Supporting Information

One-pot synthesis of acid-induced *in-situ* aggregation theranostic gold nanoparticles to enhance retention in tumor cells

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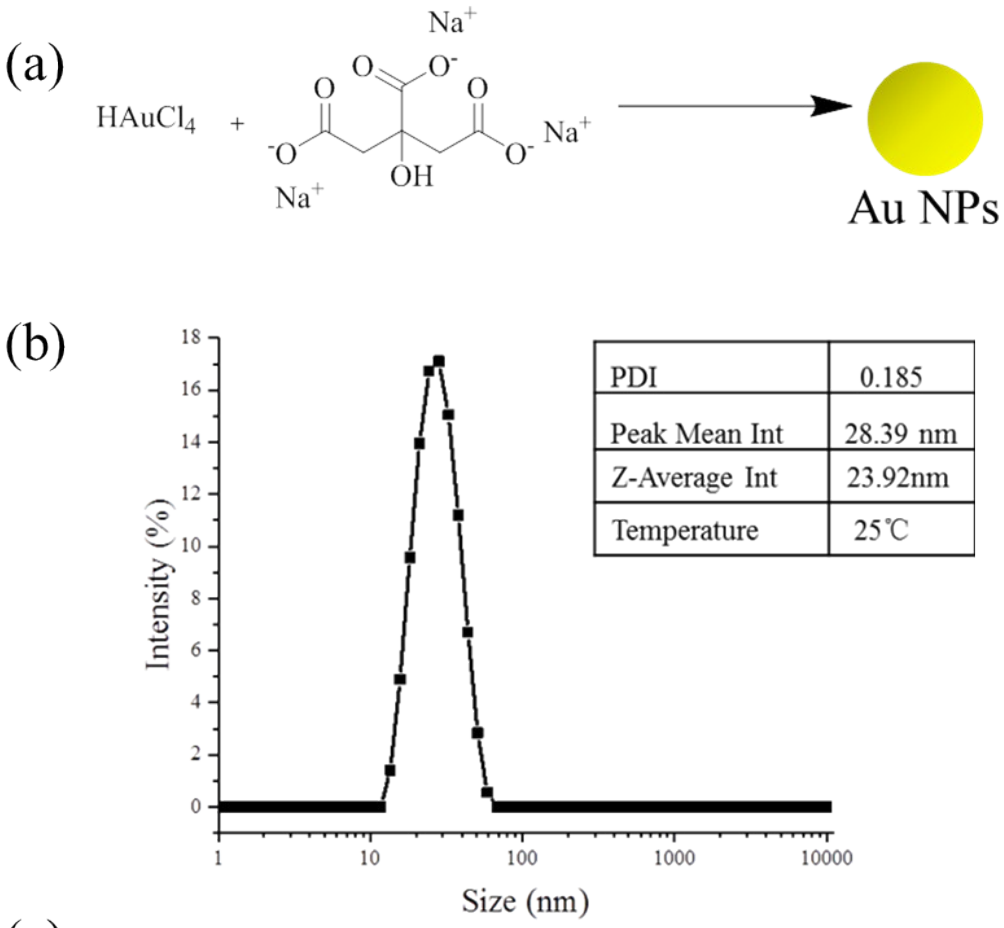

Figure S1. (a) The preparation of gold nanoparticles. The characterization of gold nanoparticle by (b) DLS and (c) TEM.

