Electronic Supplementary Material (ESI) for Polymer Chemistry.

Supporting Information

Charge-reversible and pH-responsive biodegradable micelles and vesicles from linear-dendritic supramolecular amphiphiles for anticancer drug delivery

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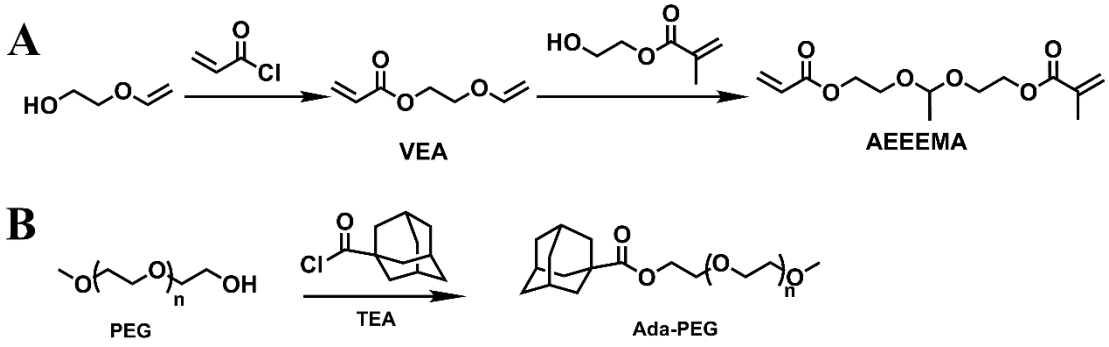
Scheme S1 Synthetic Routes of (A) Acetal Monomer AEEEMA and (B) Ada-PEG.



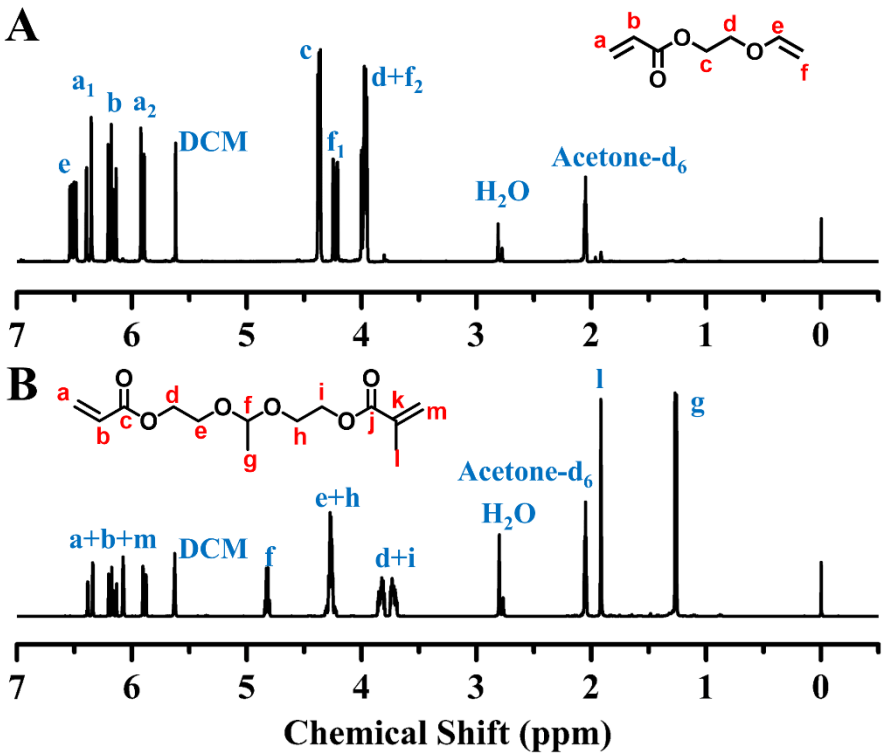


Fig. S1 ^{1}H NMR spectra of (A) VEA and (2) AEEEMA.

