

Dear Reviewers,

I am sending here with a revised manuscript entitled “Core Fucosylation and its roles in Gastrointestinal Glycoimmunology” by Nianzhu Zhang et al. We are very grateful for the positive comments and valuable suggestions raised by you and the reviewers. We rewrite the manuscript to consider all comments of the Reviewers. Fortunately, we have addressed all of the reviewer’s comments point by point in the revised manuscript.

I would like to express my gratitude to you and the reviewers for your constructive comments.

Sincerely yours,

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Reviewer Comments:**Reviewer #1:**

Scientific Quality: Grade A (Excellent)

Language Quality: Grade A (Priority publishing)

Conclusion: Minor revision

Specific Comments to Authors: This manuscript describes a variety of biological function of core fucose, synthesized by alpha1-6 fucosyltransferase (Fut8) reaction in gastrointestinal immunology and oncology. The authors cited many papers in this research field and described summary of each study. These contents seem to be fruitful for future study of glycobiology. However, the authors failed to cite original papers of Fut8 in terms of biochemistry. To increase core fucosylation in cells, GDP fucose levels and expression levels of GDP-fucose transporter are more important than expression levels of Fut8. The summary of these biochemical data were described in following papers (J Biochem. 2008 Jun;143(6):725-9. doi: 10.1093/jb/mvn011. and Biochem. Biophys. Rep. 2022 Oct 25;32:101372. doi: 10.1016/j.bbrep.2022). The authors should cite original papers about Fut8 biochemistry to improve this review manuscript.

Answer:

Thank you for the suggestion. As you pointed out, we supplied the contents of the importance of GDP-fucose to improve this review manuscript with the references of 136 and 137 (J Biochem. 2008 Jun;143(6):725-9. doi: 10.1093/jb/mvn011. and Biochem. Biophys. Rep. 2022 Oct 25;32:101372. doi: 10.1016/j.bbrep.2022) in Part 5, Fut8 Inhibitor and Gastrointestinal Oncotherapy.

Reviewer #2:

Scientific Quality: Grade C (Good)

Language Quality: Grade B (Minor language polishing)

Conclusion: Minor revision

Specific Comments to Authors: The manuscript summarized the latest research

progress about the function and mechanism of Core Fucosylation in gastrointestinal glycoimmunology. This study provided a great significance for the research of Core Fucosylation, especially for the application in gastrointestinal tumor treatment. I think this manuscript could be accepted with some modification. My main concern is: the title of the manuscript is 'Regulation of Core Fucosylation in Gastrointestinal Glycoimmunology', however, the text structure was arranged by the different mechanisms of Core Fucosylation, although each part has supporting studies from gastrointestinal diseases. It is better to present the adjustment in table or figure form, summary the role of Core Fucosylation in gastrointestinal diseases. which might be more intuitive;

Answer:

Thank you for the constructive suggestion. According to your suggestion, we summarized the role of core fucosylation in gastrointestinal diseases in Table 1, Abnormal core fucosylation in gastrointestinal diseases. We listed types of immune modulation of core fucosylation on cellular, humoral and tumor immune modulation in different gastrointestinal diseases and their mechanisms and patterns involved with the references.