wwPDB EM Validation Summary Report ⓘ

Oct 1, 2025 – 02:33 PM JST

PDB ID	:	9V1I / pdb_00009v1i
EMDB ID	:	EMD-64694
Title	:	Cryo- EM structure of ribosomal large subunit (LSU) from Entamoeba histolytica at 2.8 angstrom resolution
Authors	:	Sharma, S.; Mishra, S.; Gourinath, S.; Kaushal, P.S.
Deposited on	:	2025-05-19
Resolution	:	2.80 Å(reported)
Based on initial models	:	4UG0, 5XXB

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

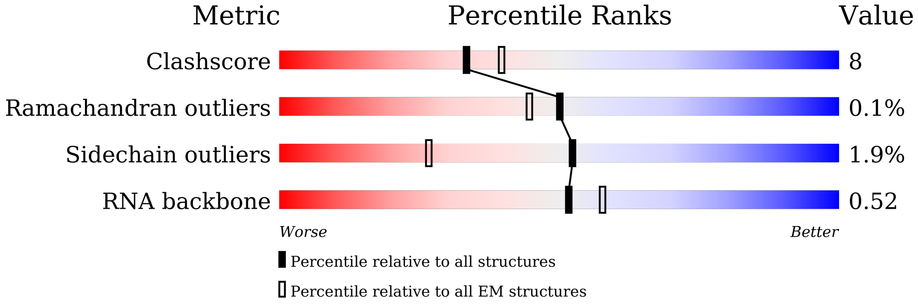
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

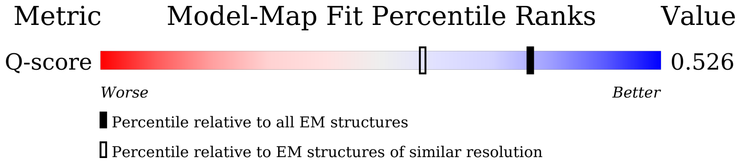
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.80 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	11806 (2.30 - 3.30)

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	1A	3503	
2	1B	155	
3	1C	117	

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Mol	Chain	Length	Quality of chain
4	lD	257	74% 21% • •
5	lE	402	76% 20% •
6	lF	431	• 81% 17% • •
7	lG	286	5% 82% 16% •
8	lH	204	• 78% 21%
9	lI	230	76% 15% 9%
10	lJ	286	8% 60% 14% 26%
11	lK	197	• 78% 19% • •
12	lL	210	78% 17% 5%
13	lM	174	16% 76% 21% • •
14	lN	291	7% 66% 13% • 20%
15	lO	205	84% 16%
16	lP	135	76% 21% • •
17	lQ	205	89% 10%
18	lR	179	• 79% 8% • 12%
19	lS	168	88% 10% • •
20	lT	173	86% 13% •
21	lU	198	• 64% 12% 24%
22	lV	166	86% 13% • •
23	lW	137	13% 35% 30% • • 32%
24	lX	140	76% 19% • 5%
25	lY	121	84% 12% •
26	lZ	163	• 26% 9% 65%
27	la	213	83% 15% •
28	lb	139	• 77% 21% • •

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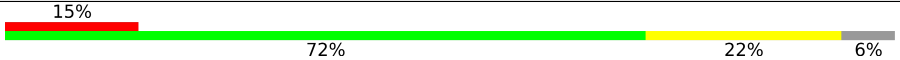
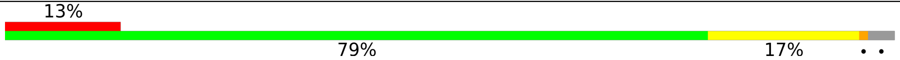
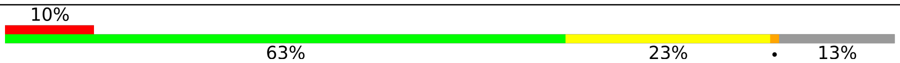
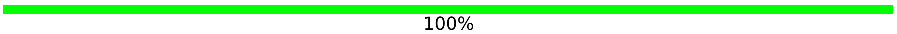
Mol	Chain	Length	Quality of chain
29	lc	149	
30	ld	64	
31	le	109	
32	lf	150	
33	lg	134	
34	lh	137	
35	li	122	
36	lj	108	
37	lk	104	
38	ll	77	
39	lm	93	
40	ln	84	
41	lo	51	
42	lp	56	
43	lq	98	
44	lr	13	

2 Entry composition

There are 44 unique types of molecules in this entry. The entry contains 121291 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 25S rRNA (3068-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	lA	3067	65572	29397	11934	21174	3067	0	0

- Molecule 2 is a RNA chain called 5.8S rRNA (145-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	lB	145	3097	1390	560	1002	145	0	0

- Molecule 3 is a RNA chain called 5S rRNA (117-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	lC	117	2477	1108	425	827	117	0	0

- Molecule 4 is a protein called Large ribosomal subunit protein uL2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	lD	246	1881	1165	382	326	8	0	0

- Molecule 5 is a protein called 60S ribosomal protein L3, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	lE	387	3076	1956	578	527	15	0	0

- Molecule 6 is a protein called 60S ribosomal protein L4, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	lF	424	3272	2085	622	551	14	0	0

- Molecule 7 is a protein called 60S ribosomal protein L5, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	lG	279	Total 2222	C 1421	N 400	O 393	S 8	0	0

- Molecule 8 is a protein called 60S ribosomal protein L6, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	lH	203	Total 1607	C 1053	N 272	O 278	S 4	0	0

- Molecule 9 is a protein called 60S ribosomal protein L7, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	lI	210	Total 1658	C 1067	N 301	O 282	S 8	0	0

- Molecule 10 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	lJ	213	Total 1727	C 1114	N 317	O 291	S 5	0	0

- Molecule 11 is a protein called 60S ribosomal protein L9, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	lK	193	Total 1538	C 974	N 279	O 279	S 6	0	0

- Molecule 12 is a protein called Ribosomal protein L10, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	lL	200	Total 1597	C 1017	N 302	O 264	S 14	0	0

- Molecule 13 is a protein called 60S ribosomal protein L11, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	lM	170	Total 1350	C 857	N 243	O 245	S 5	0	0

- Molecule 14 is a protein called 60S ribosomal protein L13, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	lN	232	1872	1186	369	309	8	0	0

- Molecule 15 is a protein called 60S ribosomal protein L13, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	lO	204	1616	1030	302	275	9	0	0

- Molecule 16 is a protein called 60S ribosomal protein L14, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	lP	132	1039	666	192	177	4	0	0

- Molecule 17 is a protein called Ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	lQ	204	1676	1051	356	264	5	0	0

- Molecule 18 is a protein called 60S ribosomal protein L17, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	lR	158	1232	779	238	210	5	0	0

- Molecule 19 is a protein called 60S ribosomal protein L18, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	lS	167	1321	835	258	219	9	0	0

- Molecule 20 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	lT	173	1413	910	259	235	9	0	0

- Molecule 21 is a protein called Ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	lU	150	1235	787	246	197	5	0	0

- Molecule 22 is a protein called 60S ribosomal protein L21, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	lV	165	1320	846	254	217	3	0	0

- Molecule 23 is a protein called Large ribosomal subunit protein eL22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	lW	93	763	493	132	133	5	0	0

- Molecule 24 is a protein called 60S ribosomal protein L23, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	lX	133	1015	629	196	182	8	0	0

- Molecule 25 is a protein called Ribosomal protein L23A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	lY	116	926	597	166	159	4	0	0

- Molecule 26 is a protein called 60S ribosomal protein L24, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	lZ	57	481	318	88	73	2	0	0

- Molecule 27 is a protein called 60S ribosomal protein L26, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	la	210	1651	1055	304	285	7	0	0

- Molecule 28 is a protein called 60S ribosomal protein L27, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	lb	137	1094	707	196	187	4	0	0

- Molecule 29 is a protein called Large ribosomal subunit protein uL15A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	lc	148	1192	757	236	194	5	0	0

- Molecule 30 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	ld	60	478	297	97	82	2	0	0

- Molecule 31 is a protein called 60S ribosomal protein L30, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	le	103	768	486	131	149	2	0	0

- Molecule 32 is a protein called 60S ribosomal protein L31, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	lf	146	1184	759	219	200	6	0	0

- Molecule 33 is a protein called 60S ribosomal protein L32, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
33	lg	129	1058	672	209	172	5	0	0

- Molecule 34 is a protein called 60S ribosomal protein L34, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	lh	105	820	512	169	133	6	0	0

- Molecule 35 is a protein called uL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	li	122	974	620	188	162	4	0	0

- Molecule 36 is a protein called 60S ribosomal protein L35a, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	lj	106	841	545	158	135	3	0	0

- Molecule 37 is a protein called 60S ribosomal protein L36, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	lk	89	712	447	144	116	5	0	0

- Molecule 38 is a protein called 60S ribosomal protein L37-A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	ll	72	591	361	132	91	7	0	0

- Molecule 39 is a protein called 60S ribosomal protein L37A, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
39	lm	90	688	428	135	119	6	0	0

- Molecule 40 is a protein called 60S ribosomal protein L38, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	ln	73	584	378	104	100	2	0	0

- Molecule 41 is a protein called Ribosomal protein L39, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	lo	50	432	275	91	63	3	0	0

- Molecule 42 is a protein called 60S ribosomal protein L40, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	lp	53	420	259	86	69	6	0	0

- Molecule 43 is a protein called 60S ribosomal protein L44, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	lq	92	756	480	148	122	6	0	0

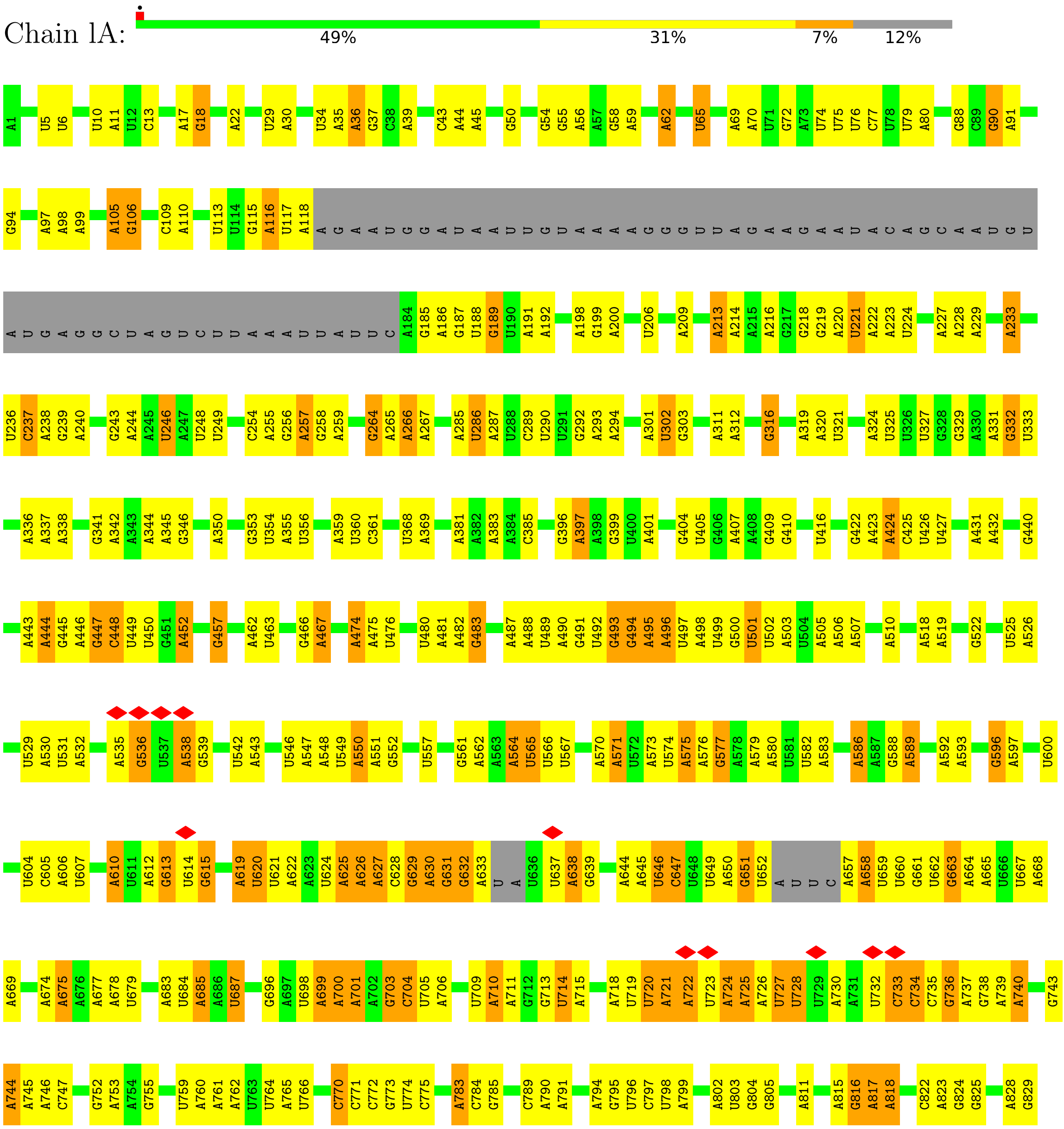
- Molecule 44 is a protein called Unknown peptide.

