



Shri Sharda Bhavan Education Society's

NANDED PHARMACY COLLEGE

3.1 RESOURCE MOBILIZATION FOR RESEARCH

3.2.1. Number of papers published per teacher in the journals notified on UGC website during year 2023-24

3.2.1.1 Number of research papers in the journals notified on UGC website during year 2023-24

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3.2.1 Number of papers published per teacher in the Journals notified on UGC website during the year 2023-24


Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal
Phytochemical Evaluation in vitro antioxidant activity and in-vivo antidiabetic activity Acacia Nilotica	Nitin B. Ghiware	Pharmacology	European Chemical Bulletin	2023	2317-2330	https://www.eurchembull.com/ (https://doi.org/10.31838/ecb/2023.12.6.211)
Formulation and in vitro evaluation of floating tablets of Hydroxypropyl methyl cellulose and polyethylene oxide using prazosin hydrochloride as a model drug	Nitin B. Ghiware	Pharmacology	European Chemical Bulletin	2023	2317-2339	https://www.eurchembull.com/ (https://doi.org/10.31838/ecb/2023.12.6.212)
In-Vitro Investigation of Antioxidant and Antidiabetic Properties of plant Extracts	A.K.Daswad	Pharmacology	Journal for Re Attach therapy and Developmental Diversities	2023	2589-7799	Hptts://jrtd.com https://doi.org/10.53555/jrtd.v6i9s(2).3329




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In silico PASS Prediction and evaluation of antitumor and anti-angiogenic activity of peel extracts of Citrus karna Raf. fruit	Dr.M.H. Ghante Prasad Jamkhande	Pharmaceutical Chemistry	Journal of Research in Pharmacy	2023	2630-6344	www.jrespharm.com http://dx.doi.org/10.29228/jrp.702
Isolation characterization and identification of bioactive phytochemicals from sesbania grandiflora	Dr. Anupkumar Sharma	Pharmaceutics	Chinese journal of medical genetics	2023	1003-9406	Hptt://zhxyxc.life
Exploring and Investigating the Potential Phytochemicals of Psidium Guajava L. Stem Extracts	Shagufta A. Farooqui	Pharmacology	International Journal of Pharmaceutical Sciences and Research	2023	2320-5148	www.ijpsr.com https://doi.org/10.13040/IJPSR.0975-8232.15(6)1845-58
Phytochemical investigation and pharmacological evaluation of medicinal plants	Shagufta A. Farooqui	Pharmacology	Journal of Re Attach therapy and development diversities	2023	2589-7799	hptts://jrtd.com https://jrtd.com/index.php/journal/article/view/2469
Evaluation of antioxidant, anti-inflammatory and anti-asthmatic activity of Barleria prionitis linn. extract	Nitin B. Ghiware Pavankumar P. Wankhade	Pharmacology	Indian Journal of Natural Sciences	2023	0976-0997	www.tnsroindia.org.in




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Isolation and characterization of phytoconstituents from methanol extract of Barleria Prionitis leaves	Nitin B. Ghiware Pavankumar P. Wankhade	Pharmacology	African journal of Biological Science	2024	2663-2187	https://www.afjbs.com https://doi/10.48047/AFJBS.6.si2.2024.6055-6068
Quantum Dots: an Overview of History, Synthesis and Applications	Dr. Anupkumar Sharma	Pharmaceutics	International Journal of pharmacy and pharmaceutical research	2024	2349-7203	Ijppr.humanjournals.com https://ijppr.humanjournals.com/wp-content/uploads/2024/06/51
Artificial Intelligence: An Emerging trend	Dr. Anupkumar Sharma	Pharmaceutics	World journal of pharmacy and pharmaceutical sciences	2024	2278-4357	www.wjpps.com https://doi/10.20959/wjpps20246-27561
In silico PASS Prediction and evaluation of antitumor and anti-angiogenic activity of peel extracts of Citrus karna Raf. fruit	Dr.M.H. Ghante Prasad Jamkhande	Pharmaceutical Chemistry	Medeni Med J	2024	2149-2042	https://doi:10.4274/MMJ.galenos.2024.49775




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PHYTOCHEMICAL EVALUATION, IN VITRO
ANTIOXIDANT ACTIVITY AND IN-VIVO
ANTIDIABETIC ACTIVITY OF ACACIA NILOTICA



