

## Supporting Information

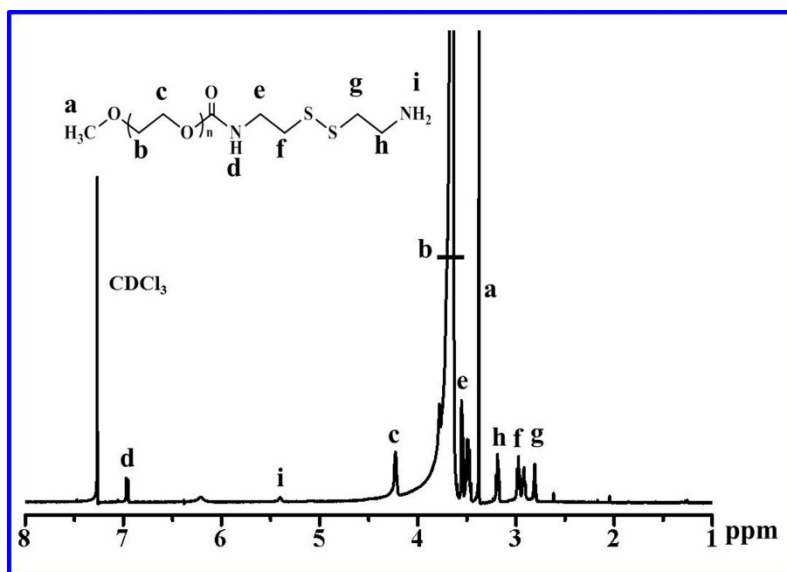
### Construction of redox/pH dual stimuli-responsive PEGylated polymeric micelles for intracellular doxorubicin delivery in liver cancer

