Phytochemical Aspects Of Members Of Acanthaceae

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ABSTRACT

The Acanthaceae are a large and diverse family of flowering plants, with over 2,500 species found worldwide. Members of this family are found in a variety of habitats, including forests, grasslands, and wetlands. Many members of the Acanthaceae are used medicinally, and some are also cultivated as ornamental plants.

The phytochemicals of members of the Acanthaceae are diverse and complex. Some of the most common phytochemicals found in this family include alkaloids, flavonoids, glycosides and tannins. Alkaloids are nitrogen-containing compounds that are often toxic, but they can also have medicinal properties. Flavonoids are plant pigments that have antioxidant and anti-inflammatory properties. Glycosides are compounds that contain a sugar molecule attached to a non-sugar molecule. Tannins are complex compounds that can bind to proteins and form a precipitate.

The phytochemicals of members of the Acanthaceae have been shown to have a variety of biological activities. Some of these activities include anti-inflammatory, anti-cancer, anti-bacterial, and anti-fungal. These activities have led to the use of members of the Acanthaceae in traditional medicine for the treatment of a variety of conditions.

KEYWORDS: ***Phytochemical, Flavonoids, Acanthaceae*.**

INTRODUCTION

Members of the Acanthaceae are characterized by their opposite leaves, which are often lobed or toothed. The flowers are typically bisexual and have a five-lobed corolla. The fruit is a capsule that splits open to release the seeds.

The Acanthaceae are an important source of food and medicine for many people around the world. Some members of the family, such as *Justicia adhatoda L.*and *Ruellia simplex*, are used to treat a variety of ailments, including fever, cough, and diarrhea. Other members, such as Eranthemum nervosum and Thunbergia alata, are used to make dyes and perfumes.

The Acanthaceae are also an important source of ornamental plants. Many members of the family are prized for their beautiful flowers, such as *Acanthus mollis* and Thunbergia alata. Others, such as *Eranthemum nervosum* and Ruellia simplex, are grown for their attractive foliage.

The Acanthaceae are a fascinating and diverse family of plants. They play an important role in the lives of many people around the world, and they continue to be a source of new and exciting plants for cultivation.

The synthesis of Acanthaceae compounds has been an active area of research for many years. A number of different methods have been developed for the synthesis of these compounds, including chemical synthesis, enzymatic synthesis, and semisynthesis. Chemical synthesis is the most common method for the synthesis of Acanthaceae compounds. This method involves the use of chemical reagents to build up the compound molecule from smaller building blocks. Enzymatic synthesis is a newer method for the synthesis of Acanthaceae compounds. This method uses enzymes to catalyze the reactions that are required to build up the compound molecule. Semisynthesis is a method that combines chemical synthesis and enzymatic synthesis. This method uses chemical synthesis to create a precursor molecule, which is then converted into the desired compound using enzymes.

Some of the most well-known medicinal plants in the Acanthaceae family include:

- ***Justicia adhatoda L.(Adhatoda vasica):*** This plant is used to treat asthma, bronchitis, and coughs.
- ***Ruellia tuberosa (Rauwolfia serpentina):*** This plant is used to treat high blood pressure and anxiety.
- ***Strobilanthes cusia (Kusia):*** This plant is used to treat diarrhea, dysentery, and fever.

The phytochemicals of members of the Acanthaceae are a valuable resource for the development of new drugs. The continued study of these compounds is likely to lead to the discovery of new treatments for a variety of diseases.

In addition to their medicinal uses, members of the Acanthaceae are also cultivated as ornamental plants. Some of the most popular ornamental Acanthaceae include:

- ***Eranthemum nervosum (Jewelweed):*** This plant has bright pink or purple flowers.
- ***Hypoestes phyllostachya (Flamingo plant):*** This plant has leaves that are variegated with pink, white, or yellow.
- ***Justicia brandegeana (Firecracker plant):*** This plant has bright red flowers.
- ***Ruellia humilis (Wild petunia):*** This plant has blue or purple flowers.

Members of the Acanthaceae are a diverse and interesting family of plants with a wide range of uses. Their phytochemicals are a valuable resource for the development of new drugs, and they are also cultivated as ornamental plants.

PHYTOCHEMICAL ASPECTS OF MEMBERS OF ACANTHACEAE

The remedies as told by the drug affiliations are completely planned. The second consideration for the uncomfortable delayed effects and toxic quality has gained more authentic evaluation on the conceivable use of friendly plants. The growing use of stationary plants in various social settings has led to reliable evaluations in standard items. In these evaluations it is assessed whether the use of standard things keeps the traditional methods of different societies with the confirmation of their medicinal effects, on the other hand if their use is basically based on old stories.

In view of the increasing interest in the use of standard medicine, it is important to meet a portion of the troubling difficulties, for example, the general barrier of assessment, proof of affluence, suitability and magnificence of general things, protection of standard arrangements Absence of standards and, key clinical ideas need to pick up and work on the right things to make them sources of improvement.

