

# Perubahan kadar senyawa karbonil pada hati dan plasma tikus yang di induksi CCL4 diikuti pemberian ekstrak air cengkeh = Alteration of carbonyl compounds level in rat s liver and plasm which induced by CCL14 and followed by administration of water extract of cloves

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## Abstrak

### <b>ABSTRAK</b><br>

Pendahuluan: Radikal bebas menjadi masalah serius karena dapat menyebabkan berbagai penyakit lewat mekanisme kerusakan DNA, protein, lipid, dan karbohidrat. Cengkeh *Syzygium aromaticum* dipercaya memiliki efek antioksidan yang kuat. Penelitian ini akan mencari tahu efek antioksidan ekstrak air cengkeh terhadap kerusakan hati dan plasma akibat CCl<sub>4</sub> dan perbedaan akibat lama pemberian. Metode: Desain penelitian adalah eksperimental in vivo. Data didapat dengan mengukur konsentrasi senyawa karbonil pada hati dan plasma 24 tikus Wistar yang dibagi ke dalam 6 kelompok, yaitu Kontrol Normal tanpa perlakuan, Kontrol Positif CCl<sub>4</sub> diikuti  $\alpha$ -tokoferol, Kontrol Negatif induksi CCl<sub>4</sub>, Cengkeh 1 cengkeh selama 1 hari, CCl<sub>4</sub> Cengkeh 1 CCl<sub>4</sub> diikuti cengkeh selama 1 hari, serta CCl<sub>4</sub> Cengkeh 3 CCl<sub>4</sub> diikuti cengkeh selama 3 hari. Dosis cengkeh 200 mg/ kgBB. Hasil: Hasil uji hati didapat kadar karbonil Kontrol Negatif lebih rendah dibanding CCl<sub>4</sub> Cengkeh 1 p=0.257 tetapi lebih tinggi dibanding CCl<sub>4</sub> Cengkeh 3 p=0.91. CCl<sub>4</sub> Cengkeh 1 lebih tinggi dibanding Kontrol Normal p=0.005 dan CCl<sub>4</sub> Cengkeh 3 p=0.008. Hasil uji plasma didapat kadar karbonil Kontrol Negatif lebih rendah dibanding CCl<sub>4</sub> Cengkeh 1 p=0,008 tetapi lebih tinggi dibanding CCl<sub>4</sub> Cengkeh 3 p=0,085. Kesimpulan: Cengkeh memiliki efek antioksidan yang mampu mengatasi kerusakan hati dan plasma akibat CCl<sub>4</sub> dan waktu 3 hari merupakan waktu yang dibutuhkan untuk menunjukkan efek.

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### <b>ABSTRACT</b><br>

Introduction Free radicals is a serious problem because it can cause various diseases through the mechanism of destruction of DNA, proteins, lipids, and carbohydrates. Cloves *Syzygium aromaticum* is believed to have strong antioxidant effect. The aim of this study was to find out the antioxidant effects of water extracts of cloves to damage the liver and plasm due to CCl<sub>4</sub> and difference in duration of administration. Methode The study design was experimental research in vivo. Data obtained from measurement of carbonyl concentration in 24 Wistar rats liver and plasm which are divided into 6 groups Normal Control without treatment, Positive Control CCl<sub>4</sub> followed by tocopherol, Negative Control induction CCl<sub>4</sub>, Cloves 1 clove for 1 day, CCl<sub>4</sub> Clove 1 CCl<sub>4</sub> followed cloves for 1 day, and CCl<sub>4</sub> Clove 3 CCl<sub>4</sub> followed cloves for 3 days. Dose of cloves was 200 mg kgBB. Result The results of liver test obtained the carbonyl level in Negative Control is lower than CCl<sub>4</sub> Cloves 1 p 0257 but higher than CCl<sub>4</sub> Clove 3 p 0.91. CCl<sub>4</sub> Cloves 1 is higher than Normal Control p 0.005 and CCl<sub>4</sub> Clove 3 p 0.008. The test results obtained plasm carbonyl level in Negatif Control is lower than CCl<sub>4</sub> Cloves 1 p 0.008 but higher than CCl<sub>4</sub> Clove 3 p 0.085. Conclusion Cloves have antioxidant effects that can overcome the liver and plasm damage caused by CCl<sub>4</sub> and it considered that 3 days the time required to show an effect.