wwPDB EM Validation Summary Report

Feb 27, 2024 – 11:49 AM EST

PDB ID	:	6V3D
EMDB ID	:	EMD-21033
Title	:	Cryo-EM structure of the Acinetobacter baumannii Ribosome: 50S subunit
Authors	:	Morgan, C.E.; Yu, E.W.
Deposited on	:	2019-11-25
Resolution	:	2.95 Å(reported)
Based on initial model	:	5AFI

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 ⓘ symbol.

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

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

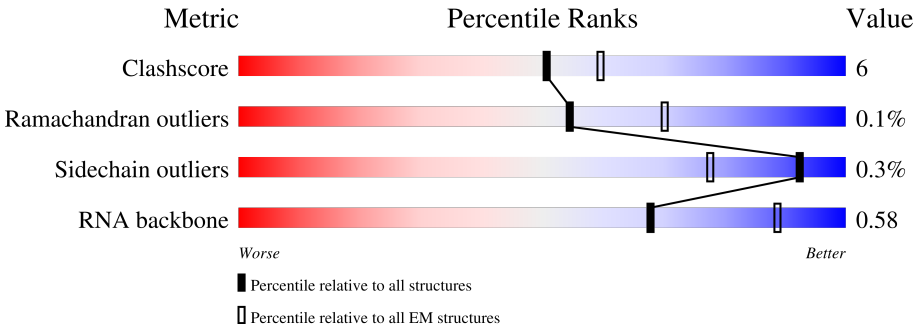
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 2.95 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	0	51	12% 94% 6%
2	1	44	84% 16%
3	2	64	75% 20%
4	3	38	63% 34%
5	AN1	2918	8% 62% 32% 5%
6	B	115	52% 39% 9%
7	C	274	86% 13%

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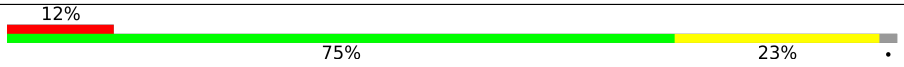
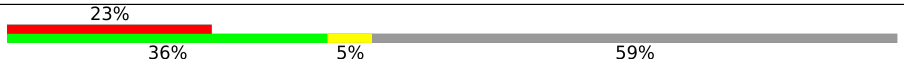
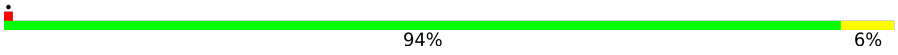
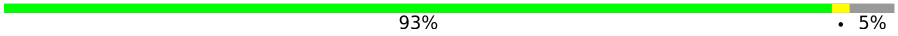
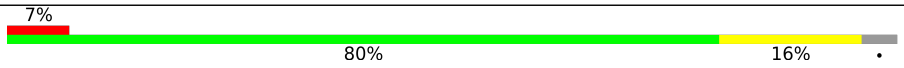
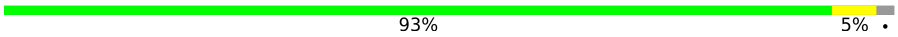
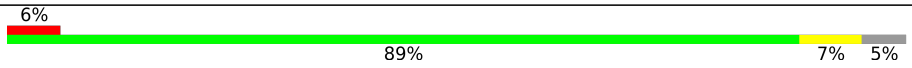
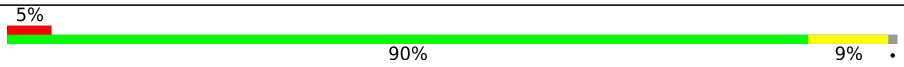
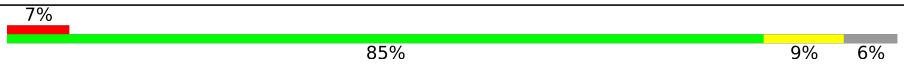
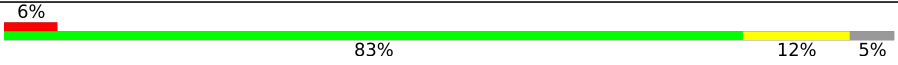
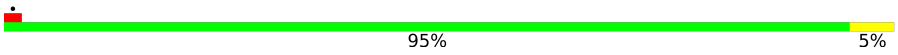
Mol	Chain	Length	Quality of chain
8	D	212	
9	E	200	
10	F	178	
11	G	177	
12	H	148	
13	I	142	
14	J	122	
15	K	146	
16	L	137	
17	M	125	
18	N	116	
19	O	122	
20	P	119	
21	Q	103	
22	R	109	
23	S	106	
24	T	105	
25	U	98	
26	V	85	
27	W	78	
28	X	65	
29	Y	58	
30	Z	61	

2 Entry composition (i)

There are 34 unique types of molecules in this entry. The entry contains 89040 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	0	51	427	274	77	73	3	0	0

- Molecule 2 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	1	44	363	222	85	54	2	0	0

- Molecule 3 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	2	63	509	319	110	76	4	0	0

- Molecule 4 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	3	38	295	179	64	48	4	0	0

- Molecule 5 is a RNA chain called 23s ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	AN1	2892	62023	27689	11345	20098	2891	0	0

- Molecule 6 is a RNA chain called 5s ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
6	B	115	2450	1095	440	800	115	0	0

- Molecule 7 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	C	270	Total	C	N	O	S	0	0
			2096	1291	434	363	8		

- Molecule 8 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	D	211	Total	C	N	O	S	0	0
			1572	972	297	300	3		

- Molecule 9 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	E	186	Total	C	N	O	S	0	0
			1419	893	265	257	4		

- Molecule 10 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	F	175	Total	C	N	O	S	0	0
			1381	877	247	249	8		

- Molecule 11 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	G	174	Total	C	N	O	S	0	0
			1318	832	236	249	1		

- Molecule 12 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	H	60	Total	C	N	O	S	0	0
			458	287	84	86	1		

- Molecule 13 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	I	142	Total	C	N	O	S	0	0
			1125	718	200	203	4		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	J	122	Total	C	N	O	S	0	0
			946	592	180	169	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
15	K	146	Total	C	N	O	S	0	0
			1089	673	215	200	1		

- Molecule 16 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	L	137	Total	C	N	O	S	0	0
			1087	687	210	185	5		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	M	119	Total	C	N	O	S	0	0
			942	590	186	163	3		

- Molecule 18 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	N	114	Total	C	N	O	S	0	0
			857	528	173	155	1		

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

Mol	Chain	Residues	Atoms				AltConf	Trace
19	O	117	Total	C	N	O	0	0
			919	578	177	164		

- Molecule 20 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	P	117	Total	C	N	O	S	0	0
			934	589	197	146	2		

- Molecule 21 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	Q	103	Total 807	C 506	N 155	O 143	S 3	0	0

- Molecule 22 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	R	109	Total 826	C 514	N 158	O 150	S 4	0	0

- Molecule 23 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms				AltConf	Trace
23	S	90	Total 702	C 447	N 127	O 128	0	0

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

Mol	Chain	Residues	Atoms				AltConf	Trace
24	T	100	Total 749	C 465	N 139	O 145	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
25	U	97	Total 760	C 477	N 143	O 139	S 1	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
26	V	80	Total 598	C 370	N 115	O 111	S 2	0	0

- Molecule 27 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	W	77	Total 632	C 395	N 130	O 105	S 2	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
28	X	62	Total	C	N	O	S	0	0
			498	308	96	93	1		

- Molecule 29 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Y	58	Total	C	N	O	S	0	0
			463	286	88	85	4		

- Molecule 30 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	Z	55	Total	C	N	O	S	0	0
			456	271	102	82	1		

- Molecule 31 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
31	3	1	Total	Zn	0
			1	1	

- Molecule 32 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
32	AN1	105	Total	Mg	0
			105	105	
32	C	1	Total	Mg	0
			1	1	

- Molecule 33 is SODIUM ION (three-letter code: NA) (formula: Na).

Mol	Chain	Residues	Atoms		AltConf
33	AN1	1	Total	Na	0
			1	1	

- Molecule 34 is water.

Mol	Chain	Residues	Atoms		AltConf
34	1	1	Total	O	0
			1	1	
34	AN1	218	Total	O	0
			218	218	

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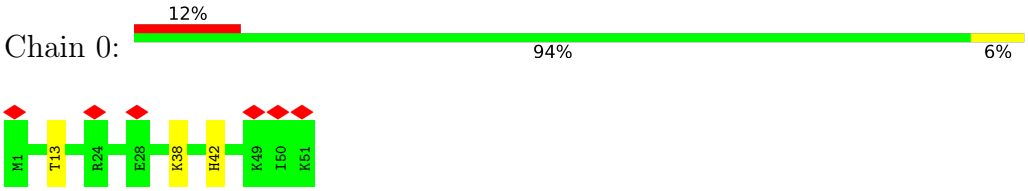
Mol	Chain	Residues	Atoms	AltConf
34	B	3	Total O 3 3	0
34	C	1	Total O 1 1	0
34	D	1	Total O 1 1	0
34	E	1	Total O 1 1	0
34	K	1	Total O 1 1	0
34	N	1	Total O 1 1	0
34	R	1	Total O 1 1	0
34	V	1	Total O 1 1	0
34	W	1	Total O 1 1	0
34	Z	1	Total O 1 1	0

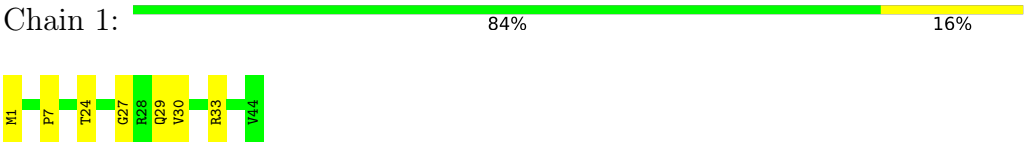
3 Residue-property plots (i)

