

## Supporting Information

### Stopped-Flow Kinetic Studies of Formation and Disintegration of Polyion Complex Micelles in Aqueous Solution

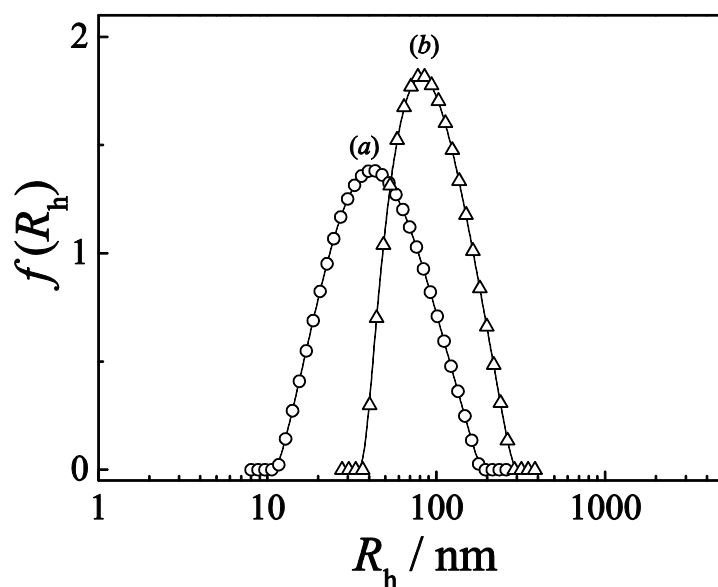
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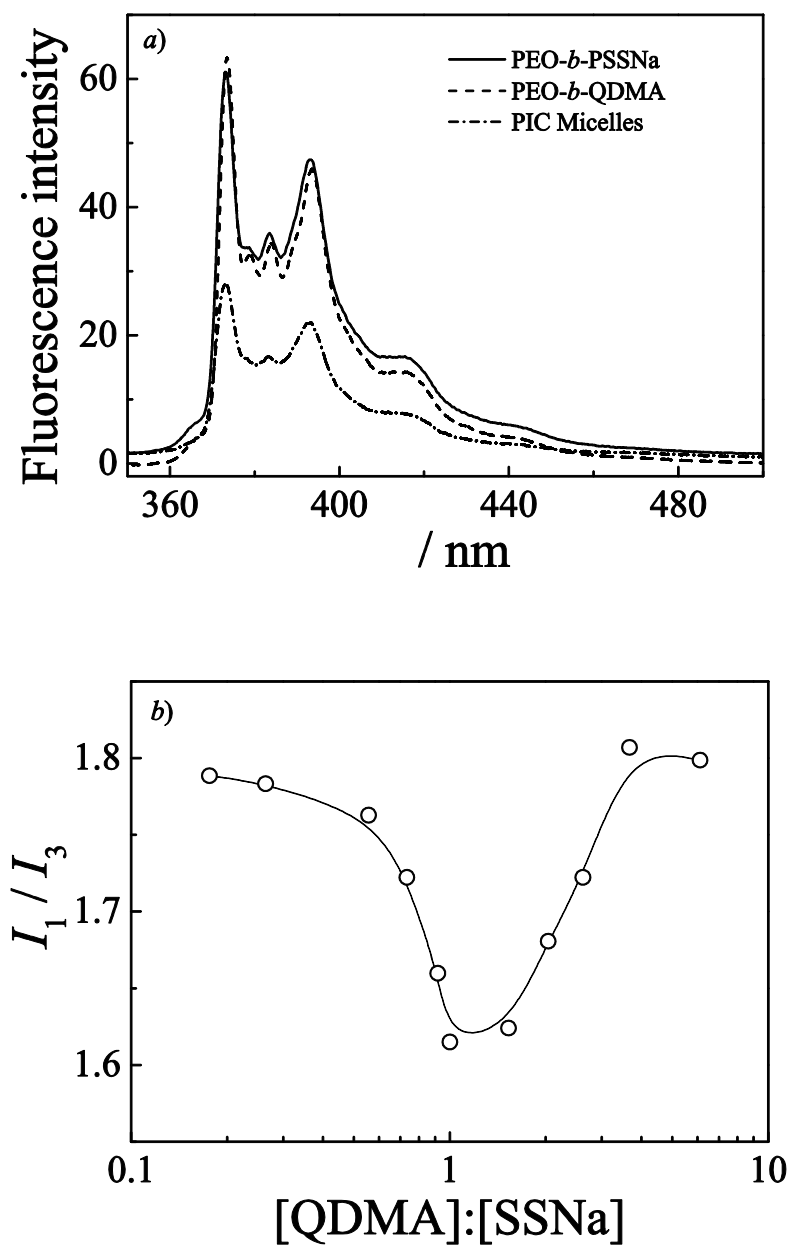
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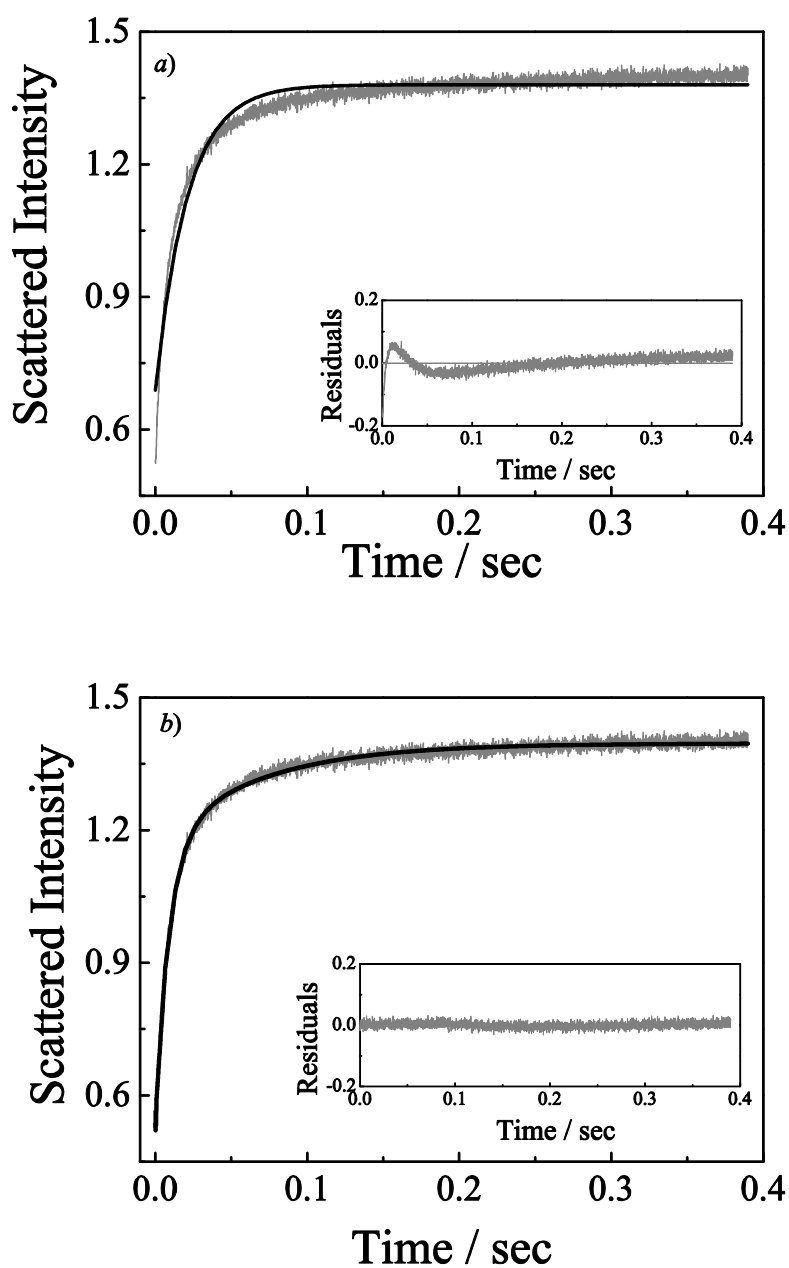
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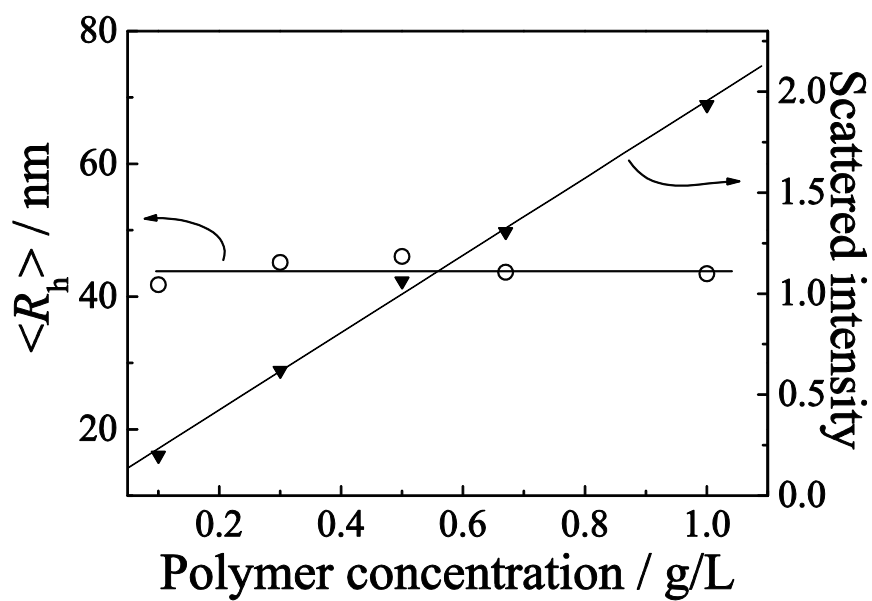
**Figure S1.** Comparison of hydrodynamic radius distributions,  $f(R_h)$ , of PIC micelles obtained by (a) stopped-flow mixing aqueous solutions of PEO-*b*-PQDMA and PEO-*b*-PSSNa, and (b) dropwise addition of the aqueous solution of PEO-*b*-PQDMA into that of PEO-*b*-PSSNa. The [QDMA]/[SSNa] mixing molar ratio was fixed at 1:1 and the total polymer concentration was 1.0 g/L.



