Full wwPDB EM Validation Report

Nov 8, 2022 – 10:03 AM JST

PDB ID	:	5ZEP
EMDB ID	:	EMD-6921
Title	:	M. smegmatis hibernating state 70S ribosome structure
Authors	:	Mishra, S.; Ahmed, T.; Tyagi, A.; Shi, J.; Bhushan, S.
Deposited on	:	2018-02-27
Resolution	:	3.40 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

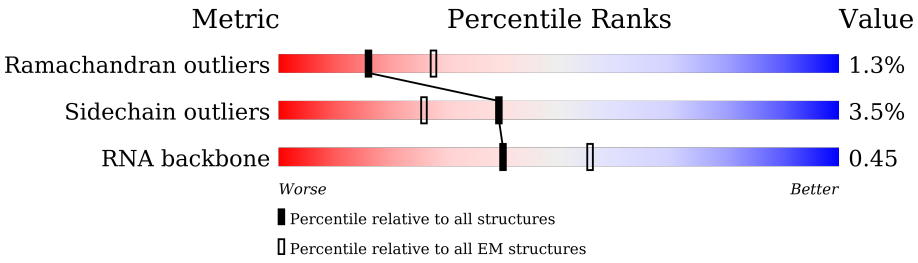
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.40 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)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	a	1528	67% 27%
2	c	275	71% 24%
3	e	214	5% 88% 7%
4	g	156	95%
5	h	132	93% 5%
6	i	150	77% 6% 16%
7	j	101	92%
8	k	138	78% 7% 15%

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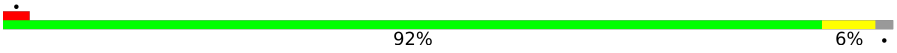
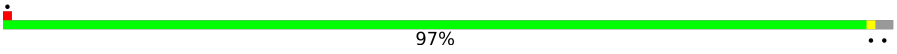
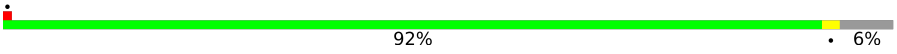
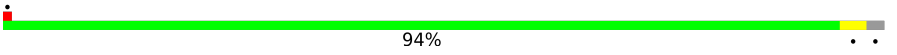
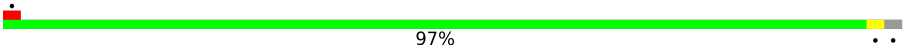
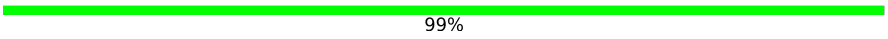
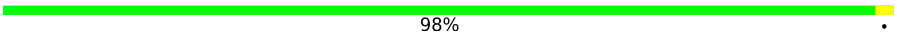
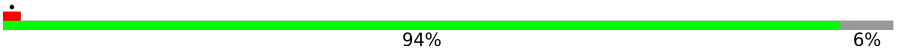
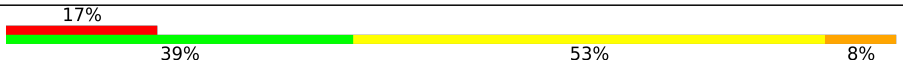
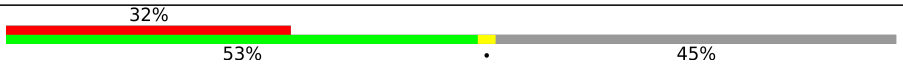
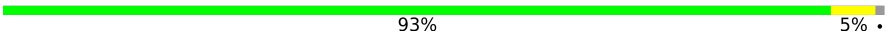
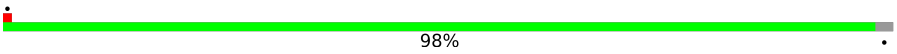
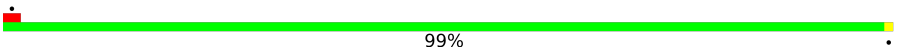
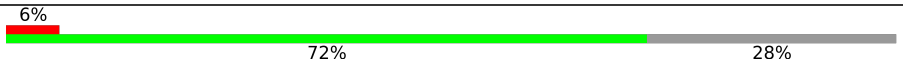
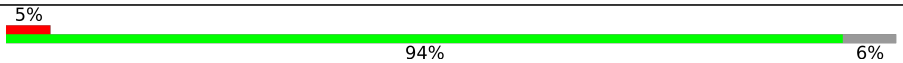
Mol	Chain	Length	Quality of chain
9	l	124	
10	o	89	
11	q	98	
12	r	84	
13	s	93	
14	t	86	
15	n	61	
16	b	277	
17	d	201	
18	f	96	
19	m	124	
20	p	156	
21	u	33	
22	w	77	
23	x	230	
24	0	479	
25	C	278	
26	D	217	
27	E	215	
28	F	187	
29	G	179	
30	H	151	
31	I	175	
32	J	142	
33	K	147	

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Mol	Chain	Length	Quality of chain
34	L	122	91% 8%
35	M	147	98%
36	N	138	92%
37	O	199	51% 7% 41%
38	P	127	99%
39	Q	113	98%
40	R	129	95%
41	S	103	97%
42	T	153	69% 5% 25%
43	U	100	79% 12% 6%
44	V	105	84% 9% 8%
45	W	215	79% 7% 13%
46	X	88	5% 86% 6% 7%
47	Y	64	98%
48	Z	77	74% 8% 18%
49	v	61	95%
50	y	75	7% 83% 12%
51	z	57	95% 5%
52	1	55	5% 69% 16% 5% 9%
53	2	47	89% 6%
54	3	64	95%
55	4	37	95% 5%
56	5	24	8% 96%
57	B	118	64% 33%
58	A	3120	67% 30%

2 Entry composition (i)

There are 58 unique types of molecules in this entry. The entry contains 152451 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	a	1506	32341	14404	5921	10510	1506	0	0

- Molecule 2 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	c	210	1672	1043	324	300	5	0	0

- Molecule 3 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	e	198	1433	885	282	262	4	0	0

- Molecule 4 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	g	156	1240	773	242	222	3	0	0

- Molecule 5 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	h	130	1003	629	188	185	1	0	0

- Molecule 6 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	i	126	994	630	194	170	0	0

- Molecule 7 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	j	97	Total	C	N	O	S	0	0
			775	488	143	141	3		

- Molecule 8 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	k	117	Total	C	N	O	S	0	0
			871	539	173	158	1		

- Molecule 9 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	l	122	Total	C	N	O	S	0	0
			958	594	197	165	2		

- Molecule 10 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	o	87	Total	C	N	O	0	0
			709	443	143	123		

- Molecule 11 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	q	92	Total	C	N	O	S	0	0
			730	458	138	132	2		

- Molecule 12 is a protein called 30S ribosomal protein S18 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	r	64	Total	C	N	O	S	0	0
			512	319	102	88	3		

- Molecule 13 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	s	78	Total	C	N	O	S	0	0
			630	405	117	107	1		

- Molecule 14 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	t	84	Total 655	C 399	N 138	O 118	0	0

- Molecule 15 is a protein called 30S ribosomal protein S14 type Z.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	n	60	Total 477	C 302	N 97	O 73	S 5	0	0

- Molecule 16 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	b	228	Total 1793	C 1132	N 322	O 330	S 9	0	0

- Molecule 17 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	d	200	Total 1641	C 1028	N 316	O 295	S 2	0	0

- Molecule 18 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	f	96	Total 771	C 486	N 138	O 145	S 2	0	0

- Molecule 19 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	m	116	Total 935	C 572	N 191	O 169	S 3	0	0

- Molecule 20 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	p	113	Total 891	C 570	N 162	O 159	0	0

- Molecule 21 is a protein called Conserved domain protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	u	32	Total	C	N	O	S	0	0
			280	172	71	36	1		

- Molecule 22 is a RNA chain called E-tRNAfMet.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	w	77	Total	C	N	O	P	0	0
			1643	732	297	537	77		

- Molecule 23 is a protein called Ribosome hibernation promoting factor.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	x	100	Total	C	N	O	S	0	0
			831	513	167	149	2		

- Molecule 24 is a protein called bS1.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	0	262	Total	C	N	O	0	0
			1310	786	262	262		

- Molecule 25 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	C	273	Total	C	N	O	S	0	0
			2097	1290	435	368	4		

- Molecule 26 is a protein called 50S ribosomal protein L3.

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

- Molecule 27 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	E	207	Total	C	N	O	S	0	0
			1553	959	292	300	2		

- Molecule 28 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	F	181	Total	C	N	O	S	0	0
			1437	903	269	259	6		

- Molecule 29 is a protein called 50S ribosomal protein L6.

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

- Molecule 30 is a protein called 50S ribosomal protein L9.

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

- Molecule 31 is a protein called 50S ribosomal protein L10.

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

- Molecule 32 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	J	133	Total	C	N	O	S	0	0
			990	625	175	187	3		

- Molecule 33 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	K	147	Total	C	N	O	S	0	0
			1138	727	208	201	2		

- Molecule 34 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	L	121	Total	C	N	O	S	0	0
			930	580	178	169	3		

- Molecule 35 is a protein called 50S ribosomal protein L15.

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

- Molecule 36 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	N	134	Total	C	N	O	S	0	0
			1074	680	211	181	2		

- Molecule 37 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	O	117	Total	C	N	O	S	0	0
			919	577	178	162	2		

- Molecule 38 is a protein called 50S ribosomal protein L18.

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

- Molecule 39 is a protein called 50S ribosomal protein L19.

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

- Molecule 40 is a protein called 50S ribosomal protein L20.

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

- Molecule 41 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms				AltConf	Trace
41	S	102	Total	C	N	O	0	0
			768	487	140	141		

- Molecule 42 is a protein called 50S ribosomal protein L22.

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

- Molecule 43 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
43	U	94	Total 739	C 469	N 135	O 135	0	0

- Molecule 44 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	V	97	Total 731	C 456	N 137	O 136	S 2	0	0

- Molecule 45 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms				AltConf	Trace
45	W	186	Total 1389	C 859	N 249	O 281	0	0

- Molecule 46 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
46	X	82	Total 604	C 372	N 127	O 105	0	0

- Molecule 47 is a protein called 50S ribosomal protein L28.

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

- Molecule 48 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Z	63	Total 527	C 322	N 102	O 102	S 1	0	0

- Molecule 49 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms				AltConf	Trace
49	v	60	Total 483	C 298	N 97	O 88	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
50	y	66	Total 510	C 316	N 93	O 96	S 5	0	0

- Molecule 51 is a protein called 50S ribosomal protein L32.

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

- Molecule 52 is a protein called 50S ribosomal protein L33 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	1	50	Total 416	C 254	N 86	O 72	S 4	0	0

- Molecule 53 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	2	45	Total 372	C 222	N 96	O 53	S 1	0	0

- Molecule 54 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms				AltConf	Trace
54	3	63	Total 502	C 302	N 115	O 85	0	0

- Molecule 55 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	4	37	Total 298	C 181	N 66	O 46	S 5	0	0

- Molecule 56 is a protein called Uncharacterized protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
56	5	23	Total 189	C 111	N 50	O 28	0	0

- Molecule 57 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	B	117	Total 2501	C 1116	N 462	O 806	P 117	0	0

- Molecule 58 is a RNA chain called 23S rRNA.

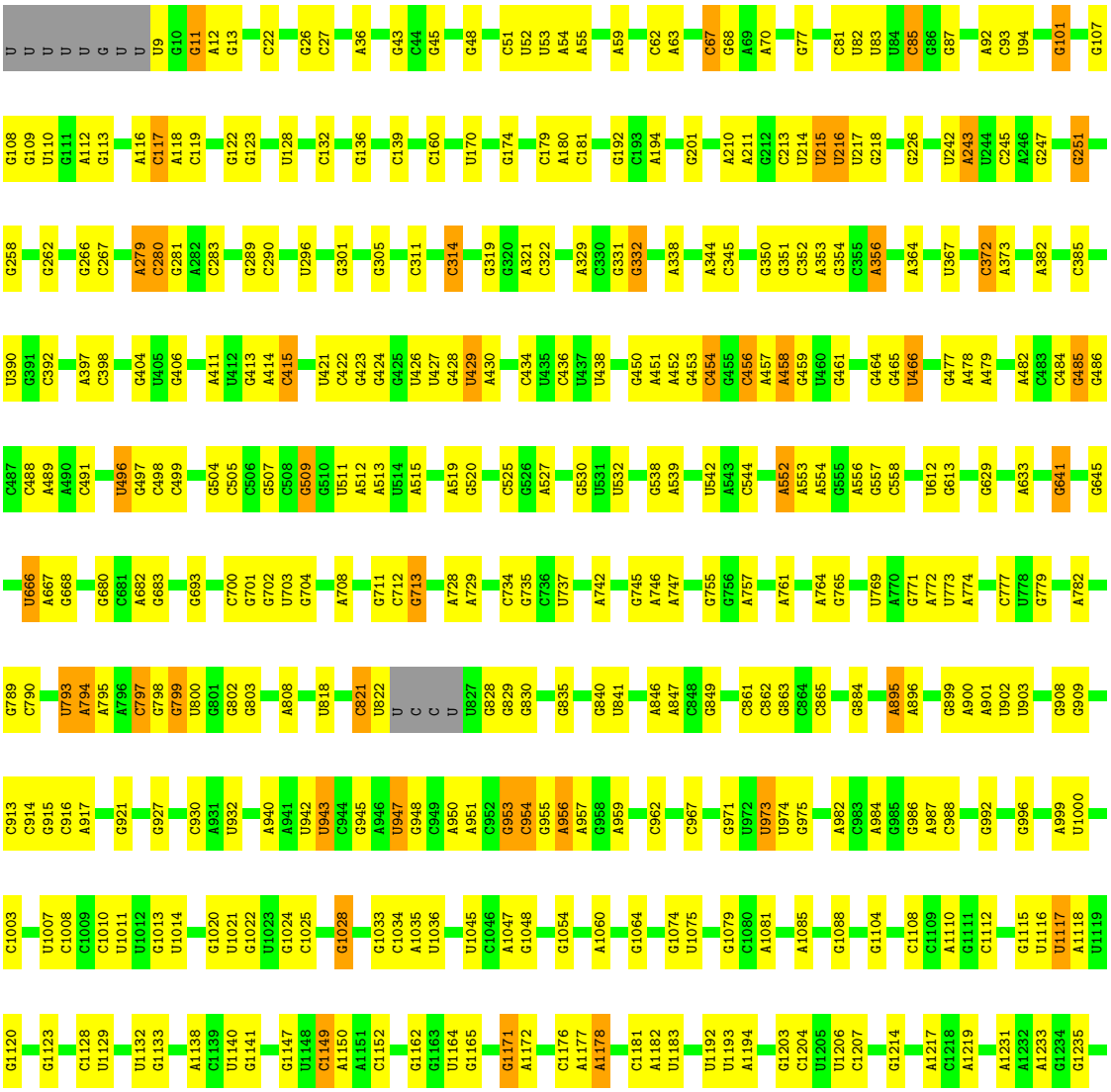
Mol	Chain	Residues	Atoms					AltConf	Trace
58	A	3102	Total 66623	C 29694	N 12253	O 21574	P 3102	0	0

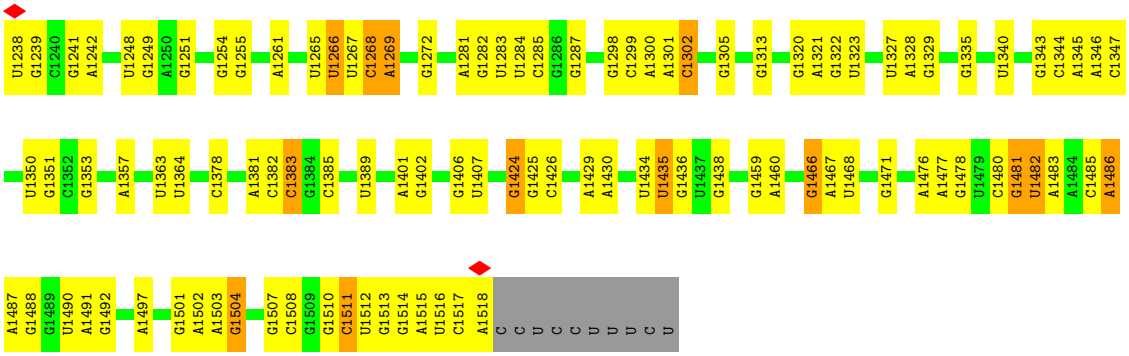
3 Residue-property plots (i)

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.

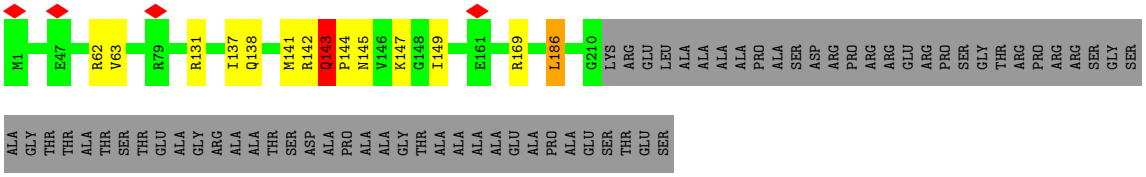
- Molecule 1: 16S rRNA

Chain a:

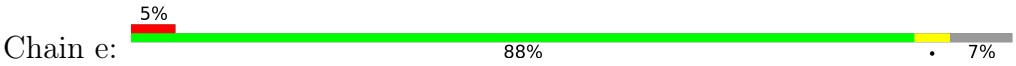


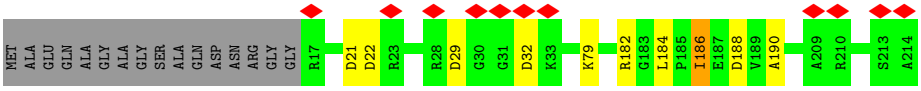


• Molecule 2: 30S ribosomal protein S3

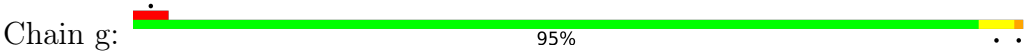


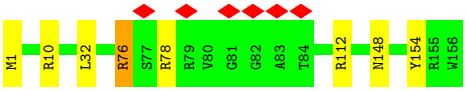
• Molecule 3: 30S ribosomal protein S5



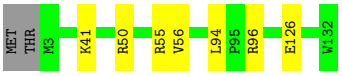


• Molecule 4: 30S ribosomal protein S7

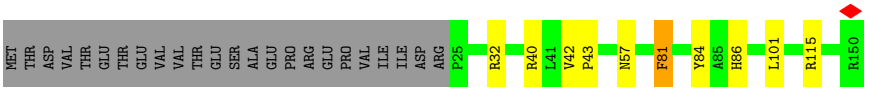




• Molecule 5: 30S ribosomal protein S8

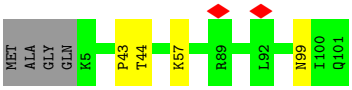


• Molecule 6: 30S ribosomal protein S9



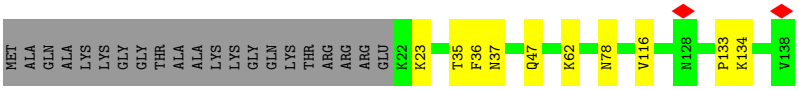
• Molecule 7: 30S ribosomal protein S10

Chain j:



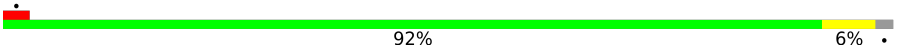
• Molecule 8: 30S ribosomal protein S11

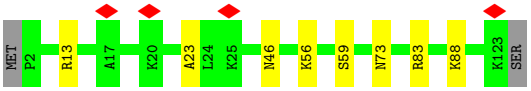
Chain k:



• Molecule 9: 30S ribosomal protein S12

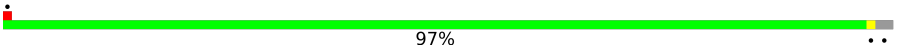
Chain l:

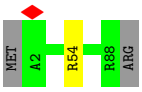




• Molecule 10: 30S ribosomal protein S15

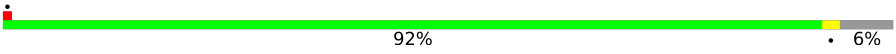
Chain o:

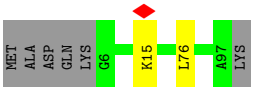




• Molecule 11: 30S ribosomal protein S17

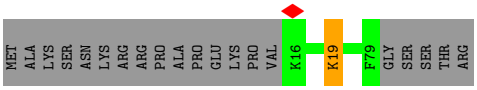
Chain q:





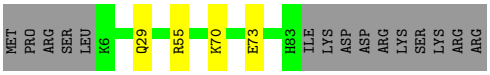
• Molecule 12: 30S ribosomal protein S18 2

Chain r:



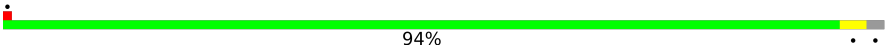
• Molecule 13: 30S ribosomal protein S19

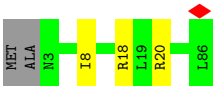
Chain s:



• Molecule 14: 30S ribosomal protein S20

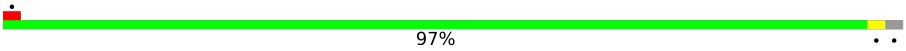
Chain t:

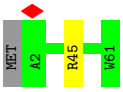




• Molecule 15: 30S ribosomal protein S14 type Z

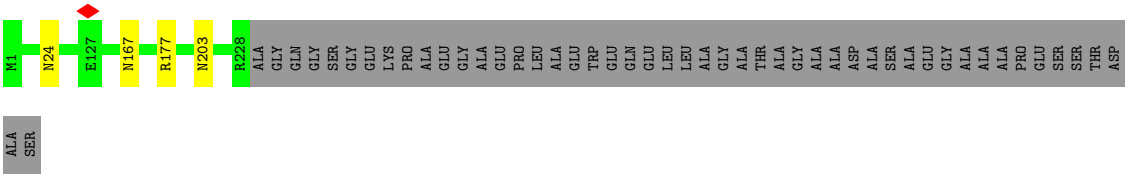
Chain n:





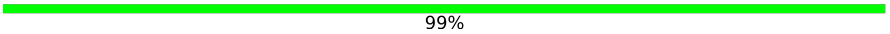
• Molecule 16: 30S ribosomal protein S2

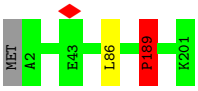
Chain b:



• Molecule 17: 30S ribosomal protein S4

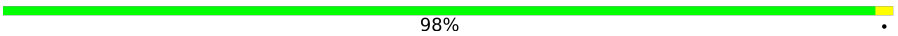
Chain d:





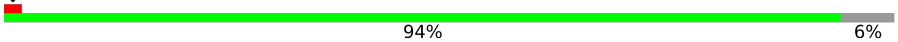
• Molecule 18: 30S ribosomal protein S6

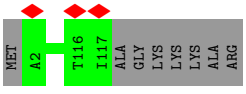
Chain f:



• Molecule 19: 30S ribosomal protein S13

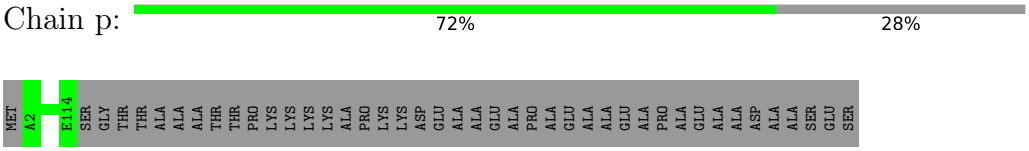
Chain m:





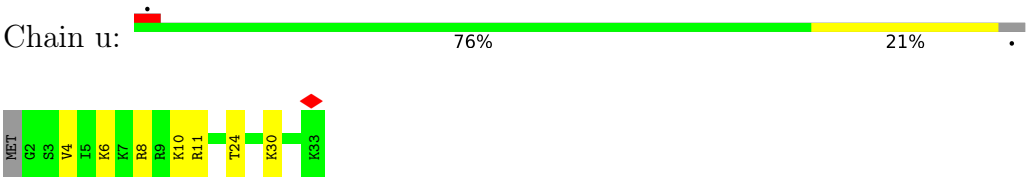
• Molecule 20: 30S ribosomal protein S16

Chain p:



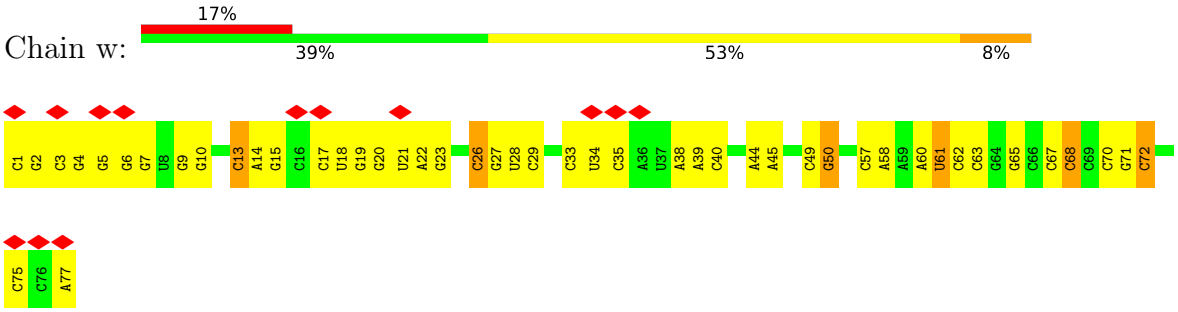
• Molecule 21: Conserved domain protein

Chain u:



