

ABSTRACT

Background: *Hypercholesterolemia can be caused by a high-fat diet and cause kidney damage. Karamunting (Rhodomyrtus tomentosa) is an antioxidant, inhibiting lipid peroxide that triggers hypercholesterolemia and kidney damage. This study was to determine the nephroprotective effect of karamunting leaves on the kidneys of hypercholesterolemic white rats.*

Methods: *This study used 25 white rats, divided into five groups, namely negative and positive controls, and treatment groups of karamunting leaf extract doses of 200, 400, and 800 mg/kgBW. High-fat feed was given for 4 weeks. Extract treatment for 2 weeks, on the 15th day termination and kidney removal were carried out. A total of 25 kidney preparations were made with H&E staining, observed at 400x magnification. Kidney damage scoring with the ImageJ application.*

Results: *The results of 800 and 400 mg/kgBW doses treatment on tubular cell damage scores were significant (p value <0.05). The interstitial cell damage scores of 800 and 200 mg/kgBW doses were significant. The glomerular cell damage score was not significant.*

Conclusion: *Karamunting leaf extract provides a nephroprotective effect on renal tubular cells at doses of 800 and 400 mg/kgBW, as well as renal interstitial cells at doses of 800 and 200 mg/kgBW, although there were no significant changes in glomerular cells.*

Keywords: *Karamunting leaves (Rhodomyrtus tomentosa), nephroprotective, hypercholesterolemia, histopathology, Rattus norvegicus*

ABSTRAK

Latar Belakang: Hiperkolesterolemia dapat diakibatkan oleh diet tinggi lemak dan mengakibatkan kerusakan ginjal. Karamunting (*Rhodomyrtus tomentosa*) bersifat antioksidan, menghambat lipid peroksida yang memicu hiperkolesterolemia dan kerusakan pada ginjal. Tujuan penelitian ini untuk mengetahui efek nefroprotektif daun karamunting terhadap histopatologi ginjal tikus putih hiperkolesterolemia.

Metode: Penelitian ini menggunakan 25 ekor tikus putih, dibagi menjadi lima kelompok, yaitu kontrol negatif dan positif, serta kelompok perlakuan ekstrak daun karamunting dosis 200 mg/kgBB, 400 mg/kgBB, dan 800 mg/kgBB. Pemberian pakan tinggi lemak selama 4 minggu. Perlakuan ekstrak selama 2 minggu, hari ke-15 dilakukan terminasi dan pengambilan ginjal. Sejumlah 25 preparat ginjal dibuat dengan pewarnaan H&E, diamati pada perbesaran 400x. Skoring kerusakan ginjal dengan aplikasi *ImageJ*.

Hasil: Hasil skor kelompok perlakuan dosis 800 mg/kgBB dan 400 mg/kgBB pada kerusakan sel tubulus signifikan ($p \text{ value} < 0,05$). Hasil skor kerusakan sel interstisial dosis 800 mg/kgBB dan 200 mg/kgBB signifikan. Skor kerusakan sel glomerulus tidak signifikan.

Kesimpulan: Ekstrak daun karamunting memberikan efek nefroprotektif pada sel tubulus ginjal dengan dosis 800 mg/kgBB dan 400 mg/kgBB, serta sel interstisial ginjal pada dosis 800 mg/kgBB dan 200 mg/kgBB, meskipun pada sel glomerulus tidak ada perubahan signifikan secara statistik.

Kata Kunci: Daun karamunting (*Rhodomyrtus tomentosa*), nefroprotektif, hiperkolesterolemia, histopatologi, *Rattus norvegicus*