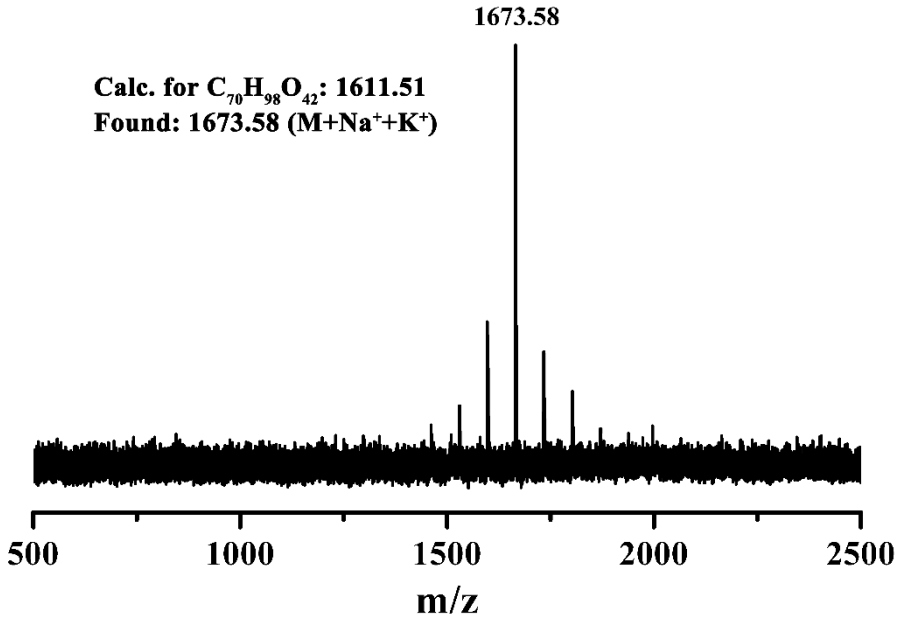


Fig. S2 MALDI-TOF MS of CD-G0.

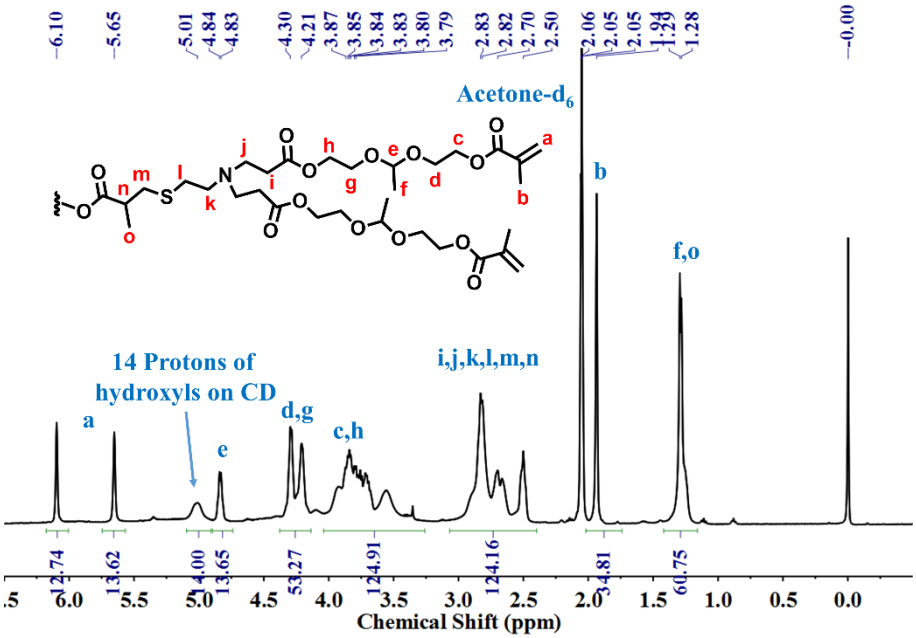


Fig. S3 Detailed ^{1}H NMR spectrum of CD-G1.

