

REVIEWER'S REPORT

Manuscript No.: IJAR-59275

Title: *Exploring the Bioactive Phytoconstituents of Merremia vitifolia: A Qualitative Phytochemical Approach.*

Recommendation:

Accept as it is

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: Mr Sahil Srivastava

Detailed Reviewer's Report

The manuscript addresses the qualitative phytochemical profile of *Merremia vitifolia* using a methanolic extract and evaluates several major phytochemical classes. The topic is relevant to pharmacognosy and natural-product research, and the manuscript provides photographic documentation of the qualitative tests along with a summary table of findings. The study may provide preliminary information for future quantitative and pharmacological investigations. The manuscript states that alkaloids, carbohydrates, glycosides, phenols, tannins, and flavonoids were detected, whereas saponins, phytosterols, proteins, and amino acids were reported as absent.

However, substantial revision is required before the manuscript can be considered for publication.

Major Comments

1. Major inconsistency between Abstract and Results - The abstract reports positive reactions for saponins and glycosides and mentions steroids as being detected at lower levels. However, the Results section reports saponins and phytosterols as absent. This discrepancy must be resolved throughout the manuscript.
2. Methodology requires substantially more detail Important experimental information is missing, including the exact quantity of plant material and solvent volume, extractive yield, concentration of the final extract, number of experimental replicates, and detailed conditions for some procedures. These details are necessary to ensure reproducibility. The extraction procedure currently states that the material was macerated for 72 hours but does not adequately report the plant-to-solvent ratio or other quantitative parameters.

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3. Temperature/storage information is incomplete The manuscript states that the crude extract was preserved at “°C,” indicating a missing numerical temperature. This should be corrected. Similarly, the drying conditions should be reported precisely, including duration and environmental conditions.
4. Qualitative results should not be interpreted as quantitative abundance Expressions such as “strongly detected,” “moderate presence,” or “lower amounts” are not adequately supported by qualitative color/precipitation tests. Unless a validated semi-quantitative scoring system was used, the results should simply be reported as present/absent or positive/negative.
5. Controls and replication should be described The authors should clarify whether positive and negative controls were used for the phytochemical tests and how many independent replicates were performed. This is particularly important when interpreting qualitative color reactions.
6. The Results section needs better organization The current Results section largely repeats the methodology and then provides the summary table. The authors should present the findings systematically, preferably in a single comprehensive table containing phytochemical class, test performed, observation, and final interpretation. The existing Table 3.1 is useful but should be improved for clarity.
7. Photographic evidence needs improvement The photographs of the phytochemical tests on pages 9–11 provide useful visual documentation, but several images are dark and the labels are handwritten. Higher-resolution photographs with consistent labeling, proper controls, and clearer presentation would substantially improve the scientific quality of the manuscript.
8. Discussion contains claims beyond the study design The study is based on preliminary qualitative phytochemical screening; therefore, statements suggesting that the findings “validate” therapeutic properties should be moderated. Detection of a phytochemical class does not establish pharmacological activity. The discussion should clearly distinguish phytochemical detection from demonstrated biological activity.
9. The discussion should focus more specifically on the present findings Considerable space is devoted to reported antioxidant, anti-inflammatory, antipyretic, thrombolytic, and other activities from previous studies. These should be used for comparison rather than as evidence that the present extract possesses those activities.
10. Reference accuracy should be carefully checked All references should be verified for accuracy, relevance, DOI, journal title, volume, issue, pages, and consistency with the statements they support. In particular, the reference to Mannan (2026) appears to concern *Trigonella foenum*

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rather than *Merremia vitifolia*, and its appropriateness for the described phytochemical methods should be reconsidered.

Minor Comments

1. Correct grammatical and typographical errors throughout the manuscript.
2. Add appropriate spaces and punctuation in several places, e.g., “*Merremia vitifolia*Flower” and “ResultsQualitative.”
3. Remove the unexplained numbering “1.1.3” appearing in the Introduction.
4. Standardize the spelling of Liebermann–Burchard throughout the manuscript.
5. Correct “Forth test” to Froth test where appropriate.
6. Ensure consistent terminology between “phenols” and “phenolic compounds.”
7. The plant authentication information should include the name and institutional affiliation of the taxonomist/botanist, if available.
8. Provide the herbarium/voucher specimen details more completely.
9. The manuscript should state whether ethical or institutional permission was required for plant collection, if applicable.
10. Improve the formatting of chemical formulas, units, superscripts, and temperatures.
11. The conclusion should be shortened and should avoid implying clinical or therapeutic efficacy from preliminary qualitative screening.
12. References should follow the journal's prescribed formatting consistently.

Overall Reviewer Comment

The manuscript presents potentially useful preliminary phytochemical information on *Merremia vitifolia*, and the inclusion of photographic evidence is a positive feature. However, the discrepancy between the Abstract and Results, incomplete methodological details, insufficient explanation of controls/replication, overinterpretation of qualitative findings, and several presentation/reference issues need to be addressed. Once these issues are satisfactorily corrected, the manuscript could be reconsidered for publication.