



Pharmacological, Pharmacokinetic and Anticancer Properties of *Forosoma* *acutifolius* Extract and Extract (Ester Leaf)

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Abstract

Forosoma acutifolius (Ester leaf) is a member of the euphorbia family. It is used in the treatment of various diseases in Africa. This study reports the phytochemical, pharmacological and pharmacokinetic properties of the leaves in addition to the evaluation of the total phenol content, flavonoid content and ascorbic acid content. The activity of the extract was evaluated by measuring the swelling activity which shows more percentage of 60.70% at 8 mg/kg; the relaxing activity is 41.74% at 8 mg/kg and the percentage reduction of thrombus is 27.7% above 2.14 mg/kg whereas thrombus with 84.40 mg/kg (100). The presence of these pharmacological properties in the leaves extract showed the ability of the leaves to prevent lung metastasis when given as a dose of 100 mg/kg. The results of this study showed that the leaves extract can be utilized as an alternative anti-metastatic agent.

Keywords: *Forosoma acutifolius*, anticancer, phenol, flavonoid, thalidomide

Introduction

There has been a great deal of research activity in the use of complementary and alternative medicines for the treatment of various acute and chronic diseases (Khan, 2008) [1] of the system classes of phytochemicals. These are derived in the anti-inflammatory and anticancer properties of polyphenols found in various botanical agents. Flavonoids and polyphenols in fruits and vegetables products has gained wide acceptance as one of the main sources of phytochemicals and complementary drug discovery and development (Khan, 2008) [1]. Medicinal plants contain the most source of most pharmaceutical and nutraceutical products. They have been investigated for their beneficial properties that can protect human against diseases (Khan et al., 2008) [2]. It has been known that they contain various compounds and constituents such as anti-inflammatory, antioxidant, antitumor, analgesic and antimicrobial drugs. Medicinal plants are of much interest due to their abundance and their natural soothing properties. These plants/leaves are characterized/constituted with the presence of various flavonoid in various defined compounds such as flavonoids in various leafy vegetables. These natural are flavonoid-derived compounds because they possess repeated carbon electron (Khan et al., 2008) [2], Khan et al., (2008) [3] and as they good in fighting diseases, they are easily absorbed into and bioavailable in the body resulting in generation of disease. Several studies has shown the presence of various flavonoid compounds that utilized such as hydroxy (OH) radical, superoxide (O₂⁻), nitric oxide (NO), nitroperoxy (NO₂), peroxyl (POX), hydrogen peroxide (H₂O₂) in the development of pathological conditions including cancer, atherosclerosis, lipid peroxidation, DNA damage and cellular apoptosis. If these conditions have been prevented by the activity of flavonoid such as thalidomide, curcumin, Resveratrol and Flavonoid-oligosaccharides (Khan, 2008) [4].

The results have been reported in the development of a number of medicines including cancer, neurodegenerative and inflammatory, giving rise to studies of anticancer for the prevention and treatment of disease (Khan and Khan, 2010) [5]. Most of the drugs that are currently available on the market for the treatment of various cancer diseases have limited potential because they are expensive and produce inevitable side effects. Therefore, it is necessary to find effective treatments for various diseases including the above-mentioned treatment of the targeted drugs. Fruit, vegetables, and herbal plants have been shown to be rich sources of compounds with the potential to prevent or cure various diseases (Khan et al., 2010) [6].

Various compounds are commonly used in the treatment of diseases including thalidomide, Resveratrol and flavonoid oligosaccharides, curcumin, Resveratrol, and its repeated units can be applied in various (Khan et al., 2010) [6]. Various investigations, commonly known as flavonoid is a plant that grows up to 1 meter high in the temperate zone and other parts of Africa, particularly Nigeria, Cameroon and Zimbabwe. It is regarded as herbaceous plant locally. The presence of compounds such as phenols, flavonoids, alkaloids and tannins/terpenes in plant may provide protection against a number of diseases. Although the plant is widely used as medicinal herb, the leaves have been investigated of the pharmacological properties of the plant.