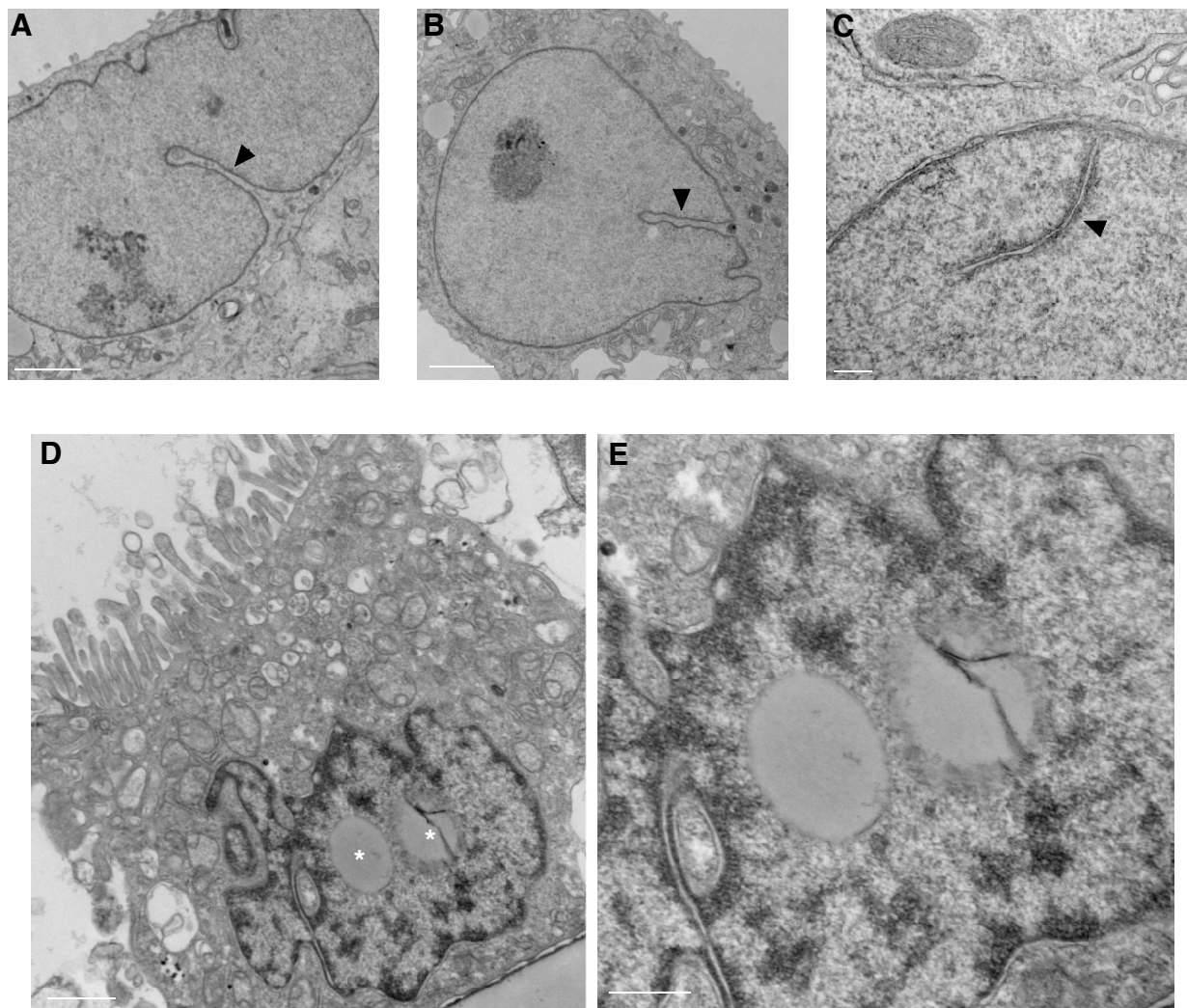


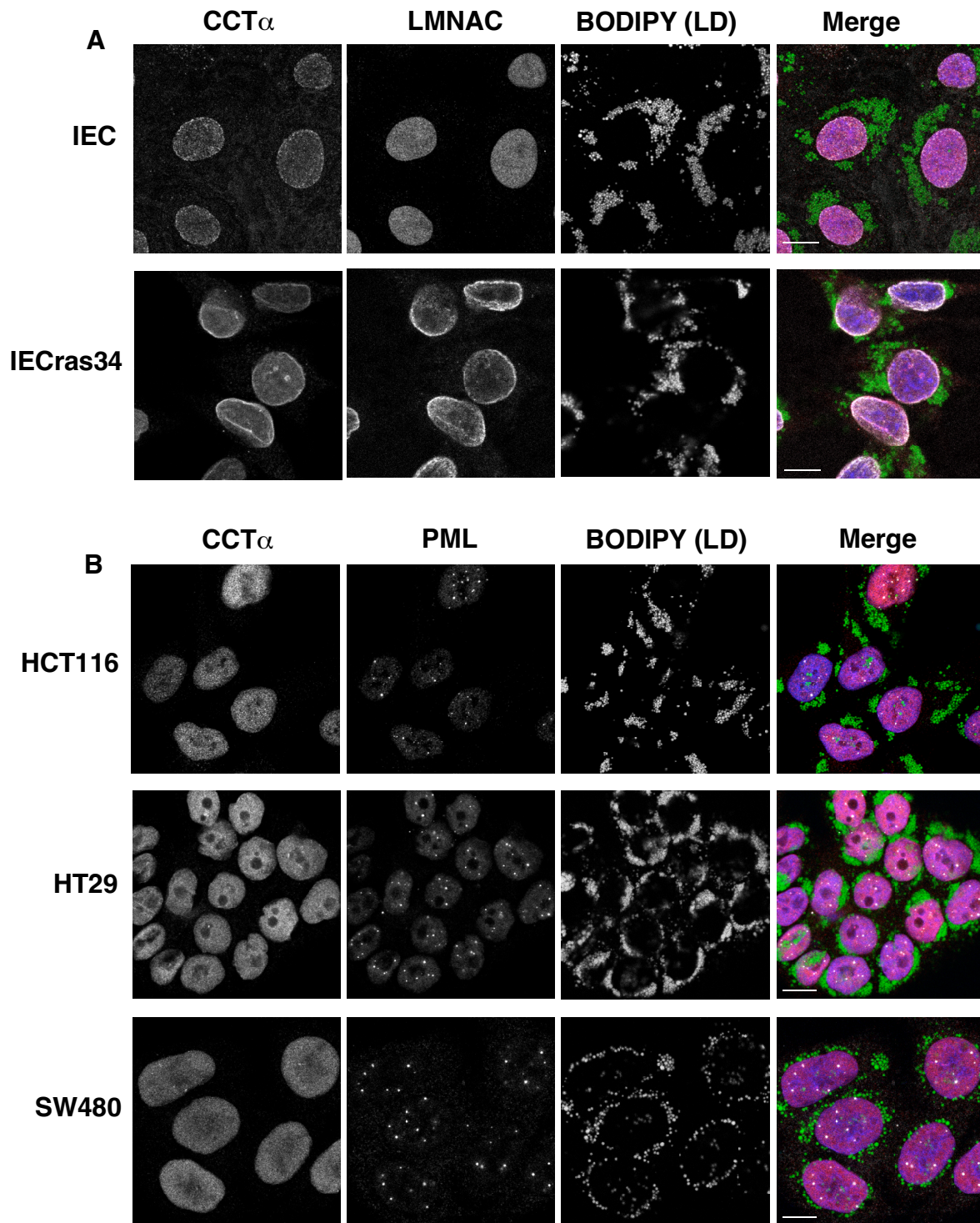
NUCLEAR LIPID DROPLETS IN CACO2 CELLS ORIGINATE *IN SITU* AT THE NUCLEAR ENVELOPE McPhee *et al.*

