ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

BULLETIN OF PHARMACEUTICAL RESEARCH

Vol. 14, Special Issue, Jan-Apr 2024

(An International Triannual Scientific Journal covering entire spectrum of Pharmaceutical Sciences)

Proceedings of APP Indo-Gulf International Conference

INVERTIS UNIVERSITY, BAREILLY, UTTAR PRADESH, INDIA - MARCH 20-21, 2024

Editor-in-Chief

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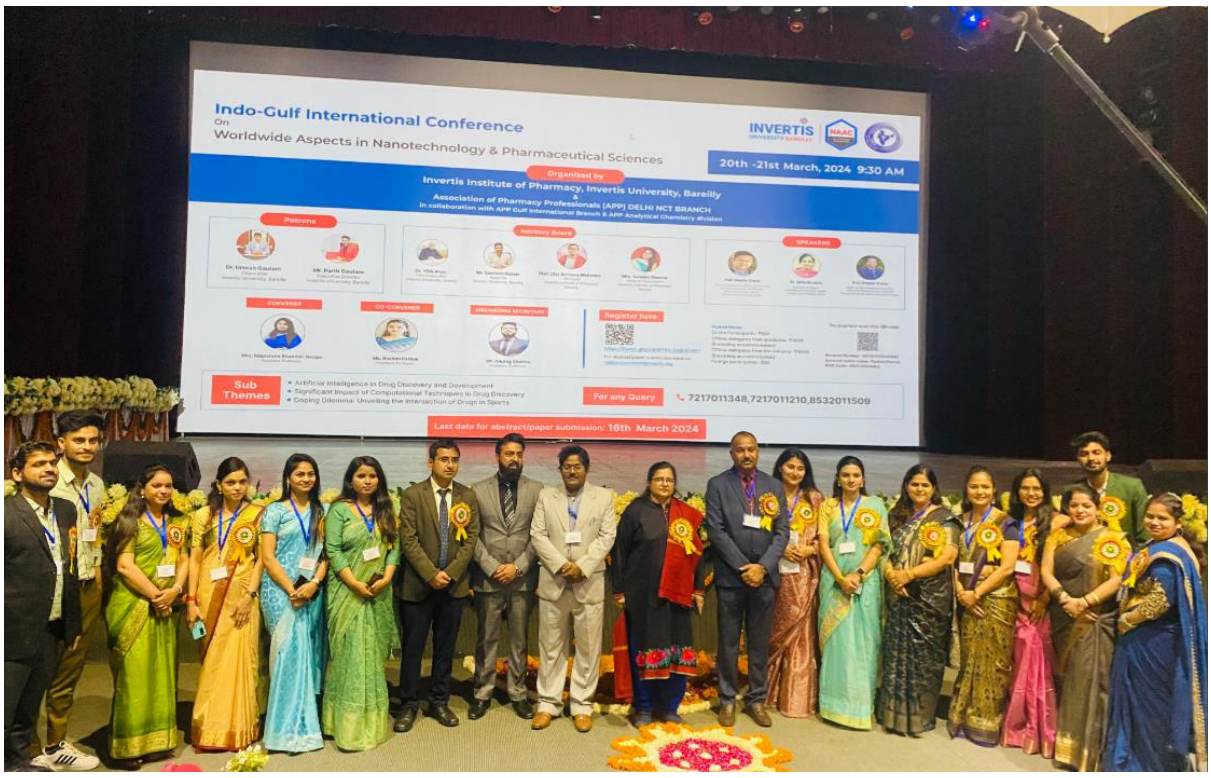
Published by :

Association of Pharmacy Professionals (APP)

Madhya Pradesh, India

http://www.appconnect.in/journal-bpr



PROCEEDINGS OF APP 4TH INDO-GULF INTERNATIONAL CONFERENCE

INVERTIS UNIVERSITY, BAREILLY, UTTAR PRADESH, INDIA

MARCH 20-21, 2024

INVERTIS
UNIVERSITY BAREILLY

Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-01

REVOLUTIONIZING TRANSDERMAL THERAPEUTICS: NANOGELS, ESSENTIAL OILS, AND ADVANCEMENTS IN COLCHICINE DELIVERY FOR ENHANCED ANTI-INFLAMMATORY ACTION AND PERMEATION BOOST

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Received: *March 10, 2024*

This study explores groundbreaking developments in transdermal therapeutics, specifically focusing on the synergistic potential of nanogels and essential oils for advancing colchicine delivery. With the limitations of oral medication administration in mind, researchers are leveraging innovative carriers to navigate skin barriers and enhance permeability for effective transdermal drug delivery. Nanogels, intricate nanoscale polymer-based networks, have shown promise as delivery systems for genes, vaccines, and poorly soluble medications. Additionally, essential oils are considered a non-toxic avenue for improving transdermal penetration. The primary objective of this research is to assess and address colchicine's challenges related to poor permeability and water solubility. The study aims to contribute to the revolutionizing of transdermal therapeutics by enhancing anti-inflammatory action and permeation for improved colchicine delivery. Considering the numerous drawbacks associated with oral medication administration, the transport of active molecules through the skin appears to be an effective technological solution. Therefore, researchers use innovative carriers that can successfully carry out transdermal administration of the molecules in order to get around skin barriers and low skin permeability. The efficient distribution of molecules via the skin is a noteworthy problem that the medical community is working to resolve. Among the methods giving promising outcomes for both dermal and transdermal delivery routes is the use of nanogels. Nanogels are nanoscale polymer-based networks that have been investigated as effective delivery systems for genes, vaccines, and poorly soluble medications. It has been suggested that essential oils are a potential, non-toxic way to improve transdermal penetration. The current study's objective was to assess the colchicine poor permeability and water solubility.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-02

WORLDWIDE ASPECTS IN NANOTECHNOLOGY AND PHARMACEUTICAL SCIENCES: A GLOBAL PERSPECTIVE

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Nanotechnology has emerged as a transformative force within the realm of pharmaceutical sciences, revolutionizing drug development, delivery, and diagnostics on a global scale. This abstract provides an overview of the worldwide aspects of the intersection between nanotechnology and pharmaceutical sciences, encompassing the collaborative efforts of researchers, advancements in drug delivery systems, diagnostic applications, and the ethical considerations surrounding this innovative field. The precision and targeted drug delivery enabled by nanotechnology has significantly enhanced therapeutic outcomes while minimizing side effects. International collaborations among scientists and researchers have fostered a global exchange of knowledge and resources, propelling the development of novel drug delivery systems, diagnostic tools, and the agnostic approaches that integrate therapy and diagnostics. This collaborative spirit is evident in the harmonization of regulatory frameworks, ensuring that safety and quality standards are maintained consistently across borders. Nanoparticle-based vaccine delivery systems have opened new avenues for immunization, demonstrating improved immune responses and stability of antigens. Emerging economies actively contribute to nanotechnology research, bolstering the field's growth and broadening its impact. As researchers continue to file global patents, issues related to intellectual property, technology transfer, and ethical considerations are addressed through international guidelines and cooperative efforts. This abstract emphasizes the importance of monitoring potential safety concerns, environmental impacts, and ethical considerations associated with the use of nanomaterials in pharmaceutical applications. The global nature of these challenges necessitates an international approach to ensure responsible development, transparent practices, and equitable access to the benefits of nanotechnology in pharmaceutical sciences. In conclusion, the worldwide collaboration and exploration of nanotechnology in pharmaceutical sciences present a dynamic landscape, with ongoing efforts to overcome challenges, promote ethical practices, and harness the full potential of nanotechnology for the advancement of global health.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-03

UNVEILING THE MECHANISTIC INSIGHTS: NMDA RECEPTORS AND CHRONIC PAIN

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Chronic pain is a multifaceted condition with a significant impact on individuals' quality of life. Over the past decades, research has increasingly focused on unraveling the intricate mechanisms underlying chronic pain to develop more effective therapeutic interventions. Among these mechanisms, N-methyl-D-aspartate (NMDA) receptors have garnered considerable attention due to their pivotal role in developing and maintaining chronic pain states. This comprehensive review synthesizes current knowledge on the involvement of NMDA receptors in chronic pain, exploring their molecular structure, physiological functions, and intricate interactions within pain pathways. Furthermore, the review delves into the diverse contributions of NMDA receptors to various chronic pain conditions, including neuropathic, inflammatory, and centralized pain. Additionally, it discusses emerging therapeutic strategies targeting NMDA receptors and highlights the challenges and future directions in this field. By providing a comprehensive understanding of the role of NMDA receptors in chronic pain, this review aims to contribute to developing novel therapeutic approaches for mitigating the burden of chronic pain.
Keywords: Chronic pain, NMDA receptors, neurobiology, mechanisms of action

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-04

A REVIEW ON: RESCENT PROGRESS AND FUTURE PROSPECTIVES IN BIOSENSORS TECHNOLOGY

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Received: *March 16, 2024*

A biosensor is an integrated receptor-transducer device. Which can convert biological response into an electrical signal? The design and development of biosensors have taken a center stage for researchers or scientific in recent decade owing the wide range of biosensor applications. Crucial exploitation of biosensors has attained dominant significance in the meadow of drug innovation, drug identification, bio remedy, food protection, disease diagnosis, and ecological examination, water and food quality monitoring, and drug delivery. It has direct to the innovation of specific and authoritative diagnostic tool that employing biological sensing element as biosensor. Nowadays, we enjoy the results of science and technology for the smoothly running lives. We frequently rely on various types of appliances or devices, such as glucometer, DNA biosensor, immunosensors, smoke detectors, infrared (IR) thermometers, florescent biosensors. The main diagnostic techniques available for the detection of breast cancer require the corresponding equipment, professional practitioners, and expert analysis, and the detection cost is high. The detection of tumor markers can effectively assist the diagnosis and treatment of breast cancer. Finally, the opportunities and challenges of developing efficient biosensors in breast cancer diagnosis and treatment are discussed. The present review aimed at summarizing the most recent finding and future prospectives regarding biosensors.
Keywords: Biosensor, tumor marker, diagnosis, immunosensors, glucometer.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-05

FORMULATION AND OPTIMIZATION OF MEFENAMIC ACID MICROSPHERES USING HYDROPHILIC POLYMER

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The current study's objective is to create mefenamic acid-loaded microspheres using a hydrophilic polymer with a solvent evaporation method. Microspheres are spherical and range from 1-1000 micrometers, firstly we did the UV and study of all parameters related to microspheres, the solvent evaporation technique is one of the known techniques for the preparation of microspheres and in ethyl acetate, the medication and ethyl cellulose polymer was dissolved while being stirred at 700 rpm. A surfactant-containing aqueous phase was maintained under stirring. After that, the aqueous phase and the organic phase were continuously stirred. The generated microspheres' loading capacity, drug content, entrapment effectiveness, and product yield were evaluated. It is evident from the SEM photos that the particles were discovered to have a spherical form. Evaluation of Microspheres is done with various parameters; in vitro release study is also carried out by diffusion technique.
Keywords: mefenamic acid, microspheres, ethyl acetate, hydrophilic polymer, spherical, In-vitro, Diffusion, Evaluation.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-06

EVALUATION OF ANTICANCER ACTIVITIES OF MORINGA OLEIFERA PHYTOCHEMICALS ON CELL PROLIFERATION

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Received: *March 11, 2024*

Moringa oleifera, a widely recognized plant since ancient times, boasts diverse phenolic compounds known for their biological activities. This study sought to assess its potential in combating cancer by reducing cell proliferation in laboratory conditions. Moringa oleifera, also called the drumstick tree, is being investigated for its ability to curb cell proliferation, particularly concerning health and wellness. Our findings indicate that Moringa contains compounds that can impede the rapid growth of cells, a critical aspect in cancer, where uncontrolled cell proliferation is prominent. The antioxidants found in Moringa counteract harmful molecules known as free radicals, which can trigger excessive cell proliferation. These discoveries suggest that Moringa oleifera holds promise as a natural means to reduce cell proliferation and promote overall health. It enhances the body's ability to identify and eliminate abnormal cells before they can multiply further. Chronic inflammation, closely associated with cancer progression, may be mitigated by Moringas anti-inflammatory properties, thereby hindering the inflammatory processes linked to cancer cell proliferation. The phytochemicals extracted from Moringa oleifera leaves show potential as primary medications for cancer treatment, as suggested by in vitro studies. This highlights the therapeutic potential of Moringa oleifera in combating cancer by regulating cell growth and inflammation. Further research is warranted to explore its efficacy and safety in clinical settings, potentially offering novel strategies in cancer therapy.
Keywords: Proliferation, Moringa Oleifera, Phytochemicals, Antioxidants, Drumstick

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-07

GROWTH FACTORS IN WOUND HEALING: MECHANISMS, INTERACTIONS AND THERAPEUTIC PROSPECTS

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Received: *March 13, 2024*

Wound healing is an intricate, multi-phase procedure that necessitates the synchronized activity of diverse cellular and molecular systems. Growth factors are crucial in this process as they coordinate cell migration, proliferation, and differentiation, which are vital for tissue repair and regeneration. This review thoroughly investigates the role of important growth factors, such as Platelet-Derived Growth Factor (PDGF), Transforming Growth Factor-beta (TGF-β), Epidermal Growth Factor (EGF), Fibroblast Growth Factors (FGFs), and Vascular Endothelial Growth Factor (VEGF), in the process of wound healing. We investigate the molecular processes by which they work, their interactions in the wound milieu, and their role in several stages of wound healing, including hemostasis, inflammation, proliferation, and remodeling. In addition, we examine the most recent developments in growth factor-based treatments, such as the use of topical applications, delivery methods based on biomaterials, and gene therapy. We emphasize their ability to improve wound healing and tissue regeneration. This evaluation also highlights present obstacles and upcoming prospects in the advancement and medical implementation of growth factor-based treatments for enhancing wound care. Keywords: Wound Healing, Platelet-Derived Growth Factor (PDGF), Transforming Growth Factor-beta (TGF-β), Epidermal Growth Factor (EGF), Fibroblast Growth Factors (FGFs), Vascular Endothelial Growth Factor (VEGF), Therapeutic Applications

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-08

COMPREHENSIVE REVIEW OF GROWTH FACTORS WITH GASTROPROTECTIVE EFFECTS: MECHANISMS AND THERAPEUTIC POTENTIAL

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Received: *March 13, 2024*

Gastrointestinal diseases, such as peptic ulcers and gastritis, are major health issues that affect people all over the world. These conditions are made worse by factors like stress, lifestyle choices, and the use of certain medications. Growth factors are essential for the upkeep, restoration, and safeguarding of the stomach mucosa. This review article presents a comprehensive summary of the latest studies on the gastroprotective properties of growth factors, including Epidermal Growth Factor (EGF), Transforming Growth Factor-alpha (TGF-α), Fibroblast Growth Factors (FGFs), and other similar substances. We methodically examine the methods by which these growth factors contribute to the protection of the mucosa, including cellular proliferation, strengthening of the mucosal barrier, anti-inflammatory effects, and promotion of angiogenesis. In addition, we examine the therapeutic significance of these findings by evaluating clinical trials and preclinical research that evaluate the effectiveness of growth factor-based therapies in the treatment of gastrointestinal illnesses. This study seeks to orient future research efforts and enhance clinical outcomes for patients with gastrointestinal illnesses by emphasizing potential therapy targets and identifying areas of limited understanding.
Keywords: Epidermal Growth Factor (EGF), Transforming Growth Factor-alpha (TGF-α), Fibroblast Growth Factors (FGFs), Gastric Mucosa, Ulcer Healing, Clinical Applications, Gastrointestinal Disorders

【1H】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-09

RELATIONSHIP BETWEEN DIABETES AND KIDNEY HEALTH: HIGHLIGHTING THE COMPLEXITIES OF DIABETIC KIDNEY DISEASE

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Diabetes mellitus is a significant worldwide health issue that impacts millions of people and results in numerous consequences, particularly diabetic kidney disease (DKD). The paper seeks to clarify the complex connection between diabetes and kidney health, specifically addressing the challenges involved in the development and treatment of diabetic kidney disease (DKD). The development of diabetic kidney disease (DKD) involves multiple factors and a series of events triggered by metabolic irregularities caused by high blood sugar levels. This leads to an increase in the filtration rate of the glomeruli, enlargement of the kidneys, and eventually the formation of scar tissue in the glomeruli and the surrounding tubules. In addition to high blood sugar levels, variables such as high blood pressure, abnormal levels of lipids in the blood, and genetic predisposition play a key role in the advancement of diabetic kidney disease (DKD). In addition, inflammation, oxidative stress, and activation of several signaling pathways are crucial factors in the development of diabetic kidney disease (DKD). Timely identification and intervention are crucial in halting the advancement of DKD to end-stage renal disease (ESRD). Presently, the methods used for diagnosis involve evaluating the amount of albumin in the urine and measuring the pace at which the kidneys filter blood. Ultimately, comprehending the complex interaction between diabetes and kidney health is crucial for reducing the impact of DKD. To effectively deal with the intricacies of DKD, a multidisciplinary strategy is necessary. This approach should involve early detection, thorough assessment of risks, and personalized therapeutic approaches. The goal is to maintain kidney function and enhance clinical outcomes for diabetic patients.
Keywords: Diabetes mellitus, Diabetic kidney disease, Glomerular filtration rate, Albuminuria, Renin-angiotensin-aldosterone system, Pathophysiology, Management strategies, Biomarkers, Personalized medicine, Reno protective therapies.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-10

ASSESSING THE INDICATORS IN HEPATOPROTECTIVE ACTIVITY: A COMPREHENSIVE ANALYSIS

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Evaluating the efficiency of treatment interventions aiming at improving liver health and reducing liver damage requires the assessment of hepatoprotective activity. This extensive analysis investigates many indicators used to evaluate hepatoprotective efficacy, such as biochemical markers, histological alterations, antioxidant enzyme levels, and inflammatory mediators. This investigation seeks to give a detailed knowledge of the mechanisms behind hepatoprotective therapies and their effects on liver function and integrity by carefully examining these markers. Furthermore, it investigates new techniques and creative methods for evaluating the protective effects on the liver, providing valuable knowledge that could aid in the creation of more effective treatment options for liver illnesses. This analysis aims to provide researchers, clinicians, and policymakers with a comprehensive understanding of the complexities associated with assessing liver health and the significance of conducting a thorough evaluation when considering hepatoprotective interventions. It synthesizes existing knowledge on indicators of hepatoprotective activity. Keywords: Hepatoprotective activity, Liver health, Biochemical markers, Histopathological changes, Antioxidant enzymes.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-11

ADVANCED COMBINATION OF NANOSTRUCTURES FOR TARGETING CERVICAL CANCER: A GLOBAL OVERVIEW

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Cervical cancer remains a significant global health concern, necessitating innovative therapeutic approaches for enhanced efficacy and reduced side effects. This abstract provides a comprehensive overview of advanced combinations of nanostructures employed in targeting cervical cancer therapies worldwide. The integration of nanotechnology into cancer treatment has opened avenues for precise drug delivery, imaging, and therapeutic interventions. This paper explores recent developments in the design and application of multifunctional nanostructures, such as liposomes, nanoparticles, and nanocomposites, showcasing their potential in overcoming the limitations of conventional treatments. The global perspective presented here encompasses diverse strategies, including personalized medicine, immunotherapy, and gene therapy, highlighting the collaborative efforts of researchers and healthcare professionals in advancing cervical cancer treatment modalities. Insights into ongoing clinical trials and regulatory considerations shed light on the translational potential of these nanostructure-based therapies, underscoring the need for a holistic approach towards achieving precision medicine in the fight against cervical cancer. This abstract serves as a comprehensive guide for researchers, clinicians, and policymakers, fostering a deeper understanding of the evolving landscape in cervical cancer therapeutics.
Keywords- Nanostructures, Cervical Cancer, Targeted Therapies, Drug Delivery, Imaging, Global Overview, and Combination Therapies.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-12

ALKOLIDS

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Received: *March 14, 2024*

A Diverse Class of Natural Products with profound Biological Effects. Alkaloids are a fascinating class of organic compounds naturally occurring, including plants, fungi, and animals. Characterized by the presence of nitrogen atoms, alkaloids exhibit a remarkable structural diversity, leading to a vast array of biological activities. This abstract delves into the key aspects of alkaloids, exploring there: CHEMICAL COMPOSITION: Highlights the presence of nitrogen and the Diverse chemical structures found within alkaloids. BIOSYNTHESIS: Briefly mentioning the various pathway by which alkaloids are produced in nature, often derived from amino acids. BIOLOGICAL SIGNIFICANCE: Emphasizing the profound impact alkaloids have on living organisms, including their potential as therapeutic agents (e.g., morphine, quinine) and their influence on ecological interaction (e.g., plant defense mechanism). Due to their unique properties and potent effect, alkaloids continue to be a subject of intense scientific exploration. This abstract serves as a springboard for further investigation into the fascinating world of these natural products.
Keywords: colorless, nonvolatile, crystalline solids.

【1L】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-13

A REVIEW ON COGNITIVE IMPAIRMENT

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Cognitive impairments are common in young adults with major depression and anxiety disorders, although their nature remains partly unclear. Therefore, major depression clearly exhibits executive dysfunction, but other, more focused deficits seem to be primarily dependent on the features of the disorder. At the very least, obsessive-compulsive disorder is linked to impairments in executive functioning and visual memory. The profile of cognitive dysfunction appears to vary depending on the subtype of anxiety disorder. Heterogeneity within study participants, including medication use, comorbid mental disorders, and status of illness, as well as methodological flaws like improper study group matching and inconsistent testing protocols, could account for the contradictory findings. Significant anxiety and depression disorders frequently cause cognitive impairments. To validate and broaden these conclusions and integrate the knowledge into clinical practice, more research is necessary. It is strongly advised that confounding variables be controlled for in subsequent research.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-14

PHYTOSOMES AS INNOVATIVE DELIVERY SYSTEMS FOR PHYTOCHEMICALS

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For several decades, medicinal herbs and their active constituents have been utilized to treat different diseases. There are some major reasons for the increased use of herbal drugs like: 1) Modern medicine is unable to efficiently cure all the human pathologies. 2) There are increasing interests and attention over the assurance and safety of synthetic drugs. 3) Many natural products are being shown to produce better results than synthetic drugs without adverse effects. However, due to poor oral bioavailability, the clinical application of numerous active compounds of plants is under debate. Different solutions have been suggested to face such obstacles, including preparing emulsions, liposomes, and nano-formulation and administration of prodrugs. Between all approaches, phyto-phospholipid complexes (named phytosomes) are appeared to be a great method to boost their bioavailability. The term "Phyto" refers to the plant, while "some" refers to cell-like. Phytosomes (or herbosomes) are the vesicular drug delivery system enhancing the absorption and bioavailability of low-soluble drugs. Phytosomes are complex of phospholipids and natural active phytochemicals, bound in their structures, obtained by the reaction between phosphatidylcholine (or any hydrophilic polar head groups) and plant extracts in an aprotic solvent. These formulations exhibit improved pharmacological and pharmacokinetic properties as compared to prevalent preparations. Phytosomes have remarkable benefits such as high drug encapsulation, reveal a better stability profile and have a better bioavailability. Moreover, a higher absorption rate leads to a lower dosage of active constituents for exerting a biological effect, also for polar phytoconstituents.
Keywords: Phytosomes, Phytoconstituents, Nano-formulation, Bioavailability.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-15

A REVIEW ON DRUG DISCOVERY AND DEVELOPMENT

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Received: *March 14, 2024*

Drug discovery is the process of identifying and characterizing molecules with the potential to safely modulate disease, with a goal to bring medicines that can improve the lives of patients. New drugs are continually required by the healthcare systems to address unmet medical needs across diverse therapeutic areas, and pharmaceutical industries primarily strive to deliver new drugs to the market through the complex activities of drug discovery and development. Discovery involves a number of processes like target identification and validation, hit identification, lead generation and optimization and finally the identification of a candidate for further development. Development, on the other hand, includes optimization of chemical synthesis and its formulation, toxicological studies in animals, clinical trials, and eventually regulatory approval. Both of these processes are time-consuming and expensive and currently the industry is under pressure owing to the extremely stringent regulatory requirements, environmental concerns, and reduced incomes due to patent expirations. These issues have had an adverse bearing on the R&D productivity in recent years, hence there is a need for innovative approaches as well as increased collaboration between industry, academia, and governmental research institutions, with a common objective of constantly delivering quality medicines. One of the main reasons we need to discover new drugs is to treat previously untreatable conditions. Scientists need to use gene editing technology and cell line development to research and understand illnesses and produce drugs that can treat them. Key words: Disease, Target identification, Synthesis, Clinical trials, Drugs

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-16

ANTIBIOTIC AWARENESS: UNCOVERING CONCEALED RISKS IN THERAPY

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Received: *March 14, 2024*

The less apparent adverse effects of antimicrobial chemotherapy focus on how antibiotics can have negative impacts on our health. Although the benefits of antimicrobial treatment often outweigh the toxic effects, there are additional risks and side effects that may go unnoticed. While healthcare practitioners are aware of certain side effects, they may lack a comprehensive understanding of broader issues, such as the proliferation of resistant microbial strains. Good examples include methicillin-resistant Staphylococcus aureus (MRSA) after β-lactam treatment. This overgrowth can lead to harder-to-treat secondary infections. Any patient receiving antibiotics may shed resistant organisms into the environment and could then pass these on to others, causing a rise in global resistance to these medicines. Upon exposure to antibiotics, bacteria undergo molecular adaptations that may increase their pathogenic potential, posing significant challenges, especially when resistance extends across multiple drug classes. It falls on doctors to promptly select the right antibiotic upon diagnosing an infection. Due to a deficiency in comprehension regarding microbiology and a lack of awareness regarding potential environmental ramifications, there have been occurrences where physicians inadvertently prescribe medications that are not optimal for the specific microbial conditions being treated. The combined information underscores the importance of understanding the hidden risks associated with antimicrobial treatment, as these less apparent consequences can have significant implications for global health. Sometimes, the not-so-obvious effects of using these medicines may be missed during regular medical care.
Keywords: antimicrobial chemotherapy, resistant microbial strains, MRSA, global resistance, pathogenic potential

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Bulletin of Pharmaceutical Research 2024;14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-17

STUDY ON RESEARCH OF CERVICAL CANCER

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Received: *March 14, 2024*

Cervical cancer refers to a malignant tumor is present in the cervix. The cervix is a donut- shaped, narrow neck- like passage at the lower end of the uterus. The main cause of cervical cancer is the long-term infection of human papilloma virus (HPV). Cervical cancer mainly occurs in women over 35 years old and is less common in women under 25. Around 70% of cervical cancer is diagnosed in women under 60 years old. The cervix is the lower, narrow and of the uterus. Cervical cancer is the disease in which cancer cells form in the tissue of the cervix. The most common types of cervical cancer are squamous cell cancer, adeno-squamous and adenocarcinoma. Signs and symptoms of stage I cervical cancer can include watery or bloody vaginal discharge that may be heavy and can have a foul odor, vaginal bleeding after intercourse, between menstrual periods or after menopause, menstrual periods may be heavier and last longer than normal. Treatment for cervical cancer depends on several factors, such as the stage of the cancer, other health conditions you may have and your preferences. Surgery, radiation, chemotherapy or a combination of the three may be used.
Keywords- HPV (Human Papilloma virus), Awareness, Perception, Utilization, Cervical cancer screening, Women.

【1Q】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-18

ESTIMATION OF PIOGLITAZONE HCL IN PHARMACEUTICAL DOSAGE FORMS BY UV SPECTROSCOPIC METHOD AND FTIR

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The use of spectroscopic analysis, particularly UV spectrophotometer, is a simple and essential technique for bulk drug estimation, formulation studies, and compatibility assessments of drugs with various excipients. This study aimed to develop a UV spectrophotometric method for the analysis of Pioglitazone hydrochloride in phosphate buffer (pH 7.4) and methanolic solution, assessing its linearity and compliance with Beer's Law. Furthermore, we aimed to use FTIR to characterize potential interactions between Pioglitazone and common pharmaceutical excipients, such as Guar Gum, Chitosan, and Sodium Alginate. Standard solutions of Pioglitazone were prepared in phosphate buffer (pH 7.4) and methanol. UV spectrophotometer was conducted to determine the maximum absorption wavelength. Calibration curves were constructed to evaluate linearity and adherence to Beer's Law. FTIR analyses were performed to investigate drug-excipient interactions by examining the functional groups. In phosphate buffer (pH 7.4), the maximum absorption wavelength for Pioglitazone hydrochloride was 268 nm. The calibration curve for Pioglitazone in phosphate buffer (pH 7.4) demonstrated linearity in the concentration range of 1–20 µg/ml, with a correlation coefficient of 0.998. In methanol, the maximum absorption wavelength for Pioglitazone hydrochloride was found to be 272 nm. The calibration curve in methanol exhibited linearity in the range of 1–20 µg/ml, with a correlation coefficient of 0.999. The developed UV spectrophotometric method for Pioglitazone analysis is a reliable, cost effective, and reproducible approach, making it a valuable tool for drug development and quality control. Additionally, the FTIR characterization confirmed interactions between Pioglitazone and common pharmaceutical excipients, enhancing our understanding of formulation compatibility.
Keywords: Pioglitazone; UV spectrophotometer; drug-excipient interactions; FTIR; Beer's Law.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-19

BIRD'S EYE VIEW OF THERAPEUTIC FRONTIERS: RECENT ADVANCES IN SMALL MOLECULE AGENTS AGAINST INFLAMMATION AND CANCER

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In the treatment of cancer and inflammation, small molecule employees have become powerful therapeutic tools that provide new therapeutic approaches with improved efficacy and fewer side effects. This review offers a thorough summary of current developments in small molecule drugs that target cancer signaling networks and inflammatory pathways. By specifically altering important signaling cascades, inhibitors of phosphodiesterase-4 (PDE4), and COX receptors have demonstrated potential in the field of inflammation to help mitigate a variety of inflammatory disorders. Small molecule drugs that target particular molecular vulnerabilities and immune checkpoints, such as tyrosine kinase inhibitors (TKIs), inhibitors of checkpoints, poly (ADP-ribose) polymerase) inhibitors, and proteasome inhibitors, have revolutionized the treatment of cancer in oncology. A new era of precision medicine has been ushered in by recent developments in high-throughput screening, personalized medicine techniques, and computational drug design, which have further accelerated the search for and creation of small molecule agents. In an effort to overcome resistance to drugs and enhance therapeutic outcomes, combination therapies that combine small molecules in other forms of treatment are currently being investigated. Notwithstanding notable advancements, issues like medication opposition, off-target effects, and treatment strategy optimization continue to be the subject of ongoing research. Sustained investigation into this area has great potential to yield novel small-molecule treatments, which would ultimately enhance the results for patients in the treatment of cancer and inflammation.

