

# Research Trends in Probiotic Technology

**Dr. Harshada Joshi**

Associate Professor, Department of Biotechnology, Mohanlal Sukhadia  
University, Udaipur, Rajasthan, India

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**Author:** Dr. Harshada Joshi

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### **Affiliation of Contributors:**

**Molecular Microbiology Laboratory, Department of Biotechnology, Mohanlal Sukhadia University, Udaipur, Rajasthan, India**

# Chapter - 9

## Factors Affecting Bacteriocin Production by Lactobacilli

Harshada Joshi

One of the important steps in the study of bacteriocins is the production of bacteriocin. Most of the researchers have observed that bacteriocin production is correlated with the quantity of biomass produced. Therefore, optimizing the cultural as well as environmental factors supporting the maximum biomass will result into higher bacteriocin production. Maximal bacteriocin production could be achieved by choosing the most well adapted culture medium or by supplementing a given culture medium with growth limiting factors, such as sugars, vitamins and nitrogen sources (Hurst, 1981) or by regulating culture at given pH (Geis *et al.*, 1983; Yang and Ray, 1994). In contrast, ten-Brink *et al.* (1994) demonstrated that growth was not necessary for acidocin B production as washed producer cells, when growth in chemically defined medium, could synthesize the bacteriocin. Similarly, Bogovic-Matijasic and Rogelj (1998) reported that bacteriocin production was not correlated with cell growth rate or with biomass.

Arokiyarny and Sivakumar (2011) studied the bacteriocin producing *Lactobacillus* sp., from traditional milk products, the metabolite bacteriocin was extracted from the isolated *Lactobacillus* LBC and the antibacterial activity was evaluated against bacterial pathogens. The bacteriocin producing *Lactobacillus* LBC exhibited the highest zone of inhibition against *Staphylococcus aureus*. This study revealed the possibility of using bacteriocin as food biopreservative to control food spoilage and pathogenic bacteria. Camel milk is more similar to human milk than any other milk and differs from other ruminant milk because it contains low cholesterol, low sugar, high minerals (sodium, potassium, iron, copper, zinc and magnesium), high vitamin C, protective proteins like as lactoferrin, lactoperoxidase, immunoglobulins, lysozyme (Yadav *et al.*, 2015). Nam and Ahn (2016) isolated and studied the antibacterial activity of *Lactobacillus curvatus*. The antimicrobial substance produced by *Lactobacillus curvatus* lost completely its antimicrobial activity by proteolytic and amylolytic hydrolysis. SDS-PAGE analysis revealed an apparent antimicrobial substance. Darsanaki *et al.* (2012) studied the *Lactobacillus* isolated from fresh vegetables; agar well