Reviewer's report

Title: Pinocembrin protects against beta-amyloid-induced toxicity in neurons through inhibiting RAGE-independent signaling pathways and regulating mitochondrion-mediated apoptosis

Version: 2 Date: 3 August 2012

Reviewer: Robin Ruthazer

Reviewer's report:

The authors have done a nice job reviewing and clarifying their results and I appreciate their continued responsiveness to suggestions and work toward making their paper a stronger manuscript. I have no major comments on this paper. I have some minor comments, but I think they are all easily addressable.

Minor Essential Revisions

There is no reference to the number of mice evaluated in this study in this revised manuscript. Please make sure the sample size is clearly stated for summary numbers you present. One option (although there are others) is to put the sample size at the base of each bar in your bar charts. At a minimum, you should say the # of mice randomized to each treatment condition.

Discretionary Revisions

Methods – animals and treatments paragraph 2 (page 6)

“Mice were randomly divided into different groups…”

I would remove the word “random” from this sentence, since at this point in the study, animals were already divided into SHAM vs. AB. If I follow the authors description, at this point the AB treated animals were (randomly) divided into 3 subgroups (no Pino, Pino20, Pino40).

Maybe add the word ‘random’ (if true) at the end of the paragraph…. “The division of mice into treatments groups, and selection of mice to be sacrificed within each treatment group were both done randomly”

Again, please tell the number of mice randomized into each group.

Results – page 15, 2nd paragraph:

“… As shown in Fig 1C and D, the AB treated mice did not spend significantly more time searching for the platform in the target quadrant…relative to sham mice…”

I think you mean (please check)

“… As shown in Fig 1C and D, the AB treated mice spent significantly less time
searching for the platform in the target quadrant......relative to sham mice”

How many mice were in each treatment group?

Results - page 18.

…..(Fig4C and D.). Therefore, we demonstrated that pinocembrin did not have a direct inhibitory effect on RAGE expression, not dependent on the proliferation of the cells”.

I do not believe a failure to show a significant difference is a demonstration that the effect is not there. This is a pretty strong conclusion. Please consider rephrasing a little. I say this because a failure to find a statistically significant association in NOT proof that the association does not truly exist.

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare I have no competing interests