



## Supplemental Effect of Zinc Oxide Nanoparticles and *Mentha spicata* butanol Extract on Blood Glucose of Diabetic Wistar Rats

Maryam Rakebizadeh<sup>1</sup>, Mahshid Zahedizadeh<sup>1</sup>, Yadolah Edalat Panah<sup>1\*</sup>

Department of Biology, Islamic Azad University Dehdasht, Dehdasht, Iran.

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### ABSTRACT

Diabetes mellitus is one of the most common diseases affecting the endocrine system. It has been estimated that the prevalence of diabetes mellitus will be increasing in the human population. It is a metabolic disease characterized by chronic escalation of blood glucose and disrupted metabolism in carbohydrates, fats and proteins.

This was an experimental study conducted on 40 male Wistar rats. Diabetes was induced in the animals through Streptozotocin (STZ). After three days, blood glucose levels were measured. The rats were diagnosed with diabetes when blood glucose was more than 250. The data were analyzed through SPSS 21. Moreover, the independent t-test was used to examine the relationship between variables.

Results of statistical analysis in relation to body weight of rats showed that there was a significant relationship between all groups at  $P < 0.05$  except for diabetic group and diabetic group by *Mentha spicata* Butanol extract as well as diabetic group by *Mentha spicata* butanol extract and diabetic groups by *Mentha spicata* butanol extract and zinc oxide nanoparticles. Concerning the glucose levels, the statistical analysis indicated that there was a significant relationship between all groups at  $P < 0.05$ .

When applied as a supplement, zinc oxide nanoparticles and *Mentha spicata* butanol extract can have anti-diabetic properties, curtailing blood glucose, revealing that nanoparticles can be used in the future as a treatment for diabetes.

### Keyword:

diabetes mellitus, zinc oxide nanoparticles, *Mentha spicata ferulacea*, glucose, rats

\* **Corresponding author:** Yadolah Edalatpanah  
email:edalatpanah1367@gmail.com