

PEER-REVIEW REPORT

Name of journal: World Journal of Stem Cells

Manuscript NO: 55521

Title: Spinal Cord injury regeneration using Autologous Bone Marrow Derived Neurocytes (ABMDN) and Rat Embryonic Stem cells (rESC): A Comparative Study in Rats.

Reviewer's code: 03372021

Position: Editorial Board

Academic degree: PhD

Professional title: Professor

Reviewer's Country/Territory: China

Author's Country/Territory: Saudi Arabia

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Reviewer chosen by: Jin-Zhou Tang (Quit in 2020)

Reviewer accepted review: 2020-03-31 06:59

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Scientific quality	<input type="checkbox"/> Grade A: Excellent <input type="checkbox"/> Grade B: Very good <input checked="" type="checkbox"/> Grade C: Good <input type="checkbox"/> Grade D: Fair <input type="checkbox"/> Grade E: Do not publish
Language quality	<input type="checkbox"/> Grade A: Priority publishing <input checked="" type="checkbox"/> Grade B: Minor language polishing <input type="checkbox"/> Grade C: A great deal of language polishing <input type="checkbox"/> Grade D: Rejection
Conclusion	<input type="checkbox"/> Accept (High priority) <input type="checkbox"/> Accept (General priority) <input type="checkbox"/> Minor revision <input checked="" type="checkbox"/> Major revision <input type="checkbox"/> Rejection
Re-review	<input type="checkbox"/> Yes <input type="checkbox"/> No
Peer-reviewer	Peer-Review: <input checked="" type="checkbox"/> Anonymous <input type="checkbox"/> Onymous

statements

Conflicts-of-Interest: [] Yes [Y] No

SPECIFIC COMMENTS TO AUTHORS

In this manuscript, the authors compared the effects of two cell transplantation therapies on the treatment of spinal cord injury (SCI). One is to transplant autologous bone marrow-derived neurocytes (ABMDN), and the other is to transplant rat embryonic stem cells (rESC). The authors used the same conditions to create a rat SCI model, and after giving different treatments, the rats were subjected to neuroelectrophysiological analysis, behavioral assessment (Basso, Beattie, Brenham (BBB)), and histopathological analysis to assess the recovery of the injury. The results showed that the transplantation of ABMDN and rESC could improve the functional recovery after iatrogenic SCI. Among them, the treatment effect of ABMDN transplantation is better. This simple study clarified the effectiveness of the two cell transplantation strategies and compared the results with a preliminary one, which is of great significance. However, there are still some issues that need to be revised before this study is published. 1. The authors should add a review of currently applied cell transplantation therapies in the Introduction section, so that readers, especially beginners, can grasp the current research level in the field and the latest research progress, for example, *Cells* 2019, 8 (8), 886. Moreover, this can also highlight the innovation of this study. 2. The author used a device to standardize the process in the SCI modeling. Reviewers are curious about this. Is this device made by the authors or a commercial device purchased? If the authors made the device, it is recommended that the authors can provide the structure and pictures of the device. If the device was purchased, it is recommended that the author can provide the manufacturer and model of the equipment. It is necessary to clarify the structure of this equipment to review the rigor of the experimental operation. 3. The sources of drugs, reagents, equipment, and cells used in the experiment were not indicated. Especially for



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Group**

7041 Koll Center Parkway, Suite
160, Pleasanton, CA 94566, USA
Telephone: +1-925-399-1568
E-mail: bpgoffice@wjgnet.com
https://www.wjgnet.com

cells, if these cells are cultivated in the author's laboratory, the method of cell extraction and culture should be pointed out in the article. If these cells are purchased, it should be indicated where to buy them. 4. The detailed steps of some experimental operations are not written in the text, such as neuroelectrophysiological experiments, BBB scores, tissue sections, and staining. It is recommended that the author supplement these contents to increase the rigor of the article. 5. It is recommended that the authors convert the results of neuroelectrophysiology experiments and BBB scale into a more easily read statistical chart format, which is more intuitive and easier to compare between groups. 6. The authors only performed simple hematoxylin and eosin (H&E) staining to observe the recovery of SCI. This method cannot observe the growth of nerve cells and nerve fibers. It is recommended that the author can conduct other more detailed histopathological observations to clarify the recovery of nerve cells and nerve fibers, for example, immunohistochemistry and immunofluorescence. 7. The number of references adopted is small, and some references are relatively old. The authors are advised to seek updates, for example, *Acta Biomaterialia* 2019, 88, 57-77.