

## Electronic Supplementary Information (ESI)

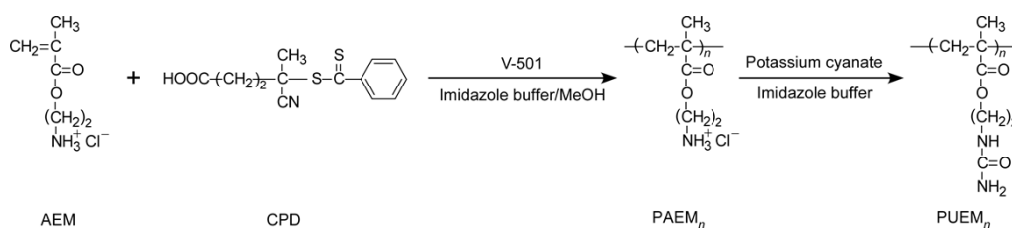
### Preparation of upper critical solution temperature (UCST) responsive diblock copolymers bearing pendant ureido groups and their micelle formation behavior in water†

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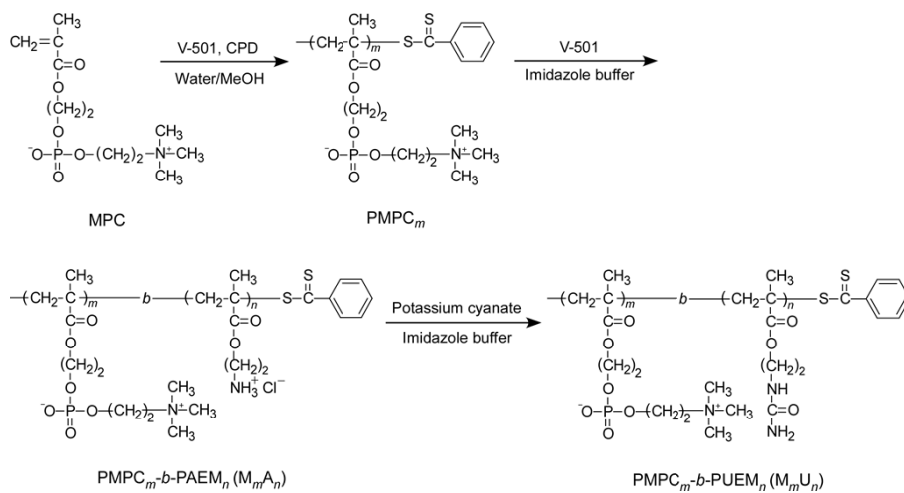
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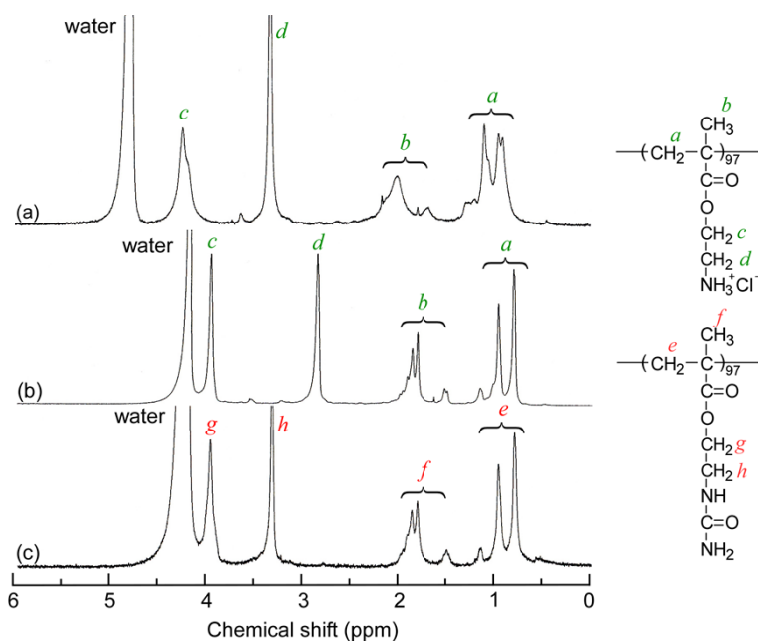
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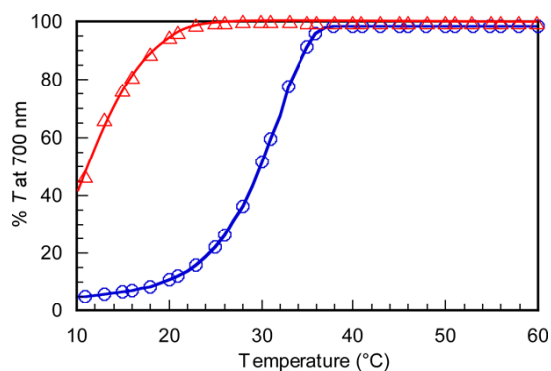
**Fig. S1** Synthesis of PUEM<sub>97</sub>.



