One Day Seminar on

"INNOVATIONS IN PHARMACEUTICAL RESEARCH- 2020 AND ORAL/ e-POSTER PRESENTATIONS"

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ABSTRACTS

Organized By

G. PULLA REDDY COLLEGE OF PHARMACY

Mehdipatnam, Hyderabad

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G. PULLA REDDY COLLEGE OF PHARMACY

(Affiliated to Osmania University Approved by AICTE and PCI)

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G. Pulla Reddy College of Pharmacy envisages to become the centre of excellence for research in Pharmacy. It aims to contribute significantly to drug development and drug discovery.

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G.Pulla Reddy College of Pharmacy aims to be on forefront in imparting the disciplined and quality Pharmacy education. The Graduate & Post-graduate students shall be groomed as responsible & highly acclaimed professionals in the Pharmaceutical Arena.

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B. Pharm

M. Pharm - Pharmaceutical Chemistry
Pharmaceutics
Pharmacology
Pharmaceutical Analysis
Pharmacognosy

Pharm. D

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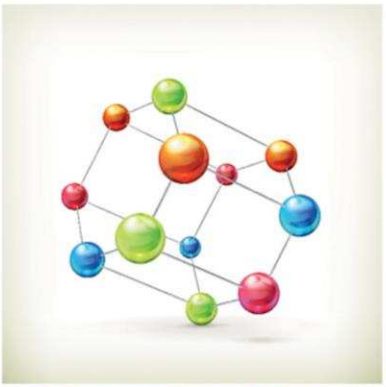
PHARMACEUTICAL CHEMISTRY



PCH001

NANOPARTICLE SYSTEM FOR ANTICANCER DRUG DELIVERY: TARGETING TO OVERCOME MULTIDRUG RESISTANCE

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Drug resistance in cancer is the foremost threat in the present therapeutic era. Resistance to anticancer drugs results from a variety of factors, such as individual genetic factors, and various cellular molecular targets. Clinically, drug resistance may develop either prior to drug therapy, or due to drug therapy. Cancer cells express multiple drug resistance (MDR) by initially developing resistance to a single anticancer drug, and slowly to various anticancer agents that are structurally similar but possess different mechanisms of action.
Biodegradable nanoparticle drug delivery systems emerge as promising therapeutic concepts to target cancer cells. Drug-loaded polymeric nanoparticles bypass the molecular domain responsible for the development of resistance, and deliver the drug in a controlled manner, with less adverse effects, and increased therapeutic efficacy.

Keywords: Multidrug resistance, Cancer, Nanoparticles, Therapeutic efficacy

PCH002

VALPROATE- ANTI-EPILEPTIC DRUG

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Preclinical studies have been carried out during the past four decades to investigate the mechanisms of action of valproate(VPA).The mechanism of action seems to be of clinical importance and includes increased GABAergic activity.Proposed mechanisms includes blockade of voltage gated sodium channels and inhibilting the activity of histone deacetylases.Valproate and its valproic acid,sodium valproate are used to treat epilepsy and bipolar disorders.Based on moderate quality evidence when added to antipsychotic drugs valproate probably increases the chances of improvements.It's primarily used in the treatment of absence seizures,tonic-clonic seizures and myoclonic seizures.It has efficacy in controlling the symptoms of dopamine dysregulation syndrome according to five case reports.It can be administerd orally or intravenously..Valproate was first synthesized in 1881 by Beverely S Burton from valeric acid,found in Valerian,Pierre Eymard serendipitously discovered the anti convulsant activity of valproic acid when it was being used as a vehivcle in several anticonvulsant drugs, he found it prevented pentylenetetrazol induced convulsions in rats. It came into medical use in 1962.The major pathway for its metabolism is mitochondrial beta-oxidation.It is metabolized by Cytochrome P450 enzymes and UDP-glucuronosyltransferase.Its adverse effect include Encephalopathy,may cause low platelet count,mydriasis, increase the chances of Polycystic ovarian syndrome. Teratogenicity is severe-it may cause spina bifida,autism,dysmorphic features,epicanthic folds.It is available under the brand names Encorate(India),Convulex(Austria),Valcote(Argentina)etc. Presently it is being tested in the treatment of AIDS and cancer owing to its histone deacetylase inhibiting effects.

Keywords: Valproate, Epilepsy

PCH003

STRUCTURE BASED VIRTUAL SCREENING, DESIGN, SYNTHESIS AND BIOLOGICAL EVALUATION OF IMIDAZOLES AS ANTIDIABETIC AGENTS

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Virtual screening is a promising method for obtaining novel hit compounds in drug discovery. Here we have done the SBVS for imidazole derivatives and from the literature we are understood that imidazoles are having the broad spectrum of activities like anticancer, anticoagulants, anti-inflammatory, antibacterial, antifungal, antiviral, antitubercular, antidiabetic and antimalarial. Here we are retrived the imidazole molecules from the CHEMBLE database and subjected for the virtual screening for different activities as antifungal, anticancer, antidiabetic, antibacterial. When compaired to the other imidazole derivatives the imidazolone molecule has the more binding effinity . Most of the imidazolones are reported to have antidiabetic activity against SUR-1 receptor on the other hand imidazolones are bioisosteres to the thiazolidinones hence a synergistic approach is expected. Hence imidazolones are subjected to virtualscreening simultaneously on SUR-1 & PPAR ɣ receptors and designed to emerge them as synergistic inhibitors of SUR-1 & PPARɣ for their possible antidiabetic activity. Then the HITS are identified, and basic pharmacophoric features responsible for the activity are predicted. By keeping in view of these a novel imidazolone derivatives were designed, docked and synthesized. The Synthesized compounds are to be characterized by physical and spectral data and subjected to the evaluation of antidiabetic activity.

Key words: Imidazoles, Insilico studies, Structure based virtual screening, characterization, Antidiabetics

PCH004

SYNTHESIS OF PYRAZOLINE ANALOGUES FOR ANTIMALARIAL LARKING

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Malaria, caused by different species of Plasmodium parasite is a distressing disease resulting in over a million deaths world over. The efforts to eradicate the disease through the armoury of agents have been proved to be futile due to development of resistance. Consequently, the search for agents for malaria treatment is a continuous process. In this regard, pyrazoline seem to be an effective heterocyclic. The latest trend for the treatment of malaria is hybrid technology where in more than one moieties are covalently linked to each other. Taking the pharmacological relevance of pyrazoline, it was incorporated with other bioactive features, on the premise that their presence in tandem in a single molecular framework can significantly contribute to the biological activity of the resulting molecules.

Key words: Malaria, Plasmodium parasite, Pyrazoline, Heterocyclic compounds

PCH005

MICROREACTOR TECHNOLOGY AND FLOW CHEMISTRY TO DEVELOPMENT OF SUSTAINABLE AND GREEN CHEMISTRY

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Microrector technology and flow chemistry could play an important role in sustainable and green chemistry. Flow chemistry is becoming a new technique for fulfilling several of the twelve green chemistry principle by Paul Anastasi and john Warne . Microrector approach could provide protection preserves atom economy, guarantee less hazardous chemical synthesis and allows the use of safer solvent and auxillaries. The flash chemistry concept as a field of chemistry synthesis using flow micro reactors where extremely fast reactions are conducted in a highly controlled manner to produce desired compounds with high selectivity. field of flash chemistry used for synthesis of protecting group free organic synthesis. flash method used for the generation of highly unstable carbamoyl anions. continuous flow catalysis appealing because it combines the advantage of catalytic reaction with flow chemistry. The recovery and reuse of catalyst in continuous flow process which provides an environmentally friendly synthesis. the use of microrectors and continues flow chemistry for the handling of hazardous chemicals in organic synthesis made possible in batch mode for example compounds containing diazo, hydrazine phosgene, azides and cyanides can be performed with relatively low risk in flow technology. continuous flow chemistry for sustainable production of active pharmaceutical ingredient using multistep continuous flow reactors synthesis of a drug target via heterogeneous catalysis.

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Key words: Microrector technology, Flash chemistry, Flow chemistry, Green chemistry, Sustainable synthesis

PHARMACEUTICS

PCU-001

ARTIFICIAL INTELLIGENCE: THE BEGINNING OF A NEW ERA IN PHARMACY PROFESSION

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Artificial intelligence (AI) is a branch of computer science that deals with the problem-solving by the aid of symbolic programming. It has greatly evolved into a science of problem-solving with huge applications in business, health care, and engineering. One of the pivotal applications of AI is the development of the expert system. With the advent of big data and AI, robots are now becoming more trustworthy for doctors, and a large number of institutions are now employing robots along with human supervision to carry out activities that were previously done by humans. The major advantage of AI is that it reduces the time that is needed for drug development and, in turn, it reduces the costs that are associated with drug development, enhances the returns on investment and may even cause a decrease in cost for the end user. A large number of researches are being carried out to improve the current available AI technology to make the pharmacy profession more efficient. The present article briefly describes the importance of AI in the process of drug development and then looks at the various AI tools that are available at the disposal of a modern-day pharmacist to aid in a more efficient functioning.

Keywords: Artificial Intelligence, robots, pharmacy.

PCU-002

RE- SEALED ERYTHROCYTES:A NOVEL AND PROMISING DRUG SYSTEM DELIVERY

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Targeted drug delivery, known as smart drug delivery focuses on targeting the medicaments by increasing the Targeted residence time and the concentration of drug at the target site of the body (organs, cells, tissues) thus improving the efficacy of treatment and reducing the side effects. Various carriers that can be used in this type of delivery are liposomes, nanoshells, erythrosomes and resealed erythrocytes. In this Innovation era, resealed erythrocytes have become the choice of drug delivery system because of its excellent biocompatibility, biodegradability and ability to entrap several molecules. The promising aspect of resealed erythrocytes makes them useful as a drug carrier. They have reduced toxicity, improved pharmacokinetic properties that help in transport of active ingredient to the targeted site. This property makes them superior as compared to the conventional drug delivery system. The method of isolation involves collection of sample from the interest, then separating the plasma and finally resealing it. Erythrocytes are prepared by using methods like hypotonic dilution, hypotonic dialysis, pre-swelling, osmotic lysis, endocytosis and chemical penetration. The tremendous potential to achieve site specific drug delivery makes them as first choice of drugs in areas like enzyme therapy, cancer, hepatic tumours and antiviral. The present article includes methods, applications, evaluation, future aspects of resealed erythrocytes and highlights its applications with particular stress in areas of cancer, hepatic tumours and enzyme therapy.

Keywords : Erythrocytes, resealed erythrocytes, Endocytosis, hypotonic solution.

PCU-003

3D PRINTING TECHNOLOGY

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3DP (3 dimensional printing) technology is a concept in academic and industrial sector , which touches the domains like aerospace, engineering, FMCG(fast moving consumer goods), architecture, military fashion industry, chemical industry, and medical field. This technology is so widespread that its applications include things that are an integral part of human life like drugs, clothing, eyeglasses, parts of cars and geometry and shape of the drug. 3DP has a wide range of applications like tissue design, printing of organs, diagnostics, manufacture of biomedical devices and design of drug and delivery systems i9n medical field .the main concept involves the transfer of matter into prototype by taking help from 3D computer-aided design (CAD) files so that digitally controlled and customized.

Keywords: 3D printing, computer-aided design.

PCU-004

BILOSOME: A BILE SALT BASED NOVEL CARRIER SYSTEM

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Bile salts (BSs) are biomaterials reminiscent of traditional surfactants with peculiar structure and self-assembled topologies. Most of the new drugs, biological therapeutics (proteins/peptides) and vaccines have poor performance after oral administration due to poor solubility or degradation in the gastrointestinal tract (GIT). Though, vesicular carriers exemplified by liposomes or niosomes can protect the entrapped agent to a certain extent from degradation. Nevertheless, the harsh GIT environment i.e, low pH, the presence of bile salts and enzymes limits their capabilities by destabilizing them. In response to that, more resistant bile salts-containing vesicles (BS-vesicles) were developed by the inclusion of bile salts into lipid bilayers constructs. Tremendous research in the last decade has made bilosomes a potential carrier system. Bilosomes with its name derived from bile salts (which is one of its major constituents), is a niosome-like colloidal carrier. Different aspects of bile salt based drug delivery systems include their composition, developmental techniques, characterization, comparative advantages of BS-integrated nanomedicines over conventional nanocarriers, stability, transitional modifications and scale-up emphasizing their biomedical potential in oral immunization against various diseases and delivery of peptide drugs. Bile acid-based amphiphiles, in the form of mixed micelles, bilosomes, drug conjugates and hybrid lipid-polymer nanoparticles are critically discussed as delivery systems for anticancer drugs, antimicrobial agents and therapeutic peptides/proteins, including vaccines. Bile acid-based nanoparticles are a growing research area therefore; multifaceted pharmaceutical and biomedical applications of bile salts are to be expected in the near future.

Keywords: Bile acids, bile salts, bilosomes, vaccines, protein and peptides,vesicular carriers, liposomes, niosomes.

PCU-005

REVIEW ON NANOSPONGES –A VERSATILE DRUG DELIVERY SYSTEM

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Target effective drug delivery systems are the novel approach for delivering various active moieties to targeted site. Targeting active moieties to a specific site is achieved by appropriate nanotechnology as targeted drug delivery system has various drawbacks. In order to combat this problem various dosage forms have been developed with nanotechnology among those the one with discrete functionalized particles are called as Nanosponges. Nanosponges are porous polymeric nanoparticles which are spherical in shape about a size of less than 1um and can load wide variety of drugs. These are nanoporous tiny mesh particular structure in which a large variety of drug substances can be suspended, and then incorporated into a specific dosage form.These nanoparticles with nanosize circulate rapidly in the body till they achieve there targeted site and release drug in a predictable and sustained manner. A detailed introduction aboutnanosponges and its various advantages when compared with vesicular systems, its mechanism of drug release, various drugs formulated as nanosponges, preparation and evaluations of nanosponges with applications in pharmacy are provided.. This article provides a clear cut view of nanosponges and its targeted delivery, by which drugs with low solubility, bioavailability and adverse effects can easily be formulated by overcoming all these problems. Novel Drug Delivery Systems are designed to provide a specific therapeutic amount of drug to the appropriate site to accomplish promptly and to maintain the desired drug concentration in the body.

