

## SUMMARY

Diabetes mellitus is a long-term metabolic disease characterized by increased blood sugar levels brought on by reduced insulin secretion and damage to the pancreatic  $\beta$ -cells. Natural substitutes with few adverse effects are being investigated more and more for their potential as a treatment as their utilization increases. The brown oyster mushroom (*Pleurotus cystidiosus*), which has a variety of bioactive attributes, including antidiabetic benefits.

This research aims to test the effectiveness of ethanol extract brown oyster mushroom (*P. cystidiosus*) in increasing GLP-1 hormone level in streptozotocin induced diabetic model rat. This research carries out to significantly show the effect of secondary metabolites of brown oyster mushrooms increase GLP-1 hormone level. This research will be carried out in a true experimental by administering ethanol extracts of *P. cystidiosus* fruit body with various dosage to 6 different groups of rats in total 30 rats. The independent variable of this research is the variation in the dose of ethanol extract *P. cystidiosus* fruit body with the bound variable is GLP-1 hormone level. The main parameters is GLP-1 hormone level and supporting parameters which included rat body weight and blood glucose, bioactive compounds in ethanol extract of *P. cystidiosus* fruit body, as well as macroscopic and microscopic characters of brown oyster mushroom. The experimental design in this research used CRD (Complete Random Design) and then analyzed by ANOVA with an error rate of 5%. If there is a real or very real difference, continue with the Post Hoc test.

The results of the administration of ethanol extract of brown oyster mushroom fruit body (*P. cystidiosus*) resulted in GLP-1 hormone levels varying significantly between groups when streptozotocin-induced rat were given the extract (ANOVA,  $P < 0.001$ ). However, not all group differences were statistically significant, according to the results of Duncan's Post Hoc analysis marked by a marginal effect. Descriptive analysis showed the results of the GLP-1 hormone at a value of 149.978 ng/L, it was the highest average in Group T2, which received a dose of 500 mg/KgBW, making it the optimum dose for treatment in STZ-induced rat. In addition, this dose is also able to balance blood glucose and increase the weight of rat.

Keywords: *Anti Diabetes, Diabetes Melitus, Hyperglycemia, Pleurotus cystidiosus, Medicinal Mushroom.*