

ESI for

## **Polypyrrole coated PLGA Core-shell nanoparticles for drug delivery and photothermal therapy**

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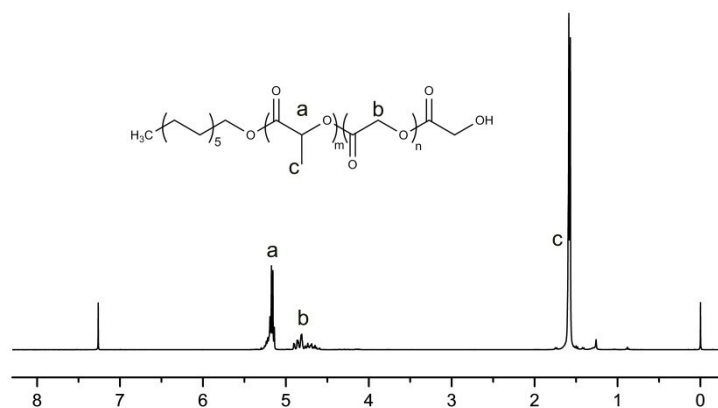
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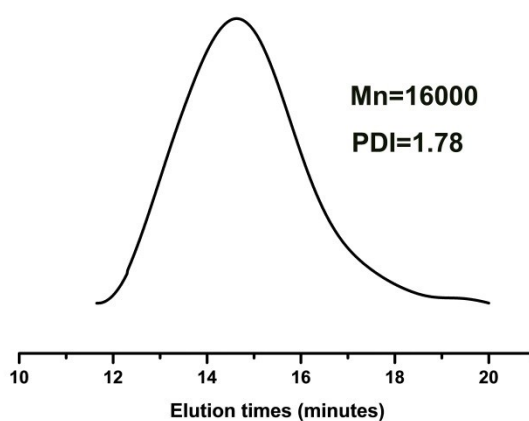
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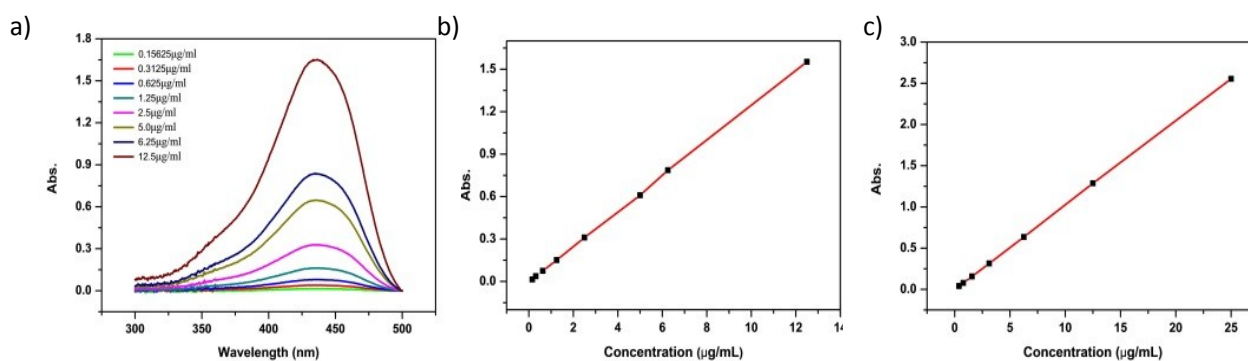
<sup>d</sup> Jilin Medical University



