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NATIONAL SYMPOSIUM

On

"Recent Perspective in Nanomedicine"

Organized By

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SCHOOL OF PHARMACEUTICAL SCIENCES

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6th –7th March 2024

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ISBN: 978-81-968476-8-5

Proceedings of

Council of Scientific and Industrial Research sponsored

National Symposium on

"Recent Perspectives in Nanomedicine"

06th to 07th March 2024

(NSRPIN 2024)

Convener

Dr. Makarand S. Gambhire

Organizing Secretaries

Dr. Sandhya L. Borse

Mr. Ramu Samineni

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ISBN: 978-81-968476-8-5

Published on the occasion of NSRPIN 2024

Published By: Sandip University, Nashik

Publisher Address:
Trimbak Road, Nashik, Maharashtra, India- 422213.
Website: www.sandipuniversity.edu.in, Email: info@sandipuniversity.edu.in
Contact No: +91 02594-222541/42/43/44

Printer Details: ***Sai Enterprises***
Upendra Nagar, CIDCO, Nashik – 10.

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Conference Website: www.sandipuniversity.edu.in

MESSAGE

Dr. Sandip N. Jha
Chairman,
Sandip University

I am delighted to know that Sandip University's School of Pharmaceutical Sciences organizing Council of Scientific and Industrial Research (CSIR) sponsored National Symposium on "Recent Perspectives in Nanomedicine" from 06th to 07th March 2024.

The symposium theme, focusing on the latest advancements and trends in nanotechnology, is meticulously chosen. I am confident that this symposium will serve as an excellent platform to explore and discuss current applications and future prospects of nanotechnology in medicine, particularly in the context of evolving circumstances and its potential impact on various diseases. It is imperative to develop an integrated approach to nanomedicine to address societal needs and benefit the general population.

At this juncture, I wish a grand success of the symposium to sensitize new dimensions in the field of nanomedicine development.

Dr. Sandip N. Jha
Chairman,
Sandip University

MESSAGE

Prof. (Dr.) Rajendra Sinha
Vice-Chancellor,
Sandip University

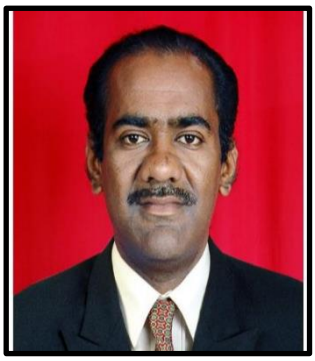
I am delighted to know that Sandip University School of Pharmaceutical Sciences organizing Council of Scientific and Industrial Research (CSIR) sponsored National Symposium on "Recent Perspectives in Nanomedicine" from 06th to 07th March 2024.

The organizers deserve commendation for choosing a highly relevant theme that directly addresses current and contemporary research needs. In today's context, nanomedicine is becoming increasingly popular in line with technological advancements. However, harnessing nanotechnology for the development of novel drug delivery systems presents significant challenges given the available resources. Therefore, it is imperative that the recent perspectives in nanomedicine reach every researcher's doorstep.

I am confident that the symposium will greatly benefit all participants and provide them with valuable insights into modern methods for the development of nanomedicines.

Prof. (Dr.) Rajendra Sinha
Vice-Chancellor,
Sandip University

MESSAGE



Prof. (Dr.) Prasad Baviskar

Registrar,

Sandip University.

It brings me great pleasure to announce that Sandip University's School of Pharmaceutical Sciences is hosting National Symposium "Recent Perspectives in Nanomedicine" on 06th & 07th March, 2024 sponsored by the Council of Scientific and Industrial Research (CSIR).

This symposium avails a tenet forum for pharmacists, researchers, industry experts, medical practitioners, and other stakeholders to manoeuvre various issues related to the development of nanomedicine. I am confident that the symposium will manifest the recent techniques in the domain of nanomedicine system. It would converge with better utility, affordable, and relevant to the evolving perceptions of the general public.

I extend my warm greetings and best wishes to all participants, hoping for the symposium to be a resounding academic success.

Prof. (Dr.) Prasad Baviskar

Registrar,

Sandip University.

MESSAGE

Prof. Makarand Gambhire
Dean,
School of Pharmaceutical Sciences,
Sandip University

It's a great pleasure to state that SOPS is organizing Council of Scientific and Industrial Research (CSIR) sponsored National Symposium on "Recent Perspectives in Nanomedicine" from 6th to 7th March 2024

The theme of this conference has been selected with relevance to the nanomedicine related research. The main objective for organizing the symposium is to convene the extensive knowledge of nanomedicines under one roof and spotlight the current research on nanotechnology in medicine.

This conference therefore provides an ideal platform for rigorous discussions, meticulous deliberations and meaningful interactions among pharmacist, researchers, healthcare practitioners and other stake holders. Hope the conference will certainly benefit all participants and bring out fruitful results to catalyze research in nanomedicine.

I wish a grand success for this important academic gesture.

Prof. Makarand S. Gambhire
Dean,
School of Pharmaceutical Sciences,
Sandip University

MESSAGE

Organizing Secretary
Dr. Sandhya Borse
Associate Professor
School of Pharmaceutical Sciences,
Sandip University

Greetings from School of Pharmaceutical Sciences,

I take this opportunity to welcome you all to the Council of Scientific and Industrial Research (CSIR) sponsored National Symposium on "Recent Perspectives in Nanomedicine" from 6th to 7th March 2024.

Through this conference we decided to bring avid researchers from around the nation and provide a platform to foster the essential interaction among them to generate and promote nanomedicine with their current research scenario. We are pleased to present a high-quality technical program that includes E-poster presentation and five invited talks by experts during the two days schedule. We received more than 80 high quality submissions E-poster presentations resulting from a successful call for papers. I am thankful to Council of Scientific and Industrial Research for encouraging us an opportunity to create the scientific platform for fruitful interactions between researchers.

I hope that the proceedings will serve as a useful reference of the state-of-the-art in Nanomedicine related research.

Dr. Sandhya Borse
Associate Professor
School of Pharmaceutical Sciences,
Sandip University=

MESSAGE

Organizing Secretary

Mr. Ramu Samineni

Assistant Professor
School of Pharmaceutical Sciences,
Sandip University

I am privileged to welcome all the eminent speakers, scientific fraternity, faculties, research scholars and post graduate/Under graduate students to the Council of Scientific and Industrial Research (CSIR) sponsored National Symposium on "Recent Perspectives in Nanomedicine" organized by School of Pharmaceutical Sciences, Sandip University Nashik.

The aim of the conference is to provide insight into the medical significance of nanosystems as well as their potential uses and drawbacks in areas like targeted drug delivery, gene therapy, and in the treatment of cancer and various genetic diseases. Although nanotechnology holds immense potential, it is yet to be exploited. Through this symposium, we will try to overcome these limitations and make full use of its potential in healthcare system in future.

I wish all the best to all the participants and congratulate the members of organizing committee.

Mr. Ramu Samineni
Assistant Professor
School of Pharmaceutical Sciences,
Sandip University

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CS-101

Multifunctional Nanotechnology Research

Chitrakshi Dhyanchand Sharma, Yogesh Sonawane

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ABSTRACT

The field of nanotechnology has led to the development of many innovative strategies for effective detection and treatment of cancer, overcoming limitations associated with conventional cancer diagnosis and therapy. Multifunctional nanoparticle systems can integrate imaging, targeting and treatment moieties on the surface and in the core, resulting in targeted delivery of the imaging or treatment modalities, specifically to the this review, various multifunctional nanoparticle systems that feature a variety of targeting moieties for in vitro and/or in vivo cancer imaging and therapy are discussed.

CS-102

Importance and Impact of Drug Information Center in Health Care Services

Raveendra Ramachandra* and Yuvaraj Sivamani

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ABSTRACT

The drug information center (DIC) is a service provider that specializes in providing drug-related information to patients, nurses, doctors, and other healthcare professionals regarding medication in written or verbal communication. The DIC responds to their inquiries and concerns about medication safety by answering calls about all aspects relating to drug information, dosage, and use, as well as their immediate and long-term side effects. The DIC offers in-depth, independent sources of vital medication information to researchers, students, working RMPs, and other healthcare professionals to satisfy the urgent demand for patient safety and to safeguard the patient's financial and legal interests. The burden of the registered pharmacist is lessened by DIC, which is observable in society and the community as the number of DICs rises over time. The purpose of the current study is to describe DIC and offer suggestions regarding the rational use of drugs.

Keywords: Drug Information Centre, Pharmacist, Drugs

CS-103

Design, Synthesis and Characterization of Benzothiazole Derivatives As Anti-Inflammatory Activity

Raveendra Ramachandra*

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ABSTRACT

Benzothiazole is a class of sulfur-containing heterocycles that contains a benzene ring fused with a thiazole ring and known to exhibit various pharmacological and biological activities. In this study, we synthesized some new benzothiazole derivatives and evaluated their anti-inflammatory property. Among the Compounds Bt2 (5-chloro-1,3- benzothiazole-2-amine), was found to be active compounds in this series when compared with reference diclofenac sodium as a promising anti-inflammatory compound.

CS-104

Review: Gel incorporated with silver nanoparticles from *Tectona grandis* seed extract by green synthesis

Sharmila Shashikant Naykar[1]* and Ramdas Dolas[1]

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ABSTRACT

Silver nanoparticles (AgNPs) have expanded significant attention due to their wide range of applications in the medical field. The advantages of AgNPs include their easy synthesis, change their shape, and high surface area. Silver nanoparticles are very efficient for topical drug administration and for pharmacological activity. The efficiency of AgNPs depends on the synthesis method and the intended application. Green synthesis methods offer an eco-friendly approach by utilizing natural sources such as plant extracts and fungus. The characterization of nanoparticles plays an important character, and it is accomplished through the use of several characterization methods such as UV-Vis spectroscopy, Fourier transform infrared spectroscopy FT-IR, scanning electron microscopy SEM,TEM, and X-ray diffraction XRD.. Additionally, the review addresses the challenges and future perspectives of utilizing green-synthesized AgNPs loaded in gel for Pharmacological application and to prepare and evaluate gel incorporated silver nanoparticle using different gel base polymers for the antimicrobial, antifungal and wound healing activity and characterize it for spreadability, and other evaluation parameters using reducing agents as tectona grandis seed extract which is having activity as leukoderma, anti-inflammaotory, hair promoters, etc.

CS-105

Formulation and Evaluation of Microsponge Loaded Topical Gel of Diclofenac Sodium

Hyma Ponnaganti*

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ABSTRACT

The present work was to formulate and evaluate the gel containing microsponges of diclofenac sodium to provide an efficient release for proficient topical therapy. The microsponges are formulated using the quasi emulsion-solvent diffusion techniqueby employing surfactant systems in the formulation. All the microsponge loaded diclofenac sodium formulations are extensively characterized by a variety of analytical techniques. The optimized microsponge formulations are then converted in to a gel formulations. The diclofenac sodium loaded microsponge gel formulation must have adequate viscosity and efficient pharmaceutical properties, that are confirmed by the texture analysis and drug release profile. Thus, the formulated microsponge-based gel of diclofenac sodium would be a promising alternative for the safer and efficient treatment of topical disorders.

KEYWORDS: microsponge gel, topical therapy, diclofenac sodium, surfactant systems, release profile, texture analysis

CS-106

Fabrication and Characterization of Electrospun Nanofibrous Scaffolds for Tissue Regeneration

Archana Shantaram Gadakh[1], Dr. Abhijeet Dattatray Kulkarni[2]

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ABSTRACT

The application of scaffolds helps fasten the healing process of wound by Tissue regeneration. A polymeric scaffold was manufactured using the electrospinning technique.It is prepared by using polyvinyal alcohol and silver nanoparticles of Nelumbo Nucifera. The distance between the injector and collector, feed flow, and voltage parameters were all standardised for the electrospinning process. To enable the material to be separated from the collector, a three hour processing period was set after the values of the electrospinning primary variables were optimised. The material that was obtained underwent various characterization techniques, including Field Emission Scanning Electron Microscopy, FTIR, Swelling Index, Energy Dispersive Spectroscopy. The antibacterial activity against Pseudomonas aeruginosa and Staphylococcus aureus was assessed through the well diffusion technique. The resulting fibres, which range in diameter from 100 to 200 nm, are what make up the scaffold. The scaffold satisfies the study's goal of creating a scaffold that might be utilised as a drug delivery vehicle and a material for Tissue regeneration as a wound dressing.

CS-107

Formulation and evaluation immediate and sustained release Bilayer tablet containing telmisartan and amlodipine

Yash Patil*, Rajesh dodiya, Lalit lata Jha, L.D patel

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ABSTRACT

The study was undertaken with the aim to Formulation and evaluation of bilayer tablet formulation of Telmisartan and Amlodipine. Thus, from the results, it is concluded that the formulation of immediate release layer of Amlodipine using 4-2% concentration of Crospovidone & PVA K30 and 30-20-1.5% concentration of HPMC K 100M-HPMC K4 M-HPMC K15 M are considered as ideal for optimized bilayer tablet formulation. The drug release data of the Telmisartan and Amlodipine was fitted into various kinetic models which as shown in figures 3.8 and 3.11. The order of release of drug was found to be zero order, in which R2 value was close to 1. The n value of Korsmeyer Peppas equation was found to be 0.746. Good correlation coefficients are obtained for Higuchi equation. The results showed that the formulation followed Peppas Model release. Thus, this optimized bilayer tablet formulation can be successfully used in the treatment of hypertension. This modified release bilayer tablets also reduced dosing frequency, increase the bioavailability and provide better patient compliance. From the results it was found that formulation F4 was the best formulation amongst the 5 formulations. Thus formulation F4 was selected for stability studies. Formulation F4 was analyzed for % Friability and % Drug Release (min), Drug Content Uniformity and Hardness at the end of each month up to three months.

