

**Title: Bacteriocinogenic lactic acid bacteria isolated from goat milk: characterization of the active cell free supernatants**

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**Abstract:**

Lactic acid bacteria (LAB) are naturally found in raw goat milk and the selection of new strains of LAB for biotechnological purposes and further exploitation of their potentialities has been related to their ability to compete with other microorganisms. To survive in goat milk, LAB can produce several compounds with activity against *spoilage microorganisms and food-borne pathogens*, including antimicrobial peptides named bacteriocins. *Listeria monocytogenes* has great importance to the food industry due to the occurrence of listeriosis after the intake of foods contaminated with cells of this bacterium and listeriosis is recognized as a serious public health hazard with high mortality rates in susceptible individuals. This study aimed at the isolation and identification of lactic acid bacteria (LAB) with bacteriocinogenic potential from raw goat's milk, the characterization of the cell-free supernatants (CFS) regarding: the antimicrobial activity; the spectrum of action; thermal stability and at different pHs; resistance to chemicals and NaCl concentrations; the mode of action of the bacteriocins produced; the adsorption capacity to the target cells in different temperatures, pH and concentrations of chemicals and NaCl; perform the molecular identification of the LAB. Three isolated strains (LS1, LS2 and LS3) produced CFS with inhibitory substances of proteinaceous nature active against *L. monocytogenes*, identified by 16S rDNA as *Weissella cibaria* (LS1) and *Lactococcus lactis* (LS2 and LS3). Particularly the CFS of *Lactococcus lactis* (LS2) showed the highest anti-*Listeria* activity (1600 AU/mL) after 2 h at pH 6.0 and was bacteriostatic. CFS of LS2, active bacteriocin at low pH and 4 °C to 80 °C, can be an alternative for the control of *Listeria* in fermented dairy products and has potential for application as a source of antimicrobial peptides and biopreservative culture against *L. monocytogenes* in other foods.

**Key-words:** Antimicrobial peptide, Biopreservative, Goat milk, Lactic acid bacteria, *Listeria monocytogenes*

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