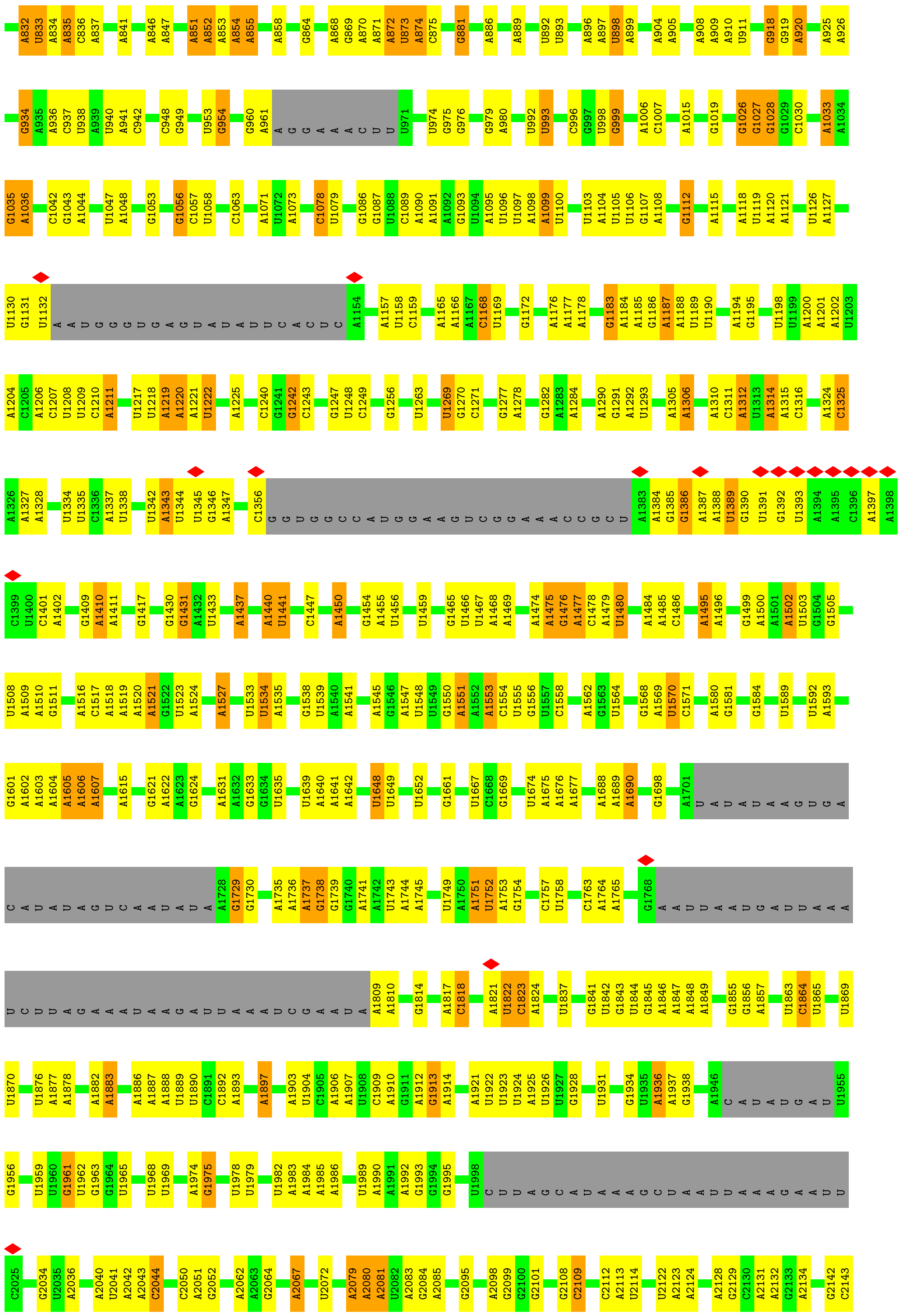
Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
44	lr	13	65	39	13	13	0	0

3 Residue-property plots ⓘ

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: 25S rRNA (3068-MER)

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G934 A935 A936 C937 U938 A939 U940 A941 C942 C948 G949 U953 G954 G960 A961 A G G A A C U U U971 U974 G975 G976 G979 A980 U992 U993 C996 G997 U998 G999 A1006 C1007 A1015 G1019 G1026 G1027 G1028 G1029 C1030 A1033 A1034
G1035 A1036 C1042 G1043 A1044 U1047 A1048 G1053 G1056 C1057 U1058 C1063 A1071 U1072 A1073 C1078 U1079 G1086 G1087 U1088 C1089 A1090 A1091 A1092 G1093 U1094 A1095 U1096 U1097 A1098 A1099 U1100 U1103 A1104 U1105 U1106 G1107 A1108 G1112 A1115 A1118 U1119 A1120 A1121 U1126 A1127
U1130 G1131 U1132 A A U G G G U G A G U A U A U U C A C U C A1154 A1157 U1158 C1159 A1165 A1166 A1167 C1168 U1169 G1172 A1176 A1177 A1178 G1183 A1184 A1185 G1186 A1187 A1188 U1189 U1190 A1194 G1195 U1198 U1199 A1200 A1201 A1202 U1203
A1204 C1205 A1206 C1207 U1208 U1209 C1210 A1211 U1217 U1218 A1219 A1220 A1221 U1222 A1225 C1240 G1241 G1242 C1243 G1247 U1248 C1249 G1256 U1263 U1269 G1270 C1271 G1277 A1278 G1282 A1283 A1284 A1290 G1291 A1292 U1293 A1305 A1306 A1310 C1311 A1312 U1313 A1314 A1315 C1316 A1324 C1325
A1326 A1327 A1328 U1334 U1335 C1336 A1337 U1338 U1342 A1343 U1344 U1345 G1346 A1347 C1356 G G U G G C C A U G G A A G U C G G A A A C C G C U A1383 A1384 G1385 G1386 A1387 A1388 U1389 G1390 U1391 G1392 U1393 A1394 A1395 C1396 A1397 A1398
C1399 U1400 C1401 A1402 G1409 A1410 A1411 G1417 G1430 G1431 A1432 U1433 A1437 A1440 U1441 C1447 A1450 G1454 A1455 U1456 U1459 G1465 U1466 U1467 A1468 A1469 A1474 A1475 G1476 A1477 C1478 A1479 U1480 A1484 A1485 C1486 A1495 A1496 G1499 A1500 A1501 A1502 U1503 G1504 G1505
U1508 A1509 A1510 G1511 A1516 C1517 A1518 A1519 A1520 A1521 G1522 U1523 A1524 A1527 U1533 U1534 A1535 G1538 U1539 A1540 A1541 A1545 G1546 A1547 U1548 U1549 G1550 A1551 A1552 A1553 C1554 U1555 G1556 U1557 C1558 A1562 G1563 U1564 G1568 A1569 U1570 C1571 A1580 G1581 G1584 U1589 U1592 A1593
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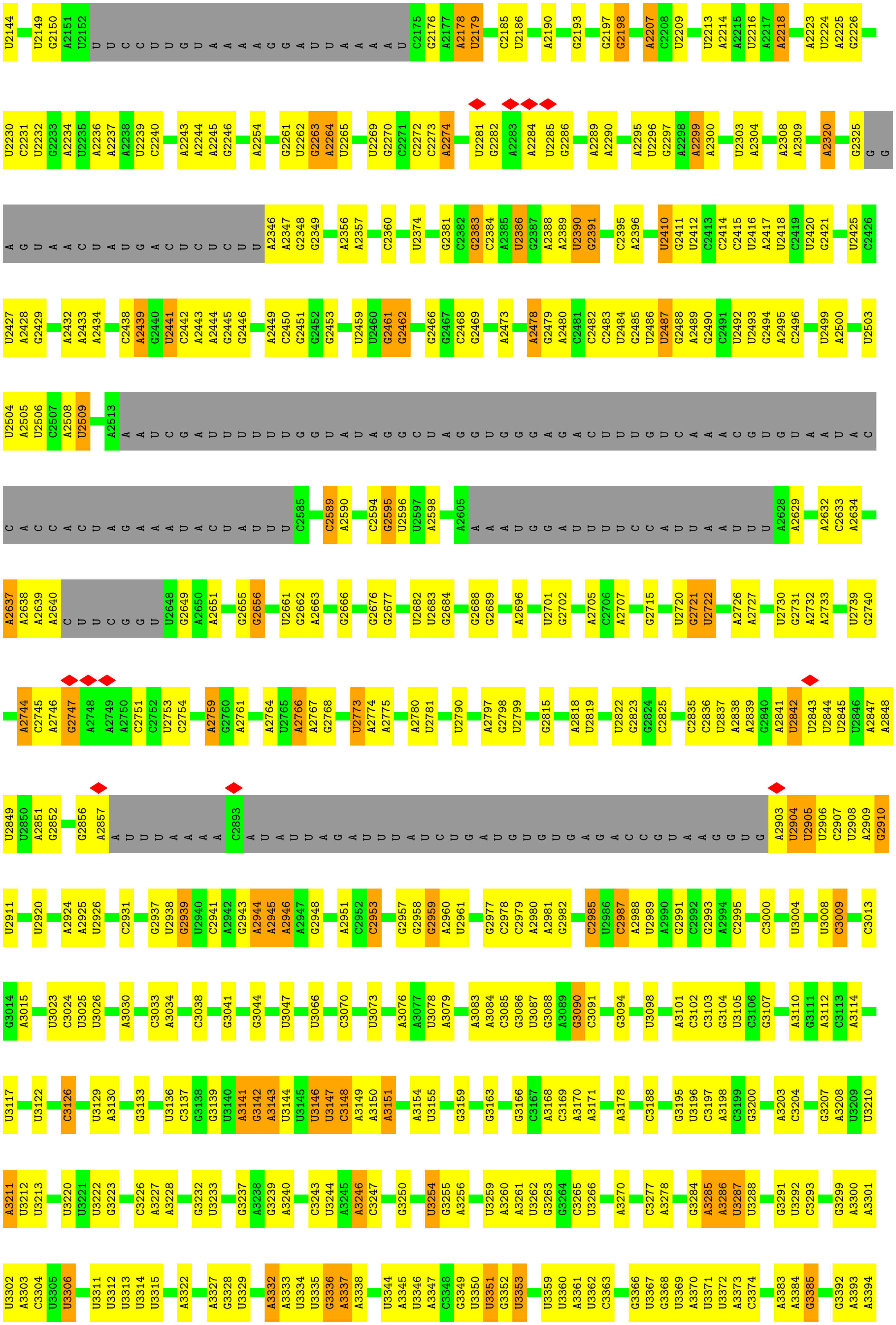
C A U A U A G U C A A U A U A A1728 G1729 G1730 A1735 A1736 A1737 G1738 G1739 G1740 A1741 A1742 U1743 A1744 A1745 U1749 A1750 A1751 U1752 A1753 G1754 C1757 U1758 C1763 A1764 A1765 G1768 A A U U A A U G A U U A A A
U C U U A G A A A U A A G A U U A A A U C G A A U A A1809 A1810 G1814 A1817 C1818 A1821 U1822 C1823 A1824 U1837 G1841 U1842 G1843 U1844 G1845 A1846 A1847 A1848 A1849 G1855 G1856 A1857 U1863 C1864 U1865 U1869
U1870 U1876 A1877 A1878 A1882 A1883 A1886 A1887 A1888 U1889 U1890 C1891 C1892 A1893 A1897 A1903 U1904 C1905 A1906 A1907 U1908 C1909 A1910 G1911 A1912 G1913 A1914 A1921 U1922 U1923 U1924 A1925 U1926 U1927 G1928 U1931 G1934 U1935 A1936 A1937 G1938 A1946 C A U A U G A U U1955
G1956 U1959 U1960 G1961 U1962 G1963 G1964 U1965 U1968 U1969 A1974 G1975 U1978 U1979 U1982 A1983 A1984 A1985 A1986 U1989 A1990 A1991 A1992 G1993 G1994 G1995 U1998 C U U A G C A U A A A G C U A A U U A A A G A A U U
C2025 G2034 U2035 A2036 A2040 U2041 A2042 A2043 C2044 C2050 A2051 G2052 A2062 A2063 G2064 A2067 U2072 A2079 A2080 A2081 U2082 A2083 G2084 A2085 G2095 A2098 G2099 G2100 G2101 G2108 C2109 C2112 A2113 U2114 U2122 A2123 A2124 A2128 G2129 C2130 A2131 A2132 G2133 A2134 G2142 C2143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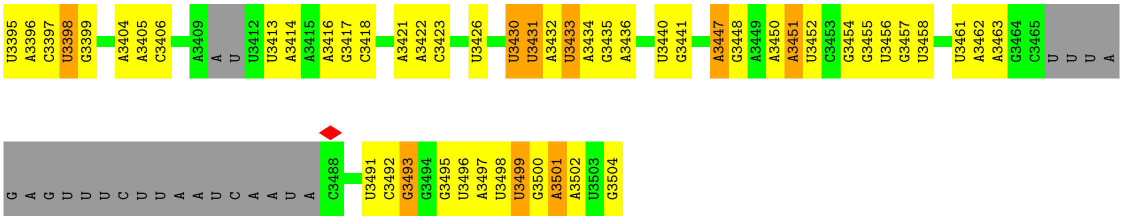
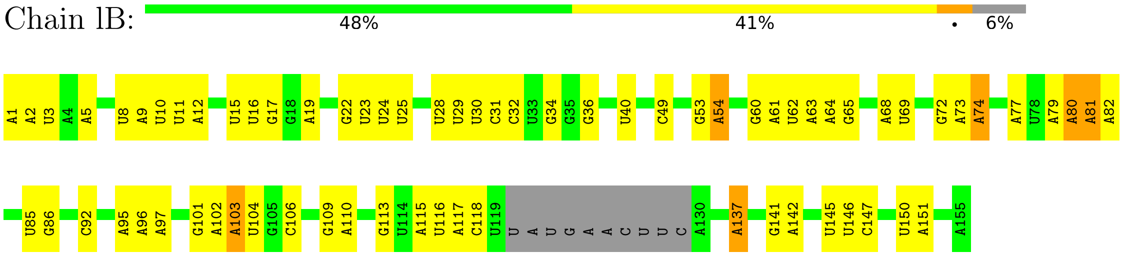
U2230 C2231 U2232 G2233 A2234 U2235 A2236 A2237 A2238 U2239 C2240 A2243 A2244 A2245 G2246 A2254 G2261 U2262 G2263 A2264 U2265 U2269 G2270 C2271 C2272 C2273 A2274 U2281 G2282 A2283 A2284 U2285 G2286 A2289 A2290 A2295 U2296 G2297 A2298 A2299 A2300 U2303 A2304 A2308 A2309 A2320 G2325 G G
A G U A A C U A U G A C U C U C U U A2346 A2347 G2348 G2349 A2356 A2357 C2360 U2374 G2381 C2382 G2383 C2384 A2385 U2386 G2387 A2388 A2389 U2390 G2391 C2395 A2396 U2410 G2411 U2412 C2413 C2414 C2415 A2416 A2417 U2418 C2419 U2420 G2421 U2425 C2426
U2427 A2428 G2429 A2432 A2433 A2434 C2438 A2439 G2440 U2441 C2442 A2443 A2444 G2445 G2446 A2449 C2450 G2451 G2452 G2453 U2459 U2460 G2461 G2462 G2466 G2467 C2468 G2469 A2473 A2478 G2479 A2480 C2481 C2482 C2483 U2484 G2485 U2486 U2487 G2488 A2489 G2490 C2491 U2492 U2493 G2494 A2495 C2496 U2499 A2500 U2503
U2504 A2505 U2506 C2507 A2508 U2509 A2513 A A U C G A U U U U U U G G U A U A G G C U A G G U G G G A G A C U U U U G U C A A A C G U G U A A U A C
C A C C A C U A G A A A U A C U A U U U C2585 C2589 A2590 C2594 G2595 U2596 U2597 A2598 A2605 A A A U G G A U U U U U C C A U U A A U U U A2628 A2629 A2632 C2633 A2634
A2637 A2638 A2639 A2640 C U U C G G U U2648 G2649 A2650 A2651 G2655 G2656 U2661 G2662 A2663 G2666 G2676 G2677 U2682 U2683 G2684 G2688 G2689 A2696 U2701 G2702 A2705 C2706 A2707 G2715 U2720 G2721 U2722 A2726 A2727 U2730 G2731 A2732 A2733 U2739 G2740
A2744 C2745 A2746 G2747 A2748 A2749 A2750 C2751 C2752 U2753 C2754 A2759 G2760 A2761 A2764 U2765 A2766 A2767 G2768 U2773 A2774 A2775 A2780 U2781 U2790 A2797 G2798 U2799 G2815 A2818 U2819 U2822 G2823 G2824 C2825 C2835 C2836 U2837 A2838 A2839 G2840 A2841 U2842 U2843 U2844 G2845 U2846 A2847 A2848
U2849 U2850 A2851 G2852 G2856 A2857 A U U U A A A A C2893 A U A A U U A G A U U U A U C U G A U G U G U G A G A C C G U A A G G U G A2903 U2904 U2905 U2906 C2907 U2908 A2909 G2910
U2911 U2920 A2924 A2925 U2926 C2931 G2937 U2938 G2939 U2940 C2941 A2942 G2943 A2944 A2945 A2946 A2947 G2948 A2951 C2952 C2953 G2957 G2958 G2959 A2960 U2961 G2977 C2978 C2979 A2980 A2981 G2982 C2985 U2986 C2987 A2988 U2989 A2990 G2991 C2992 G2993 A2994 C2995 C3000 U3004 U3008 C3009 C3013
G3014 A3015 U3023 C3024 U3025 U3026 A3030 C3033 A3034 C3038 G3041 G3044 U3047 U3066 C3070 U3073 A3076 A3077 U3078 A3079 A3083 A3084 C3085 G3086 U3087 G3088 A3089 G3090 C3091 G3094 U3098 A3101 C3102 C3103 G3104 U3105 C3106 G3107 A3110 G3111 A3112 C3113 A3114
U3117 U3122 C3126 U3129 A3130 G3133 U3136 C3137 G3138 G3139 U3140 A3141 G3142 A3143 U3144 U3145 U3146 U3147 C3148 A3149 A3150 A3151 A3154 U3155 G3159 G3163 G3166 C3167 A3168 C3169 A3170 A3171 A3178 C3188 G3195 U3196 C3197 A3198 C3199 G3200 A3203 C3204 G3207 A3208 U3209 U3210
A3211 U3212 U3213 U3220 U3221 U3222 G3223 C3226 A3227 A3228 G3232 U3233 G3237 A3238 G3239 A3240 C3243 U3244 A3245 A3246 C3247 G3250 U3254 G3255 A3256 U3259 A3260 A3261 U3262 G3263 G3264 C3265 U3266 A3270 C3277 A3278 G3284 A3285 A3286 U3287 U3288 G3291 U3292 C3293 G3299 A3300 A3301
U3302 A3303 C3304 U3305 U3306 U3311 U3312 U3313 U3314 U3315 A3322 A3327 G3328 U3329 A3332 A3333 U3334 U3335 G3336 A3337 A3338 U3344 A3345 U3346 A3347 C3348 G3349 U3350 U3351 G3352 U3353 U3359 U3360 A3361 U3362 C3363 G3366 U3367 G3368 U3369 A3370 U3371 U3372 A3373 C3374 A3383 A3384 G3385 G3392 A3393 A3394



