

Cell cortex structure and dynamics before, during and after adhesion

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Actin filaments are very dynamic protein polymers, able to create super structures within the cell. Among those structures, the actin cortex, which is the actin shell under the membrane, remains not well understood on many aspects. It is mainly composed of actin filaments of different sizes, motor proteins, actin crosslinkers and membrane linking proteins with a not yet resolved fine structure. The actin cortex is one main component that gives to the cell its elastic properties, crucial for cells to be able to undergo shape changes during tissue formation or migration. A recent study [1] shows some unexpected behavior of the cell mechanics if they are in a suspended state: upon myosin 2 inhibition, the elasticity of adherent cells decreases but, if one is able to perform such experiments on cells without contact to anything, the cells become less compliant. The goal of our project (project A9 in SFB 1027) is to study the changes in the cortex during adhesion in order to understand the different behavior of cell elasticity upon myosin inhibition. This poster is an introduction of the project, describing our workflow for the next years and introducing another poster showing our first results.

[1] Chan, Ekpenyong, Golifer, Li, Chalut, Otto, Elgeti, Guck and Lautenschläger, *Biophys. J.* 108 (2015)