Keywords:nanotechnology, nanoparticles, nanosponges, targeted drug delivery, crosslinkers

PCU-006

MAGNETIC MICROSPHERES: A NOVEL DRUG DELIVERY SYSTEM

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A number of novel drug delivery systems have emerged encompassing various routes of administration, to achieve controlled and targeted drug delivery, magnetic micro carriers being one of them. Magnetic microspheres hold great promise for reaching the goal of controlled and site specific drug delivery. Magnetic microspheres as an alternative to traditional radiation methods which uses highly penetrating radiations that is absorbed throughout the body. This kind of delivery system is very much important which localises the drug to the disease site. In this larger amount of freely circulating drug can be replaced by smaller amount of magnetically targeted drug. Magnetic carriers receive magnetic responses to a magnetic field from incorporated materials that are used for magnetic microspheres are chitosan, dextran etc. magnetic microspheres can be prepared from a variety of carrier material. One of the most utilized is serum albumin from human or other appropriate species. Drug release from albumin microspheres can be sustained or controlled by various stabilization procedures generally involving heat or chemical cross-linking of the protein carrier matrix. Magnetic microspheres were developed to overcome a major problem encountered in drug targeting namely: RES clearance and target site specificity.

Keywords:Magnetic, Micro carriers, microspheres

PCU-007

MULTIFUNCTIONAL NANOSPONGES AS A POTENTIAL NANOCARRIER FOR TARGETED DRUG DELIVERY SYSTEM

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A nanosponge is a novel and emerging technology which offers targeted and controlled drug delivery for oral, topical, parental and inhalation dosage forms. In general, the ideal delivery system will solubilise the drug lead the therapy to the target site and release the therapy to fulfill the individual need of the patient. Nanosponges are one of such effective drug carriers which conquer the problems of drug toxicity and poor bioavailability. This technology reduce side effects , improved stability, increases elegance, modify drug release and enhanced formulation flexibility. It is a specific system for targeted drug delivery of both kind of drugs either it is lipophilic or hydrophilic in a controlled manner. Nanosponges are tiny sponges with a size of about a virus (250nm-1µm). These have three dimensional networks, they can be prepared by crosslinking different types of cyclodextrins with a carbonyl or a dicarboxylate as a crosslinker. β-CDNs play an important role in new arrays of agriculture, floriculture, cosmetics, medicine, high molecular weight proteins, novel flame retardants, gas carriers and water filters. Nanosponges can also be used as a carrier for biocatalysts in the delivery and release of enzymes, proteins, vaccines and antibiotics. Hence, nanosponges drug delivery system has emerged as one of the most promising field in pharmaceutics.

Keywords: Nanosponges, Targeted drug delivery, solubility enhancement, bioavailability, cyclodextrin, cross linking agent, controlled release.

PCU-008

SOLID LIPID NANOPARTICLES: A REVIEW

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Solid Lipid Nanoparticles (SLN) are at the Forefront of the Rapidly Developing Field of Nanotechnology with Several Potential Applications in Drug Delivery and Research. Due to their Unique Size Dependent Properties, Lipid Nanoparticles Offer Possibility to Develop New Therapeutics. The Ability to Incorporate Drugs in Nanocarriers Offers A New Prototype in Drug Delivery That Could Use for Drug Targeting. Hence Solid Lipid Nanoparticles Hold Great Promise for Reaching the Goal of Controlled and site specific Drug Delivery And Hence Attracted Wide Attention Of Researchers. This Review Presents A Broad Treatment of Solid Lipid Nanoparticles Discussing Their aims, Production Procedure, Advantages, Limitations and Their Possible Remedies. Appropriate Analytical Techniques for The Characterization of SLN Like Photon Correlation Spectroscopy, Scanning Electron Microscopy, Differential Scanning Calorimetry Are Highlighted. Aspects of SLN Route of Administration and The In-vivo Fate of The Carriers Are Also Discussed.

PCU-009

HYBRID NANO-CARRIERS FOR POTENTIAL DRUG DELIVERY

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Nanocarriers have provided the versatile platform for the delivery of various therapeutic and diagnostic agents. Liposome, niosomes, polymeric and solid lipid nanoparticles are the most promising nanocarriers that have been entered in the clinical trials and become commercially available. However, each system has been associated with some problems that can be minimized by using the combinatorial approach of hybrid nanocarriers. These hybrid systems combine the benefits of different structural components to synergize the outcome of the therapy. In this chapter, the different types of hybrid nanocarriers have been described with particular emphasis on the brief rationale for the development of these hybrid nanocarriers along with different fabrication approaches with greater emphasize on the lipid polymer hybrid nanoparticles. A brief description factors governing the optimized response characteristics and their potential application of these hybrid nanoparticles are also presented.
Keywords:core shell hybrid nanoparticles, drug delivery, hybrid nanoparticles, nanoflowers

PCU-010

EMULSOMES: AN EMERGING VASICULAR DRUG DELIVERY SYSTEM

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The oral route is the easiest, cost effective and most vital method for drug administration. Therefore, improvement of dosage forms mainly for the prolonged release purpose has been a challenge for scientists. vesicular drug delivery systems are developed with a purpose to overcome problems coupled with the drugs such a poor bioavailability, protection from harsh gastric environment, and from gastric enzymes, which degrade the drug. vesicular drug delivery system such as liposomes, emulsions, niosomes, proniosomes , solid lipid nanoparticles , etc have gained much attention but emulsomes have rouse as system , which bypasses many disadvantages associated with other systems, developed as novel lipoidal vasicular system with internal solid fat core surrounded by phospholipid bilayer . this technology is design to act as vehicle for poorly soluble drugs. The drug is enclosed in the emulsomes and provide prolonged existence of drug in systemic circulation. further more emulsomal -based formulations of genetic drug such as antisense oilgonucleutides and plasmids for gene therapy that have clear potential for systemic utility are increasingly available. This review addresses the concept of emulsomal drug delivery system, summarizes the success of emulsomes for the delivery of small molecules and special attention has been paid to its formulation design, advantages, biopharmaceutical aspects, stability aspects, and various aspects related to drug delivery including future aspects.

PCU-011

DRUGS AND COSMETICS FROM THE SEA

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The marine environment is a rich source of both biological and chemical diversity. This diversity has been the source of unique chemical compounds with the potential for industrial development as pharmaceuticals, cosmetics, nutritional supplements, molecular probes, fine chemicals and agro chemicals. In recent years, a significant number of novel metabolites with potent pharmacological properties has been discovered from marine organisms. Although there are only a few marine derived products currently on the market several robust new compounds derived from marine natural products are now in the clinical pipeline, with more clinical development. while the marine world offers an extremely rich resources for novel compounds ,it also represents a great challenge that requires inputs from various scientific areas to bring the marine chemical diversity up to its therapeutic potential

Keywords: drugs and cosmetics from sea, marine based drugs, anticancer agents, immuno suppressants.

PCU-012

FORMULATION AND EVALUATION OF AMOXICILLIN TRIHYDRATE SUSTAINED RELEASE MATRIX TABLETS

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Amoxicillin is indicated to treat susceptible bacterial infections of the ear, nose, throat, gastro-intestinal tract, skin, skin structure, and lower respiratory tract. The main aim of the study is to formulate and evaluate sustained release matrix tablets of Amoxicillin trihydrate. Total 6 formulations were prepared by wet granulation method by using hydrophilic polymers such as Hydroxyl propyl methyl cellulose (HPMCK15M, HPMC E50), with other excipients like PVPK30, IPA, MCC, Magnesium stearate and Talc. Preformulation studies were carried out. Tablets were evaluated for physical characterization viz.hardness, friability, weight variation, swelling index, in-vitro drug release for 12 hr. Formulation F1 was found to be the optimized formulation have an invitro drug release of 56% in 7hr period.

Keywords: Amoxicillin trihydrate, HPMC K15M, HPMC E50, sustained Release.

PCU-013

DETECTION AND NOVEL TREATMENTS FOR ATHEROSCLEROSIS BY NANOPARTICLES.

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Atherosclerosis is a process in which abnormal deposits of lipids, cholesterol, and plaque build up leading to coronary artery disease and other cardiovascular problems, which is a silent killer and a leading cause of death in the United States. Atherosclerosis starts with the adhesion of inflammatory monocytes on the activated endothelial cells in response to inflammatory stimuli. These monocytes can further migrate into the intimal layer of the blood vessel where they are differentiated into macrophages, which take up oxidized low-density lipoproteins and release inflammatory factors to amplify the local inflammatory response. After accumulation of cholesterol, the lipid-laden macrophages are transformed into foam cells. Foam cells can die from apoptosis or necrosis, the intracellular lipid is deposed in the artery wall forming lesions. The angiogenesis for nurturing cells is enhanced during lesion development. Proteases released from macrophages, foam cells and other cells degrade the fibrous cap of the lesion, resulting in rupture of the lesion and subsequent thrombus formation. Thrombi can block blood circulation, which represents a major cause of acute heart events and stroke. Current detection techniques cannot easily, safely and effectively detect the lesions in the early stages, nor can they characterize the lesion feature such as the vulnerability. While the available therapeutic modalities cannot target specific molecules, cells, and processes in the lesions, Nanoparticles appear to have a promising potential in improving atherosclerosis detection and treatment via targeting the intimal macrophages, foam cells, endothelial cells, angiogenesis, proteolysis, apoptosis, and thrombosis. Indeed, many Nanoparticle have been developed in improving blood lipid profile and decreasing inflammatory response for enhancing therapeutic efficacy of drugs and decreasing their side effects.

PCU-014

COOLING CAPS FOR ALOPECIA

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Alopecia is a temporary consequence of cancer chemotherapy that can be depressing to the patient. This condition is usually temporary, but the patient undergoes lot of emotional stress due to hair fall. Hence minimising or relieving these kind of side effects is considered important in overall treatment as they boost the emotional status of the patients. Therefore, patients were counselled to purchase a wig or other head covering for the duration of their treatment. But these methods cannot reduce or inhibit hair loss; hence there arises a need to find an alternative method to reduce chemotherapy induced Alopecia. Cooling of the scalp has proved to reduce chemotherapy induced hair loss. As of now, only one cold cap has been approved by USFDA. FDA approved the marketing of the Dignicap scalp cooling system in the United States on December 08, 2015. On July 03, 2017 the US FDA cleared the expanded use of cooling cap; the Dignicap is made by Dignitana, a company based in Sweden. The present article gives detailed explanation on mechanism of cooling cap, their advantages and drawbacks. The Dignicap system consists of a snug-fitting silicon cooling cap connected to a cooling and control unit centres in the cap monitor scalp temperature allowing the system to automatically regulate cooling temperature throughout the treatment, a separate safety sensor in the cap ensures that the temperature never drops below the freezing point of 32ºF.

Key Words: Cooling cap, Alopecia, Chemotherapy, Dignicap®, cooling and controlling unit.

PCU-015

RECENT ADVANCEMENTS IN TRANSDERMAL DRUG DELIVERY SYSTEM

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TDDS is the most important part of pharmaceutical dosage forms. It has established itself as an integral part of novel drug delivery systems. On the application of transdermal patches, the delivery of the drug across dermis gives the systemic effect.The administration of drugs by transdermal route offers the advantage of being relatively painless. Drug delivery with transdermal patch systems exhibit slow,controlled drug release and absorption.Skin penetration enhancement technique have been developed to improve the bioavailability and increase the range of drug for which the transdermal and topical route is viable option.Third generation delivery systems target their effects to skin's barrier layer of stratum corneum using microneedles, thermal ablation, microdermabrasion,electroporation and cavitational ultrasound.Microneedles and thermal ablation are currently progressing through clinical trials for delivery of macromolecules and vaccines,such as insulin,parathyroid hormone and influenza vaccine.TDDS represents an attractive alternative to oral delivery of drugs and is poised to provide an alternative to hypodermic injection too.Characterization of transdermal patch is use to check it's quality,size,time of onset and duration,adhesive property,thicknes and cutaneous toxicological studies.The market for transdermal products has been in a significant upward trend that is likely to continue for the foreseeable future.

Keywords: Trandermal delivery advancements,skin,patches,polymers,enhancement techniques.

PCU-016

NANOPARTICLE: AN OVERVIEW OF PREPARATION, CHARACTERISATION AND APPLICATION

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In the last 30 years, particle size reduction technologies turned from an exploratory approach into a mature commercial drug delivery platform. Nanonization technologies have gained a special importance due to a steadily increasing number of development compounds showing poor aqueous solubility. Many drug delivery companies and academic research groups have contributed to the currently existing large variety of different technologies to produce drug nanoparticles. These particles consist of pure active pharmaceutical ingredient (API) and are often stabilized with surfactants and/or polymeric stabilizers adsorbed onto their surface. The mean particle size ranges normally from 1 nm up to 1000 nm. Here we review formulation aspects, characteristics and application of nanoparticle as drug delivery system.

Keywords: Nanoparticles, polymeric nanoparticles, targeting, drug delivery, drug release.

PCU-017

PRIMARY AND NOVEL APPROACHES TO COLON TARGETED DRUG DELIVERY SYSTEM

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The colon is where both nearby and fundamental conveyance of meditations can happen. Nearby delivery permits topical treatment of fiery gut malady. We that as it may, treatment can be caused viable if the medications to can be focused on legitimately into the colon, along these lines decreasing the foundational symptoms. This audit, principally things about the essential methodologies for CDDS (colon specific drug delivery) in particular prodrugs, pH and time subordinates frameworks and microbially activated framework, which made constrained progress and had impediments as contrasted and more up to date CDDS specifically pressure control colonic conveyance containers, CODESTM, and osmotic controlled medication delivery which are on of a kind as far as accomplishing in vivo site explicitness, and possibilities of assembling process.

