

## NOTE

**In Vitro Antimicrobial Efficacy of Leaves  
Extracts of *Bauhinia variegata***

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The methanolic extract obtained from the leaves of *Bauhinia variegata* has been tested for their antimicrobial activity against *Bacillus anthracis*, *Proteus vulgaris*, *Escherichia coli* and *Streptococcus agalacties* and antifungal activity against various fungi, *Aspergillus fumigatus* and *Aspergillus niger*.

The plant *Bauhinia variegata* (N.O. Leguminosae)<sup>1-4</sup> is commonly known as 'Kachnar' in Hindi. This Kachnar appears as a medium size tree, flowering during the hot season and is distributed in the sub-Himalayan tract from the Indus coastward, and also in dry forests over eastern, central and south India. This plant was locally collected from Sagar hills. It is widely used for the prevention of goitre and the bark is described as astringent, alternative, toxic and useful in scrafula skin disease along with ulcers.

The high medicinal importance of the plant attracted us to investigate its antimicrobial activities like antibacterial and antifungal.

About 2 kg of air dried and finely powdered leaves of *Bauhinia variegata* were extracted with 50% methanol at 10°C for 24 h. The extracts were concentrated under reduced pressure. The concentrated extracts were combined and filtered to get a clear brown methanolic solution.

The methanolic extract obtained from the plant was tested for the determination of its antimicrobial activity against *Proteus vulgaris*, *Bacillus anthracis*, *Escherichia coli*, *Streptococcus agalacties*, *Aspergillus fumigatus* and *Aspergillus niger*. The antimicrobial activities of the methanolic extract of *Bauhinia variegata* were determined by filter paper disc method<sup>5</sup>. Filter paper discs (Whatmann paper 6 mm diameter) were soaked with the extract, dried and were placed on soft nutrient agar (2%) petridishes which were previously seeded with various bacterial and fungal species. The media used for antibacterial and antifungal species were "oxide nutrient broth" and "Sabaroud's broth" respectively<sup>6</sup>.

Four samples (paper discs) were arranged crosswise along with margin and one of the centres as control for comparison of inhibitory zones. This was done for each plate cultured with various bacteria and fungi. The antibacterial and antifungal activity was expressed in terms of diameter of zone of inhibition. Streptomycin and acromycin in 400 ppm per positive and negative bacteria were used as control. The results were recorded by taking average of four observations using filter paper discs. After equilibration at 4°C for 1 h and incubation at 35°C

for 35 to 75 h depending upon growth rate of different bacteria, zones of inhibition were measured. For fungi this was done at room temperature (27°C) till complete growth.

The results showed that methanolic extract of the leaves of *Bauhinia variegata* have antibacterial activity against *Proteus vulgaris*, *Bacillus anthracis*, *Escherichia coli* and *Streptococcus agalacties*. The antifungal activity was shown against *Aspergillus fumigatus* and *Aspergillus niger*. The activity maxima was displaced by *Bacillus anthracis*, *Streptococcus agalacties*, and *Aspergillus fumigatus*.

The results were recorded as in Table 1 and Table 2.

TABLE-1  
ANTIBACTERIAL ACTIVITY

S. No.	Bacterial species	Antibacterial zones of inhibition (in mm)	
		Methanolic extract from leaves of <i>Bauhinia variegata</i>	Control*
1.	<i>Proteus vulgaris</i> (+)	22	18
2.	<i>Bacillus anthracis</i> (-)	25	30
3.	<i>Escherichia coli</i> (+)	13	24
4.	<i>Streptococcus agalacties</i> (-)	20	25

\*Streptomycin and acromycin in 400 ppm against gram-positive and negative bacteria.

TABLE-2  
ANTIFUNGAL ACTIVITY

S. No.	Fungal species	Antifungal zones of inhibition (in mm)	
		Methanolic extract from leaves of <i>Bauhinia variegata</i>	Control*
1.	<i>Aspergillus fumigatus</i>	25	29
2.	<i>Aspergillus niger</i>	19	20

\*β-Naphthol (1000 ppm).

## REFERENCES

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