



Full wwPDB/EMDatabank EM Map/Model Validation Report ⓘ

Jul 24, 2017 – 10:46 AM EDT

PDB ID : 5APO
EMDB ID: : EMD-3151
Title : Structure of the yeast 60S ribosomal subunit in complex with Arx1, Alb1 and C-terminally tagged Rei1
Authors : Greber, B.J.; Gerhardy, S.; Leitner, A.; Leibundgut, M.; Salem, M.; Boehringer, D.; Leulliot, N.; Aebersold, R.; Panse, V.G.; Ban, N.
Deposited on : unknown
Resolution : 3.41 Å(reported)

This is a Full wwPDB/EMDatabank EM Map/Model Validation Report
for a publicly released PDB/EMDB entry.

We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20029824

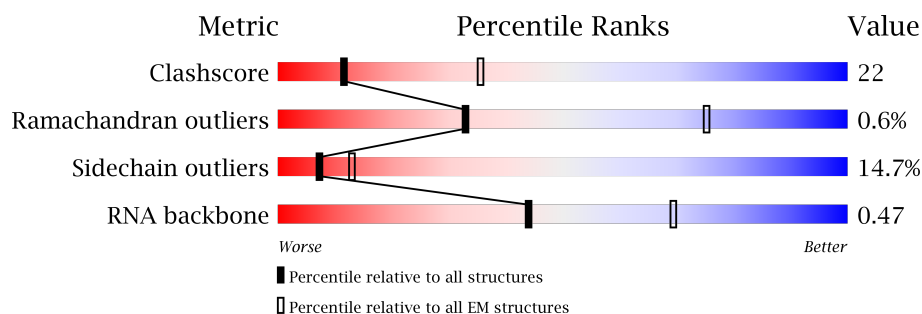
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.41 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	125131	1336
Ramachandran outliers	121729	1120
Sidechain outliers	121581	1026
RNA backbone	3398	335

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

Mol	Chain	Length	Quality of chain
1	5	3396	40% 38% 12% 8%
2	7	121	45% 49% 7%
3	8	158	47% 35% 16%
4	A	254	36% 38% 9% 17%
5	B	387	50% 40% 10%
6	C	362	49% 41% 10%
7	D	297	53% 38% 8%
8	E	176	55% 40% 5%

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Mol	Chain	Length	Quality of chain
9	F	244	
10	G	256	
11	H	191	
12	I	221	
13	J	174	
14	L	199	
15	M	138	
16	N	204	
17	O	199	
18	P	184	
19	Q	186	
20	R	189	
21	S	172	
22	T	160	
23	U	121	
24	V	137	
25	W	155	
26	X	142	
27	Y	127	
28	Z	136	
29	a	149	
30	b	59	
31	c	105	
32	d	113	
33	e	130	

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Mol	Chain	Length	Quality of chain
34	f	107	 93% 6% .
35	g	121	 83% 10% 7%
36	h	120	 83% 16% .
37	i	100	 76% 23% .
38	j	88	 86% 13% .
39	k	78	 88% 10% .
40	l	51	 78% 20% .
41	m	128	 35% 5% 59%
42	o	106	 82% 17% .
43	p	92	 80% 18% .
44	q	312	 33% 6% 62%
45	x	616	 87% 6% 6%
46	y	401	 50% . 46%
47	z	95	 89% 11%

2 Entry composition

There are 49 unique types of molecules in this entry. The entry contains 129386 atoms, of which 3 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 25S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	5	3112	Total	C	N	O	P	0	0
			66537	29736	11996	21694	3111		

- Molecule 2 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	7	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

- Molecule 3 is a RNA chain called 5.8S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	8	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 4 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A	212	Total	C	N	O	S	0	0
			1630	1021	325	283	1		

- Molecule 5 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B	386	Total	C	N	O	S	0	0
			3075	1950	584	533	8		

- Molecule 6 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	C	361	Total	C	N	O	S	0	0
			2748	1729	522	494	3		

- Molecule 7 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	D	294	Total	C	N	O	S	0	0
			2359	1489	412	456	2		

- Molecule 8 is a protein called 60S RIBOSOMAL PROTEIN EL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	E	175	Total	C	N	O	S	0	0
			1356	878	242	235	1		

- Molecule 9 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	F	223	Total	C	N	O	S	0	0
			1791	1155	325	310	1		

- Molecule 10 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	G	231	Total	C	N	O	S	0	0
			1763	1130	316	314	3		

- Molecule 11 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	H	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 12 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	I	213	Total	C	N	O	S	0	0
			1722	1094	325	297	6		

- Molecule 13 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	J	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 14 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	L	194	Total	C	N	O	0	0
			1548	965	316	267		

- Molecule 15 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	M	137	Total	C	N	O	S	0	0
			1059	678	200	179	2		

- Molecule 16 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	N	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 17 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	O	197	Total	C	N	O	S	0	0
			1555	1003	289	262	1		

- Molecule 18 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	P	183	Total	C	N	O	0	0
			1442	896	287	259		

- Molecule 19 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	Q	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 20 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	R	156	Total	C	N	O	0	0
			1258	781	265	212		

- Molecule 21 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	S	171	Total	C	N	O	S	0	0
			1437	925	266	243	3		

- Molecule 22 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	T	159	Total	C	N	O	S	0	0
			1276	805	246	221	4		

- Molecule 23 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	U	102	Total	C	N	O		0	0
			808	524	132	152			

- Molecule 24 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	V	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 25 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	W	63	Total	C	N	O	S	0	0
			521	336	102	82	1		

- Molecule 26 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	X	120	Total	C	N	O	S	0	0
			959	617	168	172	2		

- Molecule 27 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Y	126	Total	C	N	O		0	0
			993	625	192	176			

- Molecule 28 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	Z	135	Total	C	N	O	0	0
			1092	710	202	180		

- Molecule 29 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	a	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	b	58	Total	C	N	O	0	0
			462	289	100	73		

- Molecule 31 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	c	100	Total	C	N	O	S	0	0
			767	492	128	146	1		

- Molecule 32 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	d	109	Total	C	N	O	S	0	0
			883	559	167	156	1		

- Molecule 33 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	e	129	Total	C	N	O	S	0	0
			1034	655	207	171	1		

- Molecule 34 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	f	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 35 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	g	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 36 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	h	119	Total	C	N	O	S	0	0
			965	612	185	167	1		

- Molecule 37 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	i	99	Total	C	N	O	S	0	0
			770	481	156	131	2		

- Molecule 38 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	j	87	Total	C	N	O	S	0	0
			681	414	148	114	5		

- Molecule 39 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	k	77	Total	C	N	O	0	0
			608	388	114	106		

- Molecule 40 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	l	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 41 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	m	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 42 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	o	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 43 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	p	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 44 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	q	120	Total	C	N	O	S	0	0
			962	618	169	172	3		

- Molecule 45 is a protein called Probable metalloprotease ARX1.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	x	579	Total	C	N	O	S	0	0
			4477	2823	772	867	15		

There are 23 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
x	-22	MET	-	initiating methionine	UNP Q03862
x	-21	GLY	-	expression tag	UNP Q03862
x	-20	SER	-	expression tag	UNP Q03862
x	-19	SER	-	expression tag	UNP Q03862
x	-18	HIS	-	expression tag	UNP Q03862
x	-17	HIS	-	expression tag	UNP Q03862
x	-16	HIS	-	expression tag	UNP Q03862
x	-15	HIS	-	expression tag	UNP Q03862
x	-14	HIS	-	expression tag	UNP Q03862
x	-13	HIS	-	expression tag	UNP Q03862
x	-12	SER	-	expression tag	UNP Q03862
x	-11	SER	-	expression tag	UNP Q03862
x	-10	GLY	-	expression tag	UNP Q03862
x	-9	LEU	-	expression tag	UNP Q03862
x	-8	VAL	-	expression tag	UNP Q03862
x	-7	PRO	-	expression tag	UNP Q03862
x	-6	ARG	-	expression tag	UNP Q03862
x	-5	GLY	-	expression tag	UNP Q03862
x	-4	SER	-	expression tag	UNP Q03862

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Chain	Residue	Modelled	Actual	Comment	Reference
x	-3	HIS	-	expression tag	UNP Q03862
x	-2	MET	-	expression tag	UNP Q03862
x	-1	LEU	-	expression tag	UNP Q03862
x	0	GLU	-	expression tag	UNP Q03862

- Molecule 46 is a protein called CYTOPLASMIC 60S SUBUNIT BIOGENESIS FACTOR REI1.

Mol	Chain	Residues	Atoms						AltConf	Trace
46	y	217	Total	C	H	N	O	S	0	0
			1788	1131	3	324	322	8		

- Molecule 47 is a protein called ALB1.

Mol	Chain	Residues	Atoms				AltConf	Trace
47	z	85	Total	C	N	O	0	0
			510	340	85	85		

- Molecule 48 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
48	P	1	Total	Mg	0
			1	1	
48	B	2	Total	Mg	0
			2	2	
48	C	1	Total	Mg	0
			1	1	
48	V	1	Total	Mg	0
			1	1	
48	7	6	Total	Mg	0
			6	6	
48	N	1	Total	Mg	0
			1	1	
48	5	259	Total	Mg	0
			259	259	
48	8	7	Total	Mg	0
			7	7	
48	R	1	Total	Mg	0
			1	1	
48	y	1	Total	Mg	0
			1	1	

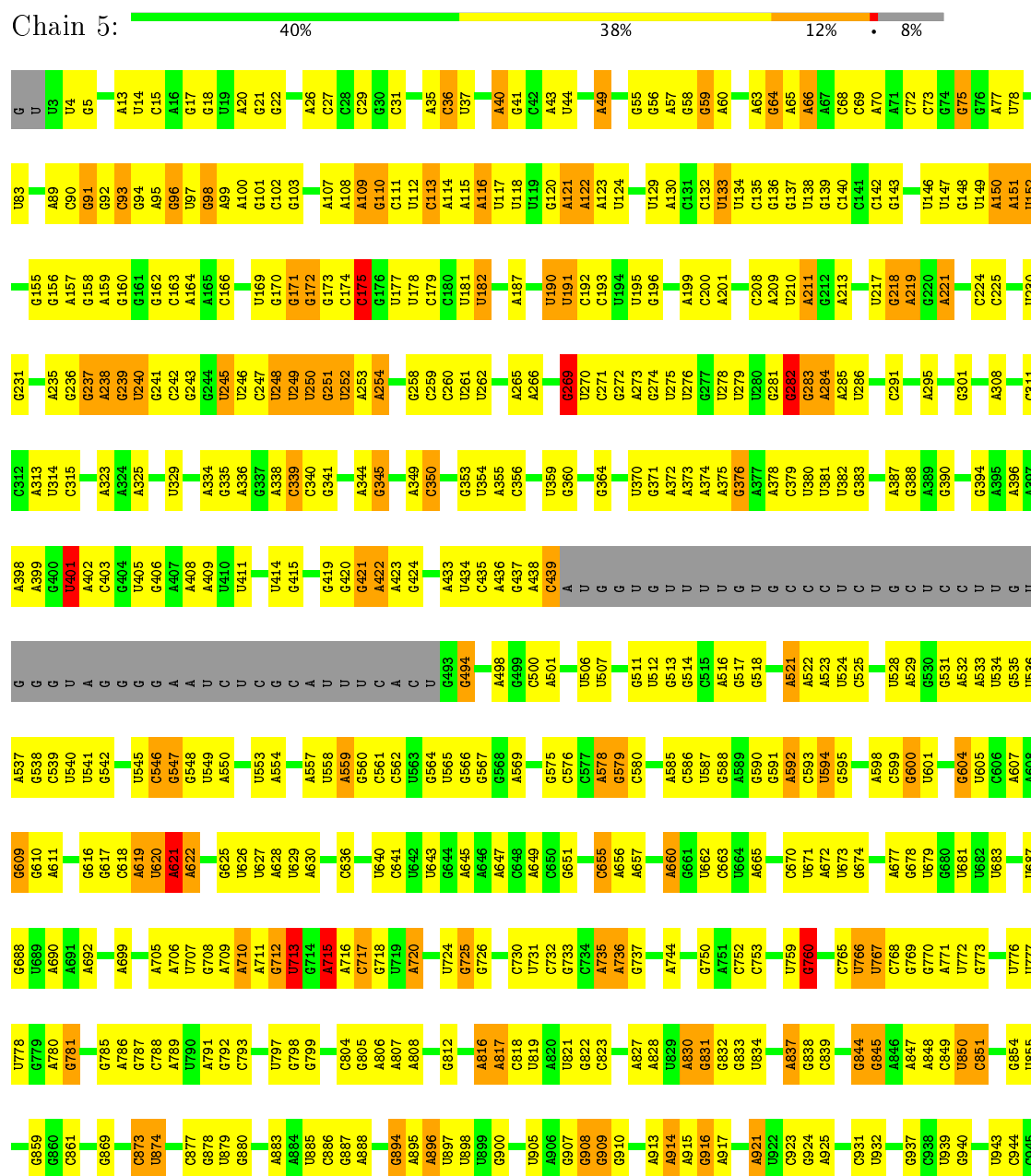
- Molecule 49 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
49	p	1	Total 1	Zn 1	0
49	o	1	Total 1	Zn 1	0
49	j	1	Total 1	Zn 1	0
49	y	2	Total 2	Zn 2	0
49	m	1	Total 1	Zn 1	0

3 Residue-property plots

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

• Molecule 1: 25S ribosomal RNA






G3343	G3263	G3099	A3017	U2944	U2875	G2777	U2868	G2602	C2531	A2404	G2311	C2248
A3344	G3264	C3099	G3022	G2945	U2880	G2778	C2684	G2603	U2532	G2407	A2312	G2249
G3345	G3265	U3100	G3023	A2946	C2881	A2779	C2685	G2604	G2533	U2408	A2313	G
U3346	G	A3106	C3025	G2947	U2882	A2790	A2689	G2605	A2536	U2409	U2314	A
U3351	A3268	U3107	G3026	G2948	U2883	G2796	G2690	G2606	U2537	U2410	G2315	A
U3352	U3270	G3108	A3027	G2950	C2884	C2797	A2691	G2607	U2538	U2411	G2316	G
G3353	G3271	G3109	G3028	G2951	C2885	C2798	A2694	G2608	C2539	G	A2317	U
U3354	C3272	C3110	A3033	G2952	U2886	C2799	A2694	A2609	U2540	U2416	C2322	A
U3355	A3273	U3111	A3034	U2953	A2887	A2799	U2701	U2611	U2541	U2417	G2323	C
G3356	G3274	U3195	G3034	U2954	U2888	G2800	U2702	U2612	U2542	U2418	U	U
U3357	U3275	G3197	A3035	U2955	C2889	A2801	A2703	U2613	U2543	A2419	A2332	A
U3358	G3276	U3198	G3036	A2956	A2890	A2802	A2703	G3614	U2544	C2420	C2333	U
A3359	U3277	G3199	U3037	G2957	U2891	A2803	A2704	G2615	C2545	U2421	U2334	G
C3360	C3278	C3120	A3040	G2960	A2892	A2804	U2712	C2616	C2546	C2422	U2335	A
G3361	A3279	U3121	U3041	U2961	C2893	U2713	U2713	U2617	A2547	U2423	U2336	C
A3362	U3280	A3208	U3042	U2962	C2894	U2714	G2714	U2617	C2548	A2424	C2337	U
U3365	U3282	A3123	C3043	C2963	A2897	A2808	U2717	A2626	C2549	G2425	C2338	C
G3366	U3283	C3212	G3044	G2964	G2898	C2809	U2718	U2629	U2550	U2426	C2339	U
U3367	A3213	G3045	G3045	U2965	C2899	C2810	U2718	C2630	U2551	U2427	U2340	G2267
G3368	U3214	A3046	A3046	G2966	A2900	A2811	U2724	G2631	U2552	U2428	A2341	U2268
G3369	G3286	U3047	U3047	A2967	G2901	C2812	U2725	G2632	U2553	G2429	U2342	U2269
A3370	U3287	C3217	A3048	G2968	U2904	A2813	C2726	U2633	U2554	C2430	U2342	A2270
G3371	G3288	U3138	U3056	U2969	U2905	C2814	A2727	A2636	C2555	C2431	A2357	A2271
U3372	G3289	A3139	U3057	C2970	U2906	G2815	A2727	A2637	A2557	U2433	A2358	G2272
G3373	C3290	G3140	G3058	A2971	C2907	C2816	U2728	U2637	U2558	U2434	C2362	U2274
U3374	G3291	A3141	G3059	G2972	G2908	A2817	U2729	A2637	U2559	G2435	A2363	C2275
A3375	C3292	U3131	U3054	U2973	G2909	U2818	G2730	A2642	C2560	U2436	C2366	G2276
G3376	G3293	C3143	U3055	U2978	U2909	A2819	U2731	A2643	A2561	G2437	A2367	C2277
C3377	A3294	U3056	U3056	U2979	A2910	C2828	U2731	A2643	U2562	U2438	A2367	C2278
C3378	A295	U3148	U3057	U2979	A2911	G2828	A2736	A2649	C2567	A2439	A2368	C2279
U3380	G3232	G3149	U3058	C2983	U2912	C2737	C2737	U2650	C2568	G	A2372	A2280
U3381	C3233	A3150	G3059	C2983	C2913	U2835	A2740	U2651	C2569	A	A2373	A2281
U3382	A3234	U3151	C3060	A2987	G2914	C2836	C2741	U2652	U2570	A	C2374	U2282
U3383	C3235	U3152	U3064	G2990	U2915	A2837	C2742	A2656	U2571	C	G2375	G2283
A3384	U3236	C	G3065	A2991	G2916	G2838	C2742	A2657	C2572	A	G2376	C2285
U3385	U3237	U	U3066	U2992	G2917	C2839	G2745	G2658	G2573	U	C2377	U2286
G3386	G3238	U	C3067	G2993	A2918	C2840	A2746	G2659	G2574	U	G2378	C2287
U3387	G3239	U	U3068	G2994	U2919	U2842	A2747	G2660	U2575	U	U2379	G2288
C3388	G3240	G	U3068	A2995	U2920	U2843	A2748	G2661	G2576	G	U2380	C2290
U3389	C3241	U	G3075	U2996	G2921	C2844	G2749	G2662	C2579	A	G	A2291
G3390	A3242	C3158	G3076	G2997	U2922	A2845	U2750	G2663	G	U2509	G	C2292
U3394	A3243	C3159	U3077	U2998	U2923	U2846	G2751	C2664	G2582	U2510	G	U2293
G3395	A3244	C3160	U3079	U2999	G2924	U2847	U2752	C2665	C2583	U2511	G	U2294
U3396	G3245	C3161	C3079	A3000	A2925	A2847	G2753	G2666	G2584	U2514	U	C2295
U3397	G3246	A3163	G3083	C3001	A2926	G2850	G2757	A2667	C2585	A2515	U	A2296
U3398	C3247	C3164	G3084	C3002	C2927	U2853	U2757	U2668	G2589	A	G2391	U2297
U3399	U3250	A3165	G3085	G3003	C2928	A2854	G2761	G2669	A2590	U2519	C2392	U2298
U3400	G3252	C3167	A3086	A3008	C2931	U2855	G2761	G	U2521	A	G2393	A2299
U3401	G3253	A3168	A3087	G3009	U2932	G2856	C2764	A2674	U2522	U	C2394	G
U3402	G3254	U3169	G3088	U3010	U2935	G2867	A2769	C2675	A2523	A	A2397	C2304
U3403	G3255	U3170	C3089	A3011	A2936	G2871	G2770	A2677	A2524	A	A2398	G2305
U3404	C3256	U3171	C3092	A3012	A2936	A2872	G2771	A2678	G2525	G	A2399	C2306
U3405	C3257	A3172	C3093	U3013	A2941	C2772	U2771	A2679	C2526	U	G2400	G2307
U3406	U3258	G3173	C3094	U3014	C2942	C2773	U2772	A2680	U2599	G	A2401	C2308
U3407	G3260	A3174	U3095	U3015	C2943	C2773	C2773	A2681	C2600	G	A2402	A2309
U3408	U3262	U3176	C3096	A3016	G2943	G2874		C2682	A2601	G	G2403	U2310

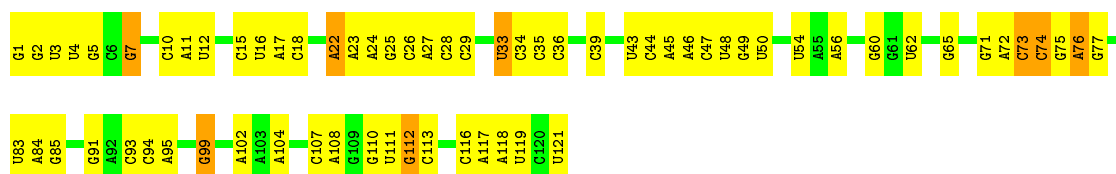
• Molecule 2: 5S ribosomal RNA

Chain 7:

45%

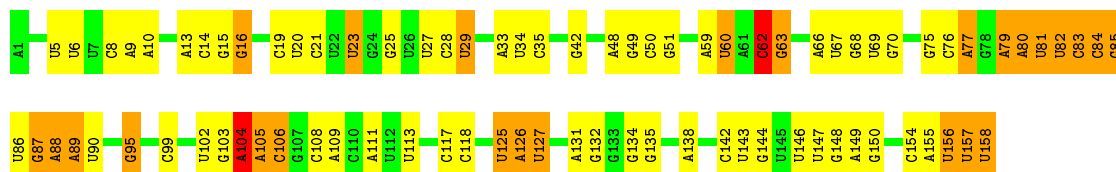
49%

7%



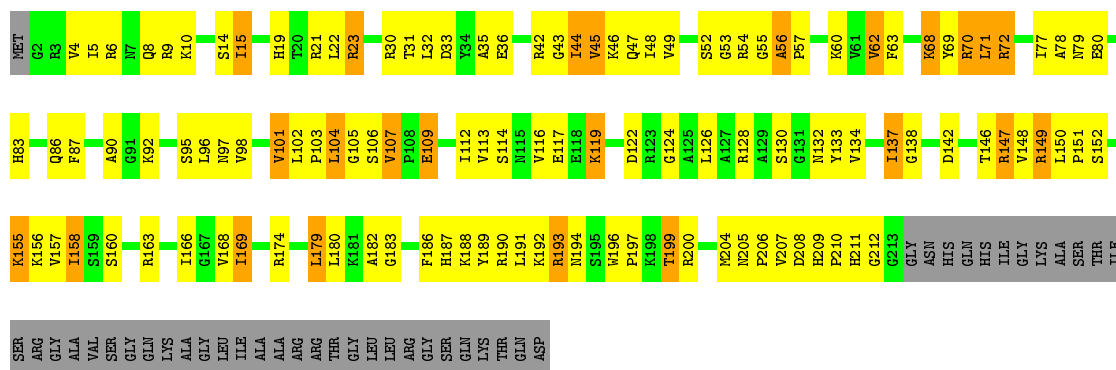
• Molecule 3: 5.8S ribosomal RNA

Chain 8: 47% 35% 16% .



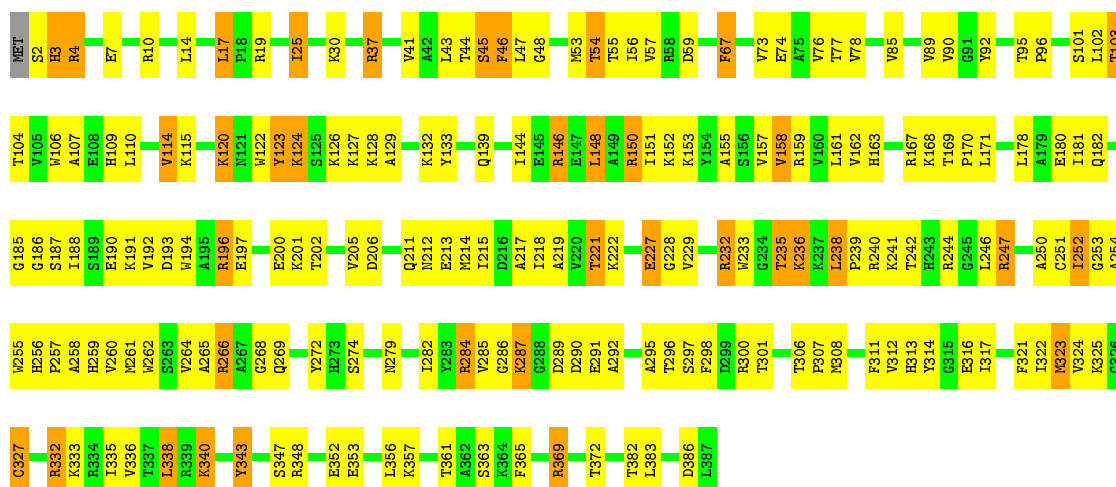
• Molecule 4: 60S ribosomal protein L2-A

Chain A: 36% 38% 9% 17%

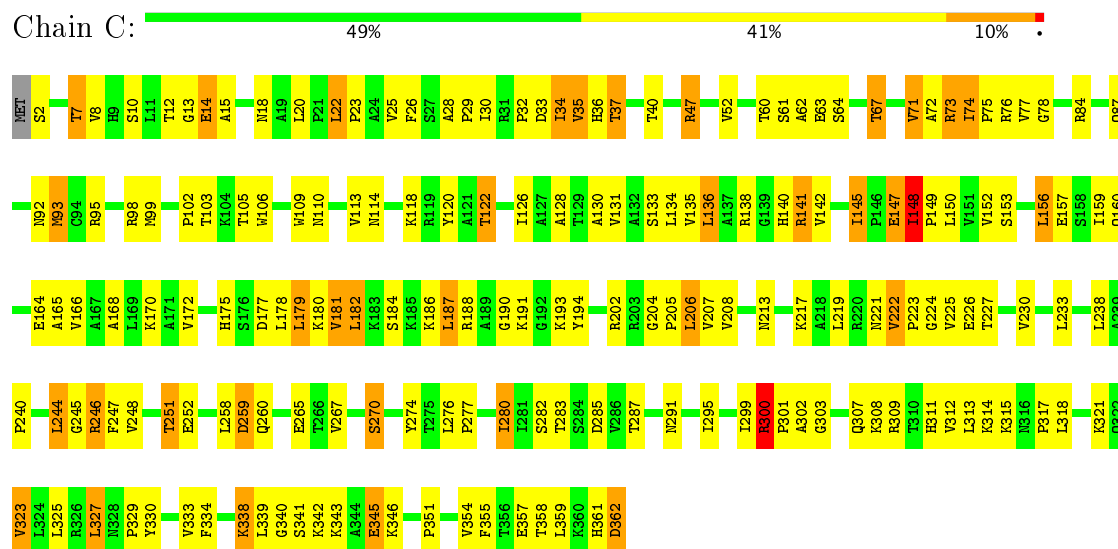


• Molecule 5: 60S ribosomal protein L3

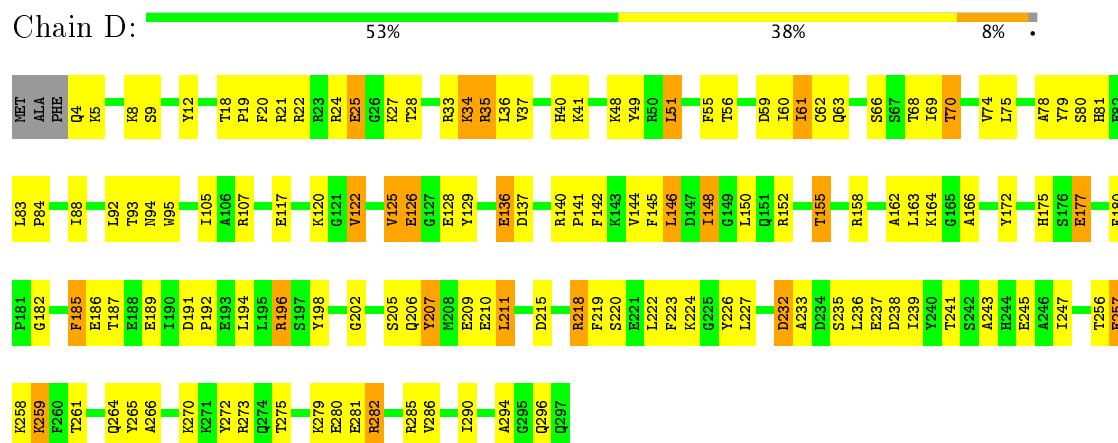
Chain B: 50% 40% 10%



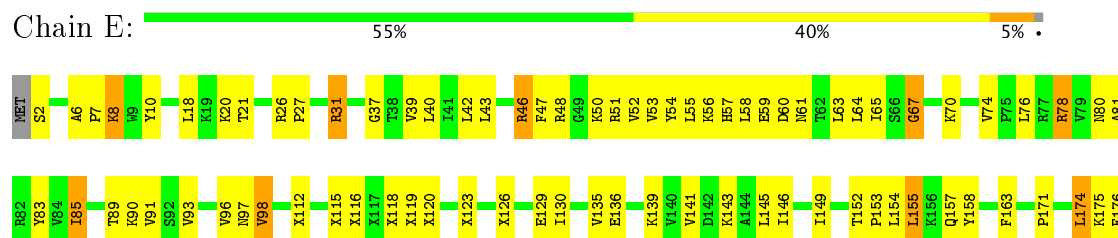
• Molecule 6: 60S ribosomal protein L4-A



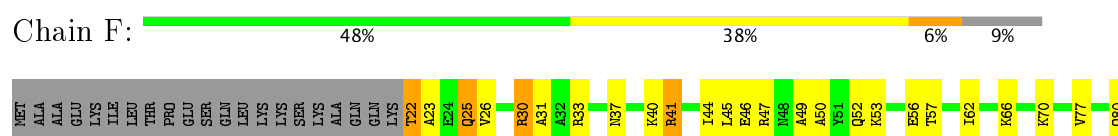
- Molecule 7: 60S ribosomal protein L5

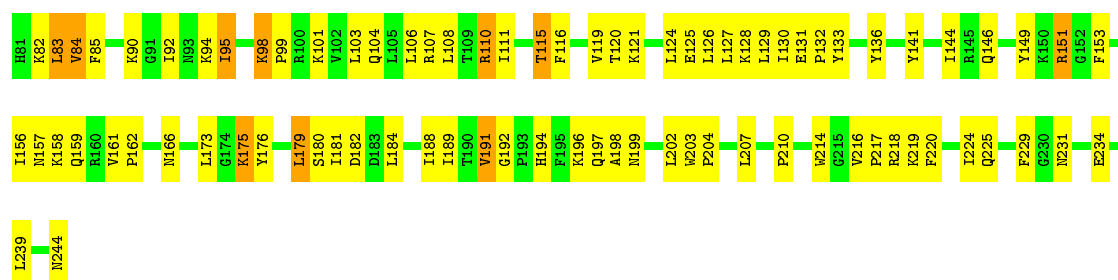


- Molecule 8: 60S RIBOSOMAL PROTEIN EL6



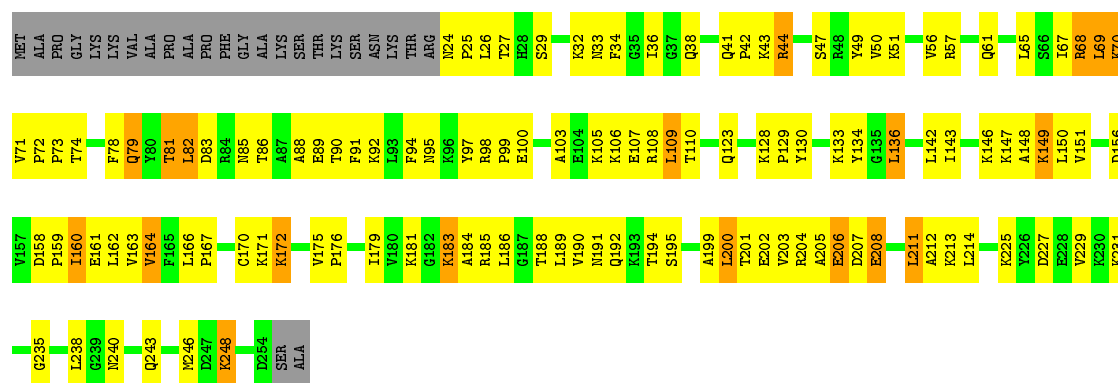
- Molecule 9: 60S ribosomal protein L7-A





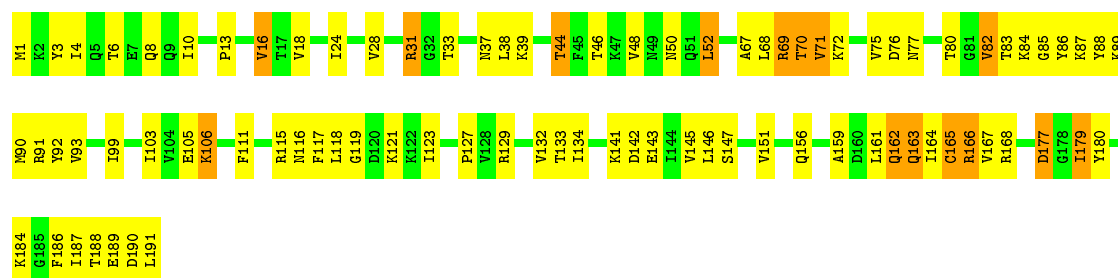
- Molecule 10: 60S ribosomal protein L8-A

Chain G: 43% 40% 7% 10%



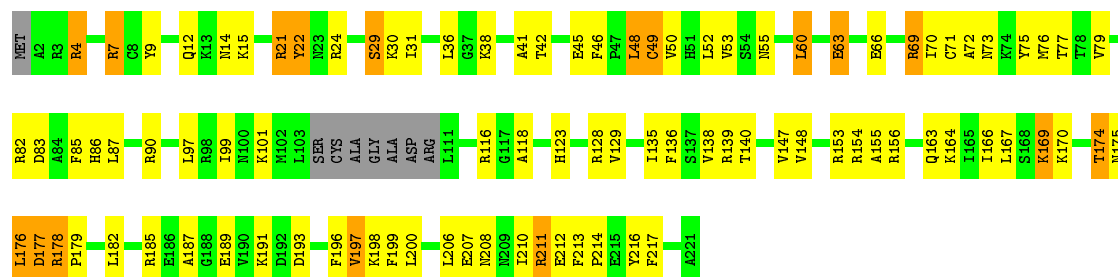
- Molecule 11: 60S ribosomal protein L9-A

Chain H: 54% 38% 8%

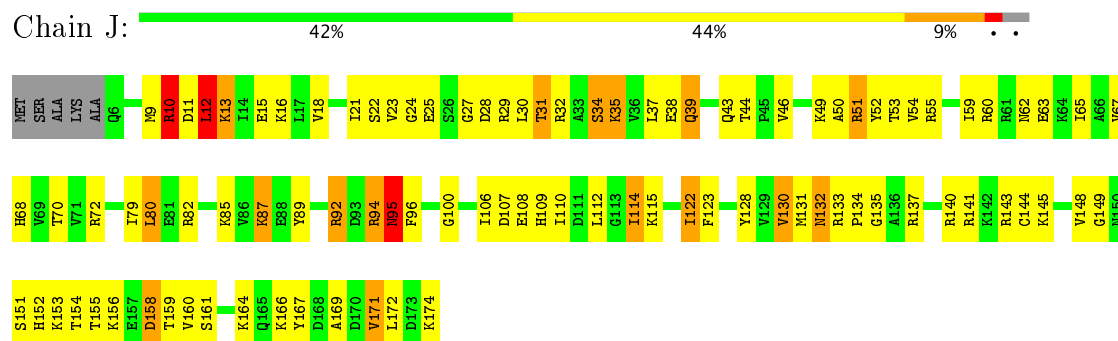


- Molecule 12: 60S ribosomal protein L10

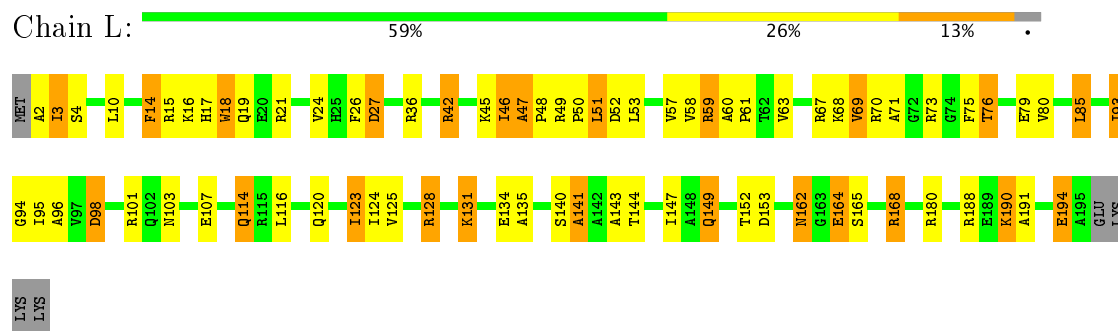
Chain I: 54% 35% 8%



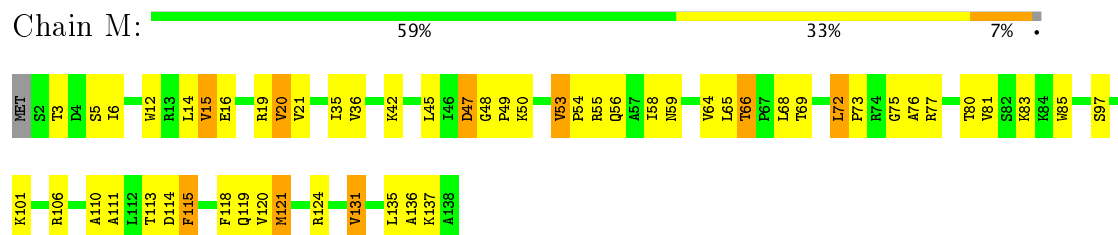
- Molecule 13: 60S ribosomal protein L11-A



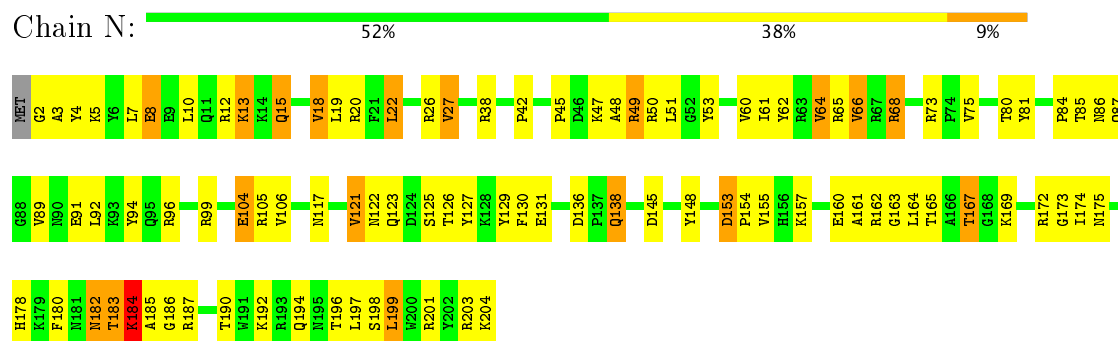
- Molecule 14: 60S ribosomal protein L13-A



- Molecule 15: 60S ribosomal protein L14-A

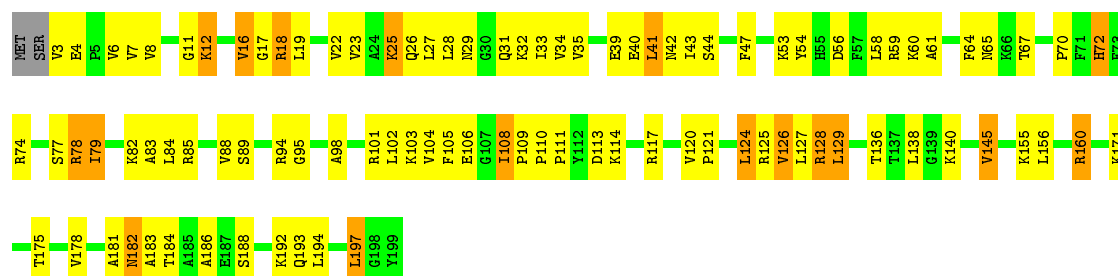


- Molecule 16: 60S ribosomal protein L15-A



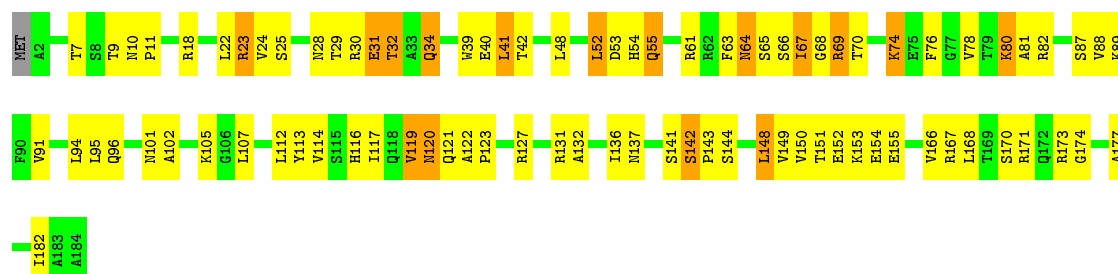
- Molecule 17: 60S ribosomal protein L16-A





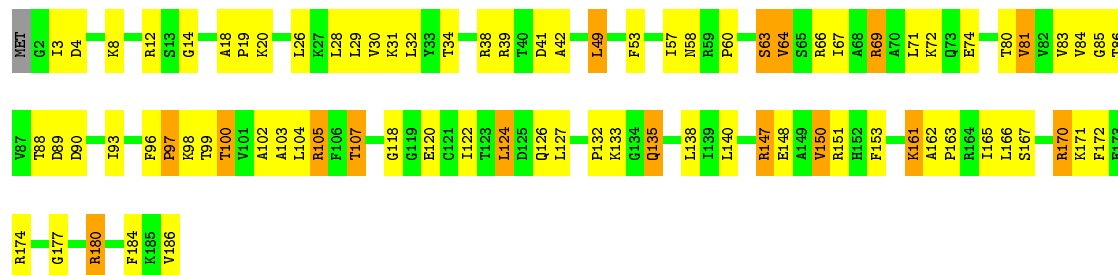
- Molecule 18: 60S ribosomal protein L17-A

Chain P: 53% 38% 9%



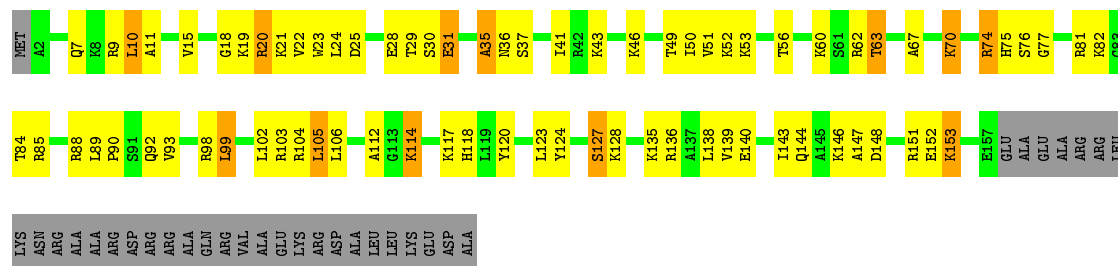
- Molecule 19: 60S ribosomal protein L18-A

Chain Q: 55% 35% 9%



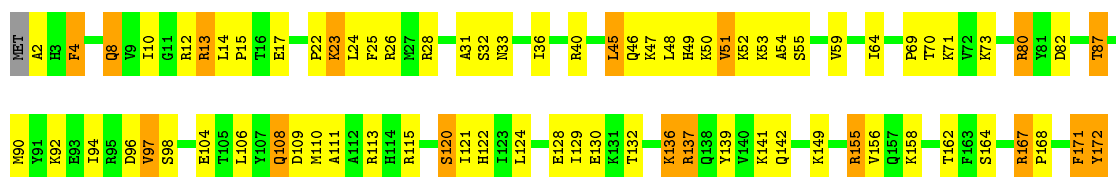
- Molecule 20: 60S ribosomal protein L19-A

Chain R: 42% 34% 6% 17%



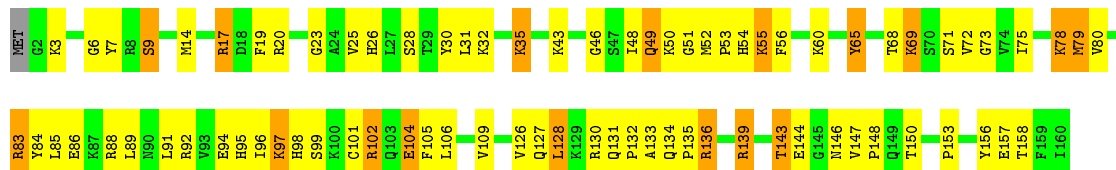
- Molecule 21: 60S ribosomal protein L20-A

Chain S: 55% 35% 10%



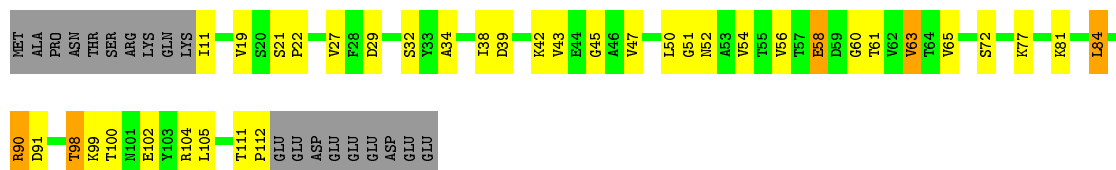
• Molecule 22: 60S ribosomal protein L21-A

Chain T: 50% 39% 11% .



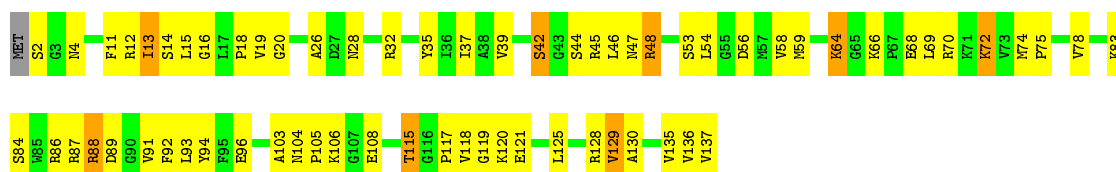
• Molecule 23: 60S ribosomal protein L22-A

Chain U: 53% 27% 16% .



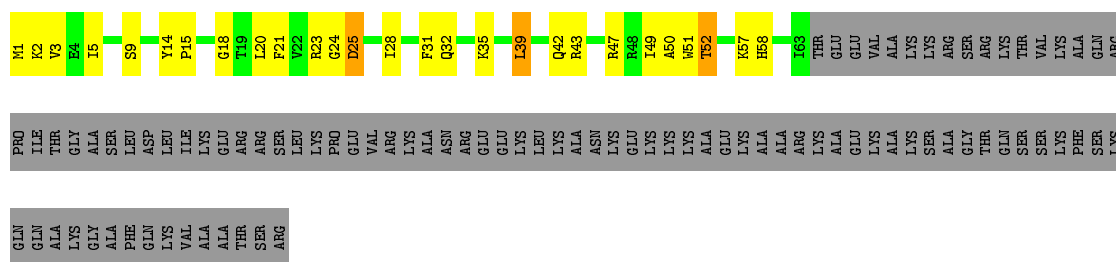
• Molecule 24: 60S ribosomal protein L23-A

Chain V: 51% 42% 6% .



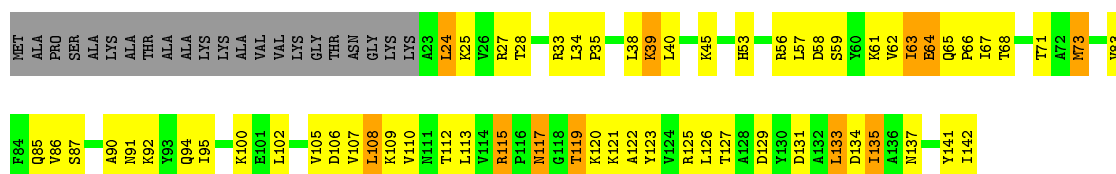
• Molecule 25: 60S ribosomal protein L24-A

Chain W: 23% 15% 59% .



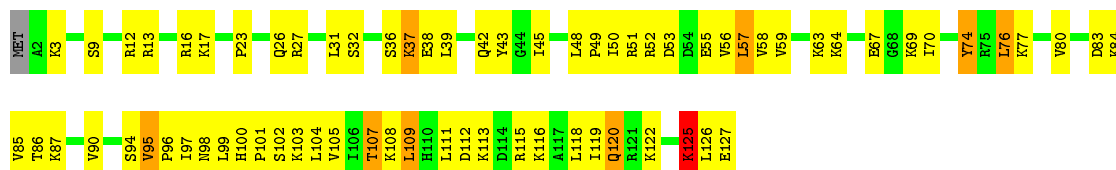
• Molecule 26: 60S ribosomal protein L25

Chain X: 40% 37% 8% 15%



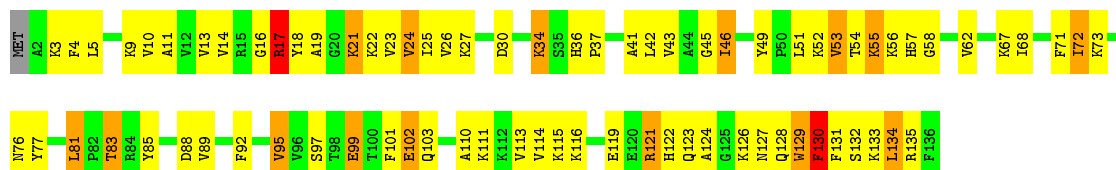
- Molecule 27: 60S ribosomal protein L26-A

Chain Y: 43% 49% 6% ..



- Molecule 28: 60S ribosomal protein L27-A

Chain Z: 42% 45% 11% ..



- Molecule 29: 60S ribosomal protein L28

Chain a: 91% 9% .



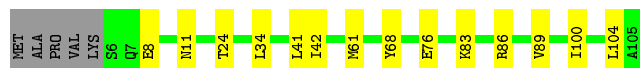
- Molecule 30: 60S ribosomal protein L29

Chain b: 85% 14% .



- Molecule 31: 60S ribosomal protein L30

Chain c: 82% 13% 5%



- Molecule 32: 60S ribosomal protein L31-A

Chain d: 86% 9% . .



