



Full wwPDB EM Validation Report ⓘ

Mar 12, 2026 – 05:01 PM UTC

PDB ID : 7ZS5 / pdb_00007zs5
EMDB ID : EMD-14926
Title : Structure of 60S ribosomal subunit from *S. cerevisiae* with eIF6 and tRNA
Authors : Best, K.M.; Ikeuchi, K.; Kater, L.; Best, D.M.; Musial, J.; Matsuo, Y.; Berninghausen, O.; Becker, T.; Inada, T.; Beckmann, R.
Deposited on : 2022-05-06
Resolution : 3.20 Å (reported)
Based on initial models : 6SNT, 6HD7, 1G62

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

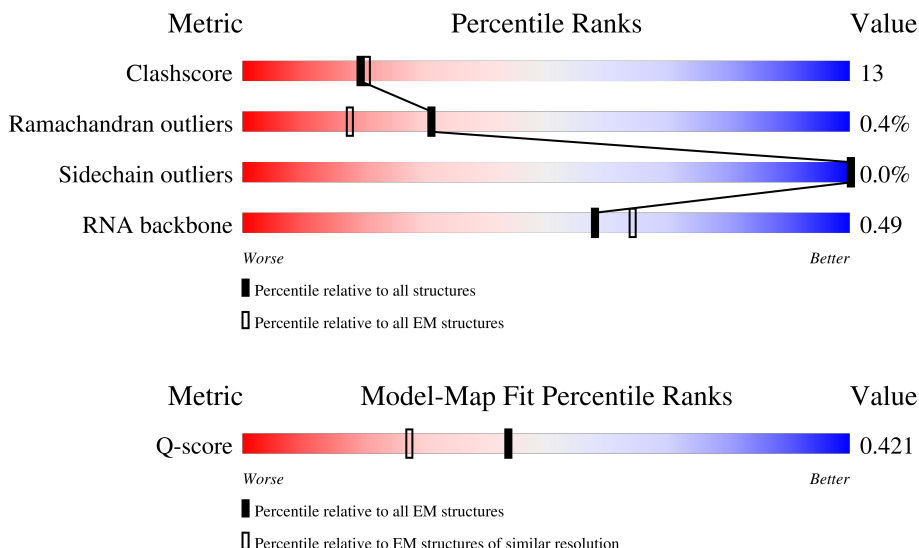
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	15020 (2.70 - 3.70)

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

Mol	Chain	Length	Quality of chain
1	1	3396	
2	3	121	
3	4	158	

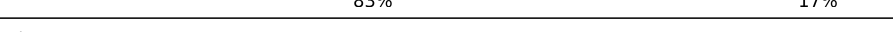
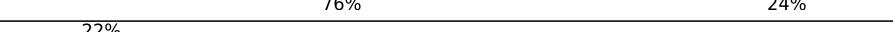
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Mol	Chain	Length	Quality of chain
4	A	224	
5	2	76	
6	BA	105	
7	BB	91	
8	BC	252	
9	BD	386	
10	BE	361	
11	BF	296	
12	BG	176	
13	BH	222	
14	BI	233	
15	BJ	191	
16	BL	169	
17	BM	193	
18	BN	136	
19	BO	203	
20	BP	197	
21	BQ	183	
22	BR	185	
23	BS	160	
24	BT	172	
25	BU	159	
26	BV	100	
27	BW	136	
28	BX	69	

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Mol	Chain	Length	Quality of chain
29	BY	121	 83% 17%
30	BZ	127	 77% 17% 6%
31	Ba	135	 71% 29%
32	Bb	148	 68% 31%
33	Bc	58	 64% 36%
34	Bd	97	 75% 25%
35	Be	109	 82% 18%
36	Bf	127	 82% 18%
37	Bg	106	 71% 29%
38	Bh	112	 5% 71% 29%
39	Bi	119	 76% 24%
40	Bj	99	 76% 23%
41	Bk	87	 67% 33%
42	Bl	77	 64% 36%
43	Bm	50	 66% 34%
44	Bn	52	 83% 17%
45	BK	220	 76% 24%
46	B	23	 22% 100%

2 Entry composition

There are 47 unique types of molecules in this entry. The entry contains 127849 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	1	3248	Total	C	N	O	P	0	0
			69452	31022	12494	22688	3248		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	3	121	Total	C	N	O	P	0	0
			2579	1152	461	845	121		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	4	158	Total	C	N	O	P	0	0
			3353	1500	586	1109	158		

- Molecule 4 is a protein called Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	A	224	Total	C	N	O	S	0	0
			1633	1019	279	328	7		

- Molecule 5 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	2	76	Total	C	N	O	P	0	0
			1619	722	288	533	76		

- Molecule 6 is a protein called 60S ribosomal protein L42-A.

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

- Molecule 7 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 8 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	BC	252	Total	C	N	O	S	0	0
			1914	1191	388	334	1		

- Molecule 9 is a protein called 60S ribosomal protein L3.

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

- Molecule 10 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 11 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	BF	296	Total	C	N	O	S	0	0
			2375	1501	414	458	2		

- Molecule 12 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	BG	156	Total	C	N	O	S	0	0
			1239	800	222	216	1		

- Molecule 13 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	BH	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

- Molecule 14 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	BI	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

- Molecule 15 is a protein called 60S ribosomal protein L9-A.

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

- Molecule 16 is a protein called 60S ribosomal protein L11-B.

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

- Molecule 17 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	BM	193	Total	C	N	O		0	0
			1543	962	315	266			

- Molecule 18 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	BN	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 19 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 20 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 21 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	BQ	183	Total	C	N	O	0	0
			1420	882	281	257		

- Molecule 22 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 23 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	BS	160	Total	C	N	O	0	0
			1286	797	269	220		

- Molecule 24 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	BT	172	Total	C	N	O	S	0	0
			1445	930	267	244	4		

- Molecule 25 is a protein called 60S ribosomal protein L21-A.

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

- Molecule 26 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	BV	100	Total	C	N	O	0	0
			796	516	131	149		

- Molecule 27 is a protein called 60S ribosomal protein L23-A.

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

- Molecule 28 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	BX	69	Total	C	N	O	S	0	0
			553	355	108	89	1		

- Molecule 29 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	BY	121	Total	C	N	O	S	0	0
			964	620	169	173	2		

- Molecule 30 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	BZ	120	Total	C	N	O		0	0
			939	591	179	169			

- Molecule 31 is a protein called 60S ribosomal protein L27-A.

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

- Molecule 32 is a protein called 60S ribosomal protein L28.

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

- Molecule 33 is a protein called 60S ribosomal protein L29.

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

- Molecule 34 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Bd	97	Total	C	N	O	S	0	0
			743	479	124	139	1		

- Molecule 35 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Be	109	Total	C	N	O	S	0	0
			876	556	167	152	1		

- Molecule 36 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Bf	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 37 is a protein called 60S ribosomal protein L33-A.

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

- Molecule 38 is a protein called 60S ribosomal protein L34-A.

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

- Molecule 39 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Bi	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 40 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Bj	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 41 is a protein called 60S ribosomal protein L37-A.

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

- Molecule 42 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
42	Bl	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 43 is a protein called 60S ribosomal protein L39.

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

- Molecule 44 is a protein called 60S ribosomal protein L40-A.

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

- Molecule 45 is a protein called 60S ribosomal protein L10.

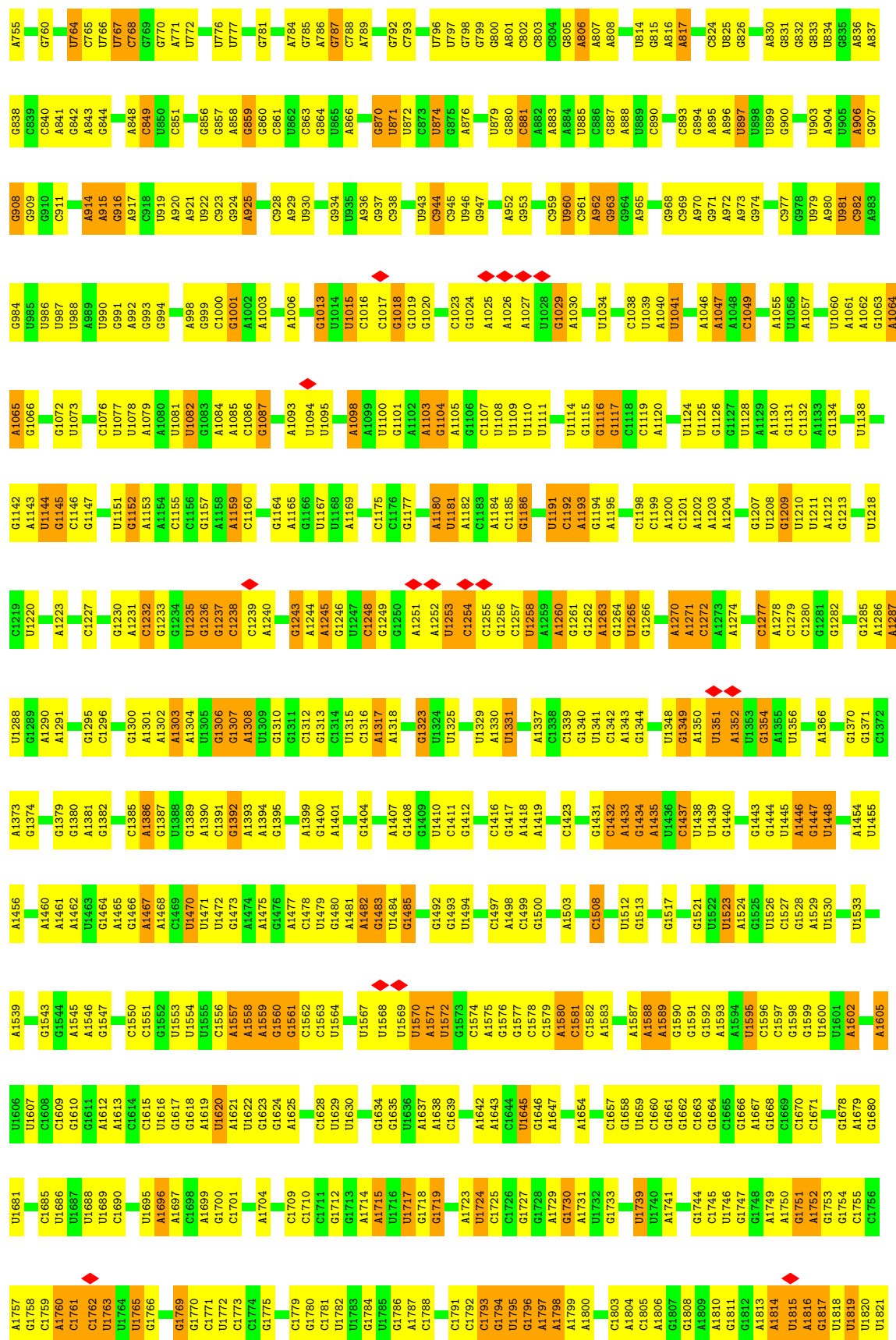
Mol	Chain	Residues	Atoms					AltConf	Trace
45	BK	220	Total	C	N	O	S	0	0
			1770	1121	335	307	7		

- Molecule 46 is a protein called Unknown chain.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	B	23	Total	C	N	O	0	0
			115	69	23	23		

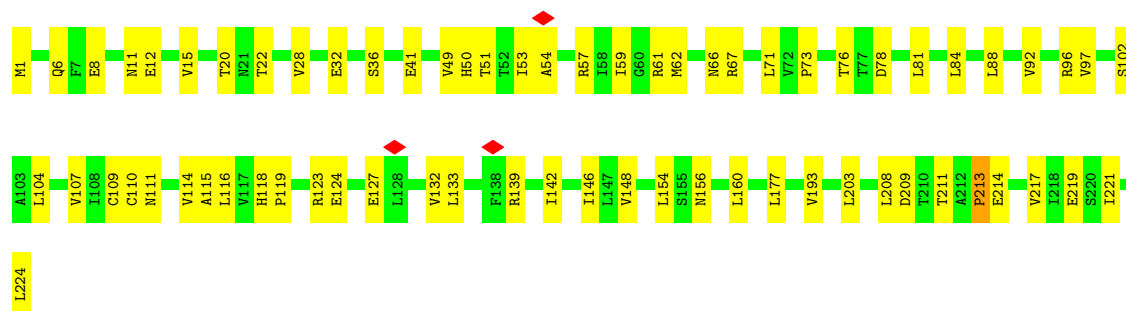
- Molecule 47 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
47	2	1	Total	Mg	0
			1	1	

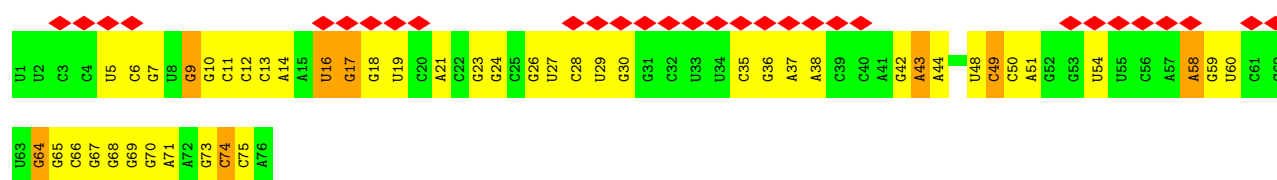


G2745	G2837	G2675	G2603	G2530	U	G2397	U2318	A2168	A2100	C	G	G1822
A2746	A2837	A2676	U2604	C2531	G	A2402	U2319	G2169	C2101	U2040	C	G1829
A2747	G2605	G2677	G2605	G2533	G	G2403	A2320	G2169	G2102	U2041	G	G1830
G2748	G2606	A2678	G2606	G2533	G	G2404	U2328	U2176	U2103	U2042	G	U1831
G2749	G2607	A2679	G2607	G2533	A	C2405	G2329	G2178	A2104	U2043	C	G1906
G2750	G2608	U2537	G2608	U2537	G	C2406	U2334	A2178	A2107	U2044	G	U1834
G2751	A2609	U2538	A2609	U2538	C	C2407	U2335	G2179	C2108	U2045	G	A1835
U2752	U2610	C2539	U2610	C2539	U	U2408	U2336	G2180	U2109	G2045	G	A1908
U2753	U2611	U2541	U2611	U2541	C	U2411	U2337	G2185	G2110	U2046	C	U1837
G2754	U2612	U2542	U2612	U2542	C	G2412	G2338	U2186	U2112	A2047	U	A1911
G2755	U2613	U2543	U2613	U2543	G	A2413	G2339	G2187	U2113	U2048	U	U1912
U2756	G2614	U2544	G2614	U2544	C	G2414	U2340	A2188	A2114	A2049	U	U1840
U2757	U2615	U2545	U2615	U2545	G	U2417	U2341	U2189	G2115	C2050	G	A1841
U2758	U2616	U2546	U2616	U2546	C	U2418	U2342	U2190	G2116	C2051	G	A1842
U2759	U2617	U2547	U2617	U2547	C	A2419	U2343	U2191	A2117	G1927	A	A1843
U2760	U2618	U2548	U2618	U2548	A	C2420	U2344	U2192	C2118	G1928	C	C1846
U2761	U2619	U2549	U2619	U2549	A	U2423	A2345	U2193	G2121	U1931	U	A1847
U2762	U2620	U2550	U2620	U2550	G	A2424	U2346	G2194	G2122	A1932	C	G1848
U2763	U2621	U2551	U2621	U2551	U	G2425	U2347	C2195	A2125	G2057	C	G1849
U2764	U2622	U2552	U2622	U2552	U	U2426	U2348	C2196	G2058	G2059	U	G1850
U2765	U2623	U2553	U2623	U2553	U	U2427	U2349	A2198	U2127	U1942	G	U1853
U2766	U2624	U2554	U2624	U2554	A	U2428	U2350	C2202	G2128	A	U	G1863
U2767	U2625	U2555	U2625	U2555	C	U2429	U2351	U2279	C2129	G	U	A1864
U2768	U2626	U2556	U2626	U2556	C	G2430	U2352	A2280	U2129	G	U	C1857
U2769	U2627	U2557	U2627	U2557	A	C2431	U2353	A2281	G2130	U2066	C	A1858
U2770	U2628	U2558	U2628	U2558	A	U2432	U2354	U2282	A2131	G2067	U	A1859
U2771	U2629	U2559	U2629	U2559	U	U2433	U2355	G2283	G2136	G2068	G	G1948
U2772	U2630	U2560	U2630	U2560	U	U2434	U2356	U2284	U2137	U2069	U	G1949
U2773	U2631	U2561	U2631	U2561	U	U2435	U2357	U2285	A2138	U	U	G1868
U2774	U2632	U2562	U2632	U2562	U	U2436	U2358	U2286	U2142	U1952	U	G1865
U2775	U2633	U2563	U2633	U2563	U	U2437	U2359	U2287	A2143	G1953	C	C1866
U2776	U2634	U2564	U2634	U2564	U	U2438	U2360	U2288	A2144	U1954	U	A1867
U2777	U2635	U2565	U2635	U2565	U	U2439	U2361	U2289	A2145	U1955	U	G1868
U2778	U2636	U2566	U2636	U2566	U	U2440	U2362	U2290	C2146	U1956	U	C1869
U2779	U2637	U2567	U2637	U2567	U	U2441	U2363	U2291	A2147	G1957	U	C1870
U2780	U2638	U2568	U2638	U2568	U	U2442	U2364	U2292	U2148	U1958	U	U1873
U2781	U2639	U2569	U2639	U2569	U	U2443	U2365	U2293	A2149	G1959	U	G1878
U2782	U2640	U2570	U2640	U2570	U	U2444	U2366	U2294	U2150	A1960	U	A1879
U2783	U2641	U2571	U2641	U2571	U	U2445	U2367	U2295	G2151	G1961	C	U1880
U2784	U2642	U2572	U2642	U2572	U	U2446	U2368	U2296	A2152	G1962	C	G1883
U2785	U2643	U2573	U2643	U2573	U	U2447	U2369	U2297	U2153	G1963	U	A1884
U2786	U2644	U2574	U2644	U2574	U	U2448	U2370	U2298	U2154	C1964	C	U1885
U2787	U2645	U2575	U2645	U2575	U	U2449	U2371	U2299	G2155	U1965	U	A1886
U2788	U2646	U2576	U2646	U2576	U	U2450	U2372	U2300	G2156	U1966	U	A1887
U2789	U2647	U2577	U2647	U2577	U	U2451	U2373	U2301	G2157	U1967	U	U1890
U2790	U2648	U2578	U2648	U2578	U	U2452	U2374	U2302	A2158	G1968	U	G1893
U2791	U2649	U2579	U2649	U2579	U	U2453	U2375	U2303	U2159	U1969	U	U1894
U2792	U2650	U2580	U2650	U2580	U	U2454	U2376	U2304	G2160	U1970	C	A1895
U2793	U2651	U2581	U2651	U2581	U	U2455	U2377	U2305	A2161	C1971	U	U1896
U2794	U2652	U2582	U2652	U2582	U	U2456	U2378	U2306	G2162	A1972	U	G1897
U2795	U2653	U2583	U2653	U2583	U	U2457	U2379	U2307	U2163	U1973	U	U1898
U2796	U2654	U2584	U2654	U2584	U	U2458	U2380	U2308	A2164	A1974	U	G1976
U2797	U2655	U2585	U2655	U2585	U	U2459	U2381	U2309	G2165	C1977	U	A
U2798	U2656	U2586	U2656	U2586	U	U2460	U2382	U2310	A2166	A2092	C	G1976
U2799	U2657	U2587	U2657	U2587	U	U2461	U2383	U2311	G2167	G2095	U	A2096
U2800	U2658	U2588	U2658	U2588	U	U2462	U2384	U2312	U2168	U2097	U	C2098
U2801	U2659	U2589	U2659	U2589	U	U2463	U2385	U2313	A2169	A2099	U	A2099
U2802	U2660	U2590	U2660	U2590	U	U2464	U2386	U2314	G2170	G2099	U	A2099
U2803	U2661	U2591	U2661	U2591	U	U2465	U2387	U2315	A2171	G2099	U	A2099
U2804	U2662	U2592	U2662	U2592	U	U2466	U2388	U2316	A2172	G2099	U	A2099
U2805	U2663	U2593	U2663	U2593	U	U2467	U2389	U2317	A2173	G2099	U	A2099
U2806	U2664	U2594	U2664	U2594	U	U2468	U2390	U2318	A2174	G2099	U	A2099
U2807	U2665	U2595	U2665	U2595	U	U2469	U2391	U2319	A2175	G2099	U	A2099
U2808	U2666	U2596	U2666	U2596	U	U2470	U2392	U2320	A2176	G2099	U	A2099
U2809	U2667	U2597	U2667	U2597	U	U2471	U2393	U2321	A2177	G2099	U	A2099
U2810	U2668	U2598	U2668	U2598	U	U2472	U2394	U2322	A2178	G2099	U	A2099
U2811	U2669	U2599	U2669	U2599	U	U2473	U2395	U2323	A2179	G2099	U	A2099
U2812	U2670	U2600	U2670	U2600	U	U2474	U2396	U2324	A2180	G2099	U	A2099
U2813	U2671	A2601	U2671	A2601	U	U2475	U2397	U2325	A2181	G2099	U	A2099
U2814	U2672	U2602	U2672	U2602	U	U2476	U2398	U2326	A2182	G2099	U	A2099
U2815	U2673	U2603	U2673	U2603	U	U2477	U2399	U2327	A2183	G2099	U	A2099
U2816	U2674	U2604	U2674	U2604	U	U2478	U2400	U2328	A2184	G2099	U	A2099
U2817	U2675	U2605	U2675	U2605	U	U2479	U2401	U2329	A2185	G2099	U	A2099
U2818	U2676	U2606	U2676	U2606	U	U2480	U2402	U2330	A2186	G2099	U	A2099
U2819	U2677	U2607	U2677	U2607	U	U2481	U2403	U2331	A2187	G2099	U	A2099
U2820	U2678	U2608	U2678	U2608	U	U2482	U2404	U2332	A2188	G2099	U	A2099
U2821	U2679	U2609	U2679	U2609	U	U2483	U2405	U2333	A2189	G2099	U	A2099
U2822	U2680	U2610	U2680	U2610	U	U2484	U2406	U2334	A2190	G2099	U	A2099
U2823	U2681	U2611	U2681	U2611	U	U2485	U2407	U2335	A2191	G2099	U	A2099
U2824	U2682	U2612	U2682	U2612	U	U2486	U2408	U2336	A2192	G2099	U	A2099
U2825	U2683	U2613	U2683	U2613	U	U2487	U2409	U2337	A2193	G2099	U	A2099
U2826	U2684	U2614	U2684	U2614	U	U2488	U2410	U2338	A2194	G2099	U	A2099
U2827	U2685	U2615	U2685	U2615	U	U2489	U2411	U2339	A2195	G2099	U	A2099
U2828	U2686	U2616	U2686	U2616	U	U2490	U2412	U2340	A2196	G2099	U	A2099
U2829	U2687	U2617	U2687	U2617	U	U2491	U2413	U2341	A2197	G2099	U	A2099
U2830	U2688	U2618	U2688	U2618	U	U2492	U2414	U2342	A2198	G2099	U	A2099
U2831	U2689	U2619	U2689	U2619	U	U2493	U2415	U2343	A2199	G2099	U	A2099
U2832	U2690	U2620	U2690	U2620	U	U2494	U2416	U2344	A2200	G2099	U	A2099
U2833	U2691	U2621	U2691	U2621	U	U2495	U2417	U2345	A2201	G2099	U	A2099
U2834	U2692	U2622	U2692	U2622	U	U2496	U2418	U2346	A2202	G2099	U	A2099
U2835	U2693	U2623	U2693	U2623	U	U2497	U2419	U2347	A2203	G2099	U	A2099
U2836	U2694	U2624	U2694	U2624	U	U2498	U2420	U2348	A2204	G2099	U	A2099
U2837	U2695	U2625	U2695	U2625	U	U2499	U2421	U2349	A2205	G2099	U	A2099
U2838	U2696	U2626	U2696	U2626	U	U2500	U2422	U2350	A2206	G2099	U	A2099
U2839	U2697	U2627	U2697	U2627	U	U2501	U2423	U2351	A2207	G2099	U	A2099
U2840	U2698	U2628	U2698	U2628	U	U2502	U2424	U2352	A2208	G2099	U	A2099
U2841	U2699	U2629	U2699	U2629	U	U2503	U2425	U2353	A2209	G2099	U	A2099
U2842	U2700	U2630	U2700	U2630	U	U2504	U2426	U2354	A2210	G2099	U	A2099
U2843	U2701	U2631	U2701	U2631	U	U2505	U2427	U235				





- Molecule 5: tRNA



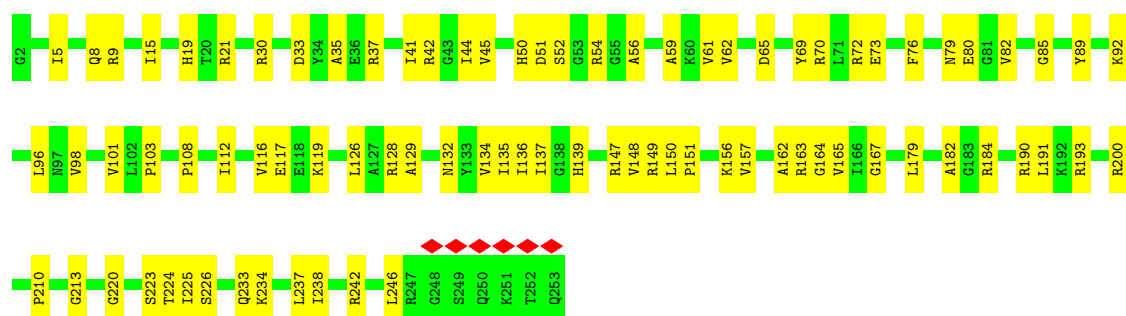
- Molecule 6: 60S ribosomal protein L42-A



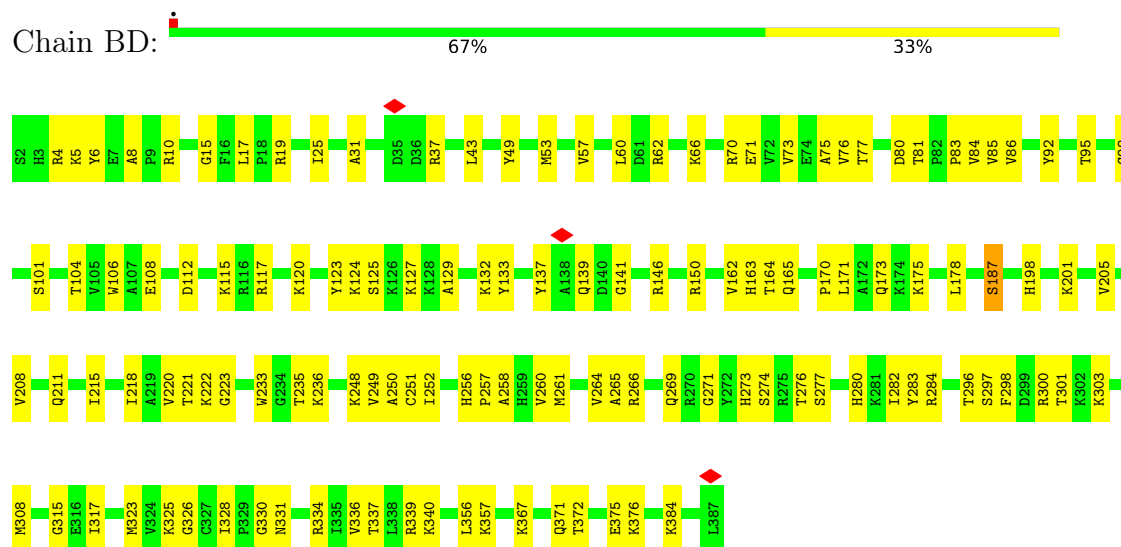
- Molecule 7: 60S ribosomal protein L43-A



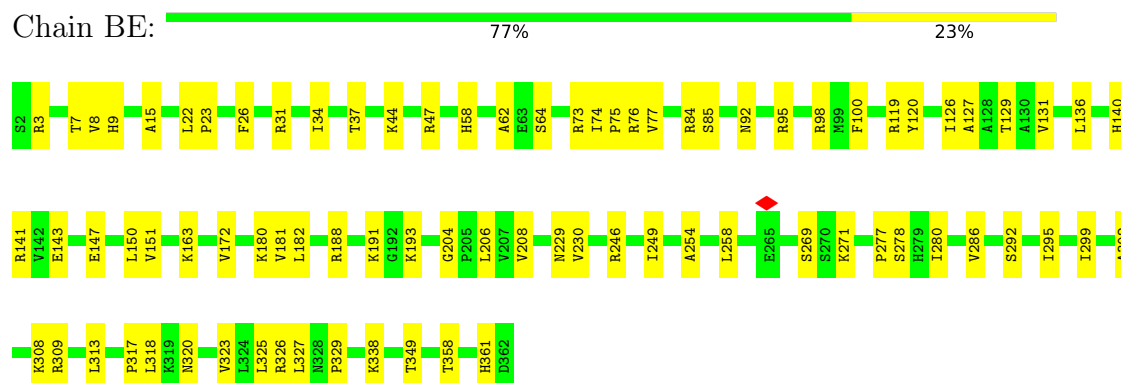
- Molecule 8: 60S ribosomal protein L2-A



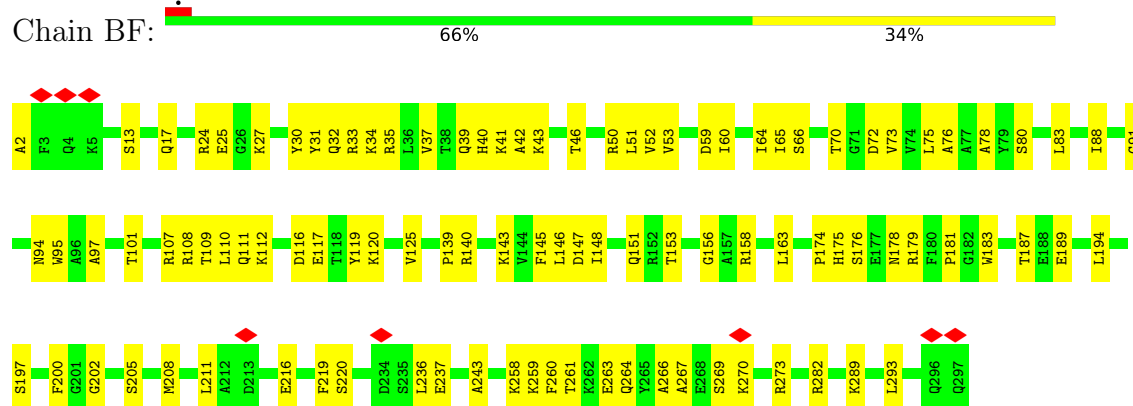
- Molecule 9: 60S ribosomal protein L3



• Molecule 10: 60S ribosomal protein L4-A

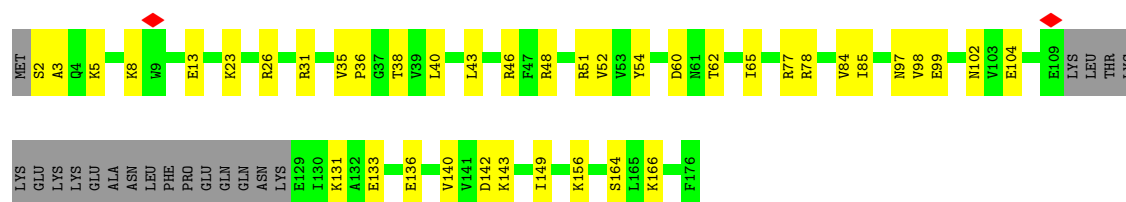


• Molecule 11: 60S ribosomal protein L5

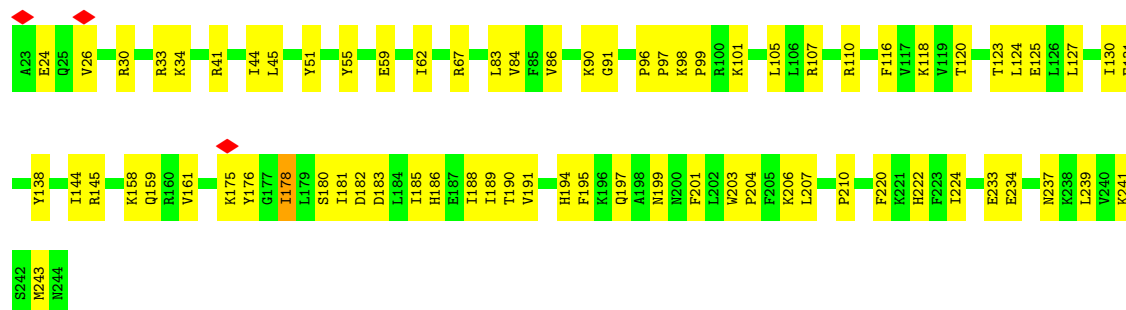


• Molecule 12: 60S ribosomal protein L6-A

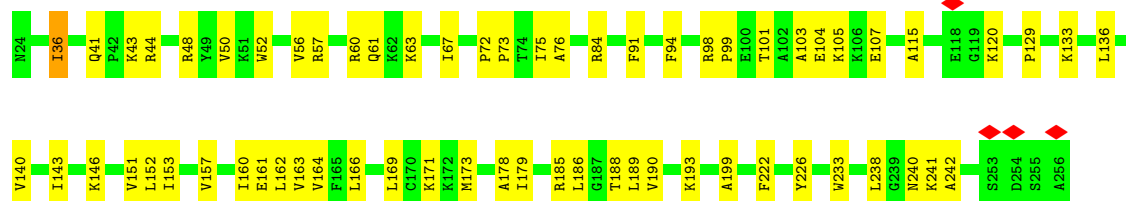




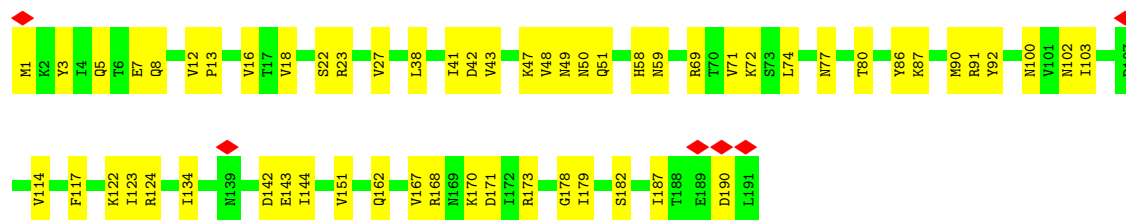
• Molecule 13: 60S ribosomal protein L7-A



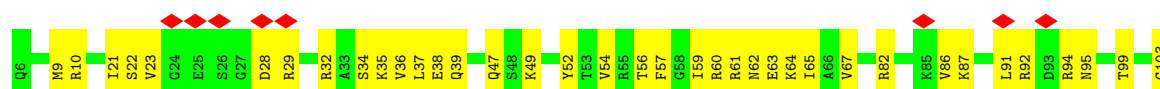
• Molecule 14: 60S ribosomal protein L8-A



• Molecule 15: 60S ribosomal protein L9-A

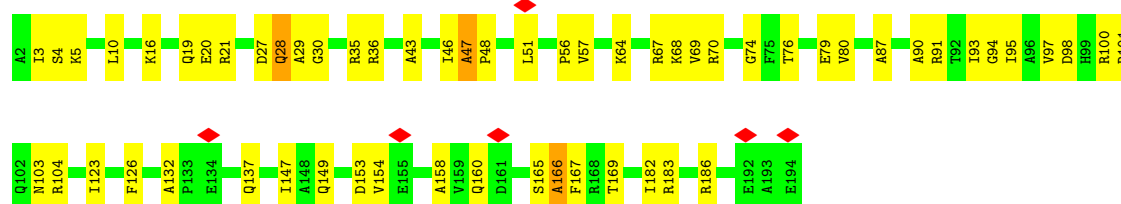


• Molecule 16: 60S ribosomal protein L11-B

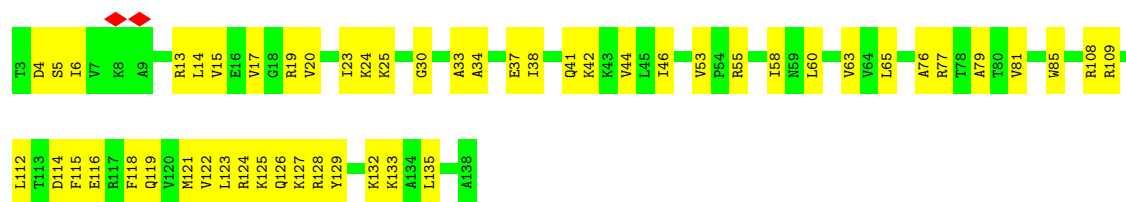




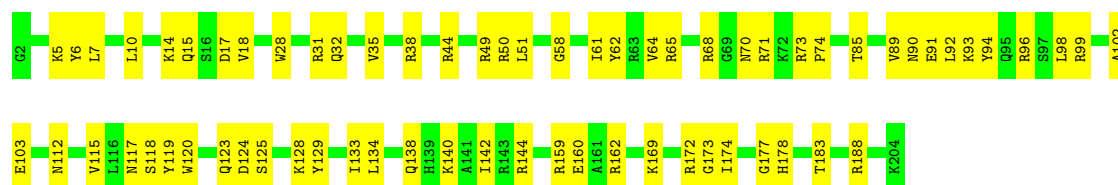
- Molecule 17: 60S ribosomal protein L13-A



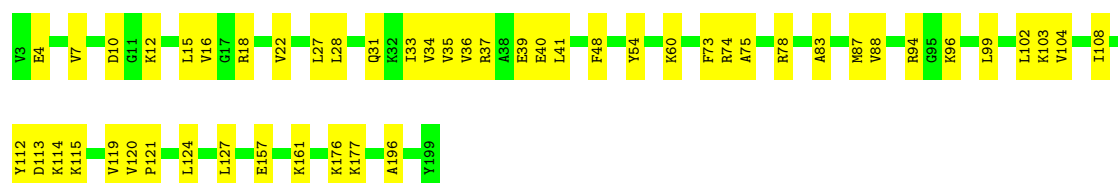
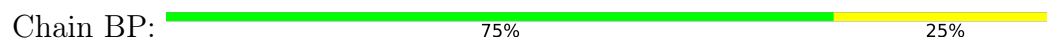
- Molecule 18: 60S ribosomal protein L14-A



- Molecule 19: 60S ribosomal protein L15-A

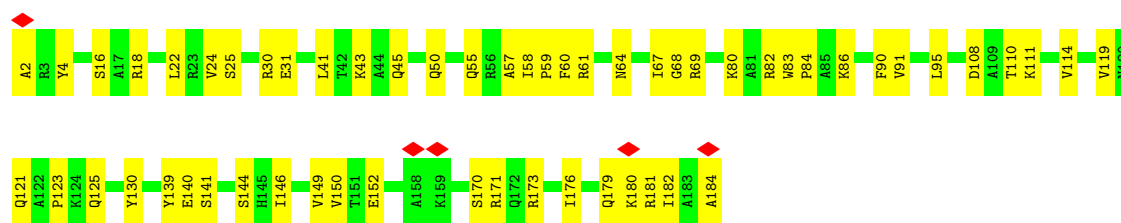


- Molecule 20: 60S ribosomal protein L16-A



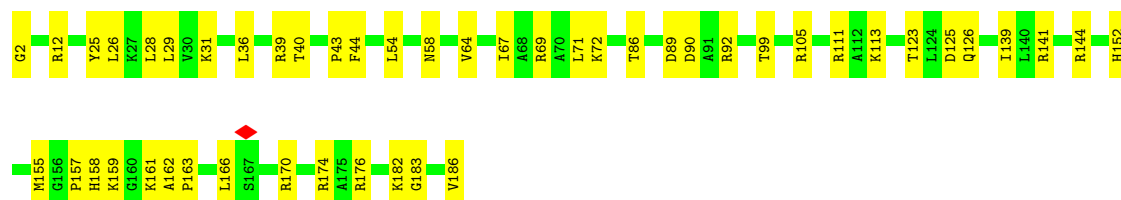
- Molecule 21: 60S ribosomal protein L17-A





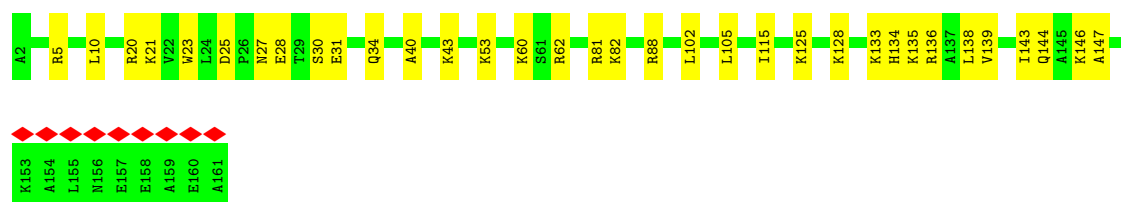
- Molecule 22: 60S ribosomal protein L18-A

Chain BR: 74% 26%



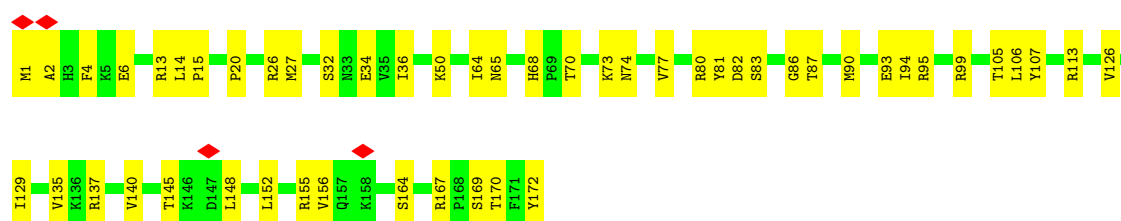
- Molecule 23: 60S ribosomal protein L19-A

Chain BS: 6% 79% 21%



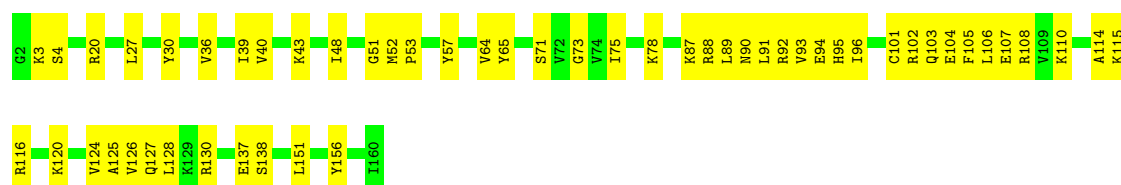
- Molecule 24: 60S ribosomal protein L20-A

Chain BT: 70% 30%

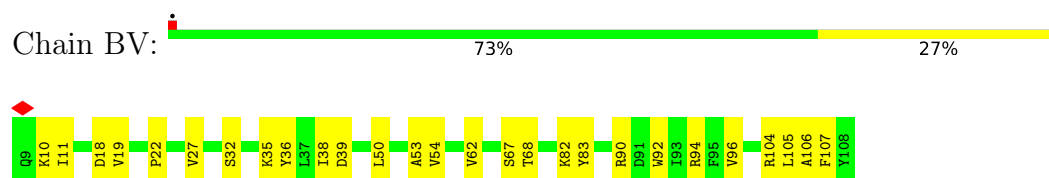


- Molecule 25: 60S ribosomal protein L21-A

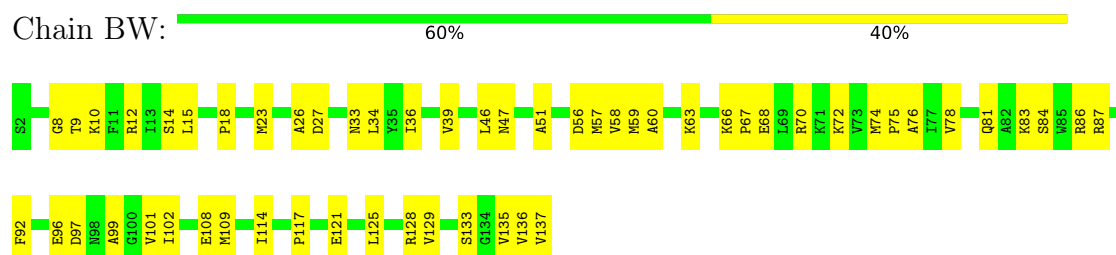
Chain BU: 67% 33%



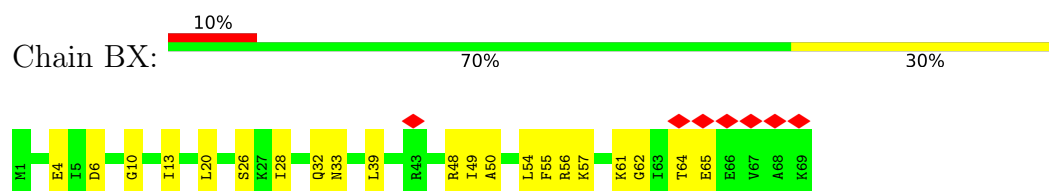
- Molecule 26: 60S ribosomal protein L22-A



