

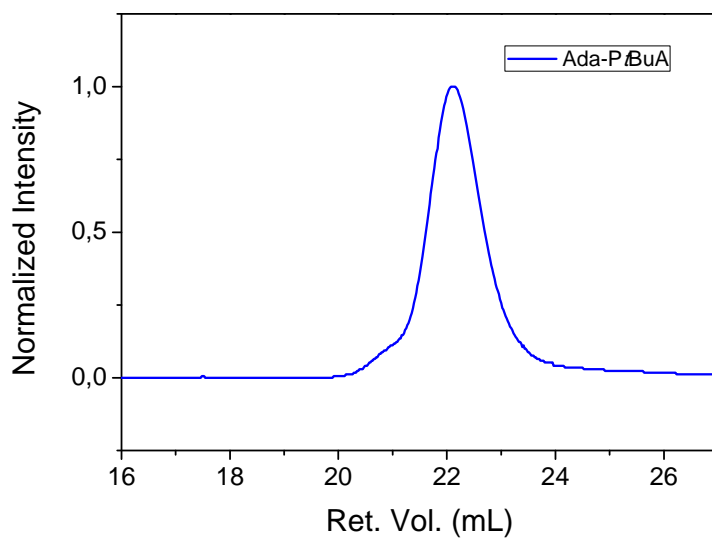
**Electronic Supplementary Information**

