International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

A Detailed Assessment of Medicinal Plants in Wound Healing in Rats

Akshita Deb[1], Dr. Narayanaswamy VB[2], Dr. Seema Gupta[3], Vishwamyna S[4]

[1]Research Scholar, Department of Pharmacognosy, R R College of Pharmacy, Bangalore-India
[2]HOD & Principal, Department of Pharmacognosy, R R College of Pharmacy, Bangalore-India
[3]Professor, Department of Pharmacognosy, R R College of Pharmacy, Bangalore-India
[4]Asst.Professor, Department of Pharmacognosy, R R College of Pharmacy, Bangalore-India

ABSTRACT:
A wound is a physical trauma that involves tearing, cutting, or puncturing the skin. A microorganism enters the site upon exposure to air, causing wound contamination and ultimately a spread of infection. Healing process is very complicated and involves various steps- inflammation, proliferation and remodeling. There are underlying factors that affect the process of wound healing like age, sex, infection, stress etc. Wound healers, a substance that accelerates the pace of healing, are in demand since the healing process is sluggish and delayed. Due to their adverse effects, several synthetic medications used to treat wounds are restricted and we chose medicinal plants over synthetic ones. Here in this review, we enlisted various medicinal plants as wound healers and this has gained much importance due to its various bioactive constituents present. This review article focuses on wound healing in different rat models by the use of various medicinal plants.

Keywords: Inflammation, Medicinal Plants, Rat Models, Wound Healing

INTRODUCTION

The complex organ known as skin covers the surface of the entire body. It protects harmful microorganisms and serves as a physical shield and barrier between the body and the external environment, stopping the loss of water and electrolytes. Due to inadequate healing and the possibility of microbial infections, which can occasionally be fatal, wound healing is a serious public health concern in developed countries. [1]

Physical injuries that cause the skin to break down or open up are called wounds. For the skin's impaired functional status and damaged anatomical stability to be restored, wounds must heal properly. A series of processes, including inflammation, cell migration, and proliferation, take place during the repair of damaged tissues.

1. As soon as an injury occurs, the inflammatory stage starts with vasoconstriction, which promotes homeostasis and releases inflammatory mediators.
2. Granulation tissue proliferation, mostly caused by fibroblasts and the angiogenesis process, ultimately defines the proliferative phase.

International Journal of Enhanced Research in Medicines & Dental Care (IJERMDC),
ISSN: 2349-1590, Vol. 11 Issue 1, January 2024, Impact Factor: 8.325

A Cross-Sectional Study on Nosocomial Infections and Its Prescribing Pattern in a Tertiary Care Hospital

Mr. Ankur Sen[1], Ms. Nayana P Kunderi[2], Mr. Rifad Abdu Rahiman[3], Mr. Siljo Sibi[4], Dr. E. Satheesh Kumar[5], Dr. Narayana Swamy V.B[6], Dr. Srividya[7]

[1,2,3,4,5,6] Department of Pharmacy Practice, R R College of Pharmacy, Affiliated to Rajiv Gandhi University of Health Sciences, Chikkabanavara, Bangalore 560090, India
[7]Department of Pharmacology, R R College of Pharmacy, Affiliated to Rajiv Gandhi University of Health Sciences, Chikkabanavara, Bangalore 560090, India

Corresponding author: Mr. Ankur Sen; Email: asr.ank1999@gmail.com

ABSTRACT

Objective: To conduct a cross-sectional study on nosocomial infections and their prescribing pattern in a tertiary care hospital. Methods: After obtaining approval from the Institutional Ethics Committee, cross-sectional study was carried out among 150 inpatients in a tertiary care hospital in Bangalore. The data were collected from the patient case profile and prescriptions and noted in a self-designed data collection form. The statistical analysis of the collected data was performed using SPSS software and excel. Results: Out of 150 cases, the patients are divided into 8 categories according to their age. Patients who are aged between 40 and 50 have a higher percentage (22.6%) who have developed Nosocomial infections. 70% of patients were above 50 years and 30% of patients were below 50 years of age. The dominant gender was Male(64.6%) and the remaining was filled by Female (35.4%). Among five infections the incidence rate was measured and found to be Bloodstream infection (19%), Catheter-induced infection (25%), Deep surgical site infection (5%), Surgical site infection (43%), Ventilator ventilator-associated pneumonia (8%). Conclusion: The path towards progress and development in the segment of nosocomial infection are related to the consistency and enhancement of infection control programs, codification of guidelines, clinical procedures, and hospital accreditation (with quality improvement and patient safety approach), these factors can be considered effective in reducing Nosocomial infections and additionally more research is needed to examine their effect in wider scopes. The recommendation for more attention towards the practical implications and policy-making to these programs that reduce nosocomial Infections should be considered.

Keywords: Hospital-acquired infection, nosocomial, Central line-associated bloodstream infections, Catheter-associated urinary tract infections, Surgical site infections, Ventilator-associated pneumonia.

INTRODUCTION

Hospital-acquired infection (HAI) or nosocomial infection is an infection occurring in a patient in a hospital or other healthcare facility in whom the infection was not present or incubating at the time of admission. This includes infections acquired in the hospital but appearing after discharge, and occupational infections among staff of the facility. HAIs not only affect patients' health and safety but also the healthcare system as a whole.
Types of nosocomial infection:

- Central line-associated bloodstream infections,
- Catheter-associated urinary tract infections,
- Surgical site infections,
- Deep surgical site infections,
- Ventilator Ventilator-associated pneumonia.

IJNRD.ORG ISSN : 2456-4184

INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG

An International Open Access, Peer-reviewed, Refereed Journal

"A Systematic Review Of : *Nyctanthes Arbor-Tristis*: A Conventional Herbal Remedy With Remarkable Medicinal Potential"

Samir Panda[1], Dr. Deeparani Urolagin[2], Vijaya Kumar J[3], Harish N[4].

[1]Research Scholar, Department of Pharmacology, R R College of Pharmacy,

[2]HOD & Professor, Department of Pharmacology, R R College of Pharmacy,

[3]Assistant Professor, Department of Pharmacology, R R College of Pharmacy, Bangalore- India

ABSTRACT :

In recent years, research on medicinal plants using traditional medical systems has drawn attention from all across the world. Many therapeutic herbs that have been used for thousands of years are present on our planet. *Nyctanthes arbor-tristis Linn*, also referred to as Parijat or night jasmine, is one such plant. This plant, which belongs to the Oleaceae family, grows natively in tropical and subtropical climates across the globe. It has several therapeutic and pharmacological qualities, although being mainly valued for its aesthetic qualities. Each portion of this significant traditional plant from India has therapeutic significance and a variety of pharmacological effects, including antibacterial, antifungal, antipyretic, antihistaminic, antimalarial, anti-inflammatory, and antioxidant properties. It is utilized in Ayurveda, Siddha, and Unani medicine. Phytochemicals such as flavanol glycoside, oleanic acid, tannic acid, carotene, friedeline, lupeol, glucose, and benzoic acid compounds are found in *Nyctanthes arbor-tristis*. *Nyctanthes arbor-tristis* may be a less expensive and potentially harmful substitute for pharmaceutical medications.

Keywords: *Nyctanthes arbor-tristis*, Phytochemicals, Ayurveda, Harsingar, glycosides, herbals, infusion, clinical trials, cannabinoids, and alkaloids.

INTRODUCTION:

Nyctanthes arbortristis, often known as *N. Arbortristis*, is a valuable medicinal plant that is a member of the Oleaceae family. Tropical and subtropical regions are typical habitats for this plant. *N. arbortristis* is also referred to as Parijat, Harsinghar, and Night Jasmine. The plants start to wither after midnight and appear lifeless when they use the daylight break. Nykhta (night) and anthos (flower) are the Greek words that gave rise to the common name Nyctanthes [1, 2]. Arbor-tristis, sometimes known as the "Tree of Sadness," is a plant that is typically a tiny tree or shrub that has extremely fragrant blossoms. These blooms create a stunning combination of red and white on the ground when they bloom at night and fade before the morning rises. The plant loses all of its brightness during the day. Other names for it include Coral Jasmine, Parijat, Queen of the Night, Harsinghar, and Night-flowering Jasmine[3]. India is the native habitat of *Nyctanthes arbortristis*. It grows in the sub-Himalayan region and is a common ornamental plant in Indian gardens. The plant may grow on rocky terrain in dry hill shadows, dry deciduous forests, and at sea level up to 1500 meters in elevation. It can even withstand light shade. It is also resilient to mild shade and can tolerate a broad range of rainfall patterns, from seasonal to non-seasonal. It is frequently grown in gardens because of its delightful and distinctive aroma[4, 5]. A species of plant known as *N. arbortristis* can be found in India's outer Himalayas, Jammu & Kashmir, Nepal, Bengal, and Tripura. It is also prevalent in the Central area, extending as far south as Godavari. The plant likes to thrive in a semi-shaded, secluded area and flowers from July to October[6]. One well-known medicinal plant, *N. arbortristis*, is a big, hardy, wild shrub or small tree that is common in the wild. They have been used as a hair tonic, to cure skin infections, and to start the menstrual cycle, among other things. Herbal medications contain very effective bioactive molecules in addition to traditional and ethnic therapies. People have been using *N. arbortristis* to treat a variety of physical ailments for decades. Different plant parts have been used for pain relief, suffering control, and illness prevention since ancient times. The majority of the medications utilized in traditional medicine were derived from plants, which are the oldest and primary source of medicinal materials. Different parts of this plant have been used in Indian systems of medicine due to their various pharmacological actions, such as anti-leishmaniasis, anti-viral, anti-fungal, anti-pyretic, anti-histaminic, anti-malarial, and anti-oxidant properties, anti-inflammatory and many more activities[7,8].

GROWING SEASON AND TYPE [9]:

This particular tree can thrive in a range of loamy soils found in average garden scenarios with a pH level between 5.6 to 7.5. The plant can grow in both full sunlight or partial shade and requires regular watering without overwatering.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

EVALUATION OF FAUJASIOPSIS FLEXUOSA AGAINST COGNITIVE IMPAIRMENT IN MICE

Mr. Vijaya Kumar J[1], Mr. Tonhaz Sobin Hussain[2], Dr. Deeparani Urolagin[3]

1. **Assistant Professor, Department of Pharmacology, R R College of Pharmacy, Bangalore-560090.**
1. **Research Scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore-560090.**
2. **Professor & HOD, Department of Pharmacology, R R College of Pharmacy, Bangalore-560090.**

ABSTRACT

The goal of this study is to learn more about how Faujasiopsis flexuosa and huperzine affect the way that stress affects mice's cognitive performance.

The application of chronic swimming stress, or 15 minutes per day for 25 days in a row, caused the cognitive damage. From the fifteenth to the twenty-fifth day, a pre-treatment of hydroxyzine (20 and 40 mg/kg) with extract was given orally by the gavage technique for ten days in a row. The Morri's Water Maze (MWM) test was used to measure the changes in stress-related cognitive impairment between the 21st and 25th of the month. In addition, the impacts of stress-induced biochemical modifications, such as decreased glutathione (an endogenous antioxidant), TBARS (lipid peroxidation process), and acetylcholinesterase activity (a measure of neurotransmitter alterations), were evaluated in mouse brain tissues. In stress-induced cognitive impairment, huperzine pre-treatment was found to have a substantial ($p < 0.05$) neuroprotective impact in addition to attenuating dose-dependent changes in brain biochemistry. Since huperzine has potential anti-oxidative, anti-lipid peroxidative, and acetylcholinesterase inhibitory properties, it may be used in the future to treat cognitive impairment caused by neuronal metabolic damage and stressful situations.

KEYWORDS: Faujasiopsis flexuosa, Morris water maze, Cognitive impairment.

International Journal of Pharmaceutical Research and Applications
Volume 9, Issue 3 May-June 2024, pp: 922-935 www.ijprajournal.com ISSN: 2456-4494

An Analytical Review of the Pharmacological Aspects of Using Zebrafish as an Animal Model in Cognitive Science

Mr. Vijaya Kumar J[1], Rayees C[2], Dr.Deeparani Urolagin[3]

1. Department of Pharmacology, Associate Professor, R R College of Pharmacy, Bangalore-560090.
2. Department of Pharmacology, Research Scholar, R R College of Pharmacy, Bangalore-560090.
3. Department of Pharmacology,Professor & HOD, R R College of Pharmacy, Bangalore-560090.

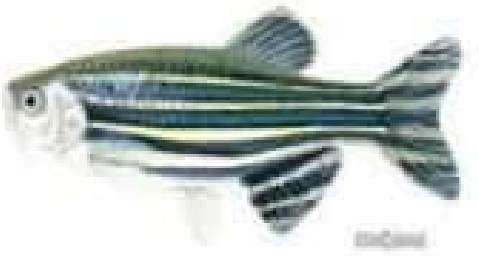
Date of Submission: 10-05-2024 Date of Acceptance: 20-05-2024

ABSRACT

Creature models are essential to medical research because they help to synthesize our understanding of the causes of both deadly and non-mortal illnesses and facilitate the creation of novel treatments. Additionally, investigations on literacy and memory in the cognitive sciences reiterate findings pertinent to humans using relevant model species. In recent decades, the scientific community has embraced the use of the zebrafish (Danio rerio) model significantly, even though mice are still the most extensively used exploratory model worldwide.Zebrafish, a small tropical brackish teleost fish, shares significant genetic, anatomical, and physiological similarities with mammals. As a result, they are becoming increasingly recognized as one of the best models for studying neurological disorders. This is because they are easy and inexpensive to maintain, have a high reproductive rate, and can be easily genetically manipulated. Zebrafish is a highly suitable experimental model for studying behaviour, inheritance, and toxicology, particularly regarding several coloured fatal diseases. Zebrafish are more effective than other invertebrate models when simulating life-threatening scenarios, especially when it comes to studying large-scale inheritable mutations and conducting biological investigations involving restorative emulsion wireworks. The zebrafish is a highly sensitive species that can be affected by both changes in medication and environmental factors. These behavioural traits can be observed in both adult fish and larvae, making zebrafish a valuable tool for medical research and pre-clinical testing. This review specifically examines the use of zebrafish as an animal model for cognitive science research.