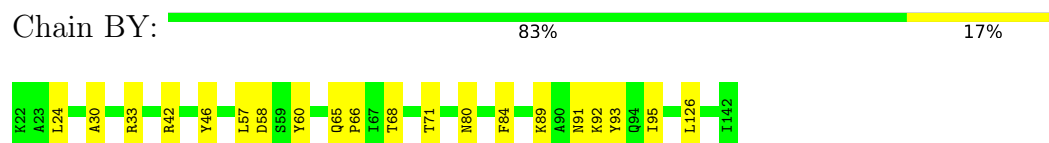
- Molecule 27: 60S ribosomal protein L23-A



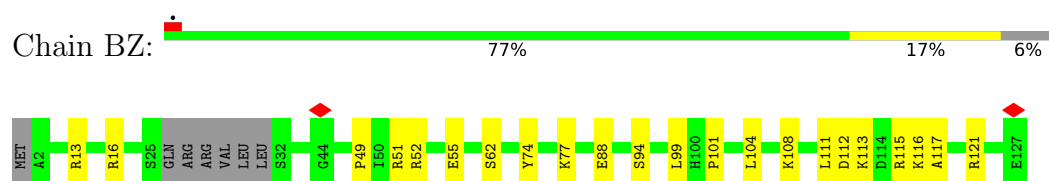
- Molecule 28: 60S ribosomal protein L24-A



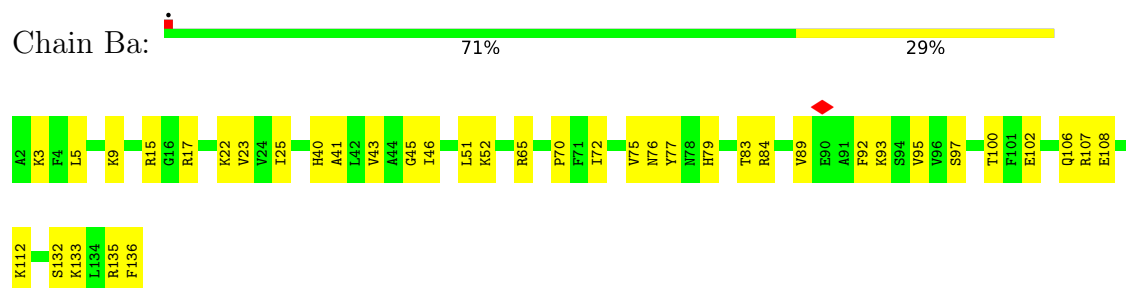
- Molecule 29: 60S ribosomal protein L25



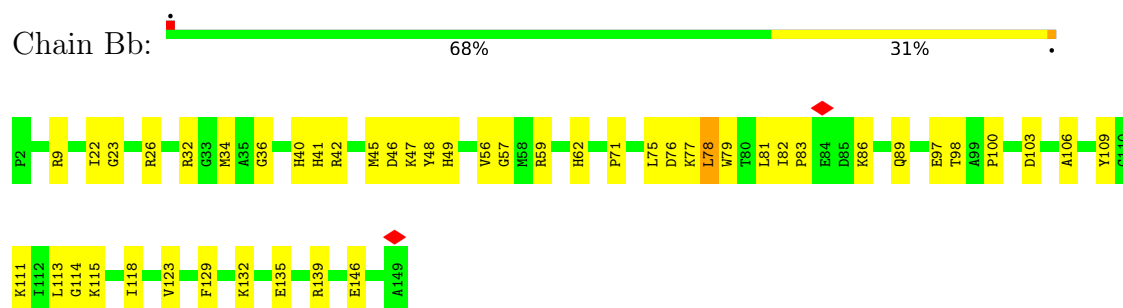
- Molecule 30: 60S ribosomal protein L26-A



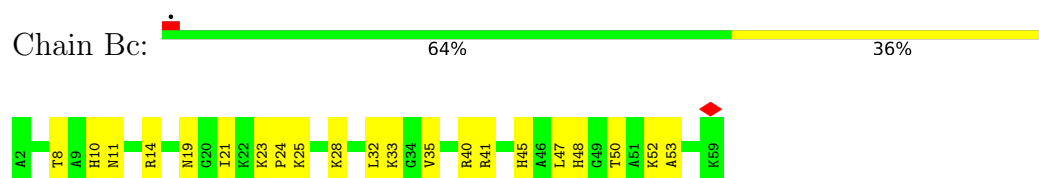
- Molecule 31: 60S ribosomal protein L27-A



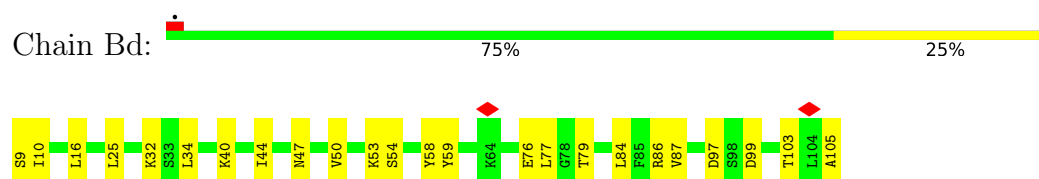
- Molecule 32: 60S ribosomal protein L28



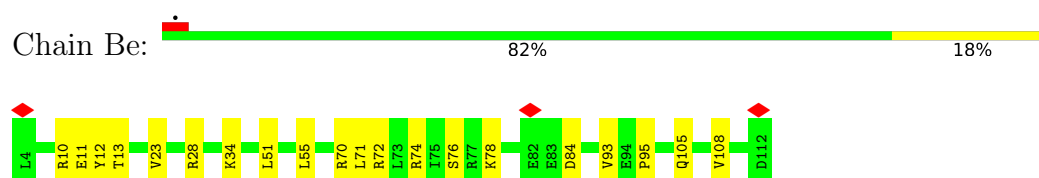
- Molecule 33: 60S ribosomal protein L29



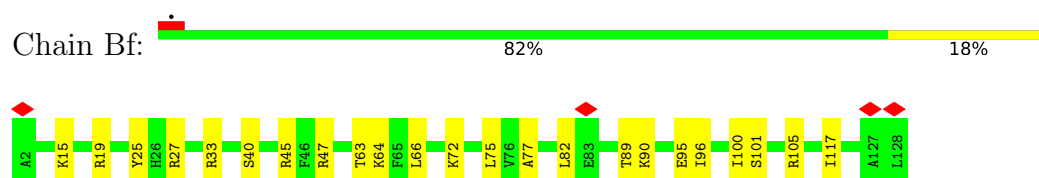
- Molecule 34: 60S ribosomal protein L30



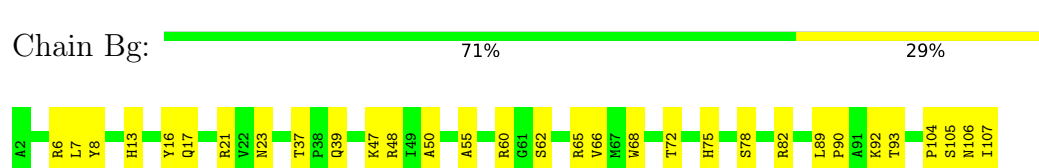
- Molecule 35: 60S ribosomal protein L31-A



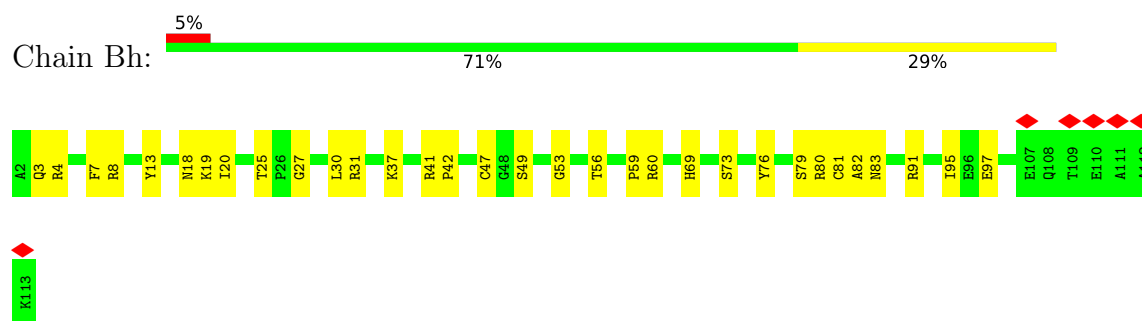
- Molecule 36: 60S ribosomal protein L32



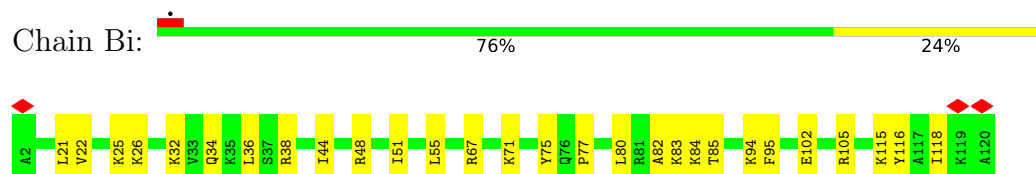
- Molecule 37: 60S ribosomal protein L33-A



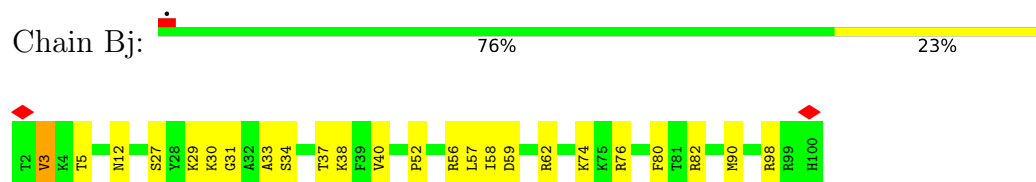
- Molecule 38: 60S ribosomal protein L34-A



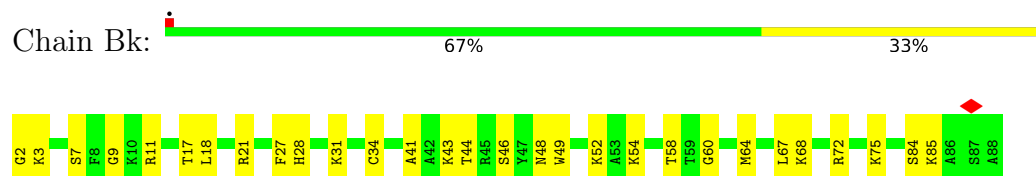
- Molecule 39: 60S ribosomal protein L35-A



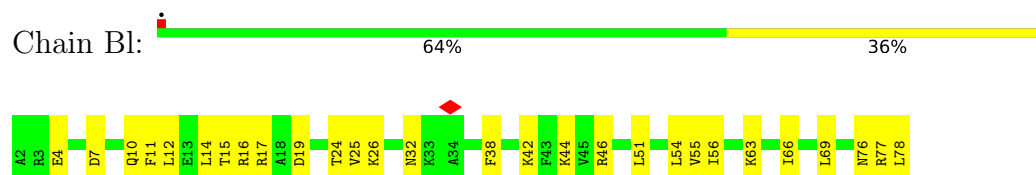
- Molecule 40: 60S ribosomal protein L36-A



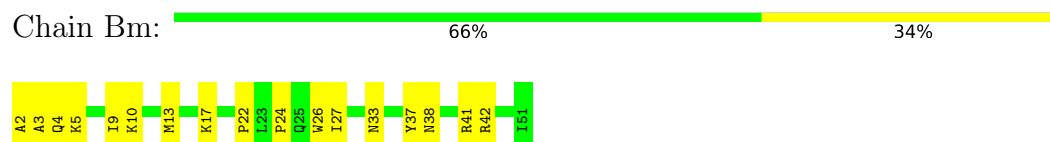
- Molecule 41: 60S ribosomal protein L37-A



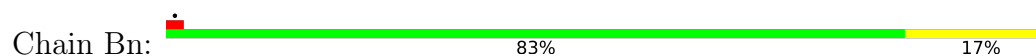
- Molecule 42: 60S ribosomal protein L38

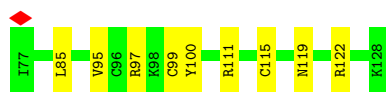


- Molecule 43: 60S ribosomal protein L39



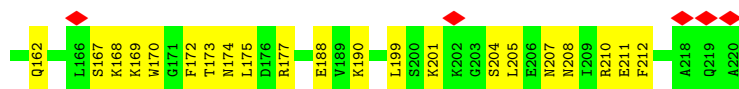
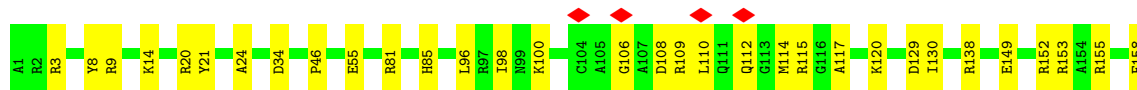
- Molecule 44: 60S ribosomal protein L40-A





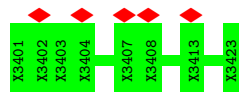
- Molecule 45: 60S ribosomal protein L10

Chain BK: 76% 24%



- Molecule 46: Unknown chain

Chain B: 22% 100%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	25072	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	43.6	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	3.151	Depositor
Minimum map value	-1.485	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.070	Depositor
Recommended contour level	0.3	Depositor
Map size (Å)	585.19995, 585.19995, 585.19995	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.045, 1.045, 1.045	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	1	0.11	0/77733	0.28	1/121186 (0.0%)
2	3	0.09	0/2883	0.26	0/4491
3	4	0.11	0/3746	0.24	0/5832
4	A	0.13	0/1653	0.38	1/2255 (0.0%)
5	2	0.09	0/1808	0.21	0/2816
6	BA	0.11	0/860	0.33	0/1136
7	BB	0.12	0/701	0.37	0/934
8	BC	0.12	0/1948	0.32	0/2617
9	BD	0.11	0/3146	0.32	0/4228
10	BE	0.10	0/2800	0.32	0/3790
11	BF	0.10	0/2425	0.32	1/3271 (0.0%)
12	BG	0.12	0/1260	0.32	0/1694
13	BH	0.12	0/1821	0.32	0/2451
14	BI	0.13	0/1836	0.35	0/2481
15	BJ	0.11	0/1539	0.31	0/2073
16	BL	0.17	0/1374	0.44	1/1842 (0.1%)
17	BM	0.12	0/1568	0.35	0/2106
18	BN	0.10	0/1068	0.33	0/1438
19	BO	0.10	0/1757	0.29	0/2354
20	BP	0.10	0/1585	0.29	0/2128
21	BQ	0.12	0/1443	0.35	0/1944
22	BR	0.09	0/1465	0.30	0/1965
23	BS	0.11	0/1303	0.33	0/1740
24	BT	0.12	0/1481	0.34	0/1990
25	BU	0.11	0/1300	0.34	0/1743
26	BV	0.11	0/812	0.32	0/1099
27	BW	0.16	0/1018	0.36	0/1369
28	BX	0.15	0/565	0.42	0/752
29	BY	0.10	0/979	0.30	0/1321
30	BZ	0.12	0/949	0.33	0/1266
31	Ba	0.13	0/1118	0.35	0/1497
32	Bb	0.15	0/1204	0.44	0/1612

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	Bc	0.16	0/473	0.46	0/629
34	Bd	0.14	0/751	0.36	0/1008
35	Be	0.10	0/890	0.30	0/1196
36	Bf	0.10	0/1041	0.30	0/1394
37	Bg	0.10	0/868	0.31	0/1168
38	Bh	0.10	0/890	0.32	0/1189
39	Bi	0.12	0/978	0.31	0/1301
40	Bj	0.12	0/778	0.33	0/1034
41	Bk	0.11	0/696	0.34	0/923
42	Bl	0.14	0/618	0.33	0/826
43	Bm	0.20	0/443	0.34	0/588
44	Bn	0.18	0/423	0.42	0/562
45	BK	0.11	0/1807	0.32	0/2425
All	All	0.11	0/137804	0.30	4/203664 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	213	PRO	CA-N-CD	-8.22	100.49	112.00
16	BL	173	ASP	CB-CA-C	-5.59	110.11	116.54
1	1	2269	U	O4'-C1'-C2'	-5.54	102.06	107.60
11	BF	260	PHE	CB-CA-C	-5.12	109.69	115.79

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	1	69452	0	34903	1524	0
2	3	2579	0	1304	72	0
3	4	3353	0	1695	80	0
4	A	1633	0	1596	48	0
5	2	1619	0	821	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	BA	847	0	918	25	0
7	BB	694	0	738	28	0
8	BC	1914	0	1981	66	0
9	BD	3075	0	3142	98	0
10	BE	2748	0	2859	61	0
11	BF	2375	0	2325	78	0
12	BG	1239	0	1326	31	0
13	BH	1784	0	1862	59	0
14	BI	1804	0	1877	53	0
15	BJ	1518	0	1587	46	0
16	BL	1353	0	1383	45	0
17	BM	1543	0	1608	48	0
18	BN	1053	0	1149	41	0
19	BO	1720	0	1779	58	0
20	BP	1555	0	1659	37	0
21	BQ	1420	0	1437	46	0
22	BR	1441	0	1543	37	0
23	BS	1286	0	1364	28	0
24	BT	1445	0	1487	43	0
25	BU	1276	0	1323	39	0
26	BV	796	0	812	19	0
27	BW	1003	0	1048	39	0
28	BX	553	0	571	16	0
29	BY	964	0	1025	19	0
30	BZ	939	0	1015	19	0
31	Ba	1092	0	1155	29	0
32	Bb	1173	0	1215	41	0
33	Bc	462	0	491	13	0
34	Bd	743	0	797	22	0
35	Be	876	0	912	14	0
36	Bf	1020	0	1090	22	0
37	Bg	850	0	880	24	0
38	Bh	880	0	945	25	0
39	Bi	969	0	1078	28	0
40	Bj	771	0	849	25	0
41	Bk	681	0	687	26	0
42	Bl	612	0	682	19	0
43	Bm	436	0	475	16	0
44	Bn	417	0	459	8	0
45	BK	1770	0	1808	43	0
46	B	115	0	35	0	0
47	2	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
All	All	127849	0	91695	2702	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 13.