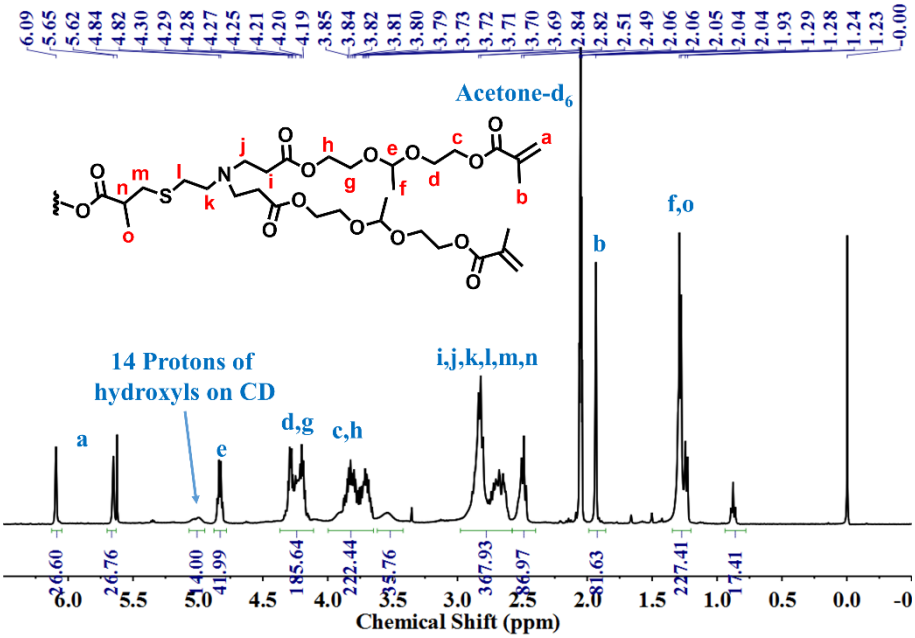


Fig. S4 Detailed ^{1}H NMR spectrum of CD-G2.

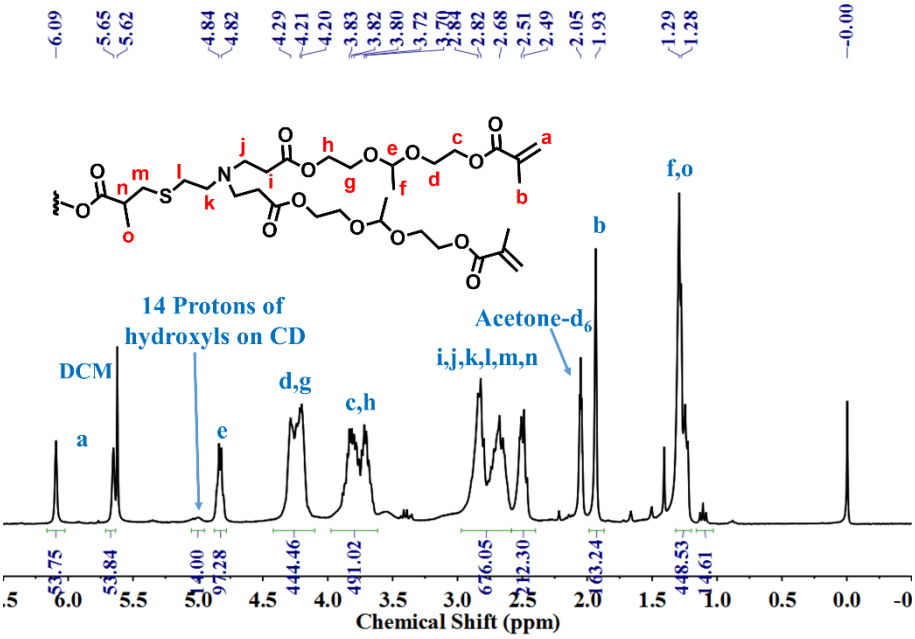


Fig. S5 Detailed ^{1}H NMR spectrum of CD-G3.

