Supporting Information

Paclitaxel-induced Ultra-small Gallic Acid-Fe@BSA Self-assembly with Enhanced MRI Performance and Tumor Accumulation for Cancer Theranostics

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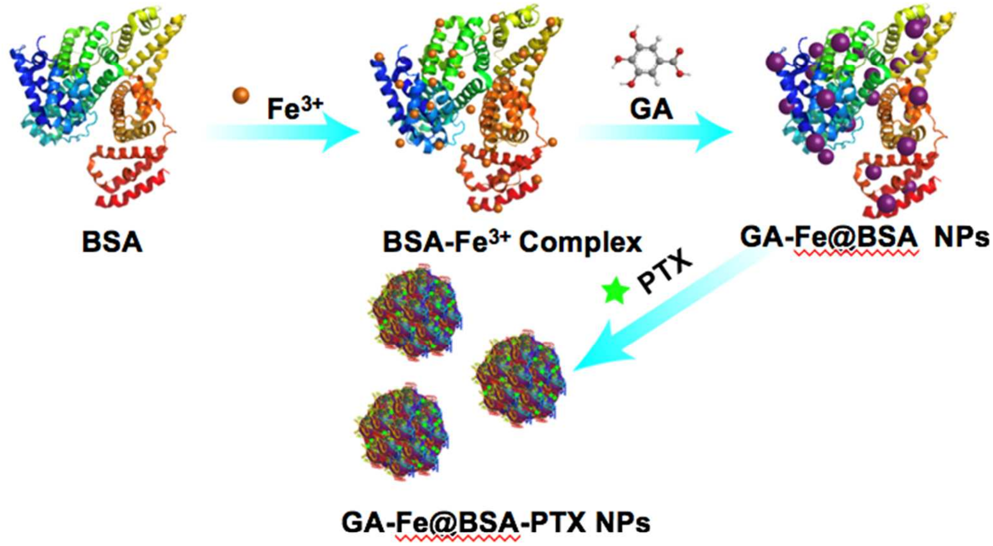

Figure S1. Schematic illustration of the fabrication process of GA-Fe@BSA-PTX self-assembled nanoparticles.

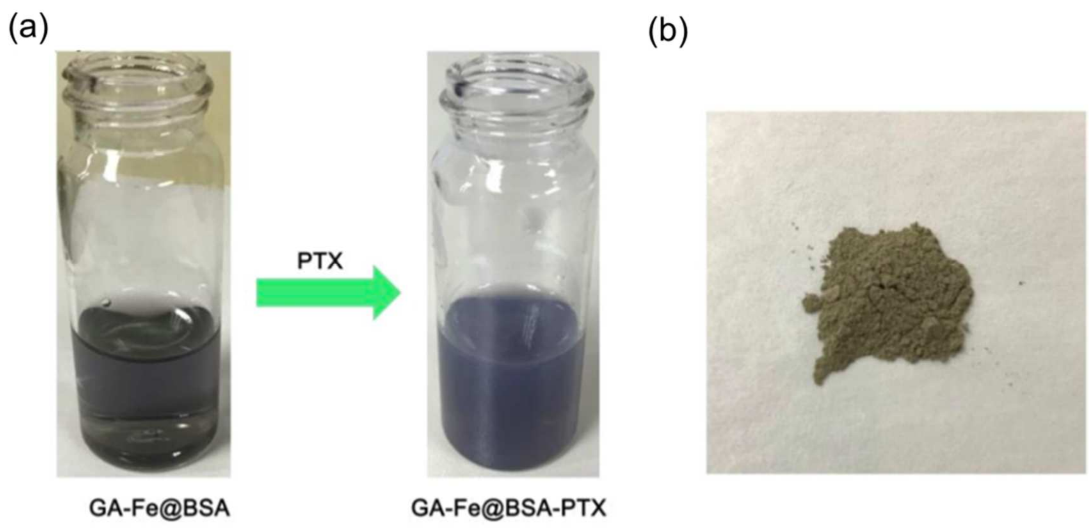

Figure S2. (a) photograph of the water dispersion GA-Fe@BSA nanoparticles before and after assembly by PTX; (b) photograph of the GA-Fe@BSA-PTX self-assembled nanoparticles powder synthesized by one time.