KEYWORDS: antihypertensive,sustained,immediate release bilayer,bioavailability

CS-108

Development of Novel Buccal Drug Delivery System by Natural Polymers for Antihypertensive therapy

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ABSTRACT

The oral route of drug administration is the most preferred route because of ease of administration and better patient compliance. But there are certain disadvantages like slow onset of action, first pass metabolism, toxicity and degradation of drug due to gastric juice restricts the selection of oral route for drug administration. The novel

mucoadhesive buccal drug delivery system is more prominent and used to counteract the disadvantages associated with the conventional oral route of administration. The various polymers including natural origin and synthetic are used in the development of mucoadhesive buccal dosage form but there are various challenges associated with the use of synthetic polymers in the design of buccal dosage form. The use of synthetic polymers in mucoadhesive buccal dosage form can be restricted due poor stability, poor mucoadhesion, poor solubility, toxicity etc. Now days the use of natural polymers in the development of novel drug delivery system has been greatly accepted as they are biocompatible, biodegradable, non-toxic and economic. The natural polymers such as Chitosan, Alginate, Gelatin, Methylcellulose etc. can be used in the development of Novel Buccal Drug Delivery System. The use of natural polymers in the mucoadhesive dosage form increases the residence time at application site by adhering to the buccal mucosa and thus increases the absorption rate. Natural polymers have excellent mucoadhesive characteristics, optimum molecular weight, good water solubility, non-toxicity and swelling ability and thus used in the mucoadhesive dosage form as an alternative to synthetic polymers.

Keywords: Mucoadhesion, First Pass Metabolism, Natural Polymers, Toxicity

CS-109

Phytochemical Screening and *in-vitro* Evaluation of Antioxidant Activity of *Samanea saman* Leaves

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ABSTRACT

Objective: This study aimed to determine the antioxidant activity of the Rain tree (*Samanea saman* (Jacq) Merr.)

Methods: Extraction for leaves of *Samanea saman* was followed by initially defatting through petroleum ether, then fractionating with chloroform and macerating with methanol. Methanolic and Chloroformic extracts were further analyzed using the conventional method for phytochemical composition and concentration-dependent antioxidant activity. Due to the presence of phenolic compounds in the leaves, the extracts were analyzed for *in-vitro* antioxidant activity. Antioxidant capacity was determined using 1,1-diphenyl-2-picrylhydrazyl (DPPH), 2,2-azinobis-ethyl-benzothiazoline-sulphonic acid diammonium salt (ABTS), and Hydrogen Peroxide (H_2O_2) Scavenging assay.

Results: Primitive phytochemical screening revealed the presence of flavonoids, tannins, and phenols in Methanolic extract and alkaloids, flavonoids, tannins, and phenols in Chloroformic extract which were confirmed using thin-layer chromatography (TLC). The antioxidant activity of extracts from *Samanea saman* demonstrated similar antioxidant properties compared to ascorbic acid and Trolox, which served as standards.

Conclusion: The current investigation suggests that the methanolic extract exhibits significant antioxidant activity. The results strongly imply that medicinal plants have the potential to be a source of antioxidants that can scavenge free radicals. Additional research is required to isolate and characterize the active moiety responsible for biological activity and treat it under various stress conditions.

Keywords: DPPH, ABTS, antioxidant, free radical scavenging, TLC.

CS-110

A Review on Tablet Splitting/ Scoring/Breakline or Breakmarks: Compiled Information on Patients Need, Splitting Techniques & Regulatory Requirements

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ABSTRACT

Tablets intended for oral administration are the most common pharmaceutical dosage form. Tablet splitting is often used in pharmacy practice in regulated and emerging markets like Europe, United States. To split tablets for a variety of reasons, including adjusting the dose, ease of swallowing (for paediatrics and geriatrics) and to save money. There are possible safety issues, especially when tablets are not scored or evaluated for splitting. Regulatory authorities and Pharmacopoeial standards providing recommendations for functional scoring on solid oral dosage form products to ensure the quality scored tablet to developed criteria by which scored tablets can be evaluated. A tablet included variations in the tablet content, weight, disintegration or dissolution, which can affect how much drug is present in a split tablet and available for absorption. In addition, there may be stability issues with splitting tablets.

Keywords: Tablet splitting, scored tablet, stability

CS-111

Pharmakokinetics of Pemetrexed in Indian Adult Patients with Lung Cancer

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ABSTRACT

The study aims to develop and validate a highly sensitive, reproducible LC-MS/MS method and to generate data regarding the pharmacokinetic profile of Pemetrexed in lung cancer subjects. Pemetrexed (PEM) is approved as the first-line treatment for lung cancer.The pharmacokinetics of PEM is highly variable. The study was conducted in a single tertiary care cancer hospital (Tata Memorial Hospital & ACTREC) in India. Twenty-five adult

chemonaive patients were diagnosed with lung cancer were enrolled in the study. In the context of a small-scale pharmacokinetic feasibility analysis, we developed an original, simple, high performance liquid chromatography-tandem mass spectrometry (LC MS/MS) assay with mass detection, allowing measurement of pemetrexed and methotrexate as respective internal standard to be performed in plasma, after protein precipitation extraction method. The analysis was achieved with a C18 analytical column using a mobile phase consisting of 0.1% formic acid in water and 100% Methanol with a gradient flow for 12 min. The linear ranges (r^2=0.99) were found from 1000 to 100000 ng/mL. The method was validated to have acceptable selectivity, linearity, accuracy, precision, and ruggedness. The concentration-time data were analysed using the Julia computing language's PUMAS package version v1.6.1. The observed values of systemic clearance, volume of distribution, maximum plasma concentration (C_{max}), total systemic exposure ($AUC_{0\text{-}inf}$) and half life($t_{1/2}$) were 128.06 ± 40.39L*h^{-1}, 7.861321 ± 5.672973 L, 128.06 ± 40.39µg/ml, 302.1 ± 121.2 µg*h*ml^{-1} and 3.286014 ± 6.91253 secs, respectively. This new method is suitable to support pharmacokinetic studies and drug monitoring.

CS-112

Nano-Technology in Sterile Pharmaceuticals: Overcoming Challenges and Exploring Potential Applications

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ABSTRACT

Nano-technology has emerged as a promising field in sterile pharmaceuticals, offering innovative solutions to enhance drug delivery and therapeutic efficacy. This poster reviews the challenges associated with the implementation of nano-technology in sterile pharmaceuticals, including regulatory hurdles, scalability issues, and concerns regarding safety and toxicity. It discusses the potential of nano-materials such as nanoparticles, liposomes, and micelles to improve drug solubility, stability, and targeted delivery in sterile environments. The poster also highlights recent advancements in nano-technology that have addressed some of these challenges, paving the way for safer and more effective sterile pharmaceutical formulations. Through a comprehensive analysis of current research and future prospects, this poster aims to shed light on the transformative impact of nano-technology in sterile pharmaceuticals.

CS-113

Recent Perspective in Nanomedicine

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ABSTRACT

With the global benefits of the new science of nanomedicine growing each year, the British Society for Nanomedicine enables open access for industry, academia, clinicians and the public to news and details of ongoing research throughout the UK. Our mission includes the direct explanation of the ongoing science and commercial developments to allow the public to understand and stay in touch with this exciting area as it impacts future global healthcare.

Nanomedicines are generally defined as medicines that apply nanotechnology and are intended for therapeutic or diagnostic applications with dimensions controlled within the nanoscale range (1–1000 nm)[1]. In pharmaceutical sciences, nanomedicines refer to the use of nanotechnologies in producing active pharmaceutical ingredients (apis) as nanoscale particles or combining apis with suitable nanomaterials to produce nanoscale particles further formulated into versatile dosage forms. The nanomedicine market is dominated by applications based on drug delivery, surpassing regenerative medicine, diagnosis both *in vitro* and *in vivo*, and vaccine-oriented applications.

Owing to the inherent shortcomings of traditional therapeutic drugs in terms of inadequate therapeutic efficacy and toxicity in clinical treatment, nanomedicine designs have received widespread attention with significantly improved efficacy and reduced non-target side effects. Nanomedicines hold tremendous theranostic potential for treating, monitoring, diagnosing, and controlling various diseases and are attracting an unfathomable amount of input of research resources.. Herein, this review elaborates on the development trends of nanomedicines,. The elaboration on various aspects of the research trends of nanomedicines may help enlighten the readers and set the route for future endeavors.

CS-114

Recent Perspective in Nanomedicine

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ABSTRACT

Nanotechnology has considerably accelerated the growth of regenerative medicine in recent years. Application of nanotechnology in regenerative medicine has revolutionized the designing of grafts and scaffolds which has resulted in new grafts/scaffold systems having significantly enhanced cellular and tissue regenerative properties. Since the cell–cell and cell-matrix interaction in biological systems takes place at the nanoscale level, the application of nanotechnology gives an edge in modifying the cellular function and/or matrix function in a more desired way to mimic the native tissue/organ. In this review, we focus on the nanotechnology-based recent advances and trends in regenerative medicine and discussed under individual organ systems including bone, cartilage, nerve, skin, teeth, myocardium, liver and eye. Recent studies that are related to the design of various

types of nanostructured scaffolds and incorporation of nanomaterials into the matrices are reported. We have also documented reports where these materials and matrices have been compared for their better biocompatibility and efficacy in supporting the damaged tissue. In addition to the recent developments, future directions and possible challenges in translating the findings from bench to bedside are outlined.

CS-115

Carbon Nanofibers

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ABSTRACT

Carbon nanofibers (CNFs) are promising materials in many fields, such as photocatalytic, nanocomposites, energy devices, filtration, sensors, tissue engineering, and drug delivery. Chemical vapor deposition, electrospinning, templating, drawing, and phase separation are the essential routes to synthesize CNFs. The growth mechanisms of CNFs are discussed and many CNF applications are also summarized. The orientation of carbon layers in CNFs influences their mechanical properties. The properties of CNFs are also discussed, which are rather wide ranging due to the differences in the structures of fibers.

CS-116

Improving the Process of Preclinical Drug Discovery through the Integration and Utilization of Artificial Intelligence Technologies

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ABSTRACT

Drug design and development represent crucial research domains for pharmaceutical companies and chemical scientists. however, obstacles and challenges such as reduced effectiveness, unintended delivery to non-target areas, lengthy timelines, and elevated expenses significantly affect the drug design and discovery process. Artificial intelligence (AI) is increasingly becoming an essential part of the drug discovery process. It holds significant promise for enhancing various stages of drug discovery and development, starting from identifying potential drug targets and extending through clinical development. In this comprehensive review, we offer an overview of the current state of AI technologies and provide insights into how AI is revolutionizing preclinical

drug discovery. We emphasize instances where AI has demonstrated tangible benefits. Recognizing the considerable enthusiasm and exaggerated claims surrounding AI's role in drug discovery, our objective is to provide a balanced perspective by examining both the opportunities and challenges associated with the integration of AI in drug discovery. By examining both opportunities and limitations, we provide a comprehensive overview of the role of AI in shaping the future of pharmaceutical research and its potential benefits for human health. Through technological advancements, the integration of artificial intelligence algorithms into computer-aided drug design has the potential to overcome the obstacles and difficulties associated with conventional drug design and development. This review also acknowledges the challenges and considerations in harnessing AI's full potential in preclinical drug discovery. In conclusion, the progress in artificial intelligence and deep learning offers a remarkable prospect for enhancing the rational process of drug design and discovery, ultimately impact the mankind.

KEYWORDS: Artificial intelligence, Machine learning, Deep learning, Virtual screening, Drug discovery.

CS-117

Gastroretentive Microsponges: Advancements in Prolonged Medication Delivery

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ABSTRACT

Oral controlled release formulations encounter numerous challenges associated with physiological factors, such as the complexity of retaining and positioning the drug delivery system within a specific region of the gastrointestinal tract (GIT) due to variations in gastric emptying. This leads to inconsistent drug absorption, inadequate drug release, and a shorter presence of the dosage form in the stomach. As a result, drugs designed for initial absorption in the GIT face difficulties. In order to tackle these issues, there has been a concerted effort to develop oral controlled release formulations with Gastroretentive properties. One such approach involves the utilization of floating microsponges, a technique aimed at prolonging the residence time of the drug in the upper GIT for local or systemic effects. Gastroretentive dosage forms (GRDFs) have been employed for a significant duration to enhance the efficacy of various important medications. Microsponges-based drug delivery systems are particularly well-suited for the treatment of dermatological conditions. The application of microsponges in drug delivery extends beyond topical usage and encompasses oral and parenteral delivery methods. Microsponges are porous, spherical particles devoid of a core that can remain in the gastric region for extended periods. They

substantially prolong the duration of medication in the stomach, thereby improving drug bioavailability, patient adherence by reducing dosing frequency, minimizing drug wastage, and enhancing the solubility of medications that primarily dissolve in an acidic stomach environment. This review examines the process of preparation, characterization, advantages, disadvantages, and various applications of floating microsponges in drug delivery.

KEY WORDS: Gastroretentive, Floating, Microsponges, Controlled release, Gastrointestinal tract

CS-118

"Formulation Development and Evaluation of Insitu Gel of Secnidazole for Vaginal Drug Delivery"

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ABSTRACT

The aim of the study was to formulate and develop the insitu gel of secnidazole for vaginal route. Secnidazole is a second generation antibacterial drug with fewer side effects than other antibacterial drug. Present formulation is prepared to provide local action. With the help of pH triggered system, the present formulation convert from solution to gel when change occur from normal pH (3.5-4.5) .The insitu gel is prepared by using Carbopol 934 as pH sensitive agent and HPMC K-100M as Mucoadhesive agent. The preliminary trials were performed by using polymer of various concentrations of guar gum, Xanthan gum and Carbopol 934.The preliminary batches were studied for gelation property and selection of polymer is done. The optimization were done by using Design expert 12.01.The 3^2 full factorial study was performed of independent like concentration of Carbopol (X_1) and concentration of HPMC K-100M (X_2) on dependent variable like Mucoadhesive strength (Y_1) and drug release (Y_2).The result obtain are compared with checkpoint batch. The *In-vitro* diffusion study shows that insitu gel release drug for longer period of time. Further the optimized batch was subjected to accelerated stability study at 40 ºC ± 2ºC/ 75% RH ± 5% RH Which revealed that there were no significant changes in the parameters evaluated after 15 and 30 days.

CS-119

Magnetic Nano materials in Cancer Therapy

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ABSTRACT

Nanotechnology can provide rapid and sensitive detection of cancer-related molecules, enabling scientists to detect molecular changes even when they occur only in a small percentage of cells. Nanotechnology also has the

potential to generate entirely novel and highly effective therapeutic agents.