PCU-018

NANO BASED DRUG DELIVERY SYSTEM: RECENT DEVELOPMENT AND FUTURE PROSPECTS

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Nano medicines and nano delivery systems are a relatively new but rapidly developing science where materials in the nano scale range are employed to serve as means of diagnostic tools or to deliver therapeutic agents to specific targeted sites in a controlled manner. Nano technology offers multiple benefits in treating chronic human diseases by site specific, and target oriented delivery of precise medicines recently there are a number of outstanding applications of the nano medicines in the treatment of various diseases. The current review, presents an updated summery of recent advances in the field of nano medicines and nano based drug delivery systems through comprehensive scrutiny of the discovery and applications of nano materials in improving both the efficacy of novel and old drugs and selective diagnosis through disease marker molecules. The opportunities and challenges of nano medicines in drug delivery from synthetic/natural sources to their clinical applications are also discussed. In addition, we have included information regarding the trend and perspective in nano medicine area.

PCU-019

PHARMACEUTICAL NANOTECHNOLOGY

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The health industry is enormous today and will only get larger as the baby-boomers reach old age. With such a huge customer based and an increasing demand, pharmaceutical industries will respond to patient's demands by expanding their technologies. As drugs become more complex and increasingly toxic, new modes of delivery are necessary to transport them to the desired sites of the body. For this reason the renowned pharmaceutical companies are applying new methods and technologies. One of the most comprehensive technologies is pharmaceutical nanotechnology. Pharmaceutical nanotechnology offers new tools, opportunities and scope, which are expected to have a great impact on many areas in disease diagnostics and therapeutics. Pharmaceutical nanotechnology is now well-established as specialized area for drug delivery, diagnostics, prognostic and treatment of diseases through its nano-engineered tools. Pharmaceutical nanotechnology provides opportunities to improve materials, medical devices and help to develop new technologies where existing and more conventional technologies may be reaching their limits. In short, recent development, market realization of various pharmaceutical nano-tools and global interest shown by scientists, governments and industries ensure that there is tremendous potential and scope of nano-based drug delivery system in near future.

PCU-020

ROLE OF NANOTECHNOLOGY IN COSMECEUTICALS

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Nanotechnology manifests the progression in the arena of research and development, by increasing the efficacy of the product through delivery of innovative solutions. To overcome certain drawbacks associated with the traditional products, application of nanotechnology is escalating in the area of cosmeceuticals. Cosmeceuticals are regarded as the fastest growing segment of the personal care industry and the use has risen drastically over the years. Nanocosmeceuticals used for skin, hair, nail, and lip care, for conditions like wrinkles, photoaging, hyperpigmentation, dandruff, and hair damage, have come into widespread use. Novel nanocarriers like liposomes, niosomes, nanoemulsions, microemulsion, solid lipid nanoparticles, nanostructured lipid carrier, and nanospheres have replaced the usage of conventional delivery system. These novel nanocarriers have advantages of enhanced skin penetration, controlled and sustained drug release, higher stability, site specific targeting, and high entrapment efficiency. However, nanotoxicological researches have indicated concern regarding the impact of increased use of nanoparticles in cosmeceuticals as there are possibilities of nanoparticles to penetrate through skin and cause health hazards. This review on nanotechnology used in cosmeceuticals highlights the various novel carriers used for the delivery of cosmeceuticals, their positive and negative aspects, marketed formulations, toxicity, and regulations of nanocosmeceuticals.

Keywords: Nanotoxicology, Nano carriers, Regulations of nano cosmetics, Conventional drug delivery system.

PCU-021

REGULATORY AFFAIRS FOR TERATOGENIC DRUGS

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Pregnancy is a special physiological condition where drug treatment presents a special concern because the physiology of medication used and certain medications can reach the fetus and cause harm. Total avoidance of pharmacological treatment in pregnancy is not possible and may be dangerous because some women enter pregnancy with medical conditions that require ongoing and episodic treatment (E. G asthma, epilepsy, hypertension) also during pregnancy new medical problem can develop and old ones can be exacerbate like headache requiring pharmacological therapy the fact that certain drugs given during pregnancy may prove harmful to unborn child is one of the classical problems in medical treatment in 1960s pregnant ladies who ingested thalidomide. Various other example of TERATOGENIC effect of drugs are known. It has been documented that congenital abnormalities caused by human teratogenic effects of drugs are known it has been documented that congenital abnormalities caused by the human teratogenic drugs account for less than 1%of total congenial abnormalities hence in 1979,food and Drugs by considering the quality of data from animal and human studies. FDA classifies various drugs used in pregnancy into five categories, A B C D and x category A is considered the safest category and category X is absolutely contradicted in pregnancy. This provides therapeutics guidance for the clinician. This regulation of teratogenic focuses on various aspects related to drug use during pregnancy and population of death rate rises so that to diminish these causes regulatory affair are consider.
Keywords: Teratogenic drugs, physiology of pregnancy, FDA, categories of drugs use in pregnancy.

PCU-022

Emulsomes: An emerging vesicular drug delivery system

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The oral route is the easiest, cost effective, and most vital method for drug administration. Therefore, improvement of dosage forms mainly for the prolonged release purpose has been a challenge for scientists. Vesicular drug delivery systems are developed with a purpose to overcome problems coupled with the drugs such a poor bioavailability, protection from harsh gastric environment, and from gastric enzymes, which degrade the drug. Vesicular drug delivery systems such as liposomes, emulsions, niosomes, proniosomes, solid lipid-nano particles, ethosomes, nanoparticles, and pharmacosomes, etc have gained much attention, but emulsomes have rouse as system, which bypasses many disadvantages associated with other systems, developed as novel lipoidal vesicular system with internal solid fat core surrounded by phospholipid bilayer. This technology is designed to act as vehicle for poorly soluble drugs. The drug is enclosed in the emulsomes and provide prolong existence of drug in systemic circulation. Furthermore, emulsomal-based formulations of genetic drugs such as antisense oligonucleotides and plasmids for gene therapy that have clear potential for systemic utility are increasingly available. This review addresses the concept of emulsomal drug delivery system, summarizes the success of emulsomes for the delivery of small molecules, and special attention has been paid to its formulation design, advantages, biopharmaceutical aspects, stability aspects, and various aspects related to drug delivery including future aspects.
Key words: Controlled oral drug delivery, emulsomes, oral bioavailability, vesicular drug delivery

PCU-023

FORMULATION AND EVALUATION OF GLICLAZIDE TABLETLOADED WITH NANOSPONGES

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The aim of this study was to design gliclazide tablets loaded with nanosponges, a BCSClass II drug with pH dependent solubility. Nanosponges are particles with a nanosize range which is poorly water-soluble drug and provides prolong release with reduced side effects. The sustained release tablets were designedsuch that the nanosponges were first optimised and then compressed into tablets. The nanosponges were subjectedfor flow properties like angle of repose, Hausner's ratio and compressibility index. The nanosponges were optimizedfor parameters like surface morphology, entrapment efficiency and in vitro drug release. The required sustainingproperty was obtained with 1.5 % ethyl cellulose & 1% PVA (GN16) showing zero order kinetics and Higuchimechanism having "n" value of 1.317 indicating super case-II transport due to relaxation of polymer chain anddiffusion. The optimized nanosponges were compressed into tablets by direct compression using different anticaking agents and evaluated for physicochemical properties and in vitro drug release. The anticaking agents are usedto maintain the morphology of the nanosponges which help in retaining the properties of nanosponges. Theoptimization for order of release was maintained zero from nanosponges to tablet preparation whereas mechanism oftransport was anomalous which was found from the "n" values as 0.527 (GNT7-1.5% MCC) and 0.594 (GNT10-1.5% MgCO 3). The optimized formulations were stable under storage conditions.

Keywords: Gliclazide, nanosponges, direct compression, tablets

PCU-024

DEVELOPMENT OF LIQUISOLID FORMULATION OF POORLY SOLUBLE HERBAL DRUG.

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Most of the newly developed drug are poorly water-soluble.Enhancing the dissolution and bioavailability of these drugs is a major challenge for the pharmaceutical industry. Liquisolid technique, which is based on the conversion of the drug in liquid state into an apparently dry, non-adherent, free flowing and compressible powder, is a novel and advanced approach to tackle the issue. The enhancement of dissolution rate of poorly water-soluble drugs, this technique is also a fairly new technique to effectively retard drug release. Furthermore, liquisolid technique has been investigated as a tool to minimize the effect of pH variation on drug release and as a promising alternative to conventional coating for the improvement of drug photostability in solid dosage forms. Overall, liquisolid technique is a newly developed and promising tool for enhancing drug dissolution and sustaining drug release, and its potential applications in pharmaceutics are still being broadened. The following presentation depicts the various formulations of- Liquorice (Glycyrrhiza glabra), a poorly soluble herbal drug used for its anti-inflammatory and immune boosting properties and how liquisolid techniques helps in efficient use of drug by using various excipients is determined and evaluated.

Keywords: Liquisolid technique,Dissolution enhancement,poorly water-soluble drugs,sustained release,pH variation,photostability

PCU-025

SELF NANO EMULSIFYING DRUG DELIVERY SYSTEM

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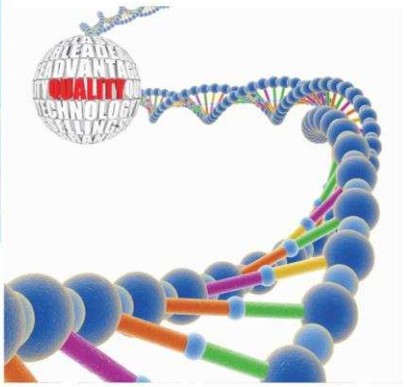
The aim of the study was to develop and optimize Self nanoemulsifying drug delivery systems (SNEDDS) for the improvement of solubility and dissolution of an anti-allergic drug, Ebastine, a BCS class II drug. Preliminary screening was carried out to select proper components combination of Oil (Oleic acid): Surfactant (Tween® 80): Co-solvent (Ethanol). Pseudo-ternary phase diagram experimental design was applied to formulate and optimize the SNEDDS containing 3:7 of (oil: S mix). Drug-Excipients compatibility studies were performed by FTIR and found no chemical interaction between the drug and excipients. The systems were assessed for evaluation parameters like optical clarity in three stages by exposing the SNEDDS to heating- cooling cycle at 4 to 45 ° C, centrifugation at 5000rpm and freeze-thaw cycles at -21 ° C to 21 ° C. The droplets of optimized SNEDDS formulation were found to be spherical with a size range of 76-111nm and emulsification efficiency of 97.67±0.3% and 91.1±0.06% drug release at the end of 30 minutes with a significant increase in dissolution rate compared to the Marketed drug suspension under the same conditions. The optimized SNEDDS formulation charged for the accelerated stability studies at 40 ◦ C/75% RH for three months revealed to be stable with 95.31±1.4% drug content and 90.12±1.98% Drug release. It was hence concluded that the solubility of poorly soluble drugs like Ebastine can be effectively enhance using Self nano emulsifying approaches using Oleic acid, Tween 80 and Ethanol as Oil, surfactant and co- solvent respectively.

Key words: Self nanoemulsifying drug delivery systems, emulsification efficiency, nano zeta sizer, freeze-thaw cycles, drug release, stability.

PHARMACOLOGY



PCL001

ALTERNATIVES METHODS TO ANIMAL TOXICITY TESTING AND LATEST ADVANCEMENTS

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The development of alternative methods for animal use, has been prompted by concerns for animal welfare in laboratory experiments. The idea is not to completely abolish the use of animals in research, as this could pose a risk to the advancement of biological knowledge, testing, and development of new drugs, vaccines, and surgical methods. Alternative tests are part of the philosophy known as the "3R philosophy". Guiding principles for more ethical use of animals in testing are the **Three Rs** (3Rs) first described by Russell and Burch in 1959. These principles are now followed in many testing establishments worldwide. These tests offer several advantages, including controlled testing conditions; a high level of standardization; a reduction in variability between experiments; the absence of systemic effects; low cost testing; a small amount of material needed; a limited amount of toxic waste, cells, and human tissues used; as well as transgenic cells carrying human genes; and reduced animal testing. The use of these alternative methods has become essential, given that they allow for a reduction in the number of animals used in laboratory experiments, for improvements in toxicological procedures that are less painful or stressful for the animals when undergoing tests.

Keywords: Animal toxicity testing, Alternative Methods, Replacement, Reduction, Refinement.

PCL002

ROLE OF STEM CELLS IN VISUAL RESTORATION

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This presentation mainly focuses on stem cell therapy as novel approach for restoring vision. There are some degenerative retinal diseases like retinitis pigmentosa and macular degeneration,these diseases gradually leads to blindness(loss of vision).Retinitis pigmentosa is characterized by continous loss of photoreceptor cells(cells that help in conversion of light into signals) and the ultimate result is loss of vision.There is no cure for this disease and nearly 2.35 millon people in world are suffering with this disease.Macular degeneration,it occurs by detoriation of central portion of retina(macula).This is age related disorder and worsens with age, which finally leads to irreversible vision loss.Nearly 200 million people around the world are suffering with macular degenaration. Stem cell therapy is the novel approach to treat these diseases,pluripotent stem cells are used in this theapy, stem cells are the special cells that have ability to develop into many different cells.Trails are made on mouse reveal that,stem cells in mouse not only have potential to survive but also differentiated and turned into functional cells. However some more studies and clinical trials are required to use this therapy in humans.Clinical trials(phase-2)are also going on this therapy. Blind people in the world can see the world after the success of this therapy.

Keywords: Vitamin D, hypercalcemia, hypervitaminosis D, supplements.

PCL003

ROLE OF STEM CELLS IN OSTEOPOROSIS TREATMENT

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Stem cells are nonspecialised cells which have the capability of continuous self-renewal by mitotic cell division and differentiate into wide range of specialised cells. Stem cell therapy have established a clinical standard care of some conditions like hematopoietic stem cell transplant for leukaemia and epithelial stem cell-based treatment. Osteoporosis is the common disease that is affecting the millions of people worldwide. Osteoporosis is a systematic skeletal disorder characterized by low bone mass and microarchitectural deterioration of bone tissue increasing the risk of fracture. It is responsible for an estimated 8.9 millon fractures per year worldwide. The current treatments for osteoporosis are predominantly bone-reabsorbing drugs that are associated with several side effects. The use of stem cells for tissue regeneration has raised great hope for the treatment of musculoskeletal disorders. Stem cell therapy for osteoporosis could potentially augment the lost mineral density by increasing the number or function of the resident stem cells. The main obstacle in this therapy is the uncertainty in the stem cell fate and biodistribution after cell transplantation. Stem cells play a key role in treating and preventing osteoporosis with less side effects. Stem cell therapy is emerging and future advancements will lead to the complete treatment of the disease by differentiation of the stem cell at desired bone site.