- Molecule 33: 60S ribosomal protein L32

Chain e: 87% 12%



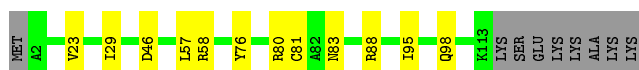
- Molecule 34: 60S ribosomal protein L33-A

Chain f: 93% 6%



- Molecule 35: 60S ribosomal protein L34-A

Chain g: 83% 10% 7%



- Molecule 36: 60S ribosomal protein L35-A

Chain h: 83% 16%



- Molecule 37: 60S ribosomal protein L36-A

Chain i: 76% 23%



- Molecule 38: 60S ribosomal protein L37-A

Chain j: 86% 13%




- Molecule 39: 60S ribosomal protein L38

Chain k: 88% 10%




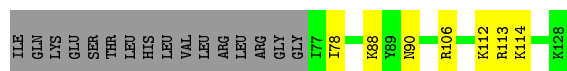
- Molecule 40: 60S ribosomal protein L39

Chain l:  78% 20%




- Molecule 41: Ubiquitin-60S ribosomal protein L40

Chain m:  35% 5% 59%




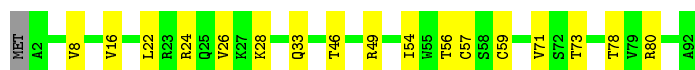
- Molecule 42: 60S ribosomal protein L42-A

Chain o:  82% 17%



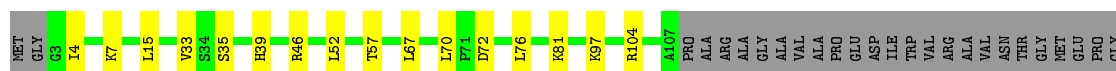
- Molecule 43: 60S ribosomal protein L43-A

Chain p:  80% 18%




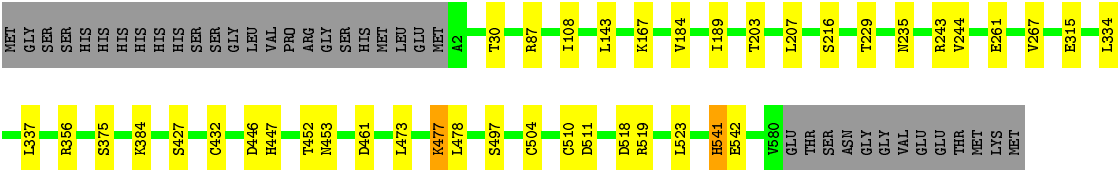
- Molecule 44: 60S acidic ribosomal protein P0

Chain q:  33% 6% 62%

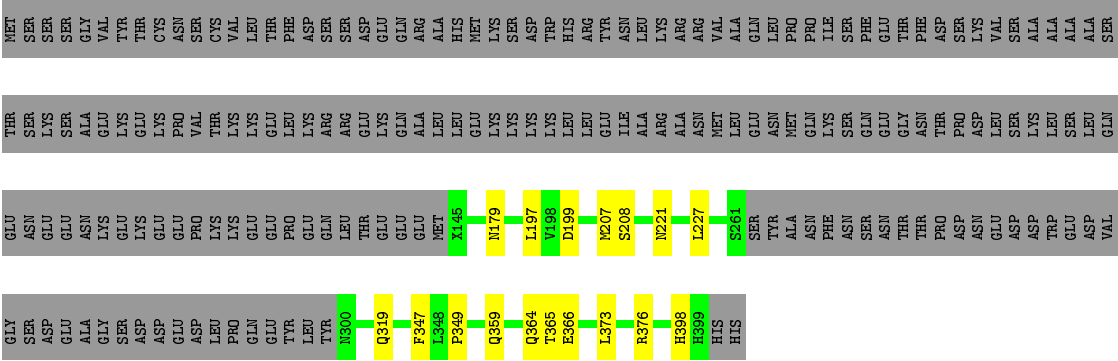


- Molecule 45: Probable metalloprotease ARX1

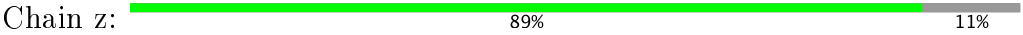
Chain x:  87% 6% 6%



● Molecule 46: CYTOPLASMIC 60S SUBUNIT BIOGENESIS FACTOR REI1



● Molecule 47: ALB1



4 Experimental information

Property	Value	Source
Reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	134701	Depositor
Resolution determination method	Not provided	Depositor
CTF correction method	PER DETECTOR FRAME	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	20	Depositor
Minimum defocus (nm)	800.00	Depositor
Maximum defocus (nm)	3000.00	Depositor
Magnification	100720	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: Y5P, ZN, P5P, MG

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 2$	RMSZ	# $ Z > 2$
1	5	0.66	12/74039 (0.0%)	1.09	121/115426 (0.1%)
10	G	0.38	0/1795	0.58	0/2429
11	H	0.40	0/1539	0.54	0/2073
12	I	0.36	0/1758	0.57	0/2358
13	J	0.34	0/1374	0.55	0/1842
14	L	0.46	0/1573	0.61	0/2113
15	M	0.38	0/1074	0.55	0/1446
16	N	0.52	0/1757	0.65	0/2354
17	O	0.48	0/1585	0.63	1/2128 (0.0%)
18	P	0.50	0/1465	0.60	0/1968
19	Q	0.42	0/1465	0.61	0/1965
2	7	0.41	0/2883	0.90	1/4491 (0.0%)
20	R	0.39	0/1275	0.52	0/1702
21	S	0.45	0/1473	0.59	0/1980
22	T	0.42	0/1300	0.56	0/1743
23	U	0.36	0/825	0.56	0/1120
24	V	0.43	0/1018	0.60	0/1369
25	W	0.40	0/533	0.53	0/707
26	X	0.42	0/974	0.62	0/1314
27	Y	0.43	0/1004	0.62	0/1341
28	Z	0.38	0/1118	0.62	0/1497
29	a	0.47	0/1204	0.64	0/1612
3	8	0.69	0/3746	1.12	8/5832 (0.1%)
30	b	0.39	0/473	0.53	0/629
31	c	0.35	0/775	0.52	0/1040
32	d	0.46	0/897	0.62	0/1205
33	e	0.52	0/1055	0.63	0/1413
34	f	0.52	0/868	0.67	0/1168
35	g	0.43	0/890	0.63	0/1189
36	h	0.42	0/974	0.58	0/1297
37	i	0.35	0/777	0.55	0/1033
38	j	0.51	0/696	0.65	0/923

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >2	RMSZ	# Z >2
39	k	0.34	0/614	0.53	0/822
4	A	0.41	0/1662	0.60	0/2236
40	l	0.46	0/443	0.57	0/588
41	m	0.40	0/423	0.55	0/562
42	o	0.41	0/860	0.56	0/1136
43	p	0.46	0/701	0.62	0/934
44	q	0.58	0/977	0.61	0/1313
45	x	0.37	0/4557	0.57	0/6189
46	y	0.39	0/1746	0.54	0/2346
5	B	0.46	0/3146	0.59	0/4228
6	C	0.47	0/2800	0.67	1/3790 (0.0%)
7	D	0.34	0/2408	0.50	0/3248
8	E	0.39	0/1269	0.58	0/1705
9	F	0.46	0/1828	0.58	0/2461
All	All	0.57	12/137616 (0.0%)	0.93	132/202265 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
14	L	0	1
16	N	0	1
27	Y	0	1
28	Z	0	1
32	d	0	3
37	i	0	1
45	x	0	3
46	y	0	1
6	C	0	3
8	E	0	1
All	All	0	16

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	1152	G	N9-C4	-7.14	1.32	1.38
1	5	2368	A	N9-C4	-6.55	1.33	1.37
1	5	336	A	N9-C4	-6.44	1.33	1.37
1	5	2392	C	N1-C6	-6.25	1.33	1.37
1	5	1446	A	N9-C4	-6.19	1.34	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	1886	A	N9-C4	-5.73	1.34	1.37
1	5	660	A	N9-C4	-5.60	1.34	1.37
1	5	1723	A	N9-C4	-5.55	1.34	1.37
1	5	1197	A	N9-C4	-5.41	1.34	1.37
1	5	1842	A	N9-C4	-5.32	1.34	1.37
1	5	2368	A	N3-C4	-5.19	1.31	1.34
1	5	408	A	C6-N1	-5.03	1.32	1.35

All (132) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1152	G	N3-C4-C5	10.03	133.61	128.60
1	5	408	A	N1-C6-N6	-8.94	113.24	118.60
1	5	1232	C	O4'-C1'-N1	8.59	115.07	108.20
1	5	2193	U	N1-C2-N3	8.32	119.89	114.90
3	8	62	C	C6-N1-C2	8.32	123.63	120.30
1	5	2307	G	C4-N9-C1'	-8.29	115.72	126.50
1	5	1152	G	N3-C4-N9	-8.06	121.16	126.00
3	8	27	U	C5-C6-N1	-7.88	118.76	122.70
1	5	64	G	N3-C4-N9	7.87	130.72	126.00
1	5	2307	G	C8-N9-C1'	7.73	137.05	127.00
1	5	1555	U	N3-C2-O2	-7.54	116.92	122.20
1	5	1812	G	N3-C4-N9	-7.10	121.74	126.00
1	5	1836	C	C6-N1-C2	-6.94	117.52	120.30
1	5	1607	U	P-O3'-C3'	6.82	127.89	119.70
1	5	1522	U	C5-C6-N1	-6.72	119.34	122.70
1	5	1631	C	C2-N1-C1'	-6.71	111.42	118.80
1	5	2808	A	O4'-C1'-N9	6.71	113.56	108.20
1	5	339	C	N1-C2-O2	-6.59	114.94	118.90
1	5	982	C	C6-N1-C2	-6.59	117.67	120.30
1	5	643	U	C5-C6-N1	-6.54	119.43	122.70
1	5	982	C	N3-C2-O2	-6.54	117.33	121.90
1	5	621	A	C8-N9-C4	-6.53	103.19	105.80
1	5	894	G	C8-N9-C4	6.50	109.00	106.40
1	5	894	G	N3-C4-C5	6.48	131.84	128.60
1	5	753	C	C6-N1-C2	-6.28	117.79	120.30
1	5	767	U	O4'-C1'-N1	6.28	113.22	108.20
1	5	1332	A	C8-N9-C4	-6.28	103.29	105.80
1	5	821	U	N1-C2-O2	-6.22	118.44	122.80
1	5	953	G	N1-C6-O6	-6.20	116.18	119.90
1	5	821	U	C2-N1-C1'	-6.15	110.32	117.70
1	5	35	A	N1-C2-N3	6.10	132.35	129.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1172	G	N3-C4-C5	-6.07	125.57	128.60
1	5	1631	C	C6-N1-C1'	6.06	128.08	120.80
1	5	931	C	N1-C2-O2	-6.04	115.27	118.90
1	5	408	A	N9-C4-C5	6.04	108.22	105.80
1	5	1151	U	C4-C5-C6	6.03	123.32	119.70
1	5	1555	U	P-O3'-C3'	6.02	126.92	119.70
1	5	99	A	N1-C2-N3	6.00	132.30	129.30
2	7	85	G	C8-N9-C4	5.93	108.77	106.40
1	5	645	A	C2-N3-C4	5.92	113.56	110.60
1	5	1175	C	C5-C6-N1	-5.91	118.05	121.00
1	5	2949	U	C5-C6-N1	-5.91	119.75	122.70
1	5	2307	G	N3-C4-N9	-5.90	122.46	126.00
1	5	360	G	N3-C4-C5	-5.89	125.66	128.60
1	5	645	A	N3-C4-C5	-5.88	122.68	126.80
1	5	64	G	N3-C4-C5	-5.87	125.66	128.60
1	5	3335	A	C8-N9-C4	-5.83	103.47	105.80
1	5	2379	U	C5-C6-N1	-5.79	119.80	122.70
1	5	72	C	C5-C6-N1	-5.78	118.11	121.00
1	5	1174	G	C4-N9-C1'	5.71	133.93	126.50
1	5	2193	U	C2-N3-C4	-5.71	123.57	127.00
1	5	2659	G	C8-N9-C4	5.71	108.69	106.40
1	5	3373	U	C5-C6-N1	-5.71	119.84	122.70
3	8	99	C	C6-N1-C2	5.67	122.57	120.30
1	5	66	A	C8-N9-C4	5.65	108.06	105.80
1	5	943	U	C5-C6-N1	-5.64	119.88	122.70
1	5	1723	A	C2-N3-C4	-5.56	107.82	110.60
1	5	2380	U	C5-C6-N1	-5.55	119.92	122.70
1	5	1151	U	N1-C2-N3	5.55	118.23	114.90
1	5	3089	C	C6-N1-C2	5.54	122.52	120.30
1	5	282	G	N3-C4-C5	-5.54	125.83	128.60
1	5	1555	U	N1-C2-O2	5.53	126.67	122.80
1	5	1348	U	N1-C1'-C2'	-5.51	105.93	112.00
1	5	1172	G	C4-N9-C1'	5.50	133.65	126.50
1	5	645	A	C6-N1-C2	-5.47	115.32	118.60
1	5	339	C	N1-C2-N3	5.43	123.00	119.20
1	5	1199	C	C6-N1-C2	5.43	122.47	120.30
1	5	1832	C	C6-N1-C2	5.41	122.46	120.30
1	5	816	A	C4-C5-C6	5.39	119.69	117.00
1	5	760	G	O4'-C1'-N9	5.38	112.51	108.20
1	5	931	C	C5-C6-N1	-5.38	118.31	121.00
1	5	1836	C	N3-C2-O2	-5.37	118.14	121.90
1	5	2231	C	C6-N1-C2	-5.34	118.16	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	3047	U	C5-C6-N1	-5.34	120.03	122.70
1	5	2584	G	C4-N9-C1'	5.34	133.44	126.50
1	5	1812	G	N3-C4-C5	5.34	131.27	128.60
1	5	2288	G	C4-N9-C1'	5.34	133.44	126.50
1	5	1348	U	C3'-C2'-C1'	-5.33	97.24	101.50
1	5	655	C	N1-C2-O2	-5.33	115.70	118.90
1	5	713	U	N3-C2-O2	-5.31	118.48	122.20
1	5	2307	G	C6-C5-N7	5.31	133.59	130.40
1	5	1174	G	N3-C4-C5	-5.31	125.95	128.60
1	5	1478	C	C6-N1-C2	5.31	122.42	120.30
1	5	175	C	C2-N1-C1'	5.29	124.61	118.80
1	5	93	C	C6-N1-C2	5.27	122.41	120.30
1	5	1152	G	C4-N9-C1'	-5.24	119.68	126.50
3	8	16	G	N9-C4-C5	-5.24	103.31	105.40
1	5	1418	A	C8-N9-C4	5.23	107.89	105.80
3	8	19	C	N3-C4-C5	5.22	123.99	121.90
1	5	72	C	C6-N1-C2	5.21	122.39	120.30
1	5	2390	A	C2-N3-C4	-5.21	108.00	110.60
1	5	621	A	N7-C8-N9	5.20	116.40	113.80
17	O	27	LEU	CA-CB-CG	-5.20	103.34	115.30
1	5	3140	G	C4-N9-C1'	5.19	133.24	126.50
1	5	2659	G	N9-C4-C5	-5.18	103.33	105.40
1	5	2388	U	C2-N3-C4	-5.18	123.89	127.00
1	5	715	A	P-O3'-C3'	5.17	125.91	119.70
1	5	64	G	C8-N9-C1'	-5.17	120.28	127.00
1	5	2307	G	N3-C4-C5	5.17	131.19	128.60
1	5	1716	U	P-O3'-C3'	5.16	125.90	119.70
1	5	401	U	C5-C6-N1	-5.16	120.12	122.70
6	C	244	LEU	CA-CB-CG	-5.16	103.44	115.30
1	5	2572	C	N1-C2-O2	5.16	121.99	118.90
1	5	1172	G	N3-C4-N9	5.15	129.09	126.00
1	5	831	G	C8-N9-C4	-5.15	104.34	106.40
1	5	2376	G	C4-C5-N7	5.14	112.86	110.80
1	5	1770	G	C4-N9-C1'	5.14	133.19	126.50
1	5	645	A	C5-C6-N1	5.14	120.27	117.70
1	5	804	C	C4-C5-C6	5.14	119.97	117.40
1	5	3282	U	C2-N1-C1'	5.14	123.86	117.70
1	5	821	U	C5-C6-N1	-5.13	120.13	122.70
1	5	1535	A	N1-C6-N6	-5.13	115.52	118.60
1	5	35	A	C6-N1-C2	-5.13	115.52	118.60
1	5	1152	G	C2-N3-C4	-5.12	109.34	111.90
1	5	27	C	C6-N1-C2	5.11	122.34	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	2568	C	O4'-C1'-N1	5.10	112.28	108.20
1	5	36	C	C2-N3-C4	-5.10	117.35	119.90
1	5	2660	G	N9-C4-C5	-5.10	103.36	105.40
1	5	269	G	C8-N9-C4	5.09	108.44	106.40
1	5	345	G	C4-C5-C6	5.08	121.85	118.80
1	5	360	G	N3-C4-N9	5.08	129.05	126.00
1	5	1887	A	C8-N9-C4	5.08	107.83	105.80
1	5	1417	G	C8-N9-C4	5.07	108.43	106.40
3	8	104	A	C8-N9-C4	5.07	107.83	105.80
1	5	221	A	N1-C6-N6	-5.07	115.56	118.60
1	5	2337	C	N1-C2-O2	-5.06	115.86	118.90
1	5	3022	G	O4'-C1'-N9	5.05	112.24	108.20
3	8	29	U	C5-C6-N1	-5.04	120.18	122.70
1	5	3093	C	C6-N1-C2	5.02	122.31	120.30
3	8	104	A	C6-N1-C2	-5.02	115.59	118.60
1	5	859	G	C8-N9-C4	-5.01	104.40	106.40
1	5	2193	U	C6-N1-C1'	5.00	128.20	121.20

There are no chirality outliers.

All (16) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	C	145	ILE	Peptide
6	C	148	ILE	Peptide
6	C	300	ARG	Peptide
8	E	67	GLY	Peptide
14	L	141	ALA	Peptide
16	N	184	LYS	Peptide
27	Y	125	LYS	Peptide
28	Z	101	PHE	Peptide
32	d	6	ASP	Peptide
32	d	82	GLU	Peptide
32	d	89	LEU	Peptide
37	i	32	ALA	Peptide
45	x	473	LEU	Peptide
45	x	477	LYS	Peptide
45	x	541	HIS	Peptide
46	y	349	PRO	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	5	66537	0	33466	1531	0
2	7	2579	0	1304	66	0
3	8	3353	0	1695	81	0
4	A	1630	0	1682	124	0
5	B	3075	0	3142	185	0
6	C	2748	0	2859	171	0
7	D	2359	0	2311	131	0
8	E	1356	0	1448	98	0
9	F	1791	0	1869	114	0
10	G	1763	0	1819	117	0
11	H	1518	0	1587	77	0
12	I	1722	0	1755	101	0
13	J	1353	0	1383	89	0
14	L	1548	0	1613	91	0
15	M	1059	0	1154	55	0
16	N	1720	0	1779	90	0
17	O	1555	0	1659	96	0
18	P	1442	0	1485	72	0
19	Q	1441	0	1543	77	0
20	R	1258	0	1342	70	0
21	S	1437	0	1475	77	0
22	T	1276	0	1323	87	0
23	U	808	0	822	24	0
24	V	1003	0	1048	71	0
25	W	521	0	551	26	0
26	X	959	0	1023	64	0
27	Y	993	0	1081	81	0
28	Z	1092	0	1155	73	0
29	a	1173	0	1215	0	0
30	b	462	0	491	0	0
31	c	767	0	816	0	0
32	d	883	0	918	0	0
33	e	1034	0	1101	0	0
34	f	850	0	880	0	0
35	g	880	0	945	0	0
36	h	965	0	1067	0	0
37	i	770	0	846	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	j	681	0	683	0	0
39	k	608	0	671	0	0
40	l	436	0	475	0	0
41	m	417	0	455	0	0
42	o	847	0	914	0	0
43	p	694	0	734	0	0
44	q	962	0	989	0	0
45	x	4477	0	4559	0	0
46	y	1785	3	1755	0	0
47	z	510	0	517	0	0
48	5	259	0	0	0	0
48	7	6	0	0	0	0
48	8	7	0	0	0	0
48	B	2	0	0	0	0
48	C	1	0	0	0	0
48	N	1	0	0	0	0
48	P	1	0	0	0	0
48	R	1	0	0	0	0
48	V	1	0	0	0	0
48	y	1	0	0	0	0
49	j	1	0	0	0	0
49	m	1	0	0	0	0
49	o	1	0	0	0	0
49	p	1	0	0	0	0
49	y	2	0	0	0	0
All	All	129383	3	95404	3548	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 22.

All (3548) 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)
15:M:48:GLY:HA3	15:M:53:VAL:HG13	1.25	1.18
4:A:149:ARG:HH12	4:A:155:LYS:HE3	1.06	1.18
8:E:78:ARG:HG3	8:E:78:ARG:HH11	1.03	1.14
5:B:4:ARG:HG3	5:B:4:ARG:HH11	1.03	1.12
10:G:44:ARG:HH11	10:G:44:ARG:HG3	1.15	1.11
6:C:148:ILE:HG23	6:C:149:PRO:HD3	1.31	1.09
10:G:24:ASN:HB3	10:G:25:PRO:HD3	1.14	1.08
17:O:128:ARG:HH11	17:O:128:ARG:HB3	1.13	1.08

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:78:ARG:HG3	17:O:78:ARG:HH11	0.95	1.06
27:Y:45:ILE:HD11	27:Y:122:LYS:HE3	1.36	1.06
22:T:17:ARG:HH11	22:T:17:ARG:HG2	1.08	1.05
1:5:1324:U:H5''	21:S:2:ALA:HA	1.36	1.05
1:5:1133:A:H2'	1:5:1134:G:H5'	1.37	1.04
19:Q:86:THR:HG22	19:Q:105:ARG:HB3	1.39	1.04
13:J:51:ARG:HG3	13:J:51:ARG:HH11	0.96	1.04
10:G:70:LYS:HA	10:G:235:GLY:HA3	1.41	1.03
1:5:1764:U:H3'	1:5:1765:U:H2'	1.37	1.02
1:5:1581:C:H41	1:5:2522:G:H4'	1.19	1.02
24:V:48:ARG:HG3	24:V:48:ARG:HH11	1.25	1.02
19:Q:69:ARG:HH11	19:Q:69:ARG:HG3	1.16	1.01
1:5:1347:U:H5'	6:C:303:GLY:HA3	1.38	1.01
14:L:165:SER:HB3	14:L:168:ARG:HB3	1.43	0.99
1:5:375:A:H1'	27:Y:87:LYS:NZ	1.76	0.99
6:C:74:ILE:HD12	6:C:75:PRO:HD2	1.41	0.99
5:B:211:GLN:HE22	5:B:284:ARG:HA	1.28	0.98
10:G:24:ASN:HB3	10:G:25:PRO:CD	1.93	0.98
28:Z:83:THR:HG23	28:Z:85:TYR:H	1.29	0.98
15:M:72:LEU:HD23	15:M:73:PRO:HD2	1.45	0.98
21:S:155:ARG:HG2	21:S:155:ARG:HH21	1.27	0.97
9:F:131:GLU:HB3	9:F:132:PRO:HD3	1.45	0.97
21:S:13:ARG:HG3	21:S:13:ARG:HH11	1.30	0.97
19:Q:133:LYS:HB2	19:Q:135:GLN:HE22	1.27	0.97
1:5:375:A:H1'	27:Y:87:LYS:HZ2	1.25	0.97
7:D:22:ARG:NH1	7:D:28:THR:OG1	1.98	0.97
1:5:2277:C:H4'	1:5:2317:A:H4'	1.47	0.97
14:L:114:GLN:HA	14:L:114:GLN:HE21	1.30	0.97
16:N:18:VAL:HG22	16:N:19:LEU:HD12	1.45	0.97
17:O:108:ILE:HD11	17:O:113:ASP:HA	1.45	0.96
21:S:26:ARG:HH11	22:T:150:THR:HG21	1.29	0.96
15:M:106:ARG:NH1	15:M:106:ARG:HB2	4.46	0.96
26:X:115:ARG:HH11	26:X:115:ARG:HG3	1.30	0.96
23:U:50:LEU:HD22	23:U:54:VAL:HB	1.45	0.96
12:I:36:LEU:HD11	12:I:69:ARG:HD3	1.46	0.96
1:5:2270:A:H2'	1:5:2271:A:C8	2.01	0.96
11:H:28:VAL:HG13	11:H:33:THR:HG22	1.47	0.96
16:N:172:ARG:HB3	16:N:174:ILE:HD13	1.48	0.96
24:V:136:VAL:HG12	24:V:137:VAL:HG23	1.48	0.95
16:N:99:ARG:HG2	16:N:130:PHE:CE2	2.03	0.94
1:5:1567:U:H3'	1:5:1568:U:H5''	1.48	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:149:ARG:NH1	4:A:155:LYS:HE3	1.81	0.94
5:B:185:GLY:O	5:B:191:LYS:NZ	2.00	0.94
1:5:247:C:H2'	1:5:248:U:H1'	1.50	0.94
1:5:1578:C:OP1	10:G:43:LYS:NZ	2.00	0.94
1:5:2338:C:OP1	5:B:236:LYS:NZ	2.00	0.94
5:B:53:MET:HE1	5:B:327:CYS:HB3	1.46	0.93
19:Q:71:LEU:HD13	19:Q:99:THR:HG21	1.49	0.93
1:5:619:A:H5'	1:5:620:U:C5	2.04	0.93
21:S:26:ARG:HH11	22:T:150:THR:CG2	1.80	0.93
1:5:2569:A:H4'	1:5:2570:U:H5'	1.49	0.93
1:5:2304:C:H2'	1:5:2305:G:H5'	1.51	0.93
17:O:183:ALA:HA	17:O:186:ALA:HB2	1.51	0.93
17:O:121:PRO:HA	17:O:124:LEU:HD23	1.47	0.93
1:5:1133:A:C2'	1:5:1134:G:H5'	1.99	0.92
3:8:95:G:OP2	13:J:72:ARG:NH1	152.91	0.92
9:F:41:ARG:HH11	9:F:41:ARG:HG3	1.34	0.92
17:O:128:ARG:CB	17:O:128:ARG:HH11	1.81	0.92
1:5:1724:U:OP2	20:R:128:LYS:NZ	2.03	0.92
5:B:150:ARG:HH11	5:B:150:ARG:HG2	1.33	0.92
5:B:4:ARG:HG3	5:B:4:ARG:NH1	1.77	0.92
11:H:86:TYR:CE2	11:H:151:VAL:HG22	2.03	0.92
13:J:92:ARG:HG2	13:J:92:ARG:HH11	1.32	0.92
9:F:41:ARG:HH11	9:F:41:ARG:CG	1.83	0.91
1:5:253:A:O2'	1:5:254:A:O5'	1.88	0.91
8:E:115:UNK:HA	8:E:118:UNK:HG3	1.52	0.91
27:Y:86:THR:HG22	27:Y:96:PRO:HA	1.53	0.91
1:5:2572:C:O2'	1:5:2573:G:OP2	1.88	0.90
1:5:149:U:OP2	16:N:49:ARG:NH2	2.04	0.90
13:J:94:ARG:O	13:J:96:PHE:N	2.04	0.90
18:P:64:ASN:HB2	18:P:80:LYS:HE3	1.52	0.90
16:N:172:ARG:HB3	16:N:174:ILE:CD1	2.02	0.90
1:5:2276:G:O6	1:5:2311:G:C2	2.25	0.90
1:5:2748:A:O2'	7:D:48:LYS:NZ	2.05	0.90
1:5:2276:G:N2	1:5:2316:G:O2'	2.03	0.90
18:P:32:THR:HG21	18:P:87:SER:HB3	1.54	0.90
1:5:1575:A:O2'	1:5:1576:G:O4'	1.91	0.89
5:B:188:ILE:H	5:B:188:ILE:HD12	1.35	0.89
9:F:22:THR:HA	9:F:25:GLN:HG2	1.53	0.89
16:N:183:THR:O	16:N:184:LYS:HB3	1.72	0.89
6:C:204:GLY:O	6:C:246:ARG:NH1	2.06	0.89
12:I:187:ALA:HB1	12:I:189:GLU:HG3	1.54	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:78:ARG:CG	17:O:78:ARG:HH11	1.84	0.89
2:7:44:C:OP2	13:J:137:ARG:NH2	2.04	0.89
15:M:106:ARG:HB2	15:M:106:ARG:HH11	4.54	0.89
8:E:96:VAL:HG12	8:E:98:VAL:HG23	1.55	0.88
1:5:2954:U:H4'	1:5:2955:U:OP1	1.72	0.88
6:C:22:LEU:HD23	6:C:23:PRO:HD2	1.56	0.88
13:J:51:ARG:CG	13:J:51:ARG:HH11	1.84	0.88
19:Q:84:VAL:HG22	19:Q:124:LEU:HD11	1.53	0.88
1:5:2925:C:H2'	1:5:2926:A:H5'	1.54	0.88
1:5:75:G:H5'	14:L:58:VAL:CG1	2.03	0.88
4:A:174:ARG:HH11	4:A:174:ARG:HG2	1.36	0.88
8:E:8:LYS:NZ	8:E:8:LYS:HB3	4.23	0.87
6:C:300:ARG:HH11	6:C:300:ARG:CG	1.85	0.87
25:W:20:LEU:HD21	25:W:28:ILE:HG23	1.54	0.87
6:C:148:ILE:HG23	6:C:149:PRO:CD	2.04	0.87
1:5:2890:A:H61	1:5:2913:C:H42	1.19	0.87
7:D:125:VAL:HG12	7:D:126:GLU:H	1.39	0.87
20:R:74:ARG:HE	20:R:74:ARG:HA	1.39	0.87
1:5:2511:A:H2'	1:5:2512:C:H5'	1.56	0.86
19:Q:133:LYS:HB2	19:Q:135:GLN:NE2	1.89	0.86
1:5:2144:A:H1'	1:5:2281:A:N6	1.90	0.86
14:L:85:LEU:HD22	14:L:120:GLN:HE22	1.40	0.86
14:L:131:LYS:HD3	14:L:131:LYS:H	1.38	0.86
20:R:105:LEU:HD23	20:R:135:LYS:HE3	1.58	0.86
28:Z:23:VAL:HG12	28:Z:45:GLY:HA3	1.58	0.86
8:E:78:ARG:HG3	8:E:78:ARG:NH1	1.84	0.86
6:C:299:ILE:HG21	19:Q:39:ARG:NH1	1.91	0.86
1:5:2307:G:H4'	1:5:2308:C:OP2	1.75	0.85
21:S:13:ARG:NH1	21:S:13:ARG:HG3	1.86	0.85
1:5:1761:C:H1'	1:5:1765:U:C5	2.10	0.85
6:C:283:THR:HG22	6:C:285:ASP:H	1.41	0.85
1:5:2806:U:H2'	1:5:2807:U:H5'	1.58	0.85
13:J:109:HIS:HD2	13:J:123:PHE:H	1.23	0.85
22:T:94:GLU:OE1	22:T:94:GLU:N	2.09	0.85
1:5:1761:C:H1'	1:5:1765:U:H5	1.41	0.85
1:5:1238:C:O2'	1:5:1239:C:OP1	1.95	0.85
5:B:232:ARG:NH1	5:B:269:GLN:O	2.09	0.85
1:5:177:U:O4	1:5:239:G:N2	2.08	0.85
1:5:769:G:O2'	1:5:770:G:H5'	1.76	0.85
6:C:156:LEU:HD23	6:C:159:ILE:HD12	1.58	0.85
19:Q:100:THR:HG22	19:Q:120:GLU:HB3	1.58	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2227:C:H2'	1:5:2228:A:H5''	1.57	0.85
1:5:2537:U:O2'	1:5:2538:U:O4'	1.94	0.85
1:5:2532:U:H2'	1:5:2533:G:H8	1.39	0.84
1:5:2248:C:O2'	1:5:2249:G:OP2	1.96	0.84
17:O:78:ARG:HG3	17:O:78:ARG:NH1	1.72	0.84
1:5:439:C:O2	1:5:494:G:N2	2.09	0.84
13:J:51:ARG:HG3	13:J:51:ARG:NH1	1.73	0.84
5:B:41:VAL:HA	5:B:185:GLY:HA3	1.59	0.84
1:5:1580:A:H4'	1:5:1581:C:OP2	1.75	0.84
1:5:248:U:H3'	1:5:249:U:H5'	1.59	0.84
1:5:75:G:H5'	14:L:58:VAL:HG11	1.59	0.84
1:5:2186:U:C2'	1:5:2187:G:H5'	2.08	0.84
19:Q:69:ARG:NH1	19:Q:69:ARG:HG3	1.83	0.84
26:X:34:LEU:HD12	26:X:35:PRO:HD2	1.60	0.83
3:8:80:A:O3'	3:8:81:U:H3'	1.78	0.83
16:N:42:PRO:HG3	16:N:61:ILE:HG13	1.60	0.83
1:5:1575:A:H2'	1:5:1576:G:C8	2.13	0.83
1:5:3289:G:H2'	1:5:3290:G:H8	1.42	0.83
11:H:106:LYS:HA	11:H:106:LYS:HE3	1.59	0.83
26:X:115:ARG:NH1	26:X:115:ARG:HG3	1.90	0.83
1:5:3068:U:OP2	20:R:62:ARG:NH2	2.10	0.83
8:E:89:THR:HG21	15:M:115:PHE:HB2	1.58	0.83
15:M:55:ARG:NH2	15:M:76:ALA:O	2.11	0.83
1:5:132:C:H2'	1:5:133:U:H5''	1.60	0.83
5:B:150:ARG:HG2	5:B:150:ARG:NH1	1.90	0.83
18:P:170:SER:HA	18:P:173:ARG:HH21	1.42	0.83
24:V:13:ILE:HD11	24:V:53:SER:HB2	1.61	0.83
1:5:2609:A:H2'	1:5:2610:G:H5''	1.60	0.83
6:C:299:ILE:HG23	19:Q:39:ARG:HB3	1.60	0.83
12:I:38:LYS:HG2	12:I:41:ALA:HB2	1.61	0.83
16:N:94:TYR:HE2	16:N:96:ARG:HB2	1.43	0.82
1:5:36:C:H2'	1:5:37:U:H5'	1.61	0.82
1:5:1221:A:O2'	19:Q:8:LYS:NZ	97.49	0.82
9:F:33:ARG:HG3	9:F:33:ARG:HH11	1.45	0.82
17:O:128:ARG:NH1	17:O:128:ARG:HB3	1.93	0.82
5:B:4:ARG:CG	5:B:4:ARG:HH11	1.90	0.81
1:5:2213:A:H2'	1:5:2214:A:H8	1.45	0.81
1:5:2144:A:H1'	1:5:2281:A:H61	1.46	0.81
1:5:2568:C:O2'	1:5:2569:A:O5'	1.96	0.81
12:I:85:PHE:HA	12:I:140:THR:HG22	1.60	0.81
1:5:1324:U:C5'	21:S:2:ALA:HA	2.09	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:G:44:ARG:HG3	10:G:44:ARG:NH1	1.94	0.81
22:T:79:MET:HB2	22:T:84:TYR:CE2	2.16	0.81
6:C:145:ILE:O	6:C:147:GLU:N	2.14	0.81
8:E:18:LEU:H	8:E:18:LEU:HD12	1.45	0.81
1:5:2509:U:H2'	1:5:2510:U:H5'	1.62	0.81
4:A:149:ARG:NH1	4:A:149:ARG:HB2	1.95	0.81
20:R:114:LYS:O	20:R:146:LYS:NZ	2.13	0.81
22:T:17:ARG:NH1	22:T:17:ARG:HG2	1.87	0.80
1:5:249:U:H3'	1:5:249:U:OP2	1.80	0.80
1:5:619:A:H5'	1:5:620:U:C6	2.16	0.80
11:H:91:ARG:HD2	11:H:143:GLU:HG3	1.64	0.80
21:S:26:ARG:NH1	22:T:150:THR:HG21	1.95	0.80
1:5:2112:U:H4'	1:5:2113:A:H5'	1.63	0.80
6:C:342:LYS:O	6:C:342:LYS:HG3	1.81	0.80
27:Y:51:ARG:HG2	27:Y:115:ARG:NH2	1.97	0.80
26:X:137:ASN:HB3	26:X:142:ILE:HD12	1.62	0.80
5:B:238:LEU:HD12	5:B:239:PRO:HD3	1.61	0.80
5:B:53:MET:CE	5:B:327:CYS:HB3	2.11	0.80
1:5:2796:G:H3'	17:O:60:LYS:HZ3	71.05	0.80
16:N:99:ARG:HG2	16:N:130:PHE:HE2	1.47	0.80
19:Q:72:LYS:NZ	19:Q:72:LYS:HB3	1.97	0.80
1:5:900:G:H1'	1:5:1589:A:N6	1.97	0.80
10:G:161:GLU:OE1	10:G:161:GLU:N	2.15	0.80
1:5:1307:G:C5'	17:O:60:LYS:HE2	2.13	0.80
26:X:24:LEU:HD22	26:X:25:LYS:H	1.46	0.80
27:Y:86:THR:HA	27:Y:97:ILE:HD13	1.64	0.80
1:5:541:U:H2'	1:5:542:G:H8	1.45	0.79
9:F:103:LEU:HG	9:F:130:ILE:HD11	1.64	0.79
1:5:2925:C:C2'	1:5:2926:A:H5'	2.12	0.79
9:F:98:LYS:HB3	9:F:99:PRO:HD3	1.65	0.79
6:C:299:ILE:HG21	19:Q:39:ARG:HH11	1.43	0.79
1:5:2312:A:O2'	1:5:2315:G:O2'	1.95	0.79
1:5:3163:A:O2'	1:5:3164:C:H5'	1.82	0.79
8:E:78:ARG:CG	8:E:78:ARG:HH11	1.92	0.79
1:5:3226:A:H2'	1:5:3227:A:H5''	1.64	0.79
17:O:108:ILE:CD1	17:O:113:ASP:HA	2.12	0.79
22:T:53:PRO:HB3	22:T:91:LEU:HD21	1.63	0.79
28:Z:88:ASP:HB3	28:Z:121:ARG:NH2	1.98	0.79
1:5:2530:G:H2'	1:5:2531:C:H5''	1.63	0.79
1:5:2954:U:H1'	1:5:2955:U:H5''	1.64	0.79
1:5:383:G:H5'	18:P:96:GLN:HE22	1.47	0.79

