

Área: ORG*(Inserir a sigla da seção científica para qual o resumo será submetido. Ex: ORG, BEA, CAT)*

Extraction, characterization and biotechnological potential of *Kalanchoe pinnata* metabolites.

Matheus Miranda de Oliveira (IC),^{1*} Luís Felipe Minozzo Figueiredo (PQ),¹ Renato Eising (PQ).¹**moliveira.2020@alunos.utfpr.edu.br; luisfigueiredo@utfpr.edu.br; renatoeising@utfpr.edu.br;**¹*Coordenação de Engenharia de Bioprocesso e Biotecnologia, Laboratório de Biotecnologia, UTFPR, Toledo/PR, Brasil.*

Palavras Chave: Therapeutic alternatives, Phytotherapeutics, Medicinal plants.

Highlights

Kalanchoe pinnata shows medicinal potential. Phytochemical screening revealed alkaloids, flavonoids, and terpenoids. Hydroethanolic and hexane extracts contain diverse bioactive compounds.

Resumo/Abstract

Plants constitute a rich arsenal of chemical products, both organic and inorganic, with varying potential for human exploitation. They are often used as complementary therapies to established treatments, influenced by ancient practices or recommended by family members/close associates over generations (Faundes-Gandolfo *et al.*, 2024).

This study aimed to evaluate the pharmacological potential of *Kalanchoe pinnata* (popularly known as "folha da fortuna"), a species traditionally used in Brazilian folk medicine. Hydroethanolic and hexane extracts were prepared from previously dried and macerated leaves. These extracts were subjected to phytochemical screening with specific reagents: Mayer for alkaloids, Shinoda for flavonoids, Liebermann-Burchard for steroids/triterpenoids, and agitation with distilled water for saponins (Simões *et al.*, 2017).

The results demonstrated the presence of alkaloids, flavonoids, and steroids/triterpenoids in both extracts, while the occurrence of saponins was restricted to the hydroethanolic extract, demonstrating the influence of solvent polarity on extraction efficiency. Saponins were only detected in the hydroethanolic extract, which is attributed to the polar nature of the solvent, as saponins are amphiphilic compounds with an affinity for polar solvents. These findings confirm the presence of different classes of bioactive metabolites, suggesting significant pharmacological potential.

Phytochemical screening of hydroethanolic and hexane extracts of *Kalanchoe pinnata* confirmed the presence of four classes of secondary metabolites: alkaloids, flavonoids, steroids or triterpenoids, and saponins. The next step in the research is to perform an extract with acetone to broaden the spectrum of the influence of solvent polarity. The formal identification of the plant species and the extraction and characterization of the plant metabolites and evaluation of properties of pharmacological interest are future prospects for this work.

Simões, C. M. *et al.* Farmacognosia: do produto natural ao medicamento. Porto Alegre: Artmed, 2017, 486 p.

Faundes-Gandolfo, N. *et al.* *Kalanchoe pinnata* (Lam.) Pers. Leaf ethanolic extract exerts selective anticancer activity through ROS-induced apoptotic cell death in human cancer cell lines. BMC Complementary Medicine and Therapies, v. 24, p. 269, 15 jul. 2024.

Agradecimentos/Acknowledgments

To UTFPR for providing the laboratories and infrastructure necessary for the development of this work.