Keywords- Small Molecule, Inflammation, Cancer

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-20

THE ADVANCEMENT OF HERBAL-BASED NANOMEDICINE FOR HAIR

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Received: *March 14, 2024*

Polymer, lipid, and natural protein-based hair care nanocarriers are in preclinical testing. Nanomedicine has enhanced therapeutic efficacy and decreased side effects. This review examines herbal nanomedicine for hair care. We also reviewed the hair cycle, its morphology, and the mechanisms of herbal-based medicine that regulate the hair cycle to treat hair loss. Nano-formulations have better solubility, permeability, therapeutic efficacy, and prolonged distribution than standard herbal medicines. This review also discussed the nanotechnology barrier and nano formulations for hair loss and growth and includes a recent herbal nanomedicine study. Researchers interested in using herbs to treat hair problems and clinically translating hair care products may find the results presented significant.
Keywords: herbal nano-medicine; hair cycle; hair follicle; herbal nano-formulations; hair growth.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-21

EXPLORING INDOLE DERIVATIVES AS NOVAL THERAPEUTICS FOR NEURODEGENERATION DISEASES

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Modern medicine faces a great deal of challenges due to neurodegenerative diseases, which makes the search for new treatment approaches necessary. Indole derivatives' wide range of pharmacological actions have drawn interest in their potential to treat neurodegeneration. An extensive summary of current developments in the use of indole derivatives as treatments for neurodegenerative illnesses is given in this review. We go through the chemical variety of indole derivatives and how they modulate important pathways connected to neurodegeneration, such as Alzheimer's disease, Parkinson's disease, anti-convulsant and anti-depressant. In addition, we review the preclinical and clinical data demonstrating the effectiveness of indole derivatives in reducing neurodegenerative pathology and identify promising targets for future research. The possibility of indole derivatives as an exciting category of treatments for neurodegenerative diseases is highlighted overall by this review, which also provides knowledge for future study instructions and methods of treatment in this difficult therapeutic area.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-22

A REVIEW ON AWARENESS AND KNOWLEDGE OF SEXUALLY TRANSMITTED DISEASES

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Received: *March 14, 2024*

Sexually transmitted diseases are generally transmitted or acquired by sexual contact. The transmission may be from person to person through blood, sexual contact semen, vaginal or other body fluids. The transmission sometimes may be without sexual contact such as from mother to infant during pregnancy although STDs don't always cause symptoms. So, if the person seems healthy it is possible that he/she may have infection. The problem with most STDs is that they can occur symptom-free and can thus be passed in unaware during unprotected sexual intercourse. The center for disease control and prevention (CDC) estimates that 6% of total adult Indians are infected with sexually transmitted disease. The social stigma around STDs often becomes barrier seeking the proper test and treatment although STI rate across India increases from past few years. According to reports (all stages and congenital syphilis) have increased 80% in the past five years but the rate of infection across India is decreasing, there has been a decline of slightly over 42% since 2010. Telangana and Andhra Pradesh have reported the highest no. of people with sexually transmitted disease in the country. According to national health profile of India. The thought is that who are at more risk for STIs so the answer is adults and adolescents are having more chances to get infected with STI. The Government of India are making efforts to reduce the rate of infection by creating awareness and opening several camps and NGOs. The changes are challenging by societal impact of STIs are realistic goals.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-23

CERVICAL SPONDYLITIS

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Received: *March 14, 2024*

Cervical Spondylitis is caused by degenerative disc disease and usually produces intermittent neck pain in middle age and elderly patients. This pain usually responds to activity modification, neck immobilization, isometric exercise, and medication. Neurologic symptoms occur infrequently, usually in patients with congenital spinal stenosis. For these patients, magnetic resonance imaging is the preferred initial diagnostic study. Because involvement of neurologic structures on imaging studies may be asymptomatic, consultation with a neurologist is advised to rule out other neurologic diseases. In most cases of spondylitis radiculopathy, the results of conservative treatment are so favorable that surgical intervention is not considered unless pain persists or unless there is progressive neurologic deficit. If indicated a surgical procedure may be done through the anterior or posterior cervical spine; results are gratifying with long term improvement in 70% to 80% of patients. Cervical spondylitis myelopathy is the most serious and disabling condition of this disease. Because many patients have nonprogressive minor impairment, neck immobilization is a reasonable treatment in patients presenting with minor neurologic findings or in whom an operation is contraindicated. This sample remedy will result in improvement in 30% to 50% of patients. Surgical intervention is indicated for patients presenting with severe or progressive neurologic deficits. Anterior cervical approaches are generally preferred, although there are still indications for laminectomy. Surgical results are modest with good initial results expected in about 70% of patients. Functional outcome noticeably decline with long term follow up , which raises the question of whether and how much, surgical treatment affect the natural course of the disease.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

OP-24

NANOTECHNOLOGY

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Received: *March 14, 2024*

Nanotechnology has emerged as a transformative force in pharmacy, revolutionizing drug delivery, diagnostics, and therapeutics. This abstract explores the integration of nanotechnology within the pharmaceutical realm, highlighting its profound impact on enhancing drug efficacy, improving patient outcomes, and mitigating adverse effects. By harnessing the unique properties of nanoparticles, such as their size, surface area, and surface charge, researchers have developed innovative drug delivery systems capable of targeted and sustained release, crossing biological barriers, and overcoming physiological challenges. Moreover, nanotechnology facilitates the development of novel diagnostic tools for early disease detection and personalized medicine approaches. This abstract elucidates the multifaceted applications of nanotechnology in pharmacy, underscoring its potential to redefine the landscape of pharmaceutical sciences and healthcare delivery.
Keywords: Nanotechnology, pharmacy, drug delivery, diagnostics, therapeutics, nanoparticles, targeted delivery, sustained release, personalized medicine, healthcare delivery.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-25

ARTIFICIAL INTELLIGENCE IN DRUG DESIGN

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Received: *March 14, 2024*

Artificial Intelligence accelerates the drug discovery and development process and reduces the cost, with enormous amounts of successful application from language modeling to improvement in the pharmaceutical sector. Drug design is one of the intensively developing modern sciences and its progress is accelerated by the implication of modern science. Various AI techniques have been used in many drug discovery applications, such as virtual screening and drug design. Computer aided drug discovery and ligand based quantitative structure activity and property (QSAR/QSPR) and de nova drug design,drug metabolism ,excretion, and discuss recent advancement in colorectal cancer, integration of plant based traditional medicine ,and showing AI assisted platform used to discover serotonin 5HT1Adrugs,whichis reaching the clinical trial in less than 12 months which is far less than conventional method and need four year of drug discovery process. GPU (Graphics processing unit) accelerated deep learning to target cancer and age-related illnesses. Insilico medicine, an artificial Intelligence (AI) company based in New York and Hong Kong, has brought the first AI-designed and discovered drug candidate to clinical trials in less than three year. Consequently, a sophisticated system such as AI, including machine learning (ML) and deep learning (DL) has successfully decreased the cost and accelerate the drug discovery & development process.
Keyword- Artificial Intelligence, Drug design, QSAR, Drug discovery & development, Computer aided drug design, Machine learning, Insilico medicine.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-26

PEDIATRIC PHARMACEUTICAL DOSAGE FORMS

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Pediatric population is a diverse group comprising of different subgroups. Although the physiological differences, most conventional drug delivery systems are not acceptable for pediatric patients as they differ in their developmental status and dosing requirements from other subsets of the population. Technology platforms are required to aid the development of age-appropriate medicines to maximize patient acceptability while maintaining safety, efficacy, accessibility and affordability. A number of approaches have been investigated for the development of sustained release liquids, such as ion exchange resins, coated microparticles in suspension or drug microemulsions, among others. Lipid based vehicles are promising by providing solubilization of highly lipophilic drugs as well as masking the unpleasant taste. Besides, self-emulsifying drug delivery systems potentially is prepared as solid dosage forms for reconstitution. Multi particulate products are expected to provide improved patient acceptability over single-unit solid dosage forms (i.e., tablets and capsules) by dint of their reduced size and thus improved ease of swallowing plus the increased dose flexibility provided by their multi-unit composition. Moreover, multi particulate products are usually suitable for controlled release and taste masking by means of film-coating technologies, which can also benefit patient's compliance.
Keywords: Pediatric, dosage form, solution, tablets

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-27

FROM ROOTS TO REMEDIES: HARNESSING THE POWER OF YOGA AND NATUROPATHY

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Received: *March 15, 2024*

Yoga and naturopathy are group of physical, mental, and spiritual practices that connects health and mind. Yoga, pranayama, and other naturopathic practices have been effective in producing physical and mental relaxation, influencing almost all systems in our body, and improving the quality of life. Naturopathy is a health science, which is based on healing power of nature, either body itself or through use of prakrutik elements. Naturopathy is a system of treating, preventing, curing disease with natural care -- such as fresh air, organic diet, water from natural sources far from any contamination, herbs, soil etc. Naturopathy works on the route of suffering and treats it naturally. Naturopathy is a form of healthcare that combines modern treatment with traditional methods. It includes alternative, natural therapies to modern medicine. Naturopathic are proficient to work as primary care specialists who are experts in the prevention, identification, managing, and curing of both critical as well as prolonged illnesses. This type of medicine was discovered by Hippocrates, a Greek physician, approximately 2400 years ago and is predominantly based on the concept of nature's healing power. Naturopathic are proficient to work as primary care specialists who are experts in the prevention, identification, managing, and curing of both critical as well as prolonged illnesses. The goal of naturopathy is not the treatment of the disease alone, but rather to restore wellness of the body. Naturopathic Medicine, or Naturopathy, is a system that uses natural substances to treat the patient and recognition that the patient's mental, emotional, and physical states must all be treated for a lasting effect. They give natural medicine with which the disease is cured instantly without taking much time for the symptom to be cured. In modern world, people become ill very frequently and they want natural and safe treatment. The usefulness of yod and naturopathy is again revived as people has not accepted the ill effects of medicines. The most important natural sources of drugs are (1) higher plants, (2) microbes, (3) animals and (4) marine organisms. With tens of thousands of plant species on earth, we are endowed with an enormous wealth of medicinal remedies from Mother Nature.
Keywords: Holistic wellness, Yoga, Naturopathy, Natural healing, Integrative healthcare

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-28

HYPERTENSION

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Received: *March 15, 2024*

Hypertension is the silent disease which is a person will not know if he has increased blood, it is also called by a symptom of a syndrome that can trigger the occurrence of hardening of blood vessels, it causes damage to the target organs. The incidence rate of hypertension is very high especially in the elderly population over 60 years. The purpose of this study is to determine the effect of non-noni fruit tea (Morinda citrifolia) on the decrease in blood pressure in the elderly group with hypertension in UPTD. Griya Werdha Kota Surabaya. This research was quasy experimental through with Pretest-Posttest Control Group Design design. The sample of the research was 34 respondents and divided into treatment group and control group at UPTD Griya Wardha Kota Surabaya through simple random sampling. The research conducted by giving noni fruit tea (Morinda citrifolia) 10gram / day for 30 days in the treatment group. In the control group was not given by noni fruit tea (Morinda citrifolia). The test that research used in this study was the wilcoxon test to know the differences between blood pressure in each treatment group and control group before and after giving noni fruit tea (Morinda citrifolia). Mann Whitney test used to know the difference between treatment group blood pressure and control group with α = 0, 05. The research showed that all respondents have blood pressure with mild hypertension and moderate hypertension of hypertension category. Blood pressure in treatment group before and after giving Morinda citrifolia tea decreased on systole blood pressure by 26% and diastole blood pressure by 20%. There was a difference between blood pressure in the treatment and control group based on non-parametric test with score ρ <0, 05. We recommend that nutrition education should be done periodically and giving noni fruit tea (Morinda citrifolia) as an alternative medicine to reduce hypertension should be given in a routine.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-29

NANOCARRIER SYSTEM TO ENHANCED EFFICIACY OF QUERCITIN TO IMPROVE ITS BIOAVABILITY

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Received: *March 15, 2024*

Quercetin is a natural flavonoid extensively distributed in human diet (onions, grapes, berries, cherries, broccoli, and citrus fruits) and functional foods. It is reported as powerful antioxidant as well as have wide range of effects on the human body due to their anti-inflammatory, spasmolytic, antioxidant, sedative, antimicrobial, antiviral, antidiabetic, immune stimulant, hepatoprotective, etc. However, the low bioavailability of quercetin significantly limits their practical application. To overcome this disadvantage, serious efforts have been made in recent years to develop nanoscale carriers for quercetin. Nanocarriers provide increased penetration of biological into specific organs in combination with controlled and prolonged release, which markedly improves their effectiveness. They are classified on the use of phytosomes, lipid-based nanoparticles, as well as polymeric and inorganic nanoparticles; their advantages and drawbacks are analyzed; the prospect of their use is discussed that opens new possibilities for the clinical application of quercetin. Hence, Nano formulation must be aimed to deliver an improved formulation with increased solubility, bioavailability, and patient compliance.
Keywords:- Quercetin, Nano formulation, low bioavability ,permeability

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-30

CURRENT STATUS ON POLYCYSTIC OVARY SYNDROME (PCOS)

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Received: *March 15, 2024*

Polycystic ovary syndrome (PCOS) is a widespread reproductive disorder that encompasses many associated health conditions and has an impact on various metabolic processes. PCOS is depicted by hyperandrogenism, polycystic ovaries, and anovulation. It increases the risk of insulin resistance (IR), type 2 diabetes, obesity, and cardiovascular disease. The etiology of the disease remains unclear, and the subjective phenotype makes a united diagnosis difficult among physicians. It seems to be a familial genetic syndrome caused by a combination of environmental and genetic factors. It can be linked with metabolic disorders in first-degree family members. PCOS is the cause of up to 30% of infertility in couples seeking treatment. Currently, there is no cure for PCOS. Despite the growing incidence of this syndrome, limited research has been done that encompasses the entirety of PCOS spectrum. In this review, the current status and possible future perspective will be discussed.
Keywords: Polycystic ovary syndrome, PCOS, Obesity, Insulin Resistance, Diabetes, Metformin, Review

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-31

TARGETING ENZYMES IN THE TREATMENT OF ALZHEIMER DISEASE

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Alzheimer's disease (AD) is defined biologically by the presence of β-amyloid plaques and tau-containing neurofibrillary tangles. Alzheimer's disease (AD) is a genetic and sporadic neurological disorder that causes amnestic dementia in its prototypical form and non-amnestic cognitive impairment in its less prevalent variants. Although Alzheimer's disease is a common cause of cognitive impairment in middle and late life, its clinical impact is influenced by additional neurodegenerative and cerebrovascular illnesses. Designing multi-target-directed ligands (MTDLs) is a very promising modern approach. This methodology was designed specifically for treating disorders with complex pathological mechanisms. Alzheimer's disease (AD), the most common multifactorial neurodegenerative disease today, is one such disorder. Alzheimer's disease (AD) is associated with increased levels of the amyloid βpeptide (Aβ) and the hyperphosphorylated tau protein, as well as the loss of neurons and synapses. Furthermore, there is some evidence that oxidative stress, metal ion deregulation, inflammation, and cell cycle regulatory failure play a role in its pathogenesis. There are numerous appealing targets for the production of anti-AD drugs, and the multi-factor nature of this disease necessitates multi-target-directed compounds that can be beneficial for AD treatment. This review focuses on the discovery of dual and multi-acting anti-AD drug candidates, particularly hybrids obtained by joining chemically active moieties acting with different targets. The first class of compounds includes cholinesterase inhibitors that act as multiple binding site inhibitors and/or inhibitors with additional characteristics. Natural products also provide numerous options for slowing the progression and symptoms of many diseases, including Alzheimer's. In the meantime, natural compound structures such as lignans, flavonoids, tannins, polyphenols, triterpenes, sterols, and alkaloids have anti-inflammatory, antioxidant, anti-amyloidogenic, and anticholinesterase properties. In this review, we summarize the pathogenesis and treatment targets for Alzheimer's disease. We also present several medicinal plants and isolated compounds that are used to prevent and treat Alzheimer's disease symptoms.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-32

EMULGEL- A NEW PLATFORM FOR TOPICAL DRUG DELIVERY SYSTEM

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Received: *March 15, 2024*

Topical Drug delivery system is defined as the application of a drug containing formulation to the skin or mucous membrane, to treat specific cutaneous disorders or cutaneous manifestations of a generalized disease such as acne and psoriasis, with the intent of containing the pharmacological effects of the drug. Emulgel systems are widely used due of their significant potential to act as drug delivery vehicle by including a broad range of drug molecules and advanced stability compared to the other dosage form like cream, lotion, gel, etc. These formulations are either available in an oil in water or water in oil type emulsions which are gelled by mixing with gelling agents. Addition of emulsion into a gel makes it a dual control release system, thereby, increasing its stability. It is non greasy and has highest stability because of the presence of gel phase which improves patient compliance. Emulgels are developing carrier systems that characterize a mixture of emulsion and gel, which are particularly significant for the delivery of hydrophobic substances. The emulsifiers are used to help emulsification during manufacturing and to ensure emulsion stability. The choice of emulsifying agents is based on their capacity to emulsify, their toxicity, and their route of administration. Generally, gelling agents are used to increase the consistency of formulation and improve thixotropic property. Therefore, the aim of this review is to gain new visions into emulgel formulations, including the selection of components, methods of preparation, and characterization, which are based on recent advances in research studies. Keywords: Emulgels, Emulsion, Topical Drug Delivery, Gel, Noval Approach

