



ISSN: 0975-766X  
CODEN: IJPTFI  
Research Article

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## ANTIBACTERIAL ACTIVITY OF GLOSSOCARDIA BOSVALLEA (L.f.) DC.

Dagawal Mangesh, Bhogaonkar Prabha<sup>1</sup> and Ghorpade Deepali<sup>2</sup>

Department of Botany, Smt. Radhabai Sarda College,  
Anjangaon Surji. Dist. Amravati (M.S.)

<sup>1</sup>Department of Botany, Govt. Vidarbha Institute Amravati.

<sup>2</sup>Govt. College of Pharmacy, Amravati.

Email: [mdagawal@gmail.com](mailto:mdagawal@gmail.com)

Received on 30-06-2011

Accepted on 18-07-2011

### Abstract

*Glossocardia bosvallea* (L.f.)DC. is a small annual herb. It is used as emmenagogue, and paste of the fresh plant is applied to promote healing of sores and wounds. Present investigation deals with antibacterial activity against five pathogenic bacteria. Plant material extracted with petroleum ether, chloroform, methanol and distilled water.

Petroleum ether extract showed maximum activity against *Proteus vulgaris*. All extracts showed significant activity against *Staphylococcus aureus* while petroleum ether, chloroform and acetone extracts did not show any activity against *Pseudomonas aeruginosa*.

**Key words:** *Glossocardia bosvallea*, antibacterial, extractive value, plant extract.

### Introduction

Even though pharmacological industries have produced a number of new antibiotics in the last three decades, resistance to these drugs by microorganisms has increased. In general, bacteria have the genetic ability to transmit and acquire resistance to drugs, which are repeatedly used as therapeutic agent<sup>1</sup>. The use of plant compounds for pharmaceutical purposes has gradually increased all over. According to World Health Organization medicinal plants would be the best source to obtain variety of drugs<sup>2</sup>. Large number of plant species in different locations around the world have been collected and semi purified extracts tried to investigate individually for antimicrobial activity<sup>3</sup>.

*Glossocardia bosvallea* is a small annual herb found along gravelly slopes grasses in wet seasons, commonly called as 'Khadakshepu'. Spoon full extract of plant is given with cow milk twice a day to cure typhoid by tribals of Kinvat tahsil dist. Nanded (M.S.)<sup>4</sup>. A paste of the fresh plant is applied to promote healing of sores and wounds. Tribals of Nasik district use root stock decoction with tea for alcohol addicts<sup>5</sup>. Antimycotic activity of the essential oil of this plant against plant pathogenic as well as human pathogenic fungi, viz., *Aspergillus niger*, *Botryodiplodia theobromae*, *Botryothichum keratinophilum*, *Chrysosporium tropicum*, *Microsporum gypseum*, *Malbranchea pulchella*, *Phytophthora parasitica* var. *piperina* and *Rhizopus nodosus* was reported by Pathak and Dixit<sup>6</sup>.

### Material and Methods

Plants were collected from Amravati district (M.S.), for identification standard floras were referred<sup>7-8</sup>. Mature leaves were shade dried, powdered and stored at 4 °C in zip lock bag for further studies.

For antimicrobial activity leaves were extracted with petroleum ether, chloroform, acetone, methanol and distilled water by soxhlet for about eight hours. Extracts were dried. The antimicrobial activity of extracts was tested by cup plate method<sup>9</sup> using Muller Hinton nutritive agar medium and Sabarof dextrose agar medium. Tetracyclin was used as standard for comparative study. Culture was procured from NCL Pune. Following strains of bacteria were used - *Bacillus subtilis* NCIM 2063, *Staphylococcus aureus* NCIM 2079, *Escherichia coli* NCIM 2065, *Proteus vulgaris* NCIM 2831 and *Pseudomonas aeruginosa* NCIM 2036. Oven dried leaf extracts were used at concentration of 10 µg/ml dissolved in DMSO for antimicrobial study. Zone of inhibition recorded in mm in each set and average of three considered for comparison after 24 hours of incubation.

