Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

PCL-PEG graft copolymers with tunable amphiphilicity as efficient drug delivery systems

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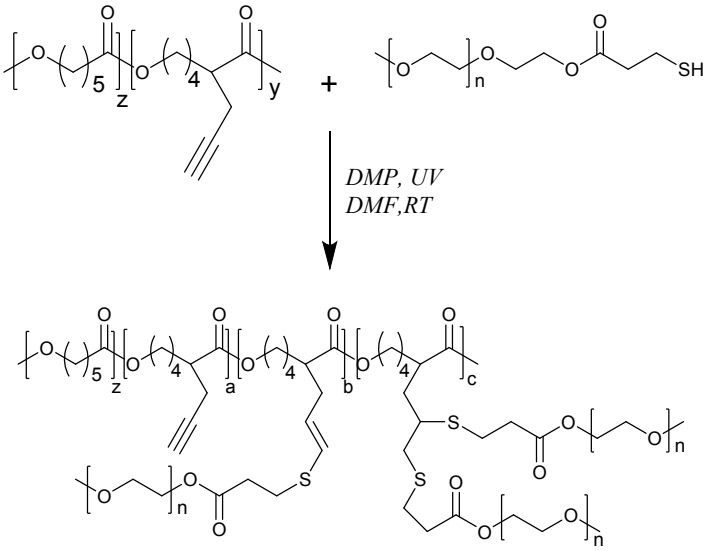


Scheme S1. Schematic representation of the preparation of the PCL-*g*-PEG copolymers by thiol-yne approach.

