Full wwPDB EM Validation Report

Apr 22, 2025 – 06:04 AM EDT

PDB ID	:	8VKI / pdb_00008vki
EMDB ID	:	EMD-43317
Title	:	Structure of Mycobacterium smegmatis 50S ribosomal subunit bound to HflX:50S-HflX-C
Authors	:	Majumdar, S.; Koripella, R.K.; Sharma, M.R.; Manjari, S.R.; Banavali, N.K.; Agrawal, R.K.
Deposited on	:	2024-01-09
Resolution	:	2.96 Å(reported)
Based on initial models	:	5O61, 6DZI

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 ①) were used in the production of this report:

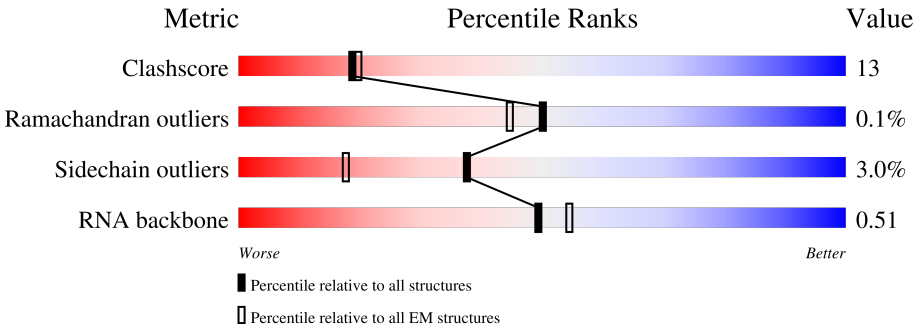
EMDB validation analysis	:	0.0.1.dev117
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.42

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 2.96 Å.

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



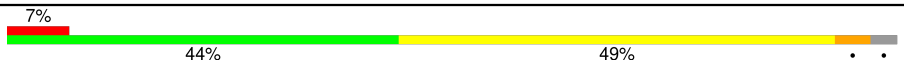
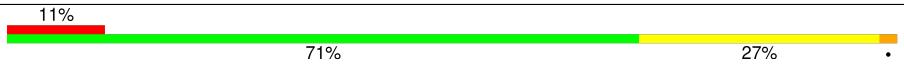
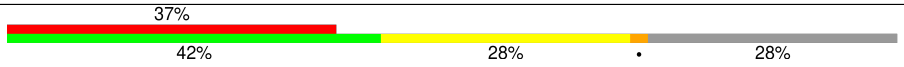
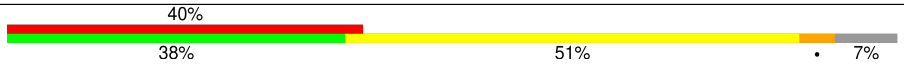
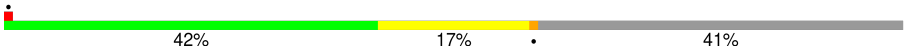
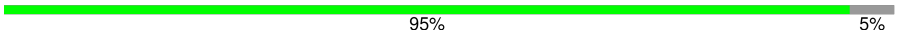
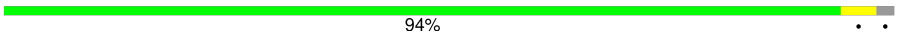
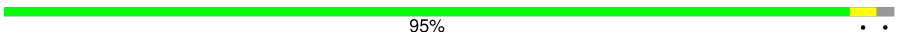
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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 <=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	2	61	66% 30%
2	3	24	79% 17%
3	4	470	8% 55% 43%
4	B	118	47% 43% 10%
5	C	278	78% 21%
6	D	217	67% 30%
7	E	215	75% 20%

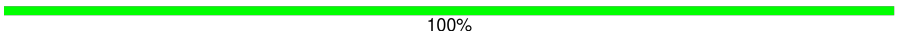
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
8	F	187	
9	G	179	
10	H	151	
11	I	175	
12	J	142	
13	K	147	
14	L	122	
15	M	147	
16	N	138	
17	O	199	
18	P	127	
19	Q	113	
20	R	129	
21	S	103	
22	T	153	
23	U	100	
24	V	105	
25	W	215	
26	X	88	
27	Y	64	
28	Z	77	
29	b	57	
30	c	55	
31	d	47	
32	e	64	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
33	f	37	
34	A	3120	

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
35	GCP	4	501	-	-	X	-

2 Entry composition

There are 35 unique types of molecules in this entry. The entry contains 96565 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	2	59	Total	C	N	O	0	0
			474	292	95	87		

- Molecule 2 is a protein called 50S Ribosomal Protein L37.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	3	23	Total	C	N	O	0	0
			189	111	50	28		

- Molecule 3 is a protein called GTPase HflX.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	4	466	Total	C	N	O	S	0	0
			3516	2171	649	689	7		

- Molecule 4 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	B	118	Total	C	N	O	P	0	0
			2522	1126	468	810	118		

- Molecule 5 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	C	275	Total	C	N	O	S	0	0
			2110	1298	438	370	4		

- Molecule 6 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	D	214	Total	C	N	O	S	0	0
			1587	982	310	290	5		

- Molecule 7 is a protein called 50S Ribosomal Protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	E	209	Total	C	N	O	S	0	0
			1569	969	295	303	2		

- Molecule 8 is a protein called 50S Ribosomal Protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	F	182	Total	C	N	O	S	0	0
			1445	907	271	261	6		

- Molecule 9 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	G	176	Total	C	N	O	S	0	0
			1348	845	249	253	1		

- Molecule 10 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	H	151	Total	C	N	O	S	0	0
			1018	635	188	194	1		

- Molecule 11 is a protein called 50S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	I	126	Total	C	N	O	S	0	0
			918	580	156	180	2		

- Molecule 12 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	J	132	Total	C	N	O	S	0	0
			958	602	172	181	3		

- Molecule 13 is a protein called 50S Ribosomal Protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	K	146	Total	C	N	O	S	0	0
			1130	722	207	200	1		

- Molecule 14 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	L	122	Total	C	N	O	S	0	0
			938	586	179	170	3		

- Molecule 15 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	M	145	Total	C	N	O	S	0	0
			1078	676	205	194	3		

- Molecule 16 is a protein called Large ribosomal subunit protein uL16.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	N	136	Total	C	N	O	S	0	0
			1092	690	213	187	2		

- Molecule 17 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	O	118	Total	C	N	O	S	0	0
			928	583	180	163	2		

- Molecule 18 is a protein called 50S Ribosomal Protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	P	126	Total	C	N	O	0	0
			956	586	199	171		

- Molecule 19 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	Q	113	Total	C	N	O	S	0	0
			907	570	171	165	1		

- Molecule 20 is a protein called 50S Ribosomal Protein L20.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	R	124	Total	C	N	O	0	0
			988	613	203	172		

- Molecule 21 is a protein called 50S Ribosomal Protein L21.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	S	100	Total 754	C 478	N 137	O 139	0	0

- Molecule 22 is a protein called 50S Ribosomal Protein L22.

Mol	Chain	Residues	Atoms				AltConf	Trace
22	T	114	Total 873	C 543	N 171	O 159	0	0

- Molecule 23 is a protein called 50S Ribosomal Protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	U	97	Total 756	C 479	N 138	O 139	0	0

- Molecule 24 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	V	97	Total 732	C 456	N 137	O 137	S 2	0	0

- Molecule 25 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	W	95	Total 735	C 452	N 149	O 134	0	0

- Molecule 26 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	X	79	Total 586	C 361	N 123	O 102	0	0

- Molecule 27 is a protein called 50S Ribosomal Protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Y	63	Total 470	C 283	N 103	O 80	S 4	0	0

- Molecule 28 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	Z	64	Total	C	N	O	S	0	0
			531	324	103	103	1		

- Molecule 29 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	b	54	Total	C	N	O	S	0	0
			423	260	93	69	1		

- Molecule 30 is a protein called 50S Ribosomal Protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	c	49	Total	C	N	O	S	0	0
			405	248	82	71	4		

- Molecule 31 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	d	46	Total	C	N	O	S	0	0
			377	225	97	54	1		

- Molecule 32 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms				AltConf	Trace
32	e	63	Total	C	N	O	0	0
			502	302	115	85		

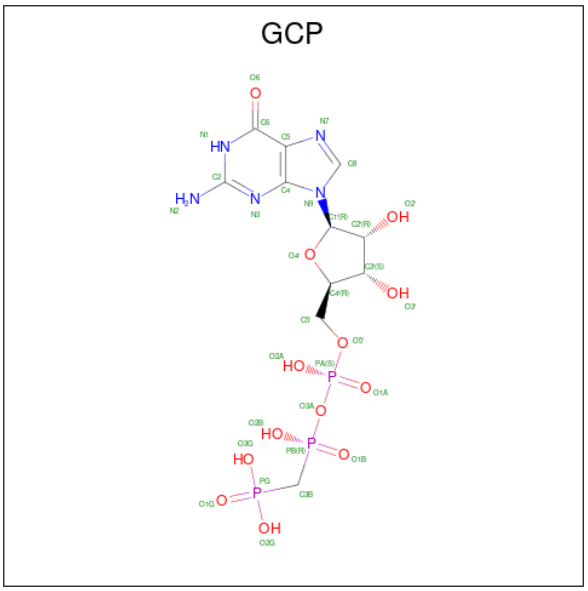
- Molecule 33 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	f	37	Total	C	N	O	S	0	0
			299	181	66	47	5		

- Molecule 34 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	A	2952	Total	C	N	O	P	0	0
			63419	28264	11675	20528	2952		

- Molecule 35 is PHOSPHOMETHYLPHOSPHONIC ACID GUANYLATE ESTER (CCD ID: GCP) (formula: $C_{11}H_{18}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



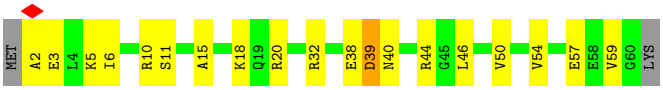
Mol	Chain	Residues	Atoms					AltConf
35	4	1	Total	C	N	O	P	0
			32	11	5	13	3	

3 Residue-property plots (i)

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

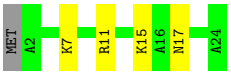
- Molecule 1: 50S ribosomal protein L30

Chain 2:



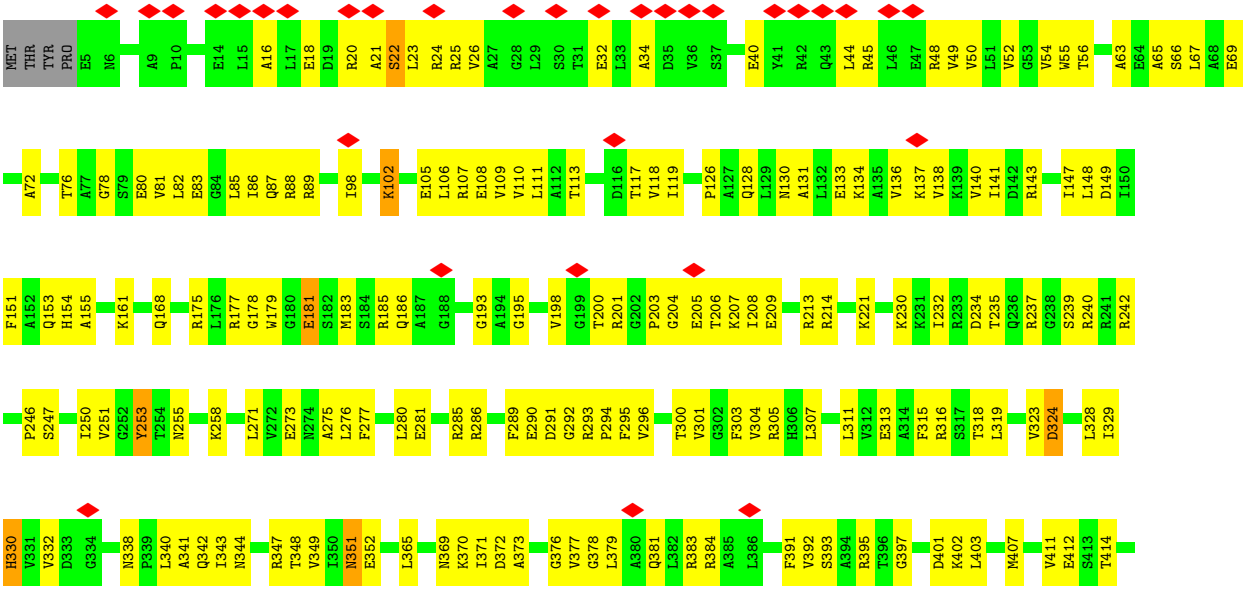
- Molecule 2: 50S Ribosomal Protein L37

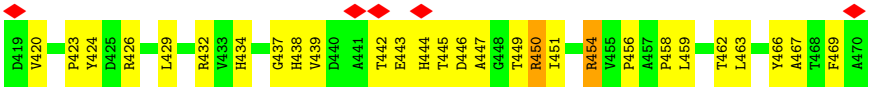
Chain 3:



- Molecule 3: GTPase HflX

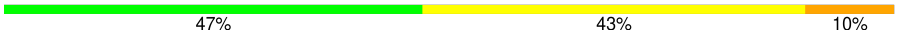
Chain 4:

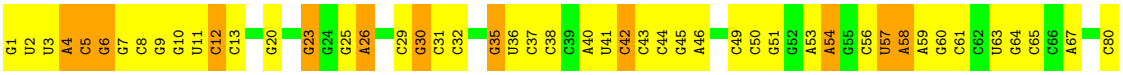




• Molecule 4: 5S ribosomal RNA

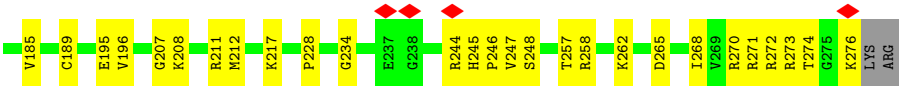
Chain B:





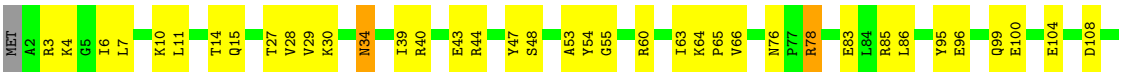
• Molecule 5: 50S ribosomal protein L2

Chain C:



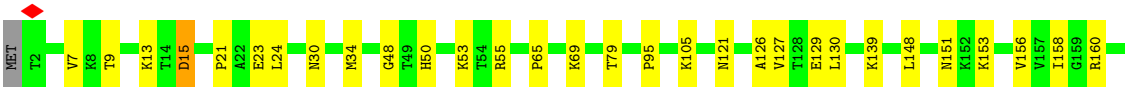
• Molecule 6: 50S ribosomal protein L3

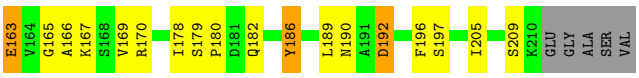
Chain D:



• Molecule 7: 50S Ribosomal Protein L4

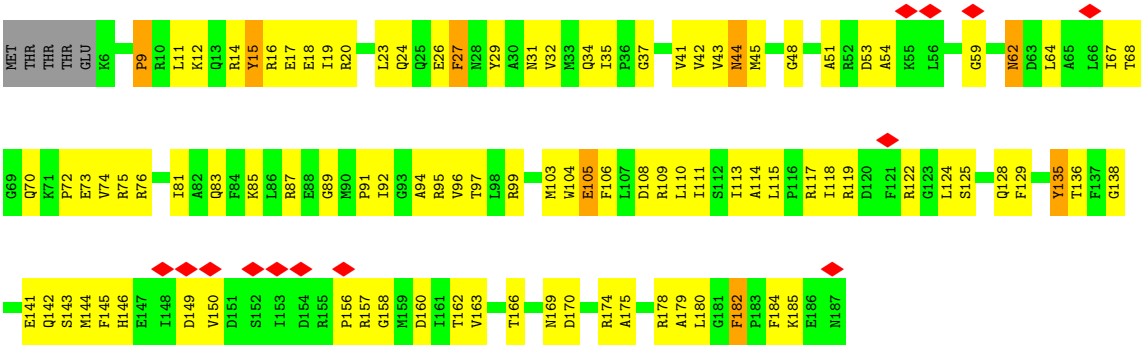
Chain E:





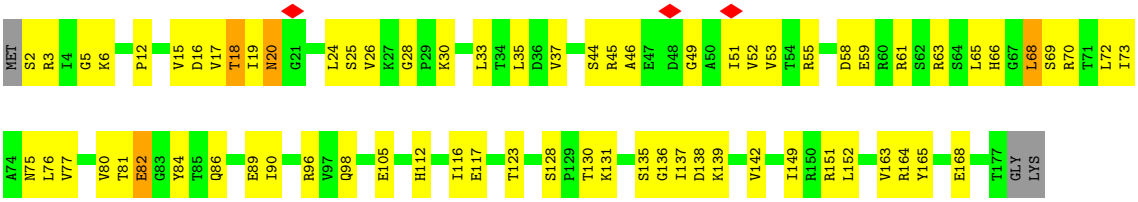
• Molecule 8: 50S Ribosomal Protein L5

Chain F:



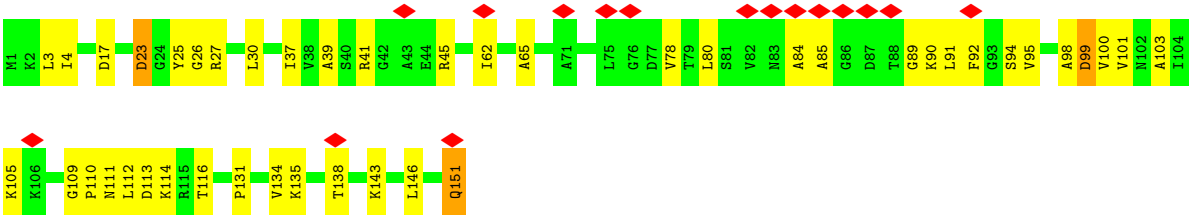
• Molecule 9: 50S ribosomal protein L6

Chain G:



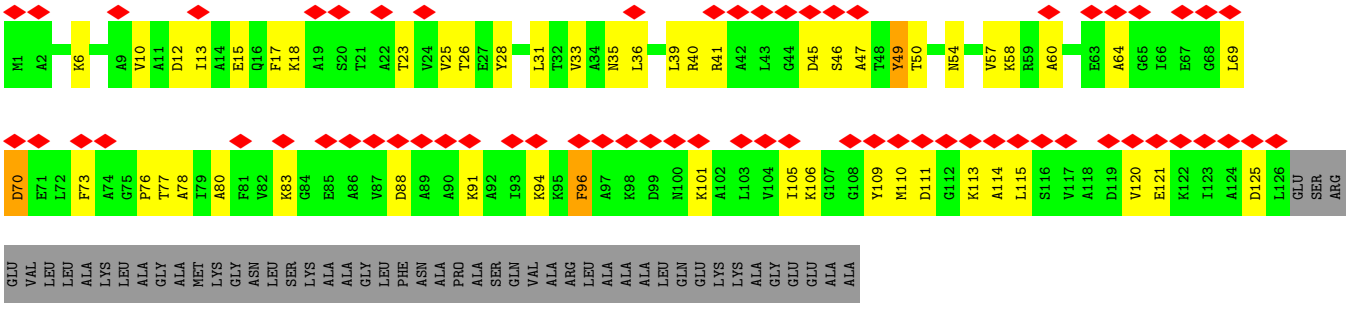
• Molecule 10: 50S ribosomal protein L9

Chain H:



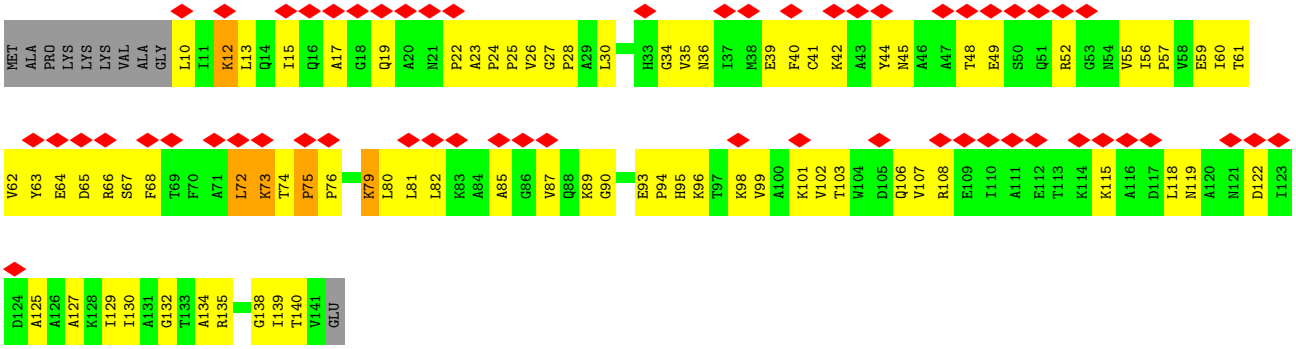
• Molecule 11: 50S ribosomal protein L10

Chain I:



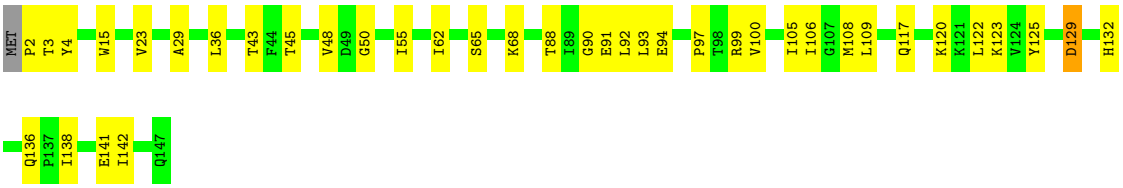
• Molecule 12: 50S ribosomal protein L11

Chain J:



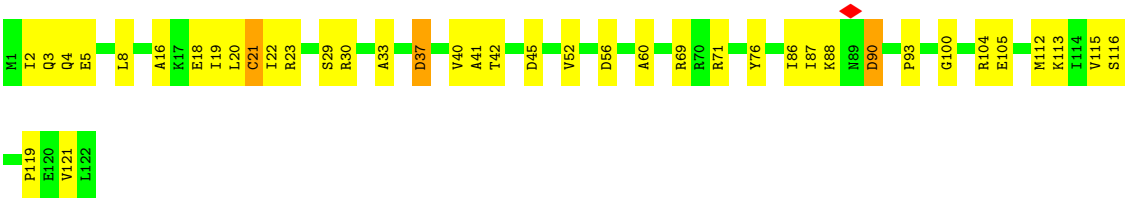
• Molecule 13: 50S Ribosomal Protein L13

Chain K:



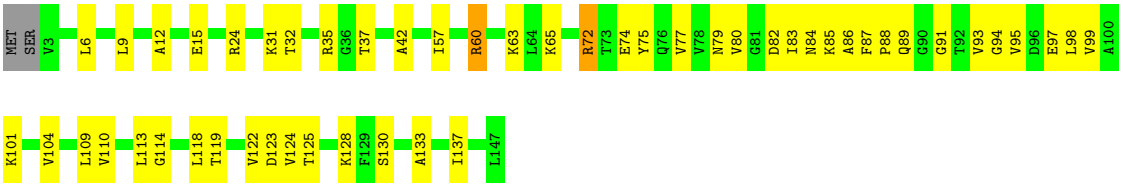
• Molecule 14: 50S ribosomal protein L14

Chain L:



• Molecule 15: 50S ribosomal protein L15

Chain M:

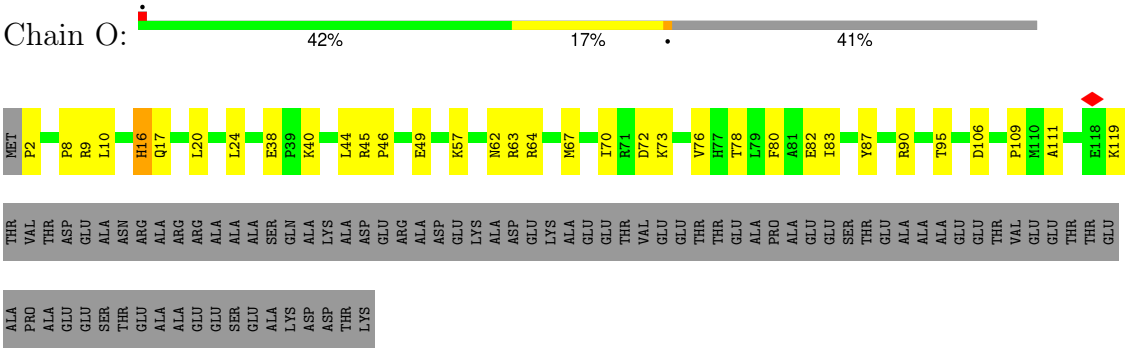


• Molecule 16: Large ribosomal subunit protein uL16

Chain N:

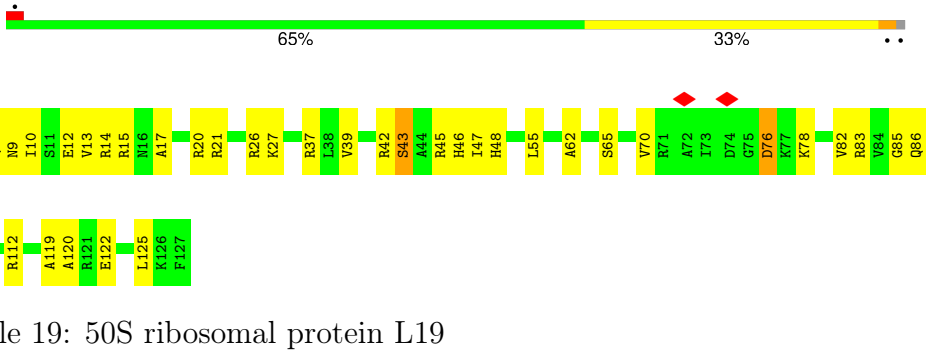
• Molecule 17: 50S ribosomal protein L17

Chain O:



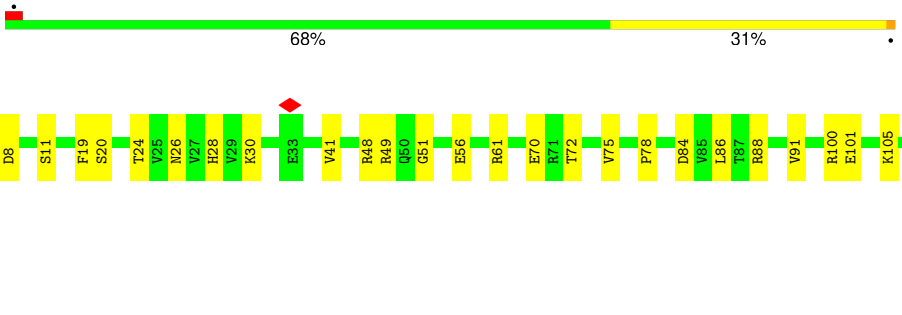
• Molecule 18: 50S Ribosomal Protein L18

Chain P:



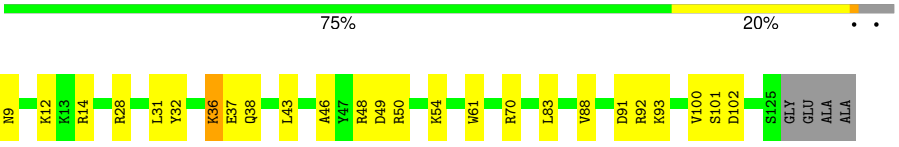
• Molecule 19: 50S ribosomal protein L19

Chain Q:



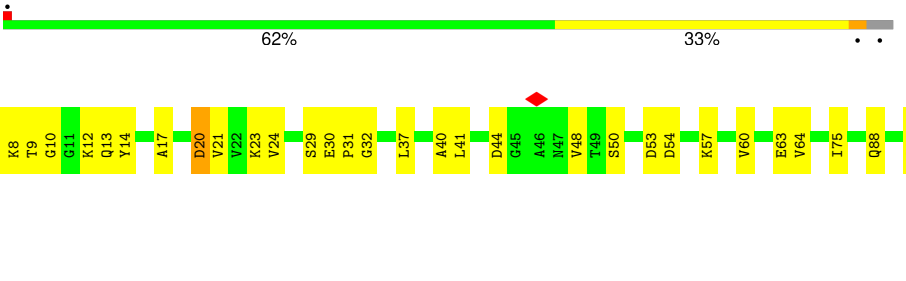
• Molecule 20: 50S Ribosomal Protein L20

Chain R:



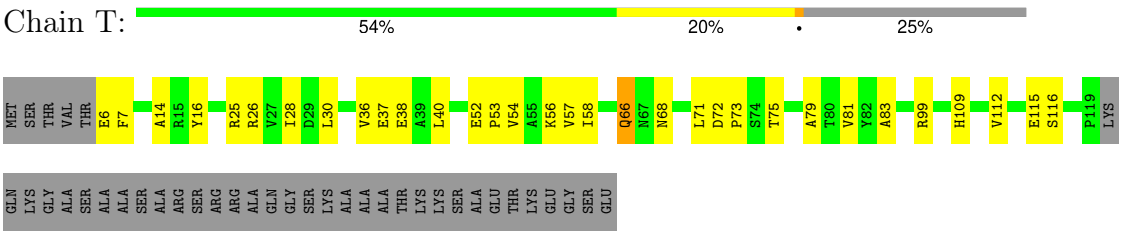
• Molecule 21: 50S Ribosomal Protein L21

Chain S:



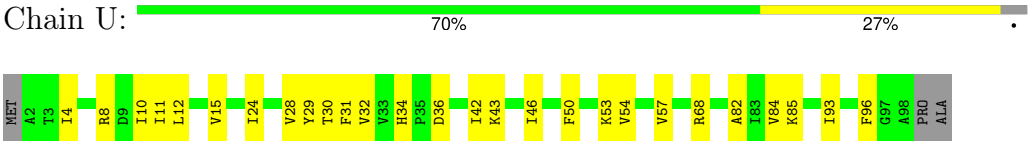
• Molecule 22: 50S Ribosomal Protein L22

Chain T:



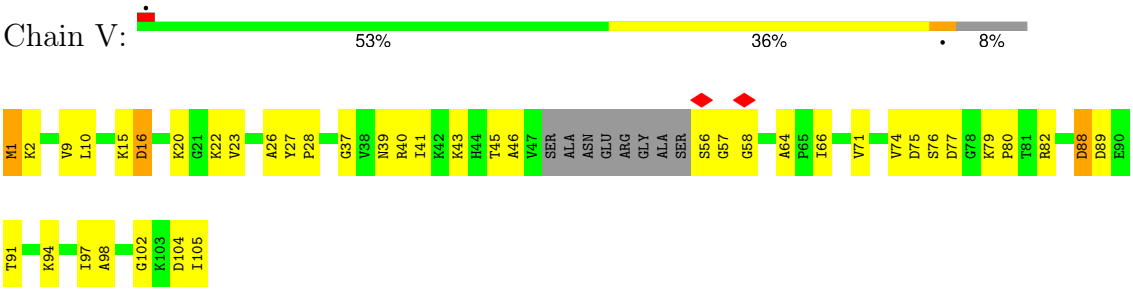
• Molecule 23: 50S Ribosomal Protein L23

Chain U:



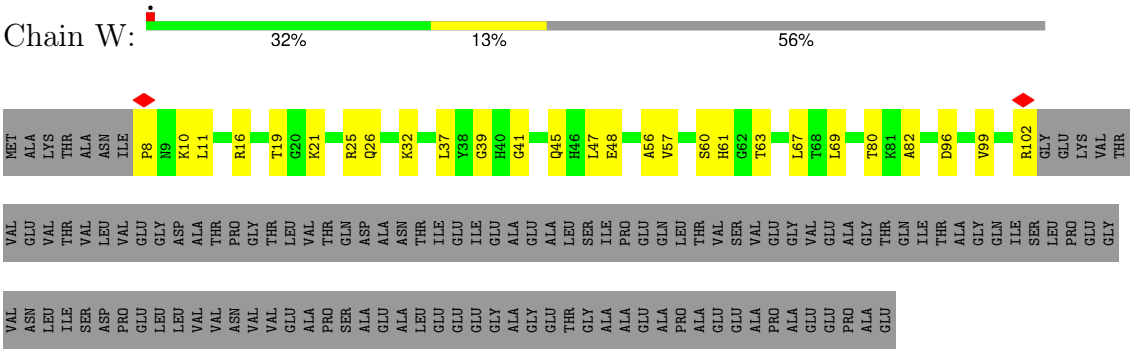
• Molecule 24: 50S ribosomal protein L24

Chain V:



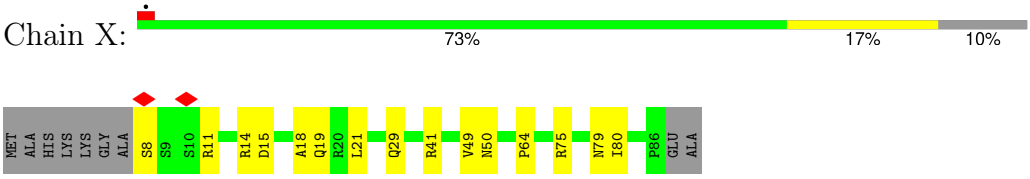
• Molecule 25: 50S ribosomal protein L25

Chain W:



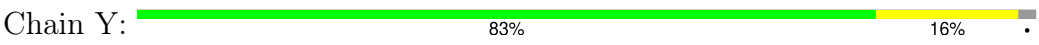
• Molecule 26: 50S ribosomal protein L27

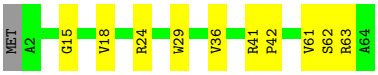
Chain X:



• Molecule 27: 50S Ribosomal Protein L28

Chain Y:



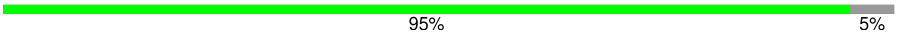


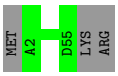
• Molecule 28: 50S ribosomal protein L29

Chain Z:

• Molecule 29: 50S ribosomal protein L32

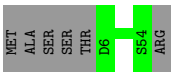
Chain b:





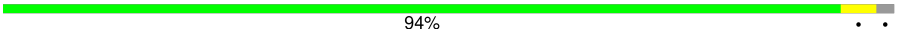
• Molecule 30: 50S Ribosomal Protein L33

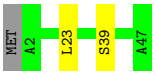
Chain c:



• Molecule 31: 50S ribosomal protein L34

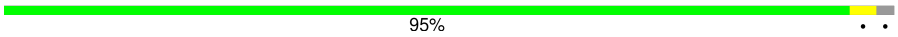
Chain d:





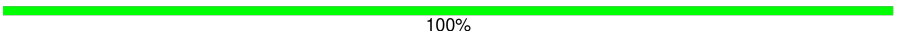
• Molecule 32: 50S ribosomal protein L35

Chain e:



• Molecule 33: 50S ribosomal protein L36

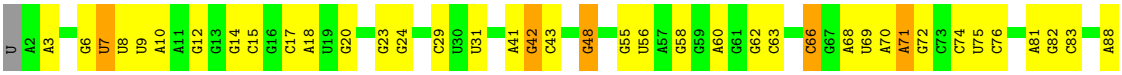
Chain f:

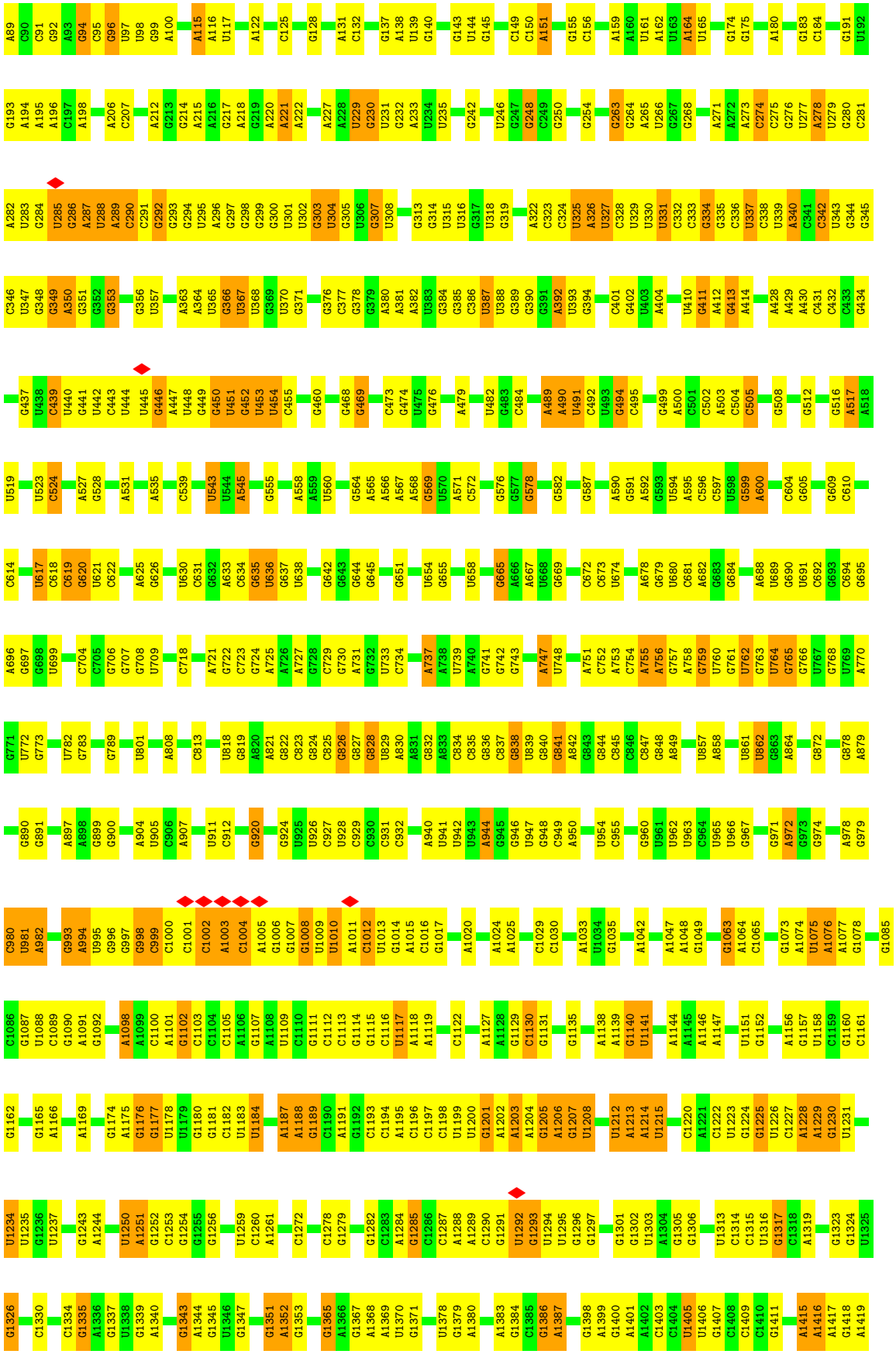


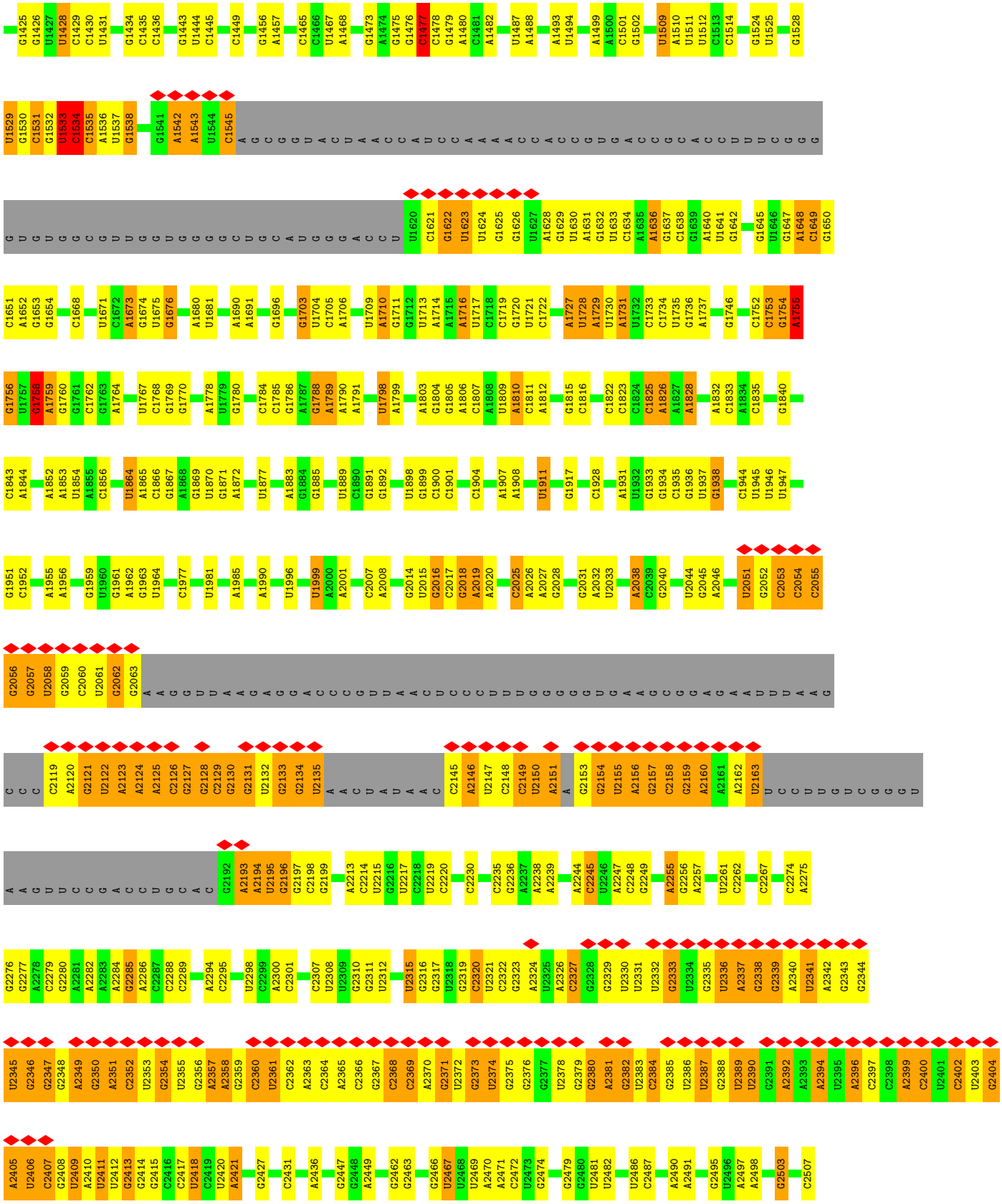
There are no outlier residues recorded for this chain.

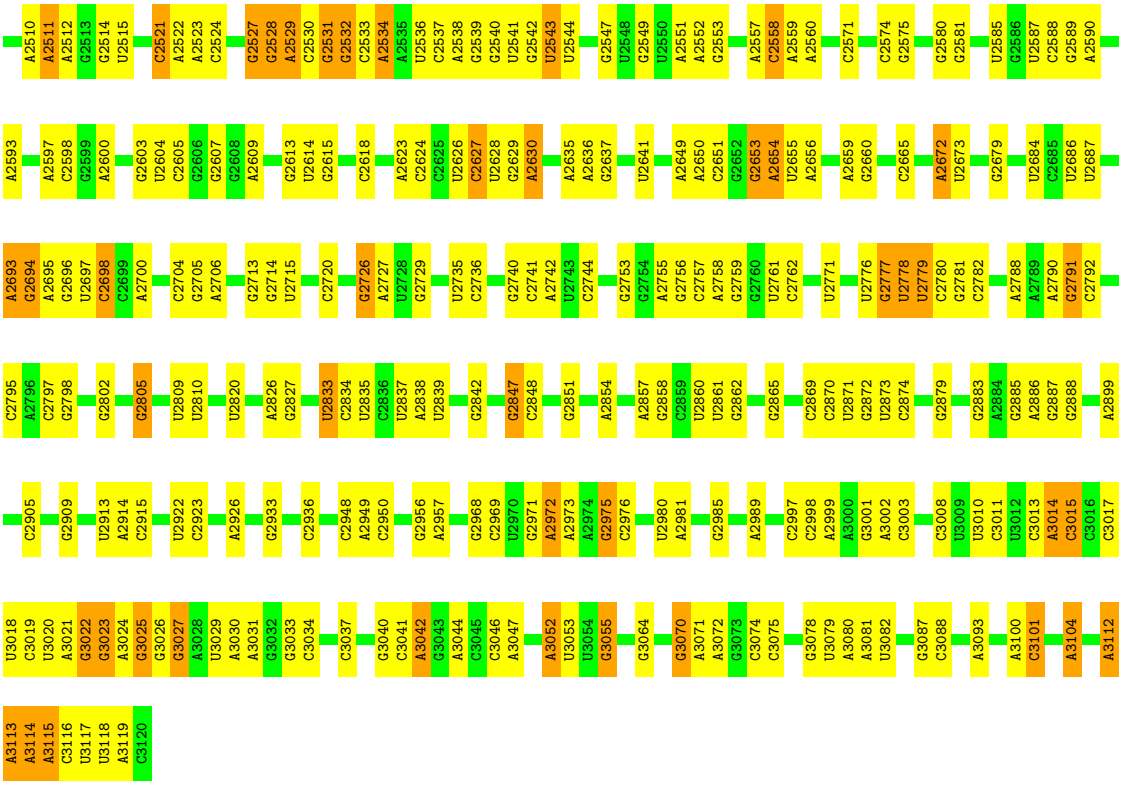
• Molecule 34: 23S ribosomal RNA

Chain A:






G1425 G1426 U1427 U1428 C1429 C1430 U1431 G1434 C1435 C1436 G1443 U1444 C1445 C1449 G1456 A1457 C1465 C1466 U1467 A1468 G1473 A1474 G1475 G1476 C1477 C1478 G1479 A1480 C1481 A1482 U1487 A1488 A1493 U1494 A1499 A1500 C1501 G1502 U1509 A1510 U1511 U1512 C1513 C1514 G1524 U1525 G1528
U1529 G1530 C1531 G1532 U1533 C1534 C1535 A1536 U1537 G1538 G1541 A1542 A1543 U1544 C1545
U1620 C1621 G1622 U1623 U1624 G1625 G1626 U1627 A1628 G1629 U1630 A1631 G1632 U1633 C1634 A1635 A1636 G1637 C1638 G1639 A1640 U1641 G1642 G1645 U1646 G1647 A1648 C1649 G1650
C1651 A1652 G1653 G1654 C1668 U1671 C1672 A1673 G1674 U1675 G1676 A1680 U1681 A1690 A1691 G1696 G1703 U1704 C1705 A1706 U1709 A1710 G1711 G1712 U1713 A1714 A1715 A1716 U1717 C1718 C1719 G1720 U1721 C1722 A1727 U1728 A1729 U1730 A1731 U1732 C1733 C1734 U1735 G1736 A1737 G1746 C1752 C1753 G1754 A1755
G1756 U1757 G1758 A1759 G1760 G1761 C1762 G1763 A1764 U1767 C1768 G1769 G1770 A1778 U1779 G1780 C1784 C1785 G1786 A1787 G1788 A1789 A1790 A1791 U1798 A1799 A1803 G1804 G1805 A1806 C1807 A1808 U1809 A1810 C1811 A1812 G1815 C1816 C1822 C1823 C1824 C1825 A1826 A1827 A1828 A1832 C1833 A1834 C1835 G1840
C1843 A1844 A1852 A1853 U1854 A1855 C1856 U1864 A1865 C1866 G1867 A1868 G1869 U1870 G1871 A1872 U1877 A1883 G1884 G1885 U1889 C1890 G1891 G1892 U1898 G1899 C1900 C1901 C1904 A1907 A1908 U1911 G1917 C1928 A1931 U1932 G1933 G1934 C1935 G1936 U1937 G1938 C1944 U1945 U1946 U1947
G1951 C1952 A1955 A1956 G1959 U1960 G1961 A1962 G1963 U1964 C1977 U1981 A1985 A1990 U1996 U1999 A2000 A2001 C2007 A2008 G2014 U2015 G2016 C2017 G2018 A2019 A2020 C2025 A2026 A2027 G2028 G2031 A2032 U2033 A2038 C2039 G2040 U2044 G2045 A2046 U2051 G2052 C2053 C2054 C2055
G2056 G2057 U2058 G2059 C2060 U2061 G2062 G2063
C2119 A2120 G2121 U2122 A2123 A2124 A2125 C2126 G2127 G2128 C2129 G2130 G2131 U2132 G2133 G2134 U2135 C2145 A2146 U2147 C2148 C2149 U2150 A2151 G2153 G2154 U2155 A2156 G2157 C2158 G2159 A2160 A2161 A2162 U2163
G2192 A2193 A2194 U2195 G2196 G2197 C2198 G2199 A2213 C2214 U2215 G2216 U2217 C2218 U2219 C2220 C2230 C2235 G2236 A2237 A2238 A2239 A2244 C2245 U2246 A2247 C2248 G2249 A2255 G2256 A2257 U2261 C2262 C2267 C2274 A2275
G2276 G2277 A2278 C2279 G2280 A2281 A2282 A2283 A2284 G2285 A2286 C2287 C2288 C2289 A2294 C2295 U2298 C2299 A2300 C2301 C2307 U2308 U2309 G2310 G2311 U2312 U2315 G2316 G2317 U2318 G2319 C2320 U2321 C2322 G2323 A2324 U2325 A2326 C2327 G2328 G2329 U2330 U2331 U2332 G2333 U2334 G2335 U2336 A2337 G2338 G2339 A2340 U2341 A2342 G2343 G2344
U2345 G2346 G2347 G2348 A2349 G2350 A2351 C2352 U2353 G2354 U2355 G2356 A2357 A2358 G2359 C2360 U2361 C2362 A2363 C2364 A2365 C2366 G2367 C2368 C2369 A2370 G2371 U2372 G2373 U2374 G2375 G2376 G2377 U2378 G2379 G2380 A2381 G2382 U2383 C2384 G2385 U2386 U2387 G2388 U2389 U2390 G2391 A2392 A2393 A2394 U2395 A2396 C2397 C2398 A2399 C2400 U2401 C2402 U2403 G2404
A2405 U2406 C2407 G2408 U2409 A2410 U2411 U2412 G2413 G2414 G2415 C2416 C2417 U2418 C2419 U2420 A2421 G2427 C2431 A2436 G2447 G2448 A2449 G2462 G2463 G2466 U2467 U2468 U2469 A2470 A2471 C2472 U2473 G2474 G2479 G2480 U2481 U2482 U2486 C2487 A2490 A2491 G2495 U2496 A2497 A2498 G2503 C2507


A2510 A2511 A2512 G2513 G2514 U2515 C2521 A2522 A2523 C2524 G2527 G2528 A2529 C2530 G2531 G2532 C2533 A2534 A2535 U2536 C2537 A2538 G2539 G2540 U2541 G2542 U2543 U2544 G2547 U2548 G2549 U2550 A2551 A2552 G2553 A2557 C2558 A2559 A2560 C2571 C2574 G2575 G2580 G2581 U2585 G2586
A2593 A2597 C2598 G2599 A2600 G2603 U2604 C2605 G2606 G2607 G2608 A2609 G2613 U2614 G2615 C2618 A2623 C2624 C2625 U2626 C2627 U2628 G2629 A2630 A2635 A2636 G2637 U2641 A2649 A2650 C2651 G2652 G2653 A2654 U2655 A2656 A2659 G2660 C2665 A2672 U2673 G2679 U2684 C2685 U2686 U2687
A2693 G2694 A2695 G2696 U2697 C2698 C2699 A2700 C2704 G2705 A2706 G2713 G2714 U2715 C2720 G2726 A2727 U2728 G2729 U2735 C2736 G2740 C2741 A2742 U2743 C2744 G2753 G2754 A2755 G2756 C2757 A2758 G2759 G2760 U2761 C2762 U2771 U2776 G2777 U2778 U2779 C2780 G2781 C2782 A2788 A2789 A2790 G2791 C2792
C2795 A2796 C2797 G2798 G2802 G2805 U2809 U2810 U2820 A2826 G2827 U2833 C2834 U2835 C2836 U2837 A2838 U2839 G2842 G2847 C2848 G2851 A2854 A2857 G2858 C2859 U2860 U2861 G2862 G2865 C2869 C2870 U2871 G2872 U2873 C2874 G2879 G2883 A2884 G2885 A2886 G2887 G2888 A2899
C2905 G2909 U2913 A2914 C2915 U2922 C2923 A2926 G2933 C2936 C2948 A2949 C2950 G2956 A2957 G2968 C2969 U2970 G2971 A2972 A2973 A2974 G2975 C2976 U2980 A2981 G2985 A2989 C2997 C2998 A2999 A3000 G3001 A3002 C3003 C3008 U3009 U3010 C3011 U3012 C3013 A3014 C3015 C3016 C3017
U3018 C3019 U3020 A3021 G3022 G3023 A3024 G3025 G3026 G3027 A3028 U3029 A3030 A3031 G3032 G3033 C3034 C3037 G3040 C3041 A3042 G3043 A3044 C3045 C3046 A3047 A3052 U3053 U3054 G3055 G3064 G3070 A3071 A3072 G3073 C3074 C3075 G3078 U3079 A3080 A3081 U3082 G3087 C3088 A3093 A3100 C3101 A3104 A3112
A3113 A3114 A3115 C3116 U3117 U3118 A3119 C3120

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	132147	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 ($e^-/Å^2$)	51.85	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	64000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	3.399	Depositor
Minimum map value	-1.560	Depositor
Average map value	0.007	Depositor
Map value standard deviation	0.111	Depositor
Recommended contour level	0.35	Depositor
Map size (Å)	430.4, 430.4, 430.4	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.076, 1.076, 1.076	Depositor

5 Model quality

5.1 Standard geometry

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

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	2	0.39	0/477	0.59	0/640
2	3	0.37	0/191	0.66	0/247
3	4	0.40	2/3558 (0.1%)	0.75	4/4822 (0.1%)
4	B	0.70	0/2821	0.85	0/4396
5	C	0.43	0/2153	0.59	0/2895
6	D	0.45	0/1609	0.61	1/2165 (0.0%)
7	E	0.40	0/1592	0.55	0/2153
8	F	0.43	2/1467 (0.1%)	0.76	2/1973 (0.1%)
9	G	0.34	0/1369	0.60	0/1848
10	H	0.33	0/1027	0.60	0/1398
11	I	0.27	0/925	0.52	0/1246
12	J	0.36	0/971	0.79	1/1315 (0.1%)
13	K	0.42	0/1157	0.54	0/1567
14	L	0.42	0/946	0.65	1/1268 (0.1%)
15	M	0.44	1/1091 (0.1%)	0.56	0/1457
16	N	0.42	0/1118	0.57	0/1506
17	O	0.42	0/945	0.57	0/1267
18	P	0.37	0/966	0.61	0/1298
19	Q	0.42	0/921	0.58	0/1236
20	R	0.48	0/1000	0.60	0/1341
21	S	0.45	1/764 (0.1%)	0.56	0/1030
22	T	0.41	0/887	0.57	0/1204
23	U	0.41	0/766	0.54	0/1030
24	V	0.36	0/738	0.58	0/987
25	W	0.33	0/745	0.57	0/1008
26	X	0.41	0/595	0.61	0/798
27	Y	0.46	0/478	0.57	0/641
28	Z	0.35	0/534	0.60	0/713
29	b	0.40	0/427	0.64	0/572
30	c	0.40	0/413	0.55	0/553
31	d	0.44	0/380	0.71	0/500
32	e	0.40	0/507	0.63	0/672

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
33	f	0.42	0/303	0.61	0/401
34	A	0.91	0/71013	0.87	49/110798 (0.0%)
All	All	0.79	6/104854 (0.0%)	0.81	58/156945 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
12	J	0	1

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	4	458	PRO	CG-CD	-11.45	1.12	1.50
3	4	458	PRO	CB-CG	-6.40	1.18	1.50
15	M	60	ARG	C-N	-5.80	1.20	1.34
8	F	9	PRO	CG-CD	-5.67	1.31	1.50
21	S	29	SER	C-N	-5.35	1.21	1.34
8	F	9	PRO	N-CD	5.05	1.54	1.47

All (58) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	4	458	PRO	N-CD-CG	-21.18	71.43	103.20
3	4	458	PRO	CA-CB-CG	-15.62	74.33	104.00
8	F	9	PRO	CA-N-CD	-12.34	94.22	111.50
8	F	9	PRO	N-CD-CG	-9.26	89.31	103.20
34	A	2245	C	C2-N1-C1'	8.52	128.17	118.80
34	A	342	C	N3-C2-O2	-8.39	116.03	121.90
34	A	2155	U	C2-N1-C1'	8.28	127.63	117.70
3	4	458	PRO	CB-CG-CD	8.24	138.63	106.50
34	A	2521	C	C2-N1-C1'	7.72	127.29	118.80
34	A	617	U	N1-C2-O2	7.61	128.12	122.80
34	A	617	U	C2-N1-C1'	7.49	126.68	117.70
34	A	2245	C	N1-C2-O2	7.09	123.15	118.90
34	A	2025	C	N3-C2-O2	-6.87	117.09	121.90
34	A	617	U	N3-C2-O2	-6.72	117.50	122.20
14	L	90	ASP	CB-CG-OD1	6.65	124.28	118.30
34	A	1753	C	C2-N1-C1'	6.54	126.00	118.80
34	A	1755	A	O4'-C1'-N9	6.45	113.36	108.20

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
34	A	342	C	N1-C2-O2	6.31	122.69	118.90
34	A	1428	U	C2-N1-C1'	6.30	125.26	117.70
34	A	1533	U	C2-N1-C1'	6.21	125.15	117.70
34	A	2245	C	N3-C2-O2	-6.20	117.56	121.90
34	A	619	C	C2-N1-C1'	6.13	125.55	118.80
6	D	113	ASP	CB-CG-OD1	6.08	123.77	118.30
34	A	962	U	N3-C2-O2	-6.08	117.95	122.20
34	A	599	G	O4'-C1'-N9	5.99	112.99	108.20
34	A	2155	U	N1-C2-O2	5.96	126.97	122.80
34	A	962	U	C2-N1-C1'	5.91	124.79	117.70
34	A	2245	C	C6-N1-C1'	-5.87	113.76	120.80
34	A	1758	G	P-O3'-C3'	5.82	126.68	119.70
12	J	73	LYS	N-CA-C	-5.81	95.31	111.00
34	A	905	U	C2-N1-C1'	5.76	124.61	117.70
34	A	1534	C	N1-C2-O2	5.75	122.35	118.90
34	A	1753	C	C6-N1-C1'	-5.75	113.90	120.80
34	A	1638	C	C2-N1-C1'	5.70	125.07	118.80
34	A	2155	U	C5-C6-N1	5.61	125.50	122.70
3	4	458	PRO	CA-N-CD	-5.58	103.68	111.50
34	A	2245	C	C6-N1-C2	-5.58	118.07	120.30
34	A	2195	U	C2-N1-C1'	5.58	124.39	117.70
34	A	2521	C	C6-N1-C1'	-5.56	114.13	120.80
34	A	619	C	N1-C2-O2	5.51	122.21	118.90
34	A	1533	U	N1-C2-O2	5.51	126.66	122.80
34	A	274	C	C2-N1-C1'	5.48	124.83	118.80
34	A	2374	U	C2-N1-C1'	5.45	124.23	117.70
34	A	2025	C	C2-N1-C1'	5.42	124.77	118.80
34	A	1102	G	O4'-C1'-N9	5.37	112.49	108.20
34	A	2230	C	N1-C2-O2	5.36	122.12	118.90
34	A	2320	C	C2-N1-C1'	5.35	124.69	118.80
34	A	2155	U	C6-N1-C1'	-5.30	113.78	121.20
34	A	2025	C	N1-C2-O2	5.28	122.07	118.90
34	A	2025	C	C6-N1-C2	-5.25	118.20	120.30
34	A	2374	U	C5-C4-O4	-5.22	122.77	125.90
34	A	617	U	C6-N1-C1'	-5.13	114.01	121.20
34	A	2155	U	N3-C2-O2	-5.11	118.62	122.20
34	A	1477	C	C2-N1-C1'	5.10	124.41	118.80
34	A	2372	U	C2-N1-C1'	5.06	123.77	117.70
34	A	1429	C	C2-N1-C1'	5.03	124.33	118.80
34	A	2805	G	O4'-C1'-N9	5.02	112.22	108.20
34	A	2698	C	N1-C2-O2	5.02	121.91	118.90

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
12	J	72	LEU	Mainchain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	2	474	0	500	16	0
2	3	189	0	205	4	0
3	4	3516	0	3564	198	0
4	B	2522	0	1285	45	0
5	C	2110	0	2165	43	0
6	D	1587	0	1630	58	0
7	E	1569	0	1607	36	0
8	F	1445	0	1476	94	0
9	G	1348	0	1399	58	0
10	H	1018	0	988	34	0
11	I	918	0	959	47	0
12	J	958	0	961	138	0
13	K	1130	0	1167	26	0
14	L	938	0	1000	25	0
15	M	1078	0	1151	36	0
16	N	1092	0	1128	22	0
17	O	928	0	972	25	0
18	P	956	0	991	39	0
19	Q	907	0	938	25	0
20	R	988	0	1038	24	0
21	S	754	0	801	24	0
22	T	873	0	909	22	0
23	U	756	0	802	22	0
24	V	732	0	782	33	0
25	W	735	0	756	18	0
26	X	586	0	601	14	0
27	Y	470	0	484	5	0
28	Z	531	0	541	15	0
29	b	423	0	463	0	0
30	c	405	0	411	0	0
31	d	377	0	411	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
32	e	502	0	541	0	0
33	f	299	0	324	0	0
34	A	63419	0	31905	1007	0
35	4	32	0	14	11	0
All	All	96565	0	64869	1959	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 (1959) 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)
12:J:56:ILE:CD1	12:J:74:THR:HG22	1.48	1.39
12:J:56:ILE:HD13	12:J:74:THR:CG2	1.49	1.39
12:J:56:ILE:HD12	12:J:74:THR:CA	1.52	1.37
12:J:56:ILE:CD1	12:J:74:THR:HA	1.58	1.31
12:J:24:PRO:HG2	12:J:25:PRO:CD	1.58	1.30
12:J:99:VAL:O	12:J:139:ILE:HG22	1.16	1.28
12:J:59:GLU:HB2	12:J:73:LYS:NZ	1.50	1.25
12:J:24:PRO:O	12:J:28:PRO:HD2	1.36	1.25
12:J:24:PRO:O	12:J:28:PRO:CD	1.84	1.24
3:4:444:HIS:CE1	12:J:24:PRO:CB	2.22	1.22
12:J:56:ILE:CD1	12:J:74:THR:CG2	2.11	1.22
3:4:21:ALA:HB1	3:4:88:ARG:HB3	1.23	1.21
12:J:24:PRO:CG	12:J:25:PRO:HD3	1.69	1.21
3:4:444:HIS:ND1	12:J:24:PRO:HB3	1.56	1.19
12:J:56:ILE:CD1	12:J:74:THR:CA	2.16	1.18
3:4:21:ALA:CB	3:4:88:ARG:HB3	1.75	1.17
12:J:98:LYS:HG2	12:J:138:GLY:O	1.45	1.16
12:J:99:VAL:O	12:J:139:ILE:CG2	1.94	1.15
3:4:444:HIS:CE1	12:J:24:PRO:HB3	1.84	1.11
34:A:273:A:H62	34:A:313:G:N2	1.51	1.06
34:A:2055:C:H41	34:A:2145:C:H5'	1.17	1.04
12:J:24:PRO:HG2	12:J:25:PRO:HD3	1.05	1.02
3:4:21:ALA:HB1	3:4:88:ARG:CB	1.90	1.02
9:G:18:THR:OG1	9:G:25:SER:N	1.93	0.99
34:A:1938:G:H21	34:A:1956:A:H62	1.05	0.98
12:J:98:LYS:CG	12:J:138:GLY:O	2.12	0.97
3:4:18:GLU:HB2	3:4:22:SER:H	1.29	0.97
12:J:24:PRO:CG	12:J:25:PRO:CD	2.34	0.95
12:J:24:PRO:HG2	12:J:25:PRO:HD2	1.49	0.94

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:J:24:PRO:CB	12:J:25:PRO:HD3	1.98	0.92
3:4:444:HIS:NE2	12:J:24:PRO:HB2	1.86	0.91
12:J:56:ILE:CD1	12:J:74:THR:CB	2.48	0.90
12:J:59:GLU:HB2	12:J:73:LYS:HZ3	1.37	0.90
12:J:59:GLU:HB2	12:J:73:LYS:HZ1	1.11	0.90
10:H:105:LYS:HD2	10:H:111:ASN:HB2	1.50	0.90
12:J:23:ALA:O	12:J:26:VAL:N	2.07	0.88
3:4:444:HIS:CE1	12:J:24:PRO:HB2	2.06	0.87
12:J:76:PRO:O	12:J:80:LEU:N	2.07	0.87
34:A:2129:C:H4'	34:A:2130:G:H8	1.40	0.86
3:4:444:HIS:CD2	12:J:24:PRO:HB2	2.10	0.86
34:A:2127:G:H3'	34:A:2128:G:H8	1.39	0.86
3:4:255:ASN:H	35:4:501:GCP:H3B1	1.39	0.86
34:A:2129:C:H4'	34:A:2130:G:H5'	1.58	0.85
34:A:2354:G:H5"	34:A:2356:G:H4'	1.55	0.85
34:A:285:U:H3'	34:A:286:G:H4'	1.58	0.85
34:A:273:A:N6	34:A:313:G:H21	1.75	0.85
34:A:273:A:N6	34:A:313:G:N2	2.24	0.85
3:4:201:ARG:HD2	3:4:205:GLU:HG2	1.57	0.84
3:4:198:VAL:HG21	3:4:203:PRO:HD2	1.59	0.84
12:J:79:LYS:HB2	12:J:82:LEU:HB2	1.60	0.84
34:A:297:G:H2'	34:A:298:G:H8	1.40	0.84
9:G:18:THR:HG1	9:G:25:SER:H	1.25	0.83
21:S:7:VAL:HG12	21:S:60:VAL:HG11	1.57	0.83
20:R:6:ARG:HD2	34:A:1365:G:H5"	1.61	0.82
3:4:18:GLU:CB	3:4:22:SER:H	1.92	0.82
34:A:1181:G:N1	34:A:1193:C:N3	2.28	0.82
6:D:119:LYS:NZ	34:A:2905:C:OP2	2.13	0.82
3:4:141:ILE:HG22	3:4:179:TRP:HZ2	1.44	0.82
12:J:23:ALA:O	12:J:27:GLY:N	2.13	0.82
12:J:23:ALA:O	12:J:24:PRO:C	2.17	0.81
12:J:56:ILE:HD11	12:J:74:THR:CG2	2.08	0.81
34:A:329:U:HO2'	34:A:446:G:H1	1.28	0.81
34:A:2133:G:H3'	34:A:2134:G:H8	1.42	0.81
8:F:41:VAL:HG22	8:F:103:MET:HG3	1.63	0.81
12:J:59:GLU:CB	12:J:73:LYS:HZ1	1.93	0.81
3:4:21:ALA:HB2	3:4:88:ARG:HB3	1.63	0.81
14:L:30:ARG:NH1	14:L:37:ASP:OD2	2.14	0.80
34:A:1181:G:N2	34:A:1193:C:O2	2.14	0.80
12:J:17:ALA:HB2	12:J:55:VAL:CA	2.12	0.80
26:X:64:PRO:HB3	34:A:759:G:H1	1.47	0.80

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:G:18:THR:HG21	9:G:25:SER:HB3	1.63	0.80
22:T:68:ASN:ND2	34:A:582:G:N3	2.31	0.79
12:J:98:LYS:NZ	12:J:140:THR:HG22	1.97	0.79
5:C:85:ASP:OD2	5:C:88:ARG:NH1	2.16	0.79
3:4:426:ARG:HB3	3:4:429:LEU:HD13	1.65	0.79
24:V:104:ASP:OD2	24:V:105:ILE:N	2.16	0.79
12:J:59:GLU:CB	12:J:73:LYS:NZ	2.42	0.78
6:D:104:GLU:N	6:D:104:GLU:OE1	2.17	0.78
12:J:56:ILE:HD11	12:J:74:THR:N	1.99	0.78
27:Y:18:VAL:HG12	27:Y:24:ARG:HG2	1.65	0.77
34:A:347:U:H2'	34:A:348:G:H8	1.47	0.77
34:A:273:A:H62	34:A:313:G:H21	1.27	0.77
12:J:17:ALA:HB2	12:J:55:VAL:N	1.99	0.77
8:F:142:GLN:HE21	8:F:156:PRO:HA	1.49	0.77
12:J:56:ILE:HD11	12:J:73:LYS:C	2.05	0.77
34:A:293:G:H2'	34:A:294:G:C8	2.20	0.77
9:G:17:VAL:HA	9:G:26:VAL:HG12	1.66	0.76
26:X:14:ARG:NH1	34:A:2503:G:N7	2.32	0.76
12:J:55:VAL:O	12:J:75:PRO:CB	2.34	0.76
34:A:2131:G:H3'	34:A:2132:U:H6	1.50	0.76
7:E:186:TYR:O	7:E:190:ASN:HB2	1.85	0.76
3:4:18:GLU:HB2	3:4:22:SER:N	2.00	0.75
20:R:36:LYS:NZ	34:A:1367:G:N7	2.34	0.75
12:J:24:PRO:O	12:J:28:PRO:HD3	1.86	0.75
12:J:56:ILE:CD1	12:J:74:THR:N	2.50	0.75
3:4:237:ARG:HG2	3:4:240:ARG:HH12	1.51	0.75
34:A:2358:A:HO2'	34:A:2383:U:HO2'	1.35	0.74
9:G:35:LEU:HB2	9:G:76:LEU:HD22	1.70	0.74
10:H:4:ILE:HG13	10:H:45:ARG:HA	1.69	0.74
34:A:297:G:H2'	34:A:298:G:C8	2.22	0.74
3:4:444:HIS:CE1	12:J:24:PRO:CA	2.69	0.74
34:A:960:G:OP2	34:A:960:G:N2	2.15	0.74
22:T:81:VAL:HG12	22:T:112:VAL:HG22	1.68	0.74
34:A:1157:G:O6	34:A:1234:U:O2	2.05	0.73
3:4:444:HIS:ND1	12:J:24:PRO:CB	2.34	0.73
17:O:10:LEU:HD21	17:O:40:LYS:HG2	1.71	0.73
17:O:106:ASP:OD2	34:A:1867:G:O2'	2.06	0.73
34:A:1938:G:N2	34:A:1956:A:H62	1.85	0.73
34:A:2317:G:H1	34:A:2418:U:H3	1.32	0.73
3:4:23:LEU:HA	3:4:102:LYS:HE2	1.70	0.73
3:4:300:THR:HB	3:4:318:THR:HG23	1.70	0.73

