ABSTRACT

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

Diabetes mellitus (DM) ordinarily cause both anatomic and functionall 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 devided 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-1β 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 an imals 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 µg/ml. According to the one way ANOVA showed that C. heyneana ethanolic extract was able to decrease IL-1β, 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-1β Expression, iNOS, SOD activity