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PEER-REVIEW REPORT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 64598

Title: Syngeneic implantation of mouse hepatic progenitor cell-derived three-dimensional liver tissue with dense collagen fibrils

Reviewer's code: 05257684
Position: Peer Reviewer
Academic degree: MD
Professional title: Doctor
Reviewer's Country/Territory: China
Author's Country/Territory: Japan

Manuscript submission date: 2021-02-27
Reviewer chosen by: AI Technique
Reviewer accepted review: 2021-02-27 03:21
Reviewer performed review: 2021-03-02 21:08
Review time: 3 Days and 17 Hours

Scientific quality	[ ] Grade A: Excellent [ ] Grade B: Very good [Y] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [ ] Accept (General priority) [ ] Minor revision [Y] Major revision [ ] Rejection
Re-review	[Y] Yes [ ] No
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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SPECIFIC COMMENTS TO AUTHORS

This is an interesting manuscript by Miho et al. describing a potential technique to serve as an alternative for liver transplantation. The paper is well-written with valid methodology, it has the value for triggering further research in this field. However, I have the following concerns regarding this manuscript. 1. As the author addressed in the manuscript, this extracellular matrices containing organoids consist of both hepatocyte and non-parenchymal cell features, however, the result shows most of gene expression are related to the feature of hepatocytes, the marker genes of non-parenchymal cells are not shown. In addition, the author considered CK19 as a marker for hepatic progenitor cell, it is also a marker of biliary epithelial cells, but its gene expression decreased in the 3-D model. Does this 3-D model also bears the feature of biliary system? 2. The author showed the 3-D model exhibits multiple liver-specific function, these functions (production of urea and albumin, P450, etc.) are mostly related to hepatocyte. Does this 3-D model contain the functions of immune cells and other type of cells in the liver? 3. What is the rational that the author used only female mice as the recipients of 3-D liver tissue culture model, why not use the males? 4. The animal experiment is insufficient, more functional markers need to be investigated in the 3-D liver tissue. 5. I suggest the author to perform a extended hepatectomy (86%) or lethal model (90%) to see if the survival rate differs when the 3-D liver tissue model is given.

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RE-REVIEW REPORT OF REVISED MANUSCRIPT

Name of journal: World Journal of Gastroenterology

Manuscript NO: 64598

Title: Syngeneic implantation of mouse hepatic progenitor cell-derived three-dimensional liver tissue with dense collagen fibrils

Reviewer's code: 05257684
Position: Peer Reviewer
Academic degree: MD
Professional title: Doctor
Reviewer's Country/Territory: China
Author's Country/Territory: Japan

Manuscript submission date: 2021-02-27
Reviewer chosen by: Chen-Chen Gao
Reviewer accepted review: 2021-04-15 03:24
Reviewer performed review: 2021-04-15 16:25
Review time: 13 Hours

Scientific quality	[ ] Grade A: Excellent [Y] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[ ] Grade A: Priority publishing [Y] Grade B: Minor language polishing [ ] Grade C: A great deal of language polishing [ ] Grade D: Rejection
Conclusion	[ ] Accept (High priority) [Y] Accept (General priority) [ ] Minor revision [ ] Major revision [ ] Rejection
Peer-reviewer statements	Peer-Review: [Y] Anonymous [ ] Onymous Conflicts-of-Interest: [ ] Yes [Y] No

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My points have been properly addressed by the authors.