wwPDB EM Validation Summary Report

Jun 22, 2026 – 02:03 PM EDT

PDB ID	:	9YKK / pdb_00009ykk
EMDB ID	:	EMD-73054
Title	:	Human type 2 IP3 receptor in apo state
Authors	:	Liu, C.; Lan, Y.; Tang, Q.; Karakas, E.
Deposited on	:	2025-10-07
Resolution	:	2.95 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 ⓘ 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:

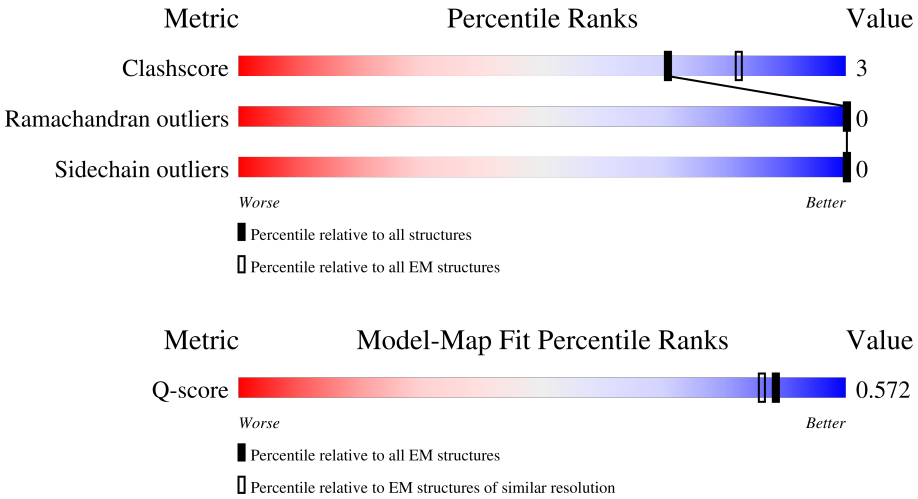
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	13114 (2.45 - 3.45)

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	2769	71% 8% 21%
1	B	2769	71% 8% 21%
1	C	2769	72% 8% 21%
1	D	2769	72% 8% 21%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 70972 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 Inositol 1,4,5-trisphosphate-gated calcium channel ITPR2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	2194	Total 17742	C 11355	N 3035	O 3246	S 106	1	0
1	B	2194	Total 17742	C 11355	N 3035	O 3246	S 106	1	0
1	C	2194	Total 17742	C 11355	N 3035	O 3246	S 106	1	0
1	D	2194	Total 17742	C 11355	N 3035	O 3246	S 106	1	0

- Molecule 2 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

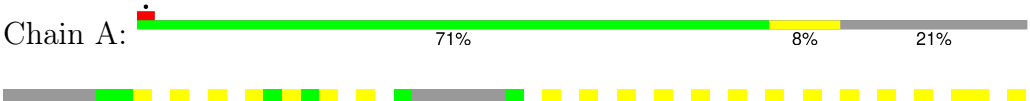
Mol	Chain	Residues	Atoms		AltConf
2	A	1	Total 1	Zn 1	0
2	B	1	Total 1	Zn 1	0
2	C	1	Total 1	Zn 1	0
2	D	1	Total 1	Zn 1	0

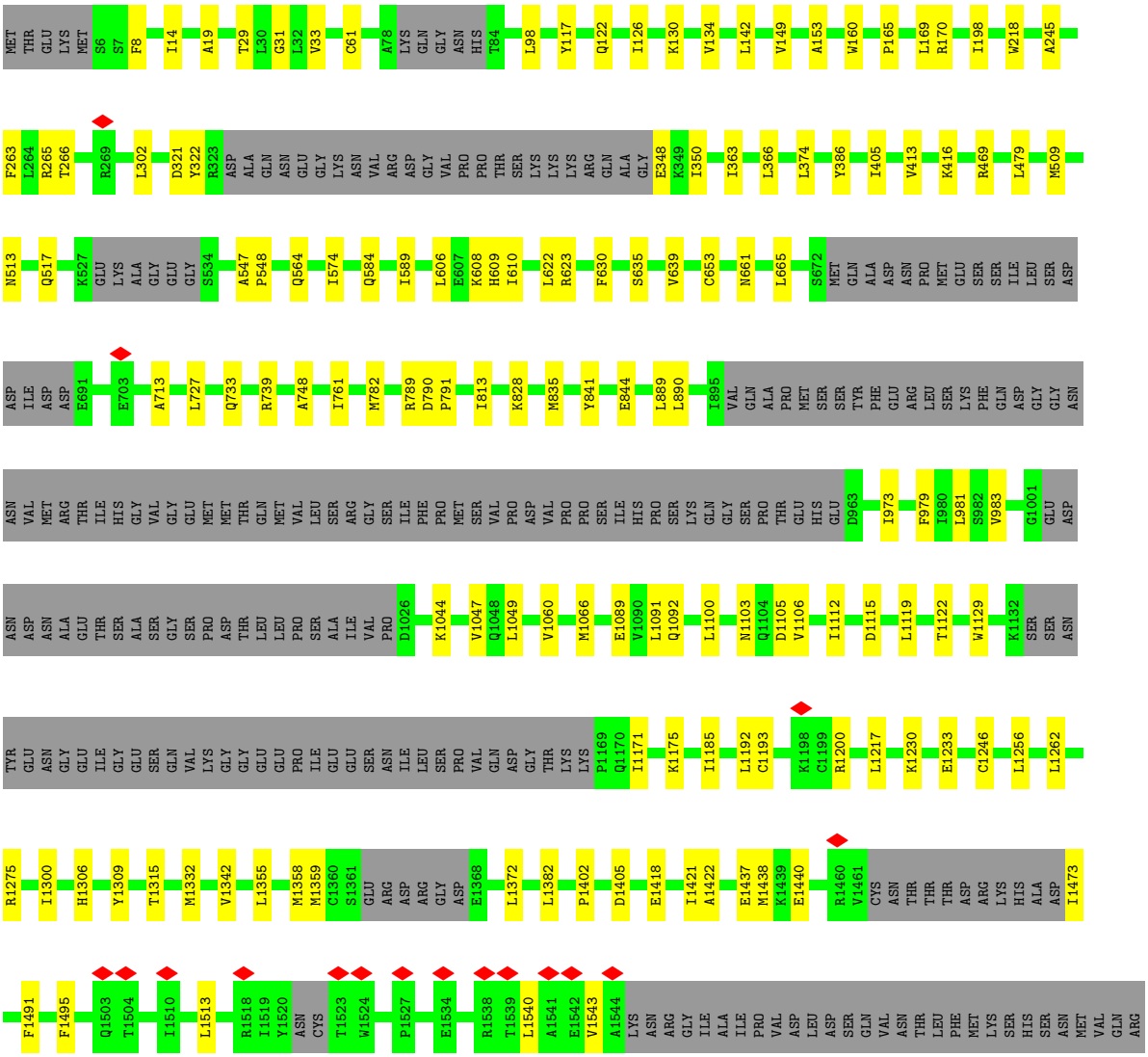
3 Residue-property plots (i)

