† Electronic Supplementary Information (ESI) available:

Novel cyclodextrin-containing pH-responsive star polymer for nanostructure fabrication and drug delivery

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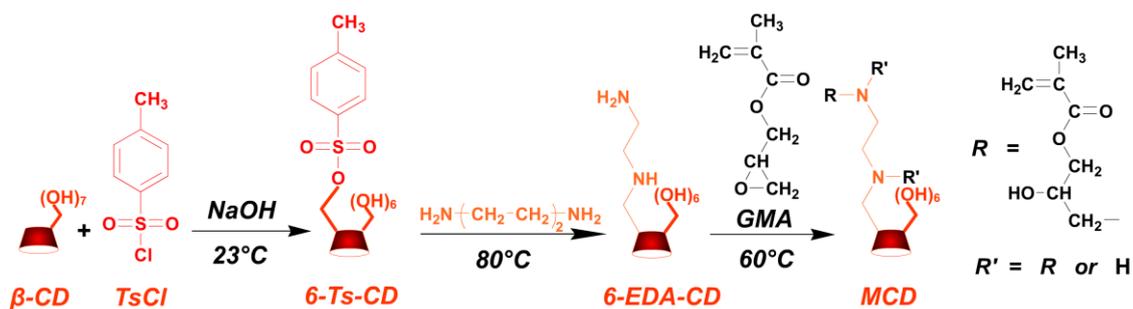
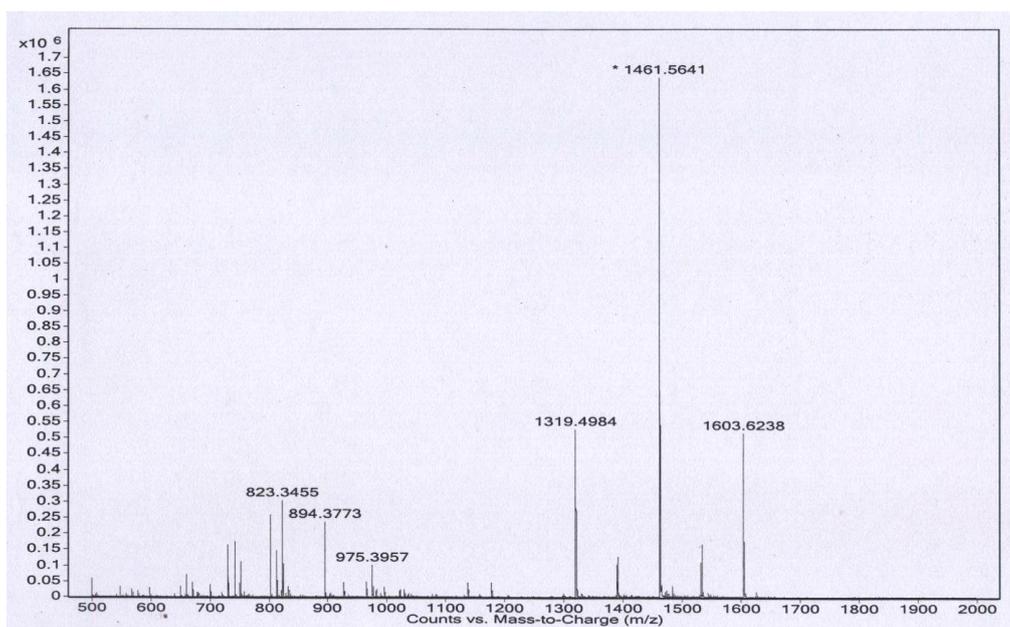**Scheme S1** Synthesis of methacrylate substituted β-cyclodextrin (MCD).

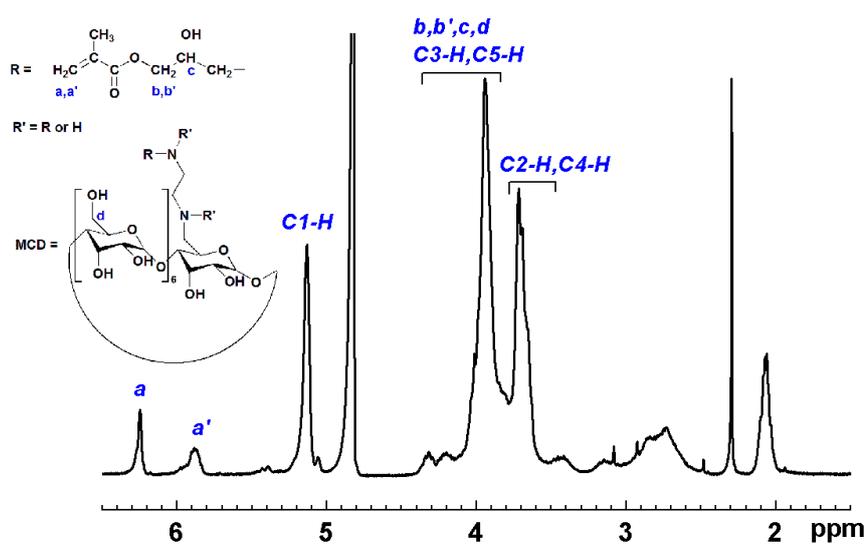**Fig. S1** The HR-ESI-MS spectrum of MCD.

