wwPDB EM Validation Summary Report

May 16, 2022 – 05:31 pm BST

PDB ID	:	7OOD
EMDB ID	:	EMD-11999
Title	:	Mycoplasma pneumoniae 50S subunit of ribosomes in chloramphenicol-treated cells
Authors	:	Xue, L.; Lenz, S.; Rappsilber, J.; Mahamid, J.
Deposited on	:	2021-05-27
Resolution	:	3.40 Å(reported)
Based on initial models	:	4YBB, 1DIV, 1ZAV, 3J9W

This is a wwPDB EM Validation Summary 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 (i) symbol.

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

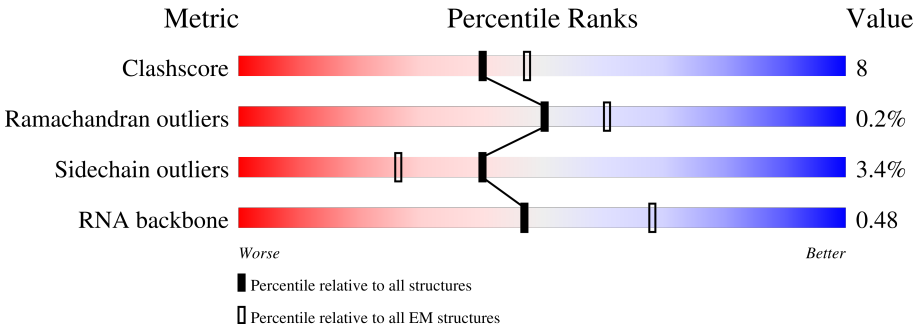
EMDB validation analysis	:	0.0.1.dev8
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.28.1

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)
Clashscore	158937	4297
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	3	2907	99% 64% 29% 6%
2	4	108	97% 62% 27% 7%
3	w	111	89% 85% 5% 11%
4	a	287	99% 97%
5	c	212	99% 95%
6	e	184	96% 94%
7	k	151	98% 95%

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Mol	Chain	Length	Quality of chain
8	i	146	99% 97%
9	m	124	96% 95%
10	q	100	99% 95%
11	u	104	83% 82% 17%
12	y	57	98% 89% 9%
13	0	48	98% 75% 23%
14	2	37	100% 38% 57% 5%
15	1	59	100% 64% 32%
16	o	119	97% 92%
17	s	237	39% 39% 61%
18	v	65	97% 89% 8%
19	x	97	45% 45% 55%
20	z	53	94% 94% 6%
21	d	180	97% 94%
22	b	287	80% 78% 20%
23	l	139	98% 97%
24	p	127	90% 87% 10%
25	j	122	100% 96%
26	n	116	97% 97%
27	t	111	86% 86% 14%
28	r	159	87% 82% 5% 13%
29	f	149	97% 96%
30	h	137	93% 92% 7%
31	g	161	78% 75% 22%

2 Entry composition (i)

There are 35 unique types of molecules in this entry. The entry contains 89509 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 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	3	2879	61690	27566	11236	20009	2879	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	4	105	2245	1003	409	728	105	0	0

- Molecule 3 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	w	99	798	505	149	144	0	0

- Molecule 4 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	a	285	2199	1370	433	390	6	0	0

- Molecule 5 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	c	210	1613	1026	294	290	3	0	0

- Molecule 6 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	e	176	1349	867	240	242	0	0

- Molecule 7 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms				AltConf	Trace
7	k	148	Total	C	N	O	0	0
			1138	722	223	193		

- Molecule 8 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	i	144	Total	C	N	O	S	0	0
			1158	733	212	208	5		

- Molecule 9 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	m	119	Total	C	N	O	S	0	0
			957	609	175	170	3		

- Molecule 10 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	q	99	Total	C	N	O	S	0	0
			809	525	148	133	3		

- Molecule 11 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	u	86	Total	C	N	O	S	0	0
			641	397	127	116	1		

- Molecule 12 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	y	56	Total	C	N	O	S	0	0
			436	262	96	73	5		

- Molecule 13 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	0	47	Total	C	N	O	S	0	0
			377	234	81	61	1		

- Molecule 14 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	2	37	Total	C	N	O	S	0	0
			303	189	65	45	4		

- Molecule 15 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	1	59	Total	C	N	O	S	0	0
			477	300	99	77	1		

- Molecule 16 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	o	115	Total	C	N	O	S	0	0
			895	568	169	157	1		

- Molecule 17 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	s	92	Total	C	N	O	S	0	0
			714	470	121	122	1		

- Molecule 18 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	v	63	Total	C	N	O	S	0	0
			504	312	107	84	1		

- Molecule 19 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	x	44	Total	C	N	O	0	0
			218	130	44	44		

- Molecule 20 is a protein called 50S ribosomal protein L33 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	z	50	Total	C	N	O	S	0	0
			408	255	81	68	4		

- Molecule 21 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	d	175	Total	C	N	O	S	0	0
			1244	797	214	229	4		

- Molecule 22 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	b	229	Total	C	N	O	S	0	0
			1758	1116	317	318	7		

- Molecule 23 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	l	136	Total	C	N	O	S	0	0
			1057	680	193	177	7		

- Molecule 24 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	p	114	Total	C	N	O	S	0	0
			941	600	185	154	2		

- Molecule 25 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	j	122	Total	C	N	O	S	0	0
			944	595	178	167	4		

- Molecule 26 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	n	112	Total	C	N	O	S	0	0
			853	534	169	149	1		

- Molecule 27 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	t	96	Total	C	N	O	S	0	0
			706	449	132	122	3		

- Molecule 28 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	r	139	Total	C	N	O	S	0	0
			1068	663	207	191	7		

- Molecule 29 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	f	144	Total	C	N	O	0	0
			713	425	144	144		

- Molecule 30 is a protein called 50S ribosomal protein L11.

Mol	Chain	Residues	Atoms				AltConf	Trace
30	h	128	Total	C	N	O	0	0
			630	374	128	128		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
31	g	125	Total	C	N	O	0	0
			617	367	125	125		

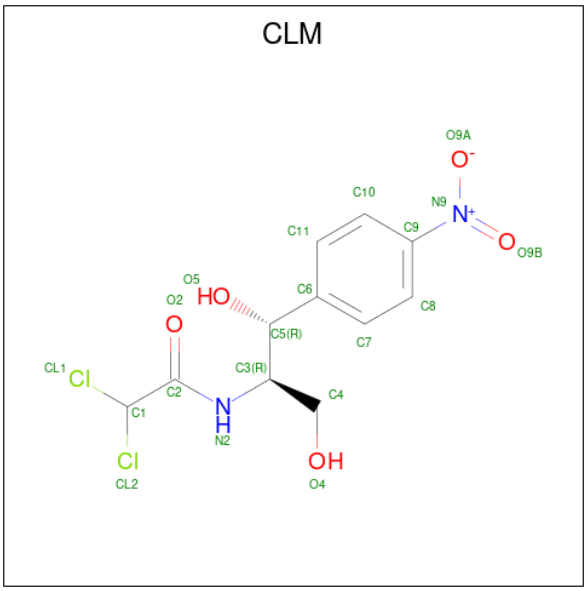
- Molecule 32 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
32	3	1	Total	K	0
			1	1	

- Molecule 33 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
33	3	24	Total	Mg	0
			24	24	
33	y	1	Total	Mg	0
			1	1	

- Molecule 34 is CHLORAMPHENICOL (three-letter code: CLM) (formula: $C_{11}H_{12}Cl_2N_2O_5$).



Mol	Chain	Residues	Atoms					AltConf
34	3	1	Total	C	Cl	N	O	0
			20	11	2	2	5	

- Molecule 35 is ZINC ION (three-letter code: ZN) (formula: Zn).

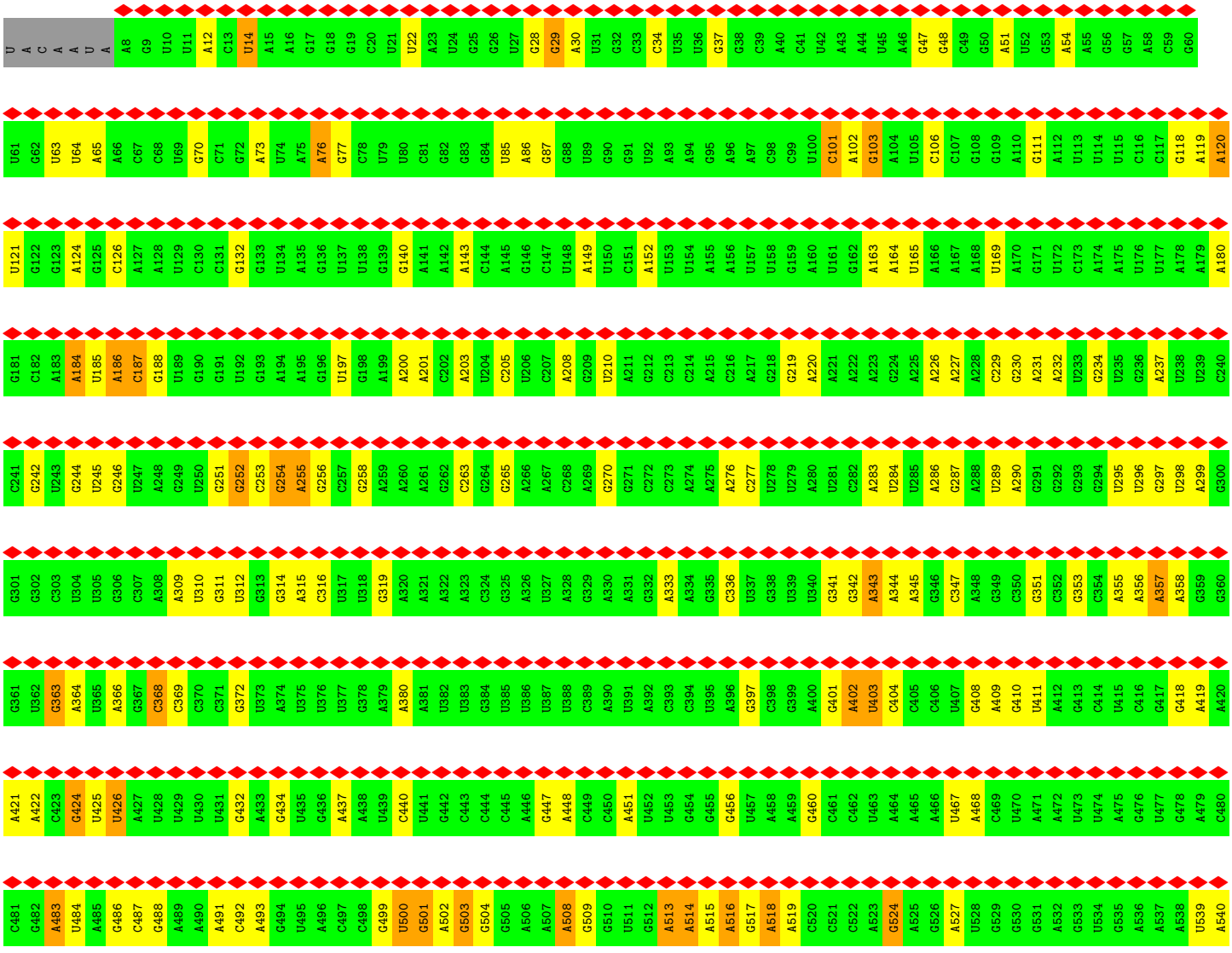
Mol	Chain	Residues	Atoms		AltConf
35	y	1	Total	Zn	0
			1	1	
35	2	1	Total	Zn	0
			1	1	
35	z	1	Total	Zn	0
			1	1	

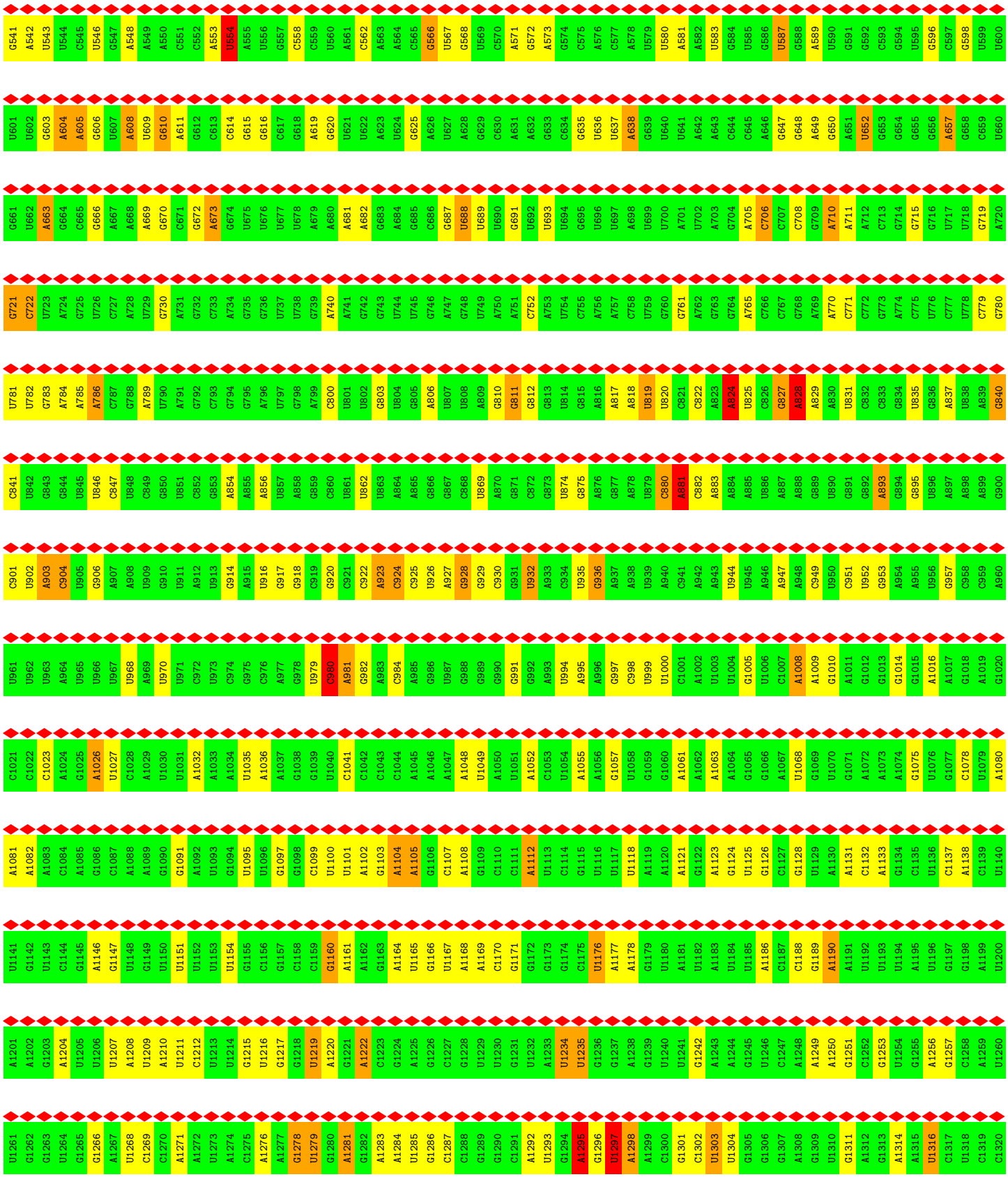
3 Residue-property plots (i)

