OPEN PEER REVIEW REPORT 2

Name of journal: Neural Regeneration Research
Manuscript NO: NRR-D-20-00840
Title: A porous collagen scaffold with axially-aligned luminal conduits combined with neural stem cells promoting the recovery of spinal cord injury
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Reviewer's country: USA

COMMENTS TO AUTHORS

The authors report their work developing a collagen scaffold into which they place fetally-derived neural stem cells and then implant the construct into rats with surgical spinal cord transsection. They show improved motor function in rats with collagen/stem cell implants relative to control animals and animals with scaffold only implants. In addition, the authors show evidence of improved neural regeneration in scaffold/neural stem cell animals. The work represents a valuable step in providing a solution for neurological recovery after spinal cord injury.

A few suggestions to improve the manuscript follow:
1. in ABSTRACT, the authors should indicate that the neural stem cells are fetally-derived.
2. In METHODS, the authors should indicate how many animals were assigned to each surgical group.
3. In METHODS, the authors should indicate how animals were sacrificed, perfused, and fixed for histopathological examination.
4. Many sections in the RESULTS contain additional methods and explanation about what the result is intended to show. These statements and descriptions should be in the appropriate sections of METHODS, so that RESULTS only has results.
5. In METHODS, the authors should indicate when final behavioral assessment was performed after surgery. Also, was baseline behavioral assessment performed prior to surgery and shortly after recovery from surgery?
6. In section 3.3, the authors should report the BBB results for scaffold/neural stem cell animals for fully (the specific scores obtained). In addition, a brief description of the functional activity that the scores represents would be helpful; this could be provided in METHODS.