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PENGARUH VARIASI PELARUT TERHADAP KADAR FLAVONOID DAN AKTIVITAS ANTIOKSIDAN JAHE MERAH (*Zingiber officinale var rubrum*)

ABSTRAK

Latar Belakang : Jahe merah (*Zingiber officinale* var. rubrum) merupakan tanaman obat yang berpotensi sebagai antioksidan. Metabolit sekunder dengan aktivitas antioksidan yaitu seperti gingerol, flavonoid , fenolik dan shogaol. Pelarut ekstraksi merupakan faktor yang mampu menarik metabolit sekunder secara optimal. Penelitian ini dilakukan untuk menganalisis pengaruh variasi pelarut terhadap kadar flavonoid total dan aktivitas antioksidan serta hubungan antara kadar flavonoid terhadap aktivitas antioksidan ekstrak jahe merah.
Metode : Ekstraksi menggunakan metode maserasi dengan pelarut berbeda yaitu etanol 96%, etil asetat, dan *n*-heksan. Analisa kualitatif menggunakan uji warna, pengukuran kadar flavonoid total menggunakan kuersetin sebagai pembanding. Aktivitas antioksidan menggunakan metode ABTS dengan kontrol positif kuersetin.
Hasil : Rendemen ekstrak pelarut etanol 96%, etil asetat, dan *n*-heksan berturut-turut yaitu 5,133% ; 6,761% ; 3,851%. Kadar flavonoid dan nilai IC_{50} dari ekstrak jahe merah yaitu : etanol 96% (111,38 mgQE/g ; 20,15ppm) , etil asetat (171,14 mgQE/g ; 11,6ppm) , *n*-heksan (163,05 mgQE/g ; 19,48ppm). Hasil uji korelasi pearson menunjukan hasil negatif pada etanol 96%, etil asetat, dan *n*-heksan: -0,9996; -0,9678; -0,9992. Terdapat hubungan antara kadar flavonoid dengan aktivitas antioksidan ekstrak Hasil korelasi menunjukan bahwa terdapat hubungan antara kadar flavonoid total dengan aktivitas antioksidan, dimana semakin besar kadar flavonoid dalam ekstrak maka aktivitas antioksidannya semakin kuat.
Simpulan : Variasi pelarut mempengaruhi kadar flavonoid dan aktivitas antioksidan ekstrak jahe merah. Terdapat hubungan antara kadar flavonoid dan aktivitas antioksidan.

Kata Kunci : Jahe merah (*Zingiber officinale var rubrum*), Pelarut, Flavonoid, Antioksidan

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"EFFECT OF SOLUTION VARIATIONS ON FLAVONOID LEVELS AND ANTIOXIDANT ACTIVITY OF RED GINGER (*Zingiber officinale var rubrum*)"

ABSTRACT

Background : Red ginger (Zingiber officinale var. rubrum) is a medicinal plant that has the potential as an antioxidant. Secondary metabolites with antioxidant activity such as gingerol, flavonoid, phenolic and shogaol. Extraction solvent is a factor capable of optimally attracting secondary metabolites. This study was conducted to analyze the effect of solvent variations on total flavonoid levels and antioxidant activity and the relationship between flavonoid levels on antioxidant activity of red ginger extract.

Method : Extraction using maceration method with different solvents, namely 96% ethanol, ethyl acetate, and n-hexane. Qualitative analysis using color test, measurement of total flavonoid levels using quercetin as a comparison. Antioxidant activity using ABTS method with quercetin positive control.

Results: The yield of 96% ethanol, ethyl acetate, and n-hexane solvent extracts were 5.133%, respectively; 6.761% ; 3.851%. Flavonoid levels and IC50 values of red ginger extract were: ethanol 96% (111.38 mgQE/g; 20.15ppm), ethyl acetate (171.14 mgQE/g; 11.6ppm), n-hexane (163.05 mgQE /g ; 19.48ppm). Pearson correlation test results showed negative results on 96% ethanol, ethyl acetate, and n-hexane: -0.9996; -0.9678; -0.9992. There is a relationship between flavonoid levels and antioxidant activity of the extract. The correlation results show that there is a relationship between total flavonoid levels and antioxidant activity, where the greater the flavonoid content in the extract, the stronger the antioxidant activity.

Conclusion : The solvent variation affects the flavonoid content and antioxidant activity of red ginger extract. There is a relationship between flavonoid levels and antioxidant activity.

Keywords : Red Ginger (Zingiber officinale var rubrum), Solvent, Flavonoid, Antioxidant,