Supporting Information

A hyperbranched amphiphilic acetal polymer for pH-sensitive drug delivery

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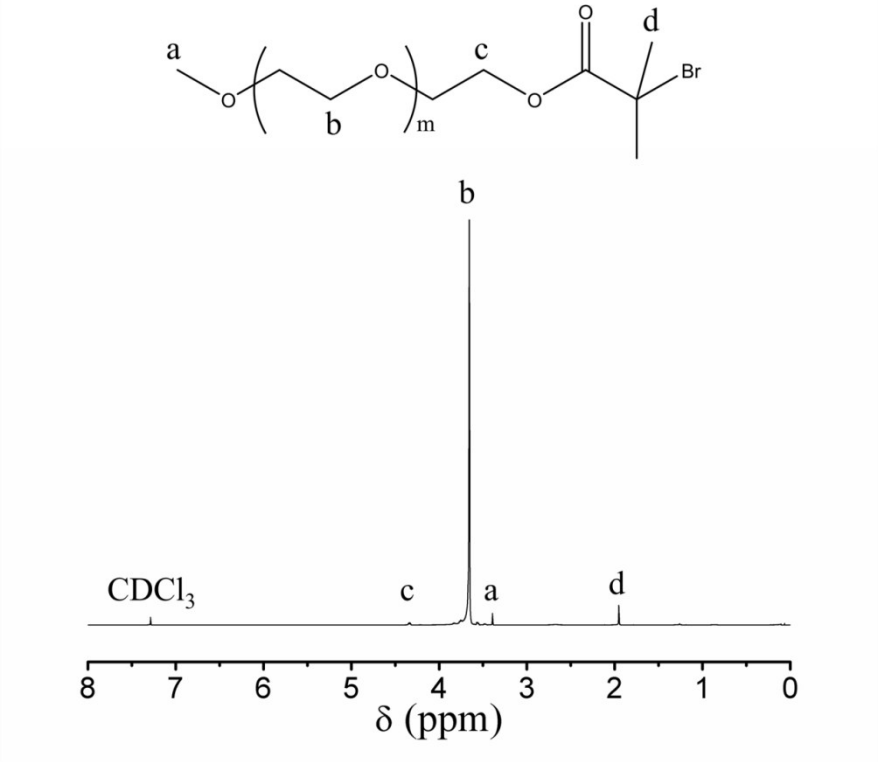


Fig. S1 ^{1}H-NMR spectra of PEG2000-Br macroinitiaor.

