

ABSTRAK

Diabetes melitus merupakan penyakit metabolik dengan karakteristik hiperglikemi, kondisi ini disebabkan oleh ketidakmampuan tubuh untuk memproduksi cukup insulin atau ketidakmampuan untuk menggunakan insulin. Salah satu tanaman Indonesia yang banyak digunakan secara tradisional di masyarakat sebagai obat penyakit diabetes mellitus adalah sambiloto. Berdasarkan aktivitas antihiperglikemi dari tanaman sambiloto, maka dilakukan penelitian mengenai efek penghambatan enzim alfa amilase oleh ekstrak etanol daun sambiloto secara invitro. Berdasarkan hasil pengujian yang dilakukan, didapatkan hasil bahwa terdapat aktivitas penghambatan aktivitas enzim alfa amilase oleh ekstrak etanol daun sambiloto, dilihat dari nilai % penghambatan dan nilai IC_{50} . Berdasarkan analisis statistika dari nilai persen penghambatan, didapatkan hasil bahwa seiring dengan peningkatan konsentrasi ekstrak etanol daun sambiloto, maka persen (%) penghambatan yang dihasilkan semakin baik hal ini dapat dilihat dari bentuk kurva yang linier serta hasil yang berbeda bermakna antar konsentrasi ($p\text{-value} < 0,05$). Nilai IC_{50} rata-rata acarbose sebesar $0,972 \pm 0,044$ mg/ml dan nilai IC_{50} rata-rata ekstrak etanol daun sambiloto adalah $9,253 \pm 0,116$ mg/ml. Berdasarkan hasil statistika antara dua kelompok didapatkan hasil yang berbeda bermakna ($p\text{-value} < 0,05$), sehingga dapat disimpulkan bahwa terdapat perbedaan daya hambat antara acarbose dengan ekstrak etanol daun sambiloto terhadap aktivitas enzim alfa amilase.

Kata kunci: diabetes, daun sambiloto, ekstrak etanol, remaserasi, antidiabetes, spektrofotometri, enzim alfa amilase

ABSTRACT

Diabetes is a metabolic disease with hyperglycemic characteristic, this condition is caused of inability to produce enough insulin or inability of the body to use it. One of many plants in Indonesia that has been used traditionally to cure diabetes such as sambiloto. Based on it is anti-hyperglycemic activity from sambiloto, so the research of it's alpha amylase enzyme inhibition from sambiloto ethanol extract as in vitro. Based on the results of tests, it was found that there was an inhibitory activity of the alpha amylase enzyme activity by the ethanol extract of the sambiloto leaf, seen from %inhibitory and IC_{50} value. Based on statistical analysis of the value of %inhibition, it was found that along with the increase in the concentration of ethanol extract of sambiloto leaf, the %inhibition produced the better this can be seen from the linear curve shape and the significantly different results between concentrations. Acarbose IC_{50} mean value is $0,972\pm 0,044$ mg/ml and sambiloto ethanol extract IC_{50} mean value is $9,253\pm 0,116$ mg/ml. Based on statistic result of these two groups it can be concluded that the result has a significant different ($p\text{-value}<0,05$), so it can be concluded that there is a different inhibition ability between acarbose and sambiloto ethanol extract toward alpha amylase enzyme activity.

Keyword: diabetes, sambiloto leave, ethanol extract, re-maceration, anti-diabetic, spectrophotometry, alpha amylase enzyme

