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Research Article

EVALUATION OF ANTI MICROBIAL ACTIVITY OF ETHANOL EXTRACT OF *PSEUDARTHRIA VISCIDA* LEAF

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ABSTRACT

The plant *Pseudarthria viscida* (Linn) belongs to Fabaceae family. It is a perennial shrub distributed throughout all districts of south India, also reported from Sri Lanka and Timor. Traditionally, the plant used in treatment of intermittent fever, urinary diseases, tumors, edema, and burning sensation, difficulty in breathing and toxic conditions. Herbal medicine is used frequently a part of larger therapeutic system like Traditional and folk medicine. Assortment of literature, the plant posses' anti-diabetic, anti oxidant, anti tumor, anti hypertensive, anti diarrheal activities and it is necessary to evaluate in a scientific base, the potential use of folk medicine for the treatment of many diseases. The present study was performed to evaluate the in vitro antimicrobial activity of ethanol extract leaves of *Pseudarthria viscida* Linn, Phytochemical screening which indicated presence of carbohydrates, alkaloids, phenols, flavonoids.

Key words: *Pseudarthria viscida* leaves, ethanol extract, microbial activity, carbohydrates,

INTRODUCTION

Natures have been a source of medicinal agents for thousands of years, a stinking of modern drug has been isolated from natural sources, some based on their use in traditional medicines or Phytomedicines. Scientific interest in medicinal plants has flourished due to enhanced efficiency of new plant derived drugs, growing interest in natural products, rising concerned the side effects conventional medicine. The various use of herbal remedies, preparations are described throughout human history represents the origin of modern medicine. Many of conventional drugs originate from plant sources[1].

The roots are astringent, digestive, constipated, anthelmintic, emollient, thermogenic, anti inflammatory, aphrodisiacs, cardiotonic, and febrifuge, also used for rejuvenating tonic. The whole plant exhibits anti oxidant, analgesic, anti fungal, anti pyretic effects. They are useful and vitiated the conditions of cough, asthma, bronchitis, tuberculosis, gout, hyperthermia, fever, general ability[3]. The root, leaf, stem, callus extract of the *Pseudarthria viscida* exhibited significant anti fungal property[4]. The preliminary photochemical screening indicates that the presence of alkaloids, flavonoids, tannins and phenolic compounds, saponins. The ethanol extract of *Pseudarthria* (Linn) root exhibited anti oxidant activity[5]. Phytochemical constituents like vaffeic acid, gallic acid, rutin and ferulic acid were identified from *Pseudarthria viscida* roots by HPLC with UV detection at 280nm[6]. The methanol extract of *Pseudarthria viscida* root exhibited 43 compounds such as cis vaccenic acid, gamma sitosterol and stigma sterol by GCMS. The ethanol extract of roots showed anti diabetic, anti inflammatory, diuretic effect.[7], literature survey suggested that, to investigate and focus for the future scope of anti microbial activity on *Pseudarthria viscida* leaf.

Fig 1: *Pseudarthria viscida* leaf (Linn)

Kingdom: Plantae,
Synonyms: Hedysarum viscidum
Division: magnoliophytaclass, magnoliopsida.
Genus: Pseudarthria
Species: viscida
order: Fabale
Common name: chappakno, nirmalli, moovila, salaparni, neyakuponna.

Pseudarthria is an under shrub, which is perennial, contain lupeol triterpenoid and it is semi erect in appearance., *arranged alternately and contains three foliate leaves, also contains membranous leaflets, pink or rose coloured flowers*[2].

MATERIALS AND METHODS

The whole plant was collected from Kolli hills, Namakkal District, Tamil Nadu. The plant was authenticated by Botanical survey of India, Southern Circle, Coimbatore and a voucher specimen were deposited (No.BSI/SC//23/06-07/tech-166). The collected Leaves of *Pseudarthria viscida* (Linn) was dried under shade drying, coarse powder was used for the extraction and phytochemical analysis.

Phytochemical studies

Leaves of *Pseudarthria viscida* Linn reduced to fine powder (# 42 size meshes) and stored in an air tight container and around 300 gm of powder were subjected to successive hot continuous extraction (Soxhlet) (60-80^{0}C) with petroleum ether, ethanol(95%v/v). Finally, the drug will be air dried in hot air oven below 500°C. Later the effective extraction, the solvent was distilled off, then it was concentrated on water bath, the extracts obtained with each solvent have been weighed[8]. The various extract of leaves of *Pseudarthria viscida* was subjected to chemical tests for identification of its active constituents.

ANTIMICROBIAL STUDIES[9, 10]

The 25,50,75 and 100µg/ml of ethanol extract were used to find out the anti microbial properties using gentamycin and fluconazole (10µg/ml) as a standard against various strains of gram positive, gram negative bacteria and fungi organism. The nutrient agar medium was prepared and sterilized by autoclave at 15 ibs pressure 120°C for 15 minutes, then aseptically poured the medium into the sterilized Petri plates and allowed to solidify the bacterial , fungal broth culture was swabbed on each Petri plates using sterile buds. Then wells were made using cork borer on the solidified medium. The ethanol extract of plant leaves to each well aseptically. The same techniques were repeated for each Petri plates were incubated at 37°C for 24 hr after incubation the plates were observed zone of inhibition.

RESULTS AND DISCUSSION

The present study on the ethanol extract leaves of *Pseudarthria viscida* (Linn). The Phytochemical screening showed the presence of carbohydrates, alkaloids and flavonoids, amino acids and tannins, steroids. The concentration 100µg/ml of ethanol extract of *Pseudarthria viscida* leaf exhibited significant activity against antibacterial and fungal organisms when compared to standard. The concentration of 50µg/ml & 75µg/ml showed moderate antibacterial, anti fungal activity when compared to standard. The concentration 25µg/ml posses mild to moderate activity of antibacterial and fungal organism when compared to standard drug. (table 1&2)

Table 1: Anti bacterial activity of ethanol extract leaves of *Pseudarthria viscida* (Linn)

S.NO	ORGANISM	CONCENTRATION OF ETHANOLIC EXTRACT & ZONE OF INHIBITION (mm)				
		25µg/ml	50µg/ml	75µg/ml	100µg/ml	Standard (µg/ml) (gentamycin)
1.	*Bacillus megaterium*	10	10	12	13	12
2.	*E.Coli*	--	----	10	12	14
3.	*B.Subtilis*	11	12	14	16	14
4.	*Pseudomonas aeruginosa*	--	---	08	10	12
5.	*Proteus vulgaris*	10	12	12	14	12

Table 2: Anti fungal activity of ethanol extract leaves of *Pseudarthria viscida* (Linn)

S.NO	ORGANISM	CONCENTRATION OF ETHANOLIC EXTRACT & ZONE OF INHIBITION (mm)				
		25µg/ml	50µg/ml	75µg/ml	100µg/ml	Standard (µg/ml) (fluconazole)
1.	*Candida albicans*	10	10	12	14	12
2.	*Aspergillus Niger*	08	11	12	13	12

CONCLUSION

Medicinal plans are the richest source of drugs of traditional system of medicines and modern medicines, food supplements, folk medicines, nutraceuticals, pharmaceutical intermediates, chemical entities for synthetic drugs. Recent years, ethno botanical, traditional uses of natural compounds specially from plant origin received very much attention as which they are well tested for efficacy ,also generally believed to be safe for human use , moreover which is the best classical approach in the search of new molecules for the management of various diseases[11]. The results obtained from the present research indicate ethanol extract of *Pseudarthria viscida* leaf has potential to act as anti-bacterial and fungal activity and also due to the presence of carbohydrates, flavonoids like active compounds**.**

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