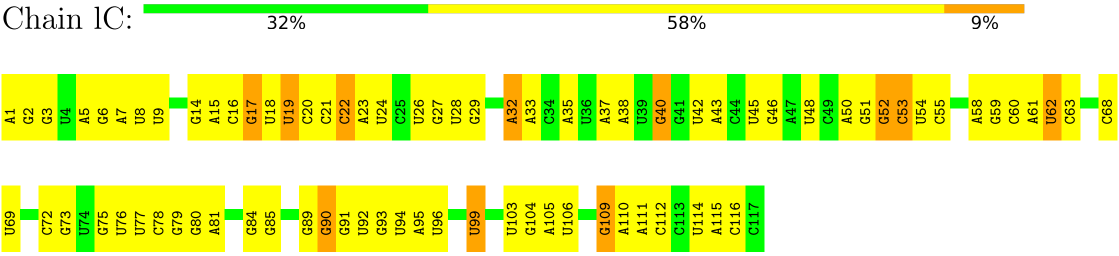
- Molecule 2: 5.8S rRNA (145-MER)

Chain lB:



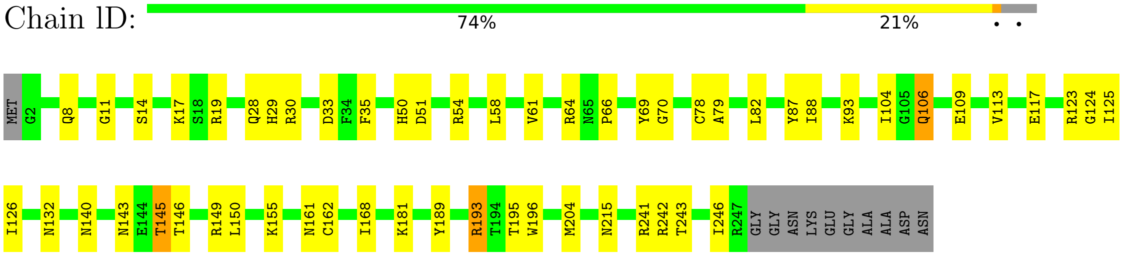
- Molecule 3: 5S rRNA (117-MER)

Chain lC:



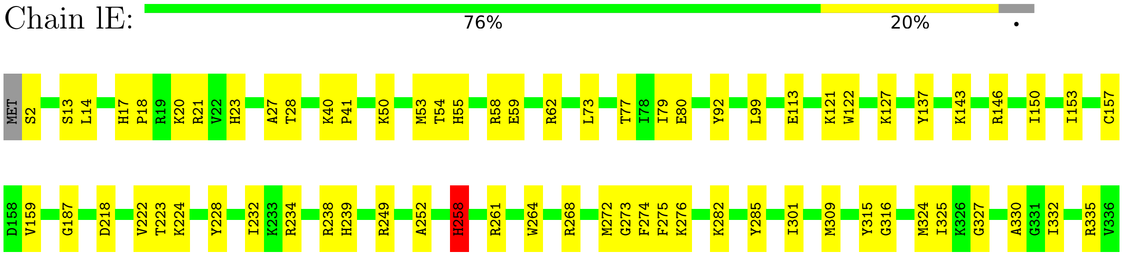
- Molecule 4: Large ribosomal subunit protein uL2

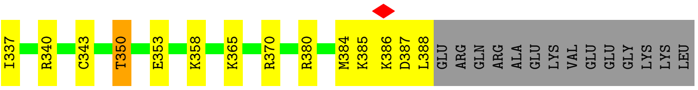
Chain lD:



- Molecule 5: 60S ribosomal protein L3, putative

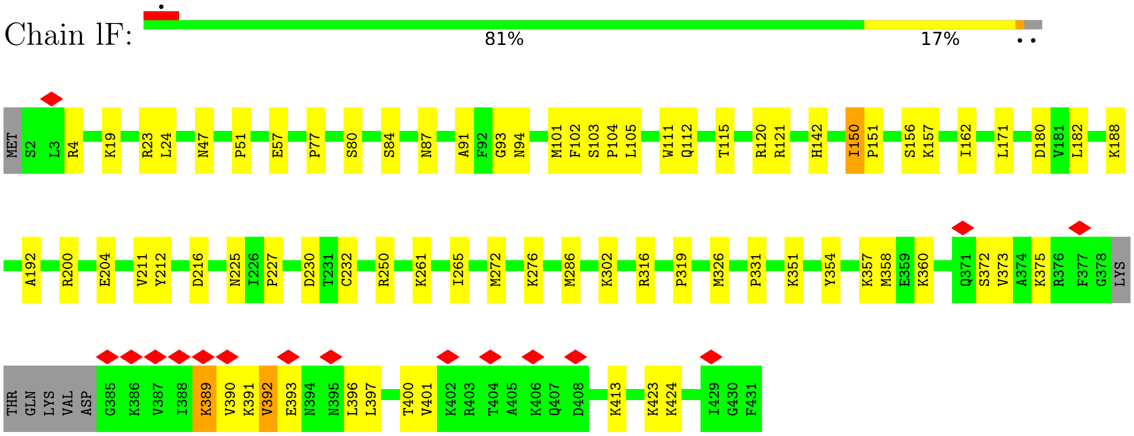
Chain lE:





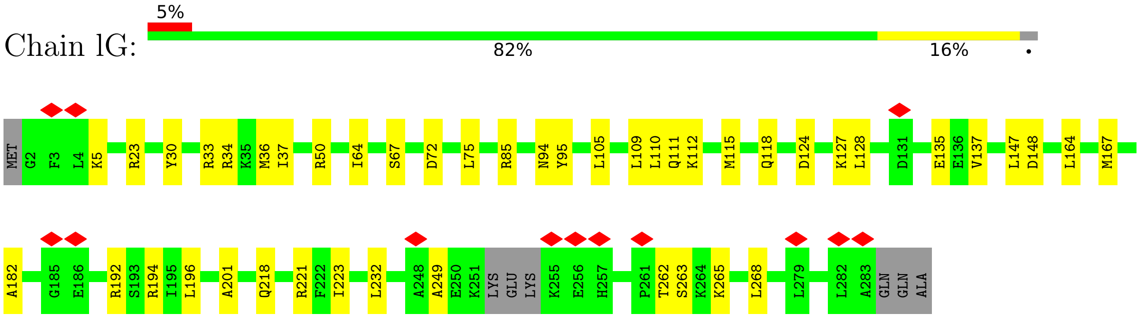
- Molecule 6: 60S ribosomal protein L4, putative

Chain lF:



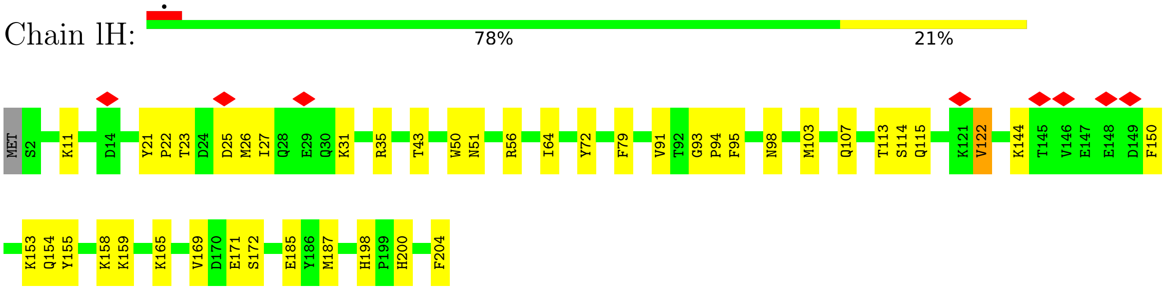
- Molecule 7: 60S ribosomal protein L5, putative

Chain lG:



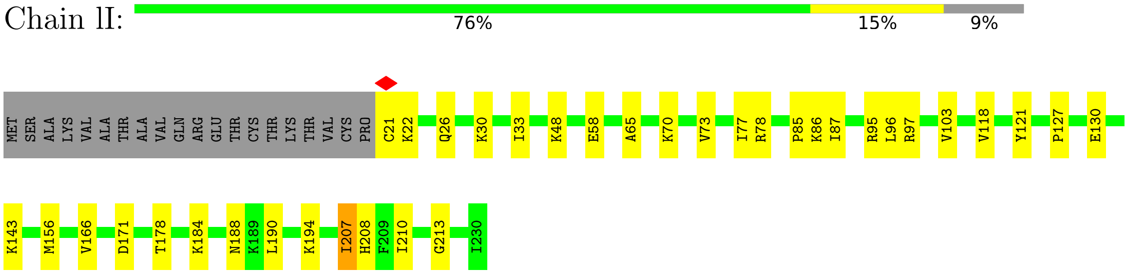
- Molecule 8: 60S ribosomal protein L6, putative

Chain lH:

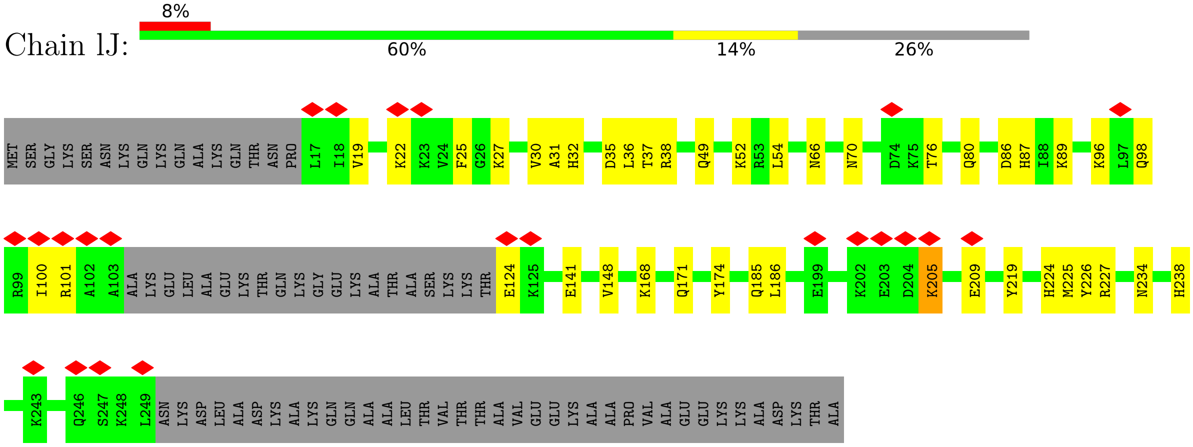


- Molecule 9: 60S ribosomal protein L7, putative

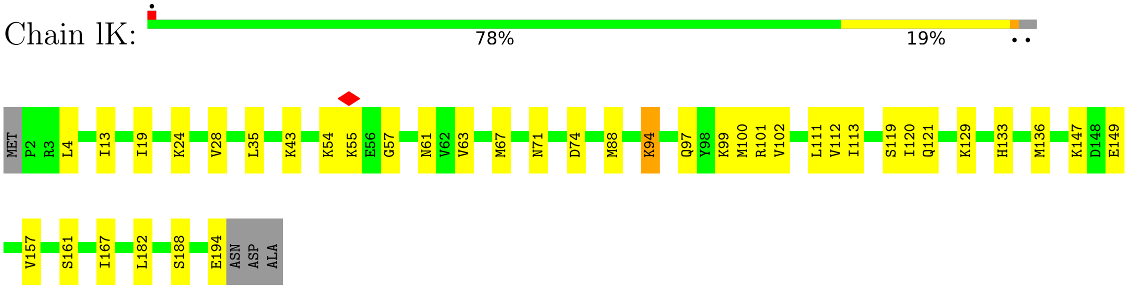
Chain lI:



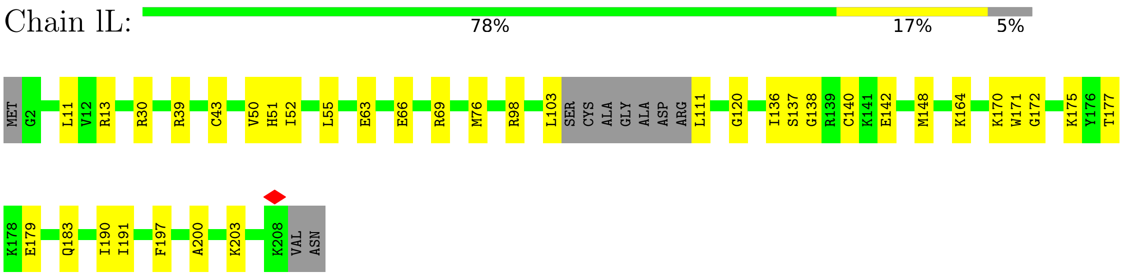
- Molecule 10: 60S ribosomal protein L7a



