

# Dadiah Supplementation During Pregnancy and Its Impact on Intestinal Microbiota and Levels of sIgA in Breast Milk and Infant Fecal

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## OBJECTIVE :

Dadiah, a fermented buffalo milk from Minangkabau culture, has shown positive effects on the gut health of both mothers and children. This study examined the effects of dadiah supplementation on pregnant mothers, focusing on the proportion of gut microbiota and the levels of secretory immunoglobulin A (sIgA) in breast milk and infant fecal samples.

## METHODOLOGY :

In a randomized controlled trial (NCT05140928), 31 healthy mother-infant pairs participated. Pregnant women aged 20-35 were randomly assigned to either the dadiah or control group. The dadiah group consumed 100g/day of dadiah pudding, while the control group received dadiah-free pudding. Both groups followed their assigned intervention six days a week, from 10-20 weeks of gestation until delivery. Breast milk and infant fecal samples were collected during the first week after birth and in the third month. QPCR analysis was performed to determine the relative proportion of *Bifidobacterium* and *Enterobacteria*, and ELISA was used to measure sIgA levels.

## RESULTS :

Over the three-month period, the dadiah group showed a higher trend in *Bifidobacteria* proportion in breast milk, and a decreasing trend in *Enterobacteria* proportion both in breast milk and infant fecal samples. Additionally, the dadiah group demonstrated higher levels of sIgA in breast milk throughout the first three months and in fecal samples during the first week.

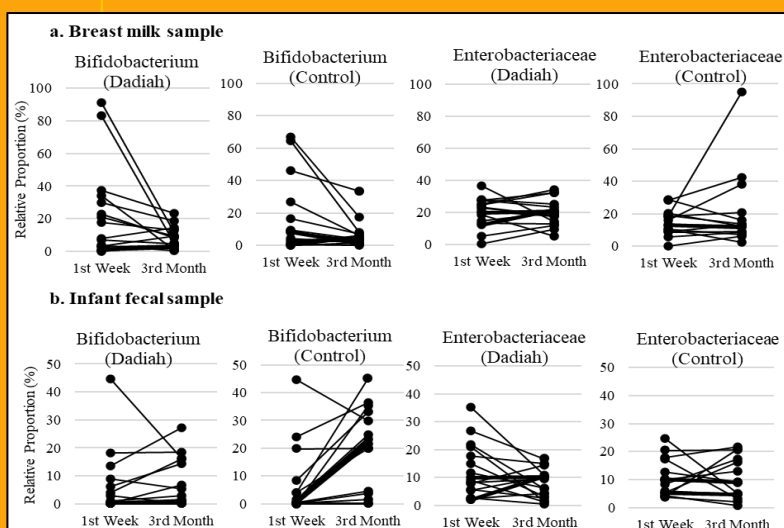


Figure 1. The trend of the relative proportion of PCR products (a) breast milk (b) infant fecal

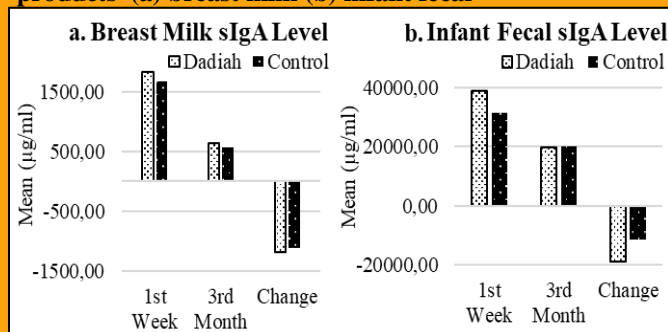


Figure 2. The mean values of secretory IgA (sIgA) levels in breast milk (a) and infant fecal samples (b)

## CONCLUSION :

The results indicate that giving dadiah to pregnant women could influence the composition of gut microbiota and boost sIgA production.

## REFERENCES :

- Chen Y, Li Z, Tye KD, Luo H, Tang X, Liao Y, et al. Probiotic Supplementation During Human Pregnancy Affects the Gut Microbiota and Immune Status. *Front Cell Infect Microbiol* [Internet]. 2019 Jul 16;9:254
- Le Roy CI, Kurilshikov A, Leeming ER, Visconti A, Bowyer RCE, Menni C, et al. Yogurt consumption is associated with changes in the composition of the human gut microbiome and metabolome. *BMC Microbiol* [Internet]. 2022 Dec 3 [cited 2022 Oct 11];22(1):39
- Taufiq Z, Chandra DN, Helmizar H, Lipoeto NI, Hegar B. Micronutrient Content and Total Lactic Acid Bacteria of 'dadiah' Pudding as Food Supplementation for Pregnant Women. *Open Access Maced J Med Sci* [Internet]. 2021 Oct 14;9(B):1149-55