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-33

TRIPHALA: ANCIENT WISDOM FOR MODERN WELLNESS

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Received: *March 15, 2024*

This article aims to conduct a comprehensive review of current literature concerning the therapeutic applications and efficacy of Triphala, a polyherbal Ayurvedic medicine composed of Emblica officinalis (Amalaki), Terminalia bellerica (Bibhitaki), and Terminalia chebula (Haritaki). Utilizing the PubMed database, the review explores various therapeutic uses of Triphala validated through scientific inquiry, extending beyond its well-established role as a gastrointestinal and rejuvenative treatment. These include but are not limited to appetite stimulation, reduction, antioxidant, anti-inflammatory, immunomodulatory, antibacterial, antimutagenic, adaptogenic, hypoglycemic, antineoplastic, chemoprotective, radioprotective effects, and dental caries prevention. Triphala's polyphenols demonstrate modulation of the human gut microbiome, promoting beneficial Bifidobacteria and Lactobacillus while inhibiting undesirable gut microbes. The bioactivity of Triphala is mediated through the gut microbiota, leading to the production of various anti-inflammatory compounds. The review synthesizes recent pharmacological and clinical data on Triphala, identifying areas requiring further investigation and clinical exploration for its continued development.
Keywords: Emblica officinalis, Terminalia bellerica, Rejuvenation, Hyperacidity.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-34

EMULGELS: A COMPREHENSIVE REVIEW

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Received: *March 15, 2024*

Topical drug administration is a well-liked and innovative method that targets the action of different medications on the skin to treat and diagnose a range of illnesses and conditions, including rheumatism, inflammation, and urticaria. The primary objective of a topical medication delivery system is to facilitate the drug's passage through the skin's barrier and appropriate skin diffusion. Emulgel is a promising drug delivery method, especially for hydrophobic medicines. This fascinating topical drug delivery device features a dual release control mechanism that includes both gel and emulsion. Emulgel has many advantages, including being greaseless, easily spreadable, quickly removable, emollient, and transparent. Emulgel is commonly used to administer analgesics, anti-inflammatory, anti-fungal, and anti-acne medications, as well as other cosmetic formulations. In the upcoming years, topical, parenteral, and oral administration are all expected to be significantly impacted by emulgels because to the increasing body of research on these systems. Thus, emulgels provide an interesting opportunity for creating novel and enhanced formulations. Keywords: Emulgel, Hydrophobic drugs, Topical drug delivery, Skin diffusion.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-35

HYDROGEL PREPARATION, CHARACTERIZATION, AND APPLICATIONS: A REVIEW

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Received: *March 15, 2024*

Hydrogel products are three-dimensional networks made up of a variety of polymeric materials that have a hydrophilic structure that allows them to retain a lot of water. These biomaterials are able to swell and incorporate a significant number of biological fluids. When swollen, they have a rubbery, squishy texture that mimics real tissue and have good biocompatibility. It is thought to be crucial that these goods be widely used in a variety of industrial and environmental application sectors. Hydrogel is one possible solution to the various problems facing medication delivery today. Hydrogel's many qualities make them broadly applicable to a variety of biological domains. This article's main goals are to discuss the many categorization schemes for hydrogels, their qualities and production techniques, their physical and chemical makeup, and the practicality of using them in a technological setting.
Keyword: cellulose; chitosan; hydrogel; wound dressings, polymers.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-36

RECENT ADVANCEMENT OF TRANSDERMAL PATCHES IN PHARMACEUTICAL FIELD

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Received: *March 15, 2024*

Transdermal patches are the most suitable and feasible drug delivery system. Transdermal patches are a non-invasive method of drug administration. It is an adhesive patch designed to deliver a specific dose of medication through the skin and into the bloodstream throughout the body. They also allow continuous drug release for a long period of time that has short biological half-life. TDDS not only provides controlled drug delivery, also protect drug from hepatic first pass metabolism. Other benefits of drug delivery through the skin include the ability to maintain a constant rate of circulation, an effective rate of drug delivery throughout time, and the advantages of diffusion and a passive delivery method. For decades, transdermal patches have attracted attention and were used to deliver drugs such as nicotine, fentanyl, nitroglycerin, and clonidine to treat various diseases or conditions. The review gives valuable information about the transdermal patch like its advantages, disadvantages, mechanism of action, types of transdermal patch, factors basic components, methods and evaluation, application of a transdermal patch. It also describes the recent advancements in innovation and technology of transdermal patches.
Keywords: TDDS (Transdermal Drug Delivery System), Transdermal Patch, Recent advancement

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-37

Preparation and Evaluation of Caffeine Loaded Polyelectrolyte Complex with Hyaluronic Acid for the Management of Local Inflammatory Bowel Diseases

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Received: *March 16, 2024*

The Caffeine being a respiratory drug cannot undergo site targeting for the colon targeted drug delivery so, to overcome the site targeting issues we find an alternative approach to cope up with the problem The site targeting is enhanced using two natural polymers providing coating using chelating agent Chitosan, complexing agent Hyaluronic acid. In this work the surfactants is used for the binding of electrolytes with drug to improve its entrapment efficiency. In order to find the optimum concentration of the drug and polymer, suitable experiments were designed and multiple batches were selected as per the desired formulation. From the optimum formulations F4 was found to have higher entrapment efficiency and drug loading capacity another formulations. Physical interactions were tested through FTIR, SEM, DSC of the drug. The responses were fitted and optimized formulation was obtained. The optimized batch of polyelectrolyte complex was further analyzed by UV, FTIR, SEM images at 1-10µm, DSC showed temperature of 252OC, %DEE of 77.89%, DLC% of 74.5% and In-vitro drug release shows zero order kinetic model all these possible outcomes were reported.
Keywords: % DEE , DLC%, complexing agent, chelating agent, site targeting

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-38

PHYTOCHEMISTRY AND PHARMACOLOGICAL ACTIVITY OF FICUS GLOMERATA

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Received: *March 15, 2024*

Ficus is one of the largest genera in the plant kingdom that belongs to the *Moraceae* family. Ficus glomerata is a species of plant popularly known as the cluster fig tree present in all over India. These species can be found abundantly in most Asian countries, Australia. The chemical analysis report has shown that Ficus glomerata contained a wide range of phytoconstituents, including phenols, flavonoids, alkaloids, tannins, saponins, terpenoids, glycosides, sugar, protein, essential and volatile oils, and steroids. Existing studies on the pharmacological functions have revealed that the observed Ficus glomerata possessed a broad range of biological properties, including astringent, hepatoprotective, antioxidant, anti-inflammatory, wound healing activity, antimicrobial action, and ant diabetic activity. This study also includes the recent applications of the Ficus glomerata and their plant parts, mainly in the nanotechnology field. Overall, the review discusses the therapeutic potentials discovered in recent times and highlights the research gaps for prospective research work.
Keywords: Ficus glomerata, phytoconstituents, Pharmacological activity, Medicinal uses

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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PHARMACOGNOSTICAL AND PHYTOCHEMICAL INVESTIGATION OF COCCINIA GRANDIS LEAVES EXTRACT

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Received: *March 15, 2024*

This study was carried out to examine pharmacognostical and phytochemical investigation of Coccinia grandis including the standardized parameter of Coccinia grandis leaves to fulfil the quality raw materials as traditional medicine. The leaves of Coccinia grandis were studied through macrosopic, microscopic, physicochemical standards such as moisture content, ash values, and extractive values. The powdered material was extracted by Soxhlet apparatus using the solvents for Pet. ether, Ethanol and Methanol successively. Phytochemical screening of the various extracts of selected plants was performed various active constituents. Thin layer chromatography of different extracts was performed and calculated the Rf value of compounds. The detailed microscopy revealed the presence of epidermis and vascular bundles, etc. Physiochemical parameters such as ash values, loss on drying, extractive values, were also determined. The percentage yield of ethanolic, methanolic and Petroleum ether extract of Coccinia grandis leaves was found to be 7.11 % w/w for Ethanolic extract, 5.62 % w/w for Petroleum ether extract and 9.87 % w/w for Methanolic extract. The phytochemical screening test of the ethanolic, methanolic and petroleum ether leaves extract of C. grandis revealed the presence of tannins, phenols, flavonoids, glycosides, alkaloid, and phytosterols. The methanol, ethanol and pet. Ether extracts of leaves of Coccinia grandis were subjected to thin layer chromatography studies, to find the presence of number of compounds which support by the chemical test. Rf value and colour of TLC spots, in different solvent system. The methanolic extract showed 6 spots; ethanolic extract showed 5 spots and petroleum ether extract showed 3 spots. The pharmacognostical and phytochemical analysis of the Coccinia grandis leaves was useful in standardization for quality, purity and sample identification.
Keywords: Coccinia grandis, Microscopy, physiochemical evaluation, phytochemical investigation, Thin layer chromatography

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-40

STUDY AND RESEARCH ON BIOSENSOR

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Received: *March 15, 2024*

A biosensor is a device that measures biological or chemical reactions by generating signals proportional to the concentration of an analyte in the reaction. Biosensors are employed in applications such as disease monitoring, drug discovery, and detection of pollutants, disease-causing micro-organisms and markers that are indicators of a disease in bodily fluids A typical biosensor consists of the following components. Analyte: A substance of interest that needs detection. For instance, glucose is an 'analyte' in a biosensor designed to detect glucose. Bioreceptor: A molecule that specifically recognizes the analyte is known as a bioreceptor. Enzymes, cells, aptamers, deoxyribonucleic acid (DNA) and antibodies are some examples of bioreceptors. Transducer: The transducer is an element that converts one form of energy into another. Biosensors are nowadays ubiquitous in biomedical diagnosis as well as a wide range of other areas such as point-of-care monitoring of treatment and disease progression, environmental monitoring, food control, drug discovery, forensics and biomedical research. A wide range of techniques can be used for the development of biosensors. Their coupling with high-affinity biomolecules allows the sensitive and selective detection of a range of analytes. We give a general introduction to biosensors and biosensing technologies, including a brief historical overview, introducing key developments in the field and illustrating the breadth of biomolecular sensing strategies and the expansion of nanotechnological approaches that are now available.
Keywords: affinity reagents, biosensors, glucose sensor, nanomaterials, pregnancy test

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-41

ALZHEIMER'S DISEASE

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Received: *March 15, 2024*

Alzheimer's disease and associated dementias are the second biggest cause of mortality in the United States and other high-income nations, according to the World Health Organisation, and the seventh highest cause of death globally. According to the Alzheimer's Association, the number of deaths linked to Alzheimer's disease grew by 146% between 2000 and 2018. It is projected that the number of Americans alone who have Alzheimer's or another type of dementia would rise from 56 million in 2020 to 88 million by 2050. They discovered that the number of fatalities from AD and other dementias per 100,000 persons grew by 148%, the prevalence of these conditions climbed by 117%. Preclinical protocols of neurodegenerative disorders (NDs) have been produced in order to assess novel therapy approaches and to comprehend the underlying mechanisms of NDs. It concluded, that numerous in- vivo screening models including chemical induced (i.e., Amyloid, Colchicine, Scopolamine, Atropine, Aluminium Chloride, High-fat diet (HFD), Kainic Acid, Domoic Acid, Ibotenic acid, and Ethanol), Transgenic Models (i.e., BACE 1,Brain injury induced AD) and spatial memory (i.e., Morris Water-Maze, Radial Arm-Maze, Circular Platform Test) and in-vitro screening models include Cells, Tissues, and Molecular simulation model that were reported for the evaluation of NDs including AD and Dementia.
Keywords: Screening models, neurodegenerative diseases, Alzheimer's disease, Dementia, Transgenic animals.

【20】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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URTICA DIOICA: PHYTOCHEMICAL PROPERTIES AND PHARMACOLOGICAL ACTION

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Received: *March 15, 2024*

Medicinal plants contain beneficial phytoconstituents which help in the treatment of various diseases. Plants are commonly used due to their low cost, ease of availability, and ancestral knowledge. Synthetic drugs are not simply costly and ineffective for disease therapy, but also susceptible to adulteration and adverse effects. Therefore, medicinal plants have been useful in the development of new drugs and continue to play valuable role in the drug discovery process. Urtica dioica has been recognised as a healing plant in many countries around the world in recent years due to its significant impact on human health. Nettle, commonly referred to as stinging nettle, is an annual plant that grows in temperate and tropical waste areas all over the world. The plant has been demonstrated to have antioxidant, anti-inflammatory, antiviral, anticancer, antibacterial, antimicrobial, antifungal, cardiovascular effects, and rheumatoid arthritis pharmacological properties. Keywords: Stinging nettle, pharmacological, anti-inflammatory, Urtica dioica

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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A NOVEL ONE POT SYNTHESIS OF KYNURENIC ESTER, ACID AND AMIDE DERIVATIVES

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Received: *March 15, 2024*

Medicinal Kynurenic acid (KYNA) is an endogenous molecule which is a non-selective antagonist of ionotropic glutamate receptors and has been found to have neuroprotective activity. A supplement of KYNA may help treat neurodegenerative disease, but it does not cross the blood-brain barrier due to its polar nature. Therefore, its different esters and amides derivatives were explored as a prodrug which can cross blood brain barrier (BBB) and transform into KYNA insitu. However, many esters and amide derivatives of KYNA synthesized via coupling reaction or multi- step synthesis using different organic or metallic catalysts. Herein we developed a novel one-pot, catalyst-free, convenient synthesis of KYNA ethyl esters using aniline and diethyl acetylene dicarboxylate in DMF under heating. We also explore the synthesis of KYNA and KYNA amide derivative in a simple manner with overall good yields via hydrolysis and condensation, respectively. Nowadays kynurenic acid is snatching the attention of scientists because its neuroprotectants activity but hardly to cross the BBB. So there are need to prepare kynurenic acid derivatives which shows better penetration and cross the BBB. KYNA act as a broad spectrum (non-selective) antagonist of ionotropic excitatory amino acid (EAAs) receptors such as N-methyl-D-aspartate (NMDA), α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid (AMPA) and kainate. Lower levels of kynurenic acid lead to neurodegenerative brain disorders such as, Alzheimer's disease (AD), Parkinson disease (PD) and psychiatric disorders such as depression. Elevated level of KYNA resulted schizophrenia.
Keywords: Kynurenic acid, ethyl esters & amides, One-pot synthesis, Neuroprotective, Neurodegenerative disease, Alzheimer's disease

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-44

ANTIOXIDANT AND ANTI-ULCER ACTIVITY OF BARK EXTRACT OF P. WALLICHIANA AGAINST PYLORUS LIGATION INDUCED ULCER IN ALBINO RATS

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Peptic ulcer involves acid-induced injury to the intestine that normally occurs in the stomach or upper part of the duodenum. It has been described as having bared mucosa that extends into submucosa even. This research focuses on pre-clinical screening of anti- ulcer potential of P. wallichiana in by pylorus-ligation induced ulcer model. Bark powder of P. wallichiana was purchased from the Amazon Pvt Ltd. Animal House, Hygia Institute of Pharmaceutical Education & Research (HIPER), Lucknow did provide rats (either sex) weighing 130-160g. Rats were divided into 5 groups; Group 1: Animals are administered only distilled water once a day, up to 15 days, Group 2: Animals are administered Omeprazole (30mg/kg) orally once a day, up to 15 days, Group 3: Animals are administered bark extract of P. wallichiana (BEW) (200mg/kg) orally once a day, up to 15 days, Group 4: Animals are administered bark extract of P. wallichiana (BEW) (400mg/kg) orally once a day, up to 15 days. Pylorus ligation method was used as ulcer induction model and evaluated parameters i.e., pH, acidity (total & free), volume of gastric content & microscopical examinations. In results, P. wallichiana has significant anti-ulcer potential at both the doses used 200mg/kg & 400mg/kg. In conclusion, it may prevent ulcer formation by the same action as ranitidine does. In all the parameters, it exhibited dose-dependent response in sub-siding ulcerogenic response. It selectively decreases gastric juice production and thus lowers pH of stomach.
Keywords: anti-ulcer, pylorus ligation, Pinus wallichiana, pH, total acidity

