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INDUCTION OF DIABETES MELLITUS TYPE I IN MOUSE (SWISS).

Agnieszka Greń, Grzegorz Formicki, Robert Stawarz

Institute of Biology, Cracow Pedagogical University,
ul. Podbrzezie 3, 31-054 Kraków, Poland.

Abstract

Diabetes type I was induced in mice (Swiss) using the streptozotocin (STZ) injection. Streptozotocin exhibits toxic properties towards insulin-producing beta-cells of the pancreas. Toxic effects of the STZ to beta-cells are non-reversible. As a result significant decrease or total inhibition of insulin secretion occurs. In our studies mice were injected with streptozotocin in citrate buffer (pH=4.5) intraperitoneally. We used dose of 75 mg/kg body weight. Seven days after STZ injection the concentration of glucose in blood was tested. Animals of the control group (n=12) showed mean glucose concentration of 84.42 mg/dl. Eight animals of twelve (66.67%) injected with streptozotocin showed increased glucose concentration in blood. Mean glucose concentration in blood of these animals was 358.3 mg/dl. In practice, animals with glucose concentration over 300 mg/dl exhibit typical diabetic syndromes. Such animals may be used in further studies over different physiological aspects of diabetes type I.

In conclusion, streptozotocin seems to be useful inducer of diabetes type I in laboratory animals. On the other hand it is efficient approximately in 60-70%, thus glucose content should be measured before introduction of animals to further tests.