wwPDB EM Validation Summary Report

Nov 20, 2022 – 07:03 am GMT

PDB ID	:	6H6F
EMDB ID	:	EMD-0150
Title	:	PTC3 holotoxin complex from Photorhabdus luminiscens - Mutant TcC-D651A
Authors	:	Gatsogiannis, C.; Merino, F.; Roderer, D.; Balchin, D.; Schubert, E.; Kuhlee, A.; Hayer-Hartl, M.; Raunser, S.
Deposited on	:	2018-07-27
Resolution	:	3.72 Å(reported)

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

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

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

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

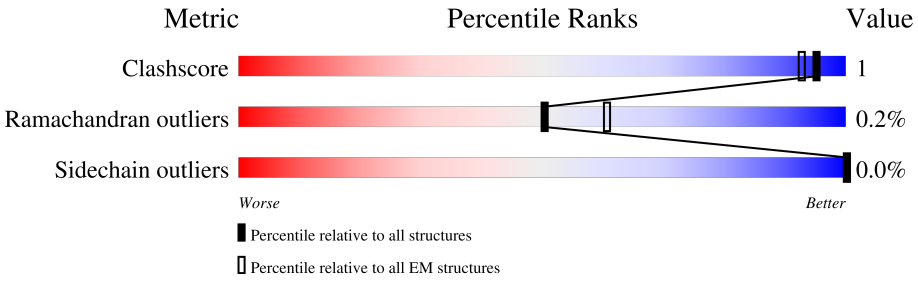
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.72 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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	2516	22% 92% 5% •
1	B	2516	21% 92% 5% •
1	C	2516	21% 92% 5% •
1	D	2516	19% 92% 5% •
1	E	2516	20% 92% 5% •
2	F	2434	42% 80% 7% • 13%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 114303 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 TcdA1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	2454	Total 19477	C 12332	N 3310	O 3774	S 61	0	0
1	B	2454	Total 19477	C 12332	N 3310	O 3774	S 61	0	0
1	C	2454	Total 19477	C 12332	N 3310	O 3774	S 61	0	0
1	D	2454	Total 19477	C 12332	N 3310	O 3774	S 61	0	0
1	E	2454	Total 19477	C 12332	N 3310	O 3774	S 61	0	0

- Molecule 2 is a protein called TcdB2,TccC3,TccC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	F	2118	Total 16918	C 10601	N 3006	O 3277	S 34	0	0

There is a discrepancy between the modelled and reference sequences:

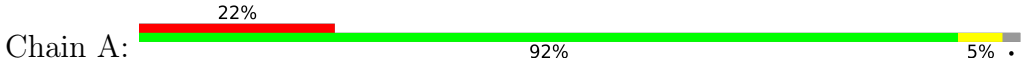
Chain	Residue	Modelled	Actual	Comment	Reference
F	2130	ALA	ASP	engineered mutation	UNP Q8GF97

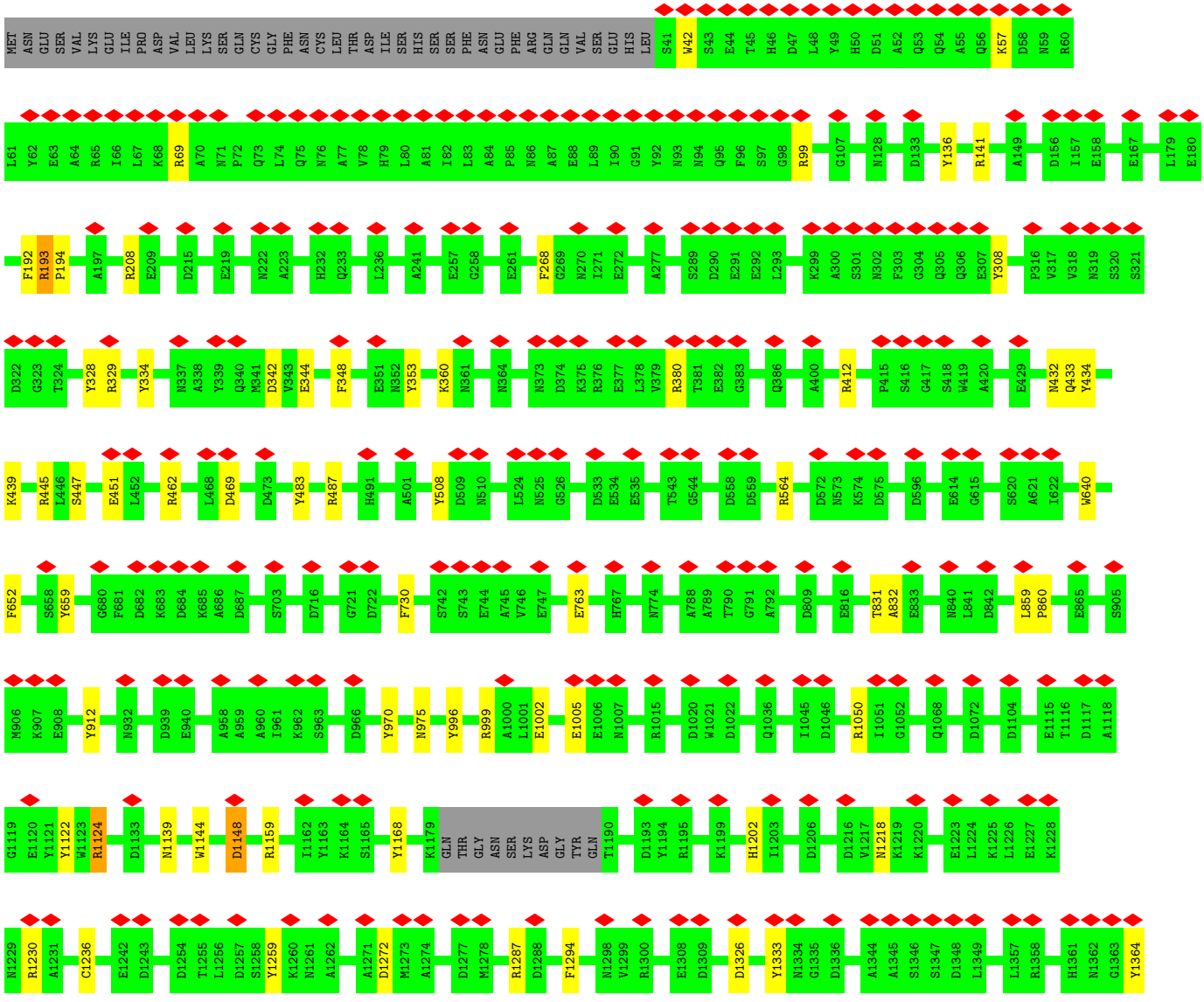
3 Residue-property plots (i)

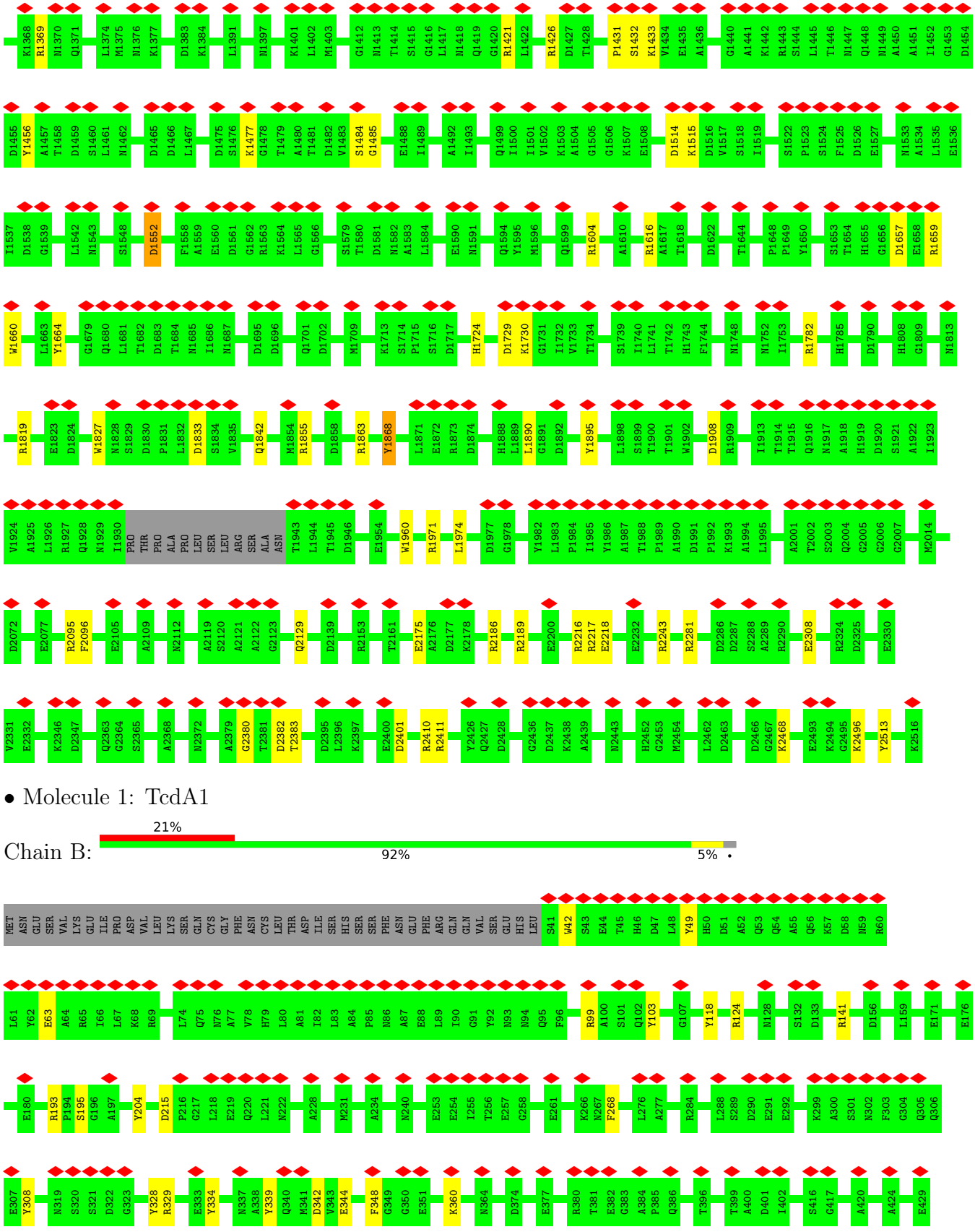
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: TcdA1

Chain A:



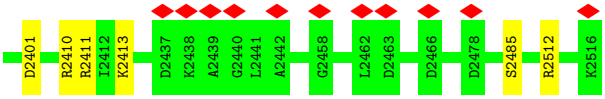




• Molecule 1: TcdA1

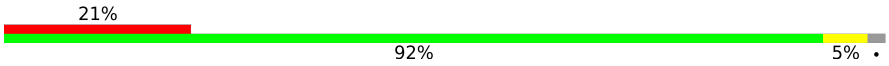
Chain B:

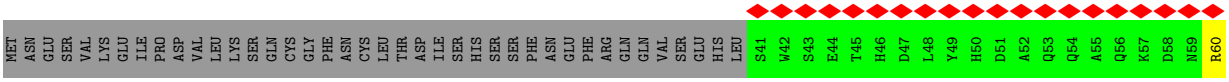

R445 R448 E451 R462 L466 Q467 L468 D469 D473 V474 L475 Y483 R487 Y488 A489 I490 H491 A492 E493 Y508 D509 N510 F515 T521 P522 G526 G532 D533 E534 E535 L538 S542 K548 D558 R564 T569 D570 H571 D572 N573 K574
D575 G576 K577 I578 K579 K583 I590 D596 D603 E604 L605 D606 E614 G615 K616 L619 D624 W640 N660 G680 F681 D682 K683 D684 K685 A686 S703 S704 E705 Q719 D722 F730 S742 S743 E744 A745 V746 E747 Q757 E763 A788 A789
T790 G791 K817 T831 A832 L859 I903 Q904 S905 M906 K907 E908 H935 A936 F937 E940 S941 R942 K956 A957 A958 A959 A960 I961 K962 D966 Q969 Y970 N975 I981 K982 T983 T984 Y996 E1005 E1006 N1007 A1008 N1009 S1010 G1011 V1012 I1013 S1014 R1015 W1021
D1022 K1023 Y1024 N1025 K1026 W1031 Y1039 E1042 D1046 Q1053 T1054 K1055 D1058 Q1068 L1069 N1070 A1071 D1072 E1075 D1076 D1099 E1115 T1116 D1117 A1118 G1119 E1120 R1124 D1133 W1141 S1142 E1143 D1148 R1159 L1167 Y1168 K1179 GLN THR GLY ASN SER LYS
ASP GLY TYR GLN T1190 E1191 R1195 H1202 Y1205 D1206 D1216 V1217 N1218 K1219 K1220 K1225 L1226 E1227 K1228 N1229 R1230 C1236 E1242 D1254 T1255 L1256 N1261 A1262 S1263 M1264 Y1268 I1269 F1270 A1271 D1272 D1277 E1281 Y1286 F1294 N1298 V1299 R1300 E1308 D1309
Y1310 S1314 R1319 K1320 D1321 L1329 S1330 M1331 N1334 G1335 D1336 N1341 A1345 S1346 S1347 D1348 L1349 Y1352 L1357 R1358 H1361 N1362 G1363 Y1364 E1365 G1366 Q1367 K1368 R1369 N1370 Q1371 C1372 N1373 L1374 K1377 D1383 N1394 P1395 N1396 N1397 S1398 S1399 N1400 K1401 L1402 N1413 T1414
S1415 G1416 L1417 N1418 Q1419 G1420 R1421 L1422 L1423 D1427 T1428 T1429 S1432 K1433 V1434 E1435 G1440 A1441 K1442 R1443 S1444 L1445 T1446 N1447 Q1448 N1449 A1450 A1451 I1452 G1453 D1454 D1455 Y1456 A1457 T1458 D1459 S1460 L1461 N1462 K1463 P1464 D1465 D1466 L1467 K1468 Q1469 Y1470 D1475 S1476 K1477 D1482 V1483 S1484 G1485
E1488 T1491 A1492 Q1499 K1503 A1504 G1505 G1506 K1507 E1508 Q1509 D1514 K1515 D1516 V1517 S1518 S1522 D1526 E1527 M1528 N1529 L1535 E1536 I1537 D1538 G1539 S1540 G1541 L1542 N1543 F1544 D1552 F1558 A1559 E1560 D1561 G1562 R1563 K1564 Y1567 E1568 S1579 T1580 D1581 N1582 A1583 E1590
R1604 L1605 F1609 A1610 R1611 T1618 T1619 G1620 I1624 I1632 Q1633 E1634 G1638 Y1650 N1651 L1652 S1653 T1654 H1655 G1656 D1657 E1658 R1659 W1660 L1663 Y1664 V1669 D1670 N1671 I1676 Y1677 S1678 G1679 Q1680 L1681 T1682 D1683 T1684 N1685 I1686 N1687 D1695 D1696 V1697 P1698 L1699 N1700 Q1701 D1702
K1712 K1713 S1714 R1727 D1728 D1729 K1730 G1731 I1732 V1733 T1734 I1735 N1736 P1737 K1738 S1739 I1740 L1741 T1742 H1743 F1744 E1745 L1750 M1758 D1759 W1769 R1782 D1790 H1808 G1809 Q1815 R1819 L1822 E1823 D1824 N1828 L1832 D1833 S1834 V1835 D1836 R1855 A1862 R1863 Y1868
E1872 R1873 D1874 L1890 G1891 D1892 K1893 P1894 Y1895 L1898 S1899 T1900 T1901 D1904 D1912 I1913 T1914 T1915 Q1916 N1917 A1918 H1919 D1920 S1921 A1922 I1923 V1924 A1925 L1926 R1927 Q1928 N1929 I1930 PRO THR PRO ALA PRO LEU SER LEU ARG SER ALA ASN T1943 L1944 T1945 D1946 Q1961 I1952 N1953 E1954
Y1959 W1960 R1971 D1977 Y1982 L1983 P1984 I1985 Y1986 A1987 T1988 P1989 A1990 D1991 P1992 K1993 T2002 G2005 G2006 G2007 K2008 E2011 R2018 N2042 E2062 D2072 D2079 A2080 E2081 K2082 E2086 F2096 D2097 N2106 E2111 A2122 R2132 L2133 D2139 R2153
M2165 E2175 A2176 D2177 K2178 R2186 R2189 E2202 D2207 R2216 R2243 K2244 F2245 Y2266 W2285 D2286 D2287 S2288 A2289 R2290 G2299 E2308 D2325 E2330 V2331 E2332 R2333 L2344 P2345 K2346 D2347 Q2363 G2364 S2365 N2372 A2379 G2380 T2381 D2382 S2386 L2396

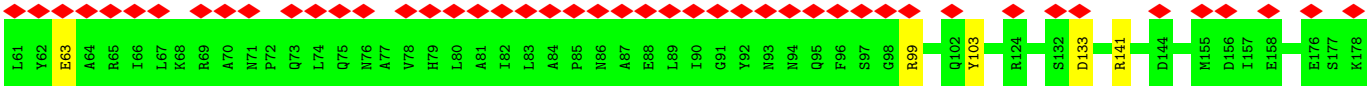


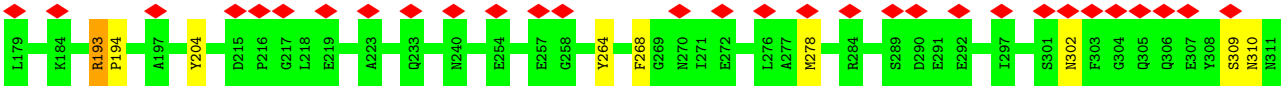
- Molecule 1: TcdA1

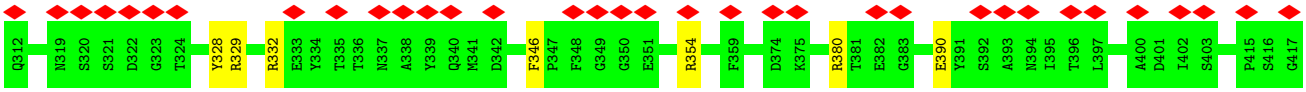
Chain C:

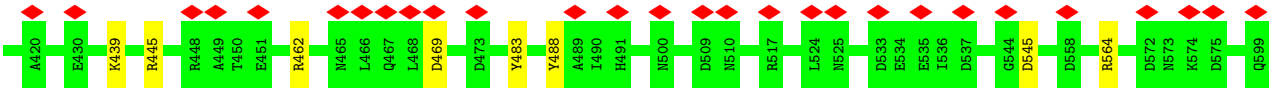


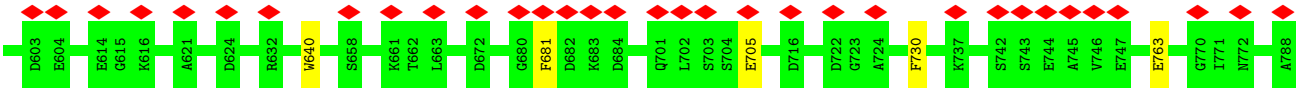


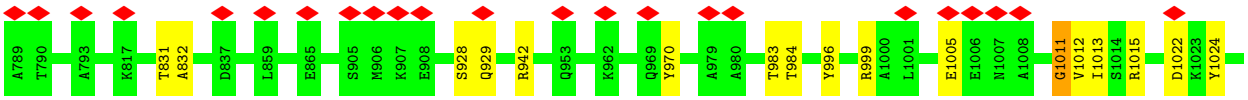


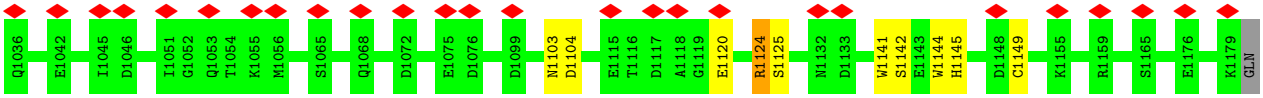


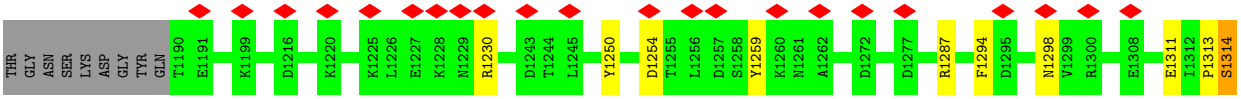


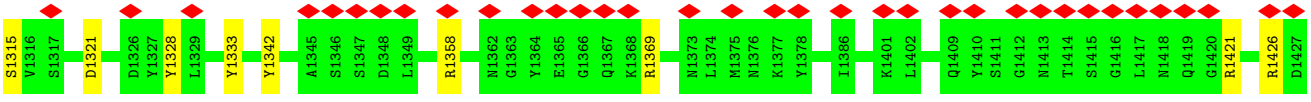


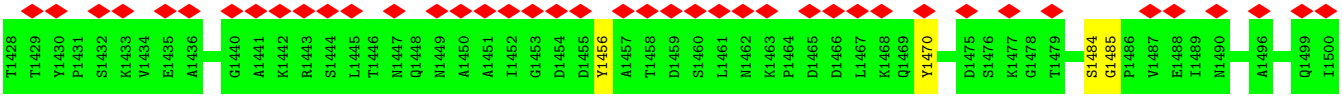


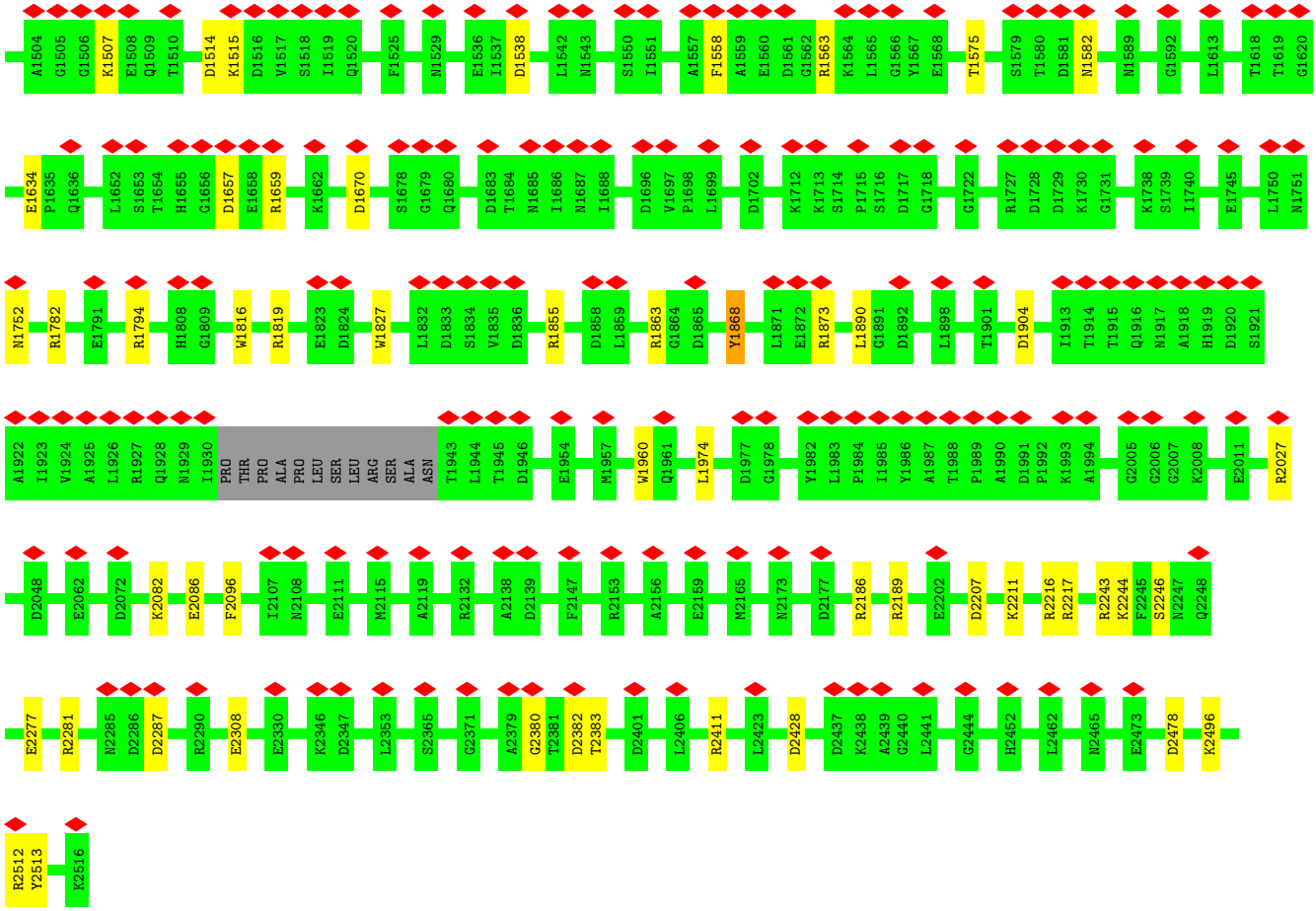




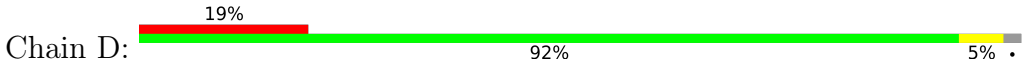


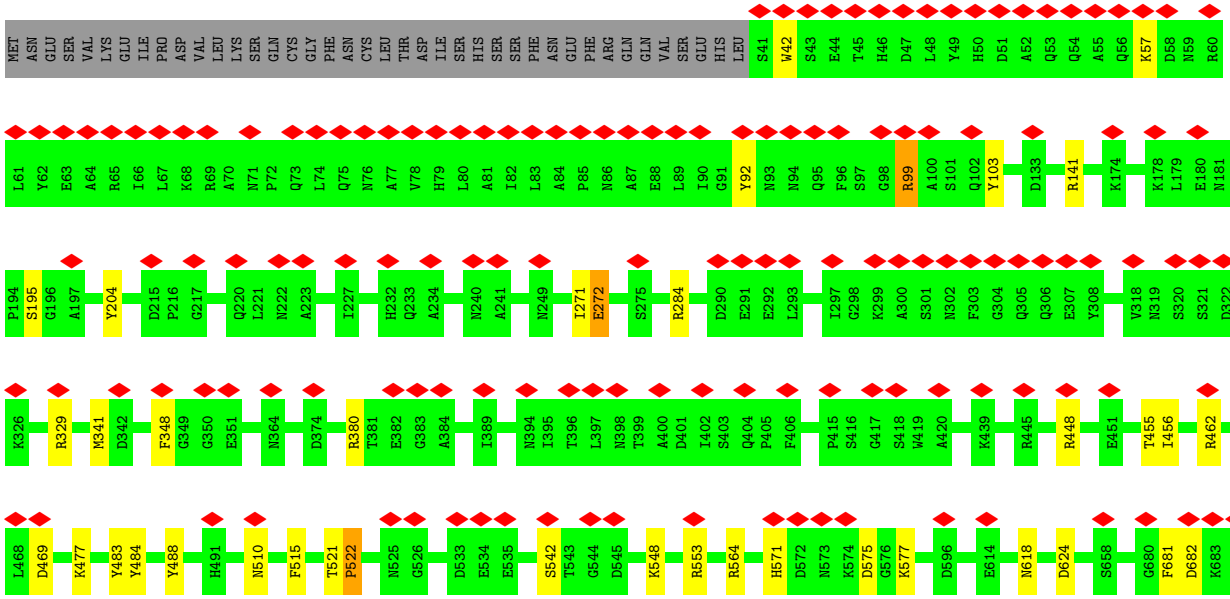


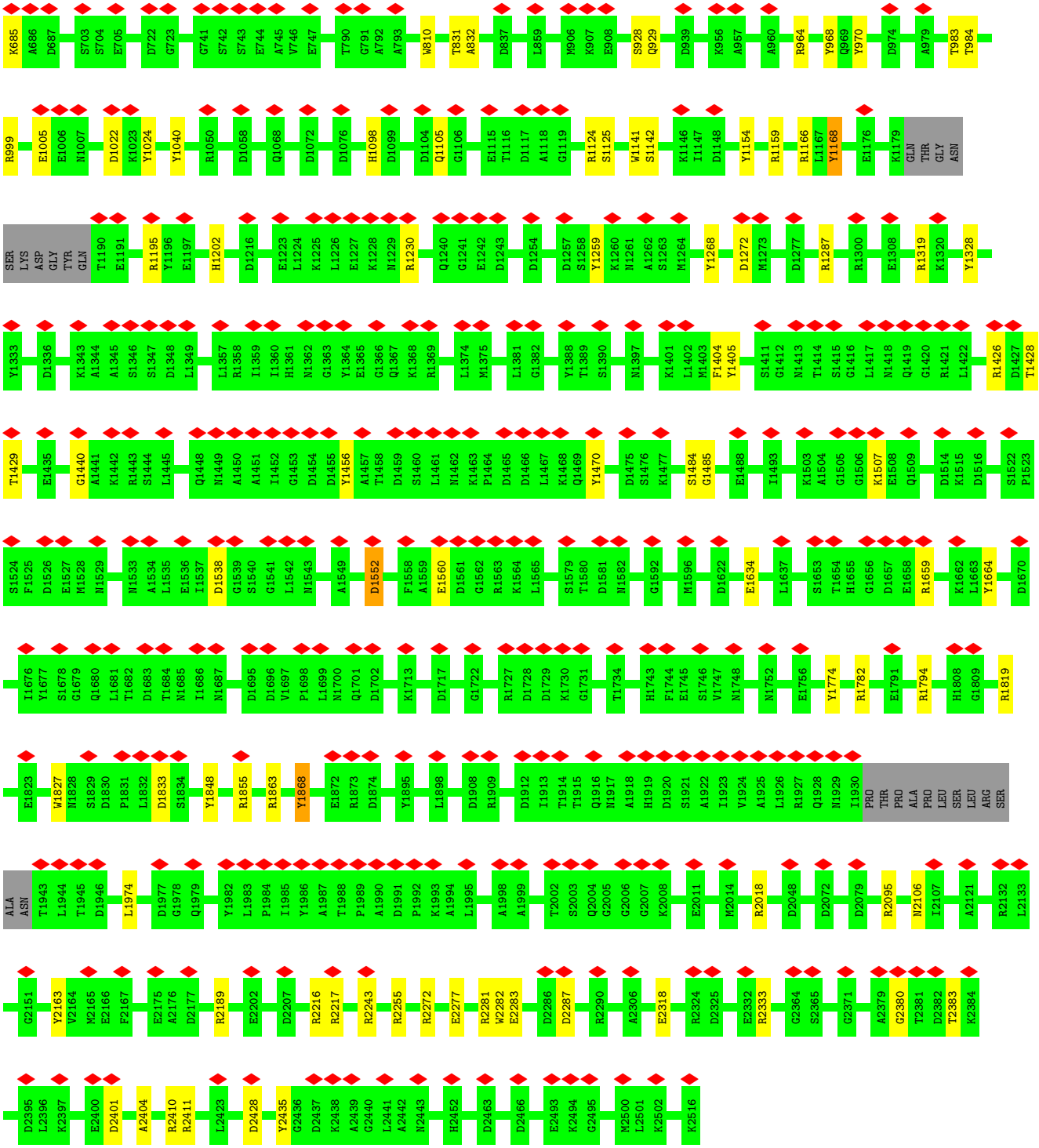




- Molecule 1: TcdA1

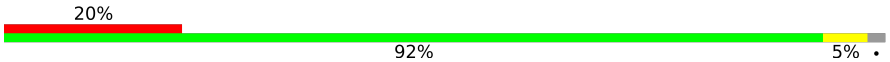


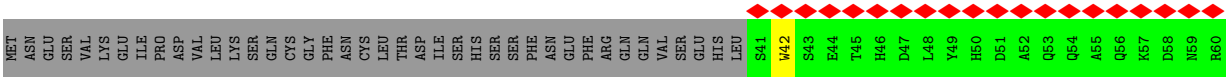


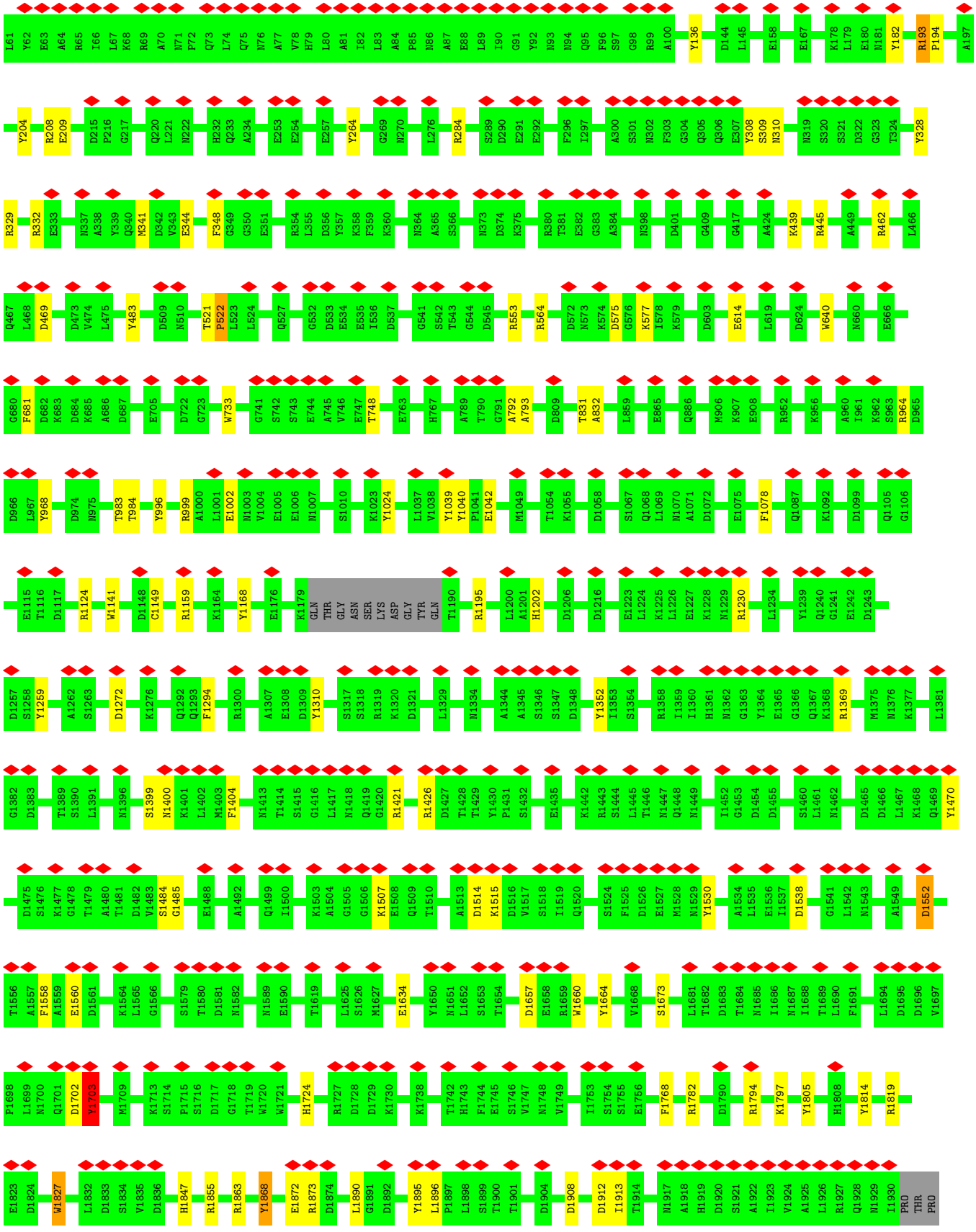


- Molecule 1: TcdA1

Chain E:



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Y204 R208 E209 D215 P216 G217 Q220 L221 N222 H232 Q233 A234 E253 E254 E257 Y264 G269 N270 L276 R284 S289 D290 E291 E292 F296 I297 A300 S301 N302 F303 G304 Q305 Q306 E307 Y308 S309 N310 N319 S320 S321 D322 G323 T324 Y328
R329 R332 E333 N337 A338 Y339 Q340 M341 D342 V343 E344 F348 G349 G350 E351 R354 L355 D356 Y357 K358 F359 K360 N364 A365 S366 N373 D374 K375 R380 T381 E382 G383 A384 N398 D401 G409 G417 A424 K439 R445 A449 R462 L466
Q467 L468 D469 D473 V474 L475 Y483 D509 N510 T521 P522 L523 L524 Q527 G532 D533 E534 E535 I536 D537 G541 S542 T543 G544 D545 R553 R564 D572 N573 K574 D575 G576 K577 I578 K579 D603 E614 L619 D624 W640 N660 E666
G680 F681 D682 K683 D684 K685 A686 D687 E705 D722 G723 W733 G741 S742 S743 E744 A745 V746 E747 T748 E763 H767 A789 T790 G791 A792 A793 D809 T831 A832 L859 E865 Q886 M906 K907 E908 R952 K956 A960 I961 K962 S963 R964 D965
D966 L967 Y968 D974 N975 T983 T984 Y996 R999 A1000 L1001 E1002 N1003 V1004 E1005 E1006 N1007 S1010 K1023 Y1024 L1037 V1038 Y1039 Y1040 P1041 E1042 M1049 T1054 K1055 D1058 S1067 Q1068 L1069 N1070 A1071 D1072 E1075 F1078 Q1087 K1092 D1099 Q1105 G1106
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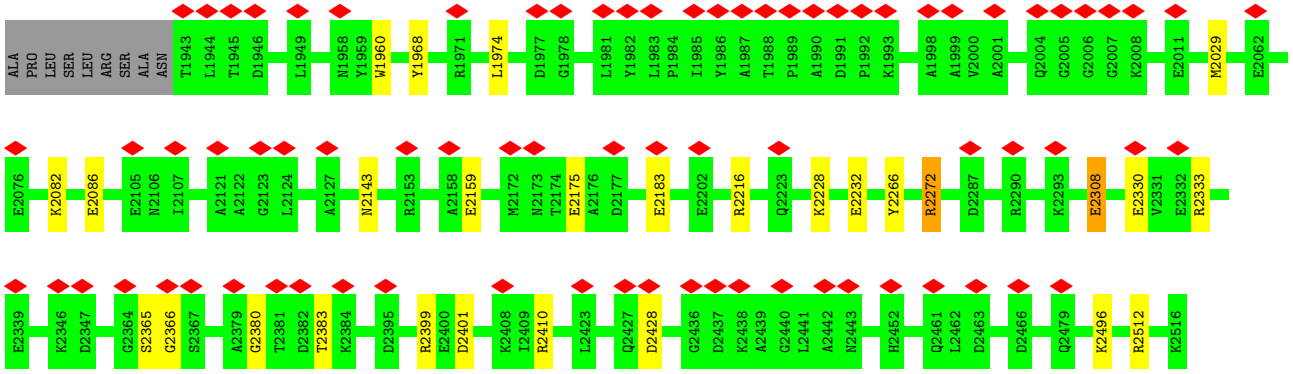
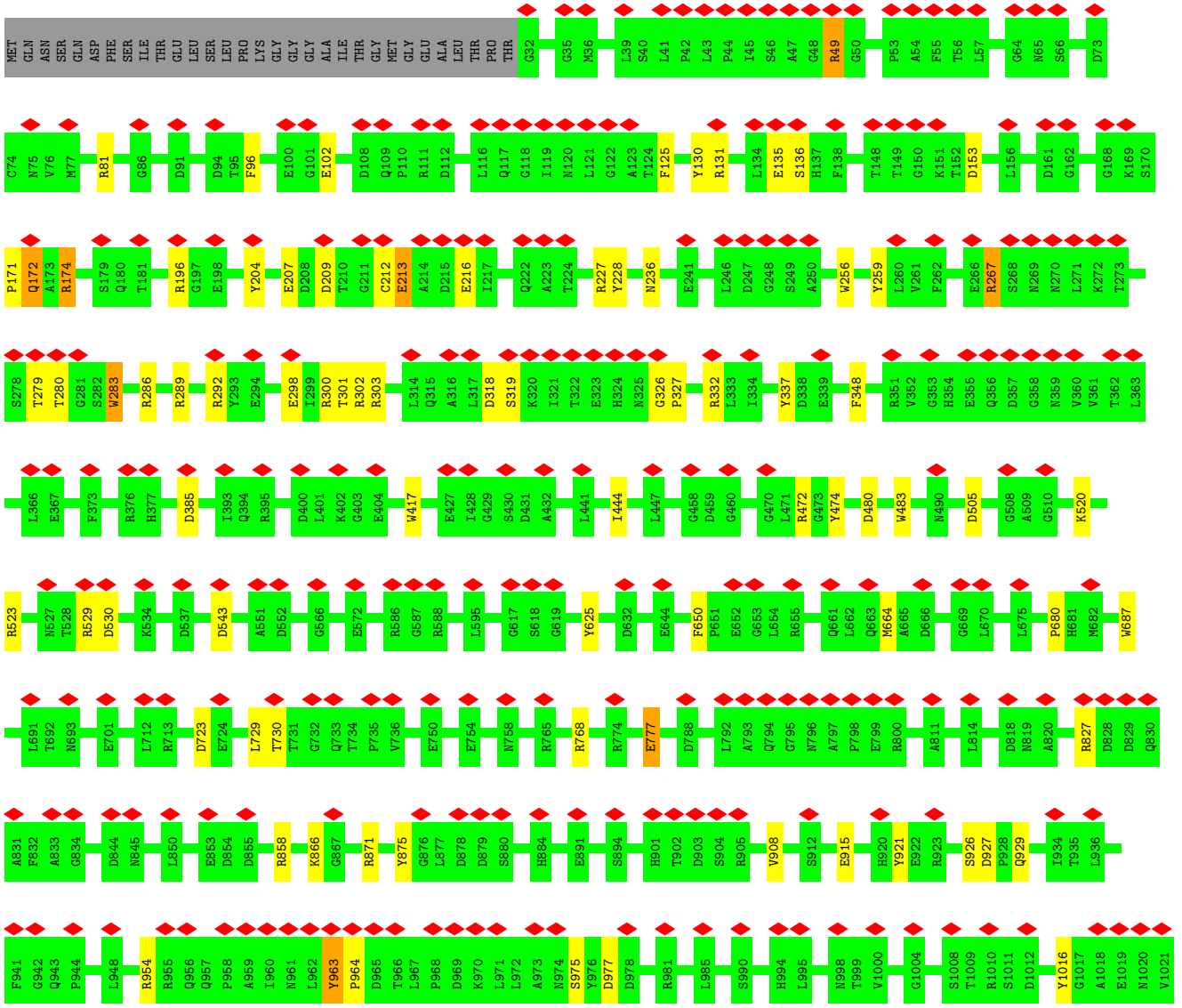
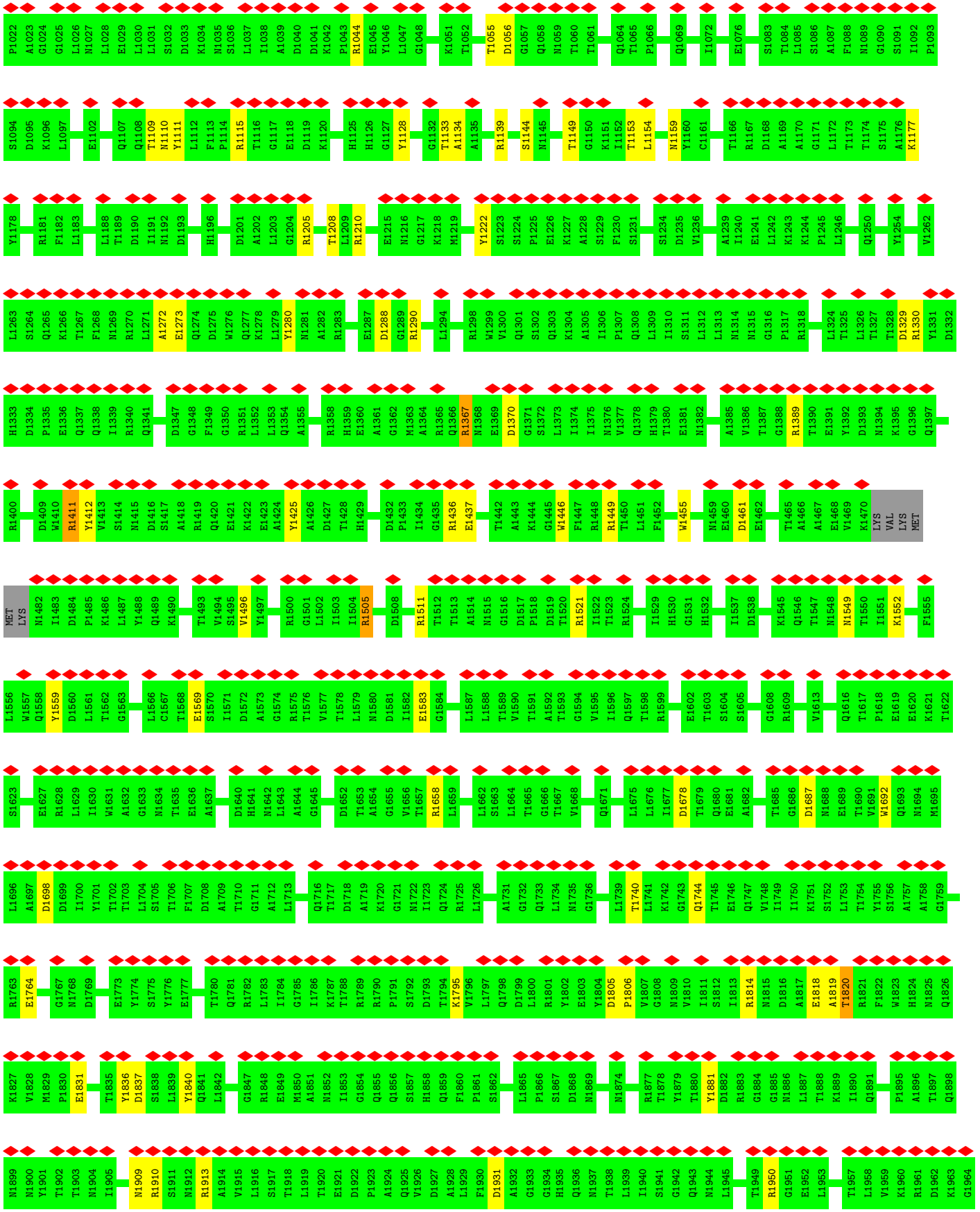
D1257 S1258 Y1259 A1262 S1263 D1272 K1276 Q1292 Q1293 F1294 R1300 A1307 E1308 D1309 Y1310 S1317 S1318 R1319 K1320 D1321 L1329 N1334 A1344 A1345 S1346 S1347 D1348 Y1352 I1353 S1354 R1358 I1359 I1360 H1361 N1362 G1363 Y1364 E1365 G1366 Q1367 K1368 R1369 M1375 N1376 K1377 L1381
G1382 D1383 T1389 S1390 L1391 N1396 S1399 N1400 K1401 L1402 M1403 F1404 N1413 T1414 S1415 G1416 L1417 N1418 Q1419 G1420 R1421 R1426 D1427 T1428 T1429 Y1430 P1431 S1432 E1435 K1442 R1443 S1444 L1445 T1446 N1447 Q1448 N1449 I1452 G1453 D1454 D1455 S1460 L1461 N1462 D1465 D1466 L1467 K1468 Q1469 Y1470
D1475 S1476 K1477 G1478 T1479 A1480 T1481 D1482 V1483 S1484 G1485 E1488 A1492 Q1499 I1500 K1503 A1504 G1505 G1506 K1507 E1508 Q1509 T1510 A1513 D1514 K1515 D1516 V1517 S1518 I1519 Q1520 S1524 F1525 D1526 E1527 M1528 N1529 Y1530 A1534 L1535 E1536 I1537 D1538 G1541 L1542 N1543 A1549 D1552
T1556 A1557 F1558 A1559 E1560 D1561 K1564 L1565 G1566 S1579 T1580 D1581 N1582 N1589 E1590 T1619 L1625 S1626 M1627 E1634 Y1650 N1651 L1652 S1653 T1654 D1657 E1658 R1659 W1660 Y1664 V1668 S1673 L1681 T1682 D1683 T1684 N1685 I1686 N1687 I1688 T1689 L1690 F1691 L1694 D1695 D1696 V1697
P1698 L1699 N1700 Q1701 D1702 Y1703 M1709 K1713 S1714 P1715 S1716 D1717 G1718 T1719 W1720 W1721 H1724 R1727 D1728 D1729 K1730 K1738 T1742 H1743 F1744 E1745 S1746 V1747 N1748 V1749 I1753 S1754 S1755 E1756 F1768 R1782 D1790 R1794 K1797 Y1805 H1808 Y1814 R1819
E1823 D1824 W1827 L1832 D1833 S1834 V1835 D1836 H1847 R1855 R1863 Y1868 E1872 R1873 D1874 L1890 G1891 D1892 Y1895 L1896 P1897 L1898 S1899 T1900 T1901 D1904 D1908 D1912 I1913 T1914 N1917 A1918 H1919 D1920 S1921 A1922 I1923 V1924 A1925 L1926 R1927 Q1928 N1929 I1930 PRO THR PRO