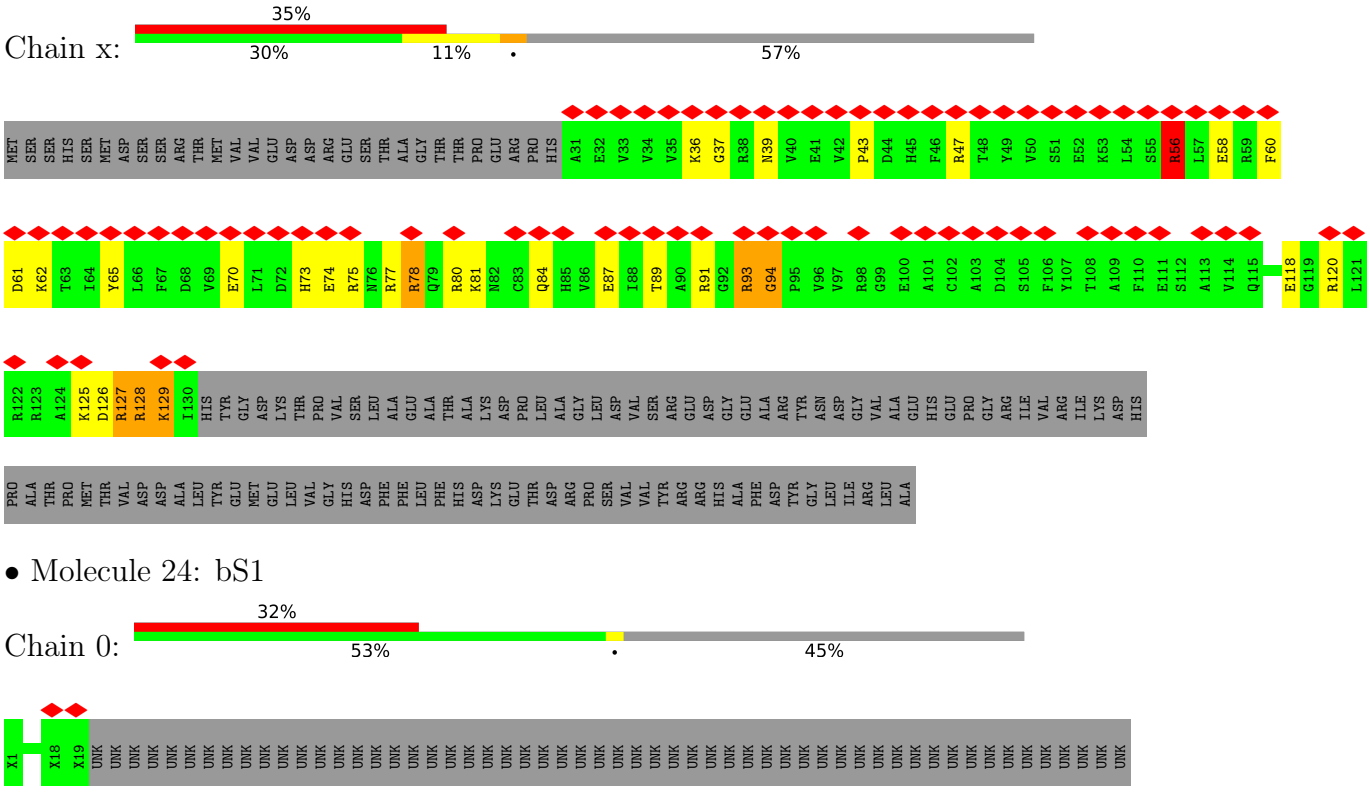
• Molecule 22: E-tRNAfMet

Chain w:



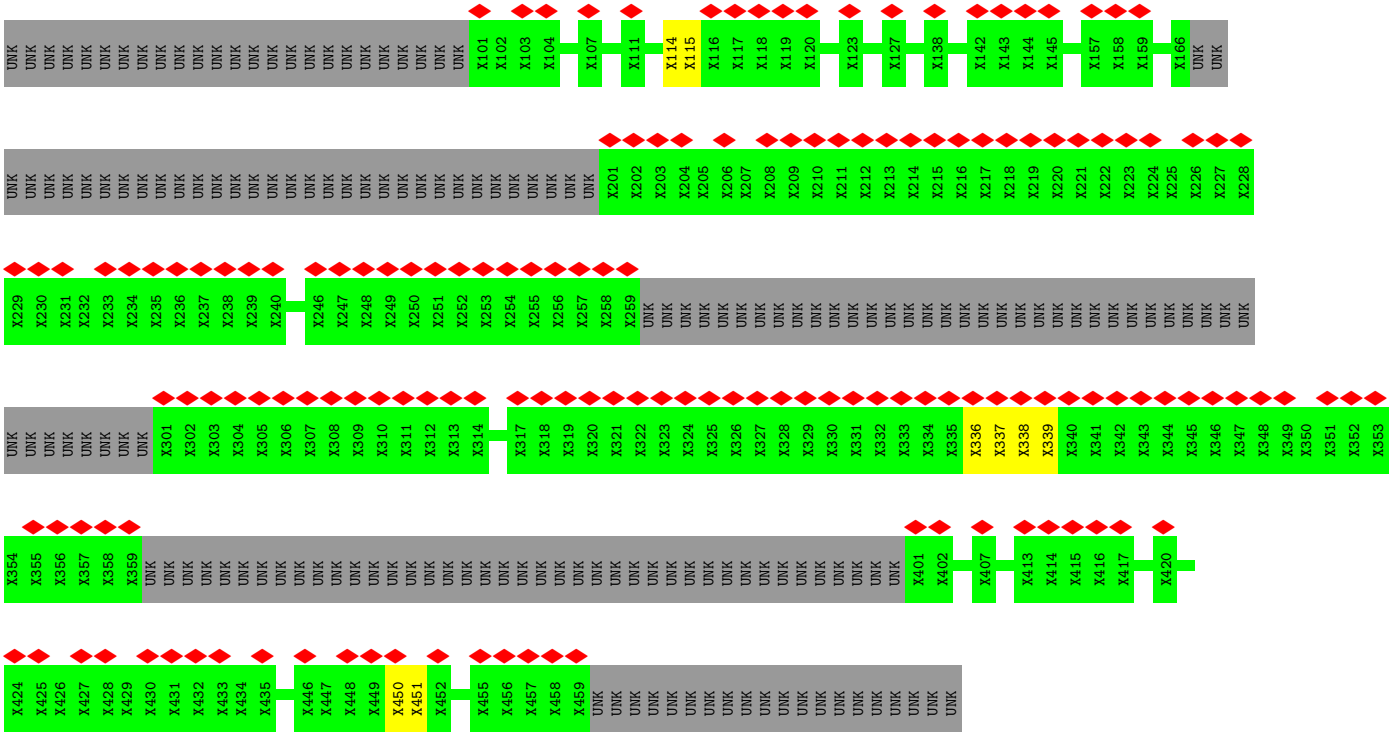
• Molecule 23: Ribosome hibernation promoting factor

Chain x:



• Molecule 24: bS1

Chain 0:

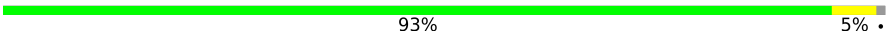


• Molecule 25: 50S ribosomal protein L2

Chain C:

• Molecule 26: 50S ribosomal protein L3

Chain D:

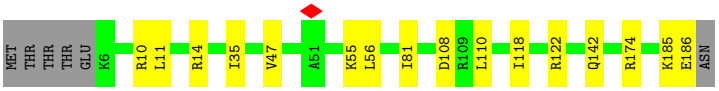


• Molecule 27: 50S ribosomal protein L4

Chain E:

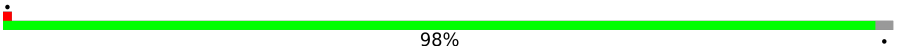
• Molecule 28: 50S ribosomal protein L5

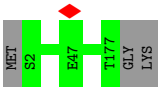
Chain F:



• Molecule 29: 50S ribosomal protein L6

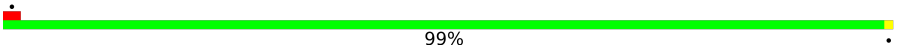
Chain G:

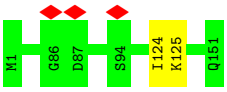




• Molecule 30: 50S ribosomal protein L9

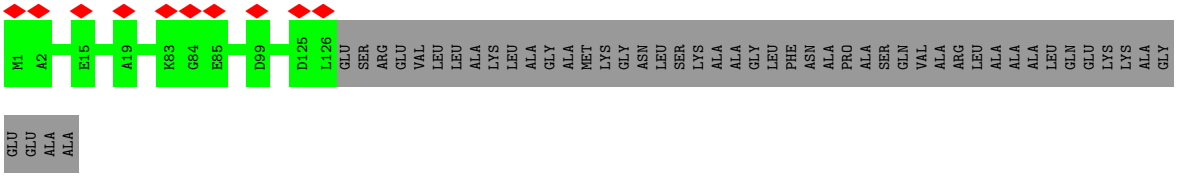
Chain H:





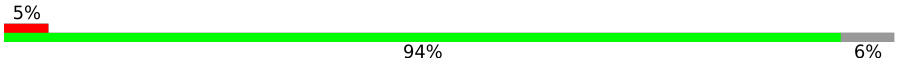
• Molecule 31: 50S ribosomal protein L10

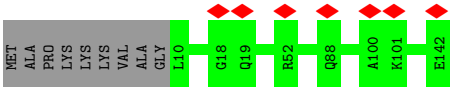
Chain I:



• Molecule 32: 50S ribosomal protein L11

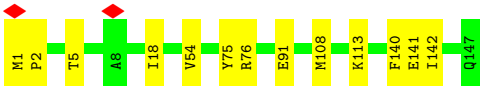
Chain J:





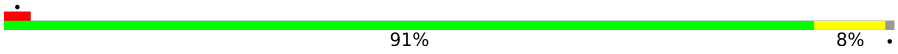
• Molecule 33: 50S ribosomal protein L13

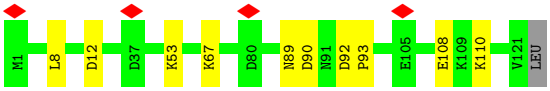
Chain K:



• Molecule 34: 50S ribosomal protein L14

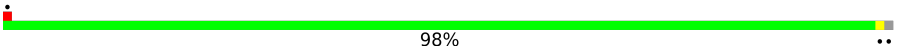
Chain L:

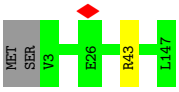




• Molecule 35: 50S ribosomal protein L15

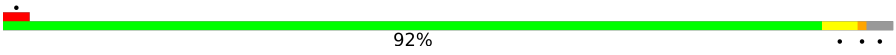
Chain M:

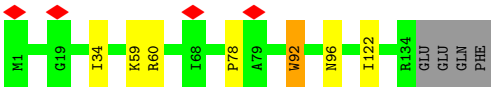




• Molecule 36: 50S ribosomal protein L16

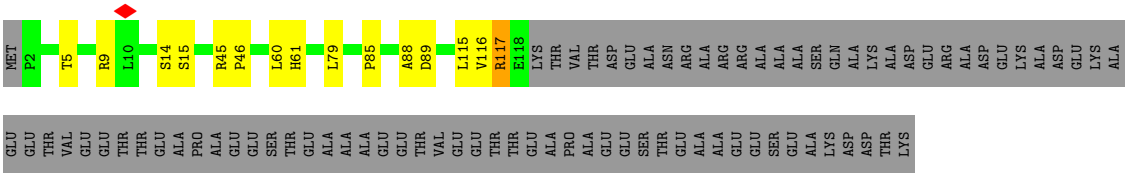
Chain N:





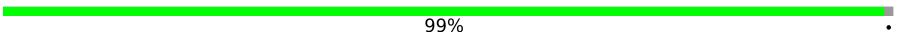
• Molecule 37: 50S ribosomal protein L17

Chain O:



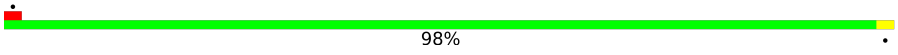
• Molecule 38: 50S ribosomal protein L18

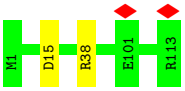
Chain P:



• Molecule 39: 50S ribosomal protein L19

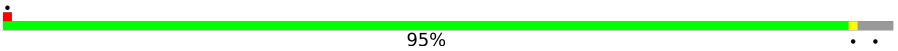
Chain Q:

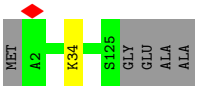




• Molecule 40: 50S ribosomal protein L20

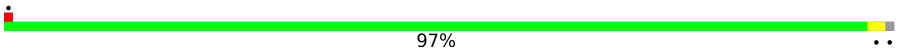
Chain R:

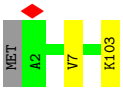




• Molecule 41: 50S ribosomal protein L21

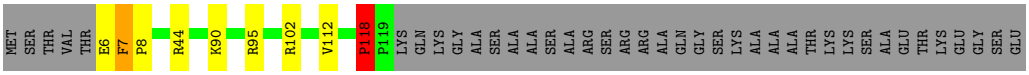
Chain S:





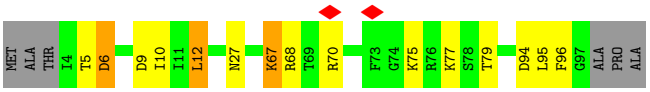
• Molecule 42: 50S ribosomal protein L22

Chain T:



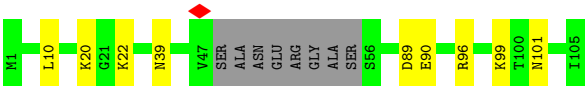
• Molecule 43: 50S ribosomal protein L23

Chain U:



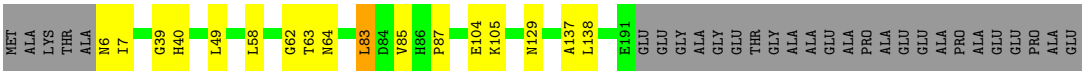
• Molecule 44: 50S ribosomal protein L24

Chain V:



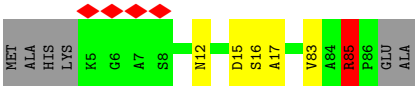
• Molecule 45: 50S ribosomal protein L25

Chain W:



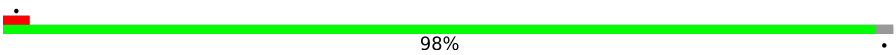
• Molecule 46: 50S ribosomal protein L27

Chain X:



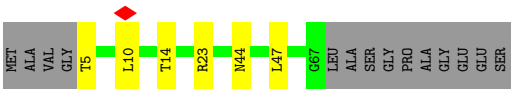
• Molecule 47: 50S ribosomal protein L28

Chain Y:



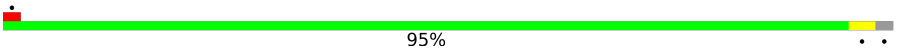
• Molecule 48: 50S ribosomal protein L29

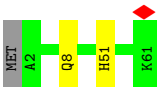
Chain Z:



• Molecule 49: 50S ribosomal protein L30

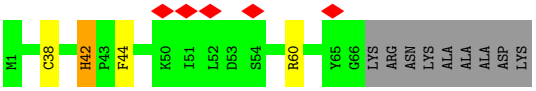
Chain v:





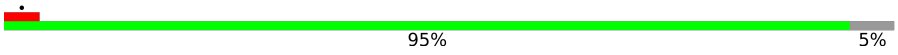
• Molecule 50: 50S ribosomal protein L31

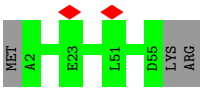
Chain y:



• Molecule 51: 50S ribosomal protein L32

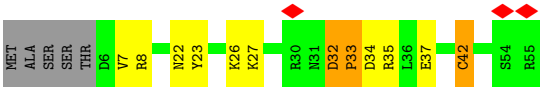
Chain z:





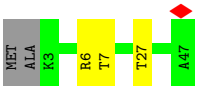
• Molecule 52: 50S ribosomal protein L33 1

Chain 1:



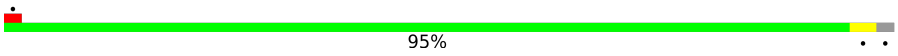
• Molecule 53: 50S ribosomal protein L34

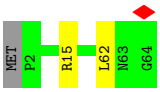
Chain 2:



• Molecule 54: 50S ribosomal protein L35

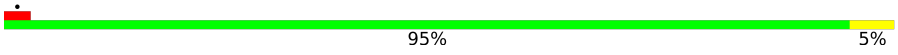
Chain 3:

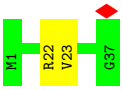




• Molecule 55: 50S ribosomal protein L36

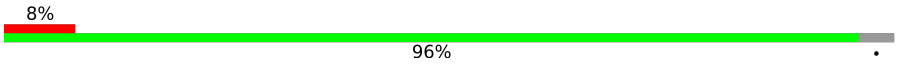
Chain 4:





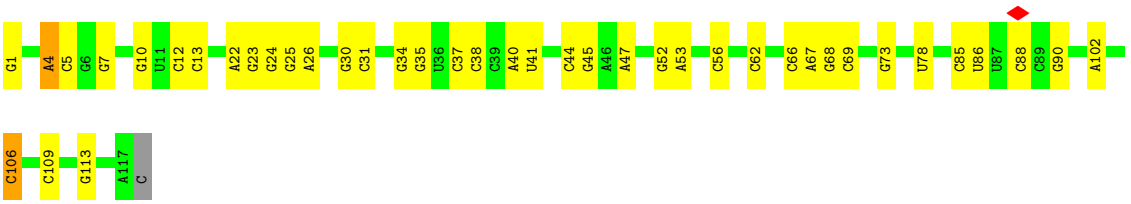
• Molecule 56: Uncharacterized protein

Chain 5:



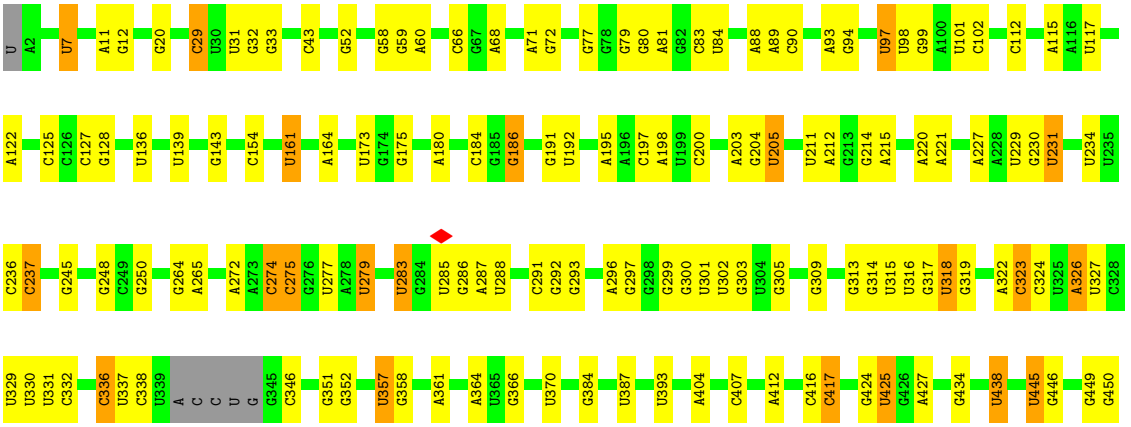
• Molecule 57: 5S rRNA

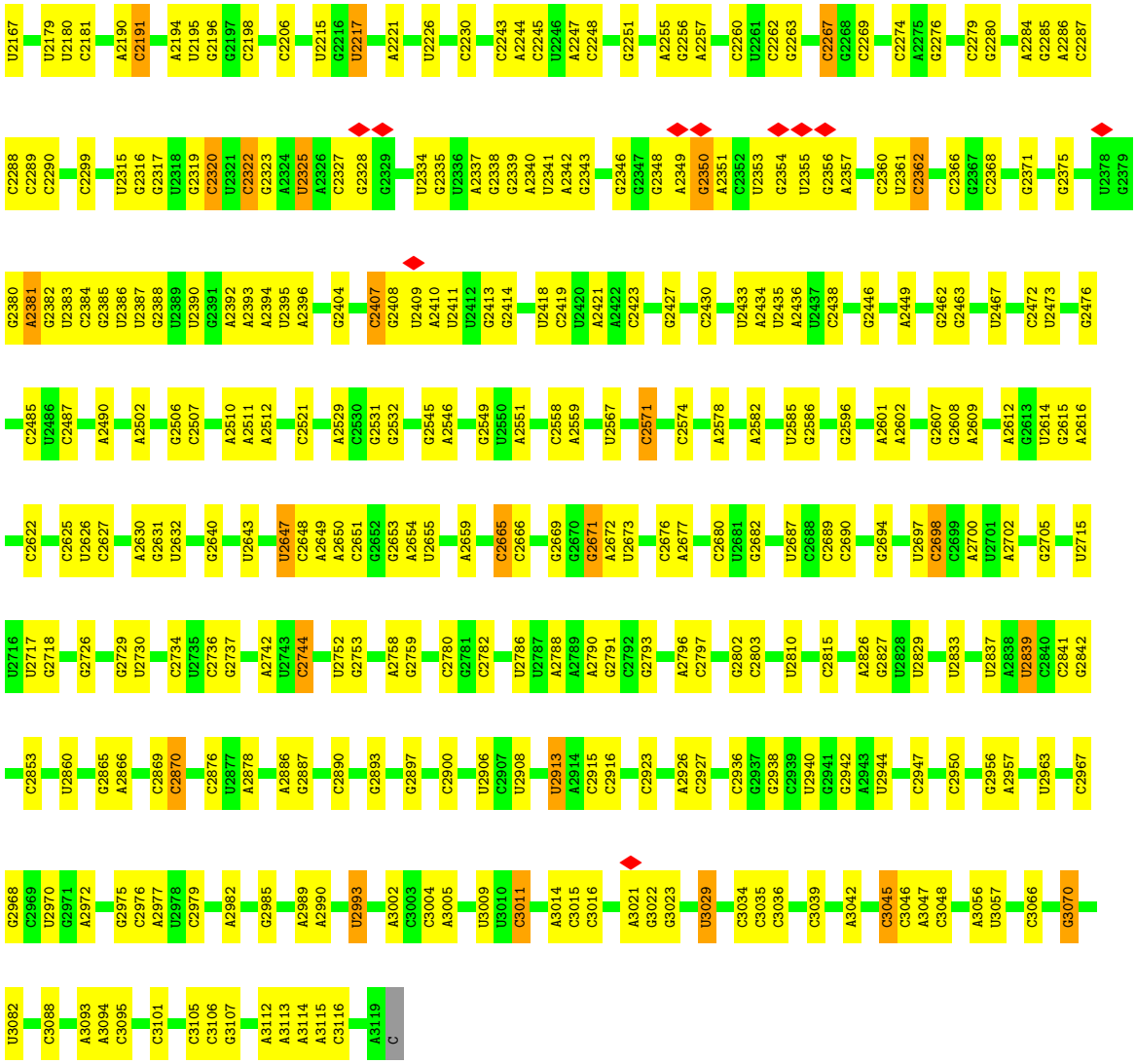
Chain B:



• Molecule 58: 23S rRNA

Chain A:




U2167 U2179 U2180 C2181 A2190 C2191 A2194 U2195 G2196 G2197 C2198 C2206 U2215 G2216 U2217 A2221 U2226 C2230 C2243 A2244 C2245 U2246 A2247 C2248 G2251 A2255 G2256 A2257 C2260 U2261 C2262 G2263 C2267 G2268 C2269 C2274 A2275 G2276 C2279 G2280 A2284 G2285 A2286 C2287
C2288 C2289 C2290 C2299 U2315 G2316 G2317 U2318 G2319 C2320 U2321 C2322 G2323 A2324 U2325 A2326 C2327 G2328 G2329 U2334 G2335 U2336 A2337 G2338 G2339 A2340 U2341 A2342 G2343 G2346 G2347 G2348 A2349 G2350 A2351 C2352 U2353 G2354 U2355 G2356 A2357 C2360 U2361 C2362 C2366 G2367 C2368 G2371 G2375 U2378 G2379
G2380 A2381 G2382 U2383 C2384 G2385 U2386 U2387 G2388 U2389 U2390 G2391 A2392 A2393 A2394 U2395 A2396 G2404 C2407 G2408 U2409 A2410 U2411 U2412 G2413 G2414 U2418 C2419 U2420 A2421 A2422 C2423 G2427 C2430 U2433 A2434 U2435 A2436 U2437 C2438 G2446 A2449 G2462 G2463 U2467 C2472 U2473 G2476
C2485 U2486 C2487 A2490 A2502 G2506 C2507 A2510 A2511 A2512 C2521 A2529 C2530 G2531 G2532 G2545 A2546 G2549 U2560 A2561 C2568 A2569 U2567 C2571 C2574 A2578 A2582 U2585 G2586 G2596 A2601 A2602 G2607 G2608 A2609 A2612 G2613 U2614 G2615 A2616
C2622 C2625 U2626 C2627 A2630 G2631 U2632 G2640 U2643 U2647 C2648 A2649 A2650 C2651 G2652 G2653 A2654 U2655 A2659 C2665 C2666 G2669 G2670 G2671 A2672 U2673 C2676 A2677 C2680 U2681 G2682 U2687 C2688 C2689 C2690 G2694 U2697 C2698 C2699 A2700 U2701 A2702 G2705 U2715
U2716 U2717 G2718 G2726 G2729 U2730 C2734 U2735 C2736 G2737 A2742 U2743 C2744 U2752 G2753 A2758 G2759 C2780 G2781 C2782 U2786 U2787 A2788 A2789 A2790 G2791 C2792 G2793 A2796 C2797 G2802 C2803 U2810 C2815 A2826 G2827 U2828 U2829 U2833 U2837 A2838 U2839 C2840 C2841 G2842
C2853 U2860 G2865 A2866 C2869 C2870 C2876 U2877 A2878 A2886 G2887 C2890 G2893 G2897 C2900 U2906 C2907 U2908 U2913 A2914 C2915 C2916 C2923 A2926 C2927 C2936 G2937 G2938 C2939 U2940 G2941 G2942 A2943 U2944 C2947 C2950 G2956 A2957 U2963 C2967
G2968 C2969 U2970 G2971 A2972 G2975 C2976 A2977 U2978 C2979 A2982 G2985 A2989 A2990 U2993 A3002 C3003 C3004 A3005 U3009 U3010 C3011 A3014 C3015 C3016 A3021 G3022 G3023 U3029 C3034 C3035 C3036 C3039 A3042 C3045 C3046 A3047 C3048 A3056 U3057 C3066 G3070
U3082 C3088 A3093 A3094 C3095 C3101 C3105 C3106 G3107 A3112 A3113 A3114 A3115 C3116 A3119 C

