

IN VITRO ASSAY OF ANTIOXIDANT POTENTIAL AND TOTAL PHENOLIC CONTENT OF PROBIOTIC *LACTOBACILLUS DELBRUECKII* SUBSP. *INDICUS* STRAINS ISOLATED FROM TRADITIONAL SRI LANKAN BUFFALO CURD

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Sri Lankan buffalo curd prepared through the back-slopping method is a rich probiotic lactic acid bacteria (LAB) source. Most of these LAB species possess antioxidant abilities to reduce the cell damage caused by oxidative activities in the human body. Therefore, the current study attempted to chemically analyse the antioxidant properties of three probiotic *Lactobacillus delbrueckii* subsp. *indicus* strains isolated from traditional Sri Lankan buffalo curd samples. In the present study, total phenolic content (TPC), ferric reducing antioxidant power (FRAP), and free radical scavenging assays against 3-ethylbenzthiazoline-6-sulfonic acid (ABTS) and 2,2-diphenyl-1-picrylhydrazyl (DPPH) were tested at different bacterial cell concentrations of 10⁴, 10⁶, 10⁸, and 10¹⁰ CFU/ml. All three *L. delbrueckii* subsp. *indicus* strains showed antioxidant properties and phenolic contents increasing with cellular concentration. The highest TPC (14.76 µg/mg of gallic acid equivalent) and FRAP (50.54 µg/mg of ascorbic acid equivalent) were observed in the strain SUR_IN-55. Free radical scavenging assays against ABTS and DPPH were also observed to be the highest in the strain SUR_IN-55, with an inhibition rate of 50% and 69.89%, respectively. The *L. delbrueckii* subsp. *indicus* strain SUR_IN-55 isolated from traditional Sri Lankan buffalo curd had the highest antioxidant properties among the tested strains. Apart from probiotic characteristics, the presence of antioxidant properties can be considered as an added advantage in their use as starter cultures for producing fermented dairy products.

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