

Einladung

zur

Verleihung des Loschmidt-Preises 2010 der Chemisch-Physikalischen Gesellschaft

an

Dr. Mario Brameshuber

Johannes Kepler University of Linz, Institute for Biophysics, Linz
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mit anschließendem Vortrag des Preisträgers

"Addressing Plasma Membrane Structure with Fluorescence Microscopy"

am

Dienstag, 21. Juni 2011, um 17.30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4/Boltzmannngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock, rechts über den Gang zum Hintereingang des Hörsaals

Abstract:

The plasma membrane of biological cells has been hypothesized to contain nanoscopic lipid platforms, which are discussed in the context of "lipid rafts" or "membrane rafts". Based on biochemical and cell biological studies, rafts are believed to play a crucial role in many signaling processes. However, there is currently not much information on their size, shape, stability, surface density, composition and heterogeneity. We present here a method which allows for the first time the direct imaging of nanoscopic stable platforms with raft-like properties diffusing in the live cell plasma membrane. After showing the basic concepts of this technique by applying it to a cellular model system, I will present recent data obtained on T lymphocytes - an essential player of the adaptive immune responses during recognition of foreign antigens. We focused on the nanoscale association state of the mobile fraction of the T-cell antigen receptor (TCR) which binds to antigenic peptide-major histocompatibility complex (pMHC) molecules on antigen presenting cells. To get a more global picture of TCR distribution on the plasma membrane we applied high speed photo-activation localization microscopy (hsPALM) to resolve structures below the diffraction limit of the optical system. To access information on TCR movement we performed single molecule tracking experiments.

**Im Anschluss an die Veranstaltung bittet die Chemisch-Physikalische Gesellschaft
zu einem kleinen Buffet**

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