

**POTENSI ANTIDIABETES EKSTRAK ETANOL BUNGA TAHI AYAM
(*Lantana camara* L.) MELALUI UJI *IN VITRO* DAN *IN SILICO***

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INTISARI

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Oleh :

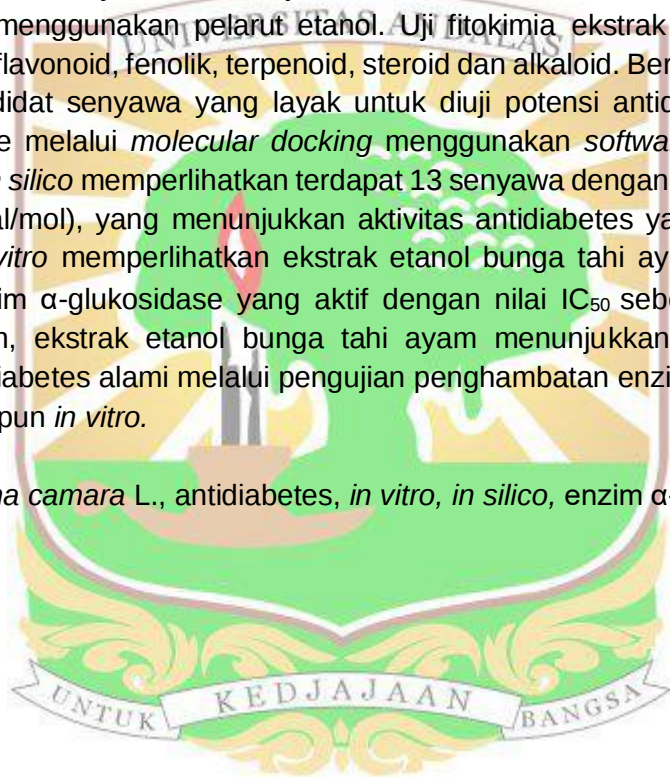
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***Pembimbing**

Tumbuhan tahi ayam (*Lantana camara* L.) merupakan gulma atau semak belukar invansif yang persebarannya melimpah di Indonesia, khususnya di Sumatera Barat. Tumbuhan ini diketahui memiliki ragam bioaktivitas, namun potensi antidiabetes dari bunga tumbuhan tahi ayam ini belum dilaporkan. Penelitian ini bertujuan untuk mengetahui potensi antidiabetes ekstrak etanol bunga tahi ayam melalui uji *in vitro* dan *in silico*. Ekstraksi dilakukan dengan metode marserasi menggunakan pelarut etanol. Uji fitokimia ekstrak etanol menunjukkan adanya kandungan flavonoid, fenolik, terpenoid, steroid dan alkaloid. Berdasarkan hasil LCMS didapatkan 67 kandidat senyawa yang layak untuk diuji potensi antidiabetesnya terhadap enzim α -glukosidase melalui *molecular docking* menggunakan software Autodock, PyMOL dan Ligplot⁺. Hasil *in silico* memperlihatkan terdapat 13 senyawa dengan *binding afinity* terbaik (-12 hingga -13 kkal/mol), yang menunjukkan aktivitas antidiabetes yang baik. Selanjutnya hasil uji secara *in vitro* memperlihatkan ekstrak etanol bunga tahi ayam memiliki aktivitas penghambatan enzim α -glukosidase yang aktif dengan nilai IC_{50} sebesar 63,1005 μ g/mL. Secara keseluruhan, ekstrak etanol bunga tahi ayam menunjukkan potensinya sebagai kandidat agen antidiabetes alami melalui pengujian penghambatan enzim α -glukosidase baik secara *in silico* maupun *in vitro*.

Kata kunci : *Lantana camara* L., antidiabetes, *in vitro*, *in silico*, enzim α -glukosidase.



ABSTRACT

ANTIDIABETIC POTENTIAL FROM ETHANOL EXTRACT OF TAHI AYAM FLOWERS (*Lantana camara* L.) EVALUATED BY IN VITRO AND IN SILICO STUDIES

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Tahi ayam plant (*Lantana camara* L.) is an invasive weed or shrub that is abundant in Indonesia, especially in West Sumatra. This plant is known to have a variety of bioactivities, but the antidiabetic potential of this tahi ayam plant flower has not been reported. This study aims to determine the antidiabetic potential of tahi ayam flower ethanol extract through in vitro and in silico tests. Extraction is carried out by the maceration method using ethanol solvents. Phytochemical tests of ethanol extracts show the presence of flavonoids, phenolics, terpenoids, steroids and alkaloids. Based on the results of the LCMS, 67 candidate compounds were found that were suitable to be tested for antidiabetic potential against the enzyme α -glucosidase through molecular docking using Autodock, PyMOL and Ligplot⁺ software. In silico results showed that there were 13 compounds with high binding affinity (-12 to -13 kcal/mol), which showed high antidiabetic activity. Furthermore, in vitro test results showed that tahi ayam flower ethanol extract had active α -glucosidase enzyme inhibition activity with an IC₅₀ value of 63,1005 μ g/mL. Overall, tahi ayam flower ethanol extract demonstrated its potential as a candidate for natural antidiabetic agents through inhibition testing of the enzyme α -glucosidase both in silico and in vitro.

Keywords : *Lantana camara* L., antidiabetic, in vitro, in silico, enzyme α -glucosidase.