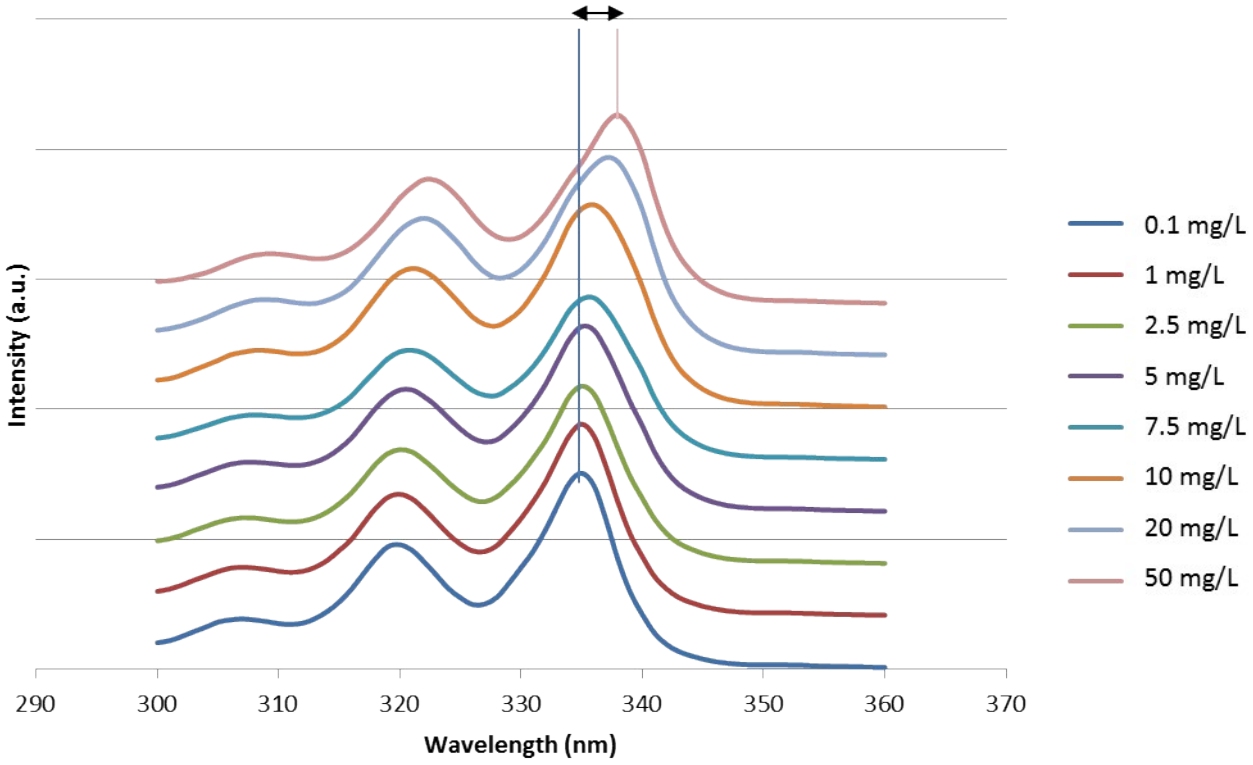


Figure S1. Excitation spectra of pyrene (λem = 371 nm) as a function of the concentration of PCL-*g*-PEG2k$_{3.2}$.

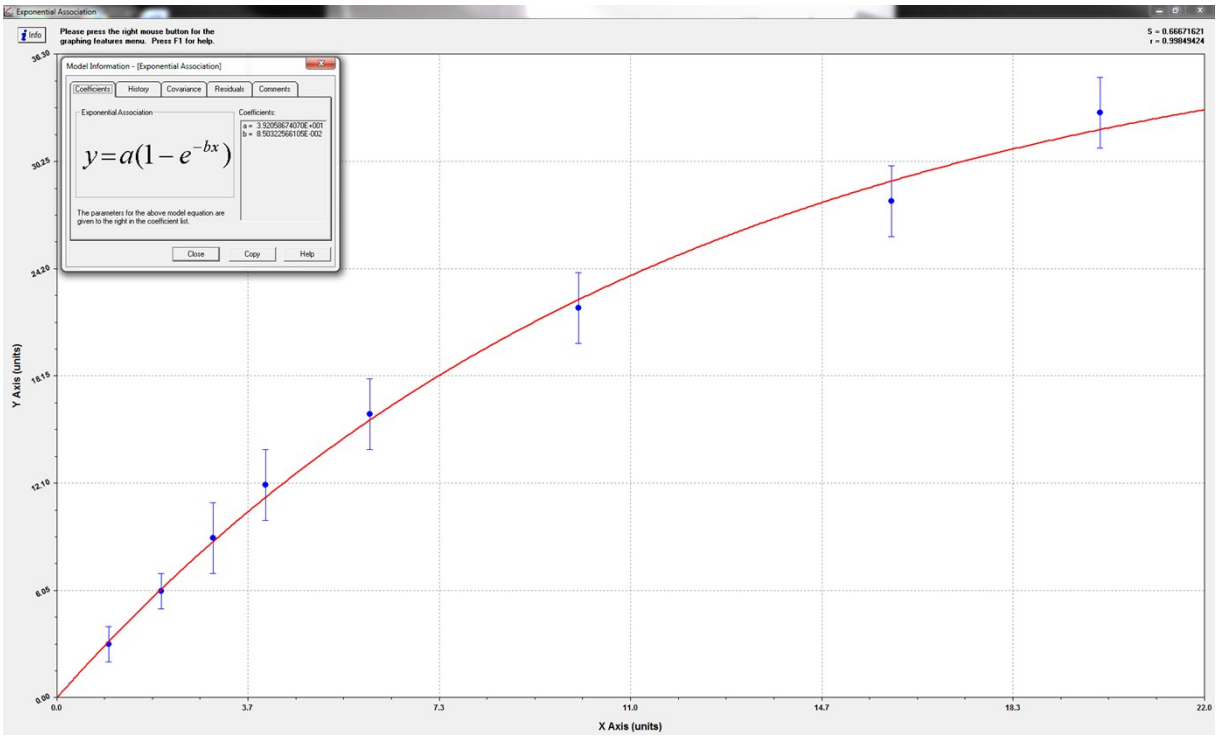


Figure S2a. Fit curve for the curcumin release from PCL-g-PEG0.7k$_{1.9}$ (software Curve Expert1.4)

