

Supporting information

Flexible CuS-Embedded Human Serum Albumin Hollow Nanocapsules with Peroxidase-Like Activity for Synergistic Sonodynamic and Photothermal Cancer Therapy

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Supplementary Figures

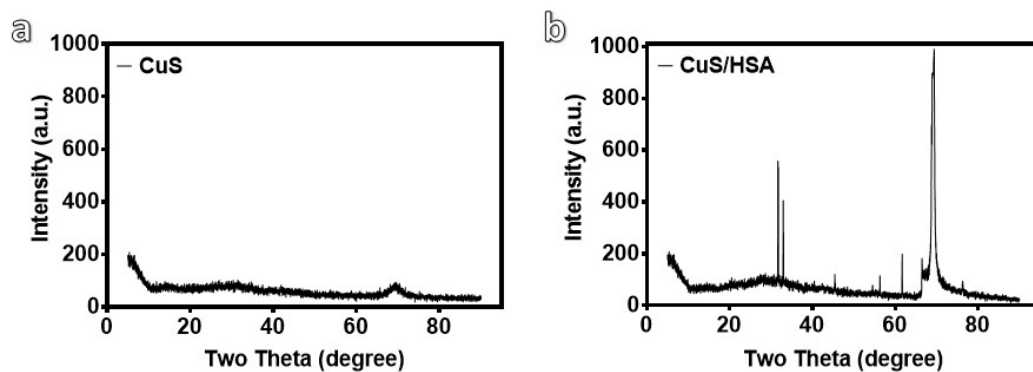


Fig. S1 XRD analysis of the (a) CuS and (b) CuS/HSA hollow nanocapsules.

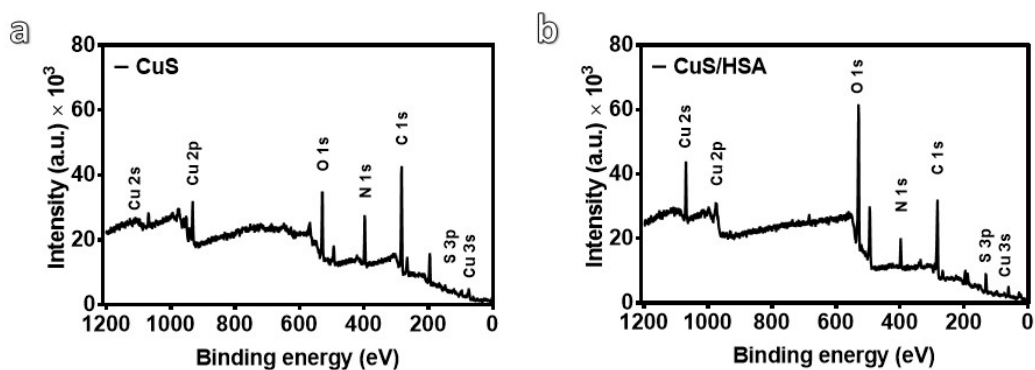


Fig. S2 XPS analysis of the (a) CuS and (b) CuS/HSA hollow nanocapsules.

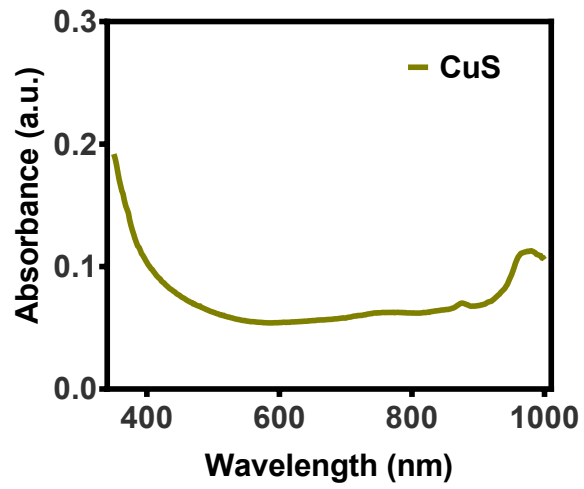


Fig. S3 The UV-spectra of the CuS nanoparticles.

