

Einladung zum Physikalischen Kolloquium

**Montag, 06.06.2011
16:15 Uhr in O25/H13**



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Integrin-mediated Cell Adhesion

During migration, cells exert forces to their environment. Furthermore, cells are exposed to external forces, for example during lymphocyte extravasation. Force-involving processes like cell adhesion and migration require specialized adhesion receptors, which are optimized to work under these non-equilibrium conditions. One particular class of these receptors is the family of integrins. Integrins bidirectionally convey forces and relay signals through the cellular membrane. They are involved in nearly all complex tasks of multicellular organisms, involving physiological events like apoptosis and patho-physiological events like metastasis. Using single molecule force spectroscopy on living cells, we could show that the mechanical environment of the integrins is an important regulatory factor in cell adhesion, hinting at a mechanism of adhesion regulation orthogonal to classical mechanisms like affinity changes. We then extrapolated the single-molecule to whole cell behavior. This helped us to understand complex cellular behavior based on single-molecule properties.

Ab 15.45 Uhr Kaffee, Tee und Kekse vor dem Hörsaal H13

**Organisation: Prof. Marti, Tel.: 23011
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