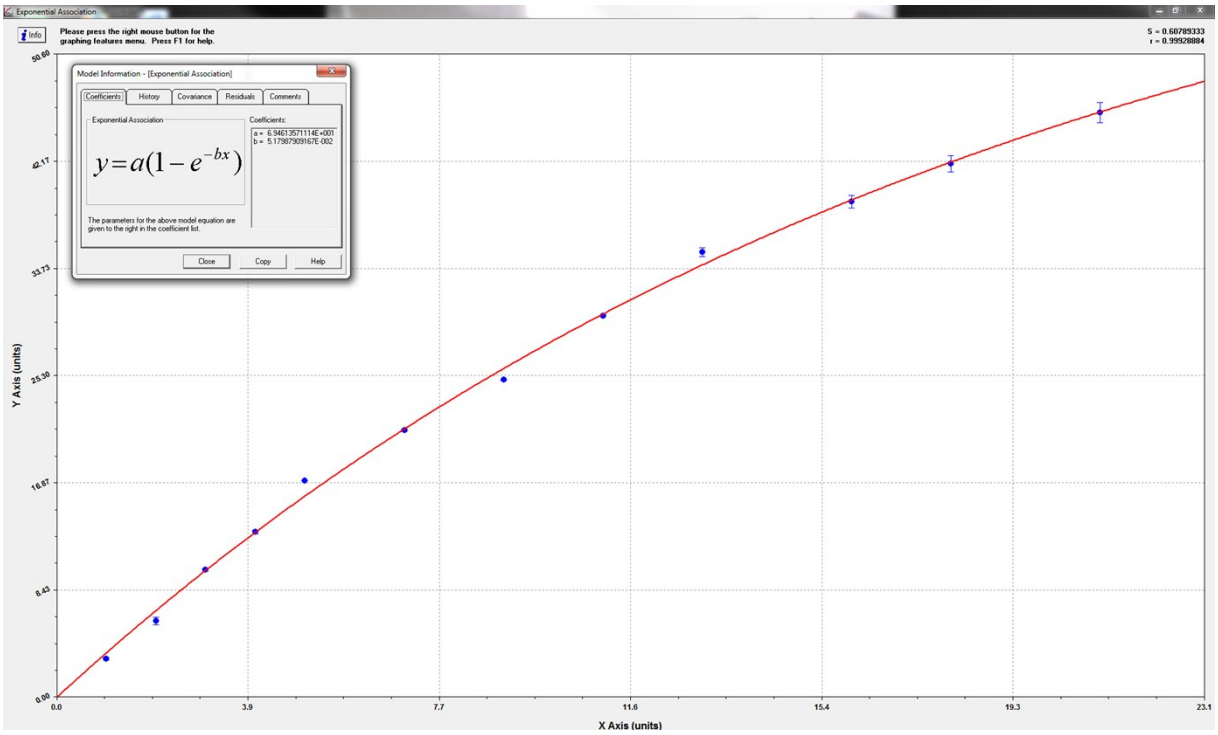


Figure S2b. Fit curve for the curcumin release from PCL-g-PEG2k$_{2.6}$ (software Curve Expert1.4)

