Colloquia in Membrane Transport

Venue: Technical University of Vienna, 1040 Vienna,

Wiedner Hauptstraße 8, "Freihaus", Lecture Hall 4

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Friday 22.01.2016 14:00 s.t. **Thomas Schmidt** (host: G. Schütz)

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"Receptor mobility in GPCR sensing and regulation"

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Abstract.

For the understanding of the regulation mechanisms of G protein-coupled receptor (GPCR) signaling it appears important to relate receptor output to it¹s mobility. We have investigated the interrelation between GPCR mobility and GPCR signal transduction in two different systems. In Ewing sarcoma-derived cells, mobility was related to the processes that are involved in regulating the function of the chemokine receptor CXCR4. In the slime-mold Dictyostelium discoideum, mobility appeared to relate to the initial amplification steps required for gradient sensing by the cAMP receptor, cAR1.
We used single-molecule epi-fluorescence microscopy to analyze in detail GPCR mobility and the subsequent behavior of the downstream G proteins. The comparison between the two systems investigated revealed, that receptor mobility closely followed the activation state of the GPCR. However, the relationship between mobility and function appears to depend on the particular system.