

ABSTRACT

THE EFFECT OF ANDROGRAPHOLIDE- CARBOXYMETHYL CHITOSAN SOLID DISPERSION SYSTEM ON BIOAVAILABILITY OF ANDROGRAPHOLIDE

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Andrographolide (ADG) a diterpene lactone substance from (*Andrographis paniculata* Nees) has pharmacological activities like hepatoprotective, anticancer, anti-inflammatory, antiviral and anti-malarial. Andrographolide has a low aqueous solubility and low bioavailability after oral administration. Andrographolide-carboxymethyl chitosan solid dispersion system (SDS ADG-CMCS) can be used to improve the solubility and dissolution of andrographolide. The aim of the study was determine the bioavailability (parameter AUC) of SDS ADG-CMCS. SDS ADG-CMCS prepared by solubilization and spray drying method. Bioavailability test is performed using New Zealand male rabbits divided into three treatment group: ADG, SDS ADG-CMCS, and physical mixture ADG-CMCS. Rabbits are given treatment by oral using sonde and blood samples are taken at specified interval time during 3 hours. ADG concentration in blood samples are prepared and determined using HPLC. The result of bioavailability test (parameter AUC_{0-180}) SDS ADG-CMCS increased 4.3 times compared to andrographolide substance and the result of One way ANOVA ($\alpha = 0,05$) is bioavailability (AUC_{0-180}) of SDS ADG-CMCS significantly increased compared bioavailability of andrographolide.

Keyword : andrographolide, carboxymethyl chitosan, solid dispersion system, bioavailability