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Review Article

Biologically Active Compounds and Use of Medicinal Plants in Treatment of Microbial Infections, Sources, Biological Action and Cellular Action

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Abstract

Medicinal plants have been used with practical implementation of certain herbal great source of plant based flavonoids, antioxidants compounds. Medicinal plants were traditionally used for health care and serve as the bases for the emergence of modern medicine. They have possess the high quality of the extracts to evaluate their therapeutic efficacy for their pharmacological action. Large variety of medicinal plants have been used as aromatic purposes and hence valuate for aroma and pharmacological sectors. Medicinal plants snowed stronger binding to the proteins secreted by the parasitic worms thus inhibiting them to proliferate in the cellular tissues thus acting as main source of immunity booster to the living tissues against the dyspepsia, gastritis, hyperacidity, menorrhagia, diabetes. *Saraca asoca* also used as source of medicinal pant due to its to antibacterial activity because of its potential against the of multiple bacterial strains. Some of the medicinal plants acting as dual nature such as targeting the microbial proteins and peptides playing important role in the development of natural therapies. Nanoparticles based therapies can be utilized for treatment of infectious diseases.

Keywords: Medicinal plants, microbial action, nanoparticles, aromatic purposes, pharmacological sectors.

INTRODUCTION

Medicinal plants are the most valuable plants that exhibit the most promising properties in order to treat the infectious diseases due to high rate of microbial resistance against variety of drugs. traditionally, chemicals and other harmful compounds have been used with practical implementation of certain herbal that sometimes can cause the serious toxicities in the living cells. Traditional medicines have replaced in the modern era due to changing action of microbes and viruses [1, 6]. As viruses have high replication rate and can cause multiple infections called coinfections that can prolonged throughout the disease severity. In order to control the infections caused by bacteria and viruses, medicinal plants have been a great source of plant based flavonoids, antioxidants and anticancer compounds. They have several advocates over some local plants such as help to boost focus and mental clarity, tackle the pollutants in the air by tururning the living spaces comfortable and moisture [1, 2].

Medicinal plants have diverse in the industrial and biological sectors in order to promote the economy power of the plants in the treatment of infections. They are acting in two ways. Appropriate used of medicinal plants with accuracy of natural extracts can treat the large number of diseases thus helpful for controlling the microbial populations while on the other hand, excessive used of medicinal plants by mixing with the chemicals drugs as inaccuracy of natural extracts can leads the borne of the large number of diseases there,

from them, there is increase in the microbial populations. They are cultivated easily from start on the season by cultivating seedlings indoors during the end of winter and then planting them outside once the spring hits [4, 7, 11].

Medicinal plants are considered as a rich resources of ingredients which can be used in drug development either pharmacological or synthetic drugs. They are also used in terms of effective drugs for long treatments of the diabetes's and other anti cancer drugs. They have multiple targets of the microbial and controlling's the variety of reactions even a single medicinal plants exhibit the pharmacological and biological activities due to presence of large number of anticanceruous and antibacterial compounds. But their action depends the particular type of specific isolation, purification of specific compounds prior to used them in the different applications for marketing sectors. They have high value due to their biological activities [3-6].

Biological activities of the medicinal plants depends upon several factors such as isolation and purification methods. Medicinal plants were traditionally used for health care and serve as the bases for the emergence of modern medicine. Based on the anticancer and antimicrobial potential of medicinal plants, they have good potential for treating physiological disorders like asthma or as an adjuvant to modern therapy [3, 4]. They are involved in regulating of biological cellular proteins that maintain the overall the cellular and biological processing of receptors based drugs in such as way that, leaves or specific cells can passed through rigouts extraction in order to maintain their biological activities. They have offered a great care for maternal and child health care, as essential drugs, in food and nutrition, for common illnesses by replacing the direct use of chemicals' that have multiple actions on the cellular activities of the biological processes such breathing, respiration, heart rate, liver and kidneys activities. The functional properties of the specific proteins present in tissues of vital organs leads to great urinate in the form of less toxic compounds [5-9].

