

Supporting Information for:

## **Dendritic polyglycerol sulfate as a novel platform for paclitaxel delivery: pitfalls of ester linkage**

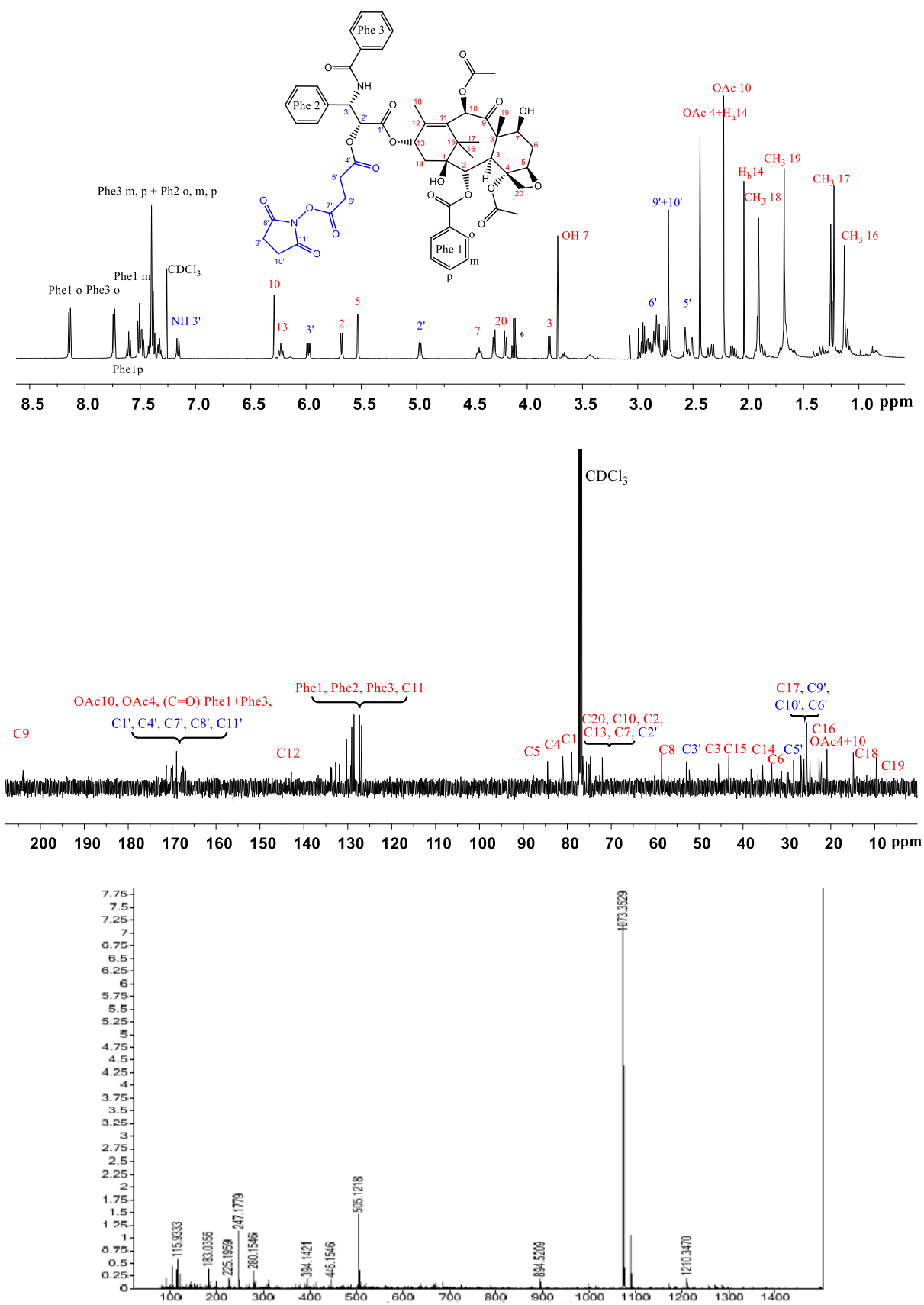
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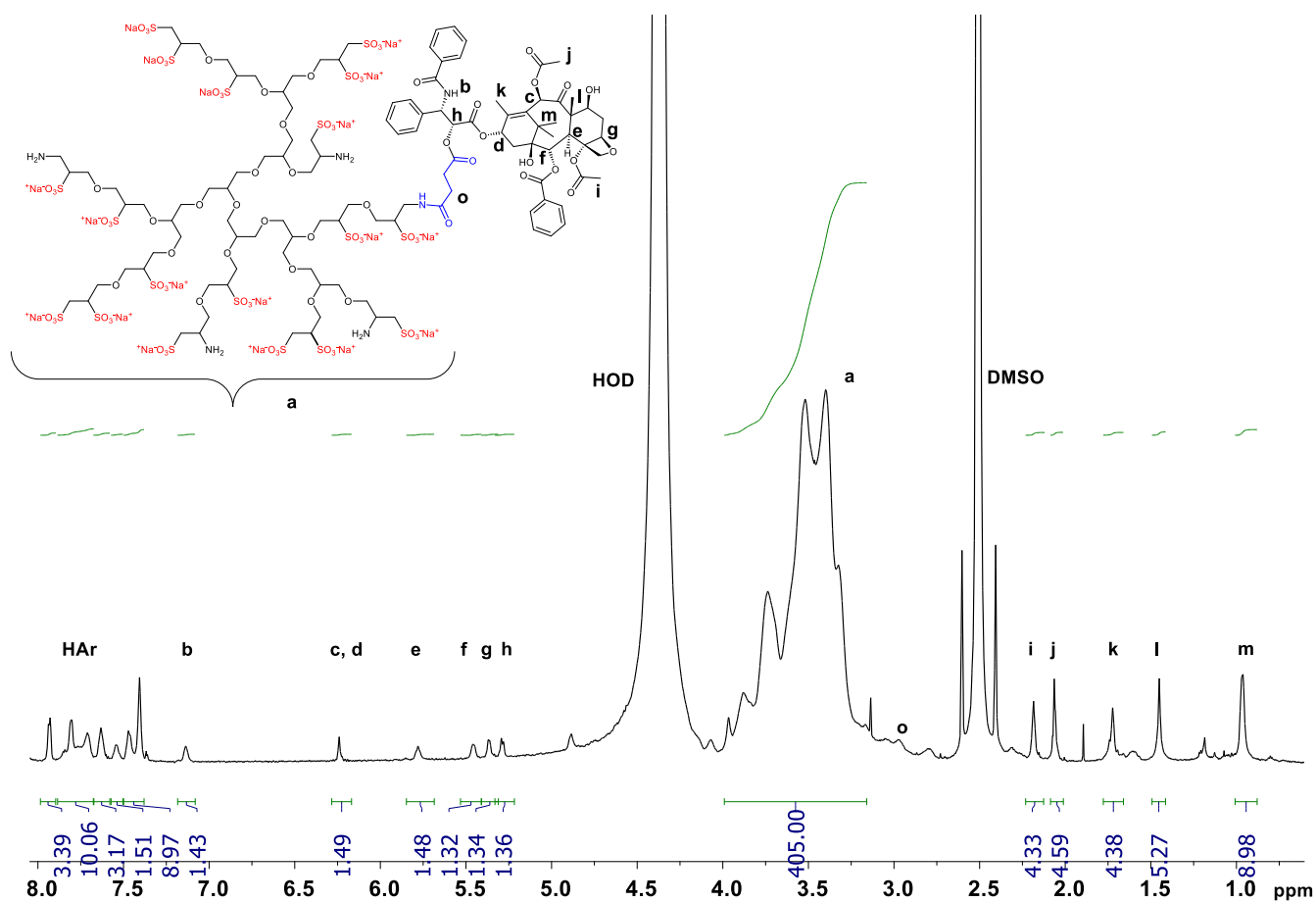
