

Uji efek antioksidan ekstrak air syzygium aromaticum terhadap kerusakan fungsi hati yang diinduksi CCL4 berdasarkan kadar malondialdehida pada tikus wistar = Antioxidant effect of clove (syzygium aromaticum) against CCL4-induced hepatotoxicity in wistar rats indicated by liver malondialdehyde level / Rizqi Amanda Nabilah

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Abstrak

ABSTRAK

Pendahuluan: Cengkih (*Syzygium aromaticum*) mengandung eugenol dipercaya memiliki efek antioksidan untuk menangkal paparan radikal bebas. Penelitian ini bertujuan untuk membuktikan efek antioksidan cengkih terhadap kerusakan fungsi hati tikus Wistar yang diinduksi oleh CCl₄ dengan melihat kadar Malondialdehida (MDA) hati sebagai hasil peroksidasi lipid. Metode: Tiga puluh enam tikus Wistar yang berusia 12 minggu dibagi menjadi 6 kelompok, yaitu kontrol negatif (CCl₄), kontrol positif (CCl₄ + α -tokoferol), dan 4 kelompok dengan pemberian CCl₄ dan cengkih selama 1 hari, 3 hari, 5 hari, dan 7 hari. Hasil: Digunakan uji One-way ANOVA dengan uji perbandingan post hoc LSD. Didapatkan rerata kadar MDA (nmol/mg protein) kontrol positif (0.0140), kontrol negatif (0.0098), 1 hari (0.0370), 3 hari (0.0660), 5 hari (0.0849) dan 7 hari (0.0968). Terdapat perbedaan bermakna ($p < 0.05$) antar kelompok pada uji One-way ANOVA. Berdasarkan uji post hoc LSD, peningkatan kadar MDA dibandingkan kontrol negatif signifikan ($p < 0.05$) pada cengkih 1 hari, 3 hari, 5 hari, dan 7 hari. Kesimpulan: Peningkatan kadar MDA menandakan adanya peningkatan stress oksidatif pada kelompok yang diberikan cengkih. Dengan demikian, cengkih bersifat hepatotoksik karena menyebabkan kerusakan membran lipid.

ABSTRACT

Introduction: Clove (*Syzygium aromaticum*) contains eugenol as its main compound known for its antioxidant effect against free radicals. This study was conducted to investigate the antioxidant effect of Clove against CCl₄-induced Wistar rats hepatotoxicity by measuring liver Malondialdehyde (MDA) level as one of occurring products of lipid peroxidation. Methods: Thirty-six Wistar rats at the age of 12-weeks were divided into six groups: positive control (given CCl₄ and α -tocopherol), negative group (CCl₄ only), and 4 groups were given CCl₄ and clove extract for 1 day, 3 days, 5 days, and 7 days each. Results: One-way ANOVA with post hoc comparisons (LSD) were performed across all groups. There was a significant difference ($p < 0.05$) in mean MDA level (nmol/mg protein) between positive control (0.0140), negative control (0.0098), 1 day of clove (0.0370), 3 days clove (0.0660), 5 days clove (0.0849) and 7 days clove (0.0968). The mean MDA levels are

significantly higher ($p < 0.05$) in groups that were given 1, 3, 5, and 7 days of clove extract respectively than the negative control group. Conclusions: Higher MDA levels in clove-given groups indicated increased oxidative stress caused by clove. Therefore, clove has hepatotoxic effects in Wistar rats instead of antioxidant effects