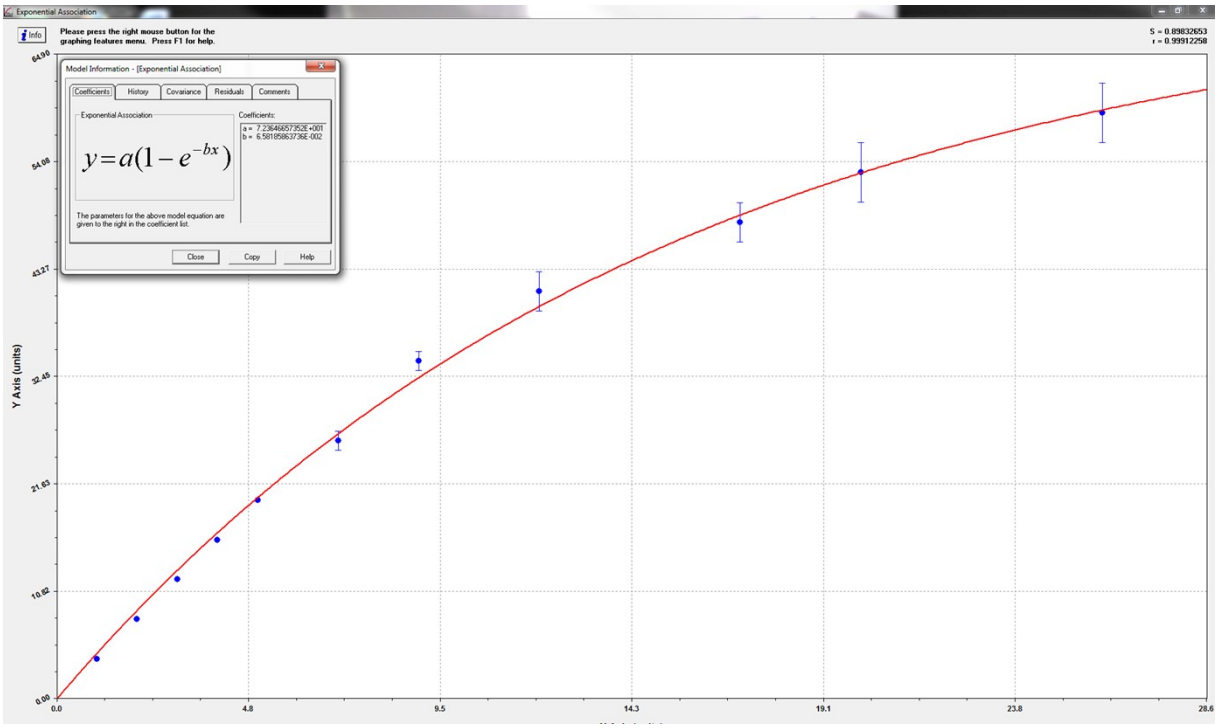


Figure S2c. Fit curve for the curcumin release from PCL-g-PEG2k$_{4.9}$ (software Curve Expert1.4)