Keywords: Zebrafish (Danio rerio),biomedical research, neurodegenerative diseases, drug screenings, pre-clinical trials, cognitive science research.

I. INTRODUCTION



ZEBRA FISH (DANIO RERIO)

The zebrafish, also known as Danio rerio, is a small freshwater fish that belongs to the cyprinoid teleost family. This fish originates from rivulets in India and is commonly kept as an aquarium fish around the world. Keeping them in a Terrazia is a simple task, almost as easy as taking care of guppies. These striped fish are available as graceful swimmers in most pet stores. The first zebrafish used in a classic screen were actually acquired from a pet store in Tubingen. Laboratory practices for their care and breeding have been well-established. The zebrafish has become a model organism for modern natural research, thanks to the pioneering work of George Streisinger and his colleagues, who recognized its numerous advantages as an experimental system. These advantages include its short generation time, the high number of eggs produced by each mating, and the fact that, because fertilization is external, all stages of development are easily accessible.

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES
[ISSN: 0975-4725; CODEN(USA):IJPS00]
Journal Homepage: https://www.ijpsjournal.com

OPEN ACCESS

Research Article

Benzotriazole Derivatives: Design, In Silico Studies, And Biological Evaluation As Antiarthritic Agents

Nagaraj N. Durgadasheemi*[1], Shivanand Kolageri [2], Hemanth S. [3]

[1] Dept. of Pharmaceutical Chemistry, R R College of Pharmacy, Chikkabanavar, Bengaluru-560090 Karnataka.
[2]Dept. of Pharmaceutical Chemistry, BLDEA's SSM College of Pharmacy and Research Centre, Vijayapur-586103
[3]Dept. of Pharmaceutical Chemistry, Ikon Pharmacy College Bidadi, Bangalore

ARTICLE INFO

Received: 26 Feb 2024
Accepted: 01 March 2024
Published: 05 March 2024
Keywords:
Benzotriazole, docking, 4DCK, BIOVIA Discovery Studio2021, PyRx, antiarthritic activity.
DOI:
10.5281/zenodo.10781080

ABSTRACT

In the current work, a series of benzotriazoles is produced by slightly altering the azole ring, and triazole derivatives are found to have similar or better activity in addition to fewer side effects. With two nitrogen atoms in its ring, benzotriazole is an organic heterocyclic molecule with a variety of biological activities, including anti-tubercular, anti-cancer, and anti-microbial effects. The rigid docking technique was used to determine the affinity between the protein and ligand. The voltage-gated sodium channel complex inhibitor protein (PDB ID:4DCK) has a three-dimensional (3D) crystal structure that can be downloaded from the protein database. Using Chem Draw, the chosen ligand molecules are produced. The method used to determine the binding affinities between ligands and proteins is rigid docking. The antiarthritic protein was used in docking experiments for 25 benzotriazole derivatives, as well as the crystal structure of the voltage-gated sodium channel C-terminus in complex (PDB ID:4DCK) inhibitors, using the molecular docking tool PyRx and some other resources. Comparing the docking scores of these compounds D1, D2, D3, D4, D5, D7, and D8 to the reference compound Indomethacin (-9.8 Kcal/mol), the results were -9.40, -10.00, -10.3, -11.1, -10.80, -11.1, and -11.1 Kcal/mol respectively. The antiarthritic drugs' results were confirmed by molecular docking and biological assessment investigations, indicating that these derivatives can function as complex (PDB ID:4DCK) inhibitors by forming the crystal structure of the voltage-gated sodium channel C-terminus. Therefore, these molecules can be further altered to create novel arthritic and anti-inflammatory drugs. According to this study, the majority of the compounds that were synthesized may be attractive therapeutic candidates with a promising pharmacological profile. Additionally, the majority of these derivatives may be useful for the continued development of better antiarthritic activity. Out of 25 substances, biological assessment

***Corresponding Author:** Nagaraj N. Durgadasheemi
Address: *Dept. of Pharmaceutical Chemistry, R R College of Pharmacy, Chikkabanavar, Bengaluru-560090 Karnataka.*
Email : nag11.nd@gmail.com

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

"A comprehensive study on *Mangifera indica* plant"

Mainak Khan[1], Dr. Deeparani Urolagin[2], Vijaya Kumar J[3], Harish N[4]

Research Scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore- 560090

Abstract:

Mangifera indica is a commonly used herb in Ayurvedic medicine. *Mangifera indica L.* belongs to the family of Anacardiaceous. Countries under tropical and subtropical zones are the top mango-producing countries. Leaves extracts of the mango plant have been studied for various health benefits, which are attributed to the excessive number of phytochemicals such as mangiferin, followed by benzophenones, phenolic acids, and other antioxidants such as flavonoids, ascorbic acid, carotenoids, and tocopherols. Its various pharmacological activities have been studied such as anti-cancer, anti-diabetic, anti-oxidant, anti-microbial, anti-obesity, lipid-lowering, hepato-protection, and anti-diarrheal. Various parts of the plant are used as a dentifrice, astringent, antiseptic, diaphoretic, stomachic, vermifuge, laxative, and diuretic and to treat diarrhea, dysentery, anemia, tonic, asthma, bronchitis, cough, hypertension, insomnia, rheumatism, leucorrhoea, hemorrhage, toothache, and piles. All parts are used to treat abscesses, broken, miscarriages, anthrax, blisters, wounds in the mouth, tympanitis, colic, diarrhea, glossitis, indigestion, bacillus's, bloody dysentery, liver, disorder, excessive urination, tetanus and asthma.

Synonyms:

- Hindi: Aam
- Sanskrit: Ambram
- Kannada: Mavu
- Tamil: Mankani
- Malayalam: Maambazham
- Kashmiri: Amb
- Bengali: Ama
- English: Mango
- Panjabi: Amb
- Gujarati: Ambo

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

"Rauwolfia serpentina: A Comprehensive Review of its Pharmacological, Phytochemical and Therapeutic Properties"

Subhadeep Saha[1], Dr.Deeparani Urolagin[2], Vijaya Kumar J[3], Harish N[4].

Research Scholar, Department of Pharmacology, R R College of pharmacy, Bangalore 560090

ABSTARCT:

Rauwolfia serpentina, commonly known as Sarpagandha, is a medicinal plant that has been extensively described in both Ayurvedic literature and modern science. It belongs to the Apocynaceae family and is currently endangered. However, it is cultivated for its numerous medicinal properties.The plant contains various compounds such as alkaloids, carbohydrates, flavonoids, glycosides, phlobatannins, phenols, resins, saponins, sterols, tannins, and terpenes, which contribute to its therapeutic effects. The root and rhizome of *Rauwolfia serpentina* have been used in Ayurvedic medicine for centuries to treat a wide range of ailments including high blood pressure, mental agitation, epilepsy, traumas, anxiety, excitement, schizophrenia, sedative insomnia, and insanity. In the past, *Rauwolfia serpentina* was considered a highly effective remedy for hypertension. The alkaloid present in its root is believed to have antihypertensive properties. Ayurvedic literature also describes other notable properties of this plant, such as its ability to treat fever, promote wound healing, improve digestion, induce sleep, relieve pain, and alleviate respiratory disorder.

Furthermore, *Rauwolfia serpentina* has various pharmaceutical applications and can be used as an excipient in many formulations. Given the need for alternative and naturally available remedies to treat millions of people worldwide, it is important to evaluate the pharmacological, phytochemical and therapeutic properties of *Rauwolfia serpentina*.

In conclusion, *Rauwolfia serpentina* is a valuable medicinal plant with a wide range of therapeutic properties. Its use in traditional medicine and its potential pharmaceutical applications make it an important subject of study for researchers and practitioners alike.

Keywords: *Rauwolfia serpentina*, Apocynaceae, Phytochemicals, Pharmacological, therapeutic.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

"Exploring the Therapeutic Potential of *Psidium guajava*: A Comprehensive Review"

Arundhati Kashyap[1], Dr. Deeparani Urolgin[2], Vijaya Kumar J[3], Harish N[4]

[1]Research Scholar, Department of Pharmacology, R R College of Pharmacy, [2]HOD & Professor, Department of Pharmacology , R R College of Pharmacy, Banglore- India

ABSTRACT

The guava tree (*Psidium guajava* Linn.) is native to tropical and subtropical regions and belongs to the Myrtaceae family. It is a vital fruit in tropical regions such as India, Indonesia, Pakistan, Bangladesh, and South America. Guava (*Psidium guajava* Linn.) is not only consumed as food but also used for medicinal purposes in subtropical regions around the world due to its pharmacological properties. The ability pharmacologic sports of the extract from the fruit, leaf, bark or roots; those sports consist of antioxidant, hepatoprotective, anti-allergy, anti- microbial, anti-spasmodic, cardioactive, anti-cough, anti-diabetic, anti-inflammatory, anti- nociceptive activities, anticancer, antidiabetic, antioxidant, antidiarrheal, anti-microbial, lipid- lowering, and hepato-protection activities. The fruit is rich in Vitamin A and Vitamin C. A variety of plant chemicals, including quercetin, catechin, and kaempferol flavonoids, have shown promising activity, as well as gallic acid, rutin, naringenin, and other compounds.

Keywords: *Psidium guajava*, anti-nociceptive, anti-spasmodic

INTRODUCTION[1,2]

Kingdom: Plantae

Clade: Angiosperms **Class**: Magnoliopsida **Order**: Myrtales **Family**: Myrtaceae **Genus**: *Psidium*

Species: *Psidium guajava*

VERNACULAR NAMES[3]

Common name – Guava

Botanical – *Psidium guajava* Linn

English – Guava, Abas, Govavier, Kautonga, Kuahpa

Hindi – Amrud

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

An In-Depth Look at the Pharmacological Effects of Piperine

Ansari Aashif Raza Mohd Imtiyaz[1], Dr. Deeparani Urolagin[2], Vijaya Kumar J[3], Harish N[4].

Research scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore-560090

Abstract

Piperine is an alkaloid that belongs to the family of Piperaceae. It is found in various species such as black pepper *(Piper nigrum)* white pepper and long pepper *(Piper)*. Piperine Natural derived products, which can be extracted from plant origin, have been extensively used in traditional medicine to treat various disorders due to their various pharmacological actions such as antioxidant, anticancer, anti-inflammatory, antihypertensive, hepatoprotective, neuroprotective, and increasing bioavailability. In addition, piperine can inhibit enzymes in the liver and intestines such as cytochrome P-450 enzymes & and glucuronosyltransferases. The inhibition of these enzymes helps slow down drug and nutrient metabolism and promotes their absorption. This review provides a comprehensive overview of piperine and its various pharmacological actions.

Keywords: piperine, *Piper nigrum, Piper longum,* extract, bioavailability.

Introduction

IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Anogeissus latifolia: A Systematic Review with Pharmacological Action

Deepika H L[1], Dr. Deeparani Urolagin[2], Vijaya Kumar J[3], Harish N[4].

[1]Research Scholar, Department Of Pharmacology, R R College Of Pharmacy,

[2]HOD & Professor, Department of Pharmacology, R R College of Pharmacy,

[3]Assistant professor, Department Of Pharmacology, R R College Of Pharmacy, Bangalore- India

Abstract:

Anogeissus latifolia is a member of the Combretaceae family. It is sometimes referred to as the Ghatti tree or the Axlewood tree. Additionally, it produces ghatti gum, a gum exudate that is widely employed as a polymer in the drug development process. Leaves might be sub-opposite or opposite. The bark is smooth, grey-white in hue, and peels in sporadic, thin scales. The plant has a high amount of terpenoids and flavonoids, which give it a high potential for antioxidant activity. It is also rich in ellagic acid, a phenolic phytoconstituent that is pharmacologically active. Studies have been conducted on the tree's ability to donate hydrogen, generate nitric oxide, scavenge superoxide, and break down hydrogen peroxide. In Ayurveda, this herb is commonly used to cure a wide range of illnesses. It is used medicinally to treat a wide range of conditions, including heart problems, nausea, vomiting, diarrhea, dysentery, colds, snake and scorpion bites, fever, skin conditions, diabetes, anemia, piles, stomach aches, anemia, and urine discharge. This plant has been tested for anti-oxidant, anti-inflammatory, hepatoprotective, anti-ulcer, antibacterial, or wound-healing properties.

