Research Article

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IN VITRO ANTI-MICROBIAL ACTIVITY ON LEAF EXTRACTS OF *ANNONA SQUAMOSA LINN*

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Abstract

The in-vitro antimicrobial activity of Petroleum Ether, Chloroform and Ethanolic extract of leave of *Annona squamosa*. The anti microbial activity was evaluated by disc diffusion method against *Pseudomonas aeruginosa, E.coli and Staphylococcus aureus*. The result showed that the Ethanolic extract possessed significant activity towards *Pseudomonas aeruginosa, E.coli and Staphylococcus aureus*.

Key words: *Annona squamosa,* Ethanolic extract, Antimicrobial activity, Custard apple.

Introduction

Annona squamosa is a commonly called as Custard apple. Is a tropical branched tree or shrub of family *Annonaceae*. The plant is highly valued in the traditional system of medicine in India for treating a variety of diseases, e.g., the bark can be used to stop diarrhea in children and adults, the fruits used to make a hair tonic [1].

Material and methods

The leaves of *Annona squamosa* were collected from Kumbakonam, Tamil Nadu, India in 2011.The plant specimen was authenticated by Dr.R.Marimuthu M.Sc.(Ag), Ph.D., Programme Co-Coordinator of Hans Roever Krish Vigyan Kendra, Perambalur, South India(Reg.No:-246/94).

Preparation of extracts

The leaves of *Annona squamosa* were dried in shade and then powered in to coarse granules. These coarse granules were then extracted with Petroleum Ether, Chloroform and Ethanol by using Sox-let apparatus for 5 hrs respectively. The corresponding extract were filtered and collected, then concentrate to dry mass by vacuum distillation. The each extract was used for chemical evaluations and anti microbial studies.

Identification of phyto chemical constituents

All extracts of the leaves of *Annona squamosa* were subjected to qualitative test for identification of its active constituents [2, 3, and 4]. That result shows the Alkaloid, Carbohydrates,

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Protein and Amino acid, Flavanoids were present in all the three extracts.

Anti microbial activity [5, 6]

The disc diffusion method was used to screen in vitro anti microbial activity. Bacteria (*Pseudomonas aeruginosa, E.coli and Staphylococcus aureus*) were grown on Muller –Hinton Agar plate and incubated at 30^0 C for 48 hrs in separately. Muller –Hinton Agar extract were sterilized and cooled to 45-50^0 C.Then ,they were distributed in sterilized Petri dish with a diameter of 9 cm.The sterile paper dish (6mm in diameter)were individually impregnated with 50 µl,75 µl and 100 µl of Petroleum Ether, Chloroform and Ethanolic extract respectively. The entire disc were dried and placed on to sterilized Petri dish, which had previously been inoculated with test micro organism. The Petri dishes were incubated at 37^0C for 24 Hrs.The diameter of the inhibition zone were measured in millimeter.Oflaxacin as used as a standard drug.

Result and Discussion

Table 01: Anti-Microbial Activity on Leaf Extracts of *Annona Squamosa Linn*

Microorganism	Zone of Inhibition (MM)									
	Petroleum Ether extract			Chloroform extract			Ethanolic extract			Oflaxacin
	50 µl	75 µl	100 µl	50 µl	75 µl	100 µl	50 µl	75 µl	100 µl	30 µg/ml
Pseudomonas aeruginosa	13	15	15	10	10	11	14	15	19	18
E.coli	12	13	14	11	11	11	13	15	21	15
Staphylococcus aureus	10	11	13	10	11	11	14	16	19	20

Zone of inhibition obtained were present in the Table 1.The anti bacterial activity of Petroleum Ether, Chloroform and Ethanolic extract were tested against *Pseudomonas aeruginosa, E.coli and Staphylococcus aureus* at concentration of 50 µl, 75 µl and 100 µl.Among three extract the Ethanolic extract of 100 µl was found to be more significant than Petroleum Ether extract and Chloroform extract.

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