Supporting Information to the manuscript

Self-assembly and Dynamics Driven by Oligocarbonate-Fluorene End-Functionalized Poly(ethylene glycol) ABA Triblock Copolymer[#]

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Table S1. Parameters from static laser light scattering by Eq. 4.

$F_mE_nF_m$	*CMC* [mg/mL]	M_w [g/mol]	A_2 [mol·cm^{-3}/g^2]	[a] N_{agg}
$F_{15.3}E_{445}F_{15.3}$	0.000216 ± 0.000442	(1.58 ± 0.11) × 10^9	(1.01 ± 1.55) × 10^{-10}	57800 ± 4024
$F_{5.6}E_{445}F_{5.6}$	0.0021 ± 0.0003	(8.25 ± 1.03) × 10^7	(-9.49 ± 7.92) × 10^{-9}	3690 ± 460
$F_2E_{445}F_2$	0.069 ± 0.002	(4.29 ± 0.02) × 10^5	(4.03 ± 0.09) × 10^{-8}	21 ± 0.1
$F_{1.2}E_{445}F_{1.2}$	0.231 ± 0.011	(1.76 ± 0.02) × 10^5	(5.73 ± 3.65) × 10^{-9}	9 ± 0.1

[a] $N_{agg} = M_w / M_w^s$ using M_w^s from Table I.

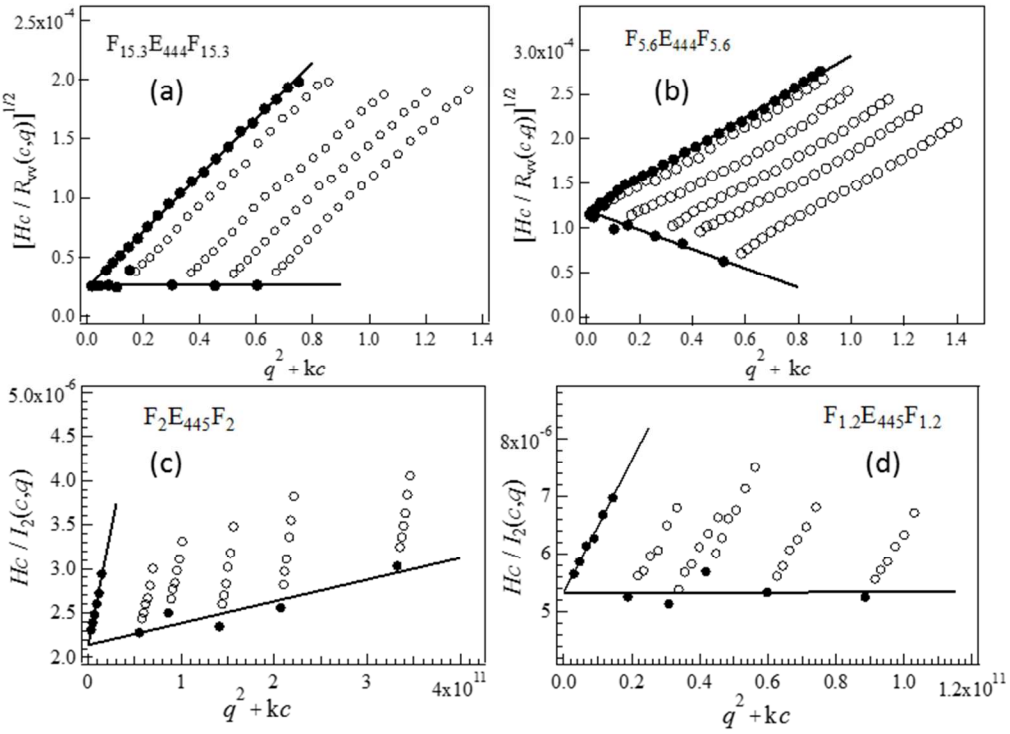

Figure S1. Berry plots from $R_{vv}(c,q)$ for (a) $F_{15.3}E_{445}F_{15.3}$ and (b) $F_{5.6}E_{445}F_{5.6}$ showing a reduced number of concentrations for clarity: (a) (0.20, 0.15, 0.10, 0.035) mg/mL and (b) (0.52, 0.36, 0.26, 0.10, 0.01) mg/mL. Zimm plots from I_2 (c,q) for (c) $F_2E_{445}F_2$ and (d) $F_{1.2}E_{445}F_{1.2}$ where $I_2(c,q) = a_2(c,q)R_{vv}(c,q)$ for (10, 7, 5, 4, 2.5) mg/mL.