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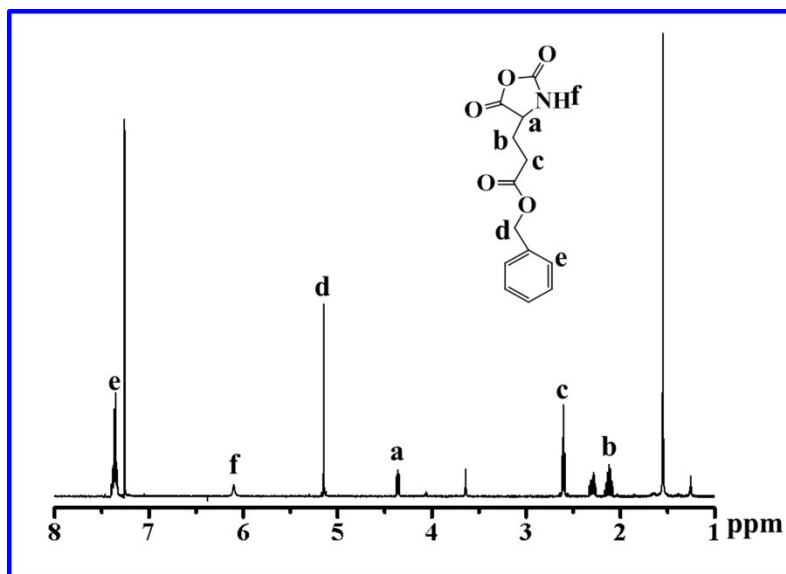
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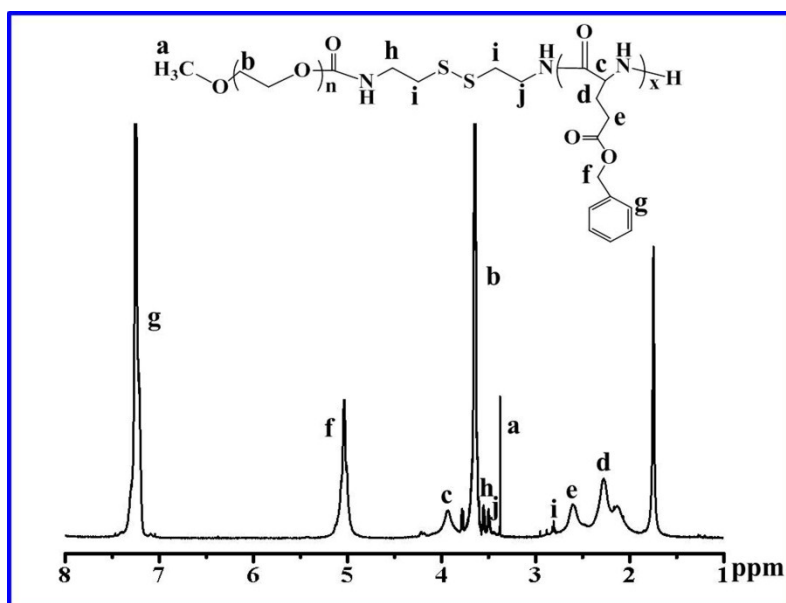
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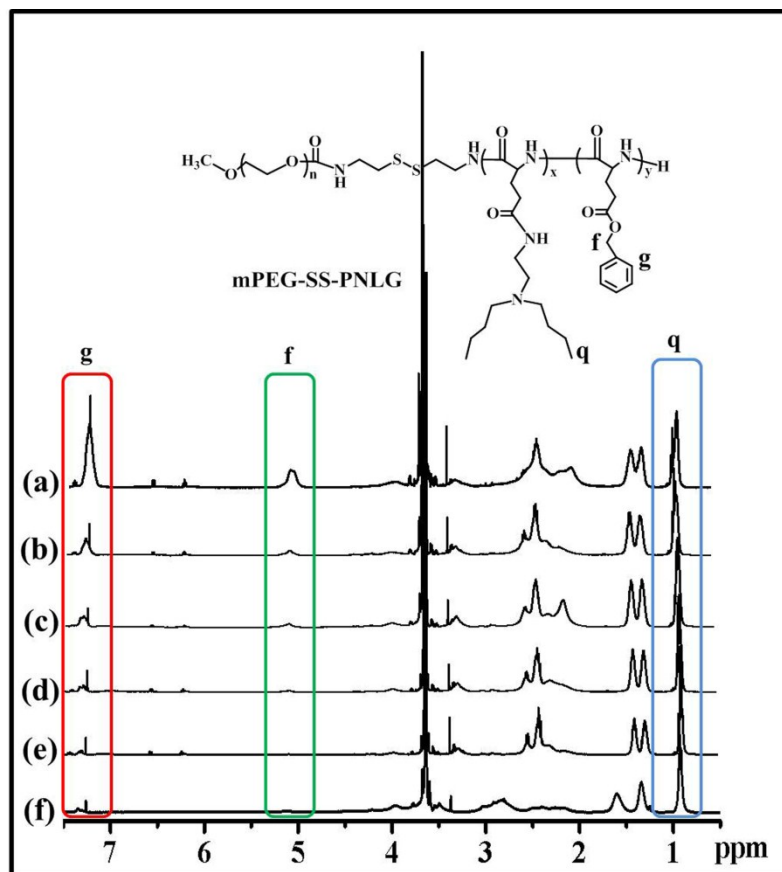
**Figure S1.** <sup>1</sup>H NMR spectra of mPEG-Cys (500MHz, CDCl<sub>3</sub>)



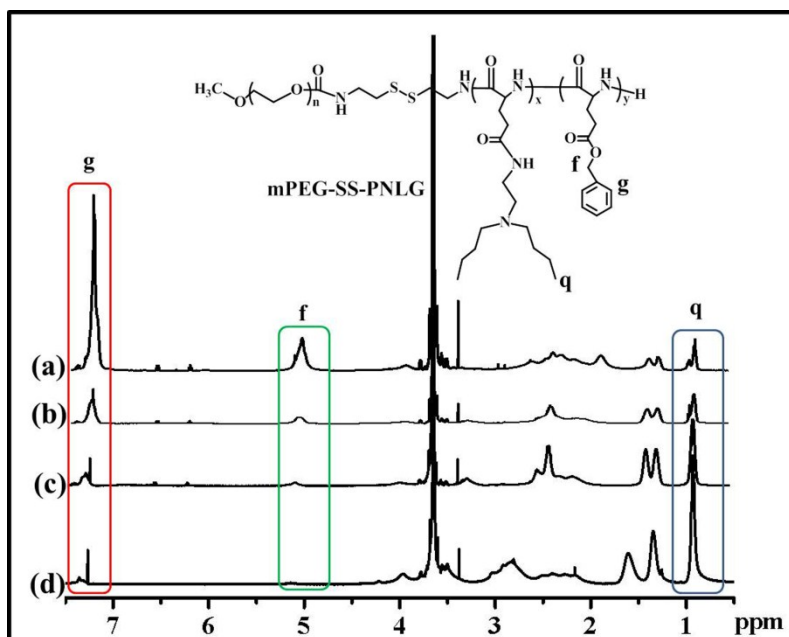
**Figure S2.** <sup>1</sup>H NMR spectra of BLG-NCA (500MHz, CDCl<sub>3</sub>)



