

Supplementary Information

Multifunctional Magnetic Mesoporous Silica Nanoagents for *in vivo* Enzyme-Responsive Drug Delivery and MR Imaging

Erdong Li¹, Yanmei Yang^{2,3*}, Guangyu Hao⁴, Xuan Yi², Shaohua Zhang², Yue Pan^{1,5*}, Bengang Xing⁶ and Mingyuan Gao²

1 State and Local Joint Engineering Laboratory for Novel Functional Polymeric Materials, College of Chemistry, Chemical Engineering and Materials Science, Soochow University, Suzhou, China. E-mail: panyue@suda.edu.cn.

2 State Key Laboratory of Radiation Medicine and Protection, School for Radiological and Interdisciplinary Sciences (RAD-X) and Collaborative Innovation Center of Radiological Medicine of Jiangsu Higher Education Institutions, Soochow University, Suzhou, China. yym@suda.edu.cn

3 College of Chemistry, Chemical Engineering and Materials Science, Collaborative Innovation Center of Functionalized Probes for Chemical Imaging in Universities of Shandong, Key Laboratory of Molecular and Nano Probes, Ministry of Education, Institute of Biomedical Sciences, Shandong Normal University, Jinan 250014, China.

4 Imaging Center, The First Affiliated Hospital of Soochow University, Suzhou, China.

5 Guangdong Provincial Key Laboratory of Malignant Tumor Epigenetics and Gene Regulation, Sun Yat-Sen Memorial Hospital, Sun Yat-Sen University, Guangzhou, 510120, China.

6 Division of Chemistry & Biological Chemistry, School of Physical & Mathematical Sciences, Nanyang Technological University, Singapore 637371.

Supplementary Figures

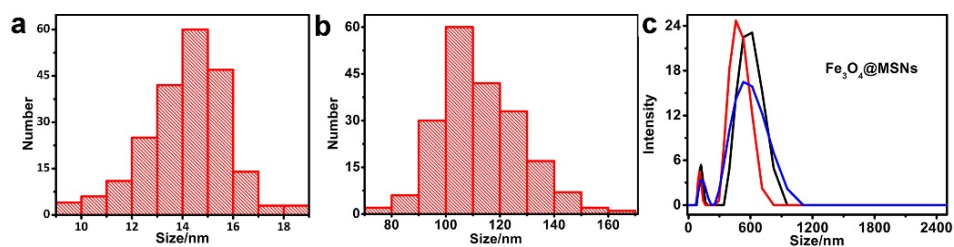


Figure S1. Diameter statistics of (a) Fe_3O_4 and (b) $\text{Fe}_3\text{O}_4@MSNs$. (c) DLS of $\text{Fe}_3\text{O}_4@MSNs$ nanoagents in PBS.

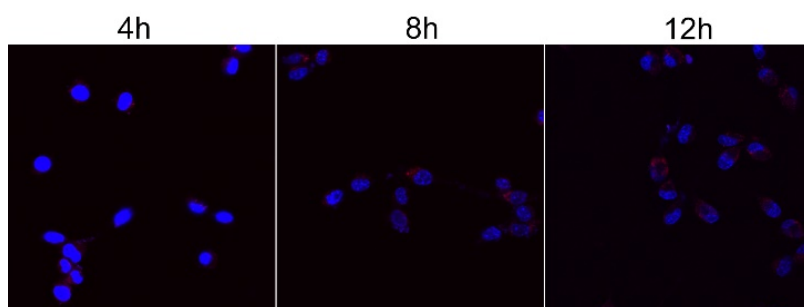


Figure S2. Confocal images of NIH/3T3 cells incubated with peptide- $\text{Fe}_3\text{O}_4@MSNs/DOX$ for different time (4 h, 8 h, 12 h).

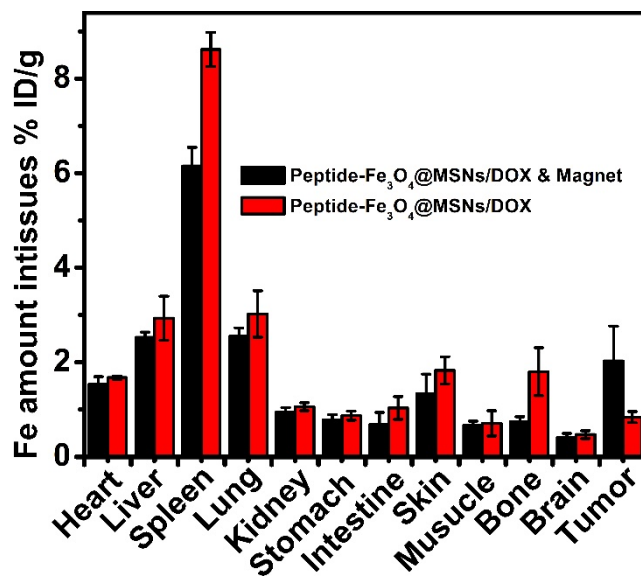


Figure S3. Biodistribution of peptide- $\text{Fe}_3\text{O}_4@MSNs/DOX$ in mice bearing HT-1080 tumors.

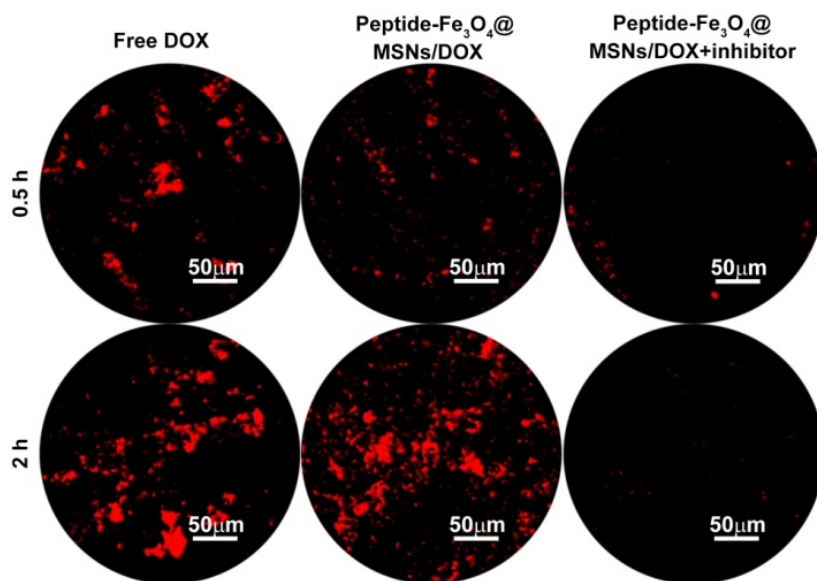


Figure S4. *In vivo* confocal images of tumor site based on the red fluorescence of DOX.