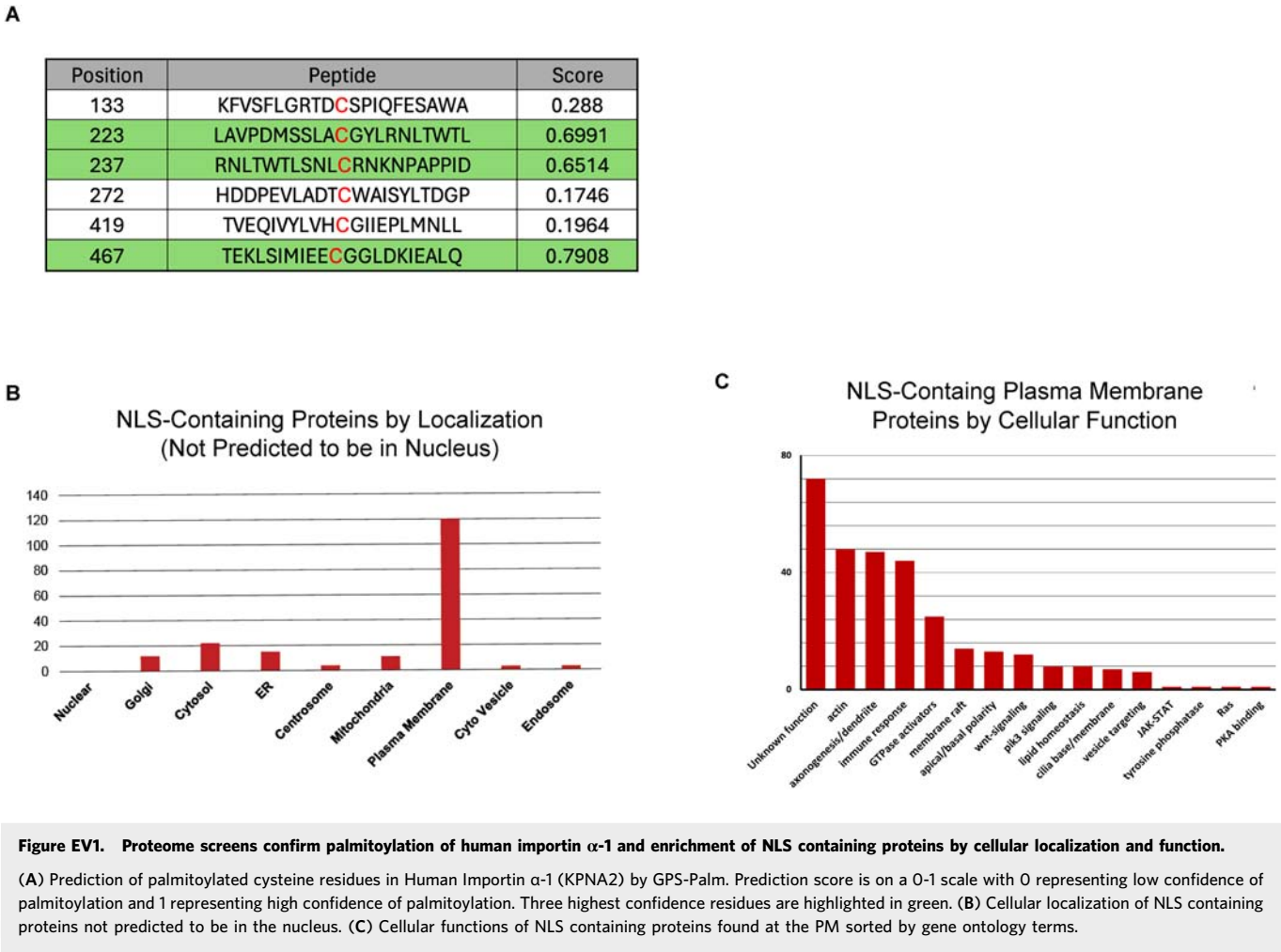


Expanded View Figures



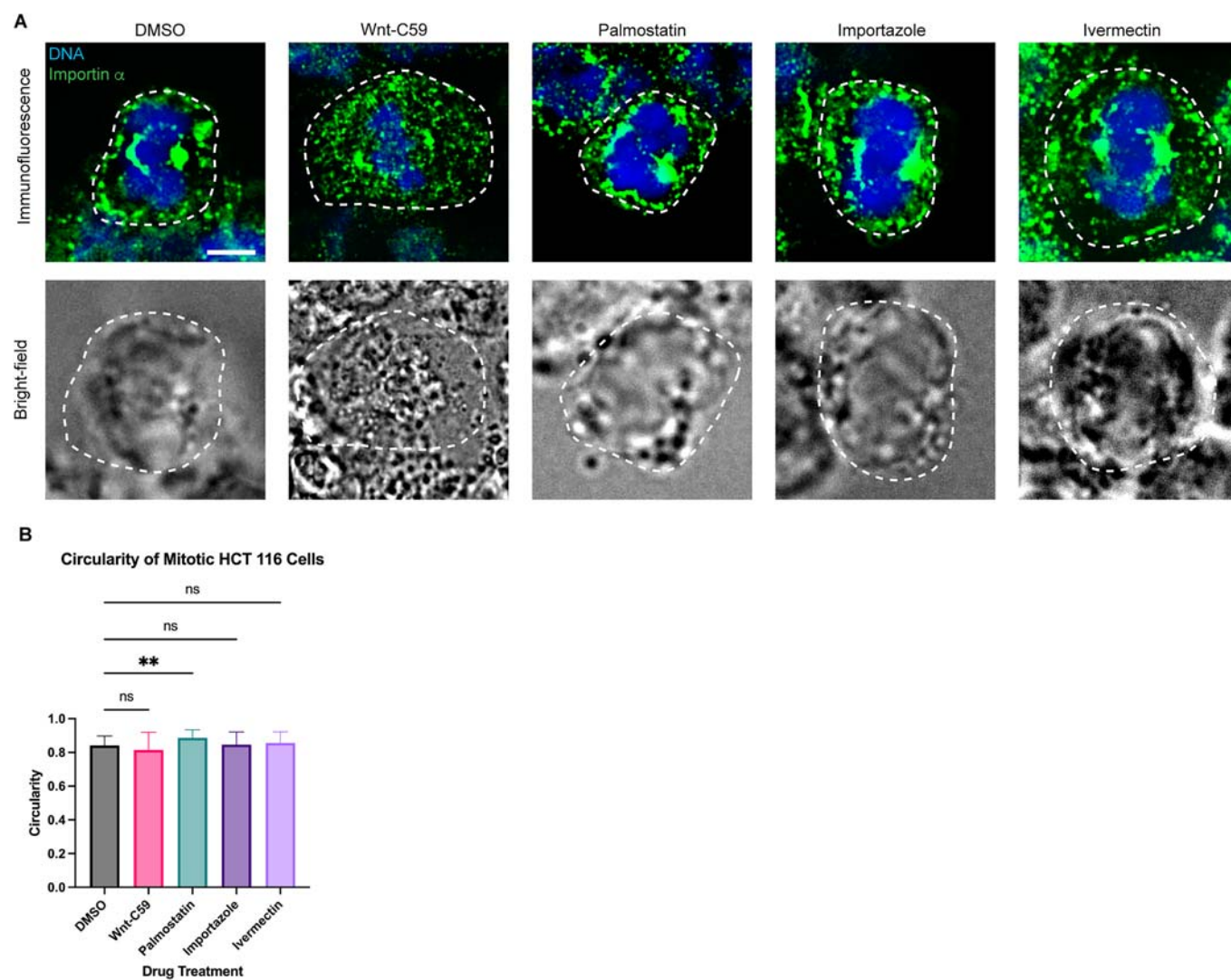


Figure EV2. KPNA2 cellular localization boundary determination.

(A) Representative immunofluorescence and bright-field images for cells used in Fig. 1A to determine KPNA2 localization and cell boundary determination for each drug treatment. Scale bar = 5 μ m. (B) Quantification of the circularity of metaphase-arrested HCT116 cells treated with DMSO, 10 μ M Wnt-C59, 50 μ M palmostatin, 40 μ M importazole or 25 μ M ivermectin for 1 h. Mean $\pm$ SEM $n = 60$, ** $p = 0.0031$ determined by Student's t-test.

