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## **Characterization of Bacteriocin-Like Substances Produced by Two Local *Lactobacillus paracasei* subsp. *paracasei* Strains**

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### **Abstract**

The increasing consumer awareness of the risks derived not only from food borne pathogens, but also from the artificial chemical preservatives used to control them, has led to an increased interest in food -grade preservatives of biological origin. In this respect, special interest has been focused on the antimicrobial bacteriocins and the lactic acid bacteria producing them which are considered safe biopreservatives. In the present study, sixty nine lactobacillus strains isolated from retail samples of local foods and dairy products were screened for bacteriocin production

Of the 47 *Lactobacillus* isolates found to be bacteriocin-like substances producers, five best strains which showed the strongest antibacterial activity against *E.coli*; *Listeria monocytogenes*; *Bacillus cereus*; *Salmonella enteritides*; and *Staphylococcus aureus*, were selected and identified, among these isolates, two were found belong to *Lb. paracasei* subsp. *paracasei*. The bacteriocin-like substances (BLS) produced by these strains were tested for characteristics that could determine their usefulness as food biopreservatives. The two BLS retained most of their bacterial activity even after autoclaving and after extended refrigerated and freezing storage, as well as after exposure to organic solvents or surfactants, and they remained functional over a wide pH rang of 3.0 to 12.0 and tolerated up to 20.0% sodium chloride. In addition they exhibited broad antimicrobial spectra against not only G<sup>+</sup> bacteria but also against G<sup>-</sup> bacteria and yeasts. These results suggest that BLS produced by two local *Lactobacillus* strains has an application potential as food biopreservatives, and may be used as alternatives or complimentary for antibiotics.