

ABSTRACT**EFFECT OF EUDRAGIT® L-100 CONCENTRATION IN PHYSICAL CHARACTERISTIC AND *Lactobacillus casei* VIABILITY FROM PROBIOTIC MICROPARTICLE**

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Microencapsulation using suitable technique and matrices was efficient methods to increase viability of probiotic bacteria. It is important that microencapsulation keeps the probiotics active through the gastrointestinal tract and releases them at their target organ. *Lactobacillus casei* was made into microparticle by spray drying method in 98°C inlet temperature with three different concentration of Eudragit® L-100 as matrices polymer. Three different formula were named formula I, formula II, formula III with 0,5% ; 0,75% and 1,0% concentration of Eudragit® L-100. Physical characteristic and viability test were performed in all formula. The result showed that microparticle have spherical shape and smooth surface only in formula I. Formula II and III have unspherical shape and concave surface. Moisture content was increase from formula I to formula II, but decrease from formula II to formula III. The particle size and encapsulation efficiency of microparticle increased with increasing Eudragit® L-100 concentration. Viability test in all formula was performed in two different conditions to know viability *Lactobacillus casei* under spray drying process and simulated pH gastrointestinal tract condition. The result showed that increasing Eudragit L-100 content decrease viability of *Lactobacillus casei* in microparticle under spray drying process and simulated pH gastrointestinal tract condition. The highest viability under spray drying process and simulated pH gastrointestinal tract condition was obtained by formula I with significant different with other formula under spray drying process and on simulated pH gastrointestinal tract condition ($p < 0,05$). There was not release of probiotic bacteria from all of formula in simulated gastric juice (pH 2).

Keywords: Microencapsulation, Spray drying, Eudragit® L-100, probiotic, *Lactobacillus casei*, physical characteristic, viability.