

Supramolecular magnetogels as nanocarriers for multimodal cancer therapy

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The magnetogels afford enhanced properties and applications into magnetic resonance imaging, biosensing, hyperthermia and as a template material [1]. Self-assembled biocompatible peptide-based hydrogelators have shown promising results as nanocarriers for antitumor drugs [2-6]. The combination with magnetic nanoparticles will synergistically enhance anticancer therapeutic strategies on the desired target through hyperthermia [1]. Superparamagnetic manganese ferrite (MnFe₂O₄) nanoparticles were successfully incorporated into self-assembled peptide-derived hydrogels. The magnetogels were evaluated as drug nanocarriers through fluorescence-based techniques (fluorescence emission, FRET and fluorescence anisotropy). Structural properties were characterized by Fourier-transform infrared spectroscopy and transmission electron microscopy. The developed magnetic nanosystems exhibited promising results for application in multimodal cancer therapy.

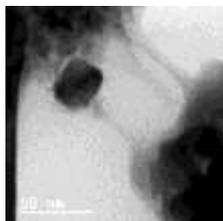


Figure 1. Transmission electron microscopy of a magnetogel.

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