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

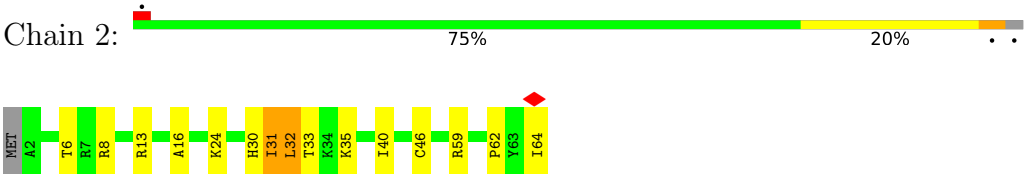
• Molecule 1: 50S ribosomal protein L33



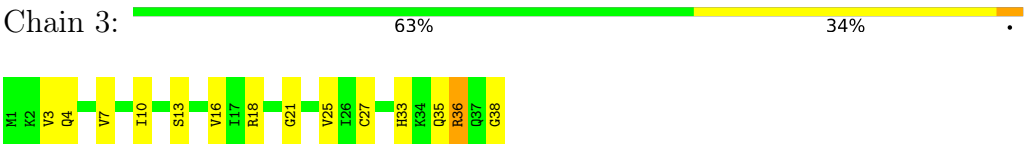
• Molecule 2: 50S ribosomal protein L34



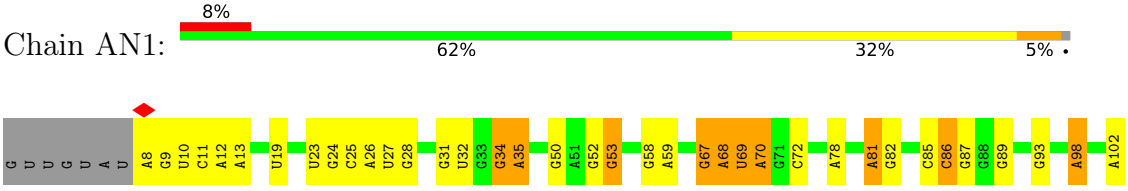
• Molecule 3: 50S ribosomal protein L35

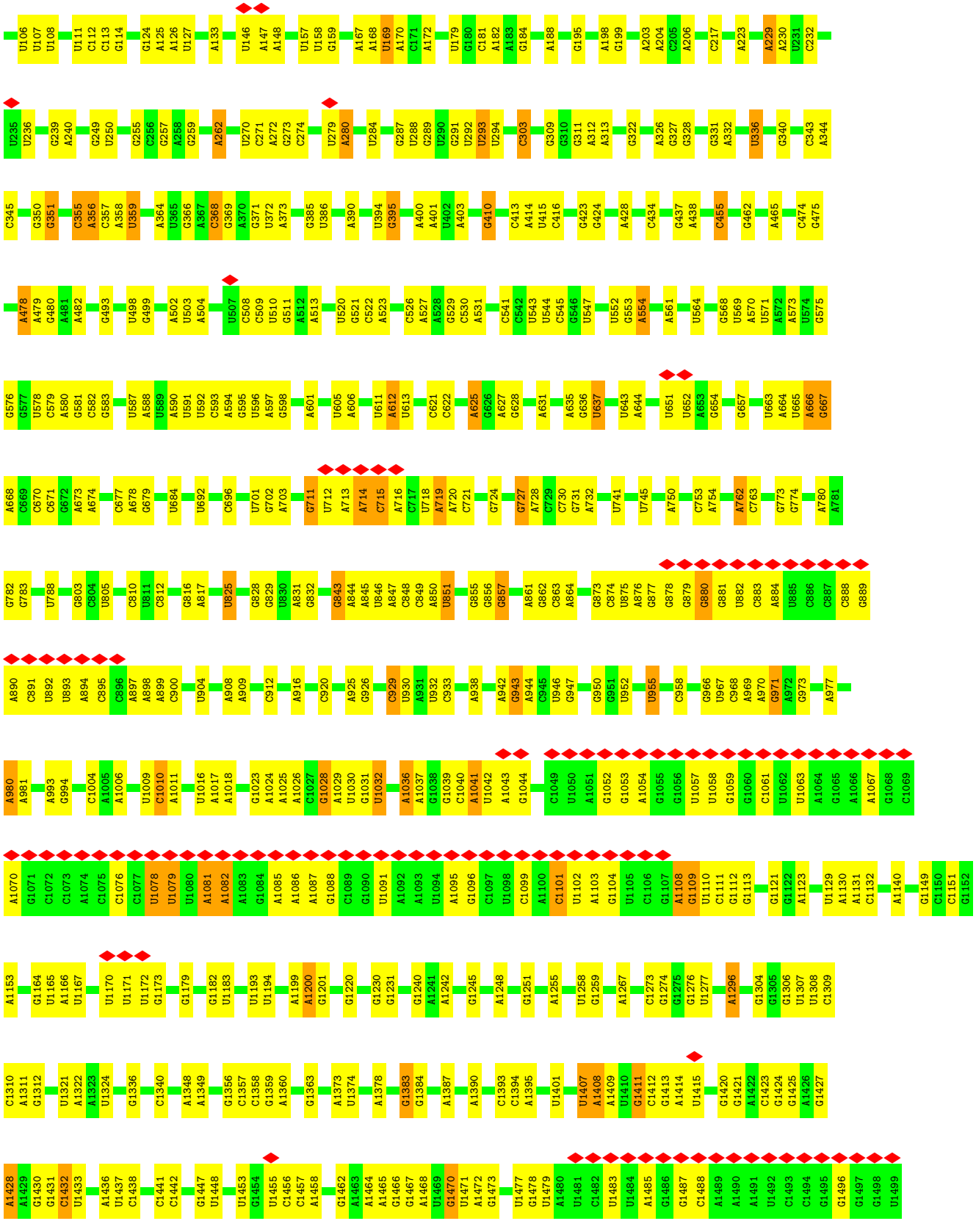


• Molecule 4: 50S ribosomal protein L36



• Molecule 5: 23s ribosomal RNA

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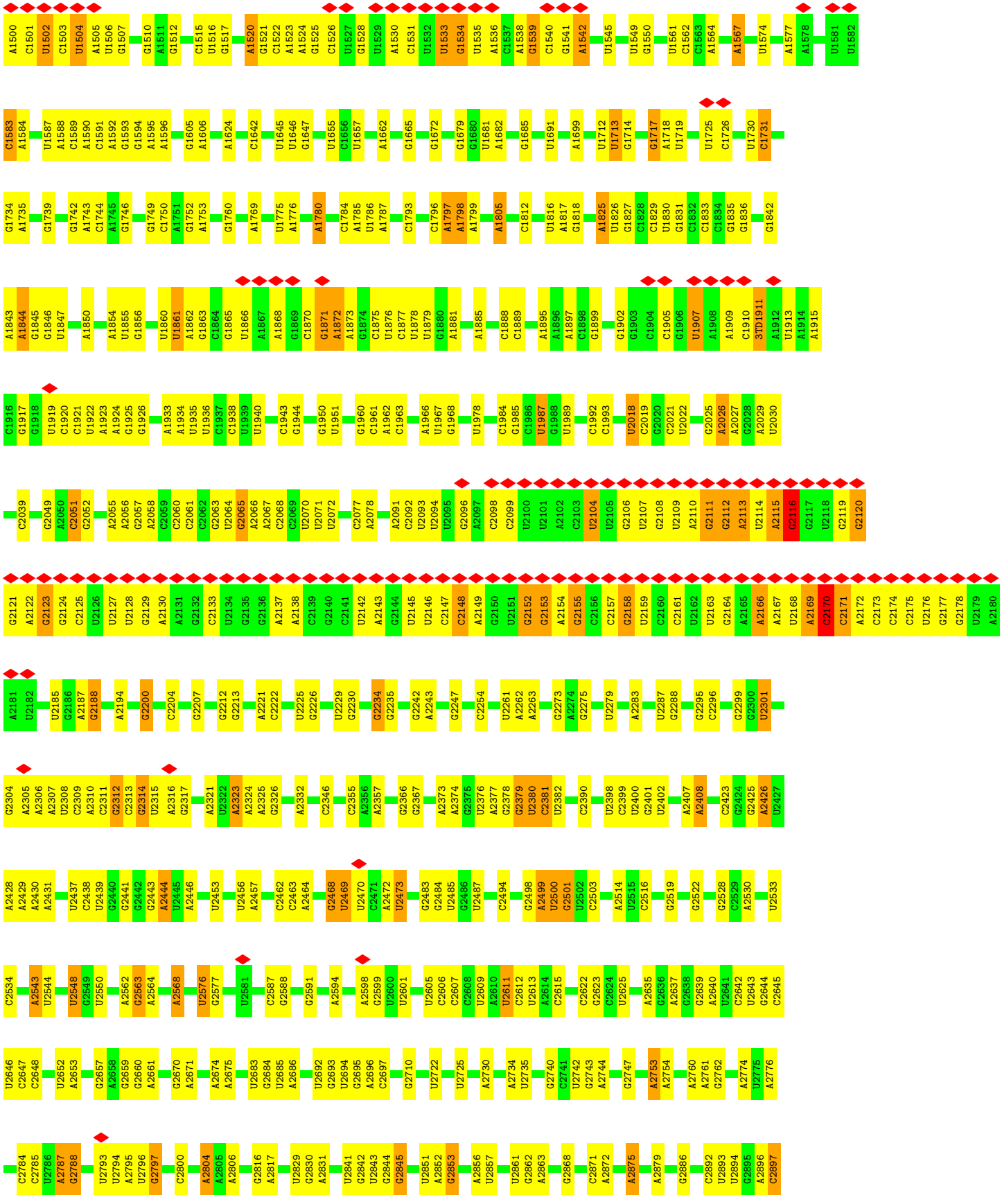
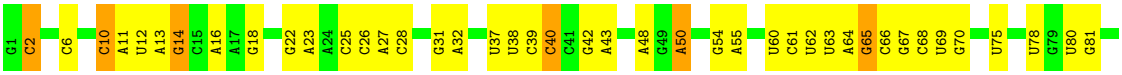
U235 U236 G239 A240 G249 U250 G255 C256 G257 A258 C259 A262 U270 C271 A272 G273 C274 U279 A280 U284 G287 U288 G289 U290 G291 U292 U293 U294 C303 G309 G310 G311 A312 A313 G322 A326 G327 G328 G331 A332 U336 G340 C343 A344
C345 G350 G351 C355 A356 C357 A358 U359 A364 U365 G366 A367 C368 G369 A370 G371 U372 A373 G385 U386 A390 U394 G395 A400 A401 U402 A403 G410 C413 A414 U415 C416 G423 G424 A428 C434 G437 A438 C455 G462 A465 C474 G475
A478 A479 G480 A481 A482 G493 U498 G499 A502 U503 A504 U507 C508 C509 U510 G511 A512 A513 U520 G521 C522 A523 C526 A527 A528 G529 C530 A531 C541 G542 U543 U544 C545 G546 U547 U552 G553 A554 A561 U564 G568 U569 A570 U571 A572 A573 U574 G575
G576 G577 U578 C579 A580 G581 C582 G583 U587 A588 U589 A590 U591 U592 C593 A594 G595 U596 A597 G598 A601 U605 A606 U611 A612 U613 C621 C622 A625 G626 A627 G628 A631 A635 G636 U637 U643 A644 U651 U652 A653 G654 G657 U663 A664 U665 A666 G667
A668 C669 C670 C671 G672 A673 A674 C677 A678 G679 U684 U692 C696 U701 G702 A703 G711 U712 A713 A714 C715 A716 C717 U718 A719 A720 C721 G724 G727 A728 C729 C730 G731 A732 U741 U745 A750 C753 A754 A762 C763 G773 G774 A780 A781
G782 G783 U788 G803 C804 U805 C810 U811 C812 G816 A817 U825 G828 G829 U830 A831 G832 G843 A844 A845 U846 A847 C848 C849 A850 U851 G855 G856 G857 A861 G862 C863 A864 G873 C874 U875 A876 G877 G878 G879 G880 G881 U882 C883 A884 U885 C886 C887 C888 G889
A890 C891 U892 U893 A894 C895 C896 A897 A898 A899 C900 U904 A908 A909 C912 A916 C920 A925 G926 C929 U930 A931 U932 C933 A938 A942 G943 A944 C945 U946 G947 G950 G951 U952 U955 C958 G966 U967 C968 A969 A970 G971 A972 G973 A977
A980 A981 A993 G994 C1004 A1005 A1006 U1009 C1010 A1011 U1016 A1017 A1018 G1023 A1024 A1025 A1026 C1027 G1028 A1029 U1030 G1031 U1032 A1036 A1037 G1038 G1039 C1040 A1041 U1042 A1043 G1044 C1049 U1050 A1051 G1052 G1053 A1054 G1055 G1056 U1057 U1058 G1059 G1060 C1061 U1062 U1063 A1064 G1065 A1066 A1067 G1068 C1069
A1070 G1071 C1072 C1073 A1074 C1075 C1076 C1077 U1078 U1079 U1080 A1081 A1082 A1083 G1084 A1085 A1086 A1087 G1088 C1089 G1090 U1091 A1092 A1093 U1094 A1095 G1096 C1097 U1098 C1099 A1100 C1101 U1102 A1103 G1104 U1105 C1106 G1107 A1108 G1109 U1110 C1111 G1112 G1113 G1121 G1122 A1123 U1129 A1130 A1131 C1132 A1140 G1149 C1150 C1151 G1152
A1153 G1164 U1165 A1166 U1167 U1170 U1171 U1172 G1173 G1179 G1182 U1183 U1193 U1194 A1199 A1200 G1201 G1220 G1230 G1231 G1240 A1241 A1242 G1245 A1248 G1251 A1255 U1258 G1259 A1267 C1273 G1274 G1275 G1276 U1277 A1296 G1304 G1305 G1306 U1307 U1308 C1309
C1310 A1311 G1312 U1321 A1322 A1323 U1324 G1336 C1340 A1348 A1349 G1356 C1357 C1358 G1359 A1360 G1363 A1373 U1374 A1378 G1383 G1384 A1387 A1390 C1393 C1394 A1395 U1401 U1407 A1408 A1409 U1410 G1411 C1412 G1413 A1414 U1415 G1420 G1421 A1422 C1423 G1424 G1425 A1426 G1427
A1428 A1429 G1430 G1431 C1432 U1433 A1436 U1437 C1438 C1441 C1442 G1447 U1448 U1453 G1454 U1455 C1456 C1457 A1458 G1462 A1463 A1464 A1465 G1466 G1467 A1468 U1469 G1470 U1471 A1472 G1473 U1477 G1478 U1479 A1480 U1481 C1482 U1483 U1484 A1485 G1486 G1487 C1488 A1489 A1490 A1491 U1492 C1493 C1494 G1495 G1496 G1497 G1498 U1499


