

## Supporting Information

### **Cu<sup>2+</sup>-chelating mesoporous silica nanoparticles for synergistic chemotherapy / chemodynamic therapy**

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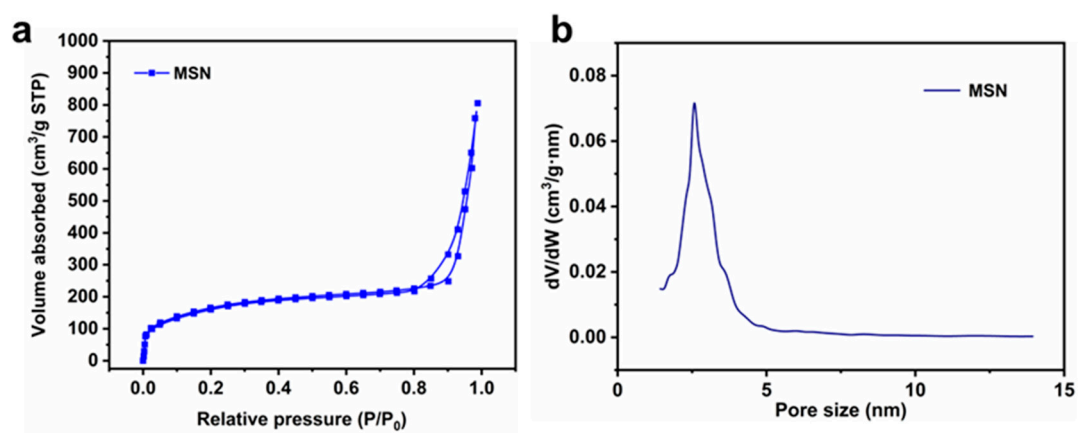
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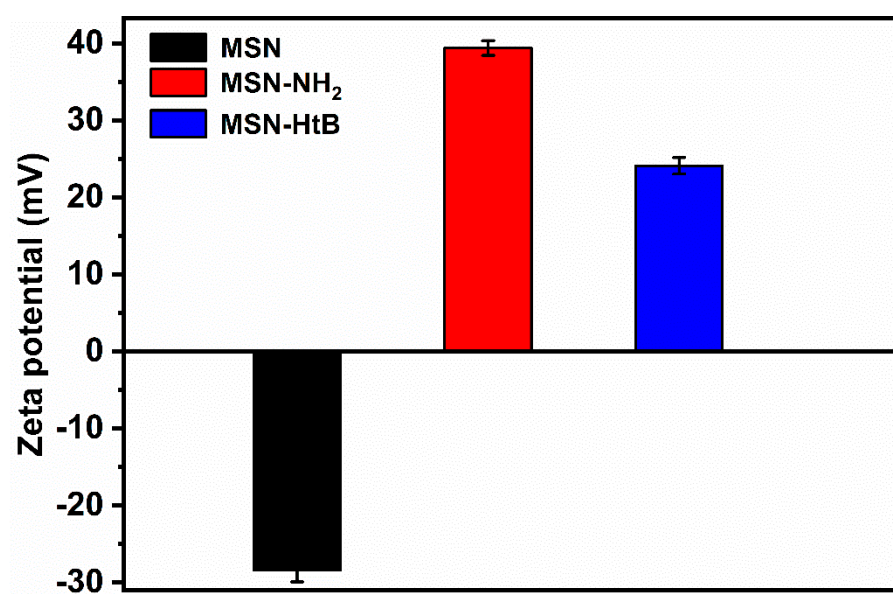
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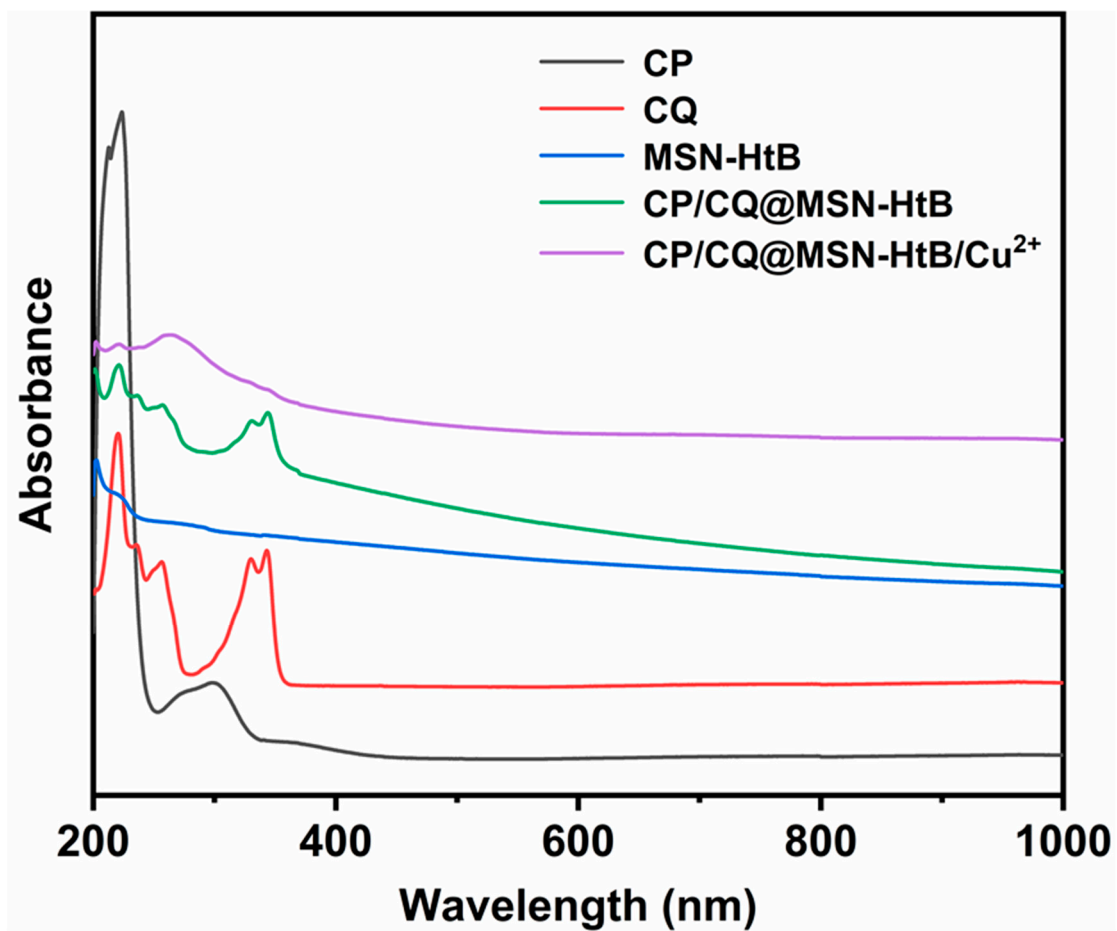
<sup>†</sup>These authors contributed equally to this work.