### Result and Discussion

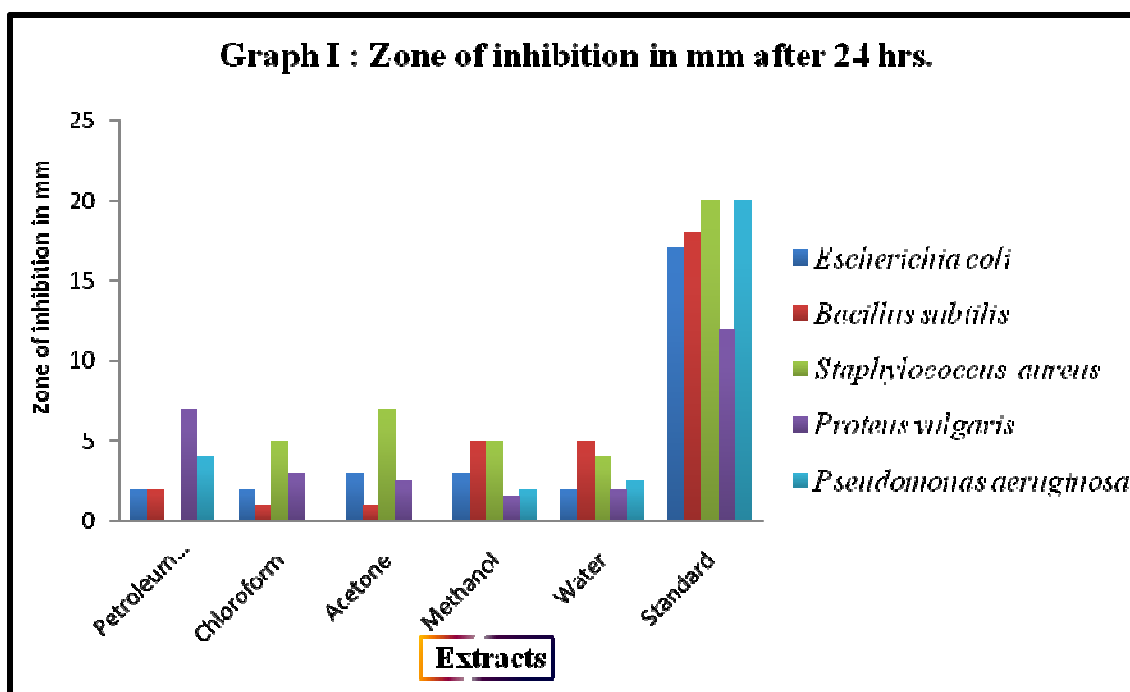
It was found that maximum contents are soluble in water while minimum in petroleum ether (Table 1). Various extracts were tested for gram -ve and gram +ve bacteria. The results obtained are presented in table 2 and graph I. It is apparent from the results that Petroleum ether and chloroform extract showed maximum activity against *Proteus vulgaris* and *Staphylococcus aureus* respectively. All extract showed significant activity against *Proteus vulgaris* while chloroform and acetone extract did not show any activity against

*Pseudomonas aeruginosa*.**Table-1: Extractive Value *Glossocardia bosvallea*.**

Extractive Value %				
Petroleum Ether	Chloroform	Acetone	Methanol	Water
9.08	7.70	11.60	3.70	13.02

**Table -2: Antibacterial activity of *Glossocardia bosvallea*.**

Sr. No.	Test Microorganism	Zone of Inhibition after 24 Hrs (in mm )					
		Petroleum Ether	Chloroform	Acetone	Methanol	Water	Standard
1.	<i>Escherichia coli</i>	2	2	3	3	2	17
2.	<i>Bacillus subtilis</i>	2	1	1	5	5	18
3.	<i>Staphylococcus aureus</i>	Nil	5	7	5	4	20
4.	<i>Proteus vulgaris</i>	7	3	2.5	1.5	2	12
5.	<i>Pseudomonas aeruginosa</i>	4	Nil	Nil	2	2.5	20



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## Corresponding Author:

**Bhogaonkar\***,

**Email:** [mdagawal@gmail.com](mailto:mdagawal@gmail.com)