Supplementary Material

# Breast milk cytokines and early growth in Gambian infants

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**Supplementary Tables**

**Table 1: Lowest Limit of Detection (LLOD) for cytokines measured using Meso Scale methods outlined in this study (Data from Meso Scale Discovery, 2014)**

|  |  |
| --- | --- |
|  | **Lowest Limit of Detection (pg/ml)** |
| **IL-1β** | 0.04 |
| **IL-2** | 0.09 |
| **IL-4** | 0.02 |
| **IL-6** | 0.06 |
| **IL-10** | 0.03 |
| **IL-12p70** | 0.11 |
| **IL-13** | 0.24 |
| **TNFα** | 0.04 |
| **IFNγ** | 0.2 |
| **IGF-1** | 26.8 |
| **TGF**$β$**2** | 265.0 |

**Table 2: Median of cytokine concentrations in colostrum and mature breast milk**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Cytokine** | **Colostrum** **median** **(IQR)**  | **Total samples**  | **Number of samples detectable (%)\*** | **BM** **median** **(IQR)**  | **Total samples**  | **Number of samples detectable (%)** | **p-value\*\*** | **p-value for proportion of detectable samples\*\*\*** |
| **TNFα** | 21.32(7.27-104.59) | 83 | 83 (100) | 1.04(0.55-2.49) | 90 | 86 (96) | p<0.001 | 0.122 |
| **IFNγ** | 13.4(5.87-29.93) | 83 | 82 (99) | 2.5(0.83-5.96) | 90 | 82 (91) | p<0.001 | 0.036 |
| **IL10** | 3.46(1.11-12.47) | 83 | 82 (99) | 0.05(0.02-0.23) | 90 | 57 (63) | p<0.001 | p<0.001 |
| **IL12** | 0.85(0.21-3.45) | 83 | 68 (82) | 0.12(0.06-0.28) | 90 | 48 (53) | p<0.001 | p<0.001 |
| **IL13** | 7.77(1.82-24.67) | 83 | 78 (94) | 1.53(0.59-2.94) | 90 | 74 (82) | p<0.001 | 0.02 |
| **IL1β** | 6 (2.2-19.92) | 83 | 83 (100) | 0.4(0.06-1.89) | 90 | 71 (79) | p<0.001 | p<0.001 |
| **IL2** | 0.84 (0.35-2.70) | 83 | 78 (94) | 0.11(0.04-0.48) | 90 | 52 (58) | p<0.001 | p<0.001 |
| **IL4** | 0.16 (0.05-0.57) | 83 | 72 (87) | 0.01(0.01-0.06) | 90 | 40 (44) | p<0.001 | p<0.001 |
| **IL6** | 25.91(8.43-73.08) | 83 | 83 (100) | 0.91(0.37-3.73) | 90 | 85 (94) | p<0.001 | 0.06 |
| **TGFβ2** | 5116.49(3464.15-8156.59  | 42 | 42 (100) | 7983.2(3842.67-19569.42) | 46 | 46 (100) | 0.11 | 1 |
| **IGF1**\*\*\*\* | 13.4(13.4-13.4) | 70 | 15 (21) | 13.4(13.4-13.4) | 90 | 10 (11) | 0.06 | 0.083 |

All measurements are in pg/ml (rounded to 2 decimal places)

\*Samples were termed as detectable if concentrations measured were above the lower limits of detection shown in Table 1.

\*\*Wilcoxon rank sum test comparing the mean concentration of each cytokine in colostrum and breast milk

\*\*\* Fisher’s exact two-sided test comparing proportions of detectable samples in colostrum and breast milk

\*\*\*\*Median and IQR of IGF1 concentrations in colostrum and BM samples coincide because the levels were below the assay limit of detection in >75% of subjects. Given this low detection rate, data on IGF1 has been removed from further statistical analysis.

Abbreviations: BM, breast milk; SD, standard deviation; IQR, interquartile range

**Table 3: Association between cytokine concentrations in colostrum and breast milk**

|  |  |  |
| --- | --- | --- |
| **Cytokine** | ***r\**** | ***p*-value** |
| **TNFα** | 0.07 | 0.57 |
| **IFNγ** | 0.06 | 0.61 |
| **IL10** | 0.14 | 0.21 |
| **IL12** | 0.26 | 0.02 |
| **IL13** | 0.04 | 0.73 |
| **IL1β** | 0.10 | 0.39 |
| **IL2** | -0.08 | 0.46 |
| **IL4** | 0.14 | 0.21 |
| **IL6** | 0.14 | 0.22 |
| **IGF1** | 0.21 | 0.08 |
| **TGFβ2** | 0.11 | 0.50 |

All values are rounded to 2 decimal places

\**r* = Spearman rank correlation co-efficient