

## The effects of aqueous extract of *Urtica dioica* on blood glucose and insulin levels on Balb/C female mouse

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### Abstract

**Introduction:** Diabetes mellitus is known as the most common metabolic disease. *Urtica dioica* is a plant in Iranian traditional medicine which is used as an antidiabetic and blood sugar lowering medication. This study aims to evaluate the effect of aqueous extract of *Urtica dioica* on blood glucose level, insulin level, body weight and pancreatic tissue of the Balb/C mice.

**Methods and Results:** After grouping 80 female Balb/C mice into 6 groups, Streptozotocin (STZ) at the dose of 130 mg/kg was injected to mice, and their blood sugar were recorded by a glucometer. Then mice were treated by the aqueous extract of *U. dioica* at different doses (1, 2, and 4 gr/kg) for 14 consecutive days. At the end, blood samples of mice were collected under anesthesia to obtain serum and plasma. Finally, blood glucose and insulin level were measured. Data was analyzed using SPSS 23 software and Duncan post test.

**Result:** Aqueous extract of *U. dioica* had an effect on pancreas tissue (number and size of pancreatic islets) and led to increase blood insulin level and body weight of mice. Beside, *U. dioica* decreased blood glucose level in mice. Injection of low dose of *U. dioica* in group 1 was effective on mentioned factors, but the impact was very low and not significant. Injection of high dose of aqueous extract of *U. dioica* in group1 was very affective on mentioned factors, and it was significant.

**Conclusions:** According to our findings, aqueous extract of *U. dioica* at high dose was very effective, and can be used as a new medicine in the treatment of diabetes mellitus in order to decrease blood sugar (glucose), and to increase blood insulin level.

**Key words:** *Urtica dioica*, Mouse, Glucose, Insulin