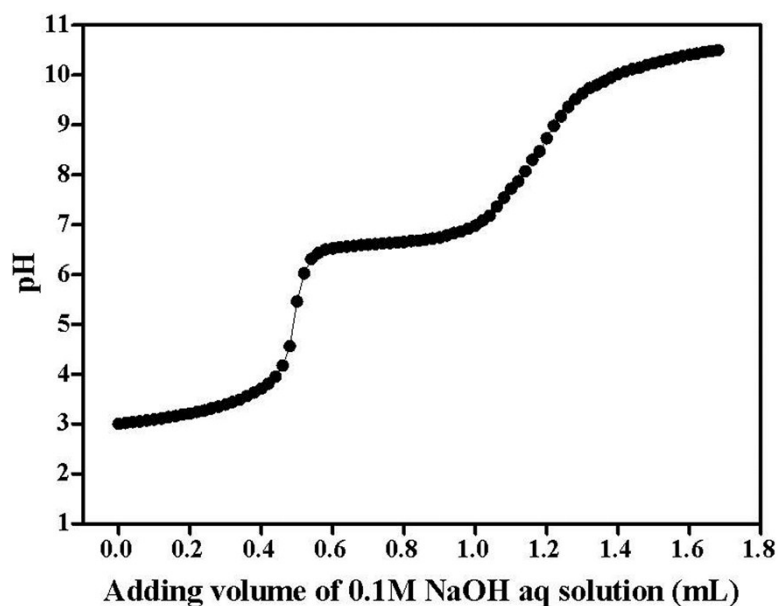
**Figure S3.** <sup>1</sup>H NMR spectra of mPEG-SS-PBLG (500MHz, CDCl<sub>3</sub>)



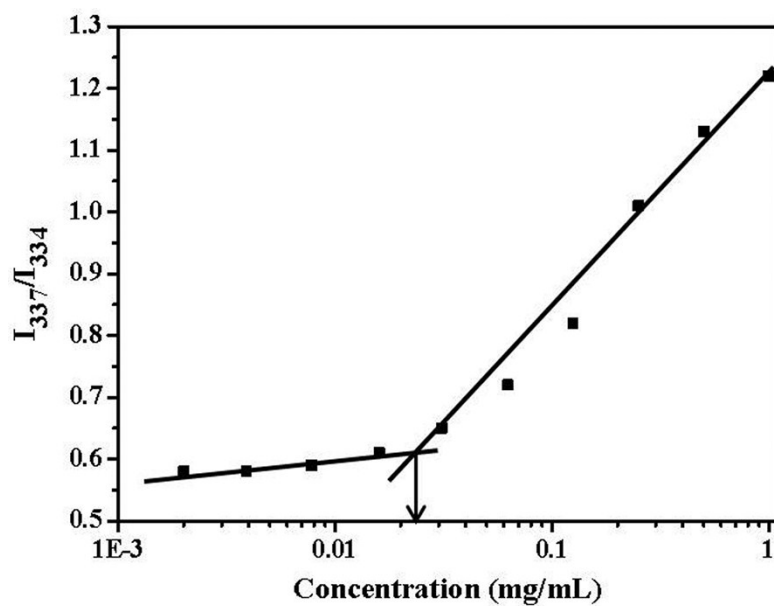
**Figure S4a.** The  $^1\text{H}$  NMR spectra of mPEG-SS-PNLG with different reaction time:  
 (a). reaction for 12h; (b) reaction for 24h; (c). reaction for 36h; (d). reaction for 48h;  
 (e). reaction for 60h; (f). reaction for 72h. (500MHz,  $\text{CDCl}_3$ )



