

SUPERPARAMAGNETIC MICELLES

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In this study, we have introduced a new type of superparamagnetic micelles. These micelles contain monodisperse superparamagnetic iron oxide nanoparticle (SPIONs) which were coated with a dense hydrophobic shell. These hydrophobic particles were encapsulated with a monolayer of PEG 2000-phospholipid. These micelles exhibited excellent colloidal stability at different temperature (20-80°C), over the extended period and in the presence of plasma proteins (e.g. bovine serum albumin) in physiological media. Superparamagnetic micelles in this study were biocompatible and did not affect cell (Hek, RAW) viability. In vitro MRI imaging indicated superparamagnetic micelles showed high r_2 relaxivity.