



Full wwPDB X-ray Structure Validation Report

Mar 31, 2014 – 06:11 PM BST

PDB ID : 4A18
Title : T.THERMOPHILA 60S RIBOSOMAL SUBUNIT IN COMPLEX WITH INITIATION FACTOR 6. THIS FILE CONTAINS 26S RRNA AND PROTEINS OF MOLECULE 1
Authors : Klinge, S.; Voigts-Hoffmann, F.; Leibundgut, M.; Arpagaus, S.; Ban, N.
Deposited on : 2011-09-14
Resolution : 3.52 Å(reported)

This is a full wwPDB validation report for a publicly released PDB entry.
We welcome your comments at validation@mail.wwpdb.org
A user guide is available at <http://wwpdb.org/ValidationPDFNotes.html>

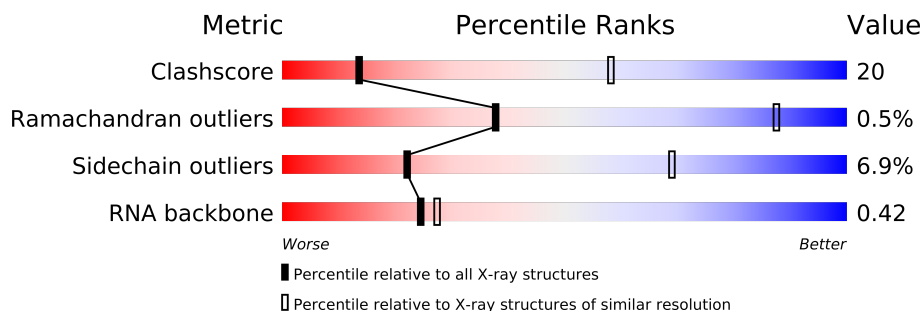
The following versions of software and data (see [references](#)) were used in the production of this report:

MolProbity	:	4.02b-467
Mogul	:	1.15 2013
Xtriage (Phenix)	:	dev-1323
EDS	:	NOT EXECUTED
Percentile statistics	:	21963
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP)	:	stable23004

1 Overall quality at a glance

The reported resolution of this entry is 3.52 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)	Similar resolution (#Entries, resolution range(Å))
Clashscore	79885	1020 (3.68-3.36)
Ramachandran outliers	78287	1082 (3.70-3.34)
Sidechain outliers	78261	1082 (3.70-3.34)
RNA backbone	1838	1008 (4.26-2.76)





The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density.

Note EDS was not executed.

Mol	Chain	Length	Quality of chain
1	1	3354	
2	A	94	
3	B	52	
4	C	109	
5	E	191	
6	F	126	
7	G	104	
8	H	113	
9	J	248	
10	K	129	
11	L	123	
12	M	118	
13	N	144	
14	O	134	
15	P	89	

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Mol	Chain	Length	Quality of chain
16	Q	104	
17	T	66	
18	U	206	
19	X	189	

2 Entry composition

There are 20 unique types of molecules in this entry. The entry contains 83962 atoms, of which 0 are hydrogen and 0 are deuterium.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 26S RRNA.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	1	3119	Total	C	N	O	P	0	0	0
			66769	29861	12195	21594	3119			

- Molecule 2 is a protein called RIBOSOMAL PROTEIN L37.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	A	91	Total	C	N	O	S	0	0	0
			721	440	158	116	7			

- Molecule 3 is a protein called RPL39.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	B	51	Total	C	N	O	S	0	0	0
			456	288	97	70	1			

- Molecule 4 is a protein called 60S RIBOSOMAL PROTEIN L36A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	C	103	Total	C	N	O	S	0	0	0
			836	526	163	140	7			

- Molecule 5 is a protein called RPL6.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
5	E	190	Total	C	N	O	S	0	0	0
			1525	966	286	272	1			

- Molecule 6 is a protein called RPL14.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
6	F	125	Total	C	N	O	S	0	0	0
			1021	659	192	169	1			

- Molecule 7 is a protein called RPL30.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
7	G	96	Total	C	N	O	S	0	0	0
			727	455	129	138	5			

- Molecule 8 is a protein called RPL35A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
8	H	107	Total	C	N	O	S	0	0	0
			850	540	167	142	1			

- Molecule 9 is a protein called TRANSLATION INITIATION FACTOR EIF-6, PUTATIVE FAMILY PROTEIN.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
9	J	226	Total	C	N	O	S	0	0	0
			1716	1068	302	336	10			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
J	-2	GLY	-	EXPRESSION TAG	UNP Q245F2
J	-1	THR	-	EXPRESSION TAG	UNP Q245F2
J	0	SER	-	EXPRESSION TAG	UNP Q245F2

- Molecule 10 is a protein called UBIQUITIN-60S RIBOSOMAL PROTEIN L40.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
10	K	52	Total	C	N	O	S	0	0	0
			415	257	83	69	6			

- Molecule 11 is a protein called RPL34.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
11	L	108	Total	C	N	O	S	0	0	0
			852	529	170	147	6			

- Molecule 12 is a protein called RIBOSOMAL PROTEIN L22.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
12	M	100	Total	C	N	O	S	0	0	0
			819	530	137	151	1			

- Molecule 13 is a protein called RPL27.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
13	N	143	Total	C	N	O	S	0	0	0
			1170	755	213	199	3			

- Molecule 14 is a protein called RPL28.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
14	O	134	Total	C	N	O	S	0	0	0
			1034	650	204	179	1			

- Molecule 15 is a protein called RPL38.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
15	P	66	Total	C	N	O	S	0	0	0
			551	367	93	90	1			

- Molecule 16 is a protein called 60S RIBOSOMAL PROTEIN L36.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
16	Q	102	Total	C	N	O		0	0	0
			803	506	165	132				

- Molecule 17 is a protein called RPL29.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
17	T	65	Total	C	N	O		0	0	0
			533	324	117	92				

- Molecule 18 is a protein called RPL13.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
18	U	203	Total	C	N	O	S	0	0	0
			1624	1015	328	279	2			

- Molecule 19 is a protein called RPL18A.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
19	X	188	Total	C	N	O	S	0	0	0
			1536	972	287	271	6			

- Molecule 20 is ZINC ION (three-letter code: ZN) (formula: Zn).

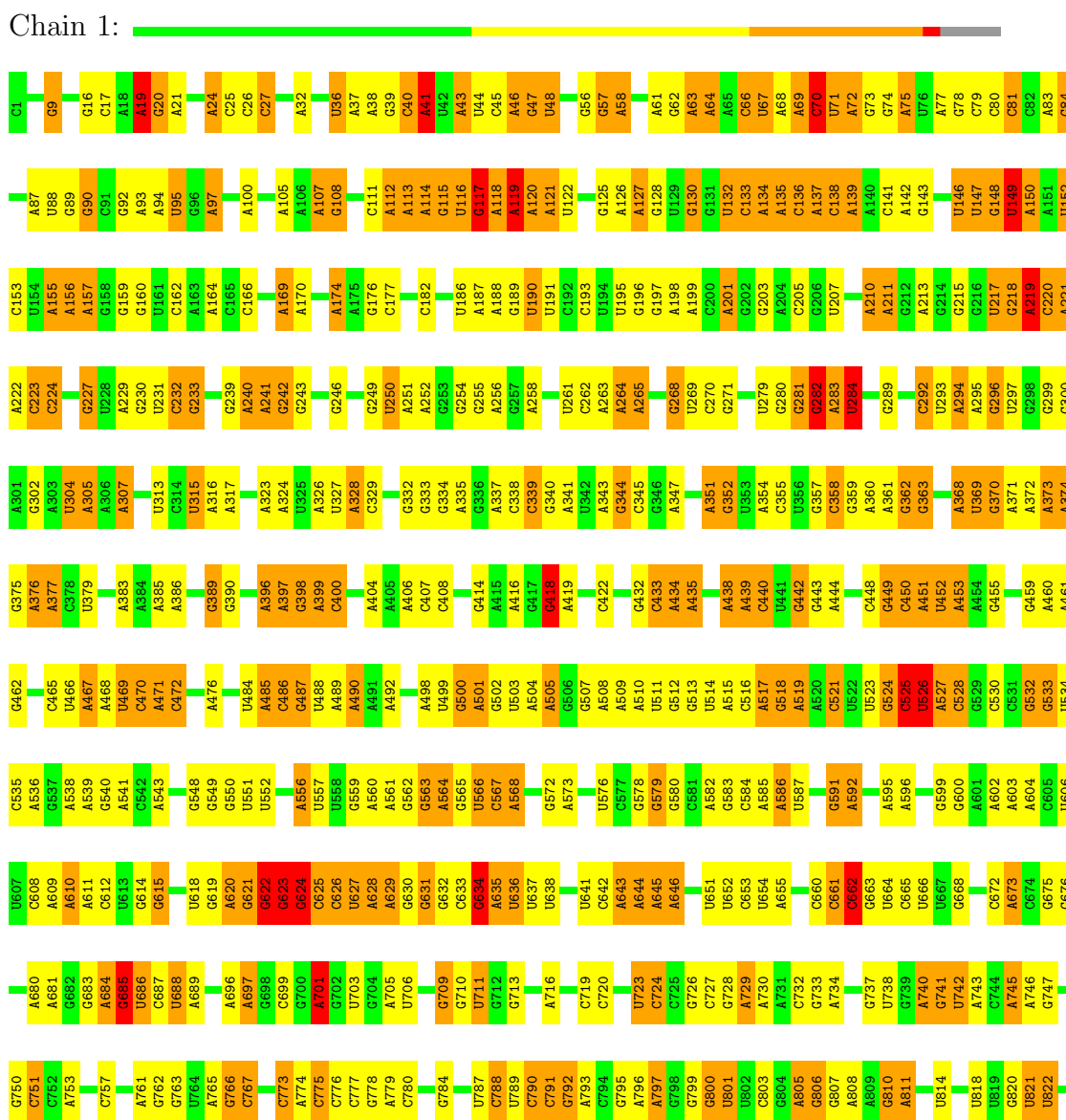
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
20	A	1	Total 1	Zn 1	0	0
20	L	1	Total 1	Zn 1	0	0
20	C	1	Total 1	Zn 1	0	0
20	K	1	Total 1	Zn 1	0	0

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 errors displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). 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.

Note EDS was not executed.

• Molecule 1: 26S RRNA





WORLD WIDE
PDB
PROTEIN DATA BANK

U3217	U3147	C3078	U2903	G2738	A2645	A2561	C	A2424	C2353	C2279	C2197	A2113	A
U3218	G3151	U3079	C2904	C2739	A2646	U2562	U	U2428	A2356	C2280	U2198	A2116	U
A3219	A3152	A3080	G2905	G2740	G2647	U2563	A	U2429	C2357	C2281	C2199	A2117	U
G3223	U3153	C3081	G2906	U2741	U2648	G2564	C	G2430	A2358	C2282	U2200	A2118	U
G3224	A3154	A3082	A2907	G2742	G2649	A2565	C	U2431	U2359	U2283	G2201	G2119	C
U3225	A3155	A3083	U2911	G2743	U2650	C2566	C	G2432	U2361	U2284	A2202	G2120	C
A3226	A3156	G3087	U2912	C2744	C2655	U2567	A	G2433	U2362	C2285	A2203	G2121	A
A3227	A3157	U3088	G2913	U2745	G2661	G2568	C	A2434	G2366	A2286	U2204	G2122	A
A3228	A3158	U3089	C2914	G2746	G2662	U2569	G	A2435	A2367	A2287	A2127	G2123	G
G3229	A3159	U3090	G2915	G2747	G2663	G2570	U	G2436	A2368	A2288	A2128	G2124	G
G3230	A3160	A3095	C2916	U2748	G2664	U2571	A	U2437	A2369	A2289	G2129	A2129	A
U3231	A3161	U3096	C2917	U2749	G2665	G2572	C	G2438	G2370	U2290	G2130	A2130	A
A3232	A3162	G3097	G2918	C2750	A2667	C2573	C	U2439	G2371	U2291	U2133	U2133	G
A3233	A3163	A3098	U2919	C2751	G2668	U2574	U	G2440	G2372	U2292	U2134	U2134	G
U3234			G2920	U2752	A2669	G2575	U			U2293	U2135	U2135	U
U3235			A2921	U2753	G2670	C2576	C			U2294	U2136	U2136	U
C3236			U2922	U2754	U2671	A2580	C			U2295	U2137	U2137	C
C3237			U2923	U2755	U2672	G2581	C			U2296	U2138	U2138	G
A3238			U2924	U2756	U2673	A2582	U			U2297	U2139	U2139	G
U3241			G2925	U2757	A2678	C2583	U			U2298	U2140	U2140	C
U3242			C2930	U2758	U2679	U2584	C			U2299	U2141	U2141	C
U3247			U2931	U2759	A2680	A2590	U			U2300	A2142	A2142	G
C3248			U2932	U2760	A2683	G2595	U			U2301	G2143	G2143	C
U3249			C2933	U2761	A2684	G2596	U			U2302	U2144	U2144	U
A3250			A2934	U2762	A2685	G2597	U			U2303	U2145	U2145	U
C3251			C2935	U2763	A2686	U2598	C			U2304	U2146	U2146	A
G3252			U2936	U2764	A2687	G2599	C			U2305	U2147	U2147	A
			C2947	U2765	U2688	U2600	U			U2306	U2148	U2148	U
A3256			U2948	U2766	U2689	U2601	U			U2307	U2149	U2149	U
G3263			G2949	U2767	U2690	U2602	U			U2308	U2150	U2150	U
U3264			U2950	U2768	U2691	G2603	C			U2309	U2151	U2151	U
A3265			C2951	U2769	U2692	U2604	C			U2310	U2152	U2152	A
G3266			U2952	U2770	U2693	U2605	U			U2311	U2153	U2153	A
A3267			G2953	U2771	U2694	U2606	U			U2312	U2154	U2154	A
C3268			U2954	U2772	U2695	U2607	U			U2313	U2155	U2155	C
G3269			C2955	U2773	U2696	U2608	U			U2314	U2156	U2156	A
A3270			U2956	U2774	U2697	U2609	U			U2315	U2157	U2157	A
C3271			G2957	U2775	U2698	U2610	U			U2316	U2158	U2158	A
G3272			U2958	U2776	U2699	U2611	U			U2317	U2159	U2159	U
U3273			C2959	U2777	U2700	U2612	U			U2318	U2160	U2160	U
A3274			U2960	U2778	U2701	U2613	U			U2319	U2161	U2161	A
A3275			G2961	U2779	U2702	U2614	U			U2320	U2162	U2162	A
C3276			U2962	U2780	U2703	U2615	U			U2321	U2163	U2163	C
A3277			C2963	U2781	U2704	U2616	U			U2322	U2164	U2164	G
U3278			U2964	U2782	U2705	U2617	U			U2323	U2165	U2165	U
G3279			G2965	U2783	U2706	U2618	U			U2324	U2166	U2166	U
			U2966	U2784	U2707	U2619	U			U2325	U2167	U2167	C
			C2967	U2785	U2708	U2620	U			U2326	U2168	U2168	C
			U2968	U2786	U2709	U2621	U			U2327	U2169	U2169	A
			G2969	U2787	U2710	U2622	U			U2328	U2170	U2170	A
			U2970	U2788	U2711	U2623	U			U2329	U2171	U2171	A
			C2971	U2789	U2712	U2624	U			U2330	U2172	U2172	A
			U2972	U2790	U2713	U2625	U			U2331	U2173	U2173	C
			G2973	U2791	U2714	U2626	U			U2332	U2174	U2174	C
			U2974	U2792	U2715	U2627	U			U2333	U2175	U2175	C
			C2975	U2793	U2716	U2628	U			U2334	U2176	U2176	A
			U2976	U2794	U2717	U2629	U			U2335	U2177	U2177	A
			G2977	U2795	U2718	U2630	U			U2336	U2178	U2178	A
			U2978	U2796	U2719	U2631	U			U2337	U2179	U2179	A
			C2979	U2797	U2720	U2632	U			U2338	U2180	U2180	A
			U2980	U2798	U2721	U2633	U			U2339	U2181	U2181	A
			G2981	U2799	U2722	U2634	U			U2340	U2182	U2182	A
			U2982	U2800	U2723	U2635	U			U2341	U2183	U2183	A
			C2983	U2801	U2724	U2636	U			U2342	U2184	U2184	A
			U2984	U2802	U2725	U2637	U			U2343	U2185	U2185	A
			G2985	U2803	U2726	U2638	U			U2344	U2186	U2186	A
			U2986	U2804	U2727	U2639	U			U2345	U2187	U2187	A
			C2987	U2805	U2728	U2640	U			U2346	U2188	U2188	A
			U2988	U2806	U2729	U2641	U			U2347	U2189	U2189	A
			G2989	U2807	U2730	U2642	U			U2348	U2190	U2190	A
			U2990	U2808	U2731	U2643	U			U2349	U2191	U2191	A
			C2991	U2809	U2732	U2644	U			U2350	U2192	U2192	A
			U2992	U2810	U2733	U2645	U			U2351	U2193	U2193	A
			G2993	U2811	U2734	U2646	U			U2352	U2194	U2194	A
			U2994	U2812	U2735	U2647	U			U2353	U2195	U2195	A
			C2995	U2813	U2736	U2648	U			U2354	U2196	U2196	A
			U2996	U2814	U2737	U2649	U			U2355	U2197	U2197	A
			G2997	U2815	U2738	U2650	U			U2356	U2198	U2198	A
			U2998	U2816	U2739	U2651	U			U2357	U2199	U2199	A
			C2999	U2817	U2740	U2652	U			U2358	U2200	U2200	A
			U3000	U2818	U2741	U2653	U			U2359	U2201	U2201	A
			A3001	U2819	U2742	U2654	U			U2360	U2202	U2202	A
			U3002	U2820	U2743	U2655	U			U2361	U2203	U2203	A
			G3003	U2821	U2744	U2656	U			U2362	U2204	U2204	A
			U3004	U2822	U2745	U2657	U			U2363	U2205	U2205	A
			C3005	U2823	U2746	U2658	U			U2364	U2206	U2206	A
			U3006	U2824	U2747	U2659	U			U2365	U2207	U2207	A
			G3007	U2825	U2748	U2660	U			U2366	U2208	U2208	A
			U3008	U2826	U2749	U2661	U			U2367	U2209	U2209	A
			C3009	U2827	U2750	U2662	U			U2368	U2210	U2210	A
			U3010	U2828	U2751	U2663	U			U2369	U2211	U2211	A
			G3011	U2829	U2752	U2664	U			U2370	U2212	U2212	A
			U3012	U2830	U2753	U2665	U			U2371	U2213	U2213	A
			C3013	U2831	U2754	U2666	U			U2372	U2214	U2214	A
			U3014	U2832	U2755	U2667	U			U2373	U2215	U2215	A
			G3015	U2833	U2756	U2668	U			U2374	U2216	U2216	A
			U3016	U2834	U2757	U2669	U			U2375	U2217	U2217	A
			C3017	U2835	U2758	U2670	U			U2376	U2218	U2218	A
			U3018	U2836	U2759	U2671	U			U2377	U2219	U2219	A
			G3019	U2837	U2760	U2672	U			U2378	U2220	U2220	A
			U3020	U2838	U2761	U2673	U			U2379	U2221	U2221	A
			C3021	U2839	U2762	U2674	U			U2380	U2222	U2222	A
			U3022	U2840	U2763	U2675	U			U2381	U2223	U2223	A
			G3023	U2841	U2764	U2676	U			U2382	U2224	U2224	A
			U3024	U2842	U2765	U2677	U			U2383	U2225	U2225	A
			C3025	U2843	U2766	U2678	U			U2384	U2226	U2226	A
			U3026	U2844	U2767	U2679	U			U2385	U2227	U2227	A
			G3027	U2845	U2768	U2680	U			U2386	U2228	U2228	A
			U3028	U2846	U2769	U2681	U			U2387	U2229	U2229	A
			C3029	U2847	U2770	U2682	U			U2388	U2230	U2230	A
			U3030	U2848	U2771	U2683	U			U2389	U2231	U223	



• Molecule 2: RIBOSOMAL PROTEIN L37

Chain A:

• Molecule 3: RPL39

Chain B:

• Molecule 4: 60S RIBOSOMAL PROTEIN L36A

Chain C:

• Molecule 5: RPL6

Chain E:

• Molecule 6: RPL14

Chain F:

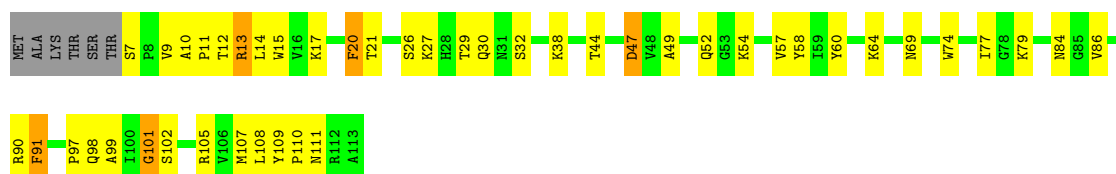


• Molecule 7: RPL30

Chain G:

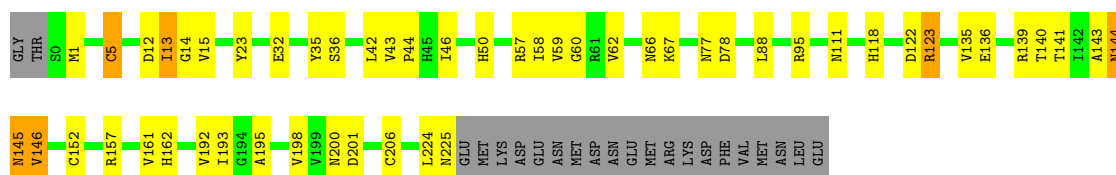
• Molecule 8: RPL35A

Chain H:



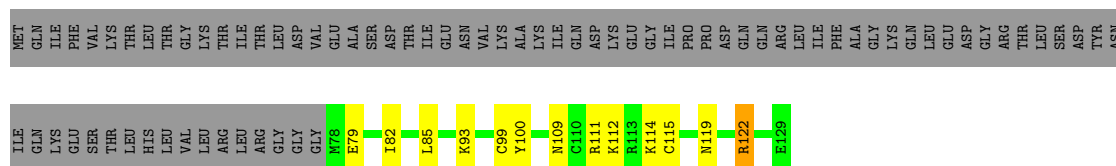
- Molecule 9: TRANSLATION INITIATION FACTOR EIF-6, PUTATIVE FAMILY PROTEIN

Chain J:



- Molecule 10: UBIQUITIN-60S RIBOSOMAL PROTEIN L40

Chain K:



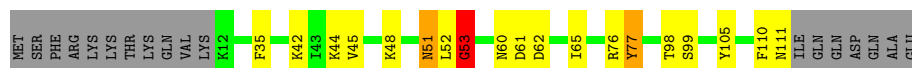
- Molecule 11: RPL34

Chain L:



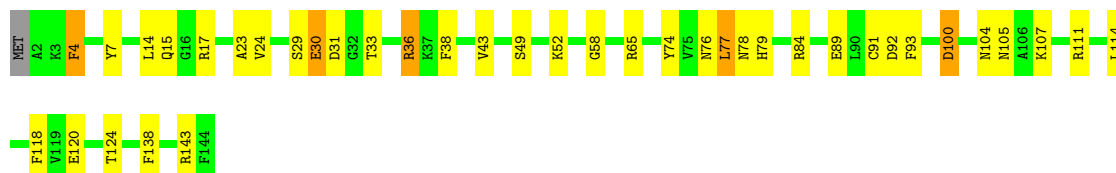
- Molecule 12: RIBOSOMAL PROTEIN L22

Chain M:



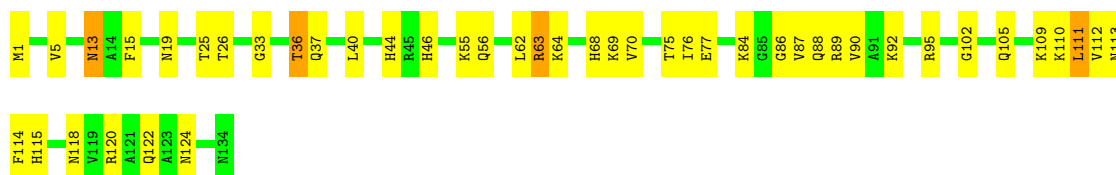
- Molecule 13: RPL27

Chain N:



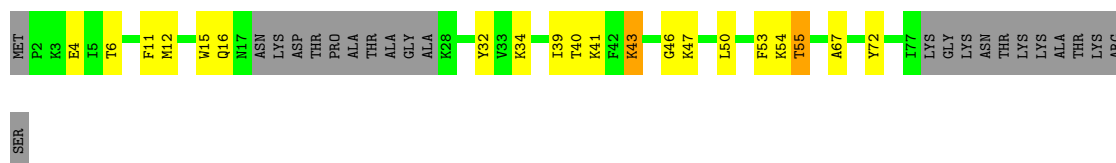
- Molecule 14: RPL28

Chain O:



- Molecule 15: RPL38

Chain P:



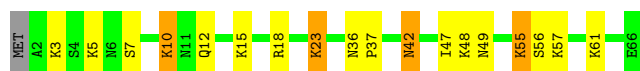
- Molecule 16: 60S RIBOSOMAL PROTEIN L36

Chain Q:



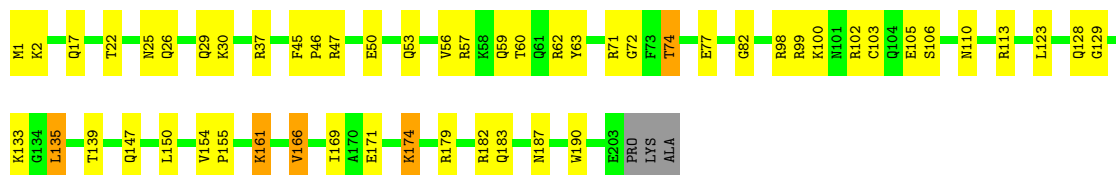
- Molecule 17: RPL29

Chain T:



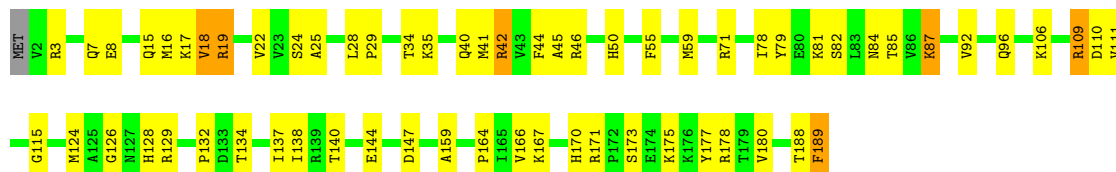
- Molecule 18: RPL13

Chain U:



- Molecule 19: RPL18A

Chain X:



4 Data and refinement statistics

EDS was not executed - this section will therefore be incomplete.