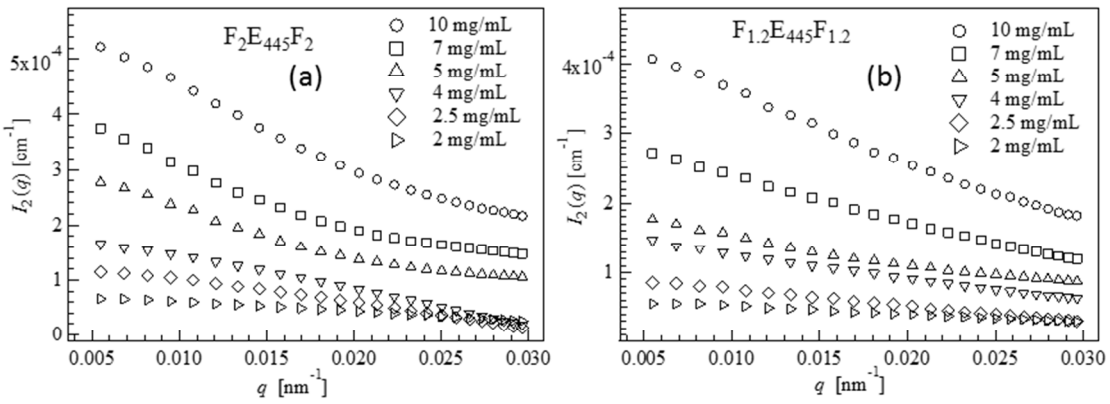

Figure S2. Angular dependence of the scattered light intensity, $I_2(q)$, for $F_2E_{445}F_2$ and $F_{1.2}E_{445}F_{1.2}$ at 6 higher concentrations as noted in the legend, where $I_2(q) = a_2(q)R_{vv}(q)$.

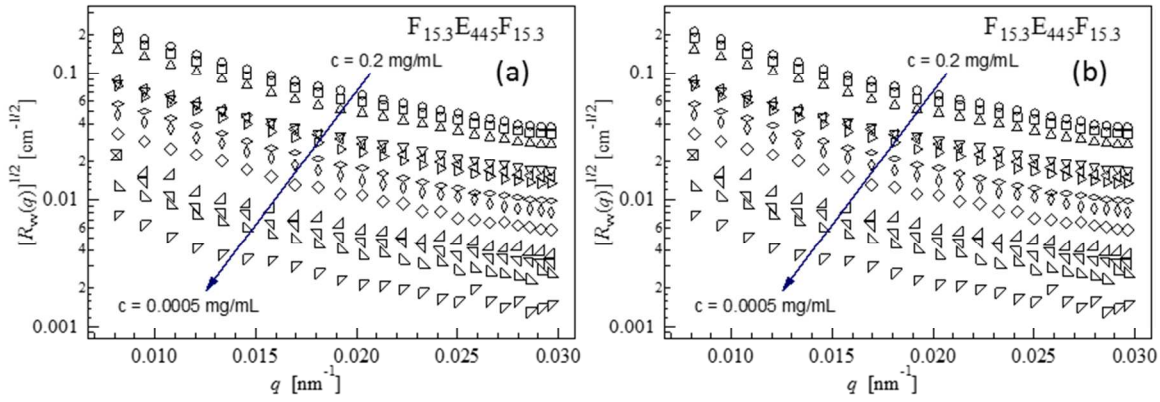

Figure S3. Angular dependence of the scattered light intensity, $[R_{vv}(q)]^{1/2}$, for $F_{15.3}E_{445}F_{15.3}$ and $F_{5.6}E_{445}F_{5.6}$.