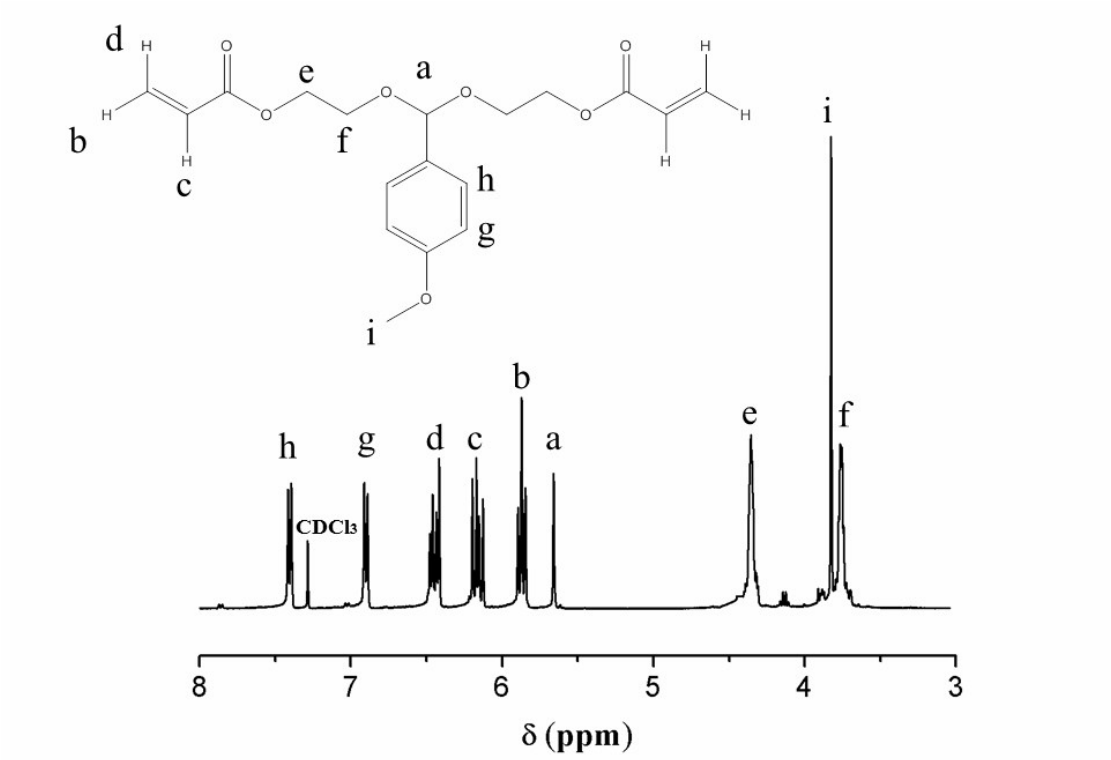
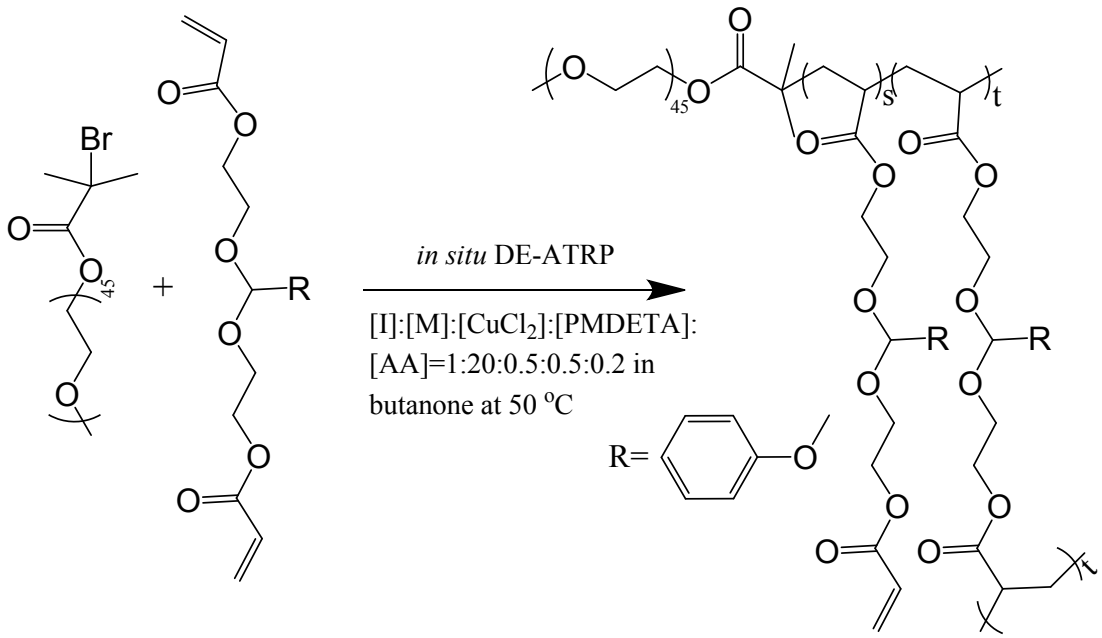


Fig. S2 ^{1}H NMR spectra of di(2-acy-loyloxy ethoxy)-[4-methoxy-phenyl]methane) (ACD) monomer.



Scheme S1. Synthesis of PEG-b-pACDs by a modified DE-ATRP.

