

EVALUATION OF SOME SECONDARY METABOLITES FROM *GARDENIA GUMMIFERA* (L.) AN INDIAN MEDICINAL PLANT.

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Abstract

Progress in medicinal plant research has undergone a phenomenal growth during last two decades. Worldwide trend towards the utilization of natural plants remedies has created an enormous need for information about the properties & uses of medicinal plant. Secondary metabolites are plant natural products which derived as a result of plant metabolism. *Gardenia gummifera* (L.) is belonging to the family Rubiaceae known for its enormous medicinal properties. The present paper deals to study the screening of secondary metabolites from leaves of *Gardenia gummifera* (L.) by using spectrophotometer. The study clearly revealed that the species contain Flavonols, Bound phenol and Orthodihydric phenol. Present investigation showed that, this plant is warehouse of chemo-diversity & can be used to isolate the therapeutic drug for the pharmaceutical industries.

Key words: *Gardenia gummifera*, Secondary metabolites, Spectrophotometer.

1.INTRODUCTION

Medicinal plants are the sources of wide variety of natural antioxidant, such as phenols, flavonoids and tannins, which possess more potent antioxidant activity than dietary plants [6]. A variety of plant secondary metabolites have been reported to act as antioxidants and amongst them phenolic compounds form a major group. Phenolics are able to scavenge reactive oxygen species (ROS) due to their electron donating properties. There are several reports on the contribution of phenolic compounds to the antioxidant potential of different plant species[1]. In many studies, phenolic compounds

demonstrated higher antioxidant activity than antioxidants like vitamins and carotenoids[2,5].

In present investigation estimation of secondary metabolites from *Gardenia gummifera* L. a genus belongs to family Rubiaceae have been done. *Gardenia gummifera* is favored beautiful medicinal herb.

Classification:

Kingdom : Plantae

Division : Magnoliophyta

Class :Magnoliopsida

Order : Gentianales

Family : Rubiaceae

Genus :*Gardenia*

Species :*gummifera*

2.MATERIAL AND METHODS

2.1. Collection and Identification of Plant material

The collection of plant is done from college campus. Plant identification was carried out with the help of standard floras[4].

2.2. Preparation of samples

Fresh leaves were collected and after that crushed with mortar and pestle, 1gm of sample was taken for estimation of each phenolic compounds.

2.3. Methods

Estimation of Phenolics such as total phenol, Orthodihydric phenols, and Bound phenol, Flavonols were done according to the methods prescribed by Thimmaiah (1999), which are given below.

A standard graph was obtained by plotting concentration on X- axis and the corresponding values

of absorbance along Y- axis on a graph paper resulting a straight line which passes through the origin and maximum points of standard reading. It is used to quantify the amount of a given compound present in an unknown sample whose absorbance value is matched against that of standard along Y-axis and a corresponding concentration could be read off along X-axis[3].

3.RESULT AND CONCLUSION

3.1. Result

Highest amount of Ortho dihydric phenol are found in plant *Gardenia gummifera* L.

Sufficient amount of Flavonols and Bound phenols are also found to be present in this plant.

3.2. Conclusion

This study reveals that the leaves of *Gardenia gummifera* L. contain rich amount of Bound phenol, Ortho-dihydric phenol, and Flavonols which are known to possess good source of antioxidant activity and anti-inflammatory activity.

Gardenia gummifera was used as medicinal herb but in recent years *Gardenia gummifera* become rare hence conservation and farming of this plant is very important because this study shows that leaves contain good source of antioxidants.

The use of natural antioxidants has been promoted because of the concerns on the safety against synthetic drugs.

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| Sr. No | Name Of Secondary Metabolites | Weight of Sample | of Total volume extract | Volume of extract for analysis | of Absorbance at | ug/g |
|--------|-------------------------------|------------------|-------------------------|--------------------------------|------------------|------|
| 1 | Flavonols | 1 gm | 5 ml | 1 ml | 0.184 At 500nm | 450 |
| 2 | Ortho-dihydric phenols | 1 gm | 5ml | 0.2 ml | 0.248 At 515nm | 3800 |
| 3 | Bound phenols | 1 gm | 5 ml | 1 ml | 0.0035 At 290 | 235 |

Table 1. Table 1. Estimation of Secondary Metabolites.