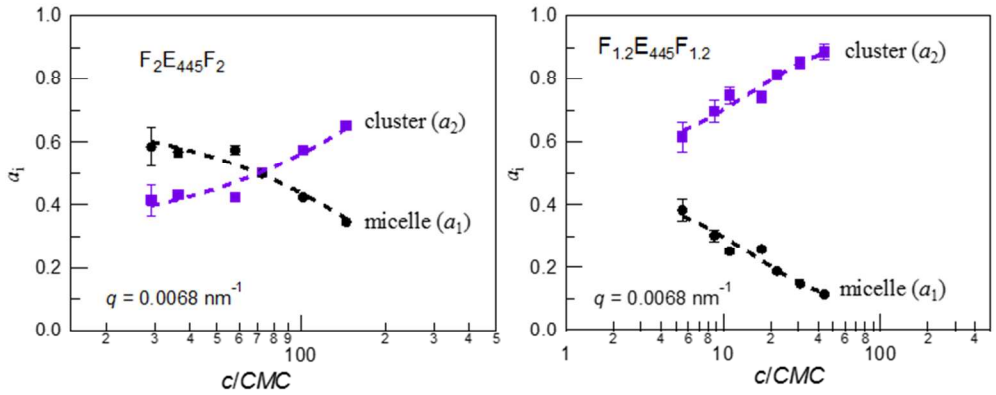

Figure S4. Concentration dependence of the relative amplitude of micelle (a_1) and cluster (a_2) for $F_2E_{445}F_2$ and $F_{1.2}E_{445}F_{1.2}$ at $q = 0.0068$ nm^{-1}.

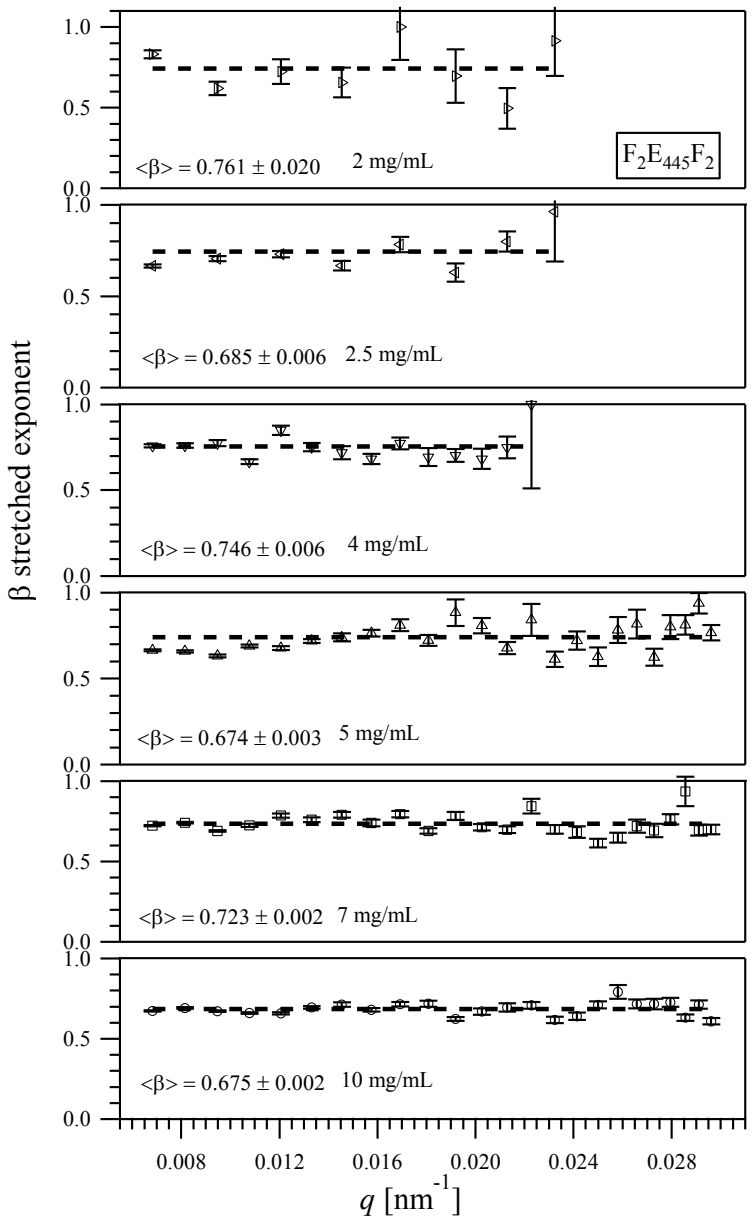

Figure S5. The q dependence of the stretched exponent (β) for six concentrations of $F_2E_{445}F_2$ in the strong clustering regime.

