GEORG-AUGUST-UNIVERSITÄT GÖTTINGEN IN PUBLICA COMMODA SEIT 1737

Impact of adhesion on the assembly and mechanics of a minimal actin cortex attached to the membrane *via* ezrin

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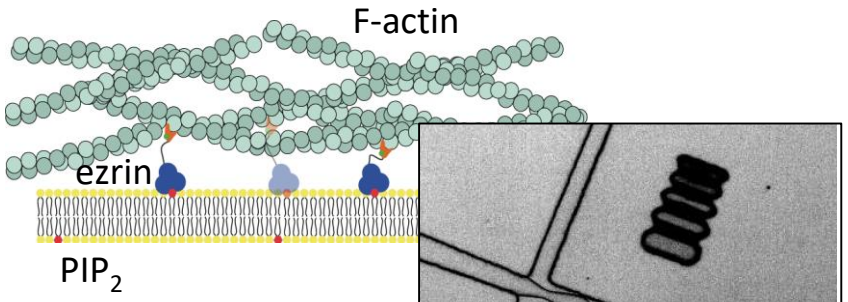
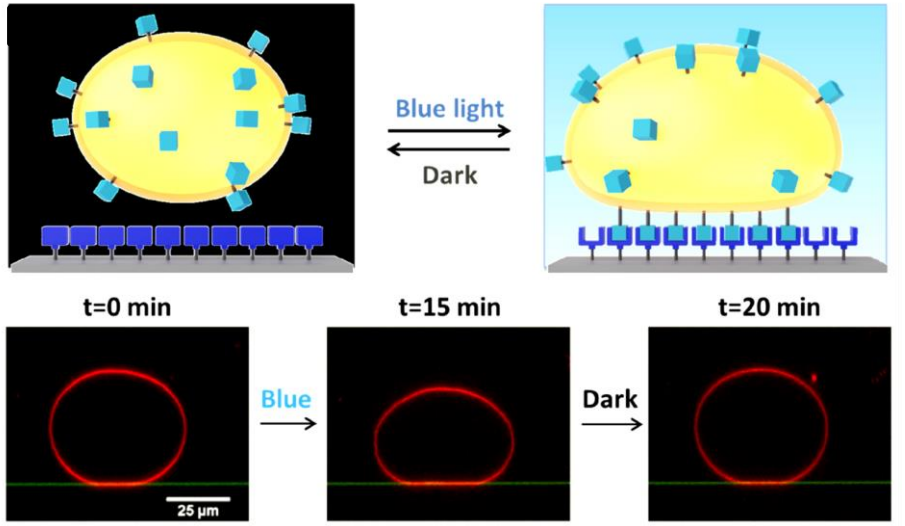
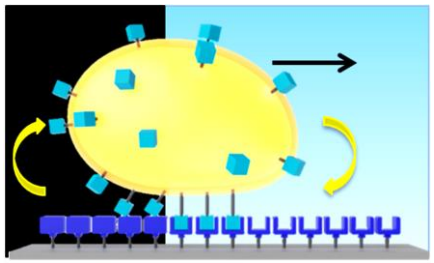
Main objective: How does **adhesion** modify the structure and mechanical properties of **actomyosin networks** attached at the inside of a **GUV** membrane and *vice versa*?



- ❑ production of giant uni-lamellar vesicles (**GUVs**) using **microfluidics**
- ❑ insertion of **actin** and **ezrin** (+ myosin)
- ❑ formation of a minimal actin cortex (**MAC**) attached to the inner leaflet of the GUV membrane via ezrin / PIP_2



- ❑ introduction of Light-Induced Dimer protein pair (**iLID**) to GUV and planar substrate to precisely **vary adhesion**
- ❑ analysis of **mechanical properties** of the GUVs



- ❑ late stage research: analysis of GUVs **movement** (with and without MAC)

Methods: protein biochemistry (expression, isolation, purification and labeling), microfluidics, optical microscopy (CLSM…), data analysis, etc.

pictures: Schön, M.; Sari, M.; Bartelt, S. et al.