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Antimicrobial Activity of Medicinal Plants

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Abstract: ***Through out history and across the plant kingdom has a provided a variety of medicines. The evaluation and spread of antibiotic resistance as well as the evaluation of new strains of disease causing agents ,is of great concern to the global health community .plants with the antimicrobial activity are also known to the numerous ,yet prior to a decade ago,minimal research had been conducted in the area of antifungal and antibiotic activities of the medicinal plants .our ability to the effectively that disease is dependent on the development sources of novel drugs is traditional medicines nature has been a source of a medicines agent of thousands of year and impressive number modern drug has been isolated from nature resources traditional medicines is an important source of potentially useful area source of great economic value all over the world .plants with antimicrobial activity are also known to the numerous yet prior to a decade ago, minimal research had been conducted in the area of antifungal medicinal plants this review focus major method used to asses in vitro testing antifungal and antibacterial agents of medicinal plants .***

Keywords: Antimicrobial ,poisoning technique to study describe chemical and biological screening of crud ethanoic extract from fear.

I. INTRODUCTION

Over three-quarters of the world population relies mainly on plants and plant extracts for health care more than 30% of the entire plant species at one time or other were used for medicinal purpose .It is a estimated that world market for plant derived drug may account for about Rs.2,00,000 crores.

Indian contribution is less than Rs.2000 crores.Indian export of raw drug has steadily grown at 26% to Rs.165 crores in 1994-95 from Rs 130 crores in 1991-92.The annual production of medicinal and aromatic plants raw material is worth about Rs .200 crores .This is likely to touch US billion 1150 by the year 2000 and US 55 Trillion by 2050 (Thomas and Skaria 19880. It has been estimated that in developed counties such as united states plants drug constituted as much 25% of the total drugs while in fast developing countries such as china and india ,the contribution is as much as 80% .Thus the economic importance of medicinal plants is much more to countries such as Indian than to rest of the world. These countries such as india provide two third of the plants used in modern system of medicine and the heath care system of rural population depends on indigenous system of medicine. Traditional sytem of medicine continoue to be widely practiced on many accounts population rise in adequate supply of drugs .

Prohibitive cost of treatments side effects of several allopathic drugs and developments of resistance to currently used drug for Infectious disease have led to increased emphasis on the use of plant materials as a sources of medicines .

Antibiotics are one of our most of important weapons in fighting bacterial infectious and have greatly benefied the health releted quality of human life sencce their introduction . However ,over the past few decades ,these health benefits are under threat as many commonly used Antibiotics have become less and less effective against certain illness not, only because many of them produced toxic resistancet bacteria . It is essential to investigate newer drug with lesser resistance.Drug derived for natural sources play a significant role in the prevention and treatment of the human diseases. In many developing countries traditional medicine is one of the primary health care system (Farnsworth,1993: Houghton 1995).Herbs are widely exploited in the traditional medicine and their curative potentials are well documented (Dubeyet al.,1995) About 61% of new drugs developed between 1980 and 2002 were the based on natural product and they have been very successfully specially in the areas of Infectious disease and cancer (Cragget al. 2005).

Recent trends , however show that the discovery rate of active novel chemical entieties descaling (Lam 2007). Natural product of higher plants may give new soures of the Antimicribial agents with possibly novel mechanism of action (Shahidi,2004).The effect of plant extracts on bacterial have been studied by a very large number of researches is different parts of the world (Reddy.2001).Plants are rich in a wide variety of a secondary metabolites such as tannins ,terpenoids ,alkaloid, flavonoids, glycosides etc .which have been found in vitro to have anti microbial properties (Danhanukaret al..2000).Herbal medicines have been known to man for countrie .therapeutic efficacy of the many indigeneous plants for several disorders has been decribed by practionrs of the traditional medicines (Ramasamy and Charles 2009).

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Antimicrobial properties of medicinal plants are being increasingly reported from dirrerent parts of the world. The world health Organization estimation that plants extracts or their active constituents are used as falk medicines in traditional therapies of 80% of worlds populations.

II. MECHANISM

A. *Efflux Pump*

Throughout the mechanism of the efflux pump (EP) the antibacterial agent is pumped out faster than the time it requires to be diffused in bacterial cells and consequently, the intrabacterial concentration becomes much lower than the effective value. By reducing the intrabacterial concentration of EP-mediated inhibitors of protein synthesis systems such as ribosomes, bacterial protein synthesis procedures are often performed without interruption . Antibiotic resistance via the mechanism of EPs can be observed in a wide range of pathogenic Gram-positive and Gram- negative bacteria and fungi such as *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Acinetobacter baumannii* and *Candida albicans*

B. *Structural modification of porins*

Antibiotics influx is mainly controlled by porins which are proteins able to form water-filled open channels that allowing the passive transportation of molecules across lipid bilayer membranes Variation in porin structure results in alteration of membrane permeability and is a mechanism to escape from the antibacterial agents . This type of antibacterial resistance is frequently found in Gram-negative pathogens such as *Acinetobacter* spp. and *Pseudomonas* spp.