A1500 C1501 U1502 C1503 U1504 A1505 U1506 G1507 G1510 A1511 G1512 C1515 U1516 G1517 A1520 G1521 C1522 A1523 A1524 G1525 C1526 U1527 G1528 U1529 A1530 C1531 U1532 U1533 G1534 U1535 A1536 C1537 A1538 G1539 C1540 G1541 A1542 U1545 U1549 G1550 U1561 C1562 C1563 A1564 A1567 U1574 A1577 A1578 U1581 U1582
C1583 A1584 U1587 A1588 C1589 A1590 C1591 A1592 G1593 G1594 A1595 A1596 G1605 A1606 A1624 C1642 U1645 U1646 G1647 U1655 G1656 U1657 A1662 G1665 G1672 G1679 G1680 U1681 A1682 G1685 U1691 A1699 U1712 U1713 G1714 G1717 A1718 U1719 U1725 C1726 U1730 C1731
G1734 A1735 G1739 G1742 A1743 C1744 A1745 G1746 G1749 C1750 A1751 G1752 A1753 G1760 A1769 U1775 A1776 A1780 C1784 A1785 U1786 A1787 C1793 C1796 A1797 A1798 A1799 A1805 C1812 U1816 A1817 G1818 A1825 U1826 G1827 C1828 C1829 U1830 G1831 C1832 C1833 C1834 G1835 G1836 G1842
A1843 A1844 G1845 G1846 U1847 A1850 A1854 U1855 G1856 U1860 U1861 A1862 G1863 C1864 G1865 U1866 A1867 A1868 G1869 C1870 G1871 A1872 A1873 G1874 C1875 U1876 C1877 U1878 U1879 G1880 A1881 A1885 C1888 C1889 A1895 A1896 A1897 C1898 G1899 G1902 G1903 C1904 C1905 G1906 U1907 A1908 A1909 C1910 3TD1911 A1912 U1913 A1914 A1915
C1916 G1917 G1918 U1919 C1920 C1921 U1922 A1923 A1924 G1925 G1926 A1933 A1934 U1935 U1936 C1937 C1938 U1939 U1940 C1943 G1944 G1950 U1951 G1960 C1961 A1962 C1963 A1966 U1967 G1968 U1978 C1984 G1985 C1986 U1987 G1988 U1989 C1992 C1993 U2018 C2019 G2020 C2021 U2022 G2025 A2026 A2027 G2028 A2029 U2030
C2039 G2049 A2050 C2051 G2052 A2055 A2056 G2057 A2058 C2059 C2060 C2061 C2062 G2063 U2064 G2065 A2066 A2067 C2068 C2069 U2070 U2071 U2072 C2077 A2078 A2091 C2092 U2093 U2094 U2095 G2096 A2097 C2098 C2099 U2100 U2101 A2102 C2103 U2104 U2105 G2106 U2107 G2108 U2109 A2110 G2111 G2112 A2113 U2114 A2115 G2116 G2117 U2118 G2119 G2120
G2121 A2122 G2123 G2124 C2125 U2126 U2127 U2128 G2129 A2130 A2131 G2132 C2133 U2134 G2135 G2136 A2137 A2138 C2139 G2140 C2141 U2142 A2143 G2144 U2145 U2146 C2147 C2148 A2149 G2150 U2151 G2152 G2153 A2154 G2155 C2156 C2157 G2158 U2159 C2160 C2161 U2162 U2163 G2164 A2165 A2166 A2167 U2168 A2169 C2170 C2171 A2172 C2173 C2174 C2175 U2176 G2177 G2178 U2179 A2180
A2181 U2182 U2185 G2186 A2187 G2188 A2194 G2200 C2204 G2207 G2212 G2213 A2221 C2222 U2225 G2226 U2229 G2230 G2234 G2235 G2242 A2243 G2247 C2254 U2261 A2262 A2263 G2273 A2274 G2275 U2279 A2283 U2287 G2288 G2295 C2296 G2299 G2300 U2301
G2304 A2305 A2306 A2307 U2308 C2309 A2310 C2311 G2312 C2313 G2314 U2315 A2316 G2317 A2321 U2322 A2323 A2324 A2325 G2326 A2332 C2346 C2355 A2356 A2357 G2366 G2367 A2373 A2374 G2375 U2376 A2377 G2378 G2379 U2380 C2381 U2382 C2390 U2398 C2399 U2400 G2401 U2402 A2407 A2408 C2423 G2424 G2425 A2426 U2427
A2428 A2429 A2430 A2431 U2437 C2438 U2439 G2440 G2441 G2442 G2443 A2444 U2445 A2446 U2453 U2456 A2457 C2462 C2463 A2464 G2468 U2469 U2470 C2471 A2472 U2473 G2483 C2484 U2485 G2486 U2487 C2494 G2498 A2499 U2500 G2501 U2502 C2503 A2514 U2515 C2516 G2519 G2522 G2528 C2529 A2530 U2533
C2534 A2543 U2544 U2548 G2549 U2550 A2562 G2563 A2564 A2568 U2576 G2577 U2581 C2587 G2588 G2591 A2594 A2598 G2599 U2600 U2601 U2605 C2606 C2607 C2608 U2609 A2610 U2611 C2612 U2613 A2614 C2615 C2622 G2623 C2624 U2625 A2635 G2636 A2637 G2638 G2639 A2640 U2641 C2642 U2643 G2644 C2645
U2646 C2647 C2648 U2652 A2653 G2657 A2658 G2659 G2660 A2661 G2670 A2671 A2674 A2675 U2683 G2684 U2685 A2686 U2692 G2693 U2694 G2695 A2696 C2697 G2710 U2722 U2725 A2730 A2734 U2735 G2740 C2741 U2742 G2743 A2744 G2747 A2753 A2754 A2760 A2761 G2762 A2774 U2775 A2776
C2784 C2785 U2786 A2787 G2788 U2793 U2794 A2795 U2796 G2797 C2800 A2804 A2805 A2806 G2816 A2817 U2829 G2830 A2831 U2841 G2842 U2843 G2844 G2845 U2851 A2852 G2853 A2856 U2857 U2861 G2862 A2863 G2868 C2871 A2872 A2875 A2879 G2886 C2892 U2893 U2894 G2895 A2896 C2897

• Molecule 6: 5s ribosomal RNA

Chain B:

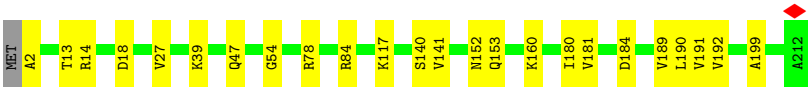


• Molecule 7: 50S ribosomal protein L2

Chain C:

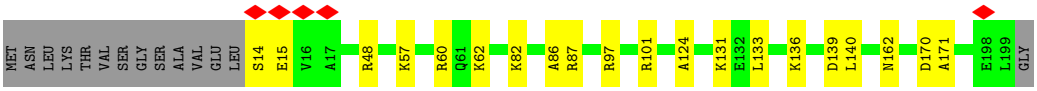
• Molecule 8: 50S ribosomal protein L3

Chain D:



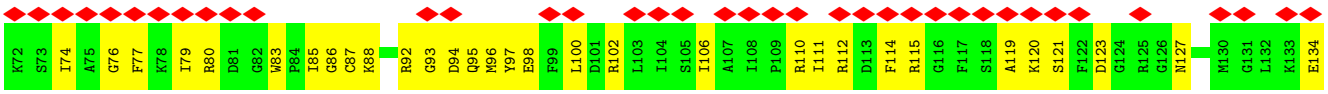
• Molecule 9: 50S ribosomal protein L4

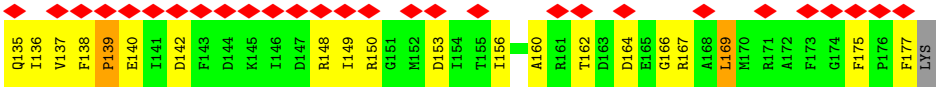
Chain E:



• Molecule 10: 50S ribosomal protein L5

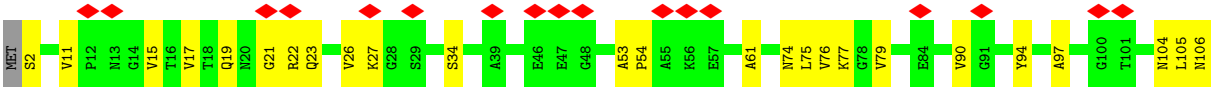
Chain F:





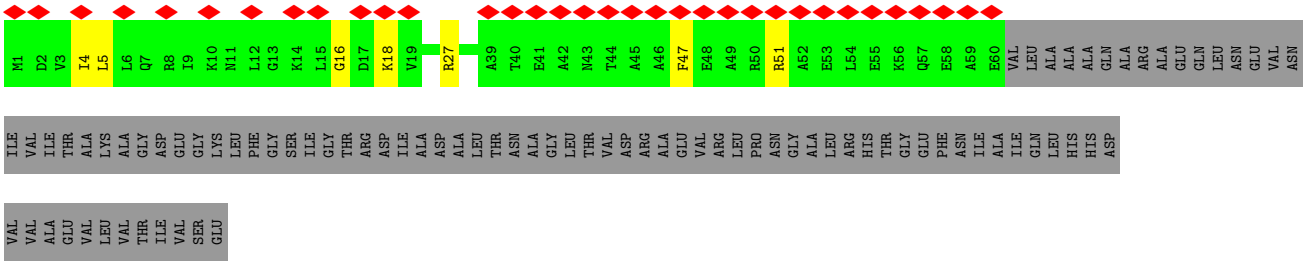
• Molecule 11: 50S ribosomal protein L6

Chain G:



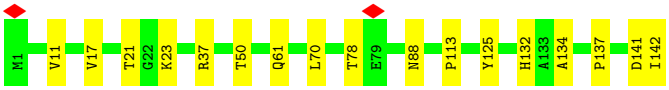
• Molecule 12: 50S ribosomal protein L9

Chain H:



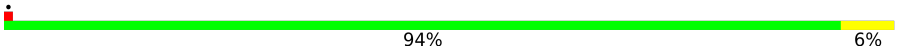
• Molecule 13: 50S ribosomal protein L13

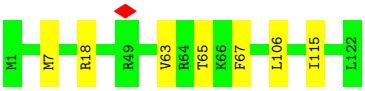
Chain I:



• Molecule 14: 50S ribosomal protein L14

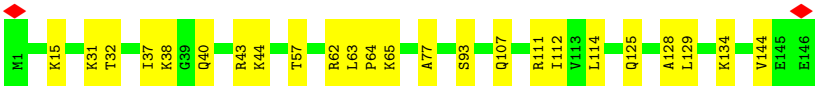
Chain J:





• Molecule 15: 50S ribosomal protein L15

Chain K:

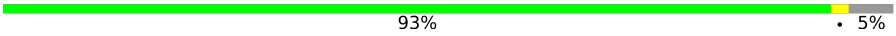


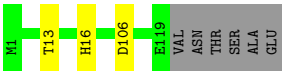
• Molecule 16: 50S ribosomal protein L16

Chain L:

• Molecule 17: 50S ribosomal protein L17

Chain M:



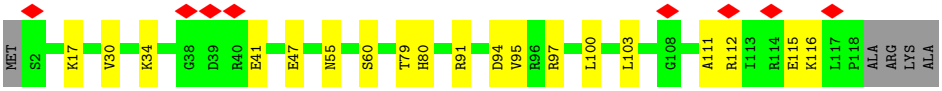


• Molecule 18: 50S ribosomal protein L18

Chain N:

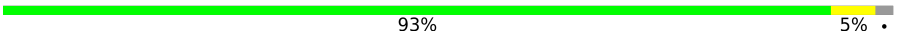
• Molecule 19: 50S ribosomal protein L19

Chain O:



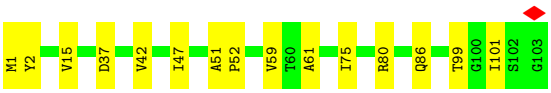
• Molecule 20: 50S ribosomal protein L20

Chain P:



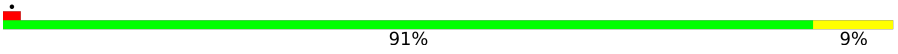
• Molecule 21: 50S ribosomal protein L21

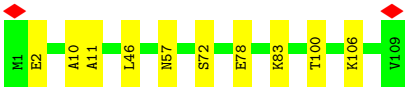
Chain Q:



• Molecule 22: 50S ribosomal protein L22

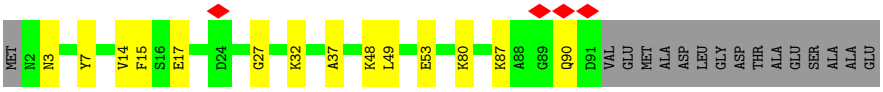
Chain R:





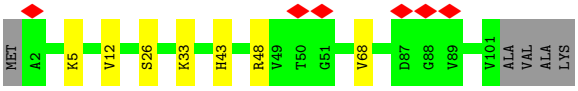
• Molecule 23: 50S ribosomal protein L23

Chain S:



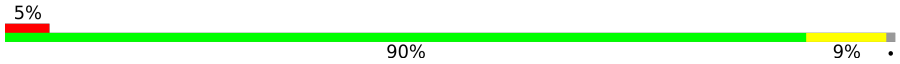
• Molecule 24: 50S ribosomal protein L24

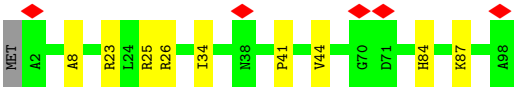
Chain T:



• Molecule 25: 50S ribosomal protein L25

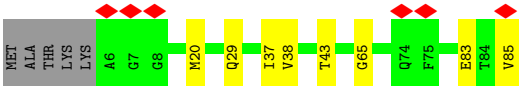
Chain U:





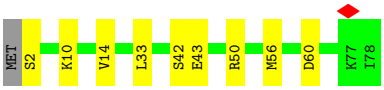
• Molecule 26: 50S ribosomal protein L27

Chain V:



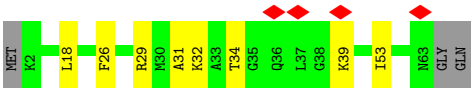
• Molecule 27: 50S ribosomal protein L28

Chain W:



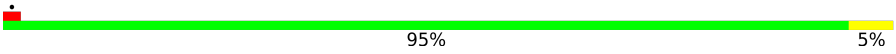
• Molecule 28: 50S ribosomal protein L29

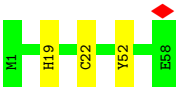
Chain X:



• Molecule 29: 50S ribosomal protein L30

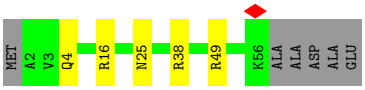
Chain Y:





• Molecule 30: 50S ribosomal protein L32

Chain Z:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	27020	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 ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	2.877	Depositor
Minimum map value	-1.232	Depositor
Average map value	-0.004	Depositor
Map value standard deviation	0.087	Depositor
Recommended contour level	0.4	Depositor
Map size (Å)	544.768, 544.768, 544.768	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.064, 1.064, 1.064	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 6MZ, 7MG, 3TD, OMG, PSU, 5MU, 2MA, MG, OMU, 2MG, ZN, NA

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	0	0.24	0/434	0.43	0/573
2	1	0.23	0/367	0.39	0/481
3	2	0.23	0/515	0.44	0/678
4	3	0.22	0/296	0.45	0/389
5	AN1	0.19	0/69101	0.76	20/107780 (0.0%)
6	B	0.17	0/2739	0.77	2/4266 (0.0%)
7	C	0.24	0/2136	0.43	0/2869
8	D	0.24	0/1590	0.45	0/2142
9	E	0.24	0/1440	0.40	0/1944
10	F	0.26	0/1401	0.52	0/1877
11	G	0.24	0/1337	0.43	0/1807
12	H	0.25	0/461	0.49	0/616
13	I	0.24	0/1151	0.40	0/1551
14	J	0.24	0/956	0.44	0/1286
15	K	0.24	0/1097	0.43	0/1461
16	L	0.24	0/1104	0.44	0/1475
17	M	0.23	0/956	0.40	0/1282
18	N	0.23	0/865	0.42	0/1156
19	O	0.24	0/931	0.42	0/1249
20	P	0.24	0/947	0.34	0/1262
21	Q	0.23	0/818	0.45	0/1094
22	R	0.23	0/831	0.40	0/1113
23	S	0.25	0/708	0.43	0/947
24	T	0.24	0/753	0.47	0/1010
25	U	0.24	0/770	0.40	0/1036
26	V	0.25	0/606	0.44	0/810
27	W	0.22	0/642	0.40	0/856
28	X	0.23	0/499	0.38	0/662
29	Y	0.22	0/468	0.41	0/624
30	Z	0.22	0/462	0.41	0/615
All	All	0.20	0/96381	0.70	22/144911 (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
4	3	0	1

There are no bond length outliers.

