

Evaluation of probiotic attributes of *Lactobacillus* species isolated from faecal samples of neonates

D.S.B.D.U. Madhushika^{1*}, H.M.T.D.K. Herath² and G.J. Panagoda²

¹*Department of Pharmacy, Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka,* ²*Department of Oral Medicine and Periodontology, Faculty of Dental Sciences, University of Peradeniya, Sri Lanka*

**dsbdum@gmail.com*

Probiotic *Lactobacillus* species have preventive as well as therapeutic effects on several types of disease conditions of different etiologies. The objective of this study was to isolate and identify *Lactobacillus* strains which have probiotic properties, from different faecal samples of healthy one to four days old neonates for the purpose of using them further as prophylactic or therapeutic agents in different disease conditions. Five isolates of *Lactobacillus* species which are Gram-positive, rod-shaped, non-motile, non-spore forming, and lacking catalase enzyme, were isolated from thirty-five faecal samples. Colony morphology was recorded as differentiated in comparison with *Lactobacillus delbrueckii* (DSM 20072) on a MRS (de Mann, Rogosa, and Sharpe) agar plate. They were screened, in vitro, for their probiotic potential properties including survival in stomach and bile acidic conditions, the absence of haemolysis and DNase enzyme, resistant to some pathogens and commonly used antibiotics. The results showed that all five isolates were negative to DNase test indicating the absence of DNase enzyme which degrades DNA into nucleic acids, alpha haemolytic (partial haemolysis) when grown in human blood agar, sensitive to commonly found pathogenic strains of *Escherichia coli* (NCTC 10418), *Staphylococcus aureus* (NCTC 6571), *Klebsiella pneumoniae* (An identified clinical isolate), *Pseudomonas aeruginosa* (NCTC 10662) and *Candida albicans* (ATCC 10231) by disc diffusion method and sensitive to all antibiotics namely, Nalidixic acid (30 µg), Norfloxacin (10 µg), Ciprofloxacin (10 µg) and Ampicillin (10 µg) while only one isolate was resistant to 0.3% bile salts for 3 hours. However, viability decreased with the time and none of them were able to tolerate the acidic condition which was pH at 2.5 even after one hour. Further, it is recommended to identify the isolate strains. In conclusion, the present study showed that none of the isolated *Lactobacillus* species can be used as potential probiotic *Lactobacilli*.