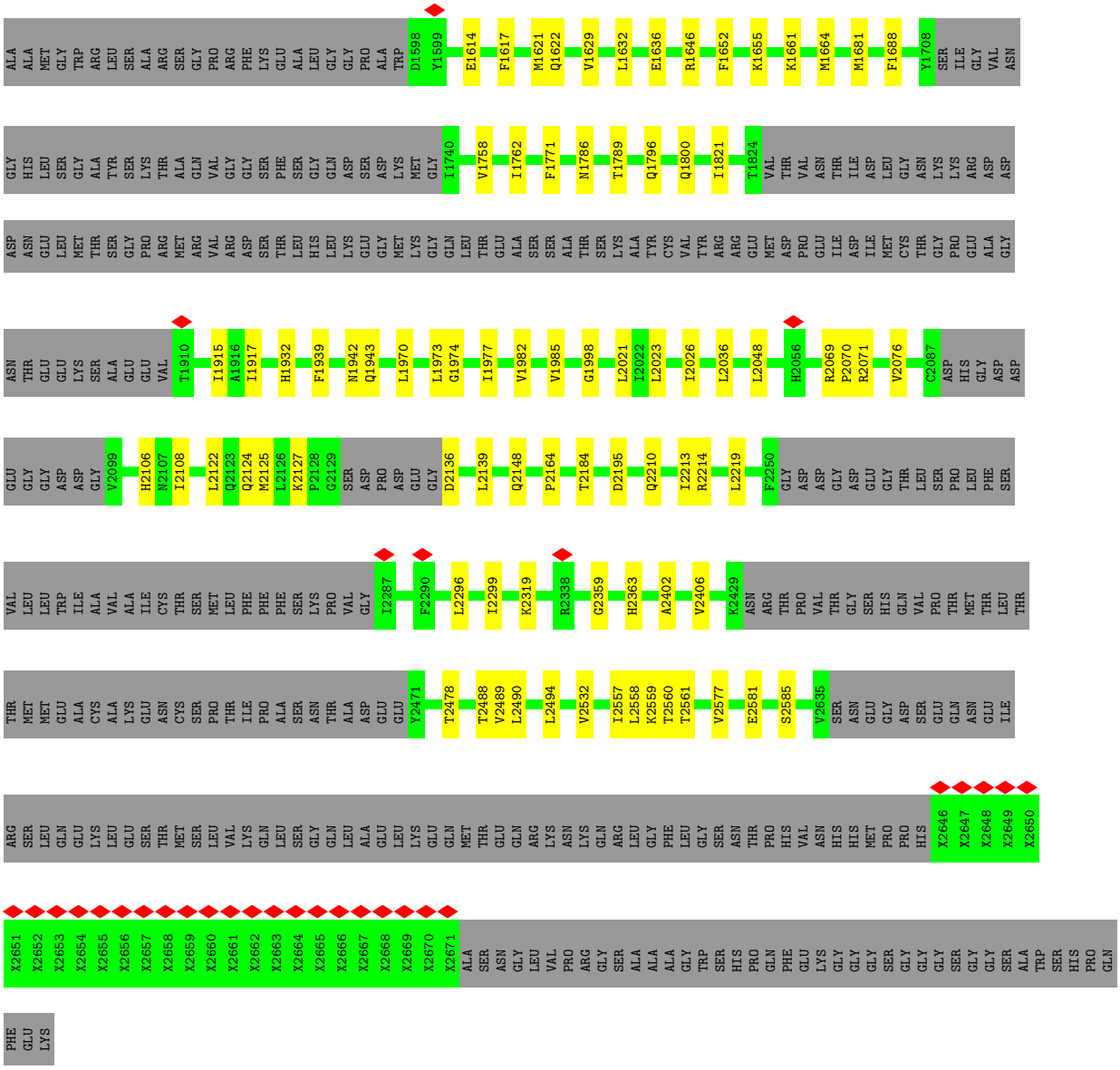
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Inositol 1,4,5-trisphosphate-gated calcium channel ITPR2

Chain A:

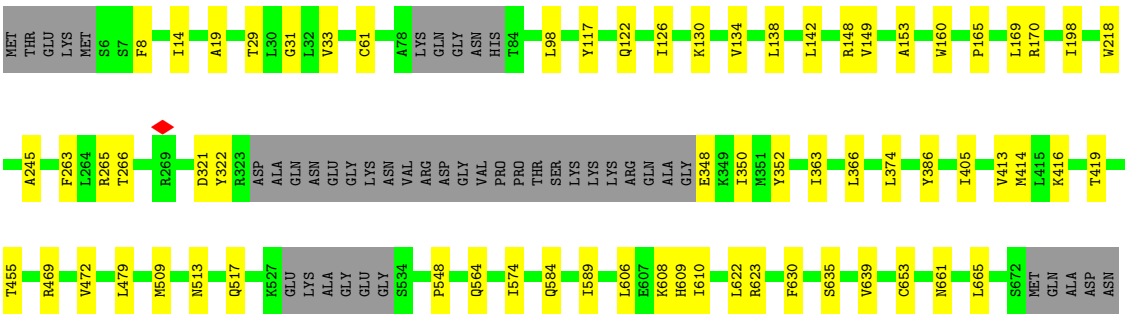


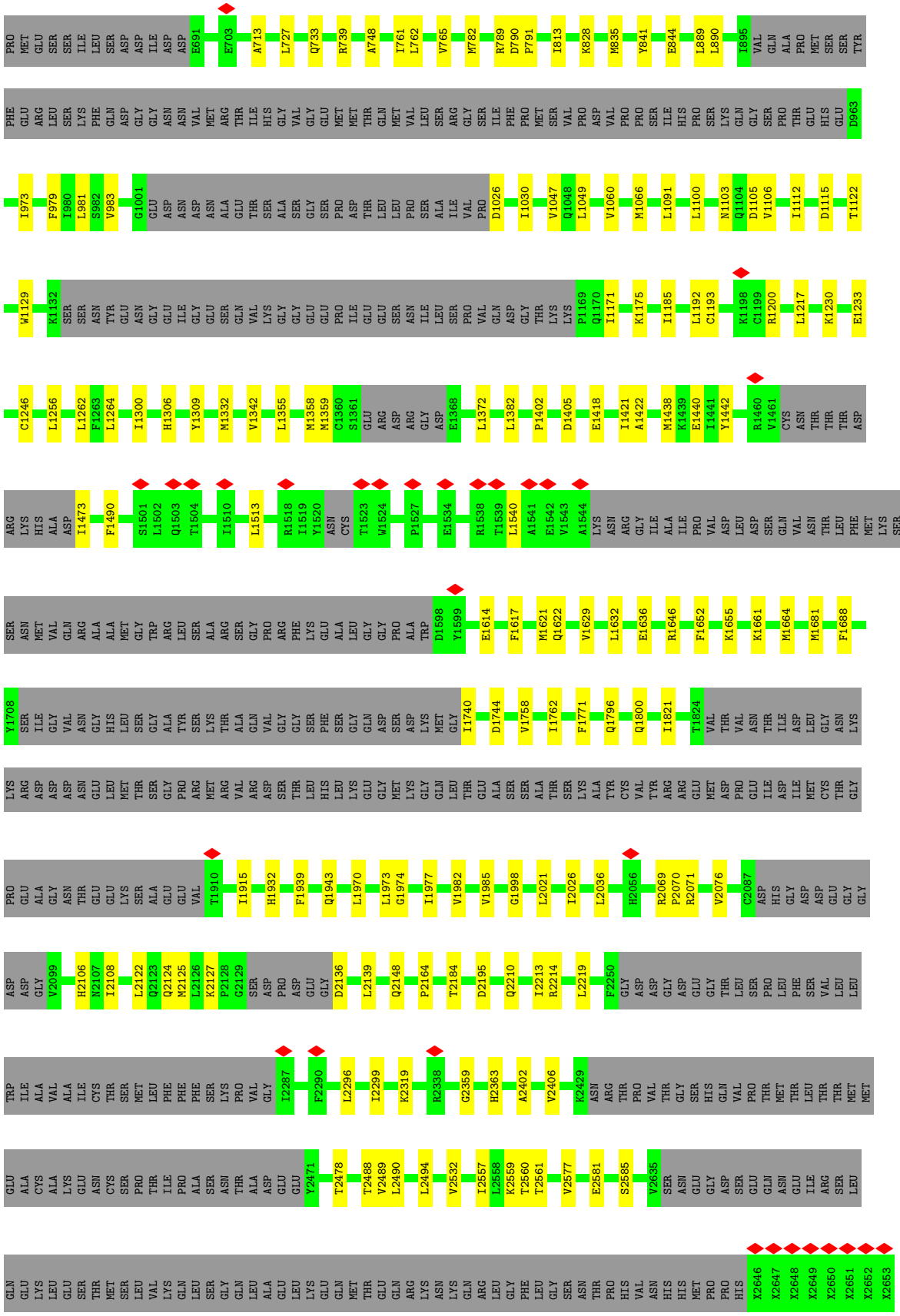


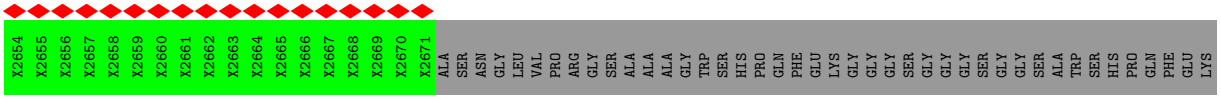


• Molecule 1: Inositol 1,4,5-trisphosphate-gated calcium channel ITPR2

Chain B:

