

Supporting Information

“Zwitterionic” gold nanorods: low toxicity and high photothermal efficiency for cancer therapy

Huangyong Jiang^a, Dong Chen^a, Dongbo Guo^a, Nan Wang^a, Yue Su^a, Xin Jin^{*a},

Gangsheng Tong^{*b} and Xinyuan Zhu^a

^aSchool of Chemistry and Chemical Engineering, State Key Laboratory of Metal Matrix Composites, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai 200240, P. R. China. E-mail: jinxin@iccas.ac.cn

^bInstrumental Analysis Center, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai 200240, P. R. China. E-mail: tgs@sjtu.edu.cn

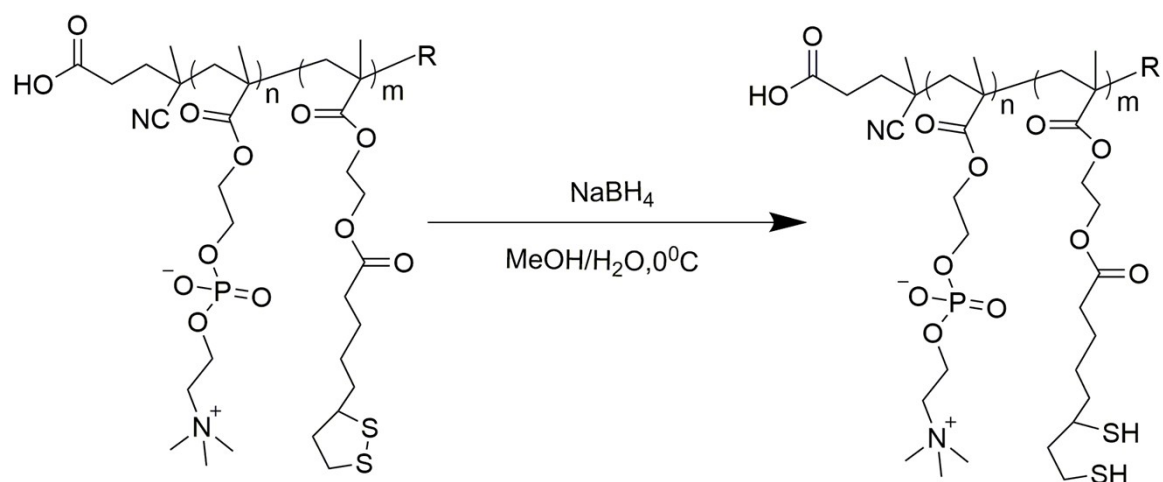


Fig. S1. Block polymer pMPC-*b*-pLA reduction to the corresponding DHLA-containing block polymer.

Synthesis and characterization of monomer HELA-LA.

