

***In vivo* tumor active targeting and CT-fluorescence dual-modal imaging  
with nanoprobe based on gold nanorod and InP/ZnS quantum dot**

Lin Zhang<sup>1‡</sup>, Xiao-Quan Yang<sup>1‡</sup>, Jie An<sup>1</sup>, Sun-Duo Zhao<sup>1</sup>, Tian-Yu Zhao<sup>1</sup>, Fang Tan<sup>2</sup>, Yuan-Cheng  
Cao<sup>2</sup>, Yuan-Di Zhao<sup>1,\*</sup>

<sup>1</sup> *Britton Chance Center for Biomedical Photonics at Wuhan National Laboratory for Optoelectronics – Hubei Bioinformatics & Molecular Imaging Key Laboratory, Key Laboratory of Biomedical Photonics (HUST, Ministry of Education), Collaborative Innovation Center for Biomedical Engineering, College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan 430074, P. R. China*

<sup>2</sup> *Key Laboratory of Optoelectronic Chemical Materials and Devices, Ministry of Education, Jiangnan University, Wuhan 430056, P. R. China*

‡These authors equally contributed to this article

\* Corresponding Author.

Tel: 86-27-87792235; Fax: 86-27-87792202. E-mail address: [zydi@mail.hust.edu.cn](mailto:zydi@mail.hust.edu.cn) (Y.D. Zhao)

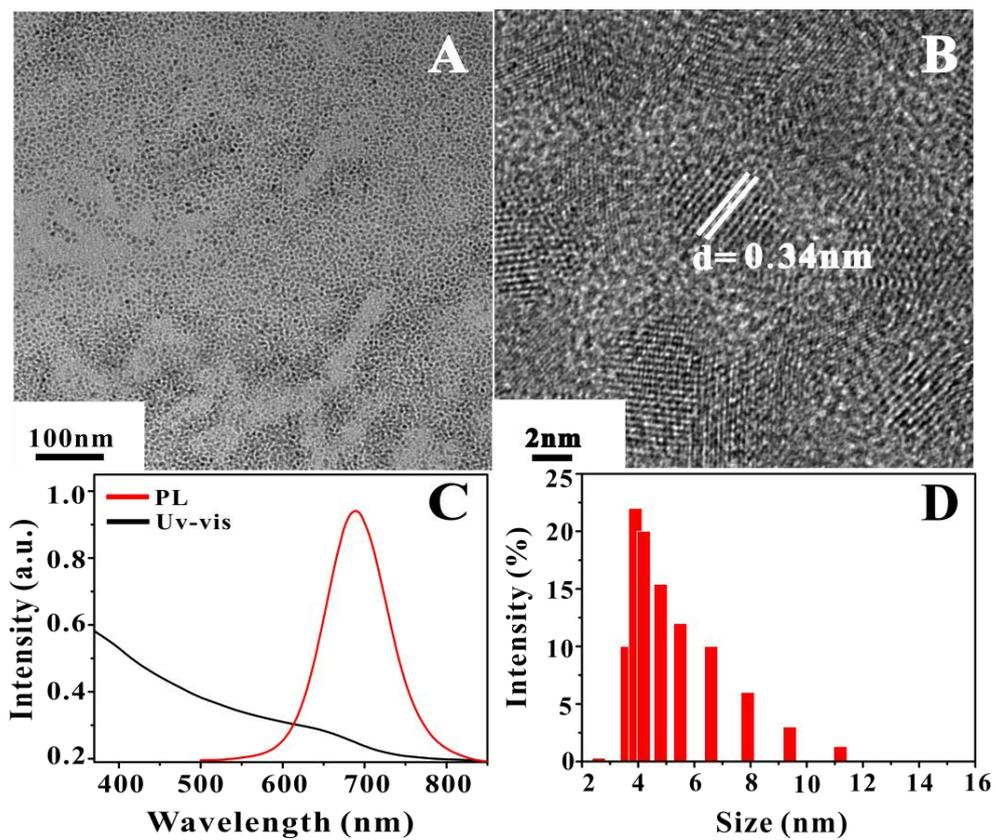


Fig. S1 TEM (A), HRTEM (B), absorption and fluorescence spectra (C), DLS (D) of InP/ZnS QD.

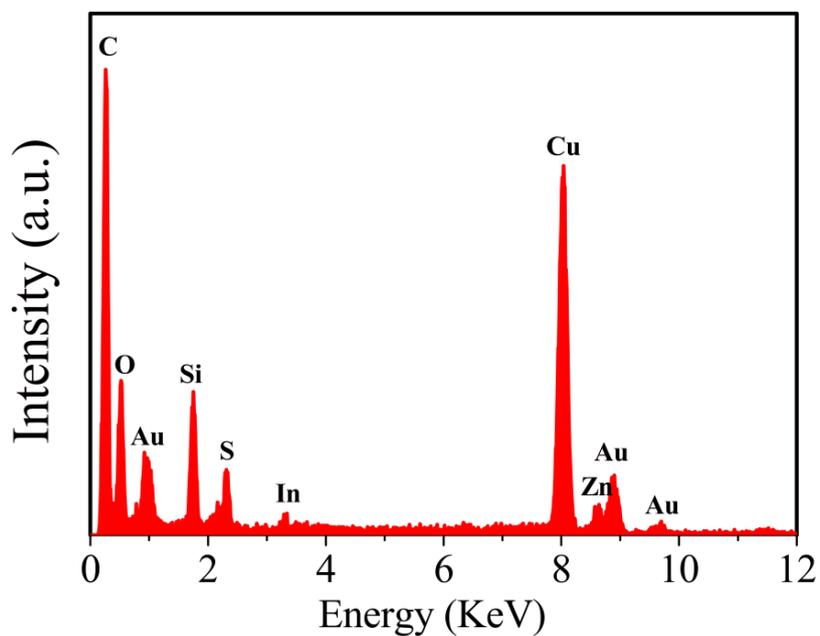


Fig. S2 EDS of ASR

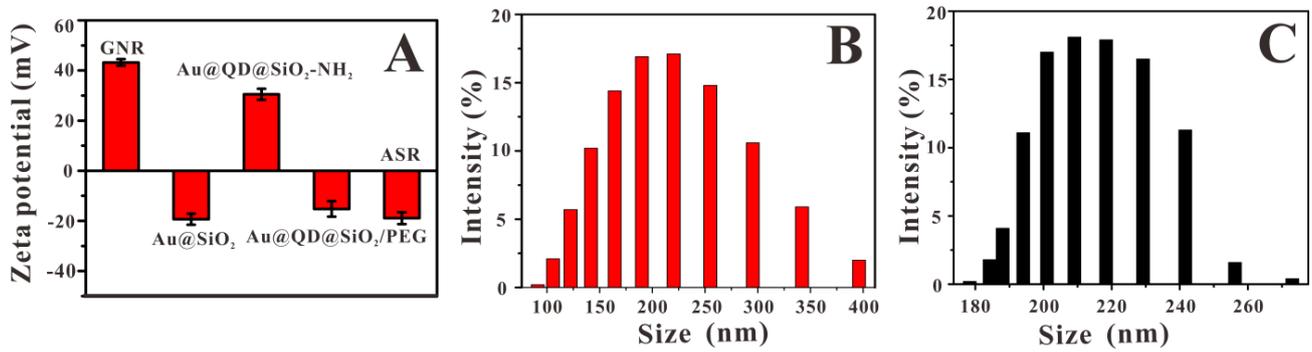


Fig.S3 Zeta potentials of GNR, Au@SiO<sub>2</sub>, Au@QD@SiO<sub>2</sub>-NH<sub>2</sub>, Au@QD@SiO<sub>2</sub>/PEG, Au@QD@SiO<sub>2</sub>/PEG-c(RGDfC) (ASR) (A); hydrated particle size distribution of Au@QD@SiO<sub>2</sub>/PEG (B) and ASR (C).

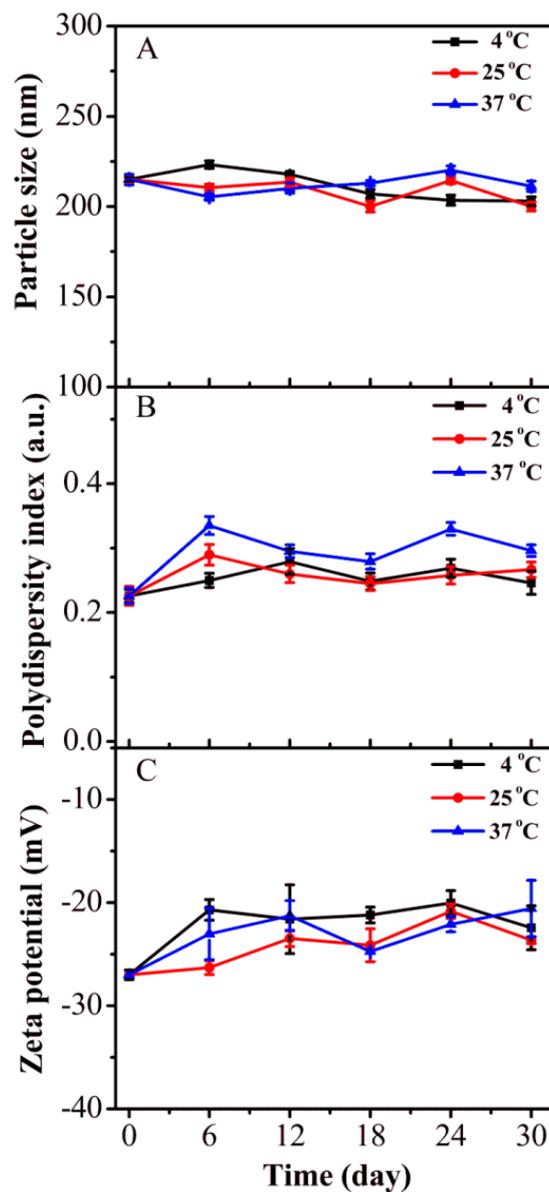


Fig. S4 The probe size (A), polydispersity index (B) and the change of zeta potential (C) with time at different preservation temperatures.

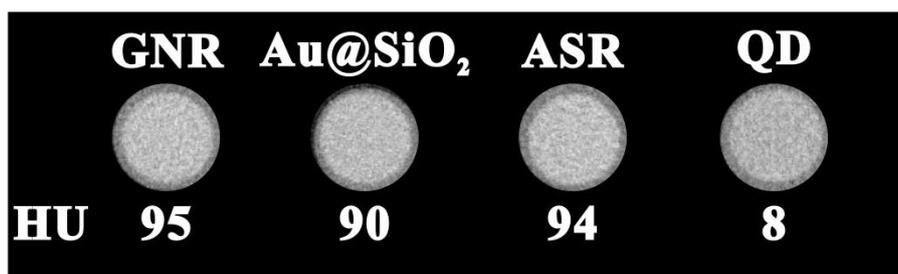


Fig.S5 CT imaging GNR, Au@SiO<sub>2</sub>, ASR and QD, the concentrations in the first three samples were all 5 mg/mL, the concentrations of QD was 100 μg/mL.

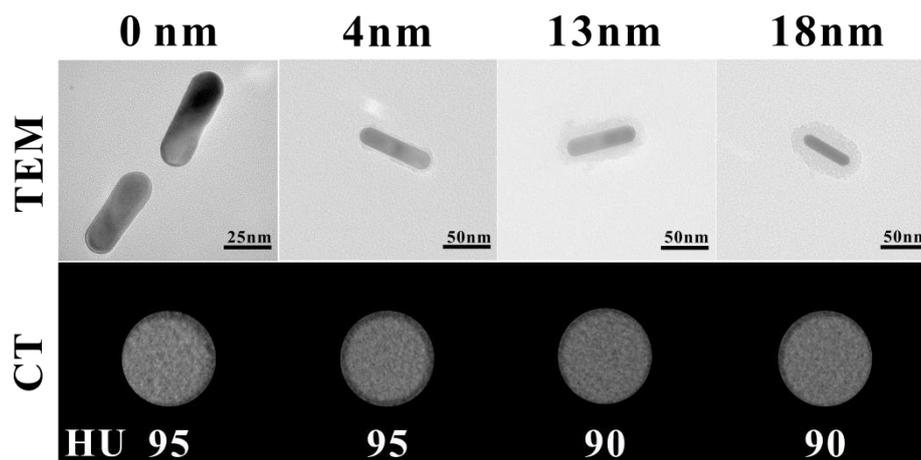


Fig. S6 TEM and CT images of Au@SiO<sub>2</sub> with different silica thickness. 0 nm; 4nm; 13nm; 18nm. Au concentration = 1mg/mL.