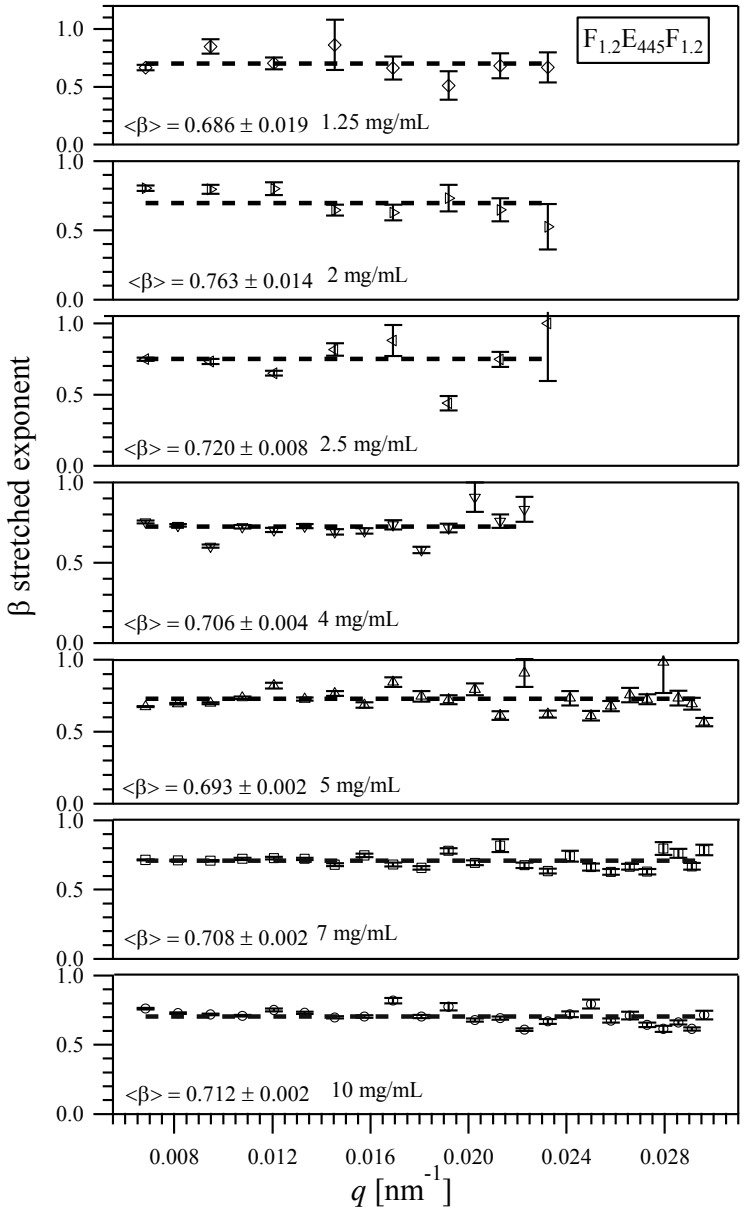

Figure S6. The q dependence of the stretched exponent (β) for seven concentrations of $F_{1.2}E_{445}F_{1.2}$ in the strong clustering regime.

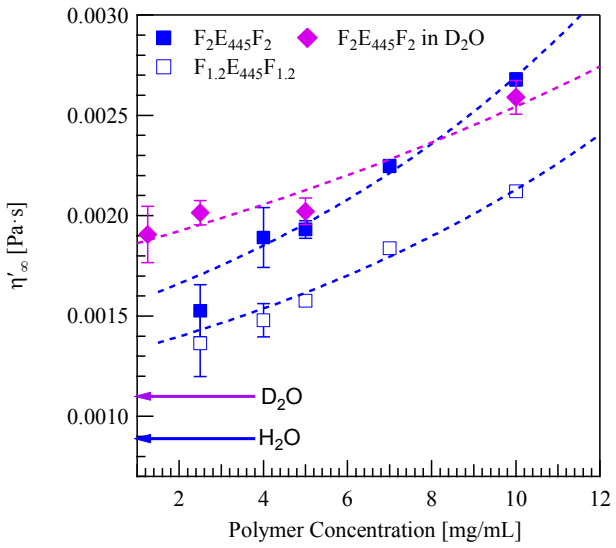

Figure S7. Predicted local solvent viscosity (η'_{∞}) using the Rouse-Zimm model and fit to intrinsic effective solvent viscosity model.

Figure S7 shows the plot of the local solvent viscosity (η'_{∞}) as a function of the polymer concentration. The dashed in Figure S7 is the fit to Lodge's expression[1] ($\eta'_{\infty} \cong \eta_o \exp\{C[\eta'_{\infty}]\}$) with an additional baseline term using the extracted solvent viscosity from the Zimm expression (with $\eta_o \rightarrow \eta'_{\infty}$) that leads to $[\eta'_{\infty}]$ = (94 ± 6) cm^3/g and baseline 7.5 × 10^{-4} Pa·s for $F_2E_{445}F_2$, and $[\eta'_{\infty}]$ = (85 ± 4) cm^3/g and baseline 6.4 × 10^{-4} Pa·s for $F_{1.2}E_{445}F_{1.2}$. The value of $[\eta'_{\infty}]$ represents the increment at which the addition of polymer changes η'_{∞}. Samples in D_2O are from reference [2].

