

ABSTRACT

**BIOAVAILABILITY OF SOLID DISPERSION
QUERCETIN-HPMC ON RABBIT**

DIO LUTFI WIDIANTO

Quercetin belongs to the Biopharmaceutics Classification System (BCS) II, therefore modifying the quercetin formulation will affect the bioavailability. In this study, quercetin was modified by adding HPMC to the quercetin as stabilizer of amorphous form of quercetin solid dispersion system. The bioavailability profile of the 250mg/kg doses of quercetin was investigated in 6 rabbits. Quercetin was administered under two condition : single quercetin as control and solid dispersion quercetin-HPMC. The concentration of quercetin in plasma were determined by a validated high performance liquid chromatography method. Bioavailability parameters including T_{max} , C_{max} and AUC_{0-480} were determined. In control group, the average value of T_{max} , C_{max} , AUC_{0-480} were 30 min, and $0.40 \pm 0.23 \mu\text{g/mL}$, $44.40 \pm 39.42 \mu\text{g}\cdot\text{minutes/mL}$, respectively. T_{max} , C_{max} and AUC_{0-480} of quercetin after the administration of solid dispersion were 15 min, $0.44 \pm 0.23 \mu\text{g/mL}$, $52.46 \pm 35.96 \mu\text{g}\cdot\text{minutes/mL}$ respectively there was slight, but not significant increase in C_{max} and AUC_{0-480} after administration of quercetin-HPMC as compared to quercetin alone. It can be concluded that HPMC can accelerate T_{max} but not change the bioavailability of quercetin showed by C_{max} and AUC_{0-480} .

Keyword : Quercetin, HPMC, solid dispersion, bioavailability, HPLC