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α , β , γ	320.19Å 289.25Å 535.04Å 90.00° 91.22° 90.00°	Depositor
Resolution (Å)	20.00 – 3.52	Depositor
% Data completeness (in resolution range)	99.4 (20.00-3.52)	Depositor
R_{merge}	0.13	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.87 (at 3.48Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.216 , 0.244	Depositor
Wilson B-factor (Å ²)	96.9	Xtriage
Anisotropy	0.228	Xtriage
Estimated twinning fraction	0.028 for h,-k,-l	Xtriage
L-test for twinning	$\langle L \rangle = 0.45$, $\langle L^2 \rangle = 0.28$	Xtriage
Outliers	0 of 1192534 reflections	Xtriage
Total number of atoms	83962	wwPDB-VP
Average B, all atoms (Å ²)	104.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.51% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# $ Z > 5$	RMSZ	# $ Z > 5$
1	1	0.75	14/74792 (0.0%)	1.12	353/116594 (0.3%)
2	A	0.64	1/734 (0.1%)	0.77	0/972
3	B	0.54	0/466	0.62	0/619
4	C	0.58	0/848	0.71	1/1123 (0.1%)
5	E	0.47	0/1550	0.74	2/2077 (0.1%)
6	F	0.51	0/1033	0.71	0/1380
7	G	0.50	0/736	0.74	0/990
8	H	0.63	0/870	0.81	0/1175
9	J	0.51	0/1739	0.70	0/2368
10	K	0.48	0/421	0.69	0/558
11	L	0.64	0/861	0.77	1/1154 (0.1%)
12	M	0.41	0/832	0.67	0/1113
13	N	0.43	0/1190	0.63	1/1582 (0.1%)
14	O	0.47	0/1047	0.77	1/1400 (0.1%)
15	P	0.41	0/561	0.61	0/745
16	Q	0.48	0/808	0.70	0/1068
17	T	0.48	0/539	0.72	0/711
18	U	0.53	0/1647	0.74	1/2201 (0.0%)
19	X	0.48	0/1563	0.74	0/2104
All	All	0.71	15/92237 (0.0%)	1.06	360/139934 (0.3%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	A	0	1
8	H	0	1
12	M	0	1
16	Q	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
All	All	0	4

All (15) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	1	3067	A	N9-C4	-7.63	1.33	1.37
1	1	3008	U	C4-C5	6.48	1.49	1.43
2	A	22	CYS	CB-SG	-6.28	1.71	1.82
1	1	3008	U	N1-C2	6.14	1.44	1.38
1	1	219	A	N9-C4	-5.91	1.34	1.37
1	1	668	G	C6-O6	5.73	1.29	1.24
1	1	2399	A	N3-C4	5.59	1.38	1.34
1	1	119	A	C6-N1	5.57	1.39	1.35
1	1	515	A	N9-C4	5.53	1.41	1.37
1	1	2803	G	N7-C5	5.43	1.42	1.39
1	1	1614	A	N9-C4	-5.34	1.34	1.37
1	1	1612	A	N9-C4	-5.29	1.34	1.37
1	1	3037	A	N9-C4	-5.20	1.34	1.37
1	1	2606	U	C2-N3	5.20	1.41	1.37
1	1	1614	A	N7-C5	-5.12	1.36	1.39

All (360) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	119	A	N1-C6-N6	13.45	126.67	118.60
1	1	2276	A	C8-N9-C4	10.97	110.19	105.80
1	1	3037	A	N1-C6-N6	10.52	124.91	118.60
1	1	37	A	N1-C6-N6	10.37	124.82	118.60
1	1	1476	G	C5-C6-O6	-10.34	122.39	128.60
1	1	1476	G	N1-C6-O6	10.26	126.06	119.90
1	1	2254	A	C5-C6-N1	10.19	122.80	117.70
1	1	685	G	C8-N9-C4	-9.84	102.46	106.40
1	1	1110	U	C2-N1-C1'	9.65	129.29	117.70
1	1	1110	U	C5-C4-O4	-9.51	120.19	125.90
1	1	1476	G	C4-C5-N7	9.37	114.55	110.80
1	1	1110	U	C5-C6-N1	9.26	127.33	122.70
1	1	344	G	C5-C6-N1	-8.98	107.01	111.50
1	1	3266	G	C8-N9-C4	8.96	109.98	106.40
1	1	668	G	C4-C5-N7	-8.88	107.25	110.80
1	1	1476	G	C5-N7-C8	-8.69	99.95	104.30
1	1	2273	C	N1-C2-O2	8.69	124.12	118.90
1	1	1538	U	N3-C4-C5	-8.68	109.39	114.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	398	G	C8-N9-C4	8.49	109.80	106.40
1	1	1394	G	C5-C6-N1	-8.48	107.26	111.50
1	1	1533	G	C5-N7-C8	-8.46	100.07	104.30
1	1	1926	G	N1-C6-O6	8.33	124.90	119.90
1	1	668	G	C5-C6-N1	-8.31	107.35	111.50
1	1	1617	G	C5-C6-N1	-8.30	107.35	111.50
1	1	119	A	C4-C5-N7	8.29	114.84	110.70
1	1	2932	U	C5-C6-N1	-8.23	118.58	122.70
1	1	2398	G	N1-C6-O6	8.21	124.83	119.90
14	O	111	LEU	CA-CB-CG	-8.13	96.59	115.30
1	1	119	A	C5-C6-N6	-8.04	117.26	123.70
1	1	2855	C	C6-N1-C2	8.00	123.50	120.30
1	1	2278	G	N1-C6-O6	7.97	124.69	119.90
1	1	2398	G	C5-C6-O6	-7.95	123.83	128.60
1	1	1902	C	N3-C2-O2	-7.92	116.36	121.90
1	1	284	U	C5-C6-N1	7.87	126.63	122.70
1	1	2133	U	N3-C4-O4	-7.81	113.93	119.40
1	1	37	A	C5-C6-N6	-7.79	117.47	123.70
1	1	2276	A	N7-C8-N9	-7.77	109.91	113.80
1	1	2803	G	C8-N9-C4	7.68	109.47	106.40
1	1	1533	G	C2-N3-C4	-7.64	108.08	111.90
1	1	2544	U	C6-N1-C2	7.63	125.58	121.00
1	1	2133	U	C5-C6-N1	-7.60	118.90	122.70
1	1	1902	C	C2-N1-C1'	7.57	127.13	118.80
1	1	284	U	C6-N1-C2	-7.56	116.46	121.00
1	1	2597	G	N1-C6-O6	7.55	124.43	119.90
1	1	1110	U	N3-C4-O4	7.52	124.67	119.40
1	1	119	A	C6-C5-N7	-7.45	127.09	132.30
1	1	3266	G	N9-C4-C5	-7.42	102.43	105.40
1	1	668	G	C5-C6-O6	7.42	133.05	128.60
1	1	344	G	C8-N9-C4	-7.39	103.44	106.40
1	1	2273	C	C6-N1-C1'	-7.39	111.94	120.80
1	1	1144	G	N3-C4-C5	-7.37	124.91	128.60
1	1	2904	C	C6-N1-C2	7.34	123.24	120.30
1	1	1183	C	C6-N1-C2	7.32	123.23	120.30
1	1	70	C	N3-C2-O2	-7.28	116.80	121.90
1	1	1533	G	C4-C5-N7	7.25	113.70	110.80
1	1	2803	G	N7-C8-N9	-7.24	109.48	113.10
1	1	832	A	C2-N3-C4	-7.21	106.99	110.60
1	1	282	G	N3-C2-N2	-7.21	114.85	119.90
1	1	117	G	C5-C6-N1	7.19	115.09	111.50
1	1	2254	A	C4-C5-C6	-7.18	113.41	117.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	117	G	C2-N3-C4	7.17	115.49	111.90
1	1	2273	C	N1-C2-N3	-7.16	114.19	119.20
1	1	1926	G	C6-C5-N7	-7.15	126.11	130.40
1	1	3077	G	C5-C6-N1	-7.14	107.93	111.50
1	1	150	A	N9-C4-C5	-7.13	102.95	105.80
1	1	2596	G	N1-C6-O6	7.12	124.17	119.90
1	1	2273	C	C2-N1-C1'	7.10	126.61	118.80
1	1	2606	U	N3-C4-C5	-7.01	110.39	114.60
1	1	1344	A	C4-C5-C6	7.01	120.50	117.00
1	1	150	A	C8-N9-C4	6.98	108.59	105.80
1	1	119	A	N9-C4-C5	-6.92	103.03	105.80
1	1	1142	G	C8-N9-C4	-6.91	103.64	106.40
1	1	2867	C	N1-C2-O2	-6.90	114.76	118.90
1	1	2619	C	C6-N1-C2	6.86	123.05	120.30
1	1	2398	G	C6-C5-N7	-6.85	126.29	130.40
1	1	398	G	N7-C8-N9	-6.84	109.68	113.10
1	1	3067	A	C2-N3-C4	-6.83	107.19	110.60
1	1	1614	A	C5-N7-C8	-6.83	100.48	103.90
1	1	1615	G	N1-C6-O6	6.82	123.99	119.90
1	1	3037	A	C5-C6-N1	-6.81	114.29	117.70
1	1	685	G	N3-C4-C5	-6.80	125.20	128.60
1	1	1614	A	C8-N9-C4	-6.80	103.08	105.80
1	1	3332	A	C4-N9-C1'	6.80	138.53	126.30
1	1	2276	A	N9-C4-C5	-6.78	103.09	105.80
1	1	3047	U	N1-C2-O2	-6.77	118.06	122.80
1	1	2254	A	C2-N3-C4	6.73	113.97	110.60
1	1	1227	A	C8-N9-C4	-6.71	103.11	105.80
1	1	3037	A	C2-N3-C4	-6.71	107.24	110.60
13	N	100	ASP	CB-CG-OD1	-6.65	112.31	118.30
1	1	1217	A	N1-C6-N6	6.64	122.59	118.60
1	1	1926	G	C4-N9-C1'	6.63	135.12	126.50
1	1	339	C	C6-N1-C2	6.62	122.95	120.30
1	1	2399	A	C8-N9-C4	6.58	108.43	105.80
1	1	1481	U	C5-C6-N1	6.56	125.98	122.70
1	1	3109	C	C4-C5-C6	-6.53	114.14	117.40
1	1	2182	G	C5-C6-O6	6.53	132.52	128.60
1	1	818	U	C5-C6-N1	-6.52	119.44	122.70
1	1	2273	C	C5-C6-N1	6.52	124.26	121.00
1	1	1858	U	N3-C4-C5	-6.52	110.69	114.60
1	1	2182	G	C8-N9-C4	-6.50	103.80	106.40
1	1	933	G	C4-C5-N7	6.49	113.40	110.80
1	1	3077	G	N1-C6-O6	6.49	123.79	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	3044	A	N1-C6-N6	6.49	122.49	118.60
1	1	1533	G	N1-C6-O6	6.48	123.79	119.90
1	1	3109	C	N3-C4-C5	6.44	124.48	121.90
1	1	2300	G	N1-C6-O6	6.43	123.76	119.90
1	1	1902	C	N1-C2-O2	6.42	122.75	118.90
1	1	1617	G	C4-C5-N7	-6.42	108.23	110.80
1	1	1343	G	C4-N9-C1'	6.41	134.83	126.50
1	1	339	C	C5-C6-N1	-6.40	117.80	121.00
1	1	1130	A	C8-N9-C4	6.40	108.36	105.80
1	1	1460	G	C5-N7-C8	-6.38	101.11	104.30
1	1	2606	U	C4-C5-C6	6.37	123.52	119.70
1	1	422	C	C6-N1-C2	6.36	122.84	120.30
1	1	951	A	N1-C2-N3	6.34	132.47	129.30
1	1	1130	A	N9-C4-C5	-6.33	103.27	105.80
1	1	3008	U	C2-N3-C4	-6.33	123.20	127.00
1	1	418	G	C5-N7-C8	-6.33	101.14	104.30
1	1	1585	A	C8-N9-C4	6.32	108.33	105.80
1	1	344	G	C4-C5-C6	6.31	122.58	118.80
1	1	2803	G	C6-C5-N7	6.30	134.18	130.40
1	1	832	A	C5-C6-N1	-6.29	114.56	117.70
1	1	1533	G	N7-C8-N9	6.29	116.24	113.10
1	1	2255	U	C6-N1-C2	6.28	124.77	121.00
1	1	2182	G	N9-C4-C5	6.28	107.91	105.40
1	1	3045	A	N1-C6-N6	-6.28	114.83	118.60
1	1	2576	C	C5-C6-N1	6.27	124.14	121.00
1	1	284	U	C2-N1-C1'	6.27	125.22	117.70
1	1	3332	A	C8-N9-C4	-6.26	103.29	105.80
1	1	2976	C	N3-C4-C5	-6.26	119.40	121.90
1	1	1631	U	C5-C6-N1	-6.25	119.57	122.70
1	1	2749	C	N1-C2-O2	6.23	122.64	118.90
1	1	1458	C	C6-N1-C2	-6.21	117.81	120.30
1	1	2803	G	C5-N7-C8	6.21	107.41	104.30
1	1	2332	C	C5-C6-N1	-6.21	117.90	121.00
1	1	664	U	N3-C4-O4	6.20	123.74	119.40
1	1	1892	G	N3-C4-N9	6.19	129.72	126.00
1	1	2904	C	N1-C2-N3	-6.19	114.87	119.20
1	1	1926	G	C8-N9-C1'	-6.19	118.95	127.00
1	1	2633	C	C5-C6-N1	-6.18	117.91	121.00
1	1	1455	G	N9-C4-C5	-6.17	102.93	105.40
1	1	525	C	C6-N1-C2	-6.15	117.84	120.30
1	1	2803	G	C4-C5-N7	-6.14	108.34	110.80
1	1	2273	C	C2-N3-C4	6.13	122.97	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	968	U	C5-C6-N1	-6.13	119.64	122.70
1	1	2633	C	C2-N1-C1'	-6.12	112.06	118.80
1	1	1460	G	C4-C5-N7	6.12	113.25	110.80
1	1	3067	A	N1-C6-N6	6.12	122.27	118.60
1	1	941	G	N3-C4-N9	-6.10	122.34	126.00
1	1	149	U	C5-C6-N1	6.10	125.75	122.70
1	1	3024	A	C8-N9-C4	6.09	108.24	105.80
1	1	1227	A	N9-C4-C5	6.06	108.22	105.80
1	1	1343	G	C8-N9-C1'	-6.06	119.12	127.00
1	1	2815	U	C2-N1-C1'	6.04	124.95	117.70
1	1	2633	C	C6-N1-C2	6.03	122.71	120.30
1	1	2273	C	C4-C5-C6	-6.01	114.39	117.40
1	1	2544	U	N3-C4-C5	6.01	118.20	114.60
1	1	41	A	N1-C6-N6	-6.00	115.00	118.60
1	1	1455	G	C4-C5-N7	5.99	113.20	110.80
1	1	242	G	C8-N9-C4	5.98	108.79	106.40
1	1	685	G	N9-C4-C5	5.98	107.79	105.40
1	1	3037	A	C4-C5-N7	5.98	113.69	110.70
1	1	3037	A	C5-N7-C8	-5.97	100.91	103.90
1	1	832	A	N1-C6-N6	5.97	122.18	118.60
1	1	1522	C	C2-N1-C1'	5.96	125.36	118.80
1	1	3043	U	C5-C4-O4	5.96	129.48	125.90
1	1	1533	G	C6-C5-N7	-5.96	126.82	130.40
1	1	833	A	N1-C2-N3	5.96	132.28	129.30
1	1	1179	G	C4-C5-N7	5.95	113.18	110.80
1	1	668	G	N3-C4-N9	-5.95	122.43	126.00
1	1	1481	U	C2-N1-C1'	5.95	124.84	117.70
1	1	1614	A	N7-C8-N9	5.95	116.77	113.80
1	1	1110	U	C6-N1-C1'	-5.94	112.88	121.20
1	1	3331	C	N3-C2-O2	-5.94	117.74	121.90
1	1	2399	A	N9-C4-C5	-5.94	103.42	105.80
1	1	2301	C	N1-C2-O2	5.94	122.46	118.90
1	1	119	A	C2-N3-C4	-5.93	107.63	110.60
1	1	1216	C	N3-C4-C5	5.93	124.27	121.90
1	1	978	G	C4-C5-N7	5.92	113.17	110.80
1	1	2877	C	C6-N1-C2	5.91	122.66	120.30
1	1	2133	U	C2-N3-C4	-5.91	123.46	127.00
1	1	822	U	C5-C6-N1	-5.90	119.75	122.70
1	1	37	A	C5-N7-C8	-5.90	100.95	103.90
1	1	418	G	C4-C5-N7	5.88	113.15	110.80
1	1	1927	U	N3-C4-C5	-5.88	111.07	114.60
1	1	2597	G	C5-C6-O6	-5.87	125.08	128.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2243	C	C6-N1-C2	5.86	122.64	120.30
1	1	1892	G	C8-N9-C1'	-5.86	119.38	127.00
1	1	1344	A	C6-C5-N7	-5.86	128.20	132.30
1	1	1918	U	N1-C2-N3	5.85	118.41	114.90
1	1	876	C	C6-N1-C2	5.85	122.64	120.30
1	1	1179	G	C5-N7-C8	-5.84	101.38	104.30
1	1	623	G	C4-N9-C1'	-5.84	118.91	126.50
1	1	606	U	C6-N1-C2	-5.83	117.50	121.00
1	1	37	A	C6-C5-N7	-5.80	128.24	132.30
1	1	2133	U	C5-C4-O4	5.80	129.38	125.90
1	1	37	A	C4-C5-N7	5.79	113.59	110.70
1	1	3081	C	C6-N1-C2	5.79	122.61	120.30
1	1	2800	C	C2-N3-C4	-5.77	117.01	119.90
1	1	3037	A	C6-C5-N7	-5.76	128.27	132.30
1	1	2795	U	C5-C6-N1	-5.74	119.83	122.70
1	1	149	U	C6-N1-C2	-5.74	117.56	121.00
1	1	882	G	C4-C5-N7	-5.73	108.51	110.80
1	1	2862	G	C5-C6-N1	-5.73	108.64	111.50
1	1	355	C	C6-N1-C2	5.72	122.59	120.30
1	1	1538	U	N3-C4-O4	5.72	123.40	119.40
1	1	1927	U	N3-C4-O4	5.71	123.40	119.40
1	1	3273	U	C2-N1-C1'	-5.69	110.87	117.70
1	1	3076	A	C8-N9-C4	-5.69	103.53	105.80
1	1	2866	G	C6-C5-N7	-5.67	127.00	130.40
1	1	1538	U	C6-N1-C2	-5.65	117.61	121.00
1	1	3332	A	N7-C8-N9	5.64	116.62	113.80
1	1	1476	G	N7-C8-N9	5.63	115.92	113.10
1	1	689	A	C8-N9-C4	5.63	108.05	105.80
1	1	1506	G	C4-C5-N7	5.63	113.05	110.80
1	1	1937	G	C8-N9-C4	-5.62	104.15	106.40
1	1	2398	G	C4-N9-C1'	5.62	133.81	126.50
1	1	3081	C	C5-C6-N1	-5.62	118.19	121.00
18	U	129	GLY	N-CA-C	-5.62	99.06	113.10
1	1	2933	G	C8-N9-C4	-5.61	104.15	106.40
1	1	3264	U	C6-N1-C2	5.61	124.36	121.00
1	1	2272	C	C2-N3-C4	-5.60	117.10	119.90
1	1	1902	C	C6-N1-C1'	-5.59	114.09	120.80
1	1	1415	C	C6-N1-C2	-5.58	118.07	120.30
1	1	1183	C	C5-C6-N1	-5.58	118.21	121.00
1	1	668	G	N9-C4-C5	5.57	107.63	105.40
1	1	282	G	C8-N9-C4	-5.57	104.17	106.40
1	1	2265	A	N7-C8-N9	5.57	116.58	113.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2765	C	C6-N1-C2	-5.56	118.07	120.30
1	1	624	G	C4-N9-C1'	-5.56	119.27	126.50
1	1	1142	G	N7-C8-N9	5.56	115.88	113.10
1	1	2933	G	N3-C4-C5	-5.56	125.82	128.60
1	1	2398	G	N3-C4-N9	5.56	129.34	126.00
1	1	1154	G	C5-N7-C8	-5.55	101.53	104.30
1	1	1926	G	C4-C5-C6	5.55	122.13	118.80
1	1	1344	A	N1-C2-N3	5.54	132.07	129.30
1	1	1154	G	N3-C4-C5	5.53	131.37	128.60
1	1	3046	A	C8-N9-C4	-5.53	103.59	105.80
1	1	701	A	C8-N9-C4	5.52	108.01	105.80
1	1	1862	C	N1-C2-O2	5.52	122.21	118.90
1	1	1506	G	C5-N7-C8	-5.51	101.54	104.30
1	1	1154	G	N1-C6-O6	5.51	123.20	119.90
1	1	1181	A	C8-N9-C4	5.50	108.00	105.80
1	1	1533	G	N3-C4-C5	5.50	131.35	128.60
1	1	1870	C	C2-N3-C4	-5.49	117.16	119.90
1	1	941	G	N3-C4-C5	5.49	131.34	128.60
1	1	2423	U	C5-C6-N1	-5.48	119.96	122.70
1	1	19	A	C8-N9-C4	5.48	107.99	105.80
1	1	797	A	C8-N9-C4	5.47	107.99	105.80
1	1	1617	G	C5-C6-O6	5.47	131.88	128.60
1	1	610	A	C8-N9-C4	5.47	107.99	105.80
1	1	3331	C	C6-N1-C2	-5.47	118.11	120.30
1	1	119	A	N1-C2-N3	5.46	132.03	129.30
1	1	418	G	C2-N3-C4	-5.45	109.17	111.90
1	1	2332	C	C5-C4-N4	5.45	124.02	120.20
1	1	621	G	N1-C6-O6	5.44	123.16	119.90
1	1	1178	U	N3-C4-C5	-5.44	111.34	114.60
1	1	911	C	C6-N1-C2	5.43	122.47	120.30
1	1	965	G	C8-N9-C4	5.42	108.57	106.40
1	1	988	G	C4-C5-N7	-5.41	108.63	110.80
1	1	1344	A	C2-N3-C4	-5.41	107.90	110.60
1	1	2790	A	C8-N9-C4	5.40	107.96	105.80
1	1	1615	G	C5-C6-O6	-5.40	125.36	128.60
1	1	1460	G	N7-C8-N9	5.40	115.80	113.10
1	1	1516	A	C5-N7-C8	-5.39	101.20	103.90
1	1	3045	A	C5-C6-N6	5.39	128.02	123.70
1	1	36	U	C6-N1-C2	5.38	124.23	121.00
1	1	2933	G	C2-N3-C4	5.37	114.58	111.90
1	1	343	A	C8-N9-C4	-5.37	103.65	105.80
1	1	1933	A	C2-N3-C4	-5.37	107.92	110.60

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	1394	G	C4-N9-C1'	5.36	133.47	126.50
1	1	1581	C	C2-N1-C1'	-5.36	112.91	118.80
1	1	665	C	C5-C6-N1	-5.35	118.32	121.00
1	1	3332	A	C8-N9-C1'	-5.35	118.07	127.70
1	1	1144	G	N3-C4-N9	5.34	129.21	126.00
1	1	668	G	C5-N7-C8	5.34	106.97	104.30
1	1	1179	G	N1-C6-O6	5.34	123.10	119.90
1	1	1882	A	C8-N9-C4	-5.33	103.67	105.80
1	1	2265	A	C5-N7-C8	-5.32	101.24	103.90
1	1	934	G	N9-C4-C5	5.32	107.53	105.40
1	1	1110	U	C6-N1-C2	-5.32	117.81	121.00
1	1	358	C	N3-C4-C5	-5.32	119.77	121.90
1	1	3266	G	N3-C4-N9	5.32	129.19	126.00
1	1	2923	U	C5-C4-O4	5.31	129.09	125.90
1	1	3070	C	C6-N1-C2	5.31	122.42	120.30
1	1	1344	A	C5-C6-N1	-5.29	115.06	117.70
1	1	3047	U	N3-C4-C5	-5.29	111.43	114.60
1	1	217	U	N3-C4-O4	5.28	123.10	119.40
1	1	2590	A	C8-N9-C4	5.28	107.91	105.80
1	1	1374	C	C6-N1-C2	-5.28	118.19	120.30
1	1	408	C	N1-C2-O2	-5.28	115.73	118.90
1	1	70	C	N1-C2-O2	5.28	122.06	118.90
1	1	1580	G	C4-C5-N7	5.28	112.91	110.80
1	1	2273	C	C5-C4-N4	-5.27	116.51	120.20
1	1	662	C	C4-C5-C6	5.27	120.03	117.40
1	1	282	G	N7-C8-N9	5.26	115.73	113.10
5	E	78	GLY	N-CA-C	-5.26	99.96	113.10
1	1	624	G	C8-N9-C1'	5.25	133.83	127.00
1	1	622	G	C8-N9-C1'	-5.23	120.21	127.00
1	1	404	A	N9-C4-C5	-5.22	103.71	105.80
1	1	623	G	C8-N9-C1'	5.22	133.79	127.00
1	1	833	A	C2-N3-C4	-5.22	107.99	110.60
1	1	997	G	C8-N9-C4	5.22	108.49	106.40
1	1	37	A	N7-C8-N9	5.22	116.41	113.80
1	1	3008	U	C5-C6-N1	-5.22	120.09	122.70
1	1	1188	G	C8-N9-C4	-5.21	104.32	106.40
1	1	3024	A	N9-C4-C5	-5.21	103.72	105.80
1	1	3325	G	C4-N9-C1'	5.21	133.27	126.50
11	L	9	ARG	N-CA-C	5.20	125.03	111.00
1	1	515	A	C8-N9-C4	-5.18	103.73	105.80
1	1	1927	U	C6-N1-C2	-5.18	117.89	121.00
1	1	354	A	C8-N9-C4	5.18	107.87	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	3095	A	C8-N9-C4	5.18	107.87	105.80
1	1	117	G	C4-C5-C6	-5.18	115.69	118.80
1	1	1549	U	C2-N1-C1'	5.17	123.91	117.70
1	1	3273	U	C6-N1-C1'	5.17	128.44	121.20
1	1	3251	C	C3'-C2'-C1'	5.17	105.64	101.50
1	1	3332	A	C6-C5-N7	-5.16	128.69	132.30
1	1	1950	C	N3-C4-C5	5.16	123.96	121.90
1	1	1476	G	C6-C5-N7	-5.15	127.31	130.40
1	1	2146	G	N1-C6-O6	5.15	122.99	119.90
1	1	634	G	C4-N9-C1'	5.15	133.19	126.50
1	1	1374	C	N1-C2-O2	5.15	121.99	118.90
1	1	2179	U	C5-C6-N1	-5.15	120.13	122.70
1	1	2396	A	N1-C6-N6	-5.14	115.52	118.60
1	1	2866	G	N1-C6-O6	5.14	122.98	119.90
1	1	814	U	C5-C6-N1	-5.13	120.13	122.70
1	1	3079	U	N1-C2-N3	5.13	117.98	114.90
1	1	3070	C	C5-C6-N1	-5.13	118.44	121.00
1	1	2818	G	C5-C6-N1	-5.13	108.94	111.50
1	1	1217	A	C4-C5-N7	5.12	113.26	110.70
1	1	2398	G	C4-C5-C6	5.12	121.87	118.80
1	1	3008	U	N3-C4-O4	-5.12	115.82	119.40
1	1	328	A	C3'-C2'-C1'	5.12	105.59	101.50
4	C	89	ILE	CB-CA-C	-5.11	101.37	111.60
1	1	2953	U	C5-C6-N1	-5.11	120.15	122.70
1	1	526	U	C3'-C2'-C1'	5.09	105.57	101.50
1	1	530	C	C6-N1-C2	-5.09	118.26	120.30
1	1	2862	G	C8-N9-C4	-5.09	104.36	106.40
1	1	3266	G	N7-C8-N9	-5.09	110.56	113.10
1	1	606	U	C5-C6-N1	5.07	125.24	122.70
1	1	740	A	C3'-C2'-C1'	5.07	105.56	101.50
1	1	1164	C	C4-C5-C6	5.07	119.94	117.40
1	1	1505	C	C6-N1-C2	-5.07	118.27	120.30
1	1	2301	C	C2-N1-C1'	5.07	124.38	118.80
5	E	118	GLY	N-CA-C	-5.07	100.43	113.10
1	1	219	A	C5-N7-C8	-5.06	101.37	103.90
1	1	2933	G	N9-C4-C5	5.06	107.42	105.40
1	1	688	U	C5-C6-N1	-5.04	120.18	122.70
1	1	1142	G	N1-C2-N2	-5.04	111.66	116.20
1	1	2394	A	N1-C2-N3	5.04	131.82	129.30
1	1	2180	G	C4-C5-N7	-5.04	108.79	110.80
1	1	2615	A	N1-C6-N6	5.03	121.62	118.60
1	1	968	U	C6-N1-C2	5.02	124.01	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	1	2869	C	C6-N1-C2	5.02	122.31	120.30
1	1	944	U	C5-C6-N1	-5.01	120.19	122.70
1	1	2141	A	N7-C8-N9	5.01	116.31	113.80
1	1	2918	G	C8-N9-C4	5.01	108.41	106.40
1	1	622	G	C3'-C2'-C1'	5.00	105.50	101.50
1	1	1072	A	C8-N9-C4	-5.00	103.80	105.80

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	A	51	GLY	Peptide
8	H	101	GLY	Peptide
12	M	53	GLY	Peptide
16	Q	12	GLY	Peptide

5.2 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 hydrogens added by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, and the number in parentheses is this value normalized per 1000 atoms of the molecule in the chain. The Symm-Clashes column gives symmetry related clashes, in the same way as for the Clashes column.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	66769	0	0	1312	0
2	A	721	0	0	23	0
3	B	456	0	0	12	0
4	C	836	0	0	10	0
5	E	1525	0	0	69	0
6	F	1021	0	0	33	0
7	G	727	0	0	20	0
8	H	850	0	0	40	0
9	J	1716	0	0	25	0
10	K	415	0	0	14	0
11	L	852	0	0	13	0
12	M	819	0	0	14	0
13	N	1170	0	0	32	0
14	O	1034	0	0	33	0
15	P	551	0	0	16	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
16	Q	803	0	0	23	0
17	T	533	0	0	18	0
18	U	1624	0	0	37	0
19	X	1536	0	0	42	0
20	A	1	0	0	0	0
20	C	1	0	0	0	0
20	K	1	0	0	0	0
20	L	1	0	0	0	0
All	All	83962	0	0	1603	0

Clashscore is defined as the number of clashes calculated for the entry per 1000 atoms (including hydrogens) of the entry. The overall clashscore for this entry is 20.

