Electronic Supplementary Material (ESI) for Polymer Chemistry.

Light cross-linkable and pH de-cross-linkable drug nanocarriers for intracellular drug delivery

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Determination of drug loading content and drug loading efficiency

1 mL of un-cross-linked drug loaded micelle solution was taken and freeze-dried. 2 mL dimethyl sulfoxide and 2 mL methanol was added to dissolve the residue. The UV-absorbance at 490 nm was recorded and the final concentration was calculated. (Standard curve: y=-0.057+15.552x, R=0.9998; y: value of absorbance; x: concentration of DOX)
Drug loading content (DLC) and drug loading efficiency (DLE) were calculated according to the following equations.
DLC (%) = (weight of the loaded drug/weight of the polymer) × 100%
DLE (%) = (weight of the loaded drug/weight in the feed) × 100%

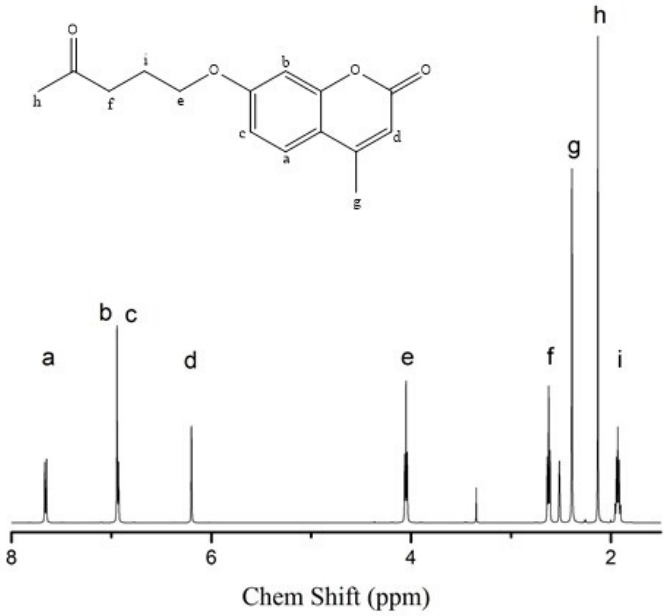

Fig. S1 ^{1}H NMR spectra of OMC in DMSO at 25 ^{o}C

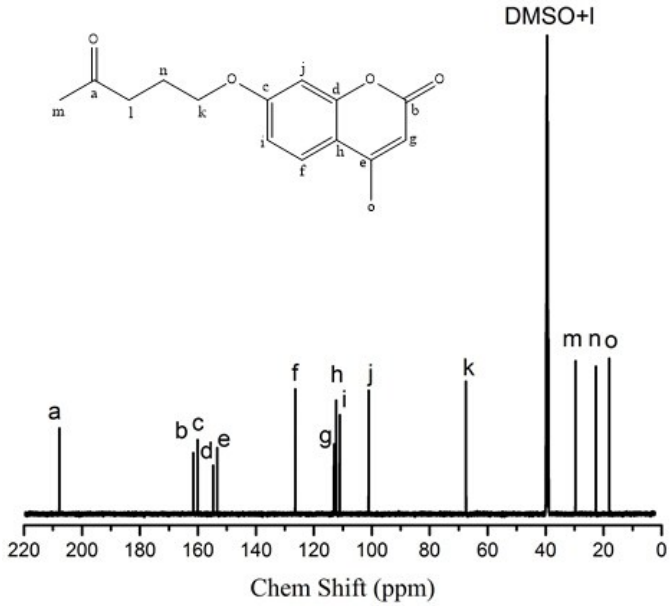

Fig. S2 ^{13}C NMR spectra of OMC in DMSO at 25 ^{o}C

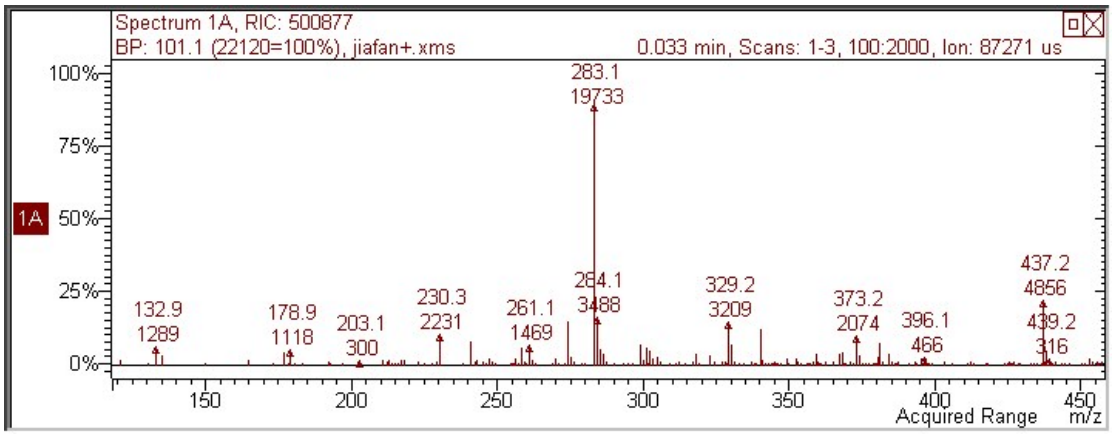

Fig. S3 mass spectra for OMC, LCMS(ESI): calculated for $C_{15}H_{16}O_4$ 260.0, found 283.1 ($+Na^+$)

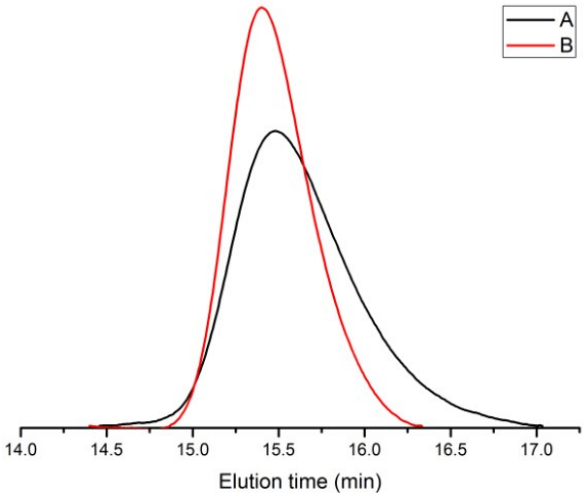

Fig S4. GPC profiles of polymers (A: mPEG; B: mPEG-PBLA; elution: DMF, PS standards)

