



**Figure S1.** SDS-PAGE of whey protein phospholipid concentrate (WPPC) (sample 6B) and raw bovine milk: the band at 140 kDa was excised and used for confirmatory proteomics. Lane 1: precision plus protein standard; Lane 2: bovine milk (3µl); Lane 3: bovine milk (6µl); Lane 4: xanthine oxidase protein standard (10µl); Lane 5: IgG protein standard (10µl); Lane 6: precision plus protein standard (12µl); Lane 7: whey protein phospholipid concentrate (WPPC) (3µl); and Lane 8: whey protein phospholipid concentrate (WPPC) (6µl).

**Table S1.** Comparison of the volume mean diameter and size range of the fat globule population measured from all WPPC samples.

Sample description	Volume mean diameter (µm)	Size range (µm)
Sample 1A (liquid)	2.09 ± 0.10	0.265 to 22
Sample 1B (liquid)	1.75 ± 0.02	0.315 to 13.08
Sample 1 (powder)	15.85 ± 0.31	2.99 to 88
Sample 2A (powder)	29.42 ± 1.02	0.265 to 248.9
Sample 2B (powder)	30.10 ± 1.97	0.446 to 148
Sample 3 (powder)	50.96 ± 1.32	3.57 to 296
Sample 4A (powder)	20.68 ± 0.96	0.265 to 176
Sample 4B (powder)	19.05 ± 0.24	0.315 to 148
Sample 5 (powder)	66.00 ± 0.92	7.13 to 418
Sample 6A (powder)	8.14 ± 0.49	0.315 to 124.5
Sample 6B (liquid)	2.64 ± 0.01	0.375 to 13.08
Fresh raw bovine milk (liquid)	4 ± 0.04	0.63 to 15.56

**Table S3.** Fatty acid composition per lipid fraction (%) for sample 1.

<b>Lipid fraction</b>	<b>Total fatty acids</b>	<b>SM</b>	<b>PC</b>	<b>PS</b>	<b>PI</b>	<b>PE</b>
8:0	0.17 ± 0.02	ND	ND	ND	ND	0.04 ± 0.06
10:0	1.14 ± 0.11	ND	ND	ND	ND	ND
11:0	0.05 ± 0.00	ND	ND	ND	ND	ND
12:0	2.65 ± 0.14	ND	ND	ND	ND	ND
13:0	0.37 ± 0.05	ND	ND	ND	ND	1.04 ± 1.80
14:0	10.77 ± 0.63	ND	9.27 ± 1.14	ND	ND	0.81 ± 0.71
14:1	0.81 ± 0.04	ND	ND	ND	2.01 ± 3.48	ND
15:0	1.32 ± 0.07	ND	1.25 ± 1.09	ND	ND	ND
16:0	36.09 ± 2.00	18.75 ± 16.32	42.78 ± 3.83	4.37 ± 3.79	10.22 ± 1.44	13.60 ± 0.31
16:1	1.53 ± 0.09	35.86 ± 3.53	3.36 ± 1.06	10.81 ± 2.59	17.43 ± 4.23	3.72 ± 0.35
17:0	0.66 ± 0.03	ND	ND	ND	ND	ND
18:0	11.70 ± 0.63	ND	9.22 ± 0.80	40.20 ± 2.94	36.20 ± 4.46	12.80 ± 0.33
18:1cis+trans	24.79 ± 1.34	ND	24.90 ± 1.66	31.50 ± 2.45	26.65 ± 2.62	46.66 ± 1.74
18:2 n6	5.01 ± 0.27	ND	9.20 ± 0.64	13.13 ± 1.29	7.49 ± 0.86	17.15 ± 0.83
18:3 n6	0.04 ± 0.00	ND	ND	ND	ND	0.37 ± 0.64
18:3 n3	0.54 ± 0.03	ND	ND	ND	ND	0.37 ± 0.64
20:0	0.21 ± 0.02	ND	ND	ND	ND	ND
20:1 n9	0.18 ± 0.08	ND	ND	ND	ND	ND
20:2 n6	0.05 ± 0.00	ND	ND	ND	ND	ND
20:3 n6	0.40 ± 0.02	ND	ND	ND	ND	0.83 ± 0.72
20:4 n6	0.45 ± 0.02	ND	ND	ND	ND	1.70 ± 0.07
20:3 n3	0.01 ± 0.00	ND	ND	ND	ND	0.11 ± 0.20
20:5 n3	0.10 ± 0.00	ND	ND	ND	ND	ND
22:0	0.28 ± 0.03	23.93 ± 1.71	ND	ND	ND	ND
22:1 n9	0.02 ± 0.00	ND	ND	ND	ND	ND
22:2 n6	0.15 ± 0.01	ND	ND	ND	ND	ND
22:5 n6	0.04 ± 0.02	ND	ND	ND	ND	0.65 ± 1.13
22:5 n3	0.22 ± 0.01	ND	ND	ND	ND	0.15 ± 0.25
22:6n3	0.21 ± 0.03	21.47 ± 1.75	ND	ND	ND	ND
24:1	0.02 ± 0.00	ND	ND	ND	ND	ND

ND: Not detected.