

## Abstrak

Hiperlipidemia berpengaruh pada perkembangan plak aterosklerosis. Aterosklerosis disebabkan peningkatan radikal bebas yang memicu reaksi peroksidasi lipid yang ditandai peningkatan MDA darah. Kutu jepang (*Tenebrio molitor*) mengandung oleic acid, linoleic acid, valine dan leucine yang dapat menurunkan LDL dan agen inflamasi sehingga diharapkan menurunkan kadar MDA darah. Penelitian ini bertujuan mengetahui pengaruh pemberian kutu jepang terhadap kadar MDA darah.

Penelitian eksperimental dengan rancangan *Post test only control group design* ini menggunakan subjek 24 ekor tikus jantan galur *Sprague dawley* (SD) dibagi dalam 4 kelompok secara random. Kelompok Kontrol diberi pakan standard dan aquades, kelompok Diet Tinggi Lemak (DTL) diberi pakan standard, aquades, diet tinggi lemak (kuning telur puyuh 2 mL/200gBB/hari dan PTU 5,4 mg/200 gBB/hari), Kelompok Simv diberi pakan standard, aquades, diet tinggi lemak dan simvastatin 0,18 mg/200 gBB/hari, kelompok KJ diberi pakan standard, aquades, diet tinggi lemak dan kutu jepang suspensi oral dosis 14,4 mg/200 gBB/hari. Pelakuan dilakukan selama 21 hari. Data dianalisis menggunakan uji *One Way Anova* dan dilanjutkan dengan uji *Post Hoc Tamhane's*.

Rerata kadar MDA darah kelompok kontrol, DTL, Simv, dan KJ adalah  $1.12 \pm 0.16$ ,  $7.15 \pm 0.56$ ,  $3.19 \pm 0.31$ ,  $4.03 \pm 0.45$ . Hasil uji *One Way Anova* menunjukkan pengaruh kutu jepang terhadap penurunan kadar MDA ( $p < 0,05$ ). Hasil uji *Post Hoc Tamhane's* menunjukkan perbedaan bermakna tiap kelompok uji ( $p < 0,05$ ).

Dari hasil tersebut dapat disimpulkan bahwa kutu jepang dapat mempengaruhi kadar MDA darah tikus putih jantan galur SD yang diinduksi diet lemak.

**Kata Kunci :** *Tenebrio molitor*, MDA darah, diet tinggi lemak

## Abstract

Hyperlipidemia can lead to the progression of atherosclerotic plaques. atherosclerosis can result from the increase in free radicals leading to lipid peroxidation reaction marked by increased blood MDA. *Tenebrio molitor* containing oleic acid, linoleic acid, valine and leucine has been shown to reduce LDL level and inflammatory agents capable of deducing blood MDA. The purpose of this study was to determine the effect of *Tenebrio molitor* on blood MDA levels in high-fat diet induced hyperlipidemic rats. In this experimental research with post test only control group design, 24 male Sprague-Dawley rats were randomly divided into 4 groups: control group (standard diet), high-fat diet group (DTL), the simvastatin (Simv) group (0.18mg/ 200gBW/day), *Tenebrio molitor* (KJ) group (14.4 mg/200gBW/day). The treatment were given for 21 days. The data were analyzed using One Way ANOVA followed by Post Hoc Tamhane's test with a significance level of  $p < 0.05$ . The mean levels of MDA in the control group, DTL group, Simv group, KJ group were  $1.12 \pm 0.16$ ,  $7.15 \pm 0.56$ ,  $3.19 \pm 0.31$ ,  $4.03 \pm 0.45$  respectively. There was a significant mean difference at least between two groups ( $p < 0.05$ ). A significant mean difference was shown in each test group ( $p < 0.05$ ). In conclusion, the administration of *Tenebrio molitor* has an effect on blood MDA levels in high fat diet induced hyperlipidemic rats.

**Keyword :** *Tenebrio molitor*, MDA, high-fat diet