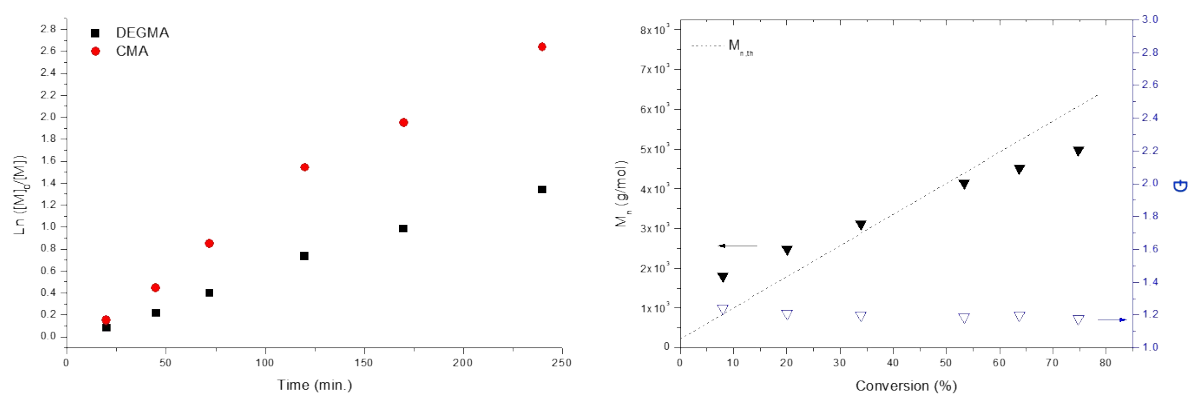
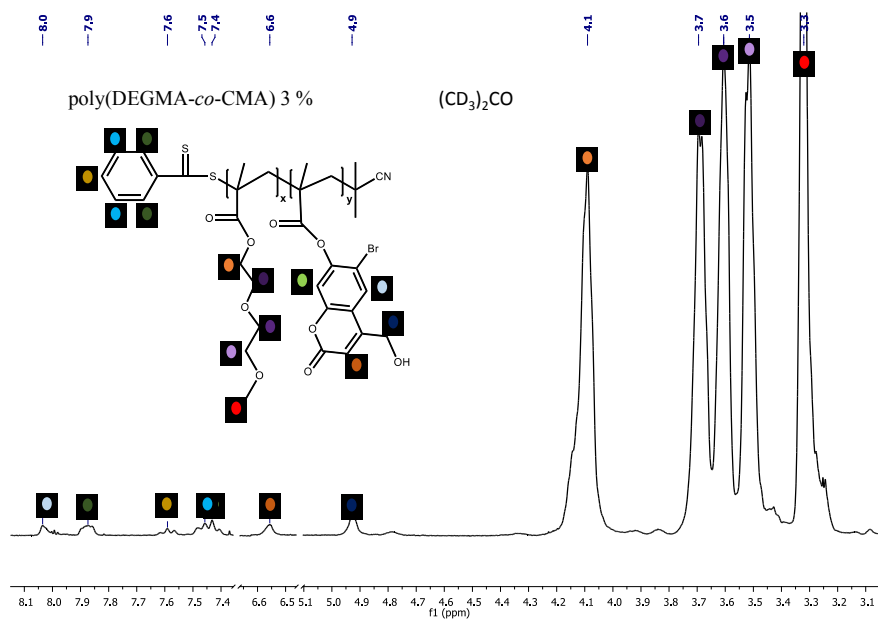


## Coumarin-containing thermoresponsive HA-based nanogels as delivery systems for anticancer chemotherapy

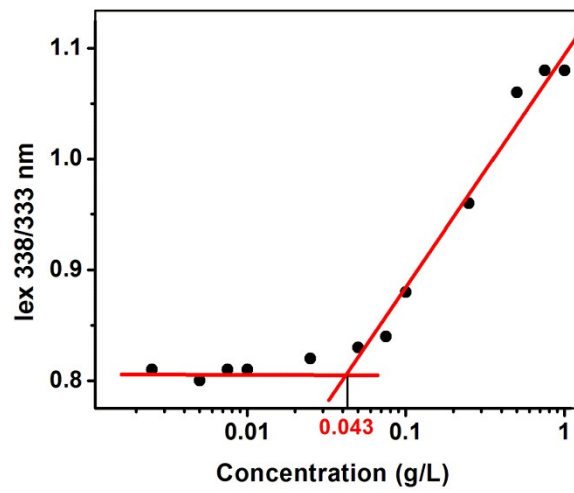
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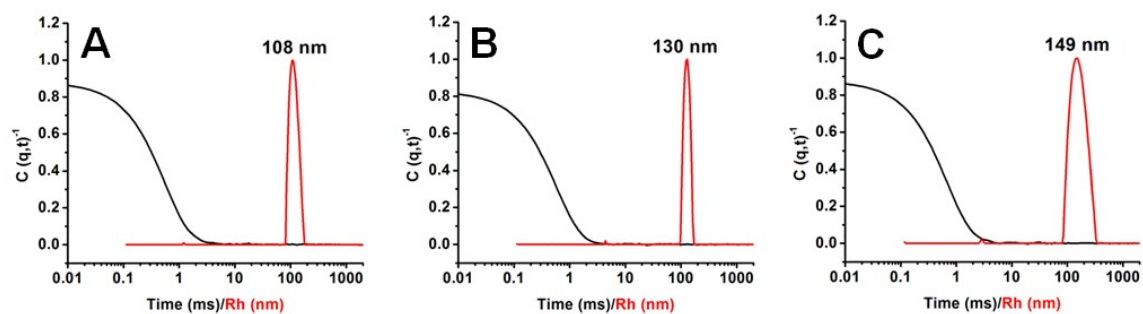
**Fig. S1.** (A) Kinetic plots and (B) dependence of the number-average molar masses ( $M_n$ ) and dispersity ( $\bar{D}$ ) on monomer conversion for the RAFT copolymerization of DEGMA and CMA (5 mol%). Reaction conditions: [DEGMA]/[CMA]/[CPDB]/[AIBN] = 38/2/1/0.2 at 80°C in toluene.