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	391837	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	1.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.253	Depositor
Minimum map value	-0.087	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	419.84, 419.84, 419.84	wwPDB
Map dimensions	328, 328, 328	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.28, 1.28, 1.28	Depositor

5 Model quality

5.1 Standard geometry

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	a	0.81	24/36201 (0.1%)	1.27	213/56488 (0.4%)
2	c	0.36	0/1696	0.62	2/2276 (0.1%)
3	e	0.39	0/1449	0.67	5/1949 (0.3%)
4	g	0.35	0/1260	0.58	0/1701
5	h	0.42	0/1018	0.71	2/1375 (0.1%)
6	i	0.36	0/1012	0.74	2/1362 (0.1%)
7	j	0.36	0/789	0.60	0/1069
8	k	0.31	0/889	0.57	0/1201
9	l	0.38	0/969	0.75	0/1294
10	o	0.34	0/718	0.58	0/963
11	q	0.39	0/741	0.67	1/993 (0.1%)
12	r	0.34	0/517	0.56	0/691
13	s	0.34	0/647	0.64	0/871
14	t	0.33	0/658	0.52	0/875
15	n	0.53	0/488	0.57	0/650
16	b	0.31	0/1822	0.54	0/2457
17	d	0.38	0/1672	0.61	1/2251 (0.0%)
18	f	0.38	0/782	0.62	1/1059 (0.1%)
19	m	0.36	0/942	0.62	0/1260
20	p	0.41	0/908	0.60	0/1226
21	u	0.49	0/280	0.67	0/359
22	w	0.78	1/1835 (0.1%)	1.23	20/2857 (0.7%)
23	x	0.56	0/843	0.93	6/1127 (0.5%)
25	C	1.00	5/2140 (0.2%)	0.93	5/2879 (0.2%)
26	D	0.54	0/1609	0.65	2/2165 (0.1%)
27	E	0.84	1/1576 (0.1%)	0.87	4/2132 (0.2%)
28	F	0.58	0/1459	0.79	1/1962 (0.1%)
29	G	0.36	0/1369	0.57	0/1848
30	H	0.33	0/1027	0.61	1/1398 (0.1%)
31	I	0.29	0/925	0.52	0/1246
32	J	0.29	0/1006	0.60	0/1364
33	K	0.76	1/1165 (0.1%)	0.88	4/1578 (0.3%)
34	L	0.92	0/938	0.96	5/1257 (0.4%)
35	M	0.53	0/1091	0.65	0/1457

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
36	N	0.91	1/1100 (0.1%)	0.86	1/1482 (0.1%)
37	O	0.74	0/936	0.95	5/1256 (0.4%)
38	P	0.43	0/966	0.57	0/1298
39	Q	0.51	0/921	0.60	1/1236 (0.1%)
40	R	0.55	0/1000	0.58	0/1341
41	S	0.47	0/778	0.57	0/1048
42	T	0.96	1/887 (0.1%)	0.93	3/1204 (0.2%)
43	U	0.75	0/749	0.87	2/1006 (0.2%)
44	V	0.65	0/737	0.78	1/987 (0.1%)
45	W	0.52	0/1404	0.81	5/1917 (0.3%)
46	X	0.96	0/613	0.87	1/821 (0.1%)
47	Y	0.55	0/478	0.71	0/641
48	Z	0.68	0/530	0.75	0/708
49	v	0.80	0/486	0.88	0/651
50	y	0.37	0/520	0.60	1/698 (0.1%)
51	z	0.55	0/427	0.61	0/572
52	1	0.73	1/424 (0.2%)	0.78	2/567 (0.4%)
53	2	0.84	0/375	1.00	1/493 (0.2%)
54	3	0.92	0/507	0.94	2/672 (0.3%)
55	4	0.82	0/302	0.77	0/401
56	5	0.44	0/191	0.60	0/247
57	B	0.55	1/2797 (0.0%)	1.15	19/4357 (0.4%)
58	A	1.00	1/74597 (0.0%)	1.24	627/116386 (0.5%)
All	All	0.84	37/164166 (0.0%)	1.13	946/245629 (0.4%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	c	0	1
3	e	0	1
4	g	0	3
5	h	0	2
7	j	0	1
8	k	0	2
9	l	0	2
11	q	0	1
12	r	0	1
13	s	0	2
17	d	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
23	x	0	11
24	0	0	8
25	C	0	5
26	D	0	2
27	E	0	5
28	F	0	1
33	K	0	1
36	N	0	2
37	O	0	2
42	T	0	1
43	U	0	1
45	W	0	2
52	1	0	2
All	All	0	60

All (37) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
22	w	1	C	OP3-P	-11.11	1.47	1.61
57	B	1	G	OP3-P	-10.43	1.48	1.61
1	a	861	C	N1-C6	-7.36	1.32	1.37
1	a	552	A	N9-C4	-7.21	1.33	1.37
25	C	79	VAL	CB-CG2	-6.93	1.38	1.52
42	T	112	VAL	CB-CG2	-6.67	1.38	1.52
1	a	552	A	N3-C4	-6.66	1.30	1.34
1	a	290	C	N1-C6	-6.28	1.33	1.37
1	a	1378	C	N1-C6	-6.25	1.33	1.37
25	C	224	VAL	CB-CG2	-6.19	1.39	1.52
1	a	746	A	N3-C4	-6.13	1.31	1.34
1	a	1497	A	N9-C4	-6.12	1.34	1.37
36	N	92	TRP	CB-CG	-5.99	1.39	1.50
1	a	1204	C	N1-C6	-5.84	1.33	1.37
1	a	708	A	N9-C4	-5.75	1.34	1.37
1	a	746	A	N9-C4	-5.71	1.34	1.37
52	1	42	CYS	CB-SG	-5.58	1.72	1.81
1	a	901	A	N9-C4	-5.57	1.34	1.37
25	C	247	VAL	CB-CG1	-5.46	1.41	1.52
1	a	863	G	N9-C8	-5.41	1.34	1.37
1	a	552	A	C5-C4	-5.33	1.35	1.38
1	a	777	C	N1-C6	-5.29	1.33	1.37
58	A	1099	A	N7-C5	-5.20	1.36	1.39
33	K	54	VAL	CB-CG2	-5.19	1.42	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	a	797	C	N1-C6	-5.18	1.34	1.37
25	C	224	VAL	CB-CG1	-5.17	1.42	1.52
1	a	1467	A	N3-C4	-5.17	1.31	1.34
1	a	296	U	C2-N3	-5.14	1.34	1.37
1	a	746	A	C5-C4	-5.13	1.35	1.38
1	a	899	G	C5-C4	-5.13	1.34	1.38
1	a	22	C	N1-C6	-5.13	1.34	1.37
1	a	1476	A	N9-C4	5.12	1.41	1.37
27	E	37	VAL	CB-CG1	-5.10	1.42	1.52
1	a	1401	A	N3-C4	-5.09	1.31	1.34
1	a	712	C	N1-C6	-5.04	1.34	1.37
25	C	187	VAL	CB-CG1	-5.03	1.42	1.52
1	a	119	C	N1-C6	-5.01	1.34	1.37

