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In vitro screening and characterization of potent probiotic lactic acid bacteria for the production of B-group vitamins

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B-group vitamins represent an essential nutrition component in the human diet, involved in many metabolic pathways. A good selection of microbial species such as probiotic lactic acid bacteria (LAB) could enhance the level of vitamins in the fermented foods and dairy products. In view of this, the study was carried out to isolate, characterize, and identify LAB isolates from colostrum, idli batter, curd, milk and milk kefir. The isolated LAB were screened for their ability to produce B-group vitamins by HPLC. It was found that, out of 134 LAB screened, 57 were positive for vitamin (B_3-niacin, B_5-Pantothenic acid, B_6-Pyridoxine and B_9-Folic acid) production. Selection criteria employed included the ability of isolates to withstand environmental conditions such as low pH, high bile salt concentration, and cell surface hydrophobicity, which are the fundamental characteristics of LAB isolates used as probiotics. The selected LAB isolates were able to survive (>85% and 75%) at low pH (2.5) and relatively high bile (1.0%) concentration. These isolates showed significant antimicrobial activity against food borne pathogens and antibiogram towards a range of antibiotics. Out of 57 vitamin producing LAB isolates, 22 isolates were found to be potent probiotics.

Biography

Bhagya H. M., aged 24 years is working as a Junior Research Fellow (JRF) for her Doctoral degree in Defence Food Research Laboratory, Mysore, Karnataka, India.

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