

Supplementary Information

An emerging dual collaborative strategy for high-performance tumor therapy by mesoporous silica nanotubes loading Mn_3O_4

Yi Zhang ^{a,b†}, Jieqiong Tan ^{c†}, Mei Long ^{a,b†}, Huaming Yang ^{a,b,d*}, Shuwen Yuan ^e, Aidong Tang ^f, Shi Chang ^g, Yuehua Hu ^{a,b*}

^a *Department of Inorganic Materials, School of Minerals Processing and Bioengineering, Central South University, Changsha 410083, China*

^b *Hunan Key Lab of Mineral Materials and Application, Central South University, Changsha 410083, China*

^c *State Key Lab of Medical Genetics, School of Life Science, Central South University, Changsha 410078, China*

^d *State Key Lab of Powder Metallurgy, Central South University, Changsha 410083, China*

^e *Department of Radiology, The Second Xiangya Hospital, Central South University, Changsha 410011, China*

^f *School of Chemistry and Chemical Engineering, Central South University, Changsha 410083, China*

^g *Xiangya Hospital, Central South University, Changsha 410078, China*

^{*} *Corresponding author, Email: hmyang@csu.edu.cn, hyh@csu.edu.cn, Fax: +86-731-88830549, Tel.: +86-731-88710804*

[†] These authors contributed equally to this work.

Figures captions

Fig. S1 XRD patterns, XPS survey spectra and Nitrogen adsorption-desorption isotherms of HNTs, silicon source and SiNTs.

Fig. S2 Nitrogen adsorption-desorption isotherm and corresponding BJH pore size distribution, XRD patterns and XPS survey spectra of Mn_3O_4 -SiNTs, and UV-vis spectra of DOX before and after Mn_3O_4 -SiNTs loading.

Fig. S3 Viabilities of Hela cells (a) when incubated with DOX at different concentrations as assessed by MTT protocol. (b) Bio-TEM images of Hela cells after incubation with Mn_3O_4 -SiNTs. (c) DAPI image of Hela cells at different Mn_3O_4 -SiNTs concentrations.

Fig. S4 FITC, DAPI and Bright images of DOX- Mn_3O_4 -SiNTs with different concentrations.

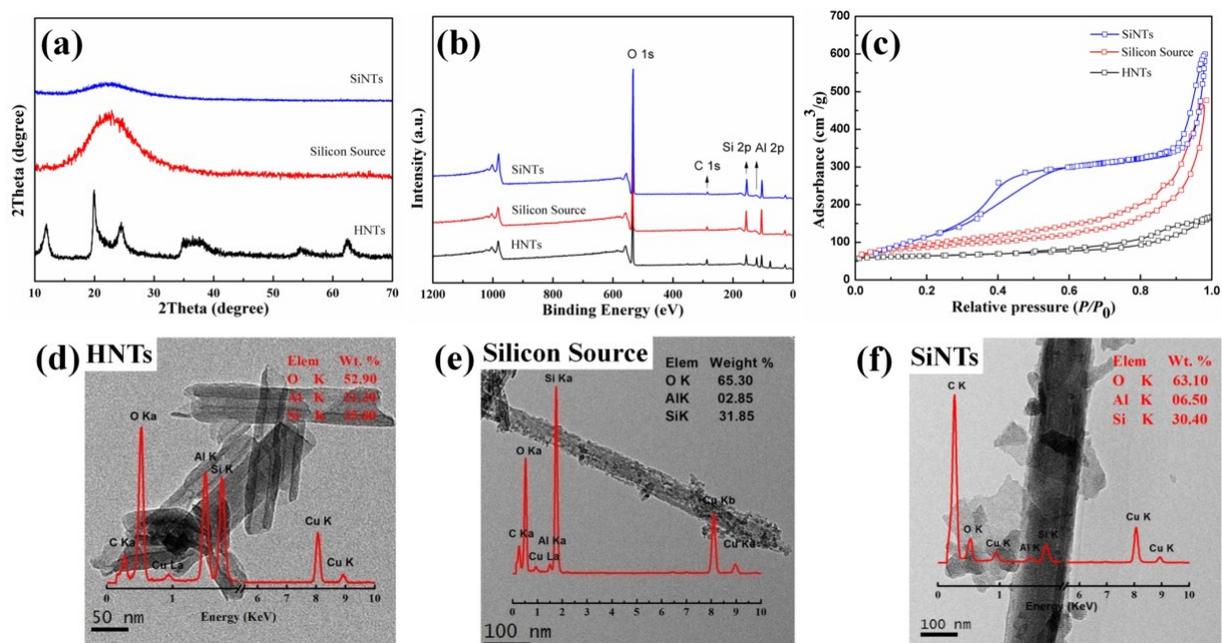


Fig. S1 XRD patterns, XPS survey spectra, Nitrogen adsorption-desorption isotherms and TEM images of HNTs, silicon source and SiNTs.

