Dear reviewer,

Many thank you for taking your time to read the manuscript and providing us with helpful suggestions. We added the missing information into the revised version of the manuscript, according to your comments. Following is our point-by-point response to your comments.

Reviewer #1:

Scientific Quality: *Grade B (Very good)*

Language Quality: *Grade B (Minor language polishing)*

Conclusion: *Accept (General priority)*

Specific Comments to Authors:

This review of the literature "Long-chain fatty acids, short-chain fatty acids, acyl-CoA synthetases, microbiota, and liver-gut axis" completely describes the problem of the short-chain fatty acids and its role in the "gut-liver axis". The manuscript includes the latest concerning the pharmacological targeting effect on the short-chain fatty acids production and long-term consequences which are associated with it. As far as we know, no previous research has investigated this problem fundamentally. Nevertheless, given the name "Long-chain fatty acids, short-chain fatty acids, acyl-CoA synthetases, microbiota, and liver-gut axis", in this manuscript there are very little data about gut microbiota species and its impact on short-chain fatty acids as one of the important ways for gut-liver axis induction. Additionally, there are insufficient information about the problem of intestine excessive bacterial growth (SIBO) and gram-negative microbiota, which are often acts as the trigger of cascade reactions which are leading to "Gut-liver" start. Summarizing this review, I recommend this work to publication in World Journal of Hepatology, with minor refinements to the above points.

1. Regarding the impact of gut microbiota species on short-chain fatty acids (SCFAs): in the revised version, we added the information about the SCFAs and their specialized bacteria producer in chapter 2.2.
2. Concerning the SCFAs as one of important ways for gut-liver axis induction, three parts about the role of SCFAs in the induction of gut-liver axis was included in chapter 2.3. Moreover, a new part about two major signaling pathways related to SCFAs, with focus on SCFAs sensing-G-protein-coupled receptors (GPCR), GPR41, and GPR43, was added in the revised manuscript.

3. About small intestine bacterial overgrowth (SIBO), as the reviewer pointed out, this information was indeed missing in our manuscript. Therefore, we added a paragraph about gut microbiota, host homeostasis, and its imbalance in chapter 2.4. The features of SIBO was described in chapter 2.4.
4. In view of germ-negative microbiota acting as the trigger of cascade reaction which leads to the initiation of *"Gut-liver axis"*, information about the influence of enterotoxins of germ-negative microbiota on the disruption of intestinal mucosa barrier was added in chapter 2.4. Additionally, the contribution of SIBO in the development of liver disease was also mentioned in this chapter.