

Supporting Information

# **Near-infrared light-controlled, oxygen-independent radical generating nano-system toward cancer therapy**

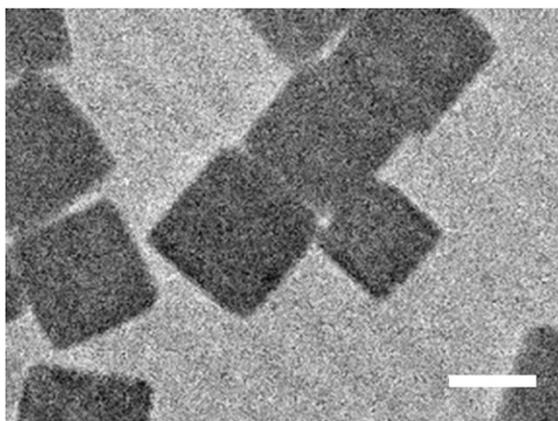
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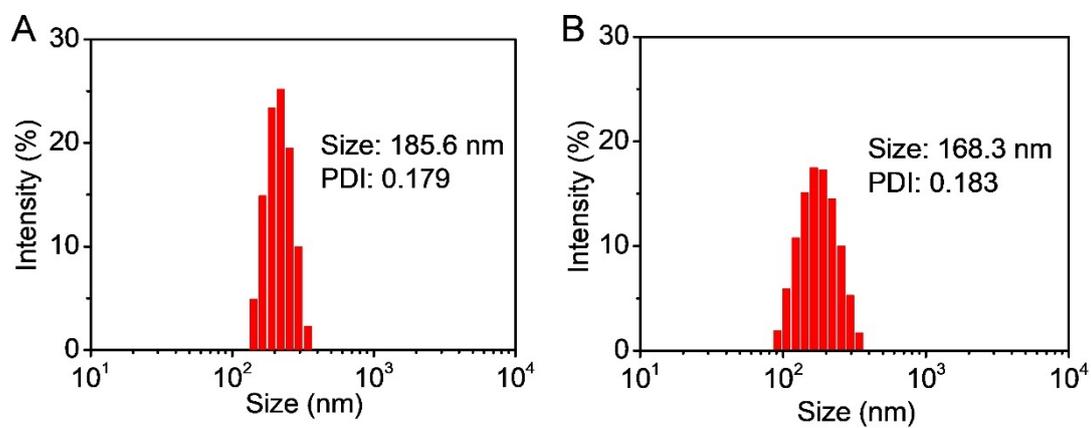
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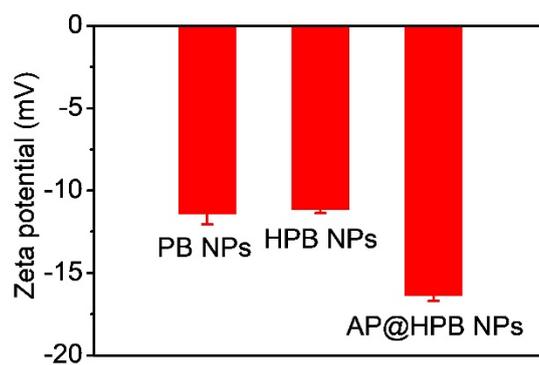
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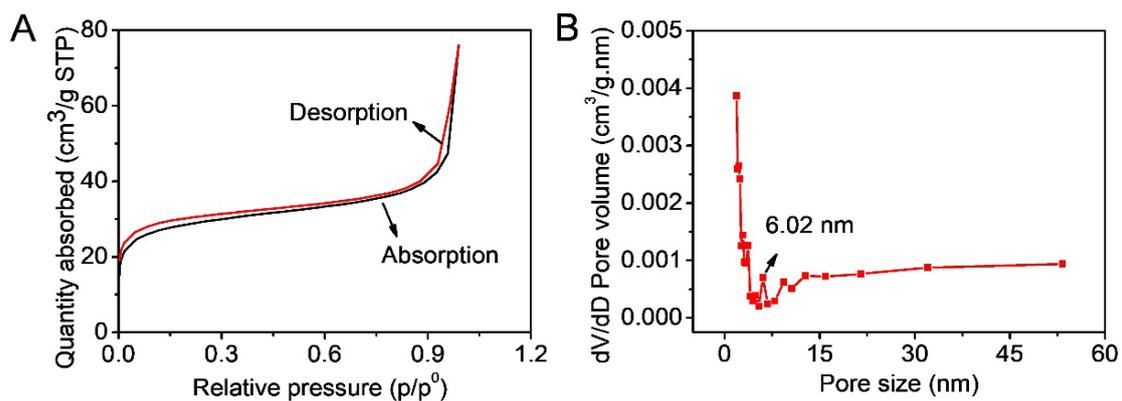
**Fig. S1.** TEM image of PB NPs. Scale bar = 100 nm.