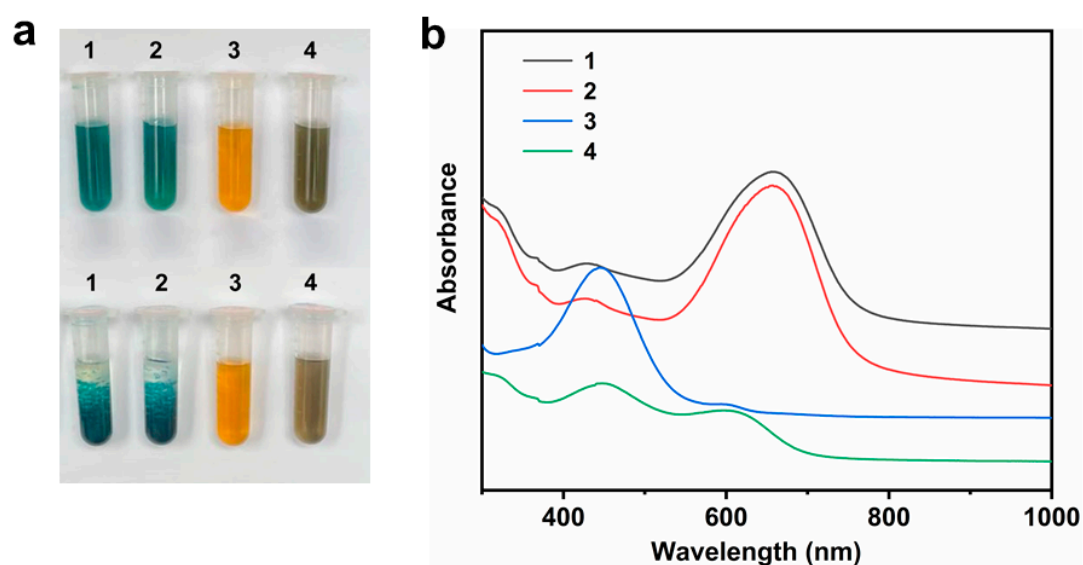
**Figure S1.** (a) N<sub>2</sub> absorption-desorption isotherms and (b) corresponding pore-size distribution of the MSNs.