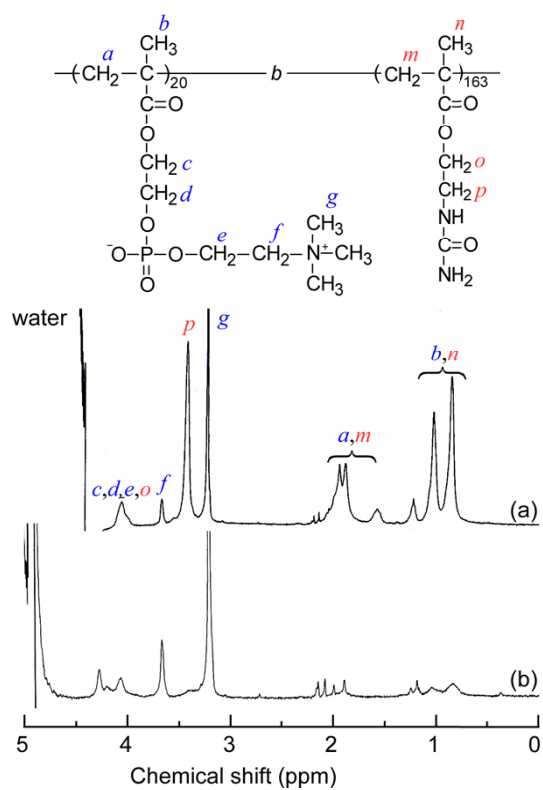
**Fig. S2** Synthesis of PMPC<sub>m</sub>-b-PUEM<sub>n</sub> (M<sub>m</sub>U<sub>n</sub>).



**Fig. S3** <sup>1</sup>H NMR spectra for PAEM<sub>97</sub> in (a) D<sub>2</sub>O at 25 °C, (b) D<sub>2</sub>O containing 0.1% NaOD at 70 °C, and (c) PUEM<sub>97</sub> in D<sub>2</sub>O containing 0.1% NaOD at 70 °C.

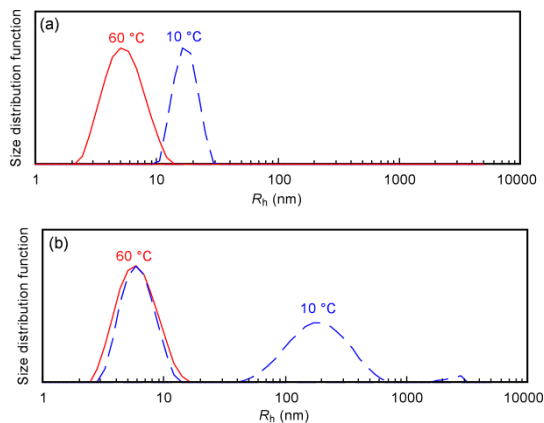


**Fig. S4** Percent transmittance ( $\%T$ ) at 700 nm for PUEM<sub>97</sub> ( $\circ$ ) and PUEM<sub>49</sub> ( $\triangle$ ) in 0.1 M NaCl aqueous solution as a function of temperature at the polymer concentration ( $C_p$ ) = 1.0 g/L.

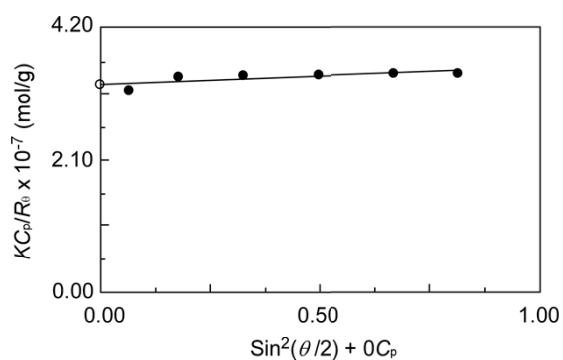


**Fig. S5**  $^1\text{H}$  NMR spectra for M<sub>20</sub>U<sub>163</sub> at  $C_p = 5.0$  g/L in H<sub>2</sub>O containing 0.1 M NaCl at

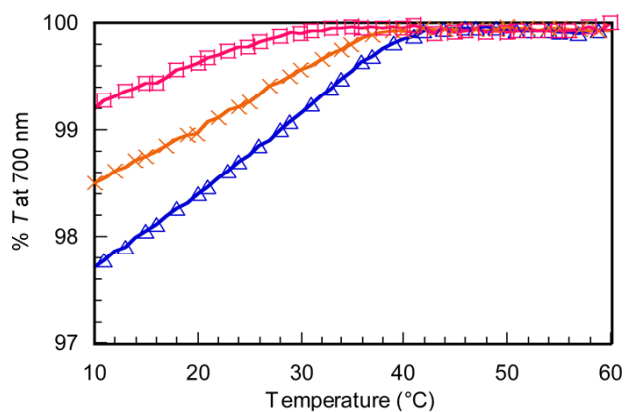
(a) 60 and (b) 10 °C.