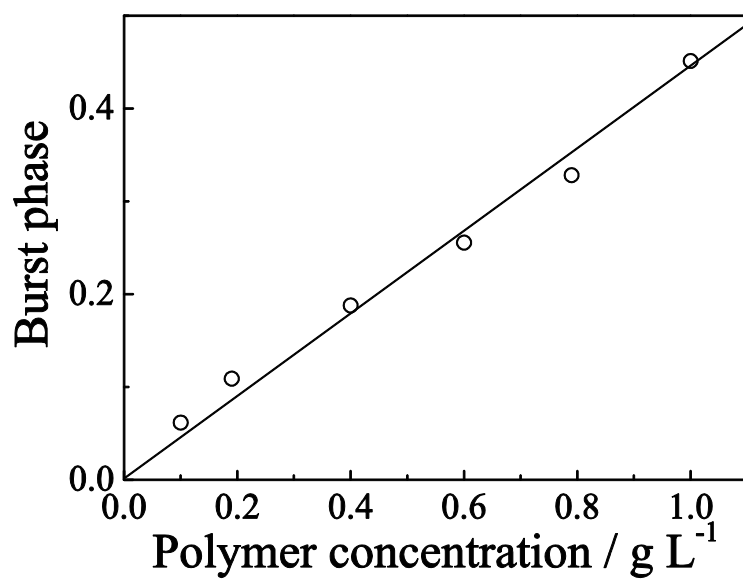
**Figure S2.** (a) Fluorescence emission spectra (excited at 330 nm) of pyrene solubilized in aqueous solutions of PEO-*b*-QDMA, PEO-*b*-PSSNa, and PIC micelles formed in the mixture of PEO-*b*-QDMA and PEO-*b*-PSSNa at [QDMA]/[SSNa] = 1:1. (b) Plot of the fluorescence intensity ratios,  $I_1/I_3$ , in the emission spectra of pyrene probes as a function of [QDMA]/[SSNa] mixing molar ratios. Total polymer concentrations and pyrene concentration were fixed to be 1.0 g/L and  $1.0 \times 10^{-6}$  mol/L, respectively.



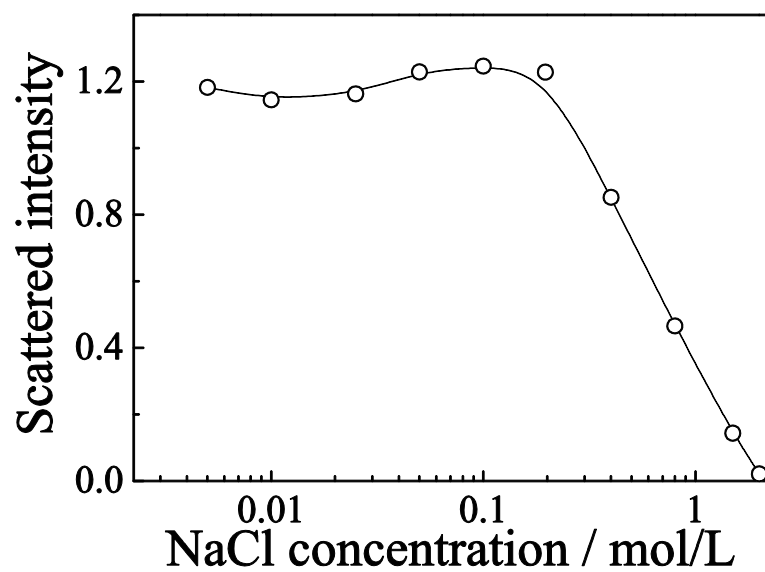
**Figure S3.** Typical time dependence of the scattered light intensity recorded upon stopped-flow mixing aqueous solutions of PEO-*b*-PQDMA and PEO-*b*-PSSNa at  $[QDMA]/[SSNa] = 1.0$ . The total polymer concentration was fixed at 1.0 g/L. The upper and lower figures are fitted by single- and double-exponential functions, respectively.