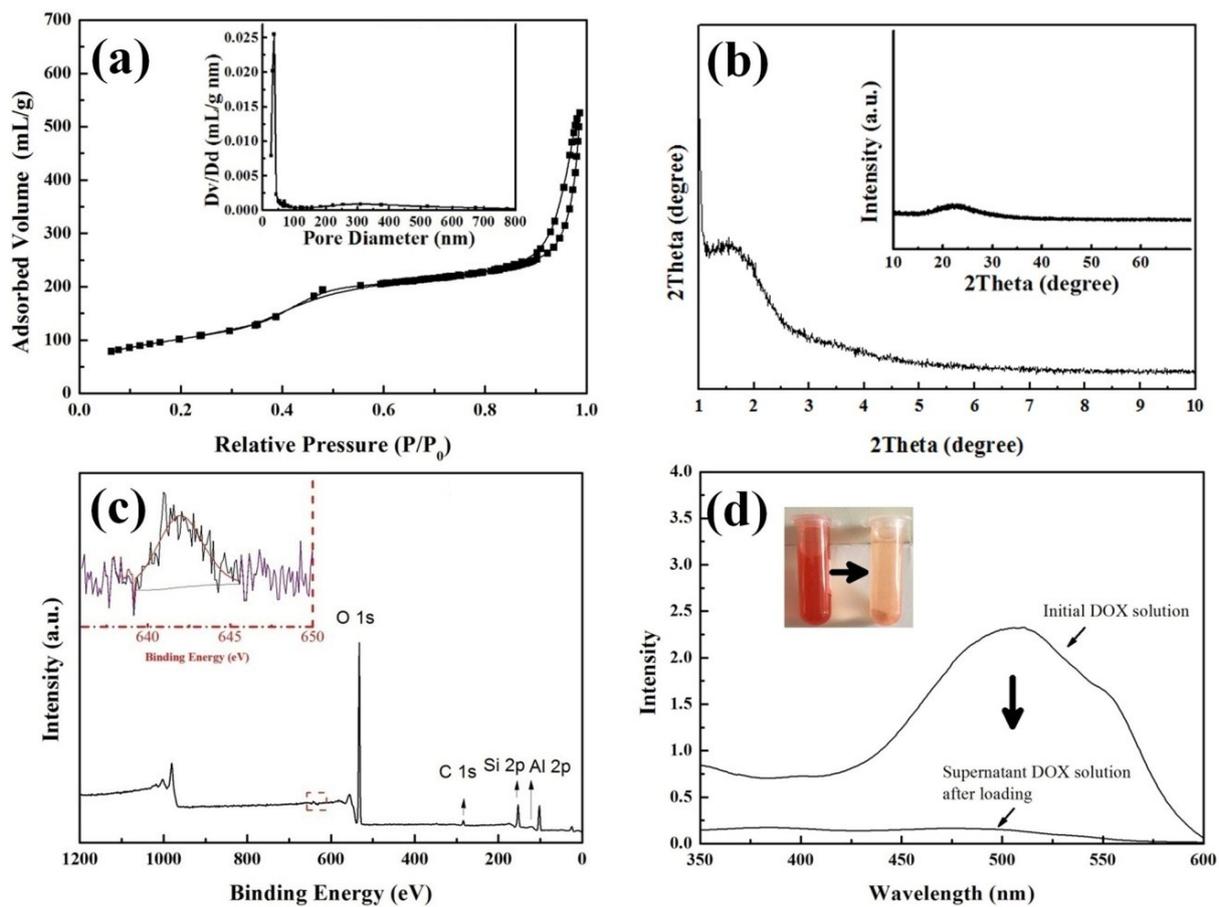


Fig. S2 (a) Nitrogen adsorption-desorption isotherm and corresponding BJH pore size distribution, (b) XRD patterns and (c) XPS survey spectra of Mn₃O₄-SiNTs, and (d) UV-vis spectra of DOX before and after Mn₃O₄-SiNTs loading.

