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 manuscript entitled "**Targeting Alzheimer's disease hallmarks with the Nrf2 activator Isoeugenol**" related to Alzheimer's disease, including potential therapeutic interventions, regulatory aspects et.al. It discusses the potential therapeutic effects of Isoeugenol, highlighting its impact on neuroinflammation, Nrf2 activation, Aβ peptides reduction, and amelioration of memory impairment. The manuscript is well-structured and can be further refined to provide additional depth and impact in the field of Alzheimer's disease research. My comments for this manuscript are minor and rather focus on clarity of presentation than the work quality.

Here are some suggestions:

1. Consideration should be given to a Long-Term Safety Assessment, which may involve comprehensive histopathological analyses of various organs, metabolic profiling, and behavioral observations to determine potential adverse effects associated with prolonged treatment.

2. Consider incorporating more details about the mechanisms through which Isoeugenol affects neuroinflammation, Nrf2 activation, and Aβ peptide reduction, as well as its specific impact on memory impairment in the mouse model.

3. Strengthen the paper's credibility by more extensively integrating a diverse range of research references. Connect these references to the study's findings and discuss how they contribute to the overall understanding of Alzheimer's disease and potential therapeutic interventions.

4. Analyzing the expression of key inflammatory markers, such as cytokines and microglial activation markers, in neuronal and microglial cell cultures as well as in animal models of neuroinflammation.

5. I suggestion to explore the specific pathways and targets involved in Nrf2 activation by Isoeugenol through molecular and cellular assays.

6. The author should evaluate cognitive function and memory improvement. Conduct behavioral experiments to further assess the effects of Isoeugenol on cognitive function and memory improvement.

7. The discussion of Isoeugenol's potential therapeutic effects in the paper needs to be described in more depth.

8. Abstract should be included with each original scientific manuscript with 4 clearly identifiable elements of content: rationale (goals of the investigation), methods (description of study subjects, experiments, and observational and analytic techniques), results (major findings), and conclusions. The author have to give more logically to highlight the key points.

9. The logical structure of the manuscript and the coherence of paragraphs need further improvement.

10. For the western blot results, the author should display the full imaging instead of scrap images.