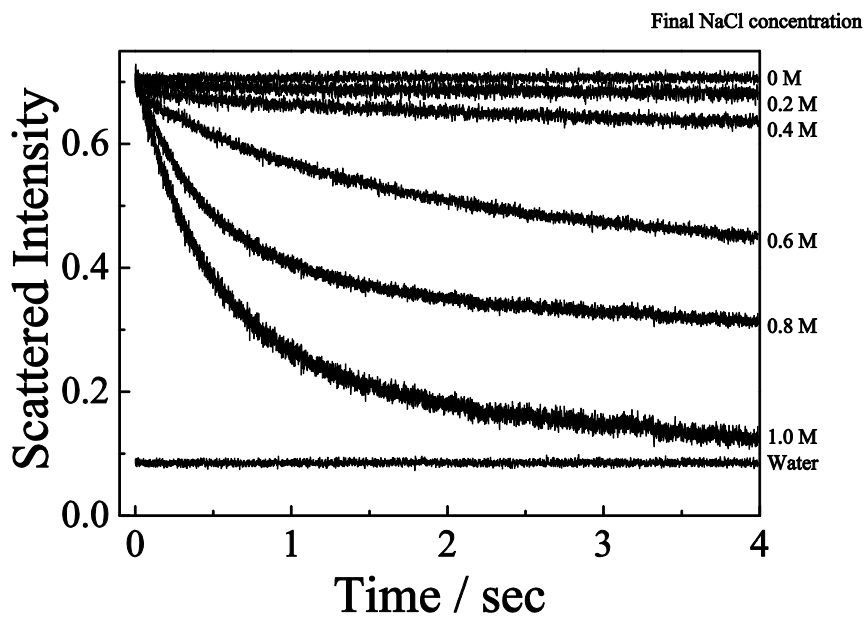
**Figure S4.** Variation of intensity-average hydrodynamic radius,  $\langle R_h \rangle$ , and scattered light intensities as a function of total polymer concentrations at  $[\text{QDMA}]/[\text{SSNa}] = 1:1$ .



**Figure S5** The burst phase scattered intensities as a function of total polymer concentrations. Experimental conditions were the same as those described in Figure 4.

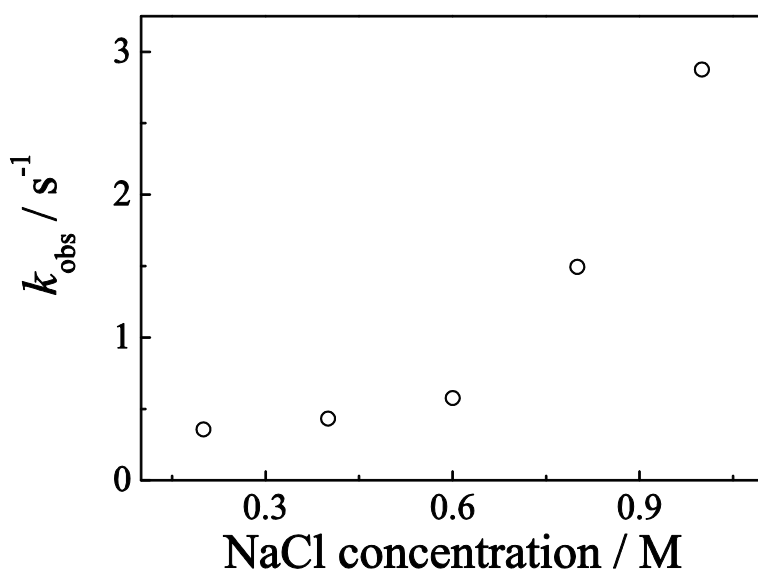


**Figure S6.** Variation of scattered light intensity of PIC micelles in the presence of varying amounts of NaCl at [QDMA]/[SSNa] = 1:1. Total polymer concentrations were fixed to be 1.0 g/L.



**Figure S7.** Time dependence of scattered light intensity obtained after stopped-flow mixing aqueous solutions of PIC micelles and NaCl. The final total polymer concentrations were fixed to be 0.5 g/L, whereas final NaCl concentrations were varied from 0 to 1.0 M.





**Figure S8.** Single-exponential fitting results of kinetics traces obtained for the disassociation of PIC micelles via mixing PIC micelle solutions with varying NaCl concentrations. The experimental conditions were the same as those described in Figure S7.