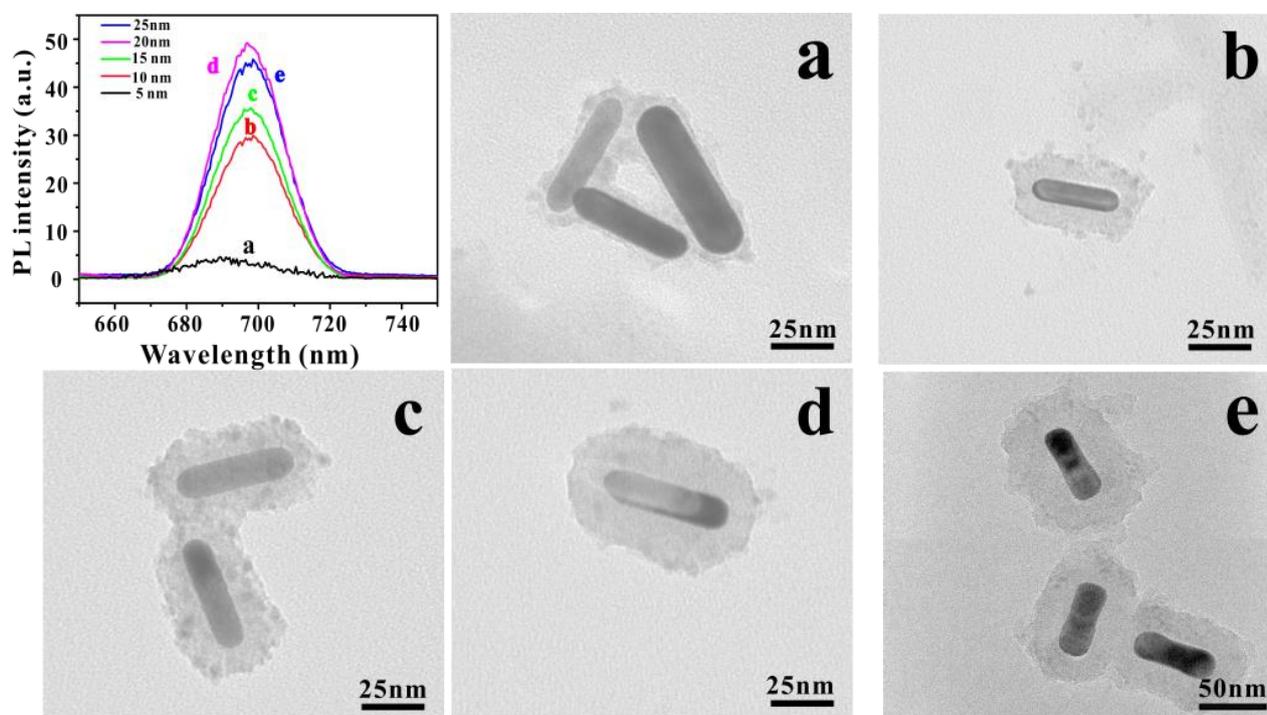


Fig. S7 Fluorescence spectra and TEM of Au@QD@SiO<sub>2</sub>/PEG-c(RGDfC) (ASR) with different silica thickness. a: 5 nm; b: 10 nm; c: 15 nm; d: 20 nm; e: 25 nm.

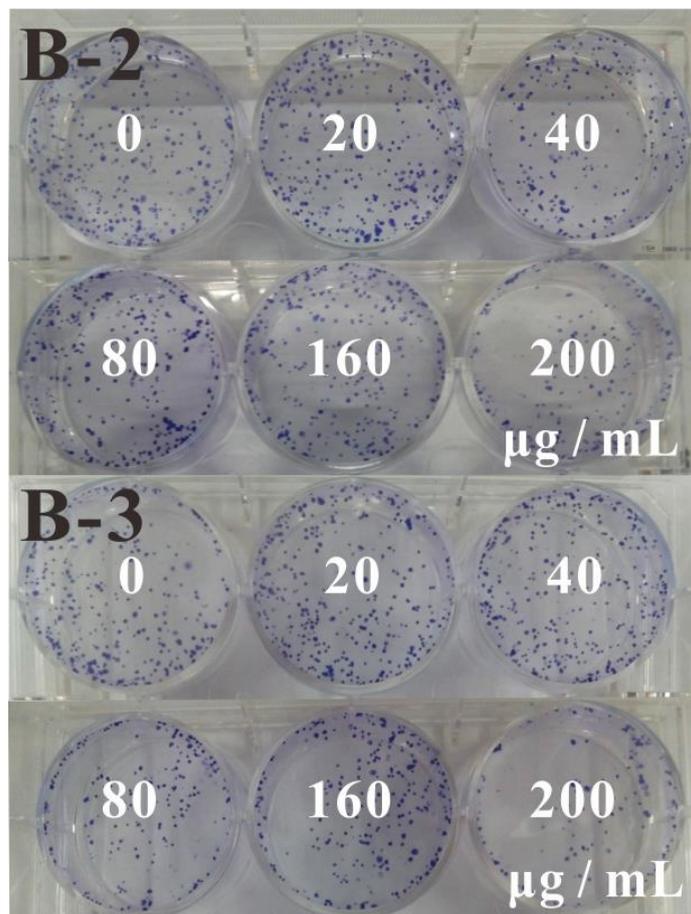


Fig.S8 White light result of colony formation assay to detect the cytotoxicity of probe. B-2 and B-3 were parallel experiments.