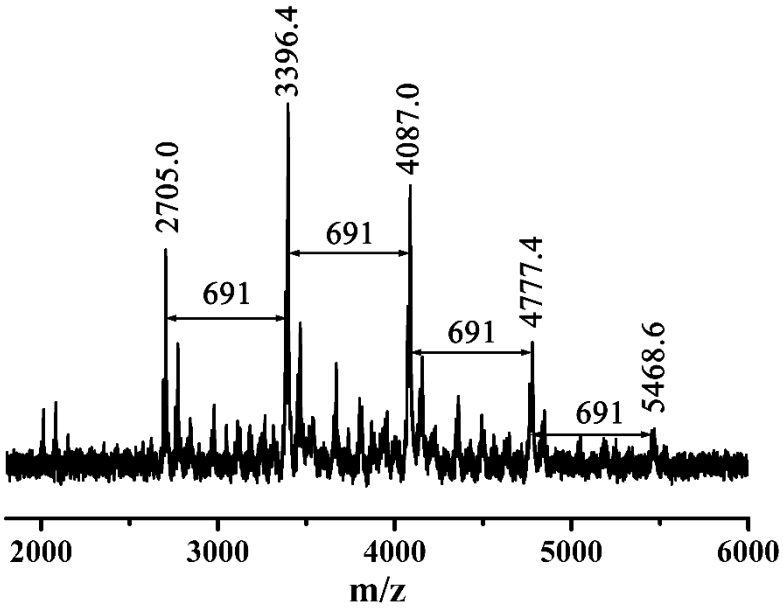


Fig. S6 MALDI-TOF MS of CD-G1.

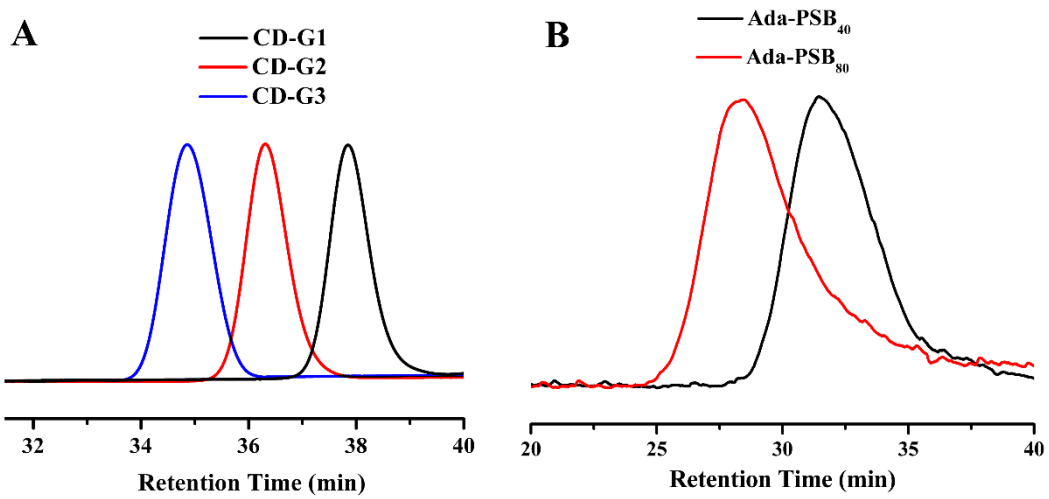


Fig. S7 GPC traces of (A) the polyacetal dendrimers with a CD core and (B) the adamantane-terminated poly(sulfobetaine).