Keywords: Stem cell, osteoporosis, stem cell therapy, mesenchymal stem cells.

PCL004

ROLE OF REPORTER GENE ASSAYS IN DRUG DISCOVERY MUCHARL

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Reporter genes assays are versatile and sensitive methods of assaying numerous targets in highthroughput screening programs. Reporter gene technology is widely used to monitor the cellular events associated with signal transduction and gene expression. Based upon the splicing of transcriptional control elements to a variety of reporter genes (with easily measurable phenotypes), it "reports" the effects of a cascade of signalling events on gene expression inside cells. The principal advantage of these assays is their high sensitivity, reliability, convenience, and adaptability to large-scale measurements. The most commonly used reporter genes are lacZ, CAT,GFP,RFP,Luc. They are widely used in biomedical and pharmaceutical research and also in molecular biology and biochemistry. Key words Reporter gene, signalling, luc, X-gal, GFP, CAT, LacZ, transformation and transfection assays, selectable markers, reporter gene construct, two-hybrid screening.

PCL005

ABZYMES

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Catalytic antibodies, developed by combining enzymes with the use of antibodies complimentary to the haptenic group, resembling the reaction transition state are the newer vista in biologics. Catalytic antibodies offer new possibilities for their potential therapeutic applications because of a high degree of reaction specificity, stereo selectivity, regioselectivity and greater affinity towards transition state analog and their latent ability to block unwanted protein-protein interactions. This review aims at basic synthetic aspects, the updated information on mechanical, biochemical and therapeutic aspects to figure out the potential of this novel biocatalyst as a powerful therapeutic.

Keywords: Abzymes, Antibody, Catalysis, Monoclonal Antibodies

PCL006

METFORMIN PREVENTS PHENYTOIN INDUCED COGNITIVE IMPAIRMENT

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Abstract:Cognitive impairment is one of the major problems associated with antiepileptic drugs.Phenytoin is one of the widely used anticonvulsant drugs,but it adversely affects learning and memory on prolonged use due to generation of reactive oxygen species.Metformin promotes neurogenesis,enhances spatial memory function and protects the brain against oxidative imbalance.Metformin,due to its interference with apoptotic cascade,prevents cell death.Hence the present study was undertaken to evaluate the nootropic effects of metformin against phenytoin induced cognitive impairment by using several preclinical models such as actophotometer,rotarod,elevated plus maze,radial arm maze and Y-maze.Adult wistar albino rats(150-200g) of both sexes were divided into three groups.Group-1 was treated as control,Group-2 was administered with phenytoin whereas Group-3 was subjected to metformin followed by phenytoin.Metformin(200mg/kg) was administered orally 1h before administration of phenytoin(25mg/kg) for 21 days.Metformin showed significant ($p<0.05$) increase in locomotor activity in actophotometer,time of fall in rotarod,number of correct entries in radial arm maze, % SAB in Y-maze and decrease in time spent in open arm in elevated plus maze,thereby reversing the effects of phenytoin.

PCL007

RECEPTOR SCREENING

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Drug discovery is the process by which new candidate medications are discovered and High-throughput screening (HTS) is a method used for scientific experimentation especially used in drug discovery , which uses robotics, data processing/control software, liquid handling devices, and sensitive detectors, high-throughput screening allows a researcher to quickly conduct millions of chemical, Receptor-ligand interactions play a crucial role in biological systems and their measurement forms an important part of modern pharmaceutical development. Numerous assay formats in HTS are available that can be used to screen and quantify receptor ligands. One of them is Scintillation proximity assays (SPAS). They have become a powerful tool for high-throughput screening (HTS) because they can measure the activity and binding of very diverse classes of drug targets. Scintillation proximity assay (SPA) is a bead-based, radio-isotopic technology format used to measure a wide range of biological interactions, including drug-target binding affinity studies. The assay is homogeneous in nature, as it relies on a "mix and measure" format. It does not involve a filtration step to separate bound from free ligand. It is compatible with ^{3}H, ^{14}C, ^{33}P, ^{35}S, and ^{125}I-based assays where the beads contain an embedded scintillant that converts the energy from radioactive decay to light when the radionuclide and bead are in close proximity.

Keywords: Drug discovery, High throughput screening, Scintillation proximity assay, Receptor-ligand, beads, Radio isotopes.

PCL008

"PRIONS" THE NEW ENIGMA FOR SCIENCE

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Evolutionary changes present a number of enigmas. One such in recent times has to be the new infectious agent called PRION. Unlike our knowledge about infectious diseases which are caused by bacteria,viruses,fungi or parasites, which contain nucleic acids. Prions are 'proteinaceous infectious particle' i.e these are proteins which cause disease but resist all attempts at classification. They are basically misfolded proteins that have ability to spread by making other proteins misfold. Prions cause several fatal and transmissible neurodegenerative diseases in humans and animals like: Crutzfeldt-jakob disease(CJD), Gerstmann straussler-scheinker syndrome(GSS), Fatal familial insomnia(FFI), in humans and Scrapie(in sheep,goat),Bovine spongiform encephalopathy (in cattle), etc.. Prion protein is a normal protein encoded by PrNP gene found on the membrane of cells and has 209 amino acids whose function is not much known but it's thought that it might play an important role in cell-cell adhesion and intracellular signaling and therefore involved in cell-cell communication in brain. This normal PrP^{C} is readily digested by proteinase(enzyme that degrades proteins) but the infectious form of this protein PrP^{Sc} or simply Prion are resistant to degradation and persist in the environment for years and proteases cannot degrade them and these possess the ability to convert normal PrP^{C} protein into the infectious isoform PrP^{Sc} by changing their conformation or shape and causing Prion diseases. Prion diseases arise in three different ways: acquired ,familial or sporandic and there is no effective treatment for prion diseases.

Keywords: Prion, Neurodegenerative disease, Fatal familial insomnia, Proteinase enzyme, PrNP gene

PCL009

DESCRIPTION AND PHARMACOLOGY OF FIRST ORAL LDL-C LOWERING DRUG "NEXLETOL"

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Nexletol is indicated as an adjunct to diet and maximally tolerated statin therapy for the treatment of adults with heterozygous familial hypercholesterolemia (HeFH) or established atherosclerotic cardiovascular disease (ASCVD) which require additional lowering of LDL-C. The effect of Nexletol on cardiovascular morbidity and mortality has not been determined. Nexletol is the first oral, once-daily, non-statin LDL-C lowering medicine approved since 2002 for indicated patients, said Esperion. It is a first-in-class ATP citrate lyase (ACL) inhibitor that lowers LDL-C by inhibition of cholesterol synthesis in the liver. NEXLETOL is an adenosine triphosphate-citrate lyase (ACL) inhibitor. indicated as an adjunct to diet and maximally tolerated statin therapy for the treatment of adults with heterozygous familial hypercholesterolemia or established atherosclerotic cardiovascular disease who require additional.

Key words: LDL Cholesterol, Hypercholesterolemia, Cardiovascular complications, Nexletol

PCL010

CARDIAC MUSCLE CELL REGROWTH

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The HER (ErbB) receptor tyrosine kinase receptors are implicated in many cancers and several anti HER treatment are now approved .In recent years, a group of compounds that bind irreversibly to adenosine triphosphate binding pocket of HER receptor have been developed. One of these compounds, neratinib, as passed preclinical phase and is currently undergoing various clinical trials .This manuscript reviews the preclinical as well as clinical data on neratinib. As per pan HER inhibitor, this irreversible tyrosine kinase inhibitor, binds and inhibits the tyrosine kinase activity of epidermal growth factor receptors, EGFR (or HER1), HER2 and HER4, which leads to reduced phosphorylation and activation of downstream signaling pathways. Neratinib has been shown to be effective against HER2over expressing or mutant tumour in -vitro and In- vivo. Neratinib is currently being investigated in various clinical trials in breast cancer and other solid tumours including those due to mutation. Earlier studies have already shown promising clinical activity for neratinib .However, more translational research is required to investigate biomarkers that could help to predict response and resistance for selection of appropriate patients for treatment with neratinib, either as mono therapy or in combination with other drugs.

Keywords: Neratinib ,HKI 272,pan-HER inhibitor, irreversible tyrosine kinase inhibitor , HER (ErbB) ,breast cancer.

PCL011

DYNAMIC COMBINATORIAL SYNTHESIS

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Dynamic combinatorial synthesis is a recently introduced supramolecular approach that uses self-assembly processes to generate libraries of chemical compounds. In contrast to the stepwise methodology of classical combinatorial techniques, dynamic combinatorial synthesis allows for the generation of libraries based on the continuous interconversion between the library constituents. Spontaneous assembly of the building blocks through reversible chemical reactions virtually encompasses all possible combinations, and allows the establishment of adaptive processes owing to the dynamic interchange of the library constituents. Addition of the target ligand or receptor creates a driving force that favours the formation of the best-binding constituent a self-screening process that is capable, in principle, of accelerating the identification of lead compounds for drug discovery.

Keywords: Supramolecule, Dynamic combinatorial library

PCL012

ANTISENSE OLIGONUCLEOTIDE THERAPY IN HUNTINGTON'S DISEASE

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Huntington's disease is an inherited disorder that results in death of brain cell. Huntington's disease is typically inherited, although up to 10% of cases are due to a new mutation. The disease is caused by an autosomal dominant mutation in either of an individual's two copies of a gene called huntingtin. The gene provide the genetic information for a protein that is called huntingtin. Expansion of CAG triplet repeats in the gene coding for the huntingtin protein results in an abnormal protein, which gradually damages cell in brain. Symptoms in early stage are change in cognitive, behavioral, jerky, random and chorea, saccadic eye movement. Other neuropsychiatric manifestation are expressed. Medical diagnosis can be done by genetic testing, medical imaging. There is no cure for huntington's disease. Only symptomatic treatment can be carried out. Physiotherapy can also be carried out for motor problems. Current medication available which is mostly used is tetrabenazine. Antisense oligonucleotide therapy targeting messenger RNA that encode mutant huntingtin protein is novel strategies.

Keywords: Huntington's disease, Huntingtin, Antisense oligonucleotide therapy, Tetrabenazine

PCL013

HIGH CONTENT SCREENING

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High-content screening involves the use of simultaneous recording of multiple parameters in cell-based assays. High content screening (HCS) also known as high content analysis(HCA) or cellomics, it is a method that is used in a biological research, biomedical research, pharmaceutical industry & drug discovery to identify substances such as small molecules, peptides or RNAi that alter the phenotype of a cell in a desired manner. HCS related to high throughput screening in which thousands of compounds are tested in parallel for their activity in one or more biological assay. HCA involved in automated microscopy & image analysis. Several detection methods have been applied in automated microscopy. Cells can be stained with fluorescent probes such as those that detect DNA or actin. In addition, immunologic detection of diverse antigens can be achieved in permeabilized fixed cells. These methods have been used in high-throughput screening assays to study cell division, cytokinesis, mitotic spindle formation and centrosome duplication as well as cell migration. Ninety-six-well and 384-well formats have been used. For most of these screens, the microscopic images were scored by visual inspection. HCS is cell based system uses living cells as a tool in biological research to elucidate the working of normal & diseased cells.

Keywords: High content screening, High throughput screening, Drug discovery

PCL014

ROLE OF YEAST TWO HYBRID ASSAY IN DRUG DISCOVERY

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Yeast two-hybrid is based on the reconstitution of a functional transcription factor (TF) when two proteins or polypeptides of interest interact. This takes place in genetically modified yeast strains, in which the transcription of a reporter gene leads to a specific phenotype, usually growth on a selective medium or change in the color of the yeast colonies Genetic approaches to the study of heterologous protein–protein interactions, focusing on the yeast Saccharomyces cerevisiae as a useful eukaryotic model system. It is widely used genetic assay to identify and characterize protein - protein interactions , the system has been adapted to cover an increasingly wide range of applications including tasks in drug discovery and development process. Two hybrid system is also includes target identification and validation and the selection of affinity reagents.

As a genetic technique yeast two hybrid offers a sensitive and cost effective mean to test the direct interaction between two targeted proteins .It was rapidly adapted by scientific community and screens in various species and research fields already lead to thousands of publications. It remains the method of choice when it becomes to discover novel protein interactions.

Keywords: Protein-protein interactions, Hybrid, Target.

PCL015

FLUORESCENCE SCREENING

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Abstract Fluorescence screening technique is most common method for screen interaction of ligand on target protein. There are various techniques in fluorescence screening; the commonly employed techniques are fluorescence intensity assay, time resolved fluorescence, fluorescence polarization, fluorescence quench assay. The principle of fluorescence intensity assay is the substrate is tagged with donor and quencher fluorescence molecule. The principle of Fluorescence polarization is change in intensity of plane polarized light which indicates interaction of ligand with target. Fluorescence quenching assay principle relies on the ability to quench the intrinsic fluorescence of tryptophan residues within a protein , that results from changes in the local environment polarity experienced by tryptophan upon the addition of a binding partner or ligand. The principle of time resolved fluorimetric measurement is as follows ,when a mixture of fluorescence compounds is excited with a short pulse of light form a laser or flash lamp the excited molecules emit either short or long lived fluorescence. .

key words: fluorophores, types of fluorescent screenig, FIA,TREF,TRF,FP.

