

## **Surface functionalization of liposomes for cellular and subcellular targeting**

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The several advantages that liposomes offer as drug release systems are well known by now, including a wide range of physico-chemical and biophysical properties that can be modified to control biological characteristics. This allows different surface functionalization of liposomes with a variety of approaches that can play a key role in overcoming cellular barriers and improve the delivery of various drugs and cargo. Herein studies performed on cationic liposomes will be discussed, with particular regard to how protocol of pegylation and stereochemistry of gemini surfactant influence both the interaction with tumor cell membrane and the subcellular fate of liposomal formulations. Moreover, results of investigations on liposome funzionalization will be reported. Glicolipid ligands can ascribe specificity of targeting toward cancer cells overexpressing GLUT family; TPP-bolaamphiphiles appear to be suitable for the formulation of novel mitochondriotropic liposomes.