

ABSTRAK

Latar Belakang : Berbagai aktivitas metabolisme di dalam sel menghasilkan produksi oksidan radikal bebas, termasuk *reactive oxygen species* (ROS), *reactive nitrogen species* (RNS), dan *reactive sulfur species* (RSS). Jahe Merah (*Zingiber officinale var rubrum rhizoma*) mengandung sekitar 169 senyawa kimiawi. Peran Jahe Merah menangkapi radikal bebas pada tubuh yang berhubungan dengan kondisi depresi.

Tujuan : Membandingkan kadar antioksidan pada ekstrak jahe merah dengan menggunakan pelarut etanol 79%, 96%, dan air.

Metode : Metode penelitian laboratorium pre-eksperimental dengan desain penelitian deskriptif untuk mengetahui perbandingan nilai *Inhibition Concentration* (IC50) ekstrak etanol jahe merah berpotensi sebagai antidepresan alami. Metode ekstraksi maserasi menggunakan pelarut etanol 70%, 96%, dan air. Selain itu, metode pengeringan menggunakan lemari pengeringan dengan kontrol suhu yang stabil 40°C, sehingga menjaga kandungan senyawa kimia seperti gingerol dan shogaol agar tidak rusak, serta menjaga aroma dan kualitas jahe merah.

Hasil : Berdasarkan hasil skrining fitokimia jahe merah mengandung flavonoid, alkaloid, glikosida, saponin, tanin, dan steroid/triterpen. Hasil nilai IC50 ekstrak etanol 96% jahe merah kategori antioksidan yang sangat kuat yaitu 28,7895 ppm, ekstrak etanol 70% jahe merah nilai IC50 sebesar 71,72525 ppm kategori antioksidan kuat, serta ekstrak air jahe merah nilai IC50 sebesar 170,3751 ppm kategori antioksidan lemah. Hasil analisis ANOVA menunjukkan bahwa nilai $p = 0,001 (<0,05)$ sehingga terdapat perbedaan yang bermakna (Signifikan) kadar IC50 dalam ekstrak etanol jahe merah yang diekstrak dengan air, etanol 70% dan etanol 96%.

Kesimpulan : Jahe merah mengandung senyawa antioksidan alami sehingga berpotensi dalam mengatasi gejala depresi.

Kata kunci : Antidepresan, Antioksidan, Jahe merah, Etanol.

ABSTRACT

Background: Various metabolic activities in cells result in the production of free radical oxidants, including reactive oxygen species (ROS), reactive nitrogen species (RNS), and reactive sulfur species (RSS). Red Ginger (*Zingiber officinale* var *rubrum* rhizoma) contains about 169 chemical compounds. The role of Red Ginger is to capture free radicals in the body that are associated with depressive conditions. **Objective:** To compare the antioxidant content of red ginger extract using ethanol 79%, 96%, and water solvents.

Methods: Pre-experimental laboratory research method with descriptive research design to determine the comparison of Inhibition Concentration (IC50) value of red ginger ethanol extract as a potential natural antidepressant. The maceration extraction method used 70%, 96%, and water ethanol solvents. In addition, the drying method uses a drying cabinet with a stable temperature control of 40°C, so as to maintain the content of chemical compounds such as gingerol and shogaol so as not to be damaged, as well as maintaining the aroma and quality of red ginger.

Results: Based on the results of phytochemical screening, red ginger contains flavonoids, alkaloids, glycosides, saponins, tannins, and steroids/triterpenes. The IC50 value of 96% ethanol extract of red ginger is a very strong antioxidant category of 28.7895 ppm, 70% ethanol extract of red ginger IC50 value of 71.72525 ppm strong antioxidant category, and red ginger water extract IC50 value of 170.3751 ppm weak antioxidant category. The results of ANOVA analysis showed that the value of $p = 0.001$ (<0.05) so that there is a meaningful difference (Significant) IC50 levels in ethanol extracts of red ginger extracted with water, 70% ethanol and 96% ethanol.

Conclusion: Red ginger contains natural antioxidant compounds that have the potential to overcome symptoms of depression.

Keywords: Antidepressant, Antioxidant, Red ginger, Ethanol.