

ABSTRAK

Judul : Efek Antioksidan Ekstrak *Strobilanthes crispata* terhadap Dislipidemia dan Kerusakan Hepato-Kardiovaskular *Rattus norvegicus* Wistar Model Diet Tinggi Lemak

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Diet tinggi lemak berkontribusi terhadap dislipidemia, steatosis hepatis, dan kerusakan kardiovaskular melalui akumulasi lipid dan stress oksidatif. *Strobilanthes crispata* (keji beling) dengan senyawa bioaktif berpotensi sebagai antioksidan dan efek modulasi lipid. Penelitian ini mengevaluasi komponen fitokimia, aktivitas antioksidan (DPPH), efek antidislipidemia dan hepato-kardiovaskular protektif ekstrak etanol *Strobilanthes crispata* (EESC) secara *in vitro* dan *in vivo*. Sebanyak 24 ekor Tikus Wistar jantan diberi diet tinggi lemak berupa minyak sapi dan mentega hewani (1:1, v/v; volume total 1 mL/tikus/hari) selama 12 minggu. Kelompok penelitian yaitu kontrol positif (atorvastatin 20 mg/kgBB), kontrol negatif (plasebo), serta perlakuan EESC 400 dan 600 mg/kgBB. EESC mengandung berbagai metabolit sekunder dan menunjukkan aktivitas antioksidan sangat kuat ($IC_{50} = 9.69$ ppm; $R = 0.99$). Pemberian EESC menurunkan berat badan tikus secara bermakna dibandingkan kelompok kontrol ($p < 0.05$) dan secara signifikan menurunkan TC, LDL-C, TG, serta meningkatkan HDL-C ($p < 0.05$). Dosis 400 mg/kgBB menunjukkan peningkatan HDL-C yang lebih kuat dan berhubungan dengan perbaikan histopatologi hepar, berupa berkurangnya ballooning hepatosit, kongesti sinusoid, serta normalisasi vena sentral. Kedua dosis EESC menunjukkan aktivitas antioksidan dan efek modulasi lipid yang signifikan, mengurangi infiltrasi inflamasi miokard, serta memperbaiki integritas endotel aorta.

Kata Kunci: Aktivitas Antioksidan, Diet Tinggi Lemak, Dislipidemia, Histopatologi, Profil Lipid, *Strobilanthes crispata*

ABSTRACT

Title : *Antioxidant Effect of Strobilanthes crisper Extract on Dyslipidemia and Hepato-cardiovascular Damage of Rattus norvegicus in High-Fat Diet Model*

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High-fat diet (HFD) contributes to dyslipidemia, hepatic steatosis, and cardiovascular damage through lipid accumulation and oxidative stress. Strobilanthes crisper (keji beling), contains bioactive compounds, has potential as an antioxidant and lipid-modulating agent. This study evaluated the phytochemical components, antioxidant activity (DPPH), and antidyslipidemic as well as hepato-cardiovascular protective effects of Strobilanthes crisper ethanol extract (EESC) in vitro and in vivo. A total of 24 Wistar rats fed a HFD consisting of beef tallow and butter (1:1, v/v; volume 1 mL/rat/day) for 12 weeks. The rats divided into four groups: positive control (atorvastatin 20 mg/kg BW), negative control (distilled water), and EESC-treated groups doses of 400 and 600 mg/kg BW. EESC contained various secondary metabolites and exhibited strong antioxidant activity ($IC_{50} = 9.69$ ppm; $R = 0.99$). EESC administration significantly reduced the body weight of the rats compared with the control group ($p < 0.05$) and significantly reduced TC, LDL-C, and TG levels while increasing HDL-C ($p < 0.05$). The 400 mg/kgBW dose showed pronounced increase in HDL-C and associated with improved hepatic histopathology, including reduced hepatocyte ballooning, decreased sinusoidal congestion, and normalization of the central vein. Both doses of EESC demonstrated significant antioxidant and lipid-modulating effects, reduced myocardial inflammatory infiltration, and improved aortic endothelial integrity.

Keywords: Antioxidant Activity, Dyslipidemia, High-fat Diet, Histopathology, Lipid Profile, Strobilanthes crisper