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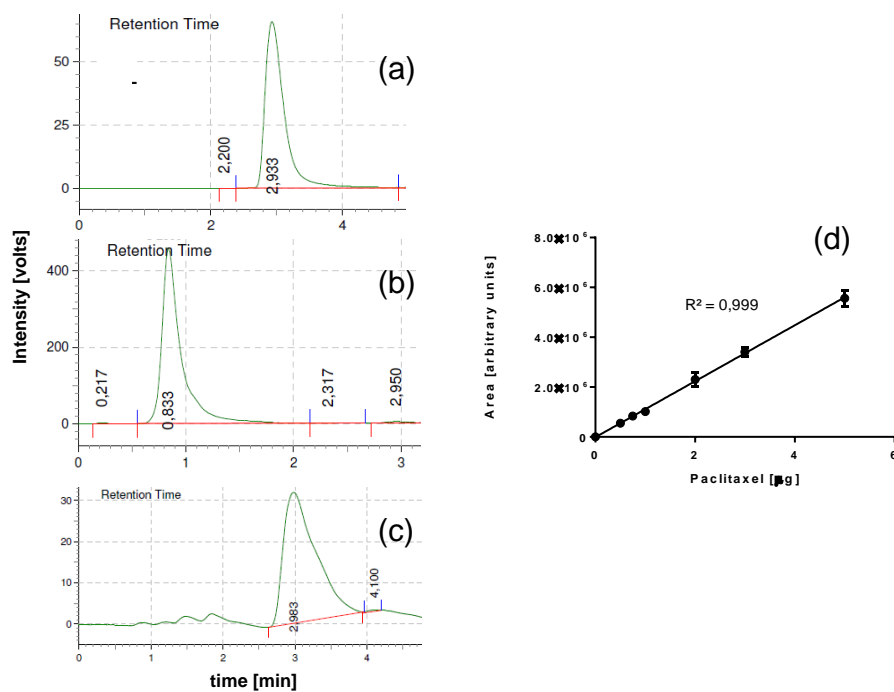
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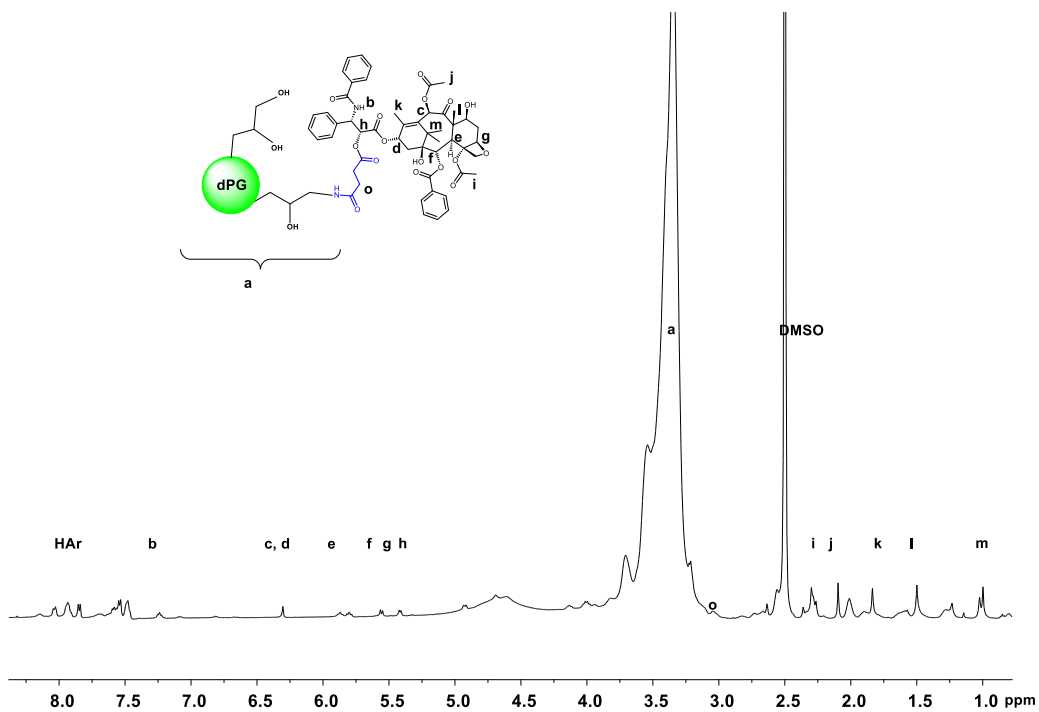
**Figure S1.**  $^1\text{H}$ ,  $^{13}\text{C}$  NMR spectra (CDCl<sub>3</sub>) and ESI-MS of PTX-Suc-NHS ester (2).