Branch ratio $= \frac{Branched\ ACD\ units}{All\ ACD\ units} * ACD\% = (1 - \frac{Linear\ ACD\ units}{All\ ACD\ units}) * ACD\% = (1 - \frac{integrals\ of\ h}{integrals\ of\ g}) * ACD\%$ (Eq. S1)

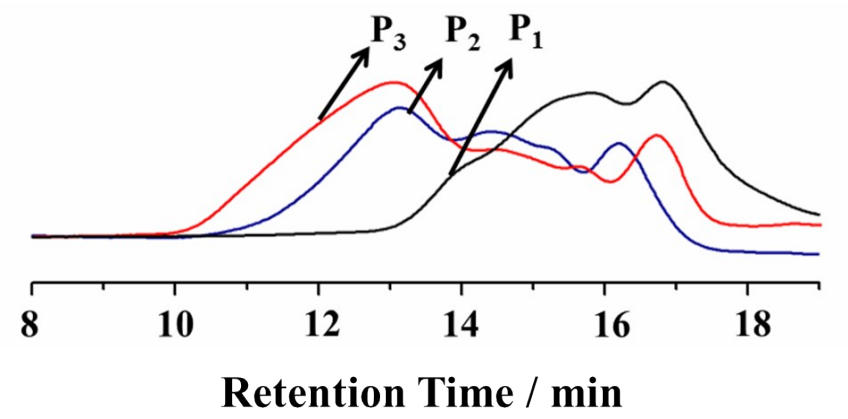
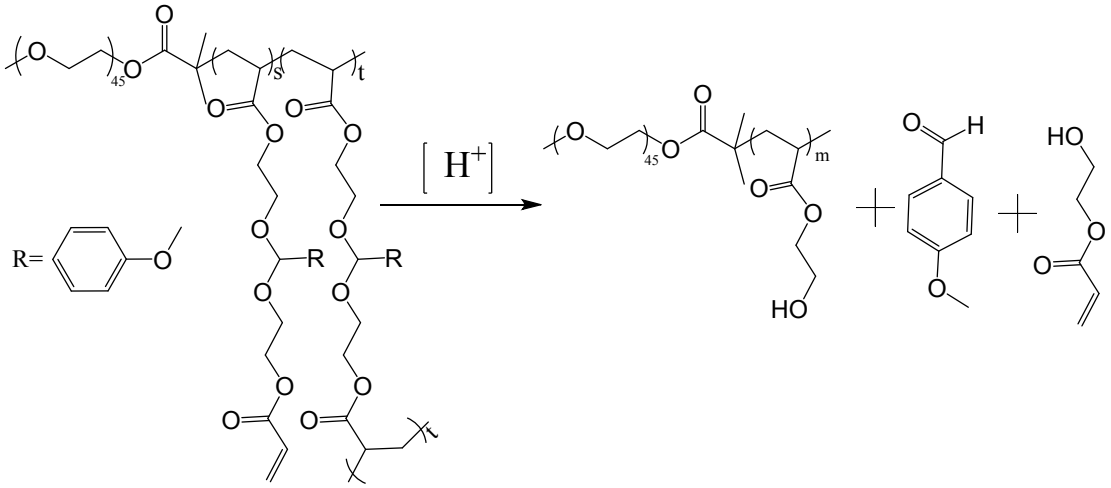


Fig. S3 Gel permeation chromatograms of the polymers after purification (P_1: M_n=15360, PDI=1.67; P_2: M_n=22060, PDI=2.93; P_3: M_n=24190, PDI=4.32).



Scheme S2. Cleavage of the branching units to small fragments in acidic condition.

