# Supporting Information

## A hollow $Co_{3-x}Cu_xS_4$ with glutathione depleting and photothermal properties for synergistic dual-enhanced chemodynamic/photothermal cancer therapy

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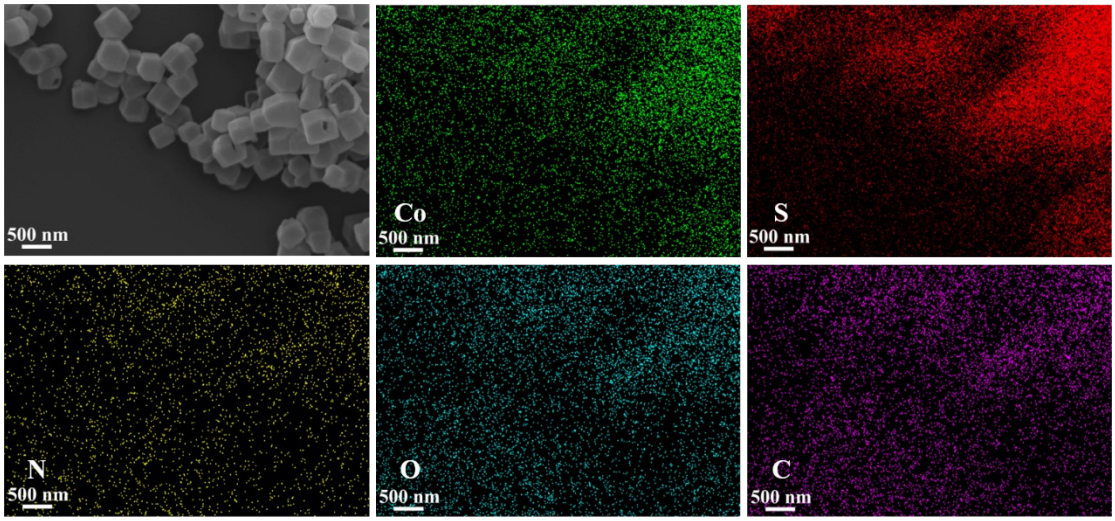