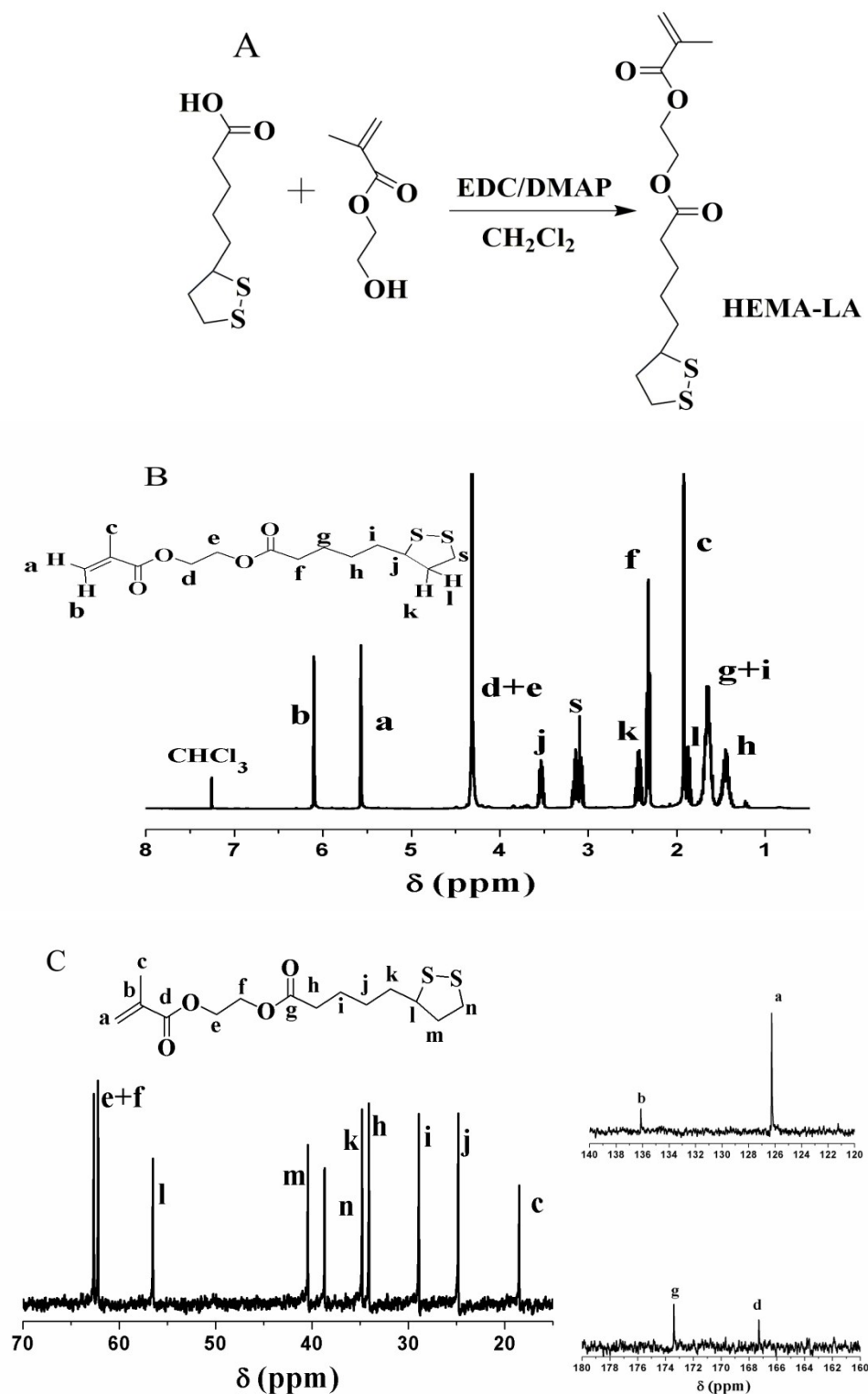


Fig. S2. A) Synthesis of monomer HEMA-LA. B) ^1H NMR spectrum of monomer HELA-LA in CDCl_3 . C) ^{13}C NMR spectrum of monomer HEMA-LA in CDCl_3 .

^{13}C NMR characterization of CTP-terminated polyMPC and pMPC-*b*-pLA.

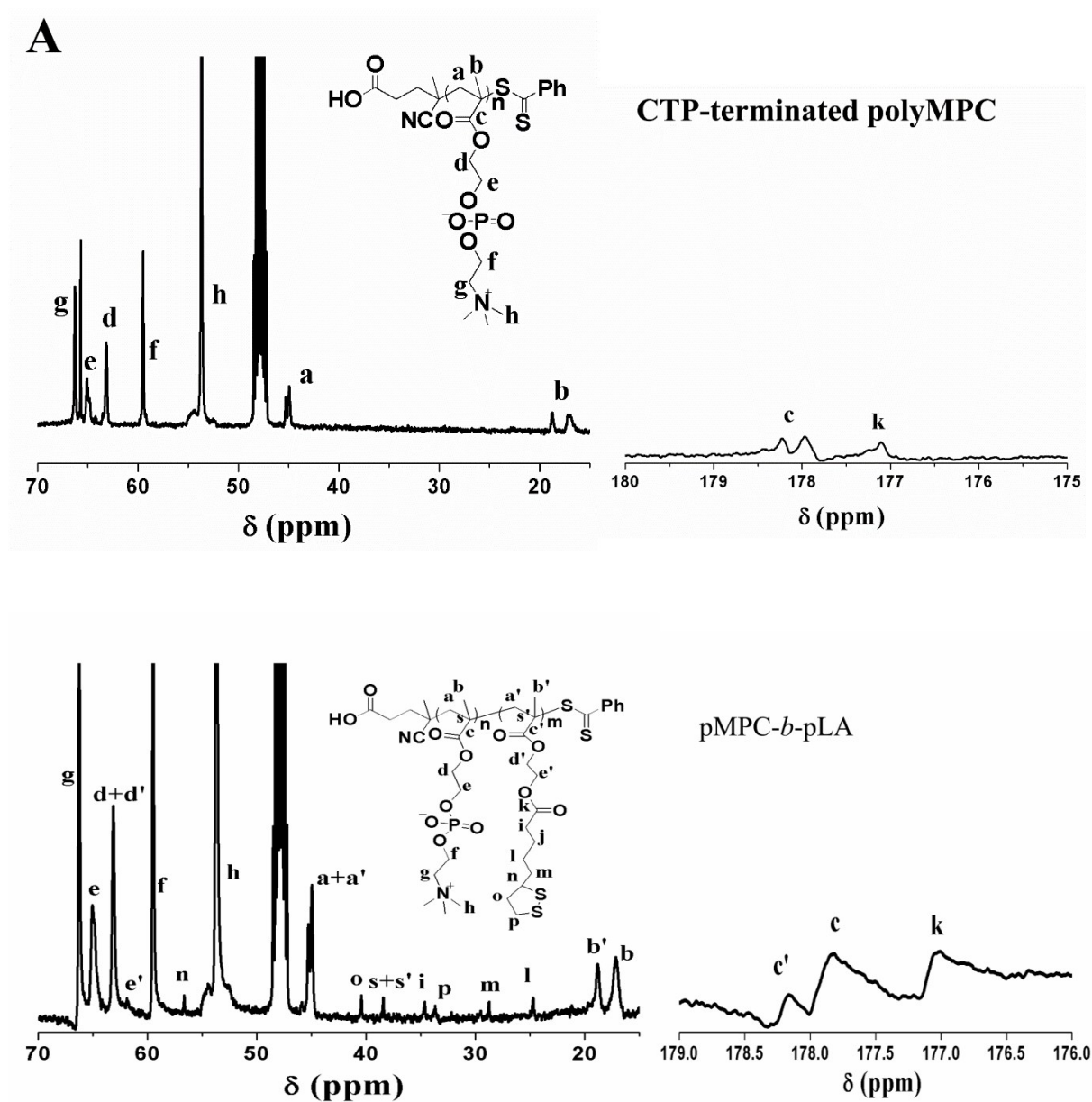


Fig. S3. ^{13}C NMR spectrum of **A)** CTP-terminated polyMPC and **B)** pMPC-*b*-pLA in $\text{MeOD-}d_4$.

Table S1. Mw^a and PDI^a of CTP-terminated polyMPC and pMPC-*b*-pLA.

Polymer	Mw	PDI
CTP-terminated polyMPC	9654	1.38
pMPC- <i>b</i> -pLA	11807	1.45

a: Measured by GPC.

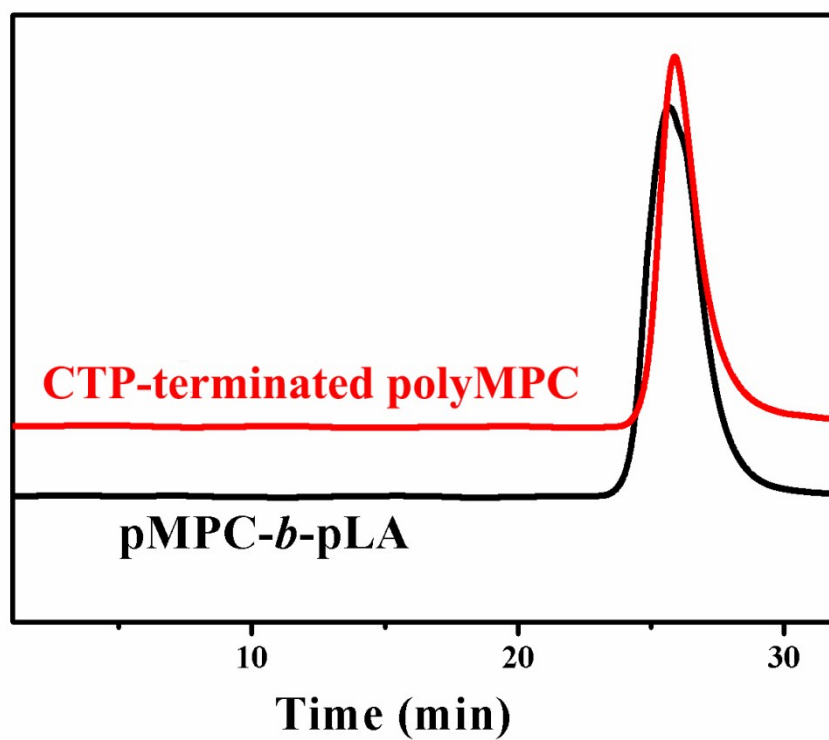


Fig. S4. Aqueous GPC traces of CTP-terminated polyMPC (red line) and pMPC-*b*-pLA (black line).

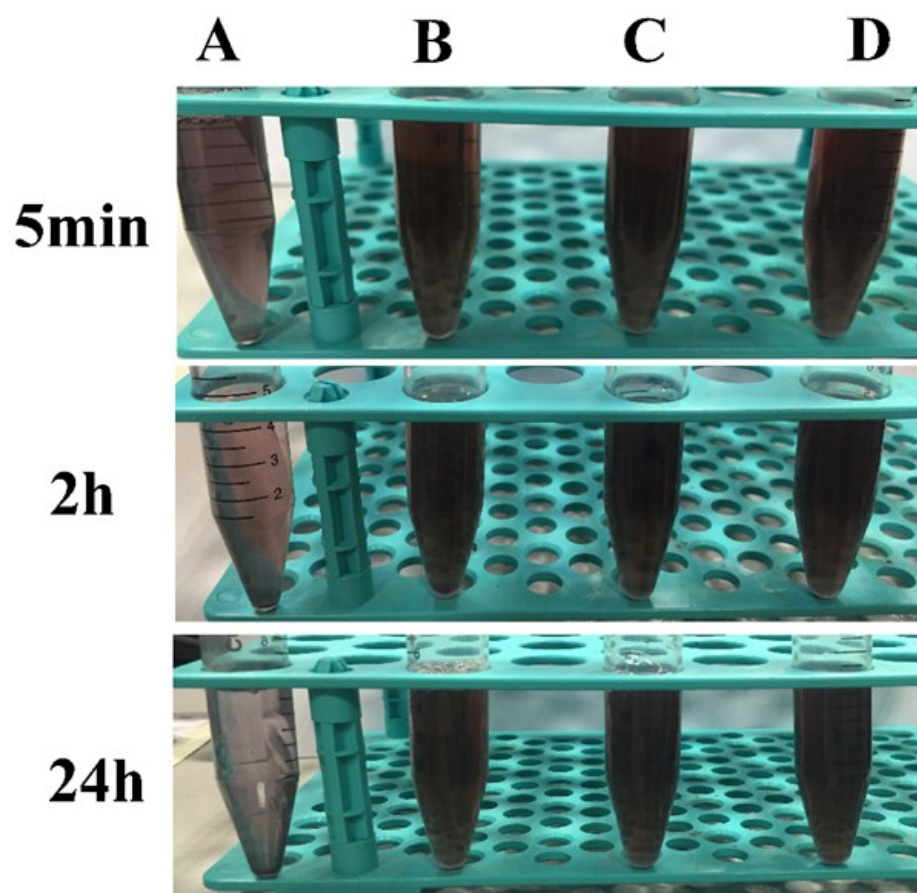


Fig. S5. The photograph of **A)** CTAB-Au NRs in 20 mM PBS solution, **B)** CTAB-Au NRs in water, **C)** pMPC-Au NRs in 20 mM PBS solution, **D)** pMPC-Au NRs in water for 5 min, 2 h and 24 h.

