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

Supporting Information

Size-dependant biodistribution and antitumor efficacy of polymer micelle drug delivery systems

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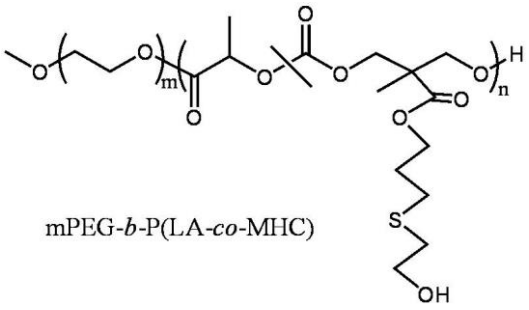
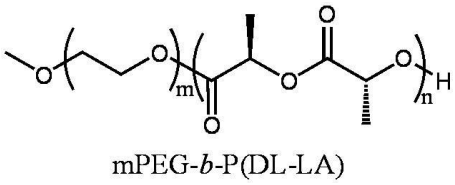
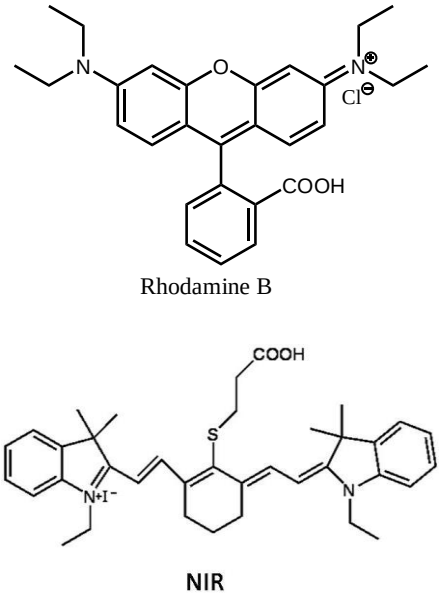




Scheme S1. The structures of block copolymers used in this study



Scheme S2. The structures of fluorescent molecules used in this study

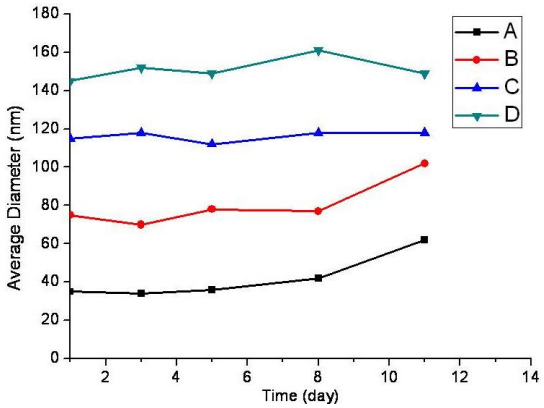


Figure S1. The size changes of initial 35nm (A), 75nm (B), 115nm (C), and 145nm (D) of M(RhB) in PBS buffer (pH=7.4) as a function of time.

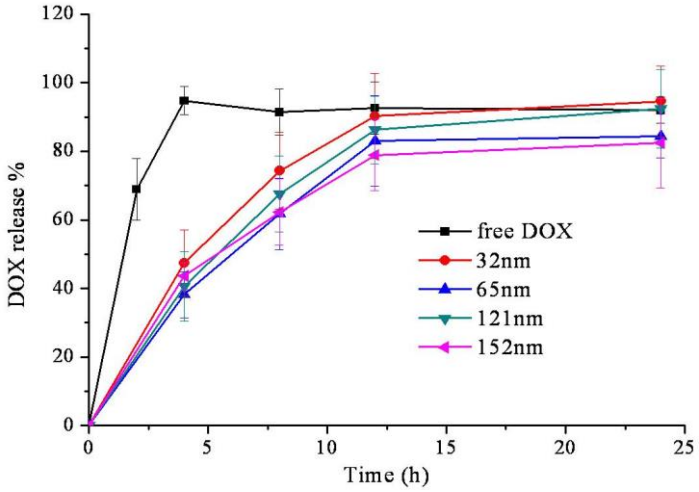


Figure S2. In vitro drug release behaviors of free DOX and Dox-loaded micelles with different sizes in PBS buffer (pH=7.4).

Table S1 Information of the polymers used for RhB- or NIR-labeling

Polymers	Mn (g/mol) [a]	PDI [b]	CMC (mg/L) [c]	ζ-potential (mV)
$MPEG_{5K}$-P(LA_{15}-MHC_4)	8200	1.10	8.2	–5.6 ± 0.2
$MPEG_{5K}$-P(LA_{25}-MHC_4)	9600	1.26	6.8	–3.9 ± 0.4
$MPEG_{5K}$-P(LA_{40}-MHC_5)	1200	1.14	3.9	–2.1 ± 0.4

[a] Determined by ^{1}H NMR; [b] Determined by GPC calibrated with polystyrene standards; [c] Critical micelle concentration determined by pyrene probe method: Firstly, 0.012 mg pyrene was pre-loaded in 100 mL of volumetric flask, followed by addition of 100 mL different concentrations (from 10^{-4} to 1.0 mg/mL) of micelle suspension in water. Then the flasks were thermostated at 25 ^{o}C for 4 h to equilibrate pyrene partition between water and micelles. Finally, the fluorescence-excitation spectra of the suspension in each flask was scanned by Perkin-Elmer LS50B luminescence spectrometer (the emission wavelength was set to 391 nm). Concomitant with the increase of the concentration of micelles, a red shift from 334 to 336 nm took place. By plotting the intensity ratio I_{336}/I_{334} against micelle concentration, CMC value was obtained.