**Figure S1.** FESEM image and EDS elemental mapping images of $Co_3S_4$.

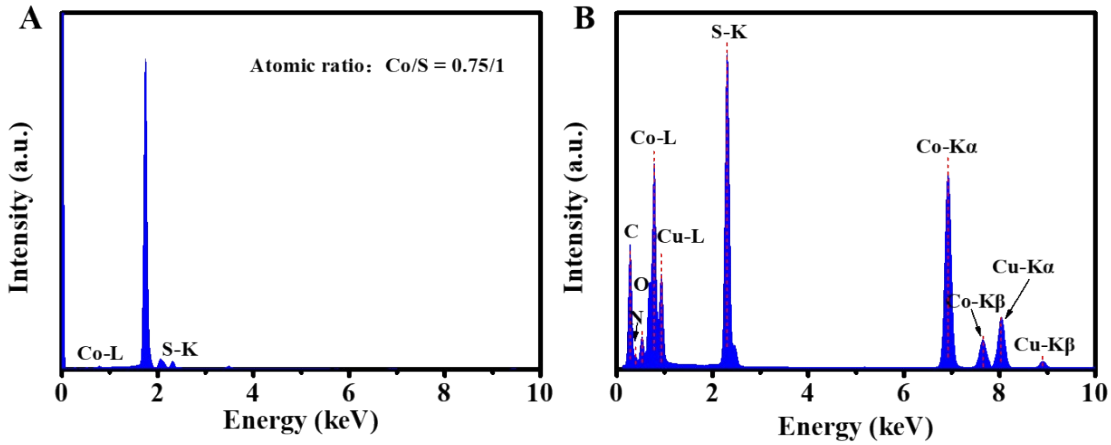


**Figure S2.** EDS spectroscopy of (A) $Co_3S_4$ and (B) $Co_{3-x}Cu_xS_4$.

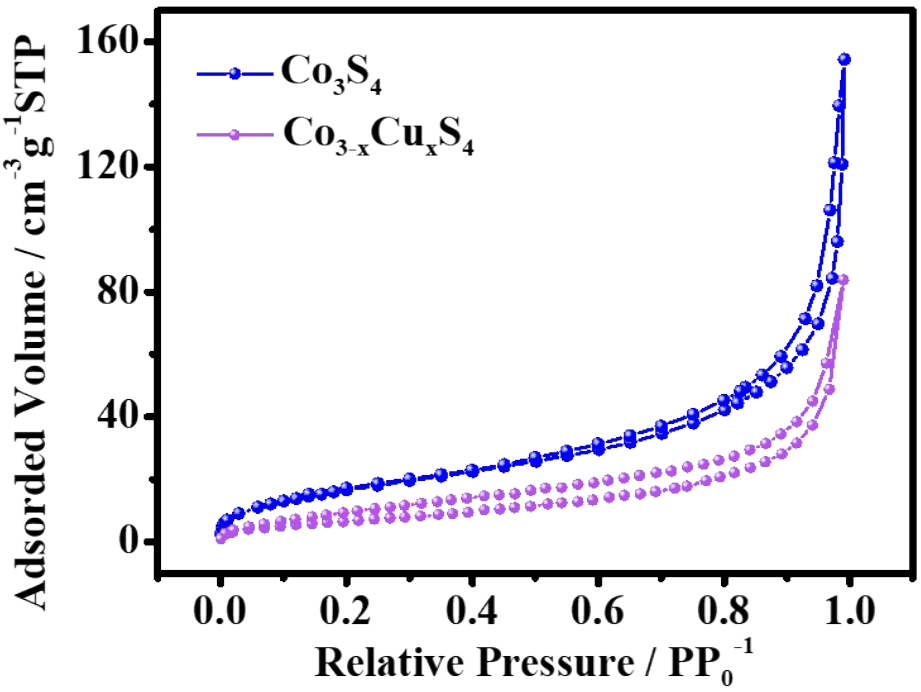


**Figure S3.** $N_2$ adsorption-desorption isotherms of $Co_3S_4$ and $Co_{3-x}Cu_xS_4$.

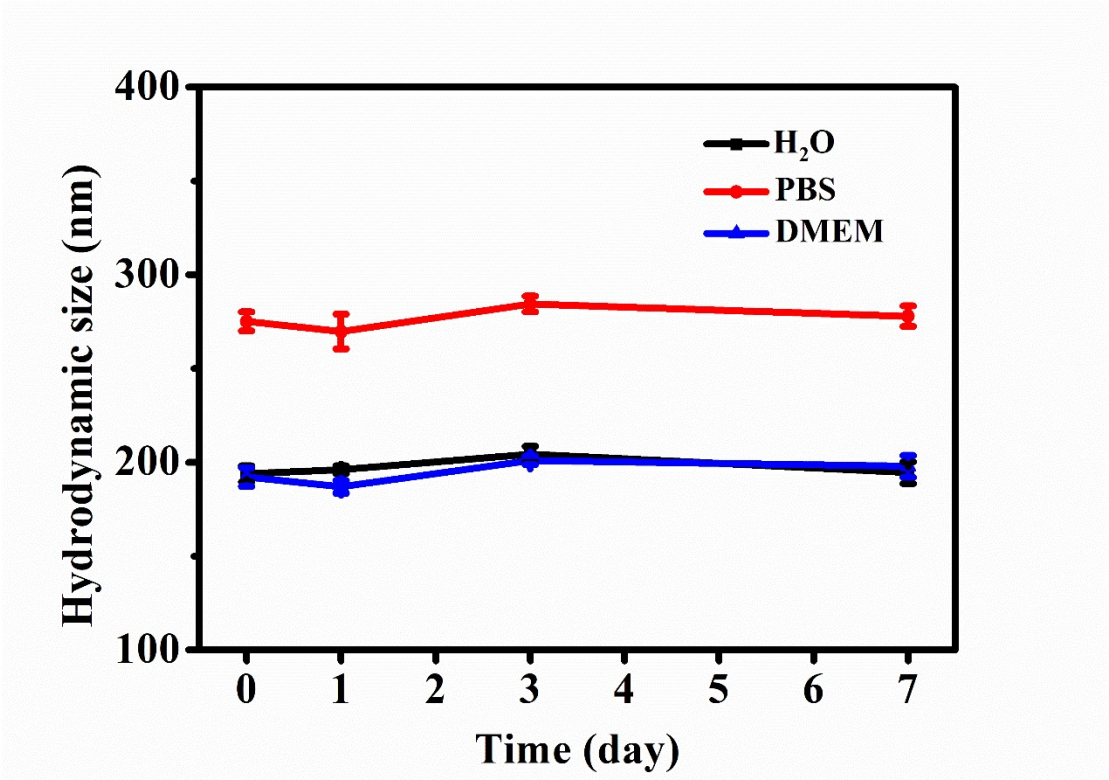


