Supporting Information

Multifunctional FeS_2@SRF@BSA nanoplatform for chemo-combine photothermal enhanced photodynamic/ chemodynamic combination therapy

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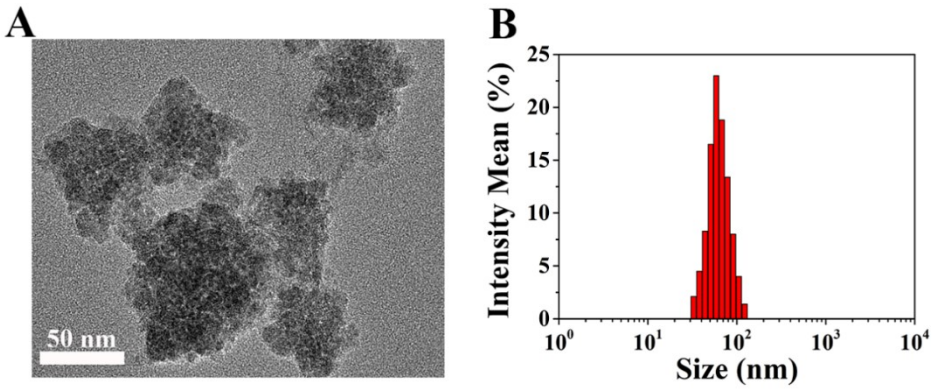

Fig S1. (A) TEM image and (B) particle size distribution of FeS_2@SRF@BSA NPs after incubation with the supernatant of lysed 4T1 cells.

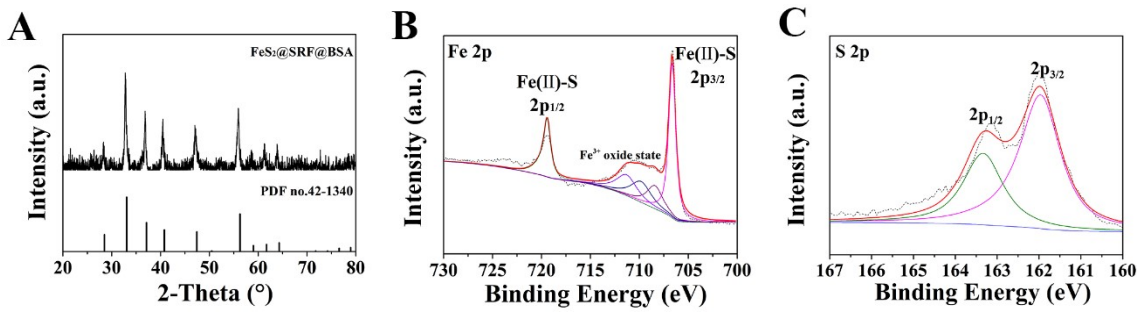

Fig S2. (A) XRD of FeS_2@SRF@BSA NPs. (B) XPS spectra of Fe 2p and (C) S 2p for FeS_2@SRF@BSA NPs.

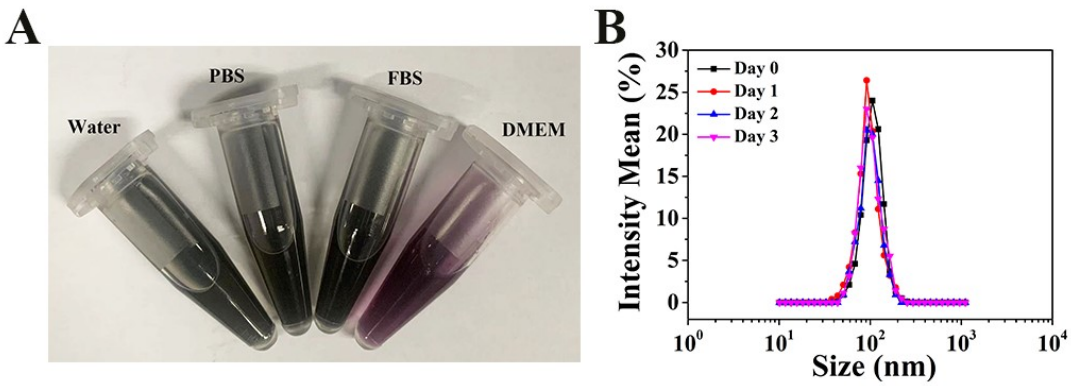

Fig S3. (A) Photos of FeS_2@SRF@BSA NPs dispersed in different solvents (water, PBS, FBS and DMEM). (B) Hydrodynamic radius of FeS_2@SRF@BSA NPs in PBS for 3 days.

