

STUDY OF POTENTIAL PROBIOTIC LACTIC ACID BACTERIA ISOLATED FROM HUMAN MILK

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In this research the probiotic (bacteriocin production, antibiotic resistance, acid and bile tolerance, adhesion to stainless steel plates) and technological (growth and survival in milk, odour and post-acidification) properties of strains isolated from human milk were evaluated. These strains were previously classified as lactic acid bacteria. The screening of these strains was initiated using the well diffusion. Eight thousand strains were evaluated and only 15 strains produced bacteriocin and 13 were able to inhibit the spoilage bacteria and pathogens used as sensitive indicators. The remainder two strains inhibited *L.monocytogenes* ATCC®7644. None of the 15 bacteriocin producers showed inhibitory activity against *Escherichia coli* ATCC® 2074, *S.thyphimuirim* ATCC® 2364 and *S.aureus* ATCC® 1602. Six strains were chosen to be evaluated according to the other probiotic properties. One of these strain showed tolerance to pH 2.0 while the others were tolerant to pH 3.0. The strains studied showed resistance to bile salts (0.3%), were able to adhere to the stainless steel plates and were resistant to clindamycin, erythromycin and gentamicin. The behavior of strains were similar when the technological properties were analyzed. All strains were able to grow in milk. They neither produced unpleasant odour nor caused post-acidification of the fermented milk after 28 days of storage at 4°C. The viable colony counts were reduced around 2.0 Log CFU.mL⁻¹ during this storage. The biochemical analysis classified three of the strains isolated from human milk as *Enterococcus faecium* and three as *Enterococcus avium*. These results confirmed the human milk is a source of potential probiotic bacteria to industrial process.

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