Supplemental Figure 1



Supplemental Figure 1. **Transition electron micrographs of undifferentiated and differentiated Caco2 cells.** A-C, TEM images of undifferentiated Caco2 cells treated with oleate (500 μ M) for 8 h showing Type II (panels A and B, bar 2 μ m) and Type I (panel C, bar 200 nm) nucleoplasmic reticulum (indicated by arrows). D, differentiated Caco2 cells have well-defined apical microvilli and multiple large nLDs indicated by asterisks (bar, 1 μ m). E, magnified field from panel D showing nLDs (bar, 400 nm).

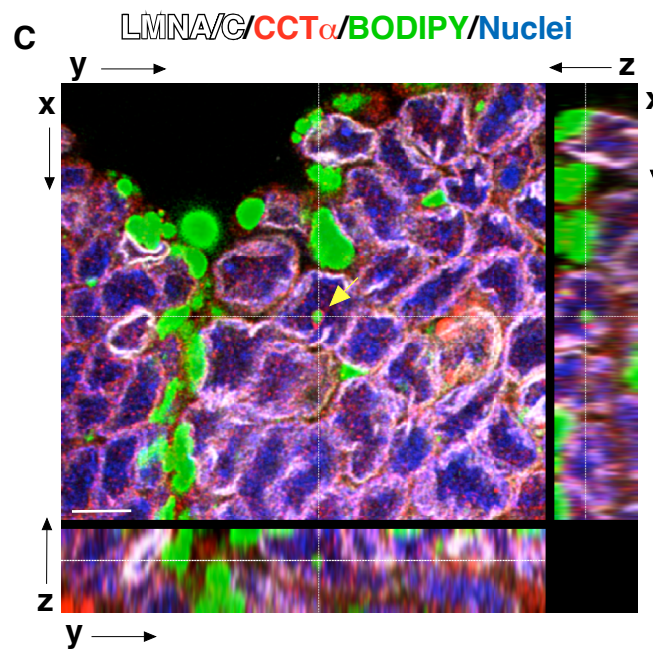
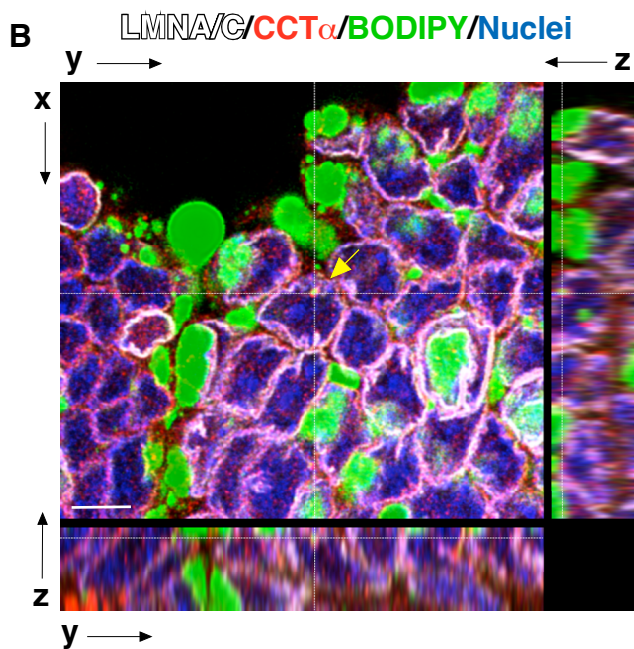
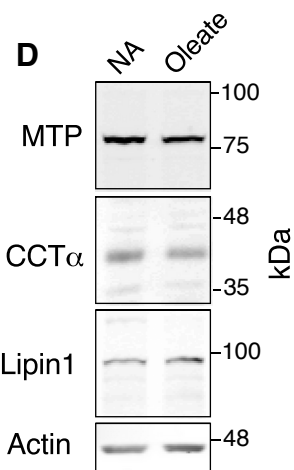
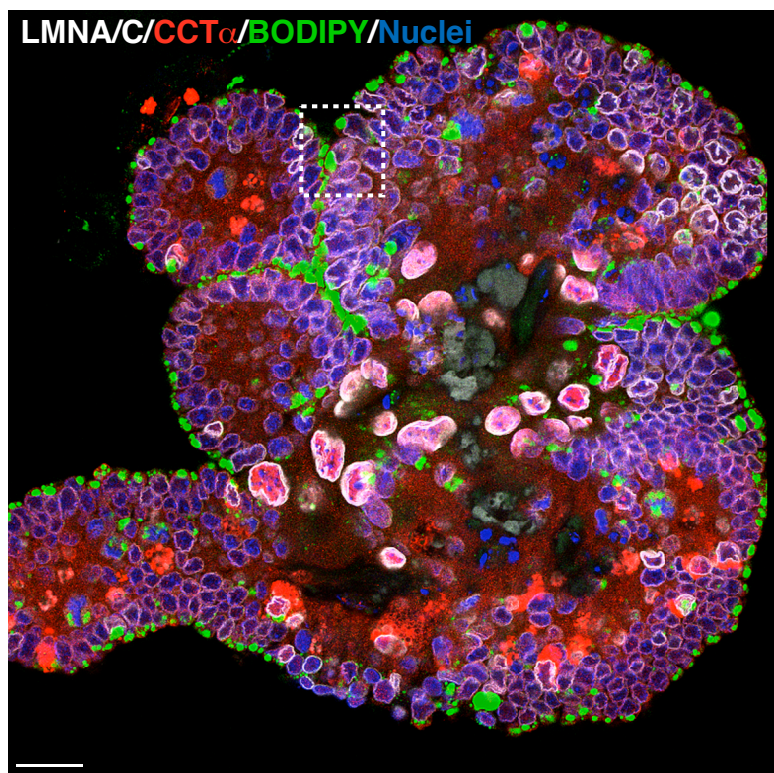
Supplemental Figure 2



