

ABSTRAK

TANAMAN OBAT ANTIHIPERGLIKEMIA DENGAN MEKANISME PENGHAMBATAN ENZIM α -GLUKOSIDASE

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Latar belakang: Hiperglikemia merupakan tanda utama penyakit Diabetes Mellitus. Pengobatan tradisional telah banyak digunakan karena secara empiris sudah diketahui efeknya dengan resiko efek samping yang kecil. Skripsi ini bertujuan untuk mengetahui tanaman obat yang memiliki aktivitas sebagai antihiperglikemia dengan mekanisme penghambatan enzim α -glukosidase.

Metodologi: Metode yang digunakan yaitu penelusuran artikel yang berkaitan dengan tanaman obat antihiperglikemia melalui *PubMed* dan *Google Scholar* dengan kata kunci tanaman obat, antihiperglikemia, inhibitor enzim α -glukosidase. Kriteria inklusi yang digunakan yaitu artikel tentang tanaman obat yang memiliki aktivitas antihiperglikemia dengan mekanisme penghambatan enzim α -glukosidase yang *publish* antara tahun 2010-2020 dengan *full text*. Artikel yang telah diperoleh kemudian diseleksi, ditelaah secara sistematis, dan hasil data dianalisis secara deskriptif kualitatif.

Hasil Penelitian: Terdapat 38 tanaman yang memiliki aktivitas antihiperglikemia dengan mekanisme penghambatan enzim α -glukosidase yang berasal dari famili *Lamiaceae*, *Moraceae*, *Rosaceae*, dan *Asteraceae* diantaranya yaitu *S.elegans*, *S.officinalis*, *S.gregii*, *O.basillicum*, *O.stamineus*, *T.zygoides*, *O.onites*, *L.purpureum*, *S.sclarea*, *S.virgata*, *F.lutea*, *F.deltoidea*, *F.carica*, *M.alba*, *C.tricuspidata*, *A.altilis*, *A.heterophyllus*, *A.odoratissimus*, *A.pinnatifidum*, *H.melaleucum*, *P.lowei*, *A.glandulosa*, *A.Argentea*, *C.Maderensis*, *C.Cardanculus*, *H.Devium johns*, *H.Monizii*, *H.Obconicum*, *A.gummifera*, *C.abrotanoides*, *C.Chinensis*, *C.caudatus*, *A.cucullata*, *V.corymbosa*, *C.pinnatifida*, *M.domestica*, *A.asiatica*, dan *P.Fulgens*.

Kesimpulan: *Salvia elegans* (*lamiaceae*), *Artocarpus altilis* (*moraceae*), *Potnetilla fulgens* (*rosaceae*), dan *Callistephus chinensis* (*asteraceae*) merupakan tanaman yang memiliki aktivitas penghambatan terbaik dari masing-masing famili dengan nilai IC₅₀ masing-masing sebesar 36 μ g/mL; 9,07 μ g/mL; 12,79 μ g/mL; dan 2,04 μ g/mL

Kata kunci: Hiperglikemia, Tanaman obat, Inhibitor enzim α -glukosidase.

ABSTRACT

ANTIHYPERGLICEMIA MEDICINAL PLANTS WITH α -GLUCOSIDASE ENZYME INHIBITORY ACTIVITY

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Background: Hyperglycemia is the main characteristic of Diabetes Mellitus. Traditional medicine has been widely used because it is empirically known its effect with a small risk of side effects. This thesis aims to determine medicinal plants which have activity as antihyperglycemia by inhibiting the α -glucosidase enzyme mechanism.

Methodology: The method used was searching for articles related to antihyperglycemic medicinal plants through PubMed and Google Scholar with the keywords medicinal plants, antihyperglycemia, α -glucosidase enzyme inhibitors. The inclusion criteria used were articles about medicinal plants that have antihyperglycemic activity with the α -glucosidase enzyme inhibition mechanism published between 2010-2020 in full text. The articles that have been obtained are then selected, analyzed systematically, and the results of the data are analyzed descriptively qualitatively.

Results: There were 38 plants that had antihyperglycemic activity by inhibiting the α -glucosidase enzyme from the families Lamiaceae, Moraceae, Rosaceae, and Asteraceae, including *S.elegans*, *S.officinalis*, *S.gregii*, *O.basillicum*, *O.stamineus*, *T.zygioides*, *O.onites*, *L.purpureum*, *S.sclarea*, *S.virgata*, *F.lutea*, *F.deltoidea*, *F.carica*, *M.alba*, *C.tricuspidata*, *A.altilis*, *A.heterophyllus*, *A.odoratissimus*, *A.pinnatifidum*, *H.melaleucum*, *P.lowei*, *A.glandulosa*, *A.Argentea*, *C.Maderensis*, *C.Cardanculus*, *H.Devium johns*, *H.Monizii*, *H.Obconicum*, *A.gummifera*, *C.abrotanoides*, *C.Chinensis*, *C.caudatus*, *A.cucullata*, *V.corymbosa*, *C.pinnatifida*, *M.domestica*, *A.asiatica*, and *P.Fulgens*.

Conclusion: *Salvia elegans* (lamiaceae), *Artocarpus altilis* (moraceae), *Potnetilla fulgans* (rosaceae), and *Callistephus chinensis* (asteraceae) were the plants with the best inhibitory activity of each family with each IC_{50} are 36 $\mu\text{g} / \text{mL}$; 9.07 $\mu\text{g} / \text{mL}$; 12.79 $\mu\text{g} / \text{mL}$; and 2.04 $\mu\text{g} / \text{mL}$.

Key words: Hyperglycemia, medicinal plants, α -glucosidase enzyme inhibitor.