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RESEARCH ARTICLE

PHYTOCHEMICAL ANALYSIS OF LEAF, STEM AND ROOT IN *EUPHORBIA ROTHIANA* SPRENG. (EUPHORBIACEAE), THE NILGIRIS WESTERN GHATS, TAMIL NADU

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ABSTRACT

Euphorbia rothiana Spreng. is an important medicinal plant. It used in hypertensive agent in traditional medicine.The present study deals with the analysis of Phytochemical constituents by qualitative analysis of leaves, stem and root were done using Petroleum ether, chloroform, ethyl acetate and ethanol extracts. Alkaloids, flavonoids, phenols, terpenoids, triterpinoids, steroids, cardio glycosides and carbohydrates were analysed. Alkaloids, flavonoids, and phenols were highly present various extracts of leaves stem and root. Cardio glycosides triterpinoids and carbohydrates were minimum present in the various extracts.

Key words: *Euphorbia rothiana,* Medicinal plant, qualitative analysis.

1. INTRODUCTION

The evaluation of all the drugs is based on phytochemical and pharmacological approaches which leads to the drug discovery referred as natural product screening (1). Any part of the plant may contain active components such as bark, leaves, flowers, roots, fruits and seeds (2). The Euphorbiaceae, in common English sometimes called euphorbia's, which is also the name of a genus in the family, is a large family, the spurge family, of flowering plants with about 300genera and 6,500 species. *Euphorbia laeta* Heyne ex Roth. syn. *Euphorbia rothiana* Spreng. Belonging to the family Euphorbiaceae. It is an annual or perennial erect herb with copiously branched stem, Leaves alternate, linear-lanceolate or oblanceolate. The seeds are used by the tribes of Madhya Pradesh to remove warts (3). They are used as an hypertensive agent in traditional medicine.The present investigation to find out the qualitative analysis from the leaves, stem and root.

2. MATERIALS AND METHODS

2.1. Collection of Plant material

Fresh leaves, stem and root parts of *Euphorbia rothiana* (Fig. 1 & 2) were collected from Dhottabetta hills, Niligri District. The authenticity of the selected plant material was confirmed by comparing with the reference specimen preserved at Botanical Survey of India, Southern Circle, Coimbatore. The leaf, stem and root parts were dried in shade at room temperature, chopped and ground to a fine powder in a mechanical blender. For extraction (50 g) of coarsely powdered plant samples were subjected to successive solvent extraction with petroleum ether, chloroform, ethyl acetate and ethanol using Soxhlet apparatus. The extracts were concentrated to dryness under reduced pressure using rotary vacuum evaporator, lyophilized and stored at -20^{o}C for further phytochemical and *in vitro* antioxidant studies.

2.2. Preparation of crude plant extracts

50 g of coarsely powdered plant samples were subjected to successive solvent extraction with petroleum ether, chloroform, ethyl acetate and ethanol. The extracts were concentrated to dryness under reduced pressure using rotary vacuum evaporator (Supervac R-185, India), lyophilized to remove traces of water molecules and the lyophilized powders were stored at -20°C for further studies.

2.3. Qualitative phytochemical analysis

The concentrated extracts were subjected to qualitative tests for the identification of various phytochemical constituents according to the method set forth by Trease and Evans (4) and Sofowora (5).

3. RESULTS AND DISCUSSION

3.1. Preliminary qualitative phytochemical analysis

In preliminary phytochemical analysis, the presence of major secondary metabolites such as alkaloids, flavonoids, phenols, saponins, terpenoids, steroids, cardiac glycosides tannins and carbohydrate were attempted and depicted. Among the various solvent types examined ethyl acetate and ethanol extracts indicated the presence of all the phytochemical constituents tested (Fig. 3). Preliminary qualitative phytochemical analysis made

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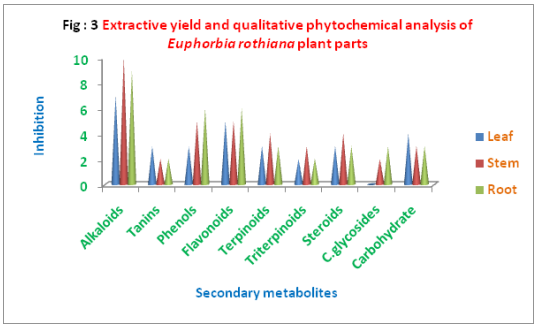
for the leaf, stem and root parts of *E.rothiana* revealed the presence of alkaloids, flavonoids, phenols, tannins, terpenoids and triterpenoids. These secondary metabolites are reported to have many biological and therapeutic properties (6-9).

Fig. 1. Study area "The Nilgiri"

Fig. 2. *Euphorbia rothiana* Spreng.



4. CONCLUSION

The phytochemical constituents are mainly responsible for these medicinal properties of the plants. Now a day, medicinal plant based drug industries and enterprises were increasing day by day in this juncture, scientific validation of traditional medicinal plants is required to confirm their therapeutic properties and hence the commercial production. The qualitative phytochemical profile revealed the presence of important secondary metabolites in the leaf, stem and root parts of the plant. However, the ethanolic extract presented higher amount of secondary metabolites than the other solvent studied.

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