ABSTRAK

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Program Studi : Farmasi

Judul : Uji Aktivitas Penghambatan Tirosinase Ekstrak Dan Fraksi Daun Johar (*Cassia siamea* Lamk.) Secara *In Vitro*

Cassia siamea L. telah digunakan secara tradisional sebagai obat karena memiliki kandungan kimiawi seperti saponin, antrakuinon, alkaloid, flavonoid, tanin, terpenoid dan steroid. Indonesia yang terletak di kawasan tropis dengan suhu tinggi dan radiasi sinar ultraviolet dapat menyebabkan gangguan kulit seperti hiperpigmentasi akibat sintesis melanin yang berlebihan. Enzim tirosinase dapat mencegah atau menghambat pembentukan melanin. Tujuan penelitian ini adalah untuk mendapatkan data hasil persentase inhibisi penghambatan tirosinase ekstrak dan fraksi daun johar secara *in vitro*. Pada penelitian ini daun *Cassia siamea* L. dimaserasi dengan pelarut metanol 96%. Ekstrak metanol kering difraksinasi menggunakan metode cair-cair dengan pelarut aquades, butanol dan kloroform. Ekstrak dan fraksi daun johar tersebut dilakukan penapisan fitokimia untuk mengetahui kandungan kimianya. Uji inhibisi tirosinase dilakukan secara *in vitro* dengan substrat L-Dopa menggunakan ELISA *plate well reader* pada konsentrasi 100, 1000 dan 10000 ppm dengan tiga kali pengulangan (triplo). Hasil penelitian menunjukkan persentasi penghambatan tertinggi pada fraksi aquades (67,471 ± 0,352 %) pada 10000 ppm. Asam kojat sebagai kontrol positif memiliki aktivitas tirosinase dan bertindak lebih aktif dibanding ekstrak dan fraksi lainnya yaitu (91,155 ± 0,228%) pada 500 ppm.

Kata kunci : Penghambatan Tirosinase, Asam Kojat, Enzim Tirosinase, *Cassia siamea* Lamk.

ABSTRACT

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Judul : In Vitro Tyrosinase Activity Test for Leaf Extract and Leaf Fraction of Johar (*Cassia siamea* Lamk.)

Cassia siamea L. has been used traditionally as medicine because it has chemical constituents such as saponins, anthraquinones, alkaloids, flavonoids, tannins, terpenoids and steroids. Indonesia, which is located in a tropical region with high temperatures and ultraviolet radiation, can cause skin disorders such as hyperpigmentation due to excessive melanin synthesis. Tyrosinase enzymes can prevent or inhibit melanin formation. The purpose of this study was to obtain data on the percentage of inhibition of tyrosinase inhibition of johar leaf extract and fraction in vitro. In this study, the leaves of Cassia siamea L. were macerated with 96% methanol as solvent. The dry methanol extract was fractionated using the liquid-liquid method with distilled water, butanol and chloroform as solvents. The extract and fraction of johar leaves were subjected to phytochemical screening to determine their chemical content. Tyrosinase inhibition test was carried out in vitro with L-Dopa substrate using ELISA plate well reader at concentrations of 100, 1000 and 10000 ppm with three repetitions (triplo). The results showed that the highest percentage of inhibition was in the distilled water fraction (67.471 ± 0.352%) at 10000 ppm. Kojic acid as a positive control had tyrosinase activity and was more active than the other extracts and fractions (91.155 ± 0.228%) at 500 ppm.

Keywords : Inhibition of Tyrosinase, Kojic Acid, Tyrosinase Enzymes, *Cassia siamea* Lamk.