## **Supporting information**



**Supporting information Figure S1, (a-c)**X-ray photoelectron spectrum (XPS) of  $Cu_5FeS_4$  nanoparticles. Copper (a), iron (b) and sulfide (c) peaks were observed in the XPS spectrum, confirming the existence of Cu, Fe and S in  $Cu_5FeS_4$  nanoparticles



**Supporting information Figure S2,** Photos and DLS of Cu<sub>5</sub>FeS<sub>4</sub>-PEG in water, 9% NaCl (PBS), cell medium and FBS.



Supporting information Figure S3, Confocal images of 4T1 cells incubated with 20  $\mu$ g/mL of Cy5.5-labeled Cu<sub>5</sub>FeS<sub>4</sub>-PEG for 6 h of incubation.

## **PBS + Laser**

## Cu₅FeS₄-PEG +Laser





Supporting information Figure S4, Hematoxylin and Eosin staining of tumor slices from mice exposure to laser treated with or without  $Cu_5FeS_4$ -PEG.



Supporting information Figure S5, Body weight curves of mice after various treatments indicated.



**Supporting information Figure S6,** In vivo potential toxicity of  $Cu_5FeS_4$ -PEG. Hematoxylin and Eosin stained micrographs of major organs slices from  $Cu_5FeS_4$ -PEG treated (dose = 50 mg/kg) mice taken at different time points (1, 7 and 30 days p.i.).