**Figure S4.** Hydrodynamic size of CCP in various aqueous media.

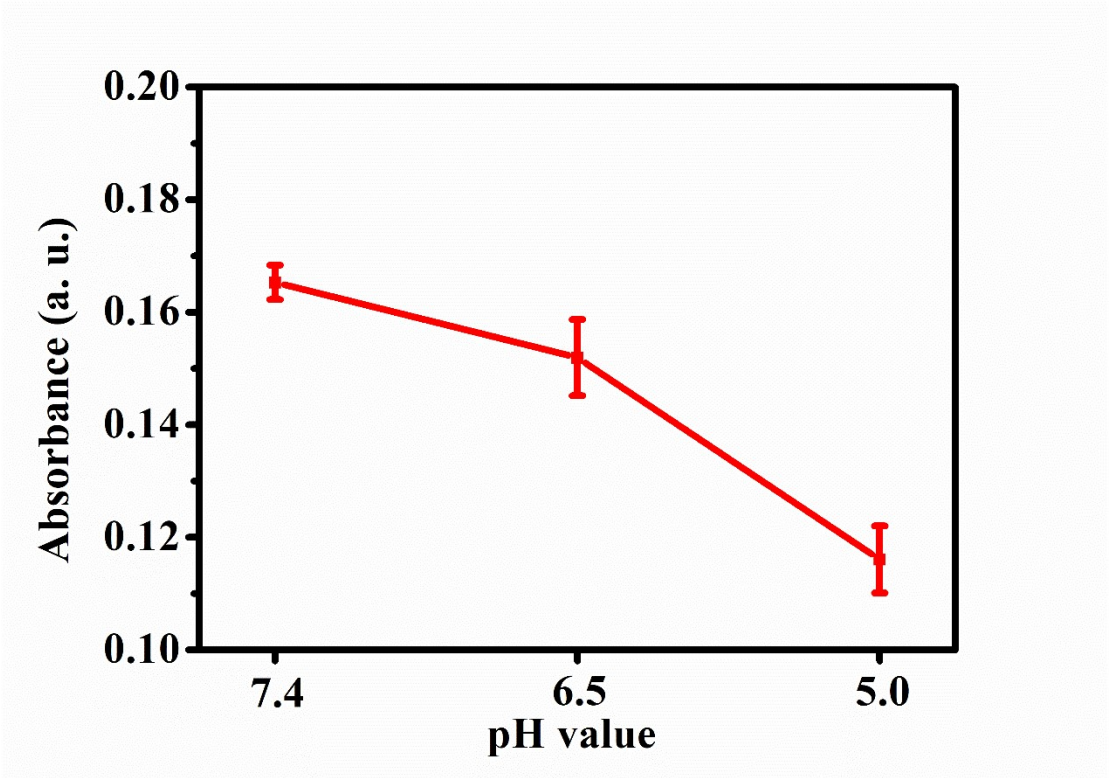


**Figure S5.** pH-responsive degradation of CCP at various pH values (7.4, 6.5, and 5.0).

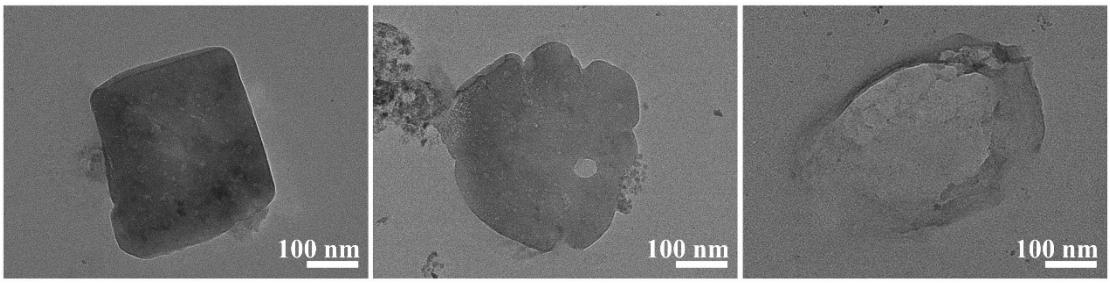


**Figure S6.