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BOOK OF ABSTRACTS

Editors

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IN VITRO PHARMACOLOGICAL POTENTIAL OF *Leucas zeylanica*

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Abstract: The genus *Leucas* is a member of the Lamiaceae family. The *Leucas* species, especially the plant of *Leucas zeylanica*, is a commonly used medicinal plant in Ayurvedha, Siddha, and Unani for treating various body inflammations, diabetic patients, oxidative stress, parasitic infections, and various body infections. On such background, this review aims to highlight the pharmacological potential of *Leucas zeylanica*. The literature review was conducted using Google Scholar, PubMed, and Hinari. We explored the database using “Pharmacological potential of *Leucas Zeylanica* in vitro assays.” The initial 361 articles were narrowed down to 48 after careful filtering based on the topic and abstract, following the PRISMA flowchart. The *Leucas zeylanica* methanol extracts have higher antioxidant activity, due to the presence of high phenolic and flavonoid content. Significant anti-inflammatory effects were seen through the inhibition of nitric oxide, TNF- α , IL-6, COX-2, and iNOS, with diterpenoids identified as a major component. The aqueous extracts of *Leucas zeylanica* demonstrated a significant reduction in blood glucose levels and inhibited α -amylase, α -glucosidase, and advanced glycation end-products. The *Leucas zeylanica* aqueous and methanol extracts showed dose-dependent anthelmintic activity comparable to albendazole-like medicines. The *Leucas zeylanica* toxicity assessments conducted using zebrafish embryo assays reported low cytotoxicity and good safety margins. Phytochemical analyses confirmed the support of a lot of bioactive compounds towards observed pharmacological effects. The *Leucas zeylanica* methanol extracts had stronger in vitro antioxidant, anti-inflammatory, antidiabetic, and anthelmintic qualities than aqueous extracts. The presence of various bioactive compounds in *Leucas zeylanica* supports traditional use and highlights its potential for the development of plant-based therapeutics.

Keywords: Anthelmintic; Antidiabetic; Anti-inflammatory; Antioxidant Activity; *Leucas zeylanica*

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