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:54:TYR:CD2	17:O:145:VAL:HG11	2.18	0.79
1:5:2532:U:H2'	1:5:2533:G:C8	2.18	0.78
5:B:169:THR:HG23	5:B:170:PRO:HD2	1.65	0.78
10:G:150:LEU:HD22	10:G:151:VAL:H	1.47	0.78
1:5:1049:C:H2'	1:5:1050:U:H6	1.47	0.78
1:5:2275:A:H2'	1:5:2276:G:O4'	1.83	0.78
1:5:2193:U:H1'	1:5:2275:A:O2'	1.83	0.78
1:5:2661:G:C2'	1:5:2662:G:H5'	2.14	0.78
1:5:1040:A:O2'	12:I:198:LYS:NZ	2.17	0.78
17:O:61:ALA:HA	17:O:70:PRO:HD2	1.64	0.78
6:C:182:LEU:HD11	6:C:223:PRO:HG2	1.64	0.78
1:5:3055:U:H1'	1:5:3057:U:OP2	1.83	0.78
19:Q:69:ARG:CG	19:Q:69:ARG:HH11	1.96	0.78
1:5:1348:U:OP1	19:Q:39:ARG:NH2	2.16	0.78
3:8:157:U:O2'	3:8:158:U:H5'	1.83	0.78
26:X:108:LEU:HD23	26:X:127:THR:HA	1.66	0.78
1:5:2304:C:C2'	1:5:2305:G:H5'	2.13	0.77
1:5:2604:U:O2'	1:5:2605:G:OP1	2.02	0.77
1:5:2952:G:H2'	1:5:2953:U:H5'	1.65	0.77
1:5:2312:A:O2'	1:5:2315:G:H1'	1.84	0.77
5:B:109:HIS:N	5:B:200:GLU:OE2	2.17	0.77
9:F:216:VAL:HB	9:F:217:PRO:HD2	1.67	0.77
17:O:12:LYS:HB3	21:S:167:ARG:HH22	1.48	0.77
1:5:2814:G:OP1	6:C:73:ARG:NH2	2.18	0.77
24:V:48:ARG:HH11	24:V:48:ARG:CG	1.96	0.77
1:5:1772:U:H5''	1:5:1773:C:H5'	1.66	0.77
1:5:914:A:C2	4:A:204:MET:HG2	2.20	0.77
1:5:1621:A:H2'	1:5:1622:U:C6	2.20	0.77
1:5:2567:C:H2'	1:5:2568:C:H5'	1.67	0.77
1:5:2661:G:H2'	1:5:2662:G:H5'	1.65	0.77
8:E:46:ARG:HH11	8:E:46:ARG:CG	1.98	0.76
6:C:299:ILE:CG2	19:Q:39:ARG:HH11	1.98	0.76
1:5:1307:G:H5''	17:O:60:LYS:HE2	1.67	0.76
1:5:2186:U:H2'	1:5:2187:G:H5'	1.65	0.76
1:5:2204:C:H4'	1:5:2205:U:OP1	1.84	0.76
1:5:2964:G:N2	1:5:2967:A:OP2	2.12	0.76
1:5:3279:A:O2'	1:5:3280:U:H5'	1.84	0.76
7:D:34:LYS:HE3	22:T:30:TYR:CE1	2.20	0.76
1:5:1807:G:H5''	28:Z:135:ARG:NH1	2.00	0.76
1:5:148:G:OP2	16:N:4:TYR:OH	2.03	0.76
27:Y:23:PRO:HG2	27:Y:26:GLN:HG3	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3358:U:H2'	1:5:3359:A:H8	1.47	0.76
13:J:18:VAL:HG22	13:J:70:THR:HG23	1.66	0.76
1:5:1816:A:O2'	1:5:1817:G:OP1	2.02	0.76
1:5:2276:G:O6	1:5:2311:G:N2	2.19	0.76
1:5:1644:C:H5'	1:5:1645:U:H5''	1.67	0.76
1:5:844:G:H2'	1:5:845:G:H5'	1.67	0.76
1:5:1819:U:O2'	1:5:1820:U:OP1	2.01	0.76
1:5:640:U:OP1	4:A:21:ARG:NH2	80.85	0.76
13:J:100:GLY:O	13:J:159:THR:HG21	1.85	0.76
1:5:190:U:O2'	1:5:191:U:OP2	2.02	0.75
1:5:2309:A:C8	1:5:2962:U:H4'	2.22	0.75
19:Q:30:VAL:O	19:Q:34:THR:HG22	1.85	0.75
1:5:2282:U:O4'	1:5:2960:C:O2'	2.02	0.75
12:I:12:GLN:NE2	12:I:128:ARG:HB3	2.00	0.75
16:N:182:ASN:O	16:N:183:THR:HG22	1.87	0.75
1:5:1235:U:H4'	1:5:1236:G:H5'	1.68	0.75
1:5:2796:G:H3'	17:O:60:LYS:NZ	71.40	0.75
21:S:155:ARG:NH2	21:S:155:ARG:HG2	1.95	0.75
1:5:2997:G:H1'	1:5:3396:U:H5'	1.67	0.75
1:5:3310:A:OP1	18:P:74:LYS:NZ	2.18	0.75
1:5:2213:A:H2'	1:5:2214:A:C8	2.21	0.75
3:8:81:U:O3'	3:8:82:U:H4'	1.86	0.75
10:G:183:LYS:HD2	10:G:194:THR:HB	1.68	0.75
1:5:915:A:C2'	1:5:916:G:H5'	2.17	0.75
24:V:104:ASN:HD21	24:V:108:GLU:HB2	1.52	0.75
28:Z:102:GLU:OE1	28:Z:103:GLN:N	2.19	0.75
1:5:2778:G:H2'	1:5:2779:A:H5'	1.69	0.74
1:5:248:U:C3'	1:5:249:U:H5'	2.16	0.74
1:5:3163:A:C2'	1:5:3164:C:H5'	2.16	0.74
1:5:2437:G:H2'	1:5:2438:A:H5''	1.67	0.74
1:5:2270:A:H2'	1:5:2271:A:H8	1.52	0.74
1:5:924:G:O6	1:5:2808:A:N6	2.20	0.74
6:C:299:ILE:HG22	6:C:300:ARG:O	1.86	0.74
1:5:2093:A:N6	20:R:114:LYS:HD3	2.02	0.74
1:5:2339:C:OP2	24:V:48:ARG:NH1	2.20	0.74
26:X:34:LEU:HD12	26:X:35:PRO:CD	2.17	0.74
27:Y:37:LYS:HE2	27:Y:37:LYS:H	1.52	0.74
7:D:270:LYS:HG2	7:D:273:ARG:HH21	1.52	0.74
1:5:1555:U:O2	1:5:1555:U:H2'	1.87	0.74
1:5:844:G:C2'	1:5:845:G:H5'	2.18	0.74
1:5:3083:G:H4'	25:W:42:GLN:HE22	1.52	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1575:A:H3'	1:5:1576:G:H5''	1.70	0.74
1:5:2817:A:H4'	1:5:2818:U:OP2	1.88	0.74
7:D:51:LEU:HD13	7:D:146:LEU:HD21	1.68	0.74
9:F:136:TYR:CZ	9:F:231:ASN:HB2	2.23	0.74
1:5:2271:A:C2'	1:5:2272:G:H5'	2.17	0.74
1:5:247:C:H2'	1:5:248:U:C1'	2.18	0.74
6:C:329:PRO:O	6:C:330:TYR:HB3	1.88	0.74
14:L:46:ILE:HG22	14:L:49:ARG:HB2	1.70	0.74
26:X:38:LEU:HD22	26:X:40:LEU:HD22	1.68	0.74
1:5:1095:U:H3	22:T:127:GLN:HG3	1.53	0.73
1:5:670:C:OP1	19:Q:147:ARG:NH2	2.21	0.73
4:A:68:LYS:HG3	4:A:69:TYR:N	2.02	0.73
12:I:14:ASN:O	12:I:128:ARG:NH2	2.21	0.73
1:5:109:A:H4'	1:5:110:G:OP1	1.88	0.73
1:5:159:A:O2'	1:5:160:G:H5'	1.86	0.73
1:5:798:G:O2'	14:L:14:PHE:O	2.05	0.73
6:C:136:LEU:HD22	6:C:142:VAL:HG22	1.68	0.73
12:I:42:THR:CG2	12:I:45:GLU:HG3	2.18	0.73
1:5:1645:U:H2'	1:5:1646:G:H5'	1.70	0.73
1:5:90:C:C2'	1:5:91:G:H5'	2.19	0.73
1:5:1362:G:H1'	9:F:159:GLN:NE2	2.04	0.73
1:5:3291:G:H2'	1:5:3292:A:C8	2.22	0.73
2:7:73:C:O2	21:S:13:ARG:NH2	2.20	0.73
6:C:142:VAL:HB	6:C:145:ILE:HD11	1.71	0.73
1:5:2584:G:H5'	1:5:2585:G:OP2	1.88	0.73
3:8:154:C:H5''	10:G:181:LYS:HD3	1.70	0.73
11:H:77:ASN:HB3	11:H:151:VAL:HG21	1.70	0.73
16:N:184:LYS:H	16:N:186:GLY:H	1.34	0.73
1:5:541:U:H2'	1:5:542:G:C8	2.23	0.73
2:7:36:C:H4'	7:D:155:THR:HG23	1.71	0.73
15:M:48:GLY:CA	15:M:53:VAL:HG13	2.14	0.73
1:5:2436:U:H3	1:5:2511:A:H62	1.34	0.73
6:C:354:VAL:HG11	22:T:143:THR:HG21	1.68	0.73
7:D:107:ARG:HH22	7:D:120:LYS:HA	1.52	0.73
7:D:51:LEU:HB3	7:D:146:LEU:HD23	1.69	0.73
13:J:50:ALA:HB2	13:J:65:ILE:HD11	1.68	0.73
1:5:2309:A:O4'	1:5:2962:U:H5'	1.89	0.73
12:I:4:ARG:NH1	12:I:99:ILE:HG22	2.04	0.73
1:5:1098:A:OP2	22:T:130:ARG:HD3	1.89	0.72
1:5:1555:U:O2'	1:5:1556:C:OP1	2.07	0.72
1:5:3343:G:H21	1:5:3362:A:H2	1.37	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:12:LYS:O	21:S:167:ARG:NH2	2.22	0.72
4:A:54:ARG:HG2	4:A:55:GLY:O	1.89	0.72
4:A:114:SER:HB2	4:A:169:ILE:HD13	1.69	0.72
6:C:190:GLY:O	6:C:193:LYS:NZ	2.22	0.72
12:I:191:LYS:HB2	12:I:213:PHE:HE1	1.52	0.72
1:5:2946:A:H5''	1:5:2947:G:H5'	1.70	0.72
14:L:45:LYS:HG3	14:L:46:ILE:HD13	1.70	0.72
1:5:2584:G:O2'	10:G:240:ASN:ND2	2.22	0.72
3:8:82:U:H2'	3:8:85:G:OP1	1.90	0.72
1:5:275:U:H2'	1:5:276:U:H6	1.54	0.72
1:5:90:C:H2'	1:5:91:G:H5'	1.71	0.72
10:G:24:ASN:O	10:G:26:LEU:N	2.22	0.72
12:I:169:LYS:H	12:I:169:LYS:HE2	1.55	0.72
20:R:74:ARG:NE	20:R:74:ARG:HA	2.05	0.72
1:5:2898:G:H5''	1:5:2899:C:H5'	1.72	0.72
4:A:44:ILE:HD12	4:A:44:ILE:H	1.55	0.72
22:T:91:LEU:HD13	22:T:96:ILE:HD11	1.71	0.72
6:C:13:GLY:C	6:C:14:GLU:HG3	2.09	0.72
7:D:182:GLY:HA2	7:D:194:LEU:HD23	1.70	0.72
8:E:46:ARG:HG3	8:E:46:ARG:HH11	1.53	0.72
12:I:42:THR:HG22	12:I:45:GLU:HG3	1.71	0.72
1:5:2675:C:H42	13:J:22:SER:HB2	1.55	0.72
1:5:2806:U:C2'	1:5:2807:U:H5'	2.19	0.72
17:O:19:LEU:O	17:O:23:VAL:HG23	1.90	0.72
27:Y:45:ILE:CD1	27:Y:122:LYS:HE3	2.17	0.72
17:O:126:VAL:HG22	17:O:127:LEU:HD23	1.71	0.71
1:5:2421:U:H2'	1:5:2422:C:H5''	1.71	0.71
19:Q:86:THR:HG22	19:Q:105:ARG:CB	2.18	0.71
26:X:115:ARG:HH11	26:X:115:ARG:CG	2.02	0.71
20:R:20:ARG:HH11	20:R:21:LYS:HZ2	1.34	0.71
26:X:59:SER:HB3	26:X:102:LEU:HD21	1.70	0.71
1:5:2332:A:H2'	1:5:2333:C:O4'	1.90	0.71
1:5:2392:C:O2'	5:B:266:ARG:NH2	2.22	0.71
1:5:2511:A:C2'	1:5:2512:C:H5'	2.20	0.71
1:5:715:A:HO2'	1:5:752:C:HO2'	1.33	0.71
6:C:300:ARG:HH11	6:C:300:ARG:HG3	1.53	0.71
16:N:94:TYR:CE2	16:N:96:ARG:HB2	2.26	0.71
1:5:59:G:H2'	3:8:33:A:O2'	1.90	0.71
11:H:177:ASP:OD1	11:H:177:ASP:N	2.24	0.71
18:P:67:ILE:HD12	18:P:82:ARG:NH2	2.06	0.71
1:5:2102:U:H2'	1:5:2103:U:H6	1.56	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1098:A:OP2	22:T:130:ARG:NH1	2.17	0.71
5:B:169:THR:HG22	5:B:171:LEU:H	1.53	0.71
1:5:1556:C:H2'	1:5:2169:G:N1	2.05	0.71
8:E:56:LYS:HB2	8:E:98:VAL:HG11	1.71	0.71
10:G:83:ASP:OD2	10:G:86:THR:N	2.21	0.71
21:S:96:ASP:OD1	21:S:97:VAL:N	2.19	0.71
1:5:3139:A:C2'	1:5:3140:G:H5'	2.21	0.71
1:5:3252:G:H2'	1:5:3253:G:C8	2.25	0.71
1:5:767:U:H1'	1:5:768:C:C6	2.26	0.71
8:E:8:LYS:HZ2	8:E:8:LYS:HB3	3.91	0.71
9:F:121:LYS:HB2	22:T:133:ALA:HB3	1.72	0.70
11:H:8:GLN:NE2	11:H:69:ARG:HG2	2.05	0.70
1:5:1051:U:H2'	1:5:1052:U:H5'	1.72	0.70
1:5:2433:U:H1'	16:N:125:SER:HB3	1.72	0.70
9:F:218:ARG:HH11	9:F:218:ARG:HG2	1.56	0.70
3:8:134:G:O2'	3:8:135:G:H5'	1.91	0.70
4:A:149:ARG:HH11	4:A:149:ARG:HB2	1.56	0.70
6:C:74:ILE:CD1	6:C:75:PRO:HD2	2.18	0.70
10:G:44:ARG:HH11	10:G:44:ARG:CG	1.98	0.70
12:I:48:LEU:HD22	12:I:49:CYS:H	1.56	0.70
14:L:123:ILE:HG12	14:L:124:ILE:N	2.05	0.70
4:A:174:ARG:HG2	4:A:174:ARG:NH1	2.05	0.70
5:B:369:ARG:HG2	5:B:369:ARG:HH11	1.57	0.70
22:T:32:LYS:HE2	22:T:98:HIS:HD2	1.57	0.70
28:Z:13:VAL:HG12	28:Z:19:ALA:HA	1.72	0.70
1:5:3170:A:O2'	1:5:3171:U:H5'	1.92	0.70
14:L:149:GLN:HE21	14:L:149:GLN:H	1.39	0.70
1:5:2276:G:N2	1:5:2316:G:HO2'	1.90	0.70
1:5:2178:A:H5''	4:A:132:ASN:HD21	1.57	0.70
25:W:35:LYS:HE2	25:W:51:TRP:CZ2	2.27	0.70
5:B:150:ARG:HH11	5:B:150:ARG:CG	2.05	0.70
6:C:60:THR:HG22	6:C:62:ALA:H	1.55	0.70
1:5:121:A:C4	10:G:108:ARG:NH1	2.60	0.70
1:5:173:G:H1	1:5:245:U:H3	1.39	0.70
6:C:20:LEU:HD11	6:C:252:GLU:HG3	1.74	0.70
10:G:172:LYS:NZ	10:G:172:LYS:HB2	2.06	0.70
8:E:171:PRO:HA	8:E:174:LEU:HD12	1.72	0.70
1:5:3228:C:H1'	1:5:3229:G:OP2	1.91	0.69
19:Q:122:ILE:CG2	19:Q:126:GLN:HB2	2.22	0.69
1:5:1348:U:C6	1:5:1348:U:H3'	2.28	0.69
1:5:3261:C:O2'	1:5:3262:U:H5'	1.92	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:87:LYS:NZ	11:H:191:LEU:HD21	2.07	0.69
1:5:1236:G:N2	1:5:1244:A:OP1	2.24	0.69
1:5:1355:A:H1'	1:5:1356:U:OP2	1.92	0.69
1:5:2971:A:H5''	1:5:2972:G:C5'	2.22	0.69
1:5:981:U:H1'	1:5:982:C:OP1	1.91	0.69
2:7:71:G:O2'	2:7:72:A:H5'	1.90	0.69
3:8:60:U:OP2	26:X:61:LYS:NZ	2.25	0.69
21:S:12:ARG:HB3	21:S:24:LEU:HD23	1.75	0.69
1:5:2593:A:H4'	1:5:2594:C:O5'	1.92	0.69
13:J:15:GLU:HB3	13:J:130:VAL:HG22	1.73	0.69
19:Q:19:PRO:HD3	19:Q:53:PHE:CE1	2.27	0.69
1:5:1083:G:H2'	1:5:1084:A:C8	2.28	0.69
1:5:1083:G:H2'	1:5:1084:A:H8	1.58	0.69
1:5:1430:U:H2'	4:A:9:ARG:HH22	66.77	0.69
1:5:2423:U:H3'	1:5:2605:G:H22	1.56	0.69
1:5:3278:C:H3'	1:5:3279:A:H5'	1.74	0.69
5:B:106:TRP:HB2	5:B:133:TYR:CE2	2.28	0.69
12:I:187:ALA:CB	12:I:189:GLU:HG3	2.21	0.69
1:5:2422:C:H2'	1:5:2423:U:O4'	1.93	0.69
1:5:3380:U:O2'	1:5:3381:U:H5'	1.93	0.69
4:A:44:ILE:CD1	4:A:62:VAL:HG13	2.22	0.69
1:5:1084:A:H2'	1:5:1085:A:C8	2.28	0.69
1:5:251:G:H1'	1:5:253:A:C5	2.28	0.69
1:5:2898:G:H5''	1:5:2899:C:C5'	2.23	0.69
1:5:3358:U:H2'	1:5:3359:A:C8	2.28	0.69
1:5:717:C:H2'	1:5:718:G:H5'	1.73	0.69
4:A:14:SER:OG	4:A:15:ILE:N	2.26	0.69
5:B:167:ARG:HH12	5:B:168:LYS:NZ	1.90	0.69
21:S:137:ARG:HG2	21:S:139:TYR:CE1	2.27	0.69
28:Z:54:THR:HG22	28:Z:57:HIS:CD2	2.27	0.69
28:Z:83:THR:HG23	28:Z:85:TYR:N	2.05	0.69
1:5:2341:A:OP2	5:B:247:ARG:NH2	2.26	0.69
1:5:2418:G:O2'	1:5:2419:A:O5'	2.07	0.69
1:5:2537:U:O2'	1:5:2538:U:O5'	2.10	0.69
4:A:30:ARG:HD3	4:A:63:PHE:CD2	2.26	0.69
1:5:1269:U:H1'	1:5:1272:C:H5	1.57	0.69
1:5:1284:C:O2'	1:5:1285:G:OP1	2.09	0.69
8:E:152:THR:HG23	8:E:155:LEU:HB2	1.72	0.69
12:I:48:LEU:HD22	12:I:49:CYS:N	2.08	0.69
21:S:12:ARG:HD2	21:S:22:PRO:HG2	1.73	0.69
1:5:1385:C:HO2'	8:E:2:SER:N	1.90	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:28:VAL:HG13	11:H:33:THR:CG2	2.21	0.69
27:Y:56:VAL:HG21	27:Y:70:ILE:HD11	1.73	0.69
1:5:2175:U:H4'	1:5:2176:U:OP2	1.92	0.68
1:5:822:G:H1'	4:A:15:ILE:HD12	1.75	0.68
12:I:191:LYS:HB2	12:I:213:PHE:CE1	2.27	0.68
1:5:2430:A:H2'	1:5:2431:C:C6	2.27	0.68
1:5:2923:U:H2'	1:5:2924:U:C6	2.28	0.68
1:5:1010:G:N2	12:I:193:ASP:OD2	2.26	0.68
14:L:76:THR:HG22	14:L:101:ARG:NH1	2.09	0.68
27:Y:63:LYS:HE3	27:Y:85:VAL:HG13	1.75	0.68
1:5:1284:C:O2'	1:5:1285:G:H5'	1.93	0.68
5:B:238:LEU:HD12	5:B:239:PRO:CD	2.23	0.68
13:J:108:GLU:HA	13:J:122:ILE:HD12	1.74	0.68
1:5:103:G:OP1	14:L:70:ARG:NH2	2.24	0.68
22:T:95:HIS:O	22:T:96:ILE:HD13	1.94	0.68
1:5:3094:A:OP1	24:V:14:SER:OG	2.10	0.68
12:I:36:LEU:HD11	12:I:69:ARG:CD	2.23	0.68
20:R:20:ARG:HH11	20:R:21:LYS:NZ	1.91	0.68
1:5:242:C:H2'	1:5:243:G:C8	2.29	0.68
1:5:2884:C:O2'	1:5:2885:C:H5'	1.94	0.68
1:5:2952:G:C2'	1:5:2953:U:H5'	2.23	0.68
7:D:88:ILE:HD11	7:D:243:ALA:HB2	1.76	0.68
11:H:88:TYR:CE2	11:H:184:LYS:HB3	2.29	0.68
13:J:109:HIS:CD2	13:J:123:PHE:H	2.10	0.68
24:V:59:MET:HE3	24:V:59:MET:HA	1.76	0.68
27:Y:37:LYS:N	27:Y:37:LYS:HE2	2.07	0.68
3:8:104:A:H3'	3:8:105:A:H5''	1.75	0.68
1:5:2393:G:H4'	5:B:252:ILE:HG12	1.74	0.68
16:N:15:GLN:HE21	16:N:20:ARG:HD3	1.57	0.68
21:S:155:ARG:CG	21:S:155:ARG:HH21	2.03	0.68
1:5:2561:A:HO2'	1:5:2562:A:H8	1.41	0.68
11:H:76:ASP:O	11:H:80:THR:HG23	1.93	0.68
14:L:114:GLN:NE2	14:L:114:GLN:HA	2.07	0.68
14:L:123:ILE:HD11	14:L:125:VAL:HG23	1.76	0.68
1:5:3386:G:H2'	1:5:3387:U:H6	1.59	0.68
2:7:48:U:OP2	7:D:94:ASN:HB3	1.94	0.68
6:C:93:MET:HE3	6:C:93:MET:H	1.58	0.68
20:R:81:ARG:CD	20:R:88:ARG:HH12	2.06	0.68
1:5:97:U:C2'	1:5:98:G:H5'	2.24	0.68
13:J:92:ARG:O	13:J:95:ASN:HB2	1.94	0.68
17:O:84:LEU:O	17:O:84:LEU:HD23	1.94	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1257:C:H2'	1:5:1258:U:O4'	1.95	0.67
15:M:135:LEU:HD13	15:M:136:ALA:N	2.08	0.67
16:N:136:ASP:OD1	16:N:138:GLN:HG2	1.94	0.67
1:5:1807:G:C5'	28:Z:135:ARG:NH1	2.57	0.67
18:P:170:SER:HA	18:P:173:ARG:NH2	2.09	0.67
28:Z:88:ASP:HB3	28:Z:121:ARG:HH22	1.59	0.67
1:5:2276:G:H21	1:5:2316:G:HO2'	1.39	0.67
5:B:107:ALA:HB1	5:B:200:GLU:HG3	1.75	0.67
8:E:48:ARG:HH11	8:E:48:ARG:HG2	1.57	0.67
1:5:2178:A:H5''	4:A:132:ASN:ND2	2.09	0.67
5:B:308:MET:HE2	5:B:372:THR:HA	1.76	0.67
13:J:28:ASP:HA	13:J:31:THR:CG2	2.25	0.67
1:5:3291:G:H2'	1:5:3292:A:H8	1.59	0.67
1:5:536:U:C2'	1:5:537:A:H5'	2.24	0.67
5:B:148:LEU:O	5:B:152:LYS:HG3	1.95	0.67
5:B:44:THR:HA	5:B:340:LYS:HD3	1.77	0.67
1:5:1226:G:H2'	1:5:1227:C:C6	2.30	0.67
1:5:2277:C:C4'	1:5:2317:A:H4'	2.22	0.67
20:R:144:GLN:O	20:R:148:ASP:HB2	1.95	0.67
1:5:627:U:H4'	1:5:1399:A:O2'	1.95	0.67
1:5:604:G:H2'	1:5:605:U:C6	2.30	0.67
9:F:179:LEU:H	9:F:179:LEU:HD22	1.59	0.67
27:Y:76:LEU:O	27:Y:77:LYS:HB2	1.94	0.67
20:R:81:ARG:HD3	20:R:88:ARG:HH12	1.60	0.67
22:T:46:GLY:HA2	22:T:52:MET:HE3	1.77	0.67
24:V:121:GLU:N	24:V:121:GLU:OE1	2.28	0.67
6:C:93:MET:CE	6:C:93:MET:H	2.08	0.67
1:5:2609:A:C2'	1:5:2610:G:H5''	2.26	0.66
1:5:2745:G:N2	1:5:2748:A:OP2	2.27	0.66
1:5:924:G:O2'	1:5:2810:C:O4'	2.12	0.66
11:H:13:PRO:HG2	11:H:16:VAL:HG11	1.75	0.66
1:5:717:C:C2'	1:5:718:G:H5'	2.25	0.66
2:7:3:U:H2'	2:7:4:U:C6	2.30	0.66
10:G:238:LEU:HD12	10:G:238:LEU:H	1.59	0.66
14:L:47:ALA:O	14:L:49:ARG:N	2.28	0.66
18:P:64:ASN:HB2	18:P:80:LYS:CE	2.25	0.66
25:W:1:MET:SD	25:W:15:PRO:HG2	2.35	0.66
1:5:2137:U:OP2	1:5:2142:A:N6	2.27	0.66
1:5:2677:G:O2'	1:5:2679:A:N7	2.22	0.66
1:5:3194:C:H2'	1:5:3195:U:H5'	1.77	0.66
21:S:82:ASP:OD1	21:S:87:THR:HB	1.94	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1231:A:N6	1:5:1277:C:OP2	2.28	0.66
1:5:2509:U:C2'	1:5:2510:U:H5'	2.26	0.66
1:5:253:A:HO2'	1:5:254:A:P	2.18	0.66
1:5:2712:U:H2'	1:5:2713:U:C6	2.30	0.66
1:5:73:C:N3	14:L:59:ARG:NH1	2.43	0.66
6:C:300:ARG:HH11	6:C:300:ARG:HG2	1.59	0.66
2:7:29:C:OP2	13:J:137:ARG:HD2	1.96	0.66
1:5:1259:A:O2'	1:5:1260:A:H5'	1.94	0.66
7:D:49:TYR:CE2	7:D:75:LEU:HD12	2.31	0.66
9:F:234:GLU:HA	9:F:234:GLU:OE1	1.95	0.66
17:O:98:ALA:HA	17:O:101:ARG:NH1	2.10	0.66
22:T:17:ARG:HH11	22:T:17:ARG:CG	1.95	0.66
6:C:208:VAL:O	6:C:251:THR:HG23	1.95	0.66
11:H:67:ALA:O	11:H:70:THR:HG23	1.96	0.66
1:5:3299:A:H4'	18:P:55:GLN:NE2	2.10	0.66
1:5:1220:U:H5''	1:5:1222:G:O4'	1.95	0.66
1:5:1324:U:H5''	21:S:2:ALA:CA	2.20	0.66
1:5:1575:A:H2'	1:5:1576:G:H8	1.60	0.66
1:5:2190:U:H2'	1:5:2191:U:C6	2.31	0.66
11:H:111:PHE:HD1	11:H:127:PRO:HA	1.61	0.66
11:H:31:ARG:HB2	11:H:82:VAL:O	1.96	0.66
24:V:75:PRO:HB2	24:V:103:ALA:O	1.96	0.66
26:X:24:LEU:CD2	26:X:25:LYS:H	2.08	0.66
1:5:1765:U:H4'	1:5:1766:G:O5'	1.95	0.66
1:5:621:A:H4'	1:5:622:A:O5'	1.95	0.66
2:7:112:G:H2'	2:7:113:C:C6	2.30	0.66
6:C:26:PHE:HD2	6:C:130:ALA:HB2	1.61	0.66
17:O:89:SER:O	17:O:95:GLY:HA3	1.95	0.66
1:5:240:U:O2'	1:5:241:G:O5'	2.12	0.66
1:5:915:A:H2'	1:5:916:G:H5'	1.77	0.66
4:A:57:PRO:HG2	4:A:78:ALA:HB3	1.76	0.66
8:E:65:ILE:O	8:E:76:LEU:HD23	1.95	0.66
23:U:50:LEU:HD22	23:U:54:VAL:CB	2.24	0.66
1:5:1563:C:H2'	1:5:1564:U:C6	2.31	0.66
14:L:27:ASP:N	14:L:27:ASP:OD1	2.23	0.66
3:8:142:C:OP1	16:N:38:ARG:NH1	2.29	0.66
5:B:167:ARG:HH12	5:B:168:LYS:HZ3	1.43	0.65
1:5:1389:G:O6	6:C:186:LYS:NZ	2.29	0.65
17:O:121:PRO:HA	17:O:124:LEU:CD2	2.25	0.65
1:5:2675:C:N4	13:J:22:SER:HB2	2.12	0.65
15:M:20:VAL:O	15:M:66:THR:HG23	1.95	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:N:18:VAL:HG22	16:N:19:LEU:CD1	2.25	0.65
1:5:1560:G:H2'	1:5:1561:G:C8	2.32	0.65
5:B:227:GLU:OE1	5:B:228:GLY:N	2.29	0.65
8:E:56:LYS:HE3	8:E:98:VAL:HG12	1.77	0.65
12:I:38:LYS:HD3	12:I:41:ALA:HB2	1.78	0.65
1:5:587:U:H2'	1:5:588:G:H5'	1.78	0.65
1:5:2828:G:OP2	12:I:7:ARG:NH1	2.28	0.65
17:O:110:PRO:HD2	17:O:111:PRO:HD2	1.78	0.65
27:Y:52:ARG:HG2	27:Y:53:ASP:N	2.12	0.65
1:5:1063:G:N1	22:T:109:VAL:HG13	2.11	0.65
1:5:250:U:OP1	1:5:250:U:H4'	1.95	0.65
1:5:2530:G:C2'	1:5:2531:C:H5''	2.25	0.65
14:L:47:ALA:HB1	14:L:48:PRO:CD	2.26	0.65
18:P:67:ILE:HD12	18:P:82:ARG:CZ	2.27	0.65
21:S:13:ARG:CG	21:S:13:ARG:HH11	2.06	0.65
27:Y:58:VAL:HG22	27:Y:104:LEU:CD2	2.26	0.65
1:5:2548:C:H5''	1:5:2549:G:OP1	1.97	0.65
1:5:2148:U:O2'	4:A:182:ALA:HB2	1.96	0.65
5:B:369:ARG:HH11	5:B:369:ARG:CG	2.09	0.65
26:X:38:LEU:O	26:X:38:LEU:HD23	1.97	0.65
28:Z:119:GLU:O	28:Z:123:GLN:HG2	1.97	0.65
1:5:1397:C:C2'	1:5:1398:U:H5'	2.26	0.65
1:5:3386:G:H2'	1:5:3387:U:C6	2.32	0.65
5:B:296:THR:HG22	5:B:298:PHE:H	1.62	0.65
6:C:138:ARG:HH21	6:C:240:PRO:HB2	1.60	0.65
2:7:56:A:O2'	13:J:148:VAL:HG13	1.97	0.65
28:Z:21:LYS:HD2	28:Z:21:LYS:N	2.11	0.65
1:5:1874:A:OP2	20:R:21:LYS:NZ	2.26	0.65
1:5:3016:A:H2'	1:5:3017:A:C8	2.32	0.65
1:5:3366:G:H2'	1:5:3367:C:C6	2.31	0.65
16:N:8:GLU:HG3	16:N:50:ARG:NH1	2.12	0.65
1:5:2292:U:H2'	1:5:2293:C:C6	2.32	0.65
1:5:3042:U:C2'	1:5:3043:C:H5'	2.27	0.65
3:8:155:A:H2'	3:8:156:U:O4'	1.97	0.65
5:B:313:HIS:O	5:B:333:LYS:HE3	1.96	0.65
24:V:104:ASN:HB2	24:V:105:PRO:CD	2.27	0.65
1:5:1950:U:H2'	1:5:1951:C:H6	1.62	0.65
1:5:1993:Y5P:H4A	1:5:1994:Y5P:H4	1.79	0.65
26:X:113:LEU:HD11	26:X:121:LYS:HD2	1.79	0.65
1:5:1260:A:O2'	1:5:1261:G:O4'	2.11	0.64
1:5:2677:G:H2'	1:5:2677:G:N3	2.11	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:759:U:C2'	1:5:760:G:H5'	2.27	0.64
1:5:848:A:H2'	1:5:849:C:O4'	1.97	0.64
9:F:157:ASN:O	9:F:158:LYS:HB3	1.97	0.64
10:G:162:LEU:HD23	16:N:7:LEU:HD11	1.78	0.64
11:H:115:ARG:NH1	11:H:123:ILE:HD11	2.12	0.64
1:5:75:G:C5'	14:L:58:VAL:HG11	2.27	0.64
17:O:54:TYR:HD2	17:O:145:VAL:HG11	1.59	0.64
14:L:165:SER:HB3	14:L:168:ARG:CB	2.25	0.64
1:5:1063:G:O2'	1:5:1097:G:N2	2.29	0.64
1:5:2510:U:O2'	1:5:2511:A:H5''	1.98	0.64
1:5:2519:A:O2'	1:5:2520:A:H5'	1.97	0.64
1:5:2836:C:C2'	1:5:2837:A:H5'	2.28	0.64
1:5:381:U:H2'	1:5:382:U:C6	2.33	0.64
1:5:769:G:C2'	1:5:770:G:H5'	2.27	0.64
9:F:90:LYS:HD3	9:F:220:PHE:CE1	2.31	0.64
10:G:156:ASP:OD1	10:G:183:LYS:HB3	1.98	0.64
12:I:38:LYS:CG	12:I:41:ALA:HB2	2.28	0.64
1:5:1235:U:H4'	1:5:1236:G:C5'	2.28	0.64
1:5:97:U:H2'	1:5:98:G:H5'	1.78	0.64
1:5:2987:A:O2'	5:B:259:HIS:HB3	1.98	0.64
11:H:87:LYS:HZ2	11:H:191:LEU:HD21	1.61	0.64
1:5:1072:G:O2'	1:5:1073:U:H5'	1.96	0.64
1:5:2841:G:H2'	1:5:2844:C:H42	1.63	0.64
5:B:347:SER:O	5:B:348:ARG:HB3	1.97	0.64
8:E:96:VAL:CG1	8:E:98:VAL:HG23	2.27	0.64
7:D:294:ALA:HB1	12:I:217:PHE:O	1.97	0.64
26:X:57:LEU:HD12	26:X:94:GLN:NE2	2.12	0.64
1:5:1803:C:H2'	1:5:1804:A:C8	2.33	0.64
1:5:3040:A:H5''	24:V:12:ARG:HB2	1.78	0.64
1:5:3289:G:H2'	1:5:3290:G:C8	2.29	0.64
8:E:116:UNK:O	8:E:120:UNK:HB1	1.98	0.64
8:E:26:ARG:HB3	8:E:27:PRO:HD2	1.79	0.64
1:5:1222:G:H1'	1:5:1223:A:OP2	1.97	0.64
1:5:1567:U:C3'	1:5:1568:U:H5''	2.27	0.64
1:5:2538:U:H3'	1:5:2539:C:H5''	1.80	0.64
1:5:946:U:O2'	1:5:947:G:H5'	1.98	0.64
16:N:122:ASN:OD1	16:N:123:GLN:N	2.30	0.64
17:O:103:LYS:HB3	17:O:105:PHE:HE1	1.62	0.64
28:Z:71:PHE:HA	28:Z:111:LYS:HE2	1.80	0.64
1:5:1807:G:H5''	28:Z:135:ARG:HH11	1.61	0.64
1:5:2404:A:N3	1:5:2404:A:H2'	2.11	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3139:A:H2'	1:5:3140:G:H5'	1.80	0.64
5:B:17:LEU:N	5:B:17:LEU:HD13	2.11	0.64
10:G:70:LYS:HA	10:G:235:GLY:CA	2.25	0.64
1:5:1064:A:H4'	1:5:1065:A:O5'	1.98	0.64
1:5:381:U:H2'	1:5:382:U:H6	1.63	0.64
6:C:26:PHE:CD2	6:C:130:ALA:HB2	2.33	0.64
1:5:3228:C:H5''	15:M:137:LYS:NZ	2.13	0.64
18:P:170:SER:CA	18:P:173:ARG:HH21	2.08	0.64
1:5:1235:U:C4'	1:5:1236:G:H5'	2.27	0.64
1:5:252:U:H4'	1:5:253:A:H5'	1.79	0.64
1:5:284:A:H5'	1:5:285:A:H5'	1.80	0.64
9:F:103:LEU:CG	9:F:130:ILE:HD11	2.28	0.64
13:J:92:ARG:HG2	13:J:92:ARG:NH1	2.04	0.64
25:W:47:ARG:HH12	25:W:58:HIS:CD2	2.15	0.64
1:5:1354:G:C6	1:5:1358:C:H5'	2.34	0.63
1:5:1568:U:O2'	1:5:1569:U:O5'	2.07	0.63
1:5:2676:A:H4'	1:5:2677:G:O5'	1.98	0.63
1:5:759:U:H2'	1:5:760:G:H5'	1.80	0.63
7:D:219:PHE:CZ	7:D:227:LEU:HD21	2.32	0.63
1:5:73:C:O2'	14:L:59:ARG:HG2	1.97	0.63
1:5:2271:A:O2'	1:5:2272:G:H5'	1.98	0.63
1:5:2275:A:N1	1:5:2316:G:H1'	2.13	0.63
1:5:2555:G:H5'	1:5:2556:C:OP2	1.97	0.63
9:F:33:ARG:HG3	9:F:33:ARG:NH1	2.11	0.63
12:I:175:ASN:HB3	12:I:176:LEU:HD23	1.79	0.63
16:N:155:VAL:O	16:N:162:ARG:NH2	2.30	0.63
1:5:2227:C:C2'	1:5:2228:A:H5''	2.28	0.63
8:E:18:LEU:N	8:E:18:LEU:HD12	2.14	0.63
1:5:2771:U:O2'	1:5:2772:C:O4'	2.15	0.63
1:5:578:A:H2'	6:C:334:PHE:HD2	1.63	0.63
12:I:36:LEU:HD13	12:I:73:ASN:HB2	1.81	0.63
1:5:1307:G:H5'	17:O:60:LYS:HE2	1.80	0.63
4:A:188:LYS:HD2	4:A:189:TYR:CE1	2.34	0.63
5:B:14:LEU:HD23	5:B:17:LEU:HD21	1.79	0.63
1:5:587:U:C2'	1:5:588:G:H5'	2.29	0.63
1:5:96:G:H5'	14:L:15:ARG:NH2	2.12	0.63
5:B:218:ILE:HD12	5:B:218:ILE:N	2.13	0.63
5:B:287:LYS:HB3	5:B:287:LYS:NZ	2.13	0.63
7:D:146:LEU:HD11	7:D:163:LEU:HB2	1.79	0.63
10:G:147:LYS:O	10:G:201:THR:HG22	1.97	0.63
18:P:166:VAL:HG12	18:P:168:LEU:HG	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:V:13:ILE:CD1	24:V:53:SER:HB2	2.29	0.63
24:V:117:PRO:HD3	25:W:25:ASP:O	1.99	0.63
1:5:1261:G:H4'	1:5:1278:A:C2	2.33	0.63
1:5:2567:C:C2'	1:5:2568:C:H5'	2.28	0.63
1:5:2947:G:H4'	1:5:2947:G:OP2	1.98	0.63
1:5:3195:U:O3'	1:5:3196:U:H6	1.81	0.63
1:5:692:A:OP1	16:N:201:ARG:NH2	2.31	0.63
1:5:2591:A:H2'	1:5:2592:G:O4'	1.99	0.63
1:5:158:G:H2'	1:5:159:A:H8	1.63	0.62
1:5:1639:C:O2'	1:5:1640:G:H5'	1.99	0.62
1:5:174:C:H2'	1:5:175:C:O4'	1.98	0.62
1:5:549:U:H2'	1:5:550:A:H8	1.64	0.62
2:7:3:U:H2'	2:7:4:U:H6	1.63	0.62
14:L:47:ALA:HB1	14:L:48:PRO:HD2	1.80	0.62
1:5:1807:G:OP1	28:Z:133:LYS:HE3	1.98	0.62
1:5:275:U:H2'	1:5:276:U:C6	2.34	0.62
1:5:3272:C:OP2	8:E:78:ARG:NH1	2.32	0.62
1:5:595:G:H1	1:5:609:G:H5''	1.64	0.62
1:5:132:C:C2'	1:5:133:U:H5''	2.29	0.62
1:5:3016:A:H2'	1:5:3017:A:H8	1.65	0.62
4:A:101:VAL:C	4:A:102:LEU:HD12	2.19	0.62
7:D:205:SER:HB3	7:D:236:LEU:HD22	1.81	0.62
1:5:1556:C:H2'	1:5:2169:G:H1	1.64	0.62
1:5:1645:U:C2'	1:5:1646:G:H5'	2.29	0.62
1:5:1724:U:H4'	1:5:1725:C:OP1	1.98	0.62
1:5:2523:A:H4'	1:5:2524:A:OP2	1.99	0.62
1:5:908:G:H3'	16:N:81:TYR:OH	2.00	0.62
5:B:188:ILE:H	5:B:188:ILE:CD1	2.07	0.62
8:E:157:GLN:OE1	8:E:157:GLN:N	2.33	0.62
9:F:26:VAL:O	9:F:30:ARG:HB3	1.98	0.62
1:5:2213:A:H61	1:5:2429:G:H1'	1.65	0.62
1:5:982:C:H2'	1:5:982:C:O2	2.00	0.62
9:F:22:THR:O	9:F:26:VAL:HG13	1.99	0.62
18:P:120:ASN:N	18:P:120:ASN:OD1	2.31	0.62
20:R:85:ARG:HH11	20:R:85:ARG:HG3	1.64	0.62
27:Y:69:LYS:HB2	27:Y:69:LYS:NZ	2.14	0.62
1:5:1555:U:O2'	1:5:1556:C:H5''	1.99	0.62
1:5:1772:U:C5'	1:5:1773:C:H5'	2.29	0.62
1:5:524:U:OP1	15:M:77:ARG:NH2	2.32	0.62
3:8:81:U:O3'	3:8:82:U:C4'	2.48	0.62
13:J:38:GLU:HG3	13:J:44:THR:HA	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1524:A:O2'	1:5:1526:U:OP2	2.16	0.62
1:5:2437:G:H2'	1:5:2438:A:C5'	2.29	0.62
1:5:2995:A:H4'	1:5:2996:U:OP1	1.99	0.62
1:5:375:A:H1'	27:Y:87:LYS:HZ3	1.64	0.62
12:I:72:ALA:O	12:I:76:MET:HG3	1.99	0.62
16:N:173:GLY:O	16:N:183:THR:HG23	1.99	0.62
21:S:128:GLU:HG2	21:S:129:ILE:N	2.15	0.62
25:W:3:VAL:HG21	25:W:14:TYR:CE1	2.35	0.62
1:5:2585:G:N3	1:5:2585:G:H2'	2.14	0.62
5:B:115:LYS:HE3	5:B:129:ALA:HB3	1.80	0.62
11:H:93:VAL:O	11:H:177:ASP:HA	1.99	0.62
6:C:295:ILE:O	6:C:299:ILE:HG12	2.00	0.62
6:C:99:MET:HE2	6:C:102:PRO:HA	1.82	0.62
16:N:153:ASP:OD2	16:N:154:PRO:HD2	1.99	0.62
17:O:12:LYS:HB3	21:S:167:ARG:NH2	2.15	0.62
26:X:135:ILE:HD13	26:X:135:ILE:O	2.00	0.62
1:5:1223:A:OP2	1:5:1285:G:N2	2.33	0.62
1:5:1360:C:H2'	1:5:1361:U:C6	2.35	0.62
1:5:2280:A:H5''	1:5:2281:A:OP2	1.99	0.62
1:5:364:G:OP1	6:C:60:THR:HG23	1.99	0.62
5:B:308:MET:HE2	5:B:372:THR:CA	2.29	0.62
7:D:270:LYS:HE2	7:D:273:ARG:NH2	2.14	0.62
7:D:8:LYS:HB3	7:D:12:TYR:CD2	2.35	0.62
11:H:89:LYS:HG2	11:H:145:VAL:HG22	1.81	0.62
14:L:162:ASN:OD1	14:L:162:ASN:N	2.32	0.62
18:P:148:LEU:HD11	18:P:150:VAL:HG13	1.82	0.62
1:5:120:G:N2	10:G:123:GLN:O	2.33	0.61
1:5:1360:C:H2'	1:5:1361:U:H6	1.65	0.61
2:7:77:G:H5''	21:S:49:HIS:O	1.99	0.61
12:I:99:ILE:HG13	12:I:123:HIS:HB2	1.82	0.61
13:J:23:VAL:HG11	13:J:29:ARG:HB3	1.80	0.61
14:L:52:ASP:OD1	14:L:141:ALA:HB3	2.00	0.61
1:5:158:G:O2'	1:5:159:A:H5'	2.00	0.61
1:5:1581:C:N4	1:5:2522:G:H4'	2.04	0.61
2:7:23:A:H2'	2:7:24:A:C8	2.36	0.61
4:A:44:ILE:HD13	4:A:62:VAL:HG13	1.80	0.61
21:S:26:ARG:HD3	22:T:150:THR:HG22	1.81	0.61
1:5:1095:U:N3	22:T:127:GLN:HG3	2.15	0.61
1:5:2198:A:C8	1:5:2270:A:H1'	2.34	0.61
1:5:3001:C:OP1	5:B:120:LYS:NZ	2.33	0.61
1:5:3160:U:H2'	1:5:3161:C:C6	2.35	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:8:134:G:C2'	3:8:135:G:H5'	2.30	0.61
5:B:256:HIS:HA	5:B:257:PRO:C	2.19	0.61
8:E:64:LEU:O	8:E:65:ILE:HD13	1.99	0.61
16:N:49:ARG:HG2	16:N:49:ARG:HH11	1.65	0.61
19:Q:98:LYS:HE3	19:Q:118:GLY:O	2.00	0.61
28:Z:25:ILE:HA	28:Z:43:VAL:HG12	1.83	0.61
1:5:248:U:H2'	1:5:249:U:C5'	2.29	0.61
1:5:405:U:H2'	1:5:406:G:H5'	1.83	0.61
2:7:27:A:H2'	2:7:28:C:C6	2.36	0.61
5:B:54:THR:HG23	5:B:55:THR:N	2.15	0.61
5:B:56:ILE:HD13	5:B:76:VAL:CG1	2.31	0.61
7:D:219:PHE:CE2	7:D:227:LEU:HD21	2.36	0.61
8:E:90:LYS:HB3	8:E:90:LYS:HZ2	4.83	0.61
15:M:47:ASP:C	15:M:49:PRO:HD3	2.20	0.61
1:5:383:G:H5'	18:P:96:GLN:NE2	2.14	0.61
1:5:1349:G:H8	1:5:1349:G:H3'	1.65	0.61
1:5:627:U:H2'	1:5:628:A:H8	1.65	0.61
1:5:93:C:OP2	1:5:2764:C:O2'	2.18	0.61
3:8:154:C:H5''	10:G:181:LYS:CD	2.31	0.61
7:D:211:LEU:HD13	7:D:219:PHE:HA	1.80	0.61
16:N:121:VAL:O	16:N:122:ASN:HB2	2.01	0.61
1:5:845:G:HO2'	1:5:847:A:H62	1.45	0.61
6:C:7:THR:HG23	6:C:147:GLU:OE2	2.00	0.61
13:J:133:ARG:HB3	13:J:134:PRO:HD2	1.81	0.61
1:5:2701:U:H5''	22:T:23:GLY:HA2	1.82	0.61
1:5:2115:G:O2'	20:R:82:LYS:HE3	2.01	0.61
1:5:248:U:O2	1:5:248:U:H2'	2.00	0.61
1:5:532:A:O2'	1:5:533:A:H5'	2.01	0.61
2:7:17:A:H2'	2:7:18:C:C6	2.35	0.61
3:8:126:A:OP2	3:8:126:A:H2'	2.00	0.61
11:H:115:ARG:NH1	11:H:123:ILE:CD1	2.64	0.61
22:T:32:LYS:HZ3	22:T:98:HIS:H	1.47	0.61
27:Y:97:ILE:HG22	27:Y:99:LEU:HD21	1.83	0.61
1:5:2431:C:O2'	1:5:2432:A:H5'	2.00	0.61
1:5:94:G:H2'	1:5:95:A:C8	2.35	0.61
6:C:131:VAL:O	6:C:135:VAL:HG23	2.00	0.61
13:J:13:LYS:HE2	13:J:132:ASN:HD21	1.65	0.61
26:X:73:MET:CE	26:X:73:MET:HA	2.29	0.61
1:5:253:A:O2'	1:5:254:A:H8	1.84	0.61
5:B:171:LEU:HD21	5:B:333:LYS:HG2	1.82	0.61
1:5:2585:G:O6	26:X:24:LEU:HD21	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:46:LYS:NZ	4:A:46:LYS:HA	2.16	0.60
14:L:140:SER:HG	14:L:143:ALA:H	1.48	0.60
1:5:1715:A:H4'	1:5:1716:U:OP1	2.00	0.60
1:5:2604:U:HO2'	1:5:2605:G:P	2.24	0.60
1:5:531:G:H2'	1:5:532:A:C8	2.36	0.60
1:5:1049:C:H2'	1:5:1050:U:C6	2.34	0.60
1:5:1597:C:H2'	1:5:1598:G:C8	2.36	0.60
6:C:282:SER:HB3	19:Q:126:GLN:HE21	1.65	0.60
1:5:1196:C:OP2	1:5:1196:C:H2'	2.01	0.60
1:5:242:C:H2'	1:5:243:G:H8	1.64	0.60
4:A:119:LYS:N	4:A:119:LYS:HD3	2.15	0.60
1:5:561:C:OP1	15:M:77:ARG:HG3	2.01	0.60
20:R:60:LYS:O	20:R:63:THR:HG23	2.01	0.60
27:Y:37:LYS:HE2	27:Y:38:GLU:H	1.66	0.60
1:5:1362:G:H2'	1:5:1363:A:C8	2.36	0.60
5:B:3:HIS:CG	5:B:3:HIS:O	2.55	0.60
10:G:86:THR:O	10:G:90:THR:HG23	2.02	0.60
16:N:172:ARG:CB	16:N:174:ILE:HD13	2.28	0.60
23:U:42:LYS:HB3	23:U:45:GLY:O	2.02	0.60
1:5:2283:G:H1'	1:5:2285:C:N4	2.15	0.60
1:5:2424:A:N6	1:5:2605:G:O2'	2.32	0.60
7:D:61:ILE:HG23	7:D:79:TYR:CE1	2.36	0.60
12:I:187:ALA:HB3	12:I:189:GLU:H	1.67	0.60
1:5:1492:G:N7	14:L:2:ALA:N	69.29	0.60
1:5:1349:G:C8	1:5:1349:G:H3'	2.37	0.60
1:5:3285:C:H2'	1:5:3286:G:H5''	1.83	0.60
1:5:977:C:O2'	1:5:978:G:H5'	2.00	0.60
4:A:209:HIS:CD2	4:A:211:HIS:H	2.19	0.60
5:B:17:LEU:HD11	5:B:233:TRP:HH2	1.66	0.60
1:5:1183:C:OP1	21:S:158:LYS:NZ	2.33	0.60
1:5:13:A:H4'	26:X:39:LYS:HD2	1.83	0.60
1:5:2855:U:H2'	1:5:2856:G:O4'	2.02	0.60
1:5:516:A:O2'	1:5:517:G:H5'	2.02	0.60
10:G:83:ASP:OD2	10:G:85:ASN:HB2	2.01	0.60
11:H:48:VAL:HG21	11:H:52:LEU:HD13	1.82	0.60
28:Z:22:LYS:HD3	28:Z:129:TRP:CZ3	2.37	0.60
1:5:1626:U:H3	1:5:1817:G:H1	1.49	0.60
1:5:948:C:O2'	1:5:949:C:H5'	2.02	0.60
26:X:133:LEU:HD22	26:X:133:LEU:O	2.02	0.60
1:5:2572:C:HO2'	1:5:2573:G:P	2.21	0.60
4:A:70:ARG:NH1	4:A:72:ARG:HH21	1.99	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:99:ILE:HD13	12:I:101:LYS:HB2	1.84	0.60
12:I:208:ASN:HA	12:I:211:ARG:HG2	1.84	0.60
7:D:37:VAL:HG12	22:T:31:LEU:HD21	1.83	0.60
1:5:1915:A:H2'	1:5:1916:U:C6	2.37	0.59
1:5:528:U:H2'	1:5:529:A:C8	2.36	0.59
1:5:771:A:C2'	1:5:772:U:H5'	2.32	0.59
5:B:285:VAL:HG22	5:B:322:ILE:HD12	1.84	0.59
27:Y:37:LYS:CE	27:Y:37:LYS:H	2.13	0.59
28:Z:128:GLN:HG2	28:Z:129:TRP:N	2.16	0.59
1:5:3047:U:O2'	1:5:3048:A:H5'	2.02	0.59
1:5:3226:A:C2'	1:5:3227:A:H5''	2.32	0.59
2:7:62:U:O3'	7:D:285:ARG:NH1	2.35	0.59
4:A:187:HIS:ND1	4:A:190:ARG:NH1	2.51	0.59
4:A:6:ARG:HH12	4:A:199:THR:H	1.47	0.59
22:T:46:GLY:HA2	22:T:52:MET:CE	2.32	0.59
1:5:355:A:H2'	1:5:356:C:O4'	2.03	0.59
6:C:321:LYS:O	6:C:325:LEU:HG	2.03	0.59
10:G:88:ALA:O	10:G:92:LYS:HB2	2.02	0.59
17:O:11:GLY:O	17:O:41:LEU:HD13	2.02	0.59
19:Q:96:PHE:CD2	19:Q:97:PRO:HD2	2.37	0.59
23:U:77:LYS:O	23:U:81:LYS:HB2	2.02	0.59
1:5:2967:A:C8	1:5:2968:G:H1'	2.37	0.59
4:A:112:ILE:O	4:A:112:ILE:HG13	2.02	0.59
4:A:205:ASN:HB3	4:A:206:PRO:HD2	1.84	0.59
8:E:55:LEU:HD23	8:E:55:LEU:N	2.18	0.59
12:I:169:LYS:O	12:I:170:LYS:HD3	2.02	0.59
13:J:164:LYS:CE	13:J:171:VAL:HB	2.32	0.59
1:5:2797:C:OP1	17:O:60:LYS:NZ	69.69	0.59
19:Q:18:ALA:HA	19:Q:53:PHE:CE1	2.38	0.59
1:5:1272:C:H2'	1:5:1273:A:H5'	1.84	0.59
1:5:2554:A:H4'	1:5:2555:G:OP1	2.01	0.59
1:5:3195:U:O2'	1:5:3196:U:H5'	2.01	0.59
2:7:110:G:O2'	2:7:111:U:H5'	2.03	0.59
5:B:306:THR:HG21	5:B:316:GLU:HA	1.82	0.59
12:I:86:HIS:ND1	12:I:139:ARG:NH1	2.51	0.59
19:Q:153:PHE:O	19:Q:161:LYS:HG2	2.03	0.59
21:S:124:LEU:HD23	21:S:124:LEU:N	2.18	0.59
26:X:58:ASP:O	26:X:62:VAL:HG23	2.03	0.59
28:Z:121:ARG:HH11	28:Z:121:ARG:CG	2.15	0.59
1:5:1767:C:C2'	1:5:1768:U:H5'	2.32	0.59
1:5:1991:Y5P:H2'	1:5:1992:Y5P:H6	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:915:A:C5	1:5:917:A:H1'	2.36	0.59
17:O:178:VAL:O	17:O:182:ASN:HB3	2.03	0.59
17:O:74:ARG:HH11	17:O:74:ARG:HG2	1.66	0.59
18:P:70:THR:HG21	18:P:81:ALA:HB3	1.84	0.59
1:5:1323:G:O2'	1:5:1324:U:H5'	2.03	0.59
1:5:162:G:O2'	1:5:163:C:H5'	2.03	0.59
1:5:1874:A:O2'	1:5:1875:G:H5'	2.03	0.59
1:5:195:U:H2'	1:5:196:G:O4'	2.02	0.59
6:C:280:ILE:O	6:C:280:ILE:HG13	2.00	0.59
8:E:174:LEU:HB2	8:E:176:PHE:CE1	2.37	0.59
11:H:162:GLN:HB2	11:H:179:ILE:O	2.03	0.59
13:J:53:THR:HG23	13:J:59:ILE:O	2.03	0.59
13:J:79:ILE:HG12	13:J:82:ARG:HH21	1.68	0.59
15:M:76:ALA:HB1	15:M:80:THR:OG1	2.01	0.59
22:T:99:SER:HG	22:T:101:CYS:HG	1.51	0.59
23:U:39:ASP:O	23:U:47:VAL:HB	2.03	0.59
1:5:3150:A:H5'	5:B:129:ALA:O	2.03	0.59
1:5:627:U:H2'	1:5:628:A:C8	2.38	0.59
6:C:317:PRO:HA	6:C:323:VAL:HG22	1.84	0.59
8:E:47:PHE:CD1	8:E:74:VAL:HG22	2.37	0.59
18:P:87:SER:O	18:P:91:VAL:HG23	2.03	0.59
20:R:153:LYS:HZ3	20:R:153:LYS:HB2	1.68	0.59
1:5:101:G:H2'	1:5:102:C:O4'	2.03	0.59
1:5:506:U:H2'	1:5:507:U:O4'	2.03	0.59
1:5:620:U:H5''	1:5:622:A:N7	2.18	0.59
6:C:274:TYR:HE1	6:C:276:LEU:HD12	1.68	0.59
22:T:135:PRO:O	22:T:136:ARG:HB2	2.02	0.59
1:5:3138:U:P	5:B:30:LYS:HZ2	2.25	0.59
9:F:41:ARG:NH1	9:F:41:ARG:CG	2.53	0.59
17:O:77:SER:HB3	17:O:106:GLU:OE1	2.03	0.59
1:5:382:U:H3	1:5:387:A:H61	1.50	0.58
7:D:51:LEU:HB2	7:D:144:VAL:CG1	2.33	0.58
12:I:197:VAL:HG12	12:I:199:PHE:CE1	2.38	0.58
8:E:154:LEU:CD1	15:M:119:GLN:HG2	2.32	0.58
1:5:1786:G:H2'	1:5:1787:A:C8	2.37	0.58
1:5:3237:U:H2'	1:5:3238:G:H5''	1.86	0.58
1:5:3287:U:H2'	1:5:3288:G:H5'	1.84	0.58
1:5:379:C:H2'	1:5:380:U:H6	1.67	0.58
1:5:2147:A:OP1	4:A:200:ARG:HG3	2.02	0.58
7:D:140:ARG:HB3	7:D:141:PRO:HD2	1.84	0.58
1:5:2523:A:C8	10:G:51:LYS:HB2	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:50:ALA:HB2	13:J:65:ILE:CD1	2.31	0.58
25:W:5:ILE:HD12	25:W:5:ILE:O	2.03	0.58
1:5:3041:U:H2'	1:5:3042:U:C6	2.38	0.58
19:Q:85:GLY:H	19:Q:104:LEU:HB2	1.66	0.58
22:T:91:LEU:CD1	22:T:96:ILE:HD11	2.34	0.58
6:C:63:GLU:O	6:C:76:ARG:N	2.35	0.58
7:D:25:GLU:HB2	7:D:27:LYS:HG3	1.85	0.58
9:F:108:LEU:CD2	9:F:115:THR:HG23	2.33	0.58
13:J:25:GLU:HG3	13:J:63:GLU:OE2	2.03	0.58
1:5:1472:U:O2'	1:5:1473:G:H5'	2.02	0.58
1:5:1818:U:H2'	1:5:1819:U:C6	2.37	0.58
1:5:2186:U:H2'	1:5:2187:G:C5'	2.34	0.58
1:5:3195:U:H5''	1:5:3195:U:O2	2.03	0.58
6:C:138:ARG:NH2	6:C:240:PRO:HB2	2.19	0.58
6:C:280:ILE:HD12	19:Q:104:LEU:CD2	2.33	0.58
9:F:161:VAL:CG1	9:F:162:PRO:HD2	2.33	0.58
16:N:182:ASN:OD1	16:N:182:ASN:N	2.37	0.58
1:5:1008:U:O2'	1:5:1009:A:H5'	2.02	0.58
1:5:1916:U:H2'	1:5:1917:C:C6	2.38	0.58
1:5:2426:U:H3	1:5:2603:G:H1	1.50	0.58
1:5:374:A:HO2'	1:5:376:G:H8	1.52	0.58
1:5:797:U:O2'	1:5:798:G:H5'	2.03	0.58
2:7:28:C:O3'	13:J:135:GLY:HA2	2.03	0.58
4:A:116:VAL:HG13	4:A:126:LEU:HB2	1.86	0.58
8:E:115:UNK:HA	8:E:118:UNK:CG	2.31	0.58
8:E:65:ILE:O	8:E:76:LEU:HA	2.02	0.58
24:V:104:ASN:HB2	24:V:105:PRO:HD2	1.85	0.58
1:5:3252:G:H2'	1:5:3253:G:H8	1.66	0.58
1:5:3292:A:O2'	1:5:3293:U:H5'	2.03	0.58
5:B:287:LYS:HZ2	5:B:287:LYS:HB3	1.69	0.58
6:C:202:ARG:NE	6:C:202:ARG:HA	2.18	0.58
7:D:219:PHE:CE2	7:D:227:LEU:HD11	2.39	0.58
1:5:353:G:N7	13:J:55:ARG:HD3	106.99	0.58
17:O:103:LYS:HB3	17:O:105:PHE:CE1	2.39	0.58
23:U:58:GLU:HG2	23:U:60:GLY:H	1.69	0.58
1:5:2101:C:O2'	1:5:2102:U:OP1	2.18	0.58
1:5:2925:C:H2'	1:5:2926:A:C5'	2.31	0.58
1:5:679:U:O2'	1:5:788:C:H1'	2.03	0.58
26:X:100:LYS:HG3	26:X:105:VAL:O	2.03	0.58
28:Z:26:VAL:HG22	28:Z:42:LEU:O	2.03	0.58
1:5:169:U:H4'	14:L:128:ARG:NH2	2.19	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2157:G:N7	4:A:152:SER:OG	2.35	0.58
1:5:766:U:H4'	1:5:767:U:H5'	1.86	0.58
5:B:290:ASP:OD2	5:B:292:ALA:HB3	2.04	0.58
6:C:345:GLU:OE1	6:C:346:LYS:N	2.36	0.58
20:R:117:LYS:HG3	20:R:118:HIS:N	2.18	0.58
1:5:1265:U:O2	1:5:1277:C:H1'	2.04	0.58
1:5:1048:A:HO2'	1:5:2632:G:HO2'	1.50	0.58
1:5:662:U:H2'	1:5:663:C:C6	2.39	0.58
5:B:214:MET:HE3	5:B:279:ASN:HA	1.86	0.58
6:C:33:ASP:O	6:C:37:THR:HG23	2.04	0.58
24:V:87:ARG:HB2	24:V:89:ASP:OD1	2.03	0.58
1:5:3162:C:O2	1:5:3163:A:C8	2.57	0.57
4:A:52:SER:HB3	4:A:191:LEU:HD12	1.84	0.57
6:C:30:ILE:O	6:C:32:PRO:HD3	2.04	0.57
8:E:152:THR:CG2	8:E:155:LEU:HD12	2.34	0.57
8:E:48:ARG:HG2	8:E:48:ARG:NH1	2.19	0.57
17:O:58:LEU:HD12	17:O:72:HIS:CG	2.39	0.57
1:5:1036:A:H2'	1:5:1037:C:O4'	2.03	0.57
6:C:60:THR:HG22	6:C:61:SER:N	2.18	0.57
7:D:257:GLU:H	7:D:257:GLU:CD	2.08	0.57
13:J:94:ARG:C	13:J:96:PHE:H	2.05	0.57
16:N:48:ALA:O	16:N:53:TYR:HB3	2.04	0.57
20:R:28:GLU:O	20:R:31:GLU:N	2.37	0.57
24:V:20:GLY:HA2	24:V:35:TYR:CE1	2.39	0.57
27:Y:100:HIS:CG	27:Y:101:PRO:HD2	2.38	0.57
1:5:1096:U:H4'	1:5:1097:G:O5'	2.04	0.57
1:5:1245:A:N7	1:5:1271:A:O2'	2.26	0.57
1:5:2102:U:H2'	1:5:2103:U:C6	2.39	0.57
1:5:3151:U:H5'	1:5:3152:U:OP1	2.03	0.57
10:G:149:LYS:HD3	10:G:201:THR:O	2.02	0.57
12:I:38:LYS:HB2	12:I:83:ASP:OD1	2.03	0.57
1:5:388:G:H4'	18:P:18:ARG:O	2.05	0.57
1:5:1203:A:N3	1:5:2855:U:O2'	2.37	0.57
1:5:2915:U:C5	5:B:7:GLU:HG2	2.39	0.57
1:5:3384:U:H2'	1:5:3385:U:H6	1.70	0.57
4:A:209:HIS:HD2	4:A:211:HIS:H	1.53	0.57
1:5:1305:U:C2	5:B:257:PRO:HB3	2.39	0.57
8:E:58:LEU:HD12	8:E:78:ARG:HD3	1.85	0.57
14:L:59:ARG:HH21	14:L:69:VAL:HG23	1.69	0.57
27:Y:109:LEU:HD22	27:Y:115:ARG:NH1	2.20	0.57
27:Y:120:GLN:CA	27:Y:120:GLN:HE21	2.16	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:121:A:C2	10:G:129:PRO:HB3	2.40	0.57
1:5:149:U:P	16:N:49:ARG:HH21	2.28	0.57
1:5:2769:A:C2'	1:5:2770:G:H5'	2.35	0.57
1:5:844:G:C3'	1:5:845:G:H5'	2.35	0.57
6:C:99:MET:CE	6:C:103:THR:H	2.17	0.57
6:C:327:LEU:HA	9:F:166:ASN:HD21	1.69	0.57
1:5:1891:A:O2'	1:5:1892:G:H5'	2.04	0.57
1:5:2558:U:O2'	1:5:2559:U:H5'	2.03	0.57
1:5:2770:G:O2'	1:5:2771:U:H5'	2.05	0.57
4:A:149:ARG:HH22	4:A:155:LYS:CD	2.18	0.57
11:H:13:PRO:O	11:H:16:VAL:HG13	2.05	0.57
13:J:80:LEU:O	13:J:80:LEU:HD22	2.04	0.57
19:Q:72:LYS:HZ2	19:Q:72:LYS:HB3	1.69	0.57
1:5:1444:G:H2'	1:5:1445:U:O4'	2.04	0.57
1:5:1891:A:C2'	1:5:1892:G:H5'	2.33	0.57
1:5:248:U:C2'	1:5:249:U:H5'	2.34	0.57
1:5:2526:C:H2'	1:5:2527:G:H8	1.70	0.57
1:5:3151:U:OP1	5:B:128:LYS:NZ	2.38	0.57
1:5:2880:U:H1'	5:B:250:ALA:CB	2.34	0.57
5:B:215:ILE:HD12	5:B:338:LEU:HB3	1.87	0.57
8:E:8:LYS:NZ	8:E:8:LYS:HA	2.20	0.57
9:F:218:ARG:NH1	9:F:218:ARG:HG2	2.18	0.57
1:5:1767:C:O2'	1:5:1768:U:H5'	2.04	0.57
1:5:2808:A:HO2'	1:5:2809:C:C5'	2.17	0.57
1:5:2922:G:H2'	1:5:2923:U:O4'	2.04	0.57
9:F:103:LEU:HG	9:F:130:ILE:CD1	2.35	0.57
1:5:75:G:OP1	14:L:58:VAL:HG13	2.04	0.57
27:Y:97:ILE:HG22	27:Y:99:LEU:CD2	2.35	0.57
1:5:2213:A:H1'	1:5:2602:G:O4'	2.05	0.57
1:5:2428:U:H2'	1:5:2429:G:H8	1.70	0.57
1:5:2573:G:H2'	1:5:2574:G:O4'	2.05	0.57
1:5:92:G:H5'	1:5:93:C:H5''	1.86	0.57
6:C:99:MET:CE	6:C:102:PRO:HA	2.34	0.57
6:C:355:PHE:O	6:C:358:THR:HG22	2.05	0.57
17:O:126:VAL:HG22	17:O:127:LEU:CD2	2.34	0.57
1:5:1362:G:H2'	1:5:1363:A:H8	1.70	0.57
1:5:1382:G:OP2	6:C:188:ARG:NH1	2.38	0.57
1:5:2131:A:H2'	1:5:2132:C:O4'	2.05	0.57
1:5:2907:G:O2'	1:5:2908:G:H5'	2.04	0.57
3:8:131:A:O2'	3:8:132:G:H5'	2.04	0.57
3:8:157:U:H2'	3:8:158:U:C6	2.40	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:73:VAL:HG22	24:V:86:ARG:HH21	1.70	0.57
8:E:171:PRO:HA	8:E:174:LEU:CD1	2.34	0.57
26:X:117:ASN:OD1	26:X:119:THR:HG23	2.05	0.57
1:5:250:U:H2'	1:5:251:G:H5'	1.87	0.56
1:5:2807:U:O2'	1:5:2808:A:H2'	2.05	0.56
1:5:3044:G:O2'	1:5:3045:G:H5'	2.04	0.56
5:B:171:LEU:CD2	5:B:333:LYS:HG2	2.35	0.56
6:C:280:ILE:HD12	19:Q:104:LEU:HD22	1.87	0.56
8:E:136:GLU:OE1	8:E:136:GLU:HA	2.05	0.56
9:F:196:LYS:HB3	9:F:197:GLN:OE1	2.05	0.56
13:J:13:LYS:HE2	13:J:132:ASN:ND2	2.20	0.56
13:J:30:LEU:O	13:J:34:SER:HB2	2.04	0.56
15:M:14:LEU:H	15:M:19:ARG:NH2	2.01	0.56
24:V:72:LYS:HG2	24:V:74:MET:HE1	1.87	0.56
27:Y:23:PRO:HG2	27:Y:26:GLN:CG	2.33	0.56
1:5:839:C:H1'	1:5:1724:U:OP1	2.05	0.56
1:5:238:A:H2'	1:5:239:G:O4'	2.05	0.56
1:5:3278:C:C3'	1:5:3279:A:H5'	2.34	0.56
1:5:3365:U:H2'	1:5:3366:G:H8	1.70	0.56
9:F:95:ILE:HG23	9:F:133:TYR:CE2	2.40	0.56
12:I:169:LYS:NZ	22:T:158:THR:O	2.26	0.56
22:T:68:THR:CG2	22:T:71:SER:HB2	2.34	0.56
1:5:1471:U:H2'	1:5:1472:U:H6	1.70	0.56
1:5:1631:C:H5''	1:5:1632:A:H5''	1.87	0.56
1:5:251:G:O2'	1:5:252:U:O4'	2.21	0.56
1:5:2769:A:O2'	1:5:2770:G:H5'	2.04	0.56
1:5:600:G:H5'	1:5:601:U:OP2	2.06	0.56
3:8:80:A:O2'	3:8:81:U:OP1	2.19	0.56
7:D:126:GLU:HB2	7:D:196:ARG:HB2	1.87	0.56
9:F:103:LEU:CD2	9:F:130:ILE:HD11	2.35	0.56
9:F:179:LEU:HD13	9:F:179:LEU:N	2.20	0.56
24:V:120:LYS:HZ2	24:V:137:VAL:HG21	1.71	0.56
26:X:141:TYR:O	26:X:142:ILE:HB	2.06	0.56
1:5:2649:A:O2'	1:5:2650:U:H5'	2.05	0.56
1:5:44:U:H5''	16:N:85:THR:HG23	1.86	0.56
13:J:49:LYS:HD2	13:J:62:ASN:O	2.05	0.56
16:N:73:ARG:CB	16:N:89:VAL:HG13	2.36	0.56
1:5:974:G:H5''	19:Q:14:GLY:O	2.05	0.56
20:R:81:ARG:HD3	20:R:88:ARG:NH1	2.18	0.56
1:5:1220:U:H4'	1:5:1221:A:H5''	1.87	0.56
1:5:2408:U:C2'	1:5:2409:G:H5'	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2967:A:N7	1:5:2968:G:H1'	2.20	0.56
1:5:4:U:O2'	1:5:5:G:H5'	2.04	0.56
26:X:57:LEU:HD12	26:X:94:GLN:HE22	1.70	0.56
1:5:1240:A:H2'	1:5:1241:U:H5'	1.87	0.56
1:5:159:A:C2'	1:5:160:G:H5'	2.36	0.56
1:5:173:G:H2'	1:5:174:C:C6	2.40	0.56
1:5:2211:U:H5	1:5:2234:G:H1	1.53	0.56
7:D:163:LEU:O	7:D:163:LEU:HD12	2.06	0.56
9:F:203:TRP:CD1	9:F:204:PRO:HD2	2.41	0.56
10:G:130:TYR:HD1	10:G:202:GLU:HB2	1.69	0.56
1:5:107:A:H2'	1:5:108:A:O4'	2.06	0.56
1:5:3194:C:C2'	1:5:3195:U:H5'	2.36	0.56
6:C:159:ILE:HG23	6:C:164:GLU:CD	2.26	0.56
6:C:265:GLU:OE1	6:C:265:GLU:HA	2.06	0.56
13:J:164:LYS:HE3	13:J:171:VAL:HB	1.87	0.56
16:N:49:ARG:CG	16:N:49:ARG:HH11	2.19	0.56
25:W:49:ILE:O	25:W:52:THR:HG23	2.06	0.56
1:5:238:A:HO2'	1:5:239:G:P	2.28	0.56
1:5:850:U:H2'	1:5:851:C:H6	1.71	0.56
5:B:159:ARG:HG2	5:B:182:GLN:HA	1.87	0.56
7:D:51:LEU:HB2	7:D:144:VAL:HG11	1.87	0.56
8:E:175:LYS:NZ	15:M:111:ALA:HA	2.21	0.56
8:E:31:ARG:NH2	8:E:81:ALA:O	2.38	0.56
27:Y:120:GLN:HA	27:Y:120:GLN:HE21	1.70	0.56
28:Z:10:VAL:O	28:Z:83:THR:HG22	2.06	0.56
1:5:2243:A:O4'	1:5:2313:A:H3'	2.06	0.56
3:8:81:U:H1'	3:8:82:U:O4'	2.06	0.56
6:C:178:LEU:O	6:C:182:LEU:HD22	2.06	0.56
6:C:246:ARG:O	6:C:248:VAL:HG23	2.06	0.56
17:O:120:VAL:O	17:O:124:LEU:HD22	2.05	0.56
27:Y:52:ARG:HG2	27:Y:53:ASP:H	1.70	0.56
1:5:1877:U:H5''	1:5:1878:G:H5'	1.86	0.56
1:5:238:A:O2'	1:5:239:G:OP1	2.21	0.56
1:5:2885:C:O2'	1:5:2886:U:H5'	2.05	0.56
1:5:3289:G:H4'	1:5:3290:G:OP1	2.06	0.56
7:D:286:VAL:O	7:D:290:ILE:HG13	2.06	0.56
8:E:130:ILE:HD12	8:E:135:VAL:CG2	2.35	0.56
10:G:81:THR:HG23	10:G:82:LEU:H	1.71	0.56
14:L:85:LEU:HD22	14:L:120:GLN:NE2	2.16	0.56
17:O:65:ASN:OD1	17:O:67:THR:HB	2.05	0.56
24:V:45:ARG:HD2	24:V:46:LEU:H	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3186:A:C2	11:H:44:THR:HG22	2.40	0.56
4:A:95:SER:OG	4:A:97:ASN:ND2	2.39	0.56
5:B:332:ARG:O	5:B:333:LYS:HB2	2.06	0.56
12:I:169:LYS:H	12:I:169:LYS:CE	2.18	0.56
17:O:84:LEU:HD23	17:O:84:LEU:C	2.26	0.56
22:T:48:ILE:HG13	22:T:94:GLU:HG2	1.86	0.56
26:X:108:LEU:HD22	26:X:127:THR:HG22	1.87	0.56
1:5:1559:A:H2'	26:X:33:ARG:HH22	1.70	0.56
1:5:1226:G:H2'	1:5:1227:C:H6	1.69	0.55
1:5:1770:G:H5'	1:5:1771:C:OP2	2.06	0.55
1:5:2725:U:H3'	1:5:2726:C:O2	2.06	0.55
1:5:908:G:H4'	1:5:909:G:O5'	2.06	0.55
4:A:117:GLU:OE2	4:A:163:ARG:NH2	2.39	0.55
4:A:83:HIS:NE2	4:A:86:GLN:HB2	2.21	0.55
5:B:109:HIS:C	5:B:110:LEU:HD12	2.27	0.55
9:F:22:THR:CA	9:F:25:GLN:HG2	2.30	0.55
10:G:34:PHE:CE1	10:G:42:PRO:HD3	2.41	0.55
14:L:85:LEU:N	14:L:85:LEU:HD23	2.21	0.55
19:Q:177:GLY:O	19:Q:186:VAL:N	2.27	0.55
19:Q:42:ALA:HB2	19:Q:133:LYS:HD3	1.88	0.55
24:V:89:ASP:OD1	24:V:91:VAL:HG12	2.06	0.55
1:5:1240:A:H2	1:5:1248:C:H41	1.54	0.55
1:5:2249:G:H8	1:5:2272:G:HO2'	1.53	0.55
1:5:394:G:N2	1:5:396:A:H3'	2.21	0.55
1:5:999:G:C6	1:5:1000:C:N4	2.73	0.55
5:B:221:THR:HG22	5:B:272:TYR:H	1.71	0.55
5:B:14:LEU:HD22	5:B:262:TRP:CZ3	2.41	0.55
1:5:116:A:OP2	16:N:2:GLY:HA3	2.06	0.55
27:Y:98:ASN:C	27:Y:99:LEU:HD23	2.26	0.55
1:5:248:U:H2'	1:5:249:U:H5'	1.88	0.55
1:5:2616:C:H2'	1:5:2617:U:H5'	1.87	0.55
1:5:55:G:C2'	1:5:56:G:H5'	2.35	0.55
2:7:112:G:H2'	2:7:113:C:H6	1.72	0.55
2:7:4:U:H2'	2:7:5:G:H8	1.70	0.55
4:A:70:ARG:HG3	4:A:71:LEU:N	2.21	0.55
5:B:74:GLU:OE2	5:B:325:LYS:HE3	2.07	0.55
7:D:294:ALA:O	7:D:296:GLN:HG2	2.06	0.55
8:E:43:LEU:HD11	8:E:85:ILE:HG13	1.88	0.55
12:I:86:HIS:HB3	12:I:139:ARG:HG2	1.88	0.55
17:O:126:VAL:CG2	17:O:127:LEU:HD23	2.36	0.55
20:R:67:ALA:HA	20:R:70:LYS:HB2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:Z:97:SER:HB3	28:Z:99:GLU:OE2	2.06	0.55
1:5:1559:A:H2'	26:X:33:ARG:NH2	2.20	0.55
1:5:1874:A:C2'	1:5:1875:G:H5'	2.36	0.55
1:5:500:C:O2'	1:5:501:A:H5'	2.06	0.55
5:B:221:THR:O	5:B:272:TYR:HA	2.06	0.55
21:S:26:ARG:HH22	21:S:28:ARG:HH21	1.55	0.55
21:S:73:LYS:NZ	21:S:97:VAL:O	2.36	0.55
1:5:1347:U:H5'	6:C:303:GLY:CA	2.26	0.55
1:5:2181:C:OP1	4:A:193:ARG:NH2	2.40	0.55
1:5:282:G:H3'	1:5:282:G:C8	2.41	0.55
1:5:36:C:C2'	1:5:37:U:H5'	2.34	0.55
4:A:205:ASN:HB3	4:A:206:PRO:CD	2.37	0.55
9:F:191:VAL:HG12	9:F:192:GLY:H	1.71	0.55
10:G:70:LYS:CA	10:G:235:GLY:HA3	2.27	0.55
12:I:175:ASN:HB3	12:I:176:LEU:CD2	2.35	0.55
16:N:184:LYS:HG2	16:N:184:LYS:O	2.05	0.55
16:N:8:GLU:HB2	16:N:50:ARG:HH12	1.72	0.55
21:S:94:ILE:HD11	21:S:106:LEU:HD23	1.89	0.55
3:8:134:G:OP1	26:X:56:ARG:HG2	2.07	0.55
1:5:1238:C:C3'	1:5:1239:C:H5''	2.37	0.55
1:5:1462:A:C2'	1:5:1463:U:H5'	2.36	0.55
1:5:2017:P5P:H2'	1:5:2018:P5P:H8	1.89	0.55
1:5:2213:A:H1'	1:5:2602:G:C4'	2.37	0.55
1:5:2536:A:H2'	1:5:2537:U:O4'	2.06	0.55
1:5:2880:U:H1'	5:B:250:ALA:HB3	1.87	0.55
1:5:3218:A:H5''	1:5:3219:G:C5	2.41	0.55
6:C:179:LEU:O	6:C:179:LEU:HD22	2.07	0.55
9:F:108:LEU:HD21	9:F:115:THR:HG23	1.88	0.55
9:F:124:LEU:HD13	9:F:124:LEU:O	2.06	0.55
13:J:53:THR:OG1	13:J:60:ARG:HA	2.07	0.55
13:J:79:ILE:HG12	13:J:82:ARG:NH2	2.21	0.55
27:Y:103:LYS:HD3	27:Y:103:LYS:N	2.20	0.55
1:5:1290:A:H2'	1:5:1291:A:C8	2.41	0.55
1:5:2421:U:C2'	1:5:2422:C:H5''	2.34	0.55
1:5:249:U:H1'	1:5:250:U:O4'	2.07	0.55
1:5:2916:U:H1'	24:V:44:SER:HB3	1.89	0.55
1:5:3250:U:O2'	1:5:3251:U:H5'	2.07	0.55
1:5:977:C:C2'	1:5:978:G:H5'	2.37	0.55
3:8:81:U:OP1	3:8:87:G:H4'	2.07	0.55
10:G:183:LYS:HD2	10:G:194:THR:CB	2.36	0.55
12:I:36:LEU:HD12	12:I:87:LEU:HD23	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:R:136:ARG:O	20:R:139:VAL:HG22	2.07	0.55
1:5:1233:G:O2'	1:5:1234:G:H5'	2.07	0.55
1:5:1916:U:H2'	1:5:1917:C:H6	1.72	0.55
1:5:2608:G:H2'	1:5:2609:A:C8	2.41	0.55
7:D:146:LEU:HD13	7:D:148:ILE:HD11	1.89	0.55
9:F:216:VAL:HB	9:F:217:PRO:CD	2.37	0.55
13:J:27:GLY:O	13:J:31:THR:HG22	2.06	0.55
20:R:123:LEU:O	20:R:127:SER:HB3	2.07	0.55
1:5:2181:C:H5''	4:A:193:ARG:NH2	2.21	0.55
1:5:517:G:O2'	1:5:518:G:H5'	2.07	0.55
1:5:620:U:H3'	1:5:621:A:H5'	1.89	0.55
1:5:992:A:C2'	1:5:993:G:H5'	2.37	0.55
2:7:17:A:H2'	2:7:18:C:H6	1.71	0.55
5:B:238:LEU:CD1	5:B:239:PRO:HD3	2.33	0.55
18:P:53:ASP:O	18:P:54:HIS:HB2	2.06	0.55
24:V:2:SER:HB2	24:V:125:LEU:HD21	1.89	0.55
24:V:59:MET:CE	24:V:59:MET:HA	2.36	0.55
27:Y:45:ILE:HD11	27:Y:122:LYS:CE	2.23	0.55
1:5:2583:C:O2'	1:5:2584:G:OP1	2.25	0.55
1:5:3083:G:H4'	25:W:42:GLN:NE2	2.22	0.55
1:5:549:U:H2'	1:5:550:A:C8	2.42	0.55
1:5:599:C:H2'	1:5:600:G:O4'	2.06	0.55
10:G:150:LEU:HD22	10:G:151:VAL:N	2.19	0.55
10:G:78:PHE:O	10:G:79:GLN:HB3	2.07	0.55
14:L:71:ALA:HB2	14:L:147:ILE:CD1	2.37	0.55
17:O:109:PRO:HB2	17:O:110:PRO:CD	2.36	0.55
1:5:2093:A:H61	20:R:114:LYS:HD3	1.69	0.55
28:Z:95:VAL:HG21	28:Z:113:VAL:HG11	1.88	0.55
1:5:2408:U:O2'	1:5:2409:G:H5'	2.07	0.54
1:5:585:A:H2'	1:5:586:C:H6	1.70	0.54
1:5:724:U:H2'	1:5:725:G:O4'	2.07	0.54
5:B:48:GLY:O	5:B:335:ILE:HD12	2.07	0.54
14:L:71:ALA:HB2	14:L:147:ILE:HD11	1.89	0.54
1:5:1651:U:H5''	4:A:71:LEU:HD22	1.89	0.54
1:5:3384:U:H2'	1:5:3385:U:C6	2.41	0.54
6:C:99:MET:HE2	6:C:103:THR:H	1.73	0.54
2:7:119:U:H3'	7:D:258:LYS:NZ	2.22	0.54
7:D:282:ARG:O	7:D:286:VAL:HG23	2.07	0.54
8:E:149:ILE:HG23	8:E:155:LEU:HD13	1.88	0.54
10:G:25:PRO:O	10:G:26:LEU:HD23	2.08	0.54
12:I:212:GLU:C	12:I:214:PRO:HD3	2.27	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:136:ILE:O	18:P:137:ASN:ND2	2.41	0.54
28:Z:10:VAL:HG22	28:Z:24:VAL:HG13	1.88	0.54
1:5:2569:A:C4'	1:5:2570:U:H5'	2.30	0.54
1:5:2605:G:H2'	1:5:2607:G:O6	2.07	0.54
1:5:2712:U:H2'	1:5:2713:U:H6	1.69	0.54
1:5:3078:U:H4'	1:5:3079:U:O5'	2.07	0.54
6:C:74:ILE:HD12	6:C:75:PRO:CD	2.27	0.54
1:5:29:C:O3'	16:N:172:ARG:NH1	2.40	0.54
1:5:1573:G:C2	1:5:1574:C:H1'	2.42	0.54
1:5:2402:A:H5''	6:C:67:THR:OG1	2.08	0.54
1:5:2562:A:H2	10:G:29:SER:HG	1.55	0.54
1:5:2746:A:H2'	1:5:2747:A:O4'	2.07	0.54
1:5:2772:C:H1'	1:5:2773:C:OP2	2.08	0.54
1:5:3351:U:H5'	1:5:3352:U:OP2	2.07	0.54
2:7:27:A:H2'	2:7:28:C:H6	1.72	0.54
4:A:147:ARG:NH1	4:A:147:ARG:HB2	2.22	0.54
1:5:984:G:P	9:F:101:LYS:HZ1	2.30	0.54
9:F:149:TYR:CE1	9:F:181:ILE:HD13	2.43	0.54
9:F:136:TYR:CE2	9:F:231:ASN:HB2	2.43	0.54
7:D:41:LYS:HB2	22:T:68:THR:O	2.07	0.54
24:V:48:ARG:NH1	24:V:48:ARG:CG	2.65	0.54
1:5:1078:U:N3	1:5:1081:U:OP2	2.34	0.54
1:5:2098:C:O2'	1:5:2099:A:H5'	2.06	0.54
1:5:2614:G:H8	1:5:2614:G:H5'	1.72	0.54
8:E:8:LYS:HZ3	8:E:8:LYS:HB3	4.14	0.54
12:I:85:PHE:CA	12:I:140:THR:HG22	2.33	0.54
1:5:1570:U:O2'	1:5:1571:A:O4'	2.19	0.54
1:5:2582:C:O2'	1:5:2583:C:H5'	2.07	0.54
1:5:2611:U:O2'	1:5:2803:A:N1	2.31	0.54
1:5:3161:C:H42	1:5:3289:G:H1	1.54	0.54
5:B:37:ARG:HA	5:B:186:GLY:CA	2.37	0.54
6:C:64:SER:HA	6:C:75:PRO:HA	1.89	0.54
10:G:211:LEU:HD13	10:G:212:ALA:N	2.22	0.54
10:G:238:LEU:CD1	10:G:238:LEU:H	2.21	0.54
14:L:165:SER:CB	14:L:168:ARG:HB3	2.27	0.54
19:Q:122:ILE:HG23	19:Q:126:GLN:HB2	1.90	0.54
27:Y:27:ARG:NH1	27:Y:76:LEU:HA	2.21	0.54
1:5:1261:G:H4'	1:5:1278:A:N1	2.22	0.54
1:5:1819:U:O2'	1:5:1820:U:H5'	2.08	0.54
1:5:2186:U:O2'	1:5:2187:G:H5'	2.08	0.54
1:5:2777:G:H5''	1:5:2778:G:OP1	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2960:C:H2'	1:5:2961:G:H8	1.73	0.54
1:5:609:G:H3'	1:5:609:G:N3	2.22	0.54
1:5:625:G:H2'	1:5:626:U:H6	1.73	0.54
1:5:732:C:H2'	1:5:733:G:H5'	1.90	0.54
5:B:14:LEU:HD23	5:B:17:LEU:CD2	2.38	0.54
7:D:266:ALA:O	7:D:270:LYS:HG3	2.07	0.54
8:E:56:LYS:HG2	8:E:57:HIS:N	2.21	0.54
8:E:59:GLU:HA	8:E:59:GLU:OE1	2.08	0.54
8:E:80:ASN:HB3	8:E:83:TYR:HD2	1.72	0.54
19:Q:72:LYS:HZ3	19:Q:72:LYS:HB3	1.72	0.54
20:R:81:ARG:HG2	20:R:88:ARG:NH1	2.22	0.54
24:V:39:VAL:O	24:V:42:SER:OG	2.25	0.54
27:Y:58:VAL:HG22	27:Y:104:LEU:HD22	1.90	0.54
1:5:2993:G:H2'	1:5:3142:A:N6	2.23	0.54
1:5:797:U:C2'	1:5:798:G:H5'	2.38	0.54
1:5:807:A:H4'	1:5:2811:A:O2'	2.08	0.54
1:5:873:C:H5''	1:5:874:U:H4'	1.90	0.54
6:C:193:LYS:HB2	6:C:193:LYS:NZ	2.23	0.54