All (2702) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:196:G:N2	1:1:219:A:H61	1.46	1.12
1:1:196:G:H21	1:1:219:A:N6	1.61	0.98
1:1:3232:G:H1	1:1:3255:U:H3	1.10	0.98
1:1:1564:U:H3	1:1:1576:G:H1	1.00	0.97
1:1:1385:C:HO2'	12:BG:2:SER:N	1.61	0.97
1:1:442:G:H1	1:1:492:U:H3	0.97	0.96
1:1:1018:G:H1	1:1:1034:U:H3	1.02	0.93
1:1:1949:G:H1	1:1:2097:U:H3	0.93	0.93
1:1:2997:G:H1	1:1:3151:U:H3	0.95	0.92
1:1:2252:A:H2'	1:1:2253:G:C8	2.07	0.89
13:BH:158:LYS:HD3	13:BH:159:GLN:H	1.36	0.89
26:BV:94:ARG:HH21	26:BV:96:VAL:HG22	1.40	0.87
1:1:196:G:H21	1:1:219:A:H61	0.86	0.86
1:1:1310:G:HO2'	1:1:2380:U:HO2'	1.15	0.85
1:1:162:G:N2	1:1:259:C:O2	2.08	0.85
1:1:824:C:H5''	8:BC:21:ARG:HD3	1.59	0.85
45:BK:174:ASN:OD1	45:BK:175:LEU:N	2.09	0.84
1:1:182:U:H3	1:1:234:G:H1	0.84	0.83
1:1:2241:U:H4'	8:BC:242:ARG:HG3	1.61	0.82
1:1:2252:A:H2'	1:1:2253:G:H8	1.43	0.81
1:1:3160:U:H3	1:1:3290:G:H1	0.86	0.81
31:Ba:89:VAL:O	31:Ba:93:LYS:NZ	2.14	0.80
32:Bb:75:LEU:HD23	32:Bb:118:ILE:HD11	1.62	0.80
3:4:83:C:O2'	3:4:85:G:N2	2.16	0.79
1:1:317:A:OP2	40:Bj:30:LYS:NZ	2.14	0.79
9:BD:221:THR:HB	9:BD:273:HIS:H	1.48	0.79
1:1:2255:A:H62	1:1:2260:U:H3	1.29	0.78
1:1:859:G:O2'	7:BB:13:LYS:O	2.01	0.78
1:1:2243:A:H1'	1:1:2313:A:H2'	1.65	0.78
11:BF:25:GLU:HG3	11:BF:27:LYS:HG3	1.66	0.78
1:1:961:C:N4	1:1:2615:G:O2'	2.17	0.78
31:Ba:84:ARG:NH1	38:Bh:97:GLU:OE2	2.18	0.77
1:1:1151:U:O2'	1:1:2369:G:N2	2.17	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2442:G:O6	1:1:2505:U:O4	2.02	0.76
1:1:525:C:H5''	18:BN:79:ALA:HB2	1.67	0.76
11:BF:52:VAL:HA	11:BF:147:ASP:HB2	1.65	0.76
1:1:1946:A:H2'	1:1:1947:G:C8	2.20	0.76
1:1:532:A:H61	1:1:560:G:H1	1.33	0.76
1:1:1203:A:OP2	1:1:1301:A:N6	2.19	0.76
1:1:3115:C:O2	1:1:3117:C:N4	2.18	0.76
1:1:866:A:N6	1:1:893:C:O2	2.18	0.75
1:1:900:G:N3	1:1:1589:A:N6	2.34	0.75
3:4:81:U:H5''	3:4:82:U:H5'	1.65	0.75
1:1:1130:A:H61	45:BK:114:MET:HE1	1.52	0.75
1:1:655:C:H2'	1:1:656:A:H8	1.51	0.74
1:1:2527:G:H1'	14:BI:241:LYS:HG2	1.68	0.74
1:1:351:A:N6	43:Bm:37:TYR:O	2.19	0.74
32:Bb:75:LEU:HD13	32:Bb:114:GLY:HA2	1.69	0.74
1:1:2675:C:N4	16:BL:22:SER:OG	2.20	0.74
1:1:1530:U:O4	1:1:1592:G:N2	2.20	0.74
4:A:28:VAL:HG12	4:A:50:HIS:HB3	1.69	0.74
1:1:965:A:H5''	17:BM:4:SER:HB3	1.69	0.74
21:BQ:64:ASN:HA	21:BQ:67:ILE:HD12	1.69	0.74
1:1:962:A:O2'	1:1:2817:A:N6	2.20	0.74
1:1:3040:A:H5''	27:BW:12:ARG:HB2	1.70	0.73
1:1:619:A:H5''	1:1:620:U:H5'	1.71	0.73
1:1:969:C:OP1	33:Bc:19:ASN:ND2	2.21	0.73
1:1:2305:G:OP2	1:1:2305:G:N2	2.17	0.73
15:BJ:47:LYS:HD2	18:BN:5:SER:HB2	1.71	0.73
16:BL:49:LYS:HD3	16:BL:62:ASN:HD22	1.52	0.73
1:1:544:C:O2	1:1:548:G:N2	2.21	0.73
1:1:1231:A:H5''	1:1:1232:C:H5'	1.71	0.73
31:Ba:3:LYS:HE2	31:Ba:5:LEU:HB2	1.69	0.73
1:1:1941:C:H42	1:1:2107:A:H61	1.35	0.72
1:1:3025:C:N4	1:1:3026:G:O6	2.22	0.72
16:BL:94:ARG:HG2	16:BL:95:ASN:H	1.52	0.72
1:1:269:G:H5''	19:BO:14:LYS:HE2	1.72	0.72
7:BB:43:GLY:O	34:Bd:86:ARG:NH1	2.22	0.72
1:1:1385:C:OP1	10:BE:141:ARG:NH1	2.21	0.72
1:1:2874:G:H22	1:1:2979:U:H3	1.37	0.72
1:1:1207:G:H5''	44:Bn:119:ASN:HD21	1.55	0.72
1:1:3258:U:O2'	1:1:3260:G:OP1	2.08	0.72
17:BM:27:ASP:OD1	17:BM:28:GLN:N	2.23	0.72
1:1:611:A:H1'	12:BG:23:LYS:HG3	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3354:U:H5''	1:1:3355:U:H5'	1.71	0.71
1:1:2950:G:N2	1:1:2950:G:OP2	2.23	0.71
1:1:2148:U:H2'	1:1:2149:A:C8	2.25	0.71
1:1:2844:C:H42	1:1:2898:G:H22	1.38	0.71
1:1:1024:G:N2	1:1:1027:A:OP2	2.23	0.71
1:1:2844:C:H42	1:1:2898:G:N2	1.88	0.71
1:1:353:G:O6	41:Bk:52:LYS:NZ	2.24	0.71
1:1:2193:U:H5'	1:1:2194:G:H5'	1.72	0.71
1:1:3234:A:N1	1:1:3253:G:O6	2.23	0.71
40:Bj:33:ALA:O	40:Bj:37:THR:OG1	2.09	0.71
1:1:2693:C:H5'	1:1:2694:A:H5''	1.72	0.71
30:BZ:99:LEU:HD23	30:BZ:104:LEU:HD21	1.72	0.71
11:BF:60:ILE:HG22	11:BF:80:SER:HB3	1.73	0.70
20:BP:75:ALA:HB3	20:BP:78:ARG:HG2	1.72	0.70
1:1:197:G:N2	1:1:372:A:N7	2.39	0.70
1:1:980:A:H2	1:1:1104:G:H21	1.40	0.70
1:1:1602:A:H5''	23:BS:10:LEU:HD11	1.71	0.70
12:BG:131:LYS:HD3	12:BG:133:GLU:H	1.56	0.70
4:A:213:PRO:HD2	4:A:214:GLU:H	1.56	0.70
1:1:1704:A:H62	1:1:1739:U:H3	1.39	0.70
4:A:211:THR:OG1	4:A:214:GLU:OE2	2.08	0.70
17:BM:76:THR:HG22	17:BM:101:ARG:HG3	1.74	0.70
1:1:406:G:O2'	3:4:17:A:N6	2.24	0.69
1:1:2185:G:O2'	1:1:2314:U:OP2	2.08	0.69
9:BD:85:VAL:HG12	9:BD:165:GLN:HE22	1.55	0.69
1:1:1539:A:N7	1:1:1553:U:O2	2.25	0.69
1:1:2655:U:H1'	1:1:2656:A:C2	2.27	0.69
1:1:1230:G:H21	1:1:1261:G:H8	1.40	0.69
1:1:376:G:O2'	1:1:400:G:N2	2.22	0.69
1:1:12:A:O2'	1:1:13:A:O5'	2.09	0.69
1:1:2159:U:OP2	8:BC:119:LYS:NZ	2.26	0.69
8:BC:92:LYS:HE3	8:BC:103:PRO:HG2	1.74	0.69
10:BE:326:ARG:HG3	10:BE:327:LEU:HD12	1.74	0.69
17:BM:158:ALA:HA	32:Bb:97:GLU:HA	1.73	0.69
1:1:300:G:H2'	1:1:301:G:H8	1.56	0.69
1:1:615:U:H3'	1:1:616:G:H8	1.57	0.69
15:BJ:8:GLN:HB3	15:BJ:72:LYS:HD2	1.74	0.69
1:1:342:A:H1'	1:1:344:A:N6	2.08	0.69
1:1:2565:U:H3	1:1:2576:G:H1	1.41	0.69
1:1:3038:U:O2'	9:BD:66:LYS:NZ	2.25	0.69
1:1:3215:A:N6	1:1:3261:C:OP2	2.26	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:219:GLU:HG2	4:A:224:LEU:HB2	1.74	0.69
1:1:1661:G:H2'	1:1:1662:G:C8	2.28	0.69
1:1:2662:G:OP1	11:BF:32:GLN:NE2	2.25	0.69
16:BL:94:ARG:NH2	16:BL:95:ASN:OD1	2.26	0.69
18:BN:44:VAL:HG23	18:BN:46:ILE:HD11	1.75	0.69
1:1:3234:A:H2	1:1:3253:G:H1	1.41	0.68
11:BF:211:LEU:HB3	11:BF:219:PHE:HB2	1.74	0.68
1:1:282:G:O2'	1:1:283:G:OP2	2.10	0.68
1:1:3374:U:OP2	35:Be:70:ARG:NH2	2.26	0.68
17:BM:165:SER:O	17:BM:167:PHE:N	2.26	0.68
18:BN:24:LYS:HG3	18:BN:25:LYS:HG3	1.76	0.68
1:1:2895:G:O2'	44:Bn:100:TYR:O	2.09	0.68
37:Bg:13:HIS:ND1	37:Bg:93:THR:O	2.24	0.68
1:1:2960:C:H2'	1:1:2961:G:H8	1.57	0.68
14:BI:99:PRO:HG2	14:BI:190:VAL:HG23	1.75	0.68
1:1:284:A:OP2	6:BA:41:ARG:NH1	2.26	0.68
1:1:1873:U:OP2	23:BS:20:ARG:NH2	2.27	0.68
1:1:3346:U:O4	1:1:3347:A:N6	2.27	0.68
15:BJ:5:GLN:HE22	15:BJ:7:GLU:HB3	1.57	0.68
1:1:1560:G:C6	1:1:1580:A:N1	2.62	0.68
15:BJ:23:ARG:NH1	15:BJ:42:ASP:OD1	2.27	0.68
10:BE:325:LEU:O	13:BH:41:ARG:NH2	2.27	0.68
1:1:1814:A:H5'	1:1:1815:U:H5'	1.76	0.68
20:BP:7:VAL:HB	20:BP:33:ILE:HG12	1.75	0.68
1:1:1312:C:O2'	20:BP:83:ALA:O	2.12	0.67
1:1:3152:U:H1'	1:1:3294:A:C5	2.30	0.67
1:1:3347:A:H2'	1:1:3348:G:H8	1.58	0.67
2:3:76:A:N3	24:BT:50:LYS:NZ	2.41	0.67
37:Bg:75:HIS:HB2	37:Bg:82:ARG:HG3	1.76	0.67
1:1:1472:U:H2'	1:1:1473:G:H8	1.59	0.67
1:1:2116:G:OP1	1:1:2118:C:N4	2.27	0.67
1:1:3146:G:O2'	9:BD:101:SER:O	2.11	0.67
9:BD:76:VAL:HG12	9:BD:325:LYS:HA	1.77	0.67
20:BP:16:VAL:HG22	20:BP:41:LEU:HD13	1.77	0.67
42:Bl:12:LEU:HB3	42:Bl:16:ARG:HH22	1.60	0.67
1:1:182:U:O2	1:1:234:G:N2	2.24	0.67
1:1:815:G:OP2	41:Bk:31:LYS:NZ	2.24	0.67
2:3:41:G:O2'	2:3:44:C:N4	2.28	0.67
1:1:218:G:H1'	1:1:372:A:H1'	1.77	0.67
1:1:576:C:OP1	13:BH:241:LYS:NZ	2.28	0.67
1:1:590:G:O2'	10:BE:309:ARG:NH1	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:915:A:OP2	1:1:2145:A:O2'	2.11	0.67
19:BO:71:ARG:HH12	19:BO:74:PRO:HD3	1.60	0.67
20:BP:4:GLU:O	20:BP:31:GLN:NE2	2.28	0.67
1:1:2129:U:H2'	1:1:2130:G:C8	2.30	0.67
1:1:2619:G:H22	5:2:75:C:H42	1.42	0.67
11:BF:83:LEU:HD12	11:BF:88:ILE:HD13	1.77	0.67
1:1:1370:G:H2'	1:1:1371:G:H8	1.61	0.66
25:BU:103:GLN:HA	25:BU:106:LEU:HD23	1.77	0.66
1:1:1949:G:OP2	23:BS:135:LYS:NZ	2.28	0.66
8:BC:62:VAL:HG12	8:BC:73:GLU:HG2	1.76	0.66
27:BW:59:MET:HA	27:BW:75:PRO:HA	1.75	0.66
11:BF:75:LEU:O	11:BF:112:LYS:NZ	2.28	0.66
17:BM:20:GLU:OE2	17:BM:21:ARG:NH2	2.29	0.66
27:BW:14:SER:O	27:BW:81:GLN:NE2	2.29	0.66
1:1:170:G:N2	1:1:248:U:O2	2.29	0.66
1:1:894:G:N2	1:1:1660:C:OP1	2.28	0.66
1:1:2880:U:OP1	27:BW:47:ASN:ND2	2.27	0.66
10:BE:286:VAL:HG11	22:BR:31:LYS:HG2	1.76	0.66
1:1:2769:A:H5''	6:BA:80:ARG:HD2	1.78	0.66
4:A:57:ARG:HH22	27:BW:8:GLY:HA3	1.60	0.66
1:1:518:G:OP2	1:1:518:G:N2	2.23	0.66
1:1:908:G:N3	1:1:925:A:N6	2.44	0.66
38:Bh:42:PRO:HD3	38:Bh:56:THR:HG22	1.77	0.66
1:1:1062:A:O2'	1:1:1098:A:OP2	2.14	0.66
1:1:1963:G:H2'	1:1:1964:C:H4'	1.76	0.66
1:1:3337:G:H2'	1:1:3338:C:C6	2.30	0.66
10:BE:327:LEU:HD23	13:BH:181:ILE:HG21	1.77	0.66
27:BW:58:VAL:O	27:BW:76:ALA:N	2.28	0.66
33:Bc:48:HIS:O	33:Bc:52:LYS:NZ	2.29	0.65
39:Bi:77:PRO:HD2	39:Bi:80:LEU:HD22	1.77	0.65
1:1:1157:G:H5''	13:BH:220:PHE:HE2	1.62	0.65
1:1:1329:U:OP1	37:Bg:17:GLN:NE2	2.30	0.65
39:Bi:32:LYS:HZ3	39:Bi:48:ARG:HH22	1.44	0.65
1:1:733:G:N2	1:1:736:A:OP2	2.29	0.65
1:1:2427:U:H3	1:1:2602:G:H1	1.44	0.65
1:1:2911:A:H1'	1:1:2913:C:H41	1.60	0.65
28:BX:6:ASP:HB3	28:BX:10:GLY:H	1.62	0.65
3:4:75:G:OP2	30:BZ:74:TYR:OH	2.14	0.65
9:BD:66:LYS:NZ	27:BW:9:THR:OG1	2.25	0.65
31:Ba:46:ILE:HA	31:Ba:70:PRO:HA	1.79	0.65
1:1:57:A:H2'	1:1:58:G:C8	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2111:G:OP2	28:BX:48:ARG:NH2	2.30	0.65
4:A:142:ILE:HG12	4:A:148:VAL:HG23	1.77	0.65
11:BF:80:SER:HA	11:BF:83:LEU:HD23	1.79	0.65
17:BM:123:ILE:HG22	39:Bi:118:ILE:HG13	1.79	0.65
1:1:100:A:H3'	1:1:101:G:H21	1.62	0.65
1:1:1003:A:N1	1:1:1049:C:O2'	2.30	0.65
1:1:3183:A:OP2	20:BP:12:LYS:NZ	2.20	0.65
1:1:53:G:OP2	41:Bk:48:ASN:ND2	2.29	0.65
1:1:2716:U:OP2	1:1:2752:U:O2'	2.14	0.65
1:1:3112:G:H21	1:1:3122:A:H62	1.43	0.65
10:BE:278:SER:HB3	22:BR:111:ARG:HH12	1.61	0.65
1:1:107:A:O2'	1:1:324:A:N3	2.26	0.65
1:1:1588:A:N6	43:Bm:4:GLN:O	2.30	0.65
1:1:266:A:N6	40:Bj:29:LYS:O	2.30	0.65
1:1:1192:C:N4	1:1:1302:A:OP2	2.29	0.65
2:3:89:G:N2	2:3:92:A:OP2	2.26	0.65
24:BT:82:ASP:HA	24:BT:87:THR:HG22	1.77	0.65
1:1:303:G:H5''	1:1:304:G:H5''	1.77	0.65
1:1:3214:U:OP2	18:BN:125:LYS:NZ	2.29	0.65
1:1:3216:G:H2'	1:1:3219:G:H2'	1.79	0.65
1:1:3308:C:N3	21:BQ:69:ARG:NH2	2.44	0.65
1:1:2202:C:H5''	8:BC:226:SER:HB2	1.79	0.64
4:A:6:GLN:HG3	4:A:208:LEU:HB2	1.78	0.64
1:1:1571:A:N7	1:1:1572:U:O2'	2.30	0.64
3:4:13:A:O2'	21:BQ:121:GLN:O	2.15	0.64
25:BU:51:GLY:HA3	25:BU:92:ARG:HG3	1.79	0.64
9:BD:301:THR:HG21	9:BD:303:LYS:HE2	1.79	0.64
1:1:300:G:H5''	40:Bj:82:ARG:HH12	1.61	0.64
1:1:1483:G:O2'	1:1:1485:G:OP2	2.15	0.64
22:BR:25:TYR:HA	22:BR:28:LEU:HD12	1.78	0.64
1:1:123:A:OP1	14:BI:105:LYS:NZ	2.31	0.64
1:1:1959:G:O6	1:1:2082:U:O2	2.16	0.64
1:1:2249:G:H2'	1:1:2249:G:N3	2.11	0.64
2:3:10:C:O2'	2:3:13:A:N6	2.30	0.64
22:BR:86:THR:HG22	22:BR:105:ARG:HB2	1.79	0.64
1:1:1260:A:N3	1:1:1280:C:O2'	2.27	0.64
11:BF:261:THR:OG1	11:BF:264:GLN:OE1	2.16	0.64
43:Bm:27:ILE:O	43:Bm:33:ASN:ND2	2.29	0.64
1:1:992:A:H5''	25:BU:43:LYS:HD3	1.80	0.64
1:1:2746:A:H4'	11:BF:176:SER:HB2	1.79	0.64
13:BH:34:LYS:HA	13:BH:34:LYS:HE3	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:BH:158:LYS:CD	13:BH:159:GLN:H	2.11	0.64
35:Be:55:LEU:HB2	35:Be:95:PRO:HD3	1.80	0.64
1:1:216:G:OP1	30:BZ:16:ARG:NH1	2.31	0.64
1:1:299:G:C8	40:Bj:31:GLY:HA3	2.33	0.64
1:1:1613:A:OP2	42:Bl:46:ARG:NH1	2.29	0.64
1:1:2361:A:O2'	36:Bf:25:TYR:OH	2.15	0.64
6:BA:24:LYS:HB2	6:BA:73:GLU:HB2	1.79	0.64
18:BN:55:ARG:NH2	18:BN:76:ALA:O	2.31	0.64
24:BT:6:GLU:OE2	24:BT:64:ILE:N	2.25	0.64
11:BF:33:ARG:HE	11:BF:37:VAL:HG21	1.63	0.64
21:BQ:30:ARG:NH1	21:BQ:31:GLU:OE2	2.26	0.63
1:1:647:A:N6	1:1:2371:G:O2'	2.28	0.63
1:1:1181:U:O2	20:BP:18:ARG:NH1	2.30	0.63
9:BD:115:LYS:NZ	9:BD:129:ALA:O	2.30	0.63
16:BL:59:ILE:HD13	16:BL:65:ILE:HD13	1.80	0.63
29:BY:65:GLN:NE2	29:BY:66:PRO:O	2.30	0.63
35:Be:13:THR:OG1	35:Be:72:ARG:NH1	2.31	0.63
1:1:612:U:H2'	1:1:613:G:H8	1.63	0.63
1:1:1634:G:N7	31:Ba:17:ARG:NH2	2.45	0.63
1:1:1816:A:O2'	1:1:1817:G:O5'	2.17	0.63
9:BD:66:LYS:O	9:BD:70:ARG:NH2	2.30	0.63
1:1:1194:G:H2'	1:1:1195:A:C8	2.33	0.63
20:BP:22:VAL:HG11	20:BP:120:VAL:HG11	1.79	0.63
1:1:633:C:O2'	37:Bg:21:ARG:O	2.17	0.63
1:1:2673:A:OP1	16:BL:94:ARG:NH2	2.27	0.63
13:BH:188:ILE:HD12	13:BH:195:PHE:HE1	1.62	0.63
1:1:519:A:N6	24:BT:65:ASN:O	2.32	0.63
1:1:1838:G:H5''	1:1:1839:A:H5'	1.81	0.63
1:1:1958:U:O2	1:1:2083:G:O6	2.16	0.63
1:1:2662:G:H2'	1:1:2663:G:C8	2.34	0.63
1:1:3185:U:OP1	15:BJ:23:ARG:NH2	2.32	0.63
27:BW:121:GLU:OE1	27:BW:121:GLU:N	2.32	0.63
1:1:69:C:OP1	19:BO:178:HIS:ND1	2.27	0.63
1:1:806:A:N3	1:1:2812:C:O2'	2.32	0.63
16:BL:47:GLN:HB3	16:BL:64:LYS:HD3	1.80	0.63
1:1:972:A:OP1	22:BR:12:ARG:NH2	2.32	0.63
1:1:3015:G:H2'	1:1:3016:A:H8	1.62	0.63
14:BI:104:GLU:HA	14:BI:107:GLU:HG3	1.81	0.63
38:Bh:25:THR:HG22	38:Bh:27:GLY:H	1.64	0.63
1:1:807:A:H61	1:1:934:G:H22	1.47	0.63
1:1:1794:G:O2'	8:BC:190:ARG:NH2	2.32	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:11:C:O2'	21:BQ:4:TYR:O	2.17	0.63
27:BW:83:LYS:NZ	27:BW:84:SER:O	2.31	0.63
1:1:923:C:O2	1:1:925:A:O2'	2.17	0.62
45:BK:204:SER:O	45:BK:208:ASN:ND2	2.32	0.62
32:Bb:135:GLU:OE2	32:Bb:139:ARG:NH2	2.32	0.62
1:1:1233:G:N1	1:1:1256:G:O6	2.32	0.62
1:1:2425:G:OP2	19:BO:90:ASN:ND2	2.31	0.62
3:4:141:C:O2	19:BO:112:ASN:ND2	2.32	0.62
9:BD:211:GLN:NE2	9:BD:283:TYR:O	2.28	0.62
29:BY:58:ASP:OD2	39:Bi:25:LYS:NZ	2.29	0.62
22:BR:155:MET:HE3	22:BR:163:PRO:HB3	1.82	0.62
40:Bj:56:ARG:NH2	40:Bj:59:ASP:OD2	2.31	0.62
4:A:213:PRO:HD2	4:A:214:GLU:N	2.13	0.62
1:1:531:G:H2'	1:1:532:A:C8	2.35	0.62
1:1:716:A:OP1	1:1:752:C:O2'	2.17	0.62
1:1:944:C:O2'	36:Bf:33:ARG:NH1	2.33	0.62
1:1:2247:G:O2'	1:1:2248:C:H5'	1.99	0.62
1:1:2366:C:H2'	1:1:2367:A:H8	1.62	0.62
1:1:3107:U:H2'	1:1:3108:G:H8	1.64	0.62
13:BH:116:PHE:O	13:BH:199:ASN:ND2	2.33	0.62
1:1:300:G:H2'	1:1:301:G:C8	2.34	0.62
1:1:600:G:N2	1:1:603:A:OP2	2.31	0.62
1:1:1157:G:OP1	13:BH:90:LYS:NZ	2.32	0.62
1:1:1464:G:N2	1:1:1467:A:OP2	2.32	0.62
1:1:3303:G:O2'	1:1:3305:A:N6	2.33	0.62
19:BO:73:ARG:HB2	19:BO:89:VAL:HG13	1.81	0.62
1:1:836:A:O2'	7:BB:9:GLY:O	2.18	0.62
1:1:1521:G:O6	43:Bm:17:LYS:NZ	2.30	0.62
1:1:3297:U:O4	9:BD:124:LYS:NZ	2.32	0.62
4:A:53:ILE:H	4:A:59:ILE:HG22	1.65	0.62
15:BJ:162:GLN:HA	15:BJ:179:ILE:HG23	1.82	0.62
1:1:2844:C:N4	1:1:2898:G:H22	1.98	0.62
8:BC:147:ARG:HA	8:BC:157:VAL:HA	1.82	0.62
1:1:289:A:H2'	1:1:290:G:H8	1.65	0.62
1:1:528:U:H2'	1:1:529:A:C8	2.35	0.62
1:1:2227:C:H2'	1:1:2228:A:H8	1.64	0.62
1:1:2828:G:O6	1:1:2862:U:O2	2.18	0.62
1:1:3016:A:H2'	1:1:3017:A:H8	1.65	0.62
7:BB:86:LEU:HD21	8:BC:108:PRO:HG2	1.82	0.62
11:BF:197:SER:O	11:BF:202:GLY:N	2.30	0.62
16:BL:87:LYS:HE3	16:BL:106:ILE:HD13	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:BW:26:ALA:HB2	27:BW:99:ALA:HB1	1.81	0.62
45:BK:188:GLU:HG3	45:BK:199:LEU:HD13	1.80	0.62
1:1:1235:U:H3	1:1:1237:G:H4'	1.65	0.61
1:1:1404:G:N2	1:1:1407:A:OP2	2.28	0.61
1:1:2557:A:OP1	8:BC:69:TYR:OH	2.13	0.61
3:4:143:U:OP2	19:BO:38:ARG:NH2	2.33	0.61
22:BR:152:HIS:ND1	22:BR:162:ALA:O	2.31	0.61
34:Bd:58:TYR:OH	38:Bh:97:GLU:OE2	2.15	0.61
1:1:2643:A:OP2	25:BU:3:LYS:NZ	2.33	0.61
2:3:77:G:H4'	2:3:78:U:O5'	2.00	0.61
9:BD:8:ALA:HB2	27:BW:46:LEU:HD13	1.83	0.61
20:BP:39:GLU:HG3	20:BP:40:GLU:HG2	1.82	0.61
45:BK:155:ARG:O	45:BK:162:GLN:NE2	2.33	0.61
13:BH:186:HIS:O	13:BH:190:THR:OG1	2.17	0.61
1:1:837:A:OP2	7:BB:4:ARG:NH2	2.34	0.61
1:1:1392:G:OP1	36:Bf:101:SER:OG	2.17	0.61
22:BR:159:LYS:O	22:BR:161:LYS:NZ	2.31	0.61
31:Ba:23:VAL:HG12	31:Ba:45:GLY:HA3	1.82	0.61
1:1:1351:U:H2'	1:1:1352:A:H2'	1.80	0.61
1:1:1909:A:H2'	1:1:1910:A:C8	2.35	0.61
9:BD:218:ILE:HG12	9:BD:276:THR:HG23	1.83	0.61
9:BD:277:SER:OG	9:BD:280:HIS:NE2	2.24	0.61
19:BO:31:ARG:NH1	19:BO:124:ASP:OD2	2.33	0.61
1:1:836:A:N6	1:1:857:G:H1'	2.15	0.61
1:1:655:C:H2'	1:1:656:A:C8	2.33	0.61
1:1:1354:G:O2'	12:BG:8:LYS:NZ	2.34	0.61
1:1:2250:G:H1	1:1:2266:U:H3	1.48	0.61
11:BF:94:ASN:OD1	11:BF:97:ALA:N	2.34	0.61
1:1:91:G:OP2	1:1:93:C:N4	2.33	0.61
1:1:1810:A:H2'	1:1:1811:G:C8	2.35	0.61
1:1:2625:C:O2'	1:1:2626:A:O5'	2.19	0.61
1:1:2967:A:H5''	8:BC:213:GLY:HA3	1.81	0.61
1:1:1714:A:H61	1:1:1730:G:H1'	1.65	0.61
2:3:3:U:H4'	2:3:25:G:H21	1.65	0.61
35:Be:11:GLU:HG2	35:Be:74:ARG:HG2	1.82	0.61
4:A:123:ARG:HH12	4:A:127:GLU:HB2	1.64	0.60
30:BZ:49:PRO:O	30:BZ:115:ARG:NH2	2.33	0.60
1:1:296:A:N3	1:1:299:G:O2'	2.33	0.60
1:1:2741:C:O2	6:BA:20:HIS:NE2	2.33	0.60
1:1:2897:A:OP2	1:1:2899:C:N4	2.31	0.60
9:BD:125:SER:O	9:BD:127:LYS:NZ	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1497:C:H2'	1:1:1498:A:H8	1.65	0.60
12:BG:52:VAL:HG11	12:BG:65:ILE:HD12	1.82	0.60
1:1:1109:U:H2'	1:1:1110:U:C6	2.36	0.60
1:1:2842:U:OP1	1:1:2844:C:N4	2.34	0.60
16:BL:82:ARG:NH1	16:BL:112:LEU:O	2.33	0.60
19:BO:94:TYR:HD1	19:BO:96:ARG:H	1.48	0.60
28:BX:32:GLN:OE1	28:BX:33:ASN:ND2	2.34	0.60
1:1:2245:C:O2'	8:BC:220:GLY:O	2.20	0.60
23:BS:105:LEU:HD23	23:BS:138:LEU:HD23	1.84	0.60
1:1:1108:U:H2'	1:1:1109:U:C6	2.37	0.60
5:2:54:U:H3	5:2:58:A:H62	1.50	0.60
37:Bg:47:LYS:NZ	37:Bg:104:PRO:O	2.35	0.60
1:1:567:G:H2'	1:1:568:G:C8	2.36	0.60
2:3:44:C:OP2	16:BL:137:ARG:NH2	2.33	0.60
2:3:96:U:H2'	2:3:97:A:H8	1.67	0.60
44:Bn:97:ARG:HE	44:Bn:122:ARG:HB3	1.66	0.60
1:1:2445:A:O2'	40:Bj:62:ARG:NH1	2.35	0.60
1:1:2618:G:N2	1:1:2643:A:O2'	2.34	0.60
1:1:3306:U:OP1	9:BD:269:GLN:NE2	2.34	0.60
19:BO:120:TRP:HE1	19:BO:123:GLN:HB3	1.66	0.60
25:BU:110:LYS:O	25:BU:114:ALA:N	2.34	0.60
1:1:728:G:H5''	22:BR:43:PRO:HB2	1.84	0.60
1:1:1973:G:N2	1:1:2050:C:O2'	2.35	0.60
1:1:3273:A:OP2	12:BG:77:ARG:NH2	2.35	0.60
1:1:3358:U:O4	1:1:3359:A:N6	2.33	0.60
2:3:11:A:N7	25:BU:20:ARG:NH1	2.49	0.60
5:2:64:G:H2'	5:2:65:G:C8	2.37	0.60
31:Ba:133:LYS:O	31:Ba:135:ARG:NH1	2.35	0.60
1:1:88:A:N6	1:1:98:G:O2'	2.34	0.60
1:1:182:U:O4	1:1:234:G:O6	2.20	0.60
1:1:608:A:O2'	10:BE:326:ARG:NH2	2.34	0.60
1:1:2283:G:H1'	1:1:2285:C:H41	1.66	0.60
1:1:358:G:N2	1:1:361:A:OP2	2.34	0.59
1:1:571:U:H2'	1:1:572:A:H8	1.67	0.59
1:1:1207:G:O2'	1:1:1209:G:OP1	2.19	0.59
2:3:74:C:H2'	2:3:75:G:C8	2.36	0.59
12:BG:97:ASN:OD1	12:BG:98:VAL:N	2.34	0.59
17:BM:76:THR:OG1	17:BM:79:GLU:OE1	2.19	0.59
45:BK:106:GLY:HA3	45:BK:110:LEU:HB2	1.84	0.59
1:1:767:U:H1'	1:1:768:C:H5	1.67	0.59
1:1:1086:C:H2'	1:1:1087:G:C8	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1114:U:OP1	32:Bb:23:GLY:N	2.35	0.59
1:1:1167:U:O2'	13:BH:210:PRO:O	2.18	0.59
1:1:1411:C:H2'	1:1:1412:G:H8	1.67	0.59
1:1:1433:A:O2'	1:1:1434:G:O4'	2.20	0.59
1:1:3060:C:O2'	1:1:3332:U:O2'	2.17	0.59
1:1:3178:A:H2'	20:BP:115:LYS:HG2	1.82	0.59
1:1:3268:A:OP1	21:BQ:181:ARG:NH1	2.35	0.59
1:1:413:U:OP1	21:BQ:30:ARG:NH2	2.32	0.59
1:1:2631:U:OP2	25:BU:4:SER:OG	2.20	0.59
10:BE:150:LEU:HD23	10:BE:249:ILE:HG12	1.83	0.59
14:BI:169:LEU:HD11	19:BO:6:TYR:HE2	1.67	0.59
1:1:788:C:H2'	1:1:789:A:H8	1.68	0.59
1:1:2392:C:O2'	9:BD:266:ARG:NH2	2.35	0.59
1:1:2521:U:O2	1:1:2523:A:O2'	2.16	0.59
1:1:2697:A:H2'	1:1:2698:G:H8	1.66	0.59
11:BF:65:ILE:HD11	11:BF:72:ASP:HB3	1.84	0.59
26:BV:32:SER:OG	26:BV:83:TYR:OH	2.15	0.59
1:1:2768:U:H2'	1:1:2769:A:H8	1.65	0.59
1:1:3275:U:H5'	37:Bg:66:VAL:HG21	1.85	0.59
1:1:518:G:N2	1:1:520:U:O2'	2.35	0.59
1:1:786:A:H1'	1:1:787:G:C8	2.36	0.59
1:1:3042:U:OP2	1:1:3092:C:N4	2.36	0.59
1:1:3193:C:H2'	1:1:3194:C:H6	1.67	0.59
1:1:3255:U:H2'	1:1:3256:G:H8	1.66	0.59
9:BD:83:PRO:O	9:BD:165:GLN:NE2	2.23	0.59
40:Bj:3:VAL:O	40:Bj:12:ASN:ND2	2.35	0.59
1:1:627:U:H2'	1:1:628:A:C8	2.37	0.59
1:1:899:U:H2'	1:1:900:G:H8	1.66	0.59
1:1:1146:C:H2'	1:1:1147:G:H8	1.68	0.59
1:1:2947:G:OP1	1:1:2982:A:N6	2.34	0.59
2:3:25:G:H2'	2:3:26:C:C6	2.38	0.59
10:BE:229:ASN:OD1	10:BE:230:VAL:N	2.34	0.59
17:BM:4:SER:OG	17:BM:5:LYS:NZ	2.36	0.59
31:Ba:52:LYS:O	31:Ba:65:ARG:NH1	2.34	0.59
1:1:2249:G:O6	1:1:2269:U:N3	2.35	0.59
1:1:2617:U:O2'	1:1:2644:C:N4	2.36	0.59
1:1:3047:U:OP1	9:BD:222:LYS:N	2.33	0.59
1:1:3181:C:N4	1:1:3182:G:O6	2.35	0.59
1:1:3371:G:OP1	9:BD:384:LYS:NZ	2.30	0.59
15:BJ:38:LEU:HD21	15:BJ:74:LEU:HD11	1.85	0.59
1:1:1560:G:O6	29:BY:33:ARG:NH1	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1639:C:N4	38:Bh:73:SER:OG	2.36	0.59
1:1:2964:G:N2	1:1:2967:A:OP2	2.30	0.59
1:1:3021:A:H61	1:1:3032:A:H3'	1.67	0.59
6:BA:51:GLY:HA2	19:BO:85:THR:HA	1.85	0.59
9:BD:218:ILE:HB	9:BD:337:THR:HB	1.84	0.59
21:BQ:60:PHE:HE2	21:BQ:82:ARG:HB3	1.67	0.59
22:BR:92:ARG:HG2	32:Bb:76:ASP:HB3	1.85	0.59
1:1:1125:U:H2'	1:1:1126:G:H8	1.68	0.59
1:1:3322:A:H2'	1:1:3323:A:C8	2.38	0.59
9:BD:95:THR:OG1	9:BD:98:GLY:O	2.17	0.59
27:BW:66:LYS:HG2	27:BW:67:PRO:HD2	1.85	0.59
31:Ba:9:LYS:HB3	31:Ba:25:ILE:HD12	1.84	0.59
1:1:36:C:H4'	1:1:808:A:H2	1.68	0.58
1:1:1151:U:O4	1:1:1200:A:N6	2.36	0.58
1:1:1370:G:H2'	1:1:1371:G:C8	2.37	0.58
1:1:2446:U:H1'	40:Bj:98:ARG:HH21	1.68	0.58
15:BJ:59:ASN:OD1	18:BN:41:GLN:NE2	2.36	0.58
19:BO:117:ASN:HB2	19:BO:133:ILE:HD11	1.84	0.58
33:Bc:8:THR:HG22	33:Bc:10:HIS:H	1.68	0.58
1:1:671:U:H2'	1:1:672:A:H8	1.68	0.58
1:1:1761:C:H2'	1:1:1763:U:H5''	1.85	0.58
1:1:2129:U:H2'	1:1:2130:G:H8	1.67	0.58
1:1:2529:A:C2	1:1:2530:G:H1'	2.38	0.58
1:1:3201:C:H2'	1:1:3202:G:C8	2.39	0.58
5:2:29:U:H2'	5:2:30:G:H8	1.68	0.58
27:BW:108:GLU:HA	27:BW:128:ARG:HG2	1.83	0.58
1:1:3110:C:H2'	1:1:3111:U:C6	2.38	0.58
9:BD:49:TYR:O	9:BD:80:ASP:N	2.34	0.58
45:BK:108:ASP:HB3	45:BK:109:ARG:HD2	1.85	0.58
1:1:63:A:N3	1:1:78:U:O2'	2.29	0.58
1:1:1098:A:OP2	25:BU:108:ARG:NH2	2.36	0.58
1:1:2514:U:OP2	1:1:2586:G:N2	2.36	0.58
1:1:2617:U:O3'	45:BK:115:ARG:NH2	2.31	0.58
1:1:3152:U:O3'	1:1:3293:U:O2'	2.22	0.58
3:4:82:U:O2	3:4:87:G:O2'	2.13	0.58
9:BD:198:HIS:HA	9:BD:201:LYS:HD2	1.84	0.58
9:BD:284:ARG:HB2	9:BD:323:MET:HB3	1.84	0.58
21:BQ:64:ASN:HD22	21:BQ:80:LYS:HD2	1.68	0.58
29:BY:68:THR:HG21	39:Bi:36:LEU:HD13	1.85	0.58
1:1:1213:G:OP2	24:BT:137:ARG:NH2	2.36	0.58
1:1:2922:G:C2	1:1:2952:G:H1'	2.39	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:BC:30:ARG:HH12	8:BC:41:ILE:HG21	1.68	0.58
10:BE:204:GLY:O	10:BE:246:ARG:NH1	2.34	0.58
1:1:144:A:OP1	14:BI:193:LYS:NZ	2.31	0.58
1:1:194:U:H2'	1:1:195:U:C6	2.38	0.58
1:1:627:U:H2'	1:1:628:A:H8	1.69	0.58
1:1:1260:A:H2'	1:1:1261:G:C4	2.38	0.58
1:1:2397:A:H2'	1:1:2873:U:H1'	1.86	0.58
2:3:45:A:H2'	2:3:46:A:H8	1.68	0.58
9:BD:170:PRO:HB2	9:BD:315:GLY:HA3	1.84	0.58
1:1:1975:C:N4	1:1:2049:A:OP1	2.33	0.58
1:1:2366:C:H2'	1:1:2367:A:C8	2.37	0.58
10:BE:269:SER:O	10:BE:271:LYS:N	2.36	0.58
13:BH:96:PRO:HB2	13:BH:99:PRO:HD2	1.86	0.58
15:BJ:77:ASN:OD1	15:BJ:86:TYR:OH	2.11	0.58
19:BO:99:ARG:NH2	19:BO:118:SER:O	2.36	0.58
34:Bd:103:THR:HG23	34:Bd:105:ALA:H	1.69	0.58
1:1:1529:A:OP2	1:1:1592:G:N2	2.36	0.58
1:1:2747:A:H4'	11:BF:174:PRO:HB2	1.85	0.58
8:BC:126:LEU:HD13	8:BC:150:LEU:HD11	1.86	0.58
1:1:1340:G:H2'	1:1:1341:U:C6	2.38	0.58
1:1:1729:A:N6	7:BB:41:PHE:O	2.34	0.58
21:BQ:119:VAL:HG12	21:BQ:146:ILE:HA	1.86	0.58
23:BS:31:GLU:HA	23:BS:34:GLN:HG2	1.86	0.58
43:Bm:9:ILE:HG22	43:Bm:13:MET:HE2	1.86	0.58
1:1:1128:U:OP1	45:BK:3:ARG:NH1	2.34	0.58
1:1:1477:A:OP1	1:1:3075:G:O2'	2.22	0.58
1:1:1624:G:O6	1:1:1819:U:O2	2.22	0.58
1:1:2696:A:N7	1:1:2758:A:N6	2.52	0.58
1:1:3229:G:N3	18:BN:133:LYS:NZ	2.52	0.58
17:BM:64:LYS:O	17:BM:67:ARG:NH1	2.37	0.58
1:1:1264:G:N2	1:1:1265:U:O4	2.35	0.57
1:1:1615:C:H2'	1:1:1616:U:C6	2.38	0.57
1:1:2541:U:H4'	1:1:2542:U:O5'	2.03	0.57
2:3:17:A:OP1	11:BF:2:ALA:N	2.36	0.57
1:1:536:U:H3	1:1:557:A:H62	1.52	0.57
1:1:1468:A:N6	1:1:1508:C:O2	2.37	0.57
1:1:3060:C:H2'	1:1:3061:G:H8	1.68	0.57
4:A:81:LEU:HD22	4:A:96:ARG:HE	1.68	0.57
8:BC:101:VAL:HA	8:BC:165:VAL:HA	1.86	0.57
10:BE:140:HIS:H	10:BE:180:LYS:HE2	1.68	0.57
19:BO:94:TYR:HE1	19:BO:96:ARG:HB2	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2660:G:N3	1:1:2744:U:O2'	2.37	0.57
1:1:2684:C:H1'	16:BL:99:THR:HG21	1.85	0.57
1:1:2746:A:N1	11:BF:148:ILE:HD13	2.20	0.57
1:1:3330:A:OP2	9:BD:376:LYS:NZ	2.38	0.57
3:4:67:U:H2'	3:4:68:G:H8	1.68	0.57
8:BC:117:GLU:HB2	8:BC:162:ALA:HB1	1.86	0.57
10:BE:23:PRO:HG2	10:BE:258:LEU:HD23	1.86	0.57
1:1:118:U:N3	1:1:122:A:OP2	2.31	0.57
1:1:1134:G:O2'	1:1:2642:A:N3	2.33	0.57
1:1:1184:A:N6	1:1:1323:G:O6	2.37	0.57
1:1:2523:A:H61	14:BI:57:ARG:HD3	1.69	0.57
1:1:3022:G:H4'	1:1:3023:U:O5'	2.04	0.57
10:BE:120:TYR:HD1	10:BE:277:PRO:HG2	1.70	0.57
37:Bg:37:THR:HG22	37:Bg:39:GLN:H	1.67	0.57
37:Bg:90:PRO:HB2	37:Bg:92:LYS:HG2	1.85	0.57
1:1:2433:U:OP2	1:1:2434:U:O2'	2.21	0.57
1:1:3082:C:H2'	1:1:3083:G:H8	1.69	0.57
2:3:63:A:O2'	2:3:65:G:O4'	2.22	0.57
18:BN:13:ARG:NH1	24:BT:172:TYR:O	2.37	0.57
29:BY:57:LEU:HD21	29:BY:89:LYS:HB2	1.87	0.57
1:1:1095:U:H3	25:BU:127:GLN:HG3	1.69	0.57
1:1:1124:U:O3'	45:BK:14:LYS:NZ	2.38	0.57
1:1:1817:G:H2'	1:1:1818:U:O4'	2.04	0.57
8:BC:45:VAL:HA	8:BC:61:VAL:HA	1.87	0.57
11:BF:107:ARG:O	11:BF:111:GLN:NE2	2.35	0.57
21:BQ:22:LEU:HD12	21:BQ:146:ILE:HD12	1.86	0.57
38:Bh:13:TYR:O	38:Bh:18:ASN:ND2	2.29	0.57
1:1:14:U:O2'	29:BY:42:ARG:NE	2.36	0.57
1:1:177:U:O2	1:1:241:G:N2	2.37	0.57
1:1:768:C:H1'	17:BM:183:ARG:HH22	1.69	0.57
1:1:2286:U:H4'	1:1:2287:C:H3'	1.87	0.57
1:1:3210:A:OP2	18:BN:109:ARG:NH1	2.37	0.57
1:1:743:C:N3	22:BR:141:ARG:NH2	2.53	0.57
1:1:1896:A:H61	1:1:2339:C:H42	1.52	0.57
1:1:2916:U:H2'	1:1:2917:G:H8	1.69	0.57
1:1:3013:U:H2'	1:1:3014:U:C6	2.39	0.57
2:3:29:C:H2'	2:3:51:A:H61	1.68	0.57
14:BI:143:ILE:HD11	14:BI:151:VAL:HG11	1.87	0.57
31:Ba:22:LYS:NZ	31:Ba:132:SER:O	2.38	0.57
1:1:2794:G:O2'	1:1:2795:U:O4'	2.22	0.57
1:1:3194:C:H2'	1:1:3195:U:H5''	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1079:A:H5''	11:BF:140:ARG:HB2	1.87	0.57
1:1:2869:U:O2'	1:1:2873:U:OP2	2.23	0.57
28:BX:56:ARG:HA	28:BX:61:LYS:HB2	1.85	0.57
32:Bb:36:GLY:HA3	32:Bb:40:HIS:NE2	2.20	0.57
1:1:2181:C:OP1	8:BC:193:ARG:NH1	2.37	0.56
25:BU:39:ILE:HD13	25:BU:102:ARG:HG2	1.86	0.56
1:1:278:U:H3	1:1:287:G:H1	1.51	0.56
1:1:1395:G:O2'	3:4:18:U:O2	2.23	0.56
1:1:2403:G:O2'	1:1:2404:A:O5'	2.23	0.56
1:1:3064:U:H2'	1:1:3065:G:H8	1.70	0.56
2:3:8:G:OP2	11:BF:30:TYR:OH	2.22	0.56
11:BF:88:ILE:HD11	11:BF:243:ALA:HB1	1.88	0.56
12:BG:164:SER:O	12:BG:166:LYS:NZ	2.37	0.56
30:BZ:111:LEU:HA	30:BZ:115:ARG:HB2	1.86	0.56
45:BK:114:MET:HG2	45:BK:117:ALA:HB2	1.86	0.56
1:1:990:U:H1'	25:BU:101:CYS:HB3	1.88	0.56
1:1:1597:C:H2'	1:1:1598:G:H8	1.69	0.56
1:1:2437:G:C8	1:1:2438:A:H1'	2.40	0.56
1:1:3193:C:H2'	1:1:3194:C:C6	2.40	0.56
13:BH:44:ILE:HG12	13:BH:180:SER:HB3	1.87	0.56
19:BO:173:GLY:O	19:BO:183:THR:OG1	2.22	0.56
22:BR:170:ARG:HD2	32:Bb:57:GLY:HA3	1.87	0.56
37:Bg:16:TYR:OH	37:Bg:89:LEU:O	2.23	0.56
45:BK:138:ARG:HD3	45:BK:172:PHE:HB2	1.87	0.56
10:BE:126:ILE:O	10:BE:129:THR:OG1	2.20	0.56
43:Bm:24:PRO:HB2	43:Bm:26:TRP:HD1	1.68	0.56
1:1:3333:G:H1'	1:1:3370:A:H61	1.70	0.56
2:3:90:U:O2'	2:3:91:G:OP1	2.21	0.56
10:BE:361:HIS:HB3	24:BT:26:ARG:HH22	1.69	0.56
17:BM:57:VAL:HG22	17:BM:147:ILE:HG23	1.87	0.56
20:BP:15:LEU:HD12	20:BP:18:ARG:HD2	1.87	0.56
1:1:422:A:N1	1:1:2362:C:O2'	2.39	0.56
1:1:1065:A:H1'	33:Bc:28:LYS:HG3	1.87	0.56
1:1:1157:G:H5''	13:BH:220:PHE:CE2	2.41	0.56
1:1:870:G:O2'	1:1:871:U:O5'	2.22	0.56
1:1:1047:A:N3	1:1:2633:U:O2'	2.37	0.56
1:1:2394:G:N2	9:BD:258:ALA:O	2.33	0.56
1:1:2724:U:OP2	1:1:2726:C:N4	2.38	0.56
1:1:2947:G:N3	9:BD:250:ALA:HB1	2.21	0.56
1:1:3201:C:H2'	1:1:3202:G:H8	1.71	0.56
1:1:3332:U:O2	1:1:3371:G:O6	2.24	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:3:A:O2'	21:BQ:61:ARG:NE	2.36	0.56
14:BI:163:VAL:HG23	14:BI:166:LEU:HD12	1.88	0.56
14:BI:186:LEU:HD12	14:BI:189:LEU:HD21	1.88	0.56
24:BT:68:HIS:O	24:BT:73:LYS:NZ	2.39	0.56
31:Ba:17:ARG:HD3	38:Bh:73:SER:HB2	1.88	0.56
1:1:656:A:H2'	1:1:657:A:C8	2.40	0.56
1:1:1645:U:H3'	1:1:1646:G:H8	1.71	0.56
2:3:28:C:H5'	16:BL:141:ARG:HH21	1.71	0.56
3:4:80:A:N1	3:4:83:C:N4	2.53	0.56
6:BA:21:THR:HG21	6:BA:76:LYS:HD2	1.87	0.56
15:BJ:122:LYS:NZ	15:BJ:123:ILE:O	2.38	0.56
17:BM:43:ALA:HB1	17:BM:137:GLN:HE22	1.71	0.56
19:BO:140:LYS:HB3	19:BO:144:ARG:HH12	1.70	0.56
27:BW:101:VAL:HB	27:BW:109:MET:HE3	1.87	0.56
44:Bn:99:CYS:HB3	44:Bn:115:CYS:HB3	1.88	0.56
1:1:451:U:O2	1:1:483:G:O6	2.24	0.56
1:1:1666:G:H2'	1:1:1667:A:H8	1.71	0.56
9:BD:220:VAL:HB	9:BD:334:ARG:HD3	1.88	0.56
1:1:276:U:H2'	1:1:277:G:C8	2.41	0.56
1:1:1433:A:O2'	1:1:1434:G:O5'	2.23	0.56
2:3:27:A:H2'	2:3:28:C:C6	2.41	0.56
6:BA:50:PHE:HZ	19:BO:91:GLU:HB3	1.71	0.56
1:1:365:A:OP1	10:BE:84:ARG:NH1	2.39	0.55
1:1:1596:C:H2'	1:1:1597:C:C6	2.41	0.55
1:1:1689:U:H2'	1:1:1690:C:C6	2.41	0.55
1:1:2154:U:H2'	1:1:2155:G:H8	1.71	0.55
1:1:2883:U:H2'	1:1:2884:C:H6	1.71	0.55
11:BF:41:LYS:HD2	25:BU:93:VAL:HG11	1.88	0.55
25:BU:40:VAL:HG21	25:BU:96:ILE:HD11	1.88	0.55
1:1:1560:G:C6	1:1:1580:A:C2	2.94	0.55
1:1:2350:C:H5''	21:BQ:68:GLY:HA3	1.87	0.55
3:4:3:A:HO2'	21:BQ:61:ARG:HE	1.55	0.55
6:BA:15:LYS:HZ3	6:BA:18:ARG:HH21	1.53	0.55
42:Bl:14:LEU:HA	42:Bl:17:ARG:HB2	1.89	0.55
1:1:651:G:O2'	1:1:1435:A:OP1	2.24	0.55
1:1:1236:G:H4'	1:1:1245:A:H1'	1.87	0.55
1:1:1492:G:H1'	1:1:1843:C:H5''	1.88	0.55
1:1:1597:C:H2'	1:1:1598:G:C8	2.41	0.55
1:1:3329:U:H4'	9:BD:308:MET:HB3	1.89	0.55
7:BB:33:GLN:OE1	7:BB:34:HIS:NE2	2.39	0.55
1:1:805:G:H2'	1:1:936:A:H61	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1290:A:H2'	1:1:1291:A:C8	2.42	0.55
1:1:1460:A:H2'	1:1:1461:A:C8	2.41	0.55
1:1:1493:G:O6	43:Bm:2:ALA:N	2.39	0.55
1:1:2619:G:H1	5:2:75:C:H41	1.52	0.55
21:BQ:64:ASN:HB2	21:BQ:80:LYS:HD2	1.89	0.55
1:1:99:A:H2'	1:1:100:A:H8	1.71	0.55
1:1:1237:G:H5'	1:1:1238:C:C5	2.42	0.55
1:1:1898:G:H2'	1:1:1899:G:O4'	2.06	0.55
1:1:2357:A:H2'	1:1:2358:A:H8	1.71	0.55
1:1:2707:C:H2'	1:1:2708:C:C6	2.42	0.55
1:1:3068:U:OP2	23:BS:62:ARG:NH2	2.31	0.55
20:BP:54:TYR:OH	20:BP:73:PHE:O	2.24	0.55
1:1:170:G:N1	1:1:248:U:N3	2.51	0.55
1:1:283:G:O2'	32:Bb:59:ARG:NH1	2.38	0.55
1:1:938:C:O2	1:1:2813:A:O2'	2.25	0.55
1:1:1100:U:O2'	13:BH:105:LEU:O	2.23	0.55
1:1:1340:G:H2'	1:1:1341:U:H6	1.72	0.55
1:1:1724:U:OP2	23:BS:128:LYS:NZ	2.36	0.55
1:1:2676:A:H5'	1:1:2677:G:C8	2.42	0.55
17:BM:3:ILE:HD13	32:Bb:34:MET:HB2	1.87	0.55
1:1:1947:G:OP1	23:BS:136:ARG:NH1	2.40	0.55
1:1:2882:U:H2'	1:1:2883:U:C6	2.41	0.55
2:3:47:C:OP1	11:BF:95:TRP:N	2.38	0.55
24:BT:15:PRO:HB3	24:BT:20:PRO:HA	1.89	0.55
1:1:618:C:O2'	37:Bg:60:ARG:NH2	2.39	0.55
1:1:1550:C:H2'	1:1:1551:C:H6	1.71	0.55
1:1:1795:U:C4	7:BB:51:ALA:HA	2.42	0.55
1:1:2225:U:H2'	1:1:2226:U:C6	2.42	0.55
1:1:3347:A:H2'	1:1:3348:G:C8	2.40	0.55
3:4:126:A:O2'	3:4:129:C:N4	2.39	0.55
12:BG:40:LEU:HD13	12:BG:84:VAL:HG11	1.88	0.55
35:Be:10:ARG:NH1	35:Be:12:TYR:OH	2.39	0.55
1:1:532:A:N6	1:1:560:G:H1	2.04	0.55
1:1:2218:G:H2'	1:1:2219:A:H8	1.71	0.55
1:1:2434:U:H4'	1:1:2435:G:O5'	2.06	0.55
9:BD:37:ARG:HG3	9:BD:187:SER:H	1.72	0.55
16:BL:52:TYR:HA	16:BL:61:ARG:HD3	1.89	0.55
16:BL:103:GLY:HA3	16:BL:128:TYR:HD1	1.72	0.55
18:BN:23:ILE:HG12	18:BN:63:VAL:HG12	1.89	0.55
42:Bl:24:THR:HG22	42:Bl:76:ASN:HB3	1.89	0.55
1:1:255:A:H2'	1:1:256:G:C8	2.42	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:895:A:O2'	1:1:897:U:OP2	2.22	0.55
1:1:1104:G:H2'	1:1:1105:A:H8	1.71	0.55
1:1:1895:A:N6	1:1:2335:G:O2'	2.39	0.55
1:1:1940:G:H21	1:1:3362:A:H8	1.55	0.55
11:BF:91:GLY:O	11:BF:94:ASN:ND2	2.39	0.55
17:BM:153:ASP:OD1	17:BM:154:VAL:N	2.39	0.55
18:BN:38:ILE:HA	18:BN:44:VAL:HG12	1.89	0.55
33:Bc:41:ARG:O	33:Bc:45:HIS:ND1	2.40	0.55
1:1:816:A:H2	1:1:919:U:H1'	1.71	0.54
1:1:1386:A:H5''	10:BE:141:ARG:HH22	1.73	0.54
1:1:1576:G:H2'	1:1:1577:G:C8	2.42	0.54
1:1:2525:G:O6	14:BI:41:GLN:NE2	2.40	0.54
1:1:2744:U:H2'	1:1:2745:G:C8	2.43	0.54
8:BC:103:PRO:HA	8:BC:163:ARG:HA	1.89	0.54
25:BU:107:GLU:HA	25:BU:110:LYS:HG2	1.89	0.54
34:Bd:44:ILE:HD13	34:Bd:53:LYS:HG3	1.89	0.54
36:Bf:77:ALA:HA	36:Bf:100:ILE:HD11	1.89	0.54
45:BK:210:ARG:HH21	45:BK:211:GLU:HB3	1.73	0.54
1:1:1718:G:H2'	1:1:1719:G:H8	1.71	0.54
1:1:1972:A:N6	1:1:2051:G:O2'	2.39	0.54
1:1:3016:A:H2'	1:1:3017:A:C8	2.43	0.54
1:1:3150:A:HO2'	1:1:3294:A:HO2'	1.54	0.54
4:A:119:PRO:HG2	4:A:146:ILE:HG22	1.88	0.54
8:BC:65:ASP:OD2	8:BC:72:ARG:NH2	2.40	0.54
11:BF:30:TYR:HA	11:BF:33:ARG:HB3	1.88	0.54
13:BH:59:GLU:HA	13:BH:62:ILE:HG22	1.88	0.54
1:1:26:A:N3	1:1:328:U:O2'	2.40	0.54
1:1:276:U:H2'	1:1:277:G:H8	1.72	0.54
1:1:353:G:H4'	1:1:354:U:O5'	2.07	0.54
1:1:1295:G:H2'	1:1:1296:C:C6	2.41	0.54
1:1:1612:A:H5''	42:Bl:51:LEU:HD22	1.89	0.54
2:3:65:G:H2'	2:3:66:A:H8	1.72	0.54
8:BC:54:ARG:HG2	8:BC:56:ALA:H	1.71	0.54
20:BP:27:LEU:HD11	20:BP:102:LEU:HD22	1.90	0.54
1:1:788:C:H2'	1:1:789:A:C8	2.42	0.54
1:1:981:U:H2'	1:1:982:C:C6	2.42	0.54
1:1:1064:A:H4'	1:1:1065:A:O5'	2.07	0.54
1:1:1834:U:OP1	43:Bm:10:LYS:NZ	2.40	0.54
1:1:2615:G:H2'	1:1:2616:C:C6	2.43	0.54
1:1:23:A:OP1	41:Bk:44:THR:OG1	2.23	0.54
1:1:611:A:O2'	1:1:612:U:O4'	2.26	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1236:G:O2'	1:1:1245:A:OP1	2.25	0.54
1:1:1847:A:H1'	21:BQ:130:TYR:CZ	2.43	0.54
1:1:1955:U:O4	1:1:1956:A:N6	2.41	0.54
4:A:1:MET:H2	4:A:203:LEU:HA	1.71	0.54
7:BB:66:GLY:HA2	8:BC:80:GLU:HG3	1.88	0.54
11:BF:289:LYS:HZ3	45:BK:205:LEU:HB2	1.73	0.54
1:1:220:G:O2'	1:1:221:A:H5'	2.08	0.54
1:1:1799:A:H2'	1:1:1800:A:C8	2.43	0.54
1:1:2697:A:H2'	1:1:2698:G:C8	2.42	0.54
45:BK:149:GLU:OE2	45:BK:153:ARG:NH2	2.40	0.54
1:1:53:G:N2	1:1:1546:A:N1	2.56	0.54
1:1:631:U:H2'	1:1:632:G:H8	1.73	0.54
1:1:1039:U:H2'	1:1:1040:A:C8	2.43	0.54
1:1:1928:G:N2	1:1:2320:A:O2'	2.40	0.54
1:1:2730:G:OP1	22:BR:158:HIS:NE2	2.39	0.54
1:1:3322:A:H2'	1:1:3323:A:H8	1.72	0.54
2:3:28:C:OP1	16:BL:137:ARG:NH1	2.41	0.54
9:BD:298:PHE:O	9:BD:300:ARG:NH1	2.40	0.54
19:BO:6:TYR:HE1	40:Bj:40:VAL:HG22	1.73	0.54
27:BW:23:MET:HE1	27:BW:78:VAL:HG13	1.90	0.54
31:Ba:72:ILE:HD11	31:Ba:107:ARG:HG3	1.89	0.54
1:1:1175:C:H1'	20:BP:87:MET:HG2	1.90	0.54
1:1:3333:G:H1'	1:1:3370:A:N6	2.22	0.54
16:BL:86:VAL:HG11	16:BL:106:ILE:HG12	1.89	0.54
21:BQ:2:ALA:HB1	21:BQ:18:ARG:HH12	1.73	0.54
1:1:292:U:OP2	19:BO:68:ARG:NH2	2.40	0.54
1:1:619:A:H4'	1:1:620:U:C6	2.43	0.54
2:3:27:A:H2'	2:3:28:C:H6	1.73	0.54
2:3:84:A:H2'	2:3:85:G:C8	2.43	0.54
5:2:13:C:H2'	5:2:14:A:H8	1.73	0.54
1:1:426:G:H2'	1:1:427:C:C6	2.43	0.54
1:1:1157:G:O2'	1:1:1169:A:N3	2.37	0.54
5:2:70:G:H2'	5:2:71:A:H8	1.72	0.54
10:BE:74:ILE:HG13	10:BE:76:ARG:HE	1.73	0.54
39:Bi:82:ALA:HB3	39:Bi:84:LYS:HZ3	1.73	0.54
1:1:149:U:OP1	19:BO:49:ARG:NH1	2.41	0.53
1:1:656:A:H2'	1:1:657:A:H8	1.72	0.53
1:1:2090:U:H2'	1:1:2091:U:C6	2.43	0.53
1:1:2374:C:N4	1:1:2941:A:N3	2.56	0.53
1:1:2659:G:H2'	1:1:2660:G:H8	1.73	0.53
1:1:2930:A:H2'	1:1:2931:C:C6	2.44	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3045:G:H5''	9:BD:19:ARG:HH22	1.73	0.53
1:1:3111:U:H2'	1:1:3112:G:O4'	2.09	0.53
14:BI:162:LEU:HD23	19:BO:7:LEU:HD21	1.89	0.53
22:BR:176:ARG:HG3	22:BR:183:GLY:HA3	1.91	0.53
1:1:1085:A:H2'	1:1:1086:C:C6	2.42	0.53
1:1:1245:A:N6	1:1:1272:C:O3'	2.41	0.53
1:1:2504:U:H4'	40:Bj:56:ARG:NH2	2.23	0.53
1:1:2512:C:H2'	1:1:2513:U:C6	2.43	0.53
7:BB:14:TYR:OH	8:BC:184:ARG:NH2	2.41	0.53
11:BF:31:TYR:O	11:BF:35:ARG:NH1	2.40	0.53
11:BF:208:MET:HA	11:BF:208:MET:HE3	1.90	0.53
12:BG:43:LEU:HD11	12:BG:85:ILE:HG13	1.90	0.53
18:BN:123:LEU:HA	18:BN:126:GLN:HB2	1.90	0.53
22:BR:158:HIS:H	22:BR:186:VAL:HG11	1.72	0.53
1:1:504:A:H2'	1:1:505:G:H8	1.72	0.53
1:1:1029:G:H2'	1:1:1030:A:H8	1.74	0.53
1:1:1574:C:H2'	1:1:1575:A:C8	2.44	0.53
1:1:1580:A:N1	29:BY:33:ARG:NH1	2.56	0.53
1:1:1661:G:H2'	1:1:1662:G:H8	1.71	0.53
1:1:2407:C:H2'	1:1:2408:U:H6	1.73	0.53
2:3:55:A:H1'	16:BL:10:ARG:HB3	1.91	0.53
21:BQ:16:SER:HB3	21:BQ:149:VAL:HG22	1.91	0.53
21:BQ:31:GLU:HG3	21:BQ:60:PHE:CD1	2.42	0.53
21:BQ:58:ILE:HD12	21:BQ:84:PRO:HD2	1.91	0.53
31:Ba:100:THR:C	31:Ba:106:GLN:HE22	2.16	0.53
1:1:156:G:OP2	40:Bj:27:SER:OG	2.17	0.53
1:1:273:A:H2'	1:1:274:G:H8	1.73	0.53
1:1:484:C:H2'	1:1:485:A:H8	1.73	0.53
1:1:1060:U:H2'	1:1:1061:A:C8	2.43	0.53
1:1:1717:U:H2'	1:1:1718:G:C8	2.44	0.53
1:1:2412:G:H2'	1:1:2413:A:H8	1.73	0.53
1:1:2732:G:H5'	1:1:2761:G:H5'	1.90	0.53
1:1:3309:G:OP2	1:1:3309:G:N2	2.40	0.53
17:BM:27:ASP:O	17:BM:29:ALA:N	2.42	0.53
31:Ba:83:THR:HG22	31:Ba:84:ARG:H	1.73	0.53
37:Bg:50:ALA:HB2	37:Bg:68:TRP:CZ3	2.44	0.53
1:1:94:G:H2'	1:1:95:A:C8	2.44	0.53
1:1:1394:A:H62	1:1:1417:G:N2	2.06	0.53
4:A:102:SER:HB3	4:A:107:VAL:HG23	1.90	0.53
9:BD:117:ARG:HD2	9:BD:175:LYS:HD3	1.89	0.53
32:Bb:81:LEU:HD21	32:Bb:109:TYR:HE2	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:632:G:N3	37:Bg:23:ASN:ND2	2.55	0.53
1:1:1471:U:H2'	1:1:1472:U:C6	2.44	0.53
1:1:2344:U:H2'	1:1:2345:A:H8	1.74	0.53
1:1:2611:U:H2'	1:1:2612:U:C6	2.43	0.53
1:1:3139:A:OP1	9:BD:274:SER:OG	2.23	0.53
1:1:3157:U:H4'	1:1:3158:G:H8	1.73	0.53
4:A:139:ARG:HA	4:A:139:ARG:NH1	2.24	0.53
18:BN:23:ILE:O	18:BN:30:GLY:N	2.42	0.53
18:BN:112:LEU:HD22	18:BN:116:GLU:HG3	1.91	0.53
30:BZ:74:TYR:CD2	30:BZ:77:LYS:HG2	2.43	0.53
1:1:484:C:H2'	1:1:485:A:C8	2.44	0.53
1:1:531:G:H2'	1:1:532:A:H8	1.72	0.53
1:1:617:G:H2'	1:1:618:C:C6	2.44	0.53
1:1:929:A:O2'	41:Bk:49:TRP:O	2.27	0.53
1:1:2085:U:H2'	1:1:2086:A:H8	1.74	0.53
1:1:2945:G:O2'	1:1:2948:C:OP2	2.21	0.53
1:1:1116:G:N2	1:1:2817:A:O4'	2.42	0.53
1:1:1975:C:H4'	42:Bl:63:LYS:HD2	1.89	0.53
1:1:2213:A:H1'	1:1:2602:G:H5'	1.90	0.53
1:1:2418:G:OP2	1:1:2606:G:N2	2.36	0.53
1:1:2960:C:H2'	1:1:2961:G:C8	2.40	0.53
31:Ba:108:GLU:HG3	31:Ba:112:LYS:HE3	1.91	0.53
1:1:221:A:O2'	1:1:223:U:OP2	2.23	0.53
1:1:1786:G:H2'	1:1:1787:A:C8	2.43	0.53
1:1:2047:A:H2'	1:1:2048:G:H4'	1.91	0.53
1:1:2442:G:H1	1:1:2505:U:H3	0.71	0.53
1:1:2837:A:H3'	1:1:2845:A:C2	2.44	0.53
1:1:3187:A:H2	1:1:3205:G:H22	1.57	0.53
13:BH:101:LYS:HE3	13:BH:105:LEU:HD11	1.90	0.53
16:BL:21:ILE:HD11	16:BL:37:LEU:HD21	1.90	0.53
26:BV:104:ARG:HH21	26:BV:106:ALA:HB2	1.74	0.53
32:Bb:41:HIS:O	32:Bb:45:MET:N	2.38	0.53
1:1:181:U:H4'	41:Bk:75:LYS:HE2	1.91	0.53
1:1:908:G:N1	1:1:2414:G:OP1	2.42	0.53
1:1:1794:G:H4'	8:BC:191:LEU:HD13	1.91	0.53
1:1:1795:U:OP2	8:BC:50:HIS:NE2	2.41	0.53
1:1:1829:G:H5''	1:1:1830:G:H5'	1.92	0.53
1:1:2267:C:C2	1:1:2268:U:C5	2.96	0.53
3:4:3:A:HO2'	21:BQ:61:ARG:NE	2.07	0.53
6:BA:53:GLN:OE1	6:BA:55:LYS:N	2.37	0.53
14:BI:98:ARG:NH2	14:BI:188:THR:O	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:BW:39:VAL:HA	27:BW:58:VAL:HG12	1.91	0.53
33:Bc:25:LYS:O	33:Bc:25:LYS:HD2	2.09	0.53
1:1:543:C:O2'	1:1:544:C:O5'	2.26	0.52
1:1:629:U:H2'	1:1:630:A:C8	2.43	0.52
1:1:857:G:O2'	1:1:858:A:O4'	2.27	0.52
1:1:1180:A:OP1	37:Bg:78:SER:N	2.42	0.52
1:1:2249:G:H3'	1:1:2272:G:O6	2.09	0.52
4:A:114:VAL:HG21	4:A:177:LEU:HG	1.91	0.52
9:BD:71:GLU:OE2	9:BD:357:LYS:NZ	2.42	0.52
11:BF:107:ARG:NH1	11:BF:116:ASP:OD1	2.43	0.52
1:1:8:C:H2'	1:1:9:U:C6	2.44	0.52
1:1:196:G:N2	1:1:219:A:N6	2.31	0.52
1:1:1261:G:O2'	1:1:1278:A:N6	2.37	0.52
1:1:1810:A:H2'	1:1:1811:G:H8	1.74	0.52
1:1:2659:G:H2'	1:1:2660:G:C8	2.44	0.52
1:1:3060:C:H2'	1:1:3061:G:C8	2.44	0.52
1:1:3074:G:H2'	1:1:3075:G:H8	1.75	0.52
3:4:26:U:H2'	3:4:27:U:C6	2.45	0.52
6:BA:45:ARG:O	6:BA:48:SER:OG	2.21	0.52
9:BD:283:TYR:HB3	9:BD:356:LEU:HD21	1.90	0.52
10:BE:120:TYR:CD1	10:BE:277:PRO:HG2	2.43	0.52
19:BO:115:VAL:O	19:BO:159:ARG:NH1	2.43	0.52
1:1:346:C:O2	1:1:348:A:N6	2.42	0.52
1:1:616:G:H2'	1:1:616:G:N3	2.24	0.52
1:1:2656:A:O2'	1:1:2657:A:OP1	2.25	0.52
2:3:67:G:O6	2:3:111:U:O2	2.28	0.52
3:4:16:G:O2'	3:4:17:A:O4'	2.27	0.52
17:BM:90:ALA:HB1	17:BM:95:ILE:HB	1.91	0.52
33:Bc:32:LEU:HD22	33:Bc:35:VAL:HG21	1.90	0.52
45:BK:129:ASP:OD1	45:BK:130:ILE:N	2.35	0.52
1:1:727:G:H4'	1:1:977:C:H5'	1.90	0.52
1:1:1144:U:H4'	1:1:1145:G:O5'	2.10	0.52
1:1:2612:U:H2'	1:1:2613:U:O4'	2.09	0.52
1:1:2997:G:O6	1:1:3151:U:O4	2.28	0.52
28:BX:6:ASP:OD2	28:BX:32:GLN:N	2.39	0.52
43:Bm:24:PRO:HB2	43:Bm:26:TRP:CD1	2.44	0.52
1:1:906:A:H1'	1:1:909:G:H21	1.73	0.52
1:1:1208:U:O2'	1:1:1210:U:OP2	2.28	0.52
1:1:2768:U:H2'	1:1:2769:A:C8	2.43	0.52
1:1:3107:U:H2'	1:1:3108:G:C8	2.45	0.52
8:BC:129:ALA:HB3	8:BC:132:ASN:HD22	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:BD:205:VAL:HA	9:BD:208:VAL:HG22	1.92	0.52
15:BJ:90:MET:HB2	15:BJ:144:ILE:HG22	1.92	0.52
25:BU:73:GLY:HA2	25:BU:90:ASN:HA	1.92	0.52
27:BW:117:PRO:HA	27:BW:135:VAL:HB	1.92	0.52
1:1:86:G:H4'	1:1:87:U:O5'	2.10	0.52
1:1:664:U:H3	1:1:798:G:H1	1.57	0.52
1:1:1660:C:H2'	1:1:1661:G:H8	1.73	0.52
1:1:2149:A:H5''	8:BC:179:LEU:HD23	1.92	0.52
1:1:2672:G:O3'	16:BL:94:ARG:NH1	2.33	0.52
3:4:14:C:H5''	21:BQ:123:PRO:HG3	1.91	0.52
11:BF:53:VAL:HG13	11:BF:60:ILE:HD11	1.91	0.52
13:BH:127:LEU:HA	13:BH:130:ILE:HG22	1.92	0.52
42:BL:32:ASN:HB3	42:BL:38:PHE:HE2	1.73	0.52
1:1:170:G:H1'	1:1:250:U:H3	1.75	0.52
1:1:1029:G:H2'	1:1:1030:A:C8	2.45	0.52
9:BD:372:THR:HG23	9:BD:375:GLU:H	1.75	0.52
10:BE:358:THR:O	24:BT:26:ARG:NH1	2.39	0.52
14:BI:101:THR:HG23	14:BI:103:ALA:H	1.73	0.52
16:BL:35:LYS:HD2	16:BL:38:GLU:HG3	1.91	0.52
1:1:63:A:OP1	19:BO:172:ARG:NH2	2.42	0.52
