Supporting information

Interactions between methyl cellulose and sodium dodecyl sulfate in aqueous solution studied by single molecule fluorescence correlation spectroscopy (FCS)

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Table S-1. FCS fitting parameters from SDS solutions.

c (SDS) mM/L	Diff.Time1 µs	Error µs	Population1 %	Diff. Time2 µs	Error µs	Population 2 %
0.1	20	0.2	100	--	--	0
0.4	21	0.2	100	--	--	0
0.6	22	0.2	100	--	--	0
0.8	22	0.2	100	--	--	0
1.0	23	0.2	100	--	--	0
2.0	22	0.2	100	--	--	0
3.0	23	0.2	100	--	--	0
5.0	18	1.3	84	70.6	1.300	16
6.0	17	1.0	85	90.0	0.956	15
7.0	17	0.7	79	77.2	0.734	21
8.0	65	0.5	100	--	--	0
10.0	97	0.2	100	--	--	0
15.0	123	0.5	100	--	--	0
20.0	132	0.3	100	--	--	0
25.0	143	0.6	100	--	--	0
40.0	152	0.4	100	--	--	0
50.0	152	0.3	100	--	--	0
65.0	148	0.4	100	--	--	0
75.0	149	0.3	100	--	--	0
80.0	154	0.4	100	--	--	0
100.0	164	0.4	100	--	--	0
120.0	168	0.4	100	--	--	0
200.0	195	0.4	100	--	--	0

Table S-2. FCS fitting parameters from 0.25 wt % MC and SDS mixtures.

c (SDS) mM/L	Diff.Time1 µs	Error µs	Population1 %	Diff. Time2 ms	Error ms	Population 2 %
0.4	28	0.2	100	--	--	0
0.6	31	0.4	100	--	--	0
0.8	31	0.3	100	--	--	0
1	28	0.2	100	--	--	0
2	30	0.4	100	--	--	0
3	41	1.1	100	--	--	0
5	163	7.4	100	--	--	0
6	131	0.7	90	2.6410	0.089	10
7	178	1.0	85	2.5380	0.058	15
8	202	2.1	70	2.3960	0.045	30
10	236	4.3	68	2.0330	0.064	32
20	358	6.6	72	2.3730	0.095	28
25	331	9.2	73	1.2830	0.081	27
40	279	1.1	100	--	--	0
50	257	1.0	100	--	--	0
65	222	0.7	100	--	--	0
75	245	0.9	100	--	--	0
100	260	1.2	100	--	--	0
120	237	0.5	100	--	--	0

Table S-3. FCS fitting parameters from 0.5 wt % MC and SDS mixtures.

c (SDS) mM/L	Diff.Time1 µs	Error µs	Population1 %	Diff. Time2 ms	Error ms	Population 2 %
0.4	30	0.2	100	--	--	0
0.6	33	0.3	100	--	--	0
0.8	34	0.4	100	--	--	0
1	41	0.9	100	--	--	0
2	66	0.2	100	--	--	0
3	37	0.3	92	1.0213	0.042	8
5	38	0.3	88	0.9575	0.024	12
6	142	0.8	82	2.9070	0.052	18
7	198	1.4	76	4.0552	0.069	24
8	242	4.6	63	3.7529	0.090	37
10	304	3.7	70	4.5327	0.100	30
20	391	4.6	76	4.3237	0.131	24
25	423	13.8	61	3.9759	0.169	39
50	202	30.0	26	1.0192	0.043	74
65	390	0.7	100	--	--	0
75	415	1.2	100	--	--	0
100	391	1.2	100	--	--	0
120	329	0.5	100	--	--	0

Table S-4. FCS fitting parameters from 1 wt % MC and SDS mixtures.

c (SDS) mM/L	Diff.Time1 µs	Error µs	Population1 %	Diff. Time2 ms	Error ms	Population 2 %
0.75	35	0.2	100	--	--	0
2	37	0.3	93	1.5362	0.067	7
5	184	2.7	52	3.6515	0.041	48
6	187	1.9	61	3.9562	0.045	39
8	259	5.4	40	4.4552	0.046	60
10	237	5.1	35	4.5700	0.041	65
20	305	13.0	38	8.7977	0.160	62
25	208	9.8	40	8.6759	0.180	60
40	312	14.0	54	7.0649	0.250	46
50	58	1.8	61	4.7206	0.120	39
75	345	-12.0	41	3.9326	0.074	59
120	66	3.5	17	0.8770	0.006	83
200	42	3.0	15	0.4945	0.004	85

Table S-5 Calculated diffusion coefficients from diffusion time of MC/SDS mixtures.

	No MC		0.25 wt MC		0.5 wt MC		1.0 wt MC	
Con SDS	**fraction 1**	**fraction 2**	**fraction 1**	**fraction 2**	**fraction 1**	**fraction 2**	**fraction 1**	**fraction 2**
(mM/L)	**(× 10^{-12} m^2s^{-1})**	**(× 10^{-12} m^2s^{-1})**	**(× 10^{-12} m^2s^{-1})**	**(× 10^{-12} m^2s^{-1})**	**(× 10^{-12} m^2s^{-1})**	**(× 10^{-12} m^2s^{-1})**	**(× 10^{-12} m^2s^{-1})**	**(× 10^{-12} m^2s^{-1})**
2	387	--	316	--	432	14.1	243	5.9
5	485	121	58	--	231	9.3	49	2.5
6	492	95	72	3.6	62	3.0	48	2.3
8	131	--	47	4.0	37	2.4	35	2.0
10	88	--	40	4.7	29	2.0	38	2.0
20	65	--	26	4.0	23	2.1	30	1.0
25	60	--	29	7.4	21	2.2	43	1.0
50	56	--	37	--	44	8.7	155	1.9
75	57	--	39	--	21	--	26	2.3
120	51	--	40	--	23	--	138	10.3