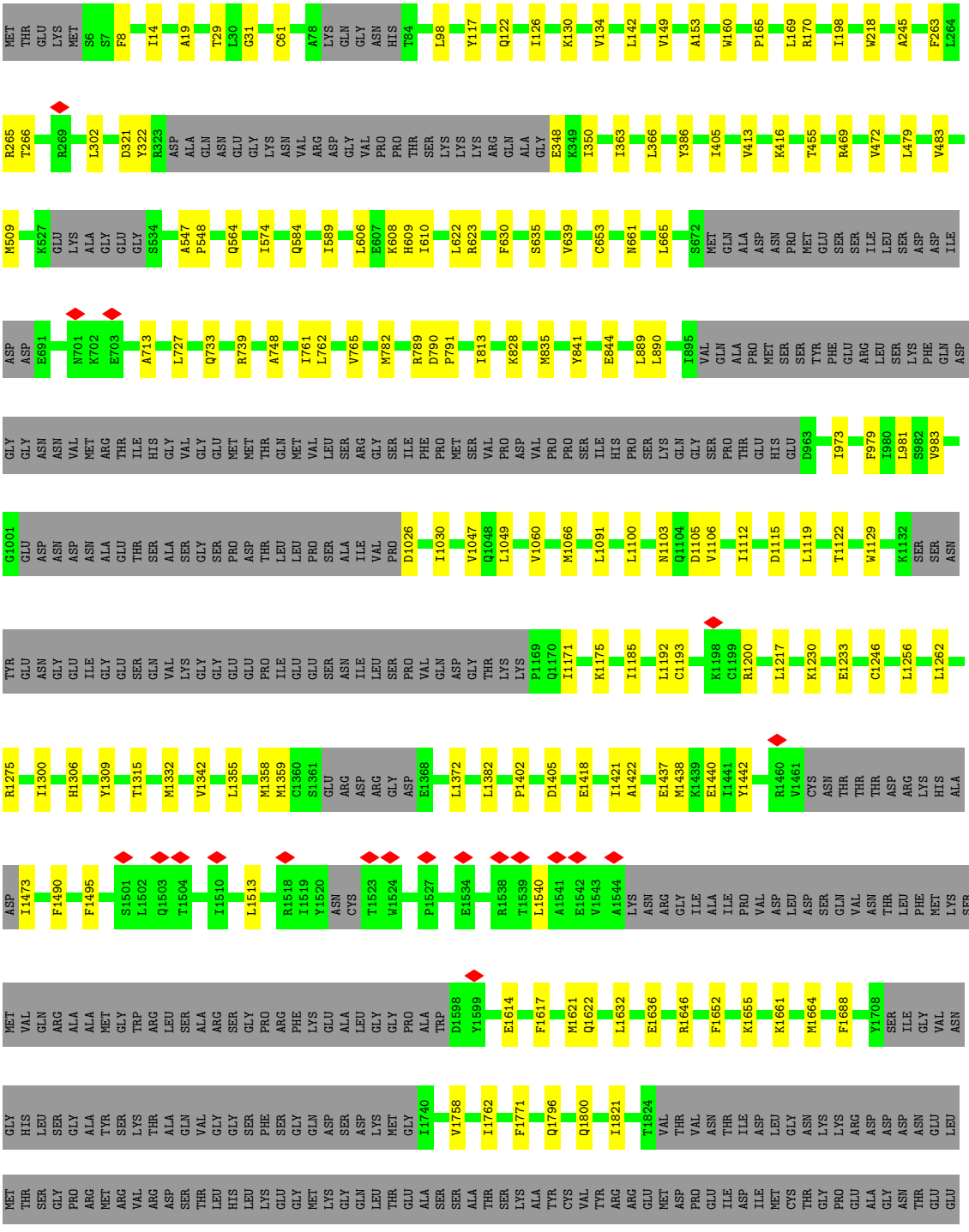


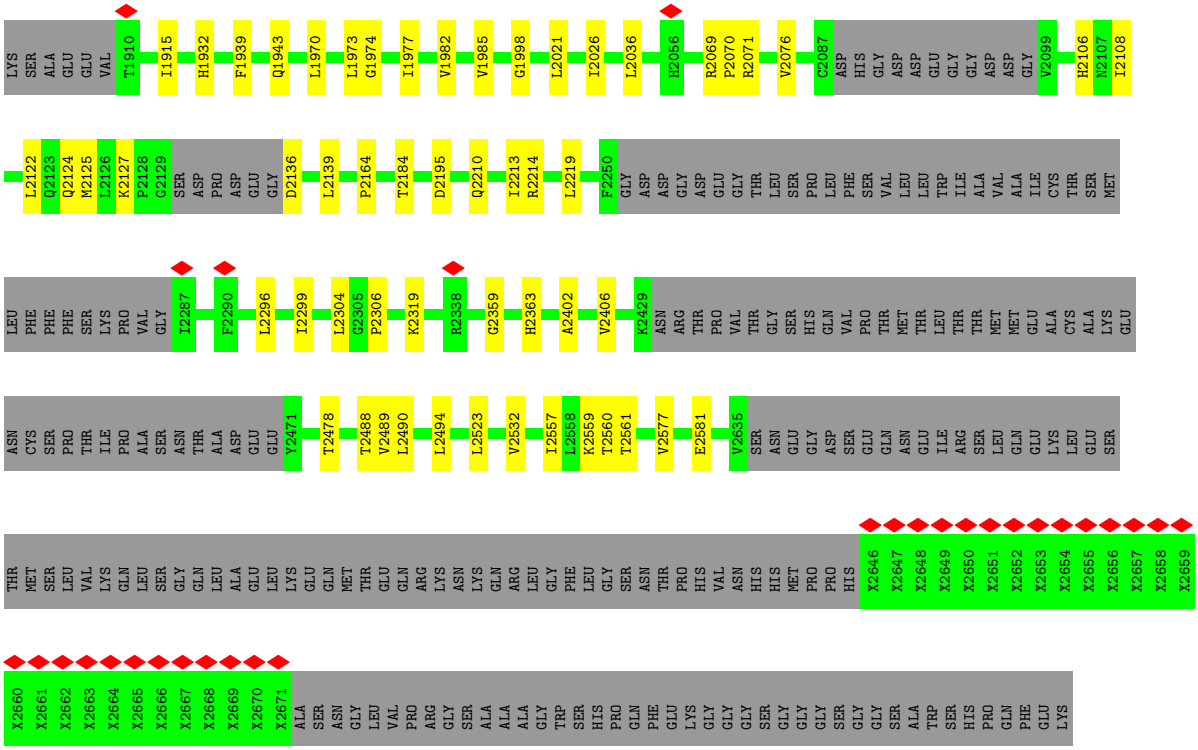

PRO MET GLU SER SER ILE LEU SER ASP ILE ASP ASP E691 E703 A713 L727 Q733 R739 A748 I761 L762 V765 M782 R789 D790 P791 I813 K828 M835 Y841 E844 L889 L890 I895 VAL GLN ALA PRO MET SER SER TYR
PHE GLU ARG LEU SER LYS PHE GLN ASP GLY GLY GLY ASN ASN VAL MET ARG THR ILE HIS GLY VAL GLY GLU MET MET THR GLN MET VAL LEU SER ARG GLY SER ILE PHE PRO MET SER VAL PRO ASP VAL PRO PRO SER ILE HIS PRO SER LYS GLN GLY SER PRO THR GLU HIS GLU D963
I973 F979 I980 L981 S982 V983 G1001 GLU ASP ASN ASP ASN ALA GLU THR SER ALA SER GLY SER PRO ASP THR LEU LEU PRO SER ALA ILE VAL PRO D1026 I1030 V1047 Q1048 L1049 V1060 M1066 L1091 L1100 N1103 Q1104 D1105 V1106 I1112 D1115 T1122
W1129 K1132 SER SER ASN TYR GLU ASN GLY GLU ILE GLY GLU SER GLN VAL LYS GLY GLY GLU GLU PRO ILE GLU GLU SER ASN ILE LEU SER PRO VAL GLN ASP GLY THR LYS LYS P1169 Q1170 I1171 K1175 I1185 L1192 C1193 K1198 C1199 R1200 L1217 K1230 E1233
C1246 L1256 L1262 F1263 L1264 I1300 H1306 Y1309 M1332 V1342 L1355 M1358 M1359 C1360 S1361 GLU ARG ASP GLY ASP E1368 L1372 L1382 P1402 D1405 E1418 I1421 A1422 M1438 K1439 E1440 I1441 Y1442 R1460 V1461 CYS ASN THR THR THR ASP
ARG LYS HIS ALA ASP I1473 F1490 S1501 L1502 Q1503 T1504 I1510 L1513 R1518 I1519 Y1520 ASN CYS T1523 W1524 P1527 E1534 R1538 T1539 L1540 A1541 E1542 V1543 A1544 LYS ASN ARG GLY ILE ALA ILE PRO VAL ASP LEU ASP SER GLN VAL ASN THR LEU PHE MET LYS SER HIS
SER ASN MET VAL GLN ARG ALA ALA MET GLY TRP ARG LEU SER ALA ARG SER GLY PRO ARG PHE LYS GLU ALA LEU GLY GLY PRO ALA TRP D1598 Y1599 E1614 F1617 M1621 Q1622 V1629 L1632 E1636 R1646 F1652 K1655 K1661 M1664 M1681 F1688
Y1708 SER ILE GLY VAL ASN GLY HIS LEU SER GLY GLY ALA TYR SER LYS THR ALA GLN VAL GLY GLY GLY SER PHE SER GLY GLN ASP SER ASP LYS MET GLY I1740 D1744 V1758 I1762 F1771 Q1796 Q1800 I1821 T1824 VAL THR VAL ASN THR ILE ASP LEU GLY ASN LYS
LYS ARG ASP ASP ASP ASN GLU LEU MET THR SER GLY PRO ARG MET ARG VAL ARG ASP SER THR LEU HIS LEU LYS GLU GLY MET LYS GLY GLN LEU THR GLU ALA SER SER ALA THR SER LYS ALA TYR CYS VAL TYR ARG ARG GLU MET ASP PRO GLU ILE ASP ILE MET CYS THR GLY
PRO GLU ALA GLY ASN THR GLU GLU SER ALA GLU GLU VAL T1910 I1915 H1932 F1939 Q1943 L1970 L1973 G1974 I1977 V1982 V1985 G1998 L2021 I2026 L2036 H2056 R2069 P2070 R2071 V2076 C2087 ASP HIS GLY ASP GLU GLY GLY
ASP ASP GLY V2099 H2106 N2107 I2108 L2122 Q2123 Q2124 M2125 L2126 K2127 P2128 G2129 SER ASP PRO ASP GLU GLY D2136 L2139 Q2148 P2164 T2184 D2195 Q2210 I2213 R2214 L2219 F2250 GLY ASP ASP GLY ASP GLU GLY THR LEU SER PRO LEU PHE SER VAL LEU LEU
TRP ILE ALA VAL ALA ILE CYS THR SER MET LEU PHE PHE PHE SER LYS PRO VAL GLY I2287 F2290 L2296 I2299 K2319 R2338 G2359 H2363 A2402 V2406 K2429 ASN ARG THR PRO VAL THR GLY SER HIS GLN VAL PRO THR MET THR LEU THR THR MET MET
GLU ALA CYS ALA LYS GLU ASN CYS SER PRO THR ILE PRO ALA SER ASN THR ALA ASP GLU GLU Y2471 T2478 T2488 V2489 L2490 L2494 V2532 I2557 L2558 K2559 T2560 T2561 V2577 E2581 S2585 V2635 SER ASN GLU GLY ASP SER GLU GLN ASN GLU ILE ARG SER LEU
GLN GLU LYS LEU GLU SER GLY GLN LEU ALA GLU LEU LYS GLU GLN MET THR GLU GLN ARG LYS ASN LYS GLN ARG LEU GLY PHE LEU GLY SER ASN THR PRO HIS VAL ASN HIS HIS MET PRO PRO HIS X2646 X2647 X2648 X2649 X2650 X2651 X2652 X2653



