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SEMINAR

Friday, 5th September 2008, at 14:00 h

Praktikumsraum/Seminar Room Physiology
N26/2301, Room 2305

Subject: **"MYOFIBROBLASTS WORK BEST UNDER STRESS: THE CELL MECHANICS AND BIOLOGY OF TISSUE REPAIR"**

The high contractile force generated by myofibroblasts is beneficial for physiological tissue repair but detrimental for organ function when it becomes excessive such as in hypertrophic scars, in virtually all fibrotic diseases and during the stroma reaction to tumors. Myofibroblasts not only exert force but adapt to the stress in their microenvironment. We modulate myofibroblast tension using multiple techniques, including collagen gels of different stiffness, novel substrates with tunable compliance, stretchable culture membranes and cell shape restriction by microcontact-printing. On the molecular level, we specifically interfere with the contractile apparatus, matrix-adhesion, cell-adhesion and growth factor activation of myofibroblasts. In general, stress-release leads to de-differentiation and/or apoptosis of myofibroblasts. We propose therapeutically interfering with their stress-perception and -transmission apparatus as novel strategy to eliminate fibrogenic cells.

Speaker: Boris Hinz PhD
Chair of the Cell Contractility Group
EPFL, Lausanne, Schweiz

Everybody is invited!