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: 23S ribosomal RNA

Chain 3:

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U601 U602 G603 A604 A605 G606 U607 A608 U609 G610 A611 G612 C613 C614 G615 G616 C617 G618 A619 G620 U621 U622 A623 U624 G625 A626 U627 A628 G629 C630 A631 A632 G633 C634 G635 U636 U637 A638 G639 U640 U641 A642 A643 C644 C645 A646 G647 G648 A649 G650 A651 U652 G653 G654 G655 G656 A657 G658 C659 U660
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G721 C722 U723 A724 G725 U726 C727 A728 U729 G730 A731 G732 C733 A734 G735 G736 U737 U738 G739 A740 A741 G742 G743 U744 U745 G746 A747 G748 U749 A750 A751 C752 A753 U754 C755 A756 A757 C758 U759 G760 G761 A762 G763 G764 A765 C766 C767 G768 A769 A770 C771 C772 C773 A774 C775 U776 C777 U778 C779 G780
U781 U782 G783 A784 A785 A786 C787 G788 A789 U790 A791 G792 C793 G794 G795 A796 U797 G798 A799 C800 U801 U802 G803 U804 G805 A806 U807 U808 A809 G810 G811 G812 G813 U814 G815 A816 A817 A818 U819 U820 C821 C822 A823 A824 U825 C826 G827 A828 A829 A830 U831 C832 C833 G834 U835 G836 A837 U838 A839 G840
C841 U842 G843 G844 U845 U846 C847 U848 C849 G850 U851 C852 G853 A854 A855 A856 U857 A858 G859 C860 U861 U862 U863 A864 A865 G866 G867 C868 U869 A870 G871 C872 G873 U874 G875 A876 G877 A878 U879 C880 A881 C882 A883 A884 A885 U886 A887 A888 G889 U890 G891 G892 A893 G894 G895 U896 A897 A898 A899 G900
C901 U902 A903 C904 U905 G906 A907 A908 U909 G910 U911 A912 U913 G914 A915 U916 G917 G918 C919 G920 C921 C922 A923 C924 C925 U926 A927 G928 G929 C930 G931 U932 A933 C934 U935 G936 A937 A938 U939 A940 C941 A942 A943 U944 U945 A946 A947 A948 C949 U950 C951 U952 G953 A954 A955 U956 G957 C958 C959 A960
U961 U962 U963 A964 U965 U966 U967 U968 A969 U970 U971 C972 U973 C974 G975 C976 A977 G978 U979 C980 A981 G982 A983 C984 A985 G986 U987 G988 G989 G990 G991 G992 A993 U994 A995 A996 G997 C998 U999 U1000 C1001 A1002 U1003 U1004 G1005 U1006 C1007 A1008 A1009 G1010 A1011 G1012 G1013 G1014 G1015 A1016 A1017 G1018 A1019 G1020
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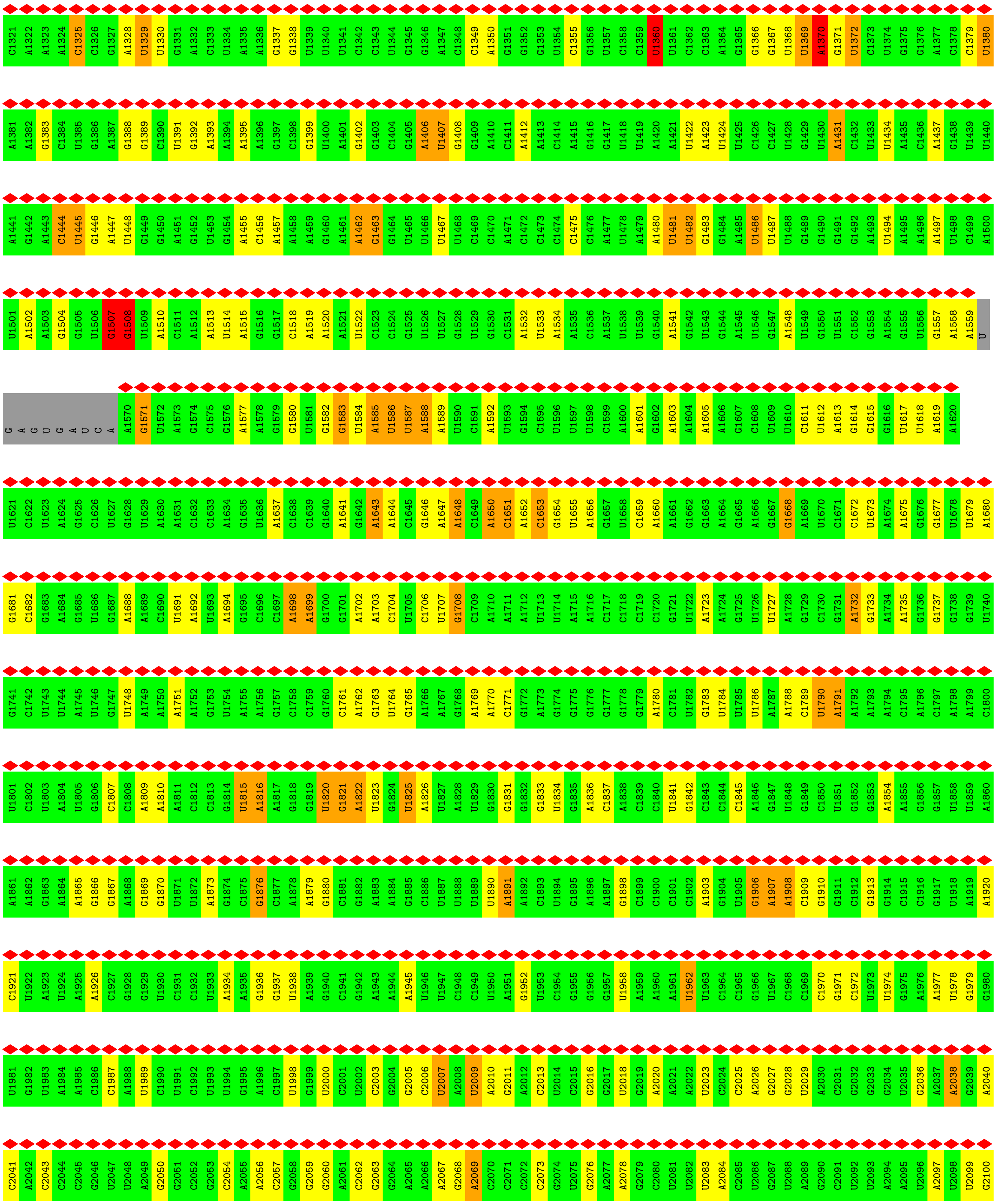
U1141 G1142 U1143 C1144 G1145 A1146 G1147 U1148 G1149 U1150 U1151 U1152 U1153 U1154 G1155 C1156 G1157 C1158 C1159 G1160 A1161 A1162 G1163 A1164 U1165 G1166 U1167 A1168 A1169 C1170 G1171 G1172 G1173 G1174 C1175 U1176 A1177 A1178 G1179 U1180 A1181 U1182 A1183 U1184 U1185 A1186 C1187 U1188 G1189 A1190 A1191 U1192 U1193 U1194 A1195 U1196 G1197 G1198 A1199 U1200
A1201 A1202 G1203 A1204 U1205 U1206 U1207 A1208 U1209 A1210 U1211 C1212 U1213 U1214 G1215 U1216 G1217 G1218 U1219 A1220 G1221 A1222 C1223 G1224 A1225 G1226 C1227 G1228 U1229 U1230 G1231 U1232 A1233 U1234 U1235 G1236 G1237 A1238 G1239 U1240 U1241 G1242 A1243 A1244 G1245 U1246 C1247 A1248 A1249 A1250 G1251 C1252 G1253 U1254 G1255 A1256 G1257 C1258 A1259 U1260
U1261 G1262 G1263 U1264 G1265 G1266 A1267 U1268 C1269 C1270 A1271 A1272 U1273 A1274 C1275 A1276 A1277 G1278 U1279 G1280 A1281 G1282 A1283 A1284 U1285 G1286 C1287 C1288 G1289 G1290 C1291 A1292 U1293 G1294 A1295 G1296 U1297 A1298 A1299 C1300 G1301 C1302 U1303 U1304 G1305 G1306 G1307 A1308 G1309 U1310 G1311 A1312 G1313 A1314 A1315 U1316 C1317 U1318 C1319 C1320



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G2161 U2162 U2163 G2164 A2165 U2166 G2167 C2168 G2169 A2170 A2171 A2172 G2173 G2174 U2175 G2176 C2177 A2178 A2179 U2180 A2181 C2182 U2183 A2184 C2185 C2186 C2187 U2188 U2189 G2190 G2191 U2192 U2193 G2194 U2195 G2196 U2197 G2198 C2199 U2200 G2201 U2202 U2203 C2204 U2205 A2206 A2207 U2208 U2209 G2210 G2211 U2212 A2213 A2214 C2215 U2216 G2217 U2218 U2219 A2220

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A2521 U2522 C2523 U2524 C2525 A2526 U2527 C2528 C2529 U2530 C2531 G2532 A2533 G2534 C2535 U2536 G2537 A2538 A2539 G2540 C2541 A2542 G2543 G2544 U2545 U2546 C2547 G2548 A2549 A2550 G2551 G2552 G2553 U2554 U2555 C2556 G2557 G2558 C2559 U2560 G2561 U2562 U2563 C2564 G2565 C2566 C2567 G2568 A2569 U2570 U2571 A2572 A2573 A2574 G2575 A2576 G2577 A2578 U2579 A2580

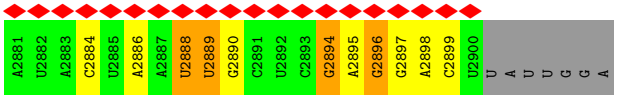
C2581 G2582 U2583 G2584 A2585 G2586 U2587 U2588 G2589 G2590 G2591 U2592 U2593 C2594 A2595 A2596 A2597 C2598 C2599 G2600 U2601 C2602 G2603 U2604 G2605 A2606 G2607 A2608 C2609 A2610 G2611 G2612 U2613 U2614 G2615 G2616 U2617 C2618 C2619 C2620 U2621 A2622 U2623 C2624 U2625 A2626 U2627 C2628 G2629 U2630 G2631 C2632 G2633 C2634 G2635 U2636 A2637 G2638 G2639 A2640

A2641 G2642 A2643 U2644 U2645 G2646 A2647 A2648 G2649 A2650 G2651 U2652 G2653 U2654 U2655 G2656 C2657 U2658 G2659 C2660 U2661 A2662 G2663 U2664 A2665 C2666 G2667 A2668 G2669 A2670 G2671 G2672 A2673 C2674 C2675 G2676 A2677 A2678 G2679 C2680 G2681 A2682 G2683 G2684 A2685 C2686 A2687 C2688 G2689 U2690 C2691 U2692 U2693 A2694 U2695 G2696 C2697 U2698 C2699 C2700

A2701 G2702 U2703 U2704 G2705 U2706 A2707 G2708 C2709 G2710 C2711 C2712 A2713 G2714 C2715 U2716 G2717 C2718 A2719 C2720 C2721 G2722 C2723 U2724 G2725 G2726 G2727 U2728 A2729 G2730 U2731 A2732 A2733 C2734 G2735 U2736 G2737 U2738 C2739 U2740 A2741 U2742 A2743 A2744 G2745 A2746 U2747 A2748 A2749 A2750 C2751 G2752 C2753 U2754 G2755 A2756 A2757 A2758 G2759 C2760

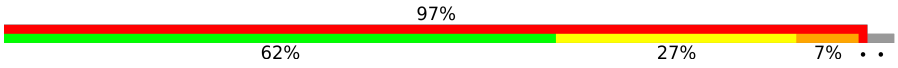
A2761 U2762 C2763 U2764 A2765 A2766 G2767 U2768 G2769 U2770 G2771 A2772 A2773 A2774 C2775 U2776 A2777 U2778 C2779 U2780 C2781 A2782 A2783 A2784 G2785 A2786 U2787 U2788 A2789 A2790 U2791 C2792 G2793 U2794 C2795 C2796 C2797 A2798 U2799 U2800 U2801 C2802 G C A A G2807 A2808 A2809 A2810 G2811 U2812 A2813 A2814 G2815 A2816 G2817 C2818 C2819 G2820

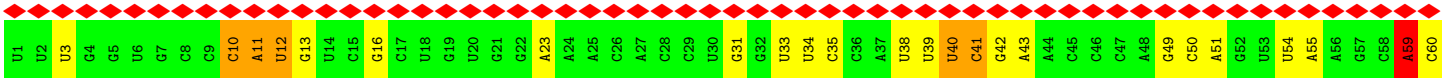
U2821 C2822 A2823 A2824 A2825 G2826 A2827 C2828 G2829 A2830 U2831 G2832 A2833 C2834 G2835 U2836 U2837 G2838 A2839 U2840 A2841 G2842 G2843 U2844 U2845 A2846 C2847 A2848 G2849 G2850 U2851 G2852 U2853 A2854 A2855 G2856 C2857 A2858 U2859 A2860 G2861 U2862 G2863 A2864 U2865 A2866 U2867 G2868 U2869 U2870 G2871 A2872 G2873 C2874 U2875 G2876 A2877 G2878 U2879 A2880

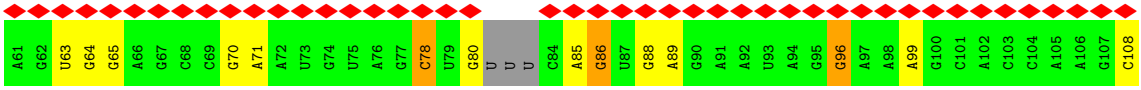


• Molecule 2: 5S ribosomal RNA

Chain 4:

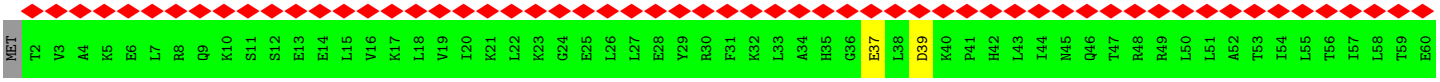


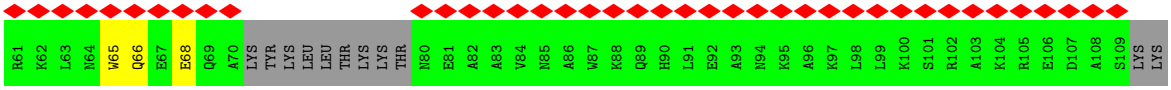




• Molecule 3: 50S ribosomal protein L29

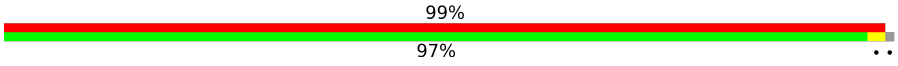
Chain w:

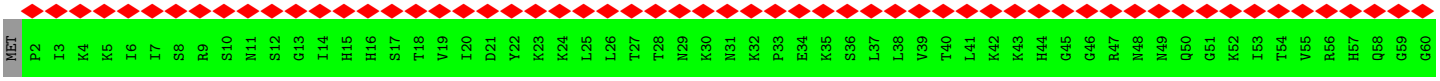


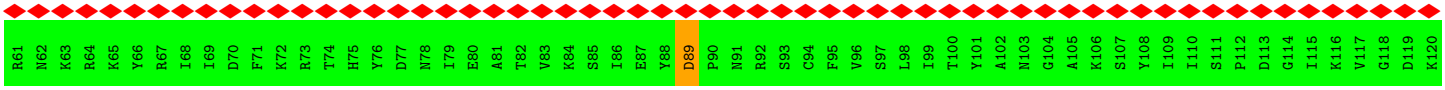


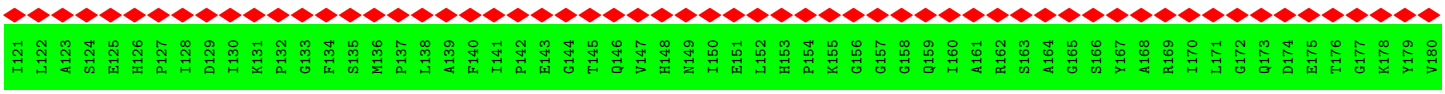
• Molecule 4: 50S ribosomal protein L2

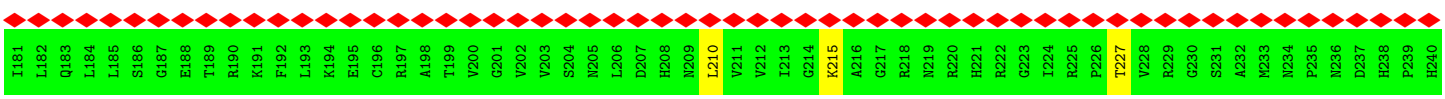
Chain a:

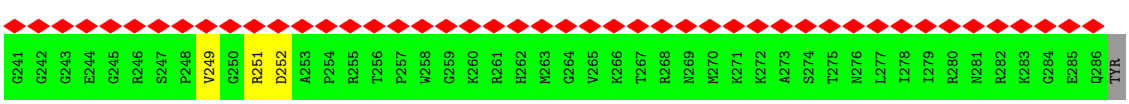






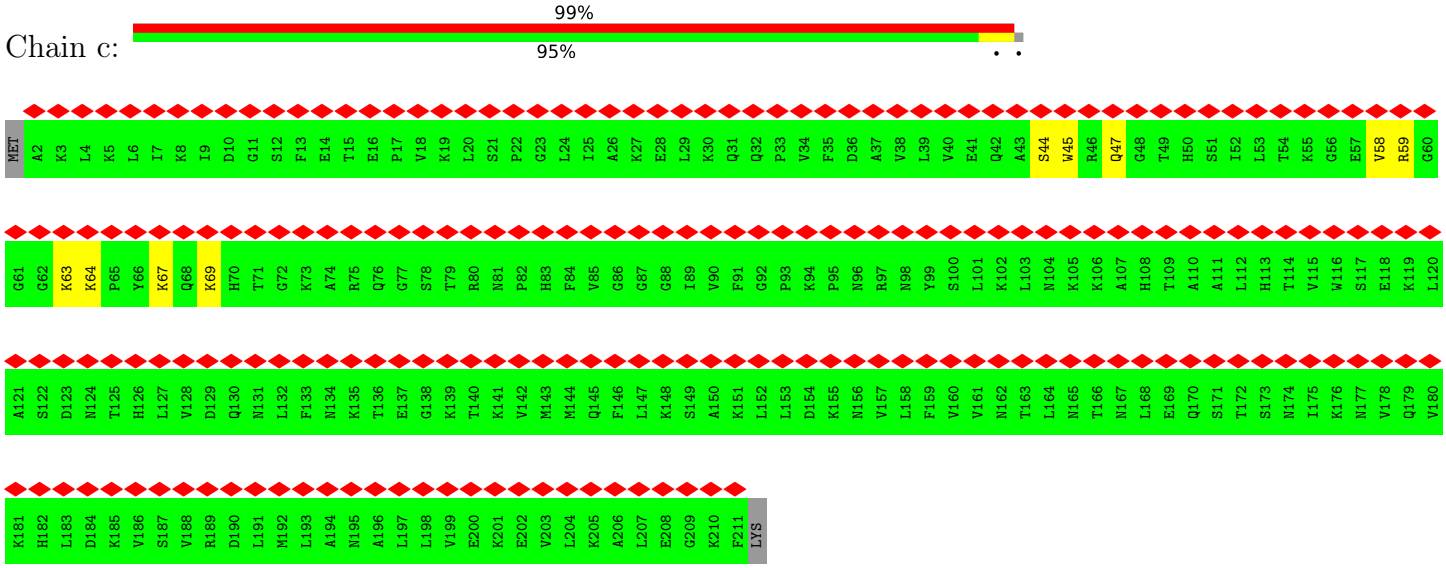






• Molecule 5: 50S ribosomal protein L4

Chain c:

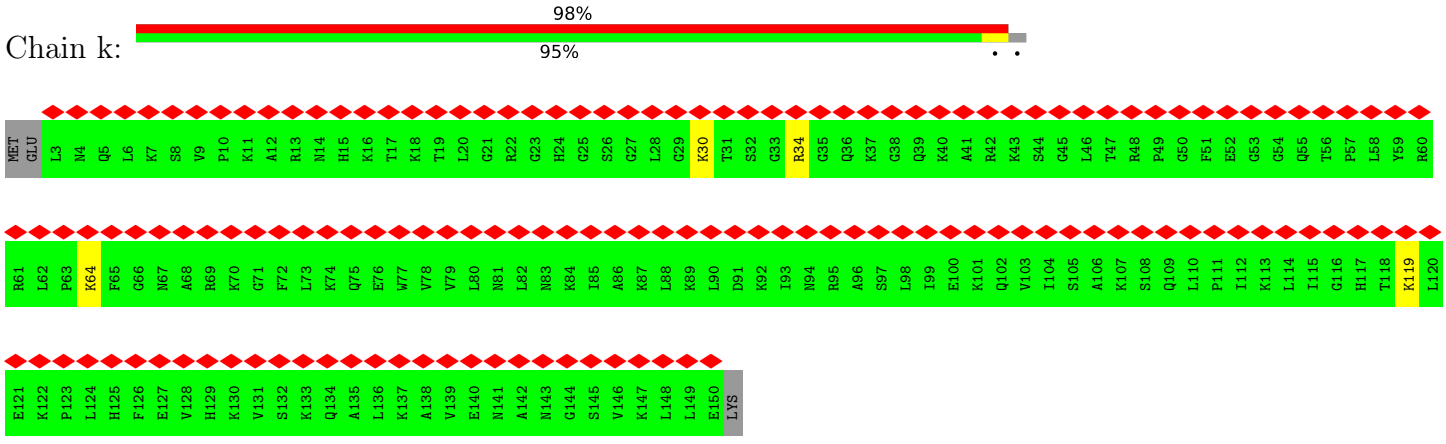


• Molecule 6: 50S ribosomal protein L6

Chain e:

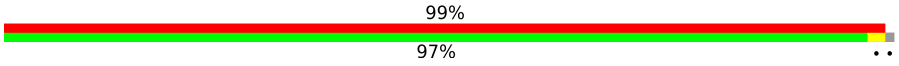
• Molecule 7: 50S ribosomal protein L15

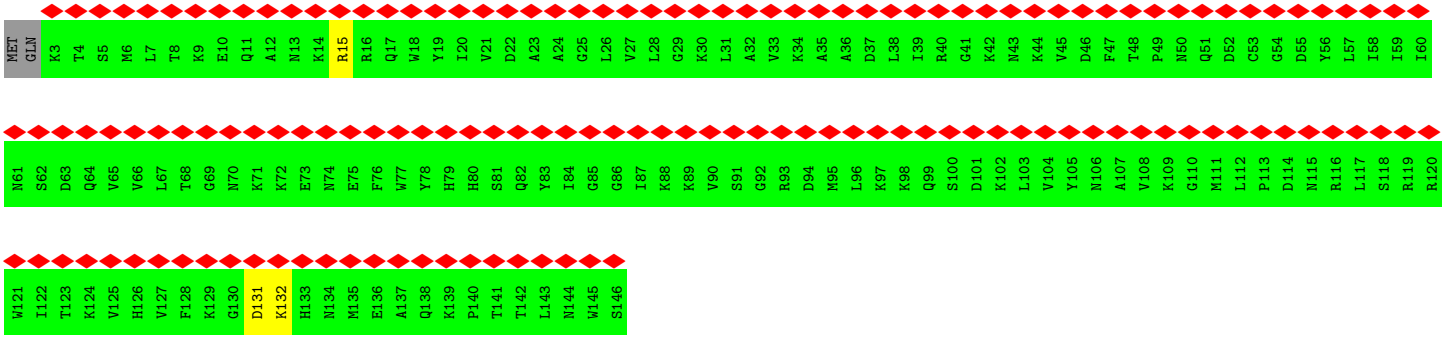
Chain k:



• Molecule 8: 50S ribosomal protein L13

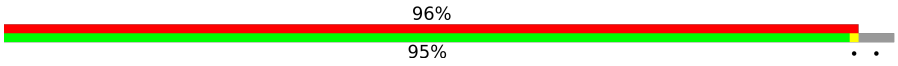
Chain i:

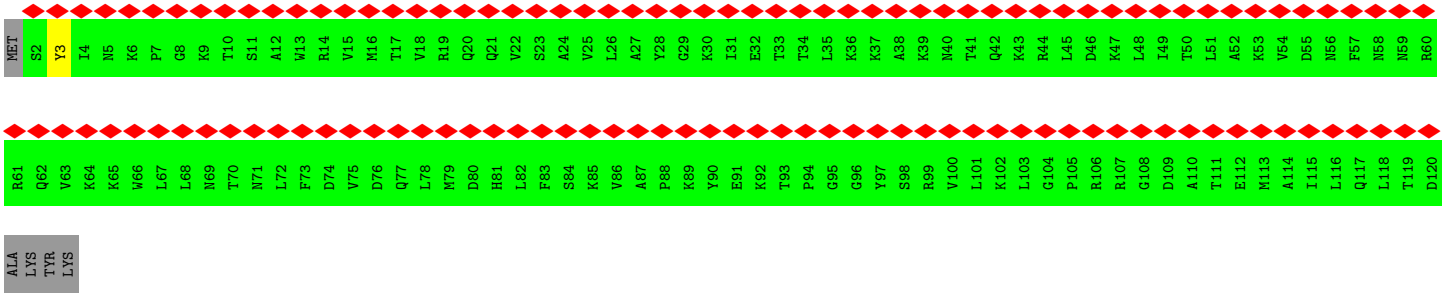




• Molecule 9: 50S ribosomal protein L17

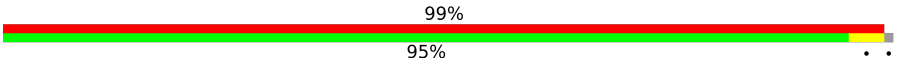
Chain m:

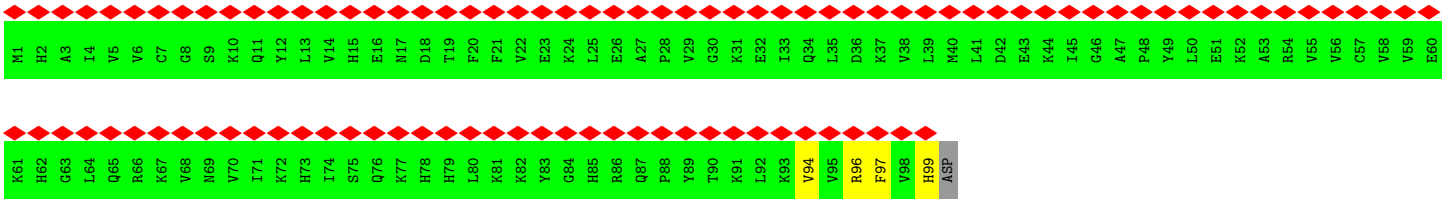




• Molecule 10: 50S ribosomal protein L21

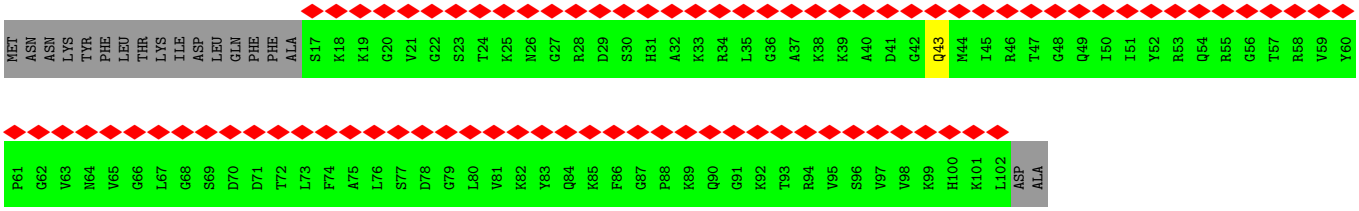
Chain q:





