Supporting Information

pH-Sensitive Nanotheranostics for Dual-modality Imaging Guided Nanoenzyme Catalysis Therapy and Phototherapy

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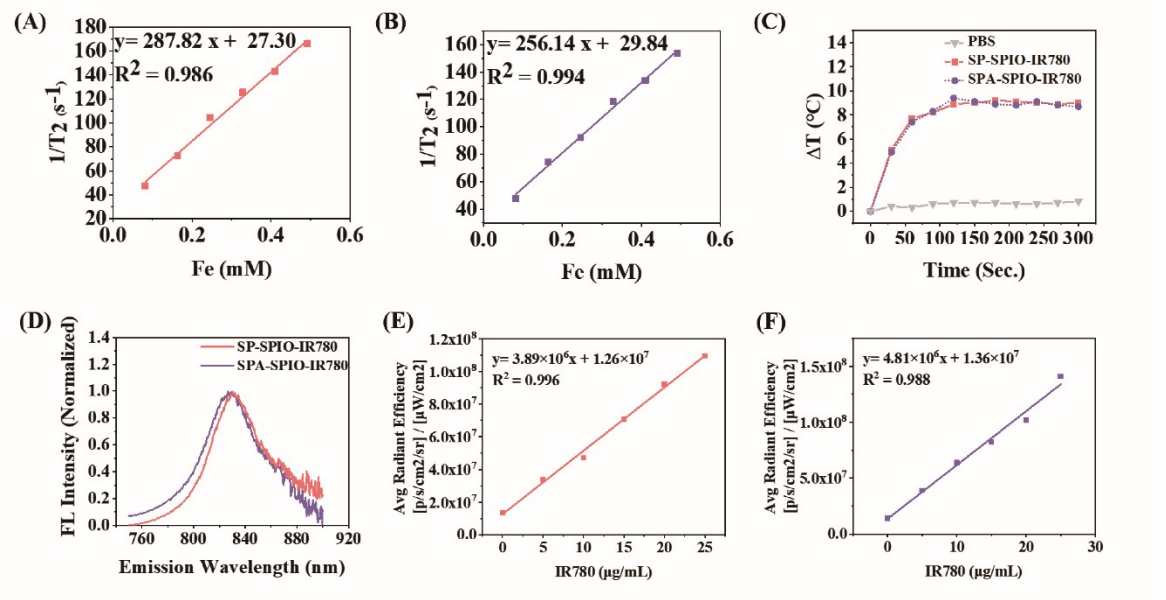

Figure S1. T_2 relaxation rates ($1/T_2$, s^{-1}) of (A) SP-SPIO-IR780 and (B) SPA-SPIO-IR780. (C) Temperature rises of PBS, SP-SPIO-IR780 or SPA-SPIO-IR780 nanosystem (IR780, 8.00 μg/mL) under the 808 nm laser irradiation at the power density of 1 $W \cdot cm^{-2}$. (D) Fluorescence spectrum of SP-SPIO-IR780 and SPA-SPIO-IR780. Average radiant efficiency of (E) SP-SPIO-IR780 and (F) SPA-SPIO-IR780.

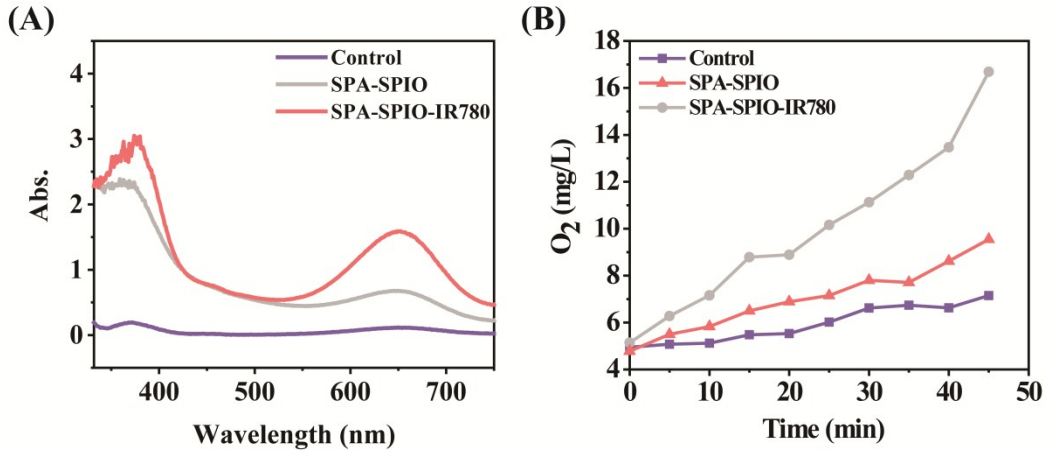

Figure S2. (A) Hydroxyl radicals (·OH) generation detected by TMB. The absorbance peaks around 370 and 650 nm indicated the relative concentration of hydroxyl radicals (·OH). (B) Dissolved oxygen concentration in solution after incubated with different micelles.

