

Reviewer #1:

Scientific Quality: Grade B (Very good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: Recently, obesity, increasingly influenced by lifestyle factors, is an essential risk for the development of T2DM that is considered the chief cause of diabetic complications. To address this challenge, in this study, the authors aimed at investigating the therapeutic effects of bariatric surgeries, including Roux-en-Y Gastric bypass (RYGB), sleeve gastrectomy (SG), and gastric banding (GB), on obese diabetic rats. The authors used glucose and insulin tolerance tests, histological examination, western blotting, and qRT-PCR to verify their hypothesis. The results showed that bariatric surgeries can modulate the glucose and lipid metabolism, and liver and kidney functions in food-derived obese diabetic rats. So, in my opinion, this paper is well-written. The experimental design is reasonable, and the results reflects the conclusion as well. I recommend its acceptance after the minor revision.

The detailed comments are:

1) In this manuscript, the authors did not scrupulously study the role of PKC β /P66shc pathway in the treatment of obese diabetic rats via bariatric surgeries. So, I do not think “PKC β /P66shc pathway” appropriate in the title of this paper.

Response:

Thank you very much for your suggestion. We have modified the title as follows: Effects of bariatric surgery on glucose and lipid metabolism, and liver and kidney functions in food-derived obese diabetic rats.

2) Although the author organized the manuscript very well, there are still some typo errors that should be addressed before publication. For example, many words are joined together by mistake. And in the “Bariatric surgery and groups” part, there is a superfluous comma in the sentence of “After resection, we cleaned the contents of the remnant stomach with a cotton swab. The stump stomach was sutured and closed, , and the abdominal cavity was washed with physiological saline.”

Response:

Thank you very much for your suggestion. We have checked the manuscript carefully and modified them accordingly.

Reviewer #2:

Scientific Quality: Grade C (Good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: The authors established a food-derived obese diabetic rat model and used it to explore the effects of bariatric surgery on glucose and lipid metabolism, and liver and kidney functions, as well as revealed the underlying

mechanism. After reasonable setting groups for Sprague-Dawley rats as RYGB, SG, GB and Sham operation groups, the authors showed that RYGB, SG and GB may be helpful for the treatment of food borne obesity diabetes. This result also draws a conclusion that the therapeutic role of bariatric surgery on obesity diabetes are realized via the PKC β /P66shc pathway. In short, the topic of this manuscript is timely and interesting. The authors have organized the manuscript rationally, with good methodology and well-written English. However, some important editing needs to be done before publication: -

In this study, the authors used Roux-en-Y Gastric bypass (RYGB), sleeve gastrectomy (SG), and gastric banding (GB) to treat food-derived obese diabetic rats. The authors should discuss the advantages and disadvantages of each of these methods in this paper.

Response:

Thank you very much for your suggestion.

We have discussed the advantages and disadvantages of Roux-en-Y Gastric bypass (RYGB), sleeve gastrectomy (SG), and gastric banding (GB) in Discussion Section as follows:

Although these results look promisingly, the bariatric surgery, including RYGB, SG and GB, has its own advantages and disadvantages:

For RYGB, advantages: it has a small wound size, low risk, good prognosis, and is generally less prone to recurrence. The way of food flow after surgery can also promote insulin secretion, effectively reduce the apoptosis of islet cells, restore the function of islets, and thus effectively treat diabetes. Disadvantages: some rats will have abdominal discomfort, local inflammation of the anastomosis, high blood sugar, which is easy to lead to incomplete healing of the surgical incision, infection, intestinal adhesion and other complications. Some rats may also experience symptoms such as gastric paresis, gastrointestinal dysfunction, abdominal distension, and inability to eat, mainly related to postoperative reduction of gastric volume.

For SG, it can effectively control type 2 diabetes and obesity related complications. By reducing the volume of stomach, surgery can reduce weight, improve type 2 diabetes and reduce the risk of obesity related cardiovascular and cerebrovascular complications. Disadvantages: surgery that completely removes the fundus of the stomach may increase the risk of developing gastroesophageal reflux disease.

For GB, advantages: like SG, it is a surgical method of reducing weight by reducing food intake. It reduces the entry passage for food by installing binding straps. The surgical damage is minimal, and there is no need to modify the digestive tract, resulting in faster postoperative recovery. Disadvantages: The restraining strap is prone to displacement and expansion, and the surgical effect is not very good, resulting in limited weight loss.

- I noticed that the authors used all male rats in their experiments, is there any particular reason?

Response:

Thank you very much for your suggestion. For half a century, most of the research models used by scientists for experiments, from mice to primates, have been male. The

primary reason for not conducting research on female animals is that the influence of female hormones complicates many factors.