

**ABSTRACTS**  
**\* Author Presenting Paper**

**38** **Bacteriocins from *Lactobacillus* as future food preservatives.** M.L. Chikindas\*, J. Cleveland, and T.J. Montville, *Rutgers, The State University of New Jersey, New Brunswick.*

*Lactobacillus* is a lactic acid bacteria (LAB) which has for centuries been associated with foods, either as spoilage or fermenting/processing organisms. Bacteria produce small peptides, called bacteriocins, which mainly kill closely related organisms and help the host survive and establish an ecological niche. As few as 0.8% (ter Brink et al 1994) and up to 5% (Larsen et al 1993) of natural isolates of *Lactobacillus* produce bacteriocins. Bacteriocin-producing *Lactobacillus* are naturally present in many foods, including salad (Franz et al 1998), cheese (Ennahar et al 1996), dry and fermented sausages (Enan et al 1996, Palacios et al 1999), etc. Most bacteriocins kill sensitive cells due to the dissipation of the proton motive force, ATP depletion and leakage of small ions and molecules from the cell (Montville and Bruno 1994). Although bacteriocins are highly active antimicrobial molecules, they are not antibiotics. Based on their structure, bacteriocins are divided into four major groups (Klaenhammer 1988). Most of the characterized bacteriocins from *Lactobacillus* belong to class I or II. Bacteriocins from *Lactobacillus* inhibit foodborne pathogens in model food systems (DeMartinis and Franco 1998) or when the bacteriocin-producer is used as a competitive organism (Nilsson et al 1999) in food challenged with *Listeria*. Currently, nisin is the only LAB bacteriocin that is commercially used as a food preservative for decades in over than 50 countries. However, many bacteriocins from *Lactobacillus* are active against foodborne pathogens and food spoilage microorganisms, and stable over a wide range of environmental conditions. Therefore, in the future these molecules should be considered as food preservatives, especially when used as a part of hurdle technology.

**Key Words:** Bacteriocin, Food preservation, *Lactobacillus*