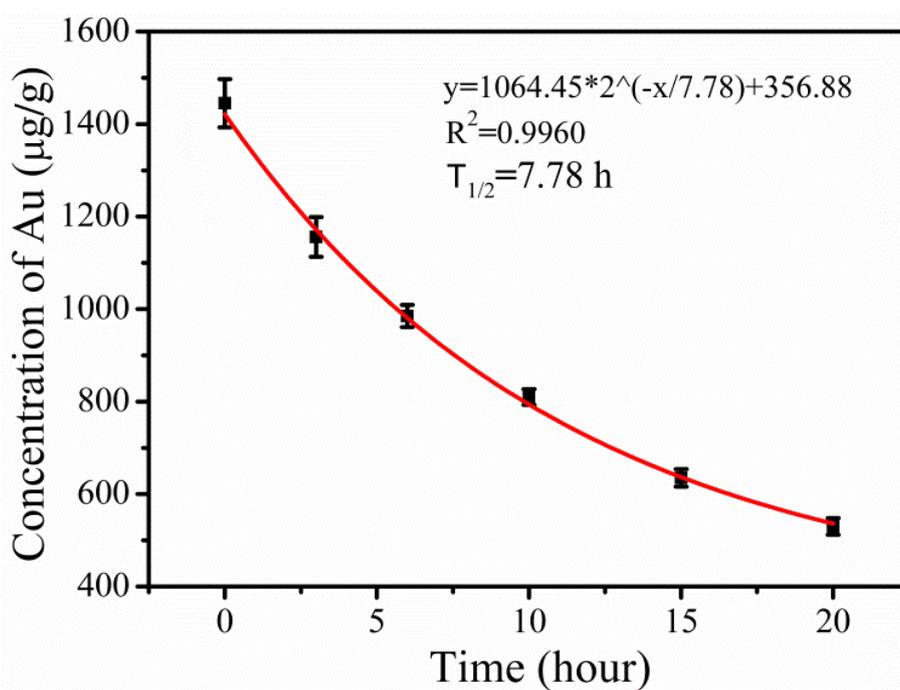


Fig. S9 Metabolic analysis of probe in mice blood (n = 5)

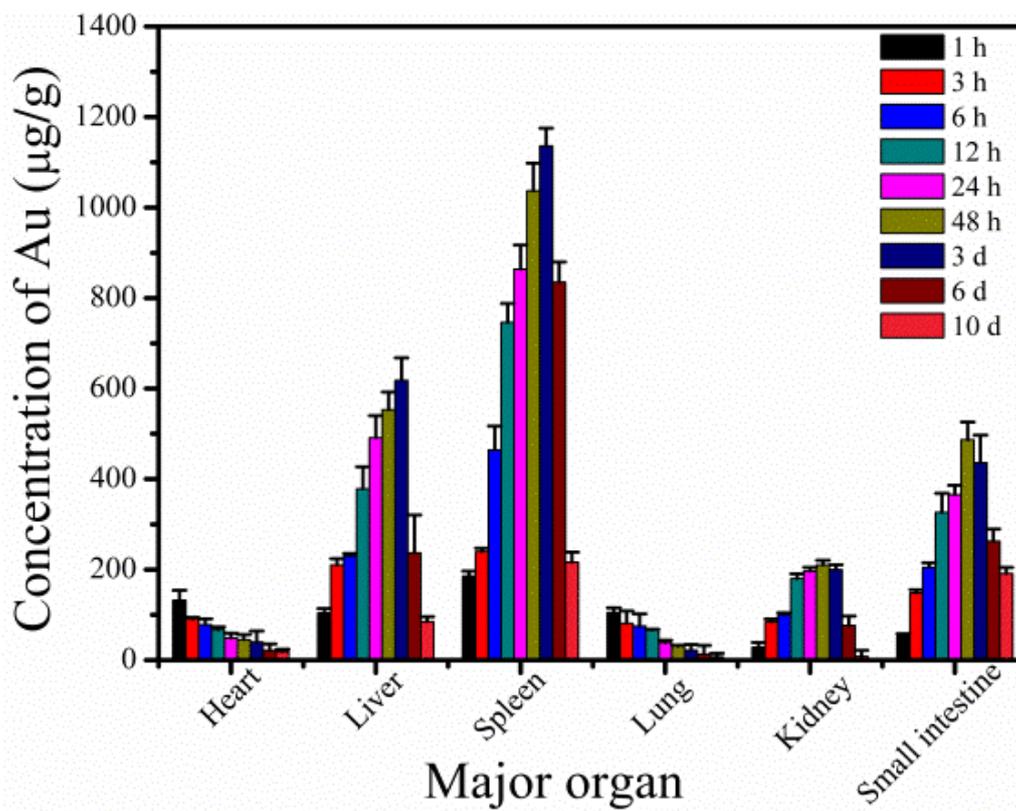


Fig. S10 Biodistribution of ASR in different organs at separate time points (n = 5).