

## Supporting information

### PEGylated alternating copolymeric prodrug of sulfur dioxide with glutathione responsiveness for Irinotecan delivery

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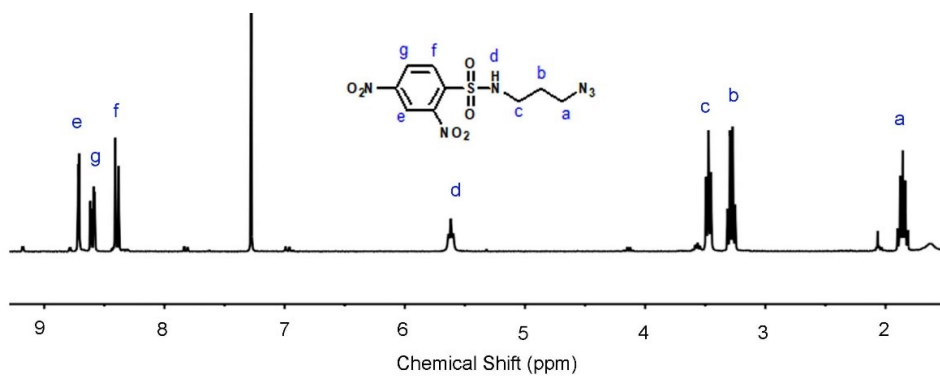
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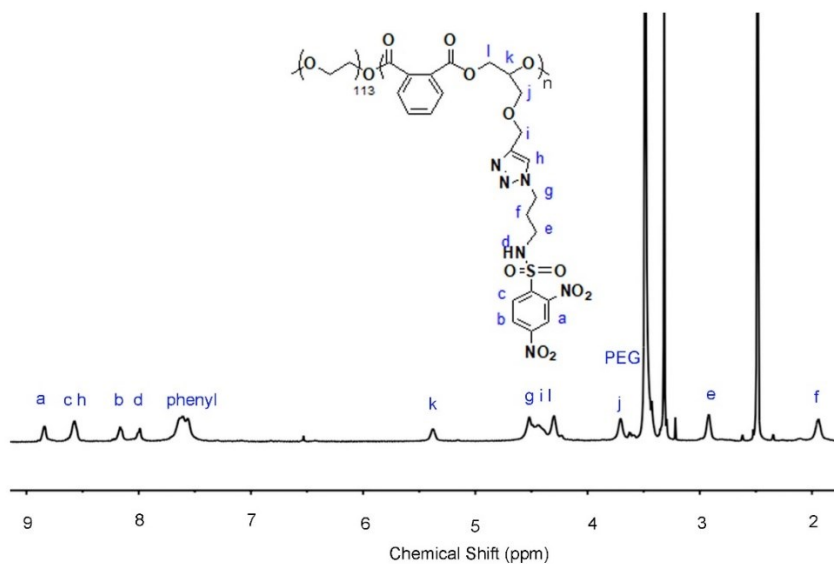
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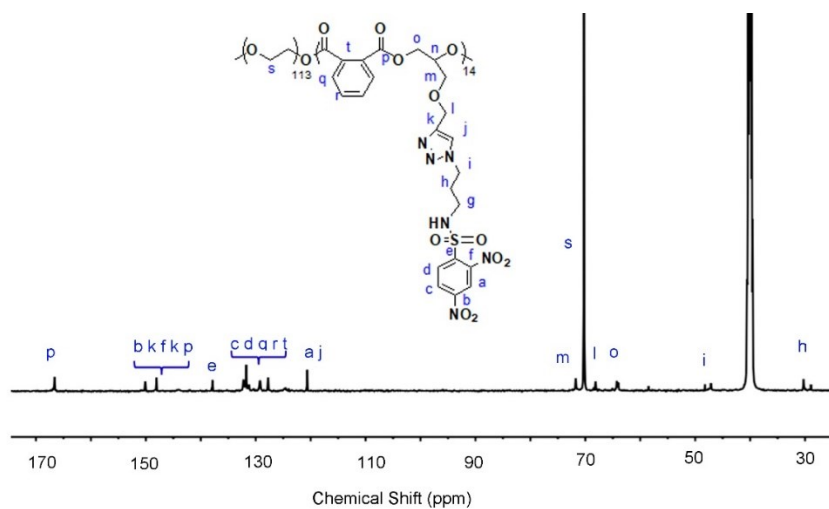