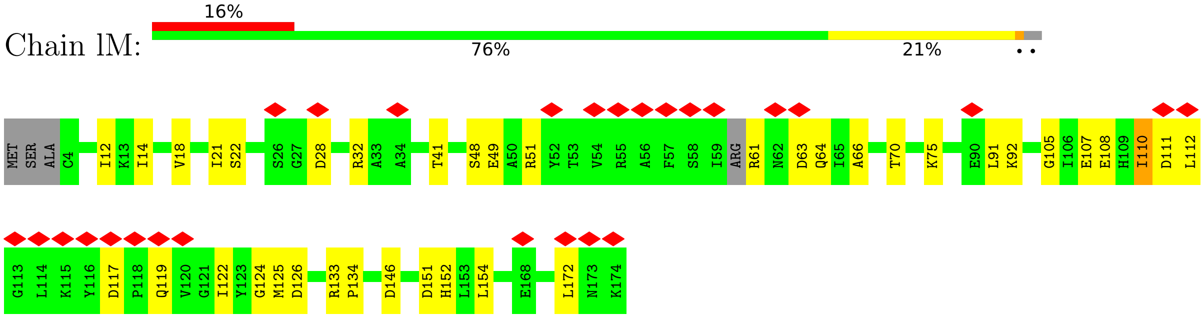
- Molecule 11: 60S ribosomal protein L9, putative



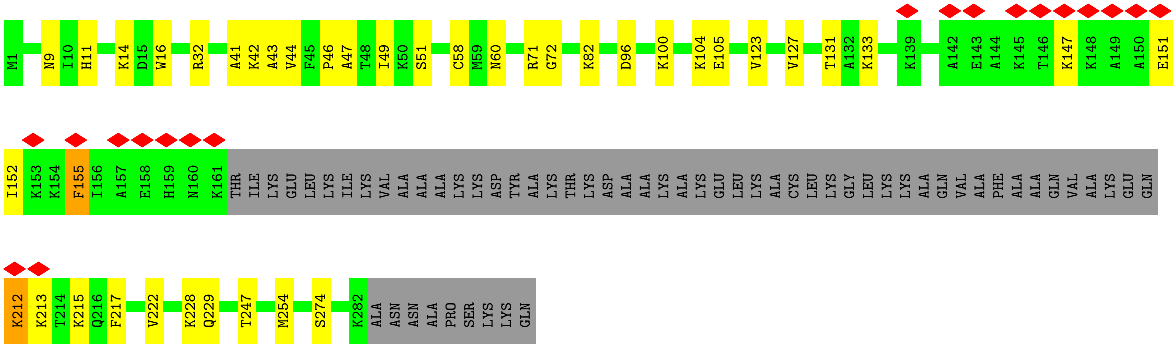
- Molecule 12: Ribosomal protein L10, putative



- Molecule 13: 60S ribosomal protein L11, putative

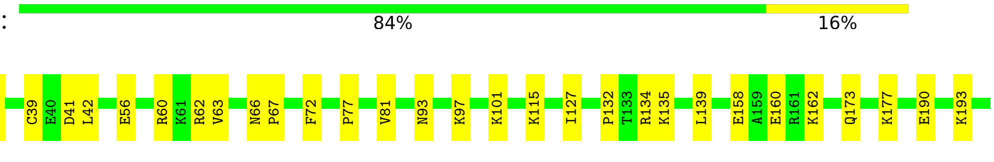


- Molecule 14: 60S ribosomal protein L13, putative



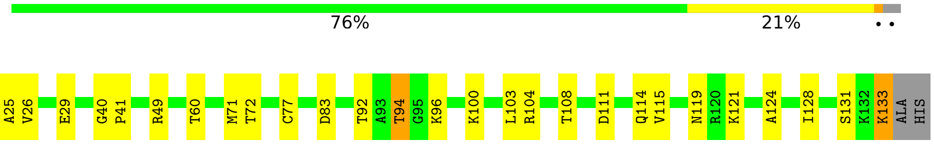
- Molecule 15: 60S ribosomal protein L13, putative

Chain lO:



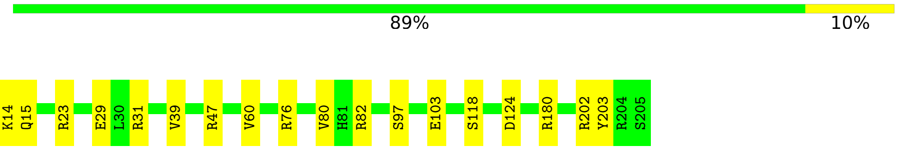
- Molecule 16: 60S ribosomal protein L14, putative

Chain lP:



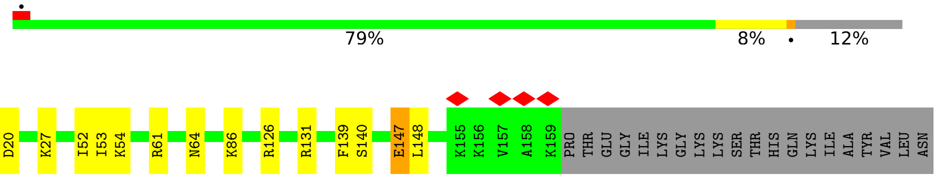
- Molecule 17: Ribosomal protein L15

Chain lQ:



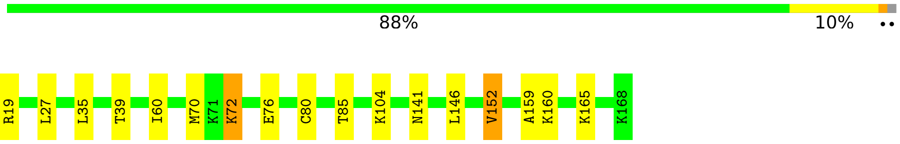
- Molecule 18: 60S ribosomal protein L17, putative

Chain lR:



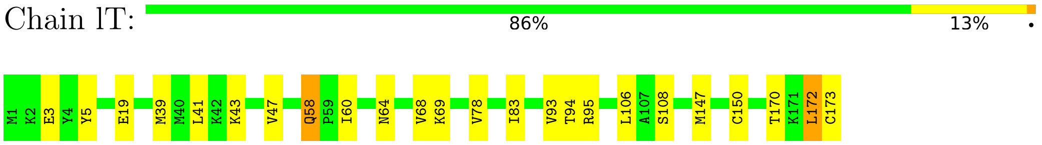
- Molecule 19: 60S ribosomal protein L18, putative

Chain lS:



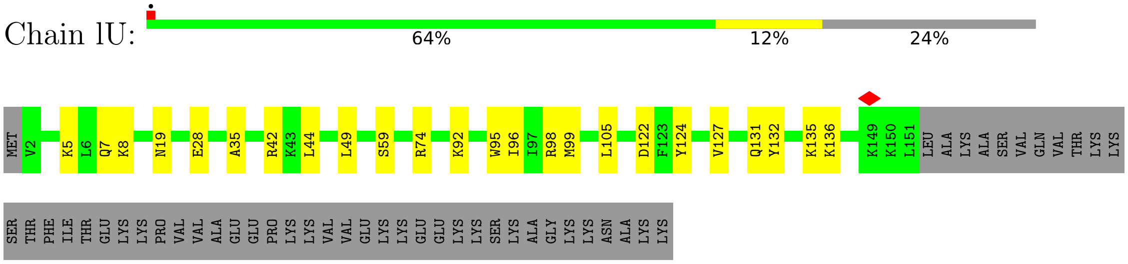
- Molecule 20: 60S ribosomal protein L18a

Chain lT:



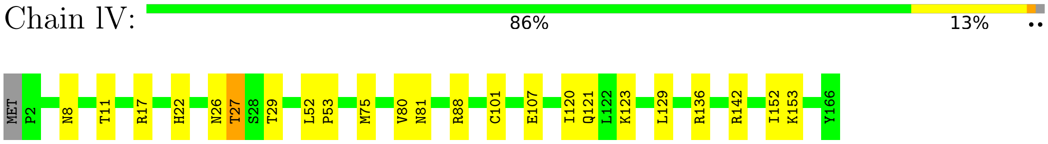
- Molecule 21: Ribosomal protein L19

Chain lU:



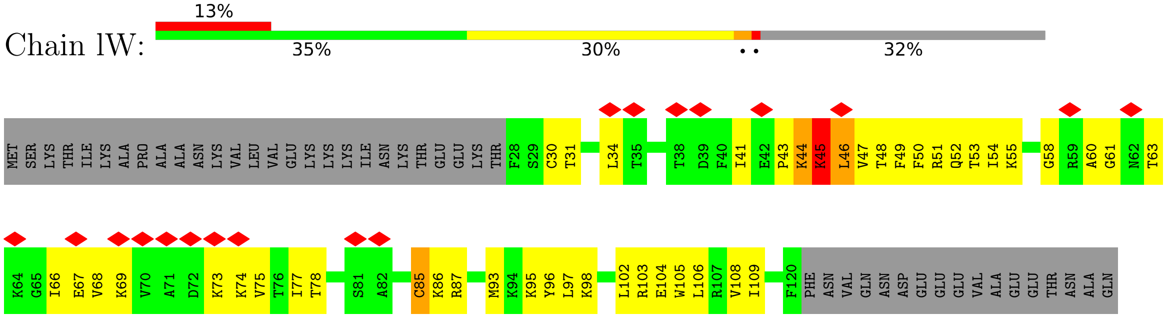
- Molecule 22: 60S ribosomal protein L21, putative

Chain lV:



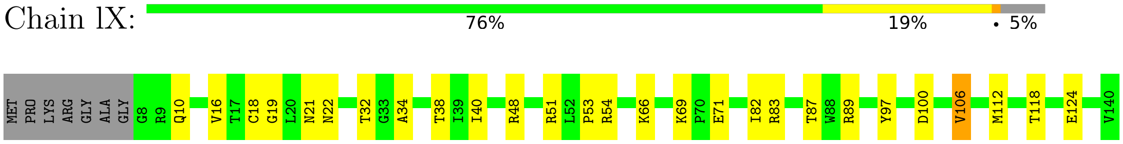
- Molecule 23: Large ribosomal subunit protein eL22

Chain lW:



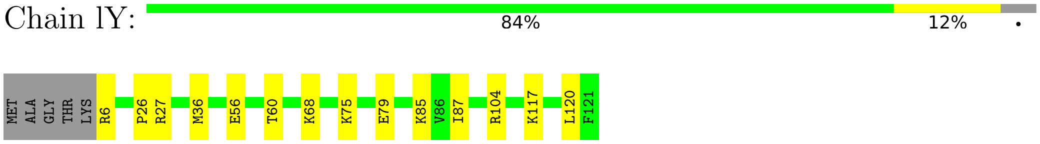
- Molecule 24: 60S ribosomal protein L23, putative

Chain lX:



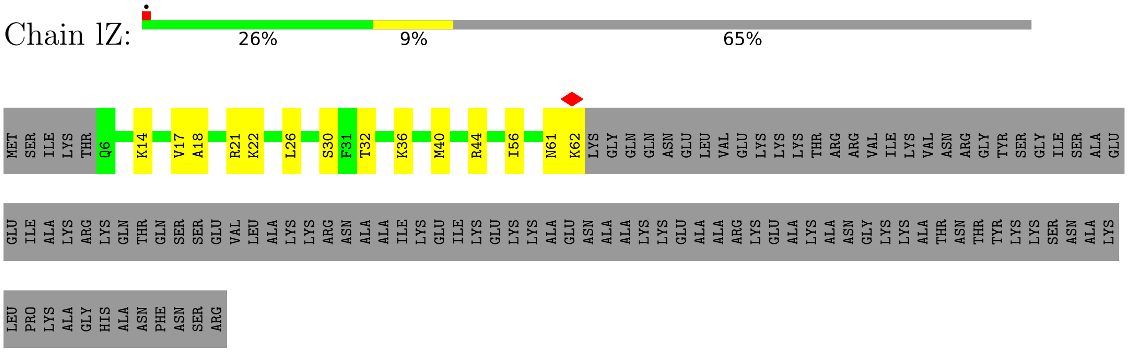
- Molecule 25: Ribosomal protein L23A, putative

Chain lY:



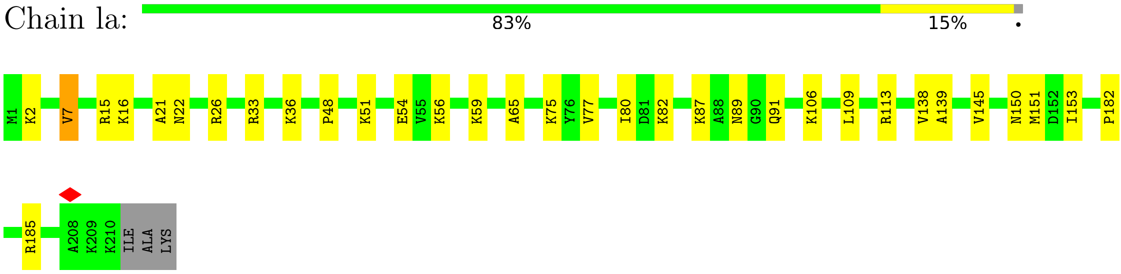
- Molecule 26: 60S ribosomal protein L24, putative

Chain lZ:



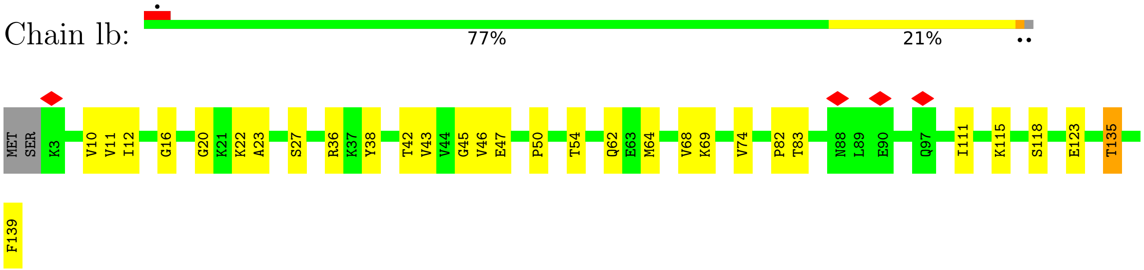
- Molecule 27: 60S ribosomal protein L26, putative

Chain la:



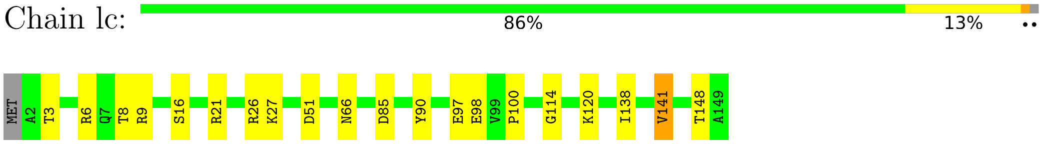
- Molecule 28: 60S ribosomal protein L27, putative

Chain lb:



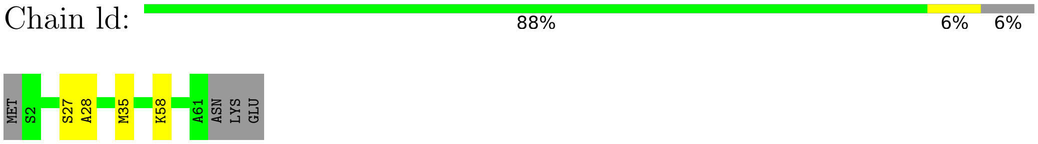
- Molecule 29: Large ribosomal subunit protein uL15A

Chain lc:



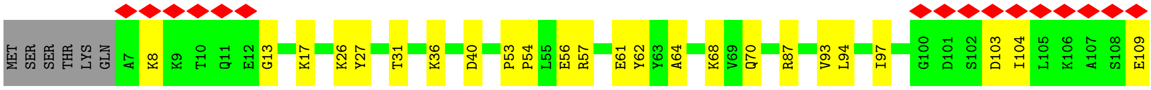
- Molecule 30: 60S ribosomal protein L29

Chain ld:



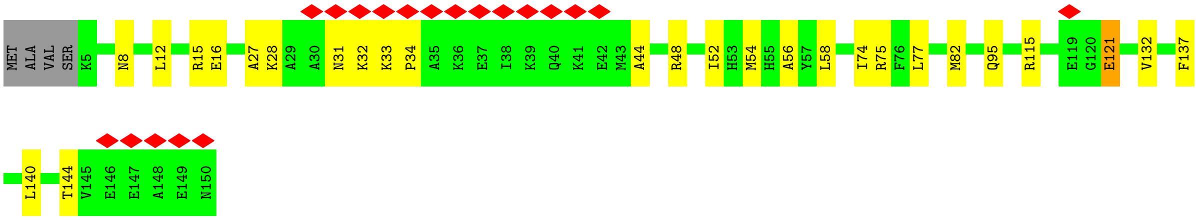
- Molecule 31: 60S ribosomal protein L30, putative

Chain le:



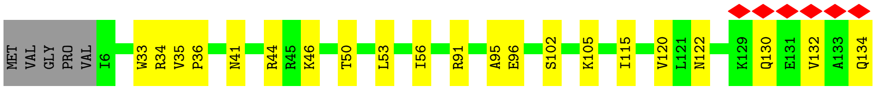
- Molecule 32: 60S ribosomal protein L31, putative

Chain lf:



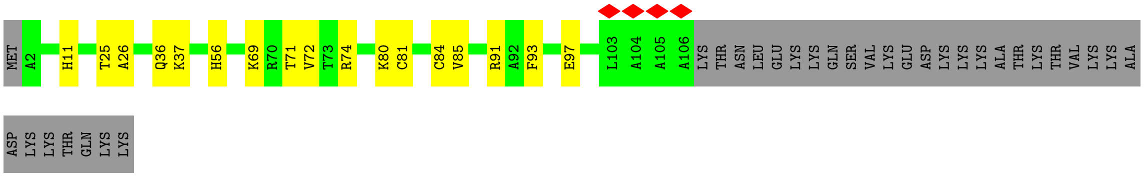
- Molecule 33: 60S ribosomal protein L32, putative

Chain lg:



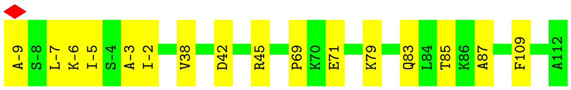
- Molecule 34: 60S ribosomal protein L34, putative

Chain lh:



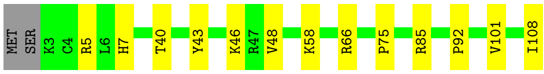
- Molecule 35: uL29

Chain li:



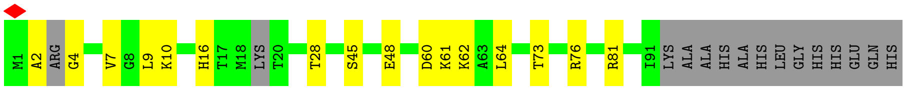
- Molecule 36: 60S ribosomal protein L35a, putative

Chain lj:



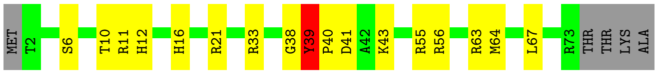
- Molecule 37: 60S ribosomal protein L36, putative

Chain lk:



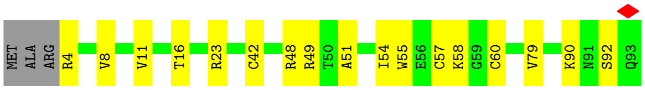
- Molecule 38: 60S ribosomal protein L37-A, putative

Chain ll:



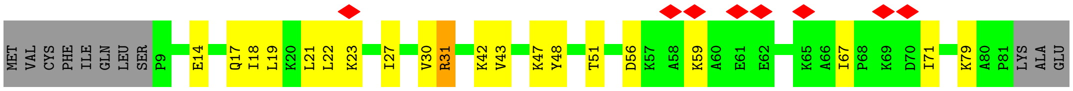
- Molecule 39: 60S ribosomal protein L37A, putative

Chain lm:



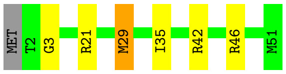
- Molecule 40: 60S ribosomal protein L38, putative

Chain ln:



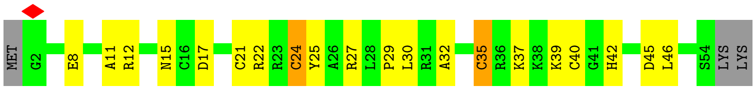
- Molecule 41: Ribosomal protein L39, putative

Chain lo:



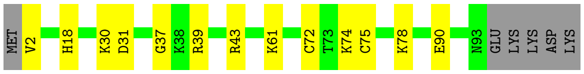
- Molecule 42: 60S ribosomal protein L40, putative

Chain lp:

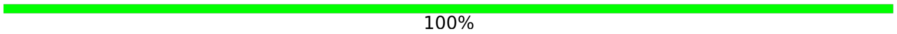


- Molecule 43: 60S ribosomal protein L44, putative

Chain lq:



- Molecule 44: Unknown peptide

Chain lr: 

There are no outlier residues recorded for this chain.

4 Experimental information ⓘ

Property	**Value**	**Source**
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	378061	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	1.34	Depositor
Minimum defocus (nm)	1800	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	75000	Depositor
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	18.211	Depositor
Minimum map value	-6.837	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	1.000	Depositor
Recommended contour level	2	Depositor
Map size (Å)	321.00003, 321.00003, 321.00003	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.07, 1.07, 1.07	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	lA	0.19	0/73480	0.30	0/114456
2	lB	0.19	0/3470	0.30	0/5401
3	lC	0.20	0/2765	0.37	2/4303 (0.0%)
4	lD	0.18	0/1920	0.29	0/2582
5	lE	0.18	0/3140	0.33	0/4216
6	lF	0.19	0/3330	0.30	1/4468 (0.0%)
7	lG	0.14	0/2261	0.29	0/3028
8	lH	0.14	0/1639	0.31	0/2203
9	lI	0.16	0/1680	0.29	0/2252
10	lJ	0.12	0/1757	0.28	0/2360
11	lK	0.13	0/1562	0.23	0/2103
12	lL	0.16	0/1633	0.31	0/2184
13	lM	0.11	0/1369	0.26	0/1834
14	lN	0.16	0/1900	0.29	0/2534
15	lO	0.17	0/1646	0.28	0/2209
16	lP	0.23	0/1051	0.34	1/1411 (0.1%)
17	lQ	0.18	0/1707	0.24	0/2276
18	lR	0.18	0/1251	0.26	0/1675
19	lS	0.16	0/1342	0.25	0/1796
20	lT	0.16	0/1445	0.26	0/1946
21	lU	0.14	0/1253	0.24	0/1666
22	lV	0.17	0/1351	0.27	0/1819
23	lW	0.27	0/774	0.67	1/1031 (0.1%)
24	lX	0.17	0/1030	0.29	0/1384
25	lY	0.14	0/941	0.22	0/1262
26	lZ	0.12	0/492	0.24	0/656
27	la	0.14	0/1673	0.23	0/2236
28	lb	0.13	0/1112	0.26	0/1489
29	lc	0.19	0/1223	0.27	0/1636
30	ld	0.18	0/485	0.31	0/639
31	le	0.13	0/776	0.29	0/1044
32	lf	0.15	0/1205	0.28	0/1609
33	lg	0.18	0/1075	0.26	0/1434
34	lh	0.16	0/833	0.23	0/1115

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
35	li	0.14	0/984	0.23	0/1310
36	lj	0.19	0/862	0.29	0/1163
37	lk	0.11	0/721	0.22	0/955
38	ll	0.20	0/602	0.33	0/797
39	lm	0.16	0/696	0.33	0/928
40	ln	0.15	0/592	0.29	0/789
41	lo	0.19	0/444	0.23	0/587
42	lp	0.17	0/425	0.54	2/563 (0.4%)
43	lq	0.16	0/770	0.24	0/1019
All	All	0.18	0/130667	0.30	7/192368 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
5	lE	0	1
20	lT	0	1
23	lW	0	1
38	ll	0	1
All	All	0	4

There are no bond length outliers.

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

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	lC	62	U	OP2-P-O3’	-8.80	81.60	108.00
3	lC	62	U	OP1-P-O3’	-8.53	82.40	108.00
42	lp	24	CYS	CA-CB-SG	6.31	128.92	114.40
42	lp	35	CYS	CA-CB-SG	5.99	128.18	114.40
6	lF	389	LYS	CA-CB-CG	5.92	125.94	114.10

There are no chirality outliers.

All (4) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
5	lE	258	HIS	Peptide
20	lT	172	LEU	Peptide
23	lW	44	LYS	Peptide
38	ll	39	TYR	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	lA	65572	0	32902	942	0
2	lB	3097	0	1552	41	0
3	lC	2477	0	1252	95	0
4	lD	1881	0	1928	40	0
5	lE	3076	0	3209	62	0
6	lF	3272	0	3500	63	0
7	lG	2222	0	2304	35	0
8	lH	1607	0	1726	31	0
9	lI	1658	0	1802	29	0
10	lJ	1727	0	1849	25	0
11	lK	1538	0	1598	28	0
12	lL	1597	0	1654	23	0
13	lM	1350	0	1390	28	0
14	lN	1872	0	2034	37	0
15	lO	1616	0	1700	21	0
16	lP	1039	0	1133	23	0
17	lQ	1676	0	1777	16	0
18	lR	1232	0	1307	12	0
19	lS	1321	0	1427	14	0
20	lT	1413	0	1479	17	0
21	lU	1235	0	1369	21	0
22	lV	1320	0	1406	18	0
23	lW	763	0	818	38	0
24	lX	1015	0	1054	24	0
25	lY	926	0	997	11	0
26	lZ	481	0	518	10	0
27	la	1651	0	1822	23	0
28	lb	1094	0	1174	22	0
29	lc	1192	0	1205	18	0
30	ld	478	0	507	3	0
31	le	768	0	810	15	0
32	lf	1184	0	1270	18	0
33	lg	1058	0	1140	15	0
34	lh	820	0	864	13	0
35	li	974	0	1093	14	0
36	lj	841	0	878	9	0
37	lk	712	0	755	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
38	ll	591	0	617	13	0
39	lm	688	0	728	14	0
40	ln	584	0	643	13	0
41	lo	432	0	444	6	0
42	lp	420	0	450	15	0
43	lq	756	0	821	10	0
44	lr	65	0	16	0	0
All	All	121291	0	88922	1660	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 1660 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)
3:lC:79:G:N1	3:lC:95:A:C2	2.13	1.17
3:lC:79:G:N1	3:lC:95:A:H2	1.41	1.15
3:lC:81:A:H2	3:lC:93:G:N1	1.44	1.13
1:lA:3454:G:N1	1:lA:3502:A:H2	1.50	1.09
1:lA:3454:G:N1	1:lA:3502:A:C2	2.20	1.05

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	lD	244/257 (95%)	229 (94%)	15 (6%)	0	100	100
5	lE	385/402 (96%)	373 (97%)	12 (3%)	0	100	100
6	lF	420/431 (97%)	404 (96%)	16 (4%)	0	100	100
7	lG	275/286 (96%)	259 (94%)	16 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
8	lH	201/204 (98%)	183 (91%)	18 (9%)	0	100	100
9	lI	208/230 (90%)	200 (96%)	8 (4%)	0	100	100
10	lJ	209/286 (73%)	200 (96%)	9 (4%)	0	100	100
11	lK	191/197 (97%)	185 (97%)	6 (3%)	0	100	100
12	lL	196/210 (93%)	187 (95%)	9 (5%)	0	100	100
13	lM	166/174 (95%)	158 (95%)	7 (4%)	1 (1%)	22	51
14	lN	228/291 (78%)	212 (93%)	16 (7%)	0	100	100
15	lO	202/205 (98%)	197 (98%)	5 (2%)	0	100	100
16	lP	130/135 (96%)	128 (98%)	2 (2%)	0	100	100
17	lQ	202/205 (98%)	197 (98%)	5 (2%)	0	100	100
18	lR	156/179 (87%)	153 (98%)	3 (2%)	0	100	100
19	lS	165/168 (98%)	153 (93%)	12 (7%)	0	100	100
20	lT	171/173 (99%)	165 (96%)	6 (4%)	0	100	100
21	lU	148/198 (75%)	145 (98%)	3 (2%)	0	100	100
22	lV	163/166 (98%)	158 (97%)	5 (3%)	0	100	100
23	lW	91/137 (66%)	82 (90%)	8 (9%)	1 (1%)	12	37
24	lX	131/140 (94%)	128 (98%)	3 (2%)	0	100	100
25	lY	114/121 (94%)	112 (98%)	2 (2%)	0	100	100
26	lZ	55/163 (34%)	54 (98%)	1 (2%)	0	100	100
27	la	208/213 (98%)	200 (96%)	8 (4%)	0	100	100
28	lb	135/139 (97%)	133 (98%)	2 (2%)	0	100	100
29	lc	146/149 (98%)	140 (96%)	6 (4%)	0	100	100
30	ld	58/64 (91%)	55 (95%)	3 (5%)	0	100	100
31	le	101/109 (93%)	92 (91%)	9 (9%)	0	100	100
32	lf	144/150 (96%)	135 (94%)	9 (6%)	0	100	100
33	lg	127/134 (95%)	123 (97%)	4 (3%)	0	100	100
34	lh	103/137 (75%)	99 (96%)	4 (4%)	0	100	100
35	li	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
36	lj	104/108 (96%)	100 (96%)	4 (4%)	0	100	100
37	lk	83/104 (80%)	82 (99%)	1 (1%)	0	100	100
38	ll	70/77 (91%)	63 (90%)	5 (7%)	2 (3%)	3	13

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
39	lm	88/93 (95%)	82 (93%)	6 (7%)	0	100	100
40	ln	71/84 (84%)	69 (97%)	2 (3%)	0	100	100
41	lo	48/51 (94%)	48 (100%)	0	0	100	100
42	lp	51/56 (91%)	50 (98%)	1 (2%)	0	100	100
43	lq	90/98 (92%)	88 (98%)	2 (2%)	0	100	100
All	All	6198/6846 (90%)	5938 (96%)	256 (4%)	4 (0%)	50	77

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
23	lW	45	LYS
38	ll	39	TYR
38	ll	40	PRO
13	lM	28	ASP

