

Screening of potential probiotic dairy yeast strains with β -galactosidase activity

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Abstract

In the current scenario consumers are more inclined toward a whole new class of food, called functional foods for providing health benefits beyond basic nutrition. Milk and milk products are as such source of a number of bioactive components which impart a number of health benefits. But individuals suffering from lactose intolerance are not able to consume milk. One possible intervention to improve this condition is to consume the probiotic products having active microbial β -galactosidase (β -gal) supporting lactose digestion. Worldwide, lactic acid bacteria per se have been explored as major probiotic organisms, but the use of yeast as probiotics is not well investigated. Yeasts are associated with the fermented foods including dairy products and produce higher amount of enzyme β -gal as compared to bacterial probiotics. Therefore, an attempt has been made to screen β -gal producing yeast spp. from dairy products possessing potential probiotic attribute. The identified strains with β -gal activity were subjected to a battery of *in vitro* probiotic tests. Isolates were evaluated at different pH (1.5, 2.0, 3.0, and 6.5) and bile salt concentration (0.5, 1.0, and 2.0%) and found to be tolerant to low pH and bile salt. After antibiotic susceptibility test, All 18 isolates were found to be resistance to selected antibiotics except Nyastatin and Fluconazole. None of the isolates showed antimicrobial activity against gram -ve organisms. Ninety percentage isolates showed antimicrobial activity against gram positive *S. aureus*. None of the isolates produced gelatinase and DNase. These strains have the potential to be further evaluated for their potential technological applications and for *in vivo* probiotics attributes.

Key Words: Functional foods, Dairy Products, Yeast, β -galactosidase, Probiotics