

## ABSTRACT

### THE RELEASE OF *p*-METHOXYCINNAMIC ACID IN SOLID LIPID NANOPARTICLES SYSTEM (*p*-METHOXYCINNAMIC ACID-CETYL ALCOHOL-TWEEN 80) FROM CARBOMER ETD 2020 GEL BASE

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The purpose of this study is to determine the solid lipid nanoparticles (SLN) *p*-methoxycinnamic acid-cetyl alcohol-Tween 80 system forming-effect on the release of *p*-methoxycinnamic acid from Carbomer ETD 2020 gel base. In the formula I *p*-methoxycinnamic acid are on the Carbomer ETD 2020 gel base without the addition of cetyl alcohol and Tween 80, in formula II *p*-methoxycinnamic acid are on the Carbomer ETD 2020 with the addition of cetyl alcohol and tween 80 without the formed of SLN system, and for the formula III *p*-methoxycinnamic acid are in the SLN system at the Carbomer ETD 2020 gel base. This *p*-methoxycinnamic acid release test are using cellophane membrane with the apparatus 5-paddle overdisk as the dissolution test tools at the phosphate media buffer pH  $7,4 \pm 0,05$  at  $32^{\circ}\text{C}$  temperatures, and 100 rpm stirring speed. Flux is the *p*-methoxycinnamic acid cumulative amount which released from the base for each  $\text{cm}^2$  for each minute. Result analysis is performed using one way SPSS ANOVA software in 95% confidence level ( $\alpha=0,05$ ). For the formula I the flux is  $64,6261 \pm 2,94 \mu\text{g}/\text{cm}^2/\text{minute}^{1/2}$ , formula II is  $38,7119 \pm 1,20 \mu\text{g}/\text{cm}^2/\text{minute}^{1/2}$ , and formula III is  $33,6730 \pm 0,19 \mu\text{g}/\text{cm}^2/\text{minute}^{1/2}$ . At the conclusion the highest *p*-methoxycinnamic acid released flux is in the formula I, whereas the lowest result is in the formula III.

Keyword : *p*-Metoxicinamat Acid, solid lipid nanoparticles (SLN), Carbomer ETD 2020, drug release