Various systems have been used in the extraction of stable compounds from plants for the manufacture of drugs. These combine the constraints of blends from plants and other standard sources, nuclear presence, applied and combinatorial science.

The importance of plants as one of the regular sources of solutions can never be particularly overstated, as for the most part 25% of recommended drugs start from plants. 55 coordinated human diseases such as disease, parasite and bacterial infection were tested. It is observed that 87% of the drugs used for treatment are derived from common substances derived from plants.

The study revealed that 122 bioactive mixtures from about 94 plant species were consumed as clinical remedies. Information on the use of plants in standard remedies is productive for physicians and the pharmaceutical industry. Essentially, supporting ethnomedicinal standard practice using new reliable systems can help countless people.

There is a need to convey phytochemical blends of a helpful plant with a medicinal turn of events. Many plant varieties of Acanthaceae have amazing healing potential, while some have been neglected to date. The plant species of this family are estimated to be a major part of both man and fauna as they are used as food, medicine or ornament and contain various major helpful metabolites, some mixtures, alkaloids, terpenoids, tannins, quinones and flavonoids.

Animal combinations of two or three plants are being used for their ethnomedicinal properties, considering their phytocompounds to be safe, Barleria (Acanthaceae) being one of such genera. The genus Barleria belongs to the Acanthaceae family. Berleria is best characterized in Africa where collections exist in two habitats, one in tropical East Africa and the other in Southern Africa.

Thus, this species is outstanding among all clear mangrove species, where clear mangroves and terrestrial tributaries are open simultaneously. The two subspecies of *Abbricatus subsp. abrectiatus* and *Abracteatus* subsp. *abarbatus* are typical in Australia. Other than that, both

subspecies stand apart by barely any basic characteristics for leaf frame, stem spine, floret shade and shaggyness etc.

The leaves appear in whorls of 4-outer matches, severely simple a great deal of the time, they are rounded to lanceolate, curved laminae with glossy appearance and long petioles, margins furrowed. From spinulose, pubescent above, with spines tipped at highest point, transient. The inflorescence is a thick, *strobilate* spike with violet-blue flowers, the bracteoles being straight *subulate villous.*

The calyx is scanty, membranous, delicately shaggy, 4-lobed, twist clashing, the upper whorl being longest. Corolla tube short, upper lip missing, lower lip flat with 3 whorled curves and pubescent. The general thing is a case, recognized compact sparkling brown and glabrous, with two levels of seeds.

Several plants belonging to this family are of unusual specific importance because they are used in human medicine solely as a response to two or three disorders: Extracts of the leaves, flowers, and roots are used in India as an expectorant and bronchodilator, thus possibly known as an antidote for colds, coughs, and asthma.

Representatives of the family can be tracked in basically every environment, in thick or open backwoods areas, scrublands, and wet fields, valleys, on the sea coast, in marine districts, in swamps and as a fragment of mangrove forest. .

Two or three plants of the Acanthaceae family were used in the standard pass solution, some are made as ornamentals because they have huge flowers with glossy petals, thus they are used as a wellspring of standard colors. is done. As a result, the two plants being researched were chosen to find new drug mixtures and potential applications for them.

RESULTS AND DISCUSSION

Air-dried powdered aeronautical parts (2.5 kg) of *Anisotes trisulcus Nees.* Eliminated by maceration and infiltration with methanol until outright exhaustion (70%). The consolidated *methanolic* confit was concentrated under reduced pressure until constant weight to give a lingering earthy colored sweet tinge (300g) of incidence.

Methanolic disposal (300 g) was taken care of in the full volume of refined water introduced for direct soluble fractionation using a separate pipet with n-hexane, chloroform, ethyl-acidic destructive induction and n-butanol.

N-hexane, chloroform, ethyl-acidic denatured derivative and n-butanol disulfide were independently distilled under reduced pressure to give 50, 35, 22 and 8 g independently and 145 g of liquid n-butanol With was left after extraction. Which was set aside for additional review.

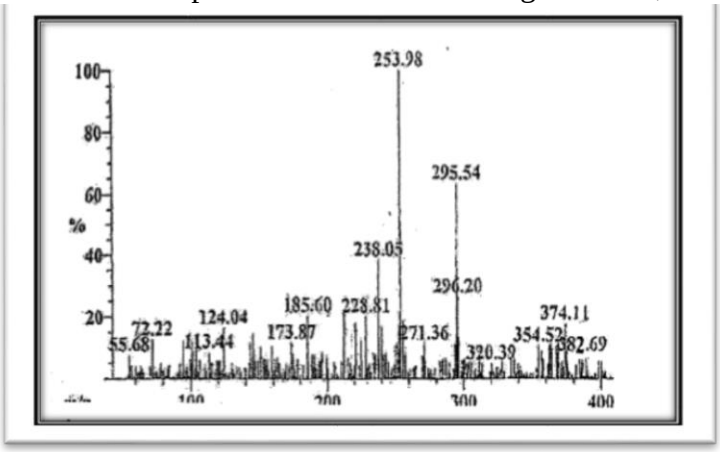
Due to the rising frustration and individuals are the greater part of everyone in making the world struggling to increase survival perceptions and improve clinical benefit development. According to One Action, 70-80% of the growing world is subject to corrections achieved by standard plants because prescriptions are excessive. From this reality, it may very well be recovered that by information collation and trial and error, basic though moderate drugs can be isolated from various flora to meet the fundamentals of the moving world. After this the requirements of official plants cannot be neglected.

