

PENGARUH PEMBERIAN EKSTRAK BUAH BLUBERI (*Vaccinium corymbosum*) TERHADAP KADAR MALONDIALDEHIDA PADA MODEL TIKUS DIABETIK

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Abstrak

Hiperglikemia kronis pada diabetes melitus meningkatkan pembentukan radikal bebas yang memicu peroksidasi lipid sehingga menghasilkan malondialdehida (MDA) sebagai penanda stres oksidatif. Buah bluberi (*Vaccinium corymbosum*) mengandung senyawa antioksidan, yaitu flavonoid, yang berpotensi menurunkan kadar MDA. Adapun tujuannya dari penelitian ini agar diketahui pengaruhnya dari pemberian ekstrak buah bluberi terhadap kadar malondialdehida plasma pada model tikus diabetik. Penelitian ini sebagai eksperimental murni desain *Posttest Only Control Group* dengan parameter berupa kadar malondialdehida (MDA). Jumlah sampel 28 tikus dengan berat minimal 150gram, usia 2-3 bulan, yang terbagi atas 6 kelompok. Tikus K1 diberikan pakan standar, sementara tikus K2, K3, K4, K5, dan K6 diinduksi aloksan dan diberikan pakan tinggi lemak selama 14 hari. Tikus K3 diberikan terapi obat metformin, sedangkan tikus K4, K5, K6 diberikan ekstrak buah bluberi dengan dosis 125, 250, maupun 500mg/kgBB selama 14 hari. Terminasi tikus dilakukan dengan pemberian anestesi ketamin xylazin, darah dimasukkan ke dalam tabung, kemudian disentrifugasi sehingga menghasilkan plasma. Pemeriksaan malondialdehida menggunakan spektrofotometer 532nm. Uji *Post Hoc Bonferroni* memperlihatkan bahwasanya pemberian ekstrak buah bluberi dosis 125 mg/kgBB, 250, maupun 500 mg/kgBB tidak memperlihatkan perbedaan bermakna ($p > 0,05$) dibandingkannya kelompok kontrol. Ekstrak buah bluberi dapat menurunkan kadar malondialdehida pada model tikus diabetik.

Kata Kunci: Antioksidan, Buah bluberi, Diabetes melitus, Malondialdehida, Radikal bebas

**THE EFFECT OF BLUEBERRY (*Vaccinium corymbosum*) FRUIT
EXTRACT ADMINISTRATION ON MALONDIALDEHYDE LEVELS IN A
DIABETIC RAT MODEL**

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Abstract

*Chronic hyperglycemia in diabetes mellitus increases the formation of free radicals, which trigger lipid peroxidation and produce malondialdehyde (MDA) as a biomarker of oxidative stress. Blueberry (*Vaccinium corymbosum*) contains antioxidant compounds, particularly flavonoids, which have the potential to reduce MDA levels. This study aimed to determine impact of blueberry fruit extract administration on plasma malondialdehyde levels in a diabetic rat model. This study was a true experimental study using a posttest-only control group design with malondialdehyde (MDA) levels as the parameter. A total of 28 rats with a minimum body weight of 150 grams and aged 2–3 months were divided into 6 groups. Rats in group K1 were given a standard diet, while rats in groups K2, K3, K4, K5, and K6 were induced with alloxan and fed a high-fat diet for 14 days. Rats in group K3 received metformin therapy, while rats in groups K4, K5, and K6 were given blueberry fruit extract at doses of 125, 250, and 500 mg/kgBW for 14 days. Termination of rats was performed using ketamine–xylazine anesthesia; blood samples were collected into tubes and centrifuged to obtain plasma. Malondialdehyde levels were measured using a spectrophotometer at a wavelength of 532 nm. The Bonferroni post hoc test showed that blueberry extract at doses of 125, 250, and 500 mg/kgBW did not show a significantly difference ($p > 0.05$) compared to control group. Blueberry fruit extract can reduce malondialdehyde levels in a diabetic rat model.*

Keywords: *Antioxidants, Blueberry fruit, Diabetes mellitus, Free radicals, Malondialdehyde*