

## **Título: MEASUREMENT AND STABILITY OF BACTERIOCIN PRODUCED BY LACTIC ACID BACTERIA ISOLATED FROM SLICED CHEESE**

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### **Resumo:**

Lactic acid bacteria (LAB) are commonly present in foods like dairy products. Some isolates of LAB are able to produce antimicrobial compounds of protein origin, named bacteriocins. This study aimed evaluate the antilisterial activity of the antimicrobial substance produced by one isolate of LAB 254 from sliced cheese and the stability in different conditions like as pH, temperatures, and chemical agents. The cell-free supernatant (CFS) was obtained and antimicrobial activity expressed in arbitrary units per mL (AU/mL) using *L. monocytogenes* ATCC 7644 as indicator microorganism. The stability of the antimicrobial substance by the addition of enzymes to 1mg/mL (catalase, proteinase K, trypsin, pepsin, and chymotrypsin with incubation at 37° C for 1h), under different conditions of pH (2, 4, 6, 8, 10, and 12, with incubation at 37° C for 1h), temperatures (-18 and 7° C for 6 months, 37 and 42° C for 30min, 100° C for 1h, and 121° C for 15min), and chemical agents (Tween 20, Tween 80, Triton X-100, Triton X-114, SDS, urea and NaCl with incubation at 37° C for 30min) was evaluated by agar diffusion method. The CFS showed antimicrobial activity against *L. monocytogenes* of 3.200 AU/mL. Other researchers demonstrate higher values of antimicrobial activity against the same pathogen evaluated. The antimicrobial substance presents in the CFS was sensible to proteolytic enzymes evaluated indicating to be bacteriocin. Different patterns of enzymatic sensibility can predict the class of bacteriocin belongs. The antimicrobial activity was preserved in different levels of pH and temperature evaluated, except to temperature of 121° C, condition commonly used in the autoclaving process, and to SDS compound. The stability to different pH, temperatures and chemical agents have distinct results according with the isolate and the bacteriocin produced in other studies. In conclusion, the bacteriocin produced by LAB 254 isolate has antilisterial activity and stability to freeze, refrigeration and heat temperatures, the wide pH range, especially at acidic pH, and to chemical agents exhibiting promising potential of antimicrobial substance or even to be used as bio-preservative for fermented food productions.

**Palavras-chaves:** bacteriocin, antilisterial activity, bacteriocinogenic potential

**Agência Fomento:** Capes