

Dear Dr. Turrone,

We are pleased to inform you that, after preview by the Editorial Office and peer review, as well as CrossCheck and Google plagiarism detection, we believe that the academic quality, language quality, and ethics of your manuscript (Manuscript NO.: 67709, Review) basically meet the publishing requirements of the World Journal of Gastroenterology. As such, we have made the preliminary decision that it is acceptable for publication after your appropriate revision. Upon our receipt of your revised manuscript, we will send it for re-review. We will then make a final decision on whether to accept the manuscript or not, based on the reviewers' comments, the quality of the revised manuscript, and the relevant documents. Please follow the steps outlined below to revise your manuscript to meet the requirements for final acceptance and publication.

Dear Editor,

we are grateful for your kind comments.

As indicated, we have carefully addressed each point raised in order to improve the quality of our manuscript and meet the requirements of your esteemed journal.

3 SCIENTIFIC QUALITY

Please resolve all issues in the manuscript based on the peer review report and make a point-by-point response to each of the issues raised in the peer review report. Note, authors must resolve all issues in the manuscript that are raised in the peer-review report(s) and make point-by-point responses to each of the issues raised in the peer-review report(s), which are listed below:

Reviewer #1:

Scientific Quality: Grade C (Good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Major revision

Specific Comments to Authors:

1. Following recently published PRISMA Extension for Scoping Reviews (PRISMA-ScR): There are several items that will help standardized this excellent Scoping Reviews

- Introduction: Please summarize rationale/and add objectives of this review to help readers follow this review easier.

- Before conclusion, if possible, please provide limitations of current evidence/scoping reviews and potential implications and/or next steps.

We would like to thank the Reviewer for the valuable suggestions.

Following her/his indications, including PRISMA-ScR items, in the revised version of our manuscript, we have modified the Introduction section, by summarizing the rationale of our review, as well as clarifying the objectives of our work (please, see L93-122). In brief, we have placed more emphasis on the different topics covered in our scoping review, ranging from the influence of the gut microbiome and microbial-derived metabolites on human physiology and pathological conditions (especially obesity and related comorbidities), to microbiome-based strategies for prevention and treatment of obesity (including diet, prebiotics, traditional and next-generation probiotics, synbiotics, engineered microbiomes, and even fecal microbiota transplantation), and finally, machine and deep learning bioinformatics approaches to analyze host-microbiome data in order to predict health risks and therapeutic outcomes.

Additionally, as required, prior to conclusions, we have discussed the limitations of our scoping review/current evidence, as well as commenting on potential implications and especially next steps that should be taken, to fully unravel the influence of the gut microbiome in the obesity

landscape and how to correct its imbalances to prevent/alleviate the disease phenotype and ensure long-term health maintenance (see L727-750).

2. Please provide the detailed information on search terms you used for ClinicalTrials.gov that revealed studies in Table 1

The Reviewer is absolutely right and we apologize for not being clear on this point. In the revised version of our manuscript, we have provided further information on the search terms used for ClinicalTrials.gov (see L573-574 and L788-789).

4 LANGUAGE QUALITY

Please resolve all language issues in the manuscript based on the peer review report. Please be sure to have a native-English speaker edit the manuscript for grammar, sentence structure, word usage, spelling, capitalization, punctuation, format, and general readability, so that the manuscript's language will meet our direct publishing needs.

To make sure we meet the journal publishing needs, we have carefully checked the manuscript for any language inaccuracies. An English language polishing, as also suggested by Reviewer #1, was carried out by a native-English speaker, as stated in the "Non-Native Speakers English Editing Certificate" provided in the attachment.

5 ABBREVIATIONS

In general, do not use non-standard abbreviations, unless they appear at least two times in the text preceding the first usage/definition. Certain commonly used abbreviations, such as DNA, RNA, HIV, LD50, PCR, HBV, ECG, WBC, RBC, CT, ESR, CSF, IgG, ELISA, PBS, ATP, EDTA, and mAb, do not need to be defined and can be used directly. Now we list the abbreviations rules as follows.

(1) Title: Please spell out any abbreviation in the title. Abbreviations are not permitted.

Since there are no abbreviations in the manuscript title, we have not made any changes at this level.

(2) Running title: Please shorten the running title to no more than 6 words. Abbreviations are permitted.

The running title consists of 5 words. No changes have been made to the previous version except for the addition of the first capital letter.

(3) Abstract: Abbreviations must be defined upon first appearance in the Abstract. Examples: Example 1: Hepatocellular carcinoma (HCC). Example 2: *Helicobacter pylori* (*H. pylori*).

(4) Key words: Abbreviations must be defined upon first appearance in the Key words.

(5) Core tip: Abbreviations must be defined upon first appearance in the Core tip. Examples: Example 1: Hepatocellular carcinoma (HCC). Example 2: *Helicobacter pylori* (*H. pylori*)

No abbreviations were used in the Abstract, Key words and Core tip.

(6) Main Text: Abbreviations must be defined upon first appearance in the Main Text. Examples: Example 1: Hepatocellular carcinoma (HCC). Example 2: *Helicobacter pylori* (*H. pylori*)

We have carefully examined the manuscript and standardized the abbreviations throughout the main text.

(8) Figures: Please verify the abbreviations used in figures and define them (separated by semicolons) at the end of the figure legend or table; for example, BMI: Body mass index; CT: Computed tomography.

The changes have been made within the caption of Figure 1 (please, see L782-783).

(9) Tables: Please verify the abbreviations used in tables and define them (separated by semicolons) at the end of the figure legend or table; for example, BMI: Body mass index; CT: Computed tomography.

The abbreviations used in Table 1 were already defined in the previous version of our manuscript. Therefore, no changes were made.

