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Supporting Information

Tailored rigidity of W/O Pickering emulsions using diacylglycerol-based surface-active solid lipid nanoparticles

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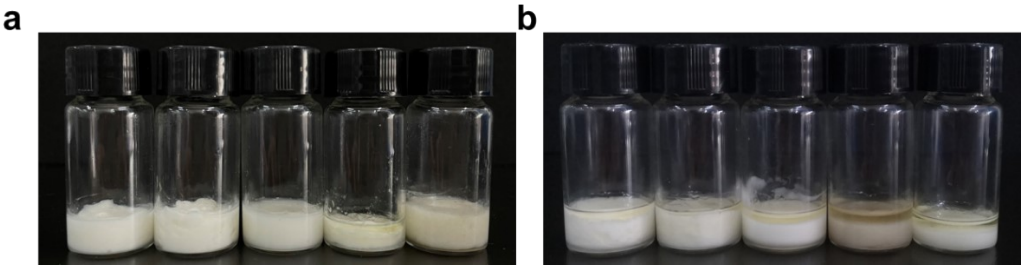

Fig S1. Visual appearances of W/O emulsions with SLN: oil mass ratio of 6: 4 (a) and 4: 6 (b) after storage at 22 °C for 4 weeks.

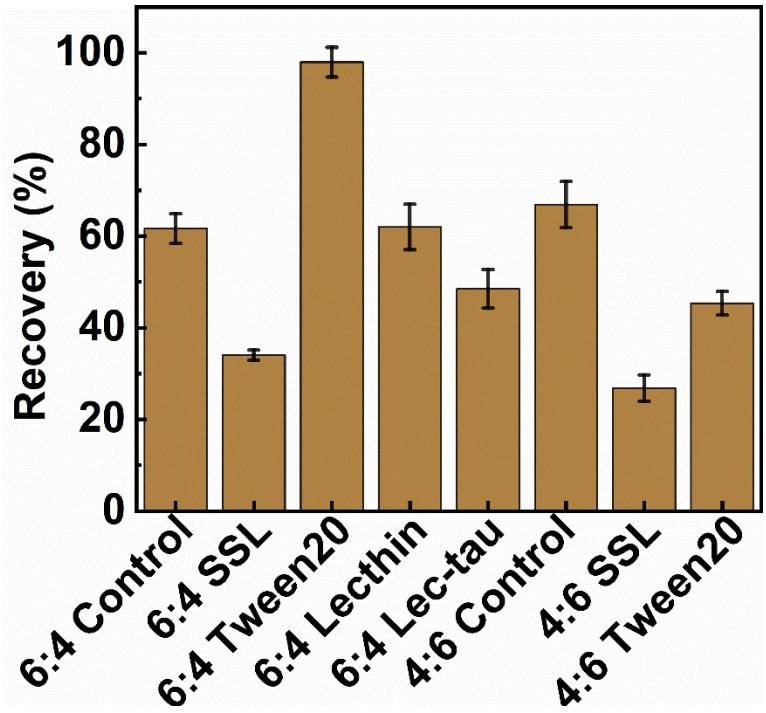

Fig S2. The recovery ratio of W/O emulsions with water: oil ratio of 6:4 and 4: 6.

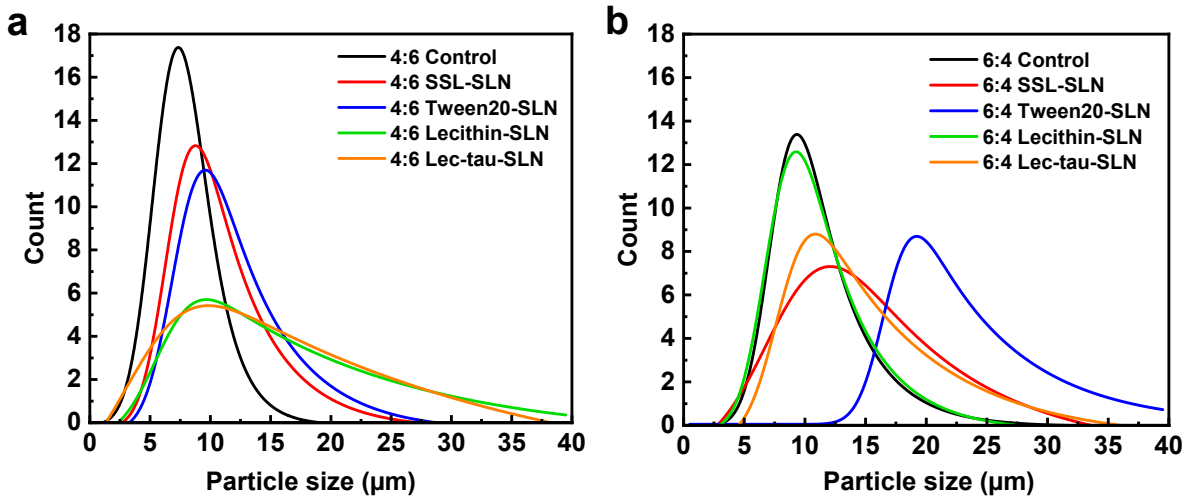

Fig S3. Droplet size distribution of emulsions with water: oil ratio of 4: 6 (a) and 6:4 (b).

