

Qualitative Analysis of Secondary Metabolites of the Plant Clematis Gouriana

J.Arul Hency Sheela

Assistant Professor of Chemistry, Bharath University, Chennai-73

ABSTRACT

The traditional medicine involves the use of different plant extracts or the bioactive constituents. This type of study provides the health application at affordable cost. Secondary metabolites are responsible for medicinal activity of plants. Hence in the present study phytochemical screening of some important medicinal plants was carried out. Qualitative phytochemical analysis of these plants confirm the presence of various phytochemicals like Alkaloids, Flavonoids, Terpenoids, saponins, tannins, Glycosides and phenol. The results suggest that the phytochemical properties for curing various ailments and possess potential antioxidant and leads to the isolation of new and novel compounds.

Keywords: Qualitative analysis, Metabolites, Alkaloids, Terpenoids, Glycosides.

I.

INTRODUCTION

Secondary metabolites are organic compounds that are not directly involved in the normal growth, development, or reproduction of an organism. Unlike primary metabolites, absence of secondary metabolites does not result in immediate death, but rather in long-term impairment of the organism's survivability, fecundity, or aesthetics, or perhaps in no significant change at all. Secondary metabolites are often restricted to a narrow set of species within a phylogenetic group. Secondary metabolites often play an important role in plant defense against herbivory and other interspecific defenses. Humans use secondary metabolites as medicines, flavorings, and recreational drugs. A primary metabolite has an important ecological function. Examples include antibiotics and pigments.

II

SECONDARY METABOLITES

- Alkaloids
- Flavonoids
- Terpenoids
- Saponins
- Tannins

- Glycosides
- Lignin
- phenol

III. EXPERIMENTAL

METHODS

Secondary metabolites

Test for Alkaloids

Dragendroff's test: The extract is treated with few drops of dragendroff's reagent. The Orange brown precipitate coloration is observed.

Wagner's test: The extract is treated with few drops of Wagner's reagent. The reddish brown precipitate is observed.

Mayer's test: The extract is treated with few drops of Mayer's reagent. The White or pale precipitate is observed.

Test for Flavonoids

Shin coda test: The Ethanolic extract is treated with 5ml of alcohol and few drops of conc.HCl and magnesium turnings.

Wolf am test for Isoflavonoids: The extract is treated with sodium amalgam and conc.HCl. The pink colour formation is observed.

Test for Phenolic compounds

Ferric chloride test: The extract is treated with 2ml of water and 10% aqueous ferric chloride solution. The Blue or green coloration is observed.

Gelatin test: About 1% solution of gelatin containing 10% NaCl is added to the ethanolic extract. The white precipitate formation is observed

Test for Tannins

lead acetate test:

The Ethanolic extract is treated with few drops of 1% lead acetate solution. The Yellow or red precipitate formation is observed.

Ferric chloride test: The Ethanolic extract is treated with 2ml of FeCl₃ solution. The Blue or Black precipitate formation is observed.

Test for Terpenoids .The Ethanolic extract is treated with 2ml of chloroform and 1ml of conc. H₂SO₄. The reddish brown color formation is observed. The Ethanolic extract is treated with 1ml of 2, 4-dinitrophenyl hydrazine in 2M HCl. The Yellow orange color formation is observed. The ethanolic extract of *Clematis gouriana* is subjected to GC-MS analysis.

Test for lignin

The Ethanolic extract add with phloroglucinol and 1 ml of conc.HCl.red colour formation is observed

Test for saponins

The ethanolic extracts add with sodium bicarbonate and shake well. honey comb froth formation is observed.

Test for steroids

The ethanolic extract added with 2ml of chloroform. And conc.sulphuric acid added to the sides of the test tube.

IV. CONCLUSION

The medicinal plants appear to be rich in secondary metabolites, widely used in traditional medicine.The anti-inflammatory, antispasmodic, antianalgesic andantidiuretic can be attributed to their high tannins, terpenoids and saponins. Exploitation of these pharmacological properties involves further investigation of these active ingredients by implementation techniquesof extraction, purification, separation, crystallization and identification.

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