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.
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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 occuring 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