INHIBITION OF ALPHA-GLUCOSIDASE BY SOME INDONESIAN MEDICINAL PLANTS FOR DIABETES MELLITUS

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ABSTRACT
Diabetes mellitus is a group of metabolic disorders characterized by hyperglycemia and associated with abnormalities in carbohydrate metabolism. Diabetes mellitus is one of the common diseases in Indonesia, and dominated by type 2 diabetes. One of the strategies to monitor blood glucose for type 2 diabetes mellitus is to inhibit production of glucose from the small intestine. α-Glucosidase inhibitors act against the enzyme in the gut to restrain liberation of glucose from oligosaccharides, and thereby reduces the postprandial glucose levels. By doing a screening of inhibitory effect on α-Glucosidase activity from some Indonesian medicinal plants, we can get new resources of α-Glucosidase inhibitor as a drug for type 2 diabetes mellitus. In this study, we determine the α-glucosidase inhibitory activity of 80% ethanolic extracts of 15 Indonesian medicinal plants. The method was an in vitro the high model using spectrophotometer. The results indicated that almost of the extracts have inhibiting activity. Compared with the control acarbose (IC$_{50}$ 117.20 µg/mL), activities are belong to the barks of Cinnamomum burmanii (Nees & T.Nees) Blume, Syzygium cumini L. (Skeel), Strychnos lucida R.Br. and the flowers of Syzygium aromaticum (L.) Merr. & Perry with IC$_{50}$ value of 2.11 µg/mL, 3.78 µg/mL, 5.40µg/mL, and 5.78µg/mL.
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