• Molecule 1: Inositol 1,4,5-trisphosphate-gated calcium channel ITPR2

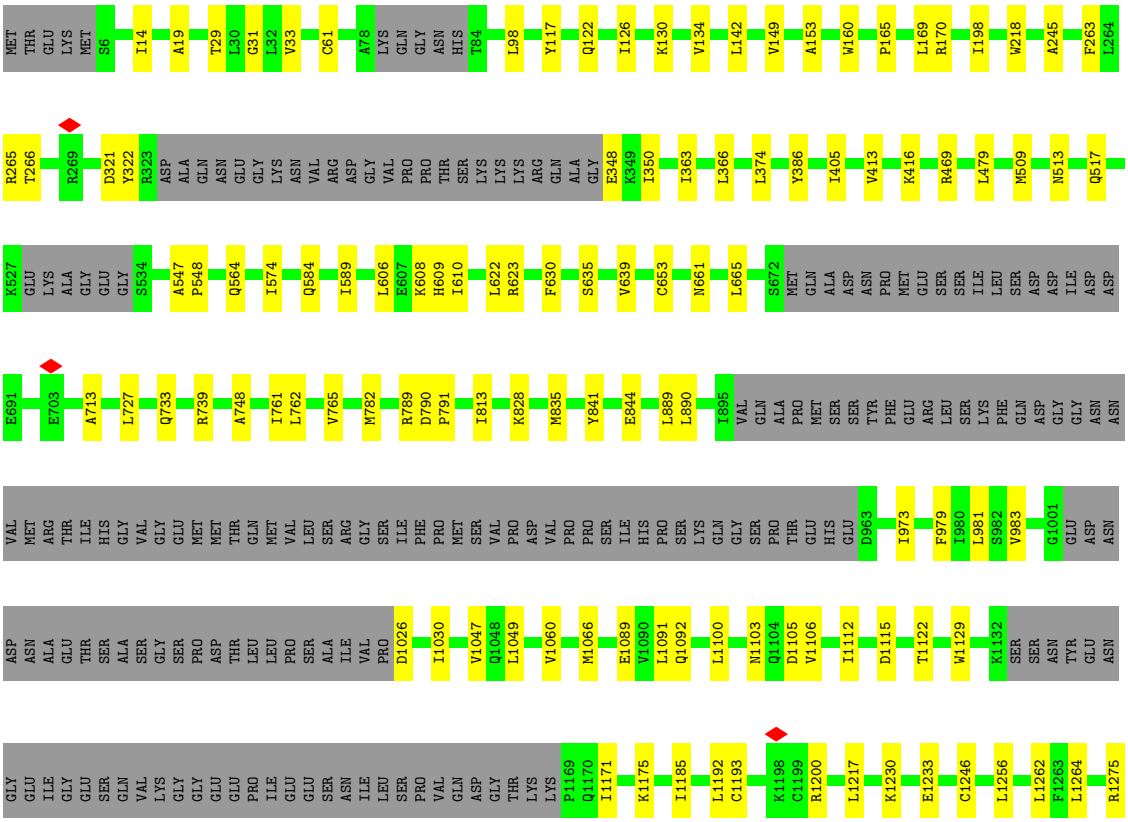
Chain C:

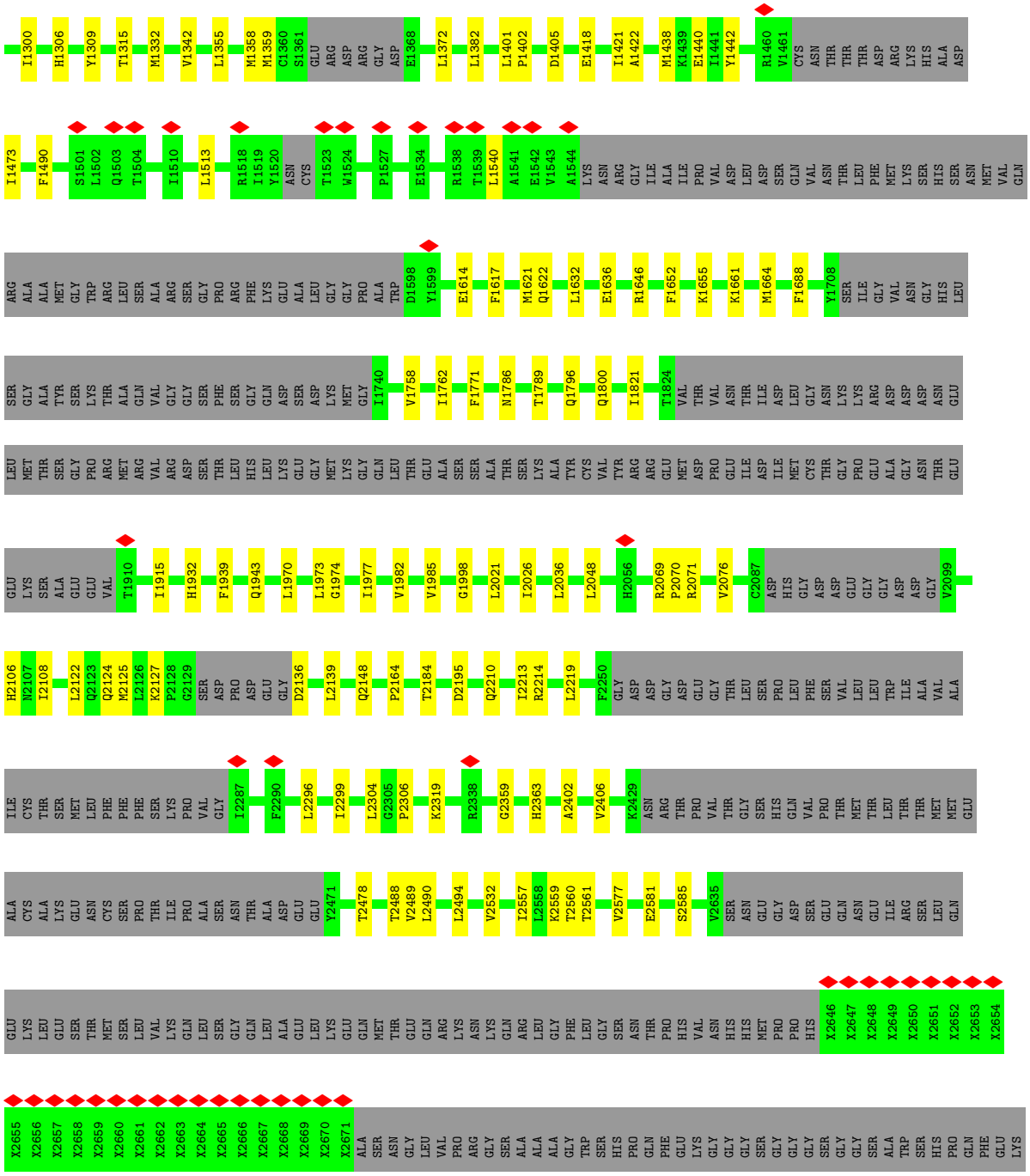




• Molecule 1: Inositol 1,4,5-trisphosphate-gated calcium channel ITPR2

Chain D:




I1300 H1306 Y1309 T1315 M1332 V1342 L1355 M1358 M1359 G1360 S1361 GLU ARG ASP ARG GLY ASP E1368 L1372 L1382 L1401 P1402 D1405 E1418 I1421 A1422 M1438 K1439 E1440 I1441 Y1442 R1460 V1461 CYS ASN THR THR ASP ARG LYS HIS ALA ASP
I1473 F1490 S1501 L1502 Q1503 T1504 I1510 L1513 R1518 I1519 Y1520 ASN CYS T1523 W1524 P1527 E1534 R1538 T1539 L1540 A1541 E1542 V1543 A1544 LYS ASN ARG GLY ILE ALA ILE PRO VAL ASP LEU ASP SER GLN VAL ASN THR LEU PHE MET LYS SER HIS SER ASN MET VAL GLN
ARG ALA ALA MET GLY TRP ARG LEU SER ALA ARG SER GLY PRO ARG PHE LYS GLU ALA LEU GLY GLY PRO ALA TRP D1598 Y1599 E1614 F1617 M1621 Q1622 L1632 E1636 R1646 F1652 K1655 K1661 M1664 F1688 Y1708 SER ILE GLY VAL ASN GLY HIS LEU
SER GLY ALA TYR SER LYS THR ALA GLN VAL GLY GLY SER PHE SER GLY GLN ASP SER ASP LYS MET GLY I1740 V1758 I1762 F1771 N1786 T1789 Q1796 Q1800 I1821 T1824 VAL THR VAL ASN THR ILE ASP LEU GLY ASN LYS LYS ARG ASP ASP ASP ASN GLU
LEU MET THR SER GLY PRO ARG MET ARG VAL ARG ASP SER THR LEU HIS LEU LYS GLU GLY MET LYS GLY GLN LEU THR GLU ALA SER SER ALA THR SER LYS ALA TYR CYS VAL TYR ARG ARG GLU MET ASP PRO GLU ILE ASP ILE MET CYS THR GLY PRO GLU ALA GLY ASN THR GLU
GLU LYS SER ALA GLU GLU VAL T1910 I1915 H1932 F1939 Q1943 L1970 L1973 G1974 I1977 V1982 V1985 G1998 L2021 I2026 L2036 L2048 H2056 R2069 P2070 R2071 V2076 C2087 ASP HIS GLY ASP ASP GLU GLY GLY ASP ASP GLY V2099
H2106 N2107 I2108 L2122 Q2123 Q2124 M2125 K2126 K2127 P2128 G2129 SER ASP PRO ASP GLU GLY D2136 L2139 Q2148 P2164 T2184 D2195 Q2210 I2213 R2214 L2219 F2250 GLY ASP ASP GLY ASP GLU GLY THR LEU SER PRO LEU PHE SER VAL LEU LEU TRP ILE ALA VAL ALA
ILE CYS THR SER MET LEU PHE PHE PHE SER LYS PRO VAL GLY I2287 F2290 L2296 I2299 L2304 G2305 P2306 K2319 R2338 G2359 H2363 A2402 V2406 K2429 ASN ARG THR PRO VAL THR GLY SER HIS GLN VAL PRO THR MET THR LEU THR THR MET MET GLU
ALA CYS ALA LYS GLU ASN CYS SER PRO THR ILE PRO ALA SER ASN THR ALA ASP GLU GLU Y2471 T2478 T2488 V2489 L2490 L2494 V2532 I2557 L2558 K2559 T2560 T2561 V2577 E2581 S2585 V2635 SER ASN GLU GLY ASP SER GLU GLN ASN GLU ILE ARG SER LEU GLN
GLU LYS LEU GLU SER THR MET SER LEU VAL LYS GLN LEU SER GLY GLN LEU ALA GLU LEU LYS GLU GLN MET THR GLU GLN ARG LYS ASN LYS GLN ARG LEU GLY PHE LEU GLY SER ASN THR PRO HIS VAL ASN HIS HIS MET PRO PRO HIS X2646 X2647 X2648 X2649 X2650 X2651 X2652 X2653 X2654
X2655 X2656 X2657 X2658 X2659 X2660 X2661 X2662 X2663 X2664 X2665 X2666 X2667 X2668 X2669 X2670 X2671 ALA SER ASN GLY LEU VAL PRO ARG GLY SER ALA ALA ALA GLY TRP SER HIS PRO GLN PHE GLU LYS GLY GLY GLY SER GLY GLY GLY SER GLY GLY GLY SER ALA TRP SER HIS PRO GLN PHE GLU LYS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	131003	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	54.7	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.690	Depositor
Minimum map value	-0.008	Depositor
Average map value	0.007	Depositor
Map value standard deviation	0.016	Depositor
Recommended contour level	0.05	Depositor
Map size (Å)	420.864, 420.864, 420.864	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.822, 0.822, 0.822	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.13	0/17945	0.25	1/24238 (0.0%)
1	B	0.13	0/17945	0.25	1/24238 (0.0%)
1	C	0.13	0/17945	0.25	0/24238
1	D	0.13	0/17945	0.25	1/24238 (0.0%)
All	All	0.13	0/71780	0.25	3/96952 (0.0%)

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	33	VAL	N-CA-C	-5.28	107.68	112.96
1	A	33	VAL	N-CA-C	-5.25	107.71	112.96
1	D	33	VAL	N-CA-C	-5.25	107.71	112.96

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	17742	0	17802	128	0
1	B	17742	0	17802	124	0
1	C	17742	0	17802	123	0
1	D	17742	0	17802	124	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
All	All	70972	0	71208	492	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 3.

The worst 5 of 492 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:C:61:CYS:HB2	1:C:122:GLN:HB2	1.56	0.88
1:A:61:CYS:HB2	1:A:122:GLN:HB2	1.56	0.87
1:B:61:CYS:HB2	1:B:122:GLN:HB2	1.57	0.86
1:D:61:CYS:HB2	1:D:122:GLN:HB2	1.56	0.86
1:B:122:GLN:HE22	1:B:160:TRP:HD1	1.30	0.79

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	2133/2769 (77%)	2081 (98%)	52 (2%)	0	100	100
1	B	2133/2769 (77%)	2081 (98%)	52 (2%)	0	100	100
1	C	2133/2769 (77%)	2078 (97%)	55 (3%)	0	100	100
1	D	2133/2769 (77%)	2079 (98%)	54 (2%)	0	100	100
All	All	8532/11076 (77%)	8319 (98%)	213 (2%)	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	1969/2447 (80%)	1969 (100%)	0	100	100
1	B	1969/2447 (80%)	1969 (100%)	0	100	100
1	C	1969/2447 (80%)	1969 (100%)	0	100	100
1	D	1969/2447 (80%)	1969 (100%)	0	100	100
All	All	7876/9788 (80%)	7876 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 99 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	1111	GLN
1	C	2574	ASN
1	C	1209	ASN
1	C	1933	ASN
1	D	562	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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 4 ligands modelled in this entry, 4 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.

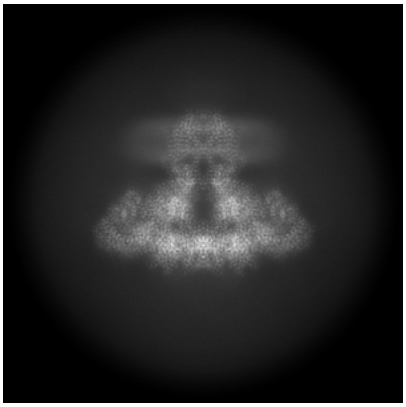
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-73054. These allow visual inspection of the internal detail of the map and identification of artifacts.