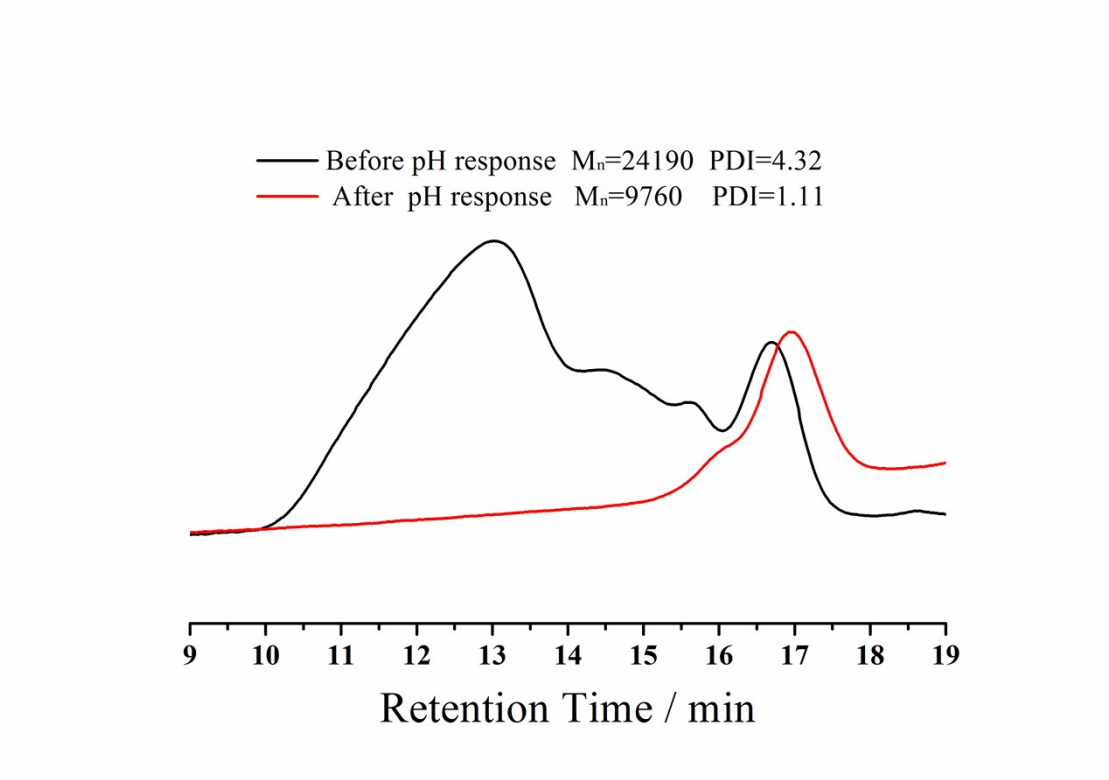


Fig. S4 Gel permeation chromatograms of polymer before and after pH response for 48 hrs.

