

A REVIEW OF CLERODENDRUM PHILIPPINUM**Sheelam Anjali* and Dr. Challa Pradeep Kumar**

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ABSTRACT

The genus of *clerodendrum* is more widely distributed throughout the world and has more than five hundred species. There are many species of this genus have been described in various indigenous system of medicines. The genus *clerodendrum* commonly used for the treatment of various life-threatening diseases. the flowering plant of *clerodendrum* family Lamiaceae. the species of this genus used in preparation of folklore medicines for the treatment. The species of *clerodendrum philippinum* has been very well studied for their chemical constituents and biological activities. The chemical

constituents of *cleridendrum philippinum* studied and presence of phytochemicals viz., flavanoids, cardioglycosides, steroids, alkaloids, proteins, terpenoids, phenols, tannins and saponins. they were resolved to qualitatively using standard literature methods. Pharmacological studies have show that these compounds & extract from the *clerodendrum Philippinum schauer* have extensive activities, such as anti diabetic activity, anti bacterial, anxiety and CNS depressant. In this review we are covered the phytochemical screening & discreption of *clerodendrum philippinum schauer* reported so far. And also covered the pharmacological properties of *clerodendrum philippinum schauer*.

KEYWORDS: The genus of *clerodendrum philippinum schauer*.**INTRODUCTION**

The WHO estimated that about 80% of populations which is developing countries rely on the traditional medicine for their Primary health cure needs.^[1] Medicinal plants played a special key role in health promotion of world. The use of plant for cure and it is treatment for various health disorder have been in practice from time immemorial & it is also estimated that about

25% of drugs required are derived from plants, moreover WHO's essential medicine list contains 252 drugs out of which 11% is purely of plant origin.^[2] The advantages of herbal medicines reported are effectiveness, affordability, safety and acceptability.^[3]

Studies on the extracts of various species of the genus *clerodendrum* has been carried out by a number of researchers round the globe. The species of *clerodendrum* like *C.phlomidis*, *C.indicum*, *C.trichotomum*, *C.serratum*, *C.chinense*, *C.petasites* etc...have been used in preparation of folk and traditional medicine to treat various kinds of ailments, such as asthma, cold, hypertension, hyperpyrexia, rheumatism, dysentery, anorexia, leucoderma, inflammatory, leprosy, arthroplogosis, furunculosis and other disease in various parts of the world such as India, Korea, China, Thailand, Africa, Japan, etc.^[4,5] the genus of *clerodendrum* 500 species in the family Lamiaceae and widely distributed throughout the whole world. A variety of chemical constituents has been isolated and characterizes for this genus including: monoterpene and its derivatives, diterpenoids, sesquiterpene, flavonoid, triterpenoids and flavonoid glycosides, steroids & steroid glycosides, phenylethanoid glycosides, cyclohexylethanoids, cyanogenic glycosides, anthraquinones, and others. Some of these constituents have been evaluated with a number of biological properties, mainly including anti-nociceptive, anti-oxidant, anti-inflammatory, anticancer, anti-hypertensive, antimicrobial, anti-diarrheal, hypoglycemic, hepatoprotective, and hypolipidemic, neuroprotective, memory enhancing and other activities.^[6]

The common names of *clerodendrum philippinum*, Chinese glory bower, glory tree, stick bish.^[7] And synonyms of *clerodendrum philippinum*, *clerodendrum chinense*, *volkmania japonica vent*, *clerodendrum fragrans auct*, *volkameria fragrans auct*, *clerodendrum philippinum schauer*.^[8] Vernacular names of *clerodendrum philippinum* it is commonly known as scent malli in India, madras malli in Tamil, kuthap in Manipur, chendumulla in Malayalam and gloey bower in English, pelegrina in Philippines, pig son in Thailand.^[7,8] The taxonomy of *clerodendrum philippinum* kingdom-plantae, phylum-tracheophyta, class-magnoliopsida, order-lamiaceae, family-lamiaceae, genus-clerodendrum, species-clerodendrum chinense.^[9] The *clerodendrum philippinum* grown as ornamental. And this plant mostly distributed in southern Asia. It is semi-woody shrub to 10 ft tall. Flowers of *clerodendrum* tight clusters, white with pink or red tinge, fragrant. No fruits. The roots and leaf extract of *clerodendrum philippinum* has been used for the treatment of asthma, rheumatism and other inflammatory disease.^[10]

The leaf is green in colour and the young stems are fresh green in colour. The leaf is relatively large and fresh green in colour. The flowering of this solid plant begins in June to the end of September. And the flowers resemble roses, they make clusters in the shape of a sphere and scents delicious.^[11] The uses of *clerodendrum philippinum* is used in peninsular Malaysia in a fomentation for rheumatism and ague, or as an ingredients if a mixture for skin problems. In Thailand the roots is considered diuretic. And also used in the treatment of abdominal pain, kidney dysfunctions and intestinal diseases, hypertension, jaundice and antiseptic.^[12]



Clerodendrum philippinum.L

Phytochemical Analysis

B.Venkatanarasimman et al reported that the phytochemical screening of *clerodendrum philippinum*. They are collected fresh leaves from udumalapet, thirupur district. The plant leaves were shade dried and powdered. The extraction was done with ethyl acetate, petroleum ether, ethanol, water, chloroform by cold percolation method. And they was taken 10 g of power and 100 ml of solvent each. And incubate 72 hours. After incubation the extracts were filtered by using whatmann's filter paper. They have been estimated and identified various phytochemical screening of *clerodendrum philippinum*. The results of phytochemical analysis of *clerodendrum philippinum* leaves showed the presence of secondary metabolites such as flavanoids, alkaloids, phenols, terpenoids, saponins, tannins, glycosides, amino acids & proteins, steroids. While the various extraction studied, the presence of several phytoconstituents showed ethanolic extraction.^[10]

Pharmacological Properties

More and more studies showed that active compounds isolated or extracts from *clerodendrum philippinum* present a wide range of pharmacological activities.

