

In-Vitro Screening For Anti-Inflammatory Activity of Bulbophyllum Kaitense. Rechib. Pseudobulb Extract by HRBC Method. Eastern Peninsular Flora in South India

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Abstract- This work is of used on the evaluation of the anti-inflammatory activity various extracts of Bulbophyllum kaitense. Pseudobulb using experimental models. Four different extracts (Petroleum ether chloroform, Ethanol and aqueous) were tested. The anti-inflammatory activity of HRBC (Human Red Blood Cell Membrane Stabilization Method) was evaluated for the in vitro of anti-inflammatory property because the erythrocyte membrane is analogous to the lysosomal membrane and its stabilization implies that the various extracts may as well stabilize lysosomal membranes. Stabilization of lysosomal membrane is important in limiting the inflammatory response by preventing the release of lysosomal constituents of activated neutrophil such as bacterial enzymes and proteases. Which cause further tissue inflammation and damage upon extracellular release. The effects of the administration of reference standard (diclofenac) were evaluated. The plant extract showed significant activities in both of the anti-inflammatory assays as compared to diclofenac drug dependent manner. This investigation suggests that Ethanol extract has anti-inflammatory potential activity. The result obtained indicate the Bulbophyllum Kaitense Pseudobulb has anti-inflammatory activities that supports the folk medicinal use of the plant. The world first report in the plant.

Index Terms- Bulbophyllum kaitense, pseudobulb, Anti-inflammatory, Diclofenac, extracts

I. INTRODUCTION

The use of herbal extracts and nutritional supplements either as alternative or complimentary medicine to the conventional chemotherapy for treatment of anti-inflammatory diseases is well documented in ayurveda. Which is an alternative medicinal system that has been practiced primarily in the Indian subcontinent for 5000 years (Dahankar et. Al.2000) inflammatory diseases, including different type of rheumatic disease are a major cause of inhibitory of the working force throughout the world. Many drugs produced a dramatic symptomatic improvement in rheumatic diseases but all of them shared the common effect called gastrointestinal irritation. The medicinal substances packaged in a plant can be safely assimilated by the body since the plants are its natural food. In India many ayurvedic practitioners are using various indigenous plants for the treatment of different types of inflammatory conditions. (K.Chandrasekaran 2011).

In the 17th century. The aesthetic appreciation was for tulips followed by the rose, gladiolus. Chrysanthemum and today virtually orchid has become the cynosure all over the world. This unusual aesthetic beauty is quite popular among the professional and amateur orchid lovers in many parts of the world. Contrary to the medicinal value of a vanguard taxon and of some other taxa including the present day eulalia (D.don) Hochy., plicinaria nodosa (dall) and Malaxis rheedii SW. are discussed in Charaka Samhita; a classic ancient Indian medicinal treatise written by Charaka in Sanskrit a few thousand years ago. This forms first record of Indian orchids and their uses in Ayurvedic medicine (Manilal and Sathishkumar 1986) yet only in the later part of the 20th century, the medicinal value orchid has been recognized. Lawler (1987) published an extensive account on ethnobotany of the family Orchidaceae and discussed the role and usage. Of many species is food, flavoring, confectionary industries, arts and crafts, animals and the veterinary medicines in several continents of the world. The use of several orchid taxa in medical practice was greatly appreciated by Good in his work the family flora published in 1945 (Duggal 1971) in the ayurvedic system of medicine a group of eight drugs known as ashtavarga is employed in the preparation of a number of rejuvenating formulations and toxicity the correct identify of these drugs has long been debated. The investigations have indicated that important constituents (drugs) of ashtavarga namely Sivak (Microstylis wallichii), of ashtavarga (Habenaria acuminate) and Ridhi Varidhi (H.intermedia) are orchidaceous in nature (Handa 1986)

