

Fluorescent porous carbon nanocapsules for two-photon imaging, NIR/pH dual-responsive drug carrier, and photothermal therapy

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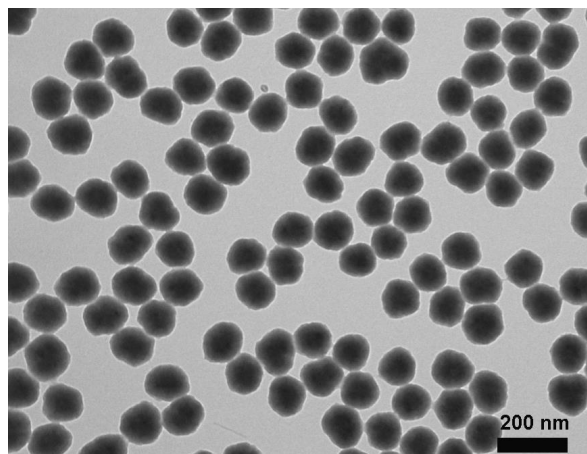


Figure S1. TEM image of the magnetite@carbon core-shell template nanoparticles (NPs).

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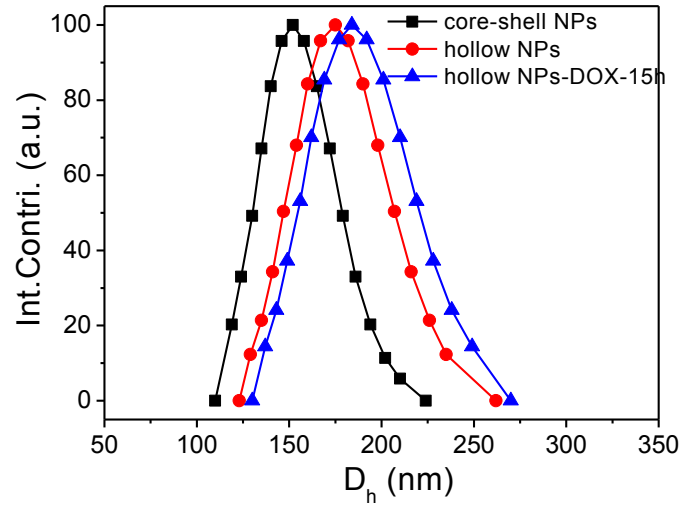


Figure S2. Size distributions of the magnetite@carbon core-shell NPs, hollow FPC-NCs, and the FPC-NCs loaded with DOX after being stored for 15 h.

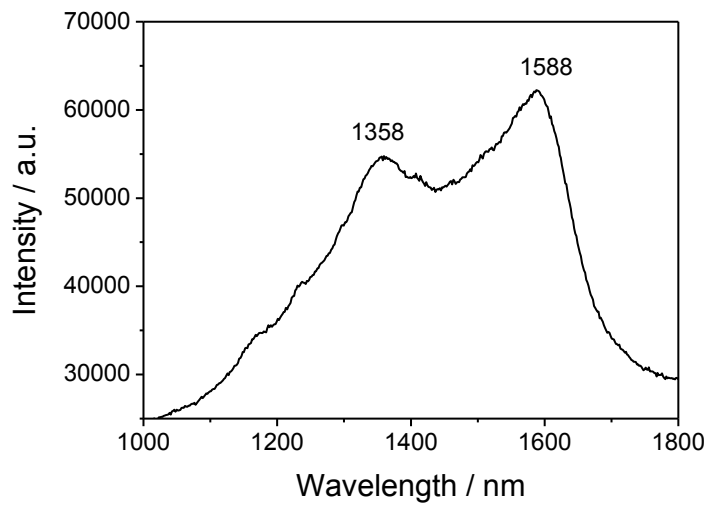


Figure S3. Typical Raman spectrum of the as-obtained FPC-NCs.