Micro and nanostructured materials have become relevant to the life sciences mainly because manufacturing advances now permit their sizes to be tailored in a control fashion such that they match the size of biological entities, which can range from tens of nanometers (average size of viruses) to tens of micrometer (average size of mammalian cells). Magnetic Nanoparticles (MNP's) can be remotely manipulated by magnetic fields. MNPs can be trapped concentrated 11-14 or used in cells separation 15-17 under alternating fields, MNPs can be heated 18 or rotated 19, 20 and in case of elongated structures they can be transit forces or torques to whatever they are in contact with.

CS-120

Telomerase: A Useful Target in Cancer Fighting

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ABSTRACT

At first, telomerase was thought to be an important characteristic that set cancerous cells apart from healthy cells. Detailed investigations revealed that telomerase is not only expressed and active in cancer cells but is also significantly more prevalent in these specific cells. As a result, it is now a very promising target for treatment against cancer. Numerous studies have demonstrated that the regulation of telomerase in mammalian cells is a complex process that includes post-translational protein-protein interactions, protein phosphorylation, and regulation of the expression of telomerase subunits that code for genes. This method involves multiple proto-oncogenes and tumor suppressor genes, and the intricacy of telomerase regulation is investigated in relation to both aging and tumor development. Additionally, telomerase control appears to be one of the most important factors to research in order to enhance cancer diagnosis, therapy, or prevention, given that multiple studies show an association between short telomeres and higher genomic instability or cell death. Remarkably, telomerase is expressed by nearly all cancer cells, making it a viable target for telomerase-related therapies. Furthermore, there is a theory that telomerase is linked to medication resistance. Therefore, if the enzyme is targeted, this behaviour may be attenuated. Furthermore, because the presence of stem cells has been established, it is important to think about whether targeting telomerase may have some negative effects that could impair the stem cells' ability to proliferate or regenerate. In light of this, we examine a few biological pathways involved in telomerase-based cancer cell treatment.

CS-121

"A Narrative Review on Adverse Drug Reactions Reporting: Current Practices and Challenges"

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ABSTRACT

The review delves into the existing ADR reporting systems, including the involvement of healthcare professionals and the growing role of patient-driven reporting initiatives. It examines the strengths and weaknesses of these systems and emphasizes the need for enhanced reporting practices to capture a comprehensive range of adverse reactions. Challenges in ADR reporting, such as underreporting, reporting bias, and difficulties in causality assessment, are critically analyzed. The impact of incomplete or inaccurate information on signal detection and risk assessment is also discussed. The review underscores the significance of addressing these challenges to maintain the integrity of pharmacovigilance efforts and optimize patient care. Moreover, the review highlights emerging technologies, including artificial intelligence and real-world data integration, as potential tools to streamline ADR reporting and signal detection processes. These innovations have the potential to revolutionize drug safety surveillance and improve the overall efficiency of pharmacovigilance practices. This narrative review explores the current practices and challenges in Adverse Drug Reactions (ADR) reporting, shedding light on the importance of pharmacovigilance in ensuring patient safety and optimizing drug therapy. Adverse drug reactions represent a critical concern in healthcare, warranting continuous monitoring and evaluation to detect and manage potential risks associated with medications.

Keywords: Adverse drug reaction reporting; Pharmacovigilance; Drug monitoring; Uppsala monitoring centre

CS-122

Ginger derived exosomes gives weight loss activity with nano curcumin

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ABSTRACT

Edible plant-derived exosome-like nanoparticles (PELNs) provide numerous benefits, including high yield, low cost, ethical compatibility, and multiple health benefits. Due to the abundant bioactive components a number of herbaceous sources have been investigated for the isolation and functionality of exosome-like nanoparticles. Exosomes have been studied as drug delivery systems for various diseases due to low immunogenicity, innate and acquired target ability, and stability. They are secreted by almost all cells from multi vesicular endosomes

and retrieved in all body fluids including bile, saliva, blood, lymph, urine, cerebrospinal fluid, milk, and etc. The applications of PELNs as drug delivery systems in neural disorders, tumor-targeted delivery, and gene delivery have been studied in different plants such as aloe, turmeric, ginger, lemon, grapefruit, grape, and strawberry. Ginger-derived exosome-like nanoparticles (GELN) shows tremendous effect in reducing body fat level. Ginger (*Zingiber o_cinale Roscoe, Zingiberaceae*) is a well-known spice and flavoring material that has also been used in traditional medicine in many areas. Curcumin is a polyphenolic compound derived from *Curcuma Longa* (*Zingiberaceae*) that possesses diverse pharmacological effects including anti-inflammatory, antioxidant, antimicrobial, and anticarcinogenic activities. Phase I clinical trials have shown curcuma as safe drugs even at high dose. The curcumin element present in turmeric can suppress the growth of fat tissues. The limiting factor is to lower bioavailability of curcumin. To enhance the bioavailability and solubility, nano curcumin are used nowadays. So nano curcumin shows synergistic effect in weight loss with ginger derived exosomes.

Keywords: Ginger, Curcumin, exosome

CS-123

Review on Analytical Method Development and Validation

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ABSTARCT

Analytical method development aids to understand the critical process parameters and to minimize their influence on accuracy and precision. A validated systematic approach ensures that it provides consistent, reliable, and accurate data. Development of a method is essential for discovery, development, and evaluation of medicines in the pharmaceutical formulation. In the pharma industry, validation policy is documented for how to perform validation, types of validation and validation policy are complied with the necessities of good manufacturing practice (GMP) regulations. Validation is very important for the effective running of the pharmaceutical firms. At every stage from raw material to the finished, stability, everywhere validation was performed. The method was developed properly, and validation parameters are explained in terms of accuracy, specificity, precision, limit of detection (LOD), limit of quantitation (LOQ), ruggedness, robustness, and system suitability testing with the example of certain drugs. All validation parameters are used in the routine and stability analysis.

CS-124

Pharmaceutical Validation and Stability Indicating RP-HPLC: A Review

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ABSTRACT

The objective of any pharmaceutical industry is to produce products of vital characteristic and great reliably, in a price-effective manner. Improvement of a method is vital for discovery, improvement, and evaluation of drugs within the pharmaceutical formula. The main intention of this evaluation article become to check the improvement and validation of the system employed for the medicine from the beginning of the method to the whole commercial batch of product. On the factor whilst an analytical approach is implemented to produce outcomes for the high-quality of drugs related samples, it is important that the consequences are reliable. Inside the pharma enterprise, validation coverage is documented for the way to carry out validation, kinds of validation and validation policy are complied with the requirements of desirable production exercise (GMP) guidelines. Validation may be very vital for the effective walking of the pharmaceutical companies. At each level from uncooked fabric to the completed, balance, anywhere validation became carried out. The approach was developed nicely, and validation parameters are defined in phrases of accuracy, specificity, and precision, limit of detection (LOD), limit of quantitation (LOQ), ruggedness, robustness, and machine suitability testing with the instance of positive tablets. All validation parameters are used within the routine and balance analysis.

Keywords: Validation, Method development, Limit of quantitation, Limit of detection, Linearity, Robustness, Ruggedness, Forced degradation.

CS-125

Formulation and Evaluation of Herbal Oil Based Ointment for Topical Treatment of Inflammation

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ABSTRACT

Essential oils and fixed oils are established since years in the clinical management of inflammatory disorders. Present study was designed to formulate and evaluate herbal based anti-inflammatory ointment to reduce the inflammation of the skin and muscle. Ointment was formulated with combination of selected of essential and fixed oils which have been reported as potential anti-inflammatory agents. Three combinations; F1, F2 and F3 were prepared and F3 was selected based on the stability and activity study reports. Anti-inflammatory activity was evaluated by carrageenan induced paw edema model in mice. Ointment was applied externally, once in two hours three times a day and once in six hrs. for consecutive day, after the onset of inflammation. The formulation (F3) showed enhanced anti-inflammatory activity by reducing the edema and inflammation by 85% compared to the standard Dual scan Gel which showed 70% reduction (contains diclofenac, diethylamine, oleum lini, methyl salicylate & menthol). From the study, it is concluded that, formulation F3possesses potential anti-inflammatory activity compared to conventional anti-inflammatory gel and can be a promising formulation for external

application to treat inflammation.

CS-126

Impact of Nanotechnology on Drug Delivery

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ABSTRACT

Nanotechnology is the engineering and manufacturing of materials at the atomic and molecular scale. In its strictest definition from the National Nanotechnology Initiative, nanotechnology refers to structures roughly in the 1-100 nm size regime in at least one dimension. Despite this size restriction, nanotechnology commonly refers to structures that are up to several hundred in size and that are developed by top-down or bottom- up engineering of individual components. Herein, we focus on the application of nanotechnology to drug delivery and highlight several areas of opportunity where current and emerging nanotechnologies could enable entirely novel classes of therapeutics.

CS-127

Quality of Artificial Intelligence Software Services in the Improvement of Pharmacy

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ABSTRACT

Constant improvement of the quality of community pharmacy services is important in the development of contemporary patient care. Artificial Intelligence (Al) focuses in producing intelligent modelling, which helps in imagining knowledge, solving problems and decision making. Recently, Al plays an important role in various fields of pharmacy. In this poster, an application of Al in community pharmacy is discussed.

CS-128

Tobacco Smoking and it's Cessation Methodology

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ABSTRACT

Tobacco farming dates back over 8000 years. In 1566, the Portuguese introduced tobacco to India. Tobacco became a valuable commodity, and its use spread rapidly. Tobacco usage is one of the leading causes of death

and disease in India, with over eight lakh people dying each year. India is the only country that uses tobacco in so many different ways. Apart from the smoked forms of tobacco consumption such as cigarettes, bidis, and cigars, there are a variety of smokeless tobacco products that account for around 35% of overall tobacco consumption. Inhaling a chemical that has been burned, tasted, and absorbed into the circulation is known as smoking. Smoking is mostly utilised as a route of administration for recreational drug use because the combustion of dried plant leaves vaporises and distributes active substances into the lungs, where they are quickly absorbed into the bloodstream and reach physiological tissue. To construct a small, spherical cylinder called a "cigarette," the dried leaves of the tobacco plant are rolled onto a small square of rice paper. Cigarettes are often manufactured in factories, although they can also be hand-rolled using loose tobacco and rolling paper. Other smoking devices include pipes, cigars, bidis, hookahs, and vaporizers

CS-129

Natural Treatment for Psoriasis: A Review on Herbal Resources

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ABSTRACT

Psoriasis is an inflammatory, auto immune disorder of the skin affecting 2 to 3% of people globally, in which genetic and environmental factors have a significant role. It mainly affects all of the body parts specially hands, foot and limbs. In psoriasis, body starts to make new skin cells more rapidly than normal which leads to the development of raised skin patches and tissues on the skin. Several treatment options are available for the treatment of psoriasis but they all are associated with various kinds of side effects. Synthetic drugs has its own side effects and this is major disadvantages of synthetic drugs. Each prescribed medicine associated with some side effects, and to cure those have to take more medicines. Natural remedies are more acceptable with the belief that they are safe and having fewer or no side effects. Herbs have been one of the important and unique sources of medicines. Psoriasis is a common skin condition where the skin develops areas that become thick covered with silvery scales. Pathophysiology of the disease includes mainly the activation and migration of T cells to the dermis triggering the release of cytokines which lead to the inflammation and the rapid production of skin cells. Many medicinal plants have been reported to have a therapeutic role in psoriasis, and the aim of the current study is to highlight such plants and related studies, which could add value to the psoriasis related research work.

CS-130

Evaluation of the Herbal Nanoparticles- A Review

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ABSTRACT

In the today's world herbal medicine are of the greater important as it has the less side effect as compared to allopathic medicine. And the targeted drug which has direct effect on the site of action is of more important than any others route of administration. Nanoparticle are targeted route of administration which are easily penetrate the cell and show faster effect of site of action. The article explain the various evaluation parameters such as the Praticle size, Drug entrapment capacity, etc for the herbal Nanoparticle.

CS-131

From Farm to Lab: Millets' Journey in Revolutionizing Drug Development

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ABSTRACT

Abstract:

This review details the transition of millets, traditionally considered a staple food, from agricultural fields to cutting laboratories. Focuses on its nutritional content, its impact on health and its new role in drug discovery, delivered with a beautiful blend of culture and innovation.

The rich nutritional value of various types of millet is important; this demonstrates their ability to solve global health problems and improve overall health. Millets' historical connection to the medicinal system provides a cultural fabric that demonstrates its importance in folk treatment and health. The focus then turned to bioactive compounds in millet, unlocking their therapeutic potential and making them a priority in drug development. Case studies and examples show where millet-derived compounds have been successful in new drug discovery.

Despite the positive outlook, problems with agriculture, extraction processes and environmental management are acknowledged. However, these challenges are seen as opportunities for collaboration between agriculture and the pharmaceutical industry to promote innovation and sustainable development. Looking ahead, this review looks at new research areas and collaborations that could enhance millet's role in global health and security. The description here paints a beautiful picture of millet's journey from farm to laboratory as a change agent changing the face of agriculture, healthcare and medicine in its own way.

Keywords: Millets, Drug discovery, Healthcare, Drug Development.

CS-133

Formulation and evaluation immediate and sustained release Bilayer tablet containing telmisartan and amlodipine

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ABSTRACT

The study was undertaken with the aim to Formulation and evaluation of bilayer tablet formulation of Telmisartan and Amlodipine. Thus, from the results, it is concluded that the formulation of immediate release layer of Amlodipine using 4-2% concentration of Crospovidone & PVA K30 and 30-20-1.5% concentration of HPMC K 100M-HPMC K4 M-HPMC K15 M are considered as ideal for optimized bilayer tablet formulation. The drug release data of the Telmisartan and Amlodipine was fitted into various kinetic models which as shown in figures 3.8 and 3.11. The order of release of drug was found to be zero order, in which R2 value was close to 1. The n value of Korsmeyer Peppas equation was found to be 0.746. Good correlation coefficients are obtained for Higuchi equation. The results showed that the formulation followed Peppas Model release. Thus, this optimized bilayer tablet formulation can be successfully used in the treatment of hypertension. This modified release bilayer tablets also reduced dosing frequency, increase the bioavailability and provide better patient compliance. From the results it was found that formulation F4 was the best formulation amongst the 5 formulations. Thus formulation F4 was selected for stability studies. Formulation F4 was analyzed for % Friability and % Drug Release (min), Drug Content Uniformity and Hardness at the end of each month up to three months.