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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ROLE OF AZELAIC ACID IN THE MANAGEMENT OF HAIR PROBLEM

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Socially and mentally, a person's hair has always had an impact on their personality and overall appearance. An overview of the possible advantages of azelaic acid for hair growth. It is a naturally occurring nine carbon atoms saturated dicarboxylic acid, usually found in wheat, barley, and rye. While azelaic acid has been demonstrated to have a variety of biochemical properties, including anti-inflammatory, anti-microbial, antioxidant, anticomedolytic, and anticancer properties, there isn't much scientific evidence to support the theory that it directly stimulates hair growth. Azelaic acid has been linked in research to protective benefits against ultraviolet B (UVB) irradiation in cultured bulb and bulge cells by measuring catalase activity, as well as inhibitory effects on the conversion of testosterone to dihydrotestosterone. This could promote hair growth.
Keywords- Azelaic acid, hair growth,

【2S】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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BIOEQUIVALENCE STUDY: AN OVERVIEW

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The study of bioequivalence involves comparing various drug brands and their dosage forms. When the rate of dissolution and absorption of two different formulations of the same drug is the same, they are bioequivalent. Comparing the therapeutic effectiveness of two drugs that have the same active ingredient is necessary to assess the possibility of replacing an innovator with similar pharmaceuticals. Conducting a bioequivalence study involves conducting two methods: in-vitro and in-vivo. In-vivo bioequivalence study is usually carried out in human and animal subjects by measuring the rate and extent of drug absorption in the blood stream after a drug has been administered. Highly reliable information can be obtained from in-vivo studies. Furthermore, living organisms have a greater degree of variability. Conducting multiple trials is necessary, and the cost is also important. A dissolution apparatus is used for in-vitro bioequivalence studies. The necessary biological conditions are provided and samples are collected and analysed on a periodic basis. The system can be controlled by conducting invitro studies. It also allows for the imitation of biological conditions. By using in-vitro studies, the cost and number of trials can be decreased. The pharmaceutical industry and national regulatory authorities worldwide have embraced the concept of "BE". Efforts are being made to understand and develop more effective and scientifically valid approaches to assess bioequivalence of various dosage forms. This article provides a brief review of the BE concepts, approaches, designs, and various basic regulatory considerations and prospects for conducting BE studies.
Keywords: Bioequivalence

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-47

TARGETING ENZYMES IN THE TREATMENT OF ALZHEIMER DISEASE

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Alzheimer's disease (AD) is defined biologically by the presence of β-amyloid plaques and tau-containing neurofibrillary tangles. Alzheimer's disease (AD) is a genetic and sporadic neurological disorder that causes amnestic dementia in its prototypical form and non-amnestic cognitive impairment in its less prevalent variants. Although Alzheimer's disease is a common cause of cognitive impairment in middle and late life, its clinical impact is influenced by additional neurodegenerative and cerebrovascular illnesses. Designing multi-target-directed ligands (MTDLs) is a very promising modern approach. This methodology was designed specifically for treating disorders with complex pathological mechanisms. Alzheimer's disease (AD), the most common multifactorial neurodegenerative disease today, is one such disorder. Alzheimer's disease (AD) is associated with increased levels of the amyloid βpeptide (Aβ) and the hyperphosphorylated tau protein, as well as the loss of neurons and synapses. Furthermore, there is some evidence that oxidative stress, metal ion deregulation, inflammation, and cell cycle regulatory failure play a role in its pathogenesis. There are numerous appealing targets for the production of anti-AD drugs, and the multi-factor nature of this disease necessitates multi-target-directed compounds that can be beneficial for AD treatment. This review focuses on the discovery of dual and multi-acting anti-AD drug candidates, particularly hybrids obtained by joining chemically active moieties acting with different targets. The first class of compounds includes cholinesterase inhibitors that act as multiple binding site inhibitors and/or inhibitors with additional characteristics. Natural products also provide numerous options for slowing the progression and symptoms of many diseases, including Alzheimer's. In the meantime, natural compound structures such as lignans, flavonoids, tannins, polyphenols, triterpenes, sterols, and alkaloids have anti-inflammatory, antioxidant, anti-amyloidogenic, and anticholinesterase properties. In this review, we summarize the pathogenesis and treatment targets for Alzheimer's disease. We also present several medicinal plants and isolated compounds that are used to prevent and treat Alzheimer's disease symptoms.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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EMULGEL – A NOVEL DRUG DELIVERY VIA TOPICAL ROUTE WITH BETTER BIOAVAILABILITY THAN EMULSION AND GEL

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Received: *March 16, 2024*

Drugs can be delivered topically by entering the body through the skin, vagina, eyes, or rectal tract. Medication can be administered for systemic or localized effects. It is possible to create topical formulations with different physicochemical characteristics, such as solid, semisolid, or liquid. A drug emulsion is prepared and then added to an emulgel to create the topical system. Emulgel is a low interfacial tension, thermodynamically stable formulation with several properties, including good thermodynamic stability and increased permeability that is created by combining a surfactant and a co-surfactant. Emulgel has a sustained release pattern with dual control. Emulgel increases patient compliance and bioavailability. It facilitates the incorporation of hydrophobic drugs into the oil segment, which is followed by the dispersion of oily globules in the aqueous segment to produce an oil-in-water emulsion. Additionally, this emulsion can be mixed with gel base. This might be a more effective way to balance and launch the drug than mixing it into a gel base. Due to their dual delivery system formation, which combines the attributes of emulsions and gels, they have better thixotropy, excellent spread ability, improved patient acceptability, greaselessness, emollient properties, and improved stability of the active ingredient.

【2V】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-49

PREFORMULATION CONSIDERATIONS FOR CONTROLLED RELEASE DOSAGE FORM

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Received: *March 16, 2024*

The development of Controlled Release (CR) dosage forms necessitates a comprehensive understanding of various physiochemical parameters. In this study, a systematic approach is proposed to streamline the selection process of the final dosage form by assessing the physical and chemical attributes of candidate forms and excluding those with undesirable properties. A structured scheme, tailored to manufacturing processes, is devised to predict potential issues using minimal test materials and basic analytical tools. Critical properties evaluated include the form's salt, free base, or acid nature, polymorphic variations, amorphic characteristics, solubility profiles in different media (such as simulated intestinal fluid (SIF) and 0.1 N HCl), melting behavior, crystallinity, as well as hydrodynamic properties encompassing moisture sorption and loss under varying relative humidity (RH) conditions, and loss on drying (LOD) during typical wet granulation drying. Additionally, the processability aspects including corrosivity, filming, and compression-related sticking are examined. Real-world examples of drug substances (DSs) are utilized to underscore the preformulation support required for the chosen form during formulation development. Specifically, in the context of gastrointestinal disorders and dissolution method development, the solubility profiles across a pH range of 1 to 8 are investigated. The advantages of employing both trial solubility and equilibrium solubility approaches are elucidated, with the latter being particularly instrumental in polymorphism detection. The study showcases the existence of two polymorphs within DS mixes, one of which exhibits significant instability. To delineate chemical and polymorphic stabilities, accelerated stability experiments are conducted in tandem with quantitative X-ray powder diffraction (QXRD) and high-performance liquid chromatography (HPLC) analyses, offering insights into variations in stability under different conditions.
Keywords: Controlled Release dosage forms, Physiochemical parameters, Preformulation support, Polymorphism detection.

【2W】

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Bulletin of Pharmaceutical Research 2024;14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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UNRAVELING THE ROLE OF HERBAL EXTRACT LOADED MICROEMULSIONS FOR THE MANAGEMENT OF GLAUCOMA

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Glaucoma is the second leading cause of blindness around the globe by damaging a nerve in the back of your eye called the optic nerve. There are 80 million people approx. worldwide suffering from glaucoma and this number is expected to increase to over 111 million by 2040. Topical administration of intraocular pressure (IOA) reducing drugs reduces the progression of glaucoma in 90% of cases. Nowadays many conventional drug delivery systems are available in the market for the treatment of glaucoma or eye conjunctiva but due to its preparation in the liquid dosage form it is not easily applicable onto the surface of the schema for the treatment of glaucoma. In order to efficiently manage glaucoma, herbal microemulsion as liquid preparation could be safer and effective as microemulsion contains globules of micron or submicron size encapsulating drug of choice which will increase the permeation across the cornea and also helps in managing the tear drainage of the drug due to its viscosity.
Keywords: Glaucoma, Micro emulsions, Intraocular pressure, Pseudo ternary phase diagram, Herbal extract.

【2X】

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Bulletin of Pharmaceutical Research 2024;14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-51

ANTI-OXIDANT & HEPATOPROTECTIVE EFFECT OF AN ETHANOLIC OF VACCARIA PYRAMIDATA ROOT IN WISTAR ALBINO RATS

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Received: *March 16, 2024*

The present study was aimed to determine the antioxidant along with hepatoprotective effects of ethanolic root extract of vaccaria pyramidata against CCl4-induced hepatic injury in wistar albino rats. Group I was maintained as normal control, which was given olive oil (1 ml daily) only. Group II (negative control), received olive oil orally for 1 to 13 days and on 14th day CCl4; olive oil (1:1v/v mixture) was given at a dose of 1.25 ml/kg body weight orally. Group III (positive control) was administered Silymarin (100 mg/kg) for thirteen days, on fourteenth day CCl4; olive oil (1:1) was administered (1.25 ml/kg) orally. Group IV to V (test groups) received test extracts (at the dose 200 mg/kg & 400mg/kg) p.o. for 13 days and on 14th day CCl4; olive oil (1:1) was given (1.25 ml/kg) orally respectively. Pretreatment with Silymarin, ethanolic root extract of showed better protection against CCl4 induced hepatotoxicity. Test indicated a reduction in elevated serum enzyme levels i.e. SGOT, SGPT & ALP significantly in test groups when compared with toxic control. The extract exhibited significant antioxidant activity when subjected to the tests like DPPH, H2O2 and ABTS scavenging, total phenol content & total flavonoid content estimation. Thus, the investigation, in reference, confirmed that ethanolic root extract possesed potential antioxidant as well as hepatoprotective activities.
Keywords: Vaccaria pyramidata medik, Ethanolic extract, Carbon tetrachloride, Hepatoprotective activity

【2Y】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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UNFAVOURABLE PREGNANCY OUTCOMES WITH GESTATIONAL DIABETES MELLITUS: A COMPREHENSIVE REVIEW INVESTIGATION

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Received: *March 16, 2024*

The most frequent medical problem during pregnancy is now gestational diabetes mellitus (GDM), which is characterized as a hyperglycemic state initially identified during pregnancy. Diabetes mellitus and cancer are the two most common causes of disease and death globally; in particular, women with diabetes mellitus have an increased risk of breast cancer (BC). Diabetes increases a woman's susceptibility to reproductive disorders. Every year, almost 18 million newborns are affected by GDM, which affects 15 to 25% of pregnancies worldwide. Gestational hypertension, pre-eclampsia, and Caesarean section pregnancy termination are risks associated with gestational diabetes mellitus (GDM). Moreover, type 2 diabetes can develop in both the mother and the child as a result of consequences from GDM, such as enhanced carbohydrate metabolism, obesity, and cardiovascular disease. for future primary investigations to account for a wider range of prognostic variables. Furthermore, it is often known that women who are pregnant or nursing are among those who are most impacted by diabetes, with India having long been known as the world's capital of diabetes. Maternal diabetes was a factor in one-third (33%) of GDM cases among Indian women. However, new evidence indicates that gestational diabetes raises the possibility of both maternal and perinatal cardiometabolic disorders. Consequently, GDM poses a significant challenge to healthcare practitioners in the twenty-first century. Our goal is to investigate how diabetes affects female reproductive function at different phases of life in light of the evolving prevalence, prognosis, and preventive measures for GDM.
Keywords: Unfavourable pregnancy, Gestational diabetes, Gestational mellitus, perinatal cardiometabolic disorder

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-53

BIOAVAILABILITY

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Bioavailability is the measure of a drug's degree and pace of unaltered absorption from its dosage form. It is one of the most important elements required to demonstrate a proper drug concentration in the systemic circulation. Low drug stability at physiological pH, low water solubility, slow rate of dissolution, insufficient biological membrane penetration, and a high level of first pass metabolism are characteristics of a treatment with low bioavailability. Medications that are poorly soluble in water must be administered orally and in large quantities to achieve therapeutic plasma concentrations. Low water solubility is a major challenge in the development of new medicinal formulations. Every drug needs to be at the site of absorption. The article outlines several methods that can be applied to improve a drug's bioavailability and facilitate its efficient absorption by the body.
Keywords: therapeutic effectiveness, bioavailability, solubility

【3A】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-54

AN OVERVIEW OF MORINGA OLEIFERA PHARMACOLOGICAL EVIDENCE, PHYTOCHEMISTRY, NUTRITIONAL VALUE, AND THERAPEUTIC PURPOSES

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Received: *March 16, 2024*

Moringa oleifera (M. oleifera) which is commonly known as Drumstick tree or Horse radish tree is an angiospermic plant which belongs to family Moringaceae. Moringa oleifera, sometimes referred to as the Horse Radish Tree or Drumstick Tree, is an angiospermic plant that is a member of the Moringaceae family. This plant is typically found in northern India's sub-Himalayan region, Afghanistan, Bangladesh, and Pakistan. This plant can survive in places of the world that are tropical or subtropical. Many people refer to it as "The Miracle Tree" because of its many nutritional and practical benefits, as well as its capacity to treat a wide range of fatal ailments. The Terai, Siwalik, and Middle Mountain regions of Nepal are ideal for cultivating moringa because to their elevation and climate. Moringa is provides an excellent source of essential amino acids, minerals, and protein to supplement the typically low-nutrient rural Nepalese diet. The high nutritional content of leaves is especially advantageous to expecting moms and their unborn children. Every portion of Moringa has useful features which might benefit mankind and it can be one of the promising plants for further research operations. This plant contains the many bioactive substances like carbohydrates, phenolic compounds, carotenoids, fatty acids, vital amino acids, and functional peptides. The scientific literature has documented on the antibacterial, antitrypanosomal, hypotensive, antispasmodic, antiulcer, anti-inflammatory, hypocholesterolemic, and hypoglycemic activities of moringa formulations. This review's primary goals were to evaluate a published scientific journal article on the multipurpose usage of Moringa oleifera and to emphasize the plant's nutritional value, phytoconstituents, and pharmacological activity. It also suggested future directions for research, market, and development strategies.
Keywords: Moringa oleifera; Miracle Tree, Phytoconstituents, Moringaceae.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-55

MEDICINAL PLANT ALKALOIDS AS A PROMISING THERAPEUTICS

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Natural product has gained popularity worldwide for promoting Healthcare, as well as disease prevention. Medical use of alkaloid-containing plants has a long history and many alkaloids are still used in medicine nowadays. Alkaloids possessed wide range of pharmacological and therapeutic effects. The current manuscript discussed the plant contents of alkaloids for medical, pharmaceutical, synthetic, and many other useful properties. Alkaloids are a huge group of naturally occurring organic compounds which contain nitrogen atom or atoms (amino or amide in some cases) in their structures. These nitrogen atoms cause alkalinity of these compounds. Alkaloids have a wide range of pharmacological effect include ajmaline(antiarrhythmic),colchicine(antigout),emetine(antiprotozoalagent,emesis)ergotalkaloids(vasoconstriction,hallucinogenic,uterotonic),glaucine(antiussiv),morphine (analgesic), codeine (analgesic, antitussive), nicotine (nicotinic acetylcholine receptor agonist), physostigmine (acetylcholinesterase inhibitor) yohimbine (stimulant, aphrodisiac) and many other therapeutic effect. It designed to Highlights the plant content of alkaloids for medical, pharmacological, synthetic and many other properties.

KEYWORDS: Medicinal plant, alkaloid, pharmacology, therapeutic.