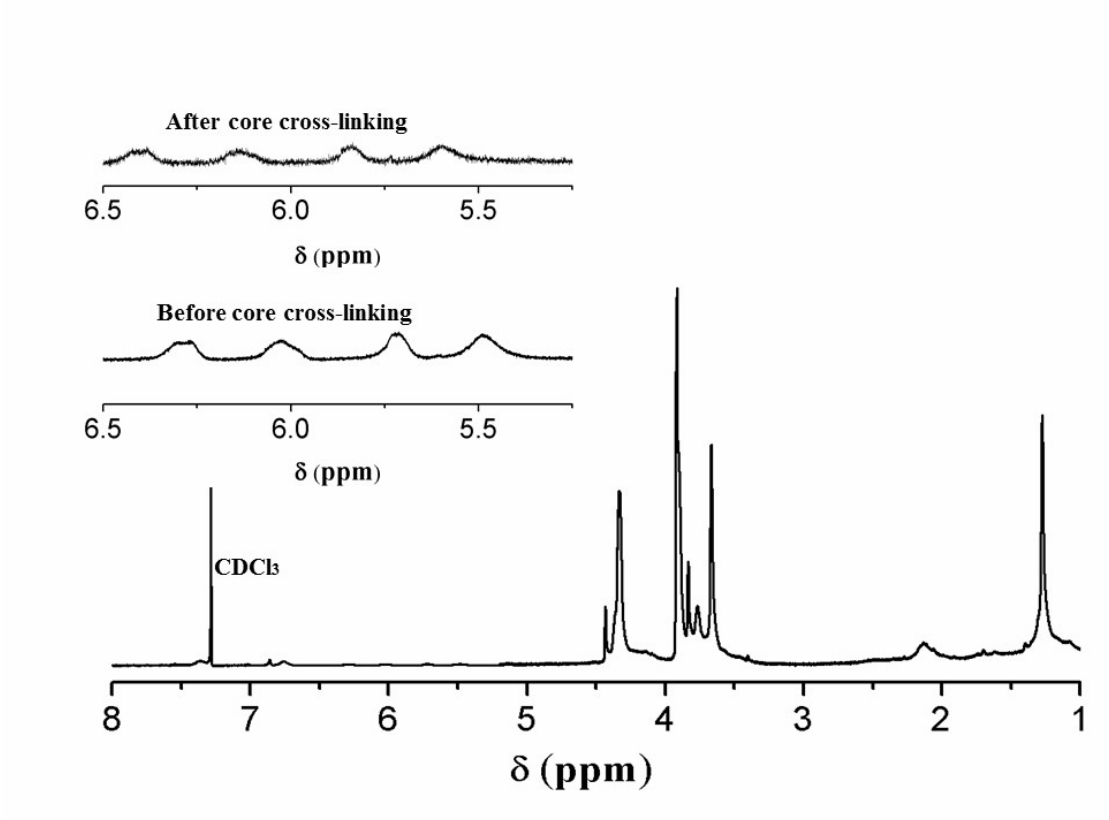


Fig. S5 ^{1}H-NMR spectra of polymer before and after 48 hrs core cross-linking.

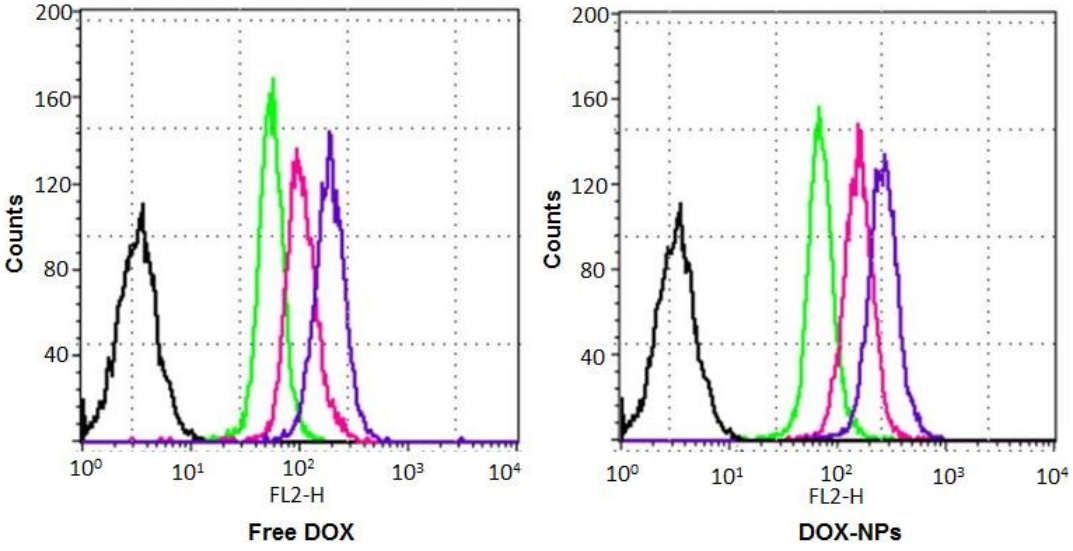


Fig. S6 DOX mean fluorescence intensity of Hela cells incubated free DOX and DOX-loaded micelles for 0.5, 3 and 6 hrs, respectively (DOX concentration = 2 μg/mL). Data represented as the mean ± SD (n = 3,*p < 0.001).