

MOLECULAR IDENTIFICATION OF ACID LACTIC BACTERIA WITH PROBIOTIC POTENTIAL

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Probiotic are living microorganisms that are found in food supplements. These microorganisms are able to induce beneficial effects in the host organism and favor the equilibrium of the native microbiota. For security reasons, it is very important to identify the strains of microorganisms in the probiotic products by molecular tests, since the biochemical and phenotypical tests are not very discriminatory and can present the same results for different species. Therefore, this work aimed to identify 21 isolates of lactic bacteria with probiotic potential by molecular tests, as well to check if they belong to different clones. Thus, the isolates were submitted to the PCR technique using specific primers to a region of the rDNA 16S gene: 27F (5' AGATTTGATCCTGGCTCAG 3') e 1492R (5' GGTTACCTTGTTACGACTT 3'). Then, the DNA samples that were previously amplified were submitted to the sequencing technique and the found sequences were compared to other in gene banks. The genetic diversity of the isolates were evaluated by the profile obtained by RAPD, which used the following unspecific primers: M13 (5'-GAGGGTGGCGGTTCT - 3') e P2 (5'-GGTGACGCAG - 3'). Phylogenetic tree were generated by the Treecon program. According to the results, the species identified by PCR were *Leuconostoc mesenteroides*, *Weissella paramesenteroides*, *Lactobacillus plantarum*, *Lactobacillus paraplantarum*, *Lactobacillus pentosus*, and *Lactobacillus fermentum*. The analysis of the results generated by RAPD showed that 7 isolates belonged to the same clone. Therefore, 14 of the 21 isolates were classified as the same and considered strains of lactic bacteria. Lastly, the results were confirmed and organized using phylogenetic trees, which allowed the visualization of the evolutionary distance among them. To sum up, these results identified and define lactic bacteria strains, which will be used in future studies. The specie of *L. plantarum* was the most representative, and it is highlighted among the other species since some studies reported some important properties of this bacterium that intensify its probiotic potential.

Keywords: lactic bacteria, PCR, RAPD, probiotics

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