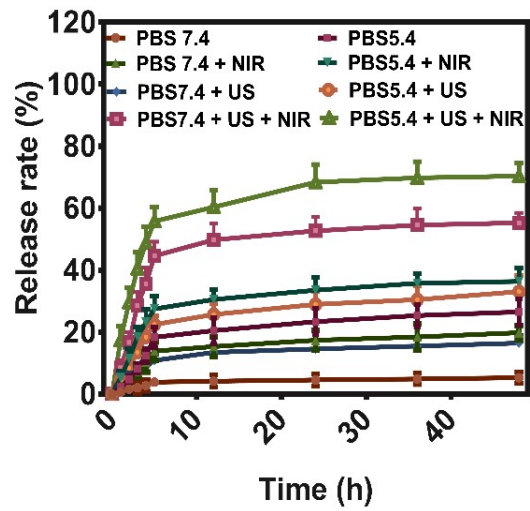


Fig. S4 The release rate of TAPP from CuS/HSA-TAPP hollow nanocapsules.

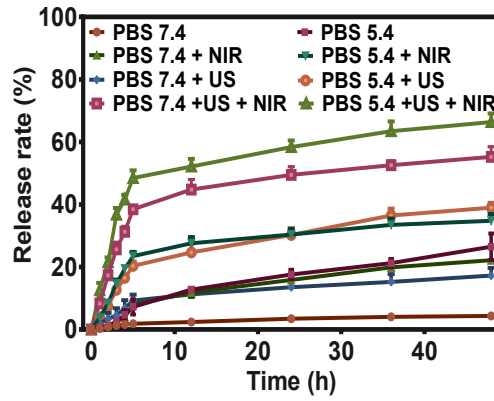


Fig. S5 The release rate of CuS from CuS/HSA-TAPP hollow nanocapsules.

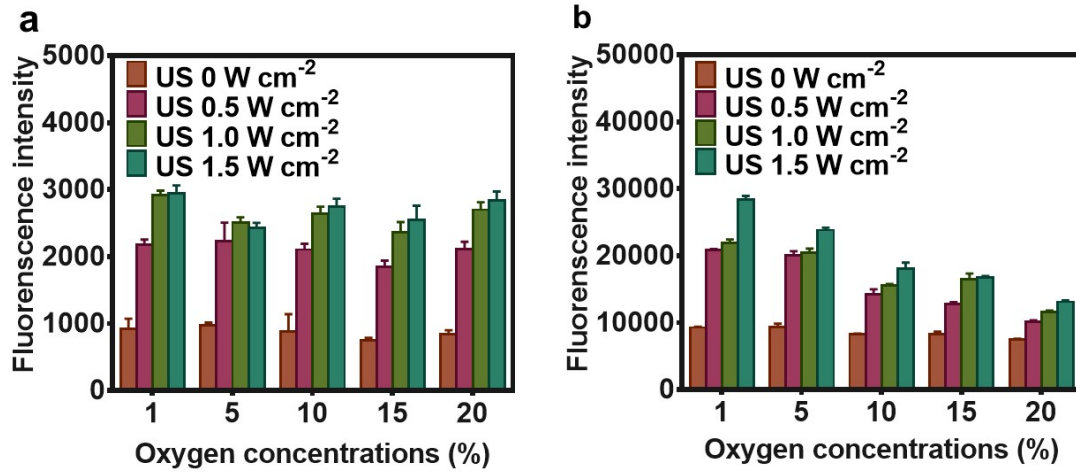


Fig. S6 The fluorescence intensities of ROS. (a) The fluorescence intensities of ROS of CuS/HSA-TAPP hollow nanocapsules in the presence of H₂O₂ and varied concentrations of oxygen (20%, 15%, 10%, 5%, and 1%) under US irradiation. (b) The fluorescence intensities of ROS of CuS/HSA-TAPP hollow nanocapsules in MCF-7 cells incubated with varied concentrations of oxygen (20%, 15%, 10%, 5%, and 1%) under US irradiation.

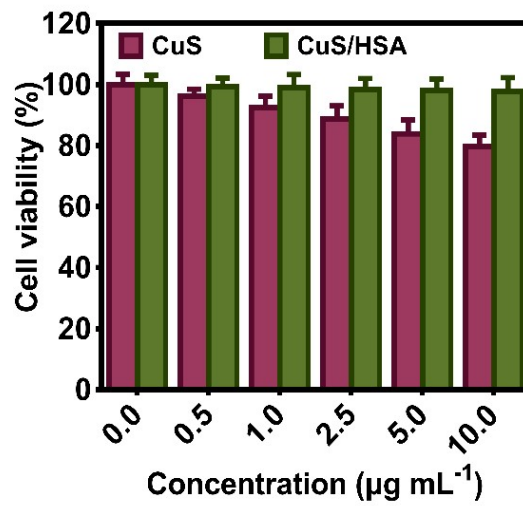


Fig. S7 The cell viability of CuS nanoparticles and CuS/HSA hollow nanocapsules.

