

## REVIEWER'S REPORT

Manuscript No.: IJAR- 58619

Title: Qualitative Phytochemical Analysis of Methanolic Extracts of Indigenous Medicinal Plant *Cordia myxa*,

### Recommendation:

Accept after minor revision

| Rating         | Excel. | Good | Fair | Poor |
|----------------|--------|------|------|------|
| Originality    |        | ✓    |      |      |
| Techn. Quality |        |      | ✓    |      |
| Clarity        |        |      | ✓    |      |
| Significance   | ✓      |      |      |      |

Reviewer's ID: Bilquees Hamza

### Detailed Reviewer's Report

This manuscript presents a preliminary qualitative phytochemical analysis of a methanolic extract derived from the dried fruits of *Cordia myxa*, a medicinal plant traditionally utilized for treating respiratory and gastrointestinal ailments. The study aimed to validate its ethnomedicinal relevance by identifying major secondary metabolite classes. Powdered fruit material was extracted with 100% methanol, concentrated, and evaluated using standard colorimetric and precipitation assays. The qualitative screening revealed the presence of alkaloids (confirmed by Mayer's, Wagner's, Dragendorff's, and Hager's tests), carbohydrates (Molisch's, Benedict's, and Fehling's tests), glycosides (Modified Borntrager's and Legal's tests), saponins (froth and foam tests), phytosterols (Salkowski's and Liebermann-Burchard's tests), phenols (ferric chloride test), tannins (gelatin test), flavonoids (alkaline reagent and lead acetate tests), and aromatic amino acid-containing proteins (xanthoproteic test). Free amino acids were absent, as indicated by a negative ninhydrin test.

The broad range of identified phytoconstituents aligns well with previously published literature on *Cordia* species. Solvent properties of methanol enabled the successful extraction of both polar and moderately polar bioactive molecules. The concurrent presence of antioxidant polyphenols (phenols, flavonoids, tannins) along with bioactive alkaloids, glycosides, and saponins provides preliminary scientific foundation supporting the traditional usage of *C. myxa* in managing oxidative, infectious, and inflammatory conditions. While the findings offer baseline chemical composition data, the manuscript lacks quantitative estimations, structural characterizations, and direct functional or bioactivity testing.

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Overall, the manuscript is clear and structured, though substantial textual redundancy and structural reorganization are needed before publication.

### Detailed Suggestions for Improvement

#### 1. Title, Formatting, and Typographical Errors

- **Typographical Correction in Title:** The scientific name in the main title contains a typo ("Cordia tyxa" using a Cyrillic character). Correct this strictly to *Cordia myxa* L. using proper italicization.
- **Line-by-Line Typos:**
  - Line 110: "Cordia myxas" should be corrected to *Cordia myxa*.
  - Line 272: Missing space in "Cordia myxawas".
  - Line 298: Correct "Whitman filter paper No.1" to "Whatman No. 1 filter paper".
  - Line 304: Correct spelling of "Hagger's" to "Hager's", "Draggendrof's" to "Dragendorff's", and "Potassium Mercurielodide" to "Potassium Mercuric Iodide".

#### 2. Introduction & Literature Review Restructuring

- **Eliminate Textual Redundancy:** The Introduction (Lines 64–94) contains significant verbatim repetition regarding the plant's traditional uses, extraction solvents, and general pharmacological profiles. Lines 86–94 duplicate the exact statements made in lines 95–102. Streamline these paragraphs into a cohesive background section.
- **Refine Review Scope (Section 2.3):** Subsection 2.3 extends over multiple pages detailing secondary literature on antioxidant, anti-inflammatory, antidiabetic, and anticancer activities of *C. myxa*. While informative, this extensive review belongs in a general review paper rather than an empirical research article reporting primary qualitative screening. Shorten Section 2.3 to focus specifically on studies relevant to methanolic fruit extracts.

#### 3. Materials and Methods Clarity

- **Clarify Plant Part and Taxonomical Validation:** Section 3.1 states "Cordia myxa was selected" without specifying the plant part until Section 3.3 ("dried fruits"). Explicitly state in Section 3.1 that fruit material was used, and include voucher specimen details or formal taxonomical identification by a recognized herbarium/botanist.
- **Complete Methodological Gaps:** Item 14 under Section 3.4 is blank. Ensure all equipment and chemical suppliers (grade, purity, manufacturer) are specified.
- **Clarify Extract Concentration:** Line 299 states "make the filtrates into one third of their obtaining volume". Please clarify whether qualitative assays were performed on this diluted

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filtrate or on reconstituted crude dry extract, as concentration significantly affects qualitative color intensity.

### 4. Results and Discussion Enhancement

- **Remove Duplication Between Results and Discussion:** Section 4.1 (Results) and Section 4.2 (Discussion) repeat identical descriptions of test mechanisms and qualitative outcomes. The Results section should strictly present the observed qualitative findings and table summaries, whereas the Discussion should focus on comparing these findings with existing literature.
- **Table and Figure Caption Consistency:**
  - In Section 4.1, captions and table headers overlap confusingly (e.g., Table 4.1 header followed by image figures 4.1–4.4, then Table 4.2). Reorganize the figure and table numbering sequentially.
  - Correct Figure 4.19 caption/labeling (Line 448) which currently cuts off or duplicates labels.
  - Check the results table for Proteins/Amino Acids (Table 4.9, Line 447): The Ninhydrin test is listed as "Positive (+)", whereas the narrative text (Lines 40, 385, 425, 452) explicitly states it was **negative**. Resolve this critical contradiction across the text and table.

### 5. Reference List Formatting

- Normalize reference entries (Lines 571–700) to adhere strictly to a single style (e.g., APA 7th).
- Fix missing publication details, broken URLs, and inconsistent formatting (e.g., incomplete journal names in lines 621, 651, 674).

### Editor Recommendation and Decision

- **Recommendation:** Accept with Minor Revision
- **Justification:** The manuscript provides a straightforward and useful baseline qualitative profile of *Cordia myxa* methanolic fruit extracts. The experimental design for qualitative screening is appropriate and uses established protocols. However, publication requires addressing the textual redundancies, fixing typographical errors in plant nomenclature, resolving the empirical contradiction in Table 4.9 regarding the Ninhydrin test result, and streamlining the manuscript structure.