171:G:H1	8:A:1177:G:N2	2.15	0.44
8:A:1357:C:H2'	8:A:1358:G:O4'	2.17	0.44
8:A:1449:G:C6	8:A:1450:G:N7	2.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1707:G:C8	8:A:1756:G:C5	3.06	0.44
8:A:2108:A:N1	8:A:2183:A:C6	2.86	0.44
8:A:2444:G:OP2	12:E:63:LYS:HD2	2.16	0.44
8:A:2474:U:H3'	8:A:2475:C:C6	2.53	0.44
8:A:2720:U:H2'	8:A:2721:A:C8	2.51	0.44
9:B:83:G:O6	9:B:94:A:N6	2.51	0.44
10:C:204:LEU:HB3	10:C:209:ALA:HB3	1.99	0.44
15:H:9:VAL:HB	15:H:13:GLY:HA3	1.98	0.44
15:H:26:ALA:O	15:H:31:VAL:HG23	2.17	0.44
15:H:62:LEU:HG	15:H:66:ASN:ND2	2.26	0.44
32:Y:21:LEU:HD23	32:Y:21:LEU:HA	1.81	0.44
34:a:21:G:H1'	34:a:915:A:H61	1.82	0.44
34:a:247:G:C6	34:a:278:G:C2	3.06	0.44
34:a:554:A:C2	34:a:555:U:C4	3.05	0.44
34:a:720:C:O2'	51:r:51:GLN:NE2	2.49	0.44
34:a:836:G:C6	34:a:851:G:C6	3.06	0.44
34:a:977:A:OP2	47:n:61:ARG:NH1	2.50	0.44
34:a:1100:C:OP2	35:b:94:ARG:HD2	2.18	0.44
34:a:1207:2MG:H2'	34:a:1208:C:H6	1.83	0.44
34:a:1295:U:H2'	34:a:1296:C:C6	2.52	0.44
42:i:45:MET:O	42:i:49:GLN:HG3	2.18	0.44
45:l:54:VAL:HG11	45:l:79:ILE:HD11	1.99	0.44
48:o:27:GLN:O	48:o:31:LEU:HG	2.17	0.44
56:w:2:C:H2'	56:w:3:C:H6	1.83	0.44
57:x:21:GLY:HA3	57:x:141:ASN:ND2	2.32	0.44
57:x:165:PRO:HA	57:x:261:ILE:O	2.18	0.44
6:5:27:VAL:N	6:5:83:ALA:H	2.12	0.44
8:A:184:C:O2'	8:A:217:A:N3	2.49	0.44
8:A:197:A:H62	8:A:2430:A:H2'	1.83	0.44
8:A:401:A:C6	8:A:402:A:N6	2.85	0.44
8:A:597:G:C6	8:A:661:A:C6	3.06	0.44
8:A:598:U:H2'	8:A:599:A:H8	1.82	0.44
8:A:608:A:C6	8:A:609:A:C6	3.06	0.44
8:A:802:A:C6	8:A:803:U:C4	3.06	0.44
8:A:964:C:O2'	8:A:2273:A:H1'	2.17	0.44
8:A:1251:C:OP2	24:Q:5:ARG:NH2	2.43	0.44
8:A:1890:A:C5	8:A:1891:G:C8	3.05	0.44
8:A:1973:G:H2'	8:A:1974:C:C6	2.52	0.44
8:A:2078:C:H2'	8:A:2079:U:H6	1.83	0.44
8:A:2099:U:H2'	8:A:2100:G:C8	2.51	0.44
8:A:2549:G:C2	8:A:2550:G:C5	3.05	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:C:198:GLU:HB3	10:C:201:LEU:HD12	2.00	0.44
20:M:74:THR:OG1	20:M:86:LYS:NZ	2.49	0.44
22:O:31:THR:HB	22:O:33:ARG:O	2.16	0.44
23:P:5:LYS:O	23:P:9:GLN:HG2	2.17	0.44
34:a:286:C:H2'	34:a:287:U:C6	2.53	0.44
34:a:337:G:H2'	34:a:338:A:C8	2.53	0.44
34:a:493:A:H2'	34:a:494:G:N9	2.33	0.44
34:a:654:G:C5	34:a:655:A:C8	3.06	0.44
34:a:1120:C:H2'	34:a:1121:U:C6	2.52	0.44
34:a:1220:G:OP1	47:n:53:ARG:NH2	2.41	0.44
34:a:1423:G:C6	34:a:1424:U:C4	3.05	0.44
36:c:85:LYS:O	36:c:88:LYS:HG2	2.18	0.44
37:d:161:ALA:HA	37:d:164:ARG:NH2	2.32	0.44
37:d:173:ASP:OD2	37:d:176:LYS:N	2.32	0.44
38:e:110:MET:CE	38:e:135:VAL:HG13	2.47	0.44
38:e:113:VAL:HG11	38:e:139:THR:HG21	2.00	0.44
39:f:4:TYR:CE2	39:f:71:ILE:HG13	2.53	0.44
39:f:11:HIS:HB3	39:f:14:GLN:OE1	2.17	0.44
46:m:38:ILE:HD12	46:m:55:LEU:HD21	2.00	0.44
48:o:24:THR:HG1	48:o:68:TYR:HE2	1.66	0.44
50:q:7:LEU:HD22	50:q:24:ILE:HD13	2.00	0.44
55:v:20:H2U:H2'	55:v:21:A:C5'	2.48	0.44
57:x:493:ILE:HB	57:x:523:PRO:CG	2.47	0.44
57:x:624:GLU:HA	57:x:627:THR:HG23	1.99	0.44
57:x:684:LEU:HD23	57:x:685:LYS:HB3	1.99	0.44
2:l:20:TYR:OH	8:A:2347:C:O2'	2.15	0.44
8:A:359:G:C6	8:A:360:U:C4	3.06	0.44
8:A:799:G:C8	8:A:800:A:C8	3.06	0.44
8:A:1281:G:H2'	8:A:1282:U:C6	2.53	0.44
8:A:1597:A:H5''	8:A:1598:A:C5'	2.43	0.44
8:A:1771:C:C2	8:A:1772:A:C8	3.06	0.44
8:A:1846:G:C2	8:A:1895:C:C2	3.06	0.44
8:A:1907:G:N2	8:A:1908:C:C2	2.85	0.44
8:A:1913:A:H4'	8:A:1914:C:H5''	1.99	0.44
8:A:1949:G:N2	8:A:1958:C:C2	2.85	0.44
8:A:2123:G:H1'	8:A:2176:A:N1	2.32	0.44
8:A:2514:U:H2'	8:A:2515:C:H6	1.81	0.44
8:A:2521:C:C2	8:A:2545:G:C2	3.06	0.44
8:A:2703:C:C2	8:A:2704:C:C5	3.06	0.44
8:A:2722:G:C5	8:A:2723:C:C4	3.06	0.44
8:A:2799:A:C6	8:A:2801:G:C5	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2840:C:H5''	21:N:53:THR:OG1	2.17	0.44
8:A:2856:A:H2'	8:A:2857:G:O4'	2.18	0.44
9:B:16:G:C6	9:B:69:G:C2	3.05	0.44
12:E:2:GLU:HB3	12:E:11:ALA:HB1	1.99	0.44
12:E:106:LYS:HG2	12:E:200:LEU:HD23	2.00	0.44
12:E:152:GLU:N	12:E:152:GLU:OE1	2.50	0.44
17:J:16:TYR:HA	17:J:138:GLN:O	2.18	0.44
18:K:63:VAL:HG12	18:K:107:LEU:HD21	1.99	0.44
34:a:71:A:C6	34:a:100:G:C8	3.06	0.44
34:a:672:U:H2'	34:a:673:A:H8	1.81	0.44
34:a:974:A:P	47:n:81:ARG:HH21	2.41	0.44
34:a:994:A:H8	34:a:994:A:O5'	2.01	0.44
34:a:1239:A:O2'	40:g:118:ARG:NH2	2.51	0.44
34:a:1316:G:N2	34:a:1318:A:H3'	2.33	0.44
39:f:53:LYS:HA	39:f:53:LYS:HD2	1.76	0.44
45:l:86:VAL:HG11	45:l:89:LEU:HD12	1.99	0.44
55:v:64:G:H2'	55:v:65:C:C6	2.53	0.44
56:w:1:G:H2'	56:w:2:C:H6	1.83	0.44
57:x:36:ASN:HD21	57:x:48:THR:HG21	1.83	0.44
7:6:15:SER:HA	7:6:20:ASN:O	2.17	0.44
8:A:134:G:C6	8:A:146:A:C6	3.06	0.44
8:A:317:G:C6	8:A:318:C:C4	3.06	0.44
8:A:364:C:H2'	8:A:365:U:H6	1.80	0.44
8:A:481:G:O2'	8:A:482:A:P	2.76	0.44
8:A:1066:U:OP1	8:A:1068:G:H5'	2.18	0.44
8:A:1248:G:P	12:E:44:ARG:HH12	2.40	0.44
8:A:1405:U:H2'	8:A:1406:U:H6	1.80	0.44
8:A:1514:G:H5''	8:A:1515:A:OP1	2.18	0.44
8:A:1715:G:HO2'	8:A:1716:U:H6	1.66	0.44
8:A:1866:A:C6	8:A:1876:A:N7	2.86	0.44
8:A:2101:A:H5'	8:A:2102:G:OP2	2.18	0.44
8:A:2244:U:C2	8:A:2245:U:C6	3.06	0.44
8:A:2438:U:O2'	8:A:2440:C:OP1	2.32	0.44
8:A:2660:A:C6	8:A:2661:G:C2	3.06	0.44
11:D:27:ILE:HG12	11:D:201:LEU:HD12	1.99	0.44
24:Q:75:TYR:CZ	24:Q:79:ILE:HG13	2.53	0.44
29:V:11:GLU:HG2	29:V:16:ALA:CB	2.47	0.44
34:a:77:A:HO2'	34:a:78:A:P	2.39	0.44
34:a:236:A:H5''	50:q:43:LEU:HD21	1.99	0.44
34:a:538:G:OP1	45:l:111:GLN:N	2.41	0.44
34:a:624:C:H4'	49:p:10:GLY:HA2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:655:A:H2'	34:a:656:G:C8	2.53	0.44
34:a:893:C:H2'	34:a:894:G:H8	1.81	0.44
34:a:924:C:H2'	34:a:925:G:C8	2.53	0.44
34:a:947:G:H2'	34:a:948:C:H6	1.81	0.44
35:b:89:PHE:CD1	35:b:153:MET:HG2	2.53	0.44
36:c:22:PHE:HA	43:j:13:PHE:HE2	1.83	0.44
36:c:96:VAL:HB	36:c:97:PRO:HD2	1.99	0.44
39:f:21:MET:SD	39:f:25:TYR:OH	2.75	0.44
41:h:28:SER:OG	41:h:56:PRO:O	2.34	0.44
46:m:10:ASP:O	46:m:12:LYS:HD2	2.17	0.44
57:x:42:VAL:HG11	62:x:801:GDP:PA	2.58	0.44
8:A:10:A:C6	8:A:2800:A:C6	3.05	0.44
8:A:244:A:C2	8:A:255:A:C4	3.05	0.44
8:A:458:G:O2'	8:A:459:U:P	2.76	0.44
8:A:930:G:N3	8:A:933:A:C8	2.86	0.44
8:A:957:C:C4	8:A:959:A:C5	3.05	0.44
8:A:1084:A:H4'	8:A:1105:U:O2'	2.18	0.44
8:A:1346:G:C6	8:A:1601:G:C6	3.06	0.44
8:A:1625:C:H2'	8:A:1626:A:O4'	2.18	0.44
8:A:1719:G:H2'	8:A:1720:U:O4'	2.18	0.44
8:A:1720:U:H2'	8:A:1721:G:O4'	2.18	0.44
8:A:2393:U:H5''	19:L:62:PRO:HB3	2.00	0.44
8:A:2463:C:C2	8:A:2464:G:C8	3.06	0.44
8:A:2554:U:H2'	8:A:2555:U:H6	1.82	0.44
8:A:2623:G:O2'	8:A:2825:G:H8	2.01	0.44
8:A:2686:G:C5	8:A:2687:U:C4	3.06	0.44
14:G:98:LYS:HD2	14:G:98:LYS:HA	1.70	0.44
21:N:14:SER:OG	21:N:17:ARG:NH1	2.51	0.44
23:P:47:ILE:HA	23:P:96:LEU:HB2	1.99	0.44
34:a:252:U:O4	34:a:253:A:N6	2.49	0.44
34:a:335:C:H2'	34:a:336:A:C8	2.49	0.44
34:a:416:G:N3	34:a:417:G:C8	2.86	0.44
34:a:431:A:C4	34:a:432:A:C8	3.06	0.44
34:a:451:A:N7	34:a:481:G:C5	2.86	0.44
34:a:593:U:C4	34:a:594:U:O4	2.70	0.44
34:a:674:G:P	39:f:86:ARG:HH21	2.41	0.44
34:a:769:G:H4'	34:a:1513:A:H4'	1.99	0.44
34:a:888:G:N2	34:a:910:C:N4	2.66	0.44
34:a:924:C:C2	34:a:925:G:N7	2.86	0.44
34:a:994:A:C4	34:a:1216:A:H4'	2.53	0.44
34:a:1366:C:H2'	34:a:1367:C:C6	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1522:U:H2'	34:a:1523:G:C8	2.44	0.44
35:b:135:MET:O	35:b:139:GLU:HB2	2.18	0.44
36:c:8:GLY:HA3	47:n:89:MET:SD	2.58	0.44
43:j:83:THR:O	43:j:87:LEU:HG	2.17	0.44
44:k:86:LYS:NZ	44:k:112:VAL:HB	2.32	0.44
51:r:62:ARG:HB3	51:r:69:TYR:CZ	2.53	0.44
53:t:14:GLU:OE2	53:t:17:ARG:NH2	2.49	0.44
3:2:3:ARG:HD3	3:2:3:ARG:HA	1.63	0.43
3:2:5:PHE:CZ	3:2:7:PRO:HB3	2.53	0.43
4:3:40:LYS:NZ	8:A:2419:U:OP1	2.51	0.43
8:A:7:G:H5'	17:J:132:HIS:CE1	2.53	0.43
8:A:86:G:N1	8:A:97:C:N3	2.66	0.43
8:A:395:U:H2'	8:A:396:G:N7	2.32	0.43
8:A:462:C:N4	8:A:463:G:O6	2.51	0.43
8:A:695:G:C2	8:A:768:G:C5	3.05	0.43
8:A:699:A:N7	8:A:734:A:C5	2.86	0.43
8:A:701:G:C2	8:A:732:C:N3	2.86	0.43
8:A:711:G:C6	8:A:721:A:C6	3.06	0.43
8:A:878:A:C2	8:A:900:A:H1'	2.53	0.43
8:A:1314:C:C4	8:A:1339:G:N2	2.86	0.43
8:A:1351:C:H2'	8:A:1352:U:C6	2.52	0.43
8:A:1406:U:H2'	8:A:1407:G:H8	1.83	0.43
8:A:1407:G:C2	8:A:1408:G:C8	3.05	0.43
8:A:1426:G:H3'	8:A:1427:A:H8	1.83	0.43
8:A:1778:U:O4	8:A:1784:A:H1'	2.18	0.43
8:A:1916:A:H1'	8:A:1917:PSU:H5''	2.00	0.43
8:A:2150:C:O2'	8:A:2151:U:OP1	2.28	0.43
8:A:2270:A:H2'	8:A:2271:G:O4'	2.18	0.43
8:A:2313:C:C2	8:A:2314:A:C8	3.05	0.43
8:A:2509:G:C6	8:A:2510:C:C4	3.06	0.43
8:A:2580:PSU:O2'	8:A:2581:G:H5'	2.18	0.43
8:A:2757:A:H2'	8:A:2758:A:H5'	1.98	0.43
9:B:55:U:H2'	9:B:56:G:C8	2.53	0.43
11:D:33:ARG:NH1	11:D:53:GLY:O	2.51	0.43
11:D:149:ASN:OD1	11:D:150:GLN:N	2.36	0.43
13:F:122:ASP:CG	13:F:124:ARG:H	2.26	0.43
17:J:112:GLY:O	17:J:115:GLY:N	2.51	0.43
19:L:109:LYS:HA	19:L:126:ARG:O	2.17	0.43
27:T:65:GLY:N	27:T:79:ASP:OD1	2.51	0.43
34:a:214:C:H2'	34:a:215:C:O2	2.18	0.43
34:a:335:C:H1'	34:a:1433:A:C2	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:500:G:H2'	34:a:501:C:H6	1.83	0.43
34:a:942:G:H21	42:i:125:GLN:NE2	2.16	0.43
34:a:1306:A:H2'	34:a:1307:U:H6	1.83	0.43
34:a:1326:U:H2'	34:a:1327:C:C6	2.52	0.43
35:b:164:ASP:OD2	35:b:167:HIS:HB2	2.18	0.43
36:c:77:GLY:HA3	36:c:82:ASP:OD2	2.18	0.43
39:f:36:ILE:H	39:f:36:ILE:HD12	1.83	0.43
55:v:57:A:H2'	55:v:58:A:H5'	2.00	0.43
57:x:296:GLY:O	57:x:305:PRO:HD2	2.18	0.43
57:x:521:MET:HE3	57:x:604:PHE:N	2.32	0.43
8:A:2:G:C6	8:A:2902:C:N4	2.86	0.43
8:A:402:A:N7	8:A:403:U:N3	2.66	0.43
8:A:529:A:C5	8:A:2042:A:C2	3.05	0.43
8:A:672:C:N3	8:A:809:G:N1	2.66	0.43
8:A:927:A:C6	8:A:928:A:C6	3.06	0.43
8:A:1071:G:H2'	8:A:1071:G:N3	2.33	0.43
8:A:1676:A:H2'	8:A:1677:A:O4'	2.18	0.43
8:A:1710:G:H2'	8:A:1711:A:H8	1.83	0.43
8:A:2064:C:H2'	8:A:2065:C:H6	1.83	0.43
8:A:2065:C:H2'	8:A:2066:C:H6	1.81	0.43
8:A:2127:G:C8	8:A:2162:G:N7	2.87	0.43
8:A:2324:U:H5''	8:A:2325:G:O5'	2.18	0.43
8:A:2584:U:H2'	8:A:2585:U:C2	2.53	0.43
8:A:2806:C:H2'	8:A:2807:U:O4'	2.19	0.43
9:B:42:C:H2'	9:B:43:C:H6	1.82	0.43
10:C:24:HIS:CE1	10:C:79:ARG:HD3	2.53	0.43
10:C:151:GLY:C	10:C:152:GLN:HG3	2.43	0.43
22:O:17:LYS:HD2	22:O:17:LYS:HA	1.83	0.43
22:O:38:GLN:HB2	22:O:47:VAL:CG1	2.48	0.43
34:a:131:A:H2'	34:a:132:C:C6	2.53	0.43
34:a:373:A:O2'	34:a:374:A:H5'	2.19	0.43
34:a:404:G:OP2	37:d:114:ARG:NH2	2.48	0.43
34:a:413:G:H21	34:a:428:G:H1'	1.83	0.43
34:a:570:G:O2'	34:a:819:A:H2'	2.19	0.43
34:a:628:G:C6	34:a:629:A:N6	2.86	0.43
34:a:654:G:C6	34:a:655:A:C4	3.06	0.43
34:a:676:A:H2	34:a:714:G:H22	1.66	0.43
34:a:718:A:C2	51:r:37:LYS:HG2	2.53	0.43
34:a:996:A:C6	34:a:997:U:C4	3.06	0.43
34:a:1297:G:N3	40:g:113:LYS:HD2	2.34	0.43
34:a:1300:G:C6	34:a:1335:U:C5	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:b:17:HIS:HD2	35:b:189:ASN:ND2	2.16	0.43
36:c:50:SER:OG	36:c:71:ARG:HD2	2.17	0.43
37:d:94:GLU:HG3	37:d:190:LEU:HD11	1.99	0.43
44:k:111:ASP:HB3	54:u:3:ILE:HG21	2.00	0.43
45:l:109:ARG:HA	45:l:109:ARG:HD3	1.87	0.43
46:m:11:HIS:HA	46:m:43:LYS:HD2	2.00	0.43
48:o:7:THR:HG23	48:o:30:LEU:HD21	1.99	0.43
53:t:2:ASN:HB2	53:t:7:LYS:HG3	2.00	0.43
55:v:30:G:N1	55:v:41:C:N3	2.65	0.43
55:v:46:A:O2'	55:v:47:U:O4'	2.35	0.43
57:x:38:LYS:HB2	57:x:38:LYS:HE3	1.63	0.43
57:x:64:SER:HA	57:x:87:ASP:O	2.18	0.43
57:x:491:GLU:HG2	57:x:565:LEU:HD22	2.00	0.43
57:x:522:TYR:CZ	57:x:574:GLY:HA3	2.53	0.43
7:6:9:TYR:HD1	7:6:27:THR:HB	1.83	0.43
7:6:65:ASN:HB2	7:6:66:ILE:H	1.70	0.43
8:A:604:G:C4	8:A:625:G:N2	2.86	0.43
8:A:876:C:O2	8:A:901:C:N4	2.46	0.43
8:A:973:A:C8	8:A:1188:U:N3	2.86	0.43
8:A:1496:A:H2'	8:A:1498:C:C4	2.54	0.43
8:A:1819:A:H1'	8:A:1821:A:C6	2.54	0.43
8:A:1903:G:C2	8:A:1904:G:C5	3.06	0.43
8:A:1909:C:O2	8:A:1922:G:N2	2.51	0.43
8:A:1947:C:H2'	8:A:1948:G:C8	2.53	0.43
8:A:2134:A:H3'	8:A:2156:G:H21	1.83	0.43
8:A:2382:G:H8	8:A:2382:G:OP2	2.01	0.43
8:A:2387:U:H4'	30:W:37:ARG:HH12	1.82	0.43
8:A:2513:A:H2'	8:A:2514:U:C6	2.53	0.43
8:A:2702:G:C6	8:A:2703:C:C4	3.06	0.43
8:A:2703:C:H2'	8:A:2704:C:H6	1.84	0.43
8:A:2848:G:H1'	8:A:2868:A:N6	2.34	0.43
8:A:2848:G:C8	23:P:94:ALA:HB2	2.53	0.43
9:B:31:C:H2'	9:B:32:U:H6	1.83	0.43
11:D:122:VAL:HB	11:D:141:ARG:NH2	2.33	0.43
12:E:149:ILE:HB	12:E:188:MET:HG2	2.00	0.43
13:F:4:HIS:HB2	13:F:96:TRP:CD1	2.53	0.43
16:I:20:SER:O	16:I:23:VAL:N	2.49	0.43
34:a:302:G:C2	34:a:303:A:C4	3.07	0.43
34:a:384:G:C6	34:a:385:C:N4	2.86	0.43
34:a:401:C:H2'	34:a:402:G:H8	1.84	0.43
34:a:543:U:H2'	34:a:544:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:560:A:H4'	34:a:561:U:H5''	1.99	0.43
34:a:736:C:OP1	51:r:60:ARG:NH2	2.40	0.43
34:a:915:A:H2'	34:a:916:U:O4'	2.18	0.43
34:a:1190:G:H5''	36:c:175:HIS:NE2	2.33	0.43
34:a:1328:C:OP1	46:m:27:THR:OG1	2.19	0.43
34:a:1409:C:H2'	34:a:1410:A:C8	2.53	0.43
34:a:1413:A:H2'	34:a:1414:U:C6	2.52	0.43
34:a:1516:2MG:H2'	34:a:1518:MA6:OP2	2.17	0.43
55:v:50:U:H2'	55:v:51:C:C6	2.53	0.43
57:x:61:THR:HB	61:x:802:PO4:P	2.58	0.43
8:A:199:A:C6	8:A:2433:A:C8	3.06	0.43
8:A:354:A:H2'	8:A:355:U:H6	1.82	0.43
8:A:458:G:HO2'	8:A:459:U:P	2.40	0.43
8:A:646:U:O4	8:A:2368:C:H1'	2.18	0.43
8:A:1064:C:N4	8:A:1068:G:H4'	2.34	0.43
8:A:1137:G:C4	8:A:1138:G:C8	3.06	0.43
8:A:1213:A:C6	8:A:1237:A:C8	3.07	0.43
8:A:1216:G:H2'	8:A:1217:U:H6	1.83	0.43
8:A:1316:U:H2'	8:A:1317:G:C8	2.54	0.43
8:A:1423:G:N1	8:A:1424:G:C5	2.86	0.43
8:A:1707:G:H2'	8:A:1708:C:C6	2.53	0.43
8:A:1837:C:N4	8:A:1899:A:N7	2.67	0.43
8:A:2319:G:HO2'	8:A:2320:U:P	2.39	0.43
8:A:2373:G:H2'	8:A:2374:C:H6	1.83	0.43
8:A:2405:G:N2	8:A:2412:A:N7	2.59	0.43
8:A:2508:G:O2'	8:A:2554:U:O2'	2.35	0.43
8:A:2531:A:C6	8:A:2532:G:C5	3.07	0.43
9:B:37:C:N4	9:B:48:U:O2	2.41	0.43
10:C:52:HIS:CE1	10:C:218:THR:HA	2.53	0.43
10:C:79:ARG:O	10:C:91:ALA:HA	2.17	0.43
15:H:40:THR:O	15:H:44:ILE:HG13	2.18	0.43
17:J:10:THR:O	17:J:10:THR:OG1	2.36	0.43
19:L:36:LYS:HG2	19:L:41:ARG:HH12	1.83	0.43
21:N:98:LEU:HB2	21:N:112:TYR:HB2	2.00	0.43
23:P:77:SER:OG	23:P:79:VAL:HG22	2.18	0.43
23:P:105:LYS:NZ	23:P:108:ARG:HD2	2.34	0.43
34:a:83:C:H2'	34:a:85:U:OP1	2.18	0.43
34:a:100:G:C6	34:a:101:A:C5	3.07	0.43
34:a:110:C:C2	34:a:111:G:C8	3.06	0.43
34:a:227:G:H2'	34:a:228:A:C8	2.53	0.43
34:a:654:G:C5	34:a:753:A:C6	3.07	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:662:U:H2'	34:a:663:A:C8	2.54	0.43
34:a:678:U:H2'	34:a:679:C:H6	1.83	0.43
34:a:1519:MA6:H8	34:a:1520:C:C4'	2.49	0.43
34:a:1523:G:C4	34:a:1524:C:C5	3.06	0.43
43:j:35:GLN:O	43:j:35:GLN:HG2	2.17	0.43
49:p:19:VAL:HB	49:p:36:VAL:O	2.19	0.43
1:0:3:GLN:HA	8:A:2615:U:C2	2.53	0.43
8:A:7:G:C2	8:A:8:C:C2	3.07	0.43
8:A:18:U:OP2	24:Q:29:ARG:NH2	2.45	0.43
8:A:269:C:C4	8:A:424:G:N1	2.87	0.43
8:A:289:G:C6	8:A:290:U:C4	3.07	0.43
8:A:613:A:H4'	8:A:614:A:C8	2.54	0.43
8:A:678:C:H2'	8:A:679:C:C6	2.52	0.43
8:A:877:A:N6	8:A:899:A:N7	2.67	0.43
8:A:1138:G:H21	17:J:108:MET:HE2	1.82	0.43
8:A:1410:G:C6	8:A:1411:U:C4	3.06	0.43
8:A:1454:C:P	21:N:63:ARG:HH12	2.41	0.43
8:A:1583:A:H4'	8:A:1585:C:C4	2.54	0.43
8:A:1999:C:H4'	8:A:2723:C:O2	2.18	0.43
8:A:2310:C:O2'	8:A:2311:A:H5'	2.17	0.43
8:A:2456:C:N3	8:A:2457:PSU:N1	2.66	0.43
8:A:2735:G:C4	8:A:2736:A:C8	3.07	0.43
8:A:2836:U:C2	8:A:2837:A:N7	2.86	0.43
9:B:117:G:H2'	9:B:118:C:C6	2.54	0.43
14:G:53:PRO:HG3	14:G:61:TRP:CE2	2.53	0.43
26:S:33:LEU:HD23	26:S:33:LEU:HA	1.80	0.43
34:a:198:G:H2'	34:a:199:A:C8	2.47	0.43
34:a:221:C:H2'	34:a:222:C:C6	2.54	0.43
34:a:408:A:C6	34:a:435:A:C6	3.06	0.43
34:a:563:A:C2	34:a:567:G:C5	3.07	0.43
34:a:583:A:C2	34:a:759:A:C6	3.07	0.43
34:a:676:A:H2'	34:a:677:U:H6	1.83	0.43
34:a:717:U:C4	34:a:734:G:N7	2.87	0.43
34:a:1078:U:O2'	38:e:133:ILE:HD12	2.18	0.43
34:a:1490:U:H2'	34:a:1491:G:C8	2.53	0.43
38:e:110:MET:HA	38:e:113:VAL:HG12	2.01	0.43
42:i:91:GLU:C	42:i:93:LEU:H	2.27	0.43
45:l:29:LYS:HE2	45:l:58:ASN:ND2	2.33	0.43
46:m:3:ILE:HG21	46:m:59:VAL:HG21	2.01	0.43
55:v:72:A:C6	55:v:73:A:C6	3.06	0.43
57:x:195:ALA:C	57:x:197:GLN:H	2.26	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:z:4:U:H2'	59:z:5:U:C6	2.53	0.43
8:A:23:G:C6	8:A:518:G:C6	3.07	0.43
8:A:24:G:N1	8:A:517:C:N3	2.66	0.43
8:A:68:G:H2'	8:A:69:C:C6	2.53	0.43
8:A:110:G:C2	8:A:111:A:C5	3.06	0.43
8:A:151:C:H2'	8:A:152:A:H8	1.82	0.43
8:A:191:A:C6	8:A:192:C:N4	2.87	0.43
8:A:252:G:C2	8:A:253:C:C2	3.06	0.43
8:A:270:A:N3	8:A:370:G:C2	2.87	0.43
8:A:573:U:H5''	8:A:575:A:N7	2.33	0.43
8:A:723:C:H2'	8:A:724:U:C6	2.54	0.43
8:A:874:G:N1	8:A:904:G:C6	2.87	0.43
8:A:1034:G:H2'	8:A:1035:U:C6	2.53	0.43
8:A:1530:G:H2'	8:A:1531:C:C6	2.54	0.43
8:A:1653:G:O6	21:N:11:ASN:N	2.49	0.43
8:A:1789:A:H3'	8:A:1790:C:H6	1.83	0.43
8:A:1840:G:C6	8:A:1841:U:C4	3.06	0.43
8:A:1954:G:N1	8:A:1986:C:OP1	2.52	0.43
8:A:2018:G:C2	8:A:2019:A:C5	3.06	0.43
8:A:2142:A:C6	8:A:2150:C:O2	2.71	0.43
8:A:2269:G:C4	8:A:2270:A:C8	3.06	0.43
8:A:2295:C:O2'	8:A:2296:U:H5'	2.19	0.43
8:A:2398:U:H2'	8:A:2399:G:H8	1.83	0.43
8:A:2414:G:C6	8:A:2415:G:N7	2.87	0.43
9:B:95:U:H2'	9:B:96:G:C8	2.54	0.43
12:E:119:ILE:N	12:E:186:VAL:O	2.51	0.43
20:M:30:SER:HA	20:M:133:LYS:HB2	2.01	0.43
24:Q:61:ILE:HG23	24:Q:75:TYR:CZ	2.53	0.43
34:a:66:A:C6	34:a:104:G:C2	3.06	0.43
34:a:533:A:C5	34:a:536:C:C4	3.06	0.43
34:a:711:G:H2'	34:a:712:A:H8	1.84	0.43
34:a:776:G:H22	34:a:802:A:P	2.39	0.43
34:a:953:G:H2'	34:a:954:G:O4'	2.19	0.43
34:a:989:U:H2'	34:a:990:C:C6	2.54	0.43
34:a:1084:G:H1'	34:a:1102:A:N7	2.33	0.43
37:d:105:GLY:C	37:d:107:GLY:H	2.27	0.43
38:e:37:VAL:HA	38:e:47:PHE:HA	2.01	0.43
46:m:6:ILE:HG22	46:m:7:ASN:N	2.30	0.43
7:6:18:CYS:CB	7:6:40:CYS:HB3	2.45	0.43
7:6:31:ASP:OD1	7:6:32:LEU:N	2.52	0.43
8:A:141:G:O2'	8:A:142:A:O5'	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:241:A:C8	8:A:243:U:C4	3.06	0.43
8:A:555:G:HO2'	8:A:556:A:P	2.42	0.43
8:A:1062:G:C4	8:A:1088:A:N7	2.87	0.43
8:A:1372:U:C2	8:A:1373:A:C8	3.06	0.43
8:A:1603:A:OP1	8:A:1604:C:OP2	2.36	0.43
8:A:1668:A:H4'	8:A:1669:A:O5'	2.18	0.43
8:A:1730:C:H4'	8:A:1731:G:O5'	2.18	0.43
8:A:1770:G:C6	8:A:1771:C:C4	3.06	0.43
8:A:1837:C:C2	8:A:1904:G:C2	3.07	0.43
8:A:2000:C:OP1	21:N:5:LYS:NZ	2.32	0.43
8:A:2061:G:H2'	8:A:2501:C:O2'	2.19	0.43
8:A:2080:A:H2'	8:A:2081:U:H6	1.83	0.43
8:A:2134:A:C2	8:A:2135:A:H1'	2.53	0.43
8:A:2135:A:N6	8:A:2156:G:O2'	2.52	0.43
8:A:2478:A:N7	8:A:2529:G:C6	2.86	0.43
8:A:2575:C:O2'	11:D:145:SER:HB2	2.19	0.43
8:A:2804:U:C2	8:A:2805:C:C5	3.07	0.43
14:G:5:LYS:HD3	14:G:61:TRP:CZ3	2.54	0.43
15:H:25:TYR:CD2	15:H:30:LEU:HD11	2.53	0.43
17:J:16:TYR:HD2	17:J:140:LEU:HB2	1.83	0.43
20:M:2:LEU:HD23	20:M:68:PHE:HD1	1.84	0.43
22:O:90:VAL:HG23	22:O:117:PHE:HD2	1.83	0.43
27:T:4:GLU:H	27:T:4:GLU:CD	2.27	0.43
34:a:3:A:H5''	34:a:4:U:O4'	2.19	0.43
34:a:177:G:H2'	34:a:178:C:C6	2.53	0.43
34:a:186:C:C4	34:a:187:G:C5	3.07	0.43
34:a:502:A:H2'	34:a:503:C:H6	1.84	0.43
34:a:531:U:C4	57:x:511:ARG:HA	2.54	0.43
34:a:550:G:C6	34:a:551:U:C4	3.06	0.43
34:a:653:U:HO2'	34:a:654:G:H8	1.64	0.43
34:a:657:U:H2'	34:a:658:C:H6	1.83	0.43
34:a:771:G:C6	34:a:772:U:C4	3.07	0.43
34:a:1142:G:H2'	34:a:1143:G:O4'	2.18	0.43
34:a:1216:A:H2'	34:a:1217:C:H6	1.83	0.43
34:a:1349:A:C4	34:a:1374:A:N6	2.87	0.43
36:c:109:GLU:HB2	36:c:143:LEU:HD22	2.00	0.43
40:g:16:LYS:HB2	40:g:43:TYR:CZ	2.54	0.43
41:h:47:ASP:O	41:h:61:THR:OG1	2.37	0.43
44:k:20:ALA:HA	44:k:32:THR:O	2.19	0.43
46:m:82:LEU:HD12	46:m:82:LEU:HA	1.83	0.43
52:s:2:ARG:HH22	52:s:9:PHE:HB2	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:v:6:G:O2'	55:v:7:G:H5'	2.19	0.43
57:x:470:ASP:O	57:x:474:ARG:N	2.49	0.43
57:x:604:PHE:O	57:x:609:PRO:HD3	2.19	0.43
8:A:238:C:H2'	8:A:239:C:O4'	2.18	0.43
8:A:338:G:C6	8:A:339:U:C4	3.07	0.43
8:A:532:A:H2'	8:A:532:A:N3	2.34	0.43
8:A:681:G:C2	8:A:797:G:C2	3.07	0.43
8:A:807:U:P	19:L:36:LYS:HD2	2.59	0.43
8:A:976:G:C2	8:A:977:G:C8	3.07	0.43
8:A:1042:G:H2'	8:A:1043:C:C6	2.54	0.43
8:A:1205:A:C8	12:E:165:HIS:HD2	2.37	0.43
8:A:1219:U:H2'	8:A:1220:G:C8	2.53	0.43
8:A:1252:G:O2'	8:A:1253:A:H5''	2.19	0.43
8:A:1340:U:OP2	27:T:82:LYS:NZ	2.52	0.43
8:A:1464:G:H2'	8:A:1465:G:C8	2.53	0.43
8:A:1626:A:OP2	8:A:1626:A:H8	2.01	0.43
8:A:1926:U:O4	8:A:1928:A:N6	2.52	0.43
8:A:2028:U:H2'	8:A:2029:G:H8	1.84	0.43
8:A:2107:G:N3	8:A:2107:G:H2'	2.34	0.43
8:A:2121:G:N1	8:A:2178:C:N3	2.66	0.43
8:A:2316:G:H4'	13:F:124:ARG:CZ	2.48	0.43
8:A:2554:U:H2'	8:A:2555:U:C6	2.54	0.43
8:A:2590:A:H2'	8:A:2591:C:H6	1.82	0.43
9:B:46:A:C5	9:B:47:C:C5	3.07	0.43
9:B:68:C:H2'	9:B:69:G:O4'	2.18	0.43
10:C:92:LEU:HB2	10:C:102:TYR:HE1	1.83	0.43
13:F:107:VAL:N	13:F:108:PRO:HD2	2.34	0.43
14:G:158:GLY:O	14:G:162:ARG:NH1	2.47	0.43
19:L:101:ILE:HG13	19:L:102:GLY:H	1.83	0.43
20:M:1:MET:HE1	20:M:44:ARG:HA	2.01	0.43
26:S:77:ASP:OD1	26:S:77:ASP:N	2.44	0.43
34:a:641:U:O2	34:a:643:C:N4	2.52	0.43
34:a:687:A:C2	34:a:704:A:C6	3.06	0.43
34:a:981:U:OP2	47:n:8:ARG:NH1	2.50	0.43
34:a:1219:A:H2'	34:a:1220:G:C8	2.54	0.43
34:a:1253:G:H2'	34:a:1254:A:C8	2.53	0.43
34:a:1302:C:C4	46:m:16:ILE:HG13	2.54	0.43
34:a:1531:A:O5'	34:a:1531:A:H8	2.02	0.43
35:b:13:VAL:HG21	35:b:211:LEU:HD13	2.01	0.43
35:b:59:ILE:HA	35:b:62:ARG:HD2	2.01	0.43
37:d:104:MET:SD	37:d:179:GLY:HA3	2.58	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:f:21:MET:HB3	39:f:25:TYR:CE2	2.54	0.43
41:h:93:LYS:HE3	41:h:116:ARG:NH1	2.34	0.43
43:j:9:ARG:NH2	43:j:71:LEU:HD21	2.33	0.43
57:x:548:TYR:CD2	57:x:589:GLU:HB2	2.53	0.43
4:3:30:HIS:CE1	4:3:31:ILE:HG13	2.54	0.43
6:5:68:PRO:CB	6:5:72:LEU:HA	2.49	0.43
8:A:212:G:H2'	8:A:213:A:C8	2.54	0.43
8:A:782:A:C8	10:C:219:VAL:HG11	2.54	0.43
8:A:1073:A:H1'	8:A:1095:A:H5'	2.01	0.43
8:A:1188:U:C2	8:A:1189:A:C8	3.07	0.43
8:A:1259:G:H2'	8:A:1260:A:C8	2.54	0.43
8:A:1294:U:H2'	8:A:1295:C:H6	1.84	0.43
8:A:1389:G:N2	8:A:1399:C:C2	2.86	0.43
8:A:1710:G:H2'	8:A:1711:A:C8	2.54	0.43
8:A:1731:G:C6	8:A:1733:G:C5	3.06	0.43
8:A:1789:A:C6	8:A:1790:C:C4	3.06	0.43
8:A:1817:G:C5	8:A:1818:U:C5	3.07	0.43
8:A:1987:A:C2	8:A:1988:G:C5	3.07	0.43
8:A:1994:C:H2'	8:A:1995:U:C6	2.54	0.43
8:A:2074:U:C2	8:A:2436:G:N2	2.87	0.43
8:A:2092:U:OP2	15:H:28:ASN:ND2	2.33	0.43
8:A:2247:A:C4	8:A:2248:C:C5	3.06	0.43
8:A:2272:U:H5''	8:A:2273:A:OP1	2.18	0.43
8:A:2378:A:O2'	22:O:91:SER:OG	2.24	0.43
8:A:2451:A:O2'	56:w:76:A:H3'	2.19	0.43
8:A:2864:G:N3	8:A:2865:U:C5	2.87	0.43
14:G:114:HIS:HE1	14:G:146:ASP:HB3	1.84	0.43
29:V:11:GLU:HG2	29:V:16:ALA:HB1	2.01	0.43
34:a:161:A:H2'	34:a:162:A:O4'	2.19	0.43
34:a:488:C:H2'	34:a:489:C:C6	2.54	0.43
34:a:624:C:H2'	34:a:625:U:O4'	2.19	0.43
34:a:661:G:H2'	34:a:662:U:C6	2.53	0.43
34:a:1060:U:H2'	34:a:1061:G:C8	2.50	0.43
34:a:1232:U:OP1	42:i:125:GLN:HG3	2.19	0.43
38:e:17:VAL:HA	38:e:34:ALA:HA	2.01	0.43
38:e:149:PRO:HA	38:e:152:VAL:HG12	2.01	0.43
41:h:17:GLN:HG3	41:h:71:VAL:HB	2.00	0.43
48:o:56:LEU:HA	48:o:56:LEU:HD23	1.68	0.43
57:x:436:ARG:HD3	57:x:476:PHE:HE2	1.83	0.43
57:x:442:PRO:O	57:x:445:ARG:NE	2.51	0.43
57:x:544:ILE:HG13	57:x:549:ILE:HG13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:5:42:ARG:HA	16:I:119:ALA:HA	2.01	0.43
6:5:45:GLY:HA2	6:5:49:GLY:O	2.19	0.43
8:A:175:G:H2'	8:A:176:A:C8	2.54	0.43
8:A:349:U:H2'	8:A:350:G:H8	1.83	0.43
8:A:350:G:C6	8:A:351:C:C4	3.06	0.43
8:A:368:A:N7	8:A:369:U:N3	2.67	0.43
8:A:457:A:H2	8:A:458:G:N2	2.14	0.43
8:A:526:A:OP1	8:A:527:C:OP1	2.37	0.43
8:A:538:A:C6	8:A:556:A:N7	2.87	0.43
8:A:721:A:H2'	8:A:722:A:C8	2.54	0.43
8:A:724:U:H2'	8:A:725:G:C8	2.53	0.43
8:A:784:G:C5	8:A:792:A:N7	2.87	0.43
8:A:813:U:HO2'	8:A:1225:G:HO2'	1.60	0.43
8:A:875:G:O6	8:A:902:C:N4	2.48	0.43
8:A:1062:G:H3'	8:A:1064:C:C2	2.54	0.43
8:A:1086:A:H4'	8:A:1087:G:C4	2.53	0.43
8:A:1130:U:H5	8:A:2026:U:P	2.42	0.43
8:A:1734:G:C2	8:A:1735:A:C5	3.07	0.43
8:A:1780:A:P	8:A:1782:U:OP1	2.76	0.43
8:A:2138:G:H3'	8:A:2139:U:H5''	2.01	0.43
8:A:2328:A:H2'	8:A:2329:U:C5	2.53	0.43
8:A:2494:G:C2	8:A:2495:G:C8	3.06	0.43
8:A:2513:A:C6	8:A:2514:U:C4	3.06	0.43
8:A:2739:U:H5''	8:A:2763:G:O6	2.19	0.43
10:C:90:ILE:HD12	10:C:102:TYR:CD2	2.53	0.43
11:D:46:ARG:HH22	11:D:89:GLU:HG3	1.84	0.43
13:F:40:GLY:HA2	13:F:84:ILE:HB	2.00	0.43
20:M:53:MET:HE1	20:M:103:TYR:HB2	2.00	0.43
31:X:65:THR:O	31:X:69:GLU:HG3	2.19	0.43
34:a:598:U:H4'	41:h:85:TYR:CD2	2.54	0.43
34:a:693:G:C6	34:a:694:A:C5	3.06	0.43
34:a:903:G:C5	34:a:904:U:C5	3.07	0.43
34:a:939:G:H2'	34:a:940:C:C6	2.54	0.43
34:a:1109:C:OP2	36:c:175:HIS:ND1	2.31	0.43
34:a:1121:U:C2	34:a:1122:U:C5	3.06	0.43
34:a:1176:A:C6	34:a:1177:G:C6	3.06	0.43
34:a:1309:G:O6	34:a:1329:A:N6	2.51	0.43
34:a:1317:C:H4'	47:n:48:LEU:HD21	2.01	0.43
34:a:1328:C:H2'	34:a:1329:A:C8	2.54	0.43
34:a:1420:U:H2'	34:a:1421:G:H8	1.84	0.43
34:a:1454:G:C4	34:a:1455:G:C8	3.06	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1521:C:H2'	34:a:1522:U:H6	1.84	0.43
37:d:8:LEU:HA	37:d:8:LEU:HD23	1.86	0.43
39:f:37:HIS:HB3	39:f:97:THR:HG22	2.01	0.43
52:s:29:PRO:HB3	52:s:47:THR:HG23	2.01	0.43
55:v:36:U:H3	59:z:1:A:H61	1.67	0.43
55:v:44:A:H2'	55:v:45:G:O4'	2.18	0.43
57:x:415:ILE:HD11	57:x:666:ALA:HB3	2.01	0.43
57:x:548:TYR:O	57:x:552:VAL:HG23	2.19	0.43
1:0:8:THR:CG2	8:A:2020:A:H5'	2.49	0.42
8:A:79:C:HO2'	8:A:346:A:HO2'	1.60	0.42
8:A:723:C:H2'	8:A:724:U:H6	1.84	0.42
8:A:942:G:OP2	19:L:39:LYS:NZ	2.38	0.42
8:A:1252:G:N2	24:Q:32:ARG:HG2	2.33	0.42
8:A:1275:A:C4	21:N:16:HIS:CD2	3.06	0.42
8:A:1307:A:C6	8:A:1308:A:N7	2.87	0.42
8:A:1429:G:C2	8:A:1430:G:C5	3.06	0.42
8:A:1910:G:N7	8:A:1921:G:C2	2.87	0.42
8:A:2062:A:N1	58:y:102:PHE:HE1	2.17	0.42
8:A:2072:C:H2'	8:A:2073:C:H6	1.82	0.42
8:A:2080:A:C4	8:A:2081:U:C5	3.07	0.42
8:A:2127:G:H2'	8:A:2127:G:N3	2.34	0.42
8:A:2495:G:C6	8:A:2496:C:N4	2.87	0.42
8:A:2647:U:N3	8:A:2674:G:O6	2.52	0.42
10:C:257:ARG:HD3	10:C:269:ARG:HH12	1.83	0.42
11:D:3:GLY:C	11:D:4:LEU:HD22	2.44	0.42
11:D:156:PHE:CD1	17:J:81:ILE:HD13	2.54	0.42
14:G:43:LYS:HB2	14:G:43:LYS:HE2	1.79	0.42
15:H:25:TYR:CE2	15:H:30:LEU:HD21	2.54	0.42
