

Lactobacillus crustorum: New Probiotic Strain Isolated from Iranian Traditional Dairy Products

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Background & Objectives: Probiotics are live micro-organisms that when administered in adequate amounts confer health benefits upon the host. Aim of this study, investigating the probiotic potential of new strain of Lactobacillus isolated from Dairy products with certain properties relevant to probiotic action, e.g. resistance to acid, bile tolerance, adhesive properties and antibacterial activity were investigated.

Methods: lactobacilli isolated from different kinds of Iranian traditional dairy products. Media of pH = 2.0, 5.0, 7.0 and 9.0 according to pH of different part of gastrointestinal track and bile salt concentrations of 0.3, 0.5 and 1.0% were used as stress conditions. Antibacterial activity of the probiotic lactobacilli was determined by means of the well diffusion Methods. In vivo study was done to prove ability of lactobacillus crustorum in mice BalbC, histological assay was done to screen some properties of the selected Lactobacillus in vivo condition. Heat treated and live cells of *L. crustorum* were inoculated by gavage to different groups of 4-6 months-old female BALB/c mice in doses of 10⁸ CFU/dose. Thereafter, these mice were challenged with Escherichia coli, also inoculated in the GIT of the animals.

Results: Among 100 isolates, 15 strains showed extremely high survival rates under stress caused by acid, NaCl or bile salts and among them one of them was the best based on probiotic properties. The identification by PCR techniques revealed that the potent strain was *Lactobacillus crustorum*. The selected strains inhibited test pathogenic bacteria to different extents in both invitro and in vivo condition.

Conclusion: Results obtained in this study proved the probiotic properties of a new strain of lactobacillus. According to our results selected strain was a potent strain based on probiotic properties in vivo and invitro conditions.

Keywords: Lactobacillus; Bacillus; Probiotic Strain