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ABSTRACTS FOR POSTER PRESENTATIONS

In Vitro Properties Analysis of Potential Probiotic of Isolated Lactic Acid Bacteria from Milk By-Product

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Background: Probiotics are live, microbial cells with several beneficial health effects on humans. The beneficial effect of probiotics mainly depends on their survival in the gastrointestinal tract. The health-promoting properties of certain LAB inhabiting the human gastrointestinal tract encouraged the food industry to develop new functional food products containing probiotic. Selection of a microbial strain for the incorporation into food products requires both in vitro and in vivo evaluations. **Methods:** In this study, bacteriocin-producing-LAB, Lactococcus lactis Gh1, was assessed in vitro for its beneficial properties for potential applications as a probiotic and starter culture in the food industry. This lactic acid bacterium was isolated from a Iranian traditional flavour enhancer prepared from milk by-product. The inhibitory effect of L. lactis Gh1 against food-borne pathogen namely Listeria monocytogenes, resistance to phenol and low pH, susceptibility to antibiotics, haemolytic, amylolytic and proteolytic activities, ability to produce acid and coagulate milk also enzymatic characteristics were assessed. **Results:** Results show that L. lactis Gh1 was tolerant to NaCl up to 4.0% (w/v), tolerant to phenol, bile salt and also at low pH conditions. The bacterium also demonstrated antimicrobial activity against L. monocytogenes (diameter of inhibition zone: 12 mm), and susceptible to wide range of antibiotics (Penicilin G, Amoxycilin, Ampicillin, Erythromycin,

Vancomycin, Chloramphenicol, Oxytetracycline, Sulphonamide, Sulphafurazole, Tetracycline). The absence of hemolytic activity and the presence of an abundance acid phosphatase and naphthol-AS-BI-phosphohydrolase were observed in this bacterium. **Conclusion:** Furthermore, L. lactis Gh1 produced acid and has ability to coagulate milk. Thus, this strain has a vast potential to be used in industrial applications, such as for the preparation of functional fermented foods and probiotic products.