18:K:112:PHE:HB3	18:K:115:ILE:HD12	2.01	0.42
22:O:52:SER:O	22:O:55:GLU:HB2	2.19	0.42
24:Q:48:ASP:HA	24:Q:51:GLN:HB2	2.01	0.42
31:X:17:ARG:NH1	31:X:23:ALA:HB2	2.34	0.42
34:a:285:C:C2	34:a:286:C:C5	3.07	0.42
34:a:592:G:H2'	34:a:593:U:H6	1.84	0.42
34:a:689:C:C2	34:a:690:G:C8	3.07	0.42
34:a:717:U:N3	34:a:734:G:N7	2.67	0.42
34:a:736:C:H2'	34:a:737:C:C6	2.53	0.42
34:a:1099:G:H2'	34:a:1100:C:C6	2.53	0.42
35:b:82:ALA:HB2	35:b:213:LEU:HB3	2.01	0.42
36:c:180:ASP:OD1	36:c:181:ILE:N	2.52	0.42
37:d:125:ASN:ND2	37:d:140:ASP:OD1	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:l:23:LEU:HA	45:l:23:LEU:HD23	1.66	0.42
46:m:65:GLU:HG3	46:m:66:GLY:H	1.83	0.42
47:n:16:ALA:O	47:n:20:PHE:HB2	2.19	0.42
55:v:53:G:H3'	55:v:54:5MU:H73	2.00	0.42
57:x:322:LYS:O	57:x:334:PHE:N	2.50	0.42
57:x:531:LYS:C	57:x:533:TYR:H	2.27	0.42
7:6:5:ILE:O	13:F:63:LYS:HB2	2.19	0.42
8:A:111:A:C6	8:A:112:U:C4	3.06	0.42
8:A:146:A:C6	8:A:147:C:C4	3.08	0.42
8:A:185:G:C6	8:A:212:G:N1	2.87	0.42
8:A:246:C:O2'	8:A:385:C:H4'	2.18	0.42
8:A:392:U:H2'	8:A:393:C:C6	2.54	0.42
8:A:406:G:C4	8:A:407:G:C8	3.07	0.42
8:A:467:G:H8	8:A:467:G:O5'	2.02	0.42
8:A:596:U:H2'	8:A:597:G:H8	1.84	0.42
8:A:1258:U:H2'	8:A:1259:G:C8	2.54	0.42
8:A:1387:A:H2'	8:A:1388:G:H8	1.83	0.42
8:A:1733:G:N1	8:A:1734:G:C5	2.87	0.42
8:A:1831:G:H2'	8:A:1832:C:C6	2.54	0.42
8:A:2078:C:H2'	8:A:2079:U:C6	2.54	0.42
8:A:2139:U:C4	8:A:2154:A:C6	3.07	0.42
8:A:2286:G:H1'	8:A:2287:A:C2	2.53	0.42
12:E:105:LEU:HD23	12:E:105:LEU:HA	1.85	0.42
14:G:95:ALA:N	14:G:127:GLN:O	2.52	0.42
14:G:97:VAL:HB	14:G:102:ILE:HD13	2.01	0.42
17:J:109:LEU:HD23	17:J:109:LEU:HA	1.75	0.42
18:K:44:LYS:O	18:K:45:GLU:HG3	2.19	0.42
19:L:78:ARG:HG2	19:L:113:ALA:HB3	2.00	0.42
34:a:26:A:H61	34:a:558:G:H1'	1.83	0.42
34:a:39:G:C6	34:a:40:C:C4	3.08	0.42
34:a:392:C:H2'	34:a:393:A:O4'	2.19	0.42
34:a:687:A:C2	34:a:704:A:C5	3.07	0.42
34:a:842:U:H4'	34:a:846:G:C2	2.54	0.42
34:a:949:A:C6	34:a:1233:G:C2	3.07	0.42
34:a:1109:C:C2	34:a:1110:A:C8	3.07	0.42
34:a:1110:A:C4	34:a:1111:A:C8	3.07	0.42
34:a:1164:G:H2'	34:a:1165:U:C6	2.54	0.42
34:a:1250:A:C8	34:a:1287:A:N7	2.87	0.42
34:a:1260:G:O5'	34:a:1284:C:H4'	2.19	0.42
34:a:1360:A:C6	34:a:1361:G:C5	3.07	0.42
34:a:1379:G:O6	40:g:1:PRO:HA	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:d:170:LEU:HD23	37:d:170:LEU:HA	1.74	0.42
38:e:95:MET:HA	38:e:123:LEU:O	2.19	0.42
38:e:104:ILE:O	38:e:111:ARG:NH2	2.52	0.42
39:f:4:TYR:CE1	39:f:91:ARG:HG2	2.54	0.42
39:f:67:PRO:HG2	39:f:70:VAL:HG23	2.00	0.42
40:g:19:SER:HB3	40:g:22:LEU:HB2	2.01	0.42
44:k:51:PHE:HB3	44:k:55:ARG:O	2.19	0.42
46:m:16:ILE:O	46:m:19:THR:OG1	2.36	0.42
48:o:63:ARG:HA	48:o:63:ARG:HD2	1.65	0.42
2:1:33:LEU:HA	2:1:33:LEU:HD23	1.78	0.42
4:3:36:ALA:O	4:3:40:LYS:HE2	2.19	0.42
8:A:72:U:O2	32:Y:55:THR:OG1	2.37	0.42
8:A:677:A:N6	8:A:802:A:N7	2.67	0.42
8:A:738:G:N2	8:A:1981:A:H2	2.18	0.42
8:A:738:G:C6	8:A:739:A:C2	3.07	0.42
8:A:796:C:H2'	8:A:797:G:C8	2.54	0.42
8:A:1045:C:C4	8:A:1111:A:C8	3.07	0.42
8:A:1142:A:C5	8:A:1144:A:C5	3.07	0.42
8:A:1310:G:N2	8:A:1313:U:O4	2.51	0.42
8:A:1721:G:O2'	8:A:1739:A:N6	2.52	0.42
8:A:2096:C:H2'	8:A:2097:A:H8	1.84	0.42
8:A:2108:A:H3'	8:A:2109:U:C6	2.54	0.42
8:A:2458:G:C2	8:A:2490:G:N2	2.87	0.42
8:A:2674:G:C2	8:A:2675:A:C5	3.07	0.42
9:B:2:G:C2	9:B:119:A:C2	3.07	0.42
10:C:259:ASN:O	10:C:261:ARG:N	2.52	0.42
13:F:35:LEU:HD23	13:F:56:LEU:HD22	2.01	0.42
14:G:49:LEU:HB3	14:G:51:PHE:CZ	2.53	0.42
20:M:25:ASP:OD1	20:M:26:VAL:N	2.52	0.42
20:M:82:MET:HE2	20:M:82:MET:HA	2.00	0.42
21:N:71:ARG:HE	21:N:71:ARG:HB3	1.62	0.42
21:N:77:ALA:O	21:N:81:ASN:HB2	2.20	0.42
29:V:20:LEU:HA	29:V:20:LEU:HD23	1.70	0.42
34:a:144:G:C2	34:a:179:A:N6	2.87	0.42
34:a:155:A:N6	34:a:167:A:N6	2.67	0.42
34:a:323:U:O4	34:a:327:A:N7	2.53	0.42
34:a:582:C:C2	34:a:583:A:C8	3.08	0.42
34:a:593:U:H2'	34:a:594:U:C6	2.54	0.42
34:a:784:A:H2'	34:a:785:G:O4'	2.18	0.42
34:a:895:G:C5	34:a:896:C:C5	3.07	0.42
34:a:947:G:C2	34:a:948:C:C2	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1129:C:H4'	42:i:17:ARG:NH2	2.34	0.42
34:a:1349:A:C4	34:a:1350:A:C8	3.08	0.42
35:b:110:ILE:CD1	35:b:147:LEU:HD23	2.49	0.42
39:f:6:ILE:HB	39:f:62:MET:HG3	1.99	0.42
46:m:41:ASP:OD1	46:m:41:ASP:N	2.47	0.42
53:t:30:PHE:O	53:t:33:LYS:HB2	2.20	0.42
55:v:42:G:O2'	55:v:43:A:O5'	2.36	0.42
8:A:80:G:C2	8:A:81:G:C5	3.07	0.42
8:A:367:G:C6	8:A:368:A:N6	2.87	0.42
8:A:408:G:H1	8:A:419:U:H3	1.66	0.42
8:A:555:G:O2'	8:A:556:A:C8	2.73	0.42
8:A:572:A:N1	8:A:2033:A:C2	2.87	0.42
8:A:817:C:H2'	8:A:818:G:O4'	2.19	0.42
8:A:923:G:H4'	30:W:25:GLU:OE1	2.20	0.42
8:A:949:G:C6	8:A:969:G:N1	2.88	0.42
8:A:1353:A:C5	8:A:1378:A:C6	3.07	0.42
8:A:1429:G:H2'	8:A:1430:G:C8	2.50	0.42
8:A:1791:A:N6	8:A:1828:G:O2'	2.43	0.42
8:A:2018:G:N1	8:A:2019:A:C5	2.87	0.42
8:A:2130:U:H4'	8:A:2134:A:O2'	2.19	0.42
8:A:2316:G:H4'	13:F:124:ARG:NH2	2.35	0.42
8:A:2417:C:H2'	8:A:2418:A:H8	1.84	0.42
8:A:2439:A:N6	8:A:2585:U:HO2'	2.17	0.42
8:A:2461:A:H1'	8:A:2492:U:N3	2.35	0.42
8:A:2510:C:C4	8:A:2511:U:C4	3.07	0.42
8:A:2783:U:H2'	8:A:2784:U:C6	2.53	0.42
9:B:11:C:HO2'	9:B:15:A:H61	1.62	0.42
19:L:77:ILE:HG13	19:L:95:LEU:HD13	2.01	0.42
25:R:78:ARG:HD3	25:R:78:ARG:HA	1.91	0.42
34:a:75:G:C6	34:a:76:G:C8	3.07	0.42
34:a:237:G:H2'	34:a:238:A:C8	2.55	0.42
34:a:571:U:H3'	34:a:572:A:H5''	2.00	0.42
34:a:655:A:C4	34:a:656:G:C8	3.08	0.42
34:a:656:G:O2'	48:o:27:GLN:OE1	2.35	0.42
34:a:845:A:H3'	34:a:845:A:N3	2.34	0.42
34:a:1055:A:O2'	36:c:160:GLU:O	2.32	0.42
34:a:1225:A:C2	34:a:1226:C:C4	3.07	0.42
34:a:1256:A:N1	34:a:1278:G:N2	2.68	0.42
34:a:1357:A:H2'	34:a:1358:U:O4'	2.20	0.42
34:a:1432:G:O2'	34:a:1433:A:H8	2.02	0.42
36:c:149:LYS:HE3	36:c:200:TRP:CE3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:e:81:GLN:NE2	38:e:148:SER:OG	2.53	0.42
46:m:95:PRO:HB3	46:m:99:GLN:NE2	2.33	0.42
55:v:70:G:H2'	55:v:71:C:C6	2.55	0.42
57:x:26:THR:HG21	57:x:49:MET:HE3	2.00	0.42
8:A:152:A:C6	8:A:153:U:C4	3.08	0.42
8:A:417:C:H2'	8:A:418:C:H6	1.84	0.42
8:A:715:A:HO2'	8:A:716:A:P	2.41	0.42
8:A:792:A:C4	8:A:2440:C:N3	2.87	0.42
8:A:820:A:H2	8:A:943:A:H4'	1.81	0.42
8:A:1030:C:C4	8:A:1125:G:N2	2.88	0.42
8:A:1096:A:H4'	8:A:1096:A:OP1	2.19	0.42
8:A:1220:G:C6	8:A:1221:C:C4	3.07	0.42
8:A:1243:C:H1'	19:L:4:ASN:O	2.19	0.42
8:A:1361:G:C6	8:A:1362:C:C4	3.07	0.42
8:A:1612:C:C4	8:A:1613:G:N7	2.87	0.42
8:A:1716:U:H2'	8:A:1717:A:C8	2.55	0.42
8:A:2136:G:H1	8:A:2155:U:C2'	2.33	0.42
8:A:2453:A:H2'	8:A:2454:G:C8	2.53	0.42
8:A:2532:G:C6	8:A:2533:U:C4	3.08	0.42
8:A:2609:U:O2'	8:A:2610:C:H5'	2.20	0.42
8:A:2624:G:C2	8:A:2625:G:C8	3.08	0.42
13:F:122:ASP:OD2	13:F:126:ASN:ND2	2.37	0.42
21:N:21:PHE:CD2	21:N:47:VAL:HG21	2.54	0.42
22:O:69:ASP:OD1	22:O:70:ALA:N	2.53	0.42
28:U:94:PHE:HA	28:U:101:THR:HA	2.02	0.42
29:V:3:THR:HG23	29:V:62:THR:HG23	2.00	0.42
31:X:70:LEU:HD23	31:X:77:TYR:CD2	2.55	0.42
34:a:22:G:H2'	34:a:23:C:C6	2.54	0.42
34:a:71:A:N1	34:a:72:A:C5	2.87	0.42
34:a:75:G:H3'	34:a:76:G:H5''	2.01	0.42
34:a:86:G:O2'	34:a:87:C:H3'	2.20	0.42
34:a:537:G:H2'	34:a:538:G:C8	2.53	0.42
34:a:665:A:H2'	34:a:732:C:O2	2.20	0.42
34:a:767:A:C4	34:a:768:A:C8	3.07	0.42
34:a:958:A:OP1	52:s:54:ARG:NH1	2.52	0.42
34:a:1152:A:C6	34:a:1153:G:C5	3.08	0.42
34:a:1163:A:C6	34:a:1174:G:C6	3.08	0.42
34:a:1366:C:H2'	34:a:1367:C:H6	1.85	0.42
43:j:6:ILE:N	43:j:76:ILE:O	2.53	0.42
50:q:18:LYS:HG2	50:q:48:GLU:O	2.18	0.42
50:q:74:LEU:HD23	50:q:75:VAL:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:x:50:ASP:HB3	57:x:55:GLU:HG3	2.00	0.42
57:x:185:VAL:HG23	57:x:186:LYS:N	2.34	0.42
2:1:37:LYS:HD3	2:1:37:LYS:HA	1.80	0.42
7:6:62:LYS:HA	7:6:62:LYS:HD3	1.59	0.42
8:A:463:G:N1	8:A:467:G:O6	2.52	0.42
8:A:631:A:H8	8:A:631:A:OP1	2.02	0.42
8:A:869:G:C6	8:A:870:U:C4	3.07	0.42
8:A:878:A:H5'	8:A:879:G:OP2	2.19	0.42
8:A:1048:A:H2'	8:A:1049:C:C6	2.50	0.42
8:A:1061:U:H5''	16:I:55:PRO:HA	2.02	0.42
8:A:1115:G:C4	8:A:1116:G:C8	3.07	0.42
8:A:1524:G:C4	8:A:1525:A:C8	3.08	0.42
8:A:1594:U:H2'	8:A:1595:C:C6	2.54	0.42
8:A:1676:A:H8	8:A:1676:A:O5'	2.03	0.42
8:A:1722:A:C6	8:A:1739:A:C8	3.08	0.42
8:A:1733:G:C2	8:A:1734:G:C5	3.08	0.42
8:A:1799:G:N2	10:C:152:GLN:O	2.52	0.42
8:A:1817:G:OP1	10:C:61:TYR:OH	2.32	0.42
8:A:1847:G:N2	8:A:1894:C:O2	2.52	0.42
8:A:2133:G:H1'	8:A:2157:G:C6	2.55	0.42
8:A:2398:U:H2'	8:A:2399:G:C8	2.54	0.42
8:A:2747:G:N2	8:A:2757:A:N7	2.66	0.42
8:A:2763:G:H5''	8:A:2764:A:OP1	2.19	0.42
8:A:2801:G:C4	8:A:2802:G:C8	3.07	0.42
9:B:2:G:C6	9:B:119:A:N1	2.88	0.42
9:B:8:C:OP1	22:O:15:ARG:NH2	2.53	0.42
12:E:46:GLN:HB2	12:E:86:ALA:CB	2.50	0.42
34:a:101:A:C4	34:a:102:G:C8	3.07	0.42
34:a:109:A:C4	34:a:327:A:C2	3.07	0.42
34:a:408:A:H2'	34:a:409:U:C6	2.55	0.42
34:a:613:C:H2'	34:a:614:C:H6	1.84	0.42
34:a:836:G:C5	34:a:851:G:C6	3.07	0.42
34:a:925:G:C2	34:a:927:G:C8	3.08	0.42
34:a:1258:G:H2'	34:a:1259:C:C6	2.54	0.42
34:a:1270:G:C2	34:a:1271:A:C5	3.07	0.42
34:a:1351:U:H3	34:a:1371:G:H1	1.67	0.42
36:c:22:PHE:HA	43:j:13:PHE:CE2	2.54	0.42
40:g:131:GLY:O	40:g:134:VAL:HG12	2.20	0.42
43:j:40:ILE:O	43:j:72:ARG:HA	2.20	0.42
52:s:39:ILE:HG23	52:s:43:MET:SD	2.59	0.42
57:x:343:ASN:HB3	57:x:374:LYS:NZ	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:664:G:C2	8:A:665:U:C2	3.08	0.42
8:A:802:A:C5	8:A:803:U:C4	3.08	0.42
8:A:1168:G:C6	8:A:1182:G:N1	2.87	0.42
8:A:1169:A:H2'	8:A:1170:C:O4'	2.20	0.42
8:A:1342:A:HO2'	8:A:1344:U:P	2.42	0.42
8:A:1385:A:C4	8:A:1403:A:C2	3.07	0.42
8:A:1667:G:H22	8:A:1994:C:H42	1.68	0.42
8:A:1790:C:H2'	8:A:1791:A:N7	2.35	0.42
8:A:1948:G:N1	8:A:1959:G:C6	2.88	0.42
8:A:2278:A:C5	8:A:2279:G:C8	3.08	0.42
8:A:2595:G:N1	8:A:2599:G:C6	2.87	0.42
8:A:2722:G:H2'	8:A:2723:C:C6	2.54	0.42
8:A:2843:G:N2	8:A:2875:C:C2	2.87	0.42
9:B:2:G:C4	9:B:3:C:C5	3.07	0.42
9:B:24:G:N7	9:B:56:G:C4	2.88	0.42
10:C:80:LEU:HD23	10:C:91:ALA:HB2	2.02	0.42
13:F:64:PRO:HA	13:F:88:VAL:HG12	2.02	0.42
16:I:29:GLN:O	57:x:646:SER:HB2	2.20	0.42
20:M:58:LYS:C	20:M:60:GLN:N	2.77	0.42
25:R:32:THR:O	25:R:32:THR:OG1	2.36	0.42
27:T:39:THR:HG22	27:T:41:ALA:H	1.84	0.42
29:V:45:ASP:OD1	29:V:46:LYS:N	2.51	0.42
31:X:70:LEU:HD12	31:X:73:ARG:HH11	1.84	0.42
34:a:68:G:H4'	34:a:171:A:H1'	2.02	0.42
34:a:272:C:H2'	34:a:273:U:H6	1.84	0.42
34:a:374:A:C5	34:a:375:U:C5	3.08	0.42
34:a:635:A:C6	34:a:636:U:C4	3.08	0.42
34:a:650:G:C6	34:a:651:C:C4	3.08	0.42
34:a:684:U:C4	34:a:685:G:C5	3.08	0.42
34:a:774:G:C2	34:a:806:C:C2	3.08	0.42
34:a:832:G:C2	34:a:855:U:C2	3.07	0.42
34:a:843:U:H3'	34:a:844:G:C8	2.55	0.42
34:a:951:G:C6	34:a:1231:G:C6	3.08	0.42
34:a:1151:A:O4'	43:j:41:PRO:HB3	2.19	0.42
34:a:1161:C:C2	34:a:1162:C:C5	3.08	0.42
34:a:1438:G:H1	34:a:1463:U:H3	1.67	0.42
34:a:1516:2MG:N2	34:a:1519:MA6:OP2	2.50	0.42
35:b:140:LEU:O	35:b:144:GLU:HG3	2.20	0.42
36:c:2:GLN:HG3	36:c:3:LYS:HZ2	1.85	0.42
37:d:123:MET:HG3	37:d:145:ARG:HD2	2.01	0.42
37:d:172:VAL:HG23	37:d:178:GLU:O	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:f:2:ARG:O	39:f:65:GLU:HA	2.19	0.42
55:v:43:A:HO2'	55:v:44:A:P	2.41	0.42
57:x:298:LEU:N	57:x:305:PRO:HB2	2.35	0.42
57:x:560:LEU:HD12	57:x:570:VAL:HB	2.01	0.42
2:1:29:LYS:HG3	2:1:31:GLU:HG3	2.02	0.42
8:A:4:U:H2'	8:A:5:A:H8	1.84	0.42
8:A:61:C:O4'	32:Y:40:SER:HB3	2.20	0.42
8:A:174:U:C2	8:A:175:G:C8	3.08	0.42
8:A:199:A:N6	8:A:2434:A:C6	2.88	0.42
8:A:304:U:H2'	8:A:305:C:C6	2.54	0.42
8:A:328:U:H4'	28:U:65:GLN:CD	2.44	0.42
8:A:363:G:H2'	8:A:364:C:H6	1.83	0.42
8:A:495:G:N2	26:S:61:ASN:HD21	2.17	0.42
8:A:520:G:C2	8:A:521:U:C2	3.08	0.42
8:A:534:U:O2'	24:Q:48:ASP:OD2	2.21	0.42
8:A:607:U:C5	8:A:620:G:C4	3.08	0.42
8:A:695:G:C2	8:A:768:G:C6	3.07	0.42
8:A:824:U:O4	8:A:825:A:N6	2.52	0.42
8:A:877:A:H8	8:A:877:A:OP2	2.02	0.42
8:A:1040:A:C2	8:A:1041:G:H1'	2.55	0.42
8:A:1186:G:C2	8:A:1187:G:C4	3.07	0.42
8:A:1477:A:H3'	8:A:1478:G:O4'	2.19	0.42
8:A:1689:A:N6	8:A:1697:G:H2'	2.34	0.42
8:A:1795:C:H2'	8:A:1796:U:C6	2.54	0.42
8:A:2057:G:C6	8:A:2612:C:N3	2.87	0.42
8:A:2087:G:C2	8:A:2088:A:C5	3.08	0.42
8:A:2209:G:C6	8:A:2210:U:C4	3.07	0.42
8:A:2543:G:C2	8:A:2544:G:C4	3.08	0.42
8:A:2574:G:O2'	11:D:148:GLN:O	2.32	0.42
8:A:2630:G:H2'	8:A:2631:G:H8	1.83	0.42
8:A:2630:G:C5	8:A:2894:G:C6	3.07	0.42
8:A:2638:G:C4	8:A:2775:G:N2	2.88	0.42
10:C:62:ARG:HB3	10:C:102:TYR:CD2	2.54	0.42
10:C:130:PRO:C	10:C:132:ARG:H	2.27	0.42
10:C:141:HIS:HD2	10:C:194:VAL:HG22	1.83	0.42
10:C:144:GLU:HG2	10:C:151:GLY:CA	2.50	0.42
14:G:21:GLN:NE2	14:G:37:ASN:O	2.52	0.42
15:H:30:LEU:HA	15:H:35:LYS:HB2	2.02	0.42
15:H:137:GLU:HG2	15:H:137:GLU:O	2.20	0.42
17:J:16:TYR:HE1	17:J:52:ASP:HB3	1.85	0.42
19:L:14:LYS:HA	19:L:14:LYS:HD2	1.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:N:13:ASN:OD1	21:N:13:ASN:N	2.52	0.42
22:O:36:TYR:CD1	22:O:52:SER:HB2	2.54	0.42
27:T:91:GLN:HG2	27:T:92:ASN:H	1.84	0.42
34:a:207:C:H2'	34:a:208:U:H4'	2.02	0.42
34:a:424:G:C2	34:a:425:G:C5	3.07	0.42
34:a:461:A:C5	34:a:462:G:N7	2.87	0.42
34:a:909:A:N3	34:a:1413:A:O2'	2.48	0.42
34:a:1345:U:C2	34:a:1377:A:C2	3.08	0.42
34:a:1359:C:H4'	34:a:1362:A:N6	2.34	0.42
36:c:69:THR:C	36:c:105:VAL:HG22	2.45	0.42
48:o:81:ILE:HG13	48:o:82:GLU:N	2.34	0.42
56:w:26:A:C4	56:w:27:G:C8	3.08	0.42
57:x:521:MET:SD	57:x:575:ILE:HD13	2.59	0.42
2:1:4:ILE:HB	8:A:2284:A:OP1	2.20	0.42
8:A:57:C:H2'	8:A:58:G:O4'	2.19	0.42
8:A:489:G:C5	8:A:1284:A:C2	3.08	0.42
8:A:771:G:C4	8:A:772:C:C5	3.08	0.42
8:A:858:G:OP2	8:A:858:G:H8	2.03	0.42
8:A:995:C:H6	8:A:995:C:H2'	1.66	0.42
8:A:1017:G:C2	8:A:1146:C:C2	3.08	0.42
8:A:1155:A:O2'	8:A:1156:A:H2'	2.20	0.42
8:A:1422:G:C6	8:A:1577:C:N3	2.88	0.42
8:A:1680:U:C4	8:A:1681:G:C5	3.08	0.42
8:A:1684:G:C6	8:A:1705:A:N1	2.88	0.42
8:A:1777:U:N3	8:A:1778:U:C5	2.88	0.42
8:A:1807:G:HO2'	8:A:1809:A:N6	2.14	0.42
8:A:1859:U:H2'	8:A:1860:G:C8	2.55	0.42
8:A:1886:U:H2'	8:A:1887:C:C6	2.54	0.42
8:A:1920:C:H5'	34:a:1517:G:C2	2.55	0.42
8:A:1966:A:N3	8:A:2592:G:O2'	2.44	0.42
8:A:2293:G:N3	8:A:2294:G:C8	2.88	0.42
8:A:2439:A:H4'	8:A:2440:C:H5''	2.01	0.42
8:A:2450:A:C2	8:A:2451:A:C4	3.08	0.42
11:D:16:THR:OG1	11:D:20:VAL:HB	2.20	0.42
14:G:54:ARG:HE	14:G:54:ARG:HB2	1.64	0.42
19:L:95:LEU:HD23	19:L:95:LEU:HA	1.86	0.42
34:a:242:G:C2	34:a:245:U:C5	3.08	0.42
34:a:581:G:C2	34:a:761:G:C6	3.07	0.42
34:a:723:U:H3	34:a:856:C:H5'	1.85	0.42
34:a:737:C:H2'	34:a:738:C:C6	2.55	0.42
34:a:921:U:O2'	38:e:22:LYS:O	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1149:C:P	42:i:10:ARG:HH21	2.43	0.42
34:a:1378:C:H5''	34:a:1379:G:OP2	2.19	0.42
53:t:27:MET:HE1	53:t:66:ILE:HG21	2.01	0.42
54:u:38:GLU:O	54:u:38:GLU:HG2	2.20	0.42
57:x:348:VAL:O	57:x:357:GLU:N	2.35	0.42
57:x:494:ARG:H	57:x:494:ARG:HG2	1.49	0.42
1:0:23:ALA:HB2	26:S:23:LEU:HD22	2.01	0.42
8:A:30:G:C5	8:A:31:C:C5	3.08	0.42
8:A:74:A:C8	8:A:88:G:N7	2.88	0.42
8:A:80:G:C6	8:A:107:G:C6	3.07	0.42
8:A:223:A:N1	8:A:422:A:C6	2.88	0.42
8:A:354:A:H2'	8:A:355:U:C6	2.55	0.42
8:A:535:G:C6	8:A:559:G:C6	3.08	0.42
8:A:594:U:H2'	8:A:595:C:C6	2.55	0.42
8:A:631:A:N3	8:A:2415:G:O2'	2.51	0.42
8:A:774:G:H4'	8:A:777:G:O2'	2.20	0.42
8:A:957:C:C2	8:A:959:A:C8	3.07	0.42
8:A:1000:A:C5	8:A:1155:A:C6	3.08	0.42
8:A:1373:A:H5''	8:A:1374:G:OP2	2.19	0.42
8:A:1392:A:H61	27:T:18:GLU:CD	2.28	0.42
8:A:1501:G:N3	8:A:1502:A:C8	2.87	0.42
8:A:1682:G:H2'	8:A:1683:U:H6	1.84	0.42
8:A:2056:G:C2	8:A:2057:G:N7	2.88	0.42
8:A:2147:A:H3'	8:A:2148:G:C8	2.55	0.42
8:A:2243:U:C2	8:A:2244:U:C5	3.07	0.42
8:A:2312:U:C5	8:A:2313:C:H5	2.38	0.42
8:A:2533:U:H2'	8:A:2534:A:O4'	2.19	0.42
8:A:2692:G:C2	8:A:2693:G:C4	3.08	0.42
8:A:2812:G:C4	8:A:2813:A:C8	3.08	0.42
8:A:2848:G:H2'	8:A:2867:G:H22	1.84	0.42
8:A:2861:U:H2'	8:A:2862:G:C8	2.53	0.42
15:H:47:PHE:HB2	15:H:51:ARG:NH1	2.34	0.42
21:N:79:LEU:HD23	21:N:83:LEU:HB2	2.01	0.42
29:V:80:HIS:N	29:V:85:LYS:O	2.36	0.42
30:W:37:ARG:O	30:W:53:HIS:ND1	2.52	0.42
30:W:41:PHE:O	30:W:55:LEU:HD11	2.19	0.42
32:Y:5:GLU:H	32:Y:5:GLU:CD	2.28	0.42
34:a:126:G:N1	34:a:236:A:C6	2.88	0.42
34:a:440:C:H2'	34:a:441:A:H8	1.83	0.42
34:a:810:C:H2'	34:a:811:C:H6	1.85	0.42
34:a:825:A:H2'	34:a:826:C:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:1002:G:C6	34:a:1003:G:C5	3.08	0.42
34:a:1044:A:N7	34:a:1045:C:H1'	2.34	0.42
34:a:1056:U:OP1	36:c:162:ALA:N	2.34	0.42
34:a:1146:A:H2'	34:a:1146:A:N3	2.33	0.42
34:a:1293:C:H2'	34:a:1294:G:C8	2.55	0.42
34:a:1355:G:C2	34:a:1356:G:C5	3.07	0.42
34:a:1375:A:H5''	40:g:24:LYS:CD	2.48	0.42
34:a:1450:U:O2'	34:a:1451:U:H5''	2.20	0.42
34:a:1485:U:H2'	34:a:1486:G:C8	2.54	0.42
37:d:6:PRO:HB2	37:d:9:LYS:HB3	2.01	0.42
38:e:23:THR:HA	38:e:27:GLY:O	2.20	0.42
43:j:52:LEU:HD13	43:j:62:ARG:HG2	2.01	0.42
46:m:112:ARG:H	46:m:112:ARG:HD2	1.83	0.42
57:x:205:ASP:OD1	57:x:205:ASP:N	2.51	0.42
8:A:305:C:C2	8:A:313:G:C6	3.08	0.41
8:A:380:G:N1	8:A:395:U:O2	2.52	0.41
8:A:464:U:C4	8:A:788:A:C4	3.08	0.41
8:A:688:U:H5'	8:A:1780:A:C2	2.55	0.41
8:A:832:U:H2'	8:A:833:A:C8	2.55	0.41
8:A:862:G:C6	8:A:863:A:C5	3.08	0.41
8:A:864:G:O2'	8:A:914:G:O6	2.34	0.41
8:A:1005:C:H2'	8:A:1006:C:H6	1.84	0.41
8:A:1229:C:H2'	8:A:1230:A:C8	2.55	0.41
8:A:1416:G:O6	8:A:1583:A:H8	2.03	0.41
8:A:1538:G:H2'	8:A:1539:U:H6	1.84	0.41
8:A:2050:C:C4	8:A:2051:A:N1	2.88	0.41
8:A:2110:G:N1	8:A:2120:G:N7	2.67	0.41
8:A:2282:G:C6	8:A:2425:A:C2	3.08	0.41
8:A:2578:G:C2	8:A:2579:C:C4	3.08	0.41
8:A:2700:A:C6	8:A:2708:G:N1	2.88	0.41
9:B:9:G:C2	9:B:10:G:C8	3.08	0.41
9:B:40:U:H1'	9:B:45:A:N6	2.35	0.41
12:E:6:LYS:HB3	12:E:121:VAL:HG12	2.02	0.41
13:F:1:ALA:HB1	13:F:4:HIS:HB3	2.01	0.41
20:M:24:THR:O	20:M:24:THR:OG1	2.38	0.41
23:P:49:ILE:HD12	23:P:57:ALA:O	2.19	0.41
33:Z:15:ARG:HA	33:Z:15:ARG:HD3	1.88	0.41
34:a:40:C:C2	34:a:41:G:C8	3.07	0.41
34:a:59:A:C6	34:a:354:G:C5	3.07	0.41
34:a:129:A:H1'	34:a:130:A:C8	2.55	0.41
34:a:134:G:H2'	34:a:135:C:O4'	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:360:G:H2'	34:a:361:G:C8	2.54	0.41
34:a:627:G:C2	34:a:628:G:C5	3.08	0.41
34:a:652:U:N3	34:a:753:A:N7	2.64	0.41
34:a:704:A:C6	34:a:705:G:C4	3.07	0.41
34:a:846:G:C2	34:a:847:G:C5	3.08	0.41
34:a:981:U:H2'	34:a:982:U:C5	2.54	0.41
34:a:1095:U:OP1	34:a:1108:G:N1	2.51	0.41
34:a:1163:A:N1	34:a:1174:G:C6	2.88	0.41
34:a:1177:G:N1	34:a:1181:G:N7	2.64	0.41
34:a:1382:C:H1'	40:g:78:ARG:NH2	2.35	0.41
35:b:14:HIS:HB3	35:b:208:ALA:CB	2.50	0.41
41:h:50:VAL:O	41:h:50:VAL:HG12	2.20	0.41
43:j:8:ILE:HD11	43:j:100:ILE:HD12	2.02	0.41
43:j:36:VAL:HG23	43:j:76:ILE:HD13	2.02	0.41
44:k:92:ARG:NH1	44:k:111:ASP:OD1	2.47	0.41
44:k:99:LEU:O	44:k:104:PHE:HB2	2.20	0.41
51:r:64:LEU:O	51:r:65:SER:OG	2.37	0.41
8:A:20:C:C2	8:A:21:A:C8	3.07	0.41
8:A:256:A:H2'	8:A:257:C:H6	1.85	0.41
8:A:335:C:C2	8:A:336:C:C5	3.09	0.41
8:A:699:A:H1'	8:A:1634:A:H2'	2.02	0.41
8:A:704:G:C2	8:A:726:G:C4	3.08	0.41
8:A:858:G:H3'	8:A:859:G:C8	2.55	0.41
8:A:1112:G:C2	8:A:1113:U:C2	3.08	0.41
8:A:1532:A:N6	8:A:1540:G:O6	2.51	0.41
8:A:1539:U:C2	8:A:1540:G:N7	2.89	0.41
8:A:1936:A:OP2	8:A:1961:C:N4	2.43	0.41
8:A:2133:G:H1'	8:A:2157:G:N1	2.34	0.41
8:A:2196:C:H2'	8:A:2197:U:C6	2.55	0.41
8:A:2677:G:C4	8:A:2731:G:N2	2.88	0.41
8:A:2721:A:C4	8:A:2873:A:N7	2.89	0.41
8:A:2784:U:H2'	8:A:2785:C:H6	1.85	0.41
8:A:2861:U:H2'	8:A:2862:G:H8	1.85	0.41
9:B:39:A:N1	9:B:44:G:N1	2.67	0.41
9:B:87:U:H3'	9:B:88:C:H5'	2.01	0.41
14:G:142:GLN:HE21	14:G:146:ASP:CG	2.27	0.41
18:K:79:PHE:CD1	23:P:69:VAL:HG22	2.55	0.41
24:Q:24:TYR:C	24:Q:24:TYR:CD1	2.98	0.41
34:a:20:U:H2'	34:a:21:G:O4'	2.20	0.41
34:a:115:G:C2	34:a:289:G:N7	2.88	0.41
34:a:158:G:C5	34:a:164:G:C6	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:531:U:O4	57:x:506:LYS:NZ	2.39	0.41
34:a:545:C:H2'	34:a:546:A:O4'	2.20	0.41
34:a:675:A:H1'	44:k:117:HIS:CE1	2.55	0.41
34:a:703:G:O2'	34:a:704:A:P	2.79	0.41
34:a:711:G:C2	34:a:712:A:C5	3.08	0.41
34:a:784:A:C4	34:a:785:G:C8	3.08	0.41
34:a:801:U:H2'	34:a:802:A:C8	2.55	0.41
34:a:810:C:C4	34:a:811:C:C5	3.08	0.41
34:a:978:A:C4	34:a:1319:A:C2	3.08	0.41
34:a:1012:A:H2'	34:a:1013:G:O4'	2.20	0.41
34:a:1229:A:OP2	46:m:112:ARG:NH1	2.53	0.41
34:a:1333:A:C8	34:a:1334:G:C8	3.07	0.41
34:a:1420:U:H2'	34:a:1421:G:C8	2.55	0.41
36:c:109:GLU:HG2	36:c:139:ASN:HB3	2.01	0.41
38:e:38:VAL:HG22	38:e:66:ALA:HB1	2.02	0.41
40:g:100:MET:O	40:g:104:VAL:HG23	2.19	0.41
45:l:48:LEU:HD23	45:l:48:LEU:HA	1.89	0.41
52:s:39:ILE:HD11	52:s:70:LEU:HD23	2.01	0.41
56:w:23:A:H2'	56:w:24:G:C8	2.56	0.41
57:x:12:ILE:HG21	57:x:281:VAL:HG13	2.02	0.41
57:x:16:ALA:N	57:x:22:LYS:HD3	2.35	0.41
57:x:344:SER:OG	57:x:374:LYS:O	2.31	0.41
8:A:64:A:H2'	8:A:65:U:C6	2.55	0.41
8:A:244:A:C2	8:A:255:A:C5	3.09	0.41
8:A:305:C:H2'	8:A:306:U:H6	1.85	0.41
8:A:376:G:H2'	8:A:377:G:H8	1.85	0.41
8:A:674:G:H5''	12:E:71:GLY:CA	2.50	0.41
8:A:864:G:O2'	8:A:865:C:H5'	2.20	0.41
8:A:949:G:C2	8:A:950:G:C5	3.07	0.41
8:A:1031:G:H2'	8:A:1032:A:C8	2.55	0.41
8:A:1063:G:H2'	16:I:88:GLY:HA3	2.01	0.41
8:A:1103:A:H3'	8:A:1104:C:C6	2.56	0.41
8:A:1615:C:OP2	8:A:1617:C:N4	2.48	0.41
8:A:1739:A:C4	8:A:1740:G:C8	3.09	0.41
8:A:1859:U:H2'	8:A:1860:G:H8	1.85	0.41
8:A:2108:A:H5''	8:A:2109:U:C4	2.56	0.41
8:A:2123:G:H1'	8:A:2176:A:N6	2.35	0.41
9:B:42:C:C6	13:F:65:LEU:HD13	2.55	0.41
9:B:66:A:C4	9:B:108:A:C6	3.08	0.41
11:D:53:GLY:HA3	11:D:77:ARG:HG2	2.02	0.41
13:F:169:LEU:HD23	13:F:169:LEU:HA	1.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:G:116:LEU:HD22	14:G:143:VAL:HG21	2.02	0.41
22:O:83:LEU:HD23	22:O:83:LEU:HA	1.83	0.41
27:T:34:VAL:HG22	27:T:81:LYS:O	2.20	0.41
32:Y:49:ASP:HA	32:Y:52:ARG:HH21	1.85	0.41
34:a:35:G:H21	45:l:114:SER:HB2	1.84	0.41
34:a:35:G:C6	34:a:36:C:C4	3.08	0.41
34:a:157:U:C2	34:a:165:G:C2	3.08	0.41
34:a:264:C:O2'	50:q:65:PRO:O	2.38	0.41
34:a:284:C:H2'	34:a:285:C:H6	1.86	0.41
34:a:501:C:C2	34:a:502:A:C8	3.08	0.41
34:a:719:C:N3	51:r:62:ARG:NH1	2.54	0.41
34:a:720:C:O2'	51:r:55:ALA:HB2	2.20	0.41
34:a:1402:4OC:O5'	34:a:1402:4OC:H6	2.20	0.41
38:e:147:ASN:OD1	38:e:148:SER:N	2.53	0.41
39:f:81:ASN:HD21	39:f:83:ALA:HB3	1.85	0.41
40:g:63:VAL:O	40:g:66:GLU:HG2	2.20	0.41
44:k:59:PRO:HD3	44:k:90:PRO:HB2	2.02	0.41
52:s:38:THR:HA	52:s:69:LYS:HA	2.01	0.41
55:v:51:C:C2	55:v:64:G:C2	3.08	0.41
8:A:99:U:O2'	8:A:100:U:H5	2.02	0.41
8:A:587:C:P	19:L:21:ARG:HH12	2.43	0.41
8:A:669:G:OP1	8:A:669:G:C8	2.73	0.41
8:A:815:C:OP2	25:R:85:LYS:HD3	2.21	0.41
8:A:923:G:H2'	8:A:924:G:H8	1.84	0.41
8:A:965:C:HO2'	8:A:2272:U:HO2'	1.67	0.41
8:A:1146:C:N4	8:A:1147:A:H62	2.17	0.41
8:A:1295:C:C2	8:A:1296:G:C8	3.08	0.41
8:A:1347:A:C5	8:A:1348:C:C6	3.07	0.41
8:A:1525:A:H2'	8:A:1526:C:O4'	2.20	0.41
8:A:1655:A:H4'	11:D:120:GLY:N	2.36	0.41
8:A:1657:U:C2	8:A:1658:C:C5	3.09	0.41
8:A:1797:G:C6	8:A:1823:G:O6	2.73	0.41
8:A:1890:A:C4	8:A:1891:G:C8	3.08	0.41
8:A:1900:A:O4'	8:A:1970:A:H5''	2.20	0.41
8:A:1908:C:H2'	8:A:1909:C:C6	2.55	0.41
8:A:2895:G:C4	8:A:2896:C:C5	3.07	0.41
9:B:75:G:C4	9:B:76:G:C8	3.08	0.41
11:D:124:ARG:NH1	11:D:162:ALA:O	2.53	0.41
18:K:13:ASN:ND2	18:K:97:THR:H	2.19	0.41
21:N:96:ARG:CZ	21:N:116:VAL:HG12	2.51	0.41
29:V:68:LYS:O	29:V:70:ILE:HG13	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:41:G:C2	34:a:42:G:C5	3.08	0.41
34:a:81:A:N6	34:a:89:U:O2'	2.52	0.41
34:a:122:G:H2'	34:a:123:U:C6	2.55	0.41
34:a:181:A:C6	34:a:195:A:N7	2.89	0.41
34:a:404:G:N7	37:d:1:ALA:N	2.63	0.41
34:a:560:A:H5'	34:a:566:G:N2	2.35	0.41
34:a:1081:A:C4	34:a:1082:A:C8	3.08	0.41
34:a:1081:A:H2'	34:a:1082:A:H8	1.85	0.41
34:a:1486:G:H2'	34:a:1487:G:O4'	2.20	0.41
39:f:22:ILE:O	39:f:26:THR:HG23	2.21	0.41
45:l:30:ARG:HH21	45:l:57:THR:HG21	1.85	0.41
46:m:30:LYS:HB2	46:m:30:LYS:HE3	1.81	0.41
53:t:42:ASP:OD1	53:t:42:ASP:N	2.49	0.41
56:w:36:A:H61	59:z:4:U:H3	1.68	0.41
57:x:535:PHE:CZ	57:x:577:LEU:HD22	2.55	0.41
8:A:97:C:H2'	8:A:98:G:C8	2.56	0.41
8:A:176:A:O2'	8:A:177:G:H5'	2.20	0.41
8:A:287:G:C2'	8:A:288:U:H5'	2.51	0.41
8:A:638:G:C6	8:A:651:G:C2	3.09	0.41
8:A:743:A:N1	8:A:755:U:N3	2.68	0.41
8:A:799:G:C5	8:A:800:A:C5	3.08	0.41
8:A:827:U:C4	8:A:2430:A:C5	3.08	0.41
8:A:883:G:O2'	8:A:885:C:O5'	2.39	0.41
8:A:925:A:H2'	8:A:926:G:C8	2.56	0.41
8:A:928:A:H2'	8:A:929:U:C6	2.55	0.41
8:A:976:G:C2	8:A:977:G:N7	2.88	0.41
8:A:976:G:H4'	8:A:1156:A:N7	2.35	0.41
8:A:1000:A:C6	8:A:1001:A:C6	3.09	0.41
8:A:1137:G:C2	8:A:1138:G:C8	3.08	0.41
8:A:1224:U:H2'	8:A:1225:G:C4	2.55	0.41
8:A:1409:U:N3	8:A:1410:G:N7	2.68	0.41
8:A:1663:G:O2'	8:A:1664:A:H8	2.04	0.41
8:A:1785:A:H2	8:A:2588:G:H21	1.64	0.41
8:A:1947:C:N3	8:A:1960:A:C2	2.88	0.41
8:A:2037:A:H2'	8:A:2038:G:H8	1.86	0.41
8:A:2187:U:H6	8:A:2187:U:H2'	1.69	0.41
8:A:2217:G:H2'	8:A:2218:G:H8	1.85	0.41
8:A:2261:C:C2	8:A:2262:U:C5	3.08	0.41
8:A:2472:G:N1	8:A:2475:C:C2	2.88	0.41
8:A:2543:G:C2	8:A:2544:G:C5	3.09	0.41
8:A:2588:G:C5	8:A:2607:G:N2	2.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2730:C:O2'	8:A:2731:G:H5'	2.19	0.41
8:A:2771:C:O2'	11:D:173:GLN:NE2	2.53	0.41
8:A:2812:G:C2	8:A:2813:A:C4	3.08	0.41
9:B:29:A:H2'	9:B:30:C:C6	2.53	0.41
11:D:5:VAL:HG11	11:D:80:TRP:CH2	2.55	0.41
11:D:98:VAL:HG21	11:D:187:LEU:HB2	2.01	0.41
18:K:78:ARG:N	23:P:70:GLU:O	2.54	0.41
20:M:42:THR:O	20:M:46:ILE:HG13	2.21	0.41
23:P:28:LYS:HB3	23:P:39:LEU:HD21	2.03	0.41
24:Q:46:TYR:CD2	25:R:74:ILE:HG23	2.56	0.41
26:S:80:PRO:HD3	26:S:102:HIS:CE1	2.55	0.41
31:X:51:SER:O	31:X:55:MET:HG3	2.20	0.41
34:a:69:G:O2'	34:a:70:U:OP1	2.31	0.41
34:a:94:G:C2	34:a:96:U:C4	3.08	0.41
34:a:230:G:H1'	49:p:25:ARG:HH12	1.86	0.41
34:a:371:A:H8	34:a:371:A:OP2	2.03	0.41
34:a:786:G:C4	34:a:787:A:C8	3.08	0.41
34:a:802:A:C8	34:a:803:G:C8	3.09	0.41
34:a:872:A:C4	34:a:874:G:N7	2.88	0.41
34:a:954:G:H2'	34:a:955:U:C6	2.56	0.41
34:a:1485:U:O4	34:a:1487:G:C6	2.74	0.41
35:b:26:MET:HE3	35:b:26:MET:HB3	1.80	0.41
