

# Microcalorimetric studies of liposomal and micellar systems

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Microcalorimetry can provide a wealth of insight into the behaviour of micellar and liposomal systems interacting with each other or with drugs, peptides, and other additives. Isothermal titration calorimetry reveals the thermodynamics of micelle formation, water-membrane partitioning of an additive, membrane permeation by the additive, additive-induced domain formation, and membrane disintegration or solubilisation. Differential scanning calorimetry focuses on thermotropic transitions (between subgel, gel, ripple, fluid, and non-lamellar phases) but provides also information about additive binding or micelle formation. Pressure perturbation calorimetry is a very interesting and sometimes urgently needed, alternative method to detect thermotropic changes. In addition, it yields a detailed description of volume changes that, in turn, characterizes internal packing of colloids and macromolecules as well as hydration phenomena. The talk will give an overview of the protocols to address all these problems and examples of previous applications.