Electronic supplementary information (ESI)

Photo-responsive magnetic mesoporous silica nanocomposites for the magnetic targeted cancer therapy

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Supplementary Figures

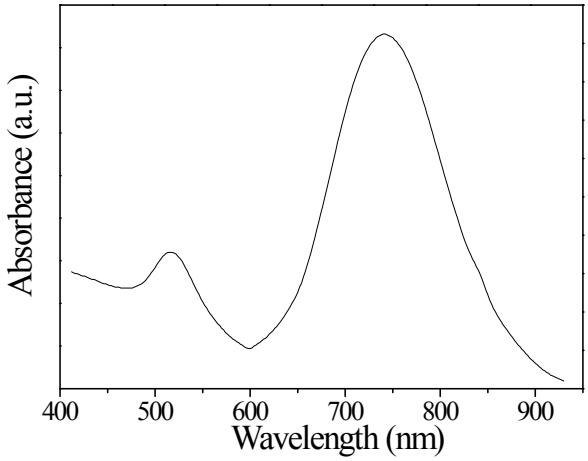

Fig. S1 UV-vis spectra of Au NRs.

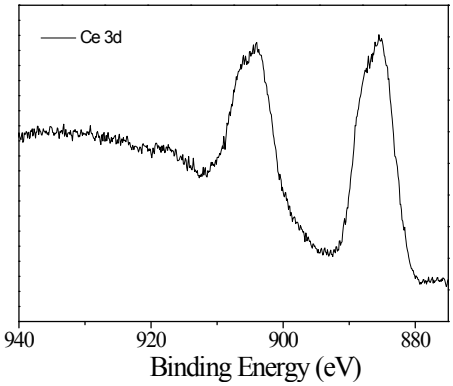

Fig. S2 X-Ray photon spectroscopy (XPS) of Au@SiO_2/Ce.

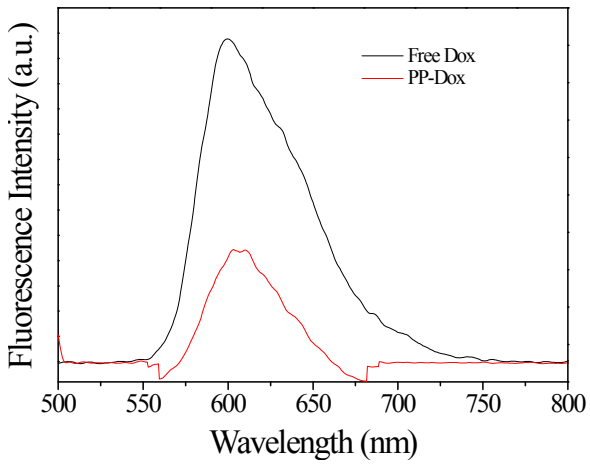

Fig. S3 Fluorescence spectra of free DOX and PP-Dox nanocomposites in pH=7.4 aqueous solution.

