Supplementary Materials: Protein assembly and network formation at fluid interfaces: Effect of the oil

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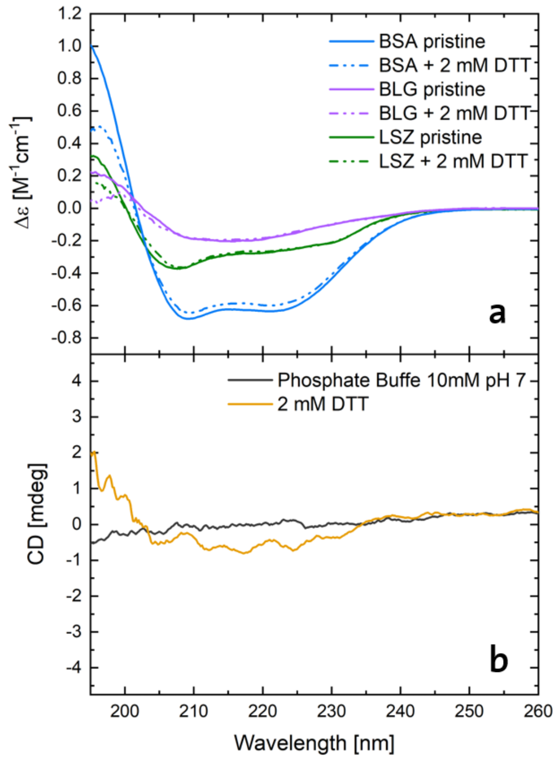

Figure S1: Circular dichroism (CD) measurements of a) BLG, BSA, and LSZ. The solid lines indicate the measurements of the pristine protein solution and the dotted lines show the CD curve after 24 h of exposure to 2 mM DTT solution. b) CD spectra of the buffer and the 2 mM DTT solution. CD spectra were obtain on a CD spectrometer (JASCO, Easton MD, US) equipped with a CD-426S/426L Peltier cell using a Hellma quartz glass high-performance cuvette with a 1 cm path length. Protein samples were measured at a protein concentration of 0.25 g·L^{-1}. CD spectra were obtained in the range from 190 – 260 nm at a scanning rate of 50 nm·min^{-1} with a data pitch of 0.2 nm, standard sensitivity, a D.I.T. of 4 s, a bandwidth of 1 nm and averaging 10 accumulations.

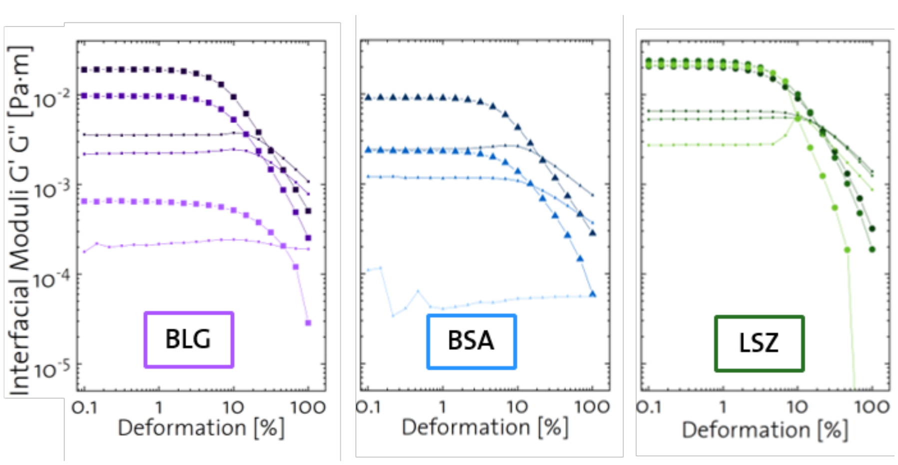

Figure S2: Amplitude sweeps of BLG (purple), BSA (blue), and LSZ (green). At *n*-octane, 1-chlorooctane and 1-octanol interfaces.

Table S1: Measured data and literature data of the dilatational rheology, including the initial interfacial tension γ_{ow} of the clean oil-water interfaces, the interfacial tension after 12h of adsorption γ, the interfacial pressure after 12h of adsorption Π, the normalized interfacial pressure after 12h of adsorption π^*, the dilatational storage modulus E', the dilatational loss modulus E", protein concentration c, the ionic strength I, and the pH of the aqueous phase. The reference numbering refers to the bibliography in the manuscript.

