wwPDB EM Validation Summary Report

May 4, 2025 – 01:51 PM EDT

PDB ID	:	8U95 / pdb_00008u95
EMDB ID	:	EMD-42024
Title	:	The structure of myosin heavy chain from Drosophila melanogaster flight muscle thick filaments
Authors	:	Abbasi Yeganeh, F.; Rastegarpouyani, H.; Li, J.; Taylor, K.A.
Deposited on	:	2023-09-18
Resolution	:	4.70 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*
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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:

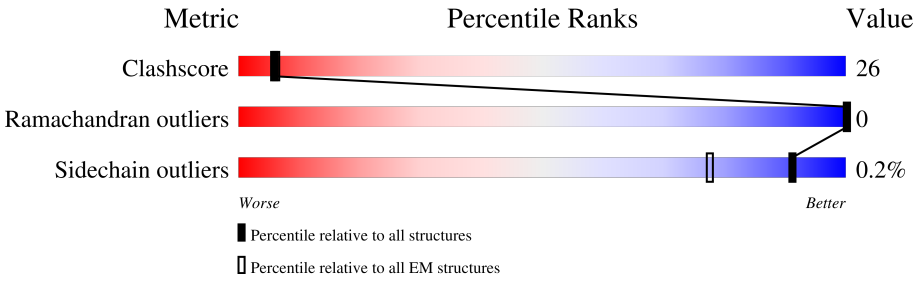
EMDB validation analysis	:	0.0.1.dev118
MolProbity	:	4-5-2 with Phenix2.0rc1
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.43.1

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.70 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	1949	52% 26% 25% 48%
1	B	1949	52% 24% 27% 48%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 16352 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 Myosin heavy chain, isoform U.

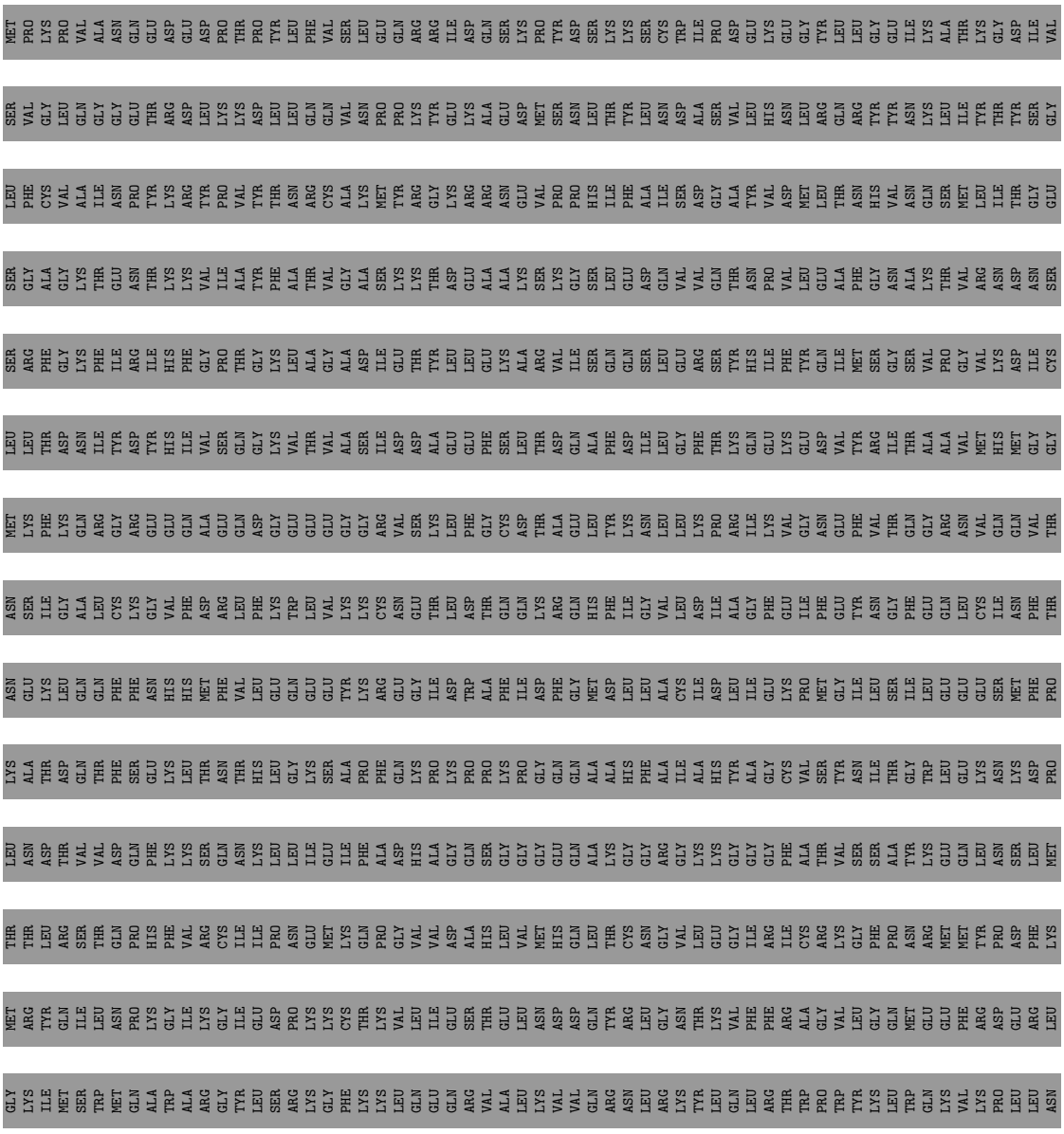
Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1009	Total	C	N	O	S	0	0
			8176	4946	1527	1695	8		
1	B	1009	Total	C	N	O	S	0	0
			8176	4946	1527	1695	8		

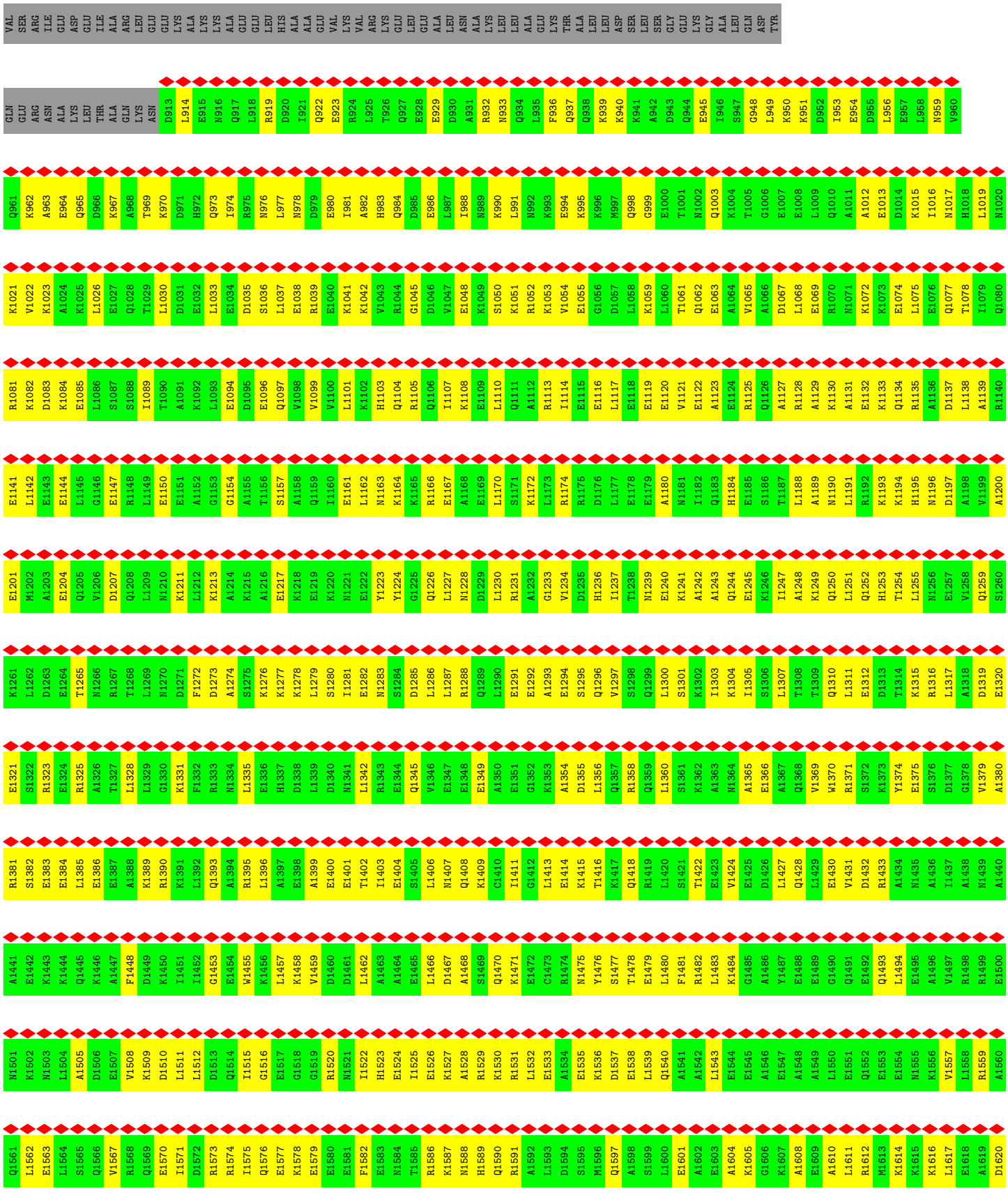
3 Residue-property plots (i)

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: Myosin heavy chain, isoform U

Chain A:




VAL SER ARG ILE GLU ASP GLU ILE ALA ARG LEU GLU GLU LYS ALA LYS LYS ALA GLU GLU LEU HIS ALA ALA GLU VAL LYS VAL ARG LYS GLU LEU GLU ALA LEU ASN ALA LYS LEU LEU ALA GLU LYS THR ALA LEU LEU ASP SER LEU SER GLY GLU LYS GLY ALA LEU GLN ASP TYR
GLN GLU ARG ASN ALA LYS LEU THR ALA GLN LYS ASN D913 L914 E915 N916 Q917 L918 R919 D920 I921 Q922 E923 R924 L925 T926 Q927 E928 E929 D930 A931 R932 N933 Q934 L935 F936 Q937 Q938 K939 K940 K941 A942 D943 Q944 E945 I946 S947 G948 L949 K950 K951 D952 I953 E954 D955 L956 E957 L958 N959 Y960
Q961 K962 A963 E964 Q965 D966 K967 A968 T969 K970 D971 H972 Q973 I974 R975 N976 L977 N978 D979 E980 I981 A982 H983 Q984 D985 E986 L987 I988 N989 K990 L991 N992 K993 E994 K995 K996 M997 Q998 G999 E1000 T1001 N1002 Q1003 K1004 T1005 G1006 E1007 E1008 L1009 Q1010 A1011 A1012 E1013 D1014 K1015 I1016 N1017 H1018 L1019 N1020
K1021 V1022 K1023 A1024 K1025 L1026 E1027 Q1028 T1029 L1030 D1031 E1032 L1033 E1034 D1035 S1036 L1037 E1038 R1039 E1040 K1041 K1042 V1043 R1044 G1045 D1046 V1047 E1048 K1049 S1050 K1051 R1052 K1053 V1054 E1055 G1056 D1057 L1058 K1059 L1060 T1061 Q1062 E1063 A1064 V1065 A1066 D1067 L1068 E1069 R1070 N1071 K1072 K1073 E1074 L1075 E1076 Q1077 T1078 I1079 Q1080
R1081 K1082 D1083 K1084 E1085 L1086 S1087 S1088 I1089 T1090 A1091 K1092 L1093 E1094 D1095 E1096 Q1097 V1098 V1099 V1100 L1101 K1102 H1103 Q1104 R1105 Q1106 I1107 K1108 E1109 L1110 Q1111 A1112 R1113 I1114 E1115 E1116 L1117 E1118 E1119 E1120 V1121 E1122 A1123 E1124 R1125 Q1126 A1127 R1128 A1129 K1130 A1131 E1132 K1133 Q1134 R1135 A1136 D1137 L1138 A1139 R1140
E1141 L1142 E1143 E1144 L1145 G1146 E1147 R1148 L1149 E1150 E1151 A1152 G1153 G1154 A1155 T1156 S1157 A1158 Q1159 I1160 E1161 L1162 N1163 K1164 K1165 R1166 E1167 A1168 E1169 L1170 S1171 K1172 L1173 R1174 R1175 D1176 L1177 E1178 E1179 A1180 N1181 I1182 Q1183 H1184 E1185 S1186 T1187 L1188 A1189 N1190 L1191 R1192 K1193 K1194 H1195 N1196 D1197 A1198 V1199 A1200
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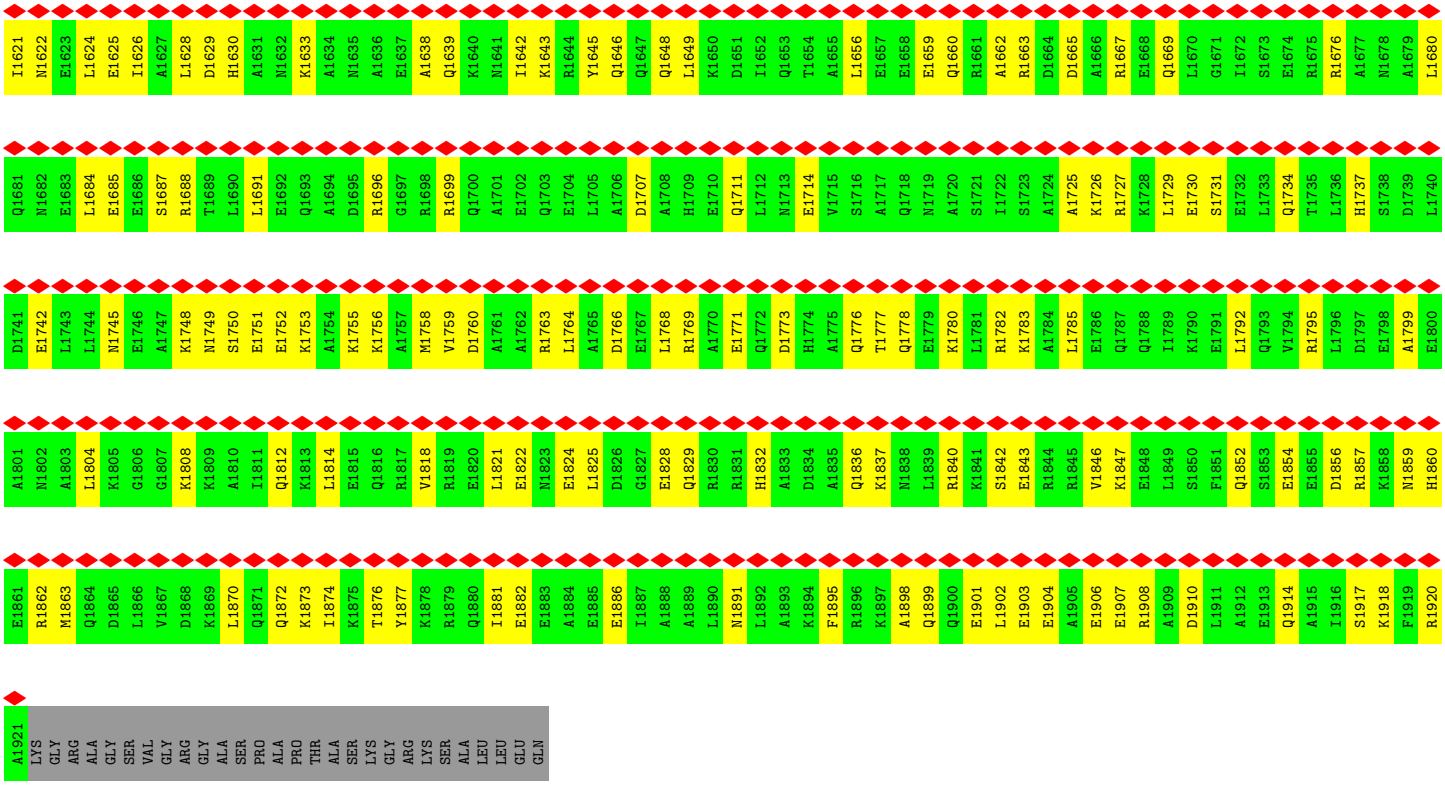
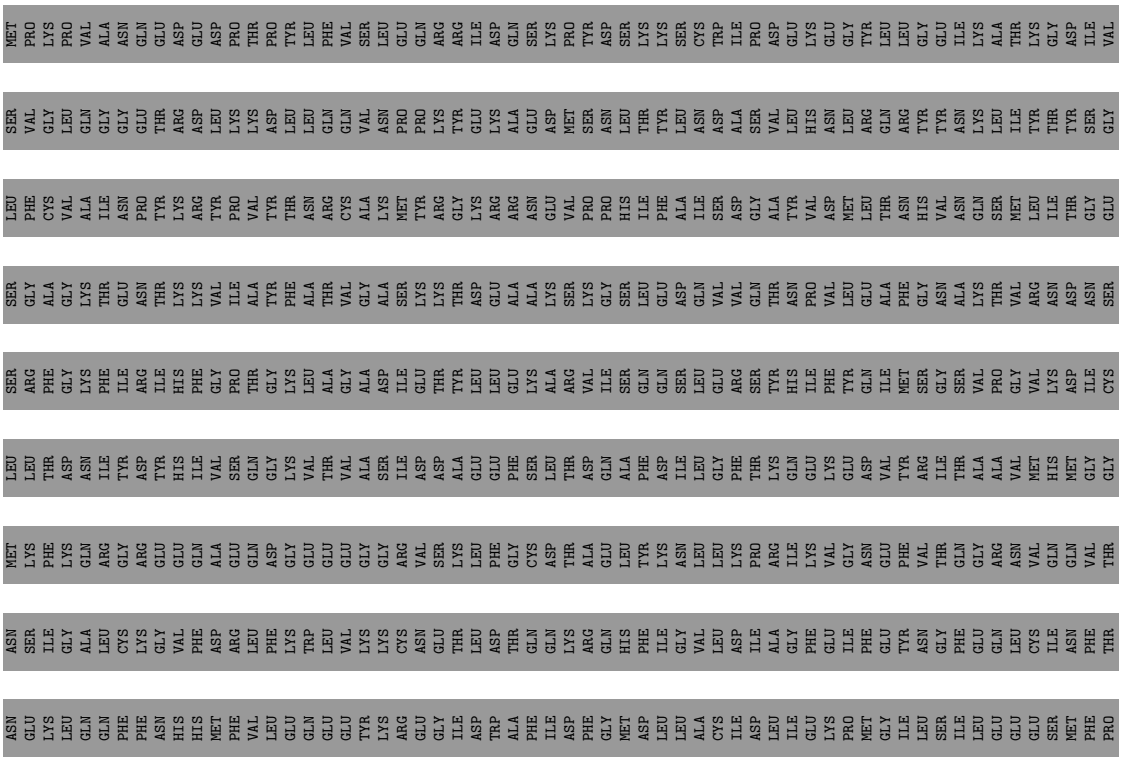
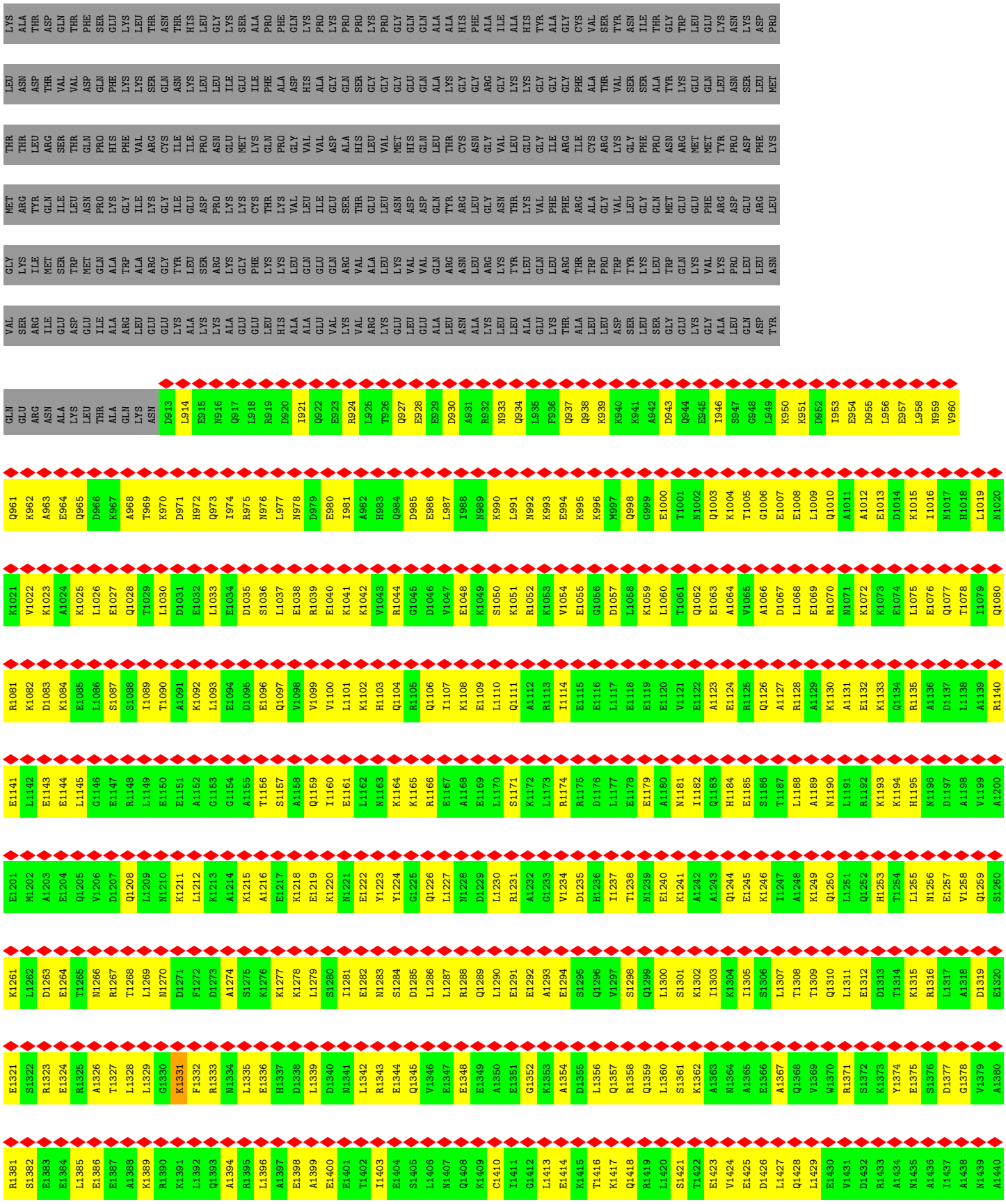