Key Words: *Anogeissus latifolia*, Combreraceae, Gum exudate, Scavenge, Dysentery,

Introduction:

A tree native to India, Nepal, Myanmar, and Sri Lanka, *Anogeissus latifolia* grows to a height of 20 to 30 meters and has a straight, cylindrical bole that can reach a diameter of 80 to 100 centimeters.[1] *A. latifolia* is found in all of India's tropical and subtropical regions, except for the dry regions of North-West India and North-East India (Champion and Seth 1968). According to Luna (2005), it frequently forms a pristine stand in the Shiwalik highlands and sub-Himalayan tract. Known locally as "Bakili," *Anogeissus latifolia*

International Journal of All Research Education and Scientific Methods (IJARESM),
ISSN: 2455-6211, Volume 12, Issue 2, February-2024, Available online at: www.ijaresm.com

"A Comprehensive Analysis of Quercetin and its Adaptable Therapeutic Effects"

Prathibha I B[1], Mr. Vijaya Kumar J[2], Dr. Deeparani Urolagin[3], Harish N[4]

[1,2,3,4]Research scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore-560090

ABSTRACT

Scientists are constantly searching for new molecules that could be used as effective nutritional ingredients in the fight against obesity and diabetes, which are particularly prevalent in Western societies. In this regard, flavonoids are a group of molecules that are increasingly gaining interest. The most important flavonoid is Quercetin, which belongs to the class called Flavanols and is commonly found in apples, tea, onions, nuts, berries, cauliflower, cabbage and many other foods. Quercetin exhibits a wide range of organic functions, including anti-carcinogenic, anti-inflammatory, and antiviral properties. It also inhibits lipid peroxidation, platelet aggregation, and capillary permeability. Quercetin helps several plant physiological processes, such as seed germination, pollen growth, antioxidant machinery, and photosynthesis. It also induces proper plant growth and development. Quercetin is an effective antioxidant, providing potent plant tolerance against numerous biotic and abiotic stresses. This review focuses on the main effects of Quercetin on wound healing.

INTRODUCTION

Flavonoids are a group of natural substances with a phenolic structure that are found in fruits, vegetables, tea, and wine. These foods have been known to have positive effects on health for a long time, even before flavonoids were identified as the active compounds. Flavonoids have a basic chemical structure of di-phenylpropanes (C6-C3-C6) and are usually found attached to sugar (glycosides), but they can also exist as aglycones, such as Quercetin, which has three rings and five hydroxyl groups. The average daily intake of polyphenols varies from 10 to 100 mg, depending on eating habits.[1]Quercetin is known to have a wide range of biological functions, including anticarcinogenic, anti-inflammatory, and antiviral activities. It also inhibits lipid peroxidation, platelet aggregation, and capillary permeability.[2]

Quercetin is the most abundant flavonoid and is named after the *Latin* word "quercetum," meaning "very well-forested" or "oak tree." It has 3 rings and 5 hydroxyl groups and belongs to the flavanol group of flavonoids.[3] Quercetin is the precursor of many other flavonoids, including citrus flavonoids such as rutin, hesperidin, naringenin, and tangeritin. It is widely distributed in the plant kingdom, particularly in rinds and barks. Quercetin itself is an aglycone or aglucone, which means it does not have a carbohydrate moiety in its structure. Normally, quercetin is found in plants as glycone or carbohydrate conjugates. Some of its glycone conjugates include rutin and thujin, which are also known as quercetin-3-rutinoside and quercitrin, respectively. Onions also contain conjugates of quercetin and carbohydrate iso rhamnetin, including Quercetin-3-4'-di-o-beta glucoside, isorhamnetin-4'-o-beta glucoside, and Quercetin-4'-o-beta glucoside.[4]

Amount of quercetin in selected food[5]

Food	Quercetin (mg/100 g)
Brocoli raw	2.8
Carrots raw	0.4
Celery raw	3.5
Cocoa powder	20.1
Cranberries raw	14.0
Kale raw	5.1
Looseleaf lettuce raw	2.0
Lingonberries raw	11.3
Onions raw	22.6
Ripe tomatoes	0.5

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

DETAILED STUDY OF GARCINIA INDICA

Lavanya K R [1],Sreelakshmi S [2],Ashfaq Ahammed K S [3],Arpitha H R[4],Anjay C[5],Muhammed Anas K P[6]

1- Asst. Prof. R R College of Pharmacy Bengaluru

2,3,4,5,6- Research Scholars of R R College of Pharmacy Bengaluru

Abstract

The goal of the current investigation is to review the morphologic traits, distribution, chemistry, and pharmacological action of the plant Garcinia indica. Hydroxycitric acid (HCA), garcinia indica, also known as kokum fruit, is found in various plant parts along with flavonoids, anthocyanins, phenolic acid, and isogarcinol. These constituents are useful for generating a range of pharmacological activities, including those related to anti-inflammatory diseases, anti-cancer, anti-ulcer, anti-oxidant, antibacterial, anti-inflammatory, antidepressant, antimicrobial, anti-aging, hepatoprotective, neuroprotective effect, anti-diabetic, and antihyperlipidemic properties.

Introduction

One of the major native tree spice crops, kokum (Garcinia indica Choisy), is found in evergreen and semi-evergreen forests and is grown in the Western Ghats of India, the South Konkan region of Maharashtra, Coorg, Wayanad, and Goa [1]. One underappreciated yet medicinally significant tree species is Garcinia indica, a tall, slender tree indigenous to India's Western Ghats. When fully grown, the globose or spherical fruit of G. indica is a deep purple color and is thought to have numerous health benefits [2]. Every state has a variety of colloquial names for kokum, including the following (Dhamija et al. 2013). Twenty of the 200 species in the genus Garcinia are found in India (Ramachandran, 2014) [3]and used as a sourcing agent in traditional recipes, as well as to make juice and syrup [4]. The tropical rain forests of the Western Ghats, extending from the Konkan southward to Mysore, Coorg, and Wayanad, are home to Garcinia indica (G. indica). It bears fruit from April to May, and it flowers from November to February. Astringent is the root. The fruit's seeds contain edible oil that is marketed as "Kokum butter." Small and complex compounds, such as xanthones and xanthone derivatives, have been identified from different species of Garcinia over the past few years[5].Garcinol shares structural similarities with curcumin, a well-known antioxidant that has both an enol version of a β-diketone moiety and phenolic hydroxyl groups[6]. Among these significant phytochemicals with various anticancer qualities is ganciclol. Among the many Garcinia species that can be found in tropical Asia and Africa are Garcinia indica, a little evergreen tree. Garcinol is one of these polyisoprenylated benzophenones, which are extracted from the fruits and leaves of these trees [7].

Morphological characters

Family: Clusiaceae

Synonym: Brindonia indicia Thou

Common name: Kokum

Kannada name : Tittidika

Sanskrit name : Vrikshamla

Malayalam name : Pinampuli

Tamil name : Murgalli

Kokum trees display a great variety of morphological differences in their natural habitat. Similar variances have been seen in the genotypes chosen for this investigation. The fact that these genotypes were taken from their natural environment may account for some of the physical differences. Fruit breeders need to evaluate the morphological features of trees. The great diversity found in the germplasm is reflected in the vast range of variances seen in plant height, canopy volume, girth of the plant, and canopy spread. From 5.20 m (IC552513) to 15.60

JAZ INDIA

Journal of Advanced Zoology

ISSN: 0253-7214

Volume 44 Issue S-1 Year 2023 Page 366:378

Pushing Limits: Exploring Torsemide's Potential Through *In-Vitro* Mucoadhesive Buccal Delivery Characterization

Becare Dkhar, K. Mahalingan[1], Hindustan Abdul Ahad[1]*, Pushpa Sahani[1], Pynskhemlin Syiemlieh[1]

[1]*Department of Pharmaceutics, R. R College of Pharmacy, Bangalore-560090, Karnataka, India.*

**Corresponding author's E-mail: abdulhindustan@gmail.com*

Article History

Received: 06 June 2023
Revised: 05 August 2023
Accepted:11August2023

Abstract

This study focuses on developing and evaluating mucoadhesive buccal tablets containing Torsemide, utilizing HPMC K-100, Xanthan Gum, and chitosan polymers at varying concentrations. Physicochemical parameters were well-maintained according to Indian Pharmacopeia standards. Swelling indices ranged from 201.75% to 241.85% over 8 hours, with suitable tablet pH (6.8-6.9) for buccal administration. Mucoadhesive strengths (18.00-27.33 g) varied with polymer concentration. Batch 6 displayed sustained Torsemide release (73.73% at 8 h), supported by optimized swelling index and mucoadhesive strength. Formulation F6, combining Xanthan Gum and Chitosan, emerged as optimal. Dissolution followed zero-order kinetics, fitting the Korsmeyer-Peppas model, indicating a diffusion-based, non-Fickian mechanism. No Torsemide-excipient interactions were observed through Fourier Transform Infrared Spectroscopy. This study successfully designed controlled-release mucoadhesive buccal tablets, influenced by polymer behavior and concentration, advancing drug delivery systems.

Keywords: *Buccal, Chitosan, Mucoadhesive, Discharge, Tablet, Torsemide.*

1. Introduction

Edema is considered by the accumulation of excess fluid within the body's tissues, resulting in swelling. It can manifest in various body parts, with hands, arms, feet, ankles, and legs being common areas of noticeable swelling[1]. The causes of edema can vary and encompass factors such as medication usage, pregnancy, or an underlying health condition, often including congestive heart failure, kidney disease, or liver cirrhosis. Addressing edema typically involves the administration of medications to eliminate surplus fluid and a reduction in dietary salt intake, which can help alleviate the swelling. However, if edema is indicative of an underlying ailment, that specific disease necessitates separate and distinct treatment. It is crucial to recognize that edema might signify a more severe underlying medical issue that requires attention[2].

Edema can stem from various underlying conditions, each contributing to fluid accumulation in distinct ways. In congestive heart failure, the heart's lower chambers lose their efficiency in pumping blood, causing blood to pool in the legs, ankles, and feet, resulting in edema. This condition can also lead to abdominal swelling and, in severe cases, fluid accumulation in the lungs (pulmonary edema), and leading to breathlessness. Cirrhosis of the liver can prompt fluid buildup in the abdominal cavity

Unlocking the Brain's Fortress: Trojan Horse Liposomes as a Revolutionary Approach to Drug Delivery

Hindustan Abdul Ahad*, Edukulla Satheesh Kumar, Abhishek Jayanna, Kusuma KC, Chaitra TC, Nishanth K

Department of Pharmaceutics, RR College of Pharmacy, Raja Reddy Layout, Chikkabanavara, Bangalore-560090, Karnataka, India
*Corresponding author E-mail: abdulhindustan@gmail.com

ABSTRACT:
The effective delivery of therapeutic agents to the brain is hindered by the blood-brain barrier (BBB), a highly selective and impermeable barrier that restricts drug entry. Researchers have explored various strategies, including Trojan horse liposomes, to overcome this challenge. This comprehensive review provides an in-depth overview of current research on Trojan horse liposomes for brain drug delivery, focusing on advantages, limitations, and future prospects. The BBB's physiology and function are explained to highlight its significance as a barrier. Traditional drug delivery limitations pave the way for Trojan horse liposomes as a potential solution. The review explores liposome formulation, composition, and functionalization, elucidating how they exploit endogenous transport systems to cross the BBB. Considerations in liposome design, such as surface modifications and targeting ligands, are discussed. Research findings on Trojan horse liposomes' efficacy in delivering therapeutics across the BBB using *in vitro*, *in vivo*, and preclinical models are presented, along with specific examples of drugs and diseases targeted. Advantages, such as enhanced drug delivery and reduced toxicity, are analyzed, while challenges like liposome stability and immunogenicity are addressed. Future prospects, including nanotechnology advancements and personalized medicine, are explored. Existing challenges such as large-scale manufacturing and clinical translation are considered. The conclusion emphasizes Trojan horse liposomes' potential for brain drug delivery and underscores the importance of overcoming BBB limitations through continued research efforts.

Keywords: Blood-brain barrier, Drug delivery, Liposomes, Targeting, Trojan

INTRODUCTION

The major challenge in drug delivery to the brain is the existence of the blood-brain barrier (BBB). Capillaries in the brain are lined with specialized endothelial cells that lack fenestrations (pores) and are tightly sealed with junctions, forming the BBB(Daneman & Prat, 2015). This barrier restricts approximately 98% of small-molecule drugs from crossing into the brain, while only minute amounts of large-molecule drugs are able to do so. Additionally, there is the blood-cerebrospinal fluid barrier, which is formed by the epithelial cells of the choroid plexuses(Abbott et al., 2010).

Various techniques have been developed to overcome these barriers and enhance the amount and concentration of therapeutic compounds in the brain. However, the challenges don't end with just crossing the BBB. Even if a compound manages to cross the barrier, it may not reach a therapeutically relevant concentration in the brain. This can be due to the drug's low permeability through the barrier or it's binding to other proteins in the body, which can render it inactive or prevent it from passing through the barrier(Ballabh et al., 2004).

Moreover, enzymes present in the brain tissue can also lead to the deactivation of the drug, even if it successfully enters the brain. These problems must be carefully addressed and considered

r.2024.14.1.P1-P11

International Journal of Life science and Pharma Research

ISSN 2250-0480

Research Article

Advancing Carvedilol's Therapeutic Impact: A Study On Solid Dispersion Capsules for Improved Efficacy

Pavan Kumar, Subhash PG, Hindustan Abdul Ahad*, Pawan Dhamala and Suprith D

Department of Pharmaceutics, RR College of Pharmacy, Chikkabanavara, Bangalore-90, Karnataka, India

Abstract: This study aimed primarily to improve and evaluate the dissolution rate of Carvedilol by employing a solid dispersion technique with β-Cyclodextrin as the carrier. Three distinct methods were utilized to create Carvedilol-containing solid dispersions: The Kneading method, Physical mixture, and Solvent evaporation method. These methods incorporated β-Cyclodextrin at varying drug-carrier ratios (1:1, 1:2, and 1:3). The initial phase encompassed pre-formulation assessments, including the establishment of a calibration curve, determination of lambda maximum, melting point determination, investigation of solubility in different solvents, and evaluation of Carvedilol-polymer compatibility through FTIR analysis. Subsequent post-formulation analyses included tests for weight variation, Carvedilol content, lock length, moisture permeation, disintegration time, in-vitro dissolution, and stability. The results of the pre-formulation tests were consistent with established references. FTIR analysis revealed no interactions between the Carvedilol and the carrier. Carvedilol content, weight variation, and disintegration time tests met the permissible limits outlined in IP standards. Both lock length and moisture permeation tests conformed to the criteria. However, due to Carvedilol's limited solubility, dissolution was inadequate. Among the in-vitro dissolution profiles, the "KN3" formulation, prepared using the Kneading method with a 1:3 ratio of Carvedilol to Carrier, employing β-Cyclodextrin as the carrier, exhibited superior discharge at 94.671%, outperforming other preparation methods.

