## Supporting Information

## The Synthesis of LA-Fe<sub>3</sub>O<sub>4</sub>@PDA-PEG-DOX for Photothermal-Chemotherapy Therapy

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Scheme S1. Schematic illustration of the reaction process of mPEG-NH<sub>2</sub> with Fe<sub>3</sub>O<sub>4</sub>@PDAs.



Scheme S2. Schematic illustration of the different direction of the applied magnetic field.



Figure S1. The large angle XRD patterns of Fe<sub>3</sub>O<sub>4</sub>, Fe<sub>3</sub>O<sub>4</sub>@PDA3.



**Figure S2.** The digital photos of (a)  $Fe_3O_4$ , (b)  $Fe_3O_4$ @PDA3, (c)  $Fe_3O_4$ @PDA3-PEG solutions in PBS.



Figure S3. TEM images of PDA.



Figure S4. The fluorescence spectra of DOX and LA-Fe<sub>3</sub>O<sub>4</sub>@PDA-PEG-DOX under 480 nm excitation.

DOX reveals red fluorescence at 600-680 nm excited by 480 nm. However, the obvious fluorescence quenching fLA-Fe<sub>3</sub>O<sub>4</sub>@PDA-PEG-DOX is derived from the strong  $\pi$ - $\pi$  stacking fDOX and PDA.



Figure S5. TEM images of LA-Fe<sub>3</sub>O<sub>4</sub>@PDA3-PEG-DOX uptake by HepG2 cells.

TEM images show the remarkedly endocytosed vesicles about 300-1000 nm suggesting that uptake of LA-Fe<sub>3</sub>O<sub>4</sub>@PDA3-PEG-DOX was mainly through endocytosis and macropinocytosis.



**Figure S6.** Flow cytometry analysis of the HepG2 cells incubated with FITC modified LA-Fe<sub>3</sub>O<sub>4</sub>@PDA3-PEG-DOX+NIR (808 nm 1 W cm<sup>-2</sup> 30 min) under different direction of magnetic field (a: without, b: top, c: side, d: bottom).