

Supporting Information

An Integrated Nanoplatfrom for Theranostics via Multifunctional Core/Shell Ferrite Nanocubes

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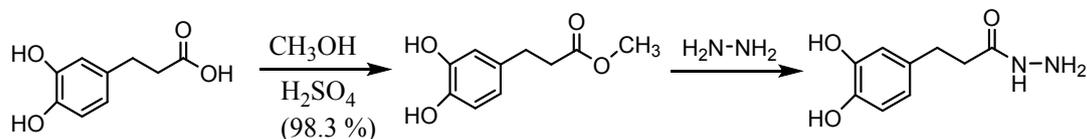
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Synthesis of 3-(3,4-Dihydroxyphenyl)propanehydrazide

The 3-(3,4-dihydroxyphenyl) propanoic acid (5 g) dissolved in methanol (20 mL), and concentrated sulphuric acid (98%, 1 mL) was added. Then the mixture was heated to reflux for 12 h and cooled to room temperature. The prepared product was reacted with hydrazine hydrate (2 mL). The final product was dried in vacuum oven and stored for further use.



Characterization

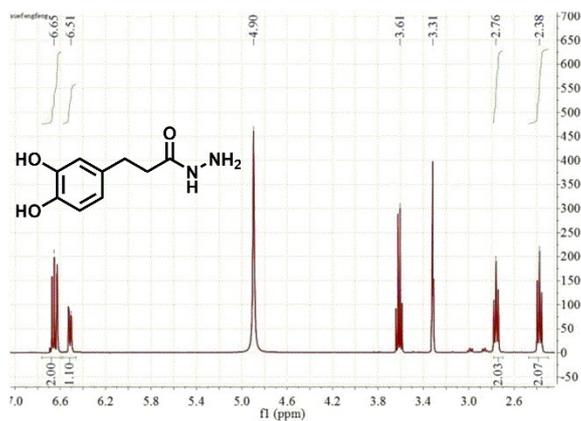


Figure S1. ^1H NMR spectrum of and 3-(3,4-dihydroxyphenyl) propanehydrazide.

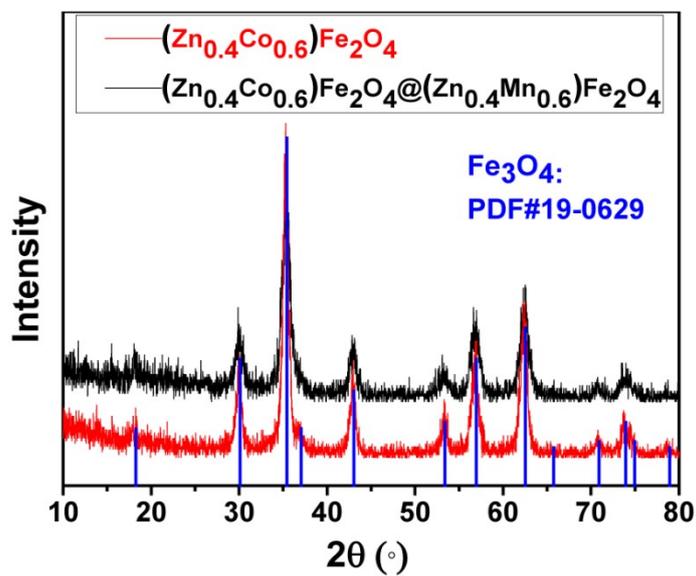


Figure S2. The XRD pattern of the core of MNPs and MNPs.

