

Antimicrobial Activity of Medicinal Plants against Disease Causing Bacteria

Nicolas Chetan*

Department of Microbiology, Fordham University, New York

Abstract

Plants are possible source of antimicrobial agents in different countries. Medicinal plants are usually in the past, used for the treatment of human infections. The present study was tried to find the truth about *Gymnema sylvestris* and *Nyctanthes arbor-tristis* for their possible activity against disease causing bacteria. *Gymnema sylvestris* and *Nyctanthes arbor-tristis* extracts were prepared in hot water, some organic solvent like, methanol and chloroform. The activity of plant extracts and selected germ-killing drugs was against three bacterial including *Staphylococcus aureus*, *Bacillus subtilis* and *Pseudomonas aeruginosa* using clear agar well diffusion method. Among the two medicinal plants, organic solvent extracts displayed possible activity against methanol extract of these 2 medicinal plants showed the highest activity against *Staphylococcus aureus*, *Bacillus subtilis* and *Pseudomonas aeruginosa* which is compared with a clear zone of inhibition using azithromycin and dmsO. These 2 extracts show germ killing activity. Further studies are needed to explore the novel design drugs in future.

Keywords: Phytochemicals, Medicinal Plants, Secondary Metabolites, Antimicrobial

Introduction

About 60 to 90% groups of people in the developing countries use plant-made from medicine. Usually in the past, plant extracts are used as herbal medicine for the treatment of human disease that can spread from person to persons. Plants are rich in a variety of phytochemicals including tannins, terpenoids, alkaloids, and flavonoids which have been found in vitro to have antimicrobial properties (Zhang et al., 2006). Although the method of action and effectiveness of these herbal extracts in most cases is still needed to be validated scientifically, these preparations help settle important host responses. Worldwide number of disease that can spread from person to persons caused by bacteria is a major public health problem. The bacterial agents including *Staphylococcus aureus*, *Bacillus subtilis* and *Pseudomonas aeruginosa*, cause a lot of infections. So these are the common issue now a days and so many person who works to find information's tried to develop herbal medicinal drugs. The present study focuses on the activity of *Gymnema sylvestris* and *Nyctanthes Arbor-Tristis* against disease causing bacteria.

Gymnema sylvestris (family-Asclepiadaceae) is a medicinal herb popularly known as "gurmar". It contains a very effective constituents i.e. triterpene, saponins which is responsible for sweet preventing actions activity known as gymnemic acids, gymnema saponins, and a polypeptide, gurmarin. The herb shows a broad range of medically helpful effects as an effective natural fix for a disease for diabetic, besides being used for joint pain-related, blood disorder that causes weakness, weakening bones, hypercholesterolemia, cardiopathy, breathing disease, microbial infections, indigestion, anti-swelling and anti-diabetic. The herbal extract is used in eat or drink, since it reduces body weight, blood cholesterol, and triglyceride levels and holds great prospects in dietary as well as related to medical drugs applications (Grover et al., 2002). *Nyctanthes arbor-tristis* is commonly known as Night Jasmine. It belongs to the family Oleaceae. It has also been reported to possess hepato-protective, antibacterial, anti-leishmanial, virus-killing and anti-fungal activities and pain-reducing, antipyretic, antioxidant, anti-malaria activities. In this study focuses on the anti-bacterial property of *Nyctanthes arbor-tristis* (Shukla et al., 2011).

Many researchers are tried to phytochemical screening by these two plants through leaf, stem, bark, root etc. but mainly of the leaf extract is very

*Address for Correspondence: Chetan N. Department of Microbiology, Fordham University, New York, E-mail: Chetannicolas223@gmail.com

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effective and quick process. Collected the healthy leaf and then it to be dried at shade completely, after it to be powdered and by using a common apparatus i.e. soxhlet method to extract the phytochemicals, that contains mainly tannin, saponins, flavonoid, resin, alkaloid etc. so these secondary metabolites are the main source of anti-bacterial property against the disease causing bacteria. Agar well diffusion method is the way to identify the clear zone of inhibition and that to also be measured the activity against the bacteria. Used for +ve and a -ve control i.e. azithromycin and DMSO, which to be compare the activity of phytochemical extract by the targeted plants. So mainly the activity of organic solvent extract more effective compared to water extract. so these are the basic idea to evaluate a novel drugs in further research. Mainly Wide range of extract as raw drugs and they possess varied medicinal properties. Some of these raw drugs are collected in larger quantities and traded in market as raw material for many herbal industries and helpful to our society.

Conclusion

Germ-killing activity is the most important trait of medical fabrics, In this study, It was examined closely so the truth can be found that potential antimicrobial effects to provide good enough protection against *Staphylococcus aureus*, *Bacillus subtilis* and *Pseudomonas aeruginosa* by using soxhlet extraction of two medicinal plants *Gymnema sylvestris* and *Nyctanthes arbor-tristis* extracts, a complete pure bioactive compound separated far from plant extracts, from these plants might show better antibacterial activity. This review not show the close number ratio and particular data but also to describe how to figure out and might be possible for creating for new design drugs in future.

References

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