

ABSTRAK

Indonesia kaya dengan keanekaragaman serta berpeluang sebagai sumber obat tradisional. Gangguan metabolisme lipid, khususnya kadar kolesterol total yang meningkat sebagai faktor risiko utama penyakit kardiovaskular yang prevalensinya terus meningkat akibat pola konsumsi tinggi lemak dan perubahan gaya hidup. Spesies tumbuhan *Averrhoa bilimbi L.* teridentifikasi menyimpan arsenal metabolit sekunder (flavonoid, saponin, tanin, alkaloid) yang diasumsikan berimplementasi biokimia terhadap reduksi kolesterol total, alhasil investigasi ilmiah pun dilancarkan pada hewan model tikus jantan Wistar yang sebelumnya dimanipulasi metaboliknya via diet tinggi lemak.

Rancangan metodologis mengklasifikasikan 30 ekor tikus ke dalam enam konfigurasi kelompok (KN, K⁻, K⁺, P1,P2,P3) dengan variasi dosis ekstrak 120 mg/200grBB/hari, 240 mg/200grBB/hari, dan 480 mg/200grBB/hari, dievaluasi secara longitudinal pada hari ke-8, ke-22, dan ke-30 via serangkaian prosedur statistik.

Seluruh varian dosis mendemonstrasikan kemampuan reduksi kolesterol yang bermakna ($p < 0,05$), dengan efektivitas paling maksimal teramati pada kelompok P3 (480 mg/200grBB), yang rerata kolesterol totalnya $107,20 \pm 4,44$ mg/dL secara komparatif ekuivalen dengan kelompok penerima simvastatin.

Sintesis empiris menegaskan bahwa ekstrak etanol daun *Averrhoa bilimbi L.* berkemampuan farmakologis mereduksi kolesterol total pada tikus Wistar hiperlipidemik, dengan dosis paling efisien pada 240 mg/kgBB sekaligus membuka peluang pemanfaatannya sebagai kandidat alternatif agen antihiperlipidemia berbasis bahan alam.

Kata kunci: Daun Belimbing Wuluh, Ekstrak Etanol, Kolesterol, Tikus

ABSTRACT

*Indonesia is wealthy with biodiversity as well as possesses potential as a traditional medicine source. Lipid metabolism disturbances, specifically elevated total cholesterol levels as the principal risk factor of cardiovascular disease whose prevalence continues to escalate as a consequence of high-fat consumption patterns and lifestyle transformations. The plant species *Averrhoa bilimbi* L. is identified to store an arsenal of secondary metabolites (flavonoids, saponins, tannins, alkaloids) that are assumed to biochemically implement toward total cholesterol reduction, such that scientific investigation was then launched upon animal models of male Wistar rats that were previously metabolically manipulated via high-fat diet.*

The methodological design classified 30 rats into six group configurations (KN, K⁻, K⁺, P1–P3) with extract dose variations of 120, 240, and 480 mg/kgBW, evaluated longitudinally on days 8, 22, and 35 via a series of statistical procedures.

All dose variants demonstrated cholesterol reduction capability that is meaningful ($p < 0.05$), with the most optimal effectiveness observed in P2 (240 mg/kgBW), whose total cholesterol mean of 104.80 ± 3.11 mg/dL is comparatively equivalent with the simvastatin-receiving group.

*Empirical synthesis affirms that *Averrhoa bilimbi* L. leaf ethanol extract possesses pharmacological capability to reduce total cholesterol in hyperlipidemic Wistar rats, with the most efficient dose at 240 mg/kgBW simultaneously opening opportunities for its utilization as an alternative candidate for natural material-based antihyperlipidemia agents.*

Keywords: *Starfruit Leaves, Ethanol Extract, Cholesterol, Rats*