OPEN ACCESS PEER-REVIEWED CHAPTER

The Expanding Role of Pyridine Derivatives as Privileged Scaffolds in Cardiac Ionic Channels

Submitted: 18 June 2022 , Reviewed: 26 July 2022 , Published: 07 November 2022

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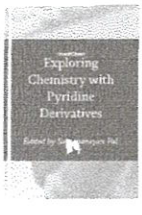
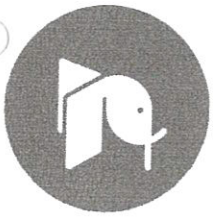
WRITTEN BY

Yasodha Krishna Janapati, Sunithasree Cheweti, Bojjibabu Chidipi, Medidi Srinivas and Sunil Junapudi



Abstract



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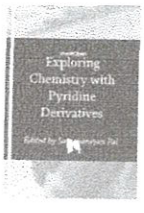

Abstract

Abstract No: P-022

Emerging applications of emulgel as a contemporary drug delivery system

N. Nikitha Varma[1], Shankaraiah Pulipaka[1,2*], Ashish Suttee [2], M. Ravi Kumar[1]

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Topical drug delivery is a convenient mode of drug delivery to treat localized infections. Topical medications are available in many dosage forms, such as creams, ointments, gels, pastes, and lotions. Both emulsions and gels are known for their benefits as topical preparations with few limitations. The literature on Emulgel formulations was searched in June 2021 from various scientific journal article. Finally, 47 articles were selected for review. Emulgel possesses many promising properties for dermatological use such as being greaseless, easily removable, easily spreadable, emollient, non-staining, longer shelf-life, transparent, having an elegant appearance and having less potential to cause serious side-effects. Many formulation scientists have started to develop Emulgel using various active pharmaceutical ingredients, especially which are hydrophobic in nature. We conclude that formulated Emulgels have shown excellent results in aspects such as appearance, rate of drug penetration to skin, rate of drug release and therapeutic response. This review article is mainly focused on formulation, ingredients, methods, and recent developments in Emulgel formulations.

Keywords: Emulgel; Gelling agent; Gel; Emulsion; Emulsifier.

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antistress activity was evaluated with the adult rats by swimming endurance test (SET), anoxia tolerance test (ATT), and immobilization stress test (IST). In EPM, Polyherbal extract (PHE 200 mg/kg; 400 mg/kg) significantly increased the percentage of time spent in open arms (180.33± 4.89 and 202.67± 3.68 seconds) in a dose dependent manner as compared to the control group (39.00±3.88 seconds), and is comparable with the standard diazepam (226.67±2.98 seconds). In RotaRod test, the polyherbal extract significantly diminished spontaneous activity (fall off time with control rats is 43.16±2.05 seconds and with polyherbal extract 400 mg/kg treated rats is 203.33±2.21 sec). In swimming endurance, polyherbal extract displayed a dose-dependent decrease in immobility time (71.66±3.45 sec) which is almost comparable to standard antistress medicine Mentat (62.66±3.13 sec). In anoxia tolerance test polyherbal extract increased the convulsion time which was again statistically significant. The levels of neurotransmitters serotonin, dopamine and norepinephrine were found to be increased with the polyherbal extract. The present study reveals that polyherbal extract possesses significant anxiolytic and anti-stress activity and, an herbal tea was prepared using polyherbal extract for the management of stress.

TRIPS/OP-05

DESIGN AND DOCKING STUDIES OF QUINOXALINES AS ANTI-INFLAMMATORY AGENTS

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COX-2 enzyme, plays a pivotal role in the inflammation and inhibiting its activity is essential to stop progression of inflammation. Quinoxaline scaffolds have a diverse array of biological activities and the present project focusses on exploring the quinoxaline scaffold for probable anti-inflammatory activity by structure based drug design (SBDD), insilico screening by docking studies on COX-2 protein (PDB ID: 3NT1). The quinoxaline derivative (S5) is found to possess better anti-inflammatory activity by virtual screening performed by mcule (1-click docking) docking software. The best docking poses and important H-bond interactions along with hydrophobic interactions were observed for compounds S1-S5. The studies were correlated with crystal ligand Naproxen (marketed drug) and the docking scores aswell as interactions were studied to find the best ligand fordrug development. The docking scores for Quinoxaline S5, Naproxen are found to be -8.5 and -8.3. The common H-bond interactions for S5 and naproxen was observed with amino acid residue Arg89.The study indicates S5, as a promising ligand for exploring anti-inflammatory activity by comparision of docking scores and interactions against Naproxen.

TRIPS/OP-06

INVIVO ANTI-INFLAMMATORY ACTIVITY OF HYDROALCOHOLIC EXTRACT OF LEAVES OF *TECTONA GRANDIS.L* BY CARRAGEENAN INDUCED PAW EDEMA IN RATS

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TRIPS/OP-07

NANO FORMULATION OF PLANT-BASED NATURAL PRODUCTS FOR TREATMENT OF TYPE 2 DIABETES MELLITUS.

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Type 2 diabetes (DM) is a severe illness that requires persisting medical treatment and patient self- management learning to prevent acute complications and to decrease the risk of long-term side effects. Due to population growth, ageing, urbanisation, increasing rates of obesity, and physical inactivity, there have been an increasing number of people with diabetes. Numerous herbal medications have been suggested for the treatment of diabetes in addition to the currently available therapeutic treatments. Due to their efficiency, lack of negative side effects, and affordable price, herbal medications are frequently given. To preserve quality and standardise

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The aim of the present study is to formulate a controlled release formulation of torsemide microspheres.
Introduction: Microspheres are characteristically free flowing powders, consisting of protein or synthetic polymers which are biodegradable in nature. Torsemide is a class of antihypertensive, it has a prolonged duration of action.
Microspheres of torsemide formulated by emulsion solvent evaporation method using different controlled release polymers.The drug incompatibility also checked by FTIR and DSC thermogram. The microspheres were evaluated for micrometric properties, entrapment efficiency and invitro drug release.
The microspheres found to be sperical in shape , entrapment efficiency found in the range with the limits.There is no evidence of drug excipients incompatibility.
In the present invention the polymers shown better control over the drug release, and decreasing the dosing frequency, the microspheres are better approach for controlled release dosage forms in novel drug delivery system and have a better bioavailability.

TRIPS/PP- 59

A PROSPECTIVE FOLLOWED BY RETROSPECTIVE OBSERVATIONAL STUDY ON DRUG UTILIZATIONEVALUATION, AND PREVALENCE OF HEART FAILURE AMONG ISCHEMIC HEART DISEASE

K.Visalakshi, G.Sandhyarani, Y.Rajesh, B.Harish
Chaitanya Deemed To be University-Pharmacy, Hanamkonda.

The study mainly focused to evaluate drug utilization using the WHO prescribing indicators in patients admitted to a tertiary care hospital (Ajara) at Hanamkonda and to know the prescribing pattern of drugs used in cardiovascular diseases followed method by a prospective descriptive observational study for six months.A total of 200 patient case sheets were reviewed & 100 patient case sheets were eligible for analysis. Majorly 51-59 years of age group patients are most affected. Out of 100 patients males and females were 58 and 42 respectively. Antiplatelets, Statins, ACE inhibitors, diuretics, and anti-anginal, ca++ channel blockers were most commonly prescribed, which certainly improve the treatment outcomes. In our study we observed that ARNI is given to the patient, who is having heart failure with reduced ejection fraction. The use of ACE inhibitors and statins was optimal similar to other studies. A pattern of prescription writing by using WHO prescribing indicators are concluded that an average number of drugs prescribed per prescription is 11.72, the percentage of drugs prescribed by generic name in a tertiary care hospital is zero, percentage of prescription with an antibiotic prescribed is 45, and percentage of prescription with an parental route prescribed is 99.10, percentage of drugs prescribed from the essential drug list is 53.84.

TRIPS/PP- 60

DEVELOPMENT AND IN VITRO CHARACTERIZATION OF BUDENOSIDE NANOPARTICLES

TUMMA HEMA DEVI, NARENDER REDDY KARRA
Chaitanya deemed to be University, Pharmacy, Kishanpura, Hanamkonda.

The aim of the present study is to formulate a controlled release formulation of budenoside nanoparticles
Nanoparticles are tiny materials having size range from 1-100 nm. Colon targeted drug delivery is having wide advantage for the treatment of crohn's disease. Budenosideis a corticosteroid and it is having prolonged drug action
Nanopaticles of Budenoside formulated by emulsion solvent evaporation method using different controlled release polymers. The drug incompatibility also checked by FTIR and DSC thermogram.
In the present invention the polymers shown better control over the drug release, and decreasing the dosing frequency, the nanoparticles are better approach for controlled release dosage forms in novel drug delivery system and have a better bioavailability.

TRIPS/PP- 61

FORMULATION AND EVALUATION OF CONTROLLED RELEASE TABLETS OF ANTIEPILEPTIC DRUG

Author: G.Bhaskar, V. Mallikarjun
Chaitanya Deemed to be university-Pharmacy,HNK,WGL.

Controlled drug delivery can be defined as delivery of the drug at a pre determined rate and or to a location according to the needs of the body and disease states for a definite time period. Controlled release drug administration means not only the prolongation of the duration of drug delivery, similar to the objective in sustained release and prolonged release, but the term also implies the predictability and reproducibility of drug release kinetics. Oral controlled release drug delivery system is one that provides continuous oral delivery of drugs at predictable and reproducible kinetics for a pre determined period throughout the course of GI transit.

TRIPS/PP- 62

STUDY ON PREVALENCE OF DIABETES MELLITUS IN TERTIARY CARE HOSPITALS.

Authors: Dr.Gaddesruthi**, Dr.p.shankaraiah*
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Diabetes mellitus (DM), commonly known as just diabetes, is a group of metabolic disorders characterized by a high blood sugar level over a prolonged period of time. If left untreated diabetes can cause many health complications. Diabetes is due to either the pancreas not producing enough insulin or the cells of the body not responding properly to the insulin Produced. Type- 1 diabetes is referred to as insulin-dependent diabetes (IDDM) which results from failure of pancreas to produce enough insulin due to loss of beta cells. Type-2 diabetes is referred to as non insulin dependent diabetes (NIDDM) this begins with insulin resistance a condition in which cells fails to respond to insulin properly. Gestational diabetes occurs when

approach is likely to revolutionize drug delivery systems to a new level, though need time to evolve.

TRIPS/OP-104

NANOTECHNOLOGY

R. Sahityamadhuri, V.Muralidharan
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The health sector is already massive and will continue to grow as baby-boomers reach older. With such a large consumer base and rising demand, pharmaceutical firms will develop new technologies in response to patient expectations. New delivery methods are required to get medications to the right targets as they become more complex and toxic. The pharmaceutical industries are using cutting-edge techniques and technologies as a result. Pharmaceutical nanotechnology is one of the most emerging technologies. The novel tools, chances, and breadth that pharmaceutical nanotechnology offers are anticipated to have a significant impact on a wide range of domains in disease diagnostics and therapies. As a specialised field for medication delivery, diagnostics, prognosis, and treatment of diseases using its nano- engineered tools, pharmaceutical nanotechnology is now well-established. When more established, traditional technologies may have reached their limits, pharmaceutical nanotechnology offers opportunity to build new, more advanced materials and medical equipment. In conclusion, recent advancements, the commercialization of numerous pharmaceutical nano-tools, and the increased attention of academics, governments, and businesses ensure that nano-based drug delivery systems have enormous potential and scope in the near future.

TRIPS/OP-105

MONKEY POX EPIDEMIOLOGY AND VACCINATION UNDER RESEARCH

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Monkey pox is an uncommon condition brought on by the monkey pox virus, which results in rash and flu-like symptoms, much like the more well-known small pox virus. It belongs to the poxviridae family's orthopoxviral genus. It can be passed from an infected person or animal to a human through intimate touch, as can the virus-contaminated objects or people. They can help protect against sickness when the vaccination is correctly provided before or soon after exposure. There are two vaccines, the ACAM2000 and the JYNNEOS, which should be administered within 4 days of exposure but may be given up to 14 days later. The antiviral tecovirimat is used as a therapy. An antiviral medication created to treat small pox has also been approved to treat monkey pox. While the monkey pox outbreak is unique, it is still manageable, and possible vaccinations are currently undergoing preclinical testing as the disease spreads across international borders. To fully understand the condition, researchers still need to do extensive research.

TRIPS/OP-106

CONCEPT OF UNIVERSAL BLOOD CREATION

Pasam Sairam
Samskruti College of Pharmacy

Everyday 12000 people in India die due to sheer lack of donating blood, maximum percentage of people nowadays are suffering from diabetes, high blood pressure and obesity so they are not grouped under Donor category so we should find an alternative thing to overcome this problem, what if we can create universal Donor blood from other blood groups, yes we can do that this is modern ongoing research in which scientists use enzymes extracted from different microorganisms to Cleve the unwanted sugar moiety from A-negative and B-negative blood group to convert them in to O-negative which is universal danar, the main mate of creating universal blood is it can be transfused to anyone without having any complications.

TRIPS/OP-107

ARTIFICIAL INTELLIGENCE IN PHARMACEUTICAL INDUSTRY AND HEALTH CARE

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What is AI?Artificial intelligence is the stimulation of human intelligence processes by machines. AI is used to make drugs more affordable and improve the probability of FDA approval. Apart from pharmaceutical industry the AI used in health care system is to enhance preventive care and quality of life, produce more accurate diagnosis, treatment plans and lead to better patient outcomes overall.AI models become especially useful for under developed economics that lack the medical infrastructure and financial framework to deal with an epidemic outbreak. AI can also predict and track the spread off infectious diseases by analysing data from government, healthcare and other sources. AI can be used effectively in different parts of drug discovery, including drug design, chemical synthesis, drug screening, poly pharmacology and drug repurposing. AI can replace the time consuming conventional, manufacturing techniques. So AI can achieve fast and accurate diagnosis. It will be very helpful to reduce the human errors as well as the cost of enhancement.