Supplemental Figure 2. **IEC18, IECras34, HCT116, HT29 and SW480 cells are devoid of nLDs and LAPS.** A, IEC and IECras34 cells incubated with oleate (500 μ M) for 24 h were immunostained with CCT α and LMNA/C primary and AlexaFluor-494 and -647 secondary antibodies, respectively. LDs were visualized with BODIPY493/503 (bar, 10 μ m). B, HCT116, HT29 and SW480 cells incubated with 500 μ M oleate for 24 h were immunostained with CCT α and PML primary and AlexaFluor-494 and -647 secondary antibodies, respectively. LDs were visualized with BODIPY493/503 (bar, 10 μ m).

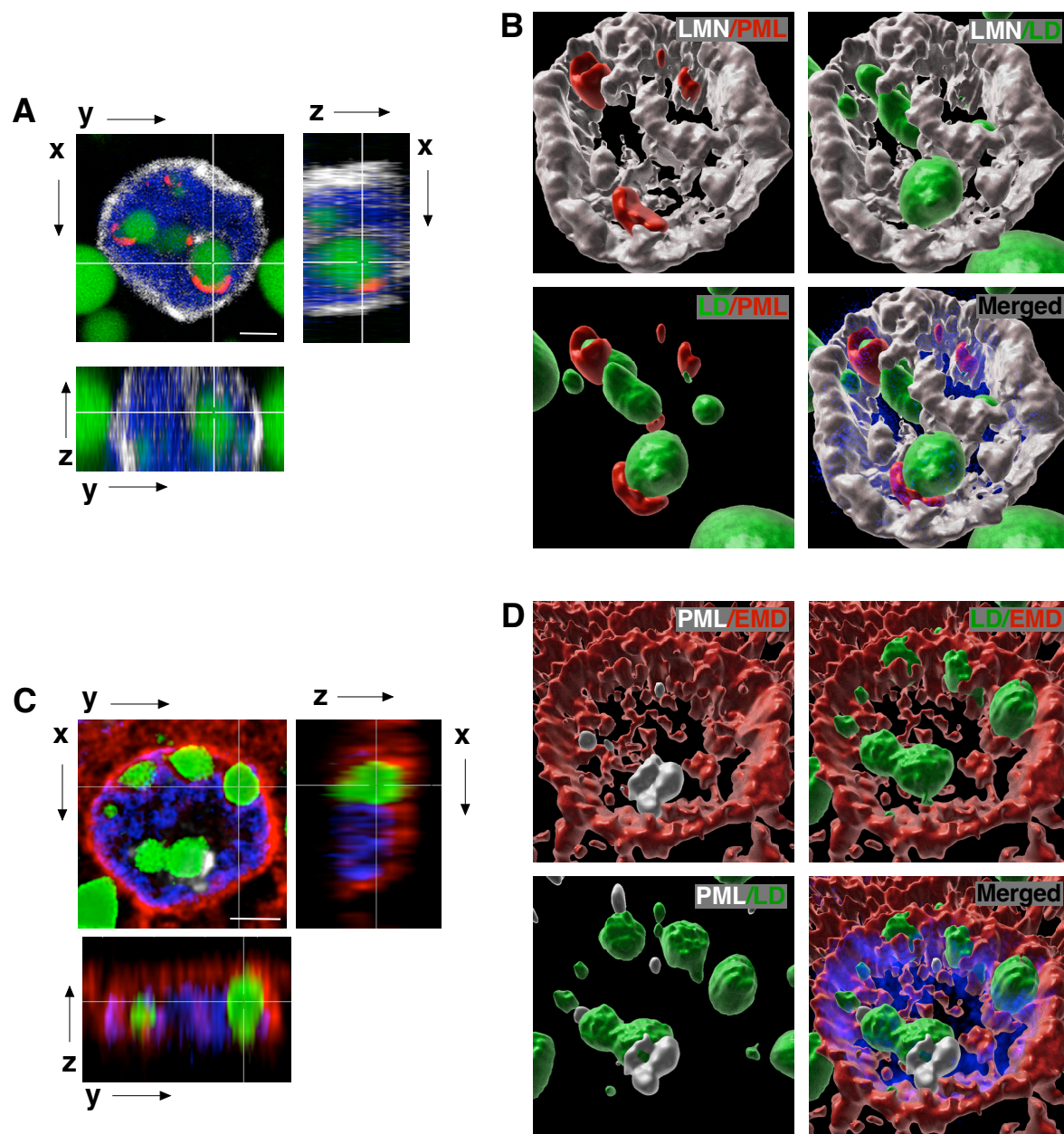
Supplemental Figure 3

A



Supplemental Figure 3. **Confocal imaging of a mouse enteroids.** A, enteroids were immunostained for CCT α and LMNA/C, LDs were stained with BODIPY 493/503 and the nuclei with Hoechst (bar, 20 μ m). B and C, additional xyz-projections of the region outlined in panel A showing CCT α -positive nLDs (indicated by arrows) in the nucleus of enterocytes (bar, 5 μ m). D, whole enteroids were lysed and immunoblotted for the indicated proteins (actin load control).

Supplemental Figure 4



Supplemental Figure 4. **Confocal imaging and 3D reconstructions of nLDs and LAPS in differentiated Caco2 cells.** Cells were treated and processed for immunofluorescence microscopy of LNMA/C, emerin (EMN) and PML as described in the legend to Figure 7 (bar, 2 μm). 3D images in panels B and D are rotated slightly to the left relative to the x-y images in panels A and C.