ABSTRAK

ANALISIS HUBUNGAN ASUPAN PROBIOTIK (*Lactobacillus casei*) TERHADAP KOLESTEROL DARAH MENCIT (*Mus musculus*) JANTAN HIPERLIPIDEMIA SEBAGAI FAKTOR GANGGUAN KARDIOVASKULAR

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Latar Belakang: Hiperlipidemia merupakan suatu keadaan dimana terjadi peningkatan satu atau lebih dari lipid plasma, merupakan penyebab terjadinya penyakit gangguan kardiovaskular yang merupakan penyebab kematian utama di dunia. Probiotik yang mengandung *Lactobacillus casei* dapat menurunkan kadar kolesterol, baik pada hewan maupun manusia. Penelitian ini bertujuan untuk menganalisis hubungan asupan probiotik *(Lactobacillus casei*) terhadap kolesterol darah mencit (*Mus musculus*) jantan hiperlipidemia sebagai faktor gangguan kardiovaskular.
Metode: Penelitian ini menggunakan studi eksperimental laboratorium dalam menguji aktivitas probiotik *(Lactobacillus casei)* pada mencit sebanyak 8 kelompok
selama 42 hari. Semua kelompok diberi asupan tambahan probiotik kecuali kelompok KN dan KO. Masing-masing diberikan dosis 0,5 ml, 1 ml, dan 2 ml. Mencit diterminasi, dilakukan pengambilan darah. Data dianalisis menggunakan normalitas *Shapiro-Wilk* dilanjutkan dengan uji *One Way Anova* dan uji *Post Hoc Bonferroni.*
Hasil: Rerata kadar kolesterol pada kelompok KN (140 mg/dl); KO (214,4 mg/dl);
PN1 (124,2 mg/dl), PO1 (181,4 mg/dl) dosis 0,5 ml; PN2 (123,2 mg/dl), PO2 (173,
8) dosis 1 ml; PN3 (119,2 mg/dl), PO3 (132 mg/dl) dosis 2 ml. Hasil terdistribusi normal, homogen dan terdapat perbedaan bermakna.
Simpulan: Terdapat perubahan kadar kolesterol pada kelompok normal walaupun tidak terlalu signifikan. Pemberian asupan probiotik *(Lactobacillus casei)* pada dosis 2 ml/grBB/hari memiliki pengaruh paling baik terhadap kadar kolesterol pada mencit jantan dengan obesitas.

Kata Kunci: Hiperlipidemia, *Lactobacillus casei*, Yoghurt, Kadar kolesterol.

ABSTRACT

ANALYSIS OF THE RELATIONSHIP BETWEEN PROBIOTIC INTAKE *(Lactobacillus casei)* AND BLOOD CHOLESTEROL IN MALE HYPERLIPIDEMIC MICE *(Mus musculus)* AS A CARDIOVASCULAR RISK FACTOR

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Background: Hyperlipidemia is a condition characterized by an increase in one or more plasma lipids, which is a leading cause of cardiovascular diseases, a major cause of death worldwide. Probiotics containing *Lactobacillus casei* can lower cholesterol levels in both animals and humans. This study aims to analyze the relationship between the intake of (*Lactobacillus casei)* probiotics and blood cholesterol levels in hyperlipidemic male mice *(Mus musculus)* as a factor in cardiovascular disorders.

Methods: This study employed a laboratory experimental design to test the probiotic activity of *Lactobacillus casei* on mice divided into 8 groups over a period of 42 days. All groups received additional probiotic intake except for the control groups (KN and KO). Each group was administered doses of 0.5 ml, 1 ml, and 2 ml. Mice were euthanized, and blood samples were collected. Data were analyzed using the Shapiro-Wilk normality test, followed by *One-Way ANOVA* and *Bonferroni post hoc* test.

Result: The average cholesterol levels in the groups were as follows: KN (140 mg/dl); KO (214.4 mg/dl); PN1 (124.2 mg/dl), PO1 (181.4 mg/dl) at a dose of 0.5 ml; PN2 (123.2 mg/dl), PO2 (173.8 mg/dl) at a dose of 1 ml; and PN3 (119.2 mg/dl), PO3 (132 mg/dl) at a dose of 2 ml. The results were normally distributed, homogeneous, and there were significant differences observed.

Conclusion: There was a change in cholesterol levels in the normal group although not too significant. Probiotic intake (Lactobacillus casei) at a dose of 2 ml/grBW/day had the best effect on cholesterol levels in male mice with obesity.

Keyword: Hyperlipidemia, *Lactobacillus casei,* Yoghurt, Cholesterol levels