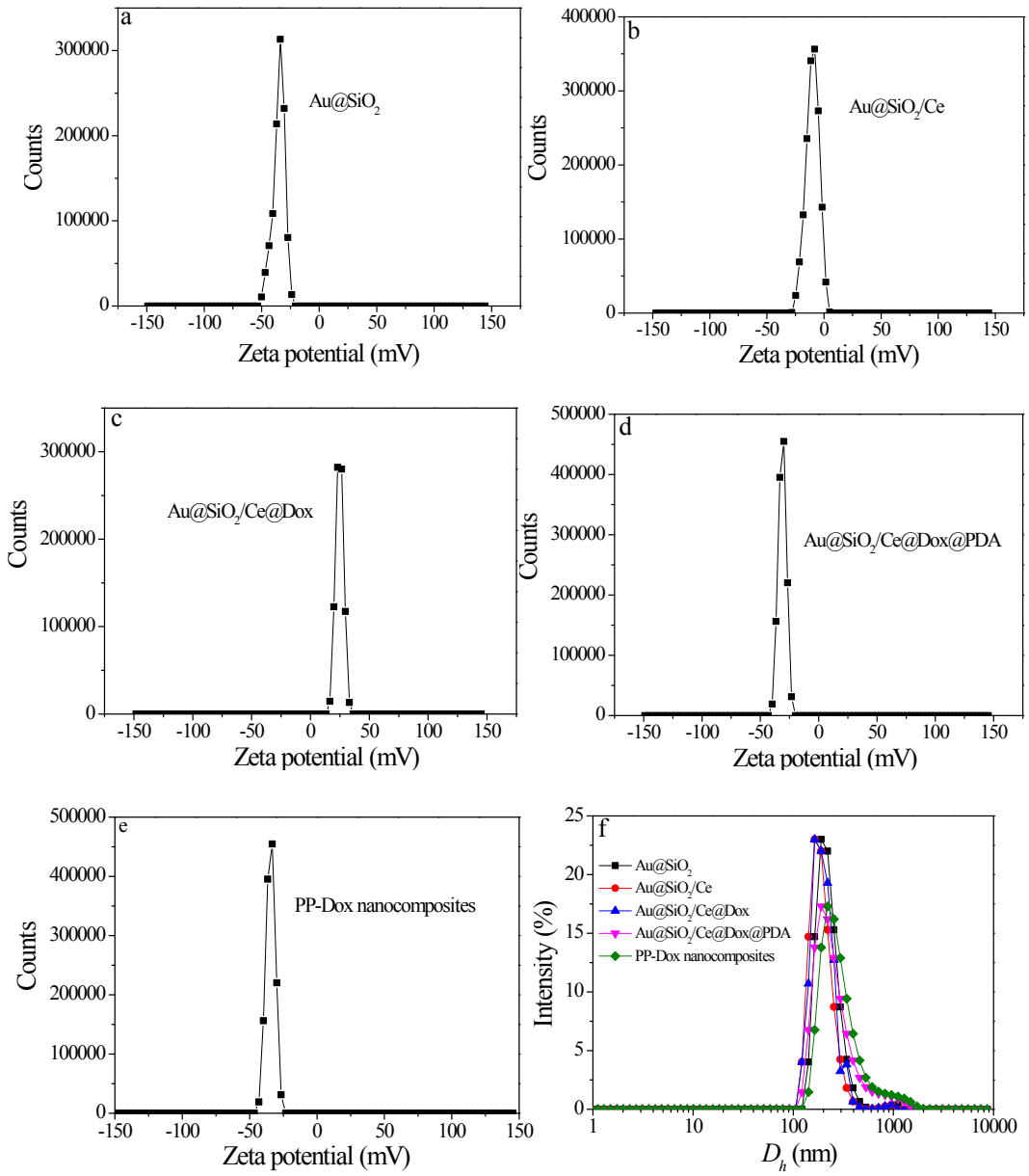

Fig. S4 Zeta potential of (a) $Au@SiO_2$, (b) $Au@SiO_2/Ce$, (c) $Au@SiO_2/Ce@Dox$, (d) $Au@SiO_2/Ce@Dox@PDA$ and (e) PP-Dox nanocomposites. (f) Average sizes of $Au@SiO_2$, $Au@SiO_2/Ce$, $Au@SiO_2/Ce@Dox$, $Au@SiO_2/Ce@Dox@PDA$ and PP-Dox nanocomposites.

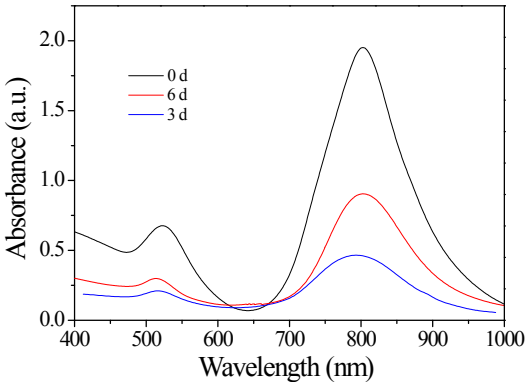

Fig. S5 UV-vis spectra of PP-Dox with an external magnetic field.

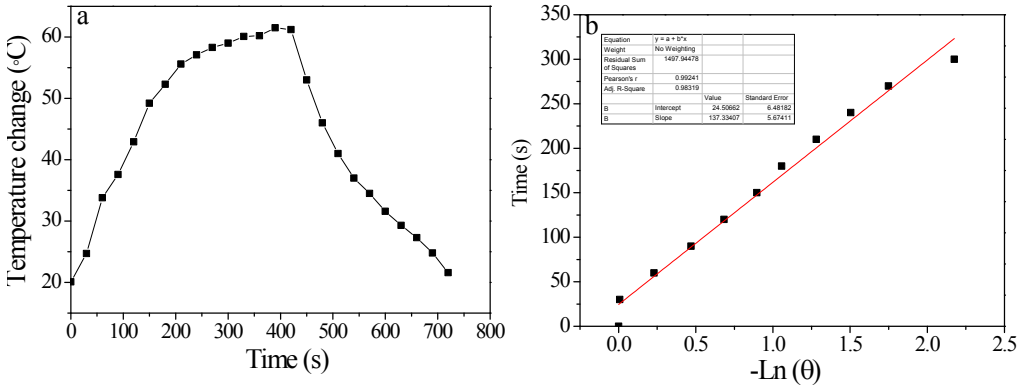

Fig. S6 (a) Photothermal effect of the irradiation of PP-Dox in aqueous dispersion with the NIR laser, in which the irradiation lasted for 7 min. (b) Time constant for heat transfer from the system is determined to be $\tau_s = 137.33$ s by applying the linear time data from the cooling period (after 720 s) versus negative natural logarithm of driving force temperature, which is obtained from the cooling stage of panel a.

