ABSTRACT

Free radicals can trigger melanogenesis on skin becomes increasing of melanin content. The inhibition tyrosinase enzyme can destroyed melanosit and degradation of melanosom. So that it prevent an increasing of melanin. We know, that *Ziziphus mauritiana* extraction (EDB) as one is of source antioxidants, it can inhibition of free radical from activities NADPH oxidase, Xanthin oxidase, and nitric oxide synthase respectively. The purpose of this study is to screening phytochemical test of EDB, antioxidant test (total phenolic, flavonoid, DPPH) and tyrosinase enzyme activity inhibition test. The results showed that the EDB screening contained Alkaloids (+ red), Phenolics (+ dark green), Flavonoids (+ yellow), Tannins (+ green), Steroids (+ bluish green) and Saponins (+ stable foaming). EDB antioxidant test showed; total phenolic was 55.45 ± 0.08 mg/gr with gallic acid control. Flavonoid levels was 23.61 ± 0.39 mg/gr with quercetin control and inhibition of IC_{50} of DDPH and tyrosine oxidase was at levels of 179.37 ± 9.85 g/ml and 9240.410 g/ml, respectively, compared to 15.39 g/ml kojic acid. From the results of this study, we concluded that EDB is an antioxidant because it contains flavonoids and total phenolic which can inhibit DPPH and tyrosinase enzymes. It is hoped that EDB can be used for hyperpigmentation inhibitors.

Keywords: Antioxidant, Bidara, Ziziphus mauritiana, Tyrosinase enzyme

ABSTRAK

Radikal bebas dapat memicu terjadinya melanogenesis sehingga kulit menjadi kehitaman akibat peningkatan jumlah melanin. Penghambatan terhadap enzim tirosinase akan merusak sel melanosit secara langsung, mempercepat degradasi melanosom, sehingga mencegah jumlah melanin yang berlebih. Adanya antioksidan secara eksogenus diharapkan mampu menghambat proses hiperpigmentasi sel. Dari studi literatur diketahui bahwa tumbuhan bidara *(Ziziphus mauritiana)* dapat menghambat aktivitas enzim-enzim pencetus radikal bebas seperti NADPH oksidase, Xanthin oksidase dan nitrit oksida sintase. Tujuan penelitian ini ingin mengetahui sifat ekstrak daun bidara (EDB) meliputi, uji fitokimia, uji antioksidan (fenolik total, Flavonoid total, DPPH) dan uji penghambatan aktivitas enzim tirosinase. Hasil skrining EDB mengandung Alkaloid (+ merah), Fenolik (+ hijau tua), Flavonoid (+ kuning), Tanin (+ hijau), Steroid (+ hijau kebiruan) dan Saponin (+ busa yang stabil). Uji antioksidan EDB menunjukkan; fenolik total 55,45 ± 0,08 mg/gr dengan kontrol asam galat. Kadar flavonoid total 23,61 ± 0,39 mg/gr dengan kontrol kuersetin serta penghambatan IC_{50} DDPH dan tirosin oksidase masing-masing pada kadar 179,37 ± 9,85 µg/ml dan 9240,410 µg/ml berbanding asam kojat 15,39 µg/ml. Dari hasil-hasil penelitian ini disimpulkan bahwa EDB bersifat antioksidan karena mengandung flavonoid serta fenolik total yang mampu menghambat DPPH dan enzim tirosinase. Diharapkan EDB dapat digunakan untuk bahan penghambat hiperpigmentasi.

Kata kunci: *Anti oksidan, Bidara, Ziziphus mauritiana, Enzim tirosinase*