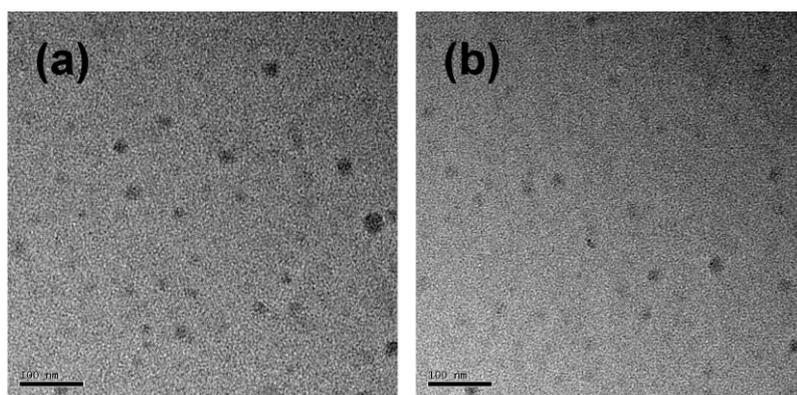**Fig. S2** The ^{1}H NMR spectrum of MCD in D_2O.

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Fig. S3 TEM images of PEG-P(CD-*co*-DMAEMA) star polymer in aqueous solution of pH 3.0 (a) and pH 10.0 (b). Scale bars: 100 nm for both (a) and (b).
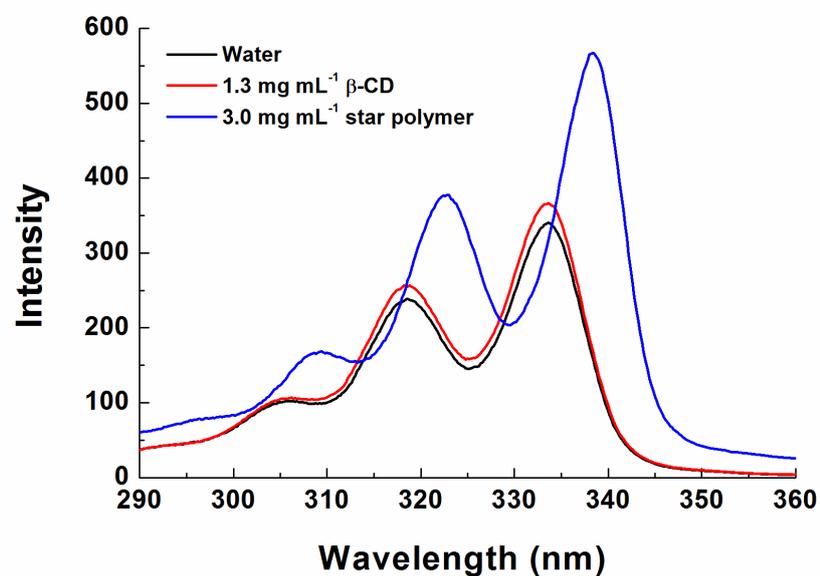

Fig. S4 Excitation spectra of pyrene in aqueous solutions containing various substances. λ_{em} = 392 nm.
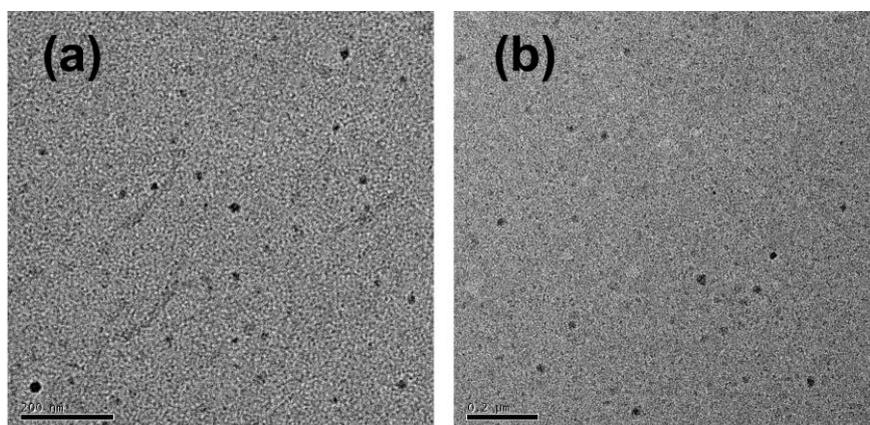

