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Electronic Supplementary Information (ESI)

Lysosome-targetable polythiophene nanoparticles for two-photon excitation photodynamic therapy and deep tissue imaging

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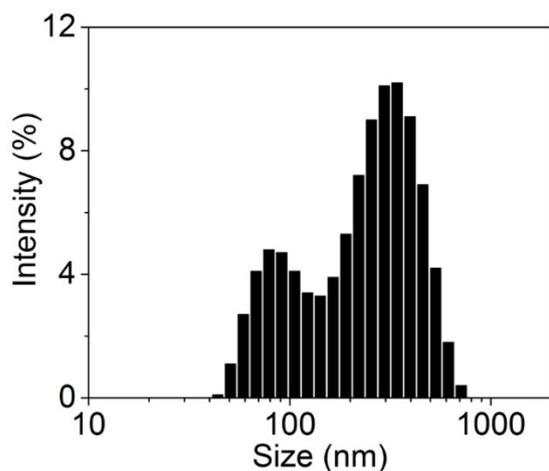


Figure S1. The DLS measurement of the PT NPs aqueous solution.

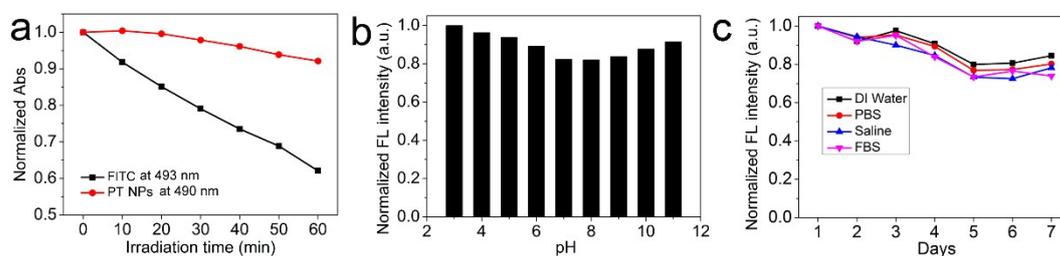


Figure S2. (a) Photostability of PT NPs and commercial fluorescein dye (Fluorescein isothiocyanate, FITC) in aqueous solution. All samples were continuously irradiated by using a 500 W xenon lamp. Absorbance was normalized. (b) Effect of pH on the FL intensity at 560 nm of PT NPs aqueous solution. (c) Fluorescence stability of PT NPs under different conditions. The fluorescence intensity of PT NPs at 560 nm was normalized.

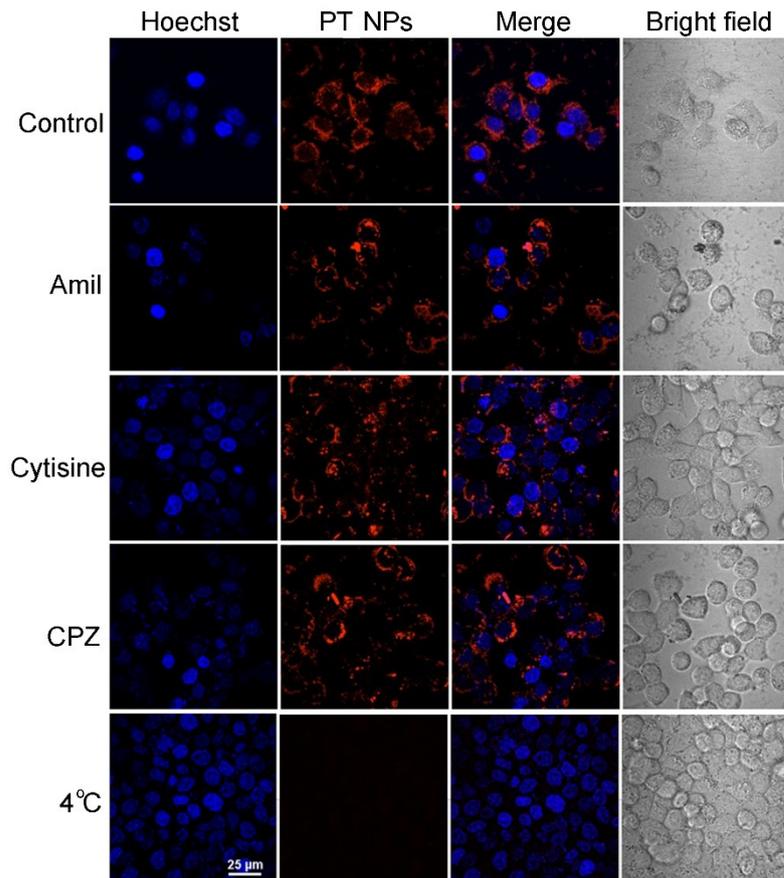


Figure S3. Confocal microscopy images displaying intracellular uptake of PT NPs (red fluorescence). The cell nuclei were stained by Hoechst and were shown in blue.