Keywords: Carrier, Carvedilol, Cyclodextrin, Dissolution, Solubility.

***Corresponding Author**

Hindustan Abdul Ahad , Department of Pharmaceutics, RR College of Pharmacy, Chikkabanavara, Bangalore-90, Karnataka, India

Received On 12 September 2023
Revised On 24 November 2023
Accepted On 14 December 2023
Published On 2 January 2024

Funding This research did not receive any specific grant from any funding agencies in the public, commercial or not for profit sectors.

Citation Pavan Kumar, Subhash PG, Hindustan Abdul Ahad, Pawan Dhamala and Suprith D , Advancing Carvedilol's Therapeutic Impact: A Study On Solid Dispersion Capsules for Improved Efficacy (2024) Int. J. Life Sci. Pharma Res 14(1), P1-P11
http://dx.doi.org/10.22376/ijlpr.2024.14.1.P1-P11

ijlpr 2024; doi 10.22376/ijlpr.2024.14.1.P12-P22

International Journal of Life science and Pharma Research

ISSN 2250-0480

Research Article

Formulation and Evaluation of Linagliptin Buccal Films

Suprith Doijode, K. Mahalingan, Hindustan Abdul Ahad*, Pavan Kumar and Pawan Dhamala

Department of Pharmaceutics, R.R College of Pharmacy, Bangalore-560090, Karnataka, India

Abstract: Achieving steady concentration levels of drugs in the plasma for diabetics is important for an extended period. The study focussed on developing mucoadhesive buccal films incorporating linagliptin, aiming to achieve controlled drug delivery for effective type 2 diabetes management towards steady level plasma concentration. The research utilizes various mucoadhesive polymers, specifically HPMC K100, HPMC E5LV, and Eudragit RL100, exploring their potential in formulating optimized films through solvent casting technique. Our primary aim was to identify the most effective formulation, that would ensure controlled drug release over an extended period. We formulated various formulations and evaluated drug content, swelling index, in-vitro drug discharge, and ex-vivo mucoadhesive strength. The formulation, incorporated linagliptin, HPMC E5LV, HPMC K100, Eudragit RL100, glycerol, and polyethylene glycol. Results from our comprehensive evaluations showcased favorable dissolution time, robust mechanical properties, and impressive mucoadhesive characteristics in the buccal films. The sustained drug discharge and mucoadhesive strength exhibited by formulation F7 indicate its potential for effective type 2 diabetes management with a single film administration lasting up to 8 hours. This research represents a significant step forward in the field of pharmaceuticals, offering a promising avenue for developing mucoadhesive buccal films to control drug delivery precisely for enhanced therapeutic outcomes in the management of type 2 diabetes.

Keywords: Buccal, Film, Linagliptin, Mucoadhesive, Type 2 Diabetes.

***Corresponding Author**

Hindustan Abdul Ahad , Department of Pharmaceutics, R.R College of Pharmacy, Bangalore-560090, Karnataka, India

Received On 7 September 2023
Revised On 15 November 2023
Accepted On 20 December 2023
Published On 2 January 2024

Funding This research did not receive any specific grant from any funding agencies in the public, commercial or not for profit sectors.

Citation Suprith Doijode, K. Mahalingan, Hindustan Abdul Ahad, Pavan Kumar and Pawan Dhamala , Formulation and Evaluation of Linagliptin Buccal Films.(2024).Int. J. Life Sci. Pharma Res.14(1). P12-P22 http://dx.doi.org/10.22376/ijlpr.2024.14.1.P12-P22

Kepes
http://scholopress.com/kepes-journal
2023 Volume 21 Issue 3 pp. 555-567

From Concept to Assessment:
Creating an Oral In-Situ Gelling System with Sucralfate

Pushpa Sahani [1], KS Srilatha [1], *Hindustan Abdul Ahad [1], Santosh Kumar Sah [1], Becare Dkhar [1], Rima Kumari Prajapati [1]

[1]Department of Pharmaceutics, R.R College of Pharmacy, Bangalore-560090, Karnataka, India

Abstract

The study aimed to develop and assess an oral in situ gelling system for Sucralfate through a comprehensive approach. Preformulation studies were conducted, encompassing API characterization, solubility, melting point, and absorption maxima determination, along with compatibility assessments. Employing an ion-activated method, a range of formulations (F1-F9) were created, with varying concentrations of Gelrite and HPMC K100M as excipients. Evaluation of these formulations covered numerous physicochemical attributes, such as appearance, clarity, pH, gel strength, viscosity, in-vitro gelling capacity, gelling time, in-vitro floating behavior, drug content, and drug release profiles. The concentration of polymers significantly influenced properties, with increased polymer concentration enhancing gel strength and viscosity but reducing cumulative drug release. Among the formulations, F4 was identified as the optimal choice, exhibiting balanced gelling capacity, viscosity, and high drug content (99.85%), ensuring sustained drug release for over 12 h. The drug release pattern adhered to a zero-order kinetic model, while the release mechanism followed Fickian diffusion, implying diffusion-controlled drug release through the polymer matrix. In conclusion, the study's systematic approach successfully delivered a promising in situ gelling system for Sucralfate, shedding light on polymer effects and drug release behaviors.

Keywords: Dosage form, Gel, Floating, Stomach, Sucralfate, Viscosity

1. Introduction

"In-situ," a term rooted in Latin, conveys the concept of something being "in its original place" or "in position." This notion finds application in the realm of drug delivery through the development of in-situ gelling systems. These systems are designed to sustain drug release and maintain consistent plasma profiles. The distinctive feature of in-situ gelling systems lies in their ability to transition from a liquid state at room temperature to a gel state upon encountering body fluids or a change in pH. This transition provides the advantage of easy administration in liquid form at the site of application, which contrasts with the challenges posed by rigid gels (Rathod et al., 2014).

These gels offer the benefit of extended drug residence time at the absorption site. This is facilitated by their transformation into strong gels following swelling. Several formulation methods can be employed to create in-situ gels, including pH-triggered, ion-activated, photo polymerization, temperature-triggered, and enzymatic cross-linking methods. Each of these techniques capitalizes on specific triggers or conditions to

*Corresponding author

DOI https://doi.org/10.5281/zenodo.8343532#113

ISSN 0975-234X (Print)
0975-4377 (Online)
DOI: 10.52711/0975-4377.2024.00009

Vol. 16 | Issue-01|
January - March| 2024

Available online at
www.anvpublication.org

Research Journal of Pharmaceutical Dosage Forms and Technology
Home page www.rjpdft.com

REVIEW ARTICLE

Navigating the Global Landscape: A Comprehensive Review of Bower and Sulez's Strategic Insights in the Pharmaceutical Industry

Aishwarya R, Hindustan Abdul Ahad*, Varsha S, Ranjitha V
Department of Pharmaceutics, RR College of Pharmacy, Chikkabanavara, Bangalore - 560090, Karnataka, India.
*Corresponding Author E-mail: abdulhindustan@gmail.com

ABSTRACT:
Bower and Sulez's work on global pharmaceutical strategy stands as a comprehensive analysis of the intricate landscape within this highly regulated and fiercely competitive industry. This article delve into critical themes, including regulatory compliance, market access strategies, and the role of innovation, acknowledging the industry's complexity marked by stringent regulations and intense competition. Emphasizing a holistic approach, the study explores nuanced strategies for navigating diverse regulatory frameworks globally, effective market entry, pricing considerations, and adapting to regional healthcare needs. Furthermore, the article highlight the significance of research and development, providing insights into fostering innovation, safeguarding intellectual property, and strategic collaborations. The work offers a balanced framework, addressing challenges and opportunities, making it a valuable resource for industry practitioners and future research in the dynamic global pharmaceutical sector.

KEYWORDS: Analysis, Approach, Compliance, Research, Strategy.

INTRODUCTION:

Bower and Sulez's work on global strategy within the pharmaceutical industry represents a comprehensive exploration of the intricate and multifaceted landscape characterizing this highly regulated and fiercely competitive sector[1]. This review aims to provide a detailed examination of the pivotal themes and compelling arguments put forth by Bower and Sulez in their examination of the pharmaceutical industry's global strategy. The pharmaceutical industry is renowned for its complexity, marked by stringent regulations, rapid technological advancements, and intense competition.

Received on 22.12.2023 Modified on 09.01.2024
Accepted on 25.01.2024
Res. J. Pharma. Dosage Forms and Tech.2024; 16(1):51-54.
DOI: 10.52711/0975-4377.2024.00009

Bower and Sulez, through their work, evidently recognize the gravity of these challenges and seek to dissect the critical facets that companies must navigate in order to thrive in such a demanding environment. By framing the industry as highly regulated and competitive, this article set the stage for an in-depth analysis that is likely to address not only the obstacles but also the opportunities inherent in a global pharmaceutical landscape[2].

This likely includes an examination of regulatory environments, acknowledging the necessity for pharmaceutical companies to maneuver through diverse and often intricate regulatory frameworks across different countries[3]. Bower and Sulez are anticipated to shed light on effective strategies for achieving and sustaining compliance, understanding regulatory intelligence, and establishing robust relationships with health authorities on a global scale. Moreover, the work

ijlpr 2023; doi 10.22376/ijlpr.2023.13.6.P332-P343

International Journal of Life science and Pharma Research

ISSN 2250-0480

Research Article

Pharmaceutics for effective drug dosage

Enhancing Nateglinide Delivery Through Mucoadhesive Buccal Tablets: Formulation and Assessment

Chrishmitha Sequeira[1], Sujatha P Muchalambe[1], Hindustan Abdul Ahad[1*], Abhishek Jayanna[1], Pynskhemlin Syiemlieh[1] and Shreya J Poojari[1]

[1*]*Department of Pharmaceutics, R.R College of Pharmacy, Bangalore-560090, Karnataka, India*

Abstract: Diabetes is a chronic illness that affects how the body converts food into energy. Numerous organs may be harmed as a result of poor diabetes control. The primary goal of the research project is to prepare and assess mucoadhesive buccal tablets of nateglinide for type 2 diabetes treatment, employing HPMC K100, Chitosan, and sodium alginate as mucoadhesive polymers alone and in a mixture through direct compression. The assessment parameters include thickness, hardness, weight variation, friability, drug content, swelling index, surface pH, *in-vitro* drug release, and *ex-vivo* mucoadhesive strength. FTIR analysis indicated no drug-excipient interaction. Physical parameters (thickness, hardness, weight variation, friability) adhered to pharmacopoeia standards, while drug content ranged from 83.65 to 99.76%. The swelling index varied from 100±7.64 to 147.5±2.89%. Formulation F5 (Sodium alginate) exhibited the highest drug discharge (92.1±2.37%), while F8 (HPMC K100 and Sodium alginate) demonstrated sustained discharge (79.1±2.13% at 8 h) and the highest mucoadhesive strength (33.0±2.00 g). Discharge kinetics followed zero-order (F1, F3, F4, F7, and F9) and Korsemeyer Peppas models (F2, F5, and F6). The study concludes that the potential of these formulations for controlled drug discharge and oral mucosal adhesion in diabetes management.

Keywords: Buccal, Chitosan, Diabetes, Nateglinide, Sodium alginate, Tablets

***Corresponding Author**

Hindustan Abdul Ahad , Department of Pharmaceutics, R.R College of Pharmacy, Bangalore-560090, Karnataka, India

Received On 11 August 2023
Revised On 02 October 2023
Accepted On 18 October 2023
Published On 01 November 2023

Funding This research did not receive any specific grant from any funding agencies in the public, commercial or not for profit sectors.

Citation Chrishmitha Sequeira, Sujatha P Muchalambe, Hindustan Abdul Ahad, Abhishek Jayanna, Pynskhemlin Syiemlieh and Shreya J Poojari , Enhancing Nateglinide Delivery Through Mucoadhesive Buccal Tablets: Formulation and Assessment.(2023).Int. J. Life Sci. Pharma Res.13(6). P332-P343 http://dx.doi.org/10.22376/ijlpr.2023.13.6.P332-P343

Exploring *Aloe Vera* Leaves Mucilage in Clarithromycin Mucoadhesive Microspheres: Investigating Particle Size and Swelling Index through Design Expert Software

Hindustan Abdul Ahad*, Edukulla Satheesh Kumar, Narayana Swamy V.B
RR College of Pharmacy, Hesaraghatta Main Road, Near Chikkabanavara Railway Station, Jalahalli West, Bengaluru-560090, Karnataka, India
*Corresponding author: Email-abdulhindustan@gmail.com

ABSTRACT

The research aimed to investigate the mucoadhesive properties of Aloe vera leaf mucilage (AVLM) when combined with Clarithromycin (CMN) to create mucoadhesive microspheres. The study involved the preparation of nine batches of CMN mucoadhesive microspheres using carbopol 934P (C-934P) and varying amounts of AVLM. To analyze the effects of AVLM and C-934P levels on particle size (PS) and swelling index (SI) as response variables, a central composite design was employed with design expert software. The results indicated that the PS of the microspheres ranged from 35.2±0.3 to 48.1±0.6µm, with batch B-1 having the smallest PS and B-8 showing the largest size. The PS was determined using the formula: +49.37+0.3500A+1.73B-0.8750AB-0.2500A^2-8.10B^2, where A represents the AVLM level and B represents the C-934P level. On the other hand, the SI of the microspheres varied from 56.8 to 61 and increased with higher polymer content. The formula for the SI was: +59.10+0.2500A+1.90B-0.1500AB+0.2500A^2-0.3000B^2. The study found that AVLM levels significantly influenced the PS and SI of the microspheres. Moreover, the researchers observed a controlled release of CMN from the microspheres, with satisfactory entrapment efficacy, mucoadhesion, and drug contents, meeting various constraints. Additionally, the microspheres demonstrated potential for targeted drug delivery to the stomach due to C-934P, and the presence of AVLM further enhanced this effect. Scanning electron microscopy images confirmed that the microspheres had a spherical shape with a relatively smooth surface. Overall, the study established the potential of AVLM-based mucoadhesive microspheres for controlled drug delivery, with promising results using CMN as a model drug.

Keywords: Clarithromycin, *Aloe vera* leave *mucilage,* Microspheres, Mucoadhesive, Particle size.

INTRODUCTION

The study's primary focus is to explore innovative methods of enhancing the gastric availability of drugs with patient consent. The researchers aim to develop gastro retentive microspheres, a convenient and easily administered dosage form, to improve the delivery of Clarithromycin (CMN), a broad-spectrum antibiotic. CMN is commonly used in standard eradication treatment for *H. pylori* infection, often combined with other antibiotics and acid-suppressing agents[1].

For effective mucoadhesive systems, the choice of polymer plays a crucial role. Oral drug administration is preferred by many patients due to its convenience, and various polymers have been investigated for mucoadhesive applications, although some of them are rare and expensive. In this study, the researchers have identified Aloe vera leaf mucilage (AVLM) as a new natural polymer with potential mucoadhesive properties. AVLM has also been found to possess antiviral properties, suggesting its potential use in antiviral therapy. By incorporating AVLM into mucoadhesive microspheres of CMN, the researchers aim to achieve a sustained systemic availability of the drug over an extended period[2].

).22376/ijlpr.2023.13.6.P344-P354

International Journal of Life science and Pharma Research

ISSN 2250-0480

Research Article

Verapamil Hydrochloride Floating Tablets

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Formulation and *in vitro* Evaluation of Verapamil Hydrochloride Floating Tablets

Rima Kumari Prajapati[1], Sujatha P. Muchalambe[1], Hindustan Abdul Ahad[*], Saurabh Kumar Shukla[1] and Pushpa Sahani[1]

[1*]*Department of Pharmaceutics, R.R College of Pharmacy, Chikkabanavara, Bangalore-560090, Karnataka, India*

Abstract: The present research work aims to formulate and evaluate novel sustained-discharge floating tablets of verapamil hydrochloride (VPH) which is used for the treatment of hypertension. We aim to use a direct compression technique to formulate the floating tablets. The characterization of the formulation of VPH was carried out by employing FT-*IR* and DSC studies, which showed that there was no chemical interaction between the drug and polymers, such as HPMC K100M, chitosan, and sodium alginate. The tablets are designed to have good *in-vitro* buoyancy, and they remain afloat in the dissolution medium. The best formulation (F7) is chosen based on its maximum drug discharge (91.91±2.25%) and drug content (97.20±2.71%) over 12h. The discharge kinetics of the drug from the tablets are analyzed using various mathematical models, such as zero order, first order, Higuchi, and Korsmeyer's equations. These models help explain and predict drug discharge behavior over time. The study concludes that a proper balance between the sustained-release polymer and the gas-forming agent is essential for efficient *in-vitro* buoyancy and sustained drug discharge. Formulation F7, which utilized sodium alginate, appears to be the most promising in terms of drug discharge and content.

Keywords: Chitosan, Floating, Release, Tablets, Verapamil.

***Corresponding Author**

Hindustan Abdul Ahad , Department of Pharmaceutics, R.R College of Pharmacy, Chikkabanavara, Bangalore-560090, Karnataka, India

Received On 29 August 2023
Revised On 12 September 2023
Accepted On 18 October 2023
Published On 1 November 2023

Funding This research did not receive any specific grant from any funding agencies in the public, commercial or not for profit sectors.

Citation Rima Kumari Prajapati, Sujatha P. Muchalambe, Hindustan Abdul Ahad*, Saurabh Kumar Shukla, Pushpa Sahani , Formulation and In vitro Evaluation of Verapamil Hydrochloride Floating Tablets.(2023).Int. J. Life Sci. Pharma Res.13(6), P344-P354 http://dx.doi.org/10.22376/ijlpr.2023.13.6.P344-P354

International Journal of Pharmaceutical Research and Applications
Volume 9, Issue 6 Nov - Dec 2024, pp: 58-68 www.ijprajournal.com ISSN: 2456-4494

Prescribing Pattern and Cost Analysis of Corticosteroids and Bronchodilators in Pulmonology Department in a Tertiary Care Hospital

Christina Grace Cahko[*1], Vishal CS[1], Ezekiel Shanbog[2], Sabrina K[3], Ali Ahamadi[4], , Sateesh Kumar [5], Padma L[6], Yashaswini [7].

Christina Grace Chako ,Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.*
RR COLLEGE OF PHARAMCY, Raja Reddy Layout, Medaralli, Chikkabanavara, Hesaraghatta Road, Banagalore Karnataka 560090.
Christina Grace Cahko, Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.*
CS Vishal, Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.
Ezekiel Shanbog, Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.
Sabrina K, Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.
Ali Ahamadi, Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.
CS Vishal, Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.
Sateesh Kumar E , Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.
Padma L, Department of Pharmacology, Sapthagiri institute of medical sciences, Bangalore.
Yashaswini, Department of Pharmacology, Sapthagiri institute of medical sciences, Bangalore.

Date of Submission: 01-11-2024 Date of Acceptance: 10-11-2024

ABSTRACT

Bronchodilators and Corticosteroids are two common types of medications used to manage respiratory conditions, particularly Asthma and COPD. These medications are often used in combination to provide comprehensive care for respiratory conditions. The primary objective of our study was to evaluate the prescribing pattern of bronchodilators and corticosteroids among the inpatients. The study also focuses on analyzing the cost of the treatment provided. Across-sectional study was conducted among 300 patients in a tertiary care hospital in Bangalore. The study included adult and geriatric inpatients receiving drug administration was the preferred route as compared to other routes. Cost analysis study revealed that mean average cost of generic drug (287.54) is much less than the mean average cost branded drugs (1011.75).This study provides adequate insights into the overall pattern of bronchodilators and corticosteroids used among various respiratory diseases. Patients must be provided with adequate information and knowledge in order to improve the medication adherence. Physicians should be encouraged to increase generic prescribing in order to minimize the financial burden on patients.

International Journal of All Research Education and Scientific Methods (IJARESM),
ISSN: 2455-6211, Volume 12, Issue 8, August-2024, Available online at: www.ijaresm.com

Comprehensive Analysis on Physicochemical Evaluation and Phytochemical Screening of Coriander Sativum Leaves and Stem

Nitish Kumar.G[1], Dr. Seema Gupta[2], Kamineni Divya[3], V Srirangapriya[4], Akshita Deb[5]

[1]Research Scholar, [2] Associate Professor and HOD, [3] Research Scholars, [4] Research Scholars, [5] Research Scholar
[1]Department of Pharmacognosy, [1]R R College of Pharmacy, Bangalore-India

ABSTRACT

In contrast to serving as a popular spice in cooked meals, coriander, formally known as Coriander sativum, is a significant medicinal herb. In India, it is also referred to as "Dhanya." Different secondary metabolites, or phytochemicals, found in coriander play a major role in the plant's defence systems and provide coriander leaves their stimulant, carminative, laxative, diuretic, and anti-aging properties. As a result, it's now a widely used medication for conditions like cancer, urethritis, cystitis, hay fever, allergies, vomiting, coughing, discomfort, and digestive and respiratory issues. The objective of the study was to ascertain the presence of various phytochemicals in the ethanolic extract of coriander for its physical evaluation, taking into account the coriander plant's growing medicinal potential. Phytochemical study was carried out on dried coriander leaves and stem obtained from a local market (KR Market, Bangalore). In this study, physicochemical evaluation was performed and the moisture content, total cash value, acid insoluble ash, water insoluble ash, water soluble ash value, water soluble extractive value and alcohol soluble extractive value were found to be not less than 9%w/w,9%,1.5%,1%,8%,18%,and 18% respectively.

The ethanolic extract was used for further phytochemical screening of coriander leaves. According to the analysis's findings, the extract contained very high concentrations of flavonoids (as determined by the NaOH test), low concentrations of tannins (as determined by the Ferric Solution Test), quinines (as determined by the HCI test), terpenoids (as determined by the Salkowski test), and cardiac glycosides (as determined by the Killer Killiani test). Conversely, the extract contained the lowest concentrations of alkaloids (as determined by the Wagner test), phenols (FeCl2 test), phlobatannins (as determined by the Precipitate test), and carbohydrates (as determined by the Molisch's test).Absence of oxalates (Ethanoic Acid Glacial Test), saponins (Foam test) and proteins (Ninhydrin Test) was observed in extract. Due to the presence of these secondary metabolites, coriander leaves stands as a prospective herb for antibacterial, anti-oxidant and anti-ageing therapy.

Keywords: Coriander Sativum, ethanol, herbs, phytochemical analysis, secondary metabolites

INTRODUCTION

Plants have a big potential to create many drug-active chemicals that people might use to profit from for a healthy lifestyle. Several infectious diseases can be treated with the traditional remedies [1]. From ancient time, humans are habitual to utilize plants and plant-derived products to cure and relief from physical and mental illness. [2] Higher plants have the ability to produce medications, but this potential is yet undiscovered. [3] Near about 120 active compounds have been isolated from the higher plants widely used in modern medicine and 80% shows a positive correlation between their therapeutic use and traditional plants from which they derived. [4] Over the last few years, researchers have become more interested in the components of plants worldwide, and data has been gathered to demonstrate the enormous potential of medicinal plants used in a variety of traditional systems. [5]

The coriander (Coriandrum sativum L.) fruit Apiaceae (Umbeliferae) is an annual herb that originated in the Mediterranean region and is now primarily grown for culinary purposes in Eastern Europe, Latin America, Africa, and Southeast Asia. Coriander, also known as cilantro, cilantrillo, Arab parsley, Chinese parsley, Mexican parsley, Dhanya and Yuen sail.[6,7] When treating urethritis, cystitis, UTIs, urticaria, rash, burns, sore throats, vomiting, indigestion, nosebleeds, coughs, allergies, hay fever, dizziness, and amoebic dysentery, this drug is advised. Although the entire plant may be eaten, the most often utilized components in cooking are the fresh leaves and the dried seeds. Due to its diaphoretic, diuretic, carminative, and stimulating properties, coriander is used in Indian traditional medicine to treat problems of the digestive, respiratory, and urinary systems.[8,9,10] Coriander has been recommended for a variety of ailments in Iranian traditional medicine, including dyspeptic symptoms, appetite loss, convulsions, sleeplessness, and

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

FORMULATION AND EVALUATION OF FAST DISSOLVING TABLETS OF OLMESARTAN MEDOXOMIL

[1]Vishal CS, [2] Dr.Ashwini Rajendra

[1]Department of Pharmaceutics, National College of Pharmacy Shimoga, [2]Associate Professor, Department of Pharmaceutics, National College of Pharmacy Shimoga.

[1]Department of Pharmaceutics ,

[1]National College of Pharmacy, Shimoga, India.

Abstract

Aim: Olmesartan medoxomil is BCS class II drug which is poorly water soluble and highly permeable in nature. Lower solubility leads to poor dissolution and inadequate bioavailability. The aim of this work was to improve the solubility of poorly aqueous soluble drug Olmesartan medoximil using Poloxamer 407 and HPMC K 15 M by solid dispersion technique. Ternary solid dispersion were prepared by solvent evaporation methods. Phase solubility study of all the formulations was carried out in distilled water .). Fast dissolving tablets of Olmesartan medoximil were formulated using selected solid dispersion and superdisintegarnt. Stability studies were carried out for selected formulation. In the phase solubility study the solubility of drug carrier mixture was found in the range between 10.428 to 21.610 mg/ml. The plot of concentration of drug verses concentration of carrier showed linearity with the regression coefficient value less than 1, indicating AN type of curve. The compatibility studies indicated the conversion of crystalline form of Olmesartan medoximil to amorphous form. Fast dissolving tablets of selected formulation showed 90.8% release in 1 hour. The formulations were stable during the study period. From the results it can be concluded that solvent evaporation technique can be utilized to prepare solid dispersion which are successfully formulated into fast dissolving tablets.

Index Terms:- Solvent evaporation method, Olmesartan Medoximil, Fast dissolving tablets.

