**Table S1 Comparison of the mean/median percentage of fatty acids of mature milk in Shanghai and other areas (%)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Fatty acid | Chinese studies | | | | Foreign studies | | | | | |
| Shanghai | Coastal([21](#_ENREF_21" \o "Urwin, 2013 #69); [22](#_ENREF_22" \o "Giuffrida, 2016 #67)) | River/lake([21](#_ENREF_21" \o "Urwin, 2013 #69); [22](#_ENREF_22" \o "Giuffrida, 2016 #67); [23](#_ENREF_23" \o "Jiang, 2016 #44)) | Inland([21](#_ENREF_21" \o "Urwin, 2013 #69); [22](#_ENREF_22" \o "Giuffrida, 2016 #67); [23](#_ENREF_23" \o "Jiang, 2016 #44)) | South Korea([25](#_ENREF_25" \o "Kim, 2017 #45)) | Japan([24](#_ENREF_24" \o "Yuhas, 2006 #86)) | Spain([7](#_ENREF_7" \o "Lopez-Lopez, 2002 #78)) | Italy([27](#_ENREF_27" \o "Grote, 2016 #135)) | U.S.A([24](#_ENREF_24" \o "Yuhas, 2006 #86)) | Canada([24](#_ENREF_24" \o "Yuhas, 2006 #86)) |
| SFA | 37.18 | 33.39-36.9 | 34.5-37.6 | 34.65-37.44 | 42.1 | 41.51 | 40.66 | 39.0 | 37.41 | 38.47 |
| MUFA | 35.55 | 37.06-38.3 | 33.86-36.4 | 34.3-38.49 | 36.3 | 38.43 | 39.63 | 45.8 | 40.40 | 42.89 |
| C18:1n-9 | 32.70 | 32.02-33.4 | 28.14-31.7 | 30.13-34.71 | NR | 31.43 | 36.35 | NR | 32.77 | 35.18 |
| C24:1n-9 | 0.06 | 0.04-0.1 | 0.1-0.2 | 0.1-0.31 | NR | NR | NR | NR | NR | NR |
| PUFA | 27.27 | 22.4-26.68 | 25.11-30.04 | 26.42-29.41 | 21.5 | 17.25 | 19.71 | 15.2 | 18.08 | 14.68 |
| n-3 | 2.28 | 1.3-2.43 | 2.13-2.77 | 1.54-3.41 | 3.0 | 3.11 | 1.38 | 1.13 | 1.55 | 1.78 |
| n-6 | 24.99 | 21.1-24.25 | 22.98-28.03 | 21.41-26.6 | 18.2 | 14.14 | 18.33 | 14.1 | 16.53 | 12.90 |
| n-6/n-3 | 11.88 | 10.38-16.5 | 9.94-10.92 | 9.26-15.39 | 6.7 | 4.5 | 13.99 | 12.5 | 10.66 | 7.25 |
| C18:2n-6 | 23.15 | 19.7-22.79 | 20.43-24.29 | 18.9-25.1 | NR | 12.66 | 16.59 | 12.8 | 14.78 | 11.48 |
| C18:3n-3 | 1.45 | 1.0-1.25 | 1.3-2.0 | 0.92-1.6 | NR | 1.33 | 0.75 | 0.62 | 1.05 | 1.22 |
| C22:4n-6 | 0.14 | NR | 0.13-0.16 | 0.12-0.18 | NR | 0.08 | 0.15 | NR | 0.11 | 0.04 |
| C22:5n-3 | 0.19 | 0.29 | 0.24-0.25 | 0.16-0.24 | NR | 0.29 | 0.12 | NR | 0.14 | 0.16 |
| C20:4n-6 | 0.59 | 0.5-0.71 | 0.6-0.74 | 0.5-0.80 | 0.48 | 0.40 | 0.53 | 0.51 | 0.45 | 0.37 |
| C22:6n-3 | 0.55 | 0.3-0.55 | 0.3-0.53 | 0.2-0.44 | 0.67 | 0.99 | 0.36 | 0.25 | 0.17 | 0.17 |

SFA, saturated fatty acids; MUFA, mono-unsaturated fatty acids; PUFA, poly-unsaturated fatty acids; NR, not reported

**Table S2 Comparison of the relative percentage of each fatty acid in sn-2 position in colostrum, transitional, mature milk**

**in Shanghai and other areas (%)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Shanghai | | | Chinese multicenter([9](#_ENREF_9" \o "Jiang, 2018 #134)) | | | | Wuxi([11](#_ENREF_11" \o "Sun, 2018 #77)) | Spain([7](#_ENREF_7" \o "Lopez-Lopez, 2002 #78)) | | | Italy([8](#_ENREF_8" \o "Haddad, 2012 #70)) | | |
| colostrum | transition | mature | colostrum | transition | mature | | mature | colostrum | transition | mature | colostrum | transition | mature |
| (1-5 d)  n=70 | (11-15 d)  n=96 | (41-45 d)  n=82 | (0-3 d)  n=26 | (13-15 d)  n=34 | (1 month)  n=41 | (2 month)  n=31 | NR  (n=10) | (1-6 d)  n=12 | (7-15 d)  n=12 | (after 15 d)  n=12 | (0-5 d)  n=8 | (6-15 d)  n=8 | (after 15 d)  n=8 |
| C12:0 | 32.86 | 35.34 | 39.80 | NR | NR | NR | NR | 43.39 | 29.24 | 25.04 | 24.61 | 42.11 | 42.68 | 37.46 |
| C14:0 | 54.81 | 55.72 | 61.54 | NR | NR | NR | NR | 61.98 | 55.32 | 52.88 | 52.77 | 50.24 | 45.04 | 39.48 |
| C16:0 | 74.65 | 75.60 | 80.75 | 77.59 | 75.56 | 73.7 | 69.39 | 81.29 | 80.30 | 86.25 | 87.86 | 62.00 | 59.11 | 62.87 |
| C18:0 | 10.53 | 8.16 | 8.64 | NR | NR | NR | NR | 9.79 | 8.98 | 9.05 | 9.04 | 10.41 | 12.59 | 7.61 |
| C18:1n-9 | 13.62 | 11.70 | 12.84 | NR | NR | NR | NR | 12.87 | 14.10 | 13.03 | 12.22 | 15.80 | 11.15 | 9.83 |
| C24:1n-9 | 55.49 | 62.87 | 54.91 | NR | NR | NR | NR | 63.77 | NR | NR | NR | NR | NR | NR |
| C18:2n-6 | 20.89 | 20.03 | 20.35 | NR | NR | NR | NR | 19.13 | 23.84 | 23.54 | 22.07 | 28.28 | 15.94 | 20.84 |
| C18:3n-3 | 23.90 | 24.11 | 26.76 | NR | NR | NR | NR | 24.06 | 26.30 | 25.76 | 24.68 | NR | NR | NR |
| C20:4n-6 | 38.92 | 36.30 | 30.84 | NR | NR | NR | NR | 39.65 | 47.85 | 43.66 | 43.27 | NR | NR | NR |
| C22:4n-6 | 61.32 | 73.35 | 69.11 | NR | NR | NR | NR | 28.24 | 70.96 | 73.48 | 62.79 | NR | NR | NR |
| C22:5n-3 | 62.16 | 66.56 | 62.91 | NR | NR | NR | NR | 32.42 | 66.92 | 68.13 | 72.29 | NR | NR | NR |
| C22:6n-3 | 60.25 | 63.67 | 61.89 | NR | NR | NR | NR | 63.23 | 52.63 | 56.80 | 61.39 | NR | NR | NR |