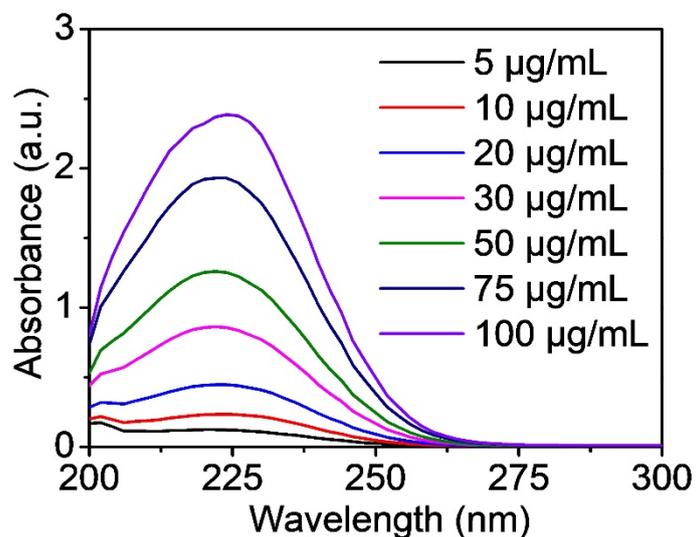
**Fig. S2.** Size distributions of PB NPs (A) and HPB NPs (B).



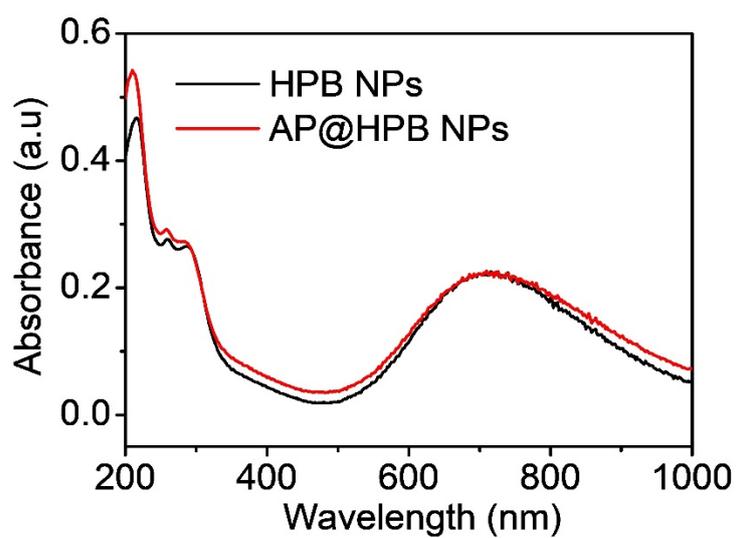
**Fig. S3.** Zeta potentials of PB NPs, HPB NPs, and AP@HPB NPs (n = 3).