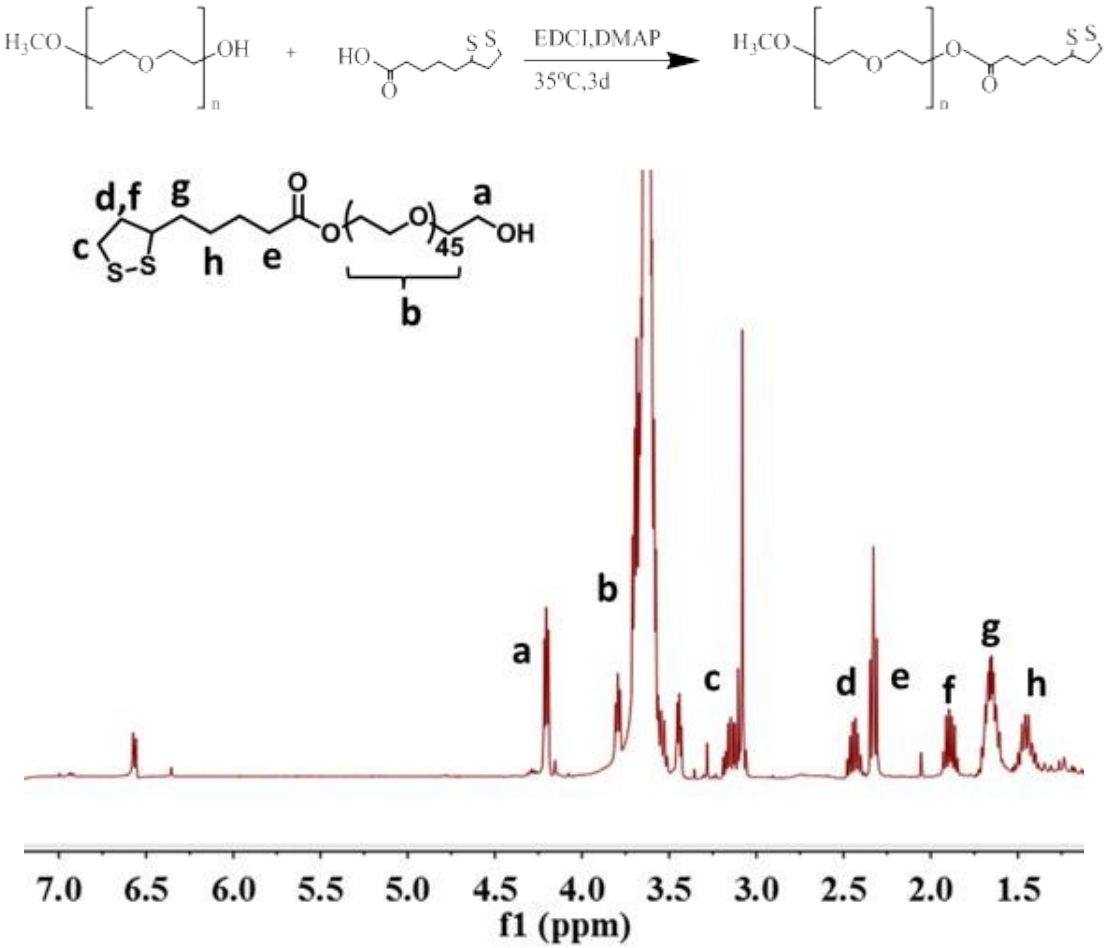

Figure S2. ^{1}H-NMR spectrum of the preparation of PEG-LA

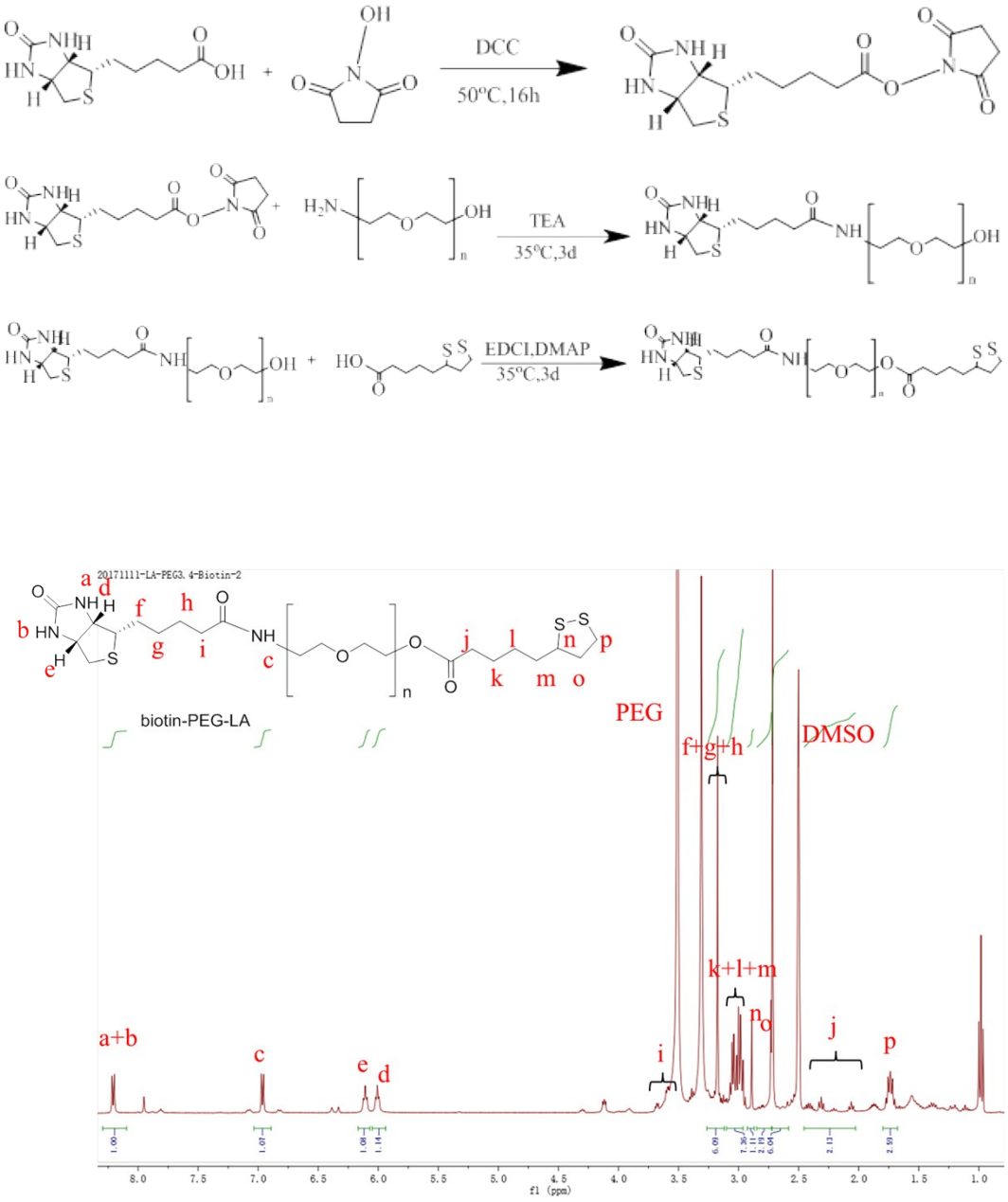