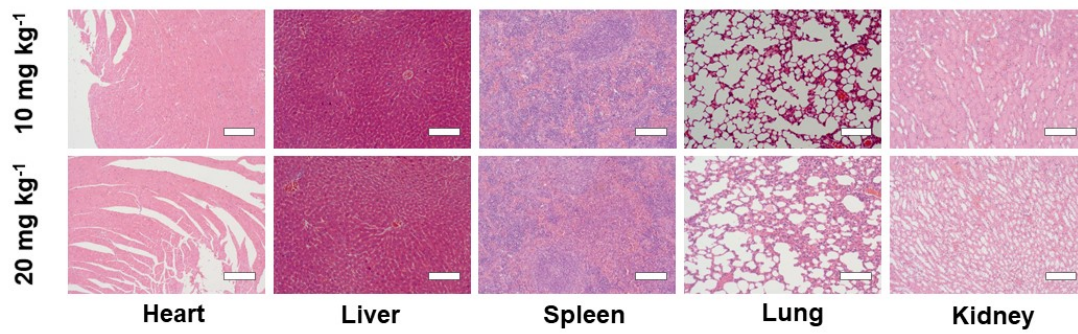


Fig. S8 The in vivo biocompatibility of the CuS/HSA hollow nanocapsules in the mice. The H&E staining of major organs of the mice injected with 10 and 20 mg kg⁻¹ CuS/HSA hollow nanocapsules. Scale bars, 100 µm.

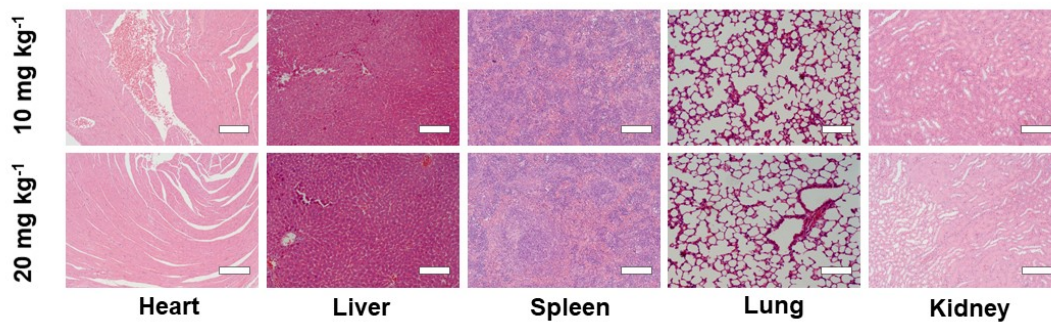


Fig. S9 The in vivo biocompatibility of the CuS/HSA-TAPP hollow nanocapsules in the mice. The H&E staining of major organs of the mice injected with 10 and 20 mg kg⁻¹ CuS/HSA-TAPP hollow nanocapsules. Scale bars, 100 μm.