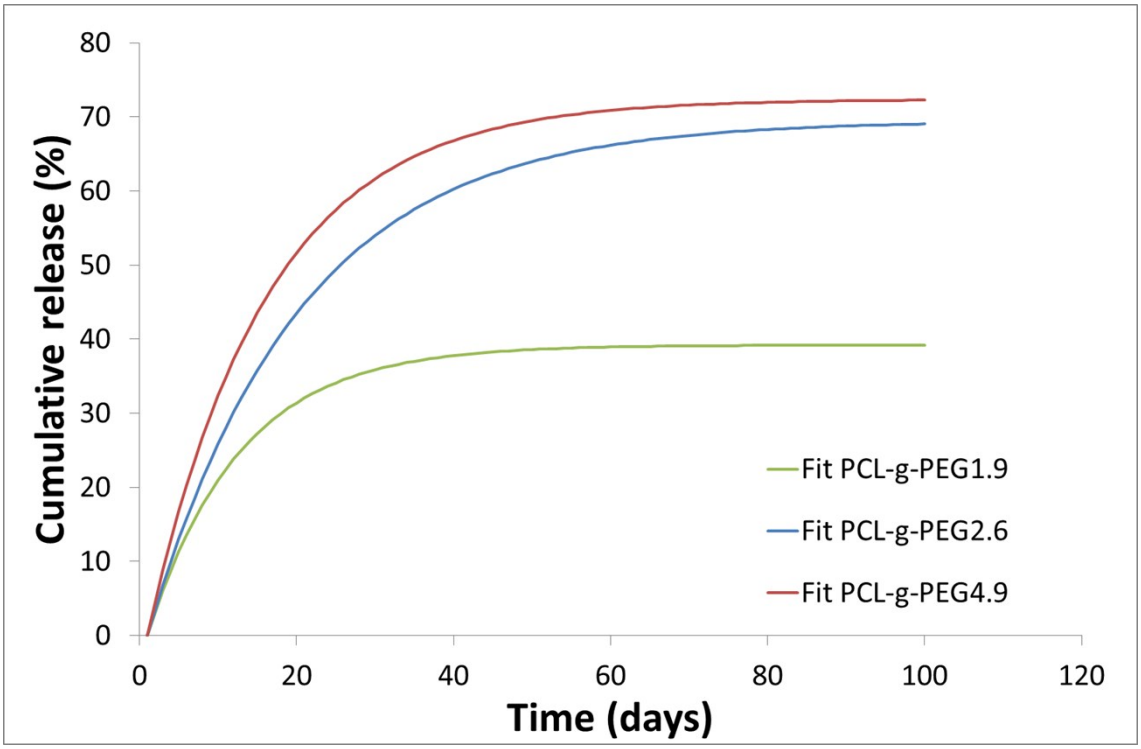


Figure S2d. Extrapolation of fit curves over 100 days for the release curcumin from PCL-*g*-PEG

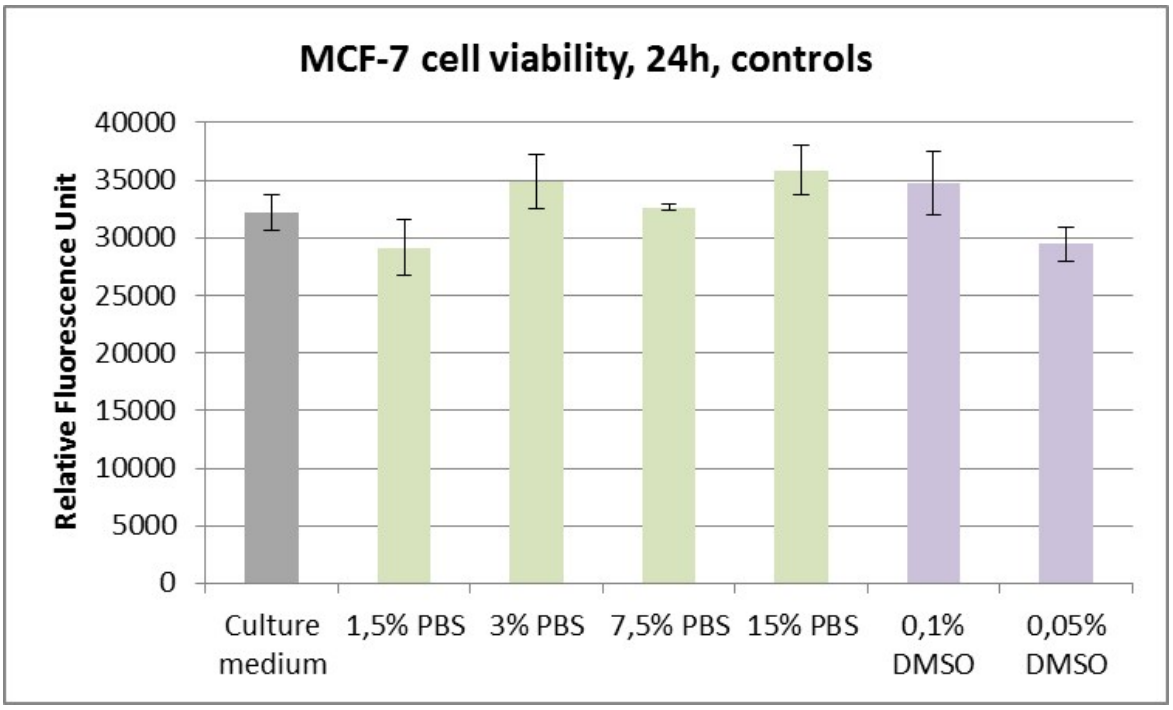


Figure S3. Viability of MCF-7 cells in different media. The grey bar represent the control in culture medium, green bars represent the culture medium supplemented with PBS (1.5% to 15%) and purple bars represent the culture medium supplemented with DMSO (0.05% and 0.1%)