I. Introduction: Oral drug delivery is the most convenient route of drug administration due to ease of administration, patient perspective, flexibility in formulation, easily available etc. However in case of the oral route there are limitations such as limited drug absorption causing poor bioavailability and low pharmacological response resulting into inadequate and low oral absorption. [1]

Oral bioavailability of a drug depends on its solubility and or dissolution rate. The dissolution may be the rate determining step for the onset of therapeutic activity. Most of the new compounds which are undergoing development, about 40 % are subject to dissolution problems. To overcome this pharmaceutical challenge, various solubilization technologies have been developed including solid dispersions, nanocrystals, use of surfactants, cyclodextrin complexes and lipid formulations. [2]

A Study on Prescribing Pattern of Antibiotics in Gastroenterology Department of a Tertiary Care Hospital.

Varalakshmi P*, Vishal CS[1], Saleh Nasir[2], Lavkush K[3], Sayan Chatterjee[4], Sateesh Kumar E[5], Padma L[6], Sapna Patil[7].

*,1,2,3,4,5 *Department of Pharmacy Practice, RR College of Pharmacy, Bangalore.*

6,7 *Department of Pharmacology, Sapthagiri institute of medical sciences, Bangalore.*

ABSTRACT:-BACKGROUND: This study investigates antibiotic prescribing patterns within the Gastroenterology department of a tertiary care hospital to gain insights into the utilization of antibiotics in the treatment of gastrointestinal conditions, with potential implications for patient care and antimicrobial stewardship.

METHODS: A cross-sectional study was carried out among 281 inpatients in a tertiary care hospital in Bangalore.

RESULTS: Most patients fall within the 20-30 age group, with males being more prevalent. The 20-30 age group accounts for 22.06% of patients, while the 90-100 age group has the lowest representation at 0.71%. Acute gastroenteritis is the most common diagnosis, representing 30.25% of cases, followed by acute pancreatitis at 8.19%, other diagnoses including peptic ulcer 7.83% and GERD 15.30%. Comorbidities are common, with Hypertension, Diabetes, and other conditions affecting 31.32% of patients. A substantial portion (33.10%) has no recorded comorbidities. Intravenous administration is the most preferred route, accounting for 82.49% of cases. Metronidazole is the most frequently prescribed antibiotic (31.16%). Among patients Metronidazole, and the main approach to adverse drug reaction management is drug withdrawal. This comprehensive analysis informs patient care and treatment strategies in the Gastroenterology department.

KEYWORDS: Antibiotics, Gastroenterology, Prescribing Pattern, Who Indicators, Adverse Drug Reaction.

I. INTRODUCTION

Prescription pattern monitoring studies are drug use studies that are primarily concerned with rational drug use in populations. "Patients receiving drugs that meet their clinical needs, at doses appropriate to their individual needs, and for appropriate durations at the lowest cost to the patient and their community," the definition states. The World Health Organization (WHO) core indicators contribute to improved prescribing patterns and thus to the rational use of medicines in health facilities. It is necessary to assess the reasonable prescribing skills of physicians, and this can be achieved through periodic prescribing reviews. The purpose of this study was to describe

INTERNATIONAL JOURNAL OF PHARMACEUTICAL SCIENCES
[ISSN: 0975-4725; CODEN(USA): IJPS00]
Journal Homepage: https://www.ijpsjournal.com

OPEN ACCESS

Review Article

A Complete Assessment On Herbal Nanogels

Akshita Deb*[1], Deeparani Urolagin[2], Ansari Aashif Raza Mohd Imtiyaz[3],Samir Panda[4], Arundhati Kashyap[5]

[1]*Research scholar, Department of Pharmacognosy, R R College of Pharmacy, Bangalore- India*
[2]*HOD & Professor, Department of Pharmacology, R R College of Pharmacy, Bangalore- India*
[3-5]*Research scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore- India*

ARTICLE INFO

Received: 11 May 2023
Accepted: 15 May 2023
Published: 17 May 2024
Keywords:
Herbal, Sustained release, Routes, Characterization
DOI:
10.5281/zenodo.11208343

ABSTRACT

In recent years, there has been an increasing number of research on the sustained and controlled distribution of drugs through the use of natural and biocompatible ingredients. In this day and age, herbal medications made from natural or traditional herbs provide merit as alternative treatments for the majority of infectious diseases as well as non-communicable illnesses like diabetes and cancer. medication delivery problems have been solved by nanotechnology, a revolutionary approach that improves medication absorption, sustains drug release, controls drug release, lowers drug toxicity, etc. A hydrogel nanoparticle containing a network of cross-linked hydrophilic polymers is referred to as a "nanogel." Cross-linked polymer nanoparticles, or nanogels, swell in an appropriate solvent. As they are smaller in size, nanogels exhibit better penetration characteristics and a strong drug loading capacity. There are several ways to deliver them, including oral, nasal, parenteral, pulmonary, intra-ocular, etc. Nanogel is preferred for herbal remedies since it is comfortable and stable. This review article focuses on the reported activities of herbal nanogels, synthesis, its preparation, characterization and evaluation. Its degradability and biocompatibility create a multibillion dollar market for the expanding pharmaceutical sector. Herbal nanogels so increase its efficacy and serve a multipurpose purpose.

INTRODUCTION

"The therapeutic practices that are alive for many years, before the event and spread of recent medicines" is a common definition of herbal medicine. This area of medicine, which is primarily the subject of research by numerous researchers, uses medicinal plants for therapeutic purposes and is used as herbal medicine.[1] In this day and age, herbal remedies made from natural or traditional herbs make sense as alternative treatments for the majority of infectious diseases as well as non-communicable illnesses like

***Corresponding Author:** Akshita Deb
Address: *Research scholar, Department of Pharmacognosy, R R College of Pharmacy, Bangalore- India*
Email ✉: akshitadeb12345@gmail.com

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
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DETAILED STUDY OF *ANOGEISSUS LATIFOLIA*

Dr.Deeparani Urolagin[1], Harshitha S[2], Clever Lyngdoh[3], Sneha rose sunil[4], Aswathy Mohan[5], Abhishek Jayakumar[6], Nevin Varghese Mathew[7], Rajesh Dey [8]

1- Professor and HOD, R R College of Pharmacy, Bangalore.

2,3,4,5,6,7,8- B pharm students, R R College of Pharmacy, Bangalore

ABSTRACT

The present study was undertaken to review the morphologic characters, distribution, chemistry, the pharmacological activity of the plant *Anogeissus latifolia*. The *Anogeissus latifolia* plant consists of beta-sitosterol, tannins, glycosides, ellagic acid, terpenoids, flavonoids, steroids, in the different parts of the plant which is useful for producing various pharmacological activity such as wound healing, antiulcer activity, antioxidant activity, antidiabetic activity, hypolipidemic activity, analgesic, anti-inflammatory, antipyretic activity, anthelmintic activity, anticonvulsant, thrombolytic activity, cytotoxicity activity.

Keywords: *Anogeissus latifolia*, Antioxidant activity, Hepatoprotective, Pharmacological activity.

INTRODUCTION

Anogeissus latifolia Wall. (Combretaceae), is a huge or mild sized tree feature of dry deciduous forests and not unusual during India .The distinctive, a part of the plant contains tanins, ellagic acid, steroids, betasitosterol, glycoside and flavonoids.[1] This flora are used as an ethnomedicine in Asia and Africa to deal with numerous illnesses like diabetes, fever, diarrhoea, dysentery, tuberculosis, wound recovery, pores and snake and scorpion venom.[2] *Anogeissus latifolia* is one of the essential medicinal plants used in Ayurveda for heart diseases. This plant is effective for urinary tract infections, skin diseases (eczema, psoriasis), liver diseases, fever, and epileptic seizures. Pharmacologically active phenolic plant component is ellagic acid. It has healing and bactericidal properties, anti-ulcer potential, lipid-lowering activity and hepatoprotective capacity. Provide assessment summary Ethnobotanical, phytochemical, pharmacological and biotechnological research on this medicinal plant.[3] The significant interest in drugs derived from *Anogeissus latifolia* plants is due to the belief that plants are secure and reliable, and with lesser side consequences. The interest on natural drugs and their usage had been growing unexpectedly in latest years.[4]

MORPHOLOGICAL CHARACTERS

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Comparative Hair Growth Evaluating Activity of Marketed Formulation with Isolated Herbal Active Constituent.

Dr. Deeparani Urolgin[1], Harshitha S [2], Sneha Rose Sunil [3], Aswathy Mohan[4], Nevin Varghese Mathew [5], Abhishek Jayakumar[6], Rajesh Dey [7], Clever Lyngdoh [8]

[1]- Professor and HOD, R R College of Pharmacy, Bengaluru.
[2,3,4,5,6,7]- B Pharm students, R R College of Pharmacy, Bengaluru.

ABSTRACT:

Background: oxidative harm has been observed in various kinds of hair loss. As a polyphenolic phytoalexin Resveratrol, Anogeissus latifolia is known to be an antioxidant, Anti-inflammatory, and anti-apoptotic agent. anogeissus latifolia is known as an antioxidant, Anti-inflammatory, and anti- apoptotic agent.

Aim: Thus, we aim to examine the effects of resveratrol and Anogeissus latifolia (nanoformulation) on hair growth.

Objective: In vivo C57BL/6 mice were used to evaluate the effects of resveratrol and Anogeissus latifolia on hair cycle, hair length, skin thickness, hair follicle diameter, hair cycle score, and the percentage of hair cycle stage. Topical application of resveratrol and Anogeisus laifolia significantly promoted and stimulated the hair growth. This present experiment showed that the combination of resveratrol and Anogeissus latifolia encourages hair growth and may be a potential candidate for treating hair loss.

Keywords: Resveratrol, Anogeissus latifolia, Hair growth, Nano formulation, Antio-oxidant, Vernier caliper.

Introduction:

Resveratrol has antioxidant activity, which also reduces inflammation, and hair follicles are stimulated, this will also improve blood circulation which increases the oxygen supply to the newly growing hair. Resveratrol belongs to the resorcinol class and consists of stilbesterol and polyphenols. Resveratrol chemical name: (3,5,4'-trihydroxystilbene) which is a polyphenolic. Resveratrol can be found in the skin of grapes, dark chocolate, plants, and peanuts, blueberries, raspberries, cranberries, mulberries, pistachios, groundnuts, and purple grapes.

Anogeissus latifolia gum ghatti or Indian gum is a complex non-starch polysaccharide. Anogeissus latifolia is a plant that belongs to the combretaceace family. The bark of the Anogeissus latifolia used in mice's hair growth activity is smooth and pale to dark grey in color1. Polysaccharides, lectins, peptides, flavonoids, and tannins are the secondary metabolites of Anogeissus latifolia. Gallotannins, 3-beta-hydroxyl-28-acetyl taraxen, terpinoids,,leucocyanidine, etc..are the phytoconstituents present.

Phytoconstituents

Resveratrol (3, 5, 4 - trihydroxystilbene) is a nonflavonoid polyphenol that takes vicinity as phytoalexin. Resveratrol includes phenols or polyphenolics, phytoalexin, Trans-resveratrol, Cis- resveratrol, Vitisin A (A compound derived from resveratrol that is visible in red wines. It additionally has antioxidant properties) glycosides, Piceid (another glycosylated form of resveratrol, found in numerous plants, which contributes to the general resveratrol content material in dietary sources)[1]

Anogeissus latofolia plant contains various secondary metabolites such as Anthraquinone, Alkaloids, phenols, essential oils, tannins, flavonoids, terpenoids, saponin, xanthones, glycosides, uronic acid galactose, pentonic acid, L-arabinose and aldobionic acid on hydrolysis with sulphuric acid. These various phytochemicals are responsible for various pharmacological activities.[2]

Pharmacological activities: Anogeissus latifolia

Anogeissus latifolia is one of the crucial medicinal plants considered Ayurveda in cardiac disease. The plant is beneficial in UTI infections, pores, skin sicknesses, liver proceedings, fever, epilepsy, and many others. The plant is wealthy in pharmacologically active phenolic phytoconstituentellagic acid. It possesses recuperation capability, microbicidal activities, antiulcer capacity, hypolipidemic activities, and hepatoprotective capacity[3]. A. latifolia extract

WORLD JOURNAL OF PHARMACEUTICAL RESEARCH
SJIF Impact Factor 8.453
Volume 13, Issue 7, 1190-1218. Review Article ISSN 2277–7105

EXPLORING THE MULTIFACETED BENEFITS OF RESVERATROL: A COMPREHENSIVE REVIEW OF ITS PHARMACOLOGICAL ACTIONS

Ansari Aashif Raza Mohd Imtiyaz[1]* and Deeparani Urolagin[2]

[1]Research Scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore-India.

[2]HOD & Professor, Department of Pharmacology, R R College of Pharmacy, Bangalore-India.

Article Received on
18 February 2024,

Revised on 09 March 2024,
Accepted on 29 March 2024

DOI: 10.20959/wjpr20247-31902

***Corresponding Author**
Ansari Aashif Raza Mohd Imtiyaz
Research Scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore-India.

ABSTRACT

Resveratrol, a constituent of reddish wine, has long been suspected to have cardioprotective impacts. Interested in this compound has been reestablished in afterward a long time, Resveratrol, a characteristic polyphenol appeared in Normal determined items, which can be extricated from plant root, has been broadly utilized in conventional pharmaceuticals to treat different clutters due to their different pharmacological activities such as antioxidant, anticancer, anti-inflammatory, antihypertensive, hepatoprotective, neuroprotective, and expanding bioavailability. It has showed up to mimic the impacts of caloric confinement, apply anti-inflammatory and anti-oxidative impacts, and impact the begin and development of numerous maladies through a couple of disobedient. The number of nitty gritty impacts of resveratrol is continuously creating. Various arrange targets have been recognized in vitro, and cautious impacts have been outlined totally different rodent models of sickness. The various point-by-point in vivo impacts of resveratrol are checked on here and, at anything point conceivable, have been related to putative components and targets. In development, the appear review summarizes the first afterward composing around resveratrol as a chemotherapeutic master against various diseases and gives an examination of the potential of this ordinary compound as a complementary or elective medicine. This survey gives a comprehensive outline of resveratrol and its different pharmacological activities.