6 EDITORIAL OFFICE'S COMMENTS

Authors must revise the manuscript according to the Editorial Office's comments and suggestions, which are listed below:

(1) Science editor:

1 Scientific quality: The manuscript describes a Review of the microbiome-based strategies to counteract obesity. The topic is within the scope of the WJG.

(1) Classification: Grade C;

(2) Summary of the Peer-Review Report: This manuscript has great potential. Would be great if the investigators can provide the details on how they performed the literature search to summarize this review. The questions raised by the reviewers should be answered;

We would like to thank the Science Editor for raising these points and apologize for not being more specific about the method chosen for the literature search.

In the revised version of our manuscript, we have clarified that the search consisted of a screening of the most pertinent and relevant articles on topics covered in PubMed – the full-text archive of biomedical and life sciences journal literature at the U.S. National Institutes of Health's National Library of Medicine. Please, see L119-122 of the revised version of our manuscript for further details.

As regards the questions raised by Reviewer #1, we have modified the Introduction section, by summarizing the rationale of our review and clarifying the objectives of our work, and we have added a new paragraph prior to conclusions, in which we have discussed the limitations of the current evidence, and commented on the potential implications and especially the next steps to take (please, see L727-750 and also the response to the specific point).

(3) Format: There is 1 table and 1 figure;

(4) References: A total of 224 references are cited, including 67 references published in the last 3 years;

(5) Self-cited references: There are 12 self-cited references.

2 Language evaluation: Classification: Grade B. The manuscript is reviewed by a native English speaker.

3 Academic norms and rules: No academic misconduct was found in the Bing search.

4 Supplementary comments: This is an invited manuscript. No financial support was obtained for the study. The topic has not previously been published in the WJG.

(13)5 Issues raised:

(1) The “Author Contributions” section is missing. Please provide the author contributions;

In accordance with the Science Editor’s suggestion, whom we kindly thank for pointing out this lack, we have added the “Author Contributions” section in the revised version of the manuscript (please, see L27-31).

(2) The authors did not provide original pictures. Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor;

In the initial submission phase, figures and tables were embedded in the main text, as specified in the author guidelines. To meet the Editorial Office requirements, we have now prepared two separate editable files, one for Figure 1 in PowerPoint format (see file “67709-Image File”) and the other for Table 1 in Word format (see file “67709-Table File”).

(3) Please confirm if the figures are original. If an author of a submission is re-using a figure or figures published elsewhere, or that is copyrighted, the author must provide documentation that the previous publisher or copyright holder has given permission for the figure to be re-published; and correctly indicating the reference source and copyrights. For example, “Figure 1 Histopathological examination by hematoxylin-eosin staining (200 ×). A: Control group; B: Model group; C: Pioglitazone hydrochloride group; D: Chinese herbal medicine group. Citation: Yang JM, Sun Y, Wang M, Zhang XL, Zhang SJ, Gao YS, Chen L, Wu MY, Zhou L, Zhou YM, Wang Y, Zheng FJ, Li YH. Regulatory effect of a Chinese herbal medicine formula on non-alcoholic fatty liver disease. World J Gastroenterol 2019; 25(34): 5105-5119. Copyright ©The Author(s) 2019. Published by Baishideng Publishing Group Inc[6]”. And please cite the reference source in the references list. If the author fails to properly cite the published or copyrighted picture(s) or table(s) as described above, he/she will be subject to withdrawal of the article from BPG publications and may even be held liable;

We confirm that Figure 1 was prepared using Microsoft PowerPoint. The only non-original parts of Figure 1 are the food items alongside the figures of obese and normal-weight subjects. These figures were downloaded as a free user from “Mind the Graph” and therefore include the corresponding watermark. As reported on the “Mind the Graph” website, “free users are allowed to publicly present infographics created with the Mind the Graph’s platform and use the illustrations available in the website. However, the use of the watermark is mandatory and Mind the Graph must be cited in the figure legend and/or acknowledgments section. This is summarized in the Creative Commons attribution share-alike license”. For more copyright details, please see: <https://mindthegraph.zendesk.com/hc/en-us/articles/360057306512-Can-I-use-Mind-the-Graph-in-my-publications->.

We have therefore added the specification in the legend of Figure 1 (please see L782-783). However, if it is not acceptable, we will proceed to modify the food items in Figure 1 by drawing them originally by ourselves.

(4) For PMID and DOI numbers of references from English-language journals, please ensure PMID and DOI numbers in the square brackets. PMCID numbers are not required. 6 Recommendation: Conditional acceptance.

We would like to thank the Reviewer for being so careful in reading our manuscript. In the revised version of our work, we have modified the References section by removing all PMCID information as suggested.

(2) Company editor-in-chief: I have reviewed the Peer-Review Report, full text of the manuscript, and the relevant ethics documents, all of which have met the basic publishing requirements of the World Journal of Gastroenterology, and the manuscript is conditionally accepted. I have sent the manuscript to the author(s) for its revision according to the Peer-Review Report, Editorial Office's comments and the Criteria for Manuscript Revision by Authors.

We really thank the Editor-in-Chief for appreciating our work and hope that the revised version of the manuscript is considered suitable for publication.

Step 5: Footnotes and Figure Legends

(1) Requirements for Figures: Please provide decomposable Figures (in which all components are movable and editable), organize them into a single PowerPoint file, and submit as "**67709-Figures.ppt**" on the system. The figures should be uploaded to the file destination of "Image File".

As requested, Figure 1 is now provided as decomposable within a single PowerPoint file (see 67709-Image File).

(2) Requirements for Tables: Please provide decomposable Tables (in which all components are movable and editable), organize them into a single Word file, and submit as "**67709-Tables.docx**" on the system. The tables should be uploaded to the file destination of "Table File".

As requested, Table 1 is now provided as decomposable within a single Word file (see 67709-Table File).