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Research Article

THE ANTIMICROBIAL ACTIVITY OF BAHUNIA VARIEGATA LINN. FLOWER EXTRACT (METHANOLIC)

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ABSTRACT

The present study was carried out to investigate the antimicrobial effect of methanolic extract of flower of *Bauhinia variegata Linn* to justify the traditional claim endowed upon this herbal drug as a *rasayana* in Ayurveda. this antimicrobial The antimicrobial activity were evaluated according to the well diffusion method by using gram positive *B. subtilus*, *S. aureaus*, *S. epidermis* and gram negative *E. coli*, *S. flexineria*, *P. auriginosa*. this study were show that of methanolic extract of flower of *Bauhinia variegata Linn* inhibited the growth of microorganisms dose dependently.

Keywords: Well diffusion method, Zone of inhibition, Gram positive, Gram negative.

INTRODUCTION

An anti-microbial is a substance that kills or inhibits the growth of microorganisms such as bacteria, fungi, or protozoans. Microorganism are the most of the cause that causes the infectious diseases. In the long time of history India Numerous infectious diseases have been known to be controlled by herbal remedies that have been proved variously since primitive to present history of the mankind. Since time immemorial, man has used various parts of plants in treatment and prevention of various ailments [1]

Bauhinia variegata known as Kachnara in Sanskrit and Hindi (Family *fabaceae*, Genus *Bauhinia*) is an herbaceous plant, found throughout India. Its powdered bark is traditionally used for tonic, astrain; ulcers.it is also useful in skin disease [2]. The flowers are used in piles, oedema, dysentery [3], as laxative and anthelmintic [4] The bark is used in fever, as tonic and astringent [5], as antileprotic, in skin diseases and wound healing , antigoitrogenic [7], and as antitumour [6]. The leaves are used in treatment of skin diseases and stomatitis [5].

However, from the above account, it is obvious that there is no information available about the antimicrobial activity of of methanolic extract of flower of *Bauhinia variegata Linn*.The present investigation was designated to explore the antimicrobial of methanolic extract of flower of *Bauhinia variegata Linn* of the above mentioned plant.

In this preliminary investigation, the . *B. variegata* flower was used and the crude extracts were subjected to screening against different strains of bacteria using standard protocol of Disc Diffusion Method (DDM). The antibacterial activities were assessed by the presence or absence of inhibition zones and MIC values

MATERIALS AND METHODS

Plant material

The flower of *Bauhinia variegata Linn* were collected from forest department of Etawah (Uttar Pradesh). The plant was identified at Pharmacognosy Department of Sir Madanlal Institute of Pharmacy, Etawah (UP), India. The voucher specimen of flower of *Bauhinia variegata Linn* (BV-152) has been preserved in our herbarium for further collection and reference.

Preparation of extracts

The flower were washed thoroughly, dried under a shade and pulverized. The coarse powder was extracted with stem barks of the plant were extracted with 95% methanol by refluxing for 36 hrs. at 50-60°C. The powder was treated with petroleum either for 3 hours for defatting . methanolic extract of flower of *Bauhinia variegata Linn* were dried using a rotary vacuum evaporator and stored in a desiccators until further use.

Phytochemical screening

The methanolic extract of flower of *Bauhinia variegata Linn* were subjected to phytochemical tests [8],[9] to identify the nature of chemical constituents present in the plant material.

Micro organisms

The test organisms included for study were gram positive *B. subtilus*, *S. aureaus*, *S. epidermis* and gram negative *E.coli*, *S. flexineria*, *P. auriginosa*. All the bacterial strains were obtained from the Jawaharlal Nehru Cancer Hospital & Research Centre, Idgoh Hill's Bhopal (M. P.) The bacteria were grown in the nutrient broth at 37°C and maintained on nutrient agar slants at 4°C.

Antimicrobial Assay

Bacterial Media (Muller Hinton Media)

36g of Muller Hinton Media (Hi-Media) was mixed with distilled water and then sterilized in autoclave at 15lb pressure for 15 minutes. The sterilized media were poured into petri dishes. The solidified plates were bored with 5mm diameter cork bearer. The plates with wells were used for the antibacterial studies.