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Abstract

In the current study, the total phenolic and flavonoid content, antioxidant activities, and antidiabetic activity of several leaf extracts from *Acacia nilotica* were assessed. Analysis of the extracts' phytochemical composition was also done. DPPH free radical scavenging experiment was used to calculate antioxidant potential. In comparison to pods and bark, the leaves were shown to have a higher total phenolic content, higher protein content, and higher antioxidant activity. The authors have tried to put all these classes of plants at a common platform so that the data and information of this review could be utilized in drawing strategies for use of medicinal plants in a way that can be extended for future scientific investigation in different aspects. The fact confirmed by reports from the World Health Organization (WHO) shows that India has the largest number of diabetic subjects in the world. Hyperglycemia can be handled initially with oral synthetic agent and insulin therapy. But these synthetic agents produce some serious side effects and are relatively expensive for developing countries. The clinical signs, severity, and treatment of oral antidiabetic drug toxicity vary greatly. Numerous plants have been touted as having therapeutic benefits for the treatment of diabetes mellitus in the natural medical system. Due to availability and affordability, a substantial rural population relies on medicinal herbs to cure their diabetes. Besides hyperglycemia, several other factors including dislipidemia or hyperlipidemia are involved in the development of micro and macrovascular complications of diabetes that are the major causes of morbidity and death. Leaves of *Acacia nilotica* used as anti-diabetic, for feeding sheep and goats in the Hissar district in India. In Kenya, the fleshy pods are readily eaten by goats, sheep and cattle, but some tribes believe they cause bloat. As a result, *A. nilotica* leaf extracts are a potential source of antioxidant and anti-diabetic chemicals.

Keywords: *Acacia Nilotica*, Hyperglycemia, Diabetes Mellitus, DPPH, Hyperlipidemia, Antidiabetic, Antioxidant.

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FORMULATION AND IN VITRO EVALUATION OF FLOATING TABLETS OF HYDROXYPROPYL METHYLCELLULOSE AND POLYETHYLENE OXIDE USING PRAZOSIN HYDROCHLORIDE AS A MODEL DRUG

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Abstract

The drug prazosin hydrochloride as an example, the goal of this work was to prepare and perform test invitro floating tablets of polyvinyl pyrrolidone (PVP) and hydroxypropyl methyl cellulose (HPMC). The floating pills were created using the effervescent technique, which employed sodium bicarbonate as a gas generator. The dry granulation process was used to create the tablets. The impact of HPMC's polymer concentrations and viscosity classes on the release profile of the medication was assessed. The effects of stearic acid and sodium bicarbonate on the floating properties and drug release profile were also investigated. According to in vitro dissolving research findings, raising the concentration of HPMC PVP and MCC may make it possible to preserve the pharmacokinetic profile. Combining sodium bicarbonate and stearic acid had no discernible impact on the medication release profile. The formulations with 20 mg of sodium bicarbonate per tablet showed the anticipated buoyancy, with an overall floating time of more than 24 hours, a floating lag time of around two minutes. The current work shows that prolonged-release floating tablets containing prazosin hydrochloride can be made using polymers such as HPMC, PVP, and MCC coupled as a gas-producing agent with sodium bicarbonate.

Keywords: Floating medication, HPMC, CRDDS, FDDS, Mucoadhesive, Prazosin hydrochloride.

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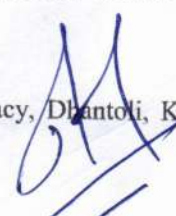
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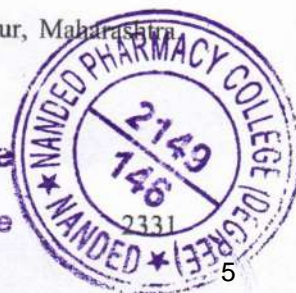
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***In-Vitro* Investigation Of Antioxidant And Antidiabetic Properties Of Plant Extracts**

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ABSTRACT

Medicinal plants have consistently served as key sources of medicine around the world. India possesses a vast heritage of traditional medicinal plant resources and is home to diverse plant and animal species. Free radicals are implicated in numerous conditions such as diabetes, inflammation, and cancer, which has increased the interest in antioxidant therapies. Diabetes, a metabolic disorder caused by insufficient insulin or its improper metabolism, has seen a global rise in prevalence, with projections indicating further increases in future generations. Among the various therapeutic approaches to manage diabetes, regulating blood glucose levels through different mechanisms is critical.

