

1. Les Amphiphiles que j'ai connus

Professeur Frederic M. MENGER

Department of Chemistry, Emory University, Atlanta, USA

"Les Amphiphiles que j'ai connus" depicts twenty-five amphiphilic systems synthesized in our laboratory while giving details about six of our favorite ones, including one that has yet to be published. The lecture in english is based on our article submitted to an issue of *Comptes-Rendus Chimie* honouring the late Pierre-Gilles de Gennes.

2. Membranes modèles hétérogènes : quelques idées physicochimiques pour mimer des phénomènes de membranes biologiques

Professeur Miglena ANGELOVA

Université Pierre & Marie Curie Paris 6 – INSERM UMR S 893 CDR St-Antoine, Paris
(à partir de Janvier 2009 : Laboratoire Matière & Systèmes Complexes,
UMR CNRS 7057 – Université Denis Diderot Paris 7)

Vesicles are closed membranes of spherical shape separating a water compartment from the bulk water in which the vesicle is suspended. Cell-sized or giant unilamellar vesicles (GUV), 10 to 200 μm in diameter, are quite efficiently prepared by the liposome electroformation method. Recently the method was used for preparation of GUVs containing raft-like domains visible under optical microscope. The raft-like domain containing GUVs permeated studies of the role of membrane heterogeneity and compartmentalisation in the lipid membrane interactions, shape and topology transformations. Some questions regarding biological cell structure and functions evoked in our recent studies will be presented: the controversial regarding biological "rafts" and the preparation of detergent resistant membranes (DRM), the phospholipase A_2 activity, the mechanisms of cholesterol extraction from membrane by the high density lipoproteins (HDL), the morphology and the dynamics of mitochondrial cristae. At the end, I shall present our forthcoming project.

Figure: Detergents induce raft-like domains budding and fission from giant unilamellar heterogeneous vesicles. A direct microscopy observation of two budding events. GUV: PC/PC*/SM/Chol (55:5:20:20) at 34°C, bar = 20 μm . Detergent: BRIJ 98. PC*=C12NBD-PC.

Reference: Staneva G, Seigneuret M, Koumanov K, Trugnan G, Angelova MI (2005) *Chem Phys Lip* 136:55-66

