Developed starter for Bulgarian white brined cheese leads to increased content of bioactive peptides

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Milk proteins are precursors of many biologically active peptides. These peptides are inactive within the sequence of the precursor proteins but can be released by enzymatic proteolysis during milk fermentation. Some lactic acid bacteria strains, developed in milk media, are capable to release bioactive peptides. In the present study, after evaluation of large number of strains, we selected two strains \textit{L. casei} and \textit{L. bulgaricus} with strong proteolytic activity including large spectra of various peptidase activities. The two strains are capable in release of Angiotensin Converting Enzyme (ACE) inhibitory peptides. A starter for Bulgarian white brined cheese, containing these strains, was constructed. The total ACE-inhibitory activity during ripening of cheese produced with the developed starter was determined in parallel with cheese produced with traditional long time used starter. The ACE-inhibitory effect was expressed as the peptide concentration needed to inhibit 50\% of ACE activity ($IC_{50}$). The developed starter led to considerable increase of the content of ACE-inhibitory peptides. Additionally, the total anti-oxidant activity of purified low-molecular weight peptides released by the developed starter was stronger than the one of the traditional cheese.

Biography

Dimitrov Zh has completed his PhD on 2007 at Bulgarian Academy of sciences, Institute of Molecular biology. He became an Associate Professor at University of Food Technology – Plovdiv, Bulgaria. He is a head of laboratory of Molecular biology at LB-Bulgaricum Plc. He has published more than 50 papers in area of molecular taxonomy and beneficial effects of lactic acid bacteria.

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