



Vortragsankündigung

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Es spricht: **Prof. Dr. Heberle**, Bielefeld University,
Biophysical Chemistry

Zeit: **Mittwoch, 18. Februar 2009 17:15 Uhr**

Ort: **TU Berlin**
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Thema: **Vectorial catalysis of membrane proteins on solid surfaces**

Abstract: Membrane proteins are the target of more than 50% of all drugs and are encoded by about 30% of the human genome. Electrophysiological techniques, like patch-clamp, unravelled many functional aspects of membrane proteins but usually suffer from poor structural sensitivity. We have developed Surface Enhanced Infrared Difference Absorption Spectroscopy (SEIDAS) to probe potential-induced structural changes of a protein on the level of a monolayer. A novel concept is introduced to incorporate membrane proteins into solid supported lipid bilayers in an orientated way via the affinity of the His-tag to the Ni-NTA terminated gold surface. Full functionality of the surface tethered cytochrome c oxidase is demonstrated by cyclic voltammetry after binding of the natural electron donor cytochrome c. General applicability of the methodological approach is shown by tethering photosystem II to the gold surface. In conjunction with hydrogenase, the basis is set towards a biomimetic system for H₂-production. Recently, we succeeded to record IR difference spectra of a monolayer of membrane protein under voltage-clamp conditions. This approach opens an avenue towards mechanistic studies of voltage-gated ion channels with unprecedented structural and temporal sensitivity.

Organisator: Prof. Dr. Bittl (FUB)

Gäste sind herzlich willkommen!

Prof. Dr. Matthias Drieß
Sprecher des Exzellenz-Clusters UniCat