The worst 5 of 22 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	AN1	503	U	C2-N1-C1'	7.29	126.44	117.70
5	AN1	1308	U	C2-N1-C1'	6.88	125.95	117.70
5	AN1	503	U	N1-C2-O2	6.69	127.48	122.80
5	AN1	788	U	C2-N1-C1'	6.41	125.39	117.70
5	AN1	2170	C	N1-C2-O2	6.38	122.73	118.90

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
4	3	36	ARG	Peptide

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	0	427	0	462	3	0
2	1	363	0	401	5	0
3	2	509	0	566	12	0
4	3	295	0	327	7	0
5	AN1	62023	0	31192	550	0
6	B	2450	0	1241	44	0
7	C	2096	0	2157	28	0
8	D	1572	0	1610	18	0
9	E	1419	0	1464	15	0
10	F	1381	0	1433	59	0
11	G	1318	0	1373	25	0

Continued on next page...

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
12	H	458	0	480	4	0
13	I	1125	0	1148	11	0
14	J	946	0	1007	4	0
15	K	1089	0	1159	15	0
16	L	1087	0	1162	9	0
17	M	942	0	987	3	0
18	N	857	0	899	7	0
19	O	919	0	973	10	0
20	P	934	0	997	5	0
21	Q	807	0	842	10	0
22	R	826	0	894	7	0
23	S	702	0	756	10	0
24	T	749	0	797	4	0
25	U	760	0	783	6	0
26	V	598	0	600	6	0
27	W	632	0	667	7	0
28	X	498	0	537	7	0
29	Y	463	0	488	2	0
30	Z	456	0	448	5	0
31	3	1	0	0	0	0
32	AN1	105	0	0	0	0
32	C	1	0	0	0	0
33	AN1	1	0	0	0	0
34	1	1	0	0	0	0
34	AN1	218	0	0	4	0
34	B	3	0	0	0	0
34	C	1	0	0	0	0
34	D	1	0	0	0	0
34	E	1	0	0	0	0
34	K	1	0	0	0	0
34	N	1	0	0	0	0
34	R	1	0	0	0	0
34	V	1	0	0	0	0
34	W	1	0	0	1	0
34	Z	1	0	0	0	0
All	All	89040	0	57850	819	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 6.

The worst 5 of 819 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)
5:AN1:1462:G:H1	5:AN1:1520:A:N6	1.49	1.10
6:B:70:G:N2	6:B:101:A:H62	1.59	1.00
6:B:70:G:H21	6:B:101:A:N6	1.64	0.96
5:AN1:2096:G:H1	5:AN1:2185:U:H3	0.91	0.89
6:B:2:C:O2	6:B:113:G:N2	2.06	0.88

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	0	49/51 (96%)	48 (98%)	1 (2%)	0	100 100
2	1	42/44 (96%)	41 (98%)	1 (2%)	0	100 100
3	2	61/64 (95%)	57 (93%)	2 (3%)	2 (3%)	4 18
4	3	36/38 (95%)	35 (97%)	1 (3%)	0	100 100
7	C	268/274 (98%)	258 (96%)	10 (4%)	0	100 100
8	D	209/212 (99%)	205 (98%)	4 (2%)	0	100 100
9	E	184/200 (92%)	184 (100%)	0	0	100 100
10	F	173/178 (97%)	149 (86%)	23 (13%)	1 (1%)	25 60
11	G	172/177 (97%)	167 (97%)	5 (3%)	0	100 100
12	H	58/148 (39%)	55 (95%)	3 (5%)	0	100 100
13	I	140/142 (99%)	136 (97%)	4 (3%)	0	100 100
14	J	120/122 (98%)	117 (98%)	3 (2%)	0	100 100
15	K	144/146 (99%)	142 (99%)	2 (1%)	0	100 100
16	L	135/137 (98%)	133 (98%)	2 (2%)	0	100 100
17	M	117/125 (94%)	115 (98%)	2 (2%)	0	100 100
18	N	112/116 (97%)	110 (98%)	2 (2%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	O	115/122 (94%)	113 (98%)	2 (2%)	0	100	100
20	P	115/119 (97%)	115 (100%)	0	0	100	100
21	Q	101/103 (98%)	96 (95%)	5 (5%)	0	100	100
22	R	107/109 (98%)	105 (98%)	2 (2%)	0	100	100
23	S	88/106 (83%)	86 (98%)	2 (2%)	0	100	100
24	T	98/105 (93%)	94 (96%)	4 (4%)	0	100	100
25	U	95/98 (97%)	94 (99%)	1 (1%)	0	100	100
26	V	78/85 (92%)	77 (99%)	1 (1%)	0	100	100
27	W	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
28	X	60/65 (92%)	60 (100%)	0	0	100	100
29	Y	56/58 (97%)	55 (98%)	1 (2%)	0	100	100
30	Z	53/61 (87%)	51 (96%)	2 (4%)	0	100	100
All	All	3061/3283 (93%)	2972 (97%)	86 (3%)	3 (0%)	54	83

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	2	31	ILE
3	2	32	LEU
10	F	139	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	
1	0	47/47 (100%)	47 (100%)	0	100	100
2	1	36/36 (100%)	36 (100%)	0	100	100
3	2	52/53 (98%)	52 (100%)	0	100	100
4	3	33/33 (100%)	33 (100%)	0	100	100
7	C	216/220 (98%)	216 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
8	D	166/167 (99%)	166 (100%)	0	100 100
9	E	144/155 (93%)	144 (100%)	0	100 100
10	F	145/147 (99%)	143 (99%)	2 (1%)	67 86
11	G	139/142 (98%)	139 (100%)	0	100 100
12	H	45/112 (40%)	45 (100%)	0	100 100
13	I	118/118 (100%)	118 (100%)	0	100 100
14	J	103/103 (100%)	103 (100%)	0	100 100
15	K	108/108 (100%)	107 (99%)	1 (1%)	78 91
16	L	113/113 (100%)	111 (98%)	2 (2%)	59 82
17	M	96/101 (95%)	96 (100%)	0	100 100
18	N	83/85 (98%)	83 (100%)	0	100 100
19	O	99/102 (97%)	98 (99%)	1 (1%)	76 90
20	P	85/86 (99%)	85 (100%)	0	100 100
21	Q	84/84 (100%)	84 (100%)	0	100 100
22	R	88/88 (100%)	88 (100%)	0	100 100
23	S	76/87 (87%)	76 (100%)	0	100 100
24	T	82/85 (96%)	81 (99%)	1 (1%)	71 88
25	U	79/80 (99%)	79 (100%)	0	100 100
26	V	60/64 (94%)	60 (100%)	0	100 100
27	W	69/70 (99%)	69 (100%)	0	100 100
28	X	54/56 (96%)	54 (100%)	0	100 100
29	Y	54/54 (100%)	54 (100%)	0	100 100
30	Z	47/50 (94%)	47 (100%)	0	100 100
All	All	2521/2646 (95%)	2514 (100%)	7 (0%)	92 97

5 of 7 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
16	L	10	ARG
16	L	60	ARG
24	T	48	ARG
19	O	112	ARG
15	K	44	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
19	O	13	ASN
22	R	37	ASN
19	O	15	GLN
20	P	11	HIS
22	R	60	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
5	AN1	2888/2918 (98%)	485 (16%)	8 (0%)
6	B	114/115 (99%)	17 (14%)	1 (0%)
All	All	3002/3033 (98%)	502 (16%)	9 (0%)

5 of 502 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
5	AN1	34	G
5	AN1	35	A
5	AN1	50	G
5	AN1	53	G
5	AN1	58	G

5 of 9 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
5	AN1	2379	G
6	B	108	C
5	AN1	478	A
5	AN1	782	G
5	AN1	1538	A

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

15 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond

length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	PSU	AN1	1913	5	18,21,22	1.09	1 (5%)	22,30,33	1.68	5 (22%)
5	PSU	AN1	952	5	18,21,22	1.08	1 (5%)	22,30,33	1.77	4 (18%)
5	OMG	AN1	2247	5	18,26,27	2.53	8 (44%)	19,38,41	1.50	4 (21%)
5	PSU	AN1	2601	5	18,21,22	1.07	1 (5%)	22,30,33	1.78	4 (18%)
5	PSU	AN1	1907	5	18,21,22	1.10	1 (5%)	22,30,33	1.76	4 (18%)
5	3TD	AN1	1911	5	18,22,23	4.22	6 (33%)	22,32,35	1.71	3 (13%)
5	6MZ	AN1	2026	5	18,25,26	1.86	3 (16%)	16,36,39	3.73	4 (25%)
5	PSU	AN1	2453	5	18,21,22	1.06	1 (5%)	22,30,33	1.80	5 (22%)
5	7MG	AN1	2065	5	22,26,27	3.83	10 (45%)	29,39,42	2.03	9 (31%)
5	PSU	AN1	2500	5	18,21,22	1.09	1 (5%)	22,30,33	1.80	5 (22%)
5	PSU	AN1	2576	5	18,21,22	1.08	1 (5%)	22,30,33	1.76	5 (22%)
5	2MG	AN1	2441	5	18,26,27	2.52	7 (38%)	16,38,41	1.37	3 (18%)
5	2MA	AN1	2499	5	17,25,26	2.54	5 (29%)	17,37,40	1.36	2 (11%)
5	5MU	AN1	1935	5	19,22,23	4.95	7 (36%)	28,32,35	3.62	9 (32%)
5	OMU	AN1	2548	5	19,22,23	3.07	8 (42%)	26,31,34	1.69	5 (19%)

