

## Answer to Reviewer

This review describes the applications of MSCs on spinal cord injury (SCI) and peripheral nerve system including the updated status of currently ongoing clinical trials. The first half of the manuscript is very focused on one topic. Provided tables are simple but give readers useful summary quickly.

Major comments 1. Although the authors stated at the end of section 3 that the potential use of cells, in particular MSCs, to stimulate nerve regeneration, I feel that section 4 is less focused. Since sections 1 & 2 are written well, this is disappointing and I strongly encourage authors to re-write section 4. Alternatively, the authors might want to re-construct the manuscript in order of such as 1. Background: SCI 2. Background: Wallerian degeneration/nerve regeneration in PNS 3. Application of MSCs for (i) SCI treatment (ii) peripheral nerve system regeneration. Although I do not think it is reviewer's role to ask changing the structure or the title of manuscripts, I felt that the flow of the manuscript is not good toward the end, thus, would like to give constructive comments. If my suggestion helps shape up the manuscript, I am happy about it.

**Answer: We have changed section 4 according to this reviewer suggestion. We practically rewrote the whole section by removing some paragraphs at the beginning of the section, by rephrasing several sentences and also by inserting new paragraphs.**

Minor comments Since there are too many minor formatting issues (2 & 3), I did not check line numbers. I ask the authors to check these formatting carefully. 1. Literatures cited. Page 3, lines 11~20 "Pathological changes resulting...imbalance of activated metalloproteinases.". I think references should be cited to indicate the origin of these information.

**Answer: We have inserted the references in the middle of the paragraph.**

Page 9, lines 3~5 “It is also possible to get...umbilical cord matrix, amniotic fluid and placenta”. There are several other important articles missing regarding to umbilical cord/amnion-derived MSCs. For example; P. De Coppi et al. (2007) Nat. Biotechnol., 25, 100-106; S. Karahuseyinoglu et al. (2007) Stem Cells, 25, 319-331; K. Kita et al. (2010) Stem Cells Dev., 19, 491-501) 2.

**Answer: We added these references.**

Abbreviations. i. Inconsistency of abbreviations used throughout the text. i) Mesenchymal stem cells (MSC); pages 5, 8, 13, 16, 19~21, 23 ii) Schwann cells (SC); pages 17~19 iii) peripheral nervous system (PNS); page 20 ii) NOGO, MAG, and OMGp (page 4, lines 3~4) may need to be defined what they are.

**Answer: We have corrected the inconsistencies. We have defined NOGO, MAG and OMGp.**

3. Formatting of references. i) page 9 4 lines from the bottom, (Zhou et al, 2013). Similar things manifested in pages 11 and 16. Not sure if you need to add years.

**Answer: We checked this information and changed in the text**

li) Some information missing in reference section, such as PMID and doi numbers.

**Answer: We added these informations.**

4. Page 11, line 22. What does “locomotor function” mean? Probably neurobiology-specific term?

**Answer: Yes, it means the ability to walk and explore the environment.**

5. Page 19, line 10. "clinical settings" may be better expression than "the human clinics". Line 11, "microsurgery repair" may be "microsurgical repair". The bottom line, "...as promoters of nerve regeneration." Not sure if the right word.

**Answer: We agree with this reviewer and changed these words.**