

SKRIPSI

**PENGARUH VARIASI DOSIS KOMBINASI *EXTRA VIRGIN OLIVE OIL*
DAN *VIRGIN COCONUT OIL* TERHADAP KADAR HDL DAN LDL PADA
TIKUS PUTIH YANG DIINDUKSI L-NAME**



Oleh:

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- 1. apt. Elsa Badriyya, M. Si**
- 2. Prof. Dr. apt. Almahdy A, MS**

**FAKULTAS FARMASI
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ABSTRAK

PENGARUH VARIASI DOSIS KOMBINASI *EXTRA VIRGIN OLIVE OIL* DAN *VIRGIN COCONUT OIL* TERHADAP KADAR HDL DAN LDL PADA TIKUS PUTIH YANG DIINDUKSI L-NAME

Oleh:

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(Program Studi Sarjana Farmasi)

No-nitro-L-arginine methyl ester (L-NAME) merupakan penghambat enzim *nitric oxide synthase* (NOS) yang menurunkan bioavailabilitas *Nitric Oxide* (NO). Penurunan NO berperan dalam peningkatan tekanan darah, pembentukan radikal bebas, dan terjadinya disfungsi endotel. Kondisi tersebut menyebabkan peningkatan kadar *Low Density Lipoprotein* (LDL) dan penurunan *High Density Lipoprotein* (HDL). Pemberian sediaan yang mengandung antioksidan seperti EVOO dan VCO dapat menghambat pembentukan *reactive oxygen species* serta meningkatkan aktivitas NOS. Penelitian ini bertujuan untuk mengetahui pengaruh variasi dosis kombinasi EVOO dan VCO terhadap tekanan darah, kadar HDL dan kadar LDL pada tikus putih yang diinduksi L-NAME. Penelitian ini menggunakan 30 ekor tikus putih jantan yang dibagi enam kelompok: kontrol normal (PBS 0,2 mL); kontrol negatif (L-NAME 50 mg/kg BB intraperitoneal); kontrol positif (L-NAME 50 mg/kg BB + Captopril 20 mg/kg BB); perlakuan 1 L-NAME 50 mg/kg BB + kombinasi EVOO:VCO 1:1(2,25mL/kg BB: 2,25mL/kg BB); perlakuan 2 L-NAME 50 mg/kg BB + kombinasi EVOO:VCO 1:2(1,5mL/kg BB:3mL/kg BB); perlakuan 3 L-NAME 50 mg/kg BB + kombinasi EVOO:VCO 2:1(3mL/kg BB:1,5mL/kg BB). Sediaan diberikan secara peroral selama 21 hari. Data dianalisis menggunakan ANOVA dan Uji Duncan. Hasil penelitian menunjukkan pemberian variasi dosis kombinasi EVOO dan VCO berpengaruh signifikan terhadap tekanan darah, HDL dan LDL ($p < 0,05$). Kombinasi EVOO dan VCO 2:1 memberikan efek paling optimal, ditandai dengan tekanan darah, kadar LDL serta kadar HDL mendekati kelompok normal. Dengan demikian, kombinasi EVOO dan VCO 2:1 berpotensi dalam proteksi penyakit kardiovaskular khususnya memperbaiki profil lipid dan tekanan darah.

Kata kunci: *Extra Virgin Olive Oil* (EVOO), *Virgin Coconut Oil* (VCO), *High Density Lipoprotein* (HDL), *Low Density Lipoprotein* (LDL), L-NAME.

ABSTRACT

THE EFFECT OF VARIATIONS IN THE COMBINATION DOSAGE OF *EXTRA VIRGIN OLIVE OIL* AND *VIRGIN COCONUT OIL* ON HDL AND LDL LEVELS IN WHITE RATS INDUCED BY L-NAME

By:

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No-nitro-L-arginine methyl ester (L-NAME) is an inhibitor of nitric oxide synthase (NOS) that reduces nitric oxide (NO) bioavailability. Decreased NO contributes to increased blood pressure, enhanced free radical formation, and endothelial dysfunction, leading to elevated Low Density Lipoprotein (LDL) levels and reduced High Density Lipoprotein (HDL) levels. Antioxidant compounds such as extra virgin olive oil (EVOO) and virgin coconut oil (VCO) may inhibit reactive oxygen species formation and improve NOS activity. This study aims to evaluate the effects of different dose ratios of combined EVOO and VCO on blood pressure, HDL, and LDL levels in L-NAME induced white rats. The researchers divided thirty male white rats into six groups: normal control (PBS 0.2 mL); negative control (L-NAME 50 mg/kg BW, intraperitoneally); positive control (L-NAME 50 mg/kg BW + captopril 20 mg/kg BW); treatment 1 L-NAME+EVOO:VCO 1:1(2.25mL/kg BW:2.25mL/kg BW); treatment 2 L-NAME+EVOO:VCO 1:2 (1.5mL/kg BW:3mL/kg BW); and treatment 3 L-NAME+EVOO:VCO 2:1(3mL/kg BW:1.5mL/kg BW). The researchers administered EVOO and VCO orally for 21 days. The researchers analyzed the data using ANOVA followed by Duncan's multiple range test. The results showed that variations in EVOO and VCO combinations significantly affected blood pressure, HDL, and LDL levels ($p < 0.05$). The EVOO:VCO 2:1 combination produced the most optimal effect, with blood pressure, LDL, and HDL levels approaching those of the normal control group. Thus, the EVOO and VCO combination at a 2:1 ratio has potential protective effects against cardiovascular disease by improving lipid profiles and blood pressure.

Keywords: *Extra Virgin Olive Oil* (EVOO), *Virgin Coconut Oil* (VCO), High Density Lipoprotein (HDL), Low Density Lipoprotein (LDL), L-NAME.