Giant unilamellar vesicles : an efficient membrane biophysical tool and its application in drug delivery studies

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1. “Giant unilamellar vesicles are proposed as a biophysical platform in this thesis because they are readily observable by optical microscopy and the size and membrane curvature are similar to cells.”
   Chapter I in this thesis

2. “The DexPEG hydrogel system is a powerful method that can be exploited to grow vesicles for applications such as membrane interactions, drug delivery, molecular recognition, lipid raft organization, and membrane fusion studies.”
   Chapter II in this thesis

3. “The high swelling capacity of the DexPEG hydrogel promotes the formation of high yields of spherical, free-floating giant vesicles.”
   Chapter II in this thesis

4. “The production of giant unilamellar vesicles can be controlled by modulating the DexPEG hydrogel physicochemical properties.”
   Chapter III in this thesis

5. “Ion transport can be revealed and quantified through direct observation of giant unilamellar vesicles, which are 20-60 μm in diameter and readily imaged by light microscopy.”
   Chapter V in this thesis

6. “A supramolecular approach is used to solve the deliverability problem of a lipophilic anionophore, with powerful anion transport activity by leakage-free membrane fusion between cell-sized giant vesicles and liposomes.”
   Chapter VI in this thesis

7. “Coiled-coil driven membrane fusion is a highly efficient system to deliver anionophores to target cell membranes.”
   Chapter VI in this thesis

8. “Giant unilamellar vesicles can be compartmentalized with the use of DexPEG hydrogels and studied as individual entities.”
   Chapter VIII in this thesis

9. “This work covers some biophysical aspects and applications of giant unilamellar vesicles applied at relevant salt concentrations and also shows that there is room for other studies.”
   Chapter VIII in this thesis