proceedings

MDPI

Type of the Paper: Abstract

Inhibitory activity of three lactic acid bacteria strains: bacteriocin production.

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Abstract: Background: The bacteriocins from lactic acid bacteria (LAB) are candidates for the application like bio preservative of food and like alternative of antibiotics and their antimicrobial activities against pathogenic and spoilage bacteria are one of the properties researched.

In the present study, we explore three LAB strains: *Enterococcus* sp CM9, *Enterococcus* sp CM18 and *Enterococcus* sp H3, that produce bacteriocins named respectively, enterocins CM9, enterocins CM18 and enterocins H3.

Method: For the antimicrobial test, fifteen of different pathogenic bacteria were tested by the spot agar test and the well diffusion assay. For the characterization of enterocins, the effect of pH, heat and chemicals agents on the activity of enterocins were realized by the well diffusion assay.

Results: The LAB used in our work, showed an inhibitory activity against all pathogenic bacteria tested but the supernatant of LAB exhibited an inhibitory activity against *L. monocytogenes*, *E. coli* and *S.* Typhimirium. The enterocins produced by the three LAB appeared stable to adjustment of an acidic or basic pH and were resistant to heat until 121°C for 15 min, therefore demonstrating their thermostability. Excepting the Triton X100, they remained stable after treatment with Tween 20, Tween 80, NaCl, SDS, urea and EDTA.

Conclusion: The results indicate that the enterocins CM9 and CM18 belong to class IIa bacteriocin and several experiments will be needful for their application.

Keywords: Lactic acid bacteria; Stability; Bacteriocins; Characterization