K1261 L1262 D1263 E1264 T1265 N1266 R1267 T1268 L1269 N1270 D1271 F1272 D1273 A1274 S1275 K1276 K1277 K1278 L1279 S1280 I1281 E1282 N1283 S1284 D1285 L1286 L1287 R1288 Q1289 L1290 E1291 E1292 A1293 E1294 S1295 Q1296 V1297 S1298 Q1299 L1300 S1301 K1302 I1303 K1304 I1305 S1306 L1307 T1308 T1309 Q1310 L1311 E1312 D1313 T1314 K1315 R1316 L1317 A1318 D1319 E1320
E1321 S1322 R1323 E1324 R1325 A1326 T1327 L1328 L1329 G1330 K1331 F1332 R1333 N1334 L1335 E1336 H1337 D1338 L1339 D1340 N1341 L1342 R1343 E1344 Q1345 V1346 E1347 E1348 E1349 A1350 E1351 G1352 K1353 A1354 D1355 L1356 Q1357 R1358 Q1359 L1360 S1361 K1362 A1363 N1364 A1365 E1366 A1367 Q1368 V1369 W1370 R1371 S1372 K1373 Y1374 E1375 S1376 D1377 G1378 V1379 A1380
R1381 S1382 E1383 E1384 L1385 E1386 E1387 A1388 K1389 R1390 K1391 L1392 Q1393 A1394 R1395 L1396 A1397 E1398 A1399 E1400 E1401 T1402 I1403 E1404 S1405 L1406 N1407 Q1408 K1409 C1410 I1411 G1412 L1413 E1414 K1415 T1416 K1417 Q1418 R1419 L1420 S1421 T1422 E1423 V1424 E1425 D1426 L1427 Q1428 L1429 E1430 V1431 D1432 R1433 A1434 N1435 A1436 I1437 A1438 N1439 A1440
A1441 E1442 K1443 K1444 Q1445 K1446 A1447 F1448 D1449 K1450 I1451 I1452 G1453 E1454 W1455 K1456 L1457 K1458 V1459 D1460 D1461 L1462 A1463 A1464 E1465 L1466 D1467 A1468 S1469 Q1470 K1471 E1472 C1473 R1474 N1475 Y1476 S1477 T1478 E1479 L1480 F1481 R1482 L1483 K1484 G1485 A1486 Y1487 E1488 E1489 G1490 Q1491 E1492 Q1493 L1494 E1495 A1496 V1497 R1498 R1499 E1500
N1501 K1502 N1503 L1504 A1505 D1506 E1507 V1508 K1509 D1510 L1511 L1512 D1513 Q1514 I1515 G1516 E1517 G1518 G1519 R1520 N1521 I1522 H1523 E1524 I1525 E1526 K1527 A1528 R1529 K1530 R1531 L1532 E1533 A1534 E1535 K1536 D1537 E1538 L1539 Q1540 A1541 A1542 L1543 E1544 E1545 A1546 E1547 A1548 A1549 L1550 E1551 Q1552 E1553 E1554 N1555 K1556 V1557 L1558 R1559 A1560
Q1561 L1562 E1563 L1564 S1565 Q1566 V1567 R1568 Q1569 E1570 I1571 D1572 R1573 R1574 I1575 Q1576 E1577 K1578 E1579 E1580 E1581 F1582 E1583 N1584 T1585 R1586 K1587 N1588 H1589 Q1590 R1591 A1592 L1593 D1594 S1595 M1596 Q1597 A1598 S1599 L1600 E1601 A1602 E1603 A1604 K1605 G1606 K1607 A1608 E1609 A1610 L1611 R1612 M1613 K1614 K1615 K1616 E1617 E1618 A1619 D1620