Figure S3. ^{1}H-NMR spectrum of the preparation of Biotin-PEG-LA

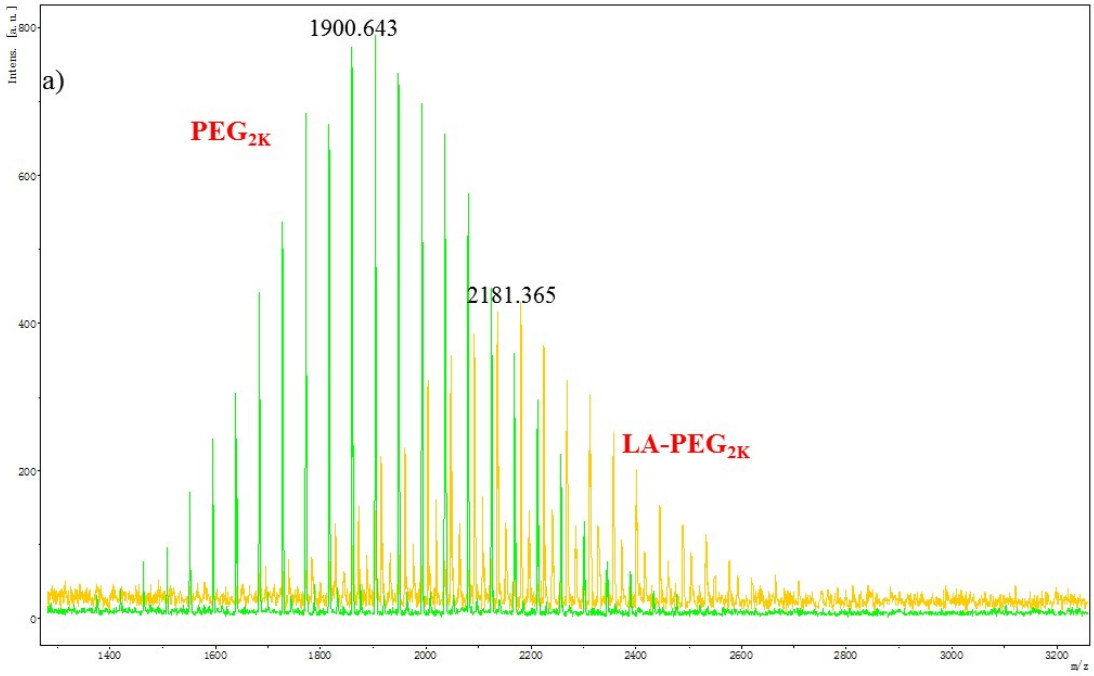

Figure S4. MALDI-TOF of LA-PEG.

