

**PERUBAHAN MORFOLOGIK *CHIEF CELLS*
PADA TIKUS DIABETES MELITUS (DM) TIPE 2
SETELAH DIINJEKSI LEPTIN**

SKRIPSI



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***MORPHOLOGICAL CHANGE OF CHIEF CELLS
IN RATS TYPE 2 DIABETES MELLITUS DUE TO LEPTIN INJECTION***

ABSTRACT

Background *Leptin is a hormone synthesized by fat tissue which involved in regulating appetite and energy metabolism. State of hunger caused diabetes consume more food and reduce levels of leptin in the blood plasma* **Purpose.** *To determine morphological changes in chief cells due to leptin injection in rats with a condition of diabetes mellitus (DM) type 2.* **Method.** *Type 2 diabetes in rats was induced by a single intraperitoneal injection of streptozotocin (100 mg/kg, i.p) in citrate buffer pH 4,5, 15 min after the intraperitoneal administration of nicotinamide (240 mg/kg, i.p) in PBS. After seven days, the rats had hyperglycemia. The twenty one rats were divided into three groups, they are a negative control group (non diabetes) was induced saline, a positive control group (diabetes) was induced saline, and treatment group (diabetes) was induced by a intraperitoneal injection of leptin (100 ug/kg, i.p) for 7 days. Fasting blood glucose was measured 7 days and 14 days after injection STZ and nicotinamide. On day 14, rats were anesthetized with ether. After anesthetized, performing surgery and the pancreas was collected immidiately. The tissue were immidiately washed with saline, then fixed with formalin 10%. Subsequently made histological preparations. Blood glucose level finding with mg/dL. Data in this research analyzed by Tukey test.* **Result.** *Found significant differences of gaster chief cells that have necrosis between the control group (+) and treatment group), indicated by $p < 0.05$. The mean fasting blood sugar levels on day 14 in the control group (-), control (+), and treatment (p), to 84 mg / dL, 219 mg / dL and 141 mg / dL. Histopatologically, showed that morphological changes in chief cells become better caused leptin in rat model type 2 Diabetes Mellitus.* **Conclusion** *decline in the number of gaster chief cells morphology changes due to administration of leptin in the rat model of type 2 diabetes mellitus.*

Key words: *Diabetes mellitus type 2, chief cells, leptin*