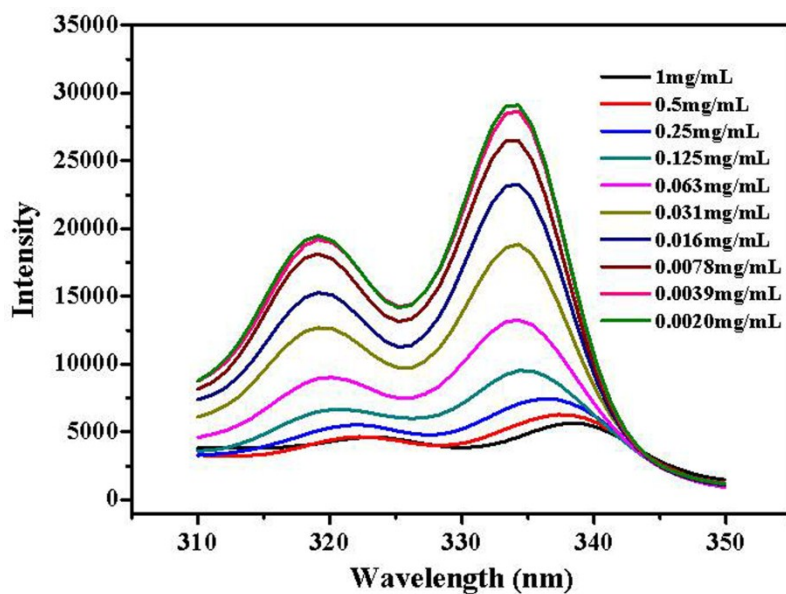
**Figure S4b.** The  $^1\text{H}$  NMR spectra of mPEG-SS-PNLG with different feed molar ratio of 2-(dibutylamino)ethylamine to benzyl groups: (a). feed molar ratio is 1:1; (b) feed molar ratio is 5:1; (c). feed molar ratio is 10:1; (d). feed molar ratio is 20:1. (500MHz,  $\text{CDCl}_3$ )



