Production of Extracellular Polysaccharide Substance by Lactic Acid Bacteria Under Different Production Conditions

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ABSTRACT

Production of extracellular polysaccharide produced by Lactic Acid Bacteria (LAB) under different production condition was investigated. Fifty nine LAB strains were used for EPS production of which all the isolates were EPS producers. There were variations in EPS production among the strains. The best five EPS producers were molecularly characterized as *Lactobacillus tucetti* FASHADFF2 having 100% relatedness to *Lactobacillus tucceti*, *Lactobacillus delbrueckii* FASHADYG2, *Weissella* sp. FASHADFF1, *Weissella* sp. FASHADWR2 and *Leuconnostoc mesenteroides* FASHADWR1 had 99% and 100% relatedness to *Lactobacillus delbrueckii, Weissella confusa*, *Weissella koreensis* and *Leuconotoc mesenteroides*. *L. delbrueckii* FASHADYG2, *Weissella* sp. FASHADFF1, *Weissella* sp. FASHADWR2, *L. tucceti* FASHADFF2 and *L. mesenteroides* FASHADWR1 produced the highest EPS (185.02 mg/L, 109.11 mg/L, 160.71 mg/L, 121.35 mg/L and 115.63 mg/L). 35°C and pH 5 supported the highest EPS production by the isolates. In conclusion, Alanine, yeast extract, sucrose, glucose and folic acid supported the highest EPS production by the 5 LAB strains.

Keyword: Exopolysaccharide, Lactic acid bacteria, condition, temperature and Sucrose.

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