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2055:C:N4	34:A:2145:C:H5'	1.99	0.73
34:A:2361:U:H3	34:A:2376:G:H1	1.36	0.73
21:S:30:GLU:OE2	21:S:32:GLY:N	2.16	0.73
8:F:23:LEU:HD11	8:F:175:ALA:HB1	1.70	0.73
9:G:96:ARG:HH22	9:G:98:GLN:HB3	1.53	0.73
24:V:10:LEU:HD13	24:V:80:PRO:HG3	1.70	0.73
34:A:1996:U:OP2	34:A:2001:A:N6	2.22	0.72
34:A:2255:A:N3	34:A:2679:G:O2'	2.22	0.72
34:A:2055:C:H42	34:A:2122:U:H2'	1.54	0.72
12:J:56:ILE:HD13	12:J:74:THR:CB	2.14	0.72
27:Y:41:ARG:HG2	27:Y:42:PRO:HD2	1.70	0.72
3:4:330:HIS:ND1	3:4:330:HIS:O	2.20	0.72
10:H:84:ALA:HB3	10:H:94:SER:H	1.54	0.72
34:A:2474:G:O2'	34:A:2720:C:OP1	2.08	0.72
34:A:298:G:N2	34:A:300:G:O2'	2.22	0.71
9:G:2:SER:HA	9:G:55:ARG:HH12	1.54	0.71
34:A:2158:C:H4'	34:A:2159:G:H2'	1.70	0.71
3:4:420:VAL:HG11	3:4:463:LEU:HB3	1.71	0.71
34:A:3023:G:H2'	34:A:3024:A:H8	1.55	0.71
25:W:37:LEU:HB3	25:W:45:GLN:HB2	1.71	0.71
3:4:21:ALA:CB	3:4:88:ARG:CB	2.54	0.71
20:R:49:ASP:OD2	34:A:651:G:N2	2.24	0.71
8:F:20:ARG:HG3	8:F:35:ILE:HG21	1.71	0.71
14:L:3:GLN:NE2	34:A:2219:U:O2	2.23	0.71
20:R:92:ARG:NH2	34:A:1272:C:OP1	2.24	0.71
34:A:2123:A:N7	34:A:2145:C:C4	2.59	0.71
18:P:43:SER:O	18:P:112:ARG:NH2	2.24	0.70
3:4:376:GLY:HA3	3:4:379:LEU:HG	1.73	0.70
20:R:37:GLU:OE2	34:A:1367:G:N2	2.19	0.70
3:4:24:ARG:HD2	3:4:88:ARG:HE	1.57	0.70
9:G:2:SER:N	34:A:2973:A:OP1	2.24	0.70
18:P:9:ASN:OD1	18:P:10:ILE:N	2.25	0.70
9:G:12:PRO:HG3	9:G:81:THR:HG22	1.73	0.70
3:4:395:ARG:HB2	35:4:501:GCP:N1	2.07	0.70
34:A:1181:G:O6	34:A:1193:C:N4	2.25	0.70
4:B:26:A:H2	4:B:115:A:H1'	1.57	0.69
8:F:15:TYR:HA	8:F:19:ILE:HG12	1.74	0.69
3:4:76:THR:HG21	3:4:276:LEU:HB2	1.72	0.69
34:A:3023:G:H2'	34:A:3024:A:C8	2.27	0.69
8:F:138:GLY:HA2	8:F:160:ASP:HA	1.74	0.69
34:A:2127:G:H3'	34:A:2128:G:C8	2.26	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:29:TYR:CD1	8:F:34:GLN:HB2	2.28	0.69
24:V:15:LYS:NZ	34:A:390:G:O2'	2.25	0.69
12:J:119:ASN:ND2	34:A:1176:G:N3	2.38	0.69
34:A:1415:A:H4'	34:A:1416:A:H5"	1.75	0.69
5:C:175:LEU:HD11	5:C:185:VAL:HG12	1.75	0.69
34:A:2123:A:N7	34:A:2145:C:C5	2.61	0.69
22:T:56:LYS:NZ	34:A:576:G:O2'	2.21	0.68
34:A:2051:U:H4'	34:A:2160:A:H62	1.58	0.68
34:A:7:U:O2'	34:A:8:U:O4'	2.12	0.68
34:A:289:A:H2'	34:A:290:C:H5	1.59	0.68
34:A:2851:G:N2	34:A:3001:G:OP2	2.27	0.68
8:F:53:ASP:OD1	8:F:54:ALA:N	2.27	0.68
34:A:737:A:N1	34:A:2593:A:O2'	2.25	0.68
12:J:56:ILE:CD1	12:J:73:LYS:C	2.61	0.68
12:J:81:LEU:HD21	12:J:102:VAL:HG21	1.74	0.68
9:G:17:VAL:O	9:G:45:ARG:NH1	2.27	0.68
23:U:34:HIS:ND1	23:U:36:ASP:OD1	2.25	0.68
34:A:1411:G:OP1	34:A:2933:G:O2'	2.08	0.68
14:L:69:ARG:HE	14:L:105:GLU:HG2	1.59	0.68
15:M:94:GLY:HA2	15:M:125:THR:HG22	1.76	0.68
34:A:1754:G:H1	34:A:1759:A:H2	1.40	0.68
5:C:257:THR:OG1	34:A:2014:G:O2'	2.12	0.68
3:4:444:HIS:CG	12:J:24:PRO:CB	2.77	0.68
14:L:4:GLN:NE2	14:L:22:ILE:O	2.25	0.68
4:B:3:U:O2'	4:B:5:C:OP2	2.10	0.67
6:D:144:VAL:HA	6:D:147:ARG:HG3	1.76	0.67
20:R:48:ARG:NH1	20:R:49:ASP:OD1	2.26	0.67
34:A:1756:G:H1'	34:A:1758:G:H22	1.59	0.67
3:4:371:ILE:HG21	3:4:391:PHE:HD1	1.57	0.67
34:A:1195:A:H2	34:A:1206:A:H8	1.42	0.67
12:J:56:ILE:HG12	12:J:72:LEU:HB3	1.76	0.67
34:A:499:G:OP2	34:A:2630:A:O2'	2.13	0.67
34:A:587:G:N1	34:A:590:A:OP2	2.28	0.67
8:F:108:ASP:HA	8:F:111:ILE:HG22	1.76	0.67
6:D:27:THR:OG1	6:D:196:GLY:O	2.13	0.67
16:N:118:LEU:HD12	16:N:131:ILE:HG23	1.77	0.67
34:A:978:A:H2'	34:A:979:G:H8	1.58	0.67
13:K:141:GLU:OE1	13:K:142:ILE:N	2.28	0.67
34:A:2527:G:O6	34:A:2538:A:N6	2.27	0.67
17:O:90:ARG:NH2	34:A:3101:C:O2'	2.27	0.67
34:A:2123:A:C8	34:A:2145:C:C2	2.82	0.67

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:J:24:PRO:CB	12:J:25:PRO:CD	2.70	0.67
15:M:99:VAL:HG13	15:M:104:VAL:HG23	1.76	0.67
18:P:8:GLN:HG2	18:P:12:GLU:OE2	1.95	0.67
12:J:129:ILE:HD11	34:A:1199:U:H1'	1.77	0.67
34:A:1864:U:O2	34:A:1865:A:N6	2.27	0.67
34:A:2350:G:H2'	34:A:2351:A:C8	2.30	0.66
6:D:148:PRO:O	34:A:2735:U:O2'	2.13	0.66
18:P:46:HIS:HB3	18:P:65:SER:HB3	1.76	0.66
3:4:21:ALA:HB2	3:4:88:ARG:HD2	1.75	0.66
3:4:291:ASP:OD1	3:4:292:GLY:N	2.29	0.66
8:F:68:THR:HG23	8:F:70:GLN:H	1.58	0.66
26:X:11:ARG:O	26:X:14:ARG:NH2	2.23	0.66
34:A:1478:C:O2'	34:A:2026:A:N3	2.27	0.66
3:4:234:ASP:OD1	3:4:235:THR:N	2.28	0.66
34:A:2399:A:HO2'	34:A:2400:C:H6	1.43	0.66
3:4:85:LEU:HD21	3:4:109:VAL:HG21	1.78	0.66
11:I:69:LEU:HB3	11:I:109:TYR:HB3	1.77	0.66
12:J:23:ALA:HA	12:J:26:VAL:HB	1.78	0.66
34:A:286:G:H2'	34:A:287:A:H8	1.59	0.66
34:A:1758:G:O2'	34:A:1759:A:OP2	2.11	0.66
34:A:1212:U:H3'	34:A:1213:A:H5"	1.78	0.66
6:D:39:ILE:O	6:D:44:ARG:NH2	2.26	0.66
34:A:263:G:O2'	34:A:517:A:N3	2.26	0.66
34:A:289:A:N7	34:A:298:G:N1	2.39	0.66
3:4:195:GLY:HA2	3:4:204:GLY:HA2	1.78	0.65
6:D:39:ILE:HD11	6:D:95:TYR:HB2	1.78	0.65
12:J:22:PRO:HG2	12:J:41:CYS:SG	2.36	0.65
11:I:47:ALA:HB1	11:I:80:ALA:HB1	1.78	0.65
8:F:17:GLU:N	8:F:17:GLU:OE2	2.27	0.65
34:A:137:G:H21	34:A:1524:G:H1'	1.62	0.65
34:A:944:A:N7	34:A:2471:A:O2'	2.29	0.65
34:A:2051:U:O2	34:A:2194:A:O2'	2.13	0.65
34:A:2121:G:H5'	34:A:2145:C:P	2.37	0.65
34:A:2123:A:C8	34:A:2145:C:N3	2.65	0.65
3:4:289:PHE:CE1	3:4:295:PHE:HB3	2.32	0.65
34:A:2394:A:OP1	34:A:2397:C:N4	2.29	0.65
17:O:70:ILE:HG23	17:O:72:ASP:H	1.61	0.65
12:J:24:PRO:O	12:J:28:PRO:CG	2.44	0.65
17:O:38:GLU:HG3	17:O:111:ALA:HB2	1.79	0.65
34:A:1184:U:N3	34:A:1187:A:OP2	2.27	0.65
7:E:105:LYS:NZ	34:A:699:U:OP2	2.29	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2528:G:H22	34:A:2536:U:H3	1.44	0.65
4:B:53:A:N7	18:P:45:ARG:NH2	2.45	0.64
8:F:14:ARG:O	8:F:18:GLU:HG3	1.96	0.64
9:G:165:TYR:HB2	9:G:168:GLU:HG2	1.79	0.64
24:V:45:THR:O	34:A:571:A:O2'	2.14	0.64
13:K:3:THR:HG21	20:R:61:TRP:HE1	1.62	0.64
34:A:1122:C:H2'	34:A:1129:G:H2'	1.78	0.64
34:A:1202:A:O3'	34:A:1223:U:O2'	2.13	0.64
3:4:444:HIS:CG	12:J:24:PRO:HB3	2.29	0.64
12:J:82:LEU:HD11	12:J:90:GLY:HA2	1.80	0.64
34:A:523:U:H2'	34:A:524:C:H5'	1.79	0.64
3:4:108:GLU:HA	3:4:111:LEU:HG	1.79	0.64
3:4:136:VAL:HG13	3:4:138:VAL:H	1.63	0.64
34:A:2390:U:H2'	34:A:2392:A:N7	2.12	0.64
12:J:56:ILE:HD11	12:J:74:THR:CA	2.24	0.64
20:R:83:LEU:HD22	20:R:88:VAL:HG21	1.79	0.64
34:A:2158:C:H5'	34:A:2159:G:C4	2.33	0.64
1:2:6:ILE:HD11	1:2:54:VAL:HG21	1.80	0.64
3:4:143:ARG:NH1	3:4:305:ARG:O	2.29	0.64
34:A:1696:G:O2'	34:A:1736:G:O6	2.15	0.64
34:A:2054:C:O2	34:A:2145:C:C2	2.51	0.63
8:F:27:PHE:CZ	8:F:35:ILE:HG13	2.33	0.63
12:J:24:PRO:HB2	12:J:25:PRO:HD3	1.80	0.63
34:A:634:C:H3'	34:A:635:G:H5"	1.80	0.63
34:A:2129:C:H4'	34:A:2130:G:C8	2.29	0.63
3:4:178:GLY:O	3:4:181:GLU:HG3	1.98	0.63
8:F:27:PHE:HZ	8:F:35:ILE:HG13	1.63	0.63
34:A:2123:A:C8	34:A:2145:C:C4	2.86	0.63
3:4:286:ARG:HG3	34:A:2697:U:H1'	1.80	0.63
7:E:127:VAL:HG11	7:E:148:LEU:HD11	1.80	0.63
12:J:10:LEU:N	12:J:60:ILE:O	2.32	0.63
3:4:285:ARG:NH2	34:A:2695:A:OP1	2.30	0.63
5:C:124:ASP:OD1	5:C:129:ASN:ND2	2.32	0.63
26:X:15:ASP:OD1	34:A:2487:C:N4	2.31	0.63
34:A:66:C:O2	34:A:70:A:O2'	2.16	0.63
34:A:242:G:O2'	34:A:254:G:O6	2.13	0.63
6:D:40:ARG:HD2	6:D:83:GLU:OE1	1.99	0.63
9:G:20:ASN:N	9:G:20:ASN:OD1	2.30	0.63
34:A:279:U:H2'	34:A:280:G:H8	1.64	0.63
34:A:2575:G:O2'	34:A:2590:A:N6	2.30	0.63
17:O:57:LYS:O	17:O:62:ASN:ND2	2.32	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:453:U:H1'	34:A:454:U:H5	1.63	0.63
34:A:978:A:H2'	34:A:979:G:C8	2.34	0.63
34:A:2872:G:H2'	34:A:2873:U:C6	2.33	0.63
3:4:107:ARG:NH2	3:4:136:VAL:O	2.32	0.63
5:C:37:LEU:HD13	5:C:62:TYR:HB2	1.81	0.63
10:H:114:LYS:NZ	34:A:282:A:OP1	2.28	0.63
34:A:273:A:N6	34:A:313:G:C2	2.66	0.63
14:L:93:PRO:HD2	14:L:113:LYS:HE3	1.81	0.62
3:4:332:VAL:HB	3:4:343:ILE:HD11	1.81	0.62
4:B:111:C:H2'	4:B:112:C:C6	2.34	0.62
23:U:85:LYS:NZ	34:A:1514:C:OP1	2.27	0.62
34:A:1195:A:H2	34:A:1206:A:C8	2.16	0.62
26:X:19:GLN:NE2	34:A:2486:U:OP2	2.32	0.62
1:2:57:GLU:N	1:2:57:GLU:OE1	2.32	0.62
34:A:1625:G:N1	34:A:1626:G:O6	2.31	0.62
11:I:58:LYS:HA	11:I:73:PHE:HE2	1.64	0.62
22:T:71:LEU:HD21	22:T:116:SER:HB2	1.80	0.62
34:A:1313:U:H2'	34:A:1314:C:H6	1.65	0.62
5:C:208:LYS:HG3	5:C:211:ARG:HB2	1.81	0.62
9:G:35:LEU:HD13	9:G:76:LEU:HD13	1.80	0.62
10:H:131:PRO:HB2	10:H:143:LYS:NZ	2.15	0.62
13:K:90:GLY:O	13:K:94:GLU:HG3	1.99	0.62
34:A:277:U:H2'	34:A:278:A:C8	2.35	0.62
2:3:17:ASN:ND2	34:A:1103:C:O2	2.31	0.62
11:I:58:LYS:HD2	11:I:70:ASP:HB3	1.81	0.62
8:F:111:ILE:HA	8:F:115:LEU:HD12	1.80	0.62
24:V:15:LYS:HZ3	34:A:411:G:H1	1.48	0.62
34:A:2294:A:H2'	34:A:2295:C:C6	2.35	0.62
13:K:125:TYR:OH	13:K:132:HIS:NE2	2.32	0.62
34:A:1201:G:N2	34:A:1204:A:OP2	2.33	0.62
34:A:2131:G:H3'	34:A:2132:U:C6	2.32	0.62
6:D:160:VAL:HG21	34:A:2842:G:H21	1.65	0.62
34:A:1479:G:N2	34:A:1482:A:OP2	2.29	0.62
5:C:89:THR:HG21	34:A:2038:A:H5"	1.82	0.61
6:D:64:LYS:HG2	34:A:3011:C:H4'	1.80	0.61
34:A:2410:A:H2'	34:A:2411:U:C6	2.35	0.61
15:M:65:LYS:NZ	34:A:2641:U:OP1	2.28	0.61
26:X:75:ARG:HD2	34:A:2558:C:H42	1.65	0.61
34:A:326:A:N6	34:A:450:G:H21	1.98	0.61
34:A:823:C:H2'	34:A:824:G:H8	1.65	0.61
12:J:62:VAL:HA	12:J:67:SER:HB2	1.81	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:997:G:H2'	34:A:998:G:H5'	1.83	0.61
15:M:80:VAL:HG22	15:M:114:GLY:HA2	1.83	0.61
34:A:1199:U:H2'	34:A:1200:U:C6	2.35	0.61
34:A:2055:C:H5"	34:A:2149:C:C5	2.35	0.61
3:4:370:LYS:HG2	35:4:501:GCP:C5	2.31	0.61
12:J:57:PRO:N	12:J:73:LYS:O	2.33	0.61
34:A:450:G:O2'	34:A:451:U:H5'	2.01	0.61
3:4:379:LEU:N	3:4:383:ARG:HB2	2.16	0.61
18:P:42:ARG:HA	18:P:47:ILE:HG13	1.83	0.61
34:A:1770:G:OP1	34:A:1937:U:O2'	2.13	0.61
34:A:2125:A:H2'	34:A:2125:A:N3	2.16	0.61
10:H:100:VAL:HG21	10:H:146:LEU:HD21	1.81	0.61
14:L:115:VAL:HG13	14:L:121:VAL:HG21	1.82	0.61
8:F:125:SER:H	8:F:185:LYS:NZ	1.98	0.61
34:A:742:G:O2'	34:A:2575:G:OP1	2.17	0.61
34:A:1223:U:H2'	34:A:1224:G:H8	1.66	0.61
25:W:21:LYS:O	25:W:25:ARG:HG3	2.01	0.61
34:A:2336:U:O2'	34:A:2337:A:O5'	2.18	0.61
7:E:189:LEU:HD13	15:M:9:LEU:HD11	1.83	0.60
34:A:920:G:N2	34:A:944:A:OP1	2.34	0.60
34:A:1710:A:H62	34:A:1716:A:H5"	1.66	0.60
34:A:2133:G:H5"	34:A:2134:G:N7	2.16	0.60
4:B:59:A:N3	18:P:9:ASN:ND2	2.49	0.60
34:A:2412:U:H2'	34:A:2413:G:C8	2.36	0.60
18:P:62:ALA:O	18:P:91:ARG:NH1	2.34	0.60
25:W:32:LYS:NZ	25:W:48:GLU:OE1	2.30	0.60
34:A:2339:G:O6	34:A:2394:A:N6	2.33	0.60
34:A:2359:G:C2	34:A:2360:C:H1'	2.36	0.60
34:A:3115:A:H2'	34:A:3116:C:C6	2.36	0.60
6:D:83:GLU:OE2	34:A:2860:U:H4'	2.01	0.60
17:O:67:MET:HG2	17:O:76:VAL:HG21	1.84	0.60
34:A:1003:A:N3	34:A:1004:C:O2'	2.30	0.60
24:V:1:MET:HE2	24:V:28:PRO:HB3	1.83	0.60
8:F:29:TYR:HD1	8:F:34:GLN:HB2	1.65	0.60
11:I:88:ASP:OD1	11:I:88:ASP:N	2.32	0.60
34:A:289:A:H2'	34:A:290:C:C5	2.36	0.60
34:A:2062:G:H21	34:A:2119:C:H5	1.49	0.60
34:A:2726:G:H5"	34:A:2727:A:H5"	1.84	0.60
3:4:348:THR:O	3:4:352:GLU:HG2	2.00	0.60
34:A:1728:U:H5'	34:A:1729:A:O5'	2.02	0.60
34:A:2552:A:H2'	34:A:2553:G:C8	2.37	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:95:ARG:NH2	34:A:2537:C:OP1	2.34	0.60
22:T:54:VAL:O	22:T:58:ILE:HG13	2.02	0.60
34:A:353:G:H1	34:A:442:U:H3	1.47	0.60
3:4:63:ALA:O	3:4:66:SER:OG	2.15	0.60
3:4:50:VAL:HG12	3:4:83:GLU:HB3	1.84	0.59
11:I:25:VAL:HG12	11:I:106:LYS:HG3	1.84	0.59
12:J:56:ILE:HD13	12:J:74:THR:HG22	0.67	0.59
13:K:129:ASP:OD1	13:K:129:ASP:N	2.34	0.59
14:L:5:GLU:HA	14:L:20:LEU:HD21	1.84	0.59
34:A:292:G:OP1	34:A:344:G:N2	2.35	0.59
34:A:747:A:N6	34:A:768:G:O2'	2.35	0.59
3:4:280:LEU:HA	3:4:301:VAL:HG13	1.83	0.59
14:L:2:ILE:HG13	14:L:8:LEU:HD21	1.84	0.59
34:A:2054:C:O2	34:A:2145:C:C4	2.55	0.59
11:I:26:THR:HG22	11:I:105:ILE:HG23	1.85	0.59
12:J:76:PRO:CB	12:J:79:LYS:HG3	2.32	0.59
14:L:112:MET:O	14:L:116:SER:OG	2.19	0.59
34:A:292:G:H2'	34:A:293:G:C8	2.37	0.59
34:A:747:A:H2'	34:A:748:U:O4'	2.03	0.59
4:B:31:C:OP1	18:P:14:ARG:NH1	2.35	0.59
9:G:19:ILE:O	9:G:19:ILE:HG22	2.02	0.59
20:R:50:ARG:O	20:R:54:LYS:NZ	2.36	0.59
34:A:279:U:H3	34:A:307:G:H1	1.51	0.59
34:A:635:G:O2'	34:A:636:U:O5'	2.20	0.59
13:K:108:MET:SD	34:A:1256:G:N2	2.70	0.59
34:A:1938:G:H21	34:A:1956:A:N6	1.87	0.59
28:Z:25:SER:HB2	28:Z:54:ILE:HD11	1.84	0.59
34:A:1003:A:H1'	34:A:1004:C:H2'	1.84	0.59
34:A:2382:G:O2'	34:A:2383:U:O4'	2.21	0.59
12:J:135:ARG:HH22	34:A:1206:A:N6	2.00	0.59
34:A:1063:G:O6	34:A:1090:G:N2	2.36	0.59
34:A:808:A:O2'	34:A:1468:A:N3	2.31	0.59
34:A:993:G:N2	34:A:1015:A:OP2	2.30	0.59
25:W:37:LEU:HB2	25:W:47:LEU:HD11	1.85	0.58
34:A:271:A:OP2	34:A:314:G:N1	2.27	0.58
34:A:473:C:O2'	34:A:476:G:N2	2.36	0.58
34:A:2331:U:H4'	34:A:2374:U:H5'	1.84	0.58
34:A:1160:G:H1	34:A:1231:U:H3	1.51	0.58
12:J:44:TYR:OH	12:J:56:ILE:O	2.20	0.58
34:A:996:G:C4	34:A:997:G:C8	2.91	0.58
34:A:1530:G:H2'	34:A:1531:C:C6	2.38	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2127:G:H5'	34:A:2153:G:H2'	1.84	0.58
3:4:148:LEU:HB3	3:4:168:GLN:HG2	1.85	0.58
7:E:178:ILE:HD12	34:A:708:G:H1	1.67	0.58
21:S:75:ILE:HB	21:S:88:GLN:HB3	1.84	0.58
34:A:2872:G:H2'	34:A:2873:U:H6	1.69	0.58
3:4:24:ARG:HG3	3:4:26:VAL:HG13	1.84	0.58
7:E:153:LYS:NZ	34:A:1319:A:OP1	2.27	0.58
16:N:47:ILE:HD12	16:N:70:PRO:HG3	1.85	0.58
34:A:2364:C:H2'	34:A:2365:A:H8	1.68	0.58
12:J:26:VAL:HG13	12:J:30:LEU:HD23	1.85	0.58
16:N:44:ASN:OD1	16:N:44:ASN:N	2.37	0.58
34:A:1011:A:C6	34:A:1012:C:H1'	2.39	0.58
34:A:2061:U:H2'	34:A:2062:G:H4'	1.85	0.58
6:D:48:SER:OG	6:D:86:LEU:O	2.18	0.58
8:F:11:LEU:HD11	8:F:111:ILE:HG21	1.86	0.58
34:A:1704:U:H2'	34:A:1705:C:C6	2.38	0.58
34:A:2869:C:H3'	34:A:2870:C:H5'	1.85	0.58
3:4:141:ILE:HG22	3:4:179:TRP:CZ2	2.33	0.58
6:D:135:GLN:HE21	34:A:2802:G:H21	1.52	0.58
9:G:58:ASP:O	9:G:63:ARG:NH1	2.36	0.58
12:J:12:LYS:H	12:J:12:LYS:HD3	1.68	0.58
34:A:1205:G:O2'	34:A:1207:G:O4'	2.21	0.58
4:B:49:C:OP1	18:P:42:ARG:NH1	2.31	0.57
19:Q:101:GLU:N	19:Q:101:GLU:OE1	2.36	0.57
34:A:248:G:H5'	34:A:250:G:N7	2.19	0.57
34:A:389:G:N1	34:A:392:A:OP2	2.31	0.57
12:J:95:HIS:HB2	34:A:1195:A:H4'	1.85	0.57
15:M:82:ASP:HA	15:M:85:LYS:HG2	1.86	0.57
3:4:214:ARG:NH1	34:A:2684:U:O2'	2.37	0.57
3:4:315:PHE:O	3:4:319:LEU:HG	2.04	0.57
12:J:98:LYS:HZ2	12:J:140:THR:HG22	1.65	0.57
34:A:1204:A:O2'	34:A:1205:G:N7	2.37	0.57
18:P:20:ARG:NH1	34:A:2558:C:OP2	2.37	0.57
34:A:3078:G:N2	34:A:3081:A:OP2	2.29	0.57
12:J:129:ILE:HA	34:A:1198:C:H1'	1.87	0.57
28:Z:52:GLN:O	28:Z:56:ARG:HG3	2.04	0.57
34:A:284:G:H21	34:A:286:G:H22	1.50	0.57
34:A:996:G:H3'	34:A:997:G:H8	1.70	0.57
34:A:347:U:H2'	34:A:348:G:C8	2.35	0.57
34:A:1537:U:H2'	34:A:1538:G:C8	2.39	0.57
34:A:2238:A:H2'	34:A:2239:A:C8	2.40	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:29:C:N4	34:A:535:A:OP2	2.38	0.57
34:A:2053:C:P	34:A:2134:G:H22	2.28	0.57
34:A:2125:A:H3'	34:A:2126:C:C5	2.39	0.57
34:A:2402:C:H2'	34:A:2403:U:C2	2.39	0.57
16:N:71:ASP:OD1	16:N:71:ASP:N	2.33	0.57
21:S:9:THR:HG21	21:S:37:LEU:HD22	1.86	0.57
5:C:177:MET:HG2	5:C:181:GLU:O	2.05	0.57
9:G:149:ILE:O	9:G:163:VAL:HG11	2.05	0.57
23:U:4:ILE:HD12	28:Z:19:LYS:NZ	2.19	0.57
34:A:757:G:OP2	34:A:757:G:N2	2.23	0.57
3:4:246:PRO:HG3	3:4:293:ARG:HD3	1.86	0.56
3:4:424:TYR:CE1	3:4:444:HIS:HE1	2.23	0.56
12:J:93:GLU:HA	12:J:96:LYS:HE3	1.87	0.56
12:J:129:ILE:HG22	12:J:130:ILE:HD13	1.87	0.56
34:A:995:U:H2'	34:A:996:G:H8	1.69	0.56
34:A:2358:A:H3'	34:A:2359:G:H8	1.70	0.56
34:A:2358:A:O2'	34:A:2383:U:O2'	2.12	0.56
34:A:2362:C:H2'	34:A:2363:A:C8	2.40	0.56
34:A:2761:U:H2'	34:A:2762:C:C6	2.40	0.56
34:A:3115:A:H2'	34:A:3116:C:H6	1.70	0.56
3:4:285:ARG:NH1	34:A:2696:G:OP2	2.38	0.56
3:4:392:VAL:HG21	3:4:403:LEU:HD22	1.87	0.56
8:F:111:ILE:HD11	8:F:182:PHE:HA	1.86	0.56
12:J:89:LYS:NZ	34:A:1183:U:OP1	2.38	0.56
26:X:64:PRO:HB3	34:A:759:G:N1	2.18	0.56
34:A:1671:U:O2	34:A:1673:A:N6	2.37	0.56
34:A:2326:A:C5	34:A:2410:A:C2	2.94	0.56
34:A:2332:U:N3	34:A:2404:G:N3	2.52	0.56
6:D:29:VAL:HG21	6:D:194:ILE:HD12	1.87	0.56
9:G:3:ARG:HB3	34:A:2975:G:C8	2.41	0.56
12:J:107:VAL:HG23	12:J:108:ARG:HD3	1.87	0.56
23:U:57:VAL:HG13	23:U:84:VAL:HG22	1.87	0.56
34:A:327:U:H2'	34:A:328:C:C6	2.40	0.56
11:I:109:TYR:HA	11:I:115:LEU:HA	1.86	0.56
34:A:1000:C:H2'	34:A:1001:C:H6	1.70	0.56
34:A:3014:A:H62	34:A:3113:A:H2	1.53	0.56
3:4:251:VAL:HG12	3:4:300:THR:HG21	1.86	0.56
10:H:62:ILE:H	10:H:65:ALA:HB3	1.69	0.56
34:A:159:A:N3	34:A:2431:C:O2'	2.36	0.56
34:A:2163:U:H1'	34:A:2198:C:H4'	1.87	0.56
3:4:444:HIS:CG	12:J:24:PRO:HB2	2.40	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:I:31:LEU:HD23	11:I:35:ASN:ND2	2.21	0.56
11:I:40:ARG:HH21	11:I:50:THR:HA	1.69	0.56
12:J:56:ILE:HD12	12:J:74:THR:HA	0.69	0.56
34:A:1118:A:H2'	34:A:1119:A:C8	2.41	0.56
3:4:381:GLN:HA	3:4:384:ARG:HB2	1.88	0.56
3:4:424:TYR:HB3	12:J:28:PRO:HA	1.86	0.56
7:E:158:ILE:HD13	7:E:197:SER:HB3	1.87	0.56
12:J:59:GLU:CB	12:J:73:LYS:HZ3	2.15	0.56
34:A:2357:A:O2'	34:A:2382:G:N3	2.31	0.56
3:4:55:TRP:N	3:4:87:GLN:O	2.35	0.56
14:L:16:ALA:HB2	14:L:52:VAL:HG21	1.86	0.56
24:V:82:ARG:NH2	34:A:382:A:OP2	2.37	0.56
34:A:1178:U:H3	34:A:1206:A:H2	1.52	0.56
34:A:1188:A:H2'	34:A:1215:U:OP1	2.04	0.56
34:A:1907:A:H2'	34:A:1908:A:C8	2.40	0.56
12:J:23:ALA:O	12:J:25:PRO:N	2.38	0.56
24:V:1:MET:HG2	24:V:2:LYS:O	2.06	0.56
34:A:1203:A:H2'	34:A:1204:A:C4	2.41	0.56
34:A:1755:A:N3	34:A:1755:A:H2'	2.20	0.56
34:A:1825:C:N4	34:A:1840:G:OP2	2.35	0.56
3:4:370:LYS:HE2	35:4:501:GCP:N9	2.21	0.56
9:G:33:LEU:HD11	9:G:137:ILE:HG22	1.87	0.56
9:G:75:ASN:ND2	34:A:2971:G:OP1	2.37	0.55
17:O:8:PRO:HG2	34:A:1870:U:C4	2.41	0.55
19:Q:28:HIS:HD2	19:Q:41:VAL:HG22	1.71	0.55
20:R:28:ARG:NH1	20:R:38:GLN:OE1	2.39	0.55
34:A:2053:C:N4	34:A:2158:C:OP1	2.39	0.55
34:A:2121:G:H8	34:A:2121:G:O5'	1.88	0.55
34:A:2341:U:H5'	34:A:2371:G:O2'	2.06	0.55
34:A:2805:G:OP2	34:A:2805:G:N2	2.33	0.55
5:C:177:MET:HA	5:C:177:MET:HE3	1.87	0.55
13:K:106:ILE:HD12	13:K:109:LEU:HD12	1.89	0.55
22:T:66:GLN:HG3	22:T:73:PRO:HG3	1.88	0.55
34:A:2382:G:H2'	34:A:2383:U:C6	2.40	0.55
3:4:195:GLY:HA2	3:4:204:GLY:CA	2.37	0.55
5:C:141:VAL:HG13	5:C:162:SER:HB2	1.87	0.55
12:J:30:LEU:HD12	12:J:35:VAL:HB	1.86	0.55
14:L:21:CYS:HA	14:L:41:ALA:HA	1.88	0.55
34:A:217:G:H22	34:A:235:U:H4'	1.70	0.55
4:B:5:C:HO2'	4:B:6:G:H8	1.54	0.55
21:S:8:LYS:HG3	21:S:40:ALA:HB2	1.88	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:T:79:ALA:HB2	22:T:115:GLU:HB2	1.89	0.55
34:A:1530:G:H21	34:A:1805:G:H1	1.53	0.55
34:A:1536:A:H2'	34:A:1537:U:O4'	2.07	0.55
8:F:14:ARG:HH22	8:F:180:LEU:HD23	1.71	0.55
9:G:55:ARG:HD3	9:G:63:ARG:HA	1.89	0.55
11:I:54:ASN:HA	11:I:57:VAL:HG12	1.88	0.55
11:I:88:ASP:O	11:I:91:LYS:NZ	2.33	0.55
12:J:76:PRO:O	12:J:80:LEU:CA	2.55	0.55
34:A:1305:G:H2'	34:A:1306:G:H8	1.72	0.55
23:U:11:ILE:O	28:Z:33:ARG:NH2	2.40	0.55
34:A:365:U:H2'	34:A:366:G:H8	1.72	0.55
34:A:681:C:H2'	34:A:682:A:C8	2.42	0.55
34:A:858:A:O2'	34:A:1877:U:OP1	2.23	0.55
34:A:965:U:H2'	34:A:966:U:C6	2.42	0.55
34:A:6:G:O2'	34:A:3114:A:N6	2.40	0.55
34:A:2146:A:H3'	34:A:2146:A:OP2	2.07	0.55
34:A:2777:G:N1	34:A:2779:U:C5	2.75	0.55
4:B:26:A:C2	4:B:115:A:H1'	2.41	0.55
5:C:258:ARG:NE	5:C:262:LYS:HZ3	2.05	0.55
7:E:50:HIS:O	7:E:50:HIS:ND1	2.40	0.55
7:E:130:LEU:HD23	7:E:130:LEU:H	1.71	0.55
8:F:19:ILE:HD12	8:F:179:ALA:HB1	1.89	0.55
34:A:2054:C:H4'	34:A:2055:C:OP2	2.06	0.55
1:2:18:LYS:NZ	34:A:1035:G:OP1	2.34	0.55
4:B:42:C:H2'	8:F:73:GLU:HG3	1.89	0.55
12:J:96:LYS:HE2	34:A:1194:C:H4'	1.89	0.55
34:A:56:U:O2'	34:A:71:A:OP2	2.21	0.55
34:A:491:U:H4'	34:A:492:C:H5'	1.89	0.55
34:A:1201:G:N2	34:A:1203:A:H3'	2.22	0.55
3:4:34:ALA:HB2	3:4:80:GLU:HG3	1.89	0.54
3:4:255:ASN:N	35:4:501:GCP:H3B1	2.16	0.54
19:Q:30:LYS:NZ	19:Q:78:PRO:O	2.31	0.54
34:A:1291:G:C2	34:A:1292:U:H1'	2.43	0.54
34:A:3117:U:H2'	34:A:3118:U:C6	2.42	0.54
21:S:10:GLY:O	21:S:12:LYS:NZ	2.39	0.54
34:A:285:U:H2'	34:A:287:A:H5'	1.89	0.54
3:4:379:LEU:H	3:4:383:ARG:HB2	1.72	0.54
11:I:18:LYS:HB3	11:I:64:ALA:HB1	1.89	0.54
13:K:43:THR:HG22	20:R:100:VAL:HG13	1.90	0.54
20:R:9:ASN:HA	20:R:12:LYS:HZ3	1.71	0.54
34:A:2051:U:H4'	34:A:2160:A:N6	2.22	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2857:A:H2'	34:A:2858:G:C8	2.43	0.54
9:G:44:SER:HB3	9:G:52:VAL:O	2.07	0.54
34:A:733:U:H2'	34:A:734:C:C6	2.43	0.54
34:A:1955:A:H3'	34:A:1956:A:H8	1.72	0.54
34:A:3024:A:H2'	34:A:3025:G:O4'	2.08	0.54
5:C:133:LEU:HD23	5:C:136:ILE:HD12	1.89	0.54
9:G:53:VAL:HG21	9:G:70:ARG:HB2	1.90	0.54
34:A:823:C:H2'	34:A:824:G:C8	2.43	0.54
34:A:997:G:H3'	34:A:998:G:H8	1.73	0.54
34:A:2054:C:O2	34:A:2145:C:C6	2.60	0.54
34:A:2411:U:H2'	34:A:2412:U:O4'	2.08	0.54
34:A:2780:C:H2'	34:A:2781:G:O4'	2.07	0.54
5:C:258:ARG:HE	5:C:262:LYS:HZ3	1.56	0.54
6:D:30:LYS:HA	6:D:191:VAL:HG12	1.89	0.54
34:A:206:A:H2'	34:A:207:C:O4'	2.08	0.54
34:A:2129:C:C4'	34:A:2130:G:H5'	2.33	0.54
34:A:2532:G:N2	34:A:2534:A:O2'	2.40	0.54
8:F:128:GLN:HB3	8:F:135:TYR:CE1	2.43	0.54
24:V:89:ASP:N	24:V:89:ASP:OD1	2.37	0.54
25:W:63:THR:O	25:W:80:THR:OG1	2.26	0.54
34:A:88:A:H1'	34:A:89:A:C8	2.42	0.54
34:A:998:G:N2	34:A:1010:U:O4	2.40	0.54
34:A:2356:G:H2'	34:A:2380:G:C5	2.42	0.54
6:D:40:ARG:HH21	34:A:3008:C:H1'	1.72	0.54
19:Q:19:PHE:O	19:Q:49:ARG:NH1	2.40	0.54
25:W:11:LEU:HD11	25:W:57:VAL:HG11	1.89	0.54
3:4:148:LEU:HD13	3:4:168:GLN:HA	1.89	0.54
6:D:142:GLN:NE2	34:A:861:U:O4	2.41	0.54
10:H:84:ALA:HB1	10:H:92:PHE:CE2	2.43	0.54
11:I:70:ASP:HA	11:I:73:PHE:CE2	2.42	0.54
22:T:25:ARG:NH1	22:T:83:ALA:O	2.41	0.54
25:W:56:ALA:O	25:W:60:SER:OG	2.21	0.54
34:A:669:G:O2'	34:A:1369:A:OP1	2.24	0.54
34:A:1000:C:H2'	34:A:1001:C:C6	2.43	0.54
34:A:1291:G:H1'	34:A:1293:G:N2	2.23	0.54
8:F:73:GLU:O	8:F:94:ALA:HA	2.08	0.54
12:J:56:ILE:HD11	12:J:74:THR:HG23	1.88	0.54
12:J:103:THR:HB	12:J:106:GLN:HG3	1.89	0.54
3:4:369:ASN:OD1	3:4:370:LYS:N	2.42	0.53
34:A:380:A:N3	34:A:401:C:O2'	2.40	0.53
3:4:271:LEU:HD12	3:4:273:GLU:HG3	1.90	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:M:12:ALA:HB3	15:M:15:GLU:HB2	1.89	0.53
18:P:98:GLU:HB3	18:P:125:LEU:HA	1.90	0.53
34:A:1198:C:H2'	34:A:1199:U:H6	1.73	0.53
34:A:1690:A:H2'	34:A:1691:A:C8	2.43	0.53
12:J:101:LYS:HA	12:J:101:LYS:HE2	1.90	0.53
21:S:30:GLU:OE1	21:S:31:PRO:HD2	2.08	0.53
25:W:39:GLY:HA3	25:W:99:VAL:HG12	1.90	0.53
34:A:1430:C:H2'	34:A:1431:U:C6	2.43	0.53
12:J:98:LYS:HG2	12:J:138:GLY:C	2.23	0.53
13:K:93:LEU:HD23	13:K:97:PRO:HA	1.91	0.53
21:S:41:LEU:HD11	21:S:48:VAL:HG13	1.89	0.53
25:W:41:GLY:H	25:W:99:VAL:HG11	1.73	0.53
34:A:678:A:N1	34:A:924:G:O2'	2.36	0.53
12:J:102:VAL:HG12	12:J:106:GLN:HE21	1.73	0.53
34:A:762:U:H2'	34:A:763:G:C8	2.43	0.53
34:A:2470:A:H2'	34:A:2471:A:C8	2.43	0.53
1:2:15:ALA:O	1:2:20:ARG:NH1	2.41	0.53
3:4:377:VAL:HB	3:4:383:ARG:HH21	1.74	0.53
10:H:101:VAL:HG21	10:H:114:LYS:HA	1.90	0.53
12:J:94:PRO:HD2	34:A:1194:C:H1'	1.90	0.53
20:R:91:ASP:OD2	21:S:13:GLN:HG3	2.07	0.53
34:A:1223:U:C2	34:A:1224:G:C8	2.96	0.53
34:A:1758:G:HO2'	34:A:1759:A:P	2.30	0.53
34:A:2497:A:H2'	34:A:2498:A:C8	2.44	0.53
3:4:24:ARG:H	3:4:87:GLN:CD	2.12	0.53
7:E:156:VAL:HG12	7:E:158:ILE:HG12	1.90	0.53
16:N:85:SER:O	16:N:85:SER:OG	2.20	0.53
26:X:50:ASN:HB2	26:X:80:ILE:HB	1.91	0.53
34:A:1146:A:H2'	34:A:1147:A:C8	2.43	0.53
34:A:1473:G:N1	34:A:1487:U:OP2	2.27	0.53
34:A:2054:C:O2	34:A:2145:C:C5	2.61	0.53
34:A:2122:U:H4'	34:A:2125:A:N7	2.23	0.53
34:A:2133:G:H5"	34:A:2134:G:C8	2.44	0.53
34:A:2288:C:H2'	34:A:2289:C:C6	2.44	0.53
3:4:24:ARG:NH1	3:4:86:ILE:HG22	2.24	0.53
5:C:176:ARG:HH12	5:C:182:ILE:HD11	1.73	0.53
9:G:63:ARG:HG2	34:A:2973:A:H4'	1.90	0.53
19:Q:110:LYS:HD3	19:Q:113:ARG:HH22	1.72	0.53
34:A:1198:C:H2'	34:A:1199:U:C6	2.44	0.53
3:4:54:VAL:HB	3:4:56:THR:HG23	1.91	0.53
3:4:67:LEU:HG	3:4:86:ILE:HD11	1.89	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:7:GLY:HA2	34:A:2540:G:H5"	1.90	0.53
23:U:31:PHE:CE2	23:U:96:PHE:HZ	2.27	0.53
28:Z:7:PRO:HD3	28:Z:56:ARG:HD2	1.90	0.53
28:Z:51:ARG:NH2	34:A:58:G:OP2	2.42	0.53
34:A:2053:C:H5'	34:A:2134:G:N2	2.24	0.53
34:A:2948:C:H2'	34:A:2949:A:C8	2.44	0.53
3:4:395:ARG:HB2	35:4:501:GCP:C6	2.39	0.53
4:B:81:U:H2'	4:B:82:A:C8	2.44	0.53
11:I:28:TYR:HD2	11:I:78:ALA:HB2	1.73	0.53
18:P:27:LYS:HD3	34:A:2558:C:H1'	1.90	0.53
34:A:388:U:H2'	34:A:389:G:O4'	2.08	0.53
34:A:1165:G:O2'	34:A:1228:A:N6	2.36	0.53
34:A:2123:A:H8	34:A:2145:C:C2	2.26	0.53
34:A:2346:G:H1'	34:A:2347:G:H5'	1.90	0.53
34:A:2407:C:H2'	34:A:2408:G:C8	2.43	0.53
34:A:2626:U:O2'	34:A:2627:C:H5'	2.09	0.53
4:B:56:C:O3'	8:F:31:ASN:ND2	2.42	0.52
6:D:7:LEU:HD22	6:D:207:VAL:HG22	1.90	0.52
6:D:47:TYR:OH	34:A:2860:U:O2'	2.24	0.52
10:H:80:LEU:HD21	10:H:99:ASP:OD2	2.09	0.52
10:H:84:ALA:HB3	10:H:94:SER:N	2.21	0.52
13:K:48:VAL:HG12	13:K:50:GLY:H	1.74	0.52
18:P:26:ARG:HH12	18:P:37:ARG:CD	2.21	0.52
34:A:221:A:N6	34:A:232:G:H1'	2.24	0.52
34:A:365:U:H2'	34:A:366:G:C8	2.44	0.52
34:A:1156:A:H2'	34:A:1157:G:O4'	2.09	0.52
34:A:2756:G:N2	34:A:2887:G:O2'	2.42	0.52
7:E:55:ARG:NH2	34:A:789:G:OP1	2.42	0.52
8:F:142:GLN:NE2	8:F:156:PRO:HA	2.20	0.52
34:A:1889:U:O2'	34:A:1891:G:N7	2.31	0.52
8:F:12:LYS:HG3	8:F:104:TRP:CD1	2.45	0.52
18:P:83:ARG:HD3	18:P:87:LEU:HD23	1.92	0.52
34:A:1201:G:H21	34:A:1203:A:H3'	1.74	0.52
34:A:1287:C:H2'	34:A:1288:A:H8	1.75	0.52
34:A:2146:A:OP2	34:A:2146:A:C8	2.63	0.52
6:D:63:ILE:HG13	6:D:66:VAL:HG22	1.90	0.52
16:N:67:ASN:ND2	16:N:105:GLU:OE2	2.37	0.52
34:A:441:G:H2'	34:A:442:U:C6	2.44	0.52
34:A:448:U:H2'	34:A:449:G:H8	1.74	0.52
3:4:24:ARG:CG	3:4:26:VAL:HG13	2.39	0.52
12:J:24:PRO:CG	12:J:25:PRO:HD2	2.22	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:747:A:H61	34:A:768:G:H1'	1.74	0.52
34:A:1001:C:C5	34:A:1002:C:H1'	2.45	0.52
34:A:1343:G:H2'	34:A:1345:G:C8	2.45	0.52
3:4:72:ALA:O	3:4:76:THR:HG22	2.09	0.52
3:4:437:GLY:HA2	3:4:456:PRO:HD3	1.90	0.52
4:B:2:U:H2'	4:B:3:U:C6	2.45	0.52
16:N:74:LEU:HB2	16:N:92:TRP:HB2	1.91	0.52
34:A:196:A:N6	34:A:2654:A:O2'	2.43	0.52
34:A:1291:G:H5'	34:A:1292:U:OP2	2.10	0.52
12:J:132:GLY:O	12:J:135:ARG:NH2	2.43	0.52
20:R:4:VAL:HG22	34:A:1314:C:H1'	1.92	0.52
24:V:88:ASP:OD1	24:V:91:THR:OG1	2.22	0.52
34:A:718:C:O2'	34:A:772:U:OP1	2.26	0.52
34:A:2404:G:H2'	34:A:2405:A:C4	2.45	0.52
3:4:126:PRO:HG3	3:4:175:ARG:HB3	1.92	0.52
9:G:128:SER:HB3	9:G:131:LYS:HB2	1.92	0.52
18:P:76:ASP:OD2	18:P:78:LYS:N	2.35	0.52
34:A:325:U:O4'	34:A:450:G:N2	2.39	0.52
34:A:751:A:H2'	34:A:752:C:C6	2.45	0.52
34:A:2133:G:H3'	34:A:2134:G:C8	2.33	0.52
34:A:2417:C:H2'	34:A:2418:U:O4'	2.10	0.52
34:A:2672:A:HO2'	34:A:2673:U:H5	1.57	0.52
13:K:136:GLN:N	13:K:136:GLN:OE1	2.42	0.52
20:R:14:ARG:HA	20:R:32:TYR:CE1	2.43	0.52
34:A:993:G:O2'	34:A:1015:A:N6	2.43	0.52
34:A:995:U:C2	34:A:996:G:C8	2.98	0.52
1:2:11:SER:OG	34:A:1107:G:OP2	2.11	0.51
3:4:251:VAL:N	3:4:329:ILE:O	2.35	0.51
5:C:228:PRO:HA	5:C:234:GLY:HA3	1.92	0.51
8:F:42:VAL:HG11	34:A:2538:A:H5'	1.90	0.51
34:A:523:U:C2'	34:A:524:C:H5'	2.40	0.51
34:A:1098:A:N3	34:A:2261:U:O2'	2.40	0.51
6:D:10:LYS:NZ	6:D:200:GLY:O	2.36	0.51
8:F:110:LEU:HA	8:F:114:ALA:HB3	1.93	0.51
12:J:66:ARG:HB3	12:J:68:PHE:CZ	2.45	0.51
34:A:502:C:H2'	34:A:503:A:C8	2.45	0.51
34:A:1398:G:O2'	34:A:1400:G:N7	2.37	0.51
34:A:1642:G:O2'	34:A:1713:U:O4	2.22	0.51
34:A:2124:A:N6	34:A:2155:U:O2'	2.43	0.51
9:G:59:GLU:HG3	9:G:61:ARG:H	1.76	0.51
34:A:349:G:H3'	34:A:350:A:H8	1.76	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2704:C:H2'	34:A:2705:G:O4'	2.11	0.51
34:A:3055:G:H2'	34:A:3100:A:H61	1.75	0.51
6:D:111:TYR:CD1	6:D:214:ARG:HD3	2.46	0.51
11:I:73:PHE:HD1	11:I:77:THR:HG21	1.75	0.51
34:A:1294:U:H2'	34:A:1295:U:C6	2.45	0.51
34:A:1425:G:N2	34:A:1428:U:C4	2.79	0.51
34:A:2339:G:H1	34:A:2387:U:H3	1.57	0.51
34:A:2345:U:N3	34:A:2346:G:O6	2.44	0.51
34:A:2538:A:H2'	34:A:2539:G:C8	2.46	0.51
3:4:193:GLY:O	3:4:207:LYS:HG3	2.10	0.51
3:4:300:THR:HB	3:4:318:THR:CG2	2.38	0.51
6:D:96:GLU:HG2	6:D:99:GLN:HB2	1.92	0.51
14:L:71:ARG:NH1	14:L:104:ARG:HB3	2.25	0.51
34:A:1195:A:C2	34:A:1206:A:H2'	2.45	0.51
3:4:25:ARG:NH1	3:4:85:LEU:HD11	2.26	0.51
3:4:44:LEU:HD23	3:4:45:ARG:H	1.75	0.51
3:4:106:LEU:HD23	3:4:136:VAL:HB	1.92	0.51
3:4:407:MET:O	3:4:411:VAL:HG23	2.11	0.51
34:A:1076:A:H2'	34:A:1077:A:C8	2.45	0.51
34:A:1174:G:H4'	34:A:1204:A:H8	1.76	0.51
34:A:1199:U:H2'	34:A:1200:U:H6	1.76	0.51
34:A:1223:U:H2'	34:A:1224:G:C8	2.45	0.51
34:A:2778:U:H2'	34:A:2780:C:C4	2.46	0.51
3:4:65:ALA:O	3:4:69:GLU:HG2	2.11	0.51
4:B:25:G:O6	4:B:57:U:O2'	2.28	0.51
11:I:54:ASN:OD1	11:I:77:THR:OG1	2.28	0.51
18:P:12:GLU:OE2	18:P:13:VAL:HG23	2.11	0.51
22:T:52:GLU:HB3	22:T:53:PRO:HD3	1.93	0.51
34:A:1754:G:H2'	34:A:1755:A:O2'	2.11	0.51
3:4:118:VAL:O	3:4:119:ILE:HD12	2.11	0.51
17:O:49:GLU:OE2	17:O:95:THR:OG1	2.28	0.51
34:A:346:C:H2'	34:A:347:U:O4'	2.10	0.51
34:A:681:C:H2'	34:A:682:A:H8	1.75	0.51
34:A:764:U:H3'	34:A:765:G:H8	1.74	0.51
34:A:1284:A:H2'	34:A:1285:G:C8	2.46	0.51
34:A:1729:A:H2'	34:A:1731:A:C8	2.46	0.51
34:A:2007:C:H2'	34:A:2008:A:C8	2.45	0.51
3:4:395:ARG:HB2	35:4:501:GCP:C2	2.41	0.51
12:J:44:TYR:O	12:J:48:THR:HG23	2.10	0.51
22:T:37:GLU:HG3	22:T:38:GLU:N	2.26	0.51
34:A:298:G:H3'	34:A:299:G:H8	1.75	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:672:C:H2'	34:A:673:C:C6	2.46	0.51
34:A:980:C:O2'	34:A:981:U:O5'	2.27	0.51
34:A:2127:G:H21	34:A:2150:U:H2'	1.74	0.51
3:4:106:LEU:O	3:4:110:VAL:HG13	2.11	0.51
6:D:108:ASP:OD1	6:D:184:LYS:HA	2.11	0.51
12:J:115:LYS:HG2	12:J:118:LEU:HD12	1.93	0.51
34:A:979:G:H2'	34:A:980:C:C6	2.46	0.51
34:A:2693:A:H2'	34:A:2694:G:O4'	2.11	0.51
34:A:3070:G:H4'	34:A:3071:A:H5'	1.93	0.51
3:4:151:PHE:HE2	3:4:311:LEU:HD13	1.76	0.50
9:G:24:LEU:HD13	9:G:73:ILE:HD12	1.93	0.50
11:I:31:LEU:HD23	11:I:35:ASN:HD22	1.75	0.50
14:L:88:LYS:HG3	14:L:90:ASP:H	1.76	0.50
15:M:87:PHE:CE1	15:M:101:LYS:HE2	2.46	0.50
18:P:87:LEU:HD12	18:P:91:ARG:HH21	1.76	0.50
34:A:2847:G:OP1	34:A:3047:A:O2'	2.22	0.50
34:A:2857:A:H2'	34:A:2858:G:H8	1.75	0.50
3:4:119:ILE:HG13	3:4:141:ILE:HD12	1.93	0.50
9:G:17:VAL:HG11	9:G:51:ILE:HG12	1.92	0.50
12:J:85:ALA:HB3	12:J:87:VAL:HG22	1.93	0.50
19:Q:48:ARG:NH1	34:A:2909:G:OP1	2.45	0.50
34:A:2407:C:N4	34:A:2408:G:O6	2.44	0.50
3:4:45:ARG:HB3	3:4:48:ARG:HH21	1.75	0.50
12:J:56:ILE:CD1	12:J:73:LYS:O	2.60	0.50
34:A:410:U:O2	34:A:414:A:N7	2.45	0.50
34:A:1284:A:H2'	34:A:1285:G:H8	1.76	0.50
34:A:2654:A:N3	34:A:2654:A:H2'	2.26	0.50
34:A:2781:G:H2'	34:A:2782:C:H6	1.76	0.50
8:F:11:LEU:HA	8:F:14:ARG:HH11	1.76	0.50
13:K:92:LEU:HD23	13:K:100:VAL:HG22	1.94	0.50
34:A:1428:U:H2'	34:A:1828:A:C2	2.46	0.50
34:A:2879:G:O2'	34:A:2888:G:O6	2.21	0.50
8:F:44:ASN:ND2	8:F:94:ALA:H	2.09	0.50
24:V:15:LYS:NZ	34:A:411:G:H22	2.09	0.50
25:W:11:LEU:HD11	25:W:57:VAL:HG21	1.94	0.50
34:A:818:U:H2'	34:A:819:G:O4'	2.12	0.50
34:A:1533:U:OP2	34:A:1535:C:N4	2.44	0.50
7:E:24:LEU:HG	7:E:209:SER:HB2	1.92	0.50
25:W:82:ALA:HB3	25:W:96:ASP:HB2	1.94	0.50
34:A:2399:A:O2'	34:A:2400:C:H6	1.94	0.50
34:A:2777:G:N1	34:A:2779:U:C4	2.80	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:165:GLY:O	7:E:169:VAL:HG22	2.12	0.50
9:G:65:LEU:O	9:G:68:LEU:HD23	2.12	0.50
34:A:1047:A:OP1	34:A:1297:G:N2	2.30	0.50
34:A:1201:G:H21	34:A:1203:A:H8	1.59	0.50
34:A:1291:G:N2	34:A:1292:U:H1'	2.27	0.50
34:A:1653:G:H2'	34:A:1654:G:O4'	2.12	0.50
34:A:2394:A:P	34:A:2397:C:H41	2.34	0.50
7:E:65:PRO:HG3	7:E:79:THR:HG23	1.93	0.50
8:F:169:ASN:N	8:F:169:ASN:OD1	2.44	0.50
34:A:277:U:H2'	34:A:278:A:H8	1.77	0.50
34:A:928:U:H2'	34:A:929:C:C6	2.46	0.50
34:A:2122:U:H3'	34:A:2122:U:OP2	2.12	0.50
6:D:188:GLU:H	6:D:188:GLU:CD	2.15	0.50
8:F:74:VAL:HG13	8:F:91:PRO:HB3	1.93	0.50
18:P:120:ALA:O	18:P:125:LEU:HB2	2.12	0.50
34:A:633:A:H2'	34:A:634:C:O4'	2.11	0.50
34:A:1529:U:H3'	34:A:1530:G:C8	2.47	0.50
34:A:1815:G:H5"	34:A:1816:C:H5'	1.94	0.50
2:3:15:LYS:HA	4:B:87:U:O2	2.13	0.49
9:G:46:ALA:HB2	9:G:52:VAL:HG23	1.92	0.49
9:G:89:GLU:O	9:G:90:ILE:HD13	2.12	0.49
12:J:57:PRO:CB	12:J:73:LYS:O	2.60	0.49
1:2:2:ALA:HB1	1:2:59:VAL:HG21	1.94	0.49
6:D:76:ASN:N	6:D:76:ASN:OD1	2.45	0.49
8:F:81:ILE:HG13	8:F:83:GLN:HG2	1.94	0.49
8:F:125:SER:H	8:F:185:LYS:HZ3	1.58	0.49
15:M:113:LEU:HD23	15:M:130:SER:HB2	1.94	0.49
34:A:55:G:O2'	34:A:70:A:N1	2.33	0.49
34:A:502:C:H2'	34:A:503:A:H8	1.77	0.49
34:A:981:U:H4'	34:A:982:A:O5'	2.12	0.49
34:A:2156:A:H1'	34:A:2159:G:OP1	2.12	0.49
34:A:2529:A:H2'	34:A:2530:C:C6	2.47	0.49
34:A:644:G:H2'	34:A:645:G:H8	1.77	0.49
34:A:2121:G:C5'	34:A:2121:G:C8	2.95	0.49
34:A:2613:G:H5"	34:A:2614:U:O4'	2.12	0.49
3:4:130:ASN:OD1	3:4:131:ALA:N	2.45	0.49
12:J:15:ILE:O	12:J:44:TYR:OH	2.18	0.49
15:M:72:ARG:HE	15:M:74:GLU:HG2	1.77	0.49
34:A:1675:U:O2'	34:A:1676:G:N7	2.44	0.49
34:A:2121:G:H3'	34:A:2122:U:H6	1.76	0.49
34:A:2343:G:H2'	34:A:2344:G:O4'	2.12	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:69:LYS:NZ	34:A:2285:G:OP1	2.38	0.49
9:G:77:VAL:O	9:G:81:THR:HG23	2.11	0.49
16:N:42:ILE:HD12	16:N:97:VAL:HG11	1.94	0.49
34:A:1290:C:H2'	34:A:1291:G:O4'	2.12	0.49
34:A:1703:G:C6	34:A:1727:A:C2	3.00	0.49
3:4:250:ILE:O	3:4:300:THR:HG23	2.13	0.49
3:4:411:VAL:O	3:4:412:GLU:HB3	2.12	0.49
25:W:8:PRO:N	25:W:10:LYS:HZ3	2.11	0.49
34:A:150:C:H2'	34:A:151:A:H8	1.77	0.49
34:A:857:U:H2'	34:A:858:A:C8	2.46	0.49
34:A:2528:G:N2	34:A:2536:U:H3	2.08	0.49
34:A:2580:G:H2'	34:A:2581:G:O4'	2.13	0.49
11:I:111:ASP:O	11:I:113:LYS:NZ	2.33	0.49
28:Z:7:PRO:HD3	28:Z:56:ARG:CD	2.43	0.49
34:A:844:G:O2'	34:A:878:G:H4'	2.13	0.49
34:A:2193:A:O2'	34:A:2196:G:N3	2.36	0.49
34:A:2235:C:H2'	34:A:2236:G:O4'	2.13	0.49
34:A:2404:G:H8	34:A:2405:A:C2	2.30	0.49
3:4:237:ARG:HG2	3:4:240:ARG:NH1	2.25	0.49
3:4:338:ASN:ND2	3:4:341:ALA:HB2	2.28	0.49
8:F:76:ARG:HG3	8:F:89:GLY:HA2	1.94	0.49
8:F:115:LEU:HA	8:F:118:ILE:HG13	1.94	0.49
9:G:5:GLY:HA3	9:G:66:HIS:NE2	2.28	0.49
21:S:30:GLU:HG3	21:S:32:GLY:O	2.13	0.49
34:A:828:G:H2'	34:A:829:U:C6	2.47	0.49
34:A:1735:U:H2'	34:A:1736:G:O4'	2.13	0.49
34:A:2354:G:C5	34:A:2381:A:H1'	2.48	0.49
3:4:247:SER:HA	3:4:296:VAL:HG12	1.95	0.49
8:F:15:TYR:HA	8:F:19:ILE:CG1	2.40	0.49
8:F:48:GLY:H	8:F:92:ILE:HG23	1.76	0.49
10:H:89:GLY:C	10:H:90:LYS:HD3	2.34	0.49
15:M:77:VAL:HG11	34:A:730:G:N1	2.28	0.49
16:N:59:LYS:O	16:N:60:ARG:HD2	2.13	0.49
34:A:729:C:O2'	34:A:733:U:OP1	2.31	0.49
34:A:782:U:H2'	34:A:783:G:O4'	2.13	0.49
34:A:821:A:H2'	34:A:822:G:O4'	2.13	0.49
34:A:1673:A:H2'	34:A:1673:A:N3	2.27	0.49
34:A:3017:C:H2'	34:A:3018:U:C6	2.48	0.49
34:A:3071:A:P	34:A:3087:G:H22	2.35	0.49
8:F:141:GLU:HG3	8:F:143:SER:H	1.78	0.49
8:F:149:ASP:OD1	8:F:150:VAL:N	2.45	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:80:LEU:HD22	10:H:100:VAL:HG23	1.95	0.49
23:U:24:ILE:HG12	23:U:29:TYR:CD1	2.47	0.49
26:X:19:GLN:HB2	26:X:21:LEU:HG	1.93	0.49
34:A:1532:G:H2'	34:A:1533:U:H6	1.78	0.49
34:A:2019:A:H2'	34:A:2020:A:C8	2.47	0.49
34:A:2420:U:H1'	34:A:2421:A:C8	2.48	0.49
4:B:29:C:O2'	4:B:60:G:N2	2.46	0.48
6:D:14:THR:HG22	6:D:15:GLN:H	1.78	0.48
9:G:117:GLU:N	9:G:117:GLU:OE2	2.46	0.48
10:H:131:PRO:HB3	10:H:146:LEU:H	1.77	0.48
12:J:98:LYS:HA	12:J:138:GLY:O	2.13	0.48
34:A:621:U:H2'	34:A:622:C:C6	2.47	0.48
34:A:1529:U:H3'	34:A:1530:G:H8	1.78	0.48
34:A:1532:G:O2'	34:A:1803:A:N1	2.41	0.48
3:4:442:THR:HB	3:4:451:ILE:HA	1.95	0.48
15:M:75:TYR:CD2	15:M:109:LEU:HB3	2.48	0.48
34:A:429:A:H2'	34:A:430:A:C8	2.48	0.48
34:A:443:C:H2'	34:A:444:U:O4'	2.13	0.48
34:A:672:C:H2'	34:A:673:C:H6	1.79	0.48
34:A:1177:G:H2'	34:A:1178:U:C6	2.48	0.48
34:A:1999:U:H1'	34:A:2833:U:H5"	1.95	0.48
34:A:3046:C:H2'	34:A:3047:A:O4'	2.13	0.48
4:B:58:A:H1'	8:F:34:GLN:HG3	1.94	0.48
8:F:129:PHE:HE1	8:F:174:ARG:HG3	1.78	0.48
11:I:28:TYR:CE2	11:I:76:PRO:HB2	2.47	0.48
34:A:193:G:H2'	34:A:194:A:O4'	2.12	0.48
34:A:288:U:O2	34:A:299:G:N2	2.46	0.48
34:A:1334:C:H2'	34:A:1335:G:O4'	2.13	0.48
34:A:1630:U:H2'	34:A:1631:A:O4'	2.13	0.48
34:A:2044:U:H2'	34:A:2045:G:O4'	2.13	0.48
34:A:2054:C:H41	34:A:2135:U:H3	1.61	0.48
5:C:63:ARG:NH1	34:A:1788:G:OP1	2.47	0.48
5:C:268:ILE:HG21	5:C:271:ARG:HE	1.78	0.48
10:H:91:LEU:HD13	10:H:94:SER:HB2	1.94	0.48
12:J:81:LEU:HD13	12:J:134:ALA:HB2	1.95	0.48
17:O:24:LEU:HB3	17:O:44:LEU:HD22	1.96	0.48
34:A:377:C:H2'	34:A:378:G:H8	1.78	0.48
34:A:625:A:H2'	34:A:626:G:O4'	2.14	0.48
34:A:1719:C:C2	34:A:1720:G:C8	3.01	0.48
34:A:2122:U:O2	34:A:2126:C:N4	2.47	0.48
3:4:207:LYS:HG2	3:4:208:ILE:HG12	1.95	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:98:ALA:HB2	10:H:114:LYS:HE3	1.94	0.48
21:S:54:ASP:HA	21:S:57:LYS:HG3	1.95	0.48
24:V:97:ILE:HA	24:V:104:ASP:HA	1.96	0.48
34:A:58:G:C6	34:A:92:G:N2	2.81	0.48
34:A:834:C:H2'	34:A:835:C:C6	2.48	0.48
3:4:45:ARG:NE	3:4:78:GLY:O	2.46	0.48
3:4:423:PRO:HD2	3:4:466:TYR:CE2	2.49	0.48
4:B:49:C:P	18:P:42:ARG:HH12	2.37	0.48
5:C:108:PRO:HA	5:C:196:VAL:HA	1.96	0.48
17:O:72:ASP:OD1	17:O:73:LYS:N	2.47	0.48
34:A:332:C:H2'	34:A:333:C:C6	2.48	0.48
34:A:337:U:H1'	34:A:345:G:C2	2.49	0.48
34:A:994:A:H3'	34:A:995:U:H6	1.79	0.48
34:A:1229:A:H1'	34:A:1230:G:H1'	1.95	0.48
34:A:3037:C:O2	34:A:3104:A:O2'	2.30	0.48
12:J:64:GLU:HG2	12:J:65:ASP:OD1	2.13	0.48
16:N:75:THR:HA	16:N:90:PRO:HA	1.95	0.48
17:O:82:GLU:HG3	17:O:83:ILE:N	2.29	0.48
19:Q:100:ARG:HG2	19:Q:101:GLU:OE1	2.13	0.48
22:T:36:VAL:O	22:T:40:LEU:HG	2.13	0.48
28:Z:16:ASP:N	28:Z:16:ASP:OD1	2.43	0.48
6:D:154:CYS:O	6:D:157:PRO:HD2	2.14	0.48
7:E:160:ARG:HG3	7:E:179:SER:OG	2.14	0.48
10:H:4:ILE:HG23	10:H:17:ASP:O	2.14	0.48
12:J:36:ASN:HB3	12:J:39:GLU:HB3	1.95	0.48
15:M:104:VAL:HG11	15:M:110:VAL:HG12	1.96	0.48
34:A:665:G:N2	34:A:2255:A:OP1	2.43	0.48
34:A:1208:U:C4	34:A:1220:C:C2	3.02	0.48
18:P:4:LYS:HD3	18:P:4:LYS:N	2.28	0.48
34:A:334:G:O6	34:A:347:U:O2	2.31	0.48
34:A:1295:U:H2'	34:A:1296:G:H8	1.77	0.48
34:A:1400:G:N2	34:A:1443:G:H5"	2.29	0.48
34:A:1944:C:H2'	34:A:1945:U:O4'	2.13	0.48
3:4:32:GLU:O	3:4:81:VAL:HG23	2.13	0.48
3:4:444:HIS:CE1	12:J:24:PRO:HA	2.48	0.48
5:C:16:ALA:HB2	5:C:207:GLY:HA3	1.96	0.48
20:R:54:LYS:HE3	34:A:1113:C:OP2	2.13	0.48
34:A:2134:G:C2'	34:A:2135:U:H2'	2.44	0.48
3:4:444:HIS:HA	3:4:449:THR:HG22	1.96	0.47
7:E:186:TYR:O	7:E:190:ASN:CB	2.59	0.47
15:M:89:GLN:H	15:M:89:GLN:CD	2.17	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:V:16:ASP:OD1	24:V:16:ASP:N	2.47	0.47
34:A:2383:U:C4	34:A:2384:C:H1'	2.49	0.47
3:4:154:HIS:ND1	3:4:277:PHE:O	2.46	0.47
3:4:286:ARG:HH21	3:4:294:PRO:HB3	1.79	0.47
14:L:90:ASP:O	14:L:90:ASP:OD1	2.32	0.47
20:R:70:ARG:NH2	34:A:1130:C:OP1	2.48	0.47
34:A:1203:A:O2'	34:A:1204:A:O4'	2.12	0.47
34:A:1535:C:H2'	34:A:1536:A:O4'	2.14	0.47
34:A:1542:A:H1'	34:A:1628:A:C6	2.49	0.47
34:A:2326:A:H2'	34:A:2327:C:H5'	1.96	0.47
3:4:98:ILE:HD11	3:4:106:LEU:HD13	1.95	0.47
3:4:393:SER:O	3:4:397:GLY:N	2.45	0.47
11:I:94:LYS:NZ	11:I:125:ASP:OD2	2.43	0.47
13:K:29:ALA:HA	13:K:105:ILE:HG12	1.97	0.47
15:M:24:ARG:HA	34:A:926:U:H2'	1.96	0.47
24:V:75:ASP:C	24:V:77:ASP:H	2.17	0.47
27:Y:15:GLY:HA3	27:Y:29:TRP:HZ3	1.78	0.47
34:A:997:G:H3'	34:A:998:G:C8	2.50	0.47
34:A:2055:C:H4'	34:A:2056:G:H8	1.80	0.47
34:A:2351:A:H1'	34:A:2396:A:H1'	1.95	0.47
6:D:6:ILE:HD11	6:D:34:ASN:OD1	2.14	0.47
7:E:9:THR:HG21	7:E:13:LYS:HD2	1.96	0.47
24:V:57:GLY:HA3	34:A:571:A:O2'	2.13	0.47
9:G:30:LYS:HE2	9:G:82:GLU:HA	1.96	0.47
9:G:59:GLU:HG3	9:G:61:ARG:N	2.30	0.47
11:I:10:VAL:HG13	11:I:60:ALA:HB2	1.96	0.47
12:J:23:ALA:N	12:J:24:PRO:HD2	2.29	0.47
12:J:98:LYS:HE3	12:J:98:LYS:HB2	1.44	0.47
14:L:76:TYR:HB2	19:Q:72:THR:HB	1.95	0.47
24:V:15:LYS:NZ	34:A:411:G:H1	2.12	0.47
34:A:2791:G:H2'	34:A:2792:C:C6	2.50	0.47
4:B:46:A:H1'	8:F:99:ARG:HH21	1.80	0.47
24:V:74:VAL:HG23	24:V:76:SER:H	1.80	0.47
34:A:76:C:O2'	34:A:428:A:N3	2.40	0.47
34:A:827:G:H2'	34:A:828:G:C8	2.50	0.47
34:A:971:G:H2'	34:A:972:A:C8	2.49	0.47
34:A:2056:G:O2'	34:A:2057:G:O5'	2.32	0.47
34:A:2311:G:H2'	34:A:2312:U:O4'	2.15	0.47
3:4:24:ARG:HH12	3:4:86:ILE:HG22	1.78	0.47
3:4:55:TRP:HB3	3:4:88:ARG:HA	1.97	0.47
3:4:424:TYR:OH	3:4:445:THR:O	2.32	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:7:G:OP1	18:P:15:ARG:NH1	2.41	0.47
4:B:41:U:N3	4:B:45:G:OP2	2.35	0.47
4:B:81:U:O2'	34:A:1033:A:N3	2.45	0.47
8:F:85:LYS:O	8:F:85:LYS:HD3	2.14	0.47
12:J:15:ILE:HB	12:J:44:TYR:CZ	2.50	0.47
14:L:60:ALA:HB2	14:L:86:ILE:HD13	1.95	0.47
15:M:93:VAL:HB	15:M:124:VAL:HA	1.96	0.47
19:Q:51:GLY:HA2	19:Q:56:GLU:CD	2.35	0.47
28:Z:45:ARG:HG2	34:A:94:G:O2'	2.13	0.47
34:A:600:A:H5"	34:A:1330:C:O2'	2.14	0.47
34:A:1798:U:H2'	34:A:1799:A:H8	1.80	0.47
34:A:2322:C:H2'	34:A:2323:G:O4'	2.15	0.47
4:B:29:C:OP1	18:P:48:HIS:NE2	2.35	0.47
4:B:49:C:H2'	4:B:50:C:O4'	2.15	0.47
5:C:245:HIS:HB3	5:C:246:PRO:HD2	1.97	0.47
7:E:7:VAL:O	7:E:15:ASP:N	2.46	0.47
15:M:95:VAL:O	15:M:99:VAL:HG22	2.15	0.47
34:A:994:A:H3'	34:A:995:U:C6	2.50	0.47
34:A:1161:C:H2'	34:A:1162:G:C8	2.50	0.47
34:A:1182:C:H2'	34:A:1183:U:O4'	2.14	0.47
34:A:1326:G:H1'	34:A:1351:G:N2	2.30	0.47
34:A:2058:U:O5'	34:A:2151:A:N6	2.48	0.47
3:4:370:LYS:HG2	35:4:501:GCP:C6	2.44	0.47
3:4:443:GLU:HG3	3:4:450:ARG:HG2	1.97	0.47
6:D:28:VAL:HG11	19:Q:7:VAL:HG21	1.97	0.47
8:F:32:VAL:HA	8:F:35:ILE:HD13	1.97	0.47
8:F:37:GLY:H	8:F:166:THR:HG1	1.60	0.47
8:F:43:VAL:HA	8:F:160:ASP:O	2.15	0.47
16:N:29:PHE:HB2	16:N:105:GLU:OE1	2.15	0.47
16:N:40:ALA:HB2	16:N:127:ILE:HG21	1.97	0.47
16:N:77:LYS:N	34:A:1074:A:OP1	2.46	0.47
21:S:53:ASP:N	21:S:53:ASP:OD1	2.48	0.47
34:A:503:A:H2'	34:A:504:C:C6	2.50	0.47
34:A:1015:A:H2'	34:A:1016:C:O4'	2.14	0.47
34:A:1189:G:H1'	34:A:1207:G:H2'	1.97	0.47
34:A:1900:C:H2'	34:A:1901:C:C6	2.50	0.47
34:A:2055:C:C5	34:A:2146:A:OP1	2.67	0.47
34:A:2298:U:H4'	34:A:2820:U:O2	2.15	0.47
34:A:2414:G:H2'	34:A:2415:G:H8	1.79	0.47
6:D:151:ILE:HG21	6:D:160:VAL:HG22	1.96	0.47
7:E:130:LEU:HD22	7:E:158:ILE:HD11	1.97	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:H:4:ILE:HG12	10:H:39:ALA:HB2	1.96	0.47
10:H:37:ILE:HD12	10:H:37:ILE:HA	1.79	0.47
11:I:12:ASP:O	11:I:15:GLU:HG3	2.14	0.47
21:S:4:TYR:HA	21:S:17:ALA:HA	1.96	0.47
22:T:53:PRO:O	22:T:57:VAL:HG23	2.15	0.47
24:V:56:SER:HA	34:A:572:C:H4'	1.96	0.47
34:A:1189:G:N3	34:A:1207:G:O2'	2.34	0.47
34:A:1898:U:H2'	34:A:1899:G:O4'	2.15	0.47
34:A:2510:A:H4'	34:A:2511:A:O4'	2.15	0.47
3:4:432:ARG:HH21	3:4:462:THR:HG21	1.78	0.46
34:A:824:G:H2'	34:A:825:C:H6	1.80	0.46
34:A:911:U:H2'	34:A:912:C:C6	2.50	0.46
34:A:993:G:N2	34:A:1014:G:H2'	2.30	0.46
34:A:1278:C:C2	34:A:1279:G:C8	3.04	0.46
34:A:1316:U:H2'	34:A:1317:G:H8	1.80	0.46
20:R:14:ARG:HA	20:R:32:TYR:CD1	2.50	0.46
28:Z:49:THR:O	28:Z:53:GLU:HG3	2.15	0.46
34:A:452:G:H2'	34:A:453:U:N1	2.30	0.46
34:A:979:G:H2'	34:A:980:C:H6	1.79	0.46
34:A:1177:G:H2'	34:A:1178:U:C5	2.50	0.46
34:A:2629:G:O2'	34:A:2635:A:N6	2.41	0.46
3:4:200:THR:HG23	16:N:45:ARG:HH22	1.81	0.46
3:4:232:ILE:HD13	34:A:2704:C:H4'	1.97	0.46
3:4:340:LEU:HD12	3:4:343:ILE:HB	1.98	0.46
12:J:24:PRO:C	12:J:28:PRO:HD2	2.26	0.46
18:P:12:GLU:HA	18:P:15:ARG:HB3	1.96	0.46
21:S:23:LYS:HE3	21:S:23:LYS:HB2	1.59	0.46
34:A:304:U:H2'	34:A:305:G:C8	2.51	0.46
34:A:931:C:H2'	34:A:932:C:H6	1.80	0.46
34:A:1856:C:O2	34:A:2922:U:O2'	2.31	0.46
3:4:183:MET:HB3	3:4:207:LYS:NZ	2.31	0.46
5:C:272:ARG:NH1	34:A:2015:U:OP2	2.45	0.46
6:D:123:PHE:HB2	34:A:3044:A:OP1	2.15	0.46
21:S:97:LEU:HD23	21:S:97:LEU:HA	1.78	0.46
24:V:9:VAL:HB	24:V:71:VAL:HG13	1.97	0.46
34:A:138:A:H2'	34:A:139:U:O2	2.14	0.46
34:A:285:U:O2'	34:A:287:A:OP1	2.31	0.46
34:A:325:U:O2'	34:A:326:A:OP1	2.29	0.46
34:A:2127:G:H2'	34:A:2127:G:N3	2.30	0.46
34:A:2148:C:OP2	34:A:2149:C:N4	2.49	0.46
8:F:119:ARG:NH1	8:F:119:ARG:O	2.49	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:141:GLU:OE1	8:F:143:SER:OG	2.19	0.46
10:H:135:LYS:NZ	10:H:138:THR:O	2.37	0.46
14:L:18:GLU:HG2	14:L:45:ASP:HB2	1.96	0.46
34:A:1169:A:N3	34:A:2975:G:N2	2.62	0.46
34:A:1476:G:H2'	34:A:1477:C:C6	2.50	0.46
34:A:1928:C:H4'	34:A:3079:U:H3	1.80	0.46
3:4:155:ALA:HA	3:4:280:LEU:HD11	1.97	0.46
7:E:205:ILE:O	7:E:209:SER:HB3	2.15	0.46
9:G:17:VAL:HG12	9:G:19:ILE:HG12	1.98	0.46
12:J:98:LYS:HD2	12:J:140:THR:HA	1.97	0.46
13:K:15:TRP:O	13:K:138:ILE:HD12	2.16	0.46
20:R:91:ASP:OD1	20:R:93:LYS:N	2.48	0.46
25:W:60:SER:HB2	25:W:61:HIS:CE1	2.51	0.46
34:A:827:G:C2'	34:A:828:G:H5'	2.45	0.46
34:A:944:A:C8	34:A:2472:C:H5'	2.50	0.46
3:4:242:ARG:NE	34:A:2755:A:OP1	2.49	0.46
8:F:34:GLN:HB3	18:P:3:HIS:CD2	2.50	0.46
8:F:117:ARG:HG3	8:F:144:MET:HA	1.98	0.46
34:A:567:A:N3	34:A:569:G:H5"	2.30	0.46
34:A:752:C:H2'	34:A:753:A:C8	2.51	0.46
34:A:965:U:H2'	34:A:966:U:H6	1.79	0.46
34:A:1138:A:N1	34:A:1259:U:H2'	2.31	0.46
34:A:1175:A:N7	34:A:1204:A:H2'	2.30	0.46
34:A:1313:U:H2'	34:A:1314:C:C6	2.49	0.46
34:A:2686:U:H2'	34:A:2687:U:C6	2.50	0.46
3:4:23:LEU:HG	3:4:102:LYS:HG3	1.97	0.46
3:4:347:ARG:O	3:4:351:ASN:OD1	2.33	0.46
4:B:35:G:N3	4:B:37:C:N4	2.64	0.46
4:B:80:C:H2'	4:B:81:U:O4'	2.15	0.46
5:C:80:ALA:HB2	5:C:96:HIS:CD2	2.51	0.46
6:D:95:TYR:HA	6:D:99:GLN:OE1	2.15	0.46
6:D:157:PRO:HD3	34:A:2795:C:O2'	2.16	0.46
13:K:23:VAL:O	13:K:62:ILE:HG13	2.16	0.46
18:P:17:ALA:O	18:P:21:ARG:HG3	2.15	0.46
34:A:448:U:H2'	34:A:449:G:C8	2.51	0.46
34:A:828:G:N1	34:A:832:G:OP2	2.49	0.46
34:A:1457:A:H2	34:A:1511:U:HO2'	1.64	0.46
34:A:1473:G:O2'	34:A:1488:A:N6	2.48	0.46
34:A:1963:G:H2'	34:A:1964:U:C6	2.51	0.46
34:A:2157:G:H5'	34:A:2158:C:H5"	1.96	0.46
3:4:242:ARG:HH22	34:A:2757:C:N4	2.14	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:1:G:H2'	4:B:2:U:C6	2.50	0.46
4:B:63:U:H2'	4:B:64:G:H8	1.81	0.46
8:F:118:ILE:HG12	8:F:144:MET:HG2	1.98	0.46
9:G:98:GLN:OE1	9:G:98:GLN:N	2.49	0.46
15:M:72:ARG:HG2	34:A:727:A:OP1	2.16	0.46
34:A:1174:G:H4'	34:A:1204:A:C8	2.51	0.46
34:A:1668:C:O2'	34:A:1764:A:N3	2.45	0.46
34:A:2344:G:H5'	34:A:2392:A:O2'	2.15	0.46
34:A:3022:G:H2'	34:A:3023:G:H1'	1.98	0.46
5:C:212:MET:HG3	34:A:2008:A:H5"	1.98	0.46
34:A:1090:G:OP2	34:A:1091:A:O2'	2.27	0.46
34:A:1296:G:H2'	34:A:1297:G:C8	2.51	0.46
34:A:2331:U:C4'	34:A:2374:U:H5'	2.46	0.46
3:4:253:TYR:CZ	3:4:304:VAL:HA	2.51	0.45
4:B:11:U:H3'	4:B:12:C:H5"	1.98	0.45
34:A:944:A:N7	34:A:2472:C:H5'	2.32	0.45
34:A:2600:A:H8	34:A:2600:A:OP1	1.99	0.45
34:A:2781:G:H2'	34:A:2782:C:C6	2.52	0.45
34:A:2922:U:H2'	34:A:2923:C:C6	2.51	0.45
3:4:149:ASP:OD1	3:4:153:GLN:NE2	2.50	0.45
8:F:12:LYS:HG3	8:F:104:TRP:NE1	2.31	0.45
11:I:57:VAL:HA	11:I:60:ALA:HB3	1.98	0.45
16:N:40:ALA:HB2	16:N:127:ILE:CG2	2.47	0.45
26:X:41:ARG:NE	26:X:41:ARG:HA	2.31	0.45
34:A:328:C:H2'	34:A:329:U:O4'	2.16	0.45
34:A:1157:G:O6	34:A:1234:U:C2	2.69	0.45
34:A:1187:A:H5'	34:A:1188:A:OP1	2.16	0.45
34:A:1524:G:H2'	34:A:1525:U:C6	2.50	0.45
34:A:2873:U:H2'	34:A:2874:C:H6	1.81	0.45
34:A:3017:C:H2'	34:A:3018:U:H6	1.81	0.45
3:4:258:LYS:H	35:4:501:GCP:PB	2.39	0.45
6:D:185:VAL:HG13	6:D:192:LEU:HD23	1.98	0.45
7:E:166:ALA:O	7:E:170:ARG:HB2	2.16	0.45
8:F:11:LEU:O	8:F:15:TYR:HB3	2.16	0.45
9:G:19:ILE:HG23	9:G:19:ILE:HD12	1.66	0.45
12:J:135:ARG:NH2	34:A:1197:C:H1'	2.30	0.45
15:M:35:ARG:NH1	15:M:42:ALA:O	2.47	0.45
15:M:88:PRO:HD2	15:M:89:GLN:NE2	2.31	0.45
19:Q:4:LEU:HD23	19:Q:4:LEU:HA	1.80	0.45
21:S:63:GLU:HB2	21:S:100:THR:HG23	1.97	0.45
24:V:15:LYS:HZ1	34:A:411:G:H22	1.64	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:754:C:H2'	34:A:755:A:O4'	2.16	0.45
34:A:1200:U:H3'	34:A:1201:G:H8	1.81	0.45
34:A:1900:C:OP2	34:A:1917:G:N2	2.45	0.45
34:A:2332:U:H2'	34:A:2333:G:C8	2.52	0.45
34:A:3030:A:H2'	34:A:3031:A:C8	2.51	0.45
1:2:39:ASP:OD2	1:2:44:ARG:NH2	2.49	0.45
3:4:16:ALA:HB3	3:4:22:SER:OG	2.16	0.45
3:4:319:LEU:O	3:4:323:VAL:HG23	2.16	0.45
6:D:53:ALA:HB1	6:D:78:ARG:HB2	1.98	0.45
6:D:176:THR:OG1	34:A:2997:C:OP1	2.30	0.45
8:F:16:ARG:HA	8:F:20:ARG:HH21	1.80	0.45
8:F:48:GLY:HA3	34:A:2531:G:O6	2.16	0.45
8:F:72:PRO:HB2	8:F:94:ALA:HB1	1.97	0.45
10:H:23:ASP:O	10:H:27:ARG:HB2	2.17	0.45
34:A:993:G:C6	34:A:1014:G:C6	3.05	0.45
34:A:1015:A:H3'	34:A:1016:C:H6	1.81	0.45
34:A:1089:C:H2'	34:A:1090:G:O4'	2.16	0.45
34:A:1647:G:H3'	34:A:1648:A:H2'	1.98	0.45
34:A:2515:U:O2'	34:A:2598:C:O2	2.34	0.45
14:L:22:ILE:N	14:L:40:VAL:O	2.39	0.45
17:O:9:ARG:HA	17:O:9:ARG:HD3	1.64	0.45
23:U:4:ILE:HD12	28:Z:19:LYS:HZ3	1.82	0.45
34:A:729:C:H2'	34:A:730:G:O4'	2.16	0.45
34:A:999:C:H1'	34:A:1000:C:C5	2.52	0.45
34:A:2528:G:H1	34:A:2536:U:H3	1.63	0.45
3:4:49:VAL:HG13	3:4:81:VAL:HA	1.97	0.45
3:4:414:THR:O	3:4:414:THR:OG1	2.33	0.45
9:G:98:GLN:OE1	9:G:105:GLU:HB3	2.16	0.45
21:S:6:ILE:HD12	21:S:41:LEU:HB3	1.98	0.45
24:V:46:ALA:HA	34:A:571:A:H4'	1.99	0.45
34:A:17:C:H2'	34:A:18:A:C8	2.52	0.45
34:A:377:C:H2'	34:A:378:G:C8	2.50	0.45
34:A:468:G:C2'	34:A:469:G:H5'	2.47	0.45
34:A:543:U:O2'	34:A:560:U:N3	2.43	0.45
34:A:762:U:H2'	34:A:763:G:H8	1.81	0.45
34:A:1200:U:H3'	34:A:1201:G:C8	2.52	0.45
34:A:1533:U:H3'	34:A:1534:C:H5"	1.98	0.45
34:A:2134:G:H4'	34:A:2146:A:N1	2.32	0.45
34:A:2326:A:C2'	34:A:2327:C:H5'	2.46	0.45
34:A:2651:C:H5'	34:A:2653:G:H5'	1.98	0.45
3:4:21:ALA:O	3:4:22:SER:C	2.55	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:371:ILE:HG12	3:4:391:PHE:HB3	1.99	0.45
4:B:4:A:H8	4:B:63:U:H1'	1.82	0.45
9:G:12:PRO:HD2	9:G:15:VAL:HG21	1.99	0.45
9:G:136:GLY:HA3	9:G:142:VAL:CG2	2.47	0.45
11:I:33:VAL:HG11	34:A:1175:A:H1'	1.98	0.45
15:M:79:ASN:O	15:M:83:ILE:HG13	2.17	0.45
23:U:53:LYS:HB3	23:U:53:LYS:HE3	1.79	0.45
24:V:98:ALA:HB3	24:V:102:GLY:O	2.16	0.45
34:A:81:A:C2	34:A:100:A:C5	3.04	0.45
34:A:439:C:H2'	34:A:440:U:C6	2.52	0.45
34:A:3118:U:H2'	34:A:3119:A:C8	2.52	0.45
3:4:143:ARG:O	3:4:147:ILE:HG12	2.17	0.45
3:4:370:LYS:HE2	35:4:501:GCP:C4	2.47	0.45
3:4:401:ASP:N	3:4:401:ASP:OD1	2.50	0.45
8:F:41:VAL:HA	8:F:162:THR:O	2.17	0.45
11:I:45:ASP:N	11:I:45:ASP:OD1	2.47	0.45
21:S:14:TYR:HE2	21:S:24:VAL:HG23	1.82	0.45
22:T:72:ASP:O	22:T:75:THR:HG22	2.17	0.45
34:A:410:U:H5"	34:A:411:G:OP2	2.17	0.45
34:A:451:U:H1'	34:A:452:G:N7	2.31	0.45
34:A:688:A:H2'	34:A:689:U:C6	2.52	0.45
34:A:1705:C:H2'	34:A:1706:A:H8	1.81	0.45
34:A:2054:C:N4	34:A:2135:U:H3	2.14	0.45
3:4:253:TYR:HB2	3:4:342:GLN:HB3	1.99	0.45
5:C:93:ALA:HB2	5:C:107:ALA:HB2	1.98	0.45
8:F:109:ARG:O	8:F:113:ILE:HB	2.17	0.45
12:J:132:GLY:CA	12:J:135:ARG:HH21	2.30	0.45
19:Q:28:HIS:CD2	19:Q:41:VAL:HG22	2.51	0.45
34:A:62:G:H2'	34:A:63:C:H6	1.82	0.45
34:A:326:A:H3'	34:A:326:A:N3	2.32	0.45
34:A:620:G:H2'	34:A:621:U:C6	2.52	0.45
34:A:753:A:C2	34:A:763:G:C2	3.05	0.45
34:A:1174:G:H5"	34:A:1175:A:H5'	1.99	0.45
34:A:1180:G:H2'	34:A:1181:G:C8	2.51	0.45
34:A:1288:A:H2'	34:A:1289:A:C8	2.52	0.45
34:A:1305:G:H2'	34:A:1306:G:C8	2.51	0.45
34:A:2351:A:O2'	34:A:2352:C:O5'	2.33	0.45
34:A:2873:U:H2'	34:A:2874:C:C6	2.52	0.45
3:4:203:PRO:O	3:4:207:LYS:N	2.49	0.45
3:4:445:THR:HG22	3:4:446:ASP:H	1.82	0.45
10:H:131:PRO:HB2	10:H:143:LYS:HZ1	1.80	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:N:2:LEU:HD23	16:N:2:LEU:HA	1.79	0.45
22:T:25:ARG:NH2	34:A:604:C:O2'	2.50	0.45
34:A:150:C:H2'	34:A:151:A:C8	2.52	0.45
34:A:429:A:H2'	34:A:430:A:H8	1.81	0.45
34:A:1178:U:N3	34:A:1206:A:H2	2.13	0.45
34:A:1509:U:H2'	34:A:1510:A:O4'	2.17	0.45
34:A:2531:G:H5'	34:A:2532:G:C8	2.52	0.45
3:4:89:ARG:HD2	3:4:89:ARG:HA	1.84	0.44
4:B:4:A:N6	4:B:23:G:O2'	2.47	0.44
6:D:6:ILE:HD12	6:D:6:ILE:HA	1.76	0.44
9:G:65:LEU:HD23	9:G:65:LEU:HA	1.83	0.44
22:T:30:LEU:HD23	22:T:30:LEU:HA	1.84	0.44
23:U:28:VAL:HG22	23:U:85:LYS:HA	1.98	0.44
24:V:23:VAL:HG21	24:V:26:ALA:HB2	1.98	0.44
34:A:137:G:H22	34:A:1812:A:H2	1.65	0.44
34:A:452:G:H2'	34:A:453:U:C2	2.52	0.44
34:A:824:G:H2'	34:A:825:C:C6	2.52	0.44
34:A:1287:C:H2'	34:A:1288:A:C8	2.50	0.44
34:A:2056:G:O2'	34:A:2057:G:O4'	2.35	0.44
34:A:2058:U:H5	34:A:2059:G:C4	2.35	0.44
34:A:2154:G:N3	34:A:2155:U:N3	2.58	0.44
34:A:2523:A:H2'	34:A:2524:C:H6	1.82	0.44
5:C:108:PRO:HD2	5:C:111:LEU:HD22	1.99	0.44
8:F:59:GLY:HA2	8:F:62:ASN:OD1	2.17	0.44
17:O:90:ARG:NH1	17:O:119:LYS:O	2.50	0.44
19:Q:24:THR:HG22	19:Q:86:LEU:HD12	1.98	0.44
22:T:28:ILE:HD12	22:T:83:ALA:HB2	1.98	0.44
34:A:82:G:C6	34:A:96:G:N1	2.85	0.44
34:A:365:U:H3	34:A:437:G:H1	1.66	0.44
34:A:367:U:H2'	34:A:368:U:C6	2.52	0.44
34:A:995:U:H2'	34:A:996:G:C8	2.49	0.44
34:A:3013:C:H5'	34:A:3014:A:O5'	2.17	0.44
1:2:40:ASN:O	1:2:44:ARG:HG2	2.17	0.44
3:4:24:ARG:HB3	3:4:87:GLN:HA	2.00	0.44
5:C:14:ARG:NH1	34:A:1911:U:O2'	2.50	0.44
6:D:60:ARG:NH2	34:A:3052:A:OP1	2.50	0.44
7:E:163:GLU:O	7:E:167:LYS:HG2	2.17	0.44
7:E:179:SER:OG	7:E:180:PRO:HD2	2.17	0.44
12:J:95:HIS:HD2	12:J:138:GLY:HA2	1.82	0.44
12:J:115:LYS:HA	12:J:118:LEU:HG	1.99	0.44
24:V:41:ILE:HG22	24:V:43:LYS:H	1.82	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:837:C:C2	34:A:838:G:C8	3.05	0.44
34:A:2026:A:H8	34:A:2026:A:OP2	2.00	0.44
34:A:3033:G:H2'	34:A:3034:C:C6	2.53	0.44
3:4:423:PRO:HD2	3:4:466:TYR:CD2	2.52	0.44
5:C:212:MET:HE2	5:C:217:LYS:HD2	2.00	0.44
8:F:75:ARG:HD3	8:F:95:ARG:HB2	1.99	0.44
8:F:118:ILE:HA	8:F:144:MET:SD	2.57	0.44
12:J:61:THR:O	12:J:61:THR:OG1	2.31	0.44
12:J:95:HIS:CB	34:A:1195:A:H4'	2.47	0.44
18:P:39:VAL:HA	18:P:103:ASP:HB3	1.98	0.44
25:W:67:LEU:HB3	25:W:69:LEU:HG	1.99	0.44
34:A:131:A:H2'	34:A:132:C:C6	2.53	0.44
34:A:1222:C:H2'	34:A:1223:U:C6	2.52	0.44
34:A:1324:G:O6	34:A:1352:A:H2'	2.17	0.44
34:A:1809:U:H2'	34:A:1810:A:C8	2.52	0.44
34:A:1822:C:H2'	34:A:1823:C:H6	1.82	0.44
2:3:11:ARG:NH1	34:A:1100:C:O2	2.49	0.44
4:B:44:C:O2	8:F:97:THR:OG1	2.36	0.44
4:B:58:A:H1'	8:F:34:GLN:CG	2.48	0.44
5:C:133:LEU:HD23	5:C:133:LEU:HA	1.78	0.44
5:C:176:ARG:NH1	5:C:182:ILE:HD11	2.32	0.44
7:E:55:ARG:HH12	34:A:789:G:P	2.39	0.44
7:E:192:ASP:N	7:E:192:ASP:OD1	2.50	0.44
9:G:84:TYR:CE2	9:G:139:LYS:HB2	2.52	0.44
11:I:13:ILE:HB	11:I:17:PHE:CZ	2.52	0.44
12:J:45:ASN:O	12:J:49:GLU:HG3	2.17	0.44
15:M:88:PRO:HD2	15:M:89:GLN:HE22	1.81	0.44
34:A:489:A:H2'	34:A:490:A:C8	2.53	0.44
34:A:2344:G:C5	34:A:2345:U:H1'	2.52	0.44
3:4:133:GLU:OE2	3:4:134:LYS:HG2	2.18	0.44
3:4:377:VAL:HB	3:4:383:ARG:NH2	2.32	0.44
6:D:85:ARG:NH1	34:A:2861:U:H5"	2.32	0.44
11:I:28:TYR:CD2	11:I:78:ALA:HB2	2.51	0.44
11:I:105:ILE:HD13	11:I:120:VAL:HG21	1.98	0.44
13:K:136:GLN:HE22	34:A:3119:A:H5'	1.82	0.44
34:A:826:G:C2	34:A:827:G:C4	3.05	0.44
34:A:1727:A:H2'	34:A:1728:U:O4'	2.17	0.44
34:A:1900:C:H2'	34:A:1901:C:H6	1.81	0.44
34:A:2056:G:N1	34:A:2151:A:OP2	2.50	0.44
34:A:2869:C:C3'	34:A:2870:C:H5'	2.48	0.44
3:4:161:LYS:HE3	34:A:2706:A:O3'	2.18	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:324:ASP:N	3:4:324:ASP:OD1	2.50	0.44
3:4:445:THR:HG22	3:4:446:ASP:N	2.33	0.44
6:D:153:GLY:O	34:A:2276:G:H4'	2.18	0.44
9:G:28:GLY:HA3	9:G:80:VAL:HB	1.99	0.44
9:G:123:THR:HG23	9:G:135:SER:OG	2.18	0.44
11:I:73:PHE:CD1	11:I:77:THR:HG21	2.52	0.44
19:Q:105:LYS:HB2	19:Q:105:LYS:HE2	1.74	0.44
34:A:191:G:OP2	34:A:191:G:N2	2.43	0.44
34:A:231:U:H2'	34:A:232:G:O4'	2.18	0.44
34:A:298:G:H3'	34:A:299:G:C8	2.50	0.44
34:A:654:U:H6	34:A:654:U:H2'	1.58	0.44
34:A:857:U:H2'	34:A:858:A:H8	1.82	0.44
34:A:1805:G:H2'	34:A:1806:A:C8	2.53	0.44
34:A:2412:U:H2'	34:A:2413:G:H8	1.82	0.44
3:4:20:ARG:HB3	3:4:88:ARG:NH1	2.32	0.44
8:F:51:ALA:HA	8:F:85:LYS:HD2	1.99	0.44
8:F:105:GLU:HA	8:F:108:ASP:OD2	2.18	0.44
11:I:105:ILE:HG21	11:I:120:VAL:HG13	1.98	0.44
15:M:63:LYS:HE3	34:A:2618:C:H5"	1.99	0.44
22:T:6:GLU:OE2	22:T:7:PHE:N	2.42	0.44
34:A:14:G:H2'	34:A:15:C:C6	2.52	0.44
34:A:564:G:N1	34:A:567:A:OP2	2.47	0.44
34:A:567:A:H1'	34:A:568:A:H5"	1.99	0.44
34:A:1784:C:H2'	34:A:1785:C:C6	2.53	0.44
34:A:2018:G:H1	34:A:2028:G:P	2.41	0.44
34:A:2777:G:C6	34:A:2778:U:H1'	2.52	0.44
1:2:5:LYS:HG3	1:2:5:LYS:O	2.17	0.44
3:4:378:GLY:HA3	3:4:383:ARG:N	2.32	0.44
4:B:32:C:O2'	4:B:54:A:N1	2.44	0.44
5:C:177:MET:HA	5:C:177:MET:CE	2.47	0.44
5:C:245:HIS:O	5:C:247:VAL:HG23	2.18	0.44
6:D:191:VAL:HG21	19:Q:7:VAL:HG11	2.00	0.44
8:F:45:MET:HE3	8:F:64:LEU:HD12	1.99	0.44
11:I:94:LYS:HB2	11:I:120:VAL:HB	1.99	0.44
17:O:10:LEU:HD21	17:O:40:LYS:HA	1.99	0.44
17:O:87:TYR:HD2	17:O:90:ARG:HD3	1.83	0.44
25:W:11:LEU:HD13	25:W:67:LEU:HG	2.00	0.44
34:A:326:A:H2	34:A:449:G:H1	1.62	0.44
34:A:997:G:C5	34:A:998:G:C5	3.06	0.44
34:A:1754:G:O3'	34:A:1755:A:H4'	2.18	0.44
34:A:2131:G:H2'	34:A:2132:U:O4'	2.17	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2213:A:H2'	34:A:2214:C:O4'	2.17	0.44
34:A:2755:A:C6	34:A:2756:G:N7	2.86	0.44
1:2:38:GLU:HG2	1:2:39:ASP:N	2.32	0.43
2:3:7:LYS:NZ	34:A:1252:G:N3	2.65	0.43
3:4:372:ASP:OD1	3:4:373:ALA:N	2.51	0.43
4:B:40:A:C2	4:B:45:G:C2	3.06	0.43
6:D:161:PHE:O	6:D:164:THR:OG1	2.35	0.43
8:F:124:LEU:O	8:F:184:PHE:HA	2.18	0.43
11:I:28:TYR:OH	34:A:1225:G:OP1	2.21	0.43
13:K:2:PRO:HA	34:A:1113:C:N3	2.33	0.43
14:L:2:ILE:HB	14:L:33:ALA:HB3	1.99	0.43
26:X:49:VAL:HG22	26:X:79:ASN:HB3	2.00	0.43
28:Z:7:PRO:HG3	34:A:74:C:H5"	2.00	0.43
34:A:332:C:H2'	34:A:333:C:H6	1.82	0.43
