Reviewer's report

Title: Glutamatergic Deficits and Parvalbumin-Containing Inhibitory Neurons in the Prefrontal Cortex in Schizophrenia

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Reviewer: Lan Yu

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Bitanihirwe et al examined the expression of NR2A mRNA in the neurons that contain parvalbumin in the prefrontal cortex between schizophrenic patients and healthy controls. They also investigated the vesicular glutamate transporter 1 (vGluT1) expression in the prefrontal cortex. The authors found the decreased PV neurons which expressed NR2A mRNA and vGluT1 in the PFC in schizophrenic patients. The conclusions of this research are reasonable, however, I have several concerns about this paper.

Major Compulsory Revisions

1. In the abstract, the BACKGROUND part seems lack of information of vGluT1. The background should correspond with the following experiments and conclusions.

2. Page4. BACKGROUND part, sentences beginning form “In this study, using………” to the end sentence of this paragraph, belong to the parts of methods, results and conclusions. It’s better to use other expression to show why the authors designed this experiments. The authors should focus on the reasonability of their experiments rather than conclusions.

3. In the results, Figure 4. Why the authors only show the results of layer3 and layer 5, I'm curious about the layer 4 result.

4. Page10. “Cellular Expression of NR2A mRNA”, the expression of NR2A mRNA in the PV cells seems no changeable in schizophrenic patients. However, page 11, last sentence “… in a subset of PV neurons, the expression of NR2A is reduced to a level that is no longer experimentally detectable”. I’m confused with these two expressions. Please explain if possible.

5. Discussion part. Page 12, in the second paragraph, the authors mentioned that a single polymorphism in neuregulin-1 gene is associated with vGluT1 expression. The evidence presented here doesn’t increase the power of explanation for the inconsistent results of this paper and others’.

6. References in this manuscript should be reduced.

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published
**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**
I declare that I have no competing interests