** TEM images of CCP after being soaked into PBS with different pH values (7.4, 6.5, and 5.4).

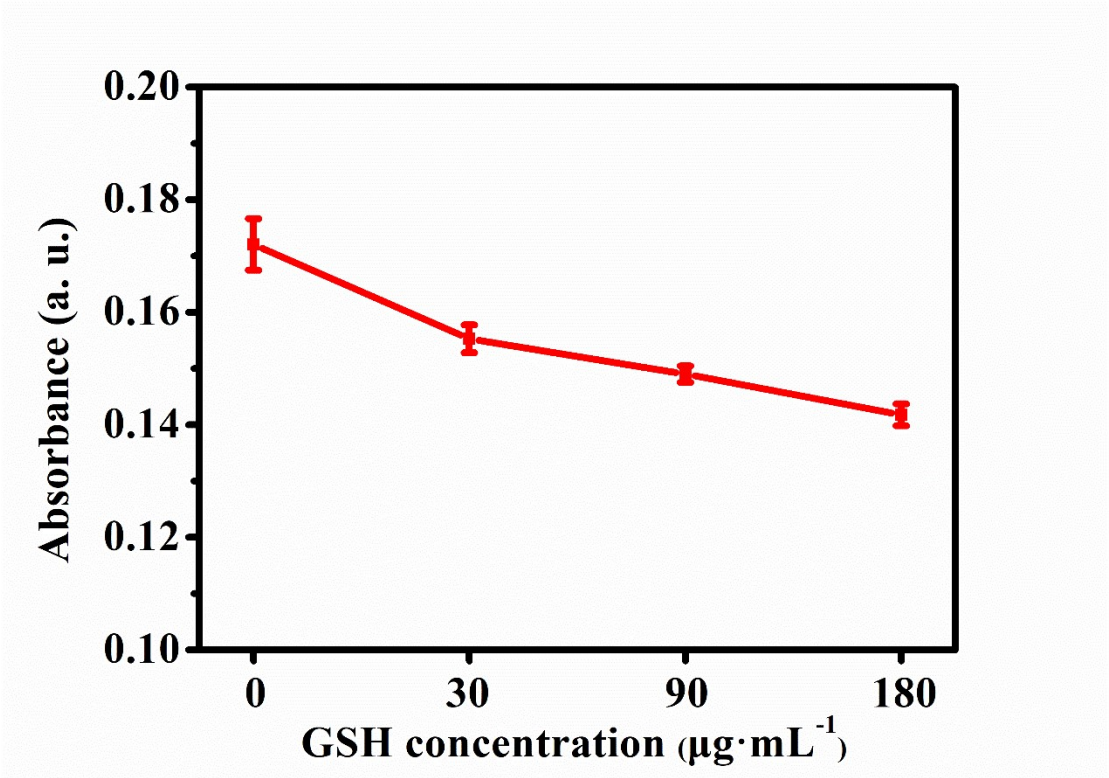


**Figure S7.** GSH-responsive degradation of CCP.

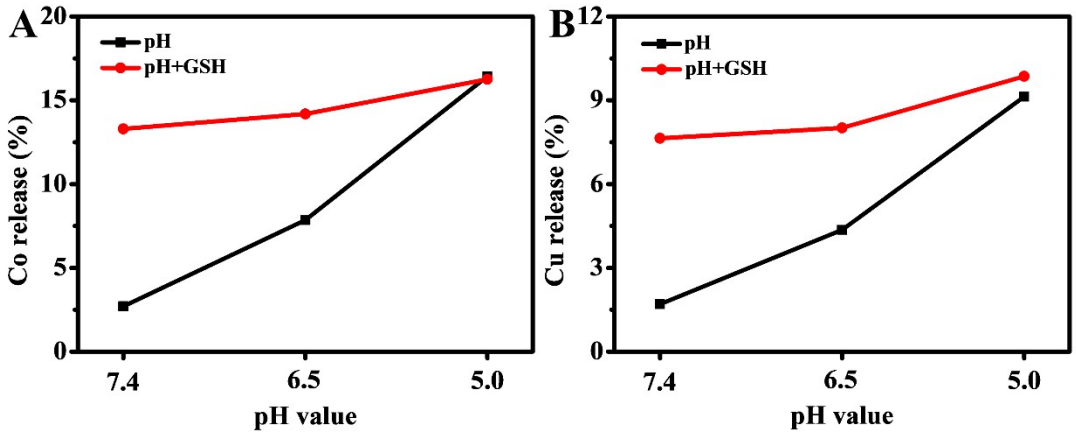


**Figure S8.** Accumulative Co (A) and Cu (B) release of CCP in PBS solution with different pH values (7.4, 6.5, and 5.0) and in the presence of GSH.