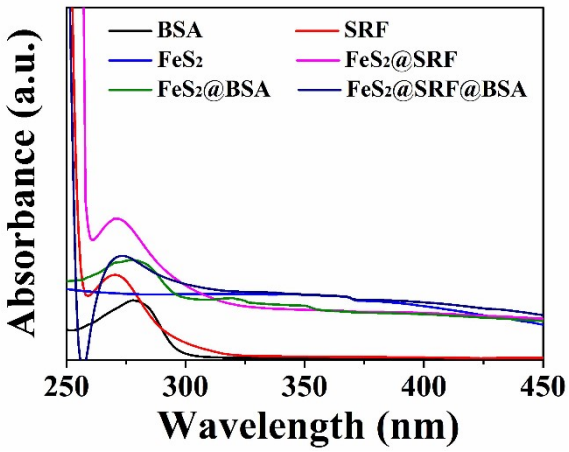

Fig S4. UV−Vis absorbance spectra of BSA, SRF, FeS_2 NPs, FeS_2@SRF NPs, FeS_2@BSA NPs and FeS_2@SRF@BSA NPs.

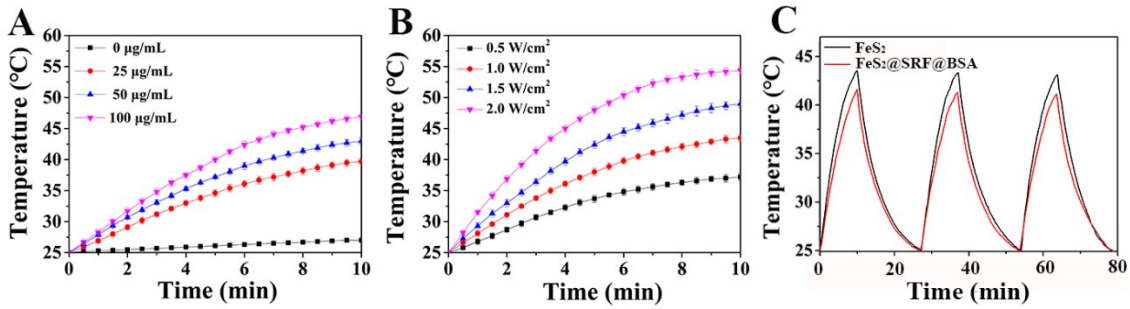

Fig S5. Temperature increment curves of FeS_2 suspensions at (A) different concentrations and (B) irradiation densities. (C) Three cycles of temperature variation of FeS_2 and FeS_2@SRF@BSA solution with continuous laser irradiation (808 nm, 1.0 W/cm^2, 10 min) and natural cooling.

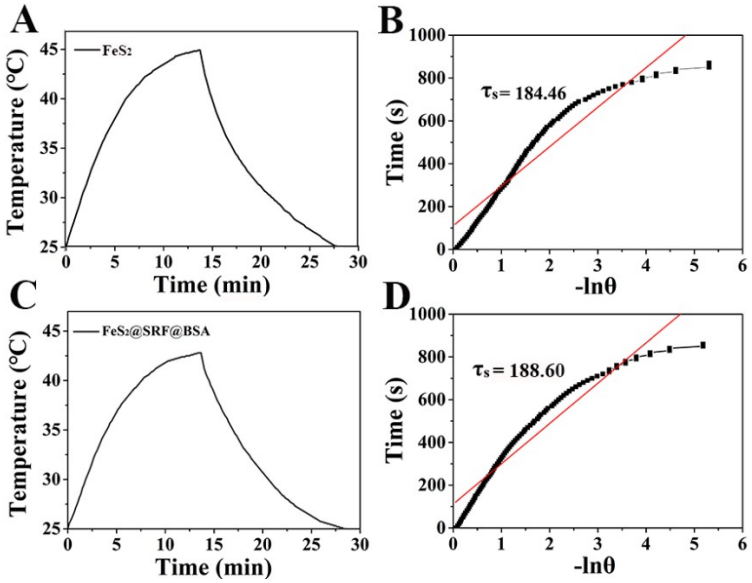

Fig S6. Photothermal effect of aqueous dispersion of (A) FeS_2 and (C) FeS_2@SRF@BSA solution under irradiation with the NIR laser. Laser was then shut off after reaching the steady maximum

temperature. Linear time data vs -ln(θ) gained from the cooling period of (B) FeS_2 and (D) FeS_2@SRF@BSA NPs to get the τ_s.

