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PRODUCTION OF ANTILISTERIAL BACTERIOCIN BY *PEDIOCOCCUS ACIDILACTICI* HA6111-2 UNDER DIFFERENT STRESS CONDITIONS

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Nowadays, the application of lactic acid bacteria (LAB) and their bacteriocins are widely used in food industry. Bacteriocin producer LAB cultures are commonly used as biopreservatives in fermented food products; thus the food industry is interested in stable cultures with stable bacteriocin activity. *Pediorococcus acidilactici* are usually isolated from different fermented meat products. The aim of our study was to investigate how the *P. acidilactici* HA6111-2 (isolated from alheira) produce bacteriocins under different stress conditions: pH, NaCl and temperature. The modified MRS broth was inoculated with the LAB strain and incubated at 30 °C (except for the stress conditions of temperature). Changes in pH and optical density were recorded every hour, for 48 h. Bacteriocin activity in the cell-free supernatant was recorded every 3 h for 48 h. *Listeria monocytogenes* serogroup IIb (from cheese), *L. monocytogenes* serogroup IVb (from cheese), *L. monocytogenes* serogroup IIb (from hamburger) and *L. innocua* NCTC 11288 were used as target strains. *Pediorococcus acidilactici* HA6111-2 could not grow well at low pH and at 10 °C environment, but it was able to produce low amount of bacteriocin. In case of pH 8.5 the alkaline adaption was clearly observed and it took ~ 28 hours. After adaption, the pH rapidly dropped and the stationary phase with highest bacteriocin production started. At 7.5% NaCl, viable cell number of *P. acidilactici* HA6111-2 slightly increased, the pH poorly decreased and the highest bacteriocin activity was achieved after 30-33 hours. At 50 °C, the cells were damaged; after 24 hours we could not detect viable cells, although the bacteriocin activity was detected at low level until 40 hours. The results also indicated that *L. monocytogenes* serogroup IIb (from hamburger) was more sensitive, while *L. innocua* showed to be more resistant. It was proved that under stress conditions, *P. acidilactici* HA6111-2 could produce antilisterial bacteriocins, however the bacteriocins activity was different for the *Listeria* strains.

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