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
5	PSU	AN1	1913	5	-	2/7/25/26	0/2/2/2
5	PSU	AN1	952	5	-	0/7/25/26	0/2/2/2
5	OMG	AN1	2247	5	-	0/5/27/28	0/3/3/3
5	PSU	AN1	2601	5	-	0/7/25/26	0/2/2/2
5	PSU	AN1	1907	5	-	1/7/25/26	0/2/2/2
5	3TD	AN1	1911	5	-	5/7/25/26	0/2/2/2
5	6MZ	AN1	2026	5	-	2/5/27/28	0/3/3/3
5	PSU	AN1	2453	5	-	0/7/25/26	0/2/2/2
5	7MG	AN1	2065	5	-	2/7/37/38	0/3/3/3
5	PSU	AN1	2500	5	-	0/7/25/26	0/2/2/2
5	PSU	AN1	2576	5	-	0/7/25/26	0/2/2/2
5	2MG	AN1	2441	5	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	2MA	AN1	2499	5	-	1/3/25/26	0/3/3/3
5	5MU	AN1	1935	5	-	0/7/25/26	0/2/2/2
5	OMU	AN1	2548	5	-	2/9/27/28	0/2/2/2

The worst 5 of 61 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	AN1	1911	3TD	C6-C5	12.19	1.49	1.35
5	AN1	1935	5MU	C2-N1	11.35	1.56	1.38
5	AN1	1935	5MU	C6-N1	10.92	1.56	1.38
5	AN1	1935	5MU	C4-C5	10.15	1.61	1.44
5	AN1	2065	7MG	C8-N9	9.69	1.51	1.46

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

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	AN1	2026	6MZ	C1'-N9-C4	-13.32	103.25	126.64
5	AN1	1935	5MU	C5-C4-N3	12.00	125.56	115.31
5	AN1	1935	5MU	C5-C6-N1	-10.20	112.84	123.34
5	AN1	2026	6MZ	N3-C2-N1	-5.19	120.56	128.68
5	AN1	2548	OMU	C4-N3-C2	-5.19	119.74	126.58

There are no chirality outliers.

5 of 15 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	AN1	1913	PSU	O4'-C1'-C5-C6
5	AN1	2548	OMU	C3'-C4'-C5'-O5'
5	AN1	2548	OMU	O4'-C4'-C5'-O5'
5	AN1	2026	6MZ	O4'-C4'-C5'-O5'
5	AN1	2026	6MZ	C3'-C4'-C5'-O5'

There are no ring outliers.

5 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	AN1	1911	3TD	1	0
5	AN1	2026	6MZ	1	0
5	AN1	2500	PSU	1	0
5	AN1	2576	PSU	1	0
5	AN1	2499	2MA	2	0

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 108 ligands modelled in this entry, 108 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

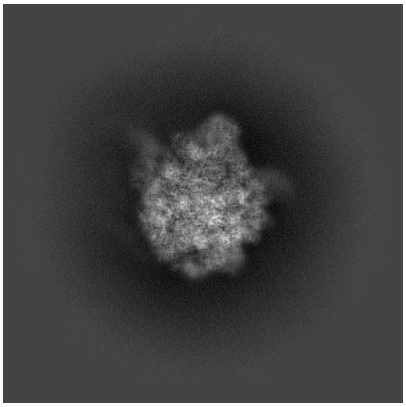
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-21033. These allow visual inspection of the internal detail of the map and identification of artifacts.

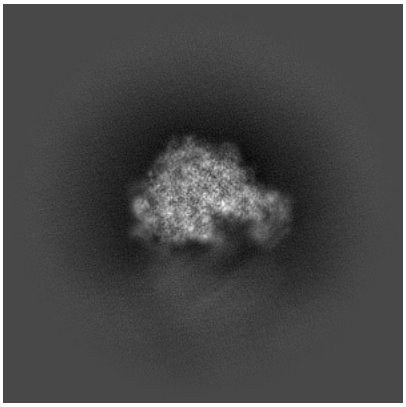
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

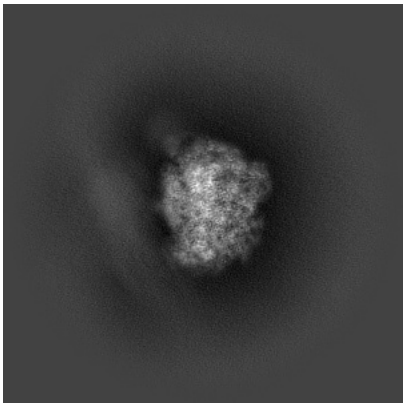
6.1.1 Primary map



X



Y

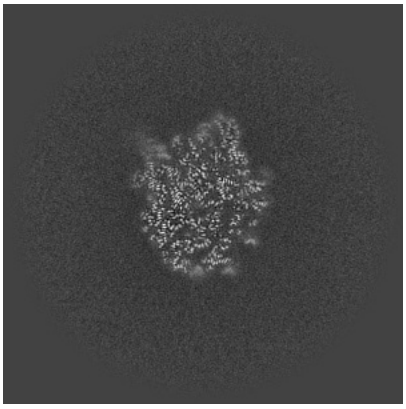


Z

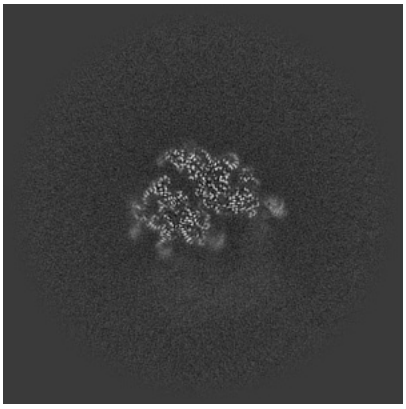
The images above show the map projected in three orthogonal directions.

6.2 Central slices

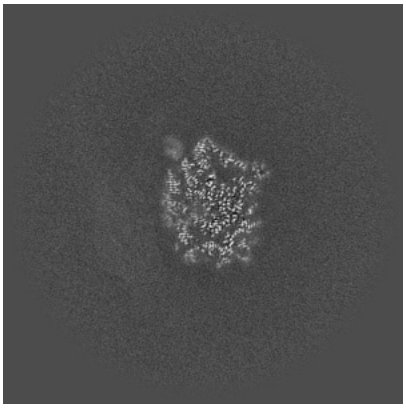
6.2.1 Primary map



X Index: 256



Y Index: 256

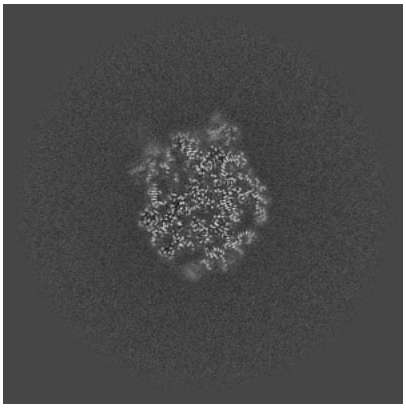


Z Index: 256

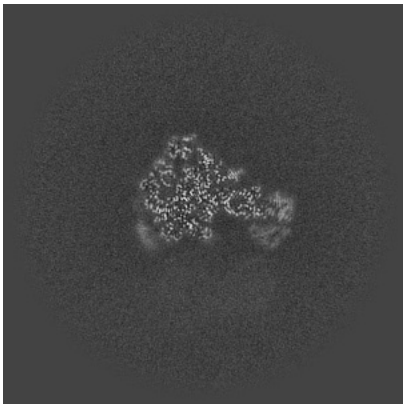
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

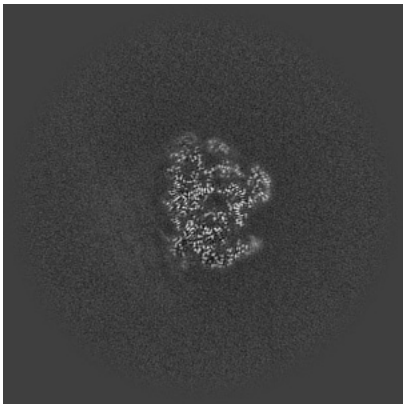
6.3.1 Primary map



X Index: 265



Y Index: 278

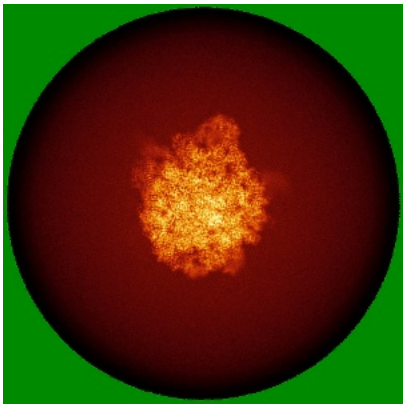


Z Index: 238

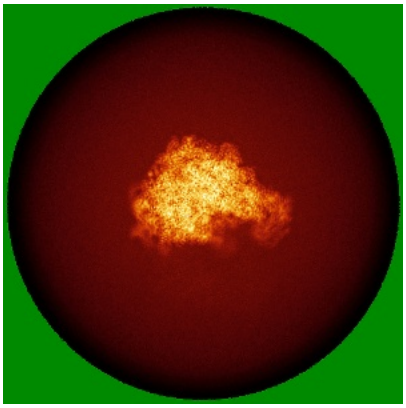
The images above show the largest variance slices of the map in three orthogonal directions.