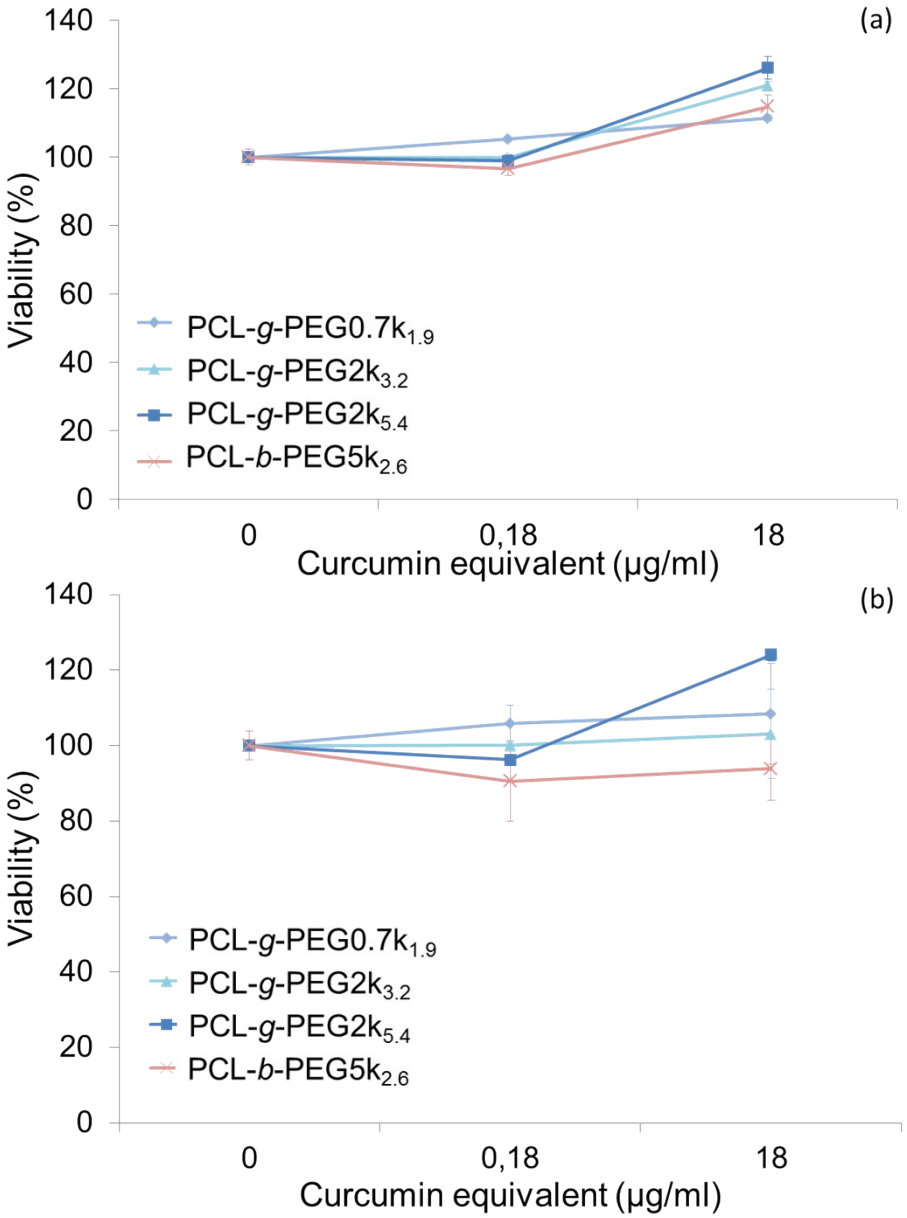
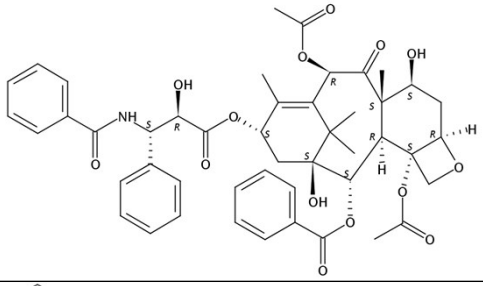
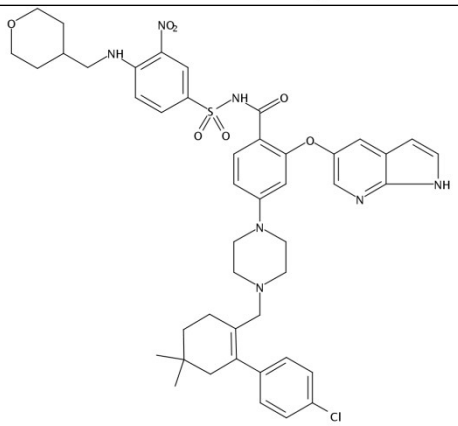
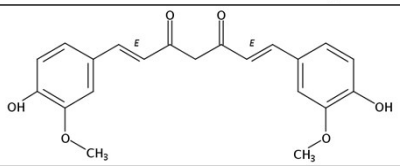
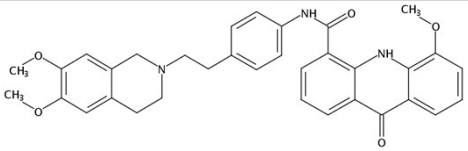
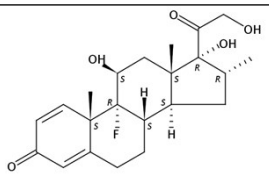
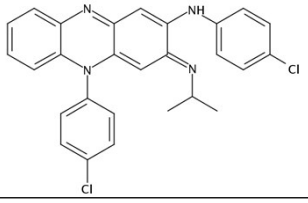