8:E:51:ARG:NH1	8:E:163:PHE:HB2	2.22	0.54
1:5:2550:U:O4'	10:G:38:GLN:NE2	2.38	0.54
21:S:108:GLN:HA	21:S:108:GLN:NE2	2.19	0.54
1:5:2357:A:H2'	1:5:2358:A:C8	2.43	0.54
1:5:2726:C:O2'	1:5:2727:A:H2'	2.07	0.54
1:5:536:U:O2'	1:5:537:A:H5'	2.08	0.54
5:B:167:ARG:NH1	5:B:168:LYS:HZ3	2.05	0.54
22:T:88:ARG:O	22:T:89:LEU:HD12	2.08	0.54
27:Y:113:LYS:HZ3	27:Y:113:LYS:HB2	1.73	0.54
28:Z:56:LYS:NZ	28:Z:56:LYS:HB2	2.23	0.54
1:5:1221:A:H3'	1:5:1222:G:C5'	2.38	0.54
1:5:137:G:H2'	1:5:138:U:C6	2.42	0.54
1:5:173:G:H2'	1:5:174:C:O4'	2.08	0.54
1:5:671:U:H2'	1:5:672:A:H8	1.71	0.54
4:A:149:ARG:HH22	4:A:155:LYS:HD2	1.73	0.54
4:A:77:ILE:HD12	4:A:128:ARG:HB3	1.90	0.54
5:B:213:GLU:OE2	5:B:340:LYS:NZ	2.41	0.54
6:C:10:SER:OG	6:C:14:GLU:OE2	2.25	0.54
6:C:338:LYS:HD3	6:C:338:LYS:N	2.23	0.54
1:5:117:U:O4	10:G:147:LYS:HD3	2.08	0.54
12:I:38:LYS:CD	12:I:41:ALA:HB2	2.37	0.54
13:J:143:ARG:HG2	13:J:144:CYS:SG	2.48	0.54
21:S:137:ARG:O	21:S:141:LYS:HG3	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:U:98:THR:CG2	23:U:104:ARG:HE	2.20	0.54
24:V:15:LEU:HA	24:V:53:SER:HB3	1.90	0.54
1:5:138:U:H2'	1:5:139:G:H8	1.72	0.53
1:5:3013:U:H2'	1:5:3014:U:C6	2.42	0.53
1:5:3163:A:N6	1:5:3288:G:O6	2.41	0.53
1:5:539:C:H2'	1:5:540:U:C6	2.44	0.53
3:8:125:U:O2'	3:8:126:A:H5'	2.06	0.53
8:E:78:ARG:CG	8:E:78:ARG:NH1	2.61	0.53
11:H:13:PRO:HG2	11:H:16:VAL:CG1	2.37	0.53
16:N:197:LEU:HG	16:N:199:LEU:HD21	1.90	0.53
19:Q:63:SER:OG	19:Q:64:VAL:N	2.41	0.53
20:R:147:ALA:O	20:R:151:ARG:HG2	2.08	0.53
1:5:1334:U:H2'	1:5:1335:C:C6	2.44	0.53
1:5:173:G:H2'	1:5:174:C:H6	1.72	0.53
1:5:2180:G:H2'	1:5:2181:C:C6	2.42	0.53
1:5:2662:G:H2'	1:5:2663:G:H8	1.74	0.53
8:E:43:LEU:HB2	8:E:83:TYR:O	2.08	0.53
12:I:60:LEU:HD21	12:I:129:VAL:HG11	1.91	0.53
1:5:1290:A:H2'	1:5:1291:A:H8	1.72	0.53
1:5:1640:G:C2'	1:5:1641:U:H5'	2.38	0.53
1:5:2114:C:H6	1:5:2114:C:H3'	1.72	0.53
1:5:2551:U:O4	4:A:95:SER:N	2.42	0.53
2:7:33:U:O2'	2:7:34:C:H5'	2.08	0.53
10:G:41:GLN:HG3	10:G:42:PRO:HD2	1.90	0.53
11:H:67:ALA:HA	11:H:70:THR:CG2	2.37	0.53
15:M:106:ARG:HB2	15:M:106:ARG:CZ	3.44	0.53
1:5:3228:C:H5''	15:M:137:LYS:HZ1	1.73	0.53
1:5:1950:U:H2'	1:5:1951:C:C6	2.44	0.53
1:5:2271:A:H2'	1:5:2272:G:H5'	1.88	0.53
2:7:74:C:O2'	2:7:75:G:H5'	2.09	0.53
3:8:80:A:C3'	3:8:81:U:H3'	2.39	0.53
3:8:80:A:C2'	3:8:81:U:H5'	2.38	0.53
5:B:25:ILE:HD13	5:B:25:ILE:O	2.09	0.53
6:C:34:ILE:HG22	6:C:35:VAL:N	2.22	0.53
7:D:107:ARG:HH22	7:D:120:LYS:CA	2.20	0.53
7:D:206:GLN:O	7:D:210:GLU:HG3	2.09	0.53
8:E:129:GLU:HG2	8:E:130:ILE:N	2.23	0.53
9:F:131:GLU:HB3	9:F:132:PRO:CD	2.27	0.53
10:G:243:GLN:HE22	10:G:246:MET:HE1	1.73	0.53
26:X:86:VAL:HG11	26:X:95:ILE:HD11	1.90	0.53
1:5:1221:A:H3'	1:5:1222:G:H5'	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1845:G:H5''	1:5:1846:C:H5'	1.90	0.53
1:5:2372:A:H3'	1:5:2373:A:C5'	2.38	0.53
1:5:283:G:H3'	1:5:283:G:N3	2.24	0.53
1:5:732:C:C2'	1:5:733:G:H5'	2.39	0.53
3:8:85:G:N3	3:8:85:G:H3'	2.23	0.53
8:E:153:PRO:O	8:E:154:LEU:HB2	2.08	0.53
21:S:26:ARG:HH11	22:T:150:THR:HG22	1.68	0.53
22:T:65:TYR:HD2	22:T:65:TYR:H	1.56	0.53
28:Z:4:PHE:O	28:Z:5:LEU:HB2	2.08	0.53
5:B:126:LYS:HB2	5:B:128:LYS:HG2	1.91	0.53
5:B:308:MET:HB2	5:B:363:SER:HB2	1.89	0.53
7:D:49:TYR:HE2	7:D:75:LEU:HD12	1.73	0.53
7:D:88:ILE:CD1	7:D:239:ILE:HG22	2.39	0.53
8:E:52:VAL:CG1	8:E:65:ILE:HG23	2.38	0.53
12:I:169:LYS:N	12:I:169:LYS:HE2	2.20	0.53
25:W:9:SER:HB3	25:W:51:TRP:HZ3	1.72	0.53
27:Y:55:GLU:CD	27:Y:108:LYS:HB2	2.29	0.53
27:Y:42:GLN:O	27:Y:125:LYS:HG3	2.09	0.53
1:5:1784:G:H2'	1:5:1785:U:O4'	2.09	0.53
1:5:1870:C:H1'	1:5:3066:U:O2'	2.09	0.53
4:A:205:ASN:O	4:A:212:GLY:HA2	2.08	0.53
5:B:41:VAL:HA	5:B:185:GLY:CA	2.35	0.53
6:C:260:GLN:NE2	6:C:260:GLN:HA	2.23	0.53
12:I:72:ALA:HB2	12:I:155:ALA:HB2	1.89	0.53
13:J:133:ARG:HB3	13:J:134:PRO:CD	2.39	0.53
1:5:1874:A:H5''	20:R:18:GLY:HA3	1.91	0.53
27:Y:23:PRO:HD2	27:Y:26:GLN:OE1	2.08	0.53
1:5:1327:C:O2'	1:5:1328:C:H5'	2.08	0.53
1:5:1583:A:H2'	1:5:1584:U:O4'	2.08	0.53
1:5:1803:C:H2'	1:5:1804:A:H8	1.74	0.53
1:5:822:G:C1'	4:A:15:ILE:HD12	2.38	0.53
6:C:22:LEU:HD23	6:C:23:PRO:CD	2.33	0.53
11:H:103:ILE:HD11	11:H:134:ILE:HG22	1.90	0.53
12:I:182:LEU:HD21	12:I:185:ARG:NH2	2.23	0.53
14:L:114:GLN:HE21	14:L:114:GLN:CA	2.09	0.53
15:M:45:LEU:HD12	15:M:56:GLN:O	2.09	0.53
18:P:105:LYS:HB3	18:P:107:LEU:HD13	1.91	0.53
24:V:2:SER:CB	24:V:125:LEU:HD21	2.39	0.53
24:V:72:LYS:HG2	24:V:74:MET:CE	2.38	0.53
1:5:237:G:H2'	1:5:238:A:H5'	1.90	0.53
1:5:2541:U:H4'	1:5:2542:U:OP1	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2683:U:OP1	13:J:18:VAL:HG11	2.07	0.53
1:5:2799:A:H1'	4:A:42:ARG:HH12	108.17	0.53
1:5:411:U:C2	3:8:13:A:C2	2.97	0.53
1:5:528:U:H2'	1:5:529:A:H8	1.74	0.53
1:5:560:G:OP1	15:M:83:LYS:NZ	2.31	0.53
1:5:771:A:H2'	1:5:772:U:H5'	1.91	0.53
3:8:9:A:H2'	3:8:10:A:C8	2.44	0.53
5:B:123:TYR:CE1	5:B:124:LYS:HB3	2.44	0.53
5:B:56:ILE:HD13	5:B:76:VAL:HG11	1.91	0.53
14:L:46:ILE:CG2	14:L:49:ARG:HB2	2.38	0.53
14:L:58:VAL:HG12	14:L:59:ARG:N	2.24	0.53
1:5:1129:A:H2'	1:5:1130:A:C8	2.44	0.53
1:5:1223:A:C5	1:5:1224:C:C5	2.97	0.53
1:5:1245:A:H2'	1:5:1272:C:OP1	2.08	0.53
1:5:2573:G:H2'	1:5:2574:G:H5''	1.91	0.53
4:A:193:ARG:HB3	4:A:193:ARG:HH11	1.72	0.53
5:B:123:TYR:CD1	5:B:124:LYS:N	2.77	0.53
10:G:100:GLU:OE2	10:G:108:ARG:NH1	2.41	0.53
10:G:98:ARG:HD2	10:G:189:LEU:O	2.09	0.53
12:I:206:LEU:O	12:I:210:ILE:HG23	2.08	0.53
14:L:180:ARG:HB3	14:L:180:ARG:NH1	2.24	0.53
14:L:76:THR:O	14:L:80:VAL:HG23	2.09	0.53
22:T:95:HIS:C	22:T:96:ILE:HD13	2.29	0.53
24:V:45:ARG:HD2	24:V:46:LEU:N	2.24	0.53
28:Z:103:GLN:HA	28:Z:103:GLN:OE1	2.09	0.53
1:5:1629:U:O4'	28:Z:115:LYS:HD3	2.09	0.53
1:5:1081:U:O2'	1:5:1082:U:P	2.67	0.52
1:5:1234:G:OP2	1:5:1235:U:H3'	2.08	0.52
1:5:251:G:P	1:5:251:G:H3'	2.49	0.52
1:5:3008:A:O2'	1:5:3009:G:H5'	2.09	0.52
1:5:313:A:H2'	1:5:314:U:C6	2.42	0.52
1:5:536:U:H2'	1:5:537:A:H5'	1.89	0.52
3:8:49:G:H2'	3:8:50:C:C6	2.44	0.52
9:F:191:VAL:HG12	9:F:192:GLY:N	2.24	0.52
9:F:23:ALA:O	9:F:26:VAL:HG22	2.09	0.52
11:H:103:ILE:HD11	11:H:134:ILE:CG2	2.38	0.52
13:J:171:VAL:HG13	13:J:172:LEU:N	2.24	0.52
16:N:184:LYS:N	16:N:186:GLY:H	2.03	0.52
17:O:127:LEU:HD22	21:S:156:VAL:HG13	1.91	0.52
18:P:78:VAL:HG12	18:P:80:LYS:H	1.74	0.52
1:5:2398:A:H2'	1:5:2399:A:H5'	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1134:G:O2'	1:5:2642:A:N3	2.31	0.52
1:5:3025:C:C2'	1:5:3026:G:H5'	2.40	0.52
4:A:53:GLY:O	4:A:192:LYS:HE3	2.09	0.52
5:B:300:ARG:HA	5:B:300:ARG:HH11	1.73	0.52
6:C:136:LEU:CD2	6:C:142:VAL:HG22	2.39	0.52
7:D:125:VAL:HG12	7:D:126:GLU:N	2.18	0.52
7:D:215:ASP:OD2	7:D:218:ARG:HB2	2.08	0.52
11:H:106:LYS:HE3	11:H:106:LYS:CA	2.36	0.52
11:H:116:ASN:OD1	11:H:119:GLY:HA2	2.08	0.52
16:N:66:VAL:O	16:N:127:TYR:HA	2.09	0.52
19:Q:132:PRO:HD2	19:Q:135:GLN:OE1	2.09	0.52
1:5:147:U:O4	10:G:183:LYS:HE2	2.10	0.52
1:5:1915:A:H2'	1:5:1916:U:H6	1.73	0.52
1:5:3042:U:O2'	1:5:3043:C:H5'	2.10	0.52
1:5:3375:A:O2'	1:5:3378:C:H5'	2.10	0.52
1:5:40:A:H2'	1:5:40:A:N3	2.24	0.52
1:5:837:A:H5''	1:5:838:G:OP2	2.09	0.52
3:8:148:G:H2'	3:8:149:A:C8	2.44	0.52
4:A:90:ALA:HB2	4:A:101:VAL:HG13	1.90	0.52
5:B:122:TRP:CZ3	5:B:127:LYS:HG2	2.43	0.52
6:C:92:ASN:HA	6:C:98:ARG:O	2.09	0.52
7:D:241:THR:O	7:D:245:GLU:HG3	2.08	0.52
11:H:164:ILE:HG23	11:H:165:CYS:SG	2.50	0.52
13:J:29:ARG:HA	13:J:32:ARG:HD2	1.91	0.52
17:O:102:LEU:HG	17:O:103:LYS:N	2.24	0.52
24:V:46:LEU:O	24:V:47:ASN:HB2	2.08	0.52
28:Z:26:VAL:HG23	28:Z:27:LYS:N	2.24	0.52
1:5:1640:G:O2'	1:5:1641:U:H5'	2.10	0.52
1:5:2312:A:OP1	1:5:2312:A:H4'	2.09	0.52
1:5:2778:G:C2'	1:5:2779:A:H5'	2.37	0.52
1:5:3159:C:H2'	1:5:3160:U:H6	1.73	0.52
1:5:818:C:H2'	1:5:818:C:O2	2.07	0.52
4:A:35:ALA:HA	10:G:36:ILE:HD13	1.91	0.52
5:B:43:LEU:HD12	5:B:43:LEU:N	2.24	0.52
6:C:71:VAL:HG13	6:C:76:ARG:NH1	2.24	0.52
7:D:68:THR:HG22	7:D:70:THR:HG22	1.91	0.52
8:E:52:VAL:HG11	8:E:65:ILE:HG21	1.92	0.52
10:G:78:PHE:CD2	10:G:179:ILE:HD13	2.44	0.52
16:N:104:GLU:HG2	16:N:160:GLU:HG2	1.90	0.52
18:P:102:ALA:HB1	18:P:112:LEU:HD11	1.90	0.52
19:Q:19:PRO:HD3	19:Q:53:PHE:HE1	1.72	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:R:139:VAL:O	20:R:143:ILE:HD13	2.09	0.52
23:U:58:GLU:HB2	23:U:63:VAL:HG13	1.92	0.52
24:V:128:ARG:HB3	24:V:128:ARG:NH2	2.25	0.52
28:Z:68:ILE:O	28:Z:115:LYS:HE2	2.10	0.52
1:5:2943:G:O2'	5:B:254:ALA:HB1	2.09	0.52
1:5:578:A:H2'	6:C:334:PHE:CD2	2.44	0.52
5:B:14:LEU:O	5:B:17:LEU:HD22	2.09	0.52
8:E:56:LYS:HB2	8:E:98:VAL:CG1	2.39	0.52
17:O:6:VAL:HG12	17:O:7:VAL:N	2.25	0.52
19:Q:124:LEU:O	19:Q:127:LEU:HB3	2.09	0.52
1:5:1276:U:H2'	1:5:1277:C:O4'	2.09	0.52
1:5:2186:U:O2'	1:5:2313:A:N3	2.39	0.52
1:5:2665:U:H4'	1:5:2666:C:OP1	2.10	0.52
1:5:3150:A:C2	1:5:3151:U:H1'	2.44	0.52
1:5:419:G:O3'	1:5:420:G:H5"	2.10	0.52
1:5:537:A:C2	1:5:538:G:H1'	2.45	0.52
1:5:546:C:H4'	1:5:547:G:O5'	2.09	0.52
8:E:64:LEU:HD13	8:E:65:ILE:N	2.24	0.52
9:F:37:ASN:O	9:F:41:ARG:HB2	2.09	0.52
10:G:47:SER:O	10:G:50:VAL:HG12	2.09	0.52
1:5:2828:G:O2'	12:I:4:ARG:NH2	2.42	0.52
14:L:17:HIS:O	14:L:19:GLN:N	2.43	0.52
15:M:20:VAL:HG13	15:M:68:LEU:O	2.09	0.52
16:N:165:THR:O	16:N:169:LYS:HG3	2.09	0.52
17:O:16:VAL:HG12	17:O:17:GLY:N	2.23	0.52
1:5:17:G:H2'	1:5:18:G:O4'	2.10	0.52
1:5:1818:U:H2'	1:5:1819:U:O4'	2.10	0.52
1:5:2398:A:C2'	1:5:2399:A:H5'	2.40	0.52
1:5:3218:A:H5"	1:5:3219:G:C4	2.45	0.52
4:A:105:GLY:HA3	4:A:160:SER:HB3	1.90	0.52
6:C:222:VAL:HG23	6:C:223:PRO:HD2	1.92	0.52
8:E:60:ASP:O	8:E:61:ASN:HB2	2.09	0.52
8:E:52:VAL:HG11	8:E:65:ILE:CG2	2.40	0.52
9:F:161:VAL:HG13	9:F:162:PRO:HD2	1.91	0.52
9:F:45:LEU:HD13	9:F:45:LEU:C	2.29	0.52
16:N:185:ALA:HB3	16:N:190:THR:CG2	2.40	0.52
22:T:19:PHE:CE2	22:T:20:ARG:HD3	2.45	0.52
26:X:63:ILE:C	26:X:63:ILE:HD13	2.30	0.52
1:5:1819:U:C2'	1:5:1820:U:H5'	2.39	0.52
1:5:2222:A:H8	1:5:2222:A:O5'	1.93	0.52
2:7:49:G:H4'	2:7:50:U:O5'	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:8:81:U:O2'	3:8:82:U:OP2	2.27	0.52
5:B:343:TYR:HD1	5:B:343:TYR:H	1.57	0.52
6:C:28:ALA:HB1	6:C:29:PRO:HD2	1.91	0.52
7:D:220:SER:O	7:D:224:LYS:HB2	2.09	0.52
10:G:166:LEU:HB2	10:G:167:PRO:HD3	1.92	0.52
10:G:248:LYS:HZ1	10:G:248:LYS:HA	1.74	0.52
13:J:112:LEU:HD23	13:J:112:LEU:H	1.75	0.52
16:N:64:VAL:CG2	16:N:65:ARG:N	2.73	0.52
26:X:64:GLU:OE1	26:X:85:GLN:HG2	2.10	0.52
1:5:1103:A:H3'	1:5:1104:G:H5'	1.91	0.52
1:5:1348:U:C3'	1:5:1348:U:C6	2.91	0.52
1:5:1809:A:H2'	1:5:1810:A:O4'	2.10	0.52
1:5:3237:U:C3'	1:5:3238:G:H5''	2.39	0.52
5:B:286:GLY:HA3	5:B:321:PHE:CE1	2.45	0.52
6:C:361:HIS:CG	6:C:362:ASP:N	2.78	0.52
8:E:39:VAL:C	8:E:40:LEU:HD23	2.31	0.52
9:F:41:ARG:NH1	9:F:41:ARG:HG3	2.11	0.52
13:J:51:ARG:HB2	13:J:52:TYR:CD1	2.45	0.52
19:Q:100:THR:CG2	19:Q:120:GLU:HB3	2.36	0.52
23:U:77:LYS:HE2	23:U:81:LYS:HE2	1.92	0.52
26:X:83:VAL:HG22	26:X:123:TYR:HD1	1.75	0.52
26:X:64:GLU:O	26:X:65:GLN:HB2	2.10	0.52
27:Y:97:ILE:CG2	27:Y:99:LEU:HD21	2.39	0.52
1:5:1066:G:H2'	1:5:1067:U:C6	2.45	0.52
1:5:1816:A:O2'	1:5:1817:G:P	2.68	0.52
1:5:2248:C:C2'	1:5:2249:G:OP2	2.58	0.52
1:5:3009:G:C2'	1:5:3010:U:H5'	2.40	0.52
8:E:52:VAL:HG13	8:E:65:ILE:HG23	1.92	0.52
9:F:156:ILE:HD12	9:F:161:VAL:HG21	1.92	0.52
9:F:77:VAL:HG21	22:T:139:ARG:HD3	1.92	0.52
19:Q:170:ARG:HA	19:Q:174:ARG:HD2	1.92	0.52
27:Y:74:TYR:CE1	27:Y:77:LYS:HD2	2.44	0.52
28:Z:121:ARG:CG	28:Z:121:ARG:NH1	2.72	0.52
3:8:83:C:H41	27:Y:113:LYS:NZ	2.08	0.51
8:E:154:LEU:HD12	15:M:119:GLN:HG2	1.92	0.51
9:F:175:LYS:HD3	9:F:176:TYR:CE2	2.45	0.51
10:G:148:ALA:HB3	10:G:175:VAL:HG11	1.91	0.51
17:O:77:SER:HB3	17:O:106:GLU:CD	2.30	0.51
1:5:1315:U:OP1	17:O:18:ARG:NH1	2.42	0.51
20:R:11:ALA:O	20:R:15:VAL:HG23	2.10	0.51
21:S:48:LEU:N	21:S:48:LEU:HD23	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1289:G:O2'	1:5:1290:A:H5'	2.09	0.51
1:5:1721:U:OP2	20:R:124:TYR:OH	2.21	0.51
1:5:2416:U:O2'	1:5:2966:G:H1'	2.10	0.51
1:5:284:A:C5'	1:5:285:A:H5'	2.39	0.51
1:5:3351:U:H3'	1:5:3351:U:O2	2.10	0.51
1:5:885:U:H2'	1:5:886:C:H6	1.76	0.51
6:C:13:GLY:O	6:C:14:GLU:HG3	2.10	0.51
7:D:80:SER:O	7:D:92:LEU:HD22	2.11	0.51
10:G:133:LYS:HB2	10:G:199:ALA:O	2.10	0.51
13:J:25:GLU:HG3	13:J:63:GLU:CD	2.30	0.51
22:T:28:SER:O	22:T:32:LYS:HG3	2.10	0.51
25:W:9:SER:HB3	25:W:51:TRP:CZ3	2.45	0.51
27:Y:43:TYR:HA	27:Y:125:LYS:HB2	1.91	0.51
1:5:1073:U:H2'	1:5:1074:U:C6	2.45	0.51
1:5:2093:A:H3'	1:5:2093:A:N3	2.26	0.51
1:5:2101:C:HO2'	1:5:2102:U:P	2.33	0.51
1:5:2198:A:C2	1:5:2199:G:C8	2.99	0.51
1:5:2193:U:O2	1:5:2275:A:H1'	2.11	0.51
1:5:712:G:H2'	1:5:713:U:H6	1.74	0.51
1:5:787:G:OP1	19:Q:148:GLU:HB2	2.10	0.51
1:5:816:A:H1'	1:5:819:U:O4	2.11	0.51
2:7:117:A:O4'	7:D:74:VAL:HG11	2.09	0.51
9:F:33:ARG:O	9:F:37:ASN:ND2	2.43	0.51
10:G:91:PHE:O	10:G:95:ASN:HB2	2.11	0.51
17:O:25:LYS:O	17:O:29:ASN:ND2	2.43	0.51
1:5:2724:U:H4'	22:T:54:HIS:CD2	2.46	0.51
26:X:73:MET:HA	26:X:73:MET:HE2	1.92	0.51
28:Z:9:LYS:HD2	28:Z:83:THR:O	2.10	0.51
1:5:1012:G:O2'	1:5:1013:G:H5'	2.11	0.51
1:5:1014:U:C2'	1:5:1015:U:H5'	2.40	0.51
1:5:1479:U:C3'	1:5:1480:G:H5'	2.40	0.51
1:5:2283:G:H4'	1:5:2308:C:H41	1.74	0.51
1:5:2636:A:H5"	1:5:2637:A:H5"	1.91	0.51
1:5:579:G:O2'	1:5:580:C:H5'	2.09	0.51
1:5:712:G:H2'	1:5:713:U:C6	2.45	0.51
1:5:89:A:OP2	19:Q:171:LYS:HD2	2.11	0.51
5:B:115:LYS:CE	5:B:129:ALA:HB3	2.40	0.51
5:B:369:ARG:NH1	5:B:369:ARG:CG	2.69	0.51
9:F:125:GLU:OE1	9:F:128:LYS:HE3	2.11	0.51
9:F:179:LEU:N	9:F:179:LEU:HD22	2.25	0.51
12:I:48:LEU:C	12:I:48:LEU:HD13	2.31	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:79:ILE:HG21	17:O:138:LEU:HD11	1.91	0.51
1:5:1603:A:OP1	20:R:9:ARG:NH2	2.44	0.51
23:U:51:GLY:O	23:U:52:ASN:HB2	2.11	0.51
1:5:3051:U:H1'	24:V:92:PHE:CE1	2.46	0.51
1:5:1551:C:H2'	1:5:1552:G:O4'	2.11	0.51
1:5:2572:C:H2'	1:5:2572:C:O2	2.09	0.51
1:5:3228:C:H4'	1:5:3229:G:O5'	2.10	0.51
1:5:3287:U:H2'	1:5:3288:G:C5'	2.40	0.51
6:C:128:ALA:HB2	6:C:244:LEU:HD22	1.92	0.51
2:7:121:U:H5''	7:D:265:TYR:HE1	1.74	0.51
10:G:79:GLN:O	10:G:79:GLN:HG2	2.09	0.51
13:J:89:TYR:O	13:J:169:ALA:HB1	2.10	0.51
1:5:44:U:H5''	16:N:85:THR:CG2	2.39	0.51
18:P:148:LEU:HD12	18:P:149:VAL:N	2.25	0.51
24:V:129:VAL:HG12	24:V:130:ALA:N	2.25	0.51
28:Z:54:THR:H	28:Z:57:HIS:HD2	1.57	0.51
1:5:1913:A:N3	1:5:2120:A:H2'	2.25	0.51
1:5:421:G:N3	1:5:421:G:H3'	2.25	0.51
5:B:78:VAL:HG11	5:B:317:ILE:CD1	2.40	0.51
6:C:317:PRO:HA	6:C:323:VAL:CG2	2.41	0.51
1:5:73:C:C4	12:I:15:LYS:HE2	92.48	0.51
16:N:73:ARG:HB3	16:N:89:VAL:HG13	1.91	0.51
1:5:150:A:H2'	1:5:151:A:H5'	1.93	0.51
1:5:3261:C:C2'	1:5:3262:U:H5'	2.41	0.51
1:5:3317:U:H4'	1:5:3318:G:O5'	2.10	0.51
1:5:656:A:H2'	1:5:657:A:C8	2.45	0.51
5:B:252:ILE:HG21	5:B:260:VAL:HG22	1.91	0.51
7:D:62:CYS:C	7:D:63:GLN:HG3	2.31	0.51
14:L:45:LYS:HG3	14:L:46:ILE:CD1	2.39	0.51
16:N:145:ASP:OD2	16:N:148:TYR:HD2	1.94	0.51
18:P:102:ALA:CB	18:P:112:LEU:HD11	2.41	0.51
20:R:106:LEU:HD21	20:R:123:LEU:HB2	1.93	0.51
21:S:110:MET:HB3	21:S:121:ILE:HD11	1.92	0.51
24:V:26:ALA:O	24:V:115:THR:HG23	2.11	0.51
1:5:2725:U:H5''	1:5:2726:C:OP2	2.11	0.51
1:5:845:G:N2	1:5:848:A:OP2	2.43	0.51
4:A:130:SER:HA	4:A:169:ILE:CG2	2.41	0.51
5:B:144:ILE:HG22	5:B:148:LEU:CD2	2.41	0.51
13:J:92:ARG:CG	13:J:92:ARG:NH1	2.72	0.51
20:R:23:TRP:CH2	20:R:25:ASP:HA	2.46	0.51
24:V:39:VAL:HG13	24:V:58:VAL:HG12	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1275:C:C2'	1:5:1276:U:H5'	2.41	0.51
1:5:171:G:H5'	1:5:172:G:OP2	2.10	0.51
1:5:422:A:N1	1:5:2362:C:O2'	2.42	0.51
4:A:44:ILE:HG23	4:A:87:PHE:CE1	2.46	0.51
9:F:62:ILE:O	9:F:66:LYS:HG3	2.11	0.51
12:I:21:ARG:NH1	12:I:22:TYR:CE1	2.79	0.51
2:7:39:C:H4'	13:J:44:THR:HG23	1.93	0.51
15:M:135:LEU:O	15:M:136:ALA:HB3	2.11	0.51
18:P:174:GLY:O	18:P:177:ALA:HB3	2.10	0.51
28:Z:46:ILE:HD11	28:Z:49:TYR:CG	2.45	0.51
1:5:1364:C:OP1	9:F:110:ARG:NH2	2.38	0.51
1:5:2538:U:C3'	1:5:2539:C:H5''	2.40	0.51
1:5:2631:U:O2'	1:5:2632:G:H5'	2.11	0.51
1:5:3037:U:H5''	5:B:348:ARG:NH1	2.26	0.51
1:5:3167:A:HO2'	1:5:3168:A:P	2.33	0.51
1:5:3357:U:HO2'	1:5:3358:U:P	2.34	0.51
2:7:46:A:OP1	7:D:158:ARG:HD3	2.11	0.51
5:B:352:GLU:HG2	5:B:353:GLU:N	2.25	0.51
7:D:51:LEU:HD13	7:D:146:LEU:CD2	2.40	0.51
7:D:78:ALA:HB3	7:D:105:ILE:CG2	2.41	0.51
13:J:28:ASP:O	13:J:31:THR:HG23	2.11	0.51
17:O:109:PRO:HB2	17:O:110:PRO:HD3	1.93	0.51
17:O:188:SER:O	17:O:192:LYS:HG2	2.11	0.51
17:O:193:GLN:O	17:O:197:LEU:HD12	2.11	0.51
27:Y:74:TYR:CD1	27:Y:77:LYS:HD2	2.45	0.51
10:G:27:THR:HG22	28:Z:53:VAL:O	2.11	0.51
1:5:1208:U:C6	1:5:3115:C:N4	2.79	0.50
6:C:219:LEU:HD22	6:C:222:VAL:HG11	1.93	0.50
6:C:361:HIS:CG	6:C:362:ASP:H	2.30	0.50
9:F:41:ARG:HG2	9:F:41:ARG:HH11	1.73	0.50
9:F:84:VAL:HG23	9:F:85:PHE:N	2.25	0.50
10:G:150:LEU:HD13	10:G:151:VAL:N	2.26	0.50
10:G:158:ASP:OD1	10:G:159:PRO:HA	2.11	0.50
11:H:87:LYS:NZ	11:H:191:LEU:CD2	2.74	0.50
13:J:23:VAL:HG13	13:J:29:ARG:HD3	1.93	0.50
15:M:113:THR:HG22	15:M:114:ASP:N	2.27	0.50
1:5:1047:A:N3	1:5:2633:U:O2'	2.43	0.50
1:5:1051:U:C5	1:5:1052:U:C6	2.99	0.50
1:5:1582:C:H4'	1:5:1583:A:OP1	2.11	0.50
4:A:77:ILE:CG2	4:A:169:ILE:HG13	2.41	0.50
5:B:90:VAL:HG13	5:B:103:THR:O	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:217:ALA:C	5:B:218:ILE:HD12	2.31	0.50
6:C:205:PRO:HG2	6:C:225:VAL:HG22	1.93	0.50
6:C:311:HIS:CD2	9:F:162:PRO:HG3	2.46	0.50
6:C:330:TYR:HA	6:C:333:VAL:HG13	1.91	0.50
8:E:139:LYS:HB3	8:E:143:LYS:HE3	1.91	0.50
10:G:106:LYS:O	10:G:110:THR:HG23	2.12	0.50
13:J:110:ILE:HG22	13:J:114:ILE:O	2.12	0.50
15:M:53:VAL:HG23	15:M:54:PRO:HD2	1.92	0.50
17:O:128:ARG:CG	17:O:128:ARG:HH11	2.24	0.50
17:O:39:GLU:OE1	17:O:39:GLU:N	2.33	0.50
1:5:2295:A:C2	24:V:37:ILE:HD12	2.46	0.50
1:5:1066:G:H2'	1:5:1067:U:H6	1.76	0.50
1:5:1152:G:N2	1:5:1200:A:H61	2.08	0.50
1:5:137:G:H2'	1:5:138:U:H6	1.75	0.50
1:5:1430:U:H2'	4:A:9:ARG:NH2	66.41	0.50
1:5:1819:U:HO2'	1:5:1820:U:P	2.29	0.50
1:5:2223:A:OP2	1:5:2223:A:H8	1.94	0.50
1:5:2935:U:H2'	1:5:2935:U:O2	2.12	0.50
1:5:708:G:H5'	1:5:709:A:OP2	2.11	0.50
2:7:99:G:OP1	21:S:53:LYS:HD3	2.12	0.50
4:A:104:LEU:HD21	4:A:116:VAL:CG2	2.41	0.50
7:D:177:GLU:OE1	7:D:177:GLU:N	2.45	0.50
9:F:106:LEU:O	9:F:107:ARG:HB2	2.11	0.50
10:G:238:LEU:HD12	10:G:238:LEU:N	2.24	0.50
11:H:84:LYS:HE2	11:H:189:GLU:HG3	1.92	0.50
12:I:86:HIS:HB3	12:I:139:ARG:CG	2.42	0.50
13:J:59:ILE:O	13:J:59:ILE:HG13	2.10	0.50
16:N:94:TYR:OH	16:N:96:ARG:HD3	2.11	0.50
1:5:1575:A:C3'	1:5:1576:G:H5''	2.39	0.50
1:5:1819:U:O2'	1:5:1820:U:C5'	2.60	0.50
1:5:2219:A:O2'	1:5:2220:A:H5'	2.12	0.50
1:5:2312:A:O2'	1:5:2315:G:C1'	2.59	0.50
1:5:2599:U:H2'	1:5:2600:C:H6	1.77	0.50
1:5:3000:A:H2'	1:5:3001:C:H6	1.77	0.50
4:A:150:LEU:HB3	4:A:151:PRO:CD	2.41	0.50
4:A:55:GLY:O	4:A:56:ALA:HB3	2.11	0.50
5:B:43:LEU:HD11	5:B:194:TRP:CH2	2.47	0.50
6:C:118:LYS:O	6:C:122:THR:HG22	2.10	0.50
6:C:206:LEU:HB3	6:C:248:VAL:HG22	1.93	0.50
7:D:202:GLY:O	7:D:206:GLN:HG3	2.11	0.50
12:I:176:LEU:N	12:I:176:LEU:HD23	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:200:LEU:HD12	12:I:213:PHE:CD2	2.47	0.50
12:I:55:ASN:HD21	12:I:164:LYS:HE3	1.75	0.50
17:O:77:SER:HB3	17:O:106:GLU:OE2	2.11	0.50
1:5:1461:A:H2'	1:5:1462:A:H8	1.77	0.50
1:5:2748:A:H4'	7:D:145:PHE:CD2	2.46	0.50
2:7:116:C:O2'	7:D:74:VAL:HG12	2.12	0.50
6:C:187:LEU:HD11	6:C:193:LYS:HD3	1.92	0.50
7:D:88:ILE:HD11	7:D:243:ALA:CB	2.41	0.50
9:F:84:VAL:HG13	9:F:119:VAL:HG22	1.93	0.50
10:G:190:VAL:HG12	10:G:190:VAL:O	2.11	0.50
10:G:94:PHE:HB3	10:G:189:LEU:HD11	1.93	0.50
18:P:67:ILE:N	18:P:67:ILE:HD13	2.26	0.50
25:W:20:LEU:CD2	25:W:28:ILE:HG23	2.35	0.50
1:5:1009:A:H2'	1:5:1010:G:O4'	2.12	0.50
1:5:1491:A:O2'	1:5:1492:G:H5'	2.12	0.50
5:B:78:VAL:HG11	5:B:317:ILE:HD13	1.94	0.50
10:G:172:LYS:HZ3	10:G:172:LYS:HB2	1.71	0.50
14:L:76:THR:HG21	14:L:103:ASN:OD1	2.11	0.50
14:L:152:THR:O	14:L:153:ASP:HB2	2.11	0.50
1:5:1349:G:O2'	6:C:291:ASN:ND2	2.44	0.50
1:5:1553:U:H6	1:5:1553:U:C5'	2.24	0.50
1:5:2312:A:HO2'	1:5:2315:G:HO2'	1.26	0.50
1:5:252:U:H4'	1:5:253:A:C5'	2.41	0.50
1:5:3237:U:H2'	1:5:3238:G:O4'	2.12	0.50
7:D:281:GLU:O	7:D:285:ARG:HG3	2.12	0.50
8:E:42:LEU:HD23	8:E:42:LEU:N	2.25	0.50
10:G:68:ARG:O	10:G:69:LEU:HB2	2.12	0.50
16:N:121:VAL:HG11	16:N:131:GLU:HG3	1.93	0.50
10:G:44:ARG:O	26:X:28:THR:HG22	2.12	0.50
1:5:1560:G:H2'	1:5:1561:G:H8	1.75	0.50
1:5:1987:Y5P:H2'	1:5:1988:Y5P:H6	1.94	0.50
1:5:1953:G:O6	1:5:2094:C:N4	2.44	0.50
1:5:2209:U:H4'	1:5:2210:G:OP1	2.12	0.50
1:5:2308:C:H2'	1:5:2309:A:N7	2.26	0.50
1:5:2433:U:OP2	1:5:2434:U:O2'	2.25	0.50
1:5:2526:C:H2'	1:5:2527:G:C8	2.47	0.50
1:5:2730:G:H2'	1:5:2731:U:O4'	2.11	0.50
1:5:546:C:H5'	1:5:547:G:OP1	2.12	0.50
8:E:130:ILE:HD12	8:E:135:VAL:HG21	1.92	0.50
8:E:48:ARG:O	8:E:48:ARG:HG3	2.12	0.50
12:I:99:ILE:HD12	12:I:99:ILE:O	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:M:21:VAL:HG12	15:M:65:LEU:HD23	1.94	0.50
1:5:1915:A:H5''	20:R:84:THR:HG22	1.94	0.50
21:S:31:ALA:HB1	21:S:36:ILE:HB	1.94	0.50
5:B:73:VAL:CG2	24:V:86:ARG:HH21	2.24	0.50
26:X:131:ASP:HB3	26:X:134:ASP:HB2	1.94	0.50
28:Z:121:ARG:HH11	28:Z:121:ARG:HG3	1.77	0.50
1:5:1079:A:O2'	1:5:1080:A:H5'	2.12	0.50
1:5:1637:A:OP2	28:Z:73:LYS:NZ	2.45	0.50
1:5:2590:A:O2'	1:5:2591:A:H5'	2.11	0.50
3:8:5:U:H2'	3:8:6:U:H6	1.76	0.50
4:A:44:ILE:HG23	4:A:87:PHE:CD1	2.46	0.50
5:B:285:VAL:HG22	5:B:322:ILE:CD1	2.42	0.50
9:F:179:LEU:HD13	9:F:179:LEU:H	1.76	0.50
2:7:28:C:H5''	13:J:137:ARG:HG2	1.94	0.50
16:N:154:PRO:O	16:N:157:LYS:HG3	2.12	0.50
1:5:1765:U:HO2'	20:R:43:LYS:HZ1	1.57	0.50
21:S:4:PHE:CD1	21:S:4:PHE:N	2.78	0.50
24:V:83:LYS:HD2	24:V:84:SER:N	2.27	0.50
27:Y:23:PRO:HD2	27:Y:26:GLN:CD	2.32	0.50
1:5:1462:A:O2'	1:5:1463:U:H5'	2.11	0.49
1:5:177:U:H3	1:5:241:G:H1	1.59	0.49
1:5:2428:U:H2'	1:5:2429:G:C8	2.47	0.49
1:5:2407:C:H1'	1:5:2818:U:O2	2.11	0.49
1:5:2909:U:H2'	1:5:2910:A:O4'	2.11	0.49
1:5:687:U:O2'	1:5:688:G:H5'	2.12	0.49
4:A:113:VAL:HG22	4:A:134:VAL:HG22	1.94	0.49
4:A:104:LEU:HD21	4:A:116:VAL:HG21	1.93	0.49
8:E:46:ARG:NH1	8:E:46:ARG:CG	2.63	0.49
10:G:225:LYS:O	10:G:229:VAL:HG23	2.13	0.49
13:J:112:LEU:N	13:J:112:LEU:HD23	2.26	0.49
13:J:9:MET:O	13:J:11:ASP:N	2.45	0.49
14:L:71:ALA:CA	14:L:147:ILE:HD11	2.42	0.49
18:P:41:LEU:HD21	18:P:95:LEU:HD22	1.94	0.49
1:5:1212:A:H5'	21:S:113:ARG:HE	1.76	0.49
27:Y:45:ILE:HD13	27:Y:48:LEU:HD21	1.93	0.49
1:5:2268:U:H2'	1:5:2269:U:C6	2.47	0.49
1:5:2418:G:H4'	1:5:2419:A:OP1	2.12	0.49
1:5:2438:A:C2'	1:5:2439:A:OP1	2.59	0.49
1:5:3257:C:H2'	1:5:3258:U:O4'	2.12	0.49
1:5:595:G:N1	1:5:609:G:H5''	2.27	0.49
4:A:47:GLN:HE21	4:A:60:LYS:HD2	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:3:TYR:HD1	11:H:3:TYR:H	1.58	0.49
12:I:66:GLU:HG2	12:I:66:GLU:O	4.24	0.49
14:L:58:VAL:CG1	14:L:59:ARG:N	2.75	0.49
1:5:562:C:OP2	15:M:77:ARG:NH1	2.45	0.49
23:U:29:ASP:HB3	23:U:32:SER:HB3	1.94	0.49
1:5:2530:G:C3'	1:5:2531:C:H5''	2.42	0.49
1:5:291:C:OP1	16:N:68:ARG:HG3	2.12	0.49
1:5:2954:U:H1'	1:5:2955:U:C5'	2.40	0.49
1:5:3087:A:H2'	1:5:3088:G:O4'	2.12	0.49
1:5:3121:U:H4'	1:5:3122:A:OP1	2.13	0.49
1:5:598:A:H2'	1:5:599:C:C6	2.47	0.49
4:A:114:SER:CB	4:A:169:ILE:HD13	2.40	0.49
4:A:46:LYS:HA	4:A:46:LYS:HZ3	1.76	0.49
5:B:312:VAL:HG12	5:B:313:HIS:ND1	2.28	0.49
1:5:3243:A:H4'	5:B:95:THR:HG22	1.94	0.49
6:C:207:VAL:HB	6:C:227:THR:HG22	1.95	0.49
8:E:90:LYS:HB3	8:E:90:LYS:NZ	4.76	0.49
9:F:33:ARG:CG	9:F:33:ARG:NH1	2.76	0.49
11:H:117:PHE:CE2	11:H:118:LEU:HD12	2.47	0.49
14:L:140:SER:OG	14:L:143:ALA:HB3	2.12	0.49
14:L:36:ARG:HH11	14:L:36:ARG:HA	4.55	0.49
19:Q:83:VAL:O	19:Q:103:ALA:HA	2.12	0.49
20:R:51:VAL:HG12	20:R:52:LYS:N	2.27	0.49
20:R:81:ARG:CG	20:R:88:ARG:HH12	2.25	0.49
21:S:46:GLN:HG2	21:S:51:VAL:O	2.12	0.49
1:5:1223:A:C8	1:5:1286:A:N1	2.80	0.49
1:5:1272:C:C2'	1:5:1273:A:H5'	2.43	0.49
1:5:230:U:H2'	1:5:231:G:O4'	2.13	0.49
1:5:2948:C:O2'	5:B:242:THR:HG22	2.12	0.49
3:8:117:C:H2'	3:8:118:C:H6	1.76	0.49
6:C:73:ARG:NH1	6:C:73:ARG:HG3	2.28	0.49
11:H:8:GLN:HE21	11:H:69:ARG:HG2	1.76	0.49
14:L:149:GLN:HE21	14:L:149:GLN:N	2.09	0.49
19:Q:124:LEU:HD23	19:Q:124:LEU:N	2.26	0.49
21:S:36:ILE:O	21:S:40:ARG:HG2	2.11	0.49
22:T:147:VAL:HG13	22:T:148:PRO:HD2	1.94	0.49
25:W:47:ARG:NH1	25:W:58:HIS:CD2	2.80	0.49
26:X:38:LEU:HD23	26:X:38:LEU:C	2.32	0.49
28:Z:129:TRP:O	28:Z:132:SER:N	2.45	0.49
1:5:1301:A:OP1	1:5:1301:A:H8	1.96	0.49
1:5:181:U:H2'	1:5:182:U:O4'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2572:C:C2'	1:5:2572:C:O2	2.60	0.49
1:5:68:C:OP2	1:5:301:G:N2	2.45	0.49
1:5:3051:U:O2'	1:5:3052:G:H5'	2.13	0.49
1:5:3167:A:O2'	1:5:3168:A:OP1	2.27	0.49
1:5:3341:U:H5''	1:5:3342:A:OP2	2.12	0.49
6:C:191:LYS:HG3	6:C:194:TYR:OH	2.13	0.49
7:D:243:ALA:O	7:D:247:ILE:HG13	2.13	0.49
12:I:50:VAL:HG22	12:I:167:LEU:HD13	1.94	0.49
18:P:34:GLN:OE1	18:P:34:GLN:HA	2.11	0.49
21:S:47:LYS:C	21:S:48:LEU:HD23	2.33	0.49
27:Y:74:TYR:HD1	27:Y:77:LYS:HB2	1.77	0.49
1:5:1251:A:H2'	1:5:1252:A:O4'	2.13	0.49
1:5:2232:A:H2'	1:5:2233:A:C8	2.47	0.49
1:5:252:U:C4'	1:5:253:A:H5'	2.42	0.49
1:5:3009:G:O2'	1:5:3010:U:H5'	2.13	0.49
7:D:25:GLU:O	13:J:144:CYS:HA	2.12	0.49
10:G:161:GLU:HA	10:G:164:VAL:HG22	1.94	0.49
17:O:113:ASP:OD1	17:O:114:LYS:N	2.44	0.49
27:Y:57:LEU:HA	27:Y:67:GLU:HG2	1.93	0.49
1:5:1471:U:H2'	1:5:1472:U:C6	2.48	0.49
1:5:1949:G:H2'	1:5:1950:U:H6	1.77	0.49
1:5:2770:G:C2'	1:5:2771:U:H5'	2.42	0.49
1:5:63:A:OP1	16:N:172:ARG:NH2	2.45	0.49
6:C:77:VAL:HG12	6:C:78:GLY:O	2.13	0.49
10:G:150:LEU:HB3	10:G:200:LEU:HD11	1.94	0.49
10:G:97:TYR:OH	10:G:207:ASP:OD2	2.27	0.49
12:I:49:CYS:SG	12:I:50:VAL:N	2.85	0.49
14:L:14:PHE:HB3	14:L:18:TRP:CD1	2.47	0.49
10:G:72:PRO:HG2	16:N:18:VAL:HA	1.95	0.49
20:R:136:ARG:O	20:R:140:GLU:HG3	2.13	0.49
23:U:19:VAL:HG12	23:U:105:LEU:HD12	1.95	0.49
1:5:2748:A:H1'	7:D:36:LEU:HD23	1.94	0.49
1:5:3000:A:H2'	1:5:3001:C:C6	2.47	0.49
1:5:3159:C:H2'	1:5:3160:U:C6	2.48	0.49
1:5:435:C:H2'	1:5:436:A:H8	1.77	0.49
1:5:992:A:O2'	1:5:993:G:H5'	2.11	0.49
2:7:24:A:H2'	2:7:25:G:O4'	2.13	0.49
2:7:45:A:H2'	2:7:46:A:O4'	2.12	0.49
2:7:94:C:H2'	2:7:95:A:H8	1.76	0.49
5:B:190:GLU:O	5:B:193:ASP:HB2	2.13	0.49
6:C:157:GLU:O	6:C:213:ASN:HB2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:J:23:VAL:HG12	13:J:24:GLY:N	2.28	0.49
14:L:93:ILE:HG22	14:L:94:GLY:H	1.77	0.49
15:M:50:LYS:HD2	15:M:85:TRP:NE1	2.28	0.49
11:H:3:TYR:HA	21:S:142:GLN:OE1	2.13	0.49
24:V:54:LEU:HD21	24:V:119:GLY:HA3	1.94	0.49
1:5:1495:U:O2	1:5:1495:U:H2'	2.11	0.49
1:5:2433:U:H5''	1:5:2434:U:H2'	1.95	0.49
1:5:2561:A:O2'	1:5:2562:A:H8	1.96	0.49
1:5:3045:G:H2'	1:5:3046:A:O4'	2.13	0.49
1:5:55:G:H2'	1:5:56:G:H5'	1.94	0.49
3:8:143:U:H2'	3:8:144:G:O4'	2.12	0.49
6:C:301:PRO:O	6:C:302:ALA:HB2	2.12	0.49
10:G:57:ARG:HG2	10:G:61:GLN:OE1	2.12	0.49
11:H:83:THR:OG1	11:H:84:LYS:N	2.46	0.49
12:I:174:THR:OG1	12:I:175:ASN:N	2.41	0.49
12:I:177:ASP:OD1	12:I:177:ASP:N	2.46	0.49
13:J:21:ILE:CD1	13:J:37:LEU:HD21	2.42	0.49
13:J:23:VAL:HG11	13:J:29:ARG:CB	2.42	0.49
16:N:27:VAL:HB	16:N:122:ASN:HD21	1.78	0.49
20:R:20:ARG:NH1	20:R:21:LYS:NZ	2.60	0.49
22:T:17:ARG:NH1	22:T:17:ARG:CG	2.61	0.49
23:U:56:VAL:HG22	23:U:65:VAL:HG22	1.93	0.49
1:5:1349:G:C8	1:5:1349:G:C3'	2.94	0.49
1:5:1532:C:H2'	1:5:1533:U:C6	2.48	0.49
1:5:1621:A:H2'	1:5:1622:U:H6	1.76	0.49
1:5:1630:U:OP1	28:Z:67:LYS:NZ	2.34	0.49
1:5:2276:G:O6	1:5:2311:G:N3	2.46	0.49
1:5:251:G:H1'	1:5:253:A:C6	2.47	0.49
1:5:2556:C:O2'	1:5:2557:A:H5'	2.13	0.49
1:5:2606:G:H4'	1:5:2607:G:C8	2.48	0.49
1:5:1901:A:O2'	1:5:2918:G:OP1	2.23	0.49
1:5:3164:C:O2'	1:5:3165:A:H8	1.96	0.49
3:8:28:C:O2'	3:8:29:U:H5'	2.12	0.49
4:A:15:ILE:HG23	4:A:194:ASN:HD22	1.77	0.49
5:B:187:SER:O	5:B:190:GLU:N	2.36	0.49
5:B:46:PHE:C	5:B:47:LEU:HD12	2.33	0.49
6:C:311:HIS:CE1	6:C:314:LYS:HA	2.48	0.49
1:5:2748:A:C2	7:D:35:ARG:HB3	2.48	0.49
12:I:177:ASP:C	12:I:179:PRO:HD2	2.34	0.49
21:S:26:ARG:HD3	22:T:150:THR:CG2	2.41	0.49
22:T:49:GLN:NE2	22:T:49:GLN:H	2.10	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:V:11:PHE:CD2	24:V:88:ARG:NH1	2.81	0.49
1:5:2609:A:C3'	1:5:2610:G:H5''	2.43	0.48
1:5:3036:G:C2'	1:5:3037:U:H5'	2.43	0.48
1:5:435:C:H2'	1:5:436:A:C8	2.48	0.48
1:5:607:A:H2'	1:5:607:A:N3	2.28	0.48
3:8:155:A:H3'	3:8:156:U:H5''	1.95	0.48
12:I:191:LYS:O	12:I:197:VAL:HG22	2.13	0.48
14:L:53:LEU:HD22	14:L:94:GLY:O	2.13	0.48
26:X:92:LYS:HE2	26:X:110:VAL:O	2.13	0.48
26:X:83:VAL:HG22	26:X:123:TYR:CD1	2.47	0.48
1:5:1355:A:H4'	1:5:1356:U:O5'	2.13	0.48
1:5:241:G:H2'	1:5:242:C:C6	2.48	0.48
1:5:2998:U:H2'	1:5:2999:U:O4'	2.13	0.48
1:5:3173:G:H2'	1:5:3173:G:N3	2.28	0.48
2:7:16:U:H2'	2:7:17:A:H8	1.78	0.48
8:E:112:UNK:HB2	8:E:115:UNK:HB1	1.94	0.48
13:J:149:GLY:O	13:J:153:LYS:HB2	2.13	0.48
14:L:59:ARG:HE	14:L:69:VAL:HG23	1.78	0.48
22:T:128:LEU:H	22:T:128:LEU:HD12	1.77	0.48
24:V:32:ARG:HB2	24:V:64:LYS:HB3	1.95	0.48
27:Y:112:ASP:O	27:Y:116:LYS:HG3	2.14	0.48
27:Y:113:LYS:NZ	27:Y:113:LYS:HB2	2.27	0.48
27:Y:55:GLU:HB2	27:Y:108:LYS:HB2	1.95	0.48
28:Z:41:ALA:HB2	28:Z:77:TYR:HE2	1.77	0.48
1:5:2531:C:O4'	1:5:2531:C:O2	2.29	0.48
1:5:3370:A:C2	1:5:3371:G:C4	3.02	0.48
1:5:57:A:O2'	1:5:58:G:H5'	2.13	0.48
1:5:873:C:H5''	1:5:874:U:O5'	2.13	0.48
3:8:127:U:O2	3:8:127:U:H2'	2.14	0.48
3:8:157:U:C2'	3:8:158:U:H5'	2.44	0.48
3:8:75:G:H2'	3:8:76:C:H6	1.78	0.48
11:H:188:THR:HG22	11:H:189:GLU:N	2.28	0.48
13:J:46:VAL:O	13:J:67:VAL:HG23	2.13	0.48
1:5:3243:A:C8	17:O:156:LEU:HD13	2.48	0.48
19:Q:67:ILE:O	19:Q:71:LEU:HG	2.13	0.48
21:S:8:GLN:HG3	21:S:26:ARG:HE	1.78	0.48
24:V:11:PHE:CG	24:V:88:ARG:NH1	2.82	0.48
28:Z:110:ALA:O	28:Z:114:VAL:HG23	2.13	0.48
1:5:2436:U:H2'	1:5:2437:G:H5'	1.95	0.48
1:5:3257:C:O2'	1:5:3258:U:H5'	2.14	0.48
1:5:344:A:H2'	1:5:345:G:H5'	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:604:G:H2'	1:5:605:U:H6	1.76	0.48
1:5:63:A:O2'	1:5:64:G:H5'	2.13	0.48
1:5:948:C:C2'	1:5:949:C:H5'	2.44	0.48
2:7:107:C:H2'	2:7:108:A:H8	1.78	0.48
5:B:221:THR:CG2	5:B:222:LYS:N	2.76	0.48
6:C:95:ARG:HG2	6:C:95:ARG:NH1	2.29	0.48
9:F:40:LYS:O	9:F:44:ILE:HG13	2.13	0.48
6:C:351:PRO:HA	9:F:70:LYS:O	2.13	0.48
17:O:42:ASN:HA	17:O:136:THR:O	2.13	0.48
28:Z:135:ARG:HB3	28:Z:135:ARG:NH2	2.27	0.48
1:5:1090:G:O2'	1:5:1091:A:H5'	2.14	0.48
1:5:1152:G:H5''	1:5:1153:A:OP2	2.13	0.48
1:5:1679:A:O2'	1:5:1680:G:H5'	2.13	0.48
1:5:1764:U:H4'	1:5:1765:U:OP2	2.13	0.48
1:5:3379:C:O2'	1:5:3380:U:H5'	2.13	0.48
1:5:710:A:H2'	1:5:711:A:C8	2.48	0.48
1:5:778:U:O2	1:5:778:U:H2'	2.14	0.48
6:C:99:MET:HE1	6:C:103:THR:HG23	1.95	0.48
16:N:153:ASP:CG	16:N:154:PRO:HD2	2.33	0.48
20:R:85:ARG:HH11	20:R:85:ARG:CG	2.27	0.48
27:Y:69:LYS:HZ2	27:Y:69:LYS:HB2	1.77	0.48
1:5:1245:A:H3'	1:5:1246:G:H5''	1.94	0.48
1:5:1666:G:H2'	1:5:1667:A:C8	2.48	0.48
1:5:2375:G:O2'	1:5:2377:G:OP2	2.22	0.48
1:5:2689:A:N3	1:5:2689:A:H2'	2.29	0.48
1:5:2836:C:H2'	1:5:2837:A:H5'	1.94	0.48
3:8:146:U:H2'	3:8:147:U:H6	1.78	0.48
5:B:282:ILE:HG22	5:B:282:ILE:O	2.13	0.48
7:D:232:ASP:OD1	7:D:232:ASP:N	2.46	0.48
9:F:149:TYR:HE1	9:F:181:ILE:HD13	1.79	0.48
18:P:119:VAL:HG22	18:P:119:VAL:O	2.14	0.48
20:R:90:PRO:HG2	20:R:93:VAL:HB	1.95	0.48
1:5:1483:G:O2'	1:5:1484:U:H5''	2.14	0.48
1:5:1596:C:H2'	1:5:1597:C:C6	2.49	0.48
1:5:1863:G:N1	1:5:1866:C:OP2	2.46	0.48
1:5:2728:G:O6	22:T:78:LYS:HE3	2.14	0.48
1:5:2882:U:H2'	1:5:2883:U:C6	2.48	0.48
1:5:715:A:H3'	1:5:715:A:H8	1.78	0.48
4:A:23:ARG:HD3	4:A:52:SER:O	2.13	0.48
6:C:122:THR:O	6:C:126:ILE:HG13	2.14	0.48
6:C:274:TYR:CE1	6:C:276:LEU:HD12	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:7:10:C:C2	7:D:20:PHE:HD1	2.32	0.48
7:D:61:ILE:HG23	7:D:79:TYR:CD1	2.49	0.48
7:D:78:ALA:HB3	7:D:105:ILE:HG23	1.95	0.48
10:G:134:TYR:CD2	10:G:190:VAL:HG11	2.49	0.48
10:G:248:LYS:HA	10:G:248:LYS:NZ	2.28	0.48
12:I:60:LEU:N	12:I:60:LEU:HD13	4.68	0.48
22:T:51:GLY:HA3	22:T:92:ARG:HG3	1.96	0.48
1:5:1182:A:C2'	1:5:1183:C:H5'	2.44	0.48
1:5:1830:G:H2'	1:5:1830:G:N3	2.28	0.48
1:5:224:C:O2'	1:5:225:C:H5'	2.14	0.48
1:5:3008:A:C2'	1:5:3009:G:H5'	2.43	0.48
1:5:3232:G:O2'	1:5:3233:C:H5'	2.13	0.48
1:5:3360:C:O2'	1:5:3361:G:H5'	2.14	0.48
1:5:75:G:H5'	14:L:58:VAL:HG13	1.91	0.48
1:5:921:A:OP1	1:5:921:A:H3'	2.13	0.48
3:8:68:G:H2'	3:8:69:U:O4'	2.14	0.48
3:8:80:A:O2'	3:8:81:U:H5'	2.13	0.48
5:B:296:THR:HG22	5:B:297:SER:N	2.28	0.48
6:C:156:LEU:HD23	6:C:159:ILE:CD1	2.36	0.48
9:F:133:TYR:N	9:F:133:TYR:CD1	2.81	0.48
9:F:22:THR:HA	9:F:25:GLN:CG	2.35	0.48
12:I:77:THR:HG22	12:I:82:ARG:HA	1.96	0.48
14:L:46:ILE:O	14:L:46:ILE:CG2	2.62	0.48
16:N:49:ARG:CG	16:N:49:ARG:NH1	2.74	0.48
1:5:620:U:O2'	18:P:167:ARG:NE	2.46	0.48
1:5:1560:G:H2'	1:5:1561:G:O4'	2.14	0.48
1:5:1949:G:H5''	20:R:104:ARG:NH1	2.29	0.48
1:5:199:A:H4'	1:5:200:C:OP1	2.12	0.48
1:5:2309:A:N3	1:5:2961:G:O2'	2.30	0.48
1:5:2524:A:O2'	1:5:2525:G:OP2	2.27	0.48
1:5:3242:G:H5''	1:5:3245:A:H8	1.79	0.48
1:5:3273:A:C6	1:5:3274:A:C6	3.01	0.48
1:5:524:U:H2'	1:5:525:C:H5'	1.96	0.48
5:B:55:THR:C	5:B:56:ILE:HD12	2.34	0.48
7:D:136:GLU:O	7:D:137:ASP:HB3	2.13	0.48
12:I:170:LYS:HA	12:I:177:ASP:HA	1.96	0.48
14:L:76:THR:HG23	14:L:79:GLU:CD	2.35	0.48
22:T:104:GLU:HG3	22:T:105:PHE:N	2.28	0.48
1:5:1279:C:H2'	1:5:1280:C:C6	2.49	0.48
1:5:1294:A:O2'	1:5:1295:G:H5''	2.14	0.48
1:5:162:G:C2'	1:5:163:C:H5'	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1818:U:O2'	1:5:1819:U:H5'	2.13	0.48
1:5:2887:A:N3	1:5:2887:A:H2'	2.28	0.48
1:5:2946:A:C5'	1:5:2947:G:H5'	2.42	0.48
1:5:726:G:H1'	1:5:744:A:H61	1.78	0.48
5:B:41:VAL:HG22	5:B:185:GLY:HA3	1.95	0.48
6:C:338:LYS:HB3	6:C:341:SER:HB2	1.96	0.48
7:D:270:LYS:HE2	7:D:273:ARG:HH21	1.79	0.48
9:F:141:TYR:HA	9:F:189:ILE:CD1	2.44	0.48
10:G:41:GLN:HE21	10:G:44:ARG:NH2	2.12	0.48
12:I:167:LEU:HD22	12:I:167:LEU:N	2.29	0.48
13:J:82:ARG:HD2	13:J:112:LEU:HB2	1.96	0.48
28:Z:72:ILE:N	28:Z:72:ILE:HD13	2.29	0.48
1:5:994:G:N2	1:5:1053:A:H2'	2.28	0.47
1:5:151:A:O2'	1:5:152:U:OP1	2.32	0.47
1:5:1568:U:HO2'	1:5:1569:U:P	2.32	0.47
1:5:1682:U:H4'	1:5:1684:U:O4	2.14	0.47
1:5:173:G:O2'	1:5:174:C:H5'	2.14	0.47
1:5:2599:U:H2'	1:5:2600:C:C6	2.49	0.47
1:5:3237:U:C2'	1:5:3238:G:H5''	2.43	0.47
1:5:699:A:OP1	14:L:68:LYS:HE3	2.14	0.47
17:O:78:ARG:HD2	17:O:78:ARG:N	2.23	0.47
1:5:1348:U:OP2	19:Q:38:ARG:NH2	2.44	0.47
1:5:2278:C:H1'	1:5:2280:A:C2	2.49	0.47
1:5:2289:U:H2'	1:5:2290:C:H6	1.79	0.47
1:5:3042:U:H2'	1:5:3043:C:H5'	1.95	0.47
1:5:3195:U:O3'	1:5:3196:U:C6	2.65	0.47
1:5:3283:U:H2'	1:5:3284:G:C8	2.49	0.47
3:8:156:U:O2'	3:8:157:U:OP1	2.26	0.47
5:B:197:GLU:O	5:B:201:LYS:HD2	2.14	0.47
6:C:315:LYS:O	6:C:317:PRO:HD3	2.14	0.47
7:D:211:LEU:HD13	7:D:219:PHE:CA	2.44	0.47
8:E:123:UNK:CG	8:E:126:UNK:HB1	2.44	0.47
9:F:144:ILE:HD12	9:F:189:ILE:HG13	1.94	0.47
9:F:214:TRP:CE2	9:F:219:LYS:HD3	2.50	0.47
14:L:14:PHE:CD1	14:L:14:PHE:N	2.82	0.47
20:R:81:ARG:CG	20:R:88:ARG:NH1	2.76	0.47
21:S:80:ARG:HD2	21:S:122:HIS:ND1	2.30	0.47
23:U:98:THR:HG23	23:U:104:ARG:HE	1.77	0.47
1:5:1223:A:C5	1:5:1286:A:C2	3.02	0.47
1:5:1329:U:O2'	1:5:1330:A:H5''	2.14	0.47
1:5:2537:U:O2	1:5:2543:U:C4	2.66	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2636:A:H5''	1:5:2637:A:C5'	2.45	0.47
1:5:3339:A:O2'	1:5:3340:G:H5'	2.14	0.47
1:5:564:G:H2'	1:5:565:U:C6	2.49	0.47
3:8:67:U:OP1	13:J:85:LYS:HD2	188.32	0.47
3:8:5:U:H2'	3:8:6:U:C6	2.49	0.47
4:A:149:ARG:NH2	4:A:155:LYS:HD2	2.29	0.47
1:5:2940:A:OP2	5:B:2:SER:HB3	2.13	0.47
8:E:175:LYS:HZ2	15:M:111:ALA:HA	1.79	0.47
10:G:191:ASN:O	10:G:192:GLN:HG3	2.15	0.47
10:G:231:LYS:O	10:G:231:LYS:HG2	2.15	0.47
10:G:44:ARG:CG	10:G:44:ARG:NH1	2.62	0.47
11:H:77:ASN:HB3	11:H:151:VAL:CG2	2.43	0.47
17:O:110:PRO:CD	17:O:111:PRO:HD2	2.44	0.47
18:P:153:LYS:HD3	18:P:154:GLU:N	2.29	0.47
21:S:167:ARG:HG3	21:S:168:PRO:HD2	1.96	0.47
1:5:1064:A:H5''	1:5:1066:G:O4'	2.14	0.47
1:5:1213:G:OP1	21:S:137:ARG:HD3	2.14	0.47
1:5:1461:A:H2'	1:5:1462:A:C8	2.49	0.47
1:5:178:U:O2'	1:5:179:C:H5'	2.15	0.47
1:5:235:A:H2'	1:5:236:G:C8	2.49	0.47
1:5:2436:U:C2'	1:5:2437:G:H5'	2.44	0.47
1:5:2954:U:H2'	1:5:2954:U:O2	2.14	0.47
1:5:546:C:H2'	1:5:546:C:O2	2.14	0.47
4:A:205:ASN:HB2	4:A:208:ASP:OD1	2.15	0.47
10:G:67:ILE:O	10:G:235:GLY:HA2	2.15	0.47
16:N:22:LEU:O	16:N:26:ARG:HG3	2.14	0.47
16:N:3:ALA:O	16:N:7:LEU:HB2	2.14	0.47
18:P:52:LEU:HD13	18:P:88:VAL:HG11	1.97	0.47
19:Q:57:ILE:N	19:Q:57:ILE:HD12	2.30	0.47
22:T:14:MET:HE1	22:T:55:LYS:HB2	1.94	0.47
24:V:118:VAL:O	24:V:136:VAL:HG13	2.14	0.47
28:Z:134:LEU:C	28:Z:134:LEU:HD22	2.35	0.47
1:5:1037:C:H2'	1:5:1038:C:C6	2.50	0.47
1:5:1085:A:OP1	22:T:35:LYS:HE2	2.14	0.47
1:5:172:G:N3	1:5:172:G:H2'	2.30	0.47
1:5:2211:U:H5	1:5:2234:G:N1	2.12	0.47
1:5:2668:U:O2'	1:5:2669:G:H5'	2.14	0.47
1:5:2971:A:OP2	1:5:2972:G:H5''	2.15	0.47
1:5:3110:C:H2'	1:5:3111:U:C6	2.49	0.47
1:5:3369:G:N3	1:5:3369:G:H3'	2.30	0.47
1:5:951:A:C2'	1:5:952:A:H5'	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:8:VAL:O	6:C:15:ALA:HB1	2.14	0.47
6:C:159:ILE:HG23	6:C:164:GLU:OE1	2.14	0.47
6:C:259:ASP:OD1	6:C:259:ASP:N	2.47	0.47
1:5:594:U:C6	6:C:308:LYS:HE2	2.50	0.47
7:D:218:ARG:HA	7:D:218:ARG:NE	2.29	0.47
8:E:52:VAL:HG22	8:E:67:GLY:CA	2.44	0.47
9:F:121:LYS:HE2	9:F:125:GLU:OE2	2.14	0.47
12:I:9:TYR:CD2	12:I:97:LEU:HD13	2.49	0.47
15:M:36:VAL:HG12	15:M:75:GLY:HA2	1.96	0.47
1:5:1037:C:H2'	1:5:1038:C:H6	1.80	0.47
1:5:1095:U:H3	22:T:127:GLN:CG	2.24	0.47
1:5:139:G:H2'	1:5:140:C:C6	2.50	0.47
1:5:2853:A:OP1	12:I:63:GLU:HB2	2.15	0.47
1:5:2923:U:H2'	1:5:2924:U:H6	1.73	0.47
1:5:2931:C:H2'	1:5:2932:U:O4'	2.15	0.47
1:5:349:A:H4'	1:5:350:C:OP2	2.14	0.47
2:7:11:A:C2'	2:7:12:U:H5''	2.44	0.47
2:7:34:C:H2'	2:7:35:C:C6	2.50	0.47
2:7:4:U:H2'	2:7:5:G:C8	2.50	0.47
3:8:126:A:H4'	3:8:127:U:OP1	2.14	0.47
5:B:169:THR:HG23	5:B:170:PRO:CD	2.39	0.47
5:B:306:THR:HA	5:B:307:PRO:HD3	1.72	0.47
6:C:188:ARG:HG2	6:C:190:GLY:H	1.80	0.47
14:L:131:LYS:N	14:L:131:LYS:HD3	2.19	0.47
18:P:141:SER:C	18:P:143:PRO:HD3	2.34	0.47
28:Z:10:VAL:HG13	28:Z:23:VAL:O	2.15	0.47
1:5:1063:G:C6	22:T:109:VAL:HG13	2.49	0.47
1:5:1347:U:H3'	19:Q:38:ARG:NH2	2.29	0.47
1:5:1555:U:O2'	1:5:1556:C:P	2.72	0.47
1:5:1576:G:H2'	1:5:1577:G:O4'	2.15	0.47
1:5:1635:G:O6	28:Z:17:ARG:HB2	2.14	0.47
1:5:1816:A:HO2'	1:5:1817:G:P	2.35	0.47
1:5:1949:G:H2'	1:5:1950:U:C6	2.49	0.47
1:5:2216:G:H22	1:5:2229:A:H2	1.63	0.47
1:5:3139:A:O2'	1:5:3140:G:H5'	2.14	0.47
3:8:15:G:C6	3:8:16:G:N1	2.83	0.47
3:8:70:G:N2	3:8:87:G:O2'	2.46	0.47
6:C:177:ASP:OD2	6:C:205:PRO:HD3	2.15	0.47
6:C:60:THR:CG2	6:C:61:SER:N	2.78	0.47
7:D:51:LEU:HD21	7:D:105:ILE:HD11	1.97	0.47
8:E:119:UNK:O	8:E:123:UNK:HG2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:R:102:LEU:CD2	20:R:138:LEU:HG	2.45	0.47
22:T:65:TYR:CE2	22:T:73:GLY:HA3	2.49	0.47
22:T:88:ARG:C	22:T:89:LEU:HD12	2.35	0.47
24:V:94:TYR:CE1	25:W:21:PHE:HD1	2.31	0.47
1:5:2276:G:C6	1:5:2311:G:N2	2.82	0.47
1:5:2749:G:O2'	7:D:35:ARG:HG2	2.14	0.47
1:5:3106:A:H2'	1:5:3107:U:O4'	2.15	0.47
2:7:11:A:O2'	2:7:12:U:H3'	2.15	0.47
4:A:117:GLU:HG2	4:A:124:GLY:H	1.80	0.47
5:B:258:ALA:O	5:B:259:HIS:CG	2.68	0.47
6:C:233:LEU:HD23	6:C:233:LEU:HA	1.55	0.47
7:D:21:ARG:HA	7:D:24:ARG:NH2	2.30	0.47
8:E:154:LEU:HD13	15:M:119:GLN:HG2	1.95	0.47
9:F:85:PHE:O	9:F:136:TYR:HA	2.15	0.47
10:G:166:LEU:HD23	10:G:166:LEU:HA	1.45	0.47
10:G:90:THR:HG22	10:G:214:LEU:HD21	1.96	0.47
15:M:15:VAL:HG23	15:M:35:ILE:HD13	1.97	0.47
16:N:199:LEU:HD23	16:N:199:LEU:N	2.30	0.47
17:O:98:ALA:HA	17:O:101:ARG:HH11	1.78	0.47
1:5:523:A:O2'	21:S:69:PRO:HD2	2.15	0.47
24:V:128:ARG:CZ	24:V:128:ARG:HB3	2.45	0.47
1:5:1038:C:O2'	1:5:1039:U:H5'	2.14	0.47
1:5:1238:C:H2'	1:5:1239:C:H5''	1.96	0.47
1:5:123:A:H5'	1:5:124:U:OP2	2.14	0.47
1:5:3120:C:HO2'	1:5:3121:U:H6	1.60	0.47
1:5:915:A:H8	1:5:2136:C:HO2'	1.63	0.47
2:7:119:U:H3'	7:D:258:LYS:HZ3	1.78	0.47
1:5:1651:U:C5'	4:A:71:LEU:HD22	2.45	0.47
7:D:83:LEU:N	7:D:84:PRO:HD2	2.29	0.47
10:G:200:LEU:HD12	10:G:200:LEU:H	1.79	0.47
11:H:141:LYS:HE2	11:H:142:ASP:OD2	2.14	0.47
11:H:24:ILE:HD11	11:H:37:ASN:ND2	2.30	0.47
12:I:196:PHE:CG	12:I:197:VAL:N	2.83	0.47
14:L:3:ILE:HG13	14:L:3:ILE:H	1.47	0.47
17:O:140:LYS:O	17:O:140:LYS:HG2	2.15	0.47
18:P:29:THR:HA	18:P:32:THR:CG2	2.45	0.47
20:R:112:ALA:CB	20:R:114:LYS:NZ	2.78	0.47
20:R:89:LEU:HD12	20:R:90:PRO:HD2	1.97	0.47
1:5:3333:G:O2'	25:W:50:ALA:HB3	2.15	0.47
28:Z:97:SER:HB3	28:Z:99:GLU:HG3	1.97	0.47
1:5:1110:U:H2'	1:5:1111:U:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1333:C:H2'	1:5:1334:U:C6	2.50	0.47
1:5:1554:U:O2'	1:5:1555:U:H5''	2.14	0.47
1:5:1639:C:C2'	1:5:1640:G:H5'	2.45	0.47
1:5:2137:U:C6	1:5:2141:U:C5	3.03	0.47
1:5:238:A:O2'	1:5:239:G:P	2.73	0.47
1:5:250:U:H2'	1:5:251:G:C5'	2.45	0.47
1:5:2569:A:H4'	1:5:2570:U:C5'	2.32	0.47
1:5:405:U:C5	1:5:406:G:C5	3.03	0.47
1:5:558:U:H4'	1:5:559:A:OP2	2.15	0.47
4:A:183:GLY:O	4:A:186:PHE:HB3	2.14	0.47
6:C:131:VAL:HG12	6:C:134:LEU:H	1.78	0.47
6:C:36:HIS:O	6:C:40:THR:HG23	2.15	0.47
7:D:128:GLU:OE2	7:D:192:PRO:HA	2.15	0.47
9:F:77:VAL:HG12	21:S:59:VAL:O	2.14	0.47
12:I:135:ILE:HG22	12:I:136:PHE:CD1	2.50	0.47
12:I:178:ARG:H	12:I:178:ARG:HG2	1.38	0.47
12:I:9:TYR:OH	12:I:99:ILE:HG23	2.15	0.47
14:L:21:ARG:O	16:N:196:THR:HG23	2.14	0.47
22:T:56:PHE:CZ	22:T:78:LYS:HD3	2.50	0.47
1:5:139:G:H2'	1:5:140:C:H6	1.80	0.47
1:5:1506:A:C2	1:5:1510:G:N1	2.83	0.47
1:5:915:A:H8	1:5:2136:C:O2'	1.98	0.47
1:5:788:C:O2'	1:5:789:A:H5'	2.15	0.47
3:8:88:A:H3'	3:8:89:A:C8	2.50	0.47
5:B:252:ILE:HG22	5:B:253:GLY:N	2.29	0.47
9:F:103:LEU:HD22	9:F:108:LEU:HB2	1.97	0.47
11:H:82:VAL:HG13	11:H:82:VAL:O	2.15	0.47
11:H:85:GLY:O	11:H:186:PHE:HA	2.14	0.47
13:J:46:VAL:HG12	13:J:68:HIS:O	2.14	0.47
14:L:47:ALA:C	14:L:49:ARG:H	2.17	0.47
21:S:14:LEU:HB2	21:S:55:SER:O	2.14	0.47
22:T:32:LYS:HE2	22:T:98:HIS:CD2	2.43	0.47
24:V:54:LEU:HD12	24:V:78:VAL:O	2.14	0.47
28:Z:16:GLY:O	28:Z:18:TYR:N	2.36	0.47
1:5:1072:G:H2'	1:5:1073:U:C6	2.50	0.46
1:5:2110:G:O2'	1:5:2111:G:H5''	2.14	0.46
1:5:2403:G:N2	1:5:2404:A:N6	2.63	0.46
1:5:2568:C:HO2'	1:5:2569:A:P	2.32	0.46
1:5:2808:A:OP2	1:5:2808:A:H3'	2.14	0.46
1:5:2971:A:H5''	1:5:2972:G:O5'	2.15	0.46
1:5:376:G:C4	1:5:401:U:C5	3.04	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:564:G:H2'	1:5:565:U:H6	1.80	0.46
4:A:137:ILE:HG23	4:A:147:ARG:O	2.15	0.46
4:A:45:VAL:HG12	4:A:86:GLN:O	2.14	0.46
5:B:106:TRP:HB2	5:B:133:TYR:HE2	1.78	0.46
5:B:239:PRO:O	5:B:242:THR:HG23	2.14	0.46
5:B:252:ILE:O	5:B:264:VAL:HG11	2.14	0.46
7:D:88:ILE:HD13	7:D:239:ILE:HG22	1.97	0.46
8:E:18:LEU:H	8:E:18:LEU:CD1	2.22	0.46
10:G:160:ILE:HG22	10:G:161:GLU:OE1	2.15	0.46
11:H:37:ASN:OD1	11:H:39:LYS:HB2	2.15	0.46
12:I:53:VAL:HG21	12:I:166:ILE:HD12	1.97	0.46
14:L:75:PHE:CZ	14:L:116:LEU:HD21	2.50	0.46
24:V:59:MET:HE3	24:V:74:MET:O	2.15	0.46
1:5:1631:C:H5''	1:5:1632:A:C5'	2.45	0.46
1:5:1779:C:H1'	20:R:93:VAL:HG21	1.97	0.46
1:5:2290:C:H2'	1:5:2291:A:H8	1.79	0.46
1:5:2584:G:C5'	1:5:2585:G:OP2	2.62	0.46
1:5:2616:C:C2'	1:5:2617:U:H5'	2.44	0.46
1:5:2790:A:OP1	19:Q:180:ARG:HD3	2.14	0.46
4:A:70:ARG:HD2	4:A:72:ARG:HE	1.80	0.46
7:D:237:GLU:H	7:D:237:GLU:CD	2.17	0.46
12:I:49:CYS:HA	12:I:138:VAL:O	2.15	0.46
14:L:46:ILE:O	14:L:47:ALA:HB3	2.16	0.46
18:P:155:GLU:HG2	18:P:155:GLU:O	2.15	0.46
20:R:81:ARG:HG2	20:R:88:ARG:HH12	1.80	0.46
23:U:43:VAL:CG2	23:U:50:LEU:HD23	2.45	0.46
3:8:147:U:H4'	26:X:38:LEU:HD12	1.97	0.46
1:5:1792:C:HO2'	1:5:1794:G:H8	1.63	0.46
1:5:3033:A:H2'	1:5:3034:C:C6	2.51	0.46
1:5:3051:U:H2'	1:5:3052:G:H8	1.80	0.46
1:5:512:U:O2'	1:5:513:G:H5'	2.16	0.46
1:5:70:A:N1	1:5:313:A:O2'	2.46	0.46
3:8:105:A:H4'	3:8:106:C:OP1	2.15	0.46
4:A:92:LYS:HA	4:A:92:LYS:HD2	4.40	0.46
5:B:41:VAL:CA	5:B:185:GLY:HA3	2.39	0.46
8:E:40:LEU:HD11	8:E:54:TYR:HB2	1.97	0.46
11:H:117:PHE:O	11:H:118:LEU:HB2	2.16	0.46
13:J:141:ARG:O	13:J:145:LYS:NZ	2.48	0.46
10:G:162:LEU:HD21	16:N:45:PRO:HG2	1.97	0.46
17:O:28:LEU:HD23	17:O:28:LEU:HA	1.55	0.46
17:O:40:GLU:OE1	17:O:40:GLU:HA	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:8:LYS:HE3	19:Q:8:LYS:HB2	1.53	0.46
1:5:1213:G:H4'	21:S:90:MET:HG2	1.97	0.46
1:5:999:G:O2'	1:5:1000:C:H5'	2.16	0.46
1:5:1354:G:O6	1:5:1358:C:H5'	2.14	0.46
1:5:1562:C:H2'	1:5:1562:C:O2	2.14	0.46
1:5:2209:U:H1'	1:5:2210:G:H5''	1.97	0.46
1:5:2248:C:O2'	1:5:2272:G:H1'	2.16	0.46
1:5:3002:C:H2'	1:5:3003:G:O4'	2.15	0.46
1:5:3160:U:H2'	1:5:3161:C:H6	1.75	0.46
1:5:665:A:H8	1:5:665:A:O5'	1.98	0.46
1:5:805:G:H1'	6:C:73:ARG:NH1	2.31	0.46
11:H:88:TYR:HE2	11:H:184:LYS:HE2	1.81	0.46
19:Q:104:LEU:HD23	19:Q:104:LEU:HA	1.59	0.46
19:Q:49:LEU:HD23	19:Q:49:LEU:HA	1.69	0.46
27:Y:56:VAL:HG21	27:Y:70:ILE:CD1	2.42	0.46
27:Y:76:LEU:O	27:Y:77:LYS:CB	2.61	0.46
1:5:1072:G:H2'	1:5:1073:U:H6	1.81	0.46
1:5:1263:A:H2'	1:5:1263:A:N3	2.31	0.46
1:5:1277:C:O2	1:5:1277:C:H2'	2.14	0.46
1:5:1495:U:C2'	1:5:1495:U:O2	2.64	0.46
1:5:240:U:HO2'	1:5:241:G:C5'	2.27	0.46
1:5:2436:U:H3	1:5:2511:A:N6	2.08	0.46
1:5:2717:U:O2'	1:5:2718:U:H5'	2.16	0.46
4:A:102:LEU:HD12	4:A:102:LEU:N	2.31	0.46
6:C:60:THR:HG22	6:C:62:ALA:N	2.25	0.46
6:C:84:ARG:HD2	6:C:87:GLN:OE1	2.16	0.46
9:F:120:THR:O	9:F:124:LEU:HB2	2.16	0.46
9:F:30:ARG:CG	9:F:31:ALA:N	2.77	0.46
14:L:24:VAL:HB	14:L:26:PHE:CE2	2.51	0.46
16:N:190:THR:O	16:N:194:GLN:HG2	2.16	0.46
20:R:153:LYS:HZ2	20:R:153:LYS:HA	1.80	0.46
21:S:14:LEU:HA	21:S:15:PRO:HD3	1.75	0.46
21:S:45:LEU:HA	21:S:45:LEU:HD22	1.64	0.46
1:5:1063:G:H2'	1:5:1097:G:N2	2.31	0.46
1:5:1236:G:H3'	1:5:1237:G:C5'	2.45	0.46
1:5:1765:U:O2'	20:R:43:LYS:NZ	2.33	0.46
1:5:241:G:H2'	1:5:242:C:H6	1.81	0.46
1:5:2747:A:O2'	1:5:2748:A:H5'	2.16	0.46
1:5:3384:U:C2	1:5:3385:U:C5	3.03	0.46
1:5:766:U:H4'	1:5:767:U:C5'	2.46	0.46
1:5:946:U:C2'	1:5:947:G:H5'	2.44	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:C:73:ARG:HH11	6:C:73:ARG:HG3	1.81	0.46
7:D:207:TYR:O	7:D:211:LEU:HB2	2.16	0.46
9:F:46:GLU:O	9:F:49:ALA:HB3	2.15	0.46
12:I:182:LEU:HD23	12:I:182:LEU:HA	1.61	0.46
24:V:104:ASN:ND2	24:V:108:GLU:HB2	2.27	0.46
28:Z:97:SER:HB3	28:Z:99:GLU:CG	2.46	0.46
1:5:1087:G:C2	1:5:1088:U:C5	3.04	0.46
1:5:1167:U:H2'	1:5:1168:U:O4'	2.16	0.46
1:5:1393:A:C8	1:5:1418:A:C6	3.04	0.46
1:5:1472:U:H2'	1:5:1473:G:H8	1.81	0.46
1:5:3013:U:H2'	1:5:3014:U:H6	1.79	0.46
1:5:69:C:OP1	16:N:178:HIS:ND1	2.49	0.46
4:A:155:LYS:HE2	4:A:155:LYS:HB3	1.70	0.46
5:B:158:VAL:HG23	5:B:191:LYS:HD2	1.98	0.46
6:C:148:ILE:HD12	6:C:148:ILE:HA	1.80	0.46
6:C:238:LEU:HD23	6:C:238:LEU:HA	1.57	0.46
9:F:229:PHE:C	9:F:229:PHE:CD1	2.88	0.46
9:F:83:LEU:C	9:F:83:LEU:HD13	2.36	0.46
16:N:104:GLU:OE2	16:N:161:ALA:HA	2.15	0.46
20:R:41:ILE:HA	20:R:41:ILE:HD13	1.82	0.46
21:S:50:LYS:O	21:S:51:VAL:HG22	2.15	0.46
15:M:55:ARG:HH11	21:S:70:THR:HB	1.81	0.46
1:5:1073:U:O2'	1:5:1074:U:H5'	2.15	0.46
1:5:129:U:H2'	1:5:130:A:C8	2.51	0.46
1:5:2234:G:O2'	1:5:2603:G:O2'	1.98	0.46
1:5:282:G:C3'	1:5:282:G:C8	2.98	0.46
1:5:3187:A:H4'	1:5:3187:A:OP1	2.16	0.46
1:5:344:A:C2'	1:5:345:G:H5'	2.46	0.46
1:5:620:U:O2'	18:P:167:ARG:CZ	2.64	0.46
1:5:2522:G:O6	4:A:70:ARG:NH2	2.49	0.46
6:C:338:LYS:CD	6:C:338:LYS:N	2.79	0.46
6:C:318:LEU:HD11	9:F:146:GLN:HG2	1.98	0.46
10:G:143:ILE:HD13	10:G:170:CYS:SG	2.56	0.46
18:P:30:ARG:HD2	18:P:63:PHE:HE1	1.80	0.46
18:P:70:THR:CG2	18:P:81:ALA:HB3	2.45	0.46
24:V:54:LEU:HA	24:V:54:LEU:HD12	1.57	0.46
25:W:5:ILE:C	25:W:5:ILE:HD12	2.37	0.46
26:X:25:LYS:HE3	26:X:25:LYS:HB2	1.78	0.46
26:X:62:VAL:HG13	26:X:90:ALA:CB	2.45	0.46
27:Y:87:LYS:HB2	27:Y:97:ILE:HD11	1.97	0.46
28:Z:13:VAL:O	28:Z:19:ALA:HA	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1062:A:H4'	22:T:105:PHE:CE2	2.50	0.46
1:5:1109:U:H2'	1:5:1110:U:O4'	2.16	0.46
1:5:1208:U:O2	1:5:1208:U:H2'	2.16	0.46
1:5:1572:U:O2	1:5:1573:G:N7	2.49	0.46
1:5:2388:U:O3'	18:P:80:LYS:NZ	2.49	0.46
1:5:3148:U:O2'	1:5:3149:G:H5'	2.16	0.46
1:5:592:A:O2'	1:5:593:C:H5'	2.16	0.46
4:A:90:ALA:CB	4:A:101:VAL:HG13	2.46	0.46
9:F:224:ILE:HG22	9:F:225:GLN:N	2.31	0.46
9:F:151:ARG:HG3	9:F:244:ASN:OD1	2.16	0.46
14:L:71:ALA:HA	14:L:147:ILE:HD11	1.98	0.46
1:5:1185:C:OP1	15:M:42:LYS:HE3	2.15	0.46
16:N:73:ARG:HB3	16:N:75:VAL:HG22	1.97	0.46
22:T:132:PRO:O	22:T:134:GLN:NE2	2.49	0.46
27:Y:52:ARG:O	27:Y:53:ASP:HB2	2.16	0.46
27:Y:59:VAL:O	27:Y:64:LYS:HD2	2.16	0.46
1:5:1268:G:O2'	1:5:1269:U:H5'	2.16	0.46
1:5:20:A:O2'	1:5:21:G:H5'	2.15	0.46
1:5:2400:G:H5'	1:5:2401:A:OP2	2.16	0.46
1:5:3340:G:O2'	1:5:3341:U:OP1	2.28	0.46
1:5:437:G:O5'	1:5:437:G:H8	1.99	0.46
1:5:916:G:H5''	1:5:917:A:OP1	2.16	0.46
1:5:968:G:H2'	1:5:969:C:C6	2.51	0.46
2:7:22:A:H2'	2:7:22:A:N3	2.30	0.46
6:C:205:PRO:HB3	6:C:247:PHE:CE2	2.51	0.46
8:E:70:LYS:HB3	8:E:146:ILE:HD11	1.97	0.46
6:C:330:TYR:HB2	9:F:45:LEU:CD2	2.46	0.46
13:J:12:LEU:HD22	13:J:12:LEU:HA	1.77	0.46
13:J:156:LYS:O	13:J:160:VAL:HG23	2.16	0.46
6:C:106:TRP:HZ2	14:L:19:GLN:NE2	2.13	0.46
14:L:49:ARG:HB3	14:L:50:PRO:HD2	1.98	0.46
19:Q:122:ILE:HG22	19:Q:126:GLN:HB2	1.96	0.46
19:Q:81:VAL:HG23	19:Q:140:LEU:HG	1.98	0.46
28:Z:4:PHE:O	28:Z:5:LEU:CB	2.64	0.46
1:5:1284:C:O2'	1:5:1285:G:P	2.73	0.45
1:5:2101:C:O2'	1:5:2102:U:P	2.74	0.45
1:5:2388:U:H2'	1:5:2389:C:H6	1.80	0.45
1:5:2556:C:C2'	1:5:2557:A:H5'	2.46	0.45
1:5:956:U:H4'	1:5:2726:C:H5''	1.99	0.45
1:5:2997:G:H1'	1:5:3396:U:C5'	2.42	0.45
