

Pharmacological evaluation of root and leaf extracts of *Dracaena reflexa* var. *angustifolia*

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ABSTRACT

Plants were being used in the treatment of diseases for centuries. In this work, *Dracaena reflexa* var. *angustifolia*, a traditionally significant plant has been studied for its potential medicinal properties. The nature has provided abundant plant wealth for all the living creatures, which possess medicinal virtues. Medicinal plants represent a rich source of antibacterial agents. There is a necessity to explore their uses and to ascertain their therapeutic properties. The present study aims to open new avenues for the improvement of medicinal uses of *D. reflexa* var. *angustifolia* leaves and roots are selected area for antibacterial and antioxidant activity. The methanolic extract of root and aqueous extract of leaves of *D. reflexa* var. *angustifolia*, *Asparagaceae* were assessed for its antibacterial and antioxidant activities. The antibacterial activity against *Staphylococcus aureus*, *Enterobacter aerogenes*, *Proteus vulgaris*, and *Lacto bacillus* organisms by agar cup plate method and aqueous leaf extract (ALE) exhibited an excellent antibacterial activity than methanolic root extract (MRE). The antioxidant activity of MRE was performed on isolated frog heart by H₂O₂ induced oxidative stress method. In the present investigation the induction of cardiac arrest was observed at 15th, 25th, and 28 min H₂O₂, ascorbic acid and MRE which shows the MRE possess a good antioxidant activity. ALE exhibited an excellent antibacterial activity than MRE. These findings suggest the excellent medicinal bioactivity of methanolic extract of root and aqueous extract of leaves of *D. reflexa* var. *angustifolia*, *Asparagaceae* and explain the popularity of this plant in the folk medicine as a remedy for bacterial disorders. The traditional system was proved to be more effective when compared to synthetic drugs due to a reduction in side effects.

Keywords: 2,2-diphenyl-1-picrylhydrazyl method, antibacterial activity, antioxidant, *Dracaena reflexa*, free radicals, hydrogen peroxide scavenging assay, reducing power

Introduction

Plants serve as therapeutic agents as well as important raw materials for the manufacturing of traditional and modern medicines as well as in food industries.^[1] Many drugs commonly used today are of herbal origin. Some are made from plant extracts, and others are synthesized to mimic a natural plant compound. From the earliest times, herbs have been prized for their pain-relieving and healing abilities, and today developing countries still rely largely on the curative properties of plants.^[2,3] According to the World Health Organization, 80% of the people living in rural areas depend on medicinal herbs as primary health-care system. The medicinal value of these plants lies in some chemical constituents that produce a definite physiological action on

the human body. The most important of these bioactive constituents of plants are alkaloids, tannins, flavonoids, phenolic compounds, etc. If the plant standardize all the parameter of proximate composition, then it is quite safe to be used as dietary supplement or as an herbal drug.^[4-6]

Dracaena consists of about 40 species and described it as a genus of about 150 species. The genus was first described by Linnaeus in 1767. Some species of *Dracaena* include *Dracaena fragrans*, *Dracaena surculosa*, *Dracaena draco*, *Dracaena marginata*, *Dracaena arborea*, *Dracaena goldieana*, *Dracaena sanderiana*, *Dracaena deremensis*, *D. reflexa*, and *Dracaena mannii*. *Dracaenas* are either shrubs or trees and are divided into two broad groups based on their growth habits - tree *Dracaenas* and shrubby *Dracaenas*. Tree *Dracaenas* include *Dracaena americana* (Central American dragon tree), *D. draco* (Canary Islands draco tree), *D. marginata*, and *D. mannii* while shrubby *Dracaenas* include *Dracaena aletiformis*, *Dracaena bicolor*, *Dracaena cincta*, and *Dracaena concinna*. *Dracaenas* are used as ornamentals, medicinal plants, in photo engraving, in research, as hedge plants, colorants, etc. In Europe

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