

## Supporting Information

### Dual-core@shell-structured $\text{Fe}_3\text{O}_4\text{-NaYF}_4\text{@TiO}_2$

### Nanocomposites as Magnetic Targeting Drug Carrier for Bioimaging and Combined Chemo-sonodynamic Therapy

*Song Shen, Xiaomeng Guo, Lin Wu, Meng Wang, Xinshi Wang, Fenfen Kong, Haijun Shen, Meng Xie, Yanru Ge\* and Yi Jin\**

#### SUPPLEMENTARY FIGURES

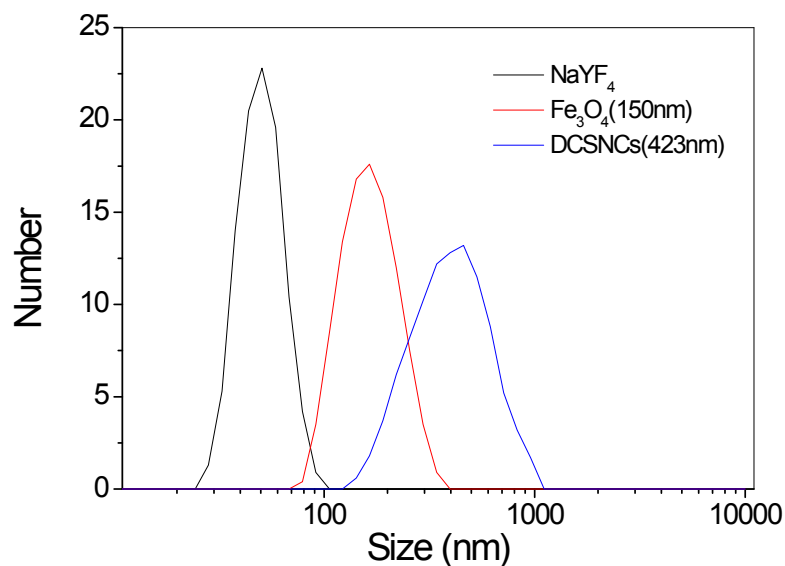


Figure S1. Dynamic light scattering of the  $\text{NaYF}_4$  (PDI=0.038),  $\text{Fe}_3\text{O}_4$  (PDI=0.057) and DCSNCs (PDI=0.186).

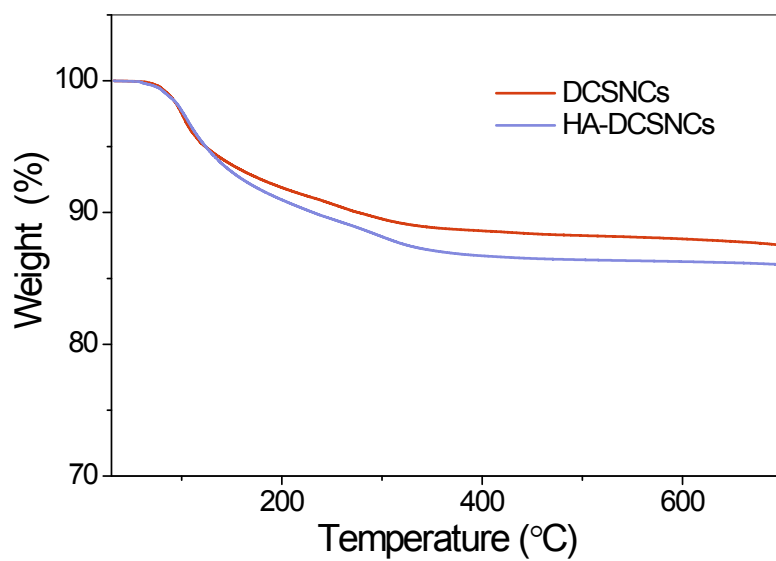


Figure S2. Thermogravimetric (TG) curves of the DCSNCs and HA-DCSNCs particles.