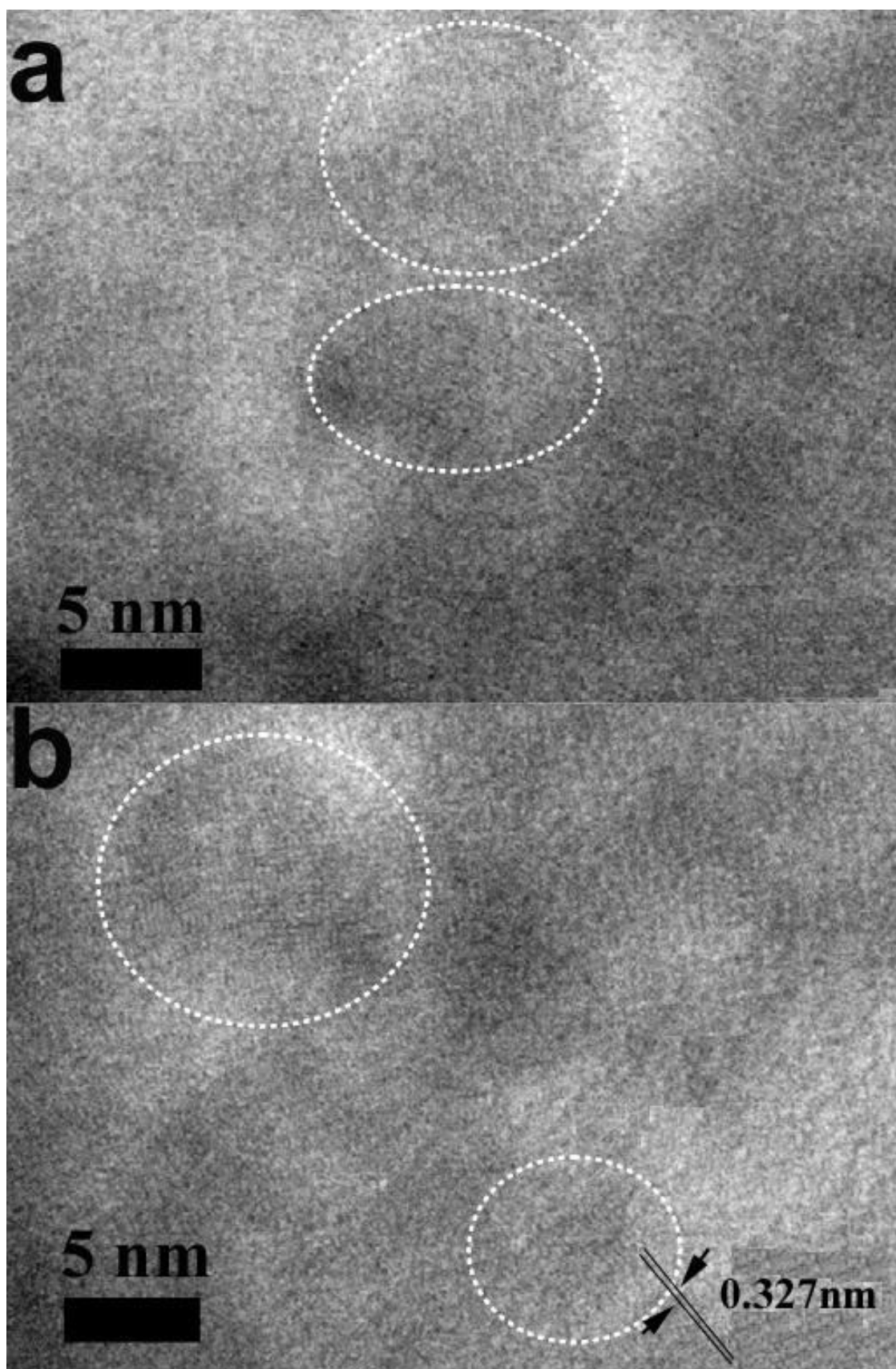


Figure S4. HRTEM images of single FPC-NCs from (a) shell area and (b) hollow cavity area. The crystal structure has been highlighted using white line.

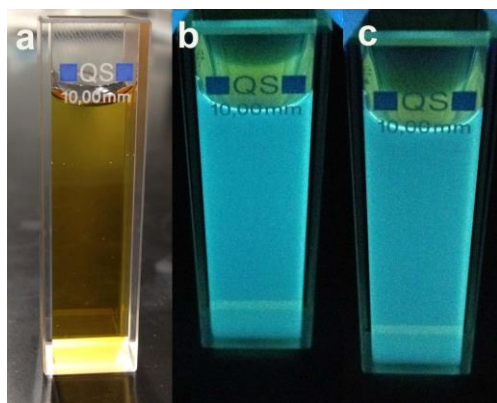


Figure S5. The photographs of the aqueous dispersions of the as-obtained FPC-NCs without exposure to UV light of 365 nm (a) and under UV light ($950 \mu\text{w}/\text{cm}^2$) of 365 nm for 0 h (b) and 24 h (c), respectively. The emitted blue light did not show color change after 24 h continuous exposure to the UV light.

