Reviewer’s report

Title: PAMs Inhibits Monoamine Oxidase A Activity and Reduces Glioma Tumor Growth, a Potential Adjuvant Treatment for Glioma

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Reviewer: Dr. Zaridatul Aini

Reviewer's report:

My major comments on this manuscript are related to the design and methodologies and also findings of the study:

1) PAMs are a mixture of Chinese herbal medicine. However, the detail composition of this herbal medication was not described in this study.

2) Several appropriate controls were not included in the study. For instance, the study involving cell lines, normal glial cells for human and mouse should be included to show that the anti-cancer effects of PAMs were selective. For in vivo study - the animal model for clorgyline should also be included in fig 4, 5 and 6 as comparison.

3) Figure 1 - It was not clear why the MAO inhibition assay was conducted in human prostate LNCaP cell while it is more logical to perform this in the U251S and U251R cells, parallel with GL-26 cell.

4) Figure 2 - The three different cell lines were treated with PAMs for 48hrs. How this time-point was determined was not described. Has any pilot study been conducted by the group/ others to determine this specific time-point?

5) Figure 4 b - the error bar for this graph is huge, please describe the stat analysis that had been used for this data and what are the p values for them?

6) The study claimed that PAMs reduced tumor growth and MAOA activity, similar to the MAOA inhibitor clorgyline. However, PAMs only showed about 20% inhibition of MAOA catalytic activity while clorgyline inhibition was achieved at much higher level, ~90% inhibition. This huge difference between the two agents suggest that PAMs might have different mechanism of action, suggesting that the conclusion of the study might not be entirely true, and requires further validation.

6) co-administration of PAM and TMZ did not provide additional anti-cancer effects and MAOA inhibition when compared to TMZ or PMA alone, suggesting that the conclusion made "PAM might be a promising adjuvant to reduce the toxicity of TMZ"
might also need further validation.

General comments:
N numbers for each experiment and error bars should be included in the figures and figure legends.

Other comments:
1) Some of the fonts of the manuscript were inconsistent
2) typographical error on statistical analysis section on the method - standard error (SE) not SED
3) It was not mentioned what type of post-hoc test was used for the one-way ANOVA stat analysis
4) The study had used two types of stat analysis - one-way ANOVA and student t-test: it should be described in detail when this was used, i.e. comparison with multiple groups/ only to control?
5) Statistical analysis need to be reviewed since there are certain data that displayed huge error bars but they managed to achieve stat significance.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

No

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I recommend additional statistical review

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Needs some language corrections before being published

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