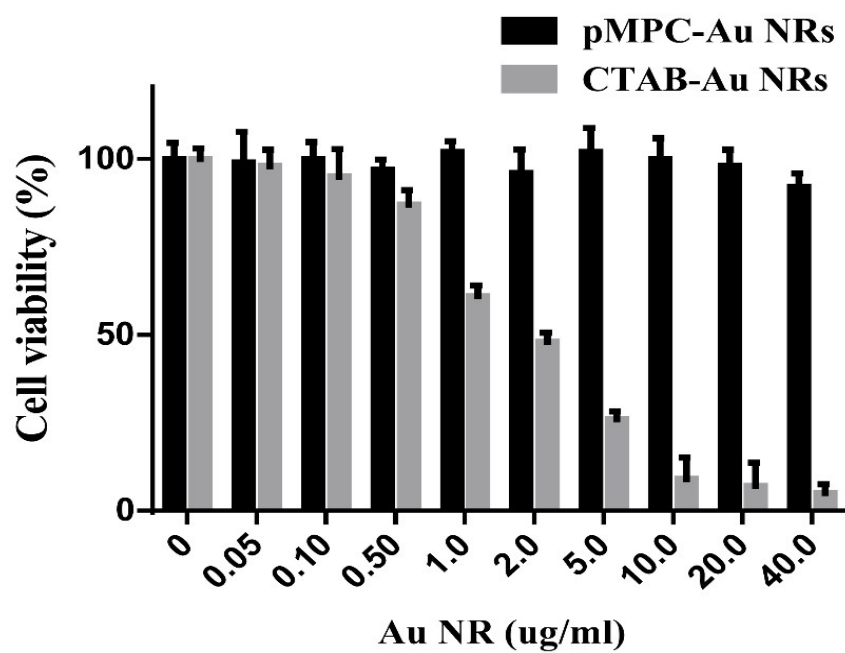


Fig. S6. Dark-cytotoxicity of CTAB-Au NRs and pMPC-Au NRs to MCF-7 cancer cells at different Au concentrations. Data are given as the mean $\pm$ SD (n=6).

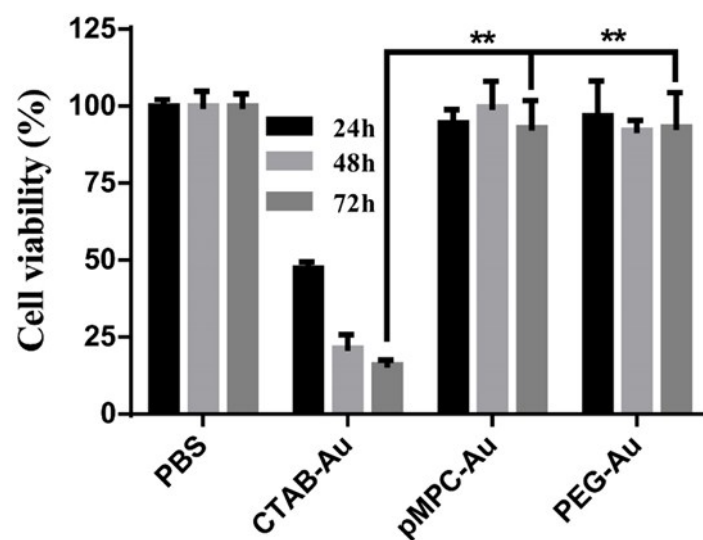


Fig. S7. Dark-cytotoxicity of CTAB-Au NRs, pMPC-Au NRs and PEG-Au NRs. The error bars represent mean $\pm$ SD (n = 6) and the statistical significance level is ** P < 0.001.