• Molecule 2: TcdB2,TccC3,TccC3

Chain F:




P1022 A1023 G1024 G1025 L1026 N1027 L1028 E1029 L1030 L1031 S1032 D1033 K1034 N1035 S1036 L1037 I1038 A1039 D1040 D1041 K1042 P1043 R1044 E1045 Y1046 L1047 G1048 K1051 T1052 T1055 D1056 G1057 Q1058 N1059 T1060 T1061 Q1064 T1065 P1066 Q1069 I1072 E1076 S1083 T1084 L1085 S1086 A1087 F1088 N1089 G1090 S1091 I1092 P1093
S1094 D1095 K1096 L1097 E1102 Q1107 Q1108 T1109 N1110 Y1111 L1112 F1113 P1114 R1115 T1116 G1117 E1118 D1119 K1120 H1125 H1126 G1127 Y1128 G1132 T1133 A1134 A1135 R1139 S1144 N1145 T1149 G1150 K1151 I1152 T1153 L1154 N1159 Y1160 C1161 T1166 R1167 D1168 A1169 A1170 G1171 L1172 T1173 T1174 S1175 A1176 K1177
Y1178 R1181 F1182 L1183 L1188 T1189 D1190 I1191 N1192 D1193 H1196 D1201 A1202 L1203 G1204 R1205 T1208 L1209 R1210 E1215 N1216 G1217 K1218 M1219 Y1222 S1223 S1224 P1225 E1226 K1227 A1228 S1229 F1230 S1231 S1234 D1235 V1236 A1239 I1240 E1241 L1242 K1243 K1244 P1245 L1246 Q1250 Y1254 V1262
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H1333 D1334 P1335 E1336 Q1337 Q1338 I1339 R1340 Q1341 D1347 G1348 F1349 G1350 R1351 L1352 L1353 Q1354 A1355 R1358 H1359 E1360 A1361 G1362 M1363 A1364 R1365 Q1366 R1367 N1368 E1369 D1370 G1371 S1372 L1373 I1374 I1375 N1376 V1377 Q1378 H1379 T1380 E1381 N1382 A1385 V1386 T1387 G1388 R1389 T1390 E1391 Y1392 D1393 N1394 K1395 G1396 Q1397
R1400 D1409 W1410 R1411 Y1412 V1413 S1414 N1415 D1416 S1417 A1418 R1419 Q1420 E1421 K1422 E1423 A1424 Y1425 A1426 D1427 T1428 H1429 D1432 P1433 I1434 G1435 R1436 E1437 T1442 A1443 K1444 G1445 W1446 F1447 R1448 R1449 T1450 L1451 F1452 W1455 N1459 E1460 D1461 E1462 T1465 A1466 A1467 E1468 V1469 K1470 LYS VAL LYS MET
MET LYS N1482 I1483 D1484 P1485 K1486 L1487 Y1488 Q1489 K1490 T1493 V1494 S1495 V1496 Y1497 R1500 G1501 L1502 I1503 I1504 R1505 D1508 R1511 T1512 T1513 A1514 N1515 G1516 D1517 P1518 D1519 T1520 R1521 I1522 T1523 R1524 I1529 H1530 G1531 H1532 T1537 D1538 K1545 Q1546 T1547 N1548 N1549 T1550 I1551 K1552 F1555
L1556 W1557 Q1558 Y1559 D1560 L1561 T1562 G1563 L1566 C1567 T1568 E1569 S1570 I1571 D1572 A1573 G1574 R1575 T1576 V1577 T1578 L1579 N1580 D1581 I1582 E1583 G1584 L1587 L1588 T1589 V1590 T1591 A1592 T1593 G1594 V1595 I1596 Q1597 T1598 R1599 E1602 T1603 S1604 S1605 G1608 R1609 V1613 Q1616 T1617 P1618 E1619 E1620 K1621 T1622
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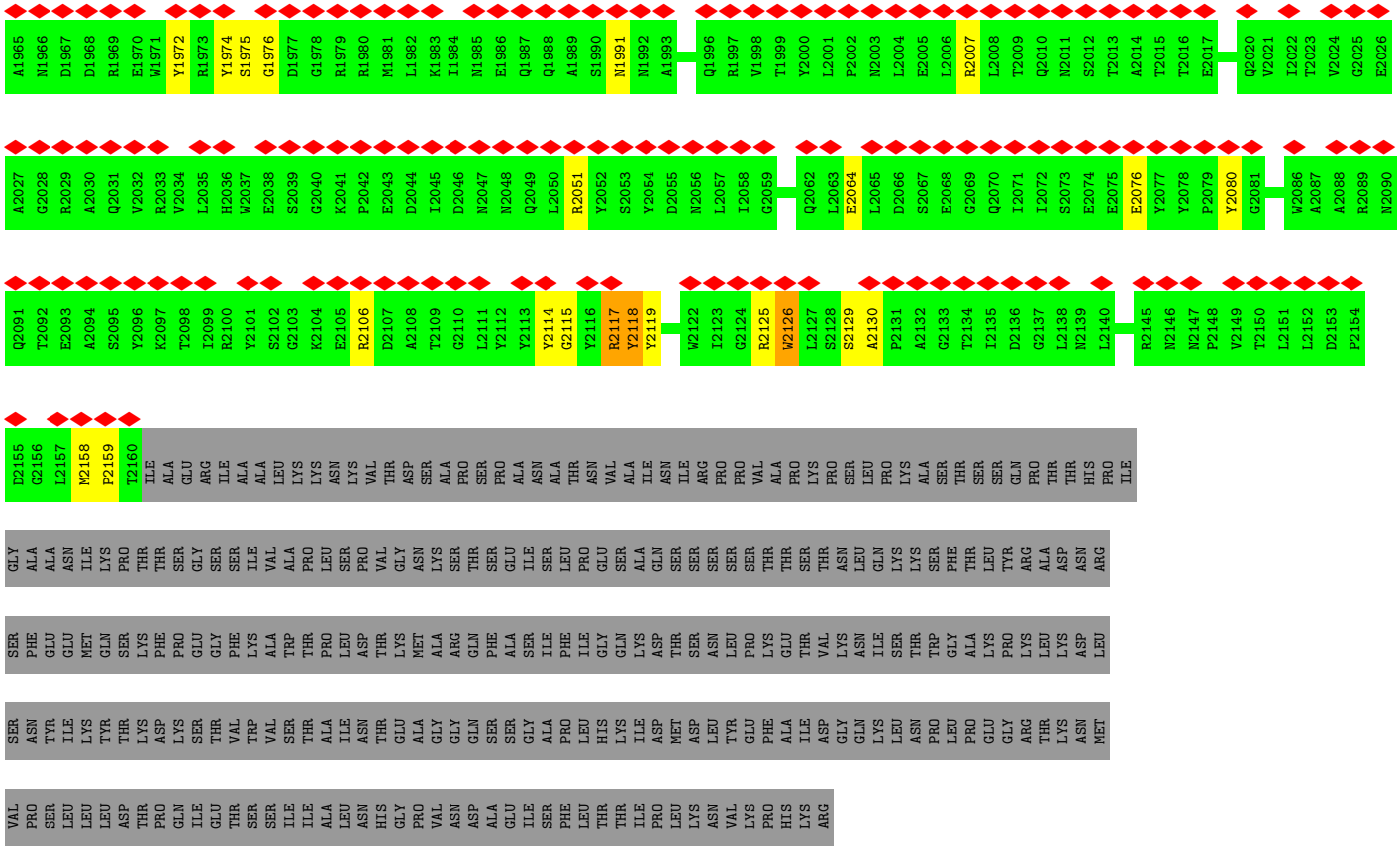
R1763 E1764 G1767 N1768 D1769 E1773 Y1774 S1775 Y1776 E1777 T1780 Q1781 R1782 L1783 I1784 G1785 I1786 K1787 T1788 R1789 R1790 P1791 S1792 D1793 T1794 K1795 V1796 L1797 Q1798 D1799 L1800 R1801 Y1802 E1803 Y1804 D1805 P1806 V1807 G1808 N1809 V1810 I1811 S1812 I1813 R1814 N1815 D1816 A1817 E1818 A1819 T1820 R1821 F1822 W1823 H1824 N1825 Q1826
K1827 V1828 M1829 P1830 E1831 T1835 Y1836 D1837 S1838 L1839 Y1840 Q1841 L1842 G1847 R1848 E1849 M1850 A1851 N1852 I1853 G1854 Q1855 Q1856 S1857 H1858 Q1859 F1860 P1861 S1862 L1865 P1866 S1867 D1868 N1869 M1874 R1877 T1878 Y1879 T1880 Y1881 D1882 R1883 G1884 G1885 N1886 L1887 T1888 K1889 I1890 Q1891 P1895 A1896 T1897 Q1898
N1899 N1900 Y1901 T1902 T1903 N1904 I1905 N1909 R1910 S1911 N1912 R1913 A1914 V1915 L1916 S1917 T1918 L1919 T1920 E1921 D1922 P1923 A1924 Q1925 V1926 D1927 A1928 L1929 F1930 D1931 A1932 G1933 G1934 H1935 Q1936 N1937 T1938 L1939 I1940 S1941 G1942 Q1943 N1944 L1945 T1949 R1950 G1951 E1952 L1953 T1957 L1958 V1959 K1960 R1961 D1962 K1963 G1964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A2027 G2028 R2029 A2030 Q2031 V2032 R2033 V2034 L2035 H2036 W2037 E2038 S2039 G2040 K2041 P2042 E2043 D2044 I2045 D2046 N2047 N2048 Q2049 L2050 R2051 Y2052 S2053 Y2054 D2055 N2056 L2057 I2058 G2059 Q2062 L2063 E2064 L2065 D2066 S2067 E2068 G2069 Q2070 I2071 I2072 S2073 E2074 E2075 E2076 Y2077 Y2078 P2079 Y2080 G2081 W2086 A2087 A2088 R2089 N2090
Q2091 T2092 E2093 A2094 S2095 Y2096 K2097 T2098 I2099 R2100 Y2101 S2102 G2103 K2104 E2105 R2106 D2107 A2108 T2109 G2110 L2111 Y2112 Y2113 Y2114 G2115 Y2116 R2117 Y2118 Y2119 W2122 I2123 G2124 R2125 W2126 L2127 S2128 S2129 A2130 P2131 A2132 G2133 T2134 I2135 D2136 G2137 L2138 N2139 L2140 R2145 N2146 N2147 P2148 V2149 T2150 L2151 L2152 D2153 P2154
D2155 G2156 L2157 M2158 P2159 T2160 ILE ALA GLU ARG ILE ALA ALA LEU LYS LYS ASN LYS VAL THR ASP SER ALA ALA PRO SER PRO ALA ASN ALA THR ASN VAL ALA ILE ASN ILE ARG PRO PRO VAL ALA PRO LYS PRO SER LEU PRO LYS ALA SER THR SER SER GLN PRO THR THR HIS PRO ILE
GLY ALA ALA ASN ILE LYS PRO THR THR SER GLY SER SER ILE VAL ALA PRO LEU SER PRO VAL GLY ASN LYS SER THR SER GLU ILE SER LEU PRO GLU SER ALA GLN SER SER SER SER THR SER THR ASN LEU GLN LYS LYS SER PHE THR LEU TYR ARG ALA ASP ASN ARG
SER PHE GLU GLU MET GLN SER LYS PHE PRO GLU GLY PHE LYS ALA TRP THR PRO LEU ASP THR LYS MET ALA ARG GLN PHE ALA SER ILE PHE ILE GLY GLN LYS ASP THR SER ASN LEU PRO LYS GLU THR VAL LYS ASN ILE SER THR TRP GLY ALA LYS PRO LYS LEU LYS ASP LEU
SER ASN TYR ILE LYS TYR THR LYS ASP LYS SER THR VAL TRP VAL SER THR ALA ILE ASN THR GLU ALA GLY GLY GLN SER SER GLY ALA PRO LEU HIS LYS ILE ASP MET ASP LEU TYR GLU PHE ALA ILE ASP GLY GLN LYS LEU ASN PRO LEU PRO GLU GLY ARG THR LYS ASN MET
VAL PRO SER LEU LEU LEU ASP THR PRO GLN ILE GLU THR SER SER ILE ILE ALA LEU ASN HIS GLY PRO VAL ASN ASP ALA GLU ILE SER PHE LEU THR THR ILE PRO LEU LYS ASN VAL LYS PRO HIS LYS ARG