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	lD	195/201 (97%)	189 (97%)	6 (3%)	35	69
5	lE	330/343 (96%)	326 (99%)	4 (1%)	67	89
6	lF	338/345 (98%)	329 (97%)	9 (3%)	40	74
7	lG	225/231 (97%)	224 (100%)	1 (0%)	89	96
8	lH	172/173 (99%)	170 (99%)	2 (1%)	67	89
9	lI	178/195 (91%)	175 (98%)	3 (2%)	56	84
10	lJ	186/242 (77%)	179 (96%)	7 (4%)	28	62
11	lK	171/174 (98%)	170 (99%)	1 (1%)	84	95
12	lL	169/176 (96%)	167 (99%)	2 (1%)	67	89
13	lM	144/147 (98%)	142 (99%)	2 (1%)	62	87
14	lN	200/243 (82%)	196 (98%)	4 (2%)	50	81

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
15	lO	167/168 (99%)	163 (98%)	4 (2%)	44	77
16	lP	116/118 (98%)	113 (97%)	3 (3%)	41	75
17	lQ	171/172 (99%)	170 (99%)	1 (1%)	84	95
18	lR	129/147 (88%)	125 (97%)	4 (3%)	35	69
19	lS	142/143 (99%)	138 (97%)	4 (3%)	38	72
20	lT	156/156 (100%)	154 (99%)	2 (1%)	65	88
21	lU	132/174 (76%)	132 (100%)	0	100	100
22	lV	144/145 (99%)	141 (98%)	3 (2%)	48	80
23	lW	86/125 (69%)	77 (90%)	9 (10%)	5	18
24	lX	109/113 (96%)	108 (99%)	1 (1%)	75	92
25	lY	99/102 (97%)	98 (99%)	1 (1%)	73	91
26	lZ	52/137 (38%)	49 (94%)	3 (6%)	17	45
27	la	177/179 (99%)	175 (99%)	2 (1%)	70	90
28	lb	121/123 (98%)	118 (98%)	3 (2%)	42	75
29	lc	120/121 (99%)	117 (98%)	3 (2%)	42	75
30	ld	50/54 (93%)	49 (98%)	1 (2%)	50	81
31	le	86/92 (94%)	83 (96%)	3 (4%)	31	65
32	lf	125/128 (98%)	122 (98%)	3 (2%)	44	77
33	lg	112/116 (97%)	108 (96%)	4 (4%)	30	64
34	lh	86/116 (74%)	84 (98%)	2 (2%)	45	78
35	li	103/103 (100%)	103 (100%)	0	100	100
36	lj	89/91 (98%)	89 (100%)	0	100	100
37	lk	71/82 (87%)	69 (97%)	2 (3%)	38	72
38	ll	60/64 (94%)	59 (98%)	1 (2%)	56	84
39	lm	72/74 (97%)	72 (100%)	0	100	100
40	ln	63/73 (86%)	62 (98%)	1 (2%)	58	85
41	lo	44/45 (98%)	43 (98%)	1 (2%)	45	78
42	lp	45/48 (94%)	45 (100%)	0	100	100
43	lq	85/91 (93%)	84 (99%)	1 (1%)	67	89
All	All	5320/5770 (92%)	5217 (98%)	103 (2%)	52	82

5 of 103 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
20	lT	58	GLN
24	lX	106	VAL
38	ll	10	THR
22	lV	27	THR
23	lW	45	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 47 such sidechains are listed below:

Mol	Chain	Res	Type
20	lT	101	GLN
25	lY	58	HIS
22	lV	5	ASN
24	lX	22	ASN
29	lc	28	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	lA	3047/3503 (86%)	553 (18%)	0
2	lB	143/155 (92%)	32 (22%)	0
3	lC	116/117 (99%)	15 (12%)	0
All	All	3306/3775 (87%)	600 (18%)	0

5 of 600 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	lA	18	G
1	lA	22	A
1	lA	29	U
1	lA	30	A
1	lA	36	A

There are no RNA pucker outliers to report.

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 oligosaccharides 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.

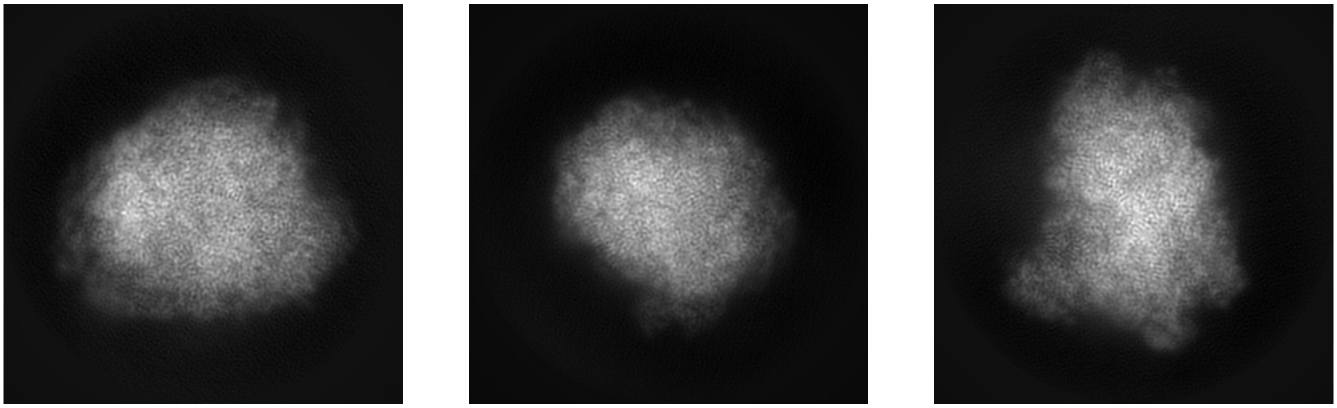
6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-64694. 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.

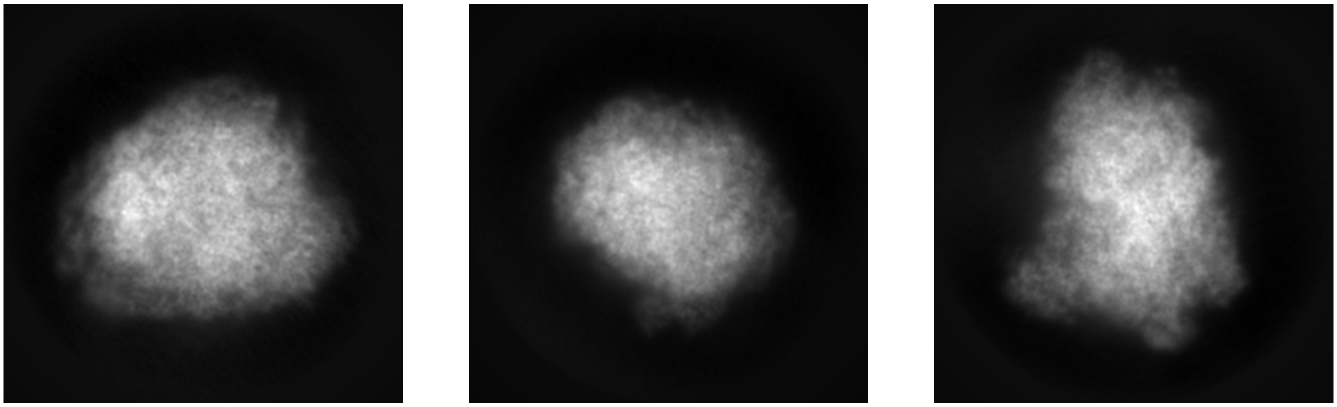
6.1 Orthogonal projections ⓘ

6.1.1 Primary map



X Y Z

6.1.2 Raw map

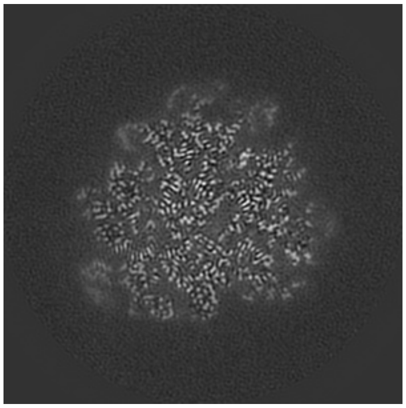


X Y Z

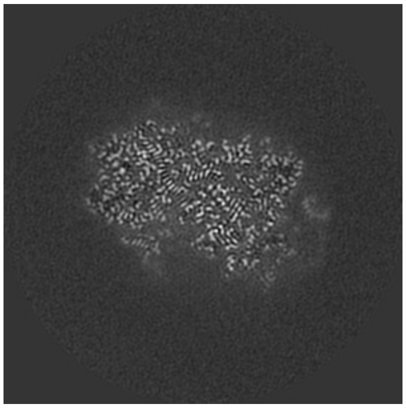
The images above show the map projected in three orthogonal directions.

6.2 Central slices

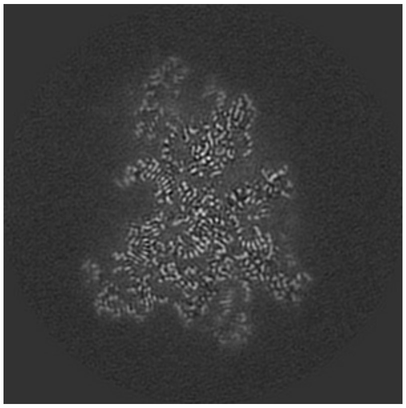
6.2.1 Primary map



X Index: 150

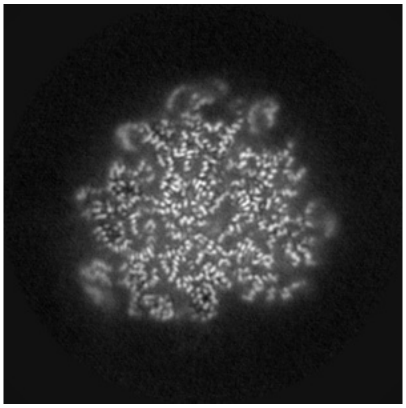


Y Index: 150

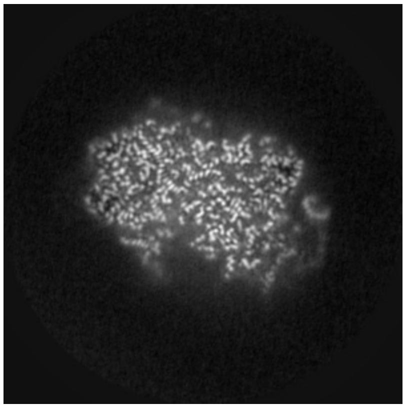


Z Index: 150

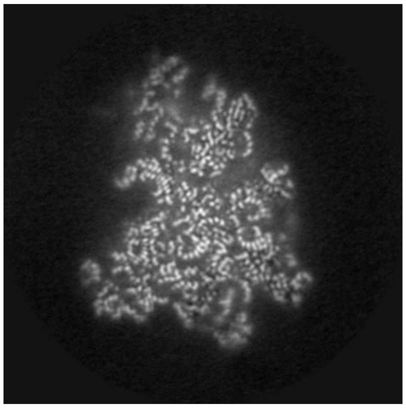
6.2.2 Raw map



X Index: 150



Y Index: 150

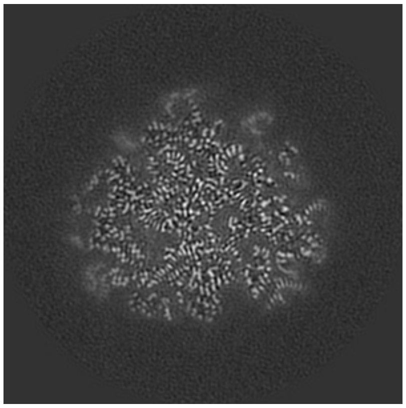


Z Index: 150

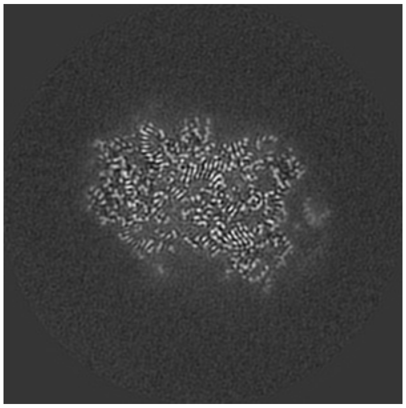
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices

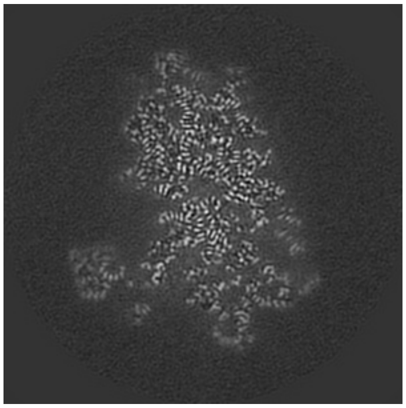
6.3.1 Primary map



X Index: 156

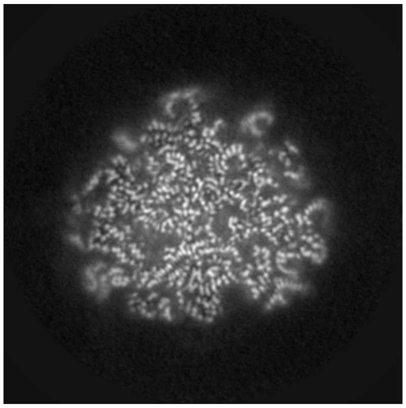


Y Index: 153

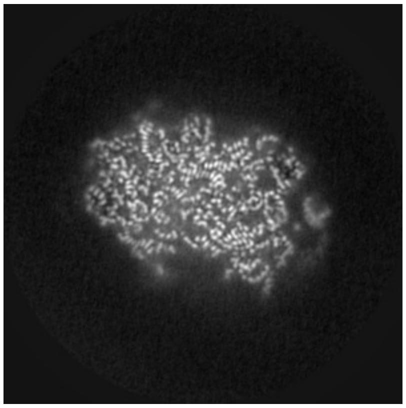


Z Index: 134

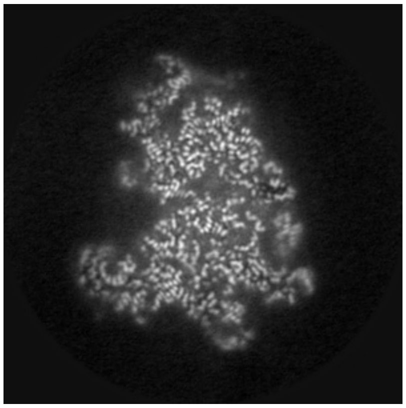
6.3.2 Raw map



X Index: 156



Y Index: 153

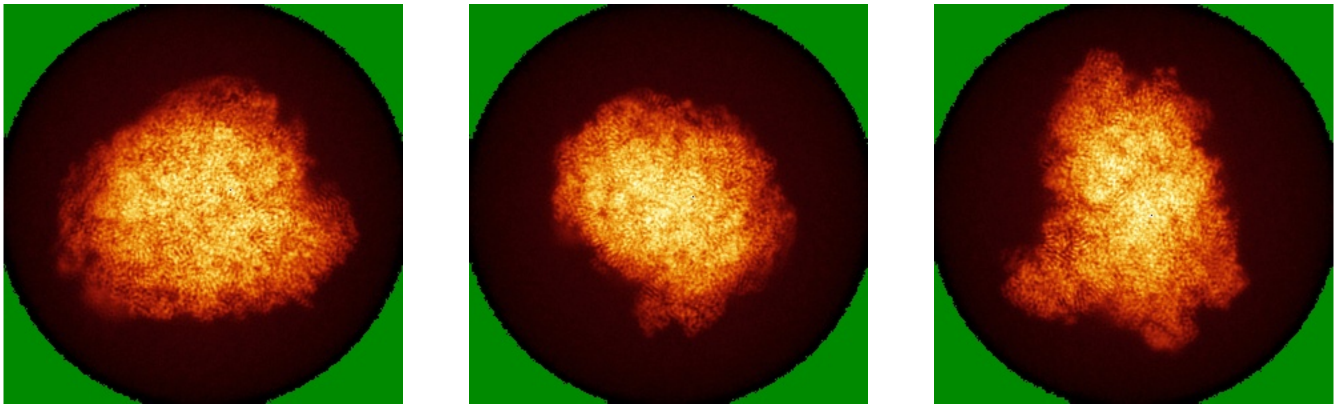


Z Index: 141

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

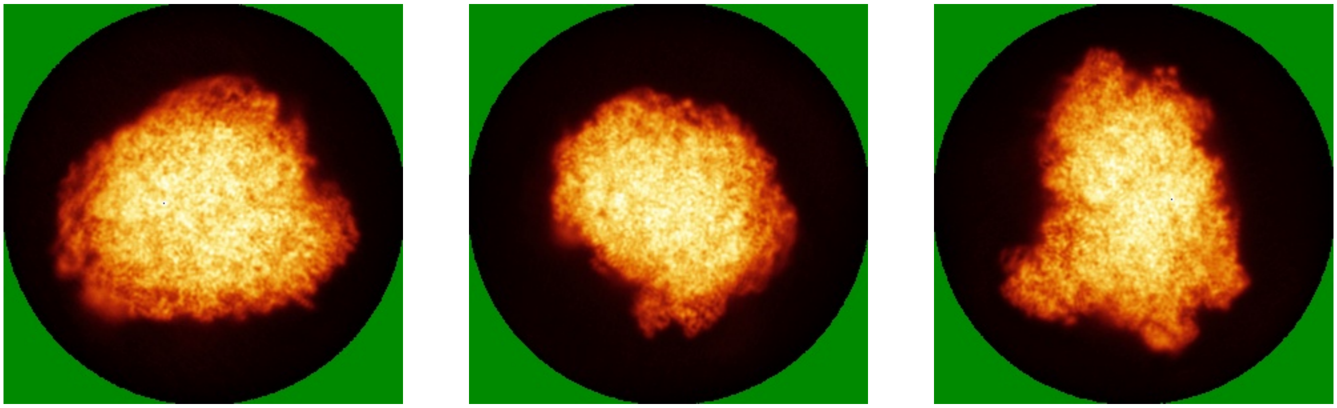
6.4 Orthogonal standard-deviation projections (False-color)

6.4.1 Primary map



X Y Z

6.4.2 Raw map



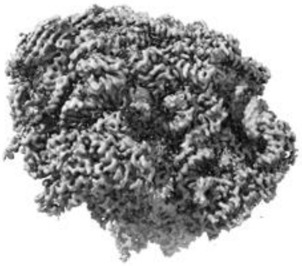
X Y Z

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

6.5 Orthogonal surface views

6.5.1 Primary map

X

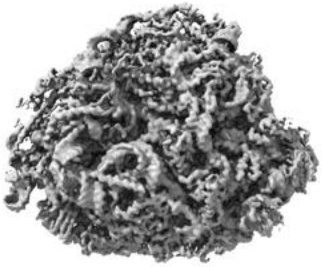


Y

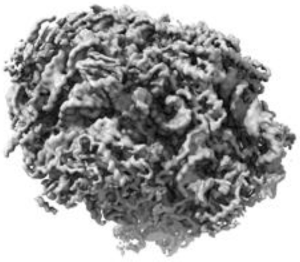
Z

The images above show the 3D surface view of the map at the recommended contour level 2.0. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X



Y

Z

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

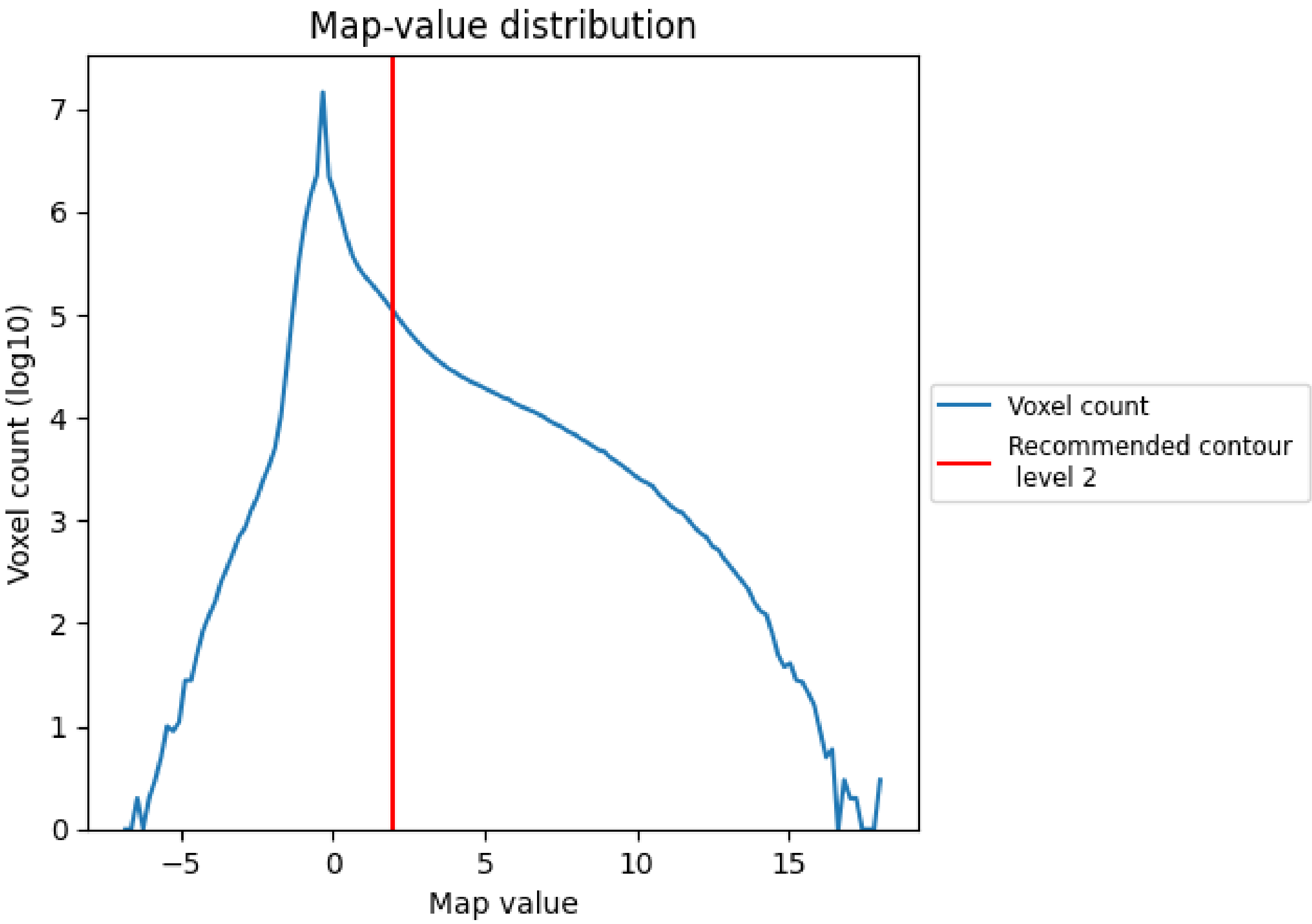
6.6 Mask visualisation

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

7 Map analysis ⓘ

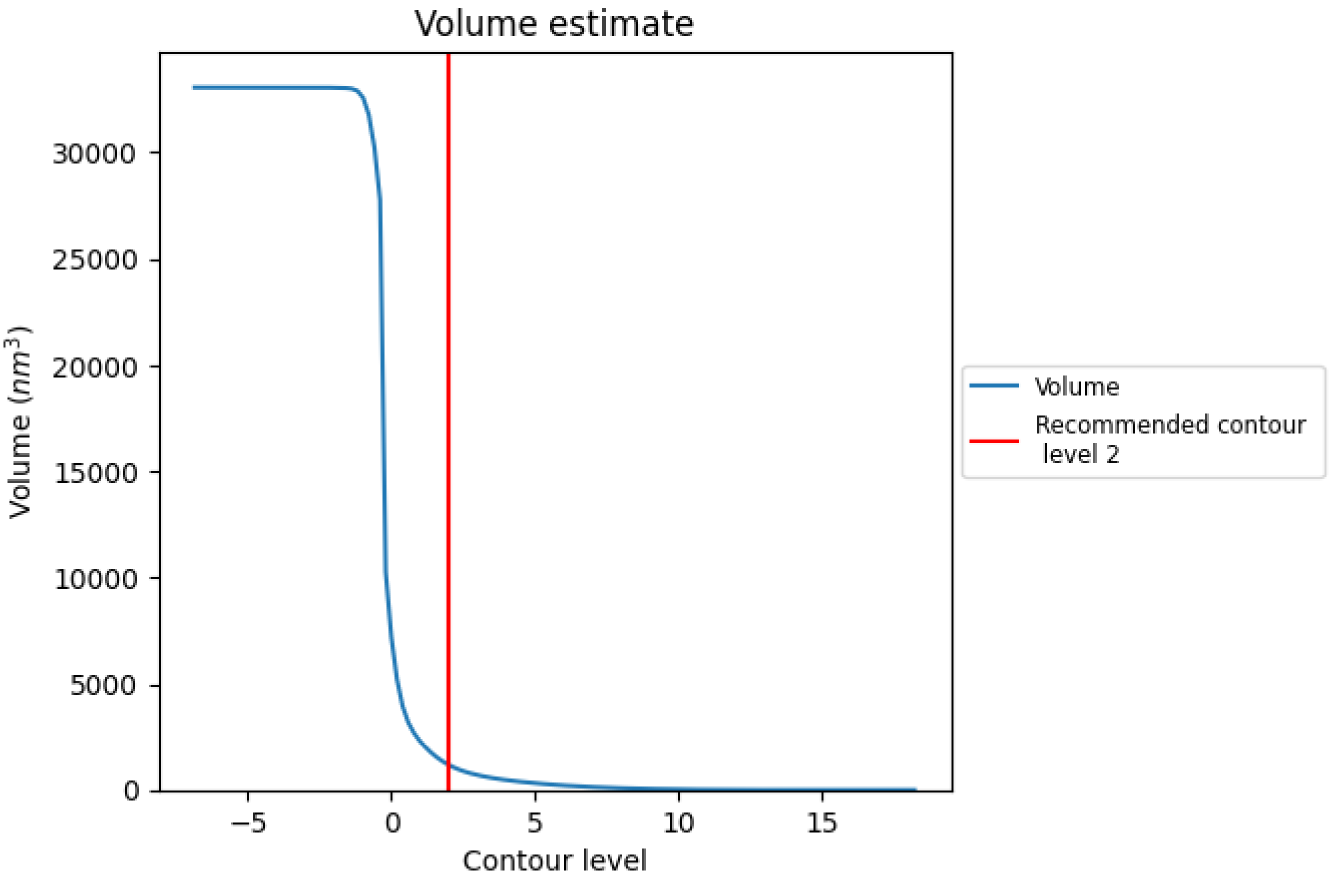
This section contains the results of statistical analysis of the map.

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.

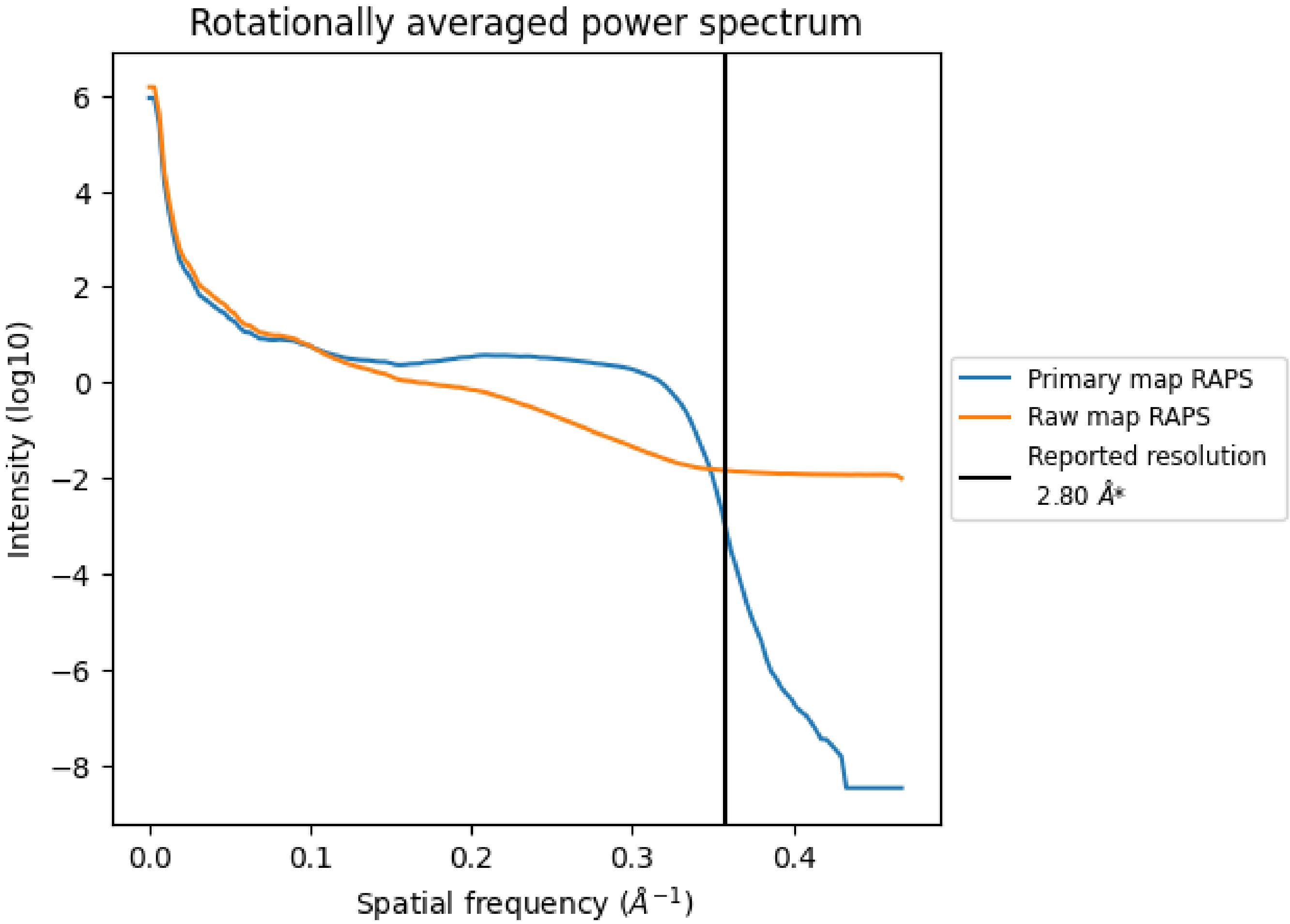
7.2 Volume estimate ⓘ



The volume at the recommended contour level is 1183 nm^3; this corresponds to an approximate mass of 1069 kDa.

