

OPEN PEER REVIEW REPORT 2

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Title: Chronic spinal cord compression associated with intervertebral disc degeneration in aging SPARC-null mice

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COMMENTS TO AUTHORS

This paper represents a descriptive histopathological and behavioural analysis of Secreted Protein Acidic and Rich in Cysteine (SPARC)-null mice as a novel model of chronic spinal cord compression (CSCC).

CSCC is a non-mechanical injury which, in humans, may be the consequence of a disc herniation, disc degeneration, tumors or injuries, which may lead to several symptoms, including pain and numbness. The intensity and diversity of clinical manifestations depend on the level of the spinal cord at which the compression occurs.

In this paper the authors perform an extensive behavioural analysis of SPARC-null mice, looking both at locomotor and somatosensory parameters. Moreover, the authors perform an extensive histopathological analysis by looking at neuron degeneration, glia activation and inflammation. All together the data presented here support SPARC-null mice as a novel and reliable model for CSCC. Nevertheless, some minor corrections need to be performed to increase the level of the presented manuscript:

-I would suggest to use some of the graphs and images as supplementary. The figures (in particular the one related to the BBB analysis) are too crowded and the graphs are difficult to read