Bulbophyllum kaitense. Rechib, Pseudobulb this is an epiphytic family orchidaceous. Endemic to south it is native of India. Occurs in the forest of eastern ghats from Kolli hills above 1200m sympodial epiphytes with uninode pseudobulbs on the rhizome. Terminating the pseudobulbs. Inflorescence umbellate scape. Leaves 9-13 cm long flowers. Without mentum. Sepal unequal petals shorter than lateral sepals. The plants have been used in the indigenous medicine such as ayurveda and local traditional medicinal practices the pseudobulb is used for the treatment of certain antioxidant, anticancer. Anti-inflammatory, antiseptic, antitumor and antimicrobial activity. The pseudobulb property is curing of different diseases. (A. Kalaiarasan) S. Ahmed John 2011) Analgesic, anesthetic, antiviral cancer preventive, fungicide, rodenticide emetic, vasodilator, COX-1 & COX-2 inhibitor, hypocholesterolemic, candidicide, diuretic, immunostimulant, chemopreventive, lipoxigenase inhibitor, pesticide, antidermatitic, Antileukemic, Hepatoprotective, hypocholesterolemic, antileukemic,

vasodilator, antispasmodic, antibronchitic, anticoronary, antiarthritic. The plants is used is few years ago is kolli hills agathiyammuniver. The plants have been used is indigenous medicine. This information was gathered by questioning local tratitinal healers and knowledgeable village people of kolli hills the aim of the present investigation was to evaluate the effectof Bulbophyllum Kaitense. Pseudobulb extract of anit-inflammatory experimental is human red Blood Cell membranes stabilization.

II. MATERIALS AND METHODS

Collection of plant material.

The healthy plant materials of Bulbophyllum kaitense. Rechits. Pseudobulb were collected from the eastern peninsula flora in south India. Kolli hills. India. September 2011 identified and authenticated by Ret, Dr.S. Hohn Britto. The director, the Rabinat Herbarium St, Joseph's College. Tiruchirappalli, Tamil Nadu. India, with the help of herbarium record. The plant voucher number RHT 827.

Preparation of Extract:

The plant material were cleaned, dried under shade and pulverized by using mixcy, 500 g of the powder of plant was successively extracted with petroleum ether. Chloroform,

Calculation:

The percentage of HRBC membrane stabilization was calculated using the formula.

$$\text{Percentage protection} = \frac{100 - \text{Optical density of sample}}{\text{Optical density of control}} \times 100$$

III. RESULT

HRBC method was selected for the *in vitro* evaluation of anti-inflammatory property because the erythrocyte membrane is analogous lysosomal membrane and its stabilization implies that the extract may as well stabilize lysosomal membranes. Stabilization of lysosomal membrane is important in limiting the inflammatory response by preventing the release of lysosomal constituents of activated neutrophil. Which cause further tissue inflammation and damage upon extra cellular release.

The results of the present investigation suggest that the ethanolic extract of Bulbophyllum kaitense. Pseudobulbs. Exert anti-inflammatory activity possible. The petroleum ether. Chloroform, and aqueous extract more or less anti-inflammatory activity. Result of anti-inflammatory activities are presented in (table-1)

IV. CONCLUSION

The present investigation it is concluded that extracts of Bulbophyllum kaitense. Pseudobulbs are capable of inhibiting inflammatory reactions as well as pain. The results provided experimental evidence for its traditional use in treating various diseases associated with inflammation and pain.

Ethanol and Aqueous in order of their increasing polarity using Soxhlet apparatus.

A) Studies on anti-inflammatory activity:

The anti-inflammatory activity using HRBC (Human Red Blood Cell Membrane stabilization) Method was carried out as described by Muruges. N. (1981) Anti-inflammatory activity was evaluated using the HEBC method was used for the estimation of anti-inflammatory activity *in vitro*. Blood was collected from healthy volunteers and was mixed with equal volume of sterilized saline solution. This blood solution was centrifuged at 3000 rpm and the packed cells are separated. The packed cells were washed with isotonic saline solution and a 10% v/v suspension is made with isotonic saline. This HRBC suspension was used for the estimation of anti-inflammatory property. The plant pseudobulb various extract. Reference sample mixed with 1 ml of phosphate buffer. 2ml of isotonic saline and 0.5ml of HRBC suspension. The reference used for this investigation is diclofenac sodium, all the assay mixtures were incubated at 37°C for 30 minutes and centrifuged at 3000 rpm. The supernatant liquid was decanted and the hemoglobin content was estimated by spectrophotometer at 560nm. The percentage hemolysis was produced is the control as 100%

