

Isolation of Potential Bacteriocin-Producing Lactic Acid Bacteria from Fermented Food Products Showing Antimicrobial Activity

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Biopreservation systems in foods are gaining popularity in food industries. Bacteriocins, an antimicrobial peptide produced by lactic acid bacteria, is considered as safe additives. Therefore, this study aimed to isolate bacteriocin-producing lactic acid bacteria from selected natural fermented food products with wide spectrum antimicrobial activity. Lactic acid bacteria were isolated from yoghurt, curd, *dosa* batter, *idli* batter and rice batter using de Man, Rogosa and Sharpe (MS) agar and incubated at room temperature (30 ± 2 °C) for 24-72 h aerobically and anaerobically. Agar well diffusion method was employed to detect the antimicrobial activity of isolates against food spoilage organisms (*Staphylococcus aureus*, *Enterococcus faecalis*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumonia*, *Serratia marcescens*, *Salmonella* sp., *Proteus* sp., *Micrococcus* sp., and *Bacillus* sp.). Antimicrobial activity screening by agar well diffusion assay showed that isolate C₃ from curd sample inhibited wide range of bacterial species. Therefore, that wide spectrum bacterium was subjected to diverse cultural, biochemical and morphological studies such as colony morphology, gram staining, catalase test and motility test and identified as *Lactobacillus* sp. Further studies are under way to purify and characterize the bacteriocin and to confirm whether the selected strain could be used to produce bacteriocin to preserve the food at industrial level.

Keywords: Antimicrobial activity, bacteriocin, fermented food products, lactic acid bacteria