

Biocompatibility, MR imaging and targeted drug delivery of a rattle-type magnetic mesoporous silica nanosphere system conjugated with PEG and cancer-cell-specific ligands

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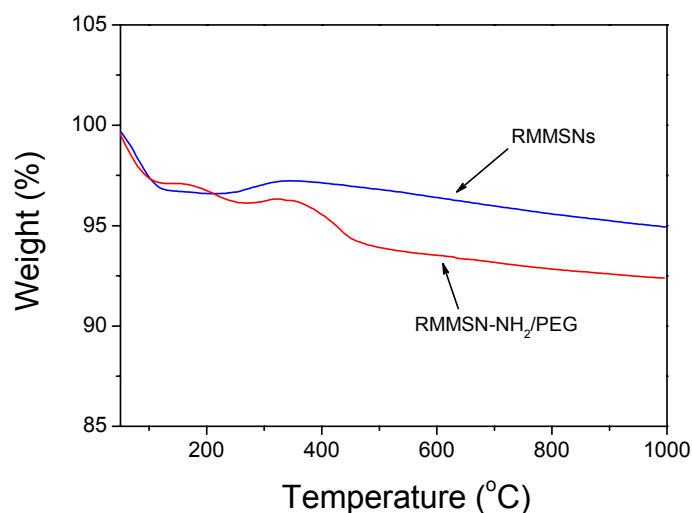


Fig. S1. TGA weight loss curves of RMMSNs and RMMSN-NH₂/PEG. The weight losses at 100-280 °C (1.0%) and 320-500 °C (2.5%) were mainly due to the decompositions of aminopropyl groups and PEG chains^{1,2}, though it is somewhat not so obvious due to the weight gain at 280-320 °C by the oxidation of Fe₃O₄ cores.

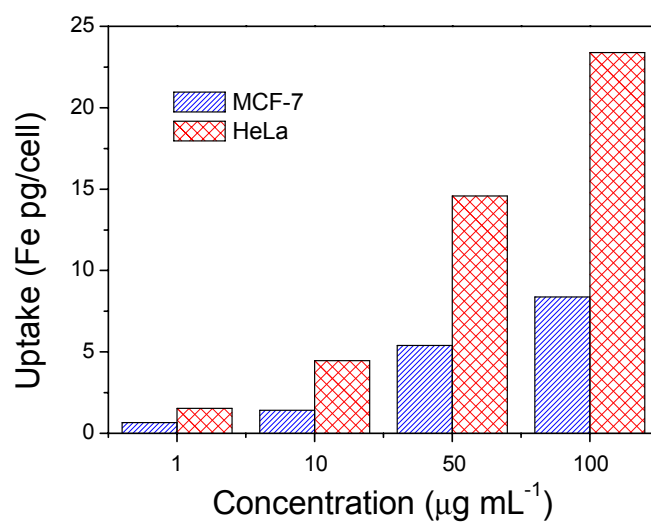


Fig. S2. The iron uptake content in FR(-) MCF-7 and FR(+) HeLa cells 3 h after incubation with different concentration of RMMSN-PEG/FA in a folate-free RPMI 1640 medium.

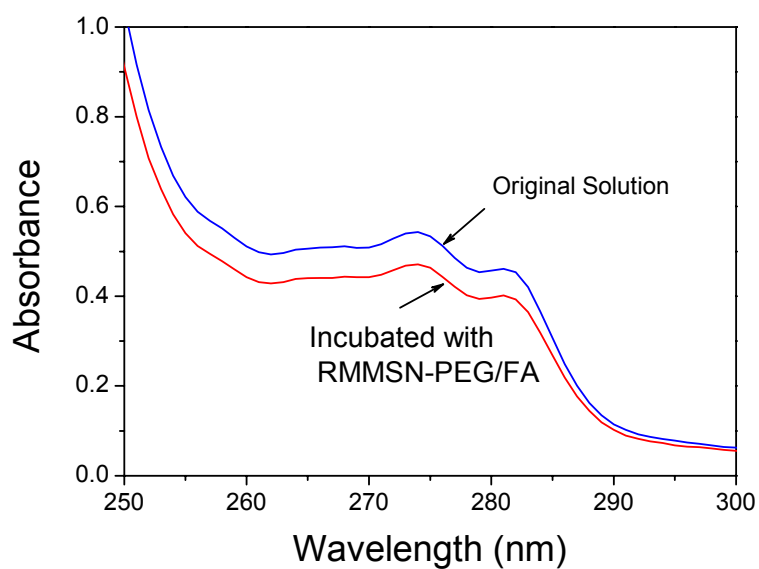


Fig. S3. UV-vis absorbance spectra of DOC solutions before and after interaction with RMMSN-PEG/FA.