3:4:105:GLU:O	3:4:109:VAL:HG23	2.18	0.43
6:D:65:PRO:O	34:A:3010:U:O2'	2.34	0.43
11:I:23:THR:HG21	11:I:69:LEU:HD22	2.00	0.43
11:I:110:MET:N	11:I:114:ALA:O	2.27	0.43
12:J:22:PRO:HD2	12:J:41:CYS:SG	2.58	0.43
13:K:65:SER:OG	34:A:1259:U:OP2	2.22	0.43
14:L:100:GLY:O	14:L:119:PRO:HD2	2.18	0.43
15:M:37:THR:O	15:M:42:ALA:HB2	2.19	0.43
23:U:54:VAL:HG13	23:U:84:VAL:HG13	2.00	0.43
24:V:79:LYS:HA	24:V:79:LYS:HD3	1.65	0.43
34:A:150:C:O2'	34:A:151:A:H5'	2.18	0.43
34:A:394:G:H4'	34:A:413:G:C6	2.53	0.43
34:A:1160:G:N2	34:A:1231:U:O2	2.44	0.43
34:A:2134:G:C3'	34:A:2135:U:H2'	2.48	0.43
34:A:2490:A:H4'	34:A:2491:A:N3	2.33	0.43
34:A:2537:C:H2'	34:A:2538:A:H8	1.83	0.43
3:4:16:ALA:HB3	3:4:22:SER:CB	2.48	0.43
3:4:118:VAL:O	3:4:140:VAL:HG23	2.19	0.43
7:E:23:GLU:OE2	7:E:23:GLU:N	2.27	0.43
10:H:112:LEU:HD13	10:H:134:VAL:HG11	2.01	0.43
12:J:59:GLU:N	12:J:73:LYS:HZ1	2.17	0.43
24:V:22:LYS:HE3	24:V:22:LYS:HB2	1.83	0.43
34:A:993:G:H2'	34:A:1014:G:N2	2.33	0.43
34:A:1430:C:H2'	34:A:1431:U:H6	1.82	0.43
34:A:1636:A:H2'	34:A:1637:G:O4'	2.18	0.43
34:A:3014:A:C2	34:A:3015:C:C5	3.06	0.43
5:C:133:LEU:N	5:C:189:CYS:O	2.46	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:273:ARG:HE	5:C:276:LYS:HD2	1.82	0.43
6:D:11:LEU:HB3	19:Q:4:LEU:HD21	2.00	0.43
14:L:22:ILE:HD11	14:L:42:THR:OG1	2.19	0.43
25:W:26:GLN:OE1	25:W:26:GLN:HA	2.18	0.43
34:A:1243:G:OP2	34:A:1244:A:O2'	2.22	0.43
34:A:2133:G:OP2	34:A:2133:G:H8	2.02	0.43
34:A:2368:C:H5"	34:A:2369:C:OP1	2.18	0.43
34:A:2380:G:H2'	34:A:2381:A:C2	2.53	0.43
34:A:2514:G:H4'	34:A:2605:C:O2'	2.18	0.43
34:A:2861:U:H2'	34:A:2862:G:O4'	2.17	0.43
34:A:3118:U:H2'	34:A:3119:A:H8	1.83	0.43
3:4:18:GLU:HB2	3:4:22:SER:CA	2.48	0.43
6:D:4:LYS:HE2	6:D:4:LYS:HB2	1.82	0.43
9:G:16:ASP:N	9:G:16:ASP:OD1	2.52	0.43
9:G:35:LEU:HD21	9:G:72:LEU:HB3	2.01	0.43
12:J:122:ASP:CG	12:J:125:ALA:HB3	2.39	0.43
18:P:93:LYS:HB2	18:P:93:LYS:HE3	1.69	0.43
24:V:39:ASN:HD22	24:V:66:ILE:HB	1.83	0.43
34:A:1963:G:H2'	34:A:1964:U:H6	1.84	0.43
34:A:2274:C:H2'	34:A:2275:A:O4'	2.18	0.43
34:A:2538:A:H2'	34:A:2539:G:H8	1.84	0.43
34:A:2757:C:H2'	34:A:2758:A:O4'	2.19	0.43
3:4:133:GLU:O	3:4:137:LYS:N	2.35	0.43
3:4:313:GLU:OE2	3:4:316:ARG:NH1	2.51	0.43
4:B:50:C:H2'	4:B:51:G:C8	2.53	0.43
6:D:40:ARG:NH2	34:A:3008:C:O2	2.52	0.43
6:D:135:GLN:OE1	6:D:135:GLN:N	2.52	0.43
6:D:154:CYS:N	34:A:2798:G:O2'	2.45	0.43
7:E:21:PRO:HB2	7:E:24:LEU:HB2	2.00	0.43
12:J:19:GLN:OE1	12:J:19:GLN:N	2.39	0.43
12:J:135:ARG:O	12:J:135:ARG:HG2	2.17	0.43
34:A:164:A:H2'	34:A:165:U:C6	2.54	0.43
34:A:1543:A:N1	34:A:1628:A:H8	2.16	0.43
34:A:1633:U:H2'	34:A:1634:C:C6	2.53	0.43
34:A:2597:A:H2'	34:A:2598:C:C6	2.54	0.43
3:4:432:ARG:HB3	3:4:459:LEU:HD21	2.00	0.43
8:F:26:GLU:OE1	8:F:26:GLU:N	2.50	0.43
9:G:49:GLY:O	9:G:51:ILE:HG13	2.18	0.43
12:J:94:PRO:O	34:A:1194:C:O2'	2.17	0.43
19:Q:91:VAL:HG13	19:Q:109:ILE:HG23	2.01	0.43
23:U:46:ILE:HG23	23:U:50:PHE:HD2	1.84	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:W:16:ARG:NH2	25:W:19:THR:HA	2.34	0.43
27:Y:63:ARG:HH12	34:A:2315:U:P	2.41	0.43
34:A:149:C:H2'	34:A:150:C:C6	2.54	0.43
34:A:281:C:H2'	34:A:282:A:C8	2.54	0.43
34:A:290:C:C5	34:A:303:G:H5"	2.54	0.43
34:A:1202:A:N3	34:A:1224:G:H1'	2.34	0.43
34:A:1425:G:H3'	34:A:1426:G:N2	2.34	0.43
34:A:1545:C:O2'	34:A:1625:G:O6	2.33	0.43
34:A:1961:G:H3'	34:A:1962:A:H8	1.83	0.43
34:A:2124:A:N6	34:A:2157:G:O4'	2.52	0.43
3:4:82:LEU:HD22	3:4:113:THR:HG22	2.00	0.43
7:E:158:ILE:HD13	7:E:158:ILE:HA	1.89	0.43
34:A:1013:U:H2'	34:A:1014:G:O4'	2.17	0.43
34:A:1651:C:H2'	34:A:1652:A:C8	2.53	0.43
34:A:1790:A:H2'	34:A:1791:A:C8	2.54	0.43
34:A:2196:G:O2'	34:A:2197:G:OP2	2.30	0.43
34:A:2261:U:H2'	34:A:2262:C:C6	2.54	0.43
34:A:2375:G:H2'	34:A:2376:G:C8	2.52	0.43
34:A:2383:U:H2'	34:A:2384:C:H4'	2.00	0.43
34:A:2551:A:H2'	34:A:2552:A:C8	2.53	0.43
34:A:2623:A:H2'	34:A:2624:C:C6	2.53	0.43
1:2:46:LEU:O	1:2:50:VAL:HG22	2.18	0.43
5:C:35:ARG:H	5:C:35:ARG:HG2	2.56	0.43
5:C:258:ARG:HD2	34:A:2016:G:OP1	2.19	0.43
8:F:87:ARG:HE	8:F:87:ARG:HB2	1.59	0.43
8:F:117:ARG:O	8:F:117:ARG:NH1	2.37	0.43
9:G:18:THR:OG1	9:G:25:SER:CA	2.65	0.43
12:J:108:ARG:HD2	12:J:127:ALA:HB1	2.00	0.43
23:U:68:ARG:NH2	34:A:1449:C:H5"	2.34	0.43
34:A:42:G:H5'	34:A:43:C:OP1	2.18	0.43
34:A:74:C:H2'	34:A:75:U:C6	2.54	0.43
34:A:82:G:C6	34:A:83:C:C4	3.06	0.43
34:A:431:C:H2'	34:A:432:C:C6	2.54	0.43
34:A:722:G:C6	34:A:730:G:C2	3.07	0.43
34:A:954:U:H2'	34:A:955:C:C6	2.54	0.43
34:A:1214:A:OP2	34:A:1214:A:H8	2.01	0.43
34:A:1622:G:H2'	34:A:1622:G:N3	2.32	0.43
34:A:1843:C:O2'	34:A:1844:A:H5'	2.17	0.43
34:A:2193:A:C4	34:A:2197:G:H1'	2.54	0.43
34:A:2349:A:H1'	34:A:2350:G:C8	2.54	0.43
34:A:2521:C:O2	34:A:2521:C:H2'	2.19	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:49:VAL:HA	3:4:117:THR:HB	2.01	0.43
3:4:181:GLU:OE1	3:4:185:ARG:NH1	2.52	0.43
3:4:201:ARG:C	3:4:204:GLY:H	2.21	0.43
8:F:108:ASP:OD1	8:F:109:ARG:N	2.52	0.43
10:H:41:ARG:HD2	10:H:41:ARG:HA	1.74	0.43
20:R:43:LEU:HD23	20:R:43:LEU:HA	1.70	0.43
23:U:43:LYS:HB2	23:U:57:VAL:HG21	2.01	0.43
34:A:756:A:H3'	34:A:757:G:C2	2.54	0.43
34:A:946:G:H2'	34:A:947:U:O4'	2.18	0.43
34:A:1087:G:H2'	34:A:1088:U:C6	2.53	0.43
34:A:1178:U:C2	34:A:1180:G:H5'	2.54	0.43
34:A:1316:U:O2'	34:A:1317:G:H5'	2.19	0.43
34:A:1401:A:H1'	34:A:1403:C:OP2	2.19	0.43
34:A:1810:A:H2'	34:A:1811:C:C6	2.53	0.43
34:A:2054:C:O2	34:A:2145:C:N3	2.52	0.43
34:A:2130:G:C2	34:A:2131:G:N7	2.87	0.43
34:A:2133:G:H2'	34:A:2133:G:N3	2.34	0.43
34:A:2300:A:H2'	34:A:2301:C:C6	2.54	0.43
34:A:2366:C:H3'	34:A:2367:G:H8	1.84	0.43
34:A:2374:U:C2	34:A:2375:G:C8	3.07	0.43
34:A:2636:A:H2'	34:A:2637:G:O4'	2.19	0.43
34:A:3018:U:H2'	34:A:3019:C:C6	2.54	0.43
3:4:76:THR:OG1	3:4:275:ALA:HB1	2.19	0.42
3:4:303:PHE:CE2	3:4:349:VAL:HG11	2.53	0.42
3:4:420:VAL:HG12	3:4:467:ALA:HA	2.00	0.42
4:B:40:A:H2'	4:B:41:U:C6	2.53	0.42
7:E:139:LYS:HB2	7:E:139:LYS:HE3	1.77	0.42
8:F:11:LEU:HG	8:F:108:ASP:HB3	2.00	0.42
12:J:98:LYS:HZ1	12:J:140:THR:HG22	1.81	0.42
13:K:93:LEU:HG	13:K:100:VAL:HG21	2.00	0.42
16:N:52:ILE:HD13	16:N:52:ILE:HA	1.82	0.42
17:O:38:GLU:HB2	17:O:109:PRO:HB2	2.01	0.42
18:P:88:ILE:HD12	18:P:88:ILE:HA	1.94	0.42
34:A:295:U:H2'	34:A:296:A:O4'	2.19	0.42
34:A:673:C:H2'	34:A:674:U:C6	2.54	0.42
34:A:1012:C:C4	34:A:1013:U:C4	3.07	0.42
34:A:1202:A:C8	34:A:1203:A:N1	2.87	0.42
34:A:2336:U:H5'	34:A:2338:G:N1	2.33	0.42
34:A:3013:C:O2'	34:A:3113:A:N6	2.46	0.42
1:2:10:ARG:HE	1:2:10:ARG:HB3	1.51	0.42
3:4:128:GLN:OE1	3:4:128:GLN:N	2.52	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:41:VAL:HG12	8:F:163:VAL:HA	2.00	0.42
8:F:67:ILE:HG12	8:F:145:PHE:CG	2.53	0.42
8:F:142:GLN:NE2	8:F:157:ARG:H	2.17	0.42
10:H:146:LEU:HD12	10:H:146:LEU:HA	1.93	0.42
11:I:6:LYS:O	11:I:10:VAL:HG23	2.19	0.42
11:I:101:LYS:HA	11:I:101:LYS:HD3	1.82	0.42
24:V:10:LEU:HG	24:V:20:LYS:HG2	2.01	0.42
24:V:82:ARG:NH1	34:A:381:A:OP2	2.52	0.42
34:A:296:A:H2'	34:A:297:G:C8	2.54	0.42
34:A:828:G:H2'	34:A:829:U:O4'	2.19	0.42
34:A:864:A:H4'	34:A:1386:G:N3	2.35	0.42
34:A:1323:G:O2'	34:A:1352:A:N1	2.36	0.42
34:A:1822:C:H2'	34:A:1823:C:C6	2.54	0.42
34:A:2288:C:H2'	34:A:2289:C:H6	1.81	0.42
34:A:2350:G:H2'	34:A:2351:A:H8	1.80	0.42
34:A:2373:G:H2'	34:A:2374:U:C6	2.54	0.42
3:4:52:VAL:HA	3:4:85:LEU:O	2.19	0.42
3:4:304:VAL:HG12	3:4:307:LEU:HD12	2.02	0.42
4:B:4:A:C8	4:B:63:U:H1'	2.54	0.42
4:B:53:A:N7	18:P:45:ARG:CZ	2.82	0.42
4:B:60:G:H3'	4:B:61:C:H6	1.84	0.42
10:H:26:GLY:HA2	10:H:30:LEU:HB2	2.00	0.42
13:K:68:LYS:HE3	34:A:1140:G:N7	2.34	0.42
15:M:94:GLY:H	15:M:97:GLU:HB2	1.84	0.42
18:P:10:ILE:HD13	18:P:10:ILE:HA	1.85	0.42
21:S:92:GLN:OE1	34:A:1111:G:H1'	2.18	0.42
34:A:394:G:H4'	34:A:413:G:C5	2.55	0.42
34:A:401:C:H2'	34:A:402:G:O4'	2.19	0.42
34:A:1064:A:H2'	34:A:1065:C:C6	2.53	0.42
34:A:1378:U:C4	34:A:1379:G:C6	3.08	0.42
34:A:1650:G:H2'	34:A:1651:C:C6	2.54	0.42
34:A:2008:A:N6	34:A:2045:G:O2'	2.39	0.42
1:2:38:GLU:HG2	1:2:39:ASP:H	1.85	0.42
3:4:141:ILE:HD12	3:4:141:ILE:O	2.19	0.42
3:4:206:THR:O	3:4:209:GLU:N	2.46	0.42
3:4:280:LEU:HG	3:4:281:GLU:HG3	2.02	0.42
3:4:328:LEU:O	3:4:365:LEU:N	2.48	0.42
5:C:179:SER:OG	34:A:2016:G:N7	2.52	0.42
10:H:85:ALA:HB3	10:H:151:GLN:HB3	2.01	0.42
11:I:31:LEU:HB3	11:I:36:LEU:HD12	2.01	0.42
11:I:40:ARG:NH1	34:A:1201:G:H4'	2.34	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:J:98:LYS:CE	12:J:140:THR:HG22	2.49	0.42
18:P:55:LEU:HD23	18:P:55:LEU:HA	1.72	0.42
18:P:83:ARG:HD3	18:P:83:ARG:O	2.20	0.42
34:A:446:G:OP2	34:A:446:G:H8	2.01	0.42
34:A:948:G:H2'	34:A:949:C:C6	2.55	0.42
34:A:1001:C:H3'	34:A:1002:C:O4'	2.19	0.42
34:A:1202:A:H2'	34:A:1203:A:C4	2.54	0.42
34:A:1721:U:H2'	34:A:1722:C:C6	2.55	0.42
34:A:1733:C:H2'	34:A:1734:C:H6	1.84	0.42
34:A:2364:C:H2'	34:A:2365:A:C8	2.50	0.42
34:A:2713:G:O2'	34:A:2714:G:H5'	2.19	0.42
3:4:193:GLY:HA2	3:4:207:LYS:CE	2.49	0.42
3:4:200:THR:HG23	3:4:200:THR:O	2.19	0.42
3:4:293:ARG:HA	3:4:438:HIS:NE2	2.34	0.42
4:B:30:G:H21	4:B:58:A:N6	2.16	0.42
5:C:78:LYS:HB2	5:C:78:LYS:HE2	1.82	0.42
5:C:273:ARG:CZ	5:C:274:THR:H	2.32	0.42
8:F:14:ARG:HB2	8:F:18:GLU:OE1	2.20	0.42
8:F:105:GLU:O	8:F:109:ARG:HG2	2.20	0.42
8:F:122:ARG:HH11	8:F:122:ARG:HA	1.83	0.42
9:G:37:VAL:HG23	9:G:69:SER:HB3	2.00	0.42
11:I:28:TYR:HB2	11:I:31:LEU:HD12	2.00	0.42
14:L:19:ILE:HB	14:L:41:ALA:HB1	2.01	0.42
15:M:6:LEU:HD23	15:M:6:LEU:HA	1.81	0.42
15:M:118:LEU:HD12	15:M:119:THR:N	2.35	0.42
18:P:85:GLY:O	18:P:88:ILE:HG22	2.19	0.42
22:T:7:PHE:HB3	22:T:116:SER:O	2.20	0.42
34:A:331:U:H2'	34:A:332:C:C6	2.54	0.42
34:A:387:U:H2'	34:A:388:U:C6	2.55	0.42
34:A:689:U:H2'	34:A:690:G:H8	1.84	0.42
34:A:1005:A:H2'	34:A:1006:G:O4'	2.19	0.42
34:A:1197:C:C2	34:A:1198:C:C5	3.08	0.42
34:A:1733:C:H2'	34:A:1734:C:C6	2.54	0.42
34:A:2761:U:H2'	34:A:2762:C:H6	1.84	0.42
34:A:3074:C:H2'	34:A:3075:C:H6	1.83	0.42
6:D:54:TYR:CG	6:D:55:GLY:N	2.87	0.42
6:D:100:GLU:OE2	6:D:100:GLU:HA	2.20	0.42
7:E:30:ASN:O	7:E:34:MET:HG3	2.18	0.42
7:E:48:GLY:O	7:E:95:PRO:HA	2.19	0.42
8:F:9:PRO:HG2	8:F:104:TRP:HB3	2.01	0.42
8:F:24:GLN:HA	8:F:27:PHE:CE2	2.54	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:128:GLN:HA	34:A:2528:G:OP1	2.19	0.42
12:J:89:LYS:HE3	12:J:89:LYS:HB3	1.94	0.42
13:K:36:LEU:HD11	13:K:122:LEU:HD13	2.02	0.42
15:M:91:GLY:HA2	15:M:122:VAL:HG12	2.01	0.42
19:Q:56:GLU:HB3	19:Q:75:VAL:HB	2.01	0.42
21:S:17:ALA:N	21:S:20:ASP:OD1	2.52	0.42
21:S:64:VAL:HG22	21:S:97:LEU:HD21	2.01	0.42
23:U:31:PHE:CE2	23:U:96:PHE:CZ	3.07	0.42
23:U:42:ILE:O	23:U:46:ILE:HG12	2.20	0.42
24:V:39:ASN:ND2	24:V:66:ILE:HB	2.35	0.42
34:A:307:G:H2'	34:A:308:U:C6	2.53	0.42
34:A:380:A:N1	34:A:404:A:O2'	2.38	0.42
34:A:502:C:N4	34:A:503:A:H62	2.18	0.42
34:A:772:U:H2'	34:A:773:G:C8	2.54	0.42
34:A:847:C:H2'	34:A:848:G:O4'	2.19	0.42
34:A:1289:A:H2'	34:A:1290:C:O4'	2.20	0.42
34:A:1935:C:H2'	34:A:1936:G:H8	1.85	0.42
1:2:38:GLU:OE1	1:2:40:ASN:ND2	2.53	0.42
3:4:21:ALA:HB1	3:4:88:ARG:HB2	1.90	0.42
8:F:136:THR:OG1	34:A:2527:G:N2	2.53	0.42
12:J:129:ILE:HG12	34:A:1198:C:O2	2.19	0.42
13:K:117:GLN:O	13:K:120:LYS:HG2	2.20	0.42
20:R:31:LEU:HD13	34:A:672:C:H4'	2.01	0.42
20:R:101:SER:OG	20:R:102:ASP:N	2.53	0.42
22:T:14:ALA:HB2	22:T:57:VAL:HG22	2.01	0.42
34:A:578:G:OP2	34:A:578:G:H8	2.02	0.42
34:A:947:U:H2'	34:A:948:G:C8	2.55	0.42
34:A:1434:G:O2'	34:A:1435:C:H5'	2.19	0.42
34:A:1533:U:O2	34:A:1533:U:H2'	2.19	0.42
34:A:1854:U:O2'	34:A:1977:C:O2'	2.21	0.42
34:A:2324:A:N6	34:A:2413:G:C5	2.88	0.42
34:A:2588:C:H2'	34:A:2589:G:O4'	2.20	0.42
5:C:54:LYS:HE2	34:A:2040:G:OP1	2.19	0.42
8:F:68:THR:HG21	8:F:96:VAL:HG11	2.02	0.42
16:N:76:LYS:HD3	16:N:91:GLU:HG2	2.02	0.42
19:Q:88:ARG:HB2	19:Q:112:LYS:HB2	2.02	0.42
34:A:74:C:H2'	34:A:75:U:H6	1.83	0.42
34:A:1418:G:O6	34:A:1419:A:N6	2.53	0.42
34:A:1951:G:H2'	34:A:1952:C:C6	2.55	0.42
34:A:2321:U:H2'	34:A:2322:C:C6	2.55	0.42
34:A:2870:C:H2'	34:A:2871:U:O4'	2.20	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:136:VAL:HG13	3:4:138:VAL:HB	2.02	0.42
6:D:151:ILE:HG23	6:D:160:VAL:HG13	2.02	0.42
7:E:53:LYS:HE2	34:A:539:C:H4'	2.02	0.42
9:G:152:LEU:HD23	9:G:152:LEU:HA	1.91	0.42
11:I:46:SER:HA	11:I:83:LYS:HB2	2.01	0.42
12:J:42:LYS:HA	12:J:42:LYS:HD3	1.64	0.42
15:M:57:ILE:HD13	15:M:60:ARG:HH21	1.84	0.42
34:A:928:U:HO2'	34:A:1339:G:HO2'	1.65	0.42
34:A:1002:C:O2'	34:A:1003:A:OP1	2.26	0.42
34:A:1301:G:H2'	34:A:1302:G:O4'	2.20	0.42
34:A:1542:A:H8	34:A:1543:A:N7	2.18	0.42
34:A:3013:C:H5'	34:A:3014:A:C5'	2.50	0.42
3:4:20:ARG:HB3	3:4:88:ARG:HH12	1.85	0.42
3:4:177:ARG:HD2	3:4:177:ARG:HA	1.86	0.42
3:4:443:GLU:H	3:4:450:ARG:HG3	1.85	0.42
5:C:155:LEU:HD13	5:C:177:MET:HE1	2.02	0.42
6:D:150:SER:O	34:A:2736:C:H1'	2.19	0.42
17:O:16:HIS:CE1	17:O:20:LEU:HD12	2.55	0.42
22:T:99:ARG:HH12	34:A:862:U:H4'	1.85	0.42
34:A:504:C:H2'	34:A:505:C:C6	2.55	0.42
34:A:1278:C:N3	34:A:1279:G:N7	2.68	0.42
34:A:1869:G:H2'	34:A:1870:U:O4'	2.20	0.42
34:A:2127:G:O2'	34:A:2151:A:H4'	2.20	0.42
34:A:2366:C:H3'	34:A:2367:G:C8	2.55	0.42
34:A:2777:G:N2	34:A:2779:U:OP1	2.53	0.42
34:A:2869:C:H4'	34:A:2956:G:O2'	2.20	0.42
34:A:3014:A:N6	34:A:3112:A:H2'	2.35	0.42
34:A:3074:C:H2'	34:A:3075:C:C6	2.55	0.42
3:4:22:SER:HB3	3:4:23:LEU:H	1.59	0.41
4:B:50:C:H2'	4:B:51:G:H8	1.85	0.41
6:D:86:LEU:HD22	6:D:95:TYR:HE2	1.85	0.41
6:D:173:ASP:OD1	6:D:173:ASP:N	2.53	0.41
8:F:178:ARG:HA	8:F:182:PHE:HD2	1.85	0.41
12:J:94:PRO:O	12:J:95:HIS:HB2	2.20	0.41
12:J:102:VAL:HG12	12:J:103:THR:H	1.85	0.41
15:M:31:LYS:HB3	15:M:32:THR:H	1.61	0.41
18:P:82:VAL:HG23	18:P:119:ALA:HB2	2.02	0.41
20:R:91:ASP:OD1	20:R:93:LYS:HB3	2.20	0.41
34:A:24:G:C2	34:A:599:G:N3	2.88	0.41
34:A:183:G:H2'	34:A:184:C:H6	1.85	0.41
34:A:339:U:H2'	34:A:340:A:N7	2.34	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:966:U:H2'	34:A:967:G:H8	1.85	0.41
34:A:1001:C:C6	34:A:1002:C:H1'	2.55	0.41
34:A:1652:A:H2'	34:A:1653:G:C8	2.55	0.41
34:A:1833:C:H2'	34:A:1835:C:C5	2.55	0.41
34:A:2134:G:O2'	34:A:2146:A:N6	2.51	0.41
34:A:2396:A:C6	34:A:2397:C:C4	3.09	0.41
4:B:95:G:O2'	34:A:1033:A:H5"	2.20	0.41
8:F:34:GLN:HB3	18:P:3:HIS:HD2	1.84	0.41
8:F:158:GLY:HA3	34:A:2529:A:C6	2.55	0.41
12:J:57:PRO:CB	12:J:73:LYS:HB2	2.50	0.41
13:K:120:LYS:HE2	13:K:120:LYS:HB3	1.75	0.41
15:M:77:VAL:HG11	34:A:730:G:H1	1.85	0.41
23:U:12:LEU:HB2	23:U:32:VAL:HG13	2.03	0.41
34:A:446:G:N2	34:A:447:A:H1'	2.35	0.41
34:A:949:C:C2	34:A:950:A:C8	3.08	0.41
34:A:996:G:C5	34:A:997:G:N7	2.88	0.41
34:A:998:G:H8	34:A:998:G:OP2	2.03	0.41
34:A:1934:G:H2'	34:A:1935:C:H6	1.85	0.41
34:A:2420:U:O2'	34:A:2421:A:H2'	2.20	0.41
34:A:2971:G:H2'	34:A:2972:A:C8	2.55	0.41
1:2:3:GLU:HA	1:2:3:GLU:OE1	2.20	0.41
3:4:383:ARG:NE	3:4:383:ARG:HA	2.36	0.41
3:4:454:ARG:H	3:4:454:ARG:HG2	1.60	0.41
5:C:162:SER:HB3	5:C:195:GLU:HB2	2.03	0.41
6:D:78:ARG:HA	6:D:78:ARG:HD2	1.95	0.41
10:H:78:VAL:HG13	10:H:146:LEU:HD12	2.01	0.41
10:H:80:LEU:HD13	10:H:103:ALA:HB2	2.02	0.41
13:K:88:THR:OG1	13:K:91:GLU:HG3	2.20	0.41
15:M:86:ALA:O	15:M:88:PRO:HD3	2.21	0.41
18:P:70:VAL:HG22	18:P:83:ARG:HG3	2.01	0.41
19:Q:61:ARG:NH1	19:Q:70:GLU:OE1	2.41	0.41
24:V:41:ILE:HG13	24:V:64:ALA:HB2	2.03	0.41
26:X:29:GLN:HE21	26:X:29:GLN:HB3	1.76	0.41
34:A:334:G:C6	34:A:348:G:C5	3.08	0.41
34:A:441:G:H2'	34:A:442:U:H6	1.84	0.41
34:A:479:A:H1'	34:A:499:G:O4'	2.20	0.41
34:A:980:C:HO2'	34:A:981:U:P	2.42	0.41
34:A:1006:G:H2'	34:A:1007:G:O4'	2.21	0.41
34:A:1175:A:N6	34:A:1205:G:OP1	2.53	0.41
34:A:2125:A:N3	34:A:2126:C:N4	2.68	0.41
34:A:2623:A:H2'	34:A:2624:C:H6	1.86	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:4:24:ARG:H	3:4:87:GLN:NE2	2.18	0.41
3:4:230:LYS:HE3	3:4:316:ARG:NH2	2.35	0.41
8:F:174:ARG:HD3	8:F:178:ARG:HH21	1.86	0.41
11:I:41:ARG:HH22	34:A:1200:U:H4'	1.86	0.41
12:J:76:PRO:O	12:J:79:LYS:C	2.57	0.41
15:M:124:VAL:HG21	15:M:137:ILE:HD13	2.03	0.41
17:O:2:PRO:HG2	34:A:2914:A:C2	2.55	0.41
23:U:30:THR:HA	23:U:82:ALA:O	2.20	0.41
34:A:279:U:H2'	34:A:280:G:C8	2.51	0.41
34:A:680:U:H2'	34:A:681:C:C6	2.55	0.41
34:A:1383:A:H2'	34:A:1384:G:O4'	2.19	0.41
34:A:1931:A:H61	34:A:1962:A:H61	1.67	0.41
34:A:2132:U:HO2'	34:A:2133:G:C1'	2.33	0.41
34:A:2366:C:H2'	34:A:2367:G:O4'	2.20	0.41
34:A:2389:U:H3'	34:A:2390:U:C5	2.54	0.41
34:A:2482:U:O2'	34:A:2651:C:OP2	2.32	0.41
34:A:3033:G:H2'	34:A:3034:C:H6	1.84	0.41
3:4:221:LYS:HD3	34:A:2686:U:OP1	2.21	0.41
9:G:6:LYS:HD3	9:G:6:LYS:HA	1.83	0.41
9:G:116:ILE:HD11	9:G:152:LEU:HD11	2.02	0.41
10:H:113:ASP:O	10:H:116:THR:OG1	2.27	0.41
15:M:133:ALA:O	15:M:137:ILE:HG13	2.20	0.41
20:R:46:ALA:O	20:R:50:ARG:HB2	2.21	0.41
34:A:1091:A:H5'	34:A:1303:U:H1'	2.01	0.41
34:A:1250:U:H2'	34:A:1251:A:C8	2.55	0.41
34:A:1387:A:OP1	34:A:1387:A:H4'	2.20	0.41
34:A:1621:C:H2'	34:A:1622:G:H5'	2.01	0.41
34:A:1622:G:H2'	34:A:1623:U:H5'	2.01	0.41
34:A:2027:A:H2'	34:A:2028:G:O4'	2.21	0.41
34:A:2740:G:H2'	34:A:2741:C:C6	2.55	0.41
34:A:2998:C:H2'	34:A:2999:A:O4'	2.21	0.41
3:4:118:VAL:O	3:4:140:VAL:HA	2.20	0.41
3:4:151:PHE:CE2	3:4:311:LEU:HD13	2.55	0.41
10:H:80:LEU:HD23	10:H:95:VAL:HG22	2.02	0.41
12:J:95:HIS:NE2	12:J:135:ARG:HG2	2.36	0.41
14:L:23:ARG:NH2	34:A:2771:U:O2	2.47	0.41
15:M:84:ASN:HB2	15:M:118:LEU:HD13	2.02	0.41
15:M:98:LEU:HD23	15:M:98:LEU:HA	1.86	0.41
17:O:45:ARG:HB3	17:O:46:PRO:HD3	2.03	0.41
17:O:64:ARG:NH1	34:A:3072:A:O3'	2.54	0.41
17:O:87:TYR:CD2	17:O:90:ARG:HD3	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:P:119:ALA:O	18:P:122:GLU:HG3	2.20	0.41
22:T:26:ARG:HE	22:T:26:ARG:HB3	1.63	0.41
23:U:93:ILE:H	23:U:93:ILE:HG13	1.72	0.41
25:W:16:ARG:HG2	25:W:48:GLU:HB3	2.02	0.41
34:A:287:A:H1'	34:A:300:G:C6	2.55	0.41
34:A:322:A:H2'	34:A:323:C:O4'	2.20	0.41
34:A:376:G:H2'	34:A:377:C:C6	2.55	0.41
34:A:449:G:C6	34:A:450:G:C5	3.09	0.41
34:A:813:C:O2'	34:A:849:A:N6	2.47	0.41
34:A:819:G:O2'	34:A:841:G:N2	2.39	0.41
34:A:1002:C:H2'	34:A:1003:A:H5"	2.03	0.41
34:A:1314:C:H2'	34:A:1315:C:H6	1.84	0.41
3:4:434:HIS:CE1	3:4:439:VAL:HG11	2.55	0.41
8:F:106:PHE:HA	8:F:109:ARG:HG2	2.02	0.41
9:G:90:ILE:HB	9:G:130:THR:HA	2.02	0.41
11:I:49:TYR:HE1	11:I:78:ALA:HB1	1.85	0.41
12:J:34:GLY:C	12:J:66:ARG:HH21	2.24	0.41
34:A:48:G:H1'	34:A:115:A:N6	2.36	0.41
34:A:630:U:H2'	34:A:631:C:C6	2.55	0.41
34:A:2350:G:H4'	34:A:2351:A:OP1	2.20	0.41
34:A:2537:C:H2'	34:A:2538:A:C8	2.56	0.41
34:A:3013:C:H5'	34:A:3014:A:H5'	2.02	0.41
6:D:43:GLU:OE2	6:D:43:GLU:N	2.31	0.41
7:E:182:GLN:HB3	34:A:708:G:H22	1.86	0.41
9:G:19:ILE:HA	9:G:19:ILE:HD13	1.71	0.41
17:O:82:GLU:HG3	17:O:83:ILE:HG13	2.02	0.41
19:Q:4:LEU:HD23	19:Q:6:PHE:HE1	1.84	0.41
19:Q:26:ASN:HB2	19:Q:84:ASP:OD1	2.20	0.41
22:T:16:TYR:H	22:T:109:HIS:CE1	2.39	0.41
34:A:337:U:H2'	34:A:344:G:C6	2.56	0.41
34:A:490:A:C2'	34:A:491:U:H5'	2.51	0.41
34:A:862:U:OP2	34:A:2835:U:O2'	2.37	0.41
34:A:1007:G:C6	34:A:1008:G:C6	3.09	0.41
34:A:1177:G:N1	34:A:1198:C:N3	2.68	0.41
34:A:1226:U:C4	34:A:1227:C:C4	3.09	0.41
34:A:2523:A:H2'	34:A:2524:C:C6	2.55	0.41
34:A:2603:G:H2'	34:A:2604:U:C6	2.56	0.41
34:A:2755:A:C6	34:A:2756:G:C5	3.09	0.41
34:A:3026:G:H2'	34:A:3027:G:O4'	2.21	0.41
1:2:32:ARG:NH1	34:A:1116:C:O2	2.46	0.41
4:B:64:G:H2'	4:B:65:C:C6	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:23:LEU:HA	8:F:23:LEU:HD12	1.76	0.41
8:F:113:ILE:HG22	8:F:146:HIS:CE1	2.55	0.41
8:F:170:ASP:O	8:F:174:ARG:HB2	2.20	0.41
11:I:39:LEU:HD21	11:I:96:PHE:CG	2.56	0.41
11:I:83:LYS:HB2	11:I:83:LYS:HE3	1.89	0.41
13:K:55:ILE:HA	13:K:123:LYS:O	2.20	0.41
19:Q:2:ASN:HB3	19:Q:5:ASP:OD2	2.20	0.41
23:U:8:ARG:HG2	28:Z:30:PHE:HB2	2.03	0.41
24:V:58:GLY:N	34:A:571:A:N3	2.60	0.41
27:Y:36:VAL:HG11	27:Y:61:VAL:HG11	2.02	0.41
34:A:139:U:H2'	34:A:140:G:O4'	2.21	0.41
34:A:494:G:H2'	34:A:495:C:O4'	2.21	0.41
34:A:940:A:H2'	34:A:941:U:O4'	2.21	0.41
34:A:1105:C:O2'	34:A:1118:A:N3	2.44	0.41
34:A:1139:A:H2'	34:A:1141:U:H5'	2.02	0.41
34:A:1314:C:H2'	34:A:1315:C:C6	2.56	0.41
34:A:1752:C:H2'	34:A:1753:C:O4'	2.21	0.41
34:A:2329:G:H1	34:A:2406:U:H3	1.69	0.41
34:A:2346:G:C2	34:A:2399:A:N7	2.89	0.41
34:A:2469:U:O2'	34:A:2660:G:OP2	2.25	0.41
34:A:2481:U:O2'	34:A:2482:U:H5'	2.21	0.41
3:4:432:ARG:NH2	3:4:459:LEU:HG	2.36	0.41
5:C:182:ILE:HD13	5:C:270:ARG:NH1	2.36	0.41
6:D:174:ARG:NH1	34:A:2997:C:OP1	2.54	0.41
16:N:29:PHE:HZ	34:A:1020:A:H2	1.69	0.41
16:N:45:ARG:H	16:N:45:ARG:HG3	1.64	0.41
16:N:58:ILE:O	16:N:59:LYS:HG2	2.21	0.41
23:U:15:VAL:HB	23:U:30:THR:HG23	2.03	0.41
26:X:8:SER:O	34:A:2479:G:N2	2.41	0.41
34:A:1003:A:OP1	34:A:1003:A:H2'	2.20	0.41
34:A:1195:A:N1	34:A:1206:A:H2'	2.36	0.41
34:A:1295:U:H2'	34:A:1296:G:C8	2.54	0.41
34:A:1337:G:N2	34:A:1340:A:OP2	2.47	0.41
34:A:1417:A:H5'	34:A:1826:A:OP2	2.21	0.41
34:A:1443:G:H2'	34:A:1445:C:C5	2.55	0.41
34:A:1649:C:C5	34:A:1789:A:H5"	2.56	0.41
34:A:1755:A:C2	34:A:1759:A:H1'	2.56	0.41
34:A:1806:A:H2'	34:A:1807:C:C6	2.56	0.41
34:A:1934:G:H2'	34:A:1935:C:C6	2.55	0.41
34:A:2133:G:C8	34:A:2134:G:C8	3.09	0.41
34:A:2335:G:N1	34:A:2390:U:O3'	2.51	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:2408:G:H2'	34:A:2409:U:O4'	2.21	0.41
34:A:2885:G:H2'	34:A:2886:A:C8	2.55	0.41
3:4:193:GLY:HA2	3:4:207:LYS:HE2	2.01	0.40
3:4:424:TYR:CE2	3:4:447:ALA:HA	2.56	0.40
9:G:164:ARG:HE	9:G:164:ARG:HB2	1.62	0.40
10:H:80:LEU:HD21	10:H:95:VAL:HG13	2.03	0.40
11:I:41:ARG:NH2	34:A:1200:U:H4'	2.35	0.40
12:J:19:GLN:NE2	12:J:52:ARG:NH1	2.69	0.40
13:K:45:THR:HG23	13:K:48:VAL:HB	2.03	0.40
19:Q:110:LYS:CD	19:Q:113:ARG:HH22	2.33	0.40
34:A:6:G:N2	34:A:7:U:O4	2.54	0.40
34:A:155:G:H2'	34:A:156:C:H6	1.84	0.40
34:A:155:G:H2'	34:A:156:C:C6	2.55	0.40
34:A:220:A:H2	34:A:266:U:H4'	1.87	0.40
34:A:1406:U:H2'	34:A:1407:G:H8	1.86	0.40
34:A:2031:G:OP2	34:A:2032:A:O2'	2.30	0.40
34:A:2125:A:N3	34:A:2125:A:C2'	2.83	0.40
34:A:2248:C:H2'	34:A:2249:G:H8	1.85	0.40
34:A:2358:A:C2	34:A:2359:G:H1'	2.56	0.40
34:A:2522:A:H2'	34:A:2523:A:O4'	2.21	0.40
34:A:2543:U:H1'	34:A:2544:U:C5	2.55	0.40
7:E:182:GLN:HB3	34:A:708:G:N2	2.36	0.40
9:G:17:VAL:HB	9:G:45:ARG:CZ	2.51	0.40
10:H:25:TYR:CD1	34:A:2317:G:H5'	2.56	0.40
12:J:40:PHE:CE1	12:J:60:ILE:HD13	2.57	0.40
12:J:101:LYS:HE2	12:J:140:THR:OG1	2.21	0.40
24:V:37:GLY:HA2	24:V:40:ARG:HH22	1.86	0.40
28:Z:21:LYS:HE2	28:Z:21:LYS:HB2	1.77	0.40
28:Z:54:ILE:HA	28:Z:54:ILE:HD13	1.80	0.40
34:A:183:G:H2'	34:A:184:C:C6	2.56	0.40
34:A:468:G:O2'	34:A:469:G:H5'	2.22	0.40
34:A:489:A:H2'	34:A:490:A:H8	1.86	0.40
34:A:545:A:N1	34:A:558:A:H5"	2.36	0.40
34:A:1073:G:O6	34:A:1075:U:O2'	2.38	0.40
34:A:1109:U:H3	34:A:1282:G:H1	1.69	0.40
34:A:1194:C:H2'	34:A:1195:A:O4'	2.21	0.40
34:A:1205:G:C6	34:A:1207:G:C2	3.09	0.40
34:A:1227:C:H2'	34:A:1228:A:C4	2.56	0.40
35:4:501:GCP:O2B	35:4:501:GCP:O3G	2.39	0.40
10:H:109:GLY:N	10:H:110:PRO:HD2	2.37	0.40
11:I:94:LYS:HZ2	11:I:121:GLU:HA	1.86	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:L:29:SER:HB2	34:A:2899:A:H4'	2.03	0.40
17:O:63:ARG:HA	17:O:80:PHE:CZ	2.57	0.40
23:U:10:ILE:H	23:U:10:ILE:HD12	1.86	0.40
34:A:222:A:O2'	34:A:508:G:N3	2.50	0.40
34:A:229:U:H3'	34:A:230:G:C5'	2.51	0.40
34:A:503:A:H2'	34:A:504:C:H6	1.85	0.40
34:A:722:G:H2'	34:A:723:C:C6	2.56	0.40
34:A:931:C:H2'	34:A:932:C:C6	2.57	0.40
34:A:1117:U:O2	34:A:1118:A:C8	2.74	0.40
34:A:1127:A:N3	34:A:1272:C:O2'	2.51	0.40
34:A:2053:C:OP2	34:A:2134:G:N2	2.54	0.40
34:A:2054:C:C6	34:A:2133:G:O6	2.75	0.40
34:A:2054:C:H5"	34:A:2133:G:C6	2.56	0.40
34:A:2059:G:H2'	34:A:2060:C:C6	2.55	0.40
34:A:2359:G:H3'	34:A:2360:C:H5"	2.02	0.40
34:A:2414:G:H2'	34:A:2415:G:C8	2.55	0.40
34:A:3055:G:H1'	34:A:3104:A:N6	2.36	0.40
7:E:126:ALA:HA	7:E:196:PHE:O	2.22	0.40
9:G:138:ASP:O	9:G:142:VAL:HG23	2.21	0.40
14:L:87:ILE:HA	14:L:93:PRO:HA	2.04	0.40
16:N:15:PRO:O	16:N:41:TYR:OH	2.32	0.40
34:A:565:A:H2'	34:A:566:A:C8	2.55	0.40
34:A:1010:U:H2'	34:A:1012:C:C6	2.56	0.40
34:A:1405:U:H2'	34:A:1406:U:H6	1.86	0.40
34:A:2307:C:H2'	34:A:2308:U:O4'	2.21	0.40
34:A:3040:G:H2'	34:A:3042:A:N7	2.36	0.40
34:A:3116:C:H2'	34:A:3117:U:H6	1.87	0.40
4:B:32:C:C2'	4:B:54:A:H61	2.34	0.40
5:C:100:GLY:O	34:A:1720:G:O2'	2.35	0.40
17:O:10:LEU:HB3	17:O:17:GLN:HG3	2.04	0.40
19:Q:1:MET:N	34:A:3064:G:N3	2.69	0.40
21:S:12:LYS:HE3	34:A:1112:C:O2	2.22	0.40
21:S:14:TYR:CE2	21:S:24:VAL:HG23	2.56	0.40
21:S:21:VAL:HG12	21:S:98:LYS:HB2	2.04	0.40
26:X:18:ALA:HB1	34:A:2495:G:OP1	2.21	0.40
34:A:94:G:H2'	34:A:95:C:C6	2.57	0.40
34:A:248:G:N3	34:A:2655:U:H4'	2.36	0.40
34:A:609:G:H2'	34:A:610:C:C6	2.57	0.40
34:A:694:C:H2'	34:A:695:G:O4'	2.22	0.40
34:A:819:G:H1'	34:A:842:A:N6	2.35	0.40
34:A:1162:G:H1'	34:A:1166:A:H1'	2.03	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:A:1369:A:H5"	34:A:1370:U:H5"	2.04	0.40
34:A:1804:G:H2'	34:A:1805:G:C8	2.56	0.40
34:A:2466:G:H2'	34:A:2467:U:O4'	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	2	57/61 (93%)	54 (95%)	3 (5%)	0	100	100
2	3	21/24 (88%)	21 (100%)	0	0	100	100
3	4	464/470 (99%)	396 (85%)	67 (14%)	1 (0%)	44	67
5	C	273/278 (98%)	256 (94%)	17 (6%)	0	100	100
6	D	212/217 (98%)	197 (93%)	15 (7%)	0	100	100
7	E	207/215 (96%)	192 (93%)	15 (7%)	0	100	100
8	F	180/187 (96%)	162 (90%)	18 (10%)	0	100	100
9	G	174/179 (97%)	153 (88%)	21 (12%)	0	100	100
10	H	149/151 (99%)	117 (78%)	32 (22%)	0	100	100
11	I	124/175 (71%)	103 (83%)	21 (17%)	0	100	100
12	J	130/142 (92%)	113 (87%)	16 (12%)	1 (1%)	16	39
13	K	144/147 (98%)	133 (92%)	11 (8%)	0	100	100
14	L	120/122 (98%)	112 (93%)	8 (7%)	0	100	100
15	M	143/147 (97%)	128 (90%)	15 (10%)	0	100	100
16	N	134/138 (97%)	125 (93%)	9 (7%)	0	100	100
17	O	116/199 (58%)	111 (96%)	5 (4%)	0	100	100
18	P	124/127 (98%)	112 (90%)	12 (10%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	Q	111/113 (98%)	97 (87%)	14 (13%)	0	100	100
20	R	122/129 (95%)	119 (98%)	3 (2%)	0	100	100
21	S	98/103 (95%)	90 (92%)	8 (8%)	0	100	100
22	T	112/153 (73%)	101 (90%)	11 (10%)	0	100	100
23	U	95/100 (95%)	88 (93%)	7 (7%)	0	100	100
24	V	93/105 (89%)	80 (86%)	13 (14%)	0	100	100
25	W	93/215 (43%)	85 (91%)	8 (9%)	0	100	100
26	X	77/88 (88%)	75 (97%)	2 (3%)	0	100	100
27	Y	61/64 (95%)	59 (97%)	2 (3%)	0	100	100
28	Z	62/77 (80%)	60 (97%)	2 (3%)	0	100	100
29	b	52/57 (91%)	49 (94%)	3 (6%)	0	100	100
30	c	47/55 (86%)	45 (96%)	2 (4%)	0	100	100
31	d	44/47 (94%)	39 (89%)	5 (11%)	0	100	100
32	e	61/64 (95%)	59 (97%)	2 (3%)	0	100	100
33	f	35/37 (95%)	35 (100%)	0	0	100	100
All	All	3935/4386 (90%)	3566 (91%)	367 (9%)	2 (0%)	50	72