PCL016

NOVEL ANTIBIOTICS THAT KILL BACTERIA IN A NEW WAY

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A new group of antibiotics with a unique approach to attacking bacteria has been discovered, making it a promising clinical candidate in the fight against antimicrobial resistance. The newly found corbomycin and the lesser known complestatin have never before seen way to kill bacteria, which is achieved blocking the function of the bacterial cell wall. The discovery comes from the family of antibiotics called glycopeptides that are produced by soil bacteria. "Bacteria have a wall around the outside of their cells that give them shape and is source of strength." "Antibiotics like penicillin kill bacteria by preventing building of wall, but antibiotics that we found actually work by doing the opposite—they prevent the wall from being broken down." This is critical for cell to divide. "In order for a cell to grow, it has to divide and expand. If you completely block the breakdown of the wall, it is like it is trapped in a prison and can't expand or grow." It was hypothesized that if the genes that made these antibiotics were different, maybe the way they killed the bacteria was also different.

Keywords: Antibiotics, Corbomycin, Complestatin, Glycopeptides

PCL017

NEUROENDOCRINE CANCER

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A neuroendocrine tumor (NET) begins in the specialized cells of the body's neuroendocrine system. These cells have traits of both hormone-producing endocrine cells and nerve cells. They are found throughout the body's organs and help control many of the body's functions. Hormones are chemical substances that are carried through the bloodstream to have a specific effect on the activity of other organs or cells in the body. All NETs are considered malignant tumors. Most NETs take years to develop and grow slowly. However, some NETs can be fast-growing. NETs can begin in any part of the body, including the Lung the lung is the second most common location of NETs. Gastrointestinal (GI) tract. NETs develop most commonly in the GI tract, specifically in the small intestine (19%), appendix (4%), and large intestine (20%). NETs can also begin in other organs. In about 15% of cases, a primary site cannot be found. Sometimes, NETs may develop in or on the adrenal glands. These rare types of NETs are called pheochromocytoma and paraganglioma.

Keywords: Neuroendocrine cancer, Malignant tumor, Hormones

PCL018

ROLE OF hERG ASSAY IN DRUG SAFETY AND DRUG DISCOVERY

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Following its involvement in life-threatening cardiac arrhythmias, the catchword 'hERG' has become infamous in the drug discovery community. The blockade of the ion channel coded by the human ether-á-go-go-related gene (hERG) has been correlated to a prolongation of the QT interval in the ECG, which again is correlated to a potential risk of a life-threatening polymorphic ventricular tachycardia - torsades de pointes (TdP). Therefore, in vitro investigations for blockade of this ion channel have become a standard, starting early in most drug discovery projects and often accompanying the whole project; at some stage, scientists in many medicinal chemistry programs have to deal with hERG channel liabilities. Data for the compound effects on hERG channel activity are generally part of the safety pharmacology risk assessment in regulatory submissions and, at this stage, are ideally conducted in compliance with good laboratory practice. With the withdrawal of clobutinol from the market, owing to its perceived risk of introducing TdP, the importance of the hERG channel has very recently been reconfirmed. Despite being of such importance for drug discovery, the relevance and impact of hERG assay data are sometimes misinterpreted, as there are drugs that block the hERG-coded ion channel but do not cause TdP, and drugs that cause TdP but do not block the hERG channel. This review aims to provide an overview of TdP, including the cardiac action potential and the ion channels involved in it, as well as on the relevance and interpretation of in vitro hERG channel data and their impact for drug discovery projects. Finally, novel cardiac safety test systems beyond in vitro hERG channel screening are discussed.

Keywords: hERG assay, QT interval, Safety Pharmacology, torsades de pointes

PCL019

GENETICALLY MODIFIED ORGANISMS

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Genetic modification is a biological technique that effects alterations in the genetic machinery of all kinds of living organisms. GMO is defined as follows by WHO (World Health Organization): "Organisms (i.e. plants, animals or microorganisms) in which the genetic material (DNA) has been altered in a way that does not occur naturally by mating and/or natural recombination". The definition seeks to distinguish the direct manipulation of genetic material from the millennial-old practice of improvement in the genetic stock of plants and animals by selective breeding. With DNA recombinant technology, genes from one organism can be transferred into another, usually unrelated, organism. The genesis of DNA modification technology can be traced back to 1944, when scientists discovered that genetic material can be transferred between different species. The first genetically modified plants – antibiotic resistant tobacco and petunias – were produced by three independent research groups in 1983 . Modern biotechnology has resulted in a resurgence of interest in the production of new therapeutic agents using botanical sources. With nearly 500 biotechnology products approved or in development globally, and with production capacity limited, the need for efficient means of therapeutic protein production is apparent.

Keywords: Gene manipulations, Genetic modifications, Recombinant DNA technology, Selective breeding

PHARMACEUTICAL ANALYSIS & QUALITY ASSURANCE

PAQ001

ESTIMATION OF ENTECAVIR MONOHYDRATE IN FORMULATION USING 3-AMINO PHENOL AS CHROMOGENIC REAGENT

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Two visible spectrophotometric methods have been developed for the determination of entecavir monohydrate in pure and dosage forms using chromogenic reagents. Method is based on reaction of drug with 3-amino phenol in acidic media to yield yellow colored chromogen exhibiting absorption maximum at 437nm. Beer's law is obeyed in the concentration range of 400-2000ng/mL with coefficient of determination (r^2) as 0.996. The Limit of detection and Limit of Quantitation were found to be 151.8ng/mL and 460ng/mL respectively. The developed method have been validated as per the ICH Q2 (R1) guidelines. The results demonstrate that the method is linear, precise and accurate. The proposed methods were successfully applied for determination of famciclovir in pharmaceutical dosage forms (tablets) with good recovery and reproducibility.

Keywords: 3-amino phenol, famciclovir, spectrophotometric determination, ICH guidelines

PAQ002

APPLICATION OF MICROFLUIDIC CHIP TECHNOLOGY IN PHARMACEUTICAL ANALYSIS: A REVIEW

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The development of pharmaceutical analytical methods represents one of the most significant aspects of drug development. Recent advances in micro fabrication and microfluidics could provide new approaches for drug analysis, including drug screening, active testing and the study of metabolism. Microfluidic chip technologies, such as lab-on-a-chip technology, three-dimensional (3D) cell culture, organs-on-chip and droplet techniques, have all been developed rapidly. Microfluidic chips coupled with various kinds of detection techniques are suitable for the high-throughput screening, detection and mechanistic study of drugs. This review highlights the latest (2010–2018) microfluidic technology for drug analysis and dicusses the potential future development in this field.

Keywords: Microfluidics, Microfluidic chip technology, Drug analysis, High throughput screening

PAQ003

DEVELOPMENT AND VALIDATION OF RP-HPLC METHOD FOR DETERMINATION OF CANAGLIFLOZIN IN BULK AND TABLET DOSAGE FORM

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A simple, specific and accurate reverse phase high performance liquid chromatographic method for the determination of Canagliflozin in bulk and pharmaceutical dosage forms. The method is optimized on INERTSIL C18 column (150mm×4.6mm,5µm) with a mobile phase combination of Methanol: Acetonitrile: Water (30:50:20 v/v/v) at a flow rate 1.0ml/min and the eluents were monitored at 250nm. Under these LC conditions Canagliflozin peak was eluted at 3.367 min. The developed method was validated as per ICH guidelines. The correlation coefficient values in linearity were found to be 0.999 and concentration range of 20-60µg/ml for canagliflozin and the mean percentage assay was found to be 99.89%. The method was found to be precise as indicated by the repeatability analysis, showing %RSD less than 2. All statistical data proves validity of the methods and can be used for routine analysis of pharmaceutical dosage form.

Keywords :- Canagliflozin, RP-HPLC Method development, Method validation

PAQ004

QUALITY RISK MANAGEMENT

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Quality risk management is a process that supports science-based and practical decisions when integrated into quality systems. Effective quality risk management can facilitate better and more informed decisions, and can provide regulators with greater assurance of a company's ability to deal with potential risks. Since two or three years Quality Risk Management (QRM) has turned into an obligatory administrative prerequisite towards human services associations. QRM is a by and large and proceeding with procedure of limiting dangers to item quality for an amazing duration cycle so as to enhance its advantage and parity the hazard. It is a precise procedure for the assessment, control, correspondence and audit of dangers to the nature of the therapeutic item. Quality Risk Management standards are adequately used in numerous regions including business, protection, business related wellbeing, general wellbeing, pharmacovigilance, and by offices directing these ventures. Despite the fact that there are a few instances of the utilization of value chance administration in the pharmaceutical business, today they are constrained and don't speak to the full commitments that hazard the executives needs to offer. In connection to pharmaceuticals, however there are an assortment of partners, including medicinal specialists and patients just as government and industry, the wellbeing of the patient by dealing with the hazard to quality ought to be viewed as prime significance.

Keywords: Quality, Quality Risk Management (QRM), ICH Q9

PAQ005

UPLC (ULTRA PERFORMANCE LIQUID CHROMATOGRAPHY)

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UPLC is a modern technique which gives a new direction for liquid chromatography. UPLC refers to ultra performance liquid chromatography, which enhance mainly in three areas: "speed, resolution and sensitivity. Ultra performance liquid chromatography (UPLC) applicable for particle less than 2µm in diameter to acquire better resolution, speed, and sensitivity compared with high-performance liquid chromatography (HPLC). In twenty first centenary pharmaceutical industries are focusing for new ways to in economy and shorten time for development of drugs. UPLC analysis at the mean time gives the better quality of their products and analytical laboratories are not exception in this trend. The separation and quantification in UPLC is done under very high pressure (up to 100M Pa). As compare to HPLC, under high pressure it is observed that not any negative influence on analytical column and also other components like time and solvent consumption is less in UPLC.

Keywords: Ultra performance liquid chromatography; High separation efficiency; Cost effective; High pressure

PAQ006

SAMPLE PREPARATION, EXTRACTION AND ANALYSIS OF IMPORTED CHILDREN'S TOYS FOR BISPHENOL A AND PHTHALATES

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The US has started to limit levels of some phthalates for use in children's' products including DEHP, DBP, BBP, DINP, DIDP & DIOP. The Consumer Product Safety Commission (CPSC) has published testing methods for these regulated phthalates. The regulation of bisphenol A (BPA) remains under debate. This study examined the levels of phthalates and BPA in 26 children's toys purchased from local discount or "dollar"- type stores. The toys were all reported as being made in china.
Microwave extraction methods were created and optimized against SPEX Certi Prep certified solid reference materials to compare levels of phthalates and BPA found in the toys. Samples were examined using GC-MS. High levels of phthalates and BPA were detected in the majority of the PVC toys. In many samples the concentration of phthalates far exceeded their limits set by the CPSC.

Keywords: Safety, GC-MS, Consumer Product Safety Commission(CPSC).

PAQ007

BIOANALYTICAL METHOD DEVELOPMENT AND VALIDATION FOR ESTIMATION OF DAUNORUBICIN AND CYTARABINE IN BLOOD PLASMA BY USING RP-HPLC

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A simple, selective and sensitive RP-HPLC method was developed for the estimation of Daunorubicin and Cytarabine in combined formulation isocratically using 20 mM KH_2PO_4 : Acetonitrile (pH 2.5) in 20:80 v/v ratio as mobile phase, column used is Prontosil C-18 (4.6 x 250mm, 5µm particle size) and the chromatogram was recorded at 254nm. The validation studies are carried out as per ICH requirements. The method is found to be specific, accurate, linear, precise (including both intra- and inter- day precision), and robust. This proposed method may represent a valuable aid in the laboratory monitoring of toxicity of anticancer chemotherapy.

Keywords: RP-HPLC, Leukemia, Daunorubicin and Cytarabine, Linearity and Calibration curve

PAQ008

HPTLC

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High peformance thin layer chromatography (HPTLC) is a method that can be used for screening lichen substances. It is as simple to use as standard TLC, but has many advantages: It is more sensitive, it is possible to run more samples in a shorter period of time, and the amount of solvent used is much smaller. The material needed and the methods used are described in detail. Horizontal chromatogram development was used. Since two of the solvents used in system B have been substituted, and since the properties of the HPTLC plates are slightly different, our results are not entirely in accordance with the standardized TLC method

HPTLC is a most versatile technique and is known for uniformity, purity profile, assay values and precision and accuracy of results. It can handle several samples of even divergent nature and composition. HPTLC is a modern analytical separation method with extensive versatility, although already much utilized, is still with great potential for future development in research and development. It is accepted as a time-saving and most economical machine practically with minimum trouble shootings. It speeds up analysis work which is usually not possible with other parallel chromatographic techniques available. The scope of hyphenation of HPTLC with other analytical techniques appears to hold considerable promise for the analysts who previously have had reservation towards the use of planar

Keywords: HPTLC, TLC, High throughput screening, Lichen substances

PAQ009

FLOW CYTOMETRY: A TOOL FOR BIOCHEMICAL ANALYSIS

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Flow cytometry is a sophisticated instrument measuring multiple physical characteristics of a single cell such as size and granularity simultaneously as the cell flows in suspension through a measuring device. The use of flow cytometry in the clinical laboratory has grown substantially in the past decades .It's working depends upon the light scattering features of the cells under investigation, which may be derived from the dyes or monoclonal antibodies targeting either extracellular molecules located on the surface or intracellular molecules inside the cell. This approach makes flow cytometry a power full tool for detailed analysis of complex populations of cells in short period of time. Here in this presentation reviews the general principle in flow cytometry, working of flow cytometry along with its histogram, its objective and its specific applications applications in recent trend.

Keywords: Flowcytometry, Cell analysis

PHARMACOGNOSY

PCG001

ADDITIVE RESPONSE OF TQR BLEND IN CYTOPROTECTIVE ACTION AGAINST OXIDATIVE STRESS

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Oxidative stress leads to DNA, lipid, and protein damage promoting a decrease in cellular survival. The age-related pathologies are tightly associated with an increase in these ROS that cause oxidative damage. Beneficial phytochemicals are tested to provide anti oxidative action. Quercetin in pagoda tree seed pod extract (Sophora japonica Linn; Fabaceae) abundant in flavonoids, Turmeric (Curcuma longa Linn; Zingiberaceae) constituent curcumin, and Rosemary (Rosmarinus officinalis Linn; Lamiaceae) constituent carnosic acid each has anti-inflammatory properties. Varieties of compositions of these have been found to synergistically activate the NRF-2, a primary regulator involved in the maintenance of redox levels in cells by enabling Antioxidant Response Element (ARE) and by inducing Heme oxygenase 1 (HMOX-1) and Glutamate-cysteine ligase modifier subunit (GCLM) expression in HepG2 cells and provides cytoprotective benefits. The protection of DNA, lipid oxidation, and the whole HepG2 cells used as an in-vitro alternative to primary human hepatocytes was analyzed using Comet Assay, ELISA for 8-Isoprostane, and Complete cell viability utilizing them as biomarkers for oxidative stress. The TQR blend showed the highest cellular protection compared to individual extracts in the blend against oxidative insult in HepG2 cells. A clinical trial to study the most effective Blend ratio in dietary supplement shows the 1:3:5 ratios providing an increase in its effect in 60 males aged between 45-65 years by examining their blood and urine samples.