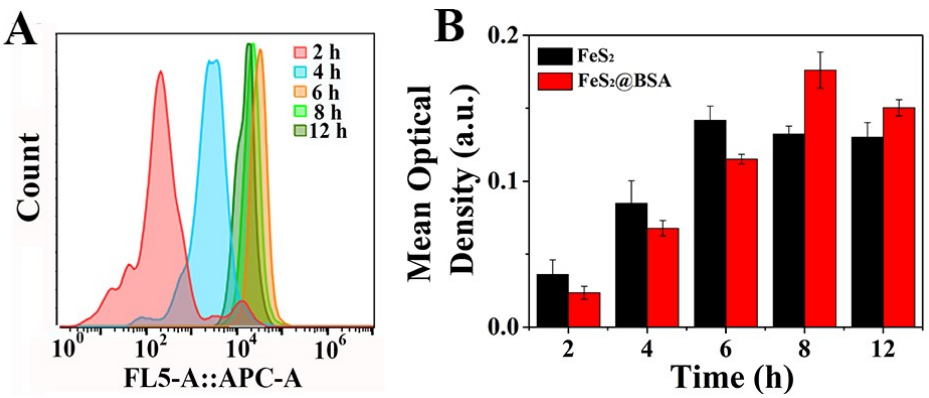

Fig S7. (A) Fluorescence histograms of the 4T1 cells incubated with FeS_2@C6 NPs for different time. (B) Fluorescence semi-quantitative analysis of fluorescence images in Fig 3C.

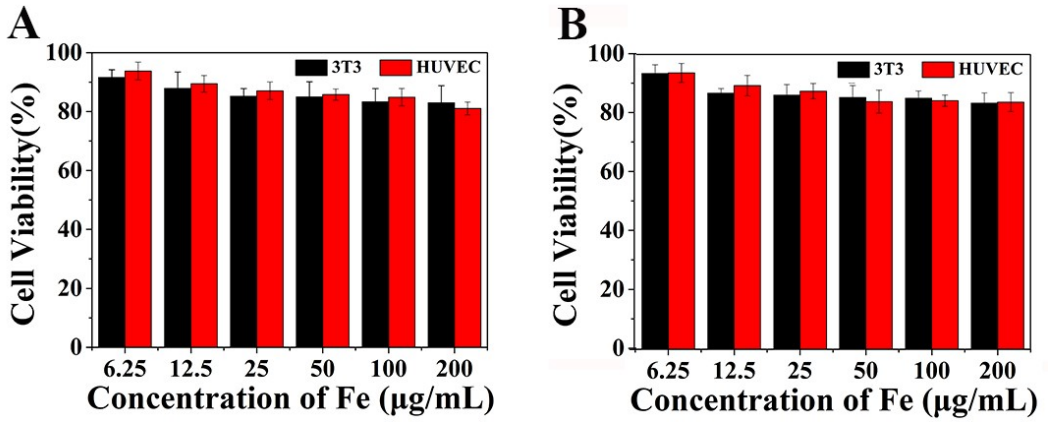

Fig S8. Viabilities of HUVECs cells and 3T3 cells incubated with various concentrations of (A) FeS_2 NPs and (B) FeS_2@BSA NPs.