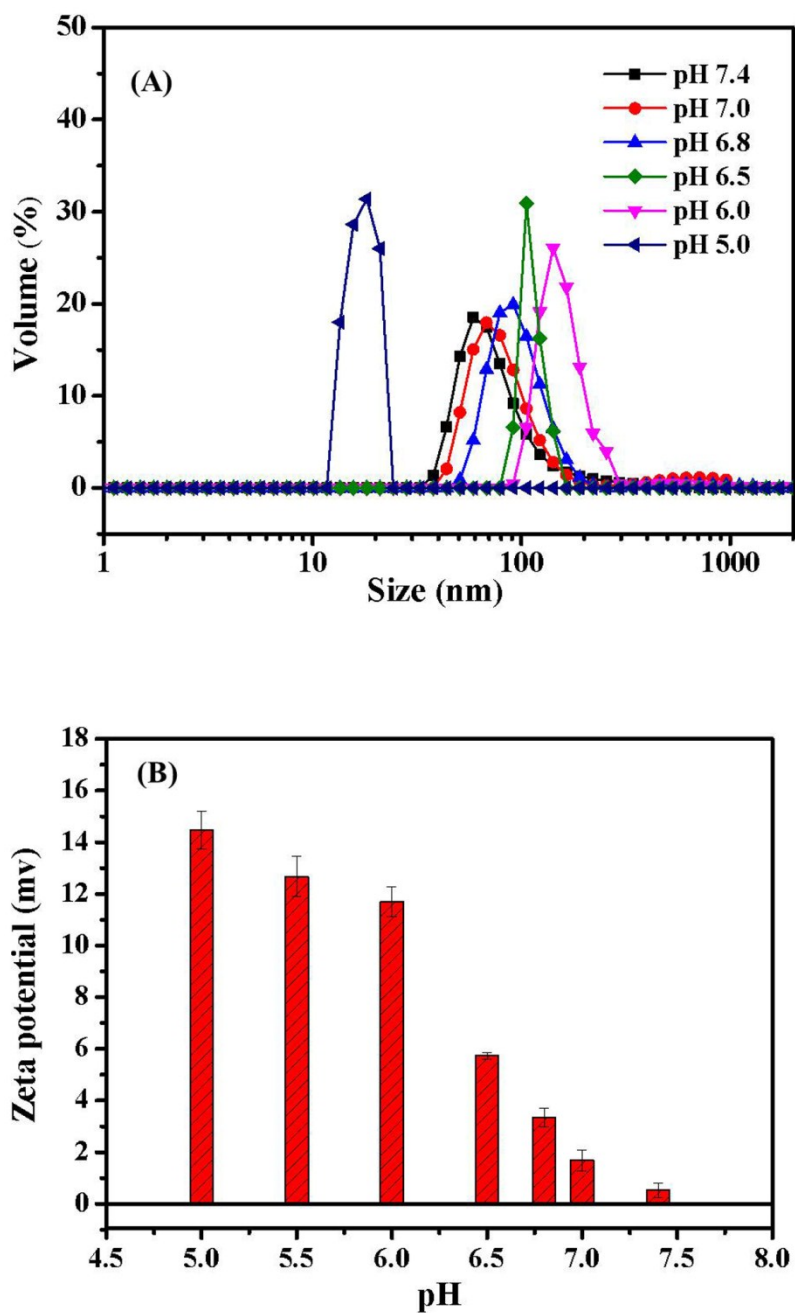
**Figure S5.** Titration curves of mPEG-SS-PNLG(90%) copolymer (1 mg/mL in deionized water).



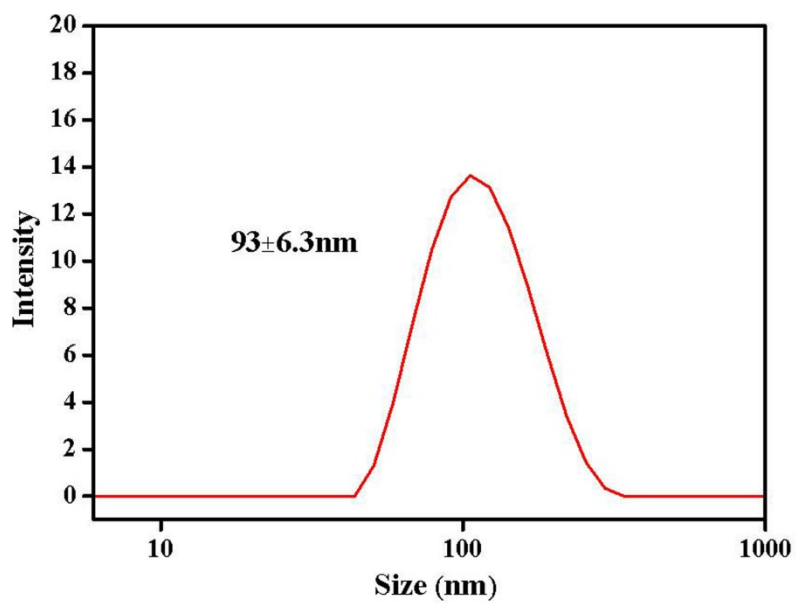
**Figure S6.** Plots of the intensity ratio  $I_{337}/I_{334}$  of pyrene in mPEG-SS-PNLG (90%) copolymer solution of different concentrations.



**Figure S7.** The fluorescence intensity of pyrene in mPEG-SS-PNLG(90%) polymer solutions of different concentration.



**Figure S8.** pH-sensitive of mPEG-SS-PNLG(90%) micelles solution (1mg/mL) at different pHs measured by (A) DLS and (B) the zeta potential.



**Figure S9.** Particle size of the DOX-loaded mPEG-SS-PNLG(90%) micelles by DLS.