This study focus on the *In-Vitro* investigation of the antioxidant and antidiabetic potential of plant extracts. Phytochemical analysis identified the presence of alkaloids, glycosides, carbohydrates, steroids, and flavonoids in both extracts. Physical properties such as solubility, melting point, ash values, loss on drying (LOD), and extractive values were also examined. The antioxidant activity of the extracts was measured using DPPH and H₂O₂ assays. Additionally, glucose production was assessed through the inhibition of the α -amylase enzyme. Our results demonstrated that *Saraca asoca* extracts exhibited significant *in-vitro* antioxidant and antidiabetic activity, indicating that these extracts warrant further investigation in pharmacological studies.

Keywords: *S. asoca*, Physicochemical parameter, Antioxidant effect, Anti-diabetic activity, α -amylase enzyme.

INTRODUCTION:

Hyperglycemia (elevated blood sugar) is a common symptom of diabetes mellitus (DM), a chronic disorder affecting the metabolism of carbohydrates, fats, and proteins, stemming from issues with insulin levels, insulin function, or both. Currently, diabetes is among the most significant global health concerns, leading to serious microvascular and macro vascular complications. By 2040, it is estimated that around 700 million people worldwide will be affected by diabetes. Hyperglycemia is known to trigger the production of reactive oxygen species (ROS), which play a vital role in the progression of diabetic complications. Antioxidants, which are compounds or nutrients present in food, act as scavengers of free radicals, helping to prevent and repair damage caused by ROS and reactive nitrogen species (RNS). Consequently, antioxidants can enhance the immune system and reduce the likelihood of diabetes-related complications.

Although synthetic antidiabetic drugs, such as insulin, are available, they do not offer long-term glycemic control without causing undesirable side effects. This has led to an increased interest in using herbal remedies for managing DM. The World Health Organization has advocated for the use of traditional medicinal plants in diabetes treatment due to their safety, effectiveness, low side effect profile, and affordability. The *S. asoca* plant is known for a range of pharmacological effects, including analgesic, antipyretic, anti-inflammatory, antispasmodic, anthelmintic, antimicrobial and antioxidant activities. Thus, extracts from the plant parts were analyzed for them *in-vitro* antioxidant and antidiabetic potential.

MATERIAL AND METHOD

Collection of Plant Material

The plant material was gathered from the hilly areas of the Nanded district and authenticated by botanists from the Department of Botany. It was then dried in the shade, ground into a powder and subjected to extraction using ethanol, methanol and water through maceration.

Preliminary Phytochemical Screening

A preliminary phytochemical screening of the active extracts was conducted using established phytochemical procedures.

Estimation of Total Phenolic Content

The total phenolic content in the crude extracts was measured using the Folin-Ciocalteu method. Various concentrations of the extracts (100 μ l) were placed into test tubes, followed by the addition of 1 ml of Folin-Ciocalteu reagent and 0.8 ml of sodium carbonate solution (7.5%). The tubes were thoroughly mixed and left to sit for 30 minutes. Absorbance was

In silico PASS prediction and evaluation of antitumor and anti-angiogenic activity of peel extracts of *Citrus karna* Raf. fruit

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ABSTRACT: Inhibition of angiogenesis is one of the significant contrivance to suppress the developing tumor. Several previous studies have shown that phytochemicals can modify numerous vital processes of tumor promotion. However, there is no literature evidence of investigation on antitumor and anti-angiogenic activity of *Citrus karna* Raf. fruit. It is used as folklore medicine for the treatment of various conditions like diabetic complications, gastro-intestinal disorders and neurological complication by the rural peoples in India. The present study was performed to investigate antitumor and antiangiogenic activity of *Citrus Karna* Raf. fruit peel. Among the different extracts, the CKME showed strong *in vitro* cytotoxic activity on Human Lung Cancer Cell line Hop2 and Human Hepatoma Cell line HepG2 in SRB assay. In Chick embryo chorioallantoic membrane (CAM) assay, angiogenesis processes is strongly inhibited by CKME and chrysin at 100 µg/disc. The formation of blood vessels is essential for fulfilling tumor growth requirements and transport of metastatically competent tumor cells that was reduced by CKME and chrysin. In *in silico* PASS prediction showed that of *Citrus Karna* Raf. contains several phytochemicals that exhibit anticancer active by different mechanisms like inhibition of TNF expression and stimulation of apoptosis. In conclusion, the components of CKME are promising candidates for cancer treatment and further experimental investigations are needed in order to confirm their mechanism of action.

