



REVIEWER'S REPORT

Manuscript No.: IJAR-50691

Date: 18-03-2025

Title: Floral Bioactive of Pongamia pinnata: A Multifaceted Approach to Oxidative Stress, Inflammation, and Microbial Resistance

Recommendation:

- Accept as it is.....**YES**.....
- Accept after minor revision.....
- Accept after major revision
- Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality	√			
Techn. Quality		√		
Clarity		√		
Significance			√	

Reviewer's Name: Tahir Ahmad

Reviewer's Decision about Paper: **Recommended for Publication.**

Comments (*Use additional pages, if required*)

Reviewer's Comment / Report

Introduction

The manuscript presents a well-structured and comprehensive study on the pharmacological properties of *Pongamia pinnata* flower extract. The introduction effectively provides background information on the plant's medicinal value and highlights its various bioactive compounds. The discussion on inflammation and the role of inflammatory mediators is detailed and scientifically relevant. The explanation of acute and chronic inflammation establishes a strong foundation for the study's relevance in anti-inflammatory research. The introduction successfully connects traditional medicinal uses of *P. pinnata* with modern pharmacological investigations.

Methodology

The methodology section is well-designed, employing multiple assays to evaluate antioxidant, antimicrobial, anti-inflammatory, and cytotoxic properties. The selection of assays such as DPPH, FRAP, ABTS, and nitric oxide scavenging for antioxidant activity provides a comprehensive assessment. The

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use of agar well diffusion for antimicrobial analysis ensures reliable evaluation of antibacterial and antifungal effects. Protein denaturation and membrane stabilization assays for anti-inflammatory potential are appropriately chosen. The methodology effectively captures different aspects of *P. pinnata* flower extract's pharmacological profile.

Results and Discussion

The results are clearly presented, with quantitative data supporting the extract's biological activity. The antioxidant potential, as measured through various free radical scavenging assays, demonstrates significant activity. The antimicrobial findings indicate moderate effectiveness against bacterial and fungal strains. The anti-inflammatory properties, particularly protein denaturation inhibition and membrane stabilization, are well-documented. The cytotoxicity assessment suggests mild effects, providing important safety considerations. The discussion integrates findings with existing literature, reinforcing the pharmacological relevance of *P. pinnata*. The interpretation of results is logical and well-supported by the data.

Conclusion

The conclusion effectively summarizes the key findings, reinforcing the extract's strong antioxidant, anti-inflammatory, and antimicrobial properties. The potential for further pharmacological exploration is well-stated, aligning with the study's objectives. The significance of *P. pinnata* as a natural therapeutic agent is convincingly presented.

Keywords and Abstract

The abstract succinctly summarizes the study, presenting essential findings in a structured manner. The keywords are relevant and well-chosen to reflect the study's scope.

Overall, the manuscript is well-written, scientifically sound, and presents valuable insights into the pharmacological potential of *Pongamia pinnata* flower extract.