Antibacterial activity of the plant extracts

The methanolic extract of flower of *Bauhinia variegata Linn* of 50µg, 100µg and 200µg concentrations were tested against gram positive *B. subtilus*, *S. aureaus*, *S. epidermis* and gram negative *E. coli*, *S. flexineria*, *P. auriginosa*, for their antimicrobial activity. It was demonstrated by well diffusion method.

Well diffusion method

Antibacterial activity of the plant extract was tested using Well diffusion method [10]. The prepared culture plates were inoculated with different selected strains of bacteria using streak plate method. Wells were made on the agar surface with 6mm cork borer. The extracts were poured into the well using sterile syringe. The plates were incubated at 37ºC+2ºC for 24 hours for bacterial activity. The plates were observed for the zone clearance around the wells. The extract of the dried straw was used for the study. Both the extracts ware dissolved in sterile distilled water to form dilution such as 50µg, 100µg and 200µg. Each concentration of the plant extract was tested against different bacterial pathogens. It was demonstrated by well diffusion assay. The zone of inhibition was calculated by measuring the diameter of the inhibition zone around the well (in mm) including the well diameter. The readings were taken in three different fixed directions in all 3 replicates and the average values were tabulated.

RESULTS

Phytochemical screening

The phytochemical tests revealed the presence of flavonoids, saponins, Alkaloids, fatty acid, Tannins Glycosides in methanol extract. The results of phytochemical screening are given in Table 1.

Antimicrobial activity

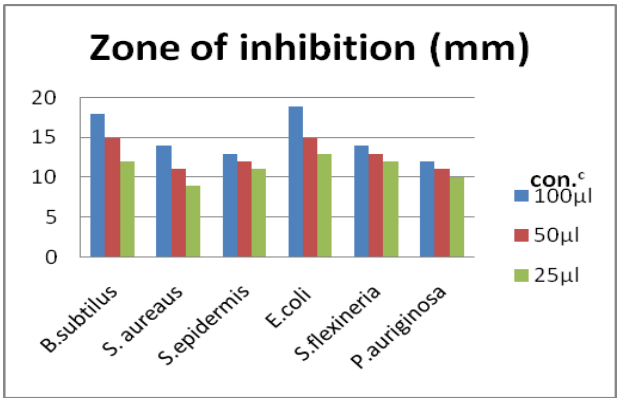
The zone of inhibition was recorded and presented below in the tabulation drawn (Table 2).

Table 1: Phytochemical screening

S. No	Name of the Phytoconstituents	Methanolic Extract Of *Bauhinia variegate flower*
1	Alkaloids	+
2	Flavonoids	+
3	fatty acid	++
4	Saponins	+ +
5	Glycosides	+ +
6	Tannins	+

Table 2: Antimicrobial activity

Concentration of Methanol Extract Added (µl)	Zone of inhibition (mm)					
	Gram Positive			Gram Negative		
	B. subtilus	*S. aureaus*	*S. epidermis*	*E. coli*	S. flexineria	*P. auriginosa*
100	18	14	13	19	14	12
50	15	11	12	15	13	11
25	12	9	11	13	12	10



DISCUSSION AND CONCLUSION

In the present era, plant and herb resources are abundant, but these resources are dwindling fast due to the onward march of civilization [11]. Although a significant number of studies have been used to obtain purified plant chemical, very few screening programmes have been initiated on crude plant materials. It has also been widely observed and accepted that the medicinal value of plants lies in the bioactive phytocomponents present in the plants [12].

In the present investigation, the active phytoconsituents of *Bauhinia variegata Linn* was studied and further the antimicrobial activity of the plant extracts was also tested against gram positive *B. subtilus*, *S. aureaus*, *S. epidermis* and gram negative *E. coli*, *S. flexineria*, *P. auriginosa* at different concentrations of the extracts to understand the most effective activity. The zone of inhibition obtained was dose dependent and the activity shown by methanol extract *Bauhinia variegata Linn* significance.

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