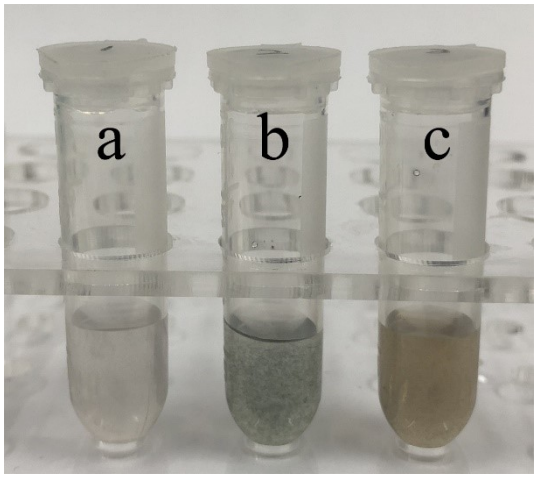


**Figure S9.** Ammonium hydroxide as an indicator to detect the presence of $Cu^{2+}$ in solution. (a) CCP, (b) CCP+$NH_3 \cdot H_2O$, (c) CCP+GSH+ $NH_3 \cdot H_2O$.

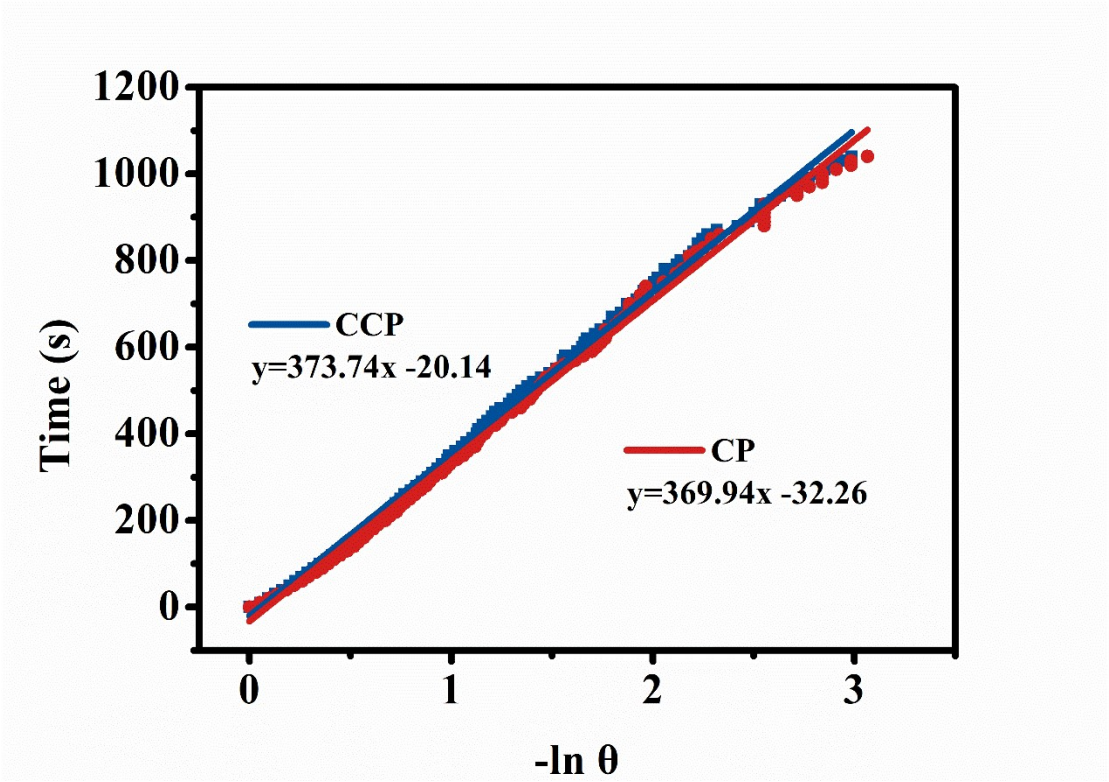


**Figure S10.** Fitting curve of time as a function of -ln(θ) derived from the cooling stage of CP and CCP.

