

Open peer review report 1

Reviewer: Michele Fornaro, Midwestern University, USA.

Comments to the authors:

It is an interesting article with very good data but not well written. Authors should add details and sell a better story. The Results and figure legends are particularly dry and the discussion doesn't discuss much.

In this manuscript, the authors present interesting data on the use of decellularized nerve matrix as a biodegradable conduit for nerve repair and compares results for nerve regeneration using the GFNC conduit versus a silicone conduit.

The data presented in this manuscript are novel and of interest for future directions in the field of peripheral nerve regeneration.

My major concern with the manuscript is not about the data but, instead, the way data are presented. Mostly for the Results and Discussion sections the Authors should add more details and full sentences to allow for a better reading flow. The text is quite schematic and dry. I would recommend a thorough text revision to polish the manuscript.

Other minor comments:

1. Please add explanation on why only Male rat were used for this study
2. The first sentence of the introduction section is not needed
3. Add spaces before () throughout the all text
4. Considering the topic, Authors should search for more updated citations.
5. M&M - Histo analysis - the first paragraph (lines 40-44) needs English revision. Line 40 .. and fixed them in formalin (delete "them") / Afterward, the previous specimens (delete previous) / stained with H&E and IHC (delete and and add or underwent immunohistochemical staining).
6. M&M fine structural analysis - Specimens were sectioned not transected.
7. Results secgtion - Line 31... "The concentration of NGF and BDNF (delete present) in rat sciatic (not static) nerve was (not were)
8. Results line 33. The prepared GFNC was confirmed to contain ... Add concentration of the growth factors. are these number pg/g?
9. In vivo study. Please add measure units for the results of SFI. Any SD?
10. In vivo study . Lines 34-46. Please explain the purpose of the mutilation data. Are the authors suggesting that mutilation correlates with Pain? There are other/more accurate behavioral tests to assess pain. If not available in the authors lab, I would suggest to better explain the mutilation data and "suggest" a possible correlation" with pain.
11. Discussion - First sentence is not in good English. What do the authors mean with "The study shall include" ? A study may suggest/ may lead to the conclusions etc.
12. The discussion should be the section where the authors comment on the result and makes statements to sell a convincing story. It is my impression that there is not much "discussion" for this manuscript. The data are there but the authors are selling them short. The data suggest way more then what the authors are commenting on. For example, What is the point of finding NGF and other factors in the GFNC conduit compared to the silicone? If fibers grow on silicone as well why do we need NGF? Is NGF responsible for axonal growth or a better rate of growth? Any literature supporting this concept? Are the authors suggesting that the increased rate of growth is due to NGF? if so you should make a clear statement. I understand the reason of this experiment but it is not well commented in the conclusion. Only a brief sentence explaining the importance of NGF for axonal growth. I would suggest to develop this topic more as well as per the entire discussion section.

13. Figure legends need more details. Readers should be able to read the figure legend and understand the logic of the experiment without reading the result section.
14. Add scale bars to all figures and the the figure legend. The magnification doesn't say much.