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*Tectona grandis.*L commonly known as Teak tree, belongs to the family Verbenaceae. Inflammation is a primary physiological defense mechanism that helps the body to protect itself from infection, toxic chemicals, or other noxious stimuli. The Hydroalcoholic leaf extract of *Tectona grandis.*L was evaluated for its anti-inflammatory activity, *in-vivo* methods. Present study aimed to evaluate the *in-vivo* anti-inflammatory activity of Hydroalcoholic extract of *Tectona grandis.*L against carrageenan-induced paw edema test at doses (100 mg/kg body weight) of the Hydroalcoholic extract. At the dose of 100 mg/kg body weight, the extract showed significant anti-inflammatory activity in the carrageenan-induced edema test models in rats showing 25.89% reduction in the paw volume comparable ($P<0.05$) to that produced by the standard drug Diclofenac (10mg/kg body weight) 45.54% at 5 hours respectively. The results of this study explicate justification of the use of this plant in the treatment of inflammatory disease conditions.

TRIPS/OP-07

NANO FORMULATION OF PLANT-BASED NATURAL PRODUCTS FOR TREATMENT OF TYPE 2 DIABETES MELLITUS.

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Type 2 diabetes (DM) is a severe illness that requires persisting medical treatment and patient self- management learning to prevent acute complications and to decrease the risk of long-term side effects. Due to population growth, ageing, urbanisation, increasing rates of obesity, and physical inactivity, there have been an increasing number of people with diabetes. Numerous herbal medications have been suggested for the treatment of diabetes in addition to the currently available therapeutic treatments. Due to their efficiency, lack of negative side effects, and affordable price, herbal medications are frequently given. To preserve quality and standardise

viscosity, swelling capacity,paste clarity and stability, freeze thaw stability. Preformulation studies like micrometry, sieve analysis, flow properties, moisture content were performed as per IP. Paracetamol tablets were prepared by wet granulation methodusing*Ipomoea batatas* starch as a binder and disintegrant. These tablets were evaluated for weight variation, hardness, friability, disintergration and dissolution as per IP. The totalresults were compared with *Zeamays*starch and the results suggest that the *Ipomoea batatas* starch complies with standards of *Zea mays* starch. The study concludes that *Ipomoea batatas* starch can be used as an alternative excipient as a binder and/or disintegrant to commercial starches.

TRIPS/PP- 86

TINY TREASURE – THE FUTURE OF NANO GOLD (GOLD NANOPARTICLES)

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Majority of the gold comes out of the ground that used in jewelry and gold bars. We have been using gold in this way from thousands of years. A breakthrough with tiny piece of gold in nanotechnology that gold nanoparticles absorb incident photons and convert them to heat to destroy cancer (tumor) cells). Due to their unique optical properties as a result of LSPR, this ensures effective PTT at relatively low radiation energy. Different sizes of gold nanoparticles observe different wavelengths. By using this property it should be possible to make solar cells can observe more sunlight. This is one way to enhance the efficiency of solar cells in order to advance solar energy as a viable method to power modern society. Gold nanoparticles are popular due to their stability and broad LSPR (localized Plasmon reasonance) effects (1, 2, 3).GNP can be coated with different materials. Because of their versatile surface chemistry, they have a wide range of applications in different fields such as catalysis, drug delivery, therapeutic agents and sensory probes. Coating the surface of nanoparticles with polyethylene glycol (PEG), or "PEGylation", is a commonly used approach for improving the efficiency of drug and gene delivery to target cells and tissues (4).At the very small scaleGNP clusters demonstrated the interesting catalytic properties (catalytic converting phenomenon, this activity helps to purify water by braking down organic contaminants (5, 6). In the future, we would have been drinking water cleaned by gold, to make better breathing apparatus to fire fighters and taking gold medicine.

TRIPS/PP- 87

TRENDING ROLE OF ARTIFICIAL INTELLIGENCE FOR THE DEVELOPMENT OF VARIOUS ASPECTS IN PHARMACEUTICAL INDUSTRY

Introduction: Artificial intelligence (AI) means machine learning and behaving like humans which ultimately facilitates works of humans.Over the last several years, the use of artificial intelligence (AI) in the pharma and biomedical industry has gone from science fiction to science fact. Increasingly, pharma and biotech companies are adopting more efficient, automated processes that incorporate data-driven decisions and use predictive analytics tools. The next evolution of this approach to advanced data analytics incorporates artificial intelligence and machine learning. The main aim of AI technology is to find hidden patterns and gather insights from vast amounts of data in ways no human could.

Types of artificial intelligence:

1.Data science algorithms: This AI uses multivariate data analytics supported by past experiential evidence. It might combine, for example, population-based treatment outcomes with individual patient's clinical data and medical history to create treatment alternatives and recommend drug combinations

2.Machine learning: ML relies on so-called neural networks that mimic the way a human brain works but can potentially reach decisions much faster and more accurately. Machine learning uses data-driven algorithms that enable software applications to become highly accurate in predicting outcomes without any need for explicit programming

3.Deep Learning: DL also relies on neural networks but includes a combination of separate layers of calculations along with combined signals. Deep learning has great potential for diagnostic uses, being able to accurately analyze images (such photos of skin conditions or radiology scans) in combination with pathology data and historical treatment outcomes.

AI can significantly improve the value proposition of pharma companies by driving innovation and the creation of new business models.

AI in drug discovery:The central goal of drug discovery research is to identify medicines to treat a particular disease. there are several drugs, chemically synthesized molecules that can specifically bind to a target molecule. To find these molecules, researchers carry out large screens of molecules to identify one with the potential to become a drug. Role of Artificial intelligence depicted in below:

Conclusion: The advancement of AI, along with its remarkable tools, continuously aims to reduce challenges faced by pharmaceutical companies impacting the drug development process along with the overall lifecycle of the product, with the inclusion of AI in the manufacturing of pharmaceutical products will improve the quality of products with desired dose and release parameters according to individual patient need.

TRIPS/PP- 88

PRONIOSOME DEVELOPMENT AND TESTING TO IMPROVE TRANSDERMAL ADMINISTRATION OF LULICONAZOLE

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The study aimed to prepare pronisomes of luliconazole an anti-fungal agent for enhancing the transdermal/topical delivery.In order to examine how formulation variables affected entrapment efficiency (EE percent) and vesicle size, pronisomes were created using a coacervation phase separation approach. The most advantageous formula is chosen

TRIPS/PP-01

FORMULATION AND EVALUATION OF HERBAL SOAP FORANTIMIRCOBIAL ACTIVITY

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TRIPS/PP- 02

A REVIEW ON APPROACHES ON GOLD NANOPARTICLES ON CANCER THERAPY

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TRIPS/PP- 03

EVALUATION OF IN-VITRO CYTOTOXIC POTENTIAL OF FICUS BENGHALENSIS TENDER PROP ROOTS EXTRACT

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TRIPS/PP- 04

ANTI-ULCER ACTIVITY OF ETHANOLIC EXTACT OF *LEUCAS URTICAEFOLIA* IN PEPTIC ULCER MODEL IN ALBINO RATS

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TRIPS/PP-01

FORMULATION AND EVALUATION OF HERBAL SOAP FORANTIMIRCOBIAL ACTIVITY

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TRIPS/PP-01

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Gold nanoparticles which are in the size range of 10–100 nm have optical, magnetic,chemical and structural properties that makes them novel from bulk solids, with potential applications in medicine. By employing gold nanoparticles as drug carriers, this carrier allows more of therapy whether it is a drug gene or antibody to reach the tumor more efficiently. These NPs offer several advantages such as superior biocompatibility, opto electronic features, huge surface to volume ratio and lower toxicity in comparison to other NPs, there by making them excellent drug carriers. It is well known that the anticancer, antiviral, antiallergic, antioxidant and anti-inflammatory capabilities of Au-NPs containing phytochemicals have been widely utilized. The plant based Au-NPs, have been utilized in the treatment of various kinds of cancers such as breast cancer cells MCF-7, Hep2 and A549 cells. AuNPs have wide range of other applications in imaging, therapy and diagnostic systems. For example, the attenuation of X-rays by gold nanoparticles for radiotherapy. Nanoparticles can be functionalized with proteins, peptides, vaccines, drugs, genes, or biomolecules, according to the research requirement. The toxicity of the nanoparticle core and its capping ligands must be distinguished, even though it has been claimed that goldnanoparticles are naturally non-toxic. Few toxicities may be specific to certain ligands.

TRIPS/PP- 03

EVALUATION OF IN-VITRO CYTOTOXIC POTENTIAL OF FICUS BENGHALENSIS TENDER PROP ROOTS EXTRACT

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Tumor cell lines will continue to form an indispensible link in the steps from drug design to the selectionof clinical candidates for cancer therapeutics. The current study is one such effort to screen for invitrocytotoxic potential of methanolic prop root extract of Ficusbenghalensis against human colonadenocarcinoma (Colo 320) cell lines by Tryphan blue assay and MTT assay following a 24hoursexposure. The present work demonstrated a reduction in the count of total viable cell by Tryphanblueassay. However, we have reported anti proliferative potential of methanolic extract of Ficusbenghalensisoncolo 320 cell lines with an IC 50 of 87.03µg/ml. Extensive studies need to be employed in near future toexplore the anti cancer potential of various solvent extracts of different parts of the plant to evolve amolecule of interest.

TRIPS/PP- 04

ANTI-ULCER ACTIVITY OF ETHANOLIC EXTACT OF *LEUCAS URTICAEFOLIA* IN PEPTIC ULCER MODEL IN ALBINO RATS

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Peptic ulcer indicates an interruption in the intestinal mucosa as a result of action of acids and pepsin .Infection due to helicobacter pylori is one of the common cause of peptic ulcer .Peptic ulcer occurs most commonly in patient above 30 to 50 age. Leucas urticaefolia is traditionally used in the treatment of fever, cold ,cough ,and swelling .The present study of Ethanolic extract of leucasurticaefolia were carried out in peptic ulcer models of albino rats and compared with the standard drug ranitidine (10mg/kg). It was found that the ethanolic extract of Leucas urticaefolia suppress gastric damage induced by aggressive factors. Ulcer index and acidity of the gastric content of treated animals are compared with controls. ID_{50} values were calculated by probit analysis. Antiulcer activity is due to the presence of Phytochemicals like flavonoids, glycosides, tannins, terpenoids.

TRIPS/PP- 05

EVALUATION OF MEMORY ENHANCING EFFECT OF *SESBANIA CANNABINA* LEAF EXTRACT IN

Geethanjali College of Pharmacy ★ Cheeryal (V), Keesara (M), Medchal (D), T.S. 501 301. ★ IQAC

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TRIPS/OP-108

COVID-19 MEDICATIONS AND ITS POST EFFECTS

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Till date, over 163 million confirmed cases of COVID-19 and over 3.3 million deaths from COVID-19 have been reported by the World Health Organization (WHO).

However, there is still no specific treatment for the disease. Some empirical and supportive medications have been used thus far, including antivirals, antipyretics, antibiotics, and corticosteroids. Corticosteroids are anti-inflammatory and immunosuppressive medications that are used to treat several diseases. These agents can produce undesirable and occasionally severe systemic adverse effects. Although the occurrence and severity of most adverse effects are related to the dose and duration of the corticosteroid therapy, avascular necrosis is not directly associated with this dose and duration, and may occur without osteoporosis.The basis of the use of such corticosteroid drugs in patients suffering from COVID-19 is the immunosuppressant nature of the drugs Corticosteroids are not recommended for routine use in COVID-19 patients by the WHO. But it is widely used by many people for treating this condition. Severe COVID-19 patients are at risk of avascular necrosis due to corticosteroid therapy Avascular necrosis is a progressive and incapacitating condition. The causes of avascular necrosis are categorized into traumatic and non-traumatic. The majority of non- traumatic cases are associated with the use of corticosteroids. Popular corticosteroid drugs and therapies that are being prescribed in patients suffering from COVID-19 are dexamethasone, methylprednisolone and or hydrocortisone with IV (intravenous) and/or oral administration. The use of such high doses of corticosteroids have shown very positive results and have been life saving in many cases.

CLINICAL RESEARCH IN TYPE 1 DIABETES

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The clinical research in type 1 Diabetes is showing a promising and tremendous outcome in the healthcare system. These stem cell transplants could be highly efficacious in Type 1 Diabetes.

The artificial pancreas is a bridge to a cure for this vulnerable disease. Initially pancreas were transplanted from a cadaver then shifted to pluripotent stem cells for better outcomes.
The stem cells were implanted subcutaneously for a period of time then they tried to infuse them in the hepatic portal vein as it is highly vascularised. Recently, with the cell pouch transplant different kind of risks can be avoided. This is for the people where risks for Type 1 Diabetes outweigh immune suppression. It is carried out so that people with severe hypoglycaemia and various complications accompanying Diabetes can have a hope of cure.
Recently, a documentary "THE HUMAN TRIAL" have shown the efforts of scientists and also depicted the plight of patients suffering from Diabetes Type 1 and the groundbreaking clinical trial – only the sixth-ever embryonic stem cell trial in the world. The immune suppression is the only thing which should be worked on in the coming years. Another set of clinical trials are all set to start from 2024 .Hope for the best.

