

ABSTRAK

Antioksidan merupakan senyawa yang dapat menghambat dan meredam radikal bebas. Rimpang temulawak memiliki kandungan seperti zat berwarna kuning (kurkumin), serat, pati, kalium oksalat, minyak atsiri, dan flavonoid, alkaloid, tannin, kurkuminoid, dan terpenoid. Untuk membuktikan perbandingan aktivitas antioksidan dengan metode frap pada ekstrak etanol temulawak berdasarkan ekstraksi maserasi dan ultrasonik. Penelitian ini merupakan penelitian eksperimental dengan membuat 2 ekstraksi maserasi dan ultrasonik dengan pelarut etanol 96%. Dilakukan secara kualitatif (standarisasi) maupun kuantitatif menggunakan metode antioksidan FRAP (*Ferric Reducing Antioxidant Power*). Hasil menunjukkan bahwa standarisasi simplisia sesuai dengan persyaratan standarisasi FHI yaitu uji kadar air 6,92%, uji kadar abu total 3,80% dan untuk uji kadar abu tidak larut asam belum memenuhi standar 0,68%, uji kadar sari larut air 10,71% uji kadar sari larut etanol 4,50%. Hasil skrining menunjukkan ekstraksi maserasi dan ultrasonik mengandung golongan senyawa flavonoid, tanin, alkaloid, dan steroid dan terpenoid. Uji aktivitas antioksidan nilai *Inhibition Concentration* 50 (IC_{50}) yang menangkap 50% radikal FRAP yaitu IC_{50} control sebesar 6,36 ppm IC_{50} maserasi 45,17 ppm IC_{50} ultrasonik 11,16 ppm termasuk kedalam kategori sangat kuat. Ekstrak etanol temulawak ekstraksi maserasi dan ultrasonik memiliki aktivitas antioksidan yang sangat kuat. Perlu dilakukan penelitian lebih lanjut dengan menggunakan metode yang lainnya.

Kata kunci : antioksidan, frap, maserasi, ultrasonik



ABSTRACT

Antioxidants are compounds that can inhibit and neutralize free radicals. The rhizome of temulawak contains compounds such as yellow pigment (curcumin), fiber, starch, potassium oxalate, essential oils, and flavonoids, alkaloids, tannins, curcuminoids, and terpenoids. To compare the antioxidant activity using the FRAP method on ethanol extract of temulawak based on maceration and ultrasonic extraction. This research is experimental by making 2 extractions, maceration and ultrasonic, with 96% ethanol solvent. It is conducted qualitatively (standardization) and quantitatively using the FRAP (Ferric Reducing Antioxidant Power) antioxidant method. The results show that the simplicia standardization meets the FHI standardization requirements, namely the water content test of 6.92%, total ash content test of 3.80%, and the acid-insoluble ash content test does not meet the standard of 0.68%, water-soluble extract content test of 10.71%, and ethanol-soluble extract content test of 4.50%. The screening results show that maceration and ultrasonic extraction contain groups of flavonoids, tannins, alkaloids, steroids, and terpenoids. The antioxidant activity test of the Inhibition Concentration 50 (IC_{50}) value, which captures 50% of FRAP radicals, shows IC_{50} control of 6,36 ppm, IC_{50} maceration of 45,17 ppm, and IC_{50} ultrasonic of 11,16 ppm, which falls into the very strong category. The ethanol extract of temulawak from maceration and ultrasonic extraction has very strong antioxidant activity. Further research is needed using other methods.

Keywords: antioxidants, FRAP, maceration, ultrasonic.

