Supporting Information

Se@SiO$_2$@Au-PEG/DOX NCs as a multifunctional theranostic agent: efficiently protect normal cells from oxidative damage during photothermal therapy

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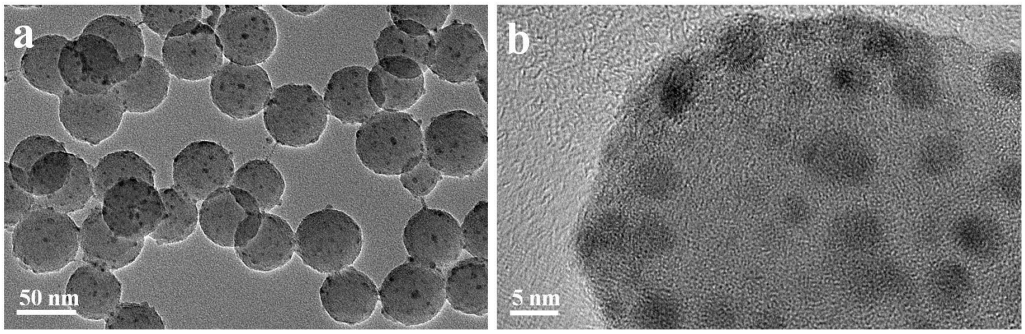

Fig. S1. (a) Low and (b) high magnification TEM images of as-prepared Se@SiO$_2$ NPs.

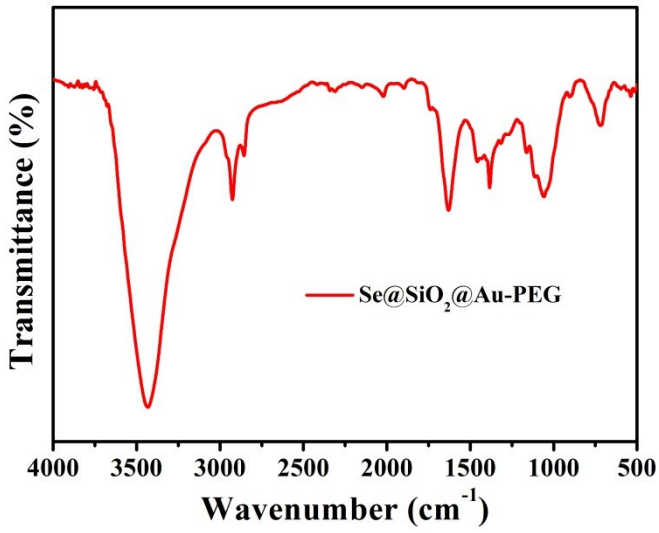

Fig. S2. FT-IR spectrum of Se@SiO$_2$@Au-PEG.

Fig. S3. The photographs of Se@SiO$_2$@Au-PEG NCs dispersed in water, PBS and 1640 cell

medium at day 0 and after storing 10 days at 4°C.

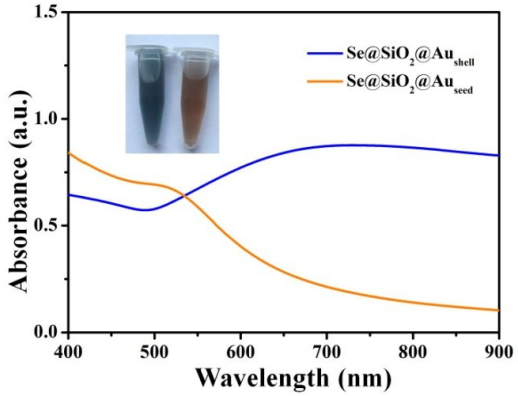

Fig. S4. UV-vis-NIR absorption spectra of $Se@SiO_2@Au_{seed}$ and $Se@SiO_2@Au_{shell}$ NPs (inset is the photographs of $Se@SiO_2@Au_{seed}$ (right) and $Se@SiO_2@Au_{shell}$ (left) NPs dispersed in water).