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International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Integrated Approach to Neuropathic Pain Management: A Systematic Review of Multi-Disciplinary Interventions.

Ansari Aashif Raza Mohd Imtiyaz[1], Dr. Deeparani Urolagin[2]

[1]Research scholar, Department of Pharmacology, R R College of Pharmacy, Bangalore- India
[2]Professor & HOD, Department of Pharmacology, R R College of Pharmacy, Bangalore- India
Email: ansariaashif251@gmail.com

ABSTRACT

Neuropathic pain is a common symptom of a heterogeneous group of conditions, including diabetic neuropathy, trigeminal neuralgia, post-herpetic neuralgia, and spinal cord injury. Neuromodulation is presently prescribed as the fourth-line treatment of neuropathic torment after fizzled pharmacological treatment but sometimes recently low-dose opioids. This paper investigates the likenesses and contrasts between chronicled and current hones for the clinical administration of patients enduring neuropathic torment around the world, with a specific center on the US, Europe, and Japan.

KEYWORDS: Neuropathic pain, diabetic neuropathy, injury, treatment, clinical management.

INTRODUCTION

Neuropathic torment, or torment related with infection or damage to the fringe or central anxious framework, [1] could be a common side effect of a heterogeneous gather of conditions, counting diabetic neuropathy, trigeminal neuralgia, post-herpetic neuralgia and spinal line harm. [2] The genuine predominance of neuropathic torment is to a great extent obscure since of the need of legitimate epidemiologic considers. Current gauges propose that around 1.5% of the common populace within the US may be influenced, [3] and Bowsher has recommended that at slightest 1% of the UK populace endure from a few shape of neurogenic torment. [4] These figures are probably an belittle since there can be a neuropathic component within the torment experienced by patients with cancer, degenerative maladies, or neurologic conditions (such as Parkinson's infection) that has so distant gone unnoticed. These conditions are most predominant within the maturing populace; since the measure of this populace is increasing worldwide, neuropathic torment will definitely put a dynamically requesting burden on healthcare assets. Hence, there's a have to be reassess neuropathic torment and its treatment. This paper investigates the similitudes and contrasts between chronicled and current hones for the clinical administration of patients enduring from neuropathic torment around the world, with specific center on the US, Europe, and Japan.[5]

Diagnosis

Whereas the history of torment investigate is long, dating back centuries, it was not until the Universal Affiliation for the Think about of Torment (IASP) was established in 1973 that consideration centered on the causes and treatment of neuropathic torment. The IASP distributed its to begin with list of torment terms in 1979 .In any case, neuropathic torment was not included within the list until 1994, when it was at that point characterized as 'pain started or caused by a primary lesion or brokenness within the anxious system',[6]This exceptionally wide definition typifies the concept that, when a nerve gets to be harmed, changes inside the neural pathways can result in incessant torment indeed within the nonappearance of a proceeding boost. In spite of the fact that this hypothesis has presently picked up common acknowledgment, it was at first a progressive thought that denied the Cartesian show of nociception and torment. In this way, neuropathic torment is categorically distinctive from nociceptive torment, which comes about from the enactment of nociceptive tactile axons by harmful boosts. Nociceptive torment is more often than not limited, localized, and dies down with mending or evacuation of the harmful substance. The characteristic side effects of neuropathic torment are depicted in more detail somewhere else in this supplement. The partition of boost from indication is somewhat mindful for the challenges in diagnosing neuropathic torment. In the event that the IASP definition is entirely connected, the clinician needs as it were to illustrate nerve harm or brokenness in a persistent encountering torment to form the conclusion of neuropathic torment. In any case, nerve harm and/or brokenness may show itself as negative side effects (tangible misfortune) as well as positive side effects (e.g., paresthesia, hyperalgesia). In spite of the fact that the affectability of the IASP definition is possibly tall, the specificity is moo, since not all patients with nerve damage involvement neuropathic torment. This may lead to a circumstance in which a persistent with nerve harm and coincidental torment from another source is misdiagnosed with neuropathic pain and along these lines abused. Alternately, neuropathic torment may be underdiagnosed when the signs and side effects of neural brokenness are not recognized. In this manner, the symptomatic work-up in patients with suspected neuropathic

IJCRT.ORG ISSN : 2320-2882

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PHARMACOGNOSTIC AND PHARMACOLOGICAL REVIEW OF MATRICARIA CHAMOMILLA

Dr. Deeparani Urolagin[1], Ansari Aashif Raza[2], Samir Panda[3], Deepika H L[4], Maneswari Boro[5].

1. **Professor and HOD, RR College of Pharmacy, Bangalore -560090**

2,3,4,5 Research Scholar, RR College of Pharmacy, Bangalore -560090

ABSTRACT

Matricaria chamomilla L.(Asteraceae) is a famous medicinal herb and it is sold all over the world. Traditional medicine uses it extensively to treat a wide range of illnesses, including infections, neuropsychiatric, respiratory, gastrointestinal, and liver ailments. Additionally, it has calming, antispasmodic, antibacterial, and antiemetic properties. Reports on the taxonomy, description of the botanical and ecological environment, ethnomedical applications, phytochemistry, biological and pharmacological properties, potential industrial applications, and encapsulation of *M. chamomilla* were thoroughly compiled and summarised in this review. On the other hand, phenolic substances such as phenolic acids, flavonoids, and coumarins predominated in *M. chamomilla* extracts. *M. chamomilla* also displayed several biological traits, including antioxidant, antibacterial, antifungal, anti-parasitic, insecticidal, anti-diabetic, anti-cancer, and anti-inflammatory actions. The biological activity of *M. chamomilla* can be improved, as well as its applications, by encapsulating the plant's essential oils or extracts. The results show that *M. chamomilla's* pharmacological actions support its traditional applications. The essential oils and extracts from *M. chamomilla* did indeed exhibit intriguing antioxidant, antibacterial, antifungal, anticancer, antidiabetic, antiparasitic, anti-inflammatory, antidepressant, antipyretic, anti-allergic, and analgesic effects. The medical use of *M. chamomilla* on people and animals was also its most significant use.

Keywords: Chamomile; ethnomedicinal; Medicinal herb; Antioxidant activity; Antimicrobial activity; phytochemical; pharmacognosy.

INTRODUCTION

One of the most significant therapeutic herbs that is native to southern and eastern Europe is *chamomile* (*Matricaria chamomilla L.*). Additionally, it is grown in Brazil, Germany, Hungary, France, Russia, and Yugoslavia. It was brought to India during the Mughal era, and it is presently grown in Jammu and Kashmir, Punjab, Uttar Pradesh, and Maharashtra. North Africa, Asia, North and South America, Australia, and New Zealand are among the places where the plants can be found[1]. The majority of plant biomass is produced in Hungary. It also thrives on Hungary's poor soils and provides a source of income for the area's underprivileged residents. Bulk flower exports to Germany are used to distil the oil. The plant had been grown in Lucknow, India, for nearly 200 years[2]. Chandra originally introduced the plant in Lucknow's alkaline soils in 1964–1965. Blue oil as such is not currently in demand in India. However, *chamomile* flowers are very popular[3]. The two largest chamomile flower growers at the moment are M/s Ranbaxy Labs Limited, New Delhi, and M/s German Remedies[4].Ancient Egypt, Greece, and Rome were all familiar with the use of *chamomile* in herbal treatments for thousands of years[5]. A medicine called *chamomile* is listed in the pharmacopoeia of 26 nations[6]. It is a

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

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Pharmacognostic and pharmacological review of *MORINGA OLEIFERA LAM*

Dr.Deeparani Urolagin[1],Nandini Goudar[2],Ansari Aashif Raza [3],Samir Panda[4],Subhadeep Saha[5].

1.Professor and HOD, R R College of Pharmacy, Bangalore

2.Assistant Professor, East West College of Pharmacy, Bangalore

3,4,5.Research scholars, R R College of Pharmacy, Bangalore

ABSTRACT

Moringa oleifera Lam. or on the other hand *munga* is one of the main plants broadly developed in India. It has a place with family (*Moringaceae*). This plant is broadly utilized as nutrition spice and contains important pharmacological activity like enemy of asthmatic, hostile to diabetic, hepatoprotective, mitigating, against fruitfulness , against disease, hostile to microbial, hostile to oxidant, cardiovascular, hostile to ulcer, CNS action, against unfavorably susceptible, injury mending, pain relieving, and antipyretic movement, *Moringa oleifera Lam*. The plant is otherwise called Pony - radish tree, Drumstick tree. All aspects of this plant contain a significant restorative component. It contains rich wellspring of the vitamin A, L -ascorbic acid, and milk protein. Alkaloids, protein, quinine, saponins, flavonoids, tannin, steroids, glycosides, fixed oil, and lipids are only a few examples of the many types of dynamic phytoconstituents that can be found. It is also possible to find this plant in tropical regions. Niazinin A, Niazinin B, and Niazimicin A, Niazimin B are a few of the ingredients. The current audit looks at this plant's phytochemical composition, restorative function, and pharmacological movement.

Keyword:

Antimicrobial activity,antipyretic, *moringa oleifera Lam.*

INTRODUCTION

It is sourced from a natural source and has fewer side effects than other herbal medicines, *Moringa oleifera* has been increasingly popular in developed nations over the past several decades as a result of the field's rapid advancement. Herbal medications and their ingredients are significant in several therapeutic systems such as Unani, siddha, yoga, homoeopathy, naturopathy, and ayurveda. This non-allopathic approach is used by more than 70% of the population. Pertaining to medicine *Moringa oleifera* is also known as the horse radish tree or the drumstick tree. *Moringa oleifera* (*Moringa oleifera Lam*)[1]. It is indigenous to and a member of the family (*Moringaceae*). India, Pakistan, and Bangladesh have sub -Himalayan regions. Afghanistan, as well. It is a little, evergreen plant that grows quickly. Afghanistan, as well. It is a little, evergreen plant that grows quickly. Alternatively, a deciduous tree. It may reach heights of 10 to 12 m^2.

Journal
of the
Oriental Institute
M.S. University of Baroda
ISSN: 0030-5324

FORMULATION OF HERBAL CREAM BY USING MIRABILIS JALAPA LEAF EXTRACT

MRS POORNIMA A N*[1], MD DILWAR HOSSAIN[2], ARGHA PRAVA SAHOO[3], HAREKRISHNA SAHOO[4] Department of Pharmaceutical Chemistry, R R College of Pharmacy, Chikkabanavara, Bangalore-560090 : poornimanarappa@gmail.com

ABSTRACT:-
Mirabilis jalapa belongs to family Nyctaginaceae and grows as small tree with thin green bark. The plant is widely distributed and also has pharmacological actions against wide spectrum of disease in traditional system of medicines. All parts of the plant especially its leaves contain number of secondary metabolites such as terpenes, proteins, flavonoids, alkaloids, and steroids.The main aim of the study is to formulate and evaluate herbal cream using Mirabilis jalapa extract to give anti- microbial ,anti-inflammatory, virus inhibitory activity, anti tumor activity, anti cancer activity etc. Mirabilis jalapa are medicinal plants used from ancient times in various herbal cosmetics such as Ayurveda, Siddha and Homeopathy. Mirabilis jalapa provides beneficial effects on skin such as anti-microbial, anti-inflammatory and skin lightening agent. The cream was formulated with Mirabilis jalapa extract with varying the weight of the components to give different formulations of F1, F2, F3. The herbal cream was evaluated for parameters such as appearance, pH, homogeneity, viscosity, acid value, saponification value. Stability studies carried out for 15 days at 25°C on the herbal cream was found to be stable. The formulation F3 was shown to be more stable and good permeability properties when compared to other formulations. Thus, the F3 herbal formulations was found to be safe and a better formulation in comparison with others.

KEYWORDS :- Mirabilis jalapa, Herbal Cream, Antibacterial (E.Coli, Streptococcus, Pseudomonous

INTRODUCTION

Since ancient times, herbs have been used for treating skin conditions and a wide variety of their dermatological disorders including inflammation, photo toxicity, atopic dermatitis and alopecia areata. Herbal extracts are added to the cosmetic preparation due to several associated properties such as antioxidant capacity, pigmentation inhibition, and antimicrobial activity which are beneficial for attenuation and prevention of various skin disorders. Preparations of herbal ingredients has been traditionally used for long time for skin care purposes. These herbs act as active ingredients of skin care formulation and are more bio compatible than the synthetic material. The synthetic material in the cosmetic can cause dangerous effect especially on long term use. Cosmetics are the products that are used for application on the body or the purpose of cleansing, beautifying or altering appearance and enhancing the beauty. Cosmetics are developed to reduce wrinkles and control oil secretion. Herbal creams are cosmetic preparations which are semisolid emulsions of one or more herbs and are designed to apply to the skin or mucous membrane. It can be defined as "a semisolid dosage form containing one or more herbs dissolved or dispersed in a suitable base". These are of softer consistency, lighter in nature and used to enhance the human appearance. Cold creams are useful for keeping skin moisturized all time, especially in winters. Vanishing creams are low fat moisturizer that dissolves in the skin that leaves no visible trace when rubbed into the skin. Herbal creams are used to protect against exogenous and endogenous harmful agents, and enhance the beauty and attractiveness to the skin.