Anti diabetic activity

Mihir k.kar et al evaluated the antidiabetic activity of the n-hexane, methanol and water of *clerodendrum philippinum* schauer leaves using streptozotocin induced diabetic rats. they are investigate the phytochemical analysis reports of the various extracts of *clerodendrum philippinum* indicates that the n-hexane extract was found to contain alkaloids, steroids, triterpenoides; where as aqueous extract showed the presence of glycosides, flavanoids, phenolic compounds, saponins: and the methoanol extract showed the presence of flavanoids, alkaloids, phenolic compounds, glycosides, triterpenoids, steroids, saponins. and reported the acute oral toxicity studies in the rats were orally fed with the test extracts in increasing dose levels of 500,1000,2000 & 4000 mg/kg body weight. The acute toxicity study was carried out according to OECD guidelines. the effect of extract at the dose levels of 400 mg/kg body weight was studied in normal, glucose loaded & streptozotocin-induced diabetic rats. The results of this study the test extracts showed significant reduction of blood glucose level in normal, glucose loaded and streptozotocin-induced diabetic rats. methanol extract concluded maximum blood glucose lowering potential as compared to other extracts. Following experimental results of the present investigation conclude that the leaf extract of *clerodendrum philippinum* is endowed with antidiabetic potential.^[12]

Anti anxiety and central nervous system depressant activity

K.G.Lalitha et al reported that the ethanolic extract of *clerodendrum philippinum schauer* flowers for anti anxiety and central nervous system depressant activity. the chemical components of *clerodendrum philippinum* flowers are known to contain propanoid derivatives are reported to have anti fungal activity. It is used as folk medicine in the treatment of colic pain. They are elevated plusmaze test models were used used to evaluate anti-anxiety activity and locomotor activity was evaluated on actophotometer with 125 and 250 mg/kg p.o doses of *clerodendrum philippinum*. The ethonolic extract of the C.philippinum flowers (125 & 250 mg/kg p .o) significantly ($p > 0.01$) decreased locomotor activity (45.20%, 53.47%) and significantly ($p < 0.01$) increased the number of entries, time spent and rears in open arm of the elevated plus maze model.^[14]

Antibacterial activity

B.V enkatanarasimman et al reported that the anti bacterial potential of crude ethanolic leaf extract of *C.philippinum schauer* against *Escherichia coli*, *staphylococcus aureus*, *klebsiella pneumon* and *bacillus substillus* and mimimum inhibitory concentration(MIC) of

C.philippinum schauer. The anti microbial activity is decided by agar well diffusion method. The four bacterial cultures namely *E. coli*, *S.aureus*, *klebsiella* & *bacillus* were provided in the medium. The wells were cut by usage gel puncture and the freshly prepared cultured organisms were swabbed on the culture plates. a volume of 20 μ l from 100 μ g, 200 μ g of the plant extract were added into the well.

The results of anti bacterial activity of ethanolic extract of *C.philippinum schauer* showed anti bacterial activity against *E.coli*, *S.aureus*, *klebsilla*, & *bacillus* at the concentration of 100 μ g/ml 200 μ g/ml. comparing to others *E.coli* and *S.aureus* shows higher MIC value. The present results demonstrate that *C.philippinum schauer* could effectively inhibit the growth of *S.aureus*, *E.coli*, *bacillus* and *klebsiella* showed the strongest antibacterial activity with inhibition zones of more then 20 mm. following experiments were conducted to determine inhibitory concentrations of *C.philippinum schauer* leaves. It reveals the highest antibacterial effect as they have the MIC value of 20 mm in the concentration of 100 μ g/ml for all of 4 stains bacterial tested. they are suggest, the medicinal property of the leaves due to the presence of these antibacterial activities present in *C.philippinim schauer*. Since the leaves possessed antibacterial activity; it can be used to cure various diseases. The ethanoloc extract of plant possess the very good antibacterial activity for common pathogenic bacteria's. the present study offer a scientific support to the use of leaves of *C.philippinum* as an anti bacterial in new drugs for therapy as it showed promising antibacterial activity.^[15]

CONCLUSION

The genus of clerodendrum have been wide acceptance for its pharmacological activities against various ailments. Although 500 species of the genus clerodendrum were distributed all over the world. Only a few of then have been investigated & studied. In the present review, it can be concluded that introduction and phytochemical, pharmacology investigations were mainly focused on *C.philippinum*. for some species, such as *C. indicum*, *C. phlomidis*, *C. serratum*, *C. trichotomim*, *C. chinense*, *C. petasites* was only studied uses.

In present review the chemical constituents has been isolated and identified from the *C.philippinum* and also pharmacological studies indicated that the crude extract of *C. philippinum* various parts like leaf, flowers. The *C.philippinum* various biological activities, such as anti diabetic, anti anxiety & CNS depressant activity, anti bacterial activity. The characteristic constituents like alkaloids, flavanoids, glycosides, phenolic compounds, saponins, steroids, triterpenoids significantly biological activities, have great potential to be

developed into new drugs, especially anti diabetic, anxiety & CNS depressant. The ethanolic extract of *C.philippinum* finding in the study offer a scientific support to the use of leaves of *C.philippinum schauer* as an antibacterial in new drugs for therapy as it showed promising antibacterial activity.

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