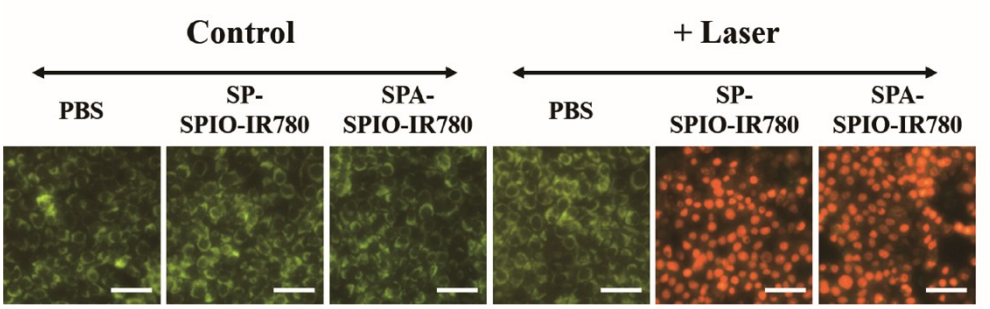

Figure S3. Inverted fluorescence microscope images of 4T1 cells incubated with PBS, SP-SPIO-IR780 and SPA-SPIO-IR780 nanosystem with and without 808 nm laser irradiation. The dead cells were dyed to orange with PI assay and the live cells were dyed to green with Calcein-AM. The concentration of SP-SPIO-IR780 or SPA-SPIO-IR780 nanosystem is 2.50 μg/mL of IR780 (scale bar = 50 μm).

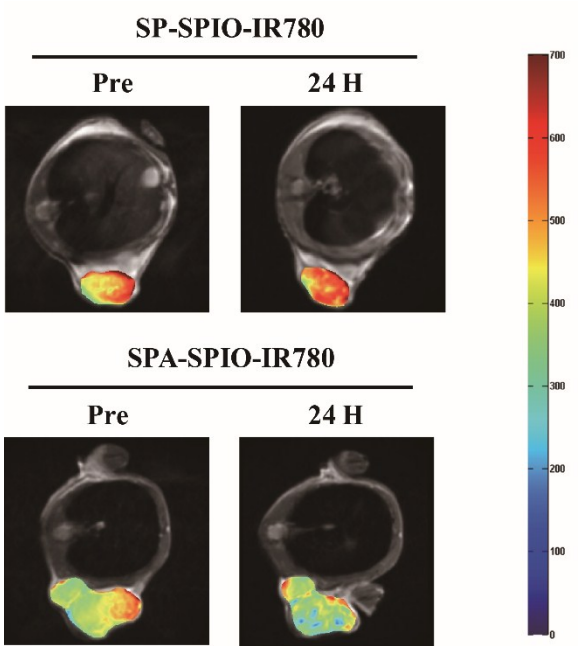

Figure S4. MRI (color mapping) of tumor site before and 24 hours post injection.

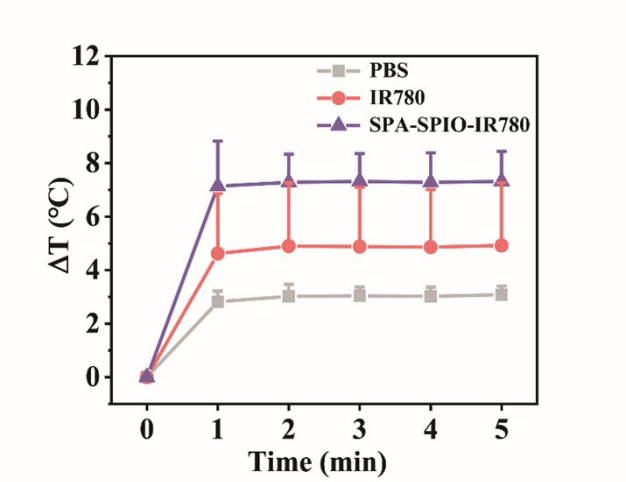

Figure S5. Temperature rises of the tumor sites of PBS, IR780 and SPA-SPIO-IR780 nanosystem treated mice respectively after laser irradiation.