Figure S4. Viability of MCF-7 cells in the presence of non-loaded nanoaggregates. The concentration of blank nanoaggregates used in this assay was equal to the concentration of loaded nanoaggregates used to reach curcumin concentrations of 0.18 and 18 µg/L. (Data are expressed as means ± SD and correspond to measurements in triplicate)

Table S1. SEC analysis of PCL-*g*-PEG during degradation at 37°c in PBS. (Mn values expressed as means ± SD and correspond to measurements in triplicate

Copolymer / Time	**PCL-*g*-PEG0.7k$_{1.2}$**		**PCL-*g*-PEG2k$_{5.4}$**	
	Mn (g/mol)	**Đ**	**Mn (g/mol)**	**Đ**
T_0	19400 ± 1400	2,1 ± 0,2	27000 ± 3700	1,6 ± 0,2
1 W	27000 ± 1150	2,6 ± 0,2	20000 ± 7200	1,5 ± 0,1
	1700 ± 100	1,2 ± 0,2		
1 M	27500 ± 1800	2,8 ± 0,1	17400 ± 5500	1,2 ± 0,1
	1200	1,2	2900 ± 100	1,0 ± 0,1
3 M	16400 ± 500	1,9 ± 0,1	37100 ± 2300	1,4 ± 0,1
	960 ± 60	1,1	2600 ± 100	1,0 ± 0,1
6 M	12800 ± 400	1,6 ± 0,1	26000 ± 4900	1,4
	900 ± 50	1,1	2500 ± 100	1,1

Table S2. Chemical structure and solubility parameters of tested APIs

Drug	Chemical structure	Solubility	logP*
Paclitaxel		1 mg/L Zhang JA. *et al. Eur J Pharm Biopharm* **2005**, *59*, 177.	3.95
ABT-199 (Venetoclax)		< 0.4 mg/L 3. Choo E.F. *et al. Drug Metab Dispos* **2014**, *42*, 207.	8.05
Curcumin		0.6 mg/L B.T. Kurien *et al. Assay Drug Dev Technol*, **2007**, *5*, 567.	3.07
Elacridar		120 µg/L Sane R. *et al. J Pharm Sci* **2013**, *102*, 1343.	4.43
Dexamethasone		0.1 g/L Dilova V. et *al. Boll Chim Farm* **2004**,*143*, 20.	2.03
Clofazimine		0.3 g/L Peters K. *et al. J. Antimicrob. Chemother.* **2000**, *45*, 77.	7.46

*From Scifinder, calculated using Advanced Chemistry Development (ACD/Labs) Software V11.02