

FUNCTIONAL PROPERTIES OF INTESTINAL LACTOBACILLI

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Lactobacilli strains isolated from faeces of adults were identified by the genus specific PCR method and API tests. TLC chromatography was used to screen their bile salt hydrolyse activity (BSH) for sodium salt of glycocholic or taurocholic acids. The growth ability measured as $A_{600\text{ nm}}$ of both BSH positive and BSH negative strains in media with different concentrations of ox bile (0.3; 0.5 and 1.0% (w/w)) and with different pH was compared. Out of 26 isolated strains, 10 lactobacilli possessed BSH activity both in exponential (8 h) and stationary (24 h) growth phases. The pH value of MRS media (in range from 5.0 to 7.2) effected the growth of tested strains in the presence of bile salts. At higher pH, the impact of ox bile was very weak probably due to low dissociation of bile acids. It was concluded that the addition of ox bile into cultivation media significantly ($p < 0.05$) extended lag phase and decreased the maximum absorbance obtained for all BSH negative strains. In the case of BSH positive strains, 0.3% concentration of bile salts did not influence these parameters compared to the growth in pure MRS broth, while significant influence was found for the 0.5 and 1.0% ox bile concentrations.

Keywords: Lactobacilli, bile salt hydrolase, bile salts

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