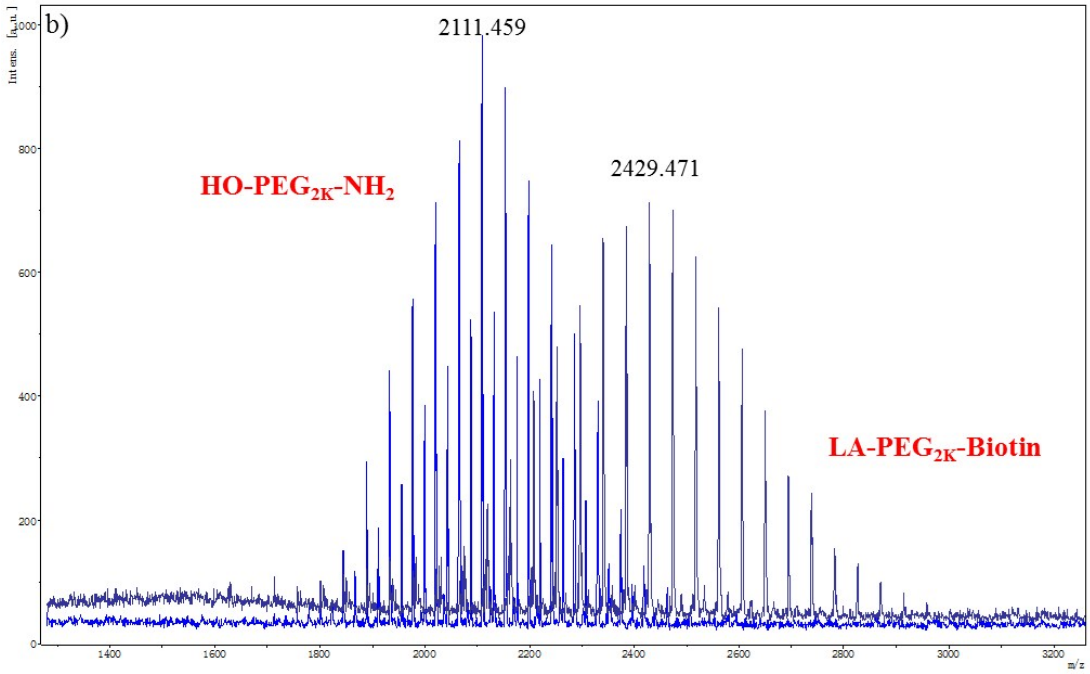

Figure S5. MALDI-TOF of Biotin-PEG-LA

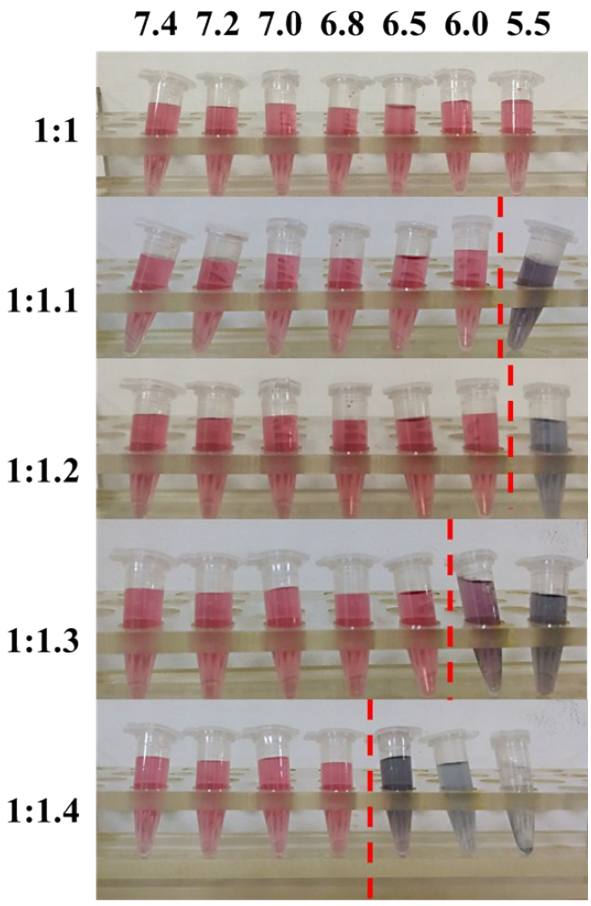

Figure S6. Digital images of Au@T at different pH conditions. Clear red color means excellent dispersion of gold nanoparticles. The red lines are drawn to make the images show more clearly. The grayish black means nanoparticles are aggregated NPs.