KEYWORDS: Antihypertensive, sustained, immediate release bilayer, bioavailability

CS-134

Formulation development & evaluation of nisoldipine sublingual tablet

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ABSTRACT

Usually a small, flat tablet intended to be inserted beneath the tongue, where the active ingredient is absorbed directly through the oral mucosa; such a tablet dissolves very promptly. Sublingual literally meaning is "under the tongue", administrating substance via mouth in such a way that the substance is rapidly absorbed via blood

vessels under tongue. Sublingual route is a useful when rapid onset of action is desired with better patient compliance than orally ingested tablets. In terms of permeability, the sublingual area of the oral cavity (i.e. the floor of the mouth) is more permeable than the buccal (cheek) area, which in turn is more permeable than the palatal (roof of the mouth) area. The portion of drug absorbed through the sublingual blood vessels bypasses the hepatic first-pass metabolic processes giving acceptable bioavailability. Various techniques can be used to formulate sublingual tablets. New sublingual technologies address many pharmaceutical and patient needs, ranging from enhanced life-cycle management to convenient dosing for pediatric, geriatric, and psychiatric patients with dysphagia, angina pectoris and hypertension. When a chemical comes in contact with the mucous membrane beneath the tongue, it diffuses through it. Because the connective tissue beneath the epithelium contains a profusion of capillaries, the substance then diffuses into them and enters the venous circulation. In contrast, substances absorbed in the intestines are the stability studies were performed as per ICH guidelines subject to "first-pass metabolism" in the liver before entering the general circulation

Keywords: Sublingual delivery, Bioavailability, Dysphagia, Hypertension, Epithelium.

CS-135

A Literature Review on Self Nanoemulsifying Drug Delivery System (SNEDD)

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ABSTRACT

The Lipid-based drug delivery system is enhancing drug solubility, permeability, and bioavailability. A considerable majority of novel pharmacologically active constituents produced in recent drug discovery programs are lipophilic and poorly soluble, posing a significant problem for pharmaceutical researchers enhancing the oral bioavailability of such drug molecules. SNEDDS is combination of oil ,surfactant , Cosurfactant Self-nano emulsifying drug delivery systems (SNEDDS), are the viable oil-based approaches for drugs that exhibit low dissolution rate and inadequate absorption. Ever since the progress of SNEDDS, researchers have been focusing on the challenges of BCS Class II and Class IV Drugs for enhancing water Solubility of poorly water-soluble drugs. It's a Novel drug delivery system which is applicable for the parenteral, Ophthalmic, intranasal and cosmetic drug delivery system. And therefore, the present review describes Preparation, components, mechanism of self-Nano emulsification, biopharmaceutical aspects, characterization methods and applications of Self nanoemulsifying drug delivery system (SNEDDS).

Keywords: Nano-emulsion, Oral delivery, Poor bioavailability, Self-emulsifying drug delivery system, surfactant, co-surfactant

CS-136

Development and Evalution of Antiulcer Herbal *in Situ* Gel Formulation

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ABSTRACT

The optimized herbal in situ formulation shows excellent pourability and gellability. It has been observed that herbal in situ gel formulation produces gel with good consistency, homogeneity and rheological behavior. It was observed that in situ gel formulation showed immediate gelling when in contact with gastric acid and rapid release and curative effect of herbal formulation. The formulation was observed to show sustained release pattern and prolonged action until total solubilization of gel in gastric fluid. The in vivo study of the optimized formulation showed that 3% drug concentration of extract in formulation gave more potent antiulcer activity than 1% drug extract concentration in formulation. The toxicological studies show no toxic and adverse effects in animal model. The formulations were found to be stable during stability study period. Therefore, it can be concluded that the herbal antiulcer in situ gel formulation can be effectively used as potential drug delivery approach for treating ulcerative diseases.

CS-137

Topical Nanogel Formulation for the Treatment of Breast Cancer: Formulation, Development and Optimization

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ABSTRACT

The project is a promising but difficult task to develop a topical drug delivery system for the treatment of breast cancer that will provide both a local and systemic effect of the medication and extend the drug's residence on the skin. Breast cancer is the second most prevalent cause of cancer-related deaths among women worldwide. To assess the compatibility of the drug and excipients, FTIR spectra were acquired for the drug alone and with the excipients. A modified ionic gelation process was used in the formulation of LET-CNGL. A 3^2 full factorial design was used to optimize the formulation, which was assessed for organoleptic and morphological properties, gelling property, spreadability, particle size, zeta potential, percent drug content, pH, viscosity, stability study, in-vitro drug diffusion, and skin irritation. A study on in vitro cytotoxicity was conducted with MCF-7 cell lines. There was no interaction between the drug and the screened excipients, according to the drug excipient

compatibility studies. The measured values of particle size (nm) and zeta potential (mV) were 80.45±1.91 nm and -16.6 mV, %.Drug content 92.28%±0.02, the optimized batch's mean cumulative percent drug diffusion was 96.56% ± 2.64. The IC_{50} values were found to be 0.8 µg/ml for prepared nanogel as compared to IC_{50} values of Letrozole and Doxorubicine taken as standard were found to be 2 µg/ml. In addition to its enhanced effectiveness and safety, letrozole topical nanogel is also appealing due to its improved patient compliance, better retention, and lack of skin irritation.

KEYWORDS: Topical drug delivery, Breast cancer, Nanogel formulation, Anticancer.

CS-138

A review on nose-to-brain drug delivery using nanoparticles

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ABSTRACT

The foreign compounds pass through blood-brain barrier (BBB) to brain is main challenges in administration of drugs to the central nervous system (CNS). Although there are currently available treatments for brain diseases that affect millions of people side effect and have partially effective systemic drug distribution, On the other hand, the ability of certain drugs to permeate through the BBB is impeded by their physicochemical properties, achieving sub-therapeutic concentrations in their target tissues. In this sense, the intranasal route with its unique anatomical features provides a promising passage for the delivery of drugs to the brain. Nanoparticle-based systems, in particular, have demonstrated an outstanding capacity to overcome the challenges presented by the intranasal route and produce drug accumulation in the brain while avoiding systemic distribution. This review includes physiological factors, advantages, limitations, current application status, especially in clinical applications, and the necessary factors for consideration in formulation development related to nasal-brain drug delivery.

CS-139

An Updated Comprehensive Review on Recent Advancements in Selenium Nanoparticles: Synthesis, Characterization, and Potential Applications

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ABSTRACT

Selenium nanoparticles (SeNPs) have attracted many researchers because of their distinctive physicochemical characteristics and possible uses in a variety of industries, such as biomedicine, environmental remediation, and

energy generation. This review offers an ingrained update on existent developments in the synthesis and characterization of SeNPs. The opportunities and obstacles of various techniques for the synthesis of SeNPs, inclusive of physical, chemical, and biological methods of synthesis are explored. The characterization techniques used to appraise the physicochemical properties of SeNPs, such as UV-visible spectroscopy, transmission electron microscopy, scanning electron microscopy, dynamic light scattering, and X-ray diffraction, are also studied. Furthermore, this review compiles up-to-date studies on the promising applications of SeNPs, like their use as an antioxidant, anticancer agents, antimicrobial agents, and in the treatment of neurodegenerative diseases. In conclusion, the challenges and future prospects of SeNPs are explained, displaying the urge for further research to fully understand their potential applications in different fields. All-embracing, this review provides a relevant system for researchers working on the synthesis, characterization, and applications of SeNPs.

CS-140

Synthesis of Green Surfactant

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ABSTRACT

Cholinium cation is a natural green Quaternary (4^O) ammonium cation and also found as a natural human metabolite while counter-anions such as alkyl sulfate are readily biodegradable and prepared from renewable raw materials. We have successfully synthesized green biodegradable surfactant i.e Quaternary (4^O) Ammonium Alkyl Sulfate (QAAS) from Quaternary (4^O) ammonium salt (QAS) and metal alkyl sulfate (MAS) by simple metathesis approach. It was characterized by using FT-IR a simple technique that establishes the successful preparation of QAAS. The key features of this methodology are its operational simplicity, mild reaction conditions and good yields.

KEYWORDS: Biosurfactant, Green Surfactant, Biodegradability, Organic Synthesis

CS-141

Enhancement solubility of Azelnidipine by pastillation technique

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ABSTRACT

Azelnidipine is a BCS class II medication in the antihypertensive drugs category. But because of its poor solubility, its dissolution rate is slow and hence have low bioavailability. To increase solubility and dissolution rate, there are several methods. In the Pharmaceutical industry, Pastillation is innovative approach used to enhance the solubility of poorly soluble drugs. This technique convert the drug and excipient in such way we get

solidify mass, which make handling easier. Pastilles are separated, solidified units that are extracted directly from the molten mass. Using this Pastillation approach hasn't, however, been studied as a medication delivery strategy. It can be used as a novel, useful, and easy method to enhance solubility and dissolution rate, according to the literature. After selecting the polymer based on solubility testing, Azelnidipine pastilles were prepared using Gelucire 50/13 and PEG 6000. The pastilles were subsequently evaluated for their yield, drug content, solubility studies, and dissolution test findings after the FT-IR validated the formulation. By Pastillation method, it was discovered that, the Azelnidipine's solubility was increased by two folds with simultaneously doubling its rate of dissolution. The solubility, rate of dissolution, and bioavailability of medications with good permeability but low water solubility may therefore be improved by Pastillation in a straightforward and effective manner.

Keywords: Pastillation, PEG 6000, DOE, Gelucire 50/13

CS-142

Development of Novel Buccal Drug Delivery System by Natural Polymers for Antihypertensive therapy

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ABSTRACT

The oral route of drug administration is the most preferred route because of ease of administration and better patient compliance. But there are certain disadvantages like slow onset of action, first pass metabolism, toxicity and degradation of drug due to gastric juice restricts the selection of oral route for drug administration. The novel mucoadhesive buccal drug delivery system is more prominent and used to counteract the disadvantages associated with the conventional oral route of administration. The various polymers including natural origin and synthetic are used in the development of mucoadhesive buccal dosage form but there are various challenges associated with the use of synthetic polymers in the design of buccal dosage form. The use of synthetic polymers in mucoadhesive buccal dosage form can be restricted due poor stability, poor mucoadhesion, poor solubility, toxicity etc. Now days the use of natural polymers in the development of novel drug delivery system has been greatly accepted as they are biocompatible, biodegradable, non-toxic and economic. The natural polymers such as Chitosan, Alginate, Gelatin, Methylcellulose etc. can be used in the development of Novel Buccal Drug Delivery System. The use of natural polymers in the mucoadhesive dosage form increases the residence time at application site by adhering to the buccal mucosa and thus increases the absorption rate. Natural polymers have excellent mucoadhesive characteristics, optimum molecular weight, good water solubility, non-toxicity and swelling ability and thus used in the mucoadhesive dosage form as an alternative to synthetic polymers.

Keywords: Mucoadhesion, First Pass Metabolism, Natural Polymers, Toxicity

CS-143

Phytosomes: A Prudent Therapeutic Approach for Cancer

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ABSTRACT

Cancer is characterized by uncontrolled cell growth and genetic alterations, cause them to multiply uncontrollably. For cancer treatment modern medicine, surgery, chemotherapy, and radiotherapy have been the primary approaches that are expensive and have so many side effects. This study emphasizes a novel approach, highlighting the potential of *Tinospora cordifolia* extract-incorporated phytosomes for cancer treatment.

Tinospora cordifolia is commonly named "Guduchi" belonging to the family Menispermaceae. It is an inducer for carcinogen/drug metabolism and induces antioxidant defence mechanisms to neutralize oxidative stress usually caused by xenobiotics. The anticancer effect of *Tinospora cordifolia* and its constituents can be due to their ability to stimulate free radical formation and DNA damage in the cancer cells.

Phytosomes is a novel formulation technology in which water-soluble phyto-molecules are converted into lipid-soluble complexes, by reacting herbal drugs with phospholipids, indicates a promising drug delivery system.

Phytoconstituent present in these herbs have large molecular size and poor lipid solubility. To overcome these limitations, it was thought worthwhile to formulate Guduchi as Phytosome. Bioavailability studies revealed a 78% *in-vitro* release of *Tinospora cordifolia* phytosomes, displaying improved pharmacokinetic and pharmacodynamic profiles.

In-vitro cytotoxicity results demonstrated the potency of formulated phytosomes over the extract i.e. IC50 concentrations at 67.81µg/ml, making them an effective treatment for cancer. This study comprehensively addresses the formulation, characterization, and evaluation of *Tinospora cordifolia* phytosomes. Along with significant cytotoxic potential, these phytosomes emerge as promising candidates for anticancer therapeutics.

Keywords: *Tinospora cordifolia*, Phytosomes, Drug delivery system, anticancer therapeutics.

CS-144

Formulation and Assessment of a Nanogel of Antifungal Herbal Drug

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ABSTRACT

The most recent developments in drug delivery and nanogel synthesis were investigated in this study. Since they are the safest substitute for contemporary allopathic drugs and have a variety of therapeutic potentials, plants have been utilized medicinally. Herbal extract is used in the formulation of nanoparticles to enhance medication

penetration through the topical route; the formulation exhibiting the best entrapment effectiveness is selected for the preparation of nanogel. The development of innovative remedies for a variety of medical diseases has benefited from the use of herbal ingredients. The most sensible method for treating skin conditions and boosting bioavailability is to use nanogels. There have been reports of the in-vitro and in-vivo effects of phytoconstituents or plant extract-loaded nanogels for a range of skin conditions, including acne, ageing, infections.

Keywords: Nanogel , Fungal Infection, Herbal , Mycoses

CS-145

Analytical Method Development and Validation for the Estimation of Remogliflozin etabonate and Vildagliptin in Bulk and in Their Dosage by Using QbD Approach.