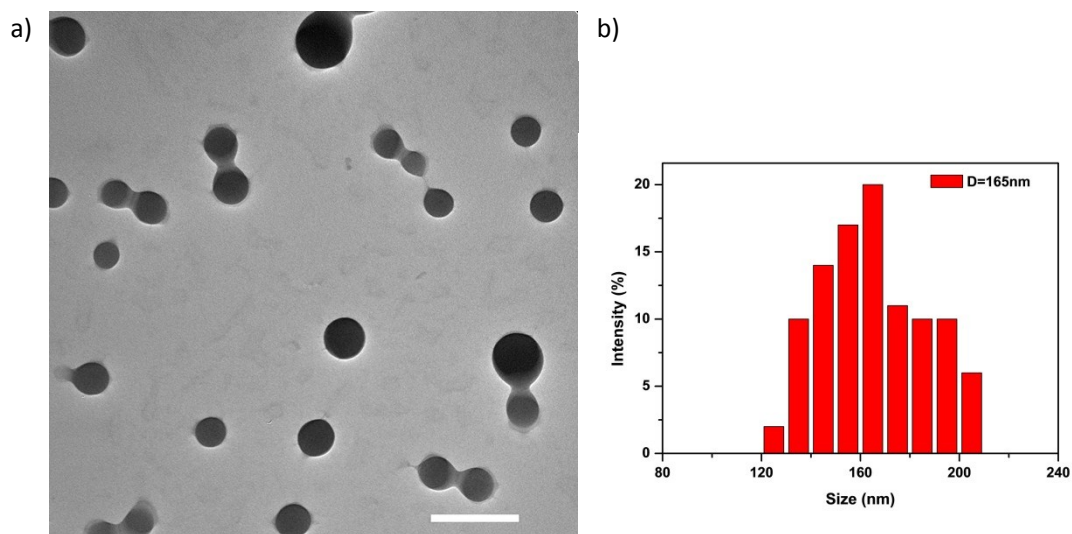
**Fig. S1**  $^1\text{H}$  NMR spectra (400 MHz) of the synthesized PLGA in  $\text{CDCl}_3$ .



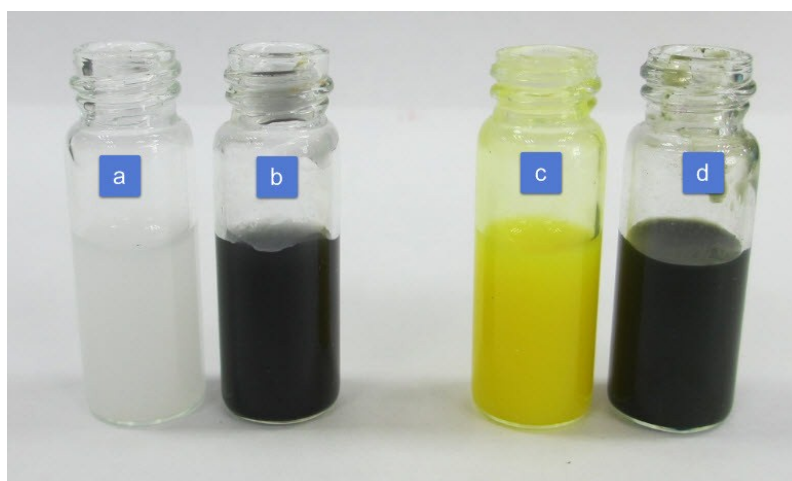
**Fig. S2** GPC elution profiles of the synthesized PLGA.



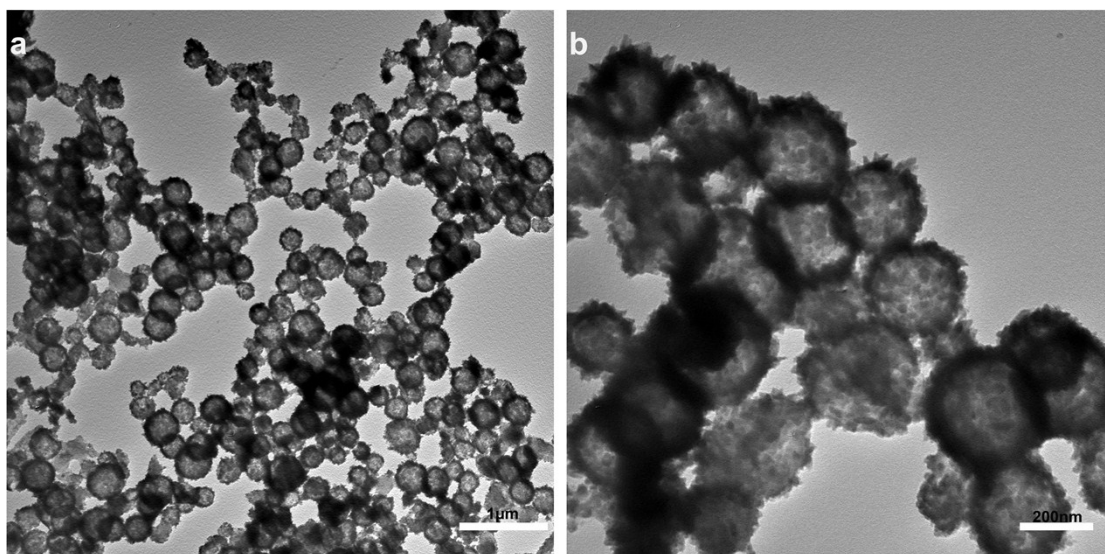
**Fig. S3** a) The UV-Vis absorption of Cur in  $\text{DMF}/\text{H}_2\text{O}$  ( $v/v=1:1$ ) at different concentrations. b) The linear relationship between the concentration of Cur and absorption intensity in  $\text{DMF}/\text{H}_2\text{O}$  ( $v/v=1:1$ ), the linear range is  $0.04 \sim 12.5 \mu\text{g}/\text{mL}$  ( $R^2 = 0.9999$ ) and the regression equation is  $y=0.1246x-0.0035$ . c) The linear relationship between the concentration of Cur and absorption intensity in DMF, the linear range is  $0.04 \sim 25 \mu\text{g}/\text{mL}$  ( $R^2 = 0.9999$ ) and the regression equation is  $y=0.1053x-0.0007$ .



