

### Antibacterial activity of *Lactobacillus* strains in spontaneously fermented curd from Sri Lanka

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In the need of wild *Lactobacillus* strains to contest for the survival in a hostile environment, they produce higher amounts of antimicrobials such as bacteriocins. Therefore, a recent trend exists in the isolation of wild-type strains from spontaneously fermented foods to be used as starter cultures, which will act as bio-preservatives and probiotics. The Food & Agricultural Organization (FAO)/ World Health Organization (WHO) has stipulated, that the *in vitro* production of antimicrobial substances as a major criterion for probiotic evaluation. In this study, 36 *Lactobacillus* strains were isolated from spontaneously fermented, traditional, buffalo curd samples and morphologically and biochemically identified up to species level. *In vitro* antibacterial effect of cell-free supernatants of isolated Lactobacilli was determined against ; *Salmonella typhi* (NCTC10787), *Staphylococcus aureus* (ATCC25923), *Bacillus cereus* (ATCC10876), *Enterococcus faecalis* (ATCC19433), *Pseudomonas aeruginosa* (ATCC27853), *Listeria monocytogenes* (NCTC11994) and *Escherichia coli* (ATCC25922), using agar well diffusion method. Antibacterial effect was clearly observed against all indicator organisms and the antibacterial property of the isolates against them was strain specific rather than species specific. The highest percentage of antibacterial activity was against *Listeria monocytogenes* (72.22%). This survey reveals that the *Lactobacillus* flora in spontaneously fermented curd withholds a natural ability to act against pathogenic and spoilage bacteria. Further, *Lactobacillus* strains encompassing the antibacterial activity could be developed as an innovative approach for controlling food-borne bacterial disease causing agents and spoilage bacteria in food.

**Keywords:** Spontaneous fermentation, Curd, *Lactobacillus*, Antibacterial activity