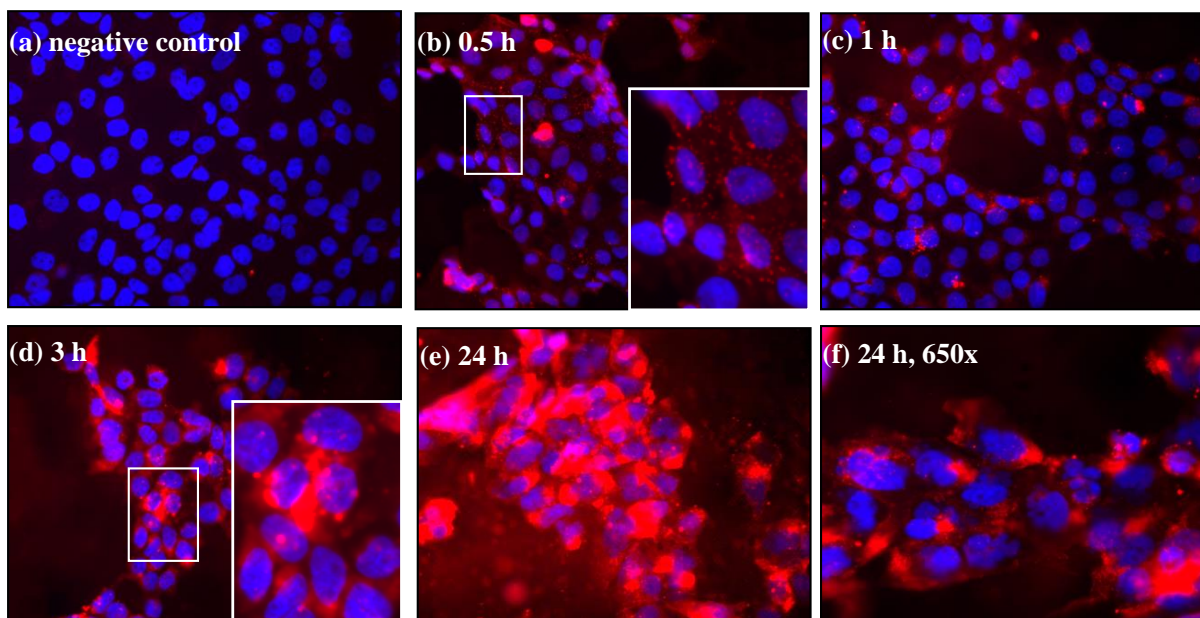
**Figure S2.**  $^1\text{H}$  NMR spectrum (DMSO- $d_6$ /D $_2$ O/DCI, 700 MHz) of dPGS-PTX (3). The integration of the peaks corresponding to the protons of the dPGS amine backbone (a, 405 H per dPGS molecule) and PTX (b-m, number of H indicated in the main article) shows an average of 1.4 PTX molecules per dPGS amine.



