Reviewer’s report

Title: Increased expressions and levels of tachykinin both ipsilaterally and contralaterally in response to unilateral rabbit muscle overuse leading to muscle and nerve affection and inflammation

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Reviewer: Zong Mei

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In this paper, Yanfeng Song et al showed that: 1) one side exercise/overuse can induce muscle inflammation in muscles at both side; 2) tachykinin was expressed in muscles (both overused side and non-exercise side) at different substructures including nerve, inflammatory cells and blood vessels both at RNA and protein level; 3) the total tachykinin was also increased after exercise in a time-dependent way at both sides and they correlated with each other in a positive way.

So, they showed a phenomenon (overusing one-side muscle causes both-sides muscle inflammation), provide a hypothesis for it (tachykinin system increased), and used different methods to detected this hypothesis (in situ hybrization, immunohistochemistry and EIA). The reviewer thinks they made good efforts on it, and basically what they want to say is convinced.

Major revisions:
As the authors have the hypothesis that tachykinin might be one of the reasons of muscle inflammation, is it not a direct and interesting way to show that there are some correlations statistically between them, for example, to correlate the total tachykinin levels in muscles and some inflammation markers. Of course it might need time to quantify the markers, but may be worth to think about it in the future.

Minor revisions:
1. Page 36, in conclusion, line 5, “expressioin” should be expression.
2. Page 6, under animals, about the anaesthetized methods, “which muscle” and “which side” is better to be noted.
3. There is no label (Figure 1) on the first figure.
4. Figure 14, better to indicate which line is for exercise and which is for non-exercise group?
5. About the figures’ presentation, is it possible to group them better?, for example, tachykinin expressions in different substructures can be put into separate figures, and in each of them, one exercise and one non-exercise can be shown.
6. And also it is not necessary to repeat same findings, like Figure 4 and Figure 3b, also the blood tachykinin expression is very convincing, one or two typical picture should be enough.
7. About the tachykinin expression in inflammatory cells, the figure quality needs to be improved. It's some kind of reduced the quality/convince of the whole article.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests