

OPEN PEER REVIEW REPORT 1

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Comments to the authors:

" Glutamate receptors delocalization and impairment of hippocampal long-term potentiation precedes local extracellular A β deposition in asymptomatic 5XFAD mouse model".

This relatively compact study demonstrates a lack of associations between time-courses of amyloid beta accumulation, LTP-modification, and memory impairment in 5xFAD mice as a model of Alzheimer disease. More generally, it raises the question whether the hippocampal LTP is a critical mechanism underpinning learning and/or memory processes. The manuscript is clearly written and the main idea is sufficiently supported.

There are several remarks associated with the data presentation in the Results.

- a) Extremely excessive citations in attempt to explain why corresponding experiments were performed in the study. These aspects should be preliminarily described in the Introduction.
- b) Numerical values in the text, duplicating those presented on figures, should be omitted because of formal principles of manuscript preparation, oriented on a convenience for a reader.
- c) The legends should be slightly modified to avoid duplication (for example):

Fig. 1, "n" is the number of mice;

Figs 2 - 4, "n" are the numbers of slices/mice;

Fig. 5, abscissa should be clearly marked: "stimulation intensity (μ A)";

Several technical errors: lacking spaces (see, e.g., page 3, lines 20 and 23) and incorrect punctuation (especially in the Abstract), should be fixed.