

Optimization of nisin production in *Lactococcus lactis*

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Lactic Acid Bacteria (LAB) have been used for centuries in the fermentation of food, not only for flavor and texture, but also due to their ability of to prevent the growth of pathogenic microorganisms. Over the last three decades, bacteriocins produced by LAB have been the subject of considerable research and industrial interest due to their potential as food biopreservatives. Bacteriocin production has been well documented for most of the LAB and has been reviewed by various researchers. Many bacteriocins produced by LAB are active not only against other LAB, but also against food borne pathogens. This makes them attractive for use as natural food preservatives. Nisin, as approved by FDA, has thus far been the only bacteriocin that find widespread application in the food industry. It is well known that nisin production at fermentation systems is influenced by many factors such as type and the level of carbon, nitrogen and phosphate sources, pH and temperature. Moreover, nisin production is also affected and limited by the challenging characteristics such as produced metabolites, adsorption of nisin onto the producer cells and enzymatic degradation by proteases. On the other hand, nisin production abilities of the producer strains can also differ. The development of applications for nisin in the food and pharmaceutical industries is limited by low production during fermentation, which eventually results in high product cost. It is therefore essential to develop new production processes that yield high volumetric nisin productivity.

Biography

Mustafa Akcelik has completed his Ph.D at the age of 28 years from Ankara University and postdoctoral studies from University of California at Davis. Dr. AKÇELİK has more than 20 years experience in Genetics and Biochemistry of Bacteria, especially lactic acid bacteria and Salmonella. He is the director of Biotechnology Institute, Ankara University. Since 2010, he has been responsible for the organization of Molecular Genetic training courses based on the use of omic Technologies. He has published more than 100 papers in reputed journals and serving as an editorial board member of repute.

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