# Efek Pemberian Ekstrak Etanol Buah Mahkota Dewa (Phaleria macrocarpa L) Terhadap Kadar Malondialdehid Organ Jantung yang Diberi Besi Berlebih = Effect of Ethanol Extract of Phaleria macrocarpa L Fruits on Malondialdehyde Levels in Rats Induced by Iron Overload's Heart

Emanuel Verrell Didy, author



---

Abstrak

Latar Belakang Besi berlebih dapat meningkatkan stress oksidatif dan merusak jantung. Salah satu marker yang digunakan dalam mendeteksi stress oksidatif adalah malondialdehid (MDA). Buah Phaleria macrocarpa L mengandung mangiferin yang bermanfaat sebagai kelator besi. Penelitian ini bertujuan untuk menganalisis efektivitas ekstrak etanol buah Phaleria macrocarpa L dalam menurunkan kadar MDA pada jantung tikus yang diberi besi berlebih. Metode 30 tikus Sprague-Dawley dibagi ke dalam 6 kelompok, yaitu kelompok normal, kontrol negatif, deferiprone 462,5mg/kgBB, mangiferin 50mg/kgBB, ekstrak etanol buah Phaleria macrocarpa L 100mg/kgBB dan 200mg/kgBB. Setiap kelompok perlakuan kecuali kelompok normal diberi besi intraperitoneal sebanyak 3x/minggu, dosis 15mg/kali selama 8 minggu. Terapi diberikan mulai minggu ke 4, pada minggu ke-8, jantung diambil, dijadikan homogenat untuk pengukuran kadar MDA menggunakan spektrofotometer. Analisis statistic menggunakan Kruskal-Wallis. Hasil Kontrol negatif mengalami peningkatan kadar MDA yang signifikan dibandingkan kelompok normal. Pemberian ekstrak etanol buah Phaleria macrocarpa L 100mg/kgBB dan 200mg/kgBB berhasil menurunkan kadar MDA dibandingkan dengan kontrol negatif. Kadar MDA dosis 100mg/kgBB (0,06±0,02nmol/mg organ) dan dosis 200mg/kgBB (0,13±0,01nmol/mg organ), lebih rendah dibandingkan dengan kontrol negatif (0,22±0,05nmol/mg organ). Kesimpulan Pemberian ekstrak etanol buah Phaleria macrocarpa L 100mg/kgBB dan 200 mg/kgBB dapat menurunkan kadar MDA organ jantung tikus Sprague-Dawley. .....Introduction Iron overload can increase oxidative stress and cause heart failures. One of the markers used in detecting oxidative stress is malondialdehyde (MDA). Phaleria macrocarpa L fruit contains mangiferin which is useful as iron chelator. This study aims to analyze the effectiveness of ethanol extract of Phaleria macrocarpa L fruit in reducing MDA levels in heart of rats induced by iron overload. Method 30 Sprague-Dawley rats were divided into 6 groups, namely normal group, negative control, deferiprone 462,5mg/kgBW, mangiferin 50mg/kgBW, ethanol extract of Phaleria macrocarpa L 100mg/kgBW and 200mg/kgBW. Each treatment group other was given intraperitoneal iron injections 3 times/week, 15mg/time for 8 weeks. At week- 8, heart was taken to be used as homogenate and followed by measuring protein levels using Bradfort test. MDA levels were measured with TBA solution using 530nm spectrophotometer, then absorbance results were divided by the protein levels of the heart. Then analysis was carried out using Kruskal-Wallis. Results The negative control group experienced significant increase in MDA levels compared to the normal group. Administration of extract ethanol of Phaleria macrocarpa L fruit 100mg/kgBW and 200mg/kgBW was successful in reducing MDA levels compared to the negative control. MDA level in dose of 100mg/kgBW (0.06±0.02nmol/mg organ), 200mg/kgBW (0.13±0.01nmol/mg organ), lower than the negative control (0.22±0.05nmol/mg organ). Conclusion Administration of ethanol extract of Phaleria macrocarpa L fruit 100mg/kgBW can reduce MDA levels in the heart organs of Sprague-Dawley

rats.