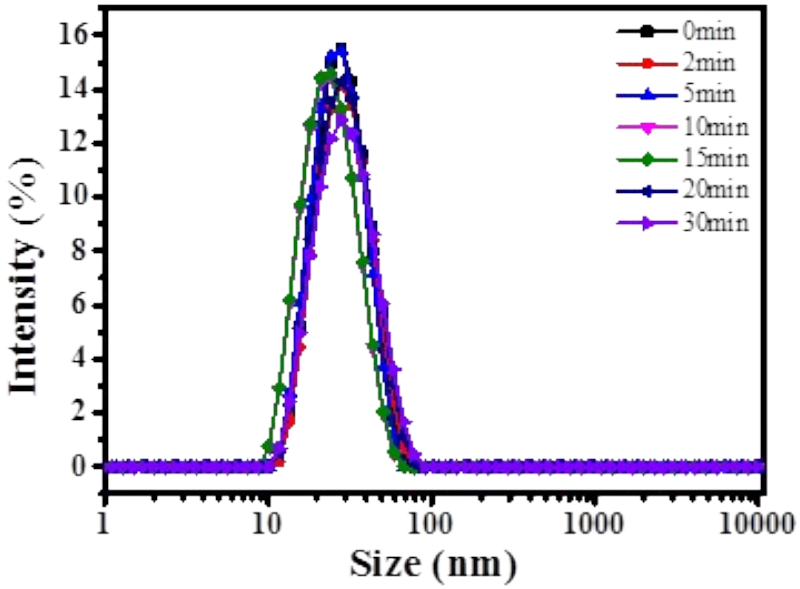

Figure S7. DLS profile of Au@Bio as the gold concentration of 0.05mg/ml in PBS buffer(PH=6.0)

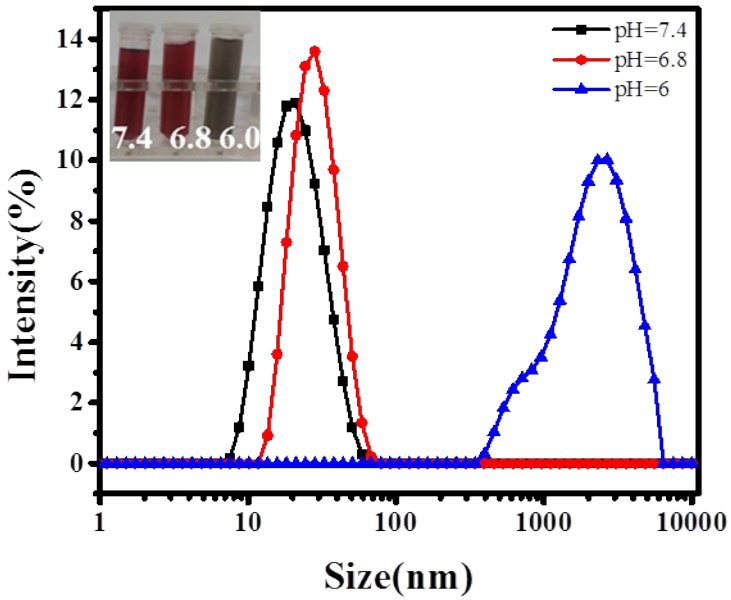

Figure S8. The responsive pH values of Au@T. DLS profile of Au@T as the gold concentration of 0.05mg/ml in PBS buffer(PH=6.0,6.8,7.0)

