OPEN PEER REVIEW REPORT 3

Name of journal: Neural Regeneration Research
Manuscript NO: NRR-D-20-00763
Title: Low-dose lipopolysaccharide as an immune regulator for homeostasis maintenance in the central nervous system through transformation to neuroprotective microglia
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COMMENTS TO AUTHORS

Major issues

1. The paper is written oversimplified. Much information and specific details in Methods, Results, and data interpretation are not reported or not appropriately presented. For example, numbers of rats being used for experimental groups were not clearly stated; survival time of the SCI rats was mentioned only once (the same for all the other experiments?). In figure 3 and related text, it is not reported what the PCA tells and the authors interpretation.
2. In figure 7, why was only one color shown with transfection of GFP and meCherry? what were the rational for the transfection of these combinations: GFP+ mCherry (control), CRMP3-GFP (CRMP3)+ Spastin-mCherry (spastin), CRMP3-GFP+ SiRNA Spastin, or CRMP3-GFP+SiRNA NC? If CRMP3 and spastin interaction is required for promoting neurite outgrowth, why CRMP3-GFP+ SiRNA Spastin (which was supposed to inhibit intrinsic spastin) did not induce lower neurite outgrowth than GFP+mCherry group.
3. The time points for SCI is problematic. If the observations were made from SCI rats in 72h after injury, a time point during acute injury stage (maybe that is why CRMP3 was decreased), the authors missed a later time point to determine whether CRMP3 may actually play a role in axon regeneration. Also, the in vivo and in vitro studies are disconnected and there are no data to directly support that "spastin and CRMP3 play roles in spinal cord injury and repair".

Minor points

Some of the fonts in Figure 5 are difficult to read.
All figures with immunostaining should provide scale bars instead of using "200x" etc.
Page 8 Line 9, "pint" should be "point"; "Light injury" should be changed to "mild injury".