

## Treating infant diarrhea using lactobacillus fermentum strain to induce defensins in enterocytes in resource poor settings

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Nearly 1 million children under-five die in the developing countries due diarrhea and enteric diseases which also contribute to stunted growth, malnutrition and to impaired cognitive development. Defensin inducing *Lactobacillus fermentum* strain could be used in pregnant women and infants after birth to reduce hormonal stress levels in infants which normally decrease growth and may in essence increase their diarrheal infection susceptibility. Probiotics have not been applied in perinatal and postnatal care to reduce diarrhea. Yet, probiotics are natural, cheap, and cost-effective method to induce innate immunity and improve intestinal barrier and therefore may be used to address severe diarrhea in infants especially when given to mothers during pregnancy. This application could modulate the environment into which the child is born and enhance prenatal and postnatal immunity. Indeed, the feasibility of modulation of host endocrine system and immunity during pregnancy and its outcomes on infant immunity and constitution have been demonstrated several studies. Probiotics help maintain a healthy gut microbiota and/or by competitively inhibiting the growth of pathogens, reestablishing the disrupted intestinal microflora, enhancing immune responses, and clearing pathogens and their toxins from the host. Evidence from clinical studies and meta-analyses show beneficial effects especially on Antibiotic-Associated Diarrhea (AAD) and *Clostridium Difficile*-Associated Diarrhea (CDAD). Defensins have been demonstrated to lower diarrheal episodes in humans. A good example is a negative correlation between HIV RNA concentration and defensins in mothers in children. Indeed, using probiotics to induce defensin production may be a new therapeutic way that may be low-cost and low risk intervention in preventing diarrhea of young children especially in developing countries that are resource poor.

### Biography

Beatrice completed her PhD at the age of 37 years from Chrian Albrechts Universitaat Zu Kiel, Germany. She is a senior lecturer, researcher and consultant in nutrition sciences at Jomo Kenyatta University of Agriculture and Technology (JKUAT). She serves as board member in the Ethics committee at JKUAT. She has published more than 25 papers in reputed peer review journals and serves as an examiner and faculty member of the Kenya Nutritionists and Dieticians Institute (KNDI).