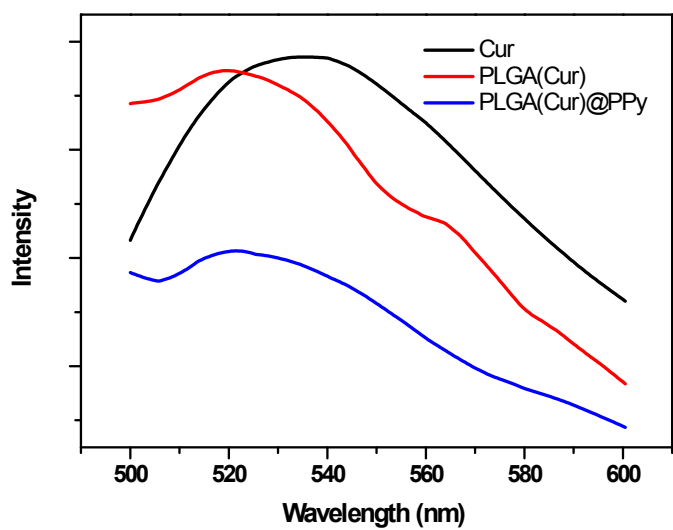
**Fig. S4** a) Transmission electron microscopy (TEM) images of PLGA (Cur) (scale bar 500 nm).b) The size distributions of PLGA (Cur) determined by the TEM images for more than 100 nanoparticles.



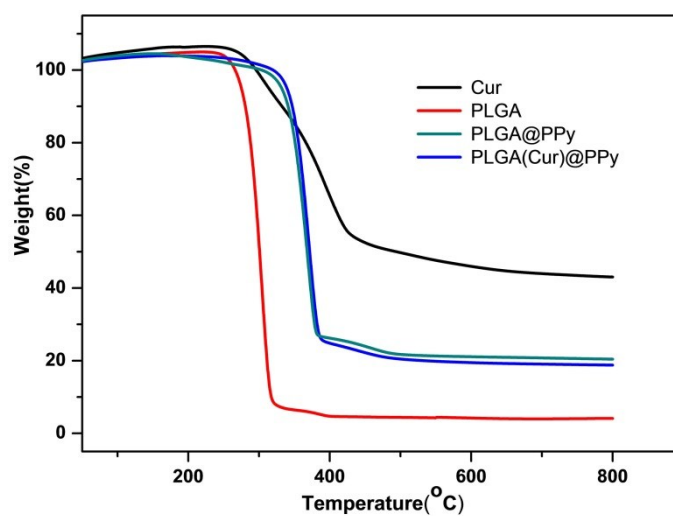
**Fig. S5** The photo images of as-prepared a) PLGA NPs, b) PLGA@PPy NPs, c) PLGA (Cur) NPs and d) PLGA (Cur)@PPy NPs dispersed in H<sub>2</sub>O.