35:b:103:TRP:CD1	35:b:107:ARG:NH1	2.88	0.41
36:c:107:LYS:HA	36:c:107:LYS:HD3	1.77	0.41
37:d:13:ARG:HB2	37:d:37:PRO:HD3	2.03	0.41
37:d:28:ASP:HA	37:d:31:CYS:O	2.21	0.41
39:f:37:HIS:N	39:f:63:ASN:O	2.53	0.41
39:f:59:TYR:HE2	51:r:66:LEU:HD21	1.86	0.41
44:k:30:ILE:HG12	44:k:45:THR:CG2	2.48	0.41
44:k:73:VAL:HG12	44:k:73:VAL:O	2.20	0.41
55:v:19:G:P	55:v:60:U:H3	2.43	0.41
57:x:13:GLY:O	57:x:109:VAL:N	2.54	0.41
57:x:621:GLU:HG2	57:x:651:VAL:O	2.21	0.41
8:A:261:G:C2	8:A:262:A:C8	3.08	0.41
8:A:286:U:C2	8:A:287:G:C8	3.08	0.41
8:A:289:G:C2	8:A:290:U:C2	3.08	0.41
8:A:382:A:C2	8:A:393:C:N3	2.89	0.41
8:A:611:C:C2	8:A:618:G:N2	2.88	0.41
8:A:676:A:N6	8:A:802:A:N1	2.65	0.41
8:A:764:A:H5''	10:C:208:GLY:HA3	2.02	0.41
8:A:1155:A:H5''	24:Q:54:ARG:HD3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1341:G:N2	27:T:59:ASN:HD22	2.17	0.41
8:A:1670:C:O5'	8:A:1670:C:H6	2.03	0.41
8:A:1798:U:C4	8:A:1819:A:C2	3.09	0.41
8:A:1861:G:C6	8:A:1862:G:N7	2.89	0.41
8:A:2402:U:H5'	8:A:2403:C:P	2.61	0.41
8:A:2646:C:H6	8:A:2646:C:O5'	2.04	0.41
12:E:29:HIS:CE1	19:L:8:PRO:HB3	2.55	0.41
13:F:105:ILE:C	13:F:108:PRO:HD2	2.45	0.41
14:G:9:VAL:HA	14:G:48:THR:HG23	2.02	0.41
14:G:11:PRO:HD2	14:G:14:VAL:HG21	2.03	0.41
14:G:28:LYS:HG3	14:G:29:ASN:N	2.35	0.41
14:G:93:TYR:HE1	14:G:106:LEU:O	2.04	0.41
16:I:100:ILE:H	16:I:139:VAL:H	1.67	0.41
17:J:131:ASN:OD1	17:J:131:ASN:N	2.48	0.41
20:M:56:ALA:HB1	20:M:119:LEU:HD12	2.03	0.41
25:R:38:VAL:O	25:R:54:VAL:HG12	2.21	0.41
31:X:35:HIS:HB3	31:X:37:PHE:HE1	1.85	0.41
34:a:112:G:C2	34:a:113:G:C8	3.08	0.41
34:a:138:G:C4	34:a:226:G:C2	3.08	0.41
34:a:155:A:H2'	34:a:156:C:C6	2.55	0.41
34:a:222:C:C2	34:a:223:A:C8	3.08	0.41
34:a:254:G:H1'	50:q:17:GLU:OE2	2.21	0.41
34:a:338:A:H2'	34:a:339:C:O4'	2.21	0.41
34:a:456:A:O5'	34:a:456:A:H8	2.04	0.41
34:a:467:U:O2	34:a:467:U:H2'	2.19	0.41
34:a:579:A:H2'	34:a:580:C:H6	1.85	0.41
34:a:608:A:C6	34:a:609:A:C5	3.09	0.41
34:a:1004:A:O2'	34:a:1005:A:O4'	2.36	0.41
34:a:1120:C:H2'	34:a:1121:U:H6	1.85	0.41
34:a:1511:G:H2'	34:a:1512:U:O4'	2.19	0.41
35:b:131:LYS:O	35:b:134:LEU:HG	2.20	0.41
36:c:32:LEU:HD23	36:c:32:LEU:HA	1.83	0.41
36:c:35:ASP:HA	36:c:38:VAL:HG12	2.03	0.41
38:e:106:ALA:HB2	38:e:124:ALA:HB3	2.02	0.41
39:f:55:HIS:HB3	39:f:56:LYS:HD3	2.02	0.41
41:h:40:LYS:NZ	41:h:47:ASP:OD1	2.29	0.41
46:m:15:VAL:HG13	46:m:29:SER:OG	2.21	0.41
49:p:51:ARG:C	49:p:52:LEU:HD22	2.46	0.41
49:p:56:ARG:HA	49:p:56:ARG:HD2	1.78	0.41
51:r:25:ILE:O	51:r:29:LYS:HG3	2.21	0.41
56:w:24:G:H2'	56:w:25:C:C6	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:x:28:ARG:HH22	57:x:41:GLU:CD	2.28	0.41
57:x:115:VAL:HG13	57:x:116:GLY:N	2.36	0.41
57:x:173:GLY:HA3	57:x:177:HIS:C	2.45	0.41
3:2:5:PHE:O	8:A:1612:C:H4'	2.20	0.41
8:A:2:G:H2'	8:A:3:U:H6	1.85	0.41
8:A:104:A:C5	8:A:105:C:C5	3.09	0.41
8:A:496:G:C4	8:A:497:A:C8	3.09	0.41
8:A:665:U:H2'	8:A:666:A:C8	2.51	0.41
8:A:717:C:H3'	8:A:718:A:C8	2.52	0.41
8:A:849:A:C4	8:A:850:U:C5	3.09	0.41
8:A:897:C:N4	8:A:898:C:H41	2.18	0.41
8:A:1051:G:C6	8:A:1052:C:C4	3.09	0.41
8:A:1068:G:N7	8:A:1070:A:C5	2.89	0.41
8:A:1118:C:H2'	8:A:1119:U:O4'	2.21	0.41
8:A:1450:G:H2'	8:A:1451:C:C6	2.55	0.41
8:A:1532:A:N1	8:A:1540:G:C6	2.88	0.41
8:A:1731:G:C6	8:A:1733:G:C6	3.09	0.41
8:A:1979:U:C2'	8:A:1980:G:H5'	2.51	0.41
8:A:2036:C:C2	8:A:2037:A:N7	2.88	0.41
8:A:2350:C:H2'	8:A:2351:G:O4'	2.20	0.41
8:A:2677:G:H2'	8:A:2678:C:H6	1.85	0.41
8:A:2839:G:C2	8:A:2840:C:C2	3.09	0.41
8:A:2852:G:H2'	8:A:2853:C:O4'	2.20	0.41
8:A:2876:G:H2'	8:A:2877:G:O4'	2.20	0.41
15:H:65:ALA:H	15:H:68:ARG:HB2	1.86	0.41
17:J:110:PRO:O	17:J:111:LYS:HD3	2.21	0.41
24:Q:46:TYR:HD2	25:R:74:ILE:HG23	1.86	0.41
24:Q:94:LEU:HD23	24:Q:94:LEU:HA	1.91	0.41
27:T:10:VAL:HG13	27:T:11:LEU:N	2.36	0.41
30:W:49:CYS:SG	30:W:53:HIS:HA	2.60	0.41
34:a:377:G:OP1	49:p:3:THR:HG21	2.19	0.41
34:a:448:A:H3'	34:a:449:G:C8	2.55	0.41
34:a:755:G:N1	34:a:756:C:C4	2.89	0.41
34:a:880:C:OP1	45:l:4:ASN:ND2	2.53	0.41
34:a:927:G:O2'	34:a:1503:A:N7	2.47	0.41
34:a:956:U:H2'	34:a:957:U:O4'	2.20	0.41
34:a:1058:G:H22	43:j:55:PRO:HG3	1.86	0.41
34:a:1134:G:C2	34:a:1141:C:C2	3.09	0.41
34:a:1138:G:C2	34:a:1140:C:C5	3.08	0.41
34:a:1323:G:H1'	34:a:1361:G:H21	1.85	0.41
36:c:38:VAL:HG23	36:c:90:VAL:CG2	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:123:LEU:HD23	36:c:123:LEU:HA	1.87	0.41
37:d:24:VAL:HG13	37:d:25:ARG:N	2.36	0.41
39:f:8:PHE:HA	39:f:87:SER:HA	2.03	0.41
39:f:46:GLN:HA	39:f:56:LYS:HG3	2.03	0.41
47:n:30:ILE:HD13	47:n:45:VAL:HG22	2.02	0.41
50:q:39:ARG:HD3	50:q:39:ARG:HA	1.78	0.41
56:w:29:G:H3'	56:w:30:G:H8	1.85	0.41
56:w:36:A:C2	59:z:5:U:C2	3.09	0.41
57:x:180:GLY:HA3	57:x:190:ILE:O	2.21	0.41
57:x:333:THR:O	57:x:384:ALA:N	2.43	0.41
57:x:363:VAL:HG23	57:x:383:ALA:HB3	2.03	0.41
57:x:462:GLU:HB3	57:x:667:THR:HG21	2.02	0.41
57:x:527:GLY:N	57:x:572:ASP:OD2	2.51	0.41
59:z:5:U:O5'	59:z:5:U:H6	2.04	0.41
8:A:7:G:C6	8:A:8:C:C4	3.09	0.41
8:A:42:A:N1	8:A:438:G:C6	2.89	0.41
8:A:49:A:C6	8:A:118:A:C5	3.09	0.41
8:A:118:A:OP2	8:A:119:A:H2'	2.21	0.41
8:A:354:A:C5	8:A:355:U:C5	3.09	0.41
8:A:449:A:C5	8:A:450:G:C8	3.09	0.41
8:A:543:G:C6	8:A:551:G:C6	3.09	0.41
8:A:1062:G:N1	8:A:1078:U:O4	2.53	0.41
8:A:1128:G:C4	8:A:1129:A:C2	3.08	0.41
8:A:1355:G:H2'	8:A:1356:G:H8	1.86	0.41
8:A:1655:A:O3'	11:D:120:GLY:HA3	2.21	0.41
8:A:2037:A:H2'	8:A:2038:G:C8	2.56	0.41
8:A:2086:U:N3	8:A:2234:G:C6	2.89	0.41
8:A:2163:A:OP1	8:A:2164:C:N4	2.48	0.41
8:A:2182:U:C2'	8:A:2183:A:H5'	2.50	0.41
8:A:2282:G:H5''	8:A:2283:C:O4'	2.21	0.41
8:A:2376:A:N6	22:O:94:ARG:HD3	2.36	0.41
8:A:2648:G:C6	8:A:2673:G:C6	3.08	0.41
8:A:2662:A:C8	8:A:2663:G:C8	3.09	0.41
8:A:2864:G:C2	8:A:2865:U:O4	2.74	0.41
9:B:54:G:H8	9:B:54:G:O5'	2.02	0.41
10:C:264:LYS:H	10:C:264:LYS:HG2	1.64	0.41
12:E:28:VAL:O	12:E:32:VAL:HG13	2.21	0.41
12:E:181:ILE:HD13	19:L:6:LEU:HD11	2.03	0.41
13:F:122:ASP:OD2	13:F:124:ARG:HB3	2.20	0.41
15:H:127:GLU:HG3	15:H:145:ASN:HB3	2.02	0.41
18:K:2:ILE:O	18:K:33:ALA:N	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:O:40:ILE:HG22	22:O:41:ALA:O	2.21	0.41
26:S:88:ARG:HD2	26:S:88:ARG:HA	1.86	0.41
31:X:38:TRP:CZ2	31:X:43:LYS:HD2	2.56	0.41
34:a:39:G:N3	34:a:404:G:C2	2.88	0.41
34:a:202:G:H1'	34:a:468:A:H2	1.85	0.41
34:a:440:C:H2'	34:a:441:A:C8	2.55	0.41
34:a:761:G:C6	34:a:762:U:C4	3.09	0.41
34:a:904:U:C2	34:a:905:U:C5	3.09	0.41
34:a:942:G:C2	34:a:943:U:C6	3.08	0.41
34:a:1237:C:O2'	34:a:1300:G:N2	2.50	0.41
34:a:1240:U:OP1	40:g:118:ARG:NH2	2.54	0.41
34:a:1241:G:C2	34:a:1242:G:N7	2.89	0.41
34:a:1284:C:C4	34:a:1285:A:C5	3.08	0.41
34:a:1324:A:C6	34:a:1325:C:C4	3.09	0.41
34:a:1355:G:C6	34:a:1368:A:C6	3.09	0.41
34:a:1386:G:H2'	34:a:1387:G:H8	1.86	0.41
34:a:1526:G:H2'	34:a:1527:U:H6	1.85	0.41
36:c:38:VAL:HG23	36:c:90:VAL:HG21	2.03	0.41
36:c:58:ARG:HA	36:c:62:SER:O	2.21	0.41
37:d:180:THR:HG22	37:d:181:PHE:H	1.86	0.41
41:h:8:ASP:O	41:h:11:THR:HG22	2.21	0.41
46:m:3:ILE:H	46:m:3:ILE:HD12	1.86	0.41
46:m:15:VAL:HG23	46:m:40:GLU:HB3	2.01	0.41
47:n:20:PHE:C	47:n:22:LYS:H	2.29	0.41
57:x:12:ILE:HD13	57:x:281:VAL:HG11	2.03	0.41
57:x:24:THR:HG21	62:x:801:GDP:C8	2.56	0.41
57:x:60:ILE:HG13	57:x:60:ILE:O	2.21	0.41
57:x:489:TYR:HD1	57:x:613:GLU:HA	1.86	0.41
4:3:39:ARG:O	4:3:43:LEU:HG	2.21	0.41
8:A:19:A:H2'	8:A:20:C:H6	1.85	0.41
8:A:52:A:C2	8:A:53:A:C5	3.09	0.41
8:A:68:G:C2	8:A:69:C:C2	3.08	0.41
8:A:93:G:C6	8:A:94:A:C6	3.08	0.41
8:A:246:C:C4	8:A:247:G:N7	2.88	0.41
8:A:258:G:O2'	19:L:103:ILE:HD11	2.20	0.41
8:A:374:A:C4	8:A:375:G:C8	3.09	0.41
8:A:396:G:C2	8:A:397:U:C2	3.09	0.41
8:A:731:C:OP2	8:A:761:A:OP1	2.38	0.41
8:A:778:G:H5'	10:C:47:ARG:HH11	1.85	0.41
8:A:1005:C:H2'	8:A:1006:C:C6	2.56	0.41
8:A:1086:A:H5''	8:A:1087:G:OP1	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1220:G:C6	8:A:1230:A:C6	3.09	0.41
8:A:1287:A:N6	21:N:106:ASP:HB3	2.36	0.41
8:A:1355:G:C6	8:A:1377:G:N2	2.89	0.41
8:A:1416:G:O2'	8:A:1417:C:O4'	2.36	0.41
8:A:1442:U:H2'	8:A:1443:U:C6	2.56	0.41
8:A:1524:G:C6	8:A:1525:A:C5	3.09	0.41
8:A:1606:C:H5''	8:A:1607:C:H5'	2.03	0.41
8:A:1664:A:H61	8:A:1996:C:H42	1.66	0.41
8:A:1668:A:O2'	8:A:1674:G:N7	2.40	0.41
8:A:1730:C:H1'	8:A:1731:G:C5	2.56	0.41
8:A:1925:C:N3	8:A:1929:G:N1	2.69	0.41
8:A:1939:5MU:O2	8:A:1967:C:H4'	2.21	0.41
8:A:1998:A:C6	8:A:1999:C:C4	3.09	0.41
8:A:2007:U:H2'	8:A:2008:C:C6	2.56	0.41
8:A:2046:G:C5	8:A:2623:G:C2	3.09	0.41
8:A:2046:G:H2'	8:A:2047:C:C6	2.56	0.41
8:A:2067:G:H4'	8:A:2068:U:OP2	2.21	0.41
8:A:2103:C:C2	8:A:2187:U:N3	2.88	0.41
8:A:2466:C:C2	8:A:2485:G:N2	2.88	0.41
8:A:2484:G:OP1	20:M:44:ARG:HB3	2.20	0.41
8:A:2622:U:H2'	8:A:2623:G:O4'	2.21	0.41
8:A:2642:G:C2	8:A:2773:C:C2	3.08	0.41
8:A:2677:G:C2	8:A:2731:G:C2	3.09	0.41
8:A:2720:U:C4	8:A:2872:A:C6	3.08	0.41
8:A:2827:C:H2'	8:A:2828:G:C8	2.53	0.41
9:B:19:C:H2'	9:B:20:G:H8	1.86	0.41
11:D:11:MET:HA	11:D:25:THR:HA	2.02	0.41
11:D:124:ARG:NH1	11:D:163:GLY:HA3	2.36	0.41
15:H:125:THR:HA	15:H:146:VAL:CG1	2.50	0.41
20:M:22:GLN:O	20:M:24:THR:N	2.53	0.41
21:N:72:ASP:CG	21:N:75:ILE:HG12	2.45	0.41
24:Q:31:TYR:CE1	24:Q:35:PHE:HD2	2.39	0.41
29:V:65:VAL:O	29:V:68:LYS:HG2	2.20	0.41
34:a:81:A:N1	34:a:90:C:C4	2.88	0.41
34:a:203:G:O2'	34:a:204:G:O4'	2.39	0.41
34:a:224:U:H2'	34:a:225:C:C6	2.56	0.41
34:a:363:A:N1	45:l:26:CYS:HB3	2.35	0.41
34:a:456:A:N6	34:a:457:G:O6	2.54	0.41
34:a:590:U:C2	34:a:650:G:C2	3.09	0.41
34:a:645:G:C5	34:a:646:G:N7	2.89	0.41
34:a:826:C:H2'	34:a:827:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:838:G:C6	34:a:839:C:C4	3.08	0.41
34:a:860:A:H2'	34:a:861:G:O4'	2.21	0.41
34:a:1019:A:H2'	34:a:1020:G:C8	2.56	0.41
34:a:1088:G:N3	34:a:1167:A:N6	2.67	0.41
34:a:1142:G:C4	34:a:1143:G:H1'	2.55	0.41
34:a:1160:G:C6	34:a:1161:C:C4	3.09	0.41
34:a:1167:A:O2'	34:a:1168:U:N3	2.53	0.41
34:a:1312:G:C2	34:a:1326:U:C2	3.09	0.41
34:a:1380:U:O2	40:g:2:ARG:NH2	2.53	0.41
34:a:1435:G:H2'	34:a:1436:U:O4'	2.21	0.41
34:a:1447:A:P	34:a:1448:C:H41	2.43	0.41
34:a:1527:U:H5	54:u:41:THR:HG21	1.86	0.41
35:b:13:VAL:O	35:b:208:ALA:HB2	2.20	0.41
42:i:7:GLY:N	42:i:85:ALA:HB2	2.35	0.41
42:i:43:ALA:O	42:i:47:VAL:HG23	2.20	0.41
43:j:56:HIS:CG	43:j:57:VAL:H	2.37	0.41
44:k:96:ILE:H	44:k:96:ILE:HG13	1.71	0.41
46:m:44:ILE:O	46:m:44:ILE:HG22	2.21	0.41
49:p:47:GLU:C	49:p:49:GLY:N	2.79	0.41
50:q:8:GLN:O	50:q:24:ILE:HG12	2.20	0.41
51:r:11:ARG:HA	51:r:14:ALA:HB3	2.03	0.41
51:r:66:LEU:O	51:r:67:LEU:HD23	2.20	0.41
56:w:63:G:C2	56:w:64:A:C5	3.09	0.41
57:x:314:GLU:HG2	57:x:339:SER:HB2	2.03	0.41
57:x:507:GLN:HA	57:x:511:ARG:HB2	2.03	0.41
57:x:570:VAL:HG11	57:x:604:PHE:CZ	2.56	0.41
8:A:261:G:N1	8:A:262:A:C5	2.88	0.41
8:A:308:G:H8	8:A:308:G:O5'	2.04	0.41
8:A:418:C:H2'	8:A:419:U:C6	2.56	0.41
8:A:679:C:C2	8:A:680:C:C5	3.09	0.41
8:A:997:G:OP1	24:Q:91:ARG:HD3	2.21	0.41
8:A:1007:C:OP1	17:J:39:LYS:HE3	2.20	0.41
8:A:1038:G:C2	8:A:1118:C:C2	3.08	0.41
8:A:1152:C:C2	8:A:1153:C:C5	3.08	0.41
8:A:1178:C:H4'	8:A:1179:G:N3	2.36	0.41
8:A:1319:C:N3	8:A:1334:G:C6	2.89	0.41
8:A:1346:G:C2	8:A:1347:A:C4	3.09	0.41
8:A:1417:C:H2'	8:A:1418:G:C8	2.56	0.41
8:A:1433:A:H2'	8:A:1434:A:C1'	2.51	0.41
8:A:1517:G:H2'	8:A:1518:C:C6	2.56	0.41
8:A:2041:U:C2	8:A:2042:A:C8	3.09	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:2595:G:C5	8:A:2597:G:OP2	2.74	0.41
9:B:16:G:H2'	9:B:17:C:O4'	2.21	0.41
12:E:49:ARG:HD2	12:E:76:PRO:HD3	2.02	0.41
12:E:124:PHE:HE2	12:E:141:MET:SD	2.44	0.41
12:E:126:VAL:HG22	12:E:137:LYS:NZ	2.36	0.41
13:F:33:ILE:HA	13:F:154:THR:O	2.21	0.41
13:F:137:PHE:HA	13:F:138:PRO:HD3	1.96	0.41
14:G:126:THR:HG22	14:G:127:GLN:N	2.36	0.41
17:J:4:PHE:CD2	24:Q:99:VAL:HG11	2.56	0.41
17:J:23:LYS:NZ	17:J:141:ASP:OD1	2.32	0.41
17:J:44:TYR:C	17:J:45:THR:HG1	2.29	0.41
26:S:11:ARG:HA	26:S:11:ARG:HD2	1.79	0.41
34:a:1:A:N3	34:a:1:A:H2'	2.36	0.41
34:a:105:G:H2'	34:a:106:C:H6	1.85	0.41
34:a:243:A:N1	34:a:282:A:N6	2.64	0.41
34:a:410:G:N2	34:a:433:G:O6	2.54	0.41
34:a:621:A:H2'	34:a:622:A:O4'	2.21	0.41
34:a:661:G:H2'	34:a:662:U:H6	1.85	0.41
34:a:665:A:C1'	34:a:733:G:H1'	2.51	0.41
34:a:790:A:OP1	55:v:39:C:H5'	2.21	0.41
34:a:1085:U:O4'	34:a:1094:G:C2	2.74	0.41
34:a:1086:U:H2'	34:a:1087:G:C8	2.50	0.41
34:a:1187:G:C6	34:a:1188:A:C6	3.09	0.41
35:b:53:LEU:HD11	35:b:216:VAL:HA	2.03	0.41
36:c:11:LEU:HD23	36:c:11:LEU:HA	1.81	0.41
38:e:133:ILE:HG13	38:e:134:ASN:N	2.36	0.41
43:j:5:ARG:N	43:j:77:VAL:HA	2.36	0.41
43:j:8:ILE:O	43:j:74:VAL:HG12	2.21	0.41
46:m:106:ARG:HD2	46:m:112:ARG:NE	2.27	0.41
54:u:30:GLU:OE1	54:u:34:ARG:NE	2.54	0.41
57:x:31:PHE:CG	57:x:39:ILE:HG22	2.56	0.41
57:x:298:LEU:HB2	57:x:302:LYS:HZ3	1.85	0.41
2:1:37:LYS:C	2:1:45:HIS:HD2	2.29	0.40
8:A:123:G:C2	8:A:124:G:C4	3.09	0.40
8:A:194:G:N1	8:A:202:U:C2	2.89	0.40
8:A:367:G:C6	8:A:368:A:C6	3.09	0.40
8:A:484:C:C2	8:A:485:C:C5	3.10	0.40
8:A:489:G:C5	8:A:491:G:C5	3.09	0.40
8:A:510:C:H2'	8:A:511:U:C6	2.55	0.40
8:A:694:U:H1'	8:A:1379:U:O2	2.21	0.40
8:A:989:G:N7	33:Z:13:ILE:HG12	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1011:G:O6	8:A:1151:A:N6	2.54	0.40
8:A:1031:G:C6	8:A:1124:G:C6	3.09	0.40
8:A:1052:C:O2	8:A:1108:U:O2'	2.33	0.40
8:A:1062:G:N3	8:A:1062:G:H2'	2.36	0.40
8:A:1062:G:O2'	8:A:1063:G:O5'	2.32	0.40
8:A:1128:G:N1	8:A:2518:A:C6	2.89	0.40
8:A:1707:G:C4	8:A:1756:G:C2	3.10	0.40
8:A:1996:C:H4'	8:A:1997:C:OP1	2.21	0.40
8:A:2216:G:N1	8:A:2217:G:C5	2.89	0.40
8:A:2404:U:C4	8:A:2405:G:C5	3.09	0.40
8:A:2428:G:N2	19:L:54:GLN:HE21	2.18	0.40
8:A:2456:C:H2'	8:A:2457:PSU:H6	1.87	0.40
8:A:2480:C:H5''	8:A:2481:G:OP2	2.21	0.40
8:A:2516:A:C6	8:A:2569:G:C2	3.09	0.40
8:A:2650:U:C2	8:A:2651:C:C5	3.09	0.40
8:A:2783:U:H2'	8:A:2784:U:H6	1.86	0.40
9:B:66:A:O2'	9:B:67:G:O5'	2.36	0.40
9:B:70:C:H2'	9:B:71:C:H6	1.86	0.40
19:L:89:VAL:HA	19:L:121:THR:HB	2.02	0.40
21:N:103:ARG:HD3	21:N:110:MET:HE2	2.02	0.40
28:U:46:LYS:HD2	28:U:46:LYS:HA	1.94	0.40
30:W:27:VAL:HB	30:W:31:SER:HB2	2.02	0.40
34:a:301:G:C2	34:a:302:G:C8	3.09	0.40
34:a:603:U:H3'	34:a:603:U:O2	2.21	0.40
34:a:667:G:H1'	48:o:50:HIS:HB2	2.04	0.40
34:a:672:U:H2'	34:a:673:A:C8	2.55	0.40
34:a:807:A:C6	34:a:808:C:C4	3.09	0.40
34:a:877:G:O2'	34:a:878:A:H5'	2.21	0.40
34:a:923:A:H2'	34:a:924:C:C6	2.56	0.40
34:a:1323:G:C2	34:a:1324:A:C4	3.09	0.40
34:a:1333:A:H3'	34:a:1334:G:H8	1.86	0.40
35:b:95:TRP:CD1	35:b:95:TRP:C	2.99	0.40
45:l:102:ASP:C	45:l:102:ASP:OD1	2.64	0.40
48:o:2:LEU:HD13	48:o:34:GLN:HA	2.03	0.40
57:x:71:TRP:CD1	57:x:278:LEU:HD13	2.56	0.40
57:x:101:SER:O	57:x:104:VAL:HG12	2.21	0.40
6:5:53:ARG:C	6:5:55:VAL:H	2.28	0.40
8:A:168:G:C4	8:A:169:G:C8	3.09	0.40
8:A:223:A:N1	8:A:422:A:C5	2.89	0.40
8:A:294:A:C6	8:A:345:A:C2	3.10	0.40
8:A:506:G:O3'	8:A:507:A:H8	2.05	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:549:G:H2'	8:A:550:C:C6	2.56	0.40
8:A:565:C:P	25:R:80:ARG:H	2.44	0.40
8:A:567:U:H2'	8:A:568:U:O4'	2.21	0.40
8:A:684:G:C6	8:A:774:G:C2	3.09	0.40
8:A:688:U:H5'	8:A:1780:A:H2	1.86	0.40
8:A:711:G:C2'	8:A:712:G:H5'	2.50	0.40
8:A:1162:G:C2	8:A:1163:G:C8	3.09	0.40
8:A:1352:U:C2	8:A:1378:A:N6	2.83	0.40
8:A:1575:C:H2'	8:A:1576:U:C6	2.57	0.40
8:A:1686:C:N4	8:A:1703:G:O6	2.54	0.40
8:A:2013:A:N6	8:A:2014:A:C6	2.89	0.40
8:A:2193:G:H2'	8:A:2194:U:H6	1.86	0.40
8:A:2193:G:H2'	8:A:2194:U:C6	2.56	0.40
8:A:2235:G:C2	8:A:2236:U:C2	3.09	0.40
8:A:2578:G:H2'	8:A:2579:C:C6	2.56	0.40
8:A:2590:A:O2'	8:A:2591:C:H5'	2.21	0.40
8:A:2616:C:N3	8:A:2617:U:C5	2.89	0.40
8:A:2667:C:O2	14:G:108:PHE:HB3	2.22	0.40
8:A:2727:A:C6	8:A:2728:U:C4	3.10	0.40
8:A:2898:U:H2'	8:A:2899:A:H8	1.82	0.40
10:C:138:SER:O	10:C:140:VAL:HG23	2.21	0.40
12:E:55:SER:O	12:E:55:SER:OG	2.36	0.40
13:F:60:SER:O	13:F:62:GLN:N	2.55	0.40
13:F:95:MET:HE2	13:F:95:MET:HB3	1.87	0.40
14:G:165:ASP:OD1	14:G:166:GLU:N	2.55	0.40
18:K:9:ASN:O	18:K:83:ALA:HA	2.21	0.40
31:X:13:THR:HG23	31:X:26:ARG:O	2.22	0.40
32:Y:17:GLU:O	32:Y:18:LEU:HB3	2.21	0.40
34:a:112:G:N2	34:a:354:G:H5'	2.22	0.40
34:a:185:U:H2'	34:a:186:C:H6	1.87	0.40
34:a:404:G:N3	34:a:498:A:H2	2.19	0.40
34:a:538:G:H2'	34:a:539:A:C8	2.53	0.40
34:a:553:A:C4	34:a:554:A:C8	3.09	0.40
34:a:606:G:H5''	34:a:607:A:H5'	2.03	0.40
34:a:623:C:C2	34:a:624:C:C5	3.10	0.40
34:a:755:G:C6	34:a:756:C:N4	2.90	0.40
34:a:878:A:H2'	34:a:879:C:C6	2.57	0.40
34:a:978:A:C5	34:a:1319:A:C2	3.10	0.40
34:a:1374:A:C6	34:a:1375:A:N6	2.89	0.40
34:a:1415:G:O2'	34:a:1416:G:H5'	2.21	0.40
35:b:49:PHE:O	35:b:53:LEU:HD23	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:c:21:TRP:HB3	36:c:58:ARG:HB2	2.03	0.40
37:d:155:LYS:HA	37:d:155:LYS:HD2	1.82	0.40
55:v:31:G:N2	55:v:40:C:C2	2.89	0.40
57:x:8:ARG:HH12	57:x:79:GLU:C	2.30	0.40
57:x:169:GLN:CD	57:x:181:VAL:HG11	2.46	0.40
57:x:277:MET:HE3	57:x:277:MET:HB3	1.79	0.40
57:x:554:LYS:O	57:x:557:GLN:HB3	2.21	0.40
57:x:631:ILE:HD11	57:x:653:ILE:HG21	2.02	0.40
4:3:6:VAL:HG23	4:3:9:ALA:HB3	2.01	0.40
8:A:121:G:C4	8:A:131:A:C6	3.09	0.40
8:A:197:A:C6	8:A:2430:A:C2	3.09	0.40
8:A:391:A:C5	8:A:392:U:C5	3.10	0.40
8:A:417:C:H2'	8:A:418:C:C6	2.57	0.40
8:A:499:U:H4'	28:U:42:LYS:HB2	2.04	0.40
8:A:562:U:H1'	8:A:2035:G:O2'	2.22	0.40
8:A:797:G:OP2	12:E:57:LYS:HB2	2.22	0.40
8:A:925:A:H2'	8:A:926:G:H8	1.85	0.40
8:A:1146:C:H2'	8:A:1147:A:C8	2.56	0.40
8:A:1235:G:C5	8:A:1236:G:N1	2.89	0.40
8:A:1323:C:C4	8:A:1324:G:N7	2.89	0.40
8:A:1346:G:C6	8:A:1347:A:C5	3.10	0.40
8:A:1368:G:C2	8:A:1369:G:C5	3.10	0.40
8:A:1447:C:H2'	8:A:1448:G:H8	1.85	0.40
8:A:1568:G:P	10:C:62:ARG:HH12	2.39	0.40
8:A:1713:A:N6	8:A:1746:A:C6	2.89	0.40
8:A:1795:C:H2'	8:A:1796:U:H6	1.86	0.40
8:A:2077:A:C8	8:A:2435:A:C4	3.09	0.40
8:A:2087:G:H2'	8:A:2088:A:C8	2.57	0.40
8:A:2127:G:N7	8:A:2161:C:H1'	2.37	0.40
8:A:2141:G:H2'	8:A:2142:A:C8	2.57	0.40
8:A:2316:G:H2'	8:A:2317:A:C8	2.51	0.40
8:A:2740:A:OP2	8:A:2763:G:N1	2.37	0.40
11:D:184:ARG:HH22	23:P:6:GLN:HG3	1.83	0.40
12:E:109:LEU:HD23	12:E:109:LEU:HA	1.80	0.40
24:Q:7:VAL:HG23	24:Q:8:ILE:N	2.37	0.40
24:Q:8:ILE:HD12	24:Q:8:ILE:HA	1.83	0.40
24:Q:15:LYS:O	24:Q:19:GLN:HG3	2.21	0.40
25:R:85:LYS:HE3	25:R:85:LYS:HB2	1.88	0.40
28:U:4:ILE:HD13	28:U:69:VAL:HG23	2.03	0.40
34:a:16:A:O2'	34:a:17:U:H5'	2.21	0.40
34:a:59:A:C4	34:a:331:G:N2	2.89	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:474:G:H2'	34:a:475:C:O4'	2.20	0.40
34:a:574:A:N3	34:a:883:C:H1'	2.36	0.40
34:a:723:U:O4	54:u:55:HIS:ND1	2.54	0.40
34:a:1110:A:C6	34:a:1111:A:C5	3.10	0.40
34:a:1167:A:C8	34:a:1169:A:N6	2.89	0.40
34:a:1184:G:C5	34:a:1185:G:N7	2.89	0.40
34:a:1185:G:N1	34:a:1186:G:C5	2.89	0.40
34:a:1302:C:C5	46:m:16:ILE:HG13	2.56	0.40
34:a:1316:G:H22	34:a:1318:A:H3'	1.86	0.40
35:b:181:PRO:HA	35:b:196:ASP:OD2	2.21	0.40
36:c:110:LEU:HD23	36:c:143:LEU:HB3	2.03	0.40
39:f:7:VAL:O	39:f:88:MET:N	2.54	0.40
40:g:65:LEU:HD23	40:g:96:ASN:ND2	2.37	0.40
41:h:46:GLU:HB3	41:h:61:THR:O	2.22	0.40
48:o:2:LEU:HD12	48:o:2:LEU:HA	1.86	0.40
49:p:76:LYS:HA	49:p:76:LYS:HD3	1.90	0.40
50:q:18:LYS:HA	50:q:50:ASN:OD1	2.22	0.40
1:0:11:LYS:HD2	1:0:11:LYS:HA	1.92	0.40
8:A:28:A:C6	8:A:29:U:N3	2.89	0.40
8:A:85:G:C2	8:A:98:G:C2	3.10	0.40
8:A:705:A:C4	8:A:706:A:C8	3.10	0.40
8:A:1167:C:H2'	8:A:1168:G:C8	2.53	0.40
8:A:1283:G:H21	8:A:1285:A:H8	1.69	0.40
8:A:1363:C:H2'	8:A:1364:G:H8	1.85	0.40
8:A:1837:C:O2'	8:A:1927:A:H1'	2.22	0.40
8:A:1889:A:H2'	8:A:1890:A:C8	2.57	0.40
8:A:2102:G:C6	8:A:2103:C:H1'	2.57	0.40
8:A:2276:G:C2	8:A:2277:G:C8	3.09	0.40
8:A:2461:A:C6	8:A:2462:C:C4	3.09	0.40
8:A:2494:G:N3	8:A:2495:G:C8	2.90	0.40
8:A:2683:C:C2	8:A:2684:U:C5	3.09	0.40
8:A:2728:U:O2'	8:A:2729:G:P	2.79	0.40
8:A:2873:A:O2'	8:A:2874:C:H5'	2.21	0.40
9:B:70:C:H2'	9:B:71:C:C6	2.55	0.40
9:B:85:G:C2	9:B:92:C:C2	3.10	0.40
9:B:112:G:H21	22:O:45:SER:C	2.25	0.40
10:C:224:MET:HB3	10:C:228:ASP:HB2	2.03	0.40
13:F:31:GLU:OE1	13:F:158:THR:HG23	2.22	0.40
17:J:68:LYS:HG2	17:J:72:LYS:HB2	2.04	0.40
20:M:67:VAL:HG22	20:M:68:PHE:N	2.37	0.40
21:N:20:MET:HE2	21:N:20:MET:HB3	1.97	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:a:35:G:C6	34:a:550:G:N1	2.90	0.40
34:a:81:A:H61	34:a:86:G:N2	2.20	0.40
34:a:158:G:C4	34:a:159:G:C8	3.09	0.40
34:a:182:A:C4	34:a:184:G:C8	3.09	0.40
34:a:355:C:H1'	34:a:388:G:H1'	2.04	0.40
34:a:439:U:C4	34:a:440:C:C5	3.09	0.40
34:a:581:G:O2'	34:a:582:C:H6	2.05	0.40
34:a:720:C:O3'	51:r:51:GLN:NE2	2.55	0.40
34:a:788:U:C4	34:a:789:U:C4	3.09	0.40
34:a:949:A:C5	34:a:950:U:C4	3.10	0.40
34:a:1055:A:C2	34:a:1206:G:C4	3.09	0.40
34:a:1071:C:H2'	34:a:1072:G:C8	2.54	0.40
34:a:1083:U:O2'	34:a:1102:A:OP2	2.31	0.40
34:a:1157:A:C5	34:a:1180:A:C6	3.09	0.40
34:a:1177:G:H2'	34:a:1178:G:C8	2.56	0.40
34:a:1304:G:H2'	34:a:1305:G:N3	2.36	0.40
36:c:153:SER:O	36:c:196:GLY:N	2.53	0.40
40:g:24:LYS:HA	40:g:24:LYS:HD3	1.99	0.40
40:g:144:ALA:O	40:g:145:GLU:HB2	2.22	0.40
42:i:27:ILE:HG22	42:i:29:ILE:HG13	2.04	0.40
42:i:90:ASP:OD1	42:i:92:SER:OG	2.32	0.40
44:k:83:VAL:O	44:k:109:ILE:HA	2.20	0.40
48:o:42:PHE:HB3	48:o:52:ARG:HH21	1.86	0.40
48:o:80:LEU:HD12	48:o:80:LEU:HA	1.88	0.40
54:u:15:LEU:HD12	54:u:15:LEU:HA	1.93	0.40
55:v:36:U:C2	55:v:37:A:C8	3.10	0.40
56:w:10:G:H2'	56:w:11:C:C6	2.56	0.40
57:x:194:ASP:OD1	57:x:194:ASP:N	2.54	0.40
57:x:590:LEU:H	57:x:590:LEU:HG	1.65	0.40
5:4:10:LEU:HA	5:4:10:LEU:HD23	1.77	0.40
8:A:136:G:C6	8:A:144:A:C6	3.09	0.40
8:A:241:A:H8	8:A:243:U:C2	2.40	0.40
8:A:466:A:N1	8:A:795:C:O2'	2.44	0.40
8:A:534:U:N3	8:A:535:G:N7	2.69	0.40
8:A:572:A:OP2	25:R:79:ARG:NH1	2.54	0.40
8:A:608:A:C2	8:A:609:A:C4	3.10	0.40
8:A:693:A:O2'	8:A:1353:A:N3	2.42	0.40
8:A:825:A:H1'	19:L:54:GLN:OE1	2.21	0.40
8:A:828:U:H2'	8:A:829:A:C8	2.57	0.40
8:A:974:G:C6	8:A:1186:G:C6	3.09	0.40
8:A:1631:G:H21	8:A:1635:A:H62	1.70	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:A:1650:A:C6	8:A:1651:G:C5	3.09	0.40
8:A:1686:C:C2	8:A:1703:G:C2	3.09	0.40
8:A:1686:C:C4	8:A:1703:G:N1	2.89	0.40
8:A:1891:G:H2'	8:A:1892:C:C6	2.55	0.40
8:A:2082:A:C4	8:A:2239:G:N2	2.90	0.40
8:A:2270:A:H3'	8:A:2271:G:H8	1.86	0.40
8:A:2748:A:C8	8:A:2753:A:N6	2.89	0.40
11:D:114:LYS:HG2	11:D:196:ALA:HB2	2.03	0.40
13:F:110:ILE:HA	13:F:133:GLU:OE1	2.22	0.40
15:H:46:PHE:O	15:H:51:ARG:HG2	2.21	0.40
19:L:79:LEU:O	19:L:82:LEU:HB2	2.22	0.40
20:M:8:LYS:HG2	20:M:9:PHE:CD2	2.57	0.40
27:T:51:PHE:CD1	27:T:51:PHE:N	2.89	0.40
34:a:57:G:C6	34:a:58:C:C4	3.09	0.40
34:a:229:U:H2'	34:a:230:G:O4'	2.22	0.40
34:a:348:G:H2'	34:a:349:A:C8	2.56	0.40
34:a:410:G:C2	34:a:433:G:O6	2.74	0.40
34:a:626:G:C2	34:a:627:G:C5	3.09	0.40
34:a:962:C:C2	34:a:963:G:C8	3.09	0.40
34:a:1089:G:C6	34:a:1090:U:C4	3.10	0.40
34:a:1117:A:O3'	42:i:105:ARG:HG2	2.22	0.40
34:a:1227:A:OP2	46:m:109:LYS:HE3	2.21	0.40
34:a:1306:A:N7	34:a:1331:G:N2	2.70	0.40
34:a:1352:C:H2'	34:a:1353:G:O4'	2.21	0.40
35:b:19:THR:C	35:b:21:TYR:H	2.30	0.40
36:c:89:VAL:HA	36:c:92:ASP:OD1	2.21	0.40
39:f:11:HIS:C	39:f:13:ASP:H	2.29	0.40
45:l:33:CYS:HB2	45:l:77:SER:O	2.22	0.40
57:x:325:THR:HG21	57:x:476:PHE:HZ	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all 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	0	54/57 (95%)	48 (89%)	6 (11%)	0	100	100
2	1	48/55 (87%)	46 (96%)	2 (4%)	0	100	100
3	2	44/46 (96%)	37 (84%)	7 (16%)	0	100	100
4	3	62/65 (95%)	51 (82%)	11 (18%)	0	100	100
5	4	36/38 (95%)	30 (83%)	6 (17%)	0	100	100
6	5	129/165 (78%)	98 (76%)	31 (24%)	0	100	100
7	6	64/70 (91%)	53 (83%)	11 (17%)	0	100	100
10	C	269/273 (98%)	229 (85%)	39 (14%)	1 (0%)	30	65
11	D	207/209 (99%)	172 (83%)	35 (17%)	0	100	100
12	E	199/201 (99%)	185 (93%)	14 (7%)	0	100	100
13	F	175/179 (98%)	143 (82%)	32 (18%)	0	100	100
14	G	174/177 (98%)	154 (88%)	20 (12%)	0	100	100
15	H	147/149 (99%)	117 (80%)	30 (20%)	0	100	100
16	I	139/142 (98%)	103 (74%)	36 (26%)	0	100	100
17	J	140/142 (99%)	128 (91%)	12 (9%)	0	100	100
18	K	120/123 (98%)	98 (82%)	22 (18%)	0	100	100
19	L	141/144 (98%)	113 (80%)	28 (20%)	0	100	100
20	M	134/136 (98%)	114 (85%)	20 (15%)	0	100	100
21	N	118/127 (93%)	106 (90%)	12 (10%)	0	100	100
22	O	114/117 (97%)	107 (94%)	7 (6%)	0	100	100
23	P	112/115 (97%)	100 (89%)	12 (11%)	0	100	100
24	Q	115/118 (98%)	110 (96%)	5 (4%)	0	100	100
25	R	101/103 (98%)	86 (85%)	13 (13%)	2 (2%)	6	33
26	S	108/110 (98%)	97 (90%)	11 (10%)	0	100	100
27	T	91/100 (91%)	79 (87%)	12 (13%)	0	100	100
28	U	100/104 (96%)	85 (85%)	13 (13%)	2 (2%)	6	33
29	V	92/94 (98%)	83 (90%)	9 (10%)	0	100	100
30	W	73/85 (86%)	60 (82%)	13 (18%)	0	100	100
31	X	75/78 (96%)	70 (93%)	5 (7%)	0	100	100
32	Y	61/63 (97%)	57 (93%)	3 (5%)	1 (2%)	7	37
33	Z	56/59 (95%)	51 (91%)	5 (9%)	0	100	100
35	b	216/240 (90%)	186 (86%)	30 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
36	c	204/233 (88%)	185 (91%)	19 (9%)	0	100	100
37	d	203/206 (98%)	167 (82%)	36 (18%)	0	100	100
38	e	155/167 (93%)	134 (86%)	21 (14%)	0	100	100
39	f	98/135 (73%)	84 (86%)	14 (14%)	0	100	100
40	g	149/179 (83%)	139 (93%)	10 (7%)	0	100	100
41	h	127/130 (98%)	113 (89%)	14 (11%)	0	100	100
42	i	125/130 (96%)	104 (83%)	21 (17%)	0	100	100
43	j	96/103 (93%)	75 (78%)	20 (21%)	1 (1%)	12	45
44	k	114/129 (88%)	97 (85%)	17 (15%)	0	100	100
45	l	121/124 (98%)	95 (78%)	26 (22%)	0	100	100
46	m	112/118 (95%)	96 (86%)	16 (14%)	0	100	100
47	n	99/102 (97%)	83 (84%)	16 (16%)	0	100	100
48	o	86/89 (97%)	75 (87%)	11 (13%)	0	100	100
49	p	80/82 (98%)	69 (86%)	10 (12%)	1 (1%)	9	41
50	q	78/84 (93%)	68 (87%)	10 (13%)	0	100	100
51	r	63/75 (84%)	52 (82%)	11 (18%)	0	100	100
52	s	80/92 (87%)	64 (80%)	16 (20%)	0	100	100
53	t	83/87 (95%)	81 (98%)	2 (2%)	0	100	100
54	u	63/71 (89%)	51 (81%)	11 (18%)	1 (2%)	7	37
57	x	701/704 (100%)	625 (89%)	74 (11%)	2 (0%)	36	70
All	All	6551/6924 (95%)	5653 (86%)	887 (14%)	11 (0%)	44	75