1:5:3083:G:H2'	1:5:3084:C:O4'	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:33:ASP:OD1	4:A:36:GLU:HG3	2.16	0.45
11:H:121:LYS:HA	11:H:121:LYS:HD3	1.68	0.45
12:I:60:LEU:N	12:I:60:LEU:HD23	2.31	0.45
17:O:22:VAL:O	17:O:26:GLN:HG2	2.16	0.45
22:T:32:LYS:CE	22:T:98:HIS:HD2	2.28	0.45
24:V:96:GLU:OE1	25:W:24:GLY:N	2.49	0.45
26:X:62:VAL:HG13	26:X:90:ALA:HB2	1.98	0.45
27:Y:108:LYS:HD3	27:Y:108:LYS:HA	1.76	0.45
1:5:1170:A:O5'	1:5:1170:A:H8	1.99	0.45
1:5:1580:A:H2'	1:5:1580:A:N3	2.31	0.45
1:5:1815:U:O2'	1:5:1816:A:P	2.75	0.45
1:5:2283:G:H4'	1:5:2308:C:N4	2.31	0.45
1:5:41:G:H21	1:5:2612:U:H5''	1.81	0.45
1:5:2836:C:O2'	1:5:2837:A:H5'	2.16	0.45
1:5:845:G:HO2'	1:5:847:A:N6	2.10	0.45
7:D:68:THR:HG22	7:D:69:ILE:N	2.32	0.45
10:G:134:TYR:CG	10:G:190:VAL:HG11	2.51	0.45
11:H:146:LEU:HD12	11:H:146:LEU:N	2.30	0.45
14:L:140:SER:OG	14:L:143:ALA:N	2.45	0.45
19:Q:26:LEU:HD22	19:Q:26:LEU:HA	1.69	0.45
21:S:136:LYS:HG2	21:S:136:LYS:H	1.55	0.45
22:T:75:ILE:HG23	22:T:86:GLU:HG3	1.99	0.45
23:U:34:ALA:O	23:U:38:ILE:HG13	2.15	0.45
27:Y:102:SER:C	27:Y:103:LYS:HD3	2.36	0.45
1:5:1282:G:H2'	1:5:1283:C:H6	1.81	0.45
1:5:1766:G:O2'	1:5:1767:C:H5'	2.17	0.45
1:5:2145:A:N3	1:5:2145:A:H2'	2.30	0.45
1:5:2176:U:C2'	1:5:2177:G:H5'	2.47	0.45
1:5:2880:U:O2	5:B:250:ALA:HB3	2.17	0.45
1:5:2298:U:H2'	1:5:2920:U:O2'	2.17	0.45
1:5:419:G:O3'	1:5:420:G:C5'	2.64	0.45
1:5:715:A:O2'	1:5:752:C:O2'	2.11	0.45
1:5:359:U:H4'	1:5:817:A:N6	2.32	0.45
2:7:44:C:H2'	2:7:45:A:H5'	1.97	0.45
3:8:143:U:OP1	16:N:38:ARG:NH2	2.49	0.45
3:8:23:U:OP1	27:Y:16:ARG:NH2	2.46	0.45
4:A:132:ASN:O	4:A:133:TYR:HB3	2.17	0.45
5:B:238:LEU:HA	5:B:238:LEU:HD13	1.76	0.45
5:B:55:THR:O	5:B:56:ILE:HD12	2.17	0.45
8:E:76:LEU:HD11	8:E:141:VAL:HG21	1.98	0.45
10:G:105:LYS:O	10:G:109:LEU:HD23	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:178:ARG:N	12:I:179:PRO:HD2	2.32	0.45
13:J:25:GLU:HG3	13:J:63:GLU:OE1	2.16	0.45
1:5:3243:A:C8	17:O:156:LEU:HD22	2.51	0.45
18:P:122:ALA:HB1	18:P:123:PRO:HD2	1.97	0.45
1:5:781:G:OP1	19:Q:151:ARG:HD2	2.17	0.45
28:Z:34:LYS:HD2	28:Z:34:LYS:HA	1.59	0.45
1:5:1011:A:H1'	12:I:193:ASP:OD1	2.17	0.45
1:5:1989:Y5P:H2'	1:5:1990:Y5P:H6	1.99	0.45
1:5:2573:G:C3'	1:5:2574:G:H5''	2.46	0.45
1:5:2727:A:OP2	1:5:2728:G:N2	2.46	0.45
1:5:3009:G:H2'	1:5:3010:U:H5'	1.98	0.45
1:5:3195:U:H1'	1:5:3196:U:OP1	2.16	0.45
1:5:2181:C:H5''	4:A:193:ARG:HH21	1.81	0.45
1:5:3315:G:H2'	5:B:123:TYR:CD2	2.52	0.45
1:5:2943:G:C8	5:B:2:SER:N	2.85	0.45
11:H:24:ILE:HD13	11:H:37:ASN:HA	1.99	0.45
18:P:52:LEU:HD12	18:P:52:LEU:HA	1.60	0.45
21:S:52:LYS:HE3	21:S:54:ALA:HB3	1.98	0.45
28:Z:122:HIS:HB2	28:Z:131:PHE:CE1	2.51	0.45
28:Z:81:LEU:HD22	28:Z:81:LEU:HA	1.61	0.45
1:5:100:A:C2'	1:5:101:G:H5'	2.46	0.45
1:5:1597:C:H2'	1:5:1598:G:H8	1.78	0.45
1:5:894:G:N2	1:5:1660:C:H5'	2.31	0.45
1:5:1778:G:O2'	1:5:1780:G:OP2	2.35	0.45
1:5:236:G:H2'	1:5:237:G:O4'	2.17	0.45
1:5:2513:U:C4'	1:5:2514:U:OP1	2.64	0.45
1:5:2422:C:N3	1:5:2609:A:N1	2.64	0.45
1:5:2808:A:HO2'	1:5:2809:C:P	2.37	0.45
1:5:2960:C:H2'	1:5:2961:G:C8	2.51	0.45
1:5:886:C:O2'	1:5:887:G:H5'	2.16	0.45
4:A:102:LEU:HB3	4:A:103:PRO:HD2	1.96	0.45
7:D:259:LYS:HD3	7:D:259:LYS:H	1.80	0.45
7:D:75:LEU:O	7:D:75:LEU:HD23	2.16	0.45
1:5:266:A:N6	12:I:30:LYS:HA	125.11	0.45
22:T:102:ARG:NH1	22:T:106:LEU:HD21	2.31	0.45
24:V:84:SER:HA	24:V:94:TYR:HB3	1.98	0.45
28:Z:123:GLN:O	28:Z:124:ALA:HB3	2.16	0.45
1:5:142:C:H2'	1:5:143:G:O4'	2.17	0.45
1:5:159:A:H2'	1:5:160:G:H8	1.81	0.45
1:5:2270:A:C6	1:5:2271:A:N6	2.84	0.45
1:5:2537:U:HO2'	1:5:2538:U:C4'	2.22	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:3152:U:C5	1:5:3395:G:C6	3.05	0.45
1:5:3209:A:H2'	1:5:3209:A:N3	2.31	0.45
2:7:24:A:H2'	2:7:25:G:C8	2.51	0.45
2:7:26:C:H2'	2:7:27:A:O4'	2.16	0.45
5:B:114:VAL:HG13	5:B:163:HIS:CG	2.50	0.45
12:I:191:LYS:CB	12:I:213:PHE:HE1	2.27	0.45
14:L:46:ILE:O	14:L:46:ILE:HG22	2.17	0.45
18:P:166:VAL:CG1	18:P:168:LEU:HG	2.46	0.45
15:M:55:ARG:HD3	21:S:70:THR:HB	1.97	0.45
1:5:2511:A:C3'	1:5:2512:C:H5'	2.46	0.45
1:5:2538:U:H2'	1:5:2539:C:C5'	2.47	0.45
1:5:995:U:N3	1:5:2637:A:C8	2.85	0.45
2:7:43:U:C4	2:7:44:C:C5	3.04	0.45
3:8:104:A:H3'	3:8:105:A:C5'	2.43	0.45
3:8:83:C:N4	27:Y:113:LYS:NZ	2.65	0.45
8:E:152:THR:HG23	8:E:155:LEU:CB	2.46	0.45
9:F:166:ASN:OD1	9:F:181:ILE:N	2.44	0.45
15:M:97:SER:O	15:M:101:LYS:HG3	2.16	0.45
24:V:106:LYS:HB3	24:V:106:LYS:HE2	1.78	0.45
24:V:120:LYS:HB2	24:V:120:LYS:NZ	2.32	0.45
26:X:100:LYS:HZ1	26:X:107:VAL:H	1.65	0.45
27:Y:52:ARG:NH1	27:Y:52:ARG:HB3	2.31	0.45
1:5:1182:A:OP2	21:S:158:LYS:HE3	2.17	0.45
1:5:1724:U:H1'	1:5:1725:C:C6	2.52	0.45
1:5:2845:A:H2	1:5:2850:G:H1	1.64	0.45
1:5:3199:G:H4'	15:M:6:ILE:HD13	1.98	0.45
1:5:3294:A:OP2	5:B:126:LYS:NZ	2.50	0.45
2:7:34:C:H2'	2:7:35:C:H6	1.81	0.45
4:A:174:ARG:CG	4:A:174:ARG:NH1	2.71	0.45
1:5:338:A:OP1	6:C:47:ARG:HA	2.17	0.45
1:5:121:A:C5	10:G:108:ARG:NH1	2.84	0.45
12:I:75:TYR:O	12:I:79:VAL:HG23	2.17	0.45
18:P:114:VAL:HG22	18:P:114:VAL:O	2.17	0.45
18:P:117:ILE:O	18:P:117:ILE:HG23	2.17	0.45
22:T:96:ILE:HG22	22:T:97:LYS:N	2.32	0.45
1:5:1898:G:C2'	1:5:1899:G:H5'	2.47	0.45
1:5:224:C:C2'	1:5:225:C:H5'	2.47	0.45
1:5:2592:G:H4'	1:5:2594:C:C2	2.52	0.45
1:5:278:U:H2'	1:5:279:U:H6	1.81	0.45
1:5:2894:C:OP1	11:H:168:ARG:HD2	2.16	0.45
1:5:107:A:H1'	1:5:325:A:N3	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:655:C:H2'	1:5:656:A:C8	2.52	0.45
3:8:84:C:H4'	3:8:85:G:OP1	2.16	0.45
6:C:219:LEU:HD13	6:C:225:VAL:HG11	1.98	0.45
7:D:270:LYS:HG2	7:D:273:ARG:NH2	2.26	0.45
8:E:37:GLY:HA2	8:E:93:VAL:HG23	1.99	0.45
16:N:163:GLY:C	16:N:164:LEU:HD23	2.38	0.45
21:S:4:PHE:HD1	21:S:4:PHE:N	2.14	0.45
21:S:8:GLN:HB2	21:S:64:ILE:HD11	1.98	0.45
25:W:2:LYS:HG2	25:W:3:VAL:N	2.31	0.45
26:X:91:ASN:ND2	26:X:94:GLN:OE1	2.50	0.45
1:5:1063:G:C2'	1:5:1097:G:N2	2.80	0.45
1:5:1447:G:O5'	18:P:63:PHE:HB3	2.17	0.45
1:5:1989:Y5P:H4A	1:5:1990:Y5P:H4	1.99	0.45
1:5:2837:A:H5"	12:I:154:ARG:HH12	1.81	0.45
1:5:850:U:O2'	1:5:851:C:P	2.75	0.45
2:7:94:C:H2'	2:7:95:A:C8	2.50	0.45
4:A:72:ARG:HD3	4:A:72:ARG:HA	1.34	0.45
5:B:287:LYS:NZ	5:B:287:LYS:CB	2.80	0.45
5:B:45:SER:OG	5:B:181:ILE:HG12	2.17	0.45
8:E:54:TYR:C	8:E:55:LEU:HD23	2.37	0.45
12:I:216:TYR:CD1	12:I:216:TYR:C	2.90	0.45
20:R:99:LEU:HD22	20:R:103:ARG:NE	2.32	0.45
7:D:40:HIS:CE1	22:T:69:LYS:HA	2.52	0.45
26:X:112:THR:HG22	26:X:122:ALA:HB2	1.98	0.45
26:X:67:ILE:HB	26:X:83:VAL:HG12	1.98	0.45
27:Y:74:TYR:CD1	27:Y:77:LYS:HB2	2.52	0.45
1:5:1279:C:H2'	1:5:1280:C:H6	1.83	0.44
1:5:1313:G:H5'	17:O:83:ALA:HB1	1.98	0.44
1:5:163:C:O2'	1:5:164:A:H5'	2.17	0.44
1:5:1718:G:H2'	1:5:1719:G:C8	2.52	0.44
1:5:1908:A:O5'	1:5:1908:A:H8	2.00	0.44
1:5:2388:U:H2'	1:5:2389:C:C6	2.52	0.44
1:5:970:A:C2	1:5:971:G:C4	3.05	0.44
1:5:2525:G:H4'	10:G:49:TYR:OH	2.17	0.44
28:Z:129:TRP:O	28:Z:132:SER:OG	2.24	0.44
1:5:110:G:OP2	14:L:73:ARG:NH1	2.43	0.44
1:5:118:U:N3	1:5:122:A:OP2	2.44	0.44
1:5:1265:U:C2	1:5:1277:C:H1'	2.52	0.44
1:5:1306:G:O6	1:5:2366:C:O2'	2.33	0.44
1:5:2094:C:H2'	1:5:2094:C:O2	2.17	0.44
1:5:2213:A:O4'	1:5:2602:G:H4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:2426:U:H2'	1:5:2427:U:C6	2.53	0.44
1:5:2746:A:C2	7:D:148:ILE:HD13	2.52	0.44
1:5:2883:U:O2'	1:5:2884:C:H5'	2.17	0.44
1:5:3130:A:N3	1:5:3130:A:H2'	2.32	0.44
1:5:3195:U:C1'	1:5:3196:U:OP1	2.65	0.44
1:5:3232:G:C6	1:5:3256:G:C6	3.06	0.44
1:5:3344:A:H5''	1:5:3345:G:OP2	2.17	0.44
1:5:987:U:H2'	1:5:988:U:C6	2.52	0.44
2:7:1:G:C2	2:7:2:G:C8	3.05	0.44
2:7:83:U:C2'	2:7:84:A:H5'	2.47	0.44
1:5:1793:C:C4	4:A:179:LEU:HD22	2.52	0.44
4:A:5:ILE:HG22	4:A:209:HIS:HA	1.99	0.44
5:B:218:ILE:N	5:B:218:ILE:CD1	2.80	0.44
5:B:343:TYR:CD1	5:B:343:TYR:N	2.85	0.44
7:D:36:LEU:O	7:D:48:LYS:HD2	2.16	0.44
12:I:207:GLU:O	12:I:210:ILE:HG12	2.17	0.44
13:J:87:LYS:HE2	13:J:87:LYS:HA	1.98	0.44
15:M:19:ARG:HG2	15:M:65:LEU:HD22	1.98	0.44
16:N:94:TYR:HD2	16:N:96:ARG:O	1.99	0.44
17:O:31:GLN:HE21	17:O:32:LYS:N	2.15	0.44
17:O:47:PHE:HA	17:O:136:THR:OG1	2.17	0.44
23:U:111:THR:HG23	23:U:112:PRO:HD2	1.98	0.44
24:V:11:PHE:O	24:V:13:ILE:HG22	2.18	0.44
26:X:61:LYS:HB2	26:X:61:LYS:HE3	1.82	0.44
1:5:1477:A:OP1	1:5:3075:G:O2'	2.35	0.44
1:5:2158:A:OP2	4:A:156:LYS:NZ	2.45	0.44
1:5:2211:U:H5	1:5:2234:G:C6	2.36	0.44
1:5:2684:C:H2'	1:5:2685:C:C6	2.53	0.44
1:5:2757:U:H4'	22:T:7:TYR:HB3	1.99	0.44
1:5:94:G:H2'	1:5:95:A:H8	1.81	0.44
4:A:180:LEU:HD21	18:P:22:LEU:HB3	86.66	0.44
4:A:77:ILE:HG21	4:A:169:ILE:HG13	2.00	0.44
4:A:79:ASN:O	4:A:80:GLU:HB3	2.16	0.44
5:B:146:ARG:CZ	5:B:146:ARG:HA	2.47	0.44
12:I:36:LEU:HD11	12:I:69:ARG:CG	2.48	0.44
15:M:19:ARG:HA	15:M:69:THR:HG22	1.99	0.44
21:S:87:THR:HG23	22:T:156:TYR:CE2	2.52	0.44
27:Y:83:ASP:O	27:Y:84:LYS:HB2	2.16	0.44
1:5:1220:U:O5'	1:5:1222:G:H5''	2.18	0.44
1:5:3294:A:H2'	1:5:3295:A:O4'	2.17	0.44
1:5:877:C:H2'	1:5:878:G:O4'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:8:117:C:H2'	3:8:118:C:C6	2.51	0.44
11:H:129:ARG:O	11:H:132:VAL:HB	2.17	0.44
20:R:85:ARG:CZ	20:R:85:ARG:HB2	2.48	0.44
26:X:57:LEU:HD13	26:X:62:VAL:HG22	1.98	0.44
27:Y:36:SER:HB2	27:Y:37:LYS:NZ	2.33	0.44
27:Y:39:LEU:HD21	27:Y:107:THR:O	2.18	0.44
1:5:1252:A:H2'	1:5:1253:U:H5'	1.99	0.44
1:5:1301:A:H4'	1:5:1302:A:H5''	2.00	0.44
1:5:1317:A:OP2	1:5:1317:A:H3'	2.17	0.44
1:5:1491:A:C2'	1:5:1492:G:H5'	2.47	0.44
1:5:208:C:C2'	1:5:209:A:H5'	2.47	0.44
1:5:3086:A:H2'	1:5:3086:A:N3	2.32	0.44
1:5:3242:G:C5'	1:5:3245:A:H8	2.31	0.44
1:5:640:U:H2'	1:5:641:C:C6	2.52	0.44
1:5:791:A:H2'	1:5:792:G:C8	2.53	0.44
4:A:117:GLU:HB3	4:A:122:ASP:OD1	2.17	0.44
5:B:240:ARG:O	5:B:240:ARG:HG2	2.16	0.44
7:D:261:THR:O	7:D:264:GLN:N	2.39	0.44
9:F:127:LEU:HD23	9:F:127:LEU:HA	1.65	0.44
10:G:162:LEU:HD23	16:N:7:LEU:CD1	2.47	0.44
12:I:79:VAL:HG11	12:I:147:VAL:HG13	1.98	0.44
16:N:183:THR:CG2	16:N:183:THR:O	2.66	0.44
27:Y:3:LYS:O	27:Y:3:LYS:HG3	2.17	0.44
28:Z:115:LYS:O	28:Z:119:GLU:HG3	2.17	0.44
1:5:1093:A:C2	1:5:1096:U:O2	2.70	0.44
1:5:1241:U:C4'	1:5:1242:G:OP1	2.65	0.44
1:5:1562:C:H2'	1:5:1563:C:C6	2.53	0.44
1:5:2144:A:C1'	1:5:2281:A:H61	2.25	0.44
1:5:2997:G:C6	1:5:3396:U:C4	3.05	0.44
1:5:575:G:H2'	1:5:576:C:H6	1.82	0.44
5:B:120:LYS:HA	5:B:120:LYS:HD2	1.73	0.44
6:C:152:VAL:HG12	6:C:153:SER:N	2.32	0.44
6:C:95:ARG:HG2	6:C:95:ARG:HH11	1.82	0.44
7:D:185:PHE:HD1	7:D:185:PHE:H	1.65	0.44
11:H:3:TYR:CD1	11:H:3:TYR:N	2.85	0.44
17:O:155:LYS:HE2	17:O:155:LYS:HB3	1.83	0.44
1:5:383:G:C5'	18:P:96:GLN:HE22	2.24	0.44
21:S:10:ILE:HA	21:S:25:PHE:O	2.17	0.44
1:5:3218:A:OP1	1:5:3218:A:H3'	2.18	0.44
4:A:102:LEU:HB3	4:A:103:PRO:CD	2.47	0.44
5:B:215:ILE:HG21	5:B:282:ILE:HD11	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:284:ARG:NH2	5:B:295:ALA:O	2.51	0.44
9:F:199:ASN:O	9:F:202:LEU:HB2	2.17	0.44
9:F:210:PRO:HG3	9:F:214:TRP:CE2	2.52	0.44
11:H:38:LEU:HD13	11:H:71:VAL:HG22	1.99	0.44
11:H:99:ILE:HD11	11:H:117:PHE:HD1	1.82	0.44
1:5:269:G:OP1	16:N:47:LYS:HE2	2.18	0.44
18:P:39:TRP:O	18:P:113:TYR:HB2	2.18	0.44
19:Q:172:PHE:N	19:Q:172:PHE:CD1	2.86	0.44
21:S:111:ALA:O	21:S:115:ARG:HA	2.18	0.44
9:F:77:VAL:HG22	22:T:139:ARG:O	2.18	0.44
27:Y:70:ILE:HG13	27:Y:80:VAL:CG1	2.47	0.44
1:5:1101:G:OP2	9:F:196:LYS:NZ	2.49	0.44
1:5:1713:G:N2	1:5:1730:G:H1'	2.32	0.44
1:5:1840:U:H4'	1:5:1841:A:H5'	1.99	0.44
1:5:308:A:H5'	1:5:2223:A:O2'	2.18	0.44
1:5:847:A:H8	1:5:847:A:O5'	2.01	0.44
3:8:79:A:N3	3:8:79:A:H2'	2.32	0.44
3:8:80:A:H2'	3:8:81:U:H2'	1.99	0.44
5:B:232:ARG:CZ	5:B:268:GLY:HA3	2.47	0.44
6:C:73:ARG:HH11	6:C:73:ARG:CG	2.30	0.44
7:D:117:GLU:HG3	7:D:117:GLU:H	1.55	0.44
8:E:52:VAL:HG13	8:E:53:VAL:N	2.33	0.44
11:H:92:TYR:HD1	11:H:142:ASP:O	2.00	0.44
12:I:175:ASN:C	12:I:176:LEU:HG	2.38	0.44
14:L:47:ALA:CB	14:L:48:PRO:CD	2.96	0.44
6:C:299:ILE:CG2	19:Q:39:ARG:NH1	2.67	0.44
3:8:83:C:N4	27:Y:113:LYS:HZ1	2.15	0.44
1:5:1334:U:H2'	1:5:1335:C:H6	1.82	0.44
1:5:1397:C:O2'	1:5:1398:U:H5'	2.18	0.44
1:5:1819:U:O2'	1:5:1820:U:P	2.76	0.44
1:5:2611:U:H2'	1:5:2612:U:C6	2.52	0.44
1:5:3121:U:H1'	1:5:3122:A:H5"	2.00	0.44
1:5:524:U:H5"	15:M:77:ARG:HH21	1.83	0.44
6:C:178:LEU:HA	6:C:178:LEU:HD23	1.71	0.44
6:C:330:TYR:OH	9:F:52:GLN:HG2	2.18	0.44
6:C:47:ARG:NH1	6:C:109:TRP:O	2.51	0.44
7:D:191:ASP:HA	7:D:192:PRO:HD2	1.77	0.44
8:E:123:UNK:HG2	8:E:126:UNK:HB1	1.99	0.44
9:F:151:ARG:NH1	9:F:244:ASN:HA	2.33	0.44
10:G:205:ALA:HA	10:G:208:GLU:OE1	2.17	0.44
13:J:133:ARG:NH1	13:J:154:THR:HG22	2.33	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:L:71:ALA:CB	14:L:147:ILE:HD11	2.48	0.44
1:5:2023:P5P:H2'	1:5:2024:P5P:H8	1.99	0.43
1:5:259:C:C2	1:5:260:C:C5	3.06	0.43
1:5:2233:A:H2	1:5:2603:G:O4'	2.01	0.43
1:5:2662:G:H2'	1:5:2663:G:C8	2.52	0.43
1:5:281:G:C2'	1:5:282:G:H5'	2.48	0.43
1:5:3047:U:C2'	1:5:3048:A:H5'	2.48	0.43
1:5:3162:C:O2'	1:5:3163:A:H5'	2.18	0.43
1:5:3186:A:N3	11:H:44:THR:HG22	2.33	0.43
2:7:15:C:C2	2:7:16:U:C5	3.05	0.43
3:8:155:A:C3'	3:8:156:U:H5''	2.48	0.43
4:A:130:SER:HA	4:A:169:ILE:HG22	1.99	0.43
4:A:149:ARG:CZ	4:A:149:ARG:HB2	2.46	0.43
6:C:318:LEU:HD23	6:C:318:LEU:N	2.33	0.43
7:D:126:GLU:HB2	7:D:196:ARG:HE	1.82	0.43
7:D:194:LEU:HD11	7:D:198:TYR:HE2	1.82	0.43
9:F:151:ARG:HD2	9:F:207:LEU:HD23	2.00	0.43
11:H:156:GLN:O	11:H:159:ALA:N	2.49	0.43
15:M:118:PHE:O	15:M:121:MET:HB3	2.18	0.43
16:N:182:ASN:O	16:N:183:THR:CG2	2.63	0.43
17:O:105:PHE:N	17:O:105:PHE:CD1	2.86	0.43
17:O:109:PRO:CB	17:O:110:PRO:HD3	2.48	0.43
18:P:10:ASN:HA	18:P:11:PRO:HD2	1.89	0.43
21:S:23:LYS:HD2	21:S:23:LYS:N	2.32	0.43
26:X:34:LEU:CD1	26:X:35:PRO:HD2	2.41	0.43
28:Z:36:HIS:N	28:Z:37:PRO:HD3	2.33	0.43
1:5:1275:C:H2'	1:5:1276:U:H5'	1.99	0.43
1:5:258:G:H2'	1:5:259:C:H6	1.83	0.43
1:5:2714:G:H5''	1:5:2714:G:N3	2.33	0.43
1:5:271:C:H2'	1:5:272:G:O4'	2.18	0.43
1:5:281:G:H2'	1:5:282:G:H5'	2.00	0.43
1:5:3058:U:H3'	1:5:3058:U:O2	2.17	0.43
1:5:3212:C:OP2	15:M:124:ARG:NH2	2.51	0.43
1:5:3233:C:H2'	1:5:3234:A:C8	2.52	0.43
1:5:3245:A:H2	1:5:3246:G:C2	2.35	0.43
1:5:601:U:OP1	1:5:601:U:H6	2.01	0.43
1:5:618:C:H2'	1:5:619:A:O4'	2.18	0.43
7:D:162:ALA:O	7:D:166:ALA:HB2	2.19	0.43
11:H:161:LEU:HD13	11:H:161:LEU:O	2.18	0.43
13:J:158:ASP:O	13:J:161:SER:HB3	2.18	0.43
13:J:16:LYS:HD3	13:J:72:ARG:CZ	2.48	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:O:23:VAL:HG13	17:O:33:ILE:HG21	1.98	0.43
1:5:671:U:O2'	19:Q:20:LYS:HD3	2.17	0.43
20:R:35:ALA:O	20:R:37:SER:N	2.51	0.43
26:X:105:VAL:HG11	26:X:126:LEU:HD13	2.00	0.43
27:Y:32:SER:HA	27:Y:49:PRO:HA	2.00	0.43
1:5:1118:C:H6	1:5:1118:C:O5'	2.02	0.43
1:5:1387:G:N2	1:5:1421:G:C4	2.85	0.43
1:5:1447:G:OP1	18:P:65:SER:OG	2.26	0.43
1:5:211:A:OP2	6:C:221:ASN:HB2	2.18	0.43
1:5:3095:U:H2'	1:5:3096:C:H6	1.83	0.43
1:5:3289:G:O2'	1:5:3290:G:P	2.76	0.43
1:5:3354:U:O4'	1:5:3354:U:O2	2.36	0.43
3:8:66:A:H2'	3:8:67:U:C6	2.53	0.43
6:C:180:LYS:O	6:C:184:SER:HB3	2.18	0.43
6:C:140:HIS:ND1	6:C:247:PHE:HB3	2.33	0.43
7:D:122:VAL:CG1	7:D:125:VAL:HA	2.48	0.43
20:R:112:ALA:CB	20:R:114:LYS:HZ1	2.31	0.43
1:5:1864:A:H5'	20:R:88:ARG:HD2	2.00	0.43
21:S:106:LEU:HD13	21:S:106:LEU:C	2.39	0.43
25:W:9:SER:CB	25:W:51:TRP:HZ3	2.31	0.43
1:5:1063:G:H2'	1:5:1097:G:H21	1.83	0.43
1:5:1471:U:C2	1:5:1472:U:C5	3.06	0.43
1:5:3357:U:O2'	1:5:3358:U:OP1	2.33	0.43
2:7:16:U:H2'	2:7:17:A:C8	2.53	0.43
5:B:161:LEU:HD23	5:B:180:GLU:HG2	2.01	0.43
6:C:165:ALA:O	6:C:168:ALA:HB3	2.18	0.43
7:D:177:GLU:HA	7:D:180:PHE:CD2	2.53	0.43
10:G:171:LYS:HA	10:G:171:LYS:HD2	1.81	0.43
11:H:10:ILE:HD13	11:H:75:VAL:HG11	2.00	0.43
11:H:90:MET:HB3	11:H:180:TYR:O	2.19	0.43
14:L:134:GLU:HG3	14:L:135:ALA:N	2.33	0.43
18:P:28:ASN:O	18:P:32:THR:HG22	2.18	0.43
19:Q:165:ILE:HA	19:Q:165:ILE:HD12	1.82	0.43
22:T:157:GLU:HG2	22:T:158:THR:N	2.33	0.43
1:5:1566:A:H2'	1:5:1567:U:O4'	2.18	0.43
1:5:2575:G:C2	1:5:2576:G:C8	3.06	0.43
1:5:3009:G:C5	1:5:3010:U:C5	3.06	0.43
1:5:3015:G:C4	1:5:3040:A:C2	3.07	0.43
1:5:545:U:H3'	1:5:546:C:H6	1.82	0.43
2:7:22:A:H1'	7:D:272:TYR:CE2	2.54	0.43
3:8:150:G:O2'	10:G:56:VAL:HG13	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:514:G:N2	6:C:340:GLY:O	2.50	0.43
9:F:158:LYS:C	9:F:158:LYS:HD3	2.39	0.43
6:C:330:TYR:HB2	9:F:45:LEU:HD22	2.00	0.43
10:G:166:LEU:CB	10:G:167:PRO:HD3	2.49	0.43
11:H:89:LYS:HB3	11:H:143:GLU:OE2	2.19	0.43
17:O:128:ARG:NH1	17:O:128:ARG:CG	2.81	0.43
24:V:48:ARG:HG3	24:V:48:ARG:NH1	2.06	0.43
24:V:93:LEU:HA	25:W:20:LEU:O	2.18	0.43
26:X:86:VAL:CG1	26:X:87:SER:N	2.81	0.43
28:Z:130:PHE:HE1	28:Z:131:PHE:CE2	2.36	0.43
28:Z:58:GLY:O	28:Z:62:VAL:HG23	2.18	0.43
1:5:100:A:O2'	1:5:101:G:H5'	2.19	0.43
1:5:112:U:O2'	1:5:113:C:H5''	2.19	0.43
1:5:1329:U:O2'	1:5:1330:A:OP1	2.28	0.43
1:5:2421:U:C3'	1:5:2422:C:H5''	2.48	0.43
1:5:2871:G:H3'	1:5:2872:A:C5'	2.48	0.43
1:5:534:U:OP1	21:S:132:THR:OG1	2.33	0.43
1:5:678:G:H2'	1:5:679:U:O4'	2.18	0.43
1:5:897:U:C2	1:5:898:U:C5	3.06	0.43
1:5:59:G:H2'	3:8:33:A:C2'	2.48	0.43
5:B:187:SER:HB3	5:B:190:GLU:OE1	2.18	0.43
11:H:87:LYS:HZ3	11:H:191:LEU:CD2	2.32	0.43
13:J:151:SER:O	13:J:152:HIS:CB	2.66	0.43
14:L:188:ARG:HG2	14:L:188:ARG:O	2.19	0.43
16:N:203:ARG:HA	16:N:203:ARG:HD3	1.86	0.43
19:Q:30:VAL:HG12	19:Q:30:VAL:O	2.83	0.43
1:5:2643:A:OP2	22:T:3:LYS:HE2	2.18	0.43
1:5:1676:A:OP2	23:U:72:SER:HB2	2.18	0.43
26:X:65:GLN:HA	26:X:66:PRO:HD3	1.87	0.43
27:Y:86:THR:CA	27:Y:97:ILE:HD13	2.40	0.43
1:5:335:G:OP1	27:Y:9:SER:HB2	2.19	0.43
1:5:1188:U:OP1	1:5:1210:U:O2'	2.26	0.43
1:5:1323:G:C2'	1:5:1324:U:H5'	2.48	0.43
1:5:1555:U:O2'	1:5:1556:C:C5'	2.66	0.43
1:5:1813:A:O2'	1:5:1816:A:N3	2.49	0.43
1:5:1845:G:C5'	1:5:1846:C:H5'	2.47	0.43
1:5:192:C:C2	1:5:193:C:C5	3.07	0.43
1:5:2116:G:C2	1:5:3064:U:H5'	2.54	0.43
1:5:2842:U:H2'	1:5:2843:U:H5'	2.00	0.43
1:5:3228:C:H5''	15:M:137:LYS:HZ2	1.81	0.43
4:A:138:GLY:O	4:A:146:THR:HG23	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:196:TRP:CG	4:A:197:PRO:HA	2.54	0.43
5:B:92:TYR:CE2	5:B:101:SER:HB3	2.54	0.43
12:I:174:THR:HG23	12:I:175:ASN:H	1.83	0.43
14:L:131:LYS:H	14:L:131:LYS:CD	2.19	0.43
14:L:164:GLU:OE1	14:L:164:GLU:HA	2.19	0.43
17:O:126:VAL:HG22	17:O:127:LEU:N	2.34	0.43
21:S:171:PHE:CG	21:S:172:TYR:N	2.86	0.43
22:T:99:SER:OG	22:T:101:CYS:SG	2.64	0.43
24:V:19:VAL:HG13	24:V:37:ILE:HA	2.00	0.43
1:5:1553:U:H5'	1:5:1553:U:H6	1.82	0.43
1:5:2156:C:C4	1:5:2178:A:C2	3.06	0.43
1:5:2562:A:N6	1:5:2579:G:H1'	2.34	0.43
1:5:3268:A:H5''	8:E:46:ARG:HH21	1.83	0.43
2:7:76:A:O2'	21:S:50:LYS:NZ	2.50	0.43
4:A:180:LEU:HD23	4:A:180:LEU:HA	1.84	0.43
6:C:110:ASN:N	6:C:110:ASN:OD1	2.52	0.43
1:5:2747:A:H5'	7:D:175:HIS:HA	2.01	0.43
9:F:176:TYR:CD1	9:F:194:HIS:CD2	3.07	0.43
10:G:163:VAL:O	10:G:166:LEU:HB2	2.19	0.43
3:8:155:A:H5'	10:G:185:ARG:HD2	2.01	0.43
12:I:29:SER:OG	12:I:31:ILE:O	2.37	0.43
16:N:84:PRO:HA	16:N:87:GLN:HB2	2.01	0.43
18:P:151:THR:CG2	18:P:152:GLU:N	2.82	0.43
18:P:151:THR:HG22	18:P:152:GLU:N	2.34	0.43
5:B:67:PHE:HD2	24:V:88:ARG:NH2	2.16	0.43
25:W:42:GLN:O	25:W:43:ARG:HB2	2.19	0.43
1:5:2176:U:H2'	1:5:2177:G:H5'	2.00	0.43
1:5:2222:A:H2'	1:5:2223:A:C8	2.54	0.43
1:5:2584:G:H1'	10:G:240:ASN:HD21	1.84	0.43
1:5:340:C:O2'	1:5:341:G:H5'	2.18	0.43
1:5:625:G:H2'	1:5:626:U:C6	2.53	0.43
1:5:833:G:H2'	1:5:834:U:O4'	2.19	0.43
1:5:939:U:H2'	1:5:940:G:H8	1.82	0.43
2:7:75:G:H1'	2:7:104:A:N6	2.34	0.43
3:8:84:C:C2	27:Y:112:ASP:HA	2.54	0.43
4:A:109:GLU:H	4:A:109:GLU:CD	2.21	0.43
4:A:147:ARG:HH11	4:A:147:ARG:HB2	1.83	0.43
1:5:3149:G:O2'	5:B:129:ALA:O	2.26	0.43
5:B:235:THR:HG23	5:B:236:LYS:N	2.33	0.43
9:F:53:LYS:O	9:F:57:THR:HG23	2.18	0.43
11:H:190:ASP:HB3	11:H:191:LEU:H	1.58	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:I:48:LEU:O	12:I:139:ARG:HA	2.19	0.43
12:I:85:PHE:CB	12:I:140:THR:CG2	2.96	0.43
17:O:35:VAL:HB	17:O:104:VAL:HG13	2.00	0.43
19:Q:32:LEU:O	19:Q:32:LEU:HD23	2.19	0.43
28:Z:89:VAL:O	28:Z:89:VAL:HG22	2.18	0.43
1:5:1054:A:H2'	1:5:1054:A:N3	2.33	0.43
1:5:1333:C:H2'	1:5:1334:U:H6	1.83	0.43
1:5:1395:G:H2'	1:5:1396:C:C6	2.54	0.43
1:5:1377:G:H1'	1:5:1431:G:N2	2.33	0.43
1:5:1941:C:H2'	1:5:1942:U:C6	2.54	0.43
1:5:2211:U:H5	1:5:2234:G:O6	2.02	0.43
1:5:2573:G:C2'	1:5:2574:G:H5''	2.49	0.43
1:5:2689:A:C8	1:5:2702:A:C6	3.07	0.43
1:5:2899:C:O2'	1:5:2901:G:OP2	2.30	0.43
1:5:3340:G:H4'	1:5:3341:U:OP1	2.18	0.43
1:5:997:A:C2'	1:5:998:A:H5'	2.49	0.43
1:5:997:A:H2'	1:5:998:A:O4'	2.18	0.43
3:8:103:G:C6	3:8:105:A:N6	2.87	0.43
3:8:146:U:H2'	3:8:147:U:C6	2.54	0.43
3:8:79:A:O2'	3:8:80:A:OP1	2.25	0.43
5:B:343:TYR:HD1	5:B:343:TYR:N	2.16	0.43
5:B:369:ARG:HB3	25:W:32:GLN:NE2	2.34	0.43
6:C:357:GLU:O	6:C:361:HIS:HB2	2.19	0.43
7:D:142:PHE:O	7:D:172:TYR:HB3	2.19	0.43
9:F:47:ARG:O	9:F:50:ALA:N	2.52	0.43
10:G:81:THR:O	10:G:82:LEU:HD13	2.19	0.43
11:H:88:TYR:CD2	11:H:184:LYS:HB3	2.53	0.43
14:L:191:ALA:O	14:L:194:GLU:HB2	2.19	0.43
17:O:183:ALA:HA	17:O:186:ALA:CB	2.35	0.43
17:O:8:VAL:HG22	17:O:34:VAL:HG13	2.00	0.43
17:O:88:VAL:HG12	17:O:89:SER:N	2.33	0.43
20:R:85:ARG:NH1	20:R:85:ARG:CG	2.82	0.43
23:U:81:LYS:HD3	23:U:90:ARG:NH2	2.34	0.43
1:5:1494:U:H4'	1:5:1495:U:O5'	2.18	0.42
1:5:1523:U:H2'	1:5:1607:U:O2	2.18	0.42
1:5:3269:U:H5'	1:5:3271:G:O4'	2.19	0.42
1:5:759:U:C3'	1:5:760:G:H5'	2.49	0.42
2:7:47:C:OP2	7:D:158:ARG:HD2	2.19	0.42
3:8:62:C:H4'	3:8:63:G:O5'	2.18	0.42
5:B:188:ILE:N	5:B:188:ILE:HD12	2.17	0.42
5:B:323:MET:HB3	5:B:323:MET:HE2	1.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:H:147:SER:HB2	11:H:187:ILE:HD11	2.01	0.42
13:J:164:LYS:HE2	13:J:171:VAL:H	1.84	0.42
14:L:190:LYS:HE3	14:L:190:LYS:HB3	1.69	0.42
15:M:49:PRO:HG2	15:M:81:VAL:HG12	2.01	0.42
20:R:62:ARG:HB2	20:R:62:ARG:CZ	2.48	0.42
26:X:105:VAL:HG12	26:X:106:ASP:N	2.34	0.42
27:Y:109:LEU:HD23	27:Y:109:LEU:HA	1.68	0.42
1:5:2950:G:OP1	5:B:241:LYS:NZ	2.48	0.42
1:5:3158:G:OP2	1:5:3158:G:H4'	2.19	0.42
1:5:354:U:C5	1:5:364:G:N2	2.87	0.42
2:7:44:C:C2'	2:7:45:A:H5'	2.49	0.42
3:8:157:U:H3'	3:8:158:U:H3'	2.00	0.42
5:B:311:PHE:HB2	5:B:314:TYR:HB3	2.01	0.42
1:5:1386:A:H5"	6:C:141:ARG:NH2	2.34	0.42
10:G:183:LYS:HG3	10:G:184:ALA:N	2.34	0.42
10:G:185:ARG:O	10:G:188:THR:OG1	2.28	0.42
10:G:90:THR:OG1	10:G:91:PHE:N	2.52	0.42
11:H:71:VAL:HG12	11:H:72:LYS:N	2.33	0.42
13:J:21:ILE:HD11	13:J:37:LEU:HD21	2.01	0.42
17:O:181:ALA:O	17:O:184:THR:HG22	2.18	0.42
21:S:33:ASN:OD1	21:S:36:ILE:HG13	2.19	0.42
24:V:37:ILE:HG12	24:V:59:MET:O	2.19	0.42
1:5:1831:U:OP2	26:X:92:LYS:HD2	2.19	0.42
1:5:2247:G:N2	1:5:2271:A:C2	2.86	0.42
1:5:2243:A:C4	1:5:2313:A:H2'	2.55	0.42
1:5:2438:A:O2'	1:5:2439:A:OP1	2.30	0.42
1:5:2545:C:C2'	1:5:2546:C:H5'	2.49	0.42
1:5:3289:G:O2'	1:5:3290:G:O5'	2.34	0.42
1:5:620:U:OP1	1:5:622:A:C6	2.73	0.42
1:5:679:U:O2'	1:5:788:C:O2	2.37	0.42
1:5:896:A:C2	1:5:913:A:C2	3.08	0.42
2:7:7:G:OP1	7:D:33:ARG:HD2	2.19	0.42
3:8:108:C:H2'	3:8:109:A:O4'	2.18	0.42
1:5:1796:G:H5'	4:A:22:LEU:HD13	2.00	0.42
5:B:356:LEU:HD23	5:B:356:LEU:N	2.33	0.42
6:C:184:SER:HB2	6:C:202:ARG:HG2	2.02	0.42
7:D:18:THR:HA	7:D:19:PRO:HD3	1.80	0.42
7:D:41:LYS:O	7:D:41:LYS:HG2	4.84	0.42
7:D:56:THR:OG1	7:D:59:ASP:N	2.53	0.42
7:D:62:CYS:HB3	7:D:105:ILE:HD13	2.00	0.42
9:F:141:TYR:HA	9:F:189:ILE:HD12	1.99	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:F:92:ILE:HD12	9:F:92:ILE:C	2.40	0.42
11:H:88:TYR:CE2	11:H:184:LYS:CB	3.01	0.42
12:I:42:THR:HG23	12:I:45:GLU:HG3	1.99	0.42
5:B:261:MET:SD	17:O:64:PHE:HA	2.59	0.42
1:5:880:G:C8	18:P:132:ALA:CB	3.01	0.42
19:Q:102:ALA:HA	19:Q:122:ILE:O	2.20	0.42
19:Q:88:THR:HA	19:Q:107:THR:HG23	2.00	0.42
20:R:112:ALA:HB1	20:R:114:LYS:NZ	2.34	0.42
5:B:73:VAL:HG22	24:V:86:ARG:NH2	2.33	0.42
26:X:57:LEU:CD1	26:X:62:VAL:HG22	2.49	0.42
28:Z:11:ALA:HB1	28:Z:81:LEU:O	2.19	0.42
28:Z:46:ILE:HD11	28:Z:49:TYR:CD2	2.54	0.42
1:5:1166:G:O2'	1:5:1167:U:H5'	2.19	0.42
1:5:1246:G:N3	1:5:1264:G:O2'	2.41	0.42
1:5:1282:G:C5	1:5:1283:C:C5	3.07	0.42
1:5:1397:C:H2'	1:5:1398:U:H5'	1.99	0.42
1:5:158:G:H2'	1:5:159:A:C8	2.49	0.42
1:5:2282:U:O2	1:5:2310:U:H4'	2.19	0.42
1:5:2512:C:H2'	1:5:2513:U:C6	2.54	0.42
1:5:553:U:O2'	1:5:554:A:H5'	2.19	0.42
1:5:854:G:H2'	1:5:855:U:H6	1.84	0.42
4:A:209:HIS:HD2	4:A:211:HIS:HB2	1.85	0.42
5:B:56:ILE:CD1	5:B:76:VAL:HG11	2.49	0.42
6:C:300:ARG:HG3	6:C:300:ARG:NH1	2.25	0.42
10:G:33:ASN:HB3	10:G:38:GLN:HG3	2.01	0.42
10:G:68:ARG:O	10:G:69:LEU:CB	2.67	0.42
12:I:36:LEU:HD11	12:I:69:ARG:HG2	2.00	0.42
13:J:133:ARG:HH12	13:J:154:THR:HA	1.83	0.42
16:N:99:ARG:HH21	16:N:167:THR:HG22	1.85	0.42
17:O:128:ARG:NH1	17:O:128:ARG:CB	2.65	0.42
17:O:25:LYS:HD3	17:O:29:ASN:HD21	1.83	0.42
18:P:39:TRP:N	18:P:39:TRP:CD1	2.87	0.42
22:T:134:GLN:HA	22:T:134:GLN:OE1	2.20	0.42
9:F:80:GLN:HG3	22:T:136:ARG:HB3	2.01	0.42
22:T:68:THR:HG23	22:T:69:LYS:N	2.34	0.42
1:5:994:G:H22	1:5:1053:A:H2'	1.84	0.42
1:5:1070:U:C2'	1:5:1071:U:H5'	2.49	0.42
1:5:1076:C:H2'	1:5:1076:C:O2	2.20	0.42
1:5:1141:C:H2'	1:5:1142:G:H5'	2.01	0.42
1:5:1238:C:C2'	1:5:1239:C:H5''	2.50	0.42
1:5:1342:C:H2'	1:5:1343:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1381:A:C2	1:5:1426:C:C2	3.08	0.42
1:5:2101:C:H2'	1:5:2102:U:C6	2.54	0.42
1:5:2572:C:H2'	1:5:2572:C:OP2	2.19	0.42
1:5:273:A:H2'	1:5:274:G:C8	2.55	0.42
1:5:281:G:C6	1:5:282:G:C6	3.07	0.42
1:5:3009:G:H2'	1:5:3010:U:C5'	2.50	0.42
1:5:3243:A:N7	17:O:156:LEU:HD22	2.35	0.42
1:5:617:G:C2'	1:5:618:C:H5'	2.49	0.42
4:A:103:PRO:HD2	4:A:106:SER:HB2	2.01	0.42
4:A:179:LEU:HD13	4:A:179:LEU:HA	1.65	0.42
5:B:307:PRO:HA	5:B:361:THR:O	2.20	0.42
5:B:306:THR:HG23	5:B:311:PHE:CD1	2.54	0.42
6:C:25:VAL:HG13	6:C:276:LEU:HD21	2.02	0.42
7:D:107:ARG:HA	7:D:107:ARG:HD3	1.74	0.42
8:E:54:TYR:CE1	8:E:63:LEU:HD22	2.53	0.42
9:F:101:LYS:O	9:F:104:GLN:N	2.51	0.42
9:F:103:LEU:HG	9:F:130:ILE:CG1	2.48	0.42
9:F:116:PHE:HB2	9:F:199:ASN:OD1	2.19	0.42
12:I:206:LEU:O	12:I:206:LEU:HG	2.19	0.42
15:M:72:LEU:HD23	15:M:73:PRO:CD	2.32	0.42
19:Q:162:ALA:HA	19:Q:163:PRO:HD2	1.83	0.42
25:W:39:LEU:HA	25:W:39:LEU:HD12	1.78	0.42
1:5:1521:G:H21	1:5:1835:A:H1'	1.85	0.42
1:5:1554:U:H1'	1:5:1555:U:H5''	2.02	0.42
1:5:1555:U:HO2'	1:5:1556:C:P	2.35	0.42
1:5:1942:U:H2'	1:5:1943:C:O4'	2.20	0.42
1:5:2112:U:C4'	1:5:2113:A:H5'	2.40	0.42
1:5:2560:C:H2'	1:5:2560:C:O2	2.18	0.42
1:5:2796:G:H4'	1:5:2798:C:C6	2.54	0.42
1:5:2835:U:H2'	1:5:2836:C:O2	2.18	0.42
1:5:3357:U:O2'	1:5:3358:U:P	2.77	0.42
1:5:730:C:C2	1:5:731:U:C5	3.08	0.42
1:5:905:U:O2'	1:5:910:G:H4'	2.20	0.42
4:A:104:LEU:HD12	4:A:104:LEU:HA	1.71	0.42
6:C:300:ARG:CG	6:C:300:ARG:NH1	2.56	0.42
6:C:309:ARG:CZ	6:C:312:VAL:HG12	2.49	0.42
6:C:92:ASN:H	6:C:93:MET:HE2	1.84	0.42
7:D:83:LEU:N	7:D:84:PRO:CD	2.82	0.42
8:E:52:VAL:HG22	8:E:67:GLY:HA2	2.00	0.42
11:H:38:LEU:HD23	11:H:38:LEU:HA	1.82	0.42
13:J:13:LYS:HE3	13:J:13:LYS:HB2	1.79	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:L:180:ARG:HB3	14:L:180:ARG:HH11	1.84	0.42
15:M:36:VAL:CG2	15:M:47:ASP:HB2	2.50	0.42
16:N:164:LEU:HD23	16:N:164:LEU:N	2.34	0.42
16:N:38:ARG:NE	16:N:60:VAL:HG13	2.34	0.42
24:V:13:ILE:HD11	24:V:54:LEU:H	1.84	0.42
25:W:18:GLY:HA3	25:W:31:PHE:O	2.19	0.42
28:Z:135:ARG:HB3	28:Z:135:ARG:HH21	1.84	0.42
1:5:112:U:HO2'	1:5:113:C:H5''	1.85	0.42
1:5:2168:A:H8	1:5:2168:A:O5'	2.03	0.42
1:5:2514:U:OP1	1:5:2514:U:H6	2.03	0.42
1:5:282:G:H3'	1:5:282:G:H8	1.84	0.42
1:5:2919:A:C6	1:5:2920:U:C4	3.08	0.42
1:5:3274:A:C5	18:P:171:ARG:NH2	2.88	0.42
1:5:947:G:C6	1:5:948:C:N4	2.88	0.42
2:7:118:A:H2'	2:7:119:U:O4'	2.20	0.42
2:7:28:C:H2'	2:7:29:C:O4'	2.20	0.42
3:8:35:C:O5'	3:8:35:C:H6	2.02	0.42
7:D:194:LEU:O	7:D:194:LEU:HD12	2.20	0.42
7:D:74:VAL:O	7:D:74:VAL:HG13	2.19	0.42
9:F:153:PHE:CD1	9:F:162:PRO:HA	2.55	0.42
10:G:204:ARG:HB3	10:G:206:GLU:OE2	2.20	0.42
14:L:14:PHE:HE2	16:N:197:LEU:HD22	1.84	0.42
20:R:112:ALA:HB1	20:R:114:LYS:HZ1	1.84	0.42
22:T:144:GLU:C	22:T:146:ASN:H	2.22	0.42
22:T:83:ARG:NH1	22:T:85:LEU:HD21	2.34	0.42
28:Z:116:LYS:HB2	28:Z:116:LYS:HE3	1.73	0.42
28:Z:26:VAL:HG23	28:Z:27:LYS:H	1.84	0.42
28:Z:51:LEU:HA	28:Z:51:LEU:HD23	1.78	0.42
1:5:112:U:O2'	1:5:113:C:P	2.78	0.42
1:5:1223:A:OP2	1:5:1223:A:H8	2.02	0.42
1:5:1653:G:H2'	1:5:1654:A:O4'	2.19	0.42
1:5:1711:C:H2'	1:5:1712:G:O4'	2.19	0.42
1:5:1862:U:H5''	1:5:1863:G:OP2	2.19	0.42
1:5:2279:A:H2	1:5:2305:G:N7	2.18	0.42
1:5:2538:U:H2'	1:5:2539:C:H5''	2.01	0.42
1:5:3044:G:H2'	1:5:3045:G:C8	2.55	0.42
1:5:2342:U:H5''	1:5:3089:C:O2'	2.20	0.42
1:5:3131:U:H2'	1:5:3132:C:H6	1.83	0.42
1:5:3305:A:O2'	1:5:3306:U:H5'	2.20	0.42
1:5:715:A:C8	1:5:715:A:H3'	2.54	0.42
4:A:47:GLN:NE2	4:A:60:LYS:HD2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:B:211:GLN:HB3	5:B:212:ASN:ND2	2.34	0.42
5:B:57:VAL:O	5:B:357:LYS:HB2	2.19	0.42
7:D:185:PHE:CD1	7:D:186:GLU:N	2.88	0.42
7:D:68:THR:CG2	7:D:70:THR:HG22	2.50	0.42
13:J:166:LYS:O	13:J:167:TYR:HB2	2.19	0.42
27:Y:36:SER:OG	27:Y:39:LEU:HD23	2.19	0.42
28:Z:55:LYS:HD3	28:Z:55:LYS:C	2.39	0.42
1:5:1125:U:OP1	12:I:15:LYS:HG3	2.19	0.42
1:5:1946:A:H2'	1:5:1947:G:O4'	2.20	0.42
1:5:1939:G:H1'	1:5:2114:C:O2	2.20	0.42
1:5:2235:C:C2	1:5:2236:G:C8	3.08	0.42
1:5:2233:A:C4'	1:5:2428:U:H4'	2.50	0.42
1:5:253:A:C4	1:5:254:A:C8	3.08	0.42
1:5:2561:A:C2	10:G:32:LYS:HG2	2.54	0.42
1:5:261:U:H2'	1:5:262:U:C6	2.55	0.42
1:5:3043:C:C2	1:5:3044:G:C8	3.08	0.42
1:5:833:G:N2	1:5:834:U:H1'	2.35	0.42
2:7:48:U:C2'	2:7:49:G:H5'	2.50	0.42
3:8:148:G:H2'	3:8:149:A:H8	1.83	0.42
1:5:3292:A:H4'	5:B:132:LYS:NZ	2.35	0.42
1:5:211:A:H3'	6:C:221:ASN:ND2	2.34	0.42
9:F:131:GLU:CB	9:F:132:PRO:HD3	2.23	0.42
12:I:76:MET:HE3	12:I:148:VAL:HA	2.01	0.42
14:L:42:ARG:HG3	14:L:42:ARG:O	2.18	0.42
11:H:50:ASN:ND2	15:M:5:SER:H	2.18	0.42
16:N:198:SER:C	16:N:199:LEU:HD23	2.40	0.42
15:M:131:VAL:HG22	17:O:182:ASN:HA	2.01	0.42
18:P:95:LEU:HA	18:P:95:LEU:HD23	1.88	0.42
20:R:120:TYR:CD2	20:R:120:TYR:C	2.92	0.42
22:T:56:PHE:CD1	22:T:56:PHE:C	2.94	0.42
24:V:16:GLY:O	24:V:18:PRO:HD3	2.20	0.42
27:Y:99:LEU:HD23	27:Y:99:LEU:N	2.33	0.42
1:5:1062:A:H5''	1:5:1063:G:H5'	2.02	0.42
1:5:1094:U:H3'	1:5:1096:U:OP1	2.20	0.42
1:5:1212:A:O2'	1:5:1213:G:H5'	2.19	0.42
1:5:2297:U:HO2'	1:5:2920:U:C1'	2.33	0.42
1:5:2308:C:H2'	1:5:2309:A:C8	2.54	0.42
1:5:2309:A:H1'	1:5:2961:G:O2'	2.19	0.42
1:5:2538:U:H4'	1:5:2541:U:O4	2.20	0.42
1:5:2736:A:OP1	22:T:92:ARG:NH1	2.48	0.42
1:5:57:A:C2	1:5:58:G:C4	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:8:76:C:H2'	3:8:77:A:O5'	2.19	0.42
4:A:189:TYR:CD1	4:A:189:TYR:N	2.88	0.42
1:5:823:C:H5'	4:A:19:HIS:CE1	2.55	0.42
5:B:196:ARG:HA	5:B:196:ARG:HE	1.85	0.42
1:5:2915:U:H5	5:B:7:GLU:HG2	1.83	0.42
6:C:181:VAL:HG11	6:C:224:GLY:HA3	2.02	0.42
7:D:144:VAL:CG1	7:D:145:PHE:N	2.83	0.42
7:D:218:ARG:O	7:D:222:LEU:HG	2.19	0.42
8:E:8:LYS:HZ2	8:E:8:LYS:HA	1.84	0.42
9:F:92:ILE:HD12	9:F:92:ILE:O	2.20	0.42
10:G:211:LEU:HD13	10:G:211:LEU:C	2.40	0.42
11:H:86:TYR:O	11:H:147:SER:HA	2.20	0.42
14:L:60:ALA:HA	14:L:61:PRO:HD3	1.80	0.42
14:L:70:ARG:HG2	14:L:71:ALA:N	2.35	0.42
14:L:73:ARG:HG2	14:L:98:ASP:HB2	2.01	0.42
16:N:175:ASN:HB2	16:N:180:PHE:CD2	2.55	0.42
24:V:11:PHE:CZ	24:V:88:ARG:HD2	2.55	0.42
28:Z:76:ASN:OD1	28:Z:77:TYR:N	2.53	0.42
1:5:1008:U:C2'	1:5:1009:A:H5'	2.50	0.41
1:5:1238:C:H3'	1:5:1239:C:H5''	2.01	0.41
1:5:1363:A:H2'	1:5:1364:C:O4'	2.20	0.41
1:5:651:G:O2'	1:5:1435:A:OP1	2.32	0.41
1:5:1638:A:H5''	1:5:1639:C:OP2	2.19	0.41
1:5:1688:U:H2'	1:5:1689:U:C6	2.55	0.41
1:5:179:C:C2	1:5:238:A:C2	3.07	0.41
1:5:2286:U:C4	1:5:2288:G:H1'	2.54	0.41
1:5:2919:A:N6	1:5:2920:U:O4	2.53	0.41
1:5:3060:C:O2	1:5:3332:U:O2'	2.35	0.41
1:5:414:U:C2'	1:5:415:G:H5'	2.50	0.41
2:7:107:C:H2'	2:7:108:A:C8	2.55	0.41
4:A:5:ILE:HG21	4:A:210:PRO:HD3	2.01	0.41
13:J:171:VAL:O	13:J:172:LEU:HD23	2.20	0.41
14:L:95:ILE:HG22	14:L:96:ALA:N	2.34	0.41
16:N:185:ALA:HB3	16:N:190:THR:HG22	2.00	0.41
18:P:131:ARG:HD2	18:P:131:ARG:HA	1.68	0.41
18:P:29:THR:HA	18:P:32:THR:HG23	2.01	0.41
19:Q:74:GLU:O	19:Q:74:GLU:HG2	3.59	0.41
24:V:28:ASN:OD1	24:V:28:ASN:N	2.48	0.41
27:Y:70:ILE:HG13	27:Y:80:VAL:HG11	2.01	0.41
28:Z:128:GLN:CG	28:Z:129:TRP:N	2.81	0.41
1:5:1231:A:H4'	1:5:1261:G:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1507:G:H5'	1:5:1507:G:N3	2.35	0.41
1:5:1761:C:H2'	1:5:1762:C:O2	2.19	0.41
1:5:2214:A:H2	1:5:2430:A:C1'	2.33	0.41
1:5:265:A:H5''	1:5:266:A:OP2	2.20	0.41
1:5:374:A:O2'	1:5:376:G:H8	2.02	0.41
1:5:735:A:HO2'	1:5:736:A:P	2.42	0.41
1:5:736:A:H2'	1:5:737:G:O4'	2.19	0.41
4:A:103:PRO:HG2	4:A:106:SER:OG	2.20	0.41
5:B:4:ARG:CG	5:B:4:ARG:NH1	2.59	0.41
7:D:146:LEU:HA	7:D:146:LEU:HD23	1.75	0.41
10:G:72:PRO:HA	10:G:73:PRO:HD3	1.68	0.41
11:H:87:LYS:HE2	11:H:89:LYS:HE2	2.02	0.41
18:P:101:ASN:OD1	18:P:101:ASN:N	2.52	0.41
19:Q:31:LYS:HB3	19:Q:31:LYS:HE3	1.83	0.41
27:Y:31:LEU:HD23	27:Y:31:LEU:HA	1.80	0.41
1:5:1127:G:H5'	12:I:118:ALA:O	2.20	0.41
1:5:1610:G:H2'	1:5:1611:G:O4'	2.21	0.41
1:5:2297:U:H2'	1:5:2299:A:N7	2.35	0.41
1:5:248:U:C3'	1:5:249:U:C5'	2.93	0.41
1:5:3167:A:H2'	1:5:3168:A:H8	1.85	0.41
1:5:3279:A:C2'	1:5:3280:U:H5'	2.50	0.41
1:5:616:G:H2'	1:5:617:G:H8	1.85	0.41
1:5:986:U:H1'	9:F:126:LEU:HD21	2.01	0.41
3:8:14:C:N4	3:8:15:G:N1	2.68	0.41
6:C:113:VAL:HG12	6:C:114:ASN:N	2.36	0.41
6:C:74:ILE:HA	6:C:75:PRO:HD3	1.93	0.41
7:D:68:THR:HG22	7:D:70:THR:H	1.85	0.41
9:F:129:LEU:N	9:F:129:LEU:HD23	2.35	0.41
12:I:213:PHE:N	12:I:214:PRO:HD3	2.34	0.41
13:J:87:LYS:NZ	13:J:87:LYS:HB3	2.35	0.41
17:O:78:ARG:HA	17:O:78:ARG:HD2	1.72	0.41
18:P:7:THR:HB	18:P:9:THR:HG22	2.02	0.41
20:R:24:LEU:HD22	20:R:50:ILE:HG12	2.02	0.41
27:Y:94:SER:O	27:Y:95:VAL:HG23	2.21	0.41
1:5:1220:U:H5''	1:5:1222:G:C5'	2.50	0.41
1:5:1492:G:H2'	1:5:1493:G:O4'	2.21	0.41
1:5:1501:U:H2'	1:5:1502:C:C6	2.55	0.41
1:5:2096:A:H2'	1:5:2097:U:C6	2.55	0.41
1:5:511:G:H2'	1:5:512:U:O4'	2.20	0.41
1:5:618:C:H2'	1:5:619:A:C4'	2.51	0.41
1:5:629:U:H2'	1:5:630:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:8:80:A:H2'	3:8:81:U:H5'	2.02	0.41
5:B:244:ARG:HG2	5:B:244:ARG:HH11	1.83	0.41
5:B:311:PHE:CE1	5:B:317:ILE:HD11	2.55	0.41
5:B:37:ARG:HH11	5:B:37:ARG:HG3	1.84	0.41
5:B:56:ILE:HD13	5:B:76:VAL:HG13	2.02	0.41
5:B:95:THR:HB	5:B:96:PRO:HD2	2.01	0.41
6:C:318:LEU:CD1	9:F:146:GLN:HG2	2.51	0.41
11:H:115:ARG:NH1	11:H:123:ILE:HD12	2.33	0.41
16:N:129:TYR:CD1	16:N:129:TYR:N	2.88	0.41
16:N:13:LYS:O	16:N:19:LEU:HD22	2.20	0.41
16:N:194:GLN:H	16:N:194:GLN:HG2	1.59	0.41
16:N:80:THR:HG21	16:N:86:ASN:O	2.20	0.41
18:P:31:GLU:OE2	18:P:61:ARG:N	2.53	0.41
21:S:53:LYS:HE3	21:S:53:LYS:HB2	1.78	0.41
27:Y:98:ASN:O	27:Y:99:LEU:HD23	2.21	0.41
28:Z:128:GLN:O	28:Z:129:TRP:C	2.57	0.41
1:5:1156:C:OP2	9:F:94:LYS:NZ	2.51	0.41
1:5:1277:C:O2	1:5:1277:C:C2'	2.68	0.41
1:5:1320:C:O2'	1:5:1321:G:H5'	2.20	0.41
1:5:1579:C:O5'	4:A:68:LYS:NZ	2.48	0.41
1:5:1635:G:N2	1:5:1638:A:OP2	2.41	0.41
1:5:1821:U:H4'	1:5:1822:C:OP2	2.19	0.41
1:5:1824:U:H2'	1:5:1825:G:O4'	2.21	0.41
1:5:2285:C:H2'	1:5:2286:U:C5	2.55	0.41
1:5:2612:U:H2'	1:5:2613:U:O4'	2.21	0.41
1:5:2892:A:O2'	1:5:2893:C:H5'	2.21	0.41
1:5:2309:A:C1'	1:5:2962:U:H5'	2.49	0.41
1:5:3236:U:O2'	1:5:3237:U:H5'	2.19	0.41
1:5:3353:G:H4'	1:5:3354:U:OP2	2.19	0.41
1:5:77:A:C2'	1:5:78:U:H5'	2.51	0.41
2:7:49:G:N3	2:7:50:U:H5	2.18	0.41
5:B:92:TYR:HB2	5:B:157:VAL:HG22	2.01	0.41
5:B:161:LEU:CD2	5:B:180:GLU:HG2	2.50	0.41
6:C:135:VAL:HG13	6:C:245:GLY:O	2.21	0.41
7:D:209:GLU:HG3	7:D:233:ALA:CB	2.50	0.41
8:E:8:LYS:NZ	8:E:8:LYS:CB	3.67	0.41
13:J:13:LYS:O	13:J:131:MET:HE3	2.21	0.41
14:L:59:ARG:O	14:L:60:ALA:HB3	2.21	0.41
17:O:125:ARG:HG3	17:O:129:LEU:HD22	2.02	0.41
1:5:2991:A:N3	18:P:69:ARG:NH2	2.69	0.41
20:R:20:ARG:NH1	20:R:21:LYS:HZ2	2.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:R:89:LEU:HA	20:R:90:PRO:HD2	1.93	0.41
22:T:83:ARG:HH11	22:T:85:LEU:HD21	1.86	0.41
26:X:53:HIS:ND1	26:X:56:ARG:NH1	2.67	0.41
1:5:1081:U:O2'	1:5:1082:U:OP2	2.36	0.41
1:5:1159:A:N3	1:5:1159:A:H3'	2.36	0.41
1:5:2098:C:C2'	1:5:2099:A:H5'	2.50	0.41
1:5:2531:C:H2'	1:5:2532:U:H5'	2.03	0.41
1:5:31:C:H2'	1:5:31:C:O2	2.19	0.41
1:5:423:A:N6	1:5:424:G:C6	2.88	0.41
4:A:79:ASN:ND2	4:A:166:ILE:O	2.54	0.41
5:B:37:ARG:HA	5:B:186:GLY:HA2	2.03	0.41
5:B:382:THR:C	5:B:383:LEU:HD23	2.41	0.41
6:C:300:ARG:NH1	6:C:300:ARG:HG2	2.29	0.41
7:D:256:THR:OG1	7:D:258:LYS:HE2	2.20	0.41
8:E:119:UNK:O	8:E:123:UNK:CG	2.68	0.41
1:5:147:U:O4'	10:G:162:LEU:HD13	2.20	0.41
10:G:186:LEU:HD23	10:G:186:LEU:HA	1.82	0.41
13:J:25:GLU:OE2	13:J:60:ARG:NH1	2.54	0.41
18:P:182:ILE:CG2	18:P:182:ILE:O	2.69	0.41
1:5:114:A:H2'	1:5:115:A:O4'	2.20	0.41
1:5:150:A:C2'	1:5:151:A:H5'	2.50	0.41
1:5:1525:G:H5'	1:5:1830:G:OP2	2.20	0.41
1:5:1817:G:O2'	1:5:1818:U:C5	2.74	0.41
1:5:1874:A:H5"	20:R:18:GLY:CA	2.50	0.41
1:5:1893:A:C4	1:5:1894:U:C5	3.08	0.41
1:5:1928:G:H2'	1:5:1929:G:O4'	2.20	0.41
1:5:2112:U:H4'	1:5:2113:A:C5'	2.42	0.41
1:5:2289:U:H2'	1:5:2290:C:C6	2.55	0.41
1:5:2243:A:N3	1:5:2313:A:H2'	2.36	0.41
1:5:3198:U:H4'	1:5:3199:G:OP2	2.21	0.41
1:5:3226:A:C3'	1:5:3227:A:H5"	2.50	0.41
1:5:3272:C:O2	8:E:80:ASN:HB2	2.21	0.41
1:5:3359:A:H2'	1:5:3360:C:C6	2.55	0.41
1:5:521:A:H2'	1:5:522:A:O4'	2.21	0.41
1:5:620:U:H3'	1:5:621:A:C5'	2.50	0.41
1:5:768:C:H2'	1:5:769:G:O5'	2.21	0.41
1:5:830:A:H2'	1:5:831:G:O4'	2.21	0.41
1:5:887:G:H2'	1:5:888:A:C8	2.56	0.41
4:A:101:VAL:O	4:A:101:VAL:HG22	2.19	0.41
7:D:122:VAL:HG12	7:D:122:VAL:O	2.21	0.41
7:D:223:PHE:O	7:D:226:TYR:N	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:D:83:LEU:HB3	7:D:88:ILE:HB	2.02	0.41
8:E:64:LEU:HD22	8:E:64:LEU:HA	1.78	0.41
9:F:188:ILE:HD13	9:F:188:ILE:HA	1.84	0.41
10:G:175:VAL:HA	10:G:176:PRO:HD3	1.84	0.41
10:G:98:ARG:HA	10:G:99:PRO:HD3	1.77	0.41
11:H:87:LYS:HZ3	11:H:191:LEU:HD21	1.83	0.41
12:I:46:PHE:CD1	12:I:140:THR:HA	2.56	0.41
18:P:170:SER:CB	18:P:173:ARG:HH21	2.34	0.41
17:O:121:PRO:HG3	21:S:164:SER:HB2	2.01	0.41
23:U:99:LYS:HB2	23:U:102:GLU:OE1	2.20	0.41
1:5:1108:U:H2'	1:5:1109:U:C6	2.56	0.41
1:5:1939:G:OP1	20:R:77:GLY:HA3	2.20	0.41
1:5:2114:C:C3'	1:5:2114:C:C6	3.04	0.41
1:5:2200:U:C2	1:5:2201:G:C8	3.09	0.41
1:5:249:U:H1'	1:5:250:U:C1'	2.51	0.41
1:5:2514:U:C6	1:5:2514:U:OP1	2.74	0.41
1:5:720:A:H2'	1:5:720:A:N3	2.35	0.41
3:8:135:G:OP2	26:X:56:ARG:NH2	2.53	0.41
5:B:14:LEU:HA	5:B:17:LEU:CD2	2.51	0.41
6:C:338:LYS:O	6:C:339:LEU:CB	2.68	0.41
8:E:126:UNK:HG2	8:E:126:UNK:O	2.21	0.41
8:E:152:THR:HA	8:E:153:PRO:HD3	1.89	0.41
1:5:591:G:N2	8:E:18:LEU:HB3	2.35	0.41
10:G:103:ALA:O	10:G:107:GLU:HG3	2.21	0.41
11:H:163:GLN:O	11:H:166:ARG:HG3	2.20	0.41
19:Q:29:LEU:HD21	19:Q:124:LEU:HB2	2.02	0.41
19:Q:3:ILE:HG22	19:Q:4:ASP:N	2.35	0.41
21:S:82:ASP:HB2	21:S:120:SER:OG	2.20	0.41
21:S:124:LEU:HD22	22:T:153:PRO:HB2	2.01	0.41
22:T:14:MET:CE	22:T:55:LYS:HB2	2.50	0.41
22:T:97:LYS:HB3	22:T:97:LYS:HE2	1.85	0.41
22:T:32:LYS:NZ	22:T:98:HIS:H	2.18	0.41
27:Y:111:LEU:HD23	27:Y:111:LEU:HA	1.66	0.41
1:5:199:A:C4	1:5:201:A:C8	3.08	0.41
1:5:2282:U:C2	1:5:2310:U:H4'	2.55	0.41
1:5:2553:U:H3'	1:5:2554:A:H5''	2.02	0.41
1:5:2682:C:HO2'	1:5:2683:U:P	2.44	0.41
1:5:2897:A:N7	1:5:2899:C:C6	2.88	0.41
1:5:1208:U:H6	1:5:3115:C:N4	2.19	0.41
1:5:311:C:O2	1:5:311:C:H2'	2.21	0.41
1:5:587:U:O2'	1:5:588:G:H5'	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:706:A:H2'	1:5:707:U:O4'	2.21	0.41
1:5:715:A:C3'	1:5:715:A:C8	3.03	0.41
4:A:148:VAL:HG11	4:A:158:ILE:HD11	2.03	0.41
5:B:151:ILE:O	5:B:155:ALA:HB3	2.20	0.41
5:B:214:MET:HE3	5:B:279:ASN:CA	2.50	0.41
8:E:51:ARG:HD2	8:E:158:TYR:CZ	2.56	0.41
18:P:48:LEU:HA	18:P:48:LEU:HD23	1.81	0.41
19:Q:135:GLN:HB3	19:Q:135:GLN:HE21	1.61	0.41
19:Q:150:VAL:O	19:Q:150:VAL:HG23	2.21	0.41
15:M:16:GLU:HB3	21:S:149:LYS:HB3	2.02	0.41
23:U:84:LEU:HD23	23:U:84:LEU:HA	1.93	0.41
24:V:120:LYS:NZ	24:V:120:LYS:CB	2.84	0.41
1:5:1070:U:O2'	1:5:1071:U:H5'	2.21	0.41
1:5:1253:U:O2	1:5:1263:A:H5'	2.20	0.41
1:5:1895:A:O2'	1:5:3053:G:H4'	2.21	0.41
1:5:218:G:C2	1:5:372:A:C2	3.08	0.41
1:5:2408:U:H2'	1:5:2409:G:H5'	2.03	0.41
1:5:2426:U:H2'	1:5:2427:U:H6	1.85	0.41
1:5:2817:A:HO2'	1:5:2818:U:H5	1.68	0.41
1:5:2298:U:H5	1:5:2926:A:C2	2.39	0.41
1:5:981:U:C5	1:5:1065:A:N6	2.89	0.41
3:8:20:U:H2'	3:8:21:C:O5'	2.20	0.41
7:D:205:SER:CB	7:D:236:LEU:HD22	2.50	0.41
13:J:137:ARG:O	13:J:141:ARG:HG2	2.21	0.41
16:N:53:TYR:CD1	16:N:53:TYR:C	2.95	0.41
17:O:129:LEU:HA	17:O:129:LEU:HD12	1.60	0.41
19:Q:177:GLY:HA2	19:Q:184:PHE:CD2	2.55	0.41
24:V:117:PRO:HA	24:V:135:VAL:O	2.21	0.41
26:X:135:ILE:HD13	26:X:135:ILE:C	2.40	0.41
1:5:1240:A:C2'	1:5:1241:U:H5'	2.51	0.41
1:5:1810:A:H2'	1:5:1811:G:O4'	2.21	0.41
1:5:2291:A:H2'	1:5:2292:U:C6	2.56	0.41
1:5:2389:C:H1'	18:P:69:ARG:NE	2.35	0.41
1:5:2922:G:H3'	1:5:2923:U:H5''	2.03	0.41
1:5:2970:C:H4'	1:5:2971:A:N1	2.36	0.41
1:5:3150:A:H2'	1:5:3151:U:O4'	2.21	0.41
1:5:585:A:C4	1:5:586:C:C5	3.09	0.41
1:5:791:A:H2'	1:5:792:G:H8	1.85	0.41
1:5:949:C:HO2'	1:5:950:G:H5'	1.85	0.41
1:5:992:A:H5''	22:T:43:LYS:HD2	2.03	0.41
3:8:8:C:H2'	3:8:9:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:4:VAL:HG12	4:A:8:GLN:HB2	2.03	0.41
1:5:2941:A:OP1	5:B:255:TRP:HB3	2.21	0.41
6:C:71:VAL:HG22	6:C:72:ALA:H	1.86	0.41
7:D:187:THR:HG22	7:D:189:GLU:OE2	2.21	0.41
8:E:6:ALA:HA	8:E:7:PRO:HD3	1.84	0.41
9:F:103:LEU:CD2	9:F:108:LEU:HB2	2.50	0.41
11:H:161:LEU:HD13	11:H:161:LEU:C	2.42	0.41
11:H:37:ASN:OD1	11:H:39:LYS:N	2.40	0.41
12:I:200:LEU:C	12:I:200:LEU:HD23	2.41	0.41
13:J:10:ARG:HD3	13:J:10:ARG:O	2.20	0.41
14:L:141:ALA:HA	14:L:144:THR:HB	2.03	0.41
8:E:175:LYS:HD2	15:M:110:ALA:O	2.21	0.41
15:M:58:ILE:HG12	15:M:59:ASN:N	2.36	0.41
16:N:153:ASP:OD2	16:N:155:VAL:HG23	2.20	0.41
17:O:125:ARG:HG3	17:O:129:LEU:CD2	2.51	0.41
17:O:160:ARG:O	17:O:160:ARG:HG2	2.20	0.41
21:S:92:LYS:HE3	21:S:109:ASP:OD2	2.21	0.41
26:X:120:LYS:HB2	26:X:120:LYS:HE3	1.78	0.41
26:X:64:GLU:HG3	26:X:64:GLU:H	1.56	0.41
27:Y:126:LEU:C	27:Y:127:GLU:HG3	2.41	0.41
27:Y:57:LEU:O	27:Y:105:VAL:HG12	2.21	0.41
1:5:1049:C:C2	1:5:1050:U:C5	3.09	0.40
1:5:1094:U:H4'	1:5:1095:U:OP2	2.21	0.40
1:5:1470:U:H2'	1:5:1471:U:C6	2.56	0.40
1:5:1479:U:H2'	1:5:1480:G:H5'	2.03	0.40
1:5:163:C:C2'	1:5:164:A:H5'	2.52	0.40
1:5:1700:G:H2'	1:5:1701:C:H6	1.86	0.40
1:5:2297:U:HO2'	1:5:2920:U:C4'	2.35	0.40
1:5:2322:C:C2'	1:5:2323:G:H5'	2.51	0.40
1:5:2409:G:C2	1:5:2813:A:C2	3.09	0.40
1:5:2631:U:P	22:T:6:GLY:HA3	2.62	0.40
1:5:590:G:C2	1:5:610:G:H2'	2.56	0.40
7:D:55:PHE:CD1	7:D:60:ILE:HG12	2.56	0.40
16:N:192:LYS:O	16:N:192:LYS:HG2	2.21	0.40
17:O:58:LEU:HA	17:O:58:LEU:HD12	1.81	0.40
19:Q:28:LEU:O	19:Q:31:LYS:HB2	2.21	0.40
19:Q:58:ASN:C	19:Q:60:PRO:HD3	2.41	0.40
22:T:143:THR:O	22:T:143:THR:HG23	2.20	0.40
7:D:40:HIS:CE1	22:T:69:LYS:HB2	2.56	0.40
24:V:120:LYS:HB2	24:V:137:VAL:CG2	2.52	0.40
24:V:66:LYS:O	24:V:70:ARG:HG3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:5:1245:A:C3'	1:5:1246:G:H5''	2.51	0.40
1:5:1317:A:O2'	1:5:1318:A:H3'	2.22	0.40
1:5:2749:G:H2'	1:5:2750:U:H6	1.87	0.40
1:5:2904:U:H2'	1:5:2905:U:C6	2.56	0.40
1:5:3214:U:H2'	15:M:121:MET:CE	2.52	0.40
1:5:3237:U:H3'	1:5:3238:G:H5''	2.02	0.40
1:5:3288:G:HO2'	1:5:3289:G:P	2.44	0.40
1:5:792:G:H2'	1:5:793:C:C6	2.56	0.40
1:5:827:A:O2'	1:5:828:A:H5'	2.21	0.40
4:A:96:LEU:HD21	4:A:107:VAL:HG12	2.04	0.40
5:B:37:ARG:HA	5:B:186:GLY:HA3	2.02	0.40
6:C:276:LEU:HA	6:C:277:PRO:HD3	1.91	0.40
19:Q:89:ASP:OD1	19:Q:90:ASP:N	2.54	0.40
20:R:102:LEU:HD22	20:R:138:LEU:HG	2.02	0.40
20:R:46:LYS:HE2	20:R:46:LYS:HB3	1.58	0.40
28:Z:72:ILE:H	28:Z:72:ILE:HD13	1.86	0.40
1:5:1192:C:N4	1:5:1301:A:O3'	2.55	0.40
1:5:1168:U:C5	1:5:1329:U:C4	3.09	0.40
1:5:1661:G:H2'	1:5:1662:G:C8	2.56	0.40
1:5:219:A:N3	1:5:219:A:H2'	2.36	0.40
1:5:2572:C:O2'	1:5:2573:G:P	2.75	0.40
1:5:2971:A:OP2	1:5:2972:G:C5'	2.69	0.40
1:5:3259:U:H5''	1:5:3261:C:H5	1.86	0.40
1:5:409:A:H2	1:5:1441:G:N3	2.19	0.40
1:5:433:A:H2'	1:5:434:U:O4'	2.21	0.40
5:B:219:ALA:CB	5:B:336:VAL:HG22	2.51	0.40
5:B:265:ALA:C	5:B:266:ARG:HG2	2.42	0.40
6:C:170:LYS:HE3	6:C:175:HIS:ND1	2.37	0.40
6:C:260:GLN:O	6:C:270:SER:HB3	2.21	0.40
6:C:30:ILE:HG22	6:C:32:PRO:HD3	2.02	0.40
7:D:22:ARG:HA	7:D:25:GLU:CG	2.51	0.40
7:D:239:ILE:O	7:D:243:ALA:HB2	2.22	0.40
7:D:279:LYS:HG2	7:D:280:GLU:OE2	2.21	0.40
8:E:43:LEU:HA	8:E:43:LEU:HD23	1.80	0.40
9:F:82:LYS:HB3	9:F:191:VAL:HG21	2.03	0.40
10:G:214:LEU:HD12	10:G:214:LEU:HA	1.77	0.40
10:G:71:VAL:HG23	10:G:72:PRO:O	2.20	0.40
1:5:1048:A:H2'	12:I:22:TYR:CZ	2.56	0.40
15:M:48:GLY:N	15:M:49:PRO:HD3	2.37	0.40
15:M:58:ILE:HG12	15:M:59:ASN:H	1.85	0.40
18:P:67:ILE:CG2	18:P:68:GLY:N	2.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:Q:28:LEU:HA	19:Q:28:LEU:HD23	1.68	0.40
22:T:6:GLY:H	22:T:9:SER:HB3	1.85	0.40
23:U:90:ARG:O	23:U:91:ASP:HB2	2.21	0.40
25:W:21:PHE:HE2	25:W:23:ARG:HG3	1.87	0.40
26:X:113:LEU:HD12	26:X:113:LEU:C	2.42	0.40
1:5:1567:U:H2'	1:5:1570:U:H5	1.87	0.40
1:5:2115:G:C2	1:5:2119:A:C2	3.09	0.40
1:5:2283:G:H1	1:5:2307:G:H5'	1.86	0.40
1:5:3095:U:H2'	1:5:3096:C:C6	2.56	0.40
1:5:3383:G:H2'	1:5:3384:U:H6	1.86	0.40
1:5:371:G:N2	1:5:373:A:H3'	2.36	0.40
1:5:49:A:OP1	14:L:16:LYS:NZ	2.49	0.40
1:5:566:G:O2'	1:5:567:G:H5'	2.20	0.40
1:5:818:C:C2	1:5:819:U:C6	3.10	0.40
1:5:92:G:H8	1:5:92:G:H3'	1.87	0.40
1:5:971:G:C6	1:5:972:A:C5	3.09	0.40
4:A:43:GLY:HA3	4:A:63:PHE:CE1	2.57	0.40
10:G:136:LEU:HD11	10:G:162:LEU:HB3	2.02	0.40
13:J:35:LYS:O	13:J:39:GLN:HB2	2.22	0.40
14:L:50:PRO:O	14:L:51:LEU:CB	2.70	0.40
1:5:3243:A:N3	17:O:109:PRO:HB3	2.36	0.40
17:O:128:ARG:HD2	17:O:128:ARG:HA	1.74	0.40
17:O:78:ARG:CG	17:O:78:ARG:NH1	2.54	0.40
18:P:142:SER:N	18:P:143:PRO:HD3	2.37	0.40
18:P:65:SER:O	18:P:66:SER:HB2	2.21	0.40
20:R:22:VAL:O	20:R:53:LYS:NZ	2.52	0.40
23:U:98:THR:OG1	23:U:102:GLU:O	2.37	0.40
23:U:21:SER:N	23:U:22:PRO:HD2	2.37	0.40
24:V:2:SER:HA	24:V:56:ASP:HA	2.03	0.40
27:Y:118:LEU:HG	27:Y:119:ILE:N	2.34	0.40
1:5:1652:G:O2'	1:5:1653:G:H5'	2.22	0.40
1:5:178:U:H2'	1:5:179:C:O4'	2.21	0.40
1:5:2097:U:H2'	1:5:2098:C:C6	2.57	0.40
1:5:2193:U:H1'	1:5:2275:A:H1'	2.04	0.40
1:5:2291:A:O2'	1:5:2292:U:H5'	2.21	0.40
1:5:3099:C:O2'	1:5:3100:U:H5'	2.22	0.40
1:5:3131:U:H2'	1:5:3132:C:C6	2.56	0.40
1:5:616:G:H2'	1:5:617:G:C8	2.56	0.40
1:5:673:U:O2'	1:5:674:G:H5'	2.22	0.40
1:5:772:U:O2'	1:5:773:G:H5'	2.21	0.40
1:5:818:C:C2'	1:5:818:C:O2	2.70	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:7:43:U:H2'	2:7:43:U:O2	2.20	0.40
5:B:162:VAL:O	5:B:178:LEU:HD12	2.21	0.40
6:C:300:ARG:HB2	6:C:301:PRO:HD3	2.03	0.40
7:D:235:SER:O	7:D:239:ILE:HG12	2.21	0.40
7:D:55:PHE:HE1	7:D:60:ILE:CD1	2.34	0.40
8:E:93:VAL:O	8:E:93:VAL:CG1	2.69	0.40
1:5:986:U:C1'	9:F:126:LEU:HD21	2.51	0.40
9:F:173:LEU:HD21	9:F:198:ALA:HA	2.04	0.40
10:G:146:LYS:HB3	10:G:146:LYS:HE3	1.90	0.40
10:G:172:LYS:CB	10:G:172:LYS:NZ	2.79	0.40
18:P:23:ARG:HA	18:P:23:ARG:HD3	1.99	0.40
20:R:10:LEU:HA	20:R:10:LEU:HD12	1.72	0.40
26:X:131:ASP:O	26:X:135:ILE:HG22	2.22	0.40
28:Z:131:PHE:HA	28:Z:131:PHE:HD2	1.77	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	A	210/254 (83%)	195 (93%)	14 (7%)	1 (0%)	32	71
5	B	384/387 (99%)	367 (96%)	17 (4%)	0	100	100
6	C	359/362 (99%)	329 (92%)	28 (8%)	2 (1%)	28	68
7	D	292/297 (98%)	282 (97%)	8 (3%)	2 (1%)	25	66
8	E	155/176 (88%)	143 (92%)	9 (6%)	3 (2%)	9	45
9	F	221/244 (91%)	210 (95%)	10 (4%)	1 (0%)	32	71
10	G	229/256 (90%)	200 (87%)	28 (12%)	1 (0%)	38	75
11	H	189/191 (99%)	178 (94%)	10 (5%)	1 (0%)	32	71
12	I	209/221 (95%)	193 (92%)	16 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	J	167/174 (96%)	143 (86%)	18 (11%)	6 (4%)	4	31
14	L	192/199 (96%)	170 (88%)	20 (10%)	2 (1%)	18	59
15	M	135/138 (98%)	133 (98%)	2 (2%)	0	100	100
16	N	201/204 (98%)	187 (93%)	13 (6%)	1 (0%)	32	71
17	O	195/199 (98%)	193 (99%)	2 (1%)	0	100	100
18	P	181/184 (98%)	176 (97%)	5 (3%)	0	100	100
19	Q	183/186 (98%)	174 (95%)	8 (4%)	1 (0%)	32	71
20	R	154/189 (82%)	148 (96%)	5 (3%)	1 (1%)	28	68
21	S	169/172 (98%)	163 (96%)	6 (4%)	0	100	100
22	T	157/160 (98%)	151 (96%)	4 (2%)	2 (1%)	14	53
23	U	100/121 (83%)	95 (95%)	5 (5%)	0	100	100
24	V	134/137 (98%)	130 (97%)	4 (3%)	0	100	100
25	W	61/155 (39%)	57 (93%)	3 (5%)	1 (2%)	11	49
26	X	118/142 (83%)	109 (92%)	9 (8%)	0	100	100
27	Y	124/127 (98%)	118 (95%)	5 (4%)	1 (1%)	22	63
28	Z	133/136 (98%)	112 (84%)	18 (14%)	3 (2%)	7	42
29	a	146/149 (98%)	132 (90%)	13 (9%)	1 (1%)	25	66
30	b	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
31	c	98/105 (93%)	92 (94%)	6 (6%)	0	100	100
32	d	107/113 (95%)	97 (91%)	8 (8%)	2 (2%)	9	45
33	e	127/130 (98%)	120 (94%)	7 (6%)	0	100	100
34	f	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
35	g	110/121 (91%)	104 (94%)	5 (4%)	1 (1%)	20	61
36	h	117/120 (98%)	109 (93%)	8 (7%)	0	100	100
37	i	97/100 (97%)	86 (89%)	8 (8%)	3 (3%)	5	35
38	j	85/88 (97%)	77 (91%)	8 (9%)	0	100	100
39	k	75/78 (96%)	70 (93%)	4 (5%)	1 (1%)	14	53
40	l	48/51 (94%)	47 (98%)	1 (2%)	0	100	100
41	m	50/128 (39%)	46 (92%)	3 (6%)	1 (2%)	9	44
42	o	103/106 (97%)	94 (91%)	9 (9%)	0	100	100
43	p	89/92 (97%)	82 (92%)	7 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
44	q	116/312 (37%)	111 (96%)	4 (3%)	1 (1%)	20	61
45	x	577/616 (94%)	544 (94%)	32 (6%)	1 (0%)	51	84
46	y	201/401 (50%)	191 (95%)	10 (5%)	0	100	100
All	All	6958/7887 (88%)	6511 (94%)	407 (6%)	40 (1%)	33	68

