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Inhibition of Alpha-Glucosidase and Antioxidant Test Using DPPH Method of Leaf Extracts of *Garciniafruticosa*Lauterb., and Phytochemical Screening on the Most Active Extract

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Abstract : Diabetes mellitus is a chronic endocrine disorder characterized by hyperglycemia, which blood sugar levels rise due to the pancreas unable to produce enough insulin or the body's cells can't respond to the insulin that is produced. Hyperglycemic conditions can also generate free radicals which can cause oxidative damage to biomolecules such as proteins, lipids, and DNA which can significantly cause diabetes or worsen the complications. Therefore, it is necessary to find drug compounds that can give an effect in lowering blood glucose levels while giving antioxidant benefits at the same time. This study aims to test the in-vitro inhibitory effect of α -glucosidase, an enzyme involved in the digestion of carbohydrates, and determine the antioxidant activity using DPPH method of *Garcinia fruticosa* Lauterb leaves n-hexane, ethyl acetate, and methonal extract. Both tests were done by using the Microplate Reader. The test results showed that the ethyl acetate extract had the most actuve IC₅₀ values, ie 25.314 mg/mL of α -glucosidase inhibition test and 12.369 mg/mL on the antioxidant activity test. Furthermore, the phytochemical screening was done on the ethyl acetate extract of *Garcinia fruticosa* leaves and several some classes of phytochemical compounds were found, which were alkaloids, flavonoids, glycosides, tannins and saponins.

Keywords : *α -glucosidase; antioxidant; antidiabetic; Garciniafruticosa leaves; phytochemical screening.*