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

7.3 Rotationally averaged power spectrum ⓘ

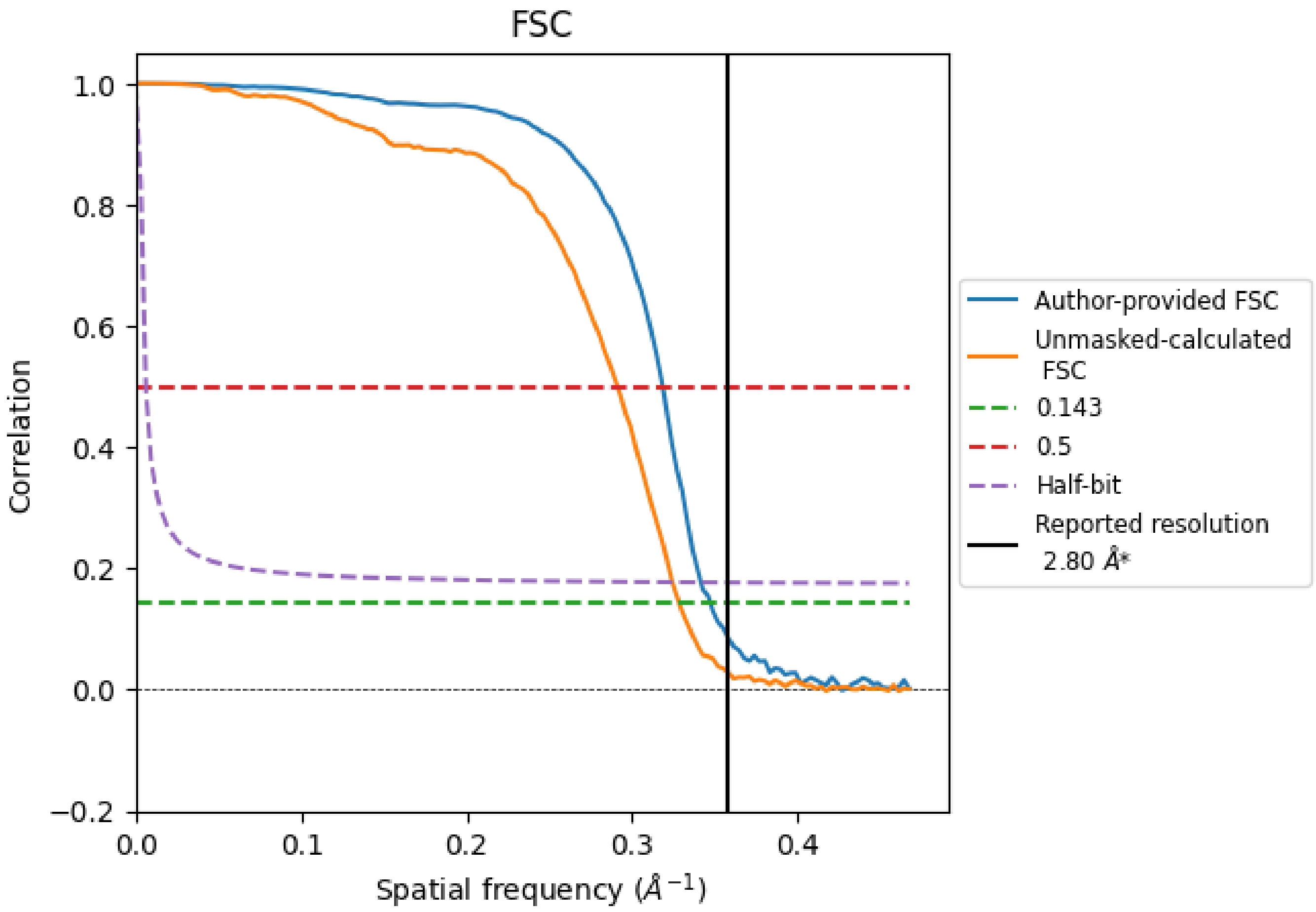


*Reported resolution corresponds to spatial frequency of 0.357 Å^{-1}

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 0.357 $\AA^{-1}$

8.2 Resolution estimates ⓘ

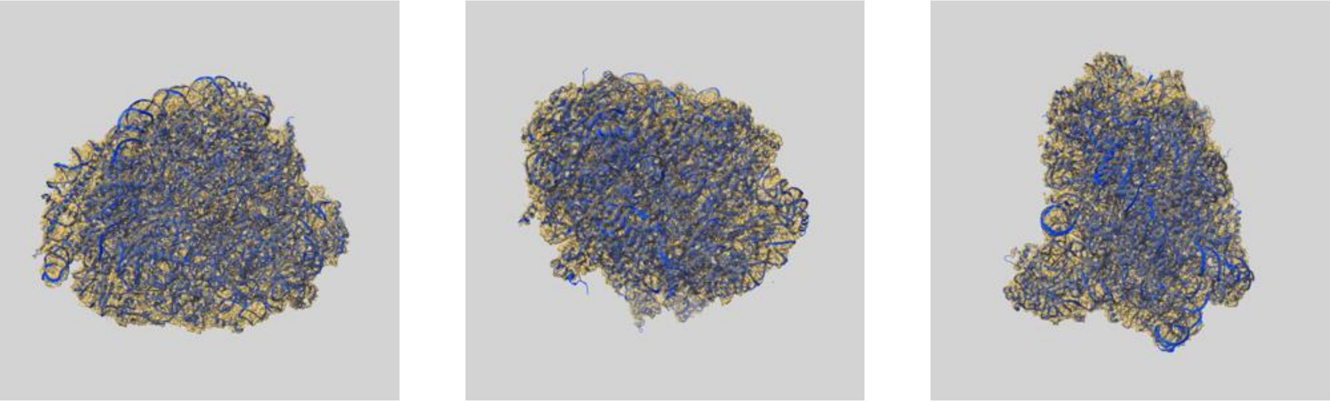
Resolution estimate (Å)	**Estimation criterion (FSC cut-off)**		
	0.143	0.5	Half-bit
Reported by author	2.80	-	-
Author-provided FSC curve	2.88	3.14	2.93
Unmasked-calculated*	3.05	3.44	3.08

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit (i)

This section contains information regarding the fit between EMDB map EMD-64694 and PDB model 9V1I. Per-residue inclusion information can be found in section 3 on page 12.

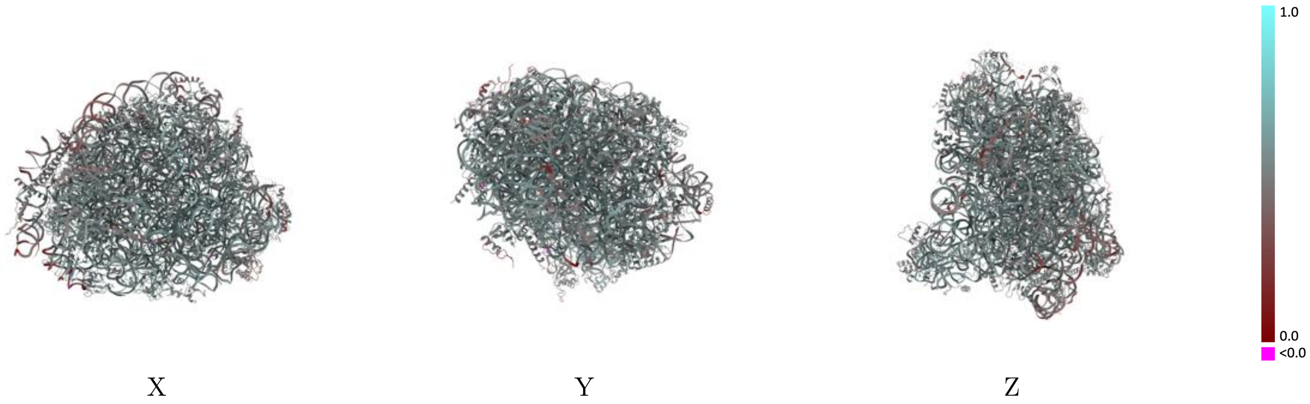
9.1 Map-model overlay (i)



X Y Z

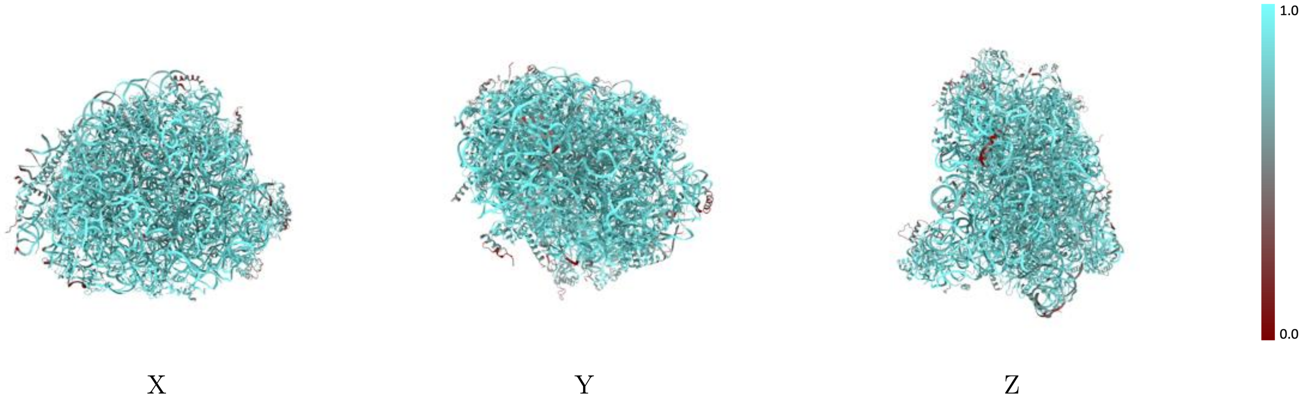
The images above show the 3D surface view of the map at the recommended contour level 2.0 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model



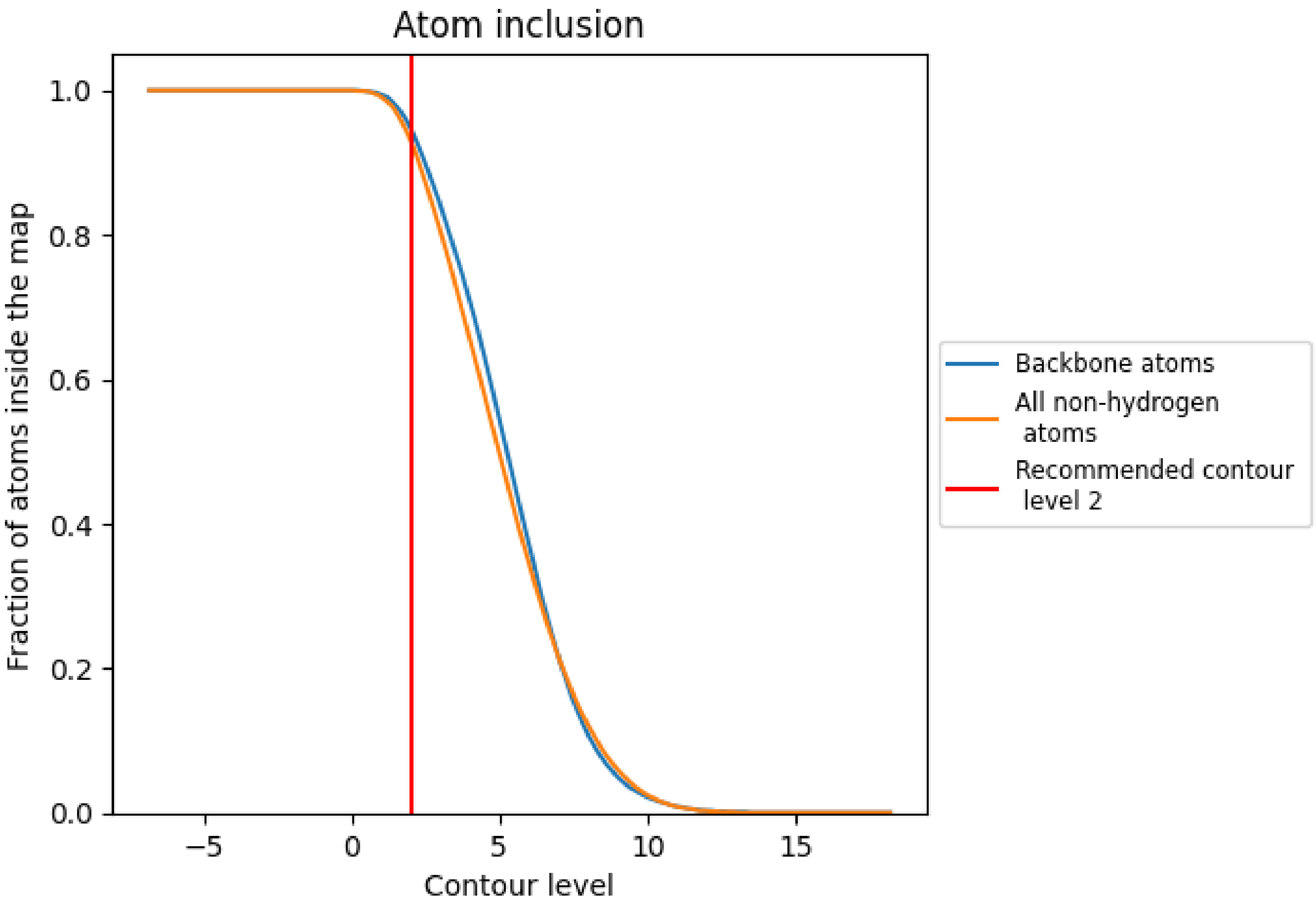
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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



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 (2).

9.4 Atom inclusion ⓘ



At the recommended contour level, 95% of all backbone atoms, 93% 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 (2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9300	0.5260
lA	0.9560	0.5250
lB	0.9860	0.5280
lC	0.9780	0.5440
lD	0.9510	0.5560
lE	0.9400	0.5500
lF	0.8800	0.5260
lG	0.8320	0.5270
lH	0.8100	0.4890
lI	0.9320	0.5320
lJ	0.7750	0.4870
lK	0.8960	0.5420
lL	0.9260	0.5460
lM	0.6820	0.4760
lN	0.8290	0.5040
lO	0.9300	0.5480
lP	0.9200	0.5450
lQ	0.9770	0.5550
lR	0.9400	0.5380
lS	0.9610	0.5370
lT	0.9600	0.5540
lU	0.9070	0.5310
lV	0.9320	0.5550
lW	0.6540	0.3900
lX	0.9460	0.5520
lY	0.9080	0.5220
lZ	0.8870	0.5390
la	0.8830	0.5060
lb	0.7920	0.5080
lc	0.9590	0.5530
ld	0.9470	0.5490
le	0.7280	0.4770
lf	0.7940	0.4830
lg	0.9210	0.5230
lh	0.9280	0.5330

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Chain	Atom inclusion	Q-score
li	0.8940	0.5120
lj	0.9770	0.5530
lk	0.9190	0.5270
ll	0.9840	0.5480
lm	0.8920	0.5380
ln	0.7550	0.4650
lo	0.9830	0.5380
lp	0.9060	0.5340
lq	0.9610	0.5560
lr	0.9540	0.5150