All (1603) close contacts within the same asymmetric unit are listed below.

Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:451:A:O2'	14:O:56:GLN:NE2	1.72	1.22
1:1:3044:A:O2'	1:1:3046:A:OP2	1.60	1.20
18:U:82:GLY:O	18:U:133:LYS:NZ	1.77	1.17
1:1:1207:A:O2'	1:1:1208:U:OP1	1.62	1.16
1:1:3230:G:N2	5:E:142:GLU:OE2	1.79	1.15
1:1:304:U:O2'	1:1:305:A:OP2	1.68	1.11
1:1:1909:C:O2'	1:1:1910:A:OP2	1.69	1.11
1:1:313:U:OP1	18:U:100:LYS:NZ	1.86	1.08
1:1:455:G:OP2	14:O:92:LYS:NZ	1.89	1.05
1:1:622:G:O2'	5:E:26:THR:O	1.75	1.04
1:1:643:A:O2'	1:1:644:A:OP2	1.75	1.02
1:1:741:G:OP2	1:1:776:C:O2'	1.78	1.01
1:1:265:A:N6	16:Q:30:ARG:O	1.93	1.00
12:M:61:ASP:OD1	12:M:62:ASP:N	1.97	0.98
5:E:89:ARG:NH2	5:E:114:ASP:OD1	1.98	0.96
1:1:1617:G:O2'	1:1:1618:A:OP2	1.79	0.96
1:1:1710:U:OP1	12:M:44:LYS:NZ	1.99	0.96
1:1:624:G:O2'	1:1:625:C:O5'	1.85	0.95
13:N:4:PHE:CD1	13:N:4:PHE:N	2.32	0.94
19:X:188:THR:O	19:X:189:PHE:CG	2.19	0.94
1:1:787:U:O2	18:U:179:ARG:NH2	2.00	0.94
1:1:729:A:O2'	1:1:810:G:N2	2.03	0.92
1:1:978:G:OP2	17:T:12:GLN:NE2	2.02	0.91
1:1:2933:G:O2'	1:1:2936:C:OP2	1.88	0.91
19:X:188:THR:O	19:X:189:PHE:CD2	2.24	0.91
12:M:51:ASN:ND2	12:M:51:ASN:O	2.05	0.90
1:1:2666:G:O6	1:1:2669:A:N6	2.04	0.90

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:3067:A:O2'	1:1:3068:U:OP1	1.88	0.90
1:1:635:A:O2'	1:1:636:U:O5'	1.90	0.90
1:1:3291:G:O2'	1:1:3292:U:O5'	1.89	0.89
1:1:904:U:O2'	1:1:905:G:P	2.31	0.89
1:1:71:U:O2'	1:1:72:A:OP1	1.90	0.88
1:1:3098:A:OP1	10:K:93:LYS:NZ	2.06	0.88
9:J:143:ALA:O	9:J:144:ASN:ND2	2.07	0.88
1:1:439:A:N6	1:1:538:A:C2	2.41	0.88
18:U:53:GLN:O	18:U:113:ARG:NH1	2.06	0.88
1:1:1186:A:O2'	1:1:1187:C:OP2	1.94	0.86
1:1:467:A:C6	1:1:512:G:C2	2.63	0.86
1:1:1902:C:O2'	1:1:1903:A:OP2	1.94	0.85
1:1:1321:A:O2'	1:1:1322:G:O5'	1.95	0.85
1:1:2254:A:C6	1:1:2255:U:C4	2.65	0.85
17:T:47:ILE:O	17:T:55:LYS:NZ	2.09	0.84
1:1:444:A:C2	1:1:533:G:N2	2.45	0.84
1:1:1379:G:N1	5:E:22:ASP:OD2	2.11	0.84
5:E:181:ASN:N	5:E:184:ASP:OD2	2.10	0.84
1:1:1657:C:OP1	13:N:111:ARG:NH1	2.12	0.83
6:F:32:ASN:OD1	6:F:34:ASN:N	2.11	0.82
8:H:54:LYS:NZ	8:H:108:LEU:O	2.12	0.82
1:1:283:A:OP1	4:C:39:ARG:NH1	2.11	0.82
1:1:3291:G:O2'	1:1:3292:U:P	2.38	0.82
1:1:3233:A:O2'	1:1:3234:U:OP1	1.97	0.82
1:1:452:U:C5'	14:O:56:GLN:NE2	2.43	0.82
1:1:470:C:O2	1:1:509:A:N6	2.12	0.82
1:1:2275:A:O2'	1:1:2276:A:O5'	1.96	0.81
1:1:1773:G:OP2	15:P:41:LYS:NZ	2.13	0.81
1:1:1737:A:N1	1:1:1754:G:O2'	2.14	0.81
1:1:1594:C:C4	1:1:1595:A:N7	2.49	0.81
1:1:1710:U:OP2	12:M:42:LYS:NZ	2.13	0.80
1:1:114:A:C6	1:1:264:A:N6	2.49	0.80
1:1:3230:G:N7	5:E:119:ARG:NH1	2.29	0.80
1:1:1518:G:OP1	2:A:14:LYS:NZ	2.13	0.80
1:1:3236:C:O2'	1:1:3237:C:OP1	2.00	0.80
1:1:396:A:C4'	1:1:397:A:OP2	2.28	0.80
1:1:2640:G:O2'	1:1:2784:G:O6	2.00	0.80
1:1:2371:G:O2'	1:1:2372:G:C8	2.35	0.79
1:1:467:A:N6	1:1:468:A:C6	2.50	0.79
1:1:2743:G:C3'	1:1:2744:C:C5'	2.61	0.79
1:1:1654:G:C4'	1:1:1655:A:OP2	2.31	0.79
1:1:2188:U:O2'	1:1:2189:G:P	2.41	0.79

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1667:A:O2'	1:1:1668:A:OP1	1.99	0.78
1:1:3109:C:C3'	10:K:111:ARG:NH1	2.46	0.78
1:1:525:C:C2'	1:1:525:C:O2	2.32	0.78
5:E:83:ASN:ND2	5:E:174:LEU:O	2.17	0.78
8:H:13:ARG:NH1	8:H:15:TRP:O	2.17	0.78
1:1:1840:U:C4'	1:1:1841:A:O5'	2.31	0.78
1:1:2569:A:O2'	1:1:2570:U:P	2.40	0.78
1:1:2254:A:C6	1:1:2255:U:O4	2.37	0.77
1:1:3170:A:N7	6:F:2:VAL:N	2.32	0.77
1:1:792:G:O2'	1:1:793:A:O5'	2.03	0.77
1:1:3297:A:C5'	1:1:3298:U:OP1	2.32	0.77
1:1:444:A:N1	1:1:533:G:N2	2.32	0.77
1:1:1737:A:O2'	1:1:1738:A:C8	2.37	0.77
1:1:1166:G:O6	17:T:10:LYS:NZ	2.18	0.77
18:U:72:GLY:O	18:U:99:ARG:NH1	2.17	0.77
1:1:518:G:O2'	1:1:519:A:O4'	2.03	0.76
1:1:467:A:N6	1:1:512:G:C2	2.54	0.76
1:1:526:U:O2'	1:1:527:A:C8	2.38	0.76
1:1:418:G:O6	1:1:2378:A:O2'	2.02	0.76
1:1:3230:G:O2'	1:1:3231:U:P	2.43	0.76
1:1:3232:A:OP1	5:E:88:LYS:NZ	2.18	0.76
1:1:974:C:O2'	1:1:996:A:OP1	2.03	0.76
1:1:240:A:C4'	1:1:241:A:OP2	2.34	0.76
1:1:304:U:O2'	1:1:305:A:C8	2.38	0.76
1:1:2548:G:O2'	1:1:2549:U:OP1	2.04	0.76
1:1:3234:U:O2'	8:H:105:ARG:NH1	2.19	0.76
1:1:3185:G:C2	1:1:3237:C:C2	2.74	0.75
1:1:2966:U:O2'	1:1:2967:U:C5'	2.35	0.75
1:1:508:A:O2'	1:1:509:A:C8	2.40	0.75
1:1:304:U:O2'	1:1:305:A:P	2.44	0.75
1:1:443:G:OP1	5:E:16:SER:OG	2.04	0.75
1:1:1379:G:OP2	14:O:102:GLY:N	2.19	0.74
1:1:100:A:O2'	18:U:60:THR:OG1	2.04	0.74
1:1:1222:A:C2	1:1:1336:U:N3	2.55	0.74
1:1:567:C:N4	1:1:603:A:C6	2.55	0.74
2:A:17:THR:CG2	2:A:18:LEU:N	2.51	0.74
1:1:1909:C:O2'	1:1:1910:A:P	2.45	0.74
14:O:13:ASN:OD1	14:O:15:PHE:N	2.22	0.73
1:1:2919:C:N3	1:1:2923:U:C5	2.56	0.73
13:N:36:ARG:NH1	13:N:74:TYR:CG	2.56	0.73
1:1:2509:U:OP2	1:1:2575:G:N2	2.21	0.73
1:1:3183:A:O2'	1:1:3184:A:O5'	2.06	0.73

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
18:U:56:VAL:CG1	18:U:57:ARG:N	2.51	0.73
1:1:3275:A:O2'	1:1:3276:C:OP2	2.06	0.73
1:1:1773:G:OP1	15:P:43:LYS:NZ	2.22	0.72
1:1:223:C:O2'	1:1:224:C:OP2	2.07	0.72
1:1:438:A:O3'	1:1:439:A:C8	2.43	0.72
7:G:40:LYS:CG	7:G:93:LEU:O	2.38	0.72
1:1:1593:A:C6	1:1:1594:C:N4	2.58	0.72
1:1:1580:G:C4'	1:1:1581:C:OP2	2.38	0.72
6:F:20:ASP:OD2	6:F:46:GLN:NE2	2.23	0.72
1:1:2551:A:O3'	13:N:52:LYS:NZ	2.23	0.72
1:1:71:U:O2'	1:1:72:A:P	2.48	0.72
1:1:832:A:C2	1:1:2406:U:O2'	2.43	0.71
1:1:1599:G:C6	1:1:1600:U:C4	2.78	0.71
1:1:1918:U:C2'	1:1:1919:A:C5'	2.67	0.71
1:1:1662:A:C5'	11:L:76:ARG:NH2	2.53	0.71
1:1:88:U:O4'	1:1:280:G:O2'	2.08	0.71
1:1:1313:A:C4'	1:1:1314:A:OP1	2.39	0.71
1:1:805:A:C4'	1:1:806:G:OP2	2.38	0.71
1:1:442:G:C2	1:1:536:A:C2	2.78	0.71
1:1:1655:A:C2	1:1:1669:G:C6	2.78	0.71
1:1:1255:A:C2	1:1:1309:G:C5	2.79	0.71
5:E:125:ASN:OD1	5:E:128:ASN:N	2.23	0.71
1:1:3177:G:C4'	1:1:3178:U:OP2	2.39	0.71
1:1:3237:C:N4	8:H:9:VAL:O	2.23	0.70
1:1:2254:A:N6	1:1:2255:U:O4	2.24	0.70
1:1:3232:A:N1	1:1:3233:A:C2	2.59	0.70
1:1:114:A:C5	1:1:264:A:C6	2.78	0.70
1:1:904:U:O2'	1:1:905:G:OP2	2.08	0.70
1:1:2542:U:C4'	1:1:2543:C:OP1	2.38	0.70
1:1:3332:A:O2'	1:1:3333:G:OP1	2.09	0.70
1:1:563:G:C4'	1:1:564:A:OP1	2.39	0.70
1:1:684:A:C2	1:1:1461:A:C2	2.79	0.70
1:1:1694:C:O2	1:1:1804:G:N2	2.25	0.70
1:1:548:G:N2	1:1:619:G:N2	2.39	0.70
1:1:3081:C:O2'	1:1:3083:A:OP2	2.10	0.70
1:1:186:U:N3	1:1:230:G:O6	2.24	0.70
1:1:284:U:C5	1:1:305:A:C5'	2.75	0.70
1:1:527:A:O2'	14:O:88:GLN:NE2	2.25	0.69
1:1:3275:A:C2'	1:1:3276:C:OP2	2.39	0.69
1:1:213:A:N6	1:1:227:G:O2'	2.25	0.69
1:1:485:A:C4'	1:1:486:C:OP1	2.40	0.69
1:1:957:U:C4'	1:1:958:A:C5'	2.70	0.69

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1771:U:O2'	15:P:54:LYS:NZ	2.26	0.69
1:1:1234:G:OP1	10:K:119:ASN:ND2	2.25	0.69
1:1:790:C:C4'	1:1:791:C:OP1	2.41	0.69
1:1:3167:U:C4'	1:1:3168:A:O5'	2.41	0.69
1:1:738:U:OP1	18:U:182:ARG:NH1	2.25	0.69
7:G:43:PHE:CE1	7:G:68:HIS:CD2	2.81	0.69
1:1:113:A:C2'	1:1:114:A:OP1	2.40	0.69
1:1:1334:G:C2	1:1:1335:A:C2	2.81	0.69
1:1:1104:C:C2	17:T:42:ASN:ND2	2.61	0.69
18:U:128:GLN:OE1	18:U:139:THR:OG1	2.10	0.69
13:N:91:CYS:SG	13:N:92:ASP:N	2.64	0.69
1:1:713:G:O6	1:1:716:A:OP1	2.11	0.69
1:1:2574:U:C4'	1:1:2575:G:OP1	2.41	0.68
1:1:2994:G:O2'	1:1:2995:A:O5'	2.12	0.68
1:1:146:U:O2	1:1:148:G:C2	2.47	0.68
6:F:62:ASN:O	6:F:75:LYS:NZ	2.27	0.68
1:1:279:U:C2	1:1:281:G:OP2	2.46	0.68
1:1:279:U:N3	1:1:281:G:OP2	2.25	0.68
1:1:524:G:O2'	1:1:525:C:OP2	2.11	0.68
1:1:3185:G:C4	1:1:3237:C:N3	2.62	0.68
1:1:2920:U:C2	1:1:2923:U:C5	2.82	0.68
3:B:32:ASP:OD1	3:B:32:ASP:N	2.26	0.68
7:G:10:ILE:CA	7:G:13:LYS:CD	2.71	0.68
1:1:1252:A:C2	1:1:3105:G:N7	2.62	0.68
1:1:3232:A:C6	1:1:3233:A:C2	2.81	0.68
1:1:2884:A:O3'	10:K:122:ARG:NH2	2.27	0.68
1:1:3155:A:N6	8:H:98:GLN:O	2.27	0.68
1:1:1600:U:C4	1:1:1601:U:C4	2.81	0.68
1:1:3011:G:N2	1:1:3020:G:C4	2.62	0.67
7:G:102:LYS:O	7:G:103:THR:OG1	2.12	0.67
1:1:2705:U:O2'	4:C:79:ARG:NH2	2.27	0.67
6:F:106:PHE:CD2	6:F:110:ARG:NE	2.63	0.67
1:1:487:G:OP2	18:U:161:LYS:NZ	2.27	0.67
1:1:709:G:OP1	18:U:37:ARG:NH2	2.28	0.67
1:1:438:A:C4	5:E:130:PHE:CE1	2.83	0.67
1:1:1434:G:C2'	1:1:1435:C:C5'	2.73	0.67
2:A:15:THR:OG1	2:A:16:HIS:CD2	2.48	0.67
1:1:978:G:C8	1:1:1144:G:C8	2.83	0.67
1:1:1130:A:C5'	1:1:1131:G:OP2	2.43	0.67
1:1:24:A:N3	1:1:327:U:O2'	2.28	0.67
1:1:1667:A:O2'	1:1:1668:A:P	2.52	0.67
1:1:1141:U:O4	1:1:1142:G:N2	2.28	0.67

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1370:A:C2	1:1:1389:G:C2	2.82	0.67
1:1:2562:U:OP2	13:N:58:GLY:N	2.28	0.67
6:F:45:ARG:NH2	6:F:67:GLN:O	2.27	0.66
1:1:70:C:N4	1:1:72:A:C5	2.63	0.66
1:1:1027:G:C8	1:1:1068:U:OP2	2.49	0.66
1:1:2952:G:N2	1:1:2955:A:OP2	2.28	0.66
1:1:1758:U:C4'	1:1:1759:C:OP2	2.42	0.66
1:1:3227:A:C5'	5:E:57:ARG:NH1	2.59	0.66
1:1:1766:A:C4'	1:1:1767:U:OP2	2.44	0.66
1:1:1181:A:C4'	1:1:1182:C:OP2	2.44	0.65
1:1:439:A:C5'	5:E:126:HIS:ND1	2.59	0.65
1:1:75:A:C8	18:U:71:ARG:NH1	2.65	0.65
1:1:1073:A:O2'	1:1:1074:A:O5'	2.13	0.65
1:1:1062:A:C5	1:1:1063:C:C5	2.84	0.65
1:1:3263:G:O2'	1:1:3265:A:N6	2.28	0.65
1:1:732:C:O2	1:1:778:G:O2'	2.15	0.65
1:1:2994:G:O2'	1:1:2995:A:P	2.54	0.65
1:1:1054:G:C6	1:1:1055:A:C6	2.85	0.65
1:1:1775:A:O5'	15:P:34:LYS:NZ	2.30	0.64
1:1:155:A:C4	1:1:265:A:C2	2.85	0.64
1:1:70:C:O2	1:1:70:C:C2'	2.45	0.64
1:1:467:A:C6	1:1:468:A:C5	2.85	0.64
1:1:2544:U:C1'	7:G:50:THR:CG2	2.75	0.64
1:1:1676:G:O2'	11:L:81:GLU:OE2	2.15	0.64
1:1:2388:G:O2'	1:1:2389:G:OP2	2.15	0.64
1:1:619:G:C4'	1:1:620:A:C2	2.79	0.64
3:B:28:ARG:NE	3:B:36:ARG:O	2.30	0.64
1:1:978:G:OP2	17:T:15:LYS:NZ	2.30	0.64
1:1:418:G:C8	1:1:418:G:C3'	2.80	0.64
1:1:1090:A:O2'	1:1:1091:G:OP1	2.15	0.64
1:1:2640:G:O2'	1:1:2784:G:C6	2.50	0.64
1:1:1249:G:O2'	1:1:1250:A:O5'	2.16	0.64
1:1:169:A:OP2	1:1:249:G:N2	2.31	0.64
1:1:3182:A:C4'	1:1:3183:A:OP1	2.45	0.64
1:1:1039:G:N2	1:1:1064:C:C2	2.66	0.64
18:U:133:LYS:C	18:U:135:LEU:N	2.52	0.64
1:1:126:A:C2	1:1:141:C:N4	2.66	0.64
1:1:3079:U:O2'	1:1:3080:A:O5'	2.15	0.64
1:1:1702:G:N7	12:M:76:ARG:NH2	2.46	0.64
1:1:2254:A:C5	1:1:2255:U:C4	2.86	0.63
1:1:3228:U:C4'	1:1:3229:C:C5'	2.77	0.63
1:1:1252:A:N3	1:1:3105:G:N7	2.46	0.63

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:282:G:N2	1:1:304:U:O4'	2.31	0.63
1:1:563:G:C5'	1:1:564:A:OP1	2.46	0.63
1:1:1027:G:O2'	1:1:1028:A:OP1	2.16	0.63
1:1:742:U:O4	17:T:61:LYS:CB	2.46	0.63
1:1:282:G:N2	1:1:304:U:C4'	2.62	0.63
1:1:881:G:OP1	1:1:1746:U:O2'	2.17	0.63
1:1:1210:C:O3'	19:X:171:ARG:NH2	2.31	0.63
1:1:2356:A:C2'	1:1:2357:C:O5'	2.47	0.63
19:X:110:ASP:OD1	19:X:111:VAL:N	2.32	0.63
1:1:568:A:C2	1:1:602:A:C2	2.87	0.63
1:1:969:C:O2'	1:1:1433:A:O2'	2.16	0.63
1:1:47:G:C1'	1:1:48:U:OP2	2.47	0.63
5:E:42:ARG:NH2	5:E:92:GLN:O	2.32	0.63
1:1:132:U:O2'	1:1:133:C:OP2	2.17	0.63
11:L:5:ILE:CG2	11:L:6:THR:N	2.59	0.63
6:F:56:THR:O	6:F:57:LYS:CG	2.47	0.63
1:1:2899:C:C5'	1:1:2900:G:OP1	2.46	0.63
1:1:801:U:O2	1:1:2708:U:O2	2.16	0.63
1:1:1375:A:C4'	1:1:1376:A:OP1	2.47	0.63
1:1:1179:G:O2'	1:1:1180:A:OP1	2.16	0.63
1:1:3291:G:O2'	1:1:3292:U:C6	2.53	0.62
1:1:1025:G:C6	1:1:1026:C:N4	2.67	0.62
1:1:3096:U:OP1	10:K:114:LYS:NZ	2.32	0.62
1:1:2277:U:O2'	1:1:2278:G:P	2.58	0.62
1:1:121:A:N6	1:1:150:A:N6	2.47	0.62
7:G:13:LYS:CD	7:G:100:ILE:CD1	2.77	0.62
1:1:232:C:O2'	1:1:233:G:OP1	2.17	0.62
1:1:620:A:C8	1:1:634:G:C6	2.88	0.62
1:1:2576:C:C5'	1:1:2576:C:C6	2.82	0.62
1:1:1594:C:C4	1:1:1595:A:C8	2.88	0.62
1:1:1580:G:O6	1:1:1608:G:N7	2.32	0.62
1:1:645:A:C1'	1:1:646:A:OP2	2.47	0.62
1:1:2385:A:C2'	1:1:2386:G:O5'	2.48	0.62
1:1:467:A:N6	1:1:512:G:C6	2.68	0.62
1:1:2254:A:C5	1:1:2255:U:C5	2.88	0.62
1:1:1599:G:C5	1:1:1600:U:C5	2.87	0.62
1:1:3168:A:OP1	1:1:3168:A:C8	2.52	0.62
14:O:25:THR:N	14:O:33:GLY:O	2.33	0.62
1:1:1595:A:O2'	1:1:1598:C:N4	2.33	0.61
1:1:2639:C:C5'	1:1:2640:G:OP2	2.48	0.61
1:1:1972:G:C2	1:1:1973:A:C8	2.88	0.61
1:1:2727:A:O2'	1:1:2728:A:OP2	2.17	0.61

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:521:C:OP1	14:O:84:LYS:NZ	2.33	0.61
1:1:433:C:C5'	1:1:434:A:OP2	2.48	0.61
1:1:132:U:O2'	1:1:133:C:P	2.57	0.61
1:1:3241:U:C4	1:1:3242:U:C4	2.87	0.61
1:1:3227:A:C2'	1:1:3228:U:OP2	2.48	0.61
1:1:3110:U:OP2	10:K:111:ARG:NH1	2.32	0.61
1:1:146:U:C4'	1:1:147:U:C5'	2.78	0.61
1:1:118:A:C4'	1:1:119:A:O5'	2.48	0.61
1:1:3190:A:N6	1:1:3191:G:N2	2.48	0.61
1:1:114:A:C4'	16:Q:37:ARG:NH2	2.63	0.61
1:1:2540:G:C4'	1:1:2541:U:OP2	2.47	0.61
1:1:2217:C:C4'	1:1:2218:A:OP2	2.49	0.61
1:1:219:A:N1	1:1:1416:U:O2'	2.34	0.61
1:1:2649:G:OP1	1:1:2739:C:O2'	2.18	0.61
1:1:2876:U:C4	1:1:2899:C:C5	2.89	0.61
1:1:467:A:N6	1:1:468:A:N1	2.48	0.61
1:1:2300:G:C4'	1:1:2301:C:OP2	2.49	0.61
1:1:1104:C:N1	17:T:42:ASN:ND2	2.49	0.61
1:1:69:A:C6	1:1:2766:A:O4'	2.54	0.61
4:C:66:VAL:CG1	4:C:89:ILE:CD1	2.79	0.60
1:1:2133:U:C5	1:1:2138:A:N7	2.69	0.60
1:1:3266:G:O2'	1:1:3268:C:OP2	2.19	0.60
7:G:8:ASP:OD1	7:G:9:ASN:N	2.33	0.60
13:N:76:ASN:OD1	13:N:78:ASN:N	2.33	0.60
1:1:169:A:N7	1:1:251:A:N6	2.49	0.60
1:1:219:A:C2	1:1:1416:U:C2'	2.84	0.60
16:Q:15:THR:CG2	18:U:103:CYS:SG	2.88	0.60
1:1:3227:A:O2'	1:1:3228:U:OP2	2.17	0.60
1:1:467:A:N6	1:1:512:G:N1	2.49	0.60
1:1:1593:A:C5	1:1:1594:C:C4	2.89	0.60
6:F:11:ARG:NH2	6:F:57:LYS:CA	2.63	0.60
1:1:963:C:OP1	1:1:987:A:O2'	2.19	0.60
5:E:56:GLY:O	5:E:59:ARG:N	2.34	0.60
1:1:1593:A:C2'	1:1:1594:C:C6	2.85	0.60
1:1:2219:A:N1	1:1:2771:U:O2'	2.34	0.60
1:1:979:U:C1'	17:T:12:GLN:NE2	2.64	0.60
1:1:155:A:C4'	1:1:156:A:OP1	2.49	0.60
1:1:512:G:C2	1:1:513:G:C4	2.89	0.60
1:1:1062:A:C6	1:1:1063:C:C5	2.89	0.60
1:1:1507:A:O2'	1:1:1882:A:C2'	2.50	0.60
1:1:3044:A:C4'	1:1:3045:A:OP2	2.50	0.60
1:1:623:G:N2	1:1:633:C:C2	2.70	0.60