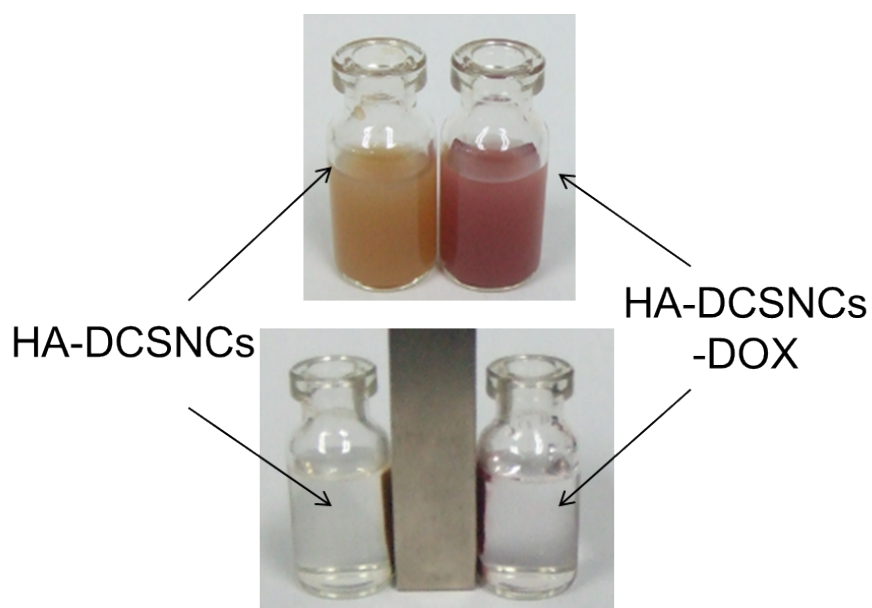


Figure S3. Photographs of the HA-DCSNCs and HA-DCSNCs-DOX aqueous solution with and without magnet.

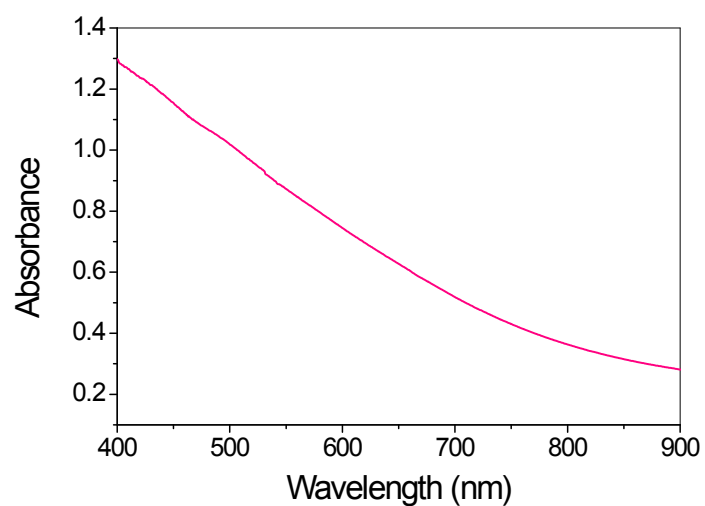


Figure S4. UV-Vis absorbance spectra of  $\text{Fe}_3\text{O}_4$  solution.