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
12	J	75	PRO
3	4	22	SER

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	2	52/54 (96%)	51 (98%)	1 (2%)	52	73
2	3	18/19 (95%)	18 (100%)	0	100	100
3	4	367/372 (99%)	351 (96%)	16 (4%)	24	49

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	C	215/218 (99%)	211 (98%)	4 (2%)	52 73
6	D	160/163 (98%)	156 (98%)	4 (2%)	42 66
7	E	169/173 (98%)	162 (96%)	7 (4%)	26 51
8	F	151/156 (97%)	144 (95%)	7 (5%)	23 47
9	G	148/150 (99%)	141 (95%)	7 (5%)	22 46
10	H	90/116 (78%)	86 (96%)	4 (4%)	24 49
11	I	89/120 (74%)	86 (97%)	3 (3%)	32 57
12	J	93/108 (86%)	89 (96%)	4 (4%)	25 49
13	K	119/120 (99%)	116 (98%)	3 (2%)	42 66
14	L	100/100 (100%)	97 (97%)	3 (3%)	36 60
15	M	112/114 (98%)	109 (97%)	3 (3%)	40 64
16	N	114/116 (98%)	113 (99%)	1 (1%)	75 86
17	O	97/158 (61%)	95 (98%)	2 (2%)	48 70
18	P	93/94 (99%)	90 (97%)	3 (3%)	34 59
19	Q	100/100 (100%)	95 (95%)	5 (5%)	20 44
20	R	97/99 (98%)	96 (99%)	1 (1%)	73 85
21	S	81/83 (98%)	77 (95%)	4 (5%)	21 45
22	T	90/117 (77%)	89 (99%)	1 (1%)	70 83
23	U	83/85 (98%)	83 (100%)	0	100 100
24	V	81/86 (94%)	76 (94%)	5 (6%)	15 36
25	W	77/168 (46%)	76 (99%)	1 (1%)	65 80
26	X	58/63 (92%)	58 (100%)	0	100 100
27	Y	50/51 (98%)	49 (98%)	1 (2%)	50 72
28	Z	58/66 (88%)	56 (97%)	2 (3%)	32 57
29	b	43/46 (94%)	43 (100%)	0	100 100
30	c	47/52 (90%)	47 (100%)	0	100 100
31	d	35/36 (97%)	33 (94%)	2 (6%)	17 39
32	e	53/54 (98%)	51 (96%)	2 (4%)	28 53
33	f	35/35 (100%)	35 (100%)	0	100 100
All	All	3175/3492 (91%)	3079 (97%)	96 (3%)	37 60

All (96) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	2	39	ASP
3	4	40	GLU
3	4	102	LYS
3	4	181	GLU
3	4	186	GLN
3	4	213	ARG
3	4	239	SER
3	4	253	TYR
3	4	290	GLU
3	4	324	ASP
3	4	330	HIS
3	4	344	ASN
3	4	351	ASN
3	4	402	LYS
3	4	450	ARG
3	4	454	ARG
3	4	469	PHE
5	C	26	ARG
5	C	244	ARG
5	C	248	SER
5	C	265	ASP
6	D	3	ARG
6	D	34	ASN
6	D	78	ARG
6	D	113	ASP
7	E	15	ASP
7	E	121	ASN
7	E	129	GLU
7	E	151	ASN
7	E	163	GLU
7	E	186	TYR
7	E	192	ASP
8	F	15	TYR
8	F	27	PHE
8	F	44	ASN
8	F	62	ASN
8	F	105	GLU
8	F	135	TYR
8	F	182	PHE
9	G	18	THR
9	G	20	ASN
9	G	68	LEU
9	G	82	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
9	G	86	GLN
9	G	112	HIS
9	G	151	ARG
10	H	3	LEU
10	H	23	ASP
10	H	99	ASP
10	H	151	GLN
11	I	49	TYR
11	I	70	ASP
11	I	96	PHE
12	J	12	LYS
12	J	13	LEU
12	J	63	TYR
12	J	79	LYS
13	K	4	TYR
13	K	99	ARG
13	K	129	ASP
14	L	21	CYS
14	L	37	ASP
14	L	56	ASP
15	M	72	ARG
15	M	123	ASP
15	M	128	LYS
16	N	71	ASP
17	O	16	HIS
17	O	78	THR
18	P	43	SER
18	P	76	ASP
18	P	86	GLN
19	Q	6	PHE
19	Q	8	ASP
19	Q	11	SER
19	Q	20	SER
19	Q	108	LYS
20	R	36	LYS
21	S	20	ASP
21	S	44	ASP
21	S	50	SER
21	S	98	LYS
22	T	66	GLN
24	V	1	MET
24	V	16	ASP

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
24	V	27	TYR
24	V	88	ASP
24	V	94	LYS
25	W	102	ARG
27	Y	62	SER
28	Z	42	SER
28	Z	47	LEU
31	d	23	LEU
31	d	39	SER
32	e	31	HIS
32	e	63	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (9) such sidechains are listed below:

Mol	Chain	Res	Type
3	4	444	HIS
6	D	21	ASN
8	F	31	ASN
8	F	44	ASN
8	F	142	GLN
11	I	100	ASN
15	M	89	GLN
19	Q	79	ASN
30	c	44	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
34	A	2946/3120 (94%)	662 (22%)	23 (0%)
4	B	117/118 (99%)	29 (24%)	0
All	All	3063/3238 (94%)	691 (22%)	23 (0%)

All (691) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
4	B	4	A
4	B	5	C
4	B	6	G
4	B	8	C
4	B	9	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	B	10	G
4	B	12	C
4	B	13	C
4	B	20	G
4	B	23	G
4	B	26	A
4	B	30	G
4	B	35	G
4	B	36	U
4	B	38	C
4	B	42	C
4	B	43	C
4	B	54	A
4	B	57	U
4	B	58	A
4	B	67	A
4	B	88	C
4	B	89	C
4	B	103	G
4	B	105	A
4	B	106	C
4	B	107	A
4	B	109	C
4	B	116	C
34	A	3	A
34	A	7	U
34	A	9	U
34	A	10	A
34	A	12	G
34	A	20	G
34	A	23	G
34	A	31	U
34	A	41	A
34	A	42	G
34	A	48	G
34	A	60	A
34	A	66	C
34	A	68	A
34	A	69	U
34	A	71	A
34	A	72	G
34	A	91	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	94	G
34	A	96	G
34	A	97	U
34	A	98	U
34	A	99	G
34	A	115	A
34	A	116	A
34	A	117	U
34	A	122	A
34	A	125	C
34	A	128	G
34	A	143	G
34	A	144	U
34	A	145	G
34	A	151	A
34	A	162	A
34	A	164	A
34	A	174	G
34	A	175	G
34	A	180	A
34	A	195	A
34	A	198	A
34	A	212	A
34	A	214	G
34	A	215	A
34	A	218	A
34	A	221	A
34	A	227	A
34	A	229	U
34	A	230	G
34	A	233	A
34	A	246	U
34	A	248	G
34	A	263	G
34	A	264	G
34	A	265	A
34	A	268	G
34	A	274	C
34	A	275	C
34	A	276	G
34	A	278	A
34	A	283	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	285	U
34	A	286	G
34	A	287	A
34	A	288	U
34	A	289	A
34	A	290	C
34	A	291	C
34	A	292	G
34	A	301	U
34	A	302	U
34	A	303	G
34	A	304	U
34	A	307	G
34	A	315	U
34	A	316	U
34	A	318	U
34	A	319	G
34	A	324	C
34	A	325	U
34	A	326	A
34	A	327	U
34	A	330	U
34	A	331	U
34	A	334	G
34	A	335	G
34	A	336	C
34	A	337	U
34	A	338	C
34	A	340	A
34	A	342	C
34	A	343	U
34	A	349	G
34	A	350	A
34	A	351	G
34	A	353	G
34	A	356	G
34	A	357	U
34	A	363	A
34	A	364	A
34	A	366	G
34	A	367	U
34	A	370	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	371	G
34	A	384	G
34	A	385	G
34	A	386	C
34	A	387	U
34	A	392	A
34	A	393	U
34	A	411	G
34	A	412	A
34	A	413	G
34	A	434	G
34	A	439	C
34	A	445	U
34	A	446	G
34	A	450	G
34	A	451	U
34	A	452	G
34	A	453	U
34	A	454	U
34	A	455	C
34	A	460	G
34	A	469	G
34	A	474	G
34	A	482	U
34	A	484	C
34	A	489	A
34	A	490	A
34	A	491	U
34	A	494	G
34	A	500	A
34	A	505	C
34	A	512	G
34	A	516	G
34	A	517	A
34	A	519	U
34	A	524	C
34	A	527	A
34	A	528	G
34	A	531	A
34	A	543	U
34	A	545	A
34	A	555	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	569	G
34	A	578	G
34	A	591	G
34	A	592	A
34	A	594	U
34	A	595	A
34	A	596	C
34	A	597	C
34	A	600	A
34	A	605	G
34	A	614	C
34	A	617	U
34	A	618	C
34	A	619	C
34	A	620	G
34	A	635	G
34	A	636	U
34	A	637	G
34	A	638	U
34	A	642	G
34	A	655	G
34	A	658	U
34	A	665	G
34	A	667	A
34	A	679	G
34	A	684	G
34	A	691	U
34	A	692	C
34	A	696	A
34	A	697	G
34	A	704	C
34	A	706	G
34	A	707	G
34	A	709	U
34	A	721	A
34	A	724	G
34	A	725	A
34	A	731	A
34	A	737	A
34	A	739	U
34	A	741	G
34	A	743	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	747	A
34	A	755	A
34	A	756	A
34	A	758	A
34	A	759	G
34	A	760	U
34	A	761	G
34	A	762	U
34	A	764	U
34	A	765	G
34	A	766	G
34	A	770	A
34	A	801	U
34	A	826	G
34	A	828	G
34	A	830	A
34	A	836	G
34	A	838	G
34	A	839	U
34	A	840	G
34	A	841	G
34	A	845	C
34	A	862	U
34	A	872	G
34	A	879	A
34	A	890	G
34	A	891	G
34	A	897	A
34	A	899	G
34	A	900	G
34	A	904	A
34	A	907	A
34	A	920	G
34	A	927	C
34	A	942	U
34	A	944	A
34	A	963	U
34	A	972	A
34	A	974	G
34	A	981	U
34	A	982	A
34	A	993	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	994	A
34	A	998	G
34	A	999	C
34	A	1002	C
34	A	1003	A
34	A	1004	C
34	A	1008	G
34	A	1009	U
34	A	1010	U
34	A	1012	C
34	A	1017	G
34	A	1024	A
34	A	1025	A
34	A	1029	C
34	A	1030	C
34	A	1042	A
34	A	1048	A
34	A	1049	G
34	A	1063	G
34	A	1075	U
34	A	1076	A
34	A	1078	G
34	A	1085	G
34	A	1092	G
34	A	1098	A
34	A	1101	A
34	A	1102	G
34	A	1114	G
34	A	1115	G
34	A	1117	U
34	A	1130	C
34	A	1131	G
34	A	1135	G
34	A	1140	G
34	A	1141	U
34	A	1144	A
34	A	1151	U
34	A	1152	G
34	A	1158	U
34	A	1176	G
34	A	1177	G
34	A	1184	U

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	1187	A
34	A	1188	A
34	A	1189	G
34	A	1191	A
34	A	1196	C
34	A	1201	G
34	A	1203	A
34	A	1205	G
34	A	1206	A
34	A	1207	G
34	A	1208	U
34	A	1212	U
34	A	1213	A
34	A	1214	A
34	A	1215	U
34	A	1225	G
34	A	1228	A
34	A	1229	A
34	A	1230	G
34	A	1235	U
34	A	1237	U
34	A	1250	U
34	A	1251	A
34	A	1253	C
34	A	1254	G
34	A	1260	C
34	A	1261	A
34	A	1285	G
34	A	1292	U
34	A	1293	G
34	A	1317	G
34	A	1326	G
34	A	1335	G
34	A	1343	G
34	A	1344	A
34	A	1347	G
34	A	1351	G
34	A	1352	A
34	A	1353	G
34	A	1365	G
34	A	1368	A
34	A	1371	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	1380	A
34	A	1386	G
34	A	1387	A
34	A	1399	A
34	A	1405	U
34	A	1409	C
34	A	1415	A
34	A	1416	A
34	A	1436	C
34	A	1444	U
34	A	1456	G
34	A	1465	C
34	A	1467	U
34	A	1475	G
34	A	1477	C
34	A	1480	A
34	A	1493	A
34	A	1494	U
34	A	1499	A
34	A	1501	C
34	A	1502	G
34	A	1509	U
34	A	1512	U
34	A	1528	G
34	A	1529	U
34	A	1531	C
34	A	1533	U
34	A	1534	C
34	A	1535	C
34	A	1538	G
34	A	1542	A
34	A	1543	A
34	A	1545	C
34	A	1622	G
34	A	1623	U
34	A	1624	U
34	A	1629	G
34	A	1632	G
34	A	1636	A
34	A	1640	A
34	A	1641	U
34	A	1645	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	1648	A
34	A	1649	C
34	A	1673	A
34	A	1674	G
34	A	1676	G
34	A	1680	A
34	A	1681	U
34	A	1703	G
34	A	1709	U
34	A	1710	A
34	A	1711	G
34	A	1714	A
34	A	1716	A
34	A	1717	U
34	A	1727	A
34	A	1728	U
34	A	1729	A
34	A	1730	U
34	A	1731	A
34	A	1737	A
34	A	1746	G
34	A	1754	G
34	A	1755	A
34	A	1756	G
34	A	1758	G
34	A	1759	A
34	A	1760	G
34	A	1762	C
34	A	1767	U
34	A	1768	C
34	A	1769	G
34	A	1778	A
34	A	1780	G
34	A	1786	G
34	A	1788	G
34	A	1789	A
34	A	1798	U
34	A	1810	A
34	A	1825	C
34	A	1826	A
34	A	1828	A
34	A	1832	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	1852	A
34	A	1853	A
34	A	1864	U
34	A	1866	C
34	A	1871	G
34	A	1872	A
34	A	1883	A
34	A	1885	G
34	A	1892	G
34	A	1904	C
34	A	1911	U
34	A	1933	G
34	A	1938	G
34	A	1946	U
34	A	1947	U
34	A	1959	G
34	A	1981	U
34	A	1985	A
34	A	1990	A
34	A	1999	U
34	A	2016	G
34	A	2017	C
34	A	2018	G
34	A	2019	A
34	A	2025	C
34	A	2033	U
34	A	2038	A
34	A	2046	A
34	A	2051	U
34	A	2052	G
34	A	2053	C
34	A	2054	C
34	A	2055	C
34	A	2056	G
34	A	2057	G
34	A	2058	U
34	A	2062	G
34	A	2063	G
34	A	2120	A
34	A	2122	U
34	A	2123	A
34	A	2124	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	2125	A
34	A	2126	C
34	A	2127	G
34	A	2128	G
34	A	2129	C
34	A	2130	G
34	A	2131	G
34	A	2133	G
34	A	2134	G
34	A	2135	U
34	A	2146	A
34	A	2147	U
34	A	2149	C
34	A	2150	U
34	A	2151	A
34	A	2154	G
34	A	2156	A
34	A	2157	G
34	A	2158	C
34	A	2159	G
34	A	2160	A
34	A	2162	A
34	A	2163	U
34	A	2193	A
34	A	2194	A
34	A	2195	U
34	A	2196	G
34	A	2199	G
34	A	2215	U
34	A	2217	U
34	A	2220	C
34	A	2244	A
34	A	2245	C
34	A	2247	A
34	A	2255	A
34	A	2256	G
34	A	2257	A
34	A	2267	C
34	A	2277	G
34	A	2279	C
34	A	2280	G
34	A	2282	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	2284	A
34	A	2285	G
34	A	2286	A
34	A	2310	G
34	A	2315	U
34	A	2316	G
34	A	2319	G
34	A	2320	C
34	A	2327	C
34	A	2330	U
34	A	2333	G
34	A	2336	U
34	A	2337	A
34	A	2338	G
34	A	2339	G
34	A	2340	A
34	A	2341	U
34	A	2342	A
34	A	2345	U
34	A	2346	G
34	A	2347	G
34	A	2348	G
34	A	2349	A
34	A	2351	A
34	A	2352	C
34	A	2353	U
34	A	2354	G
34	A	2355	U
34	A	2357	A
34	A	2358	A
34	A	2360	C
34	A	2361	U
34	A	2368	C
34	A	2369	C
34	A	2370	A
34	A	2371	G
34	A	2373	G
34	A	2378	U
34	A	2379	G
34	A	2380	G
34	A	2381	A
34	A	2382	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	2384	C
34	A	2385	G
34	A	2386	U
34	A	2387	U
34	A	2388	G
34	A	2389	U
34	A	2390	U
34	A	2392	A
34	A	2394	A
34	A	2396	A
34	A	2399	A
34	A	2400	C
34	A	2402	C
34	A	2404	G
34	A	2405	A
34	A	2406	U
34	A	2407	C
34	A	2409	U
34	A	2411	U
34	A	2413	G
34	A	2418	U
34	A	2421	A
34	A	2427	G
34	A	2436	A
34	A	2447	G
34	A	2449	A
34	A	2462	G
34	A	2463	G
34	A	2467	U
34	A	2503	G
34	A	2507	C
34	A	2511	A
34	A	2512	A
34	A	2527	G
34	A	2528	G
34	A	2529	A
34	A	2531	G
34	A	2532	G
34	A	2533	C
34	A	2534	A
34	A	2541	U
34	A	2542	G

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	2543	U
34	A	2547	G
34	A	2549	G
34	A	2557	A
34	A	2558	C
34	A	2559	A
34	A	2560	A
34	A	2571	C
34	A	2574	C
34	A	2585	U
34	A	2587	U
34	A	2607	G
34	A	2609	A
34	A	2615	G
34	A	2627	C
34	A	2628	U
34	A	2630	A
34	A	2649	A
34	A	2650	A
34	A	2653	G
34	A	2654	A
34	A	2656	A
34	A	2659	A
34	A	2665	C
34	A	2672	A
34	A	2693	A
34	A	2694	G
34	A	2698	C
34	A	2700	A
34	A	2715	U
34	A	2726	G
34	A	2729	G
34	A	2742	A
34	A	2744	C
34	A	2753	G
34	A	2759	G
34	A	2776	U
34	A	2777	G
34	A	2778	U
34	A	2779	U
34	A	2788	A
34	A	2790	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	2791	G
34	A	2797	C
34	A	2809	U
34	A	2810	U
34	A	2826	A
34	A	2827	G
34	A	2833	U
34	A	2834	C
34	A	2837	U
34	A	2838	A
34	A	2839	U
34	A	2847	G
34	A	2848	C
34	A	2854	A
34	A	2865	G
34	A	2883	G
34	A	2913	U
34	A	2915	C
34	A	2926	A
34	A	2936	C
34	A	2950	C
34	A	2957	A
34	A	2968	G
34	A	2969	C
34	A	2972	A
34	A	2975	G
34	A	2976	C
34	A	2981	A
34	A	2985	G
34	A	2989	A
34	A	3002	A
34	A	3003	C
34	A	3014	A
34	A	3015	C
34	A	3020	U
34	A	3021	A
34	A	3022	G
34	A	3023	G
34	A	3025	G
34	A	3027	G
34	A	3029	U
34	A	3041	C

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
34	A	3042	A
34	A	3052	A
34	A	3053	U
34	A	3055	G
34	A	3070	G
34	A	3080	A
34	A	3082	U
34	A	3088	C
34	A	3093	A
34	A	3101	C
34	A	3104	A
34	A	3112	A
34	A	3114	A
34	A	3115	A

All (23) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
34	A	97	U
34	A	161	U
34	A	325	U
34	A	326	A
34	A	980	C
34	A	981	U
34	A	1002	C
34	A	1151	U
34	A	1207	G
34	A	1234	U
34	A	1758	G
34	A	2053	C
34	A	2054	C
34	A	2121	G
34	A	2122	U
34	A	2123	A
34	A	2124	A
34	A	2125	A
34	A	2336	U
34	A	2350	G
34	A	2975	G
34	A	2980	U
34	A	3113	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)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
35	GCP	4	501	-	27,34,34	1.34	3 (11%)	35,54,54	2.10	9 (25%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
35	GCP	4	501	-	-	7/15/38/38	0/3/3/3

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
35	4	501	GCP	C5-C6	4.06	1.48	1.41
35	4	501	GCP	PG-O2G	2.82	1.61	1.55
35	4	501	GCP	PG-O3G	2.75	1.61	1.55

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
35	4	501	GCP	PB-O3A-PA	-5.08	115.78	132.37

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
35	4	501	GCP	C2-N3-C4	4.89	120.76	115.48
35	4	501	GCP	C2-N1-C6	4.65	122.43	115.96
35	4	501	GCP	C5-C6-N1	-4.16	117.85	123.42
35	4	501	GCP	C4'-O4'-C1'	-3.64	106.60	109.92
35	4	501	GCP	N3-C2-N1	-3.35	122.95	127.21
35	4	501	GCP	C4-C5-N7	-2.87	106.30	109.34
35	4	501	GCP	C4-C5-C6	-2.68	117.14	121.23
35	4	501	GCP	O4'-C1'-N9	2.46	112.01	108.75

There are no chirality outliers.

All (7) torsion outliers are listed below:

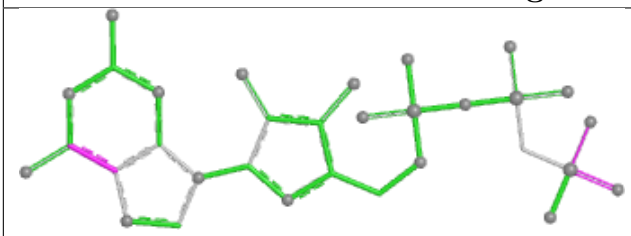
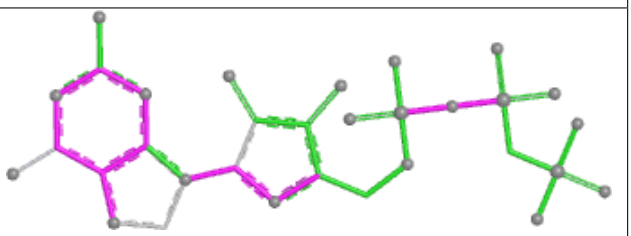
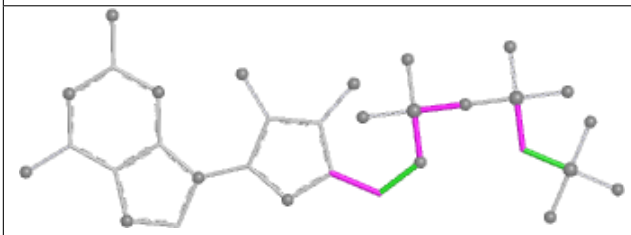
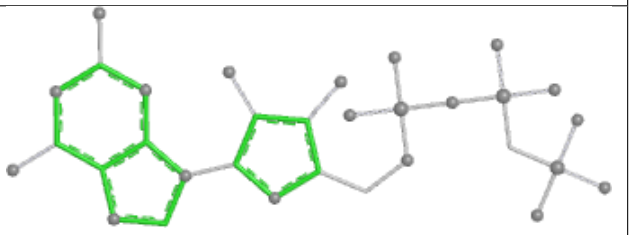
Mol	Chain	Res	Type	Atoms
35	4	501	GCP	C5'-O5'-PA-O3A
35	4	501	GCP	C5'-O5'-PA-O1A
35	4	501	GCP	C5'-O5'-PA-O2A
35	4	501	GCP	O4'-C4'-C5'-O5'
35	4	501	GCP	C3'-C4'-C5'-O5'
35	4	501	GCP	PG-C3B-PB-O1B
35	4	501	GCP	PB-O3A-PA-O1A

There are no ring outliers.

1 monomer is involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
35	4	501	GCP	11	0

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

Ligand GCP 4 501	
 Bond lengths	 Bond angles
 Torsions	 Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

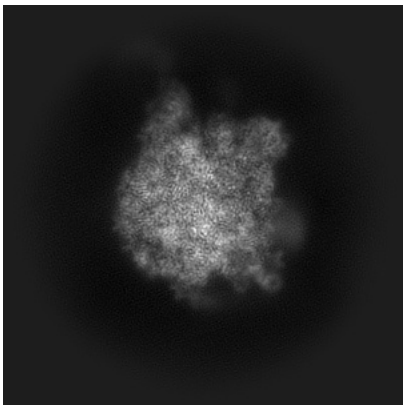
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-43317. These allow visual inspection of the internal detail of the map and identification of artifacts.