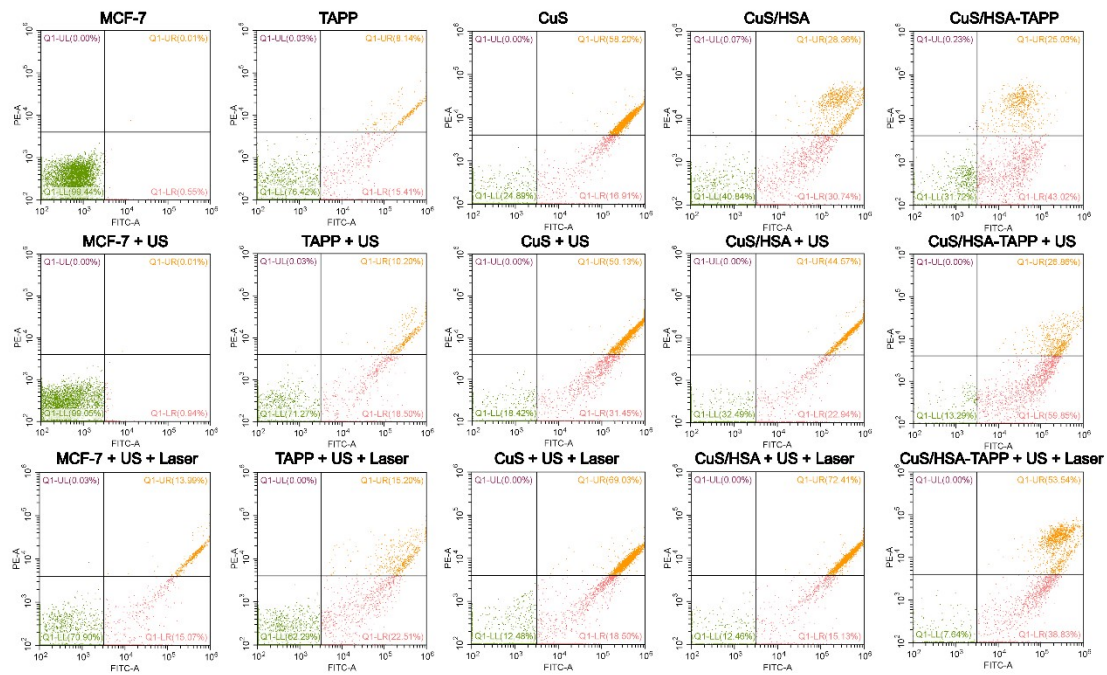


Fig. S10 Flow cytometry images of MCF-7 cells apoptosis induced by CuS, TAPP, CuS/HSA, and CuS/HSA-TAPP with or without US or laser irradiation.

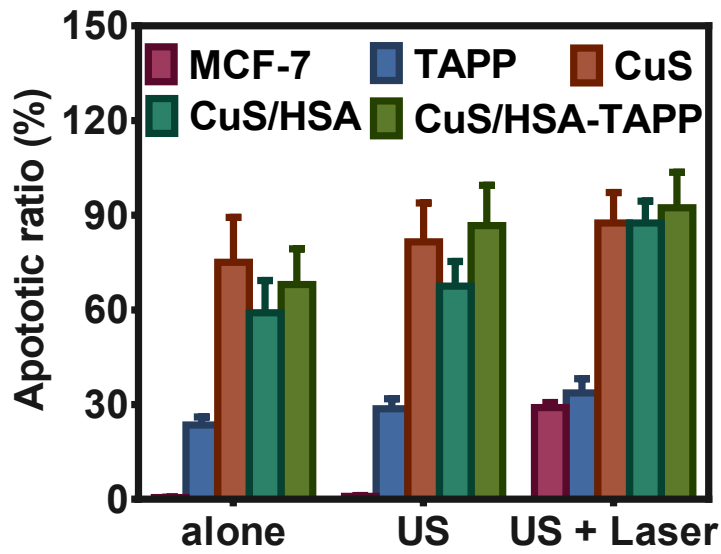


Fig. S11 Histogram of apoptosis percent in MCF-7 cells with different materials.

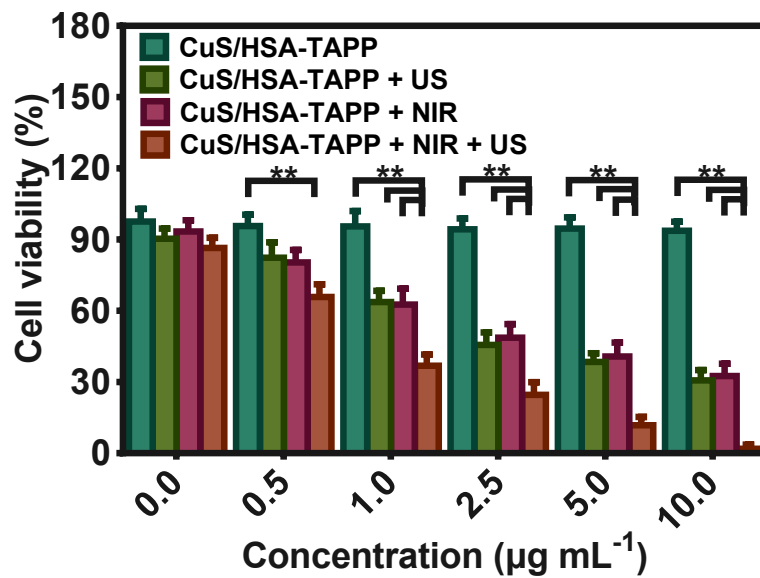


Fig. S12 Cell viabilities of MCF-7 incubated with CuS/HSA-TAPP hollow nanocapsules for combined SDT and PPT. Cell viability of the CuS/HSA-TAPP hollow nanocapsules alone, CuS/HSA-TAPP hollow nanocapsules + US (1 W cm^{-2} , 2 min), CuS/HSA-TAPP hollow nanocapsules + NIR (2 W cm^{-2} , 5 min), CuS/HSA-TAPP hollow nanocapsules + NIR (2 W cm^{-2} , 5 min) + US (1 W cm^{-2} , 2 min) groups. (**P < 0.05).