KEYWORDS: Antitumor drug screening assays; Antitumor agents; Angiogenesis inhibitors; CAM Assay; SRB Assay; *Citrus Karna* Raf.

1. INTRODUCTION

Angiogenesis is highly regulated, precise and complex pathophysiological process of formation of new blood vessels from a preexisting vasculature. It involve many highly controlled processes involving interactions between various endothelial and surrounding cells, extracellular material and different soluble factors. The undesirable angiogenesis plays crucial role in the development of diverse abnormal pathophysiological conditions like inflammatory diseases, rheumatoid arthritis, atherosclerosis, diabetic retinopathy, tumor growth and metastasis [1]. Angiogenesis plays key role in pathological alteration of normal cell to cancerous cell leading to abnormal growth and metastasis of tumor. The newly formed blood vessels supply required factors such as nutrients, growth factors and oxygen, and thereby promote tumor growth. Malignant cancer is life threatening due to metastasis property that depend on angiogenesis, as tumour cells are shed from primary tumour and infects target body organs [2,3]. Targeting inhibition of angiogenesis process in tumor cells has potential to suppress tumor development and metastasis. Thus, inhibition of angiogenesis is one of the most promising strategy towards development of new anticancer medicines, therapies and several other diseases associated with angiogenesis mechanism.

Targeting anti-angiogenesis and anti-tumor therapies for cancer treatment requires development of a quantitative angiogenesis and tumor assay. One of the effective tool that has been extensively employed now days in developing antiangiogenic drugs including heba extracts is highly vascularized chorioallantoic membrane of the chicken embryo (CAM assay). CAM contains a vascular network made up of dense capillary

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**ISOLATION, CHARACTERIZATION AND IDENTIFICATION OF BIOACTIVE
PHYTOCHEMICALS FROM SESBANIA GRANDIFLORA****A T Sharma^{1*}, N B Ghiware²**¹ Research Scholar, Nanded Pharmacy College, Nanded, Maharashtra. -431605.² Head, Centre for Pharmaceutical Research & Dept of Pharmacology, Nanded Pharmacy College, Nanded, Maharashtra. Pin431605.**Corresponding author,****A T Sharma,**Dept of Pharmaceutics,
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Abstract: *S. grandiflora* bark extract has been used in folk medicine of India and Nepal for the treatment of diabetes mellitus. The study evaluates the antidiabetic activity of methanolic extract of *Sesbania grandiflora* in type 2 diabetic rats induced by low dose streptozotocin and high fat diet. Diabetic rats were given vehicle and the standard drug, metformin (10 mg/kg), for 28 days were used. From the extract of *Sesbania Grandiflora* bark, several phytochemicals were identified. One of these compounds were isolated by preparative HPTLC method and the compounds were characterized by spectroscopy and identified as *m*-Coumaric acid. The In-vivo studies (OGTT) revealed that plant extract result significant reduction in blood glucose levels.

Keywords: *Sesbania Grandiflora*, Isolation, Anti-Diabetic, Bark etc.

Introduction

Due to the unrivalled availability of chemical variety, natural materials such as plant extracts, whether as pure compounds or as standardized extracts, provide enormous opportunity during new drug discovery [1]. According to the World Health Organization (WHO), traditional medicine is used by more than 80% of the world's population for primary healthcare. Plant-derived natural products are a rich source of molecules among improbable chemical and functional variation and they donate notably to drug discovery enterprises. Isolating secondary metabolites from natural resources has been the subject of considerable research around the world [2]. Plant constituent extraction is necessary for isolating biologically active molecules, identifying their significance in disease prevention and therapy, and determining their harmful consequences. However, little is known about the therapeutic and pharmacological qualities, as well as the biological activities, of phytochemicals produced from plants that are known to be poisonous, narcotic, or decorative. The most prevalent pancreatic islet problem is diabetes mellitus, which is characterized by an inability to make insulin or a defect in its usage. Polyuria, polydipsia, weight loss, and polyphagia are all symptoms of diabetes mellitus. Chronic hyperglycemia and glucosuria are additional symptoms, which are produced by an absolute or relative insulin insufficiency [3]. Further consequences such as hypertension, atherosclerosis, ketosis, gangrene, and microcirculatory