Use of Medicinal plants in treatment of microbial infections

Medicinal plant have much impregnate the isolated compounds that in the played a significant role in curing diseases throughout the history of mankind. They have therapeutic applications for curing the infectious diseases caused by bacteria and lethal viral bodies thus valuable for therapeutic effectiveness. They have possess the high quality of the extracts to evaluate their therapeutic efficacy for their pharmacological action to evidence authenticity [3, 5]. They also controlling the biological factors involving the antioxidant compounds, particularly plant secondary metabolites in the form of phenolic compounds and flavonoids which are generated by plant to defend the body against the foreign invaders and boost the immunity. They act in cells by promoting their growth in adequate manner so that bacterial infections adhered to the proteins secreted by the particular type of medicinal plants. Low secretions leads poor visibility of the medicinal valuable while on the other hand, high secretions increased the biological and pharmacological evaluation against the treatment for regulating the biological activities in the specific tissues. They also preferring over the chemicals' due to less toxicities caused and reached the different tissues such kidneys, liver and blood barrier system. Chemicals can cause the serious toxicities in these organs and ultimately causing the weakens immune system of the body. They also showed the cellular action by protein-protein recognition, binding or catalytic activity or turnover reactive functional groups can attack a multitude of proteins. In this way, they have biological and multifunctional evaluation depends upon the type of severity of disease [2, 7, 9, 10].

Sours of Agents	**Targets/Importance**	**Actions**	**Role**
Microbial Infections	Viral and bacterial	Cellular action	Pharmacological important plants
Medicinal plants	That exhibits the most promising properties in order to treat the infectious diseases due to high rate of microbial resistance against variety of drugs. traditionally, chemicals a	Biological and cellular action in kidneys, liver and blood barrier system	Pharmacological role
Lipids profile	medicinal plant's acting on the lipids metabolism by regulating the excessive lipolysis and also regulated the	Cellular action	Therapeutics

Medicinal plants regulated the lipids metabolism by castration of large variety of proteins involved in cellular signaling processing such as free fatty acids in the form of triglyceride adipose tissues through the secretion of several biologically active adipokines [7, 8]. Large variety of medicinal plants have been used as aromatic purposes and hence valuate for aroma and pharmacological sectors. These medicinal plans such as *Aconitum, Punica granatum, Hyosciamus, Stramonium, Secale cornutum, Filix mas, Opium, Styrax, Colchicum.* Toxicities of the isolated medicinal plants have been tested in the experimental rats such as *Launaea intybacea* and *Lactuca runcinata* DC in 1% gum acacia upon rats. These medicinal

plant's acting on the lipids metabolism by regulating the excessive lipolysis and also regulated the essential factors necessary for removal of toxic by products in resultant of the lipids breakdown [9, 10].

Biological and natural conservation of the medicinal plants are essential for incasing the varieties in the different regions of the world. They are also contribute to the conservation priorities of herbal knowledge of various medicinal plants physical and biological environments [11, 12]. The use of medicinal plants have been emerged in the recent years due to their less toxic effects. Medicinal and aromatic tropical perennial healing plant with potential health benefits can be used as remedy for targeting the severed pain therapies. Medicinal plants also involved in the prevention of the living trusses and other form of additional utilizing plants as drugs for millennia for treating diseases is as old as the human species [12].

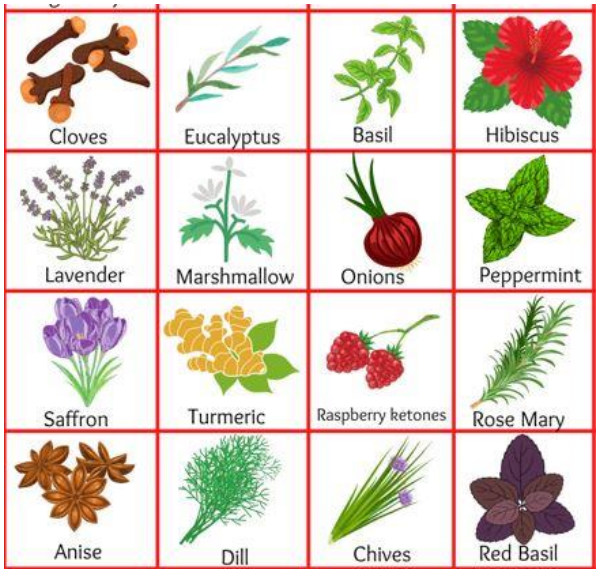

Fig-1: Shows the various medicinal plants and morphological features

Medicinal plants have experimental value as they recognized to be flawed and medicinal plant treatment on the basis of the experimental findings. Studies in the previous literature showed that of Commiphora species, *Glycyrrhiza glabra* and *Cupressus sempervirens* have been used for the treatment of colds and coughs to reduce the risk of inflammation and parasitic infections [13, 14]. These medicinal plants snowed stronger binding to the proteins secreted by the parasitic worms thus inhibiting them to proliferate in the cellular tissues thus acting as main source of immunity booster to the living tissues [13-15].