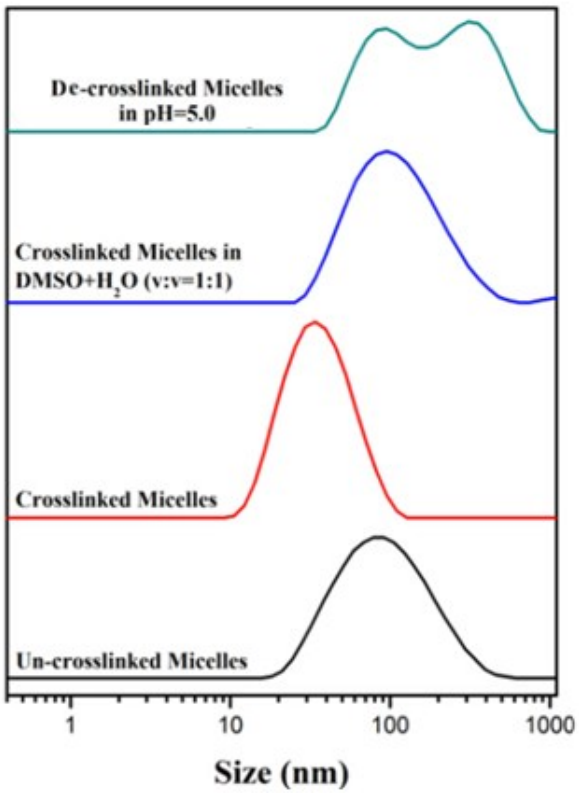

Fig S5. Size distribution of micelles under different conditions

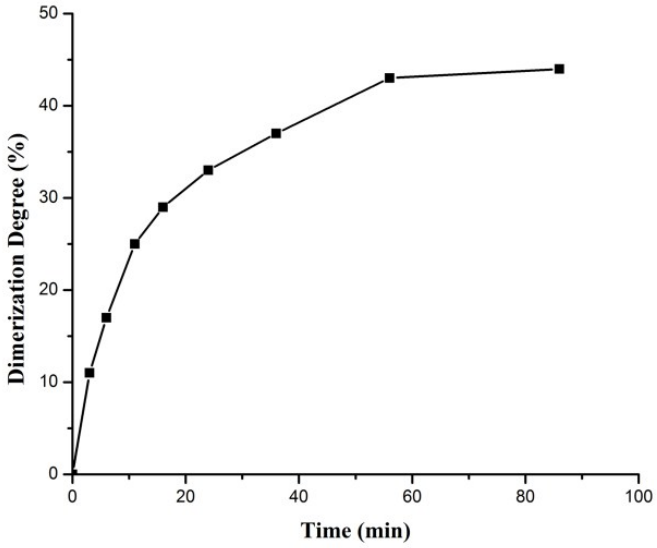

Fig S6. Dimerization degree of OMC groups

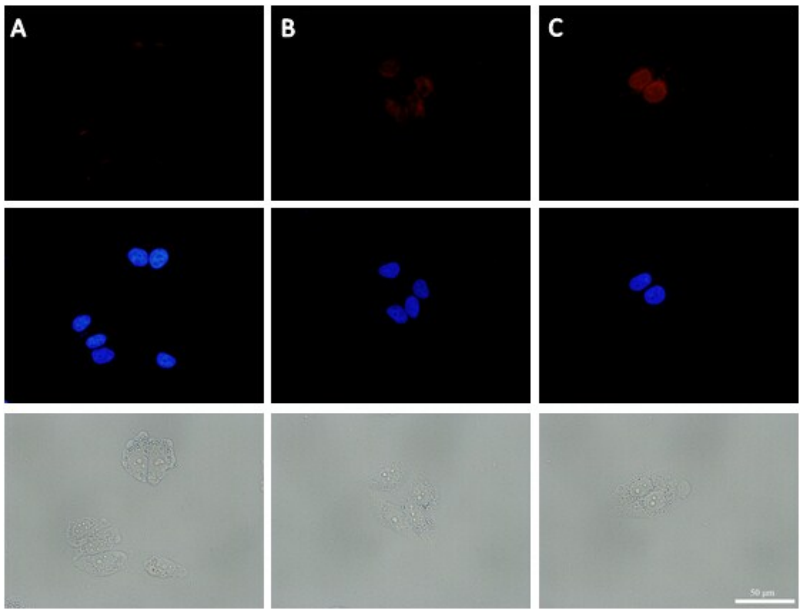

Fig. S7 Fluorescence microscopy images of HepG2 incubated with un-crosslinked drug-loaded micelles for different times (A: 1 hour; B: 3 hours; C: 5 hours; Top: fluorescent images of