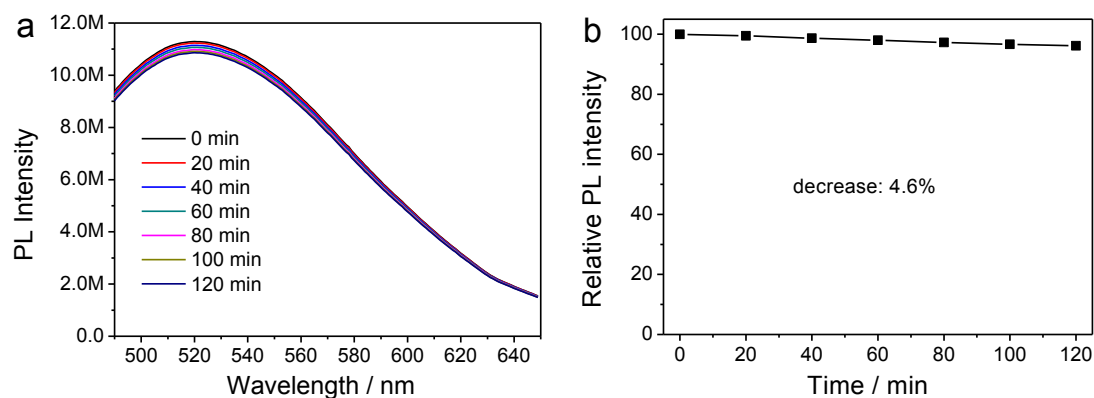


Figure S6. (a) Time-dependent PL spectra and (b) PL intensity variation ($\lambda_{\text{em}} = 520 \text{ nm}$) of the as-obtained FPC-NCs upon a continuous exposure to an excitation wavelength of 460 nm from 0 min to 120 min.

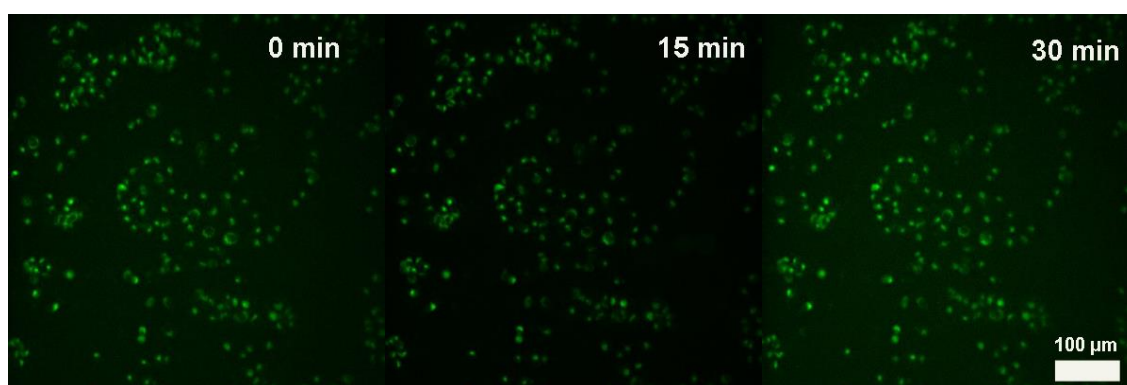


Figure S7. Laser scanning confocal microscopy images of DU145 human prostate cancer cells incubated with FPC-NCs under different excitation time. Excitation wavelength = 488 nm.

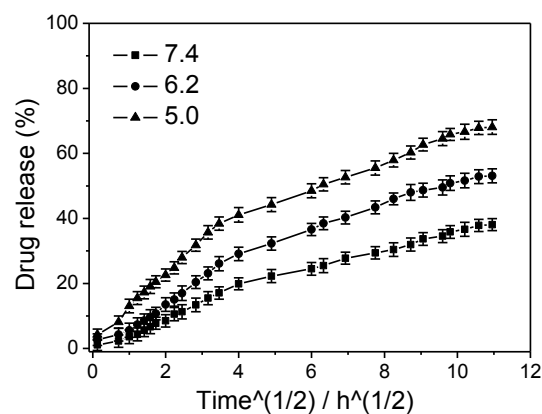


Figure S8. The square root time dependence of the DOX release from the DOX-loaded FPC-NCs dispersed in buffer solutions of different pH values (7.4, 6.2 or 5) at 37 °C. Error bars indicate the standard error of the mean for N = 3 independent experiments. The linear relation of the release rate versus \sqrt{t} confirms the diffusion characteristic of the drug release from the FPC-NCs after initial desorption.