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

BIOSYNTHESIS AND DESIGN OF Ag-Fe BIMETALLIC NANOPARTICLES USING A MEDICINAL PLANT *Buchanania lanzan* AS ANTIMICROBIAL SYNERGISTIC COMBINATION THERAPIES AGAINST CLINICALLY RELEVANT PATHOGENS

Dr.Deeparani Urolagin[1],Akila E[2],Nandini Goudar[3],Sahru reji[4],Geethapriya Loganathan

1. **Professor and HOD,R R College of Pharmacy,Bangalore**
2. **Associate professor, Alamin College of Pharmacy,Bangalore**
3. **Assistant professor,East west college of Pharmacy,Bangalore**
4. **Research scholar,R R College of Pharmacy,Bangalore**
5. **Assistant professor,Acharya college of Pharmacy,Bangalore**

ABSTRACT

Buchanania Lanzan Indian tribes employ the dry deciduous forest tree Spreng, which belongs to the *Anacardiaceae* family, extensively to treat a variety of ailments. An organic leaf extract has been used to define three primary chemical constituents with strong therapeutic potential: vomicine, epinitol, and celidoniol. These extracts primarily show anti-inflammatory, anti-hyperlipidemic, antioxidant, wound-healing, anti-diarrheal, and antivenomic effects, among many other therapeutic qualities.Very recently, unique biomaterials and biofilms are being extracted from seeds, which promise to become a major contributor in pharmaceutical industry. This review attempts to present thorough updated account of ongoing and emerging areas of research of this plant, especially in the field of phytomedicnes and pharmaceuticals.

Keywords: Nanoparticles, Sliver nanoparticles, Iron Nanoparticles, Antimicrobial activity.

IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

FORMULATION, DEVELOPMENT AND CHARACTERISATION OF ANTI-MICROBIAL HERBAL SOAP USING *Moringa olifera* AND *Albizia amara* LEAVES EXTRACT

Akila Elias*[1], Dr. Deeparani Urolagin[2], Phahjingshai Mynsong[3], Abeetha S[3], Lalzuitluangi[3], Lamphi Ia I Bha Sapuh[3], Poulami Chatterjee[3], Sabina Parvin[3], Zahangir Alam[3].

[*1] Department of Pharmacognosy, Al-ameen College of Pharmacy, Bangalore, Karnataka.

[2]Department of Pharmacology, RR College of Pharmacy, Bangalore, Karnataka.

[3]Department of Pharmacognosy, RR College of Pharmacy, Bangalore, Karnataka.

Address for Corresponding Author

Associate Professor,

Department of Pharmacognosy,

Al-Ameen College of Pharmacy, Hosur Road,

Bangalore, Karnataka – 560027.

ABSRTACT

Objective: The objective of this study is to investigate the presence of phytochemicals, and create and assess antimicrobial herbal soap a variety of bioactive herbal plant extracts with different dermatological and ethnic significance in ayurveda, including *Moringa oleifera*, *Albizia Amara*, Coconut oil, Jasmine oil, *Aloe vera barbadensis*, Piper betel, green tea, olive oil.

Methods: All plant components' extracts were obtained using various, effective extraction techniques. After that, the extract was combined with lye and fatty oil to make a cold-process soap.

Results: The prepared soap was compared to soap that was sold. The prepared soap was found to be good in appearance, color and odor. pH, % free alkali content, foamability, moisture content, alcohol insoluble matter,

Journal of Molecular Structure 1312 (2024) 138430

Contents lists available at ScienceDirect

Journal of Molecular Structure

journal homepage: www.elsevier.com/locate/molstr

Fabrication and characterisation of nabumetone transferosomal gel for effective topical delivery

Manisha Rajpurohit [a], Archana Patil [a,*], Vinyas M [b], Deeparani Urolagin [c], Mohd Saeed [d], Irfan Ahmad [e]

[a] Department of Pharmaceutics, KLE College of Pharmacy, KLE Academy of Higher Education and Research, Belagavi, Karnataka 590010, India
[b] Department of Pharmacology, GITAM School of Pharmacy, GITAM Deemed to be University, Hyderabad, India
[c] Department of Pharmacology, R. R. College of Pharmacy, Chikkabanavara, Bangalore, Karnataka, India
[d] Department of Biology, College of Sciences, University of Hail, Hail, Saudi Arabia
[e] Department of Clinical Laboratory Sciences, College of Applied Medical Sciences, King Khalid University, Abha, Saudi Arabia

ARTICLE INFO

Keywords:
Nabumetone
Transferosomes
Factorial design
Transferosomal gel
Topical delivery

ABSTRACT

Nabumetone is a lipophilic drug with a log P value of 3.2 and belongs to BCS class II due to its poor water solubility. When administered orally, it undergoes extensive first-pass metabolism, shows low bioavailability, and has unfavourable side effects that cause discomfort. Topical route has gain importance by delivering therapeutic agents via this route due to its safety and convenience of drug administration and as of there are no any gel formulations available for it. The present investigation aimed to prepare, optimise, and characterise Nabumetone-loaded transferosomes (Nb-TF) using 3^2 factorial designs. Transferosomes were prepared by the thin-film hydration method. The optimised formulation was incorporated into gel form (Nb-TG) and evaluated for its mechanical characteristics, *in-vitro* release, *ex-vivo* permeation, skin irritancy test, anti-inflammatory activity, and stability studies. The Nb-TF 5 transferosomal formulation was optimised based on vesicle size and entrapment efficiency and incorporated into the gel base. Both normal (Nb-gel) and transferosome-loaded (Nb-TG) gel pH was within the range of topical skin pH. The viscosities of Nb-gel and Nb-TG were 1262 ± 54 cP and 1327 ± 12 cP, respectively. The drug content of both gels was found to be 96.31 ± 1.16 and 97.18 ± 0.94, respectively. Nb-TG showed higher diffusion and drug permeation than Nb-gel. The skin irritancy test indicates that there was no sign of any edema or erythema observed. Nb-TG showed a curative and preventive anti-inflammatory effect. Gels were found stable at both refrigerator and room temperature. Nb-TFs were proven to be potential carriers for transdermal controlled delivery of Nabumetone as it has deep penetration in the dermis layer which directly goes into the systemic circulation, enhances the bioavailability and reduced toxicities.

1. Introduction

Arthritis is the major cause of disability and morbidity, especially among the elderly [1]. It is the inflammation of one or more joints that causes pain and stiffness that can worsen with age [2]. According to the prevalence rate of arthritis, it affects 1 % of the global population (adults), with over 19 million people affected in China and India and 1–2 % in the West [3]. Rheumatoid arthritis (RA) is a chronic, systemic autoimmune anti-inflammatory disease that affects the multiple joints of the body in a symmetric pattern, which leads to synovitis, joint erosion, and cartilage damage [4]. It arises more frequently in females than males, between the ages of 35 and 60, and occasionally in children below the age of 16 (known as juvenile RA) [3].

Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used and prescribed in the management of rheumatoid arthritis, osteoarthritis, and musculoskeletal pain. They are used as first-line therapy in the treatment of joint disorders. NSAIDs block the generation of prostaglandins, prostacyclins, and thromboxane produced from arachidonic acid by the enzyme cyclooxygenase (COX), which are mediators in the inflammatory process [3]. Clinical evidence suggests that topically applied NSAIDs are as safe and effective as oral NSAIDs [5]. Formulators were compelled to design topical delivery systems that could be

* Corresponding author.
E-mail address: archanapatil@klepharm.edu (A. Patil).

https://doi.org/10.1016/j.molstruc.2024.138430
Received 3 February 2024; Received in revised form 10 April 2024; Accepted 22 April 2024
Available online 25 April 2024

Koley et al.
Future Journal of Pharmaceutical Sciences (2024) 10:60
https://doi.org/10.1186/s43094-024-00633-1

Future Journal of Pharmaceutical Sciences

RESEARCH Open Access

Unveiling geniposide from *Paederia foetida* as a potential antihypertensive treatment: an integrated approach involving in vivo and computational methods

Chanchal Koley[1†], Arijit Mondal[2†], Suddhsattya Dey[2*], Ravi Rawat[3], Anjan Mondal[2], Naresh Kumar Rangra[4], Deeparani Urolagin[5], Padmacharan Behera[1], Dibya Lochan Mohanty[6], Ameeduzzafar Zafar[7] and Volkan Eyupoglu[8]

Abstract

Background Hypertension is one of the burning topics in today's world. Natural product can open a new window in the treatment as they are lesser side effect compared to synthetic compounds. *Paederia foetida* a naturally occurring plant has proven its biological importance in many aspects. In this present study, the ethanolic extract of *Paederia foetida* has effectively proven its antihypertensive activity against Amphetamine-induced hypertension.

Results The study was carried out for 4 weeks with five different groups where the groups receiving *Paederia foetida* (400 mg/kg) for 4 weeks result in decrease in blood pressure and was found helpful in maintaining the sodium and potassium balance in rat's serum. Amphetamine induces decreasing sodium level that can be countered by *Paederia foetida* whole plant extract. Geniposide, an active ingredient present in this plant, is having antihypertensive activity, so it was docked against different PDB IDs (3OLL, 3OLS, 5DX3, 5DXE & 6PIT), to find its anti-hypertension effectiveness through computational chemistry. The docking investigations identified that estrogen receptor (PDB ID: 3OLS) exhibited the highest possibility to be the site of action. Docking score of Geniposide with 3OLS was -8.91 which is quit comparable with the internal ligand Estradiol.

Conclusion To assess the binding affinity of Geniposide with the estrogen receptor, an additional molecular dynamics simulation was conducted. The result strongly suggests that Geniposide has the potential to function as an activator of estrogen receptor through of β-ligand binding. This key finding reveals that Geniposide may serve as a potential in the treatment of hypertension by modulating the activity of the estrogen receptor.

Keywords Hypertension, Amphetamine, *Paederia foetida*, Molecular docking, Molecular dynamics

[†]Chanchal Koley and Arijit Mondal are contributed equally to this study.

*Correspondence:
Suddhsattya Dey
kuntal.kuni@gmail.com
Full list of author information is available at the end of the article

International Journal of Science and Research Archive
eISSN: 2582-8185
Cross Ref DOI: 10.30574/ijsra
Journal homepage: https://ijsra.net/

(RESEARCH ARTICLE)

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Anti-asthmatic activity of *Tinospora cordifolia* leaves extract against ach and citric acid-induced asthma in rats

Deeparani Urolagin [1,*], Dudekula Sheshbee [2], Ansari Aashif Raza Mohd Imtiyaz [1], Samir Panda [1] and Arundhati Kashyap [1]

[1] *Department of Pharmacology, R R College of Pharmacy, Bangalore, India.*
[2] *Department of Pharmacology, Aditya Bangalore Institute of Pharmacy Education and Research, Bangalore, India.*

International Journal of Science and Research Archive, 2024, 12(01), 586–595

Publication history: Received on 31 March 2024; revised on 08 May 2024; accepted on 11 May 2024

Article DOI: https://doi.org/10.30574/ijsra.2024.12.1.0829

Abstract

Asthma is one of the common clutters experienced in clinical medication in both grown-ups and children are asthma and it is characterized by irritation of the aviation routes which causes aviation route brokenness. Breathed-in bronchodilators and anti-inflammatory drugs are accessible and compelling and they require long term utilize and are related with side impacts. Typically, why elective and complementary medication is being sort after to anticipate these side impacts. A few restorative plants have anti-inflammatory impact and have demonstrated successful within the treatment of asthma. Citric corrosive, Acetylcholine, Histamine is basically utilized for assessing anti-asthmatic movement of specific sedate. Numerous plants gotten from the normal source play a critical part within the wellbeing care framework. Writing overview on home grown drugs has appeared noteworthy anti-asthmatic movement which has not shown any momentous side impact. The pharmacological component that the phytoconstituents creating the hostile to asthmatic action are not clearly caught on till date. A few herbal formulations have been determined from the Ayurveda, conventional framework of Indian medicine and its extra framework of medication, however to be experimentally approved that they have exhibited pharmacological activity against Asthmatic. As it were less number of logical data of conventional medications is accessible for the treatment of Asthmatic. This survey contains list of restorative plant which have been tried for anti-asthmatic action within the Citric corrosive, Acetylcholine actuated asthmatic in Rodent demonstrate. Rats were divided into 4 groups and given each of them individual intervention based on the activity. Tinospora cordifolia leaf extract shows an anti-asthmatic activity in rats. hence, the data given in this inquiry will offer assistance the analysts for the advancement of elective strategies instead of inhalers and verbal anti-asthmatic drugs for the treatment of asthma and COPD which can minimize the complications.

Keywords: Anti-asthma; Bronchodilators; Anti-inflammatory; Inhalers; Phytoconstituents

1. Introduction

Asthma may be a hyper-reactive aviation route illness running a chronic course; it has around the world predominance and may be a common cause of hospitalization in children. It is assessed that right now, 300 million people groups endure from asthma with a plausibility of an extra 100 million likely to endure from the illness over the another 15-20 a long time. Asthma could be a unremitting provocative clutter of the aviation route in which numerous cells and cellular components play a part, in specific, pole cells, eosinophils, T-lymphocytes, macrophages, neutrophils, and epithelial cells. In vulnerable people, this aggravation causes repetitive scenes of wheezing, breathlessness, chest tightness, and hacking, especially at night or within the morning. These episodes are more often than not related with broad but variable wind current obstacle that's reversible either suddenly or with treatment. The irritation too causes an related increment within the existing bronchial responsiveness to a assortment of boosts [1].

* Corresponding author: Deeparani Urolagin