Study on Isolation of Potentially Probiotic *Lactobacillus species* from Fermented Rice

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ABSTRACT: *Traditional fermented food products such as fermented rice are known to possess probiotic potential. Probiotics are live microorganisms that provide a myriad of health benefits. Despite the associated health benefits, fermented rice has not received due attention in the countries where rice is the staple diet. Many strains of probiotic bacteria have been isolated from different sources, however, much work has been carried out on isolation of probiotic strains from fermented rice. In this backdrop, the present study was carried out to isolate and identify potentially probiotic microorganisms from fermented rice. Cooked and uncooked white and red rice were separately fermented and subsequently used to isolate potentially probiotic strains. The Man Rogosa Sharpe (MRS), MRS sorbitol (0.2%) and MRS L-cysteine (0.5%) culture media were used for the isolation of potentially probiotic bacteria. The samples of fermented rice were serially diluted, plated and incubated at 37 °C for 2-3 days under anaerobic conditions. The resulting colonies were purified and tested for Catalase production and Gram-staining. Distinct cluster like cocci, diplo cocci and rods were observed with Gram positive and catalase-negative reactions. Most of the isolated cluster like coccus morphologically resembled Aercococcus or Peptococcus species. The rods were selected for motility and endospore test and sugar fermentation was studied using API 50CH kits. The biochemical characteristics (Gram positivity and catalase-negativity) non-motile and non-endospore forming and colony and cell morphology of seven rod shaped bacteria resembled the genus Lactobacillus and were identified to species level by API 50CH kits. The subsequent physiological and molecular methods for species identification and probiotic characterization of these seven Lactobacillus spp will further confirm the application of them as potential probiotic starter cultures in the food industry.*

Keywords*: Catalase, gram-staining, fermented rice, Lactobacillus, probiotics*

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