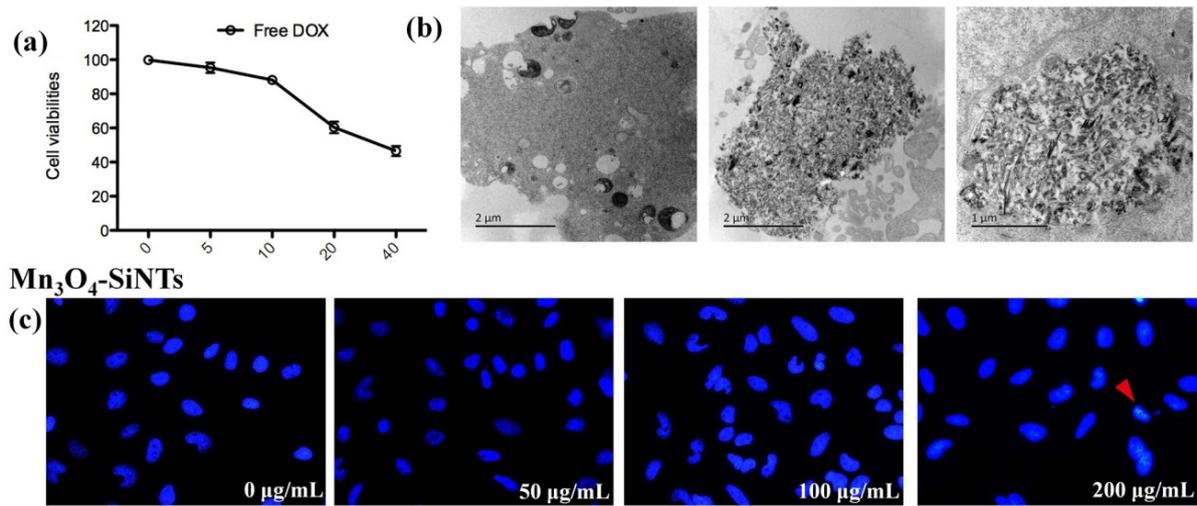


Fig. S3 Viabilities of HeLa cells (a) when incubated with DOX at different concentrations as assessed by MTT protocol. (b) Bio-TEM images of HeLa cells after incubation with Mn_3O_4 -SiNTs. (c) DAPI image of HeLa cells at different Mn_3O_4 -SiNTs concentrations.

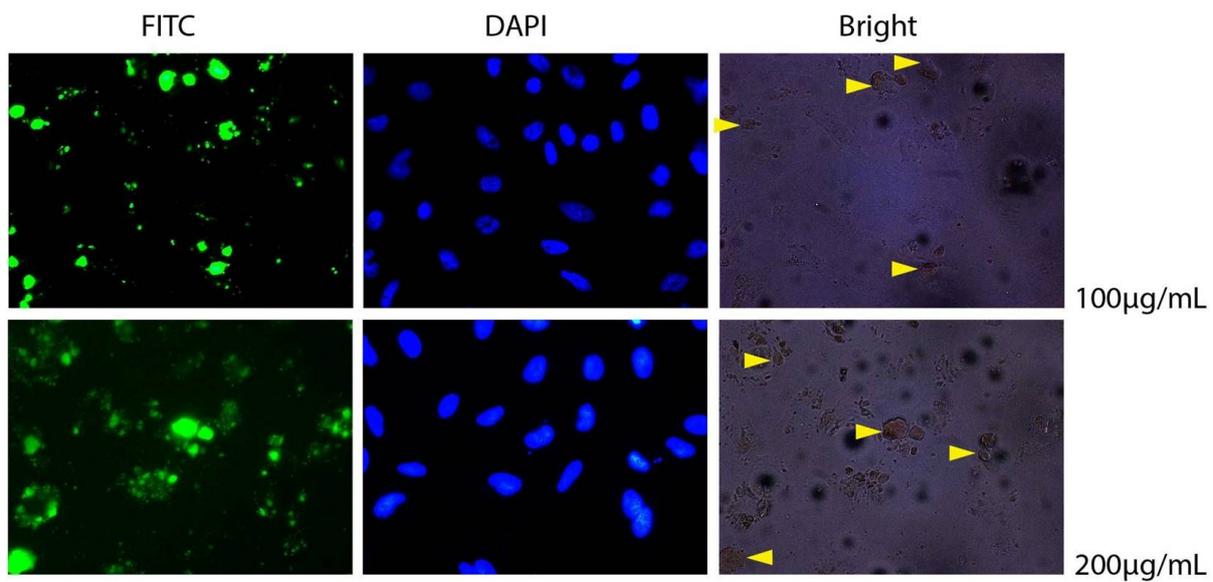


Fig. S4 FITC, DAPI and Bright images of DOX-Mn₃O₄-SiNTs with different concentrations.