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	132000	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 ($e^-/Å^2$)	2.2	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	59000	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.141	Depositor
Minimum map value	-0.113	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	528.0, 528.0, 528.0	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	1.10	33/19896 (0.2%)	0.92	57/27024 (0.2%)
1	B	1.11	45/19896 (0.2%)	0.94	50/27024 (0.2%)
1	C	1.10	37/19896 (0.2%)	0.92	54/27024 (0.2%)
1	D	1.13	38/19896 (0.2%)	0.93	55/27024 (0.2%)
1	E	1.10	44/19896 (0.2%)	0.92	51/27024 (0.2%)
2	F	1.11	40/17337 (0.2%)	1.00	70/23638 (0.3%)
All	All	1.11	237/116817 (0.2%)	0.94	337/158758 (0.2%)

The worst 5 of 237 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	308	TYR	CB-CG	-8.79	1.38	1.51
2	F	875	TYR	CB-CG	-8.14	1.39	1.51
1	D	483	TYR	CB-CG	-7.98	1.39	1.51
1	E	1310	TYR	CB-CG	-7.65	1.40	1.51
1	D	103	TYR	CB-CG	-7.62	1.40	1.51

The worst 5 of 337 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	2333	ARG	NE-CZ-NH2	-11.90	114.35	120.30
1	B	329	ARG	NE-CZ-NH2	-11.52	114.54	120.30
1	E	462	ARG	NE-CZ-NH2	-11.36	114.62	120.30
1	C	1819	ARG	NE-CZ-NH2	-10.94	114.83	120.30
1	C	329	ARG	NE-CZ-NH2	-10.84	114.88	120.30

There are no chirality outliers.

There are no planarity outliers.

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	A	19477	0	19046	32	0
1	B	19477	0	19046	31	0
1	C	19477	0	19046	38	0
1	D	19477	0	19046	30	0
1	E	19477	0	19046	35	0
2	F	16918	0	16285	55	0
All	All	114303	0	111515	214	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 1.

The worst 5 of 214 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)
2:F:228:TYR:HH	2:F:301:THR:HG1	1.36	0.71
1:D:92:TYR:OH	1:D:99:ARG:NH1	2.26	0.69
1:E:733:TRP:HE1	1:E:748:THR:HG1	1.43	0.64
1:E:1868:TYR:OH	1:E:1974:LEU:O	2.19	0.59
1:C:1868:TYR:OH	1:C:1974:LEU:O	2.22	0.58

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
1	A	2448/2516 (97%)	2401 (98%)	45 (2%)	2 (0%)	51 83

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	B	2448/2516 (97%)	2410 (98%)	32 (1%)	6 (0%)	47 78
1	C	2448/2516 (97%)	2413 (99%)	30 (1%)	5 (0%)	47 78
1	D	2448/2516 (97%)	2408 (98%)	34 (1%)	6 (0%)	47 78
1	E	2448/2516 (97%)	2407 (98%)	38 (2%)	3 (0%)	51 83
2	F	2114/2434 (87%)	2046 (97%)	58 (3%)	10 (0%)	29 65
All	All	14354/15014 (96%)	14085 (98%)	237 (2%)	32 (0%)	50 78

5 of 32 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	433	GLN
1	C	1314	SER
1	D	522	PRO
1	E	522	PRO
2	F	680	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	A	2100/2157 (97%)	2100 (100%)	0	100 100
1	B	2100/2157 (97%)	2100 (100%)	0	100 100
1	C	2100/2157 (97%)	2100 (100%)	0	100 100
1	D	2100/2157 (97%)	2099 (100%)	1 (0%)	100 100
1	E	2100/2157 (97%)	2099 (100%)	1 (0%)	100 100
2	F	1831/2104 (87%)	1827 (100%)	4 (0%)	93 97
All	All	12331/12889 (96%)	12325 (100%)	6 (0%)	100 100

5 of 6 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	F	289	ARG

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Mol	Chain	Res	Type
2	F	1044	ARG
2	F	2117	ARG
1	E	341	MET
1	D	341	MET

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (5) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1671	ASN
1	B	1671	ASN
1	B	2452	HIS
1	D	1671	ASN
2	F	1125	HIS

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no monosaccharides in this entry.

5.6 Ligand geometry (i)

There are no ligands in this entry.

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.

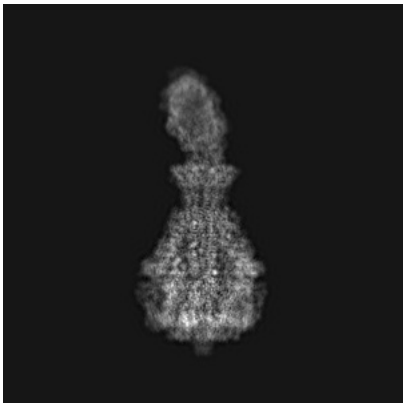
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-0150. These allow visual inspection of the internal detail of the map and identification of artifacts.

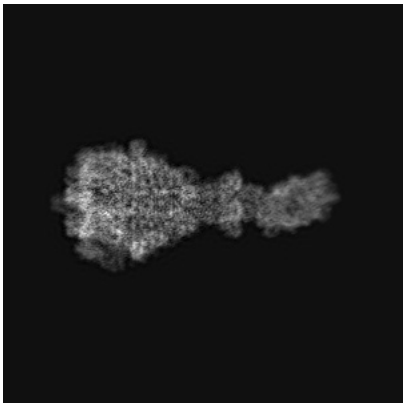
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

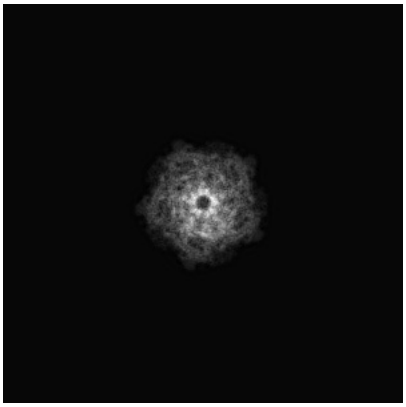
6.1.1 Primary map



X



Y

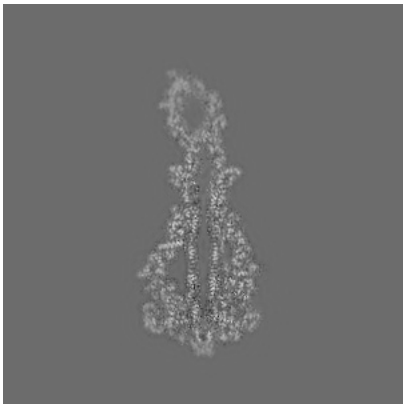


Z

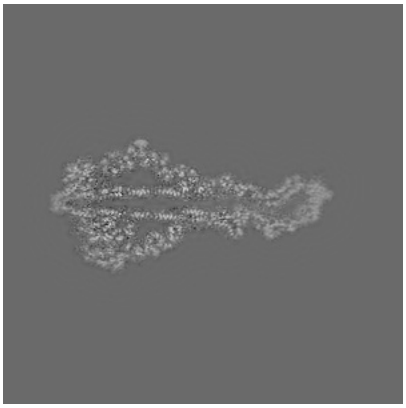
The images above show the map projected in three orthogonal directions.

