Review of: "Impending role of hippocampal neurogenesis in the development of chronic epilepsy following seizures after Kainic acid and Pentylenetetrazol treatment"

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Potential competing interests: No potential competing interests to declare.

This manuscript describes the alterations induced by seizures in the dentate gyrus of the hippocampus by analyzing how this insult affects neurogenesis, and the production of nNOS, NGF, and BDNF. The authors claim to have found an increase in neurodegeneration which decreases with time, as well as neuroinflammation. The authors also indicate that neurogenesis increases as well as apoptosis. The neurotrophins NGF and BDNF increase in the first 48 h and then decrease 8 weeks after KA and PTZ administration, suggesting their role in the increase of neurogenesis in the dentate gyrus. The article cannot be accepted in its current form. Results are not robust and consistent as they lack information or clarity.

Many results need a figure to support their description in the results section. For instance, there are no images of degenerating neurons, activated glia, or images of other brain regions to indicate that the dentate gyrus is more susceptible to the treatments.

Figure 1. Degenerating neurons are not identified. Micrographs of control conditions are hard to interpret since the fluorescence of fluorojade-B looks even higher than in the treated conditions. Authors do not use a robust method to indicate the presence or change of neuroinflammation.

Figure 2. There are no representative images of the TUNEL assay, and there is not a description of the statistical analysis performed for this experiment. Authors do not specify the value of p for three asterisks.

Figure 3. The description of the statistical symbols is lacking. It is not possible to understand the comparison between groups.

Figure 4. There are no representative images of the cells co-labelled with Calbindin and BrdU.

Figure 6. Authors must provide micrographs with a larger area to appreciate a more representative number of NADPH-d-positive neurons of each group.

Figure 7: The immunohistochemical experiments are not clear. It is hard to identify the immunoreactivity of each neurotrophin. Immunoblots lack the molecular weight of each protein, and there is not a densitometric analysis, which is mandatory to determine whether there are changes in the protein expression between groups.

With these results, it is hard to perform an objective discussion and conclusion.