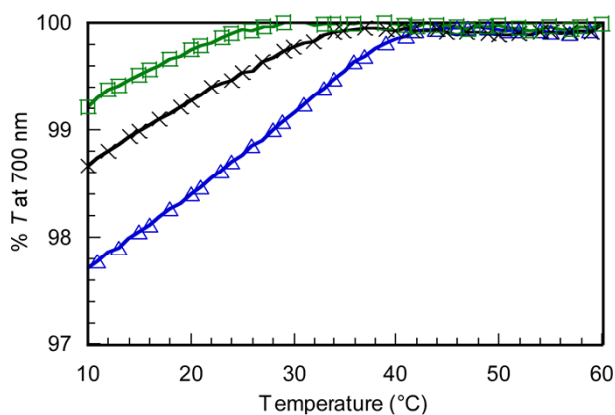
**Fig. S6** Intensity- $R_h$  distributions of (a)  $M_{20}U_{163}$  and (b)  $M_{95}U_{149}$  at  $C_p = 5.0$  g/L in aqueous solutions at 60 (—) and 10 °C (---).



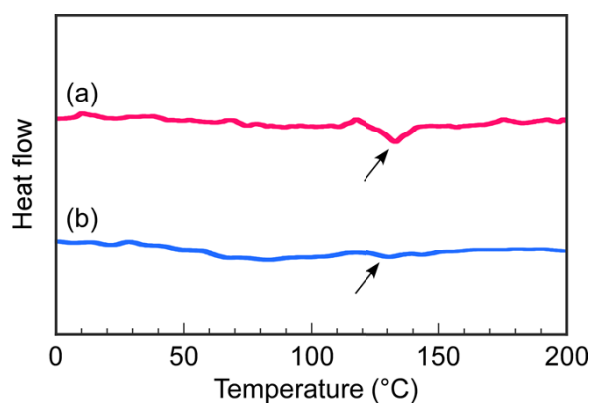
**Fig. S7** A typical example of a Debye plot for  $M_{20}U_{163}$  in 0.1 M NaCl aqueous solution at 20 °C at angles from 30 to 130° with a 20° increment.



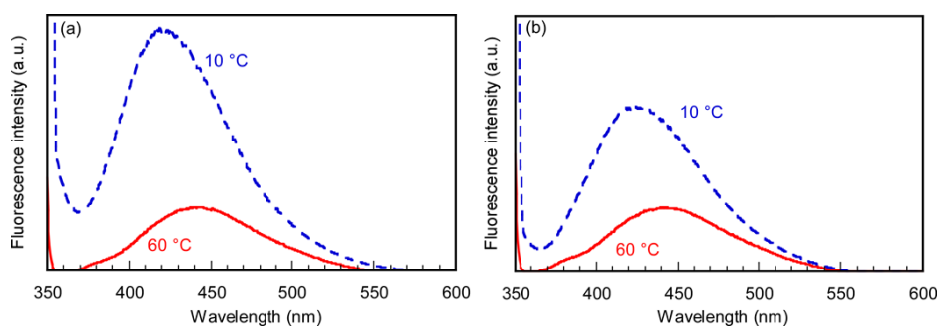
**Fig. S8** Percent transmittance (% $T$ ) at 700 nm for  $M_{20}U_{163}$  at  $C_p = 2.5$  ( $\square$ ),  $4.0$  ( $\times$ ) and  $5.0$  g/L ( $\triangle$ ) in  $0.1$  M NaCl aqueous solutions as a function of temperature.



**Fig. S9** Percent transmittance (% $T$ ) at 700 nm for  $M_{20}U_{163}$  at  $C_p = 5.0$  g/L in aqueous solutions containing  $0.1$  ( $\triangle$ ),  $0.2$  ( $\times$ ), and  $0.5$  ( $\square$ ) M NaCl as a function of temperature.



**Fig. S10** Typical differential scanning calorimetry (DSC) charts for (a) PUEM<sub>97</sub> and (b) M<sub>20</sub>U<sub>163</sub> measured at a heating rate of 10 °C/min under nitrogen atmosphere.



**Fig. S11** Fluorescence spectra for (a) M<sub>95</sub>U<sub>149</sub> and (b) M<sub>20</sub>U<sub>163</sub> in saturated PNA aqueous solution containing 0.1 M NaCl at 60 (—) and 10 °C (---).