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A comparative evaluation of Shaliparni (*Desmodium gangeticum* DC) Leaves and Root for Antibacterial Activity An In Vitro Study.

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ABSTRACT

In present condition the collection of authentic Dashmool is very difficult, so Adulterated of parts are used. Many pharmacy of Ayurveda used stem bark of Brihatpanchmool plant in absence of root. On other hand the cultivation of Laghupanchmool are very less. Keeping all these facts in mind present dissertation work is a humble attempt to find out easily and abundantly available substitute of Shaliparni . Analytical study of Shaliparni (*Desmodium gangeticum* DC) root and leaves was done.In vitro evaluation of anti-bacterial activity of Shaliparni (*Desmodium gangeticum* Dc) leaves and root alcoholic extract in selected bacteria was carrid out.

The results assessed by comparing the zone of inhibition shown by the test drug with standard drug ciprofloxacin at various concentrations, there is no susceptible results are found. Overall antibacterial action of Shaliparni root and leaves on selected bacteria showed negative results.

Key Words : *Shliparni leaves, Shaliparni root, antibacterial effect , cup plate method, laghoopanchmool, Brihatpanchmool.*

INTRODUCTION:

In many Ayurvedic granthas is mentioned that Shaliparni is having properties like jwaraghna. atisaraghna, mutrakriccha,etc[1-6] The drug Shaliparni

(*Desmodium gangeticum Dc*) known to have antibacterial activity against diseases like diarrhoea,urine infection, fever, etc.[7-11]

E – coli,staphylococcus aureus are type of bacteria which are cause of diarrhea are selected for study.[12]

Overall antibacterial action of Shaliparni root and leaves on selected bacteria showed negative results.

MATERIALS AND METHODS :

Collection of Plant Materials :

The fresh and healthy leaves and roots of the plant *Shaliparni* (Desmodium gangeticum DC) were collected from various areas of –panhala fort in Maharashatra and Dandeli in Karnataka.

Preparation of Plant Extract :

The extraction of the *Shaliparni* leaves and roots was carried out using known standard procedure i.e. maceration.

Preliminary Phytochemical Screening :

The extracts were subjected to preliminary phytochemical testing to detect for the presence of different chemical groups of compounds.

The following microorganisms Staphylococcus aureus and Escherichia coli were chosen based on their clinical and pharmacological importance..

Standard drug :

Ciprofloxacine is takan.[13]

Exprimental study :[14-15]

The antibacterial activity of Shaliparni leaves and root is carried out by cup plate method against bacteria , staphylococcus aureus and E-coli. Compared with standard drug ciprofloxacin at various concentrations i.e. 100mg/ ml, 200mg/ml, 500mg/ml, 1000mg/ml but there is no suscepetible results are found. Among the bacteria the maximum zone of inhibition was not exhibited by aqeous solution.

Observation and Results

100mg/ml,200mg/ml,500mg/ml,1000mg/ml solutions of Shaliparni leaves and roots were tested against 2 microorganisms for antibacterial activity.

The results assessed by comparing the zone of inhibition shown by the test drug with standard drug ciprofloxacin at various concentrations i.e. 100mg/ ml, 200mg/ml, 500mg/ml, 1000mg/ml but there is no suscepetible results are found.

Among the bacteria the maximum zone of inhibition was not exhibited by aqeous solution.

DISCUSSION:

The plant Shaliparni is collected, its organoleptic characters are observed, dried and coarse powder of leaves and

roots is formed. Its Macroscopic and Microscopic examination is done

The loss on drying of any sample is directly related to its moisture content. If the
moisture content is very high in any drug it may affect its preservation. Hence, the loss on
drying of the sample was determined and it was found about 7.8% of leaves to 8.4% of roots.

The ash value is indicates the presence of inorganic and salt materials in the
sample. The sample leaves having high Ash value 9.3%. It indicates the inorganic material
and salts is more than the roots having 3.9 % . Acid insolubility of ash leaves is 1.25 % and that of roots is 0.1 % .

Phytochemical analysis of drug is done. Both samples shows presence of same chemical components, like alkaloids, steroids, phenols, proteins, etc.
The TLC profile shows that the Rf value of the leaves sample is 0.14 and that of roots sample is 0.66.
The HPTLC profile shows that, the Rf value of both samples are almost similar.

The antibacterial activity of Shaliparni leaves and root is carried out by cup plate method against bacteria, staphylococcus aureus and E-coli. Compared with standard drug ciprofloxacin at various concentrations i.e. 100mg/ ml, 200mg/ml, 500mg/ml, 1000mg/ml but there is no suscepetible results are found. Among the bacteria the maximum zone of inhibition was not exhibited by aqeous solution.

CONCLUSION:

The Dissertation entitled "Comparative Evaluation of Shaliparni (*Desmodium gangeticum* DC) Leaves and Root For Antibacterial Activity An In Vitro Study." concluded as below –

Sample of leaves and roots of Shaliparni (*Desmodium gangeticum* DC) showed ,having same chemical constituents.

In Pharmacognostical study microscopically there are differenciating characters was observed in both samples.

Overall antibacterial action of Shaliparni root and leaves on selected bacteria showed negative results.

Further study:

The useful part selected for the study was leaves and roots only. Other species of desmodium may be help in this study. Aqueous extract was selected for the study, may be in alcoholic extract the results will be positive.

The study can be conducted in alcoholic extract with more concentration values.

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