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

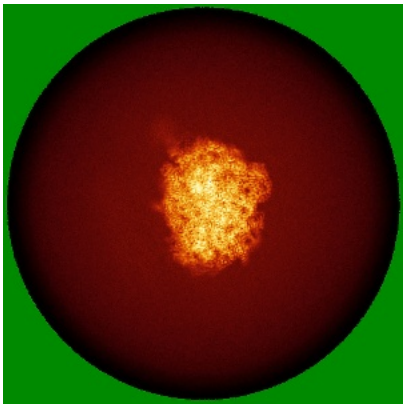
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.4. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

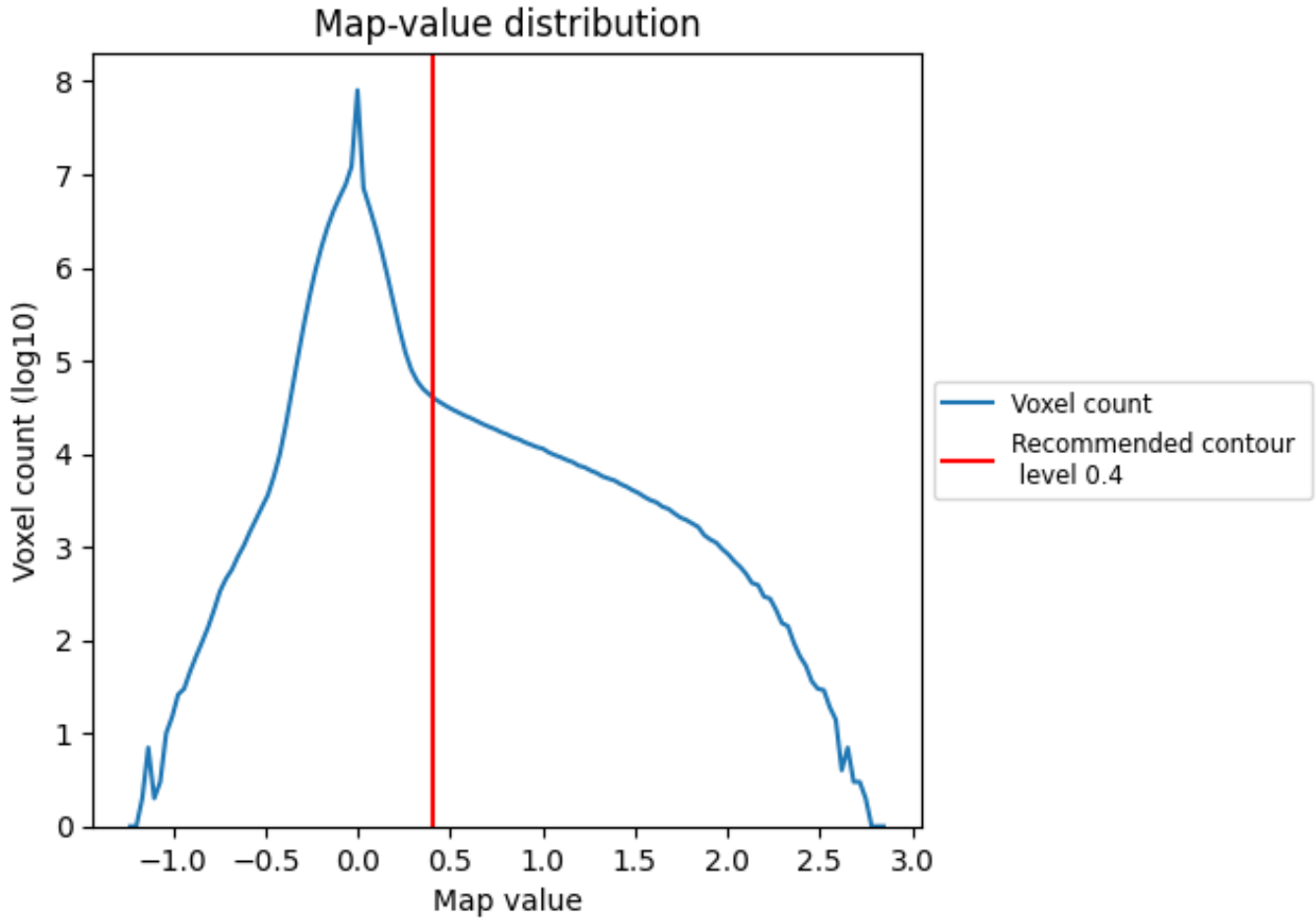
6.6 Mask visualisation (i)

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

7 Map analysis

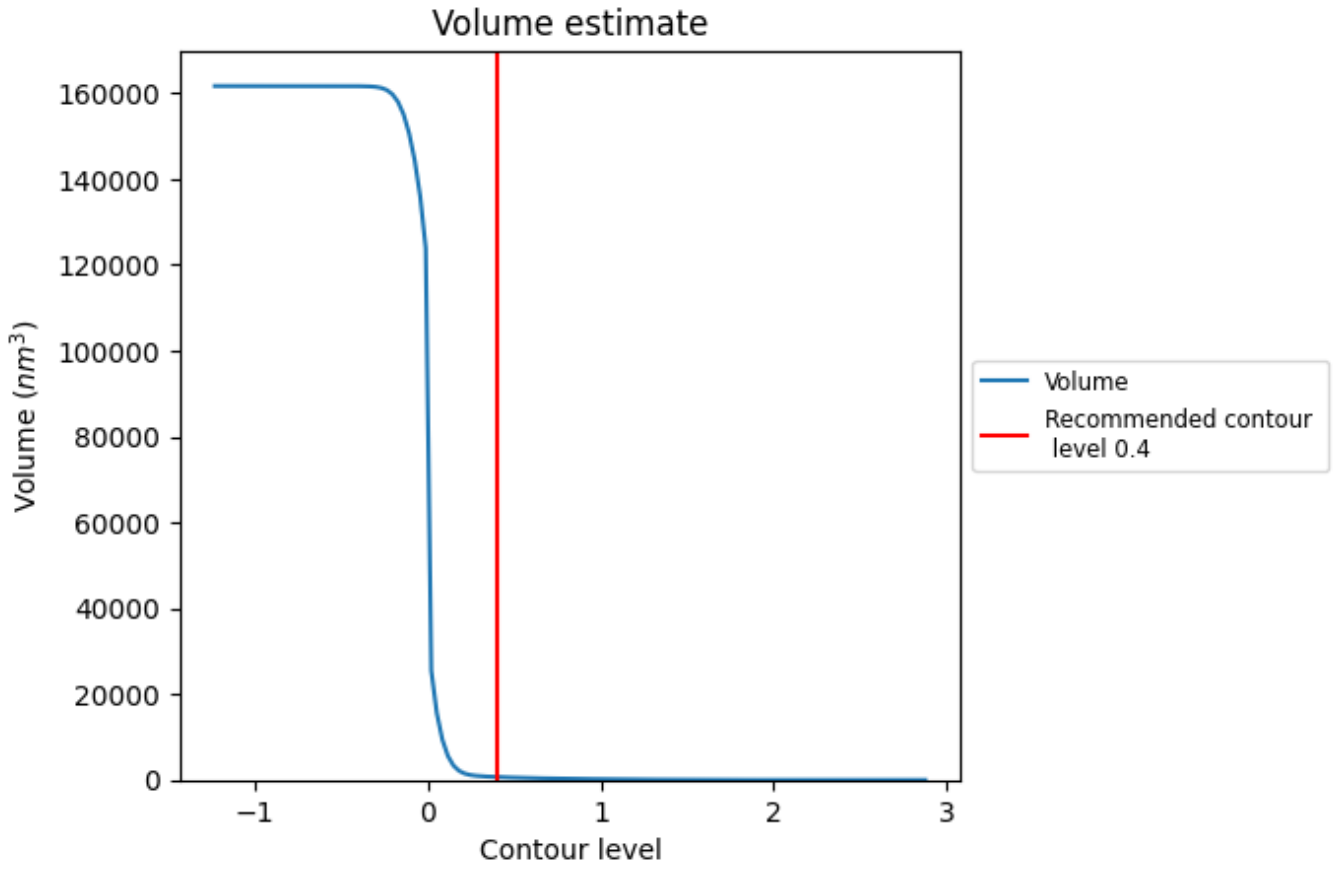
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

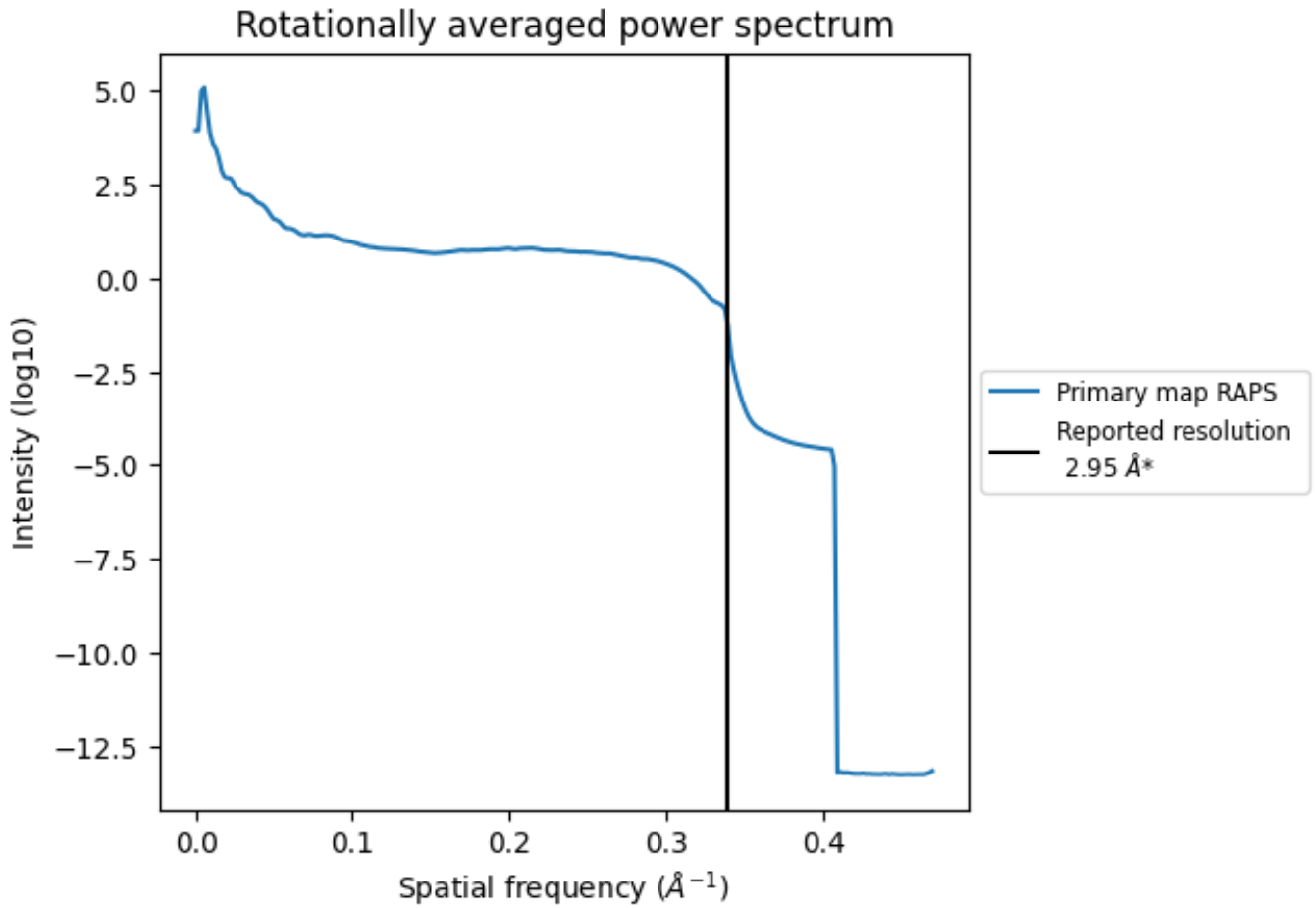
7.2 Volume estimate (i)



