

Supporting Information for:

**Responsive Release of Polyanions from Soluble Aggregates Formed with a
Hydrolyzable Cationic Surfactant and a Nonionic Surfactant**

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Table S1. The initial concentrations of NaOD added to samples with initial concentrations of 10 mM PA_{long}, 10.5 mM DB, and 38 mM C₁₂E₈, together with the corresponding pD:s as well as the fractions and concentrations of hydrolyzed DB in the respective samples after 24 h of equilibration.

NaOD / mM	pD	X _{DB,hydrolyzed} ^a / %	c _{DB,hydrolyzed} ^b / mM
0	6.19	3.4	0.4
2	6.70	13.4	1.4
4	7.05	25.2	2.6
6	7.38	46.5	4.9
8	7.54	67.2	7.1
10	7.72	75.5	7.9
12	7.79	91.9	9.6
14	8.36	100	10.5

^aThe fractions of hydrolyzed DB in the samples 24 h after the addition of NaOD.

^bThe concentrations of hydrolyzed DB in the samples 24 h after addition of NaOD.

Table S2. The initial concentrations of NaOD added to samples with initial concentrations of 9.2 mM PA_{short}, 10.5 mM DB, and 38 mM C₁₂E₈, together with the corresponding pD:s as well as the fractions and concentrations of hydrolyzed DB in the respective samples after 24 h of equilibration.

NaOD / mM	pD	X _{DB,hydrolyzed} ^a / %	C _{DB,hydrolyzed} ^b / mM
0	6.34	0	0
2	6.84	7.8	0.8
4	7.26	20.7	2.2
6	7.52	38.6	4.1
8	7.65	60.6	6.4
10	7.71	80.0	8.4
12	7.83	92.6	9.7
14	8.80	100	10.5

^aThe fractions of hydrolyzed DB in the samples 24 h after the addition of NaOD.

^bThe concentrations of hydrolyzed DB in the samples 24 h after addition of NaOD.

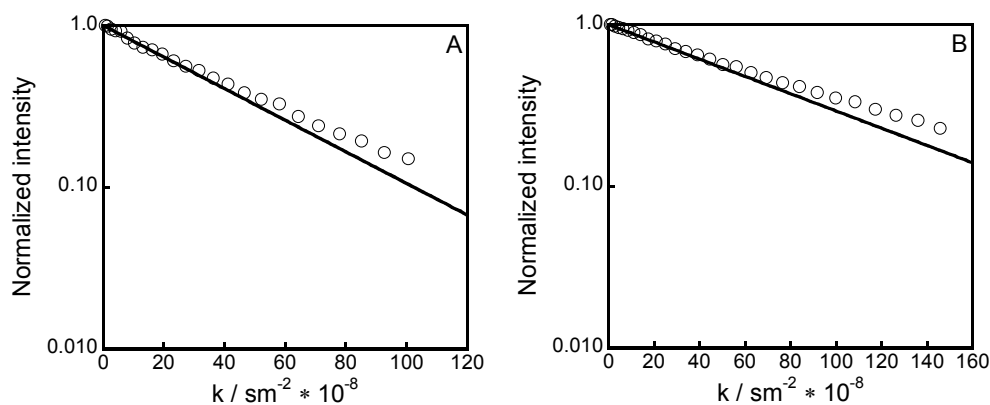


Figure S1. A) The normalized echo-decay for an aqueous solution of 10 mM PA_{short} at pD=3. The solid line is a linear least square fit to the initial slope giving $\langle D \rangle$. B) The corresponding data and fit for an aqueous solution of 10 mM PA_{long} at pD=3.

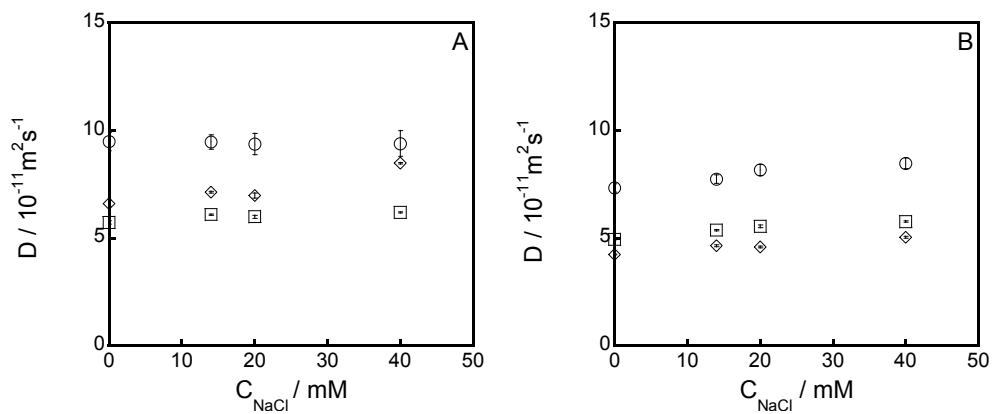


Figure S2. Self-diffusion coefficients of DTAC (circles), PA (diamonds), and C_{12}E_8 (squares) in A) DTAC + PA_{short} + C_{12}E_8 , and B) DTAC + PA_{long} + C_{12}E_8 . The concentrations of the ionic surfactant, the polyions and the nonionic surfactant are equivalent to their counterparts in the DB/PA/ C_{12}E_8 systems, i.e. 10.0 mM PA_{long} or 9.2 mM PA_{short} , 10.5 mM DTAC, and 38 mM C_{12}E_8 .