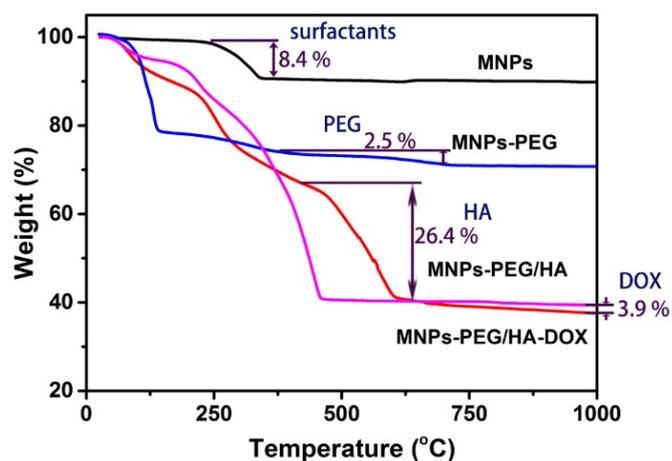


Figure S3. The thermogravimetric analysis (TGA) of MNPs, MNPs-PEG, MNPs-PEG/HA, and MNPs-PEG/HA-DOX, respectively.

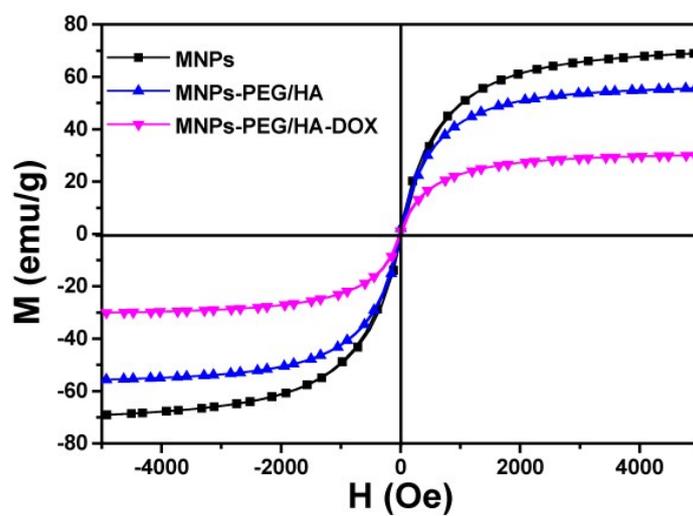


Figure S4. The hysteresis loops of MNPs, MNPs-PEG/HA, and MNPs-PEG/HA-DOX, respectively.

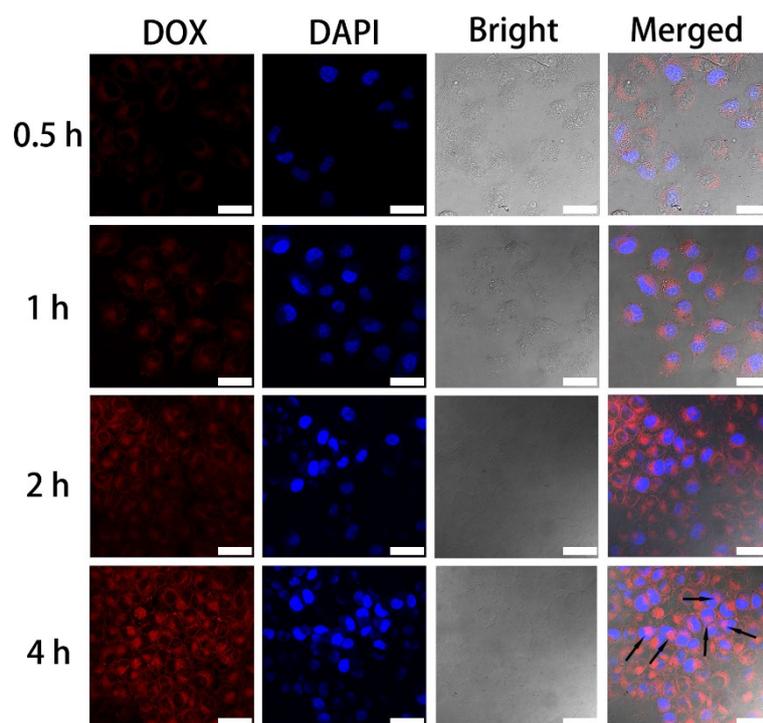


Figure S5. Confocal fluorescence images of HeLa cells after the incubation with MNPs-PEG/HA-DOX (100 $\mu\text{g}/\text{mL}$) with the different incubation time. Red and blue colors represent DOX fluorescence and DAPI stained cell nuclei, respectively.