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Goat and cow milk powder-based diets with or without prebiotics influence gut microbial populations and fermentation products in newly weaned rats

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Abstract

The influence of goat and cow milk powders individually and in combination with prebiotics (inulin and oligofructose) on gut microbial populations, organic acid concentrations and gut morphology were studied in newly weaned rats fed for 21 days. The abundance of bacterial populations such as the *Bacteroides-Prevotella-Porphyromonas* group, *Bifidobacterium* spp. and *Lactobacillus* spp. in the gastrointestinal tract (ileum, caecum or colon) of rats were influenced by goat and cow milk powder-based diets. *Clostridium perfringens* was decreased significantly ($P < 0.05$) along the intestine in rats fed goat or cow milk diets. The inclusion of prebiotics into the diets significantly increased ($P < 0.05$) the abundance of bifidobacteria in the large intestine (caecum and colon). The majority of the increases in short-chain fatty acid

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