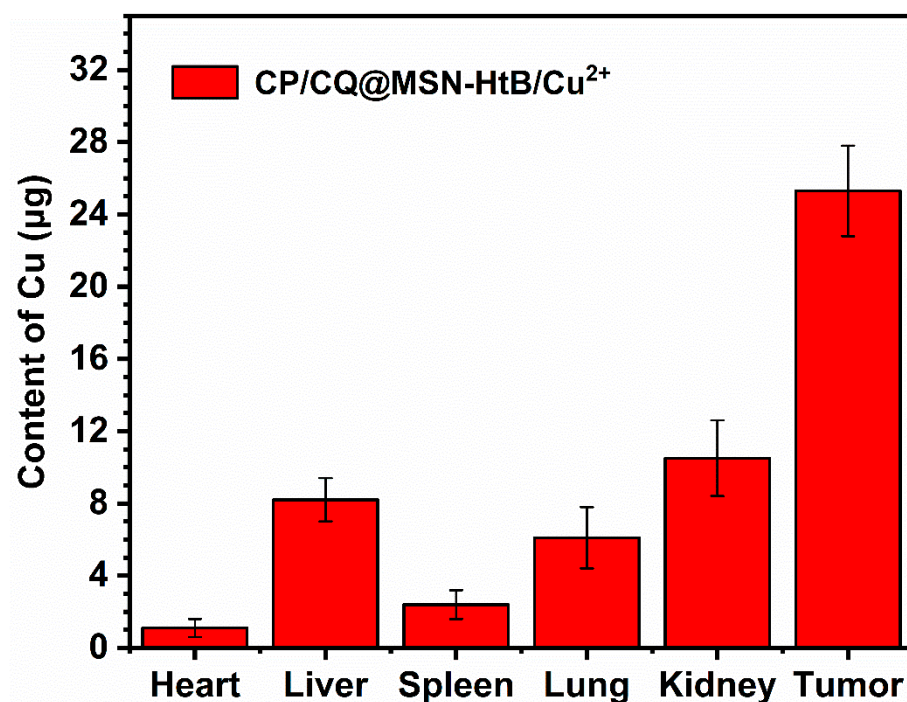
**Figure S2.** Zeta potential results of MSN, MSN-NH<sub>2</sub> and MSN-HtB.



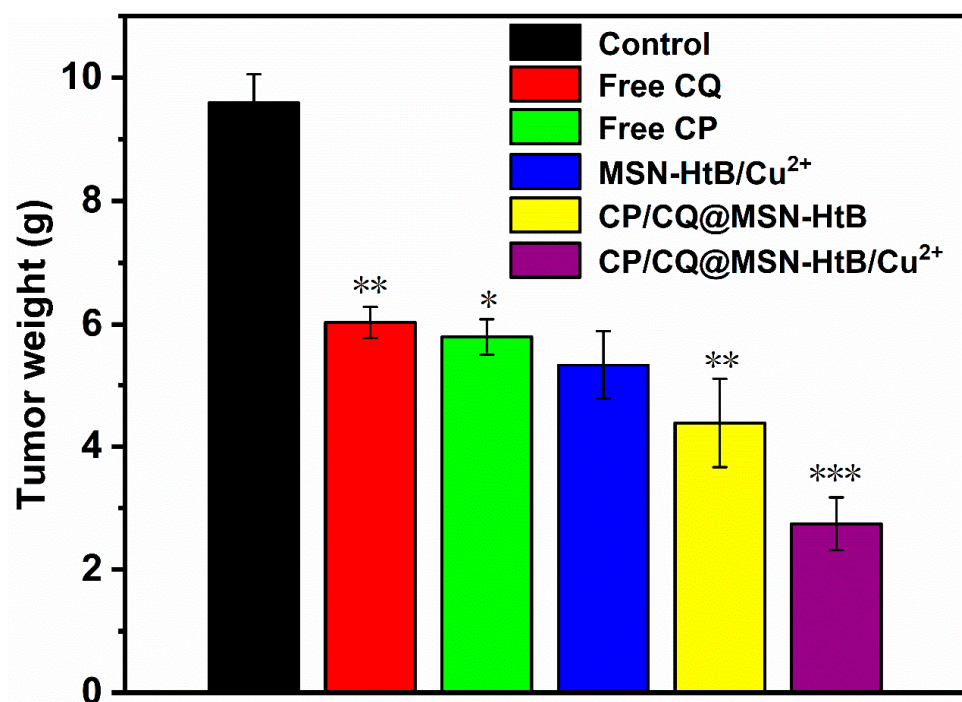
**Figure S3.** UV-Vis absorption spectra of free CP, CQ, MSN-HtB, CP/CQ@MSN-HtB and CP/CQ@MSN-HtB/Cu<sup>2+</sup>.



