

Pharmacogonostic and Phytochemical screening of Ethanolic Extract of *Cyathula prostrata* Leaves

Abhilash KB*, Afeefa KA, Afsiya Abdul Hameed, Anagha PK,

Archa P and Anusha Ajayakumar

Department of pharmaceutical analysis, Nehru College of Pharmacy,
Pampady, Thrissur, India.

ABSTRACT

The present study deals with the phytochemical screening of the leaves of the plant *Cyathula prostrata* which belong to the family Amaranthaceas. It is a herb used in many traditional and tribal systems of medicine. extract in ethanolic extracts were prepares sequentially and obtained a % yield of 9.37. Phytochemical screening revealed the steroids, carbohydrates and phenols. These are mainly used as antiulcer, anti-inflammatory etc.

Keywords: *Cyathula prostrate* and Phytochemical investigation.

INTRODUCTION

Nature is an inexhaustible source of metabolites and various plants sources are utilised for this purpose¹. Botanical identification and phytochemical characterization of plants having medicinal properties for health benefits is an important path towards standardization². Medicinal plants from a large group of economically important plants that provide the basic raw material for indigenous pharmaceuticals plants products still remain the principle source of pharmaceutical agent used in traditional medicine. Recently much attention has directed towards extracts and biologically active compounds isolated from popular plant species. In the present era of drug development and discovery of newer drug molecule, many plant products are evaluated on the basis of their traditional uses.

With the present search of interest in the phyto-therapeutics, the availability of genuine plant material is becoming scarce. Since crude plant drugs from the basis for the manufacture of numerous medicinal preparations, accurate determination of drug identity and standardization of the plant material becomes essential. Phytochemical investigation involves extraction of plant materials, separation and isolation of constituents of interests, characterization of isolated molecules, investigation of biosynthetic pathways and quantitative evaluation.

Cyathula prostrate is employed in folklore medicine in the treatment and management of dyspepsia, scabies, craw-craw, diarrhea, dysentery, cholera, itch, ringworm, coughs, leprosy, sores³⁻⁷ articular arthritis, rheumatism, shingles, wounds, ulcers, inflammations⁸⁻¹¹ and sexually transmitted diseases¹²

Cyathula prostrate of family Amaranthaceae An erect herb. occupies an important place in the medicine. It is also known as Prickly chaff flower in English, Chuvanna Kadaladi in Malayalam.. It is one of the less studied and highly exploited medicinal species of India. Phytochemical analysis of the leaves revealed that the presence of steroids, carbohydrates, and phenols.

METHODS AND METHODOLOGY

Collection and identification of plant material

Cyathula prostrate plant was collected from the natural population in Pattambi, Palakkad district, Kerala, India. The plant sample was carried to NSS College Ottapalam, Trissur. The taxonomic authentication of the plant was made by Prof. Dr. V. VenugopalakrishnaKurup, Head of Botany Department and certified.

Botanical description of the plant

An erect herb, annual or perennial about 1-2m in height, often with a woody base. The stem is obtusely quadrangular, thickened above the

nodes, often tinged with red. Leaves are opposite, simple, entire, ciliate, with margin or blade, often tinged red and short petiole. Flowers are dull pale green, hairless within superior ovary.

Extraction of *Cyathula prostrata*

Leaves of the plant was separated and washed thoroughly with running tap water. The leaves were shade dried at room temperature. After complete drying, the leaves were powdered well using a mixer. Then the powdered drug material was weighed and kept in air tight container. Powdered sample of leaves of 50 g was macerated with ethanolic solvent¹³.

Phytochemical Screening Of Extracts^{14,15,16,17}

1. Steroids

10mg of extract was dissolved in dry chloroform. Few drops of acetic anhydride were added followed by a 1ml conc. sulphuric acid. Appearance of blue colour in the chloroform layer which changes to green.

2. Alkaloids

a) Dragendorffs test- 10mg of extract was dissolved in methanol and a few drops of Dragendorffs reagent were added. Orange red precipitate showed the presence of alkaloids.
b) Mayers test- 10mg of extract was dissolved in methanol and a few drops of Mayers reagent were added. Yellow precipitate showed the presence of alkaloids.

3. Flavonoids

Shinoda test - 10mg of extract dissolved in methanol. Magnesium turnings were added into this followed by few drops of concentrated hydrochloric acid. A magenta colour showed the presence of flavonoids.

4. Coumarins

10mg extract was dissolved in methanol and alcoholic potassium hydroxide was added. Appearance of yellow colour which decolourises while adding concentrated hydrochloric acid showed the presence of coumarins.

5. Saponins

Extract was dissolved in water and shaken well. Froth formation, which lasts for a long time, showed the presence of saponins.

6. Carbohydrates

a) Molischs test - About 10mg of the extract was dissolved in 1ml water. Add molischs reagent. Then carefully add 1ml conc. sulphuric acid along the sides of the test tube. Deep violet colour at the junction of two liquids indicated the presence of carbohydrates.
b) Fehlings test - To 3ml extract add Fehlings solution A and Fehlings solution B. Mix well and heat it on a water bath for 10 minutes. Appearance of brick red colour indicates the presence of reducing sugar.

RESULT

Extraction of *Cyathulaprostrata* leaves

Table 1:

| Sl no | Extract of <i>Cyathulaprostrata</i> leaves | % Yield |
|-------|--|---------|
| 1 | Ethanolic extract | 9.37 |

Phytochemical Screening of Extracts

Extract of *Cyathulaprostrata* were screened for the secondary metabolites

Table 2:

| Sl no | Class of compounds | Ethanol extract | |
|-------|--------------------|-------------------|---|
| 1 | Steroids | + | |
| 2 | Carbohydrates | Molischs test | + |
| | | Fehlings test | - |
| 3 | Alkaloids | Mayers test | - |
| | | Dragendorffs test | - |
| 4 | Flavonoids | - | |
| 5 | Coumarins | - | |
| 6 | Saponins | - | |
| 7 | Tannins | - | |
| 8 | Phenols | + | |

CONCLUSION

In the present study deals with the usefulness of plants to mankind and also pharmacognostic evaluations serve as a standard reference for identification, authentication and for distinguishing a plant from its adulterants. Phytochemical analysis of the leaves revealed that the presence of steroids, carbohydrates, and phenols.

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