DOX; Middle: fluorescent images of DAPI; Bottom: bright field images of HepG2 cells. Scale bar: 50 μm)

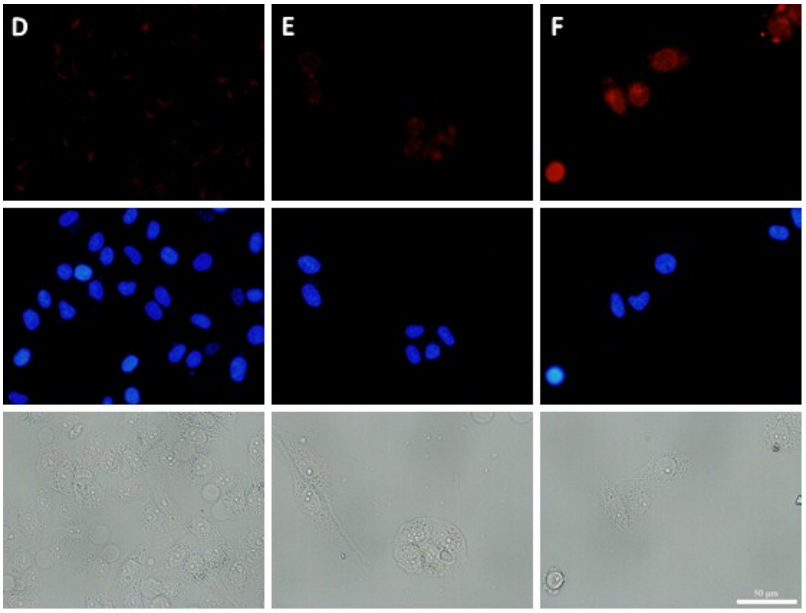

Fig. S8 Fluorescence microscopy images of HepG2 incubated with crosslinked drug-loaded micelles for different times (D: 1 hour; E: 3 hours; F: 5 hours; Top: fluorescent images of DOX; Middle: fluorescent images of DAPI; Bottom: bright field images of HepG2 cells. Scale bar: 50 μm)