6.2 Central slices

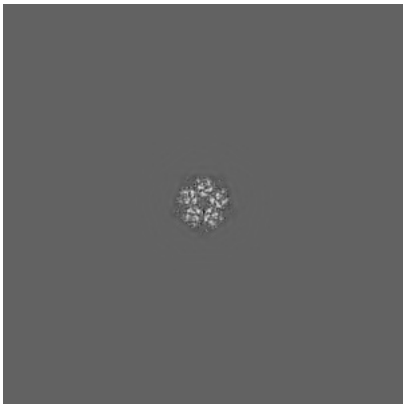
6.2.1 Primary map



X Index: 240



Y Index: 240

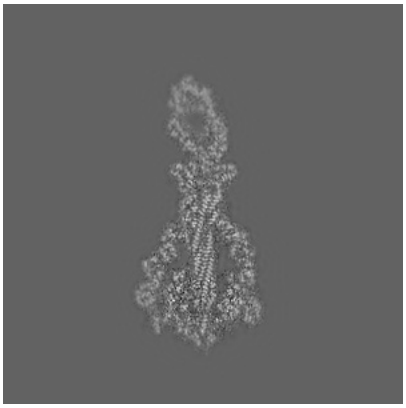


Z Index: 240

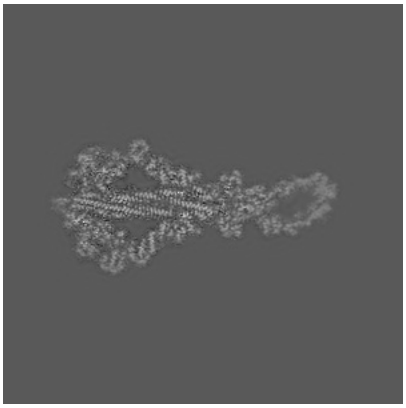
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

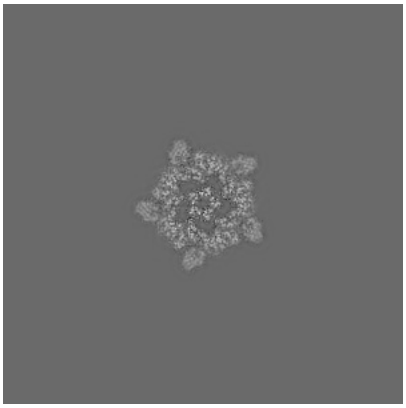
6.3.1 Primary map



X Index: 228



Y Index: 230



Z Index: 140

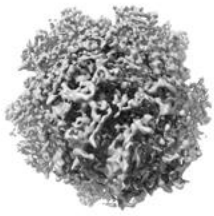
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X

Y



Z

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

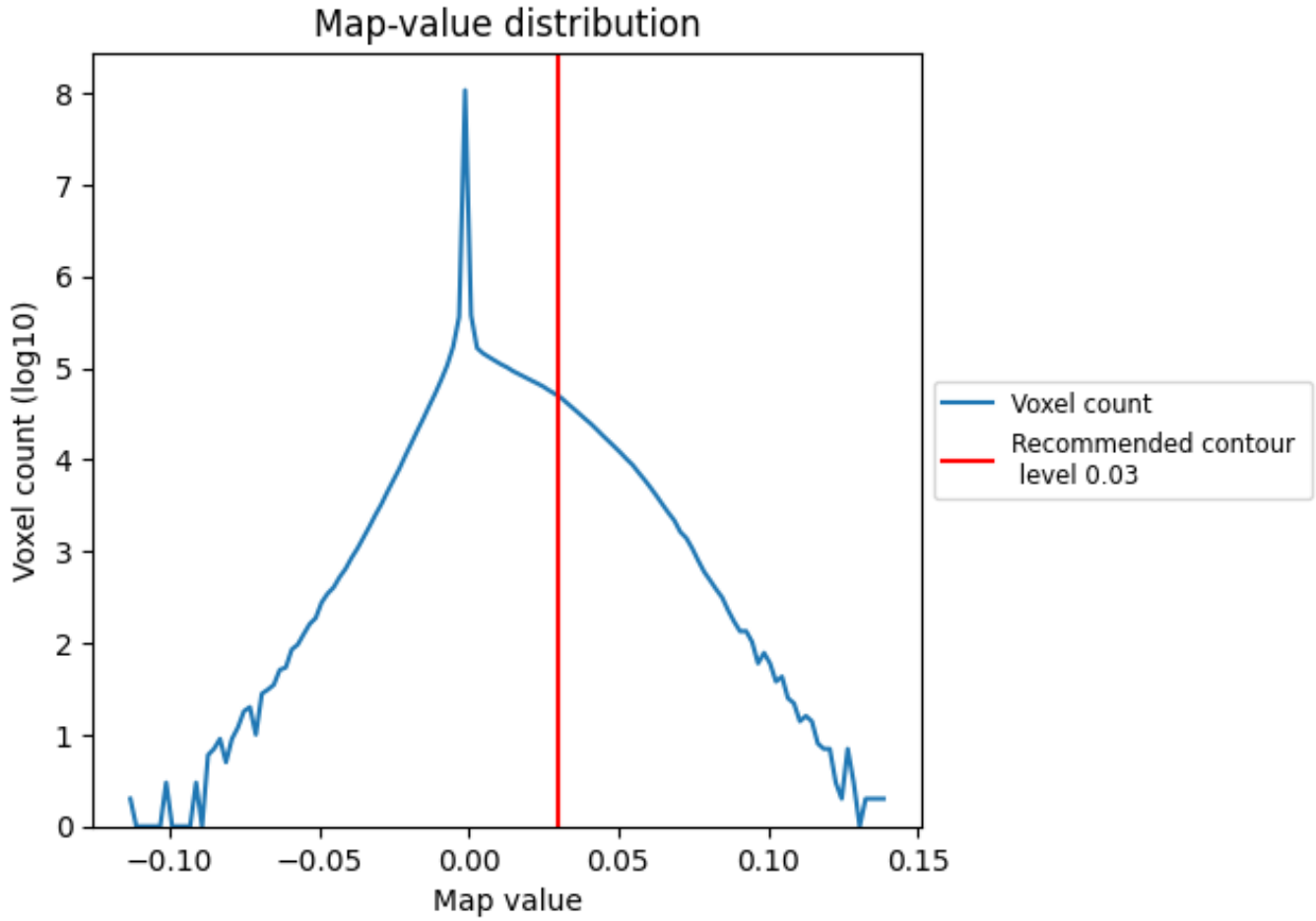
6.5 Mask visualisation (i)

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

7 Map analysis

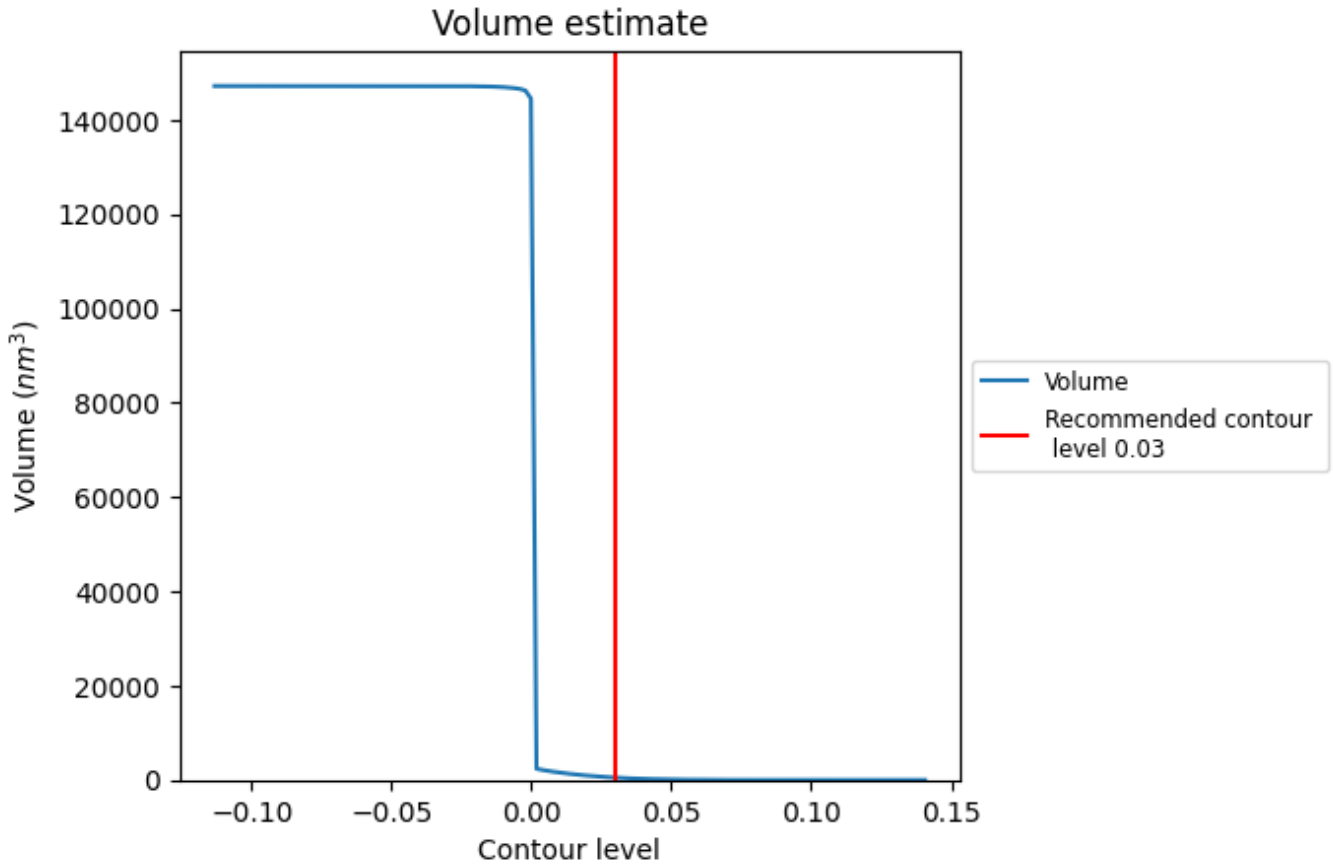
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