1:1:1460:A:H2'	1:1:1461:A:H8	1.74	0.52
1:1:1803:C:H2'	1:1:1804:A:H8	1.74	0.52
1:1:2974:U:H2'	1:1:2975:U:C6	2.44	0.52
1:1:3186:A:OP2	24:BT:170:THR:OG1	2.26	0.52
3:4:68:G:H2'	3:4:69:U:H6	1.74	0.52
4:A:71:LEU:HD23	4:A:104:LEU:HD12	1.91	0.52
5:2:54:U:O4	5:2:58:A:N7	2.43	0.52
8:BC:134:VAL:HG12	8:BC:151:PRO:HD3	1.91	0.52
11:BF:263:GLU:O	11:BF:267:ALA:N	2.40	0.52
21:BQ:179:GLN:O	21:BQ:184:ALA:N	2.42	0.52
1:1:584:G:H2'	1:1:585:A:H8	1.75	0.52
1:1:1018:G:H2'	1:1:1019:G:H8	1.75	0.52
1:1:1718:G:H2'	1:1:1719:G:C8	2.45	0.52
1:1:1805:C:H2'	1:1:1806:A:H8	1.75	0.52
1:1:1908:A:H2'	1:1:1909:A:C8	2.45	0.52
1:1:2523:A:N1	14:BI:57:ARG:NH1	2.57	0.52
3:4:156:U:H2'	3:4:157:U:C5	2.45	0.52
10:BE:188:ARG:HB3	10:BE:193:LYS:HB3	1.92	0.52
27:BW:87:ARG:HH22	27:BW:137:VAL:HG21	1.75	0.52
39:BI:102:GLU:CD	39:BI:105:ARG:HH12	2.18	0.52
45:BK:20:ARG:NH2	45:BK:21:TYR:OH	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2723:U:H5''	25:BU:87:LYS:HE2	1.92	0.52
1:1:2761:G:O6	6:BA:63:LYS:NZ	2.41	0.52
10:BE:3:ARG:NH2	10:BE:22:LEU:O	2.44	0.52
42:BL:42:LYS:HG2	42:BL:55:VAL:HG12	1.91	0.52
1:1:1235:U:N3	1:1:1237:G:H4'	2.25	0.51
1:1:1389:G:O2'	1:1:1392:G:O2'	2.28	0.51
1:1:2219:A:H2'	1:1:2220:A:C8	2.45	0.51
1:1:2767:U:O2'	6:BA:30:ALA:O	2.26	0.51
4:A:62:MET:HE1	27:BW:136:VAL:HG21	1.92	0.51
10:BE:58:HIS:CE1	10:BE:98:ARG:HE	2.27	0.51
11:BF:34:LYS:HA	25:BU:27:LEU:HD11	1.93	0.51
12:BG:102:ASN:ND2	12:BG:104:GLU:OE2	2.43	0.51
19:BO:35:VAL:HA	19:BO:65:ARG:HD3	1.90	0.51
43:Bm:5:LYS:HD2	43:Bm:13:MET:HE1	1.92	0.51
45:BK:170:TRP:O	45:BK:172:PHE:N	2.37	0.51
1:1:120:G:OP2	14:BI:133:LYS:NZ	2.42	0.51
1:1:273:A:H2'	1:1:274:G:C8	2.46	0.51
1:1:738:A:H2'	1:1:739:G:H8	1.76	0.51
2:3:45:A:H2'	2:3:46:A:C8	2.45	0.51
4:A:160:LEU:HD23	4:A:193:VAL:HB	1.91	0.51
11:BF:39:GLN:NE2	11:BF:46:THR:O	2.43	0.51
15:BJ:43:VAL:HG11	15:BJ:71:VAL:HG21	1.92	0.51
15:BJ:87:LYS:HB2	15:BJ:187:ILE:HD13	1.91	0.51
1:1:279:U:H2'	1:1:280:U:C6	2.45	0.51
1:1:1804:A:H2'	1:1:1805:C:H6	1.75	0.51
1:1:3151:U:OP2	9:BD:132:LYS:NZ	2.43	0.51
1:1:3392:U:OP1	21:BQ:43:LYS:NZ	2.41	0.51
8:BC:45:VAL:HB	8:BC:61:VAL:HG22	1.92	0.51
18:BN:15:VAL:HG12	18:BN:65:LEU:HD11	1.92	0.51
1:1:442:G:O6	1:1:492:U:O4	2.28	0.51
1:1:1624:G:H2'	1:1:1625:A:H8	1.74	0.51
1:1:1628:C:O5'	1:1:1814:A:N6	2.44	0.51
1:1:1970:U:OP2	1:1:1971:C:N4	2.43	0.51
1:1:2561:A:H61	1:1:2579:G:H2'	1.74	0.51
1:1:2708:C:H2'	1:1:2709:C:H6	1.75	0.51
1:1:2883:U:H2'	1:1:2884:C:C6	2.46	0.51
1:1:2915:U:H5'	1:1:2916:U:H5'	1.92	0.51
1:1:3027:A:O2'	1:1:3028:G:OP1	2.28	0.51
10:BE:8:VAL:HG23	10:BE:151:VAL:HG12	1.93	0.51
21:BQ:24:VAL:HG13	21:BQ:86:LYS:HG2	1.92	0.51
24:BT:99:ARG:NH2	24:BT:126:VAL:O	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:BV:94:ARG:NH2	26:BV:96:VAL:HG22	2.20	0.51
32:Bb:82:ILE:HG23	32:Bb:86:LYS:NZ	2.25	0.51
1:1:442:G:H2'	1:1:443:G:C8	2.45	0.51
1:1:1699:A:H2'	1:1:1700:G:C8	2.46	0.51
1:1:2218:G:H2'	1:1:2219:A:C8	2.45	0.51
1:1:2619:G:H22	5:2:75:C:N4	2.08	0.51
1:1:3312:U:H4'	9:BD:25:ILE:HD12	1.93	0.51
3:4:142:C:H2'	3:4:143:U:C6	2.46	0.51
4:A:109:CYS:HB3	4:A:116:LEU:HB2	1.91	0.51
9:BD:215:ILE:HD13	9:BD:282:ILE:HD11	1.92	0.51
10:BE:64:SER:HA	10:BE:75:PRO:HA	1.92	0.51
11:BF:146:LEU:HD11	11:BF:163:LEU:HD13	1.91	0.51
12:BG:97:ASN:O	12:BG:99:GLU:N	2.37	0.51
13:BH:234:GLU:O	13:BH:237:ASN:ND2	2.42	0.51
28:BX:20:LEU:HD11	28:BX:28:ILE:HD11	1.92	0.51
1:1:638:C:N4	1:1:639:G:O6	2.44	0.51
1:1:1159:A:O5'	22:BR:2:GLY:N	2.43	0.51
1:1:1307:G:H4'	1:1:1308:A:O5'	2.10	0.51
1:1:1423:C:H1'	12:BG:5:LYS:HE3	1.92	0.51
1:1:2406:C:H2'	1:1:2407:C:H6	1.76	0.51
4:A:119:PRO:HA	4:A:139:ARG:NH2	2.26	0.51
11:BF:197:SER:HB2	11:BF:202:GLY:HA3	1.92	0.51
27:BW:135:VAL:HG11	28:BX:26:SER:HB2	1.91	0.51
38:Bh:47:CYS:HG	38:Bh:49:SER:HG	1.57	0.51
41:Bk:17:THR:HG22	41:Bk:18:LEU:H	1.76	0.51
44:Bn:95:VAL:O	44:Bn:122:ARG:N	2.41	0.51
1:1:12:A:H2'	1:1:13:A:C8	2.46	0.51
1:1:1078:U:O2	1:1:1082:U:N3	2.44	0.51
1:1:1974:A:N6	1:1:2049:A:O4'	2.43	0.51
1:1:2109:U:H2'	1:1:2110:G:C8	2.46	0.51
1:1:2267:C:N3	1:1:2268:U:C5	2.78	0.51
1:1:2683:U:H1'	16:BL:128:TYR:CE2	2.46	0.51
1:1:2926:A:H2'	1:1:2927:C:C6	2.45	0.51
1:1:2953:U:H2'	1:1:2954:U:H6	1.76	0.51
11:BF:117:GLU:O	11:BF:120:LYS:NZ	2.27	0.51
35:Be:10:ARG:HG2	35:Be:108:VAL:HG23	1.93	0.51
39:Bi:67:ARG:HG2	39:Bi:71:LYS:HE3	1.93	0.51
39:Bi:82:ALA:HB3	39:Bi:84:LYS:NZ	2.25	0.51
1:1:19:U:H2'	1:1:20:A:C8	2.46	0.51
1:1:36:C:H4'	1:1:808:A:C2	2.44	0.51
1:1:120:G:O2'	1:1:121:A:N7	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:664:U:H2'	1:1:665:A:C8	2.45	0.51
1:1:737:G:H2'	1:1:738:A:C8	2.46	0.51
1:1:2607:G:H5'	8:BC:233:GLN:HB3	1.93	0.51
1:1:2819:A:H5''	1:1:2866:U:O4	2.11	0.51
8:BC:70:ARG:HE	8:BC:72:ARG:HH21	1.58	0.51
19:BO:68:ARG:HH12	19:BO:128:LYS:HE3	1.76	0.51
34:Bd:84:LEU:H	34:Bd:84:LEU:HD12	1.76	0.51
1:1:2227:C:H2'	1:1:2228:A:C8	2.44	0.51
1:1:3121:U:OP2	44:Bn:111:ARG:NE	2.37	0.51
5:2:50:C:H2'	5:2:51:A:C8	2.46	0.51
21:BQ:111:LYS:HE2	21:BQ:152:GLU:HB3	1.93	0.51
22:BR:89:ASP:OD1	22:BR:90:ASP:N	2.43	0.51
24:BT:13:ARG:HG2	24:BT:14:LEU:H	1.74	0.51
32:Bb:71:PRO:HB2	32:Bb:109:TYR:HA	1.93	0.51
37:Bg:48:ARG:HG2	37:Bg:68:TRP:CZ3	2.46	0.51
1:1:252:U:H5'	1:1:253:A:H5'	1.93	0.51
1:1:261:U:H2'	1:1:262:U:C6	2.45	0.51
1:1:737:G:H2'	1:1:738:A:H8	1.75	0.51
1:1:1302:A:N7	1:1:2857:C:O2'	2.43	0.51
1:1:2268:U:C4	1:1:2269:U:C4	2.99	0.51
9:BD:43:LEU:HB2	9:BD:208:VAL:HG12	1.92	0.51
9:BD:171:LEU:HD23	9:BD:173:GLN:H	1.76	0.51
11:BF:178:ASN:HA	11:BF:183:TRP:CD2	2.46	0.51
24:BT:81:TYR:CE1	24:BT:90:MET:HE2	2.46	0.51
41:Bk:64:MET:O	41:Bk:68:LYS:HG2	2.11	0.51
1:1:105:C:H2'	1:1:106:A:H8	1.75	0.50
1:1:1480:G:H4'	1:1:1481:A:H5'	1.93	0.50
1:1:1493:G:N2	1:1:1493:G:OP2	2.44	0.50
1:1:2403:G:HO2'	1:1:2404:A:P	2.34	0.50
1:1:2586:G:C8	14:BI:241:LYS:HD3	2.46	0.50
1:1:3357:U:H2'	1:1:3358:U:C6	2.46	0.50
4:A:76:THR:O	4:A:96:ARG:NH1	2.42	0.50
5:2:23:G:H2'	5:2:24:G:C8	2.46	0.50
31:Ba:100:THR:O	31:Ba:106:GLN:NE2	2.43	0.50
38:Bh:41:ARG:HG2	38:Bh:56:THR:HG21	1.94	0.50
1:1:928:C:H2'	1:1:929:A:C8	2.45	0.50
1:1:1341:U:H2'	1:1:1342:C:C6	2.46	0.50
1:1:1699:A:H2'	1:1:1700:G:H8	1.76	0.50
1:1:2158:A:OP2	8:BC:156:LYS:NZ	2.38	0.50
1:1:2180:G:H2'	1:1:2181:C:C6	2.46	0.50
3:4:51:G:C4	43:Bm:26:TRP:HZ2	2.29	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:Be:55:LEU:HD13	35:Be:93:VAL:HG12	1.94	0.50
1:1:662:U:H2'	1:1:663:C:C6	2.46	0.50
1:1:1624:G:H2'	1:1:1625:A:C8	2.46	0.50
1:1:2149:A:H61	1:1:2187:G:H2'	1.76	0.50
1:1:2154:U:H2'	1:1:2155:G:C8	2.46	0.50
1:1:2812:C:H2'	1:1:2813:A:C8	2.46	0.50
5:2:35:C:H2'	5:2:36:G:H8	1.76	0.50
10:BE:77:VAL:HG23	10:BE:85:SER:HA	1.93	0.50
1:1:866:A:H1'	1:1:1482:A:N6	2.26	0.50
1:1:1072:G:H2'	1:1:1073:U:C6	2.47	0.50
1:1:1616:U:H2'	1:1:1617:G:H8	1.75	0.50
1:1:1724:U:H1'	1:1:1725:C:C6	2.47	0.50
1:1:2255:A:N7	1:1:2260:U:O4	2.45	0.50
1:1:3174:A:H2'	1:1:3175:U:O4'	2.12	0.50
2:3:119:U:H3'	11:BF:258:LYS:HE2	1.94	0.50
3:4:130:C:H2'	3:4:131:A:H8	1.77	0.50
9:BD:261:MET:HB2	9:BD:264:VAL:HG23	1.93	0.50
15:BJ:18:VAL:HG13	15:BJ:27:VAL:HG12	1.94	0.50
1:1:307:A:H2'	1:1:308:A:H8	1.77	0.50
1:1:428:A:H2'	1:1:429:U:C6	2.46	0.50
1:1:615:U:H2'	1:1:616:G:C8	2.47	0.50
1:1:1107:C:H2'	1:1:1108:U:H6	1.75	0.50
1:1:1560:G:O6	1:1:1580:A:N1	2.45	0.50
1:1:2688:U:N3	11:BF:17:GLN:O	2.45	0.50
14:BI:115:ALA:O	14:BI:120:LYS:N	2.45	0.50
17:BM:46:ILE:HG21	17:BM:51:LEU:HD23	1.92	0.50
25:BU:57:TYR:OH	25:BU:87:LYS:NZ	2.33	0.50
27:BW:81:GLN:HG2	27:BW:83:LYS:HB3	1.94	0.50
1:1:615:U:C3'	1:1:616:G:H8	2.22	0.50
1:1:1447:G:O2'	1:1:1448:U:O5'	2.24	0.50
1:1:2226:U:H2'	1:1:2227:C:C6	2.47	0.50
1:1:2290:C:H2'	1:1:2291:A:H8	1.77	0.50
1:1:3367:C:H2'	1:1:3368:U:C5	2.46	0.50
19:BO:61:ILE:HD12	19:BO:133:ILE:HG22	1.94	0.50
20:BP:157:GLU:O	20:BP:161:LYS:HG2	2.12	0.50
32:Bb:77:LYS:O	32:Bb:79:TRP:N	2.45	0.50
1:1:87:U:OP2	1:1:98:G:N1	2.43	0.50
1:1:2433:U:H3'	1:1:2434:U:H2'	1.94	0.50
1:1:3160:U:O4	1:1:3290:G:O6	2.30	0.50
3:4:67:U:H2'	3:4:68:G:C8	2.47	0.50
30:BZ:101:PRO:HA	30:BZ:104:LEU:HD12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:Bk:21:ARG:NH2	41:Bk:41:ALA:O	2.35	0.50
1:1:714:G:O2'	1:1:753:C:O2'	2.24	0.50
1:1:2355:G:OP1	21:BQ:141:SER:OG	2.17	0.50
1:1:3147:G:O2'	9:BD:104:THR:OG1	2.21	0.50
3:4:8:C:H2'	3:4:9:A:C8	2.46	0.50
3:4:16:G:HO2'	3:4:17:A:H8	1.58	0.50
5:2:69:G:H2'	5:2:70:G:H8	1.76	0.50
25:BU:125:ALA:HA	25:BU:127:GLN:HE22	1.76	0.50
1:1:887:G:H2'	1:1:888:A:C8	2.47	0.50
1:1:1564:U:O4	1:1:1576:G:O6	2.29	0.50
1:1:2294:U:O3'	27:BW:63:LYS:NZ	2.45	0.50
1:1:2609:A:H2'	1:1:2610:G:C8	2.47	0.50
1:1:3269:U:H4'	1:1:3270:U:O5'	2.12	0.50
3:4:11:C:H2'	3:4:12:A:C8	2.46	0.50
8:BC:139:HIS:O	8:BC:147:ARG:NH1	2.45	0.50
10:BE:208:VAL:HG12	10:BE:254:ALA:HB1	1.94	0.50
19:BO:103:GLU:HG2	19:BO:115:VAL:HG11	1.94	0.50
26:BV:19:VAL:O	26:BV:22:PRO:HD2	2.12	0.50
31:Ba:41:ALA:N	31:Ba:75:VAL:O	2.43	0.50
1:1:1373:A:H2'	1:1:1374:G:C8	2.46	0.49
1:1:1523:U:OP1	1:1:1607:U:N3	2.45	0.49
1:1:1599:G:H2'	1:1:1600:U:C6	2.47	0.49
1:1:2223:A:H2'	1:1:2224:A:C8	2.47	0.49
1:1:2660:G:H5''	1:1:2750:U:H1'	1.93	0.49
6:BA:34:SER:OG	6:BA:35:LEU:N	2.45	0.49
11:BF:156:GLY:HA2	11:BF:181:PRO:HB3	1.93	0.49
15:BJ:49:ASN:O	15:BJ:51:GLN:N	2.42	0.49
16:BL:108:GLU:HA	16:BL:122:ILE:HG23	1.94	0.49
39:Bi:34:GLN:O	39:Bi:38:ARG:NH1	2.45	0.49
45:BK:152:ARG:HD3	45:BK:155:ARG:HD3	1.94	0.49
1:1:832:G:O6	1:1:863:C:N4	2.45	0.49
1:1:856:G:H2'	1:1:857:G:C4	2.47	0.49
1:1:1446:A:H5'	1:1:1448:U:H1'	1.93	0.49
1:1:1521:G:H5'	29:BY:71:THR:HG21	1.92	0.49
1:1:3011:A:N1	1:1:3043:C:O2'	2.38	0.49
14:BI:73:PRO:HD3	14:BI:233:TRP:CZ3	2.47	0.49
15:BJ:13:PRO:HG2	15:BJ:16:VAL:HG22	1.93	0.49
17:BM:67:ARG:HG3	17:BM:68:LYS:HG2	1.94	0.49
23:BS:133:LYS:HG3	23:BS:134:HIS:HD2	1.76	0.49
45:BK:81:ARG:HH11	45:BK:81:ARG:HG3	1.77	0.49
1:1:656:A:O2'	3:4:17:A:O2'	2.24	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:836:A:H62	1:1:857:G:H1'	1.76	0.49
1:1:929:A:H2'	1:1:930:U:C6	2.47	0.49
1:1:1949:G:O6	1:1:2097:U:O4	2.29	0.49
1:1:2424:A:H62	1:1:2605:G:H21	1.59	0.49
1:1:2508:U:H2'	1:1:2509:U:O4'	2.12	0.49
1:1:2714:G:H4'	1:1:2715:A:H3'	1.93	0.49
2:3:62:U:H2'	2:3:63:A:C8	2.47	0.49
4:A:49:VAL:HG12	4:A:51:THR:HG23	1.94	0.49
12:BG:43:LEU:HA	37:Bg:7:LEU:HD23	1.94	0.49
20:BP:35:VAL:HB	20:BP:104:VAL:HG12	1.94	0.49
25:BU:36:VAL:HG13	25:BU:65:TYR:HA	1.94	0.49
34:Bd:16:LEU:HD21	34:Bd:97:ASP:HB3	1.92	0.49
1:1:831:G:O2'	1:1:1864:A:N3	2.41	0.49
1:1:1385:C:O2'	12:BG:2:SER:N	2.37	0.49
2:3:28:C:H2'	2:3:29:C:O4'	2.12	0.49
16:BL:125:MET:HE1	16:BL:127:PHE:CE2	2.47	0.49
32:Bb:48:TYR:O	32:Bb:49:HIS:CD2	2.65	0.49
32:Bb:111:LYS:HG3	32:Bb:129:PHE:HB2	1.94	0.49
1:1:493:G:H3'	1:1:494:G:H8	1.78	0.49
1:1:671:U:H2'	1:1:672:A:C8	2.47	0.49
1:1:1111:U:O5'	17:BM:5:LYS:HD2	2.13	0.49
1:1:2526:C:H2'	1:1:2527:G:H8	1.76	0.49
1:1:2561:A:H2'	1:1:2562:A:H8	1.77	0.49
1:1:3304:U:O2'	9:BD:331:ASN:ND2	2.38	0.49
2:3:111:U:H5''	2:3:112:G:OP1	2.12	0.49
10:BE:44:LYS:HG2	10:BE:47:ARG:HH12	1.76	0.49
10:BE:62:ALA:HB2	10:BE:77:VAL:HG12	1.94	0.49
12:BG:3:ALA:HB2	36:Bf:77:ALA:HB2	1.94	0.49
13:BH:145:ARG:HA	13:BH:185:ILE:HD11	1.94	0.49
22:BR:157:PRO:HD3	32:Bb:47:LYS:HG3	1.94	0.49
24:BT:34:GLU:H	24:BT:34:GLU:CD	2.20	0.49
35:Be:23:VAL:O	35:Be:28:ARG:NH1	2.46	0.49
1:1:55:G:OP1	41:Bk:43:LYS:NZ	2.45	0.49
1:1:347:G:H2'	1:1:348:A:C8	2.46	0.49
1:1:677:A:H4'	1:1:678:G:O5'	2.13	0.49
1:1:1287:A:H2'	1:1:1288:U:C6	2.48	0.49
1:1:1470:U:H2'	1:1:1471:U:C6	2.47	0.49
1:1:2393:G:O2'	1:1:2394:G:H8	1.95	0.49
1:1:2584:G:N3	14:BI:240:ASN:ND2	2.60	0.49
12:BG:46:ARG:HD2	12:BG:48:ARG:HH12	1.78	0.49
20:BP:37:ARG:HE	20:BP:108:ILE:HD11	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:BP:113:ASP:OD1	20:BP:114:LYS:HG2	2.13	0.49
27:BW:129:VAL:O	27:BW:133:SER:OG	2.26	0.49
35:Be:76:SER:OG	35:Be:78:LYS:NZ	2.46	0.49
1:1:648:C:H5''	1:1:649:A:OP1	2.12	0.49
1:1:1393:A:N6	1:1:1417:G:H1'	2.28	0.49
1:1:1410:U:O2'	36:Bf:95:GLU:OE2	2.27	0.49
1:1:1625:A:N6	1:1:1818:U:O4	2.46	0.49
1:1:1757:A:H2'	1:1:1758:G:C8	2.48	0.49
1:1:3163:A:N6	1:1:3288:G:O6	2.45	0.49
3:4:27:U:H2'	3:4:28:C:C6	2.48	0.49
10:BE:34:ILE:HA	10:BE:37:THR:HG22	1.93	0.49
10:BE:302:ALA:HB2	22:BR:39:ARG:HH22	1.78	0.49
15:BJ:22:SER:OG	15:BJ:23:ARG:N	2.45	0.49
15:BJ:117:PHE:HE1	15:BJ:178:GLY:HA2	1.78	0.49
45:BK:204:SER:OG	45:BK:207:ASN:OD1	2.30	0.49
1:1:212:G:N2	1:1:222:A:N3	2.60	0.49
1:1:409:A:O2'	1:1:654:C:O2'	2.30	0.49
1:1:528:U:H2'	1:1:529:A:H8	1.76	0.49
1:1:753:C:H2'	1:1:754:G:H8	1.77	0.49
1:1:1290:A:H2'	1:1:1291:A:H8	1.78	0.49
1:1:1444:G:H2'	1:1:1445:U:O4'	2.13	0.49
1:1:2406:C:H2'	1:1:2407:C:C6	2.48	0.49
3:4:14:C:H2'	3:4:15:G:O4'	2.12	0.49
4:A:110:CYS:HA	4:A:115:ALA:HA	1.94	0.49
15:BJ:182:SER:HA	44:Bn:85:LEU:HD11	1.95	0.49
24:BT:2:ALA:HB3	24:BT:32:SER:HB2	1.93	0.49
33:Bc:47:LEU:HA	33:Bc:50:THR:HG22	1.95	0.49
1:1:595:G:H1	1:1:609:G:H5''	1.77	0.49
1:1:1213:G:O2'	24:BT:90:MET:HG2	2.13	0.49
1:1:1884:A:C5	1:1:1885:U:H1'	2.47	0.49
1:1:2247:G:H2'	1:1:2248:C:O4'	2.13	0.49
1:1:3160:U:O2	1:1:3290:G:N2	2.34	0.49
1:1:3276:G:O6	21:BQ:171:ARG:NH2	2.46	0.49
2:3:64:A:OP1	11:BF:289:LYS:NZ	2.46	0.49
5:2:64:G:H4'	45:BK:24:ALA:HB2	1.95	0.49
7:BB:44:LYS:HA	34:Bd:86:ARG:HH12	1.78	0.49
14:BI:160:ILE:O	14:BI:164:VAL:HG23	2.13	0.49
15:BJ:168:ARG:HA	15:BJ:168:ARG:CZ	2.43	0.49
34:Bd:34:LEU:HD11	34:Bd:59:TYR:HB3	1.94	0.49
45:BK:170:TRP:HD1	45:BK:177:ARG:HA	1.78	0.49
1:1:346:C:N4	1:1:349:A:OP2	2.39	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1253:U:N3	1:1:1264:G:OP1	2.35	0.49
1:1:1513:G:H5'	23:BS:5:ARG:HH12	1.78	0.49
1:1:2136:C:H2'	1:1:2137:U:O2	2.12	0.49
1:1:2249:G:N2	1:1:2250:G:C8	2.81	0.49
1:1:2344:U:H2'	1:1:2345:A:C8	2.48	0.49
1:1:2406:C:O2'	1:1:2619:G:N2	2.43	0.49
1:1:2837:A:OP1	45:BK:153:ARG:NH1	2.46	0.49
1:1:3157:U:H4'	1:1:3158:G:C8	2.48	0.49
3:4:48:A:O2'	3:4:49:G:OP1	2.31	0.49
3:4:151:C:OP1	14:BI:60:ARG:NH2	2.46	0.49
5:2:6:C:H2'	5:2:7:G:C8	2.48	0.49
20:BP:121:PRO:HG3	24:BT:164:SER:HB3	1.95	0.49
21:BQ:181:ARG:HG3	21:BQ:182:ILE:HG13	1.93	0.49
23:BS:134:HIS:CE1	23:BS:136:ARG:HB3	2.48	0.49
1:1:697:A:H2'	1:1:698:U:C6	2.49	0.48
1:1:871:U:H2'	1:1:872:U:C6	2.48	0.48
1:1:1057:A:OP1	13:BH:98:LYS:NZ	2.31	0.48
1:1:1447:G:O6	21:BQ:25:SER:OG	2.27	0.48
1:1:1744:G:H2'	1:1:1745:C:C6	2.48	0.48
1:1:2148:U:O2'	8:BC:182:ALA:HB2	2.13	0.48
1:1:2503:G:H2'	1:1:2504:U:H6	1.78	0.48
24:BT:95:ARG:O	24:BT:95:ARG:HG3	2.13	0.48
1:1:68:C:O3'	19:BO:177:GLY:HA2	2.12	0.48
1:1:1184:A:H2'	1:1:1185:C:H6	1.77	0.48
1:1:1410:U:H4'	36:Bf:75:LEU:HD11	1.94	0.48
1:1:1593:A:H5'	38:Bh:60:ARG:HB3	1.95	0.48
1:1:1615:C:H2'	1:1:1616:U:H6	1.76	0.48
1:1:2097:U:H2'	1:1:2098:C:C6	2.49	0.48
1:1:2162:U:OP1	8:BC:234:LYS:NZ	2.46	0.48
1:1:3185:U:H3	24:BT:169:SER:HA	1.78	0.48
9:BD:260:VAL:HG11	9:BD:266:ARG:NH1	2.28	0.48
10:BE:92:ASN:HD22	10:BE:100:PHE:HB2	1.77	0.48
10:BE:181:VAL:HG12	10:BE:182:LEU:HD12	1.94	0.48
26:BV:53:ALA:HB1	26:BV:68:THR:HG22	1.96	0.48
27:BW:66:LYS:HZ3	27:BW:68:GLU:CD	2.20	0.48
42:Bl:54:LEU:HG	42:Bl:56:ILE:HD11	1.95	0.48
1:1:305:U:C5	1:1:2776:C:H1'	2.48	0.48
1:1:576:C:H2'	1:1:577:C:C6	2.48	0.48
1:1:903:U:H2'	1:1:904:A:H8	1.77	0.48
1:1:1260:A:O2'	1:1:1261:G:O4'	2.26	0.48
1:1:1759:C:H2'	1:1:1760:A:N3	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2609:A:H2'	1:1:2610:G:H8	1.78	0.48
1:1:3009:G:N2	9:BD:15:GLY:O	2.42	0.48
2:3:37:G:N2	2:3:41:G:N3	2.61	0.48
3:4:47:C:H1'	3:4:61:A:H2'	1.94	0.48
5:2:7:G:O2'	5:2:49:C:OP2	2.23	0.48
17:BM:160:GLN:NE2	32:Bb:146:GLU:OE2	2.46	0.48
20:BP:88:VAL:HG11	20:BP:99:LEU:HD11	1.94	0.48
1:1:64:G:O2'	1:1:77:A:N3	2.37	0.48
1:1:278:U:H2'	1:1:279:U:C6	2.48	0.48
1:1:787:G:H2'	1:1:788:C:C6	2.48	0.48
1:1:943:U:O3'	1:1:1432:C:H1'	2.13	0.48
1:1:1381:A:H2'	1:1:1382:G:H8	1.78	0.48
1:1:1472:U:H2'	1:1:1473:G:C8	2.43	0.48
1:1:1591:G:H5''	38:Bh:37:LYS:NZ	2.28	0.48
1:1:1815:U:O2'	1:1:1816:A:O5'	2.23	0.48
1:1:2419:A:H2'	1:1:2420:C:C6	2.48	0.48
1:1:2502:A:H3'	1:1:2503:G:C8	2.48	0.48
1:1:2986:U:H2'	1:1:2987:A:H8	1.79	0.48
2:3:98:C:O2'	13:BH:131:GLU:OE1	2.29	0.48
4:A:139:ARG:HA	4:A:139:ARG:HH11	1.78	0.48
26:BV:50:LEU:HD12	26:BV:54:VAL:HG23	1.95	0.48
42:Bl:7:ASP:HB3	42:Bl:10:GLN:HG3	1.96	0.48
1:1:814:U:H2'	1:1:815:G:C8	2.48	0.48
1:1:998:A:H2'	1:1:999:G:H8	1.78	0.48
1:1:1252:A:H2'	1:1:1253:U:C5	2.49	0.48
1:1:1678:G:H2'	1:1:1679:A:C8	2.48	0.48
1:1:3064:U:H2'	1:1:3065:G:C8	2.48	0.48
11:BF:266:ALA:HB1	11:BF:270:LYS:HZ1	1.78	0.48
15:BJ:87:LYS:HE3	15:BJ:187:ILE:HA	1.95	0.48
20:BP:119:VAL:HG11	24:BT:167:ARG:HH11	1.77	0.48
22:BR:123:THR:OG1	22:BR:125:ASP:OD1	2.29	0.48
32:Bb:77:LYS:O	32:Bb:79:TRP:HD1	1.97	0.48
1:1:291:C:H2'	1:1:292:U:C6	2.49	0.48
1:1:340:C:O2'	1:1:344:A:N3	2.45	0.48
1:1:1152:G:O4'	1:1:2370:G:O2'	2.29	0.48
1:1:1831:U:OP2	29:BY:92:LYS:NZ	2.44	0.48
1:1:2086:A:O2'	1:1:2087:C:OP1	2.28	0.48
1:1:3304:U:O2'	9:BD:334:ARG:NH2	2.47	0.48
9:BD:328:ILE:HD11	9:BD:336:VAL:HG11	1.95	0.48
13:BH:51:TYR:OH	13:BH:183:ASP:OD1	2.31	0.48
16:BL:32:ARG:HD3	16:BL:120:ILE:HA	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:BM:56:PRO:HG3	17:BM:74:GLY:O	2.13	0.48
18:BN:118:PHE:HA	18:BN:121:MET:HE2	1.94	0.48
1:1:80:G:O6	1:1:106:A:N6	2.46	0.48
1:1:504:A:H2'	1:1:505:G:C8	2.47	0.48
1:1:802:C:H2'	1:1:803:C:C6	2.49	0.48
1:1:992:A:H2'	1:1:993:G:C8	2.48	0.48
1:1:2384:A:N1	20:BP:96:LYS:NZ	2.58	0.48
2:3:63:A:OP1	11:BF:282:ARG:HD2	2.14	0.48
3:4:130:C:H2'	3:4:131:A:C8	2.49	0.48
7:BB:38:ASP:HB3	7:BB:45:LYS:NZ	2.28	0.48
9:BD:57:VAL:HG22	9:BD:73:VAL:HG12	1.95	0.48
15:BJ:100:ASN:OD1	15:BJ:102:ASN:ND2	2.47	0.48
15:BJ:114:VAL:HB	15:BJ:124:ARG:HB2	1.96	0.48
16:BL:28:ASP:OD1	16:BL:29:ARG:N	2.47	0.48
20:BP:28:LEU:HD12	20:BP:94:ARG:HE	1.78	0.48
29:BY:60:TYR:HD2	39:Bi:25:LYS:HB3	1.77	0.48
1:1:210:U:C2	1:1:230:U:H4'	2.49	0.48
1:1:297:G:H2'	40:Bj:31:GLY:O	2.13	0.48
1:1:381:U:H2'	1:1:382:U:C6	2.49	0.48
1:1:417:A:H2'	1:1:418:A:C8	2.49	0.48
1:1:816:A:C2	1:1:919:U:H1'	2.49	0.48
1:1:1232:C:H2'	1:1:1233:G:C8	2.49	0.48
1:1:1616:U:H2'	1:1:1617:G:C8	2.49	0.48
1:1:1660:C:H2'	1:1:1661:G:C8	2.48	0.48
1:1:2412:G:H2'	1:1:2413:A:C8	2.49	0.48
1:1:2685:C:H2'	1:1:2686:A:H8	1.79	0.48
1:1:3045:G:OP1	9:BD:19:ARG:NH2	2.45	0.48
1:1:3356:G:H2'	1:1:3357:U:C6	2.48	0.48
2:3:3:U:H2'	2:3:4:U:C6	2.49	0.48
10:BE:320:ASN:O	10:BE:323:VAL:HG12	2.14	0.48
15:BJ:77:ASN:O	15:BJ:86:TYR:OH	2.32	0.48
18:BN:119:GLN:HA	18:BN:122:VAL:HG22	1.95	0.48
21:BQ:24:VAL:HG22	21:BQ:90:PHE:HD1	1.77	0.48
31:Ba:83:THR:HG22	31:Ba:84:ARG:N	2.28	0.48
32:Bb:77:LYS:C	32:Bb:79:TRP:H	2.21	0.48
1:1:50:U:H2'	1:1:51:A:H8	1.79	0.48
1:1:631:U:H2'	1:1:632:G:C8	2.48	0.48
1:1:1211:U:O2'	24:BT:113:ARG:NE	2.47	0.48
1:1:1218:U:H3	1:1:1287:A:H2	1.61	0.48
1:1:1254:C:N4	1:1:1263:A:OP1	2.47	0.48
5:2:70:G:H2'	5:2:71:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:BI:161:GLU:HG3	19:BO:10:LEU:HD23	1.96	0.48
17:BM:27:ASP:O	17:BM:30:GLY:N	2.42	0.48
21:BQ:59:PRO:HB2	21:BQ:61:ARG:HD3	1.96	0.48
23:BS:40:ALA:HA	23:BS:43:LYS:NZ	2.28	0.48
1:1:289:A:O2'	19:BO:93:LYS:O	2.30	0.48
1:1:519:A:N1	24:BT:65:ASN:N	2.62	0.48
1:1:664:U:H2'	1:1:665:A:H8	1.78	0.48
1:1:675:C:H2'	1:1:676:G:O4'	2.14	0.48
1:1:825:U:H4'	1:1:1587:A:H2	1.79	0.48
1:1:1561:G:H2'	1:1:1562:C:O4'	2.14	0.48
1:1:1596:C:O2'	1:1:1696:A:N3	2.47	0.48
1:1:2219:A:H2'	1:1:2220:A:H8	1.78	0.48
1:1:2250:G:C6	1:1:2251:G:C5	3.02	0.48
1:1:2407:C:H2'	1:1:2408:U:C6	2.48	0.48
3:4:69:U:H2'	3:4:70:G:O4'	2.13	0.48
4:A:22:THR:H	4:A:67:ARG:NH2	2.12	0.48
28:BX:64:THR:OG1	28:BX:65:GLU:N	2.46	0.48
38:Bh:8:ARG:HH12	38:Bh:31:ARG:HH11	1.62	0.48
1:1:938:C:OP2	32:Bb:26:ARG:NH1	2.46	0.47
1:1:1659:U:H2'	1:1:1660:C:C6	2.49	0.47
1:1:1667:A:H2'	1:1:1668:G:H8	1.78	0.47
1:1:2213:A:N3	1:1:2601:A:O2'	2.42	0.47
1:1:3015:G:H2'	1:1:3016:A:C8	2.47	0.47
1:1:3082:C:H2'	1:1:3083:G:C8	2.48	0.47
1:1:3284:G:H2'	1:1:3285:C:C6	2.49	0.47
3:4:139:U:H2'	3:4:140:G:H8	1.78	0.47
12:BG:36:PRO:HA	12:BG:54:TYR:HD2	1.79	0.47
19:BO:169:LYS:HG2	19:BO:174:ILE:HD11	1.96	0.47
20:BP:119:VAL:HG21	24:BT:167:ARG:HD2	1.96	0.47
21:BQ:173:ARG:HA	21:BQ:176:ILE:HG22	1.95	0.47
37:Bg:13:HIS:ND1	37:Bg:93:THR:OG1	2.47	0.47
1:1:1108:U:H2'	1:1:1109:U:H6	1.79	0.47
1:1:1602:A:H8	1:1:1602:A:OP1	1.98	0.47
1:1:2513:U:O2'	1:1:2514:U:O5'	2.18	0.47
1:1:3112:G:N2	1:1:3122:A:H62	2.09	0.47
1:1:3338:C:H2'	1:1:3339:A:C8	2.49	0.47
2:3:23:A:H2'	2:3:24:A:C4	2.49	0.47
2:3:118:A:H2'	2:3:119:U:O4'	2.14	0.47
6:BA:80:ARG:HH11	6:BA:80:ARG:HG3	1.79	0.47
7:BB:33:GLN:HG3	7:BB:49:ARG:HE	1.78	0.47
7:BB:50:GLY:O	7:BB:54:ILE:HB	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:BF:27:LYS:NZ	16:BL:144:CYS:SG	2.75	0.47
19:BO:15:GLN:HG3	40:Bj:52:PRO:HD2	1.95	0.47
1:1:62:A:OP1	19:BO:162:ARG:NH2	2.47	0.47
1:1:121:A:N1	14:BI:129:PRO:HG3	2.29	0.47
1:1:1211:U:H2'	1:1:1212:A:H8	1.79	0.47
1:1:1239:C:N4	1:1:1245:A:OP2	2.47	0.47
1:1:1416:C:O2'	1:1:1417:G:O4'	2.20	0.47
1:1:1666:G:H2'	1:1:1667:A:C8	2.49	0.47
1:1:1712:G:N2	1:1:1733:G:C6	2.81	0.47
1:1:2103:U:H2'	1:1:2104:A:C8	2.49	0.47
1:1:2269:U:C6	1:1:2269:U:H3'	2.49	0.47
1:1:2683:U:H2'	1:1:2684:C:H6	1.79	0.47
1:1:2883:U:H5	9:BD:4:ARG:HH21	1.61	0.47
1:1:3216:G:N3	1:1:3259:U:N3	2.61	0.47
3:4:51:G:O2'	3:4:52:A:H8	1.97	0.47
4:A:32:GLU:O	4:A:36:SER:OG	2.26	0.47
7:BB:36:ARG:HG2	7:BB:48:LYS:HD3	1.97	0.47
7:BB:49:ARG:NH1	7:BB:51:ALA:O	2.47	0.47
8:BC:19:HIS:ND1	8:BC:190:ARG:O	2.46	0.47
9:BD:339:ARG:HD2	9:BD:340:LYS:O	2.14	0.47
12:BG:142:ASP:OD1	12:BG:143:LYS:N	2.46	0.47
24:BT:129:ILE:HD13	24:BT:135:VAL:HG12	1.95	0.47
33:Bc:23:LYS:HD2	33:Bc:24:PRO:HD3	1.95	0.47
38:Bh:7:PHE:HE1	38:Bh:20:ILE:HG13	1.78	0.47
1:1:138:U:H2'	1:1:139:G:H8	1.79	0.47
1:1:615:U:H2'	1:1:615:U:O2	2.13	0.47
1:1:617:G:H5''	21:BQ:170:SER:OG	2.13	0.47
1:1:1494:U:OP1	43:Bm:42:ARG:NH1	2.38	0.47
2:3:41:G:H1'	2:3:44:C:H42	1.79	0.47
3:4:68:G:H2'	3:4:69:U:C6	2.49	0.47
3:4:143:U:H2'	3:4:144:G:C8	2.50	0.47
8:BC:51:ASP:OD1	8:BC:52:SER:N	2.47	0.47
11:BF:200:PHE:HB3	11:BF:237:GLU:HG3	1.95	0.47
20:BP:127:LEU:HD22	24:BT:156:VAL:HG13	1.96	0.47
21:BQ:41:LEU:HG	21:BQ:45:GLN:HE22	1.80	0.47
45:BK:155:ARG:NH2	45:BK:162:GLN:O	2.47	0.47
1:1:7:C:H5''	14:BI:193:LYS:HD3	1.96	0.47
1:1:219:A:O2'	1:1:1390:A:N6	2.47	0.47
1:1:953:G:O2'	1:1:1115:G:H4'	2.15	0.47
1:1:1117:G:O6	1:1:1142:G:N2	2.47	0.47
1:1:1481:A:O2'	1:1:1858:A:N3	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1784:G:O3'	38:Bh:19:LYS:NZ	2.44	0.47
1:1:1803:C:H2'	1:1:1804:A:C8	2.49	0.47
1:1:2531:C:H41	1:1:2547:A:H61	1.62	0.47
2:3:120:C:H5	11:BF:258:LYS:HZ1	1.63	0.47
13:BH:182:ASP:HA	13:BH:185:ILE:HG22	1.97	0.47
15:BJ:1:MET:HE3	15:BJ:3:TYR:CE2	2.49	0.47
26:BV:18:ASP:HA	26:BV:62:VAL:HG12	1.97	0.47
45:BK:158:PHE:HB2	45:BK:162:GLN:NE2	2.29	0.47
1:1:195:U:H2'	1:1:196:G:O4'	2.14	0.47
1:1:358:G:O2'	1:1:360:G:O6	2.31	0.47
1:1:637:C:H2'	1:1:638:C:C6	2.49	0.47
1:1:792:G:H2'	1:1:793:C:C6	2.49	0.47
1:1:1203:A:H2'	1:1:1204:A:C8	2.49	0.47
1:1:1393:A:H62	1:1:1417:G:H1'	1.79	0.47
1:1:1560:G:N7	29:BY:33:ARG:NH2	2.63	0.47
1:1:2249:G:N9	1:1:2272:G:N7	2.63	0.47
1:1:2655:U:H1'	1:1:2656:A:N3	2.30	0.47
1:1:2655:U:C5	6:BA:4:VAL:HG12	2.50	0.47
7:BB:44:LYS:HG2	34:Bd:86:ARG:NH1	2.28	0.47
9:BD:146:ARG:HH12	9:BD:150:ARG:HB2	1.79	0.47
9:BD:296:THR:HG22	9:BD:297:SER:H	1.79	0.47
11:BF:289:LYS:HG3	11:BF:293:LEU:HD12	1.96	0.47
14:BI:146:LYS:HG2	14:BI:173:MET:HE2	1.96	0.47
18:BN:108:ARG:NH1	20:BP:196:ALA:O	2.47	0.47
24:BT:80:ARG:HE	25:BU:156:TYR:HB2	1.79	0.47
24:BT:145:THR:HB	24:BT:148:LEU:HD13	1.95	0.47
45:BK:190:LYS:HB2	45:BK:212:PHE:CE1	2.49	0.47
1:1:8:C:H2'	1:1:9:U:H6	1.78	0.47
1:1:99:A:H2'	1:1:100:A:C8	2.49	0.47
1:1:800:G:H2'	1:1:800:G:N3	2.30	0.47
1:1:863:C:H2'	1:1:864:G:O4'	2.15	0.47
1:1:987:U:H2'	1:1:988:U:H6	1.80	0.47
1:1:1103:A:H3'	1:1:1104:G:H5'	1.96	0.47
1:1:1252:A:H2'	1:1:1253:U:H5	1.79	0.47
1:1:1303:A:O2'	1:1:1304:A:O4'	2.31	0.47
1:1:1343:A:H2'	1:1:1344:G:C8	2.50	0.47
1:1:1795:U:H5''	1:1:1796:G:OP1	2.14	0.47
1:1:1804:A:H2'	1:1:1805:C:C6	2.49	0.47
1:1:2177:G:H2'	8:BC:128:ARG:HB2	1.96	0.47
1:1:2295:A:N3	1:1:2929:C:O2'	2.45	0.47
1:1:2423:U:H2'	1:1:2424:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2440:G:H2'	1:1:2441:A:H8	1.79	0.47
1:1:2532:U:H2'	1:1:2533:G:H8	1.78	0.47
1:1:2736:A:H2'	1:1:2737:C:O4'	2.14	0.47
1:1:2856:G:P	45:BK:9:ARG:HH22	2.37	0.47
1:1:3231:U:H2'	1:1:3232:G:H8	1.80	0.47
1:1:3385:U:H2'	1:1:3386:G:H8	1.80	0.47
2:3:107:C:H2'	2:3:108:A:H8	1.80	0.47
9:BD:92:TYR:CE1	9:BD:101:SER:HB2	2.50	0.47
10:BE:9:HIS:HA	10:BE:15:ALA:HA	1.96	0.47
13:BH:138:TYR:N	13:BH:233:GLU:O	2.46	0.47
14:BI:50:VAL:HG12	29:BY:30:ALA:HA	1.96	0.47
15:BJ:91:ARG:NH1	15:BJ:142:ASP:O	2.48	0.47
16:BL:60:ARG:HG3	16:BL:63:GLU:CD	2.40	0.47
19:BO:17:ASP:OD1	19:BO:18:VAL:N	2.48	0.47
21:BQ:60:PHE:CE2	21:BQ:82:ARG:HB3	2.47	0.47
26:BV:27:VAL:HG11	26:BV:107:PHE:HE2	1.80	0.47
1:1:209:A:H4'	1:1:211:A:C8	2.49	0.47
1:1:541:U:H2'	1:1:542:G:C8	2.50	0.47
1:1:1580:A:O2'	1:1:1581:C:O5'	2.27	0.47
1:1:1781:C:H2'	1:1:1782:U:C6	2.50	0.47
1:1:1945:A:O2'	1:1:1946:A:H5'	2.15	0.47
3:4:85:G:N7	30:BZ:113:LYS:HB2	2.30	0.47
5:2:50:C:H2'	5:2:51:A:H8	1.79	0.47
10:BE:31:ARG:HG3	10:BE:34:ILE:HD12	1.96	0.47
14:BI:152:LEU:HD13	14:BI:178:ALA:HB3	1.96	0.47
17:BM:167:PHE:CE2	32:Bb:132:LYS:HB2	2.50	0.47
28:BX:57:LYS:HE2	28:BX:57:LYS:HA	1.95	0.47
1:1:1111:U:P	17:BM:5:LYS:HD2	2.55	0.47
1:1:1433:A:N7	36:Bf:19:ARG:NH2	2.63	0.47
1:1:1887:A:C2	1:1:2391:G:H4'	2.50	0.47
1:1:2085:U:H2'	1:1:2086:A:C8	2.50	0.47
1:1:3371:G:H2'	1:1:3372:A:H8	1.80	0.47
8:BC:137:ILE:HD13	8:BC:149:ARG:HB2	1.96	0.47
8:BC:224:THR:HA	8:BC:237:LEU:HB2	1.97	0.47
13:BH:175:LYS:HD2	13:BH:176:TYR:CD1	2.50	0.47
1:1:31:C:OP2	19:BO:188:ARG:NH1	2.37	0.47
1:1:307:A:H2'	1:1:308:A:C8	2.50	0.47
1:1:612:U:H2'	1:1:613:G:C8	2.48	0.47
1:1:629:U:H2'	1:1:630:A:H8	1.78	0.47
1:1:738:A:H2'	1:1:739:G:C8	2.49	0.47
1:1:1001:G:N2	1:1:1041:U:OP1	2.42	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1478:C:H2'	1:1:1479:U:C6	2.50	0.47
1:1:1481:A:H2'	1:1:1858:A:O2'	2.16	0.47
1:1:3084:C:H2'	1:1:3085:G:O4'	2.15	0.47
4:A:73:PRO:HG2	4:A:76:THR:HG23	1.97	0.47
4:A:111:ASN:ND2	4:A:156:ASN:OD1	2.49	0.47
16:BL:36:VAL:O	16:BL:39:GLN:NE2	2.48	0.47
26:BV:19:VAL:HG23	26:BV:105:LEU:HD13	1.96	0.47
31:Ba:9:LYS:HD2	31:Ba:83:THR:O	2.15	0.47
1:1:574:U:H2'	1:1:575:G:H8	1.80	0.46
1:1:574:U:C2	1:1:575:G:C8	3.03	0.46
1:1:764:U:O2	1:1:768:C:N4	2.48	0.46
1:1:2244:A:O2'	8:BC:223:SER:OG	2.29	0.46
1:1:2599:U:H5''	19:BO:70:ASN:ND2	2.31	0.46
5:2:43:A:H2'	5:2:44:A:C8	2.50	0.46
5:2:64:G:H2'	5:2:65:G:H8	1.77	0.46
9:BD:163:HIS:HB3	9:BD:178:LEU:HD12	1.96	0.46
13:BH:176:TYR:O	13:BH:194:HIS:NE2	2.48	0.46
27:BW:10:LYS:HD3	27:BW:125:LEU:HD22	1.96	0.46
31:Ba:51:LEU:HB2	31:Ba:65:ARG:HD2	1.96	0.46
1:1:1146:C:H2'	1:1:1147:G:C8	2.47	0.46
1:1:1203:A:H5''	2:3:90:U:O4	2.15	0.46
1:1:1210:U:H3	1:1:1295:G:H1	1.63	0.46
1:1:1343:A:H2'	1:1:1344:G:H8	1.80	0.46
1:1:2922:G:N2	1:1:2952:G:H1'	2.30	0.46
1:1:3028:G:O2'	1:1:3029:A:O4'	2.18	0.46
1:1:3232:G:O6	1:1:3255:U:O4	2.33	0.46
2:3:13:A:H5''	2:3:14:U:H5	1.80	0.46
3:4:41:A:H5'	41:Bk:67:LEU:HD13	1.97	0.46
9:BD:252:ILE:HG23	9:BD:264:VAL:HG11	1.97	0.46
11:BF:83:LEU:HD21	11:BF:101:THR:HG22	1.96	0.46
18:BN:20:VAL:HA	18:BN:34:ALA:HA	1.97	0.46
19:BO:58:GLY:HA3	19:BO:142:ILE:HD11	1.98	0.46
20:BP:36:VAL:HG22	20:BP:108:ILE:HG12	1.96	0.46
1:1:1678:G:H2'	1:1:1679:A:H8	1.81	0.46
1:1:2145:A:H5'	1:1:2959:C:H5'	1.97	0.46
1:1:2247:G:C2'	1:1:2248:C:H5'	2.45	0.46
1:1:2526:C:H2'	1:1:2527:G:C8	2.50	0.46
1:1:3049:A:C6	9:BD:75:ALA:HB2	2.51	0.46
4:A:88:LEU:HD23	4:A:92:VAL:HG11	1.97	0.46
41:Bk:46:SER:HB2	41:Bk:54:LYS:HG2	1.97	0.46
1:1:47:C:OP1	17:BM:16:LYS:HE2	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:184:U:H3	1:1:232:G:H1	1.62	0.46
1:1:341:G:O2'	1:1:342:A:O5'	2.32	0.46
1:1:625:G:N2	1:1:1401:A:OP1	2.38	0.46
1:1:634:C:H4'	36:Bf:47:ARG:HH12	1.79	0.46
1:1:685:G:P	17:BM:35:ARG:HH12	2.39	0.46
1:1:1223:A:H8	1:1:1285:G:H21	1.63	0.46
1:1:2527:G:H2'	1:1:2528:G:H8	1.80	0.46
1:1:2586:G:O2'	14:BI:48:ARG:NH2	2.49	0.46
1:1:2707:C:H2'	1:1:2708:C:O4'	2.15	0.46
1:1:3338:C:H2'	1:1:3339:A:H8	1.79	0.46
4:A:15:VAL:HA	4:A:61:ARG:HH11	1.79	0.46
6:BA:12:CYS:HB2	6:BA:23:HIS:CE1	2.51	0.46
8:BC:242:ARG:HH11	8:BC:246:LEU:HD23	1.80	0.46
14:BI:240:ASN:OD1	14:BI:241:LYS:N	2.48	0.46
41:Bk:72:ARG:O	41:Bk:75:LYS:HB3	2.15	0.46
1:1:135:C:H42	39:Bi:94:LYS:HD2	1.81	0.46
1:1:911:C:OP2	8:BC:9:ARG:HD2	2.15	0.46
1:1:1060:U:H2'	1:1:1061:A:H8	1.81	0.46
1:1:2043:U:O4	1:1:2045:G:N2	2.37	0.46
1:1:2103:U:OP1	23:BS:81:ARG:NH1	2.44	0.46
1:1:3152:U:OP2	1:1:3395:G:N2	2.44	0.46
5:2:5:U:H2'	5:2:6:C:C6	2.50	0.46
9:BD:106:TRP:HB2	9:BD:133:TYR:CE2	2.51	0.46
18:BN:81:VAL:O	18:BN:85:TRP:N	2.45	0.46
21:BQ:50:GLN:HB3	21:BQ:55:GLN:HB2	1.96	0.46
42:Bl:19:ASP:OD1	42:Bl:19:ASP:N	2.48	0.46
45:BK:98:ILE:HG13	45:BK:100:LYS:HG3	1.98	0.46
1:1:649:A:H2'	1:1:650:C:C6	2.50	0.46
1:1:1498:A:H2'	1:1:1499:C:C6	2.50	0.46
1:1:2439:A:O2'	1:1:2440:G:OP1	2.29	0.46
1:1:2514:U:O2'	1:1:2515:A:H8	1.99	0.46
2:3:12:U:OP2	2:3:68:C:O2'	2.34	0.46
3:4:64:U:C2	3:4:65:A:C8	3.03	0.46
6:BA:72:LEU:HD12	6:BA:81:ALA:HB3	1.96	0.46
18:BN:14:LEU:O	18:BN:19:ARG:NE	2.48	0.46
41:Bk:28:HIS:CD2	41:Bk:31:LYS:H	2.33	0.46
45:BK:46:PRO:HA	45:BK:170:TRP:CE3	2.51	0.46
1:1:264:G:P	40:Bj:34:SER:HB2	2.56	0.46
1:1:1439:U:C2	1:1:1440:G:C8	3.04	0.46
1:1:1657:C:N4	1:1:1797:A:H3'	2.30	0.46
1:1:1670:C:O2'	1:1:1860:G:OP1	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2151:C:H2'	1:1:2152:A:C8	2.51	0.46
1:1:2708:C:H2'	1:1:2709:C:C6	2.50	0.46
2:3:11:A:N6	11:BF:13:SER:O	2.48	0.46
3:4:25:G:OP2	30:BZ:13:ARG:NH2	2.48	0.46
20:BP:34:VAL:HG21	20:BP:112:TYR:CD2	2.50	0.46
1:1:412:G:H2'	1:1:413:U:C6	2.51	0.46
1:1:443:G:H2'	1:1:444:U:C6	2.50	0.46
1:1:876:A:H5''	1:1:1890:U:H5''	1.97	0.46
1:1:1104:G:H2'	1:1:1105:A:C8	2.49	0.46
1:1:1279:C:H2'	1:1:1280:C:C6	2.51	0.46
1:1:1529:A:P	1:1:1592:G:H22	2.39	0.46
1:1:1793:C:OP2	7:BB:49:ARG:NH2	2.49	0.46
1:1:2861:U:H2'	1:1:2862:U:O4'	2.15	0.46
1:1:3206:C:H1'	24:BT:155:ARG:HH22	1.79	0.46
9:BD:235:THR:HG21	9:BD:249:VAL:HG22	1.96	0.46
11:BF:153:THR:HG22	11:BF:179:ARG:HE	1.81	0.46
20:BP:10:ASP:OD2	20:BP:37:ARG:NH1	2.49	0.46
1:1:561:C:H2'	1:1:562:C:C6	2.51	0.46
1:1:1533:U:O2'	1:1:1798:A:N3	2.47	0.46
1:1:1883:A:H2'	1:1:1884:A:C8	2.50	0.46
5:2:68:G:H2'	5:2:69:G:H8	1.80	0.46
7:BB:27:LYS:O	7:BB:31:ILE:HG12	2.16	0.46
18:BN:17:VAL:HG12	18:BN:37:GLU:HA	1.98	0.46
18:BN:129:TYR:O	18:BN:133:LYS:HG2	2.15	0.46
45:BK:167:SER:OG	45:BK:168:LYS:N	2.48	0.46
1:1:66:A:H61	1:1:76:G:H1'	1.80	0.46
1:1:208:C:OP1	10:BE:163:LYS:NZ	2.47	0.46
1:1:316:U:C2	40:Bj:30:LYS:HD3	2.51	0.46
1:1:928:C:H2'	1:1:929:A:H8	1.81	0.46
1:1:1000:C:O2	1:1:1046:A:N6	2.49	0.46
1:1:2152:A:H2'	1:1:2153:U:H6	1.81	0.46
1:1:2509:U:H2'	1:1:2510:U:C6	2.51	0.46
1:1:2674:A:H2'	1:1:2675:C:C6	2.51	0.46
1:1:2827:U:O2'	1:1:2828:G:H8	1.99	0.46
1:1:3146:G:H2'	1:1:3147:G:C8	2.51	0.46
11:BF:50:ARG:NH2	11:BF:72:ASP:OD2	2.48	0.46
13:BH:178:ILE:HG23	13:BH:183:ASP:HB3	1.98	0.46
23:BS:105:LEU:HD22	23:BS:135:LYS:HD3	1.97	0.46
36:Bf:96:ILE:HG23	36:Bf:100:ILE:HD12	1.98	0.46
41:Bk:27:PHE:HA	41:Bk:34:CYS:HA	1.97	0.46
1:1:661:G:OP2	1:1:661:G:N2	2.45	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:911:C:H5''	8:BC:15:ILE:HD13	1.98	0.45
1:1:971:G:H2'	1:1:972:A:C8	2.51	0.45
1:1:1258:U:N3	1:1:1261:G:OP2	2.43	0.45
1:1:1349:G:H2'	1:1:1350:A:C4	2.51	0.45
1:1:1663:C:H2'	1:1:1664:G:H8	1.81	0.45
1:1:2425:G:P	19:BO:90:ASN:HD21	2.39	0.45
13:BH:203:TRP:CD1	13:BH:204:PRO:HD2	2.52	0.45
19:BO:51:LEU:HD12	19:BO:119:TYR:HD1	1.81	0.45
45:BK:169:LYS:HA	45:BK:177:ARG:N	2.32	0.45
1:1:260:C:H2'	1:1:261:U:C6	2.52	0.45
1:1:277:G:H2'	1:1:278:U:C6	2.51	0.45
1:1:282:G:HO2'	1:1:283:G:P	2.39	0.45
1:1:1570:U:H4'	1:1:1571:A:C8	2.51	0.45
1:1:1868:G:HO2'	1:1:2118:C:HO2'	1.62	0.45
1:1:3028:G:H2'	1:1:3029:A:C4	2.51	0.45
1:1:3096:C:H2'	1:1:3097:C:C6	2.52	0.45
2:3:90:U:HO2'	2:3:91:G:P	2.39	0.45
10:BE:150:LEU:HD21	10:BE:172:VAL:HG11	1.98	0.45
14:BI:238:LEU:HD23	14:BI:242:ALA:HB1	1.99	0.45
1:1:277:G:H5'	19:BO:91:GLU:OE2	2.16	0.45
1:1:625:G:H2'	1:1:626:U:C6	2.52	0.45
1:1:771:A:H2'	1:1:772:U:C6	2.51	0.45
1:1:796:U:H2'	1:1:797:U:C6	2.52	0.45
1:1:1680:G:H2'	1:1:1681:U:C6	2.52	0.45
1:1:3072:C:H2'	1:1:3073:A:O4'	2.17	0.45
1:1:3255:U:H2'	1:1:3256:G:C8	2.47	0.45
1:1:3384:U:H2'	1:1:3385:U:C6	2.52	0.45
3:4:142:C:H2'	3:4:143:U:H6	1.81	0.45
5:2:9:G:O2'	5:2:10:G:N7	2.44	0.45
10:BE:292:SER:HB3	10:BE:295:ILE:HG12	1.98	0.45
11:BF:76:ALA:HB3	11:BF:109:THR:HG22	1.99	0.45
13:BH:24:GLU:HB2	13:BH:26:VAL:HG22	1.97	0.45
13:BH:118:LYS:HB2	13:BH:195:PHE:HE2	1.82	0.45
23:BS:25:ASP:OD2	23:BS:28:GLU:HG3	2.16	0.45
24:BT:1:MET:HE1	24:BT:36:ILE:HG21	1.98	0.45
1:1:848:A:C5	1:1:849:C:H1'	2.52	0.45
1:1:1454:A:H5''	1:1:1455:U:H5'	1.98	0.45
1:1:2101:C:H2'	1:1:2102:U:C6	2.52	0.45
1:1:2190:U:H2'	1:1:2191:U:C6	2.51	0.45
1:1:2651:G:H5''	1:1:2652:U:O4'	2.17	0.45
1:1:2668:U:H2'	1:1:2669:G:H8	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2709:C:H2'	1:1:2710:C:C5	2.51	0.45
1:1:2710:C:H2'	1:1:2711:C:C6	2.52	0.45
1:1:2953:U:H2'	1:1:2954:U:C6	2.52	0.45
2:3:14:U:OP1	11:BF:24:ARG:NH1	2.50	0.45
5:2:10:G:C2	5:2:26:G:H1'	2.51	0.45
11:BF:66:SER:N	11:BF:73:VAL:O	2.39	0.45
11:BF:78:ALA:HA	11:BF:108:ARG:HH21	1.82	0.45
14:BI:104:GLU:HA	14:BI:107:GLU:CG	2.45	0.45
14:BI:136:LEU:HD11	14:BI:162:LEU:HB3	1.98	0.45
15:BJ:80:THR:OG1	15:BJ:86:TYR:OH	2.34	0.45
25:BU:71:SER:HA	25:BU:92:ARG:HA	1.97	0.45
26:BV:36:TYR:CE2	26:BV:83:TYR:HB2	2.50	0.45
28:BX:39:LEU:HD21	28:BX:49:ILE:HG12	1.98	0.45
1:1:507:U:H2'	1:1:508:U:C6	2.52	0.45
1:1:945:C:H2'	1:1:946:U:C6	2.51	0.45
1:1:1232:C:H42	1:1:1257:C:H42	1.65	0.45
1:1:1517:G:H5''	43:Bm:22:PRO:HG2	1.99	0.45
1:1:1596:C:H2'	1:1:1597:C:H6	1.81	0.45
1:1:1760:A:O2'	1:1:1761:C:O5'	2.27	0.45
1:1:2261:G:H2'	1:1:2262:A:C8	2.51	0.45
1:1:2285:C:OP2	1:1:2286:U:O2'	2.29	0.45
1:1:2503:G:H2'	1:1:2504:U:C6	2.51	0.45
1:1:3156:U:O2'	1:1:3157:U:OP1	2.30	0.45
3:4:156:U:OP2	14:BI:84:ARG:NH2	2.50	0.45
5:2:66:C:N4	5:2:67:G:O6	2.49	0.45
9:BD:283:TYR:OH	9:BD:325:LYS:HD2	2.17	0.45
21:BQ:25:SER:O	21:BQ:144:SER:OG	2.20	0.45
21:BQ:108:ASP:OD2	21:BQ:110:THR:HG22	2.16	0.45
24:BT:74:ASN:OD1	24:BT:95:ARG:HD3	2.17	0.45
31:Ba:23:VAL:HB	31:Ba:43:VAL:HB	1.99	0.45
42:Bl:25:VAL:HG21	42:Bl:77:ARG:HE	1.82	0.45
1:1:542:G:O2'	1:1:543:C:O5'	2.35	0.45
1:1:1101:G:H1'	13:BH:105:LEU:HD23	1.98	0.45
1:1:1754:G:H2'	1:1:1755:C:C6	2.51	0.45
1:1:2089:A:H2'	1:1:2090:U:C6	2.52	0.45
1:1:2362:C:H2'	1:1:2363:A:O4'	2.17	0.45
1:1:2433:U:H1'	19:BO:125:SER:HB3	1.99	0.45
1:1:2816:G:O2'	1:1:2869:U:OP2	2.30	0.45
1:1:3187:A:H5'	15:BJ:22:SER:HB2	1.98	0.45
2:3:112:G:H2'	2:3:113:C:C6	2.51	0.45
3:4:7:U:H2'	3:4:8:C:C6	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:27:U:H2'	3:4:28:C:H6	1.81	0.45
11:BF:216:GLU:O	11:BF:220:SER:N	2.46	0.45
13:BH:51:TYR:HB3	13:BH:55:TYR:HE1	1.82	0.45
13:BH:107:ARG:NH2	13:BH:199:ASN:O	2.45	0.45
14:BI:75:ILE:HG22	14:BI:76:ALA:N	2.32	0.45
19:BO:98:LEU:HD12	19:BO:128:LYS:HD2	1.99	0.45
27:BW:36:ILE:HD13	27:BW:60:ALA:HB2	1.97	0.45
38:Bh:81:CYS:O	38:Bh:83:ASN:N	2.49	0.45
45:BK:173:THR:HG23	45:BK:174:ASN:O	2.15	0.45
1:1:520:U:O4	10:BE:349:THR:N	2.50	0.45
1:1:914:A:H4'	1:1:915:A:O5'	2.16	0.45
1:1:970:A:H2'	1:1:971:G:C8	2.51	0.45
1:1:1765:U:H2'	1:1:1766:G:O4'	2.17	0.45
1:1:2095:G:H2'	1:1:2096:A:H8	1.82	0.45
1:1:2250:G:C8	1:1:2250:G:H5''	2.51	0.45
1:1:2291:A:H2'	1:1:2292:U:C6	2.51	0.45
1:1:2403:G:H4'	1:1:2404:A:OP1	2.15	0.45
1:1:2770:G:H2'	1:1:2771:U:C6	2.51	0.45
1:1:2985:C:H2'	1:1:2986:U:C6	2.51	0.45
1:1:3206:C:OP1	1:1:3207:U:O2'	2.28	0.45
2:3:107:C:H2'	2:3:108:A:C8	2.51	0.45
3:4:85:G:N1	30:BZ:112:ASP:OD2	2.49	0.45
4:A:54:ALA:H	4:A:76:THR:HG22	1.82	0.45
4:A:132:VAL:HG12	4:A:133:LEU:HD22	1.98	0.45
10:BE:7:THR:OG1	10:BE:147:GLU:OE2	2.33	0.45
19:BO:44:ARG:NH1	19:BO:120:TRP:O	2.49	0.45
23:BS:23:TRP:CH2	23:BS:25:ASP:HB3	2.51	0.45
23:BS:136:ARG:O	23:BS:139:VAL:HG12	2.17	0.45
30:BZ:51:ARG:HG2	30:BZ:52:ARG:H	1.82	0.45
32:Bb:46:ASP:O	32:Bb:47:LYS:HB3	2.17	0.45
42:Bl:26:LYS:NZ	42:Bl:78:LEU:O	2.37	0.45
1:1:503:C:H2'	1:1:504:A:H8	1.81	0.45
1:1:1110:U:H2'	1:1:1111:U:C6	2.52	0.45
1:1:1483:G:O2'	1:1:1484:U:H3'	2.17	0.45
1:1:1973:G:C2	1:1:2048:G:H2'	2.52	0.45
1:1:2619:G:H1	5:2:75:C:N4	2.13	0.45
1:1:2702:A:H5'	1:1:2704:A:H1'	1.98	0.45
1:1:3273:A:H2'	1:1:3274:A:O4'	2.17	0.45
2:3:4:U:H2'	2:3:5:G:H8	1.82	0.45
2:3:11:A:N1	2:3:67:G:O2'	2.42	0.45
2:3:60:G:H2'	2:3:61:G:H8	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:BE:317:PRO:O	10:BE:318:LEU:HB2	2.17	0.45
11:BF:59:ASP:OD1	11:BF:80:SER:OG	2.35	0.45
15:BJ:12:VAL:HB	15:BJ:51:GLN:HA	1.99	0.45
27:BW:68:GLU:O	27:BW:72:LYS:NZ	2.48	0.45
34:Bd:44:ILE:HG21	34:Bd:53:LYS:HG3	1.98	0.45
1:1:95:A:H5''	32:Bb:34:MET:SD	2.57	0.45
1:1:881:C:O2'	1:1:1849:C:O2'	2.10	0.45
1:1:1125:U:H2'	1:1:1126:G:C8	2.50	0.45
1:1:1579:C:H2'	1:1:1580:A:C8	2.52	0.45
1:1:1667:A:H2'	1:1:1668:G:C8	2.51	0.45
1:1:2261:G:H2'	1:1:2262:A:H8	1.81	0.45
1:1:2840:C:H2'	1:1:2841:G:O4'	2.17	0.45
1:1:2876:C:H2'	1:1:2877:G:O4'	2.17	0.45
1:1:3306:U:HO2'	1:1:3309:G:H1	1.64	0.45
3:4:77:A:H2'	3:4:78:G:O4'	2.17	0.45
7:BB:44:LYS:HD2	7:BB:59:CYS:SG	2.56	0.45
8:BC:42:ARG:HG2	8:BC:89:TYR:CE2	2.52	0.45
14:BI:140:VAL:HG22	14:BI:166:LEU:HD21	1.98	0.45
15:BJ:103:ILE:HB	15:BJ:134:ILE:HD11	1.97	0.45
1:1:213:A:N6	1:1:228:U:O4'	2.50	0.45
1:1:388:G:H5''	21:BQ:18:ARG:HB3	1.98	0.45
1:1:533:A:O2'	1:1:535:G:H5'	2.17	0.45
1:1:858:A:H2'	1:1:859:G:O4'	2.17	0.45
1:1:987:U:H2'	1:1:988:U:C6	2.52	0.45
1:1:998:A:H2'	1:1:999:G:C8	2.52	0.45
1:1:3062:G:H2'	1:1:3063:C:C6	2.52	0.45
1:1:3331:U:H2'	1:1:3332:U:O4'	2.17	0.45
11:BF:51:LEU:HD12	11:BF:64:ILE:HD11	1.98	0.45
25:BU:126:VAL:HG13	25:BU:127:GLN:H	1.82	0.45
27:BW:18:PRO:HA	27:BW:51:ALA:HA	1.99	0.45
32:Bb:100:PRO:HD2	32:Bb:123:VAL:HA	1.98	0.45
34:Bd:32:LYS:C	34:Bd:32:LYS:HD3	2.42	0.45
45:BK:168:LYS:O	45:BK:169:LYS:HG2	2.17	0.45
1:1:814:U:H2'	1:1:815:G:H8	1.82	0.44
1:1:1497:C:H2'	1:1:1498:A:C8	2.48	0.44
1:1:1685:C:H2'	1:1:1686:U:C6	2.52	0.44
1:1:2177:G:H1'	1:1:2178:A:OP2	2.17	0.44
1:1:2249:G:N1	1:1:2268:U:N3	2.65	0.44
1:1:2440:G:H2'	1:1:2441:A:C8	2.52	0.44
1:1:3233:C:H2'	1:1:3234:A:C8	2.51	0.44
1:1:3371:G:H2'	1:1:3372:A:C8	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:BA:36:PHE:O	6:BA:41:ARG:NE	2.42	0.44
8:BC:33:ASP:OD2	8:BC:33:ASP:N	2.47	0.44
9:BD:31:ALA:O	9:BD:339:ARG:NH1	2.51	0.44
13:BH:98:LYS:HB3	13:BH:99:PRO:HD3	1.98	0.44
13:BH:176:TYR:CE2	13:BH:197:GLN:HG3	2.52	0.44
17:BM:76:THR:HA	17:BM:98:ASP:O	2.17	0.44
19:BO:65:ARG:HG2	19:BO:129:TYR:CE2	2.52	0.44
21:BQ:114:VAL:HG12	21:BQ:150:VAL:HG12	1.98	0.44
22:BR:125:ASP:OD1	22:BR:126:GLN:N	2.50	0.44
23:BS:27:ASN:OD1	23:BS:28:GLU:N	2.50	0.44
29:BY:60:TYR:CD2	39:Bi:25:LYS:HB3	2.52	0.44
45:BK:55:GLU:OE1	45:BK:55:GLU:N	2.50	0.44
1:1:553:U:H2'	1:1:554:A:O4'	2.17	0.44
1:1:1114:U:H2'	1:1:1115:G:C8	2.51	0.44
1:1:1379:G:O3'	10:BE:191:LYS:NZ	2.46	0.44
1:1:1570:U:O2'	1:1:1572:U:O2	2.35	0.44
1:1:2146:C:H2'	1:1:2147:A:H8	1.82	0.44
1:1:2528:G:H2'	1:1:2529:A:C8	2.53	0.44
1:1:2663:G:H2'	1:1:2664:C:O4'	2.16	0.44
1:1:2686:A:H2'	1:1:2687:G:O4'	2.18	0.44
3:4:4:C:H2'	3:4:5:U:H6	1.80	0.44
3:4:76:C:H2'	3:4:77:A:O4'	2.18	0.44
3:4:141:C:O3'	19:BO:62:TYR:OH	2.34	0.44
7:BB:8:VAL:O	7:BB:11:THR:HG22	2.16	0.44
11:BF:41:LYS:NZ	25:BU:30:TYR:O	2.50	0.44
13:BH:30:ARG:HG3	13:BH:33:ARG:HH21	1.82	0.44
1:1:493:G:H3'	1:1:494:G:C8	2.52	0.44
1:1:503:C:O5'	12:BG:26:ARG:NH1	2.50	0.44
1:1:645:A:H1'	1:1:647:A:N7	2.32	0.44
1:1:2164:A:OP1	8:BC:8:GLN:NE2	2.50	0.44
1:1:2430:A:H2'	1:1:2431:C:C6	2.53	0.44
1:1:2961:G:H2'	1:1:2962:U:C6	2.53	0.44
1:1:3344:A:N6	1:1:3361:G:O2'	2.51	0.44
4:A:11:ASN:ND2	4:A:209:ASP:OD2	2.49	0.44
4:A:20:THR:HB	4:A:67:ARG:HH22	1.82	0.44
8:BC:225:ILE:HB	8:BC:238:ILE:HD13	2.00	0.44
10:BE:361:HIS:HB3	24:BT:26:ARG:NH2	2.32	0.44
11:BF:43:LYS:HB3	11:BF:46:THR:OG1	2.17	0.44