Air-dried powdered flying parts (3 kg) of Blepharis ciliaris (L.) Bilbert were isolated by maceration and submersion with methanol and by use. The associated *methanolic* residue was concentrated under reduced pressure to reliable weight to give a light green sweet development (270 g).

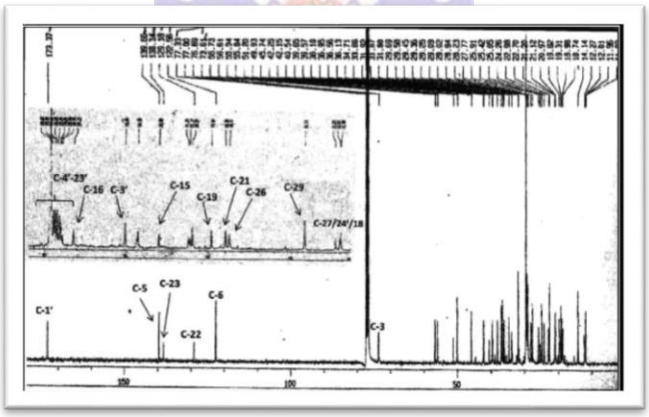
Methanolic wipe out (270 g) was dealt with at all degrees of refined water familiar with direct soluble fractionation using a separate channel with n-hexane, chloroform, ethyl-acidic Horrendous enrollment, n-butanol. Each extract was milled independently under reduced tension to give 50, 37, 45 and 12 g. The lipoidal content of the n-hexane fraction was surveyed. The various extracts obtained were characterized by different chromatographic systems for bundles of their components where the 16 mixtures were bound.

The synthesis of Acanthaceae compounds has a number of potential benefits. First, it can provide a more reliable and consistent supply of these compounds than can be obtained from natural sources. Second, it can allow for the production of compounds that are not found in nature. Third, it can allow for the modification of the structure of compounds to improve their pharmacological properties.

The synthesis of Acanthaceae compounds also faces a number of challenges. First, the synthesis of these compounds can be complex and time-consuming. Second, the synthesis of these compounds can be expensive. Third, the synthesis of these compounds can be hazardous, due to the use of toxic chemicals. Despite the challenges, the synthesis of Acanthaceae compounds is an important area of research. The development of new methods for the synthesis of these compounds has the potential to provide new treatments for a variety of diseases.



In addition to the pharmacological benefits, the synthesis of Acanthaceae compounds can also be used to improve the ornamental value of these plants. For example, the synthesis of new anthocyanins has led to the development of coleus varieties with more vibrant and varied leaf colors. The synthesis of new flavonoids has also led to the development of coleus varieties with improved resistance to pests and diseases.



The synthesis of Acanthaceae compounds is a complex and challenging field of research, but it has the potential to provide a number of benefits. The development of new methods for the synthesis of these compounds has the potential to provide new treatments for a variety of diseases, and it can also be used to improve the ornamental value of these plants.

One of the most important biological significance of Acanthaceae is their role in pollination. Many Acanthaceae plants have brightly colored flowers that attract pollinators, such as bees, butterflies, and hummingbirds. The flowers of these plants produce nectar, which is a food source for pollinators. In return, the pollinators help to spread the pollen from one plant to another, which allows the plants to reproduce.

Acanthaceae plants also play an important role in the food chain. Many species are eaten by animals, such as birds, insects, and mammals. The leaves, flowers, and seeds of Acanthaceae plants are all edible, and some species are cultivated as crops.

Acanthaceae plants also have a number of medicinal uses. The leaves, flowers, and roots of many species are used to treat a variety of ailments, such as fever, diarrhea, and pain. Some Acanthaceae plants are also used to make essential oils, which have a variety of uses, such as aromatherapy and skin care.

Overall, the Acanthaceae family is a diverse and important group of plants with a wide range of biological significance. They play important roles in pollination, the food chain, and medicine.

CONCLUSION

Plants of the genus Acanthus are found in tropical and subtropical regions all over the world. Intentional medicinal assessments related to Acanthus illicifolius have led to the hypothesis that their relation to clinical consideration should have a surprising appreciation in their ethnic medicinal recollections. The shaping evaluation has revealed that, Acanthus ilicifolius is an essential plant that has assembled medicinal activities.

Similarly, insufficient and lacking toxicological information on animal models currently exists, which recommends that it is prudent to request toxicological evaluation for different concentrations of different bits of this plant. In addition, customary susceptibility studies should also be performed for individual associated metabolites, which may sustain the fixing events of Acanthus ilicifolius.

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