Fe₃O₄@MnO₂@PPy nanocomposites overcome hypoxia: magnetic targeting assisted controlled chemotherapy and enhanced photodynamic/photothermal therapy

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Fig. S1 The changes in hydrodynamic size of Fe₃O₄@MnO₂@PPy in medium at various conditions (0-24 h: pH 7.4, 24-48 h: pH 6.5, 48-72 h: pH 6.5+0.03%H₂O₂) measured by the DLS test.

Fig. S2 Absorption spectra of DPBF-containing solutions of (A) nothing under a 638nm laser irradiation (1.0 W·cm⁻²), (B) H₂O₂, (C) Fe₃O₄@MnO₂, (D) Fe₃O₄@PPy and (E)
Fe₃O₄@MnO₂@PPy without irradiation.

**Fig. S3** Absorption spectra of a DPBF-containing solution of (A) Fe₃O₄@MnO₂, (B) Fe₃O₄@PPy, (C) Fe₃O₄@MnO₂@PPy, (D) Fe₃O₄@PPy+0.03%H₂O₂ and (E) Fe₃O₄@MnO₂@PPy+0.03%H₂O₂ under a 638nm laser irradiation (1.0 W·cm⁻²), respectively.

**Fig. S4** Fluorescence microscopy images of HepG2 cells that received different treatment as indicated. Green color represents ^1^O₂ indicator DCFH-DA (scale bar=100 μm).
**Fig. S5** Relative viabilities of HepG2 cells after incubation with Fe$_3$O$_4$, Fe$_3$O$_4$@PPy and Fe$_3$O$_4$@MnO$_2$@PPy at different concentration (0 μg/mL, 200 μg/mL, 400 μg/mL, 600 μg/mL).

**Fig. S6** Fluorescence microscopic images of HepG2 cells incubated with (A) medium, (B) Fe$_3$O$_4$, (C) Fe$_3$O$_4$@PPy and (D) Fe$_3$O$_4$@MnO$_2$@PPy. HeGp2 cells were dyed in blue by Hoechst 33342, red by PI and the merged images are also shown, respectively. The scale bars are 200 μm.