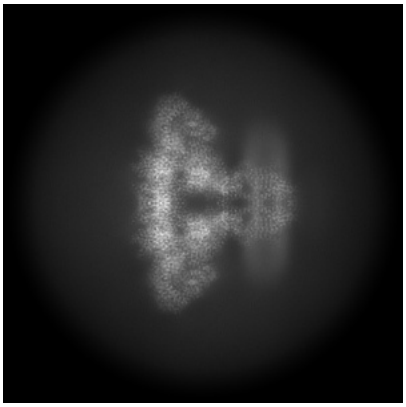
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

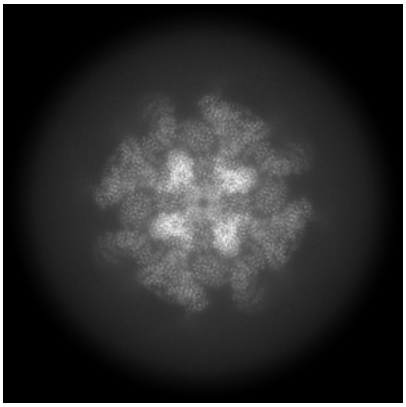
6.1.1 Primary map



X



Y



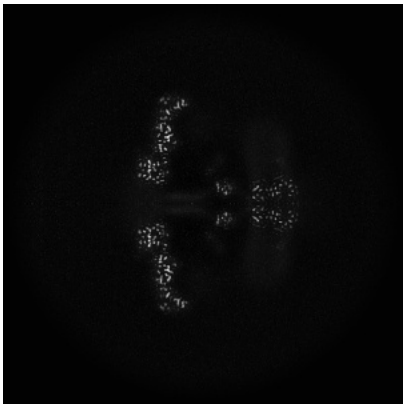
Z

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

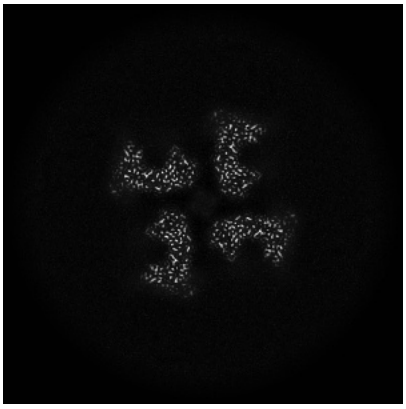
6.2 Central slices

6.2.1 Primary map

X Index: 256



Y Index: 256



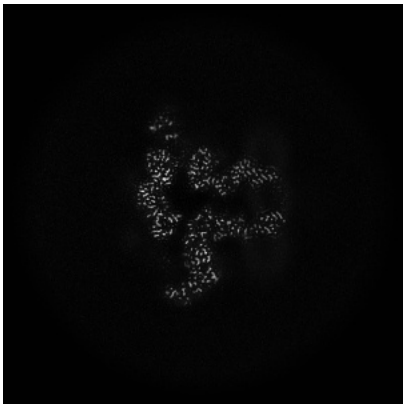
Z Index: 256

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

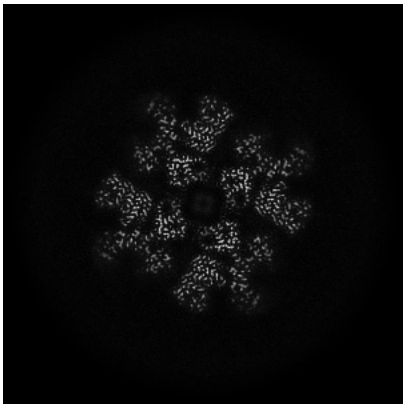
6.3 Largest variance slices (i)

6.3.1 Primary map

X Index: 292



Y Index: 292

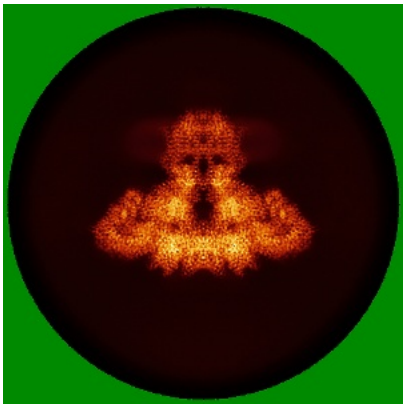


Z Index: 209

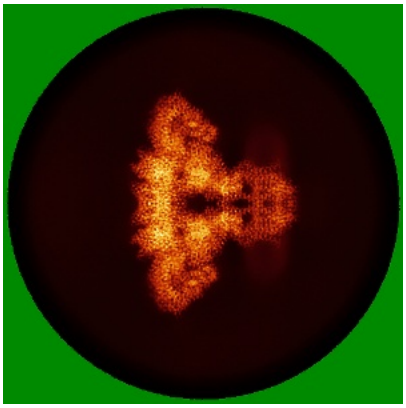
The images above show the largest variance slices of the map in three orthogonal directions.

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

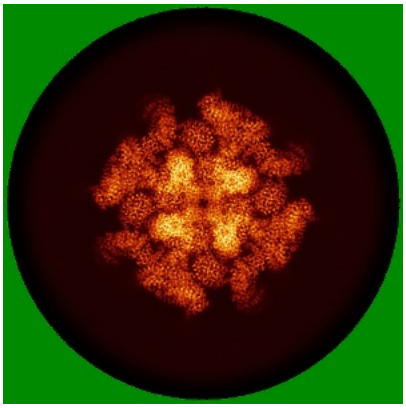
6.4.1 Primary map



X



Y

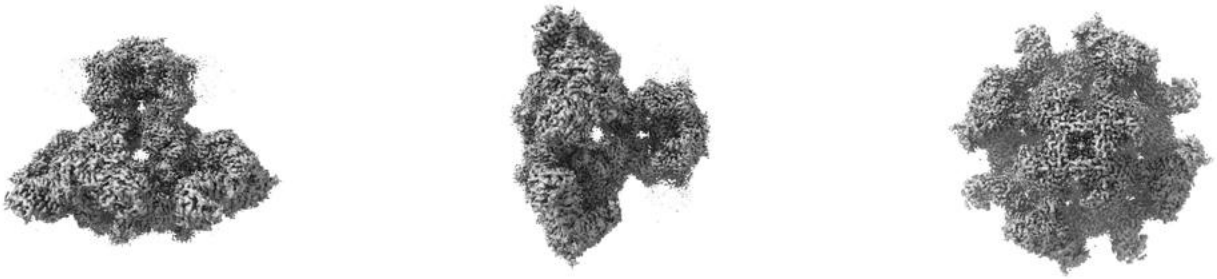


Z

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 0.05. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

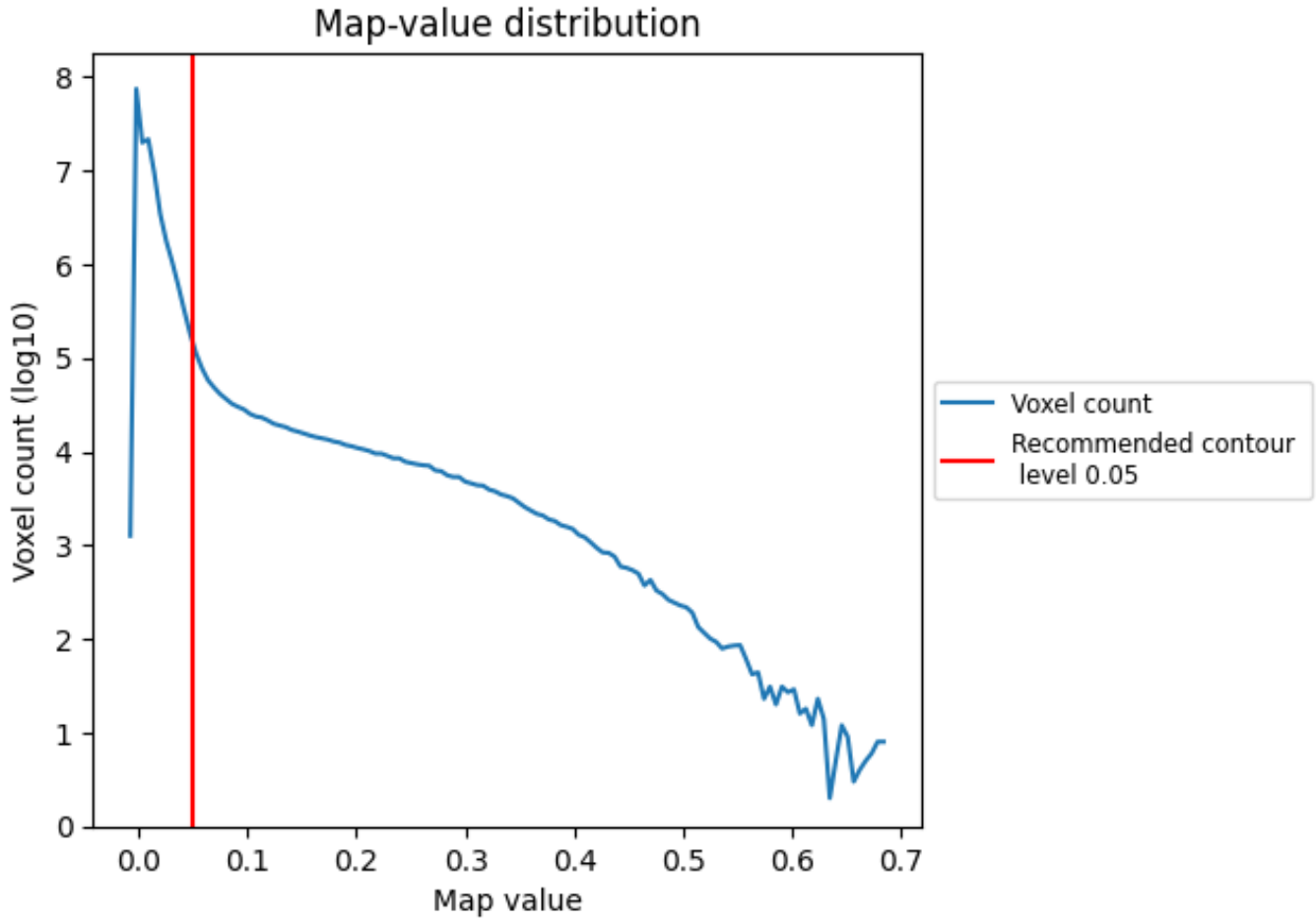
6.6 Mask visualisation (i)