All (946) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	323	C	N1-C2-O2	11.58	125.85	118.90
58	A	1130	C	N1-C2-O2	11.12	125.57	118.90
58	A	2245	C	N1-C2-O2	11.04	125.52	118.90
58	A	2245	C	C2-N1-C1'	10.65	130.51	118.80
58	A	323	C	C2-N1-C1'	10.46	130.31	118.80
58	A	2025	C	N3-C2-O2	-10.30	114.69	121.90
58	A	619	C	N1-C2-O2	10.23	125.04	118.90
58	A	3046	C	C2-N1-C1'	10.20	130.02	118.80
58	A	1012	C	C2-N1-C1'	9.89	129.68	118.80
58	A	2245	C	N3-C2-O2	-9.66	115.14	121.90
58	A	1012	C	N1-C2-O2	9.63	124.68	118.90
58	A	237	C	C6-N1-C2	-9.62	116.45	120.30
1	a	1482	U	P-O3'-C3'	9.60	131.22	119.70
5	h	94	LEU	N-CA-C	-9.59	85.11	111.00
58	A	1694	C	N1-C2-O2	9.56	124.64	118.90
58	A	1130	C	C2-N1-C1'	9.56	129.31	118.80
58	A	1630	U	C5-C4-O4	9.52	131.61	125.90
58	A	619	C	C2-N1-C1'	9.52	129.27	118.80
58	A	1694	C	N3-C2-O2	-9.51	115.25	121.90
1	a	101	G	C8-N9-C4	-9.47	102.61	106.40
58	A	1001	C	C6-N1-C2	-9.45	116.52	120.30
58	A	912	C	C5-C6-N1	9.37	125.68	121.00
58	A	1428	U	C2-N1-C1'	9.35	128.92	117.70
58	A	2407	C	N1-C2-O2	9.34	124.50	118.90
58	A	2025	C	C2-N1-C1'	9.29	129.02	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	2025	C	N1-C2-O2	9.29	124.48	118.90
6	i	101	LEU	CB-CG-CD2	-9.28	95.22	111.00
58	A	323	C	N3-C2-O2	-9.26	115.42	121.90
1	a	70	A	N1-C2-N3	9.24	133.92	129.30
58	A	2407	C	C2-N1-C1'	9.23	128.95	118.80
58	A	336	C	C2-N1-C1'	9.16	128.88	118.80
58	A	3046	C	N3-C2-O2	-9.12	115.52	121.90
1	a	108	G	C8-N9-C4	9.11	110.04	106.40
1	a	489	A	N7-C8-N9	9.09	118.35	113.80
1	a	85	C	C2-N1-C1'	9.09	128.79	118.80
1	a	332	G	C8-N9-C4	9.06	110.02	106.40
1	a	101	G	N7-C8-N9	8.96	117.58	113.10
58	A	1694	C	C6-N1-C2	-8.96	116.72	120.30
58	A	1130	C	N3-C2-O2	-8.93	115.65	121.90
58	A	709	U	N3-C2-O2	-8.88	115.98	122.20
58	A	1428	U	N1-C2-O2	8.85	129.00	122.80
43	U	12	LEU	CA-CB-CG	8.81	135.57	115.30
1	a	1268	C	C2-N1-C1'	8.75	128.43	118.80
58	A	1428	U	N3-C2-O2	-8.61	116.17	122.20
58	A	2697	U	N1-C2-O2	8.53	128.77	122.80
58	A	2870	C	C6-N1-C2	-8.53	116.89	120.30
58	A	237	C	C5-C6-N1	8.51	125.26	121.00
58	A	417	C	C6-N1-C2	-8.51	116.90	120.30
58	A	3046	C	N1-C2-O2	8.46	123.97	118.90
23	x	56	ARG	NE-CZ-NH2	8.45	124.53	120.30
58	A	622	C	C5-C6-N1	8.41	125.21	121.00
58	A	3011	C	N1-C2-O2	8.40	123.94	118.90
58	A	709	U	N1-C2-O2	8.39	128.68	122.80
58	A	905	U	C2-N1-C1'	8.39	127.77	117.70
37	O	45	ARG	C-N-CD	8.37	145.98	128.40
45	W	62	GLY	N-CA-C	8.28	133.81	113.10
22	w	13	C	C6-N1-C2	-8.25	117.00	120.30
58	A	2521	C	C2-N1-C1'	8.23	127.86	118.80
1	a	1486	A	C5-N7-C8	-8.22	99.79	103.90
58	A	703	C	C2-N1-C1'	8.21	127.83	118.80
22	w	63	C	C6-N1-C2	-8.20	117.02	120.30
58	A	2005	C	C6-N1-C2	-8.11	117.05	120.30
58	A	275	C	C2-N1-C1'	8.10	127.71	118.80
58	A	962	U	C2-N1-C1'	8.08	127.40	117.70
58	A	619	C	C6-N1-C1'	-8.00	111.20	120.80
58	A	2267	C	C6-N1-C2	-7.99	117.10	120.30
1	a	85	C	N1-C2-O2	7.98	123.69	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	2870	C	C5-C6-N1	7.98	124.99	121.00
57	B	31	C	N1-C2-O2	7.94	123.67	118.90
58	A	1521	C	C2-N1-C1'	7.94	127.53	118.80
58	A	1429	C	C2-N1-C1'	7.93	127.53	118.80
58	A	845	C	N1-C2-O2	7.92	123.65	118.90
58	A	975	U	C2-N1-C1'	7.90	127.18	117.70
58	A	275	C	C6-N1-C2	-7.89	117.14	120.30
58	A	1403	C	N3-C2-O2	-7.88	116.39	121.90
58	A	2689	C	C5-C6-N1	7.88	124.94	121.00
1	a	973	U	C6-N1-C2	-7.87	116.28	121.00
58	A	2947	C	C6-N1-C2	-7.86	117.16	120.30
58	A	323	C	C6-N1-C2	-7.85	117.16	120.30
58	A	2267	C	C5-C6-N1	7.82	124.91	121.00
58	A	1535	C	C6-N1-C2	-7.79	117.18	120.30
42	T	118	PRO	CA-N-CD	-7.78	100.60	111.50
58	A	1694	C	C2-N1-C1'	7.78	127.36	118.80
58	A	2521	C	C6-N1-C2	-7.76	117.19	120.30
58	A	543	U	N3-C2-O2	-7.76	116.77	122.20
58	A	2289	C	C5-C6-N1	7.75	124.88	121.00
58	A	2325	U	N1-C2-O2	7.74	128.22	122.80
58	A	1535	C	C2-N1-C1'	7.74	127.31	118.80
58	A	1130	C	C6-N1-C2	-7.72	117.21	120.30
58	A	1302	G	C6-C5-N7	-7.70	125.78	130.40
22	w	63	C	C5-C6-N1	7.70	124.85	121.00
58	A	905	U	N1-C2-O2	7.69	128.18	122.80
58	A	2322	C	N1-C2-O2	7.68	123.51	118.90
58	A	2944	U	N1-C2-O2	7.67	128.17	122.80
58	A	2697	U	C2-N1-C1'	7.67	126.90	117.70
58	A	29	C	C2-N1-C1'	7.66	127.23	118.80
1	a	1486	A	C6-C5-N7	-7.65	126.94	132.30
58	A	275	C	N1-C2-O2	7.63	123.48	118.90
1	a	67	C	C6-N1-C2	-7.62	117.25	120.30
58	A	102	C	C2-N1-C1'	7.58	127.14	118.80
58	A	472	C	C2-N1-C1'	7.58	127.13	118.80
58	A	2180	U	N1-C2-O2	7.56	128.09	122.80
58	A	2245	C	C6-N1-C2	-7.54	117.28	120.30
58	A	1123	C	C5-C6-N1	7.53	124.77	121.00
58	A	1044	U	N1-C2-O2	7.52	128.07	122.80
22	w	63	C	N1-C2-O2	7.51	123.41	118.90
58	A	2111	U	N1-C2-O2	7.50	128.05	122.80
58	A	1409	C	C6-N1-C2	-7.49	117.30	120.30
1	a	489	A	C8-N9-C4	-7.47	102.81	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	1030	C	C2-N1-C1'	7.46	127.01	118.80
58	A	2180	U	N3-C2-O2	-7.46	116.98	122.20
58	A	1429	C	C5-C6-N1	7.45	124.72	121.00
58	A	2287	C	C6-N1-C2	-7.44	117.32	120.30
58	A	2697	U	N3-C2-O2	-7.43	117.00	122.20
1	a	954	C	C5-C6-N1	-7.43	117.29	121.00
58	A	2288	C	C6-N1-C2	-7.41	117.34	120.30
1	a	1486	A	C2-N3-C4	-7.37	106.91	110.60
58	A	234	U	N3-C2-O2	-7.37	117.04	122.20
22	w	63	C	C2-N1-C1'	7.35	126.88	118.80
58	A	1123	C	C6-N1-C2	-7.34	117.36	120.30
58	A	932	C	C6-N1-C2	-7.32	117.37	120.30
58	A	1531	C	C2-N1-C1'	7.32	126.85	118.80
58	A	619	C	N3-C2-O2	-7.31	116.78	121.90
1	a	862	C	C6-N1-C2	7.31	123.22	120.30
58	A	905	U	N3-C2-O2	-7.30	117.09	122.20
1	a	954	C	C2-N1-C1'	-7.27	110.81	118.80
58	A	2841	C	C6-N1-C2	-7.26	117.40	120.30
1	a	311	C	N3-C2-O2	-7.25	116.82	121.90
1	a	794	A	N1-C6-N6	7.25	122.95	118.60
58	A	2360	C	N1-C2-O2	7.24	123.25	118.90
58	A	514	C	C2-N1-C1'	7.24	126.76	118.80
58	A	845	C	C6-N1-C2	-7.23	117.41	120.30
57	B	62	C	N1-C2-O2	7.23	123.23	118.90
58	A	2325	U	N3-C2-O2	-7.22	117.15	122.20
58	A	283	U	N3-C2-O2	-7.22	117.15	122.20
58	A	2087	C	C2-N1-C1'	7.22	126.74	118.80
1	a	1486	A	N7-C8-N9	7.21	117.40	113.80
1	a	1268	C	C5-C6-N1	7.19	124.60	121.00
58	A	2325	U	C2-N1-C1'	7.19	126.33	117.70
1	a	1302	C	C6-N1-C2	7.19	123.18	120.30
58	A	962	U	N1-C2-O2	7.18	127.83	122.80
1	a	895	A	P-O3'-C3'	7.17	128.31	119.70
58	A	2245	C	C6-N1-C1'	-7.16	112.20	120.80
2	c	186	LEU	CA-CB-CG	7.16	131.76	115.30
58	A	1219	U	N3-C2-O2	-7.16	117.19	122.20
1	a	1350	U	C5-C6-N1	-7.15	119.12	122.70
1	a	305	G	N3-C4-N9	7.13	130.28	126.00
1	a	794	A	N1-C2-N3	7.12	132.86	129.30
58	A	2320	C	N1-C2-O2	7.12	123.17	118.90
58	A	102	C	C6-N1-C2	-7.12	117.45	120.30
1	a	803	G	N1-C6-O6	-7.11	115.64	119.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	734	C	C5-C6-N1	7.10	124.55	121.00
58	A	2086	U	C5-C6-N1	7.10	126.25	122.70
58	A	3011	C	N3-C2-O2	-7.10	116.93	121.90
58	A	2005	C	C5-C6-N1	7.09	124.55	121.00
58	A	102	C	N1-C2-O2	7.08	123.15	118.90
58	A	445	U	P-O3'-C3'	7.07	128.19	119.70
58	A	1822	C	C6-N1-C2	-7.07	117.47	120.30
58	A	336	C	C5-C6-N1	7.07	124.53	121.00
58	A	1044	U	C2-N1-C1'	7.06	126.17	117.70
58	A	709	U	C2-N1-C1'	7.06	126.17	117.70
58	A	283	U	N1-C2-O2	7.05	127.74	122.80
58	A	2327	C	N1-C2-O2	7.05	123.13	118.90
58	A	1044	U	N3-C2-O2	-7.03	117.28	122.20
58	A	1219	U	N1-C2-O2	7.03	127.72	122.80
1	a	314	C	C6-N1-C2	-7.03	117.49	120.30
58	A	2322	C	C2-N1-C1'	7.02	126.52	118.80
58	A	543	U	N1-C2-O2	7.01	127.71	122.80
58	A	3046	C	C6-N1-C1'	-7.01	112.38	120.80
58	A	2248	C	C5-C6-N1	7.01	124.50	121.00
58	A	714	U	N1-C2-O2	6.99	127.69	122.80
58	A	2890	C	N1-C2-O2	6.99	123.09	118.90
1	a	1149	C	C6-N1-C2	-6.99	117.51	120.30
58	A	2085	C	P-O3'-C3'	6.97	128.07	119.70
1	a	1088	G	C8-N9-C4	-6.97	103.61	106.40
58	A	197	C	C5-C6-N1	6.97	124.48	121.00
58	A	1862	C	C6-N1-C2	-6.96	117.51	120.30
1	a	793	U	C2-N1-C1'	6.96	126.05	117.70
58	A	2680	C	C5-C6-N1	6.96	124.48	121.00
1	a	1269	A	C8-N9-C4	-6.95	103.02	105.80
58	A	279	U	N1-C2-O2	6.95	127.67	122.80
58	A	714	U	N3-C2-O2	-6.95	117.34	122.20
58	A	656	C	C6-N1-C2	-6.95	117.52	120.30
58	A	514	C	C6-N1-C2	-6.95	117.52	120.30
58	A	323	C	C6-N1-C1'	-6.94	112.47	120.80
57	B	31	C	N3-C2-O2	-6.93	117.05	121.90
58	A	1130	C	C5-C6-N1	6.93	124.47	121.00
58	A	1303	U	C5-C6-N1	6.93	126.16	122.70
1	a	216	U	C2-N1-C1'	6.91	126.00	117.70
58	A	1012	C	C6-N1-C1'	-6.91	112.50	120.80
58	A	472	C	N1-C2-O2	6.91	123.05	118.90
58	A	729	C	C6-N1-C2	-6.90	117.54	120.30
58	A	962	U	N3-C2-O2	-6.90	117.37	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	1298	C	C5-C6-N1	6.90	124.45	121.00
58	A	703	C	C6-N1-C2	-6.90	117.54	120.30
1	a	849	G	N3-C4-C5	-6.88	125.16	128.60
58	A	1057	C	C6-N1-C2	-6.88	117.55	120.30
58	A	2094	G	P-O3'-C3'	6.87	127.94	119.70
58	A	2248	C	C6-N1-C2	-6.86	117.56	120.30
1	a	489	A	C5-N7-C8	-6.86	100.47	103.90
58	A	7	U	C2-N1-C1'	6.84	125.90	117.70
58	A	764	U	N3-C2-O2	-6.83	117.42	122.20
58	A	3046	C	C6-N1-C2	-6.83	117.57	120.30
58	A	910	C	C5-C6-N1	6.83	124.41	121.00
58	A	784	G	C4-N9-C1'	6.82	135.37	126.50
58	A	975	U	C5-C6-N1	6.80	126.10	122.70
45	W	138	LEU	CA-CB-CG	6.79	130.93	115.30
58	A	2717	U	C5-C6-N1	6.79	126.10	122.70
1	a	216	U	N1-C2-O2	6.79	127.55	122.80
58	A	275	C	C5-C6-N1	6.77	124.39	121.00
58	A	975	U	N1-C2-O2	6.77	127.54	122.80
1	a	9	U	C5-C6-N1	6.76	126.08	122.70
58	A	1382	U	N1-C2-O2	6.76	127.53	122.80
1	a	1486	A	C4-C5-N7	6.76	114.08	110.70
1	a	243	A	N1-C6-N6	6.75	122.65	118.60
58	A	1535	C	N3-C2-O2	-6.75	117.17	121.90
58	A	1667	C	C6-N1-C2	-6.74	117.60	120.30
58	A	2289	C	C6-N1-C2	-6.74	117.60	120.30
1	a	943	U	O5'-P-OP2	-6.74	99.64	105.70
58	A	2111	U	N3-C2-O2	-6.73	117.49	122.20
57	B	106	C	N1-C2-O2	6.73	122.94	118.90
58	A	2890	C	N3-C2-O2	-6.72	117.19	121.90
1	a	216	U	N3-C2-O2	-6.72	117.50	122.20
58	A	1630	U	N3-C4-O4	-6.72	114.70	119.40
58	A	1534	C	N1-C2-O2	6.71	122.93	118.90
58	A	2671	G	C6-N1-C2	-6.71	121.07	125.10
33	K	108	MET	CA-CB-CG	6.70	124.69	113.30
58	A	2327	C	C6-N1-C2	-6.70	117.62	120.30
58	A	192	U	N3-C2-O2	-6.69	117.52	122.20
1	a	1149	C	C2-N1-C1'	6.69	126.15	118.80
1	a	119	C	O5'-P-OP1	-6.67	99.70	105.70
58	A	1302	G	N3-C4-N9	6.66	130.00	126.00
58	A	2689	C	C2-N1-C1'	6.66	126.12	118.80
58	A	2407	C	C6-N1-C1'	-6.65	112.82	120.80
58	A	2521	C	C5-C6-N1	6.64	124.32	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	332	C	N3-C2-O2	-6.64	117.25	121.90
25	C	106	ILE	CG1-CB-CG2	-6.64	96.79	111.40
58	A	910	C	C6-N1-C2	-6.63	117.65	120.30
58	A	1239	C	C5-C6-N1	6.62	124.31	121.00
58	A	1403	C	N1-C2-O2	6.61	122.87	118.90
1	a	331	G	C8-N9-C4	6.61	109.04	106.40
58	A	1012	C	N3-C2-O2	-6.61	117.27	121.90
58	A	2647	U	N1-C2-O2	6.61	127.42	122.80
58	A	283	U	C2-N1-C1'	6.60	125.62	117.70
58	A	2407	C	C5-C6-N1	6.60	124.30	121.00
58	A	2138	C	N1-C2-O2	6.59	122.86	118.90
1	a	429	U	P-O3'-C3'	6.58	127.60	119.70
58	A	1123	C	C2-N1-C1'	6.58	126.04	118.80
1	a	101	G	C5-N7-C8	-6.58	101.01	104.30
18	f	67	ALA	C-N-CA	6.58	138.14	121.70
58	A	417	C	C5-C6-N1	6.57	124.29	121.00
58	A	2327	C	C2-N1-C1'	6.56	126.02	118.80
58	A	2025	C	C6-N1-C1'	-6.56	112.93	120.80
22	w	72	C	C5-C4-N4	-6.55	115.61	120.20
1	a	558	C	C5-C6-N1	-6.54	117.73	121.00
58	A	2913	U	N3-C2-O2	-6.54	117.62	122.20
58	A	1219	U	C2-N1-C1'	6.52	125.53	117.70
37	O	85	PRO	CA-N-CD	-6.52	102.37	111.50
58	A	1409	C	C5-C6-N1	6.51	124.26	121.00
58	A	1893	C	N1-C2-O2	6.51	122.81	118.90
58	A	2269	C	C6-N1-C2	-6.51	117.70	120.30
58	A	438	U	C2-N1-C1'	6.51	125.51	117.70
58	A	29	C	N1-C2-O2	6.50	122.80	118.90
22	w	67	C	C6-N1-C2	-6.50	117.70	120.30
58	A	2970	U	C5-C6-N1	6.50	125.95	122.70
1	a	122	G	C8-N9-C4	6.50	109.00	106.40
1	a	847	A	C8-N9-C4	6.49	108.40	105.80
1	a	364	A	C8-N9-C4	-6.48	103.21	105.80
58	A	7	U	N1-C2-O2	6.48	127.33	122.80
1	a	279	A	O4'-C1'-N9	-6.46	103.03	108.20
58	A	845	C	C5-C6-N1	6.46	124.23	121.00
1	a	1486	A	N1-C6-N6	6.46	122.47	118.60
58	A	2689	C	C6-N1-C2	-6.45	117.72	120.30
58	A	1045	C	C2-N1-C1'	6.45	125.89	118.80
58	A	2290	C	C6-N1-C2	-6.44	117.72	120.30
58	A	336	C	N1-C2-O2	6.43	122.76	118.90
1	a	1266	U	C2-N1-C1'	6.43	125.41	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	1302	G	C4-N9-C1'	6.43	134.85	126.50
58	A	2671	G	C5-C6-O6	-6.42	124.75	128.60
58	A	1197	C	C2-N1-C1'	6.42	125.86	118.80
1	a	85	C	C6-N1-C1'	-6.42	113.09	120.80
1	a	332	G	N7-C8-N9	-6.42	109.89	113.10
58	A	139	U	N3-C2-O2	-6.41	117.71	122.20
58	A	2407	C	N3-C2-O2	-6.40	117.42	121.90
58	A	1551	U	C5-C6-N1	6.39	125.90	122.70
58	A	2260	C	C6-N1-C2	-6.39	117.74	120.30
1	a	1268	C	C6-N1-C1'	-6.39	113.13	120.80
58	A	764	U	N1-C2-O2	6.39	127.27	122.80
58	A	1534	C	C2-N1-C1'	6.38	125.82	118.80
37	O	89	ASP	CB-CG-OD1	6.37	124.04	118.30
58	A	2944	U	N3-C2-O2	-6.37	117.74	122.20
58	A	1212	U	C5-C6-N1	6.37	125.88	122.70
58	A	608	C	C5-C6-N1	6.37	124.18	121.00
58	A	2734	C	N1-C2-O2	6.37	122.72	118.90
1	a	895	A	C8-N9-C4	-6.35	103.26	105.80
58	A	336	C	C6-N1-C1'	-6.35	113.18	120.80
58	A	2869	C	C2-N1-C1'	6.34	125.78	118.80
58	A	839	U	N3-C2-O2	-6.33	117.77	122.20
58	A	1044	U	C5-C6-N1	6.33	125.86	122.70
1	a	1508	C	C6-N1-C2	-6.33	117.77	120.30
58	A	336	C	C6-N1-C2	-6.32	117.77	120.30
58	A	1991	C	C5-C6-N1	6.32	124.16	121.00
58	A	1001	C	C5-C6-N1	6.32	124.16	121.00
58	A	1428	U	C6-N1-C1'	-6.32	112.36	121.20
58	A	2841	C	N1-C2-O2	6.31	122.69	118.90
58	A	561	G	N3-C4-N9	6.31	129.79	126.00
58	A	279	U	N3-C2-O2	-6.30	117.79	122.20
58	A	2360	C	C2-N1-C1'	6.29	125.72	118.80
58	A	1813	C	C5-C6-N1	6.28	124.14	121.00
1	a	485	G	N7-C8-N9	6.28	116.24	113.10
1	a	1424	G	C4-N9-C1'	6.27	134.65	126.50
26	D	144	VAL	CG1-CB-CG2	-6.27	100.87	110.90
58	A	2198	C	C5-C6-N1	6.27	124.14	121.00
1	a	117	C	C6-N1-C2	6.27	122.81	120.30
57	B	4	A	C8-N9-C4	-6.27	103.29	105.80
58	A	514	C	C5-C6-N1	6.26	124.13	121.00
58	A	505	C	C5-C6-N1	6.26	124.13	121.00
58	A	1012	C	C6-N1-C2	-6.26	117.80	120.30
58	A	461	U	N3-C2-O2	-6.26	117.82	122.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	2841	C	C5-C6-N1	6.25	124.13	121.00
58	A	3070	G	C4-N9-C1'	-6.25	118.37	126.50
58	A	2025	C	C6-N1-C2	-6.25	117.80	120.30
37	O	46	PRO	CA-N-CD	-6.25	102.75	111.50
58	A	102	C	C5-C6-N1	6.25	124.12	121.00
58	A	192	U	N1-C2-O2	6.25	127.17	122.80
58	A	2076	A	N1-C6-N6	6.25	122.35	118.60
58	A	1008	G	C4-N9-C1'	6.24	134.61	126.50
22	w	72	C	N3-C4-C5	6.24	124.39	121.90
58	A	1197	C	N1-C2-O2	6.24	122.64	118.90
25	C	213	ARG	NE-CZ-NH2	-6.23	117.18	120.30
1	a	11	G	C5-N7-C8	-6.23	101.18	104.30
42	T	102	ARG	NE-CZ-NH2	-6.23	117.19	120.30
58	A	1816	C	C2-N1-C1'	6.23	125.65	118.80
58	A	1057	C	C5-C6-N1	6.23	124.11	121.00
58	A	2680	C	C6-N1-C2	-6.23	117.81	120.30
58	A	1893	C	N3-C2-O2	-6.22	117.54	121.90
58	A	2900	C	C6-N1-C2	-6.22	117.81	120.30
58	A	1429	C	C6-N1-C2	-6.22	117.81	120.30
33	K	18	ILE	CG1-CB-CG2	-6.22	97.73	111.40
58	A	2366	C	N3-C2-O2	-6.21	117.55	121.90
1	a	538	G	N3-C4-C5	-6.21	125.49	128.60
58	A	2435	U	N3-C2-O2	-6.21	117.86	122.20
1	a	305	G	C4-N9-C1'	6.20	134.56	126.50
58	A	912	C	C6-N1-C2	-6.20	117.82	120.30
58	A	1837	G	C4-C5-N7	6.20	113.28	110.80
58	A	323	C	C5-C6-N1	6.20	124.10	121.00
58	A	387	U	N1-C2-O2	6.19	127.13	122.80
57	B	69	C	N1-C2-O2	6.18	122.61	118.90
58	A	2947	C	C5-C6-N1	6.18	124.09	121.00
58	A	898	A	C4-N9-C1'	6.18	137.42	126.30
58	A	550	C	C6-N1-C2	-6.18	117.83	120.30
58	A	1130	C	C6-N1-C1'	-6.17	113.39	120.80
58	A	549	C	C6-N1-C2	-6.17	117.83	120.30
1	a	305	G	C8-N9-C1'	-6.17	118.98	127.00
58	A	1441	C	N1-C2-O2	6.16	122.60	118.90
58	A	1531	C	C5-C6-N1	6.15	124.07	121.00
53	2	7	THR	N-CA-C	6.14	127.59	111.00
58	A	957	C	C6-N1-C2	-6.14	117.84	120.30
1	a	794	A	C2-N3-C4	-6.14	107.53	110.60
57	B	4	A	N7-C8-N9	6.14	116.87	113.80
25	C	95	LEU	CB-CG-CD1	-6.13	100.57	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
36	N	122	ILE	CG1-CB-CG2	-6.13	97.90	111.40
58	A	1012	C	C5-C6-N1	6.13	124.07	121.00
58	A	703	C	C5-C6-N1	6.13	124.06	121.00
58	A	1662	C	C6-N1-C2	-6.13	117.85	120.30
58	A	1697	U	N3-C2-O2	-6.12	117.91	122.20
1	a	11	G	N3-C4-C5	6.12	131.66	128.60
58	A	3034	C	C6-N1-C2	-6.12	117.85	120.30
58	A	2320	C	C2-N1-C1'	6.11	125.52	118.80
58	A	1088	U	C5-C6-N1	6.11	125.76	122.70
1	a	108	G	N7-C8-N9	-6.11	110.05	113.10
58	A	2320	C	N3-C2-O2	-6.10	117.63	121.90
58	A	2166	C	C5-C6-N1	6.10	124.05	121.00
58	A	1535	C	N1-C2-O2	6.09	122.55	118.90
58	A	293	G	N1-C6-O6	-6.08	116.25	119.90
58	A	2362	C	N1-C2-O2	6.08	122.55	118.90
58	A	930	C	C6-N1-C2	-6.08	117.87	120.30
1	a	70	A	C6-N1-C2	-6.07	114.96	118.60
58	A	2158	C	N1-C2-O2	6.07	122.54	118.90
58	A	2900	C	C5-C6-N1	6.07	124.03	121.00
1	a	1149	C	P-O3'-C3'	6.07	126.98	119.70
44	V	10	LEU	CA-CB-CG	6.07	129.25	115.30
58	A	853	C	C2-N1-C1'	6.07	125.47	118.80
58	A	2061	U	C5-C6-N1	6.06	125.73	122.70
58	A	1302	G	C8-N9-C1'	-6.06	119.12	127.00
1	a	1178	A	N1-C2-N3	6.05	132.33	129.30
58	A	2438	C	N1-C2-O2	6.05	122.53	118.90
58	A	1801	C	N1-C2-O2	6.04	122.53	118.90
58	A	1251	A	O4'-C1'-N9	6.04	113.03	108.20
58	A	1521	C	C6-N1-C2	-6.04	117.89	120.30
58	A	2155	U	N1-C2-O2	6.04	127.03	122.80
58	A	2144	C	C6-N1-C2	-6.04	117.89	120.30
1	a	1172	A	C8-N9-C4	-6.04	103.39	105.80
57	B	31	C	C6-N1-C2	-6.04	117.89	120.30
37	O	88	ALA	C-N-CA	6.03	136.78	121.70
58	A	2782	C	C5-C6-N1	6.03	124.02	121.00
58	A	1531	C	N1-C2-O2	6.03	122.52	118.90
1	a	1117	U	OP1-P-O3'	6.03	118.46	105.20
1	a	108	G	N3-C4-N9	6.03	129.62	126.00
1	a	305	G	N3-C4-C5	-6.03	125.59	128.60
1	a	404	G	N1-C6-O6	-6.03	116.28	119.90
58	A	2381	A	P-O3'-C3'	6.03	126.93	119.70
58	A	3045	C	C6-N1-C2	-6.02	117.89	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	1410	C	C6-N1-C2	-6.02	117.89	120.30
58	A	66	C	C6-N1-C2	-6.02	117.89	120.30
58	A	2993	U	N1-C2-O2	6.01	127.01	122.80
1	a	713	G	C4-N9-C1'	-6.01	118.68	126.50
57	B	106	C	C2-N1-C1'	6.01	125.41	118.80
58	A	2689	C	N1-C2-O2	6.01	122.51	118.90
1	a	456	C	O5'-P-OP1	-6.01	100.29	105.70
1	a	485	G	C8-N9-C4	-6.01	104.00	106.40
58	A	161	U	C2-N1-C1'	6.01	124.91	117.70
58	A	622	C	C6-N1-C2	-6.00	117.90	120.30
1	a	101	G	C6-C5-N7	-6.00	126.80	130.40
58	A	2487	C	C6-N1-C2	-6.00	117.90	120.30
1	a	956	A	O4'-C1'-N9	6.00	113.00	108.20
1	a	861	C	C2-N3-C4	-5.99	116.90	119.90
58	A	784	G	C8-N9-C1'	-5.99	119.22	127.00
1	a	769	U	C5-C4-O4	5.98	129.49	125.90
58	A	1103	C	C5-C6-N1	5.98	123.99	121.00
58	A	2916	C	C6-N1-C2	-5.98	117.91	120.30
58	A	279	U	C2-N1-C1'	5.97	124.87	117.70
1	a	243	A	C5-N7-C8	-5.97	100.91	103.90
27	E	33	LEU	CB-CG-CD2	-5.97	100.84	111.00
58	A	1449	C	C6-N1-C2	-5.97	117.91	120.30
58	A	461	U	N1-C2-O2	5.96	126.98	122.80
58	A	2327	C	N3-C2-O2	-5.96	117.72	121.90
58	A	845	C	C2-N3-C4	5.96	122.88	119.90
1	a	734	C	N3-C2-O2	-5.95	117.73	121.90
57	B	62	C	N3-C2-O2	-5.95	117.73	121.90
58	A	2430	C	N1-C2-O2	5.95	122.47	118.90
58	A	1625	G	N7-C8-N9	5.95	116.07	113.10
58	A	237	C	C2-N1-C1'	5.94	125.34	118.80
58	A	2734	C	N3-C2-O2	-5.94	117.74	121.90
22	w	67	C	C5-C6-N1	5.94	123.97	121.00
58	A	357	U	P-O3'-C3'	5.94	126.83	119.70
58	A	839	U	N1-C2-O2	5.94	126.96	122.80
58	A	1531	C	C6-N1-C2	-5.94	117.92	120.30
58	A	974	G	P-O3'-C3'	5.94	126.82	119.70
58	A	2226	U	N1-C2-O2	5.94	126.95	122.80
58	A	1393	C	C6-N1-C2	-5.93	117.93	120.30
58	A	1553	C	N1-C2-O2	5.93	122.46	118.90
57	B	106	C	N3-C2-O2	-5.93	117.75	121.90
58	A	2111	U	C2-N1-C1'	5.93	124.81	117.70
58	A	918	U	C5-C6-N1	5.92	125.66	122.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	2622	C	C6-N1-C2	-5.91	117.94	120.30
58	A	2602	A	N1-C6-N6	5.89	122.14	118.60
57	B	31	C	C2-N1-C1'	5.89	125.28	118.80
58	A	1082	C	C6-N1-C2	-5.89	117.94	120.30
58	A	1467	U	N3-C2-O2	-5.89	118.08	122.20
58	A	1618	C	N1-C2-O2	5.89	122.43	118.90
58	A	1801	C	C2-N1-C1'	5.89	125.28	118.80
58	A	2419	C	C2-N1-C1'	5.88	125.27	118.80
1	a	1340	U	C5-C6-N1	-5.88	119.76	122.70
58	A	2116	C	N1-C2-O2	5.88	122.43	118.90
58	A	2155	U	N3-C2-O2	-5.88	118.08	122.20
58	A	2940	U	N3-C2-O2	-5.88	118.08	122.20
58	A	1529	U	C5-C6-N1	5.87	125.64	122.70
58	A	1798	U	N3-C2-O2	-5.87	118.09	122.20
1	a	1268	C	N3-C4-N4	5.86	122.10	118.00
58	A	1668	C	C6-N1-C2	-5.86	117.96	120.30
1	a	454	C	C2-N1-C1'	5.85	125.24	118.80
58	A	714	U	C2-N1-C1'	5.85	124.72	117.70
58	A	930	C	C5-C6-N1	5.85	123.92	121.00
58	A	2013	C	C6-N1-C2	-5.85	117.96	120.30
58	A	1813	C	C6-N1-C2	-5.84	117.96	120.30
58	A	2110	U	C2-N1-C1'	5.84	124.71	117.70
1	a	107	G	N3-C4-C5	5.84	131.52	128.60
1	a	1350	U	C6-N1-C2	5.83	124.50	121.00
22	w	72	C	C6-N1-C1'	-5.83	113.80	120.80
58	A	1494	U	N3-C2-O2	-5.83	118.12	122.20