Key words: TQR Blend, Reactive Oxygen Species, NRF-2, Antioxidant Response Element, Comet Assay, Neurodegenerative disease

PCG 002

PHYTOCHEMICALS IN THE TREATMENT OF CANCER

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Cancer is a major public health burden in both developed and developing countries. It is the second leading cause of death worldwide. There is thus increased interest in alternative treatment modalities that include chemotherapy, hormonal supplements, surgery, and radiation therapy, complementary or alternative medicine, used alone or in combination. Many of the classes of photochemical in herbal medicine are finding therapeutic use. In particular, cancer patients are reported to benefit from treatment with herbal medicine and survivability in many cases is significantly enhanced. The anti-oxidative and superoxide scavenging activities of individual active components of herbal medicine for their inhibitory activities on lipid peroxidation and anti-cancer properties. The study sheds lights on the pharmacological applications of herbal medicine in the treatment of cancer and its potential use as anti-cancer agents. Several anti-cancer agents including taxol, vinblastine, vincristine, camptothecin derivatives, topotecan and irinotecan, and etoposide derived from epipodophyllotoxin are in clinical use all over the world. A number of promising agents such as flavopiridol, roscovitine, combretastatin A-4, betulinic acid and silvestrol are in clinical or preclinical development.

Key words: Cancer, Phytochemicals

PCG 003

NEPHROPROTECTIVE AND HEPATOPROTECTIVE ACTIVITY OF SEA BUCKTHORN

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Sea buckthorns belongs to the genus Hippophae(family- Elaeagnaceae).An increased evidence of positive effects of phytochemicals in disease prevention has lead to scientific analysis of many plant materials for their bioactive constituents.sea buckthorn is known to be a good source of antioxidants and other bioactive components which have been found to exert positive effects on human health . A number of pharmacological activities such as cytoprotective,antistress, immunomodulatory, hepatoprotective, radioprotective, antiatherogenic, anti tumor and antimicrobial activites have been reported in sea buckthorn. Bioactive compounds present in sea buckthorn may serve as good ingredients for development of functional foods .Liver injuries ,renal failure induced by carbon tetrachlorideand cisplatin are the best characterizied system of xenobiotic induced hepatotoxicity and nephrotoxicity are commonly used model for the screening of hepatoprotective activites of drugs.The studies are performed in albino rats,cisplatin induced nephrotoxicty and ccl4 induced hepatotoxicity was reversed by berries of sea buckthorn probably via its antioxidant activity (presence of high content of flavonoids).

Key words: Sea buckthorn, CCl_4, Cisplatin, Nephrotoxicity, Hepatotoxicity

PCG 004

HYPOGLYCAEMIC ACTIVITY OF YACON

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Diabetes is currently a chronically more important disease due to the high rates affecting 8.5% of the world population. The need to look for natural sources as alternative elements for the treatment of this type of diseases is of greater impetus, in which the discovery and research of new natural products has been strengthened. Currently, in integrative therapies it is common to use natural elements such as yacon, due to its extensive pharmacological properties explored as anti-oxidants, prebiotics, anti-cancer, normolipemiants, cytoprotective and mainly for its greater use as a hypoglycaemic element. Thus, in this work was carried out a systematic review of the most important scientific reports on the role of yacon in hypoglycaemic activity; likewise, to develop a conceptual expansion of the metabolites and chemical composition reported that relate to their activity in the regulation of glycaemia levels and finally relating possible mechanisms related between the presence of said metabolites and hypoglycaemic activity.

Key words: Yacon, Diabetes, Polyphenols, Hypoglycemia

PCG005

COMPARATIVE EVALUATION OF ANTI-UROLITHIATIC ACTIVITY OF AQUEOUS EXTRACT OF PEEL, SEED AND WHOLE FRUIT OF PUNICA GRANATUM L IN IN-VITRO MODEL

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Urolithiasis is a multifactorial disease wherein stones are formed at any location within the urinary tract with its cause lying in series of events that lead to disruption of equilibrium between promoters and inhibitors of crystallization in the urinary system.Stone formation is one of the painful urologic disorders that occur in approximately 12% of the global population. Many interventions have been investigated and suggest that early identification and treatment of urolithiasis could reduce the risk and progression of kidney stones. The present study suggests that pomegranate could reduce the risk of urolithiasis.The active constituents of pomegranate were found to increase oxalate excretion in urine, which is extremely essential to chelate the calcium that is the major component of kidney stone. also stone nucleation and crystallisation are reduced to a greater extent. In the present study, the antiurolithiatic activity of aqueous extract of pomegranate seed, peel and whole fruit are compared and it was found that the peel of the fruit was found to contain high antiurolithiatic activity.

Key words: Urolithiasis, Nucleation, Punica granatum

PCG006

SOME NATURAL ISOLATED COMPOUNDS AS ANTICANCER AGENTS

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Worldwide cancer is the major cause of death. Major types of cancer are lung cancer, liver cancer, breast cancer, stomach cancer, blood cancer etc. in 2015. According to report of WHO treatment cost of cancer is approximately US$ 1.16 trillion per year and this amount is increasing per year. Cancer treatment includes chemotherapy, radiation, surgery and targeted therapy, which are associated with some detrimental effect. Natural phytochemicals are prominent strategy for prevention, treating, and curing cancer. They may act by augmenting apoptosis, cell cycle arrest, targeting to some specific cancer inducing proteins, increasing cytotoxicity etc. Etoposide is effective in lung cancer, ovarian cancer by inhibiting type II Topoisomerase. Various research revealed that Curcumin is effective in different types of cancers by increasing apoptosis and targeting specific gene such as MDM2 oncogene is inhibited through the ETS2 transcription factor by modulation of signaling pathway PI3K/mTOR in breast cancer. Vincristine shows anticancer property by oncogenic EWS-FLI1 fusion protein inhibition which cause G2-M phase cell cycle arrest & reduce tumor. This review depicts few phytochemicals having anticancer property such as Etoposide, Curcumin, vincristine, etc. with possible mechanism.

Key words: Phytochemicals, Cancer, Cell cycle

PCG007

PHYTOFORMULATION OF VERNONIA ELAEAGNIFOLIA FOR THE MANAGEMENT OF HYPERLIPIDAEMIA

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The aim of the present investigation was to formulate and evaluate phytoformulation prepared from methanolic extract of Vernonia elaeagnifolia. Vernonia elaeagnifolia whole plant was collected and extracted with methanol by soxhlation. Dried methanolic extract of Vernonia elaeagnifolia was used to formulate the nanosuspension by homogenization method to enhance the bioavailability of phytoconstituents by increasing its solubility. Nano suspension of Vernonia elaeagnifolia (NS-VE, 50mg/kg, 100mg/kg) was evaluated for particle size, poly dispersed index (PDI), entrapment efficiency, zeta potential, Fourier transform infrared spectroscopy (FTIR), differential scanning calorimetry (DSC). NS-VE was screened for antihyperlipidemic activity with propyl thiouracil induced and triton X-100 induced hyperlipidaemia models in rats. Average particle size of NS-VE was found to be 0.027 µm, PDI 60 % (0.026 µm), 5mV zeta potential and 46 % entrapment efficiency. NS-VE (at doses 50 mg/kg, 100 mg/kg bd.wt p.o) showed significant ($p < 0.01$) antihyperlipidemic effect by reducing levels of TG TC, LDL,VLDL and shown raised level in HDL when results were compared with normal control, disease control and standard group. Nanosuspension of Vernonia elaeagnifolia can be used for management of hyperlipidaemia and other metabolic disorders with improved bioavailability.

Key words: Antihyperlipidemic activity, Vernonia elaeagnifolia, Nano suspension, Triton X-100, Propyl thiouracil.

PHARMACY PRACTICE

PPR-001

AUTOMATED DRUG DELIVERY SYSTEM

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Automated Drug Delivery System (ADDS) are pharmaceutical formulations or devices that help in achieving targeted delivery and/or controlled release (CR) of therapeutic agents in our body Drug-delivery technology is advancing at a rapid pace, especially with baby boomers living longer and demanding products from drug-delivery manufacturers that are convenient, safe, targeted and user-friendly. Systems that deliver medication — whether implanted or at the patient bedside in the hospital — are often vital for the survival of patients. Drug-delivery devices include ambulatory infusion pumps, patch pumps for insulin delivery, linear peristaltic pumps, rotary peristaltic pumps, and tiny implantable pumps for those with chronic pain. These systems require absolute reliability, which ultimately minimizes risk and lowers costs for both hospitals and users.
The Remote Intelligent Drug Delivery System (RIDDS), a device implanted under the skin and connected to a wireless control center, is being developed to remove the inconvenience associated with taking drugs manually. Such devices will include built-in sensors that allow health care workers to monitor pulse rate, blood oxygen levels and other functions. Based on the information, they could adjust how frequently the medication is delivered or increase or decrease amounts as necessary.

Keywords- ADDS, convenient, lower costs, RIDDS

PPR-002

THE ROLE OF MENSTRUAL BLOOD DERIVED STEM CELLS IN REGENERATIVE MEDICINE

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Menstrual Blood-Derived Stem Cells (MenSC's) are a novel source of mesenchymal stem cells (mscs) their role in regenerative therapy has been increasingly utilized for management of several diseases. The role of (MenSC's) and their sources, properties and unique features in management of different diseases have been explained Sources of MenSC's : 1) Collection of cells directly from intact endometrial tissue (i.e., hysterectomy) 2) Collection of menstrual blood. They show some unique features of known adult-derived stem cells, which provide an alternative source for the research and application in regenerative medicine. They show high clinical potential with following properties: High proliferation, Remarkable versatility, and Periodic acquisition in a non-invasive manner. Their therapeutic effects and functional characteristics in various diseases like liver diseases, diabetes, stroke, muscular dystrophy, ovarian related diseases, myocardial infarction, ausherman syndrome, alzheimers, acute lung injury, cutaneous wound, endometriosis and neuro degenerative diseases are gaining much importance and a review on this has been presented .Thereby MenSC has a great potential for reducing mortality and improving the quality of life of severe patients. As a kind of adult stem cells, MenSCs have multiple properties in treating a variety of diseases in regenerative medicine for future clinical applications.
KEYWORDS: Menstrual Blood-Derived Stem Cells (MenSC's), Sources of MenSC's, regenerative therapy, Remarkable versatility

PPR-003

ARTIFICIAL INTELLIGENCE AND VIRTUAL REALITY IN MEDICAL FIELD

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Artificial intelligence (AI) is defined as 'a field of science and engineering concerned with the computational understanding of what is commonly called intelligent behavior, and with the creation of artifact's that exhibit such behavior'. : Artificial intelligence is a branch of computer science capable of analyzing complex medical data. Their potential to exploit meaningful relationship with in a data set can be used in the diagnosis, treatment and predicting outcome in many clinical scenarios. Artificial neural networks (ANN) are the most popular AI technique in medicine. ANNs are computational analytical tools which are inspired by the biological nervous system. They consist of networks of highly interconnected computer processors called 'neurons' that are capable of performing parallel computations for data processing and knowledge representation. Their ability to learn from historical examples, analyze non-linear data, handle imprecise information and generalize enabling application of the model to independent data has made them a very attractive analytical tool in the field of medicine.

Virtual reality (VR) refers to the computer-generated simulation in which a person can interact within an artificial three-dimensional environment using special electronic devices. VR has been proven to be an effective way of treating phobias; Depressions Pain Management & Physical Therapy.VR for physical therapy has also been shown to be effective in speeding up recovery time.

Key words: Artificial intelligence, artificial neural networks, virtual reality.

PPR-004

PERSONALIZED MEDICINE DISPENSING PHARMACY

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Pharmacy is a constantly changing profession that requires pharmacists to adapt their skills as scientific advances continue to transform the practice of medicine. Personalized medicine which is a scientific advance is quickly gaining traction as a clinical tool to improve the prediction, prevention and treatment of disease. Pharmacogenetics the use of genetic information to guide drug therapy decisions is an important component of personalized medicine.

Health care professionals specifically trained in the clinical application of pharmacokinetics and pharmacodynamics, pharmacists are uniquely suited to interpret and apply genetic information to the therapeutic decision-making process. In this presentation I will display a modern dispensing pharmacy that has a patient visiting area, patient information collection area (through mobile apps), justifying the prescribed drug and dose based on patients pharmacogenetics and other parameters, drug manufacturing through 3d printing which is a layer-by-layer process having the ability to fabricate 3D formulations by depositing the product components by digital control. Storage, dispensing and patient counseling area.

Personalized medicine has great role in cancer treatment and also through resolution pharmacology new drug design and treatment of inflammation. Pharmacists through personalized medicine can know the patients past medical history identify drug interactions, prevent use of drugs without indication and can also know the pharmacokinetic, pharmacodynamic parameters of drugs, can accordingly dose can be adjusted. Pharmacists also provide dose individualization via therapeutic drug monitoring. Thus personalized medicine facilitates pharmacists to provide treatment with more efficacies and less side effects.

Key words: Personalized dispensing pharmacy design, 3Dprinting, pharmacogenetics, therapeutic drug monitoring.