All (40) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
8	E	98	VAL
13	J	10	ARG
13	J	95	ASN
16	N	184	LYS
25	W	25	ASP
14	L	18	TRP
28	Z	17	ARG
28	Z	130	PHE
13	J	115	LYS
27	Y	125	LYS
28	Z	129	TRP
29	a	78	LEU
35	g	83	ASN
37	i	34	SER
37	i	63	ASN
39	k	17	ARG
6	C	71	VAL
9	F	191	VAL
20	R	35	ALA
32	d	83	GLU
37	i	64	SER
13	J	12	LEU
14	L	47	ALA
22	T	69	LYS
22	T	136	ARG
32	d	7	VAL
8	E	97	ASN
13	J	94	ARG
10	G	203	VAL
6	C	148	ILE
7	D	125	VAL
19	Q	97	PRO
45	x	519	ARG

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Mol	Chain	Res	Type
4	A	56	ALA
8	E	10	TYR
11	H	167	VAL
13	J	114	ILE
41	m	78	ILE
44	q	33	VAL
7	D	122	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	
4	A	166/196 (85%)	133 (80%)	33 (20%)	1	7
5	B	321/323 (99%)	260 (81%)	61 (19%)	2	8
6	C	288/289 (100%)	234 (81%)	54 (19%)	2	8
7	D	243/245 (99%)	209 (86%)	34 (14%)	4	21
8	E	135/136 (99%)	123 (91%)	12 (9%)	11	43
9	F	187/205 (91%)	168 (90%)	19 (10%)	8	36
10	G	177/208 (85%)	150 (85%)	27 (15%)	3	18
11	H	171/171 (100%)	148 (86%)	23 (14%)	4	23
12	I	179/187 (96%)	153 (86%)	26 (14%)	4	20
13	J	147/150 (98%)	122 (83%)	25 (17%)	2	13
14	L	154/159 (97%)	126 (82%)	28 (18%)	2	9
15	M	108/109 (99%)	95 (88%)	13 (12%)	6	28
16	N	175/176 (99%)	143 (82%)	32 (18%)	2	9
17	O	160/162 (99%)	129 (81%)	31 (19%)	1	7
18	P	145/146 (99%)	118 (81%)	27 (19%)	2	8
19	Q	150/151 (99%)	127 (85%)	23 (15%)	3	18
20	R	129/154 (84%)	106 (82%)	23 (18%)	2	10
21	S	155/156 (99%)	131 (84%)	24 (16%)	3	17

