

ABSTRAK

Dislipidemia adalah kelainan metabolisme lipid disertai dengan peningkatan atau penurunan fraksi lipid di dalam plasma. Gangguan fraksi lipid yang utama berupa peningkatan kadar kolesterol total (K-total), kolesterol *Low Density Lipoprotein* (K-LDL), trigliserida (TG), serta penurunan kolesterol *High Density Lipoprotein* (K-HDL). Bawang putih siung tunggal (*allium sativum var solo garlic*) hanya mempunyai satu siung. Kandungan senyawanya 5-6 kali lebih tinggi dari bawang putih biasa. Kandungan senyawa fenolik (238,558 mg GAE/gr), flavonoid (656,41 mg QE/gr) pada bawang putih tunggal memiliki aktivitas antioksidan sebesar 212,169 ppm karena dapat mendonorkan proton hydrogen dan menetralkan radikal bebas. Tujuan penelitian adalah untuk mengetahui efektivitas pemberian ekstrak bawang putih tunggal (*allium sativum var solo garlic*) terhadap profil lipid dan histopatologi jantung pada *rattus wistar* jantan dislipidemia. Jenis penelitian ini adalah *quasi experimental* dengan *pre test and post test group design*. Penelitian ini dilaksanakan Laboratorium Terpadu Farmakologi Farmasi Universitas Sumatera Utara pada bulan Januari sampai April 2025. Alat yang digunakan untuk *in vivo* antara lain kandang, tempat makan dan minum, sonde oral, timbangan hewan, dan mikroskop. Peralatan yang digunakan pada proses ekstraksi bawang putih (*Allium sativum L.*) dengan cara dingin (maserasi dingin 96%), evaporasi dan waterbath adalah *blender*, kaca arloji, spatula, gelas kimia, gelas ukur, erlenmeyer berpenghisap, corong *Buchner*, set alat refluks, *hotplate*, batu didih, penangas air, neraca analitik, gelas kimia 1 L, gelas kimia 250 mL, gelas ukur 50 mL, gelas ukur 10 mL, botol vial, kertas saring, dan batang pengaduk, Kertas saring, Pengereng, Penangas air (waterbath). Populasi pada penelitian ini adalah sebanyak 24 ekor *rattus wistar* jantan dibagi menjadi 4 kelompok dengan masing-masing kelompok terdiri dari 6 ekor *rattus wistar* jantan. Data dianalisis untuk normalitas dengan uji *Shapiro-Wilk*, dan jika terdistribusi normal, dilanjutkan dengan uji parametrik ANOVA satu arah dan uji *post-hoc Tukey HSD*. Hasil penelitian Uji fitokimia dapat ditemukan bahwa ekstrak bawang putih tunggal mengandung senyawa Alkaloid, Saponin, Flavonoid, Tanin, Glikosida, Triterpenoid/steroid. Hasil pengamatan histopatologi jantung pada hari 0 didapatkan pada kelompok positif ($1,83 \pm 0,41$), kelompok negatif ($0,5 \pm 0,55$), perlakuan 1 ($1,33 \pm 0,52$), perlakuan 2 ($0,67 \pm 0,82$). Pada hari 28 didapatkan pada kelompok positif ($0,5 \pm 0,55$), kelompok negatif ($0,5 \pm 0,55$), perlakuan 1 ($0,5 \pm 0,55$), perlakuan 2 ($0,67 \pm 0,82$).

Kata Kunci: Bawang Putih Tunggal, Profil Lipid, Histopatologi Jantung, *Rattus Wistar* Jantan, Dislipidemia.

ABSTRACT

*Dyslipidemia is a lipid metabolism disorder accompanied by an increase or decrease in lipid fractions in plasma. The main lipid fraction disorders are increased levels of total cholesterol (C-total), low-density lipoprotein (LDL), triglycerides (TG), and decreased levels of high-density lipoprotein (HDL). Single-clove garlic (*Allium sativum* var. solo garlic) has only one clove. Its compound content is 5-6 times higher than regular garlic. The phenolic compounds (238.558 mg GAE/g) and flavonoids (656.41 mg QE/g) in single-clove garlic have an antioxidant activity of 212.169 ppm due to their ability to donate hydrogen protons and neutralize free radicals. The purpose of this study was to determine the effectiveness of single-clove garlic extract (*Allium sativum* var. solo garlic) on the lipid profile and cardiac histopathology of male Wistar rats with dyslipidemia. This type of research is quasi-experimental with pre-test and post-test group design. This research was conducted in the Integrated Laboratory of Pharmaceutical Pharmacology, University of North Sumatra from January to April 2025. The tools used for in vivo include cages, food and drink containers, oral probes, animal scales, and microscopes. The equipment used in the process of extracting garlic (*Allium sativum* L.) by cold methods (96% cold maceration), evaporation, and water baths are blenders, watch glasses, spatulas, beakers, measuring cups, suction erlenmeyer flasks, Buchner funnels, reflux apparatus sets, hotplates, boiling stones, water baths, analytical balances, 1 L beakers, 250 mL beakers, 50 mL measuring cups, 10 mL measuring cups, vials, filter paper, and stirring rods, filter paper, dryer, water bath. The population in this study was 24 male wistar rats divided into 4 groups with each group consisting of 6 male wistar rats. Data were analyzed for normality with the Shapiro-Wilk test, and if normally distributed, continued with the one-way ANOVA parametric test and the Tukey HSD post-hoc test. The results of the phytochemical test showed that single garlic extract contained Alkaloid, Saponin, Flavonoid, Tannin, Glycoside, Triterpenoid/steroid compounds. The results of histopathological observations of the heart on day 0 were obtained in the positive group (1.83 ± 0.41), the negative group (0.5 ± 0.55), treatment 1 (1.33 ± 0.52), treatment 2 (0.67 ± 0.82). On day 28, the positive group (0.5 ± 0.55), the negative group (0.5 ± 0.55), treatment 1 (0.5 ± 0.55), and treatment 2 (0.67 ± 0.82) were found.*

Keywords: Single Garlic, Lipid Profile, Heart Histopathology, Male Wistar Rats, Dyslipidemia.