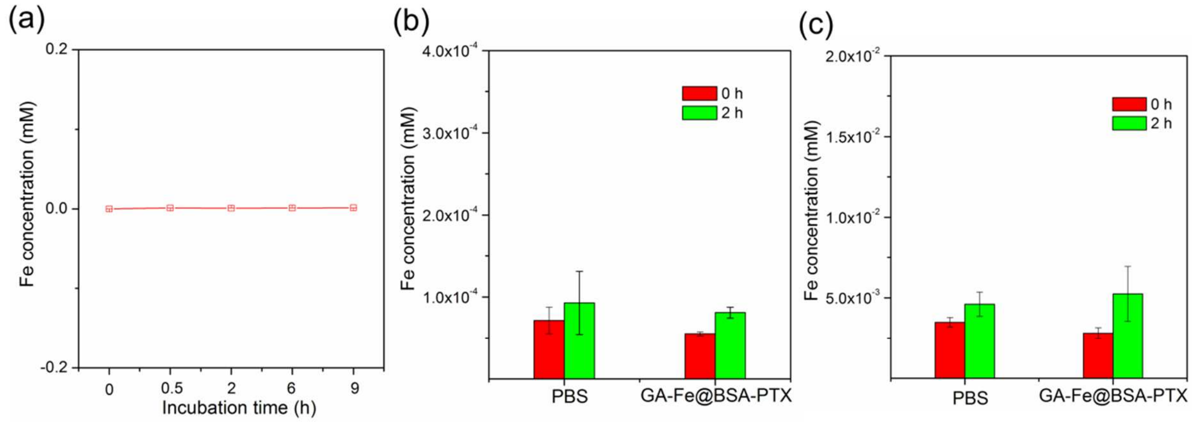

Figure S3. Stability of the GA-Fe@BSA-PTX self-assembled nanoparticles *in vitro* and *in vivo*. (a) *in vitro*: the GA-Fe@BSA-PTX was incubated with Dulbecco's Modified Eagle's Medium (DMEM) plus 10% fetal bovine serum (FBS) to simulate *in vivo* physiological conditions for different time. In order to verify if the GA-Fe@BSA-PTX self-assembled nanoparticles will release the iron ions at the physiological conditions, the Fe content in the DMEM was tested after removing the GA-Fe@BSA-PTX. Nearly no existence of Fe ions was tested in the DMEM incubated without and with GA-Fe@BSA-PTX self-assembled nanoparticles, indicating that there is no release of iron ions at the physiological conditions; (b, c) *in vivo*: the urine (b) and blood (c) of the mice was collected after 2 h of intravenous injection with GA-Fe@BSA-PTX (200 μL, 14.5 mM) and PBS (200 μL). After removing the GA-Fe@BSA-PTX self-assembled nanoparticles by the ultrafiltration centrifugation (100 kDa polyether sulfone film) from the urine and blood, the Fe ions content in the urine and blood was tested by high-dispersion inductively coupled plasma atomic emission spectroscopy. The results show that there is no obviously difference between GA-Fe@BSA-PTX and PBS group, indication that there is no release of iron ions *in vivo*.

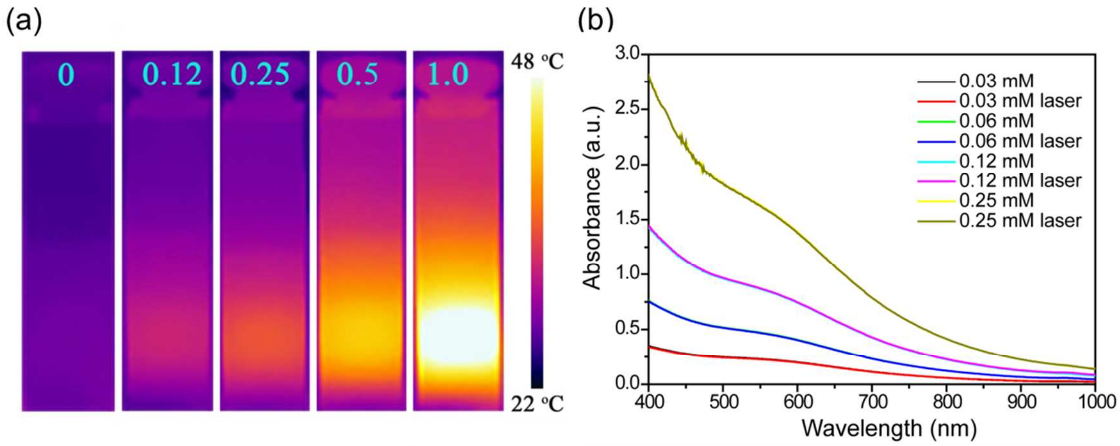

Figure S4. (a) NIR-thermal imaging of the of GA-Fe@BSA-PTX self-assembled nanoparticles at increasing concentrations under 808 nm laser irradiation for 15 min at 1 W/cm^2. (b) Absorption of the GA-Fe@BSA-PTX self-assembled nanoparticles before and after laser irradiation (808 nm, 15 min at 1 W/cm^2).