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Abstract: Simple, accurate, precise, sensitive, economic, robust RP-HPLC method was successfully developed and validated for the simultaneous estimation of Remogliflozin etabonate and Vildagliptin in bulk and in tablet dosage forms by using QbD approach. Linearity, detection limit, quantitation limit, accuracy, precision, robustness was considered for development and validation of HPLC method for Remogliflozin etabonate (RMO) and Vildagliptin (VLD) in bulk and in tablet dosage form.

Design expert used as software for evaluation of experimental design study (Stat-Ease Inc., Minneapolis, USA, Version 13.0). Due to high competence with a limited number of runs, Box Behnken Design (BBD) and response surface methodology a model used for study. Three factors, three levels and five center points are selected for BBD, leads to 17 experimental runs, which were carried out. Standard and sample prepared and injected in to chromatographic system. Retention time, theoretical plates, and peak asymmetry, peak area, resolution were measured as responses. For coefficients and nature of the robustness was evaluated by ANOVA with a linear approach.

Data of ANOVA analysis for selected responses, having P value less than 0.05 and F value more than 2.5 signifies the results of proposed approach. Also, the % RSD values were less than 2.0 for method repeatability and intermediate precision results, indicating high degree of precision of the method. The detection limits and quantitation limits were very low, which is indicate method is sensitive.

Keywords: Quality by design, HPLC, Remogliflozin etabonate, Vildagliptin, Box Behnken Design.

CS-146

Nanotechnology and Therapeutic Intervention in Covid-19

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ABSTRACT

The topic and title concern the modern technology study and review with the aid and aiming the therapeutic interpretation and overall emphases on a novel corona virus disease called COVID-19, a respiratory disorder; to overcome the disease and its prevention, the article is determined here. As the modern technique to demonstrate the overview of the virus and its cause, prevention, treatment and how the so-called modern technique, namely "nanotechnology" and its various components and factors are valuable and helpful with their pharmacological effects, implications, and other therapeutic interventions in treating the viral infection is discussed and reviewed. Several essential factors with nanoparticles, nanomaterials, and techno logy-based applications by reduction of spread ability of infections with nano formulation antibiotics and pharmaceuticals are demonstrated in the article. For increased patient and healthcare worker safety, nano-based antimicrobial technologies are included too. Again binding, entrance, replication,and budding of COVID-19 can be targeted by the antiviral properties of nanoparticles. One factor that restricts its use and should be further researched and altered is the toxicity-related inorganic nanoparticles observed and need to investigate further for vigilance, one must say. The article describes several facts about nanotechnology in treating and preventing infection and its therapeutic interventions.

CS-147

Nanosponges: Revolutionizing Medical and Pharmaceutical Sciences

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ABSTRACT

Recent advances in nanotechnology paved path for design of new biomaterials based on nanoscale with many potential applications in the field of nanomedicine. Long-term efforts to develop effective targeted drug delivery systems have mostly been hampered by the complex chemical reactions required in the creation of the more recent drug delivery systems. Because they can be made to interact with both hydrophilic and hydrophobic drug types. Nanosponges, a recently developed colloidal system, have the potential to address problems with medicine toxicity, lower bioavailability, and drug release across a wide area. They are small in size have a porous chamber and a three-dimensional network. The polarity and dimension of the polymer mesh can be easily tuned by varying the type of cross-linker and degree of cross-linking. The release of the entrapped molecules can be varied by

modifying the structure to achieve prolonged release kinetics or a faster release. The nanosponges could be used to improve the aqueous solubility of poorly water-soluble molecules, protect degradable substances, obtain sustained delivery systems or design innovative drug carriers for nanomedicine. Unlike other nanocarriers, the nanosponges can be used for treating different illnesses such cancer, autoimmune diseases, theranostic applications, blood purification, targeting, reducing photodegradation of the drug, and boosting formulation flexibility. This review work on the composition, types, methods of preparation, characterization and applications of nanosponges. In order to fully realize the potential of nanosponges and turn them into useful applications in the future, research and development activities must continue.

Keywords: colloidal system, nanocarriers, bioavailability, stability, theranostic systems.

CS-148

Formulation and Evaluation of Artesunate Solid Lipid Nanoparticles for the treatment of Malaria

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ABSTRACT

Artesunate is a butanedioic acid primarily used as an antimalarial agent. Low bioavailability and poor solubility are the major limitations of Artesunate leading to frequent dosing. The controlled-release dosage form can help in the reduction of dose frequency. Thus the present study aimed to formulate Artesunate solid lipid nanoparticles (Art-SLN) to control the drug release and ultimately lead to a reduction of dosing frequency. Art-SLNs were prepared by solvent injection method and optimized. The compatibility of the drug with excipients was studied by FT-IR and DSC. Entrapment efficiency, drug loading capacity, particle size analysis, surface morphology, dialysis membrane drug release, and *ex-vivo* drug release using chick ileum were performed. The FT-IR data revealed proper drug encapsulation within the lipid molecules. The DSC data demonstrated that the Artesunate was converted to its amorphous form suggesting its better solubility. The mean particle size of SLN was found to be 278.1 mm and the *ex-vivo* drug release from the optimized batch F5 was found to be 97.5%.

KEY WORDS: Solid lipid nanoparticles, anti-malarial, artesunate.

CS-149

From Synthesis to Application: Unveiling the Potential of Spinel Nano-ferrites in Biomedicine

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ABSTRACT

Spinel Nano-ferrites (SNFs) exhibit diverse applications in biomedicine, particularly when displaying superparamagnetic behaviour, enhancing their utility for drug delivery, hyperthermia treatment, Magnetic Resonance Imaging (MRI), and magnetic separation. Achieving superparamagnetism in SNFs relies on precise size control during synthesis, making synthesis methods critical for obtaining desired properties. SNFs boast multifunctional features including exceptional magnetic properties, large specific surface area, active surface sites, chemical stability, and adjustable shape and size, making them attractive for biomedical applications. However, maintaining high magnetism at the nanoscale poses challenges. Thus, careful engineering and consideration of factors such as shape, chemical and physical properties, and biocompatibility are crucial for maximizing SNFs' effectiveness in biomedicine. Understanding SNFs' diverse attributes can revolutionize biomedical technologies and improve patient outcomes.

Keywords: Spinel Nano-ferrites, Biomedical Applications, Superparamagnetism.

CS-150

Anion Magnetic Strip

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ABSTRACT

Nowadays, because of civilization or a busy lifestyle, a number of health issues arise, like improper blood circulation, lack of immunity, microbial infections such as bacterial or fungal infections, and likewise. So "vitamin of life" and "guard of the human body" are acclaimed as Anions. Anions can purify the air and increase the amount of oxygen as well as moisture. Friction can prompt the strip to release anions (4000–6000/cm3). Anion magnetic strip is commonly used in underwear or liners, but it is specifically designed for wellness during the menstrual cycle in women to be incorporated into sanitary napkins. It can purify or clean the vagina and prevent the breeding of anaerobic bacteria during menses. It eliminates odour, prevents itchiness, resists bacteria, and prevents various diseases within the body. Additionally, anion magnetic sanitary napkins are believed to provide a number of other health benefits, such as reducing cramps and inflammation, boosting circulation, improving immunity, and regulating pH levels. It's helpful to deal with the side effects of menstrual cycles that keep the ladies away from their work and personal commitments so that they remain active. Not anymore. These anion magnetic sanitary napkins help the ladies not to back down from work.

Keywords: Anions, Magnetic, Sanitary Napkins, Anaerobic bacteria, Cramps, Inflammation.

CS-151

Design, Characterization and Formulation of Antihistamine Mucoadhesive Intranasal Drug Delivery

System of Diphenhydramine

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ABSTRACT

The objective of the present work was to design, characterization and formulation of antihistamine mucoadhesive intranasal drug delivery system of diphenhydramine. By avoiding first-pass metabolism, this medication delivery method may increase the drug's bioavailability. The strength of the mucoadhesive was sufficient to allow for extended adherence. The created formulations might release the medicine for up to six hours, according to the drug release trials. Over the course of the six-month test period, the preparation was stable, according to the accelerated stability studies. These results suggest that diphenhydramine's antihistamine mucoadhesive intranasal drug delivery method can bypass first-pass metabolism and increase bioavailability.

Keywords: Mucoadhesive, antihistamine, intranasal drug delivery system

CS-152

A Novel Stability Indicating High Performance Thin Layer Chromatographic Method for Determination of Norethisterone Acetate as Bulk Drug and in Tablet Dosage Form

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ABSTRACT

A new simple, accurate, precise and selective stability-indicating high performance thin layer chromatographic (HPTLC) method for determination of Norethisterone acetate as bulk drug and in tablet dosage form has been developed and validated. Forced degradation studies were carried out under various stress conditions according to ICH guidelines to demonstrate the stability-indicating capability of the developed HPTLC method. Norethisterone acetate was found susceptible to all the analyzed stress conditions except photolysis. Chromatographic resolution of Norethisterone and its degradation products was achieved by using precoated silica gel 60 F_{254} aluminium plates as stationary phase and Toluene: Ethyl acetate (7.5: 2.5, v/v) as optimum mobile phase. Densitometric detection was carried out at 242 nm. The retention factor was found to be 0.47 ± 0.05. The developed method was validated with respect to linearity, accuracy, precision, limit of detection, limit of quantitation and robustness as per ICH guidelines. Results found to be linear in the concentration range of 300-1500 ng band^{-1}. The developed method has been applied successfully for the estimation of drug in tablet dosage form.

Keywords: Norethisterone, HPTLC, Forced degradation, Tablet dosage form

CS-153

Central Composite Design Based Optimization Studies of Physico-Mechanistic Properties of Bauhinia racemosa Films for Wound Healing

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ABSTRACT

Dermatological films deliver therapeutic benefits precisely to skin while minimizing adverse effects. Plant based products, especially phytoconstituents have revolutionized therapeutics. Their potential to enhance the skin's natural wound healing process has been explored extensively. Present work aimed to develop topical films of *Bauhinia racemosa* using PVP K30 and HPMC K100M using different plasticizers like sorbitol, glycerine and polyethylene glycol 400. Optimization of the films was done using Central composite design, using 3^2 full factorial designs. Effect of independent variables viz., concentration of PVP K30 and type of plasticizers on tensile strength and flux was studied. Films were characterized by folding endurance, moisture uptake, water-vapour permeation, flexibility and release studies. Films demonstrated adequate flexibility. Both independent variables demonstrated statistically significant effect on tensile strength and flux. Optimized film displayed tensile strength of 5.48 N/mm^2 and flux equal to 3.93 $mg/cm^2/h$. Water vapour permeability helps to check the amount of exudates in the wound so that the wound dries faster and hence heals faster. Low moisture uptake is essential for prevention of microbial contamination and to avoid bulkiness of the films. Films comprising HPMC K 100M: PVP K30 in 1:1 ratio with sorbitol as plasticizer effectively provided controlled release of *B. racemosa* with superior wound healing capacity.

CS-154

Ideal software of Pharmacy

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ABSTRACT

The ideal software of pharmacy with slogan "All care at one" could be made for future purpose. It could be used in pharmacy sector which will be used for improvement of treatment of the patient. The main aim of this software will be minimizing the medication error. This software includes seven tabs that are 1.Scanning 2.Data detection 3.History and patient information 4.Adverse interaction and adverse effect 5. Error data collection 6.Connection with Physician and 7.Dose Reminder. In future, if the Q.R. code or Bar code or printed prescription will bring compulsory in use then it could be easily scan. So, it could detect prescription data and basic patient information

in Data detection tab. In History and patient information tab will shows the record of history and information of patients related to the identity and health, which will even also connected with the official site of government that is ABHA Card. Even this tab could update information related to the patient time to time. Through these kinds of features of software we can determine Drug-Drug interaction, Drug-Food interaction and Lethal Dose etc. if present in prescription. If there are any interaction, adverse drug reaction and adverse effect will show by the software in Adverse interaction and adverse effect tab, then it will next collect the all error data which we can see in the tab of error data collection which will make the report and send the error data to the physician through any medium like e-mail, what's app or by any separate application in the next tab or could provide in hard copy. So, the physician could correct the error of prescription and medication which will show by software and make new errorless prescription through that the pharmacist will again go with the same procedure and after confirmation will dispense the medicines to the patient. Even this software could message or call to patients as a reminder for taking dose at prescribed time.

CS-155

A Review on Challenges and Impact of Green Chemistry on Environment

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ABSTARCT

Green chemistry is the practice of developing chemical products and procedures that reduce or completely eliminate the use or production of hazardous compounds. This represents fresh, revolutionary advancement in the study of chemistry. This environmentally friendly approach would safeguard our ecosystem from dangerous and poisonous chemicals. The 12 guiding principles for green chemistry were first put forward by Paul Anastas and John Warner in 1990. The challenges of environmentally friendly chemistry, which also saves lives. Financial, regulatory, and knowledge and experience limitations are only a few of the challenges facing green chemistry. Recycling is an essential part of green chemistry because it safeguards of humans, animals, and plants from dangerous chemicals, has a positive impact on the environment, and creates new economic opportunities. Green chemistry has several applications in both daily living and the pharmaceutical industry.

Keywords:- Green chemistry, Green technology, Challenges, Environmental impact, Economical impact, Applications.

CS-156

Citric Acid Crosslinked Hydrogel Dressings for Delivery of Metronidazole

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ABSTRACT

The objective of this study was to synthesize and characterize citric acid crosslinked hydrogel films of carboxymethyl tamarind gum for topical drug delivery system. The hydrogel films were characterized by attenuated total reflectance- Fouriertransform infrared spectroscopy, solid state 13C- nuclear magnetic resonance spectroscopy and differential scanning calorimeter. The prepared hydrogel films were evaluated for the carboxyl content and equilibrium swelling ratio. Metronidazole was loaded into these hydrogel films and drug release was monitored in different PH medium. Hemolysis assay was used to study Biocompatibility of hydrogel films. Results of attenuated total reflectance- Fourier- transform infrared spectroscopy solid state 13C- nuclear magnetic resonance spectroscopy and differential scanning calorimeter confirmed the formation of citric acid crosslinked hydrogel films. Total carboxyl content of hydrogel film was found to be increased when polymer ratio and amount of citric acid was increased. On the other hand swelling of hydrogel film was found to be decreased with increase in polymer ratio and amount of citric acid. Results of haemolysis assay indicated that the citric acid crosslinked hydrogels were safe to be used in drug delivery. In vivo wound healing study showed that metronidazole loaded hydrogel film has significant higher wound healing rate than control group, group 1, and group 3. This indicated that prepared hydrogel films can be successfully used as dressings for wound healing.

