

**All-in-One Cu Mediated Ag assemble Nanocomposites for Photothermal Assisted
Photo/Chemical Dynamic Therapy with Hypoxia Relief and Reactive Oxygen
Species Enhanced**

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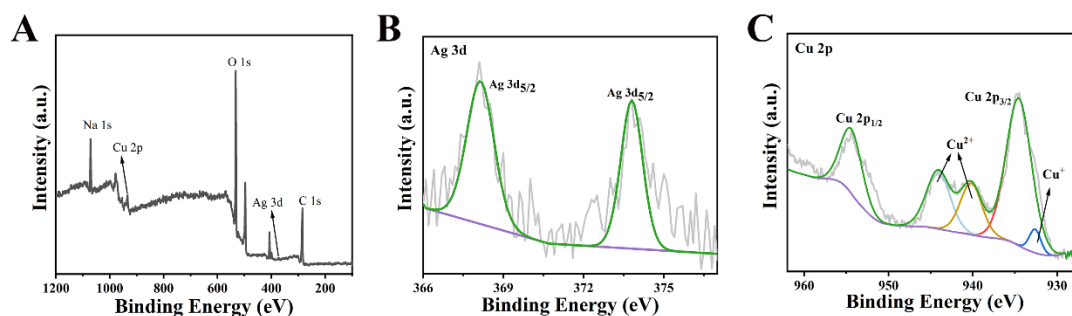


Figure S1. The XPS spectra of Ag@Cu. (A)survey spectrum, (B) Ag 3d, (C) Cu 2p.

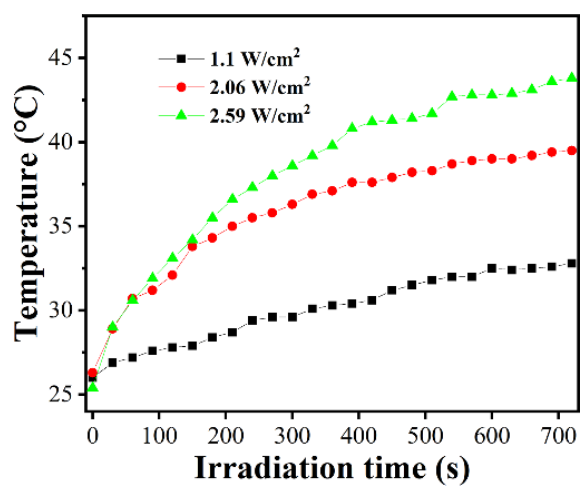


Figure S2. Temperature changes of Ag@Cu (100 µg/ml) under 808 nm laser irradiation with different power densities.

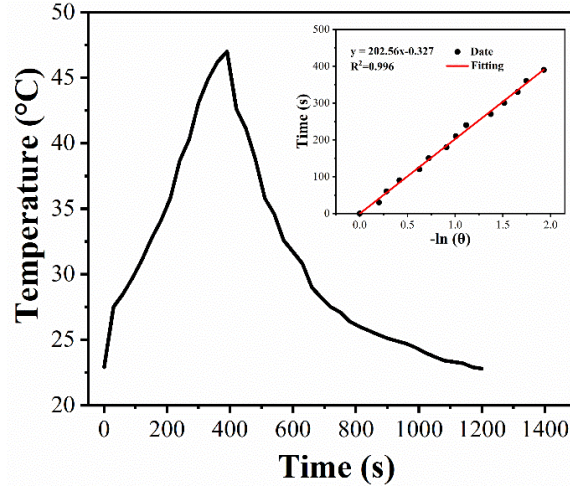


Figure S3. Photothermal effect of Ag@Cu was recorded with the irradiation lasted and then naturally cooled down.

The calculation formula of photothermal conversion efficiency is as follows:

$$\eta = \frac{Q_{sample} - Q_{water}}{I(1 - 10^{-A_{808}})} = \frac{hs(\Delta T_{sample} - \Delta T_{water})}{I(1 - 10^{-A_{808}})}$$

$\Delta_{sample} - \Delta_{water}$ can be calculated from

$$\Delta_{sample} - \Delta_{water} = (T_{max(sample)} - T_{surr(sample)}) - (T_{max(water)} - T_{surr(water)})$$

When $\Delta_{sample} - \Delta_{water}$ was 22.1 °C, I was 2.59 W/cm² and A_{808} was 0.593. According to Figure X, τ_s was determined to be 202.56 s. hs was calculated from

$$hs = \frac{m_D C_D}{\tau_s}$$

When m_D was 1 g and C_D was 4.2 J·g⁻¹·°C⁻¹. The photothermal conversion efficiency was calculated to be 23.8%.

