
Research Article



ISSN Print 2231 – 3648
 Online 2231 – 3656

**International Journal of
Pharmacy and Industrial
Research**

***IN VITRO* ANTIBACTERIAL ACTIVITY OF LEAF EXTRACT OF
SPHAERANTHUS INDICUS LINN**

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Abstract

The antibacterial activity of chloroform and methanolic extracts of *Sphaeranthus indicus* Linn leaves were studied against gram – positive, gram – negative bacteria by disc diffusion method. Both the extracts exhibited antimicrobial activity.

Key words: Antibacterials, Doxycycline, chloroform extract.

Introduction

Sphaeranthus indicus (Astraceae) the plant is a small herbaceous, branched herb, with purple colour flower. It's seen especially in the paddy field after harvest¹. The leaves, roots and seeds of this herb ethnomedically cure indigestion, bronchitis, anemia, convulsion, asthma, dysentery, vomiting and leucoderma². Externally the paste is applied to cure piles and swollen glands³. The antibacterial activity has been reported from the essential oil of *Sphaeranthus indicus*⁴.

Materials and methods

The leaves of *Sphaeranthus indicus* Linn were collected from Triunelveli District of Tamilnadu during the month of May 2011 and authenticated by the Department of Forensic and Toxicology, Government Siddha Medical

College, Palayamkottai. The leaves were washed with tap water and dried in shade and made into coarse powder.

Preparation of Extract

The coarse powdered materials were Soxhleted separately using chloroform and methanol followed by solvent removal under reduced pressure to obtain dried extracts⁵.

Evaluation of Antimicrobial Activity

The antimicrobial activity of the extracts was evaluated by agar diffusion method using the paper disc⁶. The paper impregnated with both extracts at 50µg/ml, 100µg/ml (dissolved in DMSO) respectively. Nutrient agar media was used for this study. Doxycycline. (30µg/disc) was used as standard. An average of three

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independent determinations was recorded. The observed zone of inhibition is presented in table 01.

Result

Table No. 01: Antimicrobial Activity of *Sphaeranthus indicus* Linn Leaves

Microorganism	Zone of inhibition (mm)				Doxycycline 30µg/disc
	Chloroform extract		Methanol extract		
	50µg/ml	100µg/ml	50µg/ml	100µg/ml	
<i>Pseudomonas aeruginosa</i>	-	16	-	21	30
<i>Escherichia coli</i>	-	18	-	20	28
<i>Bacillus subtilis</i>	-	19	14	25	28
<i>Staphylococcus aureus</i>	-	17	-	16	26

Discussion

It was observed that the chloroform and methanolic extract of *Sphaeranthus indicus* shows excellent antibacterial activity at 100µg/ml against the bacteria such as *Pseudomonas aeruginosa*, *Escherichia coli*, *Bacillus subtilis* and *Staphylococcus aureus* using against standard drug Doxycycline (30µg/disc). But chloroform and methanolic extracts 50µg/ml not possess any inhibition except methanolic extract against the bacteria *Bacillus subtilis*.

Acknowledgement

The authors are very grateful to Mr. Nepolean, Thanthai Roever College of Pharmacy, Perambalur to give an encouragement and guide us to carry out the work. We extend our thanks to the Management Thanthai Roever College of Pharmacy, Perambalur for providing laboratory facilities.

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