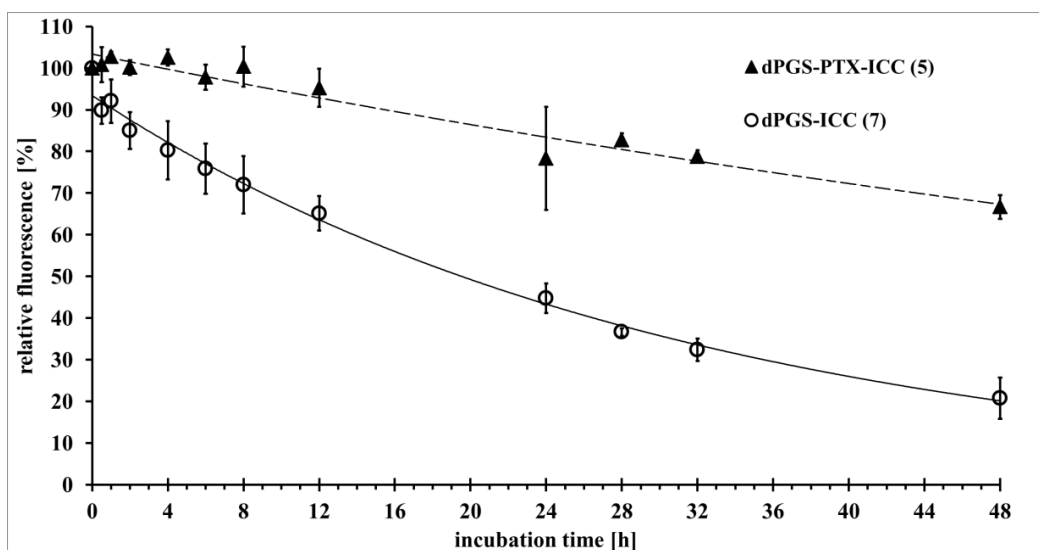
**Figure S3.** Retention times of (a) PTX, (b) dPGs-PTX (3) and (c) PTX after plasma extraction. (d) Calibration curve for PTX.