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EXPLORING AND INVESTIGATING THE POTENTIAL PHYTOCHEMICALS OF *PSIDIUM GUAJAVA* L. STEM EXTRACTS

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Keywords:

Psidium guajava L., Phytochemical Evaluation, TLC

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ABSTRACT: Objective: This study aimed to carry out a phytochemical, pharmacognostic, qualitative, and quantitative evaluation of the medicinal plant *Psidium guajava* L., also known as guava, a member of the Mytaceae family. **Methods:** The present study provides pharmacognostic, phytochemical, and quantitative details of *Psidium guajava* L. **Results:** Plant-dried stem powder material was subjected to continuous hot extraction Soxhlet using solvents pet-ether, acetone, and ethanol. Phytochemical standardization was undertaken to detect the presence of bioactive agents along with TLC. Different physical parameters, like ash values, extractive value, loss on drying, etc., were evaluated for the powdered drug. The extracts were obtained from the Soxhlet method and subjected to preliminary phytochemical evaluation. **Conclusions:** The results of this study can serve as a valuable source of information for identifying this plant for future investigation and applications.

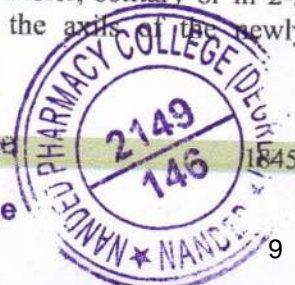
INTRODUCTION: The medicinal plant *Psidium guajava* L. also known as guava, is a member of the mytaceae family. It is abundantly available throughout India. The *P. guajava* tree's leaves and bark have a long history in medicine and are being used today. Although it is originally from Central America, it is now farmed and disseminated, and its fruits have improved the diets of millions of people worldwide in tropical regions. It grows to about 10 m, has spreading branches, and is tolerant of various soil types. It's also referred to as "poor man's apple"¹.

Psidium guajava L. is now grown in South Florida, Bermuda, the Bahamas, Cuba, Trinidad, and down to Brazil in the West Indies.

Morphology: The guava is a fast growing tree that can grow to a height of three -10 m. It has a shallow root system. Guava produces low drooping branches from the base and suckers from the root. The trunk is slender, 20cm in diameter, covered with the bark. The bark is reddish brown, thin, smooth, and flasky.

The roots are extensive but only superficial. The fruit has a strong, sweet, musky odor and can be round, ovoid, or pear-shaped. The leaves are grown in pairs, opposite to each other. The flower is white in color, about 3cm in diameter, solitary or in 2-3 flower clusters borne at the axils of the newly emerging lateral shoots¹³.

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Phytochemical Investigation And Pharmacological Evaluation Of Medicinal Plant Extracts

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ABSTRACT:

The objective of the study was to investigate the Phytochemicals of Ethyl acetate and Methanol extracts of *Ammona reticulata* L. stem bark.

The present study reports physicochemical characterization, antioxidant of stem bark extracts from *Ammona reticulata* L. plant collected from local region of Nanded, Maharashtra, India, and authenticated by botanist. Different physical parameters like ash values, extractive value, Loss on drying, etc. were evaluated for powdered drug. The extracts were obtained from Soxhlet method by using Petroleum ether, Ethyl acetate and methanol as solvents for extraction and subjected for preliminary phytochemical evaluation and antioxidant studies.

Total phenolic and flavonoids content were also analyzed. The presence of primary and secondary metabolites such as carbohydrate, proteins, alkaloids, phenolic compounds, was confirmed through preliminary phytochemical analysis. DPPH free radical scavenging assays showed antioxidant activities with increase in concentration of Ethyl acetate and Methanol stem bark extracts.

Keywords: *Ammona reticulata* L. Ethyl acetate and methanol extracts, Anti-oxidant activity.

I. INTRODUCTION:

Plants have been recognized as one of the sources of the medicinal products which are helpful to mankind. A different plant shows different pharmacological activities. Extracts obtained from various parts of plant posses' various medicinal properties. They are also used for cosmetic preparations as an herbal product shows lesser side effects as compared to the synthetic products. The repetitive or regular consumption of the synthetic drugs results in addiction or toxicity thus it is safer to use herbal medicines than the synthetic medicines.