- Molecule 1: Myosin heavy chain, isoform U

Chain B:




LYS ALA THR ASP GLN THR PHE SER GLU LYS LEU THR ASN THR HIS LEU GLY LYS SER ALA PRO PHE GLN LYS PRO LYS PRO PRO LYS PRO GLY GLN GLN ALA ALA HIS PHE ALA ILE ALA HIS TYR ALA GLY CYS VAL SER TYR ASN ILE THR GLY TRP LEU GLU LYS ASN LYS SER ASP PRO
LEU ASN ASP THR VAL VAL ASP GLN PHE LYS LYS SER GLN ASN LYS LEU LEU ILE GLU ILE PHE ALA ASP HIS ALA GLY GLN SER GLY GLY GLY GLU GLN GLN ALA ALA LYS GLY GLY ARG GLY LYS LYS GLY GLY GLY PHE ALA THR VAL SER SER ALA TYR LYS GLU GLN LEU LEU ASN SER LEU MET
THR THR LEU ARG SER THR GLN PRO HIS PHE VAL ARG CYS ILE ILE PRO ASN GLU MET LYS LYS GLN PRO GLY VAL VAL ASP ALA HIS LEU GLU LEU VAL MET HIS GLN LEU THR CYS ASN GLY VAL LEU GLU GLY GLY ILE ARG ILE CYS ARG LYS GLY PHE PRO ASN ARG MET MET TYR PRO ASP PHE LYS
MET ARG TYR GLN ILE LEU ASN PRO LYS GLY ILE LYS GLY ILE GLU ASP PRO LYS LYS CYS THR LYS VAL LEU ILE GLU SER THR GLU LEU GLU ASN ASP ASP GLN TYR ARG LEU GLY ASN THR LYS VAL PHE PHE ARG ALA GLY VAL LEU GLY GLN MET GLU GLU PHE ARG ASP GLU ARG LEU
GLY LYS ILE MET SER TRP MET GLN ALA TRP ALA ARG GLY TYR LEU SER ARG LYS GLY PHE LYS LYS LEU GLN GLU GLN LEU ARG VAL ALA LEU LYS VAL VAL GLN ARG ASN LEU GLY LYS TYR LEU ALA GLN LEU ARG THR TRP PRO TRP TYR LYS LEU GLN LEU GLN LYS VAL LYS PRO LEU LEU ASN
VAL SER ARG ILE GLU ASP GLU ILE ALA ARG LEU GLU GLU LYS LYS ALA LYS LYS ALA GLU GLU LEU HIS ALA ALA ALA GLU VAL LYS ARG VAL ARG LYS GLU LEU GLU ASN ALA LYS LYS LEU LEU ALA GLU LYS THR ALA LEU LEU ASP SER LEU SER GLY GLU LYS GLY ALA LEU GLN ASP TYR
GLN GLU ARG ASN ALA LYS LEU THR ALA GLN LYS ASN D913 L914 E915 N916 Q917 L918 R919 D920 I921 Q922 E923 R924 L925 T926 Q927 E928 E929 D930 A931 R932 N933 Q934 L935 F936 Q937 Q938 K939 K940 K941 A942 D943 Q944 E945 I946 S947 G948 L949 K950 K951 D952 I953 E954 D955 L956 E957 L958 N959 V960
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R1081 K1082 D1083 K1084 E1085 L1086 S1087 S1088 I1089 T1090 A1091 K1092 L1093 E1094 D1095 E1096 Q1097 V1098 V1099 V1100 L1101 K1102 H1103 Q1104 R1105 Q1106 I1107 K1108 E1109 L1110 Q1111 A1112 R1113 I1114 E1115 E1116 L1117 E1118 E1119 E1120 V1121 E1122 A1123 E1124 R1125 Q1126 A1127 R1128 A1129 K1130 A1131 E1132 K1133 Q1134 R1135 A1136 D1137 L1138 A1139 R1140
E1141 L1142 E1143 E1144 L1145 G1146 E1147 R1148 L1149 E1150 E1151 A1152 G1153 G1154 A1155 T1156 S1157 A1158 Q1159 T1160 E1161 L1162 N1163 K1164 K1165 R1166 E1167 A1168 E1169 L1170 S1171 K1172 L1173 R1174 R1175 D1176 L1177 E1178 E1179 A1180 N1181 I1182 Q1183 H1184 E1185 S1186 T1187 L1188 A1189 N1190 L1191 R1192 K1193 K1194 H1195 N1196 D1197 A1198 V1199 A1200
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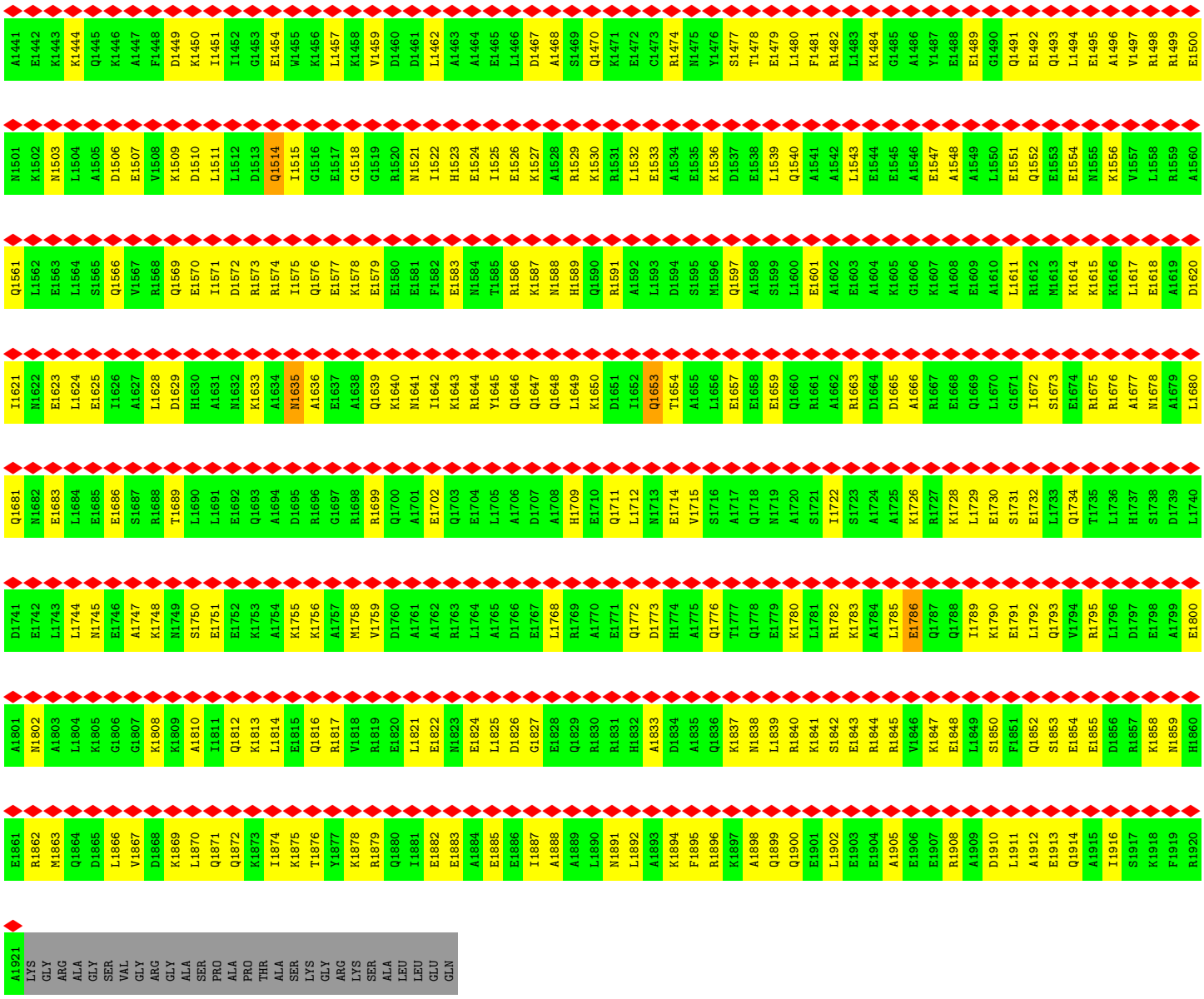
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A1921 LYS GLY ARG ALA ALA GLY SER VAL GLY ARG GLY ALA SER PRO ALA PRO THR ALA SER LYS GLY ARG LYS SER ALA LEU LEU GLU GLN

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	116000	Depositor
Resolution determination method	OTHER	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	55	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	19.048	Depositor
Minimum map value	-4.384	Depositor
Average map value	0.028	Depositor
Map value standard deviation	0.633	Depositor
Recommended contour level	2.79	Depositor
Map size (Å)	1021.44006, 1021.44006, 1021.44006	wwPDB
Map dimensions	768, 768, 768	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.33, 1.33, 1.33	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.20	0/8212	0.62	0/10958
1	B	0.22	0/8212	0.70	3/10958 (0.0%)
All	All	0.21	0/16424	0.66	3/21916 (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
1	B	0	1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	1786	GLU	N-CA-CB	5.33	118.54	110.28
1	B	1007	GLU	CA-C-N	-5.09	112.58	120.31
1	B	1007	GLU	C-N-CA	-5.09	112.58	120.31

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	B	1331	LYS	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	A	8176	0	8192	467	0
1	B	8176	0	8192	496	0
All	All	16352	0	16384	861	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 26.

The worst 5 of 861 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)
1:B:1224:TYR:HA	1:B:1227:LEU:HD12	1.50	0.93
1:A:1015:LYS:HZ1	1:B:1016:ILE:HG12	1.33	0.90
1:A:1755:LYS:HA	1:A:1758:MET:HE2	1.56	0.87
1:A:1223:TYR:OH	1:B:1226:GLN:NE2	2.09	0.85
1:A:1582:PHE:HB3	1:A:1586:ARG:HH12	1.45	0.82

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	A	1007/1949 (52%)	999 (99%)	8 (1%)	0	100	100
1	B	1007/1949 (52%)	989 (98%)	18 (2%)	0	100	100
All	All	2014/3898 (52%)	1988 (99%)	26 (1%)	0	100	100

There are no Ramachandran outliers to report.

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	866/1669 (52%)	865 (100%)	1 (0%)	92 95
1	B	866/1669 (52%)	863 (100%)	3 (0%)	91 92
All	All	1732/3338 (52%)	1728 (100%)	4 (0%)	91 94

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1089	ILE
1	B	1514	GLN
1	B	1635	ASN
1	B	1653	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 41 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	1226	GLN
1	B	1734	GLN
1	B	1250	GLN
1	B	1635	ASN
1	B	1836	GLN

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 oligosaccharides 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.

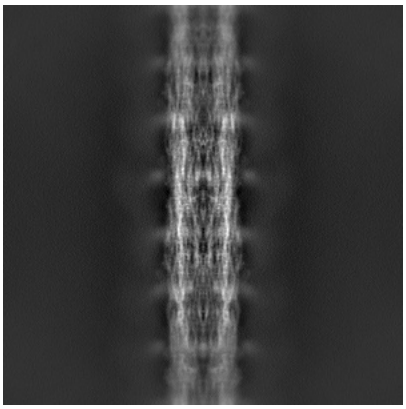
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-42024. These allow visual inspection of the internal detail of the map and identification of artifacts.

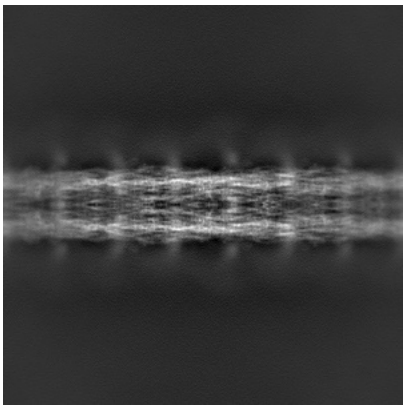
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