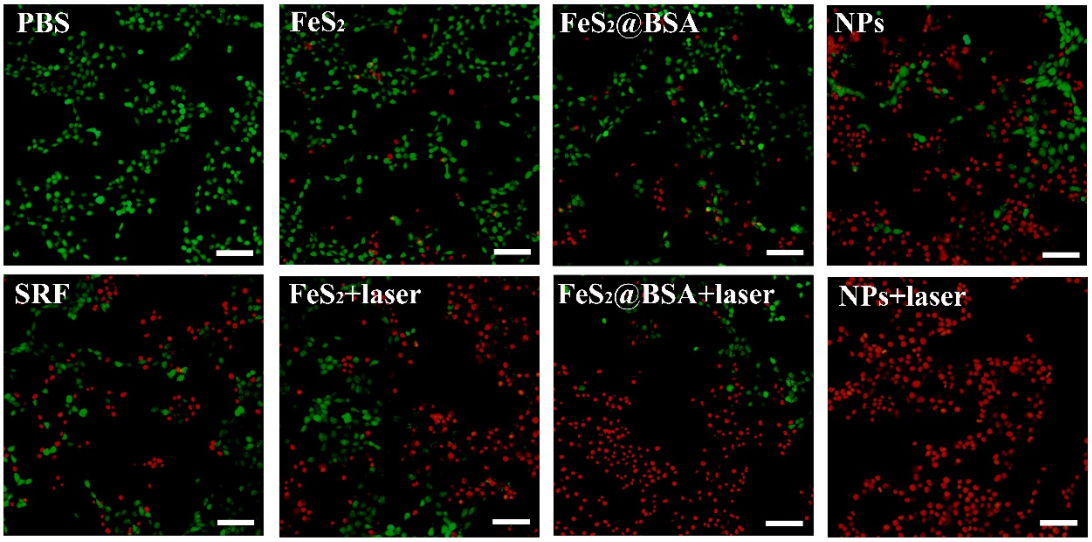

Fig S9. Fluorescence microscopy images of 4T1 cells stained with PI and Calcein-AM after treating with the NPs for 8 h with or without NIR laser irradiation (808 nm, 1.0 W/cm^2, 5 min), where NPs in the figure refers to the FeS_2@SRF@BSA NPs. (Scale bar: 100 μm)

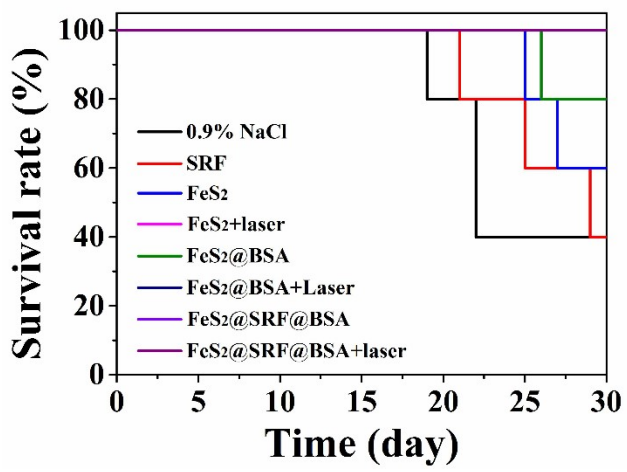

Figure S10. The survival rates of the mice after different treatments. The endpoint was considered when mice died or the tumor was larger than 1500 mm^3 (n=5).

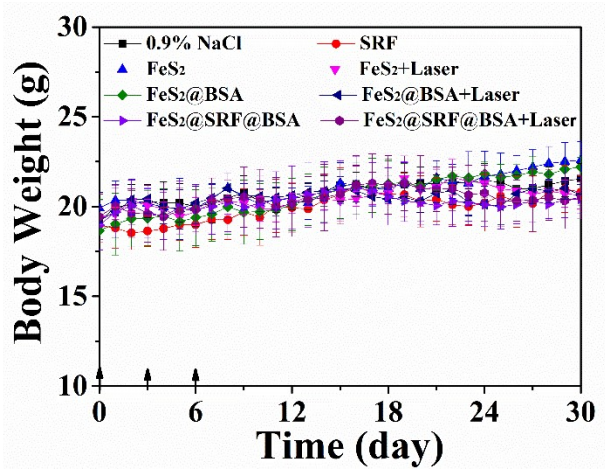

Fig S11. Variations of body weight scaled during various treatments.