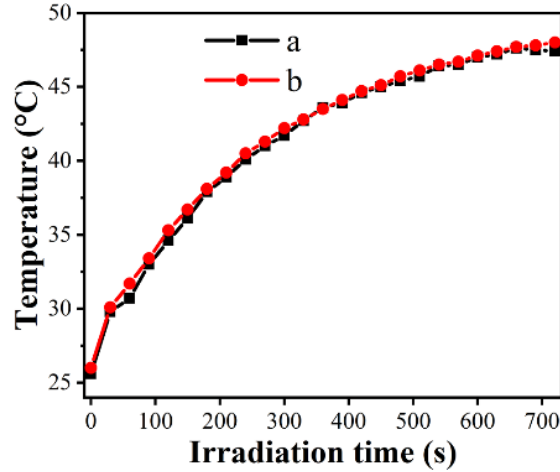


Figure S4. Photothermal stability of Ag@Cu. After (a) without or (b) with 660 nm laser irradiation for 10 min, the Ag@Cu was treated with 808 nm laser irradiation for 12 min.

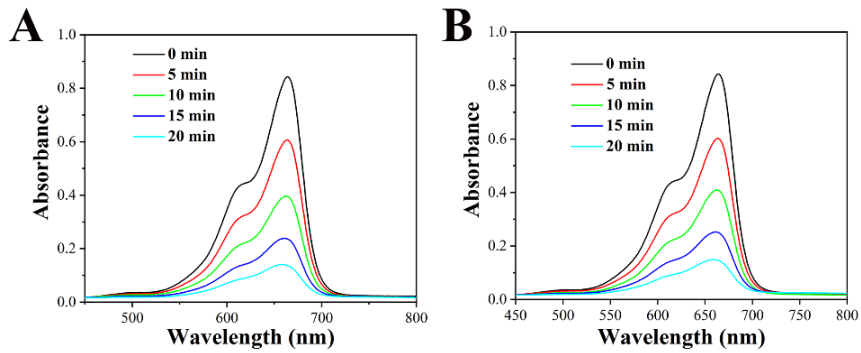


Figure S5. MB degradation by $\cdot\text{OH}$ generated by Ag@Cu, which was treated (A) without or (B) with 808 nm irradiation for 10 min, then it was treated with 660 nm laser irradiation.

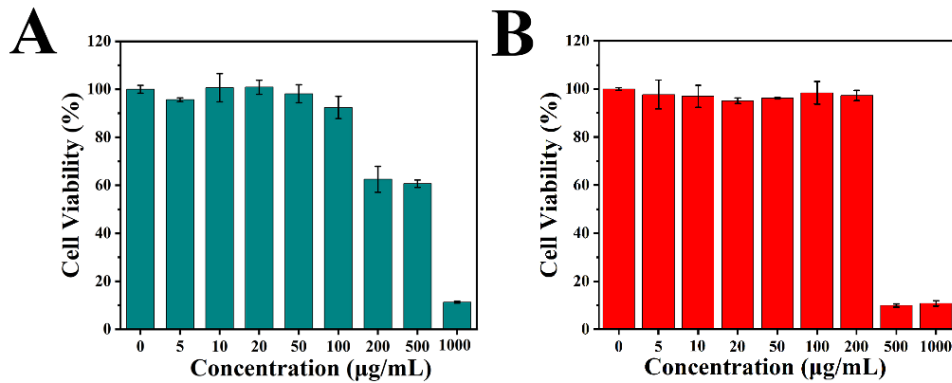


Figure S6. MTT assay of 4T1 cells (A) and HUVEC cells (B) treated with different concentrations of Ag@Cu (0, 5, 10, 50, 100, 200, 500 and 1000 $\mu\text{g/mL}$).

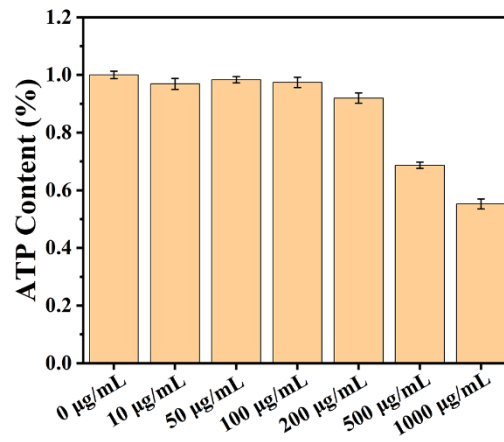


Figure S7. ATP depletion by treated with different concentrations of Ag@Cu (0, 10, 50, 100, 200, 500 and 1000 µg/mL).

