

Proceeding Paper

Characterization of Spray Dried Co-Microcapsules Containing Probiotic Culture *Lactococcus lactis* SKL 13 and γ -Aminobutyric Acid (GABA) Entrapped in a Ternary Wall Matrix [†]

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Abstract: In the present study, the probiotic strain *Lactococcus lactis* SKL 13 and γ -aminobutyric acid (GABA), a major inhibitory neurotransmitter were co-encapsulated by spray drying technique in a ternary wall matrix (maltodextrin, inulin, and dextran). The physicochemical properties such as moisture content, water activity, probiotic survivability, GABA encapsulation efficiency, flowability (Hausner Ratio and Carr's Index) of produced microcapsules were evaluated. The spray dried powder exhibited a higher probiotic and GABA encapsulation efficiencies of 92.12 and 82.46%, respectively. The spray drying resulted in a stable microcapsules containing a lower moisture content of 4.05%, and water activity of 0.27 and having a good flow characteristics with a product yield of 59.5%. SEM images of spray dried microcapsules revealed that spray dried powder had a smooth surface with some cavities that might be due to the rapid loss of moisture during spray drying. The x-ray diffraction patterns showed a broad background pattern which indicates the amorphous metastable state of dried powders. The synbiotic powder can be effectively incorporated in different food formulations for the development of probiotic enriched food products.

Keywords: keyword 1; keyword 2; keyword 3 (List three to ten pertinent keywords specific to the article yet reasonably common within the subject discipline.)

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