**Fig. S1.**  $^1\text{H}$  NMR spectrum of *N*-(3-azidopropyl)-2,4-dinitrobenzenesulfonamide (AP-DNs) in  $\text{CDCl}_3$ .

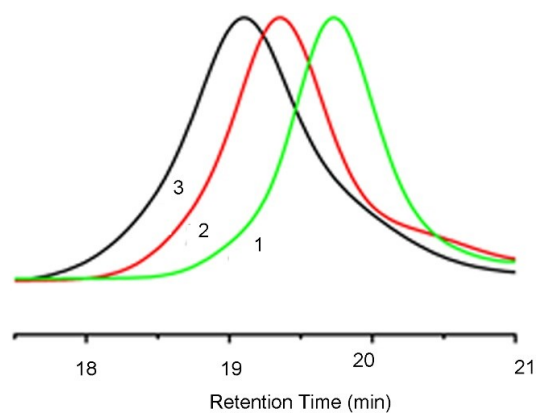
(A)



(B)



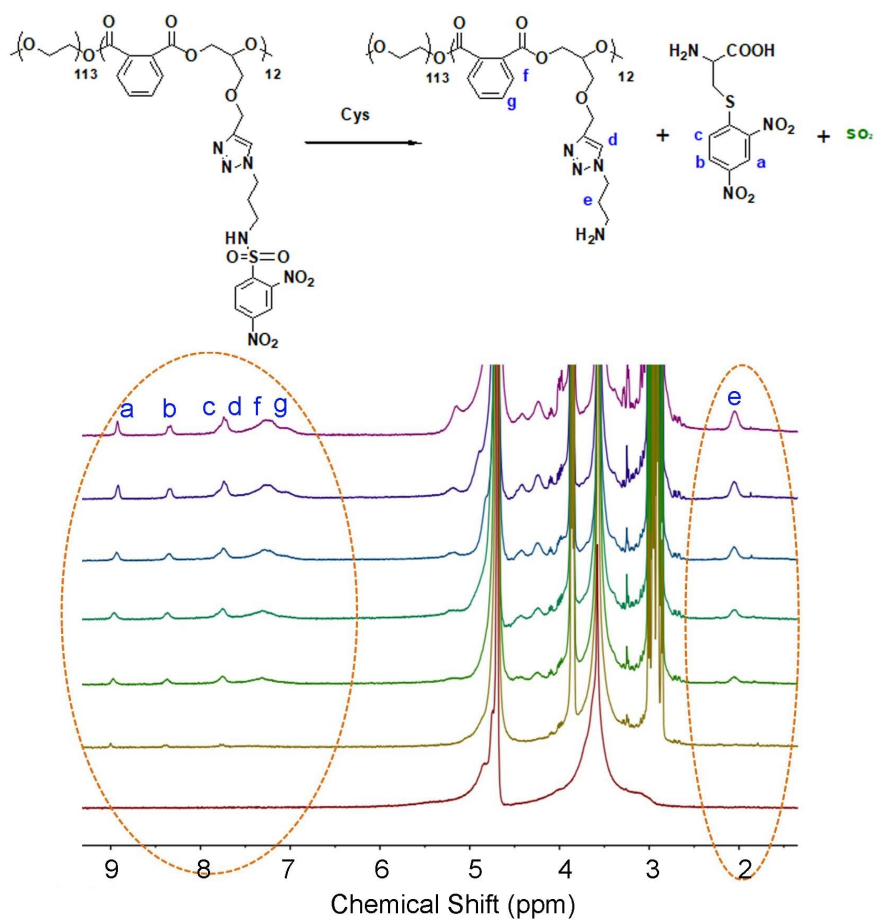
**Fig. S2.**  $^1\text{H}$  (A) and  $^{13}\text{C}$  (B) NMR spectrum of mPEG-*b*-P(PA-*alt*-GDNs) in  $\text{DMSO-}d_6$ .