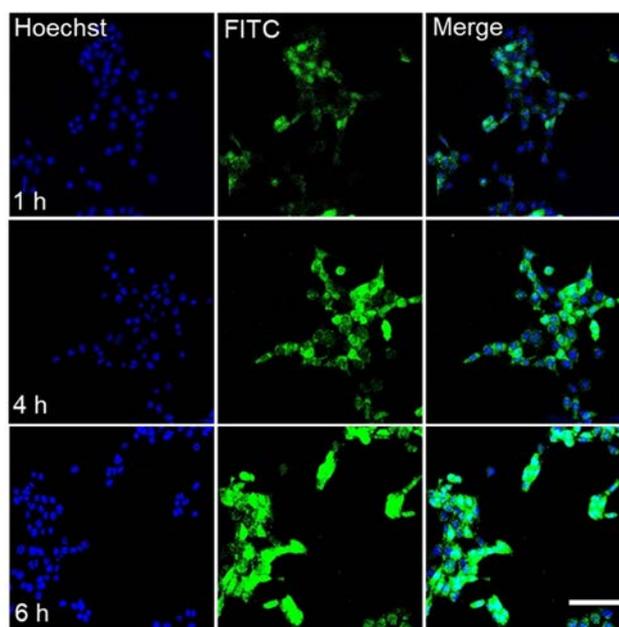
**Fig. S4.** BET analysis of HPB NPs. Nitrogen adsorption-desorption isotherm (A) and pore size distribution (B) of HPB NPs.



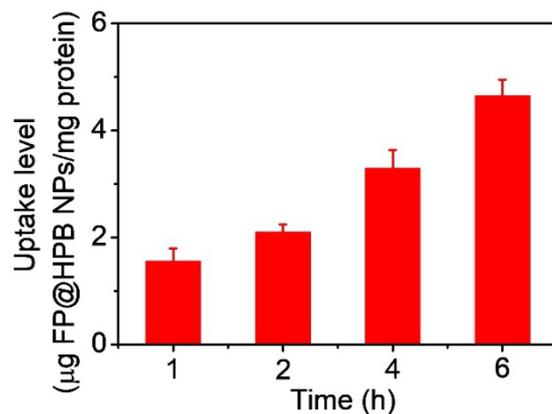
**Fig. S5.** UV-Vis absorbance spectra of AIBI at various concentrations.



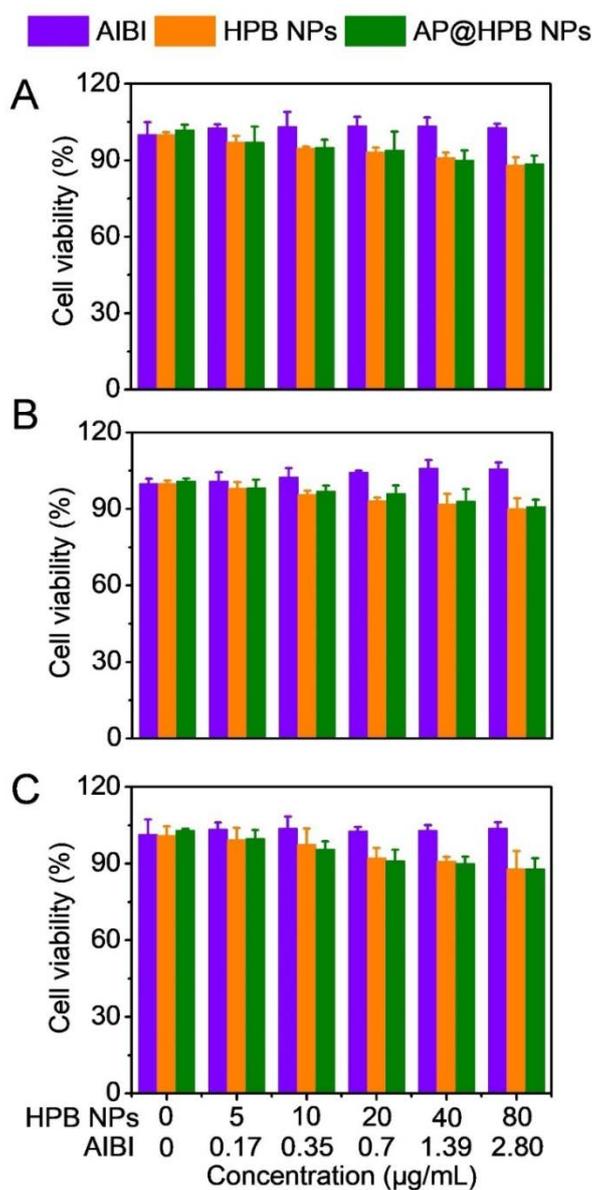
**Fig. S6.** UV-Vis absorbance spectra of HPB NPs and AP@HPB NPs.



