

ABSTRACTS FOR POSTER PRESENTATION

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Growth And Metabolism Of *Lactobacillus Salivarius* And *Lactobacillus Delbreuckii Bulgaricus* Isolated From Mother's Milk In Different Types Of Prebiotic**Nor Zalina Othman^{1*}, Solleh Ramli¹, Nurul Asmida Md.Nawawi¹, Roslinda Abd Malek¹, Mohamad Roji Sarmidi¹, Ramlan Azi², Hesham A. El Enshasy^{1,2*}**¹Institute of Bioproduct Development (IBD), Universiti Teknologi Malaysia (UTM), Johor Bahru, Malaysia.²Bioprocess Development Department, Mubarak City for Scientific Research and Technology Applications (MuCSAT), New Burg Al Arab, Alexandria, Egypt.**Abstract**

Due to health promoting effects reported for probiotics, these strains are increasingly incorporated into functional food and pharmaceutical markets. This study investigates the growth and metabolism of probiotic strains isolated from mother's milk in different types of prebiotic as a carbon source focusing on the production of short-chain fatty acid (SCFA) such as lactic acid, butyric acid, propionic acid and succinic acid. Two probiotic bacterial strains namely *Lactobacillus salivarius* and *Lactobacillus delbreuckii bulgaricus*, which were isolated from mother's milk, were evaluated both in pure and mixed cultures. The growth kinetics and metabolite profiling of SCFA were studied in different types of carbon sources such as inulin, FOS and Arabic gum where growth in glucose acted as control. The best growth profile was obtained using inulin in mixed cultures with maximum cell mass production of 8.23 g L⁻¹, followed by FOS and glucose with values of 7.67 g L⁻¹ and 6.43 g L⁻¹ respectively, whereas specific growth rate for this culture was 0.33 h⁻¹. Furthermore, growth of *L. salivarius* in glucose gave the highest succinic acid production (3.99 g L⁻¹) compared to other types of prebiotics and SCFA. *L. bulgaricus* produced highest amount of lactic acid (2.39 g L⁻¹) after 24 h of cultivation when glucose was used as the carbon source. On the other hand, growth of mixed culture of *L. bulgaricus* and *L. salivarius* gave high succinic acid production (around 2.62 g L⁻¹) in FOS after 24 h cultivation. Mixed cultures of *L. bulgaricus* and *L. salivarius* in FOS gave the highest amount of total SCFA (6.47 g L⁻¹). As a conclusion, the correlation of the response would help to determine the choice of a good prebiotics for the probiotic's strains in order to enhance the beneficial effect to human health.

Keywords: Probiotics, prebiotics, mother milk, symbiotic, growth kinetics, SCFA.