CS-157

Nanotechnology in Parkinson's Disease: A Review

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ABSTRACT

A disease called Parkinson's disease is a neurodegenerative disorder resulting in the degeneration of neurons which are linked to dopamine, which impairs both motor and non-motor capabilities. This review addresses the prospects for Parkinson's disease remedies in the present and the future with technologies based on nanotechnology. Nanoparticles optilnize healing efficacy and decrease negative effects by prolonging the length of drug circulation, allowing distribution to particular brain places, and enhancing drug absorption. Moreover, using nanomaterials in neuroprotective procedures, including antioxidant-loaded nanoparticles and nanoscale drug shipping structures, can reduce oxidative stress and irritation, which are connected to the pathogenesis of Parkinson's disorder. Parkinson's treatment is currently dealt with gene therapy, cellular

implantation, surgical treatment, and rehabilitation. However, those therapy techniques have a number of side consequences that can be mitigated through the use of nanoparticles with greater stability against enzymatic breakdown and blood-brain barrier crossing skills. To sum up, nanotechnology has sizeable potential to transform the sphere of Parkinson's research by providing novel strategies for the ailment's detection and management. This will allow us to get toward efficient and targeted healing interventions for this crippling neurodegenerative situation.

CS-158

Impurity profiling, method development, and force degradation of Clobetasol Propionate in bulk and in its marketed preparation

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ABSTRACT

A precise and robust method was developed for estimation of Clobetasol Propionate [CP] in bulk and formulations by RP-HPLC technique. The Method used Agilent 1260 Infinity II model HPLC with DAD detector and column of Phenomenex Luna - C18 with dimension 250 x 4.6 mm, 5 µm. The Mobile phase A combination was Ammonium Acetate buffer, Acetonitrile and Methanol (60:20:20) and Mobile phase B combination was Ammonium Acetate Buffer and Acetonitrile (20:80). Flow rate at 1.0 ml/min and wavelength at 240 nm with run time of 40 minutes. The retention time of Clobetasol Propionate peak is at 15.73 min. The method was validated as per ICH guidelines. The instrument precision. Method precision and Intermediate precision had an %RSD of 0.01%, 0.01% and 0.02% respectively. The cumulative % RSD for Method and Intermediate precision was 0.02%, Method was linear and accurate for concentration range 0.05 µg/ml to 120 u/ml with r of 0.999 and accuracy at 0.08%, 0.02% and 0.03% for 80%, 100% and 120% relative standard deviation Clobetasol Propionate was studied for stress stability and found to be absolute of basic condition with 99.34% degradation and heat condition with degradation at 14.40%. The established method can be used in commercial sense as it is very linear and the LOD and LOQ for CP are very low as 24.0 ng/ml and 24.0 ng/ml. Impurities were identified for injecting the reference standard and retentions were confirmed. Identified impurities were Impurity A. B. and J with retention time as 7.91, 9.28 and 18.75 mins. The method was found to be robustness and precise.

CS-159

"Emerging Applications of Nanomedicine: Revolutionizing in Healthcare" - a review

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ABSTRACT

Nanomedicine is a rapidly advancing field that holds great promise for revolutionizing healthcare. The changes and utilization of nanomaterials in various applications has opened up new possibilities for diagnostics, drug delivery, tissue engineering, and cancer therapeutics. This review aims to provide a comprehensive overview of the emerging applications of nanomedicine and highlight their potential to transform healthcare.

In the diagnostics, nanotechnology offers incredible opportunities for highly sensitive and specific detection of diseases.

One of the most significant contributions of nanomedicine is in the field of drug delivery. Nano-sized carriers, such as liposomes, polymeric nanoparticles, and dendrimers, allow for precise targeting and controlled release of therapeutic agents. Through surface modification and functionalization, these nanocarriers can selectively deliver drugs to specific cells or tissues, increasing drug efficacy while minimizing systemic side effects.nanomaterials can bypass biological barriers and deliver drugs to previously inaccessible sites, making them especially valuable for treating diseases of the central nervous system and cancer metastases.

Nanotechnology also shows immense potential in tissue engineering and regenerative medicine. Moreover, nanomedicine has revolutionized cancer therapeutics. Nanoparticle-based drug delivery systems allow for improved targeting of tumors, controlled and sustained release of anticancer drugs, and reduced systemic toxicity. Nanomedicine holds the promise of more effective and personalized treatments, with reduced side effects, ultimately shaping the future of healthcare.

Keywords: Nanoparticles, Nanotechnology, Medicine etc.

CS-160

A Validated Stability-Indicating Method for Simultaneous Determination of Metoprolol Succinate and Amlodipine Besylate in Pure and in Tablet Dosage Form Using RP-HPLC

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ABSTRACT

A simple stability-indicating assay method for metoprolol and amlodipine has been developed and validated as per ICH Q2 (R1) guideline using RP-HPLC. The separation was performed by using the stationary phase, Merck's Oyster ODS3 (150 x 4.6 mm, 5 µm) column and eluent, 0.02 M KH_2PO_4 buffer pH 2.5 : Methanol : Acetonitrile (500:200:300, v/v/v) at flow rate 1.0 mL/min. The detection was carried out at 229 nm. The peaks of metoprolol and amlodipine were eluted at 2.569 min and 6.822 min respectively. The coefficient of determination (R^2) value was found to be 0.999 for both drugs, indicating method is linear. The mean % recovery found for metoprolol, 99.56, 99.23 and 100.73 % while for amlodipine, 102.11, 98.85 and 99.40 % at 3 different levels. The method is precise as % RSD value is below 2.0. The eluent is stable up to 2 days at RT; while the preparations of standard

and sample found to be stable upto 2 days at RT and in RF. In addition to this, the peaks due to degradation product(s) were well separated from main component peak showing the stability- indicating nature of the method. The validation result demonstrates that, the method can be used successfully for stability study and routine analysis.

Keywords: RP-HPLC, Metoprolol, Amlodipine, Forced Degradation, Solution Stability, Validation

CS-161

Formulation Development and Evaluation of Bionanocomposites of Poorly Soluble Drugs

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ABSTRACT

Solubility is one of the crucial parameter to obtain desired concentration of drug in systemic circulation for maximum pharmacological response. The drug having low solubility and high permeability (BCS Class II) exhibit complete absorption into gastrointestinal region so, they have good bioavailability. Poorly water-soluble drugs frequently require excessive doses in order to attain therapeutic plasma concentrations after oral administration. After administration, about 40 % of the drug not get soluble in gastric fluid so they possess slow absorption, resulting uneven bioavailability and GI toxicity occurs. As bioavailability decreases, the dosing strength get increases. To overcome such problems, it is important to enhance drug solubility and its oral bioavailability. Bionanocomposites are the novel approach to prepare material having Nano size that contains excipients which are obtained from the natural origin having particle size 1 – 100 nm. The bionanocomposites are as similar as nanoparticles but there are some differences along with their methods of preparations, their properties, biocompatibility, biodegradable nature and their applications. The bionanocomposites are prepared by using different naturally occurring biodegradable polymers which provides the great platform for drug delivery. In this article, the main objective is to determine the different biodegradable naturally occurring polymers for preparation of bionanocomposites, novel techniques for preparation of bionanocomposites, characterization, recent applications and to enhance the use of bionanocomposites as drug carrier for delivery.

Keywords: Bionanocomposites, Polymers, Microwave, Solubility, Bioavailability

CS-162

Design, Development and Evaluation of transferosome Loaded Hydrogel for Topical Application in the management of vaginal candidiasis

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ABSTRACT

The aim of this study was to create and assess transfersomes loaded gel for more effective treatment of vulvovaginal candidiasis. The researchers formulated transfersomes of Nystatin, Neomycin sulphate, and Triamcinolone acetonide using the thin film hydration method. These transfersomes were incorporated into a gel along with Gramicidin D, using Carbopol 934P as the gelling agent. Upon optimization, the transfersomes loaded with Triamcinolone acetonide and Nystatin showed a particle size of 61.35±0.21 nm, PDI 0.213±0.0054, and zeta potential of -22.4±0.21mV. Subsequently, the addition of Neomycin sulphate transfersomes to the formulation resulted in a particle size of 70.48±0.11 nm, PDI 0.119±0.0041, and zeta potential of -10.5±0.19mV. The drug release from the transferosomal gel followed a biphasic pattern, with 50% of drug release occurring within 30 minutes, 75% at 90 minutes, and complete release at 120 minutes. The release pattern conformed to Higuchi's model. Various analytical tools, including Particle size analyzer, pH meter, Rheometer, and Texture analyzer, were used to characterize the optimized transferosomal gel. Stability studies indicated that the optimized formulations remained unchanged in terms of drug content and dissolution profile. In-vitro and in-vivo studies were conducted using a wistar rat model. The results demonstrated that the developed transfersomes loaded gel could be a promising drug delivery system for enhancing antifungal efficacy.

Keywords: CSLM Study, transferosomal gel, ELISA technique, Histopathological studies, Texture analyzer

CS-163

Nanomedicine' revolution in pharma sector

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ABSTRACT

The use of nanoparticles in regenerative medicine and for the detection and treatment of a wide range of disorders is known as nanomedicine, a fast developing and expanding subject. The innovation supply chain, the transition from research to development, and the state of nanomedicine in business today are the main points of emphasis.

CS-164

Preparation and Characterization of Liquisolids of Identified Category Drugs

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ABSTRACT

The majority (90%) of recently discovered medication candidates have low water solubility and are lipophilic. Improving these medication's bioavailability and solubility presents a significant challenge to the pharmaceutical

sector. A unique and cutting-edge method of solvingthe problem is the liquisolid technique, which is predicated on the transformation of the medicine from a liquid state into an apparently dry, non-adherent, free-flowing, and compressible powder. The goal of this study was to formulate the poorly soluble medication Mirabegron as a liquisolid compact in order to increase its rate of dissolution. Utilizing Qualityby Design approach to determine the necessary concentration of powder and liquid constituentsto create a comprehensibly flowable and compressible admixture, several liquisolid compacts were created. The formulations were evaluated for drug excipient interactions, change in crystallinity of drug, flow properties, FTIR, DSC and XRD. *In-vitro* dissolution studies were performed. Stability studies were performed at 40°C and 75% RH for three months. The developed liquisolid were compared with pure drug to determine dissolution ability and resultsshows 8 folds increase in solubility and dissolution ability of the drug.

Keywords: Poorly soluble drugs, Lipophilic drugs, Bioavailability enhancement, Dissolutionrate, liquisolid technique, Mirabegron,Quality by Design.

CS-165

Unlocking the Potential: An Eco-Friendly Method for Creating, Analyzing, and Evaluating the Safety of an Innovative Polymer Structure for Novel Drug Delivery Systems and its Application

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ABSTRACT

Background: An extremely advantageous biodegradable polymeric substance is natural mucilage. Natural mucilage is readily available, non-toxic, and biodegradable.

Aim: The current study required to determine the properties of a novel polysaccharide based polymeric network as well as its toxicity.

Method: Microwave-assisted synthesis, a green method, was employed to synthesize a graft copolymer of a polymeric mixture of novel polysaccharide (BSM) and acrylamide (AM) utilizing potassium persulfate (KPS) as an initiator. The best grade based on the most significant percentage of grafting efficiency was optimized using varying concentrations of AM and KPS. The outcomes were examined using intrinsic viscosity measurement, Fourier Transformation infrared spectroscopy (FTIR), DSC, H-NMR spectra, and X-ray diffraction. The amount of mucilage, monomer, and crosslinking in the polymeric network affect swelling to varying degrees.

Result: This approach uses microwave irradiation with potassium persulfate as the redox initiator and is

observable, economical, and environmentally friendly. 464% grafting and 107.23% grafting efficiency were displayed in the BSM-4 batch. Results on the conclusion of the grafting procedure and changes in functional groups were revealed by FTIR, DSC, H-NMR, and XRD analyses. The BSM-4 batch demonstrated that novel drug delivery of BCS class II and IV drugs using a new polysaccharide-based polymeric network is completely safe. The results of the toxicity study show that the constructed polymeric network is safe and non-toxic, and they suggest that it may eventually prove to be a superior option for many current and emerging novel drug administration techniques.

Conclusion: Acute toxicity tests showed that the mucilage-based network had proven safe for novel drug delivery, and the innovative polysaccharide-based polymeric network will be encouraging for long-term delivery of any BCS Class II or IV drug candidates.

Keywords: Natural Mucilage, Green Synthesis, Polymeric Scaffold, Seed Mucilage, Toxicity, Grafting copolymer.

Financial Assistance: SSIP Government of Gujarat and All-Well Nutritech Pvt. Ltd.

CS-166

Molecular Docking and Pharmacokinetic Prediction of Pirazine Derivative as Proteasome Inhibitor for increasing Caspase -8 expression in Cancer Therapy

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ABSTRACT

Caspase-8 is an apical caspase which initiates programmed cell death following death receptor ligation. This central role in apoptosis has prompted significant clinical interest in regulating caspase-8 expression and proteolytic activity. However, caspase-8 has also been found to play a number of non-apoptotic roles in cells, such as promoting activation NFκB signaling, regulating autophagy and altering endosomal trafficking, and enhancing cellular adhesion and migration. Therefore, depending upon the specific cellular context, caspase-8 may either potentiate or suppress tumor malignancy. Loss of apoptotic signaling is a hallmark of cancer and indeed Caspase-8 expression is often lost in tumors. This event may account not only for cancer progression but also for cancer resistance to radiotherapy and chemotherapy. Accordingly, a marked heterogeneity exists in the expression patterns of caspase-8 among different tumor types. Therapeutics have been developed which can increase caspase-8 expression. Several studies have indicated that proteasome inhibitors (PIs) are promising anticancer agents. We have discovered that PIs have the unique ability to activate effector caspases through a mitochondrial Bcl-2 inhibitable. In summary, our data indicate that PIs can activate downstream caspases.