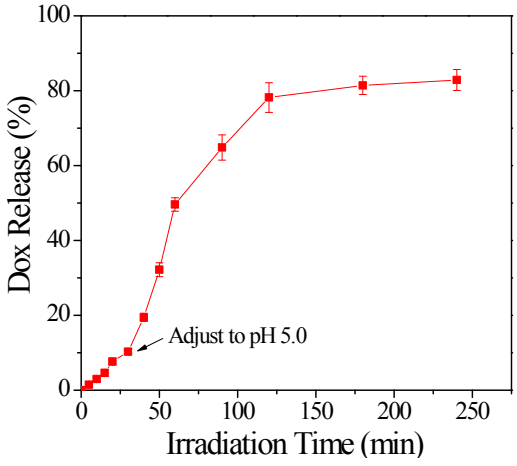

Fig. S7 Stimuli-responsive Dox release profile triggered by acidity. The media pH is

7.4 within 30 min, and the media adjusted to 5.0 at 30 min point.

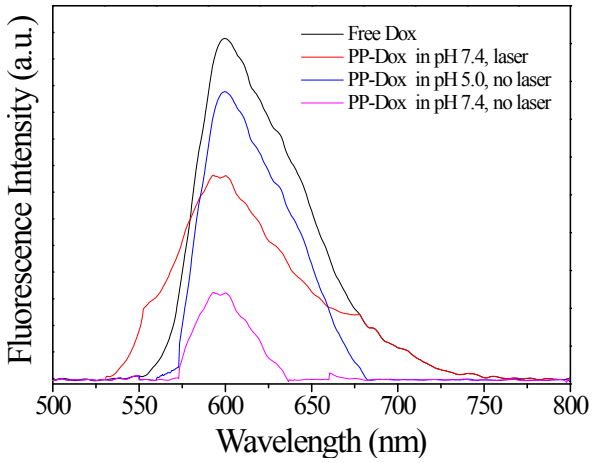

Fig. S8 Fluorescence spectra of supernatants of the PP-Dox incubated in pH=5.0 or pH=7.4 aqueous solution for 35 h.

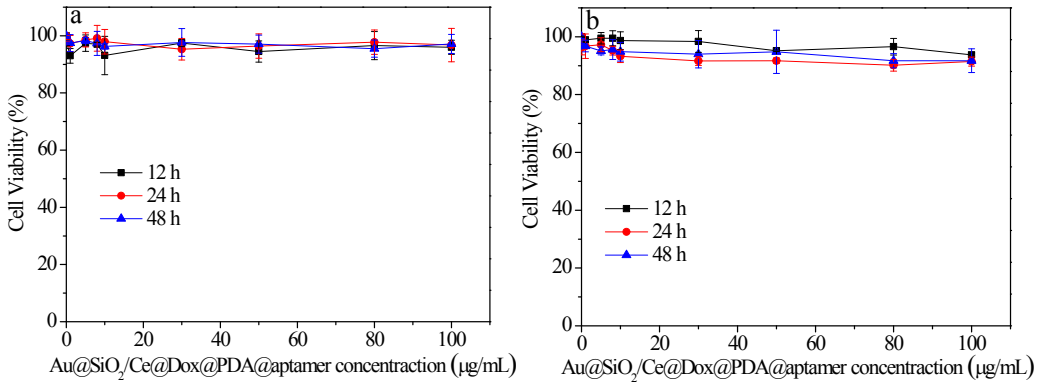

Fig. S9 Cytotoxicity assays of (a) A549 cells and (b) HepG2 cells incubated with Au@SiO_2/Ce@PDA@aptamer at different concentrations.

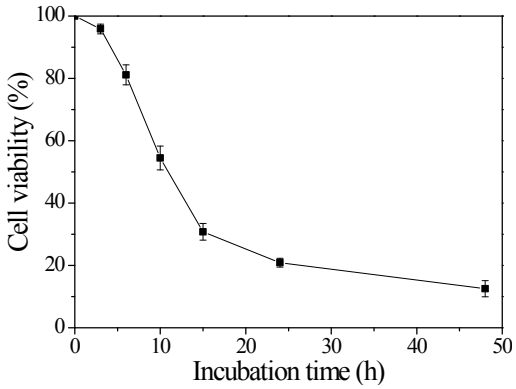

Fig. 10 The relative cell viability of A549 cells incubated with PP-Dox nanocomposites + laser (The concentration of Dox in PP-Dox is 10 μM, 808 nm, 0.8

W/cm^2, 10 min) for different incubation time. Error bars are standard error of the mean.