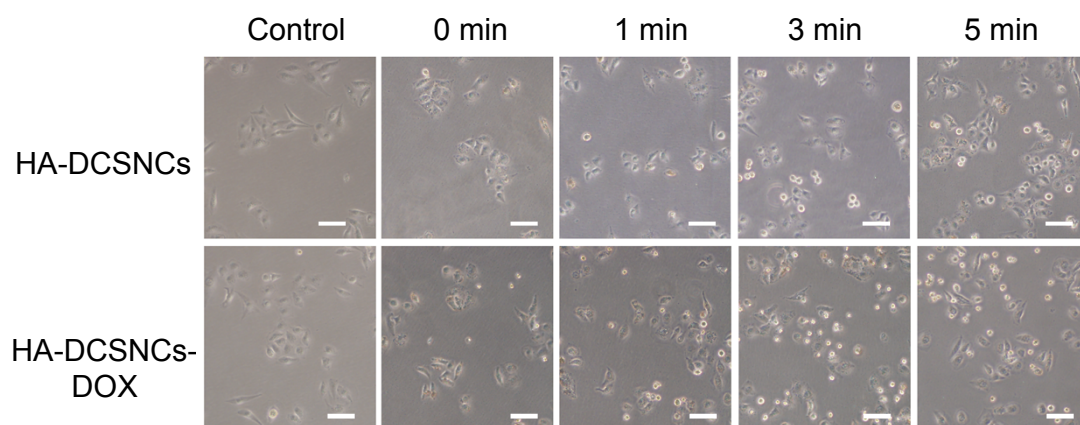


Figure S5. Morphology of MCF-7 cells treated with HA-DCSNCs and then irradiated by US at intensities of  $1.0 \text{ W}\cdot\text{cm}^{-2}$  for 0.5 min, 1 min, 3 min and 5 min, the scale bar is  $100 \mu\text{m}$ .

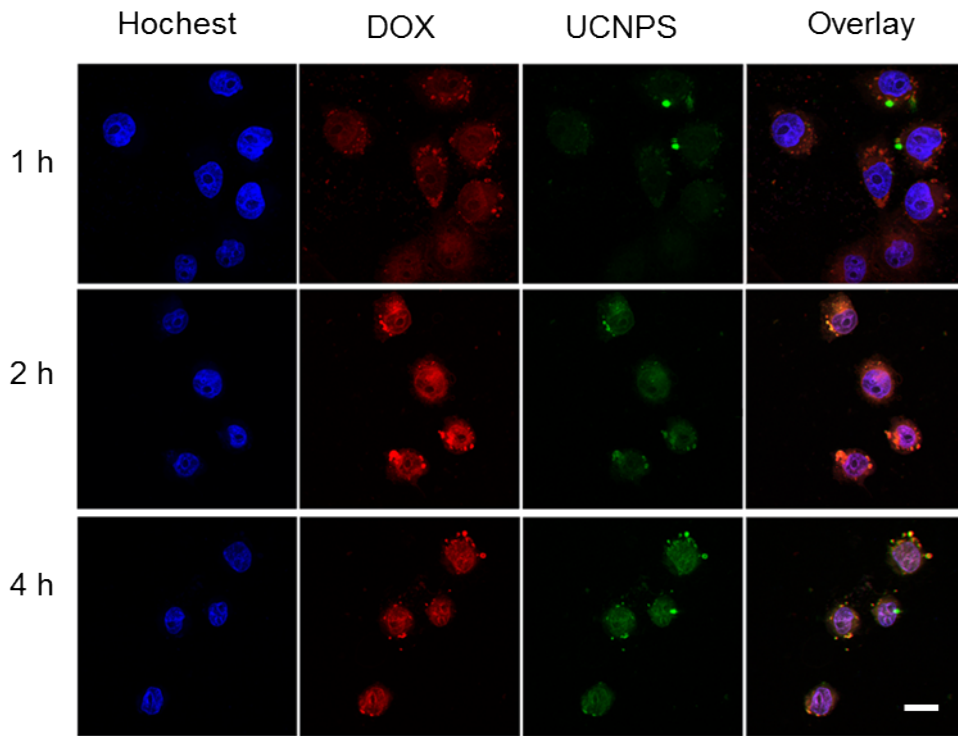


Figure S6. Uptake of HA-DCSNCs-DOX in MCF-7 cells with different incubation time. The scale bar is 20  $\mu\text{m}$ .