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

7 Map analysis

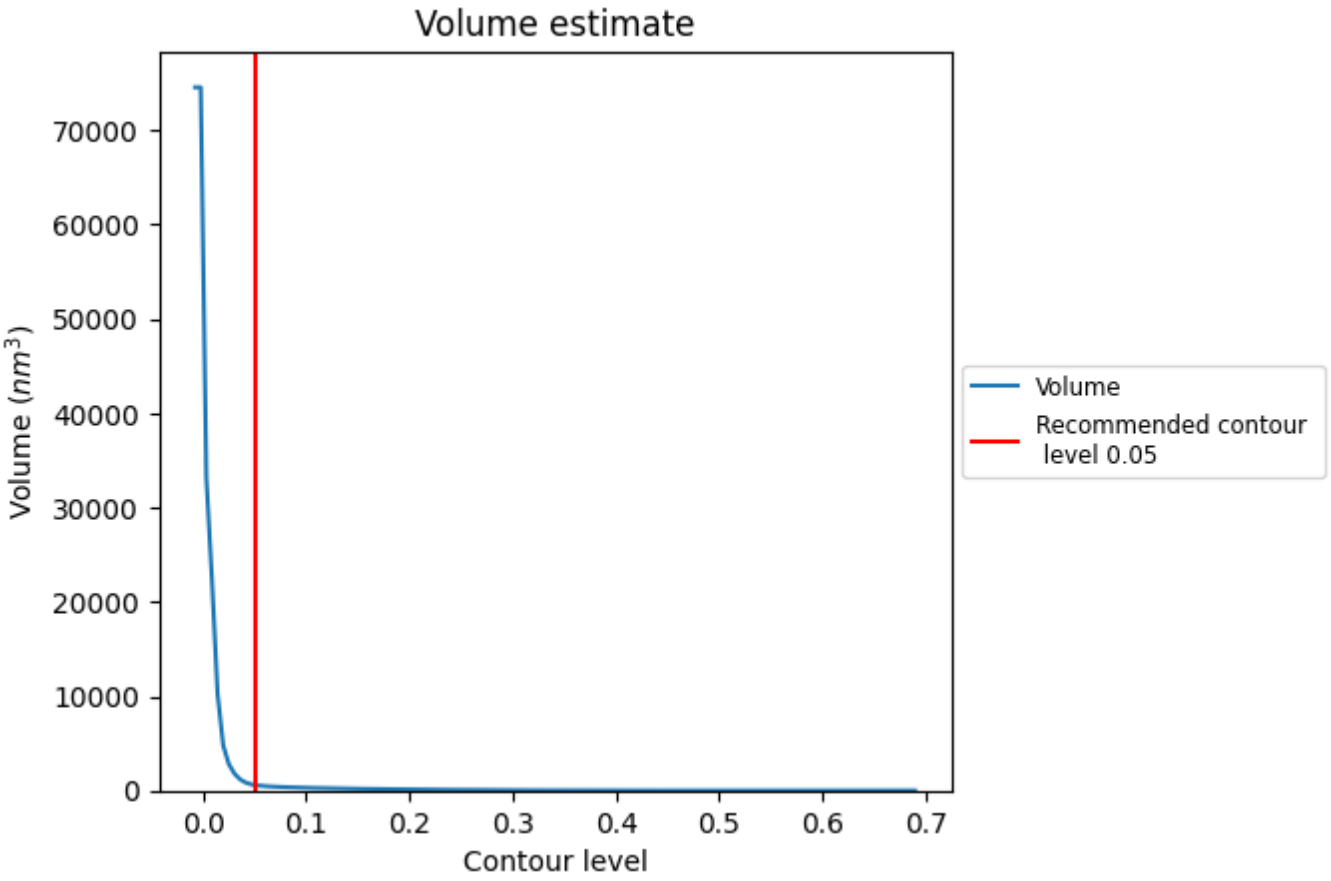
This section contains the results of statistical analysis of the map.

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.

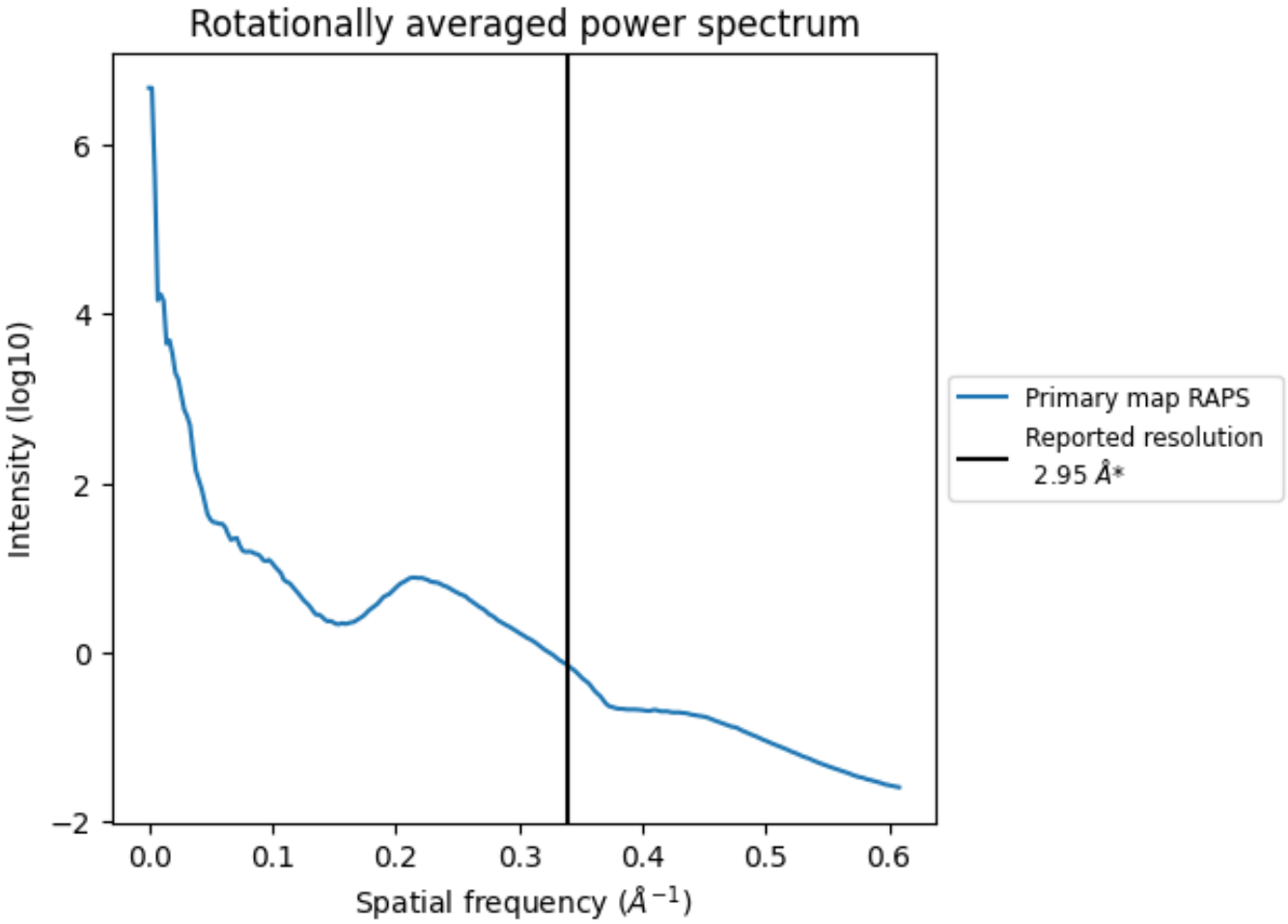
7.2 Volume estimate (i)



The volume at the recommended contour level is 597 nm^3; this corresponds to an approximate mass of 539 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}

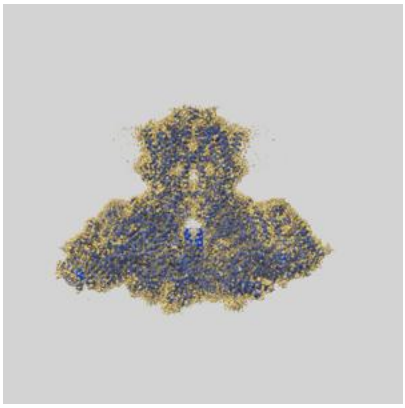
8 Fourier-Shell correlation (i)

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

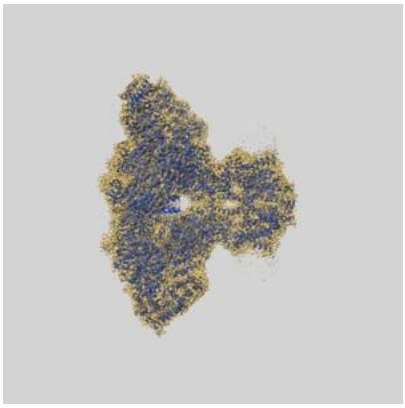
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-73054 and PDB model 9YKK. Per-residue inclusion information can be found in section 3 on page 4.