All (11) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
28	U	98	ASN
28	U	16	LYS
57	x	402	PRO
25	R	71	LYS
32	Y	19	LEU
49	p	47	GLU
43	j	58	ASN
54	u	12	ASP
57	x	367	ALA
10	C	240	GLY

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Mol	Chain	Res	Type
25	R	51	VAL

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	0	47/48 (98%)	47 (100%)	0	100	100
2	1	45/49 (92%)	45 (100%)	0	100	100
3	2	38/38 (100%)	38 (100%)	0	100	100
4	3	51/52 (98%)	50 (98%)	1 (2%)	48	66
5	4	34/34 (100%)	34 (100%)	0	100	100
7	6	59/62 (95%)	50 (85%)	9 (15%)	3	15
10	C	216/218 (99%)	216 (100%)	0	100	100
11	D	164/164 (100%)	164 (100%)	0	100	100
12	E	165/165 (100%)	165 (100%)	0	100	100
13	F	148/150 (99%)	147 (99%)	1 (1%)	76	79
14	G	137/138 (99%)	137 (100%)	0	100	100
15	H	114/114 (100%)	114 (100%)	0	100	100
17	J	116/116 (100%)	115 (99%)	1 (1%)	70	76
18	K	103/104 (99%)	103 (100%)	0	100	100
19	L	102/103 (99%)	102 (100%)	0	100	100
20	M	109/109 (100%)	109 (100%)	0	100	100
21	N	100/103 (97%)	100 (100%)	0	100	100
22	O	86/87 (99%)	86 (100%)	0	100	100
23	P	99/100 (99%)	99 (100%)	0	100	100
24	Q	89/90 (99%)	89 (100%)	0	100	100
25	R	84/84 (100%)	83 (99%)	1 (1%)	63	73
26	S	93/93 (100%)	93 (100%)	0	100	100
27	T	80/84 (95%)	80 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
28	U	83/85 (98%)	82 (99%)	1 (1%)	63	73
29	V	78/78 (100%)	78 (100%)	0	100	100
30	W	57/63 (90%)	57 (100%)	0	100	100
31	X	67/68 (98%)	67 (100%)	0	100	100
32	Y	55/55 (100%)	54 (98%)	1 (2%)	51	68
33	Z	48/49 (98%)	48 (100%)	0	100	100
35	b	180/198 (91%)	180 (100%)	0	100	100
36	c	170/190 (90%)	170 (100%)	0	100	100
37	d	172/173 (99%)	172 (100%)	0	100	100
38	e	114/126 (90%)	114 (100%)	0	100	100
39	f	87/116 (75%)	86 (99%)	1 (1%)	65	74
40	g	124/147 (84%)	124 (100%)	0	100	100
41	h	104/105 (99%)	104 (100%)	0	100	100
42	i	105/107 (98%)	105 (100%)	0	100	100
43	j	86/90 (96%)	86 (100%)	0	100	100
44	k	89/99 (90%)	89 (100%)	0	100	100
45	l	103/104 (99%)	103 (100%)	0	100	100
46	m	92/96 (96%)	92 (100%)	0	100	100
47	n	79/84 (94%)	79 (100%)	0	100	100
48	o	76/77 (99%)	76 (100%)	0	100	100
49	p	65/65 (100%)	65 (100%)	0	100	100
50	q	74/78 (95%)	74 (100%)	0	100	100
51	r	56/65 (86%)	56 (100%)	0	100	100
52	s	72/79 (91%)	72 (100%)	0	100	100
53	t	65/66 (98%)	65 (100%)	0	100	100
54	u	46/61 (75%)	46 (100%)	0	100	100
57	x	577/578 (100%)	569 (99%)	8 (1%)	59	71
58	y	1/1 (100%)	1 (100%)	0	100	100
All	All	5204/5408 (96%)	5180 (100%)	24 (0%)	78	82