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:169:A:N6	1:1:251:A:C5	2.69	0.60
1:1:1379:G:C2	5:E:22:ASP:OD2	2.55	0.60
1:1:2569:A:O2'	1:1:2570:U:OP1	2.19	0.60
1:1:567:C:N4	1:1:603:A:N1	2.49	0.60
1:1:72:A:C2	1:1:73:G:C4	2.90	0.60
1:1:25:C:O2'	1:1:326:A:N3	2.35	0.60
1:1:1594:C:C5	1:1:1595:A:N7	2.70	0.60
1:1:1376:A:C5'	1:1:1377:A:C5'	2.80	0.60
5:E:4:GLY:N	5:E:5:PRO:CD	2.65	0.60
6:F:32:ASN:OD1	6:F:33:GLN:N	2.35	0.59
1:1:3298:U:C4'	1:1:3299:G:OP2	2.49	0.59
1:1:3191:G:C2'	1:1:3192:C:OP2	2.50	0.59
1:1:622:G:C4'	1:1:623:G:OP2	2.49	0.59
1:1:2255:U:O2'	1:1:2301:C:C5'	2.50	0.59
1:1:1598:C:C6	1:1:1599:G:C8	2.90	0.59
1:1:2557:A:C2	1:1:2558:U:C2	2.89	0.59
19:X:82:SER:O	19:X:87:LYS:NZ	2.35	0.59
1:1:3185:G:N3	1:1:3237:C:C2	2.70	0.59
1:1:114:A:O4'	16:Q:37:ARG:NH1	2.35	0.59
1:1:302:G:C2	1:1:2766:A:C8	2.90	0.59
7:G:35:ARG:NH1	13:N:77:LEU:C	2.55	0.59
1:1:1507:A:C4'	1:1:1507:A:OP2	2.50	0.59
1:1:268:G:N2	1:1:294:A:OP2	2.36	0.59
1:1:169:A:N6	1:1:251:A:C4	2.70	0.59
1:1:1507:A:O4'	1:1:1507:A:OP2	2.19	0.59
1:1:363:G:C8	1:1:363:G:C5'	2.86	0.59
1:1:2883:G:O2'	10:K:100:TYR:O	2.20	0.59
1:1:882:G:O2'	1:1:883:A:O5'	2.20	0.59
1:1:2253:U:C2'	1:1:2254:A:C8	2.86	0.59
1:1:1747:A:N1	1:1:1814:U:O2'	2.36	0.59
1:1:198:A:N3	1:1:218:G:O2'	2.35	0.59
9:J:145:ASN:ND2	9:J:146:VAL:N	2.50	0.59
18:U:113:ARG:NH2	18:U:154:VAL:O	2.36	0.59
1:1:1736:G:C2	1:1:1737:A:C2	2.91	0.59
1:1:107:A:C4'	1:1:108:G:OP1	2.50	0.59
1:1:3256:A:C2	1:1:3349:U:C2	2.91	0.59
1:1:2255:U:C1'	1:1:2301:C:O4'	2.51	0.59
1:1:1595:A:C2	1:1:1598:C:OP2	2.56	0.59
1:1:1821:U:O2'	1:1:1822:G:C5	2.55	0.59
1:1:1343:G:C4'	1:1:1344:A:OP2	2.50	0.59
1:1:2958:C:C4'	1:1:2959:A:N7	2.66	0.59
9:J:143:ALA:C	9:J:144:ASN:ND2	2.55	0.59

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1742:G:C2	1:1:1751:A:C2	2.91	0.59
1:1:2761:U:O2	18:U:190:TRP:CZ2	2.55	0.59
19:X:22:VAL:CG2	19:X:78:ILE:CD1	2.81	0.58
1:1:2416:U:OP1	4:C:57:ARG:NH2	2.36	0.58
1:1:909:A:OP1	2:A:5:THR:OG1	2.21	0.58
1:1:2666:G:C4'	1:1:2667:A:OP2	2.50	0.58
1:1:2188:U:O2'	1:1:2189:G:OP2	2.21	0.58
1:1:169:A:N7	1:1:250:U:O4	2.36	0.58
1:1:2277:U:C2'	1:1:2278:G:OP1	2.51	0.58
4:C:72:CYS:SG	4:C:75:CYS:N	2.75	0.58
1:1:2100:A:C2	1:1:2101:G:C8	2.91	0.58
14:O:87:VAL:CG2	14:O:115:HIS:CD2	2.87	0.58
1:1:842:A:C8	2:A:15:THR:CG2	2.86	0.58
1:1:439:A:C2'	1:1:440:C:O5'	2.52	0.58
1:1:1593:A:C2	1:1:1601:U:O2	2.56	0.58
1:1:1937:G:O2'	1:1:2116:A:O2'	2.21	0.58
1:1:2268:G:O2'	1:1:2269:U:OP2	2.21	0.58
1:1:1061:G:C2	1:1:1062:A:C8	2.91	0.58
5:E:42:ARG:NH1	8:H:111:ASN:ND2	2.51	0.58
1:1:115:G:C4'	1:1:116:U:OP1	2.51	0.58
1:1:685:G:O2'	1:1:686:U:C6	2.56	0.58
1:1:699:C:O2'	1:1:703:U:OP1	2.21	0.58
9:J:12:ASP:O	9:J:15:VAL:N	2.37	0.58
1:1:121:A:N6	1:1:150:A:C6	2.72	0.58
1:1:467:A:C6	1:1:468:A:C6	2.92	0.58
1:1:2557:A:C2	1:1:2564:G:C4	2.92	0.58
1:1:108:G:OP2	18:U:71:ARG:NH2	2.37	0.58
1:1:2718:U:C2	1:1:2719:A:C8	2.91	0.58
1:1:1506:G:O2'	1:1:1895:U:O4	2.21	0.58
1:1:2264:U:C2'	1:1:2264:U:O2	2.52	0.58
1:1:2552:A:N6	1:1:2568:G:O2'	2.37	0.58
1:1:2576:C:C2'	1:1:2577:G:C5'	2.81	0.58
1:1:2703:G:O2'	1:1:2740:G:C2'	2.52	0.58
1:1:3146:G:O6	1:1:3248:C:N4	2.37	0.58
1:1:1475:A:C2	1:1:2351:A:C4	2.92	0.58
1:1:439:A:P	1:1:439:A:C8	2.97	0.57
1:1:1091:G:O2'	1:1:1092:C:OP1	2.22	0.57
1:1:476:A:C2	1:1:500:G:N2	2.72	0.57
1:1:1845:U:C4'	1:1:1846:C:OP2	2.52	0.57
1:1:1062:A:C6	1:1:1063:C:C4	2.92	0.57
1:1:2277:U:O2'	1:1:2278:G:OP1	2.21	0.57
1:1:64:A:N6	1:1:66:C:O2	2.37	0.57

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:2147:C:O2'	1:1:2238:A:N1	2.38	0.57
12:M:35:PHE:CD1	12:M:65:ILE:CD1	2.87	0.57
1:1:633:C:C2'	1:1:634:G:OP1	2.52	0.57
1:1:512:G:N2	1:1:513:G:C4	2.73	0.57
1:1:2370:G:O2'	1:1:2372:G:OP2	2.23	0.57
1:1:1928:C:N4	1:1:1929:G:C6	2.72	0.57
1:1:3175:A:N6	6:F:16:ASN:ND2	2.53	0.57
1:1:1207:A:O2'	1:1:1208:U:P	2.62	0.57
1:1:2574:U:C5'	1:1:2575:G:OP1	2.53	0.57
1:1:1249:G:O2'	1:1:1250:A:P	2.61	0.57
5:E:115:ASP:N	5:E:115:ASP:OD1	2.38	0.57
5:E:20:LYS:O	14:O:105:GLN:NE2	2.37	0.57
1:1:72:A:C2	1:1:73:G:C5	2.93	0.57
1:1:396:A:C2	1:1:397:A:C4	2.92	0.57
19:X:42:ARG:NH2	19:X:140:THR:CB	2.68	0.57
1:1:3237:C:C2	8:H:7:SER:OG	2.57	0.57
5:E:41:LEU:CG	5:E:68:GLN:OE1	2.52	0.57
1:1:3251:C:C4'	1:1:3252:G:OP2	2.53	0.57
16:Q:13:PHE:CD1	16:Q:14:ILE:N	2.73	0.57
1:1:304:U:C2'	1:1:305:A:OP2	2.52	0.57
1:1:1027:G:O2'	1:1:1028:A:P	2.62	0.57
1:1:880:U:C4	1:1:881:G:C5	2.92	0.57
1:1:46:A:C4'	1:1:47:G:O5'	2.52	0.57
1:1:359:G:OP1	3:B:50:LYS:NZ	2.38	0.57
1:1:3185:G:N3	1:1:3237:C:N3	2.54	0.56
14:O:40:LEU:O	14:O:44:HIS:CE1	2.58	0.56
8:H:84:ASN:O	8:H:86:VAL:N	2.38	0.56
1:1:2149:U:C2'	1:1:2150:U:C5'	2.83	0.56
1:1:672:C:N3	1:1:2369:C:O2'	2.38	0.56
1:1:790:C:O2'	1:1:791:C:C6	2.58	0.56
1:1:3127:U:C2'	1:1:3128:G:C5'	2.84	0.56
1:1:3237:C:N4	8:H:10:ALA:CA	2.68	0.56
1:1:1592:G:C6	1:1:1593:A:C6	2.93	0.56
1:1:1839:A:O2'	1:1:1840:U:C5	2.58	0.56
1:1:3080:A:N3	1:1:3082:C:O2'	2.38	0.56
15:P:15:TRP:O	15:P:72:TYR:CZ	2.58	0.56
1:1:822:U:OP1	18:U:1:MET:N	2.38	0.56
1:1:1656:G:C5	1:1:1657:C:C5	2.94	0.56
1:1:1519:G:N3	3:B:13:PHE:CE1	2.73	0.56
8:H:9:VAL:CG1	8:H:10:ALA:N	2.69	0.56
9:J:12:ASP:O	9:J:14:GLY:N	2.38	0.56
1:1:105:A:O2'	1:1:323:A:N3	2.39	0.56

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1972:G:C2	1:1:1973:A:N7	2.73	0.56
1:1:2347:A:N6	1:1:2348:G:C6	2.73	0.56
1:1:635:A:C2'	1:1:636:U:O5'	2.54	0.56
8:H:15:TRP:CH2	8:H:105:ARG:CZ	2.88	0.56
1:1:1598:C:C4	1:1:1599:G:C4	2.94	0.56
1:1:114:A:C6	1:1:264:A:C6	2.94	0.56
1:1:418:G:C6	1:1:2378:A:O2'	2.59	0.56
1:1:3128:G:C5'	1:1:3128:G:C8	2.88	0.56
1:1:1922:G:C2'	1:1:1923:G:O5'	2.53	0.56
2:A:44:MET:CE	2:A:44:MET:CA	2.83	0.56
1:1:1446:C:C6	1:1:1446:C:C5'	2.88	0.56
1:1:1146:C:N4	17:T:10:LYS:NZ	2.54	0.56
1:1:2558:U:C4	1:1:2559:U:C4	2.94	0.56
1:1:1061:G:N3	1:1:1062:A:C8	2.74	0.56
1:1:2140:A:C5	1:1:2276:A:C2	2.94	0.56
14:O:15:PHE:O	14:O:26:THR:N	2.39	0.56
1:1:1051:C:C2'	1:1:1052:A:O4'	2.54	0.56
1:1:3162:A:C4'	1:1:3163:A:OP1	2.54	0.56
1:1:673:A:OP2	1:1:2856:U:O2'	2.23	0.56
1:1:1066:A:C8	1:1:1066:A:OP2	2.59	0.56
1:1:280:G:C2'	1:1:281:G:O5'	2.53	0.56
1:1:621:G:C6	1:1:622:G:N1	2.74	0.56
1:1:1919:A:O2'	1:1:1920:A:C8	2.59	0.56
1:1:579:G:O2'	19:X:159:ALA:N	2.39	0.56
5:E:153:GLN:O	5:E:156:VAL:N	2.38	0.56
1:1:467:A:N6	1:1:512:G:C4	2.74	0.55
1:1:146:U:C4'	1:1:147:U:O5'	2.54	0.55
1:1:358:C:C4'	1:1:842:A:N6	2.69	0.55
1:1:3146:G:C6	1:1:3248:C:C4	2.95	0.55
1:1:2106:G:C2'	1:1:2107:A:OP1	2.54	0.55
13:N:15:GLN:NE2	13:N:79:HIS:CE1	2.74	0.55
1:1:3044:A:C5'	1:1:3045:A:OP2	2.54	0.55
1:1:3185:G:C8	8:H:11:PRO:CD	2.90	0.55
1:1:484:U:O2'	1:1:486:C:OP2	2.24	0.55
1:1:2278:G:O2'	1:1:2279:C:P	2.64	0.55
11:L:41:TYR:CB	11:L:58:GLN:NE2	2.70	0.55
1:1:2539:A:C2	1:1:2540:G:C5	2.94	0.55
1:1:1109:A:C1'	1:1:1110:U:OP2	2.55	0.55
1:1:2716:A:OP1	1:1:2717:G:N2	2.39	0.55
13:N:7:TYR:OH	13:N:93:PHE:N	2.38	0.55
1:1:696:A:C2'	1:1:697:A:C5'	2.85	0.55
1:1:2545:A:O2'	1:1:2546:A:OP1	2.24	0.55

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:915:C:O2'	1:1:2319:A:N3	2.39	0.55
1:1:152:U:C5'	1:1:153:C:OP2	2.55	0.55
1:1:2255:U:C5	1:1:2256:G:N7	2.75	0.55
8:H:13:ARG:NH2	8:H:17:LYS:CG	2.70	0.55
1:1:3161:A:C6	1:1:3176:A:C2	2.95	0.55
1:1:1053:A:C1'	1:1:1054:G:OP2	2.55	0.55
5:E:62:ARG:CZ	6:F:105:ASP:OD1	2.55	0.55
1:1:615:G:N2	8:H:79:LYS:CE	2.69	0.55
1:1:919:A:C1'	1:1:920:A:C2	2.90	0.55
1:1:624:G:O2'	1:1:625:C:O4'	2.24	0.55
1:1:527:A:C2'	1:1:528:C:C5'	2.85	0.55
1:1:77:A:C2	1:1:324:A:C2	2.94	0.55
1:1:532:G:OP1	5:E:127:LYS:NZ	2.40	0.55
1:1:3226:A:C2	5:E:83:ASN:O	2.60	0.55
1:1:2508:U:C4'	1:1:2509:U:OP1	2.55	0.55
1:1:3143:A:C2	1:1:3250:A:C2	2.94	0.55
14:O:86:GLY:O	14:O:90:VAL:N	2.39	0.55
9:J:201:ASP:O	9:J:224:LEU:CD2	2.55	0.55
1:1:837:G:N3	2:A:50:TRP:NE1	2.54	0.55
1:1:1053:A:O2'	1:1:1054:G:OP2	2.25	0.55
3:B:28:ARG:CZ	3:B:36:ARG:O	2.55	0.55
1:1:1106:U:O2	1:1:1110:U:C2	2.60	0.55
12:M:45:VAL:O	12:M:48:LYS:N	2.40	0.55
1:1:2100:A:C2'	1:1:2101:G:C5'	2.85	0.55
1:1:927:G:C5	1:1:928:U:C5	2.95	0.54
1:1:2902:G:O2'	1:1:2922:A:N1	2.40	0.54
1:1:370:G:N2	1:1:373:A:C8	2.75	0.54
1:1:2334:C:C4'	1:1:2335:U:OP1	2.55	0.54
1:1:1070:U:C2'	1:1:1071:C:O5'	2.55	0.54
1:1:3207:A:OP1	1:1:3207:A:C4'	2.54	0.54
1:1:281:G:C5'	1:1:282:G:OP1	2.55	0.54
1:1:126:A:C5'	1:1:127:A:OP1	2.56	0.54
1:1:1519:G:C2	3:B:13:PHE:CZ	2.94	0.54
1:1:2518:A:C4'	1:1:2519:A:OP2	2.55	0.54
16:Q:16:THR:OG1	18:U:105:GLU:OE2	2.26	0.54
1:1:2337:U:O2'	1:1:3043:U:O2'	2.25	0.54
1:1:1223:U:C2'	1:1:1223:U:O2	2.54	0.54
1:1:113:A:O2'	1:1:114:A:OP1	2.26	0.54
1:1:1039:G:C2	1:1:1064:C:N3	2.76	0.54
1:1:3190:A:C6	1:1:3191:G:N2	2.75	0.54
9:J:135:VAL:CG1	9:J:136:GLU:N	2.71	0.54
8:H:26:SER:N	8:H:29:THR:O	2.40	0.54

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1681:C:OP1	11:L:40:ASN:ND2	2.40	0.54
1:1:1767:U:C4'	1:1:1768:G:OP2	2.56	0.54
1:1:1211:A:P	19:X:171:ARG:NH2	2.80	0.54
1:1:120:A:C4'	1:1:121:A:O5'	2.56	0.54
1:1:2716:A:O3'	1:1:2717:G:C4'	2.55	0.54
9:J:58:ILE:O	9:J:60:GLY:N	2.40	0.54
19:X:3:ARG:O	19:X:19:ARG:NH2	2.41	0.54
1:1:90:G:OP1	4:C:53:LYS:NZ	2.41	0.54
1:1:2304:A:N3	1:1:2949:G:O2'	2.41	0.54
1:1:1753:A:N6	7:G:47:ASN:O	2.41	0.54
1:1:1595:A:OP2	1:1:1596:U:C5	2.61	0.54
1:1:2309:U:C4'	1:1:2310:G:OP2	2.56	0.54
1:1:3183:A:O2'	1:1:3184:A:P	2.65	0.54
1:1:3168:A:N7	19:X:166:VAL:CG1	2.71	0.54
1:1:170:A:C4	1:1:250:U:N3	2.76	0.54
2:A:28:HIS:N	2:A:33:ARG:O	2.40	0.54
1:1:397:A:O2'	1:1:400:C:O2'	2.26	0.54
1:1:2148:A:O2'	1:1:2238:A:O2'	2.26	0.54
1:1:1084:G:C2'	1:1:1085:G:C5'	2.86	0.54
1:1:2254:A:C4	1:1:2255:U:C5	2.96	0.54
1:1:1655:A:N3	1:1:1655:A:C2'	2.71	0.54
1:1:1047:G:C2'	1:1:1048:U:C5'	2.86	0.54
5:E:63:VAL:CG1	5:E:76:VAL:CG1	2.85	0.54
6:F:4:ASN:OD1	6:F:5:LYS:N	2.41	0.54
1:1:1737:A:C4'	1:1:1738:A:OP1	2.56	0.53
1:1:675:G:C6	1:1:676:G:C6	2.96	0.53
1:1:126:A:C6	1:1:139:A:C6	2.96	0.53
1:1:302:G:C2	1:1:2766:A:N7	2.76	0.53
1:1:210:A:O2'	1:1:229:A:O2'	2.26	0.53
1:1:2163:A:C6	1:1:2164:C:N4	2.77	0.53
1:1:1907:A:C2'	1:1:1908:A:O5'	2.56	0.53
1:1:627:U:C2	1:1:630:G:O6	2.60	0.53
1:1:2255:U:C6	1:1:2256:G:C8	2.96	0.53
1:1:1073:A:C2'	1:1:1074:A:O5'	2.56	0.53
1:1:685:G:C4	1:1:827:C:O4'	2.61	0.53
9:J:161:VAL:CG1	9:J:162:HIS:N	2.71	0.53
1:1:467:A:N6	1:1:512:G:C5	2.76	0.53
1:1:1752:G:OP1	1:1:1753:A:O2'	2.27	0.53
7:G:13:LYS:CB	7:G:100:ILE:CD1	2.86	0.53
1:1:169:A:C5	1:1:251:A:C6	2.96	0.53
1:1:880:U:O4	1:1:881:G:C6	2.61	0.53
1:1:880:U:C4	1:1:881:G:C6	2.96	0.53

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1600:U:C4	1:1:1601:U:C5	2.96	0.53
1:1:3161:A:C2	1:1:3176:A:C6	2.96	0.53
7:G:13:LYS:CG	7:G:14:LEU:N	2.71	0.53
6:F:8:GLN:NE2	6:F:11:ARG:NH1	2.56	0.53
1:1:2278:G:O2'	1:1:2279:C:O5'	2.27	0.53
1:1:302:G:N2	1:1:2766:A:C8	2.75	0.53
1:1:90:G:O3'	4:C:53:LYS:NZ	2.41	0.53
1:1:1411:U:C2	1:1:1412:U:C5	2.96	0.53
1:1:512:G:C2	1:1:513:G:C5	2.96	0.53
1:1:2719:A:C4	1:1:2720:G:C8	2.97	0.53
1:1:3344:U:C4'	1:1:3345:A:OP2	2.56	0.53
9:J:140:THR:CG2	9:J:141:THR:N	2.71	0.53
1:1:1627:A:C6	1:1:1628:A:C6	2.97	0.53
1:1:1599:G:C4	1:1:1600:U:C6	2.96	0.53
1:1:800:G:O2'	1:1:801:U:C5	2.62	0.53
3:B:7:LEU:O	3:B:8:ASN:C	2.47	0.53
1:1:3000:A:N1	1:1:3032:C:O2'	2.41	0.53
1:1:2368:A:N3	1:1:2812:G:O2'	2.42	0.53
1:1:1196:A:N6	1:1:1357:A:C8	2.76	0.53
1:1:624:G:O2'	1:1:625:C:P	2.67	0.53
1:1:1104:C:C6	17:T:42:ASN:OD1	2.62	0.53
1:1:368:A:C4'	1:1:369:U:OP1	2.57	0.53
1:1:220:C:C4'	1:1:221:A:OP2	2.57	0.53
1:1:316:A:C2	1:1:317:A:C4	2.97	0.53
1:1:2400:C:O2	1:1:2807:A:N1	2.42	0.53
1:1:1681:C:O2'	1:1:1823:A:OP2	2.26	0.53
1:1:784:G:C2	1:1:797:A:N6	2.77	0.53
1:1:40:C:C2'	1:1:41:A:C5'	2.87	0.53
1:1:1662:A:N1	1:1:1761:G:O2'	2.42	0.53
1:1:146:U:O2	1:1:148:G:N2	2.42	0.53
5:E:91:ASN:OD1	5:E:92:GLN:N	2.42	0.53
1:1:504:A:O2'	1:1:505:A:C8	2.61	0.53
1:1:281:G:C4'	1:1:282:G:C8	2.91	0.53
1:1:2540:G:C5'	1:1:2541:U:OP2	2.57	0.53
1:1:500:G:O2'	1:1:501:A:O5'	2.27	0.53
6:F:13:VAL:CG1	6:F:53:VAL:CG2	2.86	0.53
1:1:3198:A:N6	1:1:3199:G:C6	2.76	0.53
1:1:976:A:OP2	1:1:1394:G:N2	2.41	0.53
18:U:25:ASN:OD1	18:U:26:GLN:N	2.42	0.53
1:1:2933:G:C4'	1:1:2934:A:OP1	2.57	0.52
1:1:467:A:N1	1:1:512:G:N3	2.57	0.52
8:H:13:ARG:CG	8:H:15:TRP:CZ3	2.92	0.52

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1506:G:N2	1:1:1896:C:C5	2.78	0.52
15:P:12:MET:CA	15:P:15:TRP:NE1	2.73	0.52
5:E:62:ARG:NH1	6:F:105:ASP:OD1	2.42	0.52
19:X:25:ALA:CB	19:X:71:ARG:O	2.57	0.52
6:F:107:ASP:O	6:F:111:VAL:CG2	2.57	0.52
1:1:1805:C:C2'	1:1:1806:G:OP1	2.57	0.52
1:1:3227:A:N3	5:E:80:TYR:CE2	2.77	0.52
5:E:56:GLY:C	5:E:58:PHE:N	2.61	0.52
1:1:549:G:C6	1:1:619:G:N2	2.77	0.52
1:1:1185:A:C3'	1:1:1186:A:C5'	2.87	0.52
1:1:1599:G:C2	1:1:1600:U:C2	2.97	0.52
1:1:351:A:C4'	1:1:352:G:OP1	2.57	0.52
1:1:2415:C:C2'	1:1:2416:U:C5'	2.88	0.52
1:1:70:C:N4	1:1:72:A:C6	2.78	0.52
1:1:1653:A:C5	1:1:1839:A:N1	2.78	0.52
6:F:3:PHE:CD1	19:X:164:PRO:CB	2.91	0.52
13:N:36:ARG:NH1	13:N:74:TYR:CD1	2.78	0.52
1:1:1112:A:C6	1:1:1113:A:C6	2.97	0.52
15:P:32:TYR:CD1	15:P:32:TYR:N	2.77	0.52
1:1:451:A:OP1	14:O:55:LYS:NZ	2.43	0.52
1:1:632:G:N7	5:E:32:GLN:NE2	2.58	0.52
1:1:2539:A:C2	1:1:2540:G:N7	2.78	0.52
1:1:69:A:N6	1:1:302:G:O2'	2.43	0.52
16:Q:15:THR:OG1	18:U:103:CYS:SG	2.67	0.52
8:H:64:LYS:CG	8:H:69:ASN:ND2	2.72	0.52
18:U:171:GLU:O	18:U:174:LYS:CG	2.57	0.52
1:1:197:G:N2	1:1:371:A:C8	2.78	0.52
1:1:40:C:C6	1:1:40:C:C3'	2.93	0.52
1:1:655:A:N3	8:H:97:PRO:CG	2.73	0.52
9:J:122:ASP:OD1	9:J:123:ARG:N	2.42	0.52
1:1:2669:A:O3'	1:1:2670:U:C6	2.62	0.52
1:1:2255:U:C5	1:1:2256:G:C8	2.98	0.52
1:1:3037:A:C2	1:1:3079:U:C4	2.97	0.52
1:1:2562:U:O2'	1:1:2563:U:P	2.66	0.52
5:E:54:LEU:O	5:E:59:ARG:CB	2.58	0.52
1:1:518:G:C4'	1:1:519:A:OP2	2.57	0.52
1:1:3191:G:C5	1:1:3218:U:O4	2.63	0.52
16:Q:60:GLU:CG	16:Q:61:LEU:N	2.73	0.52
8:H:13:ARG:CG	8:H:15:TRP:CE3	2.93	0.52
1:1:1035:A:N1	1:1:1068:U:C2	2.78	0.52
7:G:35:ARG:NH1	13:N:77:LEU:CB	2.73	0.52
1:1:2271:G:C5	1:1:2272:C:C5	2.98	0.52