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TABLE 1: SHOWS *IN-VITRO* ANTI-INFLAMMATORY ACTIVITY OF PSEUDOBLUB

Sample	Percentage protection for Pet ether extract in blood			Percentage protection for Chloroform extract in blood			Percentage protection for aqueous extract in blood			Percentage protection for Ethanolic extract in blood		
	0.5	1.0	1.5	0.5	1.0	1.5	0.5	1.0	1.5	0.5	1.0	1.5
Pseudobulb	7.8	10.8	13.4	3	11.5	12.4	16.9	30	37	28.8	11.5	12.4

TABLE 2: *IN-VITRO* ANTI-INFLAMMATORY ACTIVITY OF PSEUDOBLUB

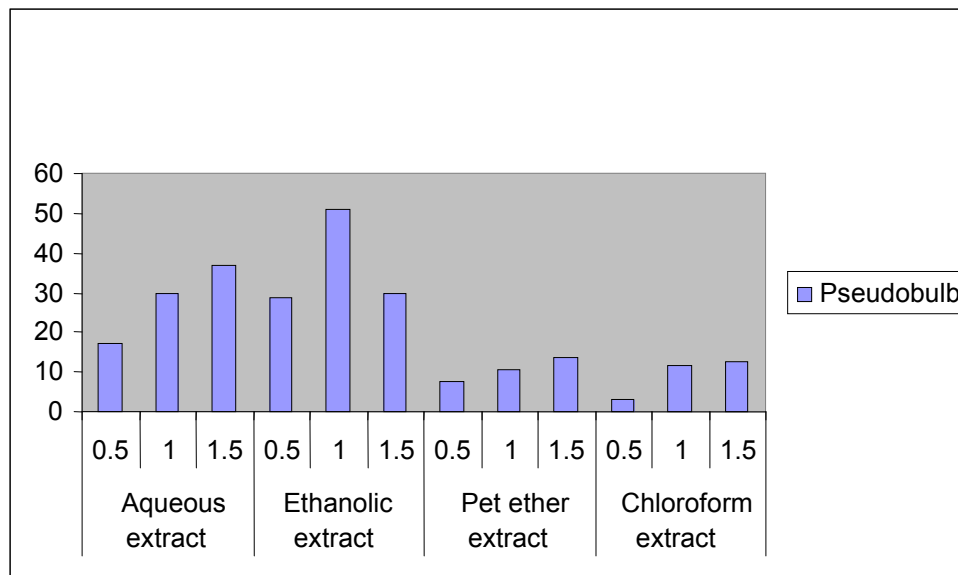


Figure 1: In vitro Analysis of Anti Inflammatory Activity by HRBC Method (Control)

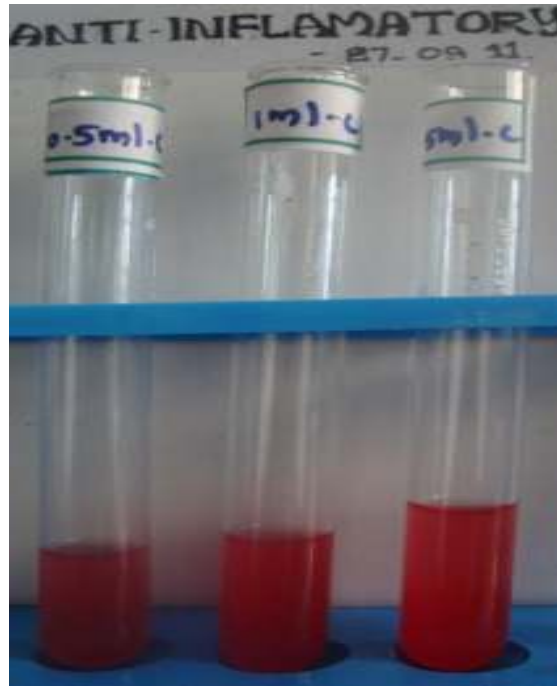


Figure 2: In vitro Analysis of Anti Inflammatory Activity by HRBC Method (Aqueous and Ethanolic Extract)

