



Abstract

Production of Antibacterial Compounds from Fermented Dairy Products Using Kefir Grain Microflora [†]

Agata Biadała ^{1,*} , Tomasz Szablewski ¹ , Renata Cegielska-Radziejewska ¹, Małgorzata Lasik-Kurdyś ² and Noranizan Mohd Adzahan ³

¹ Department of Food Quality and Safety Management, Faculty of Food Science and Nutrition, Poznan University of Life Sciences, 60-637 Poznan, Poland

² Department of Food Technology of Plant Origin, Faculty of Food Science and Nutrition, Poznan University of Life Sciences, 60-637 Poznan, Poland

³ Department of Food Technology, Faculty of Food Science and Technology, University Putra Malaysia, Serdang 43400, Malaysia

* Correspondence: agata.biadala@up.poznan.pl

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Abstract: The aim of the study was to evaluate the antibacterial properties of active compounds released during the fermentation of goat's milk and whey from goat's milk by selected bacterial strains from kefir grain microflora (*Lactiplantibacillus plantarum*, *Limosilactobacillus fermentum*, *Lactocaseibacillus rhamnosus*, *Lactobacillus acidophilus*). Two milk sources were used, i.e., goat's milk and whey from goat's milk from an organic farm in Poland. Antibacterial activity was examined through the evaluation of the reduction in indicator microorganisms (*E. coli*, *Salmonella*, *Micorococcus luteus* and *Proteus mirabilis*), checking by: plating on the selective medium (VRBG medium, nutrient agar), impedance changes measured by a BacTrac 4100 Automatic Microorganism Growth Analyzer, and optical density changes analysed by Bioscreen C. Based on the experiments, it was found that during the fermentation of whey and goat's milk, bioactive substances are released which inhibit the growth of indicator microorganisms by up to six logarithmic cycles. The impedance and optical density changes observed correlated with a decrease in the number of cells of indicator microorganisms, which confirms the antibacterial properties of milk and whey fermented by selected strains from kefir grain microflora.

Keywords: goat milk; whey protein; antimicrobial activity; kefir fermentation



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