Peran Hibiscus sabdariffa Linn pada perbaikan fungsi jantung tikus defisiensi vitamin B12: ekspresi peroxisome proliferator-activated receptor gamma coactivator-1?, carnitine palmitoyltransferase 1B, dan gambaran EKG = The role of Hibiscus Sabdariffa Linn in improving the heart function of vitamin B12 deficiency rats: expression of peroxisome proliferator-activated receptor gamma coactivator-1Ĩ±, carnitine palmitoyltransferase 1B, and ECG pattern.

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Abstrak

Defisiensi vitamin B12 menyebabkan berkurangnya donor metil dan dapat mempengaruhi metabolisme energi di jantung. Hibiscus sabdariffa Linn merupakan salah satu senyawa yang berperan sebagai kardioprotektif. Penelitian ini bertujuan mengetahui peran Hibiscus sabdariffa Linn terhadap ekspresi peroxisome proliferator-activated receptor gamma coactivator-1 (PGC-1), carnitine palmitoyltransferase 1B (CPT1B), dan gambaran EKG. Dua puluh delapan tikus Sprague-Dawley jantan usia 35-40 minggu dibagi dalam enam kelompok (2 kelompok kontrol, 2 kelompok defisiensi vitamin B12, dan 2 kelompok defisiensi vitamin B12 + Hibiscus sabdariffa Linn). Kelompok kontrol diberikan pakan standar dengan nutrisi lengkap, sedangkan kelompok perlakuan diberikan pakan AIN-93M termodifikasi defisien vitamin B12 dan ekstrak Hibiscus sabdariffa Linn 400mg/KgBB/hari. Pemeriksaan EKG dilakukan akhir minggu ke-8 dan ke-16. Sementara pemeriksaan ELISA dilakukan untuk mengukur kadar vitamin B12, Hcy, PGC-1 dan CPT1B di jantung. Hasil penelitian pada kelompok Hibiscus sabdariffa Linn menunjukkan peningkatan kadar vitamin B12 dan penurunan kadar Hcy. Hasil gambaran EKG, kadar PGC-1, dan kadar CPT1B pada penelitian ini tidak menunjukkan adanya perbedaan antar kelompok. Hibiscus sabdariffa Linn terbukti dapat mengurangi gangguan metabolisme pada jantung yang disebabkan defisiensi vitamin B12.
.....Vitamin B12 deficiency leads to reduced methyl donors and can affect cell metabolism in the heart. Hibiscus sabdariffa Linn is a compound that acts as a cardioprotective agent. This study aims to determine the role of Hibiscus sabdariffa Linn on the expression of peroxisome proliferator-activated receptor gamma coactivator-1 (PGC-1), carnitine palmitoyltransferase 1B (CPT1B), and ECG pattern. Twenty-eight male Sprague-Dawley rats aged 35-40 weeks were divided into 6 groups (2 control groups, 2 vitamin B12 deficiency groups, and vitamin B12 deficiency + Hibiscus sabdariffa Linn groups), the six groups were nurtured for 8 and 16 weeks. The control group was given standard diet with complete nutrition, while the treatment group was given modified vitamin B12 deficiency AIN-93M diet and 400mg/KgBW/day of Hibiscus sabdariffa Linn extract. At the end of week 8 and 16, ECG examination, ELISA examination heart tissue vitamin B12, heart tissue Hcy, PGC-1 and CPT1B expression were performed. Results showed at Hibiscus sabdariffa Linn groups an increase in vitamin B12 levels and a decrease in Hcy levels. There were no differences between groups on the PGC-1 levels, CPT1B levels, and ECG pattern. Hibiscus sabdariffa Linn was proven to reduce metabolic disorders in the heart caused by vitamin B12 deficiency.