## **Supporting Information**

A biodegradable and fluorescent nanovehicle with enhanced selective uptake by tumor cells

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Fig. S1. <sup>1</sup>H NMR spectrum of AcDAGEA in CDCl<sub>3</sub> at 25 °C.



Fig. S2. XPS survey scan of pAcDAGEA/pPEGA-*b*-p(DMDEA-*co*-BADS).



Fig. S3. <sup>1</sup>H NMR spectrum of LA-pDAGEA/pPEGA-*b*-p(DMDEA-*co*-BADS) in DMSO-*d*<sub>6</sub> at



Fig. S4. The DLS histogram of (A) LA-Np1, (B) LA-Np2 and (C) LA-Np3.





Fig. S5 Nanoparticle stability following incubation with 90% fetal bovine serum.



**Fig. S6** Hydrodynamic diameter versus degradation time plots of 0.5 mg/mL of LA-Np2 in pH 7.4 PBS with 5 and 20 mM DTT, respectively.



**Fig. S7.** The microscope images of NIH3T3 cells after 48 h of incubation with (A) the control, (B) DOX@Np2, (C) DOX@LA-Np2, (D) free DOX; and HepG2 cells after 48 h of incubation with (E) the control, (F) DOX@Np2, (G) DOX@LA-Np2, (H) free DOX at 20 ug/mL of DOX.

Table S1. Characterization and properties of the polymers

Samples	theoretical $M_n$ (kDa) <sup>a</sup>	measured $M_n$ (kDa) <sup>b</sup>	$M_{ m w}/M_{ m n}^{ m b}$
pAcDAGEA	6.0	5.2	1.15
pPEGA	7.2	6.5	1.17

<sup>a</sup> Theoretical  $M_n$  based on MW of monomer  $\times [M]_0/[CTA_{BODIPY}]_0$ . <sup>b</sup> Measured

by GPC using polystyrene as a standard in tetrahydrofuran.

Samples	$D_{H^{a}}(\mathbf{nm})$	PDI <sup>a</sup>	Zeta potential <sup>a</sup> (mV)
DOX@LA-Np1	$112.6 \pm 4.2$	$0.19\pm0.02$	$-5.3 \pm 0.6$
DOX@LA-Np2	$178.5\pm2.9$	$0.21\pm0.03$	$-4.7 \pm 0.7$
DOX@LA-Np3	$132.7\pm5.1$	$0.22\pm0.01$	$-5.3 \pm 0.4$

Table S2. Characterization and properties of the nanoparticles

<sup>a</sup> Hydrodynamic parameters of nanoparticles in PBS were measured by DLS at 25°C.

Table S3. Drug release kinetic obtained from DOX release data<sup>a</sup>

Conditions for drug release	п	k	<b>R</b> <sup>2</sup>	transport mechanism
pH 7.4	0.1058	12.39	0.9488	diffusion controlled
pH 5.4	0.1088	12.29	0.9641	diffusion controlled
pH 7.4 with DTT	0.3912	15.26	0.9754	diffusion controlled
pH 5.4 with DTT	0.3966	20.48	0.9557	diffusion controlled