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

Homa Manheji[1]

1 Shaheed Beheshti University of Medical Sciences

Potential competing interests: No potential competing interests to declare.

The authors have assessed the role of hippocampal neurogenesis in the development of two induction models of chronic epilepsy

The manuscript is thorough and well-constructed and I have only some positive suggestions for improvement and clarity:

The kainic acid (KA)-induced status epilepticus and pentylenetetrazol (PTZ)-induced kindling models are explained and established models for chronic epilepsy. This provides a clear rationale for the experimental design. The introduction effectively identifies a research gap. Neurogenesis and gliosis following seizures are a comprehensive insight.

- What implications of this study could impact the research of hippocampal neurogenesis and epilepsy?

- The methods section should be written with more clarity and providing sufficient detail, e.g., why did they choose two models for epilepsy instead one. What are the reasons that these two models are appropriate for research objectives?

- Please explain what was the benefits and limitations of each model and which one caused the cells die faster

- How many rats did they use as total

- How did they choose the experimental days?

- The authors have mentioned (The first and second set of rats from each group), please clarify the number of rats in each set and also the parameters were mentioned in details?

- The authors should clarify how data were collected and specific assays or measurements used.

- Please provide the information used to identify and quantify generated neurons

on the methods section

- Please describe precisely Nissl staining, Fluorojade B staining, and TUNEL assay

for measurement of neurotransmitters and growth factors (sample preparation, assay techniques)

- I wonder if the authors need to consider positive controls?

- Please mention the limitations associated with the methods

- The results are very complete and provides detailed findings from the experimental work. But if the authors consider organizing the results and grouping findings together by using subheadings could make it easier for reading

- I wonder addition to the Bar diagram figures, is it better for authors to put the microscopic figures from Nissl staining, Brdu+ cells and TUNEL assay, cells co-labelled Brdu+-calbindin and Brdu+ - GFAP

- The figures need to be clarified; they are blurred

- If the authors try to connect the observed results with initial hypotheses might help readers understand the findings better

- The discussion provides a thorough analysis of the experimental findings. It is well organized. It would be beneficial if the authors discuss the limitations of the study; it helps others know the factors that might influence the interpretation of findings,

- May these findings be used in the clinic? How would these findings contribute to treatment?