

Peer Review

Review of: "Development of a Type 2 Diabetes Mellitus Model in Rats with Administration of High-Fat Diet and Streptozotocin"

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1. Independent researcher

This manuscript describes a study on the Development of a Type 2 Diabetes Mellitus Model in Rats with Administration of High-Fat Diet and Streptozotocin. I think the data are beneficial; however, I have some questions, notes, and suggestions, and I find that some modifications are necessary to improve this manuscript.

1. Why was a high-fat diet (HFD) used to induce type 2 diabetes (T2DM) in this study? Considering the abundance of research on insulin resistance and various models of type 2 diabetes, what is the novelty of your research? I suggest using a high-carbohydrate and/or high-fat diet to induce diabetes and comparing the results.
2. Explain how the doses of STZ were selected and justified. Additionally, could you provide the mortality rates for different doses? Is the observed mortality in the animals attributed to the drug dosage itself, or does the mortality rate increase when combined with a high-fat diet? Please provide a detailed explanation in the discussion section.
3. Is the duration of the diet 4 weeks or 21 days? Please correct the abstract.
4. Animals were anesthetized with ketamine (80 mg/kg) and xylazine (100 mg/kg). The xylazine dose seems extremely high. 100 mg/kg is unrealistically high and likely toxic. Please correct.
5. Blood samples were centrifuged at 4000 g for 15 min at 4 °C to obtain the plasma.

4000 g or 4000 rpm? Please check.

1. Please correct the saline dose for the ND group. Is it 10 cc? I believe it should be 1 cc.

2. The data in the table and figure are repeated; thus, the table can be omitted. There appears to be a strong positive correlation between the two groups (e.g., glucose levels). Please check the p-value for all variables. Please organize and rewrite the results section.
3. It is recommended to use more references from 2024 and 2025.
4. The manuscript needs minor revision for language and grammar.

Attachments: available at <https://doi.org/10.32388/JM8H0I>

Declarations

Potential competing interests: No potential competing interests to declare.