

Review of: "Reduction of acetylcholine in the hippocampus of hippocampal cholinergic neurostimulating peptide precursor protein knockout mice"

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The authors of "Reduction of acetylcholine in the hippocampus of hippocampal cholinergic neurostimulating peptide precursor protein knockout mice" provided new findings in vivo on the function of HCNP in Ach, against the background of previous reports of the regulation of Ach synthesis by HCNP in explant culture experiments and ChAT regulation in in vitro kinetic studies. They indicated the reduction of Ach concentration in the extracellular space in the ventral hippocampus of HCNP-pp KO mice using the microdialysis method. They also showed that VAChT, playing a role in the packaging of Ach into synaptic vesicles, reduced in the hippocampus of HCNP-pp KO mice in comparison with that in control mice, while there was no significant differences in the number of ChAT-positive cells in the MSN and in the synaptic number in the stratum and stratum oriens. These findings are interesting because HCNP may be a cholinergic regulator of the septo-hippocampal cholinergic network. It appears to need minor revisions, but is suitable for publication in *Scientific reports*.

1) Figure 1A:

Probably the bottom line plot is HCNP-PP KO and the top line plot is control mice, but there are no annotations in the figure, so please describe them.

2) Legend of Figure 2:

As I understand it, Bayes factor is a criterion to compare two models based on observed data, and when Bayes factor > 100, it means "very strong evidence" to one model. What two models does the result of Bayes factor = 122.7 in Figure 2 refer to? And for which model is it "very strong evidence"?

In my interpretation, using the observed data in the control mouse MSN as model 1, and the previous data from the stratum oriens of the hippocampus (ref. 18) as model 2, model 1 is "very strong evidence" for the observed data in the HCNP-pp KO mouse MSN, I believe that this means that it is. If so, please state that somewhere in the manuscript.

3) Figure 2A:

I see a white shaded line at the bottom of the image, what does it mean? Is it just an error?

4) The fifth paragraph of Discussion:

“HCNP and/or HCNP-pp may mainly affect the expression of VACHT ... in these HCNP-pp KO mice,” seems to be odd because of talking about HCNP function in HCNP-pp KO mice. Why don't the authors try deleting the phrase of “in these HCNP-pp KO mice”?