## **Supporting Information**

## Composite silica coated gold nanosphere and quantum dots nanoparticle for

## X-ray CT and fluorescence bimodal imaging

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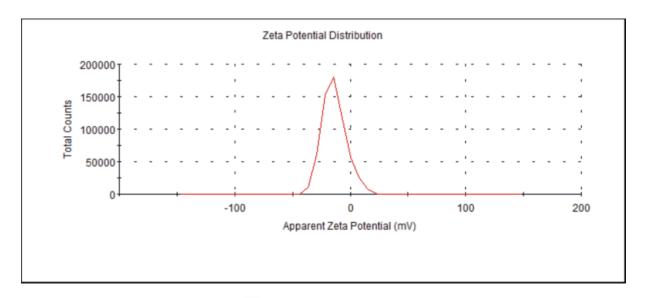


Fig. S1 Zeta-potential distribution of QD-AP (-13.8 mV)

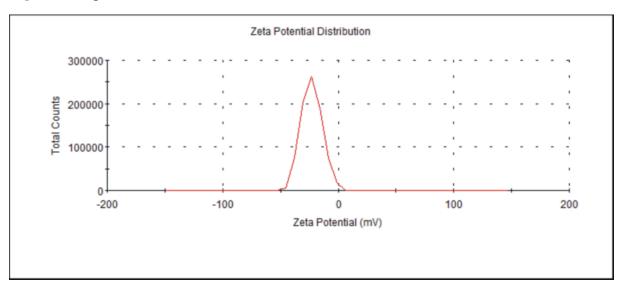


Fig. S2 Zeta-potential distribution of Au@SiO<sub>2</sub> (-23 mV)

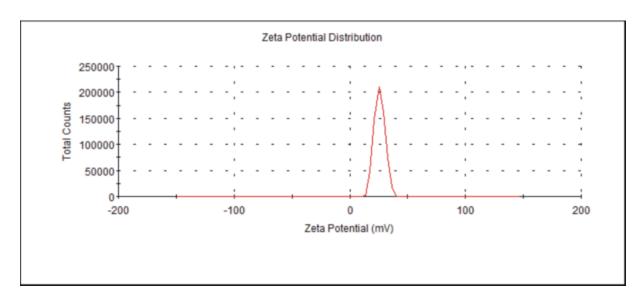


Fig. S3 Zeta-potential distribution of Au@SiO<sub>2</sub>-NH<sub>2</sub> (+26 mV)

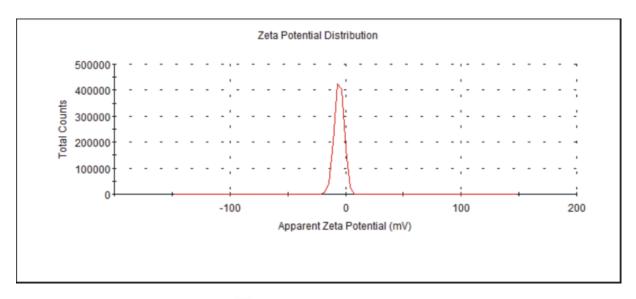


Fig. S4 Zeta-potential distribution of Au@SiO<sub>2</sub>-QDs (-5.4 mV)

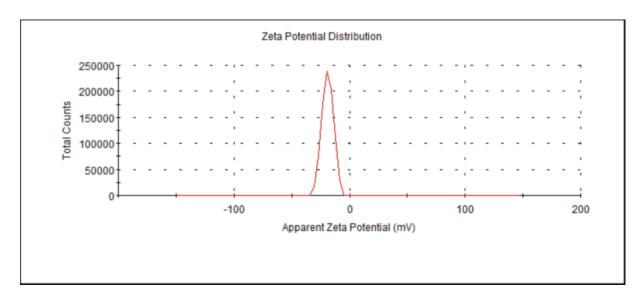


Fig. S5 Zeta-potential distribution of Au@SiO $_2$ -QDs/SiO $_2$  (-20 mV)

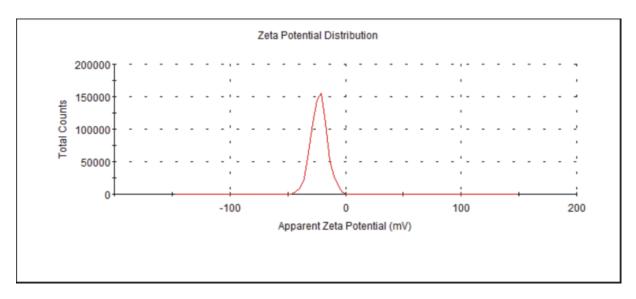
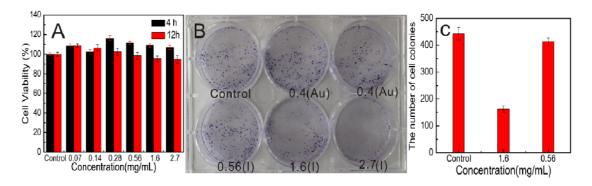
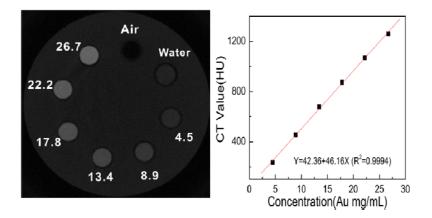


Fig. S6 Zeta-potential distribution of Au@SiO $_2$ -QDs/SiO $_2$ -PVP (-22 mV)



**Fig. S7** (A) CCK-8 test toxicity of compound meglumine diatrizoate injection to RAW 264.7 cells incubated with different concentrations (0.0-2.7mg/mL) of probe for 4 hours and 12 hours at 37 °C in the dark respectively. (B) Cell colonies formation after 10 days with different concentrations (0.56, 1.6 and 2.7 mg/mL) cultured in the 6-well plate. (C) Statistics of the quantities of cells colonies.



**Fig. S8** (A) CT images of compound meglumine diatrizoate injection suspended in water. The concentration (mg/mL) of each sample was provided beside the respective images. (B) CT hounsfield unit (HU) plotted against various concentrations of compound meglumine diatrizoate injection in the range from 4.5 to 26.7 mg/mL.