Fig. S5 TEM images of Py_1S_8 nanoparticles in aqueous solution of pH 3.0 (a) and pH 10.0 (b). Scale bars: 200 nm for both (a) and (b).
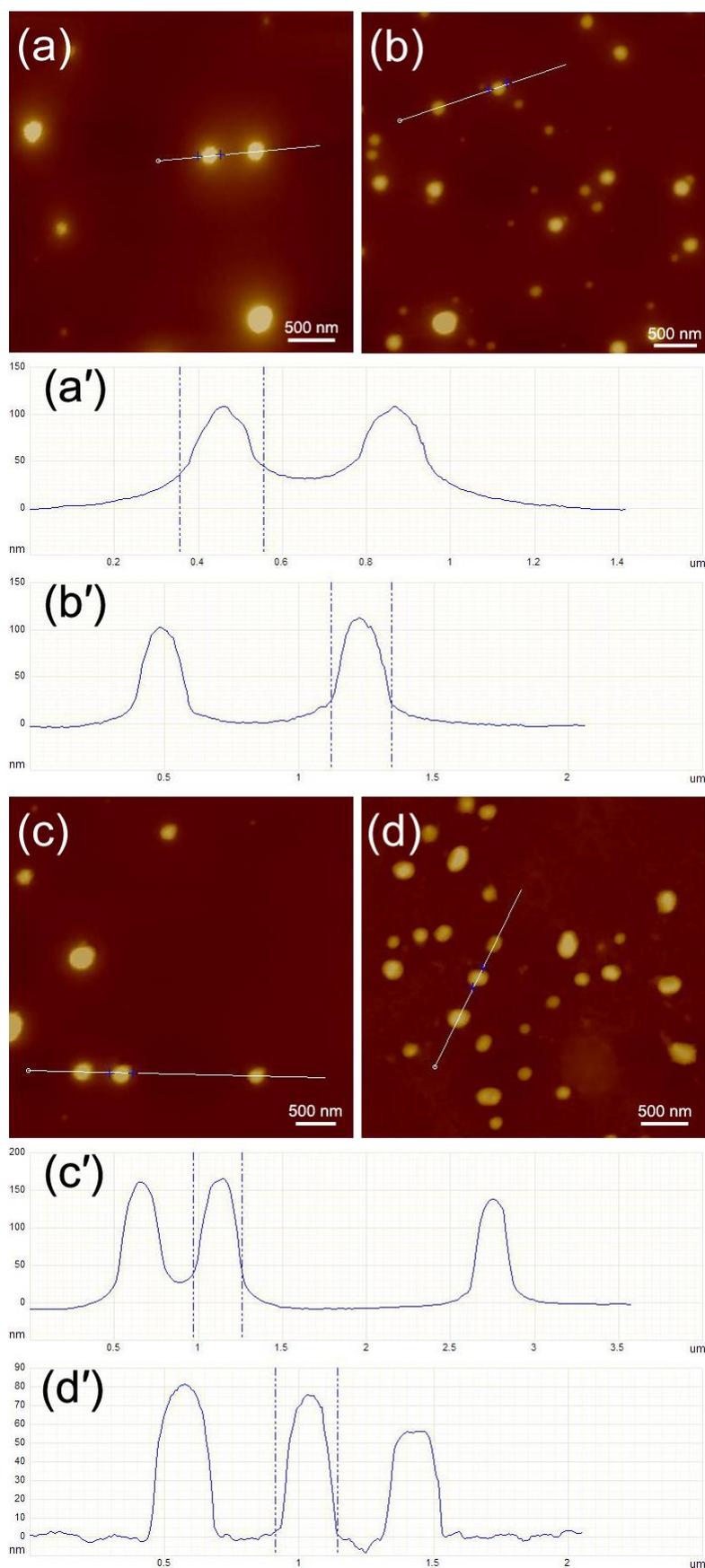
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Fig. S6 AFM height images and section analysis of PLA$_8$S$_{10}$ nanoparticles at pH 3.0 (a, a') and pH 10.0 (b, b'), PLA$_3$S$_{10}$ nanoparticles at pH 3.0 (c, c') and pH 10.0 (d, d').
