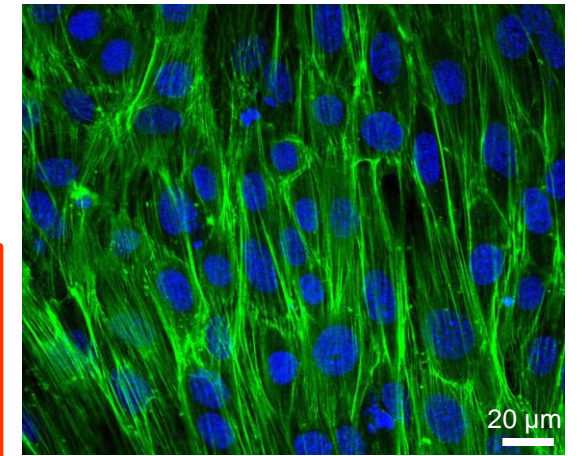
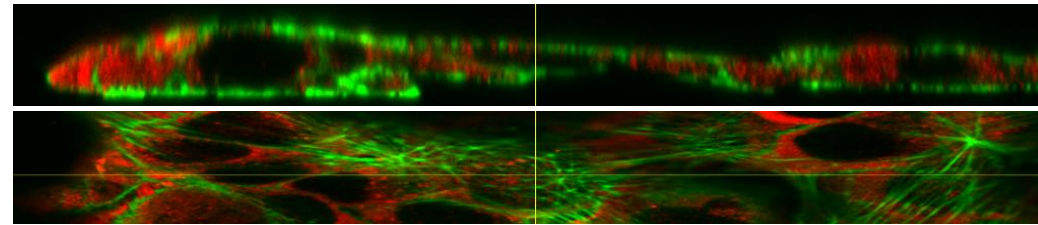
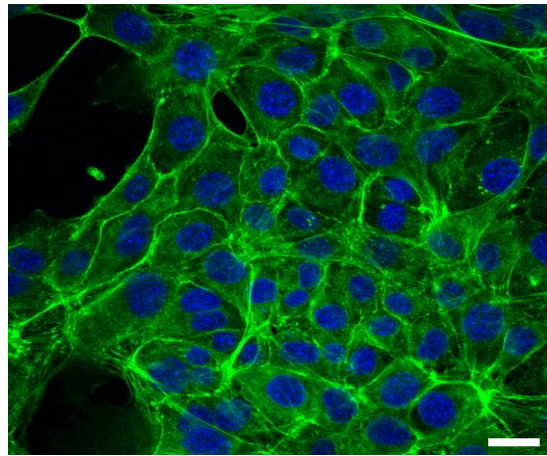
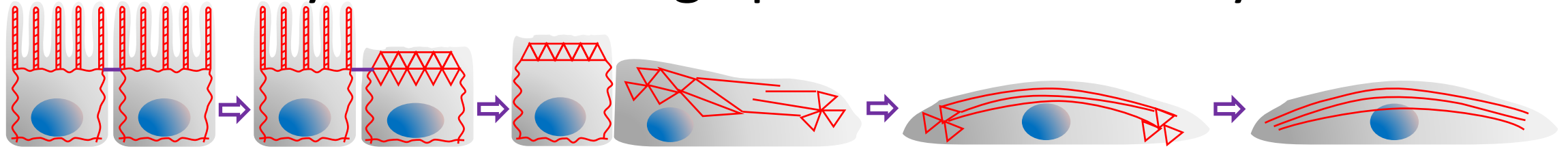
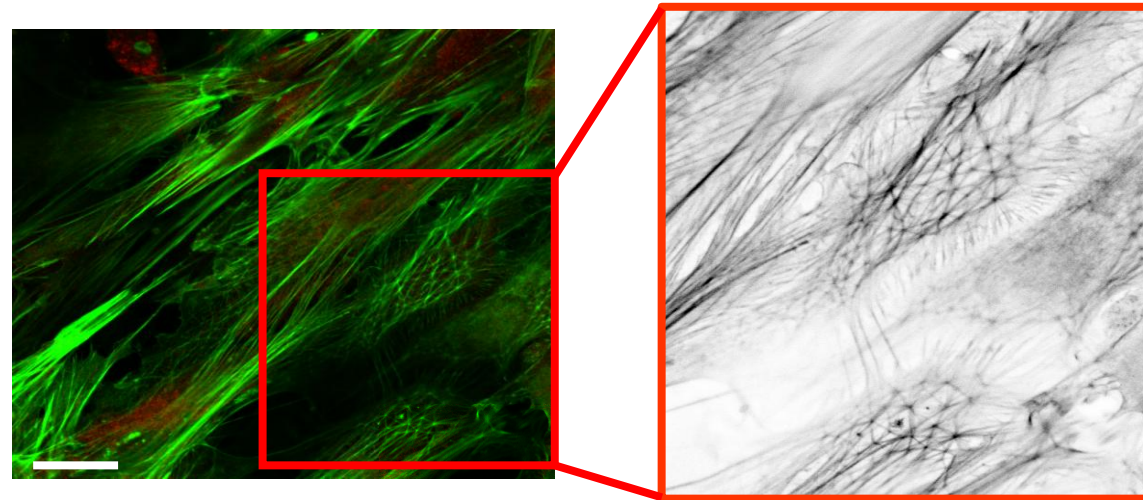


Actin Cortex Dynamics during Epithelial-Mesenchymal Transition



PIP2
actin
DAPI



I investigate the morphological changes of the actin cortex and the corresponding viscoelastic dynamics during **epithelial-mesenchymal transition (EMT)** induced by **transforming growth factor beta (TGF- β)**. Notably, a unique actin structure—resembling a **geodesic dome**—emerges transiently during the intermediate stages of EMT. To explore the biophysical significance of this structure and extract meaningful parameters, I utilize **confocal laser scanning microscopy (CLSM)** to visualize changes in actin filaments, as well as associated proteins and lipids, at various time points. In parallel, I employ **atomic force microscopy (AFM)** to quantify viscoelastic properties of the cell cortex. Additionally, I capture time-lapse images of live cells undergoing EMT to analyze the dynamics of topological parameters, such as **nematic order**, in conjunction with the formation and disassembly of the actin geodesic dome.