Scholtens *et al*., Fecal Secretory Immunoglobulin A Is Increased in Healthy Infants Who Receive a Formula with Short-Chain Galacto-Oligosaccharides and Long-Chain Fructo-Oligosaccharides. J. Nutr. 2008; 138: 1141–1147.

Abstract

In this double-blind, randomized, placebo-controlled study, we investigated the effect of an infant milk formula with 6 g/L short-chain galacto- and long-chain fructo-oligosaccharides [(scGOS/lcFOS) ratio 9:1] on the development of the fecal secretory immunoglobulin A (sIgA) response and on the composition of the intestinal microbiota in 215 healthy infants during the first 26 wk of life. The infants received breast milk or were randomized to receive an infant milk formula with or without scGOS/lcFOS. Stool samples were collected after 8 and 26 wk of intervention. The concentration of fecal sIgA was determined by ELISA, and the composition of the intestinal microbiota was determined by quantitative fluorescent in situ hybridization. The scGOS/lcFOS group and the control group were compared in the statistical analysis. A breast fed group was included as a reference. In total, 187 infants completed the study. After 26 wk of intervention, in infants that were exclusively formula fed, the concentration of sIgA was higher ($P < 0.001$) in the scGOS/lcFOS group (719 μg/g) than in the control group (263 μg/g). In addition, the percentages of bifidobacteria were higher in the scGOS/lcFOS group (60.4%) than in the control group (52.6%, $P = 0.04$). The percentages of Clostridium spp. were 0.0 and 3.27%, respectively ($P = 0.006$). In conclusion, an infant milk formula with 6 g/L scGOS/lcFOS results in higher concentrations of fecal sIgA, suggesting a positive effect on mucosal immunity.