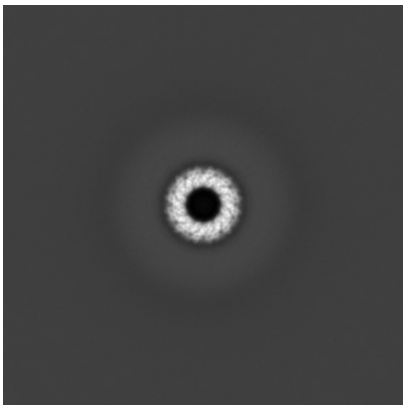
6.1.1 Primary map



X

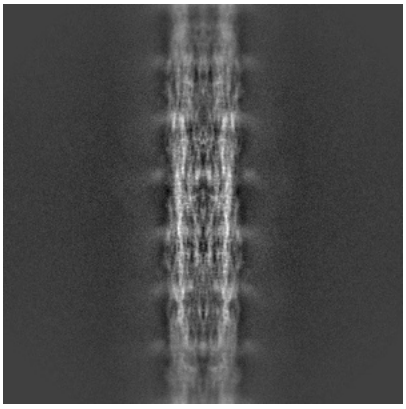


Y

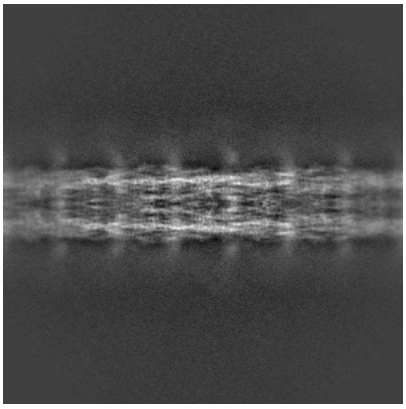


Z

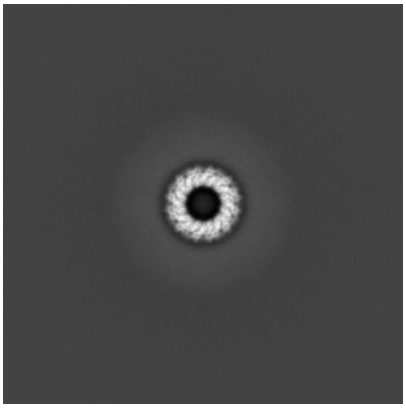
6.1.2 Raw map



X



Y

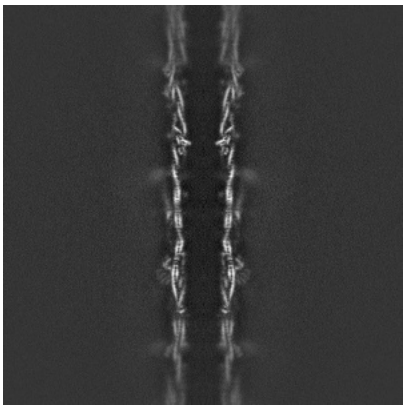


Z

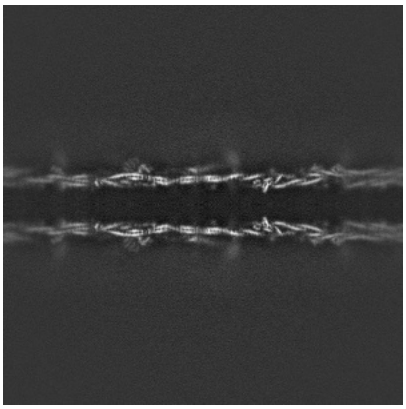
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

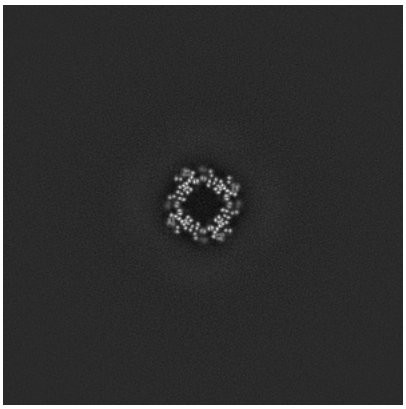
6.2.1 Primary map



X Index: 384

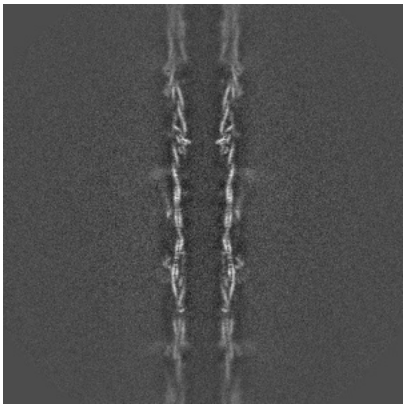


Y Index: 384

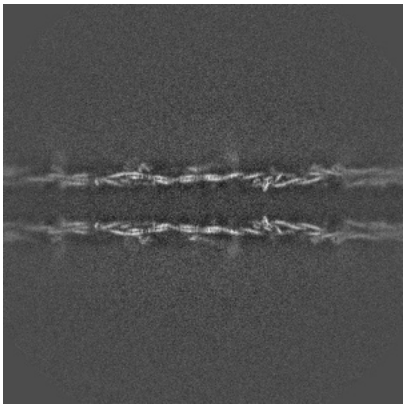


Z Index: 384

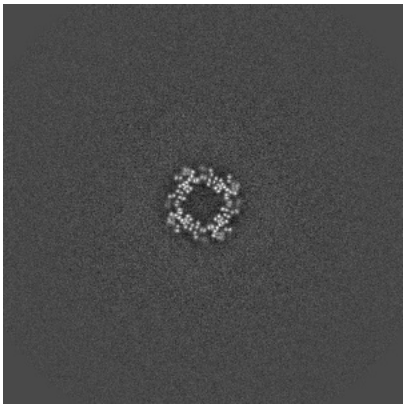
6.2.2 Raw map



X Index: 384



Y Index: 384

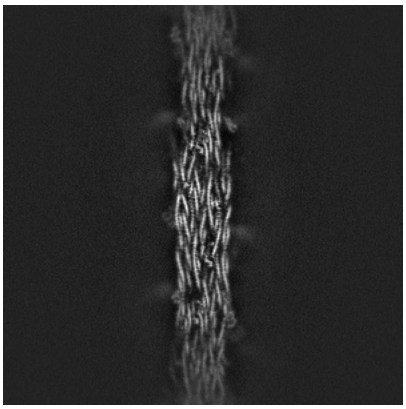


Z Index: 384

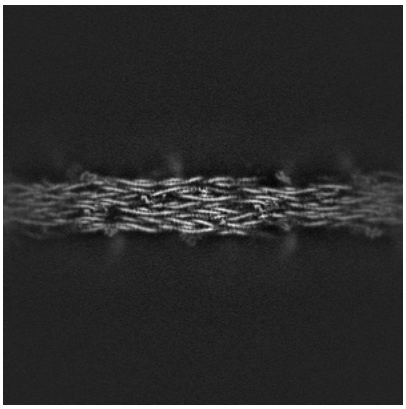
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

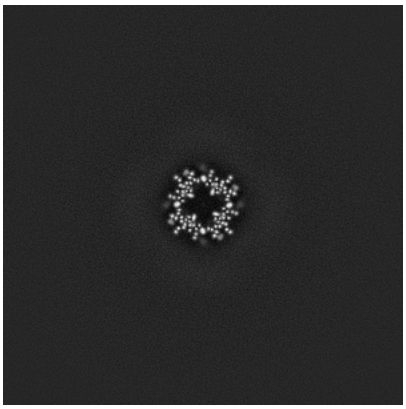
6.3.1 Primary map



X Index: 429

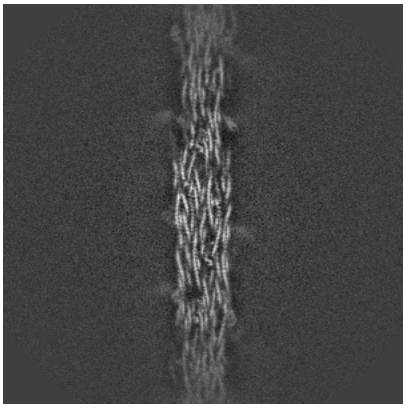


Y Index: 339

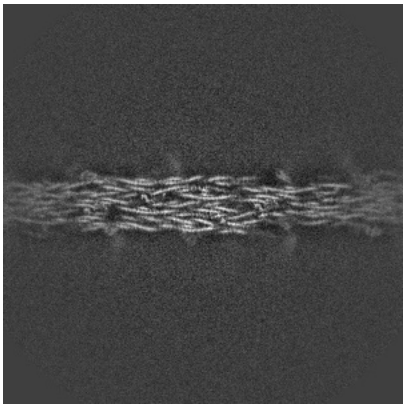


Z Index: 395

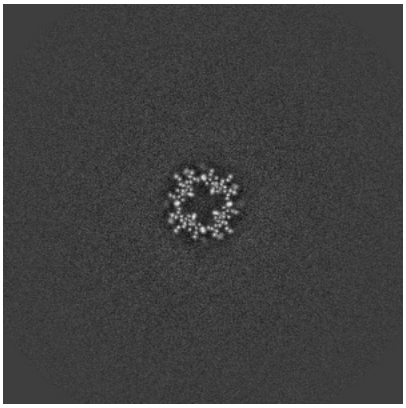
6.3.2 Raw map



X Index: 429



Y Index: 339

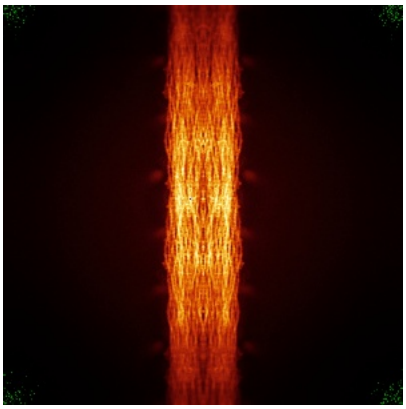


Z Index: 395

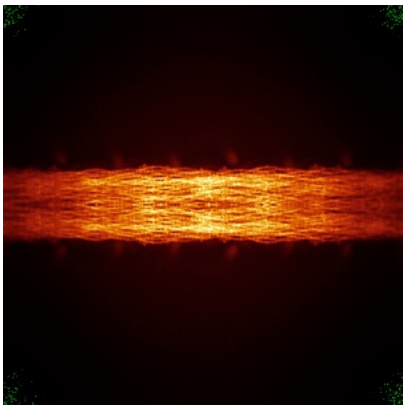
The images above show the largest variance slices of the map in three orthogonal directions.