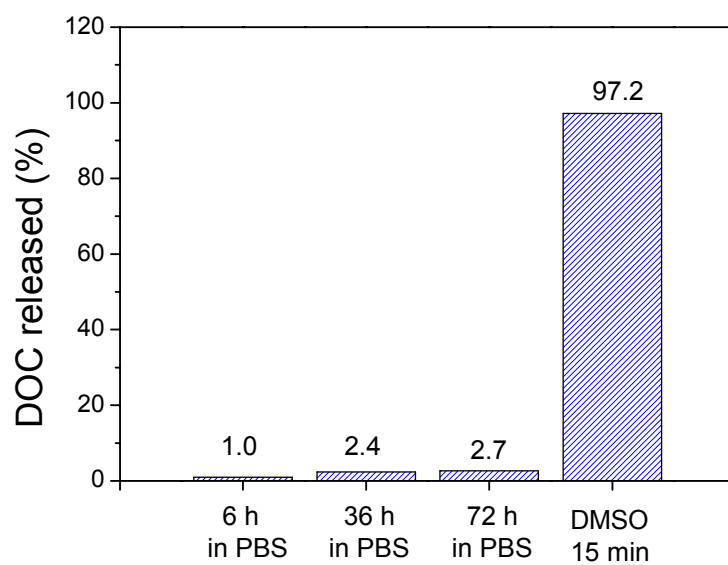


Fig. S4 The release amounts of DOC measured by UV-vis absorption when the RPF-DOC (10.0 mg) was dispersed in PBS (pH 7.4, 10 mL) and DMSO (10 mL), respectively.

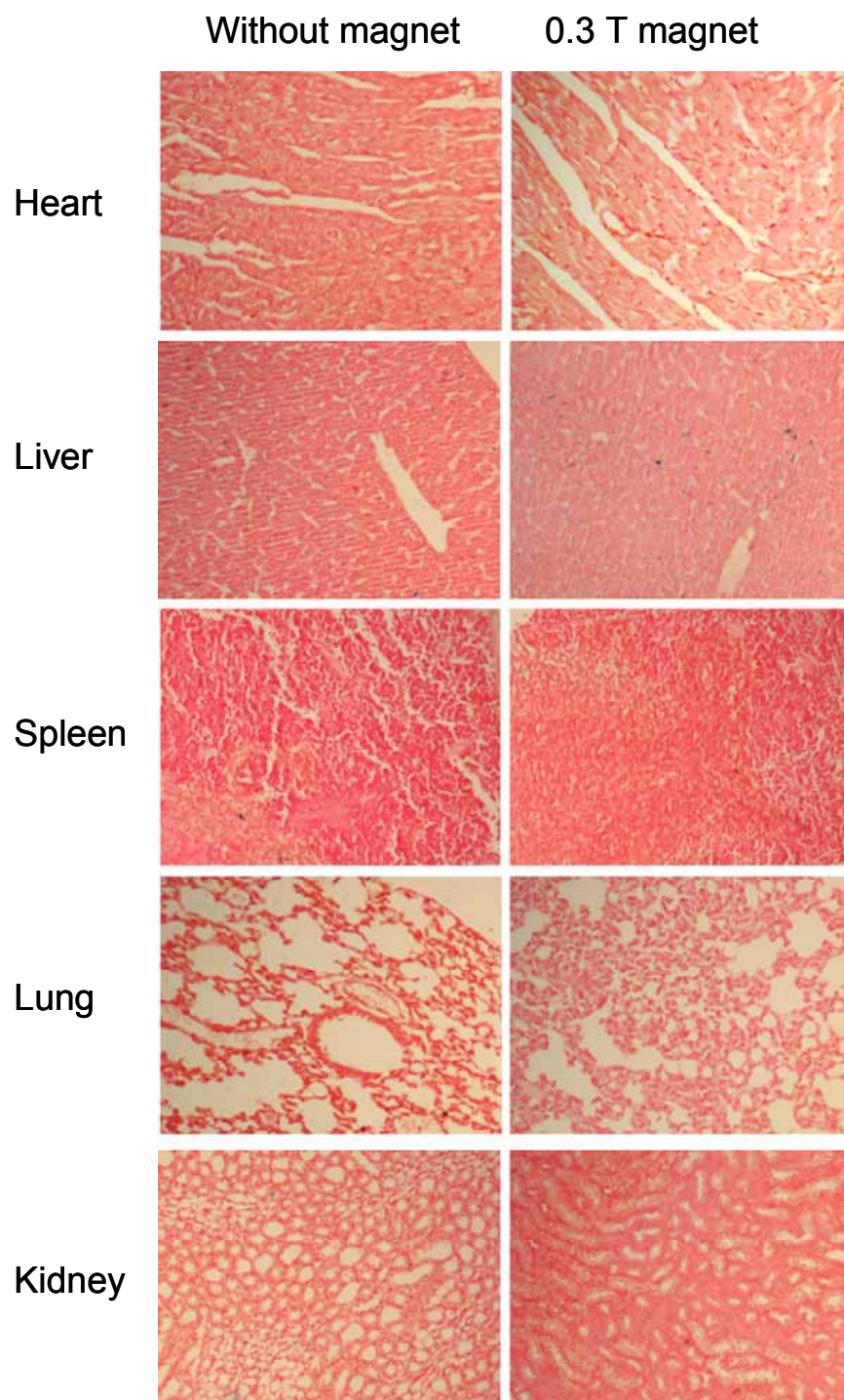


Fig. S5. Prussian blue-stained sections of mice (magnification: $\times 100$).

Table S1. Mean weights (g) of organ samples (n = 5 for control and 2 h animal groups with or without a magnet at the liver)

Animal groups	Heart	Liver	Spleen	Lung	Kidney
Control	0.10±0.01	0.95±0.11	0.11±0.01	0.17±0.01	0.26±0.03
2 h	0.11±0.01	1.03±0.08	0.12±0.02	0.16±0.01	0.26±0.01
2 h (Magnet)	0.10±0.01	1.06±0.12	0.12±0.01	0.18±0.01	0.27±0.03

References

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- 2 H. M. Xiong, D. P. Liu, H. Zhang, and J. S. Chen, *J. Mater. Chem.*, 2004, **14**, 2775-2780.