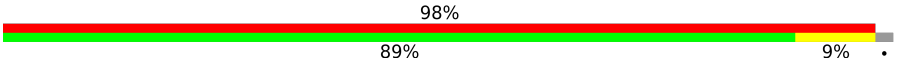
• Molecule 11: 50S ribosomal protein L27

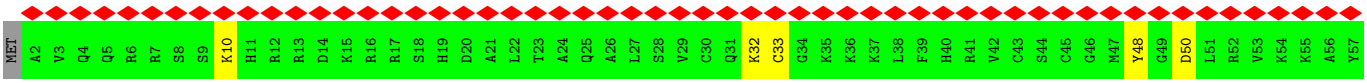
Chain u:



• Molecule 12: 50S ribosomal protein L32

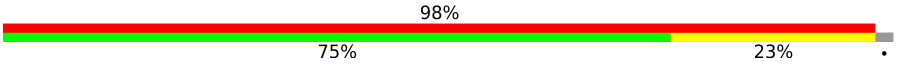
Chain y:

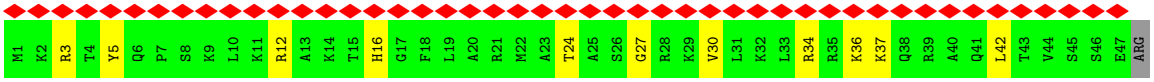




• Molecule 13: 50S ribosomal protein L34

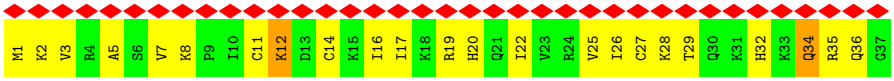
Chain 0:





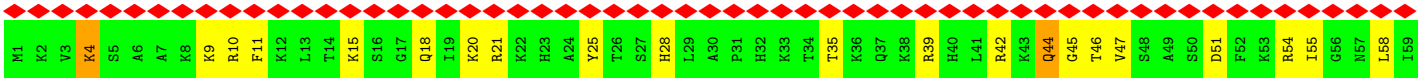
• Molecule 14: 50S ribosomal protein L36

Chain 2:



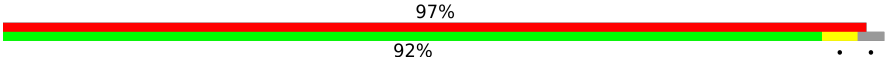
• Molecule 15: 50S ribosomal protein L35

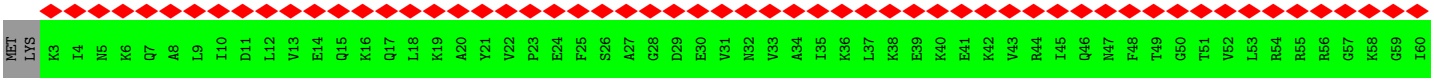
Chain 1:

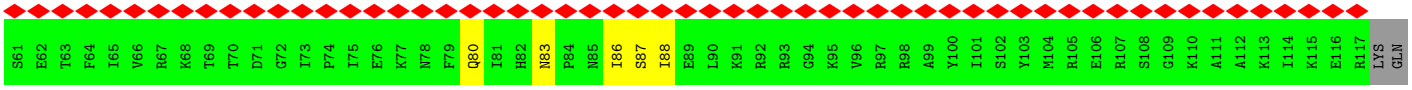


• Molecule 16: 50S ribosomal protein L19

Chain o:

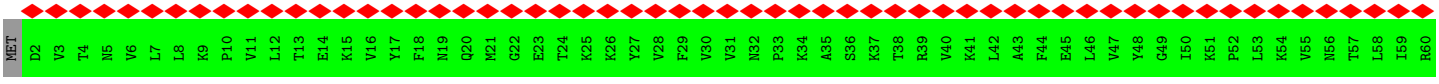


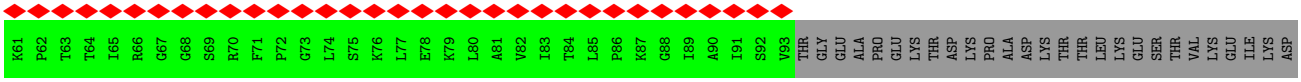


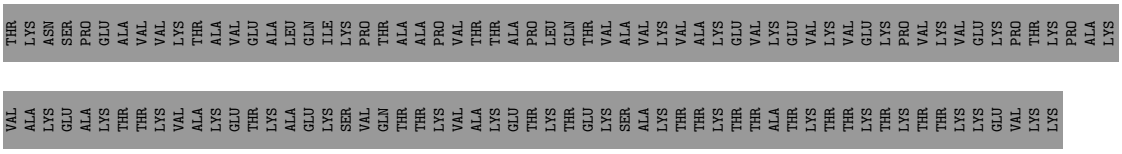


• Molecule 17: 50S ribosomal protein L23

Chain s:

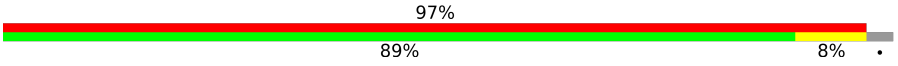






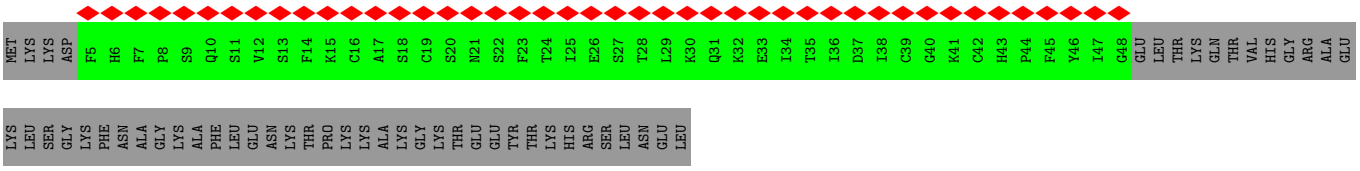
• Molecule 18: 50S ribosomal protein L28

Chain v:



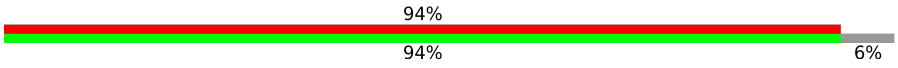
• Molecule 19: 50S ribosomal protein L31

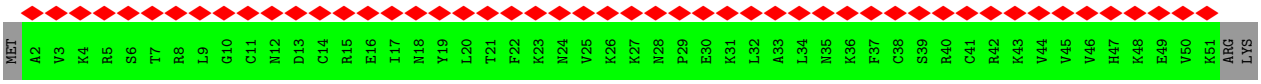
Chain x:



• Molecule 20: 50S ribosomal protein L33 1

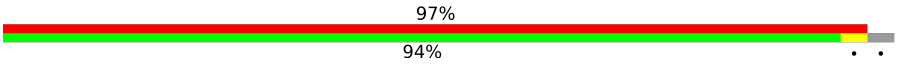
Chain z:

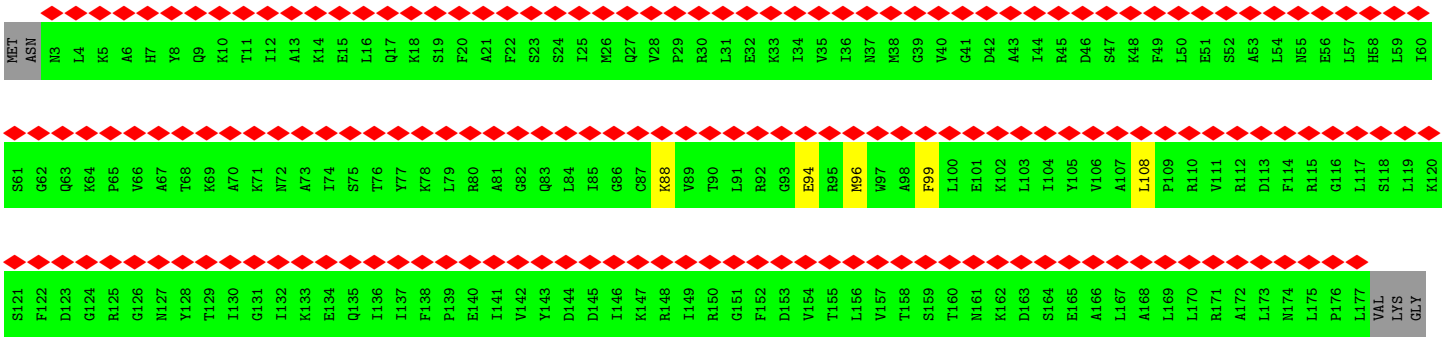




• Molecule 21: 50S ribosomal protein L5

Chain d:





• Molecule 22: 50S ribosomal protein L3

Chain b:

M1 E2 I3 R4 G5 I6 F7 G8 V9 K10 V11 G12 M13 S14 Q15 V16 F17 T18 T19 N20 N21 E22 R23 L24 P25 I26 T27 V28 I29 Y30 C31 E32 P33 N34 Q35 V36 A37 G38 V39 K40 T41 E42 A43 K44 D45 K46 Y47 S48 A49 T50 L51 L52 S53 F54 D55 T56 V57 E58 N59 K60

K61 L62 N63 K64 P65 Q66 Q67 G68 F69 F70 E71 K72 N73 N74 L75 K76 P77 T78 K79 H80 L81 Q82 E83 I84 R85 N86 M87 T88 G89 F90 E91 M92 G93 Q94 Q95 I96 T97 P98 Q99 N100 L101 F102 Q103 V104 G105 E106 Y107 V108 D109 V110 S111 A112 I113 S114 K115 G116 R117 G118 F119 T120

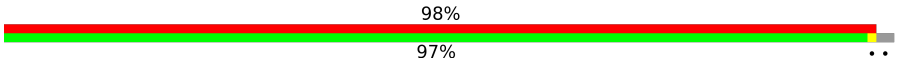
G121 A122 I123 K124 R125 W126 N127 F128 K129 I130 G131 P132 L133 G134 H135 G136 A137 G138 Y139 P140 H141 R142 F143 Q144 G145 S146 V147 Q148 A149 G150 R151 G152 G153 A154 S155 A156 Q157 R158 V159 F160 K161 G162 K163 K164 M165 S166 G167 H168 Y169 G170 H171 E172 K173 V174 T175 V176 Q177 N178 L179 R180

I181 V182 G183 F184 D185 E186 A187 N188 M189 L190 V191 L192 V193 S194 G195 A196 I197 A198 G199 P200 E201 G202 G203 V204 V205 L206 I207 R208 T209 A210 K211 K212 K213 P214 G215 V216 V217 K218 P219 I220 E221 L222 A223 V224 Q225 T226 E227 K228 A229 PRO GLU ALA LYS PRO ALA LYS LEU SER LYS LYS

LYS GLN ALA LYS GLU LEU ALA LYS ALA GLN ALA ALA ASN GLN GLN THR VAL GLU ALA LYS VAL ASP THR PRO VAL VAL GLU PRO LYS PRO THR GLU VAL LYS LYS ALA ALA PRO VAL VAL GLU LYS LYS GLY GLU ASP LYS

• Molecule 23: 50S ribosomal protein L16

Chain l:



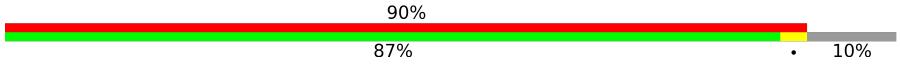
M1 L2 Q3 P4 K5 R6 T7 K8 Y9 R10 K11 P12 H13 N14 V15 S16 Y17 E18 G19 K20 A21 K22 G23 N24 S25 Y26 V27 A28 F29 G30 E31 Y32 G33 L34 V35 A36 T37 K38 G39 N40 W41 I42 D43 A44 R45 A46 I47 E48 S49 A50 R51 I52 A53 I54 S55 K56 C57 L58 G59 K60

T61 G62 K63 M64 W65 I66 R67 I68 F69 P70 H71 M72 S73 K74 T75 K76 K77 P78 L79 E80 V81 R82 M83 G84 S85 G86 K87 G88 N89 P90 E91 F92 W93 V94 A95 V96 V97 K98 Q99 G100 T101 V102 M103 F104 E105 V106 A107 N108 I109 P110 E111 S112 Q113 M114 I115 K116 A117 L118 T119 R120

A121 G122 H123 K124 L125 P126 V127 T128 W129 K130 I131 L132 K133 R134 E135 E136 VAL SER ALA

• Molecule 24: 50S ribosomal protein L20

Chain p:



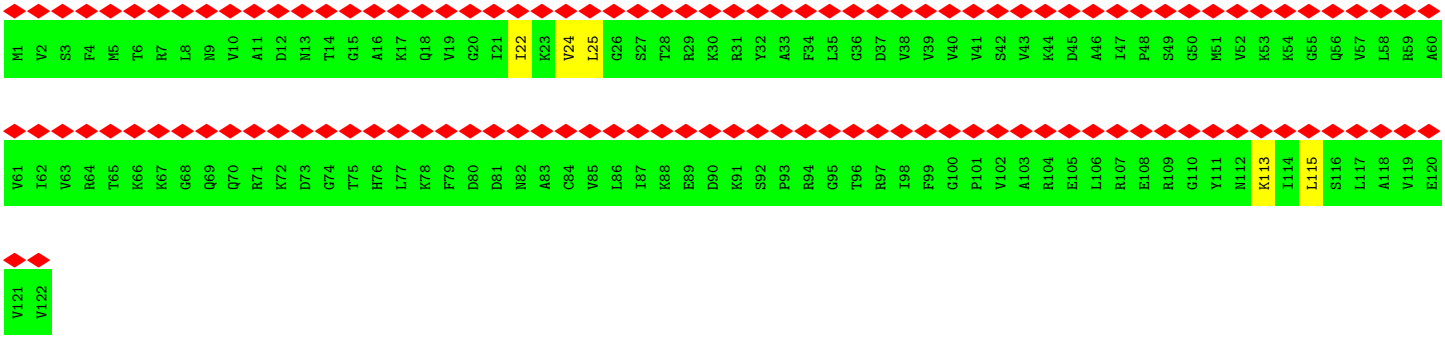
M1 R2 I3 K4 G5 G6 K7 Q8 T9 R10 V11 R12 R13 K14 K15 W16 L17 K18 Q19 A20 S21 G22 S23 F24 G25 T26 R27 H28 A29 S30 Y31 K32 V33 A34 K35 Q36 T37 V38 I39 Q40 A41 A42 K43 Y44 A45 Y46 R47 D48 R49 R50 N51 K52 K53 R54 D55 F56 R57 S58 L59 W60