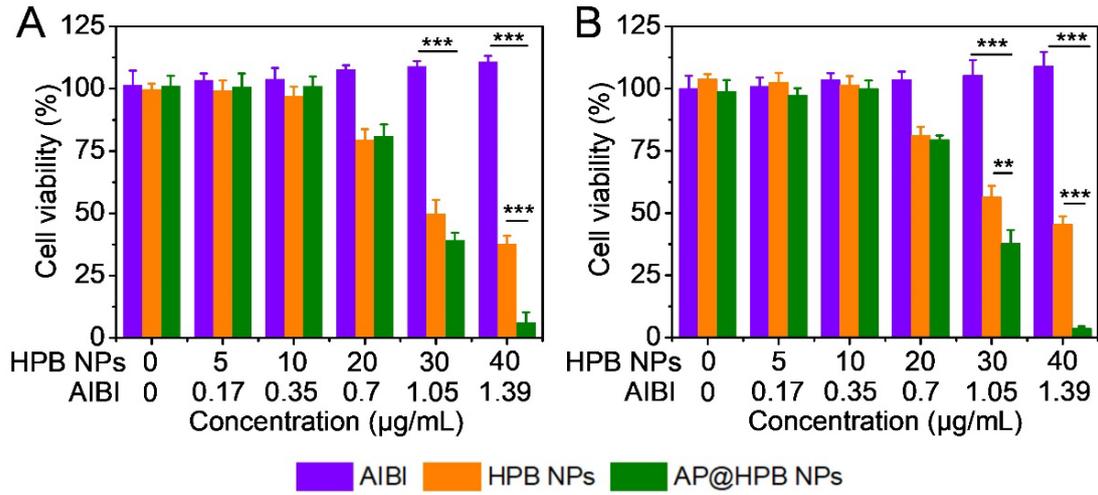
**Fig. S7.** CLSM images of 4T1 cells incubated with FP@HPB NPs (40  $\mu\text{g}/\text{mL}$ ) for different time. Cell nuclei were stained with Hoechst. Scale bar = 100  $\mu\text{m}$ .



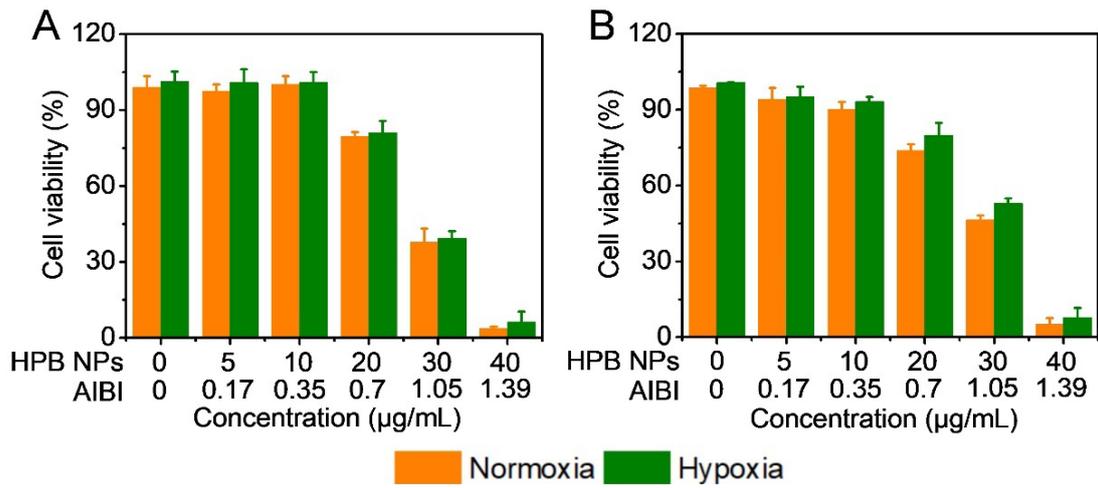
**Fig. S8.** Uptake levels of FP@HPB NPs (40 µg/mL) in 4T1 cells following incubation at 37 °C for different time (n = 3).