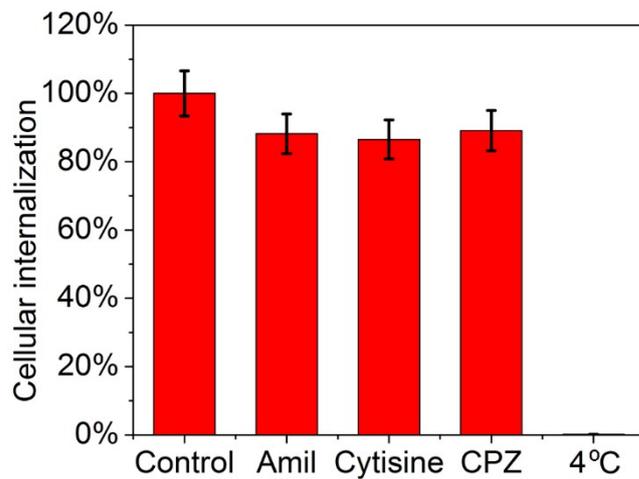


Figure S4. The intracellular uptake efficiency of PT NPs in different condition.

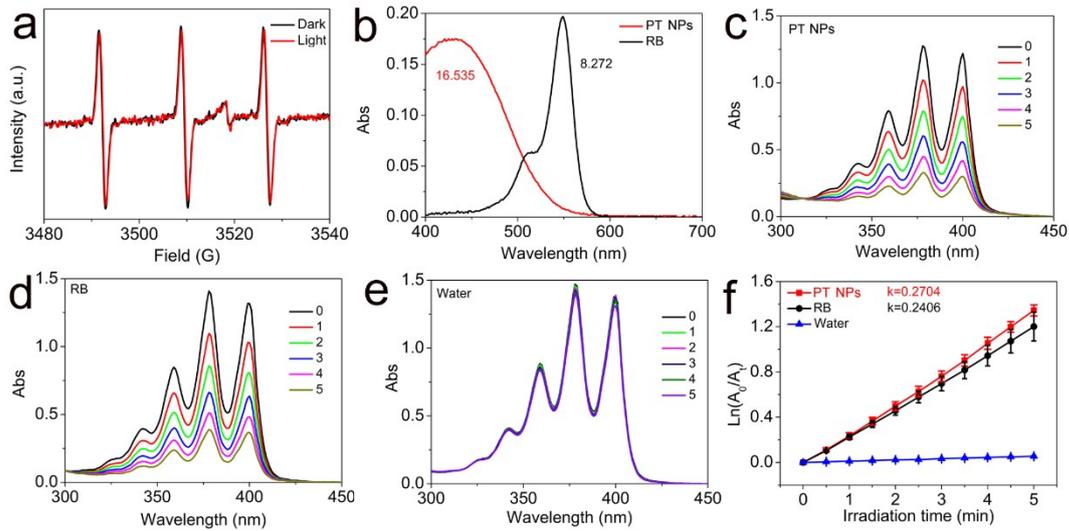


Figure S5. (a) The ESR signals of $^1\text{O}_2$ obtained upon irradiation of pure water (without PT NPs) for 10 min in the presence of 2,2,6,6-Tetramethylpiperidine (800 nm). (b) The absorption spectra of PT NPs and Rose Bengal (RB) in aqueous solution. The absorption spectra of $\text{Na}_2\text{-ADPA}$ in the presence (c) PT NPs (d) RB, and (e) Pure water with different irradiation time. (f) Decrease of $\text{Na}_2\text{-ADPA}$ absorbance at 378 nm as a function of light irradiation time in the absence (blue line) and presence of PT NPs (red line) and RB (black line). A_0 and A_t is the absorbance of ADPA at 378 nm before and after irradiation with white light (400-780 nm), respectively.

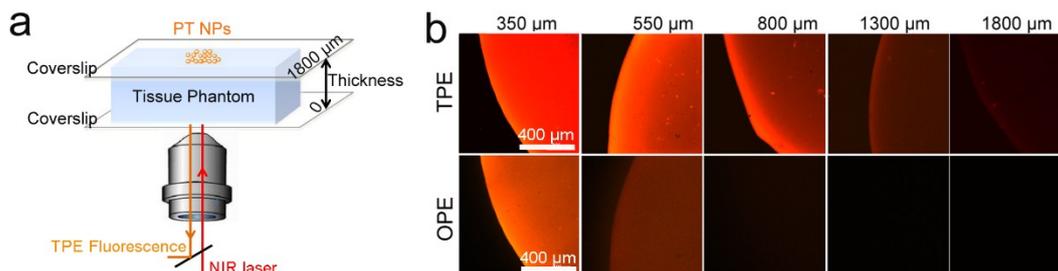


Figure S6. (a) Schematic of the setup for TPE fluorescence imaging of PT NPs in tissue phantom with different thickness. (b) Penetration depth of PT NPs for TPE (800 nm, up panel) and OPE (405 nm, down panel) fluorescence imaging in tissue phantom.