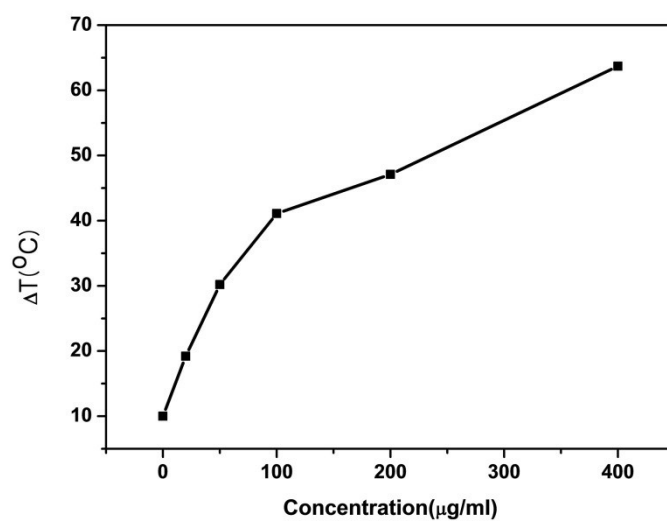
**Fig. S6** Transmission electron microscopy (TEM) images of PLGA (Cur)|@PPy treated with DCM at different magnification.



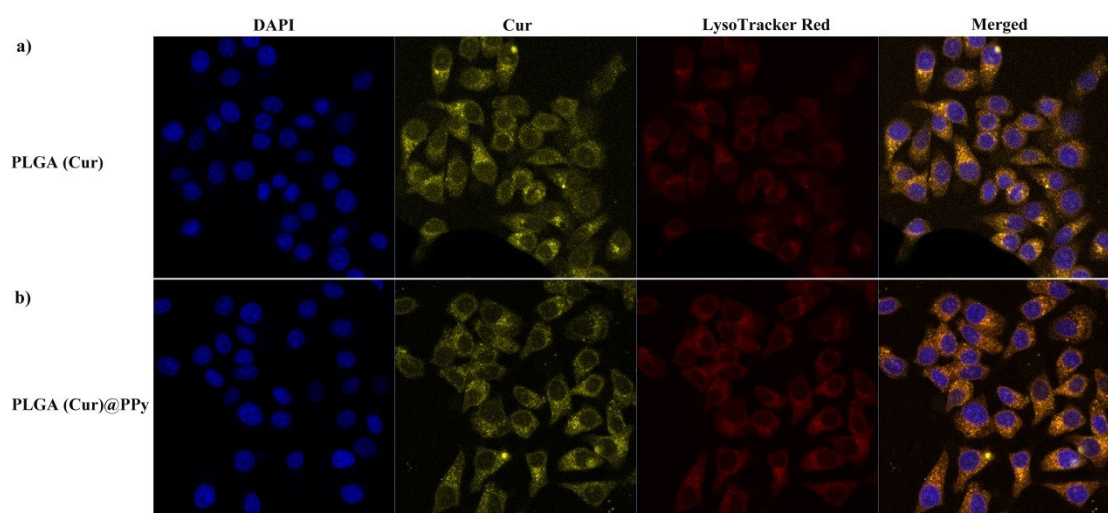
**Fig. S7** Fluorescence spectroscopy (FL) of Cur in DMF/H<sub>2</sub>O (v/v=1:2), PLGA (Cur) and PLGA (Cur)@PPy with a Cur concentration of 10 μg mL<sup>-1</sup>.



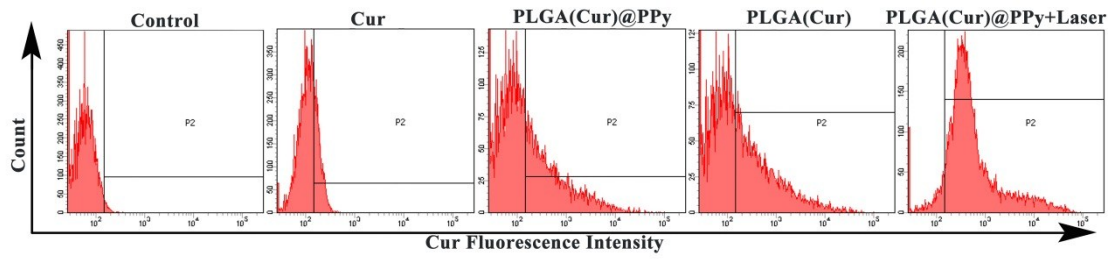
**Fig. S8** The thermogravimetric curves of Cur, PLGA, PLGA@PPy and PLGA (Cur)@PPy under N<sub>2</sub> atmosphere.



