8. CONCLUSION

The Present study provides a first comprehensive evaluation of five Unani polyherbal formulations, with a focus on their phytochemical profiles, extraction efficiencies, and pharmacological activities. Among these, two formulations (Formulation 1 and Formulation 2) are novel, marking a significant contribution to the field of Unani medicine. The findings highlight the superior efficacy of ethanolic and hydroalcoholic extracts for isolating bioactive compounds, with ethanolic extracts exhibiting potent antioxidant and antibacterial activities across most formulations. Additionally, aqueous and hydroalcoholic extracts demonstrated noteworthy antifungal effects and high total phenolic content in specific cases, underscoring the potential of diverse solvent systems in optimizing bioactivity.

The HPTLC and HR-LCMS-QTOF analyses provided unique phytochemical fingerprints and identified key bioactive metabolites, establishing a strong foundation for the standardization and quality control of these formulations. The comparative assessment of traditional medicinal knowledge with modern scientific methods validates the therapeutic relevance of these formulations.

As a pioneering investigation, this preliminary study on five Unani formulations not only enriches the scientific understanding of traditional Unani medicine but also underscores their pharmacological potential. The novel formulations, in particular, offer promising avenues for further research and development, supporting their integration into contemporary healthcare practices. These findings highlight the importance of scientifically validating traditional knowledge to enhance the utility and acceptance of Unani medicine globally.

Further studies are warranted to:

1. Isolate and identify specific bioactive compounds.
2. Investigate the potential of these formulations in managing chronic diseases.
3. Conduct clinical trials to validate their therapeutic efficacy.
4. Perform in silico studies to predict molecular interactions.