Many developing countries use the plant-based products for their needs. Our country India has developed the traditional system known as Ayurvedic system which is based on herbal products. Ayurveda have developed uncountable herbal products which helps the people according to their needs with the safe environment. A medicinal plant typically contains mixture of different phytochemical which may improve quality of life.

Ammona reticulata Linn. (Bullock's heart) is one of the traditionally important plants used for the treatment of various diseases. It belongs to family Annonaceae. Numerous phytoconstituents have been identified from different parts of *A. reticulata*. Stem bark contains tannins, alkaloid and phenolic compounds.

Leaves contain wide range of chemicals like alkaloids, amino acids, carbohydrates, steroids, flavonoids, proteins, tannins, glycosides and phenolic. The root has been identified for the content of acetogenin, alkaloid, carbohydrates, proteins, flavonoids, tannins.

Traditionally the plant has been employed for the treatment of epilepsy, dysentery, cardiac problem, parasite and worm infestations, constipation, hemorrhage, bacterial infection, dysuria, fever, ulcer and as insecticide. Bark is a powerful astringent and used as a tonic whereas leaves used for helminthiasis treatment. *Ammona reticulata* Linn has been used to the treatment of pain and inflammation. Also, it reduces hyperthyroidism, and hyperglycaemia.

Morphology:

Rampal is a small tree with a rounded crown and trunk of 25-35 cm thick its height ranges from 5-10 meter the leaves are alternate oblong and lanceolate, 10-20 cm long and 2-5cm wide. Flowers are fragrant collateral with narrow petals of 2-3cm long the flowers never fully open. The fruits are nearly heart shaped 8-16cm wide. The skin of fruits may be yellow or brownish when ripe with brownish red blush there is thick, cream- white layer of custard under the skin with moderately juicy segments. Actual seed counts 55, 60 and 76. A pointed central core is attached to the thick stem of the fruit.

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RESEARCH ARTICLE

Evaluation of Antioxidant, Anti-inflammatory and Antiasthmatic activity of *Barleria prionitis* linn. Leaves Extract

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ABSTRACT

In the Ayurvedic medical system, *Barleria prionitis* Linn, also known as Kate Koranti, this plant shows presence of alkaloids, flavonoids, glycosides, tannin and proteins. Traditionally plant used for wound healing and ash obtained from whole plant which is mixed with honey given in treatment of bronchial asthma. The current study was designed to evaluate the antioxidant, anti-inflammatory and anti-asthmatic activity. Antioxidant activity evaluated by DPPH assay and % RRI. Adult wistar albino rats were used for the anti-inflammatory activity. Histamine and acetylcholine induced bronchospasm was carried out by on isolated goat trachea. Guinea pig is used for histamine induced broncho constriction. The dried and powdered leaves of *Barleria prionitis* was extracted with continuous soxhlet extraction with Petroleum ether (40-60 ° C), Chloroform, acetone, Ethyl acetate, ethanol and methanol solvents. Preliminary phytochemical screening of all extracts was done. Antioxidant and anti-inflammatory activity of ethyl acetate, ethanol and methanol were done to find out the potent extract. In this study, the methanolic extract of leaves of *Barleria prionitis* was found to be potent comparative to ethyl acetate and ethanol extract. The results of carrageenan induced rat paw oedema model indicated the extract significantly reduces paw edema as compared with standard indomethacin drug., methanolic extract showed statistically significant activity. In the present study, the histamine and acetylcholine-induced dose-dependent contraction of goat tracheal chain was significantly inhibited by methanolic extract of leaves of *Barleria prionitis* (300 µg/ml). methanolic extract of leaves of *Barleria prionitis* significantly prolong histamine induced dyspnoea in guinea pig. In view the traditional claim of leaves of *Barleria prionitis* Linn, for inflammation and asthma, the results of our study show that the methanolic extract of



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ISOLATION AND CHARACTERIZATION OF PHYTOCONSTITUENT FROM METHANOL EXTRACT OF BARLERIA PRIONITIS LEAVES