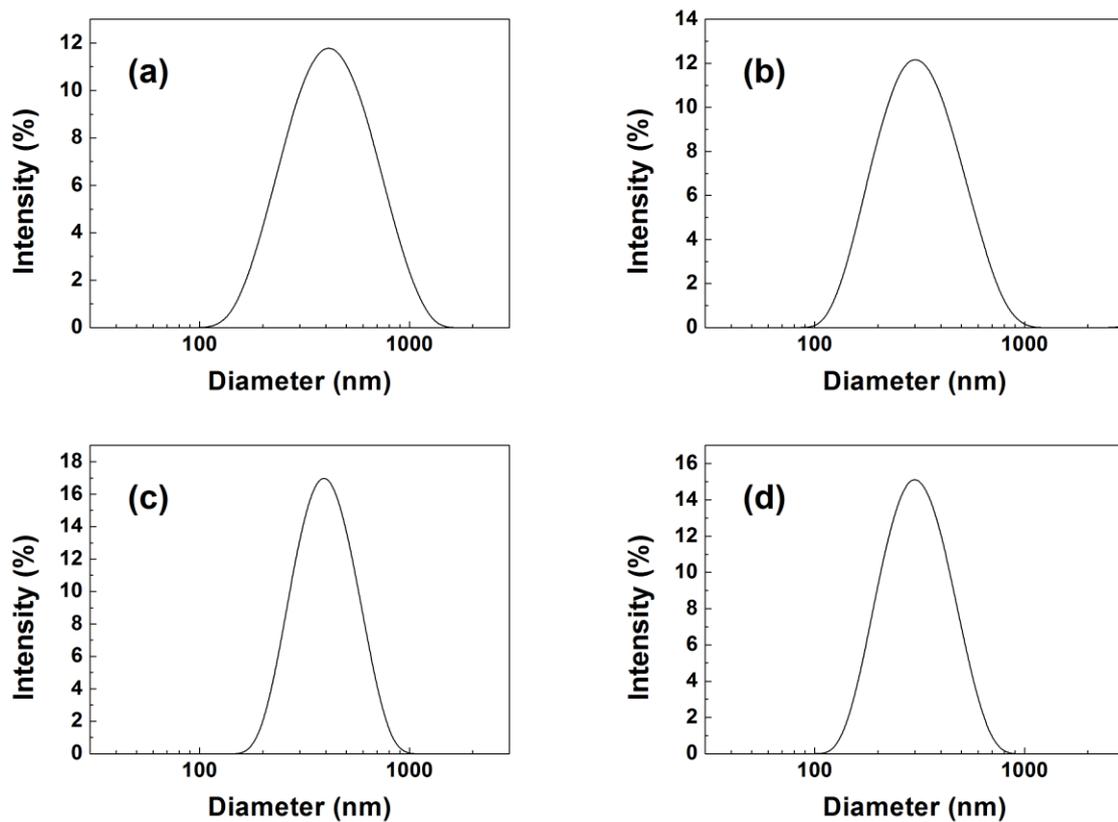
Fig. S7 DLS histograms of PLA_8S_{10} nanoparticles at pH 3.0 (a) and pH 10.0 (b), PLA_3S_{10} nanoparticles at pH 3.0 (c) and pH 10.0 (d).
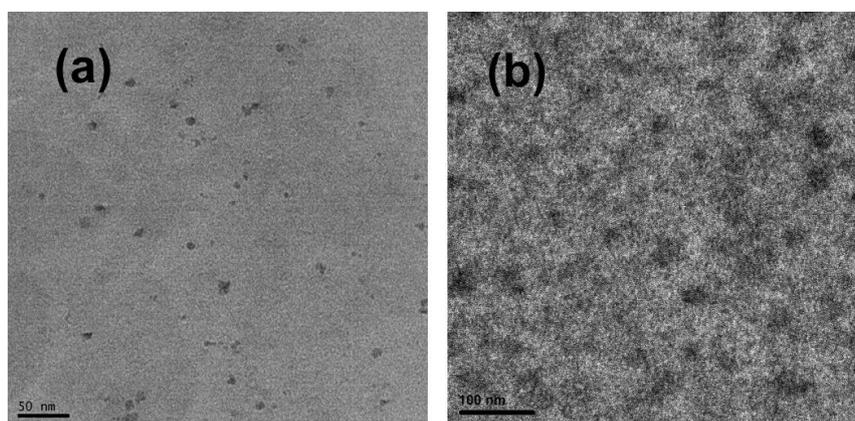

Fig. S8 TEM images of star polymer in PBS solution (a) and ABS solution (b). Scale bars: 50 nm for (a) and 100 nm for (b).