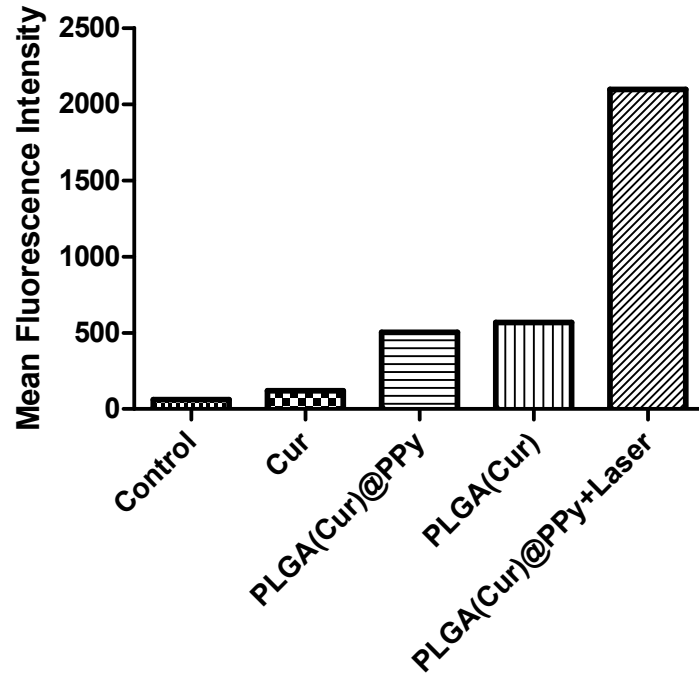
**Fig. S9** The temperature elevation of the dispersions of PLGA (Cur)@PPy nanoparticles with the increasing concentration, exposure to NIR light (808nm, 2W cm<sup>-2</sup> for 6 min).



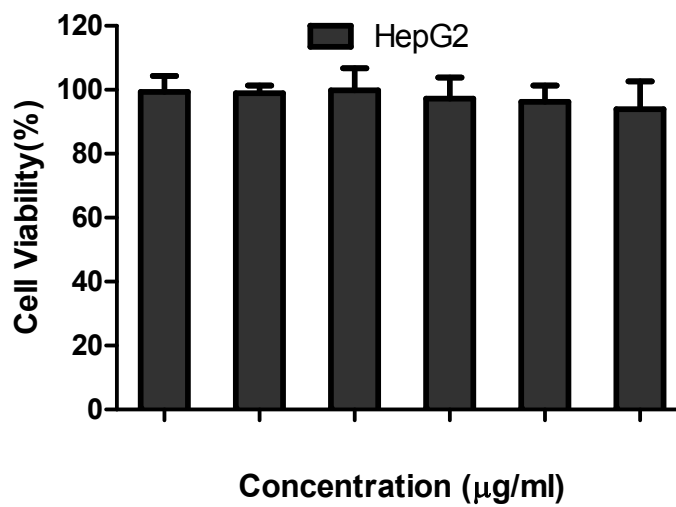
**Fig. S10** CLSM co-localization images of HepG2 cells incubated with PLGA (Cur) NPs and PLGA (Cur)@PPy NPs for 2 h at 37 °C at a concentration of 10μg mL<sup>-1</sup>. All pictures show the fluorescence images of DAPI (blue), the fluorescence of PLGA (Cur) NPs and PLGA (Cur)@PPy NPs (yellow), the fluorescence of Lyso-Tracker Red (red) and merged images from left to right.



**Fig. S11** Flow cytometry analysis of Cur fluorescence intensity in HepG2 cells with different treatments.



**Fig. S12** The mean fluorescence intensity of Cur determined from the results of Fig. S9.



**Fig. S13** Cell viabilities of HepG2 cells incubated with different concentrations of PLGA@PPy 48h.