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REVIEWER'S REPORT

Manuscript No.: IJAR-56051

Title: PHYSICO CHEMICAL CHARACTERIZATION OF A HERBO MINERAL SIDDHA DRUG - PITHA PAANDU MAATHIRAI

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 Name: Prof. Dr Dillip Kumar Mohapatra

Detailed Reviewer's Report

Strengths

The manuscript addresses the important need for **standardization of Siddha herbo-mineral formulations**, aligning with WHO and AYUSH quality control guidelines.

Authentication of raw materials by a **recognized government institute (SCRI, Chennai)** strengthens the credibility of the study.

The preparation method and purification process are clearly described with references to **classical Siddha texts**, preserving traditional authenticity.

A comprehensive set of **physico-chemical parameters** (LOD, ash values, extractive values, pH, sodium and potassium assay) has been evaluated.

The results are systematically presented and interpreted in the discussion in relation to **quality, purity, and stability** of the formulation.

The study contributes baseline data that can be used for **future pharmacological and clinical investigations**.

Weaknesses

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The study is limited to **basic physico-chemical analysis** and lacks **advanced instrumental characterization** (e.g., XRD, SEM-EDX, ICP-MS, FTIR), which is increasingly expected for herbo-mineral formulations.

No **comparative analysis** with pharmacopeial standards or similar Siddha formulations is provided.

Statistical analysis and **replicate measurements** are not clearly mentioned, which affects reproducibility.

The discussion occasionally makes **therapeutic inferences** (e.g., absorption, bioavailability) without experimental pharmacokinetic or biological data.

The manuscript contains **language, grammatical, and formatting issues** that require editorial revision.

Safety-related aspects such as **heavy metal limits or toxicity thresholds** are not addressed, despite the presence of mineral ingredients.

Figures, tables, and summarized comparative data are minimal, limiting clarity and visual impact.

Significance

The manuscript contributes to the **scientific validation of traditional Siddha medicine**, an area with limited standardized documentation.

Establishing physico-chemical profiles of Pitha Paandu Maathirai supports **quality assurance, batch consistency, and regulatory compliance**.

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The study is particularly relevant given the **high prevalence of iron deficiency anemia**, especially among women and children.

The work serves as a **reference framework** for researchers and manufacturers involved in Siddha drug standardization.

It supports the integration of traditional medicine into **evidence-based healthcare systems**.

Key Points

Pitha Paandu Maathirai was prepared strictly according to **classical Siddha literature**.

Physico-chemical parameters such as **LOD, ash values, extractive values, pH, and mineral assay** were determined following PLIM and AYUSH protocols.

The formulation showed **high ash content**, indicating significant inorganic/mineral composition.

The drug exhibited **alkaline pH (10.8)** and good solubility in water and ethanol.

Results indicate acceptable **purity and quality**, supporting its traditional use.

Further studies involving **instrumental analysis, safety evaluation, and pharmacological validation** are strongly recommended.

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