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Metabolic Products and Biological Roles of Lactic Acid Bacteria in Fermented Products of Dairy: A Review

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Abstract:

Fermented products of dairy are widely popular worldwide and play various roles, including extending the shelf life of milk and providing health benefits to manufactured products. Fermented products of dairy provide essential nutrients in the human diet, along with compounds typically found in milk or added as precursors, including lactic acid bacteria (LAB), produced, too. Peptides, organic acids, vitamins, and active compounds are among the biologically active compounds that LAB are capable of producing. Due to their metabolic activity, LAB secrete specialized enzymes such as proteases, lipases, and lactases, which break down the main components of milk, including proteins, fats, and carbohydrates. These enzymes also produce active peptides such as angiotensin I-converting enzyme (ACE) inhibitory peptides and bacteriocins, along with biologically active external polysaccharides, making them functional foods with health-promoting effects. In recent years, there has been significant progress in understanding how LAB are medically important. The consumption of fermented products of dairy has been associated with several health-promoting effects, such as lowering cholesterol, and hypertension, as well as antioxidant activity, antimicrobial activity, and immune benefits, including protection against cancer, lactose intolerance, milk allergy, and hypoglycemya. The sensory approval of dairy products is also enhanced by the addition of LAB, that increase the acidity of the product and impart a desirable flavor, aroma, and texture.

Keywords: Angiotensin I-converting enzyme, Enzymes, Exopolysaccharides, GABA, Lactose intolerance.

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