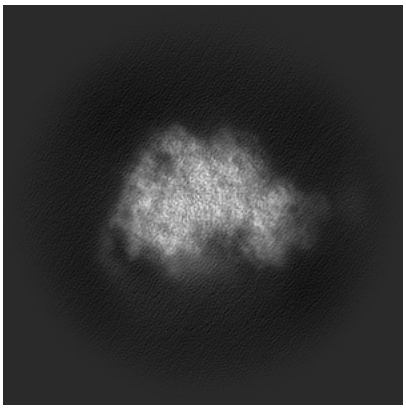
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

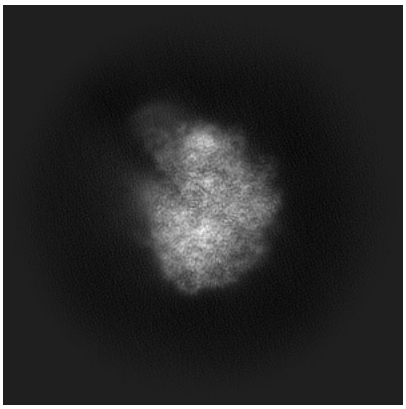
6.1.1 Primary map



X

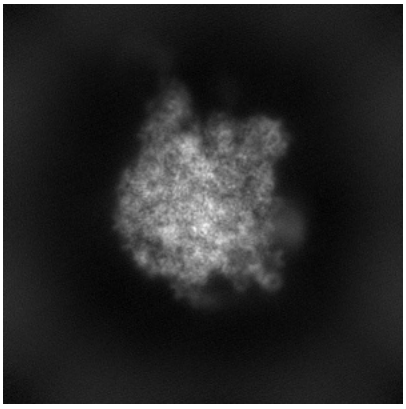


Y

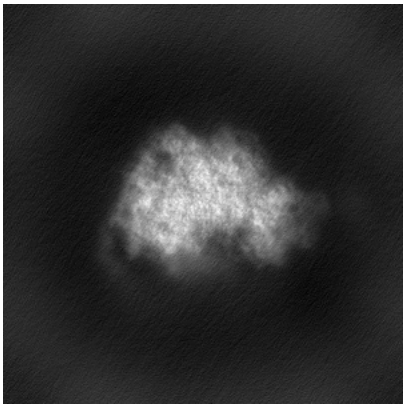


Z

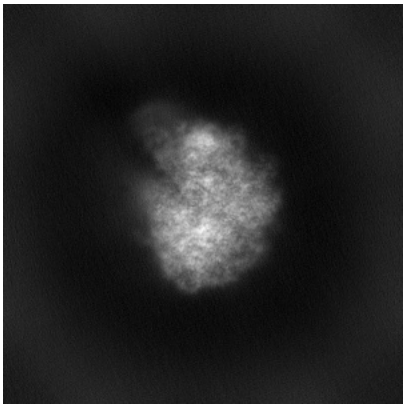
6.1.2 Raw map



X



Y

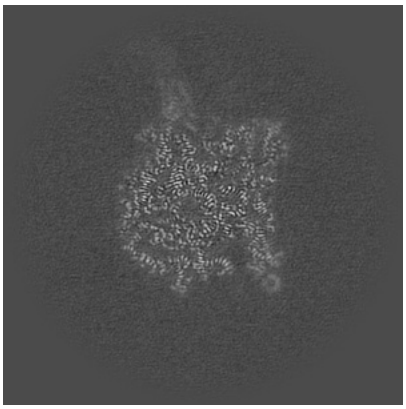


Z

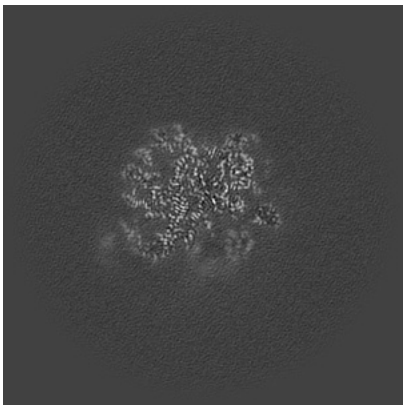
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

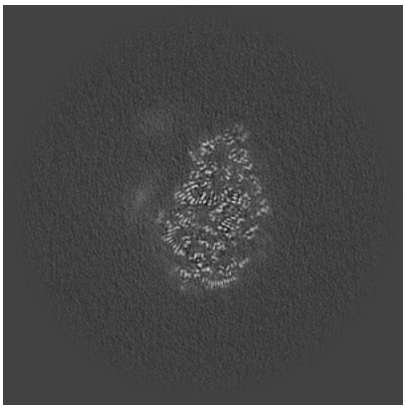
6.2.1 Primary map



X Index: 200

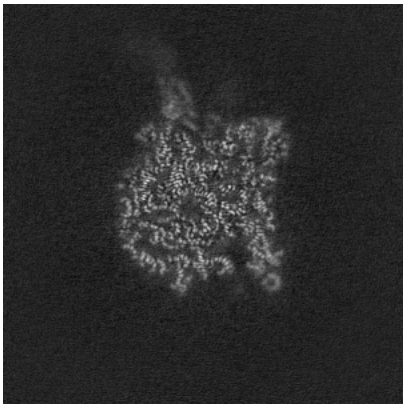


Y Index: 200

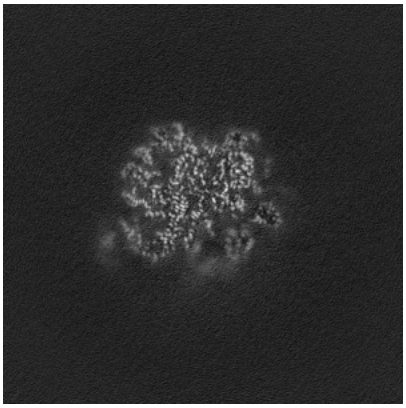


Z Index: 200

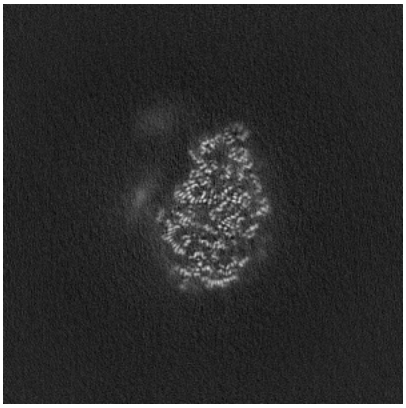
6.2.2 Raw map



X Index: 200



Y Index: 200

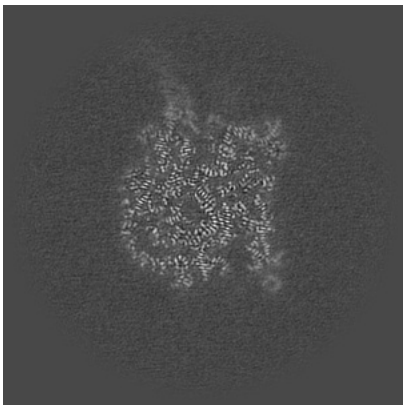


Z Index: 200

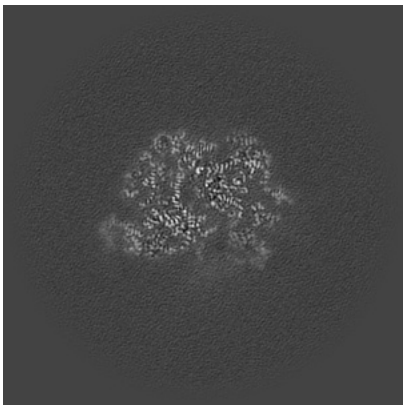
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

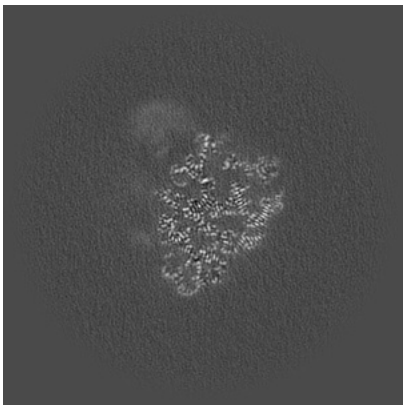
6.3.1 Primary map



X Index: 202

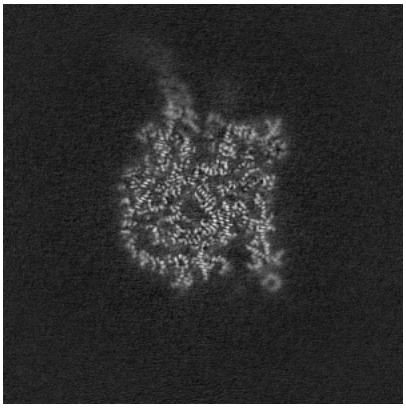


Y Index: 192

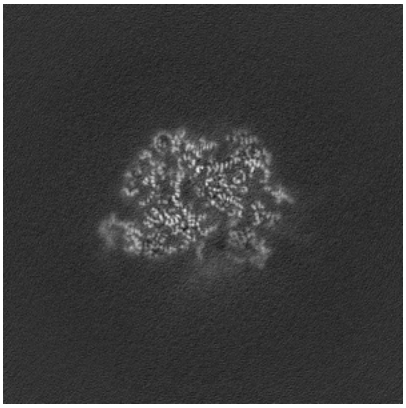


Z Index: 176

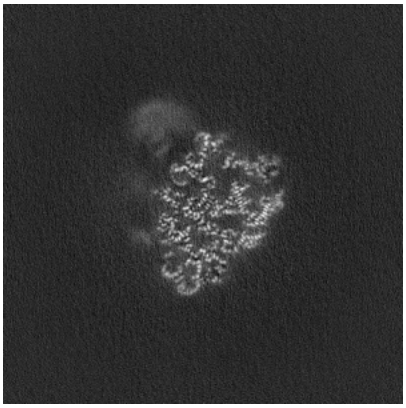
6.3.2 Raw map



X Index: 202



Y Index: 192

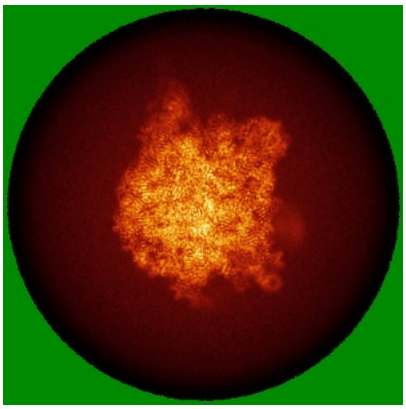


Z Index: 176

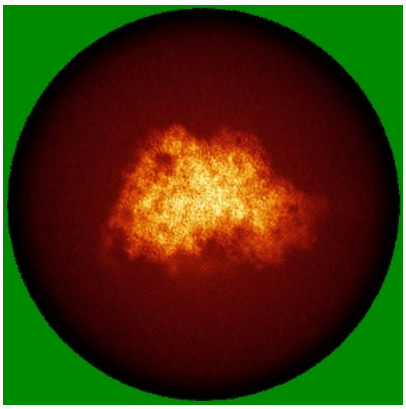
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

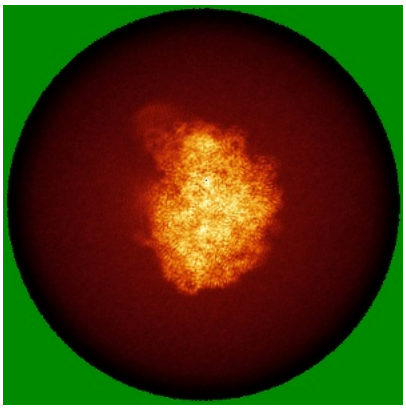
6.4.1 Primary map



X

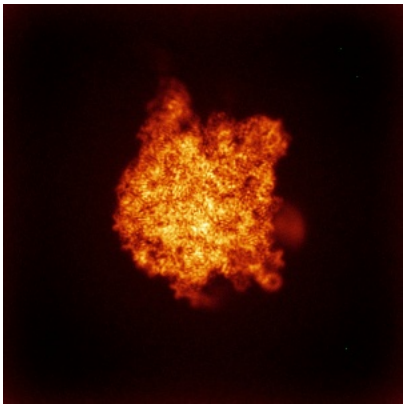


Y

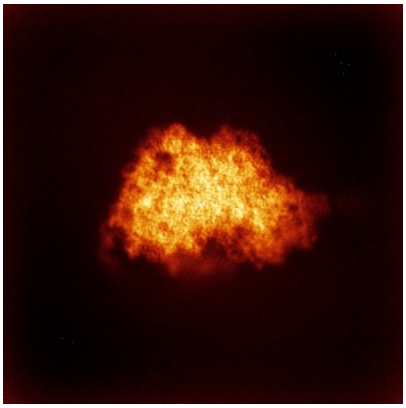


Z

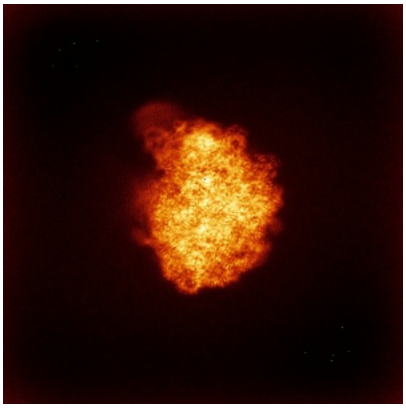
6.4.2 Raw map



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 0.35. 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.

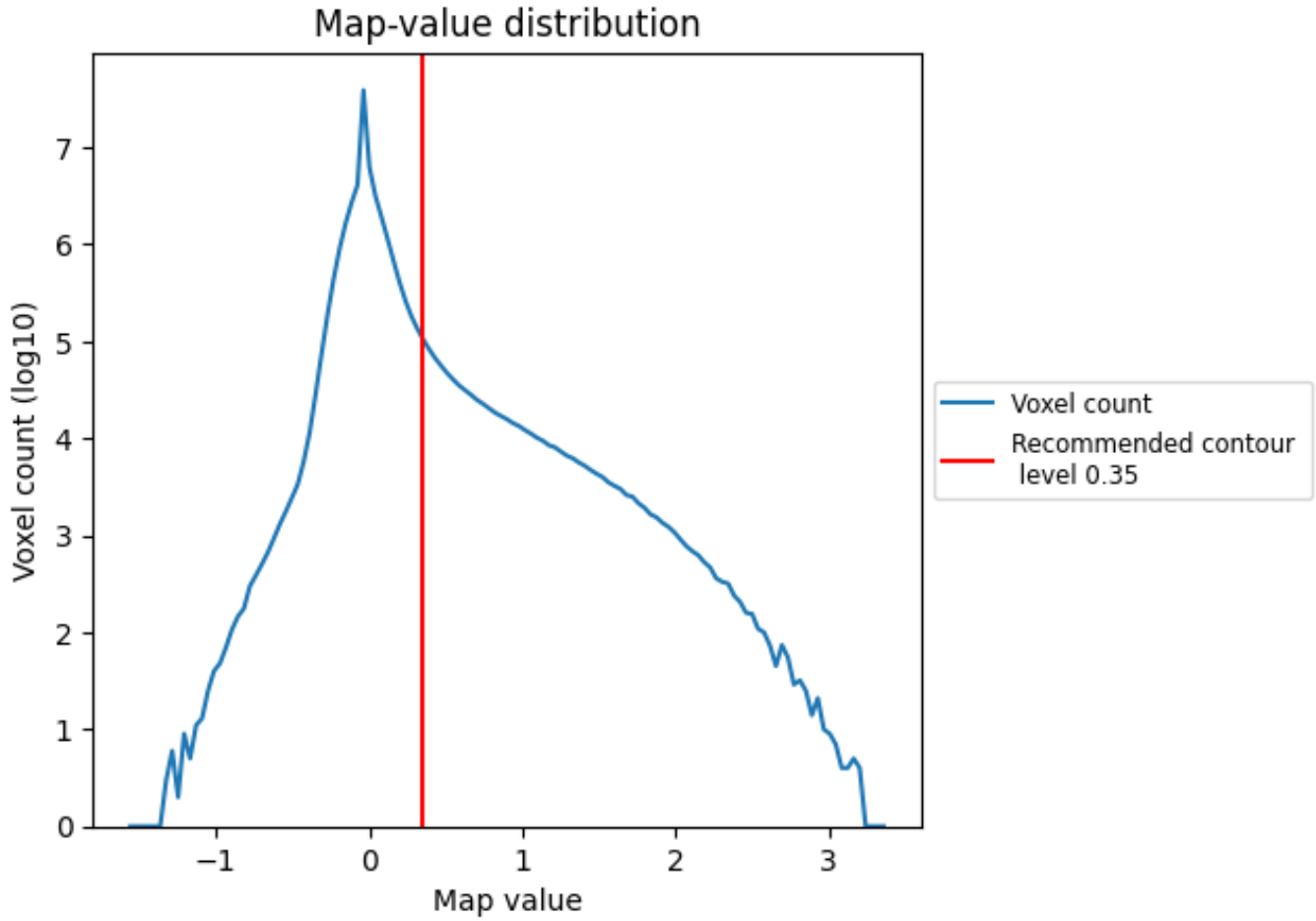
6.6 Mask visualisation (i)

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

7 Map analysis

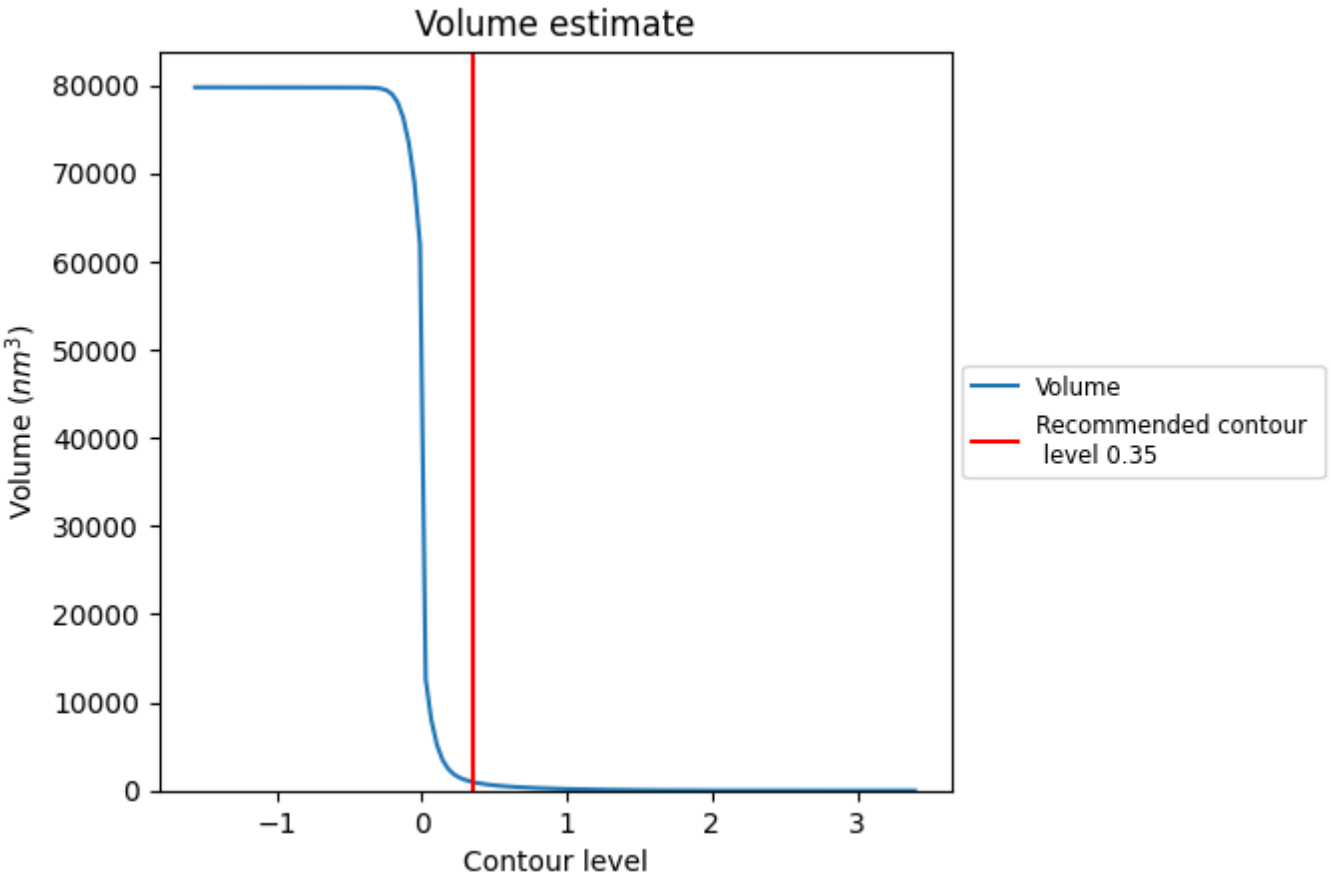
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

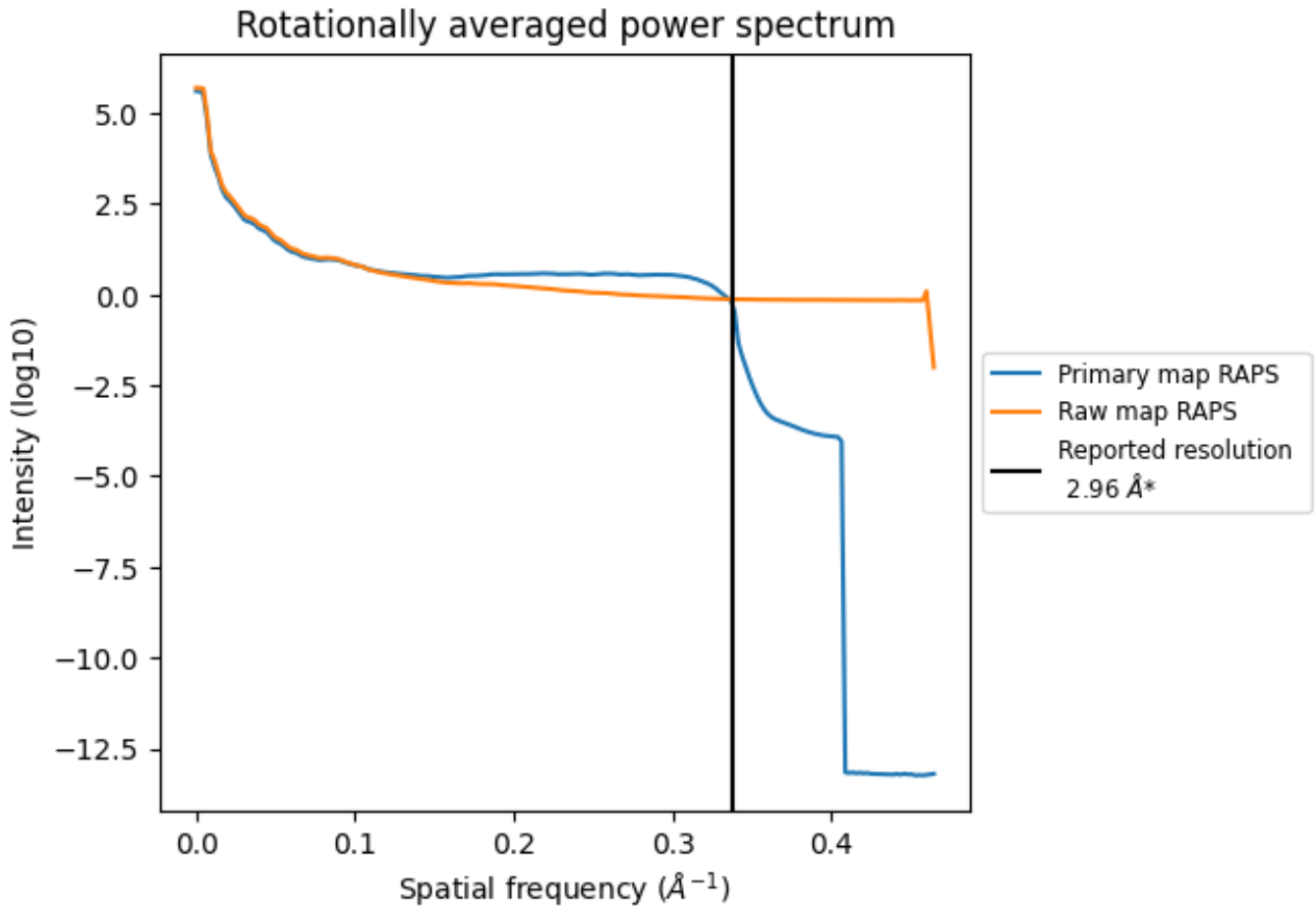
7.2 Volume estimate



The volume at the recommended contour level is 982 nm^3; this corresponds to an approximate mass of 887 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 (i)

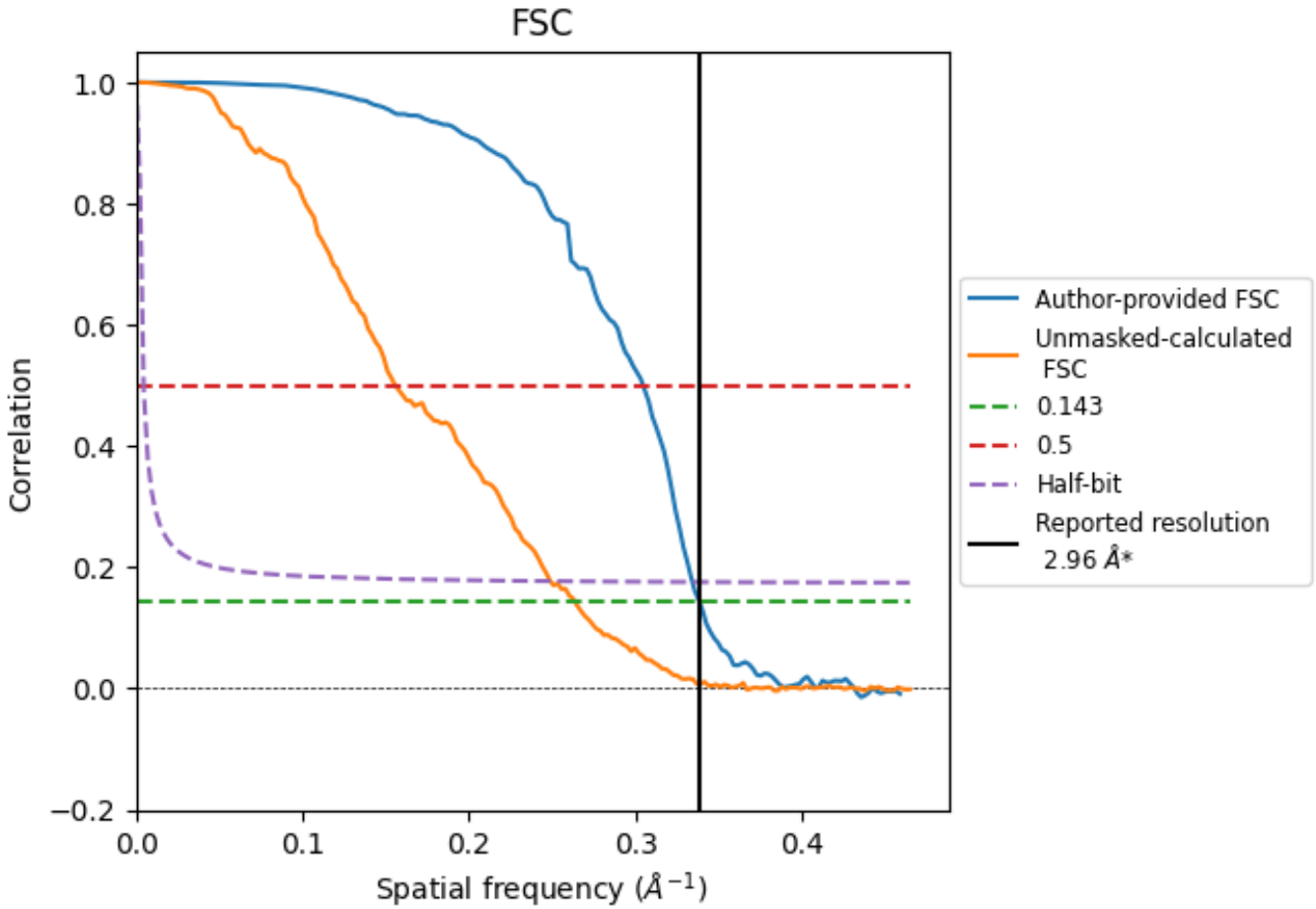


*Reported resolution corresponds to spatial frequency of 0.338 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.338 Å^{-1}

8.2 Resolution estimates (i)

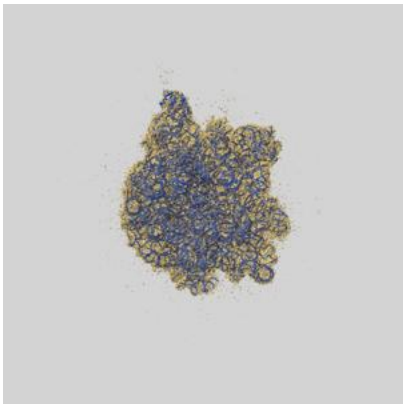
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.96	-	-
Author-provided FSC curve	2.96	3.28	2.99
Unmasked-calculated*	3.79	6.43	4.02

*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 3.79 differs from the reported value 2.96 by more than 10 %

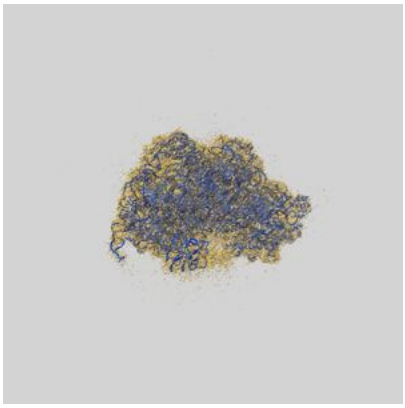
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-43317 and PDB model 8VKI. Per-residue inclusion information can be found in section 3 on page 11.

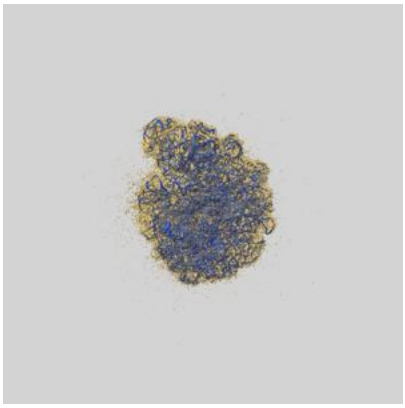
9.1 Map-model overlay



X



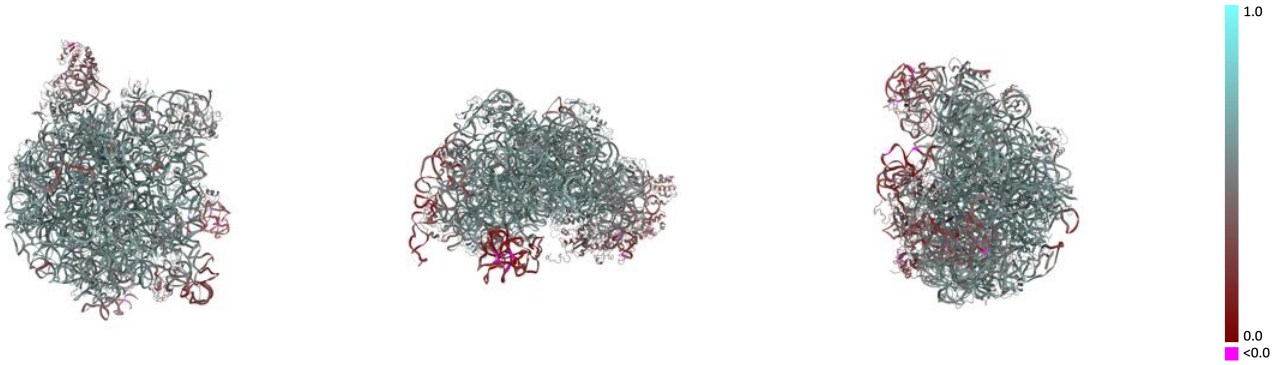
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.35 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.

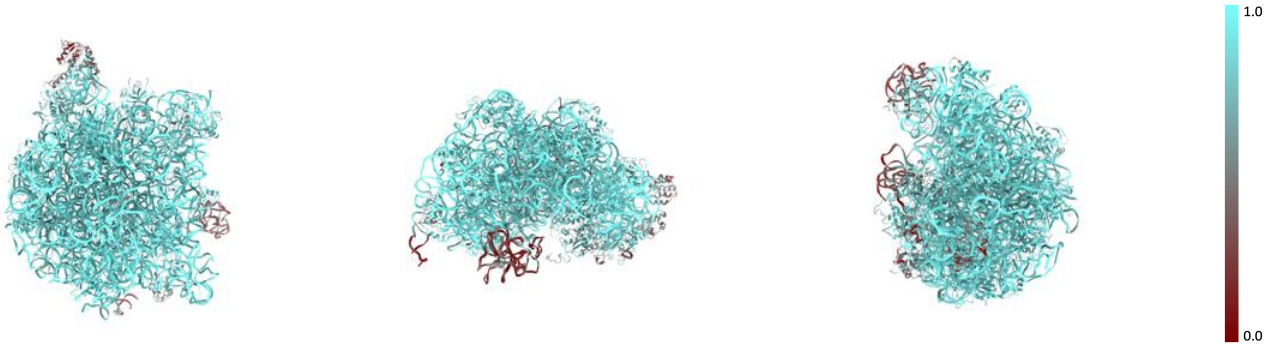
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

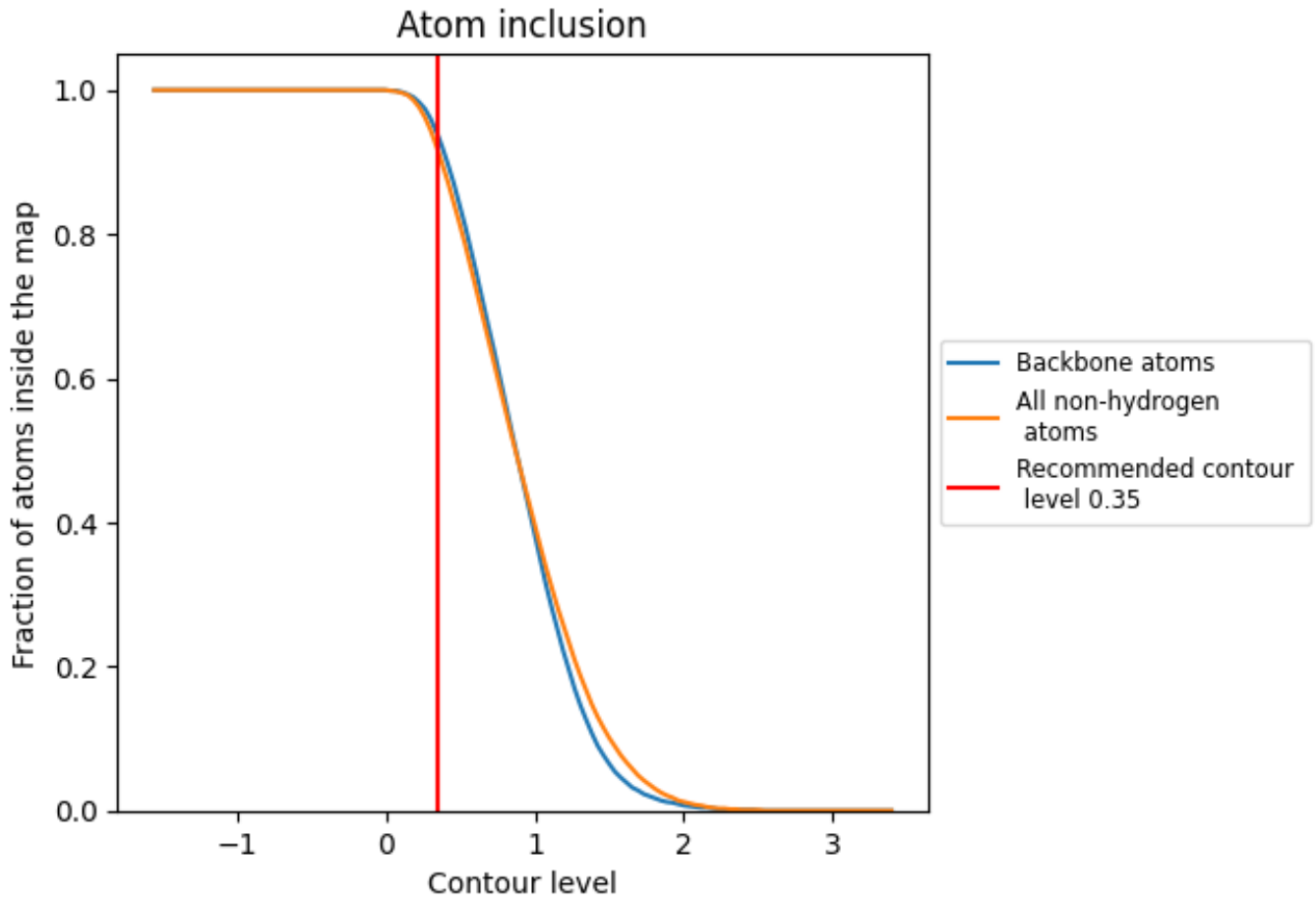
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.35).

9.4 Atom inclusion (i)



At the recommended contour level, 94% of all backbone atoms, 92% 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 (0.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9150	0.5200
2	0.9350	0.5680
3	0.9550	0.6090
4	0.7710	0.4150
A	0.9370	0.5250
B	0.9700	0.5110
C	0.9330	0.5660
D	0.9530	0.5670
E	0.9240	0.5470
F	0.7600	0.3950
G	0.8260	0.4740
H	0.7230	0.4480
I	0.4020	0.3090
J	0.4590	0.3130
K	0.9520	0.5700
L	0.9310	0.5560
M	0.9350	0.5590
N	0.9280	0.5670
O	0.9500	0.5720
P	0.9050	0.4960
Q	0.8870	0.5250
R	0.9570	0.5700
S	0.9100	0.5550
T	0.9490	0.5720
U	0.9430	0.5490
V	0.8940	0.5020
W	0.8450	0.5210
X	0.9400	0.5810
Y	0.9690	0.5700
Z	0.9250	0.5290
b	0.9680	0.5820
c	0.9570	0.5620
d	0.9600	0.5930
e	0.9750	0.5890
f	0.9650	0.5780