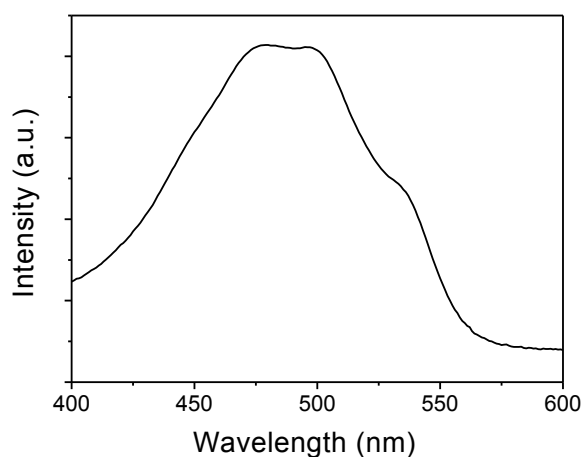


Figure S9. Typical UV-Vis absorbance spectrum of the released DOX solution in the 0.005 M PBS buffer.

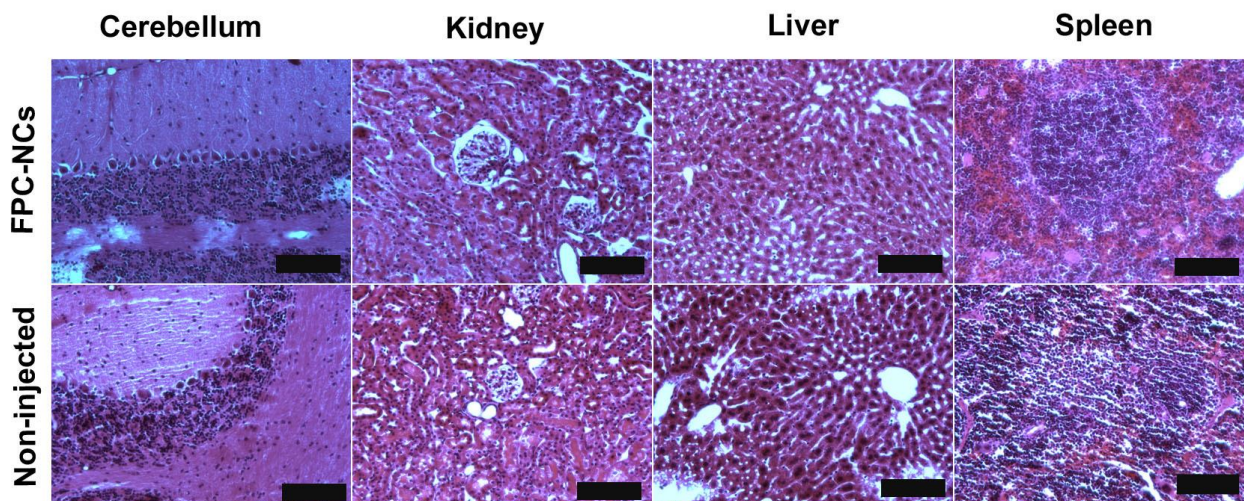


Figure S10. Representative H&E stained tissue sections of mouse cerebellum, kidney, liver, and spleen obtained from non-injected animals (bottom row) and from those 5 days after being injected with drug-free FPC-NCs (0.1 mg/mL) (top row). No evidence of toxicity was observed in any of the clearance organs. The scale bar is 200 μm .

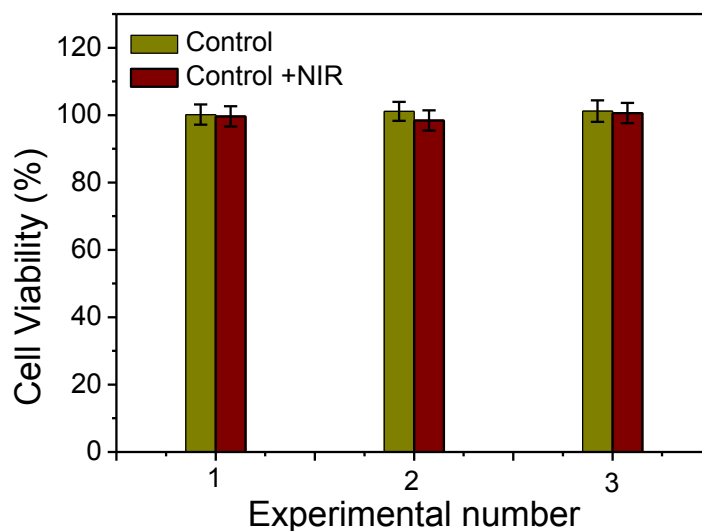


Figure S11. In vitro cell viability in the control culture medium in the absence and presence of 1.5 W/cm^2 NIR for 5 min.