OPEN PEER REVIEW REPORT 1

Reviewer: Ben Christensen, University of Utah, Salt Lake City, USA.

Comments to the authors:

Criticisms are listed in the comments to the Author. However, of particular concern is the lack of detailed statistical descriptions and the lack of a control cohort. It is my recommendation that these issues be addressed before publication be considered.

The authors present information regarding gene and protein expression in tibial and peroneal nerves following transection and reapproximation of the nerve in a rat model. The presented results are interesting and novel; however, the following concerns should be addressed:

1. The methods section is lacking an in-depth description of the statistical analyses used to evaluate the data collected. Reported p-values in some figures do not seem reasonable given the relatively low number of samples (N=4 independent samples).
2. Critically, this work is missing a control group. Without an uninjured control group, it is not possible to determine if difference observed between the tibial and peroneal nerves are due to differences in expression levels during Wallerian degeneration, or a lack of expression and detection of expression in the nerves.
3. I believe that the authors meant to say "Bunger" bands in the Introduction, rather than "Bingers" bands.
4. The authors should clarify the number of samples used for each time point for each analysis type (RNA-seq, Proteomics, and real-time PCR). The assumption is four samples per time point per analysis, but this should be clarified.
5. In Tables 1&2, it is unclear what comparison is being made (tibial vs peroneal, or peroneal vs tibial).
6. Near the end of the discussion, the authors state that their results "showed that Wallerian degeneration and regeneration following injury of peripheral nerves in rats differ based on the type of injury". The authors state in the methods that injury mechanism was the same for both nerves. Do the authors mean "location of injury" rather than "type of injury"?
7. The discussion is importantly missing the authors' thoughts on why gene and protein expression would be different between the tibial and peroneal nerves.