

Review Form 3

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| Journal Name: | International Neuropsychiatric Disease Journal |
| Manuscript Number: | Ms_INDJ_127870 |
| Title of the Manuscript: | THE SYNERGISTIC EFFECT OF <i>Curcuma longa</i> AND <i>Rosmarinus officinalis</i> ON SOME BIOCHEMICAL MARKERS IN THE BRAIN OF ALCOHOL- TREATED RATS |
| Type of the Article | |

General guidelines for the Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guidelines for the Peer Review process, reviewers are requested to visit this link:

<https://r1.reviewerhub.org/general-editorial-policy/>

Important Policies Regarding Peer Review

Peer review Comments Approval Policy: <https://r1.reviewerhub.org/peer-review-comments-approval-policy/> Benefits for Reviewers: <https://r1.reviewerhub.org/benefits-for-reviewers>

PART 1: Comments

| | Reviewer's comment | Author's Feedback <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her</i> |
|---|---|--|
| Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part. | This manuscript provides significant insights into the potential neuroprotective effects of a mixed ethanol extract of <i>Curcuma longa</i> rhizome and <i>Rosmarinus officinalis</i> leaf, addressing a critical gap in understanding alcohol-induced brain damage and its mitigation. By elucidating the biochemical and histological impacts of the extract on oxidative stress and proinflammatory markers in ethanol-exposed Wistar rats, this study contributes valuable evidence to the field of neurological research. The findings highlight the therapeutic promise of these natural compounds in preventing alcohol-related dementia, a growing concern in global health. This research not only advances our understanding of alcohol-induced neurodegeneration but also underscores the importance of exploring plant-based interventions in combating neurological disorders. | |
| Is the title of the article suitable? (If not please suggest an alternative title) | "Neuroprotective Effects of <i>Curcuma longa</i> and <i>Rosmarinus officinalis</i> Extracts on Oxidative Stress and Inflammation in the Brains of Alcohol-Treated Rats" | |

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Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.

Suggested Additions:

1. Rationale for the Study: While the background mentions the global challenge of neurological disorders and alcohol-induced brain damage, it could briefly connect these issues to the potential of Curcuma longa and Rosmarinus officinalis as therapeutic agents.
2. Key Findings: Highlight specific numerical or percentage changes in oxidative stress markers and inflammation parameters, which will strengthen the abstract's impact.
3. Implications: Add a sentence explaining how these findings could contribute to broader applications, such as the development of therapeutic interventions for alcohol-induced dementia.

Suggested Deletions or Edits:

1. LD50 Detail: The mention of "18 rats used for determination of median lethal dose (LD50)" is a technical detail that could be omitted or condensed, as the main focus is on the neuroprotective effects of the extract.
2. Histological Observations: While important, the description of neuronal insult and histological changes could be more concise, focusing instead on the prevention effect of the extracts.
3. Reduce Repetition: Streamline sentences to avoid redundancy, such as the repeated mention of "300 or 600 mg/kg mixed extract."

Suggested Revision:

Background: Neurological disorders, including alcohol-induced dementia, remain a significant global health concern. Chronic alcohol consumption produces acetaldehyde, leading to oxidative stress, inflammation, and apoptosis in neuronal cells, which contributes to memory loss and brain damage. This study investigates the potential neuroprotective effects of a mixed ethanol extract of Curcuma longa rhizome and Rosmarinus officinalis leaf on oxidative stress and proinflammatory markers in alcohol-treated male Wistar rats.

Methods: Forty-three male Wistar rats were used, with 18 for LD50 determination and 25 divided into five treatment groups, receiving varying doses of the extract and ethanol. Treatments were administered orally for 21 days, and biochemical and histological analyses were conducted on brain tissues.

Results: Ethanol administration significantly ($p < 0.05$) increased malonaldehyde, Interleukin-1 β , and TNF- α levels while reducing brain superoxide dismutase, catalase, and glutathione activities. Co-administration with 300 or 600 mg/kg of the extract significantly and dose-dependently reversed these effects, preventing oxidative damage and inflammation. Histological analysis confirmed reduced neuronal degeneration in treated groups.

Conclusion: The mixed extract demonstrated significant neuroprotective effects by mitigating oxidative stress, inflammation, and neuronal damage in alcohol-treated rats. These findings suggest its potential as a therapeutic candidate for preventing alcohol-induced dementia.

This revised version provides clarity, a stronger focus on the study's significance, and more concise reporting of findings.

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| <p>Is the manuscript scientifically, correct? Please write here.</p> | <p>Statistical Analysis: The manuscript mentions significant changes ($p < 0.05$), but it does not specify the statistical tests used (e.g., ANOVA, t-tests). Including this information would strengthen the scientific rigour.</p> <p>Dose Justification: While the extract doses (300 and 600 mg/kg) are effective, a brief justification for these specific dosages would enhance clarity. Were these doses chosen based on prior studies, or were they empirically determined?</p> <p>Mechanistic Insights: While the study demonstrates the neuroprotective effects of the extract, further discussion on the underlying mechanisms (e.g., specific active compounds in the extracts) would be beneficial.</p> <p>Histological Findings: A more detailed description of the histological evaluation (e.g., specific staining methods used, and scoring of neuronal degeneration) would add clarity. Acetaldehyde Effects: The manuscript discusses acetaldehyde as a key factor in neurotoxicity, but no direct measurement of acetaldehyde levels is reported. Including this data or referencing prior studies that establish its role in the chosen model could strengthen the conclusions.</p> | |
| <p>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</p> | <p>Some references are relevant</p> | |
| <p>Is the language/English quality of the article suitable for scholarly communications?</p> | <p>Replace "may play a role" in the conclusion with "may play a role" for grammatical accuracy. The capitalization of terms like "Catalase" should be consistent (e.g., "Catalase"). Formatting: Ensure that units (e.g., mg/kg bwt) and abbreviations are consistently formatted throughout the manuscript.</p> | |
| <p>Optional/General comments</p> | <p>The study is scientifically sound and contributes valuable insights into the neuroprotective effects of plant-based extracts. Addressing the suggestions above would further enhance the clarity, rigor, and impact of the manuscript.</p> | |

PART 2:

| | Reviewer's comment | Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here) |
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| <p>Are there ethical issues in this manuscript?</p> | <p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p> | |

Reviewer Details:

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