



Antimicrobial activity of *Anthocephalus cadamba* Linn

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Abstract

The antimicrobial activity of the various extracts of the leaves of *Anthocephalus cadamba* has been studied by agar cup plate diffusion method. Significant antibacterial and antifungal activity was shown by petroleum ether, chloroform and acetone extracts.

Keywords: Antimicrobial, *Anthocephalus cadamba*, Gentamycin

Introduction

Anthocephalus cadamba (Roxb)Miq.Syn. *Anthocephalus chinensis* (Lamk)(Rubiaceae) is widely distributed throughout the greater part of India, especially at low levels in wet places. In traditional system of medicine warm aqueous extract of *A.cadamba* leaves have been used to alleviate the pain, swelling and for cleansing and better wound healing. Recently, *A.cadamba* has been reported to possess wound healing, antioxidant, antimalarial and hepatoprotective activity [1-3].

The present study was undertaken to screen the antibacterial activity of the leaves of *Anthocephalus cadamba*.

Experimental Section

The leaves of *Anthocephalus cadamba* were collected from the local areas of Mangalore district, Karnataka, India during December 2007 and were authenticated by Prof. Gopalakrishna Bhat, Department of Botony, Poorna Prajna College, Udupi.

Preparation of Extracts

The powdered plant material (500 g) was subjected successive hot soxhlet extraction using petroleum ether (60-80°C), chloroform and acetone in their increasing order of polarity. The

extracts so obtained were concentrated to dryness by evaporating the solvent under reduced pressure using rotary evaporator. Yield of extracts was petroleum ether (2.5%), chloroform (5.2%) and acetone (4.5%). All the extracts were dissolved in sterile dimethyl sulphoxide (DMSO) for antibacterial as well as antifungal activity.

Antimicrobial activity

Antimicrobial activity was tested using various microorganisms using the Gentamycin (10 µg/ml) and Ketoconazole as standard (Table-1) by cup plate agar diffusion method [4-6]. The organisms selected for antimicrobial activity were *Escherichia coli* ATCC 25922, *Staphylococcus aureus* NCTC 6571, *Aspergillus niger* ATCC 16404, *Candida albicans* F 598, *Pseudomonas aeruginosa* APC and *Salmonella typhi* NCTC 11. The plates were incubated at 27°C for 34 hr. and the diameter of zone of inhibition measured.

Table-1. Antimicrobial activity of *Anthocephalus cadamba* leaves extracts

Micro Organisms	Zone of inhibition (mm)***SEM					
	P.ether	Chloro-form	Acetone	Genta-mycin	Keto-conazole	P value
<i>Escherichia Coli</i>	0.28 ±0.02	0.41 ±0.12	0.58 ±0.09	0.42 ±0.06	NT	>0.10
<i>Staphylococcus Aureus</i>	0.19 ±0.11	0.67 ±0.23	0.36 ±0.25	0.26 ±0.12	NT	>0.10
<i>Pseudomonas Aeruginosa</i>	0.65 ±0.08	0.66 ±0.21	0.66 ±0.14	0.56 ±0.12	NT	>0.10
<i>Salmonella Typhi</i>	0.78 ±0.11	0.46 ±0.17	0.23 ±0.13	0.77 ±0.14	NT	>0.10
<i>Asperagillus Niger</i>	0.51 ±0.21	0.45 ±0.15	0.45 ±0.10	–	0.71 ±0.22	>0.10
<i>Candida Albicans</i>	0.61 ±0.14	0.57 ±0.13	0.57 ±0.09	–	0.85 ±0.07	>0.10

NT; not tested, ***Average of triplicate, -No zone of inhibition

Results

Chloroform and acetone extracts exhibited strong activity against bacteria and fungi (Table-1) and the zone of inhibition was comparable with the standard drug.

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