OPEN PEER REVIEW REPORT 1

Name of journal: Neural Regeneration Research
Manuscript NO: NRR-D-19-00203
Title: Glutamate receptors and glutamatergic signalling in the peripheral nerves
Reviewer's Name: Susana R. Cerqueira
Reviewer's country: USA
Date sent for review: 2019-05-14
Date reviewed: 2019-05-15

COMMENTS TO AUTHORS

The review "Do axons in the peripheral nerve communicate with Schwann cells via glutamate?" is a timely and engaging manuscript that explores an important and understudied topic in neural regeneration. A scientist with recognized expertise in elucidating neurotransmitter-mediated mechanisms of neuron-glia interactions authors the review. The paper highlights the importance of understanding the origin and effects of glutamate on SC proliferation, differentiation and myelination, as well as examining the role of axons in PNS glutamate signaling. This topic can have significant impact in areas such as PNS repair, and modulation of neuropathy and chronic pain disorders. This review is likely to stimulate researchers in the field to consider investigating glutamate signaling in PNS systems, which would move the field forward.

A major comment is that although the authors briefly refer to the possibility that SCs may contribute as a source of glutamate themselves, most of the review is based on an assumption that axons are the foundation of this signaling. An example, is that the contribution of SCs in glutamate secretion is not contemplated in the Figure that the authors created to represent the current body-of-knowledge on PNS glutamate signaling. This point is also evident in the title they chose for the review. The authors need to be more clear and present evidence (or the lack of it) for the hypothesis that axon-SC contact is important in glutamate signaling in the PNS.