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:623:G:N2	1:1:633:C:O2	2.42	0.52
1:1:1196:A:C6	1:1:1357:A:C8	2.97	0.52
1:1:540:G:N2	1:1:642:C:O2	2.42	0.52
1:1:641:U:O4'	1:1:3233:A:N6	2.43	0.51
1:1:434:A:C4'	1:1:435:A:C8	2.92	0.51
1:1:2782:G:O2'	1:1:2783:U:OP2	2.28	0.51
1:1:971:C:C2'	1:1:972:U:C5'	2.89	0.51
1:1:895:A:O2'	1:1:896:U:OP2	2.28	0.51
5:E:18:TRP:CB	14:O:95:ARG:NH2	2.73	0.51
1:1:1593:A:C5	1:1:1594:C:N4	2.78	0.51
1:1:2830:U:O2	1:1:2830:U:C2'	2.58	0.51
5:E:42:ARG:NH2	5:E:95:THR:O	2.44	0.51
9:J:224:LEU:O	9:J:225:ASN:CB	2.59	0.51
19:X:96:GLN:N	19:X:134:THR:CG2	2.73	0.51
1:1:1594:C:N4	1:1:1595:A:C5	2.79	0.51
1:1:2640:G:O2'	1:1:2784:G:N1	2.44	0.51
1:1:3177:G:N2	19:X:177:TYR:CE2	2.78	0.51
1:1:738:U:O2'	1:1:778:G:OP1	2.28	0.51
1:1:882:G:C2'	1:1:883:A:OP2	2.56	0.51
1:1:3277:A:C4'	1:1:3278:U:OP2	2.59	0.51
1:1:3229:C:O2'	1:1:3230:G:P	2.68	0.51
1:1:510:A:C5'	14:O:68:HIS:O	2.58	0.51
1:1:1658:G:N7	13:N:17:ARG:NH1	2.59	0.51
1:1:685:G:C2'	1:1:686:U:OP2	2.58	0.51
1:1:1192:A:OP1	8:H:90:ARG:NH2	2.43	0.51
13:N:89:GLU:N	13:N:89:GLU:OE1	2.43	0.51
1:1:512:G:N1	1:1:513:G:C5	2.79	0.51
1:1:3110:U:C4	1:1:3113:G:O6	2.64	0.51
1:1:2550:U:C5'	1:1:2551:A:O5'	2.58	0.51
1:1:2994:G:O2'	1:1:2995:A:C8	2.64	0.51
1:1:568:A:N1	1:1:602:A:C2	2.79	0.51
1:1:1413:G:C2	1:1:1414:C:C6	2.99	0.51
1:1:2684:A:C5'	1:1:2685:A:OP2	2.58	0.51
1:1:295:A:OP1	16:Q:90:LYS:NZ	2.43	0.51
1:1:2726:C:O2'	17:T:36:ASN:CB	2.59	0.51
1:1:1711:U:C1'	12:M:77:TYR:CE2	2.94	0.51
9:J:23:TYR:CA	9:J:46:ILE:CG2	2.89	0.51
1:1:3097:G:OP2	10:K:112:LYS:NZ	2.44	0.51
1:1:3176:A:C4'	1:1:3177:G:O5'	2.59	0.51
1:1:1064:C:C2	1:1:1065:U:C6	2.99	0.51
1:1:476:A:C2	1:1:500:G:C2	2.98	0.51
1:1:859:U:C4	1:1:860:G:C6	2.98	0.51

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:2521:A:C6	1:1:2522:A:C6	2.99	0.51
1:1:3293:A:C2	1:1:3294:A:C4	2.98	0.51
1:1:396:A:C2	1:1:397:A:C5	2.98	0.51
1:1:442:G:N2	1:1:536:A:N3	2.59	0.51
1:1:1376:A:C5'	1:1:1377:A:O4'	2.58	0.51
1:1:1745:U:C2	1:1:1748:U:C5	2.99	0.51
1:1:2645:A:C8	1:1:2647:G:C8	2.99	0.51
8:H:91:PHE:CD1	8:H:91:PHE:N	2.78	0.51
1:1:1738:A:N7	1:1:1752:G:C2	2.79	0.51
1:1:1660:U:C1'	13:N:38:PHE:CZ	2.94	0.51
1:1:2517:G:C4'	1:1:2518:A:OP1	2.58	0.51
1:1:631:G:C5	5:E:31:ARG:NH2	2.78	0.51
1:1:2577:G:C2'	1:1:2578:A:O5'	2.60	0.50
1:1:683:G:O6	1:1:1458:C:O2'	2.29	0.50
1:1:1593:A:C6	1:1:1594:C:C4	2.99	0.50
1:1:2568:G:C6	1:1:2569:A:N6	2.79	0.50
1:1:315:U:C6	16:Q:28:VAL:CG1	2.95	0.50
1:1:1475:A:C2	1:1:2351:A:C5	3.00	0.50
1:1:1112:A:C6	1:1:1113:A:N6	2.79	0.50
1:1:57:G:O3'	1:1:58:A:C4'	2.59	0.50
1:1:19:A:C4'	1:1:20:G:OP2	2.60	0.50
1:1:978:G:N7	1:1:1144:G:C8	2.79	0.50
1:1:3116:A:N6	1:1:3117:G:C2	2.80	0.50
1:1:1580:G:C5'	1:1:1581:C:OP2	2.60	0.50
1:1:63:A:C4	1:1:108:G:N7	2.79	0.50
19:X:8:GLU:OE2	19:X:19:ARG:NH1	2.44	0.50
2:A:33:ARG:NE	2:A:41:ASP:OD2	2.44	0.50
1:1:3198:A:C5	1:1:3199:G:C5	3.00	0.50
1:1:1361:U:C5'	1:1:1361:U:C6	2.95	0.50
1:1:1227:A:C2'	1:1:1227:A:N3	2.75	0.50
19:X:92:VAL:O	19:X:138:ILE:N	2.45	0.50
1:1:1130:A:C2	1:1:1390:A:O2'	2.63	0.50
1:1:1348:G:O4'	19:X:129:ARG:NH1	2.44	0.50
1:1:701:A:N6	1:1:811:A:O4'	2.44	0.50
1:1:1186:A:N3	1:1:1186:A:C2'	2.74	0.50
1:1:442:G:N2	1:1:536:A:C4	2.80	0.50
1:1:2543:C:C5'	1:1:2544:U:OP2	2.60	0.50
1:1:488:U:C2	1:1:490:A:OP2	2.64	0.50
16:Q:6:ALA:O	16:Q:7:VAL:CB	2.60	0.50
6:F:17:TYR:O	6:F:17:TYR:CD1	2.65	0.50
1:1:1595:A:N3	1:1:1599:G:C6	2.79	0.50
1:1:604:A:C8	1:1:604:A:O5'	2.65	0.50

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:585:A:C6	1:1:586:A:C6	3.00	0.50
1:1:1005:A:C2'	1:1:1006:C:OP1	2.59	0.50
9:J:200:ASN:OD1	9:J:200:ASN:C	2.50	0.50
1:1:3185:G:O6	1:1:3235:U:O2'	2.29	0.50
1:1:3235:U:N3	8:H:12:THR:O	2.44	0.50
1:1:1595:A:C5	1:1:1596:U:C1'	2.94	0.50
1:1:790:C:C5'	1:1:791:C:OP1	2.60	0.50
1:1:2343:A:C3'	1:1:2344:U:C5'	2.90	0.50
1:1:2521:A:C2	1:1:2522:A:C4	3.00	0.50
1:1:1592:G:C2	1:1:1602:U:C2	2.99	0.50
1:1:1597:U:C2'	1:1:1598:C:C6	2.95	0.50
1:1:1600:U:C5	1:1:1601:U:C5	3.00	0.50
1:1:651:U:C4	1:1:652:U:C4	2.99	0.50
1:1:2703:G:O6	1:1:2730:C:N3	2.45	0.50
1:1:1403:C:O2'	1:1:1434:G:O2'	2.30	0.50
1:1:882:G:O2'	1:1:883:A:P	2.69	0.50
1:1:3125:G:C6	1:1:3126:C:C4	3.00	0.50
1:1:775:C:C2'	1:1:775:C:O2	2.60	0.49
1:1:1379:G:N2	5:E:22:ASP:OD2	2.45	0.49
1:1:566:U:C5	1:1:567:C:C5	3.00	0.49
1:1:564:A:C2'	1:1:564:A:N3	2.74	0.49
1:1:2873:C:N4	1:1:2874:U:O4	2.45	0.49
1:1:1616:G:OP1	11:L:37:LYS:NZ	2.45	0.49
1:1:3047:U:C4'	1:1:3048:A:OP2	2.60	0.49
1:1:1132:U:O5'	1:1:1132:U:C6	2.65	0.49
1:1:2932:U:C5'	1:1:2933:G:OP2	2.60	0.49
1:1:2958:C:O3'	1:1:2959:A:C8	2.64	0.49
2:A:28:HIS:O	2:A:32:LEU:N	2.45	0.49
16:Q:7:VAL:CG1	16:Q:7:VAL:O	2.60	0.49
1:1:1101:U:C5'	17:T:49:ASN:ND2	2.75	0.49
1:1:548:G:C2	1:1:635:A:C2	2.99	0.49
1:1:2665:G:C5	1:1:2669:A:N6	2.81	0.49
1:1:2300:G:O5'	1:1:2300:G:C8	2.65	0.49
8:H:11:PRO:CG	8:H:12:THR:N	2.75	0.49
1:1:1248:G:O2'	1:1:1249:G:OP2	2.30	0.49
1:1:1255:A:C2	1:1:1309:G:C6	3.00	0.49
1:1:1060:C:C4	1:1:1061:G:N7	2.81	0.49
1:1:1519:G:C2	3:B:13:PHE:CE1	3.00	0.49
1:1:3142:A:O2'	1:1:3250:A:O2'	2.30	0.49
1:1:1740:U:C5'	1:1:1741:U:OP1	2.60	0.49
9:J:43:VAL:CG1	9:J:44:PRO:N	2.75	0.49
18:U:106:SER:O	18:U:110:ASN:ND2	2.45	0.49

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:661:C:C2	1:1:662:C:C5	3.00	0.49
5:E:49:THR:CG2	5:E:50:VAL:N	2.75	0.49
1:1:1009:A:OP1	17:T:23:LYS:NZ	2.46	0.49
8:H:52:GLN:O	8:H:77:ILE:O	2.30	0.49
1:1:3098:A:C2	1:1:3115:C:C2	3.00	0.49
1:1:2348:G:C5	1:1:2349:C:C5	3.01	0.49
1:1:3344:U:O2	1:1:3344:U:C2'	2.59	0.49
1:1:2209:A:N1	1:1:2424:A:O2'	2.45	0.49
1:1:734:A:N3	1:1:2775:G:O2'	2.44	0.49
1:1:1540:U:C5	1:1:1865:A:N3	2.81	0.49
1:1:195:U:O2'	1:1:1417:A:OP2	2.30	0.49
1:1:467:A:C6	1:1:512:G:N3	2.81	0.49
1:1:2301:C:C2'	1:1:2301:C:O2	2.60	0.49
1:1:2125:C:O2'	1:1:2140:A:O4'	2.31	0.49
1:1:358:C:O2'	2:A:16:HIS:CD2	2.65	0.49
6:F:26:VAL:CG1	6:F:27:ILE:N	2.76	0.49
1:1:1495:C:C4'	1:1:1496:U:OP2	2.59	0.49
1:1:3101:G:C2	1:1:3110:U:C5	3.01	0.49
11:L:76:ARG:NH2	11:L:84:HIS:CB	2.76	0.49
1:1:3268:C:C4	1:1:3269:G:C5	3.01	0.49
1:1:1095:C:C2'	1:1:1095:C:O2	2.60	0.49
1:1:2849:U:C2	1:1:2850:U:C6	3.01	0.49
6:F:125:SER:O	6:F:126:LYS:CB	2.59	0.49
1:1:1775:A:C5'	15:P:34:LYS:NZ	2.76	0.49
1:1:1066:A:C2	1:1:1067:U:C2	3.01	0.49
18:U:77:GLU:OE2	18:U:110:ASN:ND2	2.46	0.49
18:U:166:VAL:O	18:U:169:ILE:N	2.46	0.49
1:1:517:A:C4'	1:1:518:G:OP2	2.60	0.49
1:1:1035:A:C2	1:1:1068:U:C1'	2.95	0.49
1:1:1108:A:C4'	1:1:1109:A:OP1	2.60	0.49
1:1:1006:C:C2'	1:1:1007:G:OP1	2.61	0.49
1:1:940:A:C2'	1:1:940:A:N3	2.75	0.49
1:1:2393:A:C2	1:1:2394:A:C4	3.01	0.49
1:1:583:G:C2	1:1:585:A:OP2	2.65	0.49
1:1:1064:C:C2'	1:1:1065:U:C5'	2.91	0.49
1:1:591:G:O2'	1:1:592:A:O5'	2.31	0.49
1:1:2992:G:C2	1:1:2993:C:C6	3.01	0.49
1:1:3197:A:OP2	1:1:3213:G:N2	2.46	0.49
1:1:1654:G:C2'	1:1:1654:G:N3	2.76	0.49
1:1:790:C:O2	1:1:790:C:C2'	2.61	0.49
1:1:1062:A:C4	1:1:1063:C:C5	3.01	0.49
1:1:2106:G:O2'	1:1:2107:A:P	2.71	0.49

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:3042:G:C6	1:1:3043:U:C4	3.01	0.49
18:U:45:PHE:O	18:U:147:GLN:OE1	2.30	0.49
1:1:1235:U:C6	10:K:109:ASN:ND2	2.80	0.49
5:E:28:PHE:CD1	5:E:28:PHE:C	2.86	0.49
8:H:13:ARG:NE	8:H:15:TRP:CE2	2.81	0.48
1:1:1141:U:C4	1:1:1142:G:C2	3.01	0.48
1:1:2559:U:N3	1:1:2560:U:C5	2.82	0.48
1:1:170:A:C5	1:1:250:U:C4	3.01	0.48
5:E:63:VAL:CG1	5:E:64:VAL:N	2.76	0.48
1:1:2113:A:N7	1:1:3053:U:O2'	2.46	0.48
1:1:3056:C:C2	1:1:3057:U:C5	3.00	0.48
1:1:3097:G:C2'	1:1:3098:A:O5'	2.61	0.48
1:1:1736:G:C6	1:1:1737:A:C6	3.00	0.48
1:1:2509:U:P	1:1:2575:G:N2	2.86	0.48
1:1:1753:A:C4'	1:1:1754:G:OP2	2.62	0.48
1:1:1061:G:C4	1:1:1062:A:C8	3.02	0.48
1:1:3144:G:C6	1:1:3146:G:C8	3.02	0.48
1:1:1005:A:O2'	1:1:1006:C:C5'	2.61	0.48
1:1:1554:G:N2	1:1:1857:G:C4	2.81	0.48
1:1:947:U:OP1	2:A:3:ARG:NH1	2.46	0.48
7:G:60:ALA:O	7:G:64:GLN:N	2.47	0.48
13:N:31:ASP:OD1	13:N:31:ASP:N	2.46	0.48
5:E:173:TYR:CG	6:F:106:PHE:CD1	3.01	0.48
1:1:1507:A:C4	11:L:4:ARG:NH2	2.82	0.48
1:1:1020:G:O2'	1:1:1079:A:N6	2.47	0.48
1:1:1213:G:N3	19:X:126:GLY:CA	2.77	0.48
1:1:1595:A:N7	1:1:1596:U:C2	2.81	0.48
1:1:684:A:N1	1:1:966:G:O2'	2.45	0.48
7:G:64:GLN:O	7:G:64:GLN:CG	2.61	0.48
1:1:1944:U:N3	1:1:1954:A:C2	2.81	0.48
1:1:1620:U:O2'	1:1:1631:U:O2	2.31	0.48
1:1:652:U:C2	1:1:653:C:C6	3.02	0.48
1:1:3011:G:N2	1:1:3020:G:C5	2.81	0.48
1:1:1051:C:O2	1:1:1054:G:N2	2.47	0.48
1:1:1239:G:O3'	19:X:106:LYS:NZ	2.46	0.48
1:1:3205:A:O2'	1:1:3206:A:OP2	2.31	0.48
18:U:123:LEU:CD2	18:U:135:LEU:O	2.62	0.48
1:1:632:G:C5	1:1:633:C:C5	3.02	0.48
1:1:2125:C:O2'	1:1:2140:A:N3	2.46	0.48
1:1:1581:C:O2'	1:1:1582:A:OP1	2.32	0.48
1:1:1073:A:N3	1:1:2622:U:O2'	2.47	0.48
1:1:3198:A:C6	1:1:3199:G:C6	3.02	0.48

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
6:F:104:GLY:N	6:F:107:ASP:OD2	2.46	0.48
1:1:591:G:C2'	1:1:592:A:O5'	2.62	0.48
1:1:2324:A:C5	1:1:2325:C:C5	3.01	0.48
2:A:19:CYS:O	2:A:23:GLY:N	2.46	0.48
5:E:178:PHE:O	8:H:14:LEU:CD2	2.61	0.48
16:Q:43:GLN:OE1	16:Q:43:GLN:CA	2.62	0.48
19:X:175:LYS:NZ	19:X:178:ARG:NH1	2.61	0.48
1:1:1052:A:C2	1:1:1053:A:N7	2.82	0.48
13:N:76:ASN:OD1	13:N:76:ASN:C	2.52	0.48
1:1:2203:A:O2'	1:1:2204:U:O4'	2.31	0.48
12:M:60:ASN:OD1	12:M:60:ASN:O	2.31	0.48
1:1:443:G:C6	1:1:444:A:C6	3.01	0.48
1:1:2889:G:N2	1:1:3019:G:O2'	2.47	0.48
1:1:1382:A:C4'	1:1:1383:G:O5'	2.62	0.48
1:1:379:U:C2	1:1:389:G:N2	2.82	0.48
1:1:566:U:C5	1:1:567:C:C6	3.02	0.48
7:G:42:VAL:O	7:G:68:HIS:N	2.46	0.48
1:1:1370:A:N1	1:1:1389:G:C6	2.82	0.48
1:1:3191:G:O2'	1:1:3192:C:P	2.71	0.48
1:1:1832:G:OP1	11:L:77:VAL:O	2.32	0.48
1:1:94:A:C2	1:1:95:U:C6	3.02	0.48
1:1:157:A:O5'	16:Q:25:HIS:CE1	2.67	0.48
1:1:1655:A:C4	1:1:1669:G:C5	3.02	0.47
13:N:36:ARG:NH1	13:N:74:TYR:CB	2.77	0.47
1:1:213:A:N6	1:1:227:G:C2'	2.77	0.47
1:1:1490:G:N2	1:1:1493:A:OP2	2.46	0.47
1:1:2395:G:N7	1:1:2396:A:N6	2.61	0.47
6:F:34:ASN:O	6:F:50:ILE:N	2.48	0.47
1:1:958:A:C3'	1:1:959:G:C5'	2.92	0.47
1:1:3035:A:C2	1:1:3036:U:C2	3.02	0.47
1:1:3079:U:O2'	1:1:3080:A:C5'	2.62	0.47
1:1:970:C:C2	1:1:971:C:C5	3.02	0.47
1:1:511:U:C5'	14:O:70:VAL:CG2	2.92	0.47
5:E:179:THR:CG2	5:E:180:LEU:N	2.76	0.47
1:1:2741:U:C4'	1:1:2742:G:OP2	2.62	0.47
1:1:1698:G:C6	1:1:1800:A:N1	2.81	0.47
2:A:62:THR:CG2	2:A:63:GLY:N	2.77	0.47
1:1:3174:U:C6	1:1:3174:U:OP2	2.67	0.47
1:1:73:G:OP1	18:U:56:VAL:CG1	2.63	0.47
1:1:1249:G:C2'	1:1:1250:A:OP2	2.62	0.47
1:1:2219:A:OP1	16:Q:78:ARG:NH2	2.47	0.47
1:1:2602:U:O2	1:1:2792:A:C8	2.67	0.47

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
5:E:128:ASN:OD1	5:E:130:PHE:N	2.47	0.47
1:1:467:A:C6	1:1:468:A:C4	3.02	0.47
1:1:2266:A:N7	1:1:2267:G:C6	2.82	0.47
1:1:198:A:C6	1:1:219:A:C6	3.02	0.47
1:1:927:G:C4	1:1:928:U:C6	3.02	0.47
18:U:29:GLN:O	18:U:30:LYS:C	2.53	0.47
1:1:67:U:O2	18:U:59:GLN:NE2	2.47	0.47
1:1:1593:A:C2	1:1:1594:C:N3	2.83	0.47
1:1:2703:G:OP2	1:1:2705:U:C1'	2.62	0.47
1:1:170:A:C5	1:1:250:U:N3	2.83	0.47
1:1:795:G:O2'	1:1:796:A:C8	2.67	0.47
8:H:107:MET:SD	8:H:109:TYR:CE2	3.08	0.47
1:1:766:G:O2'	1:1:767:C:P	2.72	0.47
1:1:344:G:O6	1:1:347:A:OP1	2.31	0.47
1:1:2103:A:C2	1:1:2104:C:C2	3.02	0.47
1:1:70:C:C4	1:1:72:A:C5	3.03	0.47
1:1:368:A:C5'	1:1:369:U:OP1	2.62	0.47
1:1:1017:U:C3'	1:1:1017:U:C6	2.97	0.47
1:1:3136:A:C5	1:1:3137:U:C5	3.03	0.47
1:1:2302:G:O2'	1:1:2305:U:OP2	2.32	0.47
1:1:1208:U:C5'	19:X:178:ARG:NH2	2.78	0.47
1:1:643:A:O2'	1:1:644:A:P	2.72	0.47
16:Q:27:ALA:O	16:Q:30:ARG:N	2.47	0.47
1:1:1598:C:C5	1:1:1599:G:C5	3.03	0.47
1:1:3109:C:C6	10:K:111:ARG:CZ	2.98	0.47
1:1:2575:G:C4'	1:1:2576:C:OP1	2.62	0.47
1:1:1252:A:N3	1:1:3105:G:C8	2.83	0.47
1:1:2887:C:O2'	1:1:2889:G:OP2	2.33	0.47
1:1:1370:A:C2'	1:1:1371:G:C5'	2.93	0.47
1:1:1062:A:C2	1:1:1063:C:C6	3.02	0.47
1:1:45:C:OP2	1:1:46:A:O2'	2.33	0.47
1:1:434:A:C5'	1:1:435:A:OP1	2.62	0.47
9:J:118:HIS:CE1	9:J:146:VAL:CB	2.98	0.47
1:1:1215:U:N3	1:1:1344:A:N6	2.62	0.47
1:1:2103:A:O2'	1:1:3302:A:O2'	2.33	0.47
12:M:98:THR:CG2	12:M:99:SER:N	2.77	0.47
1:1:3229:C:O2'	1:1:3230:G:OP1	2.33	0.47
1:1:623:G:N2	5:E:30:ARG:NH1	2.63	0.47
1:1:2862:G:O6	1:1:2933:G:C2'	2.62	0.47
12:M:45:VAL:CB	12:M:51:ASN:ND2	2.77	0.47
1:1:2191:C:O2'	1:1:2265:A:N3	2.48	0.47
1:1:528:C:O2'	14:O:115:HIS:CE1	2.68	0.47

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:68:A:C2	1:1:69:A:N3	2.83	0.47
1:1:1109:A:C4'	1:1:1110:U:O5'	2.62	0.47
1:1:3198:A:C6	1:1:3199:G:C5	3.03	0.47
1:1:1642:G:C2'	1:1:1643:G:C5'	2.93	0.47
8:H:57:VAL:CG2	8:H:74:TRP:CZ3	2.97	0.47
1:1:440:C:N4	1:1:538:A:C2	2.83	0.47
1:1:1736:G:N1	1:1:1737:A:C2	2.83	0.47
1:1:1114:C:C2'	1:1:1115:U:C5'	2.92	0.47
4:C:83:ILE:CG2	4:C:84:LYS:N	2.78	0.47
1:1:3013:A:C8	1:1:3014:C:C5	3.03	0.47
1:1:3305:A:C2	1:1:3315:A:C2	3.03	0.47
1:1:282:G:N2	1:1:304:U:C5'	2.78	0.47
1:1:619:G:O2'	1:1:620:A:C2	2.67	0.47
2:A:28:HIS:CD2	2:A:31:LYS:N	2.83	0.47
1:1:1004:U:C5'	1:1:1004:U:C6	2.97	0.47
1:1:2907:A:C5'	1:1:2907:A:C8	2.98	0.47
1:1:72:A:C2	1:1:73:G:C8	3.04	0.46
1:1:3234:U:O4	1:1:3236:C:C6	2.68	0.46
1:1:2347:A:C6	1:1:2348:G:C5	3.03	0.46
1:1:784:G:O2'	1:1:796:A:N6	2.48	0.46
1:1:199:A:N3	1:1:201:A:C8	2.83	0.46
1:1:3230:G:O2'	1:1:3231:U:OP1	2.34	0.46
1:1:3227:A:C2	5:E:80:TYR:CZ	3.03	0.46
1:1:3225:U:C4	1:1:3226:A:N7	2.84	0.46
1:1:2569:A:C2'	1:1:2570:U:OP1	2.62	0.46
1:1:119:A:O2'	1:1:120:A:P	2.73	0.46
1:1:2539:A:N3	1:1:2540:G:C8	2.84	0.46
19:X:16:MET:CE	19:X:18:VAL:CG2	2.93	0.46
1:1:726:G:C5	1:1:727:C:C4	3.03	0.46
1:1:2703:G:O2'	1:1:2740:G:N3	2.49	0.46
5:E:173:TYR:CE2	6:F:106:PHE:CA	2.99	0.46
6:F:45:ARG:NH1	19:X:84:ASN:O	2.48	0.46
1:1:435:A:N3	1:1:435:A:C2'	2.78	0.46
1:1:1341:C:O2'	1:1:1345:A:O2'	2.33	0.46
1:1:621:G:O6	1:1:622:G:N1	2.48	0.46
19:X:167:LYS:CA	19:X:188:THR:CG2	2.93	0.46
1:1:2667:A:C6	1:1:2668:A:C6	3.03	0.46
1:1:71:U:C2'	1:1:72:A:OP1	2.64	0.46
1:1:1667:A:C2'	1:1:1668:A:O5'	2.64	0.46
1:1:3298:U:Cl'	1:1:3299:G:P	3.03	0.46
1:1:148:G:O2'	1:1:149:U:C6	2.69	0.46
1:1:2958:C:O2'	1:1:2959:A:N7	2.48	0.46