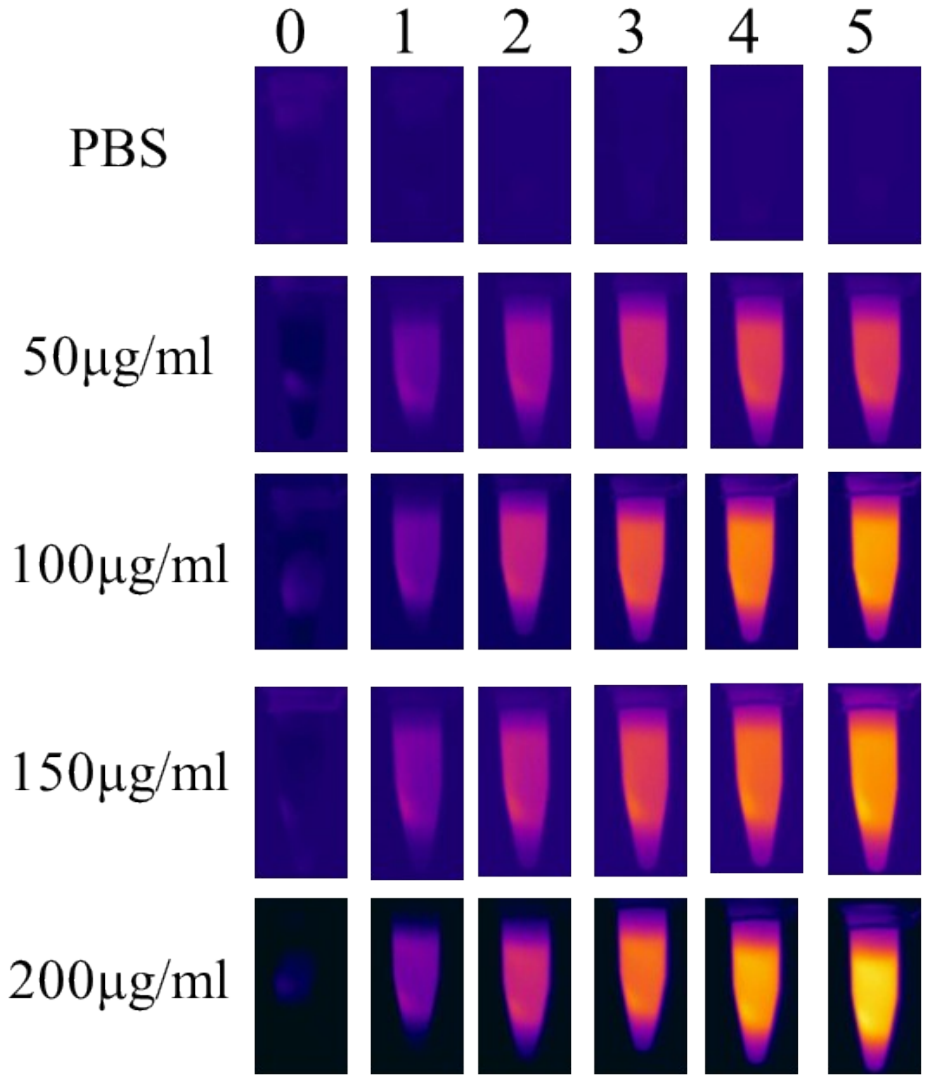

Figure S9. The photothermal performance of Au@T with different gold concentration upon NIR irradiating (808 nm，1.5W/cm2，5 min)

