

ABSTRAK**Aktivitas Antihiperglikemia Ekstrak Etanol Daun Matoa (*Pometia pinnata* J.R. Forst & G. Forst) secara *In Vitro* dan *In Vivo***

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Hiperglikemia merupakan suatu keadaan berupa kenaikan kadar glukosa darah melebihi batas normal yang menjadi ciri dari sejumlah penyakit terutama diabetes mellitus. Karbohidrat jenis polisakarida dan disakarida dimetabolisme oleh enzim α -glukosidase di usus menjadi monosakarida (glukosa) kemudian diserap oleh usus dan memasuki sirkulasi darah sehingga meningkatkan kadar glukosa darah posprandial. Berdasarkan *IDF*, penderita diabetes secara global pada tahun 2021 mencapai 537 juta orang dewasa. Matoa secara empiris telah digunakan sebagai antidiabetes dan terbukti memiliki potensi aktivitas antidiabetes melalui penelitian sebelumnya. Penelitian ini bertujuan untuk mengetahui aktivitas antihiperglikemia ekstrak etanol daun matoa (EEDM) secara *in vitro* dan *in vivo*. Pengujian *in vitro* bertujuan untuk mengetahui kemampuan EEDM dalam menghambat enzim α -glukosidase. Aktivitas penghambatan diketahui dengan mengukur absorbansi p-nitrofenol dengan *microplate reader*. Pengujian *in vivo* bertujuan untuk mengamati penghambatan kenaikan kadar glukosa darah (KGD) mencit *Swiss Webster* jantan yang diberi sukrosa. Metode pengujian yang digunakan adalah uji tes toleransi glukosa oral (TTGO). Hasil penelitian membuktikan EEDM mampu menghambat enzim α -glukosidase secara *in vitro* dengan IC_{50} 44,413 ppm yaitu lebih kecil dari standar acarbose murni. EEDM dosis 1000 mg/kg BB mampu menghambat kenaikan KGD mencit mulai dari menit ke-30 dan KGD mencit kembali normal pada menit ke-120 dengan KGD yang tidak berbeda bermakna dengan standar acarbose. Kesimpulan penelitian ini adalah EEDM memiliki aktivitas antihiperglikemia secara *in vitro* dan *in vivo*.

Kata Kunci : antihiperglikemia, matoa, *Pometia pinnata*, α -glukosidase

ABSTRACT***In Vitro and In Vivo Antihyperglycemic Activity of the Ethanolic Extract from Matoa Leaf (Pometia pinnata J.R. Forst & G. Forst)***

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Hyperglycemia is a condition in the form of an increase in blood glucose levels exceeding normal limits which is a feature of several diseases, especially diabetes mellitus. Polysaccharides and disaccharides are metabolized by α -glucosidase enzymes in the intestines into monosaccharides (glucose) which are then absorbed by the intestines and enter the blood circulation, thereby increasing postprandial blood glucose levels. Polysaccharides and disaccharides are metabolized by the α -glucosidase enzyme in the intestine into monosaccharides (glucose) which are then absorbed by the intestines and enter the blood circulation, thereby increasing blood glucose levels. Based on IDF, global diabetes sufferers in 2021 have reached 537 million adults. Matoa has been empirically used as an antidiabetic and has been shown to have antidiabetic activity through previous studies. This study aims to determine the antihyperglycemic activity of ethanol extract of matoa leaves (EEDM) in vitro and in vivo. The in vitro test aims to determine the ability of EEDM to inhibit the α -glucosidase enzyme. The inhibitory activity can be determined by measuring the absorbance of p-nitrophenol with a microplate reader. The in vivo test aimed to observe the inhibition of the increase in blood glucose levels (KGD) of male Swiss Webster mice given sucrose. The test method used is the oral glucose tolerance test (OGTT). The results showed that EEDM was able to inhibit the α -glucosidase enzyme in vitro with an IC_{50} of 44,413 ppm, which is smaller than the standard pure acarbose. EEDM 1000 mg/kg BW were able to significantly inhibit the increase in KGD of mice starting from the 30th minute and KGD of mice returned to normal at 120 minutes with KGD which were not significantly different from the acarbose standard. The conclusion of this study is that EEDM has antihyperglycemic activity in vitro and in vivo.

Keywords : antihyperglycemia, matoa, pometia pinnata, α -glucosidase