Qeios

Peer Review

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

Jahanzaib Azhar[1]

1. Department of Precision Medicine, University of Campania "Luigi Vanvitelli", Caserta, Italy

In this work, the authors have designed and optimized a method to induce type 2 diabetes in rats. The methodology is fine and has already been used by many researchers, but I have seen some modifications, and it also depends on the model and maybe the region where the model lives and what it generally eats. There are some concerns that are listed below.

1. The authors must show the biochemical parameters, including the body weight of the rats, before disease induction and before grouping.
2. The authors used 25 mg/kg of STZ + HFD and reported FBG levels of more than 400 (mg/dl). I used 100 mg/kg STZ in the past, and we didn't reach this blood glucose level. I am sure that there will be outliers in the group, and they must be excluded from the study. For example, if a rat is giving 500 **(mg/dl) FBG and others are below 300 (mg/dl), it should be excluded as an outlier because it will raise the average value.**
3. **It's surprising to see such high HBA1c levels only after some days of disease induction. This needs explanation.**
4. **The authors must perform an insulin sensitivity assay (which can be an insulin tolerance test) to show insulin resistance in rats for confirmation of the induction of type 2 diabetes.**
5. **Why did cholesterol levels increase to deadly levels in diabetic controls?**
6. **The markers of insulin signaling pathways, specifically the insulin receptor, must be analyzed either by ELISA, real-time PCR, or western blot.**

doi.org/10.32388/T1EVGV

Declarations

Potential competing interests: No potential competing interests to declare.