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1348:G:C2'	1:1:1349:U:O5'	2.63	0.46
1:1:2515:G:C6	1:1:2516:U:C4	3.03	0.46
19:X:45:ALA:CB	19:X:50:HIS:CD2	2.98	0.46
1:1:820:G:C2'	1:1:821:U:C5'	2.94	0.46
1:1:621:G:N7	1:1:622:G:C6	2.84	0.46
1:1:186:U:C2	1:1:230:G:O6	2.69	0.46
1:1:991:U:OP1	18:U:2:LYS:O	2.33	0.46
15:P:11:PHE:O	15:P:15:TRP:CD1	2.69	0.46
1:1:449:G:C4	1:1:450:C:C5	3.03	0.46
1:1:745:A:C6	1:1:746:A:C2	3.04	0.46
1:1:2434:A:C2	1:1:2504:U:C2	3.03	0.46
1:1:3306:G:N2	1:1:3314:U:C2	2.84	0.46
1:1:2669:A:C3'	1:1:2670:U:C6	2.99	0.46
1:1:1211:A:C2	1:1:1350:G:C4	3.04	0.46
1:1:1881:C:C5'	1:1:1882:A:OP2	2.63	0.46
2:A:4:GLY:C	2:A:6:PRO:CD	2.84	0.46
15:P:15:TRP:CH2	15:P:67:ALA:O	2.68	0.46
2:A:21:ARG:NH1	2:A:44:MET:CE	2.79	0.46
1:1:111:C:C2'	1:1:111:C:O2	2.64	0.46
1:1:2255:U:C2'	1:1:2256:G:C5'	2.94	0.46
1:1:398:G:O2'	1:1:399:A:C8	2.68	0.46
1:1:2378:A:C2'	1:1:2379:A:O5'	2.63	0.46
1:1:800:G:C4'	1:1:801:U:OP2	2.63	0.46
10:K:99:CYS:O	10:K:100:TYR:CB	2.64	0.46
1:1:795:G:C8	1:1:795:G:O5'	2.69	0.46
1:1:1394:G:O2'	1:1:1395:U:O5'	2.33	0.46
1:1:765:A:C6	1:1:766:G:C2	3.04	0.46
1:1:164:A:C6	1:1:256:A:C5	3.03	0.46
1:1:2255:U:O2'	1:1:2256:G:C5'	2.64	0.46
1:1:1221:G:C6	1:1:1222:A:N6	2.84	0.46
1:1:3332:A:C3'	1:1:3333:G:C5'	2.94	0.46
1:1:790:C:O2'	1:1:791:C:C5	2.69	0.46
1:1:1507:A:O2'	1:1:1882:A:N3	2.49	0.46
13:N:120:GLU:O	13:N:124:THR:OG1	2.34	0.46
1:1:125:G:C6	1:1:142:A:C6	3.03	0.46
12:M:110:PHE:O	12:M:111:ASN:CB	2.63	0.46
1:1:70:C:C4	1:1:72:A:C4	3.04	0.46
1:1:1186:A:O2'	1:1:1187:C:P	2.74	0.46
1:1:585:A:C5	1:1:586:A:C5	3.03	0.46
1:1:64:A:N6	1:1:66:C:C2	2.84	0.46
16:Q:5:GLN:O	16:Q:12:GLY:CA	2.64	0.46
5:E:120:GLU:OE2	5:E:138:GLN:CA	2.64	0.46

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:2557:A:C2	1:1:2564:G:C5	3.04	0.46
1:1:585:A:C6	1:1:586:A:C5	3.04	0.46
1:1:3144:G:C2	1:1:3249:U:C2	3.03	0.46
19:X:134:THR:CG2	19:X:134:THR:O	2.64	0.46
1:1:851:G:O2'	1:1:1614:A:C8	2.69	0.46
19:X:7:GLN:OE1	19:X:79:TYR:CB	2.64	0.46
19:X:188:THR:O	19:X:189:PHE:CB	2.64	0.45
1:1:3036:U:C4	1:1:3037:A:N6	2.84	0.45
1:1:1334:G:N3	1:1:1335:A:C2	2.83	0.45
1:1:1039:G:N2	1:1:1064:C:N3	2.64	0.45
1:1:2369:C:O2	1:1:2369:C:C2'	2.63	0.45
9:J:58:ILE:O	9:J:59:VAL:C	2.53	0.45
1:1:40:C:O2'	1:1:41:A:OP1	2.33	0.45
6:F:10:GLY:N	6:F:27:ILE:O	2.49	0.45
1:1:199:A:C4	1:1:201:A:C8	3.05	0.45
1:1:1661:A:N3	1:1:1733:C:O2'	2.49	0.45
1:1:2815:U:O2'	1:1:2817:U:O4	2.33	0.45
1:1:2921:A:C6	1:1:2922:A:N1	2.84	0.45
1:1:78:G:C2	1:1:79:C:C6	3.04	0.45
1:1:2803:G:C5'	1:1:2804:G:OP2	2.64	0.45
1:1:2265:A:N1	1:1:2266:A:C2	2.84	0.45
1:1:3175:A:C2	1:1:3177:G:C6	3.05	0.45
1:1:3021:A:C2	1:1:3022:A:C4	3.04	0.45
1:1:1107:A:C4	1:1:1108:A:C8	3.04	0.45
1:1:1049:U:C2	1:1:1056:A:C2	3.04	0.45
6:F:28:VAL:CG1	6:F:66:ASN:N	2.80	0.45
1:1:2624:A:O4'	1:1:2625:A:C2	2.70	0.45
1:1:147:U:C4'	1:1:148:G:OP2	2.64	0.45
14:O:75:THR:CG2	14:O:77:GLU:CG	2.95	0.45
6:F:29:ASN:OD1	19:X:109:ARG:NH2	2.50	0.45
1:1:625:C:C4	1:1:626:C:C5	3.05	0.45
1:1:3098:A:C2	1:1:3115:C:N3	2.84	0.45
1:1:3190:A:C6	1:1:3191:G:C2	3.04	0.45
1:1:1682:G:C5	1:1:1822:G:C6	3.04	0.45
1:1:2902:G:C6	1:1:2903:U:N3	2.85	0.45
1:1:1393:A:C2	1:1:1394:G:C4	3.04	0.45
1:1:941:G:O6	1:1:2409:G:O2'	2.35	0.45
1:1:773:C:C2	1:1:774:A:C8	3.05	0.45
17:T:48:LYS:O	17:T:55:LYS:NZ	2.50	0.45
1:1:3226:A:C2	5:E:84:GLY:CA	2.99	0.45
1:1:1031:G:N2	1:1:1071:C:O2	2.50	0.45
1:1:2303:C:C2'	1:1:2304:A:OP1	2.65	0.45

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1095:C:C4'	1:1:1096:G:OP2	2.65	0.45
1:1:1843:U:C2	1:1:1844:U:C5	3.05	0.45
1:1:1589:G:C5	1:1:1605:G:C2	3.05	0.45
1:1:550:G:C6	1:1:551:U:C4	3.04	0.45
1:1:2661:G:N2	1:1:2671:C:O2	2.49	0.45
1:1:519:A:OP1	14:O:89:ARG:NH1	2.49	0.45
1:1:788:C:C5	1:1:790:C:C5	3.05	0.45
1:1:169:A:P	1:1:249:G:N2	2.90	0.45
1:1:560:A:C2'	1:1:561:A:C8	3.00	0.45
1:1:2208:A:C5	1:1:2227:A:C6	3.05	0.45
15:P:53:PHE:CE1	15:P:55:THR:CG2	2.99	0.45
1:1:1949:U:OP2	1:1:1950:C:N4	2.50	0.45
1:1:3272:U:C4	1:1:3273:U:C5	3.05	0.45
8:H:58:TYR:CE2	8:H:60:TYR:CD2	3.05	0.45
1:1:680:A:C6	1:1:681:A:C6	3.04	0.45
5:E:69:LEU:CD2	5:E:71:SER:OG	2.65	0.45
1:1:2732:G:C6	1:1:2733:C:N4	2.85	0.45
1:1:3228:U:C3'	1:1:3229:C:C5'	2.94	0.45
1:1:2561:A:N3	1:1:2563:U:C6	2.84	0.45
1:1:1374:C:C5'	1:1:1375:A:OP1	2.65	0.45
1:1:345:C:C4	1:1:347:A:C8	3.05	0.45
1:1:1867:C:OP1	3:B:48:LYS:NZ	2.50	0.45
1:1:1230:A:N3	1:1:2843:U:O2'	2.49	0.45
1:1:3228:U:O2'	5:E:146:LYS:NZ	2.50	0.45
5:E:57:ARG:CZ	5:E:58:PHE:CE1	3.00	0.45
1:1:1839:A:O2'	1:1:1840:U:C6	2.70	0.45
1:1:3155:A:N7	8:H:101:GLY:C	2.70	0.45
1:1:48:U:C2'	1:1:48:U:O2	2.64	0.45
1:1:2683:A:C5'	1:1:2684:A:OP2	2.65	0.45
14:O:109:LYS:O	14:O:113:ASN:ND2	2.50	0.45
1:1:1440:A:C5	1:1:1441:U:C5	3.04	0.45
1:1:2765:C:C2'	1:1:2765:C:O2	2.64	0.45
1:1:729:A:C1'	1:1:810:G:N2	2.80	0.45
1:1:467:A:C5	1:1:468:A:C5	3.05	0.45
1:1:3177:G:C2	19:X:177:TYR:CE2	3.05	0.45
1:1:563:G:N1	1:1:604:A:C2	2.85	0.45
1:1:3079:U:C2'	1:1:3080:A:O5'	2.65	0.45
1:1:1145:C:O2'	1:1:1181:A:N1	2.50	0.45
1:1:126:A:C5	1:1:139:A:C6	3.05	0.45
5:E:90:VAL:CG1	5:E:91:ASN:N	2.80	0.45
1:1:2539:A:C2	1:1:2540:G:C8	3.05	0.45
9:J:12:ASP:O	9:J:13:ILE:C	2.55	0.45

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:2344:U:C5'	1:1:2344:U:C6	3.00	0.45
14:O:69:LYS:CG	14:O:70:VAL:N	2.80	0.45
1:1:766:G:C2'	1:1:767:C:OP2	2.65	0.45
1:1:1126:A:C5	1:1:1127:U:C5	3.04	0.45
1:1:687:C:C2	1:1:688:U:C5	3.04	0.45
16:Q:83:THR:O	16:Q:84:HIS:C	2.55	0.45
1:1:2283:G:C6	1:1:2284:U:C4	3.05	0.45
1:1:1222:A:C2	1:1:1336:U:C4	3.05	0.44
1:1:1402:G:O2'	1:1:1433:A:N1	2.50	0.44
1:1:2762:U:O2	1:1:2763:U:C6	2.70	0.44
1:1:1926:G:OP2	1:1:2907:A:OP1	2.34	0.44
1:1:1863:A:N6	1:1:1867:C:C2	2.85	0.44
1:1:1183:C:C3'	1:1:1184:U:C5'	2.95	0.44
9:J:66:ASN:OD1	9:J:66:ASN:C	2.56	0.44
8:H:20:PHE:C	8:H:20:PHE:CD1	2.90	0.44
13:N:105:ASN:O	13:N:105:ASN:CG	2.55	0.44
1:1:169:A:C6	1:1:251:A:C6	3.06	0.44
1:1:1108:A:C2	1:1:1110:U:O2'	2.71	0.44
8:H:26:SER:O	8:H:27:LYS:C	2.55	0.44
1:1:2283:G:C4	1:1:2284:U:C5	3.05	0.44
16:Q:45:ILE:O	16:Q:49:THR:OG1	2.35	0.44
14:O:36:THR:O	14:O:37:GLN:C	2.53	0.44
1:1:3132:A:C2'	1:1:3133:G:OP1	2.65	0.44
1:1:3049:C:O2'	1:1:3290:U:O2'	2.35	0.44
2:A:8:PHE:N	2:A:8:PHE:CD1	2.81	0.44
6:F:121:THR:CG2	6:F:121:THR:O	2.65	0.44
1:1:1481:U:O2'	1:1:1482:A:P	2.74	0.44
1:1:3097:G:C2	1:1:3116:A:C2	3.04	0.44
1:1:513:G:C4	1:1:514:U:C5	3.05	0.44
13:N:76:ASN:OD1	13:N:77:LEU:N	2.50	0.44
1:1:685:G:O2'	1:1:686:U:P	2.75	0.44
1:1:1445:G:C2'	1:1:1446:C:C5'	2.95	0.44
8:H:49:ALA:O	8:H:52:GLN:CG	2.66	0.44
18:U:59:GLN:CG	18:U:59:GLN:O	2.66	0.44
1:1:1127:U:C2	1:1:1128:G:C8	3.06	0.44
5:E:103:ASP:OD1	5:E:104:LEU:N	2.51	0.44
3:B:9:MET:O	3:B:10:LYS:C	2.54	0.44
1:1:1337:G:O2'	1:1:2375:U:O2'	2.35	0.44
1:1:279:U:O2	1:1:281:G:C8	2.71	0.44
1:1:534:U:C2	1:1:535:C:C5	3.06	0.44
1:1:2761:U:O2'	1:1:2762:U:OP1	2.35	0.44
1:1:627:U:O2	1:1:630:G:C6	2.71	0.44

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1546:G:O2'	1:1:1628:A:N1	2.51	0.44
19:X:96:GLN:CB	19:X:134:THR:CG2	2.95	0.44
1:1:1239:G:O2'	19:X:128:HIS:NE2	2.50	0.44
1:1:1184:U:C6	1:1:1184:U:C5'	3.01	0.44
1:1:2984:A:C6	1:1:2985:C:N4	2.86	0.44
1:1:1783:U:C2	1:1:1794:G:C2	3.05	0.44
1:1:556:A:C6	1:1:557:U:C5	3.06	0.44
1:1:1593:A:C4	1:1:1594:C:C4	3.06	0.44
1:1:1599:G:N1	1:1:1600:U:C2	2.86	0.44
1:1:1840:U:C6	1:1:1840:U:OP2	2.70	0.44
1:1:223:C:O2'	1:1:224:C:P	2.75	0.44
1:1:1248:G:O5'	1:1:1248:G:C8	2.70	0.44
1:1:3080:A:O2'	1:1:3081:C:P	2.76	0.44
1:1:1050:C:O2	1:1:1055:A:C2	2.71	0.44
19:X:22:VAL:CG1	19:X:40:GLN:NE2	2.80	0.44
1:1:631:G:C6	5:E:31:ARG:NH2	2.86	0.44
1:1:20:G:C5	1:1:21:A:N7	2.86	0.44
1:1:705:A:C5	1:1:706:U:C5	3.06	0.44
1:1:1474:U:C5	1:1:2350:G:N2	2.86	0.44
12:M:52:LEU:O	12:M:53:GLY:O	2.36	0.44
19:X:44:PHE:CD1	19:X:137:ILE:CD1	3.01	0.44
1:1:1752:G:C2'	7:G:85:HIS:CD2	3.00	0.44
1:1:1518:G:P	2:A:14:LYS:NZ	2.90	0.44
1:1:525:C:C4'	1:1:526:U:OP2	2.65	0.44
14:O:115:HIS:O	14:O:118:ASN:N	2.51	0.44
1:1:2428:U:OP2	1:1:2429:U:O2'	2.35	0.44
1:1:1430:G:C6	1:1:1434:G:C6	3.06	0.44
1:1:1775:A:C8	1:1:1777:A:C8	3.06	0.44
9:J:5:CYS:SG	9:J:13:ILE:CD1	3.06	0.44
1:1:608:C:C2'	1:1:609:A:O5'	2.65	0.44
1:1:137:A:C6	1:1:138:C:C4	3.05	0.44
1:1:376:A:C5'	1:1:377:A:OP1	2.65	0.44
1:1:452:U:O2'	1:1:453:A:C5'	2.66	0.44
1:1:3185:G:C5	1:1:3237:C:C4	3.05	0.44
1:1:1736:G:N1	1:1:1737:A:N1	2.64	0.44
13:N:52:LYS:O	13:N:65:ARG:NE	2.50	0.44
1:1:2632:A:C2'	1:1:2634:G:OP2	2.66	0.44
1:1:130:G:C6	1:1:137:A:C6	3.05	0.44
14:O:111:LEU:O	14:O:112:VAL:C	2.57	0.44
5:E:77:THR:CG2	5:E:157:ASP:OD1	2.66	0.44
19:X:34:THR:CG2	19:X:35:LYS:N	2.80	0.44
1:1:2380:U:C2'	1:1:2380:U:O2	2.65	0.44

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1207:A:C4	1:1:1209:G:C8	3.05	0.44
1:1:263:A:C4	16:Q:30:ARG:NH1	2.86	0.44
1:1:352:G:O2'	1:1:363:G:O6	2.36	0.44
1:1:20:G:C6	1:1:21:A:N7	2.85	0.44
1:1:3197:A:OP2	1:1:3213:G:N1	2.51	0.44
1:1:984:C:N4	1:1:2789:A:C8	2.86	0.44
1:1:1497:U:C2	1:1:1498:U:C5	3.06	0.44
1:1:1692:G:C6	1:1:1693:U:C4	3.05	0.44
1:1:222:A:C6	1:1:223:C:C4	3.06	0.44
1:1:219:A:N1	1:1:1416:U:C2'	2.81	0.44
1:1:2347:A:C6	1:1:2348:G:C6	3.06	0.44
1:1:1227:A:C4'	1:1:1228:C:O5'	2.65	0.44
1:1:1663:C:N4	11:L:75:SER:OG	2.50	0.44
19:X:170:HIS:C	19:X:170:HIS:ND1	2.71	0.44
1:1:2886:G:C8	1:1:2886:G:C3'	3.01	0.44
1:1:468:A:N6	1:1:469:U:C4	2.86	0.43
1:1:533:G:N2	1:1:534:U:C2	2.86	0.43
1:1:190:U:C4	1:1:224:C:O4'	2.71	0.43
1:1:1427:G:C2	1:1:1437:U:O2	2.71	0.43
1:1:2561:A:C2	1:1:2563:U:C2	3.06	0.43
1:1:1027:G:C2'	1:1:1027:G:N3	2.81	0.43
1:1:1845:U:C5'	1:1:1846:C:OP2	2.66	0.43
1:1:1078:U:C5	1:1:1079:A:N7	2.86	0.43
1:1:2634:G:C2'	1:1:2635:C:C5'	2.96	0.43
1:1:2432:G:C6	1:1:2433:A:C5	3.06	0.43
1:1:2165:A:C2	1:1:2166:G:C8	3.06	0.43
1:1:84:G:N2	1:1:97:A:OP2	2.51	0.43
15:P:39:ILE:CG2	15:P:40:THR:N	2.81	0.43
1:1:239:G:C6	1:1:240:A:N6	2.86	0.43
1:1:3263:G:C4'	1:1:3264:U:O5'	2.66	0.43
1:1:2111:G:O2'	1:1:2112:G:OP1	2.36	0.43
1:1:526:U:O2'	1:1:527:A:O5'	2.35	0.43
1:1:3226:A:N1	5:E:83:ASN:O	2.51	0.43
1:1:1589:G:C8	1:1:1605:G:N2	2.86	0.43
1:1:296:G:O2'	16:Q:32:GLY:CA	2.67	0.43
1:1:1143:G:N2	1:1:2805:A:O4'	2.50	0.43
1:1:3237:C:N3	8:H:7:SER:OG	2.52	0.43
1:1:1580:G:O5'	1:1:1580:G:C8	2.71	0.43
1:1:121:A:C6	1:1:150:A:C6	3.06	0.43
1:1:373:A:C4'	1:1:374:A:OP1	2.66	0.43
1:1:3345:A:C8	1:1:3345:A:OP2	2.72	0.43
1:1:750:G:C2'	1:1:751:C:C5'	2.97	0.43

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1656:G:C6	1:1:1657:C:C4	3.07	0.43
1:1:1657:C:C5	13:N:17:ARG:NH2	2.86	0.43
1:1:459:G:C5	1:1:517:A:C6	3.06	0.43
1:1:832:A:N6	1:1:959:G:N1	2.66	0.43
1:1:1660:U:O2'	13:N:79:HIS:CD2	2.72	0.43
1:1:992:A:N6	1:1:993:G:C6	2.87	0.43
1:1:628:A:C4'	1:1:629:A:OP2	2.66	0.43
1:1:861:A:C2'	1:1:861:A:N3	2.82	0.43
1:1:2255:U:O2'	1:1:2301:C:C4'	2.67	0.43
1:1:1518:G:N7	3:B:2:GLY:N	2.66	0.43
1:1:1222:A:C2	1:1:1336:U:C2	3.06	0.43
1:1:3019:G:C5	1:1:3020:G:C5	3.06	0.43
1:1:1746:U:C4	1:1:1747:A:N7	2.86	0.43
1:1:3268:C:N4	1:1:3269:G:C5	2.86	0.43
13:N:14:LEU:N	13:N:79:HIS:O	2.51	0.43
1:1:723:U:O2'	1:1:724:C:OP1	2.36	0.43
1:1:1953:G:OP2	1:1:1954:A:O2'	2.36	0.43
1:1:550:G:C5	1:1:551:U:C5	3.07	0.43
8:H:99:ALA:O	8:H:102:SER:OG	2.36	0.43
1:1:3234:U:O4	1:1:3236:C:C5	2.72	0.43
1:1:1738:A:C8	1:1:1752:G:C2	3.06	0.43
1:1:567:C:N4	1:1:603:A:C2	2.86	0.43
1:1:1053:A:C1'	1:1:1054:G:P	3.07	0.43
1:1:1112:A:N6	1:1:1113:A:N6	2.67	0.43
1:1:2907:A:N1	1:1:2915:C:O2	2.52	0.43
10:K:79:GLU:O	10:K:82:ILE:N	2.51	0.43
1:1:624:G:C6	1:1:625:C:N4	2.87	0.43
1:1:509:A:C2	1:1:510:A:C8	3.07	0.43
1:1:2276:A:N6	1:1:2947:C:O2'	2.52	0.43
1:1:2187:C:O2'	1:1:2307:A:N1	2.52	0.43
1:1:3175:A:C6	1:1:3177:G:C6	3.06	0.43
1:1:651:U:C4	1:1:652:U:C5	3.06	0.43
1:1:1820:U:O2'	1:1:1822:G:N2	2.52	0.43
1:1:627:U:O2	1:1:630:G:O6	2.36	0.43
1:1:1002:A:C2	1:1:1004:U:C5'	3.01	0.43
1:1:1558:C:O2'	1:1:1825:A:N3	2.52	0.43
1:1:643:A:O2'	5:E:131:LYS:CE	2.67	0.43
1:1:469:U:O2	1:1:510:A:N1	2.52	0.43
5:E:68:GLN:CG	5:E:68:GLN:O	2.66	0.43
14:O:62:LEU:O	14:O:63:ARG:C	2.56	0.43
14:O:110:LYS:O	14:O:114:PHE:CB	2.67	0.43
1:1:1398:G:C2'	1:1:1399:A:O5'	2.67	0.43

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1966:U:C2'	1:1:1967:C:O5'	2.67	0.43
1:1:779:A:C2	1:1:780:C:C2	3.06	0.43
1:1:1551:C:C4	1:1:1552:U:O4	2.72	0.43
1:1:2641:U:C4	1:1:2748:U:O2	2.71	0.43
5:E:125:ASN:C	5:E:125:ASN:OD1	2.57	0.43
1:1:2275:A:O2'	1:1:2276:A:P	2.76	0.43
1:1:1599:G:C2'	1:1:1600:U:C5'	2.97	0.43
1:1:2430:G:N2	1:1:2509:U:O4	2.52	0.43
1:1:1048:U:C4	1:1:1049:U:C5	3.07	0.43
1:1:2228:A:N7	1:1:2229:G:N7	2.67	0.43
1:1:9:G:O2'	1:1:1587:A:N6	2.52	0.43
1:1:174:A:N1	1:1:246:G:C4	2.86	0.43
1:1:2290:A:C6	1:1:2291:A:C6	3.07	0.43
1:1:632:G:C5	1:1:633:C:C4	3.07	0.42
1:1:624:G:O2'	1:1:625:C:C6	2.71	0.42
1:1:1752:G:O5'	1:1:1752:G:C8	2.72	0.42
1:1:1053:A:C2'	1:1:1054:G:OP2	2.67	0.42
1:1:2801:A:N6	1:1:2802:G:C6	2.87	0.42
1:1:389:G:C6	1:1:390:G:C4	3.06	0.42
1:1:1642:G:C2	1:1:1852:A:C2	3.07	0.42
1:1:2291:A:O2'	1:1:2916:C:O2'	2.37	0.42
1:1:70:C:C5	1:1:72:A:C4	3.07	0.42
1:1:3098:A:N1	1:1:3115:C:C4	2.87	0.42
6:F:2:VAL:CG1	6:F:3:PHE:N	2.82	0.42
1:1:1608:G:C2'	1:1:1609:U:O5'	2.67	0.42
1:1:3011:G:C1'	1:1:3012:U:OP2	2.67	0.42
1:1:47:G:O2'	1:1:48:U:OP1	2.37	0.42
6:F:28:VAL:CG1	6:F:66:ASN:CA	2.97	0.42
1:1:43:A:C5	1:1:44:U:C5	3.07	0.42
1:1:997:G:C5'	1:1:1399:A:O2'	2.67	0.42
1:1:269:U:C2	1:1:270:C:C5	3.07	0.42
1:1:1105:U:C2	1:1:1111:G:C2	3.06	0.42
1:1:1355:C:C2'	1:1:1356:G:O5'	2.67	0.42
1:1:1728:A:C2'	1:1:1729:U:OP2	2.66	0.42
1:1:1669:G:C2	1:1:1670:A:C5	3.07	0.42
1:1:848:C:O2'	1:1:1561:A:O2'	2.37	0.42
1:1:927:G:C4	1:1:928:U:C5	3.06	0.42
1:1:371:A:C6	1:1:372:A:C6	3.08	0.42
1:1:1004:U:C4'	1:1:1005:A:OP2	2.68	0.42
1:1:3171:A:N6	1:1:3172:A:N6	2.66	0.42
1:1:1318:A:N6	1:1:1319:C:C4	2.87	0.42
1:1:2353:C:O2	1:1:2353:C:C2'	2.65	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:775:C:C5'	1:1:776:C:OP2	2.68	0.42
1:1:904:U:O2'	1:1:905:G:OP1	2.37	0.42
2:A:14:LYS:NZ	3:B:52:TYR:CE1	2.88	0.42
1:1:2371:G:C6	1:1:2372:G:C6	3.07	0.42
1:1:2242:G:N3	1:1:2266:A:C2	2.87	0.42
1:1:1758:U:C5'	1:1:1759:C:OP2	2.67	0.42
1:1:1051:C:C6	1:1:1051:C:O5'	2.72	0.42
14:O:40:LEU:O	14:O:44:HIS:ND1	2.53	0.42
1:1:2376:A:C2	1:1:2377:G:C8	3.07	0.42
1:1:3309:U:C2'	1:1:3310:U:O5'	2.67	0.42
1:1:1636:C:C2	1:1:1637:A:C8	3.07	0.42
1:1:1617:G:O2'	1:1:1618:A:P	2.75	0.42
1:1:2521:A:N1	1:1:2522:A:C6	2.87	0.42
1:1:631:G:N7	5:E:31:ARG:NH2	2.66	0.42
1:1:746:A:O2'	1:1:808:A:O2'	2.37	0.42
19:X:28:LEU:O	19:X:29:PRO:C	2.56	0.42
16:Q:46:ARG:NH2	16:Q:51:PHE:CD2	2.88	0.42
1:1:1331:A:O2'	1:1:2872:C:O2'	2.37	0.42
1:1:1154:G:N2	1:1:1157:A:OP2	2.52	0.42
8:H:47:ASP:N	8:H:47:ASP:OD1	2.51	0.42
1:1:2561:A:C2	1:1:2563:U:C4	3.08	0.42
1:1:1820:U:C4'	1:1:1821:U:OP2	2.67	0.42
15:P:15:TRP:O	15:P:72:TYR:CE1	2.73	0.42
8:H:107:MET:CB	8:H:109:TYR:CE2	3.03	0.42
1:1:2625:A:C5'	1:1:2626:A:C5'	2.97	0.42
1:1:174:A:N6	1:1:246:G:C5	2.87	0.42
1:1:471:A:C2'	1:1:472:C:O5'	2.68	0.42
1:1:2793:G:C5	1:1:2794:U:C5	3.07	0.42
1:1:1942:C:C6	1:1:1942:C:C5'	3.03	0.42
1:1:1597:U:C5	1:1:1598:C:C4	3.08	0.42
1:1:2559:U:O2	1:1:2561:A:N1	2.52	0.42
18:U:62:ARG:NE	18:U:63:TYR:CE2	2.88	0.42
11:L:9:ARG:O	11:L:10:ARG:CB	2.67	0.42
13:N:24:VAL:CG2	13:N:138:PHE:CE1	3.03	0.42
1:1:2154:A:C8	1:1:2172:G:N2	2.87	0.42
1:1:1880:C:C1'	11:L:7:TYR:CE1	3.03	0.42
13:N:100:ASP:O	13:N:104:ASN:N	2.53	0.42
1:1:637:U:C2	1:1:638:U:C5	3.08	0.42
1:1:452:U:O2'	1:1:453:A:O5'	2.37	0.42
1:1:3227:A:O2'	5:E:86:PRO:CG	2.67	0.42
1:1:3230:G:O2'	1:1:3231:U:OP2	2.38	0.42
1:1:283:A:N7	1:1:305:A:C8	2.87	0.42