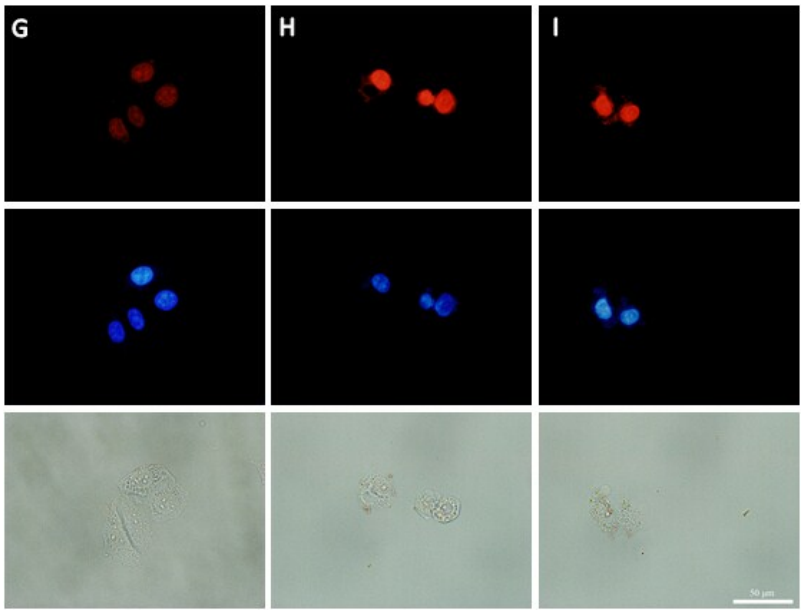

Fig. S9 Fluorescence microscopy images of HepG2 incubated with free DOX for different times (G: 1 hour; H: 3 hours; I: 5 hours; Top: fluorescent images of DOX; Middle: fluorescent images of DAPI; Bottom: bright field images of HepG2 cells. Scale bar: 50 μm)

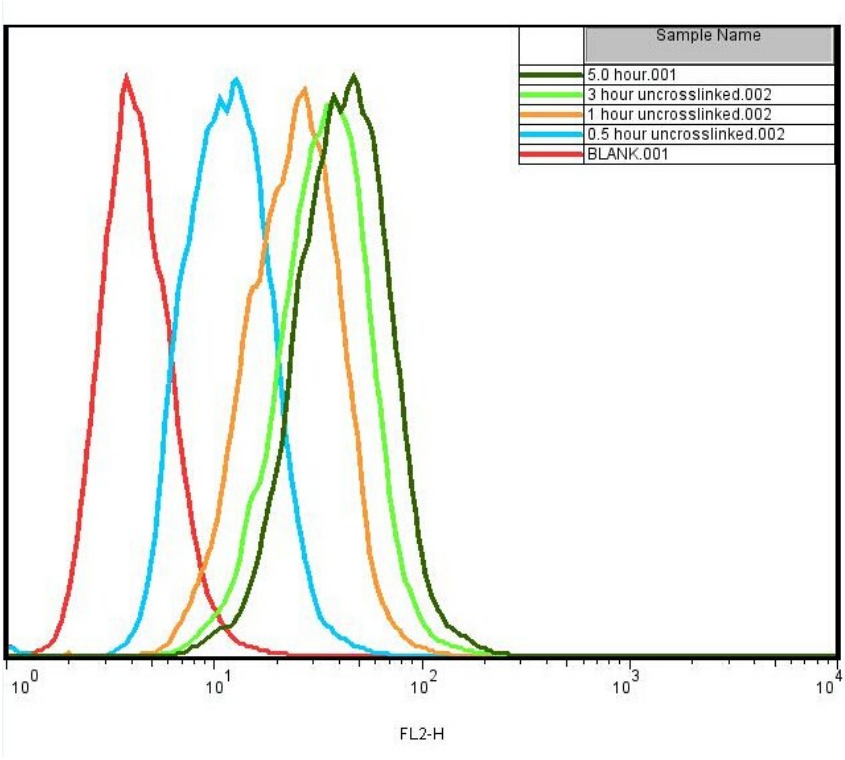

Fig. S10 Flow cytometric profiles of HepG2 cells incubated with un-crosslinked drug-loaded micelles at different time intervals