TRIPS/OP-110

BIOREDUCTION AND SYNTHESIS OF SILVER NANOPARTICLES USING *PSEUDOMONAS AERUGINOSA* EXTRACT

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Bio reduction as a novel nano particle synthesizing technology attracts increasing attention. Biological synthesis of nanoparticles is an inexpensive, pollution free, and eco-friendly method. The present work was undertaken to investigate the use of *Pseudomonas aeruginosa* extract for the synthesis of silver nanoparticles. In the present investigation, biological extract of *Pseudomonas aeruginosa* was used for the biosynthesis of silver nanoparticles. Biosynthesis of silver Nano particles (AgNPs) from $AgNO_3$ in the presence of the extracts of *Pseudomonas aeruginosa* was observed by the resultant reddish brown colour. The colour change arising from the excitation of surface Plasmon vibration. Biogenic silver nanoparticles were characterized by using ultraviolet-visible (UV–Vis) spectrophotometry, Fourier transform Infrared spectrometry (FT-IR), Scanning electron microscopy (SEM). The UV-Vis absorption peaks of silver nanoparticles were observed at 436 nm for biological extract of *Pseudomonas aeruginosa*. Fourier transform infrared spectroscopy revealed the possible biomolecules involved in bio reduction, capping and stabilization of nanoparticles. The SEM images revealed that the silver nanoparticles are spherical in shape and mono dispersed. The size of silver nanoparticles ranges from 40 to 100 nm. The biosynthesized silver nano particles using*Pseudomonas aeruginosa* extract tested for the anti-bacterial activity on bacterial species viz., *Bacillus subtilis, Proteusvulgaris* andEscherichia*coli.* The zone of inhibition of AgNPs against all the tested clinical bacteria such as Bacillus subtilis, Proteus vulgaris and Escherichia coli showed the range between 21.0 and 25.0 mm. whereas standard Streptomycin 10 µg /disc showed highest zone of inhibition of 23.0 mm diameter.
Among the three different pathogens tested, *Bacillus subtilis* exhibited high level of sensitivity to AgNPs with 25.0

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DNA PROGRAMMING IN DRUG DISCOVERY AND DRUG DEVELOPMENT

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Introduction

Biological cells possess important characteristics, such as energy efficiency, self reproduction, and miniature scale that make them attractive for much application. Examples include embedded intelligence in smart medicine, materials, sensing and nanoscale fabrication. Huge numbers of programmed cells executing in parallel will enable computation. Living cells are the ultimate programming substrate. The last 15 years has seen the design of simple "genetic circuits" that are encoded in DNA and perform their function in the cellular milieu. An electronic circuit-like computation is produced by a gene circuit by harnessing biological interactions. For example, a simple NOT gate can be constructed by using a gene that turns off a second gene. When the first gene is on, the second is off, and vice versa. Using more complex strategies, a number of circuits have been built that function like logic gates, oscillators, and memory. The next phase of synthetic biology will be to understand how to connect many such circuits to build programs. DNA defines what enzymes, proteins, and molecules are made inside of a cell, and that DNA code can be programmed to grow new kinds of proteins and molecules that can be used in beauty.

Leonard Adleman is an American computer scientist. One of his contributions to the development of the RSA encryption algorithm earned him the 2002 Turing Award, also known as the Nobel Prize in Computer Science. He also founded the field of DNA computing, which is another accomplishment. worked on DNA-based computation and the digital nature of DNA's function in processing information. Von Neumann pioneered game theory and, along with Alan Turing and Claude Shannon, was one of the conceptual inventors of the stored-program digital computer. The polymerase chain reaction (PCR), which allows for the rapid and massive duplication of a little amount of DNA, was developed by Kary Mullis in 1985. The two strands of the DNA molecule are split apart by heat, and the DNA building blocks that have been added are attached to each strand.

The significance of this programming did not lie in the sophistication of the problem, but in the fact that it showed that strands of DNA, mixed together in a vial, could be controlled such that their biochemistry could be viewed as a computation. Parallel power of DNA computing: An example of the Hamilton path problem. All physical systems are capable of doing computations; it is up to the investigator to make those computations useful. Since 1994, DNA computation has made significant advancements, and programmable computers free of moving parts and using just DNA molecules have been created.

Future Applications: Using this method, scientists intend to work on a number of different applications, including yeast that can be engineered to shut off when it is producing too many toxic byproducts in a fermentation reactor and bacteria that can live on plant roots and produce insecticide if they detect an attack on the plant. Bacteria that can be swallowed to help with lactose digestion is also one of the applications they plan to work on. One of the new circuits, which have seven logic gates and over 12,000 base pairs of DNA, is the biggest biological circuit yet constructed. The quickness of this method is an additional benefit. Until now, "it would take years to build these types of circuits. Now you just hit the button and immediately get a DNA sequence to test"

Cellular Gate: A fundamental chemical process in the cell is the production of proteins from genes encoded in the DNA. The cell performs important regulatory activities through DNA-binding proteins that repress the production of particular protein. Proposes using this regulatory mechanism to implement digital logic inverters. This concept can be extended to construct complex digital logic, making the cell a self-contained computational unit.

The Microbial Colony Language is a programming paradigm simple enough for biological cells, yet expressive enough to implement interesting applications. The language makes use of programming techniques that are dependably executed by biological cells. The programme for a single cell consists of chemical diffusion with a limited communication range, boolean state, boolean operations, and event-triggered rules. In computer science, a Boolean is a logical data type that can have only the values true or false. For example, in JavaScript, Boolean conditionals are often used to decide which sections of code to execute (such as in if statements) or repeat (such as in for loops).

Global Trend: The biological advancement is now coming to the forefront of beauty, bringing innovations and opportunities through its ability to program code to grow new kinds of beauty ingredients. Biology operates on a sort of code, which is one of its most amazing features. Biopharmaceutical firms like Biocon Limited and GSK have already started looking for Synthetic Biology-based remedies in India to quickly and cheaply produce innovative medicines. The Department of Biotechnology (DBT), India has recently started a Synthetic Biology training program for postgraduates, Ph.D. Students, Postdocs, and faculty members in 2018.

Conclusion

Scientists have implemented language-level and protein-level simulators that model cell colonies executing microbial programs. Simulations demonstrate that these algorithms are capable of producing large-scale pattern formation and coordinated group activity. The effort to develop programmable biological systems is merely a first step in extending the role and nature of computer beyond conventional applications.

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FACULTY ARTICLES

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

SIMULTANEOUS ESTIMATION OF THE NETUPITANT AND PALONOSETRON IN TABLET DOSAGE FORM BY RP-HPLC

D ASLESHA *[1], Dr. M SRINIVAS
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A simple, Accurate, precise method was developed for the simultaneous estimation of the Netupitant and Palonosetron in Tablet dosage form. Chromatogram was run through Thermo Kromasil (250 mm 4.6 mm, 5µ). Mobile phase containing Buffer and Acetonitrie in the ratio of 65:35 was pumped through column at a flow rate of 1ml/min. Buffer used in this method was 0.01N ammonium acetate buffer. Temperature was maintained at 30°C. Optimized wavelength for Netupitant and Palonosetron was 248nm. Retention time of Netupitant and Palonosetron were found to be 2.43min and 3.71min. %RSD of the Netupitant and Palonosetron were and found to be 0.49 and 0.99 respectively. % Recover was Obtained as 100.19% and 100.55% for Netupitant and Palonosetron respectively. LOD, LOQ values are obtained from regression equations of Netupitant and Palonosetron were 0.06 ppm, 0.01 ppm and 0.18 ppm, 0.03 ppm respectively. Regression equation of Netupitant is y = 7345x + 335.6, and of Palonosetron is y = 64794x + 359.5.

Key Words: Netupitant, Palonosetron, RP-HPLC

CURRENT DEVELOPMENTS OF BIOANALYTICAL SAMPLE PREPARATION TECHNIQUES IN PHARMACEUTICALS

Dr. N.ANJANEYULU
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Department of Ph.Analysis.

The development of bioanalytical sample preparation techniques has become challenging over the decades because of the need to constantly accomplish higher sensitivity, accuracy, and speed of analysis in complex biofluids (e.g., blood, serum, plasma, saliva, feces, and urine). In addition, because of the minute concentration of analytes, samples are often required to be pre concentrated prior to analysis. However, this often increases the levels of interfering components, such as small molecules (e.g., drugs, salts, and metabolites) or large molecules (e.g., nucleic acids, proteins, and peptides). Consequently, highly specific sample clean-up actions are necessary for accurate and selective Bioanalysis for regulatory purpose. Subsequently, these studies support regulatory filings such as investigational new drug application, new drug application, and abbreviated new drug application. Therefore, bioanalytical sample preparation techniques need to be thoroughly validated before they can be

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employed in actual sample analysis. In most biological samples, carbohydrates, proteins, lipids, salts, and other endogenous components are present in large amounts. They can hamper the preferred trace analytes via matrix effects, where their elimination is the primary purpose of sample preparation prior to analysis. In addition, more bioanalytical studies have been reported on liquid-liquid extraction (LLE) and solid-phase extraction (SPE). Recently, dispersive liquid-liquid microextraction (DLLME) and electro membrane extraction (EME) have become more acceptable due to their advantages in clinical investigations. Therefore, continuous improvement of novel sample preparation and microfluidics-based techniques is necessary to accelerate bioanalytical research.

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF BROMELAIN AND RUTOSIDE TRIHYDRATE IN ITS BULK AND PHARMACEUTICAL DOSAGE FORM BY RP - HPLC

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A simple accurate and precise method was developed for the simultaneous estimation of Bromelain and Rutoside trihydrate in its bulk dosage form by RP-HPLC. These both Combination drug has anti-inflammatory properties and hence is used for treatment in edema and inflammation. Mobile phase with potassium di hydrogen phosphate methanol: phosphate Buffer 70:30 was run through standard discovery, Inertsil C18 column (4.6x150mm, 5µm) Column at a rate of 1ml/min at 25°C and optimized wavelength was 260nm.Retention time. For Bromelain and Rutoside trihydrate was 2.669min and 3.855min, %RSD of 0.2% and %recovery of 0.6% were obtained for Bromelain and Rutoside trihydrate respectively.LOD and LOQ values obtained for Bromelain and RutosideTrihydrate. All parameters of validation are found to be within the range and method was precise and reliable which is also Economical that can be apt to adopt in regular quality control test in Industries.

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employed in actual sample analysis. In most biological samples, carbohydrates, proteins, lipids, salts, and other endogenous components are present in large amounts. They can hamper the preferred trace analytes via matrix effects, where their elimination is the primary purpose of sample preparation prior to analysis. In addition, more bioanalytical studies have been reported on liquid-liquid extraction (LLE) and solid-phase extraction (SPE). Recently, dispersive liquid-liquid microextraction (DLLME) and electro membrane extraction (EME) have become more acceptable due to their advantages in clinical investigations. Therefore, continuous improvement of novel sample preparation and microfluidics-based techniques is necessary to accelerate bioanalytical research.

ANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR THE SIMULTANEOUS ESTIMATION OF BROMELAIN AND RUTOSIDE TRIHYDRATE IN ITS BULK AND PHARMACEUTICAL DOSAGE FORM BY RP - HPLC

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A simple accurate and precise method was developed for the simultaneous estimation of Bromelain and Rutoside trihydrate in its bulk dosage form by RP-HPLC. These both Combination drug has anti inflammatory properties and hence is used for treatment in edema and inflammation. Mobile phase with potassium di hydrogen phosphate methanol: phosphate Buffer 70:30 was run through standard discovery, Inertsil C18 column (4.6x150mm, 5µm) Column at a rate of 1ml/min at 25°C and optimized wavelength was 260nm.Retention time. For Bromelain and Rutoside trihydrate was 2.669min and 3.855min, %RSD of 0.2% and %recovery of 0.6% were obtained for Bromelain and Rutoside trihydrate respectively.LOD and LOQ values obtained for Bromelain and RutosideTrihydrate. All parameters of validation are found to be within the range and method was precise and reliable which is also Economical that can be apt to adopt in regular quality control test in Industries.

KEYWORDS: Bromelain and Rutoside Trihydrate, RP – HPLC

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DEPARTMENT OF PHARMACEUTICS

CUBOSOMES IN CANCER THERAPY

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The most significant contributors to cancer-related death are late diagnosis and interventions. Cubosomes are liquid-crystalline nanostructured particles with specialised amphiphilic lipid compositions. They are biocompatible, adaptive drug carriers that can deliver drugs through a variety of routes of administration because of their capacity to encapsulate lipophilic, hydrophilic, and amphiphilic molecules inside their structure. Several research studies have been carried out to evaluate the potential use of cubosomes in a range of disease models, including hepatoprotection, skin infections, ocular applications, Alzheimer's disease, and ENT infections.

Cubosomes have been tested in numerous preclinical trials to treat cancer and for theranostic purposes. Amphiphilic lipids, stabilisers, and therapeutic molecules make up cubosomes, which self-assemble to form the lipid bicontinuous cubic phase. Amphiphilic lipids like monoolein and phytantriol (PHYT) are used in this process. Stabilizers are an essential ingredient in the production of cubosomes. They function by encasing the cubosome structure in a protective shell, preventing aggregation, and enhancing dispersion stability by avoiding amalgamation with the bulk cubic phase. The most often used stabilisers in the production of cubosomes are block copolymers. Triblock copolymer F127 (Poloxamer 407) has long been regarded as the benchmark for non-lamellar lyotropic liquid crystal (LLC) lipid nanoparticles.

The ability of cubosomes to hold hydrophilic, hydrophobic, and amphiphilic medicinal molecules is one of their main advantages as nanoparticles. Moreover, cubosomes have demonstrated significant advantages in the administration of drugs via intravenous and intranasal methods. Cubosomes might help move colloidal materials without clogging capillaries. Moreover, they may reduce drug plasma-protein interactions, improving the stability and bioavailability of drug molecules.

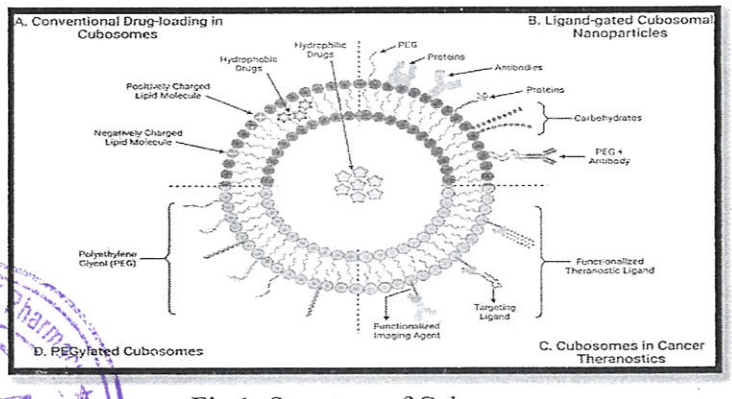

Fig 1: Structure of Cubosomes

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The application of cubosomes nanoparticles has experimented with several times in colorectal cancer. Saber and colleagues had explored reducing the toxicity of Cisplatin, a major drug used in colorectal chemotherapy. 5-Fluorouracil (5FU) is a potent anticancer drug that has been used to treat solid tumours, particularly liver cancer.

The bio distribution of 5FU in the rat liver was substantially greater in cubosome formulations than in 5FU alone. Saber and colleagues came up with a cubosome formulation to look into the possibility of better bioavailability and the likely mechanism of albendazole's anticancer action. Patil and colleagues created bedaquiline-loaded cubosomes that were specifically designed to target non–small-cell lung cancer (NSCLC). Aleandri and colleagues developed a cubosome formulation of paclitaxel to decrease toxicity and improve the site-of-action specificity. Cubosomes have been used to circumvent the difficulties associated with chemotherapy in skin cancer. Thus, Zhai and colleagues chose paclitaxel as the active ingredient in cubosome formulations, to evaluate human epidermal carcinoma A431 and an animal skin cancer xenograft model.

As a drug delivery system, cubosomes have been demonstrated to be effective in a variety of dosage forms, including oral, topical, ocular, and parenteral administration. In the future, cubosome-mediated targeted nanoparticle cancer-drug carriers have the potential to revolutionize cancer therapy by improving the quality of life of cancer patients.

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NANOTECHNOLOGY APPROACHES TO SYSTEMIC LYPUS ERYTHEMATUS

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ABSTRACT:

Systemic lupus erythematous is a autoimmune disease which is a chronic multisystemic heterogenous disease caused by self-destruction of system by production of autoantibodies due to self-antigens. Novel therapeutic approaches are necessary to treat SLE despite tremendous advancements in therapeutic alternatives and greater understanding of the pathophysiology. An innovative approach that may significantly improve the treatment of serious diseases is immune system modulation based on nanotechnology. Therapeutic delivery may be enhanced by

DEPARTMENT OF PHARMACY PRACTICE

POLYCYSTIC OVARIAN SYNDROME: A KAP STUDY AMONG FEMALE STUDENTS IN A PRIVATE COLLEGE, TELANGANA STATE, INDIA

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BACKGROUND: Polycystic ovarian syndrome (PCOS) is a chronic health condition which haunts the normal biological cycle of young women and is largely neglected. The prevention and management of this condition heavily depend on having sufficient knowledge, attitude and practice (KAP). The main objective of this study was to estimate the KAP levels among engineering and pharmacy students of a private college in Telangana state, India.

METHODS: A cross sectional study was conducted among female students (N=418) aged between 18 and 26 years using well structured, and validated PCOS questionnaire to test the KAP levels among the study participants. Descriptive statistics was used to quantify the KAP scores and $p < .05$ was considered significant.

RESULTS: Among the 418 participants, the total knowledge score was found to be poor [76% with a Mdn.(IQR) score of 8(7)], and the total attitude score was found be neutral [59% with a Mdn.(IQR) score of 42(8)], whereas the total practice scores was found to be poor [45.9% with a Mdn.(IQR) score of 6(4)]. About 82% of the participants had risk factors of family history or diabetes. The study reported a moderate total KAP scores [51%, 55(11), $p < .001$. Moreover, the engineering students were found to have a lower KAP scores when compared to pharmacy students ($p < .001$).

CONCLUSION: Most respondents had a limited understanding about the complications, diagnosis, and risk factors related to the disorder. This study made it evident that heath education and awareness regarding PCOS among students need to be improved, to prevent delay in diagnosis and therapy.

KEYWORDS: Polycystic ovarian syndrome, knowledge, attitude, practice, pharmacy and engineering students.

DRUG RELATED PROBLEMS IDENTIFIED BY CLINICAL PHARMACIST IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA: AN OBSERVATIONAL STUDY

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Introduction: Drug related problems (DRP) negatively impact the quality of life of the patient and increase the burden of illnesses in terms of economic and social factors. In order to reduce medication errors, adverse reactions, and length of stay, pharmacy services must identify and classify potential DRPs. The goals of this study are thus to identify DRPs by reviewing medical orders (MOs) given to each patient, and to analyses DRPs using PCNE classification. Materials and

Methods: This study was conducted in eight medical wards in a multispeciality hospital using prospective observational cohort research. Pharmaceutical Care Network Europe's version 9.1 classification system (version 9.1) was used to identify and classify potential DRPs based on the

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patients' medical orders. Results: A total of 394 patients were admitted to the hospital wards for treatment of a variety of clinical conditions during the study period. From the total cohort, 190 (48%) medical orders were detected with DRP. A total of 324 DRPs were detected and classified among 190 patients using PCNE 9.1. Among them, drug-drug interactions (16.3%) account for the highest prevalence followed by incomplete drug treatment (15.4%), documentation error (12.3%), monitoring errors (13.8%).

Conclusion: The current study emphasizes the importance of reporting DRPs to patients in order to Provide better health care and advocates the significance of clinical pharmacists in pharmaceutical patient care.

Keywords: Drug related problems, Medication errors, PCNE classification, Clinical pharmacists, Pharmaceutical patient care.

DEPARTMENT OF PHARMACEUTICAL REGULATORY AFFAIRS

A REVIEW ON PATENT SYSTEM IN INDIA AND G20 COUNTRIES

K. MOUNIKA, Dr. Y. SHIVA KUMAR

Department of Ph. Regulatory Affairs

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Patents are standards that are used to grow innovative knowledge because they reflect the generation of that knowledge. Previous research focuses primarily on examining the benefits of specific rights, but now about standards for short-term economic development, G20 country studies. The long-term effects of formal standards and patents on economic growth in a panel of G 20 nations are being examined for the first time in this research. In order to promote technical and economic growth, the patent system ensures that knowledge on new inventions is made available for eventual public use. With the codification of their standards and the integration of three types of patents, inventions may be qualified for certain types of patent protection. The G20 countries' codified patent rules contain procedural provisions for the patent filing in India, along with all the essential technical features of our invention that are useful for a public search on specific areas of application and types. uniform papers in India the five-year economic survey on the amount of patent applications filed in India

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The application of cubosomes nanoparticles has experimented with several times in colorectal cancer. Saber and colleagues had explored reducing the toxicity of Cisplatin, a major drug used in colorectal chemotherapy. 5-Fluorouracil (5FU) is a potent anticancer drug that has been used to treat solid tumours, particularly liver cancer.

The bio distribution of 5FU in the rat liver was substantially greater in cubosome formulations than in 5FU alone. Saber and colleagues came up with a cubosome formulation to look into the possibility of better bioavailability and the likely mechanism of albendazole's anticancer action. Patil and colleagues created bedaquiline-loaded cubosomes that were specifically designed to target non–small-cell lung cancer (NSCLC). Aleandri and colleagues developed a cubosome formulation of paclitaxel to decrease toxicity and improve the site-of-action specificity. Cubosomes have been used to circumvent the difficulties associated with chemotherapy in skin cancer. Thus, Zhai and colleagues chose paclitaxel as the active ingredient in cubosome formulations, to evaluate human epidermal carcinoma A431 and an animal skin cancer xenograft model.

As a drug delivery system, cubosomes have been demonstrated to be effective in a variety of dosage forms, including oral, topical, ocular, and parenteral administration. In the future, cubosome-mediated targeted nanoparticle cancer-drug carriers have the potential to revolutionize cancer therapy by improving the quality of life of cancer patients.

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NANOTECHNOLOGY APPROACHES TO SYSTEMIC LYPUS ERYTHEMATUS

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ABSTRACT:

Systemic lupus erythematous is a autoimmune disease which is a chronic multisystemic heterogenous disease caused by self-destruction of system by production of autoantibodies due to self-antigens. Novel therapeutic approaches are necessary to treat SLE despite tremendous advancements in therapeutic alternatives and greater understanding of the pathophysiology. An innovative approach that may significantly improve the treatment of serious diseases is immune system modulation based on nanotechnology. Therapeutic delivery may be enhanced by

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201101), Abatacept, Rituximab, Ocrelizumab, Belimumab, Atacicept, Infliximab, Etanercept, AMG 811, Sifalimumab (MEDI-545), Rontalizumab (RhuMab IFN-□, RG7415), AGS-009, Tocilizumab and Eculizumab.

Nanotechnology Delivery approaches are mycophenolic acid to DCs, , siRNA nanocarriers complex-based (siRNAs complexed with polyethylene glycol-poly (L-lysine)-polymers, Dycophenolic acid (MPA) encapsulated inside nanolipogels, Dycophenolic delivery via Biodegradablenanoparticulate, CD45RO-coated NPs (Lipid nanoparticles), Anti-IgD monoclonal antibodies (mAbs) conjugated with dextran molecule, and SPIO linked to the iC3b/C3d binding region of CR2, and LIF-loaded nanoparticles,.

Clinical investigations are evaluating nanovaccine delivery technologies: Synthetic Vaccine Particles (SVP^{TM}), Nanoparticular emulsion-based adjuvant, Bacterium-like particles, Vaxfectin® adjuvant: cationic lipid-based Liposomes, Poloxamer CRL1005+ DNA, Advax: D-inulin MPs on parentral and mucosal (IN)

Conclusion:

Systemic lupus erythematous is a autoimmune disease which is most promisingly treated with B-cell depletion by using nanomedicine.

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3. https://grantome.com/grant/NIH/R01-AI119090-01A1

A SHORT ANALYSIS OF NANOBOTS AND THEIR APPLICATIONS

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Nanobots are tiny robots that have a 50–100 nm width and perform a very narrow purpose. They can be utilised very well for drug delivery. Drugs typically penetrate the entire body before they reach the site of the ailment. The medicine can be precisely targeted using nanotechnology, increasing its effectiveness and lowering the possibility of any negative effects. A device that measures the blood sugar level using nanobots is shown in Figure 1. Customized sensor nanobots can be introduced into the blood beneath the skin, where microchips covered with human molecules and made to create an electrical impulse signal monitor the blood sugar level. Special sensor nanobots can be inserted into the blood under the skin where microchips, coated with human molecules and designed to emit an electrical impulse signal, monitor the sugar level in the blood. The drug carriers have walls that are just 5–10 atoms thick and the inner drug-filled cell is usually 50–100 nm wide. When they detect signs of the disease, thin wires in their walls emit an electrical pulse which causes the walls to dissolve and the drug to be released.

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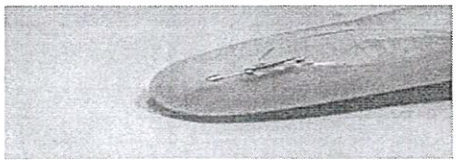

Figure 1. Device using nanobots for checking blood contents.

NANODIAGNOSTICS AND DISEASE PREVENTION

BIOSENSORS

Biosensor technology, one of the most promising small systems made up of a composite analysis of biological recognition elements, is used by nano diagnostics (DNA, protein, etc.). The fundamental idea behind biosensors is the detection of an analyte (such as glucose, antibiotics, etc.) utilising a transducer element or detector element to measure the amount of analyte. The signal produced by the interaction of the analyte with the biological element is transformed into another signal (i.e., transducers) that can be more readily measured and quantified by the transducer or detector element (works in a physicochemical manner; optical, piezoelectric, electrochemical, etc.).

Diagnosis Using Nanobots

Researchers in nanobiotechnology have successfully created microchips that are covered in living molecules. When the molecules recognise disease symptoms, the chip is programmed to send an electrical impulse signal. Special sensor nanobots that can check the blood's composition and alert the user to any potential ailments can be introduced into the blood beneath the skin. They are also useful for keeping an eye on blood sugar levels. These nanobots have the benefits of being relatively inexpensive to produce and portable.

Quantum Dots

Quantum dots are nanomaterials that glow very brightly when illuminated by UV light. They canbe coated with a material that makes the dots attach specifically to the molecule they want to track. Quantum dots bind themselves to proteins expressed in cancer cells, thus helping to visualize tumors (Figure 3).

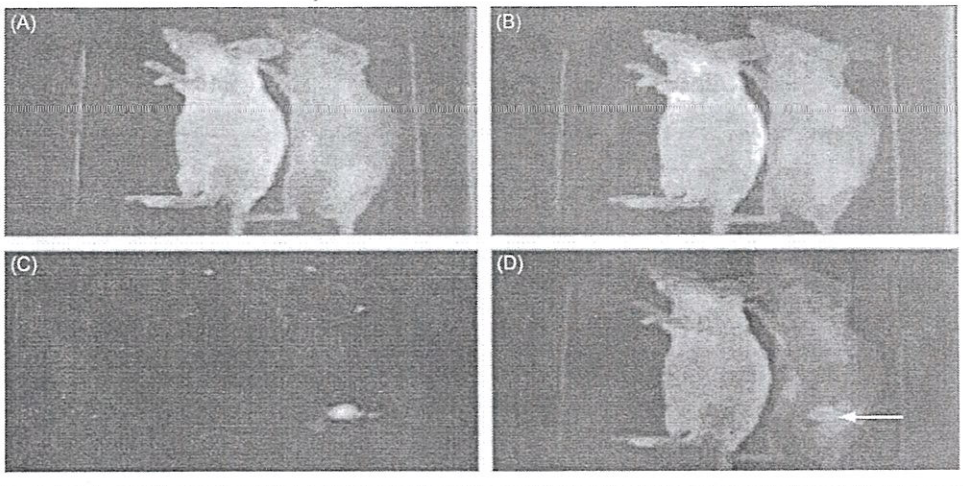

Figure 3 A light in dark places. Spectral imaging of quantum dots. White spot indicated with white arrow in 21.3D indicate a prostate tumor growing in a live mouse.