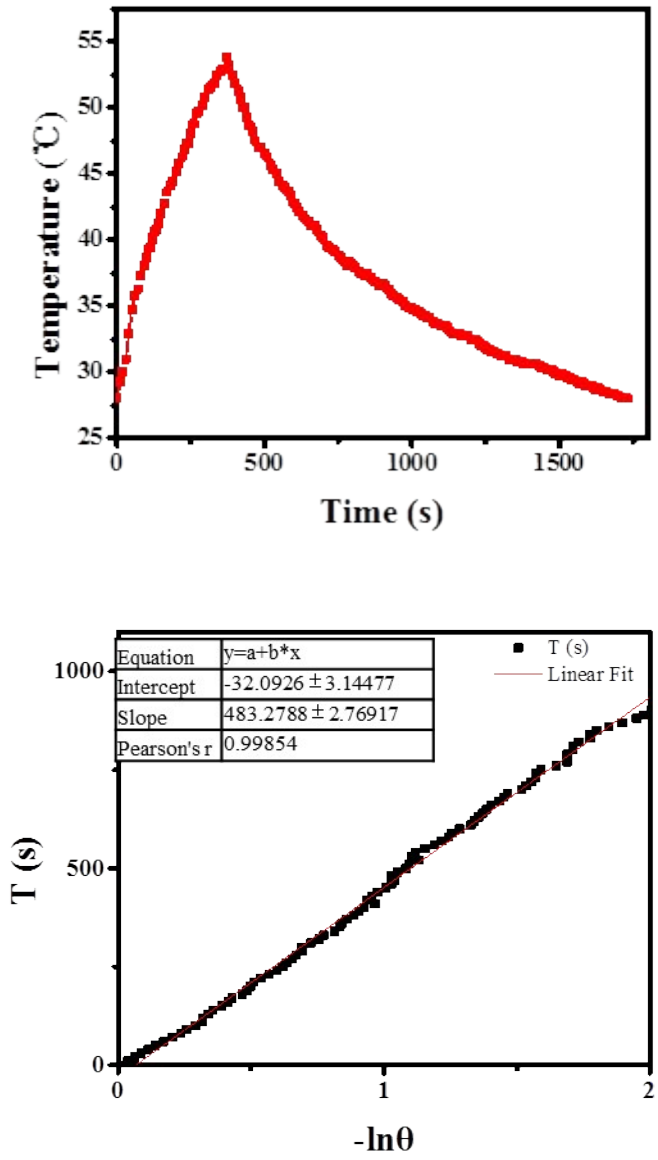

Figure S10. Temperature of aqueous solutions containing Au@T (100 μg mL^{-1}) for showing their different photothermal conversion behaviors induced by 808 nm laser irradiation (Inset: photothermal images acquired right before the NIR laser was switched off).

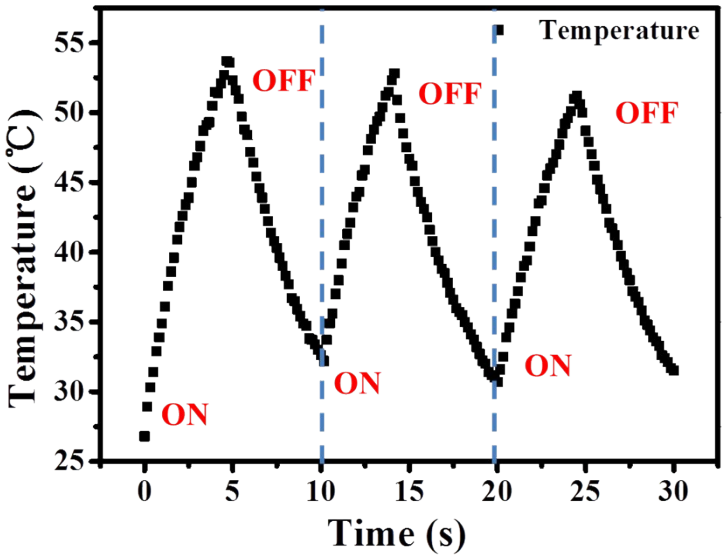

Figure S11.The temperature change curves of Au@T over repeated laser on/off cycles