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Bulletin of Pharmaceutical Research 2024;14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-56

EXPLORING THE PHARMACOKINETICS OF NANOTECHNOLOGY-ENABLED NOVEL DRUG DELIVERY SYSTEMS: A PROMISING FRONTIER IN MEDICINE

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The emergence of nanoparticle-based drug formulations represents an ideal shift in modern pharmacotherapy, offering unprecedented opportunities to address the complexities of disease treatment. Nanoparticles, characterized by their size range of 100 to 500 nm, present a versatile platform for drug delivery, owing to their unique physicochemical properties. This abstract explores the multifaceted strategies employed in the design and optimization of nanoparticle-based drug delivery systems, focusing on their pharmacokinetic implications. By harnessing nanotechnology, these systems can overcome biological barriers, such as the blood-brain barrier, and achieve targeted drug delivery to specific tissues or cells, enhancing therapeutic efficacy while minimizing off-target effects. This fusion of nanotechnology and imaging paves the way for the development of theragnostic platforms, enabling simultaneous diagnosis and therapy and ushering in a new era of personalized medicine. This abstract focuses on recent advancements and clinical applications, highlighting the transformative impact of nanotechnology on drug delivery and precision medicine. By elucidating the intricate interplay between nanoparticle design, pharmacokinetics, and therapeutic outcomes, this concept offers insights into the future of pharmaceutical research and development. Additionally, these nanoparticle systems enable targeted and sustained drug delivery to specific tissues, reducing drug-related toxicity and enhancing patient compliance with less frequent dosing schedules. Nanotechnology has demonstrated significant benefits in treating diseases such as cancer, AIDS, and others, while also advancing diagnostic capabilities.
Keywords: Nanoparticle-based drug, Pharmacokinetic implications, Controlled release kinetics, Precision medicine.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-57

RECENT ADVANCED OF ARTIFICIAL INTELLIGENCE TECHNIQUES FOR THE DEVELOPMENT OF ANTITUMOR AND ANTI-HYPOGLYCEMIC DRUGS: AN OVERVIEW

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The Developments in molecular and cellular biology have led to important breakthroughs in the majority of cancer research. Diabetes is one of the main causes of an organization's problems, and cancer is one of the major causes of sickness and death worldwide. One of the systems that has been considered for the fourth commercial revolution is artificial intelligence (AI). The improvement of the drug discoveries and the time of drug release is required to maintain the drug stability. Large quantities of statistics may be explored and generated with the aid of using AI that may then be transformed into beneficial for the Information. In this world biggest drug corporations have been already started for the drug improvement studies. Artificial intelligence provides an enormous number of opportunities in current times for the quick identification and development of new anticancer tablets. Clinical studies, genomic exams, digital therapeutic records, and high-resolution clinical imaging are just a few examples of the tools that could potentially enhance the development of drugs. A researcher's large statics units from the pharmaceutical department and clinical fields can be researched with the use of an advanced artificial intelligence framework. The evaluation of AI is firmly associated with computational biology, and artificial intelligence (AI) has the potential to improve cancer drugs by integrating data on structural biology, drug resistance, and the majority of cancer medications. An assessment of an AI's practical evaluation of its competence and handling of diabetes is also highlighted in this assessment. We are going to emphasize on the most recent information about the cellular and molecular pathways of an explanation of the potential applies of the clinical data and clinical practice, despite the fact that the precise mechanisms underlying the cancer-fighting capabilities of this molecules remain unknown. Key Words – Artificial Intelligence Framework, Cancer, Computational Biology, Clinical Studies

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-58

LEVERAGING ARTIFICIAL INTELLIGENCE IN DRUG DISCOVERY AND DEVELOPMENT: A COMPREHENSIVE REVIEW

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The integration of artificial intelligence (AI) methodologies within the space of drug discovery and development has revolutionized the pharmaceutical industry in recent years. This paper provides a comprehensive review of the diverse applications of AI in various stages of the drug discovery and development pipeline. It explores how AI techniques such as machine learning, deep learning, and natural language processing have been instrumental in accelerating the identification of potential drug candidates, optimizing lead compounds, predicting pharmacokinetic and pharmacodynamic properties, and repurposing existing drugs. Additionally, this review highlights the role of AI-driven approaches in target identification, biomarker discovery, clinical trial optimization, and personalized medicine. Furthermore, challenges and limitations associated with the implementation of AI in drug discovery, including data quality, interpretability, and regulatory considerations, are discussed. Finally, the paper concludes with an outlook on future directions and the transformative potential of AI technologies in shaping the landscape of drug discovery and development.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-59

PATHOPHYSIOLOGY, TYPES, EVALUATION TECHNIQUES AND TREATMENT OF OBESITY

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The Obesity is a complex and multifaceted disease characterized by excessive adiposity that poses significant health risks. It is a major public health concern, with a rising global prevalence and substantial economic impact on healthcare systems. Obesity refers to the presence of excess body fat. Body mass index is used to diagnose obesity. Body mass index is weight in kilogram per height in meter square, the normal body mass index is 19.8 to 26, the overweight is 26.1 to 29 and the obese body mass index is more than 30. The pathophysiology of obesity involves a chronic positive energy balance, influenced by genetic, environmental, socio-economic, and behavioral factors. This imbalance is regulated by a complex interaction between endocrine tissues and the central nervous system. The condition affects virtually every organ system and is a key risk factor for numerous co-morbid diseases, including type-2 diabetes mellitus, hypertension, dyslipidemia, cardiovascular disease, and certain cancers. Obesity also directly reduces life expectancy and has been identified as one of the most severe risk factors for hospitalization and mortality from COVID-19. According to the genetic involvement, obesity is classified into syndromic obesity and common polygenic obesity. The anti-obesity agents may be evaluated by using the following techniques: Diet-induced obesity, Seasonal obesity, Exotic models of obesity, Non-human primates models of obesity, Virus-induced obesity, Hypothalamic obesity and Genetic obesity models. Treatment of obesity, such as Diets-whole grains like wheat, oats, brown rice, and quinoa, healthy protein like fish, poultry, nuts, seeds, beans, and legumes, and avoiding unhealthy foods, Lifestyle modifications-engaging in regular physical activity and yoga postures like Padahastasanam, Trikonasanam, and Bhujangasanam to burn calories and improve metabolic rate to aid in weight reduction, behavioural modification, psychological support, Medication therapy-Orlistat in allopathic, Triphala in ayurvedic, Murraya Koenigii in siddha, Afflatus Arq-E-Zeera in unani, and Calcarea Carbonica in homeopathic and Bariatric surgery. Keywords: Overweight, Adiposity, Body Mass Index, Diet, Orlistat, Bariatric.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-60

AN OVERVIEW OF EMERGING DEVELOPMENTS IN DEVELOPING ORAL HERBAL MALE CONTRACEPTIVES

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The Recognizing the importance of population control for global health encourages extensive research into male contraceptive methods. There are several synthetic contraceptives on the market; however many have negative side effects. Over time, several male contraceptive treatments, including hormonal, pharmacological, and immunological therapies, were studied and found to be effective with low failure rates compared to condoms. This review focuses on herbal contraceptives, which can effectively limit reproduction in both animals and humans. This study highlights herbal medicinal plants and plant extracts that have been shown to have strong antifertility effects in males. The review focuses on plants traditionally used for their spermicidal and antispermatogenic properties, as well as those with animal and human studies on their antifertility effects. It examines doses, chemical constituents, and mechanisms of action. This overview describes sperm generation, hormone synthesis, and male contraceptive mechanisms. The current review can help generate plant monographs and suggestions for their application. Several plant species described below may be beneficial in controlling male fertility through oral means. More study on the chemical and biological features of lesser-known plants is needed to assess their contraceptive efficacy and potential harmful consequences, allowing them to be used safely to manage male fertility. New technologies are needed to provide safer, more powerful pharmaceuticals that can be self-administered, cost-effective, and reversible.
Keywords: Antifertility, Family Planning, Herbal Contraceptives Herbs, Mechanisms Oral male contraception, overpopulation.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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SKIN CANCER

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Received: *March 16, 2024*

The Skin cancers encompass melanoma, arising from the pigmented cells of the skin, and non- melanoma skin cancers, which arise from epithelial cells (basal cell carcinoma and squamous cell carcinoma), lymphocytes (mycosis), or sensory cells (Merkel cell carcinoma). Survival from basal cell carcinoma and squamous carcinoma, the most common forms of skin cancer, is very high. Most skin cancer deaths result from melanoma. Ultraviolet radiation exposure is implicated in most skin cancers, and the incidence of skin cancer is rising worldwide. Surgical removal is the primary means of treatment for most skin cancers. Skin cancers are the most common of all cancers. Approximately 77% of all skin cancers are basal cell carcinomas (BCCs), 20% are squamous cell carcinomas (SCCs), and 3% are melanomas. There are a few other rare skin cancers. The incidence of skin cancer has been increasing by approximately 4% to 8% per year over the past 40 years. Skin cancer is the most common form of all cancers. Basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), two types of lesions associated with aging and sun exposure; represent the vast majority of non-melanoma skin cancers (NMSC). BCC is by far the most common non-melanoma cancer type. Although this cancer is rarely fatal, it can lead to dramatic disfiguring. SCC is less common but still has the potential to be fatal. Melanoma is one of the most serious forms of skin cancers because it has a potential for metastasis, which explains why melanoma is responsible for 90% of all skin cancer–related deaths. Your treatment options for skin cancer and the precancerous skin lesions known as actinic will vary, depending on the size, type, depth and location of the lesions. Small skin cancers limited to the surface of the skin may not require treatment beyond an initial skin biopsy that removes the entire growth.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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NANOTECHNOLOGY IN HEALTHCARE: THE POWER OF NANOBOTS

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Nowadays, doctors are trying to make medical treatments better by using techniques that are less invasive, meaning they don't involve cutting into the body too much. They're also using a new technology called nanotechnology to help with this. Nanotechnology is all about really tiny things, like tiny machines called nanorobots. These robots are so small that you can't even see them without a microscope. Scientists are working hard to create these miniature machines in laboratories. They are called by different names, like nanobots, nanoids, nanites, or nanomites. These tiny robots have big potential, especially in medicine. They could help diagnose and treat diseases like diabetes and cancer much better than we can now. Imagine a future where, if someone gets cancer, instead of having to go through tough treatments like chemotherapy, they could just get a tiny injection of special nanorobots. These little robots would zoom around the body, find the cancer cells, and destroy them without harming any healthy cells. That means no more hair loss, nausea, or other side effects from traditional treatments. One of the coolest things about nanorobots is that they are super durable and can last for a long time inside the body. Moreover, their miniscule size allows them access to areas beyond the reach of typical medications or instruments. Consequently, surgical procedures may become more efficient and less invasive, offering significant benefits to patients. As the name suggests, nanorobots are little superheroes that could change the way we treat diseases and improve people's lives. While they are still being developed and tested in labs, the possibilities they offer for patients, doctors, engineers, and scientists are really exciting.
Keywords: Nanotechnology, Nanorobots, Targeted therapy, Medical innovation

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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A PHARMACOKINETICS AND PHARMACODYNAMIC STUDY OF CLARITHROMYCIN-LOADED SUBMICRON-SIZED CARRIERS

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The current study aims to improve clarithromycin bioavailability and effectiveness in complicated intra-abdominal infection management. Therefore, clarithromycin-loaded submicron dual lipid carriers (CLA-DLCs) were developed via hot high shear homogenization technique and evaluated for colloidal parameters, release behavior, stability study, and in-vitro antibiofilm activity. Bioavailability and therapeutic efficacy of optimized formulation on hampering cytokines storm induction was determined in E. coli-induced peritonitis. The developed CLA-DLCs (particle size 326.19 ± 24.14 nm, zeta potential −31.34± 2.81 mV, and entrapment efficiency 85.78 ± 4.01%) exhibited smooth spherical shapes and sustained in vitro release profiles. Long-term stability study of optimized CLA-DLCs ensured maintenance of colloidal parameters for 1 year at room temperature. In vitro antimicrobial studies revealed 3.43-fold higher anti-biofilm activity of CLA-DLCs compared with clarithromycin. In addition, the relative bioavailability of CLA-DLCs was enhanced 5.89-fold compared to pure drug in rats. The remarkable decrease in microbial burden in blood as well as tissues, along with oxidative stress markers (lipid peroxidation, myeloperoxidase activity, and carbonylated protein level) and immunological markers (total leukocyte count, neutrophil migration, NO, TNF-, and IL-6) on treatment with CLA-DLCs enhanced the survival in a rat model of peritonitis compared with the pure drug and untreated groups. In conclusion, CLA- DLCs hold promising potential in management of intra-abdominal infections and prevention of associated complications. Keywords: E. coli; peritonitis; submicron dual lipid carriers; clarithromycin

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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A REVIEW ON POTENTIAL OF CURCUMIN FOR THE MANAGEMENT RHEUMATOID ARTHRITIS AND PSORIATIC ARTHRITIS

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Rheumatoid arthritis (RA) and Psoriatic arthritis (PsA) are chronic inflammatory illness recognized by joint pain and swelling, along with systemic symptoms. The distinction between RA and PsA may be complicated to make since their clinical presentations and symptoms are so similar. Rheumatoid arthritis and psoriatic arthritis are treated in a palliative manner since they are not curable disease. Allopathic medicines have serious side effects, and long term-consumption affects patients' life. Hyperacidity, stomach ulcers, gastrointestinal bleeding, and perforation, are many of the most common adverse effects. Curcumin, the primary active component within Curcuma longa (turmeric), has been demonstrated to become most helpful in the therapy of rheumatoid arthritis and psoriatic arthritis, with effectiveness attributed towards its mode of activity. The aim of the review is to define the corelation between the rheumatoid arthritis and psoriatic arthritis and to report the use and mechanism of curcumin in the management of rheumatoid arthritis and psoriatic arthritis. According to the various literature surveys and evidence it can be conclude that the curcumin can serves as a safe and effective therapeutic option as compare to the synthetic medications for the management of rheumatoid arthritis and psoriatic arthritis. As a conclusion rheumatoid arthritis and psoriatic arthritis both have many similarities, and the various synthetic medication used can give various side effects. Curcumin a traditional medicinal herb serves as a beneficial plant by producing anti-inflammatory, immunomodulatory, antioxidative action in the management of rheumatoid and psoriatic arthritis, also avoids the side effect produced by various synthetic medications.

【3L】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-65

MINI TABLETS IN HARD GELATIN CAPSULE

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Oral drug delivery is the most desirable and preferred method of administering therapeutic agents for their systemic effects. Mini-tablets are flat or slightly curved tablets with a diameter ranging between 1.0-3.0 mm. Mini-tablets are small, solid dosage forms that are typically round or oval in shape and can be filled into hard gelatin capsules. They offer several benefits, such as improved drug distribution, reduced risk of local irritation, and the ability to encapsulate multiple drugs or formulations in a single capsule. The use of mini-tablets in hard gelatin capsules allows for precise dosing and can be particularly useful when multiple drugs need to be administered together or when controlled release is desired. Hard gelatin capsules can be filled with various types of fillings, including powders, granules, pellets, liquids, and semi-liquids .The filling process involves filling the capsule body with the desired formulation, compressing the powder or forming a soft compact, and then joining the capsule body with the cap. The size of hard gelatin capsules can vary, and they are available in different sizes ranging from 000 to 5 for human use.

【3M】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-66

PATHOPHYSIOLOGY, TYPES, EVALUATION TECHNIQUES AND TREATMENT OF LIVER DISEASE

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Received: *March 16, 2024*

~~Liver disease refers to any condition that inflames or damages the liver. Damage to the liver can accumulate through several~~ stages of liver disease, each stage having a cumulative effect on the liver's ability to function properly. The pathophysiology of liver disease involves the disruption of liver cell activity. In the initial stages of liver disease, inflammatory-hepatitis or fatty-steatosis changes, or both-steatohepatitis, can occur. If the cause of liver injury is not removed, the damage can progress to fibrosis and eventually cirrhosis. The four stages of liver damage or disease are: inflammation, fibrosis, cirrhosis, and end-stage liver disease. There are many types of liver disease, including Hepatitis A-E, Non-alcoholic fatty liver disease, autoimmune hepatitis, Primary sclerosis cholangitis, Wilson's disease, Alpha-1 antitrypsin deficiency, Liver cancer, Cirrhosis, Liver failure, Alcoholic fatty liver disease, Primary biliary cirrhosis, Hemochromatosis, and Drug-induced liver disease. Experimental models for hepato-protective studies have been developed to mimic human liver diseases. These models measure the ability of the drug to prevent or cure hepatic toxicity-induced by different hepatotoxins in cellular cultures, organs, or in experimental animals-rats, mice, etc. Treatment for liver disease depends on the diagnosis. Some liver problems can be treated with lifestyle modifications, such as losing weight or not drinking alcohol. Other liver problems may be treated with medicines or surgery. Hepatoprotective drugs are intended to protect the liver from such complications. They will not replace drugs that combat the causes of liver diseases, for example, antiviral drugs, but can improve the functioning of liver cells.

