ABSTRACT

EFFECT OF METHACRYLIC ACID COPOLYMER TYPE B CONCENTRATION IN PHYSICAL CHARACTERIZATION OF MICROPARTICLES AND THE IMMUNOMODULATORY EFFECT OF *Lactobacillus casei*

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Microencapsulation is a process which the material, in the form of solids, liquids and gases, covered by a thin coating material that envelop the entire range of materials within 1-1000μm. Probiotics are living microorganisms which administered in host at adequate amounts will provide health benefits. *Lactobacillus casei* is used to improve the B lymphocytes, the cells that produce IgA, IgG and IgM antibodies and increase the activity. Factors affecting the growth and viability of probiotic bacteria such physiological conditions, temperature, pH, water activity and oxygen. Acidic gastric pH conditions can reduce the viability of probiotic bacteria, so microencapsulated probiotics is a method which effective enough to protect bacteria. This study aimed to compare the physical characteristics and immunomodulatory effects of *Lactobacillus casei* made with methacrylic acid copolymer type B (0.5%; 1.0%; 1.5%) matrix in the form of microparticles. Probiotic microparticles made using spray drying method. The results showed that the formula with 1.0% matrix formed more spherical microparticles and big size, but formula 1,5% provide the highest immunomodulatory effects. It proves that elevated levels of methacrylic acid copolymer type B matrix does not affect the physical characteristics and immunomodulatory effects of probiotics microparticles.

Keywords: Micrpoarticle, *Lactobacillus casei,* Methacrylic acid copolymer type B, Physical characterization, Immunomodulatory effect