I61 L62 R63 L64 N65 A66 A67 L68 R69 E70 Q71 G72 M73 T74 Y75 S76 V77 F78 I79 N80 L81 L82 K83 K84 H85 N86 I87 E88 I89 N90 R91 K92 V93 L94 S95 E96 L97 A98 I99 K100 E101 P102 S103 K104 F105 N106 L107 I108 V109 Q110 K111 V112 K113 S114 GLU GLN PRO LYS ALA ALA

LYS PRO ALA ALA LEU GLY ASN

• Molecule 25: 50S ribosomal protein L14

Chain j:



• Molecule 26: 50S ribosomal protein L18

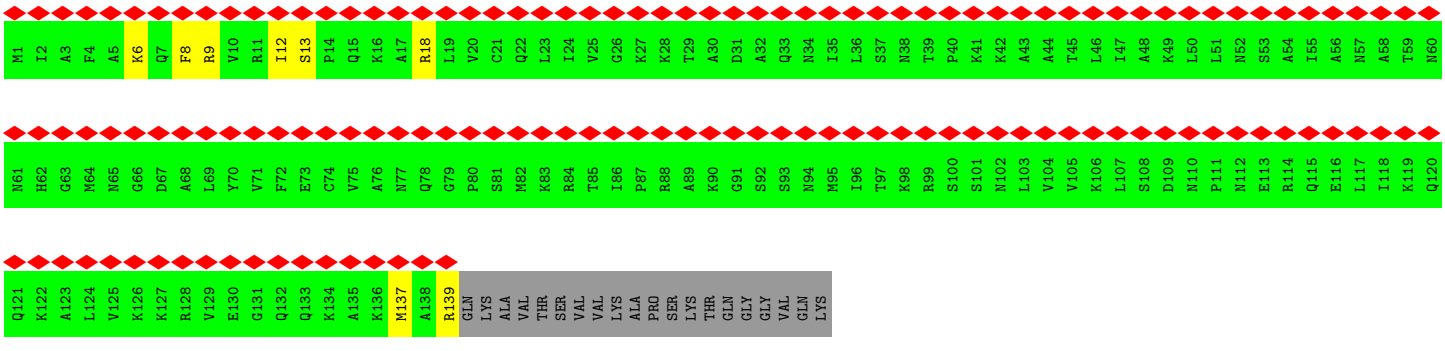
Chain n: 97% 97%

• Molecule 27: 50S ribosomal protein L24

Chain t: 86% 86% 14%

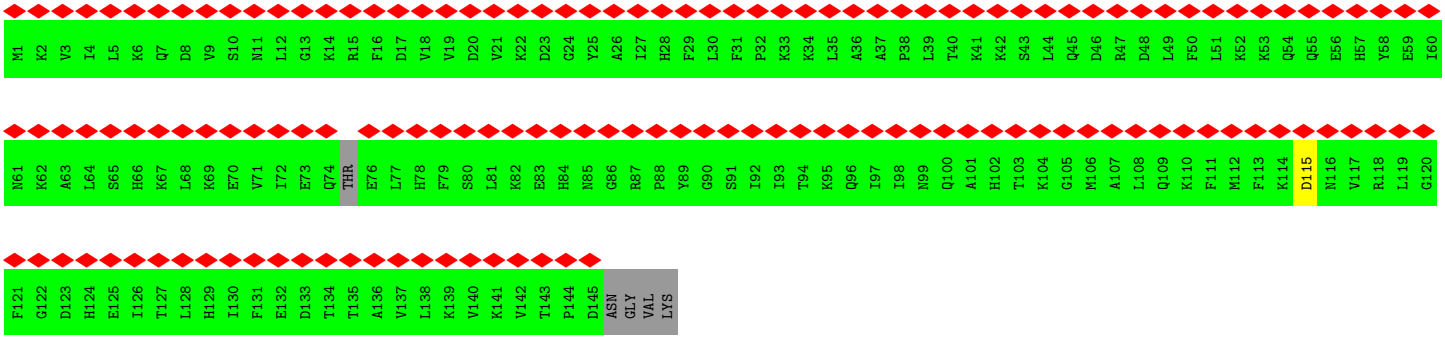
• Molecule 28: 50S ribosomal protein L22

Chain r: 87% 82% 5% 13%



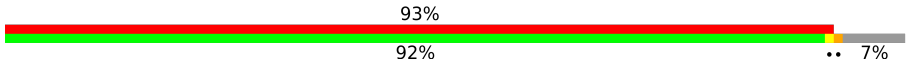
• Molecule 29: 50S ribosomal protein L9

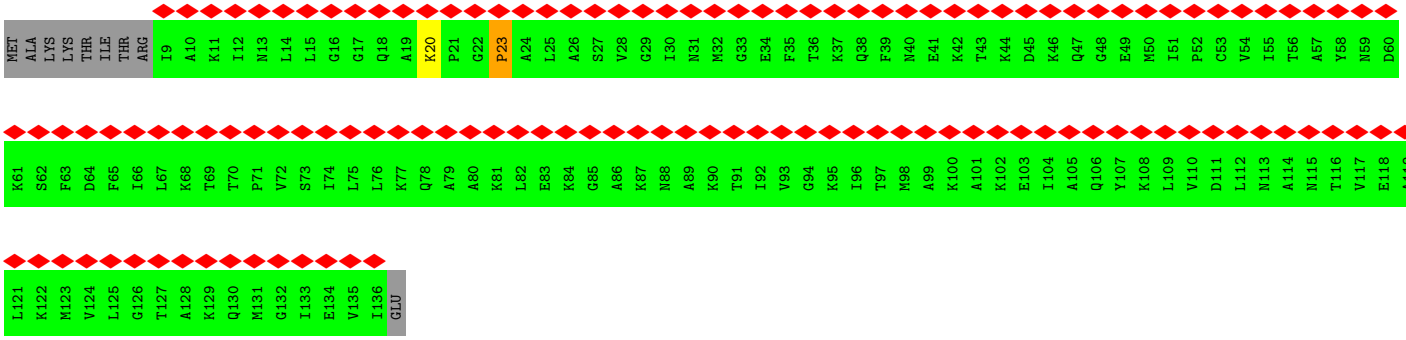
Chain f: 97% 96%



• Molecule 30: 50S ribosomal protein L11

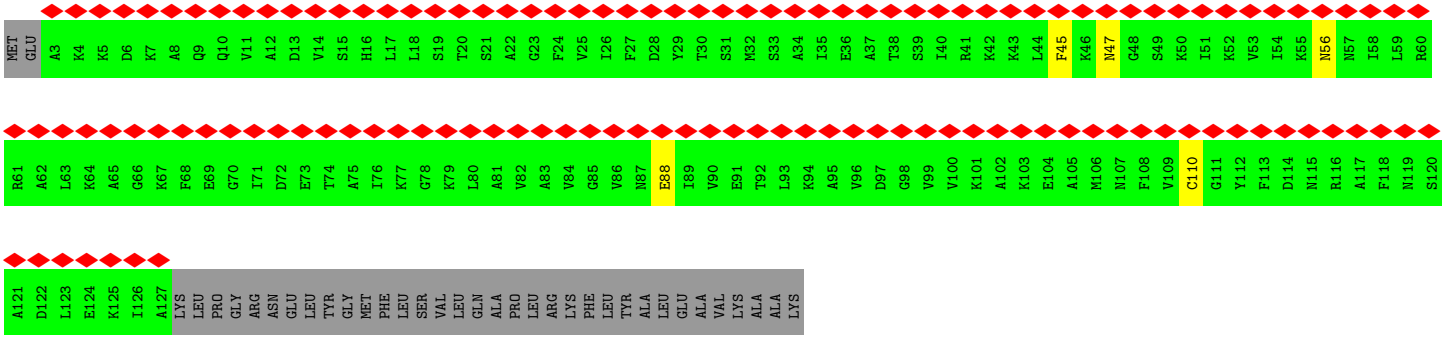
Chain h:





• Molecule 31: 50S ribosomal protein L10

Chain g:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of subtomograms used	17890	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	3.2	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	3750	Depositor
Magnification	81000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.022	Depositor
Minimum map value	-0.010	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.0023	Depositor
Map size (Å)	323.076, 323.076, 323.076	wwPDB
Map dimensions	380, 380, 380	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.8502, 0.8502, 0.8502	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	3	0.89	68/69100 (0.1%)	0.93	141/107749 (0.1%)
2	4	0.60	0/2511	0.82	1/3910 (0.0%)
3	w	0.41	0/806	0.61	0/1080
4	a	0.46	1/2241 (0.0%)	0.59	0/3013
5	c	0.41	0/1639	0.65	1/2209 (0.0%)
6	e	0.36	0/1373	0.55	0/1854
7	k	0.40	0/1155	0.59	0/1541
8	i	0.43	0/1180	0.54	0/1585
9	m	0.41	0/972	0.55	0/1308
10	q	0.42	0/826	0.59	0/1109
11	u	0.45	0/649	0.55	0/867
12	y	0.48	0/440	0.79	1/582 (0.2%)
13	0	0.41	0/380	0.50	0/501
14	2	0.57	1/305 (0.3%)	0.77	2/401 (0.5%)
15	1	0.44	0/484	0.56	0/637
16	o	0.42	0/905	0.63	1/1211 (0.1%)
17	s	0.39	0/726	0.51	0/981
18	v	0.39	0/510	0.59	0/684
19	x	0.25	0/217	0.48	0/301
20	z	0.39	0/412	0.58	0/547
21	d	0.32	0/1264	0.57	1/1719 (0.1%)
22	b	0.42	0/1791	0.57	0/2408
23	l	0.45	0/1082	0.54	0/1456
24	p	0.49	0/955	0.55	0/1271
25	j	0.49	0/953	0.60	0/1275
26	n	0.35	0/861	0.51	0/1156
27	t	0.35	0/712	0.52	0/954
28	r	0.50	1/1077 (0.1%)	0.57	0/1441
29	f	0.44	0/711	0.78	0/988
30	h	0.62	0/629	1.00	1/873 (0.1%)
31	g	0.76	0/616	1.03	1/856 (0.1%)
All	All	0.79	71/97482 (0.1%)	0.86	150/146467 (0.1%)

The worst 5 of 71 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	a	89	ASP	C-N	8.41	1.50	1.34
1	3	2735	G	O3'-P	-7.74	1.51	1.61
1	3	611	A	P-OP2	7.73	1.62	1.49
1	3	1281	A	C5-C6	-7.67	1.34	1.41
1	3	2057	C	O3'-P	-7.63	1.51	1.61

The worst 5 of 150 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	3	2506	C	O5'-P-OP1	-12.90	94.09	105.70
1	3	1399	G	O5'-P-OP1	-12.79	94.19	105.70
1	3	205	C	O5'-P-OP1	-12.26	94.67	105.70
1	3	372	G	O5'-P-OP2	-11.34	95.49	105.70
1	3	2060	G	O5'-P-OP1	11.10	124.02	110.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	3	61690	0	30961	237	0
2	4	2245	0	1135	7	0
3	w	798	0	838	0	0
4	a	2199	0	2248	0	0
5	c	1613	0	1676	0	0
6	e	1349	0	1373	0	0
7	k	1138	0	1223	0	0
8	i	1158	0	1176	0	0
9	m	957	0	1008	0	0
10	q	809	0	852	0	0
11	u	641	0	650	0	0
12	y	436	0	441	0	0
13	0	377	0	422	14	0
14	2	303	0	348	22	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	1	477	0	530	30	0
16	o	895	0	932	0	0
17	s	714	0	785	0	0
18	v	504	0	542	0	0
19	x	218	0	90	0	0
20	z	408	0	436	0	0
21	d	1244	0	1160	0	0
22	b	1758	0	1797	0	0
23	l	1057	0	1088	0	0
24	p	941	0	1017	0	0
25	j	944	0	1019	0	0
26	n	853	0	873	0	0
27	t	706	0	726	0	0
28	r	1068	0	1150	0	0
29	f	713	0	313	0	0
30	h	630	0	309	0	0
31	g	617	0	308	0	0
32	3	1	0	0	0	0
33	3	24	0	0	0	0
33	y	1	0	0	0	0
34	3	20	0	10	4	0
35	2	1	0	0	0	0
35	y	1	0	0	0	0
35	z	1	0	0	0	0
All	All	89509	0	57436	272	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

The worst 5 of 272 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:2:11:CYS:SG	14:2:32:HIS:HE1	1.46	1.35
14:2:14:CYS:SG	14:2:27:CYS:HB2	1.99	1.03
1:3:254:G:OP2	15:1:10:ARG:NH2	2.01	0.93
1:3:253:C:O2	15:1:9:LYS:NZ	2.09	0.86
14:2:16:ILE:HG12	14:2:25:VAL:HG12	1.62	0.78

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	w	95/111 (86%)	89 (94%)	6 (6%)	0	100	100
4	a	283/287 (99%)	253 (89%)	30 (11%)	0	100	100
5	c	208/212 (98%)	186 (89%)	22 (11%)	0	100	100
6	e	174/184 (95%)	165 (95%)	9 (5%)	0	100	100
7	k	146/151 (97%)	126 (86%)	20 (14%)	0	100	100
8	i	142/146 (97%)	134 (94%)	8 (6%)	0	100	100
9	m	117/124 (94%)	111 (95%)	6 (5%)	0	100	100
10	q	97/100 (97%)	85 (88%)	12 (12%)	0	100	100
11	u	84/104 (81%)	76 (90%)	8 (10%)	0	100	100
12	y	54/57 (95%)	48 (89%)	6 (11%)	0	100	100
13	0	45/48 (94%)	43 (96%)	2 (4%)	0	100	100
14	2	35/37 (95%)	34 (97%)	1 (3%)	0	100	100
15	1	57/59 (97%)	53 (93%)	4 (7%)	0	100	100
16	o	113/119 (95%)	95 (84%)	18 (16%)	0	100	100
17	s	90/237 (38%)	82 (91%)	8 (9%)	0	100	100
18	v	61/65 (94%)	53 (87%)	8 (13%)	0	100	100
19	x	42/97 (43%)	31 (74%)	11 (26%)	0	100	100
20	z	48/53 (91%)	45 (94%)	3 (6%)	0	100	100
21	d	173/180 (96%)	154 (89%)	19 (11%)	0	100	100
22	b	227/287 (79%)	199 (88%)	28 (12%)	0	100	100
23	l	134/139 (96%)	118 (88%)	16 (12%)	0	100	100
24	p	112/127 (88%)	104 (93%)	8 (7%)	0	100	100
25	j	120/122 (98%)	105 (88%)	15 (12%)	0	100	100
26	n	108/116 (93%)	91 (84%)	17 (16%)	0	100	100
27	t	92/111 (83%)	84 (91%)	8 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
28	r	137/159 (86%)	123 (90%)	14 (10%)	0	100 100
29	f	140/149 (94%)	121 (86%)	18 (13%)	1 (1%)	22 55
30	h	126/137 (92%)	116 (92%)	8 (6%)	2 (2%)	9 34
31	g	123/161 (76%)	115 (94%)	4 (3%)	4 (3%)	4 22
All	All	3383/3879 (87%)	3039 (90%)	337 (10%)	7 (0%)	50 78

5 of 7 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
29	f	115	ASP
30	h	20	LYS
31	g	45	PHE
31	g	110	CYS
30	h	23	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
3	w	83/98 (85%)	78 (94%)	5 (6%)	19 49
4	a	233/243 (96%)	226 (97%)	7 (3%)	41 68
5	c	174/184 (95%)	166 (95%)	8 (5%)	27 57
6	e	138/159 (87%)	135 (98%)	3 (2%)	52 75
7	k	118/126 (94%)	114 (97%)	4 (3%)	37 65
8	i	124/128 (97%)	121 (98%)	3 (2%)	49 74
9	m	104/109 (95%)	103 (99%)	1 (1%)	76 88
10	q	88/91 (97%)	84 (96%)	4 (4%)	27 58
11	u	64/85 (75%)	63 (98%)	1 (2%)	62 81
12	y	45/49 (92%)	41 (91%)	4 (9%)	9 33
13	0	39/41 (95%)	39 (100%)	0	100 100
14	2	35/35 (100%)	32 (91%)	3 (9%)	10 35

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
15	1	51/51 (100%)	47 (92%)	4 (8%)	12 39
16	o	91/105 (87%)	87 (96%)	4 (4%)	28 58
17	s	80/208 (38%)	80 (100%)	0	100 100
18	v	55/60 (92%)	50 (91%)	5 (9%)	9 32
20	z	47/50 (94%)	47 (100%)	0	100 100
21	d	111/154 (72%)	107 (96%)	4 (4%)	35 63
22	b	185/233 (79%)	181 (98%)	4 (2%)	52 75
23	l	107/115 (93%)	106 (99%)	1 (1%)	78 90
24	p	99/108 (92%)	95 (96%)	4 (4%)	31 60
25	j	103/103 (100%)	98 (95%)	5 (5%)	25 55
26	n	85/99 (86%)	85 (100%)	0	100 100
27	t	69/96 (72%)	68 (99%)	1 (1%)	67 83
28	r	116/132 (88%)	109 (94%)	7 (6%)	19 49
All	All	2444/2862 (85%)	2362 (97%)	82 (3%)	40 65

5 of 82 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
21	d	94	GLU
25	j	25	LEU
21	d	99	PHE
24	p	50	ARG
28	r	6	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
26	n	38	HIS
15	1	28	HIS
6	e	24	HIS
6	e	21	GLN
7	k	134	GLN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	3	2876/2907 (98%)	667 (23%)	58 (2%)
2	4	103/108 (95%)	32 (31%)	6 (5%)
All	All	2979/3015 (98%)	699 (23%)	64 (2%)

5 of 699 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	3	12	A
1	3	14	U
1	3	28	G
1	3	37	G
1	3	47	G

5 of 64 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	3	2897	G
2	4	34	U
1	3	1209	U
1	3	1048	A
2	4	38	U

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 30 ligands modelled in this entry, 29 are monoatomic - leaving 1 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
34	CLM	3	3026	-	19,20,20	2.42	7 (36%)	23,27,27	1.34	2 (8%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
34	CLM	3	3026	-	-	3/20/22/22	0/1/1/1

The worst 5 of 7 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
34	3	3026	CLM	O9B-N9	-5.97	1.12	1.22
34	3	3026	CLM	C2-N2	4.12	1.43	1.34
34	3	3026	CLM	C1-C2	3.80	1.58	1.53
34	3	3026	CLM	O2-C2	-3.42	1.16	1.23
34	3	3026	CLM	O5-C5	-3.12	1.36	1.42

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
34	3	3026	CLM	C4-C3-N2	-3.06	104.40	109.27
34	3	3026	CLM	C3-N2-C2	-2.79	118.14	123.07

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
34	3	3026	CLM	C3-C5-C6-C7
34	3	3026	CLM	C3-C5-C6-C11
34	3	3026	CLM	N2-C3-C4-O4

There are no ring outliers.

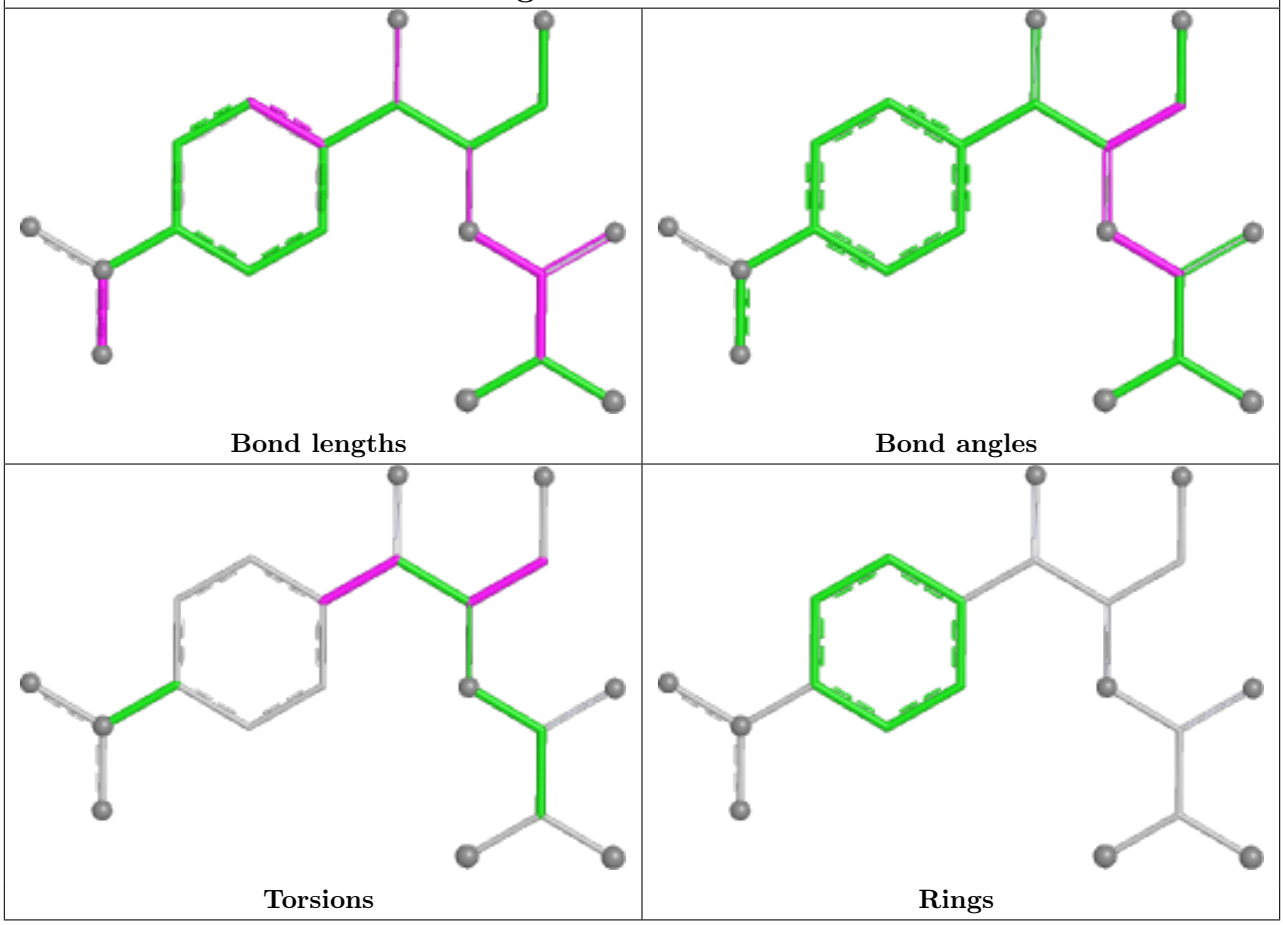
1 monomer is involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
34	3	3026	CLM	4	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths,

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

Ligand CLM 3 3026



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

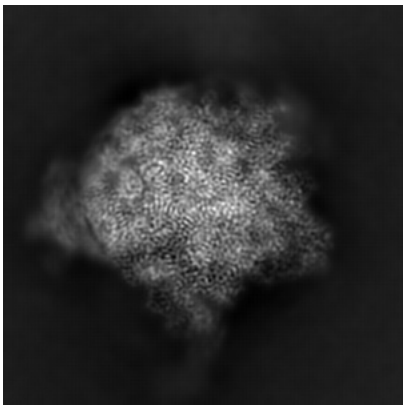
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-11999. These allow visual inspection of the internal detail of the map and identification of artifacts.

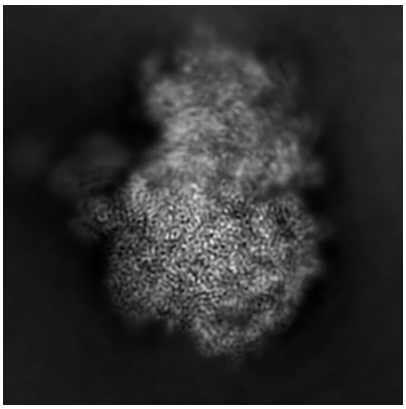
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

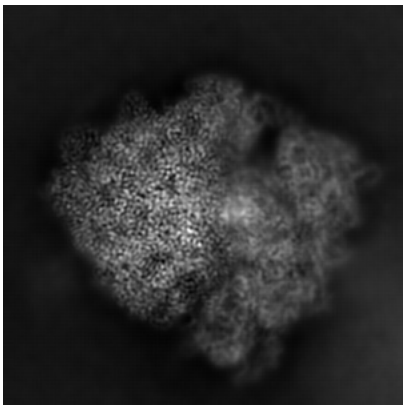
6.1.1 Primary map



X

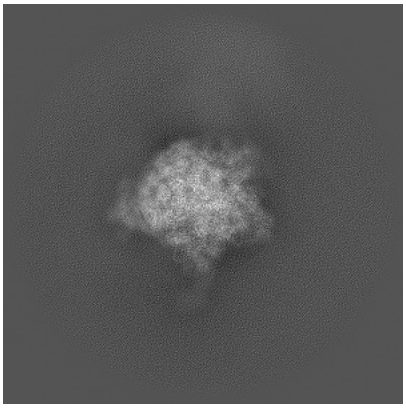


Y

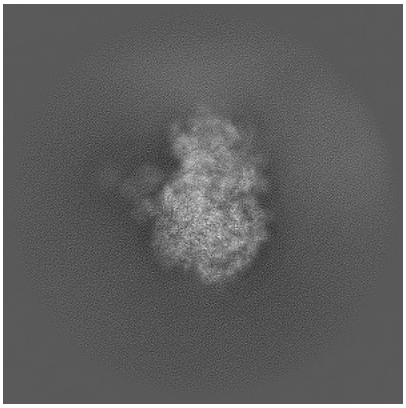


Z

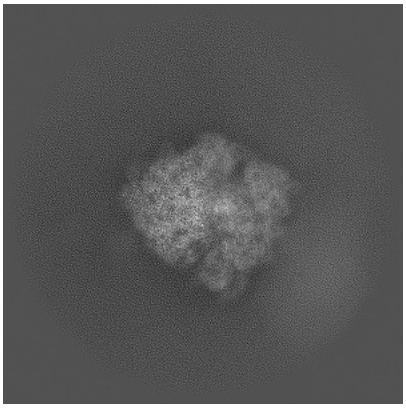
6.1.2 Raw map



X



Y

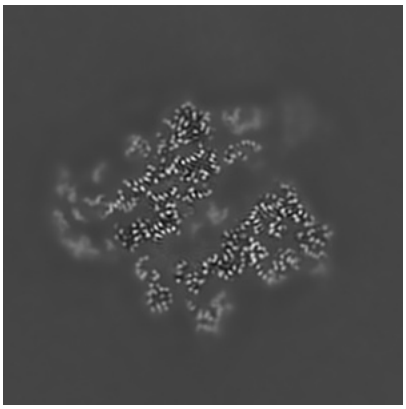


Z

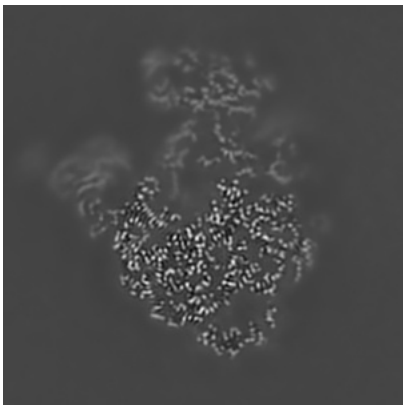
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