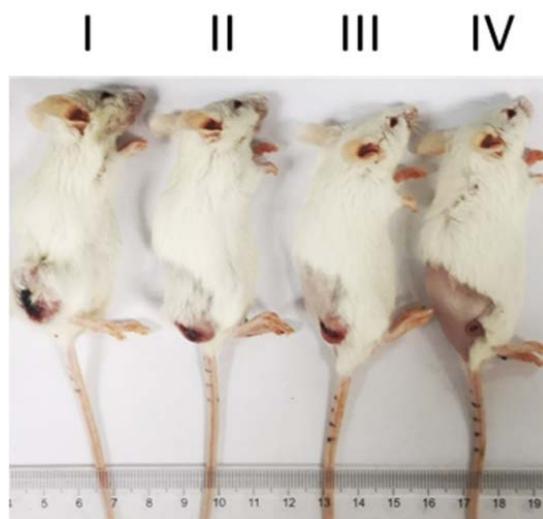
**Fig. S9.** Viability of 4T1 (A), HeLa (B), and LLC (C) cells following 6-h incubation with AIBI, HPB NPs, or AP@HPB NPs (n = 3).



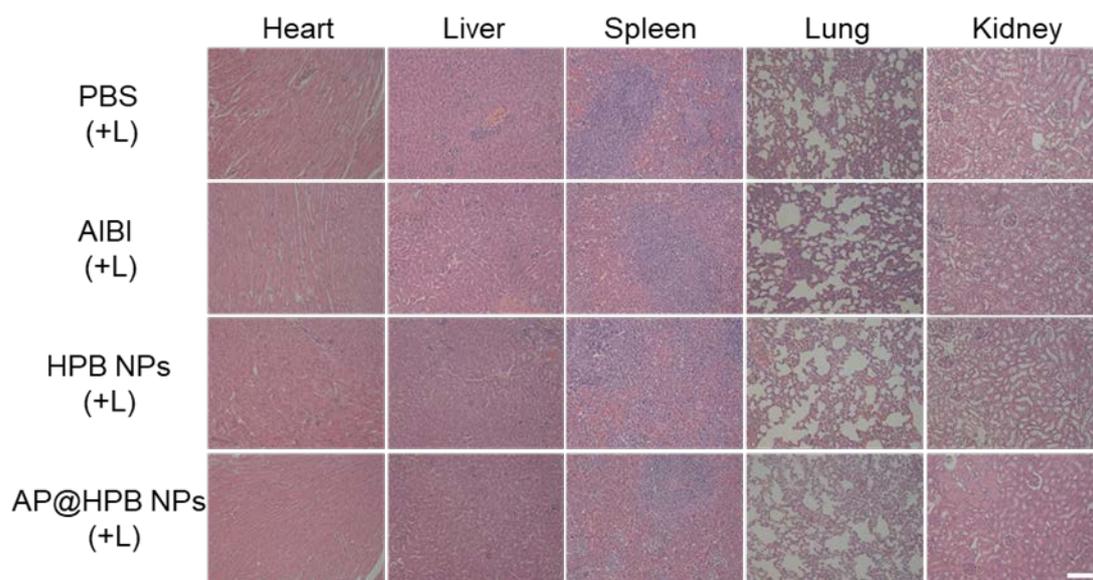
**Fig. S10.** Cytotoxicity of AIBI, HPB NPs, and AP@HPB NPs to HeLa (A) and LLC (B) cells with laser irradiation (808 nm, 0.8 W/cm<sup>2</sup>, 5 min) under normoxic condition (n = 3).



**Fig. S11.** Cytotoxicity of AP@HPB NPs to HeLa (A) and LLC (B) cells with laser irradiation (808 nm, 0.8 W/cm<sup>2</sup>, 5 min) under normoxic and hypoxic conditions (n = 3).



**Fig. S12.** Images of 4T1 tumor-bearing mice on day 14 in the *in vivo* efficacy study. Each group represents (I) PBS + (L), (II) AIBI + (L), (III) HPB NPs (+L), and (IV) AP@HPB NPs (+L).



**Fig. S13.** H&E-stained major organ sections harvested on day 14 in the *in vivo* efficacy study. Scale bar = 100  $\mu$ m.