ABSTRACT

STUDY IN VIVO OF *p*-METHOXYCINNAMIC ACID (*p*MCA)-HYDROXYPROPIL-β-CYCLODEXTRIN (HPβCD) INCLUSION COMPLEX (Prepared By Slurry Method)

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p-methoxycinnamic acid (*p*MCA) is an active compound obtained from hydrolysis of ethyl p-methoxycinnamate acid (E*p*MC) which is isolated from *Kaempferia galanga* Linn. and has an analgesic effect. *p*MCA has low solubility in water, hence absorption and bioavailability *p*MCA in the body becomes imperfect and slow. One of the method to increase the solubility of drug is by forming inclusion complex of *p*MCA with Hidroxypropil-β-siklodekstrin (HPβCD) (1:1). The inclusion complex is prepared using slurry method. The aim of this study was determine the bioavailability (t_{max}, C_{max} and $AUC_{0-\sim}$) *p*MCA-HPβCD inclusion complex prepared by slurry compared to *p*MCA and *p*MCA-HPβCD physical mixture. Bioavailability test is performed using 5 New Zealand male rabbits each treatment group. There are three treatments: *p*MCA, *p*MCA-HPβCD physical mixture, and *p*MCA-HPβCD inclusion complex. Rabbits are given treatment by oral using sonde and blood samples are taken at a certain time. Blood samples of each rabbit are prepared and determined sample concentration using HPLC. Sample concentration in each treatment group are calculated and analyzed parameters bioavailability (t_{max}, C_{max}, $AUC_{0-\sim}$) using ANOVA one way (α=0,05). The result of ANOVA is bioavailability (t_{max}, C_{max}, $AUC_{0-\sim}$) *p*MCA-HPβCD inclusion complex increased significantly compared to *p*MCA but bioavailability of *p*MCA-HPβCD inclusion complex is equal with *p*MCA-HPβCD physical mixture.

Keyword: inclusion complex, *p*MCA, hidroxypropil-β-siklodekstrin, bioavailability, slurry method