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
22	T	136/137 (99%)	113 (83%)	23 (17%)	2	13
23	U	89/107 (83%)	80 (90%)	9 (10%)	9	37
24	V	104/105 (99%)	93 (89%)	11 (11%)	8	34
25	W	55/129 (43%)	52 (94%)	3 (6%)	25	62
26	X	104/118 (88%)	86 (83%)	18 (17%)	2	12
27	Y	109/110 (99%)	96 (88%)	13 (12%)	6	28
28	Z	115/116 (99%)	92 (80%)	23 (20%)	1	7
29	a	118/119 (99%)	106 (90%)	12 (10%)	8	36
30	b	46/47 (98%)	38 (83%)	8 (17%)	2	12
31	c	84/88 (96%)	70 (83%)	14 (17%)	2	13
32	d	94/97 (97%)	85 (90%)	9 (10%)	10	39
33	e	110/111 (99%)	94 (86%)	16 (14%)	4	20
34	f	90/91 (99%)	84 (93%)	6 (7%)	19	57
35	g	95/103 (92%)	84 (88%)	11 (12%)	6	29
36	h	103/105 (98%)	84 (82%)	19 (18%)	2	9
37	i	80/82 (98%)	61 (76%)	19 (24%)	1	3
38	j	70/71 (99%)	59 (84%)	11 (16%)	3	17
39	k	67/69 (97%)	60 (90%)	7 (10%)	8	35
40	l	45/46 (98%)	35 (78%)	10 (22%)	1	4
41	m	47/116 (40%)	41 (87%)	6 (13%)	5	25
42	o	90/91 (99%)	72 (80%)	18 (20%)	1	7
43	p	71/72 (99%)	54 (76%)	17 (24%)	1	3
44	q	105/254 (41%)	88 (84%)	17 (16%)	3	15
45	x	508/540 (94%)	469 (92%)	39 (8%)	15	50
46	y	187/355 (53%)	171 (91%)	16 (9%)	12	45
All	All	5912/6602 (90%)	5042 (85%)	870 (15%)	7	19