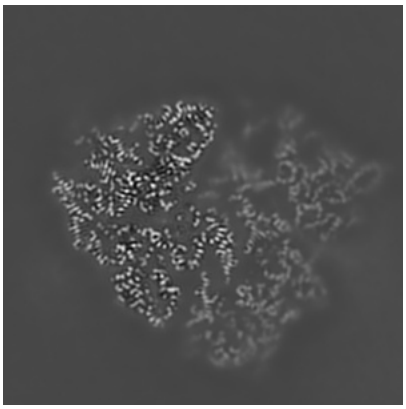
6.2.1 Primary map



X Index: 190

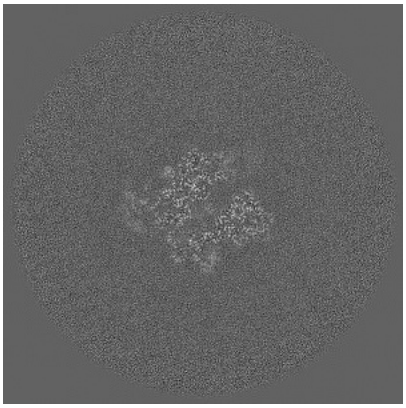


Y Index: 190

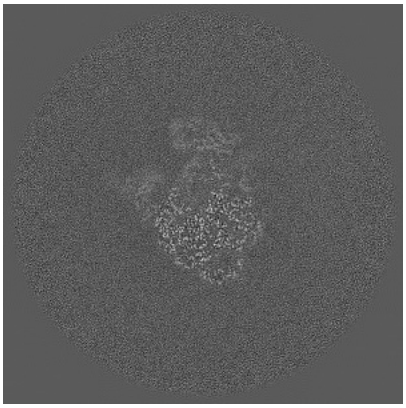


Z Index: 190

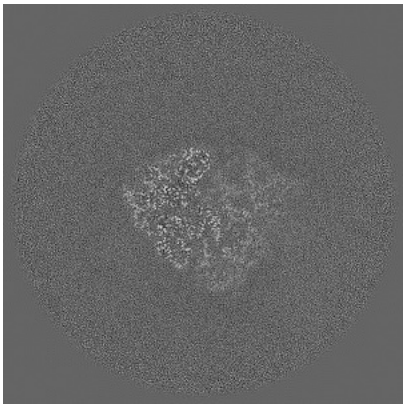
6.2.2 Raw map



X Index: 176



Y Index: 176

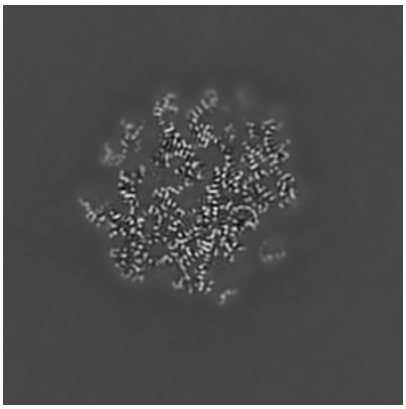


Z Index: 176

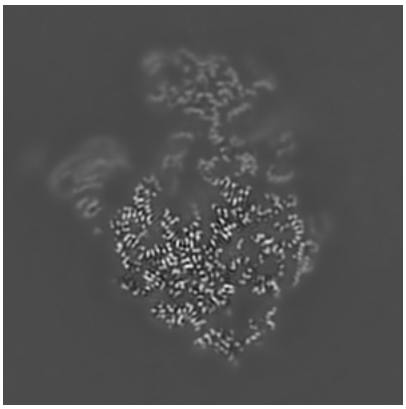
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

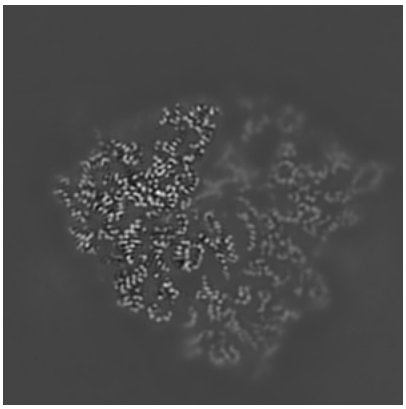
6.3.1 Primary map



X Index: 146

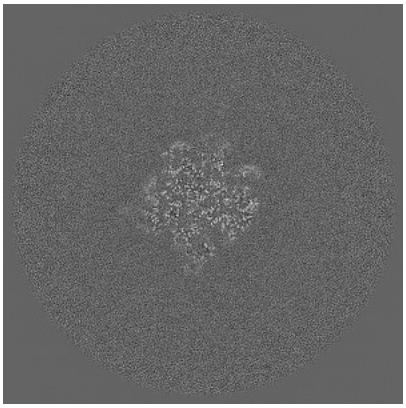


Y Index: 194

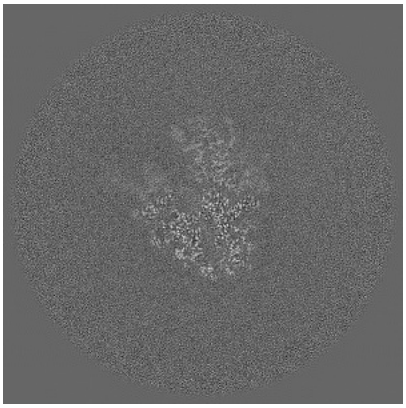


Z Index: 186

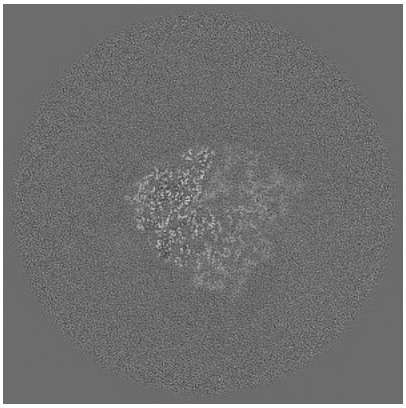
6.3.2 Raw map



X Index: 165



Y Index: 169



Z Index: 173

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

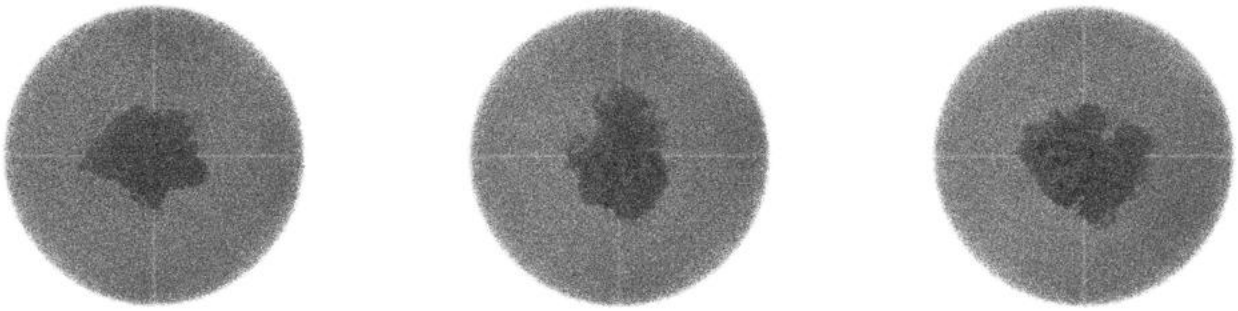
6.4 Orthogonal surface views (i)

6.4.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.0023. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 Raw map



X Y Z

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

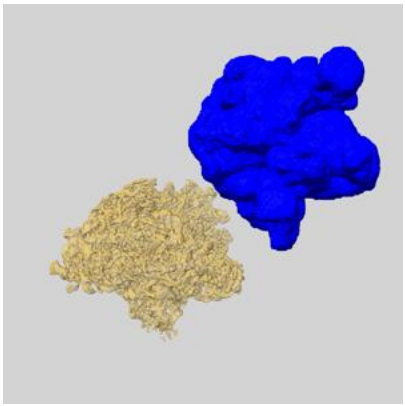
6.5 Mask visualisation (i)

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

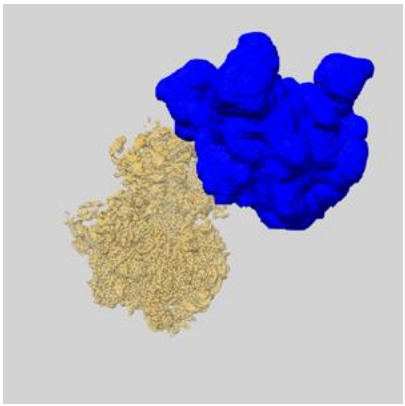
A mask typically either:

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

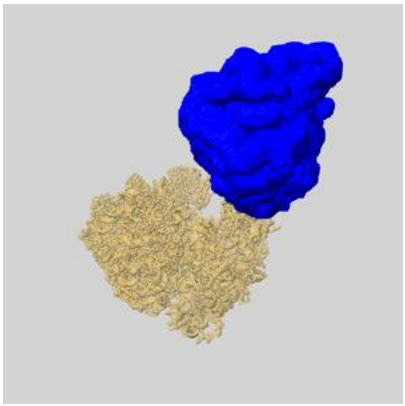
6.5.1 emd_11999_msk_1.map (i)



X



Y

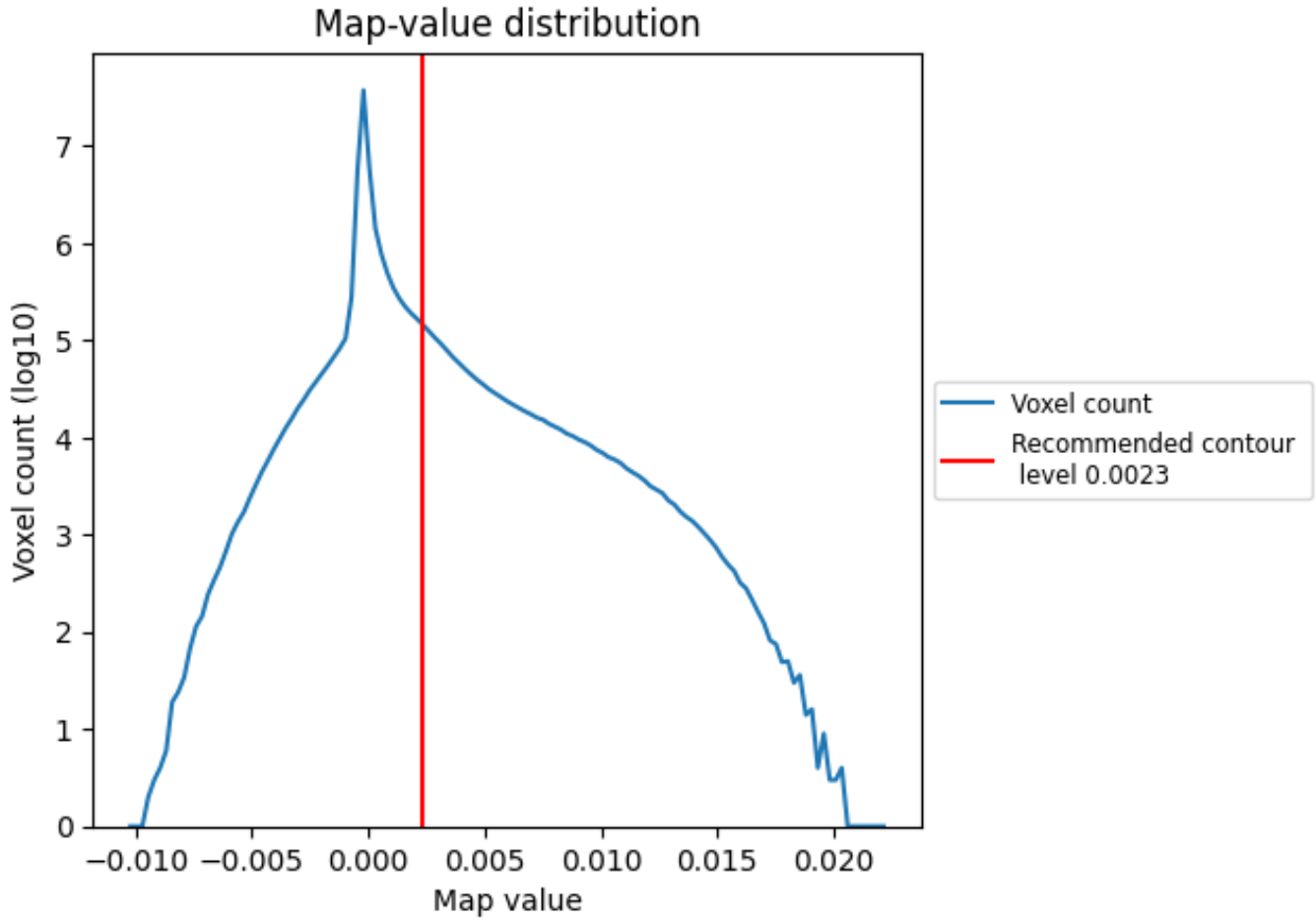


Z

7 Map analysis

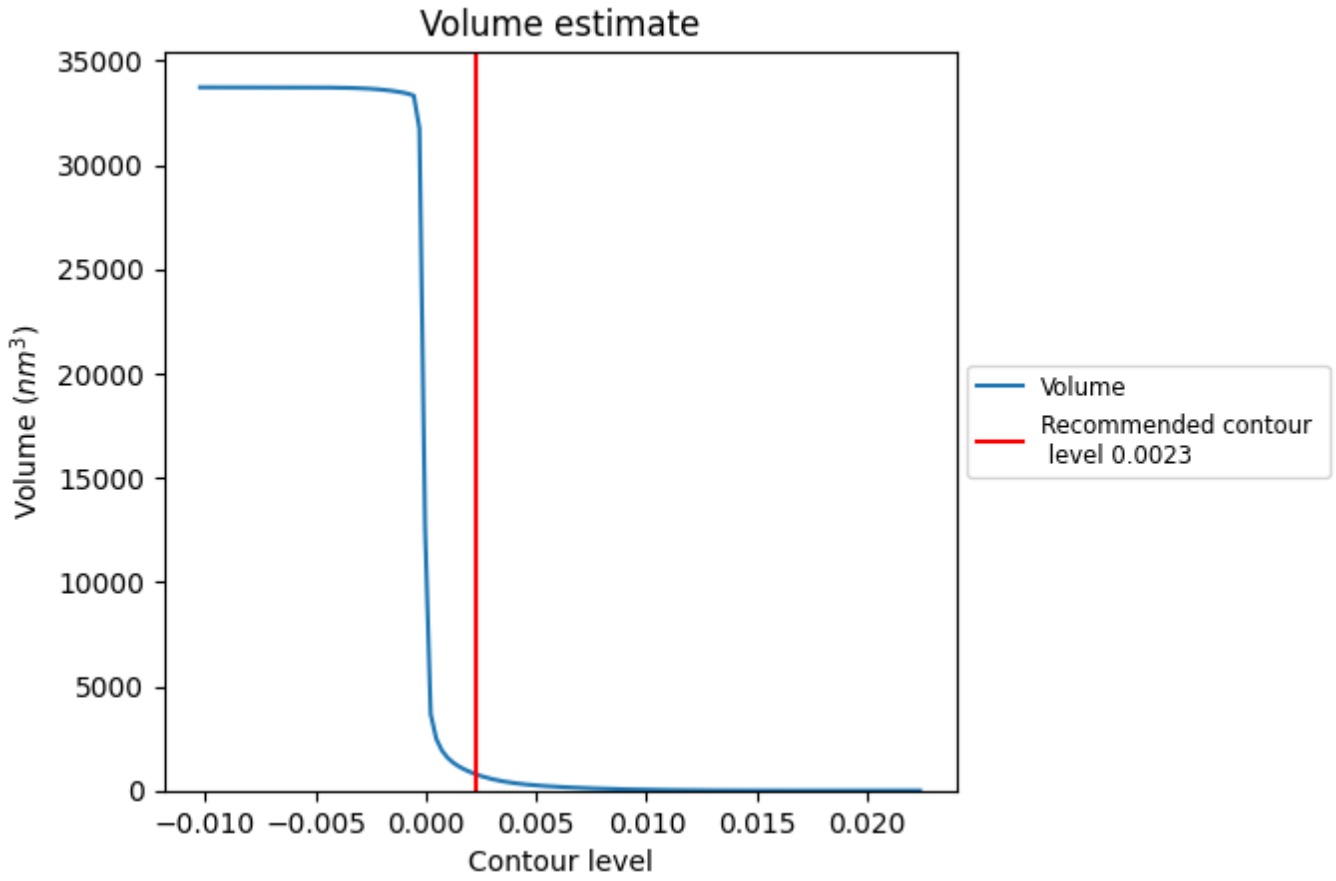
This section contains the results of statistical analysis of the map.