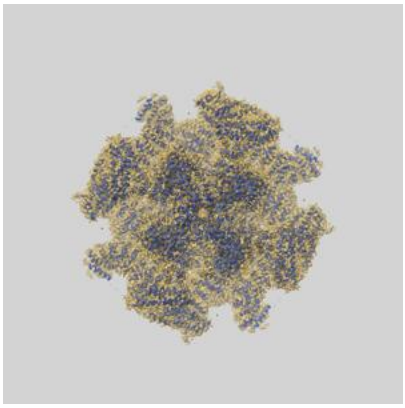
9.1 Map-model overlay



X



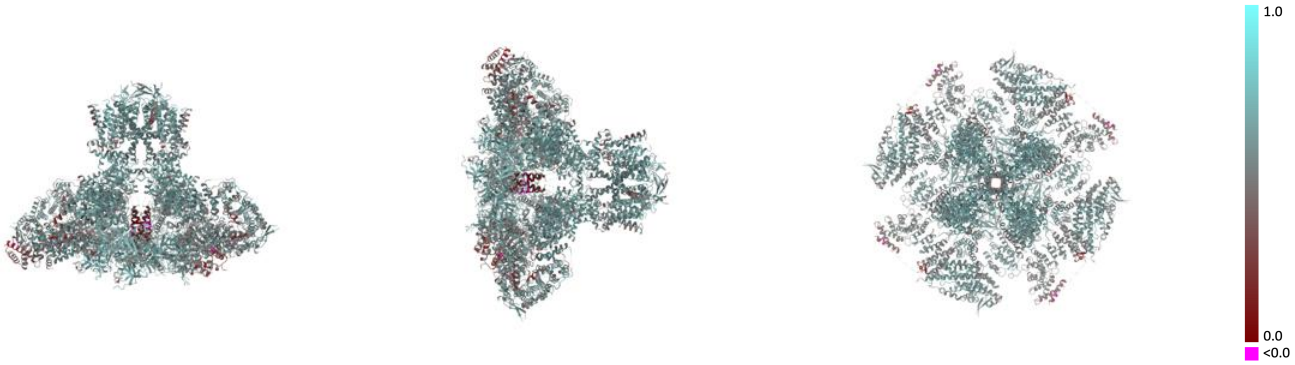
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.05 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.

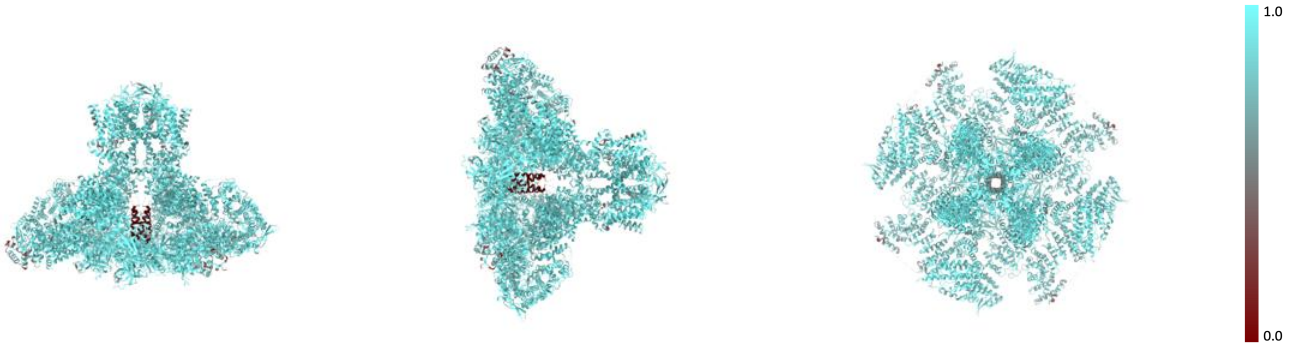
9.2 Q-score mapped to coordinate model (i)



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.

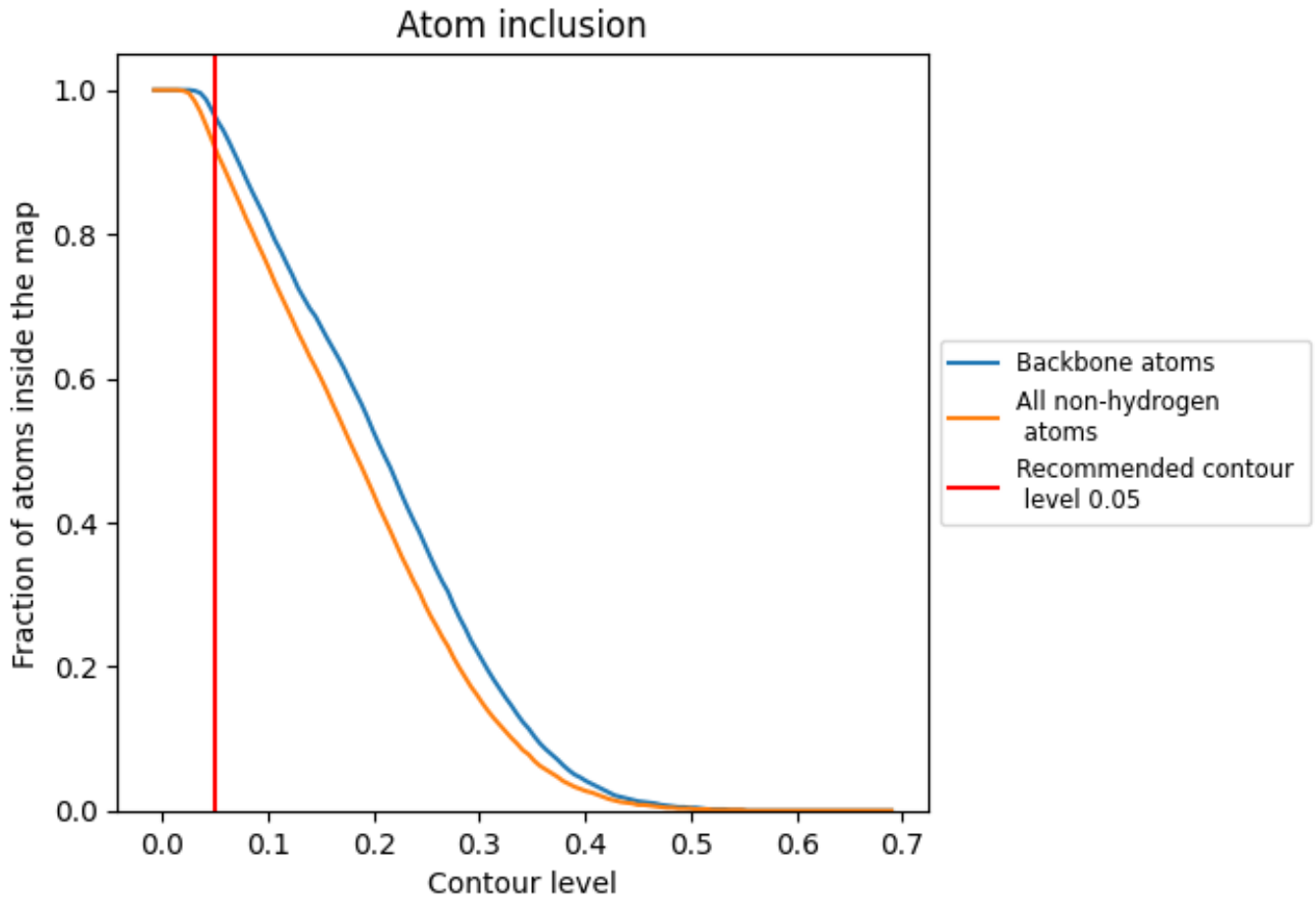
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.05).

9.4 Atom inclusion (i)



At the recommended contour level, 96% of all backbone atoms, 92% 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 (0.05) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9190	0.5720
A	0.9190	0.5720
B	0.9190	0.5720
C	0.9190	0.5720
D	0.9190	0.5720