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ABSTRACT

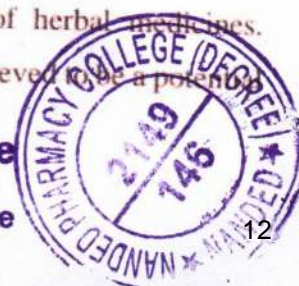
The medicinal plants are believed to be a potential source of medicinal phytochemicals and have a great potential for discovery of new drug candidates. In the Ayurvedic medical system, *Barleria prionitis* Linn, also known as Kate Koranti, is a well-known medicinal plant. *Barleria prionitis* Leaves was exhaustively defatted using petroleum ether (BP-PE) and extracted successively with chloroform (BP-CH) and methanol (BP-ME) using Soxhlet apparatus. Methanolic extract was found potent hence fractionation of methanolic extract was done by column chromatography. Fraction of methanolic extract of *Barleria prionitis* were subjected to phytochemical screening for tannins, glycosides, steroids, terpenoids, flavonoids, and alkaloids. Isolation of phytoconstituent compound by using High Performance Thin Layer Chromatography (HPTLC). characterization of phytoconstituent was done by using FT-IR, IR, NMR, LC-MS and mass spectrum.

Keywords : phytochemicals, *Barleria prionitis* Leaves, column chromatography, Isolation

INTRODUCTION

Medicinal plants are used in the management of healthcare problems worldwide, and about 60-80% of the world's population still depends upon traditional herbal medicines (Bolta *et al*, 2000; Middleton *et al*, 2000; Dey *et al*, 2009) The global demand of herbal medicines is increasing rapidly because of their low cost and presumed safety of herbal medicines. Musayimi *et al*, 2008; Banerjee *et al*, 2012) The medicinal plants are believed to be a potential

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Quantum Dots: An Overview of History, Synthesis and Applications



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ABSTRACT

Quantum dots (QDs) are a landmark development in the field of nanotechnology. These zero-dimensional semiconductors, unlike their physical attributes, have enormous capacity to store energy within themselves. This energy is contained in several thousands of electrons that constitute the nanoparticles. QDs are synthesized by both organic and inorganic methods, the choice being dependent upon the desired efficacy of the resultant product. The optical and electronic properties of these particles are dependent upon the transitions of constituent electrons between the valence and conductance bands and this phenomenon is exploited in synthesizing QDs to be employed as biomarkers. As biomarkers, these particles find many clinical applications, in an array of *in vivo* and *in vitro* techniques, ranging from drug delivery systems to interstitial target tracking. The present review article discusses the historical development, structural aspects, methods of synthesis and various applications of QDs in the medical and other fields.


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ARTIFICIAL INTELLIGENCE: AN EMERGING TREND

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ABSTRACT

Artificial Intelligence (AI) was initially limited to engineering field only, but in the recent years, it is briefly introduced into the other fields like pharma, healthcare, business, public sector etc. This review article describes role of the AI in various field of medical care, its advantage as well as disadvantages in pharmacy, and its tools. AI is greatly advanced into the decision-making, problem solving and critical thinking and having applications in various fields like business, pharmacy, health care, and engineering as well. Now the robots are using in the various medical procedures as they are more trustworthy for doctors, as they are more advanced in their work, as they can do any task within the short time period and effectively than humans. In a nutshell, AI is the new evolving field in every sector, even in pharmacy, and it needs more development for updating the current

scenario as well as for new researches.

KEYWORDS: Artificial intelligence, healthcare, decision-making, robots.

INTRODUCTION

The global pharmaceutical industry has been witnessing two seismic shifts which are disturbing the industry status quo. The first shift is in the balance of power across the healthcare value chain, as governments and insurers take centre stage, pressuring pharmaceutical companies to reduce prices and demonstrate greater value from their therapies. Secondly, a swing from treatment to prevention, diagnostics and cure, is growing stronger in time, attracting a host of new entrants from within and outside of the sector. This shift is driven by three underlying developments: ground-breaking new therapies, advances in technology and the computerization of health through increased access to data by patients.