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
5:E:22:ASP:N	5:E:22:ASP:OD1	2.53	0.42
1:1:3175:A:N1	1:1:3177:G:N1	2.68	0.42
1:1:1050:C:C4	1:1:1051:C:N3	2.88	0.42
1:1:894:G:C6	1:1:895:A:C6	3.08	0.42
1:1:1495:C:O2	1:1:1535:A:C2	2.73	0.42
1:1:3308:A:C2	1:1:3309:U:C2	3.08	0.42
15:P:46:GLY:O	15:P:47:LYS:C	2.58	0.42
1:1:1936:U:O2'	1:1:2117:A:N7	2.53	0.42
1:1:762:G:C2	1:1:763:G:C8	3.07	0.42
1:1:2247:A:C4	1:1:2248:G:C8	3.08	0.42
1:1:1310:C:C5	1:1:1311:C:C4	3.08	0.42
14:O:1:MET:O	14:O:5:VAL:N	2.52	0.42
1:1:1839:A:C4'	1:1:1840:U:O5'	2.67	0.42
1:1:2106:G:O2'	1:1:2107:A:OP1	2.38	0.42
1:1:773:C:C2'	1:1:774:A:O5'	2.68	0.42
1:1:39:G:C4	1:1:2789:A:C2	3.07	0.42
1:1:938:A:C2'	1:1:939:A:OP2	2.68	0.42
4:C:77:THR:CG2	4:C:78:LYS:N	2.82	0.42
1:1:852:A:C2	1:1:853:A:C4	3.07	0.42
1:1:2435:A:C2	1:1:2503:U:C2	3.07	0.42
13:N:29:SER:O	13:N:30:GLU:C	2.58	0.42
1:1:1669:G:C2	1:1:1670:A:C6	3.08	0.42
14:O:118:ASN:OD1	14:O:122:GLN:NE2	2.52	0.42
1:1:651:U:O2'	1:1:1425:U:C5	2.72	0.42
1:1:653:C:C2	1:1:654:U:C5	3.07	0.42
19:X:16:MET:CG	19:X:17:LYS:N	2.83	0.42
1:1:938:A:N1	1:1:2130:G:O2'	2.53	0.42
1:1:462:G:OP1	14:O:64:LYS:NZ	2.53	0.42
7:G:11:GLN:CG	7:G:12:SER:N	2.83	0.42
1:1:2438:G:C6	1:1:2439:C:C4	3.08	0.42
1:1:406:A:C8	1:1:407:C:C5	3.08	0.42
1:1:135:A:C5'	1:1:136:C:OP2	2.68	0.42
1:1:1162:A:OP2	17:T:5:LYS:NZ	2.52	0.42
1:1:624:G:C4	1:1:625:C:C4	3.08	0.41
1:1:1326:U:O2'	10:K:114:LYS:O	2.38	0.41
1:1:2564:G:C6	1:1:2565:A:C5	3.08	0.41
15:P:12:MET:O	15:P:16:GLN:CG	2.68	0.41
1:1:1414:C:C4	1:1:1415:C:C5	3.08	0.41
1:1:3143:A:OP2	1:1:3143:A:C8	2.73	0.41
1:1:1196:A:C6	1:1:1357:A:N7	2.88	0.41
1:1:2873:C:C4	1:1:2874:U:O4	2.73	0.41
1:1:609:A:C2	1:1:610:A:C5	3.08	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:2906:G:C2'	1:1:2907:A:C5'	2.98	0.41
1:1:838:G:C4	1:1:839:U:C5	3.08	0.41
14:O:120:ARG:O	14:O:124:ASN:ND2	2.52	0.41
1:1:1022:A:C2	1:1:1080:A:C4	3.08	0.41
1:1:1123:A:OP2	1:1:1124:G:C8	2.73	0.41
1:1:2619:C:C2	1:1:2638:G:C2	3.08	0.41
1:1:1537:U:C5'	1:1:1538:U:C5	3.03	0.41
9:J:35:TYR:CZ	9:J:50:HIS:CE1	3.08	0.41
1:1:1135:U:C6	1:1:1135:U:C5'	3.02	0.41
1:1:3178:U:C5'	6:F:97:LYS:NZ	2.82	0.41
1:1:864:C:O2'	1:1:1748:U:OP1	2.38	0.41
1:1:1078:U:C5	1:1:1079:A:C5	3.07	0.41
1:1:1383:G:C4'	1:1:1383:G:OP1	2.66	0.41
1:1:134:A:C6	1:1:135:A:C6	3.08	0.41
7:G:21:GLY:CA	7:G:94:ASP:O	2.68	0.41
1:1:61:A:C6	1:1:62:G:C6	3.08	0.41
1:1:3106:C:C3'	1:1:3107:C:C5'	2.98	0.41
1:1:2185:U:C4	1:1:2186:U:C4	3.08	0.41
2:A:54:VAL:O	2:A:57:ARG:N	2.54	0.41
5:E:114:ASP:C	5:E:116:TYR:N	2.74	0.41
1:1:1902:C:O2	1:1:1902:C:C2'	2.68	0.41
1:1:3185:G:C4	1:1:3237:C:C4	3.08	0.41
1:1:1427:G:C2'	1:1:1428:G:O5'	2.67	0.41
1:1:1430:G:C5'	1:1:1431:U:OP2	2.68	0.41
1:1:1370:A:C2	1:1:1389:G:N1	2.88	0.41
1:1:2403:U:C2	1:1:2802:G:N2	2.88	0.41
1:1:2710:A:C2	1:1:2725:A:C2	3.08	0.41
1:1:2216:G:O6	16:Q:75:LYS:NZ	2.52	0.41
1:1:2146:G:O2'	1:1:2184:U:OP1	2.38	0.41
5:E:99:SER:N	5:E:191:PHE:O	2.53	0.41
17:T:56:SER:OG	17:T:57:LYS:N	2.53	0.41
1:1:2753:C:C5	1:1:2754:C:C5	3.08	0.41
4:C:51:GLN:CG	4:C:52:THR:N	2.82	0.41
1:1:1481:U:C2'	1:1:1481:U:O2	2.69	0.41
1:1:3110:U:C4'	1:1:3111:A:OP1	2.68	0.41
1:1:146:U:O2'	1:1:147:U:OP1	2.38	0.41
1:1:2564:G:O6	1:1:2565:A:N6	2.53	0.41
1:1:1062:A:N6	1:1:1063:C:N4	2.68	0.41
5:E:42:ARG:O	5:E:45:ILE:CG2	2.68	0.41
1:1:1045:G:N2	1:1:1059:U:O2	2.53	0.41
1:1:825:G:N2	1:1:826:A:C2	2.88	0.41
1:1:710:G:C2'	1:1:711:U:O5'	2.68	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:3301:G:O2'	1:1:3318:A:N6	2.53	0.41
1:1:284:U:O4'	1:1:284:U:P	2.79	0.41
1:1:3094:U:OP2	1:1:3117:G:N1	2.53	0.41
1:1:2255:U:C4'	1:1:2301:C:O4'	2.68	0.41
1:1:3078:C:C4	1:1:3079:U:C4	3.08	0.41
1:1:1025:G:O2'	1:1:1028:A:N6	2.53	0.41
2:A:5:THR:N	2:A:6:PRO:CD	2.84	0.41
1:1:1865:A:N1	1:1:1872:U:C4	2.89	0.41
1:1:975:G:C2	1:1:1397:G:O6	2.74	0.41
1:1:2198:U:O2	1:1:2235:G:C2	2.73	0.41
1:1:2530:G:N2	1:1:2537:C:O2	2.53	0.41
1:1:2734:G:N2	1:1:2737:A:OP2	2.53	0.41
1:1:3316:C:N4	1:1:3317:G:C6	2.88	0.41
1:1:2665:G:C4'	1:1:2666:G:O5'	2.68	0.41
1:1:2994:G:C2'	1:1:2995:A:OP2	2.69	0.41
1:1:3146:G:C6	1:1:3248:C:N4	2.88	0.41
1:1:920:A:C6	1:1:922:U:C2	3.09	0.41
1:1:2902:G:C6	1:1:2903:U:C4	3.08	0.41
1:1:2228:A:C8	1:1:2229:G:N7	2.89	0.41
1:1:292:C:C6	1:1:292:C:C5'	3.04	0.41
1:1:3096:U:C5'	10:K:112:LYS:NZ	2.84	0.41
18:U:154:VAL:N	18:U:155:PRO:CD	2.84	0.41
1:1:1141:U:C4	1:1:1142:G:N2	2.88	0.41
1:1:583:G:N3	1:1:585:A:OP2	2.54	0.41
1:1:2771:U:C5	1:1:2772:U:C5	3.08	0.41
1:1:1414:C:N3	1:1:1415:C:C5	2.88	0.41
1:1:615:G:N2	8:H:79:LYS:NZ	2.68	0.41
1:1:1394:G:C8	1:1:1394:G:O5'	2.74	0.41
1:1:1926:G:C6	1:1:1927:U:C2	3.08	0.41
1:1:2596:G:C6	1:1:2597:G:C5	3.09	0.41
19:X:55:PHE:CZ	19:X:59:MET:CE	3.03	0.41
1:1:1598:C:C5	1:1:1599:G:C8	3.07	0.41
1:1:2429:U:C4'	1:1:2430:G:O5'	2.69	0.41
1:1:3176:A:C4'	1:1:3177:G:C5'	2.98	0.41
1:1:1104:C:C6	17:T:42:ASN:ND2	2.88	0.41
1:1:3268:C:N4	1:1:3269:G:C6	2.88	0.41
1:1:3144:G:C2	1:1:3249:U:O2	2.73	0.41
1:1:1107:A:C6	1:1:1108:A:C5	3.09	0.41
1:1:1865:A:C6	1:1:1872:U:N3	2.89	0.41
1:1:680:A:N6	1:1:681:A:N6	2.68	0.41
1:1:2679:G:C5'	1:1:2680:A:OP2	2.69	0.41
1:1:2292:U:C2	1:1:2294:A:C6	3.09	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:3223:G:C2'	1:1:3224:C:O5'	2.69	0.41
1:1:112:A:N1	1:1:265:A:O2'	2.54	0.41
1:1:1658:G:P	13:N:107:LYS:NZ	2.94	0.41
1:1:3232:A:N6	1:1:3233:A:C2	2.88	0.41
1:1:399:A:N3	1:1:400:C:N3	2.69	0.41
1:1:2370:G:N2	1:1:2372:G:C8	2.89	0.41
1:1:3175:A:C5'	1:1:3176:A:OP2	2.68	0.41
1:1:3175:A:C2	1:1:3177:G:C5	3.09	0.41
1:1:3036:U:O4	1:1:3037:A:N6	2.54	0.41
1:1:3037:A:C2	1:1:3079:U:N3	2.89	0.41
1:1:788:C:C4	1:1:790:C:C6	3.09	0.41
1:1:148:G:O2'	1:1:149:U:O5'	2.39	0.41
1:1:2558:U:C5	1:1:2559:U:C4	3.09	0.41
1:1:1068:U:O5'	1:1:1068:U:C6	2.74	0.41
1:1:1090:A:C4'	1:1:1091:G:O5'	2.68	0.41
1:1:1432:G:N2	1:1:1433:A:C2	2.89	0.41
1:1:1373:G:C5	1:1:1374:C:C5	3.08	0.41
1:1:2727:A:O4'	17:T:37:PRO:CD	2.68	0.41
1:1:2432:G:C6	1:1:2506:G:C5	3.09	0.41
1:1:2118:G:C6	1:1:2327:A:C2	3.09	0.41
19:X:15:GLN:NE2	19:X:115:GLY:CA	2.84	0.41
1:1:159:G:C4	1:1:160:G:C8	3.09	0.41
1:1:1531:C:C4	1:1:1532:A:N7	2.88	0.41
19:X:144:GLU:O	19:X:147:ASP:N	2.53	0.41
9:J:111:ASN:C	9:J:111:ASN:OD1	2.59	0.41
7:G:71:VAL:CG1	7:G:71:VAL:O	2.68	0.41
1:1:187:A:C4	1:1:211:A:C6	3.09	0.41
1:1:357:G:N2	1:1:360:A:OP2	2.54	0.41
1:1:155:A:N3	1:1:265:A:N1	2.68	0.41
1:1:1481:U:C5	1:1:3067:A:C2	3.09	0.41
1:1:3068:U:O2'	1:1:3070:C:OP2	2.39	0.41
1:1:467:A:N1	1:1:468:A:C4	2.89	0.41
8:H:54:LYS:CA	8:H:110:PRO:CG	2.99	0.41
1:1:2309:U:C5'	1:1:2310:G:OP2	2.69	0.41
1:1:3102:A:C2	1:1:3111:A:C8	3.09	0.41
1:1:2576:C:C6	1:1:2576:C:C4'	3.04	0.41
1:1:1245:U:N3	1:1:1314:A:C2	2.89	0.41
1:1:2563:U:C2	1:1:2564:G:C8	3.09	0.41
1:1:116:U:C6	1:1:117:G:N7	2.89	0.41
1:1:864:C:N3	1:1:865:C:C5	2.89	0.41
1:1:56:G:N2	1:1:58:A:N3	2.69	0.41
9:J:192:VAL:O	9:J:195:ALA:N	2.54	0.41

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:856:G:O2'	1:1:1888:A:N3	2.54	0.41
1:1:1731:G:N2	11:L:54:ASN:ND2	2.69	0.41
1:1:2862:G:O2'	1:1:2863:U:C5	2.74	0.40
1:1:583:G:C4	1:1:585:A:OP2	2.74	0.40
1:1:585:A:N6	1:1:586:A:C6	2.90	0.40
2:A:21:ARG:CZ	2:A:44:MET:CE	2.99	0.40
1:1:20:G:C4	1:1:21:A:C8	3.09	0.40
18:U:74:THR:O	18:U:77:GLU:N	2.53	0.40
1:1:559:G:C6	1:1:609:A:C6	3.10	0.40
1:1:1017:U:C2'	1:1:1018:A:O5'	2.69	0.40
1:1:1380:C:O2	14:O:36:THR:OG1	2.38	0.40
1:1:3308:A:C2	1:1:3309:U:N3	2.89	0.40
1:1:573:A:C6	1:1:596:A:N7	2.88	0.40
1:1:307:A:C2	1:1:2770:U:O2	2.74	0.40
18:U:50:GLU:O	18:U:150:LEU:CD1	2.69	0.40
5:E:78:GLY:O	5:E:79:PRO:C	2.56	0.40
18:U:183:GLN:O	18:U:187:ASN:ND2	2.54	0.40
1:1:3153:U:C5'	1:1:3154:A:OP2	2.70	0.40
1:1:2242:G:C6	1:1:2243:C:C4	3.08	0.40
1:1:567:C:C4	1:1:603:A:N1	2.89	0.40
1:1:675:G:O2'	1:1:1461:A:OP1	2.39	0.40
1:1:654:U:O2'	8:H:98:GLN:NE2	2.54	0.40
1:1:1038:G:C2	1:1:1039:G:C4	3.09	0.40
1:1:1383:G:O2'	1:1:1384:G:OP2	2.39	0.40
1:1:1549:U:OP2	1:1:1629:U:O2'	2.39	0.40
1:1:80:C:C2'	1:1:81:C:O5'	2.69	0.40
1:1:532:G:C2'	1:1:533:G:C8	3.04	0.40
1:1:1658:G:OP2	13:N:107:LYS:NZ	2.54	0.40
1:1:1599:G:C2	1:1:1600:U:N1	2.89	0.40
1:1:832:A:N1	1:1:2406:U:O2'	2.53	0.40
1:1:1972:G:N2	1:1:1973:A:C8	2.90	0.40
1:1:362:G:C3'	1:1:363:G:C5'	2.99	0.40
1:1:2850:U:O2	1:1:2850:U:C2'	2.70	0.40
1:1:2324:A:C6	1:1:2325:C:C4	3.10	0.40
1:1:3308:A:C5	1:1:3309:U:C4	3.10	0.40
1:1:26:C:C2'	1:1:27:C:C5'	2.99	0.40
13:N:23:ALA:CB	13:N:43:VAL:CG1	2.99	0.40
12:M:51:ASN:ND2	12:M:51:ASN:C	2.72	0.40
1:1:792:G:C2	1:1:793:A:C4	3.09	0.40
1:1:1061:G:C2	1:1:1062:A:N9	2.90	0.40
1:1:987:A:N1	1:1:2802:G:O2'	2.54	0.40
1:1:1215:U:C2	1:1:1344:A:N6	2.89	0.40

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Atom-1	Atom-2	Distance(Å)	Clash(Å)
1:1:1540:U:C5	1:1:1865:A:O2'	2.74	0.40
1:1:1638:A:OP1	15:P:50:LEU:N	2.54	0.40
5:E:7:GLY:C	5:E:9:ASN:N	2.74	0.40
9:J:32:GLU:OE1	9:J:32:GLU:CA	2.70	0.40
1:1:632:G:C6	1:1:633:C:C4	3.09	0.40
5:E:114:ASP:O	5:E:116:TYR:N	2.55	0.40
1:1:624:G:C4	1:1:625:C:C5	3.09	0.40
1:1:2187:C:C2'	1:1:2188:U:C5'	3.00	0.40
7:G:40:LYS:O	7:G:65:ILE:CG2	2.69	0.40
1:1:805:A:C5'	1:1:806:G:OP2	2.69	0.40
1:1:3177:G:C8	1:1:3177:G:OP1	2.75	0.40
5:E:173:TYR:CD2	6:F:106:PHE:CD1	3.10	0.40
1:1:2278:G:C2'	1:1:2279:C:OP2	2.69	0.40
1:1:2385:A:O4'	1:1:3267:A:C6	2.75	0.40
1:1:218:G:OP1	1:1:218:G:C8	2.74	0.40
1:1:1107:A:C5	1:1:1108:A:C5	3.09	0.40
1:1:984:C:O2	1:1:2603:G:O2'	2.39	0.40
1:1:135:A:C4'	1:1:136:C:OP2	2.70	0.40
1:1:1847:A:C4	1:1:1848:C:C5	3.09	0.40
9:J:77:ASN:OD1	9:J:78:ASP:N	2.55	0.40
1:1:2178:A:C2'	1:1:2179:U:O5'	2.70	0.40
13:N:114:LEU:O	13:N:118:PHE:CD1	2.75	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone ⓘ

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution. The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	A	89/94 (95%)	85 (96%)	4 (4%)	0	100	100
3	B	49/52 (94%)	46 (94%)	3 (6%)	0	100	100
4	C	101/109 (93%)	99 (98%)	2 (2%)	0	100	100
5	E	188/191 (98%)	178 (95%)	9 (5%)	1 (0%)	38	87
6	F	123/126 (98%)	115 (94%)	8 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
7	G	94/104 (90%)	90 (96%)	4 (4%)	0	100	100
8	H	105/113 (93%)	100 (95%)	5 (5%)	0	100	100
9	J	224/248 (90%)	211 (94%)	11 (5%)	2 (1%)	25	80
10	K	50/129 (39%)	43 (86%)	7 (14%)	0	100	100
11	L	106/123 (86%)	98 (92%)	8 (8%)	0	100	100
12	M	98/118 (83%)	92 (94%)	5 (5%)	1 (1%)	22	78
13	N	141/144 (98%)	133 (94%)	7 (5%)	1 (1%)	30	83
14	O	132/134 (98%)	125 (95%)	7 (5%)	0	100	100
15	P	62/89 (70%)	58 (94%)	4 (6%)	0	100	100
16	Q	100/104 (96%)	89 (89%)	9 (9%)	2 (2%)	11	63
17	T	63/66 (96%)	59 (94%)	3 (5%)	1 (2%)	14	68
18	U	201/206 (98%)	188 (94%)	12 (6%)	1 (0%)	38	87
19	X	186/189 (98%)	177 (95%)	8 (4%)	1 (0%)	38	87
All	All	2112/2339 (90%)	1986 (94%)	116 (6%)	10 (0%)	38	87

All (10) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
16	Q	7	VAL
5	E	86	PRO
17	T	10	LYS
9	J	13	ILE
16	Q	13	PHE
18	U	135	LEU
19	X	81	LYS
13	N	30	GLU
9	J	193	ILE
12	M	53	GLY

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 X-ray entries followed by that with respect to entries of similar resolution. The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	A	69/72 (96%)	58 (84%)	11 (16%)	4	22
3	B	48/49 (98%)	44 (92%)	4 (8%)	16	59
4	C	95/101 (94%)	92 (97%)	3 (3%)	51	89
5	E	162/163 (99%)	152 (94%)	10 (6%)	26	73
6	F	111/112 (99%)	107 (96%)	4 (4%)	47	87
7	G	80/88 (91%)	76 (95%)	4 (5%)	34	80
8	H	87/92 (95%)	78 (90%)	9 (10%)	10	47
9	J	195/216 (90%)	177 (91%)	18 (9%)	13	54
10	K	46/113 (41%)	43 (94%)	3 (6%)	24	72
11	L	92/107 (86%)	87 (95%)	5 (5%)	31	78
12	M	93/110 (84%)	90 (97%)	3 (3%)	51	89
13	N	130/131 (99%)	123 (95%)	7 (5%)	31	78
14	O	108/108 (100%)	102 (94%)	6 (6%)	30	77
15	P	60/77 (78%)	56 (93%)	4 (7%)	23	70
16	Q	81/83 (98%)	75 (93%)	6 (7%)	20	66
17	T	61/62 (98%)	55 (90%)	6 (10%)	12	49
18	U	169/171 (99%)	159 (94%)	10 (6%)	28	75
19	X	167/168 (99%)	153 (92%)	14 (8%)	16	59
All	All	1854/2023 (92%)	1727 (93%)	127 (7%)	22	69

All (127) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A	19	CYS
2	A	24	LYS
2	A	26	THR
2	A	29	LYS
2	A	34	CYS
2	A	43	LYS
2	A	44	MET
2	A	46	ARG
2	A	55	ARG
2	A	62	THR
2	A	73	ARG
3	B	4	ASN
3	B	32	ASP
3	B	41	ARG

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Mol	Chain	Res	Type
3	B	45	ARG
4	C	27	LYS
4	C	58	LYS
4	C	95	THR
5	E	23	ASP
5	E	28	PHE
5	E	57	ARG
5	E	59	ARG
5	E	90	VAL
5	E	95	THR
5	E	97	SER
5	E	107	VAL
5	E	115	ASP
5	E	117	PHE
6	F	8	GLN
6	F	39	ASP
6	F	53	VAL
6	F	82	THR
7	G	24	THR
7	G	29	SER
7	G	66	SER
7	G	86	ARG
8	H	13	ARG
8	H	20	PHE
8	H	21	THR
8	H	30	GLN
8	H	32	SER
8	H	38	LYS
8	H	44	THR
8	H	47	ASP
8	H	91	PHE
9	J	1	MET
9	J	5	CYS
9	J	36	SER
9	J	42	LEU
9	J	57	ARG
9	J	62	VAL
9	J	67	LYS
9	J	88	LEU
9	J	95	ARG
9	J	123	ARG
9	J	139	ARG

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Mol	Chain	Res	Type
9	J	144	ASN
9	J	145	ASN
9	J	146	VAL
9	J	152	CYS
9	J	157	ARG
9	J	198	VAL
9	J	206	CYS
10	K	85	LEU
10	K	115	CYS
10	K	122	ARG
11	L	4	ARG
11	L	12	SER
11	L	21	ARG
11	L	61	PRO
11	L	73	THR
12	M	51	ASN
12	M	77	TYR
12	M	105	TYR
13	N	4	PHE
13	N	33	THR
13	N	36	ARG
13	N	49	SER
13	N	77	LEU
13	N	84	ARG
13	N	143	ARG
14	O	13	ASN
14	O	19	ASN
14	O	36	THR
14	O	46	HIS
14	O	63	ARG
14	O	76	ILE
15	P	4	GLU
15	P	6	THR
15	P	43	LYS
15	P	55	THR
16	Q	15	THR
16	Q	16	THR
16	Q	31	LYS
16	Q	37	ARG
16	Q	68	LYS
16	Q	101	GLN
17	T	3	LYS

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Mol	Chain	Res	Type
17	T	7	SER
17	T	18	ARG
17	T	23	LYS
17	T	42	ASN
17	T	55	LYS
18	U	17	GLN
18	U	22	THR
18	U	46	PRO
18	U	47	ARG
18	U	74	THR
18	U	98	ARG
18	U	102	ARG
18	U	161	LYS
18	U	166	VAL
18	U	174	LYS
19	X	18	VAL
19	X	19	ARG
19	X	24	SER
19	X	41	MET
19	X	42	ARG
19	X	46	ARG
19	X	85	THR
19	X	87	LYS
19	X	109	ARG
19	X	124	MET
19	X	132	PRO
19	X	173	SER
19	X	180	VAL
19	X	189	PHE

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3114/3354 (92%)	1118 (35%)	209 (6%)

All (1118) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	9	G
1	1	16	G
1	1	17	C
1	1	19	A
1	1	20	G
1	1	24	A
1	1	27	C
1	1	32	A
1	1	36	U
1	1	38	A
1	1	41	A
1	1	43	A
1	1	47	G
1	1	48	U
1	1	57	G
1	1	58	A
1	1	63	A
1	1	64	A
1	1	66	C
1	1	67	U
1	1	69	A
1	1	70	C
1	1	71	U
1	1	72	A
1	1	74	G
1	1	75	A
1	1	81	C
1	1	83	A
1	1	84	G
1	1	87	A
1	1	89	G
1	1	90	G
1	1	92	G
1	1	93	A
1	1	95	U
1	1	97	A
1	1	107	A
1	1	108	G
1	1	112	A
1	1	114	A
1	1	115	G
1	1	116	U
1	1	118	A

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Mol	Chain	Res	Type
1	1	119	A
1	1	120	A
1	1	121	A
1	1	122	U
1	1	127	A
1	1	128	G
1	1	130	G
1	1	133	C
1	1	134	A
1	1	135	A
1	1	136	C
1	1	137	A
1	1	138	C
1	1	139	A
1	1	143	G
1	1	147	U
1	1	148	G
1	1	149	U
1	1	152	U
1	1	156	A
1	1	157	A
1	1	162	C
1	1	166	C
1	1	169	A
1	1	174	A
1	1	176	G
1	1	177	C
1	1	182	C
1	1	188	A
1	1	189	G
1	1	190	U
1	1	191	U
1	1	193	C
1	1	196	G
1	1	201	A
1	1	203	G
1	1	205	C
1	1	207	U
1	1	211	A
1	1	215	G
1	1	217	U
1	1	218	G

