Supporting Information

pH-Responsible Fluorescent Carbon Nanoparticles for Tumor Selective Theragnosis via pH-turn on/off Fluorescence and Photothermal Effect

In Vivo and In Vitro

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Figure S2. Powder X-ray diffraction (PXRD) spectra of FNP and FNP-I





Figure S4. a) Luminescence spectra of FNP with different concentration of IR825 at excitation wavelength at 360 nm. (b) Stern–Volmer plots for the quenching of luminescence spectra of the FNP by IR825 dyes.



Figure S5. Fluorescence spectra of (a) FNP and (b) FNP-I under different PBS solution, pH 6.0, 6.8, and 7.4) at varying excitation wavelengths.



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Figure S6. Fluorescence spectra of FNP-I at emission wavelength 550 nm which represent the IR825 emission under different PBS solution, pH 6.0, 6.8, and 7.4) at varying excitation wavelengths (b) Thermographic photo of temperature elevation analysis of FNP-I under pH 6.8 and pH 7.4 under NIR irradiation 0 and 5 min.



Figure S7. The temperature elevation curve of an aqueous solution of (a) IR825 at 0.4 mg/mL under pH solution and FNP-I dependent on concentration under NIR irradiation (808 nm laser, 2 W cm-2), at pH values between (b) 6.0, (c) 6.8 and (d) 7.4.



Figure S8. The MTT assay used for the concentration-dependent *in vitro* biocompatibility study of MDAMB and KB cells treated with FNP, FNP-I, FNP-I + NIR irradiation.



Figure S9. The MTT assay used for the concentration-dependent *in vitro* biocompatibility study of MDAMB and KB cells treated with IR825 without NIR irradiation.



Figure S10. In vitro cytotoxicity measured by the MTT assay in MDAMB-231and MDCK cells under NIR light at different power density.



Figure S11. Flow cytometric (FACS) analysis for assessment of *in vitro* quantitative cellular uptake of control and MDAMB cells treated with FNP-I nanoparticles. The control groups were studied only MDAMB cells with laser at 488 nm. The cellular uptake was quantified by calculating total cells number and uptake cells number. The merged data represented FACS counting shift between control and study group. (n = 5 per group).



Figure S12. Pharmacokinetic profile of FNP-I in MDAMB-231 tumor-bearing mice and *ex vivo* fluorescence image of liver 3 h post-injection and pH shock at 6.4 for 10 min, FNP-I, fluorescent nanoparticle loaded with IR825.