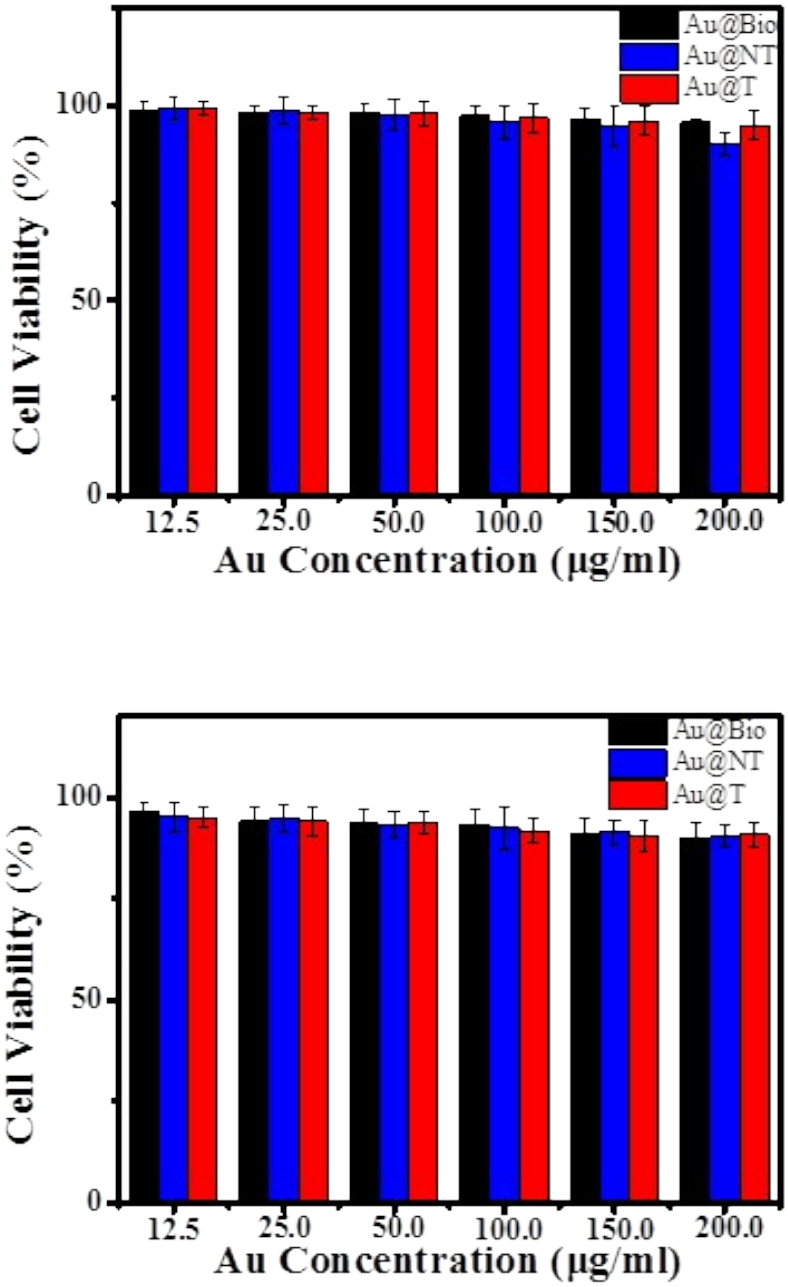

Figure S12. Viability of NIH 3T3 cells after incubated with different concentrations of Au@Bio, Au@ NT, Au@T for 24 h (a) and 48 h (b) respectively.

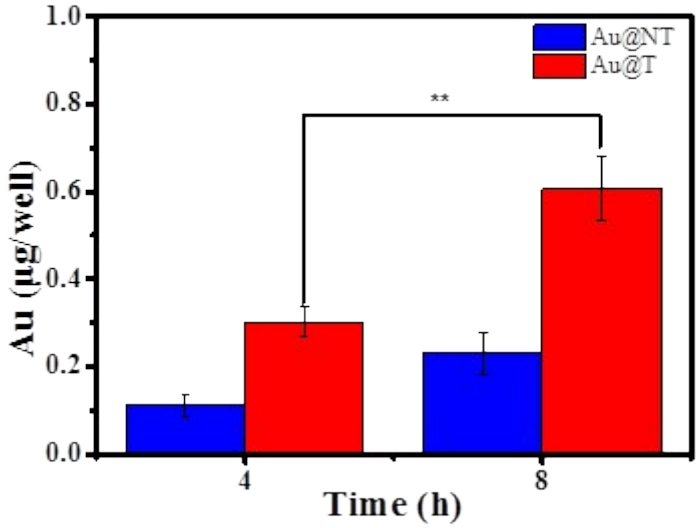

Figure S13. Cellular uptake of HepG2 cells incubated with Au@NT and Au@T for 4 and 8 h using ICP-AES analysis; error bars indicate SD (n= 3).

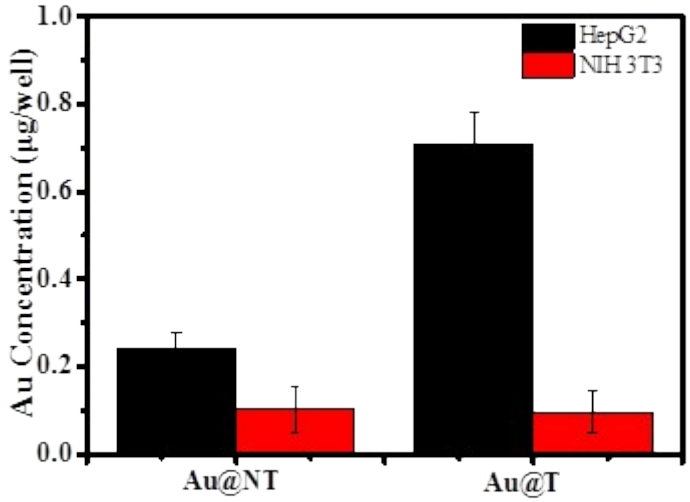

Figure S14. Cellular uptake of HepG2 and NIH 3T3 cells incubated with Au@NT and Au@T for 8 h using ICP-AES analysis; error bars indicate SD (n= 3).