**Host-Guest Driven Supramolecular Assembly of Reversible  
Comb-Shaped Polymers in Aqueous Solution**

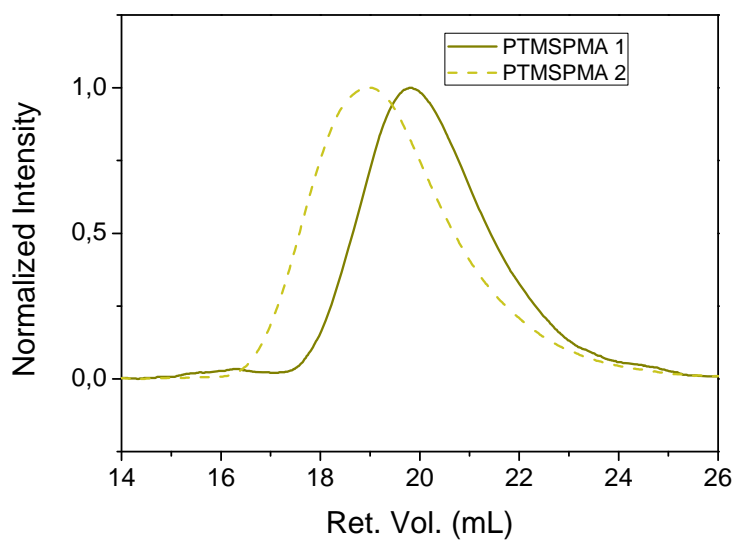
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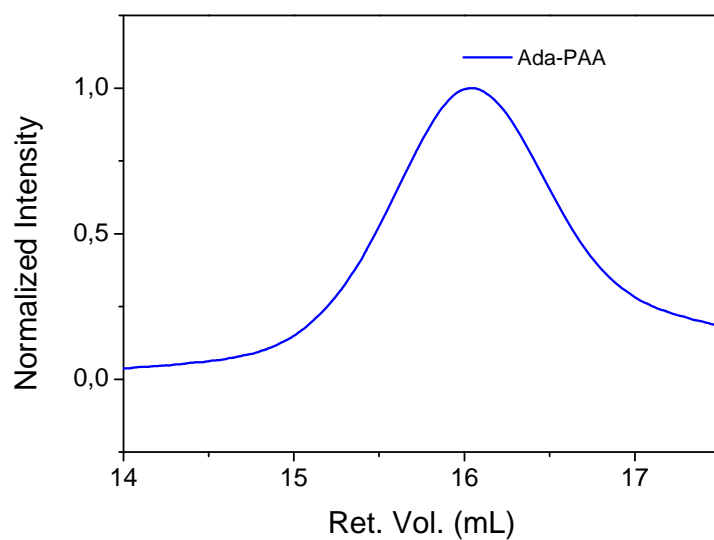
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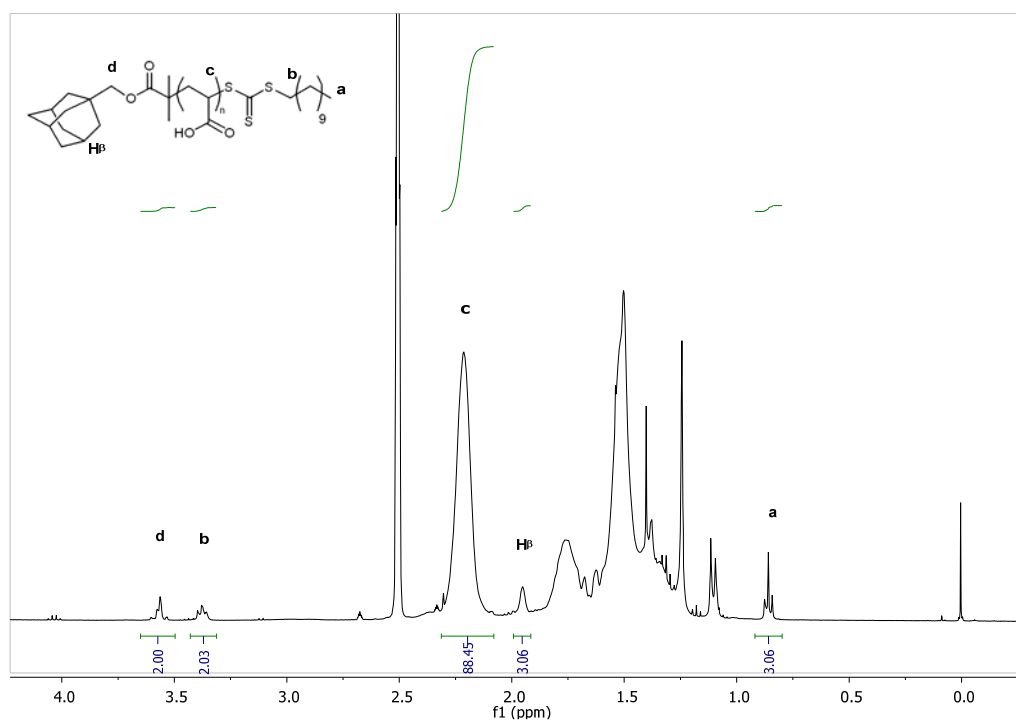
**Fig S 1.** SEC trace of Ada-PtBuA in DMF at 70°C ( $M_n = 16000$  g/mol, PDI = 1.11)