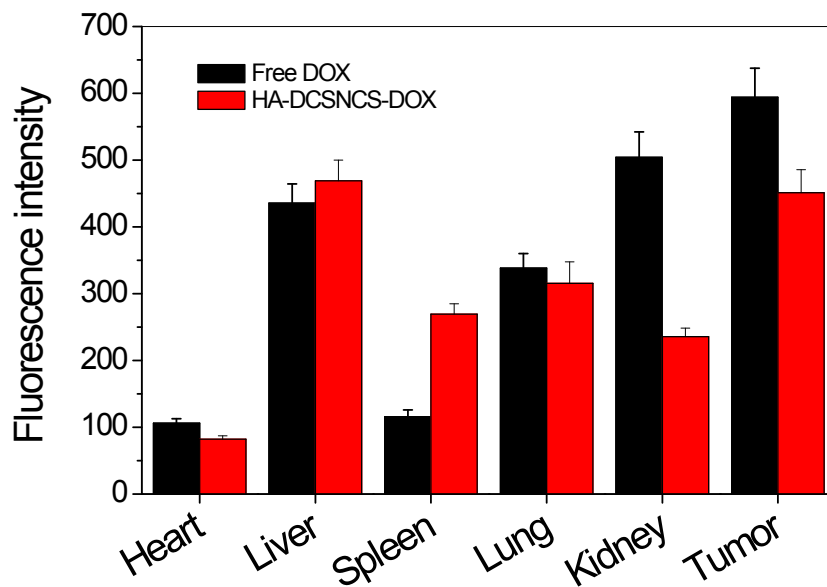


Figure S7. Fluorescence intensity of DOX in various organs (heart, liver, spleen, lung, kidney and tumor) 12 h after injection of free DOX and HA-DCSNCs-DOX respectively. Results are

expressed as means  $\pm$  the standard error ( n = 3).

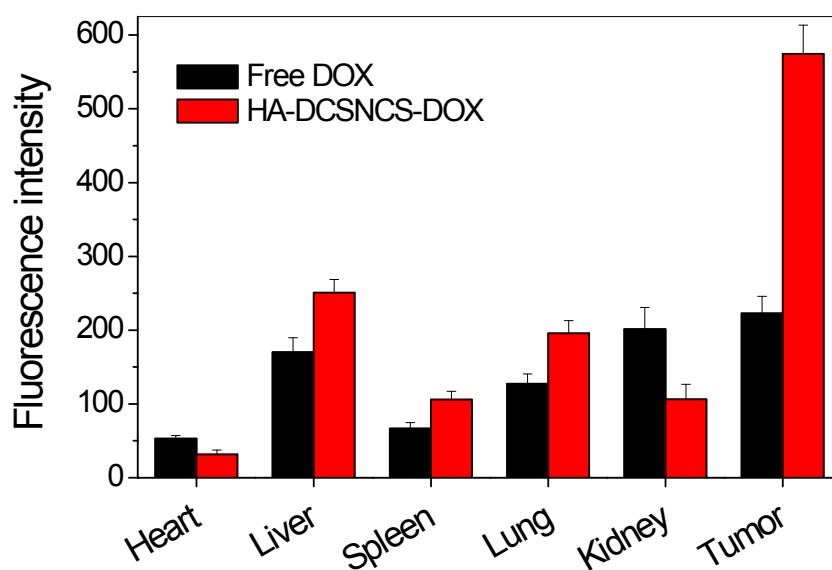


Figure S8. Fluorescence intensity of DOX in various organs (heart, liver, spleen, lung, kidney and tumor) 48 h after injection of free DOX and HA-DCSNCS-DOX respectively. Results are expressed as means  $\pm$  the standard error ( n = 3).

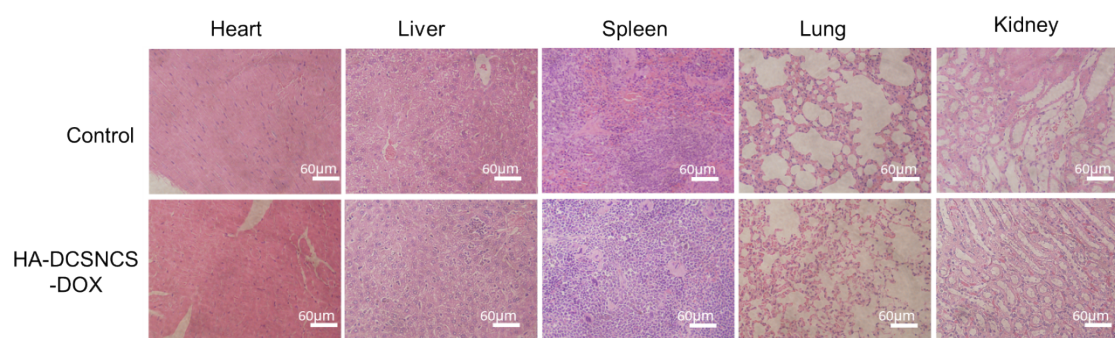


Figure S9. H&E stained images of heart, liver, spleen, lung and kidney collected from HA-DCSNCS-DOX-injected