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Research Article **Published Date:-2023-12-27 10:18:48**

Pharmaceutical and Biopharmaceutical Industries: Revolutionizing Healthcare

The drug and biopharmaceutical enterprises play a pivotal part in transforming healthcare through the incident and delivery of creative cures and remedies. This item explores the key facets of these areas, stressing their impact on healthcare.

Pharmaceuticals, outlined as wealthy secondhand in the diagnosis, situation, or stop of disease, aim to restore, correct, or refine everyday functions. On the other hand, biopharmaceuticals (or biologicals) circumscribe sugars, proteins, nucleic acids, living containers, or tissues and are curative devices that arise natural beginnings to a degree persons, animals, or microorganisms. In contrast to common pills combined with synthetic processes, biopharmaceuticals are primarily acquired through unaffected processes, containing extraction from living constructions or production utilizing alteration of genetic material Table 1.

• Some usual biopharmaceuticals, originally gleaned from animals or persons, are immediately created through biotechnological advancements.

• For instance, healing insulin, previously gleaned from porcine pancreatic islets, is immediately made utilizing alteration of genetic material in yeast (Saccharomyces cerevisiae) or E. coli.

• Biopharmaceuticals caused by alteration of genetic material usually fall into three classifications:

• Substances nearly equal to the body's own key signaling proteins.

• Monoclonal antibodies look like those caused by apiece human immune plan against bacteria.

• Receptor builds (fusion proteins) established uniformly happening receptors connected to the immunoglobulin frame.

Examples include

From living systems: Whole blood and ancestry parts, organs and fabric transplants, stem containers, antibodies for inactive immunization, polluted microbiota, human bosom milk, and human reproductive containers.

Produced by recombinant DNA: Blood determinants, fabric plasminogen activators, hormones, hematopoietic growth determinants, interferon, interleukin-located produce, vaccines, monoclonal antibodies, tumor loss determinants, therapeutic enzymes.

• Key dispute Pharmaceutical manufacturing

• Biopharmaceuticals

• Healthcare strike

• Innovative medicines

• Therapeutic fragments

• Recombinant DNA technologies

• Personalized cure

• Gene medicines

• Regulatory processes.

Research Article **Published Date:-2023-12-21 11:37:16**

Studies on the Influence of Charge Inducer and it's Combination with P-gp Inhibitor to Improve the Oral Bioavailability of Nimodipine via Submicron Lipid Emulsions

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Background: Nimodipine (NM), is a dihydropyridine calcium channel blocker with poor oral bioavailability (BA) of about 13% due to first-pass metabolism and P-gp efflux.
Objective: The present work aimed to study the influence of the charge inducer and its combination with P-gp inhibitor to improve the oral bioavailability of NM by developing a suitable delivery system of Submicron Lipid Emulsion (SME).
Methods: Five SME formulations of NM were prepared by homogenization followed by ultrasonication. Prepared SMEs were characterized for particle size, PDI, Zeta Potential (ZP), Entrapment Efficiency (EE), and drug content. In vitro, release studies were performed in 0.1N HCl and pH 6.8 phosphate buffer by open tube method. The physical stability of all NM–SMEs was tested by the individual effects of centrifugation, dilution (desorption stress), and storage. Bioavailability studies were conducted on male Wistar rats after oral administration of NM suspension and F1 to F5 SME formulations.
Results and conclusion: Five NM- SMEs were developed with a mean size ranging from 93 - 137 nm, Zeta potential of – 26 ± 1 mV (negatively charged), +45.8 to +46.3 mV (positively charged), and PDI of 0.15 - 0.25. The in vitro release studies showed that relatively more cumulative percentage release of NM – SMEs in 0.1N HCl than in pH phosphate buffer during 24 hours. The physical stability of NM–SMEs indicated that they were stable to the effects of centrifugation, dilution, and storage. Pharmacokinetic (PK) studies showed that the oral bioavailability of NM in F4 SME was significantly higher than that of all other formulations. Taken together, the results indicated the development of a stable lipid-based carrier, F4 SME to improve the oral bioavailability of this drug by minimizing first-pass metabolism due to lymphatic transport, reducing the efflux by P-gp inhibition, and further, by increased uptake of the positively charged F4 SME globules by enterocytes. Future: The research study findings increase the possibility of developing NM F4 SME by the pharmaceutical industry for the patient’s benefit.