The volume at the recommended contour level is 687 nm^3; this corresponds to an approximate mass of 620 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 0.339 $Å^{-1}$

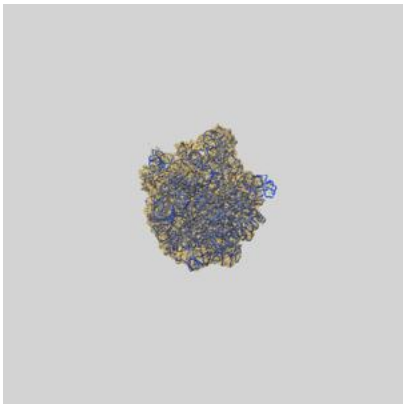
8 Fourier-Shell correlation

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

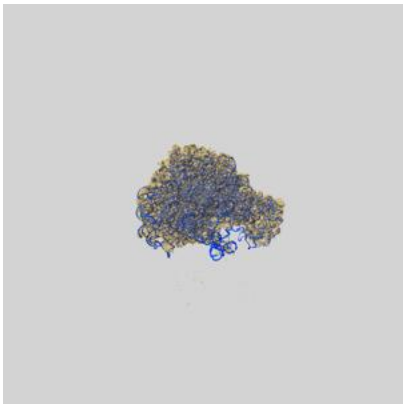
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-21033 and PDB model 6V3D. Per-residue inclusion information can be found in section 3 on page 10.

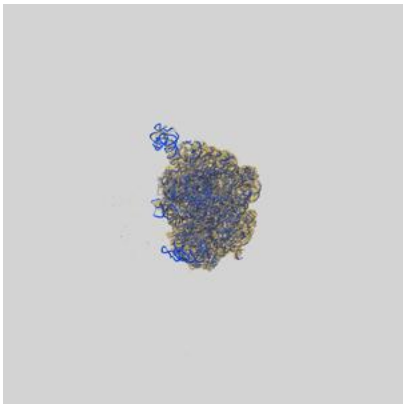
9.1 Map-model overlay



X



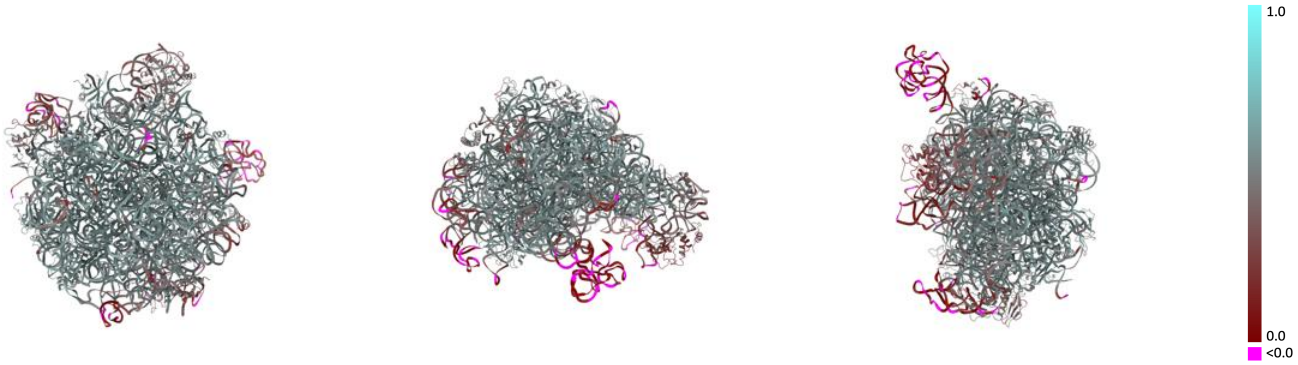
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.4 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.

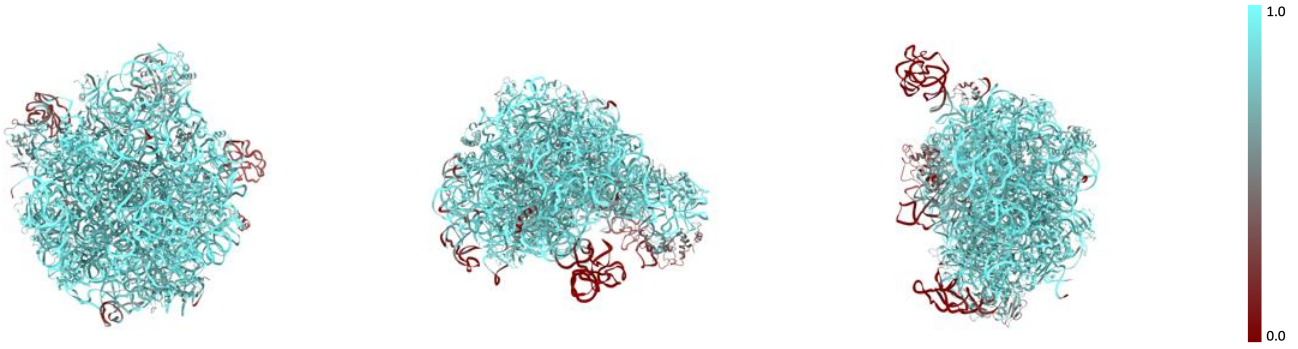
9.2 Q-score mapped to coordinate model



X Y Z

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

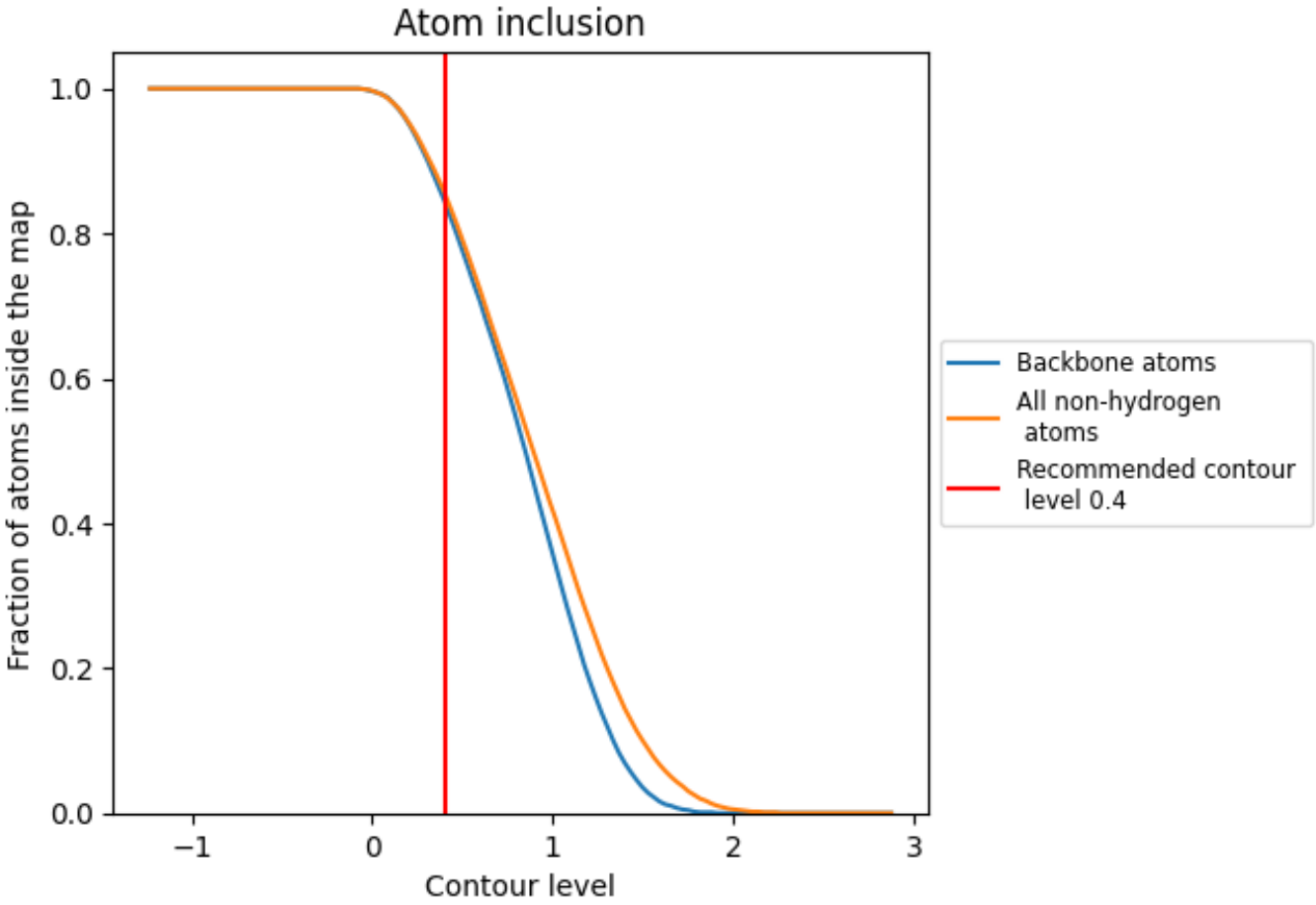
9.3 Atom inclusion mapped to coordinate model



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.4).

9.4 Atom inclusion (i)



At the recommended contour level, 84% of all backbone atoms, 86% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8570	0.4930
0	0.7310	0.5030
1	0.8980	0.5680
2	0.8160	0.5380
3	0.8040	0.5180
AN1	0.8770	0.4880
B	0.9220	0.4410
C	0.8490	0.5480
D	0.9000	0.5540
E	0.8630	0.5390
F	0.3670	0.2570
G	0.6450	0.4310
H	0.3810	0.3700
I	0.8920	0.5510
J	0.8410	0.5480
K	0.8780	0.5480
L	0.8130	0.5320
M	0.9100	0.5690
N	0.8140	0.4610
O	0.8010	0.5230
P	0.9180	0.5670
Q	0.8920	0.5510
R	0.8580	0.5560
S	0.8130	0.5110
T	0.7810	0.4910
U	0.8220	0.5070
V	0.8580	0.5510
W	0.8630	0.5410
X	0.7280	0.4210
Y	0.8570	0.5250
Z	0.8410	0.5400