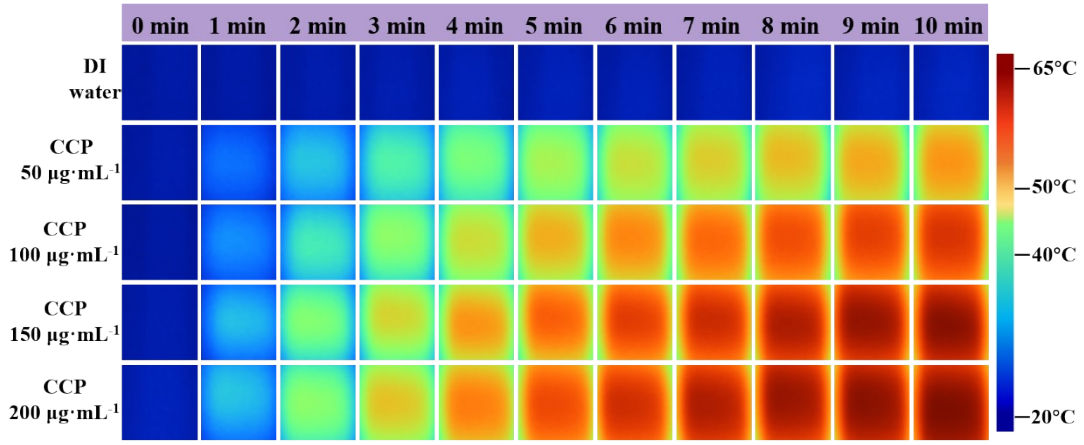


**Figure S11.** Infrared thermographic images of CCP (0-200 μg·mL$^{-1}$) under 808 nm laser (1.0 W·cm$^{-2}$).

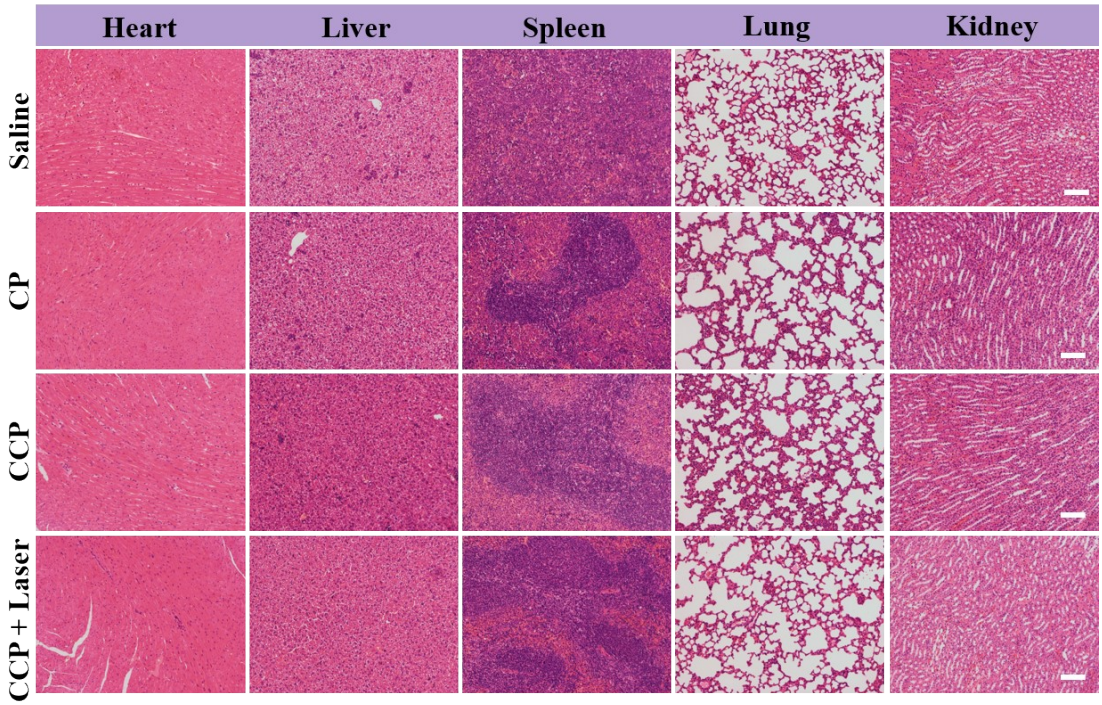


**Figure S12.** H&E staining histological images of major organs of mice at 14 d post-injection, scale bar: 100 μm.