

## OPEN PEER REVIEW REPORT 1

**Name of journal:** Neural Regeneration Research

**Manuscript NO:** NRR-D-20-00877

**Title:** Gut microbiome: implications for neurogenesis and neurological diseases

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**Reviewer's country:** Mexico

### COMMENTS TO AUTHORS

The manuscript Gut microbiome: implications for neurogenesis and neurological diseases written by Liu et al, is a review documenting the relationship between gut microbiota and the gut. In particular indicates that some residents of the microbiome may participate in the development of the pathology o some neurological disorders while other integrants of the microbiome like probiotics may be beneficial.

This small review made a list of some experimental results from animal models where an analysis of the microbiome has been made and a link has been proposed with pathology. However I have two observations:

In the point 3 "Gut microbiota: the link with neurogenesis and potential mechanisms of action" they talked about one study performed in germ-free (GF) mouse (reference 23) where the GF mice exhibited increased adult hippocampal neurogenesis, what could be contradictory with the fact they want to highlight in this review.

Later on they said that "microbial colonization of GF mice at 3 weeks of age did not induce changes in adult hippocampal neurogenesis, suggesting a critical window when colonization with microbiota could influence adult hippocampal neurogenesis"

At the end of the paragraph it is not clear what idea to catch, germ free is good or gut microbiome is good.

Finally, there are not explanations about the mechanisms that either good micro biome or bad microbiome induce to exert their effects. In the discussion the authors said that there is no explanation about the mechanisms, is it true?