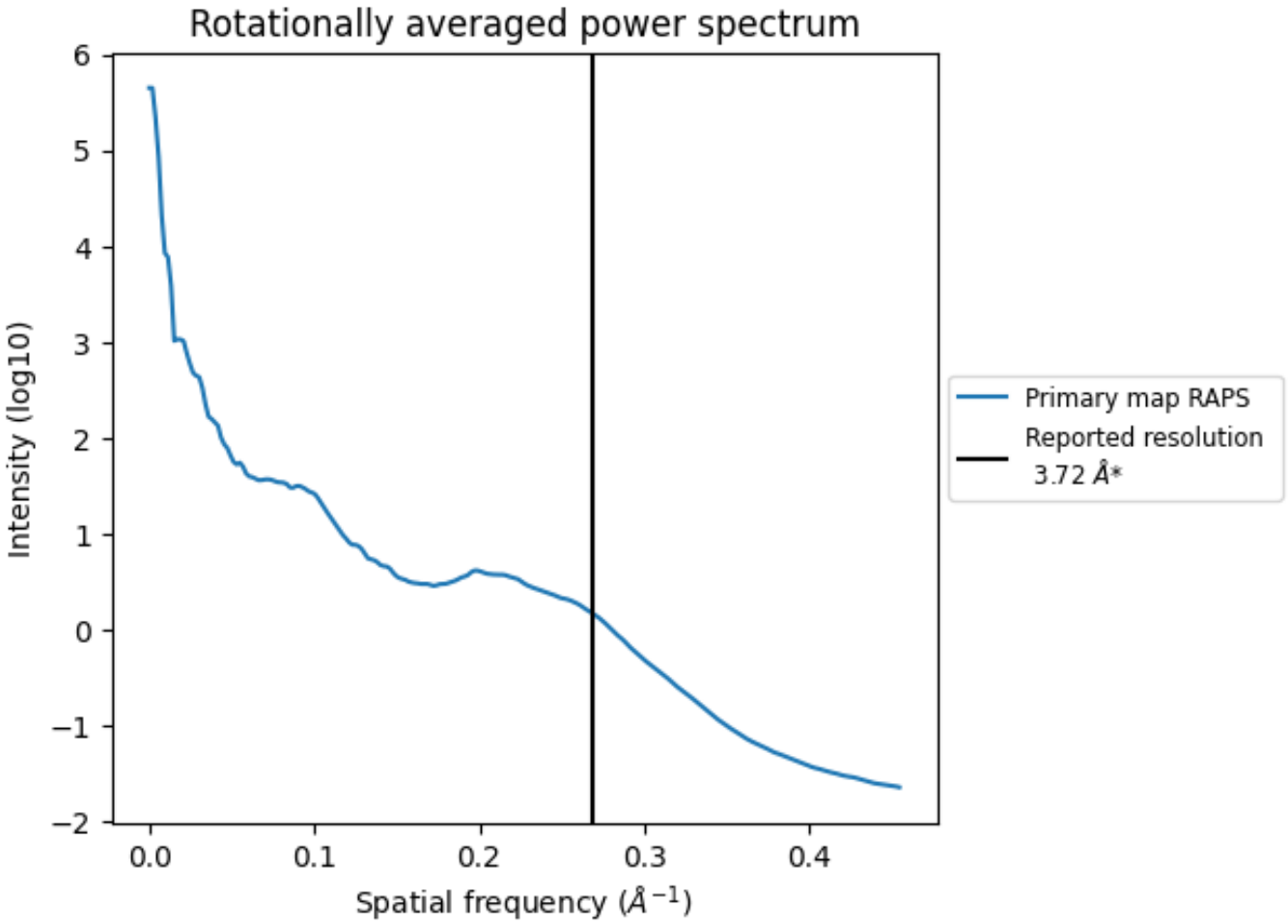
7.2 Volume estimate (i)



The volume at the recommended contour level is 491 nm^3; this corresponds to an approximate mass of 444 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 0.269 Å^{-1}

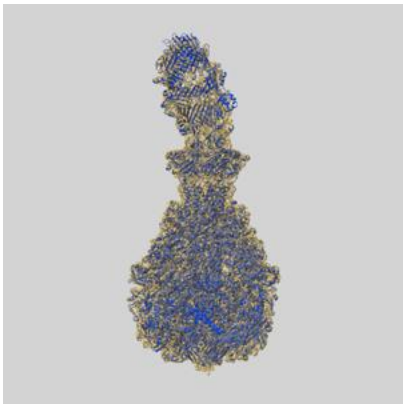
8 Fourier-Shell correlation (i)

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

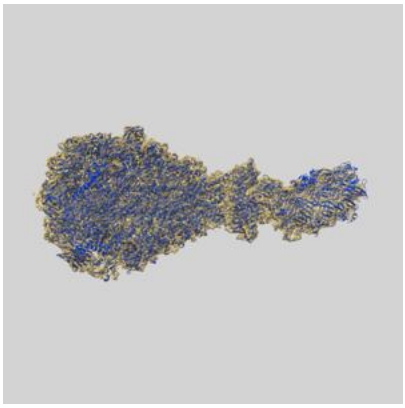
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-0150 and PDB model 6H6F. Per-residue inclusion information can be found in section 3 on page 4.

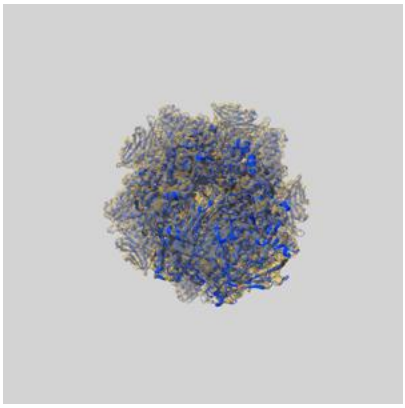
9.1 Map-model overlay



X



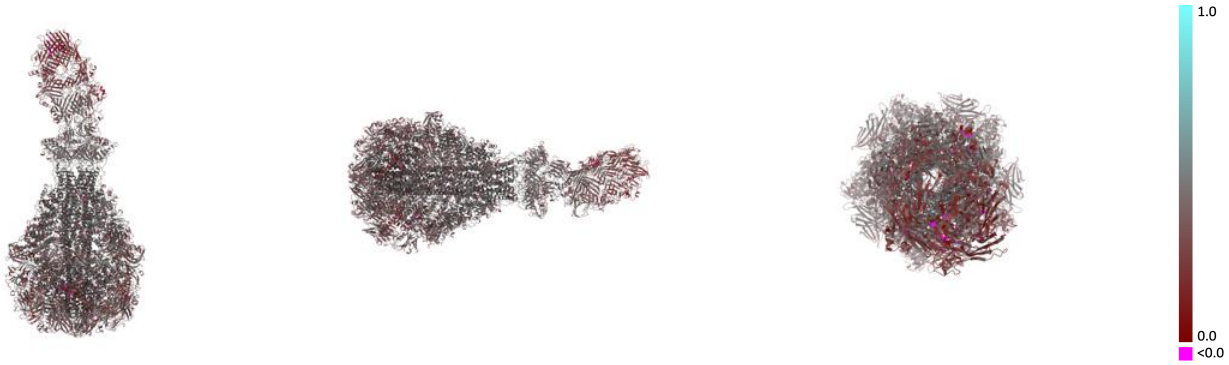
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

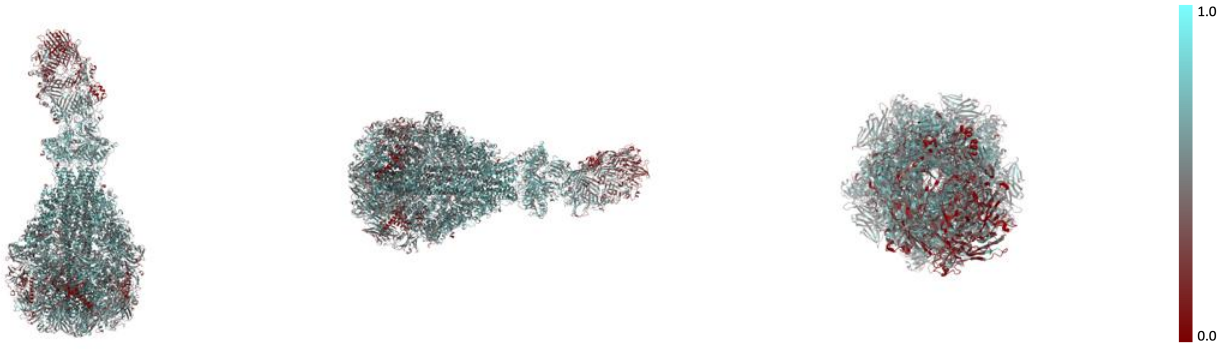
9.2 Q-score mapped to coordinate model



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.

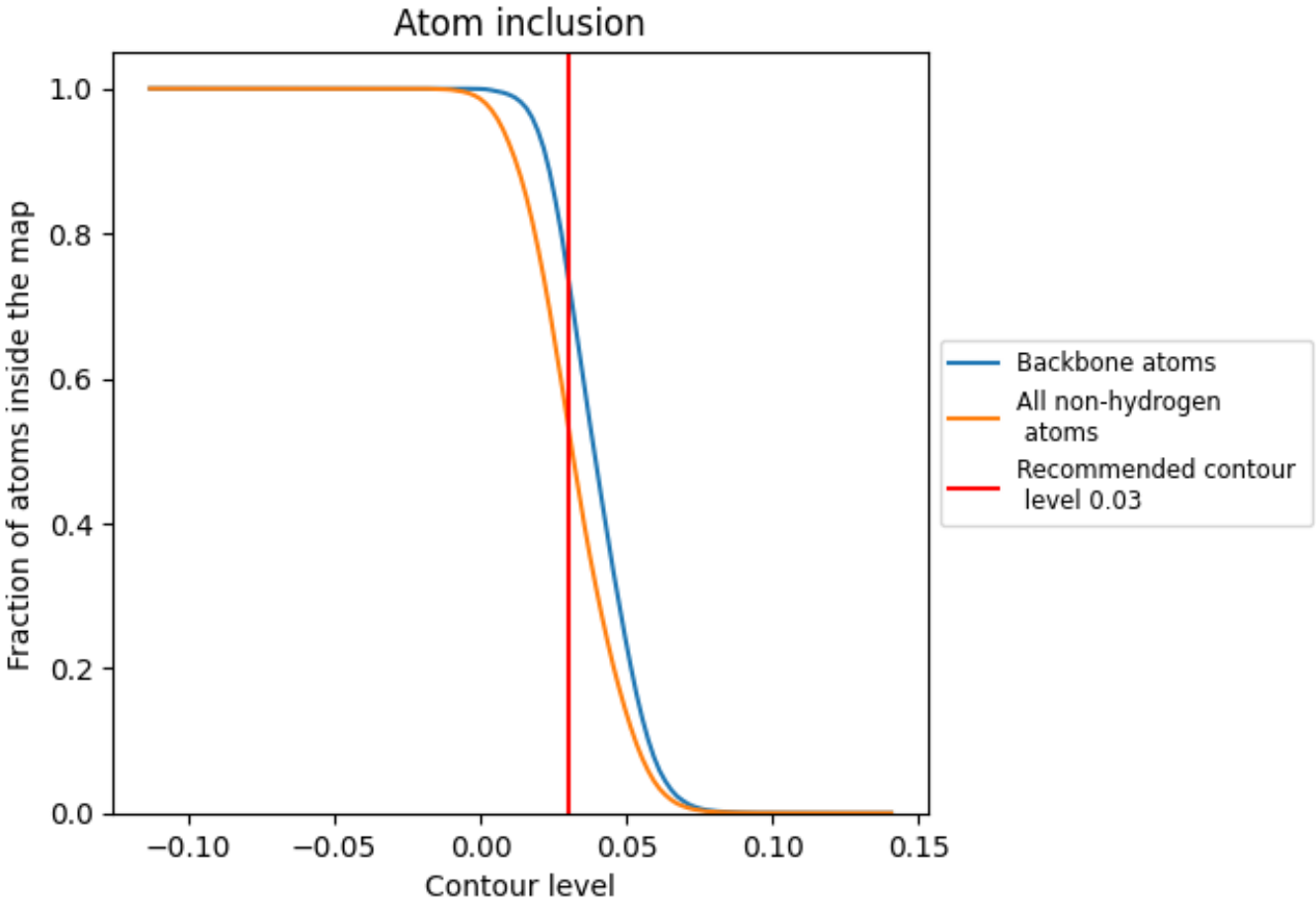
9.3 Atom inclusion mapped to coordinate model



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 (0.03).

9.4 Atom inclusion (i)



At the recommended contour level, 74% of all backbone atoms, 54% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5352	0.3750
A	0.5515	0.3850
B	0.5568	0.3840
C	0.5574	0.3850
D	0.5619	0.3910
E	0.5576	0.3890
F	0.4085	0.3090