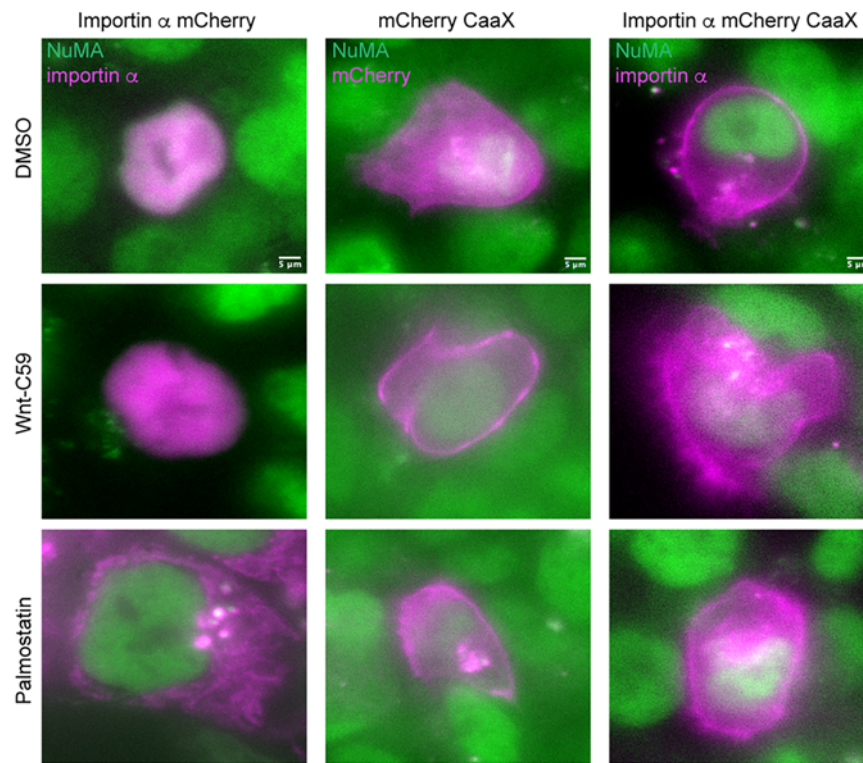


Figure EV3. CaaX modified importin α localizes to the plasma membrane independent of palmitoylation.

Immunofluorescent images of HCT116 cells transfected with importin α -mCherry, mCherry-CaaX or importin α -mCherry-CaaX treated with DMSO, Wnt-C59 or palmostatin. Importin α -mCherry-CaaX localizes to the plasma membrane in all drug treatments. Scale bar = 5 μ m.