**Figure S4.** (a) Visual detection of chelation between  $\text{Cu}^{2+}$  and the His-tag by PV (top: immediately after the addition of PV; bottom: after standing for 15 min) and (b) the corresponding UV/vis spectra. Sample key: 1. MSN-HtB NPs; 2. HtB peptide; 3. control, without  $\text{CuSO}_4$ ; 4. control, without HtB.

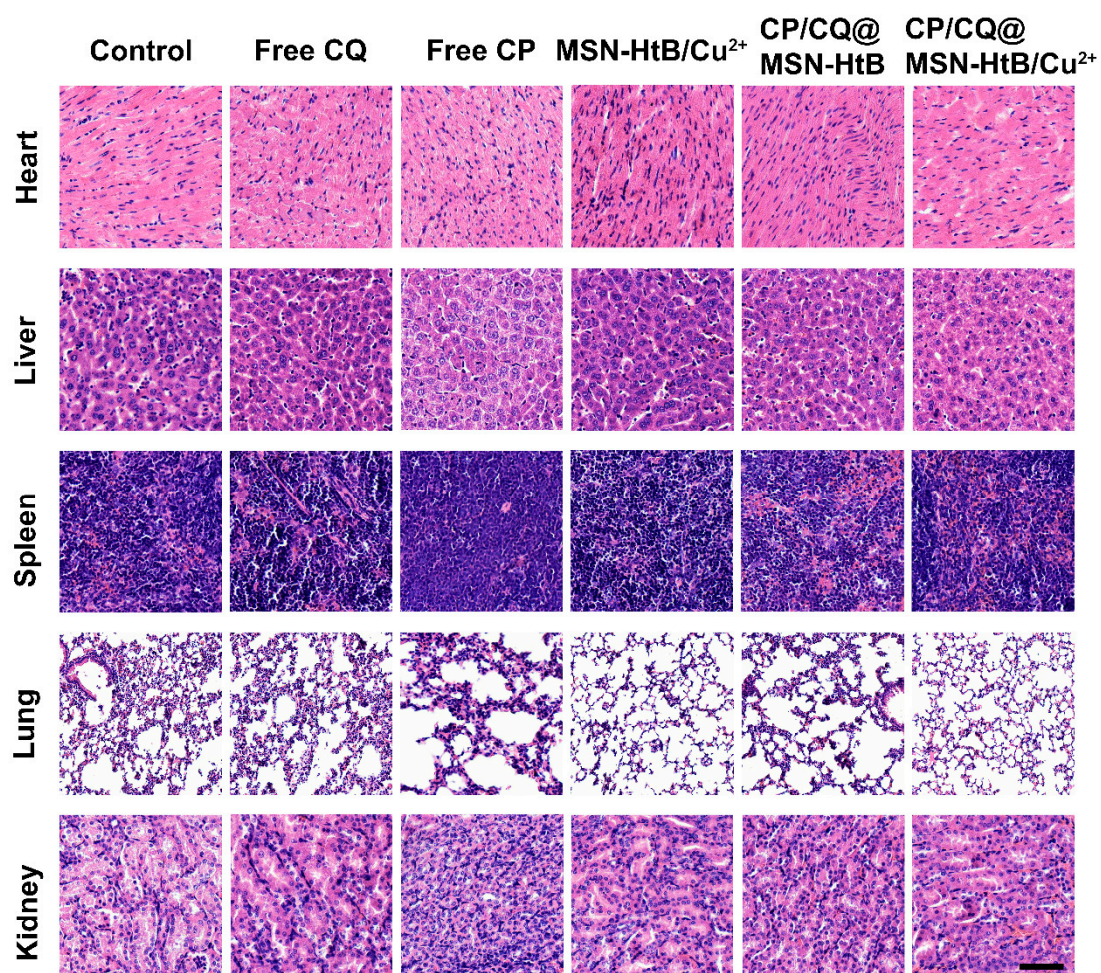


**Figure S5.** Content of Cu in the major organs and tumor after intravenous injection of CP/CQ@MSN-HtB/Cu<sup>2+</sup> NPs.



**Figure S6.** The tumor weights after the 12 day *in vivo* experimental period. \*P < 0.05, \*\*P < 0.01, \*\*\*P < 0.001 when compared to the control.





**Figure S7.** H&E staining of major organs from the control and experimental groups. All scale bars are 20  $\mu$ m.