

ABSTRACT

EFFECT OF CONCENTRATION EUDRAGIT® S 100 AS A MATRIX IN PHYSICAL CHARACTERISTICS OF MICROPARTICLES AND PROTECTION ABILITY OF MICROPARTICLES *Bifidobacterium bifidum*

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Probiotics can confer a health benefit in a minimum concentration 10^6 cfu/g. The bacteria that is widely used as probiotic is *Bifidobacterium bifidum*. *Bifidobacterium bifidum* is not resistant to the acid environment in the stomach but it work in basic environment in the intestine. So, the bacteria made in the form of microparticles encapsulated by spray drying with Eudragit® S 100 to protect the bacteria. Microencapsulation is a process in which the active ingredient trapped inside polymer and protect from environmental influences then released to the target site. It made into three concentrations of Eudragit® S 100 (0,5 %, 1,0 %, and 1,5 %). Then, these three formula tested on the physical characteristics of microparticles and protection ability of microparticles. The result is known that in formula I have a porous morphology and plenty basin, formula II has a spherical and smooth surface while the formula III has a spherical morphology and a little basin. The Increasing concentrations of Eudragit® S 100 in formula I, II, and III causes the particle size increases but the moisture content decreases. The results on the protection ability of microparticles shows that protection with increasing concentrations of Eudragit® S 100 increase against heat of spray drying process but under exposure of simulated gastric fluid (pH 1,2) the protection ability increase in formula I to II and decrease in formula III. Data protection ability analyzed using One-Way ANOVA and showed that there was no significant difference among the three formulas in the protection ability againts heat of spray drying proces and protection ability under exposure of simulated gastric fluid.

Keywords: Micoencapsulation, Spray drying, Eudragit® S 100, Probiotic, *Bifidobacterium bifidum*, Physical characteristic of microparticles, Protection ability.