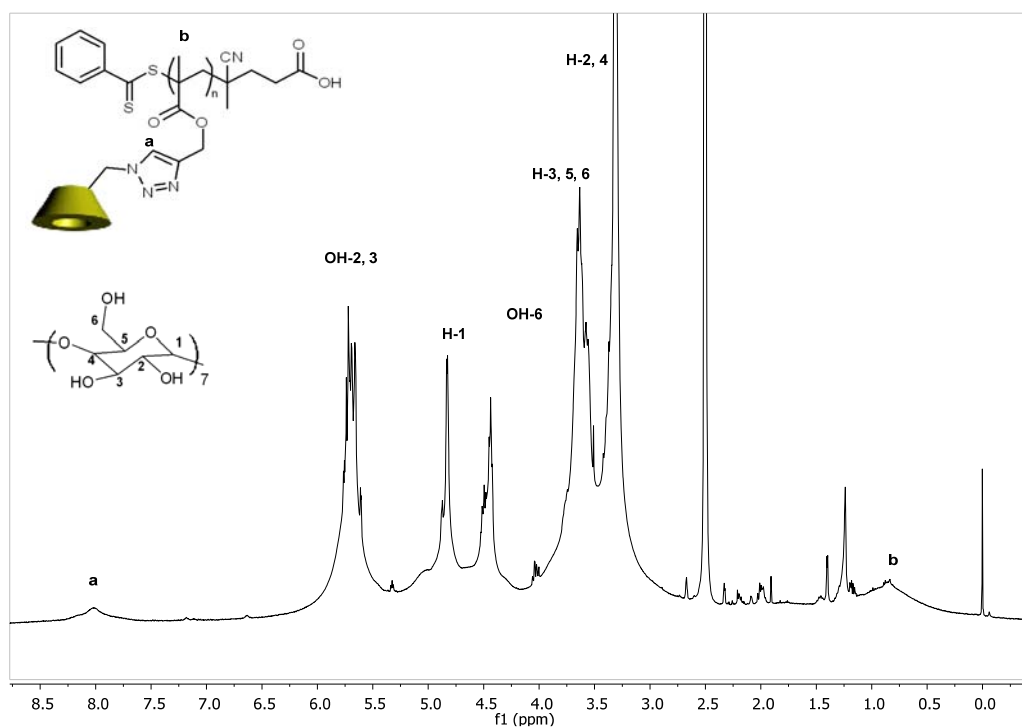
**Fig S 2.** SEC traces of PTMSPMA 1 ( $M_n = 34000$  g/mol, PDI = 1.26) and PTMSPMA 2 ( $M_n = 41200$  g/mol, PDI = 1.49) in DMF/LiBr 0,05M at 70°C.



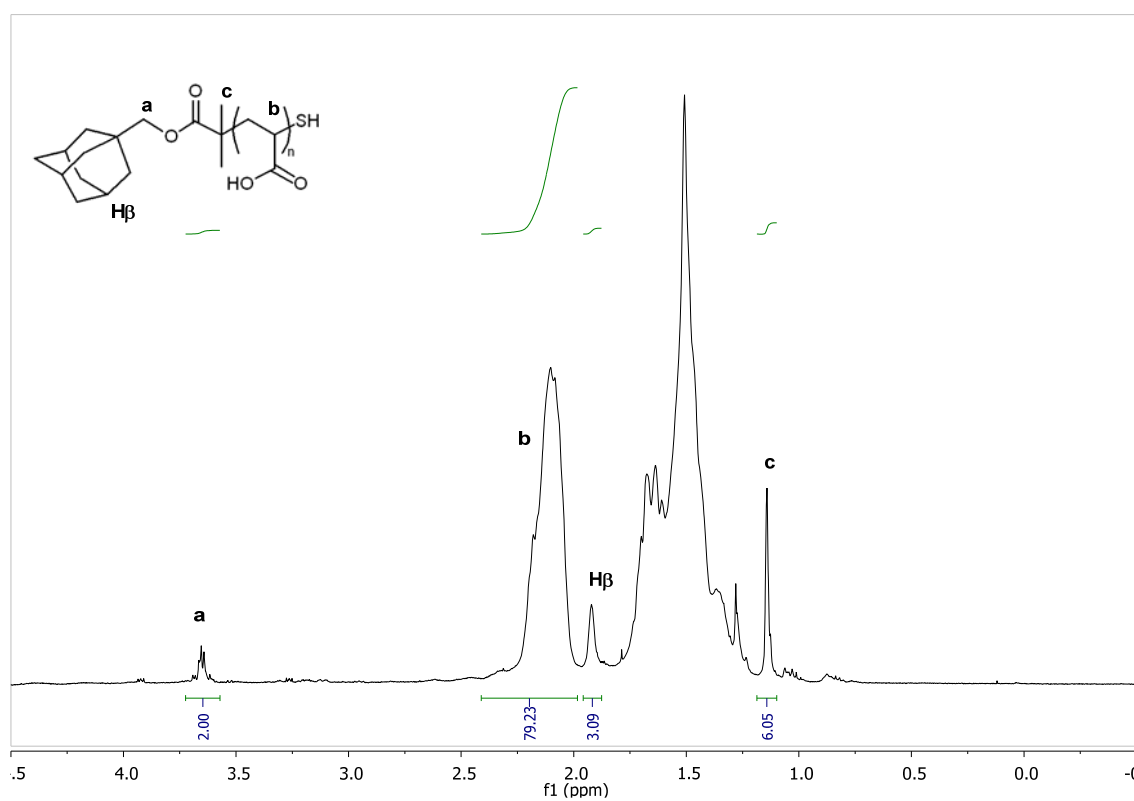
**Fig S 3.** SEC trace of Ada-PAA ( $M_n = 8100$  g/mol, PDI = 1.36) in  $H_2O$  (pH 7.1 at  $25^\circ C$ ).