Tables

Table S1. Particle size and PDI of DAG particles prepared with or without addition of surfactants.

	Samples									
	Control	0.8% SSL	1.2% SSL	0.8% Lecithin	1.2% Lecithin	2% Lecithin	2% lec-tau	0.8% Tween 20	1.2% Tween 20	2% Tween 20
Particle size (nm)	306.4 ±5.31	166.6 ±1.9	232.7 ±3.48	275.67 ±6.32	292.95 ±3.6	218.6 ±0.5	225.1 ±0.9	342.3 ±0.29	222.43 ±3.96	126.6 ±0.75
PDI	0.46 ±0.06	0.19 ±0.02	0.27 ±0.04	0.30 ±0.06	0.38 ±0.02	0.34 ±0.01	0.24 ±0.01	0.38 ±0.05	0.34 ±0.03	0.29 ±0.01

Table S2. Melting and crystallization temperatures and enthalpies of bulk fat and SLNs.

Samples	DSC heating curve		DSC cooling curve	
	Melting peak (°C)	Enthalpy (J/g)	T_{oneset} (°C)	Enthalpy (J/g)
Bulk fat	1: 51.37±0.13	1: –29.69±0.18	58.48±0.056	1: 27.34±0.06
	2: 57.04±0.10	2: –2.62±0.16		2: 9.36±0.15
	3: 68.55±0.07	3: –39.82±0.12		3: 7.73±0.01
SSL	1: 40.80±0.12	1：–4.52±0.04	45.38±0.05	1: 31.85±0.12
	2: 47.49±0.03	2：–11.04±0.06		2: 3.99±0.14
	3: 50.90±0.02	3：–0.55±0.11		
Control-SLN	1: 50.89±0.47	1：–0.12±0.05	53.65±0.07	1: 0.23±0.01
	2: 65.05±0.01	2：–1.82±0.06		2: 0.31±0.09
				3: 2.51±0.08
0.8% SSL	1: 55.73±0.38	1: –0.45±0.06	51.18 ±0. 06	1: 0.70±0.05
	2: 59.81±0.15	2: –0.42±0.03		2: 1.59±0.04
1.2% SSL	1: 55.06±0.42	1: –0.27±0.02	50.83±0.1	1: 1.62±0.22
	2: 58.72±0.03	2: –0.18±0.04		2: 1.08±0.20
0.8% lecithin	1: 52.24±0.16	1: –0.25±0.09	55.46±0.18	1: 0.94±0.01
	2: 63.73±0.21	2: –1.07±0.11		2: 0.99±0.02
				3: 0.77±0.06
1.2% lecithin	1: 51.63±0.06	1: –1.36±0.01	54.06±0.02	1: 0.8±0.13
	2: 63.38±0.03	2: –1.16±0.39		2: 0.4±0.02
				3: 0.75±0.05
2% lecithin	1: 53.07±0.14	1: –0.68±0.06	46.16±0.01	1: 0.81±0.05
	2: 63.48±0.38	2: –0.56±0.17		2: 0.6±0.07
				3: 0.49±0.08
2% lec-tau	1: 50.72±0.05	1: –1.36±0.01	41.75±0.22	1: 4.96±0.01
	2: 64.88±0.03	2: –2.06±0.01		
0.8% Tween 20	1: 52.30±0.4	1: –1.80±0.04	41.36±0.21	1: 0.28±0.05
	2: 64.07±0.04	2: –1.06±0.02		2: 2.13±0.09
1.2% Tween 20	1: 52.47±0.46	1: –2.48±0.09	37.92±0.21	1: 6.77±0.95
	2: 62.97±0.04	2: –0.94±0.05		
2% Tween 20	1: 53.47±0.74	1: –2.16±0.06	37.11±0.43	1: 7.09±1.09
	2: 62.23±0.02	2: –0.11±0.08		

Table S3. Surface-average diameter of the emulsions stabilized by SLN: oil ratios of 4:6 and 6:4.

	Control SLN	SSL-SLN	Tween 20-SLN	lecithin-SLN	lec-tau-SLN
4:6	7.89 ± 0.64	10.99 ± 1.22	11.39 ± 0.19	17.35 ± 1.02	14.48 ± 0.10
6:4	11.04 ± 0.53	13.12 ± 1.36	23.01 ± 2.23	11.72 ± 1.66	14.68 ± 0.27