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PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 55679

Title: A Practical Choice to Robust and Efficient Differentiation of Human Pluripotent Stem Cells

Reviewer's code: 02608938
Position: Peer Reviewer
Academic degree: MD, MSc, PhD
Professional title: Assistant Professor
Reviewer's Country/Territory: United States
Author's Country/Territory: China

Manuscript submission date: 2020-03-28
Reviewer chosen by: AI Technique
Reviewer accepted review: 2020-03-29 17:40
Reviewer performed review: 2020-03-30 15:47
Review time: 22 Hours

Scientific quality	[Y] Grade A: Excellent [ ] Grade B: Very good [ ] Grade C: Good [ ] Grade D: Fair [ ] Grade E: Do not publish
Language quality	[Y] Grade A: Priority publishing [ ] 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
Re-review	[ ] 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 a concise and well written review focusing on different approaches to differentiate human pluripotent stem cells (hPSCs) into destinate organs. Authors recommend embryoid body-based 3D suspension culture with multiple cells co-culture as a comprehensive approach, based on others and their own experiences. Information in this review will be very useful for the field and is timely critical. I have only some minor comments listed below. 1. Can the components in the section of Limitation and Choice be organized in the same order as the main body? Specifically, the first sentence is not specific considering that five approaches are already reviewed in the main body. TF approach is reviewed lastly and thus the 2nd sentence describing TF should be mentioned also lastly. In TF approach, forced expression is one type of roads and gene of interest in an expression cassette can be delivered by plasmid/expression construct, viral vector or transgenic (recombination of genomic sequences), but not by bacteria! From cited review, no bacteria is mentioned for "transfection", too. 2. Vertical lines in the table should be removed. Necessary legend should be provided, e.g., what \ is.