Review of: "Targeting Alzheimer's disease hallmarks with the Nrf2 activator Isoeugenol"

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Potential competing interests: No potential competing interests to declare.

The authos have done a tremedous work to seek their aim however the study is so confusing since the authors didn't provide much declarations and systematic view of their work to the readers. here are some questions and inquires that the authors should provide to enhance the quality of the paper

1. Abstract and Introduction:

- The abstract should be concise and focused on the core elements of the study. If it's not concise, it may fail to effectively communicate the essential points and objectives of the research.

- An overly long introduction with distracting information can dilute the focus on the central theme of the study, which in this case is Nrf2. The introduction should be streamlined to emphasize the main research question and its significance.

2. Assessment of Nrf2:

- If Nrf2 is central to the study, using immunohistochemical markers to assess it would provide a more direct and specific analysis. This approach could enhance the validity of the findings related to Nrf2.

3. Use of Swiss ADME vs. PAMPA:

- If Swiss ADME offers a more comprehensive analysis compared to PAMPA, suggesting its use is valid. Comprehensive tools can provide a more detailed understanding of the ADME (Absorption, Distribution, Metabolism, and Excretion) profiles of the substances studied.

4. Sample Size Estimation:

- The method for estimating the sample size, especially in in vivo studies, should be clearly articulated. If the number of animals used is considered small, this raises concerns about the statistical power and generalizability of the findings.

5. Repetition of In Vivo Experiments:

- Knowing how many times each in vivo experiment was performed is crucial for assessing the reliability and reproducibility of the results. I know the authors mentioned it in the legands but it would be preferable if the authors mentioned it in each section.

6. Variation in Age of Animal Models:

- The rationale for using animals of different ages in various experiments should be clear. Age can significantly influence the results in studies involving disease models, particularly in the context of neurodegenerative diseases like Alzheimer's.

7. Use of Rat vs. Human ELISA Kits:

- The choice of using human ELISA kits instead of rat-specific kits needs justification, especially considering the potential differences in protein structure and function between species.

8. Presentation of Gene Primers:

- Organizing gene primers into a table would enhance clarity and readability, making it easier for readers to understand and replicate the study.

9. Assessment of Sensory and Motor Behavior:

- If Alzheimer's Disease (AD) is the main focus, the rationale behind assessing sensory and motor behavior should be explained. While these assessments can be relevant, their connection to the core study of AD should be made explicit.

10. Effect on Different Memory Domains:

- Clarification is needed on whether eugenol affects different memory domains. This is significant in the context of AD research.

11. Presentation of Western Blots:

- Providing uncropped images of western blots is important for transparency and allows readers to fully assess the results. Cropped images can lead to questions about data selection and representation.

12. Confusing Bar Patterns in Graphs:

- The use of the same pattern in bars can be confusing and hinder the interpretation of results. Diverse, clear patterns or colors should be used for better differentiation.

13. Histopathological Imaging:

- The choice to use low-power images for the hippocampus, especially when it is a critical area of study in AD, should be reconsidered. High-power images would provide more detailed information, which is particularly important for the hippocampus in the context of AD.

These points highlight a range of issues, from methodological choices to presentation of results, that can affect the overall quality and credibility of the research. Addressing these drawbacks would strengthen the study and make its findings more robust and reliable.