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Mol	Chain	Res	Type
1	1	219	A
1	1	220	C
1	1	221	A
1	1	223	C
1	1	224	C
1	1	227	G
1	1	231	U
1	1	232	C
1	1	233	G
1	1	240	A
1	1	241	A
1	1	242	G
1	1	243	G
1	1	250	U
1	1	252	A
1	1	254	G
1	1	255	G
1	1	258	A
1	1	261	U
1	1	262	C
1	1	264	A
1	1	265	A
1	1	268	G
1	1	271	G
1	1	281	G
1	1	282	G
1	1	283	A
1	1	284	U
1	1	289	G
1	1	292	C
1	1	293	U
1	1	294	A
1	1	297	U
1	1	299	G
1	1	300	G
1	1	304	U
1	1	305	A
1	1	307	A
1	1	315	U
1	1	328	A
1	1	329	C
1	1	332	G

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Mol	Chain	Res	Type
1	1	333	G
1	1	334	G
1	1	335	A
1	1	337	A
1	1	338	C
1	1	339	C
1	1	340	G
1	1	341	A
1	1	351	A
1	1	352	G
1	1	361	A
1	1	362	G
1	1	363	G
1	1	368	A
1	1	369	U
1	1	370	G
1	1	373	A
1	1	374	A
1	1	375	G
1	1	376	A
1	1	377	A
1	1	383	A
1	1	385	A
1	1	386	A
1	1	389	G
1	1	396	A
1	1	397	A
1	1	399	A
1	1	400	C
1	1	414	G
1	1	416	A
1	1	418	G
1	1	419	A
1	1	432	G
1	1	433	C
1	1	434	A
1	1	435	A
1	1	438	A
1	1	439	A
1	1	440	C
1	1	442	G
1	1	448	C

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Mol	Chain	Res	Type
1	1	449	G
1	1	450	C
1	1	451	A
1	1	453	A
1	1	460	A
1	1	461	A
1	1	465	C
1	1	466	U
1	1	467	A
1	1	469	U
1	1	470	C
1	1	471	A
1	1	472	C
1	1	486	C
1	1	487	G
1	1	489	A
1	1	490	A
1	1	492	A
1	1	498	A
1	1	499	U
1	1	501	A
1	1	502	G
1	1	503	U
1	1	505	A
1	1	507	G
1	1	516	C
1	1	517	A
1	1	518	G
1	1	519	A
1	1	521	C
1	1	523	U
1	1	525	C
1	1	526	U
1	1	527	A
1	1	528	C
1	1	532	G
1	1	533	G
1	1	539	A
1	1	541	A
1	1	543	A
1	1	552	U
1	1	556	A

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Mol	Chain	Res	Type
1	1	562	G
1	1	564	A
1	1	565	G
1	1	566	U
1	1	567	C
1	1	568	A
1	1	572	G
1	1	576	U
1	1	578	G
1	1	579	G
1	1	580	G
1	1	582	A
1	1	584	C
1	1	586	A
1	1	587	U
1	1	591	G
1	1	592	A
1	1	595	A
1	1	599	G
1	1	600	G
1	1	611	A
1	1	612	C
1	1	614	G
1	1	615	G
1	1	618	U
1	1	620	A
1	1	622	G
1	1	623	G
1	1	625	C
1	1	626	C
1	1	627	U
1	1	628	A
1	1	629	A
1	1	631	G
1	1	634	G
1	1	635	A
1	1	636	U
1	1	643	A
1	1	644	A
1	1	645	A
1	1	646	A
1	1	660	C

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Mol	Chain	Res	Type
1	1	661	C
1	1	662	C
1	1	663	G
1	1	666	U
1	1	673	A
1	1	684	A
1	1	685	G
1	1	686	U
1	1	697	A
1	1	701	A
1	1	709	G
1	1	711	U
1	1	719	C
1	1	720	C
1	1	723	U
1	1	724	C
1	1	728	G
1	1	729	A
1	1	730	A
1	1	733	G
1	1	737	G
1	1	740	A
1	1	741	G
1	1	742	U
1	1	743	A
1	1	745	A
1	1	747	G
1	1	751	C
1	1	753	A
1	1	757	C
1	1	761	A
1	1	767	C
1	1	773	C
1	1	775	C
1	1	777	C
1	1	788	C
1	1	789	U
1	1	790	C
1	1	791	C
1	1	792	G
1	1	799	G
1	1	800	G

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Mol	Chain	Res	Type
1	1	801	U
1	1	803	C
1	1	805	A
1	1	806	G
1	1	807	G
1	1	810	G
1	1	811	A
1	1	821	U
1	1	825	G
1	1	827	C
1	1	831	A
1	1	833	A
1	1	840	G
1	1	842	A
1	1	847	G
1	1	855	A
1	1	861	A
1	1	862	A
1	1	863	G
1	1	869	G
1	1	870	G
1	1	872	A
1	1	873	A
1	1	881	G
1	1	883	A
1	1	886	C
1	1	894	G
1	1	896	U
1	1	898	C
1	1	899	U
1	1	904	U
1	1	905	G
1	1	908	A
1	1	919	A
1	1	921	A
1	1	922	U
1	1	930	U
1	1	932	G
1	1	933	G
1	1	934	G
1	1	935	G
1	1	939	A

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Mol	Chain	Res	Type
1	1	940	A
1	1	941	G
1	1	942	A
1	1	944	U
1	1	946	A
1	1	948	C
1	1	957	U
1	1	958	A
1	1	959	G
1	1	961	A
1	1	962	G
1	1	969	C
1	1	972	U
1	1	973	C
1	1	978	G
1	1	983	U
1	1	984	C
1	1	985	U
1	1	986	C
1	1	987	A
1	1	988	G
1	1	989	G
1	1	990	A
1	1	992	A
1	1	999	G
1	1	1003	G
1	1	1004	U
1	1	1005	A
1	1	1006	C
1	1	1007	G
1	1	1008	C
1	1	1012	U
1	1	1017	U
1	1	1018	A
1	1	1019	G
1	1	1020	G
1	1	1021	U
1	1	1027	G
1	1	1028	A
1	1	1031	G
1	1	1034	U
1	1	1035	A

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Mol	Chain	Res	Type
1	1	1036	G
1	1	1039	G
1	1	1040	A
1	1	1041	C
1	1	1042	U
1	1	1048	U
1	1	1052	A
1	1	1054	G
1	1	1058	C
1	1	1060	C
1	1	1061	G
1	1	1063	C
1	1	1066	A
1	1	1067	U
1	1	1072	A
1	1	1073	A
1	1	1074	A
1	1	1075	C
1	1	1083	U
1	1	1085	G
1	1	1087	A
1	1	1090	A
1	1	1091	G
1	1	1092	C
1	1	1095	C
1	1	1096	G
1	1	1097	G
1	1	1098	A
1	1	1099	G
1	1	1101	U
1	1	1102	U
1	1	1103	A
1	1	1104	C
1	1	1108	A
1	1	1109	A
1	1	1110	U
1	1	1111	G
1	1	1115	U
1	1	1116	C
1	1	1122	A
1	1	1123	A
1	1	1124	G

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Mol	Chain	Res	Type
1	1	1125	A
1	1	1129	C
1	1	1130	A
1	1	1131	G
1	1	1132	U
1	1	1135	U
1	1	1142	G
1	1	1144	G
1	1	1151	U
1	1	1155	U
1	1	1158	G
1	1	1159	C
1	1	1161	G
1	1	1166	G
1	1	1169	G
1	1	1170	A
1	1	1176	G
1	1	1178	U
1	1	1180	A
1	1	1181	A
1	1	1182	C
1	1	1184	U
1	1	1185	A
1	1	1186	A
1	1	1187	C
1	1	1198	G
1	1	1199	G
1	1	1202	C
1	1	1203	C
1	1	1204	C
1	1	1205	A
1	1	1206	A
1	1	1207	A
1	1	1208	U
1	1	1209	G
1	1	1212	C
1	1	1213	G
1	1	1216	C
1	1	1217	A
1	1	1218	U
1	1	1219	C
1	1	1220	A

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Mol	Chain	Res	Type
1	1	1224	A
1	1	1226	C
1	1	1227	A
1	1	1228	C
1	1	1233	G
1	1	1234	G
1	1	1235	U
1	1	1236	G
1	1	1243	C
1	1	1244	A
1	1	1245	U
1	1	1246	A
1	1	1248	G
1	1	1249	G
1	1	1250	A
1	1	1255	A
1	1	1257	G
1	1	1309	G
1	1	1313	A
1	1	1314	A
1	1	1316	G
1	1	1319	C
1	1	1334	G
1	1	1335	A
1	1	1336	U
1	1	1339	C
1	1	1340	G
1	1	1343	G
1	1	1344	A
1	1	1351	U
1	1	1353	G
1	1	1356	G
1	1	1357	A
1	1	1358	U
1	1	1361	U
1	1	1363	A
1	1	1371	G
1	1	1374	C
1	1	1375	A
1	1	1376	A
1	1	1377	A
1	1	1378	U

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Mol	Chain	Res	Type
1	1	1380	C
1	1	1381	G
1	1	1382	A
1	1	1383	G
1	1	1384	G
1	1	1387	U
1	1	1392	G
1	1	1395	U
1	1	1399	A
1	1	1400	G
1	1	1401	G
1	1	1403	C
1	1	1405	U
1	1	1406	G
1	1	1410	G
1	1	1413	G
1	1	1416	U
1	1	1424	U
1	1	1425	U
1	1	1426	G
1	1	1430	G
1	1	1431	U
1	1	1434	G
1	1	1435	C
1	1	1437	U
1	1	1445	G
1	1	1446	C
1	1	1456	U
1	1	1460	G
1	1	1461	A
1	1	1463	C
1	1	1468	U
1	1	1469	G
1	1	1472	A
1	1	1478	A
1	1	1479	A
1	1	1481	U
1	1	1482	A
1	1	1494	A
1	1	1495	C
1	1	1496	U
1	1	1507	A

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Mol	Chain	Res	Type
1	1	1508	A
1	1	1509	G
1	1	1521	U
1	1	1528	G
1	1	1533	G
1	1	1534	C
1	1	1537	U
1	1	1538	U
1	1	1539	G
1	1	1540	U
1	1	1545	G
1	1	1547	G
1	1	1548	U
1	1	1549	U
1	1	1551	C
1	1	1552	U
1	1	1562	G
1	1	1575	U
1	1	1578	U
1	1	1581	C
1	1	1582	A
1	1	1583	A
1	1	1584	U
1	1	1585	A
1	1	1587	A
1	1	1588	A
1	1	1589	G
1	1	1595	A
1	1	1596	U
1	1	1597	U
1	1	1599	G
1	1	1600	U
1	1	1605	G
1	1	1606	U
1	1	1608	G
1	1	1609	U
1	1	1613	A
1	1	1614	A
1	1	1618	A
1	1	1621	G
1	1	1625	U
1	1	1629	U

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Mol	Chain	Res	Type
1	1	1630	A
1	1	1631	U
1	1	1632	U
1	1	1633	C
1	1	1638	A
1	1	1639	G
1	1	1643	G
1	1	1644	A
1	1	1645	C
1	1	1649	G
1	1	1650	U
1	1	1651	A
1	1	1652	U
1	1	1654	G
1	1	1655	A
1	1	1656	G
1	1	1662	A
1	1	1663	C
1	1	1666	A
1	1	1668	A
1	1	1676	G
1	1	1681	C
1	1	1682	G
1	1	1686	G
1	1	1698	G
1	1	1707	A
1	1	1714	C
1	1	1715	U
1	1	1716	U
1	1	1717	U
1	1	1726	C
1	1	1729	U
1	1	1737	A
1	1	1738	A
1	1	1739	A
1	1	1740	U
1	1	1741	U
1	1	1742	G
1	1	1748	U
1	1	1753	A
1	1	1754	G
1	1	1759	C

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Mol	Chain	Res	Type
1	1	1760	G
1	1	1766	A
1	1	1767	U
1	1	1768	G
1	1	1775	A
1	1	1776	G
1	1	1777	A
1	1	1783	U
1	1	1793	A
1	1	1798	U
1	1	1805	C
1	1	1806	G
1	1	1807	C
1	1	1819	C
1	1	1820	U
1	1	1821	U
1	1	1823	A
1	1	1834	G
1	1	1839	A
1	1	1840	U
1	1	1841	A
1	1	1845	U
1	1	1846	C
1	1	1852	A
1	1	1861	C
1	1	1863	A
1	1	1865	A
1	1	1866	A
1	1	1869	G
1	1	1870	C
1	1	1873	C
1	1	1874	A
1	1	1882	A
1	1	1885	G
1	1	1886	U
1	1	1890	C
1	1	1895	U
1	1	1902	C
1	1	1903	A
1	1	1904	U
1	1	1905	A
1	1	1908	A

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Mol	Chain	Res	Type
1	1	1909	C
1	1	1910	A
1	1	1917	A
1	1	1919	A
1	1	1923	G
1	1	1924	A
1	1	1925	A
1	1	1929	G
1	1	1930	G
1	1	1937	G
1	1	1938	G
1	1	1942	C
1	1	1943	G
1	1	1950	C
1	1	1951	G
1	1	1952	G
1	1	1955	U
1	1	1956	A
1	1	1957	A
1	1	1958	G
1	1	2101	G
1	1	2102	A
1	1	2106	G
1	1	2107	A
1	1	2108	A
1	1	2109	G
1	1	2110	C
1	1	2111	G
1	1	2117	A
1	1	2118	G
1	1	2119	G
1	1	2127	A
1	1	2130	G
1	1	2133	U
1	1	2134	A
1	1	2136	U
1	1	2146	G
1	1	2147	C
1	1	2150	U
1	1	2154	A
1	1	2156	G
1	1	2157	G

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Mol	Chain	Res	Type
1	1	2159	C
1	1	2162	A
1	1	2165	A
1	1	2178	A
1	1	2183	A
1	1	2189	G
1	1	2190	C
1	1	2191	C
1	1	2196	G
1	1	2199	C
1	1	2200	U
1	1	2202	A
1	1	2216	G
1	1	2217	C
1	1	2218	A
1	1	2220	U
1	1	2223	A
1	1	2239	A
1	1	2240	C
1	1	2241	G
1	1	2244	G
1	1	2249	U
1	1	2251	A
1	1	2252	C
1	1	2254	A
1	1	2255	U
1	1	2265	A
1	1	2268	G
1	1	2271	G
1	1	2273	C
1	1	2275	A
1	1	2276	A
1	1	2277	U
1	1	2278	G
1	1	2279	C
1	1	2280	C
1	1	2281	U
1	1	2283	G
1	1	2286	A
1	1	2292	U
1	1	2293	U
1	1	2298	A

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Mol	Chain	Res	Type
1	1	2301	C
1	1	2302	G
1	1	2303	C
1	1	2304	A
1	1	2305	U
1	1	2308	A
1	1	2309	U
1	1	2310	G
1	1	2317	U
1	1	2321	A
1	1	2324	A
1	1	2329	U
1	1	2330	G
1	1	2331	U
1	1	2335	U
1	1	2342	U
1	1	2343	A
1	1	2344	U
1	1	2353	C
1	1	2356	A
1	1	2357	C
1	1	2358	A
1	1	2361	U
1	1	2366	G
1	1	2367	A
1	1	2368	A
1	1	2369	C
1	1	2370	G
1	1	2372	G
1	1	2378	A
1	1	2379	A
1	1	2380	U
1	1	2383	U
1	1	2386	G
1	1	2388	G
1	1	2389	G
1	1	2391	G
1	1	2392	A
1	1	2393	A
1	1	2394	A
1	1	2396	A
1	1	2397	A

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Mol	Chain	Res	Type
1	1	2398	G
1	1	2399	A
1	1	2400	C
1	1	2406	U
1	1	2407	G
1	1	2410	C
1	1	2412	U
1	1	2413	G
1	1	2414	A
1	1	2416	U
1	1	2417	C
1	1	2421	U
1	1	2430	G
1	1	2509	U
1	1	2510	A
1	1	2515	G
1	1	2517	G
1	1	2518	A
1	1	2519	A
1	1	2520	G
1	1	2521	A
1	1	2524	A
1	1	2532	G
1	1	2541	U
1	1	2542	U
1	1	2543	C
1	1	2545	A
1	1	2546	A
1	1	2548	G
1	1	2549	U
1	1	2550	U
1	1	2551	A
1	1	2552	A
1	1	2554	G
1	1	2560	U
1	1	2562	U
1	1	2563	U
1	1	2566	C
1	1	2569	A
1	1	2570	U
1	1	2574	U
1	1	2575	G

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Mol	Chain	Res	Type
1	1	2576	C
1	1	2577	G
1	1	2578	A
1	1	2580	A
1	1	2582	A
1	1	2583	C
1	1	2595	G
1	1	2603	G
1	1	2614	A
1	1	2615	A
1	1	2616	U
1	1	2617	G
1	1	2618	C
1	1	2622	U
1	1	2625	A
1	1	2626	A
1	1	2627	C
1	1	2633	C
1	1	2634	G
1	1	2635	C
1	1	2637	G
1	1	2638	G
1	1	2639	C
1	1	2640	G
1	1	2641	U
1	1	2642	C
1	1	2644	U
1	1	2645	A
1	1	2646	A
1	1	2647	G
1	1	2655	C
1	1	2666	G
1	1	2667	A
1	1	2670	U
1	1	2672	U
1	1	2678	A
1	1	2679	G
1	1	2680	A
1	1	2683	A
1	1	2684	A
1	1	2685	A
1	1	2693	A

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Mol	Chain	Res	Type
1	1	2702	U
1	1	2703	G
1	1	2704	A
1	1	2705	U
1	1	2706	U
1	1	2707	U
1	1	2708	U
1	1	2717	G
1	1	2718	U
1	1	2721	G
1	1	2726	C
1	1	2727	A
1	1	2728	A
1	1	2729	A
1	1	2735	A
1	1	2741	U
1	1	2742	G
1	1	2743	G
1	1	2744	C
1	1	2749	C
1	1	2751	A
1	1	2761	U
1	1	2762	U
1	1	2765	C
1	1	2766	A
1	1	2767	A
1	1	2768	G
1	1	2772	U
1	1	2774	A
1	1	2775	G
1	1	2779	G
1	1	2784	G
1	1	2787	A
1	1	2788	G
1	1	2789	A
1	1	2790	A
1	1	2791	A
1	1	2798	C
1	1	2802	G
1	1	2804	G
1	1	2805	A
1	1	2806	U

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Mol	Chain	Res	Type
1	1	2815	U
1	1	2816	G
1	1	2817	U
1	1	2821	A
1	1	2822	G
1	1	2827	G
1	1	2829	G
1	1	2830	U
1	1	2831	U
1	1	2833	A
1	1	2847	U
1	1	2848	U
1	1	2849	U
1	1	2855	C
1	1	2857	U
1	1	2858	C
1	1	2859	G
1	1	2860	A
1	1	2863	U
1	1	2875	A
1	1	2876	U
1	1	2887	C
1	1	2899	C
1	1	2900	G
1	1	2902	G
1	1	2907	A
1	1	2911	U
1	1	2912	U
1	1	2913	C
1	1	2916	C
1	1	2918	G
1	1	2923	U
1	1	2924	A
1	1	2925	G
1	1	2930	C
1	1	2932	U
1	1	2933	G
1	1	2934	A
1	1	2935	G
1	1	2936	C
1	1	2947	C
1	1	2955	A

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Mol	Chain	Res	Type
1	1	2956	G
1	1	2958	C
1	1	2959	A
1	1	2960	G
1	1	2961	G
1	1	2962	U
1	1	2965	G
1	1	2967	U
1	1	2971	C
1	1	2972	C
1	1	2978	G
1	1	2985	C
1	1	2986	G
1	1	2995	A
1	1	2996	C
1	1	2999	U
1	1	3000	A
1	1	3001	A
1	1	3008	U
1	1	3011	G
1	1	3012	U
1	1	3019	G
1	1	3021	A
1	1	3028	A
1	1	3036	U
1	1	3041	G
1	1	3044	A
1	1	3045	A
1	1	3046	A
1	1	3047	U
1	1	3048	A
1	1	3063	G
1	1	3066	A
1	1	3068	U
1	1	3072	G
1	1	3080	A
1	1	3081	C
1	1	3087	G
1	1	3088	U
1	1	3104	G
1	1	3105	G
1	1	3106	C

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Mol	Chain	Res	Type
1	1	3107	C
1	1	3109	C
1	1	3110	U
1	1	3111	A
1	1	3112	A
1	1	3114	U
1	1	3115	C
1	1	3116	A
1	1	3118	A
1	1	3119	A
1	1	3120	U
1	1	3123	A
1	1	3125	G
1	1	3128	G
1	1	3129	G
1	1	3130	A
1	1	3131	A
1	1	3132	A
1	1	3133	G
1	1	3134	C
1	1	3138	G
1	1	3139	U
1	1	3143	A
1	1	3145	U
1	1	3146	G
1	1	3147	U
1	1	3151	G
1	1	3152	A
1	1	3154	A
1	1	3155	A
1	1	3156	A
1	1	3157	C
1	1	3158	G
1	1	3159	A
1	1	3160	A
1	1	3161	A
1	1	3162	A
1	1	3163	A
1	1	3167	U
1	1	3168	A
1	1	3169	A
1	1	3173	U

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Mol	Chain	Res	Type
1	1	3174	U
1	1	3175	A
1	1	3176	A
1	1	3177	G
1	1	3178	U
1	1	3179	U
1	1	3183	A
1	1	3184	A
1	1	3185	G
1	1	3186	G
1	1	3188	A
1	1	3191	G
1	1	3192	C
1	1	3193	G
1	1	3197	A
1	1	3201	G
1	1	3202	C
1	1	3205	A
1	1	3206	A
1	1	3207	A
1	1	3208	A
1	1	3215	C
1	1	3217	U
1	1	3219	A
1	1	3224	C
1	1	3226	A
1	1	3229	C
1	1	3230	G
1	1	3231	U
1	1	3232	A
1	1	3234	U
1	1	3235	U
1	1	3236	C
1	1	3237	C
1	1	3238	A
1	1	3241	U
1	1	3242	U
1	1	3247	U
1	1	3251	C
1	1	3252	G
1	1	3264	U
1	1	3265	A

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Mol	Chain	Res	Type
1	1	3267	A
1	1	3269	G
1	1	3270	A
1	1	3274	A
1	1	3276	C
1	1	3277	A
1	1	3278	U
1	1	3279	G
1	1	3292	U
1	1	3298	U
1	1	3299	G
1	1	3307	A
1	1	3311	U
1	1	3312	C
1	1	3324	U
1	1	3325	G
1	1	3326	A
1	1	3332	A
1	1	3333	G
1	1	3334	C
1	1	3338	U
1	1	3343	U
1	1	3344	U
1	1	3345	A
1	1	3352	U

All (209) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	19	A
1	1	40	C
1	1	46	A
1	1	47	G
1	1	71	U
1	1	74	G
1	1	83	A
1	1	107	A
1	1	113	A
1	1	115	G
1	1	117	G
1	1	118	A
1	1	119	A

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Mol	Chain	Res	Type
1	1	120	A
1	1	132	U
1	1	133	C
1	1	135	A
1	1	146	U
1	1	147	U
1	1	148	G
1	1	155	A
1	1	210	A
1	1	223	C
1	1	232	C
1	1	240	A
1	1	281	G
1	1	296	G
1	1	304	U
1	1	328	A
1	1	341	A
1	1	368	A
1	1	396	A
1	1	399	A
1	1	419	A
1	1	432	G
1	1	434	A
1	1	438	A
1	1	452	U
1	1	485	A
1	1	500	G
1	1	517	A
1	1	518	G
1	1	524	G
1	1	525	C
1	1	526	U
1	1	563	G
1	1	579	G
1	1	622	G
1	1	624	G
1	1	628	A
1	1	635	A
1	1	643	A
1	1	645	A
1	1	660	C
1	1	685	G

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Mol	Chain	Res	Type
1	1	723	U
1	1	740	A
1	1	742	U
1	1	766	G
1	1	789	U
1	1	790	C
1	1	791	C
1	1	800	G
1	1	805	A
1	1	882	G
1	1	898	C
1	1	904	U
1	1	921	A
1	1	986	C
1	1	1004	U
1	1	1027	G
1	1	1053	A
1	1	1090	A
1	1	1091	G
1	1	1108	A
1	1	1109	A
1	1	1122	A
1	1	1123	A
1	1	1131	G
1	1	1143	G
1	1	1181	A
1	1	1207	A
1	1	1216	C
1	1	1219	C
1	1	1226	C
1	1	1227	A
1	1	1248	G
1	1	1249	G
1	1	1313	A
1	1	1343	G
1	1	1375	A
1	1	1376	A
1	1	1380	C
1	1	1381	G
1	1	1382	A
1	1	1383	G
1	1	1394	G

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Mol	Chain	Res	Type
1	1	1425	U
1	1	1433	A
1	1	1481	U
1	1	1495	C
1	1	1508	A
1	1	1509	G
1	1	1580	G
1	1	1583	A
1	1	1584	U
1	1	1587	A
1	1	1596	U
1	1	1617	G
1	1	1654	G
1	1	1667	A
1	1	1737	A
1	1	1738	A
1	1	1740	U
1	1	1752	G
1	1	1758	U
1	1	1766	A
1	1	1767	U
1	1	1775	A
1	1	1776	G
1	1	1804	G
1	1	1819	C
1	1	1820	U
1	1	1839	A
1	1	1840	U
1	1	1845	U
1	1	1902	C
1	1	1909	C
1	1	1919	A
1	1	1922	G
1	1	1954	A
1	1	2106	G
1	1	2107	A
1	1	2133	U
1	1	2140	A
1	1	2188	U
1	1	2217	C
1	1	2265	A
1	1	2275	A

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Mol	Chain	Res	Type
1	1	2277	U
1	1	2278	G
1	1	2300	G
1	1	2301	C
1	1	2309	U
1	1	2367	A
1	1	2391	G
1	1	2413	G
1	1	2429	U
1	1	2508	U
1	1	2517	G
1	1	2518	A
1	1	2520	G
1	1	2540	G
1	1	2542	U
1	1	2545	A
1	1	2548	G
1	1	2550	U
1	1	2562	U
1	1	2569	A
1	1	2574	U
1	1	2575	G
1	1	2654	U
1	1	2666	G
1	1	2669	A
1	1	2716	A
1	1	2727	A
1	1	2741	U
1	1	2761	U
1	1	2765	C
1	1	2815	U
1	1	2838	G
1	1	2847	U
1	1	2886	G
1	1	2899	C
1	1	2933	G
1	1	2994	G
1	1	3011	G
1	1	3035	A
1	1	3044	A
1	1	3045	A
1	1	3047	U

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Mol	Chain	Res	Type
1	1	3079	U
1	1	3110	U
1	1	3153	U
1	1	3155	A
1	1	3157	C
1	1	3162	A
1	1	3167	U
1	1	3175	A
1	1	3176	A
1	1	3177	G
1	1	3182	A
1	1	3183	A
1	1	3191	G
1	1	3204	A
1	1	3205	A
1	1	3229	C
1	1	3230	G
1	1	3233	A
1	1	3236	C
1	1	3251	C
1	1	3263	G
1	1	3277	A
1	1	3278	U
1	1	3291	G
1	1	3298	U
1	1	3310	U
1	1	3332	A
1	1	3344	U

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

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

5.5 Carbohydrates ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 4 ligands modelled in this entry, 4 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.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

EDS was not executed - this section will therefore be empty.

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

EDS was not executed - this section will therefore be empty.

6.3 Carbohydrates ⓘ

EDS was not executed - this section will therefore be empty.

6.4 Ligands ⓘ

EDS was not executed - this section will therefore be empty.

6.5 Other polymers ⓘ

EDS was not executed - this section will therefore be empty.