All (24) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	3	31	ILE
7	6	48	GLN
7	6	49	ARG
7	6	51	VAL
7	6	53	THR
7	6	56	ARG
7	6	57	VAL
7	6	62	LYS
7	6	63	ARG
7	6	65	ASN
13	F	9	ASP
17	J	52	ASP
25	R	51	VAL
28	U	14	THR
32	Y	28	LEU
39	f	41	ASP
57	x	98	VAL
57	x	294	ILE
57	x	295	ASN
57	x	405	LEU
57	x	467	ILE
57	x	471	ARG
57	x	593	LYS
57	x	697	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (99) such sidechains are listed below:

Mol	Chain	Res	Type
1	0	5	ASN
1	0	37	HIS
1	0	41	HIS
2	1	45	HIS
4	3	27	ASN
4	3	30	HIS
10	C	89	ASN
10	C	133	ASN
10	C	229	HIS
10	C	238	ASN
11	D	136	ASN
11	D	173	GLN
11	D	185	ASN
12	E	97	ASN
12	E	163	ASN

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Mol	Chain	Res	Type
12	E	195	GLN
14	G	100	ASN
14	G	114	HIS
14	G	142	GLN
15	H	66	ASN
15	H	135	HIS
17	J	80	HIS
17	J	136	GLN
18	K	3	GLN
18	K	5	GLN
18	K	29	HIS
18	K	90	ASN
18	K	93	GLN
19	L	4	ASN
19	L	54	GLN
20	M	3	GLN
21	N	3	HIS
21	N	11	ASN
21	N	23	ASN
22	O	38	GLN
22	O	98	GLN
24	Q	36	GLN
25	R	43	ASN
26	S	7	HIS
27	T	48	GLN
27	T	70	HIS
28	U	68	ASN
32	Y	45	GLN
33	Z	33	HIS
35	b	17	HIS
35	b	88	GLN
35	b	167	HIS
36	c	2	GLN
36	c	18	ASN
37	d	35	GLN
37	d	39	GLN
37	d	73	ASN
37	d	115	GLN
37	d	135	GLN
38	e	42	ASN
39	f	11	HIS
39	f	17	GLN

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Mol	Chain	Res	Type
39	f	52	ASN
40	g	85	GLN
40	g	96	ASN
40	g	147	ASN
41	h	17	GLN
43	j	56	HIS
43	j	99	GLN
44	k	14	GLN
44	k	21	HIS
45	l	76	HIS
45	l	111	GLN
47	n	60	GLN
48	o	34	GLN
48	o	37	HIS
49	p	59	HIS
49	p	79	ASN
50	q	44	HIS
50	q	46	HIS
51	r	51	GLN
52	s	13	HIS
52	s	42	ASN
52	s	55	GLN
52	s	56	HIS
53	t	12	GLN
53	t	19	HIS
53	t	47	GLN
53	t	51	ASN
53	t	69	ASN
53	t	81	GLN
57	x	36	ASN
57	x	54	GLN
57	x	121	GLN
57	x	128	GLN
57	x	215	ASN
57	x	258	ASN
57	x	271	ASN
57	x	427	GLN
57	x	464	HIS
57	x	504	HIS
57	x	516	HIS
57	x	583	HIS
57	x	626	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	a	1539/1542 (99%)	349 (22%)	0
55	v	76/77 (98%)	21 (27%)	0
56	w	75/76 (98%)	35 (46%)	0
59	z	10/33 (30%)	8 (80%)	0
8	A	2902/2903 (99%)	722 (24%)	56 (1%)
9	B	119/120 (99%)	23 (19%)	3 (2%)
All	All	4721/4751 (99%)	1158 (24%)	59 (1%)

All (1158) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
8	A	10	A
8	A	12	U
8	A	15	G
8	A	27	G
8	A	35	G
8	A	43	G
8	A	44	A
8	A	46	G
8	A	62	U
8	A	63	A
8	A	71	A
8	A	74	A
8	A	75	G
8	A	84	A
8	A	93	G
8	A	96	C
8	A	101	A
8	A	102	U
8	A	103	A
8	A	104	A
8	A	118	A
8	A	120	U
8	A	131	A
8	A	140	C
8	A	141	G
8	A	142	A
8	A	149	A
8	A	160	A
8	A	163	C
8	A	170	U

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Mol	Chain	Res	Type
8	A	175	G
8	A	196	A
8	A	199	A
8	A	200	U
8	A	204	A
8	A	205	G
8	A	215	G
8	A	216	A
8	A	221	A
8	A	222	A
8	A	226	A
8	A	228	C
8	A	229	C
8	A	230	G
8	A	232	G
8	A	233	A
8	A	239	C
8	A	241	A
8	A	242	G
8	A	243	U
8	A	244	A
8	A	245	G
8	A	248	G
8	A	255	A
8	A	264	C
8	A	266	G
8	A	272	A
8	A	275	C
8	A	276	U
8	A	278	A
8	A	279	A
8	A	288	U
8	A	291	G
8	A	294	A
8	A	296	U
8	A	302	C
8	A	311	A
8	A	322	A
8	A	323	C
8	A	330	A
8	A	332	A
8	A	345	A

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Mol	Chain	Res	Type
8	A	346	A
8	A	359	G
8	A	361	G
8	A	367	G
8	A	368	A
8	A	370	G
8	A	371	A
8	A	372	G
8	A	373	U
8	A	386	G
8	A	396	G
8	A	401	A
8	A	404	A
8	A	405	U
8	A	406	G
8	A	411	G
8	A	435	C
8	A	451	U
8	A	455	C
8	A	457	A
8	A	458	G
8	A	459	U
8	A	464	U
8	A	478	A
8	A	479	A
8	A	480	A
8	A	481	G
8	A	482	A
8	A	490	C
8	A	491	G
8	A	494	G
8	A	496	G
8	A	503	A
8	A	504	A
8	A	505	A
8	A	507	A
8	A	508	A
8	A	509	C
8	A	518	G
8	A	527	C
8	A	529	A
8	A	531	C

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Mol	Chain	Res	Type
8	A	532	A
8	A	544	C
8	A	545	U
8	A	546	U
8	A	548	G
8	A	549	G
8	A	556	A
8	A	563	A
8	A	572	A
8	A	573	U
8	A	575	A
8	A	603	A
8	A	613	A
8	A	614	A
8	A	615	U
8	A	622	G
8	A	627	A
8	A	637	A
8	A	643	A
8	A	645	C
8	A	646	U
8	A	647	G
8	A	654	A
8	A	655	A
8	A	669	G
8	A	674	G
8	A	682	G
8	A	686	U
8	A	695	G
8	A	704	G
8	A	712	G
8	A	714	U
8	A	716	A
8	A	717	C
8	A	730	A
8	A	745	1MG
8	A	747	5MC
8	A	757	G
8	A	760	G
8	A	764	A
8	A	765	C
8	A	775	G

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Mol	Chain	Res	Type
8	A	776	G
8	A	782	A
8	A	783	A
8	A	784	G
8	A	785	G
8	A	800	A
8	A	803	U
8	A	805	G
8	A	806	C
8	A	811	U
8	A	812	C
8	A	819	A
8	A	827	U
8	A	828	U
8	A	831	G
8	A	846	U
8	A	847	U
8	A	856	G
8	A	857	G
8	A	859	G
8	A	882	G
8	A	883	G
8	A	884	U
8	A	885	C
8	A	887	A
8	A	889	C
8	A	890	C
8	A	891	G
8	A	893	C
8	A	894	U
8	A	895	U
8	A	896	A
8	A	897	C
8	A	899	A
8	A	901	C
8	A	902	C
8	A	903	C
8	A	904	G
8	A	907	G
8	A	910	A
8	A	915	C
8	A	917	A

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Mol	Chain	Res	Type
8	A	927	A
8	A	931	U
8	A	934	U
8	A	941	A
8	A	946	C
8	A	953	G
8	A	957	C
8	A	958	U
8	A	959	A
8	A	961	C
8	A	973	A
8	A	974	G
8	A	980	A
8	A	983	A
8	A	990	A
8	A	995	C
8	A	996	A
8	A	1002	G
8	A	1003	G
8	A	1005	C
8	A	1009	A
8	A	1012	U
8	A	1013	C
8	A	1026	G
8	A	1033	U
8	A	1041	G
8	A	1045	C
8	A	1046	A
8	A	1047	G
8	A	1048	A
8	A	1052	C
8	A	1055	G
8	A	1056	G
8	A	1057	A
8	A	1058	U
8	A	1059	G
8	A	1060	U
8	A	1061	U
8	A	1062	G
8	A	1063	G
8	A	1066	U
8	A	1067	A

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Mol	Chain	Res	Type
8	A	1068	G
8	A	1069	A
8	A	1070	A
8	A	1071	G
8	A	1072	C
8	A	1073	A
8	A	1074	G
8	A	1075	C
8	A	1077	A
8	A	1078	U
8	A	1079	C
8	A	1080	A
8	A	1081	U
8	A	1082	U
8	A	1083	U
8	A	1084	A
8	A	1085	A
8	A	1086	A
8	A	1087	G
8	A	1088	A
8	A	1089	A
8	A	1091	G
8	A	1092	C
8	A	1093	G
8	A	1094	U
8	A	1095	A
8	A	1096	A
8	A	1097	U
8	A	1098	A
8	A	1100	C
8	A	1101	U
8	A	1102	C
8	A	1103	A
8	A	1105	U
8	A	1109	C
8	A	1111	A
8	A	1112	G
8	A	1115	G
8	A	1122	G
8	A	1130	U
8	A	1131	G
8	A	1132	U

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Mol	Chain	Res	Type
8	A	1133	A
8	A	1135	C
8	A	1139	G
8	A	1142	A
8	A	1143	A
8	A	1151	A
8	A	1154	G
8	A	1155	A
8	A	1174	U
8	A	1175	A
8	A	1176	U
8	A	1179	G
8	A	1180	U
8	A	1181	U
8	A	1204	A
8	A	1210	G
8	A	1211	C
8	A	1212	G
8	A	1225	G
8	A	1227	G
8	A	1234	U
8	A	1247	A
8	A	1250	G
8	A	1252	G
8	A	1253	A
8	A	1256	G
8	A	1263	U
8	A	1264	A
8	A	1265	A
8	A	1271	G
8	A	1272	A
8	A	1273	U
8	A	1275	A
8	A	1284	A
8	A	1300	G
8	A	1301	A
8	A	1302	A
8	A	1306	C
8	A	1313	U
8	A	1314	C
8	A	1321	A
8	A	1330	C

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Mol	Chain	Res	Type
8	A	1340	U
8	A	1341	G
8	A	1352	U
8	A	1365	A
8	A	1368	G
8	A	1373	A
8	A	1374	G
8	A	1376	C
8	A	1378	A
8	A	1379	U
8	A	1383	A
8	A	1395	A
8	A	1407	G
8	A	1409	U
8	A	1410	G
8	A	1413	A
8	A	1415	U
8	A	1416	G
8	A	1420	A
8	A	1421	G
8	A	1425	G
8	A	1428	C
8	A	1429	G
8	A	1434	A
8	A	1452	G
8	A	1455	G
8	A	1458	U
8	A	1459	G
8	A	1460	U
8	A	1461	C
8	A	1473	G
8	A	1475	G
8	A	1478	G
8	A	1482	G
8	A	1490	A
8	A	1491	G
8	A	1493	C
8	A	1494	A
8	A	1497	U
8	A	1503	A
8	A	1504	A
8	A	1508	A

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Mol	Chain	Res	Type
8	A	1515	A
8	A	1522	A
8	A	1524	G
8	A	1534	U
8	A	1536	C
8	A	1537	G
8	A	1538	G
8	A	1558	C
8	A	1566	A
8	A	1567	G
8	A	1569	A
8	A	1578	U
8	A	1584	U
8	A	1585	C
8	A	1598	A
8	A	1608	A
8	A	1610	A
8	A	1616	A
8	A	1622	G
8	A	1634	A
8	A	1635	A
8	A	1646	C
8	A	1647	U
8	A	1648	U
8	A	1649	G
8	A	1651	G
8	A	1654	A
8	A	1664	A
8	A	1665	A
8	A	1672	A
8	A	1674	G
8	A	1694	C
8	A	1695	G
8	A	1698	A
8	A	1699	G
8	A	1713	A
8	A	1715	G
8	A	1716	U
8	A	1729	U
8	A	1730	C
8	A	1731	G
8	A	1738	G

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Mol	Chain	Res	Type
8	A	1746	A
8	A	1756	G
8	A	1757	A
8	A	1758	U
8	A	1764	C
8	A	1773	A
8	A	1779	U
8	A	1781	U
8	A	1785	A
8	A	1791	A
8	A	1800	C
8	A	1801	A
8	A	1802	A
8	A	1808	A
8	A	1809	A
8	A	1814	G
8	A	1815	A
8	A	1816	C
8	A	1829	A
8	A	1833	C
8	A	1835	2MG
8	A	1838	C
8	A	1857	G
8	A	1862	G
8	A	1866	A
8	A	1869	G
8	A	1871	A
8	A	1873	G
8	A	1884	G
8	A	1889	A
8	A	1890	A
8	A	1901	A
8	A	1906	G
8	A	1908	C
8	A	1910	G
8	A	1912	A
8	A	1913	A
8	A	1914	C
8	A	1915	3TD
8	A	1916	A
8	A	1917	PSU
8	A	1918	A

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Mol	Chain	Res	Type
8	A	1919	A
8	A	1922	G
8	A	1924	C
8	A	1925	C
8	A	1926	U
8	A	1927	A
8	A	1929	G
8	A	1930	G
8	A	1937	A
8	A	1938	A
8	A	1939	5MU
8	A	1942	C
8	A	1955	U
8	A	1964	G
8	A	1965	C
8	A	1967	C
8	A	1970	A
8	A	1971	U
8	A	1972	G
8	A	1976	U
8	A	1977	A
8	A	1982	U
8	A	1991	U
8	A	1992	G
8	A	1993	U
8	A	1997	C
8	A	2020	A
8	A	2022	U
8	A	2023	C
8	A	2030	6MZ
8	A	2031	A
8	A	2032	G
8	A	2033	A
8	A	2034	U
8	A	2036	C
8	A	2043	C
8	A	2046	G
8	A	2052	A
8	A	2055	C
8	A	2056	G
8	A	2060	A
8	A	2061	G

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Mol	Chain	Res	Type
8	A	2062	A
8	A	2069	G7M
8	A	2076	U
8	A	2089	C
8	A	2092	U
8	A	2093	G
8	A	2101	A
8	A	2102	G
8	A	2103	C
8	A	2104	C
8	A	2107	G
8	A	2110	G
8	A	2111	U
8	A	2112	G
8	A	2114	A
8	A	2115	G
8	A	2116	G
8	A	2118	U
8	A	2119	A
8	A	2120	G
8	A	2123	G
8	A	2124	G
8	A	2125	G
8	A	2126	A
8	A	2127	G
8	A	2128	G
8	A	2129	C
8	A	2130	U
8	A	2131	U
8	A	2132	U
8	A	2133	G
8	A	2134	A
8	A	2135	A
8	A	2136	G
8	A	2138	G
8	A	2139	U
8	A	2143	C
8	A	2146	C
8	A	2147	A
8	A	2148	G
8	A	2150	C
8	A	2151	U

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Mol	Chain	Res	Type
8	A	2153	C
8	A	2154	A
8	A	2155	U
8	A	2157	G
8	A	2159	G
8	A	2161	C
8	A	2162	G
8	A	2163	A
8	A	2164	C
8	A	2166	U
8	A	2169	A
8	A	2170	A
8	A	2171	A
8	A	2172	U
8	A	2173	A
8	A	2175	C
8	A	2180	U
8	A	2181	U
8	A	2182	U
8	A	2183	A
8	A	2186	G
8	A	2187	U
8	A	2188	U
8	A	2190	G
8	A	2193	G
8	A	2194	U
8	A	2198	A
8	A	2203	U
8	A	2204	G
8	A	2212	A
8	A	2213	U
8	A	2225	A
8	A	2226	C
8	A	2238	G
8	A	2239	G
8	A	2243	U
8	A	2266	A
8	A	2267	A
8	A	2273	A
8	A	2279	G
8	A	2280	G
8	A	2283	C

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Mol	Chain	Res	Type
8	A	2287	A
8	A	2288	A
8	A	2304	G
8	A	2305	U
8	A	2307	G
8	A	2309	A
8	A	2320	U
8	A	2321	U
8	A	2322	A
8	A	2325	G
8	A	2327	A
8	A	2333	A
8	A	2335	A
8	A	2347	C
8	A	2350	C
8	A	2357	G
8	A	2358	A
8	A	2361	G
8	A	2382	G
8	A	2383	G
8	A	2384	U
8	A	2385	C
8	A	2388	A
8	A	2392	A
8	A	2402	U
8	A	2403	C
8	A	2406	A
8	A	2410	G
8	A	2423	U
8	A	2425	A
8	A	2429	G
8	A	2430	A
8	A	2432	A
8	A	2434	A
8	A	2435	A
8	A	2438	U
8	A	2441	U
8	A	2445	2MG
8	A	2447	G
8	A	2448	A
8	A	2449	U
8	A	2450	A

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Mol	Chain	Res	Type
8	A	2469	A
8	A	2475	C
8	A	2476	A
8	A	2478	A
8	A	2480	C
8	A	2484	G
8	A	2487	G
8	A	2491	U
8	A	2498	OMC
8	A	2501	C
8	A	2502	G
8	A	2503	2MA
8	A	2504	PSU
8	A	2506	U
8	A	2518	A
8	A	2520	C
8	A	2529	G
8	A	2535	G
8	A	2547	A
8	A	2548	U
8	A	2553	G
8	A	2554	U
8	A	2556	C
8	A	2566	A
8	A	2567	G
8	A	2572	A
8	A	2573	C
8	A	2576	G
8	A	2585	U
8	A	2602	A
8	A	2603	G
8	A	2609	U
8	A	2613	U
8	A	2615	U
8	A	2621	G
8	A	2623	G
8	A	2629	U
8	A	2630	G
8	A	2634	A
8	A	2646	C
8	A	2647	U
8	A	2654	A

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Mol	Chain	Res	Type
8	A	2655	G
8	A	2656	U
8	A	2660	A
8	A	2663	G
8	A	2673	G
8	A	2682	A
8	A	2684	U
8	A	2689	U
8	A	2690	U
8	A	2702	G
8	A	2707	U
8	A	2712	C
8	A	2713	U
8	A	2714	G
8	A	2717	C
8	A	2726	A
8	A	2729	G
8	A	2733	A
8	A	2744	G
8	A	2748	A
8	A	2751	G
8	A	2752	C
8	A	2755	C
8	A	2757	A
8	A	2758	A
8	A	2764	A
8	A	2765	A
8	A	2769	U
8	A	2776	A
8	A	2778	A
8	A	2779	U
8	A	2780	G
8	A	2790	U
8	A	2791	G
8	A	2794	C
8	A	2796	U
8	A	2797	U
8	A	2798	U
8	A	2799	A
8	A	2800	A
8	A	2801	G
8	A	2803	G

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Mol	Chain	Res	Type
8	A	2804	U
8	A	2808	G
8	A	2809	A
8	A	2818	U
8	A	2820	A
8	A	2833	U
8	A	2834	G
8	A	2836	U
8	A	2846	G
8	A	2849	U
8	A	2866	U
8	A	2867	G
8	A	2872	A
8	A	2873	A
8	A	2879	A
8	A	2880	C
8	A	2883	A
8	A	2886	A
8	A	2894	G
8	A	2902	C
9	B	9	G
9	B	14	U
9	B	24	G
9	B	25	U
9	B	32	U
9	B	33	G
9	B	35	C
9	B	37	C
9	B	42	C
9	B	44	G
9	B	45	A
9	B	56	G
9	B	66	A
9	B	67	G
9	B	73	A
9	B	83	G
9	B	88	C
9	B	89	U
9	B	90	C
9	B	91	C
9	B	108	A
9	B	109	A

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Mol	Chain	Res	Type
9	B	120	U
34	a	2	A
34	a	6	G
34	a	7	A
34	a	9	G
34	a	22	G
34	a	31	G
34	a	32	A
34	a	39	G
34	a	47	C
34	a	48	C
34	a	51	A
34	a	64	G
34	a	70	U
34	a	71	A
34	a	74	A
34	a	76	G
34	a	78	A
34	a	80	A
34	a	81	A
34	a	83	C
34	a	84	U
34	a	85	U
34	a	86	G
34	a	89	U
34	a	92	U
34	a	94	G
34	a	96	U
34	a	108	G
34	a	119	A
34	a	121	U
34	a	130	A
34	a	131	A
34	a	141	G
34	a	144	G
34	a	154	U
34	a	160	A
34	a	161	A
34	a	166	U
34	a	182	A
34	a	183	C
34	a	184	G

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Mol	Chain	Res	Type
34	a	197	A
34	a	198	G
34	a	205	A
34	a	208	U
34	a	210	C
34	a	211	G
34	a	218	U
34	a	240	G
34	a	245	U
34	a	247	G
34	a	251	G
34	a	262	A
34	a	266	G
34	a	267	C
34	a	281	G
34	a	289	G
34	a	298	A
34	a	299	G
34	a	306	A
34	a	321	A
34	a	328	C
34	a	329	A
34	a	344	A
34	a	346	G
34	a	352	C
34	a	356	A
34	a	363	A
34	a	367	U
34	a	371	A
34	a	372	C
34	a	373	A
34	a	376	G
34	a	377	G
34	a	381	C
34	a	383	A
34	a	384	G
34	a	388	G
34	a	397	A
34	a	406	G
34	a	411	A
34	a	413	G
34	a	414	A

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Mol	Chain	Res	Type
34	a	421	U
34	a	423	G
34	a	424	G
34	a	428	G
34	a	429	U
34	a	439	U
34	a	461	A
34	a	462	G
34	a	465	A
34	a	466	A
34	a	467	U
34	a	468	A
34	a	470	C
34	a	479	U
34	a	482	A
34	a	484	G
34	a	496	A
34	a	505	G
34	a	509	A
34	a	510	A
34	a	511	C
34	a	512	U
34	a	517	G
34	a	518	C
34	a	521	G
34	a	527	G7M
34	a	530	G
34	a	531	U
34	a	532	A
34	a	546	A
34	a	547	A
34	a	559	A
34	a	562	U
34	a	564	C
34	a	572	A
34	a	573	A
34	a	576	C
34	a	577	G
34	a	596	A
34	a	605	U
34	a	607	A
34	a	608	A

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Mol	Chain	Res	Type
34	a	615	G
34	a	629	A
34	a	632	U
34	a	633	G
34	a	650	G
34	a	665	A
34	a	687	A
34	a	691	G
34	a	703	G
34	a	704	A
34	a	723	U
34	a	724	G
34	a	733	G
34	a	734	G
34	a	748	G
34	a	753	A
34	a	755	G
34	a	760	G
34	a	761	G
34	a	773	G
34	a	777	A
34	a	779	C
34	a	781	A
34	a	792	A
34	a	793	U
34	a	794	A
34	a	813	U
34	a	814	A
34	a	815	A
34	a	817	C
34	a	819	A
34	a	821	G
34	a	829	G
34	a	841	C
34	a	842	U
34	a	843	U
34	a	844	G
34	a	845	A
34	a	846	G
34	a	849	G
34	a	851	G
34	a	868	C

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Mol	Chain	Res	Type
34	a	885	G
34	a	889	A
34	a	890	G
34	a	902	G
34	a	913	A
34	a	914	A
34	a	922	G
34	a	928	G
34	a	934	C
34	a	935	A
34	a	958	A
34	a	960	U
34	a	966	2MG
34	a	967	5MC
34	a	968	A
34	a	969	A
34	a	970	C
34	a	971	G
34	a	973	G
34	a	975	A
34	a	976	G
34	a	977	A
34	a	981	U
34	a	982	U
34	a	984	C
34	a	990	C
34	a	992	U
34	a	993	G
34	a	994	A
34	a	996	A
34	a	1004	A
34	a	1006	G
34	a	1012	A
34	a	1014	A
34	a	1016	A
34	a	1017	U
34	a	1020	G
34	a	1023	U
34	a	1025	U
34	a	1026	G
34	a	1030	U
34	a	1031	C

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Mol	Chain	Res	Type
34	a	1032	G
34	a	1037	C
34	a	1043	G
34	a	1045	C
34	a	1050	G
34	a	1053	G
34	a	1056	U
34	a	1063	C
34	a	1065	U
34	a	1085	U
34	a	1086	U
34	a	1092	A
34	a	1094	G
34	a	1101	A
34	a	1104	G
34	a	1108	G
34	a	1126	U
34	a	1134	G
34	a	1137	C
34	a	1138	G
34	a	1139	G
34	a	1144	G
34	a	1147	C
34	a	1151	A
34	a	1159	U
34	a	1167	A
34	a	1168	U
34	a	1179	A
34	a	1182	G
34	a	1183	U
34	a	1184	G
34	a	1196	A
34	a	1197	A
34	a	1210	C
34	a	1211	U
34	a	1212	U
34	a	1213	A
34	a	1215	G
34	a	1218	C
34	a	1224	U
34	a	1225	A
34	a	1226	C

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Mol	Chain	Res	Type
34	a	1227	A
34	a	1239	A
34	a	1241	G
34	a	1248	A
34	a	1254	A
34	a	1256	A
34	a	1257	A
34	a	1258	G
34	a	1260	G
34	a	1261	A
34	a	1270	G
34	a	1275	A
34	a	1278	G
34	a	1280	A
34	a	1281	C
34	a	1285	A
34	a	1286	U
34	a	1287	A
34	a	1294	G
34	a	1297	G
34	a	1298	U
34	a	1300	G
34	a	1301	U
34	a	1302	C
34	a	1305	G
34	a	1306	A
34	a	1307	U
34	a	1312	G
34	a	1317	C
34	a	1320	C
34	a	1322	C
34	a	1325	C
34	a	1331	G
34	a	1332	A
34	a	1338	G
34	a	1340	A
34	a	1346	A
34	a	1347	G
34	a	1348	U
34	a	1353	G
34	a	1361	G
34	a	1363	A

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Mol	Chain	Res	Type
34	a	1370	G
34	a	1374	A
34	a	1378	C
34	a	1379	G
34	a	1381	U
34	a	1383	C
34	a	1397	C
34	a	1398	A
34	a	1399	C
34	a	1402	4OC
34	a	1408	A
34	a	1413	A
34	a	1417	G
34	a	1418	A
34	a	1419	G
34	a	1420	U
34	a	1426	G
34	a	1427	C
34	a	1428	A
34	a	1429	A
34	a	1434	A
34	a	1441	A
34	a	1442	G
34	a	1443	C
34	a	1446	A
34	a	1451	U
34	a	1452	C
34	a	1467	C
34	a	1472	U
34	a	1473	G
34	a	1474	U
34	a	1482	G
34	a	1483	A
34	a	1484	C
34	a	1485	U
34	a	1486	G
34	a	1487	G
34	a	1491	G
34	a	1492	A
34	a	1497	G
34	a	1499	A
34	a	1503	A

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Mol	Chain	Res	Type
34	a	1504	G
34	a	1506	U
34	a	1517	G
34	a	1519	MA6
34	a	1523	G
34	a	1529	G
34	a	1530	G
34	a	1533	C
34	a	1534	A
34	a	1535	C
34	a	1536	C
34	a	1538	C
34	a	1539	C
34	a	1540	U
55	v	9	G
55	v	16	C
55	v	18	G
55	v	20	H2U
55	v	21	A
55	v	24	U
55	v	33	U
55	v	34	C
55	v	38	A
55	v	42	G
55	v	43	A
55	v	44	A
55	v	46	A
55	v	47	U
55	v	48	C
55	v	52	G
55	v	55	PSU
55	v	56	C
55	v	57	A
55	v	75	C
55	v	76	A
56	w	7	A
56	w	8	4SU
56	w	16	U
56	w	17	C
56	w	18	G
56	w	19	G
56	w	20	U

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Mol	Chain	Res	Type
56	w	21	A
56	w	22	G
56	w	23	A
56	w	28	G
56	w	35	A
56	w	36	A
56	w	38	A
56	w	39	PSU
56	w	40	C
56	w	44	G
56	w	45	U
56	w	46	G7M
56	w	47	U
56	w	48	C
56	w	53	G
56	w	54	5MU
56	w	55	PSU
56	w	57	G
56	w	58	A
56	w	59	U
56	w	60	U
56	w	61	C
56	w	62	C
56	w	67	C
56	w	68	C
56	w	74	C
56	w	75	C
56	w	76	A
59	z	-1	C
59	z	0	U
59	z	2	U
59	z	3	G
59	z	4	U
59	z	5	U
59	z	7	G
59	z	8	U

All (59) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
8	A	242	G
8	A	310	A

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Mol	Chain	Res	Type
8	A	369	U
8	A	446	G
8	A	458	G
8	A	479	A
8	A	481	G
8	A	503	A
8	A	530	G
8	A	545	U
8	A	555	G
8	A	571	U
8	A	715	A
8	A	774	G
8	A	784	G
8	A	883	G
8	A	894	U
8	A	1024	G
8	A	1062	G
8	A	1082	U
8	A	1090	A
8	A	1093	G
8	A	1182	G
8	A	1224	U
8	A	1300	G
8	A	1331	G
8	A	1451	C
8	A	1473	G
8	A	1490	A
8	A	1647	U
8	A	1663	G
8	A	1715	G
8	A	1730	C
8	A	1907	G
8	A	1912	A
8	A	1917	PSU
8	A	1918	A
8	A	1926	U
8	A	1939	5MU
8	A	2149	U
8	A	2150	C
8	A	2158	A
8	A	2192	U
8	A	2287	A

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Mol	Chain	Res	Type
8	A	2319	G
8	A	2324	U
8	A	2428	G
8	A	2449	U
8	A	2468	A
8	A	2505	G
8	A	2655	G
8	A	2706	A
8	A	2728	U
8	A	2756	U
8	A	2796	U
8	A	2808	G
9	B	36	C
9	B	66	A
9	B	89	U

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

46 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
55	5MU	v	54	55	19,22,23	4.81	7 (36%)	28,32,35	3.52	11 (39%)
8	OMG	A	2251	8	23,26,27	1.27	3 (13%)	33,38,41	2.09	8 (24%)
8	5MC	A	1962	8	18,22,23	3.55	7 (38%)	26,32,35	1.10	2 (7%)
34	MA6	a	1519	34	23,26,27	1.50	5 (21%)	34,38,41	2.76	12 (35%)
8	PSU	A	2604	8	18,21,22	1.09	2 (11%)	22,30,33	1.90	5 (22%)
34	PSU	a	516	34	18,21,22	1.42	3 (16%)	22,30,33	2.13	4 (18%)
8	6MZ	A	2030	8	22,25,26	1.63	5 (22%)	30,36,39	2.46	13 (43%)
58	FME	y	101	58	8,9,10	0.48	0	7,9,11	1.04	1 (14%)
56	G7M	w	46	56	23,26,27	2.67	8 (34%)	35,39,42	2.24	10 (28%)
8	G7M	A	2069	8	23,26,27	2.58	8 (34%)	35,39,42	2.18	10 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
8	OMU	A	2552	8	19,22,23	2.94	8 (42%)	26,31,34	1.76	4 (15%)
8	2MG	A	2445	8	23,26,27	1.34	3 (13%)	32,38,41	2.26	9 (28%)
8	OMC	A	2498	8	19,22,23	0.89	1 (5%)	26,31,34	1.20	1 (3%)
8	2MG	A	1835	8	23,26,27	2.92	7 (30%)	32,38,41	2.24	10 (31%)
56	5MU	w	54	56	19,22,23	1.46	5 (26%)	28,32,35	2.23	8 (28%)
56	PSU	w	55	56	18,21,22	1.41	3 (16%)	22,30,33	1.93	4 (18%)
8	1MG	A	745	8	22,26,27	2.64	5 (22%)	33,39,42	1.86	7 (21%)
8	5MC	A	747	8	18,22,23	3.46	7 (38%)	26,32,35	1.12	2 (7%)
34	2MG	a	966	34	23,26,27	2.91	8 (34%)	32,38,41	2.28	9 (28%)
34	2MG	a	1207	34	23,26,27	2.91	8 (34%)	32,38,41	2.21	9 (28%)
8	2MA	A	2503	8	22,25,26	3.63	9 (40%)	33,37,40	2.17	8 (24%)
8	PSU	A	1911	8	18,21,22	1.07	1 (5%)	22,30,33	1.73	4 (18%)
55	4SU	v	8	55	18,21,22	3.44	7 (38%)	26,30,33	2.44	5 (19%)
8	PSU	A	2580	8	18,21,22	1.09	3 (16%)	22,30,33	1.90	5 (22%)
34	5MC	a	1407	34	18,22,23	3.69	7 (38%)	26,32,35	0.95	1 (3%)
8	5MU	A	1939	8	19,22,23	4.62	7 (36%)	28,32,35	3.76	10 (35%)
56	PSU	w	32	56	18,21,22	1.79	5 (27%)	22,30,33	2.48	8 (36%)
8	3TD	A	1915	8	22,23,23	6.54	9 (40%)	29,35,35	4.35	14 (48%)
8	PSU	A	955	8	18,21,22	1.00	1 (5%)	22,30,33	1.69	4 (18%)
8	PSU	A	2605	8	18,21,22	1.12	2 (11%)	22,30,33	1.81	4 (18%)
34	5MC	a	967	34	18,22,23	3.73	7 (38%)	26,32,35	0.95	1 (3%)
8	6MZ	A	1618	8	22,25,26	3.00	5 (22%)	30,36,39	4.27	12 (40%)
34	4OC	a	1402	34	20,23,24	2.98	8 (40%)	26,32,35	0.79	0
34	UR3	a	1498	34	19,22,23	2.58	6 (31%)	26,32,35	1.43	3 (11%)
8	PSU	A	2457	8	18,21,22	1.06	2 (11%)	22,30,33	1.98	5 (22%)
34	MA6	a	1518	34	23,26,27	1.49	6 (26%)	34,38,41	2.56	11 (32%)
56	4SU	w	8	56	18,21,22	3.57	7 (38%)	26,30,33	2.32	5 (19%)
56	MIA	w	37	56	28,31,32	3.68	13 (46%)	40,44,47	3.20	21 (52%)
8	PSU	A	1917	8	18,21,22	2.72	5 (27%)	22,30,33	2.98	9 (40%)
8	PSU	A	746	8	18,21,22	1.07	2 (11%)	22,30,33	1.67	4 (18%)
56	PSU	w	39	56	18,21,22	2.13	8 (44%)	22,30,33	3.11	13 (59%)
34	2MG	a	1516	34	23,26,27	2.92	9 (39%)	32,38,41	2.22	11 (34%)
55	PSU	v	55	55	18,21,22	1.08	1 (5%)	22,30,33	1.69	4 (18%)
8	PSU	A	2504	8	18,21,22	1.14	2 (11%)	22,30,33	1.83	4 (18%)
34	G7M	a	527	34	23,26,27	2.61	8 (34%)	35,39,42	2.26	10 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
55	H2U	v	20	55	18,21,22	3.03	5 (27%)	21,30,33	2.04	5 (23%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
55	5MU	v	54	55	-	0/7/25/26	0/2/2/2
8	OMG	A	2251	8	-	2/9/27/28	0/3/3/3
8	5MC	A	1962	8	-	4/7/25/26	0/2/2/2
34	MA6	a	1519	34	-	3/11/29/30	0/3/3/3
8	PSU	A	2604	8	-	1/7/25/26	0/2/2/2
34	PSU	a	516	34	-	0/7/25/26	0/2/2/2
8	6MZ	A	2030	8	-	5/9/27/28	0/3/3/3
58	FME	y	101	58	-	4/7/9/11	-
56	G7M	w	46	56	-	2/7/25/26	0/3/3/3
8	G7M	A	2069	8	-	1/7/25/26	0/3/3/3
8	OMU	A	2552	8	-	3/9/27/28	0/2/2/2
8	2MG	A	2445	8	-	2/9/27/28	0/3/3/3
8	OMC	A	2498	8	-	1/9/27/28	0/2/2/2
8	2MG	A	1835	8	-	2/9/27/28	0/3/3/3
56	5MU	w	54	56	-	1/7/25/26	0/2/2/2
56	PSU	w	55	56	-	2/7/25/26	0/2/2/2
8	1MG	A	745	8	-	2/7/25/26	0/3/3/3
8	5MC	A	747	8	-	0/7/25/26	0/2/2/2
34	2MG	a	966	34	-	2/9/27/28	0/3/3/3
34	2MG	a	1207	34	-	0/9/27/28	0/3/3/3
8	2MA	A	2503	8	-	2/7/25/26	0/3/3/3
8	PSU	A	1911	8	-	0/7/25/26	0/2/2/2
55	4SU	v	8	55	-	1/7/25/26	0/2/2/2
8	PSU	A	2580	8	-	0/7/25/26	0/2/2/2
34	5MC	a	1407	34	-	0/7/25/26	0/2/2/2
8	5MU	A	1939	8	-	2/7/25/26	0/2/2/2
56	PSU	w	32	56	-	4/7/25/26	0/2/2/2
8	3TD	A	1915	8	-	4/10/26/26	0/2/2/2
8	PSU	A	955	8	-	0/7/25/26	0/2/2/2
8	PSU	A	2605	8	-	1/7/25/26	0/2/2/2
34	5MC	a	967	34	-	2/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	6MZ	A	1618	8	-	2/9/27/28	0/3/3/3
34	4OC	a	1402	34	-	3/9/29/30	0/2/2/2
34	UR3	a	1498	34	-	2/7/25/26	0/2/2/2
8	PSU	A	2457	8	-	0/7/25/26	0/2/2/2
34	MA6	a	1518	34	-	3/11/29/30	0/3/3/3
56	4SU	w	8	56	-	0/7/25/26	0/2/2/2
56	MIA	w	37	56	-	6/15/33/34	0/3/3/3
8	PSU	A	1917	8	-	5/7/25/26	0/2/2/2
8	PSU	A	746	8	-	2/7/25/26	0/2/2/2
56	PSU	w	39	56	-	5/7/25/26	0/2/2/2
34	2MG	a	1516	34	-	0/9/27/28	0/3/3/3
55	PSU	v	55	55	-	2/7/25/26	0/2/2/2
8	PSU	A	2504	8	-	2/7/25/26	0/2/2/2
34	G7M	a	527	34	-	2/7/25/26	0/3/3/3
55	H2U	v	20	55	-	0/7/38/39	0/2/2/2