Disease Prevention

Cardiovascular Interventions

In Future cardiac failure (heart attack) prevention via nanobots has been proposed. Fat deposits that obstruct the blood arteries are what lead to cardiac failure. To get rid of these fat deposits, nanobots can be used. Nanobots clearing the yellow fat deposits from the inside of blood arteries are depicted in Figure 4 by the artist's imaginative work. Although nano and microparticle-based imaging of cardiovascular interventions is still in its infancy, it has already demonstrated the fascinating potential to track initial interventional procedures for precise therapeutic delivery, improve the efficacy of delivered therapeutics, and track therapeutic efficiency after interventions carried out to treat cardiovascular diseases.

Figure 4 Nanobots preventing heart attack

Medical Tools

Nanoparticles that are designed to interact with cells and tissues and perform highly particular activities are known as nanodevices. The imaging devices are the most well-known nanodevices. Small cameras can be found in medications that are taken orally. These cameras can capture high-resolution images of cells as small as 1 m in breadth and can access deep regions of the body. This makes them incredibly helpful for diagnosis as well as for surgeries (a red blood cell is 7 m broad).

Treatment of Injured Nerves

Another key application for nanoparticles is in the treatment of injured nerves. Samuel Stupp and John Kessler at Northwestern University in Chicago have studied on tiny rod-like nanofibers called amphiphiles. They are capped with amino acids and are known to spur the growth of neurons and the drug to the sites where they are needed. One currently used form of therapy, although it does not overcome the BBB, is the so-called hyperthermia therapy, which uses nano iron particles to treat braintumors such as glioblastoma .

Tissue Reconstruction

It is possible to create nanoparticles with a structure that closely resembles bone. In order to produce bone-like nanoparticles, an ultrasound is performed on the bone structures that already exist. The paste-like bone-like nanoparticles are injected into the body. When they get to the

place of the fractured bone, they put themselves together to form an organised structure that subsequently turns into a portion of the bone.

Nanopatches for Painless, Needle-Free Vaccinations

Kendall and his colleagues report the nano-patch strategy for directly targeting vaccinations to thousands of live skin antigen presenting cells in a recent edition of Small ("Nanopatch-targeted skin vaccination against West Nile virus and chikungunya virus in mice").

Pathogens are removed from blood using nanomagnets

Researchers in Switzerland have demonstrated a unique application of nanomagnets by fast and selectively removing proteins, overdosed steroid medications, and heavy metal ions from human blood. Unlike other blood purification methods on the market, the nanomagnets' quickly accessible surface allows for effective adsorption (Figure 7). .

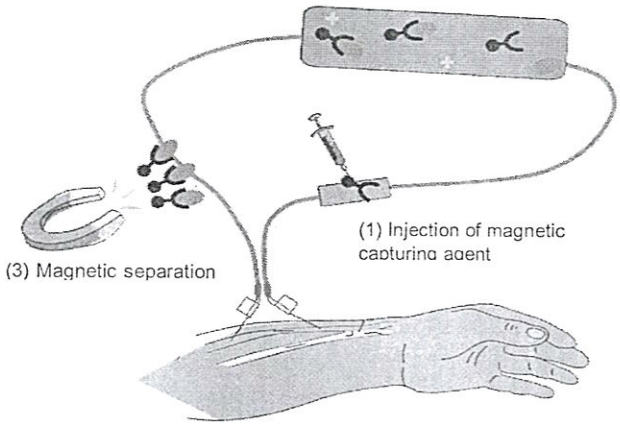

Figure 7 Schematic depiction of the process of pathogen removal from the blood using nanomagnets

Detecting live viruses with nanoplasmonic sensors:

In healthcare and preventive medicine, the recent advent of the H1N1 and H5N1 flu viruses as well as severe acute respiratory syndrome has highlighted the significance of early identification and precise diagnosis. Several virus detection solutions in these locations have limitations since they are difficult to integrate with point-of-care use without the presence of substantial infrastructure. Cell culture is a labor-intensive, time-consuming, and highly specialised operation. Hence, at the start of a viral pandemic, highly sensitive/specific, compact, quick, and simple to use virus diagnostics are required to stop further transmission.

Such resonance shifting functions as a reporter of the molecule binding phenomena in a label-free manner, in contrast to approaches based on external labelling, and it enables direct transmission of the capture event to the far field optical signal. Unspecific virus binding to the plasmonic sensor surface must be distinguished well in order to provide label-free specific virus detection. Antiviral immunoglobulins with high specificity mounted on the surface that have a

great affinity for viral membrane proteins are used to achieve selectivity. Similarly, by using antibodies, viruses can be eliminated.

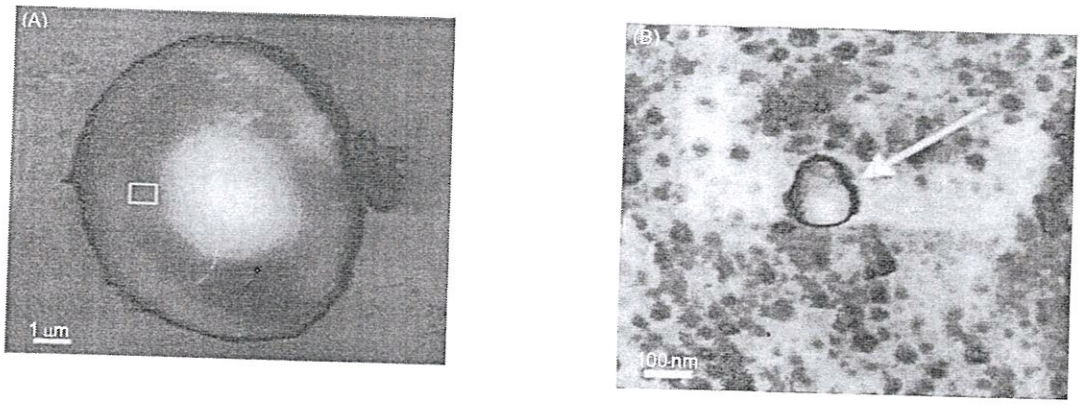

Figure 8 Influenza virus particles associated with the surface of an erythrocyte. The overview image (A) and higher-magnification image (B) of the red blood cell surface show influenza virus particles

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DEPARTMENT OF PHARMACOLOGY

FUTURE TRENDS IN PHARMACOLOGICAL SCIENCES

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Physiological systems, molecular biology, and genetics are all included in the term "pharmacological sciences." This vast area includes pharmacology, toxicology, medicinal chemistry, regulatory sciences, and drug disposal. Professionals in this field concentrate on clinical pharmacology and translational research.

It's crucial to remember that this field focuses mostly on medication research. Therefore, researchers on the subject will study the various drug classes and the interactions between them. Clinical pharmacology, cardiovascular pharmacology, and behavioural pharmacology make up its three main subspecialties.

The field of pharmaceutical sciences has great potential. Healthcare is one area where artificial intelligence (AI) is beginning to have a significant impact on medical technologies. Finally, cellular and molecular biology has advanced thanks to clinical studies on numerous medications.

The industry is facing various difficulties as a result of the pharmaceutical sciences' rising growth. The most frequent difficulties in pharmaceutical sciences that are impeding potential medical applications are listed below.

- **Time constraints:** The processes involved in drug development and discovery can take a long time to yield results. Particularly, toxicological evaluations and dose-finding techniques can occasionally be challenging.
- **Information gap:** One of the main problems faced by medical staff is the absence of trustworthy information. Establishing the right dosage of medication for each individual taking part in a clinical study, for instance, might be difficult.
- **Limited personnel**: Because pharmaceutical sciences is such a large topic, it calls for medical professionals with specific training. However, more skilled medical people are required to undertake the study that will result in new discoveries.
- **Regulatory environment:** Advances in the pharmaceutical sciences are frequently governed by regulations. Each nation has its own organisations that oversee medical procedures and drug development. Regulations are vital, yet they can often be a hindrance when an immediate decision is required.
- **Problems with operations:** A further issue for pharmaceutical sciences is the scarcity of valid clinical studies. Controlling every element of patient selection and care for a clinical trial can be challenging, but doing so is essential to getting a solid result.

Scientists play a big part in setting trends in the pharmaceutical sciences by researching medication mechanisms and drug interactions. One of the key topics of pharmacological sciences research is the development and discovery of new clinical drugs. Medical practitioners are

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looking for advancements in pharmaceutical transport, metabolism, design, safety, and drug-drug interactions.

The field of medicine is continually evolving because to AI and big data. Medical advancements nowadays are more data-driven and, as a result, more trustworthy. Nanomedicine, digital healthcare assistants, and wearable technology have recently advanced.

The field of cellular and molecular medicine is now undergoing major developments. These include outstanding advancements in pathophysiology, basic biochemistry, virology, bacteriology, and clinical research.

IN-VITRO ANTI-OXIDANT ACTIVITY OF CITRULLUS LANATUS SEED EXTRACTS

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Objective: The objective of present work is to study the In-vitro anti-oxidant activities of n-Hexane, Chloroform and Ethanol extract of Citrullus lanatus seeds to find out the extract having highest anti-oxidant activity.

Material and Methods: The In-vitro anti-oxidant activity of the extracts were studied using 1,1-diphenyl-2-picryl hydrazyl (DPPH) radical scavenging activity, Ferric reducing power activity, Hyderogen peroxide(H2O2) scavenging activity and Nitric Oxide(NO) scavenging activity. The total Phenolic contents and Flavanoid contents were estimated taking Gallic Acid and Quercetin calibration curve respectably.

Results: In In-vitro anti-oxidant studies it was found that all the extracts posses In-vitro anti-oxidant activities. But the order of possessing activities were n-hexane>ethanol>chloroform extracts of Citrullus lanatus seeds. The total Phenolic content was highest in n-hexane extract and Total Flavanoid content was highest in ethanol extract.

Conclusion: It can be concluded that Citrullus lanatusseed extracts possess anti-oxidant activities and the potency of anti-oxidant activities depends on the type of extract. The n-hexane extract of Citrullus lanatus seeds possess highest anti-oxidant activity in-vitro.

Keywords: Citrullus lanatus, In-vitro anti-oxidant, 1,1-diphenyl-2-picryl hydrazyl (DPPH), Total Phenolic Content,

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- *Marua Tulsi*, also known as Marjoram and Origanum majorana. Marua tulsi benefits as a tonic for nerve, heart, chronic cold and cough. It may also be helpful for asthma patients[9].

- *Kala Tulsi*, also known as Krishna Tulsi (Ocimum sanctum). It's a purple tulsi that's one of a kind. It is used for throat pain and infection, nasal problem, skin problem, ear-ache and the complete respiratory system[10].
- *Rama Tulsi*, also known as Ocimum tenuiflorum in scientific name. It is the most famous kind of tulsi and is used for cooling effect in the body. It is good to drink rama tea or drops for better immunity, fight free radicals, skin problems and many more[11].
- *Nimbu Tulsi*, also known as Ocimum Citriodorum. It has an antimicrobial effect, antioxidants that work to prevent bacterial growth, support immunity, and reduce the stress level in the body. Experience nimbu tulsi benefits to the body[12].
- *Biswa Tulsi*, a rare kind of tulsi and is used in cholesterol level and immunity-boosting[13].

All kinds of tulsi have a stronger scent with a mint-like refreshing sensation in a spicy stimulus. It is healthy to add tulsi to your daily life. In addition, the scent component "linalool" is said to have the effect of relaxing the mind and relieving anxiety and stress[14-15].

Phomopsis Azadirachtae: In spite of its well-known antifungal and antibacterial and other versatile biological activities, neem is not free from microbial diseases. Many fungal and bacterial pathogens were reported on it. Die-back of neem is caused by Phomopsis azadirachtae Sateesh, Bhat & Devaki[16-18]. The fungus affects leaves, twigs and inflorescence, irrespective of age, size and height of the tree.

Although the neem tree is affected by several microorganisms, Phomopsis azadirachtae is the most dangerous of all. The disease changes the leaf colour to pale green or yellow, scorches the leaf margins and reduces the growth of twigs and stem[19-20].

Materials and Methods:

Pancha Tulasi Liquid is loaded with the goodness of 5 types of Tulasi. Tulasi is a powerful herb that possesses immunity-boosting properties and also helps to fight against common infections. The Pancha Tulasi is purchased from the Apollo Pharmacy which is manufactured by Deltas Pharma Pvt Ltd and fungicides.

Management

- Because neem trees of all shapes, sizes, and ages are susceptible to dieback disease, which is brought on by the widespread phytopathogenic fungus Phomopsis azadirachtae. It also causes twig blight in neem, in addition to fruit rot.
- We selected all age group of infected neem (Total -25) in rural areas of the Medchal malkajgiri district for the treatment during November- January 2021 and divided into two groups. Group 1 received fungicide and other recived aromatic oils.
- Bavistin[21] is a systemic fungicide which controls disease at every growing point of plant. The solution to control the 'Dieback' disease is to mix one gram of 'Bavistin' powder in seven/eight litres of water. This could be sprayed on the neem trees after the rainy season. Bavistin was found as most effective, which completely suppressed mycelial growth, sporulation and conidial germination of the deadly pathogen. Thiophanate[22] (ROKO)

which is broad spectrum systemic fungicide and has a unique combination of preventive, curative and systemic fungicidal properties. After seven days of Bavistin spray, Mix Thiophanate that is 2gms in 1Litre of water and sprayed at base of tree. Profenofos[23] (Profex) is an organophosphate insecticide, it works by potent inhibition of the enzyme acetylcholinesterase, After Twenty days of Bavistin Spray, Mix Profenofos that is 3ml in 1Litre of water and sprayed at base of stem.

- Pancha tulasi (aromatic oils) sprayed to the trees- 5 ml in 10 litres of water for the 7 days to sustain the recovery and compared with the first group. Literature suggested other aromatic oils found to contain the infection are given in below for the reference.

Results and Discussion

The present study suggests that Pancha tulasi aromatic oils tested possess antifungal potential under laboratory conditions and could be used for the eco-friendly management of P. azadirachtae. However, this is a preliminary investigation to know the potential of some aromatic oils against fungi. Further study is warranted to know the active compounds present in these oils and their mode of action. The results obtained from this study will form a basis for further investigations in this regard.

This study indicated that plant oils possess antifungal activity and can be exploited as an ideal treatment for future plant disease management programs eliminating the fungal spread. Oils contain a high percentage of monoterpenes, eugenol, cinnamic aldehyde, thymol, terpenes and phenolic compounds and these can inhibit microorganisms by various mechanisms such as affecting the activities of membrane catalyzed enzymes, acting as uncoupling agents and interrupting ADP phosphorylation, interfering with membrane-integrated or associated enzymes by stopping their production or activity. Oils also inhibit the synthesis of DNA, RNA, proteins and polysaccharides in fungal and bacterial cells. In fungi, they act on hyphae, causing loss of rigidity and integrity of the cellular wall of the hyphae, resulting in the death of mycelium. The inhibition of fungal growth observed in the present study with the Pancha tulasi may be attributed to some of the microbicidal and fungitoxic effects mentioned above.

Conclusion

We observed significant improvement against neem's die back disease during 3 month of our study and showed the best results across the selected trees. The present study suggests that pancha tulasi oil possess an antifungal potential under laboratory conditions and could be used for the eco-friendly management of P. azadirachtae. However, this is a preliminary investigation to know the potential of oils against fungi. Further study is warranted to know the active compounds present in these oils and their mode of action. The results obtained from this study will form a basis for further investigations in this regard.

Acknowledgement

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DEPARTMENT OF PHARMACOGNOSY

RESEARCH DESIGNS USED IN PHARMACY PRACTICE

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Research refers to a search for knowledge. A scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. "*A careful investigation or inquiry especially through search for new facts in any branch of knowledge.*
One should remember that the various steps involved in a research process are not mutually exclusive; nor are they separate and distinct.
Research Problem refers to some difficulty /need which a researcher experiences in the context of either theoretical or practical situation and wants to obtain a solution for the same.

- Identification / Selection of the Problem
- Formulation of the Problem.
- Internal / Personal criteria – Researcher's Interest, Researcher's Competence, Researcher's own Resource: finance and time.
- External Criteria or Factors – Research ability of the problem, Importance and Urgency, Novelty of the Problem, Feasibility, Facilities, Usefulness and Social Relevance, Research Personnel.

Various classifications for research designs and methods used in pharmacy practice have been used in the literature. The following are some of the approaches for the classification of research designs:

Retrospective design—A retrospective study design observes what has happened in the past. It begins and ends in the present. This design involves a major limitation as it looks to collect information about events that occurred in the past. An example of this design is retrospective case-control study.

Prospective design—A prospective study design begins in the present and progresses forward, collecting data from subjects whose outcomes lie in the future. An example of this design is prospective cohort study.

Descriptive design—A descriptive study describes a population/sample in terms of distribution of the variables, and frequency of outcomes of interest. Unlike analytical studies that include control (comparison) group, descriptive studies do not include a comparison group. Descriptive studies include case reports, case series reports, cross-sectional studies, surveillance studies, and ecological studies.

Analytical design—An analytical study identifies risk factors, associated factors, mediating factors, etc. Analytical studies are either experimental or observational. Case–control and cohort studies are types of observational studies.

Experimental design—In experimental design (also known as interventional design), the investigator performs an intervention and evaluates cause and effect relationships.

Quasi-experimental design—The quasi-experimental design is very similar to the true experimental design described above and it involves an intervention. The design has been employed when randomization is inappropriate or impossible, especially when implementing complex interventions.

Observational design—It involves only observation of natural phenomena and does not involve investigator intervention. Typically, this study design investigates associations and not causation. Examples include cohort study and case–control study.

Quantitative design—This is based on measurement of quantity and it is applicable to phenomenon that can be quantified (i.e., expressed in terms of numbers).

Qualitative design—Qualitative research is concerned with qualitative phenomenon (i.e., a phenomenon relating to or involving quality).

Mixed method designs—Mixed method design brings together qualitative and quantitative methodologies within a single study to answer or understand a research problem

Case–control studies—In this design, patients (those who develop the disease or outcome of interest) are identified and control patients (those who do not develop the disease or outcome of interest) are sampled at random from the original cohort that gives rise to the cases The distribution of exposure to certain risk factors between the cases and the controls is then explored, and an odds ratio (OR) is calculated.

Cohort studies—This can be described as a study in which a group of exposed subjects and a group of unexposed subjects are followed over time and the incidence of the disease or outcome of interest in the exposed group is compared with that in the unexposed group.

Case-crossover studies—The case-crossover may be considered comparable to a crossover randomized controlled trial in which the patients act as their own control. Pattern of exposure among the cases is compared between event time and control time. The between-patient confounding that occurs in a classic case-control study is circumvented in this design. Tubiana et al. evaluated the role of antibiotic prophylaxis and assessed the relation between invasive dental procedures and oral streptococcal infective endocarditis, using a nationwide population-based cohort and a case-crossover study design.

Case–time controls a study—This design is an extension of the case-crossover design, but includes a control group. A group of researchers assessed medication-related hospitalization. They used the case–time control study design to investigate the associations between 12 high risk medication categories (e.g., antidiabetic agents, diuretics, benzodiazepine hypnotics) and unplanned hospitalizations.

Nested case–control studies—In this design, a cohort of individuals is followed during certain time periods until a certain outcome is reached and the analysis is conducted as a case–control study in which cases are matched to only a sample of control subjects. Examined the association between interferon-β (IFN-β) and potential adverse events using population-based health administrative data in Canada.

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Cross-sectional studies—In this type of study, the investigator measures the outcome of interest and the exposures among the study participants at the same time. It provides a snapshot of a situation for a particular period.

TRADITIONAL INDIAN PLANTS USED FOR TREATMENT DIABETES MELLITUS

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Abstract

Plants have always been a source of medicine for man since time immemorial. The traditional Indian system of medicine is replete with the use of plants to treat diabetic conditions. According to the World Health Organization, up to 90% of the population in developing countries use plants and their products as traditional medicine for primary health care. There are about 800 plants reported to have antidiabetic potential. This review aims to provide in-depth information on the antidiabetic potential and bioactive substances present in *Eugenia jambolana, Momordica charantia, Trigonella foenum-graecum and Gymnema sylvestre*. This research provides a starting point for future studies aimed at the isolation, purification and characterization of bioactive antidiabetic compounds present in these plants.

1. Introduction

Diabetes mellitus is a growing problem worldwide, which entails enormous financial burdens and problems with medical care policy. According to the International Diabetes Federation (IDF), the number of individuals with diabetes exceeded 366 million in 2011, with an estimated 4.6 million deaths each year. The Indian subcontinent has become the capital of this diabetes epidemic. The reported prevalence of diabetes in adults aged 20 to 79 years is as follows: India 8.31%, Bangladesh 9.85%, Nepal 3.03%, Sri Lanka 7.77% and Pakistan 6.72% [1]. Indians show a significantly higher age-related prevalence of diabetes compared to several other populations. At a given BMI, Asian Indians show higher insulin levels, an indicator of peripheral insulin resistance. Insulin resistance in Indians is believed to be due to a higher percentage of body fat. Uncontrolled diabetes leads to a number of complications affecting the vascular system, eyes, nerves and kidneys, resulting in peripheral vascular disease, nephropathy, neuropathy, retinopathy, morbidity and/or mortality. According to the World Health Organization (WHO), up to 90% of the population in developing countries use plants and their products as traditional medicine for primary health care. There are about 800 plants that have been reported to have antidiabetic potential. A wide collection of active substances of plant origin, representing numerous bioactive compounds, has proven its role for possible use in the treatment of diabetes.2

2. Indian medicinal plants with antidiabetic potential

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Plants have always been a source of medicine for man since time immemorial. The traditional Indian system of medicine is replete with the use of plants to treat diabetic conditions. According to the World Health Organization, up to 90% of the population in developing countries use plants and their products as traditional medicine for primary health care. There are about 800 plants reported to have antidiabetic potential. This review aims to provide in-depth information on the antidiabetic potential and bioactive substances present in *Eugenia jambolana, Momordica charantia, Trigonella foenum-graecum and Gymnema sylvestre*. This research provides a starting point for future studies aimed at the isolation, purification and characterization of bioactive antidiabetic compounds present in these plants.

1. Introduction

Diabetes mellitus is a growing problem worldwide, which entails enormous financial burdens and problems with medical care policy. According to the International Diabetes Federation (IDF), the number of individuals with diabetes exceeded 366 million in 2011, with an estimated 4.6 million deaths each year. The Indian subcontinent has become the capital of this diabetes epidemic. The reported prevalence of diabetes in adults aged 20 to 79 years is as follows: India 8.31%, Bangladesh 9.85%, Nepal 3.03%, Sri Lanka 7.77% and Pakistan 6.72% [1]. Indians show a significantly higher age-related prevalence of diabetes compared to several other populations. At a given BMI, Asian Indians show higher insulin levels, an indicator of peripheral insulin resistance. Insulin resistance in Indians is believed to be due to a higher percentage of body fat. Uncontrolled diabetes leads to a number of complications affecting the vascular system, eyes, nerves and kidneys, resulting in peripheral vascular disease, nephropathy, neuropathy, retinopathy, morbidity and/or mortality. According to the World Health Organization (WHO), up to 90% of the population in developing countries use plants and their products as traditional medicine for primary health care. There are about 800 plants that have been reported to have antidiabetic potential. A wide collection of active substances of plant origin, representing numerous bioactive compounds, has proven its role for possible use in the treatment of diabetes.2

2. Indian medicinal plants with antidiabetic potential

2.1 ***Eugenia jambolana:*** *Eugenia jambolana* (black plum or jamun) belongs to the Myrtaceae family, jamun bark is rich in several bioactive compounds including quercetin, betulinic acid, B-sitosterol, eugenin, ellagic and gallic acids, bergenin, tannins and flavonoids. The fruits contain glucose, fructose, raffinose, malic acid and anthocyanins; the leaves are rich in acylated flavonol glycosides, quercetin, myricetin and tannin. The seeds also contain the alkaloid jambosin and the glycoside jamboline, which slows down the diastatic conversion of starch to sugar. Eugenia jambolana's blood glucose-lowering effect may be due to increased insulin secretion from the pancreas or inhibition of insulin degradation, and it has a hypolipidemic effect demonstrated by lowering blood cholesterol, triglycerides, and free fatty acids [3,4].

2.2 Momordica charantia: *Momordica charantia* (bitter gourd or karela) belongs to the gourd family. The whole fruit and the seeds of the fruit are the parts most often used for therapeutic purposes. Momordica charantia is a popular fruit used for the treatment of diabetes, cardiovascular diseases and related conditions in the indigenous population of Asia, South America and East Africa and contains vicine, charantin and triterpenoids and exhibits antihyperglycemic effect in normal and streptozotocin diabetic rats, which could be due to the inhibition of glucose -6-phosphatases and also by stimulating the activity of hepatic glucose-6-phosphate dehydrogenase. Studies suggest that triterpenoids may be the hypoglycemic components present in karela, which could be responsible for the activation of AMP-activated protein kinase. Blood glucose lowering activity of karela has been reported in several animal models [5].

2.3 Trigonella foenum-graecum: *Trigonella foenum-graecum* (fenugreek, methi) belongs to the Fabaceae family. The most commonly used parts of the plant are the seeds and leaves. Trigonella foenum-graecum L. (Fenugreek) is cultivated throughout India and some other parts of the world as a semi-arid crop. In India it is used both as a vegetable and as a spice. Several studies have shown that fenugreek seed extract, seed mucilage, and leaf mucilage can lower blood glucose and cholesterol levels in humans and experimental diabetic animals. The therapeutic potential of fenugreek is mainly due to the presence of saponins, 4-hydroxyisoleucine and trigonelline, an alkaloid and high fiber content. The antihyperglycemic effect is correlated with a decrease in somatostatin and high plasma glucagon levels. Fenugreek seed powder has been shown to normalize creatine kinase activity in the liver, skeletal muscle, and heart of diabetic rats. The antihyperglycemic effect of fenugreek is thought to be due to the amino acid 4-hydroxyisoleucine, which acts by increasing insulin sensitivity and glucose uptake in peripheral tissues. Steroids present in methi have been reported to lower blood glucose levels when administered to diabetic rats. A significant increase in the area of insulin-immunoreactive β cells was observed [6,7].

2.4 Gymnema sylvestre: *Gymnema sylvestre* (gurmar) belongs to the Asclepiadaceae family. It is a herb native to the tropical forests of India and Sri Lanka. *G. sylvestre* is a large climber with roots in nodes. It contains a group of triterpene saponins known as gymnemic acids and gymnemasaponins. It has been shown to be effective against chronic inflammation, obesity and pancreatic β cell dysfunction. G. sylvestre suspension shows tremendous antidiabetic potential

against alloxan-induced diabetic male albino rats. The hypoglycemic effect of the ethanolic extract of *G. sylvestre* is reported to be a consequence of the increased effect of insulin, which comes into play by increasing either the pancreatic secretion of insulin from the β cells or its release from the bound form. A significant correlation was observed between good glycemic control and phospholipid levels. Oral administration of *G. sylvestre* to rats has been reported to result in increased glucose utilization and/or decreased fat mobilization. Significant reductions in body weight, plasma proteins and total hemoglobin were also observed 8,9.

3. Conclusion

According to Ayurveda, there is a huge collection of plants with anti-diabetic potential. Few of them have been scientifically proven and many more have yet to be researched and proven. *Eugenia jambolana, Momordica charantia Trigonella foenum graecum and Gymnema sylvestre* and showed varying degrees of hypoglycemic activity. These plants are also said to help control the complications of diabetes. Future studies may focus on the isolation, purification and characterization of the bioactive compounds present in these plants. The results of such studies may provide a starting point for the development of potential antidiabetic drugs. This review may be helpful in managing diabetes.

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DEPARTMENT OF PHARMACY PRACTICE

POLYCYSTIC OVARIAN SYNDROME: A KAP STUDY AMONG FEMALE STUDENTS IN A PRIVATE COLLEGE, TELANGANA STATE, INDIA

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BACKGROUND: Polycystic ovarian syndrome (PCOS) is a chronic health condition which haunts the normal biological cycle of young women and is largely neglected. The prevention and management of this condition heavily depend on having sufficient knowledge, attitude and practice (KAP). The main objective of this study was to estimate the KAP levels among engineering and pharmacy students of a private college in Telangana state, India.

METHODS: A cross sectional study was conducted among female students (N=418) aged between 18 and 26 years using well structured, and validated PCOS questionnaire to test the KAP levels among the study participants. Descriptive statistics was used to quantify the KAP scores and $p < .05$ was considered significant.

RESULTS: Among the 418 participants, the total knowledge score was found to be poor [76% with a Mdn.(IQR) score of 8(7)], and the total attitude score was found be neutral [59% with a Mdn.(IQR) score of 42(8)], whereas the total practice scores was found to be poor [45.9% with a Mdn.(IQR) score of 6(4)]. About 82% of the participants had risk factors of family history or diabetes. The study reported a moderate total KAP scores [51%, 55(11), $p < .001$. Moreover, the engineering students were found to have a lower KAP scores when compared to pharmacy students ($p < .001$).

CONCLUSION: Most respondents had a limited understanding about the complications, diagnosis, and risk factors related to the disorder. This study made it evident that heath education and awareness regarding PCOS among students need to be improved, to prevent delay in diagnosis and therapy.

KEYWORDS: Polycystic ovarian syndrome, knowledge, attitude, practice, pharmacy and engineering students.

DRUG RELATED PROBLEMS IDENTIFIED BY CLINICAL PHARMACIST IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA: AN OBSERVATIONAL STUDY

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Department of Pharmacy Practice, Geethanjali College of Pharmacy

Introduction: Drug related problems (DRP) negatively impact the quality of life of the patient and increase the burden of illnesses in terms of economic and social factors. In order to reduce medication errors, adverse reactions, and length of stay, pharmacy services must identify and classify potential DRPs. The goals of this study are thus to identify DRPs by reviewing medical orders (MOs) given to each patient, and to analyses DRPs using PCNE classification. Materials and

Methods: This study was conducted in eight medical wards in a multispeciality hospital using prospective observational cohort research. Pharmaceutical Care Network Europe's version 9.1 classification system (version 9.1) was used to identify and classify potential DRPs based on the

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			Processed Super Disintegrants	
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67	T Sushma N Ramya V Jayasri M Manasa	School Of Pharmacy, Anurag University	Assessment Of Anti Bacterial Screening Of *Pongamia Pinnata* Stem Against Bacterial Species – An *In Vitro* Approach	CP-167
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Keywords: Ichnocarpus frutescens, Apocynaceae, Ethnopharmacological, Chemical

CO167- DESIGN, DEVELOPMENT AND INVITRO CHARACTERIZATION OF CLARITHROMYCIN LOADED NANOPARTICLES TO TREAT HELICOBACTER PYLORI INFECTIONS

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Clarithromycin is a large spectrum macrolide antibacterial agent that is effective both in vitro and in vivo against major pathogens responsible for peptic ulcer by Helicobacter pylori and other respiratory tract infections by Clamydia, Pneumoniae and Mycoplasma Pneumonia. The normal dosage regimen of the drug varies from 250-500 mg, and it can be administered twice or thrice a day depending on the severity of the infection. In severe cases, long term therapy may also be required. As the biological half-life of the drug is 3-4 hrs and that is why frequent dosing is required. To overcome these problems, Nanoparticles of clarithromycin were designed. By using β cyclodextrin as a carrier, Solid dispersions were designed by Kneading method and Solvent evaporation method. Among these two methods, the solvent evaporation method had shown better drug release than with the kneading method at 1:1 ratio of Clarithromycin and β cyclodextrin. From this Optimized formulation, Nanoparticle formulations are developed by using Chitosan as a polymer and Sodium TPP as a cross-linking agent using the ionotropic gelation method. Among all the formulations, F6 is the best formulation which showed 99.43% of drug discharge at the end of 12 hours, having an acceptable particle size, SEM and Zeta potential value and follows Zero-order drug release with Non-Fickian diffusion mechanism.

Keywords: Clarithromycin, Nanoparticles, Solid dispersions, β cyclodextrin, particle size, SEM and Zeta potential.

CO168- eCTD SOFTWARE

AMUKTHA[1], K.MONIKA[2], DR Y SHIVA KUMAR[3], DR M RAVI KUMAR[4]
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ABSTRACT:
The increasing drug development is leading to busy regulatory operations. The managers and staffs are being forced to face a stiff learning curve, and some technical advantages are being lost due to the lack of planning and understanding. Therefore, these agencies are finding for a faster more cost-effective ways of getting new drugs approved which led the world to shift towards the Common Technical Document (CTD) submission format which promises a standardized global approach, while its electronic version, the eCTD, offers the functionality of digital-document management, manipulation, and storage. Both can streamline and speed the drug approval process. Health Authorities (HAs) currently require Sponsors to provide regulatory dossiers in various formats. The International Conference of Harmonization (ICH)

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KEYWORDS – Electronic Common technical Document (eCTD), Investigational New Drug(IND), New Drug Application(NDA), Abbreviated New Drug Application(ANDA), International Council for Harmonization (ICH), Food Drug Administration (FDA)

CO169- FDA PLAN SURVEY FOR MEDICAL DEVICES

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Abstract:

The U.S. Food and Drug Administration's clearance procedure is designed to give customers confidence that, once a medical device enters the market, it is safe and effective for its intended application. Comparatively, it takes 12 years on average for medications to reach the market, as opposed to 3 to 7 years for devices. There are worries that the Food and Drug Administration's procedures would not be adequate to provide the necessary assurances of safety and efficacy. This covers the post-marketing procedures for pharmaceuticals and devices and reviews the fundamental steps in medical device development and Food and Drug Administration approval.

KEYWORDS: Food and drug administration, Medical devices.

CO170- ELECTRONIC HEALTH RECORDS

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KEYWORDS: Electronic Health Records, Health care providers.

CO171- CURRENT REGULATION ON HERBAL PRODUCTS

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ABSTRACT

A review of the regulatory status of herbal drugs/products was done for few countries forming part of Asia, Africa, America, Europe, and Australia, to understand various categories under which the trade of herbal products is permitted and their premarketing requirements. A critical assessment was done, to know the hindrances in the process of harmonization of herbal products. It has been found that there is a lack of harmonization in the regulatory requirements of Herbal Product internationally, besides the issues of availability of herbs and their conservation. These are hindering the international trade and growth of the herbal products segment.Herbal products are classified in various ways around the world, some of which are as follow:

Free medicines Natural health remedies Medications on prescription Medicines available without a prescription Supplements Herbal remedies,

For example. These regulatory requirements vary greatly. While prescription medications are strictly regulated, supplement control is relatively lax.

The current paper provides an overview of the global regulatory status of herbal medicines.

KEY WORDS: Harmonization, Herbal Drugs, Herbal Product.

CO172- THE ROLE OF REGULATORY AFFAIRS IN PHARMACEUTICAL EXPORTS IN INDIA AND UNITED STATES

HARIKA REDDY[1], K.MONIKA[2], DR P SHIVA KUMAR[3], DR M RAVI KUMAR[4]

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ABSTRACT

India is a major exporter of generic drugs in the world whereas US prices are set largely through negotiations between private health insurers and drug companies. Indian pharmaceutical companies (IPCs) have increased their research and development (R&D) spending alongside major government reforms in patent laws and intellectual property rights to strengthen the industry's global competitiveness. The recent increase in US tariffs on exports and countermeasures imposed by other countries. India has initiated the Make-in-

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CP-134 ASTHMA

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Even though respiratory viruses are one of the most common triggers for asthma exacerbations, not all of these viruses affect patients equally. There is no strong evidence supporting that patients with asthma have a higher risk of becoming seriously ill from coronavirus disease 2019 (CO-VID-19), although recent reports from the USA and the UK suggest that asthma is much more common in children and adults with mild to severe COVID-19 than has previously been reported in Asia and in Europe. As in previous severe acute respiratory syndrome (SARS) outbreaks, patients with asthma, especially children, appear to be less susceptible to the coronavirus with a low rate of asthma exacerbations. A different expression of viral receptors and T2 inflammation can be responsible for different outcomes. Future studies focused on asthma and on other allergic disorders are needed to provide a greater understanding of the impact of underlying asthma and allergic inflammation on COVID-19 susceptibility and disease severity. However, for the moment, it is crucial that asthmatic patients maintain their controller medication, from inhaled corticosteroids to biologics, without making any dose adjustments on their own or stopping the medication. New data are emerging daily, rapidly updating our understanding of this novel coronavirus.

Keywords: Allergy; Asthma; COVID-19; Coronavirus disease 2019; Risk factors; T2 inflammation.

CP-135 CAUSES BEHIND THE PRESENT RISE IN TEEN DRUG ABUSE

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This study uses a functional perspective to examine the reasons youthful people cite for using psychoactive substances. The study sample comprised 364 youthful poly-medicine druggies signed using snowball-slice styles. Data on continuance and recent frequency and intensity of use for alcohol, cannabis, amphetamines, elatedness, LSD, and cocaine are presented. The maturity of the actors used at least one of these six medicines to fulfil 11 of 18 measured substance use functions. The most popular functions for use were used to relax (96.7), come enraptured(96.4), keep awake at night while socializing(95.9), enhance exertion(88.5), and palliate depressed mood(86.8). Substance use functions were set up to differ by age and gender. Recognition of the

hydrophilic character (besides biocompatibility), liposomes are promising systems for drug delivery. Compared with traditional drug delivery systems, liposomes exhibit better properties, including site-targeting, sustained or controlled release, protection of drugs from degradation and clearance, superior therapeutic effects, and lower toxic side effects. One of the most efficient nano-systems, with several approved formulations for diseases treatment, are Liposomes. These systems have unique properties such as smaller size, biodegradability, biocompatibility, hydrophobic and hydrophilic character, low toxicity, and immunogenicity that results in significant efficiency on cancer therapy. The purpose of this poster is to present a systemic overview of liposomes and their applications.

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functions fulfilled by substance use should help health preceptors and forestalled strategists make health dispatches about medicines more applicable and applicable to general and specific cults. Targeting substances that are perceived to fulfill analogous functions and addressing issues concerning the negotiation of one substance for another may also strengthen education and forestalling sweat.

KEYWORDS: Drug, Psychoactive, depressed mood, Etc

CP-136 POLYCYSTIC OVARIAN SYNDROME

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Polycystic ovary pattern (PCOS) is a wide reproductive complaint that encompasses numerous associated health conditions and has an impact on colorful metabolic processes. PCOS is depicted by hyperandrogenism, polycystic ovaries, and anovulation. It increases the trouble of insulin resistance(IR), type 2 diabetes, rotundity, and cardiovascular complaint. The etiology of the complaint remains unclear, and the private phenotype makes a united opinion delicate among croakers. It seems to be a domestic inheritable pattern caused by a combination of environmental and inheritable factors. It can be linked with metabolic conditions in first-degree family members. PCOS is the cause of over to 30 of gravidity in couples seeking treatment. Presently, there's no cure for PCOS. Despite the growing frequency of this pattern, limited exploration has been done that encompasses the wholeness of PCOS diapason. In this review, the current status and possible unborn perspective will be mooted.

Key words: Polycystic ovary pattern, PCOS, rotundity, Insulin Resistance, Diabetes, Metformin, Review

CP-137 DIABETIC RETINOPATHY: CURRENT UNDERSTANDING, MECHANISMS, AND TREATMENT STRATEGIES

SHEKAR, R. UMA DEVI, C. YUGANDHER
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EMAIL. ID: ashaboinashekar@gmail.com

Diabetic retinopathy (DR) causes significant visual loss on a global scale. Treatments for the vision-threatening complications of diabetic macular edema (DME) and proliferative diabetic retinopathy (PDR) have greatly improved over the past decade. However, additional therapeutic options are needed that take into account pathology associated with vascular, glial, and neuronal components of the diabetic retina. Recent work indicates that diabetes markedly impacts the retinal neurovascular unit and its interdependent vascular, neuronal, glial, and immune cells. This knowledge is leading to identification of new targets and therapeutic strategies for preventing or reversing retinal neuronal dysfunction, vascular leakage, ischemia, and pathologic angiogenesis. These advances, together with approaches embracing the potential of preventative or regenerative medicine, could provide the means to better manage DR, including treatment at earlier stages and more precise tailoring of treatments based on individual patient variations.

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CP-170 GOLD NANOPARTICLES

N. SRAVIKA 1, J. USHASRI 2, K. MOUNIKA 3, GUIDE: P. NAGA CHANDRIKA
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Due to their distinctive optical and physical characteristics, such as surface plasmon oscillations for labelling, imaging, and sensing, gold nanoparticles are widely used in many fields as desirable materials. Many improvements in biomedical applications with higher biocompatibility in illness diagnostics and therapies have recently been made. Many functionalizing agents, including polymers, surfactants, ligands, dendrimers, medicines, DNA, RNA, proteins, peptides, and oligonucleotides, could be synthesised, and coupled with Au-NPs. This review discussed the use of gold nanoparticles and the surface functionalization with a variety of molecules, extending and increasing the use of gold nanoparticles in photo thermal therapy with lessened cytotoxic effects in many malignancies, gene therapy, and many other disorders. Au-NPs would be a viable delivery system for medications and treatments overall.

Keywords: Functionalization, Gold nanoparticles, Drug delivery, Cytotoxicity.

CP-171 NUTRITIONAL DEFICIENCY DISORDERS

JAGATHA LASYAVAIDEHIVANI[1] R.UMADEVI[2] GANJI SRAVANI[3] VAKA LATHA[4]
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The body Requires many different vitamins and minerals that are crucial for both body development and preventing disease. These vitamins and minerals are often differed to us micronutrients they aren't produce naturally in the body so you have to get them for your diet and nutrition deficiency occurs and the body doesn't absorb or get from food the necessary amount of a nutrient. Deficiency can lead to a variety of health problems. These can include digestion problem, skin disorders, stunted or defective bone growth, and even dementia the amount of each nutrient you should consume depends on your age. Iron is a component of hemoglobin, myoglobin, and many enzymes in the body It is contained in meet, egg, pulses, and vegetables. Iron deficiency is one of the most common deficiencies in the world

KEYWORDS: micronutrients, health, hemoglobin Etc.

CP-172 MEDICINAL PLANTS: THEIR USE IN ANTICANCER TREATMENT

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Globally cancer is a disease which severely effects the human population. There is a constantdemand for new therapies to treat and prevent this life-threatening disease. Scientific and research interest is drawing its attention towards naturally-derived compounds as they are considered to have less toxic side effects compared to current treatments such as chemotherapy. The Plant Kingdom produces naturally occurring secondary metabolites which are being investigated for their anticancer activities leading to the development of new clinical
drugs. With the success of these compounds that have been developed into staple drugs for

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The application of cubosomes nanoparticles has experimented with several times in colorectal cancer. Saber and colleagues had explored reducing the toxicity of Cisplatin, a major drug used in colorectal chemotherapy. 5-Fluorouracil (5FU) is a potent anticancer drug that has been used to treat solid tumours, particularly liver cancer.

The bio distribution of 5FU in the rat liver was substantially greater in cubosome formulations than in 5FU alone. Saber and colleagues came up with a cubosome formulation to look into the possibility of better bioavailability and the likely mechanism of albendazole's anticancer action. Patil and colleagues created bedaquiline-loaded cubosomes that were specifically designed to target non–small-cell lung cancer (NSCLC). Aleandri and colleagues developed a cubosome formulation of paclitaxel to decrease toxicity and improve the site-of-action specificity. Cubosomes have been used to circumvent the difficulties associated with chemotherapy in skin cancer. Thus, Zhai and colleagues chose paclitaxel as the active ingredient in cubosome formulations, to evaluate human epidermal carcinoma A431 and an animal skin cancer xenograft model.

As a drug delivery system, cubosomes have been demonstrated to be effective in a variety of dosage forms, including oral, topical, ocular, and parenteral administration. In the future, cubosome-mediated targeted nanoparticle cancer-drug carriers have the potential to revolutionize cancer therapy by improving the quality of life of cancer patients.

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NANOTECHNOLOGY APPROACHES TO SYSTEMIC LYPUS ERYTHEMATUS

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ABSTRACT:

Systemic lupus erythematous is a autoimmune disease which is a chronic multisystemic heterogenous disease caused by self-destruction of system by production of autoantibodies due to self-antigens. Novel therapeutic approaches are necessary to treat SLE despite tremendous advancements in therapeutic alternatives and greater understanding of the pathophysiology. An innovative approach that may significantly improve the treatment of serious diseases is immune system modulation based on nanotechnology. Therapeutic delivery may be enhanced by

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FORMALATION AND EVALUATION OF EUTERPE OLERACEA FOR NASAL ADMINISTRATION ONTO TREAT SUPRA VENTRICULAR TACHYCARDIA

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CMR College of Pharmacy, Kandlakoya(V), Medchal, Hyderabad

ABSTRACT : (SDIP-NC-ETRAPS-2023-28)
Obective: The present study was planned to develop nasal gel for the treatment of supra ventricular tachycardia. The objective of the present investigation was to develop a mucohadhesive in-situ gel with reduced nasal mucociliary clearance to improve the local effect of polyherbal extract in the treatment of supra ventricular tachycardia. The prolonged residence of drug formulation in the nasal cavity is one of the most importance of intranasal drug delivery. The prepared formulation was subjected for gelling temperature, gelling time, viscosity, gel strength, pH, drug content, mucoadhesive strength, spread ability and irritancy studies. METHODS: In the study, the Chitosan based mucoadhesive in-situ nasal gels containing Euterpe Oleracea extract were used having antioxidant and anti-inflammatory effect. A polyherbal in-situ hydrogel was designed and evaluated by and mixing of chitosan, poly ethylene glycol (PEG 400) and xantham gum with a small amount of hydroxypropyl methylcellulose (HPMC K4M) and carbopol 934. RESULTS: The mucohadhesive gel after being administration in to nasal cavity to get transformed in to solution at body temperature, which diminished nasal cavity mucociliary clearance and prolonged duration of action. The in-situ herbal gel prepared by combination of different concentration of HPMC K4M or carbopol or xantham gum and chitosan produce the better and effective gel. The findings of evaluation parameters indicate the nasal in-situ gel to solution. Conclusion: The concluded that in-situ gel to herbal drug (Eutrepe oleracea) to over com first pass metabolism to overcome first pass metabolism to improve the bioavaibility. The mcoadhesive in-situ gel system is a promising approach for the intra nasal drug delivery system.

Keywords : Eutrepe oleracea, HPMC, Carbopol, In-situ gel, Chitosan, Xanthan gum, Benzalkonium chloride.

FORMULATION AND EVALUATION OF ANTICOAGULANT MAGNETIC NANOPARTICLES

Ramya sree, Dr. P.Neeraja, P.Naga chandrika, Dr.M.Ravikumar
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ABSTRACT : (SDIP-NC-ETRAPS-2023-29)
Magnetic nanoparticles are the class of nanoparticles that can be manipulated by using magnetic fields. These particles consisting of two components, a magnetic material like iron, nickel, cobalt, and a chemical component with functionality mainly with biocatalytic or biorecognition properties. Amazing phenomena exhibited by magnetic nanoparticles include superparamagnetism, high field irreversibility, and high saturation magnetization. Anticoagulant reffered as blood thinners that are chemicals which stops or slow down blood coagulation, extending the clotting time, these are used to treat thrombotic diseases. anticoagulant drugs which are recently used are warfarin, heparin, apixaban, enoxaparin. anticoagulant used as coating agent to magnetic nanoparticles, they act as both anticoagulant agent and wound-healing agent. Magnetic nanoparticles are prepared by using chemical coprecipitation method.

Key words: Magnetic nanoparticle, Biorecognition, Anticoagulant, Wound-healing agent.

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ADVANCED APPROACH TO TRANSETHOSOMES OF TRANSDERMAL DRUG DELIVERY SYSTEM

C. Sree Pravalika, P.Angel Sharon, N.Sathwika, P.Naga Chandrika
Dr. P.Neeraja, Dr. Ravikumar
Department of Pharmaceutics, Geethanjali College of Pharmacy, Medchal, Telangana

ABSTRACT : (SDIP-NC-ETRAPS-2023-07)
Mucoadhesive drug delivery system interact with the mucous layer covering the mucosal epithelial surface and mucin molecules and thereby it increases the residence time of the dosage form at the site of absorption. In recent years, mucoadhesion drug delivery system has shown remarkabl interest for increasing the residence time at the site where it is applied and to expedite contact of dosage form with the underlying mucosa, mainly to promote absorption and elevate the percentage bioavailability of drug to it s extensive surface area and a higher rate of blood. This could be assessed in delivering and enlarging number high molecular weight molecules like protein and peptides. Mucoadhesive controlled drug delivery system are valuable, since they are not only a controlled but also target release and this site specific delivery. The prospect of this presentation is to present comprehensive information related to mucoadhesion and mucoadhesive drug delivery system. This presentation gives a highlighted view of all aspects of Mucoadhesive drug delivery system.
Keywords: Mucoadhesion, mechanism of mucoadhesion, factors affecting mucoadhesion.

DESIGN, DEVELOPEMENT IN VITRO & IN VIVO CHARACTERIZATION OF GASTRO RETENTIVE FLOATING DRUG DELIVERY SYSTEM

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resistant organisms (MDROs) isolated from pus samples of Diabetic wounds. Methodolo Antibacterial assessment was performed by disc diffusion assay and t bactericidal/bacteriostatic effect was assessed by minimum inhibitory concentration (MI and minimum bactericidal concentration (MBC). Time-kill kinetics that examined t dynamics of the antimicrobial activity relative to time. Protein leakage that evaluated t release of protein metabolites on contact and Fluorescence-activated cell sorting (FAC analysis that confirmed bacterial cell death was performed at 1x MIC and 2x M concentrations of green synthesised ZnO NPs. Cytotoxicity by MTT assay was assessed Human Embryonic Kidney epithelial cells (HEK 293). Result and Discussion: Biosynthesis ZnO NPs at an average size of about 11.12 ± 0.38 nm exhibited excellent antibacter effects with the MIC and MBC values were in the range of 50 µg/mL to ≥ 200 µg/mL and 1 µg/mL to ≥ 200 µg/mL, respectively. Time-kill assays demonstrated a significant decrease the growth of all species >90% decrease in viable count within 6 h. Protein leakage and Fl cytometric analysis confirmed cell death of MDROs with reduced cytotoxic effects on HE 293 cells. This study provides a vital insight towards the development of a new antimicrob agent for treating antimicrobial resistant-microbes.

Keywords : ZnO NPs; Pajanelia longifolia; Antibacterial activity; MIC/MBC; Fl cytometry; Cytotoxicity.

A REVIEW ON BIOFLAVANOIDS IN THE TREATMENT OF SYSTEMIC LUPUS ERYTHEMATOSUS

Lakshmi Rajita Kotta1, Naga Chandrika Pallam1, Dr A Vijaya Laksmi2
1Geethanjali College of Pharmacy, Cheeryal, Keesara, Telangana.
2Vels University Chennai, Tamil nadu.

ABSTRACT : (SDIP -NC-ETRAPS-2023-07)

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STANDARDIZATION OF AYURVEDIC FORMULATION CHURNA- A REVIEWA

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Department of Pharmacy, Annamalai University
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ABSTRACT : (SDIP-NC-ETRAPS-2023-12)
Plants have used since ancient ages for relieving pain and treatments. Ayurveda the oldest system of Indian medicine' which uses herbs has a key role to play in health care system. Various ayurvedic formulations like Asavas, Aristas, Churna, Bhasma, Gutika etc are in place for administration. The quality control of herbal crude drug formulation is important in justifying their acceptability in modern system of medicines. WHO has emphasized the need to ensure quality control of medicinal plants products by using modern techniques and by applying suitable standards and parameters. Churnas are single or combination of herbal powders Which are simple and easy to administer. In the present study the standardization parameters like authentication, organoleptic , physico-chemical, physical ,microscopical evaluation , flow properties of powders , methods employed to detect heavy metals, pesticide residues and shelf life determination are reviewed in detail for churnas. The standardization of churnas ascertains the safety, efficacy and acceptance of the product in global market.

Key words: Churnas, physico - chemical, heavy metals, shelf life, pesticide residue

CANCER TREATMENT GOLD NANO TECHNOLOGY

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Cancer is a disease in which abnormal cell divide uncontrollably and destroy body. Nanotechnology facilitates conjugated nanoparticle and allows easy detection of early stages of the disease these particles allow targeting cancer drugs they are generally low in proportions. Nanoparticles are small in size they are bio safe ,loading of drugs and physical therapy have been increased. Cancer nano therapeutics are rapidly progressing and being implemented to solve several limitations of targeting, lack of water solubility, poor oral bio availability, and low therapeutics indices.a wide range of nanomaterials based on organic, inorganic, lipid or glycan compounds as well as synthetic polymers has been utilized for the development and improvement of new cancer therapeutics.

DEVELOPMENT OF BIOSYNTHESIZED SILVER NANOPARTICLES FROM CINNAMOMUM TAMALA FOR WOUND HEALING ACTIVITY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-14)

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Key words : Churnas, physico - chemical, heavy metals, shelf life, pesticide residue

CANCER TREATMENT GOLD NANO TECHNOLOGY

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ABSTRACT : (SDIP-NC-ETRAPS-2023-13)
Cancer is a disease in which abnormal cell divide uncontrollably and destroy body. Nanotechnology facilitates conjugated nanoparticle and allows easy detection of early stages of the disease these particles allow targeting cancer drugs they are generally low in proportions. Nanoparticles are small in size,they are bio safe ,loading of drugs and physical therapy have been increased. Cancer nano therapeutics are rapidly progressing and being implemented to solve several limitations of targeting lack of water solubility,poor oral bio availability and low therapeutics indices a wide range of nanomaterials based on organic, inorganic,lipid or glycan compounds as well as synthetic polymers has been utilized for the development and improvement of new cancer therapeutics.

DEVELOPMENT OF BIOSYNTHESIZED SILVER NANOPARTICLES FROM CINNAMOMUM TAMALA FOR WOUND HEALING ACTIVITY

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