58	A	599	G	O4'-C1'-N9	5.82	112.86	108.20
58	A	1158	U	N3-C2-O2	-5.82	118.13	122.20
1	a	311	C	C2-N1-C1'	5.82	125.20	118.80
58	A	1082	C	C5-C6-N1	5.82	123.91	121.00
58	A	2744	C	N1-C2-O2	5.81	122.39	118.90
58	A	1167	C	C6-N1-C2	-5.81	117.98	120.30
1	a	794	A	C4-C5-C6	5.81	119.90	117.00
58	A	617	U	N3-C2-O2	-5.80	118.14	122.20
58	A	2423	C	C5-C6-N1	5.80	123.90	121.00
1	a	243	A	C4-C5-N7	5.79	113.60	110.70
58	A	2690	C	C6-N1-C2	-5.79	117.98	120.30
1	a	693	G	N3-C4-C5	-5.79	125.71	128.60
34	L	67	LYS	CD-CE-NZ	-5.79	98.39	111.70
58	A	1302	G	C4-C5-N7	5.79	113.12	110.80
58	A	324	C	N3-C2-O2	-5.78	117.85	121.90
1	a	1481	G	C8-N9-C4	-5.78	104.09	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	200	C	C6-N1-C2	-5.78	117.99	120.30
58	A	504	C	C5-C6-N1	5.77	123.89	121.00
58	A	1747	C	C6-N1-C2	-5.77	117.99	120.30
22	w	72	C	C2-N1-C1'	5.77	125.14	118.80
1	a	132	C	C6-N1-C2	5.76	122.61	120.30
1	a	504	G	N3-C4-C5	-5.76	125.72	128.60
58	A	417	C	N1-C2-O2	5.76	122.36	118.90
58	A	2407	C	C6-N1-C2	-5.76	118.00	120.30
58	A	2927	C	N1-C2-O2	5.76	122.36	118.90
1	a	799	G	N3-C4-C5	5.76	131.48	128.60
58	A	139	U	C2-N1-C1'	5.76	124.61	117.70
58	A	939	C	C6-N1-C2	-5.76	118.00	120.30
45	W	49	LEU	CB-CG-CD2	-5.75	101.22	111.00
58	A	2191	C	N1-C2-O2	5.75	122.35	118.90
58	A	154	C	C6-N1-C2	-5.74	118.00	120.30
58	A	495	C	C6-N1-C2	-5.74	118.00	120.30
58	A	1034	U	N3-C2-O2	-5.74	118.18	122.20
1	a	666	U	C6-N1-C1'	5.74	129.24	121.20
58	A	191	G	C4-N9-C1'	5.74	133.96	126.50
1	a	532	U	C5-C6-N1	-5.73	119.83	122.70
58	A	2815	C	C6-N1-C2	-5.73	118.01	120.30
1	a	385	C	C6-N1-C2	-5.73	118.01	120.30
58	A	2088	C	N1-C2-O2	5.73	122.34	118.90
58	A	7	U	N3-C2-O2	-5.72	118.19	122.20
58	A	2217	U	N3-C2-O2	-5.72	118.19	122.20
58	A	1030	C	N1-C2-O2	5.72	122.33	118.90
1	a	108	G	N9-C4-C5	-5.72	103.11	105.40
1	a	243	A	C2-N3-C4	-5.71	107.75	110.60
58	A	857	U	C5-C6-N1	5.70	125.55	122.70
58	A	1775	C	C5-C6-N1	5.70	123.85	121.00
58	A	2138	C	C2-N1-C1'	5.70	125.07	118.80
58	A	962	U	C6-N1-C1'	-5.70	113.22	121.20
58	A	332	C	N1-C2-O2	5.70	122.32	118.90
58	A	1045	C	N1-C2-O2	5.70	122.32	118.90
58	A	2666	C	N1-C2-O2	5.70	122.32	118.90
1	a	666	U	C2-N1-C1'	-5.69	110.87	117.70
58	A	2890	C	C6-N1-C2	-5.69	118.02	120.30
58	A	898	A	N7-C8-N9	5.69	116.64	113.80
58	A	1198	C	C6-N1-C2	-5.69	118.02	120.30
1	a	413	G	O4'-C1'-N9	5.68	112.74	108.20
23	x	47	ARG	NE-CZ-NH2	5.67	123.14	120.30
58	A	1467	U	C2-N1-C1'	5.67	124.51	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	2350	G	P-O3'-C3'	5.67	126.50	119.70
57	B	62	C	C2-N1-C1'	5.67	125.03	118.80
58	A	977	G	N3-C4-N9	5.66	129.40	126.00
58	A	1197	C	C6-N1-C2	-5.66	118.04	120.30
22	w	50	G	C6-C5-N7	-5.66	127.01	130.40
58	A	868	C	C6-N1-C2	-5.65	118.04	120.30
1	a	372	C	N3-C2-O2	-5.65	117.94	121.90
1	a	846	A	C2-N3-C4	-5.65	107.78	110.60
58	A	1996	U	C2-N1-C1'	5.65	124.48	117.70
1	a	1171	G	O5'-P-OP2	-5.65	100.62	105.70
1	a	311	C	N1-C2-O2	5.64	122.29	118.90
58	A	788	C	C6-N1-C2	-5.64	118.04	120.30
58	A	3066	C	C6-N1-C2	-5.64	118.04	120.30
58	A	2841	C	N3-C2-O2	-5.64	117.95	121.90
58	A	975	U	N3-C2-O2	-5.63	118.26	122.20
45	W	49	LEU	CA-CB-CG	5.62	128.23	115.30
58	A	2144	C	C5-C6-N1	5.62	123.81	121.00
1	a	1486	A	C5-C6-N1	-5.62	114.89	117.70
58	A	2730	U	N3-C2-O2	-5.61	118.27	122.20
58	A	1001	C	N1-C2-O2	5.61	122.27	118.90
1	a	1204	C	C5-C6-N1	-5.61	118.20	121.00
34	L	110	LYS	N-CA-C	5.60	126.13	111.00
58	A	43	C	C6-N1-C2	-5.60	118.06	120.30
58	A	2842	G	N3-C4-C5	-5.60	125.80	128.60
1	a	794	A	C6-C5-N7	-5.60	128.38	132.30
1	a	1481	G	N3-C4-C5	-5.60	125.80	128.60
58	A	2803	C	N1-C2-O2	5.60	122.26	118.90
58	A	29	C	C6-N1-C1'	-5.60	114.08	120.80
1	a	488	C	C6-N1-C2	-5.59	118.06	120.30
58	A	1008	G	C6-C5-N7	-5.59	127.04	130.40
58	A	1515	C	C6-N1-C2	-5.59	118.06	120.30
58	A	839	U	C2-N1-C1'	5.58	124.40	117.70
58	A	703	C	N1-C2-O2	5.58	122.25	118.90
1	a	1214	G	C8-N9-C4	5.58	108.63	106.40
58	A	1429	C	N1-C2-O2	5.58	122.25	118.90
58	A	2245	C	C5-C6-N1	5.58	123.79	121.00
58	A	1298	C	C2-N1-C1'	5.58	124.94	118.80
1	a	466	U	C2-N1-C1'	5.57	124.39	117.70
22	w	68	C	C5-C6-N1	5.57	123.78	121.00
57	B	38	C	N1-C2-O2	5.57	122.24	118.90
58	A	112	C	C6-N1-C2	-5.57	118.07	120.30
58	A	1386	G	C8-N9-C4	-5.56	104.17	106.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	a	85	C	N3-C2-O2	-5.56	118.01	121.90
58	A	1862	C	C5-C6-N1	5.56	123.78	121.00
58	A	3048	C	N1-C2-O2	5.56	122.23	118.90
58	A	922	U	N3-C2-O2	-5.55	118.31	122.20
58	A	2181	C	C6-N1-C2	-5.55	118.08	120.30
58	A	1816	C	C5-C6-N1	5.55	123.78	121.00
58	A	2687	U	C5-C6-N1	5.55	125.47	122.70
58	A	324	C	C6-N1-C2	-5.55	118.08	120.30
22	w	50	G	C4-N9-C1'	5.54	133.71	126.50
58	A	2979	C	C5-C6-N1	5.54	123.77	121.00
58	A	929	C	C5-C6-N1	5.54	123.77	121.00
22	w	4	G	N3-C4-N9	-5.54	122.68	126.00
22	w	26	C	N3-C4-C5	5.54	124.12	121.90
58	A	1212	U	N1-C2-O2	5.54	126.68	122.80
58	A	2290	C	C5-C6-N1	5.54	123.77	121.00
58	A	1843	C	C2-N1-C1'	5.54	124.89	118.80
1	a	953	G	O4'-C1'-N9	5.53	112.63	108.20
22	w	63	C	N3-C2-O2	-5.53	118.03	121.90
58	A	1816	C	N1-C2-O2	5.53	122.22	118.90
58	A	1651	C	C5-C6-N1	5.53	123.76	121.00
39	Q	15	ASP	CB-CG-OD1	5.53	123.28	118.30
58	A	2842	G	C2-N3-C4	5.53	114.66	111.90
22	w	62	C	N1-C2-O2	5.52	122.22	118.90
58	A	234	U	N1-C2-O2	5.52	126.67	122.80
58	A	1775	C	C2-N1-C1'	5.52	124.88	118.80
1	a	489	A	C6-C5-N7	-5.52	128.44	132.30
1	a	799	G	C8-N9-C4	5.52	108.61	106.40
33	K	5	THR	N-CA-C	-5.52	96.10	111.00
57	B	69	C	N3-C2-O2	-5.52	118.04	121.90
58	A	937	U	C5-C6-N1	5.52	125.46	122.70
1	a	666	U	C5-C4-O4	5.52	129.21	125.90
58	A	1612	U	N3-C2-O2	-5.52	118.34	122.20
1	a	1117	U	P-O3'-C3'	5.51	126.32	119.70
58	A	846	C	C6-N1-C2	-5.51	118.09	120.30
58	A	1197	C	C5-C6-N1	5.51	123.75	121.00
58	A	1548	C	N1-C2-O2	5.51	122.20	118.90
23	x	58	GLU	CB-CA-C	-5.50	99.39	110.40
58	A	2230	C	N1-C2-O2	5.50	122.20	118.90
58	A	733	U	C5-C6-N1	5.50	125.45	122.70
1	a	902	U	C5-C6-N1	-5.50	119.95	122.70
58	A	1801	C	C6-N1-C2	-5.50	118.10	120.30
58	A	2521	C	N1-C2-O2	5.50	122.20	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	1321	C	C6-N1-C2	-5.49	118.10	120.30
58	A	2632	U	C5-C6-N1	5.49	125.45	122.70
1	a	745	G	C4-C5-N7	5.49	113.00	110.80
23	x	94	GLY	C-N-CD	5.49	139.93	128.40
1	a	737	U	C5-C6-N1	-5.49	119.96	122.70
1	a	258	G	C8-N9-C4	-5.49	104.21	106.40
1	a	85	C	C6-N1-C2	-5.48	118.11	120.30
26	D	156	THR	C-N-CD	5.48	139.91	128.40
58	A	1847	U	N1-C2-N3	5.48	118.19	114.90
58	A	204	G	O4'-C1'-N9	5.48	112.58	108.20
28	F	35	ILE	C-N-CD	5.48	139.90	128.40
25	C	35	ARG	C-N-CD	5.48	139.90	128.40
52	1	32	ASP	C-N-CD	5.48	139.90	128.40
1	a	70	A	N1-C6-N6	5.47	121.88	118.60
58	A	2647	U	N3-C2-O2	-5.47	118.37	122.20
58	A	1366	A	C2-N3-C4	5.47	113.33	110.60
58	A	2362	C	C6-N1-C2	-5.47	118.11	120.30
58	A	1045	C	N3-C2-O2	-5.47	118.07	121.90
1	a	296	U	N3-C2-O2	-5.47	118.37	122.20
1	a	1117	U	O4'-C1'-N1	5.46	112.57	108.20
1	a	1383	C	C6-N1-C2	-5.46	118.11	120.30
3	e	190	ALA	C-N-CD	5.46	139.87	128.40
1	a	1507	G	C8-N9-C4	5.46	108.58	106.40
1	a	954	C	C6-N1-C2	5.45	122.48	120.30
58	A	184	C	C6-N1-C2	-5.45	118.12	120.30
58	A	1102	G	N3-C4-C5	-5.45	125.88	128.60
1	a	962	C	C5-C6-N1	5.45	123.72	121.00
58	A	2116	C	N3-C2-O2	-5.44	118.09	121.90
58	A	1485	C	C5-C6-N1	5.44	123.72	121.00
34	L	12	ASP	CB-CG-OD1	5.43	123.19	118.30
58	A	3035	C	C6-N1-C2	-5.43	118.13	120.30
58	A	2752	U	N1-C2-O2	5.43	126.60	122.80
58	A	97	U	P-O3'-C3'	5.42	126.21	119.70
58	A	918	U	C6-N1-C2	-5.42	117.75	121.00
1	a	11	G	C4-C5-N7	5.42	112.97	110.80
1	a	496	U	C2-N1-C1'	5.42	124.20	117.70
58	A	3070	G	N3-C4-C5	5.42	131.31	128.60
58	A	1991	C	C6-N1-C2	-5.41	118.14	120.30
58	A	2690	C	C5-C6-N1	5.41	123.71	121.00
1	a	415	C	C2-N1-C1'	5.41	124.75	118.80
1	a	803	G	N9-C4-C5	5.41	107.56	105.40
1	a	85	C	C5-C6-N1	5.41	123.70	121.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	802	C	N1-C2-O2	5.41	122.14	118.90
58	A	905	U	C6-N1-C1'	-5.41	113.63	121.20
58	A	1904	C	N3-C2-O2	-5.41	118.12	121.90
1	a	821	C	N1-C2-O2	5.40	122.14	118.90
58	A	2571	C	N1-C2-O2	5.40	122.14	118.90
58	A	2665	C	N1-C2-O2	5.40	122.14	118.90
58	A	1276	G	C4-C5-N7	5.40	112.96	110.80
58	A	3116	C	C6-N1-C2	-5.39	118.14	120.30
58	A	1662	C	C5-C6-N1	5.39	123.69	121.00
1	a	27	C	C6-N1-C2	5.39	122.45	120.30
58	A	1260	C	C2-N1-C1'	5.39	124.72	118.80
58	A	1302	G	N9-C4-C5	-5.38	103.25	105.40
58	A	2472	C	C2-N1-C1'	5.38	124.72	118.80
1	a	1510	G	N3-C4-C5	-5.38	125.91	128.60
1	a	1477	A	C8-N9-C4	-5.38	103.65	105.80
58	A	425	U	C5-C6-N1	5.38	125.39	122.70
58	A	984	U	C5-C6-N1	5.38	125.39	122.70
58	A	505	C	C6-N1-C2	-5.38	118.15	120.30
58	A	191	G	C8-N9-C1'	-5.38	120.01	127.00
58	A	1996	U	O4'-C1'-N1	5.38	112.50	108.20
58	A	2198	C	C6-N1-C2	-5.38	118.15	120.30
58	A	929	C	C6-N1-C2	-5.37	118.15	120.30
1	a	454	C	C6-N1-C2	-5.37	118.15	120.30
58	A	1766	U	N1-C2-N3	5.37	118.12	114.90
1	a	1028	G	C8-N9-C4	-5.36	104.25	106.40
58	A	2226	U	C5-C6-N1	5.36	125.38	122.70
1	a	967	C	C6-N1-C2	5.36	122.44	120.30
1	a	947	U	C6-N1-C2	5.36	124.22	121.00
17	d	189	PRO	C-N-CA	5.36	135.10	121.70
58	A	2147	U	C5-C6-N1	5.36	125.38	122.70
58	A	1298	C	C6-N1-C2	-5.36	118.16	120.30
22	w	61	U	N1-C2-O2	5.35	126.55	122.80
1	a	1269	A	N7-C8-N9	5.35	116.48	113.80
58	A	1926	C	C6-N1-C2	-5.35	118.16	120.30
58	A	787	C	C6-N1-C2	-5.35	118.16	120.30
58	A	472	C	C6-N1-C2	-5.35	118.16	120.30
58	A	1158	U	N1-C2-O2	5.35	126.55	122.80
58	A	2829	U	N3-C2-O2	-5.35	118.45	122.20
45	W	58	LEU	CB-CG-CD2	-5.35	101.91	111.00
6	i	32	ARG	CB-CA-C	5.34	121.09	110.40
58	A	1953	C	C6-N1-C2	-5.34	118.17	120.30
58	A	2267	C	N1-C2-O2	5.34	122.10	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	2360	C	C5-C6-N1	5.34	123.67	121.00
58	A	2625	C	N1-C2-O2	5.34	122.10	118.90
58	A	2698	C	C2-N1-C1'	5.34	124.67	118.80
34	L	108	GLU	N-CA-C	-5.34	96.59	111.00
58	A	2327	C	C5-C6-N1	5.34	123.67	121.00
1	a	331	G	N9-C4-C5	-5.33	103.27	105.40
58	A	514	C	N1-C2-O2	5.33	122.10	118.90
58	A	1694	C	C5-C6-N1	5.33	123.67	121.00
58	A	2375	G	C6-C5-N7	-5.33	127.20	130.40
58	A	957	C	C5-C6-N1	5.33	123.66	121.00
58	A	2138	C	N3-C2-O2	-5.33	118.17	121.90
58	A	952	C	C6-N1-C2	-5.33	118.17	120.30
30	H	124	ILE	C-N-CA	5.33	135.01	121.70
1	a	1028	G	N7-C8-N9	5.32	115.76	113.10
58	A	2886	A	C8-N9-C4	-5.32	103.67	105.80
58	A	996	G	C4-N9-C1'	5.32	133.42	126.50
58	A	2890	C	C2-N1-C1'	5.32	124.65	118.80
58	A	1898	U	N3-C2-O2	-5.32	118.48	122.20
58	A	1094	G	C4-C5-N7	5.32	112.93	110.80
58	A	2472	C	C5-C6-N1	5.32	123.66	121.00
33	K	1	MET	C-N-CD	5.32	139.56	128.40
1	a	1060	A	C8-N9-C4	5.31	107.92	105.80
1	a	1511	C	C5-C6-N1	5.31	123.66	121.00
58	A	845	C	N3-C2-O2	-5.31	118.18	121.90
58	A	1943	C	N1-C2-O2	5.31	122.08	118.90
1	a	509	G	C5-N7-C8	-5.30	101.65	104.30
5	h	94	LEU	C-N-CD	5.30	139.54	128.40
58	A	1008	G	N3-C4-N9	5.30	129.18	126.00
58	A	3016	C	C6-N1-C2	-5.30	118.18	120.30
54	3	15	ARG	CB-CG-CD	-5.30	97.82	111.60
1	a	641	G	C8-N9-C4	-5.30	104.28	106.40
58	A	1521	C	C6-N1-C1'	-5.30	114.44	120.80
58	A	1734	C	C6-N1-C2	-5.30	118.18	120.30
58	A	1220	C	C6-N1-C2	-5.30	118.18	120.30
58	A	1321	C	C5-C6-N1	5.29	123.65	121.00
58	A	1651	C	C6-N1-C2	-5.29	118.18	120.30
27	E	19	GLU	C-N-CA	5.29	134.92	121.70
58	A	1817	C	C5-C6-N1	5.29	123.64	121.00
1	a	489	A	O4'-C1'-N9	5.28	112.43	108.20
58	A	192	U	C2-N1-C1'	5.28	124.04	117.70
1	a	1511	C	C6-N1-C2	-5.28	118.19	120.30
58	A	2322	C	C6-N1-C1'	-5.28	114.46	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	a	109	G	C5-C6-N1	5.28	114.14	111.50
1	a	901	A	C2-N3-C4	-5.28	107.96	110.60
52	1	8	ARG	C-N-CD	5.28	139.48	128.40
58	A	2087	C	C6-N1-C1'	-5.28	114.47	120.80
58	A	1409	C	C2-N1-C1'	5.27	124.60	118.80
58	A	102	C	N3-C2-O2	-5.27	118.21	121.90
58	A	1065	C	C5-C6-N1	5.27	123.64	121.00
1	a	11	G	O4'-C1'-N9	5.27	112.41	108.20
1	a	322	C	N1-C2-O2	-5.27	115.74	118.90
1	a	1171	G	C5'-C4'-O4'	-5.26	102.78	109.10
1	a	799	G	N9-C4-C5	-5.26	103.30	105.40
58	A	2274	C	C6-N1-C2	-5.26	118.19	120.30
58	A	2118	C	N1-C2-O2	5.26	122.06	118.90
11	q	76	LEU	CA-CB-CG	5.26	127.40	115.30
58	A	1030	C	C6-N1-C1'	-5.26	114.49	120.80
1	a	846	A	N1-C2-N3	5.25	131.93	129.30
58	A	1449	C	C5-C6-N1	5.25	123.62	121.00
58	A	2366	C	N1-C2-O2	5.25	122.05	118.90
58	A	2967	C	C6-N1-C2	-5.25	118.20	120.30
58	A	274	C	C2-N1-C1'	5.25	124.57	118.80
58	A	326	A	C8-N9-C4	-5.25	103.70	105.80
58	A	2717	U	C6-N1-C2	-5.25	117.85	121.00
1	a	777	C	C6-N1-C1'	-5.24	114.51	120.80
58	A	205	U	N1-C2-O2	5.24	126.47	122.80
58	A	599	G	N1-C6-O6	-5.24	116.75	119.90
1	a	802	G	C8-N9-C4	-5.24	104.30	106.40
58	A	1816	C	C6-N1-C2	-5.24	118.20	120.30
58	A	1008	G	C8-N9-C1'	-5.24	120.19	127.00
1	a	1204	C	C6-N1-C2	5.24	122.40	120.30
58	A	472	C	C6-N1-C1'	-5.24	114.51	120.80
58	A	2107	G	C2-N3-C4	-5.24	109.28	111.90
1	a	215	U	N3-C2-O2	-5.23	118.54	122.20
3	e	32	ASP	CB-CG-OD2	5.23	123.01	118.30
58	A	2782	C	C6-N1-C2	-5.23	118.21	120.30
1	a	1480	C	C6-N1-C2	-5.23	118.21	120.30
58	A	3048	C	C5-C6-N1	5.23	123.61	121.00
1	a	903	U	C5-C6-N1	-5.23	120.09	122.70
1	a	1466	G	N3-C4-C5	-5.23	125.99	128.60
58	A	417	C	N3-C2-O2	-5.23	118.24	121.90
58	A	1521	C	C5-C6-N1	5.23	123.61	121.00
42	T	7	PHE	C-N-CD	5.23	139.38	128.40
1	a	895	A	N9-C4-C5	5.22	107.89	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	2487	C	N3-C2-O2	-5.22	118.25	121.90
1	a	110	U	C5-C6-N1	-5.22	120.09	122.70
58	A	2435	U	C2-N1-C1'	5.22	123.96	117.70
58	A	2012	C	C6-N1-C2	-5.22	118.21	120.30
1	a	1203	G	N3-C4-N9	-5.21	122.87	126.00
58	A	2226	U	N3-C2-O2	-5.21	118.55	122.20
1	a	509	G	N7-C8-N9	5.21	115.70	113.10
1	a	1510	G	C2-N3-C4	5.21	114.51	111.90
58	A	2118	C	N3-C2-O2	-5.21	118.25	121.90
58	A	1429	C	C6-N1-C1'	-5.21	114.55	120.80
58	A	1553	C	N3-C2-O2	-5.21	118.25	121.90
2	c	143	GLN	C-N-CD	5.21	139.33	128.40
58	A	572	C	C5-C6-N1	5.21	123.60	121.00
58	A	231	U	C2-N1-C1'	5.21	123.95	117.70
58	A	236	C	C5-C6-N1	5.21	123.60	121.00
58	A	658	U	C2-N1-C1'	5.21	123.95	117.70
58	A	1837	G	N3-C4-N9	5.21	129.12	126.00
1	a	530	G	C6-C5-N7	-5.20	127.28	130.40
54	3	62	LEU	CA-CB-CG	5.20	127.26	115.30
3	e	21	ASP	CB-CG-OD2	5.20	122.98	118.30
1	a	504	G	N3-C4-N9	5.20	129.12	126.00
1	a	107	G	C8-N9-C4	5.19	108.48	106.40
58	A	472	C	N3-C2-O2	-5.19	118.27	121.90
58	A	703	C	C6-N1-C1'	-5.19	114.57	120.80
58	A	547	U	N1-C2-O2	5.19	126.43	122.80
58	A	2260	C	N3-C2-O2	-5.19	118.27	121.90
1	a	485	G	C4-N9-C1'	5.18	133.24	126.50
58	A	79	G	C8-N9-C4	-5.18	104.33	106.40
58	A	1991	C	N3-C2-O2	-5.18	118.27	121.90
58	A	101	U	N1-C2-O2	5.18	126.42	122.80
58	A	184	C	C5-C6-N1	5.18	123.59	121.00
57	B	78	U	N3-C2-O2	-5.17	118.58	122.20
58	A	197	C	C2-N1-C1'	5.17	124.49	118.80
58	A	1478	C	N1-C2-O2	5.17	122.00	118.90
58	A	275	C	N3-C2-O2	-5.17	118.28	121.90
58	A	609	G	N3-C4-N9	5.17	129.10	126.00
58	A	802	C	C2-N1-C1'	5.17	124.49	118.80
58	A	1837	G	N9-C4-C5	-5.17	103.33	105.40
58	A	2680	C	C2-N1-C1'	5.17	124.48	118.80
58	A	927	C	C6-N1-C2	-5.17	118.23	120.30
1	a	900	A	N1-C2-N3	5.16	131.88	129.30
58	A	1212	U	C2-N1-C1'	5.16	123.90	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	a	1302	C	C5-C6-N1	-5.16	118.42	121.00
58	A	1266	C	C6-N1-C2	-5.16	118.23	120.30
1	a	747	A	C4-C5-C6	5.16	119.58	117.00
1	a	790	C	N3-C2-O2	-5.16	118.29	121.90
1	a	1435	U	O4'-C1'-N1	-5.16	104.07	108.20
58	A	83	C	C5-C6-N1	5.16	123.58	121.00
58	A	197	C	N1-C2-O2	5.16	122.00	118.90
58	A	438	U	N1-C2-O2	5.16	126.41	122.80
58	A	2243	C	C2-N1-C1'	5.16	124.47	118.80
1	a	280	C	C6-N1-C2	5.15	122.36	120.30
58	A	1276	G	C6-C5-N7	-5.15	127.31	130.40
25	C	94	LEU	CB-CG-CD1	-5.15	102.25	111.00
58	A	646	U	N3-C2-O2	-5.15	118.59	122.20
58	A	1977	C	C6-N1-C2	-5.15	118.24	120.30
58	A	2839	U	N1-C2-O2	5.15	126.41	122.80
1	a	1504	G	C8-N9-C4	5.15	108.46	106.40
58	A	747	A	C4-C5-N7	5.15	113.27	110.70
58	A	3045	C	C5-C6-N1	5.15	123.57	121.00
58	A	324	C	N1-C2-O2	5.15	121.99	118.90
58	A	407	C	C6-N1-C2	-5.15	118.24	120.30
1	a	953	G	OP1-P-OP2	5.14	127.32	119.60
58	A	387	U	N3-C2-O2	-5.14	118.60	122.20
3	e	22	ASP	CB-CG-OD2	5.14	122.92	118.30
1	a	454	C	C5-C6-N1	5.14	123.57	121.00
27	E	93	PRO	C-N-CA	5.14	134.54	121.70
58	A	1001	C	N3-C2-O2	-5.14	118.31	121.90
58	A	2780	C	C6-N1-C2	-5.14	118.25	120.30
58	A	186	G	C4-C5-N7	5.13	112.85	110.80
58	A	977	G	N3-C4-C5	-5.13	126.03	128.60
58	A	2260	C	N1-C2-O2	5.13	121.98	118.90
58	A	1103	C	C2-N1-C1'	5.13	124.44	118.80
58	A	853	C	C6-N1-C2	-5.13	118.25	120.30
58	A	1382	U	N3-C2-O2	-5.13	118.61	122.20
50	y	42	HIS	C-N-CD	5.12	139.16	128.40
58	A	1467	U	N1-C2-O2	5.12	126.39	122.80
58	A	2430	C	N3-C2-O2	-5.12	118.31	121.90
1	a	1088	G	N7-C8-N9	5.12	115.66	113.10
58	A	1320	U	C5-C6-N1	5.12	125.26	122.70
1	a	1485	C	C6-N1-C2	5.12	122.35	120.30
1	a	251	G	N9-C4-C5	-5.12	103.35	105.40
1	a	666	U	O4'-C1'-N1	5.12	112.30	108.20
58	A	961	U	C2-N1-C1'	5.12	123.84	117.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	1102	G	C2-N3-C4	5.12	114.46	111.90
58	A	2262	C	C5-C6-N1	5.12	123.56	121.00
58	A	3036	C	C6-N1-C2	-5.12	118.25	120.30
3	e	29	ASP	CB-CG-OD2	5.11	122.90	118.30
58	A	2993	U	N3-C2-O2	-5.11	118.62	122.20
1	a	372	C	N1-C2-N3	5.11	122.78	119.20
1	a	1340	U	C6-N1-C2	5.11	124.06	121.00
43	U	6	ASP	C-N-CD	5.11	139.12	128.40
58	A	318	U	N1-C2-O2	5.11	126.38	122.80
58	A	685	G	C4-N9-C1'	5.11	133.14	126.50
1	a	821	C	C2-N1-C1'	5.11	124.42	118.80
58	A	759	G	N3-C4-C5	5.11	131.15	128.60
58	A	912	C	C4-C5-C6	-5.11	114.85	117.40
58	A	472	C	C5-C6-N1	5.10	123.55	121.00
58	A	1903	C	N1-C2-O2	5.10	121.96	118.90
58	A	2086	U	C6-N1-C2	-5.10	117.94	121.00
58	A	2923	C	C5-C6-N1	5.10	123.55	121.00
58	A	277	U	C5-C6-N1	5.10	125.25	122.70
58	A	1460	C	C2-N1-C1'	5.10	124.41	118.80
58	A	2158	C	N3-C2-O2	-5.09	118.33	121.90
58	A	608	C	N1-C2-O2	5.09	121.96	118.90
58	A	3034	C	C5-C6-N1	5.09	123.55	121.00
1	a	63	A	C8-N9-C4	-5.09	103.77	105.80
22	w	28	U	OP1-P-O3'	5.09	116.39	105.20
58	A	127	C	C5-C6-N1	5.08	123.54	121.00
1	a	1171	G	P-O5'-C5'	-5.08	112.77	120.90
58	A	2485	C	N3-C2-O2	-5.08	118.34	121.90
58	A	2780	C	N1-C2-O2	5.08	121.95	118.90
58	A	1534	C	N3-C2-O2	-5.08	118.35	121.90
58	A	1102	G	N3-C4-N9	5.07	129.04	126.00
58	A	2697	U	C5-C6-N1	5.07	125.24	122.70
1	a	798	G	O4'-C1'-N9	5.07	112.25	108.20
23	x	58	GLU	CA-CB-CG	5.07	124.55	113.40
58	A	964	C	C5-C6-N1	5.07	123.53	121.00
58	A	2005	C	C2-N1-C1'	5.07	124.38	118.80
58	A	2077	C	C5-C6-N1	5.07	123.53	121.00
58	A	2361	U	C5-C6-N1	5.07	125.23	122.70
46	X	85	ARG	C-N-CD	5.07	139.04	128.40
57	B	109	C	N1-C2-O2	5.07	121.94	118.90
58	A	1298	C	N1-C2-O2	5.07	121.94	118.90
58	A	1403	C	C2-N1-C1'	5.06	124.37	118.80
1	a	1486	A	C8-N9-C4	-5.06	103.78	105.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
58	A	1775	C	N1-C2-O2	5.06	121.94	118.90
1	a	1149	C	N3-C2-O2	-5.06	118.36	121.90
58	A	1753	C	C6-N1-C2	-5.06	118.28	120.30
57	B	4	A	N1-C6-N6	5.06	121.63	118.60
58	A	1485	C	C2-N1-C1'	5.05	124.36	118.80
1	a	1192	U	O4'-C1'-N1	5.05	112.24	108.20
1	a	847	A	N7-C8-N9	-5.05	111.28	113.80
34	L	92	ASP	C-N-CD	5.05	139.00	128.40
58	A	658	U	C5-C6-N1	5.05	125.22	122.70
58	A	2138	C	C6-N1-C2	-5.05	118.28	120.30
1	a	1515	A	C8-N9-C4	-5.05	103.78	105.80
58	A	1239	C	N1-C2-O2	5.05	121.93	118.90
58	A	2087	C	C5-C6-N1	5.05	123.52	121.00
58	A	2320	C	C6-N1-C2	-5.04	118.28	120.30
58	A	3029	U	N1-C2-O2	5.04	126.33	122.80
57	B	73	G	N3-C4-N9	5.04	129.02	126.00
58	A	2940	U	N1-C2-O2	5.04	126.33	122.80
58	A	2940	U	C5-C6-N1	5.04	125.22	122.70
58	A	1953	C	C5-C6-N1	5.04	123.52	121.00
27	E	155	LEU	CB-CG-CD1	-5.03	102.44	111.00
58	A	211	U	N3-C2-O2	-5.03	118.68	122.20
58	A	1992	U	C5-C4-O4	-5.03	122.88	125.90
58	A	2118	C	C6-N1-C2	-5.03	118.29	120.30
58	A	2322	C	N3-C2-O2	-5.03	118.38	121.90
58	A	1535	C	O4'-C1'-N1	5.03	112.22	108.20
58	A	1862	C	N1-C2-O2	5.02	121.91	118.90
58	A	2736	C	C5-C6-N1	5.02	123.51	121.00
1	a	458	A	O4'-C1'-N9	5.02	112.22	108.20
1	a	927	G	N3-C4-C5	-5.02	126.09	128.60
58	A	2671	G	N3-C4-N9	5.02	129.01	126.00
1	a	1482	U	N1-C2-N3	5.02	117.91	114.90
58	A	2913	U	N1-C2-O2	5.02	126.31	122.80
1	a	755	G	N1-C6-O6	5.01	122.91	119.90
58	A	2698	C	N1-C2-O2	5.01	121.91	118.90
1	a	742	A	C4-C5-C6	5.01	119.51	117.00
1	a	356	A	C4-C5-C6	5.01	119.50	117.00
1	a	415	C	C6-N1-C2	-5.01	118.30	120.30
1	a	799	G	C2-N3-C4	-5.01	109.40	111.90
23	x	56	ARG	NE-CZ-NH1	-5.00	117.80	120.30