Review Article **Published Date:-2023-11-20 09:52:55**

Biologic Medications for the Treatment of Psoriasis - Main Groups and Dosing System

This review explores the evolving landscape of psoriasis treatment with a focus on the transformative impact of biologic drugs. Psoriasis, a prevalent and persistent skin condition characterized by red and scaly patches, historically relied on topical, phototherapeutic, and systemic treatments, each with limitations. The advent of biologics represents a significant advancement, offering targeted interventions by addressing specific immunologic mechanisms underlying the disease. Biologics are now considered the preferred systemic therapy for chronic moderate-to-severe plaque psoriasis, particularly when conventional treatments prove ineffective or present disadvantages.
The review delineates the mechanisms of action for biologics targeting tumour necrosis factor-alpha (TNF-?), interleukin-17 (IL-17) and interleukin-23 (IL-23). Specific drugs under each category, including etanercept, infliximab, adalimumab, secukinumab, ustekinumab, and others, are detailed with recommended dosages. Biologics have demonstrated substantial effectiveness, with clinical trials and real-world studies showcasing significant improvements in disease severity and patient’s quality of life. Notably, these drugs exhibit rapid action, often yielding noticeable changes within weeks.
While biologics have revolutionized psoriasis treatment, the review emphasizes the importance of judicious use due to potential side effects such as injection-site reactions and respiratory infections. Serious adverse events, including infections and autoimmune reactions, necessitate careful patient selection and monitoring for safety. In conclusion, biologics offer a precise and effective approach to psoriasis treatment, promising marked symptom improvement and enhanced quality of life. The review underscores the need for responsible utilization, considering patient-specific factors, and anticipates ongoing advancements in biologics for improved control over this chronic dermatitis.

Review Article **Published Date:-2023-09-06 17:51:16**

Hypersexual Disorder: A Comprehensive Review of Conceptualization, Etiology, Assessment and Treatment

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Hypersexual disorder, also known as compulsive sexual behavior or sex addiction, is a complex and clinically significant condition characterized by intense and recurrent sexual fantasies, urges, or behaviors that significantly disrupt an individual's daily life and overall well-being. Despite its importance, hypersexual disorder remains a controversial and debated topic, lacking standardized diagnostic criteria in major classification systems.
This review paper provides a comprehensive examination of hypersexual disorder, encompassing its definition, conceptualization, etiology, co-occurring conditions, effects on mental and physical health, assessment, treatment approaches, cultural and ethical considerations, and future research directions. By synthesizing information from existing literature and research, this review aims to deepen our understanding of hypersexual disorder and contribute to the development of evidence-based interventions.
The review begins by exploring the evolution of the term "hypersexual disorder" and its current status in diagnostic classifications. It then delves into the potential etiological factors contributing to the development of hypersexual behaviors, including neurobiological, genetic, and psychosocial factors.
Furthermore, the review discusses the common comorbidities associated with hypersexual disorder, emphasizing the importance of addressing co-occurring mental health conditions in treatment planning. The psychological and physiological effects of hypersexual behaviors on affected individuals are examined, underscoring the urgency of early intervention and comprehensive treatment.
The assessment and diagnosis of hypersexual disorder are thoroughly examined, considering the challenges and methodologies involved in identifying and evaluating affected individuals. Cultural and ethical considerations are highlighted, stressing the significance of providing culturally sensitive and ethical care to diverse populations.
In the context of treatment, the review discusses various therapeutic approaches, including psychotherapy, medication, support groups, and harm-reduction strategies. The need for evidence-based treatments tailored to hypersexual disorder is underscored while recognizing the challenges of developing standardized protocols in this evolving field.
Finally, future research directions are outlined, focusing on the standardization of diagnostic criteria, prevalence studies, neurobiological investigations, and the integration of cultural competency in treatment approaches.
In conclusion, this review paper aims to contribute to a comprehensive understanding of hypersexual disorder and its implications for affected individuals and society. By exploring the multifaceted aspects of the condition, this review seeks to provide insights into effective treatment approaches and inspire further research in the study of hypersexual disorder.

