

## Detection of the antilisterial activity of enterocin produced by lactic acid bacteria

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**Abstract:** *Listeria monocytogenes* is an important foodborne pathogen, has emerged with a mortality rate of up to 30% of cases. In view of this scenario, new alternatives are being developed to control these microorganisms. In this study evaluated the antilisterial action of enterocins produced by *Enterococcus durans* MF5 (ent-MF5) in *L. monocytogenes* CLIST 2042 3b, as well as the genotyping of the enterocin-producing bacteria. Therefore, the action of ent-MF5 was determined using the broth microdilution technique, in order to evaluate the inhibitory and bactericidal activity at different incubation times (2, 4, 6, 12, 16, 18 and 20 hours). The DNA extracted from *E. durans* MF5 was amplified by PCR with specific primers for the evaluated genes (*entA*, *entB*, *entP* and *entX*). Accordingly, there were positive results for all genes tested and the deduced sequences were analyzed by BLAST, indicating high homology with the respective sequences to bacteriocins from *E. faecium* (99% identity). Ent-MF5 significantly reduced the growth rate of *L. monocytogenes* at all evaluated times ( $p < 0.05$ ), from a concentration of 0.03 µg/mL and bactericidal action from 0.02 µg/mL, corresponding to 10% ± 3.2% inhibition. The highest inhibitory activity was observed at concentrations of 4.47 and 2.24 µg/mL, corresponding to 100% inhibition. Interestingly, in the first hours of incubation, after 4 hours, it was possible to identify a progressive reduction in growth, from 28% ± 0.0013% of inhibition and reduction of cultivable cells of *L. monocytogenes*, with 99% ± 2.27% inhibition. Therefore, the data demonstrated that ent-MF5 can be considered as a promising antimicrobial compound for the control of *L. monocytogenes*, important for the clinical context and for the food industrial. Still, even at low concentrations, the compound acted significantly on the growth of *L. monocytogenes*.

**Keywords:** Bacteriocin; antimicrobial; *Listeria* sp.