There are no chirality outliers.

All (60) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
24	0	114	UNK	Peptide
24	0	115	UNK	Peptide
24	0	336	UNK	Peptide
24	0	337	UNK	Peptide
24	0	338	UNK	Peptide
24	0	339	UNK	Peptide
24	0	450	UNK	Peptide
24	0	451	UNK	Peptide
52	1	32	ASP	Peptide
52	1	33	PRO	Peptide
25	C	144	ALA	Peptide
25	C	229	VAL	Peptide
25	C	246	PRO	Peptide
25	C	35	ARG	Peptide
25	C	61	ALA	Peptide
26	D	153	GLY	Peptide
26	D	156	THR	Peptide
27	E	131	VAL	Peptide
27	E	137	SER	Peptide
27	E	158	ILE	Peptide
27	E	162	ASP	Peptide
27	E	93	PRO	Peptide
28	F	81	ILE	Peptide
33	K	91	GLU	Peptide
36	N	60	ARG	Peptide
36	N	78	PRO	Peptide
37	O	117	ARG	Peptide
37	O	61	HIS	Peptide
42	T	95	ARG	Peptide
43	U	67	LYS	Peptide
45	W	137	ALA	Peptide
45	W	39	GLY	Peptide
2	c	62	ARG	Peptide
17	d	189	PRO	Peptide
3	e	186	ILE	Peptide
4	g	1	MET	Peptide
4	g	32	LEU	Peptide
4	g	76	ARG	Peptide
5	h	126	GLU	Peptide
5	h	55	ARG	Peptide
7	j	44	THR	Peptide
8	k	133	PRO	Peptide
8	k	35	THR	Peptide

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Mol	Chain	Res	Type	Group
9	l	23	ALA	Peptide
9	l	88	LYS	Peptide
11	q	15	LYS	Peptide
12	r	19	LYS	Peptide
13	s	70	LYS	Peptide
13	s	73	GLU	Peptide
23	x	125	LYS	Peptide
23	x	126	ASP	Peptide
23	x	127	ARG	Peptide
23	x	128	ARG	Peptide
23	x	129	LYS	Peptide
23	x	37	GLY	Peptide
23	x	56	ARG	Sidechain
23	x	65	TYR	Sidechain
23	x	70	GLU	Peptide
23	x	93	ARG	Peptide
23	x	94	GLY	Peptide

5.2 Too-close contacts

Due to software issues we are unable to calculate clashes - this section is therefore empty.

5.3 Torsion angles

5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	c	208/275 (76%)	184 (88%)	17 (8%)	7 (3%)	3 21
3	e	196/214 (92%)	176 (90%)	19 (10%)	1 (0%)	29 61
4	g	154/156 (99%)	144 (94%)	9 (6%)	1 (1%)	25 57
5	h	128/132 (97%)	119 (93%)	8 (6%)	1 (1%)	19 51
6	i	124/150 (83%)	108 (87%)	13 (10%)	3 (2%)	6 28

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
7	j	95/101 (94%)	84 (88%)	10 (10%)	1 (1%)	14 44
8	k	115/138 (83%)	103 (90%)	10 (9%)	2 (2%)	9 34
9	l	120/124 (97%)	93 (78%)	26 (22%)	1 (1%)	19 51
10	o	85/89 (96%)	81 (95%)	4 (5%)	0	100 100
11	q	90/98 (92%)	79 (88%)	11 (12%)	0	100 100
12	r	62/84 (74%)	54 (87%)	8 (13%)	0	100 100
13	s	76/93 (82%)	68 (90%)	8 (10%)	0	100 100
14	t	82/86 (95%)	77 (94%)	5 (6%)	0	100 100
15	n	58/61 (95%)	53 (91%)	5 (9%)	0	100 100
16	b	226/277 (82%)	211 (93%)	15 (7%)	0	100 100
17	d	198/201 (98%)	185 (93%)	12 (6%)	1 (0%)	29 61
18	f	94/96 (98%)	90 (96%)	4 (4%)	0	100 100
19	m	114/124 (92%)	102 (90%)	12 (10%)	0	100 100
20	p	111/156 (71%)	104 (94%)	7 (6%)	0	100 100
21	u	30/33 (91%)	28 (93%)	2 (7%)	0	100 100
23	x	98/230 (43%)	80 (82%)	15 (15%)	3 (3%)	4 23
25	C	271/278 (98%)	234 (86%)	33 (12%)	4 (2%)	10 36
26	D	212/217 (98%)	197 (93%)	10 (5%)	5 (2%)	6 28
27	E	205/215 (95%)	179 (87%)	20 (10%)	6 (3%)	4 24
28	F	179/187 (96%)	163 (91%)	14 (8%)	2 (1%)	14 44
29	G	174/179 (97%)	166 (95%)	8 (5%)	0	100 100
30	H	149/151 (99%)	139 (93%)	9 (6%)	1 (1%)	22 55
31	I	124/175 (71%)	118 (95%)	6 (5%)	0	100 100
32	J	131/142 (92%)	118 (90%)	13 (10%)	0	100 100
33	K	145/147 (99%)	132 (91%)	10 (7%)	3 (2%)	7 30
34	L	119/122 (98%)	106 (89%)	10 (8%)	3 (2%)	5 26
35	M	143/147 (97%)	128 (90%)	15 (10%)	0	100 100
36	N	132/138 (96%)	111 (84%)	20 (15%)	1 (1%)	19 51
37	O	115/199 (58%)	101 (88%)	11 (10%)	3 (3%)	5 26
38	P	124/127 (98%)	119 (96%)	5 (4%)	0	100 100
39	Q	111/113 (98%)	102 (92%)	9 (8%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
40	R	122/129 (95%)	120 (98%)	2 (2%)	0	100 100
41	S	100/103 (97%)	94 (94%)	5 (5%)	1 (1%)	15 46
42	T	112/153 (73%)	103 (92%)	6 (5%)	3 (3%)	5 26
43	U	92/100 (92%)	76 (83%)	11 (12%)	5 (5%)	2 13
44	V	93/105 (89%)	83 (89%)	8 (9%)	2 (2%)	6 29
45	W	184/215 (86%)	156 (85%)	22 (12%)	6 (3%)	4 22
46	X	80/88 (91%)	61 (76%)	14 (18%)	5 (6%)	1 9
47	Y	61/64 (95%)	57 (93%)	4 (7%)	0	100 100
48	Z	61/77 (79%)	59 (97%)	1 (2%)	1 (2%)	9 34
49	v	58/61 (95%)	53 (91%)	5 (9%)	0	100 100
50	y	64/75 (85%)	60 (94%)	3 (5%)	1 (2%)	9 34
51	z	52/57 (91%)	51 (98%)	1 (2%)	0	100 100
52	1	48/55 (87%)	40 (83%)	5 (10%)	3 (6%)	1 9
53	2	43/47 (92%)	41 (95%)	2 (5%)	0	100 100
54	3	61/64 (95%)	54 (88%)	7 (12%)	0	100 100
55	4	35/37 (95%)	29 (83%)	5 (14%)	1 (3%)	4 24
56	5	21/24 (88%)	20 (95%)	1 (5%)	0	100 100
All	All	6085/6909 (88%)	5493 (90%)	515 (8%)	77 (1%)	16 39

All (77) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	c	138	GLN
2	c	143	GLN
2	c	144	PRO
4	g	154	TYR
8	k	116	VAL
23	x	78	ARG
25	C	58	HIS
25	C	145	VAL
25	C	262	LYS
26	D	151	ILE
27	E	94	LYS
27	E	152	LYS
28	F	47	VAL
33	K	142	ILE

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Mol	Chain	Res	Type
34	L	89	ASN
42	T	7	PHE
42	T	118	PRO
45	W	40	HIS
45	W	83	LEU
48	Z	10	LEU
52	1	34	ASP
2	c	63	VAL
2	c	149	ILE
3	e	186	ILE
5	h	56	VAL
9	l	59	SER
23	x	128	ARG
25	C	146	GLU
26	D	155	ALA
27	E	65	PRO
28	F	142	GLN
33	K	140	PHE
36	N	59	LYS
37	O	15	SER
43	U	75	LYS
45	W	63	THR
46	X	12	ASN
46	X	16	SER
46	X	17	ALA
55	4	23	VAL
6	i	43	PRO
6	i	81	PHE
26	D	161	PHE
33	K	2	PRO
34	L	90	ASP
37	O	116	VAL
45	W	85	VAL
45	W	104	GLU
52	1	33	PRO
2	c	137	ILE
8	k	36	PHE
17	d	189	PRO
26	D	150	SER
27	E	4	LYS
27	E	93	PRO
30	H	125	LYS

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Mol	Chain	Res	Type
37	O	60	LEU
42	T	8	PRO
43	U	6	ASP
43	U	67	LYS
44	V	90	GLU
44	V	101	ASN
45	W	87	PRO
46	X	83	VAL
52	1	7	VAL
2	c	145	ASN
6	i	42	VAL
26	D	157	PRO
27	E	132	GLU
43	U	5	THR
46	X	85	ARG
7	j	43	PRO
41	S	7	VAL
43	U	10	ILE
23	x	43	PRO
50	y	42	HIS
34	L	93	PRO

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	
2	c	171/212 (81%)	164 (96%)	7 (4%)	30	59
3	e	139/147 (95%)	135 (97%)	4 (3%)	42	69
4	g	132/132 (100%)	127 (96%)	5 (4%)	33	61
5	h	106/108 (98%)	103 (97%)	3 (3%)	43	70
6	i	102/125 (82%)	96 (94%)	6 (6%)	19	49
7	j	88/90 (98%)	86 (98%)	2 (2%)	50	74
8	k	91/105 (87%)	85 (93%)	6 (7%)	16	46
9	l	103/105 (98%)	98 (95%)	5 (5%)	25	55

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
10	o	75/77 (97%)	74 (99%)	1 (1%)	69 84
11	q	78/83 (94%)	78 (100%)	0	100 100
12	r	55/72 (76%)	54 (98%)	1 (2%)	59 79
13	s	69/84 (82%)	67 (97%)	2 (3%)	42 69
14	t	69/70 (99%)	66 (96%)	3 (4%)	29 59
15	n	49/50 (98%)	48 (98%)	1 (2%)	55 77
16	b	191/218 (88%)	187 (98%)	4 (2%)	53 76
17	d	175/176 (99%)	174 (99%)	1 (1%)	86 94
18	f	85/85 (100%)	84 (99%)	1 (1%)	71 85
19	m	99/104 (95%)	99 (100%)	0	100 100
20	p	92/118 (78%)	92 (100%)	0	100 100
21	u	30/31 (97%)	23 (77%)	7 (23%)	1 2
23	x	88/199 (44%)	66 (75%)	22 (25%)	0 2
25	C	214/218 (98%)	208 (97%)	6 (3%)	43 70
26	D	160/163 (98%)	156 (98%)	4 (2%)	47 72
27	E	167/173 (96%)	159 (95%)	8 (5%)	25 56
28	F	150/156 (96%)	138 (92%)	12 (8%)	12 38
29	G	148/150 (99%)	148 (100%)	0	100 100
30	H	90/116 (78%)	90 (100%)	0	100 100
31	I	89/120 (74%)	89 (100%)	0	100 100
32	J	102/108 (94%)	102 (100%)	0	100 100
33	K	120/120 (100%)	116 (97%)	4 (3%)	38 66
34	L	99/100 (99%)	97 (98%)	2 (2%)	55 77
35	M	112/114 (98%)	111 (99%)	1 (1%)	78 90
36	N	112/116 (97%)	109 (97%)	3 (3%)	44 70
37	O	96/158 (61%)	90 (94%)	6 (6%)	18 47
38	P	93/94 (99%)	93 (100%)	0	100 100
39	Q	100/100 (100%)	99 (99%)	1 (1%)	76 88
40	R	97/99 (98%)	96 (99%)	1 (1%)	76 88
41	S	82/83 (99%)	81 (99%)	1 (1%)	71 85
42	T	90/117 (77%)	86 (96%)	4 (4%)	28 58

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
43	U	82/85 (96%)	72 (88%)	10 (12%)	5 18
44	V	81/86 (94%)	75 (93%)	6 (7%)	13 42
45	W	152/168 (90%)	146 (96%)	6 (4%)	32 61
46	X	59/63 (94%)	57 (97%)	2 (3%)	37 65
47	Y	50/51 (98%)	50 (100%)	0	100 100
48	Z	58/66 (88%)	53 (91%)	5 (9%)	10 35
49	v	53/54 (98%)	51 (96%)	2 (4%)	33 61
50	y	57/63 (90%)	54 (95%)	3 (5%)	22 52
51	z	43/46 (94%)	43 (100%)	0	100 100
52	1	48/52 (92%)	41 (85%)	7 (15%)	3 12
53	2	35/36 (97%)	33 (94%)	2 (6%)	20 50
54	3	53/54 (98%)	53 (100%)	0	100 100
55	4	35/35 (100%)	34 (97%)	1 (3%)	42 69
56	5	18/19 (95%)	18 (100%)	0	100 100
All	All	5032/5574 (90%)	4854 (96%)	178 (4%)	39 65

All (178) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	c	131	ARG
2	c	141	MET
2	c	142	ARG
2	c	143	GLN
2	c	147	LYS
2	c	169	ARG
2	c	186	LEU
3	e	79	LYS
3	e	182	ARG
3	e	184	LEU
3	e	188	ASP
4	g	10	ARG
4	g	76	ARG
4	g	78	ARG
4	g	112	ARG
4	g	148	ASN
5	h	41	LYS
5	h	50	ARG

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Mol	Chain	Res	Type
5	h	96	ARG
6	i	40	ARG
6	i	57	ASN
6	i	81	PHE
6	i	84	TYR
6	i	86	HIS
6	i	115	ARG
7	j	57	LYS
7	j	99	ASN
8	k	23	LYS
8	k	37	ASN
8	k	47	GLN
8	k	62	LYS
8	k	78	ASN
8	k	134	LYS
9	l	13	ARG
9	l	46	ASN
9	l	56	LYS
9	l	73	ASN
9	l	83	ARG
10	o	54	ARG
12	r	19	LYS
13	s	29	GLN
13	s	55	ARG
14	t	8	ILE
14	t	18	ARG
14	t	20	ARG
15	n	45	ARG
16	b	24	ASN
16	b	167	ASN
16	b	177	ARG
16	b	203	ASN
17	d	86	LEU
18	f	47	ARG
21	u	4	VAL
21	u	6	LYS
21	u	8	ARG
21	u	10	LYS
21	u	11	ARG
21	u	24	THR
21	u	30	LYS
23	x	36	LYS

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Mol	Chain	Res	Type
23	x	39	ASN
23	x	56	ARG
23	x	60	PHE
23	x	61	ASP
23	x	62	LYS
23	x	73	HIS
23	x	74	GLU
23	x	75	ARG
23	x	77	ARG
23	x	78	ARG
23	x	80	ARG
23	x	81	LYS
23	x	84	GLN
23	x	87	GLU
23	x	89	THR
23	x	91	ARG
23	x	93	ARG
23	x	118	GLU
23	x	120	ARG
23	x	127	ARG
23	x	129	LYS
25	C	35	ARG
25	C	71	ASP
25	C	73	ASP
25	C	168	LYS
25	C	256	ARG
25	C	258	ARG
26	D	60	ARG
26	D	154	CYS
26	D	159	ARG
26	D	201	ARG
27	E	4	LYS
27	E	20	LEU
27	E	33	LEU
27	E	75	ARG
27	E	130	LEU
27	E	150	GLU
27	E	171	ASN
27	E	178	ILE
28	F	10	ARG
28	F	11	LEU
28	F	14	ARG

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Mol	Chain	Res	Type
28	F	55	LYS
28	F	56	LEU
28	F	108	ASP
28	F	110	LEU
28	F	118	ILE
28	F	122	ARG
28	F	174	ARG
28	F	185	LYS
28	F	186	GLU
33	K	75	TYR
33	K	76	ARG
33	K	113	LYS
33	K	141	GLU
34	L	8	LEU
34	L	53	LYS
35	M	43	ARG
36	N	34	ILE
36	N	92	TRP
36	N	96	ASN
37	O	5	THR
37	O	9	ARG
37	O	14	SER
37	O	79	LEU
37	O	115	LEU
37	O	117	ARG
39	Q	38	ARG
40	R	34	LYS
41	S	103	LYS
42	T	6	GLU
42	T	44	ARG
42	T	90	LYS
42	T	118	PRO
43	U	9	ASP
43	U	12	LEU
43	U	27	ASN
43	U	68	ARG
43	U	70	ARG
43	U	77	LYS
43	U	79	THR
43	U	94	ASP
43	U	95	LEU
43	U	96	PHE

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Mol	Chain	Res	Type
44	V	20	LYS
44	V	22	LYS
44	V	39	ASN
44	V	89	ASP
44	V	96	ARG
44	V	99	LYS
45	W	6	ASN
45	W	7	ILE
45	W	64	ASN
45	W	83	LEU
45	W	105	LYS
45	W	129	ASN
46	X	15	ASP
46	X	85	ARG
48	Z	5	THR
48	Z	14	THR
48	Z	23	ARG
48	Z	44	ASN
48	Z	47	LEU
49	v	8	GLN
49	v	51	HIS
50	y	38	CYS
50	y	44	PHE
50	y	60	ARG
52	1	22	ASN
52	1	23	TYR
52	1	26	LYS
52	1	27	LYS
52	1	35	ARG
52	1	37	GLU
52	1	42	CYS
53	2	6	ARG
53	2	27	THR
55	4	22	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (102) such sidechains are listed below:

Mol	Chain	Res	Type
2	c	27	GLN
2	c	97	GLN
2	c	101	ASN
2	c	107	ASN

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Mol	Chain	Res	Type
2	c	122	GLN
4	g	148	ASN
5	h	117	GLN
6	i	57	ASN
6	i	64	HIS
7	j	99	ASN
8	k	31	HIS
8	k	37	ASN
8	k	47	GLN
8	k	49	ASN
8	k	58	HIS
8	k	78	ASN
9	l	46	ASN
10	o	28	GLN
11	q	33	GLN
12	r	70	ASN
13	s	22	GLN
13	s	29	GLN
14	t	3	ASN
14	t	7	GLN
14	t	21	ASN
16	b	15	HIS
16	b	24	ASN
16	b	36	ASN
16	b	167	ASN
16	b	203	ASN
17	d	49	GLN
18	f	80	ASN
23	x	39	ASN
23	x	73	HIS
23	x	76	ASN
23	x	79	GLN
23	x	84	GLN
23	x	85	HIS
25	C	58	HIS
25	C	96	HIS
25	C	130	ASN
25	C	135	ASN
25	C	205	ASN
25	C	227	ASN
26	D	34	ASN
27	E	35	HIS

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Mol	Chain	Res	Type
27	E	76	GLN
27	E	121	ASN
27	E	176	HIS
27	E	184	ASN
27	E	202	ASN
28	F	34	GLN
28	F	44	ASN
28	F	142	GLN
28	F	146	HIS
29	G	66	HIS
32	J	33	HIS
32	J	119	ASN
33	K	47	ASN
33	K	132	HIS
33	K	135	GLN
34	L	4	GLN
35	M	58	HIS
35	M	76	GLN
35	M	84	ASN
35	M	127	ASN
36	N	57	HIS
36	N	96	ASN
37	O	16	HIS
37	O	77	HIS
38	P	41	ASN
40	R	38	GLN
40	R	41	HIS
41	S	76	HIS
41	S	85	HIS
41	S	92	GLN
42	T	67	ASN
42	T	68	ASN
43	U	27	ASN
43	U	58	ASN
45	W	40	HIS
45	W	46	HIS
45	W	101	GLN
45	W	126	GLN
46	X	29	GLN
46	X	46	HIS
46	X	79	ASN
47	Y	22	HIS

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Mol	Chain	Res	Type
48	Z	44	ASN
48	Z	52	GLN
49	v	8	GLN
49	v	42	GLN
49	v	51	HIS
50	y	40	GLN
52	1	48	HIS
52	1	49	GLN
53	2	11	ASN
53	2	19	HIS
54	3	7	HIS
54	3	28	ASN
54	3	31	HIS
56	5	17	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	a	1504/1528 (98%)	397 (26%)	0
22	w	76/77 (98%)	41 (53%)	0
57	B	116/118 (98%)	33 (28%)	1 (0%)
58	A	3096/3120 (99%)	785 (25%)	28 (0%)
All	All	4792/4843 (98%)	1256 (26%)	29 (0%)

All (1256) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	a	11	G
1	a	12	A
1	a	13	G
1	a	26	G
1	a	36	A
1	a	43	G
1	a	45	G
1	a	48	G
1	a	51	C
1	a	52	U
1	a	53	U
1	a	54	A
1	a	55	A
1	a	59	A

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Mol	Chain	Res	Type
1	a	62	C
1	a	67	C
1	a	68	G
1	a	77	G
1	a	81	C
1	a	82	U
1	a	83	U
1	a	85	C
1	a	87	G
1	a	92	A
1	a	93	C
1	a	94	U
1	a	101	G
1	a	112	A
1	a	113	G
1	a	116	A
1	a	117	C
1	a	118	A
1	a	123	G
1	a	128	U
1	a	136	G
1	a	139	C
1	a	160	C
1	a	170	U
1	a	174	G
1	a	179	C
1	a	180	A
1	a	181	C
1	a	192	G
1	a	194	A
1	a	201	G
1	a	210	A
1	a	211	A
1	a	213	C
1	a	214	U
1	a	215	U
1	a	216	U
1	a	217	U
1	a	218	G
1	a	226	G
1	a	242	U
1	a	243	A

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Mol	Chain	Res	Type
1	a	245	C
1	a	247	G
1	a	251	G
1	a	262	G
1	a	266	G
1	a	267	C
1	a	279	A
1	a	280	C
1	a	281	G
1	a	283	C
1	a	289	G
1	a	301	G
1	a	314	C
1	a	319	G
1	a	321	A
1	a	329	A
1	a	332	G
1	a	338	A
1	a	344	A
1	a	345	C
1	a	350	G
1	a	351	G
1	a	352	C
1	a	353	A
1	a	354	G
1	a	356	A
1	a	367	U
1	a	372	C
1	a	373	A
1	a	382	A
1	a	390	U
1	a	392	C
1	a	397	A
1	a	398	C
1	a	406	G
1	a	411	A
1	a	414	A
1	a	415	C
1	a	421	U
1	a	422	C
1	a	423	G
1	a	424	G

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Mol	Chain	Res	Type
1	a	426	U
1	a	427	U
1	a	428	G
1	a	429	U
1	a	430	A
1	a	434	C
1	a	436	C
1	a	438	U
1	a	450	G
1	a	451	A
1	a	452	A
1	a	453	G
1	a	454	C
1	a	456	C
1	a	457	A
1	a	458	A
1	a	459	G
1	a	461	G
1	a	464	G
1	a	465	G
1	a	466	U
1	a	477	G
1	a	478	A
1	a	479	A
1	a	482	A
1	a	484	C
1	a	485	G
1	a	486	G
1	a	491	C
1	a	496	U
1	a	497	G
1	a	498	C
1	a	499	C
1	a	505	C
1	a	507	G
1	a	509	G
1	a	511	U
1	a	512	A
1	a	513	A
1	a	515	A
1	a	519	A
1	a	520	G

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Mol	Chain	Res	Type
1	a	525	C
1	a	527	A
1	a	539	A
1	a	542	U
1	a	544	C
1	a	552	A
1	a	553	A
1	a	554	A
1	a	556	A
1	a	557	G
1	a	612	U
1	a	613	G
1	a	629	G
1	a	633	A
1	a	641	G
1	a	645	G
1	a	666	U
1	a	667	A
1	a	668	G
1	a	680	G
1	a	682	A
1	a	683	G
1	a	700	C
1	a	701	G
1	a	702	G
1	a	703	U
1	a	704	G
1	a	711	G
1	a	713	G
1	a	728	A
1	a	729	A
1	a	735	G
1	a	757	A
1	a	761	A
1	a	764	A
1	a	765	G
1	a	771	G
1	a	772	A
1	a	773	U
1	a	774	A
1	a	779	G
1	a	782	A

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Mol	Chain	Res	Type
1	a	789	G
1	a	793	U
1	a	794	A
1	a	795	A
1	a	797	C
1	a	799	G
1	a	800	U
1	a	808	A
1	a	818	U
1	a	821	C
1	a	822	U
1	a	828	G
1	a	829	G
1	a	830	G
1	a	835	G
1	a	840	G
1	a	841	U
1	a	865	C
1	a	884	G
1	a	895	A
1	a	896	A
1	a	908	G
1	a	909	G
1	a	913	C
1	a	914	C
1	a	915	G
1	a	916	C
1	a	917	A
1	a	921	G
1	a	930	C
1	a	932	U
1	a	940	A
1	a	942	U
1	a	943	U
1	a	945	G
1	a	947	U
1	a	948	G
1	a	950	A
1	a	951	A
1	a	953	G
1	a	954	C
1	a	955	G