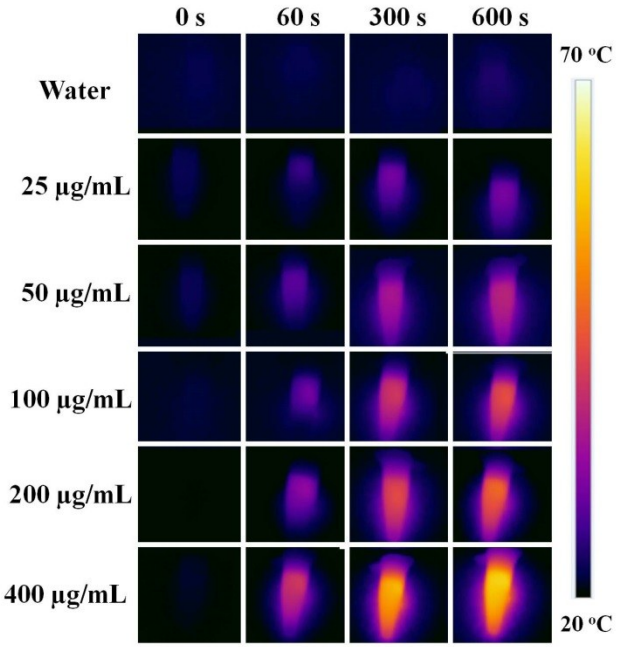

Fig. S5. The infrared thermal images of $Se@SiO_2@Au$-PEG at various concentrations under NIR irradiation.

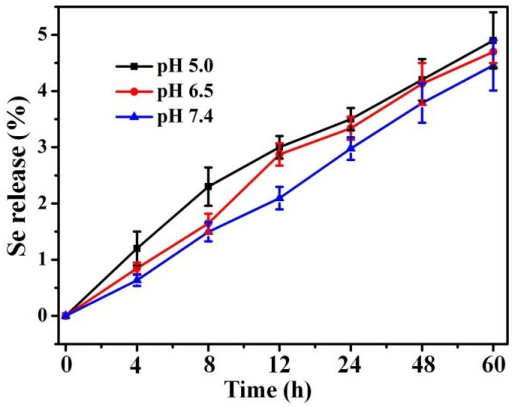

Fig. S6. The release of Se in different conditions (pH 5.0, 6.5 and 7.4 PBS).

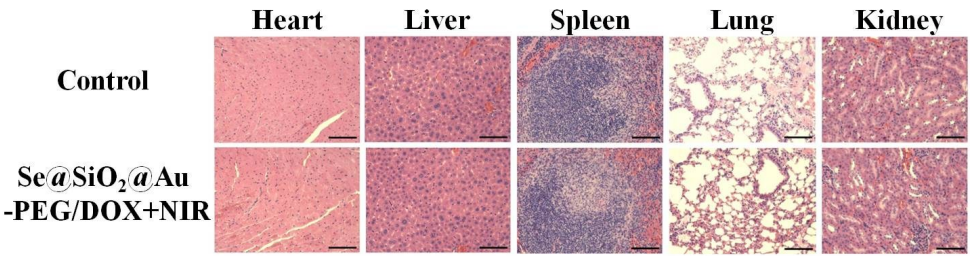

Fig. S7. H&E staining images of major organs slices collected from control and Se@SiO_2@Au-PEG/DOX+NIR groups, scale bar is 100 μm.

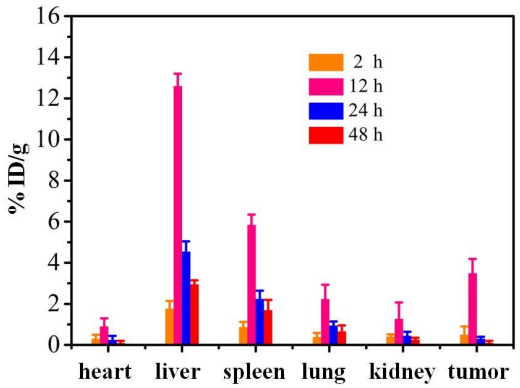

Fig. S8. Biodistribution of Au in tissues at different time points of 2, 12, 24, and 48 h post-injection of Se@SiO_2@Au-PEG NPs. Data are presented as percentages of Au amount per organ relative to total injection dose (ID). Error bars were based on 3 mice per points.