All (870) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	A	10	LYS
4	A	15	ILE
4	A	23	ARG

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Mol	Chain	Res	Type
4	A	31	THR
4	A	32	LEU
4	A	44	ILE
4	A	45	VAL
4	A	48	ILE
4	A	49	VAL
4	A	62	VAL
4	A	68	LYS
4	A	70	ARG
4	A	71	LEU
4	A	72	ARG
4	A	98	VAL
4	A	101	VAL
4	A	104	LEU
4	A	107	VAL
4	A	109	GLU
4	A	119	LYS
4	A	137	ILE
4	A	142	ASP
4	A	147	ARG
4	A	149	ARG
4	A	155	LYS
4	A	157	VAL
4	A	158	ILE
4	A	168	VAL
4	A	169	ILE
4	A	179	LEU
4	A	193	ARG
4	A	199	THR
4	A	207	VAL
5	B	3	HIS
5	B	4	ARG
5	B	10	ARG
5	B	17	LEU
5	B	19	ARG
5	B	25	ILE
5	B	37	ARG
5	B	45	SER
5	B	46	PHE
5	B	54	THR
5	B	59	ASP
5	B	67	PHE

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Mol	Chain	Res	Type
5	B	77	THR
5	B	85	VAL
5	B	89	VAL
5	B	102	LEU
5	B	103	THR
5	B	104	THR
5	B	114	VAL
5	B	120	LYS
5	B	123	TYR
5	B	124	LYS
5	B	139	GLN
5	B	146	ARG
5	B	148	LEU
5	B	150	ARG
5	B	153	LYS
5	B	158	VAL
5	B	192	VAL
5	B	196	ARG
5	B	202	THR
5	B	205	VAL
5	B	206	ASP
5	B	221	THR
5	B	227	GLU
5	B	229	VAL
5	B	232	ARG
5	B	235	THR
5	B	236	LYS
5	B	238	LEU
5	B	246	LEU
5	B	247	ARG
5	B	251	CYS
5	B	252	ILE
5	B	266	ARG
5	B	274	SER
5	B	284	ARG
5	B	287	LYS
5	B	289	ASP
5	B	291	GLU
5	B	301	THR
5	B	323	MET
5	B	324	VAL
5	B	327	CYS

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Mol	Chain	Res	Type
5	B	332	ARG
5	B	338	LEU
5	B	340	LYS
5	B	343	TYR
5	B	365	PHE
5	B	369	ARG
5	B	386	ASP
6	C	2	SER
6	C	7	THR
6	C	12	THR
6	C	14	GLU
6	C	18	ASN
6	C	22	LEU
6	C	34	ILE
6	C	35	VAL
6	C	37	THR
6	C	47	ARG
6	C	52	VAL
6	C	67	THR
6	C	73	ARG
6	C	74	ILE
6	C	93	MET
6	C	105	THR
6	C	120	TYR
6	C	122	THR
6	C	133	SER
6	C	136	LEU
6	C	141	ARG
6	C	147	GLU
6	C	150	LEU
6	C	156	LEU
6	C	160	GLN
6	C	166	VAL
6	C	172	VAL
6	C	179	LEU
6	C	181	VAL
6	C	182	LEU
6	C	187	LEU
6	C	206	LEU
6	C	217	LYS
6	C	222	VAL
6	C	226	GLU

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Mol	Chain	Res	Type
6	C	230	VAL
6	C	246	ARG
6	C	251	THR
6	C	258	LEU
6	C	259	ASP
6	C	267	VAL
6	C	270	SER
6	C	280	ILE
6	C	287	THR
6	C	300	ARG
6	C	307	GLN
6	C	313	LEU
6	C	323	VAL
6	C	327	LEU
6	C	338	LYS
6	C	343	LYS
6	C	345	GLU
6	C	359	LEU
6	C	362	ASP
7	D	4	GLN
7	D	5	LYS
7	D	9	SER
7	D	25	GLU
7	D	34	LYS
7	D	35	ARG
7	D	51	LEU
7	D	61	ILE
7	D	66	SER
7	D	70	THR
7	D	81	HIS
7	D	93	THR
7	D	95	TRP
7	D	126	GLU
7	D	129	TYR
7	D	136	GLU
7	D	146	LEU
7	D	148	ILE
7	D	150	LEU
7	D	152	ARG
7	D	155	THR
7	D	164	LYS
7	D	177	GLU

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Mol	Chain	Res	Type
7	D	185	PHE
7	D	196	ARG
7	D	207	TYR
7	D	211	LEU
7	D	218	ARG
7	D	232	ASP
7	D	238	ASP
7	D	257	GLU
7	D	259	LYS
7	D	275	THR
7	D	282	ARG
8	E	8	LYS
8	E	20	LYS
8	E	21	THR
8	E	31	ARG
8	E	46	ARG
8	E	50	LYS
8	E	78	ARG
8	E	85	ILE
8	E	91	VAL
8	E	145	LEU
8	E	155	LEU
8	E	174	LEU
9	F	22	THR
9	F	25	GLN
9	F	30	ARG
9	F	41	ARG
9	F	56	GLU
9	F	83	LEU
9	F	84	VAL
9	F	95	ILE
9	F	98	LYS
9	F	110	ARG
9	F	111	ILE
9	F	115	THR
9	F	151	ARG
9	F	175	LYS
9	F	179	LEU
9	F	180	SER
9	F	182	ASP
9	F	184	LEU
9	F	239	LEU

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Mol	Chain	Res	Type
10	G	44	ARG
10	G	65	LEU
10	G	68	ARG
10	G	69	LEU
10	G	70	LYS
10	G	74	THR
10	G	79	GLN
10	G	81	THR
10	G	82	LEU
10	G	89	GLU
10	G	109	LEU
10	G	128	LYS
10	G	136	LEU
10	G	142	LEU
10	G	149	LYS
10	G	160	ILE
10	G	164	VAL
10	G	172	LYS
10	G	183	LYS
10	G	195	SER
10	G	200	LEU
10	G	206	GLU
10	G	208	GLU
10	G	211	LEU
10	G	213	LYS
10	G	227	ASP
10	G	248	LYS
11	H	1	MET
11	H	4	ILE
11	H	6	THR
11	H	16	VAL
11	H	18	VAL
11	H	31	ARG
11	H	44	THR
11	H	46	THR
11	H	52	LEU
11	H	68	LEU
11	H	69	ARG
11	H	70	THR
11	H	71	VAL
11	H	82	VAL
11	H	105	GLU

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Mol	Chain	Res	Type
11	H	106	LYS
11	H	133	THR
11	H	162	GLN
11	H	163	GLN
11	H	165	CYS
11	H	166	ARG
11	H	177	ASP
11	H	179	ILE
12	I	4	ARG
12	I	7	ARG
12	I	21	ARG
12	I	22	TYR
12	I	24	ARG
12	I	29	SER
12	I	48	LEU
12	I	49	CYS
12	I	52	LEU
12	I	60	LEU
12	I	63	GLU
12	I	69	ARG
12	I	70	ILE
12	I	71	CYS
12	I	90	ARG
12	I	116	ARG
12	I	153	ARG
12	I	156	ARG
12	I	163	GLN
12	I	169	LYS
12	I	174	THR
12	I	176	LEU
12	I	177	ASP
12	I	178	ARG
12	I	197	VAL
12	I	211	ARG
13	J	10	ARG
13	J	12	LEU
13	J	13	LYS
13	J	31	THR
13	J	34	SER
13	J	35	LYS
13	J	39	GLN
13	J	43	GLN

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Mol	Chain	Res	Type
13	J	51	ARG
13	J	54	VAL
13	J	80	LEU
13	J	87	LYS
13	J	92	ARG
13	J	95	ASN
13	J	106	ILE
13	J	107	ASP
13	J	122	ILE
13	J	128	TYR
13	J	130	VAL
13	J	132	ASN
13	J	140	ARG
13	J	155	THR
13	J	158	ASP
13	J	171	VAL
13	J	174	LYS
14	L	3	ILE
14	L	4	SER
14	L	10	LEU
14	L	14	PHE
14	L	27	ASP
14	L	42	ARG
14	L	46	ILE
14	L	51	LEU
14	L	57	VAL
14	L	59	ARG
14	L	63	VAL
14	L	67	ARG
14	L	69	VAL
14	L	76	THR
14	L	85	LEU
14	L	93	ILE
14	L	98	ASP
14	L	107	GLU
14	L	114	GLN
14	L	123	ILE
14	L	128	ARG
14	L	131	LYS
14	L	149	GLN
14	L	162	ASN
14	L	164	GLU

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Mol	Chain	Res	Type
14	L	168	ARG
14	L	190	LYS
14	L	194	GLU
15	M	3	THR
15	M	12	TRP
15	M	15	VAL
15	M	20	VAL
15	M	47	ASP
15	M	53	VAL
15	M	64	VAL
15	M	66	THR
15	M	72	LEU
15	M	115	PHE
15	M	120	VAL
15	M	121	MET
15	M	131	VAL
16	N	5	LYS
16	N	8	GLU
16	N	10	LEU
16	N	12	ARG
16	N	13	LYS
16	N	15	GLN
16	N	18	VAL
16	N	22	LEU
16	N	27	VAL
16	N	49	ARG
16	N	51	LEU
16	N	62	TYR
16	N	64	VAL
16	N	66	VAL
16	N	68	ARG
16	N	91	GLU
16	N	92	LEU
16	N	104	GLU
16	N	105	ARG
16	N	106	VAL
16	N	117	ASN
16	N	121	VAL
16	N	126	THR
16	N	138	GLN
16	N	153	ASP
16	N	167	THR

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Mol	Chain	Res	Type
16	N	182	ASN
16	N	183	THR
16	N	184	LYS
16	N	187	ARG
16	N	199	LEU
16	N	204	LYS
17	O	3	VAL
17	O	4	GLU
17	O	12	LYS
17	O	16	VAL
17	O	18	ARG
17	O	25	LYS
17	O	41	LEU
17	O	43	ILE
17	O	44	SER
17	O	53	LYS
17	O	56	ASP
17	O	59	ARG
17	O	72	HIS
17	O	78	ARG
17	O	79	ILE
17	O	82	LYS
17	O	85	ARG
17	O	94	ARG
17	O	108	ILE
17	O	117	ARG
17	O	124	LEU
17	O	126	VAL
17	O	128	ARG
17	O	129	LEU
17	O	145	VAL
17	O	160	ARG
17	O	171	LYS
17	O	175	THR
17	O	182	ASN
17	O	194	LEU
17	O	197	LEU
18	P	23	ARG
18	P	24	VAL
18	P	25	SER
18	P	31	GLU
18	P	32	THR

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Mol	Chain	Res	Type
18	P	34	GLN
18	P	40	GLU
18	P	41	LEU
18	P	42	THR
18	P	52	LEU
18	P	55	GLN
18	P	64	ASN
18	P	67	ILE
18	P	69	ARG
18	P	74	LYS
18	P	76	PHE
18	P	80	LYS
18	P	89	LYS
18	P	94	LEU
18	P	116	HIS
18	P	119	VAL
18	P	120	ASN
18	P	121	GLN
18	P	127	ARG
18	P	142	SER
18	P	144	SER
18	P	148	LEU
19	Q	12	ARG
19	Q	41	ASP
19	Q	49	LEU
19	Q	63	SER
19	Q	64	VAL
19	Q	66	ARG
19	Q	69	ARG
19	Q	80	THR
19	Q	81	VAL
19	Q	93	ILE
19	Q	100	THR
19	Q	105	ARG
19	Q	107	THR
19	Q	124	LEU
19	Q	135	GLN
19	Q	138	LEU
19	Q	147	ARG
19	Q	150	VAL
19	Q	161	LYS
19	Q	166	LEU

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Mol	Chain	Res	Type
19	Q	167	SER
19	Q	170	ARG
19	Q	180	ARG
20	R	7	GLN
20	R	10	LEU
20	R	19	LYS
20	R	20	ARG
20	R	29	THR
20	R	30	SER
20	R	31	GLU
20	R	36	ASN
20	R	49	THR
20	R	56	THR
20	R	63	THR
20	R	70	LYS
20	R	74	ARG
20	R	75	HIS
20	R	76	SER
20	R	92	GLN
20	R	98	ARG
20	R	99	LEU
20	R	105	LEU
20	R	114	LYS
20	R	127	SER
20	R	152	GLU
20	R	153	LYS
21	S	4	PHE
21	S	8	GLN
21	S	13	ARG
21	S	17	GLU
21	S	23	LYS
21	S	32	SER
21	S	45	LEU
21	S	51	VAL
21	S	71	LYS
21	S	80	ARG
21	S	87	THR
21	S	97	VAL
21	S	98	SER
21	S	104	GLU
21	S	108	GLN
21	S	120	SER

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Mol	Chain	Res	Type
21	S	130	GLU
21	S	136	LYS
21	S	137	ARG
21	S	155	ARG
21	S	162	THR
21	S	167	ARG
21	S	171	PHE
21	S	172	TYR
22	T	9	SER
22	T	17	ARG
22	T	25	VAL
22	T	26	HIS
22	T	35	LYS
22	T	49	GLN
22	T	50	LYS
22	T	55	LYS
22	T	60	LYS
22	T	65	TYR
22	T	72	VAL
22	T	78	LYS
22	T	79	MET
22	T	80	VAL
22	T	83	ARG
22	T	97	LYS
22	T	102	ARG
22	T	104	GLU
22	T	126	VAL
22	T	128	LEU
22	T	131	GLN
22	T	139	ARG
22	T	143	THR
23	U	11	ILE
23	U	27	VAL
23	U	58	GLU
23	U	61	THR
23	U	63	VAL
23	U	84	LEU
23	U	90	ARG
23	U	98	THR
23	U	100	THR
24	V	4	ASN
24	V	13	ILE

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Mol	Chain	Res	Type
24	V	42	SER
24	V	48	ARG
24	V	64	LYS
24	V	68	GLU
24	V	69	LEU
24	V	72	LYS
24	V	88	ARG
24	V	115	THR
24	V	129	VAL
25	W	39	LEU
25	W	52	THR
25	W	57	LYS
26	X	24	LEU
26	X	27	ARG
26	X	39	LYS
26	X	45	LYS
26	X	63	ILE
26	X	64	GLU
26	X	68	THR
26	X	71	THR
26	X	73	MET
26	X	108	LEU
26	X	109	LYS
26	X	115	ARG
26	X	117	ASN
26	X	119	THR
26	X	125	ARG
26	X	129	ASP
26	X	133	LEU
26	X	135	ILE
27	Y	12	ARG
27	Y	13	ARG
27	Y	17	LYS
27	Y	37	LYS
27	Y	50	ILE
27	Y	57	LEU
27	Y	74	TYR
27	Y	76	LEU
27	Y	90	VAL
27	Y	95	VAL
27	Y	107	THR
27	Y	109	LEU

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Mol	Chain	Res	Type
27	Y	120	GLN
28	Z	3	LYS
28	Z	14	VAL
28	Z	17	ARG
28	Z	21	LYS
28	Z	24	VAL
28	Z	30	ASP
28	Z	34	LYS
28	Z	46	ILE
28	Z	52	LYS
28	Z	53	VAL
28	Z	55	LYS
28	Z	72	ILE
28	Z	81	LEU
28	Z	83	THR
28	Z	92	PHE
28	Z	95	VAL
28	Z	99	GLU
28	Z	102	GLU
28	Z	121	ARG
28	Z	126	LYS
28	Z	127	ASN
28	Z	130	PHE
28	Z	134	LEU
29	a	14	HIS
29	a	22	ILE
29	a	25	HIS
29	a	26	ARG
29	a	43	ILE
29	a	60	TYR
29	a	73	LEU
29	a	85	ASP
29	a	91	LEU
29	a	97	GLU
29	a	115	LYS
29	a	118	ILE
30	b	6	ASN
30	b	12	GLN
30	b	18	ARG
30	b	29	TYR
30	b	41	ARG
30	b	50	THR

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Mol	Chain	Res	Type
30	b	58	LYS
30	b	59	LYS
31	c	8	GLU
31	c	11	ASN
31	c	24	THR
31	c	34	LEU
31	c	41	LEU
31	c	42	ILE
31	c	61	MET
31	c	68	TYR
31	c	76	GLU
31	c	83	LYS
31	c	86	ARG
31	c	89	VAL
31	c	100	ILE
31	c	104	LEU
32	d	6	ASP
32	d	26	LYS
32	d	31	ARG
32	d	35	GLU
32	d	73	LEU
32	d	83	GLU
32	d	91	SER
32	d	94	GLU
32	d	102	LYS
33	e	4	LEU
33	e	8	LYS
33	e	27	ARG
33	e	31	ASN
33	e	33	ARG
33	e	34	LYS
33	e	50	ILE
33	e	51	SER
33	e	73	THR
33	e	75	LEU
33	e	82	LEU
33	e	89	THR
33	e	100	ILE
33	e	106	VAL
33	e	120	THR
33	e	125	ARG
34	f	31	LYS

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Mol	Chain	Res	Type
34	f	48	ARG
34	f	53	TYR
34	f	70	LYS
34	f	74	THR
34	f	86	ARG
35	g	23	VAL
35	g	29	ILE
35	g	46	ASP
35	g	57	LEU
35	g	58	ARG
35	g	76	TYR
35	g	80	ARG
35	g	81	CYS
35	g	88	ARG
35	g	95	ILE
35	g	98	GLN
36	h	14	LYS
36	h	19	SER
36	h	21	LEU
36	h	36	LEU
36	h	41	LEU
36	h	45	LYS
36	h	48	ARG
36	h	51	ILE
36	h	56	THR
36	h	62	GLN
36	h	68	GLN
36	h	86	ARG
36	h	89	ARG
36	h	90	ARG
36	h	94	LYS
36	h	101	THR
36	h	105	ARG
36	h	107	LYS
36	h	119	LYS
37	i	3	VAL
37	i	5	THR
37	i	9	ILE
37	i	17	VAL
37	i	26	ILE
37	i	43	LEU
37	i	45	ARG

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Mol	Chain	Res	Type
37	i	57	LEU
37	i	58	ILE
37	i	60	LEU
37	i	68	ARG
37	i	75	LYS
37	i	76	ARG
37	i	81	THR
37	i	84	LYS
37	i	87	VAL
37	i	88	GLU
37	i	94	ILE
37	i	98	ARG
38	j	5	THR
38	j	12	HIS
38	j	15	SER
38	j	17	THR
38	j	21	ARG
38	j	28	HIS
38	j	45	ARG
38	j	55	ARG
38	j	59	THR
38	j	65	ARG
38	j	79	GLN
39	k	8	ILE
39	k	31	LEU
39	k	46	ARG
39	k	53	THR
39	k	61	LYS
39	k	64	LYS
39	k	67	GLN
40	l	4	GLN
40	l	11	GLN
40	l	21	ARG
40	l	23	LEU
40	l	27	ILE
40	l	28	ARG
40	l	29	LEU
40	l	41	ARG
40	l	45	ARG
40	l	46	ARG
41	m	88	LYS
41	m	90	ASN

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Mol	Chain	Res	Type
41	m	106	ARG
41	m	112	LYS
41	m	113	ARG
41	m	114	LYS
42	o	2	VAL
42	o	7	THR
42	o	8	ARG
42	o	20	HIS
42	o	38	GLN
42	o	45	ARG
42	o	47	GLN
42	o	55	LYS
42	o	71	ARG
42	o	80	ARG
42	o	83	LEU
42	o	84	THR
42	o	85	LEU
42	o	89	LYS
42	o	93	LEU
42	o	99	GLN
42	o	104	LEU
42	o	105	GLN
43	p	8	VAL
43	p	16	VAL
43	p	22	LEU
43	p	24	ARG
43	p	26	VAL
43	p	28	LYS
43	p	33	GLN
43	p	46	THR
43	p	49	ARG
43	p	54	ILE
43	p	56	THR
43	p	57	CYS
43	p	59	CYS
43	p	71	VAL
43	p	73	THR
43	p	78	THR
43	p	80	ARG
44	q	4	ILE
44	q	7	LYS
44	q	15	LEU

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Mol	Chain	Res	Type
44	q	35	SER
44	q	39	HIS
44	q	46	ARG
44	q	52	LEU
44	q	57	THR
44	q	67	LEU
44	q	70	LEU
44	q	72	ASP
44	q	76	LEU
44	q	81	LYS
44	q	97	LYS
44	q	104	ARG
44	q	185	LEU
44	q	191	TYR
45	x	30	THR
45	x	87	ARG
45	x	108	ILE
45	x	143	LEU
45	x	167	LYS
45	x	184	VAL
45	x	189	ILE
45	x	203	THR
45	x	207	LEU
45	x	216	SER
45	x	229	THR
45	x	235	ASN
45	x	243	ARG
45	x	244	VAL
45	x	261	GLU
45	x	267	VAL
45	x	315	GLU
45	x	334	LEU
45	x	337	LEU
45	x	356	ARG
45	x	375	SER
45	x	384	LYS
45	x	427	SER
45	x	432	CYS
45	x	446	ASP
45	x	447	HIS
45	x	452	THR
45	x	453	ASN

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Mol	Chain	Res	Type
45	x	461	ASP
45	x	477	LYS
45	x	478	LEU
45	x	497	SER
45	x	504	CYS
45	x	510	CYS
45	x	511	ASP
45	x	518	ASP
45	x	523	LEU
45	x	541	HIS
45	x	542	GLU
46	y	179	ASN
46	y	197	LEU
46	y	199	ASP
46	y	207	MET
46	y	208	SER
46	y	221	ASN
46	y	227	LEU
46	y	319	GLN
46	y	347	PHE
46	y	359	GLN
46	y	364	GLN
46	y	365	THR
46	y	366	GLU
46	y	373	LEU
46	y	376	ARG
46	y	398	HIS

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (107) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	47	GLN
4	A	97	ASN
4	A	132	ASN
4	A	139	HIS
4	A	194	ASN
4	A	209	HIS
5	B	11	HIS
5	B	121	ASN
5	B	211	GLN
5	B	243	HIS
5	B	273	HIS

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Mol	Chain	Res	Type
6	C	5	GLN
6	C	114	ASN
6	C	221	ASN
6	C	260	GLN
6	C	291	ASN
6	C	311	HIS
7	D	40	HIS
7	D	57	ASN
7	D	63	GLN
8	E	172	HIS
9	F	25	GLN
9	F	37	ASN
9	F	159	GLN
9	F	194	HIS
10	G	41	GLN
10	G	221	ASN
10	G	240	ASN
10	G	243	GLN
11	H	8	GLN
11	H	50	ASN
11	H	100	ASN
11	H	169	ASN
11	H	183	HIS
12	I	12	GLN
12	I	59	GLN
13	J	132	ASN
14	L	13	HIS
14	L	19	GLN
14	L	114	GLN
14	L	120	GLN
14	L	149	GLN
16	N	15	GLN
16	N	90	ASN
17	O	26	GLN
17	O	29	ASN
17	O	31	GLN
17	O	50	ASN
17	O	122	GLN
18	P	55	GLN
18	P	96	GLN
18	P	125	GLN
19	Q	73	GLN

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Mol	Chain	Res	Type
19	Q	135	GLN
20	R	58	HIS
21	S	8	GLN
21	S	138	GLN
22	T	16	GLN
22	T	49	GLN
22	T	77	ASN
22	T	95	HIS
22	T	98	HIS
23	U	109	GLN
25	W	42	GLN
25	W	58	HIS
26	X	65	GLN
27	Y	120	GLN
28	Z	36	HIS
28	Z	57	HIS
28	Z	106	GLN
29	a	44	ASN
30	b	6	ASN
31	c	75	ASN
33	e	52	GLN
34	f	5	HIS
34	f	13	HIS
34	f	77	ASN
35	g	3	GLN
35	g	18	ASN
36	h	20	GLN
36	h	68	GLN
36	h	99	GLN
36	h	104	GLN
36	h	108	GLN
40	l	25	GLN
40	l	38	ASN
42	o	22	GLN
43	p	34	HIS
44	q	37	GLN
45	x	18	ASN
45	x	51	HIS
45	x	118	ASN
45	x	146	HIS
45	x	188	HIS
45	x	235	ASN

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Mol	Chain	Res	Type
45	x	281	ASN
45	x	294	GLN
45	x	366	GLN
45	x	377	GLN
45	x	405	ASN
45	x	429	ASN
45	x	447	HIS
45	x	471	HIS
46	y	172	HIS
46	y	182	HIS
46	y	239	HIS
46	y	319	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	5	3084/3396 (90%)	669 (21%)	73 (2%)
2	7	120/121 (99%)	14 (11%)	0
3	8	157/158 (99%)	36 (22%)	5 (3%)
All	All	3361/3675 (91%)	719 (21%)	78 (2%)

All (719) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	5	14	U
1	5	15	C
1	5	22	G
1	5	26	A
1	5	40	A
1	5	43	A
1	5	49	A
1	5	59	G
1	5	60	A
1	5	65	A
1	5	66	A
1	5	75	G
1	5	83	U
1	5	91	G
1	5	96	G
1	5	98	G
1	5	109	A

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Mol	Chain	Res	Type
1	5	110	G
1	5	111	C
1	5	113	C
1	5	116	A
1	5	121	A
1	5	122	A
1	5	133	U
1	5	134	U
1	5	135	C
1	5	136	G
1	5	146	U
1	5	150	A
1	5	152	U
1	5	155	G
1	5	156	G
1	5	157	A
1	5	166	C
1	5	170	G
1	5	171	G
1	5	172	G
1	5	175	C
1	5	182	U
1	5	187	A
1	5	190	U
1	5	191	U
1	5	210	U
1	5	211	A
1	5	213	A
1	5	218	G
1	5	219	A
1	5	221	A
1	5	237	G
1	5	239	G
1	5	240	U
1	5	245	U
1	5	246	U
1	5	248	U
1	5	249	U
1	5	250	U
1	5	251	G
1	5	252	U
1	5	254	A

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Mol	Chain	Res	Type
1	5	269	G
1	5	270	U
1	5	282	G
1	5	283	G
1	5	284	A
1	5	286	U
1	5	295	A
1	5	315	C
1	5	323	A
1	5	329	U
1	5	334	A
1	5	339	C
1	5	350	C
1	5	370	U
1	5	376	G
1	5	378	A
1	5	390	G
1	5	398	A
1	5	399	A
1	5	401	U
1	5	402	A
1	5	403	C
1	5	421	G
1	5	422	A
1	5	438	A
1	5	439	C
1	5	494	G
1	5	498	A
1	5	521	A
1	5	535	G
1	5	546	C
1	5	547	G
1	5	548	G
1	5	557	A
1	5	559	A
1	5	569	A
1	5	578	A
1	5	579	G
1	5	592	A
1	5	594	U
1	5	600	G
1	5	604	G

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Mol	Chain	Res	Type
1	5	609	G
1	5	611	A
1	5	619	A
1	5	620	U
1	5	621	A
1	5	622	A
1	5	636	C
1	5	647	A
1	5	649	A
1	5	660	A
1	5	677	A
1	5	681	U
1	5	683	U
1	5	690	A
1	5	705	A
1	5	710	A
1	5	712	G
1	5	713	U
1	5	715	A
1	5	716	A
1	5	717	C
1	5	720	A
1	5	725	G
1	5	735	A
1	5	736	A
1	5	750	G
1	5	760	G
1	5	766	U
1	5	776	U
1	5	777	U
1	5	780	A
1	5	781	G
1	5	785	G
1	5	786	A
1	5	799	G
1	5	806	A
1	5	808	A
1	5	812	G
1	5	817	A
1	5	830	A
1	5	832	G
1	5	837	A

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Mol	Chain	Res	Type
1	5	844	G
1	5	845	G
1	5	851	C
1	5	861	C
1	5	869	G
1	5	873	C
1	5	874	U
1	5	879	U
1	5	883	A
1	5	895	A
1	5	896	A
1	5	907	G
1	5	908	G
1	5	909	G
1	5	914	A
1	5	916	G
1	5	921	A
1	5	923	C
1	5	925	A
1	5	932	U
1	5	937	G
1	5	944	C
1	5	953	G
1	5	959	C
1	5	960	U
1	5	961	C
1	5	974	G
1	5	979	U
1	5	982	C
1	5	983	A
1	5	984	G
1	5	991	G
1	5	995	U
1	5	1001	G
1	5	1002	A
1	5	1010	G
1	5	1014	U
1	5	1015	U
1	5	1047	A
1	5	1049	C
1	5	1057	A
1	5	1064	A

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Mol	Chain	Res	Type
1	5	1065	A
1	5	1072	G
1	5	1081	U
1	5	1082	U
1	5	1085	A
1	5	1086	C
1	5	1093	A
1	5	1094	U
1	5	1095	U
1	5	1096	U
1	5	1097	G
1	5	1098	A
1	5	1103	A
1	5	1104	G
1	5	1117	G
1	5	1131	G
1	5	1138	U
1	5	1144	U
1	5	1151	U
1	5	1152	G
1	5	1153	A
1	5	1155	C
1	5	1157	G
1	5	1159	A
1	5	1160	C
1	5	1180	A
1	5	1181	U
1	5	1183	C
1	5	1186	G
1	5	1190	A
1	5	1191	U
1	5	1192	C
1	5	1196	C
1	5	1201	C
1	5	1209	G
1	5	1216	C
1	5	1217	A
1	5	1222	G
1	5	1223	A
1	5	1232	C
1	5	1235	U
1	5	1236	G

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Mol	Chain	Res	Type
1	5	1237	G
1	5	1239	C
1	5	1241	U
1	5	1242	G
1	5	1243	G
1	5	1245	A
1	5	1246	G
1	5	1252	A
1	5	1258	U
1	5	1259	A
1	5	1262	G
1	5	1263	A
1	5	1264	G
1	5	1265	U
1	5	1266	G
1	5	1285	G
1	5	1307	G
1	5	1308	A
1	5	1309	U
1	5	1314	C
1	5	1329	U
1	5	1330	A
1	5	1345	G
1	5	1348	U
1	5	1349	G
1	5	1350	A
1	5	1351	U
1	5	1352	A
1	5	1353	U
1	5	1356	U
1	5	1357	G
1	5	1380	G
1	5	1385	C
1	5	1386	A
1	5	1391	C
1	5	1394	A
1	5	1398	U
1	5	1399	A
1	5	1400	G
1	5	1408	G
1	5	1415	U
1	5	1419	A

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Mol	Chain	Res	Type
1	5	1421	G
1	5	1433	A
1	5	1434	G
1	5	1435	A
1	5	1437	C
1	5	1446	A
1	5	1450	G
1	5	1460	A
1	5	1480	G
1	5	1481	A
1	5	1483	G
1	5	1484	U
1	5	1490	A
1	5	1502	C
1	5	1503	A
1	5	1508	C
1	5	1514	G
1	5	1533	U
1	5	1536	G
1	5	1539	A
1	5	1544	G
1	5	1554	U
1	5	1555	U
1	5	1556	C
1	5	1557	A
1	5	1560	G
1	5	1561	G
1	5	1562	C
1	5	1563	C
1	5	1564	U
1	5	1568	U
1	5	1569	U
1	5	1570	U
1	5	1571	A
1	5	1572	U
1	5	1573	G
1	5	1575	A
1	5	1576	G
1	5	1578	C
1	5	1579	C
1	5	1581	C
1	5	1582	C

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Mol	Chain	Res	Type
1	5	1587	A
1	5	1589	A
1	5	1593	A
1	5	1596	C
1	5	1607	U
1	5	1608	C
1	5	1620	U
1	5	1629	U
1	5	1639	C
1	5	1642	A
1	5	1643	A
1	5	1644	C
1	5	1645	U
1	5	1649	U
1	5	1677	G
1	5	1683	A
1	5	1704	A
1	5	1716	U
1	5	1717	U
1	5	1718	G
1	5	1721	U
1	5	1724	U
1	5	1725	C
1	5	1730	G
1	5	1741	A
1	5	1750	A
1	5	1751	G
1	5	1759	C
1	5	1760	A
1	5	1763	U
1	5	1764	U
1	5	1765	U
1	5	1770	G
1	5	1772	U
1	5	1780	G
1	5	1797	A
1	5	1812	G
1	5	1814	A
1	5	1815	U
1	5	1816	A
1	5	1817	G
1	5	1818	U

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Mol	Chain	Res	Type
1	5	1820	U
1	5	1821	U
1	5	1839	A
1	5	1840	U
1	5	1841	A
1	5	1842	A
1	5	1846	C
1	5	1849	C
1	5	1850	A
1	5	1866	C
1	5	1877	U
1	5	1878	G
1	5	1879	A
1	5	1880	U
1	5	1887	A
1	5	1893	A
1	5	1901	A
1	5	1906	G
1	5	1907	C
1	5	1918	C
1	5	1930	A
1	5	1935	G
1	5	1943	C
1	5	2101	C
1	5	2102	U
1	5	2111	G
1	5	2112	U
1	5	2113	A
1	5	2114	C
1	5	2118	C
1	5	2121	G
1	5	2122	G
1	5	2131	A
1	5	2144	A
1	5	2158	A
1	5	2163	C
1	5	2164	A
1	5	2169	G
1	5	2185	G
1	5	2192	C
1	5	2193	U
1	5	2205	U

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Mol	Chain	Res	Type
1	5	2210	G
1	5	2223	A
1	5	2225	U
1	5	2228	A
1	5	2229	A
1	5	2244	A
1	5	2249	G
1	5	2270	A
1	5	2273	G
1	5	2275	A
1	5	2279	A
1	5	2281	A
1	5	2288	G
1	5	2298	U
1	5	2307	G
1	5	2308	C
1	5	2309	A
1	5	2310	U
1	5	2313	A
1	5	2314	U
1	5	2315	G
1	5	2334	U
1	5	2335	G
1	5	2336	U
1	5	2337	C
1	5	2338	C
1	5	2363	A
1	5	2373	A
1	5	2374	C
1	5	2375	G
1	5	2378	C
1	5	2385	G
1	5	2388	U
1	5	2390	A
1	5	2391	G
1	5	2393	G
1	5	2394	G
1	5	2397	A
1	5	2401	A
1	5	2402	A
1	5	2403	G
1	5	2411	U

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Mol	Chain	Res	Type
1	5	2417	U
1	5	2418	G
1	5	2419	A
1	5	2420	C
1	5	2421	U
1	5	2422	C
1	5	2423	U
1	5	2426	U
1	5	2437	G
1	5	2438	A
1	5	2439	A
1	5	2510	U
1	5	2511	A
1	5	2512	C
1	5	2514	U
1	5	2515	A
1	5	2522	G
1	5	2523	A
1	5	2524	A
1	5	2525	G
1	5	2526	C
1	5	2530	G
1	5	2531	C
1	5	2532	U
1	5	2537	U
1	5	2538	U
1	5	2539	C
1	5	2540	A
1	5	2543	U
1	5	2552	C
1	5	2554	A
1	5	2555	G
1	5	2567	C
1	5	2568	C
1	5	2569	A
1	5	2570	U
1	5	2571	U
1	5	2572	C
1	5	2573	G
1	5	2574	G
1	5	2584	G
1	5	2585	G

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Mol	Chain	Res	Type
1	5	2589	G
1	5	2593	A
1	5	2594	C
1	5	2604	U
1	5	2605	G
1	5	2606	G
1	5	2607	G
1	5	2609	A
1	5	2610	G
1	5	2614	G
1	5	2615	G
1	5	2626	A
1	5	2629	U
1	5	2636	A
1	5	2652	U
1	5	2656	A
1	5	2657	A
1	5	2662	G
1	5	2663	G
1	5	2674	A
1	5	2677	G
1	5	2681	U
1	5	2683	U
1	5	2689	A
1	5	2690	G
1	5	2691	A
1	5	2694	A
1	5	2703	A
1	5	2704	A
1	5	2714	G
1	5	2726	C
1	5	2728	G
1	5	2729	U
1	5	2736	A
1	5	2737	C
1	5	2740	A
1	5	2742	C
1	5	2752	U
1	5	2753	G
1	5	2761	G
1	5	2772	C
1	5	2773	C

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Mol	Chain	Res	Type
1	5	2777	G
1	5	2778	G
1	5	2779	A
1	5	2796	G
1	5	2799	A
1	5	2800	G
1	5	2801	A
1	5	2802	A
1	5	2804	A
1	5	2807	U
1	5	2808	A
1	5	2809	C
1	5	2810	C
1	5	2812	C
1	5	2814	G
1	5	2816	G
1	5	2817	A
1	5	2818	U
1	5	2819	A
1	5	2839	G
1	5	2844	C
1	5	2845	A
1	5	2847	A
1	5	2853	A
1	5	2856	G
1	5	2867	C
1	5	2871	G
1	5	2872	A
1	5	2873	U
1	5	2875	U
1	5	2887	A
1	5	2889	C
1	5	2898	G
1	5	2899	C
1	5	2907	G
1	5	2911	A
1	5	2916	U
1	5	2918	G
1	5	2923	U
1	5	2928	C
1	5	2935	U
1	5	2936	A

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Mol	Chain	Res	Type
1	5	2942	C
1	5	2945	G
1	5	2947	G
1	5	2953	U
1	5	2954	U
1	5	2955	U
1	5	2956	A
1	5	2957	G
1	5	2971	A
1	5	2972	G
1	5	2978	U
1	5	2979	U
1	5	2983	C
1	5	2990	G
1	5	2996	U
1	5	2997	G
1	5	3003	G
1	5	3012	A
1	5	3028	G
1	5	3057	U
1	5	3059	G
1	5	3078	U
1	5	3079	U
1	5	3086	A
1	5	3092	C
1	5	3109	G
1	5	3116	G
1	5	3117	C
1	5	3122	A
1	5	3123	A
1	5	3130	A
1	5	3131	U
1	5	3142	A
1	5	3143	C
1	5	3152	U
1	5	3164	C
1	5	3165	A
1	5	3168	A
1	5	3172	A
1	5	3173	G
1	5	3174	A
1	5	3175	U

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Mol	Chain	Res	Type
1	5	3176	G
1	5	3179	U
1	5	3181	C
1	5	3186	A
1	5	3187	A
1	5	3194	C
1	5	3195	U
1	5	3196	U
1	5	3207	U
1	5	3217	C
1	5	3218	A
1	5	3219	G
1	5	3227	A
1	5	3228	C
1	5	3229	G
1	5	3238	G
1	5	3243	A
1	5	3244	A
1	5	3245	A
1	5	3247	G
1	5	3249	C
1	5	3253	G
1	5	3259	U
1	5	3263	G
1	5	3265	C
1	5	3269	U
1	5	3270	U
1	5	3273	A
1	5	3276	G
1	5	3277	U
1	5	3278	C
1	5	3279	A
1	5	3281	U
1	5	3282	U
1	5	3285	C
1	5	3286	G
1	5	3289	G
1	5	3290	G
1	5	3294	A
1	5	3304	U
1	5	3313	U
1	5	3316	A

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Mol	Chain	Res	Type
1	5	3317	U
1	5	3318	G
1	5	3319	U
1	5	3324	C
1	5	3341	U
1	5	3342	A
1	5	3345	G
1	5	3346	U
1	5	3351	U
1	5	3352	U
1	5	3354	U
1	5	3356	G
1	5	3357	U
1	5	3358	U
1	5	3362	A
1	5	3369	G
1	5	3378	C
1	5	3383	G
1	5	3389	U
1	5	3390	G
1	5	3394	U
1	5	3396	U
2	7	7	G
2	7	22	A
2	7	33	U
2	7	54	U
2	7	60	G
2	7	65	G
2	7	73	C
2	7	74	C
2	7	76	A
2	7	91	G
2	7	93	C
2	7	99	G
2	7	102	A
2	7	112	G
3	8	23	U
3	8	25	G
3	8	34	U
3	8	42	G
3	8	48	A
3	8	51	G

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Mol	Chain	Res	Type
3	8	59	A
3	8	60	U
3	8	62	C
3	8	63	G
3	8	77	A
3	8	80	A
3	8	81	U
3	8	82	U
3	8	83	C
3	8	84	C
3	8	85	G
3	8	86	U
3	8	87	G
3	8	88	A
3	8	89	A
3	8	90	U
3	8	95	G
3	8	102	U
3	8	104	A
3	8	105	A
3	8	106	C
3	8	111	A
3	8	113	U
3	8	125	U
3	8	126	A
3	8	127	U
3	8	138	A
3	8	156	U
3	8	157	U
3	8	158	U

All (78) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	5	151	A
1	5	190	U
1	5	210	U
1	5	217	U
1	5	238	A
1	5	282	G
1	5	438	A
1	5	546	C

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Mol	Chain	Res	Type
1	5	620	U
1	5	621	A
1	5	715	A
1	5	735	A
1	5	765	C
1	5	850	U
1	5	873	C
1	5	981	U
1	5	982	C
1	5	1064	A
1	5	1081	U
1	5	1094	U
1	5	1222	G
1	5	1238	C
1	5	1241	U
1	5	1284	C
1	5	1307	G
1	5	1329	U
1	5	1352	A
1	5	1355	A
1	5	1555	U
1	5	1568	U
1	5	1571	A
1	5	1580	A
1	5	1607	U
1	5	1716	U
1	5	1724	U
1	5	1816	A
1	5	1819	U
1	5	2101	C
1	5	2112	U
1	5	2204	C
1	5	2209	U
1	5	2248	C
1	5	2307	G
1	5	2418	G
1	5	2422	C
1	5	2438	A
1	5	2513	U
1	5	2539	C
1	5	2583	C
1	5	2593	A

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Mol	Chain	Res	Type
1	5	2604	U
1	5	2662	G
1	5	2682	C
1	5	2772	C
1	5	2807	U
1	5	2817	A
1	5	2871	G
1	5	2872	A
1	5	2954	U
1	5	2971	A
1	5	2995	A
1	5	3078	U
1	5	3115	C
1	5	3121	U
1	5	3167	A
1	5	3195	U
1	5	3218	A
1	5	3228	C
1	5	3269	U
1	5	3289	G
1	5	3340	G
1	5	3341	U
1	5	3357	U
3	8	79	A
3	8	80	A
3	8	88	A
3	8	126	A
3	8	156	U

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

20 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
1	Y5P	5	1986	1	15,19,20	2.53	2 (13%)	19,26,29	1.53	2 (10%)
1	Y5P	5	1987	1	15,19,20	2.54	2 (13%)	19,26,29	1.52	2 (10%)
1	Y5P	5	1988	1	15,19,20	2.54	2 (13%)	19,26,29	1.51	2 (10%)
1	Y5P	5	1989	1	15,19,20	2.54	2 (13%)	19,26,29	1.47	2 (10%)
1	Y5P	5	1990	1	15,19,20	2.53	2 (13%)	19,26,29	1.53	2 (10%)
1	Y5P	5	1991	1	15,19,20	2.57	2 (13%)	19,26,29	1.49	2 (10%)
1	Y5P	5	1992	1	15,19,20	2.50	2 (13%)	19,26,29	1.53	2 (10%)
1	Y5P	5	1993	1	15,19,20	2.58	2 (13%)	19,26,29	1.47	2 (10%)
1	Y5P	5	1994	1	15,19,20	2.55	2 (13%)	19,26,29	1.54	2 (10%)
1	Y5P	5	1995	1	15,19,20	2.53	2 (13%)	19,26,29	1.48	2 (10%)
1	P5P	5	2016	1	16,23,24	0.83	0	14,33,36	0.86	1 (7%)
1	P5P	5	2017	1	16,23,24	0.83	0	14,33,36	0.86	0
1	P5P	5	2018	1	16,23,24	0.83	0	14,33,36	0.87	0
1	P5P	5	2019	1	16,23,24	0.84	0	14,33,36	0.90	0
1	P5P	5	2020	1	16,23,24	0.83	0	14,33,36	0.87	0
1	P5P	5	2021	1	16,23,24	0.82	0	14,33,36	0.83	0
1	P5P	5	2022	1	16,23,24	0.83	0	14,33,36	0.89	0
1	P5P	5	2023	1	16,23,24	0.86	0	14,33,36	0.93	0
1	P5P	5	2024	1	16,23,24	0.82	0	14,33,36	0.87	0
1	P5P	5	2025	1	16,23,24	0.82	0	14,33,36	0.85	0

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
1	Y5P	5	1986	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1987	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1988	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1989	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1990	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1991	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1992	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1993	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1994	1	-	0/7/33/34	0/2/2/2
1	Y5P	5	1995	1	-	0/7/33/34	0/2/2/2
1	P5P	5	2016	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2017	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2018	1	-	0/3/25/26	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
1	P5P	5	2019	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2020	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2021	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2022	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2023	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2024	1	-	0/3/25/26	0/3/3/3
1	P5P	5	2025	1	-	0/3/25/26	0/3/3/3

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	5	1991	Y5P	C4-N3	-8.82	1.38	1.46
1	5	1993	Y5P	C4-N3	-8.74	1.38	1.46
1	5	1987	Y5P	C4-N3	-8.71	1.38	1.46
1	5	1995	Y5P	C4-N3	-8.67	1.38	1.46
1	5	1989	Y5P	C4-N3	-8.66	1.38	1.46
1	5	1994	Y5P	C4-N3	-8.64	1.38	1.46
1	5	1988	Y5P	C4-N3	-8.54	1.38	1.46
1	5	1990	Y5P	C4-N3	-8.54	1.38	1.46
1	5	1986	Y5P	C4-N3	-8.51	1.38	1.46
1	5	1992	Y5P	C4-N3	-8.34	1.38	1.46
1	5	1991	Y5P	C2-N3	3.97	1.37	1.29
1	5	1987	Y5P	C2-N3	3.97	1.37	1.29
1	5	1995	Y5P	C2-N3	4.00	1.37	1.29
1	5	1989	Y5P	C2-N3	4.04	1.37	1.29
1	5	1990	Y5P	C2-N3	4.22	1.38	1.29
1	5	1994	Y5P	C2-N3	4.23	1.38	1.29
1	5	1993	Y5P	C2-N3	4.24	1.38	1.29
1	5	1988	Y5P	C2-N3	4.27	1.38	1.29
1	5	1986	Y5P	C2-N3	4.32	1.38	1.29
1	5	1992	Y5P	C2-N3	4.40	1.38	1.29

All (21) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1986	Y5P	N1-C2-N3	-3.98	114.34	125.46
1	5	1994	Y5P	N1-C2-N3	-3.97	114.37	125.46
1	5	1992	Y5P	N1-C2-N3	-3.92	114.50	125.46
1	5	1990	Y5P	N1-C2-N3	-3.91	114.53	125.46
1	5	1988	Y5P	N1-C2-N3	-3.88	114.61	125.46
1	5	1993	Y5P	N1-C2-N3	-3.77	114.93	125.46
1	5	1989	Y5P	N1-C2-N3	-3.74	114.99	125.46

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	5	1987	Y5P	N1-C2-N3	-3.73	115.03	125.46
1	5	1995	Y5P	N1-C2-N3	-3.71	115.08	125.46
1	5	1991	Y5P	N1-C2-N3	-3.61	115.36	125.46
1	5	2016	P5P	C6-N1-C2	2.00	118.64	115.89
1	5	1993	Y5P	C4-N3-C2	4.67	126.89	117.73
1	5	1991	Y5P	C4-N3-C2	4.76	127.06	117.73
1	5	1989	Y5P	C4-N3-C2	4.76	127.07	117.73
1	5	1990	Y5P	C4-N3-C2	4.79	127.13	117.73
1	5	1988	Y5P	C4-N3-C2	4.81	127.17	117.73
1	5	1992	Y5P	C4-N3-C2	4.87	127.27	117.73
1	5	1995	Y5P	C4-N3-C2	4.87	127.28	117.73
1	5	1987	Y5P	C4-N3-C2	4.87	127.28	117.73
1	5	1994	Y5P	C4-N3-C2	4.88	127.30	117.73
1	5	1986	Y5P	C4-N3-C2	4.92	127.39	117.73

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

12 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	5	1987	Y5P	1	0
1	5	1988	Y5P	1	0
1	5	1989	Y5P	2	0
1	5	1990	Y5P	2	0
1	5	1991	Y5P	1	0
1	5	1992	Y5P	1	0
1	5	1993	Y5P	1	0
1	5	1994	Y5P	1	0
1	5	2017	P5P	1	0
1	5	2018	P5P	1	0
1	5	2023	P5P	1	0
1	5	2024	P5P	1	0

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry

Of 286 ligands modelled in this entry, 286 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

The following chains have linkage breaks:

Mol	Chain	Number of breaks
47	z	2
1	5	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	z	107:UNK	C	115:UNK	N	20.22
1	5	1995:Y5P	O3'	2016:P5P	P	17.42
1	z	127:UNK	C	131:UNK	N	9.67