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

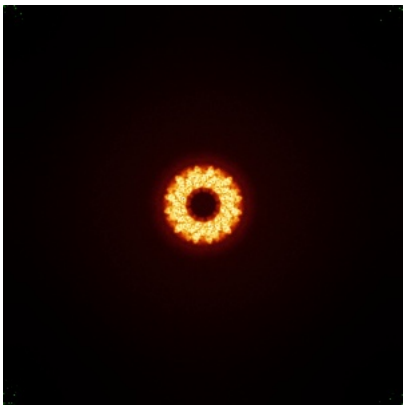
6.4.1 Primary map



X

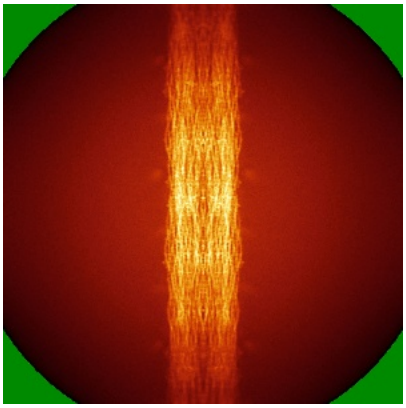


Y

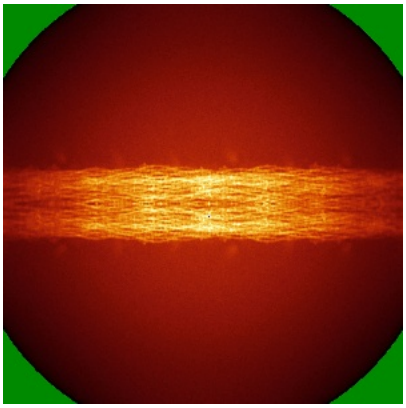


Z

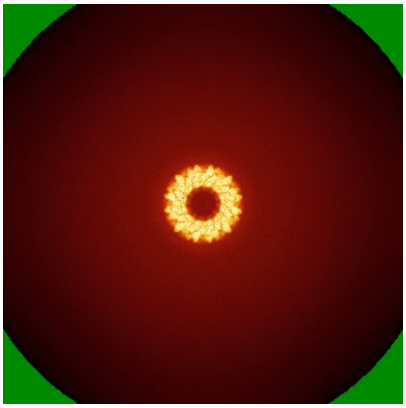
6.4.2 Raw map



X



Y

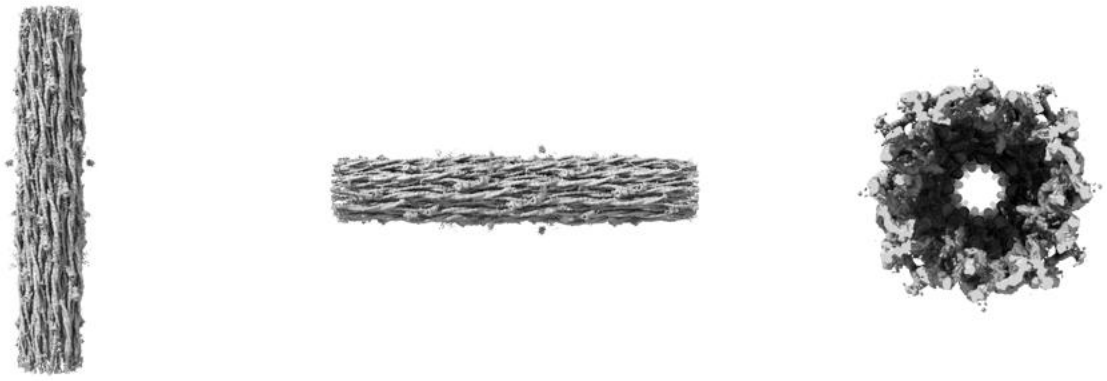


Z

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 (i)

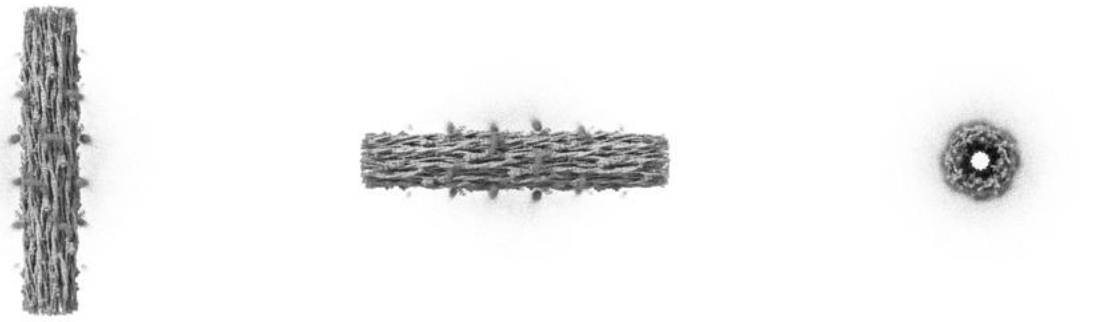
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 2.79. 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.

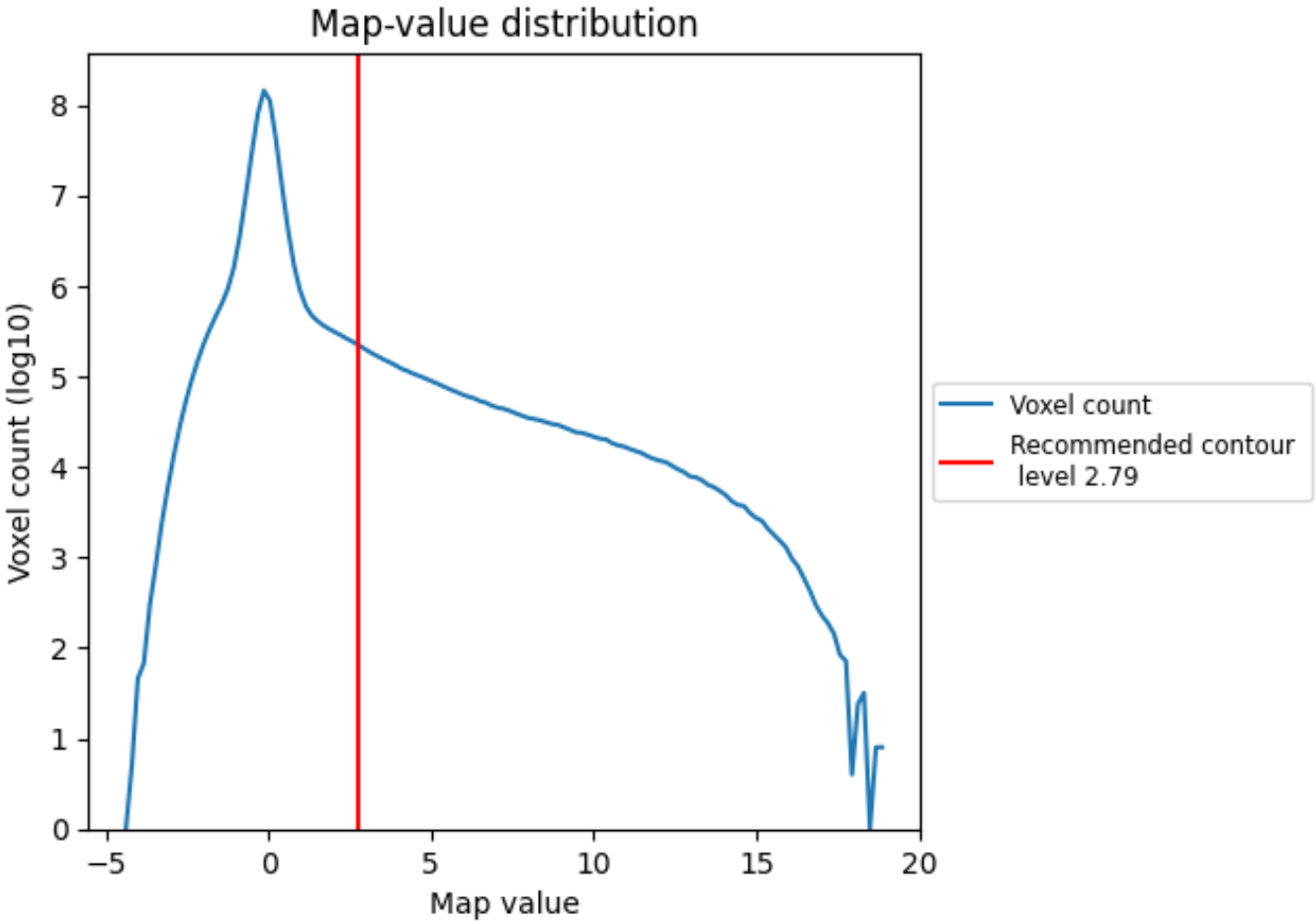
6.6 Mask visualisation (i)

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

7 Map analysis

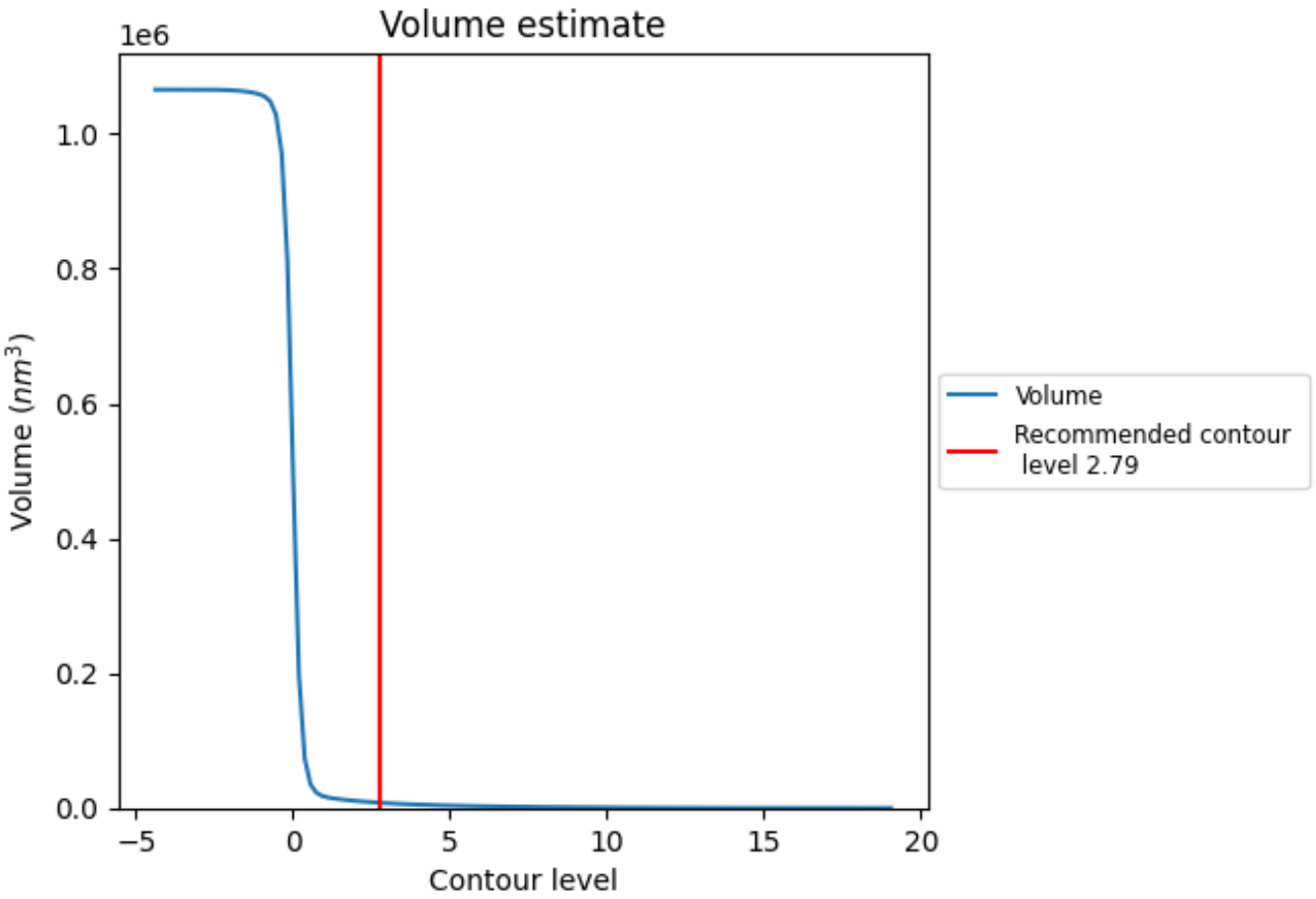
This section contains the results of statistical analysis of the map.

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.

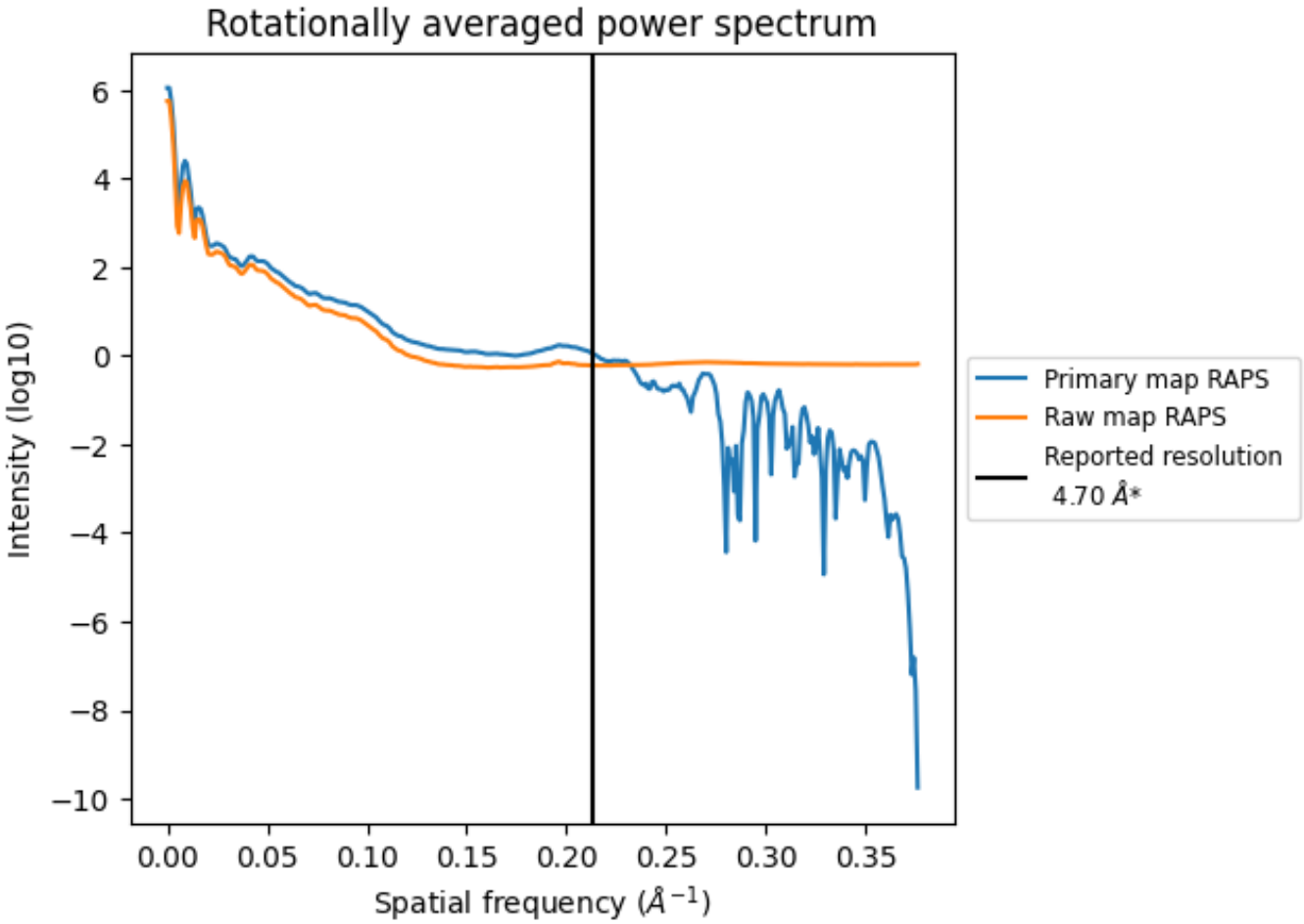
7.2 Volume estimate (i)



The volume at the recommended contour level is 7791 nm^3; this corresponds to an approximate mass of 7038 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)

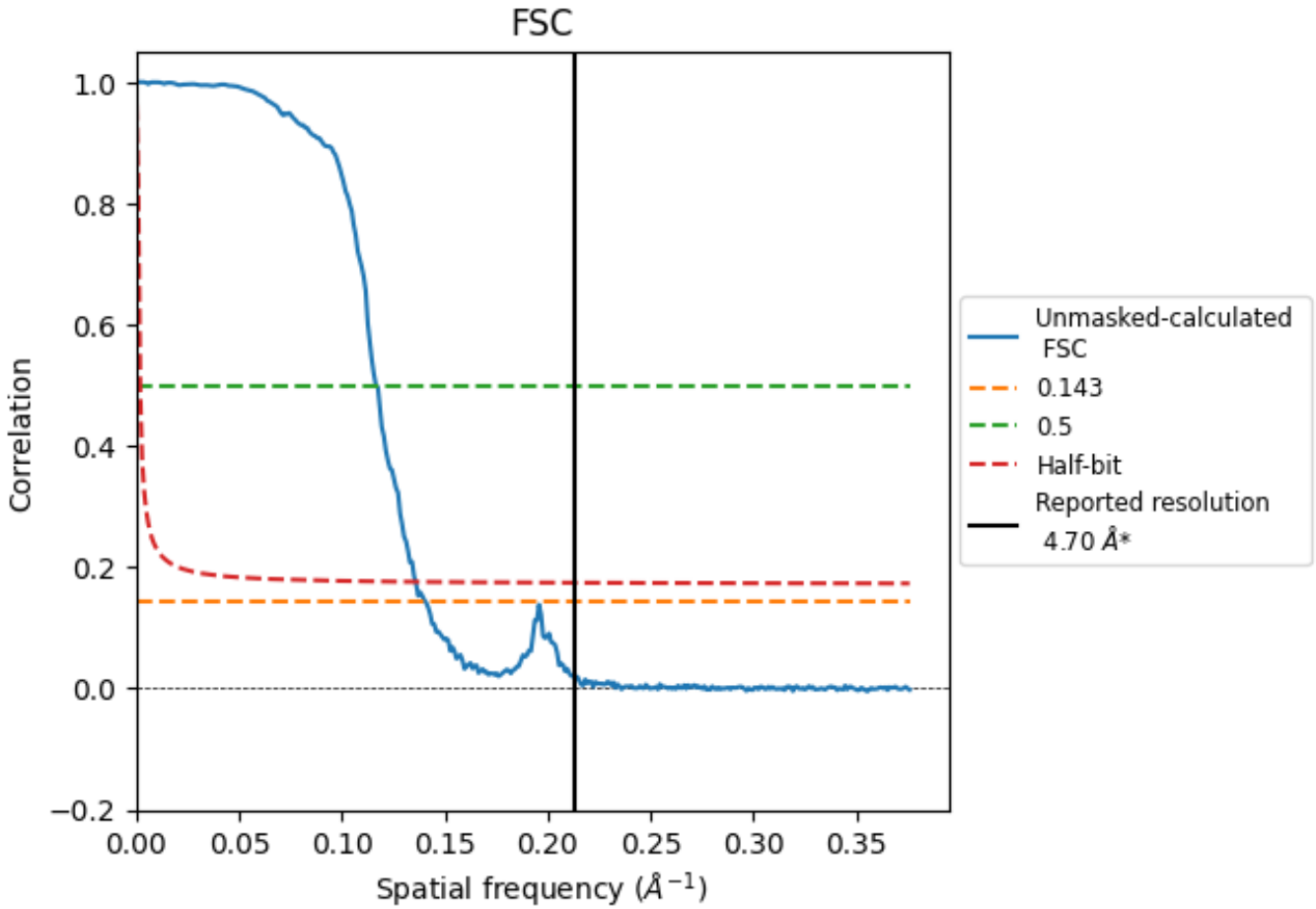


*Reported resolution corresponds to spatial frequency of 0.213 Å^{-1}

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 0.213 Å^{-1}

8.2 Resolution estimates (i)

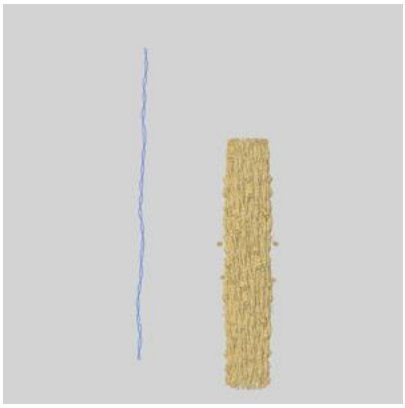
Resolution estimate (Å)	Estimation criterion (FSC cut-off)			
	0.143	0.5	Half-bit	Other
Reported by author	-	-	-	4.70
Author-provided FSC curve	-	-	-	-
Unmasked-calculated*	7.11	8.57	7.36	-

