Universitas Ngudi Waluyo
Program Studi Farmasi, Fakultas Kesehatan
Skripsi, Februari 2025
Ayu Putri Brilian Subhan
051211056

PENGARUH METODE EKSTRAKSI PANAS DAN DINGIN TERHADAP AKTIVITAS ANTIOKSIDAN EKSTRAK ETANOL 96% BEKATUL PADI (*Oryza sativa* L.)

ABSTRAK

Latar Belakang: Bekatul padi mengandung metabolit sekunder seperti alkaloid, flavonoid, tanin, saponin dan steroid yang berperan sebagai antioksidan. Bekatul padi memiliki potensi sebagai kosmetik karena memiliki sifat antioksidan yang dibutuhkan oleh pembuatan produk kosmetik. Tujuan penelitian ini adalah menganalisis kandungan metabolit sekunder secara kualitatif dan kuantitatif serta aktivitas antioksidan ekstrak bekatul padi (*Oryza sativa* L.) metode maserasi dan sokletasi.
Metode: Jenis penelitian ini adalah penelitian eksperimental. Simplisia bekatul padi (*Oryza sativa* L.) diberikan perlakuan metode ekstraksi yang berbeda yaitu metode maserasi dan sokletasi. Skrining fitokimia dilakukan secara kualitatif dan kuantitatif dengan pengujian flavonoid total. Aktivitas antioksidan diuji menggunakan spektrofotometer UV-Vis dengan metode ABTS dan nilai IC_{50} sebagai parameter analisis SPSS Uji Parametrik *One Way Anova*.
Hasil: Ekstrak bekatul padi metode maserasi dan sokletasi positif mengandung alkaloid, flavonoid dan triterpenoid. Nilai rata-rata kadar flavonoid total metode maserasi sebesar 2,520 ± 0,005 mgQE/g dan metode sokletasi sebesar 2,815 ± 0,006 mgQE/g. Uji aktivitas antioksidan metode maserasi memiliki nilai rata-rata IC_{50} sebesar 421,689 ± 1,453 ppm sedangkan metode sokletasi memiliki nilai rata-rata IC_{50} sebesar 482,407 ± 2,620 ppm.
Kesimpulan: Ekstrak bekatul padi metode maserasi maupun sokletasi mengandung alkaloid, flavonoid dan steroid. Metode maserasi dan sokletasi memiliki perbedaan yang signifikan berdasarkan nilai IC_{50}. Aktivitas antioksidan ekstrak bekatul padi metode maserasi maupun sokletasi memiliki kategori sangat lemah.

Kata Kunci : bekatul, maserasi, sokletasi, antioksidan.

Ngudi Waluyo University
Study Program of Pharmacy, Faculty of Health
Final Project, Februari 2025
Ayu Putri Brilian Subhan
051211056

THE EFFECT OF HOT AND COLD EXTRACTION METHODS ON THE ANTIOXIDANT ACTIVITY OF 96% ETHANOL EXTRACT OF RICE BRAN (Oryza Sativa L.)

ABSTRACT

Background: Rice bran contains secondary metabolites such as alkaloids, flavonoids, tannins, saponins and steroids that act as antioxidants. Rice bran has potential as a cosmetics ingredient due to its antioxidant properties, which are required in the production of cosmetic products. The aim of this study is to analyze the qualitative and quantitative content of secondary metabolites as well as the antioxidant activity of rice bran extract (*Oryza sativa* L.) using maceration and Soxhlet extraction methods.
Method: this study is an experimental research. Rice bran (*Oryza sativa* L.) was subjected to two different extraction methods, maceration and Soxhlet extraction. Phytochemical screening was performed qualitatively and quantitatively by testing the total flavonoid content. Antioxidant activity was tested using a UV-Vis spectrophotometer with the ABTS method and the IC_{50} value was used as the parameter for analysis using SPSS.
Result: Both maceration and Soxhlet extract of rice bran were positive for alkaloids, flavonoids and triterpenoids. The average total flavonoid content of the maceration method was 2,520 ± 0,005 mgQE/g and the Soxhlet method was 2,815 ± 0,006 mgQE/g. the antioxidant activity test shows that the maceration method had an average IC_{50} value of 421,689 ± 1,453 ppm, while the Soxhlet method had an average IC_{50} value of 482,407 ± 2,620 ppm.
Conclusion: Both maceration and Soxhlet extraction methods of rice bran contain alkaloids, flavonoids and triterpenoids. There was a significant difference in antioxidant activity based on the IC_{50} values. The antioxidant activity of rice bran extract using maceration and soxhletation methods is in the very weak category.

Keywords: rice bran, maceration, soxhlet, antioxidant