

MAXACID MCM

Besides classic organic acids such as formic acid, propionic acid and lactic acid, monoglycerides (MCMs) are gaining increasing importance in animal nutrition. Monoglycerides are created when a free medium-chain fatty acid (MCFA) is bound to glycerin via esterification. MAXACID MCM uses a compound of the esterified medium-chain fatty acids caprylic acid (C8), capric acid (C10) and lauric acid (C12). They have a broad spectrum of action and have shown to help regulate and inhibit gram-positive and gram-negative bacteria in the digestive tract of animals. This inhibiting effect is especially distinctive for streptococci (Fig. 1). MCMs are taste- and odour-neutral, which improves the acceptance of the animals. They are emulsifiable thanks to their polarity, and very effective even in a pH-neutral medium and when used in small amounts.

Figure 1: Comparison of minimum inhibitory concentrations (MICs) of free capric and lauric acid and their monoglycerides (based on Kabara et al., 1972)

		Pneumococci	Streptococci	Staphylococci
Medium-chain fatty acids (MCFAs)				
Capric acid	µmol/ml	1.45	2.90	2.90
Lauric acid	µmol/ml	0.06	0.25	2.49
Monoglycerides (MCMs)				
1-monocaprin	µmol/ml	0.10	0.20	1.00
1-lauric acid	µmol/ml	0.09	0.09	0.09

Mode of action: monoglycerides

The good absorption of the MCMs enables bound fatty acids to easily penetrate the bacterial cell. At the same time they make the cell wall more permeable and change its structure. Enzymes then break the bond between glycerin and the fatty acid within the cell. This leads to a fall in the pH level and the germ-inhibiting effect starts. The released fatty acid now destroys the metabolic balance and DNA of the cell. It becomes almost impossible for pathogenic bacteria to reproduce, as MCMs inhibit many mechanisms that are relevant for reproduction. In this way, MCMs attack the protective coating (cell membrane) of the bacteria and at the same time interfere with metabolic processes and the cell defence system inside the cell. This suppression of harmful bacteria promotes the development of beneficial bacteria in the intestinal flora. Thus, a combination of MCMs with a probiotic out of the MAXLAC product line is highly recommended. They have an additional regulatory and stabilising effect on the digestive tract.

Besides our standardized MAXACID MCM product, we also offer individual compounds of esterified fatty acids. They can be combined with regard to needs and targeted application. Please contact us in order to develop a tailor-made solution for your requirements.

Contact:

Provita Supplements GmbH

E-Mail: info@provita-supplements.de

Tel.: +49 4101 218 6200

Please visit our website for more information: www.provita-supplements.com