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.

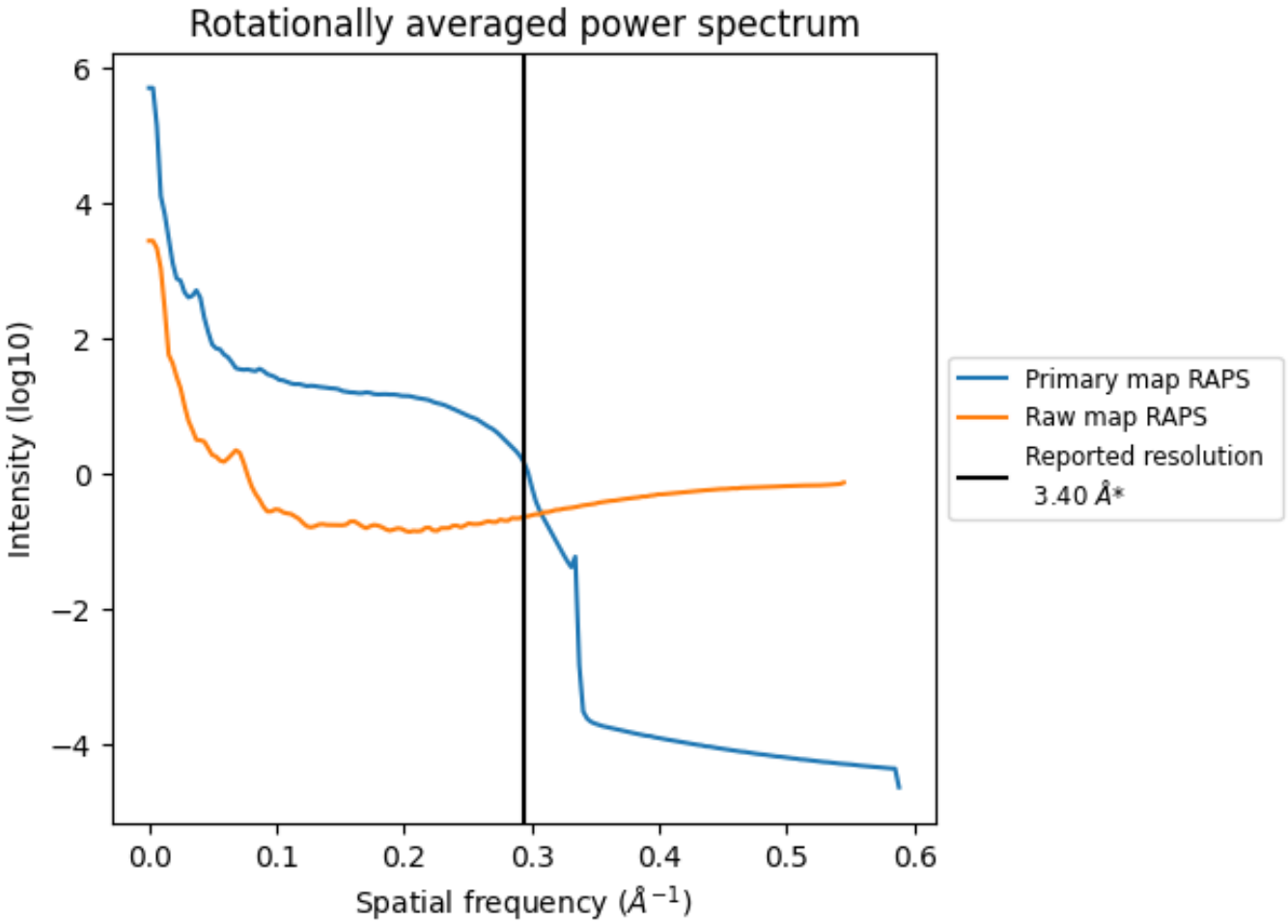
7.2 Volume estimate (i)



The volume at the recommended contour level is 773 nm^3; this corresponds to an approximate mass of 698 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)

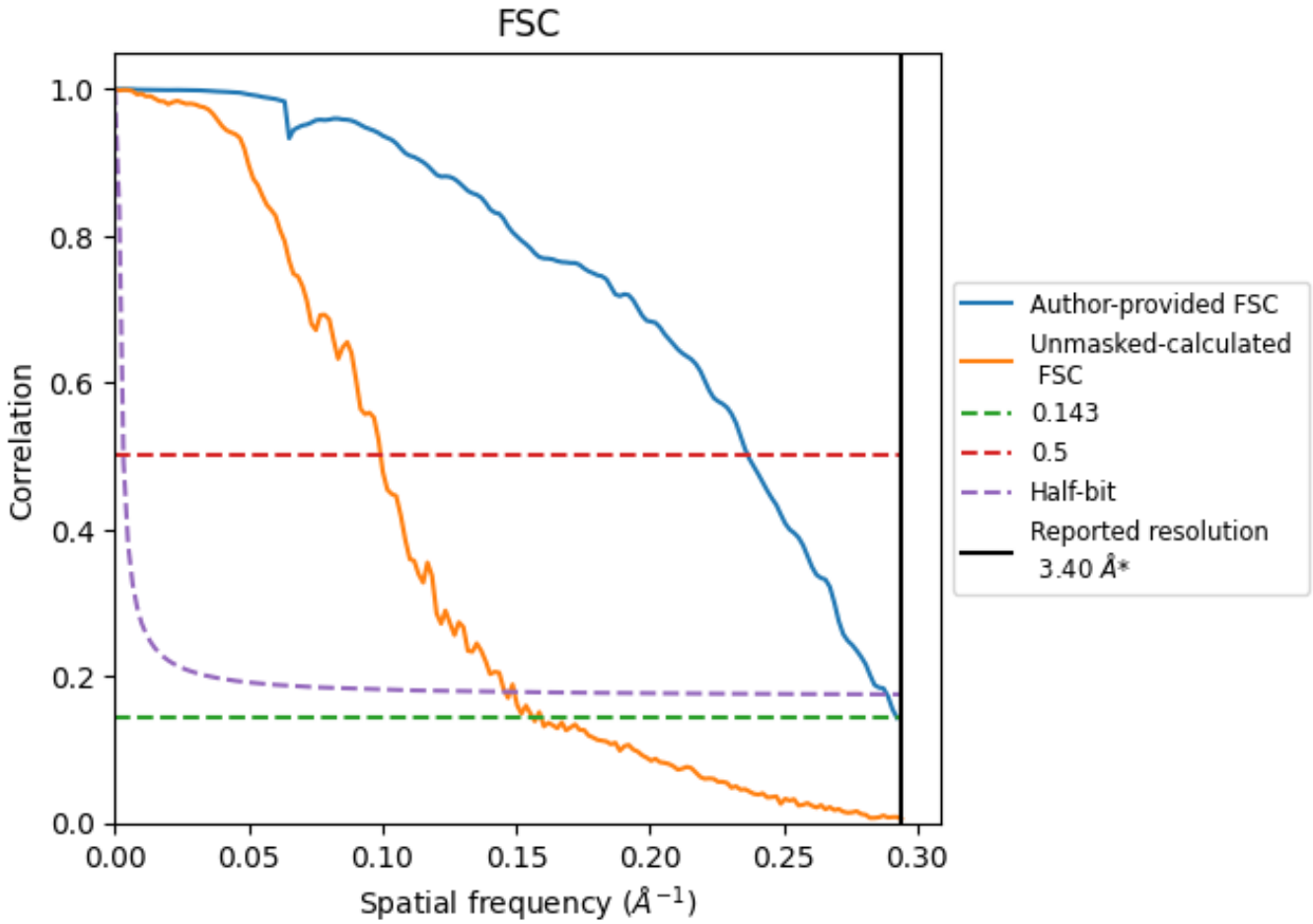


*Reported resolution corresponds to spatial frequency of 0.294 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.294 Å^{-1}

8.2 Resolution estimates (i)

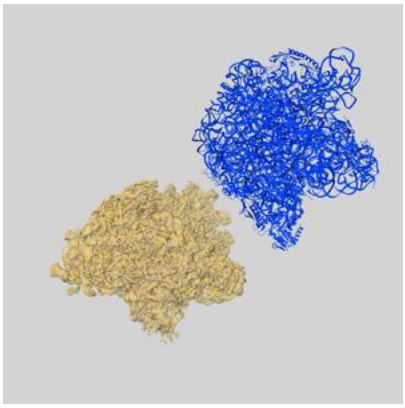
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.40	-	-
Author-provided FSC curve	3.42	4.22	3.47
Unmasked-calculated*	6.40	10.06	6.85

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.40 differs from the reported value 3.4 by more than 10 %

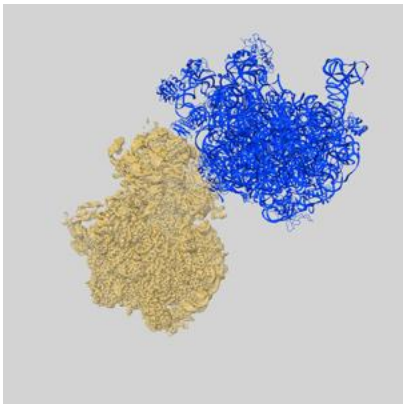
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-11999 and PDB model 7OOD. Per-residue inclusion information can be found in section 3 on page 10.

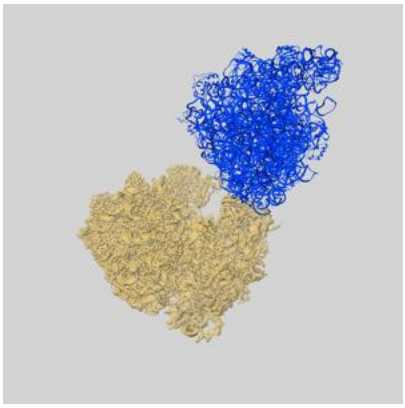
9.1 Map-model overlay



X



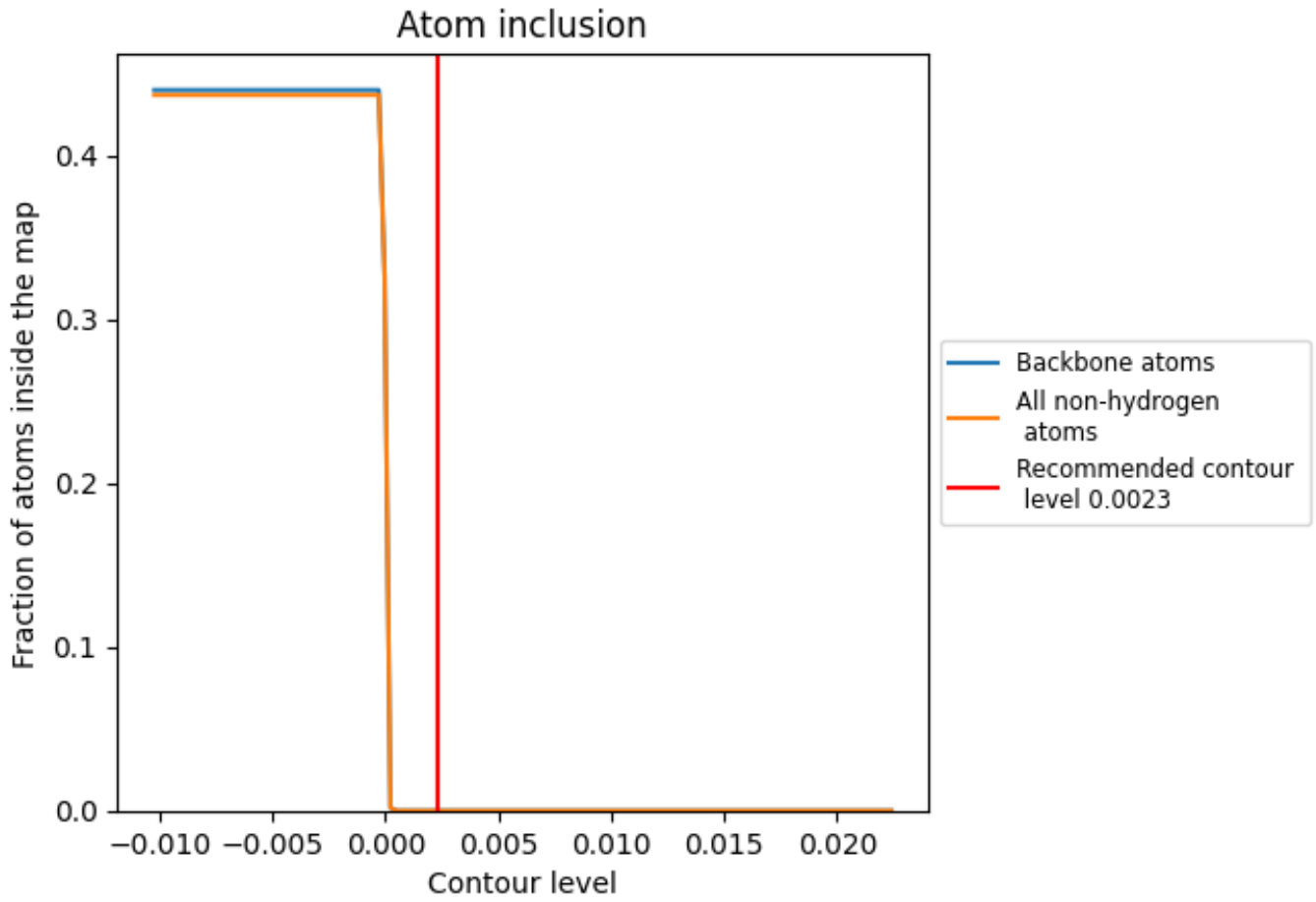
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0023 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 Atom inclusion (i)



At the recommended contour level, 0% of all backbone atoms, 0% of all non-hydrogen atoms, are inside the map.