All (248) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	A	1915	3TD	C2'-C1'	-19.15	1.28	1.53
8	A	1915	3TD	O4'-C1'	15.38	1.64	1.43
56	w	37	MIA	C2-S10	-15.05	1.62	1.75
8	A	1618	6MZ	C6-N6	12.07	1.47	1.34
8	A	1915	3TD	C6-C5	11.52	1.48	1.35
55	v	54	5MU	C2-N1	11.13	1.56	1.38
8	A	2503	2MA	C4-N3	11.01	1.48	1.34
55	v	54	5MU	C6-N1	10.33	1.55	1.38
8	A	1939	5MU	C6-N1	9.91	1.55	1.38
8	A	1939	5MU	C2-N1	9.74	1.54	1.38
55	v	54	5MU	C4-C5	9.51	1.60	1.44
34	a	967	5MC	C6-C5	9.49	1.50	1.34
8	A	1939	5MU	C4-C5	9.37	1.60	1.44
34	a	1407	5MC	C6-C5	9.33	1.49	1.34
55	v	20	H2U	C2-N1	9.24	1.48	1.35
8	A	1962	5MC	C6-C5	8.83	1.49	1.34
8	A	747	5MC	C6-C5	8.81	1.49	1.34
8	A	1939	5MU	C4-N3	-8.32	1.23	1.38
55	v	54	5MU	C4-N3	-8.10	1.23	1.38
8	A	1915	3TD	C2-N1	8.01	1.47	1.37
56	w	8	4SU	C4-N3	7.83	1.46	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	v	8	4SU	C4-N3	7.52	1.45	1.37
34	a	1207	2MG	C2-N3	7.33	1.45	1.31
34	a	966	2MG	C2-N3	7.30	1.45	1.31
34	a	1516	2MG	C2-N3	7.30	1.45	1.31
56	w	8	4SU	C2-N1	7.28	1.50	1.38
8	A	745	1MG	C2-N2	7.27	1.47	1.34
56	w	37	MIA	C13-C14	7.24	1.53	1.32
8	A	1835	2MG	C2-N3	7.22	1.45	1.31
8	A	1915	3TD	O4'-C4'	-7.06	1.29	1.45
34	a	1402	4OC	C4-N3	6.97	1.44	1.32
8	A	2503	2MA	C2-N3	6.90	1.46	1.34
55	v	8	4SU	C2-N1	6.86	1.49	1.38
8	A	1962	5MC	C4-N3	6.81	1.45	1.34
8	A	2552	OMU	C2-N1	6.75	1.49	1.38
34	a	1407	5MC	C4-N3	6.74	1.45	1.34
8	A	2552	OMU	C2-N3	6.68	1.49	1.38
34	a	967	5MC	C4-N3	6.64	1.45	1.34
8	A	1915	3TD	O3'-C3'	-6.48	1.27	1.43
8	A	747	5MC	C4-N3	6.40	1.45	1.34
34	a	966	2MG	C4-N3	6.39	1.49	1.34
56	w	46	G7M	C4-N3	6.36	1.49	1.34
55	v	20	H2U	C2-N3	6.34	1.49	1.38
8	A	1835	2MG	C4-N3	6.33	1.49	1.34
34	a	1207	2MG	C4-N3	6.32	1.49	1.34
34	a	527	G7M	C4-N3	6.32	1.49	1.34
34	a	1516	2MG	C2-N2	6.28	1.47	1.33
34	a	1407	5MC	C2-N3	6.26	1.49	1.36
34	a	1498	UR3	C2-N1	6.20	1.47	1.38
34	a	1207	2MG	C2-N2	6.20	1.47	1.33
8	A	1835	2MG	C2-N2	6.19	1.47	1.33
8	A	745	1MG	C4-N3	6.18	1.49	1.34
34	a	967	5MC	C2-N3	6.16	1.48	1.36
34	a	966	2MG	C2-N2	6.13	1.47	1.33
8	A	1962	5MC	C2-N3	6.11	1.48	1.36
55	v	54	5MU	C6-C5	6.09	1.44	1.34
8	A	2069	G7M	C4-N3	6.08	1.48	1.34
34	a	1498	UR3	C6-C5	6.03	1.49	1.35
8	A	1917	PSU	C2'-C1'	-6.00	1.45	1.53
8	A	1939	5MU	C6-C5	5.98	1.44	1.34
34	a	1516	2MG	C4-N3	5.96	1.48	1.34
56	w	8	4SU	C6-C5	5.93	1.48	1.35
8	A	747	5MC	C2-N3	5.86	1.48	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	a	1402	4OC	C2-N3	5.82	1.48	1.36
34	a	1402	4OC	C6-C5	5.76	1.48	1.35
56	w	46	G7M	C2-N3	5.76	1.47	1.33
8	A	745	1MG	C2-N3	5.74	1.44	1.34
8	A	2503	2MA	C2-N1	5.73	1.44	1.34
34	a	527	G7M	C2-N3	5.72	1.47	1.33
55	v	8	4SU	C6-C5	5.63	1.48	1.35
8	A	2552	OMU	C6-C5	5.54	1.47	1.35
56	w	8	4SU	C2-N3	5.48	1.47	1.38
8	A	2069	G7M	C2-N3	5.41	1.46	1.33
8	A	2069	G7M	C5-N7	-5.39	1.32	1.39
8	A	2503	2MA	C6-N1	5.31	1.42	1.35
55	v	8	4SU	C2-N3	5.31	1.47	1.38
34	a	527	G7M	C5-N7	-5.30	1.33	1.39
56	w	46	G7M	C5-N7	-5.29	1.33	1.39
55	v	8	4SU	C4-S4	-5.28	1.58	1.68
56	w	39	PSU	C2'-C1'	-5.19	1.47	1.53
56	w	8	4SU	C4-S4	-5.06	1.58	1.68
55	v	20	H2U	C4-N3	4.98	1.46	1.37
8	A	1917	PSU	C4-N3	-4.87	1.29	1.38
8	A	1917	PSU	C2-N1	-4.78	1.30	1.36
34	a	967	5MC	C4-N4	4.77	1.46	1.34
34	a	1498	UR3	C2-N3	4.71	1.48	1.39
34	a	967	5MC	C6-N1	4.70	1.46	1.38
34	a	1407	5MC	C4-N4	4.68	1.46	1.34
8	A	747	5MC	C4-N4	4.67	1.46	1.34
8	A	1962	5MC	C4-N4	4.67	1.46	1.34
34	a	1407	5MC	C6-N1	4.62	1.45	1.38
34	a	1516	2MG	C2-N1	4.60	1.44	1.36
34	a	1207	2MG	C2-N1	4.52	1.43	1.36
34	a	966	2MG	C2-N1	4.51	1.43	1.36
8	A	1915	3TD	C6-N1	4.33	1.43	1.36
34	a	527	G7M	C2-N2	4.33	1.44	1.34
56	w	46	G7M	C2-N2	4.29	1.44	1.34
8	A	1835	2MG	C2-N1	4.29	1.43	1.36
34	a	967	5MC	C2-N1	4.25	1.49	1.40
34	a	1402	4OC	C4-N4	4.19	1.44	1.35
8	A	2069	G7M	C2-N2	4.15	1.44	1.34
8	A	2503	2MA	C5-C6	4.12	1.52	1.41
8	A	1962	5MC	C6-N1	4.09	1.45	1.38
8	A	2030	6MZ	C5-C4	4.05	1.46	1.39
34	a	1407	5MC	C2-N1	3.87	1.48	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	A	1917	PSU	C2-N3	-3.81	1.31	1.37
8	A	1917	PSU	C6-N1	-3.77	1.30	1.36
8	A	747	5MC	C6-N1	3.69	1.44	1.38
34	a	1516	2MG	C5-N7	-3.68	1.31	1.39
8	A	1962	5MC	C2-N1	3.67	1.48	1.40
8	A	1835	2MG	C5-N7	-3.66	1.32	1.39
34	a	1402	4OC	C2-N1	3.66	1.47	1.40
34	a	1207	2MG	C5-N7	-3.59	1.32	1.39
8	A	745	1MG	C5-N7	-3.59	1.32	1.39
8	A	1835	2MG	O6-C6	-3.59	1.16	1.23
8	A	2552	OMU	C4-N3	3.59	1.45	1.38
8	A	747	5MC	O2-C2	-3.58	1.17	1.23
8	A	2030	6MZ	O3'-C3'	3.56	1.51	1.43
34	a	527	G7M	C5-C6	3.55	1.53	1.43
8	A	2503	2MA	C6-N6	-3.54	1.25	1.34
8	A	2069	G7M	C5-C6	3.53	1.53	1.43
56	w	8	4SU	C5-C4	3.52	1.47	1.42
34	a	1402	4OC	C5-C4	3.52	1.48	1.40
56	w	46	G7M	C5-C6	3.50	1.53	1.43
34	a	966	2MG	C5-N7	-3.49	1.32	1.39
55	v	55	PSU	C6-C5	3.46	1.39	1.35
56	w	32	PSU	C4-N3	-3.46	1.32	1.38
34	a	967	5MC	O2-C2	-3.43	1.17	1.23
34	a	1519	MA6	C5-N7	-3.40	1.32	1.39
56	w	55	PSU	C6-C5	3.37	1.39	1.35
8	A	1618	6MZ	C8-N9	-3.36	1.31	1.37
34	a	1407	5MC	O2-C2	-3.35	1.17	1.23
56	w	37	MIA	C4-N9	-3.31	1.30	1.37
8	A	2503	2MA	C5-N7	-3.31	1.32	1.39
34	a	1516	2MG	O6-C6	-3.30	1.17	1.23
8	A	2504	PSU	C6-C5	3.29	1.39	1.35
34	a	1207	2MG	O6-C6	-3.29	1.17	1.23
34	a	966	2MG	O6-C6	-3.27	1.17	1.23
8	A	747	5MC	C2-N1	3.22	1.47	1.40
56	w	39	PSU	C6-C5	3.21	1.39	1.35
8	A	2552	OMU	O4-C4	-3.21	1.18	1.24
8	A	1962	5MC	O2-C2	-3.20	1.17	1.23
34	a	1519	MA6	C8-N9	-3.20	1.31	1.37
34	a	516	PSU	C6-C5	3.19	1.39	1.35
56	w	37	MIA	C5-N7	-3.17	1.33	1.39
8	A	2605	PSU	C6-C5	3.15	1.39	1.35
8	A	1618	6MZ	C5-C4	-3.15	1.33	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	a	1519	MA6	C6-N6	3.12	1.46	1.36
56	w	32	PSU	C2-N1	-3.10	1.32	1.36
55	v	8	4SU	C5-C4	3.09	1.46	1.42
34	a	1518	MA6	C6-N6	3.08	1.45	1.36
34	a	1518	MA6	C5-N7	-3.06	1.33	1.39
8	A	1911	PSU	C6-C5	3.04	1.38	1.35
8	A	2030	6MZ	C5-N7	-3.00	1.33	1.39
56	w	37	MIA	C5-C4	2.99	1.44	1.39
8	A	746	PSU	C6-C5	2.99	1.38	1.35
8	A	2604	PSU	C6-C5	2.98	1.38	1.35
8	A	2445	2MG	C6-N1	-2.96	1.33	1.38
34	a	1402	4OC	O2-C2	-2.94	1.18	1.23
34	a	516	PSU	C4-N3	-2.94	1.33	1.38
34	a	1518	MA6	C8-N9	-2.92	1.32	1.37
8	A	1939	5MU	O4-C4	-2.92	1.18	1.23
56	w	55	PSU	C4-N3	-2.88	1.33	1.38
8	A	2251	OMG	C5-C4	2.86	1.46	1.38
34	a	1402	4OC	C6-N1	2.86	1.44	1.38
34	a	1518	MA6	C5-C4	-2.85	1.33	1.39
56	w	46	G7M	O6-C6	-2.83	1.18	1.23
8	A	2445	2MG	C5-C4	2.82	1.46	1.38
8	A	1618	6MZ	C6-N1	-2.80	1.30	1.35
34	a	527	G7M	O6-C6	-2.80	1.18	1.23
56	w	46	G7M	C2-N1	2.80	1.44	1.37
56	w	37	MIA	C4-N3	-2.79	1.30	1.34
8	A	2251	OMG	C6-N1	-2.77	1.33	1.38
8	A	1939	5MU	O2-C2	-2.76	1.18	1.23
8	A	1618	6MZ	C4-N9	-2.74	1.31	1.37
55	v	8	4SU	O2-C2	-2.74	1.18	1.23
8	A	2069	G7M	O6-C6	-2.74	1.18	1.23
8	A	2580	PSU	O4'-C1'	-2.73	1.40	1.43
56	w	37	MIA	C2'-C3'	-2.72	1.45	1.53
56	w	37	MIA	C8-N9	-2.72	1.32	1.37
56	w	54	5MU	C4-N3	-2.72	1.33	1.38
34	a	1519	MA6	C5-C4	-2.71	1.34	1.39
56	w	39	PSU	C2-N1	-2.70	1.33	1.36
56	w	54	5MU	C6-C5	2.70	1.39	1.34
34	a	1498	UR3	C6-N1	2.68	1.44	1.38
56	w	39	PSU	C4-N3	-2.68	1.33	1.38
56	w	39	PSU	C1'-C5	-2.67	1.44	1.50
55	v	54	5MU	O4-C4	-2.67	1.18	1.23
56	w	46	G7M	C6-N1	2.61	1.43	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
55	v	54	5MU	O2-C2	-2.61	1.18	1.23
8	A	2503	2MA	C4-N9	-2.61	1.31	1.37
8	A	2457	PSU	O4'-C1'	-2.60	1.40	1.43
56	w	8	4SU	O2-C2	-2.58	1.18	1.23
8	A	1915	3TD	C2-N3	2.57	1.44	1.38
8	A	955	PSU	C6-C5	2.56	1.38	1.35
8	A	2552	OMU	C6-N1	2.56	1.44	1.38
56	w	37	MIA	C2'-C1'	-2.55	1.45	1.53
56	w	32	PSU	C6-N1	-2.52	1.32	1.36
56	w	54	5MU	C6-N1	-2.52	1.33	1.38
34	a	1498	UR3	O2-C2	-2.52	1.17	1.22
8	A	2069	G7M	C2-N1	2.51	1.43	1.37
8	A	2445	2MG	C5-N7	-2.51	1.34	1.39
34	a	527	G7M	C2-N1	2.46	1.43	1.37
56	w	37	MIA	C3'-C4'	-2.44	1.46	1.53
56	w	39	PSU	C3'-C4'	-2.44	1.46	1.53
8	A	2552	OMU	O2-C2	-2.41	1.18	1.23
8	A	1915	3TD	C1'-C5	-2.40	1.44	1.50
34	a	1498	UR3	O4-C4	-2.40	1.18	1.23
34	a	966	2MG	C5-C6	2.39	1.53	1.44
8	A	2251	OMG	C5-N7	-2.37	1.34	1.39
8	A	2457	PSU	C4-C5	-2.35	1.37	1.44
55	v	20	H2U	O4-C4	-2.35	1.18	1.23
56	w	32	PSU	C1'-C5	-2.32	1.44	1.50
56	w	54	5MU	C4-C5	2.30	1.48	1.44
56	w	37	MIA	O5'-C5'	-2.29	1.39	1.44
34	a	1516	2MG	C5-C6	2.28	1.52	1.44
56	w	54	5MU	C2-N1	2.27	1.42	1.38
55	v	20	H2U	O2-C2	-2.26	1.18	1.23
34	a	966	2MG	C6-N1	2.25	1.43	1.38
34	a	527	G7M	C6-N1	2.24	1.43	1.38
8	A	2580	PSU	C4-C5	-2.22	1.37	1.44
8	A	1835	2MG	C5-C6	2.20	1.52	1.44
8	A	2605	PSU	C4-C5	-2.18	1.37	1.44
8	A	745	1MG	C5-C6	2.17	1.51	1.45
34	a	1207	2MG	C5-C6	2.16	1.52	1.44
8	A	2069	G7M	C6-N1	2.14	1.42	1.38
34	a	1207	2MG	C6-N1	2.14	1.42	1.38
8	A	2580	PSU	C6-C5	2.14	1.37	1.35
34	a	1516	2MG	C6-N1	2.13	1.42	1.38
8	A	2504	PSU	C4-C5	-2.13	1.38	1.44
34	a	1518	MA6	C5-C6	-2.12	1.35	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
56	w	32	PSU	O5'-C5'	-2.12	1.39	1.44
56	w	37	MIA	O4'-C4'	-2.11	1.40	1.45
34	a	1516	2MG	C4-N9	-2.11	1.32	1.38
56	w	37	MIA	C2-N3	-2.08	1.30	1.34
8	A	746	PSU	C4-C5	-2.08	1.38	1.44
56	w	55	PSU	C2-N3	-2.07	1.34	1.37
56	w	39	PSU	O4'-C1'	-2.07	1.41	1.43
34	a	516	PSU	C2-N3	-2.07	1.34	1.37
8	A	2030	6MZ	C8-N9	-2.07	1.33	1.37
8	A	2552	OMU	C5-C4	2.06	1.48	1.43
8	A	2503	2MA	C8-N9	-2.04	1.33	1.37
8	A	2030	6MZ	C5-C6	2.04	1.47	1.41
8	A	2604	PSU	C4-C5	-2.02	1.38	1.44
34	a	1518	MA6	C8-N7	2.02	1.35	1.31
8	A	2498	OMC	C5-C4	-2.02	1.38	1.42
56	w	39	PSU	C6-N1	-2.01	1.32	1.36
34	a	1519	MA6	C5-C6	-2.01	1.36	1.41

All (320) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	A	1618	6MZ	C4-N9-C8	13.18	120.02	105.73
8	A	1915	3TD	O9-P-O5'	-12.58	73.25	106.73
8	A	1939	5MU	C5-C4-N3	12.18	125.71	115.31
55	v	54	5MU	C5-C4-N3	11.21	124.88	115.31
8	A	1939	5MU	C5-C6-N1	-10.68	112.35	123.34
8	A	1618	6MZ	N9-C8-N7	-10.59	99.42	113.91
8	A	1915	3TD	O9-P-OP1	-10.59	67.16	107.64
55	v	54	5MU	C5-C6-N1	-9.80	113.26	123.34
34	a	1519	MA6	N1-C6-N6	-9.38	106.83	117.08
34	a	1518	MA6	N1-C6-N6	-8.66	107.61	117.08
55	v	8	4SU	C4-N3-C2	-8.58	119.01	127.34
56	w	8	4SU	C4-N3-C2	-8.29	119.29	127.34
56	w	37	MIA	C12-C13-C14	-8.14	111.30	127.14
8	A	1618	6MZ	C5-C6-N1	7.95	126.67	118.20
56	w	39	PSU	N1-C2-N3	7.75	123.92	115.13
8	A	1915	3TD	O4-C4-N3	-7.24	107.03	120.30
8	A	1915	3TD	OP1-P-O5'	7.18	125.84	106.73
55	v	20	H2U	C4-N3-C2	-7.05	119.94	125.79
8	A	2445	2MG	C2-N3-C4	7.02	120.75	112.04
34	a	966	2MG	C2-N3-C4	6.69	120.33	112.04
34	a	1207	2MG	C2-N3-C4	6.66	120.30	112.04

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	A	1835	2MG	C2-N3-C4	6.66	120.30	112.04
8	A	1618	6MZ	N3-C4-N9	6.42	137.67	127.08
8	A	2251	OMG	C5-C4-N3	-6.40	118.08	128.46
56	w	37	MIA	C5-C4-N3	-6.38	120.01	127.19
34	a	1516	2MG	C2-N3-C4	6.37	119.94	112.04
8	A	2030	6MZ	C5-C4-N3	-6.32	118.51	126.75
56	w	32	PSU	N1-C2-N3	6.28	122.24	115.13
56	w	39	PSU	O4'-C1'-C2'	-6.26	96.32	105.14
8	A	2445	2MG	C5-C4-N3	-6.22	118.36	128.46
34	a	516	PSU	N1-C2-N3	6.11	122.05	115.13
8	A	2503	2MA	C5-C4-N3	-6.00	120.44	127.19
8	A	1915	3TD	N1-C2-N3	5.99	120.86	116.14
8	A	1915	3TD	C3'-C2'-C1'	5.96	108.58	101.64
8	A	1917	PSU	N1-C2-N3	5.96	121.88	115.13
55	v	8	4SU	C5-C4-N3	5.93	120.19	114.69
56	w	37	MIA	C11-S10-C2	-5.90	97.86	102.27
34	a	1519	MA6	C5-C4-N3	-5.90	119.06	126.75
56	w	55	PSU	N1-C2-N3	5.89	121.80	115.13
56	w	37	MIA	O3'-C3'-C2'	-5.85	92.88	111.82
34	a	966	2MG	C5-C4-N3	-5.70	119.21	128.46
56	w	8	4SU	C5-C4-N3	5.61	119.89	114.69
34	a	1207	2MG	C5-C4-N3	-5.61	119.36	128.46
8	A	1618	6MZ	C9-N6-C6	-5.59	118.06	122.87
34	a	527	G7M	CN7-N7-C5	5.57	133.69	126.77
8	A	2503	2MA	N9-C8-N7	-5.52	106.36	113.91
8	A	2552	OMU	C4-N3-C2	-5.43	119.42	126.58
8	A	1939	5MU	C4-N3-C2	-5.41	120.34	127.35
56	w	37	MIA	O2'-C2'-C3'	-5.41	94.31	111.82
8	A	745	1MG	C5-C4-N3	-5.36	119.77	128.46
34	a	1516	2MG	C5-C4-N3	-5.31	119.84	128.46
34	a	1518	MA6	N1-C2-N3	-5.31	120.30	128.60
8	A	1835	2MG	C5-C4-N3	-5.28	119.89	128.46
56	w	32	PSU	O2-C2-N1	-5.27	116.99	122.79
56	w	54	5MU	C4-N3-C2	-5.23	120.59	127.35
55	v	54	5MU	N3-C2-N1	5.18	121.76	114.89
56	w	46	G7M	CN7-N7-C5	5.17	133.19	126.77
8	A	1939	5MU	N3-C2-N1	5.15	121.73	114.89
8	A	1917	PSU	C3'-C2'-C1'	5.10	107.58	101.64
56	w	54	5MU	N3-C2-N1	5.10	121.66	114.89
8	A	2069	G7M	CN7-N7-C5	5.09	133.09	126.77
8	A	1939	5MU	O4-C4-C5	-5.07	119.03	124.90
8	A	2030	6MZ	N3-C4-N9	5.06	135.42	127.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	a	1519	MA6	N1-C2-N3	-5.05	120.70	128.60
8	A	2251	OMG	C2-N3-C4	5.03	121.26	112.30
8	A	1917	PSU	O2'-C2'-C1'	-4.93	99.47	111.23
8	A	1915	3TD	C4-N3-C2	-4.93	119.26	124.61
55	v	54	5MU	O4-C4-C5	-4.92	119.20	124.90
8	A	2251	OMG	N9-C4-N3	4.87	135.72	125.94
8	A	1917	PSU	O4'-C1'-C2'	-4.85	98.31	105.14
8	A	2604	PSU	C4-N3-C2	-4.83	119.39	126.34
8	A	2457	PSU	C4-N3-C2	-4.82	119.39	126.34
8	A	1618	6MZ	N1-C2-N3	-4.78	121.13	128.60
55	v	54	5MU	C4-N3-C2	-4.77	121.18	127.35
8	A	2604	PSU	N1-C2-N3	4.74	120.50	115.13
8	A	1917	PSU	C6-C5-C4	-4.73	114.89	118.20
8	A	1911	PSU	C4-N3-C2	-4.70	119.56	126.34
8	A	1618	6MZ	C5-N7-C8	4.70	110.19	103.51
34	a	966	2MG	C2-N1-C6	-4.70	119.07	124.48
56	w	32	PSU	C2'-C3'-C4'	-4.67	93.56	102.64
56	w	46	G7M	C1'-N9-C4	-4.66	112.65	126.50
8	A	2605	PSU	C4-N3-C2	-4.64	119.65	126.34
34	a	1518	MA6	C5-C4-N3	-4.64	120.69	126.75
56	w	39	PSU	O2-C2-N1	-4.60	117.72	122.79
34	a	527	G7M	C5-C4-N3	-4.60	119.33	128.15
8	A	2605	PSU	N1-C2-N3	4.59	120.33	115.13
8	A	2445	2MG	N9-C4-N3	4.55	135.08	125.94
34	a	527	G7M	C2-N3-C4	4.55	120.41	112.30
34	a	1516	2MG	C2-N1-C6	-4.53	119.27	124.48
34	a	1498	UR3	C4-N3-C2	-4.51	120.32	124.56
8	A	2504	PSU	N1-C2-N3	4.49	120.22	115.13
8	A	2503	2MA	N3-C4-N9	4.49	133.22	126.99
8	A	746	PSU	C4-N3-C2	-4.48	119.88	126.34
34	a	1519	MA6	C5-C6-N6	4.48	133.09	125.30
8	A	2580	PSU	C4-N3-C2	-4.47	119.90	126.34
34	a	1207	2MG	C2-N1-C6	-4.45	119.36	124.48
8	A	1618	6MZ	C1'-N9-C8	-4.44	117.12	127.14
8	A	2069	G7M	C1'-N9-C4	-4.43	113.34	126.50
34	a	1519	MA6	C4-C5-C6	4.40	120.81	115.88
56	w	37	MIA	C15-C14-C13	-4.40	109.94	122.65
8	A	2457	PSU	N1-C2-N3	4.40	120.11	115.13
8	A	1618	6MZ	C5-C4-N9	-4.38	100.69	105.78
8	A	2503	2MA	C4-N9-C8	4.37	110.46	105.73
8	A	2504	PSU	C4-N3-C2	-4.37	120.05	126.34
8	A	1835	2MG	C2-N1-C6	-4.37	119.45	124.48

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	a	527	G7M	CN7-N7-C8	-4.31	118.19	124.84
8	A	2580	PSU	N1-C2-N3	4.29	119.99	115.13
55	v	55	PSU	C4-N3-C2	-4.27	120.18	126.34
56	w	46	G7M	O6-C6-C5	-4.25	118.46	128.06
8	A	1911	PSU	N1-C2-N3	4.24	119.94	115.13
56	w	37	MIA	C4-C5-N7	-4.23	105.47	110.62
55	v	55	PSU	N1-C2-N3	4.22	119.91	115.13
8	A	2069	G7M	C5-C4-N3	-4.16	120.18	128.15
8	A	1917	PSU	C4-N3-C2	-4.16	120.35	126.34
8	A	2069	G7M	C2-N3-C4	4.15	119.69	112.30
34	a	527	G7M	C5-C6-N1	4.10	120.36	111.79
34	a	516	PSU	C4-N3-C2	-4.07	120.47	126.34
8	A	955	PSU	C4-N3-C2	-4.07	120.47	126.34
56	w	54	5MU	C5-C4-N3	4.07	118.78	115.31
34	a	1518	MA6	C5-C6-N6	4.06	132.38	125.30
55	v	8	4SU	C5-C4-S4	-4.04	119.27	124.47
56	w	46	G7M	C2-N3-C4	4.03	119.47	112.30
8	A	955	PSU	N1-C2-N3	4.02	119.69	115.13
56	w	46	G7M	C5-C6-N1	4.00	120.15	111.79
8	A	745	1MG	C1'-N9-C4	-4.00	114.61	126.50
56	w	8	4SU	N3-C2-N1	4.00	120.19	114.89
34	a	1518	MA6	N9-C8-N7	-3.98	108.47	113.91
34	a	966	2MG	N9-C4-N3	3.98	133.94	125.94
8	A	746	PSU	N1-C2-N3	3.97	119.63	115.13
55	v	8	4SU	N3-C2-N1	3.97	120.16	114.89
56	w	37	MIA	C6-C5-N7	3.97	136.68	132.39
8	A	2069	G7M	CN7-N7-C8	-3.97	118.72	124.84
56	w	46	G7M	C5-C4-N3	-3.95	120.58	128.15
8	A	1618	6MZ	C5-C4-N3	-3.92	121.64	126.75
8	A	1939	5MU	O2-C2-N1	-3.92	117.58	122.79
8	A	2552	OMU	N3-C2-N1	3.91	120.08	114.89
8	A	2030	6MZ	C9-N6-C6	-3.90	119.52	122.87
56	w	54	5MU	C5-C6-N1	-3.86	119.36	123.34
8	A	2498	OMC	C2'-C1'-N1	-3.85	106.75	114.22
56	w	37	MIA	N3-C4-N9	3.84	132.31	126.99
8	A	2069	G7M	C5-C6-N1	3.82	119.76	111.79
8	A	1915	3TD	O9-P-OP2	-3.78	95.88	110.68
8	A	1917	PSU	O2-C2-N1	-3.78	118.63	122.79
56	w	54	5MU	O4-C4-C5	-3.76	120.55	124.90
56	w	37	MIA	C2'-C3'-C4'	-3.73	95.39	102.64
56	w	55	PSU	C4-N3-C2	-3.73	120.96	126.34
56	w	46	G7M	CN7-N7-C8	-3.72	119.09	124.84

