

**Review Form 3**

Journal Name:	<a href="#">Journal of Advances in Biology &amp; Biotechnology</a>
Manuscript Number:	Ms_JABB_124785
Title of the Manuscript:	Neuro Behavioural and Biochemical Analysis of MPTP-Induced Parkinson's Disease in Mice: Therapeutic Effects of Plumbagin
Type of the Article	

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**PART 1: Review Comments**

<b>Compulsory</b> REVISION comments	Reviewer's comment	<b>Author's Feedback</b> (Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<p>Please write a few sentences regarding the importance of this manuscript for the scientific community. Why do you like (or dislike) this manuscript? A minimum of 3-4 sentences may be required for this part.</p>	<p><b>Significance of the Manuscript in the Scientific Community</b>            This manuscript is significant for the scientific community as it explores the dual impact of MPTP on both the central nervous system and liver function, highlighting the interconnectedness of neurodegenerative diseases and liver health. The findings suggest that plumbagin, known for its antioxidant properties, may serve as a potential therapeutic agent against the neurotoxic and hepatotoxic effects of MPTP, which is crucial for developing new treatment strategies for Parkinson's disease.            Moreover, the study employs a comprehensive approach by utilizing behavioral tests to assess anxiety and depressive-like behaviors alongside biochemical analyses of liver function, providing a holistic view of the effects of MPTP. This multifaceted investigation not only contributes to the understanding of Parkinson's disease but also opens avenues for further research into the effects of neurotoxins on multiple organ systems, which is an area that requires more attention in the field.            Personally, I appreciate this manuscript for its thorough methodology and the relevance of its findings. The integration of behavioral and biochemical assessments offers a well-rounded perspective on the implications of MPTP exposure, making it a valuable resource for researchers interested in neurodegenerative diseases and their systemic effects. The potential therapeutic implications of plumbagin also add an exciting dimension to the research, suggesting practical applications that could benefit patients suffering from Parkinson's disease.</p>	
<p>Is the title of the article suitable? (If not please suggest an alternative title)</p>	<p><b>Suitability of the Article Title</b>            The title "Neuro Behavioural and Biochemical Analysis of MPTP-Induced Parkinson's Disease in Mice: Therapeutic Effects of Plumbagin" is suitable as it accurately reflects the core focus of the study. It highlights the key aspects of the research, including the neurobehavioral and biochemical analyses conducted on MPTP-induced Parkinson's disease in mice, as well as the investigation into the therapeutic effects of plumbagin. This clarity is essential for attracting the right audience and conveying the study's objectives. However, an alternative title could be "Exploring the Neuroprotective and Hepatoprotective Effects of Plumbagin in MPTP-Induced Parkinson's Disease" This alternative emphasizes both the neuroprotective and hepatoprotective roles of plumbagin, which are significant findings of the research. This could enhance the title's appeal by underscoring the dual impact of plumbagin on both the nervous system and liver function, which is a critical aspect of the findings</p>	

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<p>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.</p>	<p><b>Evaluation of the Abstract's Comprehensiveness</b>  The abstract of the article provides a solid overview of the study, covering the aims, methodology, results, and conclusions. However, there are areas where it could be enhanced for greater clarity and completeness. Here are some suggestions for improvement:</p> <ul style="list-style-type: none"> <li>• <b>Clarification of the Study's Aims:</b> While the abstract mentions the investigation of plumbagin's effects, it could specify the primary hypothesis or research question being addressed. This would help readers understand the study's focus more clearly.</li> <li>• <b>Detailed Methodology:</b> The abstract briefly mentions the division of mice into groups and the behavioral tests conducted. Including more specific details about the experimental design, such as the number of mice in each group and the duration of the treatment, would provide a clearer picture of the methodology used in the study.</li> <li>• <b>Conclusion:</b> The conclusion could be strengthened by explicitly stating the implications of the findings for future research or potential clinical applications of plumbagin in treating Parkinson's disease and liver dysfunction.</li> </ul> <p>By incorporating these suggestions, the abstract would provide a more comprehensive and informative summary of the study, making it easier for readers to grasp the significance and outcomes of the research.</p>	
<p>Are subsections and structure of the manuscript appropriate?</p>	<p><b>Evaluation of Manuscript Structure and Subsections</b>  The structure and subsections of the manuscript appear to be appropriate based on the provided contexts. Here are some observations regarding the organization and clarity of the manuscript:</p> <ul style="list-style-type: none"> <li>• <b>Clear Division of Sections:</b> The manuscript is organized into distinct sections, including the abstract, results, discussion, and conclusion. This clear division helps readers navigate through the study's components effectively.</li> <li>• <b>Discussion of Results:</b> The results section presents findings related to behavioral changes and biochemical analyses, which are crucial for understanding the impact of MPTP and the therapeutic effects of plumbagin. The results are supported by statistical significance, which adds credibility to the findings.</li> <li>• <b>In-depth Discussion:</b> The discussion section elaborates on the implications of the results, linking the neurotoxic effects of MPTP to liver dysfunction and behavioral changes. This connection is essential for comprehending the broader impacts of the study.</li> <li>• <b>Conclusion Summary:</b> The conclusion effectively summarizes the key findings and suggests the potential of plumbagin as a therapeutic agent. It emphasizes the dual impact of MPTP on both the central nervous system and liver function, which is a significant takeaway from the study [3].</li> <li>• <b>Methodology Clarity:</b> While the abstract provides a brief overview of the methodology, the main manuscript should ensure that the methods are detailed enough for reproducibility. This includes specifics about the experimental design, treatment protocols, and behavioral tests used, which are crucial for readers to understand how the study was conducted.</li> <li>• <b>Suggestions for Improvement:</b> <ul style="list-style-type: none"> <li>• Including a dedicated methodology section that outlines the experimental design, sample sizes, and specific procedures would enhance clarity.</li> <li>• Adding subheadings within the discussion to separate different themes (e.g., neurotoxicity, hepatotoxicity, behavioral outcomes) could improve readability and organization.</li> </ul> </li> </ul> <p>Overall, the manuscript's structure is appropriate, but enhancing the methodology section and organizing the discussion with subheadings could further improve clarity and comprehensiveness.</p>	
<p>Please write a few sentences regarding the scientific correctness of this manuscript. Why do you think that this manuscript is scientifically robust and technically sound? A minimum of 3-4 sentences may be required for this part.</p>	<p><b>Scientific Robustness and Technical Soundness of the Manuscript</b>  The manuscript is scientifically robust and technically sound due to its well-structured experimental design and comprehensive analysis of both behavioral and biochemical outcomes. The study effectively utilizes a control group alongside various treatment groups, allowing for a clear comparison of the effects of plumbagin on MPTP-induced</p>	

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	<p><b>Parkinson's disease in mice, which enhances the reliability of the results .</b>  <b>Moreover, the use of established biochemical markers such as ALT, AST, and ALP to assess liver function provides a solid foundation for evaluating hepatotoxicity, ensuring that the findings are grounded in recognized scientific methods .</b>  <b>Overall, the combination of a rigorous experimental framework, appropriate biochemical assessments, and relevant behavioral evaluations contributes to the manuscript's credibility and scientific integrity, making it a valuable addition to the field of neuropharmacology.</b></p>	
<p><b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b>          :-</p>	<p><b>Evaluation of References in the Manuscript</b>  <b>The references in the manuscript appear to be sufficient in number, as they support the key findings and discussions presented throughout the study. The inclusion of recent studies, such as those by Datta et al. (2020) and Shojaie et al. (2020), indicates that the authors are engaging with current research trends and findings related to Parkinson's disease and its connection to liver dysfunction .</b>  <b>However, to enhance the manuscript's depth and relevance, it may be beneficial to include additional references that focus on the therapeutic effects of plumbagin and its mechanisms of action. For instance, studies that explore the neuroprotective properties of plumbagin in various neurodegenerative models could provide a broader context for the findings. Additionally, recent reviews on the role of inflammation in Parkinson's disease could further substantiate the discussion on the neuroinflammatory aspects highlighted in the paper.</b>  <b>In summary, while the existing references are adequate, incorporating more recent and relevant studies could strengthen the manuscript's foundation and provide a more comprehensive understanding of the therapeutic potential of plumbagin in Parkinson's disease.</b></p>	
<p><u>Minor REVISION</u> comments</p> <p><b>Is the language/English quality of the article suitable for scholarly communications?</b></p>	<p><b>Assessment of Language Quality in the Article</b>          The language and English quality of the article appear to be suitable for scholarly communications based on the following observations:</p> <ul style="list-style-type: none"> <li>• <b>Clarity and Precision:</b> The manuscript effectively communicates complex scientific concepts related to Parkinson's disease and the effects of MPTP and plumbagin. The discussions are clear, allowing readers to understand the implications of the findings without ambiguity .</li> <li>• <b>Technical Terminology:</b> The use of appropriate scientific terminology is consistent throughout the paper. Terms related to neurobiology, biochemistry, and pharmacology are employed correctly, which is essential for a scholarly audience .</li> <li>• <b>Structured Presentation:</b> The article is well-structured, with distinct sections for the abstract, discussion, and conclusions. This organization aids in the logical flow of information, making it easier for readers to follow the authors' arguments and findings .</li> <li>• <b>Grammar and Syntax:</b> The grammar and syntax used in the article are generally correct, contributing to the overall readability. There are no significant grammatical errors that would impede comprehension .</li> <li>• <b>Engagement with Current Research:</b> The authors reference recent studies, which not only supports their claims but also demonstrates engagement with ongoing research in the field. This is crucial for scholarly communication as it situates the work within the broader scientific discourse .</li> </ul> <p>In conclusion, the language quality of the article is appropriate for scholarly communications. It effectively conveys the research findings and engages with relevant literature, making it suitable for publication in a scientific journal. However, minor revisions for stylistic consistency and clarity could further enhance its quality.</p>	
<p><u>Optional/General</u> comments</p>		

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**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(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)</i>
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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