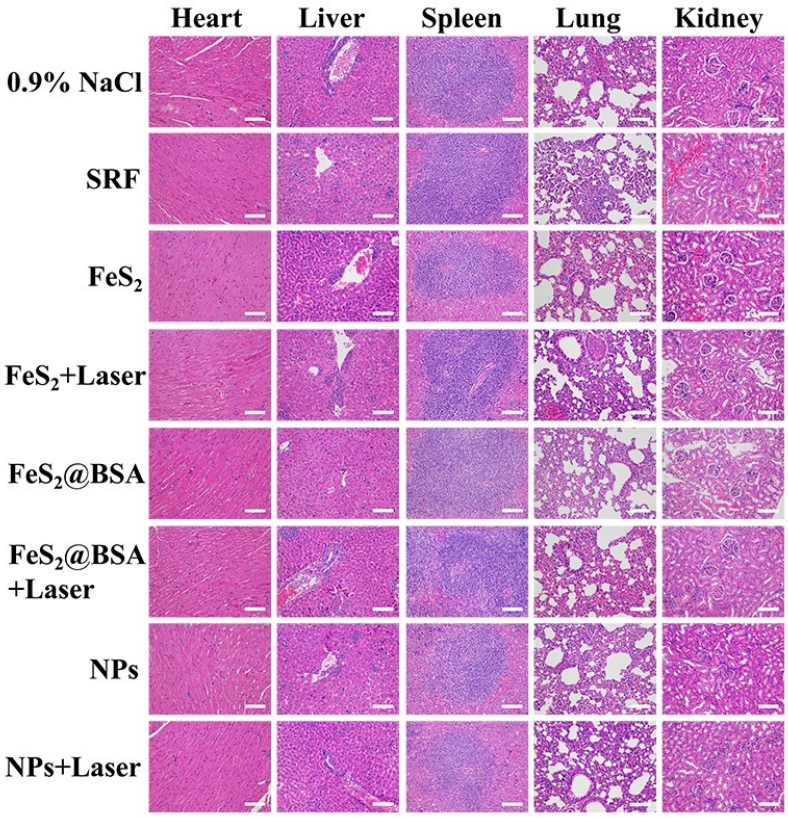

Fig S12. H&E staining of tissues dissected from the mice in various groups, where NPs in the figure refers to the FeS_2@SRF@BSA NPs. (Scale bars: 100 μm)

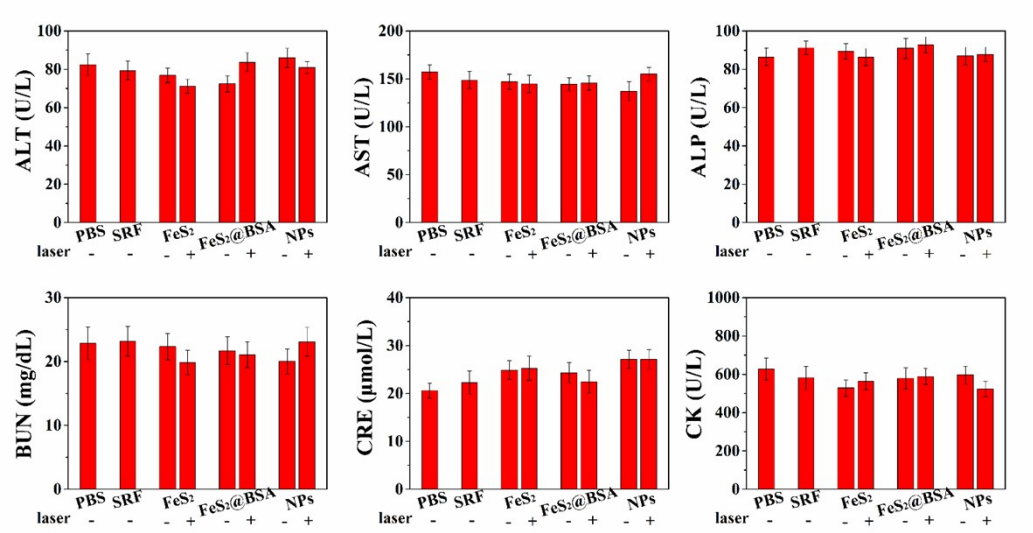

Fig S13. Blood biochemical analysis of mice at 30 days after injection of NPs, where NPs in the figure refers to the FeS_2@SRF@BSA NPs. (5 mg of Fe/kg mouse, 100 μL, n = 5, Mean ± S.D.)