

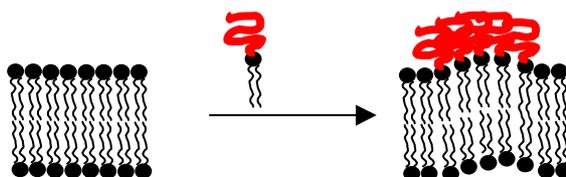
LIPID RAFTS ANF THEIRBIOLOGICAL SIGNIFICANCE : ENGINEERING LIPID ORDER AND DENSITY

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Biological membranes built from lipid bilayer membranes are highly valuable model systems for the description and investigation of membrane processes. Clustering effects, permeability studies as well as the influence of molecules onto the lipid-bilayer structure can be studied efficiently. The present talk will focus on two recent examples studying (a) the formation of raft-type lipid-conjugates on the surface of vesicles and planar bilayer membranes and (b) the action of small cationic polymers onto lipid bilayer membranes. In both cases vesicle systems serve as model membranes to study the distribution of lipid molecules by thermal, fluorescent and AFM-methods. A method controlling the density of surface receptors on vesicle surfaces relying on polymeric-lipid conjugates is presented.



[1] **Domain Formation in Lipid Bilayer Membranes : Control of Nanostructure by Molecular Architecture**, Wolfgang H. Binder,* Mirko Einzmann, Martin Knapp, Gottfried Köhler, *Monatshfte f. Chemie*, **2004**, 152(1), 13 – 21.

[2] **Rafts and Domains in Lipid Membranes**, Wolfgang H. Binder *, Veronique Barragan, Fredric M. Menger, *Angewandte Chemie Int. Ed.* **2003**, 5802 – 5827.

[3] **Phase Separation in Lipid-Polyoxazoline Conjugates : Synthesis and Domain Formation**, Mirko Einzmann and Wolfgang H. Binder* *Polymer Preprints* **2002**, 43(2), 1029 - 1030.

[4] **Cationic Surfactants with Counterions of Glucuronate Glycosides**, Fredric M. Menger, Wolfgang H. Binder, Jason S. Keiper, *Langmuir* **1997**, 13, 3247 – 3250.