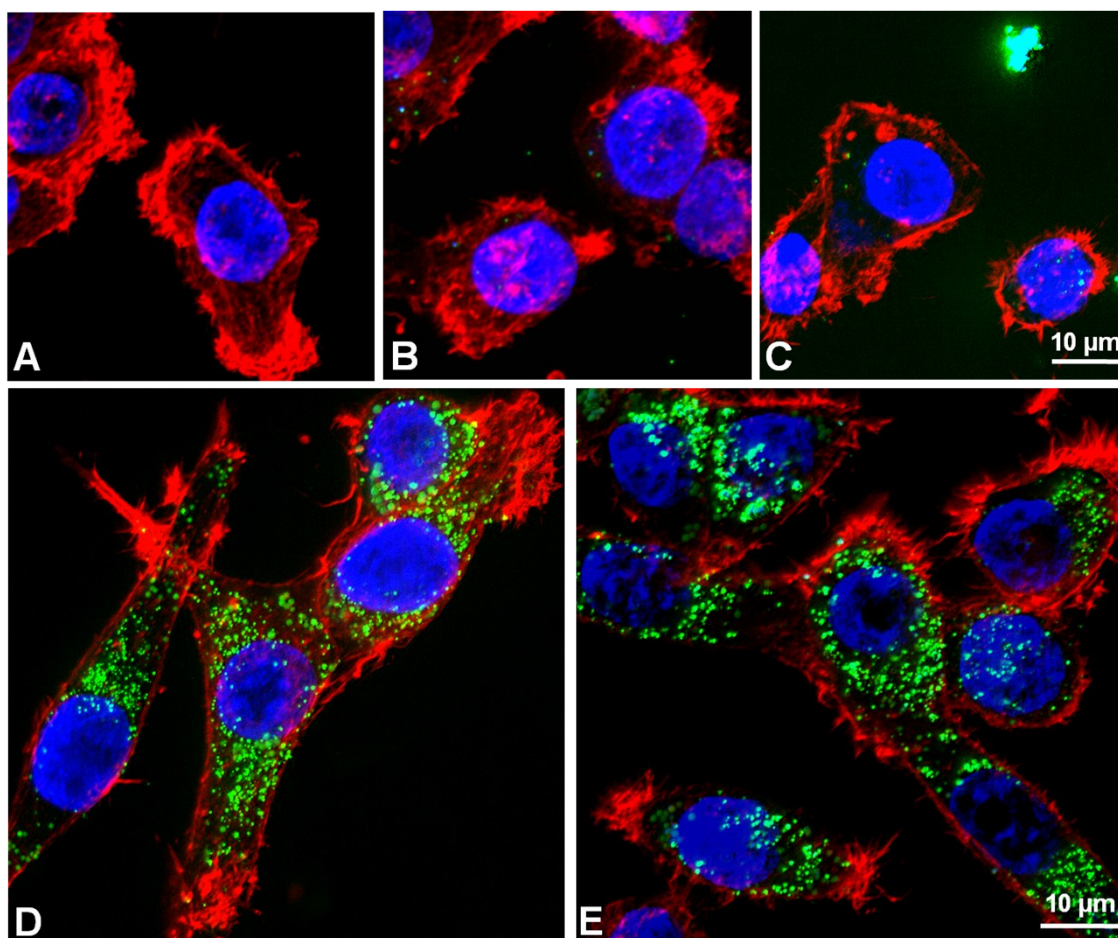
**Fig. S2.**  $^1\text{H}$  NMR spectrum (300 MHz,  $10 \text{ mg mL}^{-1}$  in  $(\text{CD}_3)_2\text{CO}$ ,  $25^\circ\text{C}$ ) of poly(DEGMA-co-CMA) with molar percentage of CMA of 3 %.



**Fig. S3.** Critical aggregation concentration (CAC) of HA-poly(DEGMA-co-CMA) 5% in PBS at 37 °C, determined by the pyrene method: excitation intensity ratio of pyrene at 338 nm and 333 nm ( $I_{338}/I_{333 \text{ nm}}$ ) as a function of HA derivative concentration.



**Fig. S4.** Hydrodynamic radius of loaded HA-m-poly(DEGMA-co-CMA) nanogels determined by dynamic light scattering at  $90^\circ$  ( $0.5 \text{ g L}^{-1}$  in PBS at  $37^\circ\text{C}$ ). DSB-loaded nanogels 5% (A) and 3% (B), and PTX-loaded nanogels 5% (C).



**Fig. S5.** Cellular uptake of HA-m-poly(DEGMA-co-CMA) nanogels by HeLa cells. Confocal microscopy images of control cells (A), cells incubated with filtered solutions of native HA and free DSB (B), cells incubated with unfiltered solutions of native HA and free DSB (C), and cells incubated with DSB-loaded HA-m-poly(DEGMA-co-CMA) 3% (D) and 5% (E) nanogels, for 16 h. Cell nuclei were stained blue with Hoechst, cell membrane was stained red with Alexa Fluor667 conjugated phalloidin and DSB was visualized in the green fluorescence channel.