Keywords: Hepatitis, Steatosis, Liver-cirrhosis, Fibrosis, Hepatoprotective.

【3N】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-67

EVALUATION OF NDDS OR TECHNOLOGIES TO ENHANCE PATIENT ADHERENCE AND OUTCOMES

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Received: *March 16, 2024*

Adherence is defined as the extent to which a person's behavior corresponds to desirable healthcare goals jointly established with the healthcare provider. In cardiovascular disease, adherence to medications is low – over 50% of patients do not take medications as prescribed. The relationship between adherence to medications and clinical outcomes has been clearly demonstrated particularly in cardiovascular disease. Serious complications, increased hospitalization and death. Adherence to proven, effective medications remains low, resulting in high rates of clinical complications, hospital readmissions and death. The use of technology to identify patients at risk and to target interventions for poor adherence has increased. Recent studies have evaluated technology based interventions to improve medications adherence by using pharmaceutical database, tailoring educational information to individual patient needs delivering technology driven reminders to patients and providers, and integrating-in-person interventions with electronic alerts. Cellular phone reminders and in home electronic technology used to communicate reminder messages have shown mixed results. The use of NDDSs technology is adopted to increase the bioavailability of the drug, reduce adverse effects and side effects and increase drug stability. It refers to the approaches, formulations, technologies and systems for transporting a pharmaceutical compound in the body as needed to safely achieve its desired therapeutic effects.
Keywords –NDDSs technology, Medication Adherence, Clinical Outcomes.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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A REVIEW ON RECENT APPROACHES IN BUCCAL PATCHES

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Received: *March 16, 2024*

A biosensor is an integrated receptor-transducer device. Which can convert biological response into an electrical signal? The design and development of biosensors have taken a center stage for researchers or scientific in recent decade owing the wide range of biosensor applications. Crucial exploitation of biosensors has attained dominant significance in the meadow of drug innovation, drug identification, bio remedy, food protection, disease diagnosis, and ecological examination, water and food quality monitoring, and drug delivery. It has direct to the innovation of specific and authoritative diagnostic tool that employing biological sensing element as biosensor. Nowadays, we enjoy the results of science and technology for the smoothly running lives. We frequently rely on various types of appliances or devices, such as glucometer, DNA biosensor, immunosensors, smoke detectors, infrared (IR) thermometers, florescent biosensors. The main diagnostic techniques available for the detection of breast cancer require the corresponding equipment, professional practitioners, and expert analysis, and the detection cost is high. The detection of tumor markers can effectively assist the diagnosis and treatment of breast cancer. Finally, the opportunities and challenges of developing efficient biosensors in breast cancer diagnosis and treatment are discussed. The present review aimed at summarizing the most recent finding and future prospectives regarding biosensors.
Keywords: Biosensor, tumor marker, diagnosis, immunosensors, glucometer.

【3P】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-69

PULSE OF PROGRESS: NAVIGATING HYPERTENSIVE DRUGS AND THEIR IMPACT

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Received: *March 16, 2024*

Hypertension causes difficulty in the functioning of the heart and is involved in atherosclerosis, raising the risk of heart attack and stroke. Many antihypertensive medicines are used for the treatment of hypertension such as diuretics, sympatholytic agents, renin inhibitors, calcium channel blockers, beta adrenergic agonist and vasodilators. These drugs have some common side effect like muscle cramps, eye problems, erectile disfunction, peripheral edema etc. Beta blockers: The physiological effects of hypertension encompass both short-term and long-t erm implications. In the short term, elevated blood pressure can cause symptoms like headaches, dizziness, and fatigue, etc. Beta blockers, This helps the heart beat slower and with less force. Beta blockers include atenolol, metoprolol and others. Beta blockers aren't usually recommended as the only medicine prescribed. ACE inhibitors (Angiotensin-Converting Enzyme inhibitors) are a class of medications commonly used in allopathic medicine to treat hypertension (high blood pressure). These medications work by blocking the action of the angiotensin-converting enzyme, which is responsible for converting angiotensin I into angiotensin II. Angiotensin II is a potent vasoconstrictor, meaning it narrows blood vessels, leading to increased blood pressure. By inhibiting this enzyme, ACE inhibitors help dilate blood vessels and reduce blood pressure levels. Some common ACE inhibitors used in allopathic medicine for hypertension include: Lisinopril, Captopril. It's important for patients taking ACE inhibitors for hypertension to follow their healthcare provider's instructions closely, attend regular check-ups.
Key words: Hypertension, vasodilators, Beta blockers, Side-effects,

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-70

A PHARMACOGNOSTIC REVIEW ON NYCTANTHES ARBOR-TRISTIS

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Received: *March 16, 2024*

Nyctanthes arbor-tristis also known as Parijat plant, is a species of flowering plant native to Southeast Asia, particularly India, Bangladesh, and Thailand. It is renowned for its fragrant, white, star-shaped flowers that bloom at night, emitting a powerful and pleasant aroma. The Parijat Plant (Nyctanthes arbor-tristis) Botanical Characteristics, Traditional Uses, and Pharmacological Properties. The Parijat plant, scientifically classified as Nyctanthes arbor-tristis, holds significant cultural, medicinal, and botanical importance across its native regions in Southeast Asia. This review comprehensively explores its botanical characteristics, traditional uses, and pharmacological properties. Botanically, N. arbor-tristis is a small tree or shrub bearing lanceolate leaves and delicate, fragrant, white flowers with orange tubular cores. Its flowers, which bloom exclusively at night, have earned it the moniker "Queen of the Night." Culturally, the plant holds symbolic significance in Hindu mythology and is often associated with various religious ceremonies. Traditional medicine systems, particularly Ayurveda, have extensively employed different parts of the Parijat plant for treating a wide array of ailments, including fevers, digestive disorders, rheumatism, and skin conditions. Recent scientific studies have corroborated many of these traditional uses, revealing the plant's diverse pharmacological properties, including analgesic, anti-inflammatory, antioxidant, antimicrobial, and hepatoprotective effects. Furthermore, phytochemical analyses have identified various bioactive compounds such as flavonoids, phenolic acids, terpenoids, and alkaloids, which contribute to its therapeutic potential. Despite the growing scientific interest, further research is warranted to elucidate the mechanisms of action and clinical efficacy of N. arbor-tristis-derived compounds, paving the way for its integration into modern healthcare practices.
Keywords: Parijat plant, Nyctanthes arbor-tristis, botanical characteristics, pharmacological properties, phytochemicals

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-71

POTENTIAL THERAPEUTIC USES OF ZINGIBER OFFICINALE

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Received: *March 16, 2024*

Tuberculosis (TB) remains a significant global health challenge, with an estimated 2 billion people worldwide infected with Mycobacterium tuberculosis. Current anti-tuberculosis treatment (ATT) primarily relies on antibacterial drugs, which are lengthy, often causing adverse side effects, and can lead to the development of drug-resistant strains of the bacteria. Recognizing these challenges, researchers have explored the potential of combination therapies targeting both the pathogen and the host to effectively combat TB. One such promising avenue involves the use of gingerol, a potent and pharmacologically active compound found in ginger. Studies have shown that gingerol can restrict the growth of Mycobacterium tuberculosis within the lungs, spleen, and liver of infected mice. This suggests that ginger supplementation could play a beneficial role in enhancing the effectiveness of TB treatment. An integrated holistic approach to TB treatment combines conventional TB drugs with natural remedies like ginger. Ginger is known to enhance the body's immune response, potentially shortening the time required for a therapeutic response. Furthermore, ginger supplementation has been found to reduce levels of inflammatory markers such as TNF alpha, ferritin, and malondialdehyde (MDA). These reductions indicate that ginger possesses anti-inflammatory and antioxidant properties, which can mitigate the inflammatory response and oxidative stress associated with TB infection. By incorporating ginger supplementation into anti-TB therapy, it's possible to not only enhance the body's immune response but also to reduce inflammation and oxidative stress, thereby improving treatment outcomes and potentially minimizing the development of drug-resistant TB strains.
Keywords: Ginger, Tuberculosis, Anti-oxidant, Anti- inflammatory, Oxidative stress

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-72

INTRODUCTION TO ARTIFICIAL INTELLIGENCE IN PHARMACY: BASIC CONCEPTS AND APPLICATIONS

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Received: *March 16, 2024*

AI is the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. Integrating Artificial Intelligence (AI) into pharmacy practice represents a promising frontier with profound implications for healthcare delivery. Artificial intelligence use in pharmaceutical technology has increased over the years, and technology can save time and money while providing a better understanding of the relationships between different formulations and process parameters. With the advancements in AI technologies, pharmacists increasingly leverage these tools to enhance various facets of pharmaceutical practice. The paper examines the multifaceted applications of AI in pharmacy, including drug discovery, personalized medicine, medication management, adverse drug event detection, and clinical decision support systems. Pharma companies can implement AI in manufacturing for higher productivity, improved efficiency, and faster production of lifesaving drugs, including Quality control, predictive maintenance, waste reduction, design optimization, and process automation. AI holds the potential to improve the R&D process. By harnessing the power of AI, pharmacists can optimize patient care, streamline workflows, and contribute to the evolution of pharmaceutical science and practice. This comprehensive introduction serves as a foundation for understanding the transformative potential of AI in pharmacy and encourages further exploration and innovation in this dynamic intersection of technology and healthcare.
Keywords: Artificial Intelligence, Future of medicine, Pharmacy practice, Drug discovery, Innovation.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-73

JANAUSHADHI KENDRA VS GOVERNMENT VS BRANDED: WHICH ACETAMINOPHEN TABLET IS THE SUPREME

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Received: *March 16, 2024*

This study aims to compare the quality, efficacy, and affordability of acetaminophen tablets available in three categories: Janaushadhi Kendra (Generic), Government-produced, and Branded varieties. Acetaminophen, a commonly used over-the-counter medication, is widely utilized for its analgesic and antipyretic properties. However, variations in pricing, manufacturing standards, and branding often lead consumers to question the equivalency and effectiveness of different options. The research methodology involves a comprehensive analysis of product labelling, manufacturing processes, pricing structures, and consumer feedback. Preliminary findings suggest that while branded acetaminophen tablets often come with higher prices attributed to branding and marketing expenses, they may not necessarily offer superior efficacy or safety compared to generic counterparts available at Janaushadhi Kendra or those produced by government agencies. This research contributes to the ongoing discourse on healthcare accessibility and affordability by providing empirical evidence to support informed decision-making regarding the selection of acetaminophen tablets. The findings underscore the importance of promoting generic and government-produced medications as viable alternatives to branded products, particularly in resource-constrained settings where affordability and accessibility are paramount concerns. Further studies could delve deeper into specific aspects such as consumer perception and long-term health outcomes to provide a more comprehensive understanding of the implications of choosing between different categories of acetaminophen tablets.
Keywords:- Acetaminophen tablets, comparative analysis, generic, over-the-counter medication, healthcare accessibility

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-74

NAYANTARA THE SECOND MOST USED ALKALOIDS FOR CANCER TREATMENT

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Received: *March 16, 2024*

Al The purpose of this review is to demonstrate the anticancer properties of several phytochemicals derived from Nayantara (Catharanthus roseus). One of the major health problems facing both industrialized and developing nations is cancer. The process of carcinogenesis can be stopped or inhibited by cancer chemotherapy preventative medicines, many of which are natural compounds. Because of their clearly characterized mechanism of action, herbal anticancer drugs derived from Catharanthus roseus are widely used. Vinca alkaloids, the primary alkaloids of Catharanthus roseus, are significant because they combat cancer. In clinical application, there are four main vinca alkaloids: vindesine (VDS), vinblastine (VBL), vinorelbine (VRL), and vincristine (VCR). Vinflunine, a novel vinca alkaloids anticancer agent, was recently found. To aid scientists and students in understanding the fundamental therapeutic value of the plant, an attempt has been made to concisely outline the pharmacological action of the aforementioned plant against anticancer property in this review. Vinblastine is a secondary medication used to treat Hodgkin's disease and other neoplasms, while vincristine is the preferred treatment for juvenile leukemia. Together, vincristine and vinblastine, which constitute a novel class of naturally occurring oncolytic drugs, are widely employed in the chemotherapeutic treatment of a broad range of human cancers.The methyl-erythritol phosphate (MEP), shikimate, and mevalonate pathways are the ones that produce the powerful anticancer chemicals. Numerous biological features of these two compounds are covered in depth in the section that follows. Nanotechnology-based synthesis has been used in recent years, and it has been thought that this approach will boost the effectiveness of the bioactive molecules. This may be heralding in a new phase in the creation of medications based on nanotechnology. However, consideration was given to the potential toxicity of the abundant vinca chemicals.
Keywords : Madagascar periwinkle, vinblastine , vinca alkaloids , vincristine , nayantara , anti-cancer activity

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-75

UNRAVELING THE ROLE OF MICROBIOTA DYSBIOSIS IN GASTROINTESTINAL DISORDERS

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The intricacy and variety of roles the gut microbiota plays have been made evident by the recent advancement of sophisticated sequencing tools. Moreover, dysbiosis, or changes in the balance or composition of the intestinal microbiota, is linked to several gastrointestinal disorders. There is mounting evidence linking the pathophysiology of extra-intestinal and intestinal illnesses to dysbiosis of the gut microbiota. Extra-intestinal illnesses include allergies, asthma, metabolic syndrome, cardiovascular disease, and obesity, while intestinal disorders include celiac disease, inflammatory bowel disease, and irritable bowel syndrome (IBS). The crucial mutualistic interaction between the colonic microbiota, their metabolic products, and the host immune system plays a critical role in the pathways leading to the development of illness in many of these disorders. Developing a "healthy" connection at a young age seems essential for preserving intestinal homeostasis. Specifically, the types of bacteria that live in the colon's mucus layer may impact the maintenance of host cellular homeostasis or the induction of inflammatory mechanisms. This can occur through direct contact with host cells or indirect communication through bacterial metabolites. This overview explains how changes in gut microbial communities contribute to illness pathogenesis by examining the complex link between microbiota dysbiosis and gastrointestinal (GIT) diseases.
Keywords: Microbiota dysbiosis, Gastrointestinal disorders, inflammatory bowel disease, Gut microbiome.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-76

EXPLORING RECEPTOR-MEDIATED SIGNALING PATHWAYS IN DIABETIC COMPLICATIONS: A COMPREHENSIVE REVIEW

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Received: *March 16, 2024*

Diabetes mellitus is a complex metabolic disorder that affects millions of people worldwide and is associated with various complications. Understanding the underlying mechanisms and signaling pathways involved in the development of these complications is crucial for the development of effective treatment strategies. This comprehensive review focuses on receptor-mediated signaling pathways implicated in diabetic complications, including retinopathy, nephropathy, neuropathy, and cardiovascular diseases. The review explores the molecular interactions and signaling cascades activated by receptors such as the receptor for advanced glycation end products (RAGE), the angiotensin II type I receptor (ATIR), and the vascular endothelial growth factor receptor (VEGFR) in diabetic complications. It discusses the role of these receptors in promoting inflammation, oxidative stress, endothelial dysfunction, and fibrosis, which contribute to the pathogenesis of diabetic complications. Furthermore, the review highlights the potential therapeutic targets within these signaling pathways and discusses the current strategies being explored to modulate these pathways for the prevention and treatment of diabetic complications. It discusses the use of receptor antagonists, receptor blockers, and small molecule inhibitors as potential therapeutic interventions to attenuate the detrimental effects of these signaling pathways. Overall, this comprehensive review provides valuable insights into receptor-mediated signaling pathways involved in diabetic complications. It underscores the importance of targeting these pathways for the development of novel therapeutic interventions to prevent or alleviate the burden of diabetic complications. Keywords: Hyperglycemia, Receptor-mediated Signaling Pathways, Diabetic complications.

