

## ABSTRAK

### **EFEK EKSTRAK BIJI ALPUKAT (*Persea americana* Mill) TERHADAP GAMBARAN HISTOPATOLOGI HATI DAN GINJAL MENCIT BALB/c (*Mus musculus*) YANG DIINFEKSI BAKTERI *Staphylococcus aureus***

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Alpukat (*Persea americana* Mill) merupakan buah yang banyak digemari oleh masyarakat Indonesia dan mengandung antioksidan yang tinggi. Konsumsi buah alpukat menyisakan biji alpukat sebagai salah satu limbah. Biji tersebut dapat digunakan sebagai antibakteri karena mengandung alkaloid, triterpenoid, flavonoid, saponin, dan tanin. Tujuan penelitian ini untuk mengetahui pengaruh pemberian ekstrak biji alpukat pada mencit BALB/c yang diinfeksi bakteri *Staphylococcus aureus* terhadap gambaran histopatologi organ hati dan ginjal mencit. Mencit sebanyak 25 ekor secara acak dibagi menjadi lima kelompok, setiap kelompok terdapat lima ekor mencit dan diinjeksi bakteri *Staphylococcus aureus*  $1 \times 10^8$  CFU/ml secara intraperitoneal. Kelompok I sebagai kelompok kontrol negatif yang diberi aquades 1 ml/hari/PO, Kelompok II sebagai kontrol positif yang diberi terapi antibiotik tetrasiklin dosis 130 mg/kg BB/hari/PO, Kelompok III diberi terapi ekstrak biji alpukat dosis 300 mg/kg BB/hari/PO, Kelompok IV diberi terapi ekstrak biji alpukat dosis 600 mg/kg BB/hari/PO, dan Kelompok V diberi terapi ekstrak biji alpukat dosis 1200 mg/kg BB/hari/PO. Pengobatan dilakukan selama tujuh hari kemudian mencit dieuthanasi menggunakan ketamin overdosis. Mencit yang mati segera dinekropsi, diambil organ hati dan ginjal kemudian dimasukkan dalam larutan formalin 10%, selanjutnya dibuat preparat histopatologi dengan pewarnaan Hematoksilin dan Eosin. Data yang diperoleh dianalisis secara deskriptif menunjukkan perubahan histopatologi pada organ hati dan ginjal, yaitu ditemukan degenerasi vakuoler, radang perivaskuler, kongesti, dan nekrosis. Pada kelompok pemberian ekstrak etanol biji alpukat dosis terendah (300 mg/kg BB) menunjukkan perubahan paling ringan dibandingkan dengan kelompok kontrol, dosis 600 mg/kg BB, dan 1200 mg/kg BB. Perubahan tersebut antara lain radang perivaskuler pada hati dan degenerasi vakuoler pada ginjal.

Kata kunci: biji alpukat, tetrasiklin, *Staphylococcus aureus*, mencit BALB/c, histopatologi.

## ABSTRACT

### THE EFFECT OF AVOCADO (*Persea americana* Mill) SEED'S EXTRACT TOWARDS HISTOPATHOLOGICAL FIGURE OF LIVER AND KIDNEY OF BALB/c MICE (*Mus musculus*) INFECTED WITH BACTERIA *Staphylococcus aureus*

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Avocado (*Persea americana* Mill) is a kind of fruit that is liked by the Indonesian people. It contains high antioxidants, so it can be used as traditional medicine. Avocado consumption produces avocado seeds as a waste. These seeds can be used as antibacterial because they contain alkaloids, triterpenoids, flavonoids, saponins, and tannins. The purpose of this study is to determine the effect of giving avocado seed extract to BALB/c mice infected with bacteria *Staphylococcus aureus* on the histopathological picture of the liver and kidney of the mice. Twenty five mice were divided into five groups randomly, each group contains five mice and were injected with bacteria *Staphylococcus aureus*  $1 \times 10^8$  CFU/ml intraperitoneally. Group I as a negative control group, was given distilled water 1 ml/day/orally, Group II as a positive control, mice treated with tetracycline antibiotic at a dose of 130 mg/kg BW/day/orally, Group III treated with avocado seed extract at a dose of 300 mg/kg BW/day/orally, Group IV treated with avocado seed extract at a dose of 600 mg/kg BW/day/orally, and Group V treated with avocado seed extract at a dose of 1200 mg/kg BW/day/orally. The treatment was carried out for seven days and then the mice were euthanized using overdose of ketamine. The dead-mice were necropsied immediately, the liver and kidney organs of the mice were taken, and then put into 10% formalin solution. After that, the organs were made into histopathological preparations stained with Hematoxylin and Eosin. The data obtained were analyzed descriptively showing there were histopathological changes in the liver and kidneys, namely vacuolar degeneration, perivascular inflammation, congestion, and necrosis. In the group giving the lowest dose of avocado seed ethanol extract (300 mg/kg BW) showed the lightest changes compared to the control group, a dose of 600 mg/kg BW, and 1200 mg/kg BW. These changes include perivascular inflammation of the liver and vacuolar degeneration of the kidneys.

Key words: avocado seed, tetracycline, *Staphylococcus aureus*, BALB/c mice, histopathology.