

OPEN PEER REVIEW REPORT 1

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Title: Biochanin A attenuates spinal cord injury in rats by modulating Nrf2/P62 and TLR4/NF- κ B/NLRP3 pathways

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COMMENTS TO AUTHORS

This is a well written article with relevance to spinal cord injury and neuroprotection. The results are encouraging to the field of spinal cord injury management, even though these are still based on an animal model. My comments are below:

1. The authors should explicitly state the difference between the sham group and the model group. This would help to explain the differences in the results between the sham group, model group and the BA group, so as to make sense of the effectiveness of the intervention.
2. Is the BA infusion rate of 40mg/kg/d supported in the literature?
3. Were any perioperative complications observed in the mice especially in the BA group and PC group? This is of interest as we know that steroids result in wound complications in the human population with spinal cord injury, and this serves as one of the criticisms of its use. If the authors did not specifically look out for these complications, that should also be stated so that future studies can consider that during study design.
4. The timing for intervention is of particular interest in spinal cord injury - some groups advocate the administration of therapeutics such as steroids within 8H of spinal cord injury. Did the authors consider the time (in hours) after spinal cord injury for which BA or Methylprednisolone was administered - and was this controlled for?
5. The authors should include a paragraph on the limitations of the study.