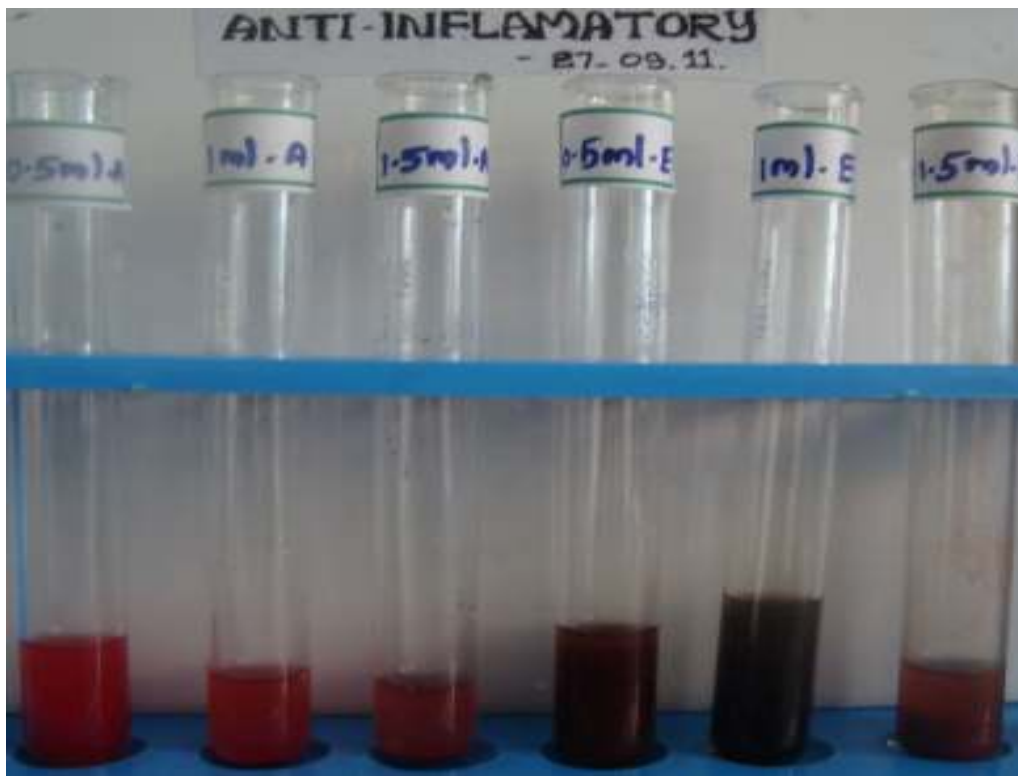


Figure 3: *In vitro* Analysis of Anti Inflammatory Activity by HRBC Method (Chloroform) Pet ether Extract

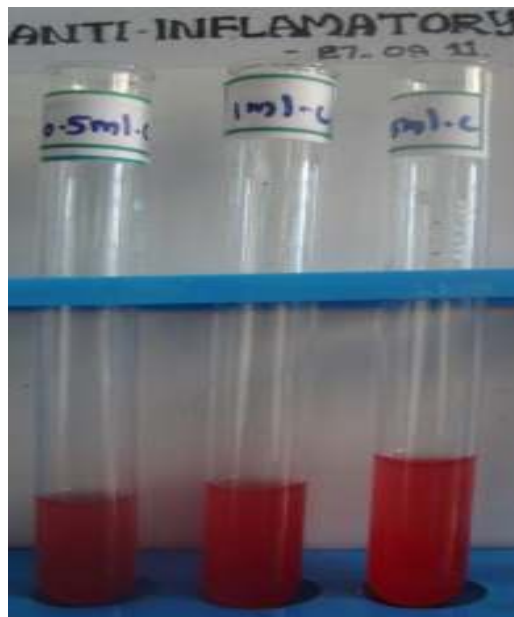


Figure 4: *In vitro* Analysis of Anti Inflammatory Activity by HRBC Method (Chloroform) Pet ether Extract