PPR-005

DIGITAL PATIENT EDUCATION

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Patient education is a valuable part of care that enables patients to be informed, active participants in their own treatment. The Recent technological innovations have created new opportunities for the increased adoption of Virtual Reality (VR), Augmented Reality (AR), Mixed reality, Interactive graphics, Cyberspace, Stimulated reality methods in medicine. Virtual reality refers to the immersion within a completely virtual environment, which is often or most-easily achieved by taking over the entirety of a participant's peripheral field-of-view via a Head-Mounted Display. Currently standard virtual reality systems use either Virtual Reality Headsets or Multi-projected Environments, VR headsets consisting head-mounted display. AR systems range from simple, handheld displays showing models superimposed on real-world video images to head-mounted devices with see-through glasses that allow wearers to visualize virtual elements superimposed on the surrounding real-world environment. Mixed reality is the merging of the real world and virtual worlds to produce new environments and visualizations. Computer game graphical technology offers the opportunity to experience how often an event occurs, rather than simply reading its frequency. A cyberspace is a networked virtual reality. Simulated reality is the hypothesis that reality could be simulated. Pharmacist educates the patient on the benefits of drug and how it improves his condition on adherence , general adverse effects (risk benefit ratio) and how to handle them through this digital patient education.This digital patient education widely applied in the management of post traumatic stress disorder,phobias,physical rehabilitation, stroke rehabilitation, Alzheimer's disease, treatment-resistant phantom limb pain.

Key words: Virtual reality, augmented reality, Mixed Reality, Interactive Graphics, Cyberspace, Stimulated Reality.

PPR-006

A REVIEW ON THE OUTBREAK OF NOVEL CORONAVIRUS-2019 (COVID-19)

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Coronavirus (REALM: Riboviria) gets its name or is classified on the analysis of the crown or halo like appearance of the envelope glycoproteins and on characteristic feature of chemistry and replication. Infectious bronchitis viruses in chicken and 2 human nasal cavity viruses which have been named HCoV-229E and HCoV-0C43 are the earliest discoveries (1960's) of coronaviruses. Depending on the relation to the evolutionary development and diversification analysis of the recently released 2019-nCoV genomic data, showed that the 2019-nCoV is most scrupulously related to 2 SARS-like CoV sequences, which were isolated from bats during the period 2015-2017(in Zhoushan, Zhejiang province, China),which suggest that the bats and human CoV share a common ancestor. SARS-CoV and MERS-CoV (highly pathogenic zoological viruses) causing Severe acute respiratory syndrome and middle east respiratory syndrome respectively have emerged into human communities since past 20 years which has been a significant threat to global health, Showcasing a new class of public health concern that may continue to emerge into human populations; respiratory syndromes caused by CoV, transmitted from person-to-person contact resulting in high morbidity and mortality.

Key words: Taxonomical classification (pertaining to structure), etiology, replication, pathogenesis, host defences, diagnosis and control.

PPR-007

ROLE OF PHARMACIST IN PALLIATIVE CARE

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Palliative care is specialized medical care for people living with a serious illness. This type of care is focused on providing relief from the symptoms and stress of the illness. The goal is to improve quality of life for both; the patient and the family. Palliative care is provided by a specially-trained team of doctors, nurses, pharmacists and other specialists who work together with a patient's other doctors to provide an extra layer of support.
Role of Pharmacist in Palliative Care: The timely provision of medications- Assist in drug shortage management, including patient focused and supply decisions. Ongoing medications are usually a core part of a palliative care treatment plan for the management of symptoms. Pharmacists serve as an authoritative resource on the optimal use of medications in symptom management and palliative care. It is the responsibility of a pharmacist to ensure that patients have access to the medications required in the management of their health condition in a timely manner. This is important as it plays a key role in increasing the quantity and quality of life for palliative care patients.Detection and management of drug-related problems. Inclusion of palliative care as a subject in the curriculum of students aspiring to become clinical pharmacist will provide basic skills and knowledge about the medication management approach for a palliative care patient.

Key words: Palliative care, palliative, supportive, and hospice care Pharmacist (PHC), Pain.

PPR-008

16TECH ADVANCEMNET IN PHARMACEUTICAL TO RE-INVENT HEALING

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We know that we are living in the age in which the technology is moving rapidly. Everything is getting advanced; we are creating new fields and wrapping up the existing and old mode sand process. As we are moving on technology advancement in various sectors, here are some opportunities that are emerging in the health care and pharmaceutical sector also. The technological advancement in pharmaceuticals is bringing hope to the patients. We are improving health care through the use of innovative digital technologies.

Key words: Precision medicine, Health sensors, 3D printing and Robotic surgery etc.

PPR-009

MICRONEEDLES: A RESEARCH THAT WOULD CHANGE LIVES

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Traditional transdermal patches have been limited to use with a small range of molecules, which is unfortunate, given their patient-friendly features and ease of use. As the pharmaceutical industry continues to expand its offerings to include larger molecules and biologics, new transdermal platforms are also evolving. This article describes how microneedle technology is being applied in two new transdermal systems using solid and hollow microneedles. The solid and hollow microneedle transdermal systems, currently available for clinical trials, have the ability to deliver small molecules as well as biologics, opening up the potential for self-administration of a broad array of Active Pharmaceutical Ingredients (APIs).

Key words: microneedle, transdermal, biologics, administration, potential

PPR-010

ARTIFICIAL INTELLIGENCE IN CANCER THERAPY

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Artificial intelligence (AI) approaches have the potential to affect several facets of cancer therapy. These include drug discovery and development and how these drugs are clinically validated and ultimately administered at the point of care, among others. Currently, these processes are expensive and time-consuming. Moreover, therapies often result in variable treatment outcomes between patients. The convergence of AI and cancer therapy has resulted in multiple solutions to address these challenges. AI platforms ranging from machine learning to neural networks can accelerate drug discovery, harness biomarkers to accurately match patients to clinical trials, and truly personalize cancer therapy using only a patient's own data. These advances are indicators that practice-changing cancer therapy empowered by AI may be on the horizon. Using computer algorithms to search for important signals in the noise can reduce treatment times, improve the quality of care, and make the best use of valuable resources. "We have demonstrated that AI can make work more efficient without compromising on quality of care, and in many cases it can improve the care that patients receive," says Corey Zankowski, senior vice-president of Oncology Software Solutions at Varian, which is focusing on developing and delivering intelligent cancer care solutions.

Keywords: Artificial intelligence, cancer therapy, cancer, Bio marker etc.

PPR-011

ADVERSE DRUG REACTIONS

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We define an adverse drug reaction as "an appreciably harmful or unpleasant reaction, resulting from an intervention related to the use of a medicinal product, which predicts hazard from future administration and warrants prevention or specific treatment, or alteration of the dosage regimen, or withdrawal of the product." Such reactions are currently reported by use of WHO's Adverse Reaction Terminology, which will eventually become a subset of the International Classification of Diseases. Adverse drug reactions are classified into six types (with mnemonics): dose-related (Augmented), non-dose-related (Bizarre), dose-related and time related (Chronic), time-related (Delayed), withdrawal (End of use), and failure of therapy (Failure). Timing, the pattern of illness, the results of investigations, and rechallenge can help attribute causality to a suspected adverse drug reaction. Management includes withdrawal of the drug if possible and specific treatment of its effects. Suspected adverse drug reactions should be reported. Surveillance methods can detect reactions and prove associations.

Key words: adverse drug effects, dosage regimen, augmented, surveillance

PPR-012

ADVANCED STUDY ON VARICELLA-ZOSTER VIRUS, IT'S INFECTION AND TREATMENT

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Humanalpha herpes virus 3 (HHV-3), usually referred as the Varicella-zoster virus (VZV), is one of nine herpes viruses known to infect humans. It is an enveloped icosahedral virus approx.200 nm in diameter, with a tegument, capsid and core. To be able to produce clinically two distinct diseases (Chickenpox and Shingles) have been identified in different age groups and the vitality of action may also vary. VZV is a pandemic, highly contagious viral infection that can spread from an infected person to someone who had never had chickenpox or received chickenpox vaccine. After primary infection it establishes latency in dorsal root ganglia. The reactivation of Dormant virus causes a neuro cutaneous syndrome (Shingles) also known as Herpes zoster which is predominantly seen inpeople after the age of 50. It is primarily a disease of childhood (90% cases reported in younger than 10 year). It is a viral infection that has historically touched a large majority of the population with every year, more than 3.5million cases out of which 9000 hospitalization and 100 deaths i.e.,1 in 60,000 cases have been identified. The development of antiviral drugs the mostly preferred is Acyclovir and the newly approved varicella (OKA) vaccine has increased the clinical significance. In this review, Introduction to VZV, pathogenesis, symptoms, chickenpox, shingles, treatment by acyclovir and it's mode of action, prevention and conclusion are being discussed.

PPR-013

CONTROL OF MOSQUITOES USING NON CHEMICAL METHODS

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Everybody wants to kill mosquitoes, but in Singapore they create mosquitoes and spread them in millions to fly free in the country. Mosquitoes cause diseases which can be deadly. Mainly female mosquitoes have dengue virus, just like malaria, dengue can also get from a mosquito bite which can be deadly. So, to eliminate dengue virus we need to kill mosquitoes. But for killing them we use insecticides, mosquito coils etc. which are harmful to humans. So to avoid that Singapore researchers introduced an alternative method which can be safe. They create new male mosquitoes which can find causative female aedes mosquito and stop it from having babies. For creating the mosquito they have used bacteria called WOLBACHIA. This organism is introduced into the male mosquito in laboratory conditions and allowed them to spread. This lab raised mosquito and causative mosquito when mates together there will be no production of offspring's. This new lab raised mosquito causes no harm to humans. Results are found by calculating population of both lab raised and causative mosquitoes. The method is successes in first attempt but clinical trials are still going on.

Keywords: Dengue, aedes mosquito, bacteria, Singapore, Wolbachia, lab raised mosquito.

PPR-014

EDIBLE VACCINE

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Vaccine is a biological preparation that improves immunity against a particular disease. Traditional vaccine contains weakened or killed causative microorganism which stimulate body's immune system for destroying it. Edible vaccines offer cost-effective, easily administrable, storable and widely acceptable as bio friendly particularly in developing countries. Oral administration of edible vaccines proves to be promising agents for reducing the incidence of various diseases like hepatitis and diarrhea especially in the developing world, which face the problem of storing and administering vaccines. Edible vaccines are obtained by incorporating a particular gene of interest into the plant, which produces the desirable encoded protein. Edible vaccines are specific to provide mucosal activity along with systemic immunity. Various foods that are used as alternative agents for injectable vaccines include cereals (wheat, rice, and corn), fruits (bananas) and vegetables (lettuce, potatoes, and tomatoes). Thus, edible vaccines overcome all the problems associated with traditional vaccines and prove to be best substitutes to traditional vaccines.

Keywords: Edible vaccines; Immunity; Traditional vaccines.

PPR-015

THE PREVANLENCE OF THE USE OF HEALTH SUPPLEMENTS BY ATHLETES

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Any edible substance that is commercially available and consumed in addition to usual diet, with its contents not evaluated by Food and Drug Administration (FDA) is labelled as "supplement". Though the pattern of dietary substances use differs is distinctive sub populations, commonly used substances by athletes are protein powders, energy drinks and shots, creatine, amino acids, multivitamins with caffeine, beta-hydroxy-beta-methyl butyrate, dehydroepi-androsterone (DHEA), and testosterone boosters. The anabolic steroids consists of a class of natural male sex hormone, testosterone. Anabolic steroids have androgen effects and anabolic effects. Testosterone together with a set of synthetic testosterone or its analogues is used clinically to treat several conditions such as reproductive system dysfunction, breast cancer, and anemia. Testosterone besides being responsible for the development of secondary male sexual characters, it is also an important hormone which stimulates protein synthesis. This effect on protein synthesis results in increased muscle size, body mass and strength. However to get the desired effects, athletes use the doses 10-100 times the doses used for medical purposes. With their fast desired effect of increased endurance and muscle mass, the prevalence of their use has been rising since the middle of this century. The use is more common among adolescent men and those who have been dissatisfied with the improvement in muscle growth after many years of working out and other dietary supplements. Through enhancement of athletic performance has been demonstrated by many studies in past but the potential adverse effects associated with the anabolic steroid usage has led to sporting governing bodies to ban these substances for consumption among professional athletes. Since most of these drugs and supplements are very easily available in the developing countries like India, the trend of its consumption is important to be known.

PPR-016

DRUG RESISTANT SUPERBUGS

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Antibiotics have always been considered one of the wonder discoveries of the 20th century. This is true, but the real wonder is the rise of antibiotic resistance in hospitals, communities, and the environment concomitant with their use. The extraordinary genetic capacities of microbes have benefitted from man's overuse of antibiotics to exploit every source of resistance genes and every means of horizontal gene transmission to develop multiple mechanisms of resistance. The term "superbugs" refers to microbes with enhanced morbidity and mortality due to multiple mutations endowing high levels of resistance to the antibiotic classes specifically recommended for their treatment. Superbugs are one of the most urgent threats as identified by centers of disease control and prevention. Superbugs are total drug resistant and human killing microbes that modern medicine struggles to combat. It develops when normal strain of bacteria becomes resistant to multiple antibiotic drugs.

Key words: superbugs, MDR (multiple drug resistance), genetic mutation, horizontal gene transmission.

PPR-017

LEPROSY RESISTANT DRUGS

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Leprosy is caused by mycobacterium leprae and has been known since biblical timesIt is still endemic in many regions of the world and a public health problem in Brazil.The prevalence rate in 2011 reach 1.54 cases per 10,000 inhabitants in BrazilThe mechanism of transmission of leprosy consist of prolong close contact between susceptible and predisposed individuals and untreated multibacillary patients. Transmission occurs through inhalation of bacilli present in upper airway secretionThe nasal mucosa is the main entry of exit route of M. leprae.The deeper understanding of the structure and biological characteristic of M.leprae, the sequencing of its genomealong with advances in understanding the mechanism of host immune against the bacillidependent on genetic susceptibility, have contributed to the understanding of the pathogenesis, variations in the clinical characteristics and progression of the disease. This article aim to update dermatologists on epidemiological, clinical and etiopathogenic leprosy aspectsLeprosy is chronic infectious disease caused by mycobacterium leprae.It is highly contagious,but its morbidity is low because a large portion of the population is naturally resistant to this disease. Leprosy effects mainly the skin and peripheral .it diagnosis is established based on skin and neurologic examination of the patient. Early diagnosis is very importantThe timely and proper implementation of treatment will prevent sequelae and physical disabilities that have an impact on the individuals social and working lifewhich are also responsible for the stigma and prejudice regarding this disease.