20:BP:177:LYS:HD2	20:BP:177:LYS:C	2.42	0.44
23:BS:144:GLN:HA	23:BS:147:ALA:HB3	1.99	0.44
29:BY:80:ASN:HD21	29:BY:126:LEU:HB2	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:Bb:103:ASP:OD2	32:Bb:106:ALA:N	2.50	0.44
45:BK:100:LYS:HD2	45:BK:120:LYS:HE3	2.00	0.44
1:1:1055:A:N3	2:3:81:U:O2'	2.49	0.44
1:1:1076:C:C4	1:1:1077:U:C4	3.05	0.44
1:1:1598:G:OP2	38:Bh:31:ARG:NH2	2.50	0.44
1:1:1771:C:H2'	1:1:1772:U:O4'	2.18	0.44
1:1:2127:U:O2'	1:1:2301:U:OP1	2.35	0.44
1:1:2196:C:O2'	1:1:2270:A:H2'	2.17	0.44
1:1:2250:G:C4	1:1:2251:G:C8	3.06	0.44
1:1:2819:A:H5''	1:1:2866:U:C4	2.53	0.44
1:1:3182:G:H2'	1:1:3183:A:C8	2.53	0.44
8:BC:59:ALA:N	8:BC:76:PHE:O	2.49	0.44
9:BD:86:VAL:HG22	9:BD:162:VAL:HG12	1.99	0.44
12:BG:31:ARG:NH2	37:Bg:105:SER:OG	2.51	0.44
18:BN:41:GLN:HG3	18:BN:42:LYS:HD2	1.99	0.44
18:BN:46:ILE:HD13	18:BN:58:ILE:HB	2.00	0.44
31:Ba:9:LYS:HD3	31:Ba:9:LYS:HA	1.65	0.44
35:Be:34:LYS:HE2	35:Be:34:LYS:HB2	1.88	0.44
41:Bk:85:LYS:N	41:Bk:85:LYS:HD3	2.33	0.44
1:1:267:G:N2	19:BO:50:ARG:O	2.51	0.44
1:1:501:A:H2'	1:1:502:U:C6	2.51	0.44
1:1:1277:C:H2'	1:1:1278:A:H8	1.82	0.44
1:1:1557:A:O2'	1:1:1558:A:OP1	2.28	0.44
1:1:2220:A:H2'	1:1:2221:G:C8	2.53	0.44
1:1:2352:A:N6	1:1:2353:G:O6	2.50	0.44
1:1:2916:U:H2'	1:1:2917:G:C8	2.51	0.44
2:3:20:A:H2'	2:3:21:G:C8	2.53	0.44
13:BH:194:HIS:HB2	13:BH:197:GLN:NE2	2.32	0.44
16:BL:99:THR:O	16:BL:154:THR:OG1	2.33	0.44
21:BQ:57:ALA:HA	21:BQ:83:TRP:CD1	2.53	0.44
24:BT:27:MET:HG3	25:BU:151:LEU:O	2.17	0.44
32:Bb:98:THR:HG22	32:Bb:98:THR:O	2.17	0.44
33:Bc:11:ASN:OD1	33:Bc:14:ARG:NH1	2.46	0.44
40:Bj:74:LYS:HD2	40:Bj:80:PHE:CD1	2.53	0.44
1:1:164:A:C2	1:1:258:G:C2	3.06	0.44
1:1:277:G:H2'	1:1:278:U:H6	1.83	0.44
1:1:605:U:H2'	1:1:606:C:C6	2.52	0.44
1:1:710:A:H2'	1:1:711:A:C8	2.53	0.44
1:1:838:G:O6	1:1:856:G:N2	2.48	0.44
1:1:840:C:H2'	1:1:841:A:C8	2.53	0.44
1:1:1438:U:C2	1:1:1439:U:C5	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1746:U:O2'	42:Bl:4:GLU:OE1	2.35	0.44
1:1:1757:A:C6	1:1:1769:G:C2	3.06	0.44
1:1:1799:A:H2'	1:1:1800:A:H8	1.82	0.44
1:1:2228:A:H2'	1:1:2229:A:C8	2.52	0.44
1:1:2355:G:H4'	21:BQ:139:TYR:CE1	2.53	0.44
1:1:2402:A:N7	10:BE:73:ARG:NH2	2.66	0.44
1:1:2745:G:N2	1:1:2748:A:OP2	2.42	0.44
1:1:2816:G:H4'	1:1:2817:A:O5'	2.18	0.44
3:4:38:U:O2'	39:Bi:83:LYS:NZ	2.33	0.44
4:A:12:GLU:OE2	27:BW:128:ARG:NH2	2.51	0.44
5:2:74:C:P	45:BK:109:ARG:HE	2.41	0.44
9:BD:233:TRP:CD1	9:BD:265:ALA:HB1	2.53	0.44
12:BG:51:ARG:NH2	18:BN:114:ASP:OD2	2.51	0.44
15:BJ:167:VAL:HG12	15:BJ:170:LYS:HB2	2.00	0.44
17:BM:91:ARG:HE	17:BM:97:VAL:HB	1.82	0.44
19:BO:73:ARG:HH11	19:BO:92:LEU:HD11	1.83	0.44
22:BR:64:VAL:HG12	22:BR:90:ASP:H	1.83	0.44
36:Bf:96:ILE:HG21	36:Bf:105:ARG:HD3	1.99	0.44
1:1:86:G:H1'	1:1:87:U:OP2	2.16	0.44
1:1:136:G:H5'	39:Bi:95:PHE:CG	2.52	0.44
1:1:543:C:O2'	1:1:544:C:O4'	2.31	0.44
1:1:675:C:O2'	1:1:679:U:OP1	2.36	0.44
1:1:700:C:H2'	1:1:701:G:H8	1.83	0.44
1:1:717:C:H2'	1:1:718:G:O4'	2.18	0.44
1:1:960:U:H4'	1:1:963:G:C2	2.52	0.44
1:1:1062:A:N3	25:BU:130:ARG:NH2	2.66	0.44
1:1:1077:U:H2'	1:1:1078:U:C6	2.52	0.44
1:1:1203:A:H2'	1:1:1204:A:H8	1.82	0.44
1:1:1779:C:N4	23:BS:88:ARG:O	2.50	0.44
1:1:2138:A:N7	41:Bk:3:LYS:HE2	2.32	0.44
1:1:2151:C:O2'	1:1:2243:A:N1	2.47	0.44
1:1:2632:G:O6	1:1:2647:A:N6	2.51	0.44
10:BE:163:LYS:HB3	10:BE:163:LYS:HE2	1.86	0.44
11:BF:187:THR:HG23	11:BF:189:GLU:H	1.83	0.44
14:BI:151:VAL:HG12	14:BI:199:ALA:HB2	1.99	0.44
20:BP:34:VAL:HG23	20:BP:103:LYS:HB2	1.99	0.44
25:BU:94:GLU:HG2	25:BU:95:HIS:CD2	2.53	0.44
25:BU:126:VAL:HG13	25:BU:127:GLN:N	2.31	0.44
39:Bi:22:VAL:HA	39:Bi:25:LYS:HB2	1.99	0.44
43:Bm:38:ASN:HB3	43:Bm:41:ARG:HG2	2.00	0.44
1:1:787:G:H2'	1:1:788:C:H6	1.83	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:837:A:N6	1:1:856:G:O2'	2.50	0.44
1:1:857:G:HO2'	1:1:858:A:H8	1.64	0.44
1:1:871:U:C4	1:1:890:C:H1'	2.53	0.44
1:1:1018:G:H2'	1:1:1019:G:C8	2.52	0.44
1:1:1341:U:H2'	1:1:1342:C:H6	1.81	0.44
1:1:1717:U:H3	1:1:1727:G:H1	1.66	0.44
1:1:2493:U:H4'	1:1:2494:A:C8	2.53	0.44
1:1:2988:C:O2	9:BD:266:ARG:NH1	2.50	0.44
1:1:3112:G:OP1	15:BJ:77:ASN:ND2	2.51	0.44
2:3:28:C:H5'	16:BL:141:ARG:NH2	2.32	0.44
8:BC:5:ILE:HD13	8:BC:210:PRO:HD3	2.00	0.44
8:BC:116:VAL:HG22	8:BC:126:LEU:HB2	2.00	0.44
12:BG:36:PRO:HA	12:BG:54:TYR:CD2	2.53	0.44
13:BH:90:LYS:HG3	13:BH:91:GLY:N	2.33	0.44
16:BL:94:ARG:HG2	16:BL:95:ASN:N	2.28	0.44
18:BN:128:ARG:O	18:BN:132:LYS:NZ	2.50	0.44
22:BR:44:PHE:HD1	22:BR:139:ILE:HD11	1.83	0.44
25:BU:115:LYS:HD2	25:BU:128:LEU:HD21	2.00	0.44
31:Ba:92:PHE:HB2	31:Ba:95:VAL:HB	2.00	0.44
39:Bi:21:LEU:HD11	39:Bi:55:LEU:HG	2.00	0.44
41:Bk:2:GLY:O	41:Bk:7:SER:HB3	2.18	0.44
1:1:427:C:OP2	36:Bf:15:LYS:NZ	2.41	0.44
1:1:709:A:N3	1:1:2787:G:O2'	2.44	0.44
1:1:1329:U:OP1	37:Bg:82:ARG:NH2	2.50	0.44
1:1:1635:G:N2	1:1:1638:A:OP2	2.23	0.44
1:1:1973:G:H22	1:1:2050:C:H1'	1.82	0.44
1:1:2098:C:H2'	1:1:2099:A:C8	2.53	0.44
1:1:2532:U:H2'	1:1:2533:G:C8	2.53	0.44
1:1:2583:C:H2'	1:1:2584:G:C8	2.53	0.44
1:1:2597:U:H2'	1:1:2598:G:H8	1.83	0.44
16:BL:9:MET:HE1	16:BL:134:PRO:HB2	2.00	0.44
17:BM:47:ALA:HB1	17:BM:48:PRO:HD2	2.00	0.44
21:BQ:91:VAL:O	21:BQ:95:LEU:N	2.50	0.44
24:BT:77:VAL:HG21	24:BT:106:LEU:HD12	2.00	0.44
37:Bg:47:LYS:NZ	37:Bg:106:ASN:HB2	2.32	0.44
1:1:696:C:OP2	10:BE:119:ARG:NH2	2.39	0.43
1:1:802:C:H2'	1:1:803:C:H6	1.83	0.43
1:1:920:A:H5''	1:1:921:A:OP1	2.18	0.43
1:1:1063:G:C4	25:BU:105:PHE:HZ	2.36	0.43
1:1:1306:G:H1'	20:BP:60:LYS:HA	1.99	0.43
1:1:1465:A:H2'	1:1:1466:G:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1642:A:N3	1:1:1822:C:O2'	2.45	0.43
1:1:1940:G:H2'	1:1:1941:C:H6	1.83	0.43
1:1:2294:U:N3	1:1:2297:U:OP2	2.30	0.43
1:1:2364:G:H22	1:1:2396:G:H1'	1.83	0.43
1:1:2374:C:OP2	1:1:2823:G:O2'	2.29	0.43
1:1:3186:A:H2	15:BJ:58:HIS:H	1.66	0.43
1:1:3375:A:O2'	1:1:3376:A:O4'	2.29	0.43
2:3:112:G:H2'	2:3:113:C:H6	1.82	0.43
4:A:78:ASP:OD1	4:A:96:ARG:NH2	2.51	0.43
9:BD:220:VAL:O	9:BD:330:GLY:HA2	2.18	0.43
10:BE:31:ARG:HH21	10:BE:280:ILE:HD13	1.83	0.43
16:BL:92:ARG:NH2	16:BL:95:ASN:HD21	2.16	0.43
17:BM:126:PHE:CG	17:BM:132:ALA:HB1	2.53	0.43
27:BW:67:PRO:HA	27:BW:70:ARG:HD3	1.98	0.43
27:BW:86:ARG:HB2	27:BW:92:PHE:CZ	2.53	0.43
28:BX:4:GLU:HG2	28:BX:13:ILE:HB	1.99	0.43
31:Ba:76:ASN:OD1	31:Ba:77:TYR:N	2.51	0.43
32:Bb:83:PRO:HG2	32:Bb:86:LYS:HE3	1.99	0.43
1:1:162:G:H2'	1:1:163:C:C6	2.52	0.43
1:1:1244:A:C2	1:1:1271:A:H4'	2.53	0.43
1:1:1461:A:H2'	1:1:1462:A:H8	1.82	0.43
1:1:1543:G:HO2'	1:1:2168:A:HO2'	1.65	0.43
1:1:1746:U:H2'	1:1:1747:G:H8	1.83	0.43
1:1:3187:A:OP2	15:BJ:23:ARG:HG3	2.18	0.43
7:BB:44:LYS:HG2	34:Bd:86:ARG:HH12	1.84	0.43
8:BC:96:LEU:HD23	8:BC:96:LEU:HA	1.79	0.43
8:BC:98:VAL:HG23	8:BC:167:GLY:HA3	1.99	0.43
11:BF:43:LYS:HB3	11:BF:46:THR:HG1	1.82	0.43
11:BF:266:ALA:HB1	11:BF:270:LYS:NZ	2.33	0.43
15:BJ:190:ASP:OD1	15:BJ:190:ASP:N	2.50	0.43
16:BL:54:VAL:HG12	16:BL:56:THR:HG22	2.00	0.43
16:BL:107:ASP:HA	16:BL:124:GLY:HA2	1.99	0.43
18:BN:132:LYS:HA	18:BN:135:LEU:HB3	2.00	0.43
26:BV:54:VAL:HG12	26:BV:67:SER:HA	2.00	0.43
27:BW:27:ASP:OD2	27:BW:102:ILE:HG22	2.18	0.43
29:BY:91:ASN:O	29:BY:95:ILE:HG12	2.18	0.43
32:Bb:78:LEU:O	32:Bb:78:LEU:HD23	2.18	0.43
43:Bm:41:ARG:HD2	43:Bm:41:ARG:HA	1.70	0.43
1:1:529:A:H2'	1:1:530:G:C8	2.53	0.43
1:1:2090:U:H2'	1:1:2091:U:H6	1.82	0.43
1:1:3279:A:P	1:1:3279:A:H8	2.40	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3296:A:OP1	9:BD:120:LYS:N	2.50	0.43
1:1:3370:A:C4	1:1:3371:G:C8	3.06	0.43
3:4:57:C:OP2	41:Bk:68:LYS:NZ	2.48	0.43
3:4:73:U:H2'	3:4:74:U:O4'	2.18	0.43
7:BB:40:SER:O	34:Bd:47:ASN:ND2	2.51	0.43
7:BB:49:ARG:HB2	7:BB:55:TRP:CZ3	2.53	0.43
8:BC:37:ARG:HA	8:BC:92:LYS:HD3	2.00	0.43
11:BF:95:TRP:CD1	11:BF:158:ARG:HA	2.53	0.43
22:BR:54:LEU:HB3	22:BR:58:ASN:HB2	1.99	0.43
22:BR:69:ARG:HA	22:BR:72:LYS:HZ1	1.84	0.43
23:BS:139:VAL:O	23:BS:143:ILE:HG13	2.18	0.43
24:BT:73:LYS:O	24:BT:95:ARG:HB2	2.19	0.43
27:BW:74:MET:HA	27:BW:75:PRO:HD3	1.91	0.43
34:Bd:25:LEU:HD23	34:Bd:87:VAL:HB	1.99	0.43
34:Bd:77:LEU:HG	34:Bd:87:VAL:HG13	2.00	0.43
36:Bf:19:ARG:NH1	36:Bf:33:ARG:HG3	2.33	0.43
40:Bj:57:LEU:HD12	40:Bj:90:MET:HE3	1.99	0.43
1:1:874:U:N3	1:1:2978:U:OP1	2.36	0.43
1:1:908:G:H21	1:1:925:A:H62	1.66	0.43
1:1:946:U:H2'	1:1:947:G:H8	1.84	0.43
1:1:1639:C:H5'	38:Bh:53:GLY:HA3	2.00	0.43
1:1:1752:A:H2'	1:1:1753:G:H8	1.83	0.43
1:1:1943:C:H4'	1:1:3346:U:H4'	1.99	0.43
1:1:2621:G:O6	45:BK:112:GLN:NE2	2.50	0.43
1:1:2728:G:OP1	1:1:2728:G:H4'	2.18	0.43
1:1:3261:C:H2'	1:1:3262:U:C6	2.54	0.43
3:4:4:C:C2	3:4:5:U:C5	3.06	0.43
4:A:217:VAL:O	4:A:221:ILE:HG22	2.18	0.43
13:BH:144:ILE:HD13	13:BH:189:ILE:HD13	1.99	0.43
13:BH:239:LEU:HD21	13:BH:243:MET:HE3	1.99	0.43
15:BJ:41:ILE:HG22	15:BJ:43:VAL:HG13	2.01	0.43
17:BM:10:LEU:HD13	22:BR:166:LEU:HD11	2.01	0.43
22:BR:113:LYS:HB2	22:BR:113:LYS:HE3	1.67	0.43
27:BW:56:ASP:OD1	27:BW:57:MET:N	2.52	0.43
30:BZ:88:GLU:HG3	30:BZ:94:SER:HB2	2.00	0.43
40:Bj:5:THR:HG23	40:Bj:12:ASN:HB3	2.00	0.43
1:1:80:G:C6	1:1:106:A:C6	3.07	0.43
1:1:986:U:O3'	13:BH:125:GLU:HG2	2.18	0.43
1:1:1622:U:C2	1:1:1623:G:C8	3.06	0.43
1:1:2943:G:N2	9:BD:251:CYS:SG	2.92	0.43
1:1:3276:G:N2	37:Bg:62:SER:OG	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:22:U:O2'	3:4:23:U:OP1	2.29	0.43
3:4:66:A:H2'	3:4:67:U:C6	2.53	0.43
6:BA:17:CYS:SG	6:BA:18:ARG:N	2.91	0.43
31:Ba:15:ARG:HG3	31:Ba:79:HIS:CD2	2.54	0.43
34:Bd:40:LYS:HD3	34:Bd:40:LYS:N	2.34	0.43
42:Bl:12:LEU:O	42:Bl:15:THR:OG1	2.29	0.43
1:1:731:U:H2'	1:1:732:C:H6	1.84	0.43
1:1:1164:G:H2'	1:1:1165:A:C8	2.54	0.43
1:1:1203:A:H5''	2:3:90:U:C4	2.53	0.43
1:1:1528:G:H2'	1:1:1529:A:C8	2.54	0.43
1:1:1959:G:C6	1:1:2082:U:O2	2.71	0.43
1:1:2335:G:N2	1:1:2339:C:O2'	2.52	0.43
1:1:2635:A:H5''	1:1:2636:A:OP1	2.19	0.43
1:1:2807:U:O2'	1:1:2809:C:OP1	2.35	0.43
1:1:2880:U:O2	9:BD:250:ALA:HB3	2.19	0.43
1:1:3383:G:N2	35:Be:105:GLN:OE1	2.32	0.43
1:1:3392:U:H2'	1:1:3393:U:C6	2.53	0.43
11:BF:110:LEU:HB3	11:BF:116:ASP:HB2	2.00	0.43
14:BI:72:PRO:HA	14:BI:233:TRP:CZ3	2.54	0.43
16:BL:91:LEU:HD23	16:BL:91:LEU:HA	1.73	0.43
17:BM:182:ILE:O	17:BM:186:ARG:N	2.47	0.43
23:BS:21:LYS:O	23:BS:53:LYS:HB2	2.19	0.43
24:BT:94:ILE:HD12	24:BT:105:THR:HG23	1.99	0.43
27:BW:36:ILE:HD12	27:BW:58:VAL:HG21	2.00	0.43
39:Bi:77:PRO:HB2	39:Bi:80:LEU:HD13	2.01	0.43
1:1:1184:A:H2'	1:1:1185:C:C6	2.54	0.43
1:1:1870:C:O2	1:1:3066:U:O2'	2.33	0.43
1:1:1969:G:H2'	1:1:1970:U:C6	2.53	0.43
1:1:2188:A:H3'	1:1:2189:U:C6	2.53	0.43
1:1:2746:A:O2'	11:BF:175:HIS:HA	2.18	0.43
1:1:3269:U:H5'	1:1:3271:G:O4'	2.18	0.43
1:1:3330:A:H2'	1:1:3331:U:C6	2.54	0.43
4:A:123:ARG:NH2	4:A:124:GLU:HA	2.33	0.43
7:BB:36:ARG:NE	7:BB:45:LYS:O	2.51	0.43
11:BF:194:LEU:O	11:BF:197:SER:OG	2.32	0.43
13:BH:207:LEU:HB3	13:BH:243:MET:HB3	2.01	0.43
18:BN:60:LEU:HD13	24:BT:152:LEU:HD11	2.00	0.43
19:BO:62:TYR:HD2	19:BO:134:LEU:HD13	1.84	0.43
22:BR:26:LEU:HA	22:BR:29:LEU:HD12	2.00	0.43
32:Bb:47:LYS:C	32:Bb:49:HIS:H	2.27	0.43
1:1:816:A:OP2	1:1:906:A:N6	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:1243:G:N2	1:1:1270:A:H2'	2.32	0.43
1:1:1973:G:N2	1:1:2048:G:H2'	2.34	0.43
1:1:2178:A:H5''	8:BC:132:ASN:ND2	2.34	0.43
1:1:2234:G:O2'	1:1:2603:G:O2'	2.36	0.43
1:1:2555:G:C8	38:Bh:91:ARG:HG2	2.54	0.43
1:1:2689:A:H5''	1:1:2690:G:OP1	2.19	0.43
1:1:2748:A:H4'	11:BF:145:PHE:CZ	2.54	0.43
11:BF:148:ILE:HG23	11:BF:151:GLN:NE2	2.34	0.43
13:BH:83:LEU:HD21	13:BH:189:ILE:HA	2.01	0.43
15:BJ:90:MET:O	15:BJ:143:GLU:HG3	2.19	0.43
1:1:417:A:H2'	1:1:418:A:H8	1.83	0.43
1:1:601:U:H3'	1:1:602:A:C8	2.53	0.43
1:1:1160:C:C5	1:1:1366:A:H1'	2.53	0.43
1:1:1198:C:H2'	1:1:1199:C:C5	2.54	0.43
1:1:1439:U:H2'	1:1:1440:G:H8	1.84	0.43
1:1:1467:A:C5	1:1:1470:U:C4	3.07	0.43
1:1:1590:G:C2	1:1:1591:G:C8	3.07	0.43
1:1:2513:U:H4'	1:1:2514:U:OP1	2.18	0.43
1:1:2689:A:H4'	1:1:2690:G:C4	2.53	0.43
1:1:3051:U:H2'	1:1:3052:G:H8	1.84	0.43
1:1:3339:A:H2'	1:1:3340:G:C8	2.54	0.43
2:3:28:C:H5''	16:BL:137:ARG:HD3	2.01	0.43
3:4:61:A:H5''	3:4:63:G:O2'	2.19	0.43
7:BB:78:THR:HA	7:BB:81:SER:HB3	2.00	0.43
9:BD:139:GLN:HG3	9:BD:141:GLY:H	1.83	0.43
9:BD:367:LYS:HB3	28:BX:33:ASN:ND2	2.34	0.43
11:BF:148:ILE:HG23	11:BF:151:GLN:CD	2.43	0.43
16:BL:56:THR:HG23	16:BL:57:PHE:CD1	2.53	0.43
16:BL:138:VAL:HG13	16:BL:141:ARG:HH12	1.82	0.43
17:BM:90:ALA:HA	17:BM:93:ILE:HG22	2.00	0.43
29:BY:66:PRO:HA	29:BY:84:PHE:HA	2.01	0.43
41:Bk:60:GLY:HA2	41:Bk:64:MET:HE2	2.01	0.43
1:1:158:G:H2'	1:1:159:A:H8	1.83	0.43
1:1:275:U:H2'	1:1:276:U:C6	2.54	0.43
1:1:1244:A:H61	1:1:1248:C:H6	1.66	0.43
1:1:1433:A:H4'	1:1:1434:G:OP1	2.19	0.43
1:1:1658:G:O4'	1:1:1796:G:H2'	2.18	0.43
1:1:2812:C:H2'	1:1:2813:A:H8	1.82	0.43
1:1:3138:U:H5''	9:BD:274:SER:O	2.19	0.43
1:1:3175:U:HO2'	1:1:3176:G:P	2.41	0.43
1:1:3216:G:O2'	1:1:3217:C:OP1	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3279:A:H2'	1:1:3280:U:C6	2.54	0.43
3:4:71:A:H3'	30:BZ:51:ARG:HG3	2.01	0.43
9:BD:60:LEU:HD21	9:BD:62:ARG:NH2	2.34	0.43
13:BH:86:VAL:HG21	13:BH:127:LEU:HD11	2.01	0.43
18:BN:123:LEU:O	18:BN:127:LYS:N	2.44	0.43
25:BU:104:GLU:HA	25:BU:107:GLU:OE2	2.19	0.43
41:Bk:84:SER:C	41:Bk:85:LYS:HD3	2.44	0.43
1:1:280:U:O2'	1:1:282:G:N7	2.50	0.42
1:1:338:A:OP1	10:BE:47:ARG:HA	2.19	0.42
1:1:365:A:C6	1:1:366:A:C6	3.07	0.42
1:1:525:C:OP2	18:BN:77:ARG:NH2	2.39	0.42
1:1:610:G:H1'	10:BE:313:LEU:HD22	2.00	0.42
1:1:870:G:H4'	1:1:871:U:OP1	2.18	0.42
1:1:999:G:H2'	1:1:1000:C:C6	2.53	0.42
1:1:1015:U:H2'	1:1:1018:G:C8	2.54	0.42
1:1:1207:G:H5''	44:Bn:119:ASN:ND2	2.27	0.42
1:1:1389:G:H5''	36:Bf:101:SER:HB2	2.01	0.42
1:1:1392:G:N1	1:1:1417:G:N7	2.66	0.42
1:1:1836:C:H2'	1:1:1837:U:C6	2.54	0.42
1:1:2270:A:H3'	1:1:2271:A:C8	2.54	0.42
1:1:2502:A:H3'	1:1:2503:G:H8	1.84	0.42
1:1:2555:G:N7	38:Bh:95:ILE:HD12	2.33	0.42
1:1:2656:A:HO2'	1:1:2657:A:P	2.42	0.42
1:1:2911:A:H5''	1:1:2912:G:OP1	2.18	0.42
1:1:3000:A:H2'	1:1:3001:C:C6	2.54	0.42
1:1:3385:U:H2'	1:1:3386:G:C8	2.53	0.42
5:2:37:A:H3'	5:2:38:A:H8	1.84	0.42
6:BA:17:CYS:O	6:BA:19:LYS:HG3	2.19	0.42
6:BA:80:ARG:HG3	6:BA:80:ARG:NH1	2.34	0.42
14:BI:52:TRP:HB3	14:BI:56:VAL:CG1	2.49	0.42
27:BW:33:ASN:C	27:BW:34:LEU:HD12	2.44	0.42
31:Ba:97:SER:N	31:Ba:100:THR:OG1	2.51	0.42
1:1:589:A:N6	1:1:610:G:O2'	2.52	0.42
1:1:589:A:H1'	1:1:1337:A:H5''	2.01	0.42
1:1:1023:C:N3	1:1:1030:A:N6	2.67	0.42
1:1:1223:A:H2'	1:1:1223:A:N3	2.34	0.42
1:1:1339:C:H2'	1:1:1340:G:H8	1.84	0.42
1:1:1619:A:H2'	1:1:1620:U:C6	2.54	0.42
1:1:2178:A:H5''	8:BC:132:ASN:HD21	1.84	0.42
1:1:2251:G:N2	1:1:2265:C:N3	2.61	0.42
1:1:3095:U:H2'	1:1:3096:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:3113:A:H4'	15:BJ:69:ARG:HG3	2.00	0.42
2:3:22:A:H2'	2:3:22:A:N3	2.33	0.42
5:2:27:U:H2'	5:2:28:C:C6	2.54	0.42
10:BE:329:PRO:HB2	13:BH:45:LEU:HD12	2.01	0.42
11:BF:25:GLU:O	16:BL:144:CYS:HA	2.19	0.42
13:BH:120:THR:HB	13:BH:123:THR:HG23	2.00	0.42
22:BR:71:LEU:HG	22:BR:99:THR:HG21	2.01	0.42
39:Bi:32:LYS:HA	39:Bi:32:LYS:HD2	1.82	0.42
41:Bk:17:THR:HG22	41:Bk:18:LEU:N	2.33	0.42
1:1:160:G:H1	1:1:261:U:H3	1.67	0.42
1:1:489:C:O2'	1:1:490:A:O4'	2.36	0.42
1:1:594:U:C4	10:BE:308:LYS:HE2	2.54	0.42
1:1:792:G:H2'	1:1:793:C:H6	1.85	0.42
1:1:1431:G:OP2	32:Bb:9:ARG:NH1	2.28	0.42
1:1:2103:U:H2'	1:1:2104:A:H8	1.84	0.42
1:1:2151:C:H2'	1:1:2152:A:H8	1.85	0.42
1:1:2279:A:H2	1:1:2305:G:H8	1.67	0.42
1:1:2635:A:H4'	1:1:2636:A:N3	2.34	0.42
1:1:2998:U:H2'	1:1:2999:U:C6	2.53	0.42
2:3:1:G:H1'	11:BF:269:SER:HB2	2.01	0.42
3:4:66:A:H2'	3:4:67:U:H6	1.84	0.42
5:2:16:U:O2'	5:2:17:G:O5'	2.36	0.42
9:BD:77:THR:HG23	9:BD:326:GLY:O	2.20	0.42
13:BH:110:ARG:HB2	13:BH:206:LYS:HZ2	1.84	0.42
13:BH:178:ILE:HA	13:BH:183:ASP:HB3	2.02	0.42
14:BI:178:ALA:HA	14:BI:222:PHE:CD2	2.55	0.42
18:BN:115:PHE:O	18:BN:118:PHE:HB3	2.20	0.42
19:BO:71:ARG:HD2	19:BO:94:TYR:HD2	1.83	0.42
1:1:144:A:H2'	1:1:145:G:O4'	2.19	0.42
1:1:392:G:H22	1:1:400:G:H1	1.68	0.42
1:1:573:C:H2'	1:1:574:U:H6	1.83	0.42
1:1:1184:A:C6	1:1:1323:G:C6	3.07	0.42
1:1:1671:C:OP1	23:BS:60:LYS:NZ	2.47	0.42
1:1:2249:G:H5''	1:1:2272:G:N7	2.34	0.42
1:1:2502:A:H2'	1:1:2502:A:N3	2.34	0.42
1:1:2528:G:H2'	1:1:2529:A:H8	1.84	0.42
1:1:3191:G:H5''	20:BP:176:LYS:HE2	2.00	0.42
2:3:35:C:O2	2:3:45:A:O2'	2.36	0.42
2:3:54:U:H5'	2:3:55:A:H8	1.84	0.42
4:A:81:LEU:HD12	4:A:84:LEU:HD11	2.01	0.42
9:BD:123:TYR:CZ	9:BD:124:LYS:HG3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:BM:94:GLY:HA3	39:Bi:116:TYR:OH	2.20	0.42
22:BR:182:LYS:HD3	22:BR:182:LYS:HA	1.87	0.42
25:BU:48:ILE:HB	25:BU:94:GLU:OE2	2.18	0.42
32:Bb:86:LYS:HG2	32:Bb:89:GLN:HE22	1.84	0.42
35:Be:51:LEU:HD23	35:Be:55:LEU:HD22	2.00	0.42
38:Bh:79:SER:C	38:Bh:80:ARG:HD2	2.45	0.42
42:Bl:66:ILE:HA	42:Bl:69:LEU:HD13	2.01	0.42
1:1:75:G:O3'	17:BM:70:ARG:NH2	2.52	0.42
1:1:361:A:N3	1:1:814:U:H1'	2.34	0.42
1:1:1751:G:O6	42:Bl:44:LYS:NZ	2.51	0.42
1:1:1805:C:H2'	1:1:1806:A:C8	2.54	0.42
1:1:1852:G:N3	41:Bk:9:GLY:HA3	2.34	0.42
3:4:9:A:H2'	3:4:10:A:H8	1.84	0.42
4:A:154:LEU:HD11	4:A:177:LEU:HD23	2.02	0.42
22:BR:67:ILE:HD12	22:BR:67:ILE:H	1.84	0.42
23:BS:102:LEU:HD22	23:BS:138:LEU:HD22	2.01	0.42
31:Ba:136:PHE:O	38:Bh:76:TYR:OH	2.37	0.42
45:BK:8:TYR:CD2	45:BK:96:LEU:HD13	2.55	0.42
1:1:77:A:H5'	17:BM:100:ARG:NH1	2.34	0.42
1:1:99:A:H1'	1:1:281:G:C5	2.55	0.42
1:1:122:A:H61	1:1:148:G:H1'	1.84	0.42
1:1:154:U:O2'	1:1:155:G:OP2	2.31	0.42
1:1:155:G:N1	1:1:265:A:OP2	2.31	0.42
1:1:529:A:H2'	1:1:530:G:H8	1.85	0.42
1:1:616:G:H1'	1:1:3273:A:N6	2.35	0.42
1:1:648:C:C4	1:1:2375:G:H4'	2.55	0.42
1:1:1117:G:C6	1:1:1142:G:N2	2.87	0.42
1:1:1211:U:H2'	1:1:1212:A:C8	2.54	0.42
1:1:1499:C:H2'	1:1:1500:G:C8	2.54	0.42
1:1:2723:U:H2'	1:1:2724:U:C6	2.55	0.42
1:1:2810:C:OP2	1:1:2955:U:O2'	2.35	0.42
1:1:2952:G:H2'	1:1:2953:U:C6	2.54	0.42
1:1:2955:U:OP2	1:1:2977:G:N2	2.53	0.42
1:1:3048:A:H5'	9:BD:53:MET:HE3	2.01	0.42
1:1:3337:G:H2'	1:1:3338:C:H6	1.81	0.42
11:BF:205:SER:HB3	11:BF:236:LEU:HD22	2.01	0.42
12:BG:35:VAL:O	12:BG:38:THR:OG1	2.30	0.42
17:BM:5:LYS:HE2	17:BM:5:LYS:HB2	1.95	0.42
21:BQ:125:GLN:HE21	21:BQ:140:GLU:HA	1.85	0.42
28:BX:54:LEU:H	28:BX:54:LEU:HD12	1.84	0.42
42:Bl:63:LYS:HE2	42:Bl:63:LYS:HB2	1.91	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:59:G:H4'	1:1:60:A:H4'	2.02	0.42
1:1:218:G:O6	30:BZ:62:SER:N	2.53	0.42
1:1:713:U:H2'	1:1:714:G:O4'	2.20	0.42
1:1:1192:C:O2'	1:1:1193:A:H5'	2.19	0.42
1:1:1203:A:N6	1:1:1300:G:H2'	2.35	0.42
1:1:1439:U:H2'	1:1:1440:G:C8	2.55	0.42
1:1:1533:U:H1'	1:1:1798:A:H2	1.84	0.42
1:1:1637:A:H1'	1:1:1709:C:O2'	2.20	0.42
1:1:1679:A:OP1	26:BV:94:ARG:NH1	2.53	0.42
1:1:2115:G:O2'	23:BS:82:LYS:NZ	2.49	0.42
1:1:2176:U:H5'	8:BC:54:ARG:HH22	1.84	0.42
5:2:5:U:H3	5:2:68:G:H1	1.68	0.42
8:BC:129:ALA:HB3	8:BC:132:ASN:ND2	2.34	0.42
9:BD:112:ASP:OD1	9:BD:112:ASP:N	2.52	0.42
11:BF:119:TYR:OH	11:BF:139:PRO:O	2.27	0.42
14:BI:171:LYS:HG2	14:BI:226:TYR:CD1	2.54	0.42
16:BL:34:SER:HB3	16:BL:67:VAL:HG11	2.01	0.42
1:1:20:A:H2'	1:1:21:G:C8	2.55	0.42
1:1:304:G:H1	32:Bb:62:HIS:CE1	2.38	0.42
1:1:491:C:H2'	1:1:492:U:C6	2.55	0.42
1:1:987:U:C2	1:1:1098:A:C2	3.08	0.42
1:1:1015:U:H2'	1:1:1018:G:N7	2.35	0.42
1:1:1084:A:H2'	1:1:1085:A:C8	2.55	0.42
1:1:1203:A:N3	1:1:2855:U:O2'	2.37	0.42
1:1:1559:A:H2'	1:1:1559:A:OP2	2.19	0.42
1:1:1792:C:H1'	1:1:1794:G:N7	2.35	0.42
1:1:1900:A:C2	1:1:1906:G:H1'	2.54	0.42
1:1:1927:G:C8	7:BB:16:VAL:HG12	2.54	0.42
1:1:2312:A:O2'	1:1:2315:G:N3	2.46	0.42
1:1:2349:U:H1'	1:1:3307:A:O2'	2.19	0.42
1:1:2368:A:H2'	1:1:2369:G:H8	1.84	0.42
1:1:2990:G:O2'	9:BD:269:GLN:HB2	2.18	0.42
1:1:3011:A:H4'	1:1:3012:A:H4'	2.02	0.42
1:1:3213:A:H62	18:BN:124:ARG:NH2	2.16	0.42
1:1:3243:A:O2'	1:1:3244:A:OP1	2.33	0.42
1:1:3294:A:H2'	1:1:3295:A:O4'	2.19	0.42
6:BA:6:LYS:HE3	6:BA:94:GLY:HA2	2.01	0.42
14:BI:153:ILE:HB	14:BI:179:ILE:HG12	2.01	0.42
15:BJ:48:VAL:HG22	15:BJ:49:ASN:OD1	2.20	0.42
19:BO:64:VAL:HG11	19:BO:102:ALA:HB1	2.02	0.42
27:BW:96:GLU:HG2	27:BW:97:ASP:N	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:BZ:117:ALA:O	30:BZ:121:ARG:HG3	2.19	0.42
34:Bd:34:LEU:CD1	34:Bd:59:TYR:HB3	2.50	0.42
41:Bk:54:LYS:O	41:Bk:58:THR:HG23	2.19	0.42
1:1:595:G:H2'	1:1:596:C:C6	2.55	0.42
1:1:639:G:OP1	36:Bf:40:SER:HB3	2.20	0.42
1:1:744:A:O2'	22:BR:144:ARG:HG3	2.20	0.42
1:1:1959:G:H2'	1:1:1960:A:C8	2.55	0.42
1:1:2249:G:N3	1:1:2272:G:O6	2.53	0.42
1:1:2367:A:H2'	1:1:2368:A:C8	2.55	0.42
1:1:2417:U:O2'	1:1:2418:G:H5'	2.19	0.42
1:1:2656:A:N7	1:1:2658:G:C8	2.88	0.42
1:1:2926:A:H2'	1:1:2927:C:H6	1.83	0.42
1:1:3206:C:H1'	24:BT:155:ARG:NH2	2.34	0.42
8:BC:79:ASN:O	8:BC:82:VAL:HG22	2.19	0.42
9:BD:108:GLU:HA	9:BD:137:TYR:HE2	1.85	0.42
10:BE:136:LEU:HD21	10:BE:143:GLU:HG3	2.02	0.42
21:BQ:180:LYS:HA	21:BQ:184:ALA:C	2.44	0.42
25:BU:52:MET:HG3	25:BU:53:PRO:HD2	2.02	0.42
26:BV:90:ARG:O	26:BV:92:TRP:N	2.48	0.42
27:BW:15:LEU:HD13	27:BW:51:ALA:HB3	2.00	0.42
30:BZ:55:GLU:HB2	30:BZ:108:LYS:HB2	2.01	0.42
31:Ba:40:HIS:HA	31:Ba:76:ASN:HA	2.02	0.42
34:Bd:76:GLU:O	34:Bd:79:THR:OG1	2.32	0.42
36:Bf:64:LYS:O	36:Bf:72:LYS:HE2	2.19	0.42
1:1:260:C:H2'	1:1:261:U:H6	1.85	0.42
1:1:495:G:H2'	1:1:496:C:C6	2.55	0.42
1:1:585:A:H4'	37:Bg:72:THR:HG22	2.02	0.42
1:1:695:C:OP1	10:BE:271:LYS:NZ	2.48	0.42
1:1:908:G:N2	1:1:925:A:H62	2.17	0.42
1:1:952:A:H4'	1:1:968:G:N2	2.34	0.42
1:1:1138:U:O3'	13:BH:97:PRO:HD3	2.19	0.42
1:1:1317:A:O2'	1:1:1318:A:H2'	2.20	0.42
1:1:1622:U:H2'	1:1:1623:G:H8	1.85	0.42
1:1:1868:G:O2'	1:1:2118:C:O2'	2.28	0.42
1:1:2243:A:H1'	1:1:2313:A:C2'	2.44	0.42
1:1:2368:A:H2'	1:1:2369:G:C8	2.55	0.42
1:1:2524:A:N1	14:BI:44:ARG:NH1	2.68	0.42
1:1:2798:C:H5'	1:1:2800:G:H5'	2.02	0.42
1:1:2961:G:H2'	1:1:2962:U:H6	1.85	0.42
1:1:2976:A:H2'	1:1:2977:G:O4'	2.20	0.42
2:3:108:A:H2'	2:3:109:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:BE:26:PHE:HA	10:BE:127:ALA:HA	2.01	0.42
16:BL:163:PHE:HE2	16:BL:169:ALA:HB3	1.84	0.42
45:BK:211:GLU:C	45:BK:212:PHE:HD1	2.27	0.42
1:1:42:C:H2'	1:1:43:A:H5''	2.02	0.41
1:1:435:C:H2'	1:1:436:A:C8	2.55	0.41
1:1:532:A:H2'	1:1:533:A:C8	2.55	0.41
1:1:677:A:H5''	1:1:785:G:O6	2.20	0.41
1:1:1202:A:O2'	1:1:1203:A:H5'	2.19	0.41
1:1:1715:A:N7	34:Bd:84:LEU:HD13	2.34	0.41
1:1:2186:U:H5	8:BC:200:ARG:HD3	1.85	0.41
1:1:2413:A:H2'	1:1:2414:G:H8	1.85	0.41
1:1:2428:U:H2'	1:1:2429:G:H8	1.85	0.41
1:1:2590:A:H2'	1:1:2591:A:C8	2.55	0.41
1:1:3044:G:H2'	1:1:3045:G:C8	2.55	0.41
1:1:3096:C:O3'	9:BD:325:LYS:NZ	2.53	0.41
1:1:3215:A:C6	1:1:3259:U:H1'	2.54	0.41
1:1:3355:U:N3	1:1:3357:U:OP1	2.53	0.41
2:3:4:U:H2'	2:3:5:G:C8	2.55	0.41
12:BG:149:ILE:HG23	12:BG:156:LYS:HE3	2.02	0.41
17:BM:166:ALA:O	17:BM:169:THR:OG1	2.32	0.41
18:BN:33:ALA:HB2	18:BN:53:VAL:HG11	2.02	0.41
19:BO:28:TRP:NE1	19:BO:32:GLN:HE21	2.18	0.41
1:1:182:U:H2'	1:1:183:G:H8	1.86	0.41
1:1:292:U:P	19:BO:68:ARG:HH21	2.42	0.41
1:1:406:G:OP1	1:1:1395:G:N2	2.53	0.41
1:1:529:A:C6	1:1:564:G:C6	3.08	0.41
1:1:668:G:H2'	1:1:669:U:H6	1.85	0.41
1:1:1160:C:H1'	1:1:1331:U:O2	2.20	0.41
1:1:1724:U:O4	23:BS:125:LYS:NZ	2.53	0.41
1:1:2149:A:C2	1:1:2188:A:H4'	2.54	0.41
1:1:2338:C:OP1	9:BD:236:LYS:HD2	2.20	0.41
1:1:2651:G:H1	1:1:2796:G:H1'	1.85	0.41
1:1:2712:U:H4'	1:1:2743:A:H4'	2.02	0.41
1:1:2999:U:H2'	1:1:3000:A:C8	2.55	0.41
1:1:3034:C:O2'	15:BJ:122:LYS:HD3	2.20	0.41
3:4:2:A:C4	3:4:3:A:C8	3.08	0.41
3:4:19:C:H2'	3:4:20:U:C6	2.55	0.41
3:4:155:A:O5'	14:BI:185:ARG:HD2	2.20	0.41
4:A:66:ASN:ND2	4:A:133:LEU:HD12	2.35	0.41
9:BD:4:ARG:O	9:BD:4:ARG:HG2	2.19	0.41
1:1:127:G:H2'	1:1:128:G:H8	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:366:A:H2'	1:1:367:A:O4'	2.21	0.41
1:1:987:U:C2	1:1:988:U:C5	3.08	0.41
1:1:1754:G:H2'	1:1:1755:C:H6	1.86	0.41
1:1:1757:A:H2'	1:1:1758:G:H8	1.84	0.41
1:1:1765:U:OP1	1:1:1765:U:H4'	2.20	0.41
1:1:2188:A:H3'	1:1:2189:U:H6	1.86	0.41
1:1:2252:A:C2	1:1:2253:G:C5	3.08	0.41
1:1:2900:A:C2	1:1:2901:G:C8	3.07	0.41
1:1:3114:A:N6	1:1:3119:U:O2	2.53	0.41
1:1:3133:C:C2	1:1:3134:A:C8	3.08	0.41
2:3:20:A:H2'	2:3:21:G:H8	1.85	0.41
2:3:47:C:H2'	2:3:48:U:C6	2.55	0.41
13:BH:222:HIS:CE1	13:BH:224:ILE:HG12	2.55	0.41
15:BJ:86:TYR:CE2	15:BJ:151:VAL:HG22	2.55	0.41
23:BS:115:ILE:HA	23:BS:146:LYS:NZ	2.34	0.41
35:Be:71:LEU:HD23	35:Be:71:LEU:HA	1.87	0.41
35:Be:84:ASP:OD1	35:Be:84:ASP:N	2.51	0.41
38:Bh:3:GLN:OE1	38:Bh:3:GLN:N	2.50	0.41
45:BK:201:LYS:HE2	45:BK:201:LYS:HB2	1.84	0.41
1:1:99:A:H1'	1:1:281:G:C6	2.55	0.41
1:1:374:A:O2'	1:1:376:G:H8	2.03	0.41
1:1:510:G:H1	1:1:581:U:H3	1.69	0.41
1:1:727:G:H2'	1:1:728:G:O4'	2.19	0.41
1:1:817:A:N3	41:Bk:11:ARG:HB2	2.36	0.41
1:1:833:G:H2'	1:1:834:U:H6	1.85	0.41
1:1:916:G:C6	1:1:924:G:H1'	2.56	0.41
1:1:1093:A:O2'	1:1:1094:U:O4'	2.35	0.41
1:1:1255:C:H2'	1:1:1256:G:C8	2.56	0.41
1:1:1482:A:H2'	1:1:1482:A:N3	2.34	0.41
1:1:2579:G:OP2	1:1:2580:A:O2'	2.31	0.41
1:1:2930:A:H2'	1:1:2931:C:H6	1.84	0.41
1:1:3080:G:H2'	1:1:3081:C:C6	2.55	0.41
2:3:1:G:O3'	11:BF:273:ARG:NH1	2.54	0.41
3:4:121:U:H2'	3:4:122:U:C6	2.54	0.41
7:BB:76:ALA:HA	7:BB:79:VAL:HG23	2.02	0.41
9:BD:84:VAL:HG22	9:BD:164:THR:HG22	2.02	0.41
10:BE:206:LEU:HB2	10:BE:246:ARG:NH2	2.36	0.41
13:BH:120:THR:O	13:BH:124:LEU:N	2.41	0.41
13:BH:185:ILE:HA	13:BH:188:ILE:HG22	2.02	0.41
18:BN:19:ARG:HD2	18:BN:65:LEU:HD22	2.02	0.41
20:BP:121:PRO:HA	20:BP:124:LEU:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:BT:93:GLU:HG3	24:BT:140:VAL:HG21	2.02	0.41
26:BV:35:LYS:O	26:BV:38:ILE:HG22	2.20	0.41
40:Bj:58:ILE:HG13	40:Bj:59:ASP:N	2.36	0.41
1:1:7:C:H2'	1:1:8:C:C6	2.56	0.41
1:1:136:G:H5'	39:Bi:95:PHE:CD2	2.55	0.41
1:1:300:G:H5''	40:Bj:82:ARG:NH1	2.32	0.41
1:1:1709:C:C2	1:1:1710:C:C5	3.08	0.41
1:1:1863:G:H22	1:1:1865:A:H3'	1.86	0.41
1:1:2113:A:H2'	1:1:2114:C:O4'	2.20	0.41
1:1:2290:C:H2'	1:1:2291:A:C8	2.55	0.41
1:1:2882:U:O3'	9:BD:10:ARG:NH1	2.54	0.41
1:1:3085:G:H5''	1:1:3086:A:OP1	2.20	0.41
2:3:100:C:H2'	2:3:101:G:O4'	2.20	0.41
3:4:55:U:H3	3:4:62:C:N4	2.19	0.41
3:4:63:G:H22	3:4:97:A:H2	1.68	0.41
4:A:41:GLU:HG2	4:A:203:LEU:HD13	2.02	0.41
8:BC:44:ILE:HD11	8:BC:85:GLY:HA2	2.03	0.41
16:BL:23:VAL:HG13	16:BL:29:ARG:HE	1.84	0.41
29:BY:46:TYR:HB3	39:Bi:75:TYR:O	2.21	0.41
30:BZ:111:LEU:HD12	30:BZ:116:LYS:HG2	2.02	0.41
1:1:577:C:O2'	1:1:579:G:OP1	2.34	0.41
1:1:648:C:N4	1:1:2375:G:H4'	2.35	0.41
1:1:714:G:C6	32:Bb:113:LEU:HD11	2.56	0.41
1:1:1191:U:H1'	20:BP:48:PHE:CD2	2.56	0.41
1:1:1342:C:H2'	1:1:1343:A:H8	1.84	0.41
1:1:1658:G:H2'	1:1:1659:U:C6	2.56	0.41
1:1:1829:G:H5'	29:BY:93:TYR:OH	2.20	0.41
1:1:2186:U:O2'	1:1:2313:A:N3	2.46	0.41
1:1:2273:G:HO2'	1:1:2274:U:H6	1.68	0.41
1:1:2316:G:C6	1:1:2317:A:C6	3.08	0.41
1:1:2577:C:H2'	1:1:2578:U:C6	2.56	0.41
1:1:3041:U:H2'	1:1:3042:U:H6	1.86	0.41
1:1:3387:U:H2'	1:1:3388:C:C6	2.56	0.41
5:2:11:C:H2'	5:2:12:C:C6	2.56	0.41
8:BC:35:ALA:HA	14:BI:36:ILE:HD11	2.03	0.41
11:BF:40:HIS:CE1	11:BF:42:ALA:HB3	2.55	0.41
12:BG:31:ARG:NE	37:Bg:107:ILE:O	2.53	0.41
14:BI:75:ILE:HG22	14:BI:76:ALA:H	1.86	0.41
23:BS:30:SER:O	23:BS:34:GLN:NE2	2.49	0.41
24:BT:26:ARG:HD2	24:BT:27:MET:N	2.35	0.41
28:BX:56:ARG:HH22	28:BX:62:GLY:HA3	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:Bb:76:ASP:CG	32:Bb:115:LYS:HB3	2.46	0.41
1:1:19:U:H4'	19:BO:138:GLN:NE2	2.36	0.41
1:1:685:G:OP1	17:BM:35:ARG:NH1	2.53	0.41
1:1:1185:C:H2'	1:1:1186:G:C8	2.55	0.41
1:1:1575:A:N6	1:1:1576:G:O6	2.54	0.41
1:1:1595:U:O2'	1:1:1697:A:O2'	2.34	0.41
1:1:1637:A:H4'	31:Ba:15:ARG:HB3	2.02	0.41
1:1:2113:A:O2'	1:1:2116:G:N7	2.53	0.41
1:1:2221:G:N2	1:1:2224:A:OP2	2.41	0.41
1:1:2328:U:H2'	1:1:2329:C:C6	2.55	0.41
1:1:2843:U:OP2	1:1:2844:C:N4	2.51	0.41
1:1:3089:C:H2'	1:1:3090:U:O4'	2.21	0.41
1:1:3243:A:H5'	9:BD:95:THR:HG22	2.02	0.41
1:1:3295:A:H2'	1:1:3296:A:C8	2.56	0.41
3:4:75:G:C6	43:Bm:26:TRP:CZ3	3.08	0.41
4:A:97:VAL:HG11	4:A:104:LEU:HD11	2.02	0.41
9:BD:4:ARG:O	9:BD:6:TYR:N	2.54	0.41
39:Bi:25:LYS:HG2	39:Bi:51:ILE:HD11	2.03	0.41
39:Bi:44:ILE:HD11	39:Bi:48:ARG:NH2	2.36	0.41
1:1:196:G:C2	1:1:219:A:N6	2.86	0.41
1:1:253:A:H2'	1:1:254:A:C8	2.56	0.41
1:1:1434:G:H5'	1:1:1437:C:H5	1.86	0.41
1:1:1545:A:H2'	1:1:1547:G:OP2	2.21	0.41
1:1:1605:A:H4'	1:1:1607:U:C5	2.55	0.41
1:1:1723:A:N1	1:1:1788:C:O2'	2.46	0.41
1:1:2091:U:H2'	1:1:2092:A:C8	2.56	0.41
1:1:2150:G:H22	1:1:2313:A:H2	1.67	0.41
1:1:2269:U:C6	1:1:2269:U:C3'	3.04	0.41
1:1:2439:A:O2'	1:1:2440:G:P	2.79	0.41
1:1:2624:G:H2'	1:1:2625:C:O4'	2.21	0.41
1:1:2778:G:C2'	1:1:2779:A:H5'	2.51	0.41
1:1:2849:C:H2'	1:1:2850:G:O4'	2.21	0.41
1:1:3007:U:H2'	1:1:3008:A:C8	2.56	0.41
1:1:3121:U:H4'	1:1:3122:A:OP1	2.21	0.41
1:1:3369:G:OP2	28:BX:61:LYS:HE3	2.20	0.41
3:4:40:A:N3	3:4:40:A:H2'	2.36	0.41
3:4:53:A:C4	3:4:54:A:C8	3.09	0.41
8:BC:112:ILE:HG22	8:BC:135:ILE:HG12	2.01	0.41
9:BD:80:ASP:OD1	9:BD:81:THR:N	2.54	0.41
14:BI:61:GLN:HB2	19:BO:28:TRP:CH2	2.56	0.41
14:BI:91:PHE:HA	14:BI:94:PHE:HD2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:BI:166:LEU:HD23	14:BI:166:LEU:HA	1.91	0.41
17:BM:103:ASN:C	17:BM:104:ARG:HD3	2.45	0.41
24:BT:83:SER:N	24:BT:86:GLY:O	2.54	0.41
25:BU:36:VAL:HA	25:BU:64:VAL:HG12	2.02	0.41
26:BV:10:LYS:O	26:BV:68:THR:OG1	2.39	0.41
27:BW:109:MET:HE1	27:BW:114:ILE:HD11	2.02	0.41
42:Bl:11:PHE:O	42:Bl:15:THR:HG23	2.20	0.41
1:1:50:U:C2	1:1:51:A:C8	3.09	0.41
1:1:122:A:N6	1:1:148:G:H1'	2.36	0.41
1:1:184:U:H2'	1:1:185:C:C6	2.55	0.41
1:1:209:A:H4'	1:1:211:A:N7	2.36	0.41
1:1:292:U:H2'	1:1:293:C:H6	1.86	0.41
1:1:366:A:OP1	10:BE:95:ARG:NH2	2.45	0.41
1:1:520:U:H1'	13:BH:67:ARG:NH2	2.35	0.41
1:1:573:C:H2'	1:1:574:U:C6	2.56	0.41
1:1:585:A:H2'	1:1:586:C:C6	2.56	0.41
1:1:642:U:OP1	32:Bb:22:ILE:HG23	2.21	0.41
1:1:687:U:H5	17:BM:36:ARG:HH12	1.66	0.41
1:1:744:A:H1'	22:BR:141:ARG:HE	1.86	0.41
1:1:797:U:H2'	1:1:798:G:C8	2.55	0.41
1:1:840:C:H2'	1:1:841:A:H8	1.86	0.41
1:1:842:G:H2'	1:1:843:A:H8	1.84	0.41
1:1:1013:G:N1	1:1:1038:C:N3	2.69	0.41
1:1:1339:C:H2'	1:1:1340:G:C8	2.55	0.41
1:1:1433:A:H1'	36:Bf:27:ARG:HE	1.86	0.41
1:1:1609:C:H2'	1:1:1610:G:H8	1.86	0.41
1:1:1654:A:N3	38:Bh:59:PRO:HB3	2.36	0.41
1:1:1709:C:H2'	1:1:1710:C:C6	2.56	0.41
1:1:2099:A:H2'	1:1:2100:A:N3	2.36	0.41
1:1:2429:G:H2'	1:1:2430:A:C8	2.56	0.41
1:1:2439:A:H2'	1:1:2440:G:O4'	2.21	0.41
1:1:2753:G:N7	6:BA:86:LYS:HE2	2.36	0.41
1:1:2881:C:H2'	1:1:2882:U:C6	2.56	0.41
1:1:2947:G:C4	9:BD:250:ALA:HB1	2.56	0.41
1:1:2997:G:H2'	1:1:2998:U:H6	1.86	0.41
1:1:3213:A:H2'	1:1:3214:U:C2	2.56	0.41
3:4:17:A:C5	3:4:18:U:C5	3.09	0.41
3:4:43:A:H2'	3:4:44:A:H8	1.86	0.41
9:BD:171:LEU:HD21	9:BD:173:GLN:HB2	2.02	0.41
9:BD:256:HIS:HA	9:BD:257:PRO:C	2.46	0.41
10:BE:299:ILE:HG23	22:BR:39:ARG:HE	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:BH:176:TYR:HE2	13:BH:197:GLN:HG3	1.86	0.41
14:BI:101:THR:HG22	14:BI:104:GLU:CD	2.45	0.41
15:BJ:47:LYS:HE3	15:BJ:50:ASN:HA	2.03	0.41
15:BJ:47:LYS:NZ	18:BN:4:ASP:HB3	2.35	0.41
15:BJ:92:TYR:OH	15:BJ:144:ILE:HB	2.21	0.41
16:BL:36:VAL:HG21	16:BL:123:PHE:HD2	1.86	0.41
17:BM:80:VAL:HG11	17:BM:87:ALA:HA	2.03	0.41
17:BM:126:PHE:CD1	39:Bi:115:LYS:HG3	2.56	0.41
20:BP:41:LEU:HD23	20:BP:41:LEU:HA	1.98	0.41
22:BR:36:LEU:O	22:BR:40:THR:OG1	2.34	0.41
22:BR:44:PHE:CD1	22:BR:139:ILE:HD11	2.55	0.41
22:BR:174:ARG:O	32:Bb:56:VAL:HG11	2.20	0.41
24:BT:4:PHE:CE1	24:BT:107:TYR:HD2	2.38	0.41
25:BU:78:LYS:HB2	25:BU:87:LYS:HG3	2.02	0.41
25:BU:89:LEU:HB3	25:BU:91:LEU:CD2	2.51	0.41
25:BU:116:ARG:HG3	25:BU:120:LYS:NZ	2.35	0.41
25:BU:137:GLU:OE1	25:BU:138:SER:N	2.54	0.41
26:BV:104:ARG:HG2	26:BV:105:LEU:N	2.36	0.41
34:Bd:50:VAL:O	34:Bd:54:SER:N	2.46	0.41
34:Bd:99:ASP:OD1	34:Bd:99:ASP:N	2.54	0.41
36:Bf:63:THR:HA	36:Bf:66:LEU:HD22	2.03	0.41
38:Bh:30:LEU:HD23	38:Bh:30:LEU:HA	1.85	0.41
39:Bi:21:LEU:O	39:Bi:25:LYS:N	2.39	0.41
40:Bj:74:LYS:HD2	40:Bj:80:PHE:HD1	1.86	0.41
45:BK:170:TRP:NE1	45:BK:177:ARG:HG3	2.36	0.41
1:1:171:G:H2'	1:1:172:G:H8	1.86	0.41
1:1:293:C:O2'	40:Bj:76:ARG:O	2.30	0.41
1:1:480:C:O2'	1:1:481:U:H5''	2.21	0.41
1:1:754:G:H2'	1:1:755:A:H8	1.86	0.41
1:1:1145:G:H1'	1:1:1160:C:N3	2.36	0.41
1:1:1700:G:H2'	1:1:1701:C:C6	2.56	0.41
1:1:1852:G:H2'	1:1:1853:U:C6	2.57	0.41
1:1:2158:A:H1'	1:1:2160:G:C8	2.55	0.41
1:1:2813:A:H2'	1:1:2814:G:O4'	2.21	0.41
3:4:43:A:H2'	3:4:44:A:C8	2.56	0.41
3:4:69:U:H3'	3:4:70:G:C8	2.56	0.41
6:BA:106:PHE:C	16:BL:60:ARG:HH22	2.27	0.41
8:BC:96:LEU:HD11	8:BC:108:PRO:HD2	2.02	0.41
13:BH:84:VAL:HG12	13:BH:138:TYR:HD1	1.85	0.41
18:BN:114:ASP:O	18:BN:118:PHE:N	2.53	0.41
26:BV:82:LYS:HD2	26:BV:82:LYS:HA	1.95	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:Bc:32:LEU:O	33:Bc:40:ARG:NH2	2.54	0.41
37:Bg:6:ARG:NH1	37:Bg:8:TYR:O	2.52	0.41
45:BK:34:ASP:CG	45:BK:85:HIS:HE2	2.29	0.41
1:1:38:U:H5''	32:Bb:32:ARG:HG3	2.02	0.40
1:1:595:G:N1	1:1:609:G:O4'	2.55	0.40
1:1:1107:C:H2'	1:1:1108:U:C6	2.56	0.40
1:1:1366:A:O3'	36:Bf:45:ARG:NH2	2.54	0.40
1:1:2512:C:H2'	1:1:2513:U:H6	1.86	0.40
1:1:2769:A:O3'	6:BA:80:ARG:HB2	2.21	0.40
1:1:2909:U:H2'	1:1:2910:A:O4'	2.21	0.40
1:1:3041:U:H2'	1:1:3042:U:C6	2.56	0.40
1:1:3122:A:C2	1:1:3123:A:C8	3.10	0.40
1:1:3199:G:H2'	1:1:3200:G:H8	1.86	0.40
1:1:3379:C:H2'	1:1:3380:U:C6	2.56	0.40
4:A:32:GLU:O	4:A:36:SER:N	2.51	0.40
4:A:118:HIS:CG	4:A:119:PRO:HD2	2.55	0.40
8:BC:101:VAL:HG23	8:BC:164:GLY:C	2.46	0.40
12:BG:60:ASP:OD1	12:BG:62:THR:OG1	2.24	0.40
13:BH:197:GLN:O	13:BH:201:PHE:N	2.52	0.40
14:BI:63:LYS:O	14:BI:67:ILE:HG12	2.21	0.40
25:BU:75:ILE:HG22	25:BU:88:ARG:HG2	2.02	0.40
32:Bb:86:LYS:HG2	32:Bb:89:GLN:NE2	2.35	0.40
34:Bd:9:SER:OG	34:Bd:10:ILE:N	2.53	0.40
36:Bf:89:THR:OG1	36:Bf:90:LYS:N	2.54	0.40
1:1:7:C:H2'	1:1:8:C:H6	1.86	0.40
1:1:185:C:H4'	30:BZ:121:ARG:O	2.21	0.40
1:1:533:A:O2'	1:1:535:G:OP2	2.30	0.40
1:1:677:A:H1'	1:1:678:G:OP2	2.21	0.40
1:1:999:G:H2'	1:1:1000:C:H6	1.85	0.40
1:1:1018:G:N2	1:1:1034:U:O2	2.39	0.40
1:1:1342:C:H2'	1:1:1343:A:C8	2.55	0.40
1:1:1618:G:O2'	3:4:126:A:N1	2.54	0.40
1:1:1836:C:H2'	1:1:1837:U:H6	1.85	0.40
1:1:1912:U:H2'	1:1:1913:A:O4'	2.22	0.40
1:1:2045:G:O2'	1:1:2046:U:O4'	2.19	0.40
1:1:2305:G:H21	1:1:2305:G:P	2.39	0.40
1:1:2493:U:H4'	1:1:2494:A:N7	2.37	0.40
1:1:2721:A:O3'	33:Bc:33:LYS:HD3	2.21	0.40
1:1:3322:A:C6	1:1:3386:G:C6	3.09	0.40
2:3:62:U:H2'	2:3:63:A:H8	1.87	0.40
3:4:85:G:C8	30:BZ:113:LYS:HD2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:2:27:U:H2'	5:2:28:C:H6	1.86	0.40
12:BG:23:LYS:HD3	12:BG:23:LYS:HA	1.91	0.40
12:BG:136:GLU:O	12:BG:140:VAL:HG23	2.20	0.40
13:BH:159:GLN:O	13:BH:161:VAL:HG13	2.21	0.40
14:BI:43:LYS:H	14:BI:43:LYS:HG2	1.68	0.40
19:BO:71:ARG:HD2	19:BO:94:TYR:CD2	2.56	0.40
19:BO:115:VAL:HG21	19:BO:160:GLU:HG2	2.03	0.40
32:Bb:42:ARG:HA	32:Bb:45:MET:HB3	2.04	0.40
39:Bi:84:LYS:HB3	39:Bi:85:THR:H	1.56	0.40
1:1:705:A:N3	1:1:714:G:N2	2.64	0.40
1:1:991:G:H2'	1:1:992:A:C8	2.56	0.40
1:1:1119:C:H2'	1:1:1120:A:C8	2.56	0.40
1:1:1857:C:O2'	38:Bh:4:ARG:HG2	2.21	0.40
1:1:1895:A:O2'	1:1:3053:G:H4'	2.22	0.40
1:1:2117:A:C8	1:1:3064:U:H1'	2.57	0.40
1:1:2265:C:H2'	1:1:2266:U:C6	2.56	0.40
1:1:2495:C:H2'	1:1:2496:C:C6	2.56	0.40
1:1:3008:A:OP2	20:BP:74:ARG:NH1	2.55	0.40
1:1:3018:C:H5''	4:A:8:GLU:HB3	2.03	0.40
1:1:3274:A:H5''	1:1:3276:G:C8	2.56	0.40
3:4:151:C:H5	29:BY:24:LEU:HD11	1.87	0.40
4:A:107:VAL:HG22	4:A:118:HIS:HB2	2.03	0.40
5:2:66:C:H2'	5:2:67:G:C8	2.56	0.40
9:BD:223:GLY:HA2	9:BD:271:GLY:HA3	2.03	0.40
14:BI:238:LEU:HB3	14:BI:242:ALA:HB3	2.04	0.40
17:BM:69:VAL:H	17:BM:149:GLN:HE22	1.69	0.40
18:BN:122:VAL:O	18:BN:126:GLN:N	2.44	0.40
33:Bc:50:THR:HA	33:Bc:53:ALA:HB3	2.02	0.40
1:1:397:A:O2'	1:1:400:G:OP2	2.39	0.40
1:1:574:U:H2'	1:1:575:G:C8	2.56	0.40
1:1:650:C:H2'	1:1:651:G:C8	2.57	0.40
1:1:653:A:C2	1:1:1443:G:C5	3.09	0.40
1:1:721:G:C2	1:1:722:G:C8	3.10	0.40
1:1:788:C:C2	1:1:789:A:C8	3.09	0.40
1:1:870:G:O2'	1:1:871:U:H6	2.04	0.40
1:1:1443:G:C2	1:1:1444:G:C5	3.09	0.40
1:1:2041:U:H2'	1:1:2042:G:O4'	2.22	0.40
1:1:2101:C:H2'	1:1:2102:U:H6	1.85	0.40
1:1:2369:G:H2'	1:1:2370:G:C8	2.56	0.40
1:1:2722:U:H2'	1:1:2723:U:H6	1.86	0.40
1:1:2815:G:H21	1:1:2818:U:H3	1.68	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:1:2875:U:OP2	1:1:2945:G:N1	2.42	0.40
1:1:3162:C:H2'	1:1:3163:A:C8	2.56	0.40
3:4:18:U:C2	3:4:19:C:C5	3.10	0.40
8:BC:136:ILE:HD13	8:BC:148:VAL:HG12	2.04	0.40
9:BD:17:LEU:HD11	9:BD:233:TRP:HH2	1.86	0.40
11:BF:143:LYS:HB3	11:BF:143:LYS:HE2	1.78	0.40
12:BG:13:GLU:OE2	36:Bf:89:THR:N	2.54	0.40
15:BJ:171:ASP:OD2	15:BJ:173:ARG:N	2.55	0.40
15:BJ:187:ILE:HD13	15:BJ:187:ILE:HA	1.97	0.40
17:BM:19:GLN:HE21	17:BM:19:GLN:HB2	1.68	0.40
17:BM:43:ALA:HB1	17:BM:137:GLN:NE2	2.35	0.40
18:BN:108:ARG:HA	18:BN:108:ARG:HD2	1.89	0.40
26:BV:39:ASP:OD1	26:BV:39:ASP:N	2.54	0.40
1:1:27:C:O2'	1:1:327:A:N3	2.50	0.40
1:1:843:A:H2'	1:1:844:G:H8	1.87	0.40
1:1:880:G:O6	1:1:883:A:H5'	2.22	0.40
1:1:972:A:H2'	1:1:973:A:C8	2.56	0.40
1:1:1194:G:H8	1:1:1194:G:O5'	2.04	0.40
1:1:1524:A:O2'	1:1:1526:U:OP1	2.39	0.40
1:1:1647:A:N6	1:1:1808:G:H1'	2.36	0.40
1:1:1752:A:H2'	1:1:1753:G:C8	2.57	0.40
1:1:1761:C:H5''	1:1:1762:C:OP2	2.21	0.40
1:1:1791:C:H2'	1:1:1792:C:C6	2.56	0.40
1:1:1973:G:H1'	1:1:2049:A:H61	1.86	0.40
1:1:2138:A:C8	41:Bk:3:LYS:HE2	2.56	0.40
1:1:2393:G:OP1	9:BD:248:LYS:HD3	2.21	0.40
1:1:2445:A:H2'	1:1:2446:U:H6	1.86	0.40
1:1:2601:A:H2'	1:1:2602:G:H8	1.87	0.40
1:1:2898:G:OP2	1:1:2899:C:H5''	2.22	0.40
1:1:3272:C:OP2	12:BG:78:ARG:NH2	2.54	0.40
1:1:3321:C:H2'	1:1:3322:A:H8	1.86	0.40
2:3:7:G:N2	11:BF:70:THR:O	2.54	0.40
2:3:19:C:H2'	2:3:20:A:H8	1.86	0.40
2:3:39:C:H2'	2:3:40:C:O4'	2.21	0.40
5:2:10:G:N2	5:2:26:G:H1'	2.37	0.40
9:BD:308:MET:HE3	9:BD:371:GLN:O	2.22	0.40
10:BE:22:LEU:HA	10:BE:23:PRO:HD3	1.89	0.40
17:BM:48:PRO:HA	17:BM:137:GLN:OE1	2.22	0.40
18:BN:55:ARG:HD3	24:BT:70:THR:HB	2.03	0.40
19:BO:5:LYS:HD2	40:Bj:40:VAL:HG21	2.02	0.40
28:BX:50:ALA:HA	28:BX:55:PHE:CD2	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:Bf:82:LEU:HD21	36:Bf:117:ILE:HD13	2.02	0.40
37:Bg:55:ALA:HB3	37:Bg:65:ARG:NH1	2.37	0.40
39:Bi:22:VAL:HG22	39:Bi:26:LYS:HZ3	1.86	0.40
40:Bj:38:LYS:HA	40:Bj:38:LYS:HD2	1.90	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	A	222/224 (99%)	218 (98%)	4 (2%)	0	100	100
6	BA	103/105 (98%)	101 (98%)	2 (2%)	0	100	100
7	BB	89/91 (98%)	87 (98%)	2 (2%)	0	100	100
8	BC	250/252 (99%)	247 (99%)	3 (1%)	0	100	100
9	BD	384/386 (100%)	375 (98%)	6 (2%)	3 (1%)	16	50
10	BE	359/361 (99%)	343 (96%)	14 (4%)	2 (1%)	21	56
11	BF	294/296 (99%)	288 (98%)	4 (1%)	2 (1%)	18	52
12	BG	152/176 (86%)	151 (99%)	1 (1%)	0	100	100
13	BH	220/222 (99%)	213 (97%)	5 (2%)	2 (1%)	14	47
14	BI	231/233 (99%)	225 (97%)	4 (2%)	2 (1%)	14	47
15	BJ	189/191 (99%)	186 (98%)	3 (2%)	0	100	100
16	BL	167/169 (99%)	154 (92%)	12 (7%)	1 (1%)	21	56
17	BM	191/193 (99%)	179 (94%)	9 (5%)	3 (2%)	7	36
18	BN	134/136 (98%)	130 (97%)	3 (2%)	1 (1%)	18	52
19	BO	201/203 (99%)	198 (98%)	3 (2%)	0	100	100
20	BP	195/197 (99%)	191 (98%)	4 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
21	BQ	181/183 (99%)	175 (97%)	6 (3%)	0	100	100
22	BR	183/185 (99%)	178 (97%)	5 (3%)	0	100	100
23	BS	158/160 (99%)	155 (98%)	3 (2%)	0	100	100
24	BT	170/172 (99%)	163 (96%)	7 (4%)	0	100	100
25	BU	157/159 (99%)	150 (96%)	6 (4%)	1 (1%)	21	56
26	BV	98/100 (98%)	92 (94%)	5 (5%)	1 (1%)	12	45
27	BW	134/136 (98%)	132 (98%)	2 (2%)	0	100	100
28	BX	67/69 (97%)	65 (97%)	2 (3%)	0	100	100
29	BY	119/121 (98%)	118 (99%)	1 (1%)	0	100	100
30	BZ	116/127 (91%)	113 (97%)	3 (3%)	0	100	100
31	Ba	133/135 (98%)	128 (96%)	4 (3%)	1 (1%)	16	50
32	Bb	146/148 (99%)	140 (96%)	5 (3%)	1 (1%)	18	52
33	Bc	56/58 (97%)	55 (98%)	0	1 (2%)	6	34
34	Bd	95/97 (98%)	95 (100%)	0	0	100	100
35	Be	107/109 (98%)	103 (96%)	4 (4%)	0	100	100
36	Bf	125/127 (98%)	122 (98%)	3 (2%)	0	100	100
37	Bg	104/106 (98%)	101 (97%)	3 (3%)	0	100	100
38	Bh	110/112 (98%)	108 (98%)	1 (1%)	1 (1%)	14	47
39	Bi	117/119 (98%)	114 (97%)	3 (3%)	0	100	100
40	Bj	97/99 (98%)	91 (94%)	5 (5%)	1 (1%)	12	45
41	Bk	85/87 (98%)	85 (100%)	0	0	100	100
42	Bl	75/77 (97%)	73 (97%)	2 (3%)	0	100	100
43	Bm	48/50 (96%)	47 (98%)	0	1 (2%)	5	31
44	Bn	50/52 (96%)	50 (100%)	0	0	100	100
45	BK	218/220 (99%)	209 (96%)	9 (4%)	0	100	100
All	All	6330/6443 (98%)	6148 (97%)	158 (2%)	24 (0%)	31	62