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-77

BENEFITS OF NANOTECHNOLOGY IN THE FIELD OF COSMETICS: A REVIEW

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Nanotechnology has unlimited application in the field of Pharmaceuticals, Cosmetics, Biomedical and drug delivery, Defense and security, Automobile, Aerospace, and metallurgy etc. Among these fields application of nanotechnology has vitalize more in the industry of cosmetics products. It improves the efficacy of cosmetic products. The major benefits of Nanoparticles in cosmetics have enduring stability, Proper penetration of formulation at the site of application. Nanotechnology based formulation have been immensely used in different beauty products, Skincare products such as moistening agents, cleansing agents. Hair care products such as hair colorants styling agent, Shampoo, Face care products such as lipistiks, mascara, powders, face foundations, Nail care products such as nail vanishes, paint removers, dental products deodorants and perfumes. The different types of nanocarriers that are used in cosmetics such as cubosomes, liposomes, hydrogels, dendrimes, nanoemulsions, nanocrystals, microemulsion, and solid lipid nanoparticles. The main focus of this study is to review the recent literature for benefits of nanotechnology in cosmetics with some examples of nonmaterial that are widely used in the field of cosmetics. Key words: Nanotechnology, Nanoparticles, cosmetics, Liposome.

ORAL PRESENTATION

【3Y】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-78

IN-SITU NASAL GEL FORMULATIONS USING EXTRACTS OF TAGETES ERECTA LINN AND SIMILAX ZEYLANICA, AND THEIR PHARMACEUTICAL EVALUATION FOR THE TREATMENT OF ALLERGIC RHINITIS

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The purpose of this work was to develop an in-situ gel that is thermoreversible in order to treat allergic rhinitis (AR). The objective of this research is to develop a mucoadhesive in-situ gel with a lower nasal mucocilliary clearance in order to improve a polyherbal extract's local effects when treating allergic rhinitis (AR). For the administration of intranasal medication, the drug formulation's prolonged residence in the nasal cavity is essential. Tests were conducted on the generated formulations for irritancy, mucoadhesive strength, spread ability, medication content, gel strength, pH, viscosity, and gelling temperature. Keywords: Tageteserecta, Linn, Similaxzeylanica, HPMC, Carbopol, In-situ, Pluronic

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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NUTRACEUTICALS & DIETARY SUPPLEMENTS – A BOON OR BANE TO SOCIETY

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Received: *March 16, 2024*

Fast Nutraceuticals are substances that has been concentrated and repackaged in a non-food shape, such as a capsule, under the banner of "dietary supplements." A dietary supplement is defined as "a product (other than tobacco) that is intended to supplement the diet and contains one or more of the following dietary ingredients—a vitamin, a mineral, herb or other botanical, an amino acid". A dietary supplement helps by increasing the total daily intake, or a concentrate, metabolite, constituent, extract, or combinations of these ingredients; is ingested in pill, capsule, tablet, or liquid form and is not represented for use as a conventional food or as the sole item of a meal or diet. A dietary supplement is defined as "a product that is intended to supplement the diet and contains one or more of the following dietary ingredients—a vitamin, a mineral, herb or other botanical, an amino acid". Nutraceuticals and nutrition supplements are collectively referred to as "dietary supplements," intended to be taken orally. The common reasons for using dietary supplements are to improve conditions such as overall health and disease prevention, performance and appearance. These are often perceived as "safe" and less likely to have side effects. The scientific research on Nutraceuticals and nutrition supplements is frequently misinterpreted for commercial interests because of high consumer demands. The manufacturing and marketing of supplements are full of challenges. Several challenges associated with the development of nutraceuticals are often ignored because of a lack of authoritative control. These challenges include identification of the authentic source of raw materials, purity of the compound, presence of other active compounds, quality, lack of experimental evidence, false advertising, contamination with heavy metals, and interactions between supplements and drugs.
Keywords: Nutraceuticals, dietary supplements, nutritional supplements, interactions.

【4A】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-80

FORMULATION AND EVALUATION OF DIPIVEFRINE NANOEMULGEL FOR OCULAR DRUG DELIVERY SYSTEM

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The Glaucoma is the leading cause of the abnormality of the vision. It comprises a group of eye conditions that harm the optic nerve, responsible for transmitting visual information from the eye to the brain and crucial for maintaining good vision. Optic nerve damage is often associated with elevated eye pressure, although glaucoma can still occur even when eye pressure is within the normal range. Conventional therapy of the eye care includes eye drops whereas nanotechnology facilitates the engineering of materials at the scale of biomolecules, allowing for the precise regulation of cellular functions. It is the emerging technology. The advantage of the nanoparticle includes enhanced bioavaliabity, increase the absorption at target site, and moderate the penetration of drug in the tissue the unique physicochemical and biological attributes of nanoparticles, attributed to their small size, make them highly suitable for biomedical applications. However, an unexpectedly high occurrence of follicular conjunctivitis has been noted in glaucoma patients undergoing this topical treatment. Some patients experienced significant discomfort. It is advisable to regularly examine the conjunctiva to detect early signs of this side effect, which may initially be asymptomatic. Nanoemulsions, distinct from larger emulsions, create nearly transparent systems where droplets range from 20 to 200 nm. They are also known as miniemulsions or submicrometer emulsions. Similar to regular emulsions, they enable the transportation and dissolution of hydrophobic substances in a water-based phase.These nanoemulsions serve as effective carriers in cosmetic and pharmaceutical applications. (26) A combination of surfactant and cosurfactant (Tween 80 and 96% ethanol in a 5:4 ratio) and the oil phase (oleic acid) are blended at various ratios: 1:9, 2:8, 3:7, 4:6, 5:5, 6:4, 7:3, 8:2, and 9:1.(27) The resulting mixture is slowly introduced to Aquadest and agitated until a clear liquid forms, indicating the formation of a nanoemulsion gel.
Keywords: Nanoemulge, Dipivefrin, Nanoemulsion, Nanoparticle

【4B】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

AB-81

EXPLORING THE POTENTIAL OF EPIGALLOCATECHIN GALLATE AS AN EGFR INHIBITOR: INSIGHTS FROM MOLECULAR DOCKING, SIMULATION, DENSITY FILED THEORY AND GENE-GENE INTERACTIONS IN THE CONTEXT OF LUNG CANCER THERAPY

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Lung cancer is one of the most common malignancies in the world, according to the International Agency for Research on Cancer. As the most common cause of cancer-related death, lung cancer still presents a significant challenge to scientists and researchers working to discover novel therapies and drugs. Among epithelial malignancies, including most lung cancers, the tumour microenvironment (TME) is recognised as one of the most important hallmarks. It is linked to carcinogenesis and progression, invasion, and metastasis. In recent years, the TME has received a lot of attention. Pharmacotherapy has traditionally relied heavily on natural materials, particularly in the treatment of cancer. Natural substances that target the TME have been shown to have anticancer effects and underlying mechanisms in this study. Supplementing anticancer medications with naturally occurring substances is another area of investigation for our team. Nanotechnology and other materials used to enhance the advantages of natural products are also highlighted. Ultimately, our goal is that this study of these natural substances will lead to the creation of new concepts for the treatment of lung cancer patients.
Keywords: Lung cancer, tumour microenvironment, Nanotechnology, Pharmacotherapy, malignancies.

【4C】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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SYNTHESIS AND PHARMACOLOGICAL EVALUATION OF PYRAZOLE DERIVATIVES

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Received: *March 16, 2024*

Aromatic organic heterocyclic containing pyrazole scaffolds possesses two nitrogen atoms of five-member ring. A series of substituted pyrazole compounds were synthesized and their structure was characterized by melting point, TLC, IR and NMR analysis. Pyrazole derivatives have widespread pharmacological activity such as antitumor, anti-inflammatory, antimicrobial, antidepressant, antifungal, anti- malarial, enzyme inhibitors, anti-diabetic, and anticonvulsant. All the synthesized compounds were evaluated for molecular docking studies. Among the docked ligands, compound HI7 reported highest dock score of -8.77 with Glide energy of -59.182Kcal/mol. Compound HI7 possessed 3 hydrogen bonds, each with ASN 73, VAL 367 and PHE 176 amino acids at bond distances of 2.03 Å, 2.01 Å and 2.06 Å, respectively. Dock scores of all the compounds ranged from -8.77 (compound HI7) to -4.709 (compound HI9). VAL 367 and PHE 176 the most commonly interacted amino acid with the data set ligands i.e. urea transporter-B (UT-B) protein ligand interactions of the dataset ligands showed diuretic activity. The compounds (HI7, HI5, HI6) showed significant diuretic activity. Keywords: Pyrazole derivatives, Computational properties, Diuretics, urea transporter-B (UT-B) protein.

【4D】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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INNOVATIVE FORMULATION AND TECHNOLOGICAL ADVANCEMENTS IN FASTDISSOLVING ORAL THIN FILM DRUG DELIVERY SYSTEMS

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Fast Dissolving Oral Thin Film Drug Delivery Systems (FDOFDDS) represent a significant advancement in pharmaceutical technology, offering a convenient and patient-friendly alternative to traditional oral dosage forms. These innovative films dissolve rapidly upon contact with saliva, allowing for quick absorption of the medication into the bloodstream, often without the need for water or swallowing. FDOFDDS can be tailored to incorporate a wide range of Active Pharmaceutical Ingredients (API's) including both hydrophilic and hydrophobic compounds, making them suitable for various therapeutic applications. FDOFDDS represent a promising platform for delivering a wide range of therapeutics in a convenient, patient-friendly manner and suitable for those drugs which undergo first pass metabolism and have less bioavailability. Ongoing research and innovation in formulation and technology are driving the development of FDOFDDS with improved efficacy, safety and patient acceptance. As the field continues to evolve, FDOFDDS are poised to play an increasingly important role in modern pharmaceutical therapy, offering innovative solutions to the challenges of drug delivery.
Keywords: FDOFDDS, Innovation, Bioavailability, Hydrophobic, Hydrophilic

【4E】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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NATURAL BIOACTIVES LOADED TRANSFEROSOMES AS PROMISING THERAPEUTICS FOR PSORIASIS THERAPY

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Received: *March 16, 2024*

Fast Psoriasis is an autoimmune disease characterized by scaly silver patches on the skin. In the normal skin phase, keratinocytes grow in a fully mature state under 35-40 days whilst, in psoriatic skin, this whole process is completed within 5-7 days to develop lesions due to the accumulation of keratinocytes. Diacerein has also anti-inflammatory activity and has the potential to suppress the cytokines such as TNF-α and interferon-γ (IFNγ). Transferosomes are flexible and penetrate skin layers easily due to their deformability property without rupturing skin structure. This research framework designs a lipid- based topical nano-delivery system loaded with berberine HCl and diacerein for the treatment of psoriasis by using box-Behnken design optimization. The optimized formulation was characterized for polydispersity index, vesicle size, entrapment efficiency, zeta potential (ζ), spectral analysis like FTIR, thermal analysis, and X-ray diffraction, deformability, transmission electron microscopy, in- vitro release, ex-vivo skin permeation studies, and stability studies. The optimized formulation had a particle size of 110.90±2.8 nm with high entrapment efficiency (89.50±1.5 of berberine HCl and 91.23±1.8 of diacerein). Deformability, polydispersity index, ζ potential, and antioxidant activity of the optimized formulation were 2.44, 0.296, and -13.3 mV. The Optimized transferosomes exhibited 82.093±0.81% and 85.02±3.81% release of berberine HCl and diacerein after 24 h of dissolution study. The transdermal flux of optimized formulation was 0.0224 µg/cm2/h (2.24 cm/h permeation coefficient) and 0.0462 µg/cm2/h (4.62 cm/h permeation coefficient), respectively for berberine HCl and diacerein. Raman analysis of treated pig skin confirmed that the transferosomes can permeate the skin. In addition, the berberine HCl and diacerein-loaded transferosomes were found stable at 4°C for three months. The outcomes of this research framework a berberine HCl and diacerein-loaded transferosomes would be effective and safe in psoriasis treatment with expected no side effects.

Keywords: Berberine, Diacerein, Transferosomes, Topical delivery, Psoriasis

【4F】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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PATHOPHYSIOLOGY, CAUSES, TYPES, EVALUATION TECHNIQUES, AND TREATMENT OF EPILEPSY

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Received: *March 16, 2024*

Epilepsy is one of the oldest known diseases in history. It is a neurological disorder. The main characteristics of epilepsy are seizures, convulsions, abnormal body movements, and loss or disturbed consciousness. The pathophysiology of convulsion includes the disturbance of nerve cell movement within the brain, causing muscles to automatically contract and fit. This comes about in sudden, savage, and sporadic developments of the body. The irregular movement takes over the ordinary working of one or more brain systems, coming about in seizures. The causes of epilepsy can be genetic, trauma or injury to the head, brain tumors, stroke, infectious diseases of the brain such as meningitis, and developmental disorders of the brain such as autism. There are several types of convulsions generalized epileptic seizures-atonic seizures, myoclonic seizures, absence, and generalized atonic clonic and partial seizures-simple partial seizures and complex partial seizures. The anti-convulsion agent may be evaluated by using some techniques like Electroencephalogram, Maximal electroshock-induced convulsion, Chemo-convulsion, genetically prone epileptic rats, Kindling or focal seizures, Psychomotor epilepsy, or photic epilepsy. The medication system for convulsion involves antiepileptic drugs, which work by abating certain channels within the brain that can get overexcited. There are more than 30 medicine antiepileptic drugs in the advertisement, generally accessible as verbal tablets or capsules. The choice of medicine depends on variables such as the patient's age, way of life, chance of getting pregnant, sorts of seizures, and how frequently they have seizures.
Keywords: Epilepsy, Neurological, Seizures, Meningitis, Electroencephalogram.

【4G】

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Bulletin of Pharmaceutical Research 2024; 14(S)
An Official Publication of Association of Pharmacy Professionals
ISSN: 2249-6041 (Print); ISSN: 2249-9245 (Online)

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GREEN SYNTHESIS OF NANOPARTICLES TECHNOLOGY

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Received: *March 16, 2024*

The field of nanotechnology has shown great promise, with a wide range of applications spanning from electronics to medicine. Particularly, nanoparticles have attracted a lot of interest because of their special qualities, which make them useful in a variety of industries. However, the significant energy consumption and frequent use of dangerous chemicals in conventional nanoparticle manufacturing methods raise environmental concerns. As a result, green nanoparticle synthesis—which uses natural resources to create nanoparticles with less environmental impact—has become more popular as a viable substitute. An overview of the concepts, procedures, and most current developments in the field of green synthesis of nanoparticles technology are presented in this study. In green synthesis, natural resources such as microorganisms and plant extracts are used as stabilizing and reducing agents throughout the nanoparticle synthesis process. Phytochemicals and enzymes are examples of biological resources that have intrinsic qualities that can be used to create nanoparticles under mild reaction conditions, hence eliminating the need for harsh chemicals and energy-intensive processes. Green synthesis's environmental friendliness is one of its main benefits. Green synthesis adheres to the principles of sustainable development by minimizing the production of harmful by-products and reducing carbon footprint, in contrast to conventional approaches. Moreover, the inclusion of bioactive chemicals into the nanoparticles is made possible by the use of natural extracts, giving the finished product additional therapeutic value. The scope and efficiency of producing nanoparticles have been considerably extended by recent developments in green synthesis techniques. To improve the synthesis process and customize the properties of nanoparticles for particular applications, novel techniques have been developed, including microwave-assisted synthesis, ultrasound-mediated synthesis, and nanoparticle assembly employing biomolecules. In conclusion, the environmentally benign, cost-effective, and biomedically compatible green synthesis of nanoparticles is a sustainable and eco-friendly approach to nanotechnology that offers several advantages. Green synthesis has the potential to completely transform the field of nanotechnology and open the door to more sustainable and environmentally friendly technological developments with continued research and development.
Keywords- Green synthesis, imaging, paving

【4H】

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