

## Supplementary data

**Table 7**Phospholipid concentrations of milk lipid extracts from different animal species by  $^{31}\text{P}$  NMR spectrum.

PL classes	Concentration <sup>a</sup> ( $\mu\text{g/ml}$ )			
	Cow	Camel	Mare	Human
LPA	0 $\pm$ 0	0 $\pm$ 0	0.66 $\pm$ 0.73	0.29 $\pm$ 0.66
LPE	0.32 $\pm$ 0.90 <sup>a</sup>	0 $\pm$ 0 <sup>b</sup>	4.37 $\pm$ 2.48 <sup>c</sup>	3.68 $\pm$ 2.23 <sup>c</sup>
PA	0 $\pm$ 0 <sup>a</sup>	3.60 $\pm$ 3.64 <sup>b</sup>	2.29 $\pm$ 2.49 <sup>ab</sup>	0.89 $\pm$ 1.43 <sup>ab</sup>
CL	0 $\pm$ 0	2.25 $\pm$ 6.36	0 $\pm$ 0	0.11 $\pm$ 0.39
EPLAS	10.16 $\pm$ 8.18 <sup>a</sup>	30.15 $\pm$ 18.48 <sup>b</sup>	3.21 $\pm$ 2.56 <sup>c</sup>	29.91 $\pm$ 11.08 <sup>b</sup>
PE	65.99 $\pm$ 33.37 <sup>a</sup>	124.51 $\pm$ 41.34 <sup>b</sup>	14.80 $\pm$ 5.00 <sup>c</sup>	50.76 $\pm$ 23.56 <sup>a</sup>
SM	44.01 $\pm$ 22.42 <sup>a</sup>	112.76 $\pm$ 44.32 <sup>b</sup>	17.80 $\pm$ 3.95 <sup>c</sup>	80.47 $\pm$ 23.14 <sup>b</sup>
PS	23.35 $\pm$ 14.10 <sup>a</sup>	43.19 $\pm$ 22.30 <sup>b</sup>	6.76 $\pm$ 4.14 <sup>c</sup>	23.60 $\pm$ 9.62 <sup>a</sup>
LPC	0 $\pm$ 0 <sup>a</sup>	0 $\pm$ 0 <sup>ac</sup>	1.01 $\pm$ 0.91 <sup>b</sup>	0.76 $\pm$ 1.18 <sup>bc</sup>
PI	9.72 $\pm$ 7.25 <sup>c</sup>	20.71 $\pm$ 8.32 <sup>b</sup>	5.62 $\pm$ 1.57 <sup>c</sup>	11.58 $\pm$ 4.67 <sup>a</sup>
aaPC	0 $\pm$ 0 <sup>a</sup>	4.77 $\pm$ 3.62 <sup>ab</sup>	0.78 $\pm$ 0.43 <sup>ab</sup>	1.17 $\pm$ 2.43 <sup>b</sup>
PC	59.95 $\pm$ 29.21 <sup>a</sup>	79.78 $\pm$ 29.61 <sup>a</sup>	17.00 $\pm$ 3.44 <sup>b</sup>	64.66 $\pm$ 23.80 <sup>a</sup>
unknown	3.99 $\pm$ 0.77	0 $\pm$ 0	0 $\pm$ 0	0.36 $\pm$ 0.72
Total PL	213.50 $\pm$ 110.90 <sup>a</sup>	419.32 $\pm$ 144.58 <sup>b</sup>	73.72 $\pm$ 13.10 <sup>c</sup>	268.10 $\pm$ 87.59 <sup>a</sup>
PL% of total lipid	0.57 $\pm$ 0.32 <sup>a</sup>	1.00 $\pm$ 0.42 <sup>b</sup>	1.15 $\pm$ 0.35 <sup>b</sup>	0.55 $\pm$ 0.27 <sup>a</sup>

<sup>a</sup> Results are means  $\pm$  SD of 15 samples for cow, 8 samples for camel and mare, 22 samples for human milk; the means within each row labelled by different letters are significantly different (Mann-Whitney test,  $P < 0.05$ ).

**Table 8**

Relative proportion of phospholipid classes in the milk from different animal species.

PL classes	Relative proportion <sup>a</sup> (mol% of total PLs)			
	Cow	Camel	Mare	Human
LPA	0 ± 0	0 ± 0	1.66 ± 1.92	0.21 ± 0.46
LPE	0.25 ± 0.73 <sup>a</sup>	0 ± 0 <sup>a</sup>	9.22 ± 3.90 <sup>b</sup>	2.52 ± 1.60 <sup>c</sup>
PA	0 ± 0 <sup>a</sup>	0.80 ± 0.75 <sup>b</sup>	3.58 ± 3.86 <sup>ab</sup>	0.32 ± 0.50 <sup>ab</sup>
CL	0 ± 0	0.37 ± 1.04	0 ± 0	0.05 ± 0.15
EPLAS	4.91 ± 2.53 <sup>a</sup>	7.01 ± 1.82 <sup>a</sup>	4.19 ± 2.96 <sup>a</sup>	11.49 ± 2.04 <sup>b</sup>
PE	31.82 ± 2.88 <sup>a</sup>	30.79 ± 2.72 <sup>b</sup>	19.65 ± 5.41 <sup>c</sup>	18.83 ± 3.37 <sup>c</sup>
SM	20.02 ± 1.38 <sup>a</sup>	26.14 ± 5.81 <sup>b</sup>	22.66 ± 4.55 <sup>b</sup>	29.33 ± 2.28 <sup>c</sup>
PS	9.97 ± 2.81	10.84 ± 7.36	8.24 ± 4.44	8.42 ± 2.34
LPC	0 ± 0 <sup>a</sup>	0 ± 0 <sup>a</sup>	2.04 ± 1.64 <sup>b</sup>	0.55 ± 0.88 <sup>c</sup>
PI	3.72 ± 1.87 <sup>a</sup>	4.22 ± 0.71 <sup>a</sup>	6.18 ± 0.91 <sup>b</sup>	3.67 ± 1.10 <sup>a</sup>
aaPC	0 ± 0 <sup>a</sup>	0.45 ± 0.71 <sup>ab</sup>	0.23 ± 0.44 <sup>ab</sup>	0.39 ± 0.70 <sup>b</sup>
PC	28.68 ± 2.73 <sup>a</sup>	19.14 ± 1.31 <sup>b</sup>	22.35 ± 3.22 <sup>c</sup>	24.05 ± 3.01 <sup>c</sup>
unknown	0.63 ± 1.30	0.24 ± 0.45	0 ± 0	0.18 ± 0.55

<sup>a</sup> Results are means ± SD of 15 samples for cow, 8 samples for camel and mare, 22 samples for human milk; the means within each row labelled by different letters are significantly different (Mann-Whitney test,  $P < 0.05$ ).

**Table 9**

Lipid globules size of the milk from different animal species.

Milk species	Diameter <sup>a</sup> ( $\mu\text{m}$ )	
	$d_{(4,3)}$	$d_{(v0,5)}$
Cow	$3.36 \pm 1.39^a$	$3.02 \pm 1.25^a$
Camel	$1.57 \pm 0.42^b$	$1.16 \pm 0.69^b$
Mare	$1.51 \pm 0.37^b$	$0.44 \pm 0.16^b$

<sup>a</sup> Results are means  $\pm$  SD of 15 samples for cow, 8 samples for camel and mare; the means within each column labelled by different letters are significantly different (Mann-Whitney test,  $P < 0.05$ ).