Key Words: Caspase-8, proteasome inhibitor(PI), FLIP, apoptosis, NFκB signaling

CS-167

Pharmacological and scientific study of Sausage tree (Kigelia pinnata): A review

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ABSTRACT

Abstract: Kigelia pinnata Linn. (Balam Kheera) belongs to the family of Bignoniaceae and is commonly called the "sausage" tree because of its hugs fruits. The goal of this review is to learn more about Kigelia pinnata's scientific research and pharmacological activities.A review of the literature indicates that plants have long been used as remedies for a wide range of illnesses, including rheumatism, psoriasis, diarrhoea, and stomach problems. Many contemporary scientific studies have looked into its use as an aphrodisiac, skin care, anti-inflammatory, antioxidant, antimicrobial, antihyperlipidemic, anti-trypanosomal, anti-ulcer, antiprotozal, CNS activity, diuretic, anti-ulcer, anti-trypanosomal, antimalarial, antiplasmodial, analgesic, anti-inflammatory, anti-inflammatory, antimicrobial, antidiarrheal, fertility enhancer, sickle - cell anemia, genital infections, , body weakness, leprosy, respiratory ailment, worm infestation and kidney stones, antineoplastic activities.

Numerous active ingredients are present in K. pinnata, including tannins, flavonoids, steroids, anthraquinone, phlobatannins, cardiac glycoside, terpenoids, saponins, elaidic acid, squalene, stearic acid, lapachol, palmitic acid, Pinnatal, Iso pinnatal, kigelinol, Iso kigelinol, beta tocopherol, Hentriacontane, 3, 4 dihydro-8- phytene, 2-acetylnaphtho [2,3-b] furan-4, 9-quinone, Kojic acid, Norviburtinal, Specioside, Verminoside, Minecoside, etc.

Keyword: Kigelia pinnata, pharmacological study ,phytochemical study

CS-168

Exploratory Clinical Trials: A Review

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ABSTRACT

Exploratory clinical trials are likewise called as phase 0 trials or Micro-dosing technique. FDA (Food and Medication Organization) declared these preliminaries in January 2006 for the Quicker improvement of new prescriptions. The Science, assembling and control's data ought to be thought about while arranging phase 0 clinical preliminaries. These preliminaries are directed after fruitful culmination of preclinical preliminaries or before stage I trials. These preliminaries give a chance to create fundamental human pharmacokinetics and pharmacodynamics information prior in the medication advancement process. Because of phase 0 clinical preliminaries cost of new medication advancement process get diminished by concentrating on just most encouraging mixtures in additional review. The exploratory IND upholds the exhibition of first-in-human testing

of new investigational specialists at sub- remedial portions in view of decreased assembling and handling prerequisites, permitting the show of medication target impacts and appraisal of pharmacokinetic-pharmacodynamics connections in people prior in clinical turn of events. The future viewpoints of phase 0 clinical preliminary are to lay out at the exceptionally earliest open door before enormous quantities of patients have been gathered and presented to potential medication related harmfulness. The significant goal is to grill and refine an objective or biomarker measure for drug impact in human examples carrying out strategies created and approved in preclinical trials. Decide if component of activity characterized in non-clinical models can be accomplished in people.

Keywords: Clinical preliminaries, Exploratory, Pharmacokinetics, Pharmacodynamics, IND.

CS-169

Hylocereus undatus a natural remedy for the prevention and treatment of gastric ulcers: A scientific evaluation

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ABSTRACT

Gastric/Peptic ulcer is one among the serious gastrointestinal diseases comprising of combination of disorders, affecting more than 60% population in the world. Even though various classes of conventional drugs are used in the treatment, the adverse effect they produce are limiting their applications, suggesting in alternative therapies, especially natural and sustainable treatments. Fruits being integral part of healthy diet, has potential to reduce the risk of various chronic diseases and metabolic disorders. In this study, we have evaluated pulp of Dragon fruit for its potential to prevent and cure gastric ulcers on ethanol and indomethacin induced gastric ulcer models in Wistar rats. Dragon fruit (Hylocereus undatus) being economic crop, rich in iron content and contains around 83% water, 3.1% dietary fibre, rich in dietary minerals and vitamins which are of greater importance in promoting gut health. The pulp (1:4 dilution with distilled water) was administered orally, in three different doses 2ml, 4ml and 8ml per kg body weight. Dose dependent response was observed for both preventive and curative activity. Dose of 8ml/kg body weight showed 50.12% curative (antiulcer) effect in indomethacin induced gastric ulcer models, whereby 77.98% of protection was observed in ethanol induced gastric ulcer model, comparable with standard drugs sucralfate and omeprazole which marked 50.20% curative and 78.88% protection. Present study reveals that dragon fruit pulp is one of the best natural remedies to prevent and cure gastric ulcers in its natural form and can be advised for ulcer treatments which will provide multiple benefits of healing and nutritional care

and can be advised for sustainable health practices.

KEY WORDS: Gastric ulcers, Antiulcer, Hylocereus undatus (Dragon fruit), Nutrition, Preventive and Curative effects

CS-170

Therapeutic Potential of Benincasa Hispida For The Treatment Of Alzheimer Disease

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ABSTRACT

This article provides details on the annual climbing plant Benincasa hispida, a natural herb from the cucurbitaceae family. The fruit is also called as winter gourd, ash gourd and kushmanda fruit. It is the most well-liked herb that is readily available to communities for medicinal and nutritional purposes. The phytochemical review indicates the presence of pentacyclic triterpene, flavonoids, volatile oils, bryonolic acid, alnusenol, multiflorenol, isomultiflorenol, lupeol, β-sitosterol etc. Benincasa hispida fruit is one of incredible fruit which can improve health, treat a variety of illnesses and prevent many more. Pharmacological studies have revealed that the Benincasa hispida plant is useful in the treatment of several nerve diseases, including peptic ulcer, diabetic mellitus, internal organ hemorrhages, jaundice, epilepsy, and Alzheimer's disease.. The review mainly focuses on the effect of the fruit Benincasa hispidas potential to treat Alzheimer disease. This article covers all relevant information regarding Benincasa hispida with both historical and contemporary examples.

CS-171

Emerging trends in cancer treatment

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ABSTRACT

Immunotherapy utilizes the body's immune system to target and destroy cancer cells, offering a promising alternative to conventional treatments. Key emerging trends in immunotherapy, including checkpoint inhibitors, adoptive cell therapies, and combination approaches, are discussed. These advancements hold great promise for improving patient outcomes and reshaping the landscape of cancer care. Recent advancements in cancer treatment have led to the emergence of several promising trends aimed at improving patient outcomes and reducing side effects. One notable trend is the rise of immunotherapy, which harnesses the body's immune system to target and destroy cancer cells. This approach has shown remarkable success in various cancers, offering durable responses and fewer adverse effects compared to traditional treatments like chemotherapy. Additionally, personalized

medicine is gaining traction, utilizing genetic profiling to tailor treatments to individual patients' unique characteristics and tumor biology. This approach allows for more precise targeting of cancer cells, leading to better outcomes and reduced toxicity.

Moreover, the advent of targeted therapies directed at specific molecular alterations within tumors has revolutionized cancer care. These therapies inhibit the growth and spread of cancer by interfering with specific molecules involved in tumor development, offering a more focused and effective treatment approach. Furthermore, advancements in precision surgery and radiation therapy techniques enable more precise tumor removal and destruction while minimizing damage to surrounding healthy tissues. Finally, the integration of artificial intelligence and big data analytics holds promise in optimizing treatment strategies, predicting treatment responses, and identifying new therapeutic targets. Overall, these emerging trends signify a shift towards more effective, personalized, and less toxic cancer treatments, offering hope for improved outcomes and better quality of life for cancer patients.

CS-172

Techniques And Reporting Of Adverse Drug Reactions (ADR) / Serious Adverse Events (Sae) In Healthcare Professionals Using Mobile Applications: A Comprehensive Review

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ABSTRACT

Adverse drug reactions (ADRs) and serious adverse events (SAEs) are critical concerns in healthcare, necessitating effective reporting and management to ensure patient safety. This review article explores the innovative use of mobile applications in facilitating ADR and SAE reporting among healthcare professionals. It delves into the techniques, benefits, challenges, and future prospects associated with mobile-based reporting systems. The review begins by providing an overview of the prevalence and significance of ADRs and SAEs in healthcare settings, emphasizing the need for efficient reporting systems. It then delves into the evolution and integration of mobile applications in healthcare, highlighting their potential to enhance ADR and SAE reporting processes. This comprehensive review sheds light on the promising role of mobile applications in the techniques and reporting of ADRs and SAEs in healthcare settings. It underscores the need for healthcare professionals and regulatory bodies to harness the full potential of mobile technology to ensure patient safety and promote drug efficacy through timely and accurate reporting.

Keywords: Adverse drug reactions (ADR), Serious adverse events (SAE), Mobile applications, Pharmacovigilance, Data security. Indian Journal

CS-173

Emerging Applications of Nanomedicine: Revolutionizing in Healthcare" - a review

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ABSTRACT

Nanomedicine is a rapidly advancing field that holds great promise for revolutionizing healthcare. The changes and utilization of nanomaterials in various applications has opened up new possibilities for diagnostics, drug delivery, tissue engineering, and cancer therapeutics. This review aims to provide a comprehensive overview of the emerging applications of nanomedicine and highlight their potential to transform healthcare. In the diagnostics, nanotechnology offers incredible opportunities for highly sensitive and specific detection of diseases. One of the most significant contributions of nanomedicine is in the field of drug delivery. Nano- sized carriers, such as liposomes, polymeric nanoparticles, and dendrimers, allow for precise targeting and controlled release of therapeutic agents. Through surface modification and functionalization, these nanocarriers can selectively deliver drugs to specific cells or tissues, increasing drug efficacy while minimizing systemic side effects. nanomaterials can bypass biological barriers and deliver drugs to previously inaccessible sites, making them especially valuable for treating diseases of the central nervous system and cancer metastases.Nanotechnology also shows immense potential in tissue engineering and regenerativemedicine. Moreover, nanomedicine has revolutionized cancer therapeutics. Nanoparticle-based drug delivery systems allow for improved targeting of tumors, controlled and sustained releaseof anticancer drugs, and reduced systemic toxicity. Nanomedicine holds the promise of more effective and personalized treatments, with reduced side effects, ultimately shaping the future of healthcare.

Keywords: Nanoparticles, Nanotechnology, Medicine etc.

Cs-174

Assessment of Quality Of Life in Acne Vulgaris Patients In Terms Of Clinical Severity And Psychological Burden:- A Multi Centre Study In Anand District

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ABSTRACT

Background The appearance of the acne and its appendages not only reflects the general body condition, but

also exerts an effect on one's self-esteem and self-image, and the way he/she is perceived by the others and their influence believed to be the main factor associated with psychological disorders like depression, Anxiety.

Aim This work was carried out to evaluate the impact of acne vulgaris on quality of life in terms of clinical severity with physiological burden. A total of 171 patients (140 Female and 31 Male) with acne vulgaris from ourstudy site participated and we collected the data on sociodemographic characteristics, presentation of acne, duration of acne, treatment history, treatment response thereafter assessed

Methodology for Quality of life was assessed using the Dermatology Life Quality Index (DLQI). Severity of acne using the global, acne severity scale and for depression disorder using the Hamilton Rating Scale for Depression.

Results Most cases (73.09%) were among 18-22 years & 81.87 were female. Facial acne was the most common (64.47%). Acne scars were seen in 85.52% of cases. There was a statistically significant relation between acne severity and severity of depression on assessment scales. The relation between acne severity and DLQI was statistically significant. In most patients with mild acne severity, a minor effect on DLQI was present, whereas in most patients with severe acne, severe effects were present. Conclusion Treatment needs to address both the acne and the psychiatric manifestations can be reducing by patient counselling.

CS-175

Review on Phytochemical Screening of Barleria

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ABSTRACT

The Acanthaceae family of plants is widely recognized for its therapeutic qualities and for its cultural and economic significance in horticulture and traditional medicine. They are used as food or as ornaments all over the world and are significant to both people and animals. Within the Acanthaceae family, Barleria is the third largest genus. Among the many well-known and documented species of Barleria are B. lupulina, B. cristata, B. grandiflora, and B. prionitis. Plants in this genus feature abundant bioactive compound-containing flowers, leaves, stems, roots, and seed extracts that show great medicinal potential for treating a wide range of illnesses and diseases. According to studies, bioactive substances include phenylethanoid glycosides quinones, iridoids, flavonoids, and the immunostimulant protein "Sankaranin." This review gives inclusive report on existing literature, phytochemical screening of the genus Barleria.

Keywords: Acanthaceae, Barleria, bioactive compounds.

CS-176

Nanotechnology for Anxiety And Depression.

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ABSTRACT

Nanotechnology has transformed the pharmacokinetics and pharmacodynamics by developing the more efficient drug delivery systems with less side effects. Anxiety and depression are most common stress released psychiatric disorders which willing and unwillingly affects our day to day life. Antidepressant and anxiolytic drugs works by altering the certain chemicals in the brain. In several scientific domains, nanotechnology have many benefits. One of the major issue regarding to brain related medications are crossing of BBB. Whereas, nanoparticles have small particle size that facilities the penetration of the drug across the BBB. Drugs for treating anxiety and depression are serotonergic, adrenergic, glutamatergic, TCAs, SNRI's, etc. Anxiety and depression pathogenesis affects various neurobiological processes such as HPA axis activity, monoamine systems functioning, neurogenesis, neuroinflammation, etc. At this present moment,a few research groups are studying the pharmacokinetics, pharmacodynamics and efficacy of antidepressant and anxiolytic nanodrugs. Their research are at various stages: from nanoproducts design to preclinical and clinical stages of testing. The current rise in number of NPs that have shown enormous potential in the treatment of brain diseases and disorders. Whereas, In vitro and in vivo studies both are crucial to the study and identification of the best nano particles based treatment for neurodegenerative diseases.

