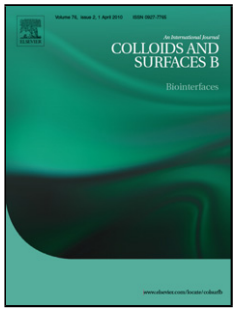

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PREPARATION AND CHARACTERIZATION OF QUERCETIN-LOADED LIPID LIQUID CRYSTALLINE SYSTEMS

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Abstract

The aim of the present study was to investigate mixtures of soy phosphatidylcholine (SPC) and glycerol dioleate (GDO) as encapsulation matrices for antioxidant quercetin. The effects of quercetin loading into non-aqueous formulations, non-lamellar liquid crystalline phases and their colloidal dispersions were studied by using synchrotron small angle X-ray diffraction, dynamic light scattering, cryogenic electron microscopy and high performance liquid chromatography. Quercetin incorporation is discussed in the context of lipid aggregation behavior, self-assembled nanostructure and chemical stability. The obtained results show that SPC/GDO-based formulations can incorporate relatively high amounts of quercetin and serve as liquid crystalline delivery vehicles in the form of bulk phases or colloidal dispersions.

Keywords: