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Review Article

CLERODENDRUM INERME: A CURRENT REVIEW

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ABSTRACT

The genus *Clerodendrum* L. (Family: Lamiaceae) is very widely distributed in tropical and subtropical regions of the world. More than five hundred species of the genus are identified till now, which includes small trees, shrubs and herbs. Ethno-medical importance of various species of *Clerodendrum* genus has been reported in various indigenous systems of medicines and as folk medicines. The genus is being used as medicines specifically in Indian, Chinese, Thai, Korean, Japanese systems of medicine for the treatment of various life threatening diseases such as syphilis, typhoid, cancer, jaundice and hypertension. Along with biological studies, isolation and identification studies of chemical constituents and its correlation with the biological activities of the genus has also been studied. The major chemical components reported from the genus are phenolic, steroids, di- and triterpenes, flavonoids, volatile oils, etc.

Keywords: *Clerodendrum inerme*, Clerosterol, Salvigenin, Biological activities.

INTRODUCTION

Clerodendrum is a genus of flowering plants in the family Lamiaceae. Its common names include glory bower and bag flower. It is currently classified in the subfamily Ajugoideae, being one of several genera transferred from Verbanaceae to Lamiaceae in the 1990s, based on phylogenetic analysis of morphological and molecular data. *Clerodendrum* is a genus of small trees, shrubs, lianas, and sub herbaceousperennials. Leaves are decussate or whorled, never spiny as in some close relatives. Inflorescence usually terminal, sepals usually connate, often colored, usually a crescent. Corolla red to yellow, pink, or white and corolla tube 5-lobed the lobes are usually unequal. Stamens 4 (rarely 5), usually in 2 pairs of unequal length and projecting well beyond the mouth of the corolla. Ovary incompletely 4-locular and 4 Ovules. Style terminal on the ovary, bifid. Fruit a drupe, usually with 4 grooves or lobes, 4-seeded (rarely 2-seeded by abortion).

Antimalarial Activity

(Gayar and Shazll, 1968, Kalyanasundaram and Das 1985) studied that *C. inerme* inhibit the growth of larvae of *Aedes aegypti*, *Culex quinquefasciatus* and *Culex pipiens* at 80 and 100 ppm concentration of petroleum ether and ether extracts and was found to have antimalarial activities.

Antioxidant Activity

(Masuda *et al.*, 1999) studied that species of *C. inerme* has been used as antioxidant drugs in various indigenous system of medicine. (Chae *et al.*, 2004) studied that the active isolate jinoside D were found to possess significant antioxidant activity

Antihepatoprotective Effects

The ethanolic extract of *Clerodendrum inerme* leaves were screened for its hepatoprotective

activity in CCl₄ (0.5 ml/kg, i.p.) induced liver damage in Swiss albino rats at a dose of 200 mg/kg body weight. The ethanolic extract of *C. inerme* significantly ($P < 0.001$) decreases the serum enzyme alanine amino transferase (ALT), aspartate amino transferase (AST), alkaline phosphates (ALP), triglycerides (TGL), total cholesterol (TC) and significantly increased the glutathione level.

Anti-Inflammatory Activity

(Somasundram and Sadique 1986) studied that flavonoid glycosides of *Clerodendrum inerme* showed modulation in calcium transport in isolated inflamed rat liver and there by showed reduction in inflammation.

Antimicrobial Activity

(George and Pandalai 1949) studied the alcoholic extracts of leaves and flowers of *C. inerme* for its antibacterial activity against *Escherichia coli* and *Staphylococcus aureus* which showed significant inhibitory effects against these organisms.

Antiviral Activity

(Mehdi et al., 1997) studied the antiviral activity of *Clerodendrum inerme* against Hepatitis B virus which showed an ED₅₀ value of 16 mg/ml.

Antihaemolytic Activity

(Sharaf et al., 1969) studied that the organic extracts of *C. Inerme* showed strong uterine stimulant activity when tested in female rats and rabbits. (Somasundram and Sadique 1986) studied the antihemolytic activity of *C. inerme* in healthy human adults at 0.02-2.0 mg/ml. The results suggested a significant inhibition of phospholipase an enzyme responsible of haemolytic at 0.05-1.5 mg/ml.

Antihypotensive Activity

(Bhakuni et al., 1969) studied the hypotensive effects of *C. inerme* extracts in dogs at 50 mg/kg and it showed a positive significant activity.

Antifungal Activity

(Sharma and Verma 1991) studied the antifungal activity of leaf extracts of *C. inerme* with various fungal organisms. The results showed an effective control in fruit rotting fungi organism.

CONCLUSION

Thus from the above literature cited it was found that very little work has been carried out for the exploration of the plant species. Thus this review will solve the queries of most of the researches and will focus on the specific activities related to the plant. As we all know that the herbal medicine represents the most important and vital in the field of traditional medicine all over the world. Due to its increase in demand for its effective treatment the flora are used extensively for the development of newer drugs which are generally safer than the other systems of medicine.

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[Pharmacophore: The group of atoms in the molecule of a drug responsible for the drug's action Or The group of atoms in a drug molecule which is responsible for the biologic and pharmacologic interaction.]