Reviewer’s report

Title: The relationship between bile acid concentration, glucagon-like-peptide 1, fibroblast growth factor 15 and bile acid receptors in rats during progression of glucose intolerance

Version: 0 Date: 02 May 2017

Reviewer: Varun Pathak

Reviewer’s report:

This study tries to determine the role of correlation between unbalance of bile acid-FXR and TGR5 pathway on glucose tolerance, using HFD + STZ model in rats. The methodology was well described in the manuscript. Clinically, bile acid levels are significant altered in diabetics. The bile acids is critical for a number of metabolic and signalling pathways. Indeed, the most prominent signalling molecules that mediate bile acid signalling nuclear receptor farnesoid X receptor (FXR) and the membrane receptor TGR5.

I have following comments:

1. Authors mention that a group of animals were allowed normal chow, provide appropriate description (for example - fat/carbohydrates ratio and energy provided in KJ/g

2. Need to provide energy in KJ for HFD.

3. What ethical approvals were obtained prior to commencement of animal experiments?

4. What was the rational for carrying out OGTT a day prior to STZ injections? As the animals should have been stress free 3-4 days prior to STZ administrations.

5. Need citation, when using 30mg/kg BW STZ.

6. What was the rational for carrying out body weight measurements every 2 weeks?

7. There are numerous incidences in the manuscript where unscientific English is used (for example line 48 - authors say that "rats were killed at the end of study", Line 45 - authors say that "something else"). Authors need to make considerable effort in re-writing parts of manuscript.

8. In method section, a mere mention that blood for measurements were collected from heart is not suffice. Please provide what method/equipment/consumables were used for this.

9. Please provide citation for 2 h meal test.

10. Table 1 legend - Provide more information such as the day on which measurements were taken.
11. When coming to figures, there are a number of issues related to uniformity, such as fonts used in Figure 2-4 are different and not consistent. There are no mention of Figure number at some incidences, X-axis in Fig 2A does not contain units, at some places there are gridlines while in others there are none, all line graphs should start at conjoint axis point 0 - lot of variation among different graphs. Uniformity and consistency is stressed.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

Quality of written English
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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