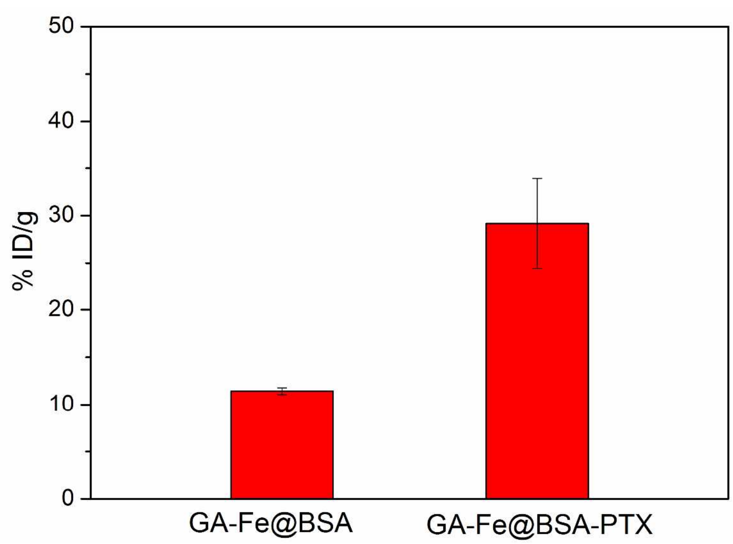

Figure S5. Fe ions content in the tumor after 2 h of intravenous injection with GA-Fe@BSA and GA-Fe@BSA-PTX respectively. The Fe ions content in the tumor of the mice after intravenous injection with GA-Fe@BSA-PTX is 29.17 % ID/g, which is much higher than that of the mice injected with GA-Fe@BSA (11.4 % ID/g), indicating the GA-Fe@BSA-PTX can effectively enhance the accumulation in tumor.

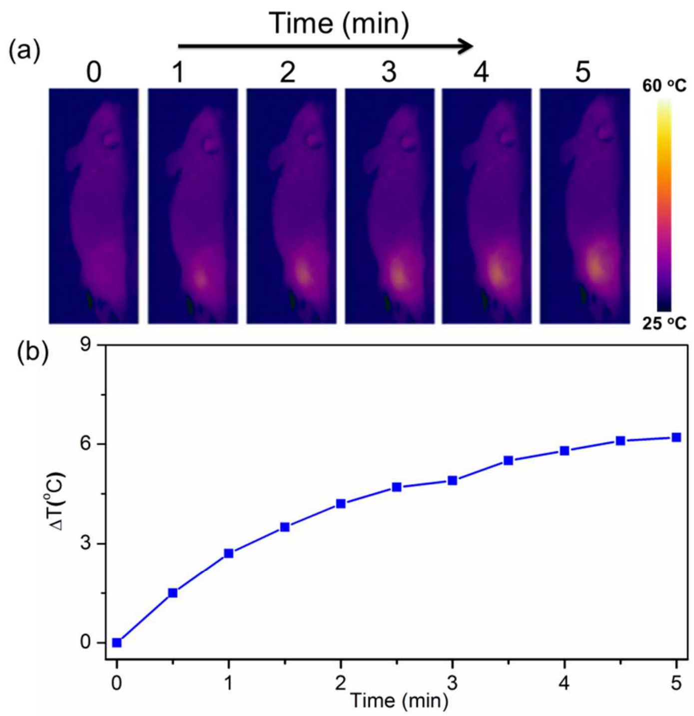

Figure S6. NIR thermal images (a) and corresponding temperature variations (b) of mice bearing 4T1 tumors after intravenous injection with GA-Fe@BSA (14.5 mM, 200 μL) under the laser irradiation (808 nm, 1 W/cm^2 for 5 min).