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**Lipid hydrolysis products affect the composition of microbiota isolated from infant fecal samples after *in vitro* fermentation.**

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Some lipid hydrolysis products such as medium-chained free fatty acids (FFA) and monoacylglycerols (MAG) have antibacterial activity, while others, including oleic acid, have been reported to be essential for optimal growth of *Lactobacillus* species. Thus, the FFA and MAG concentration in the distal ileum and in colon can be expected to selectively modulate the growth rate and hereby the composition of the microbiota. In earlier studies, we have shown that this concentration is dependent on the type of emulsification of the triglycerides, which deviates between breast milk and formula milk.

Here, we have determined effects of selected combinations of FFA and MAG on microbial composition during a 24-hour anaerobic *in vitro* fermentation in microbiota obtained from infant fecal samples (age 2-5 months). PCR-based quantification of 11 different bacterial taxa revealed that the growth of *Firmicutes*, *Lactobacillus* and *B.longum* is significantly increased in the presence of a mixture of C10-C14 FFAs.