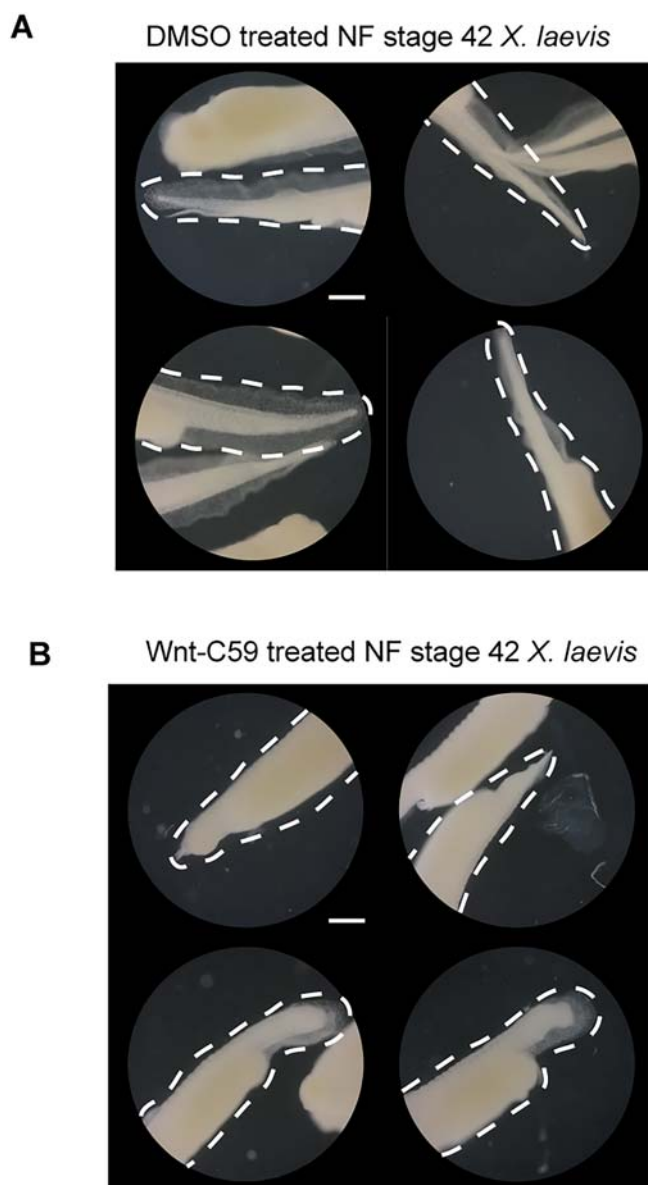


Figure EV4. Wnt-C59 treated *X. laevis* tadpoles exhibit shortened tail length.

(A) Brightfield images of NF Stage 42 *X. laevis* tadpole tails treated with DMSO from 24 to 72 hpf. DMSO treated tadpoles exhibit normal development and typical length tails. Scale bar = 500 μ m. White dashed line indicates examined tadpole tail for each image. (B) Brightfield images of NF Stage 42 *X. laevis* tadpole tails treated with Wnt-C59 from 24 to 72 hpf. Wnt-C59 treated tadpoles exhibit abnormal development, shortened tails, and abnormally shaped tails. Scale bar = 500 μ m. White dashed line indicates examined tadpole tail for each image.

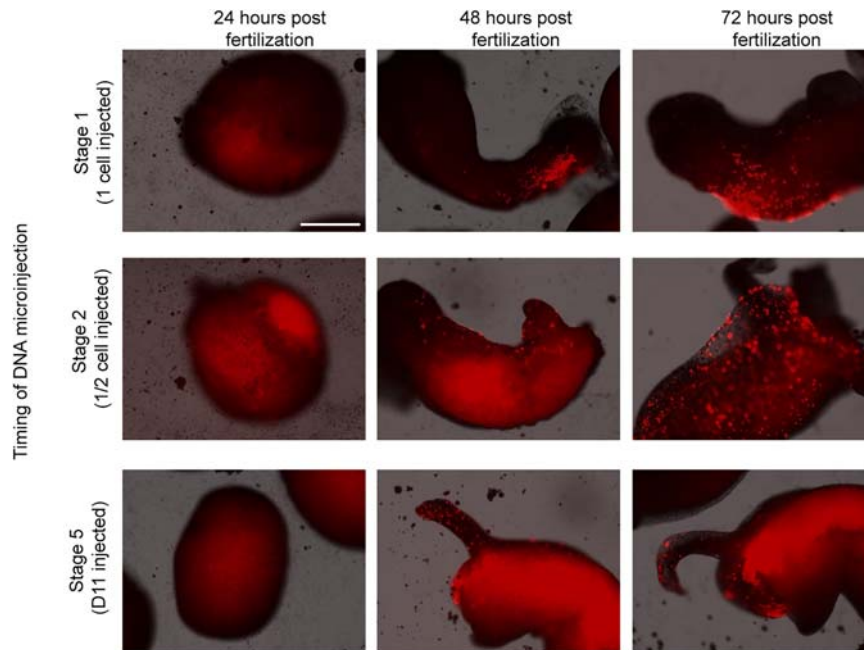


Figure EV5. Importin α overexpression produces severe developmental defects in *X. laevis* embryos.

Immunofluorescent images of *X. laevis* embryos co-injected with importin α -mCherry-CaaX pcDNA4TO and pcDNA6TR at 24, 48, and 72 h post fertilization. Embryos were injected at either the 1 cell, 2 cell (injected into 1 of 2 cells), or 16 cell stage (injected into the D11 blastomere). All 1 and 2 cell injected embryos exhibit high mortality and severe developmental defects. D11 injected embryos had better survivability though some embryos still exhibited defects. Scale bar = 500 μ m.