

ABSTRACT

THE POTENTIAL OF *Curcuma heyneana* ETHANOLIC EXTRACT TO MECANISM OF PANCREATIC BETA CELLS RECOVERY ON RAT INDUCED BY MLD-STZ

Diabetes mellitus (DM) ordinarily cause both anatomic and functional organ was damage. Herbal therapy using *Curcuma heyneana* ethanolic extract is one of Diabetes mellitus (DM) treatment. Research were designed to reveal effect of *C. heyneana* ethanolic extract on blood glucose contain repairing of DM rats. The research divided in two part, (1) descriptive research: substances screening and antioxidant activity test of *C. heyneana* ethanolic extract, (2) experimental research: effect of *C. heyneana* ethanolic extract on IL-1 β expression, iNOS distribution, NO concentration, SOD activity, insulin concentration, and the pancreatic beta cells damage of DM rats. DM type 1 rats induced by 20 mg/kgBW streptozotocin for 5 consecutive days use as animals model. *C. heyneana* ethanolic extract were given administrated to DM rats in varying doses of 36, 72, and 108 mg/Kg BW for 7 consecutive days. Data were analyzed by Analysis of variance. The result of descriptive research showed that *C. heyneana* ethanolic extract contain terpenoid, flavonoid, and 0,665% curcumin. *C. heyneana* has an antioxidant activity with IC₅₀=47,95 μ g/ml. According to the one way ANOVA showed that *C. heyneana* ethanolic extract was able to decrease IL-1 β , iNOS, NO, and increase SOD activity, insulin product and repair the pancreatic beta cells damage on DM rats induced by MLD-STZ. The optimal dose of ethanolic extract of *C. heyneana* for therapy DM rats is 72 mg/kg BW.

Key word: *Curcuma heyneana*, Diabetes mellitus, IL-1 β Expression, iNOS, SOD activity