

ABSTRAK

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ANALISIS DAN PERBANDINGAN AKTIVITAS ANTIOKSIDAN EKSTRAK ETANOL 96% DAUN MANGROVE (*Rhizophora stylosa* Griff.) MENGGUNAKAN METODE DPPH DAN ABTS

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(XV + 83 halaman; 9 tabel; 19 gambar; 7 lampiran)

Radikal bebas merupakan molekul bersifat reaktif untuk menyerang sel dan menimbulkan kerusakan sel. Senyawa yang mampu menangkal efek negatif radikal bebas disebut antioksidan. Antioksidan telah banyak diteliti berasal dari tanaman, salah satunya adalah tanaman Mangrove jenis *Rhizophora stylosa* Griff. Penelitian ini dilakukan untuk mengetahui metabolit sekunder yang terkandung, analisis aktivitas antioksidan ekstrak, dan membandingkan nilai IC₅₀ metode DPPH dan ABTS secara statistik. Penelitian terdiri dari beberapa tahap yaitu pembuatan simplisia, pembuatan ekstrak dengan pelarut etanol 96% menggunakan metode maserasi, skrining fitokimia, dan pengukuran aktivitas antioksidan dengan metode DPPH dan ABTS menggunakan instrumen spektrofotometri UV-Vis. Analisis data dilakukan dengan mengukur absorbansi sampel dan menghitung % inhibisi. Data dianalisis dengan cara membuat kurva kalibrasi sehingga didapat persamaan regresi linier dan dihitung nilai IC₅₀, kemudian data yang diperoleh dari kedua metode dibandingkan menggunakan *T-test*. Hasil uji skrining fitokimia ekstrak diketahui mengandung metabolit sekunder meliputi alkaloid, flavonoid, tanin, saponin, fenol dan steroid. Hasil uji aktivitas antioksidan dengan metode DPPH dan ABTS diketahui bahwa *Rhizophora stylosa* Griff. berpotensi kuat sebagai antioksidan dengan nilai IC₅₀ masing-masing sebesar 60,83 ppm dan 67,82 ppm. Adapun hasil analisis data menggunakan *T-test* menunjukkan bahwa metode DPPH dan ABTS tidak memiliki perbedaan yang signifikan dibuktikan dengan nilai *p-value* > 0,05.

Kata Kunci: Antioksidan, Mangrove (*Rhizophora stylosa* Griff.), Etanol 96%, DPPH, ABTS

Referensi: 73 (1966-2023)

ABSTRACT

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ANALYSIS DAN COMPARISON OF ANTIOXIDANT ACTIVITY OF 96% ETHANOL EXTRACT OF MANGROVE LEAVES (*Rhizophora stylosa* Griff.) USING DPPH AND ABTS METHODS

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*Free radicals are reactive molecules that attack cells and cause cell damage. Compounds that can counteract the negative effects of free radicals are called antioxidants. Antioxidants have been widely studied from plants, one of which is the Mangrove plant *Rhizophora stylosa* Griff. This study was conducted to determine the secondary metabolites contained, analyze the antioxidant activity of the extract, and compare the IC_{50} values of DPPH and ABTS methods statistically. The research consisted of several stages, namely making simplisia, making extracts with 96% ethanol solvent using maceration method, phytochemical screening, and measuring antioxidant activity with DPPH and ABTS methods using UV-Vis spectrophotometric instruments. Data analysis was done by measuring the absorbance of the sample and calculating the % inhibition. The data were analyzed by making a calibration curve so that a linear regression equation was obtained and the IC_{50} value was calculated, then the data obtained from the two methods were compared using the T-test. The results of phytochemical screening test of extracts are known to contain secondary metabolites including alkaloids, flavonoids, tannins, saponins, phenols and steroids. The results of antioxidant activity tests with DPPH and ABTS methods showed that *Rhizophora stylosa* Griff. has strong potential as an antioxidant with IC_{50} values of 60.83 ppm and 67.82 ppm, respectively. The results of data analysis using the T-test showed that the DPPH and ABTS methods did not have significant differences as evidenced by the $p\text{-value} > 0.05$.*

Keywords: *Antioxidant, Mangrove (*Rhizophora stylosa* Griff.), Ethanol 96%, DPPH, ABTS*

References: *73 (1966– 2023)*