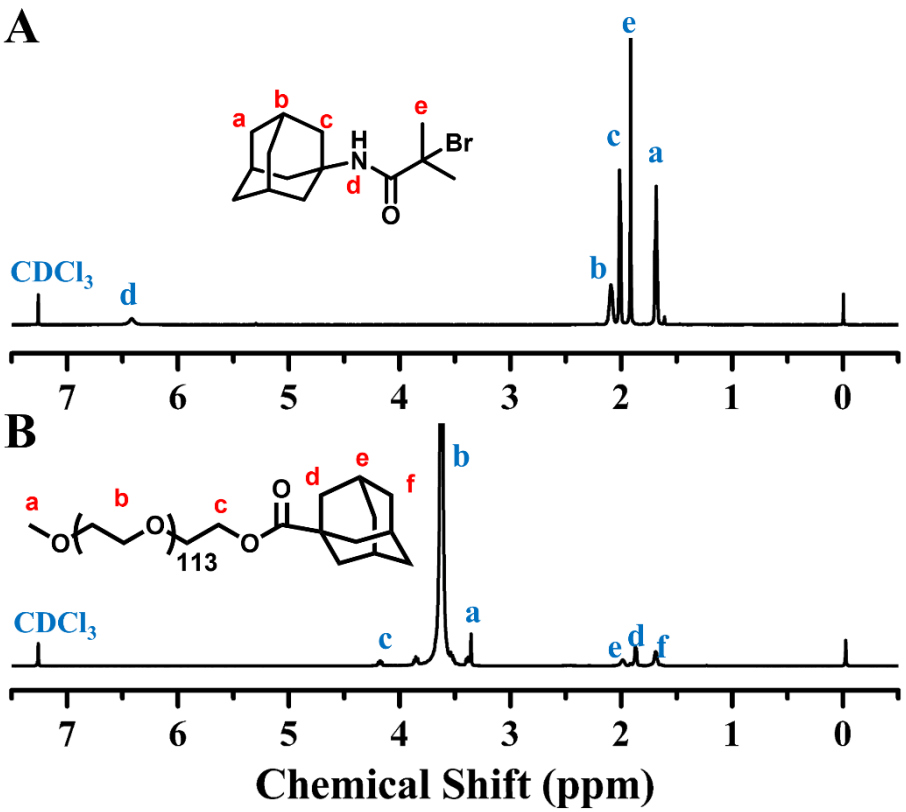


Fig. S8 ^{1}H NMR spectra of (A) Ada-Br and (B) Ada-PEG.

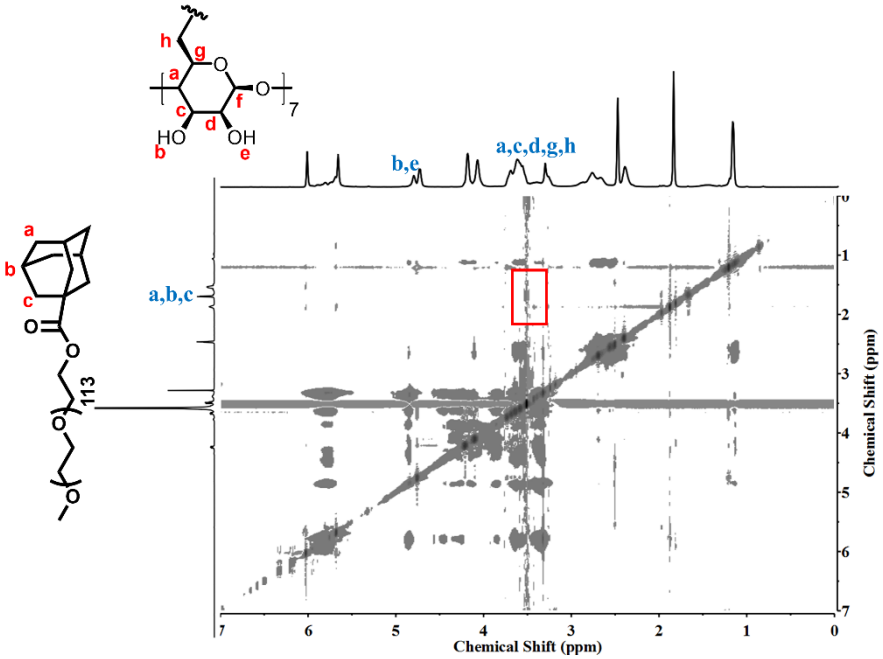


Fig. S9 2D NOESY spectrum of Ada-PEG and CD-G1. The red rectangle showed the correlational peaks between the protons of adamantane groups and the internal protons of CDs.

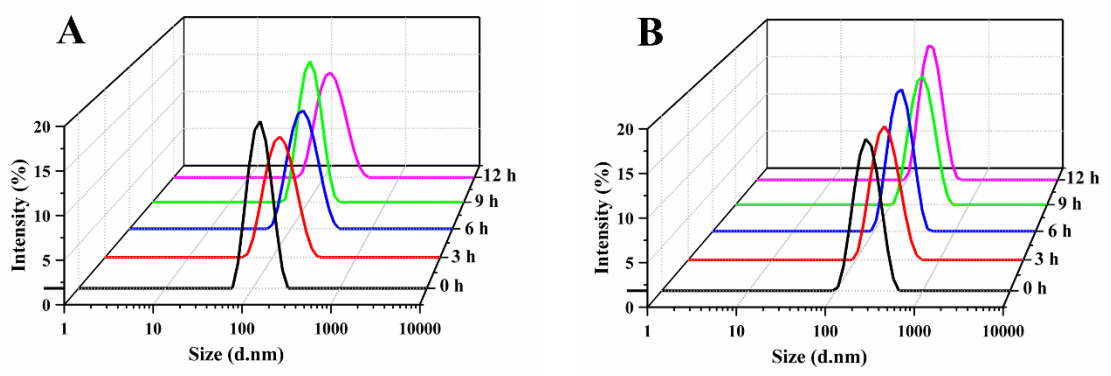


Fig. S10 DLS profiles of (A) the CD-G1/Ada-PSB$_{40}$ micelles and (B) the CD-G2/Ada-PSB$_{40}$ vsicles after being incubated at pH=7.4 for 12 h.

