

Leveraging Natural Plant Extracts for Cutting-Edge Cancer Therapies: A Case Study

Prof. Sam Mashele

Professor, Faculty of Health and Environmental Sciences, Central University of Technology, Free State, South Africa

Abstract:

Cancer treatment advancements have dramatically improved patient outcomes. However, traditional therapies such as chemotherapy are often accompanied by significant toxicity and debilitating side effects. The demand for alternative, safer cancer therapies has led to exploring plant-based extracts, which offer targeted cytotoxic effects with reduced harm to healthy cells. This paper presents a novel plant extract with selective cytotoxicity against specific cancer cell lines, notably breast (MCF7) and renal (TK10) cells, and evaluates its potency, cost-effectiveness, and market potential compared to traditional chemotherapy drugs like Paclitaxel and Vincristine.