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	A	2030	6MZ	C4-C5-N7	-3.71	106.10	110.62
34	a	527	G7M	N9-C4-N3	3.69	133.35	125.94
56	w	39	PSU	C6-C5-C4	3.68	120.77	118.20
34	a	527	G7M	C1'-N9-C4	-3.67	115.59	126.50
55	v	54	5MU	C5M-C5-C6	-3.66	117.97	122.85
8	A	747	5MC	C5-C6-N1	-3.65	119.58	123.34
8	A	745	1MG	C1'-N9-C8	3.65	137.09	126.70
8	A	2030	6MZ	C5-N7-C8	3.63	108.66	103.51
8	A	745	1MG	N9-C4-N3	3.62	133.20	125.94
8	A	955	PSU	O2-C2-N1	-3.62	118.81	122.79
56	w	39	PSU	C4-N3-C2	-3.60	121.15	126.34
8	A	2504	PSU	O2-C2-N1	-3.60	118.83	122.79
8	A	1962	5MC	C5-C6-N1	-3.60	119.64	123.34
34	a	527	G7M	O6-C6-C5	-3.59	119.95	128.06
8	A	2030	6MZ	C2-N3-C4	3.57	120.18	111.75
34	a	1207	2MG	N9-C4-N3	3.56	133.08	125.94
8	A	2457	PSU	O2-C2-N1	-3.55	118.88	122.79
34	a	1518	MA6	C2-N1-C6	3.53	120.09	111.75
34	a	1519	MA6	C2-N3-C4	3.51	120.04	111.75
56	w	37	MIA	O2'-C2'-C1'	-3.48	98.39	110.02
8	A	2552	OMU	C5-C4-N3	3.48	120.05	114.84
8	A	2503	2MA	C5-N7-C8	3.47	108.44	103.51
8	A	2580	PSU	O2-C2-N1	-3.47	118.97	122.79
56	w	37	MIA	C2'-C1'-N9	-3.45	104.56	113.30
56	w	46	G7M	C1'-N9-C8	3.45	138.38	126.74
8	A	1915	3TD	O2-C2-N3	-3.43	116.76	121.83
8	A	2069	G7M	C1'-N9-C8	3.43	138.31	126.74
8	A	2069	G7M	O6-C6-C5	-3.42	120.34	128.06
8	A	1915	3TD	C10-N3-C2	3.37	125.85	118.30
34	a	1519	MA6	N3-C4-N9	3.36	132.62	127.08
8	A	745	1MG	C2-N3-C4	3.35	119.51	111.98
56	w	37	MIA	C3'-C2'-C1'	3.35	107.79	101.43
34	a	516	PSU	O2-C2-N1	-3.32	119.13	122.79
8	A	1618	6MZ	C2-N3-C4	3.31	119.57	111.75
34	a	1518	MA6	C4-C5-C6	3.29	119.56	115.88
8	A	1939	5MU	C5M-C5-C6	-3.28	118.47	122.85
34	a	527	G7M	C2-N1-C6	-3.27	119.14	125.10
34	a	1519	MA6	N9-C8-N7	-3.24	109.48	113.91
34	a	1518	MA6	C2-N3-C4	3.21	119.34	111.75
56	w	46	G7M	C2-N1-C6	-3.21	119.25	125.10
56	w	39	PSU	C3'-C2'-C1'	-3.20	97.90	101.64
56	w	8	4SU	C5-C4-S4	-3.20	120.34	124.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	a	1519	MA6	C2-N1-C6	3.20	119.32	111.75
8	A	1835	2MG	N9-C4-N3	3.18	132.33	125.94
56	w	46	G7M	N9-C4-N3	3.17	132.31	125.94
56	w	37	MIA	C5-N7-C8	3.16	108.00	103.51
56	w	37	MIA	O4'-C1'-N9	3.15	114.26	108.06
8	A	2251	OMG	C6-C5-N7	3.14	136.09	130.25
56	w	37	MIA	C16-C14-C13	-3.14	113.58	122.65
8	A	2251	OMG	C2'-C1'-N9	-3.13	108.14	114.22
56	w	37	MIA	O4'-C1'-C2'	-3.12	99.83	106.64
56	w	39	PSU	O4'-C4'-C3'	-3.12	98.94	105.11
8	A	2069	G7M	C2-N1-C6	-3.11	119.42	125.10
34	a	516	PSU	C3'-C2'-C1'	3.10	105.25	101.64
8	A	1915	3TD	O2'-C2'-C1'	-3.10	103.83	111.23
8	A	2030	6MZ	C4-N9-C8	3.09	109.08	105.73
55	v	20	H2U	N3-C2-N1	3.09	119.92	116.65
34	a	1516	2MG	N9-C4-N3	3.07	132.11	125.94
8	A	2457	PSU	C6-C5-C4	3.05	120.33	118.20
56	w	32	PSU	C4'-O4'-C1'	-3.05	100.89	108.55
8	A	746	PSU	O2-C2-N1	-3.02	119.46	122.79
8	A	2069	G7M	N9-C4-N3	3.01	131.97	125.94
34	a	1498	UR3	C1'-N1-C2	2.99	122.04	116.99
56	w	55	PSU	O2-C2-N1	-2.96	119.53	122.79
8	A	2504	PSU	C6-N1-C2	-2.96	119.66	122.68
55	v	20	H2U	C5-C4-N3	2.94	119.95	116.65
56	w	32	PSU	C6-N1-C2	-2.92	119.69	122.68
8	A	1835	2MG	C1'-N9-C4	-2.91	117.87	126.50
8	A	2552	OMU	O4-C4-C5	-2.88	120.09	125.16
8	A	2030	6MZ	N1-C2-N3	-2.87	124.11	128.60
8	A	2445	2MG	C6-C5-N7	2.86	135.57	130.25
56	w	39	PSU	C6-N1-C2	-2.85	119.76	122.68
8	A	1835	2MG	C5-C6-N1	2.83	120.38	113.19
8	A	2030	6MZ	C6-C5-N7	2.83	135.45	132.39
8	A	2604	PSU	O2-C2-N1	-2.82	119.69	122.79
8	A	2030	6MZ	N9-C8-N7	-2.81	110.07	113.91
56	w	32	PSU	C4-N3-C2	-2.80	122.31	126.34
55	v	54	5MU	C5M-C5-C4	2.79	121.84	118.77
8	A	745	1MG	N9-C8-N7	-2.79	108.14	113.39
55	v	55	PSU	O2-C2-N1	-2.78	119.73	122.79
34	a	527	G7M	C1'-N9-C8	2.78	136.12	126.74
34	a	1519	MA6	C5-N7-C8	2.77	107.44	103.51
34	a	966	2MG	N9-C8-N7	-2.74	108.23	113.39
8	A	1911	PSU	O2-C2-N1	-2.73	119.78	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	a	1516	2MG	C1'-N9-C4	-2.73	118.40	126.50
56	w	37	MIA	C4-N9-C8	2.72	108.68	105.73
56	w	37	MIA	N9-C8-N7	-2.72	110.20	113.91
8	A	1835	2MG	N9-C8-N7	-2.70	108.30	113.39
34	a	1207	2MG	O6-C6-C5	-2.70	119.44	126.60
8	A	1939	5MU	C5M-C5-C4	2.70	121.74	118.77
8	A	2580	PSU	O4'-C1'-C2'	2.69	108.94	105.14
8	A	1835	2MG	C1'-N9-C8	2.69	134.35	126.70
34	a	1516	2MG	N9-C8-N7	-2.68	108.33	113.39
8	A	2251	OMG	C4-C5-N7	-2.68	106.47	110.72
55	v	20	H2U	C5-C6-N1	2.68	120.44	111.61
58	y	101	FME	O-C-CA	-2.68	117.77	124.78
34	a	1498	UR3	C6-N1-C2	-2.67	119.39	121.79
34	a	1207	2MG	C5-C6-N1	2.67	119.98	113.19
34	a	966	2MG	C5-C6-N1	2.67	119.98	113.19
8	A	2445	2MG	CM2-N2-C2	-2.66	117.98	123.86
34	a	1407	5MC	C5-C6-N1	-2.66	120.60	123.34
34	a	1518	MA6	N3-C4-N9	2.66	131.46	127.08
34	a	1516	2MG	CM2-N2-C2	-2.65	118.01	123.86
8	A	2445	2MG	C2'-C1'-N9	-2.65	105.72	113.22
8	A	1835	2MG	N1-C2-N3	-2.65	119.86	123.95
8	A	2503	2MA	C6-C5-C4	2.64	120.74	117.18
55	v	20	H2U	O2-C2-N1	-2.64	119.79	123.11
8	A	2503	2MA	N3-C2-N1	-2.62	120.89	125.72
34	a	1518	MA6	C5-N7-C8	2.62	107.23	103.51
8	A	1915	3TD	C5'-C4'-C3'	-2.61	105.40	115.18
55	v	54	5MU	O2-C2-N1	-2.61	119.32	122.79
8	A	1915	3TD	C5-C6-N1	-2.61	118.20	122.11
8	A	2030	6MZ	O4'-C1'-N9	2.60	113.18	108.06
55	v	54	5MU	C6-C5-C4	2.58	120.19	118.03
8	A	2580	PSU	C6-N1-C2	-2.58	120.05	122.68
34	a	966	2MG	O6-C6-C5	-2.57	119.77	126.60
34	a	966	2MG	CM2-N2-C2	-2.57	118.18	123.86
8	A	2503	2MA	N6-C6-N1	2.55	120.64	117.03
55	v	54	5MU	C6-N1-C2	-2.55	118.71	121.30
8	A	1835	2MG	O6-C6-C5	-2.55	119.84	126.60
56	w	54	5MU	C3'-C2'-C1'	2.54	106.25	101.43
8	A	2605	PSU	O2-C2-N1	-2.54	119.99	122.79
8	A	1939	5MU	O4-C4-N3	-2.53	115.27	120.12
8	A	1962	5MC	C5-C4-N4	-2.53	117.70	121.48
56	w	32	PSU	O4'-C1'-C2'	2.52	108.70	105.14
56	w	55	PSU	C3'-C2'-C1'	2.52	104.57	101.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	a	967	5MC	C5-C6-N1	-2.51	120.76	123.34
34	a	1516	2MG	C5-C6-N1	2.51	119.56	113.19
34	a	1207	2MG	N9-C8-N7	-2.50	108.67	113.39
8	A	955	PSU	C6-N1-C2	-2.50	120.12	122.68
34	a	1207	2MG	N1-C2-N3	-2.47	120.13	123.95
34	a	1516	2MG	C1'-N9-C8	2.47	133.72	126.70
56	w	39	PSU	O4-C4-N3	2.46	124.84	120.12
8	A	745	1MG	C5-C6-N1	2.45	119.64	114.91
8	A	1915	3TD	O4'-C1'-C2'	-2.45	101.70	105.14
8	A	747	5MC	CM5-C5-C6	-2.44	119.58	122.85
34	a	1516	2MG	O6-C6-C5	-2.44	120.12	126.60
8	A	2457	PSU	O4'-C1'-C2'	2.41	108.54	105.14
56	w	54	5MU	O4'-C1'-N1	2.40	113.86	108.36
8	A	2605	PSU	C6-N1-C2	-2.39	120.23	122.68
8	A	2030	6MZ	C2'-C3'-C4'	-2.39	98.00	102.64
8	A	2445	2MG	C2-N1-C6	-2.37	121.76	124.48
56	w	37	MIA	O4'-C4'-C3'	-2.36	100.45	105.11
56	w	39	PSU	C4'-O4'-C1'	-2.34	102.67	108.55
8	A	2445	2MG	C4-C5-N7	-2.34	107.02	110.72
8	A	1917	PSU	O4'-C4'-C3'	-2.31	100.55	105.11
56	w	32	PSU	C5'-C4'-C3'	-2.30	106.54	115.18
8	A	2604	PSU	C6-N1-C2	-2.30	120.33	122.68
56	w	54	5MU	O2-C2-N1	-2.29	119.74	122.79
55	v	55	PSU	C6-N1-C2	-2.27	120.36	122.68
56	w	39	PSU	O5'-C5'-C4'	2.27	116.70	108.99
34	a	1516	2MG	N1-C2-N3	-2.25	120.47	123.95
8	A	1618	6MZ	C6-C5-N7	2.24	134.82	132.39
55	v	54	5MU	O4-C4-N3	-2.20	115.90	120.12
56	w	39	PSU	C2'-C3'-C4'	2.20	106.91	102.64
34	a	966	2MG	N1-C2-N3	-2.19	120.56	123.95
8	A	2604	PSU	C6-C5-C4	2.19	119.73	118.20
34	a	1519	MA6	C5-C4-N9	2.19	108.33	105.78
8	A	2445	2MG	O6-C6-C5	-2.18	120.81	126.60
8	A	2251	OMG	O6-C6-C5	-2.15	120.90	126.60
56	w	39	PSU	C5-C6-N1	-2.14	118.89	122.11
8	A	2030	6MZ	C4-C5-C6	2.12	118.45	116.81
56	w	37	MIA	C2-N3-C4	2.11	117.92	112.35
8	A	1939	5MU	C6-C5-C4	2.10	119.79	118.03
55	v	8	4SU	O2-C2-N1	-2.10	119.99	122.79
8	A	1911	PSU	C6-N1-C2	-2.10	120.54	122.68
56	w	8	4SU	O2-C2-N1	-2.09	120.00	122.79
34	a	1519	MA6	C4-C5-N7	-2.07	108.10	110.62

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
34	a	1207	2MG	CM2-N2-C2	-2.06	119.31	123.86
34	a	1518	MA6	C4-N9-C8	2.05	107.95	105.73
8	A	1917	PSU	C6-N1-C2	-2.02	120.61	122.68
8	A	2251	OMG	C8-N7-C5	2.01	107.88	104.24
8	A	746	PSU	C6-N1-C2	-2.01	120.63	122.68

There are no chirality outliers.

All (87) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
55	v	55	PSU	O4'-C1'-C5-C6
8	A	745	1MG	O4'-C4'-C5'-O5'
8	A	746	PSU	C2'-C1'-C5-C4
8	A	746	PSU	C2'-C1'-C5-C6
8	A	1915	3TD	O4'-C1'-C5-C4
8	A	1915	3TD	O4'-C1'-C5-C6
8	A	1917	PSU	C2'-C1'-C5-C4
8	A	1917	PSU	C2'-C1'-C5-C6
8	A	2030	6MZ	N1-C6-N6-C9
8	A	2030	6MZ	O4'-C4'-C5'-O5'
8	A	2030	6MZ	C3'-C4'-C5'-O5'
8	A	2251	OMG	C1'-C2'-O2'-CM2
8	A	2504	PSU	C3'-C4'-C5'-O5'
8	A	2504	PSU	O4'-C4'-C5'-O5'
8	A	2552	OMU	O4'-C1'-N1-C2
8	A	2552	OMU	O4'-C1'-N1-C6
8	A	2552	OMU	C1'-C2'-O2'-CM2
34	a	966	2MG	O4'-C4'-C5'-O5'
34	a	966	2MG	C3'-C4'-C5'-O5'
34	a	967	5MC	O4'-C4'-C5'-O5'
34	a	967	5MC	C3'-C4'-C5'-O5'
34	a	1402	4OC	C1'-C2'-O2'-CM2
34	a	1498	UR3	O4'-C1'-N1-C6
34	a	1498	UR3	O4'-C1'-N1-C2
34	a	1518	MA6	C5-C6-N6-C9
34	a	1518	MA6	C5-C6-N6-C10
34	a	1519	MA6	C3'-C4'-C5'-O5'
56	w	32	PSU	C2'-C1'-C5-C4
56	w	32	PSU	O4'-C1'-C5-C4
56	w	32	PSU	O4'-C1'-C5-C6
56	w	37	MIA	C5-C6-N6-C12
56	w	37	MIA	N1-C6-N6-C12

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Mol	Chain	Res	Type	Atoms
56	w	37	MIA	N1-C2-S10-C11
56	w	37	MIA	N3-C2-S10-C11
56	w	37	MIA	C12-C13-C14-C15
56	w	37	MIA	C12-C13-C14-C16
56	w	39	PSU	O4'-C1'-C5-C4
56	w	39	PSU	O4'-C1'-C5-C6
56	w	39	PSU	C3'-C4'-C5'-O5'
56	w	39	PSU	C4'-C5'-O5'-P
56	w	55	PSU	C3'-C4'-C5'-O5'
58	y	101	FME	O1-CN-N-CA
58	y	101	FME	N-CA-CB-CG
58	y	101	FME	C-CA-CB-CG
8	A	745	1MG	C3'-C4'-C5'-O5'
8	A	1835	2MG	O4'-C4'-C5'-O5'
8	A	1939	5MU	C3'-C4'-C5'-O5'
8	A	1939	5MU	O4'-C4'-C5'-O5'
8	A	2445	2MG	C3'-C4'-C5'-O5'
8	A	2498	OMC	O4'-C4'-C5'-O5'
8	A	2503	2MA	O4'-C4'-C5'-O5'
34	a	1402	4OC	O4'-C4'-C5'-O5'
56	w	39	PSU	O4'-C4'-C5'-O5'
56	w	55	PSU	O4'-C4'-C5'-O5'
8	A	1915	3TD	O4'-C4'-C5'-O5'
34	a	1402	4OC	C3'-C4'-C5'-O5'
34	a	1519	MA6	O4'-C4'-C5'-O5'
34	a	1518	MA6	N1-C6-N6-C10
8	A	2030	6MZ	C4'-C5'-O5'-P
8	A	1962	5MC	C2'-C1'-N1-C6
8	A	2445	2MG	O4'-C4'-C5'-O5'
8	A	1835	2MG	C3'-C4'-C5'-O5'
34	a	527	G7M	C3'-C4'-C5'-O5'
58	y	101	FME	CB-CG-SD-CE
8	A	2503	2MA	C3'-C4'-C5'-O5'
34	a	527	G7M	C4'-C5'-O5'-P
34	a	1519	MA6	C4'-C5'-O5'-P
56	w	54	5MU	C4'-C5'-O5'-P
8	A	1917	PSU	C3'-C4'-C5'-O5'
8	A	1962	5MC	C2'-C1'-N1-C2
55	v	55	PSU	C4'-C5'-O5'-P
8	A	1618	6MZ	C3'-C4'-C5'-O5'
8	A	1962	5MC	O4'-C1'-N1-C6
8	A	1962	5MC	O4'-C1'-N1-C2

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Mol	Chain	Res	Type	Atoms
8	A	2251	OMG	C4'-C5'-O5'-P
56	w	46	G7M	C4'-C5'-O5'-P
56	w	46	G7M	C3'-C4'-C5'-O5'
8	A	1917	PSU	O4'-C1'-C5-C4
8	A	2604	PSU	O4'-C1'-C5-C4
8	A	2605	PSU	O4'-C1'-C5-C4
8	A	1618	6MZ	O4'-C4'-C5'-O5'
56	w	32	PSU	O4'-C4'-C5'-O5'
8	A	2030	6MZ	C5-C6-N6-C9
55	v	8	4SU	O4'-C4'-C5'-O5'
8	A	1917	PSU	O4'-C1'-C5-C6
8	A	2069	G7M	O4'-C4'-C5'-O5'
8	A	1915	3TD	C3'-C4'-C5'-O5'

There are no ring outliers.

29 monomers are involved in 52 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
55	v	54	5MU	4	0
8	A	2251	OMG	1	0
34	a	1519	MA6	4	0
58	y	101	FME	2	0
56	w	46	G7M	1	0
8	A	2552	OMU	2	0
8	A	1835	2MG	3	0
56	w	55	PSU	1	0
8	A	745	1MG	2	0
8	A	747	5MC	1	0
34	a	1207	2MG	2	0
8	A	2503	2MA	1	0
8	A	1911	PSU	1	0
8	A	2580	PSU	2	0
34	a	1407	5MC	1	0
8	A	1939	5MU	1	0
8	A	1915	3TD	1	0
34	a	967	5MC	1	0
8	A	1618	6MZ	1	0
34	a	1402	4OC	3	0
8	A	2457	PSU	3	0
34	a	1518	MA6	3	0
56	w	37	MIA	4	0
8	A	1917	PSU	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	A	746	PSU	2	0
56	w	39	PSU	2	0
34	a	1516	2MG	4	0
55	v	55	PSU	2	0
55	v	20	H2U	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

3 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
61	PO4	x	802	-	4,4,4	1.11	0	6,6,6	0.44	0
60	AM2	a	2001	-	40,40,40	0.83	1 (2%)	53,60,60	1.73	12 (22%)
62	GDP	x	801	-	28,30,30	1.15	3 (10%)	44,47,47	2.08	11 (25%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
60	AM2	a	2001	-	-	4/12/84/84	0/4/4/4
62	GDP	x	801	-	-	5/16/32/32	0/3/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
62	x	801	GDP	C6-N1	-2.82	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
62	x	801	GDP	C5-C4	2.71	1.46	1.38
60	a	2001	AM2	CA6-CA7	-2.62	1.48	1.53
62	x	801	GDP	C5-N7	-2.29	1.34	1.39

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
62	x	801	GDP	C5-C4-N3	-5.79	119.07	128.46
62	x	801	GDP	PA-O3A-PB	-5.36	114.44	132.83
62	x	801	GDP	C2-N3-C4	4.92	121.07	112.30
60	a	2001	AM2	OA6-CA6-CA7	-4.20	101.18	109.66
62	x	801	GDP	N9-C4-N3	4.10	134.18	125.94
62	x	801	GDP	C6-C5-N7	3.90	137.50	130.25
60	a	2001	AM2	CA8-CA7-CA6	-3.87	98.68	110.06
60	a	2001	AM2	CC2-CC3-CC4	-3.81	104.93	111.37
60	a	2001	AM2	OA4-CA1-CA2	3.76	118.62	110.25
60	a	2001	AM2	CA8-CA7-NA7	-3.52	104.71	111.00
60	a	2001	AM2	CA1-OA4-CA5	3.47	118.65	113.06
62	x	801	GDP	C4-C5-N7	-2.92	106.10	110.72
60	a	2001	AM2	CB5-CB4-NB4	-2.70	105.33	110.92
60	a	2001	AM2	CA5-CA6-CA7	-2.51	104.77	110.62
62	x	801	GDP	C2'-C3'-C4'	2.48	107.46	102.64
60	a	2001	AM2	CA6-CA7-NA7	-2.32	104.83	111.28
60	a	2001	AM2	CA1-OA1-CC1	-2.32	112.22	117.96
62	x	801	GDP	O6-C6-C5	-2.28	120.54	126.60
62	x	801	GDP	C5-C6-N1	2.16	118.68	113.19
60	a	2001	AM2	CA6-CA5-CA4	-2.16	105.97	110.93
62	x	801	GDP	C8-N7-C5	2.08	108.01	104.24
62	x	801	GDP	O2B-PB-O3A	2.02	111.41	104.64
60	a	2001	AM2	OA8-CB1-CB2	-2.01	102.88	108.10

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
62	x	801	GDP	C5'-O5'-PA-O1A
62	x	801	GDP	C5'-O5'-PA-O2A
60	a	2001	AM2	OB1-CB5-CB6-OB6
62	x	801	GDP	O4'-C4'-C5'-O5'
60	a	2001	AM2	CB4-CB5-CB6-OB6
62	x	801	GDP	C3'-C4'-C5'-O5'
60	a	2001	AM2	CA8-CA7-NA7-CA9

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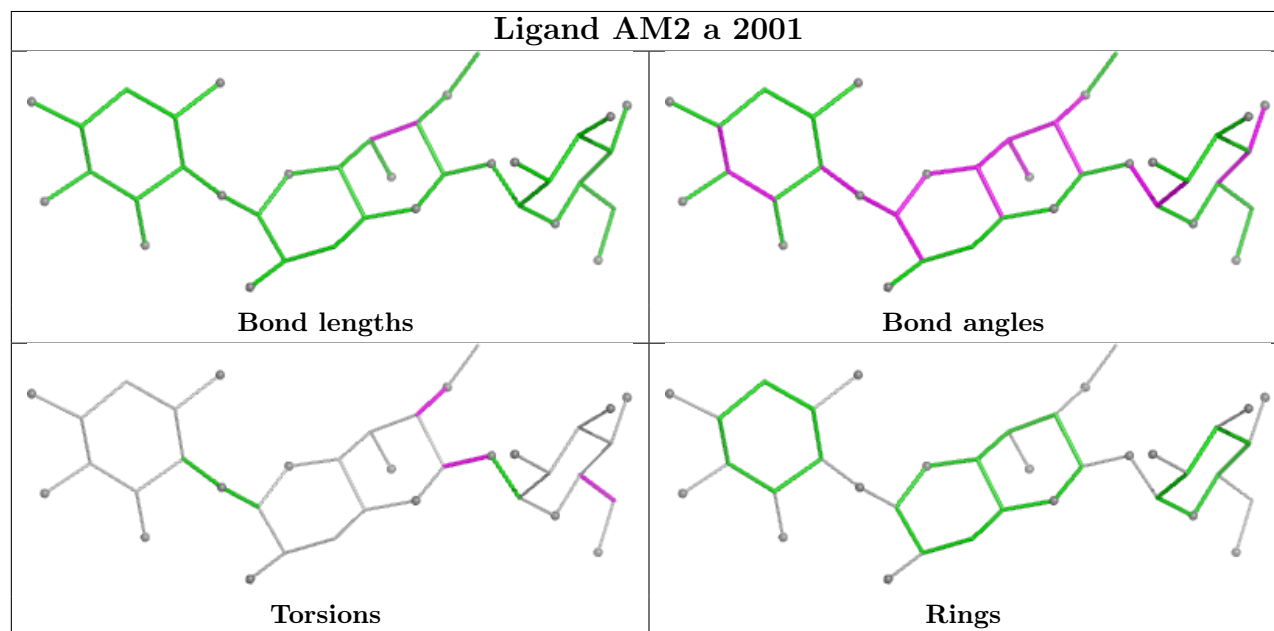
Mol	Chain	Res	Type	Atoms
60	a	2001	AM2	OA5-CA8-OA8-CB1
62	x	801	GDP	C5'-O5'-PA-O3A

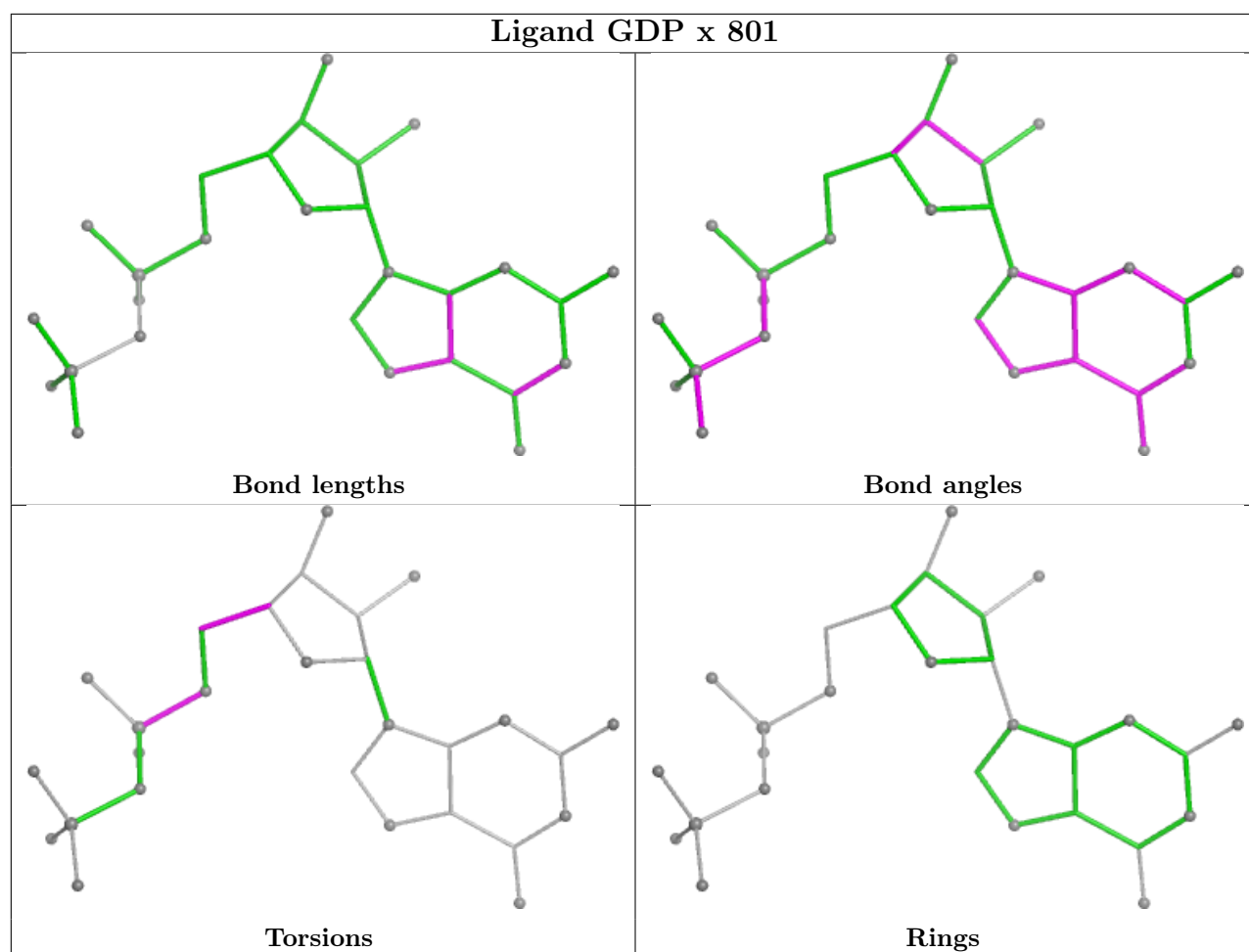
There are no ring outliers.

2 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
61	x	802	PO4	2	0
62	x	801	GDP	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

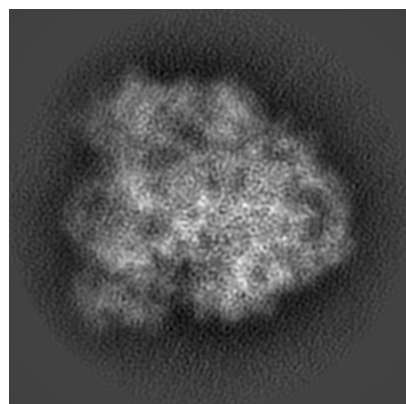
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13462. These allow visual inspection of the internal detail of the map and identification of artifacts.

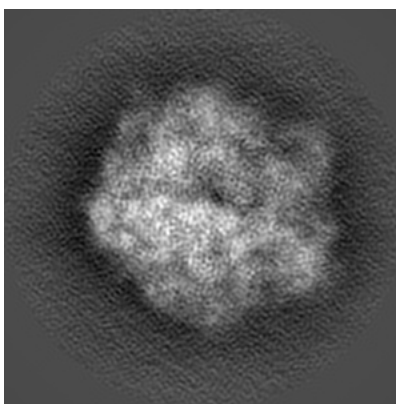
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

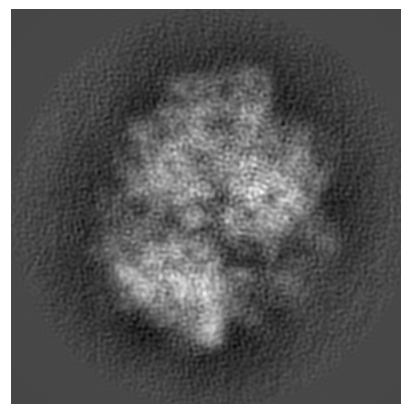
6.1.1 Primary map



X

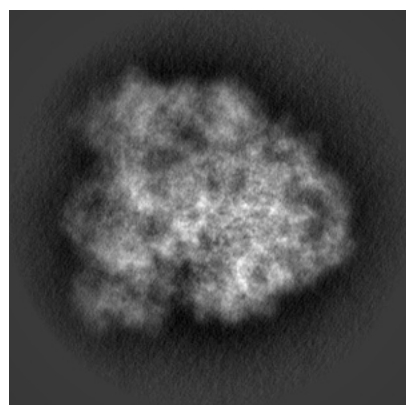


Y

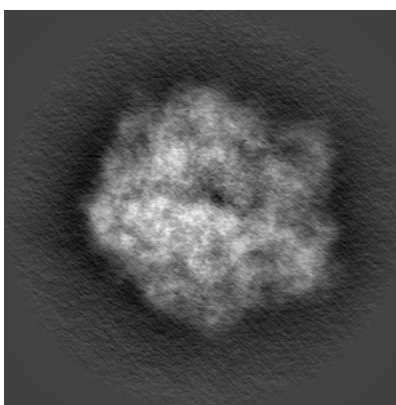


Z

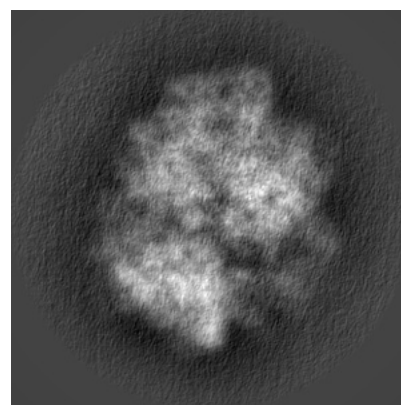
6.1.2 Raw map



X



Y

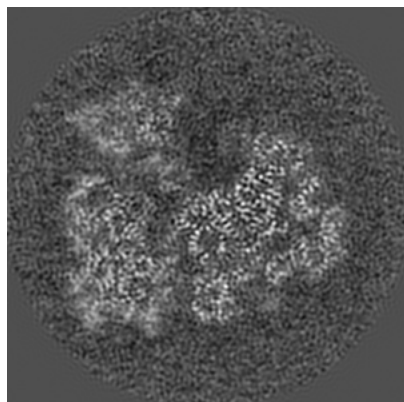


Z

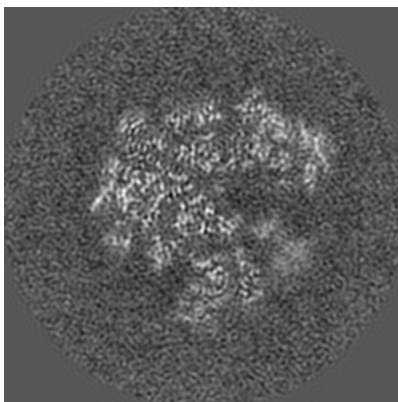
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

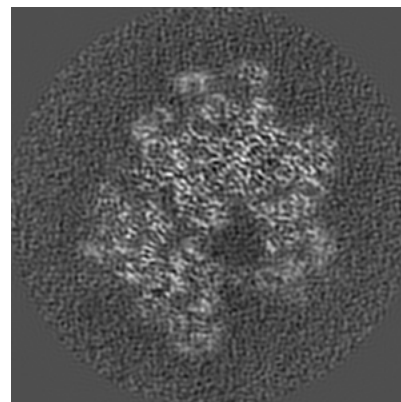
6.2.1 Primary map



X Index: 144

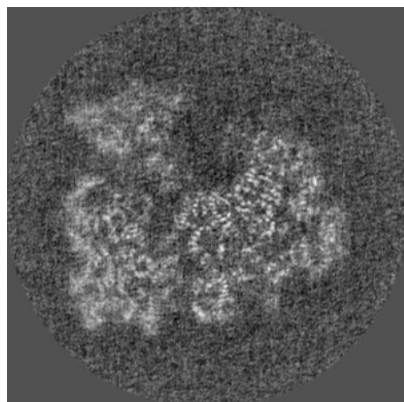


Y Index: 144

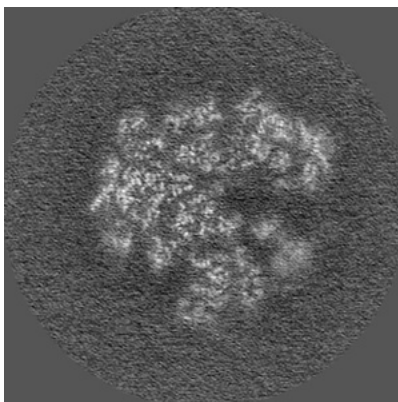


Z Index: 144

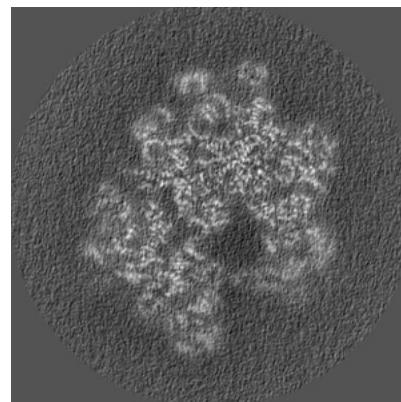
6.2.2 Raw map



X Index: 144



Y Index: 144

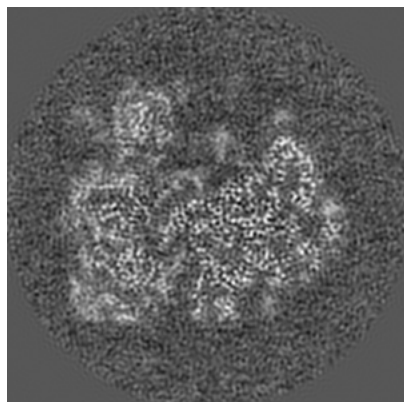


Z Index: 144

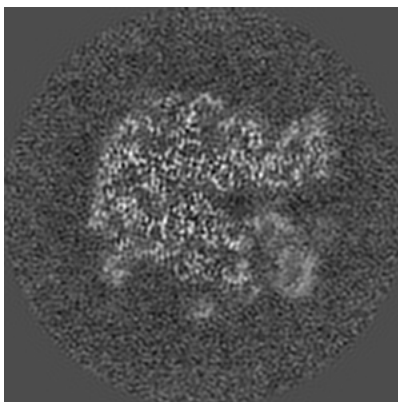
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

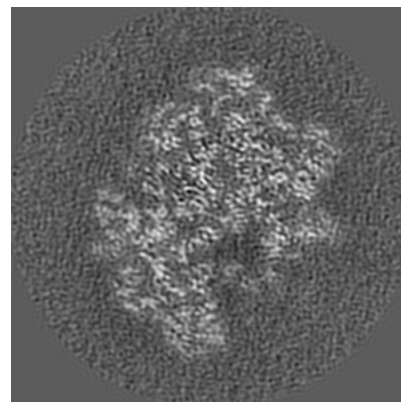
6.3.1 Primary map



X Index: 138

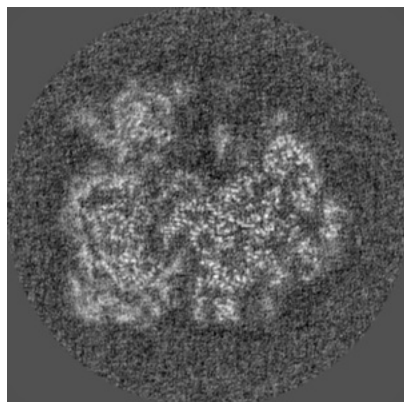


Y Index: 157

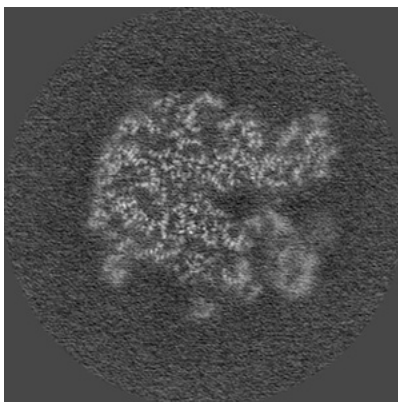


Z Index: 134

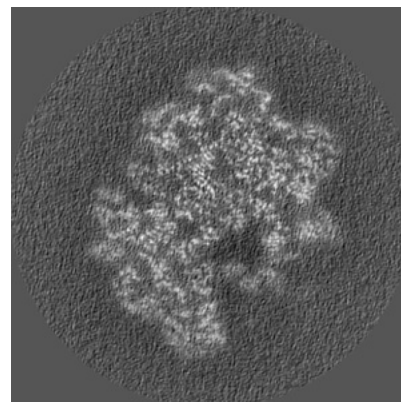
6.3.2 Raw map



X Index: 139



Y Index: 157

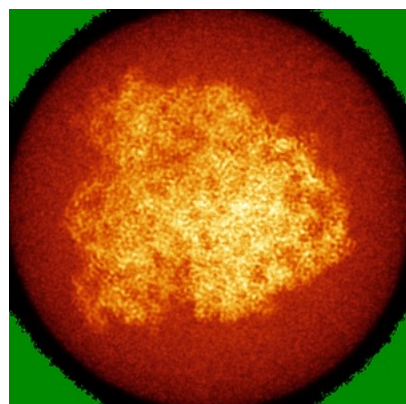


Z Index: 135

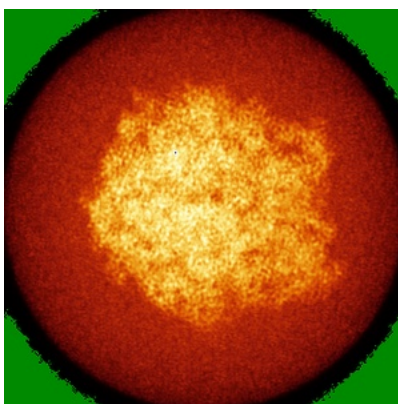
The images above show the largest variance slices of the map in three orthogonal directions.