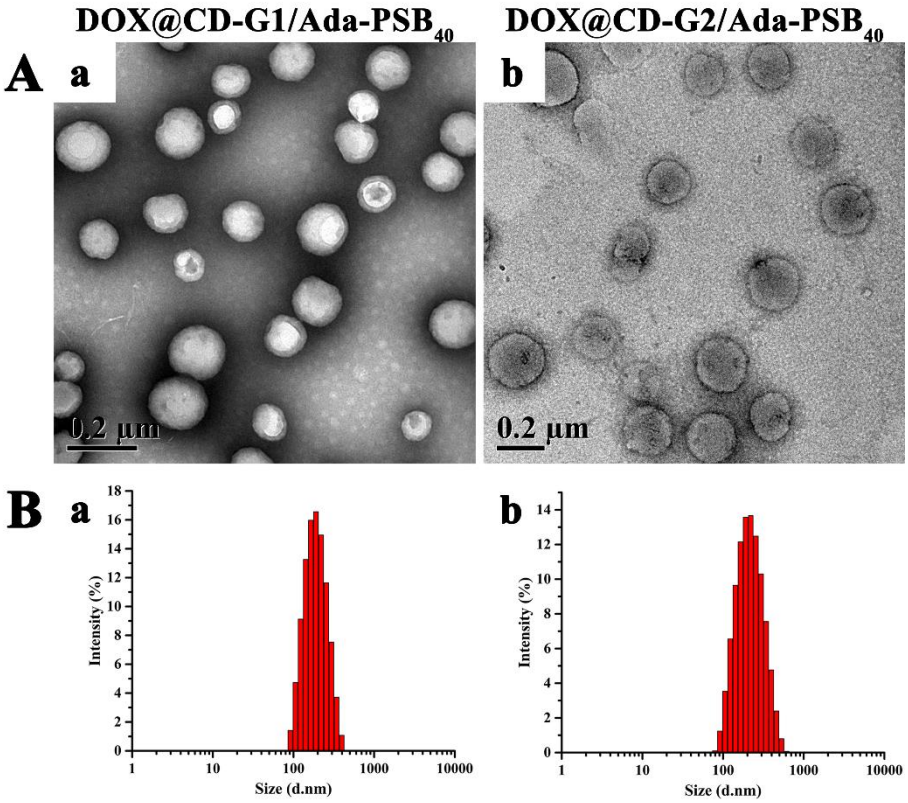


Fig. S11 (A) TEM images and (B) DLS analysis of (a) DOX@CD-G1/Ada-PSB$_{40}$ and (b) DOX@CD-G2/Ada-PSB$_{40}$ nanoparticles.

Table S1 MWs of and PDIs of the polyacetal dendrimers with a CD core and the adamantane-terminated poly(sulfobetaine)

Sample	$M_{n,\,calc.}$	$^{a}M_{n,\,GPC}$	$^{a}M_{w,\,GPC}$	^{a}PDI
CD-G1	5986	6420	6930	1.08
CD-G2	14736	15300	17100	1.12
CD−G3	32236	30600	35200	1.15
Ada-PSB$_{40}$	—	5170	6620	1.28
Ada-PSB$_{80}$	—	9620	12800	1.33

^{a}MWs and PDIs determined by GPC.

Table S2 Characterizations of the DOX-loaded micelles and vesicles

Nanoparticle	^{a}Size (nm)	^{a}PDI	DLC (wt%)	DLE (%)
DOX@CD-G1/Ada-PSB$_{40}$	191	0.106	5.73	57.3
DOX@CD-G2/Ada-PSB$_{40}$	231	0.119	7.22	56.1

^{a}Sizes and PDIs determined by DLS.