

EFEK KOMBINASI EKSTRAK RIMPANG KUNYIT (*Curcuma domestica val*) DAN DAUN PEGAGAN (*Centella asiatica L*) TERHADAP EKSPRESI GEN eNOS PADA JARINGAN HATI TIKUS OBES

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ABSTRAK

Obesitas adalah kondisi patologis akibat akumulasi lemak berlebih yang meningkatkan risiko gangguan metabolik, termasuk disfungsi endotel yang ditandai oleh penurunan produksi *nitric oxide* (NO) sintesis oleh enzim *endothelial nitric oxide synthase* (eNOS). Penelitian ini bertujuan mengevaluasi efek kombinasi ekstrak etanol rimpang kunyit (*Curcuma domestica Val.*) dan daun pegagan (*Centella asiatica L.*) terhadap kadar NO serum dan ekspresi gen eNOS pada jaringan hati tikus obesitas. Penelitian eksperimental ini menggunakan tikus jantan yang diinduksi obesitas dengan pakan tinggi lemak dan karbohidrat selama 60 hari. Tikus dibagi enam kelompok: normal, obesitas (kontrol negatif), orlistat 10,8 mg/kgBB (kontrol positif), ekstrak kunyit 200 mg/kgBB, ekstrak pegagan 200 mg/kgBB, dan kombinasi kunyit–pegagan 200:100 mg/kgBB. Parameter yang diukur meliputi berat badan, kadar NO serum (metode Griess), dan ekspresi gen eNOS (qPCR). Hasil menunjukkan kombinasi ekstrak secara signifikan menurunkan berat badan dan meningkatkan kadar NO serta ekspresi gen eNOS dibandingkan kelompok obesitas ($p < 0,05$). Temuan ini mengindikasikan potensi kombinasi ekstrak kunyit dan pegagan sebagai agen preventif disfungsi endotel pada obesitas melalui peningkatan produksi NO dan regulasi ekspresi gen eNOS

Kata Kunci: obesitas, disfungsi endotel, kadar NO serum, ekspresi gen

***THE EFFECT OF A COMBINATION OF ETHANOL EXTRACT OF
TURMERIC (*Curcuma longa* L.) AND GOTU KOLA LEAVES (*Centella
asiatica* (L.) Urb) ON THE EXPRESSION OF THE eNOS GENE IN THE
LIVER TISSUE OF OBESE RATS***

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ABSTRACT

*Obesity is a pathological condition characterized by excessive fat accumulation that increases the risk of metabolic disorders, including endothelial dysfunction, which is marked by decreased nitric oxide (NO) production synthesized by the enzyme endothelial nitric oxide synthase (eNOS). This study aimed to evaluate the effect of a combination of ethanol extracts from turmeric rhizome (*Curcuma domestica* Val.) and gotu kola leaves (*Centella asiatica* L.) on serum NO levels and eNOS gene expression in the liver tissue of obese rats. This experimental study used male rats induced with obesity through a high-fat and carbohydrate diet for 60 days. The rats were divided into six groups: normal, obese (negative control), orlistat 10.8 mg/kgBB (positive control), turmeric extract 200 mg/kgBB, gotu kola extract 200 mg/kgBB, and a combination of turmeric–gotu kola at 200:100 mg/kgBB. The parameters measured included body weight, serum NO concentration (Griess method), and eNOS gene expression (qPCR). Results showed that the combination extract significantly reduced body weight and increased serum NO levels and eNOS gene expression compared to the obese group ($p < 0.05$). These findings suggest the potential of the turmeric and gotu kola extract combination as a preventive agent against endothelial dysfunction in obesity by enhancing NO production and regulating eNOS gene expression.*

Keywords : *obesity, endothelial dysfunction, serum nitric oxide levels, gene expressio*