**Author’s response to reviews**

**Title:** The interplay of BDNF-TrkB with NMDA receptor in the process of propofol-induced cognition dysfunction in Hippocampus of neonatal rats

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Responses to reviewers’ comments and the list of changes in text

Dear Editor, We appreciate your response for our manuscript which titled "The interplay of BDNF-TrkB with NMDA receptor in the process of propofol-induced cognition dysfunction in Hippocampus of neonatal rats" so quickly. On the other hand, we also thank all the reviewers and you very much for the constructive advices and hard work. According to the comments from the reviewers, we do the following explanations and revisions. We wonder if the following replies could meet your requirements. Please feel free to contact with us if there is still something you want us to do. We look forward to hearing from you. Thank you! Best regards! Sincerely yours, Fang Wang

Response to Reviewer 1:

I believe the work has been improved and they have addressed all the previous major concerns in this updated version. The authors correctly removed the reference to POCD from the introduction and replaced that with the effects of anesthesia on the developing brain. I still think the manuscript can benefit from a similar addition in the discussion section, as this effect seen may not be simply a propofol effect, but an overall "GABA-ergic" effect from anesthetic medications in general. This however is a minor issue, and does not take away from the main findings in this study being that the effects of anesthesia on the developing brain may be through NMDA and BDNF-TrkB signaling pathways.

Response: Thanks for your thoughtful comments on our paper. It is known that anesthetic agents can cause widespread and dose-dependent apoptotic neurodegeneration and cognition dysfunction in the developing brain. It is also known that the most frequently used general anesthetics have either N-methyl-D-aspartate (NMDA) receptor blocking or γ-aminobutyric acid (GABA) receptor activating properties. In particular, many intravenous anesthetics, among them barbiturates, propofol, and etomidate, as well as inhalational