Review Article **Published Date:-2023-08-22 16:37:38**

Significance and Prospect of Brf1 Overexpression

Brf1 (TFIIB-related factor 1) is a transcription factor, which specifically modulates the transcription of RNA polymerase III-dependent genes (RNA Pol III genes), such as tRNAs and 5S rRNA. The products of tRNAs and 5S rRNA transcription will be changed with the alteration of Brf1 expression. Whereas deregulation of Brf1 and RNA Pol III genes are tightly associated with cell proliferation and transformation, and tumorigenesis. In recent years, emerging studies indicate that Brf1 expression is increased in patients with cancers. In this review, we summarize the progress of the abnormal expression of Brf1 in different human cancers to explore an underlying mechanism and its clinical implication, as well as to prompt its application prospect. With the depth of the Brf1 study and the progress of biotechnology, the status of Brf1 expression may be used as a universal indicator of the early detection and prognosis observation of human cancers.

Research Article **Published Date:-2023-07-14 10:16:12**

Evaluation of the Antihyperglycaemic Activities, Safety and Phytochemical Profile of Celtis zenkeri Engl

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Objective: The study evaluated the hyperglycaemia-lowering effects, safety, and phytochemical profile of Celtis zenkeri leaf extract in order to justify its antidiabetic folkloric usage.
Methods: Modified OECD test guidelines were used to assess its acute and sub-acute toxicity while its effect on blood parameters such as blood glucose, and haematological and biochemical levels were evaluated using appropriate assays. Both in vitro and in vivo antihyperglycaemic assays were used for the antidiabetic studies while histology of the pancreas, liver, and kidney of the rats was examined after treatment with the extract at 250, 500, and 1000 mg/kg for 21 days. GC-MS analysis was used to determine the chemical constituents of the extract.
Results: The results obtained showed that the leaf extract of C. zenkeri was not toxic in rats at 5000 mg/kg. It elicited a significant decrease in the blood glucose levels of the animals but did not affect the haematological and biochemical components of normal rats. It significantly inhibited ?-amylase and ?-glucosidase actions and gave comparable activity to glibenclamide (5 mg/kg) at all time points at 200 and 400 mg/kg. The extract comparably reduced blood glucose levels with glibenclamide at 100 and 200 mg/kg on days 10 and 14 in drug-induced diabetic rats and maintained the histoarchitecture of the liver, kidney, and pancreas at 250 and 500 mg/kg.
Conclusion: The study justified the ethnomedicinal use of C. zenkeri in diabetes management.

Research Article **Published Date:-2023-07-06 11:20:33**

Identification and Infrared Spectroscopic Study of Lapachol, ?-Lapachone and Hydroxy-hydrolapachol

Metabolites of Brazilian Cerrado species are considered an immense font of biologically active compounds The diversity of organic compounds generated by the secondary metabolism of various Cerrado plants draws attention especially because many of these compounds have the capacity to be structurally modified and, consequently, produce other very interesting derivatives for pharmacological purposes. Despite this, little is described in the literature about fast, easy, and accessible identification methods for any laboratory, such as infrared spectroscopy. In this sense, this work demonstrates the synthesis and elucidation through spectroscopic techniques of lapachol and its synthetic derivatives. Through quick and simple extractions or reactions, lapachol, ?-lapachone, and hydroxy-hydrolapachol were obtained with adequate yields. From this, the main FTIR absorptions of the mentioned naphthoquinones are described, which facilitates the identification of these metabolites with high biological potential. The present work contributes could become a simpler source of data for extraction, synthesis, and spectroscopic characterization by FTIR of the compounds.

Review Article **Published Date:-2023-05-09 16:00:52**

Cytotoxic Effects of Aminotriles with Bioactive Potential: An Integrative Review

Aminonitriles are pharmacological-interest bioactive due to their promising antimicrobial and antitumor activity. Since cytotoxicity tests are inherent to the new drug development process, this work aimed to verify reports in the scientific literature on the cytotoxic effects of aminonitriles. The method adopted was an integrative review of works published in the last 10 years in the PubMed, Embase, Web of Science, and Virtual Health Library (VHL) databases. Three articles that matched the selection and eligibility criteria were included in this review. A total of 33 aminonitriles were used in the cytotoxicity experiments, and of the nine molecules based on pyridine, two exerted moderate cytotoxic activity, of the twelve synthesized from benzimidazole, none showed cytotoxic activity, and of the twelve derived from renieramycins, all showed considerable cytotoxic activities. The studies used in this research evaluated the cytotoxic effects of aminonitriles with evident anticancer and antimicrobial activity. The importance of evaluating the cytotoxicity of aminonitriles is emphasized, as well as the need for investigative research that explores other evaluation methods in pre-clinical tests that may corroborate the existing findings, with a view to the development of therapies against emerging health problems.

Opinion **Published Date:-2023-04-13 16:39:03**

Expanding human-based predictive models capabilities using organs-on-chip: A standardized framework to transfer and co-culture human iPSCs into microfluidic devices

There is an urgent need for predictive preclinical models to enhance the success rate of clinical trial outcomes. One of the main reasons for drug attrition is the lack of translational models, methods using human cells are particularly in the spotlight of regulatory bodies as they offer an alternative to in vivo studies and have the potential to improve the translational of preclinical trials. Organs-on-Chips (OoCs) are sensible candidates to reduce the cost and the ethical burden of animal models while accelerating and de-risking drug development. The innovation of such systems is based on both the increased relevance of the cells used and the ability to build precise, yet physiologically relevant, complex architectures.
The use of microfluidic technologies with human induced pluripotent stem cells (hiPSCs) opens new routes to create relevant in vitro approaches as they will soon be able to reproduce clinical characteristics of donors or specific populations.
The adoption of OoC models by pharmaceutical industries, and in fine by regulatory agencies, still requires: (i) establishing standardized, reproducible, robust, and replicable cell culture protocols with specific validation and characterization criteria, (ii) evidence that the technology predicts human responses, thus allowing to contribute efficiently and reliably to clinical trials success of novel therapeutics, and (iii) evidence that the models refine and reduce animal testing without compromising with the quality and the pertinence of the data generated.

Research Article **Published Date:-2023-04-07 16:32:08**

Design and optimization of mRNAs encoding an Anti-TIGIT antibody with therapeutic potential for cancer in TIGIT-humanized BALB/c Mice

mRNA drugs are synthesized using cell-free systems without complex and stringent manufacturing processes, which makes their preparation simple, efficient, and economical. Over the past few years, mRNAs encoding antibodies have been one of the research frontiers of antibody drug development. In cancer immunotherapy, mRNAs encoding immune checkpoint antibodies may be advantageous regarding antibody persistence and durability of the anti-tumor immune response of patients. In our previous study, a candidate antibody—AET2010—targeting the novel immune checkpoint TIGIT was reported. Its anti-tumor activity was also investigated using adoptive transfer of NK-92MI cells in a xenograft mouse model, but the limitations of the model did not facilitate precise evaluation. In the present study, we further investigated the therapeutic potential of AET2010 for cancer in TIGIT-humanized BALB/c mice. Next, we explored the design, synthesis, and optimization of mRNAs encoding AET2010 and ultimately obtained a candidate mRNA (mRNA-BU) with favorable in vitro and in vivo expression levels of active AET2010. Particularly, lipid-nanoparticle-encapsulated mRNA-BU delivered to mice produced AET2010 with significantly higher peak concentration and expression duration than an equivalent dose of original AET2010. This study provides a sound basis for developing novel drugs targeting TIGIT.

Research Article **Published Date:-2023-03-03 11:44:35**

Hospital-acquired infections and antibiotic use in a geriatric hospital: a point prevalence study

Background: Healthcare-Associated Infections (HAIs) are the most common healthcare-associated complications, particularly in elderly patients. The aim of this study is to describe the prevalence of HAIs and associated risk factors in the IRCCS INRCA of Ancona.
Methods: A cross-sectional study has been carried out. Data has been collected in accordance with the European Centre for Disease Prevention and Control (ECDC) Point Prevalence Survey 2022-2023 (PPS3) protocol in the IRCCS INRCA of Ancona in November 2022.
Results: Out of the 128 patients included in our study, 75.0% were over 78 years old and 9.1% presented an active HAI on the day of the survey. The prevalence of HAIs varied based on the length of the hospital stay (OR 1.1, CI 95% 1.05 - 1.17, $p < 0.001$) and hospitalization > 7 days (OR 5.9, CI 95% 1.2 - 28.7, $p = 0.02$).
Conclusion: It is clear from our findings that HAIs are associated with advanced patient age, prolonged hospital stay, and use of medical devices, especially in those patients that, due to their clinical situation, are more vulnerable. Although some of these infections can easily be treated, it is important to develop effective infection control strategies thanks to antimicrobial stewardship programs.

Case Study **Published Date:-2023-02-14 16:45:19**

Knowledge of diabetic patients regarding diabetes management, diet, lifestyle modification and blood glucose monitoring

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Hyperglycemia due to abnormalities in insulin production, insulin action, or both characterizes the metabolic disorders known collectively as diabetes [1].