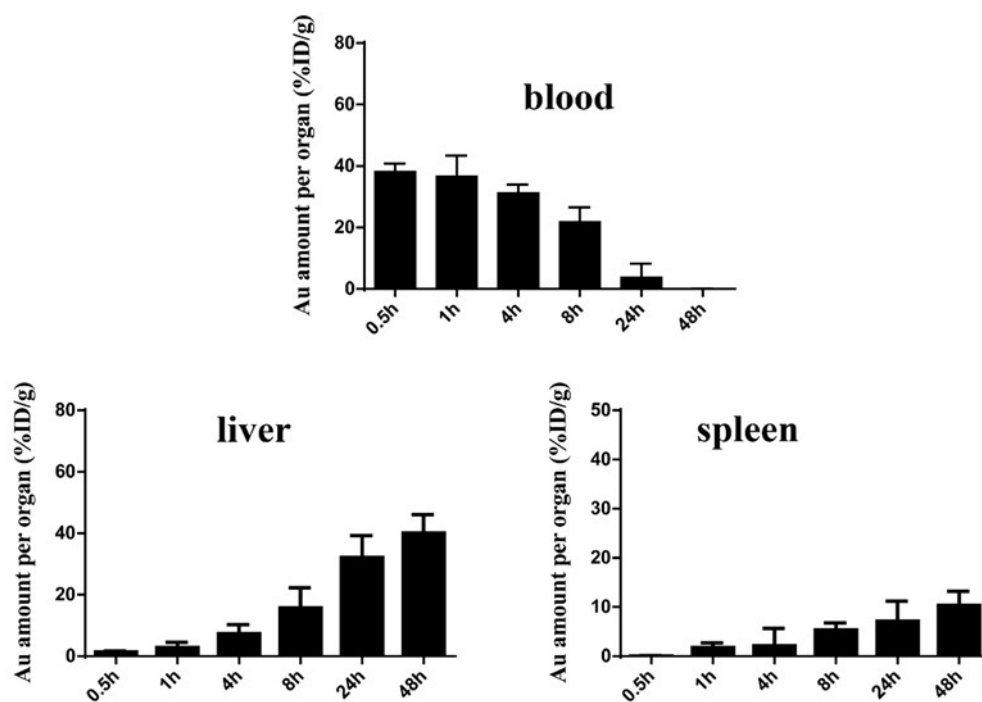


Fig. S8. Biodistribution of PEGylated Au NRs in the organs of the Balb/c mice. The error bars represent mean $\pm$ SD (n = 3).

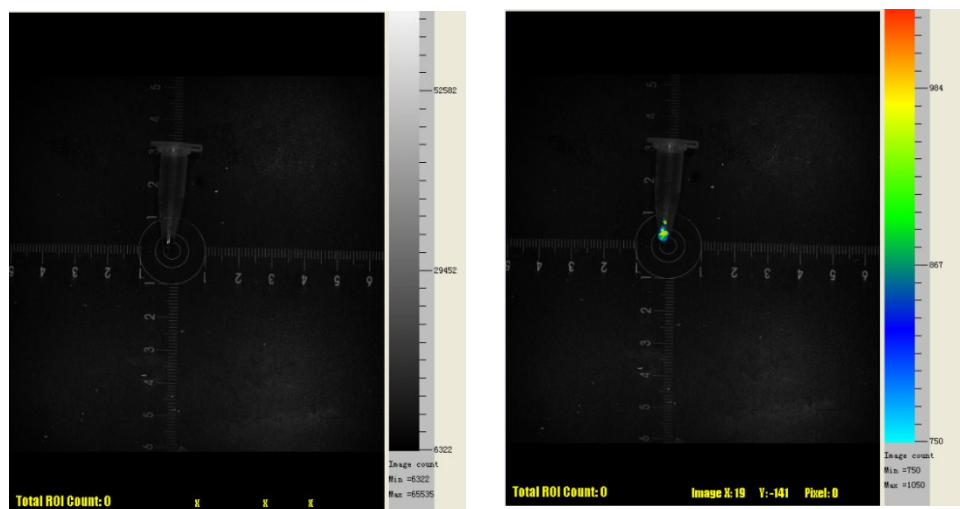


Fig. S9. The photograph (left) and ex vivo small animal fluorescence image (right) of Cy5.5-pMPC-Au NRs excited at 580 nm.