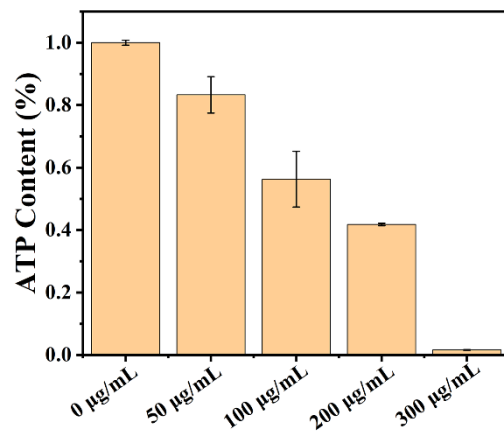


Figure S8. The ATP content of 4T1 cells treated with different concentrations of Ag@Cu (0, 5, 50, 100, 200 and 300 µg/mL).

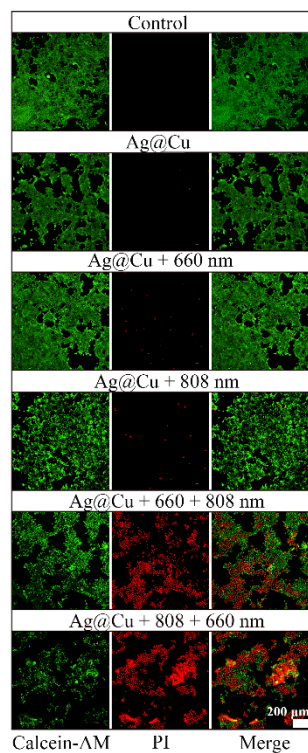


Figure S9. Microscopy images dyed with calcein-AM and PI of 4T1 cells treated with PBS or Ag@Cu (50 $\mu\text{g}/\text{mL}$) (scale bar = 200 μm).

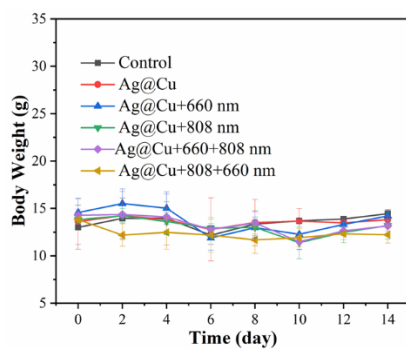


Figure S10. The body weight of BALB/c mice bearing 4T1 from different treatment groups.

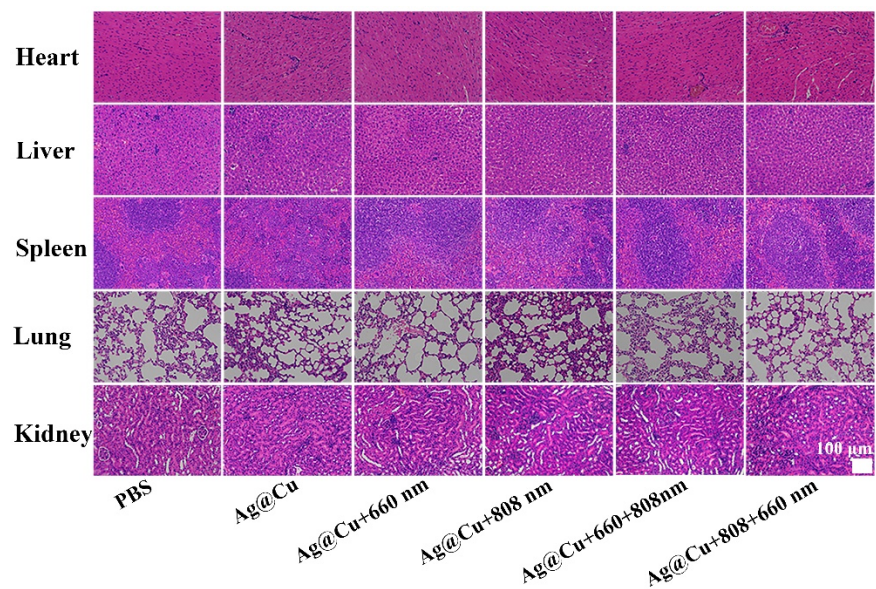


Figure S11. HE images of normal tissues in BALB/c mice after systematic injection of different groups (scale bar = 100 μm).