

## ABSTRACT

The purpose of this research to determine the activity of antidiabetic in *Canavalia ensiformis* extracts in vitro against inhibition of  $\alpha$ -Glucosidase enzyme. The research method consists of three phase. The first phase of the research was started by soaking the *Canavalia ensiformis* using water for 4 hours with stirred circulation, then trimming process, reducing size, drying for 7 hours at 60°C and sieve. In the second phase of reasearch the *Canavalia ensiformis* flour was extracted using hot water with temperature 90°C for 10 hours twice and then filtered. The water extract was evaporated with temperature 40°C and pressure 72 mbar. In phase III research the concentrated extract was tested by antidiabetic activity using alpha glucosidase activity assay kit MAK123 (Sigma Aldrich). The concentration variation of the extract of *Canavalia ensiformis* used was 0.1; 0.5; 1.0; and 10% with acarbose 0.1% as positive control. The response in the reasearch include chemical response. Chemical responses are phytochemical analysis,  $\alpha$ -Glucosidase enzyme activity, and inhibition activity of  $\alpha$ -Glucosidase enzyme. that is determination of antidiabetic activity using  $\alpha$ -Glucosidase enzyme inhibition method. The results of phytochemical analysis showed that flour and *Canavalia ensiformis* extract contain saponins, alkaloids, triterpenoids and steroids. *Canavalia ensiformis* extract with variation concentration was 0.1; 0.5; 1.0; and 10% have activity of enzyme  $\alpha$ -Glucosidase respectively that is 3.17; 1.98; 8.33 and 9.52 U/L as well as having a percentage of inhibition of the enzyme  $\alpha$ -Glucosidase respectively of 98.73; 99.21; 96.67 and 96.16% with acarbose 0.1% as a positive control (99.05% percent inhibition).