

## ABSTRAK

Pratiwi, Onny. 2016. ***Pengaruh Ekstrak Daun Kemiri Terhadap Kadar Malondialdehid Serum Tikus (Rattus norvegicus) Wistar Model Diabetes Mellitus Tipe 2***. Tugas Akhir, Program Studi Kedokteran, Fakultas Kedokteran Universitas Brawijaya. Pembimbing: (1) dr. Dian Nugrahenny, M. Biomed (2) Kana Mardhiyyah, S.Si, M. Biomed.

Diabetes mellitus adalah penyakit metabolik kronik penyebab kematian nomor 6 di Indonesia. Kematian pada penderita diabetes tidak secara langsung akibat hiperglikemianya, namun karena komplikasi yang terjadi akibat peningkatan stres oksidatif yang ditandai oleh peningkatan kadar malondialdehid (MDA) dalam serum. Penelitian ini bertujuan menganalisis pengaruh pemberian ekstrak daun kemiri terhadap kadar MDA serum tikus Wistar model DM tipe 2. Studi eksperimental menggunakan desain *Randomized Post Test Only Control Group* yang dilakukan terhadap hewan coba tikus Wistar yang diinduksi DM menggunakan diet tinggi lemak dan injeksi streptozotocin. Sampel dipilih dengan cara *Purposive Sampling* dan dilanjutkan dengan *simple random sampling* untuk dibagi dalam 5 kelompok yaitu, kelompok kontrol negatif/normal ( $n=4$ ), kelompok kontrol positif/DM ( $n=4$ ), kelompok DK1 ((DM+dosis kemiri 100mg/kgBB/hari) ( $n=4$ )), kelompok DK2 ((DM+dosis kemiri 200mg/kgBB/hari) ( $n=4$ )), kelompok DK3 ((DM+dosis kemiri 400mg/kgBB/hari) ( $n=4$ )). Variabel yang diukur adalah kadar MDA serum menggunakan metode TBARS. Hasil penelitian menunjukkan bahwa penurunan kadar MDA serum pada kelompok perlakuan dosis kemiri dengan kontrol berbeda secara bermakna (ANOVA,  $p=0,000$ ). Namun tidak didapatkan perbedaan bermakna antara kelompok DK1 dan DK2 ( $p = 0,802$ ), dan antara kelompok DK1 dan DK3 ( $p = 0,595$ ). Dan terdapat hubungan kuat yang negatif antara peningkatan dosis ekstrak kemiri dengan penurunan kadar MDA serum tikus DM ( $r=-0,724$ ,  $p=0,000$ ). Kesimpulan penelitian ini adalah pemberian ekstrak daun kemiri dapat menurunkan kadar MDA serum dan semakin tinggi dosis ekstrak daun kemiri, akan semakin rendah kadar MDA serum tikus Wistar model DM tipe 2.

Kata kunci: MDA serum, diabetes mellitus tipe 2, ekstrak daun kemiri

## ABSTRACT

Pratiwi, Onny. 2016. ***The Effect of Candlenut (Aleurites moluccana) Leaves Extract on Malondialdehyde Serum Levels of Type 2 Diabetes Mellitus Wistar Rat (Rattus norvegicus)***. Final Assignment, Medical Program, Faculty of Medicine, Universitas Brawijaya. Supervisors: (1) dr. Dian Nugrahenny, M. Biomed (2) Kana Mardhiyyah, S.Si, M. Biomed.

Diabetes mellitus is a chronic metabolic disease that becomes the 6th leading cause of mortality in Indonesia. The cause of mortality in diabetics is not directly due to hyperglycemia, but because of the complications that occur due to increased oxidative stress characterized by elevated levels of Malondialdehyde (MDA) in serum. This study was aimed to analyze the effect of candlenut leaves extract on MDA serum level in diabetes mellitus type 2 Wistar rat. Experimental study using Randomized Post Test Only Control Group design applied on diabetic Wistar rats induced by Streptozotocin and High Fat Diet. Samples were selected by Purposive Sampling and continued by simple random sampling and then divided into 5 groups: the negative/normal control group ( $n = 4$ ), the positive/DM control group ( $n = 4$ ), the DK1 group (DM + 100mg/kgBW/day dose of the extract) ( $n = 4$ ), the DK2 group (DM + 200mg/kgBW/day dose of the extract) ( $n = 4$ ), the DK3 group (DM + 400mg/kgBW/day dose of the extract) ( $n = 4$ ). The variable was MDA serum level measured using the TBARS method. The results showed that decreased levels of MDA serum in candlenut leaves extract treatment group differ significantly compared with the control group (ANOVA,  $p = 0.000$ ). But there were no significant differences between DK1 and DK2 groups ( $p = 0.802$ ), and between DK1 and DK3 groups ( $p = 0.595$ ). There was a strong negative relationship between increasing doses of the candlenut leaves extract with the decreased levels of diabetic rat's MDA serum ( $r = -0.724$ ,  $p = 0.000$ ). This study concludes that candlenut leaves extract can reduce levels of MDA serum and the higher dose of candlenut leaves extract, the lower level of MDA serum in Wistar rat with type 2 diabetes.

Key words: MDA serum, type 2 diabetes mellitus, candlenut leaves extract