Protein	Oil	γ_{ow} [mN/m]	γ [mN/m]	Π [mN/m]	π^* [ ]	E' [mN/m]	E" [mN/m]	c wt %	I [mM]	pH	ref
LSZ	n-Octane	52	21.4	30.60	0.59	59	3	0.01	10	7	
LSZ	1-Chlorooctane	35	17	18.00	0.51	41	5	0.01	10	7	
LSZ	MCT	26	15	11.00	0.42	37	4	0.01	10	7	
LSZ	1-Octanol	8.7	5.3	3.40	0.39	10	0.5	0.01	10	7	
BSA	n-Octane	52	24	28.00	0.54	50	6	0.01	10	7	
BSA	1-Chlorooctane	35	19.5	15.50	0.44	42	5	0.01	10	7	
BSA	MCT	26	15.2	10.80	0.42	13.3	1	0.01	10	7	
BSA	1-Octanol	8.5	6	2.50	0.29	2.4	0.5	0.01	10	7	
BLG	n-Octane	52	20	32.00	0.62	60	5	0.01	10	7	
BLG	1-Chlorooctane	35	15.6	19.40	0.55	37	5	0.01	10	7	
BLG	MCT	26	14.9	11.10	0.43	38	5	0.01	10	7	
BLG	1-Octanol	8.5	5.9	2.60	0.31	7.2	0.6	0.01	10	7	
BLG	Decane	50	17.1	32.90	0.66	52.68	0.44	0.01	10	7	[29]
BLG	Dodecane	51.00	22.30	28.70	0.56	60.62	5.28	0.01	10	7	[29]
BLG	Tetradecane	51.5	22.9	28.60	0.56	62.90		0.01	10	7	[29]
BLG	Hexadecane	51.50	27.00	24.50	0.48	64.32	6.08	0.01	10	7	[29]
BLG	Cyclohexane	50.00	20.50	29.50	0.59	62.39	4.69	0.01	10	7	[29]
BLG	Decaline	50.00	20.00	30.00	0.60	60.38	4.58	0.01	10	7	[29]
BLG	Toluene	36.30	17.05	19.25	0.53	47.32	3.04	0.01	10	7	[29]
BLG	Limonene	37.00	16.80	20.20	0.55	45.00	4.60	0.01	10	7.4	[29]
LSZ	Hexadecane	53.3	27.3	26.00	0.49	70	4	0.005	100	6.7	[53]
BSA	MCT	27	16	11.00	0.41	25		0.010	30	6.7	[54]
BLG	MCT	27	15	12.00	0.44	23		0.010	30	6.7	[54]
BLG	tetradecane	51.3	21.3	30.00	0.58	55		0.010	30	6.7	[55]
BLG	Sunflower oil	31.2	11.2	15.00	0.48	20		0.010	30	6.7	[55]
BSA	tetradecane	51.3	20.7	30.60	0.60	51		0.010	30	6.7	[55]
BSA	Sunflower oil	31.2	16.2	15.00	0.48	22.3		0.010	30	6.7	[55]
BLG	Paraffin oil	48				45		0.010	75	7	[56]
BLG	tert-butanol	1.96	1.5	0.46	0.23	2.3		0.100			[57]
BSA	tert-butanol	1.96	1.65	0.31	0.16	0.38		0.100			[57]
LSZ	tert-butanol	1.96				0.06		0.100			[57]
BLG	tetradecane	50	20	30.00	0.60	45		0.013	10	7	[58]
BLG	Sunfloweroil	29	18	11.00	0.38	30		0.018	10	6.8	[58]
BLG	Tetradecane	53	25	28.00	0.53	65		1.840	150	7	[27]
BLG	olive oil	29.5	17	12.50	0.42	30		1.840	150	7	[27]
BLG	tetradecane	52.5	23.5	29.00	0.55	60		0.094	10	7	[59]

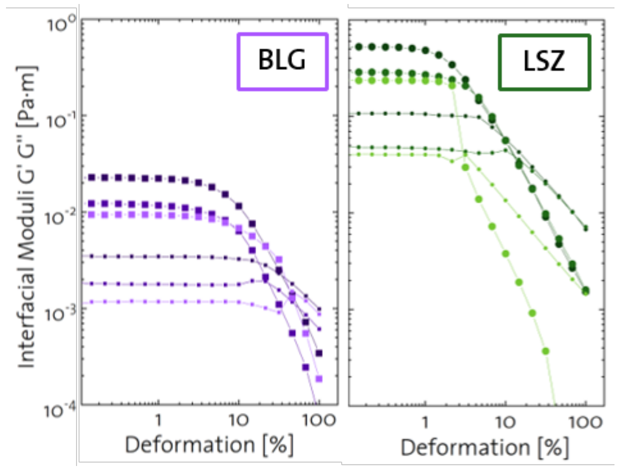

Figure S3: Amplitude sweeps of BLG (purple) and LSZ (green) after the injection of DTT. At n-octane, 1-chlorooctane and 1-octanol interfaces.

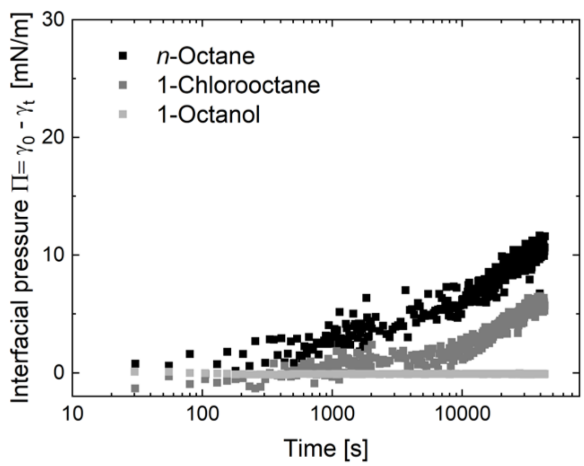

Figure S4: Adsorption behavior of DTT to n-octane, 1-chlorooctane, and 1-octanol, depicted as interfacial pressure over time. The experiment was performed with a droplet profile tensiometer.