

Supplementary Materials: Apparent Interfacial Tension Effects in Protein Stabilized Emulsions Prepared with Microstructured Systems

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Table S1. Measured droplet diameters after premix and in the final emulsion obtained for Tween 20, BSA, and whey protein.

Emulsifier	Conc. (%)	Premix Flow (Kg/m ² s)	Droplet Diameter D32 (μm)	
			D after Premix (μm)	D final Emulsion (μm)
Tween 20	0.1	9.16 ± 0.07	12.510 ± 0.789	5.308 ± 0.312
		18.56 ± 1.33		4.326 ± 0.258
		24.31 ± 0.23		3.987 ± 0.043
	0.5	9.47 ± 1.95	11.266 ± 0.122	2.895 ± 0.042
		17.59 ± 0.06		2.000 ± 0.037
		32.94 ± 0.42		0.665 ± 0.005
	1.25	6.44 ± 0.20	11.140 ± 0.445	2.5545 ± 0.029
		24.45 ± 4.68		1.779 ± 0.063
		28.19 ± 6.33		1.737 ± 0.011
	2	10.04 ± 1.33	11.591 ± 0.234	2.277 ± 0.079
		26.74 ± 0.28		1.857 ± 0.039
		47.98 ± 0.55		1.551 ± 0.011
BSA	0.25	30.49 ± 0.25	26.110 ± 0.728	8.192 ± 1.828
		47.38 ± 0.63		5.732 ± 0.238
	0.5	26.95 ± 5.52	28.771 ± 1.345	7.663 ± 0.257
		45.73 ± 14.62		5.328 ± 0.231
	1	23.35 ± 0.27	29.640 ± 0.692	7.001 ± 0.352
		36.11 ± 0.85		4.234 ± 0.224
WP	0.25	30.96 ± 0.05	26.952 ± 2.146	8.331 ± 3.886
		35.83 ± 0.33		6.696 ± 0.236
	0.5	26.17 ± 0.09	27.425 ± 0.896	9.230 ± 0.368
		49.04 ± 12.69		4.962 ± 0.790
	1	18.79 ± 1.27	29.426 ± 2.058	6.8032 ± 1.165
		33.91 ± 3.04		5.806 ± 0.071

Table S2. Values of D_{neck} and $w_{oil,start}$ measured during oil droplet formation in the Y-junctions with Tween 20, BSA or whey protein at different concentrations.

Continuous Phase	Cont. Phase Velocity (m/s)	D_{neck} (μm)	$w_{oil,start}$ (μm)
1% BSA	0.143	6.53	6.53
	0.188	4.73	4.73
	0.223	7.88	7.88
	0.243	8.17	8.17
	0.205	6.53	6.53
0.5% BSA	0.059	5.60	5.60
	0.052	4.90	4.90
	0.219	5.32	5.32

Table S2. Cont.

0.25% BSA	0.008	7.53	13.18
	0.009	5.65	13.18
	0.030	5.88	5.88
	0.030	8.17	8.17
	0.029	7.51	7.51
1% whey protein	0.007	8.12	N/A
	0.012	8.17	N/A
	0.021	4.08	8.49
0.5% whey protein	0.076	6.14	8.66
	0.244	8.35	8.35
	0.244	7.88	8.82
	0.074	5.95	9.61
	0.057	6.30	6.30
0.25% whey protein	0.033	6.30	6.30
	0.041	5.83	9.45
	0.003	6.30	7.56
	0.029	4.73	5.67
	0.071	8.66	6.12
2% Tween 20	0.040	6.53	6.53
	0.057	6.53	6.53
	0.065	8.18	8.18
	0.067	6.53	6.53