Keywords- Antidepressant, Anxiolytic, BBB, neurotransmittors, nanoparticles

CS-177

Formulation and Evaluation of Sleep inducing Vanishing Cream

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ABSTRACT

The purpose of present study was to formulate and evaluate the herbal vanishing cream. A sleep inducing cream is suggested for easy use and more effectiveness by using natural oils including lavender and Jasmine oil. Its simple application on the forehead is expected to produce calming effect and produce a good sleep. Intention is to avoid use of sleeping pills. Method carried out to prepare the cream is simple by preparing oil phase and aqueous phase at 70oC temperature. Then aqueous phase was added into the oil phase at 70° C with continuous stirring. Perfume is added after cooling of formulation at last just before the finished product was transferred to the suitable container. The formulation was evaluated as per the guidelines given and found good results.

Key words: Insomnia, Sedation, Cream, lavender oil, chamomile.

CS-178

Application Of Quality By Design Approach For Development & Validation Of Stability Indicating RP-HPLC Method For Few Identified Drug In Bulk & Pharmaceutical Dosage Form

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ABSTRACT

Quality by design (QbD) is a fixed plan approach that ensures quality of marketed product from the starting to final output. Quality of a drug is quantify by compliance of certain predetermined specifications. This is ascertained by different validated analytical procedures carried out by quality control personnel and put down by the Quality Assurance (QA) department of a pharmaceutical company. QbD is a first prospective approach through which before starting know the process, what parameters hamper on it and build quality throughout process not at last. Using ATPP, CPP, DoE, CQA and Design space. The given method was developed using QbD approach. Validated as per current ICH Q2 (R1) guidelines. Recently, the US Food and Drug Administration introduced quality by design (QbD) as a fundamental pharmaceutical quality model to be considered in the development of pharmaceutical products and processes. The regulatory guidelines for that ICH Q8 (R2) (pharmaceutical Development, ICH Q9 (Quality Risk management) and ICH Q10 (Pharmaceutical quality management. Stability of drug products will be study by using ICH Q1A (R2) guideline.

Keywords: - QbD, Validation, Stability of drug, ICH.

CS-179

Potential Future Trends in Investment Policy for Research and Development in Nanomedicine in India

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ABSTRACT

"The best way to predict the future is to create it." Abraham Lincoln India is making significant investments in the study and development of nanomedicine to advance society and enhance healthcare results. The public and business sectors are collaborating to encourage investment and cooperation in this area. The Department of Biotechnology (DBT) and the Department of Science and Technology (DST) have developed initiatives to assist public-private collaborations in translational nanomedicine research. To create novel nanomedicine technologies, private corporations are working with research groups and academic institutions. Future directions in India's investment policy for nanomedicine research include.

CS-180

Nanotechnology a multidisciplinary study about nanomaterials

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ABSTRACT

Nanotechnology a multidisciplinary study about nanomaterials which are synthesized from metals, metal oxide, silicates,polymers, carbon, and several other biomolecules. Nanotechnology mainly uses metal oxide nanoparticles that have a wide range of anti - microbial activity to treat skin diseases. Metallic nanoparticles are used as a potential drug for treating diseases. The green synthesis of metallic nanoparticles has been proposed as a cost-effective and eco-friendly alternative to chemical and physical methods. Thespesia populnea tree belongs to the Malvaceae family are grown in tropical forests areas. Thespesia populnea aqueous bark extract combines with copper metals effectively against skin-infection causing microbes. Antimicrobial activity of CuONPs (Copper Oxide Nanoparticles) was effective against skin infection-causing microbes of bacterial strains such as Staphylococcus aureus. Thus, the CuONPs (Copper Oxide Nanoparticles) proved to be stable and have high antimicrobial activity. Copper nanoparticle-based ointment containing aqueous extract of Thespesia populnea to treat skin infection and other skin related diseases can be prepared.

CS-181

Nano Quantum Sensors

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ABSTRACT

Nano sensors as we know that nano sensors are the devices which are very new devices in the medical term that can make revolution for the medical field in treatment of cancers ,neurological disorders , early detecting disease condition and for imaging medical condition.

It is a sensor which sense all the activity is going on in the human body. It's a type of sensors that can detect all the radioactive activity it has [ODMR] optical detected magnetic resonance in this we use quantum nano sensor quantum diamonds they are as natural as the diamonds we get from the mines they are gone under a process from [HTHP]high temperature high pressure [(150 to 300)].

Alkali atom ensembles in vapour cells can be spin-polarized, and their magnetic field coupling can be probed through optical means besides the absorption-based approach magnetic field detection can also be achieved by measuring d.c. and a.c. polarization rotation of the probe light8. These OPMs can achieve minute-long coherence times12 and magnetic field sensitivities of 100 aT Hz−1/2 in the laboratory13. Spin-exchange relaxation-free

OPMs are operated at elevated temperatures of 100 °C and near-zero magnetic field. The high temperature requires insulation from target samples, and the requirement for near-zero magnetic field necessitates additional coils to cancel out environmental magnetic fields. OPM cells have been miniaturied down to the millimetre scale, it includes several points like OPM based MEG , monitiring and imaging , magnetic nano particle imaging , biomagnetic sensing with nanodiamonds hyperpolarization , dynamic nuclear polarization , (NV) thermometry , NV based quantum thermometry high spatial resolution temperature stable and biocompatible

CS-182

Determination Of Plasma Ticagrelor Concentration Using LC-MS/MS For Pharmacokinetic And Bioequivalence Studies In Healthy Adult Asian Volunteers Under Fasting Conditions.

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ABSTRACT

The Relative Bioavailability Fasting Study of Ticagrelor film coated Tablets 90 mg the Concentrations of Ticagrelor in human plasma samples were evaluated according to this validated analytical method by LC-MS/MS. The method involves a simple liquid-liquid extraction of ticagrelor and Ticagrelor D7 (Internal standard) with 1mM Ammonium Acetate and separation by reverse phase chromatography using Zorbax SB C8 150*4.6mm,5µm Column. A sensitive and selective LC-MS/MS method for estimation of Ticagrelor in K2EDTA human plasma over the concentration range 5.002 ng/mL to 3002.391 ng/mL was developed and validated. Electro spray Ionization detections of Ticagrelor, Ticagrelor D7 were carried out with multiple reaction monitoring of m/z 523.100 / 152.900, 530.300 / 153.100 respectively in positive ion mode [M+H] + using a triple quadruple mass spectrometer. The retention time for Ticagrelor was 1.74 Minutes ±30sec and Ticagrelor D7 was 1.73 Minutes ±30sec, with a total run time of 3 minutes. No interfering peaks or matrix effects were observed. This validation provides the results of standard curves, quality control samples, recovery, and stability experiments. The LC-MS/MSmethod for the determination of Ticagrelor in human plasma has specifications for sensitivity, reproducibility and accuracy. This validated method was successfully applied for bioavailability and bioequivalence studies by analysis of blood samples taken up to 24 Hrs after oral administration of Ticagrelor film coated Tablets 90 mg under fasting state in 14 health adult Asian volunteers.

CS-183

Formation and Evaluation Of Glucoma Nano Ophthalmic Patch

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ABSTRACT

The number of people are suffering from glucoma and different eye related disease for this glucoma nano ophtalmi c patch which contain combination ANTI VEGF and pailocarpin are most effective drugs for glucoma and helps in improving vision. This patch contain NDDS which are going to best opction for intraocular injection, and convenient to use for any one with any age group.this patch can also reduce chance of surgery and helps in cure of myopia.

CS-184

Formation And Evaluation Of Glucoma Nano Ophthalmic Patch

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ABSTRACT

In recent years, there has been an unprecedented explosion of research and applications in the field of nanotechnology. Nanomaterials have opened a new avenue as antimicrobial agents owing to their unique properties, such as surface chemistry (functionalizable structure), chemical stability, and appropriate size, high surface area to mass ratio, high reactivity, stability, robustness, durability, biosafety, and biocompatibility. Garlic (Allium sativum) is recognized for its potential to treat and prevent various diseases including cardiovascular problems, common cold, bacterial and fungal infections To improve safety and efficacy, these phytoconstituents have been delivered using nanoformulations such as liposomes, hydrogels, and nanoparticles for the treatment against different bacteria, viruses, fungi, and parasites infections

CS-185

Development and Evaluation of Solid Self Emulsifying Drug Delivery System of Olmesartan Medoxomil By using Adsorption to Solid Carrier Techniques

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ABSTRAC T

Olmesartan medoxomil (OLM) is an angiotensin II receptor blocker antihypertensive agent. It is a highly

lipophilic (logp (octanol/water) 5.55),poorly water soluble drug with absolute bioavailability of 26%.The main objective of this study was to prepare a solid form of lipid based self-emulsifyi ng drug delivery system by adsorption to solid carrier technique to i mprove the oral bioava ilability of poorly water solu ble drug Olmesartan medoxomil. The solu bility of OLM was determined in various vehicles like oils, surfactants and co-surfactants. Pseudotemary phase diagrams were constructed to identify the efficient self-emulsifying region. The liquid SEDDS was a system that consist of Olmesartan , Acrysol k-150, Labrasol , Transcutol P as a drug,oil,surfactant and co-surfactant. The optimized liquid SMEDDS was transformed into a free flowing powder using Avice!or Aerosil 200 as the adsorbent. Prepared SEDDS formulations were tested for microemulsifying properties and the resultant microemulsions were evaluated for robustness to dilution, assessment of efficiency of self emulsication, emulsification time, turbidity measurement , viscosity, drug content and in-vitro dissolution. The optimized SEDDS formulation further evaluated for heating cooling cycle, centrifugation studies and freeze thaw cycling, particle size distribution, zeta potential were carried out to confirm the stability of the formed SEDDS. The formulation was found to show a significant improvement in terms of the drug release with complete release of drug within 60 mi nutes Thephysical stateofthedrug in solid self-micro emulsifying powder was revealed by Differential ScanningCalorimetric and X-ray powder diffraction studies which indicated the presence of the drug in the d issolved form in the lipid excipients ..The dissolution of the drug was enhanced significantly from the SMEDDS formulation as compared to pure drug.

Keywords: Olmesartan medoxomil, Solid self-microemulsifying drug delivery system, Adsorption, Dissolution.

CS-186

Nanoemulgel for Delivery of Phytoconstituents

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ABSTRACT

Nanoemulgel is a novel method of delivering plant-based constituents through the skin. Plant- based compounds, known as phytoconstituents, have many different medical activities, such as anti-microbial, anti-cancer, antibacterial, anti-inflammatory, etc. But due to their lower absorption, plant-based medicine does not show a proper therapeutic response in the body. To overcome this problem, nanoemulgel is the best choice for delivering a phytoconstituent. Nanoemulgel improves phytoconstituents solubility, bioavailability, and targeted delivery, increasing their efficacy and therapeutic response. Nanoemulgel, which are nano-sized oil droplets distributed in a gel matrix, provide a novel platform for delivering phytoconstituents while addressing issues such as low solubility and bioavailability.

This abstract focuses on the unique characteristics of phytoconstituent-based nanoemulgel and their possible uses

in various formulations. It talks about the latest developments in phytoconstituent-based nanoemulgel development and their potential to enhance therapeutic response and drug delivery effectiveness. The nanoemulgel was created in two steps: first, creating a stable nanoemulsion, and then putting it into a gel matrix. The formulation was evaluated for particle size, zeta potential, morphology, rheological behaviour, and drug release profile. The results show that the nanoemulgel had desirable properties such as small particle size, high encapsulation efficiency, and long-term release of phytoconstituent. Overall, the nanoemulgel formulation offers a novel approach for the administration of phytoconstituents with improved stability and efficacy, and it has the potential to be used in pharmaceutical and cosmetic applications.

CS-187

Phytosomes for Delivering of Phytoconstituents

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ABSTRACT

This e-poster provides a comprehensive examination of phytosomes, a Novel Drug Delivery System (NDDS), and their application in treating a wide range of diseases. Phytoconstituents, such as flavonoids and tannins derived from plants, offer significant health benefits but often face challenges related to poor absorption, limiting their therapeutic efficacy. Phytosomes offer a solution by encapsulating phytoconstituents with phospholipids, notably phosphatidylcholine, thereby enhancing their stability and solubility. This encapsulation facilitates the formation of a unique complex that aids in penetrating biological barriers, resulting in significantly improved bioavailability of phytoconstituents.

The review evaluates the utilization of phytosomes in managing conditions such as cancer, hepatotoxicity, obesity, diabetes, and as antioxidants. By efficiently delivering phytoconstituents, phytosomes demonstrate promising potential in enhancing therapeutic outcomes across diverse diseases. This assessment underscores the significance of phytosome- based delivery systems in revolutionizing treatment approaches for various health conditions. It presents a novel avenue for improving therapeutic efficacy and patient outcomes, offering exciting prospects for the future of drug delivery and disease management.

CS-188

Cyclodextrin for Delivering of Phytoconstituents

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ABSTRACT

Due to their numerous and varied medicinal properties, bioactive phytochemicals derived from natural sources have attracted a lot of attention in recent years. These products include pharmaceuticals, nutraceuticals, and functional food supplements. However, major drawbacks like low solubility, low bioavailability and dissolution rate, and instability that reduces bioactivity restrict their use as therapeutically active components and formulation into innovative drug delivery systems. These drawbacks can be effectively overcome by complexing them with various cyclodextrins because their hydrophobic cavity and toroidal shape make them perfect for encasing and solubilizing hydrophobic and poorly soluble substances. Cyclodextrins, or CDs, are a class of cyclic oligosaccharides that have a lipophilic interior chamber and a hydrophilic outside. overall, CD molecules do not penetrate lipophilic membranes because they are a bit huge and include a lot of hydrogen donors and acceptors. Since they have more bioavailability and have better transport, natural compounds containing cyclodextrin have showed promise in the treatment of a number of diseases. Cyclodextrin- containing natural compounds show potential in treating diseases due to their bioavailability and transport, improving drug stability and solubility in cancer therapy and facilitating efficient delivery of anti-inflammatory substances in inflammatory conditions. In this e poster we are going to discuss the unique structure of cyclodextrin its properties, methods of preparation and its various advantages of delivering natural compounds in various diseases.

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