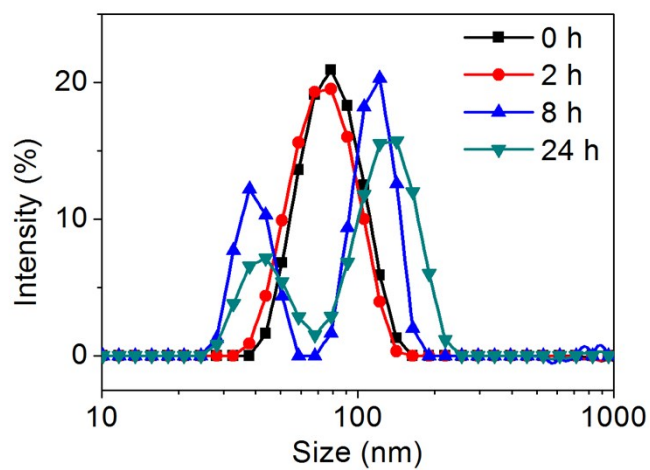
**Fig. S3.** GPC profiles of mPEG (1), mPEG-*b*-P(PA-*alt*-GPE) (2) and mPEG-*b*-P(PA-*alt*-GDNs) (3).

**Table S1.** GPC results of mPEG, mPEG-*b*-P(PA-*alt*-GPE) and mPEG-*b*-P(PA-*alt*-GDNs).

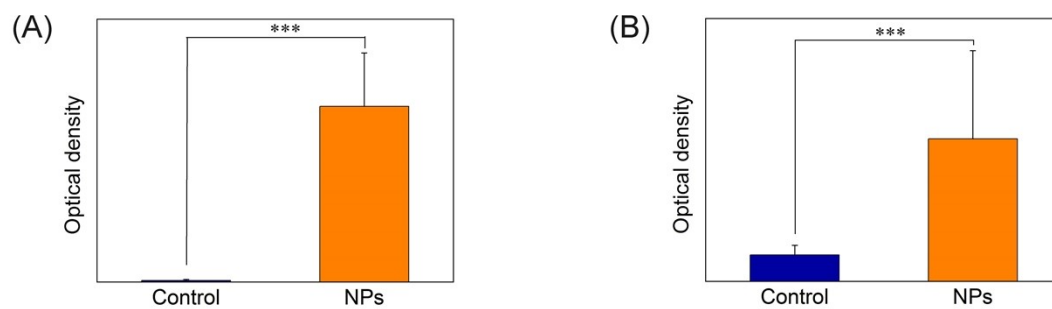
	<b>Polymers</b>	$M_n$	$\bar{D}$
1	mPEG	12500	1.16
2	mPEG- <i>b</i> -P(PA- <i>alt</i> -GPE)	20900	1.27
3	mPEG- <i>b</i> -P(PA- <i>alt</i> -DNs)	27000	1.33



**Fig. S4.** In situ time-varied <sup>1</sup>H NMR spectra of mPEG-*b*-P(PA-*alt*-GDNs) micelles in the presence of cysteine at room temperature.



**Fig. S5.** The DLS profiles of NPs (0.02 mg/mL) after treatment with 5 mM GSH.



**Fig. S6.** (A) and (B) are the relative optical densities in HepG2 cells based on the CLSM results in Figure 6A and 6B, respectively.  $***p < 0.001$ .