Electronic supplementary information

Hydrophobic or PEGylated, Self-Stabilized Paclitaxel Polymer Prodrug Nanoparticles for Cancer Therapy

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Supporting figures



Figure S1. ¹H NMR spectrum in CDCl₃ in the 0.5–8.5 ppm region of Ptx-digly-AMA-SG1. *CDCl₃ residual signal (7.26 ppm) and EtOAc signal (2.05 ppm).



Figure S2. ¹H NMR spectrum in CDCl₃ in the 0.5–8.5 ppm region of Ptx-digly-CDP. *CDCl₃ residual signal (7.26 ppm).



Figure S3. ¹H NMR spectra in CDCl₃ in the 0.5–8.5 ppm region of **P1–P5.** Red areas indicate the aromatic protons of Ptx, the green area indicates the vinylic proton of the isoprene unit (1,4-addition), corresponding to ~81% of total isoprene units,³ and the blue area indicates the proton in the α -position to the tertiary carbon of SG1.



Figure S4. SEC chromatograms (CHCl₃ eluent, 1 mL.min⁻¹) of **P2–P5** after purification (the chromatogram of **P1** was not shown for clarity because it is nearly identical than that of **P2**).



Figure S5. ¹H NMR spectra in CDCl₃ in the 0.5–8.5 ppm region of **P6** and **P7**. Red areas indicate the aromatic protons from Ptx and the green area indicates the ether protons from POEGMA.



Figure S6. SEC chromatograms (CHCl₃ eluent, 1 mL.min⁻¹) of Ptx-digly-POEGMA **P6** and **P7** after purification.



Figure S7. Evolution with time of (a) the average diameter and (b) the particle size distribution of Ptx-digly-PI nanoparticles **P5** in PBS determined by DLS.



Figure S8. Evolution with time of (a) the average diameter and (b) the particle size distribution of Ptx-digly-POEGMA nanoparticles **P6** in water determined by DLS.



Figure S9. Concentration-size dependence of Ptx-digly-PI nanoparticles **P5** prepared by nanoprecipitation determined by DLS.



Figure S10. Cytotoxicity assay on MCF-7 cells with increasing concentrations of Ptx-digly-PI P5 and Ptx-digly-POEGMA P6 nanoparticles after an incubation period of 72 h. The horizontal dashed line indicates the IC_{50} .

Table S1. Average Diameters for Ptx-digly-PI (P4) and Ptx-digly-POEGMA (P6)Nanoparticles Determined by Cryo-TEM. a

Sample	$D_n{}^b$	D_{w}^{c}	Polydispersity index (γ)
	(nm)	(nm)	
P4	141	234	1.66
P6	92	98	1.07

^{*a*}Determined by counting from Cryo-TEM images (n = 164 for P4 and n = 12 for P6).

$${}^{b}D_{n} = \sum_{i} n_{i} \cdot D_{i} / \sum_{i} n_{i}$$
$${}^{c}D_{w} = \sum_{i} n_{i} \cdot D_{i}^{4} / \sum_{i} n_{i} \cdot D_{i}^{3}$$

^{*d*}polydispersity index: $\gamma = D_w / D_n$