In Silico PASS Predictions and Exploration of Antioxidant and Anti-inflammatory Activity of Citrus Karna Raf. Fruit

Citrus karna Raf. Meyvesinin Antioksidan ve Anti-enflamatuvar Aktivitesinin İn Silico PASS Tahminleri ve Araştırılması

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ABSTRACT

Objective: Inflammation and oxidative stress are major factors in the development of many disorders. Natural antioxidants present in plants can interrupt, decrease, or reduce the oxidation of components sensitive to oxidative processes by scavenging free radicals and lowering oxidative stress. Most anti-inflammatory agents used in the management of inflammatory disorders diminish oxidative damage. The biological potential of *Citrus karna* Raf. remains undisclosed, despite its richness in several bioactive compounds.

Methods: The methanolic extract was evaluated for quantitative phytochemical analysis and antioxidative efficacy using 1,1-diphenyl-2-picrylhydrazyl radical and hydrogen peroxide scavenging activity. A carrageenan-induced paw edema model was employed to evaluate the anti-inflammatory potential as antioxidants exert anti-inflammatory effects. *In silico* prediction of activity spectra for substance predictions were performed to understand the possible mechanism of action of phytochemicals.

Results: CKME showed dose-dependent radical scavenging effects. The powerful scavenging activity of CKME could be due to the diverse polyphenolic compounds such as ascorbic acid, beta-carotene, and naringin. In addition, the percentage inhibition of paw edema and swelling was observed in CKME-treated rats and mice, which is the same as that of standard drug-treated groups. The Pa value of ascorbic acid, beta-bisabolene, linalool, and naringin is more than 0.7 which shows that these phytoconstituents might contribute to the anti-inflammatory action of extract samples such as CKME.

Conclusions: Our findings shows that CKME possess strong antioxidant and anti-inflammatory effects. The richness of plants in polyphenolics such as flavonoids might be a contributing factor for these potential effects.

Keywords: *Citrus karna* Raf., plant extract, antioxidant, anti-inflammatory, PASS prediction

ÖZ

Amaç: Enflamasyon ve oksidatif stres birçok hastalığın gelişimindeki önemli faktörlerdir. Bitkilerde bulunan doğal antioksidanlar, serbest radikalleri temizleyerek ve oksidatif stresi azaltarak oksidatif süreçlere duyarlı bileşenlerin oksidasyonunu durdurabilir, azaltabilir veya yok edebilir. Enflamatuvar bozuklukların tedavisinde kullanılan çoğu anti-enflamatuvar ajan oksidatif hasarı azaltır. *Citrus karna* Raf.'ın biyolojik potansiyeli, çeşitli biyoaktif bileşikler bakımından zengin olmasına rağmen açıklanmamıştır.

Yöntemler: Metanolik ekstrakt, kantitatif fitokimyasal analiz ve 1,1-difenil-2-pikrilhidrazil radikali ve hidrojen peroksit süpürme aktivitesi kullanılarak antioksidatif etkinlik açısından değerlendirilmiştir. Antioksidanlar anti-enflamatuvar etkiler gösterdiğinden, anti-enflamatuvar potansiyeli değerlendirmek için carrageenan kaynaklı bir pençe ödemi modeli kullanılmıştır. Fitokimyasalların olası etki mekanizmasını anlamak amacıyla madde öngörülerini için aktivite spektrumlarının *in silico* tahmini yapılmıştır.

Bulgular: CKME doza bağlı radikal süpürücü etkiler göstermiştir. CKME'nin güçlü radikal temizleme aktivitesi askorbik asit, beta-karoten ve naringin gibi çeşitli polifenolik bileşiklerden kaynaklanıyor olabilir. Buna ek olarak, CKME ile tedavi edilen sıçan ve farelerde, standart ilaçla tedavi edilen gruplarla aynı olan pençe ödemi ve şişmesinin yüzde inhibisyonu gözlenmiştir. Askorbik asit, beta-bisabolene, linalool ve naringinin Pa değerinin 0,7'den fazla olması, bu fitokonstituentlerin CKME gibi ekstrakt örneklerinin anti-enflamatuvar etkisine katkıda bulunabileceğini göstermektedir.

Sonuçlar: Bulgularımız, CKME'nin güçlü antioksidan ve anti-enflamatuvar etkilere sahip olduğunu göstermektedir. Bitkilerin flavonoidler gibi polifenolikler bakımından zengin olması, bu potansiyel etkilere katkıda bulunan bir faktör olabilir.

Anahtar kelimeler: *Citrus karna* Raf., bitki ekstresi, antioksidan, anti-enflamatuvar, PASS tahmini

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