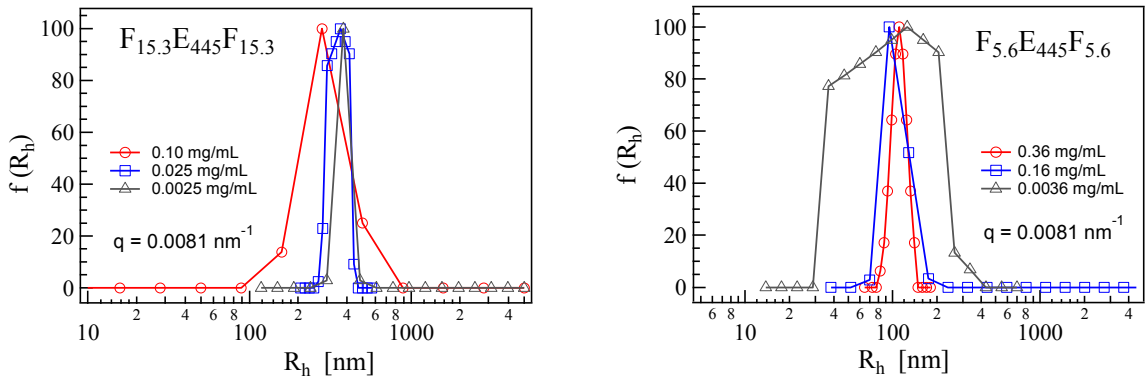

Figure S8. CONTIN results from the Brookhaven[§] software for $F_{15.3}E_{445}F_{15.3}$ and $F_{5.6}E_{445}F_{5.6}$ at $q = 0.0081$ nm^{-1} for concentrations provided in the legend.

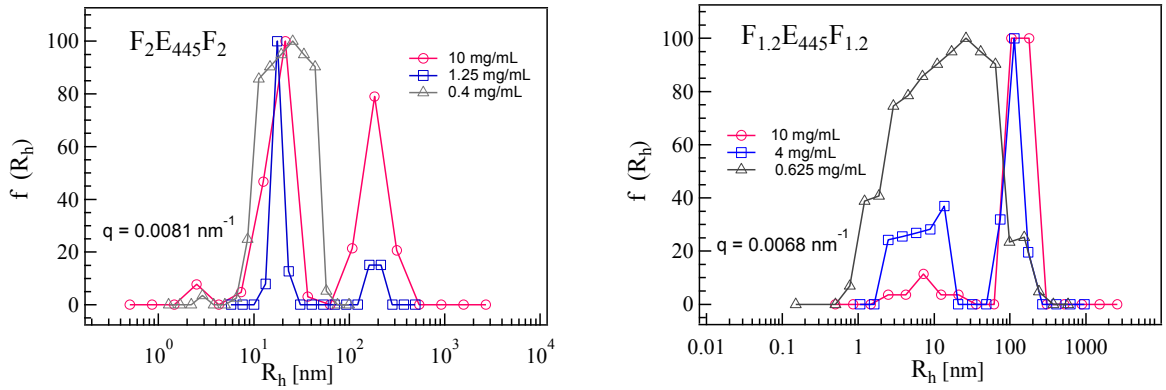

Figure S9. CONTIN results from the Brookhaven[§] software for $F_2E_{445}F_2$ at $q = 0.0081$ nm^{-1} and $F_{1.2}E_{445}F_{1.2}$ at $q = 0.0068$ nm^{-1} for concentrations provided in the legend.

[§] Certain commercial equipment and materials are identified in this paper in order to specify adequately the experimental procedure. In no case does such identification imply recommendations by the National Institute of Standards and Technology (NIST) nor does it imply that the material or equipment identified is necessarily the best available for this purpose.

(1) Lodge, T. Solvent Dynamics, Local Friction, and the Viscoelastic Properties of Polymer Solutions. *J. Phys. Chem.* **1993**, *97* (8), 1480–1487 DOI: 10.1021/j100110a004.
(2) Prabhu, V. M.; Venkataraman, S.; Yang, Y. Y.; Hedrick, J. L. Equilibrium Self-Assembly, Structure, and Dynamics of Clusters of Star-Like Micelles. *Acs Macro Lett.* **2015**, *4* (10), 1128–1133 DOI: 10.1021/acsmacrolett.5b00507.