Key words:clinical diagnosis, disease transmission, infectious, education, epidemiological, genetic phenomena, immunologic factorleprosy,leprae ,sign and symptoms

PPR-018

BEIGE FAT IN THE TREATMENT OF OBESITY

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Obesity and metabolic disorders are major health concerns worldwide. Although a range of therapies have been developed, these pharmaceutical treatments often have adverse side effects or limited efficacy. Therefore, there is a growing need of novel therapeutics to prevent or treat obesity. Obesity is thought to be caused by an imbalance between energy intake and energy consumption. Increasing energy consumption is considered as a potential therapeutic strategy to treat obesity and its related disorders. Brown fat is a specialized fat depot characterized by increased energy expenditure and heat production. Its expansion and/or activation can protect against diet-induced obesity. The finding of active brown fat in human adults has aroused a great interest in the study of adipose tissue browning. The "re-discovery" of brown fat has been accompanied by the identification of beige adipocytes (small clusters of brown-like white adipocytes within white fat depots) .Beige adipocytes , that share some common characteristics with brown adipocytes such as high mitochondria content and uncoupling protein 1 (UCP1) expression can be induced in white adipose tissue (WAT) Beige fat, however, has the largest potential as a therapeutic target in the prevention of obesity or diabetes (or both) because it can be present in many white depots as clusters of pre-adipocytes that can be recruited.

PPR-019

PLASTIC SURGERY

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Plastic surgery is a surgical specialty involving the restoration, reconstruction or alterations of the human body; it can be divided into two main categories I. E reconstructive surgery and cosmetic surgery, reconstructive surgery is performed on abnormal structures of the body, caused by congenital defects, developmental abnormalities, trauma, burns, tumor's, infection, disease whereas cosmetic surgery is performed to reshape normal structures of the body, usually to improve shape and appearance, reconstructive surgery is of several types which includes breast surgery, cleft palates repair, scar revision, skin cancer surgery, tissue expansion, craniofacial surgery. Cosmetic surgery is also of several types facial contouring – (subtypes are facial implants, Liposuction, cheek augmentation), facial rejuvenation, body contouring.

PPR-020

ALZHEIMER'S DISEASE

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Alzheimer's disease is a degenerative brain disorder. Etiology is unknown which is the most common form of dementia .It is usually starts in late middle age or in old age, results in progressive memory loss, impaired thinking, disorientation and changes in personality and mood. There is a degeneration of brain neurons especially in the cerebral cortex and presence of neuro fibrillary tangles and plagues containing beta-amyloid cells. The disease was first described by dr.aloisalzheimer, a German physician in 1906. Alzheimer' disease is a chronic irreversible disease that effects the cells of the brain &causes impairment of intellectual functions. About 3, 60,000 new cases of Alzheimer are diagnosed each year. Down syndrome, family history, chronic high B.P head injury gender, smoking &drinking. Etiology is unknown. However, several factors are thought to be implicated in this disease Neurochemical factors, Environmental factors, Genetic & immunological factors.
Alzheimer's disease attacks nerves and brain cells as well as neurotransmitter. The destruction of these parts causes clumps of protein to form around the brain cells, these clumps are known as plaques and bundles
The presence of the plaques and bundles start to destroy more connections between the brain cells which makes the condition worse.

Key Words: Alzheimer's disease, etiology, dementia, disorientation, degeneration, plagues, beta-amyloid, down syndrome, chronic high b.p,neuro fibrillary tangles, progressive, implicated, neurochemical, immunological, clumps , destroy ,smoking, drinking.

PPR-021

BIO-NANOENCAPSULATION TECHNOLOGY - A SCIENTIFIC REVIEW ON DIABETIC RESEARCH

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Many anti-diabetic agents are indicated for the treatment of diabetes mellitus. Apart from them the antilipidemic drug, probucol (PB), has demonstrated potential applications in Type 2 diabetes (T2D) through its protective effects on pancreatic β-cells.PB has poor solubility and bioavailability, and despite attempts to improve its oral delivery; none has shown dramatic improvements in absorption or antidiabetic effects. Although, Preliminary data has shown potential benefits from bile acid co-encapsulation with PB.One bile acid has shown best potential improvement of PB oral delivery (ursodeoxycholic acid, UDCA). This study aimed to examine PB and UDCA microcapsules, and their hypoglycaemic, antilipidemic and anti-inflammatory effects in vivo. These microcapsules exerted positive effects on β-cells viability at hyperglycemic state, and brought about hypoglycaemic and anti-inflammatory effects on the prediabetes mice. In conclusion, PBUDCA co-encapsulation has showed beneficial therapeutic impact of dual antioxidant-bile acid effects in diabetes treatment.

Key Words: Type 2 diabetes, probucol, co-encapsulation, ursodeoxycholic acid (UDCA), microcapsule, hypoglycaemic, antilipidemic, and anti-inflammatory.

PPR-022

A REVIEW ON MELANOMA

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Melanoma is a malignant tumor that arises from melanocytes, dendritic cells that produce melanin, a pigment that protects the body from damaging ultraviolet (UV) radiation. A cluster of melanocytes form nevi (pigmented lesions or moles) and melanoma results when these melanocytes undergo a malignant transformation. Melanocytes may be found in various parts of the body; however, they are primarily located in the epidermis, more than 90% of all melanomas are cutaneous. Although melanoma is curable if detected in early localized form. Melanoma is the 5 th most serious skin cancer in united States accounts for fewer than 5% of skin cancer but it is most serious form of disease causing up to 75% of skin cancer related deaths. the incidence of cutaneous melanoma increased tremendously from 1970 to the late 1990's however rates are remain stable since 2000. Five year survival rates for melanoma is increased from 82% in 1975 to 92% in 2004 but overall morality rate remains unchanged and metastatic melanoma is historically been considered as one of the most therapeutically challenging malignancies. Usually there are mainly 4 types of melanoma. Melanoma can be treated by using surgery, radiation therapy, depending upon conditions.

KEY WORDS: malignant melanoma, cutaneous melanoma.

PPR-023

POLYCYSTIC OVARY SYNDROME

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Polycystic ovary syndrome (PCOS) happens when women's ovaries or adrenal glands produce more male hormones than normal. PCOS causes cysts (fluid-filled sacs) to grow on the ovaries PCOS is more common in women who have obesity or have a mother or sister with PCOS. To diagnose PCOS, your health care provider may do a physical exam, pelvic exam, Blood tests, and an ultrasound. There is no cure, but diet, exercise, and medicines can help control the symptoms. Birth control pills help women have normal periods, reduce male hormone levels, and clear acne. Treatments for infertility caused by PCOS may include medicines, surgery and in vitro fertilization.

Keyword: Hirsutism, Hyperandrogenemia, obesity, PCOS.

PPR-024

FIGHT THE IODINE DEFICIENCY: ADVANCES IN THE IODINE SUPPLEMENT AS LIFE SAVING DOT

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Abstract:
Iodine is a trace element naturally present in some foods and sea food and available in an important nutrient dietary supplement. Iodine deficiency is a global health issue and has multiple adverse effects on growth and development. Iodine deficiency disorders-mental retardation delayed sexual maturation ad other physical and neurological abnormalities and is also reported to be linked with autism, cysts, septum cancers, hypo and hyper thyroidism, goiter etc. Ground breaking technology of life saving DOT of bindi might work in the safe and control delivery of iodine for various iodine deficiency disorders by reducing the problems of thyroid intake and improving patient compliance.

Keywords: DOT, Mental-retardation, bindi, Autism, Cysts, Bindi.

PPR-025

NANO IN NEUROSCIENCES: POTENTIAL APPLICATIONS AND ITS ADVANCES

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Abstract:

Nanotechnology is the science that deals with materials at nanoscale levels. Nanotechnology (nanotech) may be the manipulation of subject on an atomic and molecular level or its manipulation one magnitude sized from 1 to 100 nanometers at least. The collaboration of this field with bioengineering and neuroscience can transform basic science into novel materials and devices for the treatment and monitoring of the pathological condition of neurological disease. Nano neuroscience is a science that bridges neuroscience and nanotechnology by concurrently addressing the fundamental goals of these two separate fields. The main goals of this technology are to understand how the nervous system operates and how neurons communicate and organize themselves into ordered networks in various action and mental states to treat the disease related to nervous system.
The communication between neuroscience and nanotechnology may provide a solution to many central nervous system disorders, from neurodevelopmental disorders to psychiatric disorders and motor and sensory disorders. In this review, we focus on nanomaterials and specifically on carbon-based nanomaterials, such as carbon nanotubes (CNTs) and graphene for neuroprotection. While these materials raise potential safety concerns, they represent a tremendous technological opportunity for the restoration of neuronal functions. This presentation also highlights nanotools such as nanowires and nano-modified MEA for high-performance electrophysiological recording and stimulation of neuronal electrical activity and the Potential applications of nanomaterials for drug delivery to the central nervous system, Nanomaterial-based approaches for neural regeneration, Applications of nanotechnology for neuroimaging, Nanotechnology in neurosurgery and the future prospective of human brain project.
Keywords: Nano neurosciences, nanomaterials, neuronal drug delivery, nano tools, neuro imaging, neuro surgery, human brain project.

PPR-026

BEAUTY PARLOUR SYNDROME: PREVALANCE OF VERTEBRO BASILAR INSUFFICIENCY.

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Beauty parlour syndrome is medically known as vertebro basilar insufficiency, is the term used to describe a stroke caused as a result of hair washing at hair dressing salon. But very few people are aware that this process can limit the supply of blood to the brain and may lead to an eventual stroke. It is defined as transitory ischemic of the vertebro basilar circulation.Vertebro basilar arteries supply blood to areas such as brain stem,thalamus,hippocampus,cerebellum,occipital and medial temporal lobes.It is caused when there is an injury,tear or blood clot in one of the four major arteries that go to the brain ,can cause a tear in the blood vessel,resulying in a blood clot,which can travel to your brain and causes stroke.The main causes include smoking,hypertension,age,gender,family history,genetics and hyperlipidaemia.Other causes include cardio embolic conditions such as atrial fibrillation.The treatment includes lifestyle modifications surgery and drug therapy.
Key Words: vertebro basilar insufficiency, ischaemic, hyperlipidaemia, cardio embolic conditions**.**

PPR-027

WIRELESS BRAIN SENSOR

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The team of neurosurgeons and engineers has developed wireless brain sensors which monitor intracranial pressure and temperature with in the skull of patient suffering from severe Traumatic Brain Injuries or even those suffering from Parkinson's disease. Doctors must be able to accurately measure intracranial pressure in the brain because an increase in pressure in the injured person may further increase the brain injury. Researchers are developing the technology further so, that in future it will be use to detect dementia, sleep disorders along with traumatic brain injury.

Key Words: intracranial pressure, brain injury, disease, disorders.

PPR-028

ISCHEMIC HEART DISEASECURRENT AND ADVANCED TREATMENT

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Ischemic heart disease is raising common cause of death around the world. This is because of insufficient amount of oxygen within the myocardial cells due to imbalance between oxygen supply and it's demand .There are some conventional surgery based therapy for the treatment of ischemic heart disease and also such as advanced biopharmaceutical based therapy i.e., protein, gene, cell therapies. The biopharmaceutical based therapies which includes, RECOMBINANT PROTEIN THERAPY, GENE THERAPY and CELL TRANSPLANTATION are recognized has major approaches in improving collateral blood flow in the ischemic heart and including neovascularization. So, this explores the current status and future of advanced treatment of ischemic heart diseases with conventional medical therapy and biopharmaceutical based therapy. Further research to this is under progress.

Key words: Biopharmaceutical based therapy, neovascularization, recombinant protein therapy, gene therapy.

PPR-029

SCIENTIFIC APPROACH TO TREAT TOBACCO ADDICTION- A REVIEW

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In this current review, we have gathered the information regarding the various aspects of tobacco. The propagation & measure taken like the climatic condition for instance temperature, soil texture are discussed in this review. The different methods of isolationusing fungal pectinase to release mesophilic cells & it's further process are reviewed in this work . Attempts have been made to gather information on the side effects of tobacco & the various measures to treat nicotine addiction are highlighted in this article.

PPR-030

CHEMO BRAIN-POTENTIAL ROLE OF POLYPHENOLS

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The term Chemo-brain refers to Impairment in Cognitive Skills like thinking and memory. These can occur when an individual being prone to chemotherapy.Chemo-brain can also be called as Chemo-fog. The present review co-relates with the prevention and treatment of Chemo-brain. In that case, Poly-phenols play an eminent role. Poly-phenols constitute an important group of Phyto-chemicals that gained increased research attention. Initial evidence came from epidemiologic studies suggesting that a diet which includes regular consumption of fruits and vegetables(rich in polyphenols) significantly reduces the risk of chemo-brain. Poly-phenols like Berries, Cocoa and polydatin found to be more effective in the treatment of chemo-brain. Firstly, they interact with important neuronal signaling cascades leading to an inhibition of apoptosis triggered by neuro-toxic species and to a promotion of neuronal survival and differentiations. These interactions include selective actions on a number of protein kinase and lipid kinase signaling cascades, mostly PI3/AKt and MAP kinase pathways which regulate pro-survival transcription factors and gene expression. Secondly, they induce peripheral and cerebral vascular blood flow in a manner which may lead to induction of Angiogenesis and nerve cell growth in Hippocampus. From this current review I conclude that Poly-phenols play a key role in management of Chemo-brain.

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Foreign Students at GPRCP


G. Pulla Reddy Memorial Gold Medal for B.Pharm Topper in Osmania University

"Prof. M. L. Khorana medal (IPA)" at 63rd IPC, Bengaluru, 2011

Alumni Meet- 2009

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