

## **The Effect of Giving Porang Flour Substitution Biscuits on HDL Levels of White Rats Wistar Strain Diabetes Mellitus Dyslipidemia**

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### **ABSTRACT**

*Diabetes mellitus is a disease characterized by hyperglycemia and disturbances of protein, fat and carbohydrate metabolism associated with absolute or relative deficiency of insulin secretion and action. The condition of insulin resistance in diabetes mellitus can cause lipid metabolism disorders, one of which is marked by a decrease in High Density Lipoprotein (K-HDL) cholesterol. One of the medical nutrition therapies that can be done is by consuming high-fiber foods. The purpose of this study was to determine the effect of giving porang flour substitution biscuits on HDL levels of white rats wistar strain with diabetes mellitus dyslipidemia. This type of research is True experimental with Pretest-Posttest Control Group Design approach. This study used 15 rats aged 2-3 months with a weight of 160-250 grams which were divided into 3 groups; negative control, positive control and treatment. The negative control group was only given standard feed. The positive control group was given a high-cholesterol diet (70% standard feed, 20% lard and 10% duck egg yolk), 0.01% PTU and induced STZ 30 mg/kgBB. The treatment group was given a high-cholesterol diet (70% standard feed, 20% lard and 10% duck egg yolk), PTU 0.01%, STZ induced 30 mg/kgBB and biscuits substituted with porang flour. Blood examination is carried out by 2 methods, namely spectrophotometry and strip test method. Data analysis used Shapiro Wilk normality test, Levenne Test, One Way ANOVA, Kruskal Wallis, Mann Whitney, Wilcoxon and Paired T-test. The results showed that there was no difference in HDL levels before and after the intervention in the negative control group ( $p = 0.574$ ) and the positive control group ( $p = 0.078$ ). And there was a significant difference between pretest and posttest HDL cholesterol levels in the treatment group ( $p=0.004$ ). However, the results of the analysis cannot be concluded that there is an effect of giving porang flour substitution biscuits on HDL levels of diabetes mellitus dyslipidemia rats because use of 2 different type of analytical methods in this study*

**Keywords:** *Porang flour substitution biscuits, HDL, Diabetes Mellitus, Dyslipidemia*