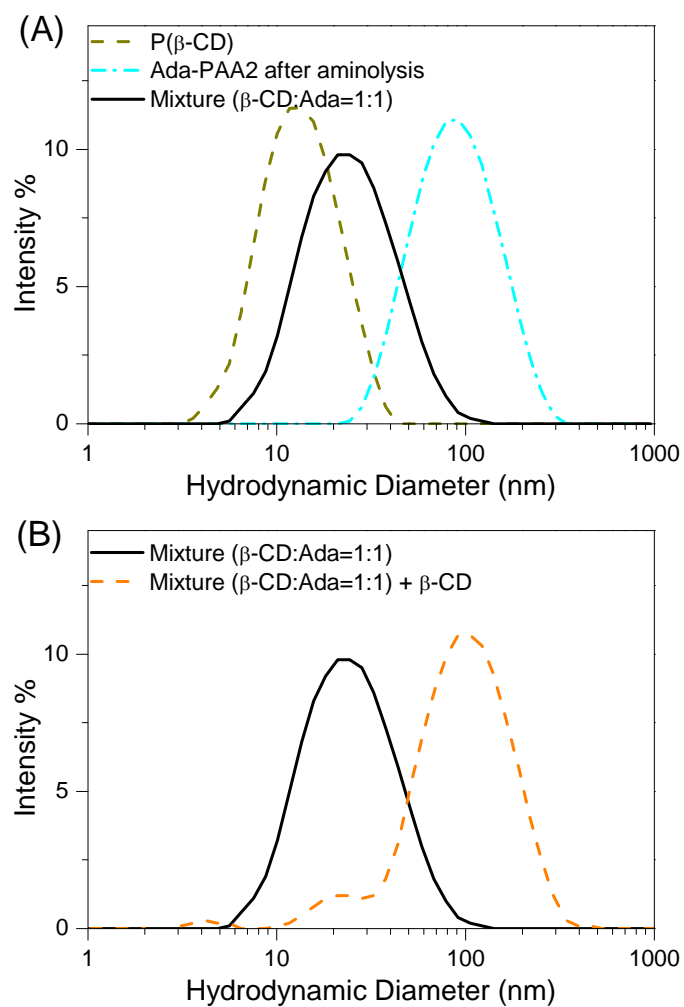
**Fig S 4.**  $^1H$  NMR spectrum of Ada-PAA in  $DMSO-d_6$  at  $25^\circ C$ .



**Fig S 5.**  $^1\text{H}$  NMR spectrum of P( $\beta$ -CD) **1** in DMSO- $d_6$  at 25°C.



**Fig S 6.**  $^1\text{H}$  NMR spectrum of Ada-PAA2 after aminolysis in  $\text{D}_2\text{O}$  at 25°C.



**Fig S 7.** DLS analysis in water at pH 7 of (A): P( $\beta$ -CD)1, Ada-PAA2 after aminolysis, and mixture of P( $\beta$ -CD) and Ada-PAA2 after aminolysis; (B): mixture of P( $\beta$ -CD) and Ada-PAA2 after aminolysis (Ada: $\beta$ -CD = 1:1) before and after addition of  $\beta$ -CD.