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

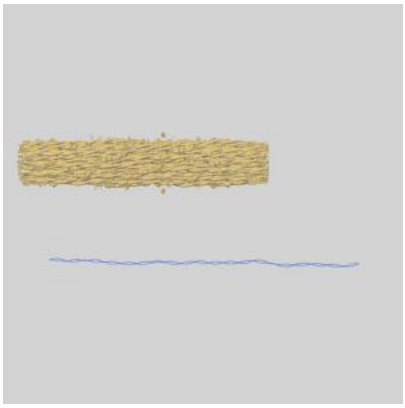
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-42024 and PDB model 8U95. Per-residue inclusion information can be found in section 3 on page 4.

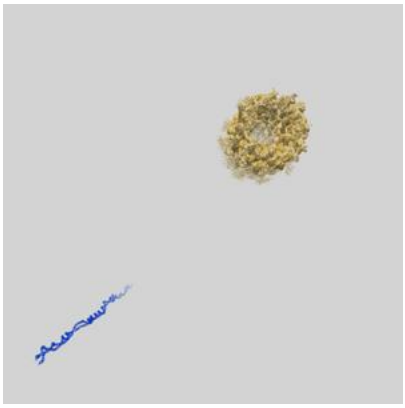
9.1 Map-model overlay



X



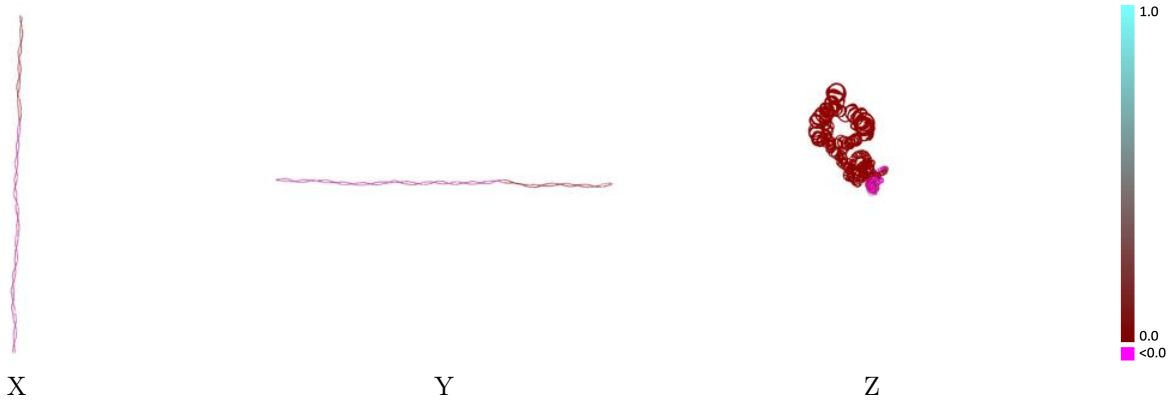
Y



Z

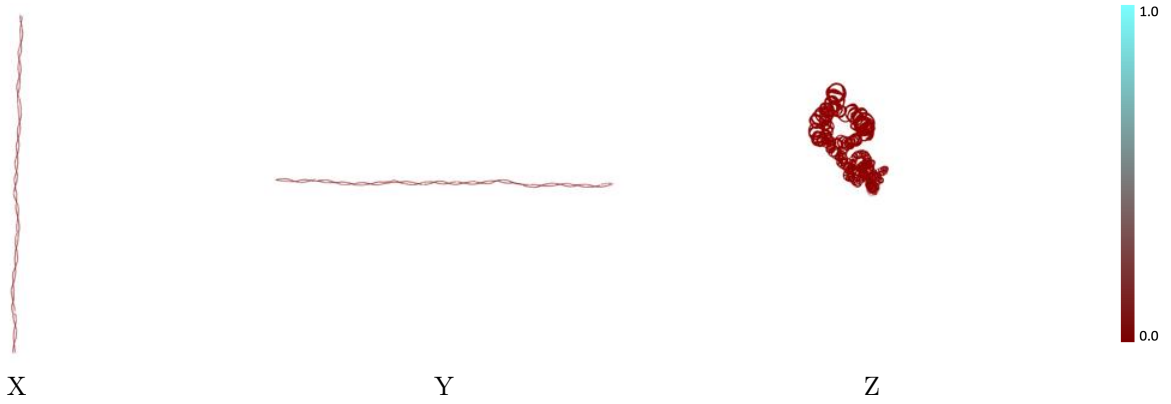
The images above show the 3D surface view of the map at the recommended contour level 2.79 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model (i)



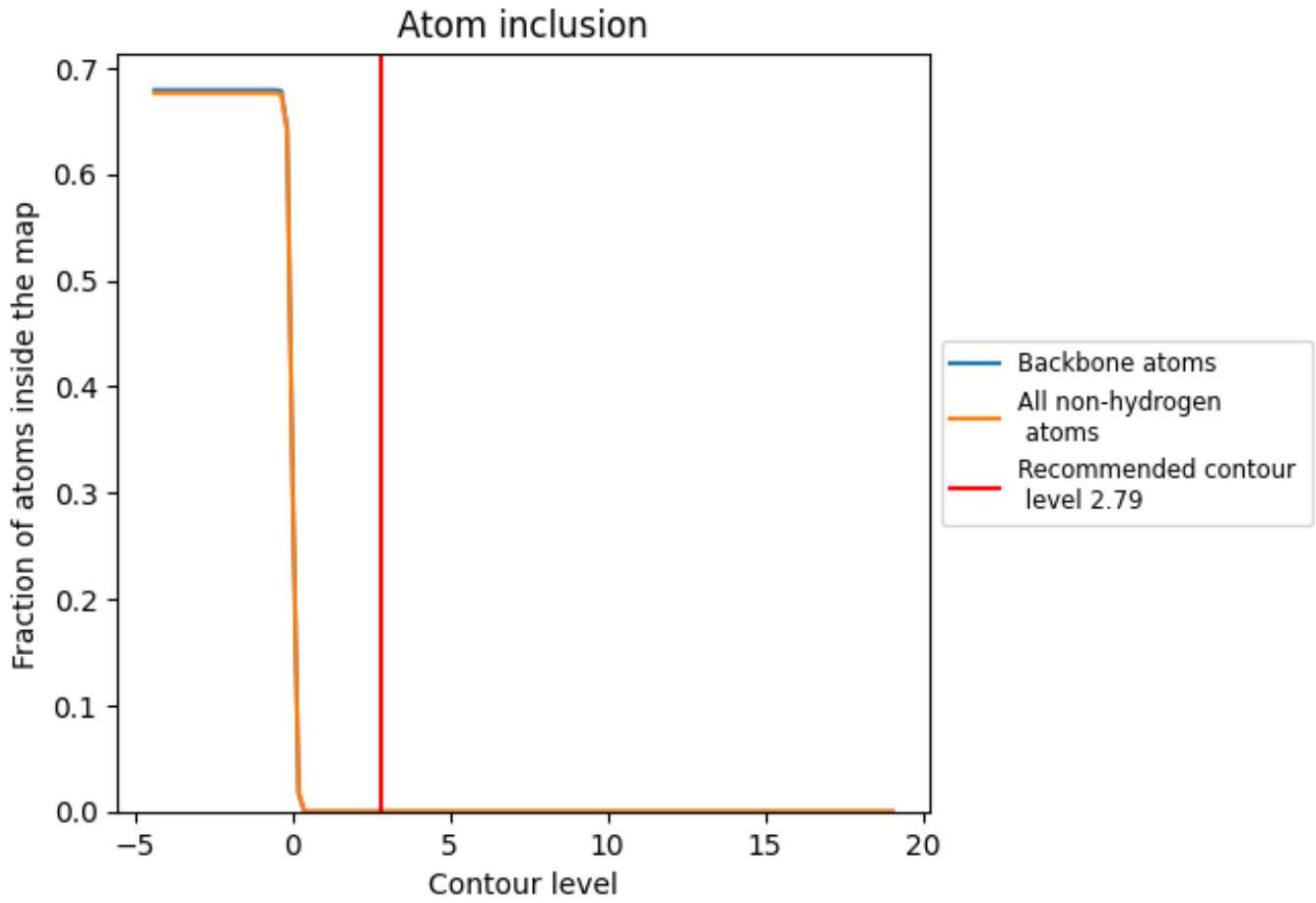
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model (i)



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 (2.79).

9.4 Atom inclusion (i)



At the recommended contour level, 0% of all backbone atoms, 0% 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 (2.79) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.0000	0.0010
A	0.0000	0.0030
B	0.0000	-0.0010