Medicinal Significance of the *Phyllanthus emblica*

Phyllanthus emblica is used as a source of medicinal plant in the form of Vitamin C. It has variety of actions against the viral for cough. It also poses the antioxidant power due to the presence of polyphenols compounds in the high concentrations as compared to the other medicinal plants. It also playing important roles in boosting the immunity power by enhancing Natural Killer (NK) cell activity in various tumor cells and therefore can be used for combinations for therapeutic applications [12, 15].

Phyllanthus emblica also possess the anti-inflammatory properties due to the immune boosters and acting as main source of targeting the cellular proteins released in response to the microbial infections. It has been used for controlling the rate of infections of high risk diseases such as dyspepsia, gastritis, hyperacidity, menorrhagia, diabetes due to diuretic, stomachic, restorative and anti-inflammatory properties. It phytonutrients fights against free radicals that can attack and damage brain cells. It also used as anti-cancer agent to inhibit growth of lung, liver, cervical, breast, ovarian and colorectal cancer cells [14, 16].

Medicinal value of the *Saraca asoca*

Saraca asoca also used as source of medicinal pant due to its to antibacterial activity because of its potential against the of multiple bacterial strains such as *Bacillus subtilis*, *Escherichia coli*. *Saraca asoca* also controlling the fungal infections have been attributed to compromised immune reaction of an *Fusarium oxysporum*, *Blumeria graminis*, *Mycosphaerella graminicola*, *Ustilago mayd* [16-18]. There is need to design the nanoparticles based suspensions that particularly used in combinations to the host cells in order to decrease the disease rate as nanoparticles delivery have safe mode of action as compared to the directly applied chemicals. *Saraca asoca* also acting as anti-oxidant, anti-microbial, anti-viral, anti-inflammatory, anticancer, radioprotective effect,

genotoxicity and anti-diabetic activities flavonoids, phenolics lignans [19, 20].

Role in Cellular Activities

Medicinal plants also contributed to the antibacterial activity of plants due to the presence of phenolic compounds and high oxidation. The biological reactions involved the eliminating the reaction of free radical chains through compact binding to the Phenolic compounds such as quercetin and gallic acid have pro-oxidant activity that involved the bioprocessing of free radicals. Some of the major secondary metabolites that showed interactions exist that link between plants and their biotic and abiotic environments [17, 21]. Some of the medicinal plants acting as dual nature such as targeting the microbial proteins and peptides playing important role in the development of natural therapies [22]. Even the medicinal plants have dual actions in controlling the infections of multiple diseases such as common diseases, like diabetes, cancer, cholera, diarrhea, asthma, pyrexia, since ancient times.

Herbal based medicines that can be designed in order to promote the host and natural compounds extracted by the specific medicinal plants. Majority of the medicinal plants are cheaper while on the other hand, irrationally used drugs are prepared by heavy machinery therefore, high cost required in their manufacturings and packaging. The potential use of herbal medicine use in is much higher than the toxic chemicals that can cause the cellular toxicities. Medicinal plants also secreted out the secondary metabolites that have been extensible studies in the experimental rats [23-24].

Extract of the medicinal plants with nanoparticles suspensions leads to significant achievements in the field of biological sciences in multiple sclerosis, cancer and tumors caused diseases. This approach emeped the bioengineered nanoparticles prior to use them directly for industrials purposes. This means that one can suffice with less dosage and thereby fewer side effects. Kidney damage is being developed. The method uses gold nanorods functionalized to attach to the type of protein generated by damaged kidneys. Therefore, accuracy of the detection of the toxic materials by the nano based combinations is more than the acquired chemicals and synthetic drugs [25-29].

Biologically synthesized nanoparticles are major source of therapeutic in targeting the parasitic toxic in case of serious inflammation. As chemical bindings of drugs takes time to the targeted site and can cause the tissue toxicities while on the other hand, safe and novel nanoparticles that have been synthesized through green process have several advantages over traditional medicines. Biological nanoparticles are reproducible structures that can compatible with biological structures of host tissues where can easily reached and shoe the responses. They are most used in medicine and pharmaceuticals for as key biological molecules for therapeutics drug carriers for targeted delivery, cancer treatment [30-35].

CONCLUSION

Medicinal plants have diverse importance for treating the medical diseases and inflammation due to severity of the microbial resistance. Many of the chemicals or drugs that potentially used for healing, and anticancer can cause serious health issues due to arising of cellular toxicities. Medicinal herbs in terms of safe and reliable source of antioxidants and phenolic compounds can be used for treatment of natural healing process and maintain the biological reactions occurring at the normal progress without interfering the working of tissues. Nanoparticles based therapies can be utilized for treatment of infectious diseases.

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