C. *Enzymetic inactivation*

Resistance to aminoglycosides in Gram-negative bacteria is most often mediated through the modification of functional groups by utilizing three kinds of modifying enzymes. These modified products have displayed a considerably lower affinity for RNA and have caused the blockage of protein synthesis since they are not capable of binding to ribosomes

D. *Alteration of target sites*

Drug-binding site alteration can be counted as another resistance mechanism, in which the antibacterial agent is not able to react with the targeted bacterial site and thus results in a dramatic reduction in the antibacterial activity of the agent

III. MEDICINAL PLANT

1.Acridine 2.Quinilizines 3.Betalianes



APPLICATIONS

1) The antimicrobial compounds from medicinal plants may inhibit the growth of bacteria ,fungi, viruses.
2) It is a used to kill micro- organism or stop their growth (bacteriostatics agents)
3) Plants are rich in a wide variety of secondary metabolites such as tannins , terpenoids ,alkaloids ,and flavonoid .
4) Useful antimicrobial phytochemicals can be devided into several categories decribed below .
5) Although the wide application of antimicrobial substances causes a decrease in microbe contamination to treat diseases, the release of huge amount of antimicrobial into environment is expected to accelerate the antimicrobial resistance (AMR) developed by 'super' microbes

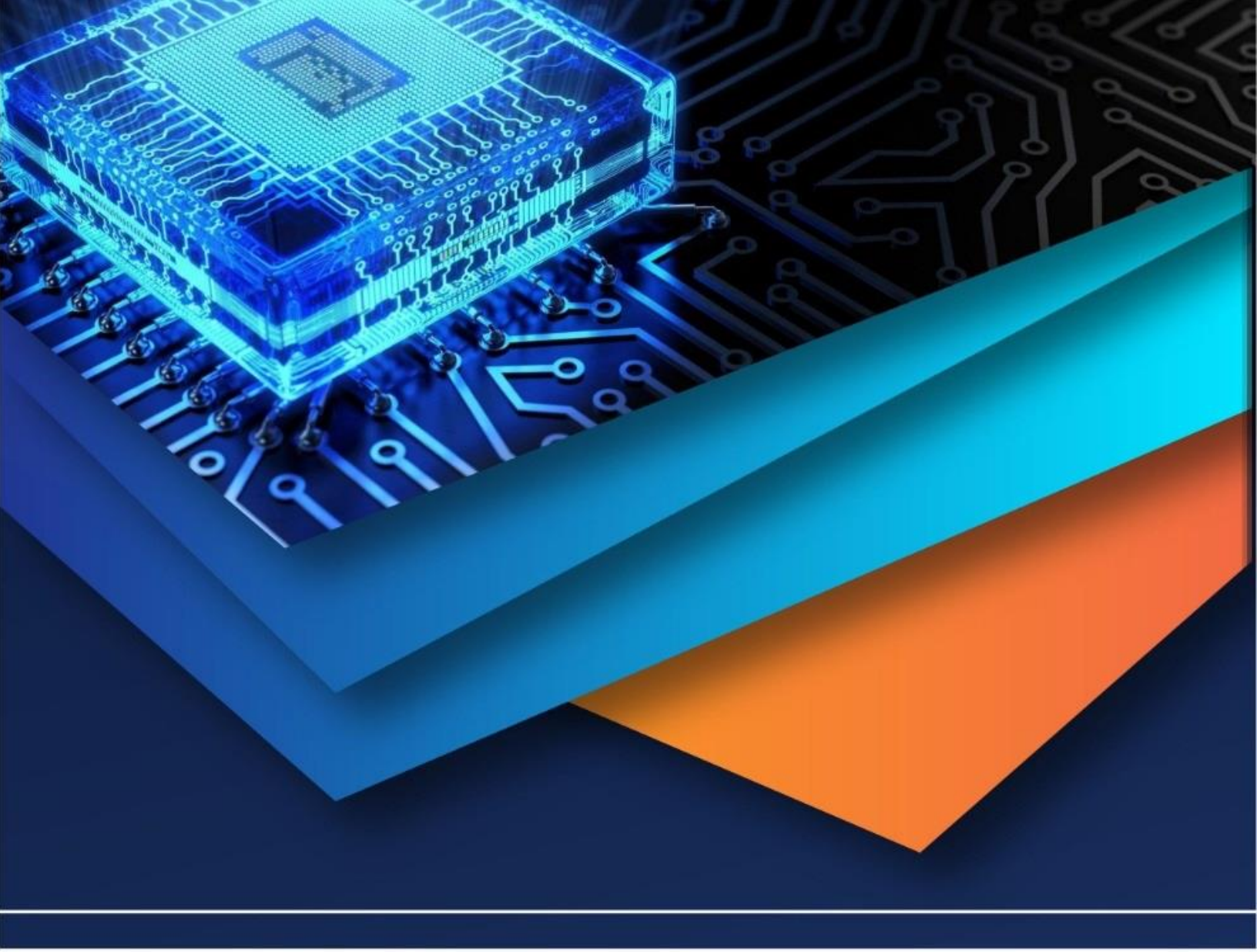
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IV. CONCLUSIONS

Our data express 1)plant extract have great potentialas antimicrobial compounds against microorganisms .thus they can be used in the treatment of infectious disease caused by resistant microbes .the synergistic effect from the aasociation of antibiotic with plants extract against resistant bacteria leads to new choice for the treatment of infectious disease .this effect enables the use of the respective antibiotic when it is no longer effective by itself during therapeutic treatment.

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