All (24) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
11	BF	259	LYS
17	BM	28	GLN
17	BM	166	ALA

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Mol	Chain	Res	Type
31	Ba	102	GLU
38	Bh	82	ALA
16	BL	114	ILE
25	BU	124	VAL
14	BI	157	VAL
43	Bm	3	ALA
9	BD	5	LYS
9	BD	187	SER
10	BE	338	LYS
9	BD	317	ILE
10	BE	131	VAL
18	BN	6	ILE
26	BV	11	ILE
33	Bc	21	ILE
11	BF	125	VAL
32	Bb	78	LEU
40	Bj	3	VAL
17	BM	47	ALA
13	BH	178	ILE
13	BH	191	VAL
14	BI	36	ILE

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	A	177/192 (92%)	177 (100%)	0	100	100
6	BA	90/90 (100%)	90 (100%)	0	100	100
7	BB	71/71 (100%)	71 (100%)	0	100	100
8	BC	193/194 (100%)	193 (100%)	0	100	100
9	BD	320/322 (99%)	320 (100%)	0	100	100
10	BE	288/288 (100%)	288 (100%)	0	100	100
11	BF	244/244 (100%)	244 (100%)	0	100	100
12	BG	134/153 (88%)	134 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
13	BH	186/186 (100%)	186 (100%)	0	100	100
14	BI	187/191 (98%)	187 (100%)	0	100	100
15	BJ	171/171 (100%)	171 (100%)	0	100	100
16	BL	147/147 (100%)	147 (100%)	0	100	100
17	BM	154/154 (100%)	154 (100%)	0	100	100
18	BN	107/107 (100%)	107 (100%)	0	100	100
19	BO	175/175 (100%)	175 (100%)	0	100	100
20	BP	160/160 (100%)	160 (100%)	0	100	100
21	BQ	140/145 (97%)	140 (100%)	0	100	100
22	BR	150/150 (100%)	150 (100%)	0	100	100
23	BS	131/131 (100%)	131 (100%)	0	100	100
24	BT	156/156 (100%)	156 (100%)	0	100	100
25	BU	136/136 (100%)	136 (100%)	0	100	100
26	BV	87/87 (100%)	87 (100%)	0	100	100
27	BW	104/104 (100%)	104 (100%)	0	100	100
28	BX	56/60 (93%)	56 (100%)	0	100	100
29	BY	104/105 (99%)	104 (100%)	0	100	100
30	BZ	103/110 (94%)	103 (100%)	0	100	100
31	Ba	115/115 (100%)	115 (100%)	0	100	100
32	Bb	118/118 (100%)	118 (100%)	0	100	100
33	Bc	46/46 (100%)	46 (100%)	0	100	100
34	Bd	81/81 (100%)	81 (100%)	0	100	100
35	Be	92/96 (96%)	92 (100%)	0	100	100
36	Bf	109/109 (100%)	109 (100%)	0	100	100
37	Bg	90/90 (100%)	90 (100%)	0	100	100
38	Bh	95/95 (100%)	94 (99%)	1 (1%)	65	79
39	Bi	104/104 (100%)	104 (100%)	0	100	100
40	Bj	81/81 (100%)	81 (100%)	0	100	100
41	Bk	70/70 (100%)	70 (100%)	0	100	100
42	Bl	68/68 (100%)	68 (100%)	0	100	100
43	Bm	45/45 (100%)	45 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
44	Bn	47/47 (100%)	47 (100%)	0	100	100
45	BK	184/186 (99%)	184 (100%)	0	100	100
All	All	5316/5380 (99%)	5315 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
38	Bh	69	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (62) such sidechains are listed below:

Mol	Chain	Res	Type
4	A	86	ASN
4	A	145	ASN
4	A	162	HIS
6	BA	38	GLN
6	BA	59	HIS
8	BC	38	HIS
8	BC	132	ASN
8	BC	205	ASN
8	BC	217	GLN
9	BD	109	HIS
9	BD	121	ASN
9	BD	224	HIS
10	BE	160	GLN
10	BE	221	ASN
11	BF	63	GLN
11	BF	111	GLN
12	BG	4	GLN
12	BG	167	ASN
13	BH	61	ASN
14	BI	38	GLN
14	BI	45	ASN
14	BI	221	ASN
15	BJ	5	GLN
15	BJ	8	GLN
15	BJ	59	ASN
16	BL	6	GLN
16	BL	39	GLN
16	BL	62	ASN

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Mol	Chain	Res	Type
17	BM	12	ASN
17	BM	19	GLN
17	BM	66	ASN
17	BM	106	GLN
18	BN	41	GLN
18	BN	62	GLN
19	BO	95	GLN
20	BP	65	ASN
21	BQ	34	GLN
21	BQ	55	GLN
22	BR	15	HIS
23	BS	58	HIS
23	BS	66	HIS
23	BS	130	ASN
24	BT	68	HIS
25	BU	16	GLN
25	BU	95	HIS
25	BU	127	GLN
27	BW	47	ASN
28	BX	33	ASN
32	Bb	11	HIS
32	Bb	14	HIS
32	Bb	25	HIS
36	Bf	13	HIS
36	Bf	49	ASN
37	Bg	17	GLN
37	Bg	77	ASN
37	Bg	88	ASN
38	Bh	98	GLN
40	Bj	100	HIS
42	Bl	32	ASN
43	Bm	4	GLN
44	Bn	119	ASN
45	BK	122	HIS

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	1	3243/3396 (95%)	755 (23%)	79 (2%)
2	3	120/121 (99%)	27 (22%)	3 (2%)
3	4	157/158 (99%)	34 (21%)	3 (1%)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
5	2	75/76 (98%)	16 (21%)	0
All	All	3595/3751 (95%)	832 (23%)	85 (2%)

All (832) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	1	12	A
1	1	13	A
1	1	15	C
1	1	22	G
1	1	26	A
1	1	27	C
1	1	30	G
1	1	40	A
1	1	41	G
1	1	43	A
1	1	44	U
1	1	49	A
1	1	59	G
1	1	60	A
1	1	65	A
1	1	66	A
1	1	77	A
1	1	86	G
1	1	87	U
1	1	92	G
1	1	109	A
1	1	111	C
1	1	116	A
1	1	117	U
1	1	118	U
1	1	119	U
1	1	123	A
1	1	134	U
1	1	136	G
1	1	146	U
1	1	147	U
1	1	148	G
1	1	150	A
1	1	155	G
1	1	156	G
1	1	157	A

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Mol	Chain	Res	Type
1	1	166	C
1	1	167	U
1	1	182	U
1	1	187	A
1	1	188	U
1	1	189	G
1	1	190	U
1	1	191	U
1	1	192	C
1	1	200	C
1	1	210	U
1	1	212	G
1	1	213	A
1	1	218	G
1	1	219	A
1	1	220	G
1	1	221	A
1	1	227	G
1	1	234	G
1	1	240	U
1	1	241	G
1	1	245	U
1	1	253	A
1	1	269	G
1	1	270	U
1	1	281	G
1	1	283	G
1	1	286	U
1	1	295	A
1	1	297	G
1	1	298	U
1	1	304	G
1	1	305	U
1	1	315	C
1	1	317	A
1	1	323	A
1	1	329	U
1	1	330	G
1	1	342	A
1	1	343	U
1	1	344	A
1	1	350	C

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Mol	Chain	Res	Type
1	1	351	A
1	1	353	G
1	1	354	U
1	1	375	A
1	1	376	G
1	1	395	A
1	1	398	A
1	1	399	A
1	1	401	U
1	1	403	C
1	1	406	G
1	1	421	G
1	1	422	A
1	1	427	C
1	1	438	A
1	1	439	C
1	1	440	A
1	1	441	U
1	1	479	U
1	1	480	C
1	1	481	U
1	1	482	C
1	1	488	U
1	1	489	C
1	1	494	G
1	1	517	G
1	1	520	U
1	1	521	A
1	1	535	G
1	1	542	G
1	1	543	C
1	1	544	C
1	1	546	C
1	1	547	G
1	1	548	G
1	1	555	U
1	1	556	U
1	1	558	U
1	1	559	A
1	1	569	A
1	1	578	A
1	1	579	G

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Mol	Chain	Res	Type
1	1	589	A
1	1	592	A
1	1	597	G
1	1	603	A
1	1	608	A
1	1	609	G
1	1	611	A
1	1	617	G
1	1	620	U
1	1	621	A
1	1	622	A
1	1	636	C
1	1	637	C
1	1	641	C
1	1	646	A
1	1	649	A
1	1	660	A
1	1	661	G
1	1	662	U
1	1	677	A
1	1	678	G
1	1	681	U
1	1	690	A
1	1	691	A
1	1	705	A
1	1	712	G
1	1	715	A
1	1	716	A
1	1	719	U
1	1	720	A
1	1	742	G
1	1	760	G
1	1	764	U
1	1	765	C
1	1	766	U
1	1	767	U
1	1	768	C
1	1	770	G
1	1	776	U
1	1	777	U
1	1	781	G
1	1	784	A

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Mol	Chain	Res	Type
1	1	787	G
1	1	799	G
1	1	801	A
1	1	806	A
1	1	817	A
1	1	826	G
1	1	830	A
1	1	849	C
1	1	851	C
1	1	859	G
1	1	860	G
1	1	861	C
1	1	871	U
1	1	874	U
1	1	879	U
1	1	881	C
1	1	885	U
1	1	896	A
1	1	897	U
1	1	907	G
1	1	908	G
1	1	914	A
1	1	915	A
1	1	916	G
1	1	917	A
1	1	922	U
1	1	925	A
1	1	937	G
1	1	944	C
1	1	959	C
1	1	960	U
1	1	962	A
1	1	963	G
1	1	974	G
1	1	979	U
1	1	982	C
1	1	984	G
1	1	994	G
1	1	1001	G
1	1	1006	A
1	1	1013	G
1	1	1015	U

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Mol	Chain	Res	Type
1	1	1016	C
1	1	1017	C
1	1	1018	G
1	1	1020	G
1	1	1025	A
1	1	1026	A
1	1	1029	G
1	1	1041	U
1	1	1047	A
1	1	1049	C
1	1	1065	A
1	1	1066	G
1	1	1081	U
1	1	1082	U
1	1	1087	G
1	1	1098	A
1	1	1103	A
1	1	1104	G
1	1	1116	G
1	1	1117	G
1	1	1131	G
1	1	1132	C
1	1	1143	A
1	1	1144	U
1	1	1145	G
1	1	1152	G
1	1	1153	A
1	1	1155	C
1	1	1159	A
1	1	1177	G
1	1	1180	A
1	1	1181	U
1	1	1182	A
1	1	1186	G
1	1	1191	U
1	1	1192	C
1	1	1193	A
1	1	1201	C
1	1	1209	G
1	1	1220	U
1	1	1227	C
1	1	1232	C

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Mol	Chain	Res	Type
1	1	1235	U
1	1	1236	G
1	1	1237	G
1	1	1238	C
1	1	1240	A
1	1	1243	G
1	1	1245	A
1	1	1246	G
1	1	1248	C
1	1	1249	G
1	1	1251	A
1	1	1253	U
1	1	1254	C
1	1	1258	U
1	1	1260	A
1	1	1262	G
1	1	1263	A
1	1	1265	U
1	1	1266	G
1	1	1270	A
1	1	1271	A
1	1	1272	C
1	1	1274	A
1	1	1277	C
1	1	1282	G
1	1	1286	A
1	1	1287	A
1	1	1303	A
1	1	1306	G
1	1	1307	G
1	1	1308	A
1	1	1313	G
1	1	1315	U
1	1	1316	C
1	1	1317	A
1	1	1323	G
1	1	1325	U
1	1	1330	A
1	1	1331	U
1	1	1348	U
1	1	1349	G
1	1	1351	U

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Mol	Chain	Res	Type
1	1	1352	A
1	1	1354	G
1	1	1356	U
1	1	1380	G
1	1	1386	A
1	1	1387	G
1	1	1391	C
1	1	1392	G
1	1	1399	A
1	1	1400	G
1	1	1408	G
1	1	1418	A
1	1	1419	A
1	1	1432	C
1	1	1434	G
1	1	1435	A
1	1	1437	C
1	1	1446	A
1	1	1447	G
1	1	1448	U
1	1	1456	A
1	1	1467	A
1	1	1470	U
1	1	1475	A
1	1	1482	A
1	1	1483	G
1	1	1485	G
1	1	1503	A
1	1	1508	C
1	1	1512	U
1	1	1523	U
1	1	1527	C
1	1	1554	U
1	1	1556	C
1	1	1557	A
1	1	1558	A
1	1	1559	A
1	1	1560	G
1	1	1561	G
1	1	1563	C
1	1	1567	U
1	1	1568	U

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Mol	Chain	Res	Type
1	1	1569	U
1	1	1570	U
1	1	1571	A
1	1	1572	U
1	1	1578	C
1	1	1580	A
1	1	1581	C
1	1	1582	C
1	1	1583	A
1	1	1588	A
1	1	1589	A
1	1	1595	U
1	1	1602	A
1	1	1605	A
1	1	1620	U
1	1	1621	A
1	1	1629	U
1	1	1630	U
1	1	1643	A
1	1	1645	U
1	1	1688	U
1	1	1696	A
1	1	1715	A
1	1	1717	U
1	1	1719	G
1	1	1724	U
1	1	1731	A
1	1	1739	U
1	1	1741	A
1	1	1749	A
1	1	1750	A
1	1	1751	G
1	1	1752	A
1	1	1760	A
1	1	1761	C
1	1	1762	C
1	1	1763	U
1	1	1765	U
1	1	1769	G
1	1	1770	G
1	1	1773	C
1	1	1775	G

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Mol	Chain	Res	Type
1	1	1780	G
1	1	1794	G
1	1	1795	U
1	1	1796	G
1	1	1797	A
1	1	1798	A
1	1	1813	A
1	1	1814	A
1	1	1815	U
1	1	1816	A
1	1	1817	G
1	1	1819	U
1	1	1820	U
1	1	1821	U
1	1	1822	C
1	1	1835	A
1	1	1839	A
1	1	1840	U
1	1	1841	A
1	1	1843	C
1	1	1846	C
1	1	1847	A
1	1	1848	G
1	1	1849	C
1	1	1850	A
1	1	1851	G
1	1	1858	A
1	1	1866	C
1	1	1867	A
1	1	1878	G
1	1	1879	A
1	1	1880	U
1	1	1885	U
1	1	1886	A
1	1	1893	A
1	1	1902	G
1	1	1906	G
1	1	1907	C
1	1	1909	A
1	1	1914	G
1	1	1926	C
1	1	1931	U

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Mol	Chain	Res	Type
1	1	1932	A
1	1	1952	G
1	1	1953	G
1	1	1954	G
1	1	1960	A
1	1	1961	G
1	1	1962	G
1	1	1963	G
1	1	1964	C
1	1	1969	G
1	1	1972	A
1	1	1973	G
1	1	1976	G
1	1	2044	U
1	1	2047	A
1	1	2048	G
1	1	2050	C
1	1	2081	U
1	1	2082	U
1	1	2087	C
1	1	2093	A
1	1	2101	C
1	1	2102	U
1	1	2111	G
1	1	2112	U
1	1	2113	A
1	1	2114	C
1	1	2121	G
1	1	2122	G
1	1	2125	A
1	1	2126	A
1	1	2131	A
1	1	2138	A
1	1	2142	A
1	1	2144	A
1	1	2145	A
1	1	2148	U
1	1	2157	G
1	1	2159	U
1	1	2160	G
1	1	2166	A
1	1	2169	G

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Mol	Chain	Res	Type
1	1	2176	U
1	1	2177	G
1	1	2178	A
1	1	2179	C
1	1	2186	U
1	1	2188	A
1	1	2197	C
1	1	2198	A
1	1	2205	U
1	1	2208	A
1	1	2209	U
1	1	2210	G
1	1	2243	A
1	1	2244	A
1	1	2248	C
1	1	2250	G
1	1	2252	A
1	1	2256	A
1	1	2257	C
1	1	2269	U
1	1	2270	A
1	1	2272	G
1	1	2280	A
1	1	2281	A
1	1	2282	U
1	1	2287	C
1	1	2297	U
1	1	2298	U
1	1	2299	A
1	1	2306	C
1	1	2307	G
1	1	2308	C
1	1	2309	A
1	1	2310	U
1	1	2313	A
1	1	2315	G
1	1	2318	U
1	1	2319	U
1	1	2334	U
1	1	2335	G
1	1	2336	U
1	1	2340	U

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Mol	Chain	Res	Type
1	1	2374	C
1	1	2375	G
1	1	2378	C
1	1	2386	A
1	1	2388	U
1	1	2397	A
1	1	2402	A
1	1	2403	G
1	1	2404	A
1	1	2411	U
1	1	2418	G
1	1	2419	A
1	1	2434	U
1	1	2435	G
1	1	2436	U
1	1	2437	G
1	1	2438	A
1	1	2439	A
1	1	2440	G
1	1	2442	G
1	1	2444	C
1	1	2447	A
1	1	2449	A
1	1	2452	G
1	1	2493	U
1	1	2494	A
1	1	2495	C
1	1	2497	U
1	1	2501	U
1	1	2503	G
1	1	2505	U
1	1	2506	U
1	1	2507	C
1	1	2511	A
1	1	2514	U
1	1	2515	A
1	1	2522	G
1	1	2523	A
1	1	2524	A
1	1	2526	C
1	1	2530	G
1	1	2531	C

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Mol	Chain	Res	Type
1	1	2533	G
1	1	2537	U
1	1	2538	U
1	1	2539	C
1	1	2540	A
1	1	2541	U
1	1	2542	U
1	1	2544	U
1	1	2547	A
1	1	2548	C
1	1	2550	U
1	1	2552	C
1	1	2555	G
1	1	2558	U
1	1	2560	C
1	1	2568	C
1	1	2571	U
1	1	2572	C
1	1	2582	C
1	1	2585	G
1	1	2593	A
1	1	2600	C
1	1	2606	G
1	1	2607	G
1	1	2614	G
1	1	2618	G
1	1	2619	G
1	1	2626	A
1	1	2635	A
1	1	2636	A
1	1	2638	C
1	1	2652	U
1	1	2653	C
1	1	2655	U
1	1	2657	A
1	1	2672	G
1	1	2674	A
1	1	2678	A
1	1	2679	A
1	1	2681	U
1	1	2689	A
1	1	2691	A

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Mol	Chain	Res	Type
1	1	2694	A
1	1	2702	A
1	1	2703	A
1	1	2710	C
1	1	2712	U
1	1	2713	U
1	1	2727	A
1	1	2728	G
1	1	2729	U
1	1	2737	C
1	1	2752	U
1	1	2753	G
1	1	2755	C
1	1	2758	A
1	1	2772	C
1	1	2773	C
1	1	2777	G
1	1	2778	G
1	1	2779	A
1	1	2797	C
1	1	2800	G
1	1	2801	A
1	1	2802	A
1	1	2803	A
1	1	2810	C
1	1	2814	G
1	1	2817	A
1	1	2818	U
1	1	2842	U
1	1	2844	C
1	1	2845	A
1	1	2847	A
1	1	2867	C
1	1	2871	G
1	1	2872	A
1	1	2873	U
1	1	2874	G
1	1	2888	U
1	1	2889	C
1	1	2898	G
1	1	2899	C
1	1	2912	G

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Mol	Chain	Res	Type
1	1	2923	U
1	1	2935	U
1	1	2936	A
1	1	2938	G
1	1	2941	A
1	1	2942	C
1	1	2947	G
1	1	2954	U
1	1	2955	U
1	1	2966	G
1	1	2971	A
1	1	2972	G
1	1	2978	U
1	1	2979	U
1	1	2983	C
1	1	2984	C
1	1	2997	G
1	1	3012	A
1	1	3021	A
1	1	3022	G
1	1	3023	U
1	1	3026	G
1	1	3028	G
1	1	3030	G
1	1	3047	U
1	1	3049	A
1	1	3056	U
1	1	3058	U
1	1	3059	G
1	1	3078	U
1	1	3080	G
1	1	3086	A
1	1	3092	C
1	1	3113	A
1	1	3117	C
1	1	3122	A
1	1	3130	A
1	1	3131	U
1	1	3141	A
1	1	3142	A
1	1	3143	C
1	1	3144	G

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Mol	Chain	Res	Type
1	1	3151	U
1	1	3153	U
1	1	3154	C
1	1	3155	U
1	1	3156	U
1	1	3157	U
1	1	3158	G
1	1	3170	A
1	1	3172	A
1	1	3173	G
1	1	3174	A
1	1	3176	G
1	1	3179	U
1	1	3181	C
1	1	3182	G
1	1	3185	U
1	1	3186	A
1	1	3187	A
1	1	3195	U
1	1	3196	U
1	1	3197	G
1	1	3198	U
1	1	3206	C
1	1	3207	U
1	1	3208	G
1	1	3209	A
1	1	3210	A
1	1	3213	A
1	1	3216	G
1	1	3217	C
1	1	3218	A
1	1	3219	G
1	1	3220	G
1	1	3226	A
1	1	3227	A
1	1	3228	C
1	1	3229	G
1	1	3231	U
1	1	3244	A
1	1	3245	A
1	1	3246	G
1	1	3247	G

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Mol	Chain	Res	Type
1	1	3259	U
1	1	3260	G
1	1	3268	A
1	1	3269	U
1	1	3270	U
1	1	3273	A
1	1	3274	A
1	1	3276	G
1	1	3278	C
1	1	3279	A
1	1	3288	G
1	1	3289	G
1	1	3290	G
1	1	3293	U
1	1	3294	A
1	1	3295	A
1	1	3304	U
1	1	3305	A
1	1	3307	A
1	1	3316	A
1	1	3317	U
1	1	3318	G
1	1	3319	U
1	1	3334	U
1	1	3335	A
1	1	3341	U
1	1	3345	G
1	1	3347	A
1	1	3349	C
1	1	3351	U
1	1	3352	U
1	1	3353	G
1	1	3354	U
1	1	3355	U
1	1	3356	G
1	1	3358	U
1	1	3359	A
1	1	3368	U
1	1	3369	G
1	1	3370	A
1	1	3375	A
1	1	3378	C

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Mol	Chain	Res	Type
1	1	3382	U
1	1	3383	G
1	1	3389	U
1	1	3390	G
1	1	3396	U
2	3	7	G
2	3	11	A
2	3	13	A
2	3	14	U
2	3	22	A
2	3	23	A
2	3	24	A
2	3	33	U
2	3	41	G
2	3	42	A
2	3	50	U
2	3	53	U
2	3	54	U
2	3	55	A
2	3	64	A
2	3	65	G
2	3	73	C
2	3	76	A
2	3	77	G
2	3	78	U
2	3	87	G
2	3	90	U
2	3	91	G
2	3	93	C
2	3	102	A
2	3	112	G
2	3	121	U
3	4	22	U
3	4	23	U
3	4	24	G
3	4	34	U
3	4	35	C
3	4	39	G
3	4	49	G
3	4	51	G
3	4	59	A
3	4	60	U

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Mol	Chain	Res	Type
3	4	62	C
3	4	63	G
3	4	71	A
3	4	72	A
3	4	80	A
3	4	82	U
3	4	83	C
3	4	85	G
3	4	86	U
3	4	87	G
3	4	90	U
3	4	91	C
3	4	95	G
3	4	104	A
3	4	106	C
3	4	111	A
3	4	112	U
3	4	113	U
3	4	116	G
3	4	125	U
3	4	126	A
3	4	129	C
3	4	151	C
3	4	152	G
5	2	9	G
5	2	16	U
5	2	17	G
5	2	18	G
5	2	19	U
5	2	21	A
5	2	42	G
5	2	43	A
5	2	48	U
5	2	49	C
5	2	58	A
5	2	59	G
5	2	60	U
5	2	64	G
5	2	73	G
5	2	74	C

All (85) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	1	12	A
1	1	14	U
1	1	43	A
1	1	86	G
1	1	154	U
1	1	219	A
1	1	239	G
1	1	269	G
1	1	282	G
1	1	285	A
1	1	316	U
1	1	341	G
1	1	353	G
1	1	374	A
1	1	400	G
1	1	426	G
1	1	543	C
1	1	547	G
1	1	602	A
1	1	677	A
1	1	689	U
1	1	715	A
1	1	870	G
1	1	906	A
1	1	914	A
1	1	916	G
1	1	981	U
1	1	1064	A
1	1	1144	U
1	1	1253	U
1	1	1307	G
1	1	1433	A
1	1	1447	G
1	1	1557	A
1	1	1580	A
1	1	1695	U
1	1	1730	G
1	1	1760	A
1	1	1793	C
1	1	1795	U
1	1	1815	U
1	1	1816	A
1	1	1913	A

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Mol	Chain	Res	Type
1	1	1959	G
1	1	2086	A
1	1	2101	C
1	1	2111	G
1	1	2158	A
1	1	2177	G
1	1	2178	A
1	1	2403	G
1	1	2434	U
1	1	2436	U
1	1	2439	A
1	1	2513	U
1	1	2525	G
1	1	2537	U
1	1	2538	U
1	1	2541	U
1	1	2549	G
1	1	2625	C
1	1	2656	A
1	1	2727	A
1	1	2816	G
1	1	2911	A
1	1	3022	G
1	1	3027	A
1	1	3079	U
1	1	3121	U
1	1	3156	U
1	1	3175	U
1	1	3216	G
1	1	3218	A
1	1	3219	G
1	1	3243	A
1	1	3246	G
1	1	3269	U
1	1	3272	C
1	1	3334	U
2	3	76	A
2	3	77	G
2	3	90	U
3	4	22	U
3	4	48	A
3	4	71	A

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

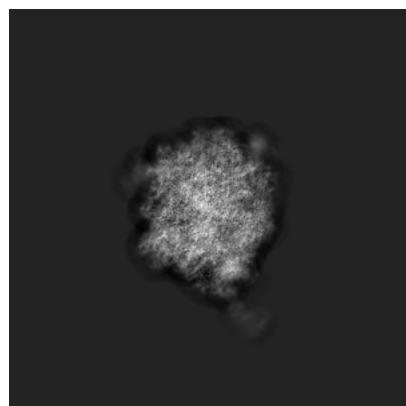
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14926. These allow visual inspection of the internal detail of the map and identification of artifacts.