**Figure S4.**  $^1\text{H}$  NMR spectrum ( $\text{DMSO-d}_6$ , 500 MHz) of dPG-PTX (4).



**Figure S5.** Representative images of A431 cells after incubation with dPGS-PTX-ICC (5) at different times. Concentration = 1  $\mu$ M. Figure (a) represents a negative control. Nuclear staining with DAPI (blue), ICC (red). Magnification 450x (a-e), 650x (f), extracts of (b) and (d) digitally enlarged.

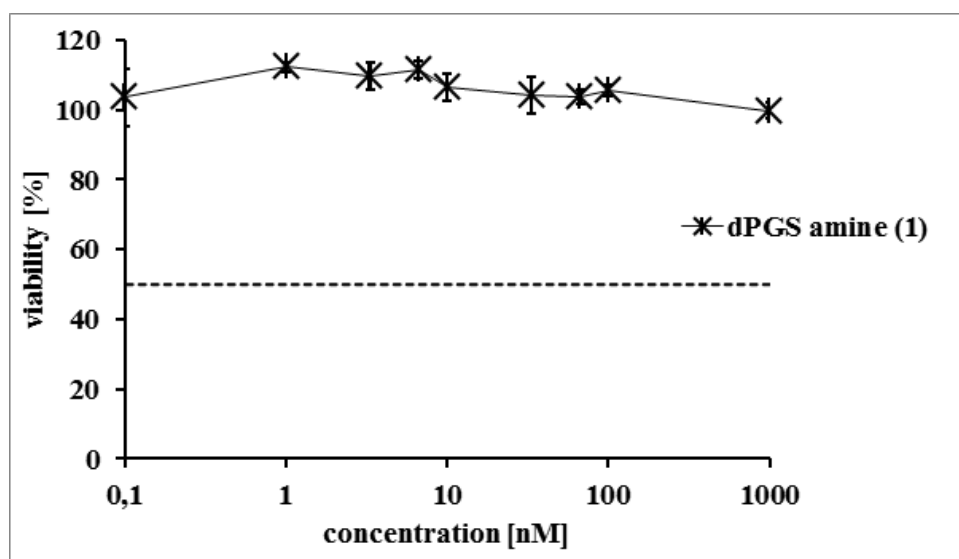


**Figure S6.** Elimination kinetics of dPGS-PTX-ICC (5) and dPGS-ICC (7) after 24 h preincubation (=100% fluorescence) of 1  $\mu$ M of both conjugates using A431 cells. Fluorescence of dPGS-PTX-ICC (5) is reduced more slowly than with PTX-free dPGS-ICC (7).

Sample	Cell line	24 h			48 h			72 h		
		IC <sub>50</sub> [nM]	95% C.I. [nM]	R <sup>2</sup>	IC <sub>50</sub> [nM]	95% C.I. [nM]	R <sup>2</sup>	IC <sub>50</sub> [nM]	95% C.I. [nM]	R <sup>2</sup>
PTX <sup>a)</sup>	A431	89.0	33.3-238	0.83	3.3	1.9-6	0.92	1.7	0.9-3.2	0.9
dPGS-PTX (3) <sup>b)</sup>	A431	311	157-615	0.84	7.6	6-9.5	0.98	3.4	2.3-5.1	0.95
PTX <sup>a)</sup>	A549	240	93.2-618	0.85	14.5	7.3-28.9	0.92	2.6	1.3-5.3	0.91
dPGS-PTX (3) <sup>a)</sup>	A549	591	286-1223	0.89	57.2	35.6-91.9	0.95	9.5	6.6-13.8	0.97

<sup>a)</sup>(n = 3). <sup>b)</sup>(n = 4).

**Table S1.** Comparison of IC<sub>50</sub> values of PTX and dPGS-PTX (3) in A431 and A549 cell lines.



**Figure S7.** Viability of dPGS amine (1) in A431 cells after 48 h of incubation.