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

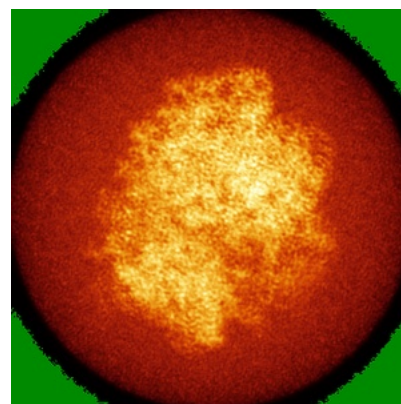
6.4.1 Primary map



X

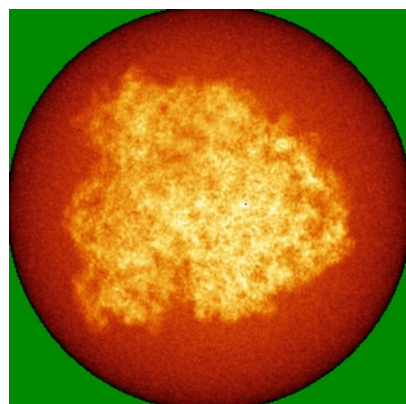


Y

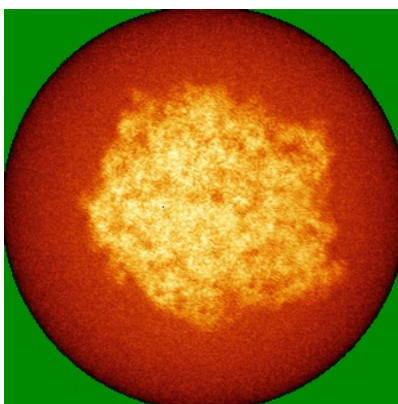


Z

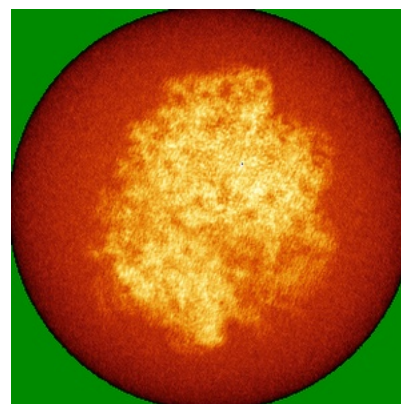
6.4.2 Raw map



X



Y

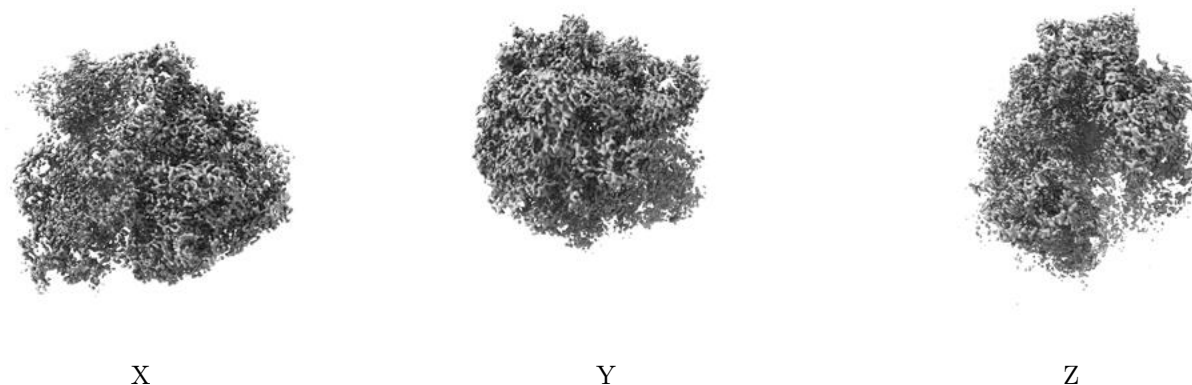


Z

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.

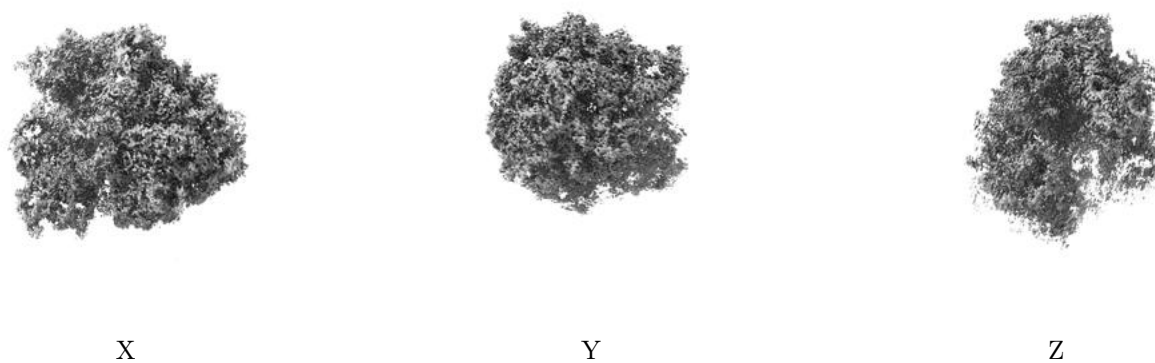
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 4.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

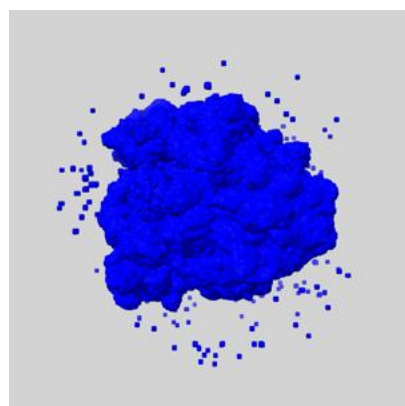
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

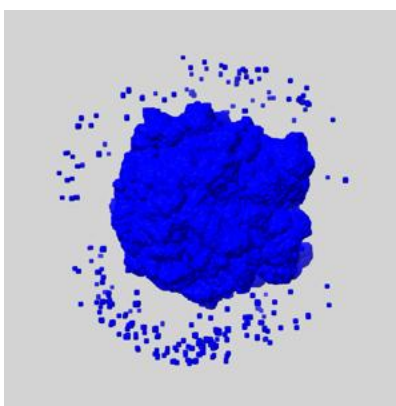
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

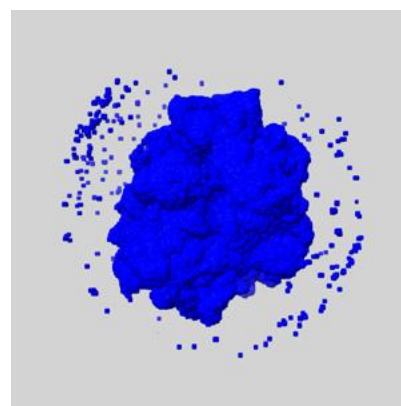
6.6.1 emd_13462_msk_1.map [i](#)



X



Y

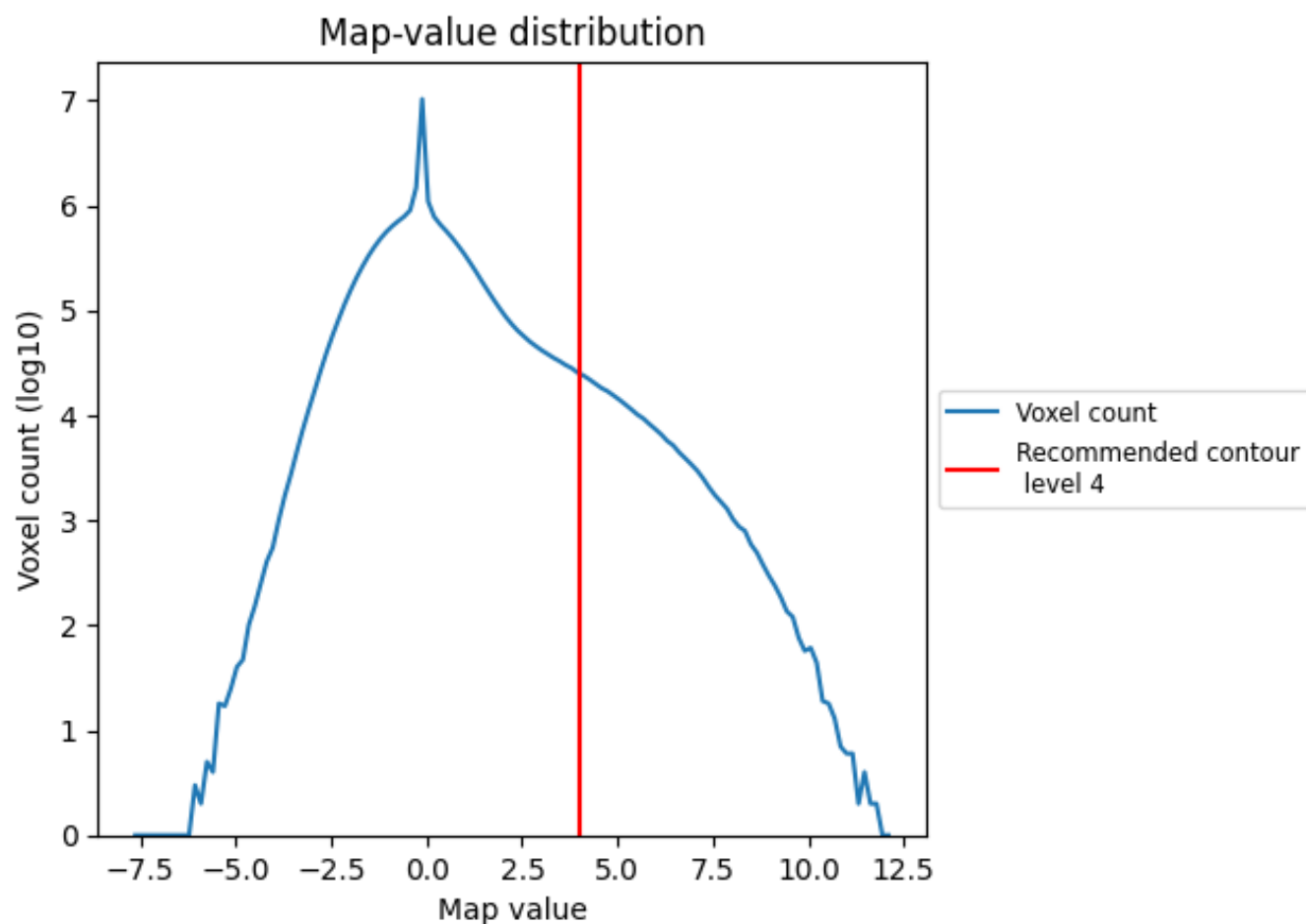


Z

7 Map analysis [i](#)

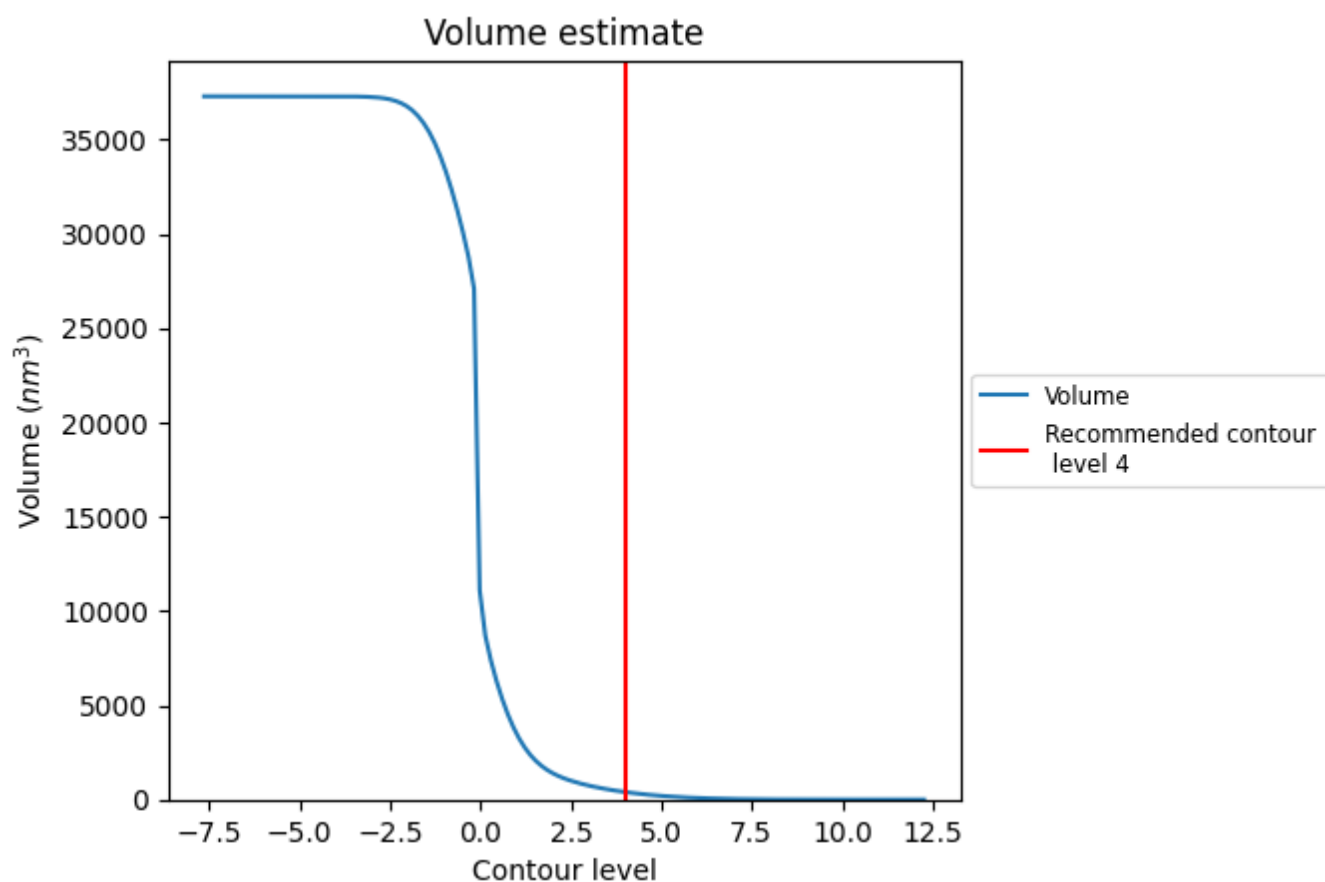
This section contains the results of statistical analysis of the map.

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.

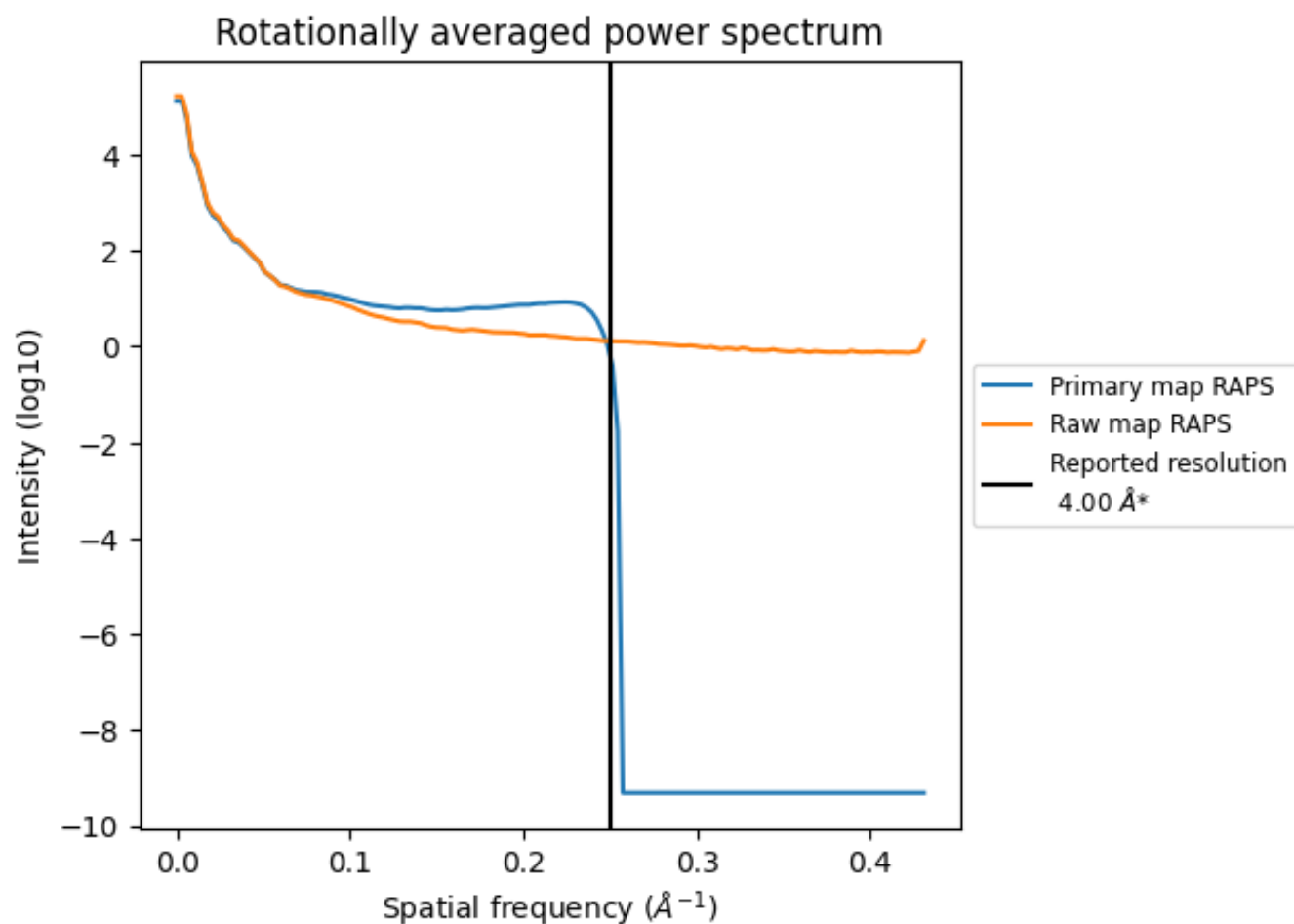
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 397 nm³; this corresponds to an approximate mass of 359 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 ⓘ

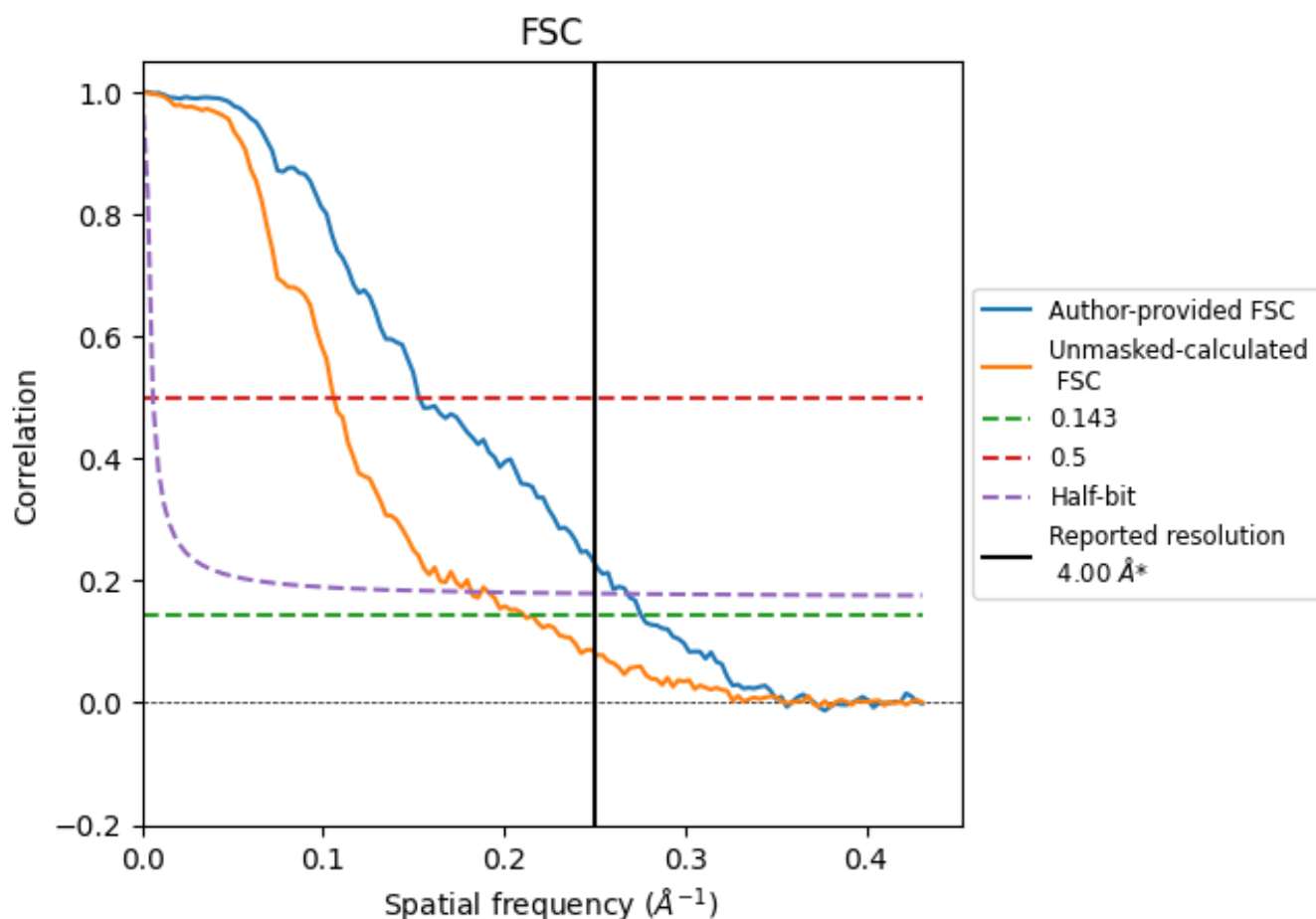


*Reported resolution corresponds to spatial frequency of 0.250 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.250 Å⁻¹

8.2 Resolution estimates [i](#)

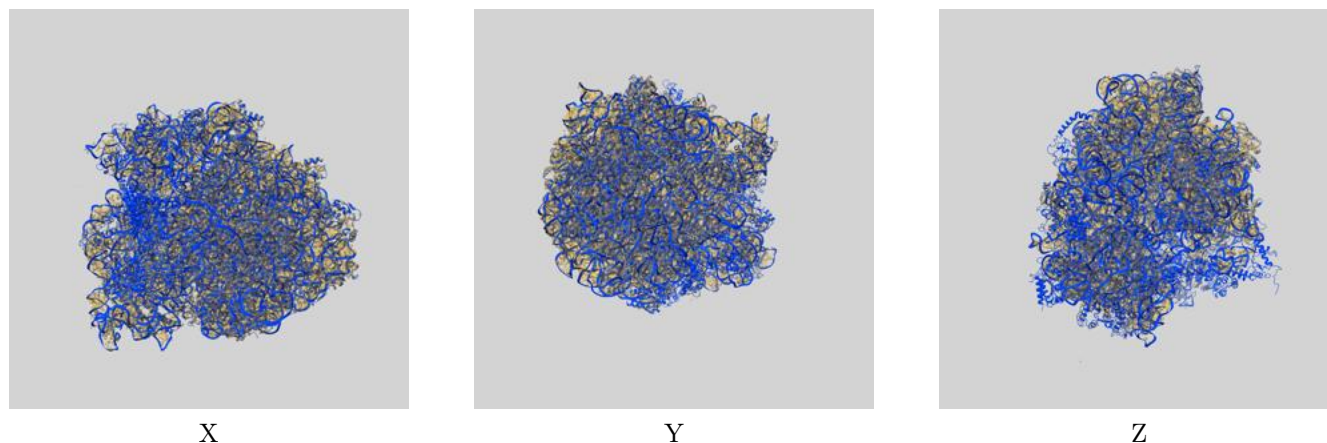
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.00	-	-
Author-provided FSC curve	3.63	6.54	3.73
Unmasked-calculated*	4.74	9.44	5.50

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.74 differs from the reported value 4.0 by more than 10 %

9 Map-model fit [i](#)

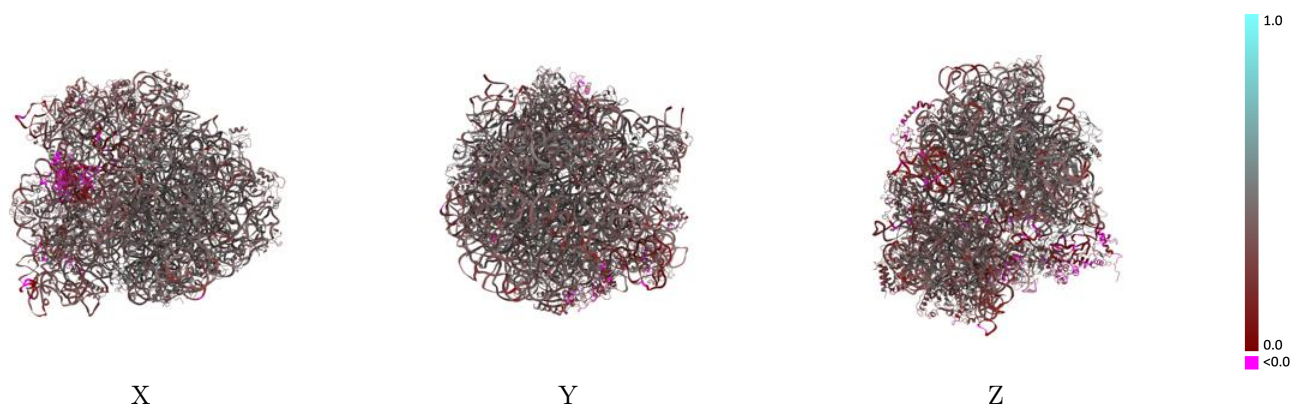
This section contains information regarding the fit between EMDB map EMD-13462 and PDB model 7PJW. Per-residue inclusion information can be found in section [3](#) on page [17](#).

9.1 Map-model overlay [i](#)



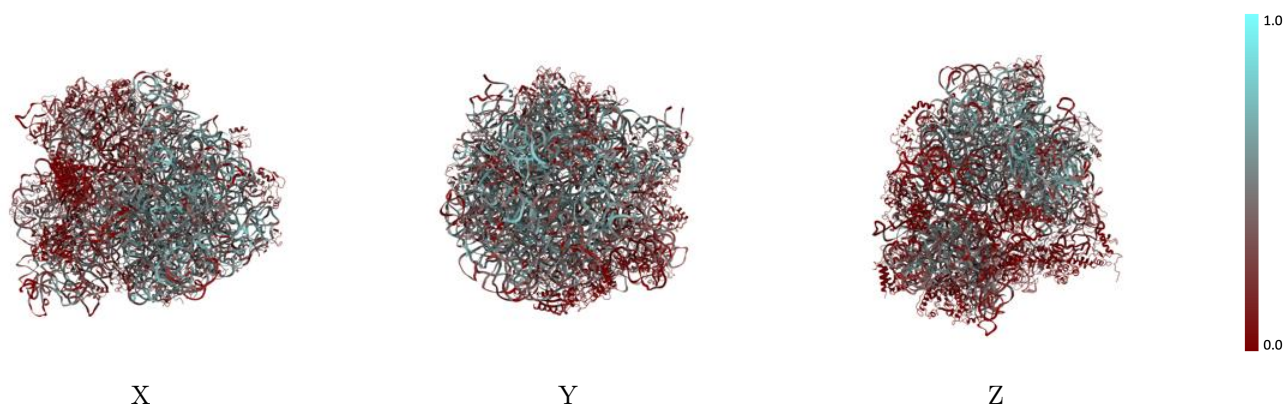
The images above show the 3D surface view of the map at the recommended contour level 4.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



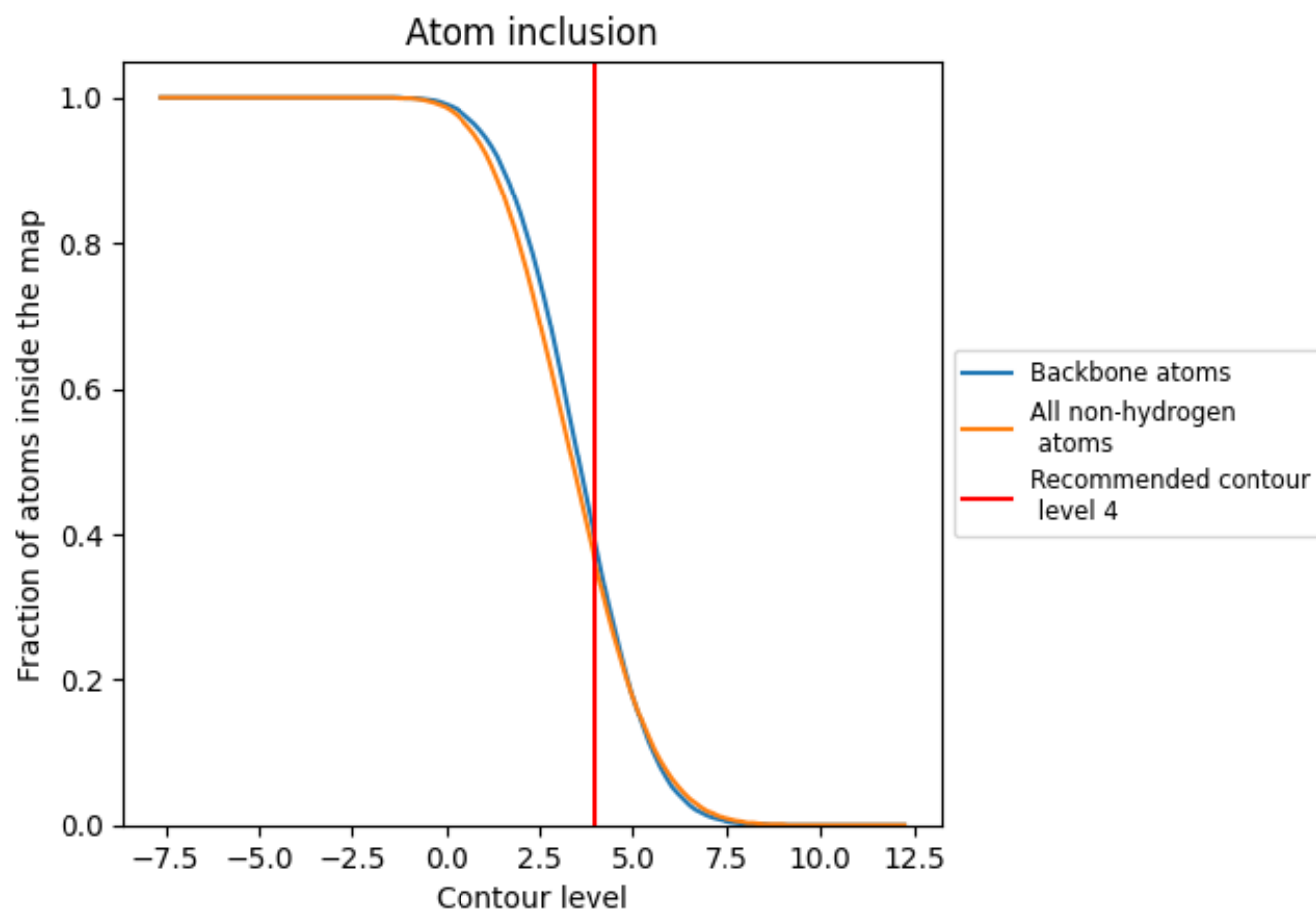
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (4).

9.4 Atom inclusion [i](#)



At the recommended contour level, 39% of all backbone atoms, 36% 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 (4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.3580	 0.3640
0	 0.2870	 0.4300
1	 0.2140	 0.3950
2	 0.3580	 0.4440
3	 0.3120	 0.4300
4	 0.3430	 0.4320
5	 0.0020	 0.0890
6	 0.0370	 0.2960
A	 0.4810	 0.3800
B	 0.4950	 0.3600
C	 0.3090	 0.4450
D	 0.3170	 0.4400
E	 0.2720	 0.4010
F	 0.1390	 0.3340
G	 0.1130	 0.3540
H	 0.0140	 0.1950
I	 0.0030	 0.0890
J	 0.3640	 0.4250
K	 0.2380	 0.4270
L	 0.3050	 0.4270
M	 0.2980	 0.4170
N	 0.3790	 0.4260
O	 0.2720	 0.3800
P	 0.2510	 0.4060
Q	 0.4010	 0.4300
R	 0.3330	 0.4300
S	 0.2990	 0.4290
T	 0.2740	 0.3920
U	 0.2370	 0.3750
V	 0.2790	 0.3990
W	 0.3270	 0.4360
X	 0.2910	 0.4080
Y	 0.2450	 0.3420
Z	 0.3340	 0.4030
a	 0.4000	 0.3530



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Chain	Atom inclusion	Q-score
b	 0.0280	 0.2920
c	 0.1200	 0.3420
d	 0.1390	 0.3300
e	 0.1900	 0.3860
f	 0.0820	 0.3260
g	 0.0420	 0.3000
h	 0.2400	 0.3960
i	 0.1410	 0.3490
j	 0.0970	 0.3180
k	 0.1880	 0.3860
l	 0.1740	 0.4070
m	 0.0740	 0.3220
n	 0.1580	 0.3370
o	 0.2420	 0.3670
p	 0.2700	 0.3780
q	 0.2370	 0.3790
r	 0.1400	 0.3590
s	 0.0450	 0.3120
t	 0.1810	 0.3490
u	 0.0470	 0.3070
v	 0.1720	 0.3050
w	 0.0640	 0.2110
x	 0.0510	 0.2810
y	 0.0950	 0.3410
z	 0.2960	 0.4170