

ABSTRAK

Penelitian ini bertujuan untuk menguji dan menganalisis efektivitas pemberian ekstrak cengkeh (*Syzygium aromaticum*) terhadap fungsi pankreas tikus putih (*Rattus norvegicus*) jantan galur wistar yang diinfeksi *Staphylococcus aureus* dan bagaimana gambaran histopatologinya. Sampel penelitian ini dihitung menggunakan rumus Ferderer untu 4 kelompok. Penelitian ini menggunakan 24 ekor tikus galur wistar untuk tiap kelompok percobaan. Pengelompokkan hewan uji dilakukan secara acak kedalam 4 kelompok uji. Kelompok pertama sebagai kelompok kontrol, pada kelompok ini tikus hanya diberi aquades. Kelompok perlakuan diberi Infeksi bakteri dan ekstrak cengkeh dengan dosis berbeda yaitu 200mg/KgBB, 400mg/KgBB, dan 600mg/KgBB. Hasil penelitian menunjukkan bahwa ekstrak cengkeh mengandung metabolit sekunder berupa saponin, tannin, flavonoid, dan triterpenoid yang membantu memperbaiki sel pankreas yang rusak akibat kondisi infeksi *Staphylococcus aureus*. Pemberian ekstrak cengkeh dengan dosis 600mg/KgBB efektif dalam memperbaiki fungsi pankreas pada tikus putih (*Rattus norvegicus*) galur wistar yang mengalami infeksi *Staphylococcus aureus*. Hasil pengamatan histopatologi jaringan pankreas pada kelompok perlakuan 3 (600mg/KgBB) mengalami perbaikan paling signifikan dan mendekati kelompok kontrol (Kelompok acuan) dibanding kelompok lainnya.

Kata Kunci: Infeksi, *Staphylococcus aureus*, Pankreas, Cengkeh

ABSTRACT

*This study aims to analyze and test the effectiveness of administering moringa flower extract (*Moringa oleifera*) in reducing cholesterol levels and improving testicular function in male Wistar rats (*Rattus norvegicus*) who are obese and how the histopathology of rat testicles (*Rattus norvegicus*) looks like. The research sample was 24 male Wistar rats (*Rattus norvegicus*) obtained by calculating the Ferderer formula for 4 groups. Each group consisted of 6 mice that were given different treatments. The control/normal group was given regular food and distilled water, while the treatment group was made obese and given *Moringa oleifera* flower extract at different doses, namely 200mg/KgBB, 400mg/KgBB, and 600mg/KgBB. To induce obesity in test animals, mice were fed a high-fat diet every day in the form of quail egg yolks for 14 days. These foods exogenously increase cholesterol levels and give rise to obesity. The parameter used to confirm that mice are obese is by calculating the Lee index value. After 14 days of a high-fat diet, the mice were calculated for the Lee Index value and obtained a value of >0.30 , which means the mice were obese. The results of the observations showed that *Moringa oleifera* flower extract at a dose of 400mg/KgBW and 600mg/KgBW was effective in reducing total cholesterol levels in obese white Wistar rats. This is evident from the cholesterol levels in both groups which were less than 54mg/dl. The results of histopathological observations of testicular tissue in treatment group 3, namely *Moringa oleifera* flower extract at a dose of 600 mg/KgBW, experienced the most significant improvement and were closer to the control group compared to the other groups. Reducing total cholesterol levels and improving the function of testicles damaged due to obesity occurs due to the help of the phytochemical compounds contained in *Moringa* flower extract. Based on the results of phytochemical tests, it was found that *Moringa* flower extract contains compounds in the form of flavonoids, tannin saponin alkaloids, and steroids which help reduce total cholesterol levels and improve testicular function.*

Keywords: Obesity, Cholesterol, Testes, Moringa Flowers