ABSTRAK

PENGARUH EKSTRAK BAWANG HITAM (*Allium sativum L.*) TERHADAP KADAR MALONDIALDEHID (MDA) HEPAR TIKUS PUTIH (*Rattus norvegicus)* BETINA GALUR WISTAR YANG DIINDUKSI ALKOHOL METODE *BINGE DRINKING*

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Latar belakang: Konsumsi *binge drinking* alkohol dapat menyebabkan peningkatan stres oksidatif sehingga menyebabkan nekrosis sel hepar. Bawang hitam dikenal sebagai sumber antioksidan lebih tinggi dibandingkan bawang putih. Penelitian ini dilakukan dengan tujuan mengetahui efek antioksidan ekstrak bawang hitam terhadap sel hepar dengan mengukur kadar MDA sebagai penanda stres oksidatif.

Metode: Penelitian eksperimental *post-test only control group design* menggunakan sampel 32 ekor tikus putih (*Rattus norvegicus*) galur Wistar yang dibagi menjadi 4 kelompok, yaitu K1 hanya diberi aquadest 3gr/kgBB, K2 diinduksi alkohol 3gr/kgBB, P1 diinduksi alkohol 3gr/kgBB dan bawang hitam dengan dosis 400 mg/kgBB, P2 diinduksi alkohol 3gr/kgBB dan bawang hitam dengan dosis 800 mg/kgBB selama 3 hari.

Hasil: Rerata kadar MDA pada tiap kelompok perlakuan adalah K1:0,51±0,21 nmol/gr, K2: 1,61±0,52 nmol/gr, P1: 1,30±0,28 nmol/gr, P2:0,79±0,52 nmol/gr, dengan hasil uji normalitas Saphiro-Wilk $p>0,05$, uji homogenitas Levene p:0,078, uji parametrik One Way ANOVA didapatkan perbedaan kelompok p:0,001 ($p<0,05$). Uji *post hoc LSD* p:0,042 terdapat di kelompok perlakuan (P2)

Kesimpulan: Ekstrak bawang hitam memiliki kemampuan menurunkan kadar MDA hepar tikus putih (*Rattus norvegicus*) betina galur Wistar yang diinduksi alkohol metode *binge drinking*.

Kata kunci: antioksidan, bawang hitam, *binge drinking*, malondialdehid

ABSTRACT

THE EFFECT OF BLACK GARLIC (*Allium sativum L.*) EXTRACT ON LIVER MALONDIALDEHYDE (MDA) LEVELS OF FEMALE WISTAR RATS (*Rattus norvegicus*) AFTER ALCOHOL BINGE DRINKING

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Background: Binge drinking alcohol can cause an increase in oxidative stress, causing liver cell necrosis. Black garlic is known as a source of antioxidants higher than garlic. This research was conducted with the aim of determining the antioxidant effect of black garlic extract on liver cells by measuring MDA levels as a marker of oxidative stress.
Methods: post-test only control group design experimental research using 32 white rats (*Rattus norvegicus*) of the Wistar strain as samples, which were divided into 4 groups, K1 was only given 3gr/kgW distilled water, K2 was induced with 3gr/kgW alcohol, P1 was induced with 3gr/kgW alcohol plus black garlic extract at a dose of 400 mg/kgW, P2 induced by 3gr/kgW alcohol plus black garlic extract at a dose of 800 mg/kgW for 3 days.
Results: MDA rate levels in each group are, K1:0,51±0,21 nmol/gr, K2:1,61±0,52 nmol/gr, P1:1.30±0,28 nmol/gr, and P2:0.79±0,52 nmol/gr, with Shapiro-Wilk normality test results p>0.05, Levene homogeneity test p:0,78, One Way ANOVA parametric test result p:.0,001. LSD post hoc test p:0.042 in the group (P2).
Conclusion: Black garlic extract can reduce hepatic MDA levels of female Wistar rats (*Rattus norvegicus*) after induced by alcohol binge drinking.

Keyword: antioxidants, binge drinking, black garlic, malondyaldehide