

Studies on antimicrobial activity of *Lactobacillus* spp. with special reference to their use as biopreservative

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Lactic acid bacteria (LAB) prefer nutritious environments like foods, decaying material and the mucosal surfaces of the gastrointestinal and urogenital tract, where they enhance the host protection against pathogens. In recent years, the increasing concern over the preservation of minimally processed foods has spurred growing awareness of food safety issues. This has prompted new approaches to inhibit food borne pathogens. *Lactobacillus* is one of the most important genus of LAB which exhibits antimicrobial activity. It is also known to generate health benefit for the consumer.

Antimicrobial compounds produced by LAB have provided these organisms with a competitive advantage over other microorganisms. LAB isolates, capable of producing good amount of bacteriocins have been anticipated to have enormous potential for applications as biopreservative to meat and its products. In the present experiment *Lactobacillus* spp have been tested for their antimicrobial activity against microbes which cause spoilage of meat.

The probiotic organisms must not only be safe for food and clinical use, but it must also exhibit documented health benefits, including inhibition of pathogens. Upon ingestion, a probiotic organism encounters the high acidity of the stomach and the release of bile salts into the upper small intestine. *In vitro* studies have shown that the selected strains of *Lactobacillus* can survive exposure to such a low pH and NaCl concentration. In the present experiment, the cell free medium of the *Lactobacillus* supernatant inhibited the growth of human pathogenic bacteria. When applied in a traditional Indian delicacy, it showed potentials as biopreservative and food.

Biography

M. K. Bhattacharya has done his M.Sc. in Botany and Ph.D. on areas of microbiology from Gauhati University and LL.B from Assam University. He has been teaching microbiology for about 28 years. He has served as the Principal of Nabinchandra College, Badarpur for three years. At present, he is the Associate Professor and Head of the Department of Botany and Biotechnology of Karimganj College, Karimganj, Assam. He has published more than 40 research papers in reputed journals. Now he is involved as the Principal investigator in two teaching projects and two research projects sanctioned by different funding agencies under the Govt of India.

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