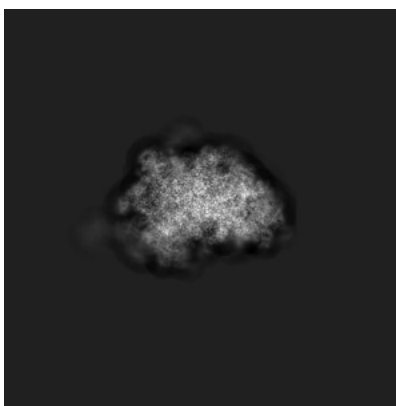
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

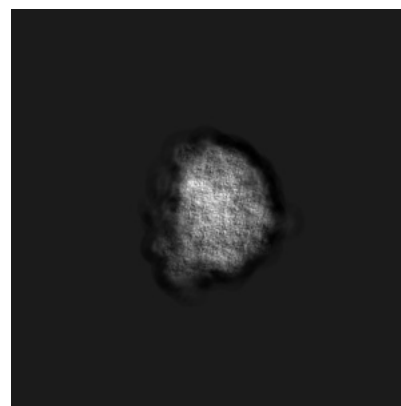
6.1.1 Primary map



X

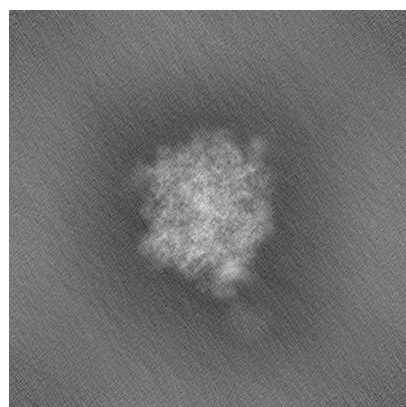


Y

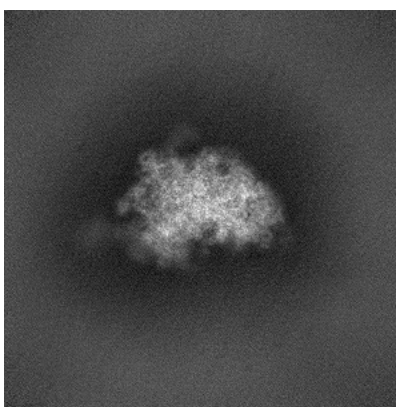


Z

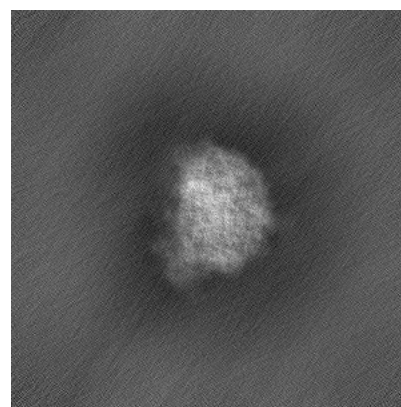
6.1.2 Raw map



X



Y

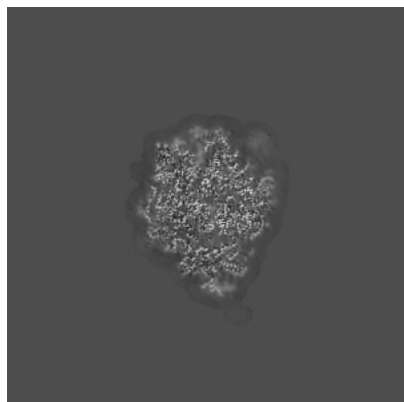


Z

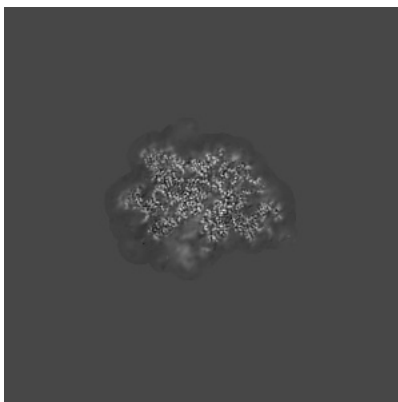
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

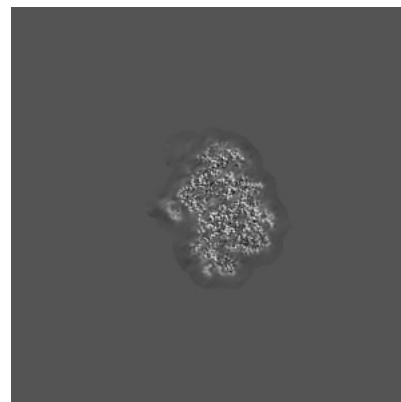
6.2.1 Primary map



X Index: 280

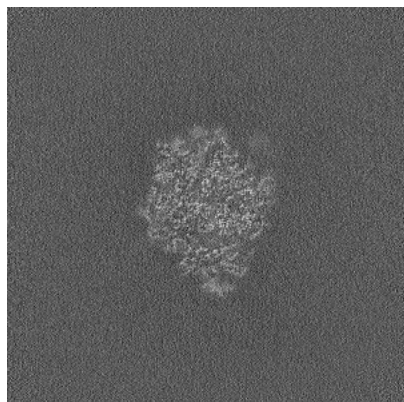


Y Index: 280

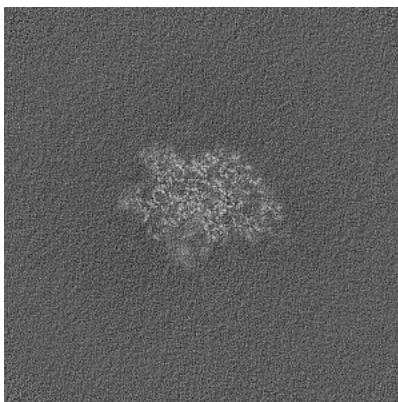


Z Index: 280

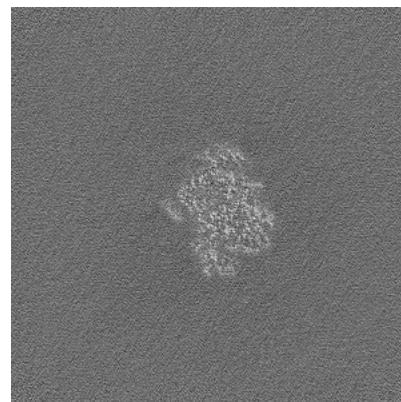
6.2.2 Raw map



X Index: 280



Y Index: 280

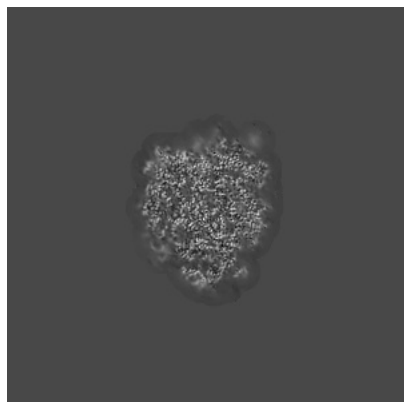


Z Index: 280

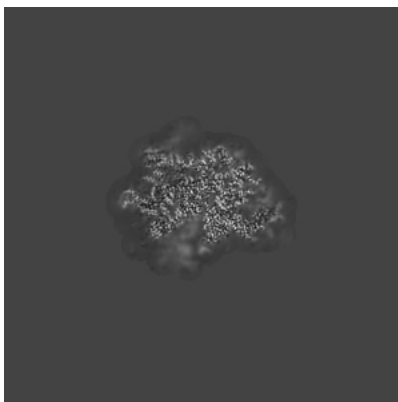
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

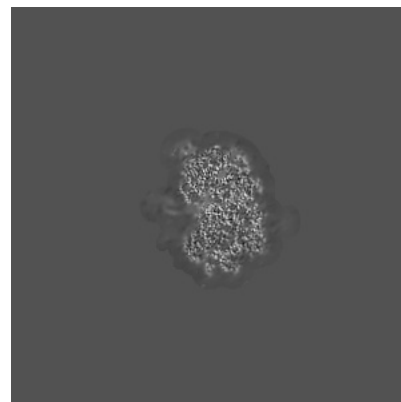
6.3.1 Primary map



X Index: 300

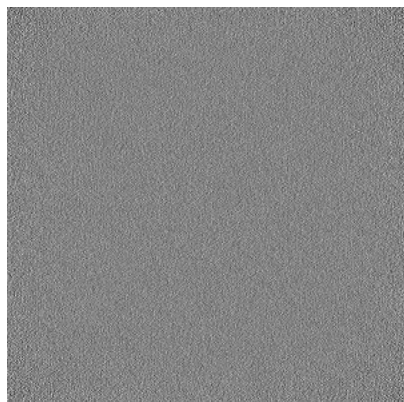


Y Index: 275

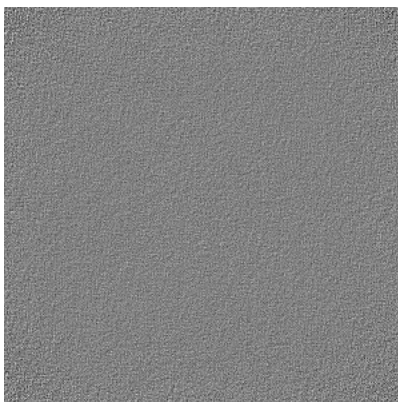


Z Index: 271

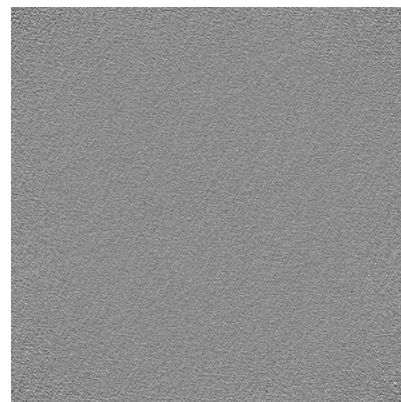
6.3.2 Raw map



X Index: 0



Y Index: 0

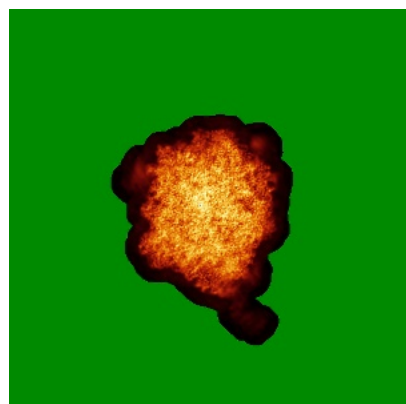


Z Index: 0

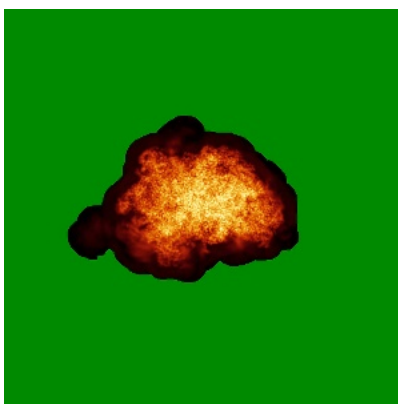
The images above show the largest variance slices of the map in three orthogonal directions.

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

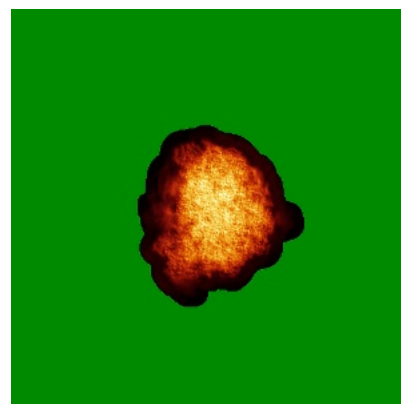
6.4.1 Primary map



X

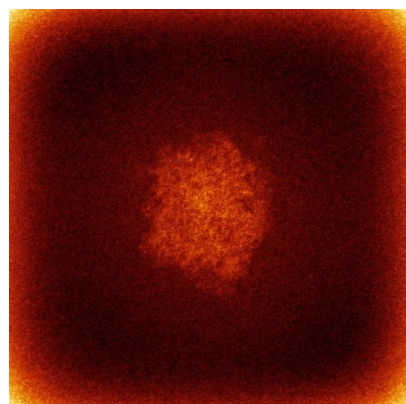


Y

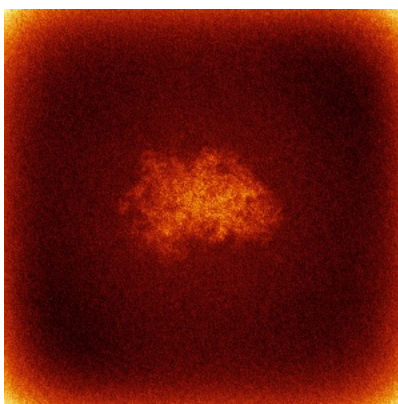


Z

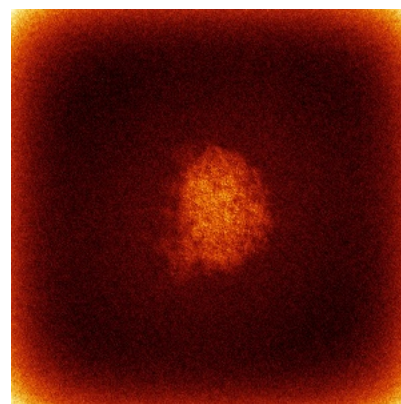
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



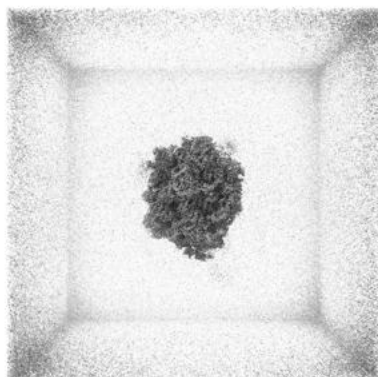
Y



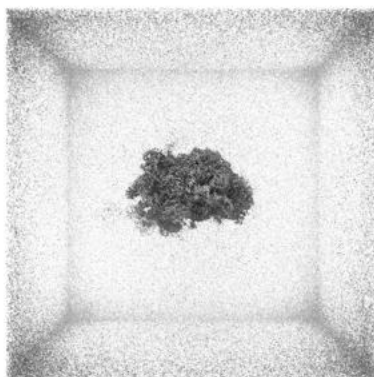
Z

The images above show the 3D surface view of the map at the recommended contour level 0.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

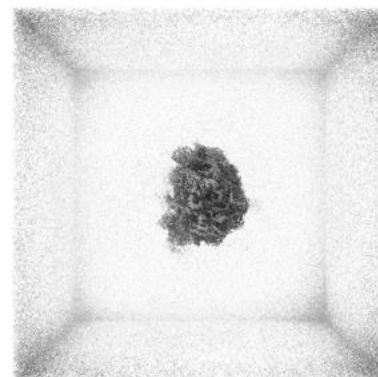
6.5.2 Raw map



X



Y



Z

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

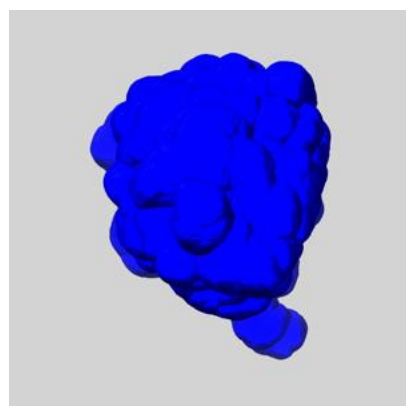
6.6 Mask visualisation [i](#)

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

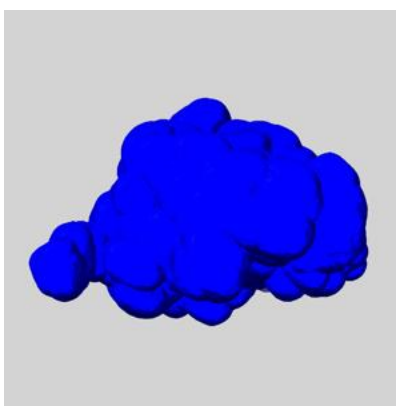
A mask typically either:

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

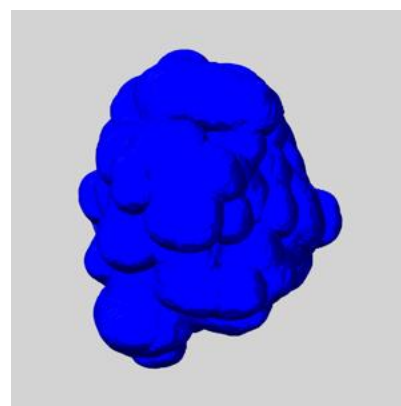
6.6.1 emd_14926_msk_1.map [i](#)



X



Y

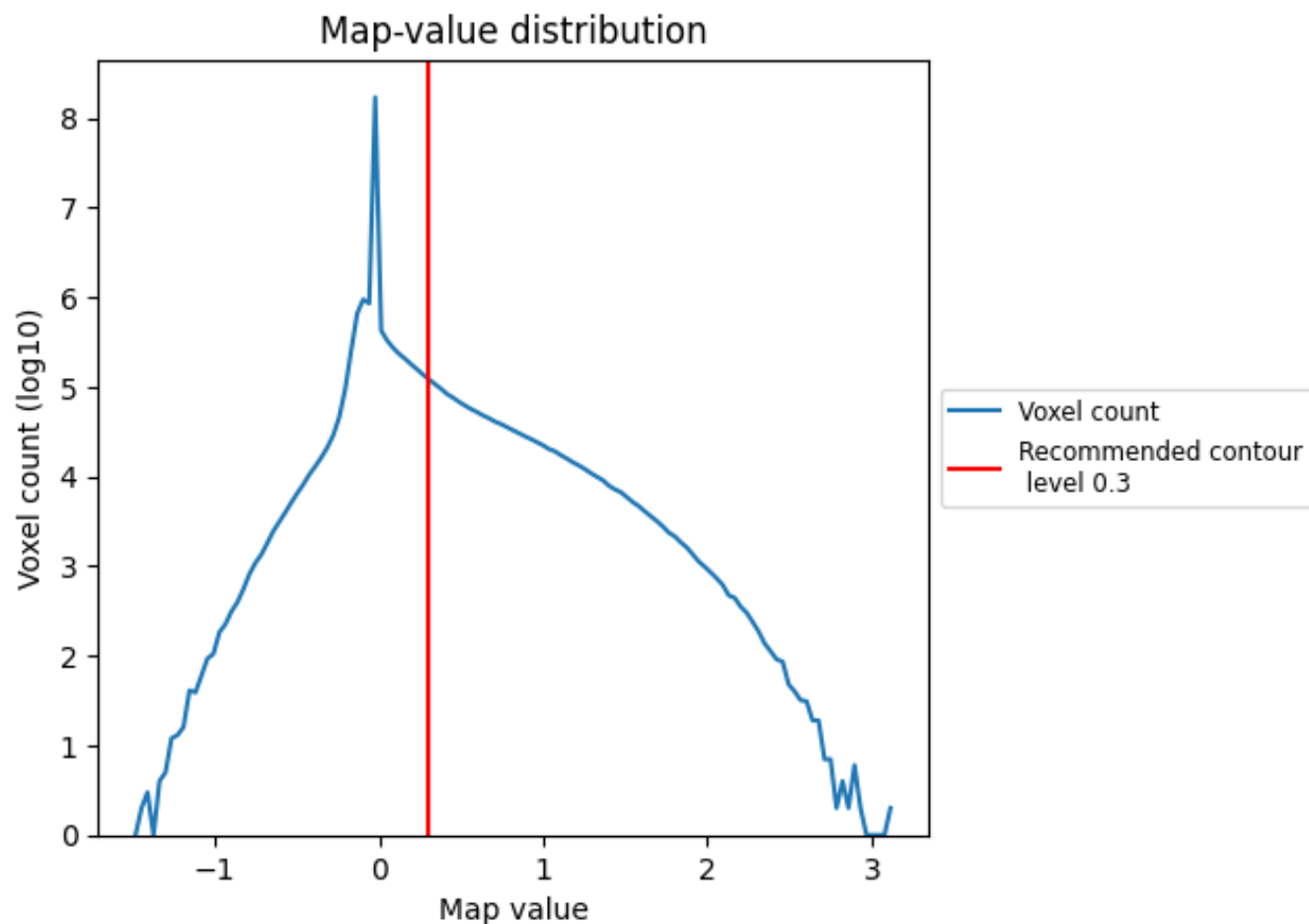


Z

7 Map analysis [i](#)

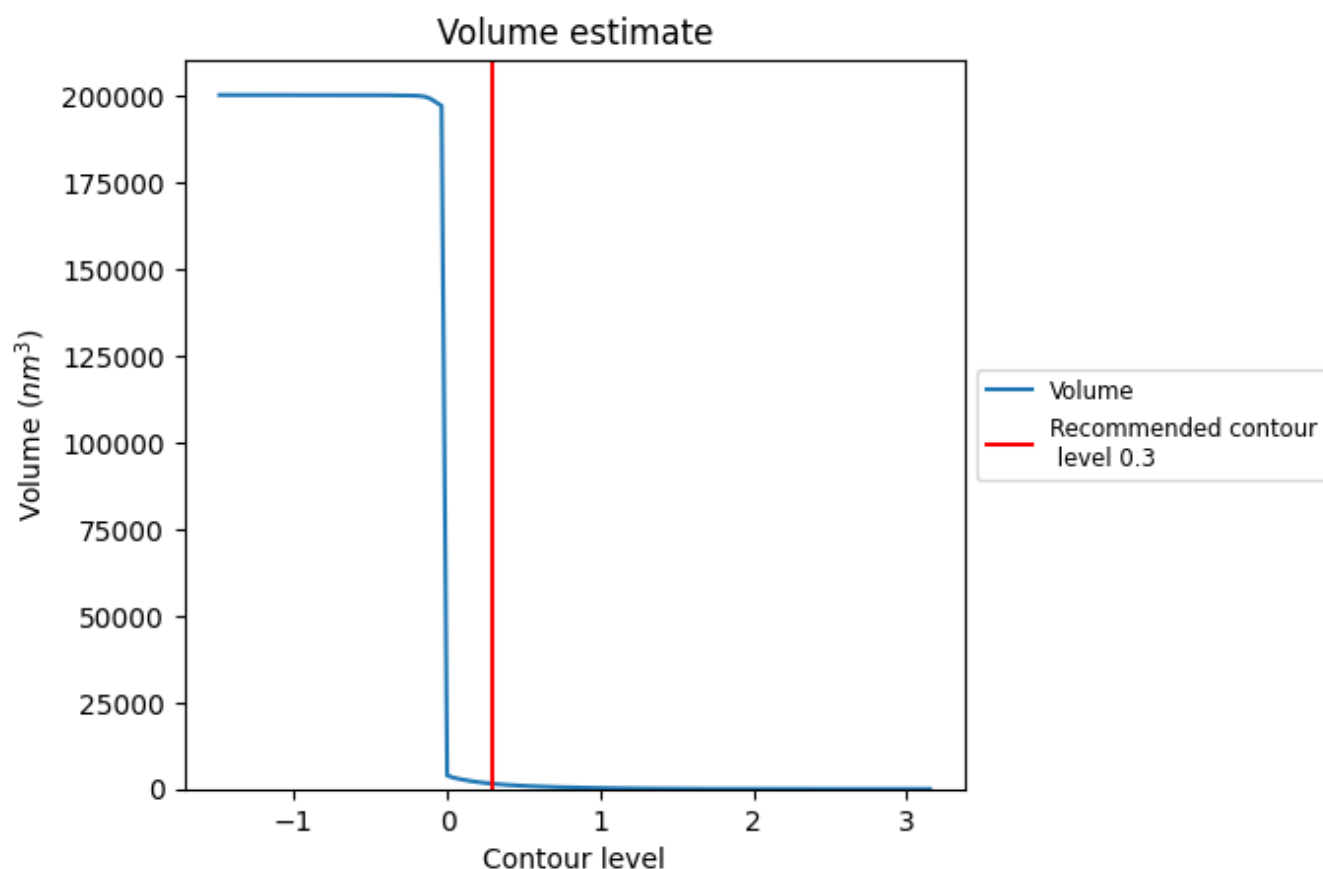
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

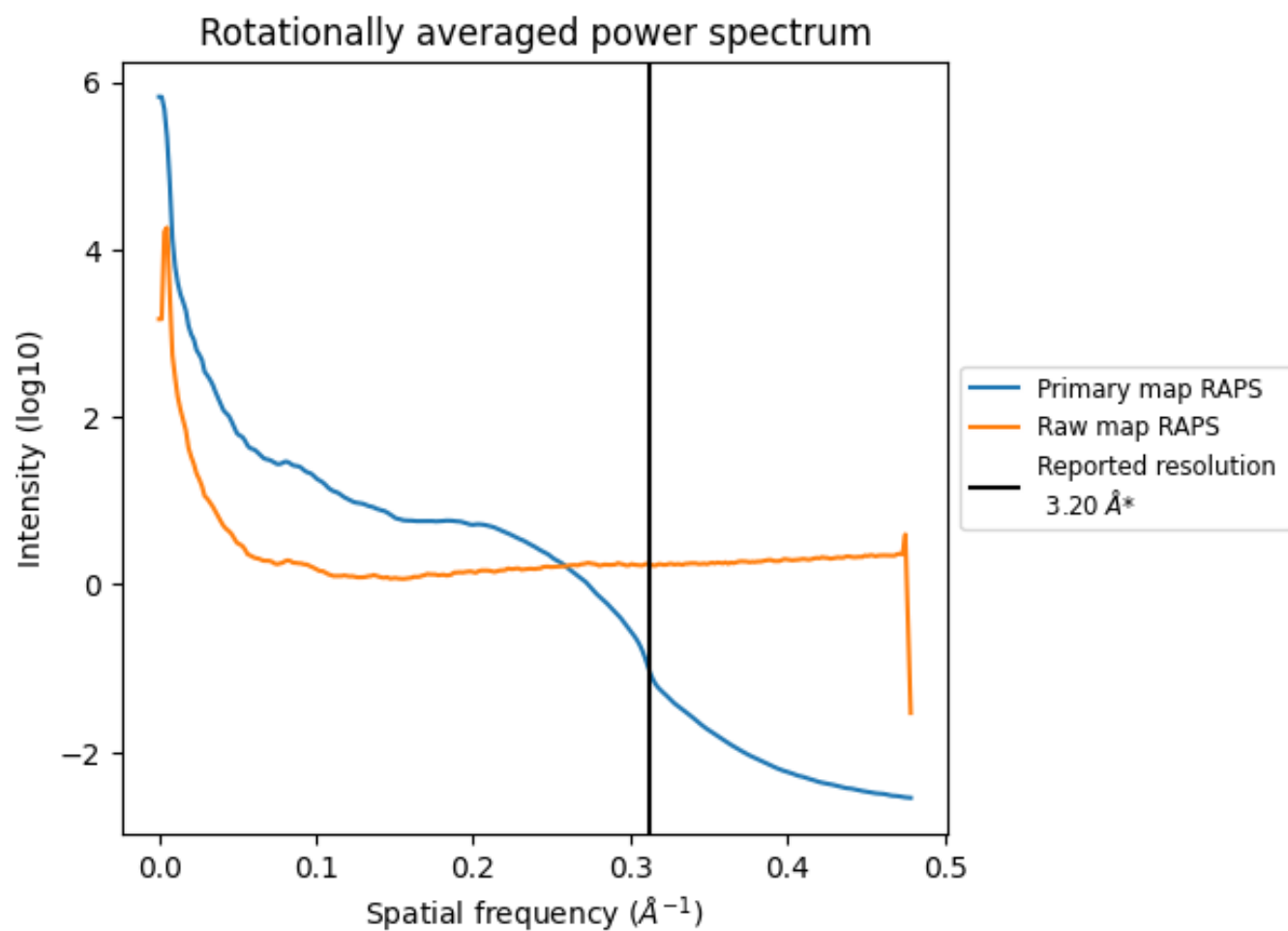
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1499 nm^3 ; this corresponds to an approximate mass of 1354 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

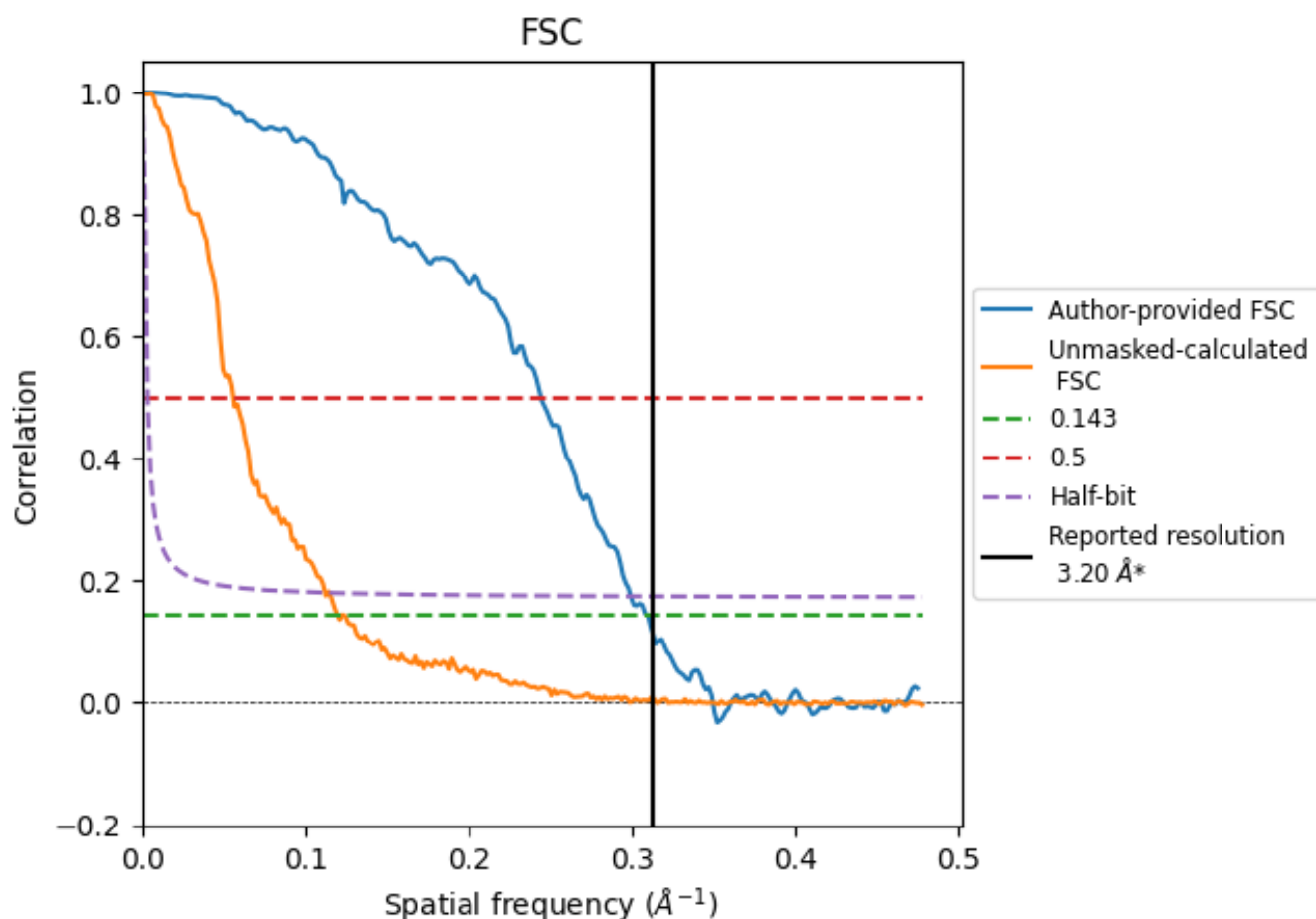


*Reported resolution corresponds to spatial frequency of 0.312 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.312 Å⁻¹

8.2 Resolution estimates [i](#)

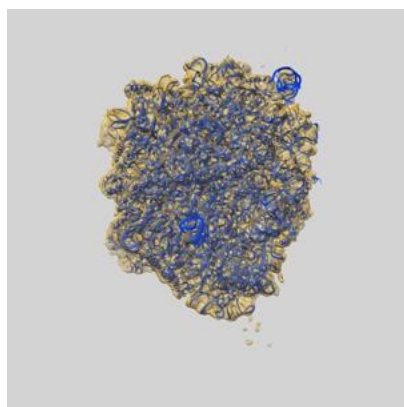
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	3.22	4.08	3.34
Unmasked-calculated*	8.33	17.99	8.90

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 8.33 differs from the reported value 3.2 by more than 10 %

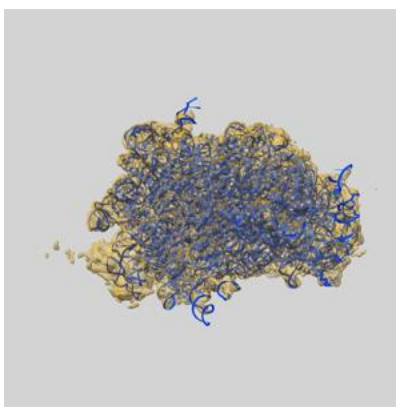
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-14926 and PDB model 7ZS5. Per-residue inclusion information can be found in section 3 on page 12.

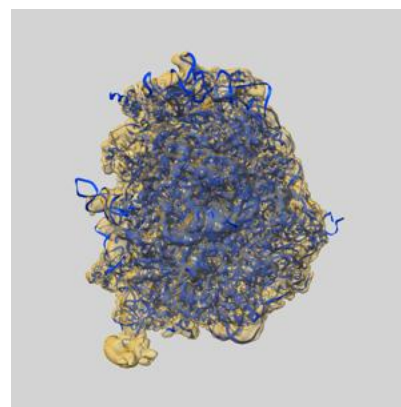
9.1 Map-model overlay [i](#)



X



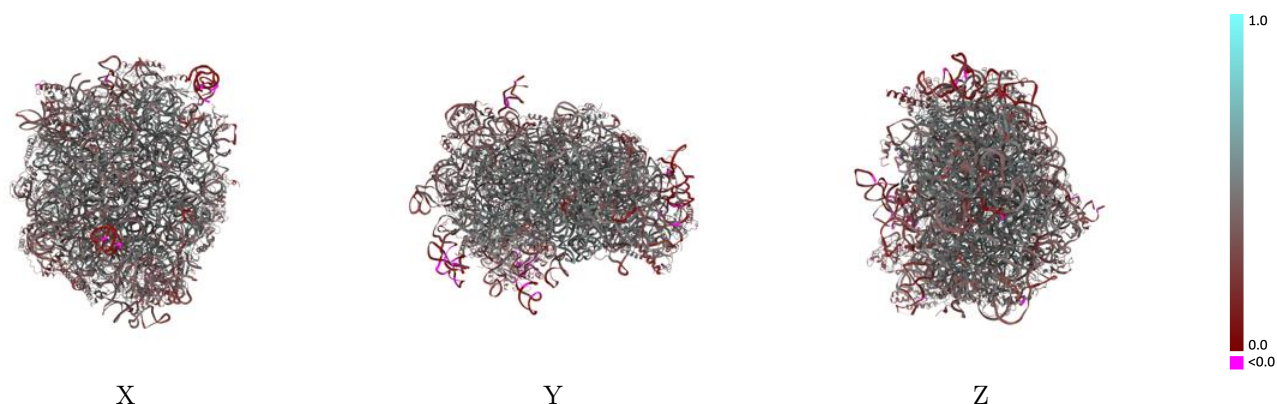
Y



Z

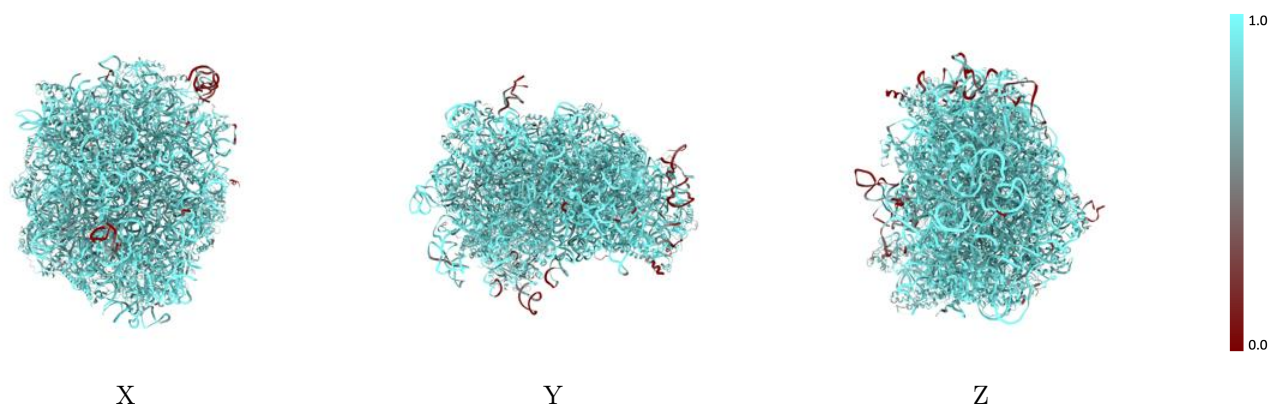
The images above show the 3D surface view of the map at the recommended contour level 0.3 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



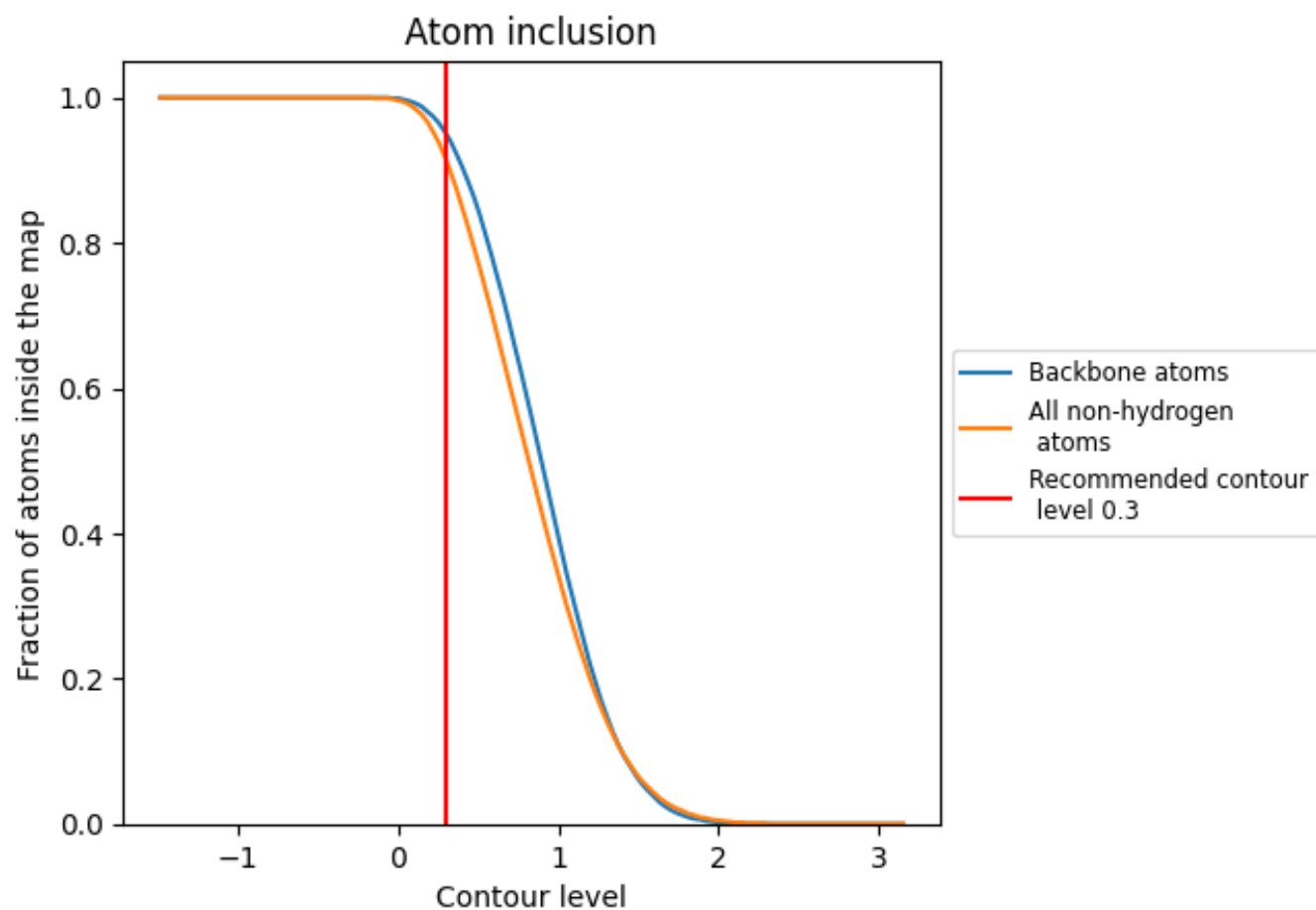
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.3).

9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 91% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9140	 0.4210
1	 0.9390	 0.4160
2	 0.5330	 0.1110
3	 0.9620	 0.4120
4	 0.9780	 0.4490
A	 0.8320	 0.3510
B	 0.7560	 0.3320
BA	 0.8560	 0.4560
BB	 0.9190	 0.4630
BC	 0.9110	 0.4740
BD	 0.9180	 0.4570
BE	 0.9190	 0.4580
BF	 0.8490	 0.3730
BG	 0.8310	 0.3830
BH	 0.8890	 0.4470
BI	 0.8770	 0.3950
BJ	 0.8560	 0.4280
BK	 0.8610	 0.4220
BL	 0.8000	 0.3220
BM	 0.8720	 0.4410
BN	 0.8470	 0.3940
BO	 0.9440	 0.4970
BP	 0.9230	 0.4640
BQ	 0.9170	 0.4450
BR	 0.8930	 0.4620
BS	 0.8820	 0.4380
BT	 0.8730	 0.4500
BU	 0.8740	 0.4400
BV	 0.8820	 0.4000
BW	 0.9140	 0.4720
BX	 0.8550	 0.4210
BY	 0.9400	 0.4720
BZ	 0.8700	 0.4380
Ba	 0.8710	 0.4240
Bb	 0.9110	 0.4600



Continued on next page...

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Chain	Atom inclusion	Q-score
Bc	 0.8940	 0.4210
Bd	 0.8540	 0.4150
Be	 0.8810	 0.4630
Bf	 0.8880	 0.4570
Bg	 0.9030	 0.4710
Bh	 0.8720	 0.4410
Bi	 0.9120	 0.4320
Bj	 0.8730	 0.4210
Bk	 0.9450	 0.5100
Bl	 0.7910	 0.4030
Bm	 0.9300	 0.4780
Bn	 0.9130	 0.4600