OPEN PEER REVIEW REPORT 2

Name of journal: Neural Regeneration Research
Manuscript NO: NRR-D-22-00464
Title: MELATONIN, TUNNELING NANOTUBES, MESENCHYMAL CELLS, AND TISSUE REGENERATION: Current perspective
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COMMENTS TO AUTHORS

General Comments:

This manuscript aims to provide a current perspective of melatonin, intercellular mitochondria transfer through tunneling nanotubes for MSCs-based therapy. The topic is attractive for broad readers. The manuscript is well organized. The authors propose the use of melatonin is an important pharmacological strategy to improve MSCs-based cell transplantation. Melatonin has great therapeutic potential in MSCs-based therapy of neurological and immune disorders, cerebral and cardiac ischemia, diabetes, and bone and cartilage diseases. Some suggestions and the detailed weakness are showed as following.

Specific Comments:

1.The graphic of TNT structures may be furnished in the figure to visually illustrate the whole perspective.

2. Limitation of the melatonin application in MSCs-based therapy and TNTs related research should be discussed more in the "Concluding remarks and perspective" section.