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Mol	Chain	Res	Type
1	a	956	A
1	a	957	A
1	a	959	A
1	a	971	G
1	a	973	U
1	a	974	U
1	a	975	G
1	a	982	A
1	a	984	A
1	a	986	G
1	a	987	A
1	a	988	C
1	a	992	G
1	a	996	G
1	a	999	A
1	a	1000	U
1	a	1003	C
1	a	1007	U
1	a	1008	C
1	a	1010	C
1	a	1011	U
1	a	1013	G
1	a	1014	U
1	a	1020	G
1	a	1021	U
1	a	1022	G
1	a	1024	G
1	a	1025	C
1	a	1028	G
1	a	1033	G
1	a	1034	C
1	a	1035	A
1	a	1036	U
1	a	1045	U
1	a	1047	A
1	a	1048	G
1	a	1054	G
1	a	1064	G
1	a	1074	G
1	a	1075	U
1	a	1079	G
1	a	1081	A

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Mol	Chain	Res	Type
1	a	1085	A
1	a	1104	G
1	a	1108	C
1	a	1110	A
1	a	1112	C
1	a	1115	G
1	a	1116	U
1	a	1117	U
1	a	1118	A
1	a	1120	G
1	a	1123	G
1	a	1128	C
1	a	1129	U
1	a	1132	U
1	a	1133	G
1	a	1138	A
1	a	1140	U
1	a	1141	G
1	a	1147	G
1	a	1149	C
1	a	1150	A
1	a	1152	C
1	a	1162	G
1	a	1164	U
1	a	1165	G
1	a	1171	G
1	a	1176	C
1	a	1177	A
1	a	1178	A
1	a	1181	C
1	a	1182	A
1	a	1183	U
1	a	1193	U
1	a	1194	A
1	a	1206	U
1	a	1207	C
1	a	1217	A
1	a	1219	A
1	a	1231	A
1	a	1233	A
1	a	1235	G
1	a	1238	U

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Mol	Chain	Res	Type
1	a	1239	G
1	a	1241	G
1	a	1242	A
1	a	1248	U
1	a	1249	G
1	a	1251	G
1	a	1254	G
1	a	1255	G
1	a	1261	A
1	a	1265	U
1	a	1266	U
1	a	1267	U
1	a	1268	C
1	a	1269	A
1	a	1272	G
1	a	1281	A
1	a	1282	G
1	a	1283	U
1	a	1284	U
1	a	1285	C
1	a	1287	G
1	a	1298	G
1	a	1299	C
1	a	1300	A
1	a	1301	A
1	a	1302	C
1	a	1305	G
1	a	1313	G
1	a	1320	G
1	a	1321	A
1	a	1322	G
1	a	1323	U
1	a	1327	U
1	a	1328	A
1	a	1329	G
1	a	1335	G
1	a	1343	G
1	a	1344	C
1	a	1345	A
1	a	1346	A
1	a	1347	C
1	a	1351	G

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Mol	Chain	Res	Type
1	a	1353	G
1	a	1357	A
1	a	1363	U
1	a	1364	U
1	a	1381	A
1	a	1382	C
1	a	1383	C
1	a	1385	C
1	a	1389	U
1	a	1402	G
1	a	1406	G
1	a	1407	U
1	a	1424	G
1	a	1425	G
1	a	1426	C
1	a	1429	A
1	a	1430	A
1	a	1434	U
1	a	1435	U
1	a	1436	G
1	a	1438	G
1	a	1459	G
1	a	1460	A
1	a	1466	G
1	a	1468	U
1	a	1471	G
1	a	1478	G
1	a	1481	G
1	a	1482	U
1	a	1483	A
1	a	1486	A
1	a	1487	A
1	a	1488	G
1	a	1490	U
1	a	1491	A
1	a	1492	G
1	a	1501	G
1	a	1502	A
1	a	1503	A
1	a	1504	G
1	a	1511	C
1	a	1512	U

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Mol	Chain	Res	Type
1	a	1513	G
1	a	1514	G
1	a	1516	U
1	a	1517	C
1	a	1518	A
22	w	2	G
22	w	3	C
22	w	5	G
22	w	6	G
22	w	7	G
22	w	9	G
22	w	10	G
22	w	13	C
22	w	14	A
22	w	15	G
22	w	17	C
22	w	18	U
22	w	19	G
22	w	20	G
22	w	21	U
22	w	22	A
22	w	23	G
22	w	26	C
22	w	27	G
22	w	29	C
22	w	33	C
22	w	34	U
22	w	35	C
22	w	38	A
22	w	39	A
22	w	40	C
22	w	44	A
22	w	45	A
22	w	49	C
22	w	50	G
22	w	57	C
22	w	58	A
22	w	60	A
22	w	61	U
22	w	65	G
22	w	68	C
22	w	70	C

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Mol	Chain	Res	Type
22	w	71	G
22	w	72	C
22	w	75	C
22	w	77	A
57	B	4	A
57	B	5	C
57	B	7	G
57	B	10	G
57	B	12	C
57	B	13	C
57	B	22	A
57	B	23	G
57	B	24	G
57	B	25	G
57	B	26	A
57	B	30	G
57	B	34	G
57	B	35	G
57	B	37	C
57	B	40	A
57	B	41	U
57	B	44	C
57	B	45	G
57	B	47	A
57	B	52	G
57	B	53	A
57	B	56	C
57	B	66	C
57	B	67	A
57	B	68	G
57	B	85	C
57	B	86	U
57	B	88	C
57	B	90	G
57	B	102	A
57	B	106	C
57	B	113	G
58	A	7	U
58	A	11	A
58	A	12	G
58	A	20	G
58	A	29	C

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Mol	Chain	Res	Type
58	A	31	U
58	A	32	G
58	A	33	G
58	A	52	G
58	A	58	G
58	A	59	G
58	A	60	A
58	A	68	A
58	A	71	A
58	A	72	G
58	A	77	G
58	A	80	G
58	A	81	A
58	A	88	A
58	A	89	A
58	A	90	C
58	A	93	A
58	A	94	G
58	A	98	U
58	A	99	G
58	A	115	A
58	A	117	U
58	A	122	A
58	A	125	C
58	A	128	G
58	A	136	U
58	A	143	G
58	A	161	U
58	A	164	A
58	A	173	U
58	A	175	G
58	A	180	A
58	A	186	G
58	A	195	A
58	A	198	A
58	A	203	A
58	A	205	U
58	A	212	A
58	A	214	G
58	A	215	A
58	A	220	A
58	A	221	A

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Mol	Chain	Res	Type
58	A	227	A
58	A	229	U
58	A	230	G
58	A	231	U
58	A	237	C
58	A	245	G
58	A	248	G
58	A	250	G
58	A	264	G
58	A	265	A
58	A	272	A
58	A	274	C
58	A	275	C
58	A	279	U
58	A	283	U
58	A	285	U
58	A	286	G
58	A	287	A
58	A	288	U
58	A	291	C
58	A	292	G
58	A	296	A
58	A	297	G
58	A	299	G
58	A	300	G
58	A	301	U
58	A	302	U
58	A	303	G
58	A	305	G
58	A	309	G
58	A	313	G
58	A	314	G
58	A	315	U
58	A	317	G
58	A	318	U
58	A	319	G
58	A	322	A
58	A	323	C
58	A	326	A
58	A	327	U
58	A	329	U
58	A	330	U

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Mol	Chain	Res	Type
58	A	331	U
58	A	336	C
58	A	337	U
58	A	338	C
58	A	346	C
58	A	351	G
58	A	352	G
58	A	357	U
58	A	358	G
58	A	361	A
58	A	364	A
58	A	366	G
58	A	370	U
58	A	384	G
58	A	393	U
58	A	404	A
58	A	412	A
58	A	416	C
58	A	417	C
58	A	424	G
58	A	425	U
58	A	427	A
58	A	434	G
58	A	438	U
58	A	445	U
58	A	446	G
58	A	449	G
58	A	450	G
58	A	452	G
58	A	453	U
58	A	454	U
58	A	459	A
58	A	460	G
58	A	468	G
58	A	471	C
58	A	472	C
58	A	474	G
58	A	489	A
58	A	491	U
58	A	493	U
58	A	498	G
58	A	505	C

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Mol	Chain	Res	Type
58	A	509	U
58	A	512	G
58	A	530	G
58	A	543	U
58	A	544	U
58	A	547	U
58	A	555	G
58	A	561	G
58	A	562	G
58	A	566	A
58	A	567	A
58	A	568	A
58	A	569	G
58	A	585	G
58	A	589	A
58	A	591	G
58	A	592	A
58	A	594	U
58	A	595	A
58	A	596	C
58	A	605	G
58	A	617	U
58	A	618	C
58	A	619	C
58	A	620	G
58	A	639	C
58	A	640	G
58	A	641	U
58	A	642	G
58	A	643	G
58	A	644	G
58	A	647	G
58	A	649	U
58	A	655	G
58	A	665	G
58	A	666	A
58	A	667	A
58	A	678	A
58	A	679	G
58	A	684	G
58	A	685	G
58	A	689	U

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Mol	Chain	Res	Type
58	A	696	A
58	A	706	G
58	A	707	G
58	A	708	G
58	A	709	U
58	A	712	G
58	A	721	A
58	A	725	A
58	A	728	G
58	A	730	G
58	A	731	A
58	A	740	A
58	A	747	A
58	A	753	A
58	A	757	G
58	A	758	A
58	A	760	U
58	A	763	G
58	A	765	G
58	A	766	G
58	A	768	G
58	A	769	U
58	A	770	A
58	A	774	G
58	A	784	G
58	A	785	A
58	A	794	G
58	A	801	U
58	A	830	A
58	A	832	G
58	A	838	G
58	A	845	C
58	A	862	U
58	A	863	G
58	A	868	C
58	A	871	A
58	A	872	G
58	A	879	A
58	A	880	G
58	A	890	G
58	A	891	G
58	A	897	A

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Mol	Chain	Res	Type
58	A	899	G
58	A	904	A
58	A	908	A
58	A	915	U
58	A	917	A
58	A	919	A
58	A	920	G
58	A	921	C
58	A	927	C
58	A	942	U
58	A	944	A
58	A	945	G
58	A	960	G
58	A	961	U
58	A	966	U
58	A	971	G
58	A	973	G
58	A	974	G
58	A	975	U
58	A	981	U
58	A	982	A
58	A	994	A
58	A	995	U
58	A	996	G
58	A	1001	C
58	A	1002	C
58	A	1003	A
58	A	1007	G
58	A	1009	U
58	A	1011	A
58	A	1012	C
58	A	1013	U
58	A	1014	G
58	A	1016	C
58	A	1022	C
58	A	1025	A
58	A	1029	C
58	A	1030	C
58	A	1042	A
58	A	1044	U
58	A	1046	C
58	A	1047	A

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Mol	Chain	Res	Type
58	A	1048	A
58	A	1049	G
58	A	1058	A
58	A	1062	A
58	A	1063	G
58	A	1068	C
58	A	1070	G
58	A	1074	A
58	A	1076	A
58	A	1078	G
58	A	1085	G
58	A	1091	A
58	A	1092	G
58	A	1098	A
58	A	1100	C
58	A	1101	A
58	A	1107	G
58	A	1114	G
58	A	1130	C
58	A	1131	G
58	A	1140	G
58	A	1141	U
58	A	1143	G
58	A	1144	A
58	A	1151	U
58	A	1163	A
58	A	1164	A
58	A	1169	A
58	A	1171	C
58	A	1173	G
58	A	1175	A
58	A	1178	U
58	A	1181	G
58	A	1184	U
58	A	1185	A
58	A	1186	G
58	A	1187	A
58	A	1188	A
58	A	1189	G
58	A	1190	C
58	A	1191	A
58	A	1192	G

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Mol	Chain	Res	Type
58	A	1201	G
58	A	1202	A
58	A	1205	G
58	A	1206	A
58	A	1207	G
58	A	1209	G
58	A	1212	U
58	A	1213	A
58	A	1215	U
58	A	1216	A
58	A	1224	G
58	A	1229	A
58	A	1230	G
58	A	1232	G
58	A	1233	A
58	A	1237	U
58	A	1238	G
58	A	1239	C
58	A	1240	G
58	A	1244	A
58	A	1246	A
58	A	1250	U
58	A	1251	A
58	A	1253	C
58	A	1254	G
58	A	1260	C
58	A	1261	A
58	A	1270	G
58	A	1275	A
58	A	1292	U
58	A	1293	G
58	A	1303	U
58	A	1325	U
58	A	1332	G
58	A	1335	G
58	A	1343	G
58	A	1344	A
58	A	1345	G
58	A	1347	G
58	A	1353	G
58	A	1362	A
58	A	1363	G

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Mol	Chain	Res	Type
58	A	1365	G
58	A	1368	A
58	A	1369	A
58	A	1371	G
58	A	1372	C
58	A	1386	G
58	A	1389	U
58	A	1404	C
58	A	1409	C
58	A	1415	A
58	A	1416	A
58	A	1417	A
58	A	1440	C
58	A	1444	U
58	A	1448	C
58	A	1456	G
58	A	1462	G
58	A	1465	C
58	A	1467	U
58	A	1480	A
58	A	1493	A
58	A	1494	U
58	A	1499	A
58	A	1501	C
58	A	1507	G
58	A	1510	A
58	A	1521	C
58	A	1522	G
58	A	1529	U
58	A	1531	C
58	A	1532	G
58	A	1533	U
58	A	1534	C
58	A	1539	A
58	A	1540	U
58	A	1546	A
58	A	1549	G
58	A	1550	G
58	A	1551	U
58	A	1552	A
58	A	1553	C
58	A	1554	U

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Mol	Chain	Res	Type
58	A	1555	A
58	A	1556	A
58	A	1561	C
58	A	1562	C
58	A	1563	A
58	A	1564	A
58	A	1565	A
58	A	1566	A
58	A	1567	C
58	A	1568	C
58	A	1570	C
58	A	1571	C
58	A	1572	G
58	A	1573	U
58	A	1574	G
58	A	1578	G
58	A	1580	A
58	A	1584	U
58	A	1587	G
58	A	1588	G
58	A	1589	G
58	A	1590	G
58	A	1591	U
58	A	1592	G
58	A	1593	U
58	A	1595	G
58	A	1596	C
58	A	1597	G
58	A	1598	U
58	A	1599	U
58	A	1600	G
58	A	1601	G
58	A	1602	U
58	A	1604	G
58	A	1605	G
58	A	1606	G
58	A	1607	C
58	A	1609	G
58	A	1610	C
58	A	1611	A
58	A	1625	G
58	A	1629	G

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Mol	Chain	Res	Type
58	A	1630	U
58	A	1632	G
58	A	1633	U
58	A	1636	A
58	A	1637	G
58	A	1638	C
58	A	1639	G
58	A	1640	A
58	A	1641	U
58	A	1642	G
58	A	1648	A
58	A	1649	C
58	A	1654	G
58	A	1658	G
58	A	1672	C
58	A	1674	G
58	A	1676	G
58	A	1678	U
58	A	1679	A
58	A	1680	A
58	A	1681	U
58	A	1688	G
58	A	1703	G
58	A	1710	A
58	A	1711	G
58	A	1713	U
58	A	1715	A
58	A	1717	U
58	A	1721	U
58	A	1724	G
58	A	1727	A
58	A	1728	U
58	A	1731	A
58	A	1737	A
58	A	1744	A
58	A	1748	A
58	A	1753	C
58	A	1754	G
58	A	1767	U
58	A	1768	C
58	A	1769	G
58	A	1774	U

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Mol	Chain	Res	Type
58	A	1778	A
58	A	1780	G
58	A	1786	G
58	A	1787	A
58	A	1789	A
58	A	1792	A
58	A	1798	U
58	A	1803	A
58	A	1813	C
58	A	1826	A
58	A	1836	A
58	A	1837	G
58	A	1845	G
58	A	1852	A
58	A	1863	G
58	A	1864	U
58	A	1866	C
58	A	1869	G
58	A	1870	U
58	A	1871	G
58	A	1872	A
58	A	1878	G
58	A	1887	A
58	A	1892	G
58	A	1893	C
58	A	1903	C
58	A	1906	U
58	A	1916	A
58	A	1917	G
58	A	1933	G
58	A	1958	C
58	A	1967	G
58	A	1973	C
58	A	1974	A
58	A	1975	A
58	A	1981	U
58	A	1990	A
58	A	1998	C
58	A	1999	U
58	A	2017	C
58	A	2018	G
58	A	2026	A

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Mol	Chain	Res	Type
58	A	2028	G
58	A	2033	U
58	A	2046	A
58	A	2052	G
58	A	2062	G
58	A	2064	A
58	A	2074	G
58	A	2075	G
58	A	2083	A
58	A	2085	C
58	A	2086	U
58	A	2088	C
58	A	2089	C
58	A	2090	U
58	A	2091	U
58	A	2092	U
58	A	2093	G
58	A	2094	G
58	A	2095	G
58	A	2096	G
58	A	2106	A
58	A	2107	G
58	A	2111	U
58	A	2112	U
58	A	2118	C
58	A	2120	A
58	A	2130	G
58	A	2131	G
58	A	2137	A
58	A	2138	C
58	A	2140	A
58	A	2142	A
58	A	2151	A
58	A	2153	G
58	A	2154	G
58	A	2160	A
58	A	2161	A
58	A	2163	U
58	A	2167	U
58	A	2179	U
58	A	2190	A
58	A	2191	C

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Mol	Chain	Res	Type
58	A	2194	A
58	A	2195	U
58	A	2196	G
58	A	2206	C
58	A	2215	U
58	A	2217	U
58	A	2221	A
58	A	2244	A
58	A	2247	A
58	A	2251	G
58	A	2255	A
58	A	2256	G
58	A	2257	A
58	A	2263	G
58	A	2267	C
58	A	2276	G
58	A	2279	C
58	A	2280	G
58	A	2284	A
58	A	2285	G
58	A	2286	A
58	A	2299	C
58	A	2315	U
58	A	2316	G
58	A	2317	G
58	A	2319	G
58	A	2320	C
58	A	2322	C
58	A	2323	G
58	A	2325	U
58	A	2328	G
58	A	2334	U
58	A	2335	G
58	A	2337	A
58	A	2338	G
58	A	2339	G
58	A	2340	A
58	A	2341	U
58	A	2342	A
58	A	2343	G
58	A	2346	G
58	A	2348	G

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Mol	Chain	Res	Type
58	A	2349	A
58	A	2351	A
58	A	2353	U
58	A	2354	G
58	A	2355	U
58	A	2356	G
58	A	2357	A
58	A	2362	C
58	A	2368	C
58	A	2371	G
58	A	2380	G
58	A	2382	G
58	A	2383	U
58	A	2384	C
58	A	2385	G
58	A	2386	U
58	A	2387	U
58	A	2388	G
58	A	2390	U
58	A	2392	A
58	A	2393	A
58	A	2394	A
58	A	2395	U
58	A	2396	A
58	A	2404	G
58	A	2407	C
58	A	2408	G
58	A	2409	U
58	A	2410	A
58	A	2411	U
58	A	2413	G
58	A	2414	G
58	A	2418	U
58	A	2421	A
58	A	2427	G
58	A	2433	U
58	A	2434	A
58	A	2436	A
58	A	2446	G
58	A	2449	A
58	A	2462	G
58	A	2463	G

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Mol	Chain	Res	Type
58	A	2467	U
58	A	2473	U
58	A	2476	G
58	A	2490	A
58	A	2502	A
58	A	2506	G
58	A	2507	C
58	A	2510	A
58	A	2511	A
58	A	2512	A
58	A	2529	A
58	A	2531	G
58	A	2532	G
58	A	2545	G
58	A	2546	A
58	A	2549	G
58	A	2551	A
58	A	2558	C
58	A	2559	A
58	A	2567	U
58	A	2571	C
58	A	2574	C
58	A	2578	A
58	A	2582	A
58	A	2585	U
58	A	2586	G
58	A	2596	G
58	A	2601	A
58	A	2607	G
58	A	2608	G
58	A	2609	A
58	A	2612	A
58	A	2614	U
58	A	2615	G
58	A	2616	A
58	A	2626	U
58	A	2627	C
58	A	2630	A
58	A	2631	G
58	A	2640	G
58	A	2643	U
58	A	2647	U

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Mol	Chain	Res	Type
58	A	2648	C
58	A	2649	A
58	A	2650	A
58	A	2651	C
58	A	2653	G
58	A	2654	A
58	A	2655	U
58	A	2659	A
58	A	2665	C
58	A	2669	G
58	A	2671	G
58	A	2672	A
58	A	2673	U
58	A	2676	C
58	A	2677	A
58	A	2682	G
58	A	2694	G
58	A	2698	C
58	A	2700	A
58	A	2702	A
58	A	2705	G
58	A	2715	U
58	A	2718	G
58	A	2726	G
58	A	2729	G
58	A	2737	G
58	A	2742	A
58	A	2744	C
58	A	2753	G
58	A	2758	A
58	A	2759	G
58	A	2786	U
58	A	2788	A
58	A	2790	A
58	A	2791	G
58	A	2793	G
58	A	2796	A
58	A	2797	C
58	A	2802	G
58	A	2810	U
58	A	2826	A
58	A	2827	G

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Mol	Chain	Res	Type
58	A	2833	U
58	A	2837	U
58	A	2839	U
58	A	2853	C
58	A	2860	U
58	A	2865	G
58	A	2866	A
58	A	2870	C
58	A	2876	C
58	A	2878	A
58	A	2887	G
58	A	2893	G
58	A	2897	G
58	A	2906	U
58	A	2908	U
58	A	2913	U
58	A	2915	C
58	A	2926	A
58	A	2936	C
58	A	2938	G
58	A	2942	G
58	A	2950	C
58	A	2956	G
58	A	2957	A
58	A	2963	U
58	A	2968	G
58	A	2972	A
58	A	2975	G
58	A	2976	C
58	A	2977	A
58	A	2982	A
58	A	2985	G
58	A	2989	A
58	A	2990	A
58	A	2993	U
58	A	3002	A
58	A	3004	C
58	A	3005	A
58	A	3009	U
58	A	3011	C
58	A	3014	A
58	A	3015	C

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Mol	Chain	Res	Type
58	A	3021	A
58	A	3022	G
58	A	3023	G
58	A	3029	U
58	A	3039	C
58	A	3042	A
58	A	3045	C
58	A	3047	A
58	A	3056	A
58	A	3057	U
58	A	3070	G
58	A	3082	U
58	A	3088	C
58	A	3093	A
58	A	3094	A
58	A	3095	C
58	A	3101	C
58	A	3105	C
58	A	3106	C
58	A	3107	G
58	A	3112	A
58	A	3113	A
58	A	3114	A
58	A	3115	A

All (29) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
57	B	66	C
58	A	84	U
58	A	89	A
58	A	97	U
58	A	316	U
58	A	336	C
58	A	357	U
58	A	445	U
58	A	456	C
58	A	567	A
58	A	974	G
58	A	980	C
58	A	981	U
58	A	1002	C

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Mol	Chain	Res	Type
58	A	1010	U
58	A	1084	U
58	A	1117	U
58	A	1186	G
58	A	1562	C
58	A	1571	C
58	A	1595	G
58	A	1596	C
58	A	1597	G
58	A	1730	U
58	A	2085	C
58	A	2088	C
58	A	2094	G
58	A	2350	G
58	A	2381	A

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

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

5.5 Carbohydrates

There are no monosaccharides in this entry.

5.6 Ligand geometry

There are no ligands in this entry.

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.

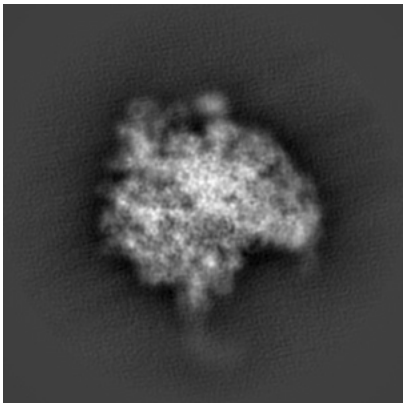
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-6921. These allow visual inspection of the internal detail of the map and identification of artifacts.

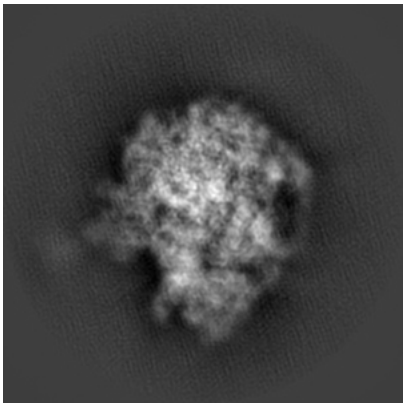
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

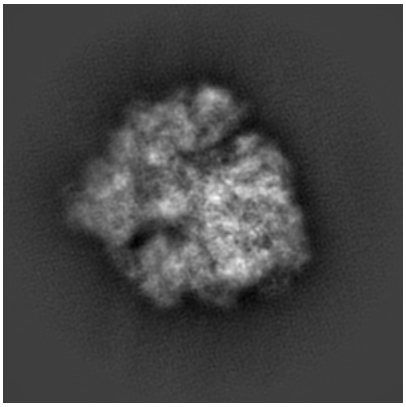
6.1.1 Primary map



X



Y

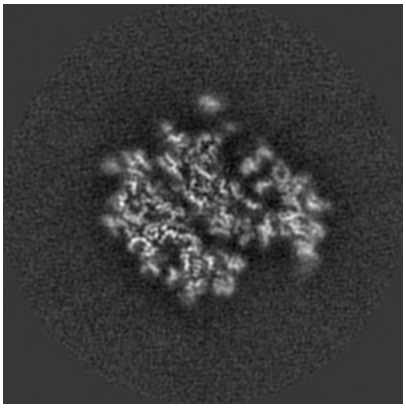


Z

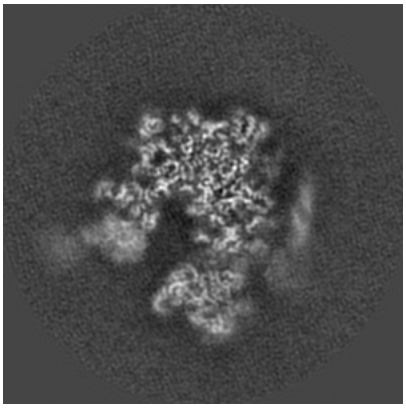
The images above show the map projected in three orthogonal directions.

6.2 Central slices

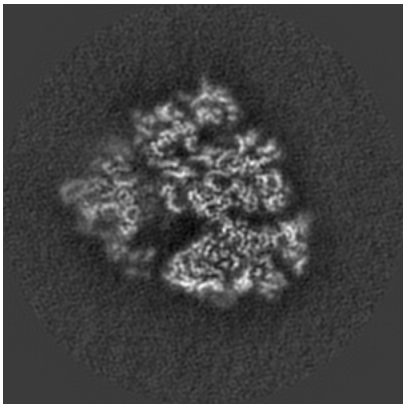
6.2.1 Primary map



X Index: 164



Y Index: 164

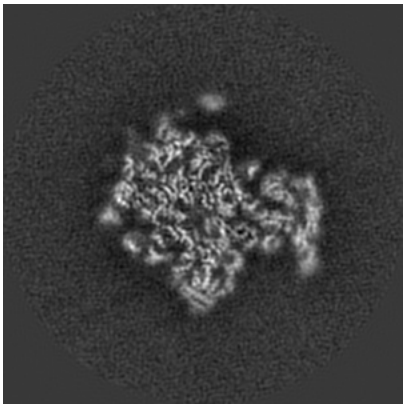


Z Index: 164

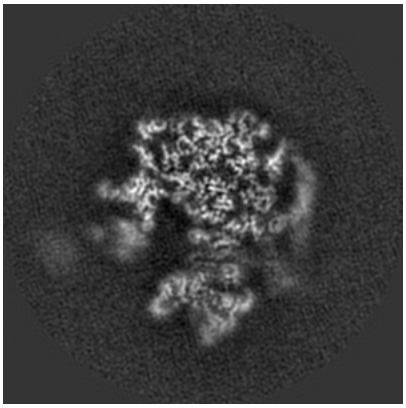
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

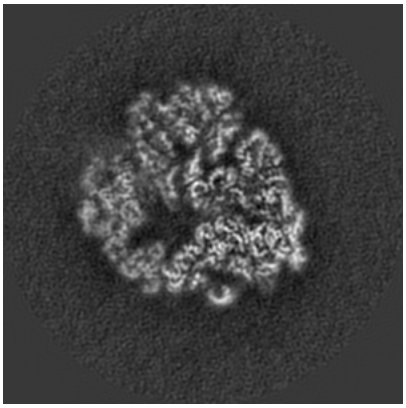
6.3.1 Primary map



X Index: 171



Y Index: 169



Z Index: 157

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

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X

Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

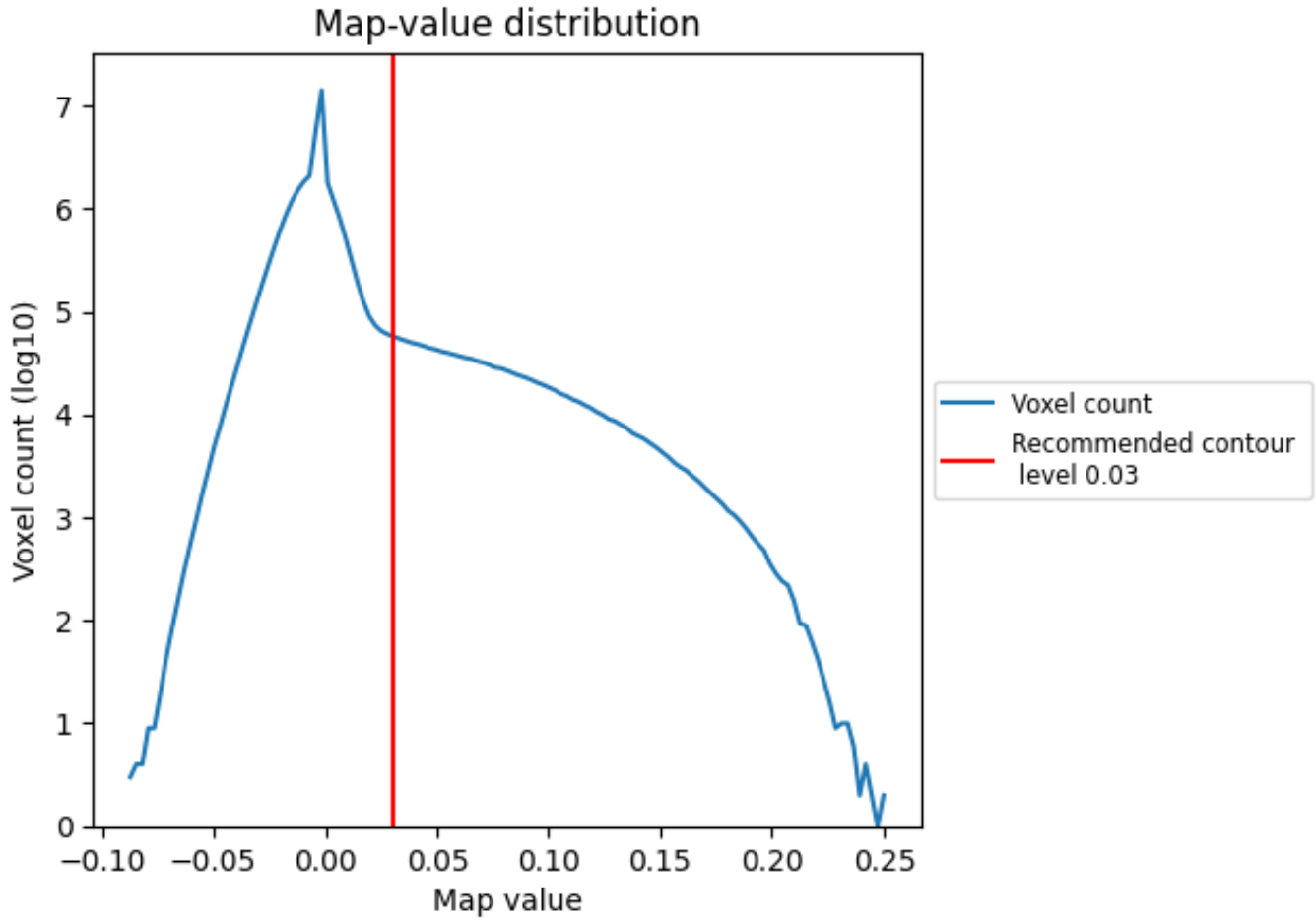
6.5 Mask visualisation (i)

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

7 Map analysis

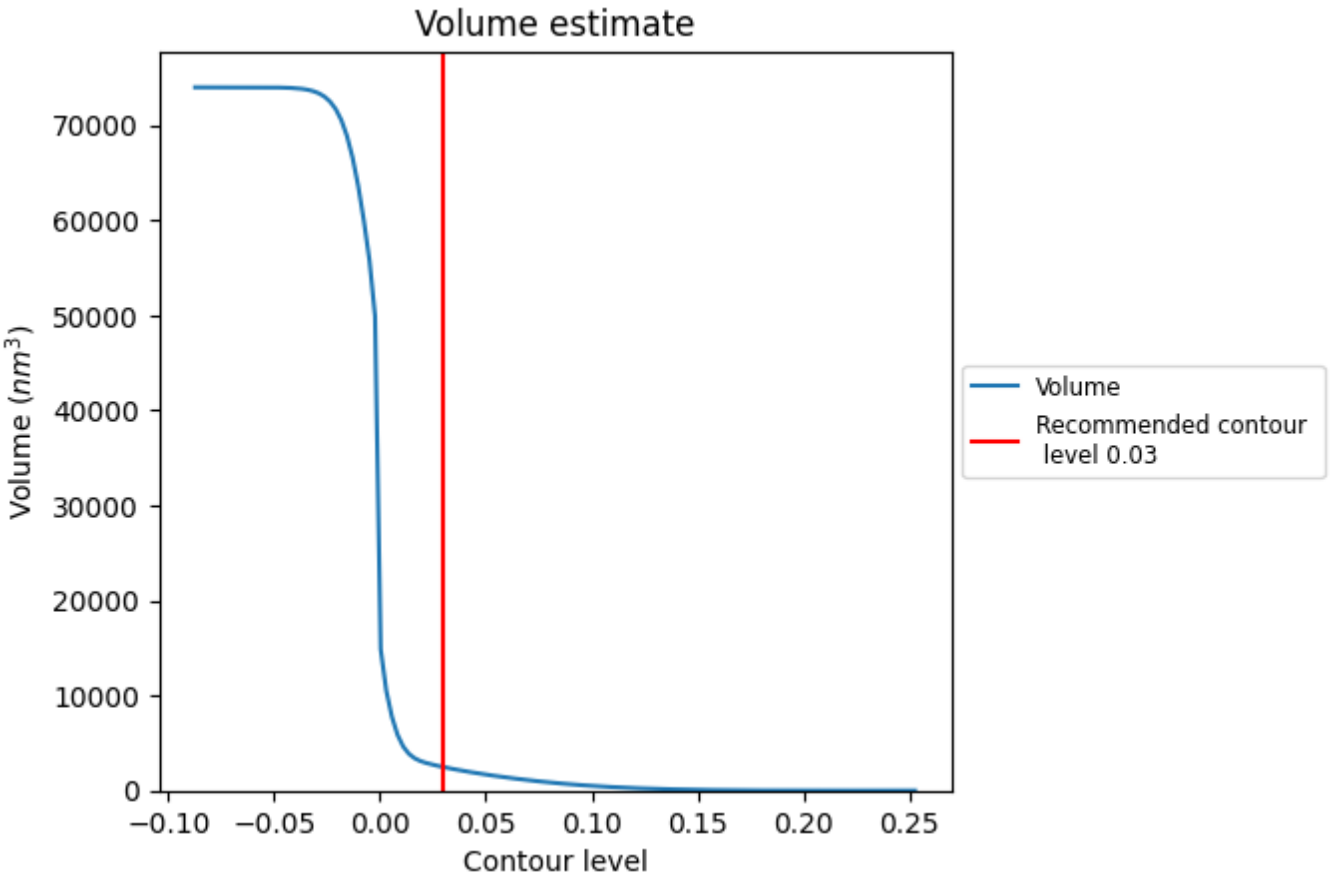
This section contains the results of statistical analysis of the map.

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.

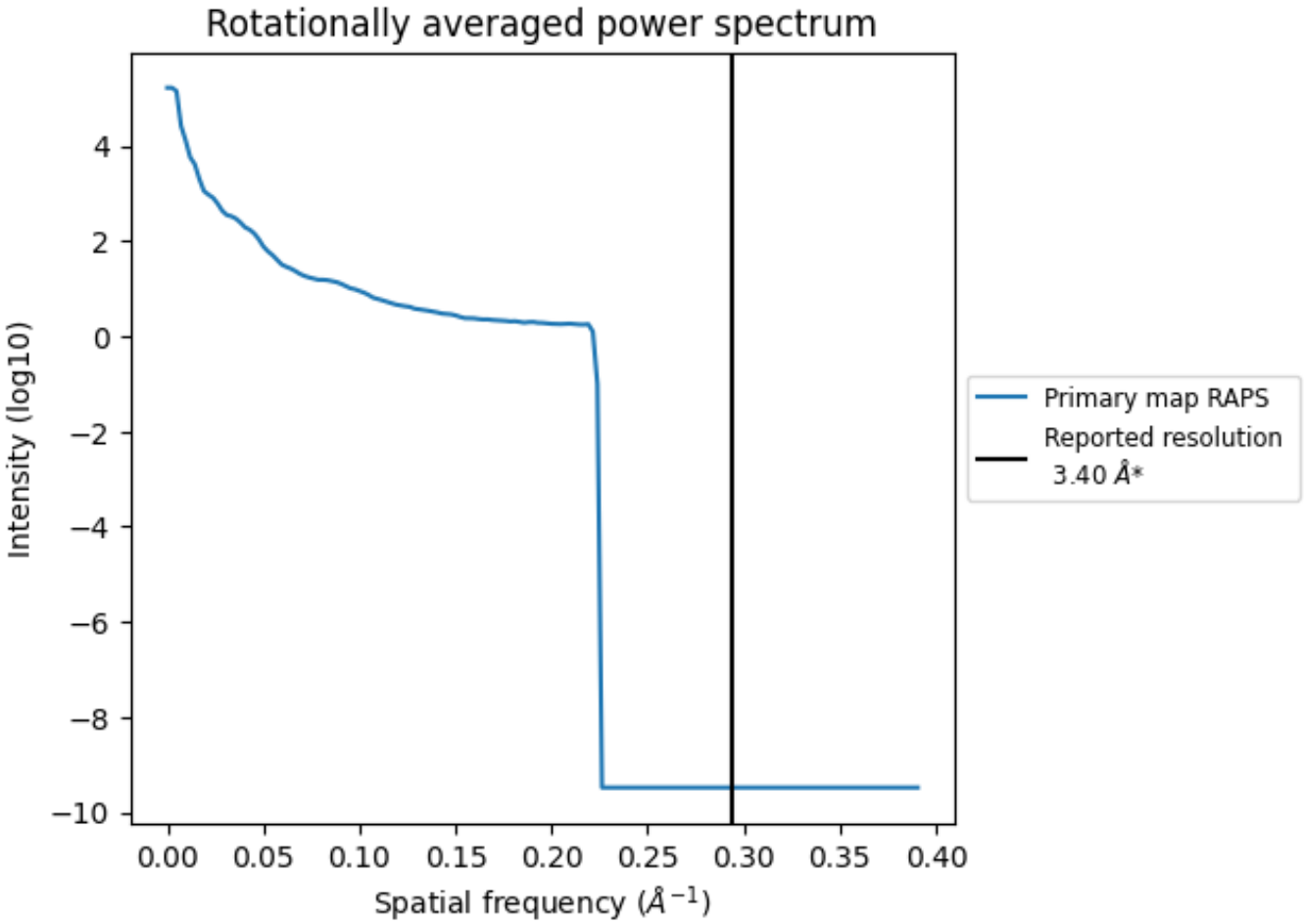
7.2 Volume estimate



The volume at the recommended contour level is 2473 nm^3; this corresponds to an approximate mass of 2234 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 0.294 Å^{-1}

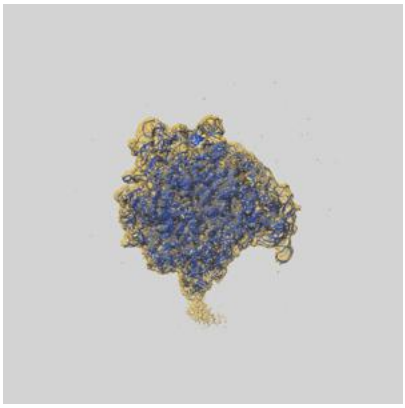
8 Fourier-Shell correlation (i)

This section was not generated. No FSC curve or half-maps provided.

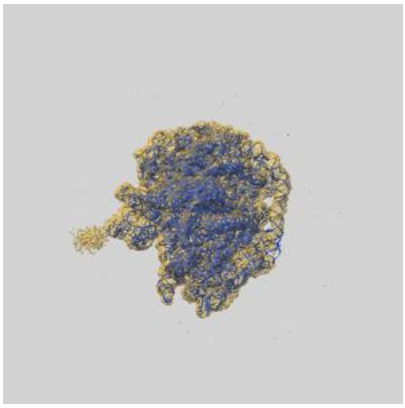
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-6921 and PDB model 5ZEP. Per-residue inclusion information can be found in section 3 on page 14.

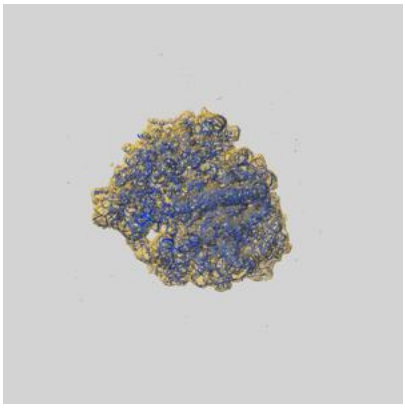
9.1 Map-model overlay



X



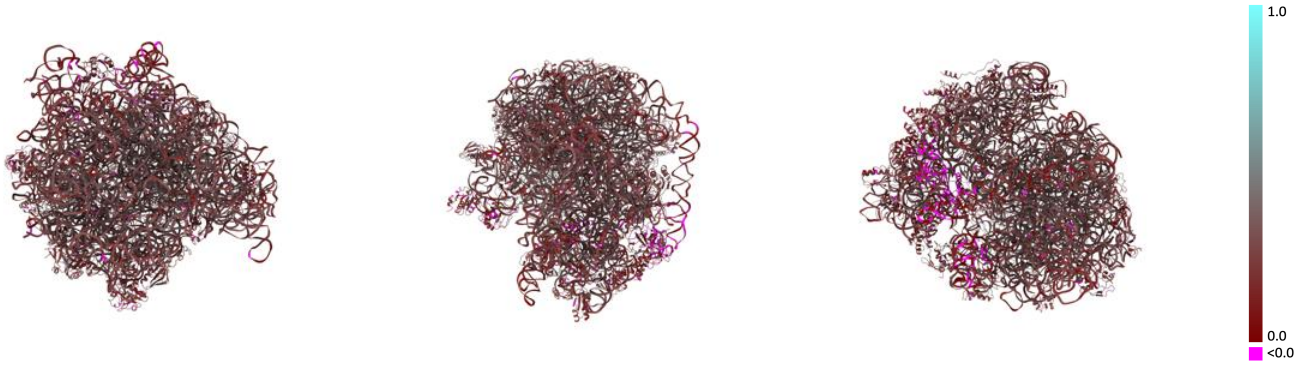
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.03 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.

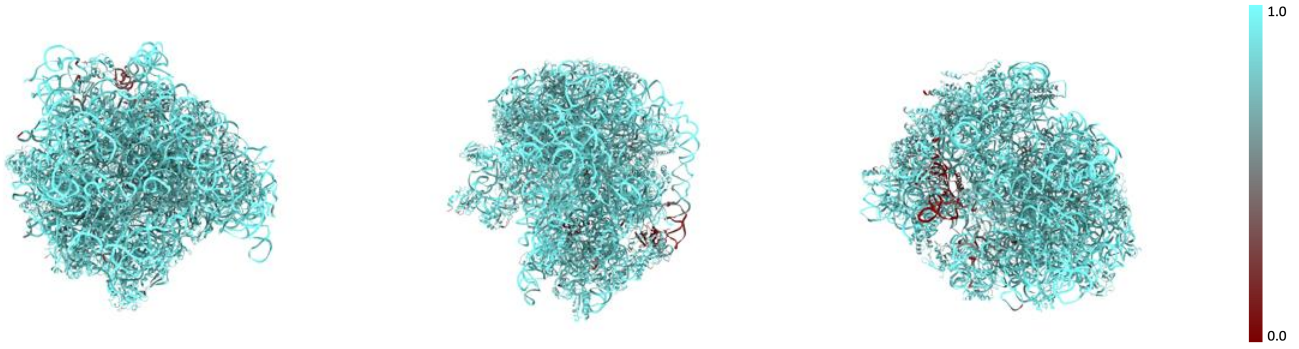
9.2 Q-score mapped to coordinate model (i)



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.

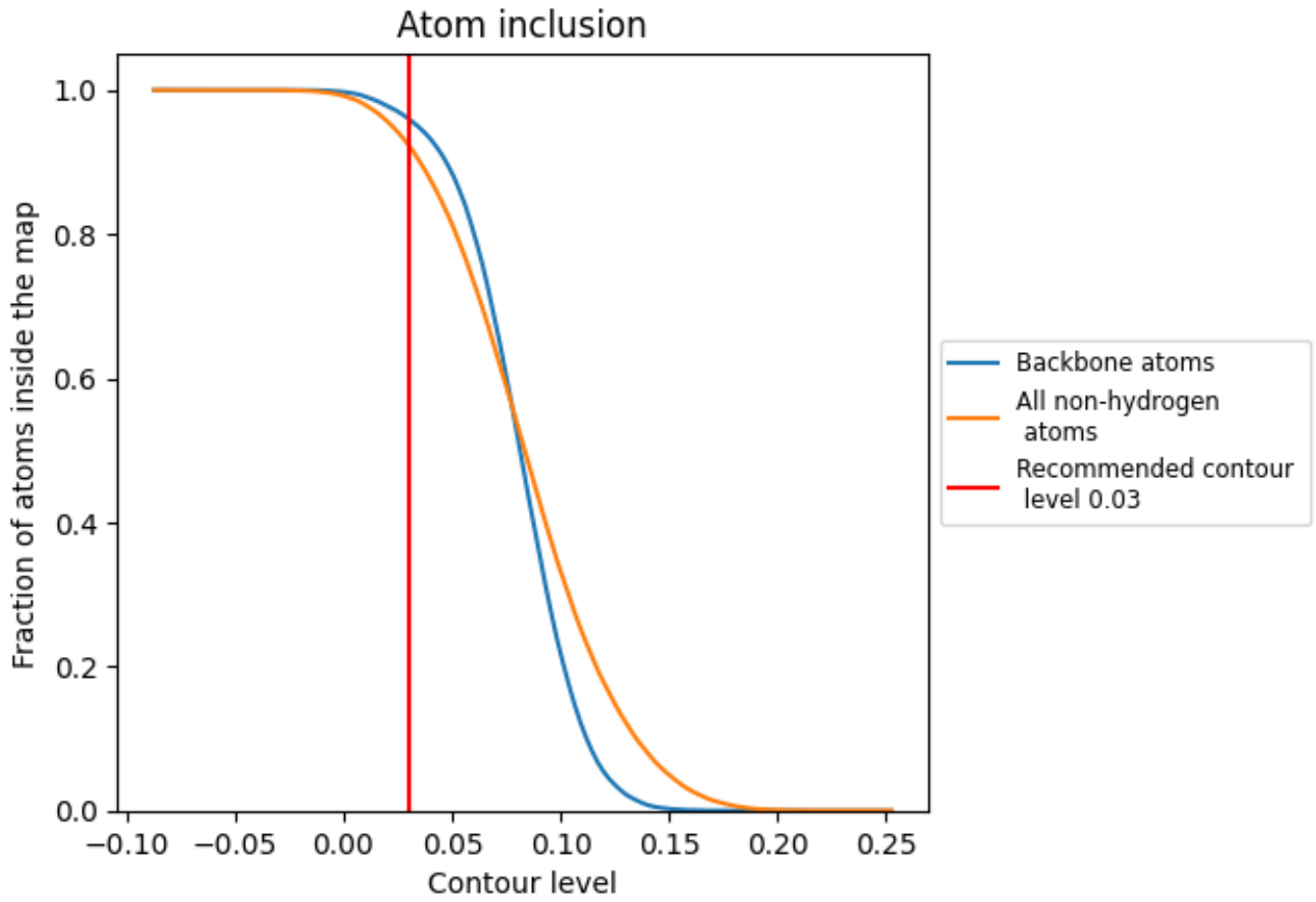
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.03).

9.4 Atom inclusion (i)



At the recommended contour level, 96% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9239	0.2750
0	0.4168	0.0310
1	0.8561	0.2240
2	0.8372	0.3070
3	0.8208	0.2930
4	0.8846	0.2810
5	0.8268	0.2680
A	0.9680	0.2950
B	0.9764	0.2680
C	0.8200	0.2850
D	0.8544	0.2870
E	0.8665	0.2690
F	0.8780	0.2420
G	0.9109	0.2520
H	0.8720	0.2260
I	0.8401	0.1300
J	0.8631	0.1190
K	0.8557	0.2760
L	0.7561	0.2780
M	0.8451	0.2700
N	0.8327	0.2880
O	0.8121	0.2510
P	0.9100	0.2480
Q	0.8045	0.2540
R	0.8552	0.2450
S	0.8682	0.3080
T	0.8290	0.2830
U	0.8340	0.2990
V	0.8776	0.2290
W	0.8889	0.2550
X	0.8065	0.2590
Y	0.8455	0.3030
Z	0.8419	0.2110
a	0.9862	0.3000
b	0.8330	0.1980

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Chain	Atom inclusion	Q-score
c	0.8418	0.2040
d	0.8525	0.1940
e	0.8138	0.2510
f	0.8652	0.2630
g	0.8395	0.2020
h	0.8763	0.2830
i	0.9168	0.2300
j	0.8767	0.2300
k	0.8595	0.2540
l	0.8095	0.2680
m	0.8555	0.2020
n	0.8420	0.2520
o	0.8436	0.2410
p	0.8675	0.2440
q	0.8136	0.2600
r	0.8846	0.2500
s	0.8470	0.2270
t	0.8299	0.1930
u	0.6832	0.2460
v	0.8312	0.2500
w	0.6689	0.1340
x	0.2425	-0.0160
y	0.8457	0.2190
z	0.8209	0.2820